



**MANITOU NORTH AMERICA, INC.**

6401 IMPERIAL DRIVE  
Waco, TX 76712-6803

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**MRT2150  
PRIVILEGE E3  
CRANE OPERATION  
MANUAL**

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***MRT 1850 - 2150 -***  
***2540***

**PRIVILEGE**

**- E3 -**

**MANUALE DI UTILIZZO GRU**  
**CRANE OPERATION MANUAL**  
**BETRIEBSANLEITUNG KRAN**

**1ª DATA DI PUBBLICAZIONE**

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**PREMESSA**

**QUESTO MANUALE  
FORNISCE ISTRUZIONI  
SUPPLEMENTARI CHE  
INTEGRANO QUELLE  
GIÀ FORNITE NEL  
MANUALE DI USO E  
MANUTENZIONE DELLA  
MACCHINA.**

**INTRODUCTION**

**THIS MANUAL PROVIDES  
SUPPLEMENTARY  
INSTRUCTIONS IN ADDITION  
TO THOSE  
ALREADY GIVEN IN THE  
MACHINE OPERATION  
AND MAINTENANCE  
MANUAL.**

**VORWORT**

**DIESES HANDBUCH  
LIEFERT ZUSÄTZLICHE  
ANWEISUNGEN,  
MIT DENEN DIE  
VERVOLLSTÄNDIGT  
WERDEN, DIE SCHON IN  
DER BETRIEBS- UND  
WARTUNGSANLEITUNG  
DER MASCHINE  
STEHEN.**

## INTRODUZIONE

- Il costruttore mette a vostra disposizione (con garanzia) una vasta gamma di accessori per il vostro carrello elevatore e ad esso perfettamente adattati.
- Gli accessori sono consegnati con un diagramma di carico relativo al vostro carrello elevatore. Il libretto d'istruzioni e il diagramma di carico dovranno rimanere nel carrello elevatore. L'uso dei possibili accessori è regolato dalle istruzioni contenute nel presente manuale.
- Quando l'accessorio montato prevede il sollevamento di carichi sospesi (es. jib con gancio, argano etc...) il vostro carrello elevatore viene classificato automaticamente come gru mobile



Solo gli accessori omologati e certificati "CE" dal costruttore sono utilizzabili sui nostri carrelli elevatori. La responsabilità del costruttore non sarà coinvolta in caso di modifica o utilizzazione di accessori effettuata a sua insaputa.



**È vietato l'uso di accessori intercambiabili non previsti in origine in dotazione sulla macchina.**

Nel caso di successive richieste di implementazione delle funzioni della macchina con altri accessori, l'utente prima della messa in servizio ha l'obbligo di richiedere il controllo d'idoneità all'impiego da parte di un tecnico autorizzato MANITOU, che provvederà a verificare il corretto funzionamento e l'aggiornamento della documentazione necessaria all'uso del nuovo accessorio. Solamente dopo tale controllo verrà rilasciato un nuovo certificato di conformità "CE" della macchina riportante unicamente i nuovi accessori installati.



Tutti gli accessori con braccio gru devono essere utilizzati in posizione orizzontale (vedi diagrammi di portata); per gli argani verificare la perfetta verticalità tramite l'indicatore a pendolo posto sul telaio dell'accessorio.



La macchina equipaggiata di accessorio con carico sospeso è conforme alle seguenti norme:

- DIN 15018-1, gruppo di sollevamento H1, gruppo di sollecitazione B3
- DIN 15019-2
- EN 13000/2004, velocità del vento inferiore a 50km/h.

Gli argani sono progettati secondo la norma ISO 4301, con condizioni di impiego e classe dell'apparecchiatura: T4, L2, M4.

## INTRODUCTION

- The manufacturer supplies a large range of accessories (guarantees) perfectly suitable for your fork lift truck.
- The accessories are supplied together with a load diagram regarding your fork lift truck. The instruction leaflet and load diagram must remain in the lift truck. The use of possible accessories depends on the instructions given in this manual.
- When the accessory mounted is meant for lifting suspended loads (such as jib with hook, winch, etc...) your fork lift truck is automatically classified as a crane truck.



Only accessories homologated and certified as "CE" by the manufacturer can be used on our fork lift trucks. The manufacturer shall not be responsible for unauthorized modification or use of accessories.



**Do not use interchangeable accessories not originally included in the machine supply.**

For subsequent requests for implementation of machine functions using other accessories, before starting up the machine, the user must request inspection for suitability for use by an authorized MANITOU technician, who will check the correct working and updating of the documentation necessary for using the new accessory.

It is only after this inspection that a new "CE" conformity certificate will be issued for the machine indicating only the new accessories installed.



All accessories with boom must be used in the horizontal position (see capacity diagram); for winches, check the perfect verticality by means of the pendulum indicator provided on the accessory frame.



The machine equipped with accessory with suspended load conforms to the following standards:

- DIN 15018-1, lifting unit H1, stress unit B3
- DIN 15019-2
- EN 13000/2004, wind speed less than 50km/h.

The winches are designed in accordance with standard ISO 4301, as regards conditions of use and equipment class: T4, L2, M4.

## EINLEITUNG

- Der Hersteller stellt Ihnen (unter Garantie) eine umfassende Palette von Zubehörteilen für Ihren Stapler zur Verfügung, die sich perfekt für diesen eignen.
- Das Zubehör wird mit einem Lastdiagramm zu Ihrem Stapler ausgeliefert. Die Betriebsanleitung und das Lastdiagramm müssen im Stapler bleiben. Der Gebrauch der möglichen Zubehörteile wird durch die Anweisungen geregelt, die in diesem Handbuch stehen.
- Wenn das montierte Zubehörteil das Heben hängender Lasten vorsieht (z.B. Kranausleger mit Kranhaken, Winde etc...) wird Ihr Stapler automatisch als Fahrkran klassifiziert.



Nur zugelassene Zubehörteile mit "CE" Kennzeichnung des Herstellers können auf unseren Staplern benutzt werden. Der Hersteller übernimmt keine Haftung, wenn die Zubehörteile ohne sein Wissen geändert und benutzt worden sind.



**Die Benutzung ursprünglich nicht zur Bestückung der Maschine vorgesehener austauschbarer Arbeitsgeräte ist verboten.**

Bei anschließenden Erfordernissen zur Implementierung der Maschinenfunktionen mit anderen Arbeitsgeräten ist der Anwender vor der Inbetriebnahme dazu verpflichtet, die Kontrolle zur Gebrauchseignung seitens eines autorisierten Technikers von MANITOU zu beantragen, der den korrekten Betrieb und die Aktualisierung der zum Gebrauch erforderlichen Dokumentation des neuen Arbeitsgeräts prüfen wird.

Erst nach dieser Kontrolle wird eine neue "EG" Konformitätsbescheinigung der Maschine ausgestellt, auf der nur die neu installierten Arbeitsgeräte stehen.



Alle Zubehörteile mit Kranausleger müssen in der horizontalen Position benutzt werden (siehe Lastdiagramme). Für die Winden ist die perfekte Vertikalität mittels des Pendelanzeigers auf dem Gestell des Zubehörteils sicherzustellen.



Die Maschine, die mit Zubehörteil mit hängenden Lasten ausgestattet ist, entspricht den folgenden Normen:

- DIN 15018-1, Hubklasse H1, Beanspruchungsgruppe B3
- DIN 15019-2
- EN 13000/2004, Windgeschwindigkeit unter 50 km/h

Die Winden sind gemäß der Norm ISO 4301 mit Einsatzbedingungen und Klasse des Geräts geplant: T4, L2, M4.

## Scala BEAUFORT

Velocità del vento ad una altezza di 10 m su terreno piatto

Grado	Tipo di vento	Velocità (nodi)	Velocità (km/h)	Velocità (m/s)	Effetti a Terra	Effetti in Mare
0	Calma	0 - 1	0 - 1	< 0.3	il fumo si alza verticalmente	il mare è uno specchio
1	Bava di vento	1 - 3	1 - 5	0.3 - 1.5	il vento piega il fumo	increspature corte ma più evidenti
2	Brezza leggera	4 - 6	6 - 11	1.6 - 3.3	Il vento è percepibile al volto; agita le foglie	onde piccole ma evidenti
3	Brezza tesa	7 - 10	12 - 19	3.4 - 5.4	Il vento agita continuamente foglie e ramoscelli	piccole onde, creste che cominciano ad infrangersi
4	Vento moderato	11 - 16	20 - 28	5.5 - 7.9	il vento solleva polvere e pezzi di carta; agita i ramoscelli	piccole onde più evidenti e frequenti che diventano più lunghe
5	Vento teso	17 - 21	29 - 38	8 - 10.7	gli arbusti con fogliame ondeggiano	si formano piccole onde nelle acque interne; onde moderate allungate
6	Vento fresco	22 - 27	39 - 49	10.8 - 13.8	Agita rami grossi; i fili metallici sibilano; è difficoltoso l'uso dell'ombrello	si formano onde con creste di schiuma bianca, e spruzzi
7	Vento forte	28 - 33	50 - 61	13.9 - 17.1	Agita interi alberi; si ha difficoltà a camminare contro vento	il mare è grosso, la schiuma comincia ad essere sfilacciata in scie.
8	Burrasca moderata	34 - 40	62 - 74	17.2 - 20.7	Rompe rami di alberi; è quasi impossibile camminare contro vento	onde di altezza media e maggiore lunghezza; dalle creste si distaccano turbini di spruzzi.
9	Burrasca forte	41 - 47	75 - 88	20.8 - 24.4	Causa leggeri danni ai fabbricati (camini, tegole ecc.).	grosse ondate, spesse scie di schiuma e spruzzi, sollevate dal vento, riducono la visibilità
10	Tempesta	48 - 55	89 - 102	24.5 - 28.4	Raro all' interno della terra ferma; sradica alberi; causa notevoli danni ai fabbricati	enormi e violente ondate con lunghe creste a criniera; visibilità ridotta
11	Tempesta violenta	56 - 63	103 - 117	28.5 - 32.6	Molto raro, causa estese devastazioni	onde enormi ed alte, che possono nascondere navi di media stazza; ridotta visibilità
12	Uragano	64 +	oltre 118	32.7 +	Causa gravissime catastrofi	In mare banchi di schiuma; l'aria è piena di schiuma e spruzzi; visibilità fortemente ridotta

## BEAUFORT scale

Wind speed at a height of 10 m from flat ground

Force	Type of wind	Speed (knots)	Speed (kph)	Speed (m/s)	Effects on Land	Sea condition
0	Calm	0 - 1	0 - 1	< 0.3	smoke rises vertically	sea like a mirror
1	Light air	1 - 3	1 - 5	0.3 - 1.5	the wind bends the smoke	ripples but without foam crests
2	Light breeze	4 - 6	6 - 11	1.6 - 3.3	The wind can be felt on the face; shakes the leaves	small but evident wavelets
3	Gentle breeze	7 - 10	12 - 19	3.4 - 5.4	The wind continuously shakes the leaves and twigs	large wavelets. Perhaps scattered white horses
4	Moderate breeze	11 - 16	20 - 28	5.5 - 7.9	The wind raises dust and scraps of paper; shakes the twigs	small waves. Fairly frequent white horses
5	Fresh breeze	17 - 21	29 - 38	8 - 10.7	leafy shrubs sway	small waves form on inland waters. Moderate waves, many white horses
6	Strong breeze	22 - 27	39 - 49	10.8 - 13.8	Shakes thick branches, metal wires hum; it becomes difficult to keep an umbrella open	large waves begin to form; white foam crests, probably spray
7	Near gale	28 - 33	50 - 61	13.9 - 17.1	Whole trees sway; it is difficult to walk against the wind	sea heaps up and white foam blown in streaks along the direction of the wind
8	Gale	34 - 40	62 - 74	17.2 - 20.7	Breaks the branches of trees; it is almost impossible to walk against the wind	moderately high waves, crests begin to break into spindrift.
9	Strong gale	41 - 47	75 - 88	20.8 - 24.4	Causes slight damage to buildings (stacks, tiles, etc..).	high waves. Dense foam along the direction of the wind. Crests of waves begin to roll over. Spray may affect visibility
10	Storm	48 - 55	89 - 102	24.5 - 28.4	Rare inland; uproots trees; causes considerable damage to buildings	very high waves with long overhanging crests. Visibility affected
11	Violent storm	56 - 63	103 - 117	28.5 - 32.6	Very rare, causes extensive devastation	exceptionally high waves that may hide medium sized ships. Visibility affected
12	Hurricane	64 +	over 118	32.7 +	Causes very serious catastrophes	the air is filled with foam and spray. Sea completely white with driving spray. Visibility very seriously affected



## BEAUFORT-SKALA

Windgeschwindigkeit in einer Höhe von 10 m auf ebenem Boden

Grad	Windtyp	Geschwindigkeit (Knoten)	Geschwindigkeit (km/h)	Geschwindigkeit (m/s)	Auswirkungen im Binnenland	Auswirkungen auf See
0	Windstille	0 - 1	0 - 1	< 0.3	Rauch steigt gerade empor	Spiegelglatte See
1	Leichter Zug	1 - 3	1 - 5	0.3 - 1.5	Windrichtung ist nur durch Rauch erkennbar	Schuppenförmige Kräuselwellen
2	Lichte Brise	4 - 6	6 - 11	1.6 - 3.3	Wind ist im Gesicht spürbar	Kleine Wellen, Kämme brechen sich nicht
3	Schwache Brise	7 - 10	12 - 19	3.4 - 5.4	Dünne Zweige und Blätter bewegen sich	Kleine Wellen, Wellenkämme beginnen sich zu brechen
4	Mäßige Brise	11 - 16	20 - 28	5.5 - 7.9	Zweige und dünne Äste bewegen sich; Staub und erhebt sich	Noch kleine Wellen, jedoch vielfach weiße Schaumköpfe
5	Frische Brise	17 - 21	29 - 38	8 - 10.7	Kleine Bäume schwanken	Mäßig lange Wellen mit Schaumkämmen
6	Starker Wind	22 - 27	39 - 49	10.8 - 13.8	Pfeiften an Drahtleitungen, Regenschirmbenutzung ist schwierig	Bildung größerer Wellen, größere Schaumflächen
7	Steifer Wind	28 - 33	50 - 61	13.9 - 17.1	Ganze Bäume schwanken; Spürbare Hemmung beim Gehen	See türmt sich Schaumstreifen in Windrichtung
8	Stürmischer Wind	34 - 40	62 - 74	17.2 - 20.7	Zweige brechen von Bäumen; Gehen wird erheblich erschwert	Hohe Wellenberge Gipfel beginnen zu versprühen
9	Sturm	41 - 47	75 - 88	20.8 - 24.4	Kleinere Schäden an Häusern und Dächern.	Dichte Schaumstreifen rollende See Gischt verweht Sichtbehinderung
10	Schwerer Sturm	48 - 55	89 - 102	24.5 - 28.4	Selten im Binnenland; Bäume werden entwurzelt; bedeutende Schäden an Häusern	Sehr hohe Wellenberge verbreitet weißer Schaum Sicht beeinträchtigt
11	Orkanartiger Sturm	56 - 63	103 - 117	28.5 - 32.6	Sehr selten schwere Sturmschäden	Außergewöhnlich hohe Wellenberge Wellenkämme zu Gischt verweht Sicht herabgesetzt
12	Orkan	64 +	über 118	32.7 +	Katastrophale Orkansschäden	See vollständig weiß; Luft voller Schaum und Gischt; keine Fernsicht mehr

### CONSIGLI GENERALI RELATIVI ALL'UTILIZZO DELLA GRU

Quando vedete questo simbolo significa che:



**Attenzione! Siate prudenti! E' in gioco la vostra sicurezza o quella della gru.**

- Attenersi ai dati indicati sui diagrammi di carico. In nessun caso tentare di sollevare carichi superiori a quelli ammessi sui diagrammi di carico allegati alla macchina.
- Trasportare il carico in posizione bassa e con il braccio telescopico rientrato al massimo.
- Guidare la gru ad una velocità adeguata alle condizioni e allo stato del terreno.
- Senza carico applicato viaggiare con braccio telescopico abbassato e rientrato al massimo.
- Non andare mai troppo forte né frenare bruscamente con un carico.
- Quando il carico viene sollevato, fare attenzione che nessuno possa intralciare l'operazione e non compiere manovre errate.
- Non tentare di compiere operazioni che superino le capacità della gru.
- Fare attenzione ai cavi elettrici.
- Non utilizzare la gru durante forti temporali ed in presenza di rischio caduta fulmini.
- Non lasciare in nessun caso il carrello in parcheggio con un carico sollevato.
- Non avvicinarsi ed entrare nel raggio di azione della gru.
- Pensare sempre alla sicurezza e trasportare solamente dei carichi ben equilibrati.
- Non lasciare la gru carica con il freno di stazionamento inserito su una pendenza superiore al 15%.
- Con argano o attrezzature con carico appeso al gancio è necessario:
  - Posizionare l'argano perpendicolarmente al carico da sollevare.
  - La discesa del gancio a vuoto, deve essere avviata lentamente (dolcemente) poiché se azionata velocemente può allentare la fune attorcigliata sul tamburo, con gravi guai per la fune stessa, il fine corsa, etc..



- Prima di operare con la gru su pneumatici o su stabilizzatori verificare sempre la consistenza del suolo (controllare i dati sugli appoggi nel manuale di uso e manutenzione del "carrello elevatore"), nel caso in cui il suolo non sia adatto a sopportare il peso della gru, consultare vostro agente o concessionario per prendere le opportune precauzioni.

### GENERAL RECOMMENDATIONS REGARDING THE USE OF THE CRANE

This symbol means:



**Attention! Take care! Your safety and that of the crane is at stake**

- Abide by the data indicated on the load diagrams. Do not try to lift loads greater than those permitted as indicated in the load diagrams enclosed with the machine.
- Keep the load lowered during transport, with the telescopic boom retracted as far as possible.
- Drive the crane at a speed suitable for the ground conditions.
- Run the crane without load, with the telescopic boom lowered and retracted to the maximum possible extent.
- Never go too fast or brake suddenly with a load applied.
- When the load is being lifted, take care to make sure there is no obstacle to the operation, and avoid incorrect manoeuvres.
- Do not try to carry out operations that are beyond the crane capacity.
- Take care with the electric wires.
- Do not use the crane in storms or when there is risk of lightning.
- Do not leave the truck parked with a load raised, under any circumstances whatsoever.
- Do not approach or walk within the range of operation of the crane.
- Always keep safety in mind and transport only well balanced loads.
- Never leave the crane parked with the parking brake engaged on a slope exceeding 15%.
- With the winch or equipment with load hanging from the hook:
  - Position the winch perpendicular to the load to be lifted.
  - The empty hook must be lowered slowly (gently) since, if activated rapidly, it can slacken the rope wound around the drum, with serious damage to the rope, the limit stop, etc...



- Before working with the crane on tyres or stabilizers, always check the consistency of the ground (check the data regarding bearings in the "Forklift Truck Operation and Maintenance Manual"); if the ground is not suitable for supporting the weight of the crane, consult your agent or dealer to take appropriate precautions.

### ALLGEMEINE RATSCHLÄGE ZUR BENUTZUNG DES KRANS

Wenn Sie dieses Symbol sehen, bedeutet dies folgenden:



**Achtung! Seien Sie vorsichtig! Ihre Sicherheit oder die des Krans steht auf dem Spiel.**

- Beachten Sie die Daten, die in den Lastdiagrammen stehen. Versuchen Sie auf keinen Fall, Lasten zu heben, die größer als die nach den Lastdiagrammen zu lässig sind, die der Maschine beiliegen.
- Befördern Sie die Last in einer tiefen Position und mit dem Teleskopausleger, der so weit wie möglich eingefahren ist.
- Fahren Sie den Kran mit einer Geschwindigkeit, die zu den Bedingungen und dem Zustand des Bodens passt.
- Ohne angebrachte Last muss der Teleskopausleger gesenkt und so weit wie möglich eingefahren sein.
- Wenn eine Last vorhanden ist, nie zu schnell fahren und auch nicht zu stark bremsen.
- Wenn die Last gehoben wird, darauf achten, dass niemand den Vorgang behindern kann und dass keine Fehlbedienungen vorgenommen werden.
- Nicht versuchen, Vorgänge auszuführen, bei denen die Belastbarkeit des Krans überschritten wird.
- Auf Stromkabel achten.
- Den Kran nicht bei größeren Unwettern oder bei Blitzgefahr benutzen.
- Den Stapler auf keinen Fall mit gehobener Last auf einem Parkplatz stehen lassen.
- Sich nicht der Reichweite des Krans nähern und nicht darin eintreten.
- Immer auf die Sicherheit achten und nur Lasten transportieren, die sich im Gleichgewicht befinden.
- Den beladenen Kran nicht mit angezogener Handbremse auf einem Gefälle von über 15 % stehen lassen.
- Mit Winde oder Gerät mit am Kranhaken hängender Last ist folgendes erforderlich:
  - Die Winde rechtwinklig zur zu hebenden Last positionieren.
  - Das Senken des leeren Kranhakens mit langsam (sanft) gestartet werden, weil das um die Trommel aufgewickelte Seil sich lockern kann, wenn es schnell betätigt wird, was schwere Auswirkungen auf das Seil, den Endschalter etc. haben kann.



- Bevor man mit dem Kran auf Reifen oder Stabilisatoren arbeitet, immer die Bodenbeschaffenheit prüfen (die Daten prüfen, die in der Betriebs- und Wartungsanleitung des "Staplers" stehen). Falls der Boden nicht geeignet ist, das Gewicht des Krans zu tragen, wenden Sie sich an den Vertreter oder den Vertragshändler, um die angemessenen Vorsichtsmaßnahmen zu treffen.

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**- La gru ammette queste inclinazioni di lavoro:**

- **Macchina stabilizzata**  
+/- 1° in senso longitudinale e trasversale.
- **Macchina su gomme**  
+/- 2° in senso longitudinale  
+/- 1° in senso trasversale.

- Se la fune, sul bozzello tende ad avvitarci, sganciare il gancio capocor da fisso, tirare la fune e ruotarla nel senso opposto fino ad annullare l'avvitamento, quindi riagganciare il capocorda.
- Manovrare con dolcezza la leva di comando per evitare sobbalzi del carico ed eventuali difettosi avvolgimenti della fune sul tamburo.
- Sollevare il carico verticalmente, evitando oscillazioni e sollevamenti obliqui.
- Verificare giornalmente lo stato della fune, se usurata, rovinata o anche solamente con un filo rotto (vedi ISO 4309), provvedere immediatamente alla sostituzione (consultare il vostro concessionario).
- Verificare giornalmente l'efficienza del fine corsa idraulico salita e discesa gancio e la tenuta del freno con carico applicato.
- Prestare attenzione agli accessori usati per sollevare il carico: in particolare controllare la capacità in relazione alla portata massima della gru e verificarne periodicamente l'integrità.
- Lubrificare periodicamente con olio la parte rotante del gancio.
- Verificare periodicamente il buon avvolgimento della fune sul tamburo.
- Gli accessori seguenti non sono destinati ad impianti per il sollevamento o lo spostamento di persone.
- Prima della prima messa in servizio dell'argano, o di qualsiasi altra attrezzatura che appenda il carico con un gancio, denunciarlo alla autorità preposta per il controllo (ISPEL) della vostra zona (solo per Italia).
- Ricordarsi ogni anno seguente di richiedere la visita di controllo alla USL della vostra zona (solo per Italia).



*Prima della messa in servizio della gru accertarsi della compatibilità della macchina e della taratura del suo sistema di sicurezza al tipo di accessorio montato.*



*Una taratura non conforme del sistema di sicurezza può risultare molto pericolosa per la vostra sicurezza, se avete dubbi non esitate, consultate immediatamente il vostro concessionario.*

**- The crane allows the following operating slopes:**

- **Machine stabilized**  
+/- 1° in the longitudinal and transverse direction.
- **Machine on tyres**  
+/- 2° in the longitudinal direction  
+/- 1° in the transverse direction.

- If the rope on the block tends to get twisted, unhook the fixed socket hook, pull the rope and turn it in the opposite direction to untwist it, then rehook the socket.
- Raise the control lever gently to prevent jerking the load and eventual defective winding of the rope on the drum.
- Lift the load vertically, avoiding oscillations and oblique lifting.
- Check the condition of the rope daily and if worn or damaged or even if just one of the threads is frayed, (see ISO 4309), replace it immediately (consult your dealer).
- Check the working of the hook ascent/descent hydraulic limit stops and the brake daily, with the load applied.
- Take special care with the accessories used for lifting the load: check the capacity in relation to the maximum crane capacity and check it periodically to make sure it is intact.
- Lubricate the rotary part of the hook periodically with oil.
- Check the rope periodically to make sure it is wound properly on the drum.
- The following accessories are not meant for systems used for lifting and transporting people.
- Before starting with the use of the winch, or any other equipment used for hanging the load from a hook, inform the authorities responsible for inspection (ISPEL) in your area (for Italy only).
- Remember to have an inspection by the Health Authorities in your area (for Italy only) every year.



*Before commissioning the crane, check the compatibility of the machine and the calibration of its safety system with the type of accessory mounted.*



*Non conforming calibration of the safety system can be very dangerous for your safety; if in doubt, do not hesitate to contact your dealer immediately.*

**- Der Kran gestattet die folgenden Arbeitsneigungen:**

- **Maschine stabilisiert**  
+/- 1° in der Längs- und der Querrichtung
- **Maschine auf Reifen**  
+/- 2° in der Längsrichtung  
+/- 1° in der Querrichtung

- Wenn das Seil dazu tendiert, sich auf der Umlenkrolle zu verdrehen, den Haken des festen Kabelschuhs aushaken, das Seil ziehen und in der entgegengesetzten Richtung drehen, bis die Verdrehung aufgehoben ist. Den Kabelschuh dann wieder einhaken.
- Den Schalthebel vorsichtig betätigen, um ein Springen der Last und das etwaige falsche Aufwickeln des Seils auf der Trommel zu vermeiden.
- Die Last vertikal heben, Oszillationen und schräge Hebevorgänge vermeiden.
- Den Zustand des Seils täglich prüfen. Wenn es verschlissen, beschädigt oder auch nur ein Faden gerissen ist (siehe ISO 4309), muss es sofort ersetzt werden (siehe Vertragshändler).
- Die Funktionstüchtigkeit des hydraulischen Endschafters, das Heben und Senken des Kranhakens und den Halt der Bremse mit angelegter Last täglich prüfen.
- Auf die zum Heben der Last verwendeten Zubehörteile achten: Insbesondere das Tragvermögen im Hinblick auf die max. Tragfähigkeit des Krans prüfen und täglich die Unversehrtheit kontrollieren.
- Den sich drehenden Teil des Kranhakens regelmäßig schmieren.
- Regelmäßig prüfen, dass das Seil sich gut um die Trommel aufwickelt.
- Die folgenden Zuhörteile sind nicht für Anlagen zum Heben und Befördern von Personen bestimmt.
- Vor der ersten Inbetriebnahme der Winde oder jeder anderen Ausrüstung, bei der die Last mit einem Kranhaken aufgehängt wird, muss diese der zuständigen Kontrollbehörde (ISPEL) Ihrer Gegend (gilt nur für Italien) gemeldet werden.
- Nicht vergessen, jedes anschließende Jahr die Inspektion bei der Gesundheitsbehörde Ihrer Gegend zu beantragen (gilt nur für Italien).



*Vor der ersten Inbetriebnahme des Krans die Kompatibilität der Maschinen und die Eichung ihres Sicherheitssystems mit dem montierten Gerätetyp prüfen.*



*Eine Eichung, die nicht dem Sicherheitssystem entspricht, kann für Ihre Sicherheit sehr gefährlich werden. Wenn Sie Zweifel haben, zögern Sie nicht, sich sofort an den Vertragshändler zu wenden.*



Alcuni accessori, tenuto conto delle loro dimensioni, e con il braccio abbassato e rientrato, rischiano di interferire con i pneumatici anteriori e di provocare il loro deterioramento se l'inclinazione dell'attrezzatura è rivolta in basso.

**Per eliminare tale rischio, far uscire il braccio telescopico di una lunghezza sufficiente in funzione dell'accessorio, in modo tale che non avvengano interferenze.**



!Certain accessories, because of their size, and with the boom retracted and lowered, can interfere with the front tyres and damage them if the equipment is sloped downwards.

**To eliminate this risk, extend the telescopic boom to a length sufficient for the accessory, so that there is no interference.**



Einige Zubehörteile können angesichts ihrer Abmessungen mit gesenktem und eingefahrenen Ausleger mit den Vorderrädern ins Gehege kommen, wobei sie verschleißen, wenn die Neigung des Geräts nach unten gewendet ist.

**Um diese Gefahr zu vermeiden, den Teleskopausleger nur um die Länge ausfahren lassen, die für das Zubehörteil ausreicht, damit diese Interferenzen vermieden werden.**



I carichi massimi sono definiti dalla capacità della gru, tenuto conto del peso e del centro di gravità dell'accessorio. Qualora l'accessorio avesse una capacità inferiore a quella della gru, non superare mai questo limite.



The maximum loads are defined by the crane capacity, taking into account the weight and centre of gravity of the accessory. Never exceed this limit if the capacity of the accessory is less than that of the crane.



Die max. Lasten werden durch das Tragvermögen des Krans festgelegt, wobei das Gewicht und der Schwerpunkt des Zubehörteils berücksichtigt werden. Sollte das Zubehörteil ein Tragvermögen haben, das unterhalb der des Krans liegt, darf dieser Grenzwert nie überschritten werden.

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**MONTAGGIO DELL'ACCESSORIO  
CON BLOCCO MANUALE****Presca dell'accessorio**

- Verificare che l'accessorio sia in una posizione che faciliti l'aggancio dell'attacco rapido. Nel caso in cui fosse male orientato, prendete le precauzioni necessarie per spostarlo in condizioni di massima sicurezza.
- Verificare che il perno di bloccaggio sia inserito nell'apposito supporto sul telaio.
- Posizionare il carrello elevatore con il braccio abbassato ben di fronte e parallelo all'accessorio e inclinare l'attacco rapido in avanti (Fig.A).
- Portare l'attacco rapido sotto il tubo d'aggancio dell'accessorio, alzare leggermente il braccio e inclinare l'attacco stesso all'indietro per posizionare l'accessorio (Fig.B).
- Disimpegnare l'accessorio dal suolo per agevolare il bloccaggio.

**Bloccaggio manuale**

- Prendere il perno di bloccaggio sul supporto e infilarlo nel foro dell'attacco rapido per bloccare l'accessorio (Fig. C).
- Non dimenticare di mettere la copiglia.

**Sbloccaggio manuale**

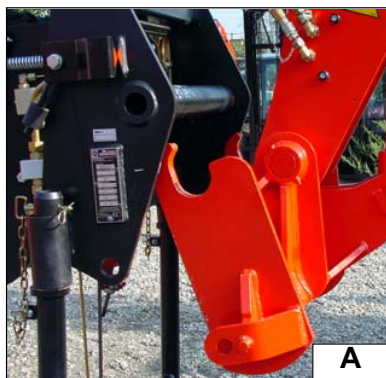
- Procedere in senso inverso a quello del BLOCCAGGIO MANUALE facendo attenzione a rimettere il perno di bloccaggio nel supporto sul telaio.

**Rimozione (e posa) dell'accessorio**

- Procedere in senso inverso a quello della PRESA DELL'ACCESSORIO facendo attenzione a posare il medesimo in posizione sicura su suolo compatto e piano. Se l'accessorio è dotato di sistema idraulico, innestare gli attacchi rapidi o viceversa disinnestarli in caso di smontaggio accessorio previa decompressione del circuito.



Mantenete puliti gli innesti rapidi e proteggete gli orifizi non utilizzati con gli appositi tappi.



A

**HOW TO MOUNT THE ACCESSORY  
WITH MANUAL LOCK****Engaging the accessory**

- Check that the accessory is in a position which simplifies connection of the snap coupling. If it is badly positioned, take the necessary precautions to move it in the conditions of maximum safety.
- Check that the locking pin is engaged in the support provided on the frame.
- Position the lift-truck with the boom lowered squarely in front of and parallel to the accessory and tilt the snap coupling forward (Fig.A).
- Bring the snap coupling into position below the accessory's connection pipe, raise the boom slightly and tilt the connection back to position the accessory (Fig.B).
- Raise the accessory off the ground for easier engagement.

**Manual locking**

- Take the locking pin on the support and fit it into the hole of the quick coupling in order to lock the accessory in place (Fig. C). Do not forget to fit on the split pin.

**Manual release**

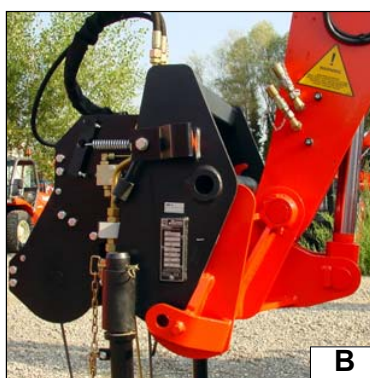
- Proceed in reverse direction to the MANUAL LOCKING procedure, taking care to replace the locking pin in the support on the frame.

**Removing (and putting down) the  
accessory.**

- Proceed with the ACCESSORY HITCHING instructions in reverse order. Make sure that the actual accessory is placed in a safe position on compact, flat ground. If the accessory has a hydraulic circuit, connect the quick couplings or uncouple them if the accessory is being demounted after having relieved the pressure from the circuit.



Keep the snap couplings clean and protect the unused orifices with the caps provided.



B

**MONTAGE DES ZUBEHÖRTEILS MIT  
MANUELLER VERRIEGELUNG****Einsetzen des Anbaugeräts**

- Vergewissern Sie sich, daß das Anbaugerät sich in einer Stellung befindet, in der die Schnellkupplung leicht einrasten kann. Sollte das Gerät schlecht ausgerichtet sein, ergreifen Sie alle erforderlichen Vorsichtsmaßnahmen, um es in aller Sicherheit versetzen zu können.
- Vergewissern Sie sich, daß sich der Sicherungsbolzen in der entsprechenden Halterung am Rahmen befindet.
- Positionieren Sie den Gabelstapler mit gesenktem Arm genau gegenüber und parallel zum Anbaugerät. Neigen Sie die Schnellkupplung nach vorne (Abb.A).
- Bringen Sie die Schnellkupplung unter das Kupplungsrohr des Anbaugeräts, heben Sie den Arm leicht an und neigen Sie die Kupplung selbst nach hinten, um das Anbaugerät in Position zu bringen (Abb.B).
- Heben Sie das Anbaugerät vom Boden an, um das Einrasten zu vereinfachen.

**Handverriegelung**

- Den Sperrbolzen auf dem Träger nehmen und ihn in die Öffnung der Schnellkupplung stecken, um das Zubehörteil zu verriegeln (Abb. C). Nicht vergessen, den Sicherungssplint einzustecken.

**Handentriegelung**

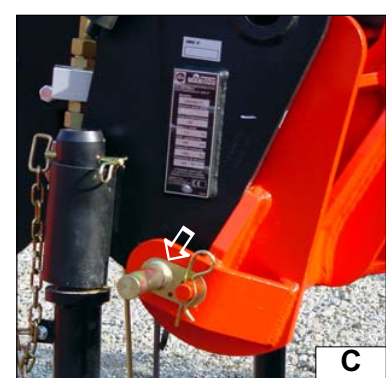
- Gehen Sie in umgekehrter Reihenfolge wie bei der HANDVERRIEGELUNG vor und achten Sie darauf, den Sicherungsbolzen wieder in die Halterung am Rahmen einzusetzen.

**Abnehmen (und Ablegen) des  
Anbaugeräts**

- In der umgekehrten Richtung zu der bei der AUFNAHME DES ZUBEHÖRTEILS vorgehen, wobei darauf zu achten ist, dass dieses in einer sicheren Position auf einem kompakten und ebenen Boden abgelegt wird. Wenn das Zubehörteil mit hydraulischem System versehen ist, die Schnellkupplung ankoppeln bzw. bei Abbau des Zubehörteils abkoppeln, nachdem man den Druck aus dem hydraulischen Kreislauf abgelassen hat.



Halten Sie die Schnellkupplungen stets sauber, und schützen Sie nicht verwendete Öffnungen durch entsprechende Stopfen.



C

**MONTAGGIO DELL'ACCESSORIO CON BLOCCO IDRAULICO (OPZIONALE).****Presca dell'accessorio**

- Verificare che l'accessorio sia in una posizione che faciliti l'aggancio dell'attacco rapido. Nel caso in cui fosse male orientato, prendete le precauzioni necessarie per spostarlo in condizioni di massima sicurezza.
- Verificare che le aste del martinetto di bloccaggio siano rientrate.
- Posizionare il carrello elevatore con il braccio abbassato ben di fronte e parallelo all'accessorio e inclinare l'attacco rapido in avanti (Fig.A).
- Portare l'attacco rapido sotto il tubo d'aggancio dell'accessorio, alzare leggermente il braccio e inclinare l'attacco stesso all'indietro per posizionare l'accessorio (Fig.B).
- Disimpegnare l'accessorio dal suolo per agevolare il bloccaggio.
- Azionare il comando optional per bloccare l'accessorio.

**Bloccaggio e sbloccaggio idraulico (opzionale)**

- Il bloccaggio e lo sbloccaggio di un eventuale accessorio avviene tramite l'utilizzo del comando optional (comando che può essere azionato da un apposito pulsante o dal manipolatore stesso a seconda del tipo di carrello elevatore che si possiede) tramite i perni che debbano fuoriuscire dai fori dell'attacco rapido (Fig. C).

**Rimozione (e posa) dell'accessorio**

- Procedere in senso inverso a quello della PRESA DELL'ACCESSORIO facendo attenzione a posare il medesimo in posizione sicura su suolo compatto e piano.

**ACCESSORY WITHOUT HYDRAULIC SYSTEM AND HYDRAULIC LOCKING (OPTIONAL).****Engaging the accessory**

- Check that the accessory is in a position which simplifies connection of the snap coupling. If it is badly positioned, take the necessary precautions to move it in the conditions of maximum safety.
- Check that the rods of the locking cylinder are retracted.
- Position the lift-truck with the boom lowered squarely in front of and parallel to the accessory and tilt the snap coupling forward (Fig.A).
- Bring the snap coupling into position below the accessory's connection pipe, raise the boom slightly and tilt the connection back to position the accessory (Fig.B).
- Raise the accessory off the ground for easier engagement.
- Operate the optional control to lock the accessory

**Hydraulic locking and release (optional)**

- Accessories are locked and released with the optional control (which can be operated by a button or by the manipulator itself, depending on the type of lift truck in question), by means of the pins which must project from the holes of the quick coupling (Fig. C).

**Removing (and putting down) the accessory**

- Proceed in reverse direction to the ENGAGING THE ACCESSORY procedure, taking care to place it in a safe position on firm, flat ground.

**MONTAGE DES ZUBEHÖRTEILS MIT HYDRAULISCHER VERRIEGELUNG****Einsetzen des Anbaugeräts**

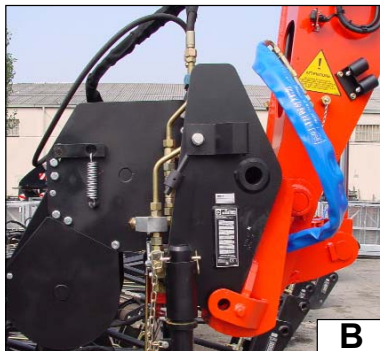
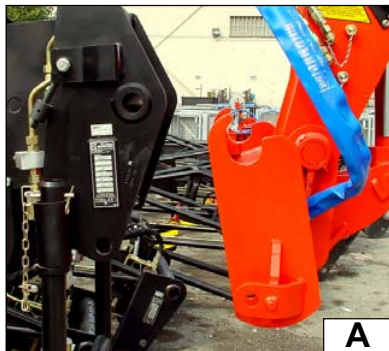
- Vergewissern Sie sich, daß das Anbaugerät sich in einer Stellung befindet, in der die Schnellkupplung leicht einrasten kann. Sollte das Gerät schlecht ausgerichtet sein, ergreifen Sie alle erforderlichen Vorsichtsmaßnahmen, um es in aller Sicherheit versetzen zu können.
- Vergewissern Sie sich, daß die Stäbe des Verriegelungszyinders eingefahren sind.
- Positionieren Sie den Gabelstapler mit gesenktem Arm genau gegenüber und parallel zum Anbaugerät. Neigen Sie die Schnellkupplung nach vorne (Abb.A).
- Bringen Sie die Schnellkupplung unter das Kupplungsrohr des Anbaugeräts, heben Sie den Arm leicht an und neigen Sie die Kupplung selbst nach hinten, um das Anbaugerät in Position zu bringen (Abb.B).
- Heben Sie das Anbaugerät vom Boden an, um das Einrasten zu vereinfachen.
- Das Bedienelement Optional betätigen, um das Zubehörteil zu verriegeln.

**Hydraulische Ver- und Entriegelung (wahlweise)**

- Das Ver- bzw. Entriegeln eines etwaigen Zubehörteils erfolgt über die Benutzung des Bedienelements Optional (Bedienelement, das je nach dem Hubstapler, den man besitzt, mit einer speziellen Taste oder mit dem Vierwegschalter betätigt werden kann) mittels der Bolzen, die aus den Öffnungen der Schnellkupplung austreten müssen (Fig. C).

**Abnehmen (und Ablegen) des Anbaugeräts**

- Gehen Sie in umgekehrter Reihenfolge wie beim EINSETZEN DES ANBAUGERÄTS vor und achten Sie darauf, das Anbaugerät in einer sicheren Stellung auf festem, ebenem Untergrund abzulegen.



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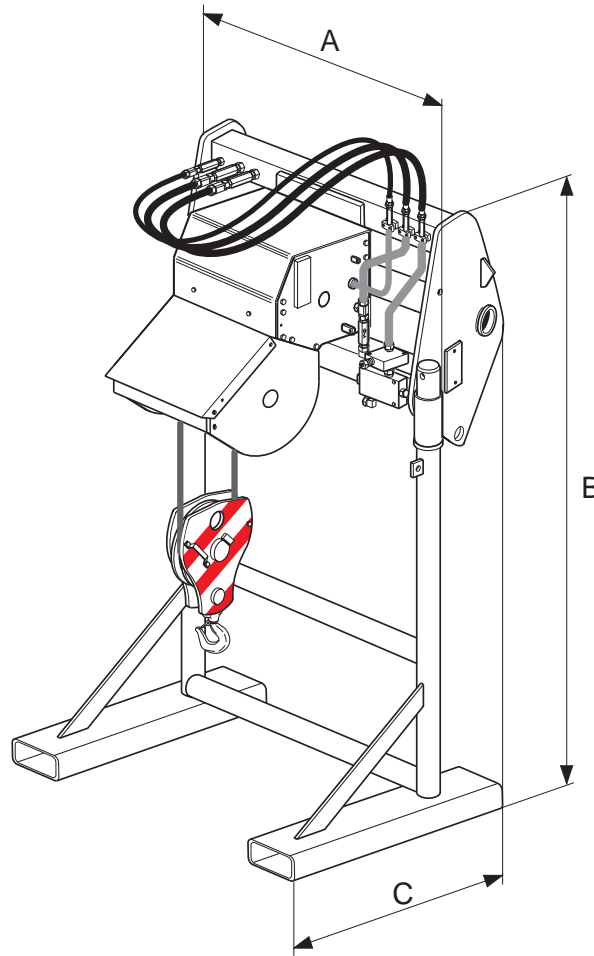




**CARATTERISTICHE TECNICHE**  
**ARGANO 3/4/5 Ton**

**TECHNICAL CHARACTERISTICS**  
**WINCH 3/4/5 Ton**

**TECHNISCHE MERKMALE**  
**WINDE 3/4/5 Ton**



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	FUNDE ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	VELOCITA' GANCIO	Ø AVVOLGIMENTO PULEGGIA	Ø AVVOLGIMENTO TAMBURO	FINE CORSA UP/DOWN ENDLAUF	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEBSDRUCK	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN			PESO WEIGHT GEWICHT
				TOW SPEED HAKEN GESCHWINDIGKET	Ø WINDING PULLEY WICKEL-Ø RIEMENSCHEBBE	Ø WINDING DRUM WICKEL-Ø TROMMEL			A	B	C	
ARGANO 3 T WINCH 3 T WINDE 3 T	3000 Kg CON 2 FUNI 3000 Kg WITH 2 ROPES 3000 Kg MIT ZWEI SEILE	Ø 10 mm 9460 daN x 45 m ▲(x 49 m)	5 T	24 m/min	230 mm	233 mm	IDRAULICO HYDRAULIC HYDRAULIK	220 Bar max	950	1440	865	400 Kg
ARGANO 4 T WINCH 4 T WINDE 4 T	4000 Kg CON 2 FUNI 4000 Kg WITH 2 ROPES 4000 Kg MIT ZWEI SEILE	Ø 12 mm 16000 daN x 45 m ▲(x 53 m)		18 m/min	280 mm	276 mm		250 Bar max				462 Kg
ARGANO 5 T WINCH 5 T WINDE 5 T	5000 Kg CON 2 FUNI 5000 Kg WITH 2 ROPES 5000 Kg MIT ZWEI SEILE							275 Bar max				

▲ : solo per MRT 2540 e 2440 EPS

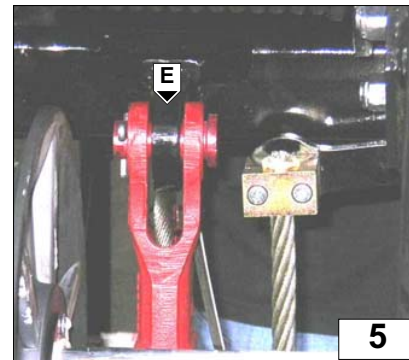
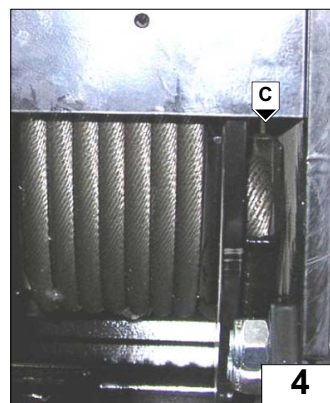
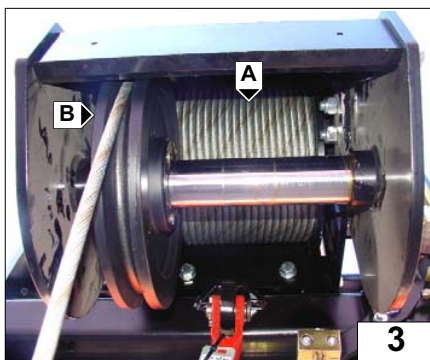
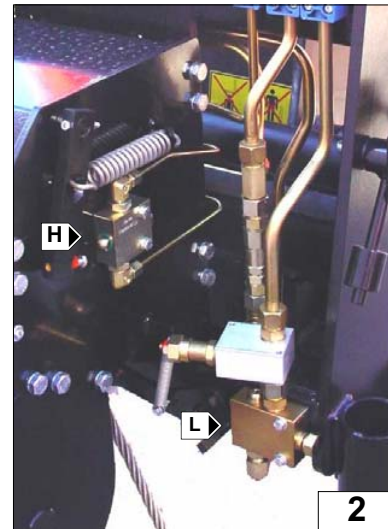
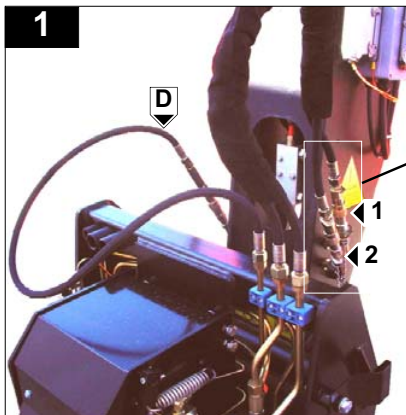
▲ : only for MRT 2540 and 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

**ARGANO 3 Ton****MESSA IN SERVIZIO E UTILIZZO**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle **istruzioni obbligatorie di verifica e controllo**:

- verificare l'integrità della struttura esterna dell'argano.
- verificare il corretto collegamento idraulico degli innesti rapidi **1, 2**, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune **H** (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune **L** (Fig.2);
- controllare lo stato della fune e il corretto avvolgimento sul tamburo **A** (Fig.3);
- controllare il corretto movimento laterale e di rotazione della puleggia di guida fune **B** (Fig.3);
- controllare lo stato dei capocorda **C** (Fig.4) e **E** (Fig.5);

**3 Ton WINCH****COMMISSIONING AND USE**

For your own safety, before starting a work cycle, **follow the compulsory instructions for inspection and checking**:

- check the outer frame of the winch to make sure it is intact.
- ensure correct hydraulic connection of quick-release couplings **1, 2**, check the Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop **H** (Fig.2);
- check the correct working of the rope lift limit stop **L** (Fig.2);
- check the condition of the rope and its winding around drum **A** (Fig.3);
- check the correct lateral movement and rotation of the rope guide pulleys **B** (Fig.3);
- check the condition of terminal **C** (Fig.4) and **E** (Fig.5);

**WINDE 3 Tonnen****INBETRIEBNAHME UND GEBRAUCH**

Bevor Sie einen Arbeitszyklus beginnen, **sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten**:

- Die Außenstruktur der Winde auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen **1, 2**, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken **H** prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben **L** prüfen (Abb. 2).
- Den Zustand des Seils und die korrekte Aufwicklung um die Trommel **A** prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenkzeuge **B** prüfen (Abb. 3).
- Den Zustand der Kabelschlaufen **C** (Abb. 4) und **E** (Abb. 5) prüfen.

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- verificare l'integrità del bozzello e la rotazione della sua puleggia **F** (Fig.6);
- verificare lo stato del gancio: che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **G** (Fig.6);
- controllare l'aggancio dell'argano alla macchina operatrice **J** (Fig.7).

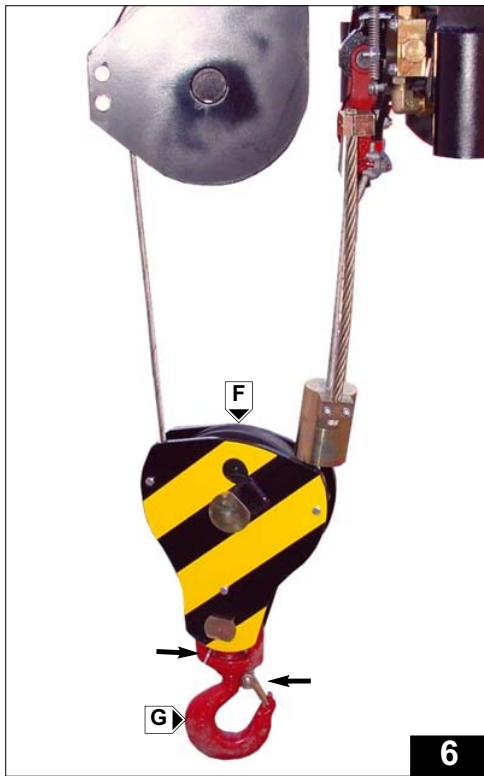
Per l'utilizzo, dalla posizione di parcheggio, sganciare l'argano dal suo piedistallo, sfilando i fermi di sicurezza. **K** (Fig.7)

- check the condition of the block and rotation of its pulley **F** (Fig.6);
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.6);
- check to make sure the winch is hooked properly to the operating machine **J** (Fig.7).

To use the winch, unhook it from its pedestal, from the parking position, after removing the safety retainers. **K** (Fig.7)

- Die Umlenkrolle auf ihre Unversehrtheit und die Rotation ihrer Riemenscheibe **F** prüfen (Abb. 6).
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 6).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingerastet ist (Abb. 7).

Für die Benutzung aus der Abstellposition die Winde von ihrem Gestell ausklinken, wobei man die Sicherheitsbefestigungen herauszieht. **K** (Abb. 7)



## MANUTENZIONE

## MAINTENANCE

## WARTUNG

- RIDUTTORE

- GEAR REDUCER

- GETRIEBE

- FUNE, PULEGGIA e CAPOCORDA

- ROPE, PULLEY AND TERMINAL

- SEIL, RIEMENSCHLEIBE UND  
SEILSCHLAUFE

- BOZZELLO

- BLOCK

- UMLENKROLLE

- GANCIO

- HOOK

- KRANHAKEN

- FINE CORSA DISCESA FUNE

- ROPE DESCENT LIMIT STOP

- ENDSCHALTER SEIL SENKEN

- FINE CORSA SALITA FUNE

- ROPE LIFT LIMIT STOP

- ENDSCHALTER SEIL HEBEN

- IMPIANTO IDRAULICO

- HYDRAULIC SYSTEM

- HYDRAULISCHE ANLAGE

**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** almeno una volta al mese **B** (Fig.8) e all'occorrenza rabboccare **A** (Fig.8) con olio dello stesso tipo di quello presente all'interno del riduttore (**ISO VG 150**).

Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **ISO VG**, dipendente dalla temperatura di esercizio.

**La prima sostituzione dell'olio** deve essere effettuata dopo 100 ore di funzionamento, successivamente ogni 12 mesi o ogni 2000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.8a) verso il basso.
- Svitare il tappo **A** (Fig.8a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico verso l'alto **A** (Fig.8).
- Svitare il tappo di livello olio **B** (Fig.8);
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **B** (Fig.8).(0,25 lt)
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

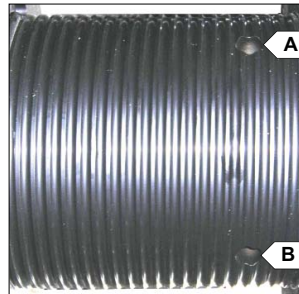
The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** at least once a month **B** (Fig.8) and top up if necessary **A** (Fig.8) with the same type of oil as that present in the gear reducer (**ISO VG 150**).

Use of gear oil with **EP** additives, with viscosity **ISO VG**, depending on the operating temperature, is recommended.

**Oil must be changed the first time** after 100 hours of operation, and subsequently every 12 months or every 2000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.8a) is downwards.
- Unscrew plug **A** (Fig.8a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is upwards **A** (Fig.8).
- Unscrew the oil level plug **B** (Fig.8);
- Fill with the right type of oil until it starts flowing out through the level hole **B** (Fig.8).(0,25 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

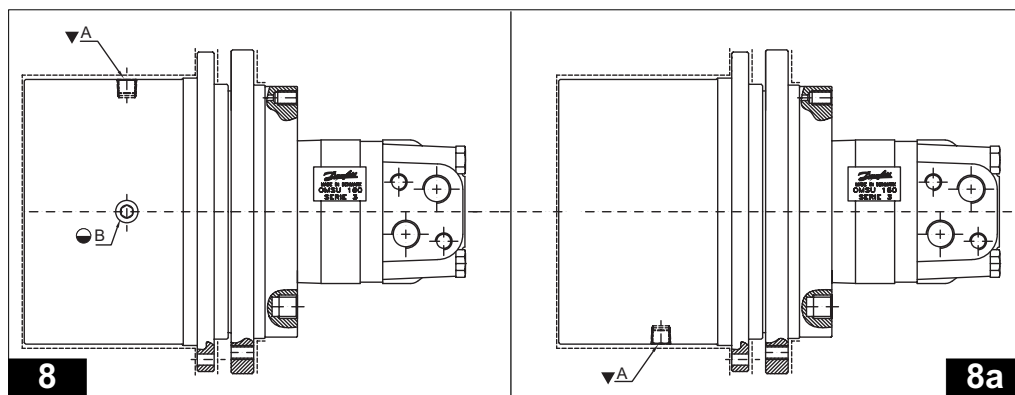
Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens einmal im Monat prüfen **B** (Abb. 8) und bei Bedarf Öl nachfüllen **A** (Abb. 8). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**ISO VG 150**).

Am besten benutzt man Öl für Getriebe mit **EP**-Zusatz mit Viskosität **ISO VG** je nach der Betriebstemperatur.

Der erste Ölwechsel ist nach 100 Betriebsstunden fällig, dann jeweils alle 12 Monate bzw. alle 2000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb. 8a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 8a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 8).
- Den Ölstandstopfen **B** abschrauben (Abb. 8).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **B** ausläuft (Abb. 8).(0,25 lt)
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.9) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.9a) e che sia ben arrotolata sul tamburo **B** (Fig.9). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare giornalmente e mantenere lubrificato il **perno C** (Fig.9) su cui ruota la **puleggia di guida D** (Fig.9), che dovrà avere sempre un buono movimento di rotazione e di traslazione laterale. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.10) e dei suoi morsetti fermafune **F** (Fig.10).

**ROPE, PULLEY AND TERMINAL**

Check **rope A** daily (Fig.9) to make sure it is in perfect condition, that there are no broken filaments (Fig.9a) and that it is wound correctly around drum **B** (Fig.9).

If this is not the case, replace it with a new one having the same diameter and features.

Check the lubrication of the rope, and apply industrial grease or dust-proof synthetic oil, if necessary.

Check and lubricate **pin C** (Fig.9) on which **guide pulley D** (Fig.9) rotates, on a daily basis, making sure its rotation and transverse movements are smooth. Lubricate the pin with lithium soap grease, if necessary.

Check the condition of terminal **E** (Fig.10) and its **rope-holder** clamps **F** (Fig.10).

**SEIL, RIEMENSCHLEIBE UND SEILSCHLAUFE**

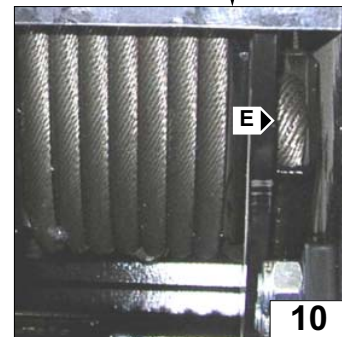
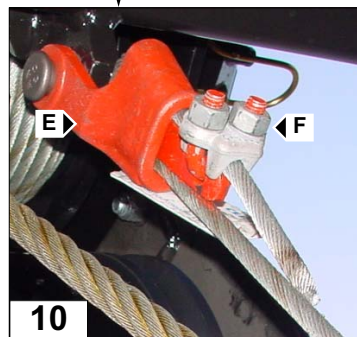
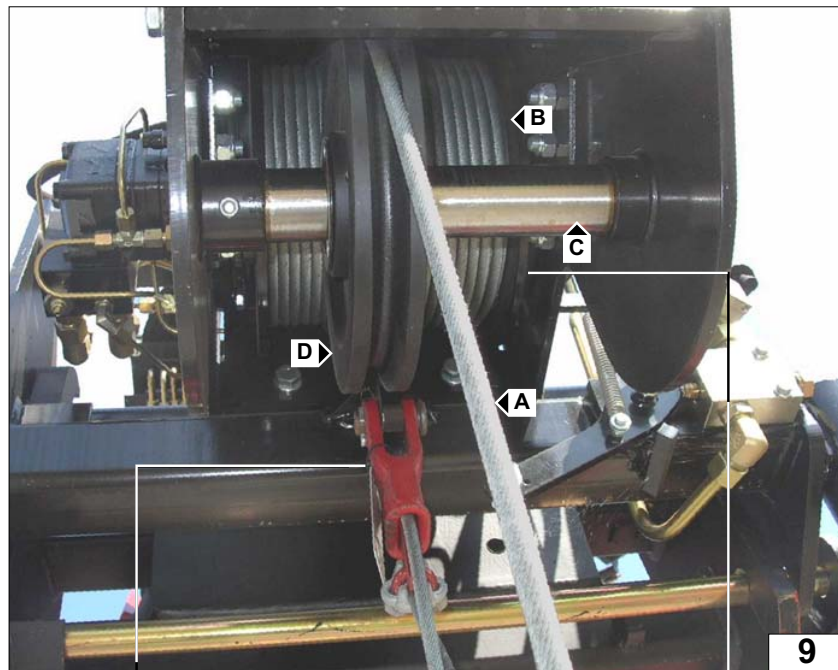
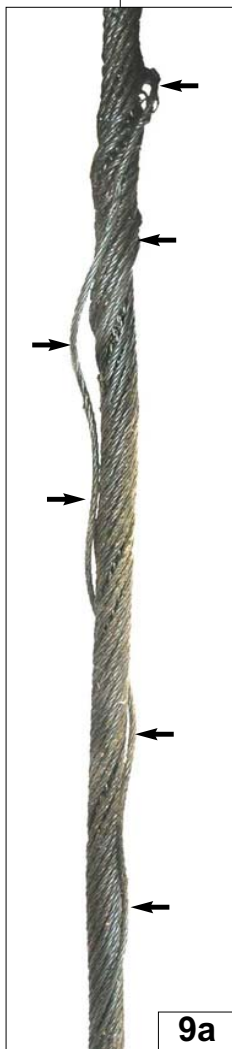
Täglich prüfen, dass das Seil **A** (Abb. 9) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 9a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 9).

Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Den Bolzen **C** (Abb. 9), auf dem sich die Führungsscheibe **D** (Abb. 9) dreht, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen und seitlich versetzen.

Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschleufe **E** (Abb. 10) und die Bügelklemmen **F** (Abb. 10) auf Unversehrtheit prüfen.



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**BOZZELLO**

Per una massima efficienza e sicurezza, mantenere intatta la struttura esterna **H** (Fig.11) e controllare che la puleggia **L** (Fig.12) ruoti correttamente sul suo perno **M** (Fig.12).  
Se necessità, lubrificare con grasso al sapone di litio il perno **M** (Fig.11).

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.12).  
Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.12).  
Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.12).

**BLOCK**

For maximum efficiency and safety, make sure the outer frame **H** (Fig.11) is intact and check pulley **L** (Fig.12) to make sure it rotates properly around its pin **M** (Fig.12).  
Lubricate pin **M** with lithium soap grease, if necessary (Fig.11).

**HOOK**

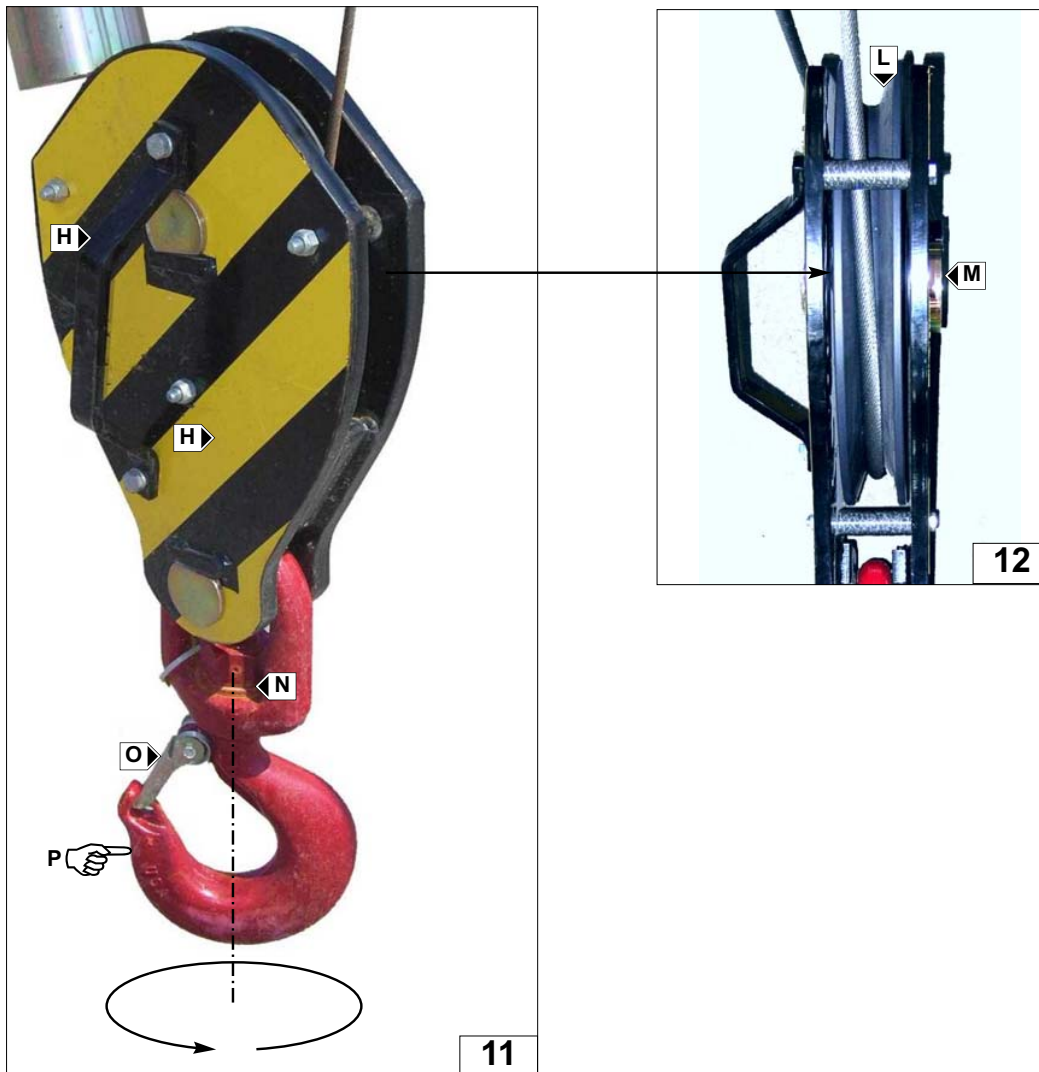
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.12).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.12).  
Check the condition and working of safety tab **O** (Fig.12).

**UMLENKROLLE**

Für eine maximale Effizienz und Sicherheit die Außenstruktur **H** (Abb. 11) unversehrt halten und sicherstellen, dass die Riemenscheibe **L** (Abb. 12) sich korrekt um ihren Bolzen **M** dreht (Abb. 12).  
Falls erforderlich, den Bolzen **M** mit Lithiumseifenfett schmieren (Abb. 11).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 12).  
Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 12).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 12).



**FINE CORSA DISCESA FUNE** (Fig.13)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.14)

**IMPIANTO IDRAULICO** (Fig.15)

Ispezionare giornalmente raccordi, valvole, tubi, per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'organo.

**ROPE DESCENT LIMIT STOP** (Fig.13)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.14)

**HYDRAULIC SYSTEM** (Fig.15)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 13)

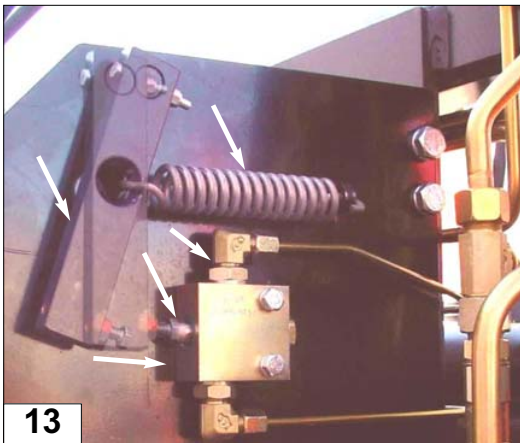
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalters für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

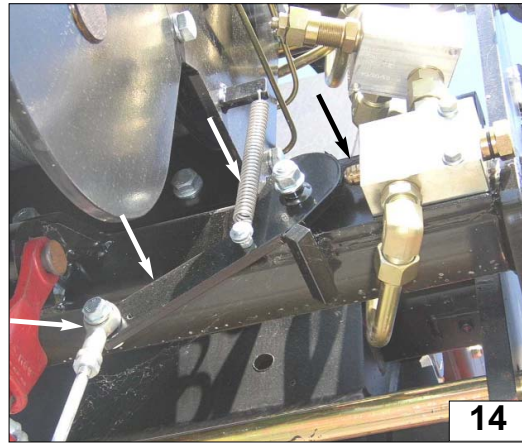
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**HYDRAULISCHE ANLAGE** (Abb. 15)

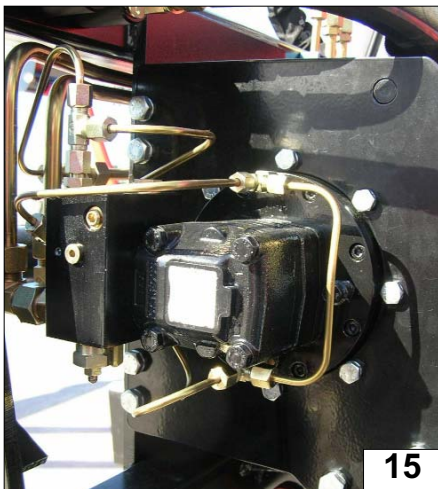
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



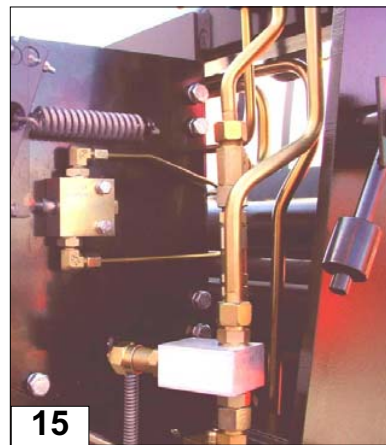
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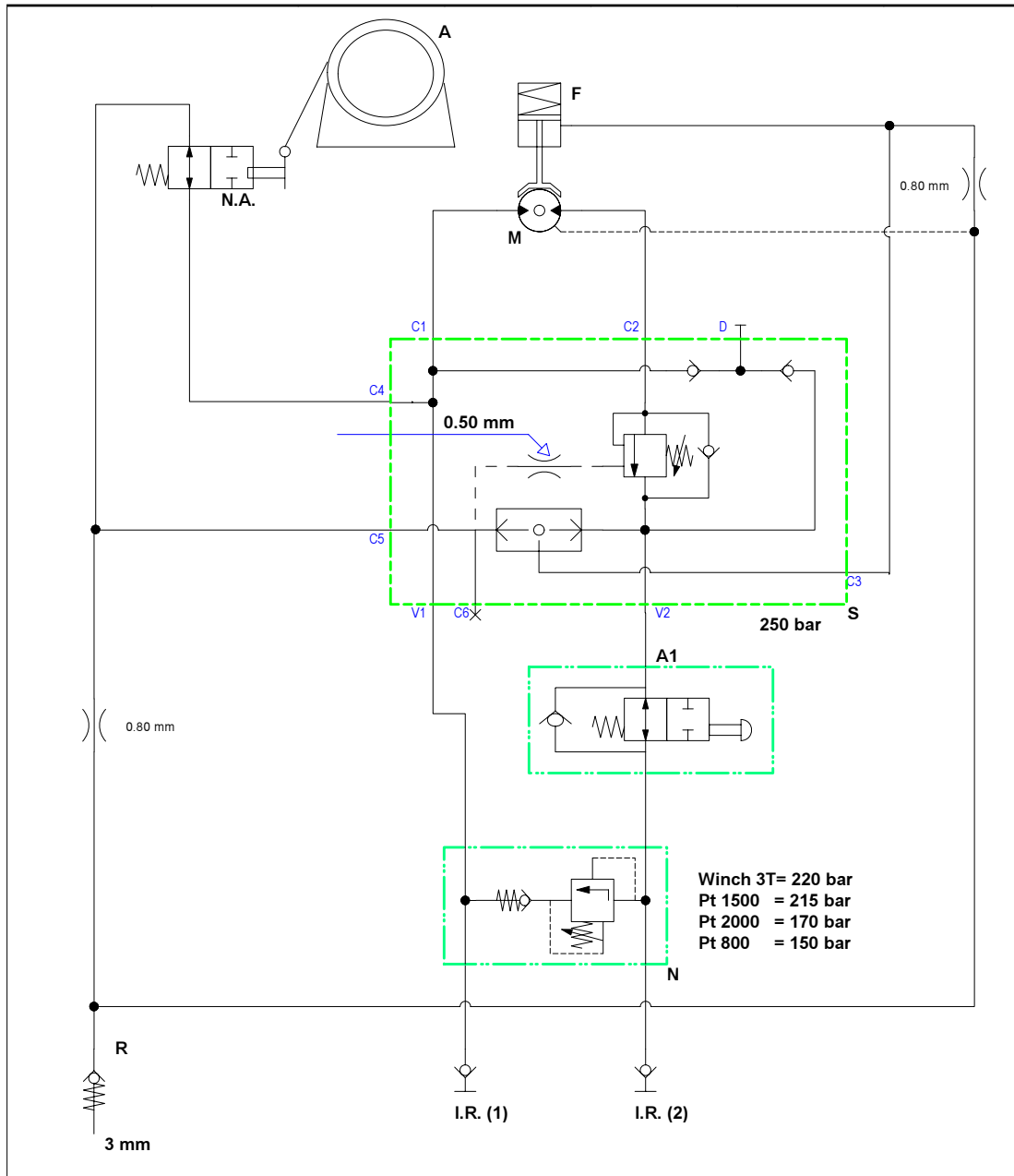


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**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTNER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE



**ARGANO 4 - 5 Ton****4 - 5 Ton WINCH****WINDE 4 - 5 Tonnen****MESSA IN SERVIZIO E UTILIZZO****COMMISSIONING AND USE****INBETRIEBNAHME UND GEBRAUCH**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle **Istruzioni obbligatorie di verifica e controllo:**

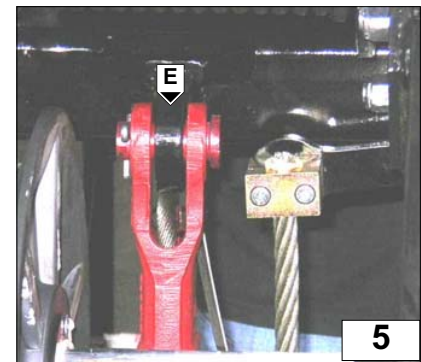
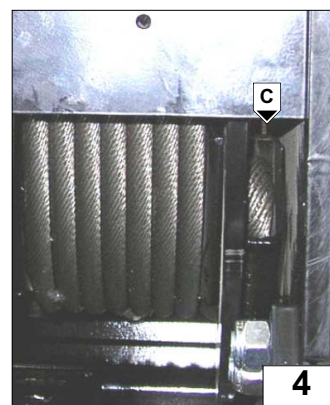
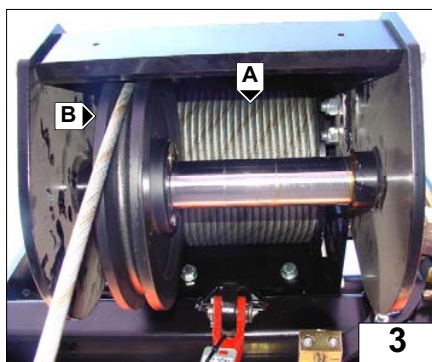
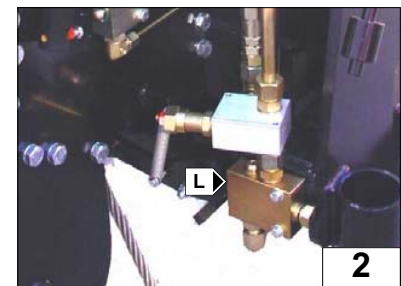
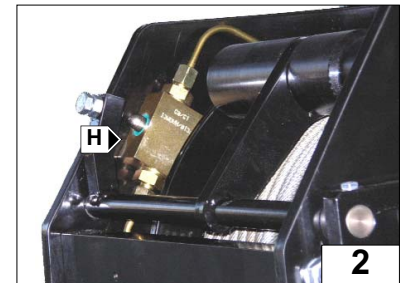
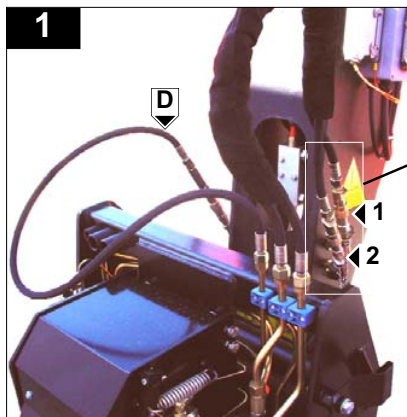
- verificare l'integrità della struttura esterna dell'argano.
- verificare il corretto collegamento idraulico degli innesti rapidi 1, 2, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune H (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune L (Fig.2);
- controllare lo stato della fune e il corretto avvolgimento sul tamburo A (Fig.3);
- controllare il corretto movimento laterale e di rotazione della puleggia di guida fune B (Fig.3);
- controllare lo stato dei capocorda C (Fig.4) e E (Fig.5);

For your own safety, before starting a work cycle, **follow the compulsory instructions for inspection and checking:**

- check the outer frame of the winch to make sure it is intact.
- ensure correct hydraulic connection of quick-release couplings 1, 2, check the Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop H (Fig.2);
- check the correct working of the rope lift limit stop L (Fig.2);
- check the condition of the rope and its winding around drum A (Fig.3);
- check the correct lateral movement and rotation of the rope guide pulleys B (Fig.3);
- check the condition of terminal C (Fig.4) and E (Fig.5);

Bevor Sie einen Arbeitszyklus beginnen, **sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten:**

- Die Außenstruktur der Winde auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen 1, 2, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken H prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben L prüfen (Abb. 2).
- Den Zustand des Seils und die korrekte Aufwicklung um die Trommel A prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenkseibe B prüfen (Abb. 3).
- Den Zustand der Kabelschlaufen C (Abb. 4) und E (Abb. 5) prüfen.



- verificare l'integrità del bozzello e la rotazione della sua puleggia **F** (Fig.6);
- verificare lo stato del gancio: che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **G** (Fig.6);
- controllare l'aggancio dell'organo alla macchina operatrice **J** (Fig.7).

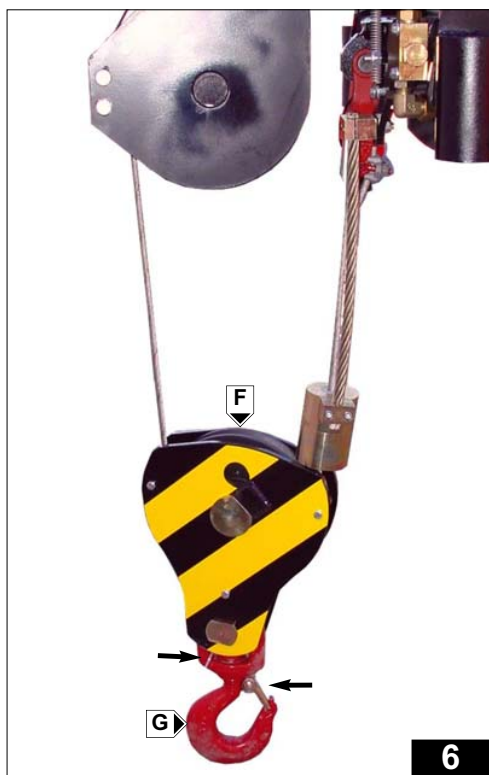
Per l'utilizzo, dalla posizione di parcheggio, sganciare l'organo dal suo piedistallo, sfilando i fermi di sicurezza. **K** (Fig.7)

- check the condition of the block and rotation of its pulley **F** (Fig.6);
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.6);
- check to make sure the winch is hooked properly to the operating machine **J** (Fig.7).

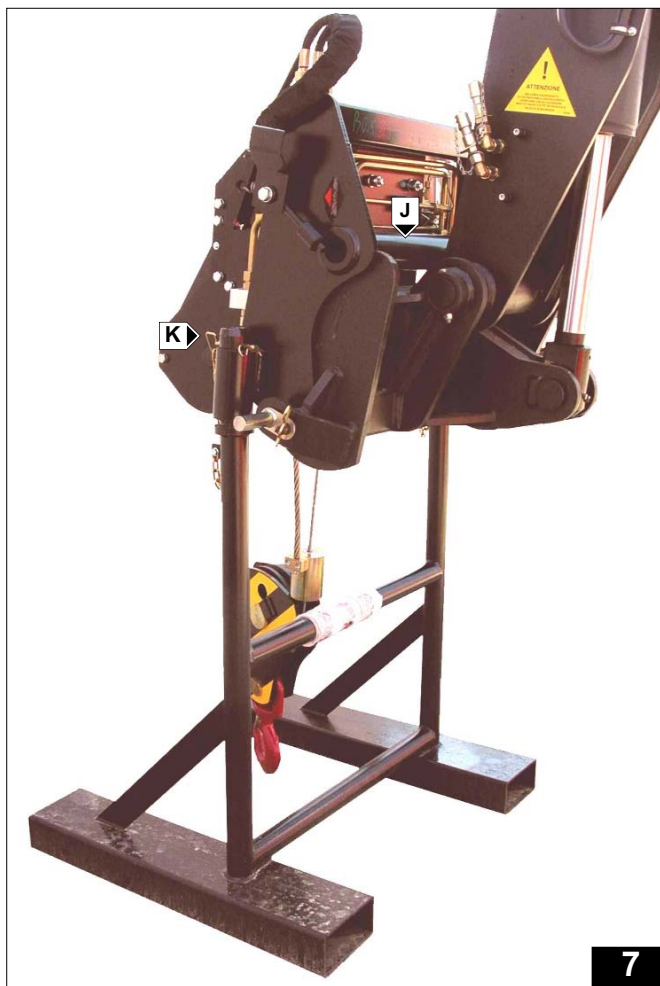
To use the winch, unhook it from its pedestal, from the parking position, after removing the safety retainers. **K** (Fig.7)

- Die Umlenkrolle auf ihre Unversehrtheit und die Rotation ihrer Riemenscheibe **F** prüfen (Abb. 6).
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 6).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingerastet ist (Abb. 7).

Für die Benutzung aus der Abstellposition die Winde von ihrem Gestell ausklinken, wobei man die Sicherheitsbefestigungen herauszieht. **K** (Abb. 7)



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## MANUTENZIONE

## MAINTENANCE

## WARTUNG

- RIDUTTORE

- GEAR REDUCER

- GETRIEBE

- FUNE, PULEGGIA e CAPOCORDA

- ROPE, PULLEY AND TERMINAL

- SEIL, RIEMENSCHLEIBE UND  
SEILSCHLAUFE

- BOZZELLO

- BLOCK

- UMLENKROLLE

- GANCIO

- HOOK

- KRANHAKEN

- FINE CORSA DISCESA FUNE

- ROPE DESCENT LIMIT STOP

- ENDSCHALTER SEIL SENKEN

- FINE CORSA SALITA FUNE

- ROPE LIFT LIMIT STOP

- ENDSCHALTER SEIL HEBEN

- IMPIANTO IDRAULICO

- HYDRAULIC SYSTEM

- HYDRAULISCHE ANLAGE

**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** ogni 100 ore **A** (Fig.8b) e all'occorrenza rabboccare **A** (Fig.8b) con olio dello stesso tipo di quello presente all'interno del riduttore (**SHELL SPIRAX HD80 W90**). Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **SAE 80W/90 oppure SAE 85W/140**.

**La prima sostituzione dell'olio** deve essere effettuata dopo 150 ore di funzionamento, successivamente ogni 1000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.8a) verso il basso.
- Svitare il tappo **A** (Fig.8a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico sull'asse orizzontale **A** (Fig.8b).
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **A** (Fig.8b). (1,3 lt)
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** every 100 hours **A** (Fig.8b) and top up if necessary **A** (Fig.8b) with the same type of oil as that present in the gear reducer (**SHELL SPIRAX HD80 W90**). Use of gear oil with EP additives with viscosity **SAE 80W/90 or SAE 85W/140** is recommended.

**Oil must be changed the first time** after 150 hours of operation, and subsequently every 1000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.8a) is downwards.
- Unscrew plug **A** (Fig.8a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is on the horizontal axis **A** (Fig.8b).
- Fill with the right type of oil until it starts flowing out through the level hole **A** (Fig.8b). (1,3 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

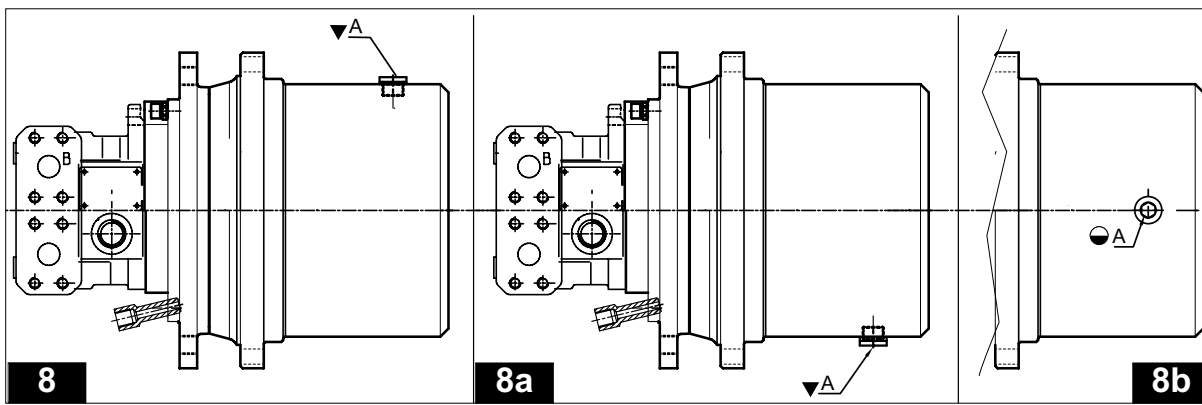
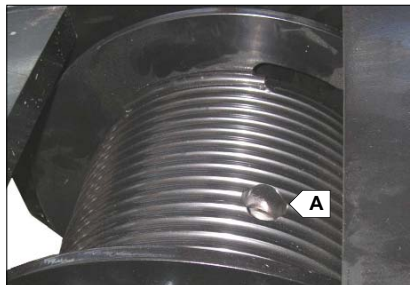
Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens alle 100 Betriebsstunden prüfen **A** (Abb. 8b) und bei Bedarf Öl nachfüllen **A** (Abb. 8b). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**SHELL SPIRAX HD80 W90**). Am besten benutzt man Öl für Getriebe mit EP-Zusatz mit Viskosität **SAE 80W/90 oder SAE 85W/140**.

Der erste Ölwechsel ist nach 150 Betriebsstunden fällig, dann jeweils alle 1000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb. 8a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 8a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 8).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **A** ausläuft (Abb. 8b). (1,3 lt)
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



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**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.9) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.9a) e che sia ben arrotolata sul tamburo **B** (Fig.9). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare giornalmente e mantenere lubrificato il **perno C** (Fig.9) su cui ruota la **puleggia di guida D** (Fig.9), che dovrà avere sempre un buono movimento di rotazione e di traslazione laterale. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.10) e dei suoi morsetti fermafune **F** (Fig.10).

**ROPE, PULLEY and TERMINAL**

Check **rope A** daily (Fig.9) to make sure it is in perfect condition, that there are no broken filaments (Fig.9a) and that it is wound correctly around drum **B** (Fig.9).

If this is not the case, replace it with a new one having the same diameter and features.

Check the lubrication of the rope, and apply industrial grease or dust-proof synthetic oil, if necessary.

Check and lubricate **pin C** (Fig.9) on which **guide pulley D** (Fig.9) rotates, on a daily basis, making sure its rotation and transverse movements are smooth. Lubricate the pin with lithium soap grease, if necessary.

Check the condition of terminal **E** (Fig.10) and its **rope-holder** clamps **F** (Fig.10).

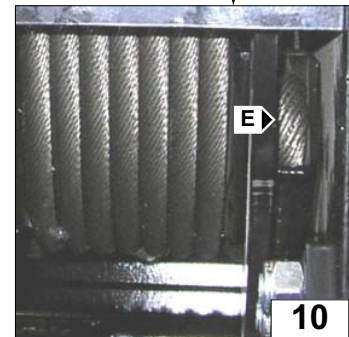
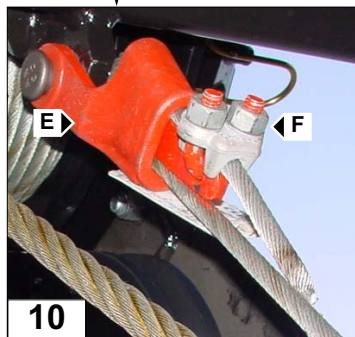
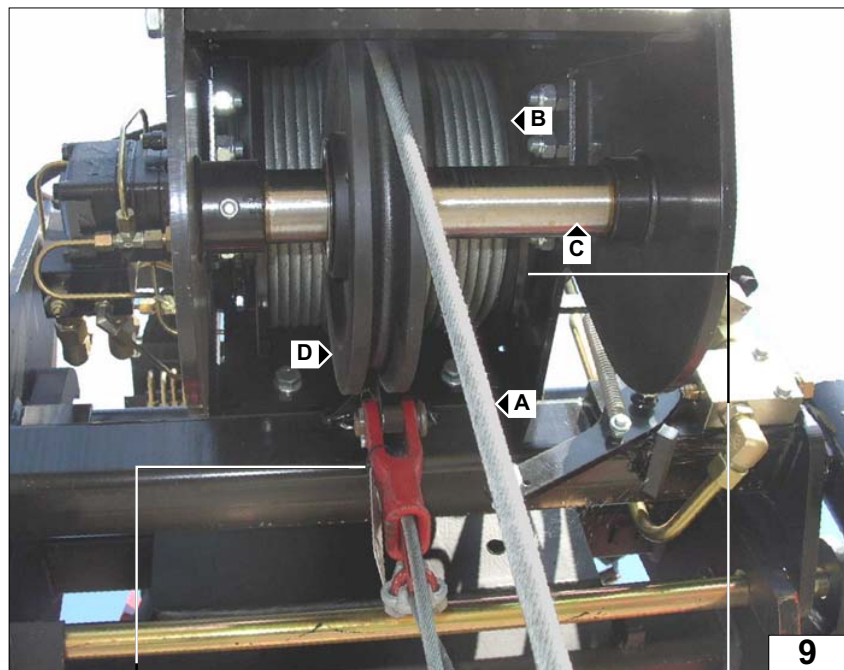
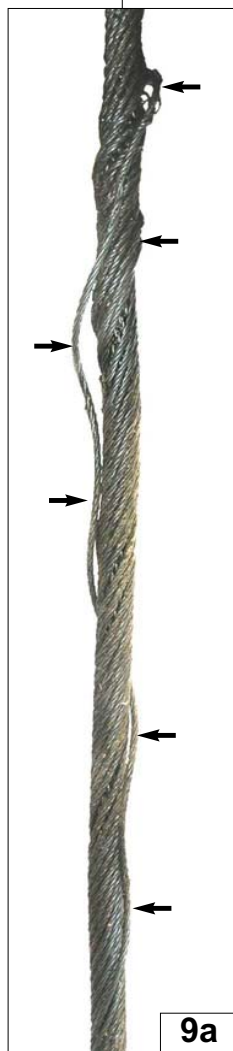
**SEIL, RIEMENSCHLEIBE und SEILSCHLAUFE**

Täglich prüfen, dass das Seil **A** (Abb. 9) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 9a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 9). Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Den Bolzen **C** (Abb. 9), auf dem sich die Führungsscheibe **D** (Abb. 9) dreht, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen und seitlich versetzen.

Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschleife **E** (Abb. 10) und die Bügelklammern **F** (Abb. 10) auf Unversehrtheit prüfen.



**BOZZELLO**

Per una massima efficienza e sicurezza, mantenere intatta la struttura esterna **H** (Fig.11) e controllare che la puleggia **L** (Fig.12) ruoti correttamente sul suo perno **M** (Fig.12).

Se necessità, lubrificare con grasso al sapone di litio il perno **M** (Fig.11).

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.12).

Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.12). Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.12).

**BLOCK**

For maximum efficiency and safety, make sure the outer frame **H** (Fig.11) is intact and check pulley **L** (Fig.12) to make sure it rotates properly around its pin **M** (Fig.12).  
Lubricate pin **M** with lithium soap grease, if necessary (Fig.11).

**HOOK**

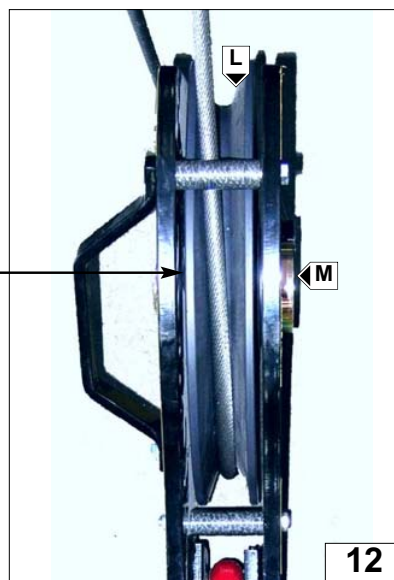
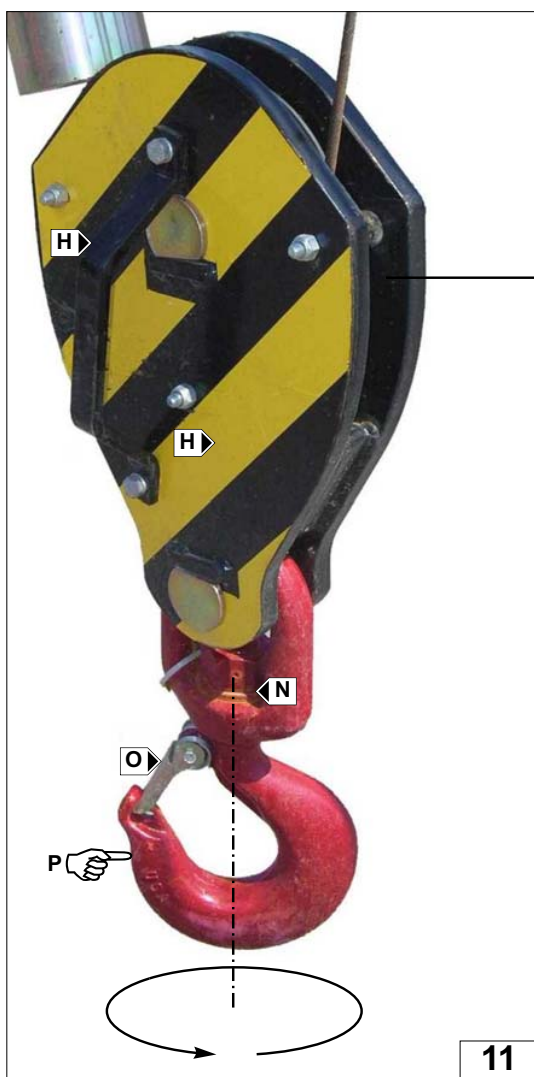
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.12).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.12).  
Check the condition and working of safety tab **O** (Fig.12).

**UMLENKROLLE**

Für eine maximale Effizienz und Sicherheit die Außenstruktur **H** (Abb. 11) unverseht halten und sicherstellen, dass die Riemenscheibe **L** (Abb. 12) sich korrekt um ihren Bolzen **M** dreht (Abb. 12).  
Falls erforderlich, den Bolzen **M** mit Lithiumseifenfett schmieren (Abb. 11).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 12).  
Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 12).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 12).





**FINE CORSA DISCESA FUNE** (Fig.13)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi . Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi . Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.14)

**IMPIANTO IDRAULICO** (Fig.15)

Ispezionare giornalmente raccordi, valvole, tubi , per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'argano.

**ROPE DESCENT LIMIT STOP** (Fig.13)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.14)

**HYDRAULIC SYSTEM** (Fig.15)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 13)

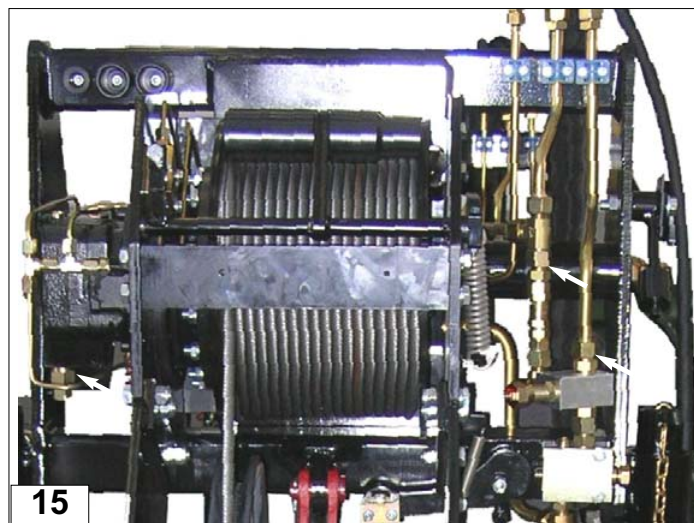
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalters für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

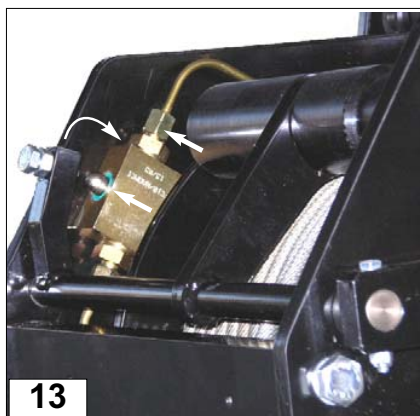
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalters für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 14)

**HYDRAULISCHE ANLAGE** (Abb. 15)

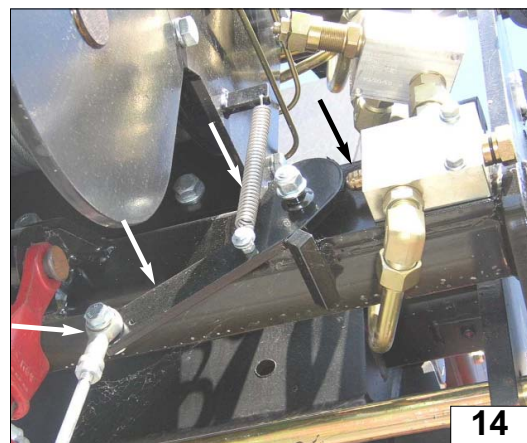
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



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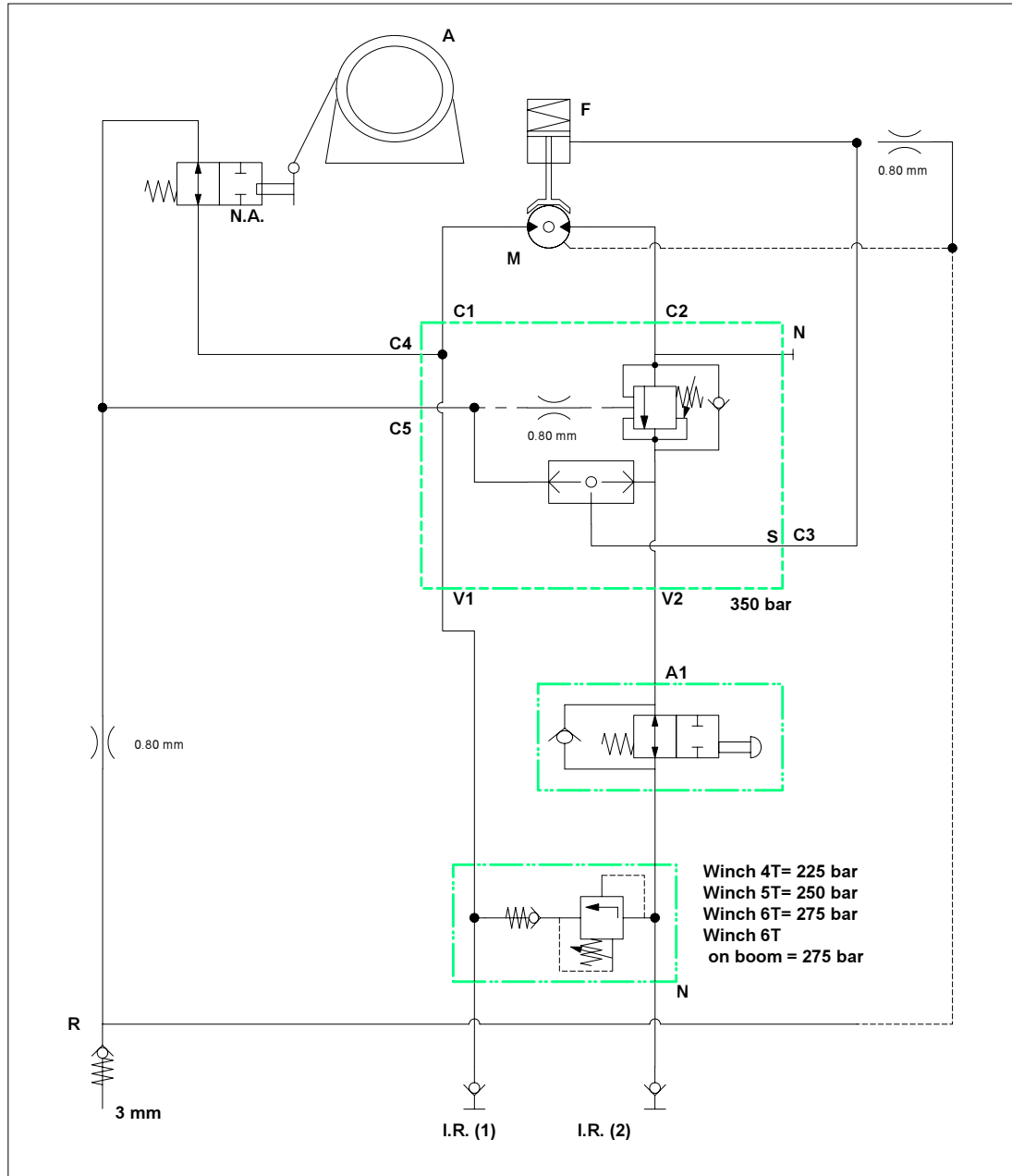


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## SCHEMA IDRAULICO

## HYDRAULIC SCHEME

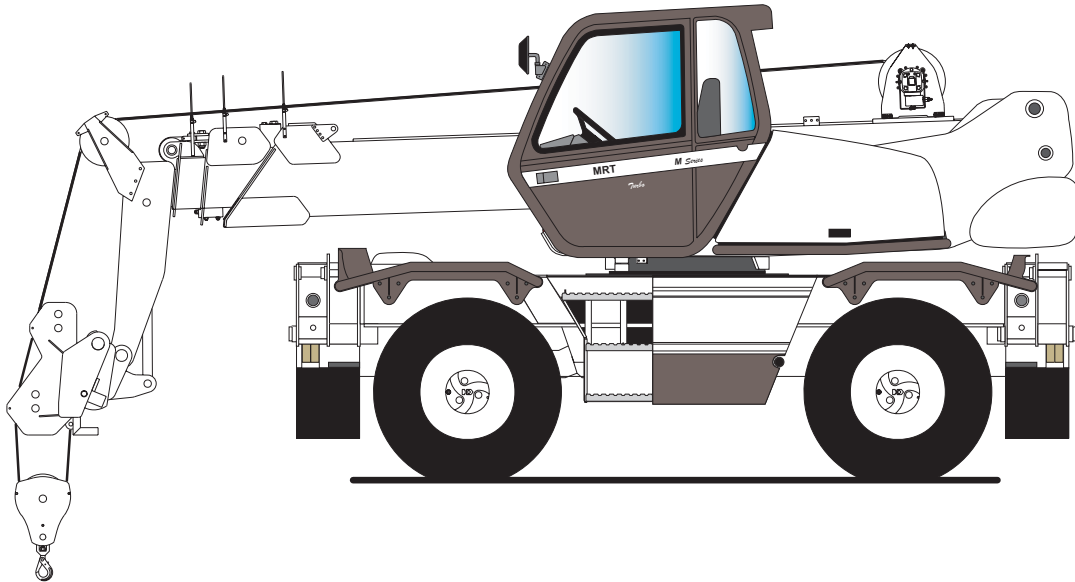
## SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREI- BUNG	CAPACITA' CAPACITY KAPAZITAET	FUNE ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	Ø AVVOLGIMENTO PULEGGIA Ø WINDING PULLEY WICKEL-Ø RIEMENSCHLEIBE	Ø AVVOLGIMENTO TAMBURO Ø WINDING DRUM WICKEL-Ø TROMMEL	VELOCITA' GAN- CIO TOW SPEED HAKEN GESCHWIN- DIGKEIT	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEBSDRUCK	FINE CORSA UP/DOWN ENDLAUF
ARGANO 6 T WINCH 6 T WINDE 6 T	6000 KG CON 2 FUNI 6000 KG WITH 2 ROPES 6000 KG MIT ZWEI SEILE	Ø 12 mm x 65 m ▲(x 72 m) 16000 daN	6 T	280 mm	276 mm	18 m/min	275 Bar max	DISCESA: IDRAULICO - SALITA: ELETTRICO DESCENT: HYDRAULIC - ASCENT: ELECTRIC ABSTIEG: HYDRAULISCHE - AUFSTIG: ELEKTRISCHE

▲ : solo per MRT 2540 e 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

## UTILIZZO DELL'ARGANO SUL BRACCIO

### ATTIVAZIONE ARGANO

- Collegare i raccordi idraulici all'argano (Fig. 1 - Rif. A).
- Togliere la coppiglia (Fig. 2 - Rif. B) e sfilare il perno dalla staffa di riposo sul braccio esterno (Fig. 2 - Rif. C).
- Comandare la discesa della fune per permettere il passaggio attraverso i tre guide fune (Fig. 3 - Rif. D).
- Inserire la fune nella puleggia togliendo il perno (Fig. 4 - Rif. E).
- Liberare la fune dal ferma cavo (Fig. 5 - Rif. F) togliendo il morsetto di sicurezza.
- Inserire la fune nelle pulegge guida fune (Fig. 6 - Rif. G).

## USING THE WINCH ON THE BOOM

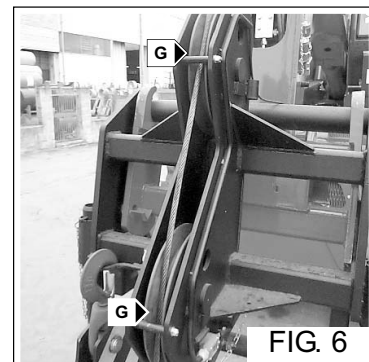
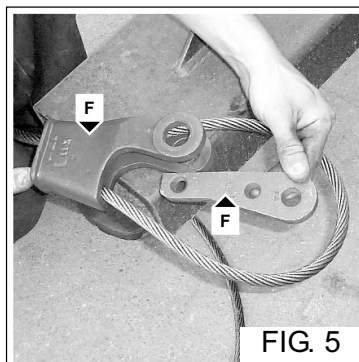
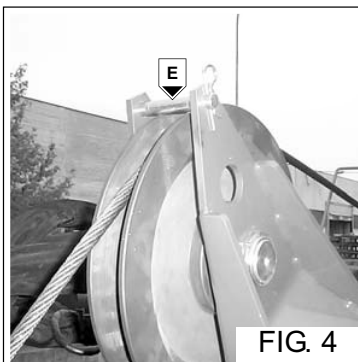
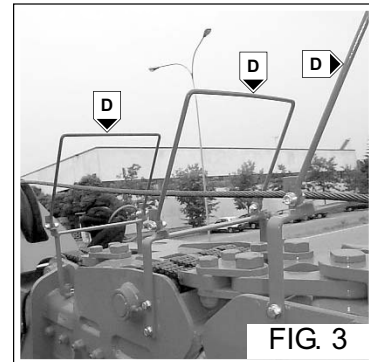
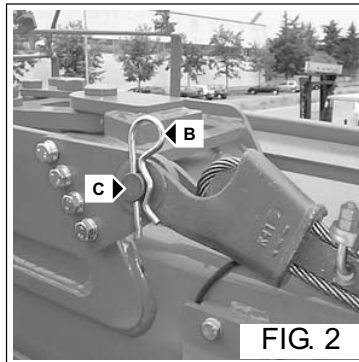
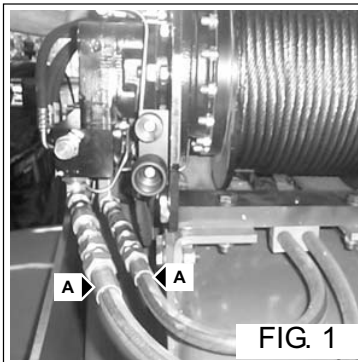
### ACTIVATING THE WINCH

- Connect the hydraulic fittings to the winch (Fig. 1 - Ref. A).
- Remove the cotter pin (Fig. 2 - Ref. B) and extract the pin from clevis on the outside boom (Fig. 2 - Ref. C).
- Lower the rope to let it pass through the three rope guides (Fig. 3 - Ref. D).
- Insert the rope in the pulley, removing the pin (Fig. 4 - Ref. E).
- Free the rope from the cable clamp (Fig. 5 - Ref. F) after removing the safety clamp.
- Insert the rope in the rope guide pulley (Fig. 6 - Ref. G).

## WINDENGEBRAUCH AM AUSLEGER

### WINDENAKTIVIERUNG

- Die hydraulischen Anschlußstücke mit der Winde verbinden (Abb. 1 - Buchst. A).
- Den Splint (Abb. 2 - Buchst. B) entfernen und den Zapfen aus dem Ruhebügel am äußeren Ausleger (Abb. 2 - Buchst. C) herausziehen.
- Das Seil absenken, damit der Durchgang durch die drei Seilführungen (Abb. 3 - Buchst. D) möglich ist.
- Das Seil in die Riemenscheibe einführen, indem man den Zapfen (Abb. 4 - Buchst. E) entfernt.
- Das Seil vom Seilanschlag (Abb. 5 - Bez. F) freigegeben, indem man die Seilklemme entfernt.
- Das Seil in die Seilführungs-Riemenscheiben (Abb. 6 - Buchst. G) einführen.



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- Inserire la fune nel bozzello (Fig. 7/8 - Rif. A) (la fune deve passare fra la puleggia ed i due perni (Fig. 7/8 - Rif. B).
- Inserire la fune nel peso di fine corsa salita fune (Fig. 9 - Rif. C).
- Inserire la fune nel ferma cavo (Fig. 10 - Rif. D) e bloccarla correttamente dando alcuni colpi di martello in entrambi i lati dell'insieme (Fig. 11 - Rif. E).
- Avvitare il morsetto di sicurezza fune al ferma cavo (Fig. 12 - Rif. F).
- Montare il ferma cavo nell'apposito alloggiamento sotto le pulegge guida fune (Fig. 12 - Rif. G).

- Insert the rope in the block (Fig. 7/8 - Ref. A) (the rope must pass through the pulley and the two pins (Fig. 7/8 - Ref. B).
- Insert the rope in the rope lift stop weight (Fig. 9 - Ref. C).
- Insert the rope in the cable clamp (Fig. 10 - Ref. D) and block it properly by tapping with a hammer on both sides of the assembly (Fig. 11 - Ref. E).
- Screw the safety clamp back on the cable clamp (Fig. 12 - Ref. F).
- Fit the cable clamp in its housing under the rope guide pulley (Fig. 12 - Ref. G).

- Das Seil in den Kolben (Abb. 7/8 - Buchst. A) einführen (das Seil muß zwischen der Riemenscheibe und den zwei Zapfen durchgehen (Abb. 7/8 - Buchst. B).
- Das Seil in das Gewicht des Endschalters Aufwärtshub Seil einstecken (Abb. 9 - Bez. C).
- Das Seil in den Kabelhalter (Abb. 10 - Buchst. D) einführen und ordnungsgemäß festspannen, indem man an beiden Seiten der Einheit (Abb. 11 - Buchst. E) ein paar mal mit dem Hammer klopft.
- Die Seilklemme am Seilanschlag anschrauben (Abb. 12 - Bez. F).
- Den Seilhalter in der vorgesehenen Aufnahme unter den Seilführungs-Riemenscheiben (Abb. 12 - Buchst. G) anbringen.

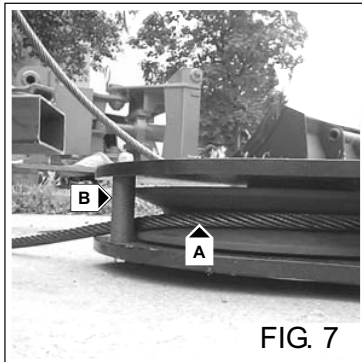


FIG. 7

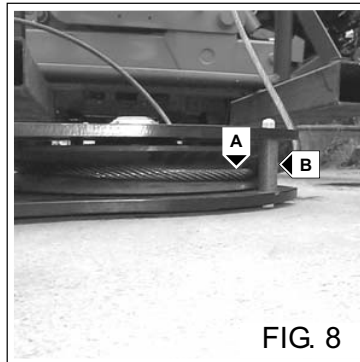


FIG. 8

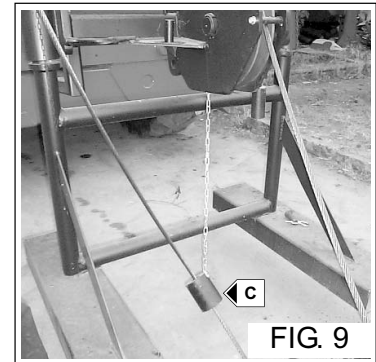


FIG. 9

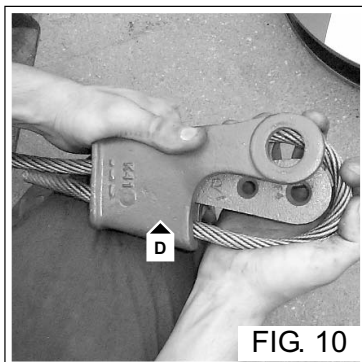


FIG. 10

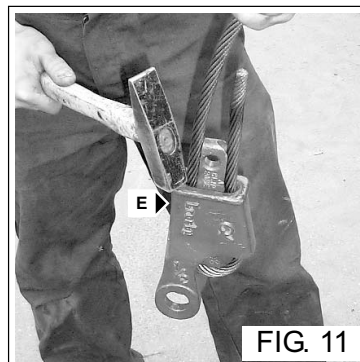


FIG. 11

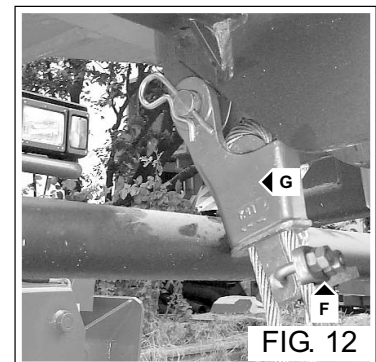


FIG. 12

- Posizionare la presa a riposo (Fig. 13 - Rif. A) e inserire il cavo per il fine corsa salita fune (Fig. 13 - Rif. B).
- Da questo momento si attivano i seguenti blocchi di movimento dovuti al fine corsa salita fune :
  - blocco salita fune
  - blocco sfilo braccio
  - blocco salita/discesa braccio



Attenzione :

- Se non viene attivato il fine corsa salita fune é in grave pericolo :
- l'incolumità delle persone circostanti
  - l'incolumità delle cose circostanti
  - l'integrità strutturale della macchina
  - il materiale sollevato
- Selezionare sul sistema di sicurezza la corretta posizione di lavoro per l'argano sul braccio della macchina e togliere il supporto delle pulegge guida fune (Fig. 14 - Rif. C).

- Position the gripper on hold (Fig. 13 - Ref. A) and insert the cable for the rope lift stop (Fig. 13 - Ref. B).
- From this moment onwards, the following movement blocks are activated due to the rope lift limitswitch :
  - rope lift block
  - boom extension block
  - boom ascent/descent block



Attention :

- If the rope lift stop is not activated there is serious risk for the safety of:
- bystanders
  - objects in the surrounding area
  - the machine structure
  - the material lifted
- Select on the safety system the correct operating position for the winch on the machine boom and remove the rope guide pulley support (Fig. 14 - Ref. C).

- Die Steckdose in die Ruhestellung bringen (Abb. 13 - Bez. A) und das Kabel für den Endschalter Aufwärtshub Seil stecken (Abb. 13 - Bez. B).
- Ab diesem Moment werden folgende Bewegungsblöcke aufgrund des Seilhochgangs-Endschalters aktiviert :
  - Block Seilhochgang
  - Block Auslegerausziehung
  - Block Auslegeranhebung/-absenkung



Achtung :

- Wenn der Endschalter Aufwärtshub Seil nicht aktiviert wird, besteht schwere Gefahr für:
- die Unversehrtheit der umstehenden Personen
  - die Unversehrtheit der umstehenden Gegenstände
  - die Unversehrtheit der Maschinenstruktur
  - das gehobene Material
- Am Sicherheitssystem die richtige Arbeitsstellung für die Winde am Maschinenausleger wählen und den Träger der Seilführungs-Riemenscheiben (Abb. 14 - Buchst. C) entfernen.

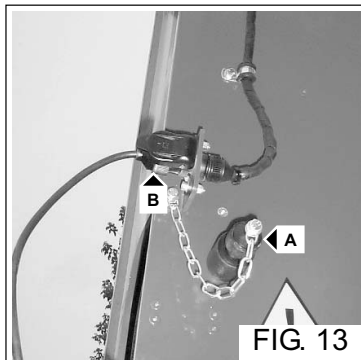


FIG. 13

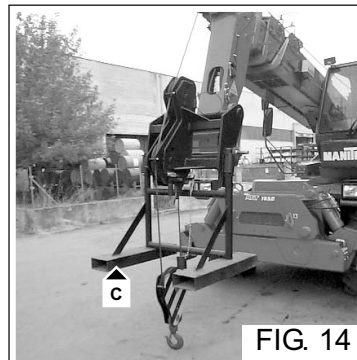


FIG. 14

**INATTIVITA' DELL'ARGANO**

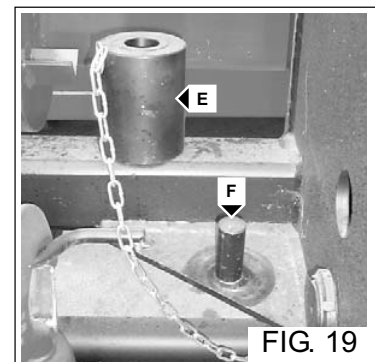
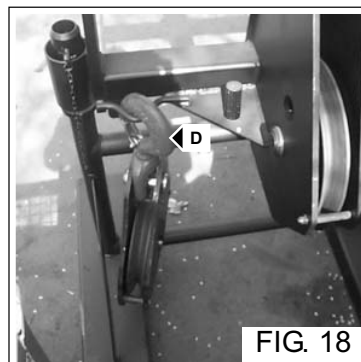
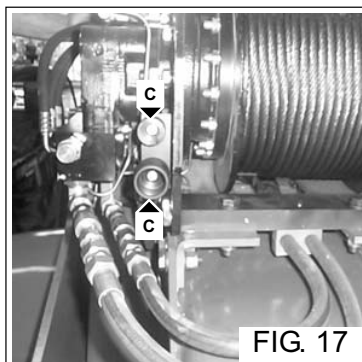
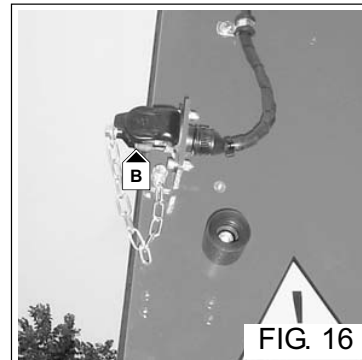
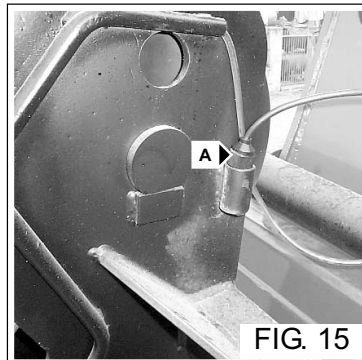
- Per utilizzare altri accessori, ripetere le operazioni in ordine inverso ricordandosi di :
  - mettere il cavo per il fine corsa salita fune a riposo (Fig. 15 - Rif. A)
  - inserire la presa nella spina (Fig. 16 - Rif. B)
  - scollegare i raccordi idraulici dall'argano e riporli negli appositi supporti (Fig. 17 - Rif. C)
  - riporre il bozzello nell'apposito alloggiamento (Fig. 18 - Rif. D)
  - riporre il peso di fine corsa salita fune (Fig. 19 - Rif. E) nell'apposito perno (Fig. 19 - Rif. F)

**PUTTING AWAY THE WINCH**

- To use other accessories, repeat the operations described above in reverse order, and remember to :
  - put the rope lift limitswitch cable lying flat (Fig. 15 - Ref. A)
  - insert the plug into the socket (Fig. 16 - Ref. B)
  - disconnect the hydraulic fittings from the winch and replace them in their supports (Fig. 17 - Ref. C)
  - set the block back in its seating (Fig. 18 - Ref. D)
  - set the rope lift stop weight (Fig. 19 - Ref. E) back in its pin (Fig. 19 - Ref. F)

**NICHTVERWENDUNG DER WINDE**

- Zur Verwendung anderer Zubehörteile, die Vorgänge auf umgekehrte Reihenfolge wiederholen und dabei folgendes nicht vergessen :
  - Das Kabel für den Endschalter des Seil Aufwärtshub in Ruhestellung (Abb. 15 - Buchst. A) bringen.
  - Den Stecker in die Steckdose stecken (Abb. 16 - Bez. B)
  - Die hydraulischen Anschlußstücke von der Winde loslösen und an den vorgesehenen Haltern (Abb. 17 - Buchst. C) anbringen.
  - Den Block in seine Aufnahme legen (Abb. 18 - Bez. D)
  - Das Gewicht des Endschalters Aufwärtshub Seil (Abb. 19 - Bez. E) in den Bolzen (Abb. 19 - Bez. F) stecken.



## MANUTENZIONE

- RIDUTTORE
- FUNE, PULEGGIA e CAPOCORDA
- BOZZELLO
- GANCIO
- FINE CORSA DISCESA FUNE
- FINE CORSA SALITA FUNE
- IMPIANTO IDRAULICO

## MAINTENANCE

- GEAR REDUCER
- ROPE, PULLEY AND TERMINAL
- BLOCK
- HOOK
- ROPE DESCENT LIMIT STOP
- ROPE LIFT LIMIT STOP
- HYDRAULIC SYSTEM

## WARTUNG

- GETRIEBE
- SEIL, RIEMENSCHNUR UND SEILSCHLAUFE
- UMLENKROLLE
- KRANHAKEN
- ENDSCHALTER SEIL SENKEN
- ENDSCHALTER SEIL HEBEN
- HYDRAULISCHE ANLAGE



**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** ogni 100 ore **A** (Fig.20b) e all'occorrenza rabboccare **A** (Fig.20b) con olio dello stesso tipo di quello presente all'interno del riduttore (**SHELL SPIRAX HD80 W90**). Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **SAE 80W/90 oppure SAE 85W/140**.

**La prima sostituzione dell'olio** deve essere effettuata dopo 150 ore di funzionamento, successivamente ogni 1000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.20a) verso il basso.
- Svitare il tappo **A** (Fig.20a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico sull'asse orizzontale **A** (Fig.20b).
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **A** (Fig.20b) (1,3 lt).
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** every 100 hours **A** (Fig.20b) and top up if necessary **A** (Fig.20b) with the same type of oil as that present in the gear reducer (**SHELL SPIRAX HD80 W90**). Use of gear oil with EP additives with viscosity **SAE 80W/90** or **SAE 85W/140** is recommended.

**Oil must be changed the first time** after 150 hours of operation, and subsequently every 1000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.20a) is downwards.
- Unscrew plug **A** (Fig.20a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is on the horizontal axis **A** (Fig.20b).
- Fill with the right type of oil until it starts flowing out through the level hole **A** (Fig.20b). (1,3 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

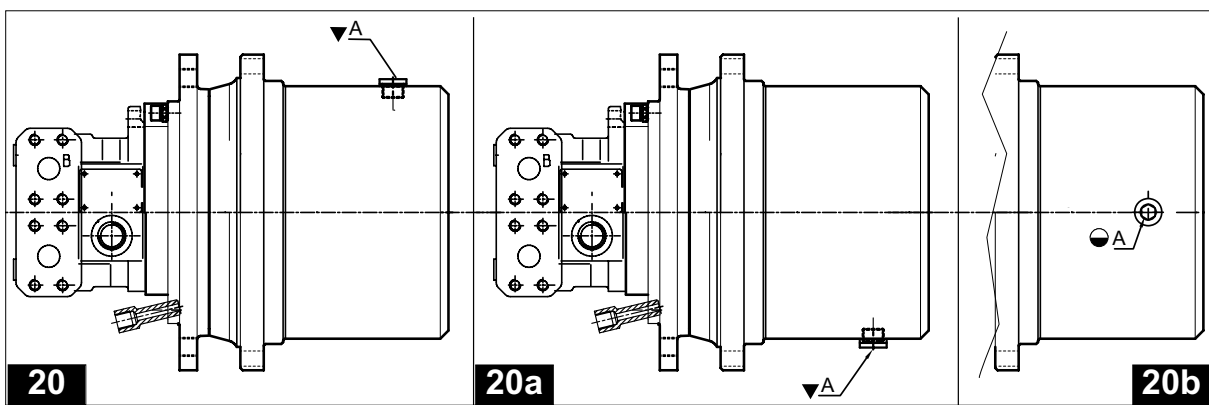
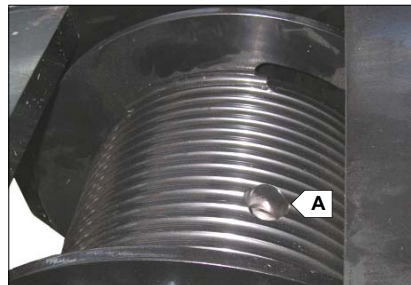
Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens alle 100 Betriebsstunden prüfen **A** (Abb. 20b) und bei Bedarf Öl nachfüllen **A** (Abb. 20b). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**SHELL SPIRAX HD80 W90**). Am besten benutzt man Öl für Getriebe mit EP-Zusatz mit Viskosität **SAE 80W/90 oder SAE 85W/140**.

Der erste Ölwechsel ist nach 150 Betriebsstunden fällig, dann jeweils alle 1000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb. 20a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 20a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 20).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **A** ausläuft (Abb. 20b) (1,3 lt).
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.21) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.21a) e che sia ben arrotolata sul tamburo **B** (Fig.21).

Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare giornalmente e mantenere lubrificato il **perno C** (Fig.21) su cui ruota la **puleggia di guida D** (Fig.21), che dovrà avere sempre un buono movimento di rotazione e di traslazione laterale.

Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.22) e dei suoi morsetti fermafune **F** (Fig.22).

**ROPE, PULLEY and TERMINAL**

Check **rope A** daily (Fig.21) to make sure it is in perfect condition, that there are no broken filaments (Fig.21a) and that it is wound correctly around drum **B** (Fig.21).

If this is not the case, replace it with a new one having the same diameter and features.

Check the lubrication of the rope, and apply industrial grease or dust-proof synthetic oil, if necessary.

Check and lubricate **pin C** (Fig.21) on which **guide pulley D** (Fig.21) rotates, on a daily basis, making sure its rotation and transverse movements are smooth. Lubricate the pin with lithium soap grease, if necessary.

Check the condition of terminal **E** (Fig.22) and its **rope-holder** clamps **F** (Fig.22).

**SEIL, RIEMENSCHLEIBE und SEIL-SCHLAUFE**

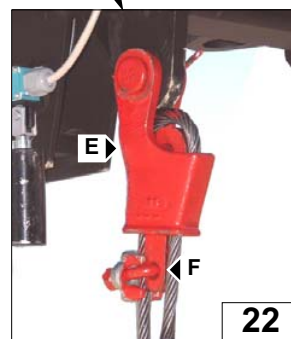
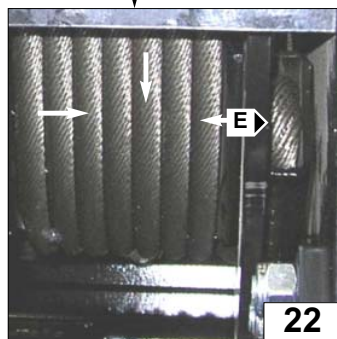
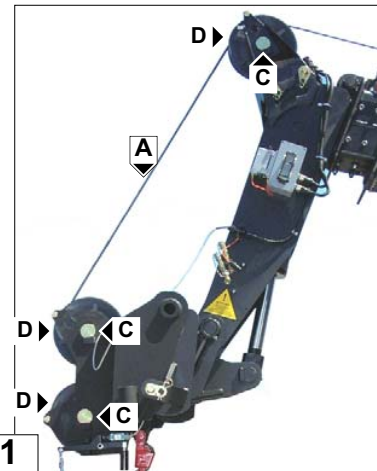
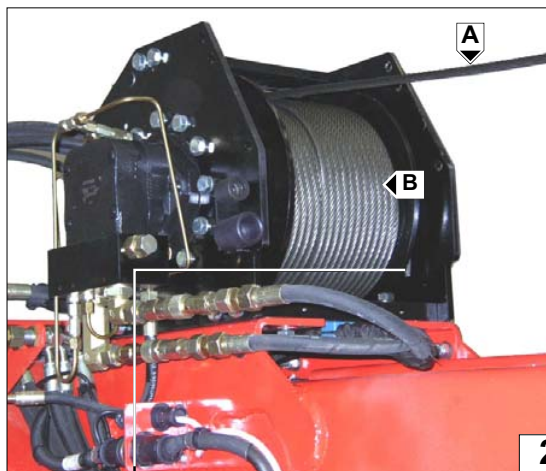
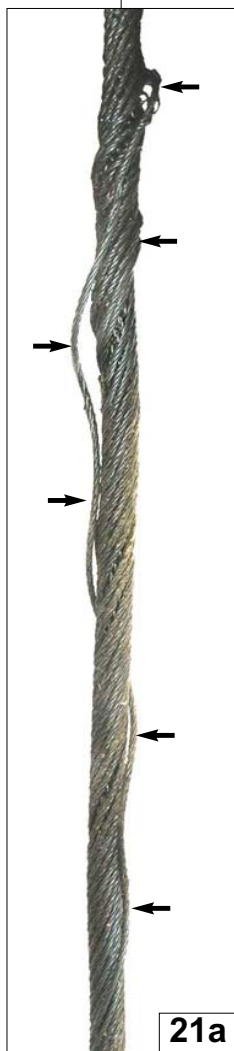
Täglich prüfen, dass das Seil **A** (Abb. 21) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 21a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 21).

Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Den Bolzen **C** (Abb. 21), auf dem sich die Führungsscheibe **D** (Abb. 21) dreht, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen und seitlich versetzen.

Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschleufe **E** (Abb. 22) und die Bügelklemmen **F** (Abb. 22) auf Unversehrtheit prüfen.



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**BOZZELLO**

Per una massima efficienza e sicurezza, mantenere intatta la struttura esterna **H** (Fig.23) e controllare che la puleggia **L** (Fig.24) ruoti correttamente sul suo perno **M** (Fig.24).  
Se necessità, lubrificare con grasso al sapone di litio il perno **M** (Fig.23).

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.24).  
Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.24).  
Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.24).

**BLOCK**

For maximum efficiency and safety, make sure the outer frame **H** (Fig.23) is intact and check pulley **L** (Fig.24) to make sure it rotates properly around its pin **M** (Fig.24).  
Lubricate pin **M** with lithium soap grease, if necessary (Fig.23).

**HOOK**

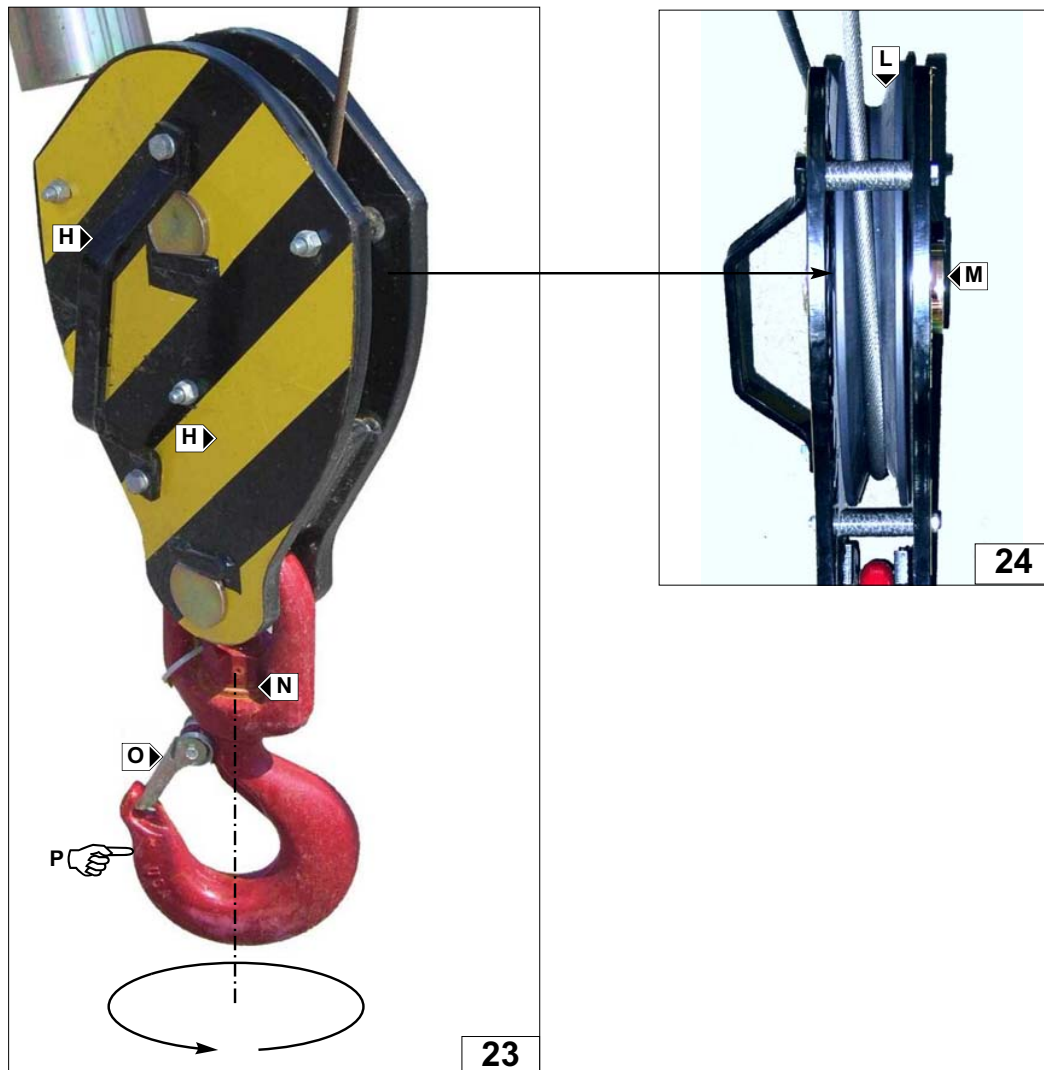
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.24).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.24).  
Check the condition and working of safety tab **O** (Fig.24).

**UMLENKROLLE**

Für eine maximale Effizienz und Sicherheit die Außenstruktur **H** (Abb. 23) unversehrt halten und sicherstellen, dass die Riemenscheibe **L** (Abb. 24) sich korrekt um ihren Bolzen **M** dreht (Abb. 24).  
Falls erforderlich, den Bolzen **M** mit Lithiumseifenfett schmieren (Abb. 23).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 24).  
Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 24).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 24).



**FINE CORSA DISCESA FUNE** (Fig.25)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e il microinterruttore; controllare il collegamento elettrico. Inoltre verificare l'integrità del leveraggio di contatto finecorsa salita e la tenuta della sua molla. (Fig.26)

**IMPIANTO IDRAULICO** (Fig.27)

Ispezionare giornalmente raccordi, valvole, tubi, per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'organo.

**ROPE DESCENT LIMIT STOP** (Fig.25)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and safety microswitch cleaned daily for maximum efficiency; check the connection electrical. Also check the condition of the lift limit stop contact leverage and the seal on its spring. (Fig.26)

**HYDRAULIC SYSTEM** (Fig.27)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 25)

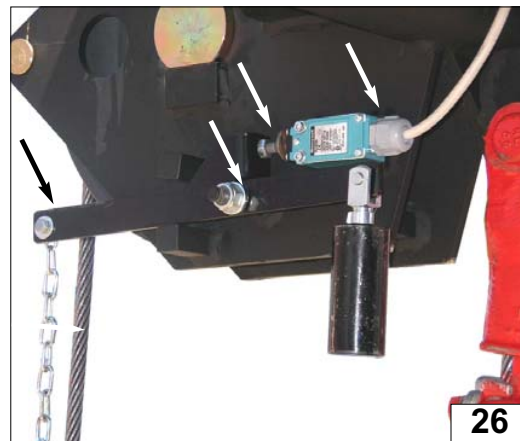
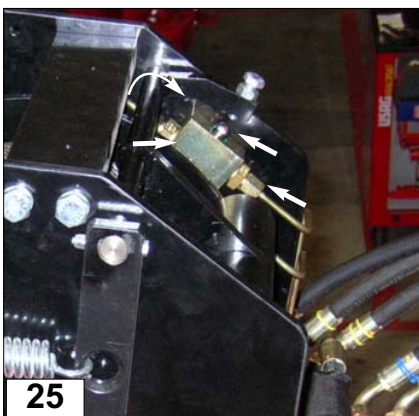
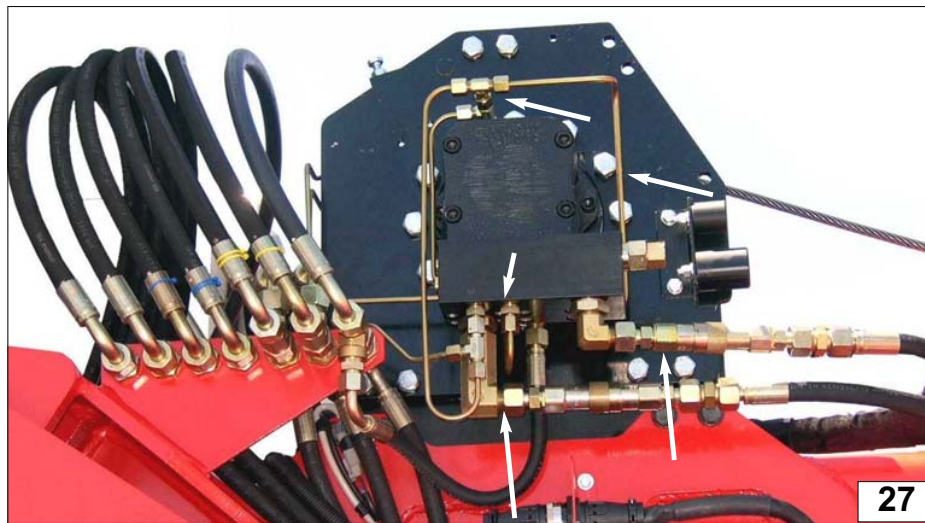
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalters für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalters für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 26)

**HYDRAULISCHE ANLAGE** (Abb. 27)

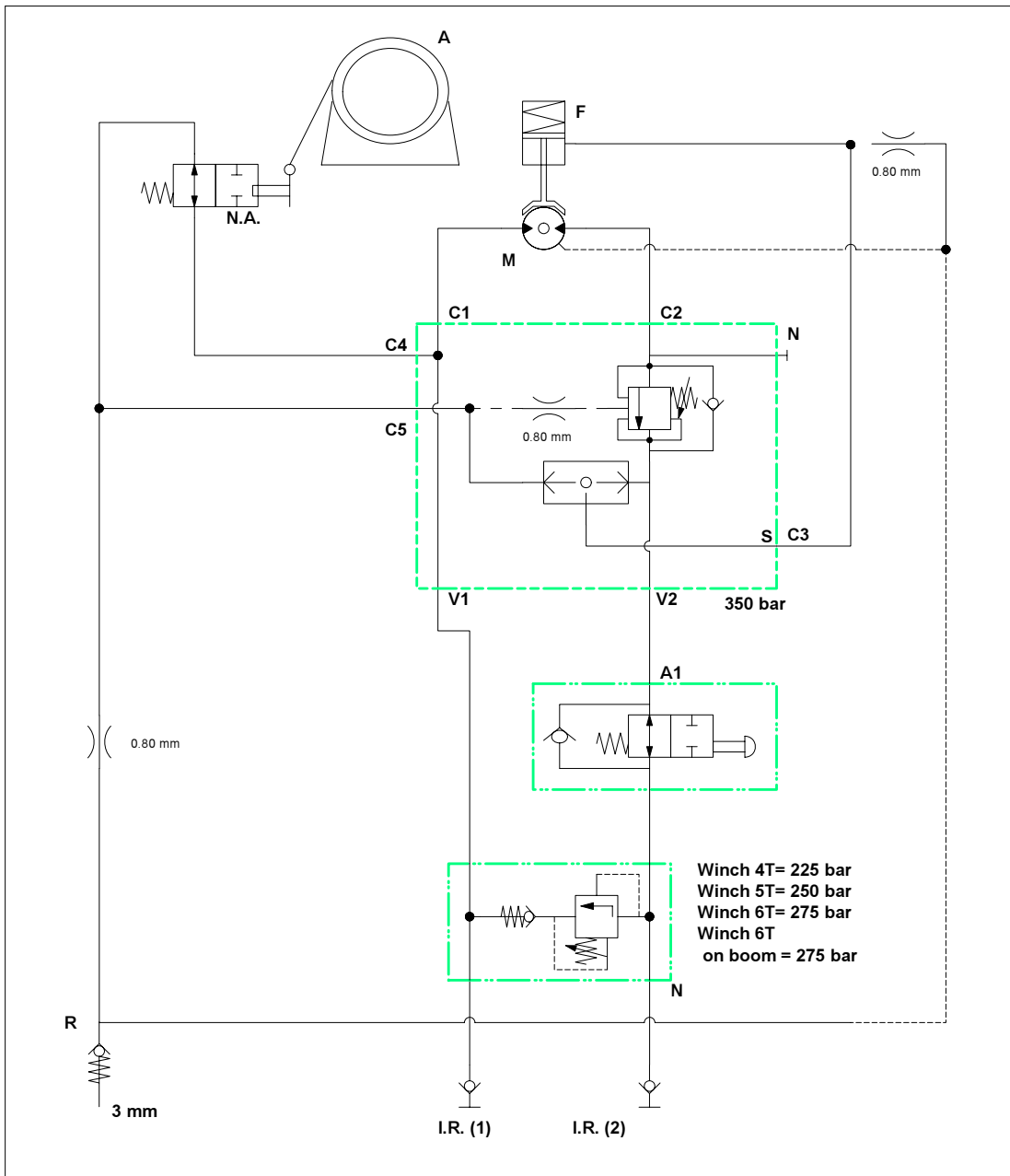
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



SCHEMA IDRAULICO

HYDRAULIC SCHEME

SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

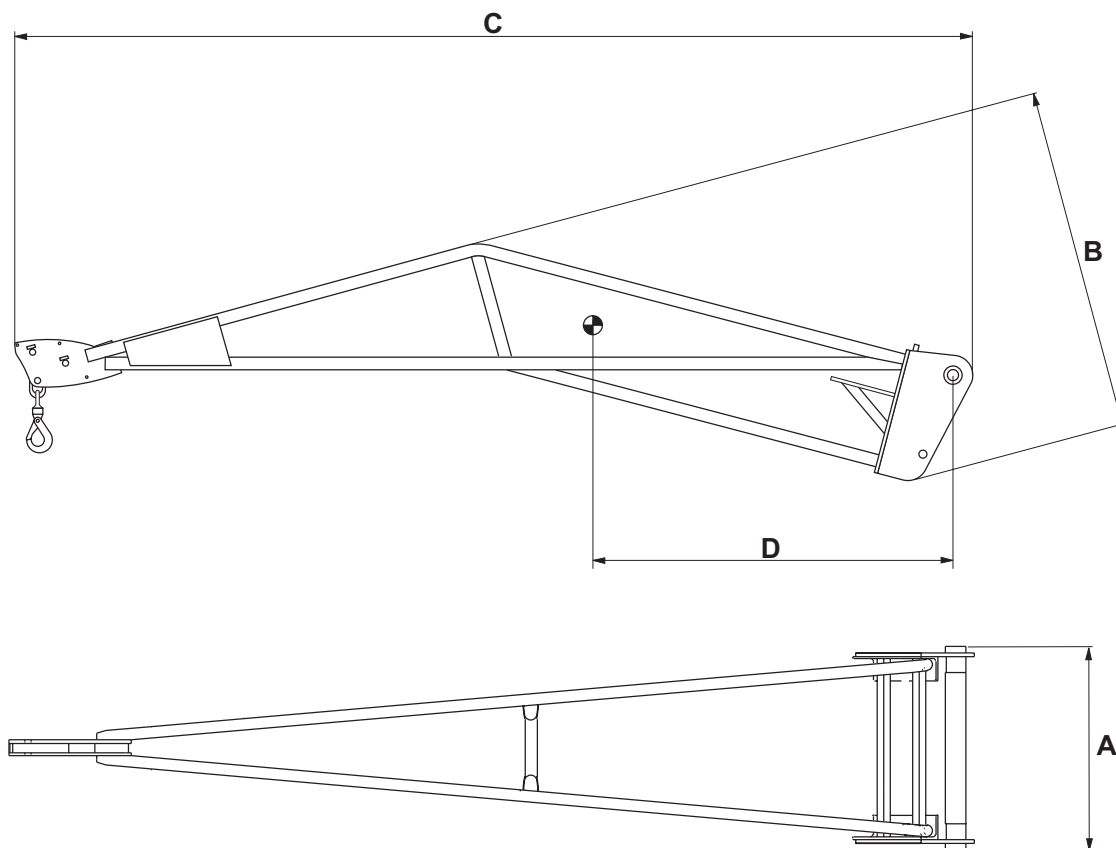
**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE

BRACCETTO P 600

HOIST P 600

P 600 ANGRIFSSCHENREL

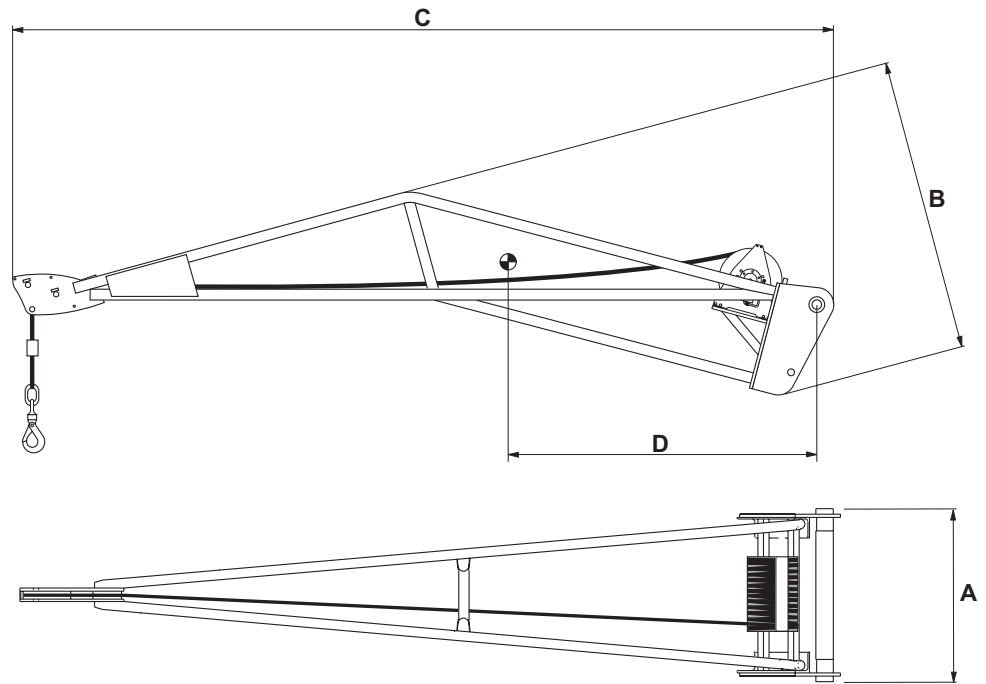


CARATTERISTICHE - CHARACTERISTICS - DATEN						
DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN			ACCESSORIO ATTACHMENT ZUBEHOER	PESO WEIGHT GEWITCH
		A	B	C		
P 600	600 Kg	830	815	4027	1200	190 Kg

BRACCETTO PT 600

HOIST WITH WINCH PT 600

PT 600 ANGRIFSSCHENREL



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	FUNI ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	VELOCITA' GANCIO TOW SPEED HAKEN GESCHWINDIGKEIT	Ø AVVOLGIMENTO PULEGGIA Ø WINDING PULLEY WICKEL-Ø RIEMENSCHLEIBE	Ø AVVOLGIMENTO TAMBURO Ø WINDING DRUM WICKEL-Ø TROMMEL	FINE CORSA UP/DOWN ENDLAUF	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEB- SDRUCK	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN mm				PESO WEIGHT GEWICHT
									A	B	C	D	
PT 600	600 Kg	Ø 6 mm x 30 m ▲(x 34 m)	5 T	45 m/min	230 mm	233 mm	IDRAULICO HYDRAULIC HYDRAULIK	185 Bar max	830	815	4027	1200	320 Kg

▲ : solo per MRT 2540 e 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

**PT 600****MESSA IN SERVIZIO E UTILIZZO**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle ***Istruzioni obbligatorie di verifica e controllo:***

- verificare l'integrità della struttura esterna dell'argano e del braccetto tralicciato.
- verificare il corretto collegamento idraulico degli innesti rapidi 1, 2, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune H (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune L (Fig.2);

**PT 600****COMMISSIONING AND USE**

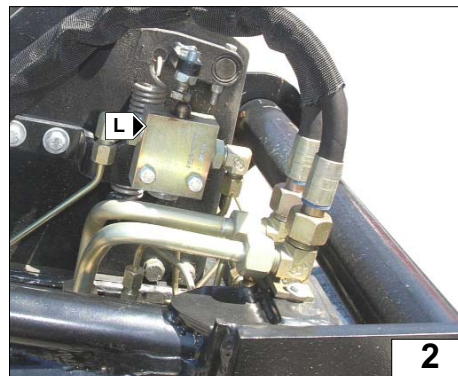
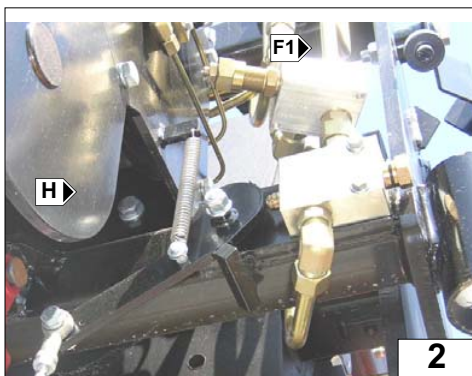
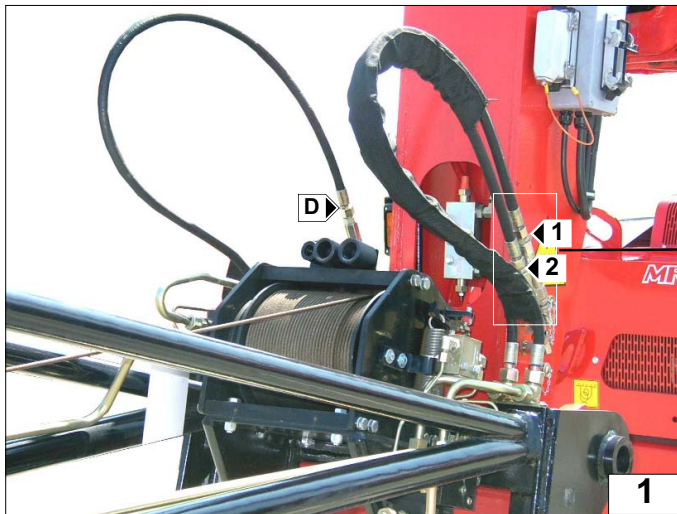
For your safety, before starting a work cycle, ***follow the compulsory instructions for inspection and checking:***

- check the outer frame of the winch and the trestle arm.
- ensure correct hydraulic connection of quick-release couplings 1, 2, Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop H (Fig.2);
- check the correct working of the rope lift limit stop L (Fig.2);

**PT 600****INBETRIEBNAHME UND GEBRAUCH**

Bevor Sie einen Arbeitszyklus beginnen, sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten:

- Die Außenstruktur der Winde und des Gittermastauslegers auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen 1, 2, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken H prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben L prüfen (Abb. 2).





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- controllare lo stato della fune **B** (Fig.3) e il corretto avvolgimento sul tamburo **A** (Fig.3);
- controllare il corretto movimento rotazione delle puleggie di guida fune **F1** (Fig.2);
- controllare lo stato del capocorda **C** (Fig.3);
- controllare che il grillo di collegamento fune e gancio sia ben avvitato **K** (Fig.4) e che i morsetti **K1** (Fig.4) blocchino la fune.
- verificare lo stato del gancio: che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **G** (Fig.4);
- controllare l'aggancio del braccetto alla macchina operatrice **J** (Fig.5).

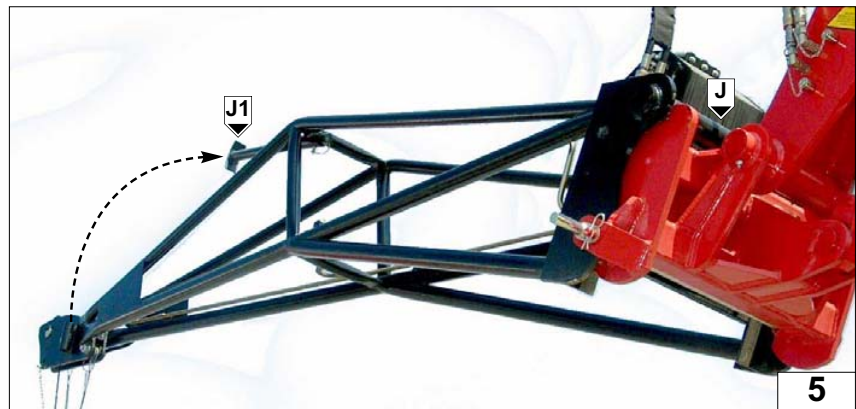
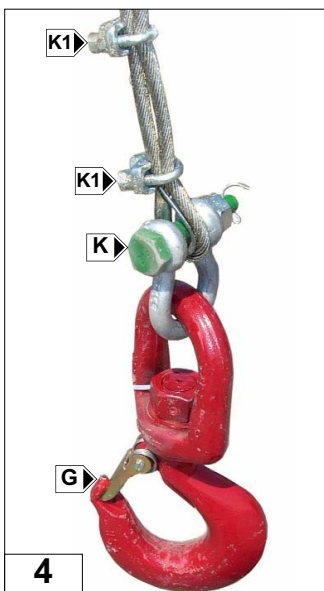
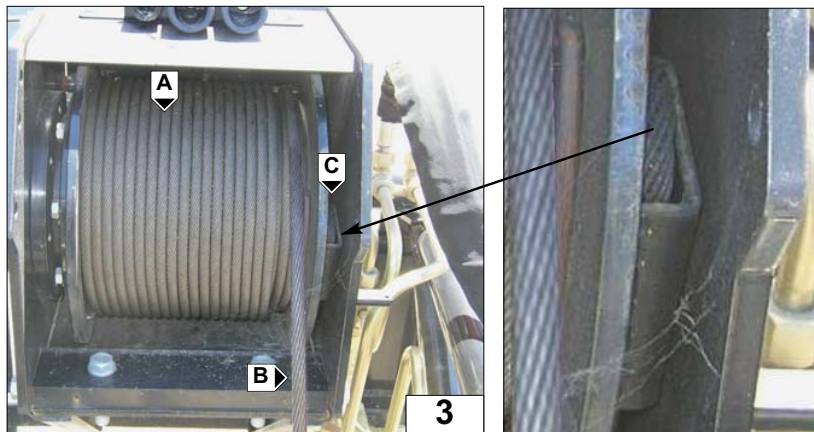
Dalla posizione di parcheggio è possibile sganciare il piede di appoggio e posizionarlo all'interno del braccetto per operare senza ulteriori ingombri **J1** (Fig.5).

- check the condition of the rope **B** (Fig.3) and its winding around drum **A** (Fig.3);
- check the correct movement and rotation of the rope guide pulleys **F1** (Fig.2);
- check the condition of terminal **C** (Fig.3);
- check to make sure the shackle connecting the rope and hook is screwed on properly **K** (Fig.4) and that terminals **K1** (Fig.4) block the rope.
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.4);
- check the hooking of the arm to the operating machine **J** (Fig.5).

From the parking position, it is possible to unhook the supporting feet and position it inside the arm to work without further impediment **J1** (Fig.5).

- Den Zustand des Seils **B** prüfen (Abb. 3) und die korrekte Aufwicklung um die Trommel **A** prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenkscheibe **F1** prüfen (Abb. 2).
- Den Zustand der Kabelschlaufen **C** (Abb. 3) prüfen.
- Sicherstellen, dass der Seilverbindungsschäkel und der Kranhaken gut eingeschraubt sind **K** (Abb. 4) und dass die Klemmen **K1** (Abb. 4) das Seil blockieren.
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 4).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingerastet ist (Abb. 5).

Aus der Abstellposition die Winde kann man den Abstellfuß ausklinken und ihn innerhalb des Auslegers anordnen, ohne noch mehr Platz in Anspruch zu nehmen. **J1** (Abb. 5)



## MANUTENZIONE

## MAINTENANCE

## WARTUNG

- RIDUTTORE

- GEAR REDUCER

- GETRIEBE

- FUNE, PULEGGIA e CAPOCORDA

- ROPE, PULLEY AND TERMINAL

- SEIL, RIEMENSCHNUR UND SEILSCHLINGE

- GRILLO e MORSETTI

- SHACKLE E CLAMPS

- SCHÄKEL UND KLEMMEN

- GANCIO

- HOOK

- KRANHAKEN

- FINE CORSA DISCESA FUNE

- ROPE DESCENT LIMIT STOP

- ENDSCHALTER SEIL SENKEN

- FINE CORSA SALITA FUNE

- ROPE LIFT LIMIT STOP

- ENDSCHALTER TEIL HEBEN

- IMPIANTO IDRAULICO

- HYDRAULIC SYSTEM

- HYDRAULISCHE ANLAGE

**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** ogni 100 ore **A** (Fig.6b) e all'occorrenza rabboccare **A** (Fig.6b) con olio dello stesso tipo di quello presente all'interno del riduttore (SHELL SPIRAX HD80 W90). Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **SAE 80W/90 oppure SAE 85W/140**.

**La prima sostituzione dell'olio** deve essere effettuata dopo 150 ore di funzionamento, successivamente ogni 1000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.6a) verso il basso.
- Svitare il tappo **A** (Fig.6a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico sull'asse orizzontale **A** (Fig.6b).
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **A** (Fig.6b). (0,6 lt)
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

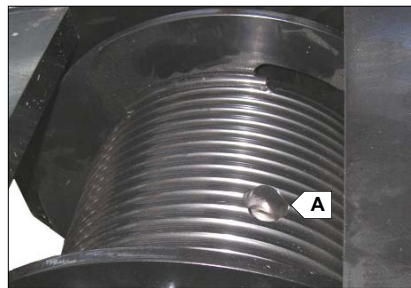
Correct lubrication will allow efficient working and long life of the gear reducer.

The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** every 100 hours **A** (Fig.6b) and top up if necessary **A** (Fig.6b) with the same type of oil as that present in the gear reducer (SHELL SPIRAX HD80 W90). Use of gear oil with **EP** additives with viscosity **SAE 80W/90** or **SAE 85W/140** is recommended.

**Oil must be changed the first time** after 150 hours of operation, and subsequently every 1000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.6a) is downwards.
- Unscrew plug **A** (Fig.6a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is on the horizontal axis **A** (Fig.6b).
- Fill with the right type of oil until it starts flowing out through the level hole **A** (Fig.6b). (0,6 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

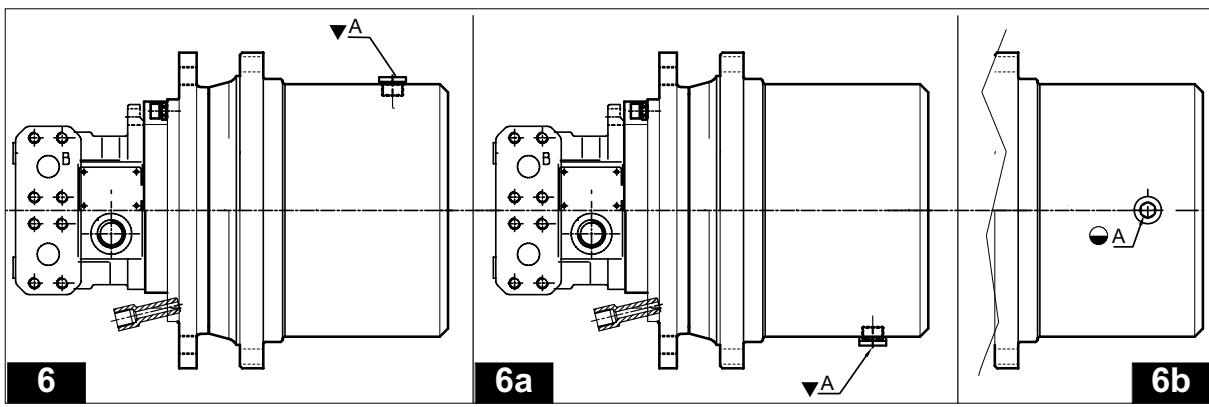
Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens alle 100 Betriebsstunden prüfen **A** (Abb. 6b) und bei Bedarf Öl nachfüllen **A** (Abb. 6b). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (SHELL SPIRAX HD80 W90). Am besten benutzt man Öl für Getriebe mit EP-Zusatz mit Viskosität **SAE 80W/90** oder **SAE 85W/140**.

Der erste Ölwechsel ist nach 150 Betriebsstunden fällig, dann jeweils alle 1000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb. 6a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 6a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 6).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **A** ausläuft (Abb. 6b).(0,6 lt)
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.7) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.7a) e che sia ben arrotolata sul tamburo **B** (Fig.7). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare e mantenere lubrificato i **perni C** (Fig.8) su cui ruotano le **puleggie di guida D** (Fig.8), che dovranno avere sempre un buono movimento di rotazione. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.9) e dei suoi morsetti fermafune.

**ROPE, PULLEY and TERMINAL**

Check rope **A** (Fig.7) daily to make sure it is good condition, that there are no broken filaments (Fig.7a) and that it is wound properly around drum **B** (Fig.7). If this is not the case, replace the rope with a new one having the same diameter and features. Check the lubrication of the rope, and if necessary, lubricate with industrial grease or Dust-proof synthetic oil.

Check and lubricate **pins C** (Fig.8) on which **guide pulleys D** (Fig.8) rotate, and these must rotate freely. If necessary, lubricate the pin with lithium soap grease.

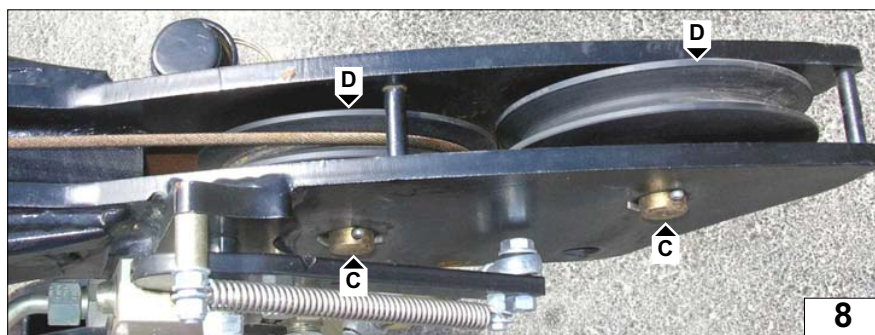
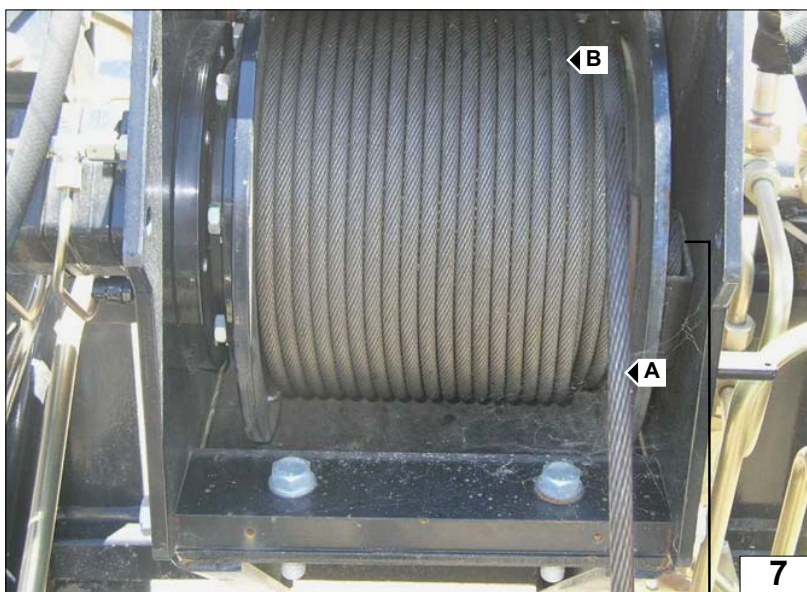
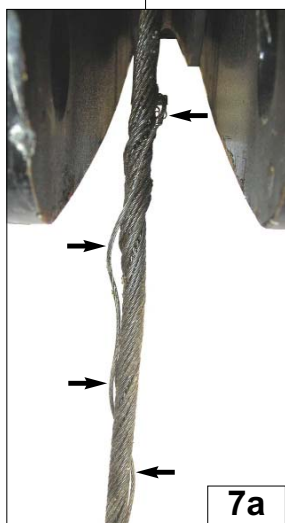
Check terminal **E** (Fig.9) and the **rope-holder** clamps to make sure they are intact.

**SEIL, RIEMENSCHLEIBE und SEILSCHLINGE**

Täglich prüfen, dass das Seil **A** (Abb. 7) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 7a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 7). Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Die Bolzen **C** (Abb. 8), auf dem sich die Führungsscheiben **D** (Abb. 8) drehen, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen. Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschleufe **E** (Abb. 9) und die Bügelklemmen auf Unversehrtheit prüfen.



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**GRILLO e MORSETTI**

È importante verificare l'integrità e il serraggio delle viti dei morsetti **F** (Fig.10) e del bullone del grillo **G** (Fig.10) una volta alla settimana.

**SHACLE AND CLAMPS**

It is important to check the condition and locking of the clamp screws **F** (Fig.10) and the shackle **G** bolt (Fig.10) once a week.

**SCHÄKEL UND KLEMMEN**

Es ist wichtig, immer die Schrauben der Klemmen **F** (Abb. 10) und des Schraubbolzens des Schäkels **G** (Abb. 10) einmal pro Woche auf Unversehrtheit und festen Sitz zu prüfen.

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.10).

Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.10).  
Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.10).

**HOOK**

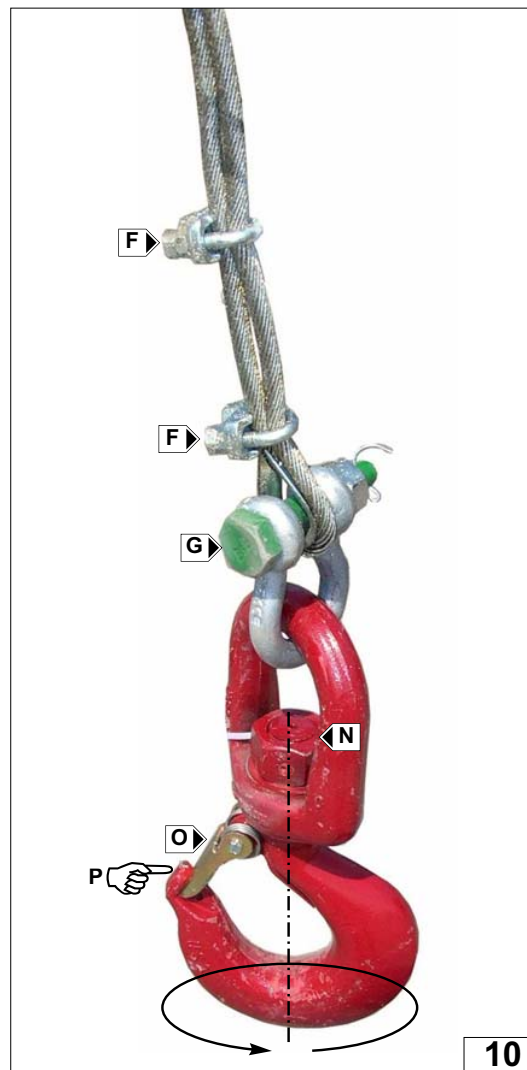
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.10).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.10).

Check the condition and working of safety tab **O** (Fig.10).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 10).

Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 10).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 10).



10

**FINE CORSA DISCESA FUNE** (Fig.11)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.12)

**IMPIANTO IDRAULICO** (Fig.13)

Ispezionare giornalmente raccordi, valvole, tubi, per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'argano.

**ROPE DESCENT LIMIT STOP** (Fig.11)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.12)

**HYDRAULIC SYSTEM** (Fig.13)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 11)

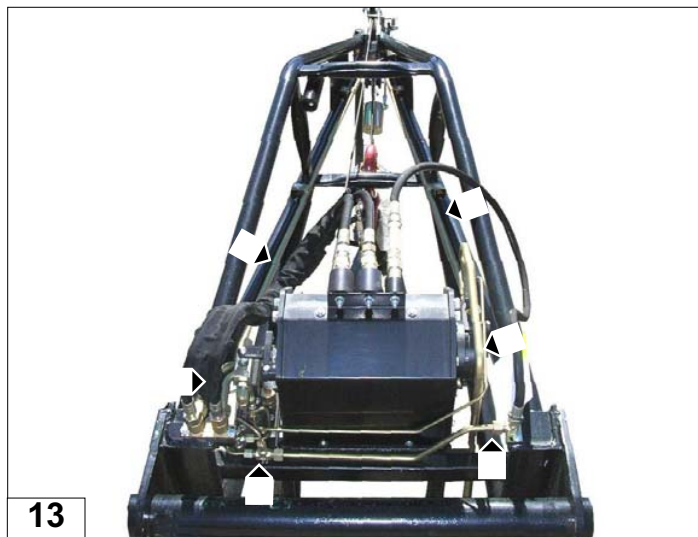
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 12)

**HYDRAULISCHE ANLAGE** (Abb. 13)

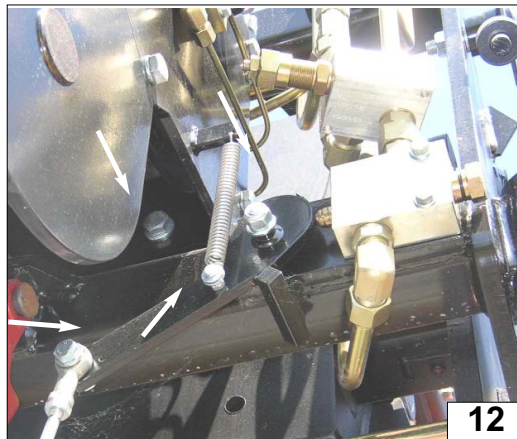
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



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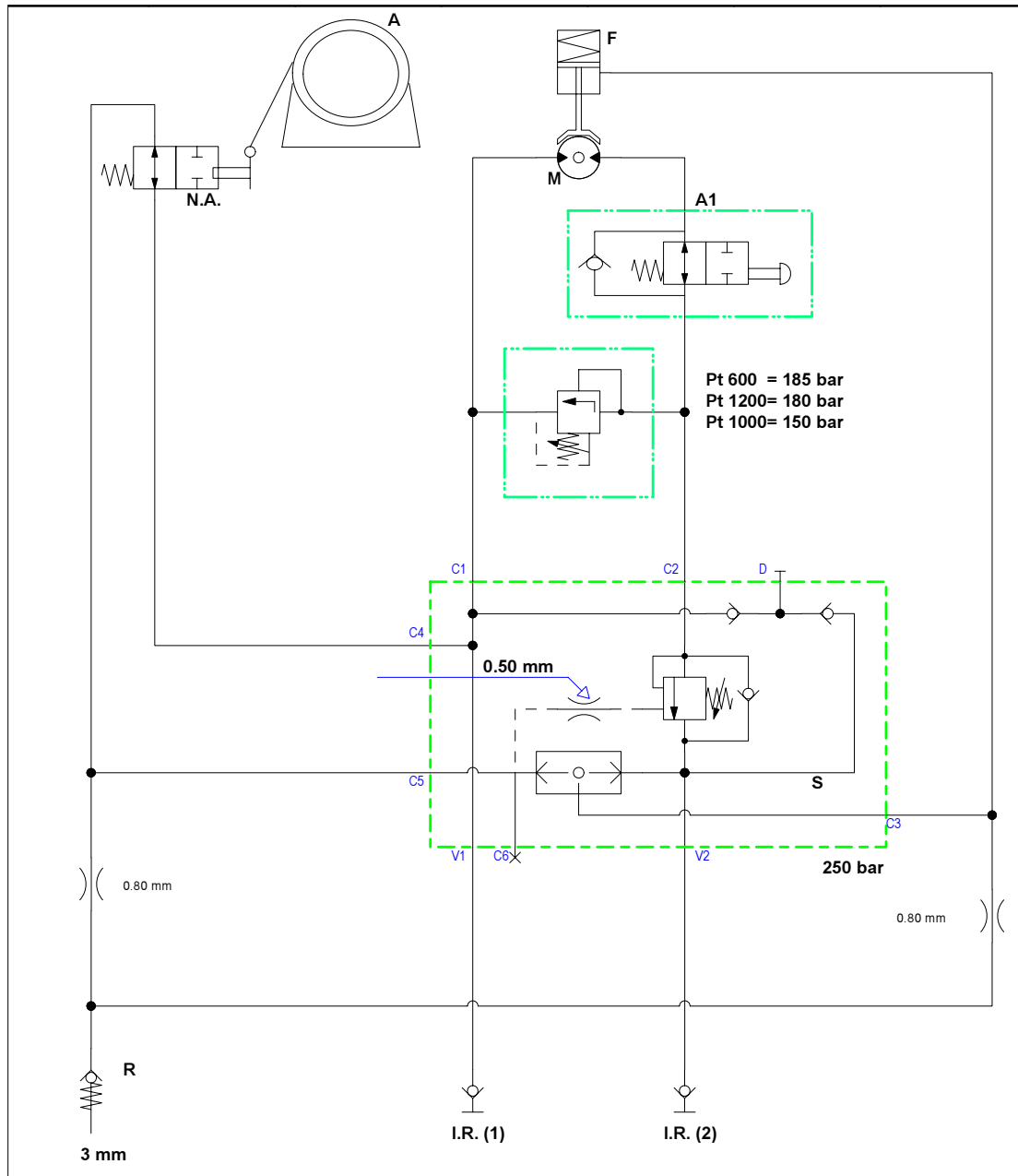


12

SCHEMA IDRAULICO

HYDRAULIC SCHEME

SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

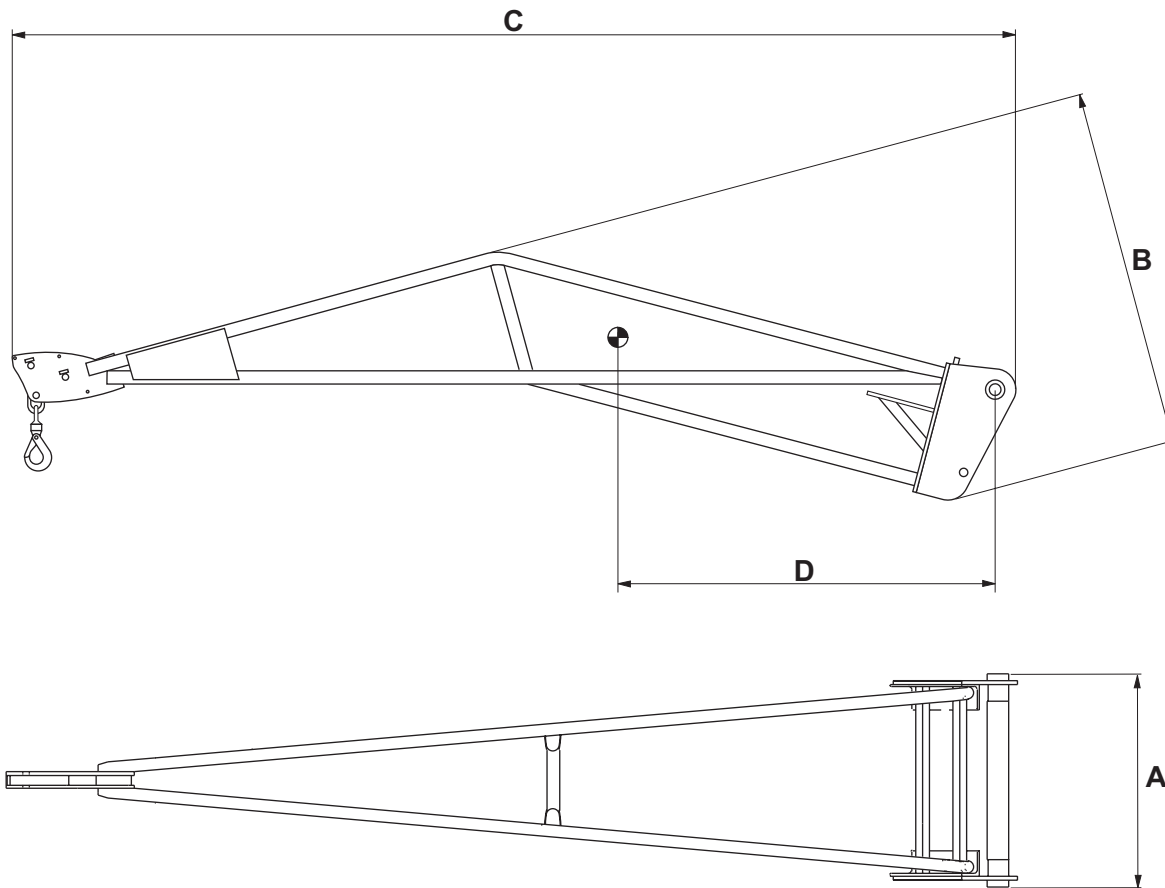
**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTNER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE

BRACCETTO P 1000

HOIST P 1000

P 1000 ANGRIFSSCHENREL



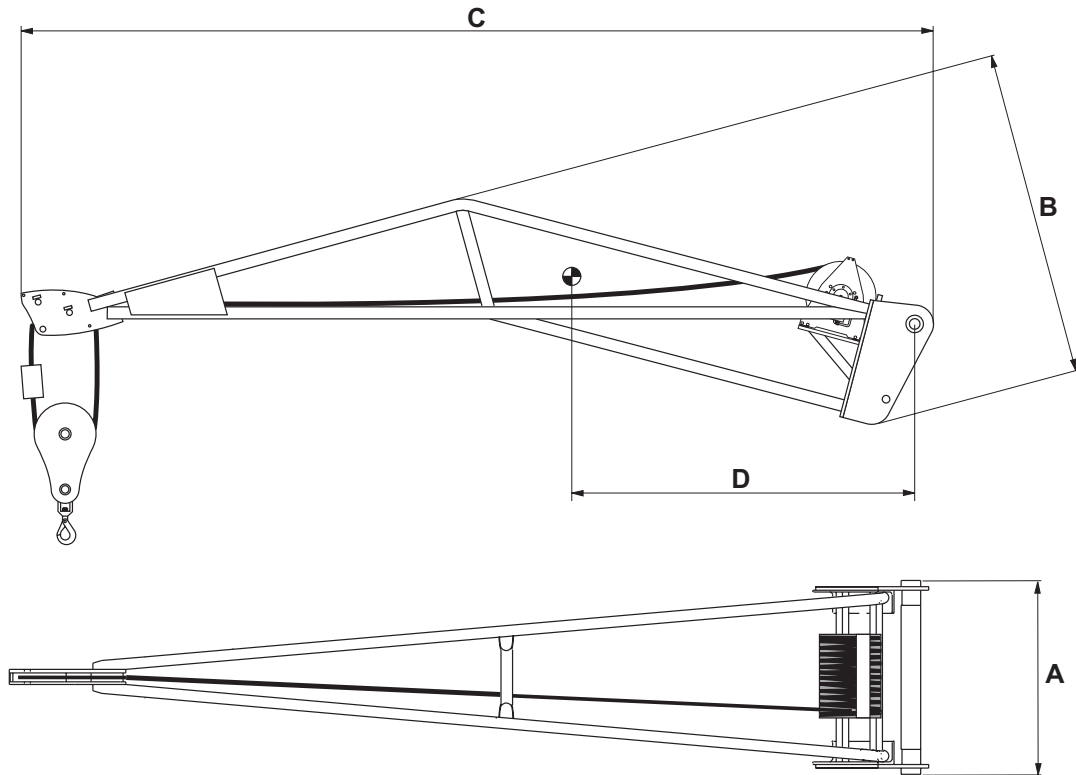
CARATTERISTICHE - CHARACTERISTICS - DATEN						
DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN (mm)			ACCESSORIO ATTACHMENT ZUBEHOER D	PESO WEIGHT GEWITCH
		A	B	C		
P 1000	1000 Kg	830	815	4027	1200 mm	190 Kg



BRACCETTO PT 1000

HOIST WITH WINCH PT 1000

PT 1000 ANGRIFSSCHENREL



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	FUNE ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	VELOCITA' GANCIO TOW SPEED HAKEN GESCHWINDIGKEIT	Ø AVVOLGIMENTO PULEGGIA Ø WINDING PULLEY WICKEL-Ø RIEMENSCHIBE	Ø AVVOLGIMENTO TAMBURO Ø WINDING DRUM WICKEL-Ø TROMMEL	FINE CORSA UP/DOWN ENDLAUF	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEB- SDRUCK	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN mm				PESO WEIGHT GEWICHT
									A	B	C	D	
PT 1000	1000 Kg	Ø 6 mm x 46 m ▲(x 56 m)	5 T	23 m/min	146 mm	201 mm	IDRAULICO HYDRAULIC HYDRAULIK	150 Bar max	830	815	4027	1200	348 Kg

▲ : solo per MRT 2540 e 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

**PT 1000****MESSA IN SERVIZIO E UTILIZZO**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle **istruzioni obbligatorie di verifica e controllo**:

- verificare l'integrità della struttura esterna dell'argano e del braccetto tralicciato.
- verificare il corretto collegamento idraulico degli innesti rapidi **1, 2**, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune **H** (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune **L** (Fig.2);

**PT 1000****COMMISSIONING AND USE**

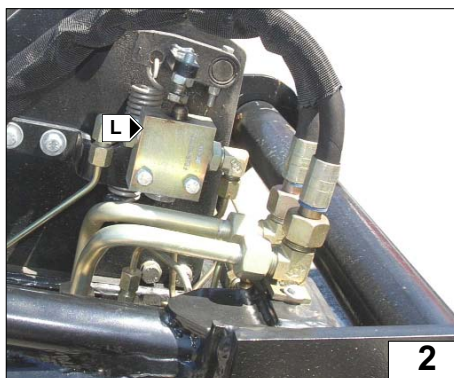
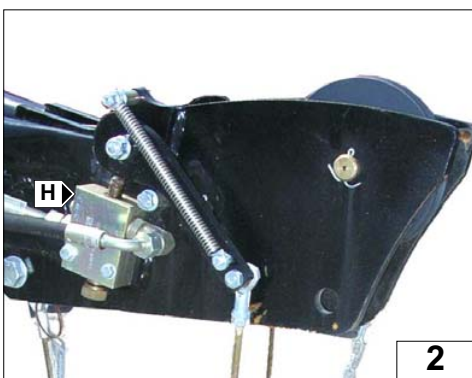
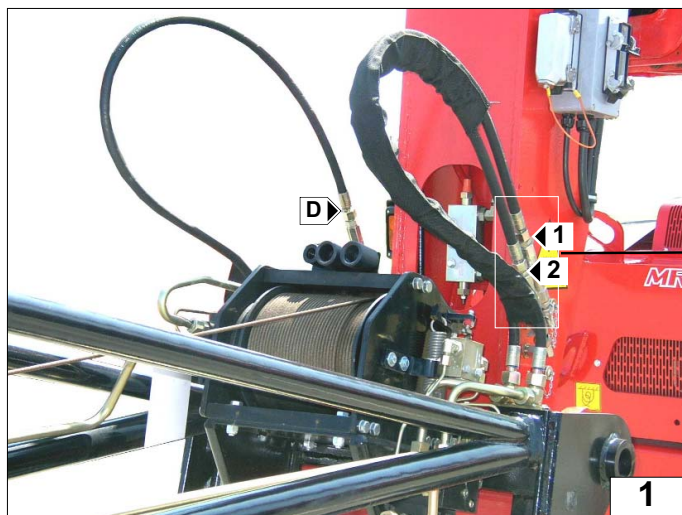
For your safety, before starting a work cycle, **follow the compulsory instructions for inspection and checking**:

- check the outer frame of the winch and the trestle arm.
- ensure correct hydraulic connection of quick-release couplings **1, 2**, Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop **H** (Fig.2);
- check the correct working of the rope lift limit stop **L** (Fig.2);

**PT 1000****INBETRIEBNAHME UND GEBRAUCH**

Bevor Sie einen Arbeitszyklus beginnen, sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten:

- Die Außenstruktur der Winde und des Gittermastauslegers auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen **1, 2**, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken **H** prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben **L** prüfen (Abb. 2).



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- controllare lo stato della fune **B** (Fig.3) e il corretto avvolgimento sul tamburo **A** (Fig.3);
- controllare il corretto movimento rotazione delle pulegge di guida fune **F1** (Fig.3);
- controllare lo stato del capocorda **C** (Fig.3);
- verificare l'integrità del bozzello **F** (Fig.4)
- verificare lo stato del gancio **K** (Fig.4): che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **K1** (Fig.4);
- controllare l'aggancio del braccetto alla macchina operatrice **J** (Fig.5).

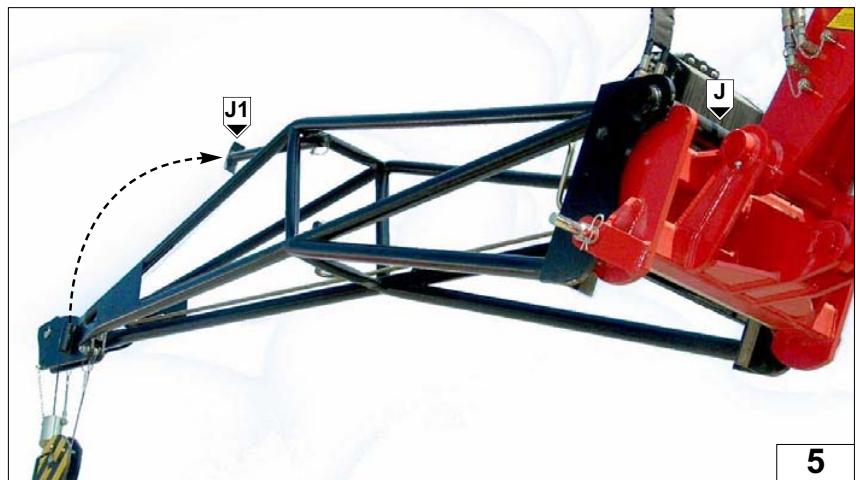
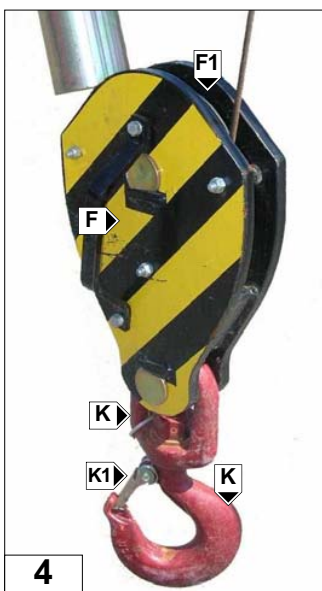
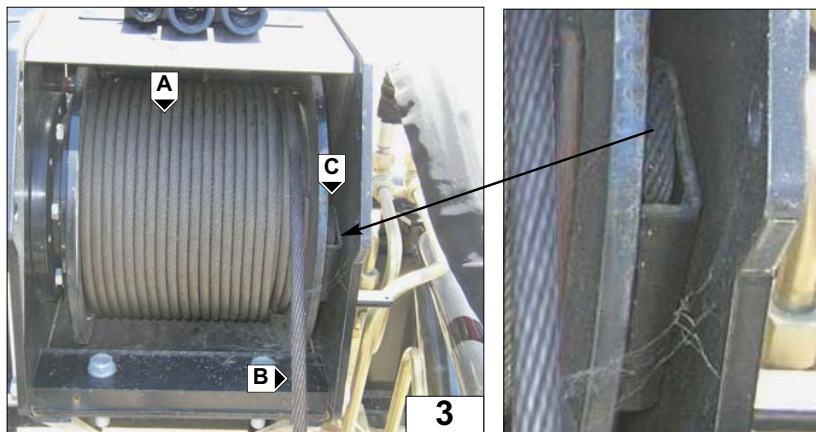
Dalla posizione di parcheggio è possibile sganciare il piede di appoggio e posizionarlo all'interno del braccetto per operare senza ulteriori ingombri **J1** (Fig.5).

- check the condition of the rope **B** (Fig.3) and its winding around drum **A** (Fig.3);
- check the correct movement and rotation of the rope guide pulleys **F1** (Fig.3);
- check the condition of terminal **C** (Fig.3);
- check block **F** to make sure it is intact (Fig.4)
- check to make sure the shackle connecting the rope and hook is screwed on properly **K** (Fig.4) and that terminals **K1** (Fig.4) block the rope.
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.4);
- check the hooking of the arm to the operating machine **J** (Fig.5).

From the parking position, it is possible to unhook the supporting feet and position it inside the arm to work without further impediment **J1** (Fig.5).

- Den Zustand des Seils **B** prüfen (Abb. 3) und die korrekte Aufwicklung um die Trommel **A** prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenscheibe **F1** prüfen (Abb. 3).
- Den Zustand der Kabelschlaufen **C** (Abb. 3) prüfen.
- Die Umlenkrolle **F** auf Unversehrtheit prüfen (Abb. 4)
- Sicherstellen, dass der Seilverbindungsschäkel und der Kranhaken gut eingeschraubt sind **K** (Abb. 4) und dass die Klemmen **K1** (Abb. 4) das Seil blockieren.
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 4).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingerastet ist (Abb. 5).

Aus der Abstellposition die Winde kann man den Abstellfuß ausklinken und ihn innerhalb des Auslegers anordnen, ohne noch mehr Platz in Anspruch zu nehmen. **J1** (Abb. 5)



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- FUNE, PULEGGIA e CAPOCORDA

- ROPE, PULLEY AND TERMINAL

- SEIL, RIEMENSCHLEIBE UND SEILSCHLAUFE

- BOZZELLO

- BLOCK

- UMLENKROLLE

- GANCIO

- HOOK

- KRANHAKEN

- FINE CORSA DISCESA FUNE

- ROPE DESCENT LIMIT STOP

- ENDSCHALTER SEIL SENKEN

- FINE CORSA SALITA FUNE

- ROPE LIFT LIMIT STOP

- ENDSCHALTER SEIL HEBEN

- IMPIANTO IDRAULICO

- HYDRAULIC SYSTEM

- HYDRAULISCHE ANLAGE

**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** ogni 100 ore **A** (Fig.6b) e all'occorrenza rabboccare **A** (Fig.6b) con olio dello stesso tipo di quello presente all'interno del riduttore (**SHELL SPIRAX HD80 W90**). Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **SAE 80W/90** oppure **SAE 85W/140**.

**La prima sostituzione dell'olio** deve essere effettuata dopo 150 ore di funzionamento, successivamente ogni 1000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.6a) verso il basso.
- Svitare il tappo **A** (Fig.6a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico sull'asse orizzontale **A** (Fig.6b).
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **A** (Fig.6b). (0,6 lt)
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** every 100 hours **A** (Fig.6b) and top up if necessary **A** (Fig.6b) with the same type of oil as that present in the gear reducer (**SHELL SPIRAX HD80 W90**). Use of gear oil with **EP** additives with viscosity **SAE 80W/90** or **SAE 85W/140** is recommended.

**Oil must be changed the first time** after 150 hours of operation, and subsequently every 1000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.6a) is downwards.
- Unscrew plug **A** (Fig.6a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is on the horizontal axis **A** (Fig.6b).
- Fill with the right type of oil until it starts flowing out through the level hole **A** (Fig.6b). (0,6 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

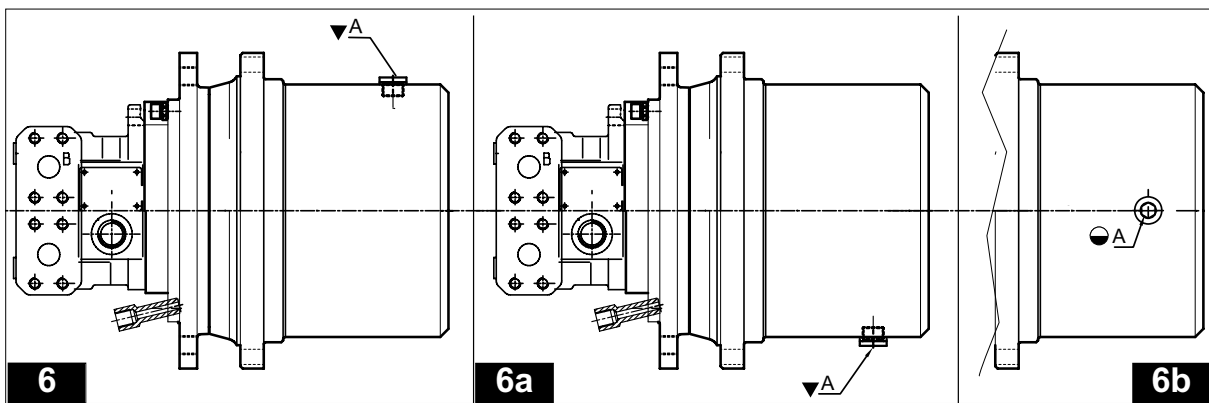
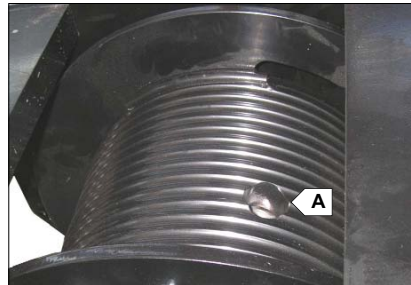
Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens alle 100 Betriebsstunden prüfen **A** (Abb. 6b) und bei Bedarf Öl nachfüllen **A** (Abb. 6b). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**SHELL SPIRAX HD80 W90**). Am besten benutzt man Öl für Getriebe mit EP-Zusatz mit Viskosität **SAE 80W/90** oder **SAE 85W/140**.

Der erste Ölwechsel ist nach 150 Betriebsstunden fällig, dann jeweils alle 1000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb. 6a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 6a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 6).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **A** ausläuft (Abb. 6b).
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.7) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.7a) e che sia ben arrotolata sul tamburo **B** (Fig.7). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare e mantenere lubrificato i **perni C** (Fig.8) su cui ruotano le **puleggie di guida D** (Fig.8), che dovranno avere sempre un buono movimento di rotazione. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.9) e dei suoi morsetti fermafune.

**ROPE, PULLEY and TERMINAL**

Check rope **A** (Fig.7) daily to make sure it is good condition, that there are no broken filaments (Fig.7a) and that it is wound properly around drum **B** (Fig.7). If this is not the case, replace the rope with a new one having the same diameter and features. Check the lubrication of the rope, and if necessary, lubricate with industrial grease or Dust-proof synthetic oil.

Check and lubricate **pins C** (Fig.8) on which **guide pulleys D** (Fig.8) rotate, and these must rotate freely. If necessary, lubricate the pin with lithium soap grease.

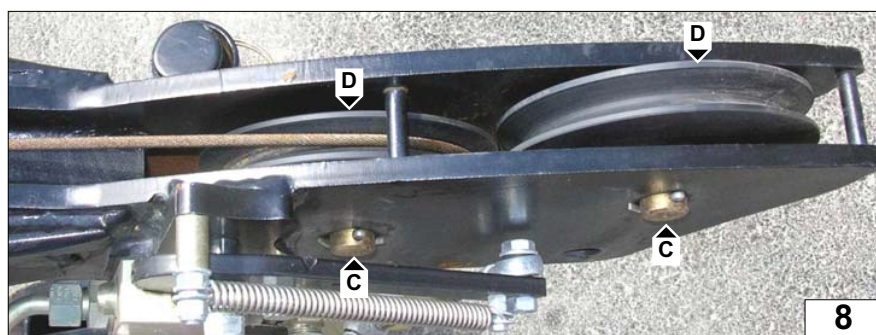
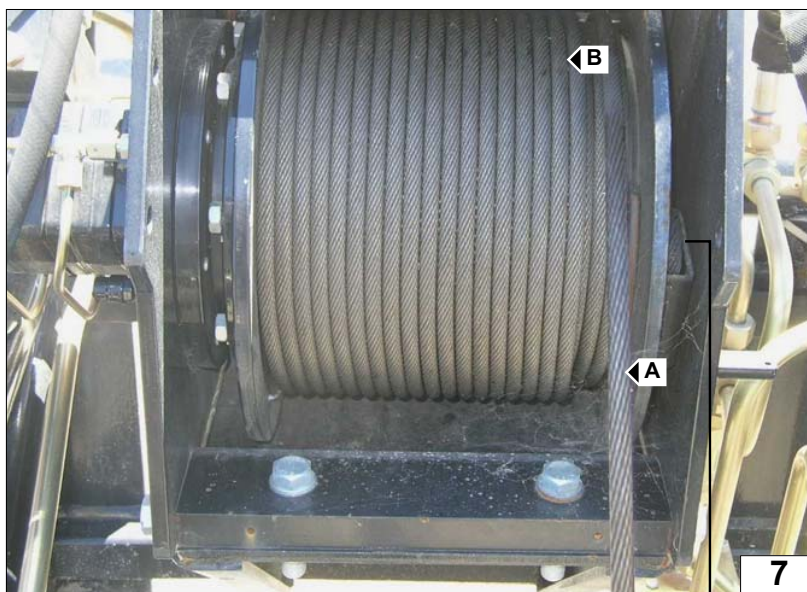
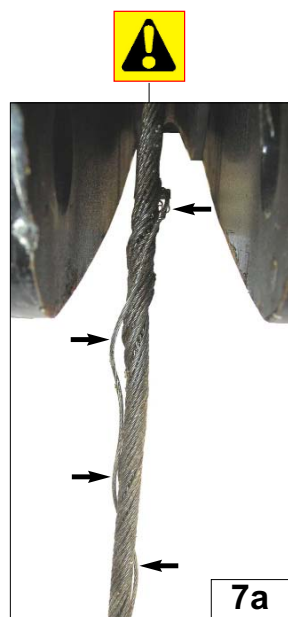
Check terminal **E** (Fig.9) and the **rope-holder** clamps to make sure they are intact.

**SEIL, RIEMENSCHLEIBE und SEILSCHLINGE**

Täglich prüfen, dass das Seil **A** (Abb. 7) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 7a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 7). Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Die Bolzen **C** (Abb. 8), auf dem sich die Führungsscheiben **D** (Abb. 8) drehen, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen. Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschleife **E** (Abb. 9) und die Bügelklemmen auf Unversehrtheit prüfen.



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**BOZZELLO**

Per una massima efficienza e sicurezza, mantenere intatta la struttura esterna **F** (Fig.10) e controllare che la puleggia **G** (Fig.10) ruoti correttamente sul suo perno **G1** (Fig.10).  
Se necessità, lubrificare con grasso al sapone di litio il perno **G1** (Fig.10).

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.10).  
Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.10).  
Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.10).

**BLOCK**

For maximum efficiency and safety, make sure the outer frame **F** (Fig.10) is intact and check pulley **G** (Fig.10) to make sure it rotates properly around its pin **G1** (Fig.10).  
Lubricate pin **M** with lithium soap grease, if necessary (Fig.10).

**HOOK**

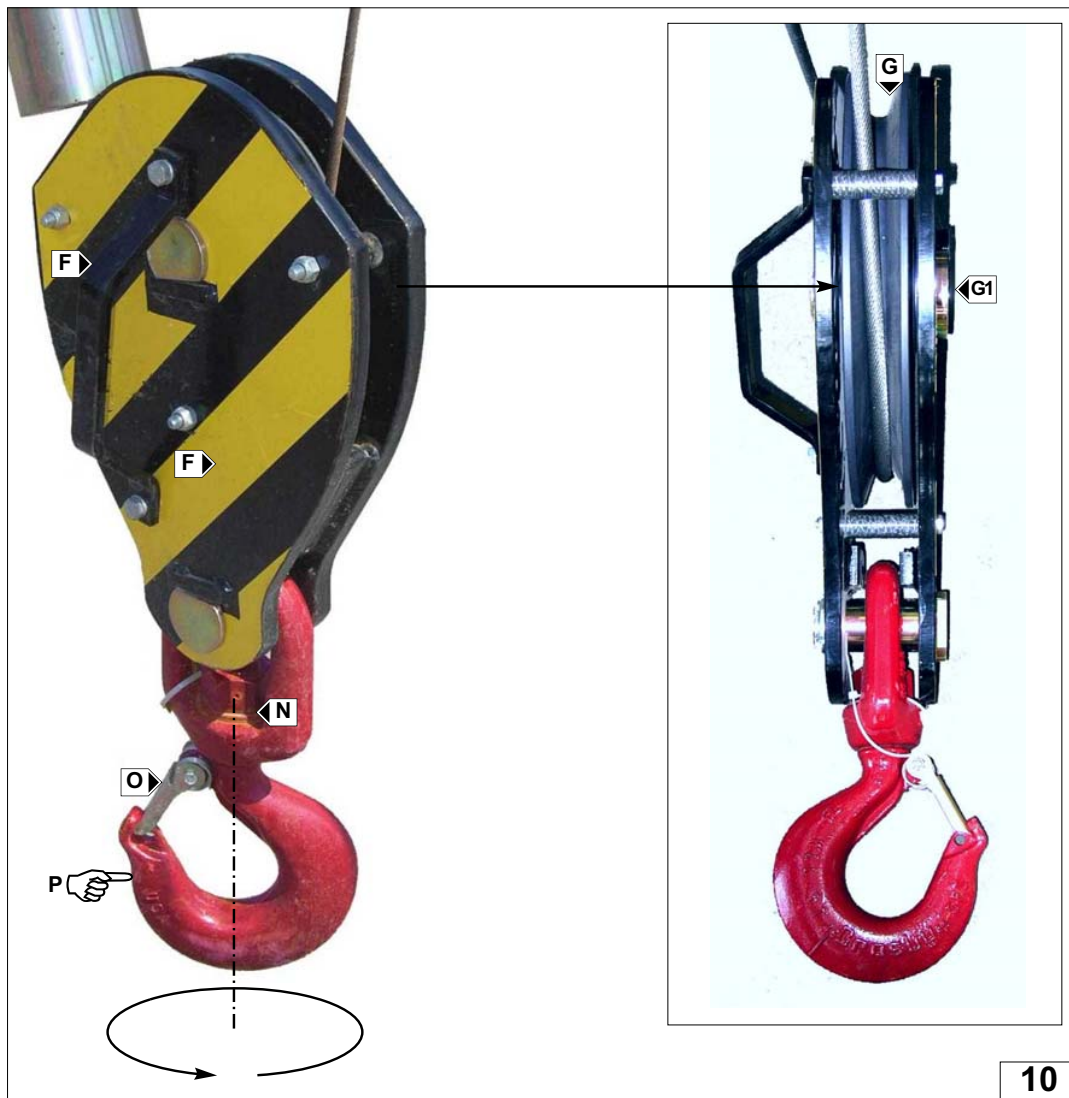
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.10).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.10).  
Check the condition and working of safety tab **O** (Fig.10).

**UMLENKROLLE**

Für eine maximale Effizienz und Sicherheit die Außenstruktur **F** (Abb. 10) unversehrt halten und sicherstellen, dass die Riemenscheibe **G** (Abb. 10) sich korrekt um ihren Bolzen **G1** dreht (Abb. 10).  
Falls erforderlich, den Bolzen **M** mit Lithiumseifenfett schmieren (Abb. 10).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 10).  
Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 10).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 10).



10

**FINE CORSA DISCESA FUNE** (Fig.11)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.12)

**IMPIANTO IDRAULICO** (Fig.13)

Ispezionare giornalmente raccordi, valvole, tubi, per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'argano.

**ROPE DESCENT LIMIT STOP** (Fig.11)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.12)

**HYDRAULIC SYSTEM** (Fig.13)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 11)

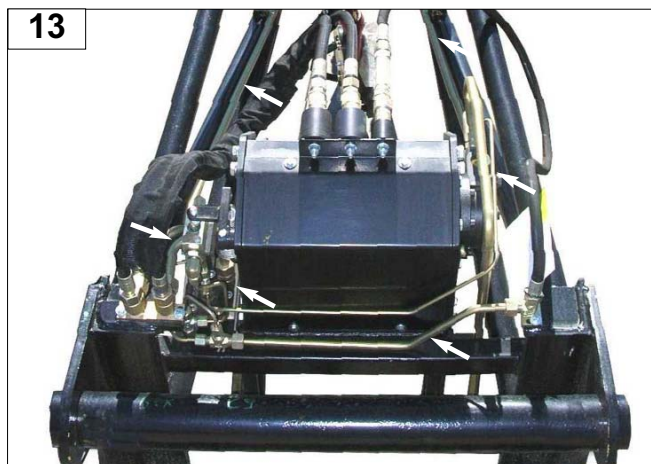
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 12)

**HYDRAULISCHE ANLAGE** (Abb. 13)

Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.

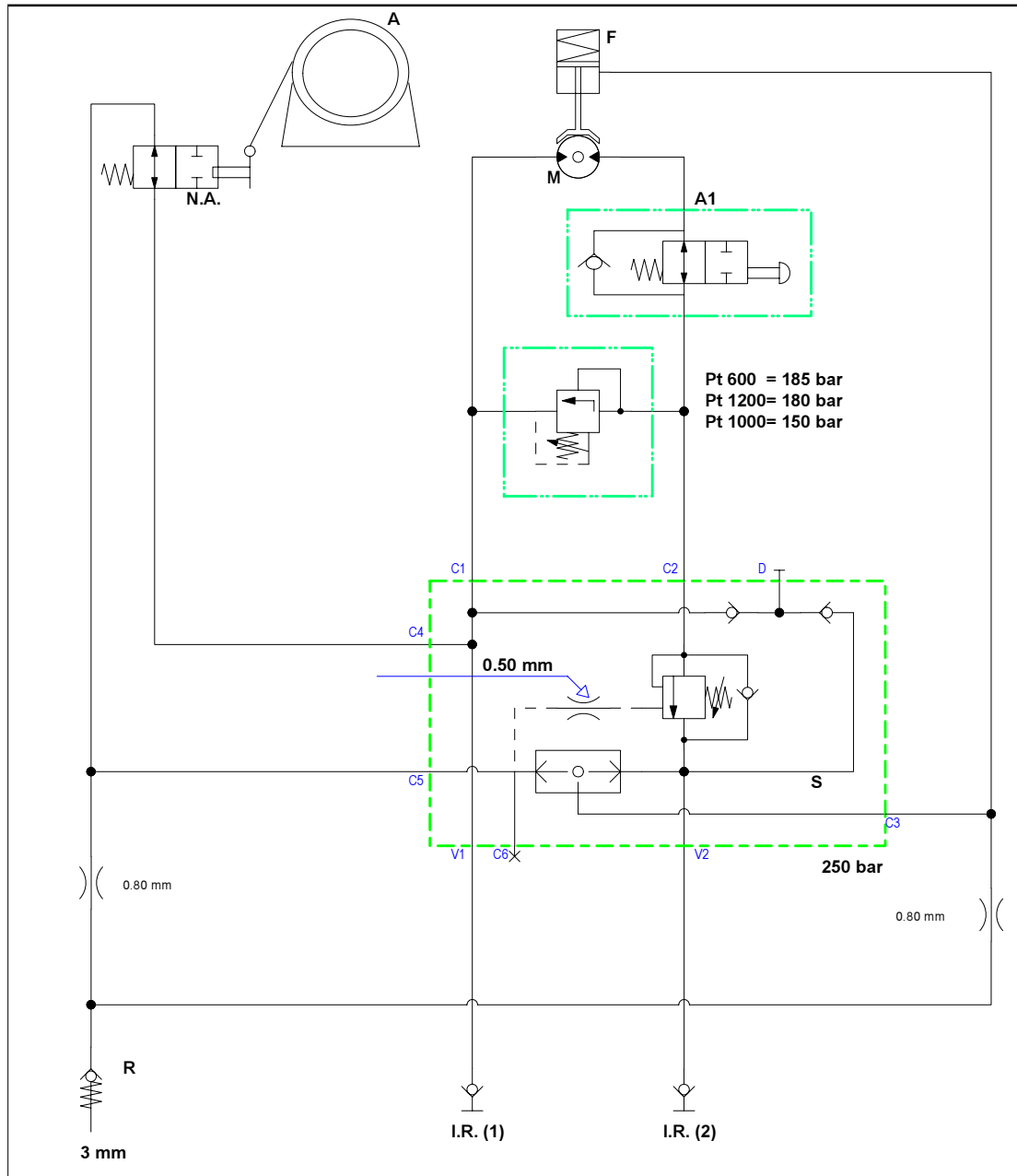




SCHEMA IDRAULICO

HYDRAULIC SCHEME

SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

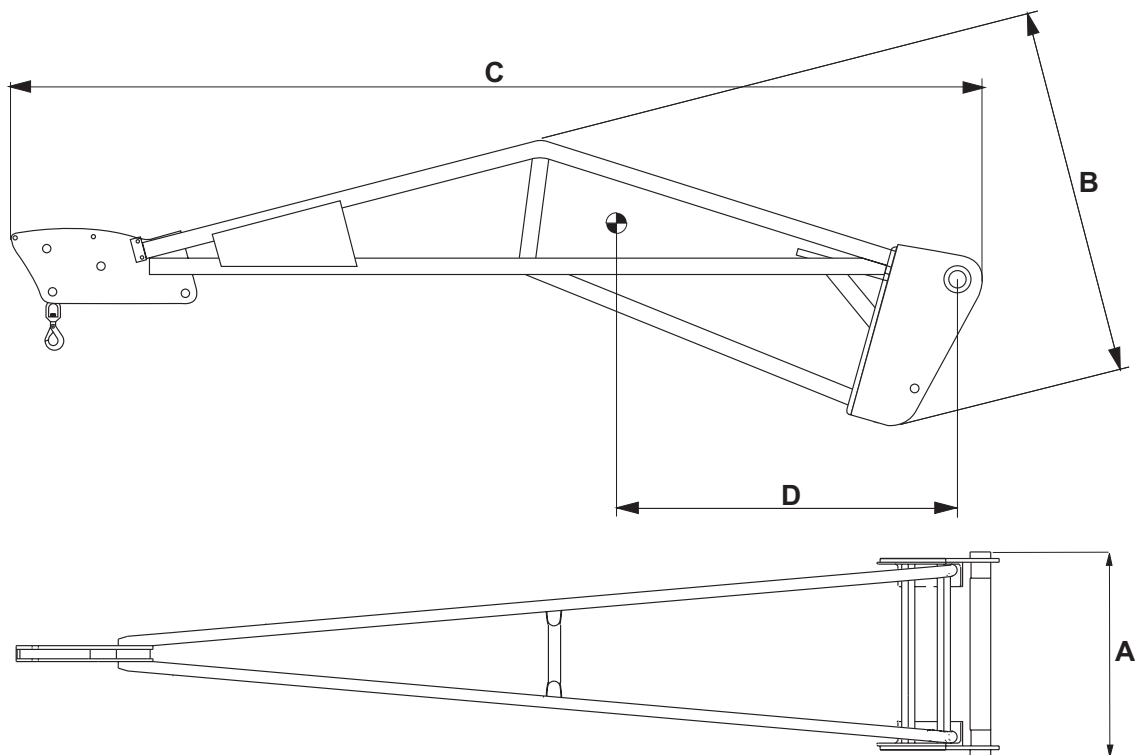
**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE

BRACCETTO P 1200

HOIST P 1200

P 1200 ANGRIFSSCHENREL

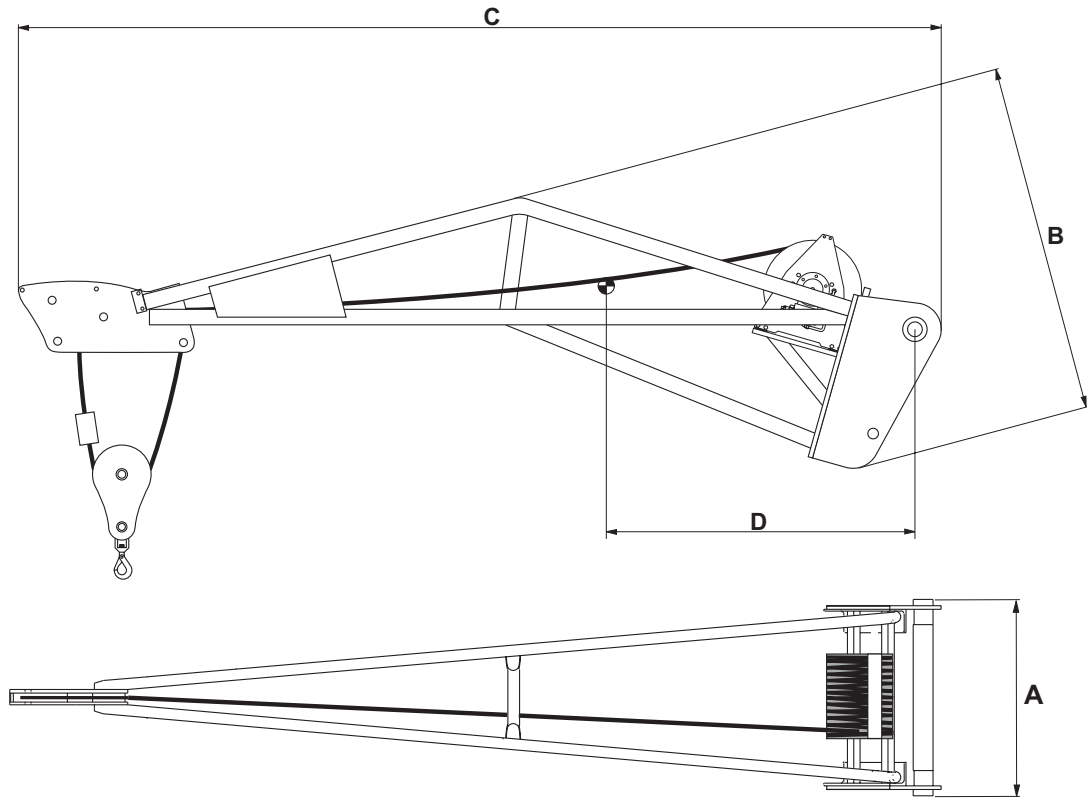


CARATTERISTICHE - CHARACTERISTICS - DATEN						
DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN			ACCESSORIO ATTACHMENT ZUBEHOER	PESO WEIGHT GEWICHT
		(mm)				
		A	B	C	D	
P 1200	1200 Kg	830	868	2944	1000 mm	200 Kg

BRACCETTO PT 1200

HOIST WITH WINCH PT 1200

PT 1200 ANGRIFSSCHENREL



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	FUNE ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	VELOCITA' GANCIO TOW SPEED HAKEN GESCHWINDIGKEIT	Ø AVVOLGIMENTO PULEGGIA Ø WINDING PULLEY WICKEL-Ø RIEMENSCHLEIBE	Ø AVVOLGIMENTO TAMBURO Ø WINDING DRUM WICKEL-Ø TROMMEL	FINE CORSA UP/DOWN ENDLAUF	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEB- SDRUCK	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN mm				PESO WEIGHT GEWICHT
									A	B	C	D	
PT 1200	1200 Kg	Ø 6 mm x 46 m ▲(x 56 m)	5 T	23 m/min	146 mm	201 mm	IDRAULICO HYDRAULIC HYDRAULIK	180 Bar max	830	868	2944	800	310 Kg

▲ : solo per MRT 2540 e 2440 EPS

▲ : Only for MRT 2540 and 2440 EPS

▲ : Only for MRT 2540 and 2440 EPS

**PT 1200****MESSA IN SERVIZIO E UTILIZZO**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle **Istruzioni obbligatorie di verifica e controllo:**

- verificare l'integrità della struttura esterna dell'argano e del braccetto tralicciato.
- verificare il corretto collegamento idraulico degli innesti rapidi **1, 2**, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune **H** (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune **L** (Fig.2);

**PT 1200****COMMISSIONING AND USE**

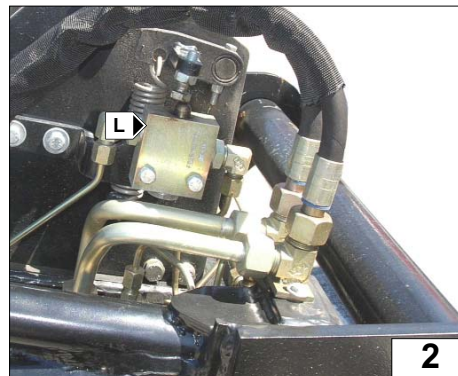
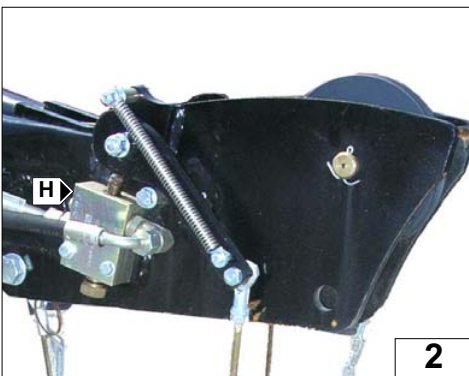
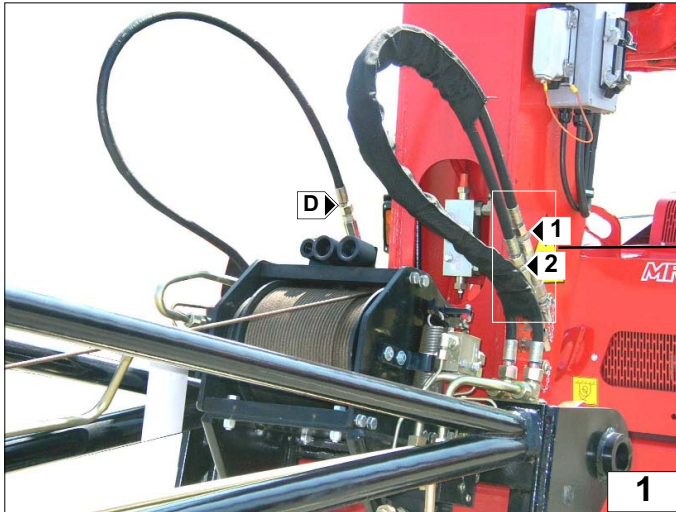
For your safety, before starting a work cycle, ***follow the compulsory instructions for inspection and checking:***

- check the outer frame of the winch and the trestle arm.
- ensure correct hydraulic connection of quick-release couplings **1, 2**, Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop **H** (Fig.2);
- check the correct working of the rope lift limit stop **L** (Fig.2);

**PT 1200****INBETRIEBNAHME UND GEBRAUCH**

Bevor Sie einen Arbeitszyklus beginnen, sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten:

- Die Außenstruktur der Winde und des Gittermastauslegers auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen **1, 2**, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken **H** prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben **L** prüfen (Abb. 2).



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- controllare lo stato della fune **B** (Fig.3) e il corretto avvolgimento sul tamburo **A** (Fig.3);
- controllare il corretto movimento rotazione delle pulegge di guida fune **F1** (Fig.3);
- controllare lo stato del capocorda **C** (Fig.3);
- verificare l'integrità del bozzello **F** (Fig.4)
- verificare lo stato del gancio **K** (Fig.4): che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **K1** (Fig.4);
- controllare l'aggancio del braccetto alla macchina operatrice **J** (Fig.5).

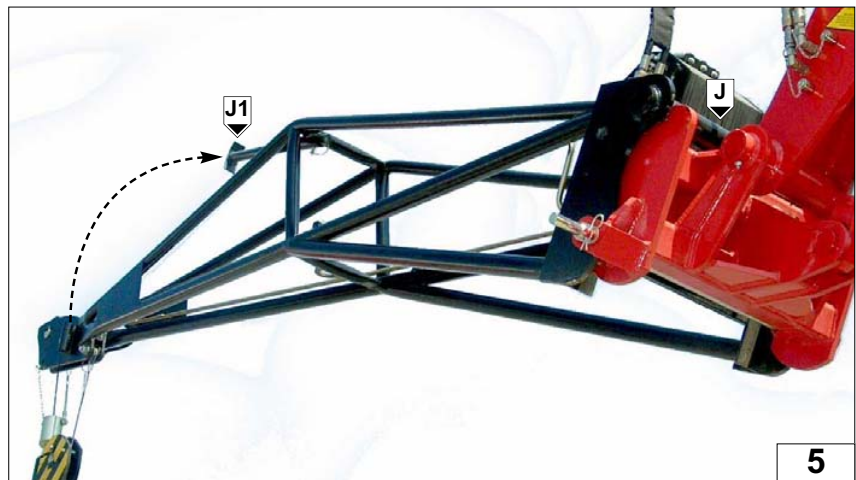
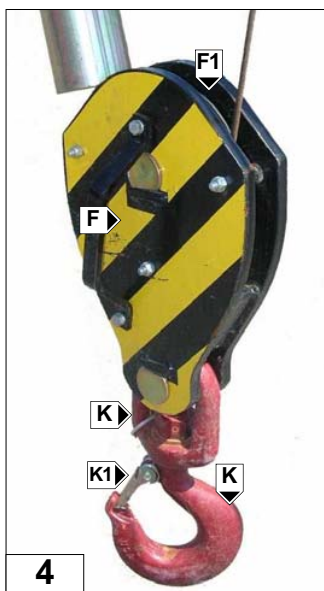
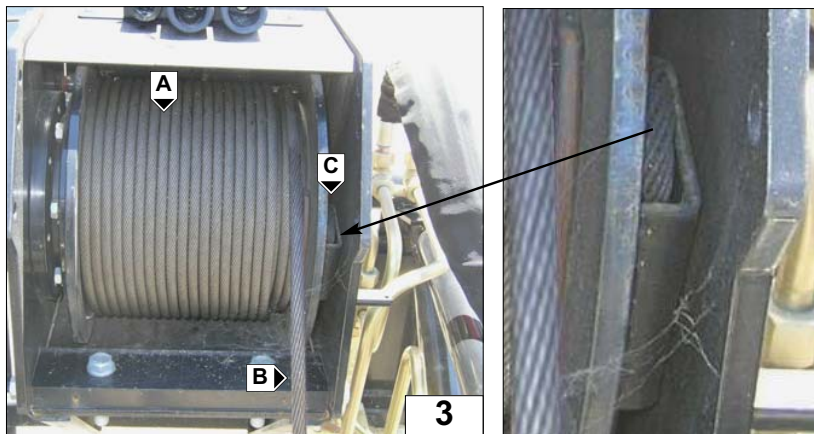
Dalla posizione di parcheggio è possibile sganciare il piede di appoggio e posizionarlo all'interno del braccetto per operare senza ulteriori ingombri **J1** (Fig.5).

- check the condition of the rope **B** (Fig.3) and its winding around drum **A** (Fig.3);
- check the correct movement and rotation of the rope guide pulleys **F1** (Fig.3);
- check the condition of terminal **C** (Fig.3);
- check block **F** to make sure it is intact (Fig.4)
- check to make sure the shackle connecting the rope and hook is screwed on properly **K** (Fig.4) and that terminals **K1** (Fig.4) block the rope.
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.4);
- check the hooking of the arm to the operating machine **J** (Fig.5).

From the parking position, it is possible to unhook the supporting feet and position it inside the arm to work without further impediment **J1** (Fig.5).

- Den Zustand des Seils **B** prüfen (Abb. 3) und die korrekte Aufwicklung um die Trommel **A** prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenscheibe **F1** prüfen (Abb. 3).
- Den Zustand der Kabelschlaufen **C** (Abb. 3) prüfen.
- Die Umlenkrolle **F** auf Unversehrtheit prüfen (Abb. 4)
- Sicherstellen, dass der Seilverbindungsschäkel und der Kranhaken gut eingeschraubt sind **K** (Abb. 4) und dass die Klemmen **K1** (Abb. 4) das Seil blockieren.
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 4).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingerastet ist (Abb. 5).

Aus der Abstellposition die Winde kann man den Abstellfuß ausklinken und ihn innerhalb des Auslegers anordnen, ohne noch mehr Platz in Anspruch zu nehmen. **J1** (Abb. 5)



## MANUTENZIONE

## MAINTENANCE

## WARTUNG

- RIDUTTORE

- GEAR REDUCER

- GETRIEBE

- FUNE, PULEGGIA e CAPOCORDA

- ROPE, PULLEY AND TERMINAL

- SEIL, RIEMENSCHLEIBE UND  
SEILSCHLAUFE

- BOZZELLO

- BLOCK

- UMLENKROLLE

- GANCIO

- HOOK

- KRANHAKEN

- FINE CORSA DISCESA FUNE

- ROPE DESCENT LIMIT STOP

- ENDSCHALTER SEIL SENKEN

- FINE CORSA SALITA FUNE

- ROPE LIFT LIMIT STOP

- ENDSCHALTER SEIL HEBEN

- IMPIANTO IDRAULICO

- HYDRAULIC SYSTEM

- HYDRAULISCHE ANLAGE

**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** ogni 100 ore **A** (Fig.6b) e all'occorrenza rabboccare **A** (Fig.6b) con olio dello stesso tipo di quello presente all'interno del riduttore (**SHELL SPIRAX HD80 W90**). Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **SAE 80W/90 oppure SAE 85W/140**.

**La prima sostituzione dell'olio** deve essere effettuata dopo 150 ore di funzionamento, successivamente ogni 1000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.6a) verso il basso.
- Svitare il tappo **A** (Fig.6a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico sull'asse orizzontale **A** (Fig.6b).
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **A** (Fig.6b). (0,6 lt)
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** every 100 hours **A** (Fig.6b) and top up if necessary **A** (Fig.6b) with the same type of oil as that present in the gear reducer (**SHELL SPIRAX HD80 W90**). Use of gear oil with **EP** additives with viscosity **SAE 80W/90** or **SAE 85W/140** is recommended.

**Oil must be changed the first time** after 150 hours of operation, and subsequently every 1000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.6a) is downwards.
- Unscrew plug **A** (Fig.6a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is on the horizontal axis **A** (Fig.6b).
- Fill with the right type of oil until it starts flowing out through the level hole **A** (Fig.6b). (0,6 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

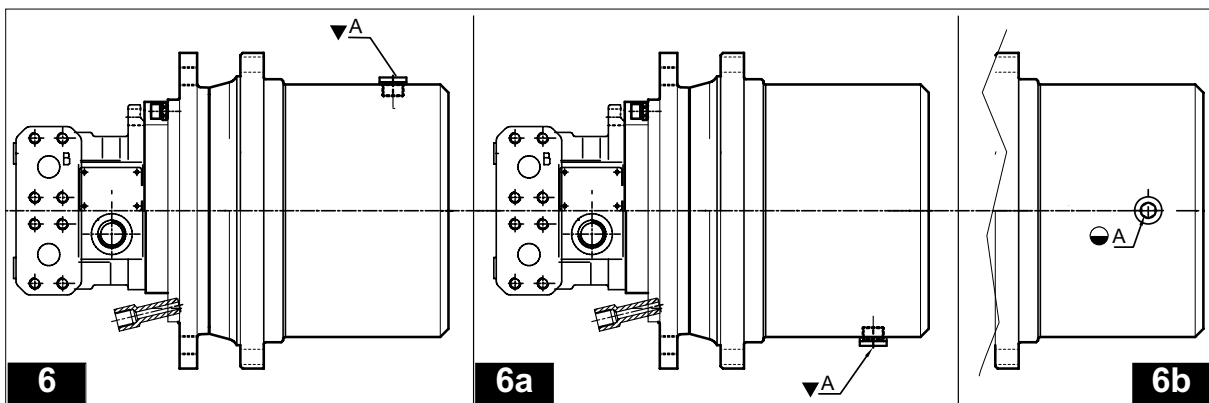
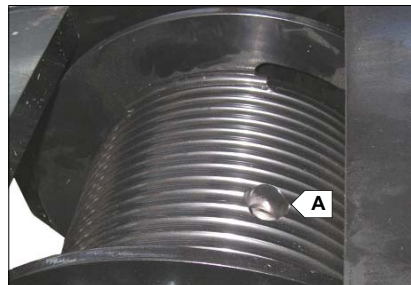
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Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens alle 100 Betriebsstunden prüfen **A** (Abb. 6b) und bei Bedarf Öl nachfüllen **A** (Abb. 6b). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**SHELL SPIRAX HD80 W90**). Am besten benutzt man Öl für Getriebe mit EP-Zusatz mit Viskosität **SAE 80W/90** oder **SAE 85W/140**.

Der erste Ölwechsel ist nach 150 Betriebsstunden fällig, dann jeweils alle 1000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb. 6a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 6a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 6).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **A** ausläuft (Abb. 6b). (0,6 lt)
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.7) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.7a) e che sia ben arrotolata sul tamburo **B** (Fig.7). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare e mantenere lubrificato i **perni C** (Fig.8) su cui ruotano le **puleggie di guida D** (Fig.8), che dovranno avere sempre un buono movimento di rotazione. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.9) e dei suoi morsetti fermafune.

**ROPE, PULLEY and TERMINAL**

Check rope **A** (Fig.7) daily to make sure it is good condition, that there are no broken filaments (Fig.7a) and that it is wound properly around drum **B** (Fig.7). If this is not the case, replace the rope with a new one having the same diameter and features. Check the lubrication of the rope, and if necessary, lubricate with industrial grease or Dust-proof synthetic oil.

Check and lubricate **pins C** (Fig.8) on which **guide pulleys D** (Fig.8) rotate, and these must rotate freely. If necessary, lubricate the pin with lithium soap grease.

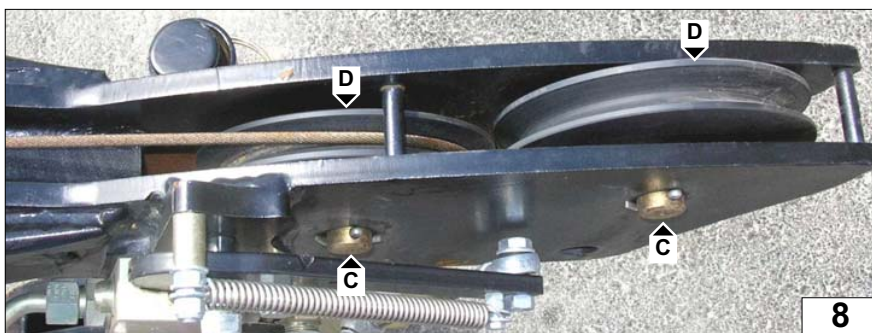
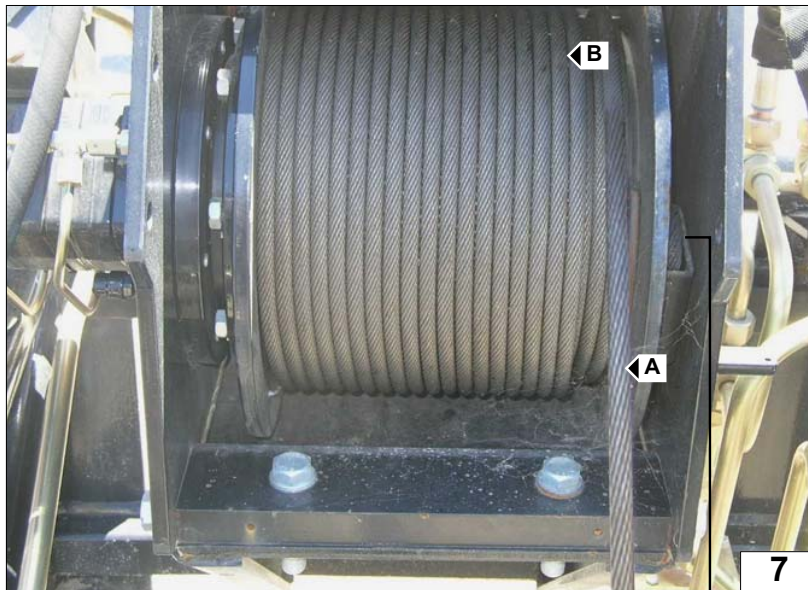
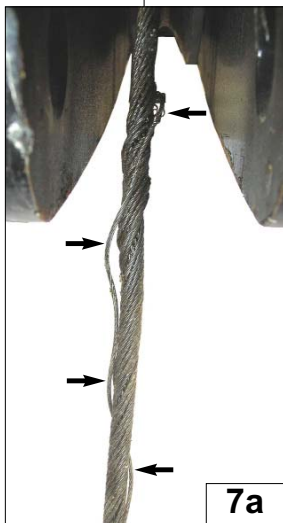
Check terminal **E** (Fig.9) and the **rope-holder** clamps to make sure they are intact.

**SEIL, RIEMENSCHLEIBE und SEILSCHLINGE**

Täglich prüfen, dass das Seil **A** (Abb. 7) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 7a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 7). Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Die Bolzen **C** (Abb. 8), auf dem sich die Führungsscheiben **D** (Abb. 8) drehen, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen. Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschleife **E** (Abb. 9) und die Bügelklemmen auf Unversehrtheit prüfen.





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**BOZZELLO**

Per una massima efficienza e sicurezza, mantenere intatta la struttura esterna **F** (Fig.10) e controllare che la puleggia **G** (Fig.10) ruoti correttamente sul suo perno **G1** (Fig.10).  
Se necessità, lubrificare con grasso al sapone di litio il perno **G1** (Fig.10).

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.10).  
Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.10).  
Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.10).

**BLOCK**

For maximum efficiency and safety, make sure the outer frame **F** (Fig.10) is intact and check pulley **G** (Fig.10) to make sure it rotates properly around its pin **G1** (Fig.10).  
Lubricate pin **M** with lithium soap grease, if necessary (Fig.10).

**HOOK**

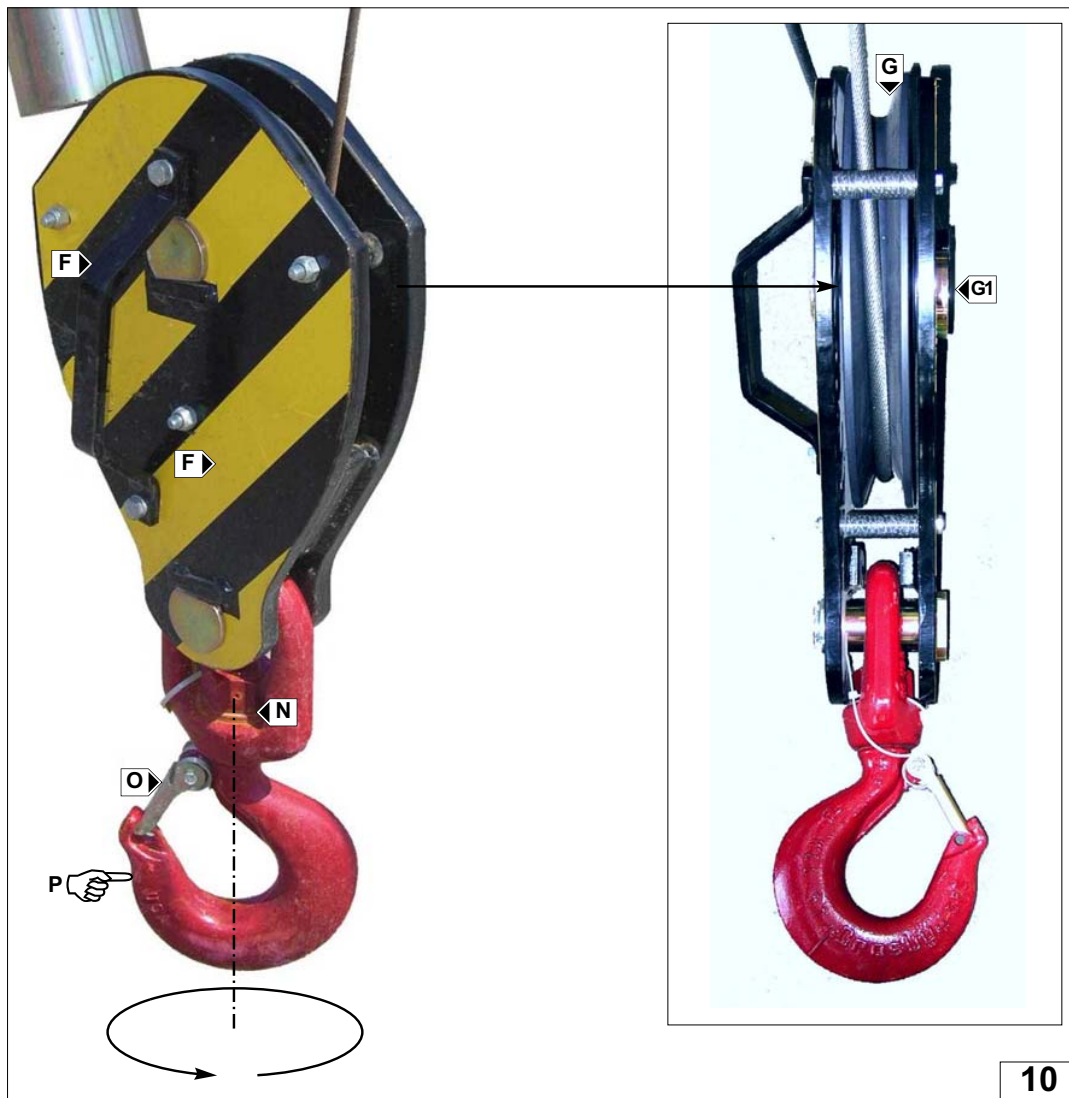
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.10).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.10).  
Check the condition and working of safety tab **O** (Fig.10).

**UMLENKROLLE**

Für eine maximale Effizienz und Sicherheit die Außenstruktur **F** (Abb. 10) unversehrt halten und sicherstellen, dass die Riemenscheibe **G** (Abb. 10) sich korrekt um ihren Bolzen **G1** dreht (Abb. 10).  
Falls erforderlich, den Bolzen **M** mit Lithiumseifenfett schmieren (Abb. 10).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 10).  
Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 10).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 10).



10

**FINE CORSA DISCESA FUNE** (Fig.11)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.12)

**IMPIANTO IDRAULICO** (Fig.13)

Ispezionare giornalmente raccordi, valvole, tubi, per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'argano.

**ROPE DESCENT LIMIT STOP** (Fig.11)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.12)

**HYDRAULIC SYSTEM** (Fig.13)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 11)

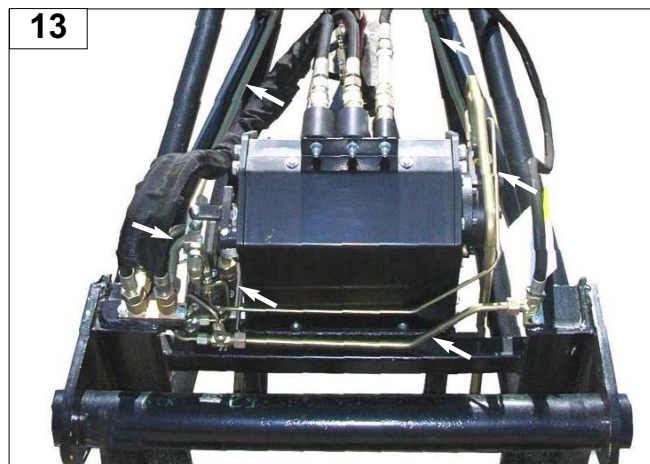
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 12)

**HYDRAULISCHE ANLAGE** (Abb. 13)

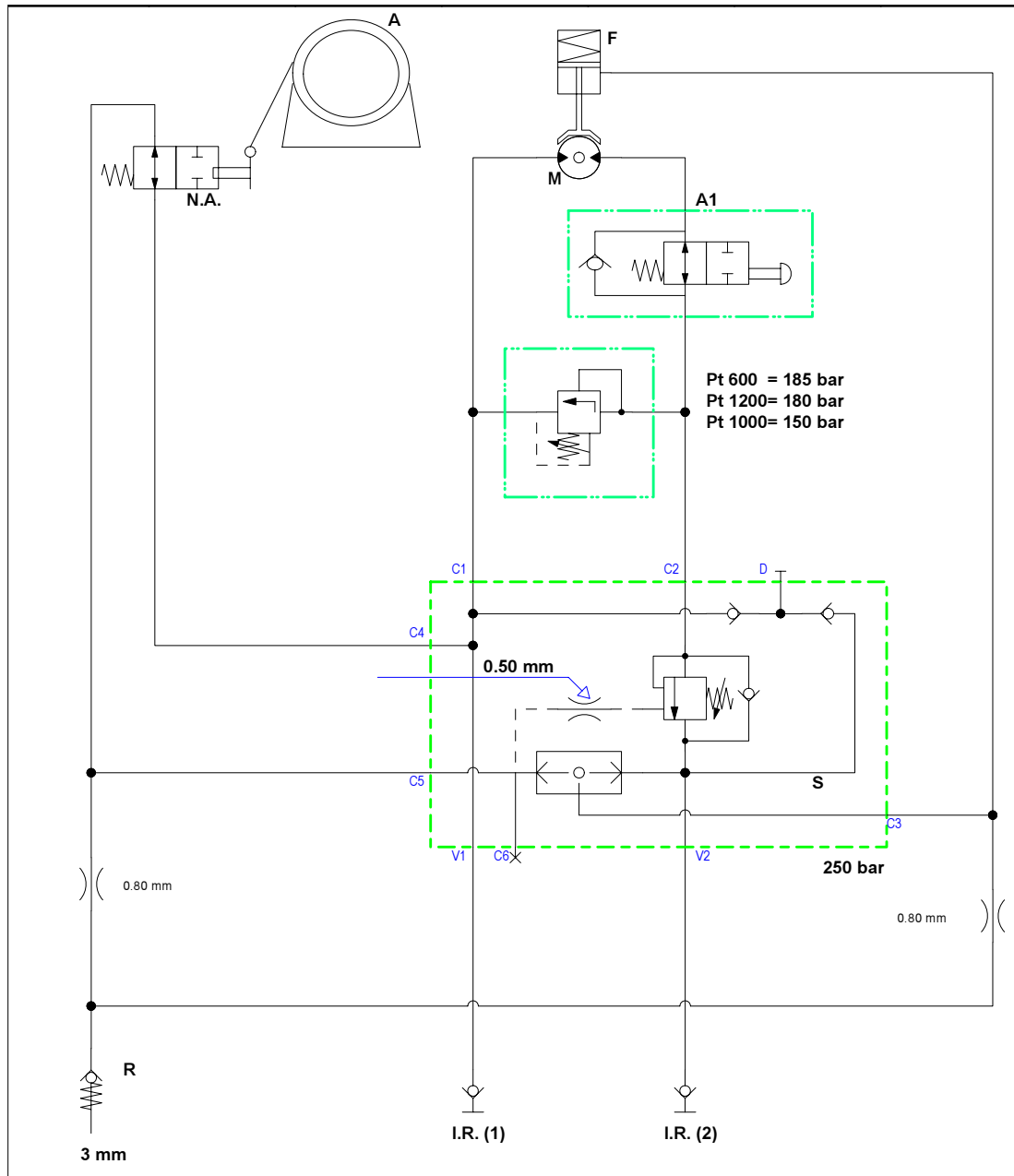
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



SCHEMA IDRAULICO

HYDRAULIC SCHEME

SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

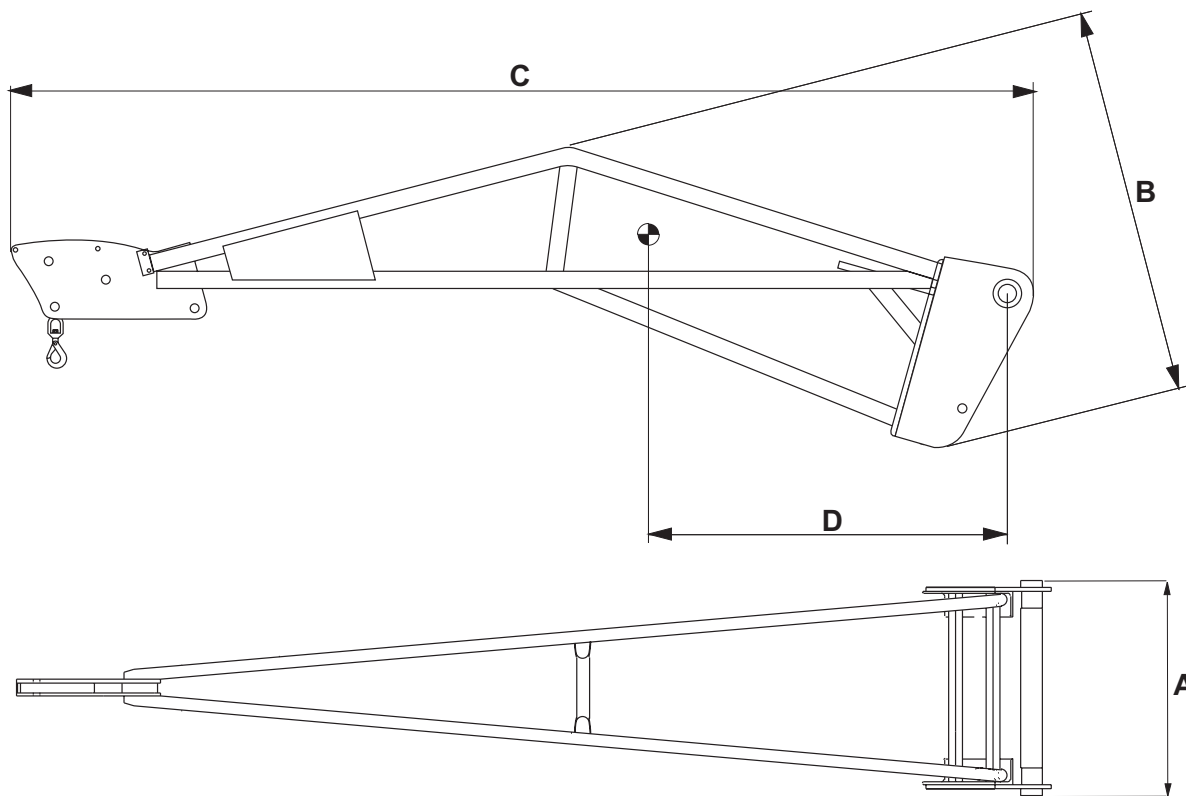
**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTNER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE

BRACCETTO P 1500

HOIST P 1500

P 1500 ANGRIFSSCHENREL

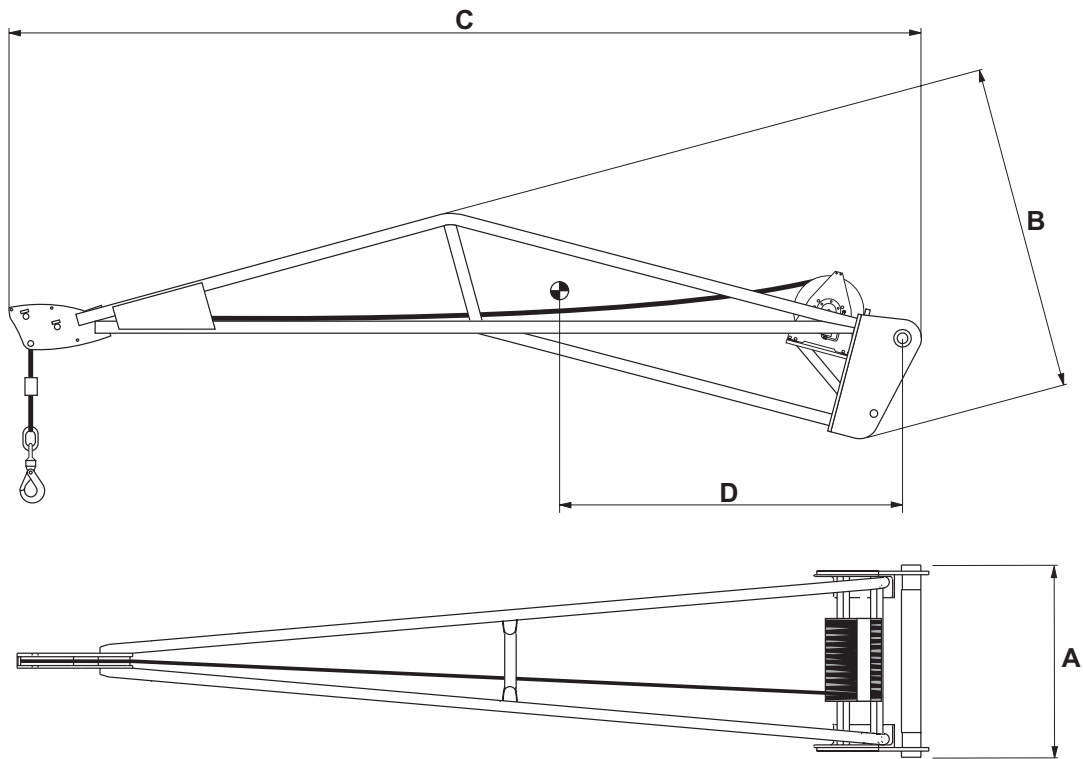


CARATTERISTICHE - CHARACTERISTICS - DATEN						
DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN (mm)			ACCESSORIO ATTACHMENT ZUBEHOER  D	PESO WEIGHT GEWITCH
		A	B	C		
P 1500	1500 Kg	830	815	4027	1000 mm	170 Kg

BRACCETTO PT 1500

HOIST WITH WINCH PT 1500

PT 1500 ANGRIFSSCHENREL



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	FUNE ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	VELOCITA' GANCIO TOW SPEED HAKEN GESCHWINDIGKET	Ø AVVOLGIMENTO PULEGGIA Ø WINDING PULLEY WICKEL-Ø RIEMENSCHEBE	Ø AVVOLGIMENTO TAMBURO Ø WINDING DRUM WICKEL-Ø TROMMEL	FINE CORSA UP/DOWN ENDLAUF	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEB- SDRUCK	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN mm				PESO WEIGHT GEWITCH
									A	B	C	D	
PT 1500	1500 Kg	Ø 10 mm x 30 m ▲(x 34 m)	5 T	23 m/min	230 mm	233 mm	IDRAULICO HYDRAULIC HYDRAULIK	215 Bar max	830	868	2944	800	363 Kg

▲ : solo per MRT 2540 e 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

**PT 1500****MESSA IN SERVIZIO E UTILIZZO**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle **Istruzioni obbligatorie di verifica e controllo:**

- verificare l'integrità della struttura esterna dell'argano e del braccetto tralicciato.
- verificare il corretto collegamento idraulico degli innesti rapidi 1, 2, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune H (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune L (Fig.2);

**PT 1500****COMMISSIONING AND USE**

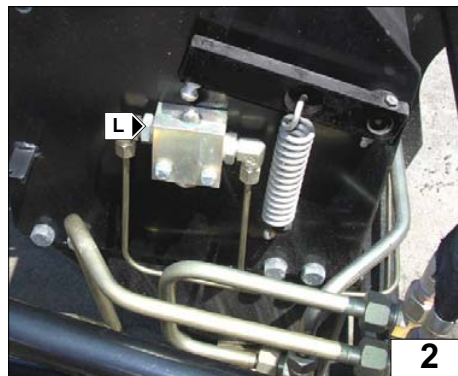
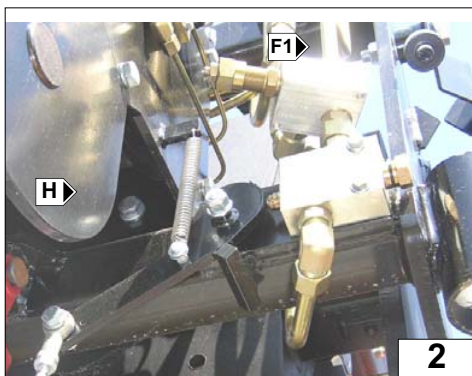
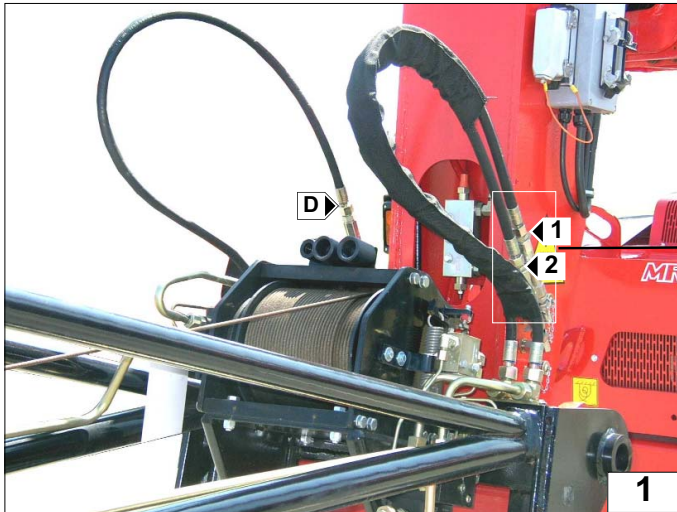
For your safety, before starting a work cycle, **follow the compulsory instructions for inspection and checking:**

- check the outer frame of the winch and the trestle arm.
- ensure correct hydraulic connection of quick-release couplings 1, 2, Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop H (Fig.2);
- check the correct working of the rope lift limit stop L (Fig.2);

**PT 1500****INBETRIEBNAHME UND GEBRAUCH**

Bevor Sie einen Arbeitszyklus beginnen, sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten:

- Die Außenstruktur der Winde und des Gittermastauslegers auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen 1, 2, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken H prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben L prüfen (Abb. 2).



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- controllare lo stato della fune **B** (Fig.3) e il corretto avvolgimento sul tamburo **A** (Fig.3);
- controllare il corretto movimento rotazione delle pulegge di guida fune **F1** (Fig.2);
- controllare lo stato del capocorda **C** (Fig.3);
- controllare che il grillo di collegamento fune e gancio sia ben avvitato **K** (Fig.4) e che i morsetti **K1** (Fig.4) blocchino la fune.
- verificare lo stato del gancio: che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **G** (Fig.4);
- controllare l'aggancio del braccetto alla macchina operatrice **J** (Fig.5).

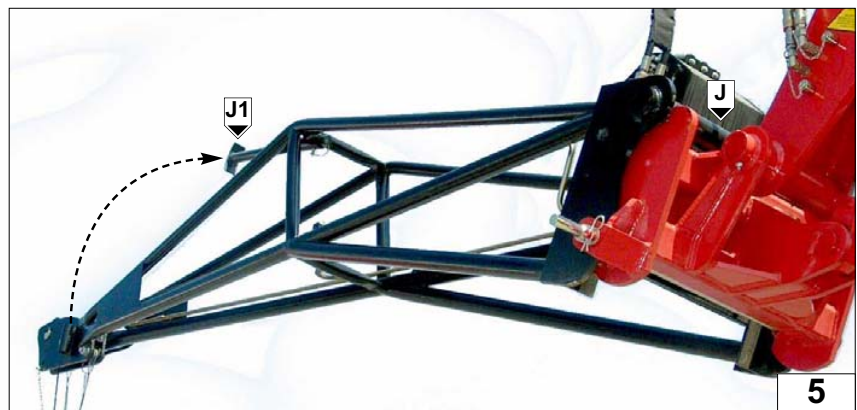
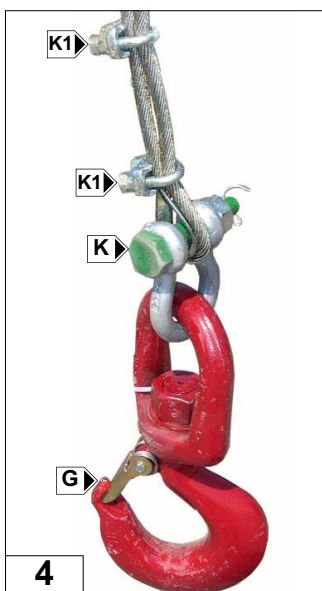
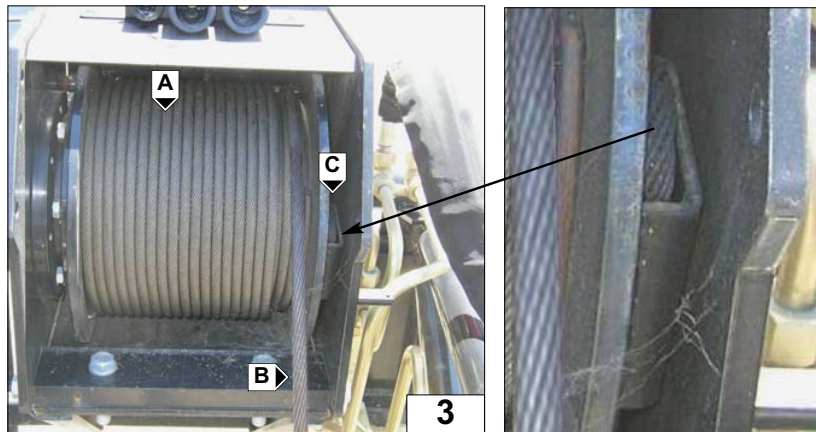
Dalla posizione di parcheggio è possibile sganciare il piede di appoggio e posizionarlo all'interno del braccetto per operare senza ulteriori ingombri **J1** (Fig.5).

- check the condition of the rope **B** (Fig.3) and its winding around drum **A** (Fig.3);
- check the correct movement and rotation of the rope guide pulleys **F1** (Fig.2);
- check the condition of terminal **C** (Fig.3);
- check to make sure the shackle connecting the rope and hook is screwed on properly **K** (Fig.4) and that terminals **K1** (Fig.4) block the rope.
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.4);
- check the hooking of the arm to the operating machine **J** (Fig.5).

From the parking position, it is possible to unhook the supporting feet and position it inside the arm to work without further impediment **J1** (Fig.5).

- Den Zustand des Seils **B** prüfen (Abb.3) und die korrekte Aufwicklung um die Trommel **A** prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenscheibe **F1** prüfen (Abb. 2).
- Den Zustand der Kabelschlaufen **C** (Abb. 3) prüfen.
- Sicherstellen, dass der Seilverbindungsschäkel und der Kranhaken gut eingeschraubt sind **K** (Abb. 4) und dass die Klemmen **K1** (Abb. 4) das Seil blockieren.
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 4).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingeschraubt ist (Abb. 5).

Aus der Abstellposition die Winde kann man den Abstellfuß ausklinken und ihn innerhalb des Auslegers anordnen, ohne noch mehr Platz in Anspruch zu nehmen. **J1** (Abb. 5)



## MANUTENZIONE

## MAINTENANCE

## WARTUNG

- RIDUTTORE

- GEAR REDUCER

- GETRIEBE

- FUNE, PULEGGIA e CAPOCORDA

- ROPE, PULLEY AND TERMINAL

- SEIL, RIEMENSCHIBE UND SEILSCHLINGE

- GRILLO e MORSETTI

- SHACKLE E CLAMPS

- SCHÄKEL UND KLEMMEN

- GANCIO

- HOOK

- KRANHAKEN

- FINE CORSA DISCESA FUNE

- ROPE DESCENT LIMIT STOP

- ENDSCHALTER SEIL SENKEN

- FINE CORSA SALITA FUNE

- ROPE LIFT LIMIT STOP

- ENDSCHALTER TEIL HEBEN

- IMPIANTO IDRAULICO

- HYDRAULIC SYSTEM

- HYDRAULISCHE ANLAGE



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**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** almeno una volta al mese **B** (Fig.6) e all'occorrenza rabboccare **A** (Fig.6) con olio dello stesso tipo di quello presente all'interno del riduttore (**ISO VG 150**).

Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **ISO VG**, dipendente dalla temperatura di esercizio.

**La prima sostituzione dell'olio** deve essere effettuata dopo 100 ore di funzionamento, successivamente ogni 12 mesi o ogni 2000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.6a) verso il basso.
- Svitare il tappo **A** (Fig.6a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico verso l'alto **A** (Fig.6).
- Svitare il tappo di livello olio **B** (Fig.6);
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **B** (Fig.6).
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** at least once a month **B** (Fig.6) and top up if necessary **A** (Fig.6) with the same type of oil as that present in the gear reducer (**ISO VG 150**).

Use of gear oil with **EP** additives, with viscosity **ISO VG**, depending on the operating temperature, is recommended.

**Oil must be changed the first time** after 100 hours of operation, and subsequently every 12 months or every 2000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.6a) is downwards.
- Unscrew plug **A** (Fig.6a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is upwards **A** (Fig.8).
- Unscrew the oil level plug **B** (Fig.6);
- Fill with the right type of oil until it starts flowing out through the level hole **B** (Fig.6).(0,25 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

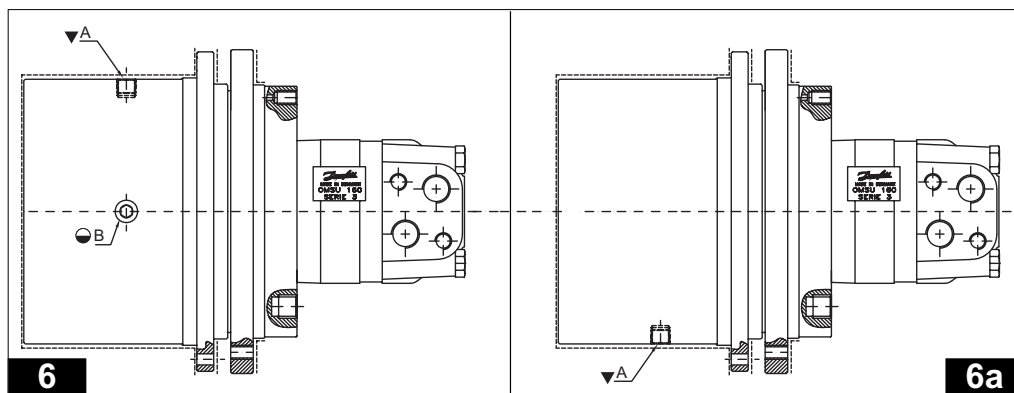
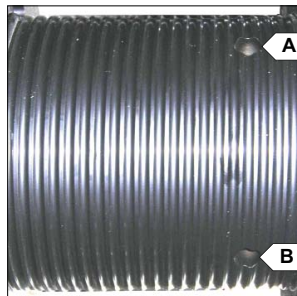
Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens einmal im Monat prüfen **B** (Abb. 6) und bei Bedarf Öl nachfüllen **A** (Abb. 6). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**ISO VG 150**).

Am besten benutzt man Öl für Getriebe mit **EP**-Zusatz mit Viskosität **ISO VG** je nach der Betriebstemperatur.

Der erste Ölwechsel ist nach 100 Betriebsstunden fällig, dann jeweils alle 12 Monate bzw. alle 2000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb.6a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 6a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 6).
- Den Ölstandstopfen **B** abschrauben (Abb. 6).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **B** ausläuft (Abb. 6).(0,25 lt)
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.7) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.7a) e che sia ben arrotolata sul tamburo **B** (Fig.7). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare e mantenere lubrificato i **perni C** (Fig.8) su cui ruotano le **puleg-gie di guida D** (Fig.8), che dovranno avere sempre un buono movimento di rotazione. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.9) e dei suoi morsetti fermafune.

**ROPE, PULLEY and TERMINAL**

Check rope **A** (Fig.7) daily to make sure it is good condition, that there are no broken filaments (Fig.7a) and that it is wound properly around drum **B** (Fig.7). If this is not the case, replace the rope with a new one having the same diameter and features. Check the lubrication of the rope, and if necessary, lubricate with industrial grease or Dust-proof synthetic oil.

Check and lubricate **pins C** (Fig.8) on which **guide pulleys D** (Fig.8) rotate, and these must rotate freely. If necessary, lubricate the pin with lithium soap grease.

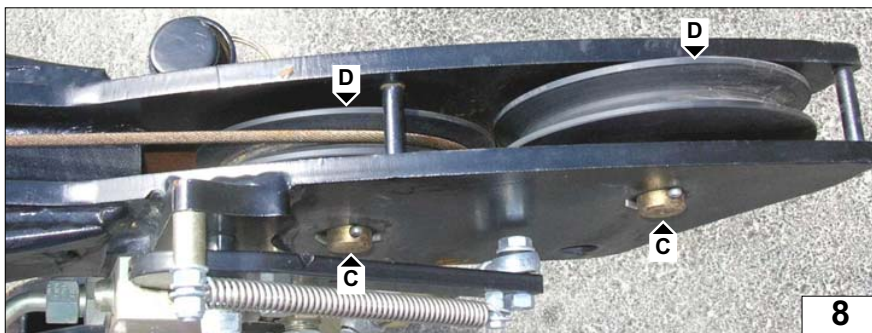
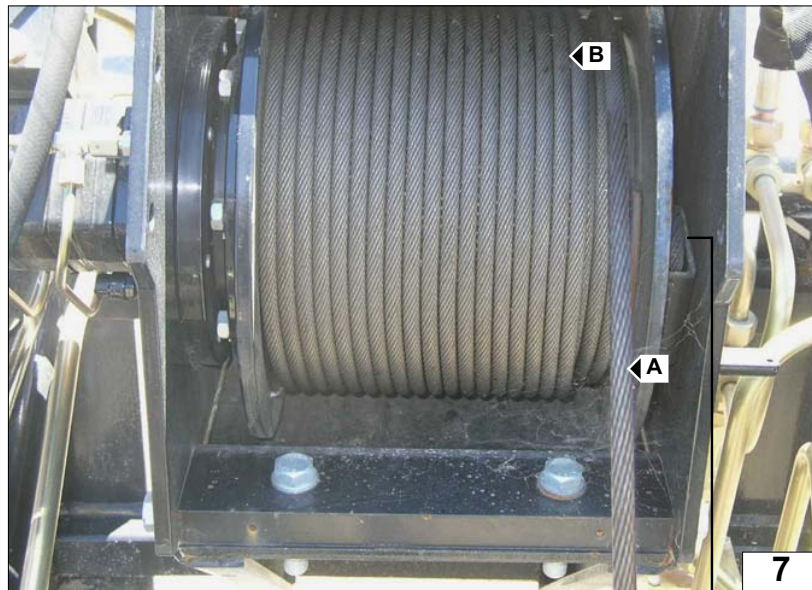
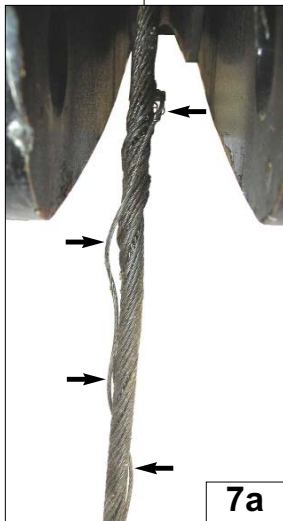
Check terminal **E** (Fig.9) and the **rope-holder** clamps to make sure they are intact.

**SEIL, RIEMENSCHLEIBE und SEILSCHLINGE**

Täglich prüfen, dass das Seil **A** (Abb. 7) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 7a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 7). Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Die Bolzen **C** (Abb. 8), auf dem sich die Führungsscheiben **D** (Abb. 8) drehen, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen. Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschlaufe **E** (Abb. 9) und die Bügelklemmen auf Unversehrtheit prüfen.



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**GRILLO e MORSETTI**

È importante verificare l'integrità e il serraggio delle viti dei morsetti **F** (Fig.10) e del bullone del grillo **G** (Fig.10) una volta alla settimana.

**SHACLE AND CLAMPS**

It is important to check the condition and locking of the clamp screws **F** (Fig.10) and the shackle **G** bolt (Fig.10) once a week.

**SCHÄKEL UND KLEMMEN**

Es ist wichtig, immer die Schrauben der Klemmen **F** (Abb. 10) und des Schraubbolzens des Schäkels **G** (Abb. 10) einmal pro Woche auf Unversehrtheit und festen Sitz zu prüfen.

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.10).

Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.10).

Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.10).

**HOOK**

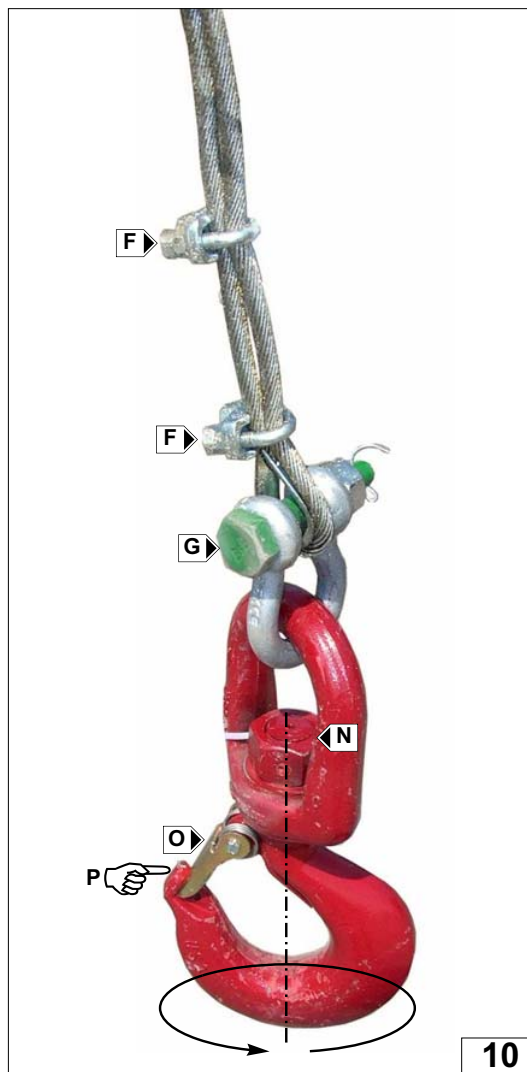
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.10). Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.10).

Check the condition and working of safety tab **O** (Fig.10).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationschraube des Kranhakens **N** geschmiert halten (Abb. 10).

Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 10). Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 10).



**FINE CORSA DISCESA FUNE** (Fig.11)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi . Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi . Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.12)

**IMPIANTO IDRAULICO**(Fig.13)

Ispezionare giornalmente raccordi, valvole, tubi , per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'argano.

**ROPE DESCENT LIMIT STOP** (Fig.11)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.12)

**HYDRAULIC SYSTEM** (Fig.13)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 11)

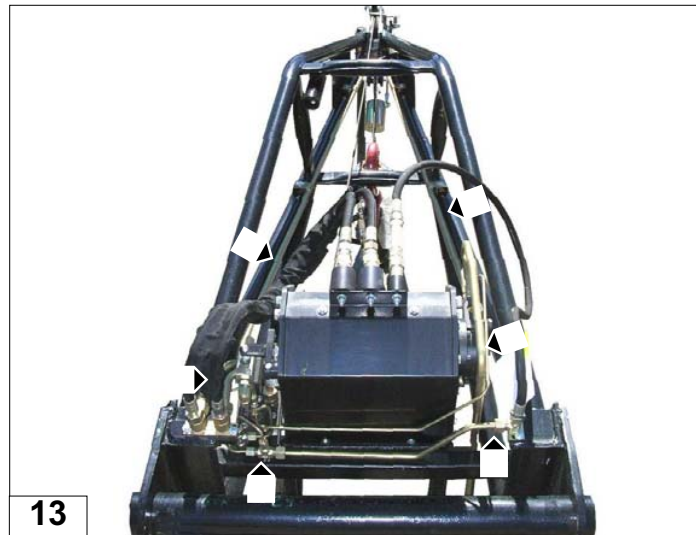
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

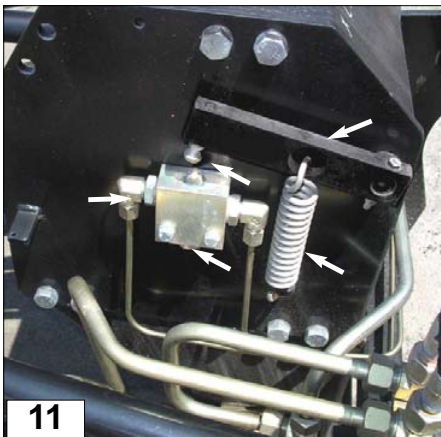
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 12)

**HYDRAULISCHE ANLAGE**(Abb. 13)

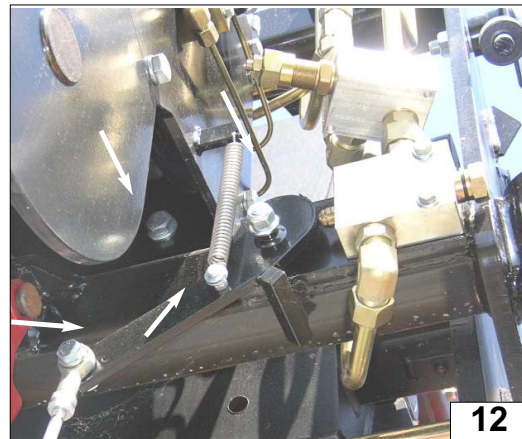
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



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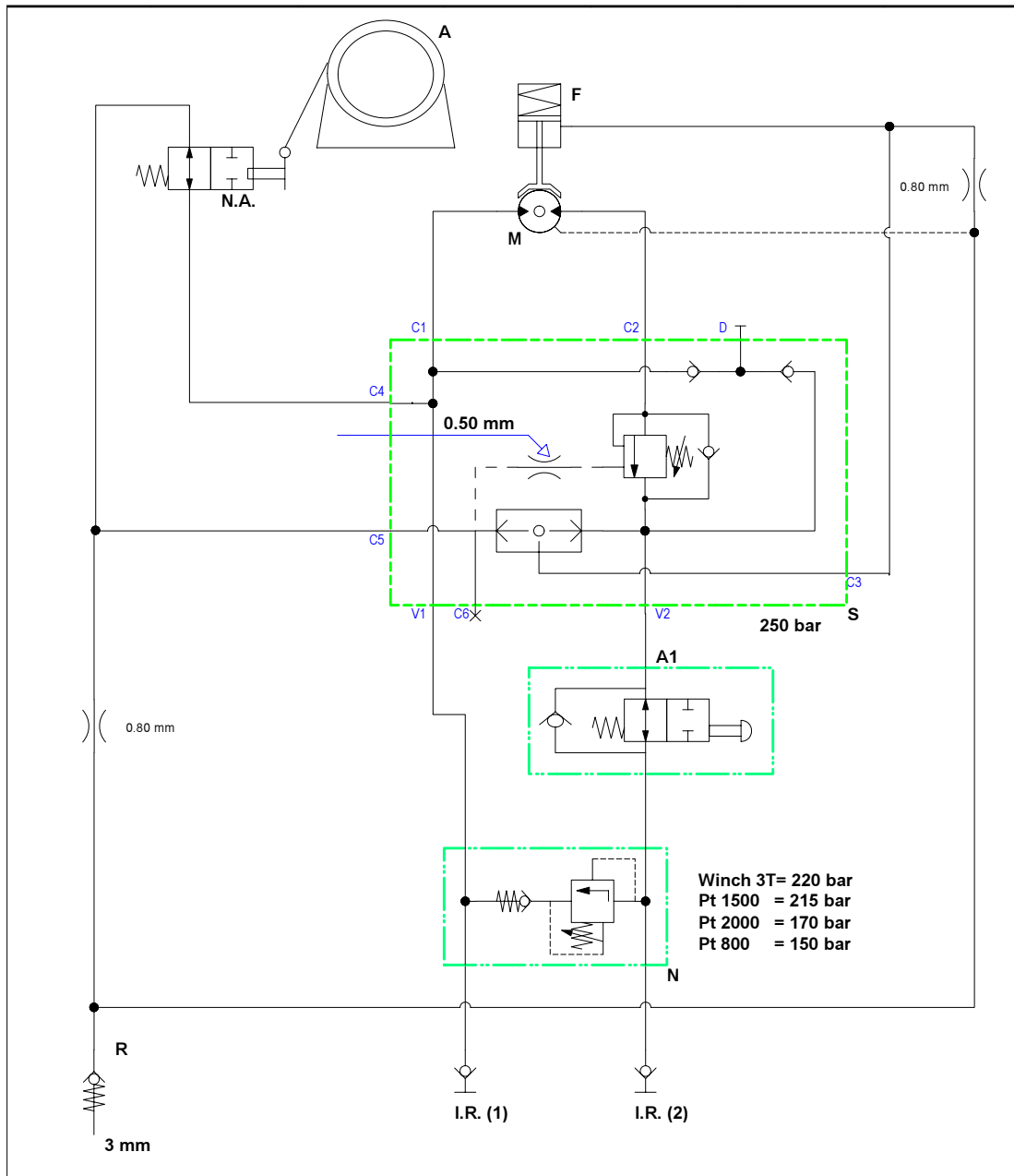


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## SCHEMA IDRAULICO

## HYDRAULIC SCHEME

## SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESCO RAPIDO  
**I.R.2** = INNESCO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

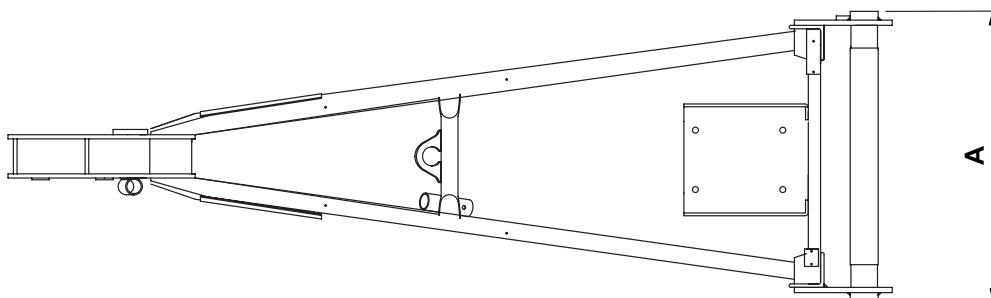
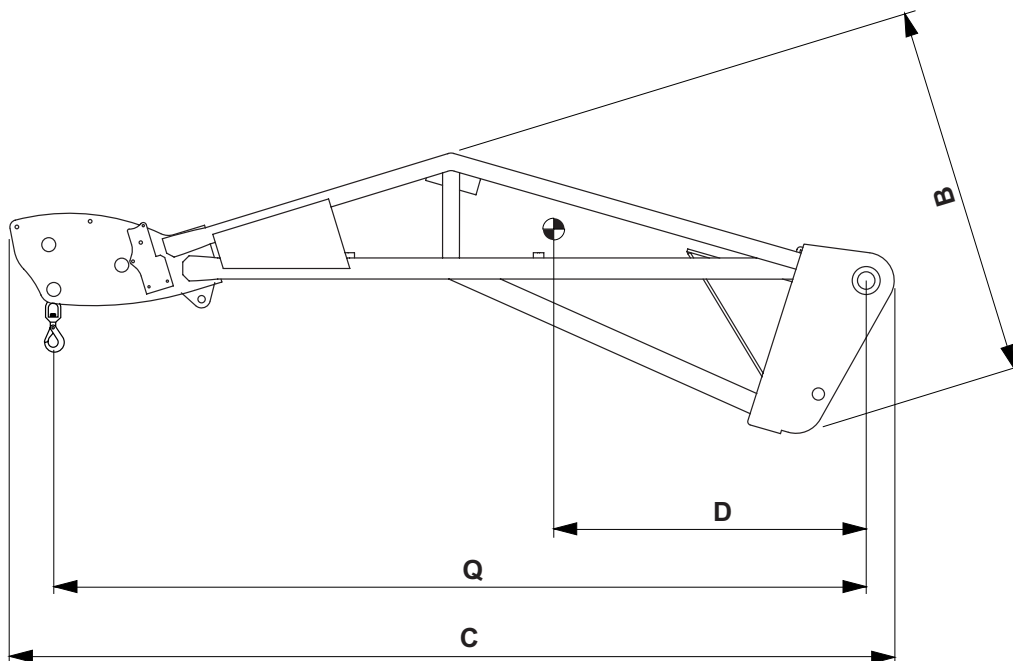
**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTNER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE

BRACCETTO P 2000

HOIST P 2000

P 2000 ANGRIFSSCHENREL

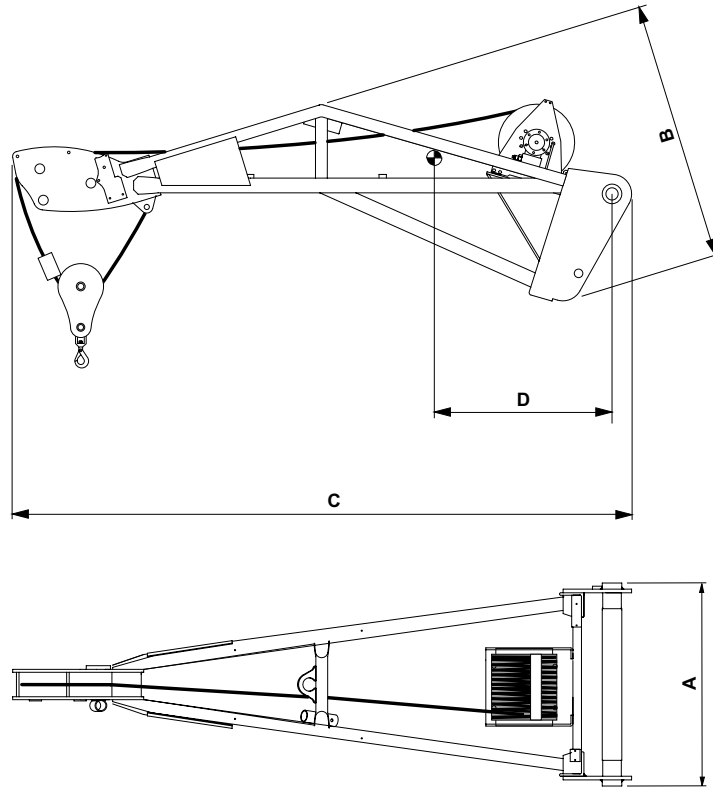
**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN (mm)			ACCESSORIO ATTACHMENT ZUBEHOER  D	DIS. GANCIO HOOK DISTANCE	PESO WEIGHT GEWITCH
		A	B	C			
P 2000	2000 Kg	830	1060	2530	900 mm	2325 mm	190 Kg

BRACCETTO PT 2000

HOIST WITH WINCH PT 2000

PT 2000 ANGRIFSSCHENREL



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	FUNDE ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	VELOCITA' GANCIO TOW SPEED HAKEN GESCHWINDIGKET	Ø AVVOLGIMENTO PULEGGIA Ø WINDING PULLEY WICKEL-Ø RIEMENSCHIBE	Ø AVVOLGIMENTO TAMBURO Ø WINDING DRUM WICKEL-Ø TROMMEL	FINE CORSA UP/DOWN ENDLAUF	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEB- SDRUCK	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN mm				PESO WEIGHT GEWITCH
									A	B	C	D	
PT 2000	2000 Kg	Ø 10 mm x 46 m ▲ (x 52 m)	5 T	23 m/min	200 mm	233 mm	IDRAULICO HYDRAULIC HYDRAULIK	170 Bar max	830	868	2250	730	387 Kg

▲ : solo per MRT 2540 e 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

▲ : only for MRT 2540 and 2440 EPS

**PT 2000****MESSA IN SERVIZIO E UTILIZZO**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle ***Istruzioni obbligatorie di verifica e controllo:***

- verificare l'integrità della struttura esterna dell'argano e del braccetto tralicciato.
- verificare il corretto collegamento idraulico degli innesti rapidi 1, 2, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune H (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune L (Fig.2);

**PT 2000****COMMISSIONING AND USE**

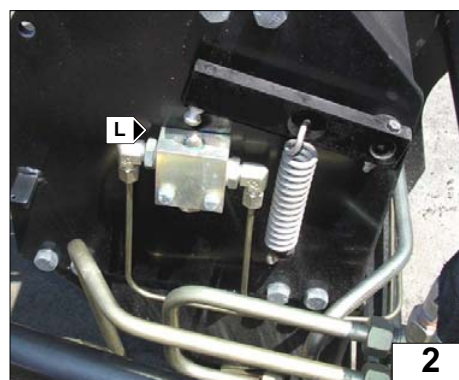
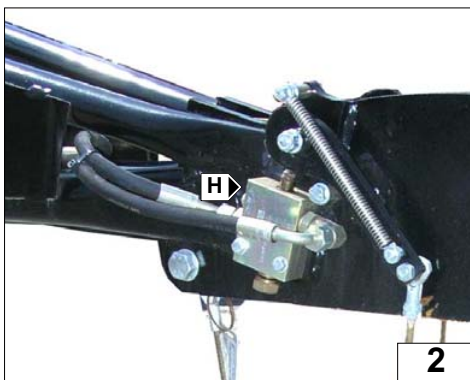
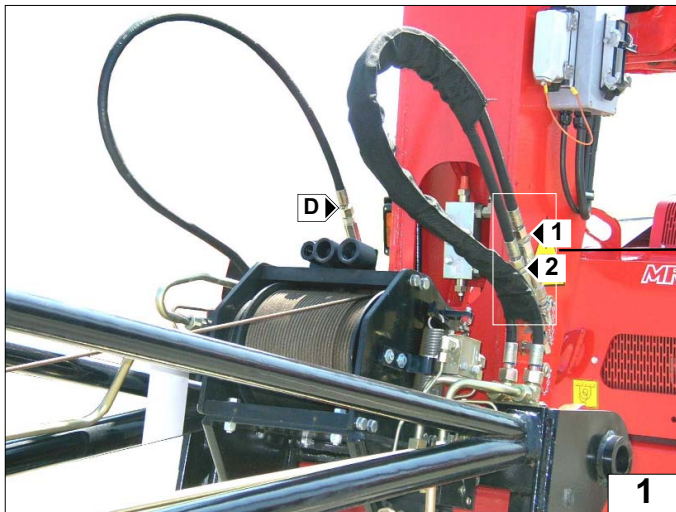
For your safety, before starting a work cycle, ***follow the compulsory instructions for inspection and checking:***

- check the outer frame of the winch and the trestle arm.
- ensure correct hydraulic connection of quick-release couplings 1, 2, Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop H (Fig.2);
- check the correct working of the rope lift limit stop L (Fig.2);

**PT 2000****INBETRIEBNAHME UND GEBRAUCH**

Bevor Sie einen Arbeitszyklus beginnen, sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten:

- Die Außenstruktur der Winde und des Gittermastauslegers auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen 1, 2, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken H prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben L prüfen (Abb. 2).





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- controllare lo stato della fune **B** (Fig.3) e il corretto avvolgimento sul tamburo **A** (Fig.3);
- controllare il corretto movimento rotazione delle pulegge di guida fune **F1** (Fig.4);
- controllare lo stato del capocorda **C** (Fig.3);
- verificare l'integrità del bozzello **F** (Fig.4)
- verificare lo stato del gancio **K** (Fig.4): che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **K1** (Fig.4);
- controllare l'aggancio del braccetto alla macchina operatrice **J** (Fig.5).

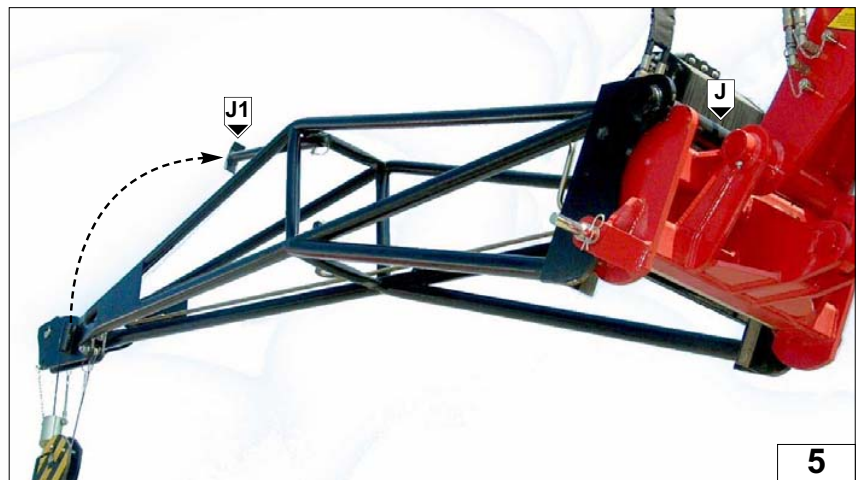
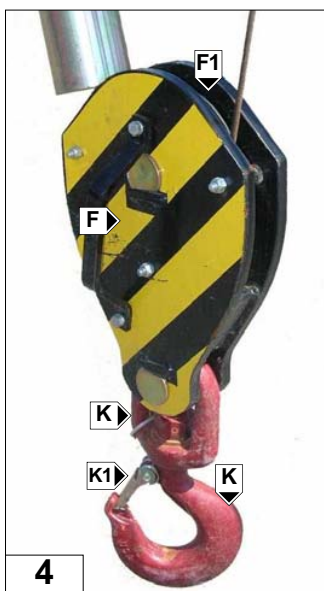
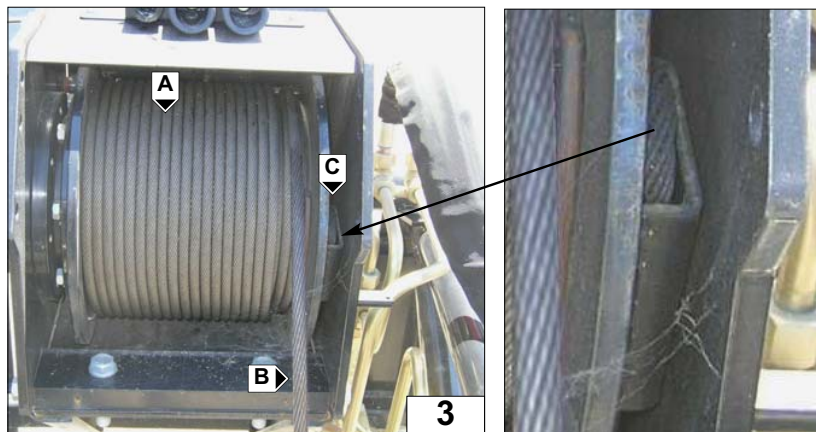
Dalla posizione di parcheggio è possibile sganciare il piede di appoggio e posizionarlo all'interno del braccetto per operare senza ulteriori ingombri **J1** (Fig.5).

- check the condition of the rope **B** (Fig.3) and its winding around drum **A** (Fig.3);
- check the correct movement and rotation of the rope guide pulleys **F1** (Fig.4);
- check the condition of terminal **C** (Fig.3);
- check block **F** to make sure it is intact (Fig.4)
- check to make sure the shackle connecting the rope and hook is screwed on properly **K** (Fig.4) and that terminals **K1** (Fig.4) block the rope.
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.4);
- check the hooking of the arm to the operating machine **J** (Fig.5).

From the parking position, it is possible to unhook the supporting feet and position it inside the arm to work without further impediment **J1** (Fig.5).

- Den Zustand des Seils **B** prüfen (Abb. 3) und die korrekte Aufwicklung um die Trommel **A** prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenscheibe **F1** prüfen (Abb. 4).
- Den Zustand der Kabelschlaufen **C** (Abb. 3) prüfen.
- Die Umlenkrolle **F** auf Unversehrtheit prüfen (Abb. 4)
- Sicherstellen, dass der Seilverbindungsschäkel und der Kranhaken gut eingeschraubt sind **K** (Abb. 4) und dass die Klemmen **K1** (Abb. 4) das Seil blockieren.
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 4).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingerastet ist (Abb. 5).

Aus der Abstellposition die Winde kann man den Abstellfuß ausklinken und ihn innerhalb des Auslegers anordnen, ohne noch mehr Platz in Anspruch zu nehmen. **J1** (Abb. 5)



## MANUTENZIONE

## MAINTENANCE

## WARTUNG

- RIDUTTORE

- FUNE, PULEGGIA e CAPOCORDA

- BOZZELLO

- GANCIO

- FINE CORSA DISCESA FUNE

- FINE CORSA SALITA FUNE

- IMPIANTO IDRAULICO

- GEAR REDUCER

- ROPE, PULLEY AND TERMINAL

- BLOCK

- HOOK

- ROPE DESCENT LIMIT STOP

- ROPE LIFT LIMIT STOP

- HYDRAULIC SYSTEM

- GETRIEBE

- SEIL, RIEMENSCHNUR UND  
SEILSCHLAUFE

- UMLENKROLLE

- KRANHAKEN

- ENDSCHALTER SEIL SENKEN

- ENDSCHALTER SEIL HEBEN

- HYDRAULISCHE ANLAGE

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**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** almeno una volta al mese **B** (Fig.6) e all'occorrenza rabboccare **A** (Fig.6) con olio dello stesso tipo di quello presente all'interno del riduttore (**ISO VG 150**).

Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **ISO VG** dipendente dalla temperatura di esercizio.

**La prima sostituzione dell'olio** deve essere effettuata dopo 100 ore di funzionamento, successivamente ogni 12 mesi o ogni 2000 ore di funzionamento.

- Eseguire il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.6a) verso il basso.
- Svitare il tappo **A** (Fig.6a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico verso l'alto **A** (Fig.6).
- Svitare il tappo di livello olio **B** (Fig.6);
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **B** (Fig.6). (0,25 lt)
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

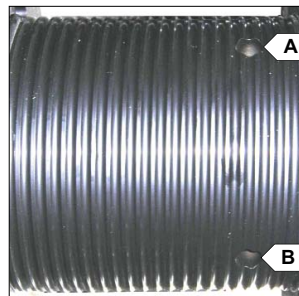
The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** at least once a month **B** (Fig.6) and top up if necessary **A** (Fig.6) with the same type of oil as that present in the gear reducer (**ISO VG 150**).

Use of gear oil with **EP** additives, with viscosity **ISO VG**, depending on the operating temperature, is recommended.

**Oil must be changed the first time** after 100 hours of operation, and subsequently every 12 months or every 2000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.6a) is downwards.
- Unscrew plug **A** (Fig.6a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is upwards **A** (Fig.8).
- Unscrew the oil level plug **B** (Fig.6);
- Fill with the right type of oil until it starts flowing out through the level hole **B** (Fig.6). (0,25 lt)
- Refit the plugs and rewind the rope.

**GETRIEBE**

Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

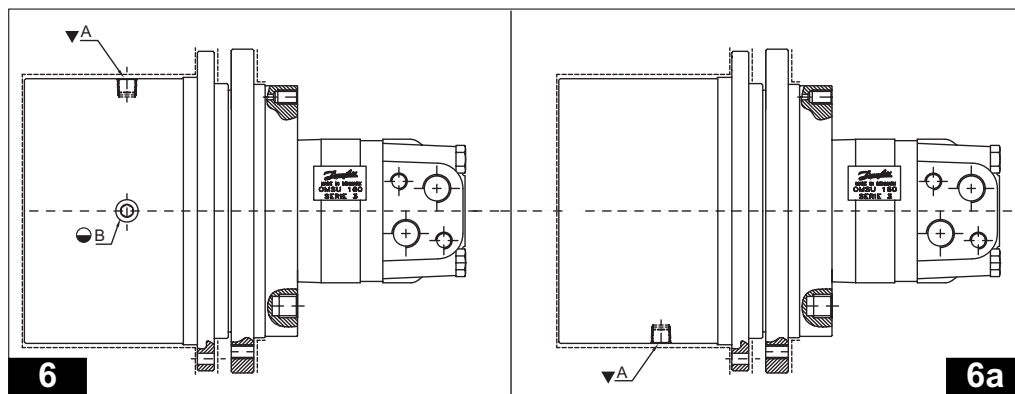
Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens einmal im Monat prüfen **B** (Abb. 6) und bei Bedarf Öl nachfüllen **A** (Abb. 6). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**ISO VG 150**).

Am besten benutzt man Öl für Getriebe mit **EP**-Zusatz mit Viskosität **ISO VG** je nach der Betriebstemperatur.

Der erste Ölwechsel ist nach 100 Betriebsstunden fällig, dann jeweils alle 12 Monate bzw. alle 2000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb.6a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 6a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 6).
- Den Ölstandstopfen **B** abschrauben (Abb. 6).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **B** ausläuft (Abb. 6). (0,25 lt)
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.7) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.7a) e che sia ben arrotolata sul tamburo **B** (Fig.7). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare e mantenere lubrificato i **perni C** (Fig.8) su cui ruotano le **puleggie di guida D** (Fig.8), che dovranno avere sempre un buono movimento di rotazione. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.9) e dei suoi morsetti fermafune.

**ROPE, PULLEY and TERMINAL**

Check rope **A** (Fig.7) daily to make sure it is good condition, that there are no broken filaments (Fig.7a) and that it is wound properly around drum **B** (Fig.7). If this is not the case, replace the rope with a new one having the same diameter and features. Check the lubrication of the rope, and if, necessary, lubricate with industrial grease or Dust-proof synthetic oil.

Check and lubricate **pins C** (Fig.8) on which **guide pulleys D** (Fig.8) rotate, and these must rotate freely. If necessary, lubricate the pin with lithium soap grease.

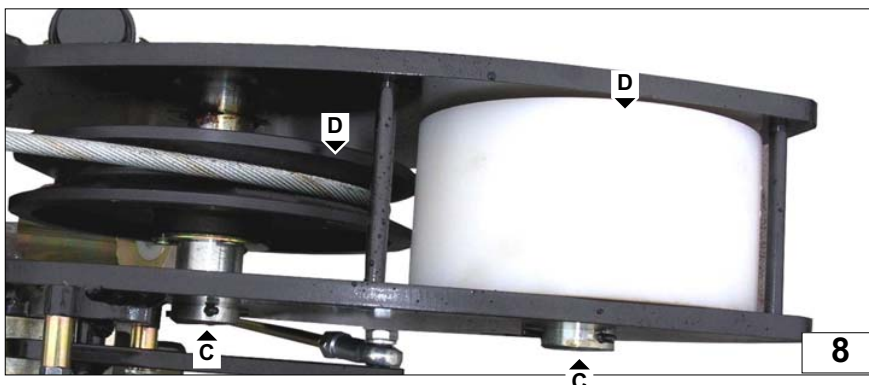
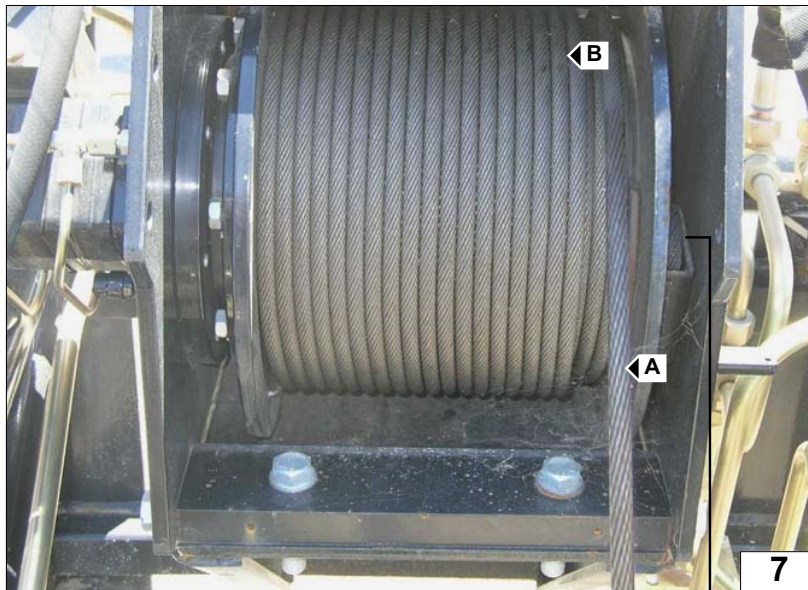
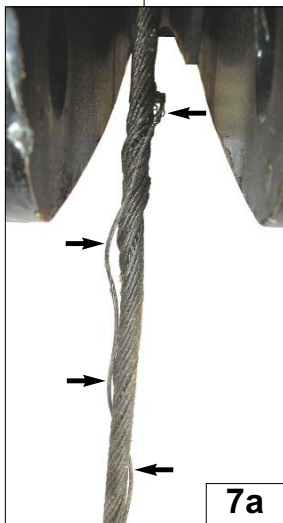
Check terminal **E** (Fig.9) and the **rope-holder** clamps to make sure they are intact.

**SEIL, RIEMENSCHLEIBE und SEILSCHLINGE**

Täglich prüfen, dass das Seil **A** (Abb. 7) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 7a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 7). Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Die Bolzen **C** (Abb. 8), auf dem sich die Führungsscheiben **D** (Abb. 8) drehen, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen. Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschlaufe **E** (Abb. 9) und die Bügelklemmen auf Unversehrtheit prüfen.



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**BOZZELLO**

Per una massima efficienza e sicurezza, mantenere intatta la struttura esterna **F** (Fig.10) e controllare che la puleggia **G** (Fig.10) ruoti correttamente sul suo perno **G1** (Fig.10).  
Se necessità, lubrificare con grasso al sapone di litio il perno **G1** (Fig.10).

**GANCIO**

Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.10).  
Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.10).  
Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.10).

**BLOCK**

For maximum efficiency and safety, make sure the outer frame **F** (Fig.10) is intact and check pulley **G** (Fig.1) to make sure it rotates properly around its pin **G1** (Fig.10).  
Lubricate pin **M** with lithium soap grease, if necessary (Fig.10).

**HOOK**

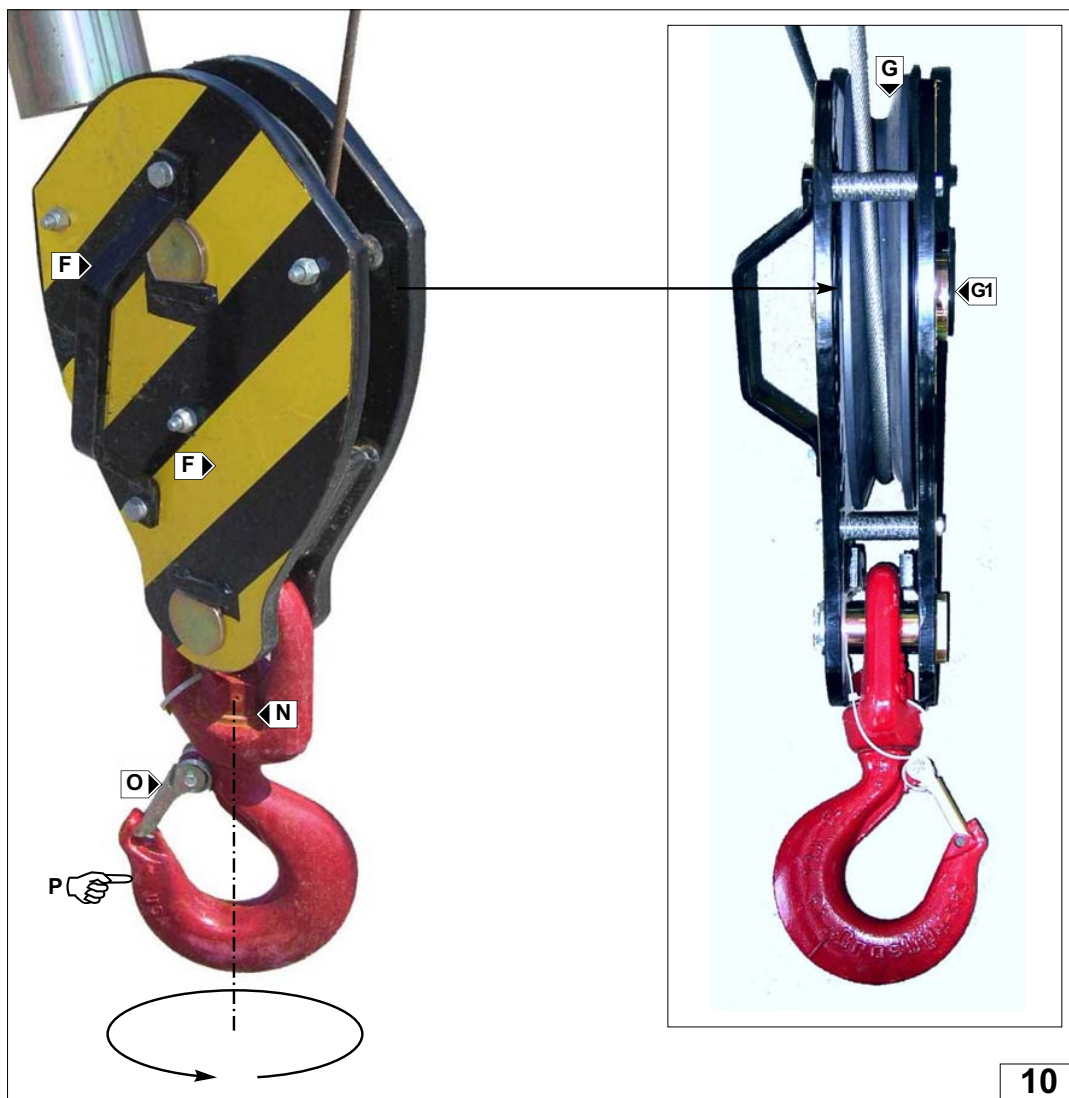
For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.10).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.10).  
Check the condition and working of safety tab **O** (Fig.10).

**UMLENKROLLE**

Für eine maximale Effizienz und Sicherheit die Außenstruktur **F** (Abb. 10) unversehrt halten und sicherstellen, dass die Riemenscheibe **G** (Abb. 10) sich korrekt um ihren Bolzen **G1** dreht (Abb. 10).  
Falls erforderlich, den Bolzen **M** mit Lithiumseifenfett schmieren (Abb. 10).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 10).  
Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 10).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 10).



10

**FINE CORSA DISCESA FUNE** (Fig.11)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi. Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.12)

**IMPIANTO IDRAULICO** (Fig.13)

Ispezionare giornalmente raccordi, valvole, tubi, per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'argano.

**ROPE DESCENT LIMIT STOP** (Fig.11)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.12)

**HYDRAULIC SYSTEM** (Fig.13)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 11)

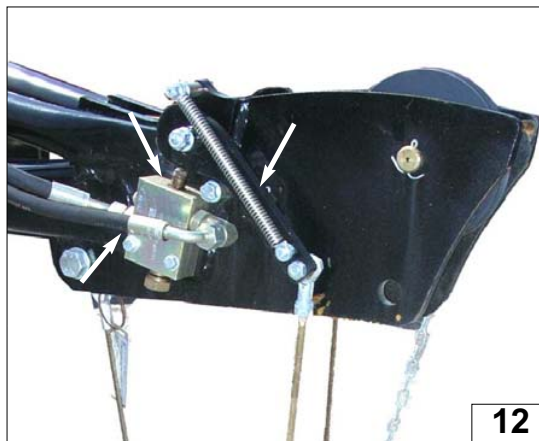
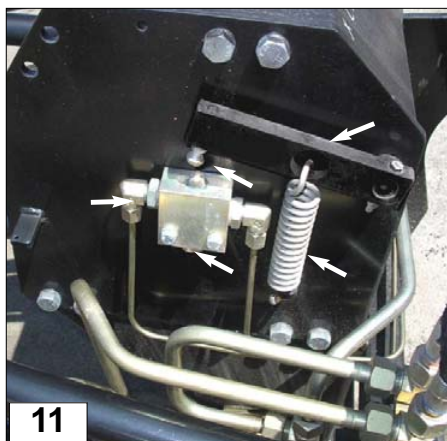
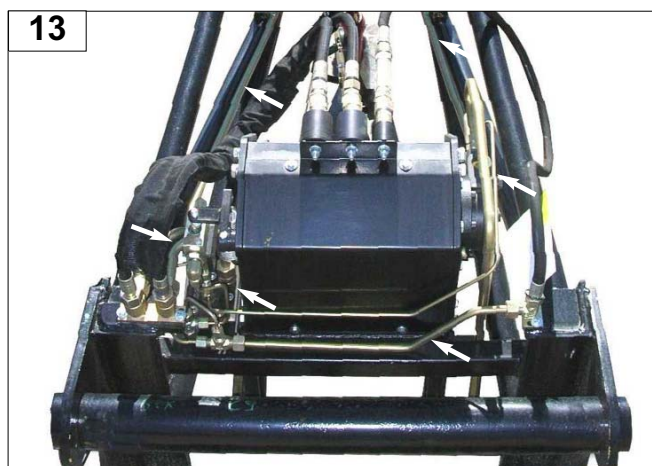
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 12)

**HYDRAULISCHE ANLAGE** (Abb. 13)

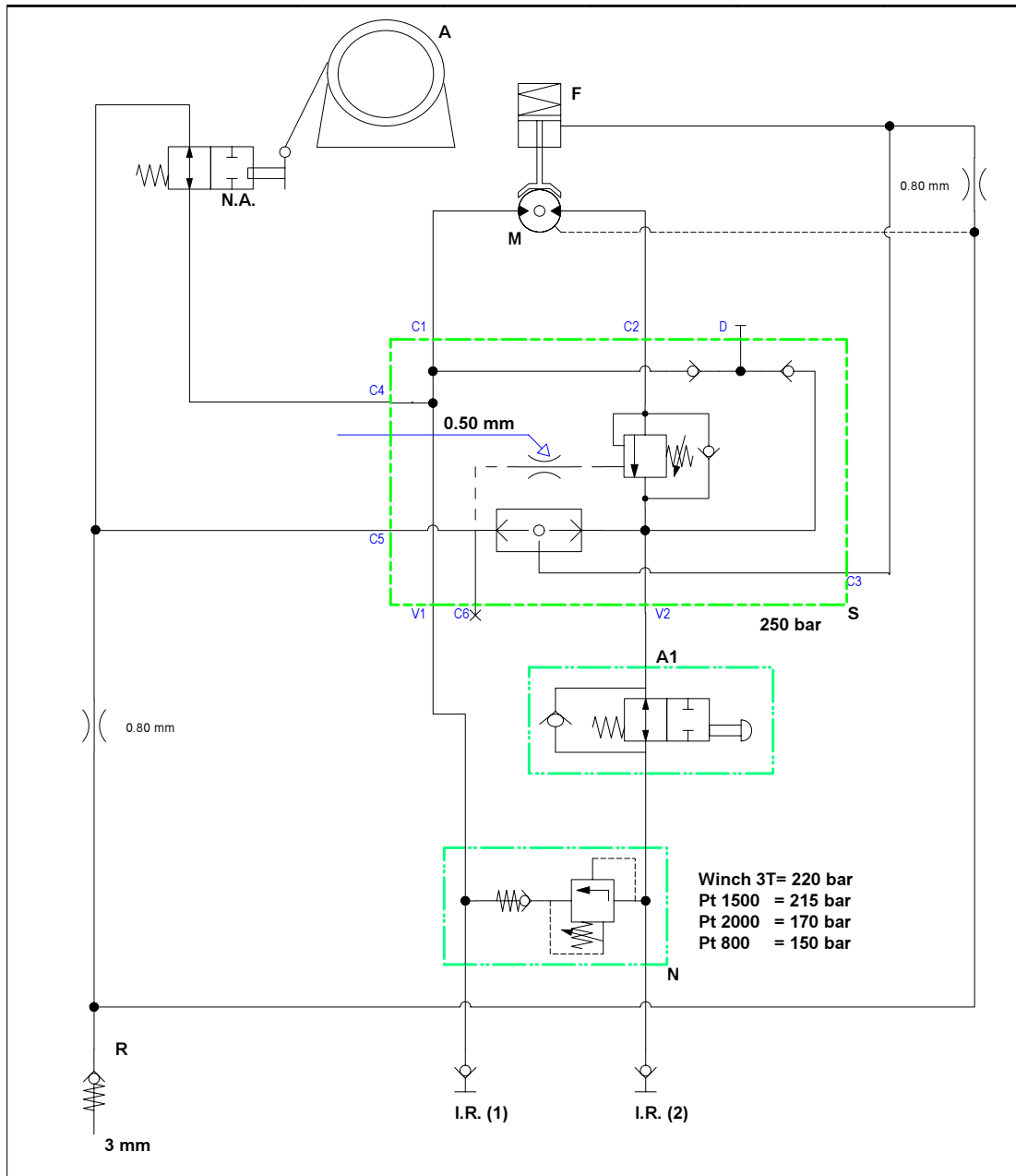
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



## SCHEMA IDRAULICO

## HYDRAULIC SCHEME

## SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

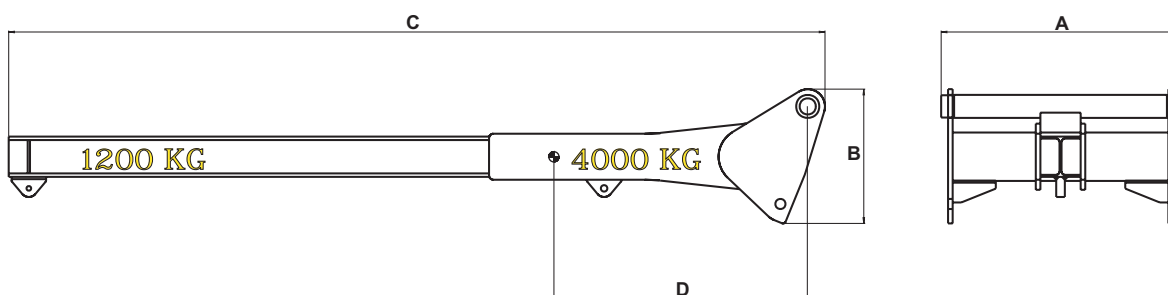
**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTNER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE

BRACCETTO P 4000

HOIST P 4000

P 4000 ANGRIFSSCHENREL



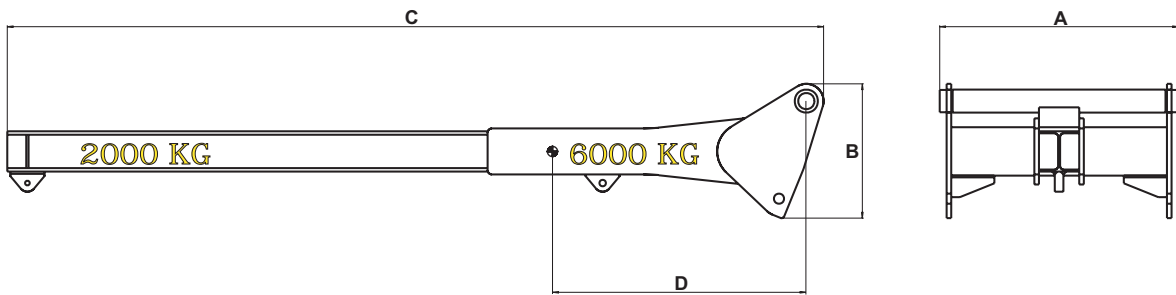
CARATTERISTICHE - CHARACTERISTICS - DATEN						
DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN			ACCESSORIO ATTACHMENT ZUBEHOER	PESO WEIGHT GEWITCH
		(mm)				
		A	B	C	D	
P 4000	4000 Kg	830	467	2838	880 mm	210 Kg



BRACCETTO P 6000

HOIST P 6000

P 6000 ANGRIFSSCHENREL



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

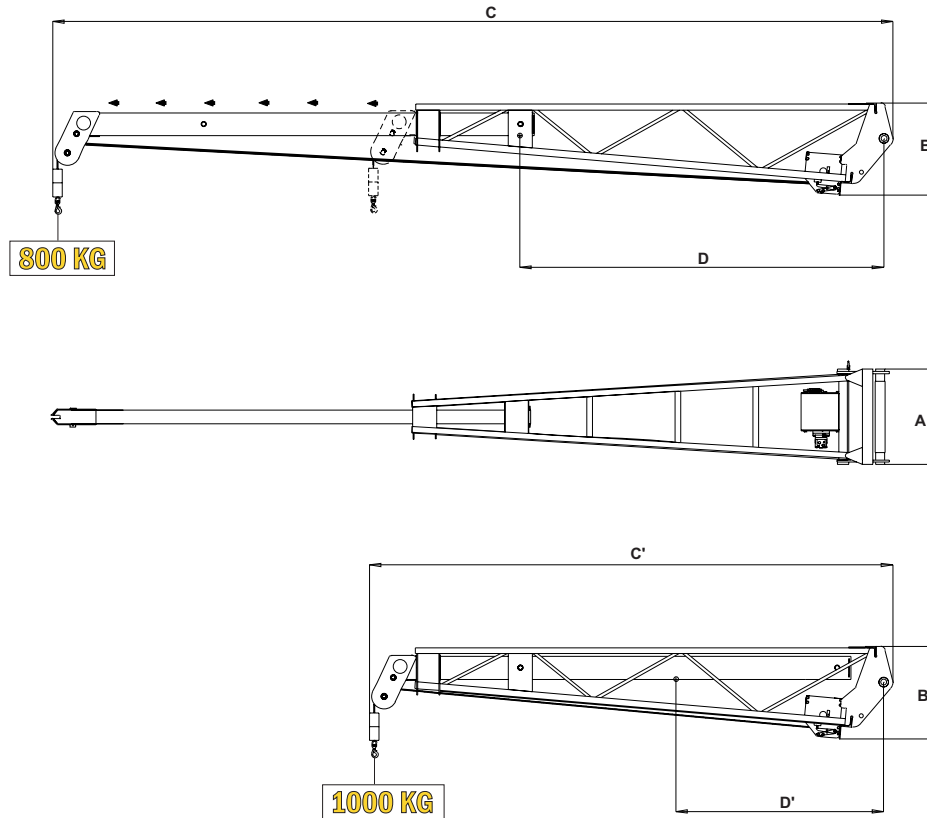
DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN			ACCESSORIO ATTACHMENT ZUBEHOER	PESO WEIGHT GEWITCH
		(mm)				
		A	B	C		
P 6000	6000 Kg	830	467	2838	D	210 Kg



BRACCETTO CRANE JIB PT 800

PT 800 HOIST CRANE JIB

CRANE JIB ANGRIFSSCHENREL  
PT800



**CARATTERISTICHE - CHARACTERISTICS - DATEN**

DESCRIZIONE DESIGNATION BESCHREIBUNG	CAPACITA' CAPACITY KAPAZITAET	FUNTE ROPES SEIL	GANCIO "CE" HOOK "CE" HAKEN "CE"	VELOCITA' GANCIO TOW SPEED HAKEN GESCHWINDIGKET	Ø AVVOLGIMENTO PULEGGIA	Ø AVVOLGIMENTO TAMBURO	FINE CORSA UP/DOWN ENDLAUF	PRESSIONE DI ESERCIZIO OPERATING PRESSURE BETRIEB- SDRUCK	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN mm				PESO WEIGHT GEWITCH
									A	B	C	D	
CRANE JIB PT 800	Kg 1000	Ø 10 mm x 46 m	5 T	45 m/min	230 mm	233 mm	IDRAULICO HYDRAULIC HYDRAULIK	150 Bar max	835	805	7310	2480	606 Kg
											C'	D'	
											4550	1705	

**PT 800****MESSA IN SERVIZIO E UTILIZZO**

Per la vostra sicurezza, prima di iniziare un ciclo di lavoro, attenersi alle **Istruzioni obbligatorie di verifica e controllo:**

- verificare l'integrità della struttura esterna dell'argano e del braccetto tralicciato.
- verificare il corretto collegamento idraulico degli innesti rapidi 1, 2, Drenaggio e lo stato dei tubi flessibili (Fig.1);
- controllare il corretto funzionamento del fine corsa discesa fune H (Fig.2);
- controllare il corretto funzionamento del fine corsa salita fune L (Fig.2);

**PT 800****COMMISSIONING AND USE**

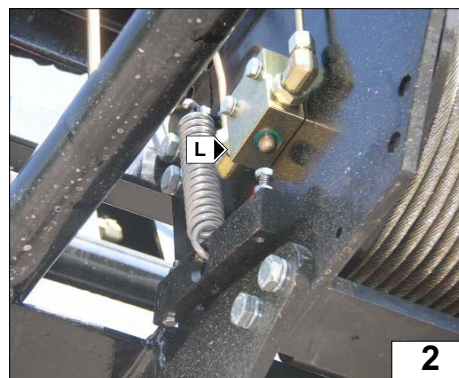
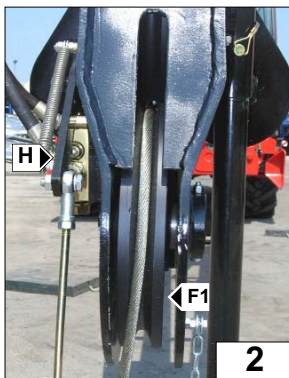
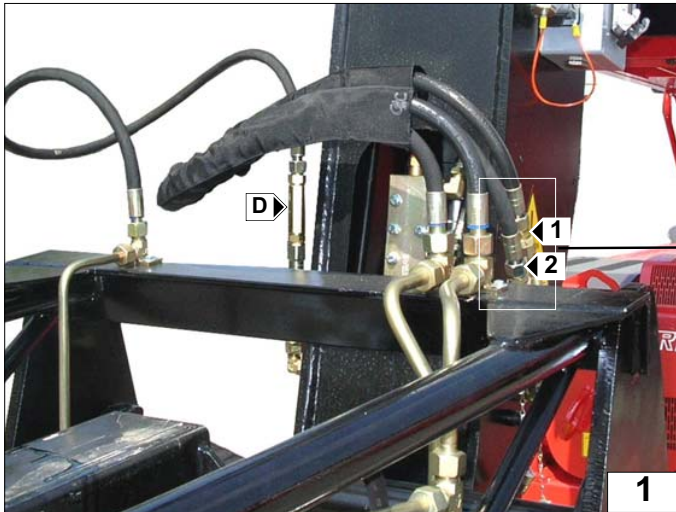
For your safety, before starting a work cycle, ***follow the compulsory instructions for inspection and checking:***

- check the outer frame of the winch and the trestle arm.
- ensure correct hydraulic connection of quick-release couplings 1, 2, Drainage and the condition of the hose pipes (Fig.1);
- check the correct working of the rope descent limit stop H (Fig.2);
- check the correct working of the rope lift limit stop L (Fig.2);

**PT 800****INBETRIEBNAHME UND GEBRAUCH**

Bevor Sie einen Arbeitszyklus beginnen, sollten Sie sich zu Ihrer Sicherheit an die obligatorischen Prüfvorschriften halten:

- Die Außenstruktur der Winde und des Gittermastauslegers auf Unversehrtheit prüfen.
- Den korrekten hydraulischen Anschluss der Schnellkupplungen 1, 2, der Rücklaufleitung und den Zustand der Schläuche prüfen (Abb. 1).
- Den korrekten Betrieb des Endschalters Seil senken H prüfen (Abb. 2).
- Den korrekten Betrieb des Endschalters Seil heben L prüfen (Abb. 2).



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- controllare lo stato della fune **B** (Fig.3) e il corretto avvolgimento sul tamburo **A** (Fig.3);
- controllare il corretto movimento rotazione delle pulegge di guida fune **F1** (Fig.2);
- controllare lo stato del capocorda **C** (Fig.3);
- controllare che il grillo di collegamento fune e gancio sia ben avvitato **K** (Fig.4) e che i morsetti **K1** (Fig.4) blocchino la fune.
- verificare lo stato del gancio: che non sia deformato, che ruoti liberamente e che la linguetta di sicurezza sia efficiente **G** (Fig.4);
- controllare l'aggancio del braccetto alla macchina operatrice **J** (Fig.5).

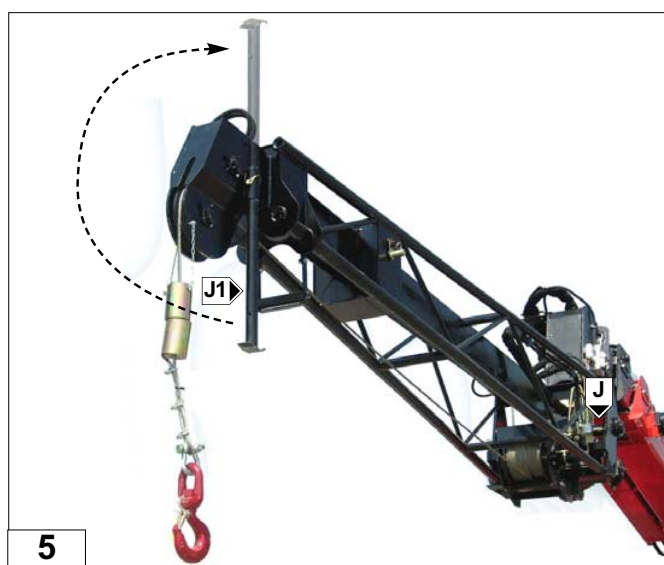
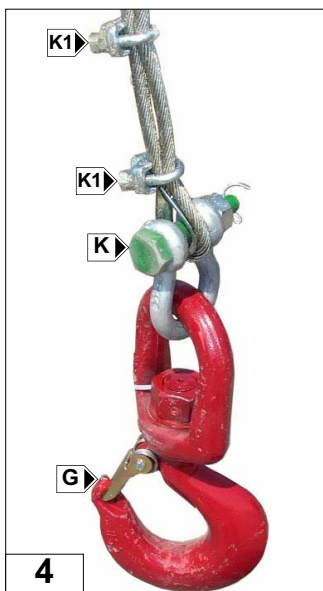
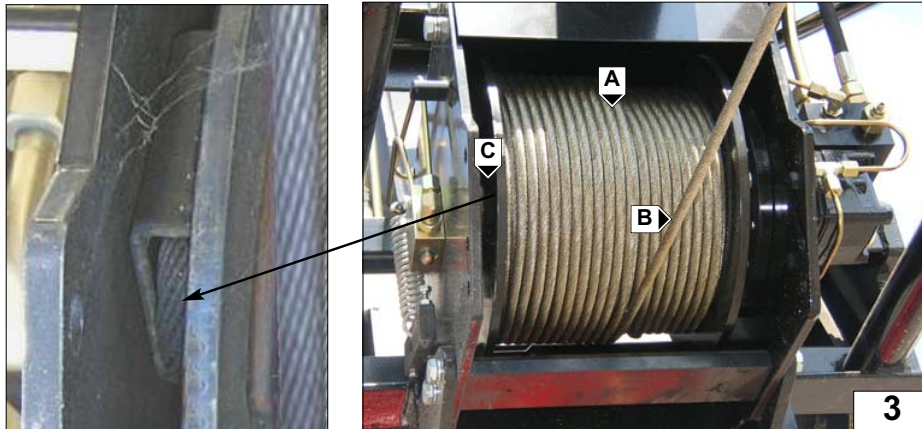
Dalla posizione di parcheggio è possibile sganciare il piede di appoggio e posizionarlo al contrari, sopra al braccetto per operare senza ulteriori ingombri **J1** (Fig.5) per la fune.

- check the condition of the rope **B** (Fig.3) and its winding around drum **A** (Fig.3);
- check the correct movement and rotation of the rope guide pulleys **F1** (Fig.2);
- check the condition of terminal **C** (Fig.3);
- check to make sure the shackle connecting the rope and hook is screwed on properly **K** (Fig.4) and that terminals **K1** (Fig.4) block the rope.
- check the hook: make sure it is not deformed, that it turns freely and that the safety tab is efficient **G** (Fig.4);
- check the hooking of the arm to the operating machine **J** (Fig.5).

From the parking position, it is possible to unhook the supporting feet and position it inside the arm to work without further impediment **J1** (Fig.5).

- Den Zustand des Seils **B** prüfen (Abb.3) und die korrekte Aufwicklung um die Trommel **A** prüfen (Abb. 3).
- Die korrekte Seiten- und Rotationsbewegung der Seillenscheibe **F1** prüfen (Abb. 2).
- Den Zustand der Kabelschlaufen **C** (Abb. 3) prüfen.
- Sicherstellen, dass der Seilverbindungsschäkel und der Kranhaken gut eingeschraubt sind **K** (Abb. 4) und dass die Klemmen **K1** (Abb. 4) das Seil blockieren.
- Den Zustand des Kranhakens prüfen: Er darf nicht deformiert sein, muss sich frei drehen können und der Sicherheitskeil **G** muss effizient sein (Abb. 4).
- Sicherstellen, dass die Winde an der Arbeitsmaschine **J** eingerastet ist (Abb. 5).

Aus der Abstellposition die Winde kann man den Abstellfuß ausklinken und ihn innerhalb des Auslegers anordnen, ohne noch mehr Platz in Anspruch zu nehmen. **J1** (Abb. 5)



## MANUTENZIONE

- RIDUTTORE
- FUNE, PULEGGIA e CAPOCORDA
- GRILLO e MORSETTI
- GANCIO
- FINE CORSA DISCESA FUNE
- FINE CORSA SALITA FUNE
- IMPIANTO IDRAULICO

## MAINTENANCE

- GEAR REDUCER
- ROPE, PULLEY AND TERMINAL
- SHACKLE E CLAMPS
- HOOK
- ROPE DESCENT LIMIT STOP
- ROPE LIFT LIMIT STOP
- HYDRAULIC SYSTEM

## WARTUNG

- GETRIEBE
- SEIL, RIEMENSCHLEIBE UND SEILSCHLINGE
- SCHÄKEL UND KLEMMEN
- KRANHAKEN
- ENDSCHALTER SEIL SENKEN
- ENDSCHALTER TEIL HEBEN
- HYDRAULISCHE ANLAGE

**RIDUTTORE**

Una corretta lubrificazione consente un buon funzionamento e una lunga durata del riduttore.

Per accedere all'indicatore di livello o al tappo di rabbocco olio, occorre srotolare completamente la fune dal tamburo.

**Controllare il livello dell'olio** almeno una volta al mese **B** (Fig.6) e all'occorrenza rabboccare **A** (Fig.6) con olio dello stesso tipo di quello presente all'interno del riduttore (**ISO VG 150**).

Si consiglia l'utilizzo di olio per ingranaggi con additivazione **EP** con viscosità **ISO VG**, dipendente dalla temperatura di esercizio.

**La prima sostituzione dell'olio** deve essere effettuata dopo 100 ore di funzionamento, successivamente ogni 12 mesi o ogni 2000 ore di funzionamento.

- Eseguiere il cambio dell'olio con riduttore ancora caldo per facilitare un completo svuotamento.
- Per scaricare l'olio, ruotare il tamburo del motore portando il tappo di rabbocco / scarico **A** (Fig.6a) verso il basso.
- Svitare il tappo **A** (Fig.6a) e scaricare completamente l'olio.
- Ruotare il tamburo portando il foro di rabbocco/scarico verso l'alto **A** (Fig.6).
- Svitare il tappo di livello olio **B** (Fig.6);
- Rabboccare con olio nuovo e di tipo corretto fino a quando l'olio non fuoriesce da foro di livello **B** (Fig.6) (0,25 lt).
- Riavvitare i tappi e riavvolgere la fune.

**GEAR REDUCER**

Correct lubrication will allow efficient working and long life of the gear reducer.

The rope must be unwound completely from the drum to access the level indicator or oil filler plug.

**Check the oil level** at least once a month **B** (Fig.6) and top up if necessary **A** (Fig.6) with the same type of oil as that present in the gear reducer (**ISO VG 150**).

Use of gear oil with **EP** additives, with viscosity **ISO VG**, depending on the operating temperature, is recommended.

**Oil must be changed the first time** after 100 hours of operation, and subsequently every 12 months or every 2000 hours of operation.

- Change the oil with the gear reducer still hot so that the oil drains out completely.
- To drain out the oil, turn the motor drum so that the filler/drain plug **A** (Fig.6a) is downwards.
- Unscrew plug **A** (Fig.6a) and drain out the oil completely.
- Turn the drum so that the filler/drain plug is upwards **A** (Fig.6).
- Unscrew the oil level plug **B** (Fig.6);
- Fill with the right type of oil until it starts flowing out through the level hole **B** (Fig.6) (0,25 lt).
- Refit the plugs and rewind the rope.

**GETRIEBE**

Die korrekte Schmierung gewährleistet den guten Betrieb und die lange Haltbarkeit des Getriebes.

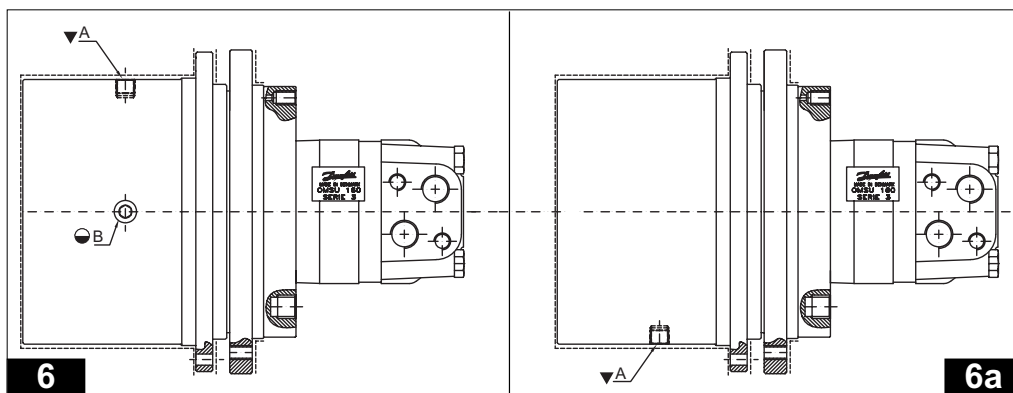
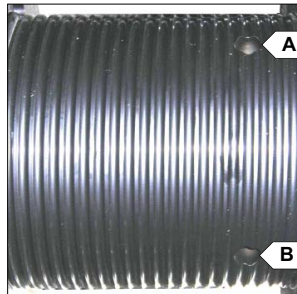
Um Zugriff zum Ölstand- und Öleinfüllstopfen zu erhalten, ist das Seil ganz von der Trommel abzuwickeln.

Den Ölstand mindestens einmal im Monat prüfen **B** (Abb. 6) und bei Bedarf Öl nachfüllen **A** (Abb. 6). Dazu Öl der gleichen Sorte wie das verwenden, das im Getriebe schon vorhanden ist (**ISO VG 150**).

Am besten benutzt man Öl für Getriebe mit **EP**-Zusatz mit Viskosität **ISO VG** je nach der Betriebstemperatur.

Der erste Ölwechsel ist nach 100 Betriebsstunden fällig, dann jeweils alle 12 Monate bzw. alle 2000 Betriebsstunden.

- Die Ölwechsel bei noch warmen Getriebe ausführen, um das ganz auslaufen zu können.
- Um das Öl abzulassen, die Trommel des Motors drehen, um den Nachfüll-/Ablaufstopfen **A** (Abb. 6a) nach unten zu bringen.
- Den Stopfen **A** (Abb. 6a) losschrauben und das Öl ganz auslaufen lassen.
- Die Trommel drehen, indem man den Nachfüll-/Ablaufstopfen **A** nach oben bringt (Abb. 6).
- Den Ölstandstopfen **B** abschrauben (Abb. 6).
- Das neue Öl des korrekten Typs nachfüllen, bis das Öl aus der Standschraube **B** ausläuft (Abb. 6) (0,25 lt).
- Die Stopfen wieder aufschrauben und das Seil aufwickeln.



**FUNE, PULEGGIA e CAPOCORDA**

Controllare giornalmente che la **fune A** (Fig.7) sia sempre in ottimo stato, che non ci siano filamenti rotti (Fig.7a) e che sia ben arrotolata sul tamburo **B** (Fig.7). Altrimenti sostituirla con una nuova e dello stesso diametro e caratteristiche. Controllare la lubrificazione della fune, se necessita lubrificare con grasso industriale oppure olio sintetico antipolvere.

Controllare e mantenere lubrificato il **perno C** (Fig.8) su cui ruota le **puleggia di guida D** (Fig.8), che dovranno avere sempre un buono movimento di rotazione. Se necessita, lubrificare con grasso al sapone di litio il perno.

Assicurarsi dell'integrità dei **capocorda E** (Fig.9) e dei suoi morsetti fermafune.

**ROPE, PULLEY and TERMINAL**

Check rope **A** (Fig.7) daily to make sure it is good condition, that there are no broken filaments (Fig.7a) and that it is wound properly around drum **B** (Fig.7). If this is not the case, replace the rope with a new one having the same diameter and features.

Check the lubrication of the rope, and if necessary, lubricate with industrial grease or Dust-proof synthetic oil.

Check and lubricate **pins C** (Fig.8) on which **guide pulleys D** (Fig.8) rotate, and these must rotate freely. If necessary, lubricate the pin with lithium soap grease.

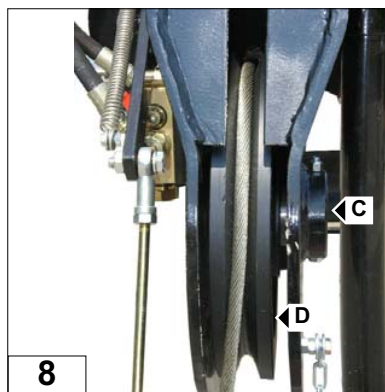
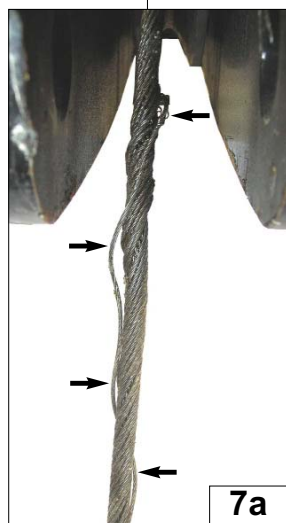
Check terminal **E** (Fig.9) and the **rope-holder** clamps to make sure they are intact.

**SEIL, RIEMENSCHLEIBE und SEILSCHLINGE**

Täglich prüfen, dass das Seil **A** (Abb. 7) immer einen sehr guten Zustand aufweist, dass keine Seilfasern gerissen sind (Abb. 7a) und dass das Seil gut um die Trommel **B** aufgewickelt ist (Abb. 7). Andernfalls ist das Seil durch ein neues mit dem gleichen Durchmesser und den gleichen Eigenschaften zu ersetzen. Die Schmierung des Seils prüfen. Muss es geschmiert werden, dazu ein Industriefett oder ein synthetisches Staubschutzfett benutzen.

Die Bolzen **C** (Abb. 8), auf dem sich die Führungsscheiben **D** (Abb. 8) drehen, täglich prüfen und geschmiert halten. Diese muss sich immer gut drehen. Falls erforderlich, den Bolzen mit Lithiumseifenfett schmieren.

Die Seilschlaufe **E** (Abb. 9) und die Bügelklemmen auf Unversehrtheit prüfen.





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**GRILLO e MORSETTI**

È importante verificare l'integrità e il serraggio delle viti dei morsetti **F** (Fig.10) e del bullone del grillo **G** (Fig.10) una volta alla settimana.

**SHACLE AND CLAMPS**

It is important to check the condition and locking of the clamp screws **F** (Fig.10) and the shackle **G** bolt (Fig.10) once a week.

**SCHÄKEL UND KLEMMEN**

Es ist wichtig, immer die Schrauben der Klemmen **F** (Abb. 10) und des Schraubbolzens des Schäkels **G** (Abb. 10) einmal pro Woche auf Unversehrtheit und festen Sitz zu prüfen.

**GANCIO**

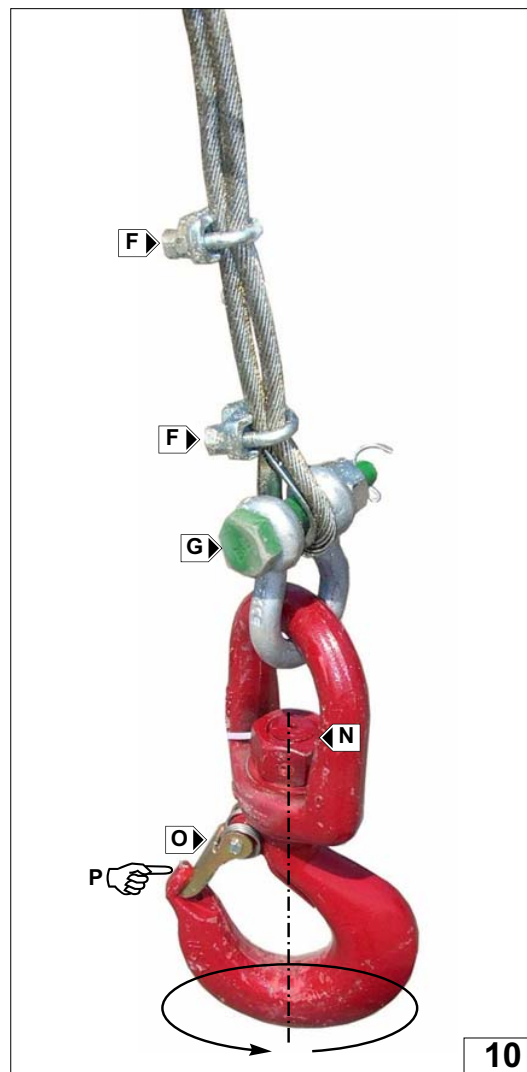
Per una massima efficienza mantenere lubrificata la vite di rotazione del gancio **N** (Fig.10).  
Senza carico sospeso, il gancio deve sempre ruotare liberamente e con la sola pressione della mano **P** (Fig.10).  
Controllare lo stato e l'efficienza della linguetta di sicurezza **O** (Fig.10).

**HOOK**

For maximum efficiency, keep the hook rotation screw **N** lubricated (Fig.10).  
Without load suspended, the hook must rotate freely, merely by pressing with the hand **P** (Fig.10).  
Check the condition and working of safety tab **O** (Fig.10).

**KRANHAKEN**

Für eine maximale Effizienz und Sicherheit die Rotationsschraube des Kranhakens **N** geschmiert halten (Abb. 10).  
Ohne hängende Last muss der Kranhaken sich immer frei und nur durch Handdruck drehen **P** (Abb. 10).  
Den Zustand und die Effizienz des Sicherheitskeils prüfen **O** (Abb. 10).



**FINE CORSA DISCESA FUNE** (Fig.11)

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi . Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla.

**FINE CORSA SALITA FUNE**

Giornalmente per una massima efficienza mantenere sempre pulito il pistoncino e la valvola idraulica di sicurezza; controllare il serraggio dei raccordi e lo stato dei tubi . Inoltre verificare l'integrità del leveraggio di contatto finecorsa discesa e la tenuta della sua molla. (Fig.12)

**IMPIANTO IDRAULICO** (Fig.13)

Ispezionare giornalmente raccordi, valvole, tubi, per evitare eventuali perdite di olio che compromettano il rendimento e la durata dell'organo.

**ROPE DESCENT LIMIT STOP** (Fig.11)

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Check the condition of the descent limit stop contact leverage and the seal on its spring.

**ROPE LIFT LIMIT STOP**

Keep the piston and hydraulic safety valve cleaned daily for maximum efficiency; check the unions and pipes to make sure they are tightened properly. Also check the condition of the descent limit stop contact leverage and the seal on its spring. (Fig.12)

**HYDRAULIC SYSTEM** (Fig.13)

Inspect the unions, valves, pipes daily to prevent oil leakage which will affect the working and life of the winch.

**ENDSCHALTER SEIL SENKEN** (Abb. 11)

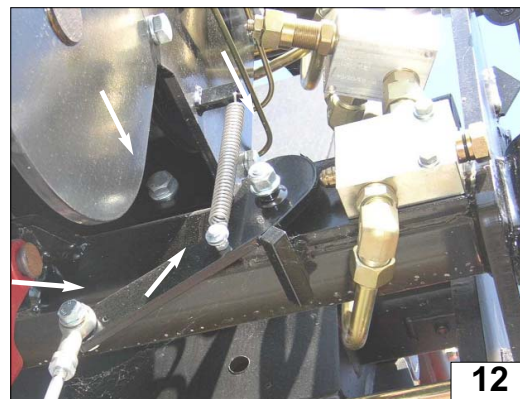
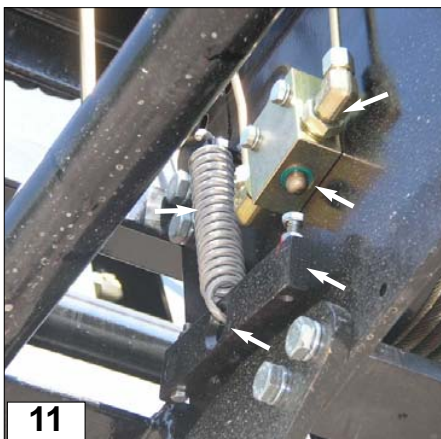
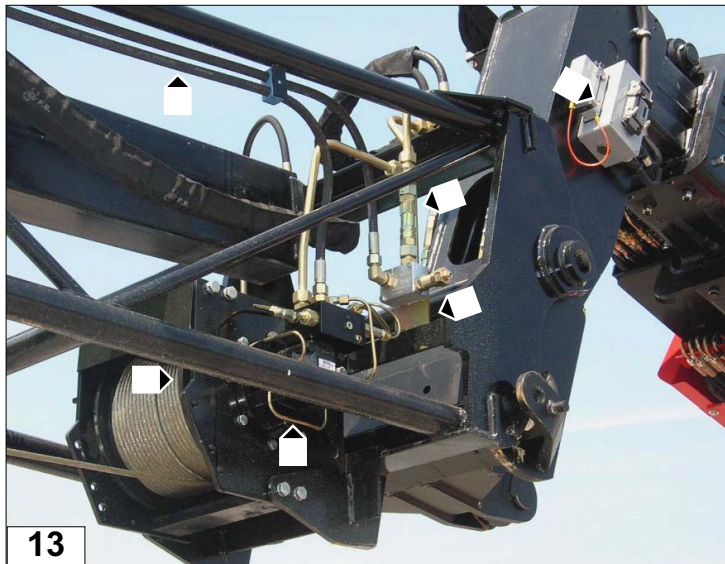
Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilsenken auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen.

**ENDSCHALTER SEIL HEBEN**

Für die maximale Effizienz den Kolben und das hydraulische Sicherheitsventil täglich reinigen. Den Anschluss der Verbindungen und den Zustand der Leitungen prüfen. Außerdem das Kontaktgestänge des Endschalers für Seilheben auf Unversehrtheit und die Funktionstüchtigkeit seiner Feder prüfen. (Abb. 12)

**HYDRAULISCHE ANLAGE** (Abb. 13)

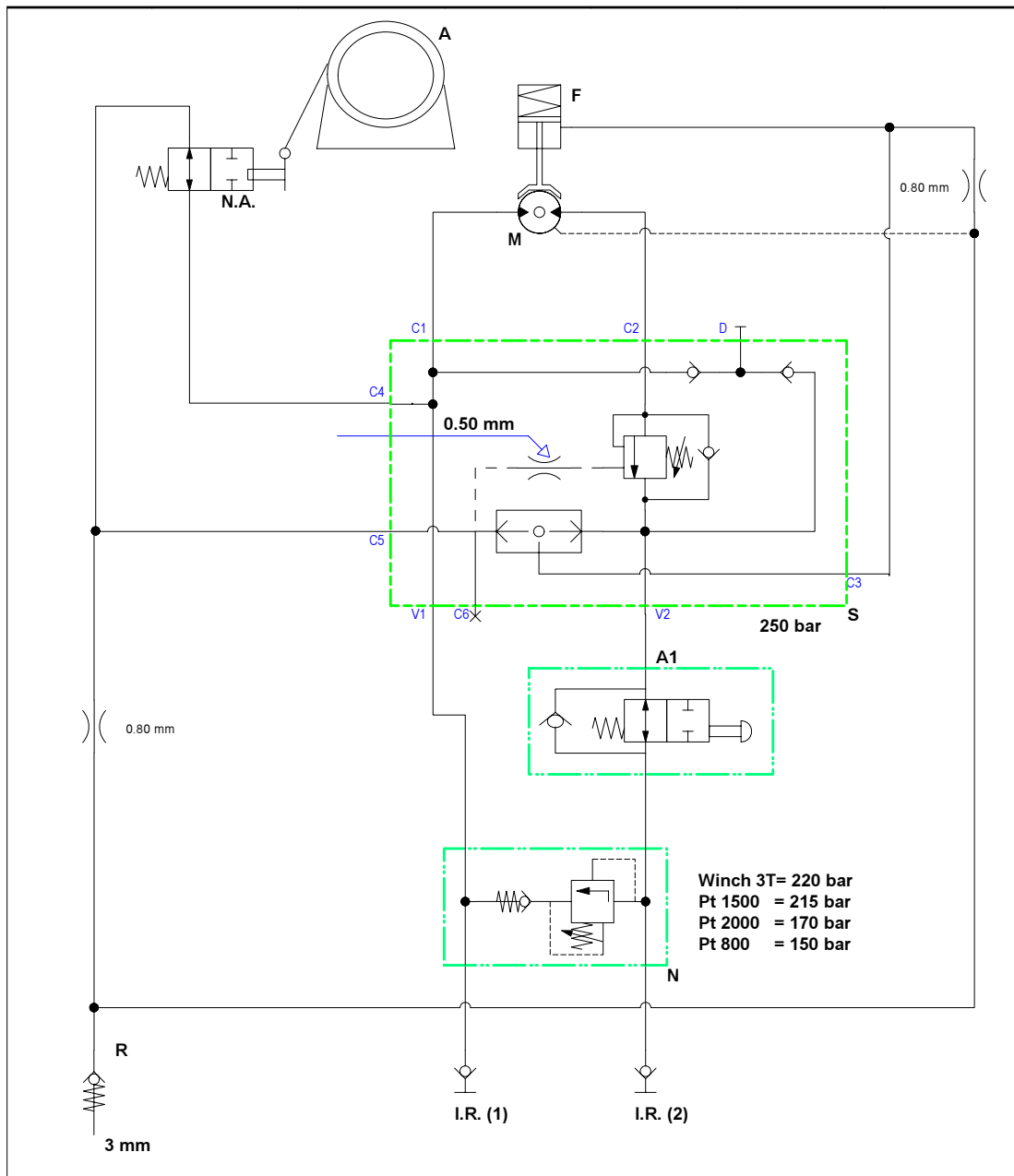
Anschlüsse, Ventile, Leitungen täglich prüfen, um etwaige Leckstellen zu vermeiden, welche die Leistung und die Haltbarkeit der Winde in Frage stellen.



## SCHEMA IDRAULICO

## HYDRAULIC SCHEME

## SCHEMA HYDRAULIK



**A** = ARGANO  
**N.A.** = MICRO MASSIMA DISCESA  
**R** = SERBATOIO OLIO  
**I.R.1** = INNESTO RAPIDO  
**I.R.2** = INNESTO RAPIDO  
**A1** = MICRO MASSIMA SALITA  
**S** = VALVOLA  
**N** = VALVOLA MASSIMA PRESSIONE  
**M** = MOTORE  
**F** = FRENO

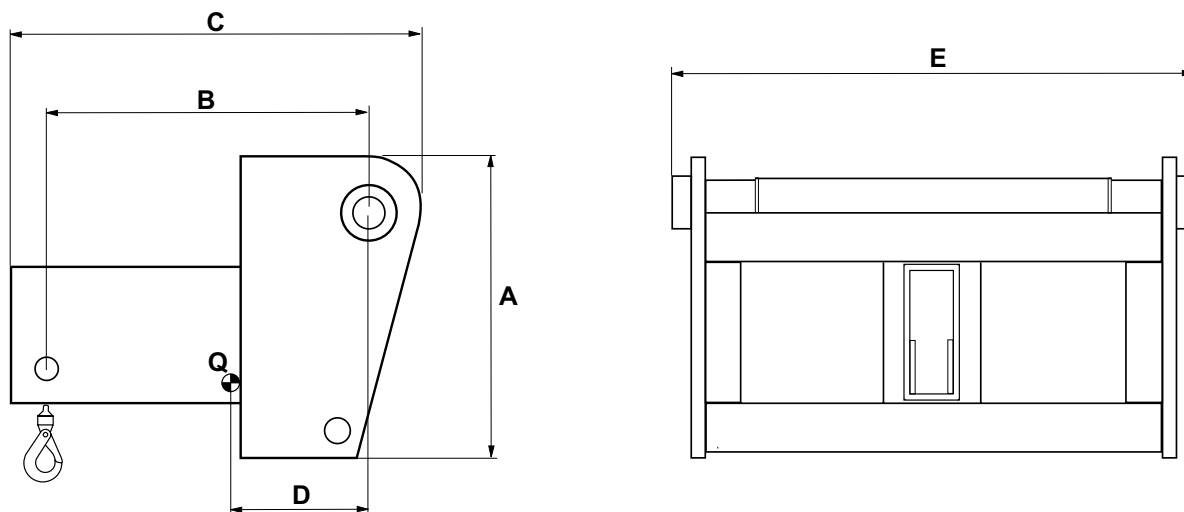
**A** = WINCH  
**N.A.** = MAXIMUM DESCENT MICROSWITCH  
**R** = OIL TANK  
**I.R.1** = QUICK-RELEASE COUPLING  
**I.R.2** = QUICK-RELEASE COUPLING  
**A1** = MAXIMUM ASCENT MICROSWITCH  
**S** = VALVE  
**N** = MAXIMUM PRESSURE VALVE  
**M** = MOTOR  
**F** = BRAKE

**A** = STEHENDE WINDE  
**N.A.** = MIKROSCHALTER MAXIMALE SENKUNG  
**R** = ÖLBEHÄLTER  
**I.R.1** = SCHNELLKUPPLUNG  
**I.R.2** = SCHNELLKUPPLUNG  
**A1** = MIKROSCHALTER MAXIMALE HEBUNG  
**S** = VENTIL  
**N** = ÜBERDRUCKVENTIL  
**M** = MOTOR  
**F** = BREMSE

BRACCETTO CON GANCIO

JIB WITH HOOK

AUSLENGER MIT AHKEN



CARATTERISTICHE - CHARACTERISTICS - DATEN							
DESCRIZIONE DESIGNATION BESCHREIBUNG	RIFERIMENTO REFERENCE ZEICHEN	Qmax (Kg)	MIS. INGOMBRO OVERAL LENGTH ABMESSUNGEN (mm)				PESO WEIGHT GEWITCH
			A	B	C	D	
PC 30	479868	3000	470	470	600	250	115 Kg
PC 40	607300	4000	470	470	600	250	115 Kg
PC 50	509592	5000	470	470	600	250	117 Kg

# 5 . DIAGRAMMI DI PORTATA

LOAD CHARTS

LEISTUNGS-TABELLEN



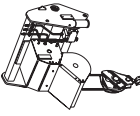
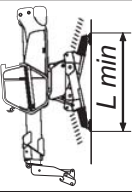
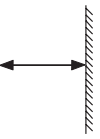
***I diagrammi di portata sono validi solo con il sistema di sicurezza regolarmente inserito.***

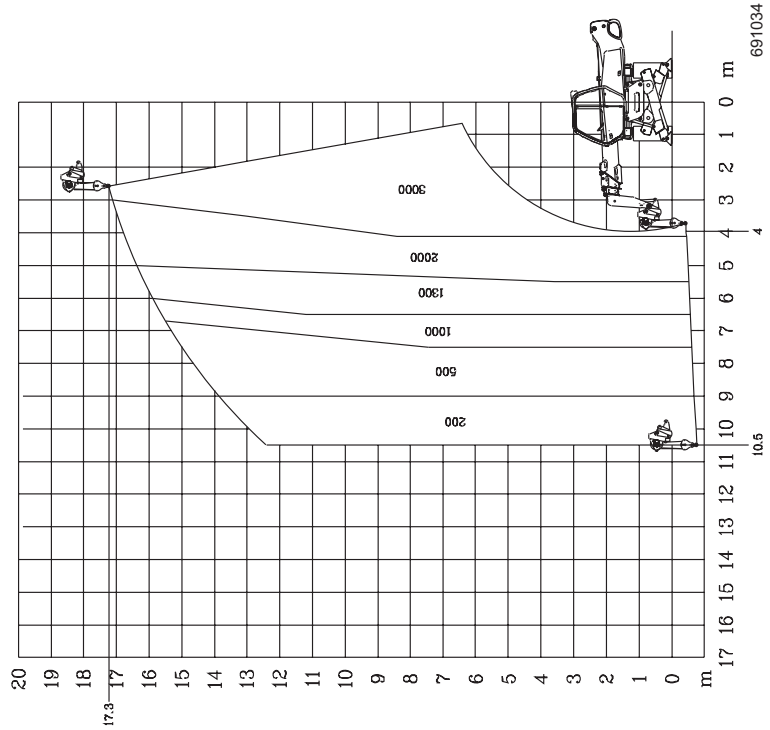


***The load capacity diagrams are only valid with the safety system properly activated.***

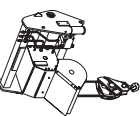
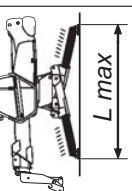
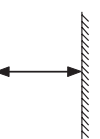


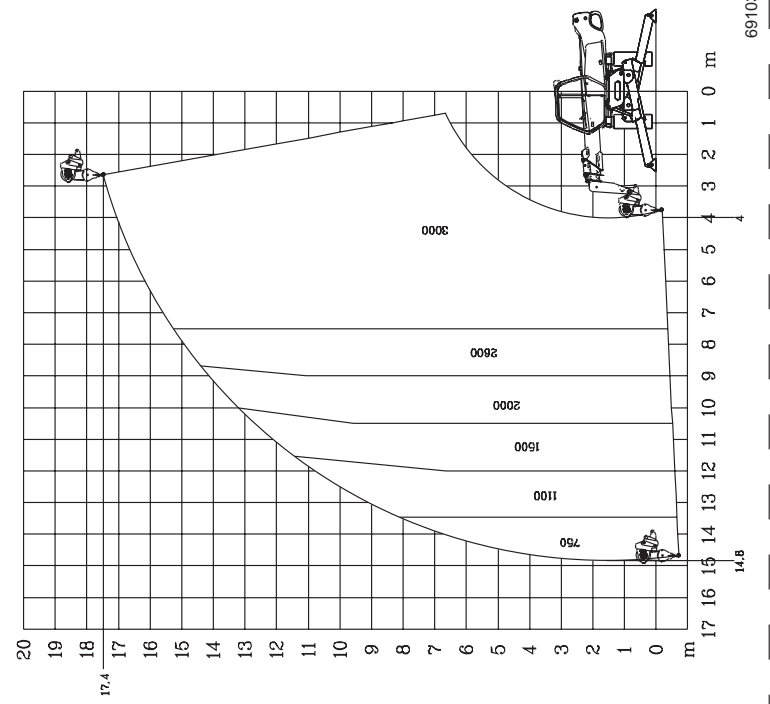
***Diese Traglastdiagramme gelten nur bei korrekt eingestellten Sicherheitssystem.***

MRT 1850		pos. C
Winch 3T		17,3 m
	3000 Kg	
	L min	

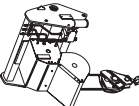
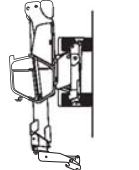
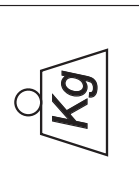
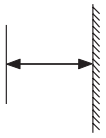


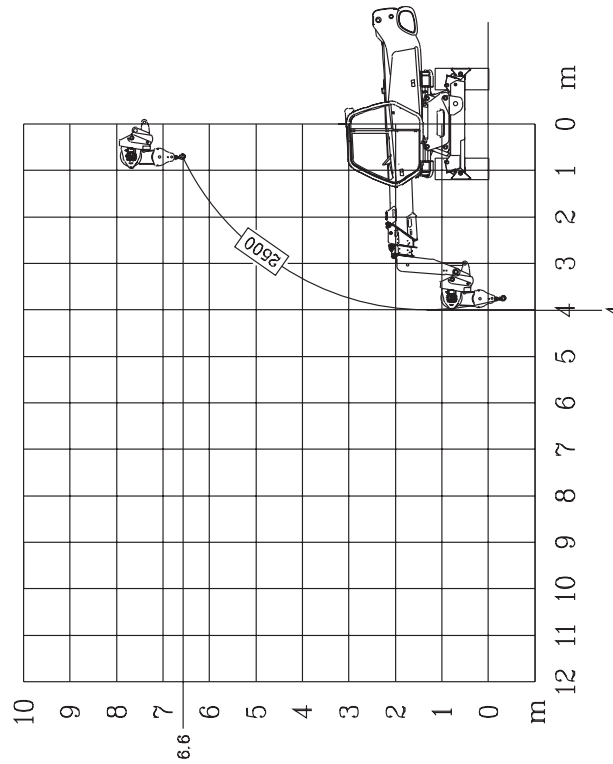
691034

MRT 1850		pos. C
Winch 3T		17,4 m
	3000 Kg	
	L max	

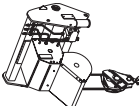
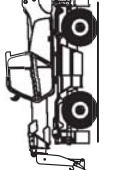

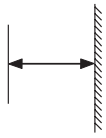


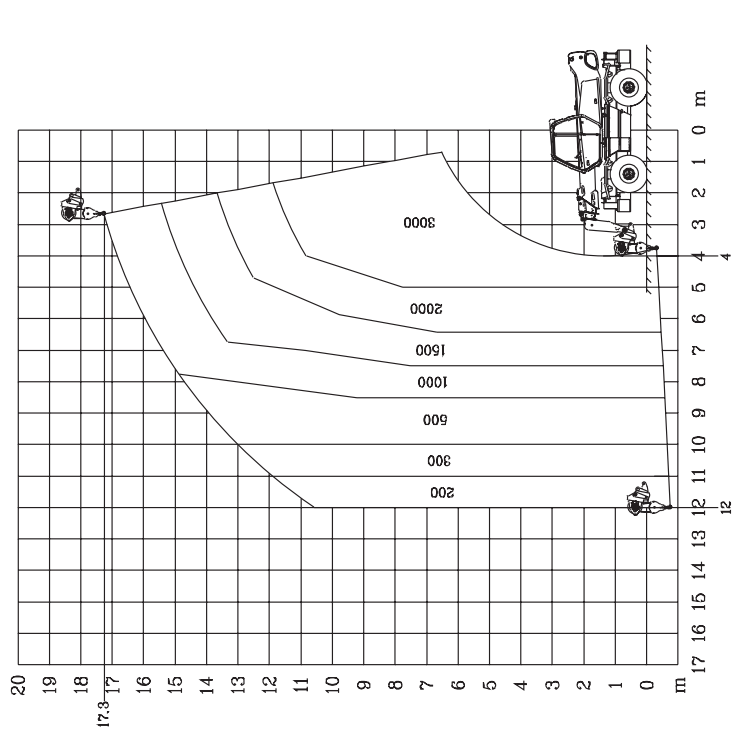
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MRT 1850		pos. C	
Winch 3T		2500 Kg	6,6 m
			

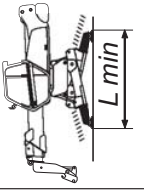

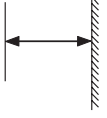


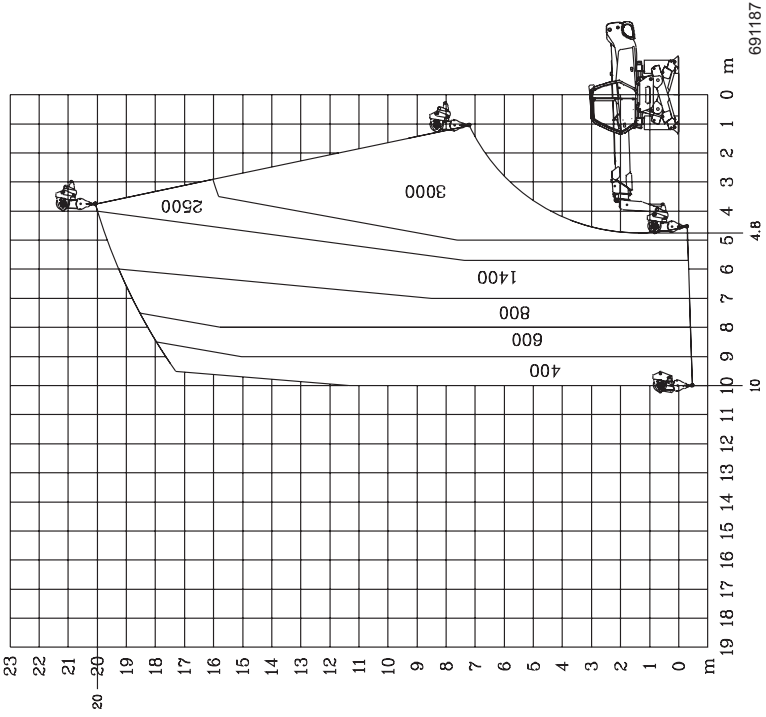
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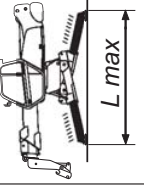

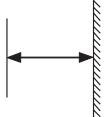
MRT 1850		pos. C	
Winch 3T		3000 Kg	17,3 m
			

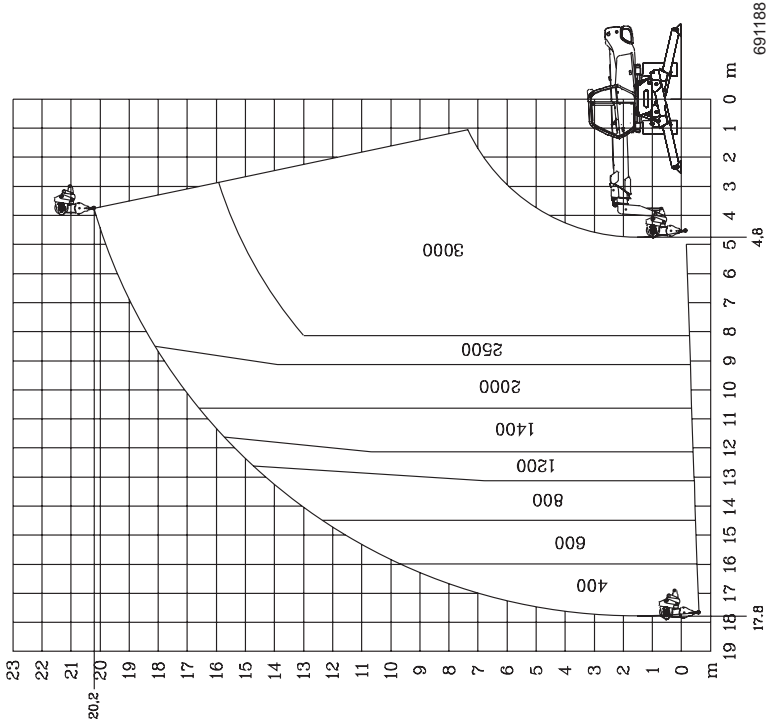


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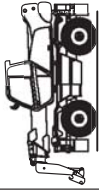
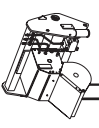
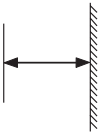
<b>MRT 2150</b> 	<b>3000</b> 	<b>pos. C</b> <b>20 m</b> 

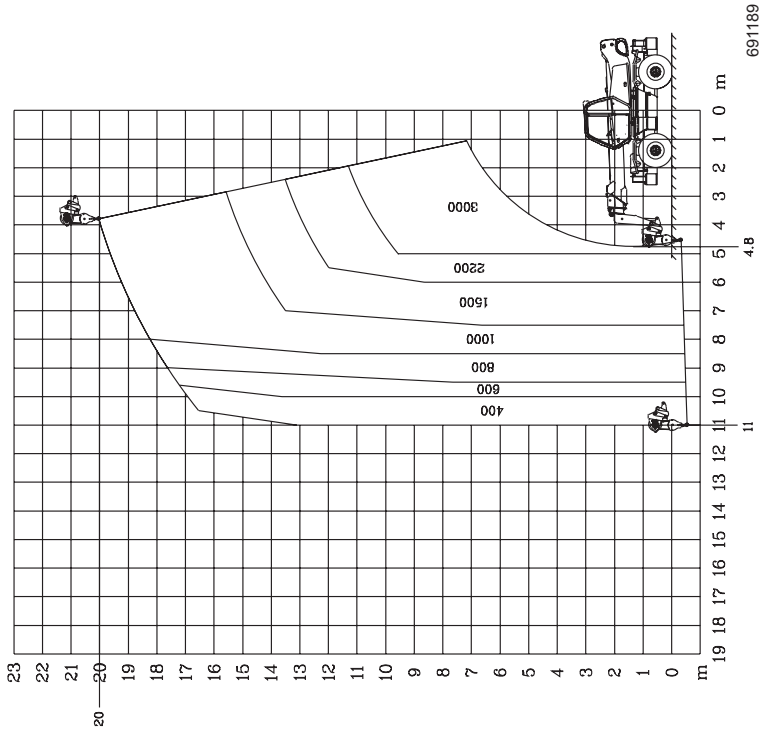


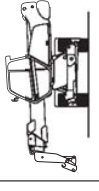
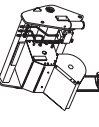
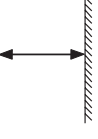
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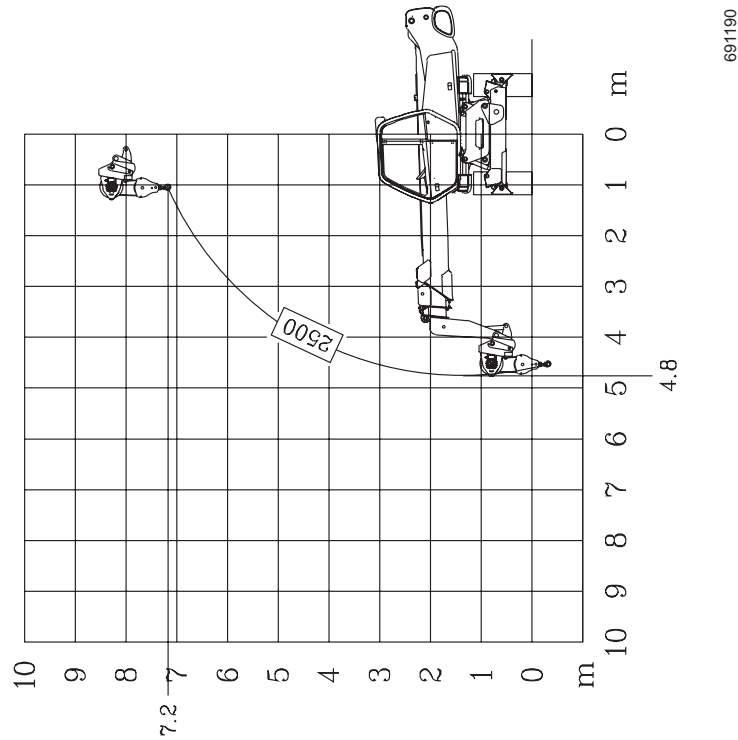




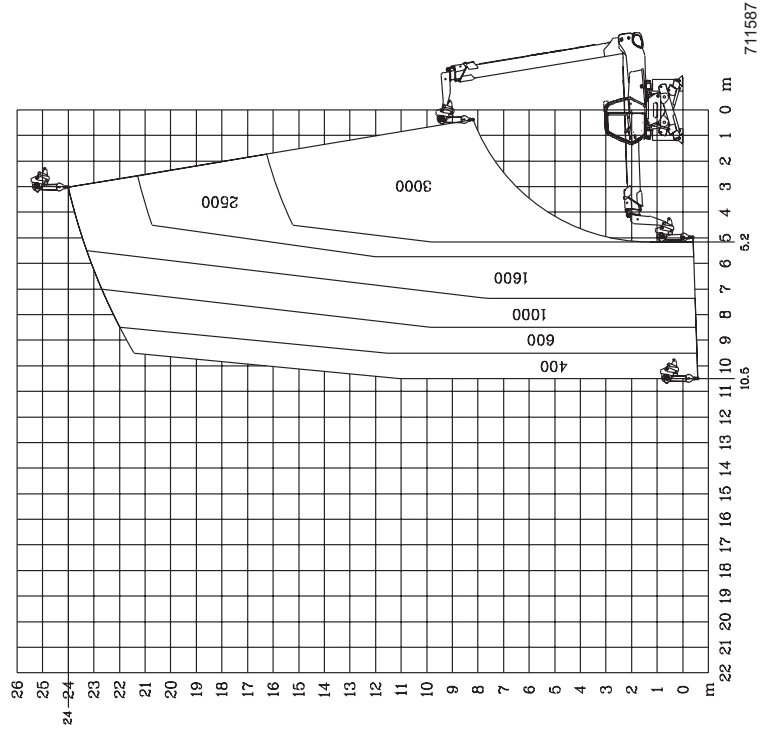
MRT 2150	pos. C
Winch 3T	3000 Kg
	20 m
	



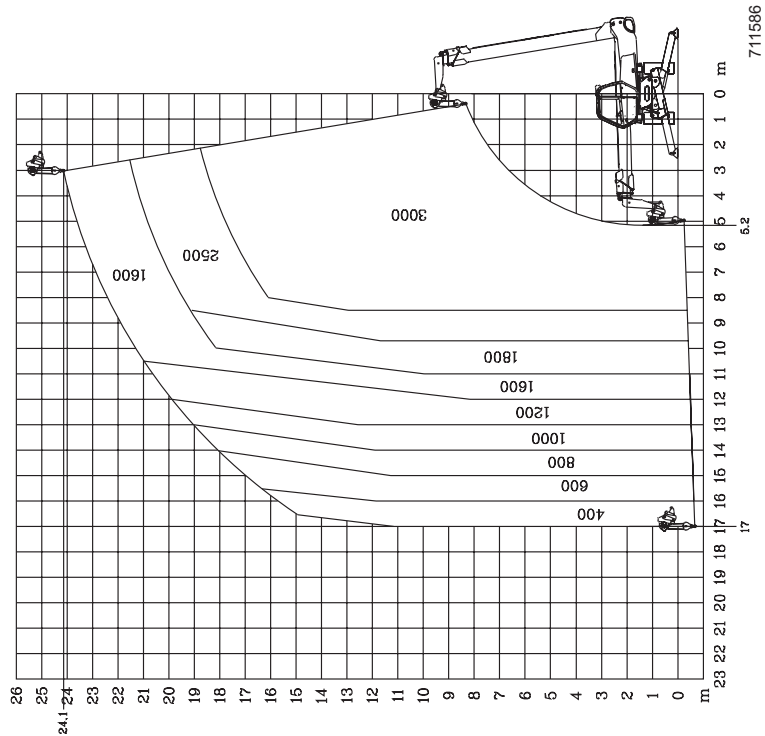
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Winch 3T	2500 Kg
	7,2 m
	

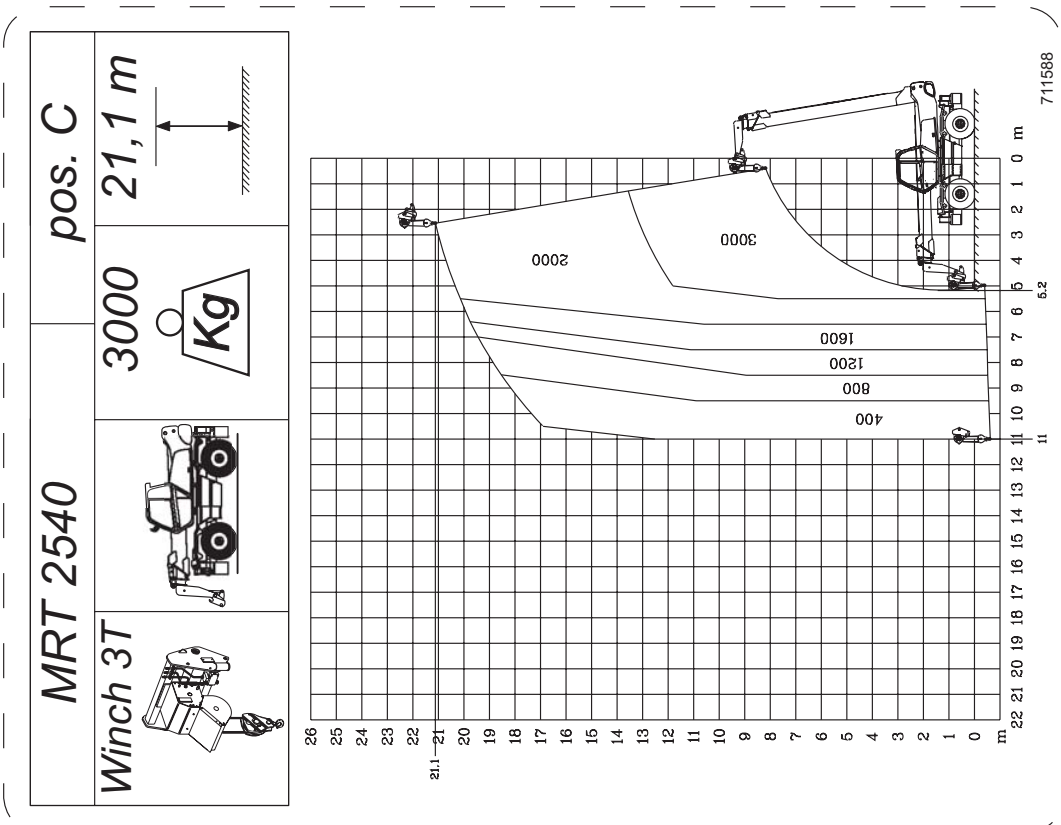
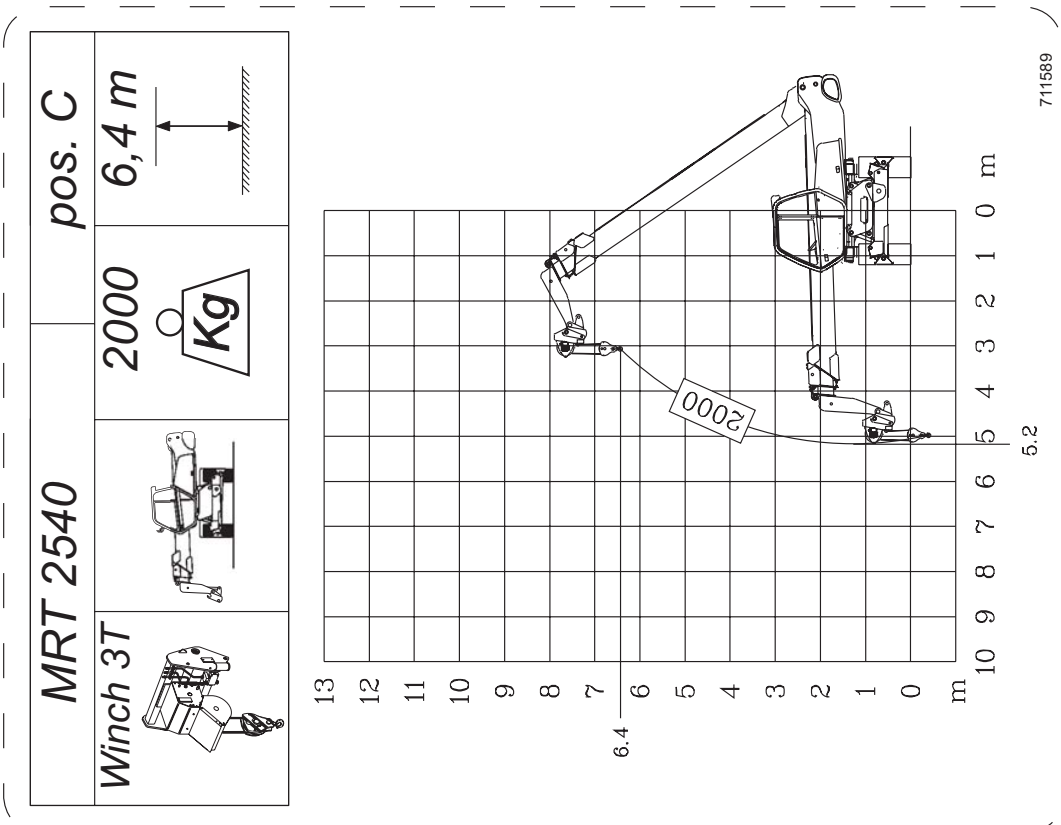


MRT 2540	pos. C
Winch 3T	3000 Kg
	24 m

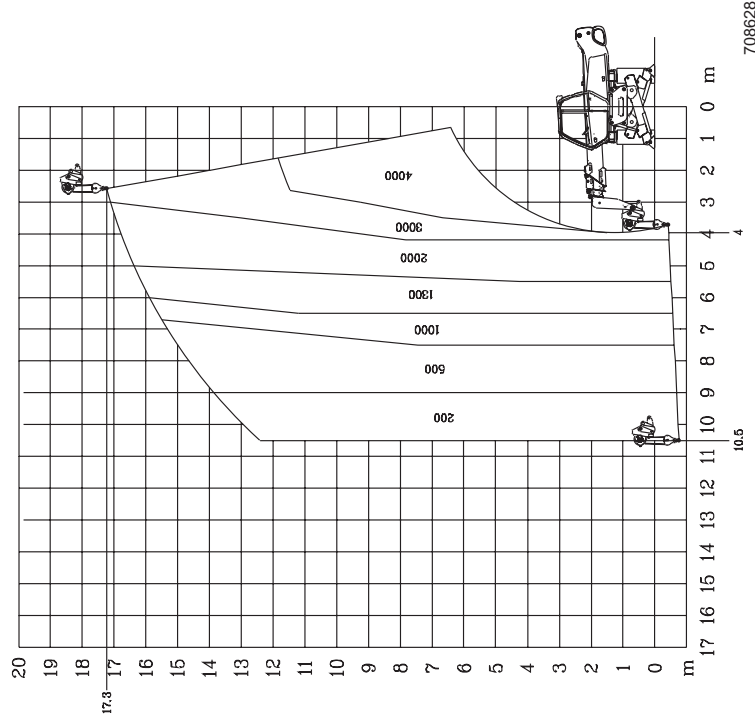


MRT 2540	pos. C
Winch 3T	3000 Kg
	24,1 m

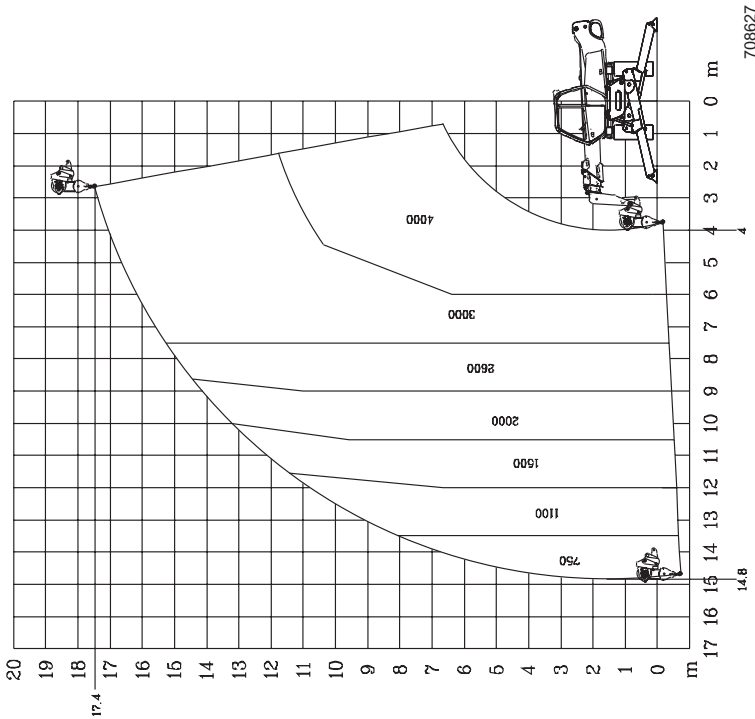


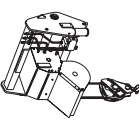
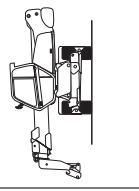


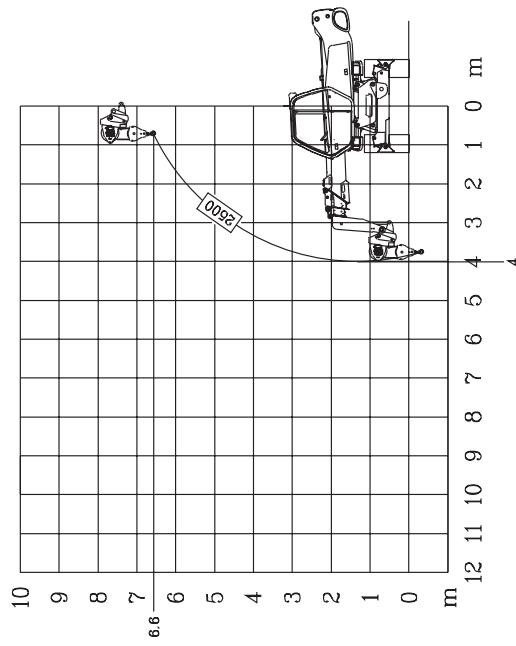
MRT 1850	pos. I
Winch 4T	4000 Kg
	17,3 m



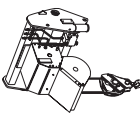
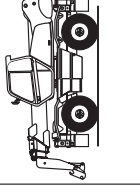
MRT 1850	pos. I
Winch 4T	4000 Kg
	17,4 m

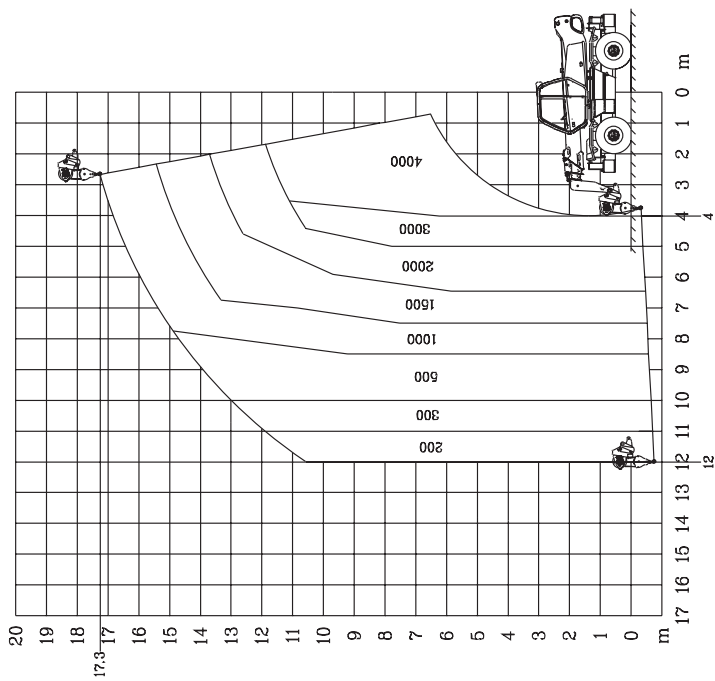


MRT 1850		pos. I
Winch 4T		2500 Kg
		6,6 m

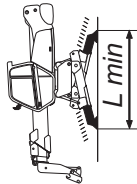

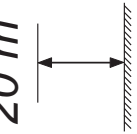
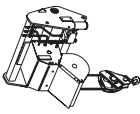


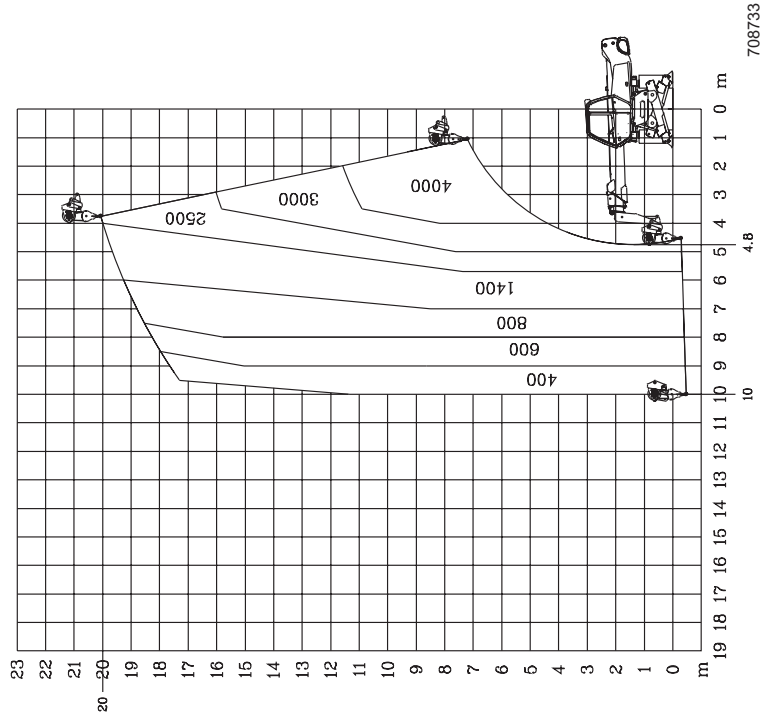
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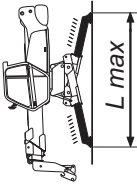

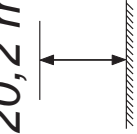
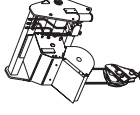
MRT 1850		pos. I
Winch 4T		4000 Kg
		17,3 m

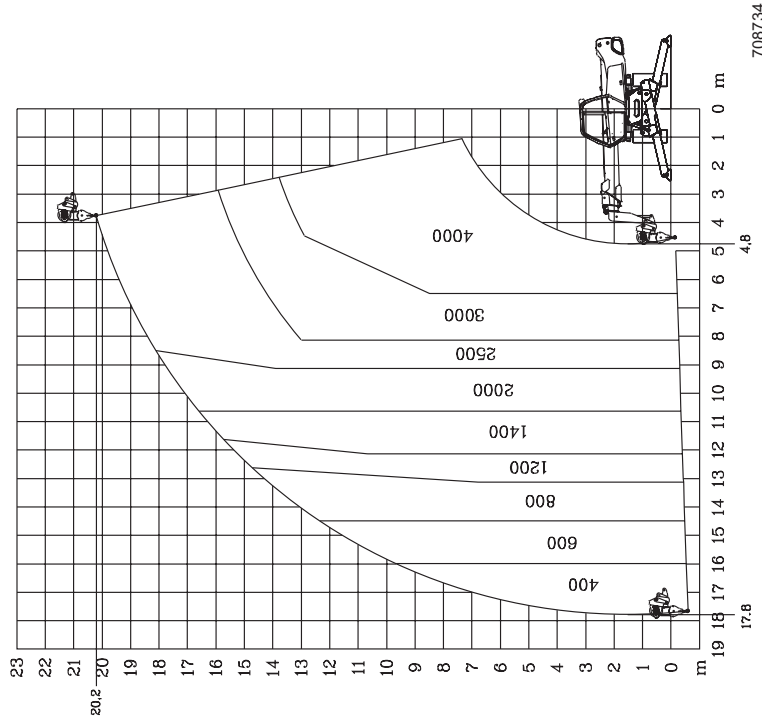


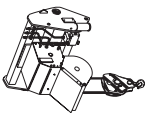
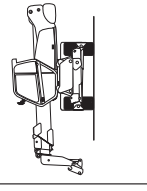


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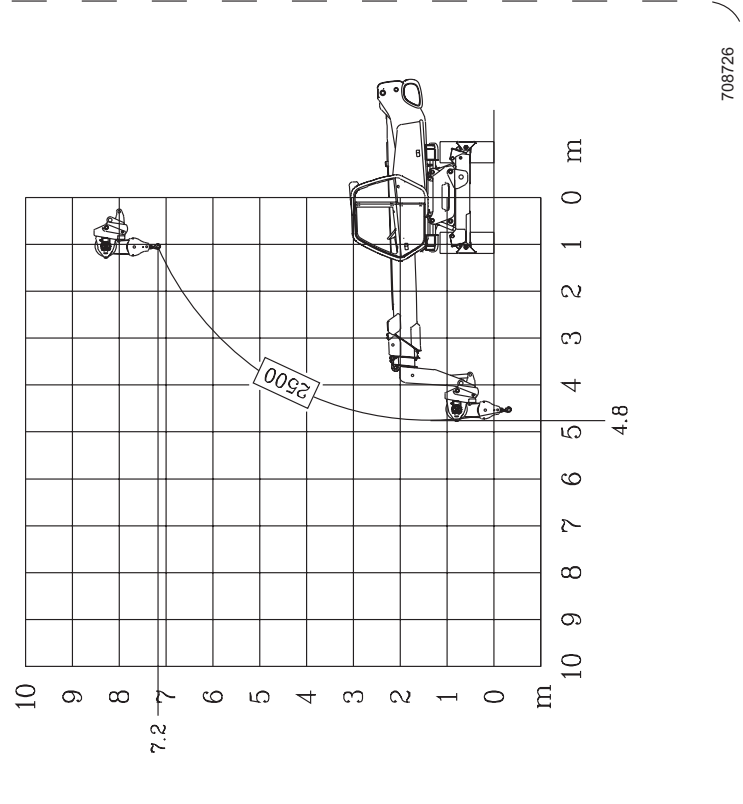
MRT 2150			pos. I
			
Winch 4T			



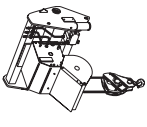
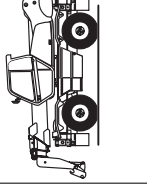


MRT 2150			pos. I
			
Winch 4T			

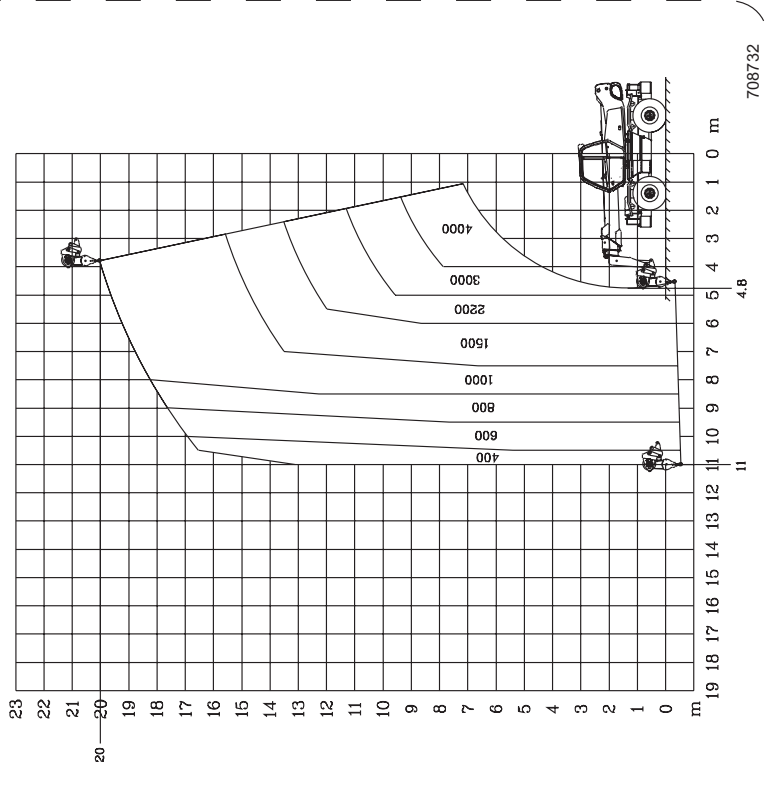


MRT 2150		pos. I	
Winch 4T		2500	7,2 m
			

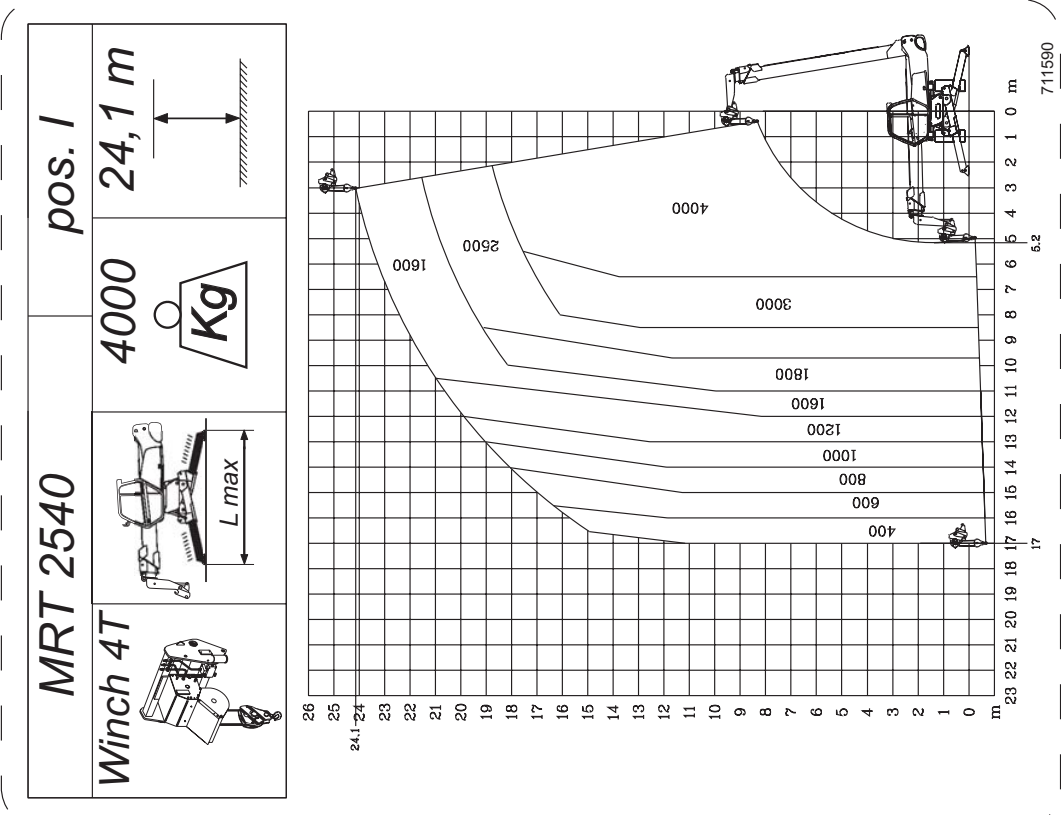
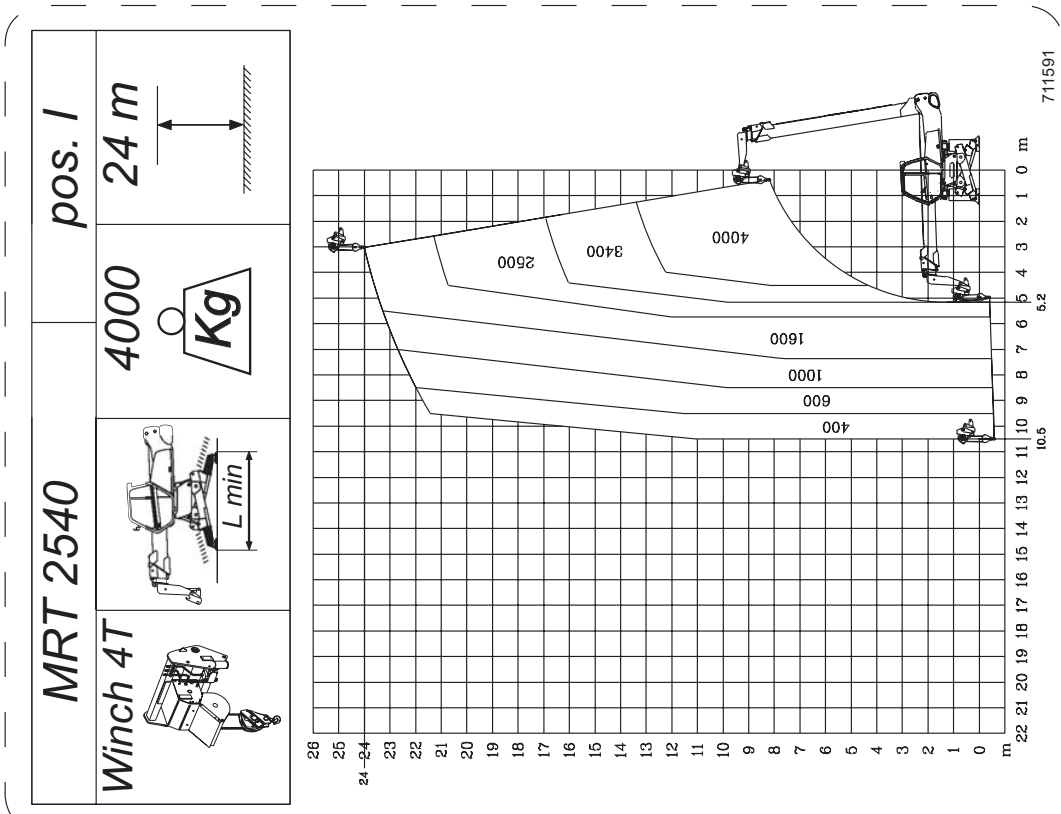


708726

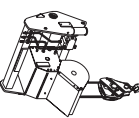



MRT 2150		pos. I	
Winch 4T		4000	20 m
			

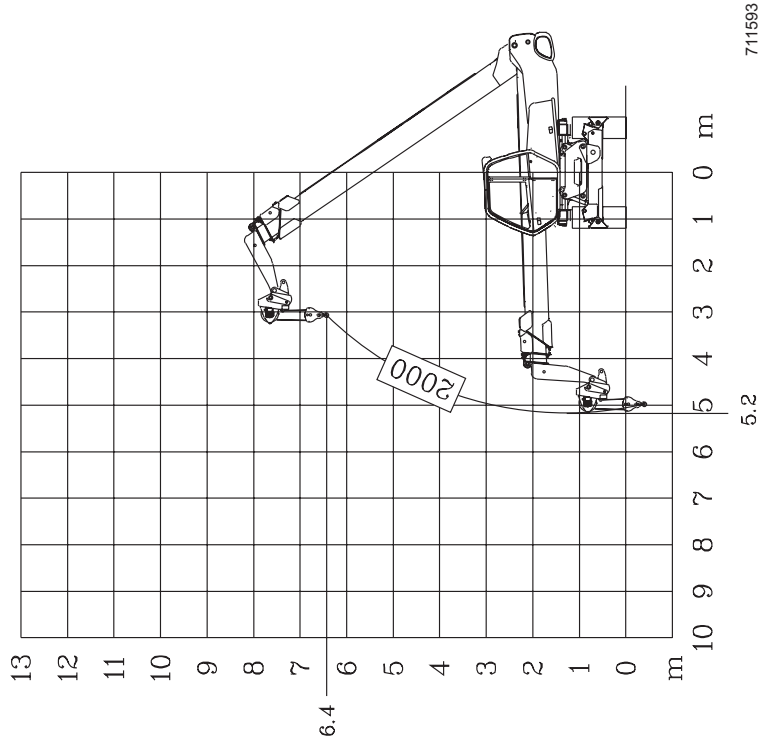


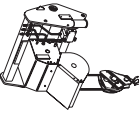
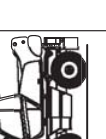
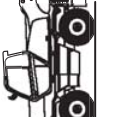

708732

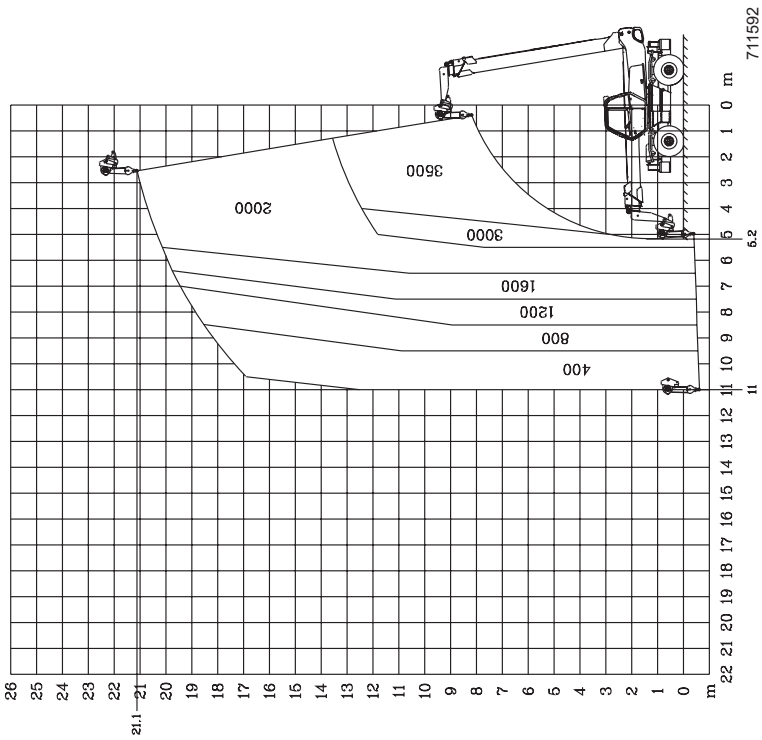


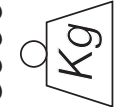
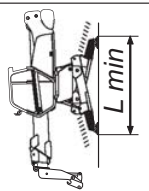
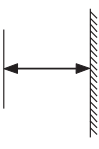


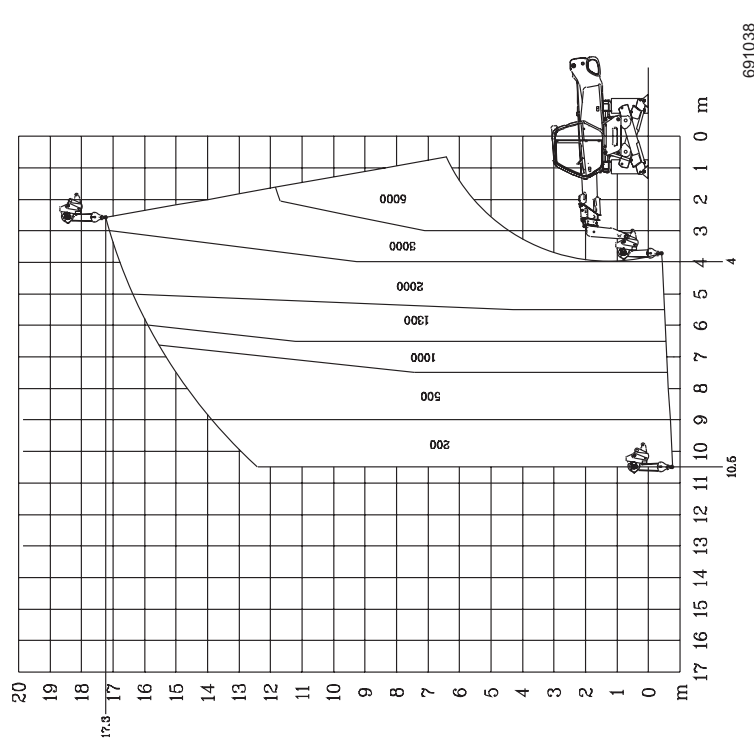
MRT 2540		pos. I
Winch 4T		6,4 m 
		2000 Kg 


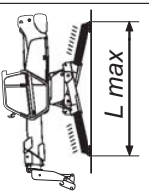
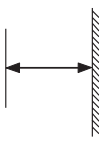


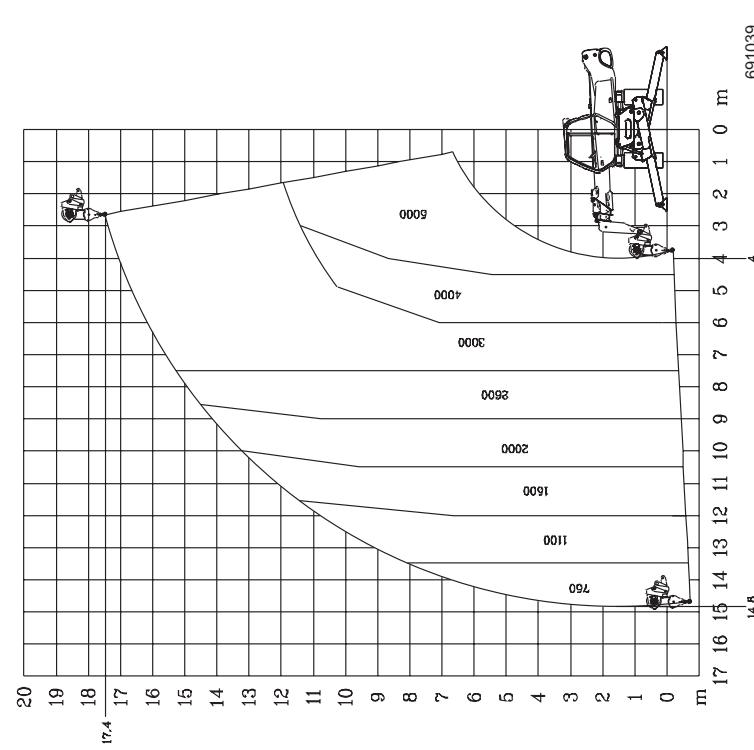
MRT 2540		pos. I
Winch 4T		21,1 m 
		3500 Kg 

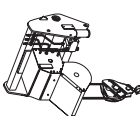
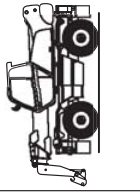
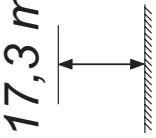


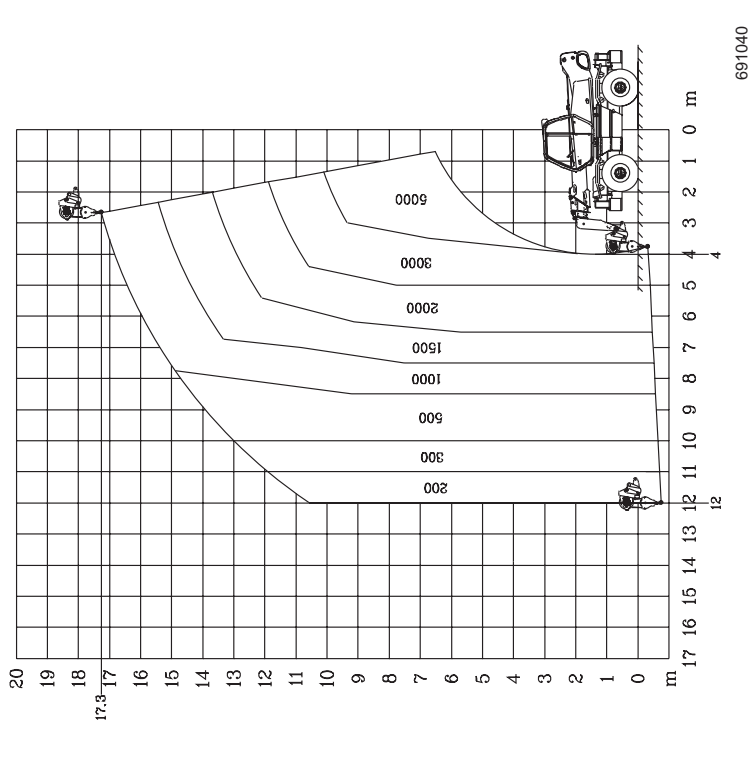
<b>MRT 1850</b>		<b>pos. J</b>
<b>Winch 5T</b>		<b>17,3 m</b>
	<b>5000</b>	

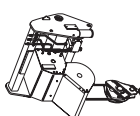
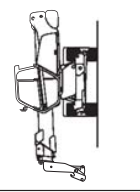
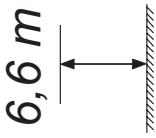


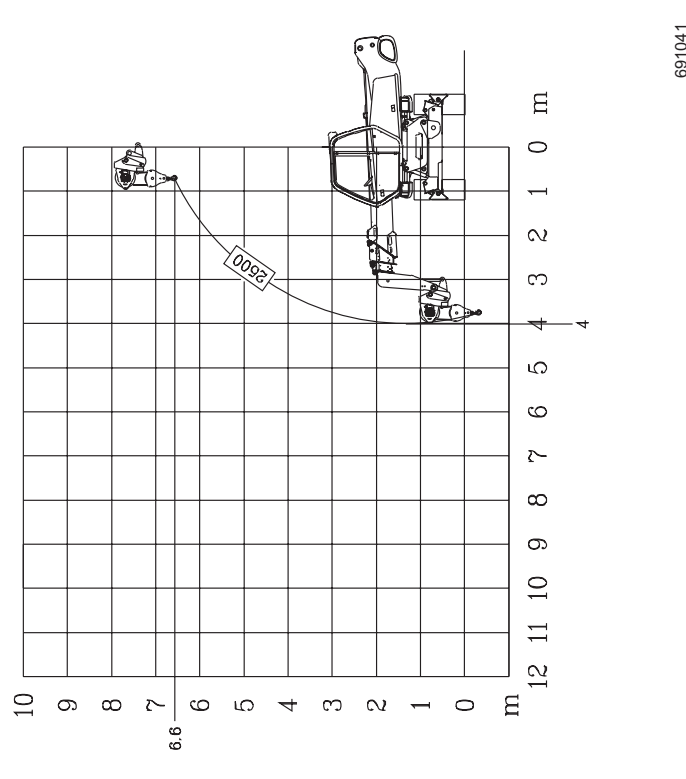
<b>MRT 1850</b>		<b>pos. J</b>
<b>Winch 5T</b>		<b>17,4 m</b>
	<b>5000</b>	

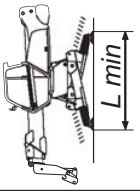

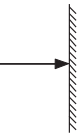


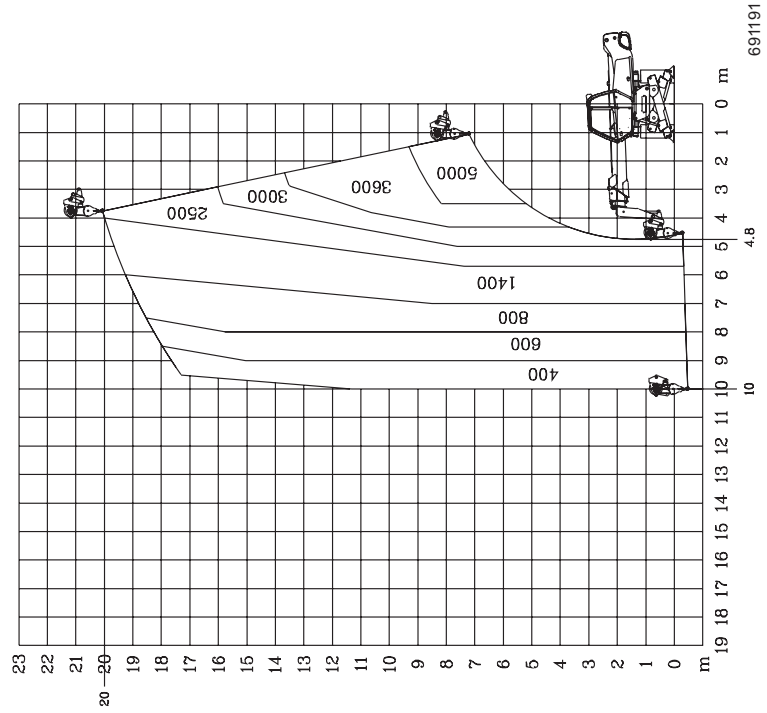
<b>MRT 1850</b>		<b>pos. J</b>
<b>Winch 5T</b>		<b>17,3 m</b>
	<b>5000 Kg</b>	

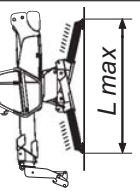

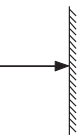


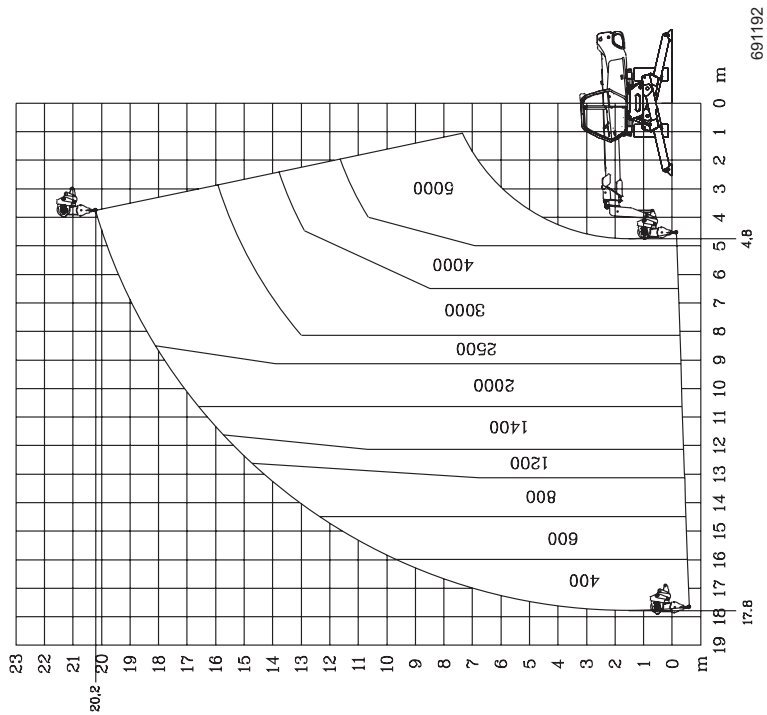
<b>MRT 1850</b>		<b>pos. J</b>
<b>Winch 5T</b>		<b>6,6 m</b>
	<b>2500 Kg</b>	

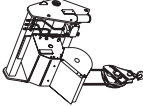
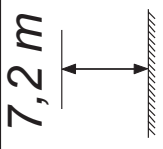

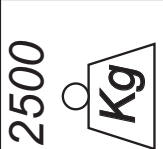
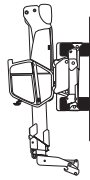


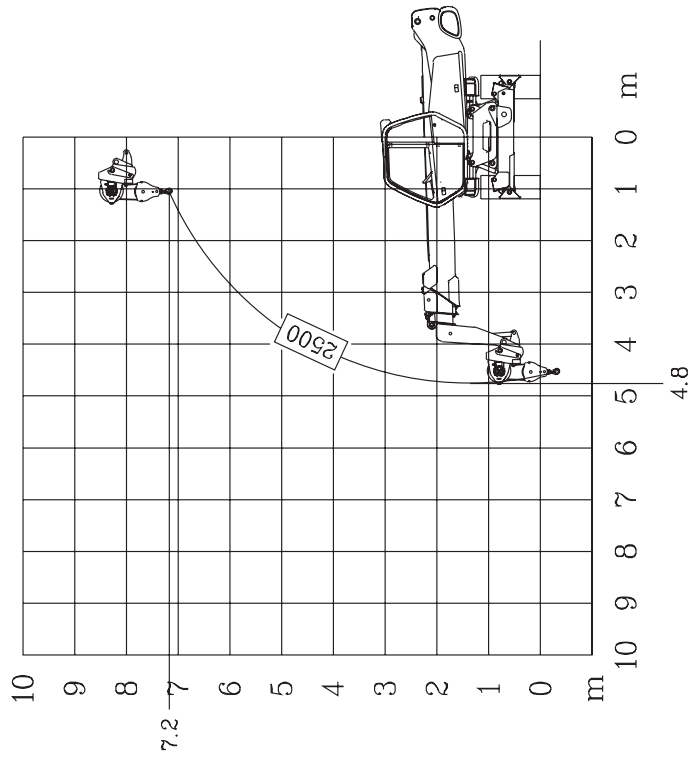
<b>MRT 2150</b> 		<b>5000</b> 	<b>pos. J</b> <b>20 m</b> 



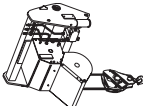
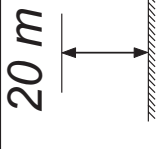

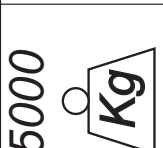

<b>MRT 2150</b> 		<b>5000</b> 	<b>pos. J</b> <b>20,2 m</b> 

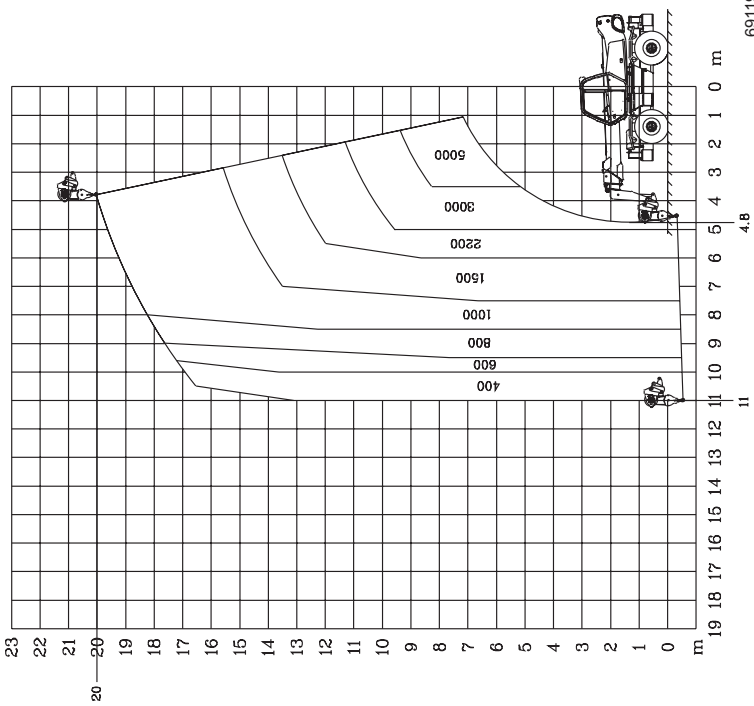


MRT 2150		pos. J
Winch 5T		
		
		

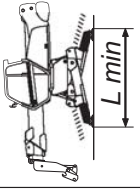

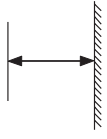


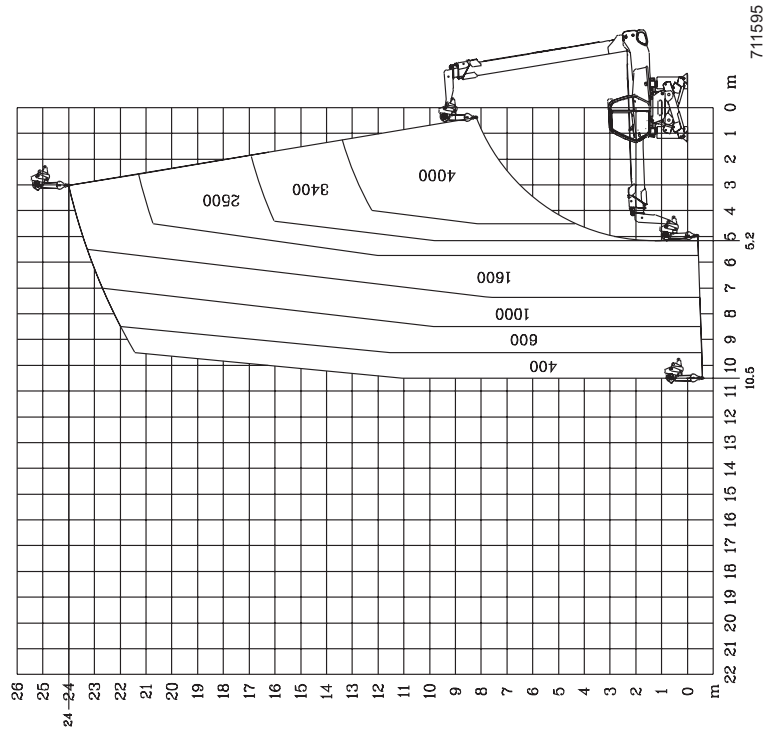
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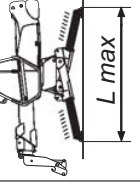

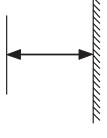
MRT 2150		pos. J
Winch 5T		
		
		

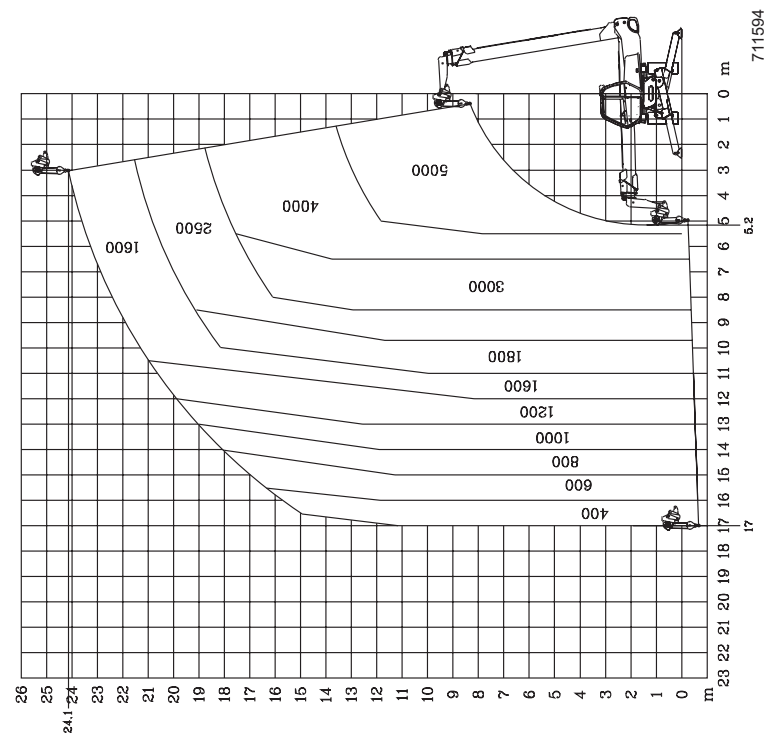


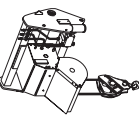
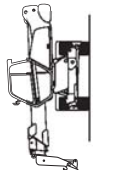

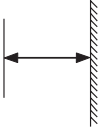
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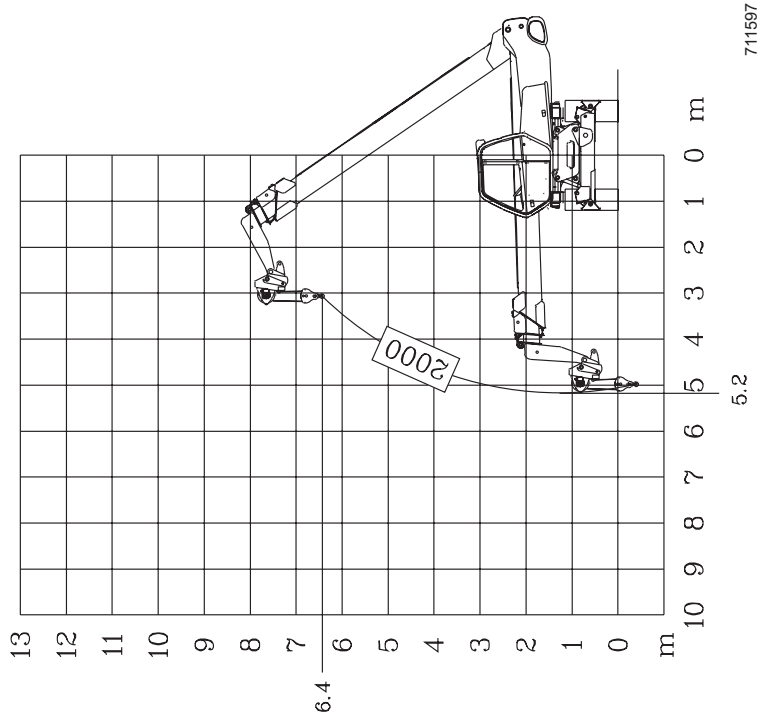
<b>MRT 2540</b> 	<b>4000</b> 	<b>pos. J</b> <b>24 m</b> 

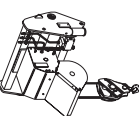
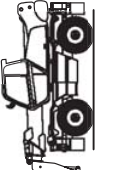

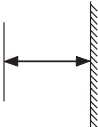


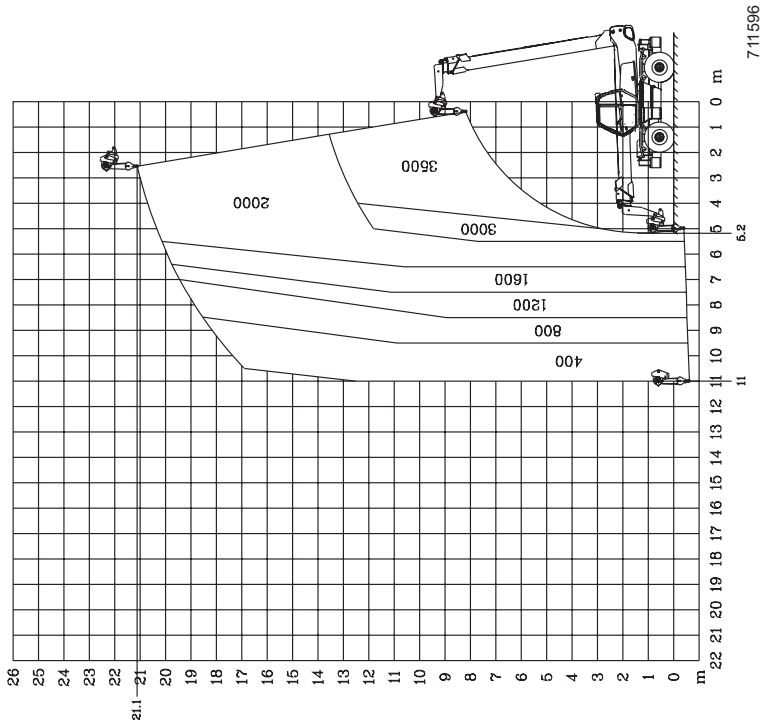
<b>MRT 2540</b> 	<b>5000</b> 	<b>pos. J</b> <b>24,1 m</b> 



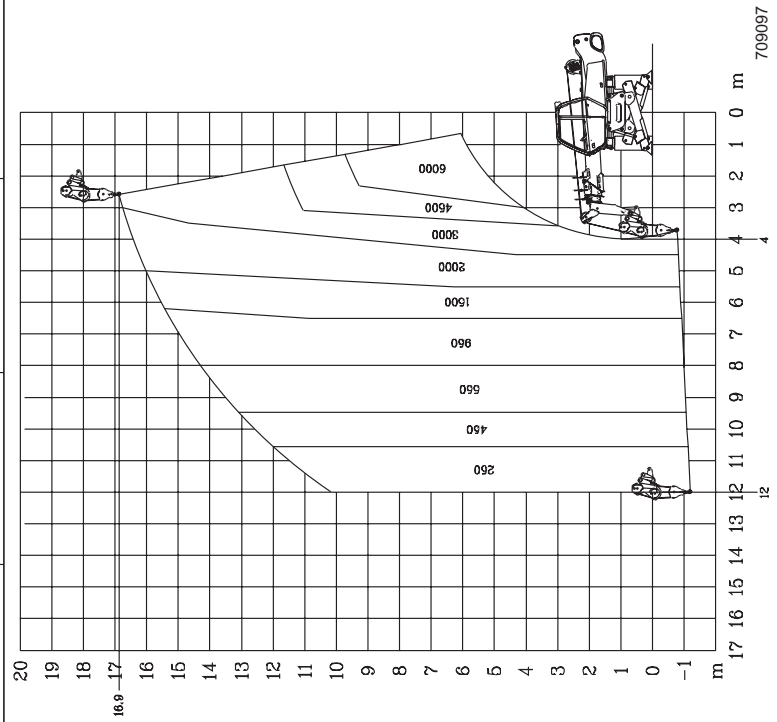
MRT 2540		pos. J	
Winch 5T		2000	6,4 m
			



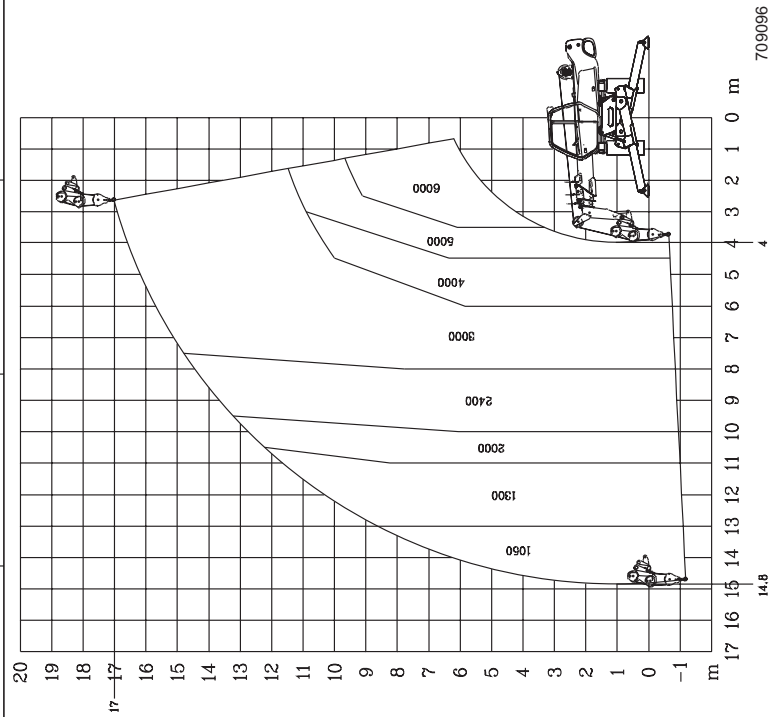
MRT 2540		pos. J	
Winch 5T		3500	21,1 m
			



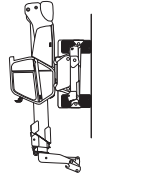
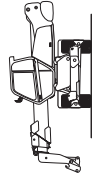
MRT 1850		pos. 1
		16,9 m
Winch 6T		6000 Kg

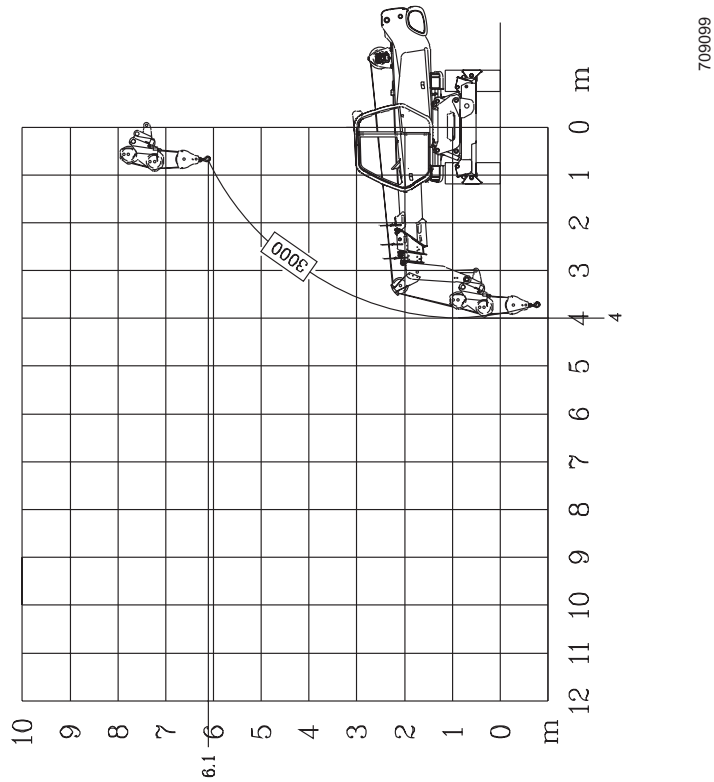


MRT 1850		pos. 1
		17 m
Winch 6T		6000 Kg

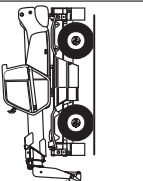



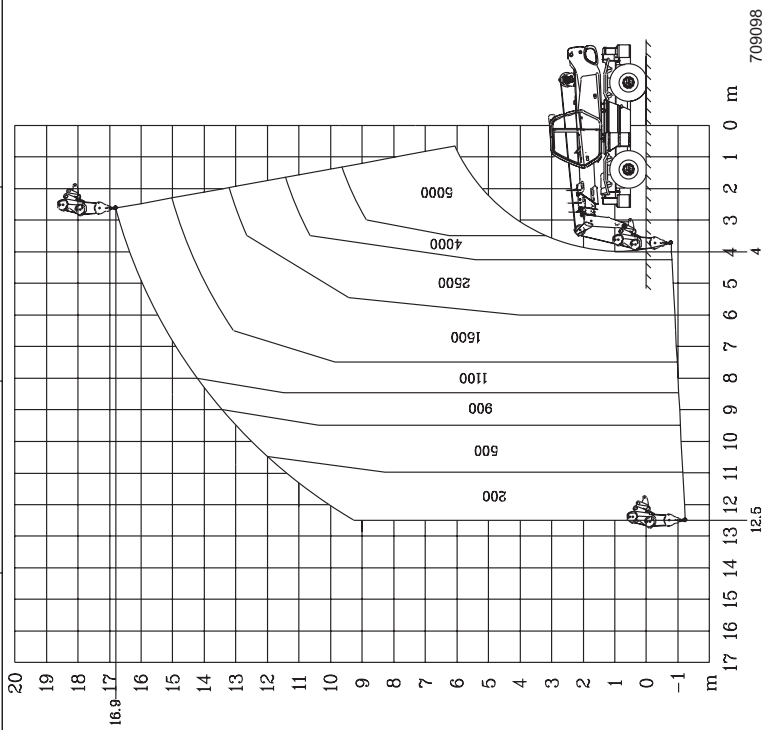


MRT 1850		pos. 1
Winch 6T		3000 Kg
		6,1 m

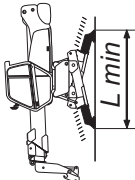
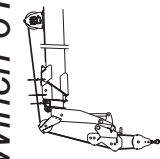
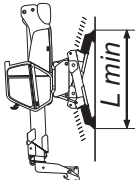

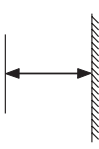


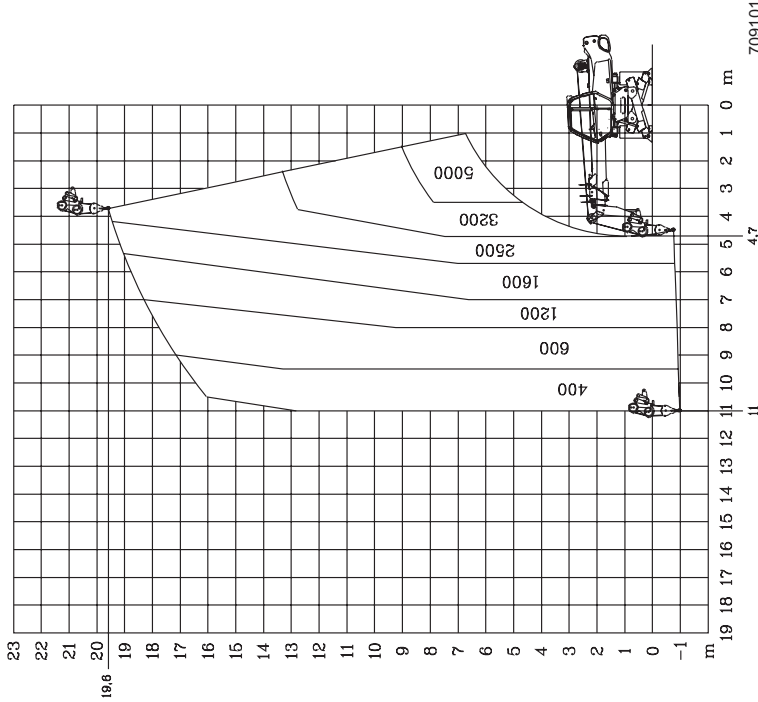
709099

MRT 1850		pos. 1
Winch 6T		5000 Kg
		16,9 m

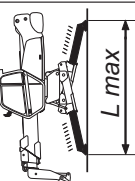
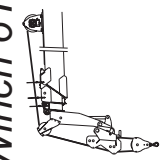
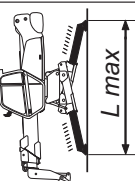

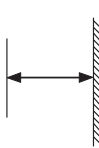


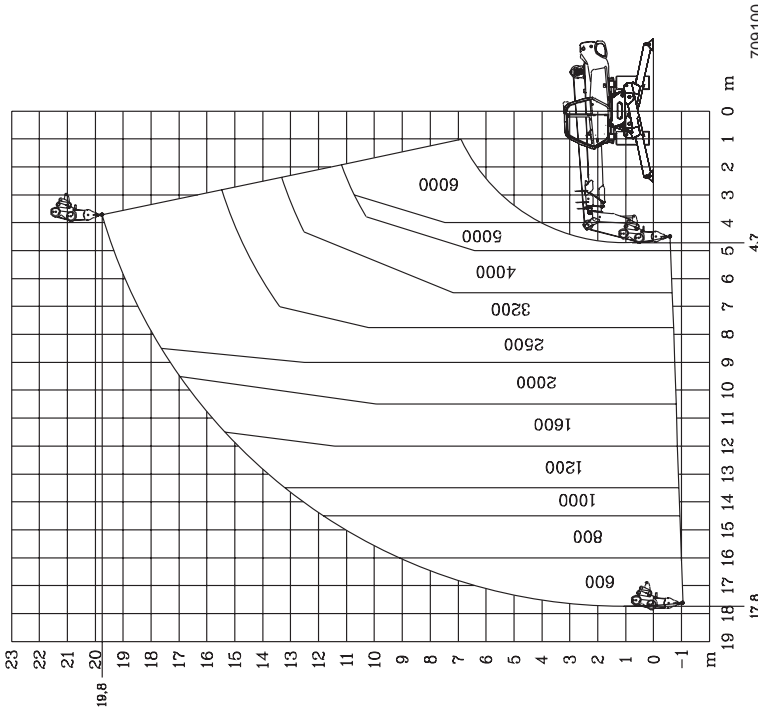
709098

<b>MRT 2150</b>		<b>pos. 1</b>	
<b>Winch 6T</b>		<b>5000 Kg</b>	<b>19,6 m</b>
			

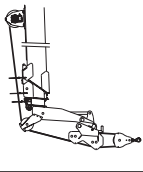
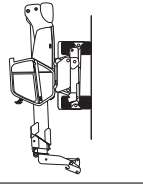
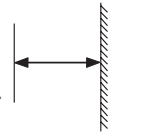


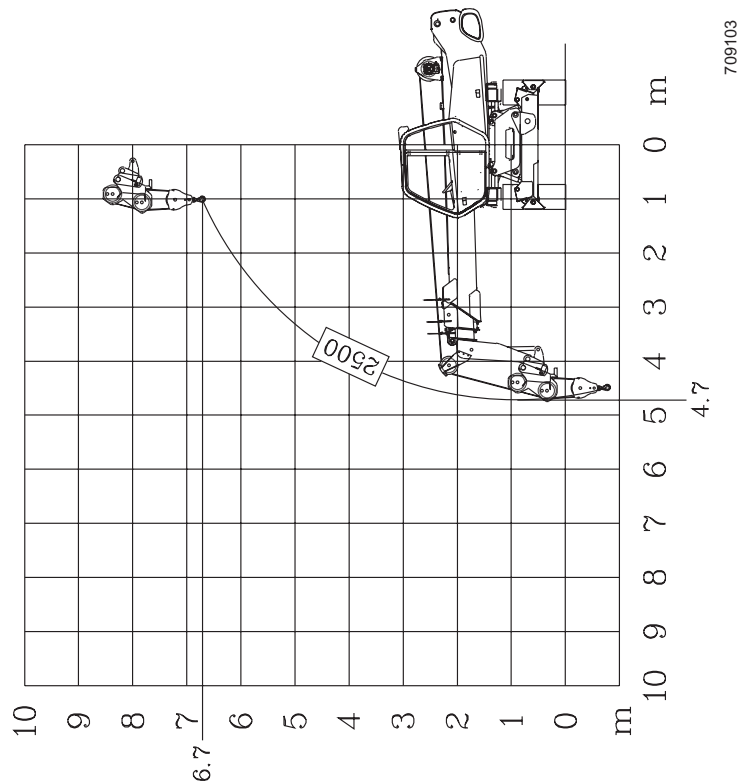
709101

<b>MRT 2150</b>		<b>pos. 1</b>	
<b>Winch 6T</b>		<b>6000 Kg</b>	<b>19,8 m</b>
			

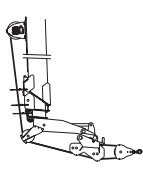
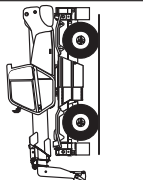
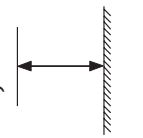


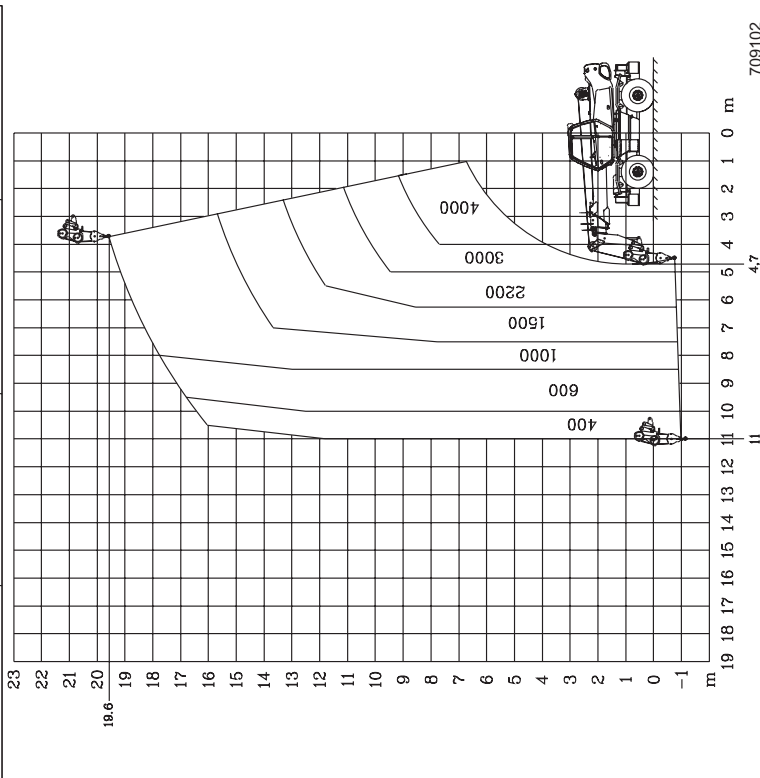
709100

MRT 2150		pos. 1	
Winch 6T		2500 Kg	6,7 m
			

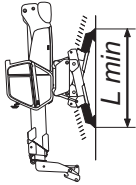
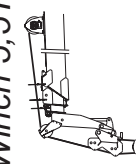



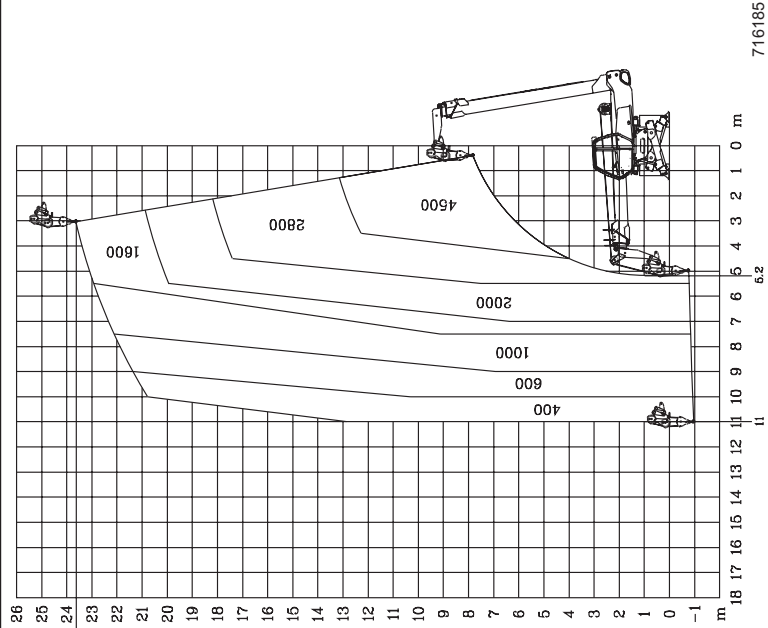
709103

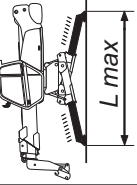
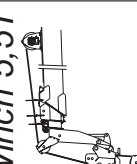

MRT 2150		pos. 1	
Winch 6T		4000 Kg	19,6 m
			

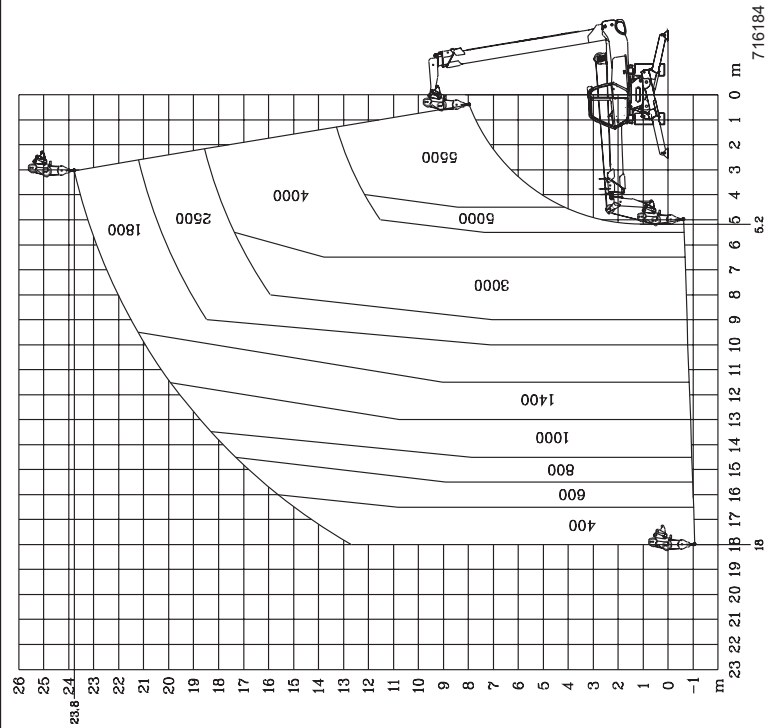


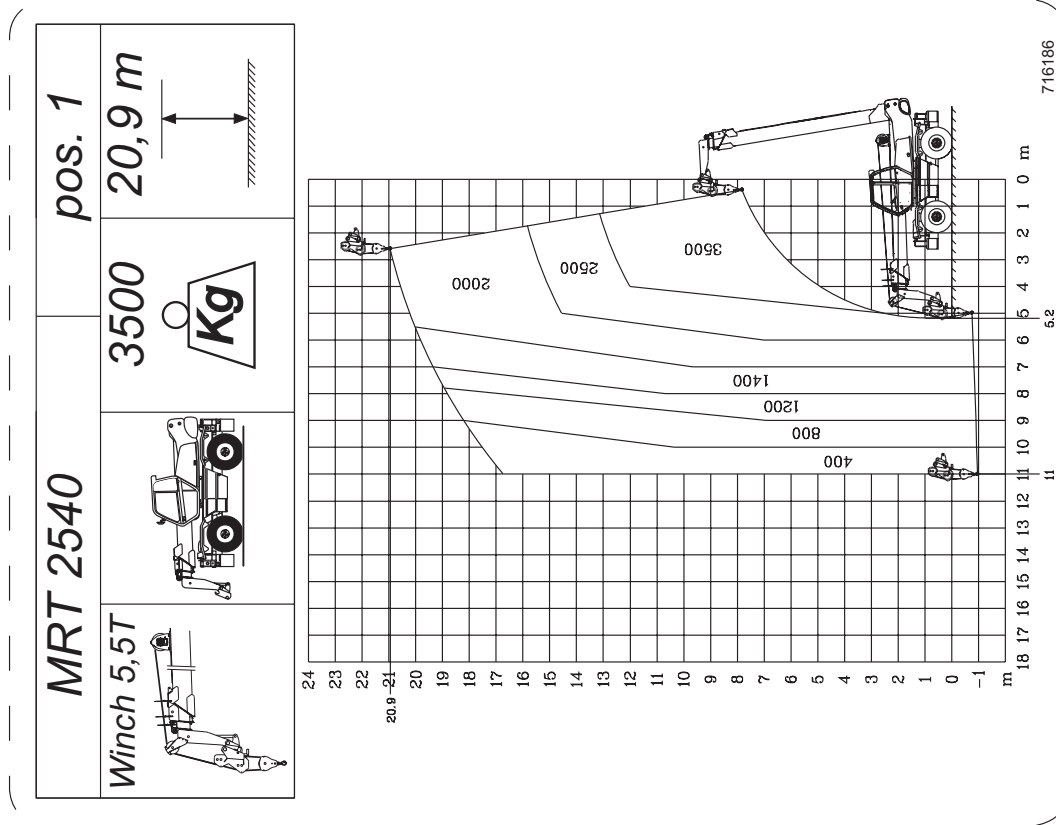
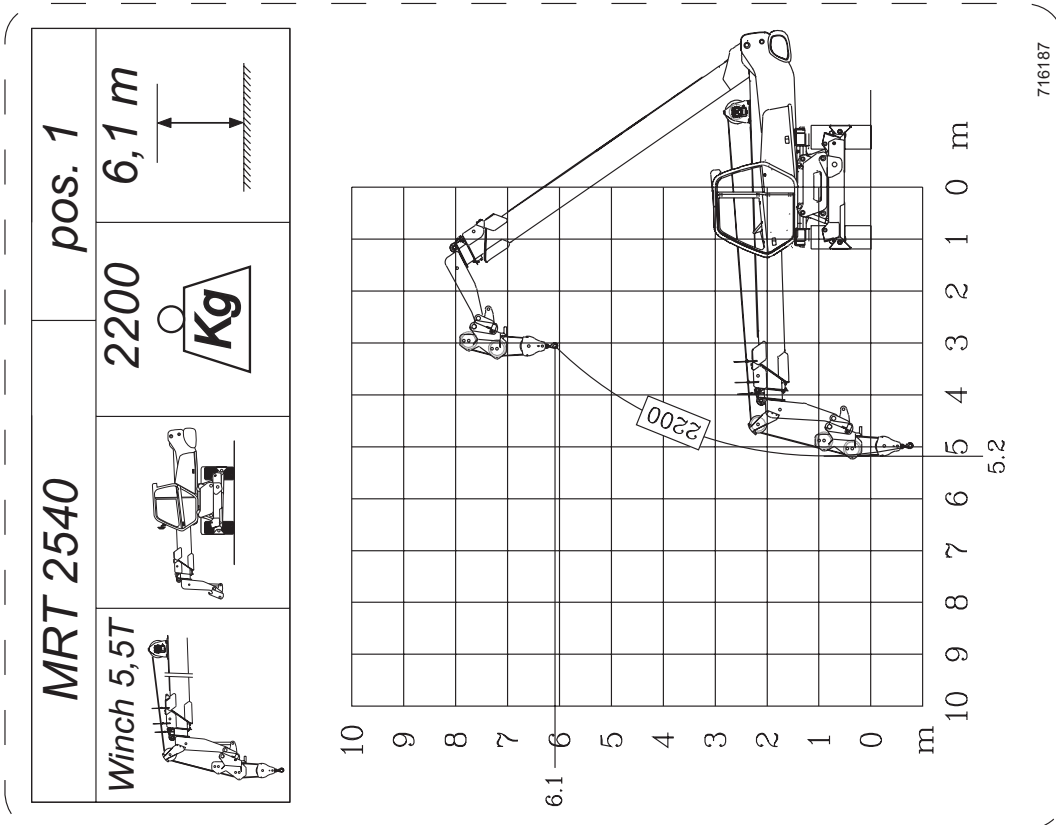
709102

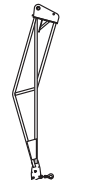
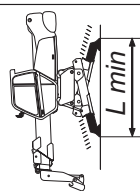
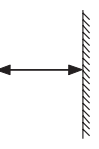

<p><b>MRT 2540</b></p> 	<p><b>Winch 5,5T</b></p> 	<p><b>4500</b></p> <p><b>Kg</b></p>	<p><b>pos. 1</b></p> <p><b>23,6 m</b></p> 
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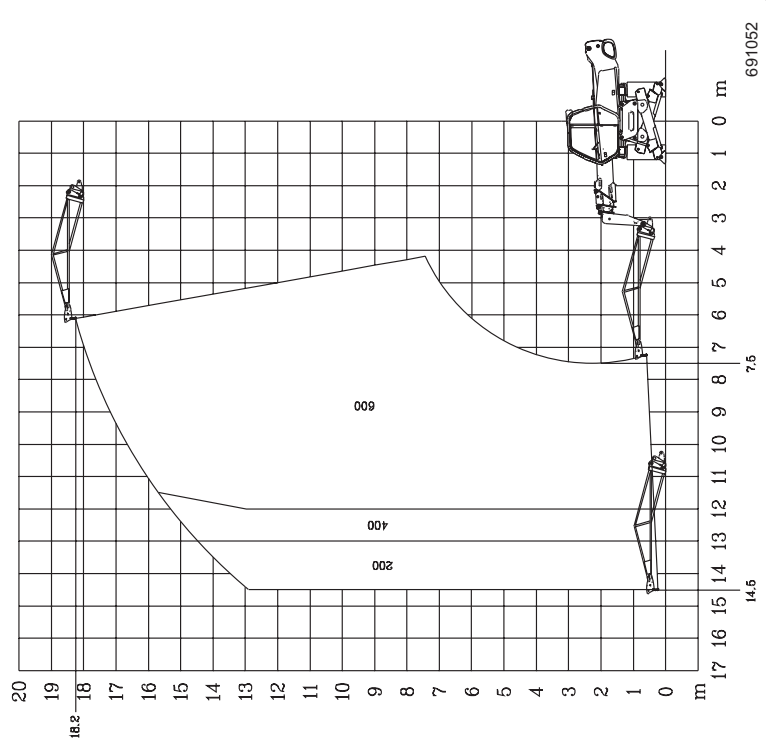


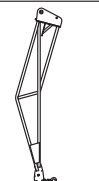
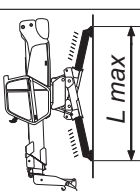
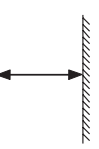

<p><b>MRT 2540</b></p> 	<p><b>Winch 5,5T</b></p> 	<p><b>5500</b></p> <p><b>Kg</b></p>	<p><b>pos. 1</b></p> <p><b>23,8 m</b></p> 
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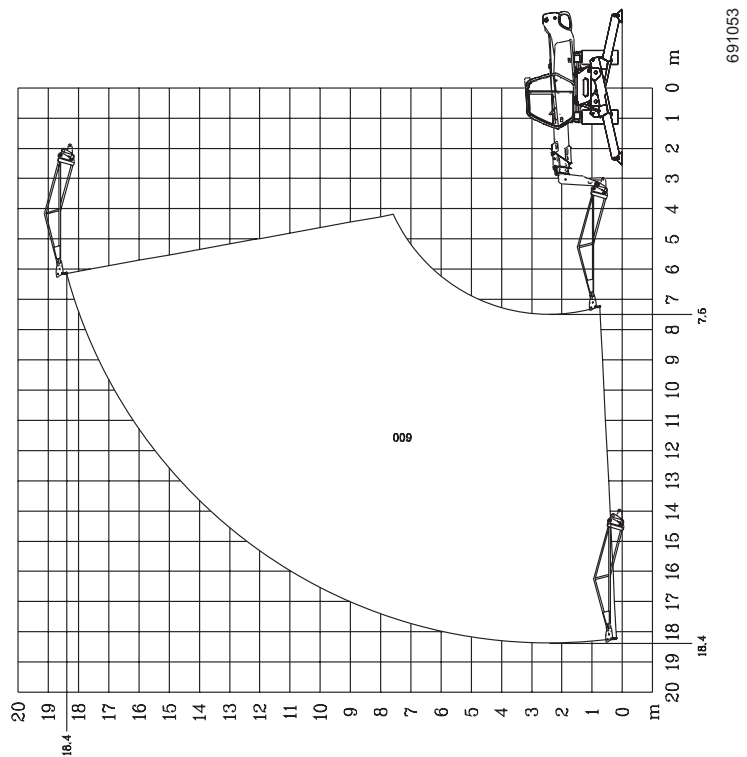


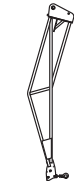
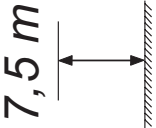
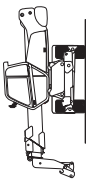



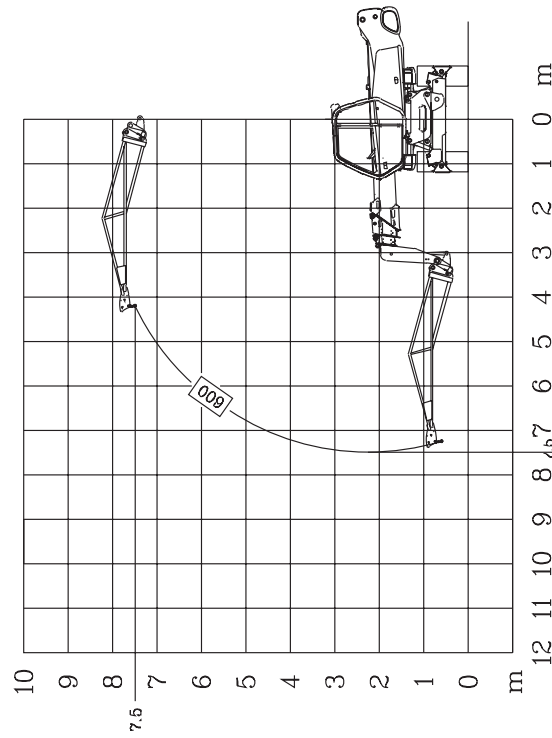
MRT 1850		pos. D	
		600	18,2 m
P 600			
			



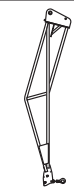
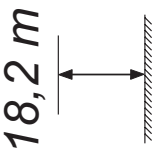


MRT 1850		pos. D	
		600	18,4 m
P 600			
			

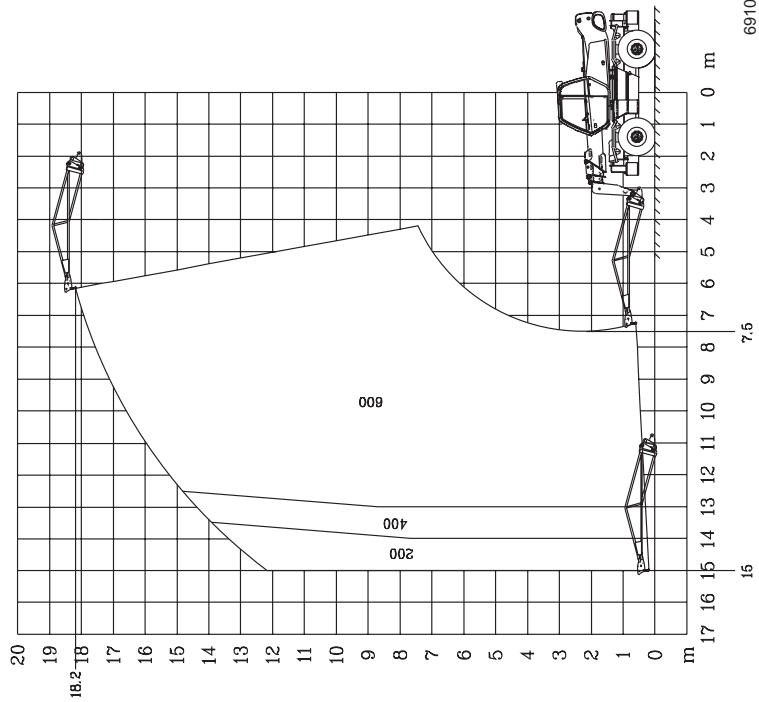


MRT 1850		pos. D
P 600		
		600
		

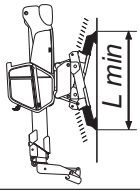

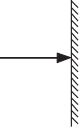



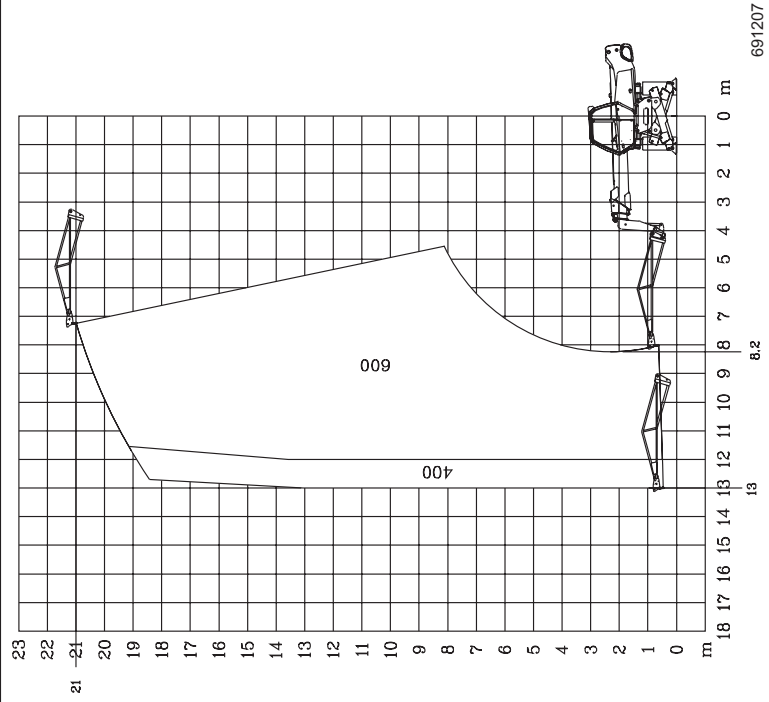
691055

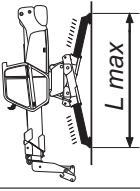

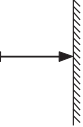

MRT 1850		pos. D
P 600		
		600
		

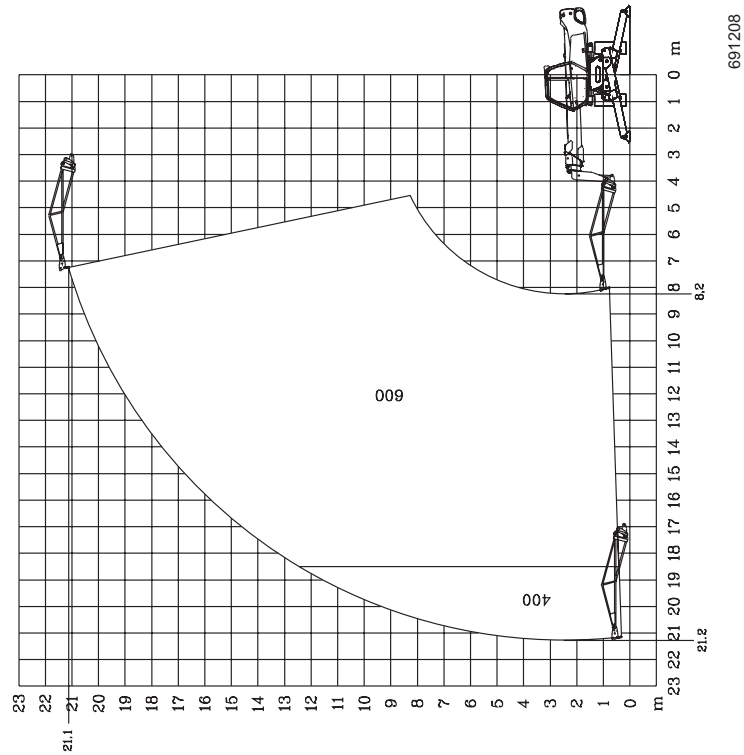


691054

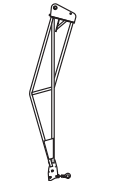
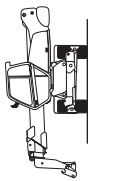
MRT 2150		pos. D	
		600	21 m
P 600			
			

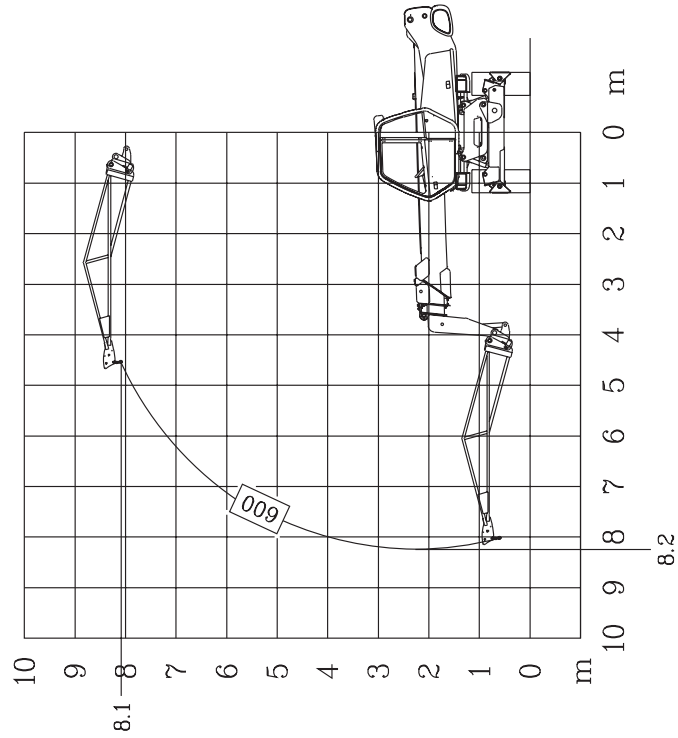


MRT 2150		pos. D	
		600	21,1 m
P 600			
			

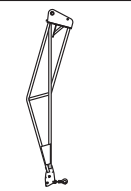
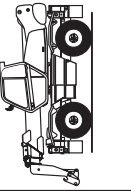


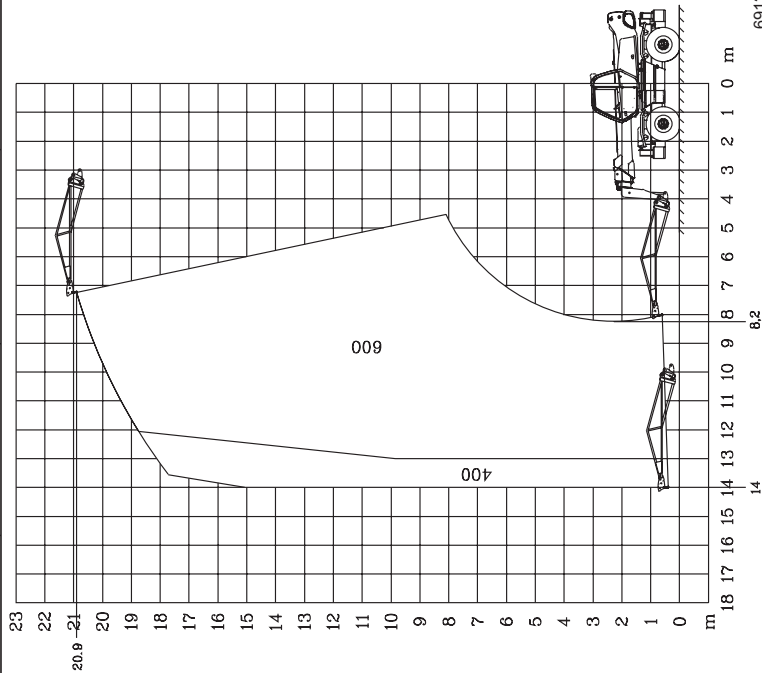


MRT 2150		pos. D
P 600		8,1 m
		600 Kg


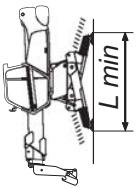

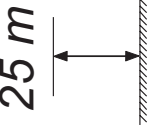


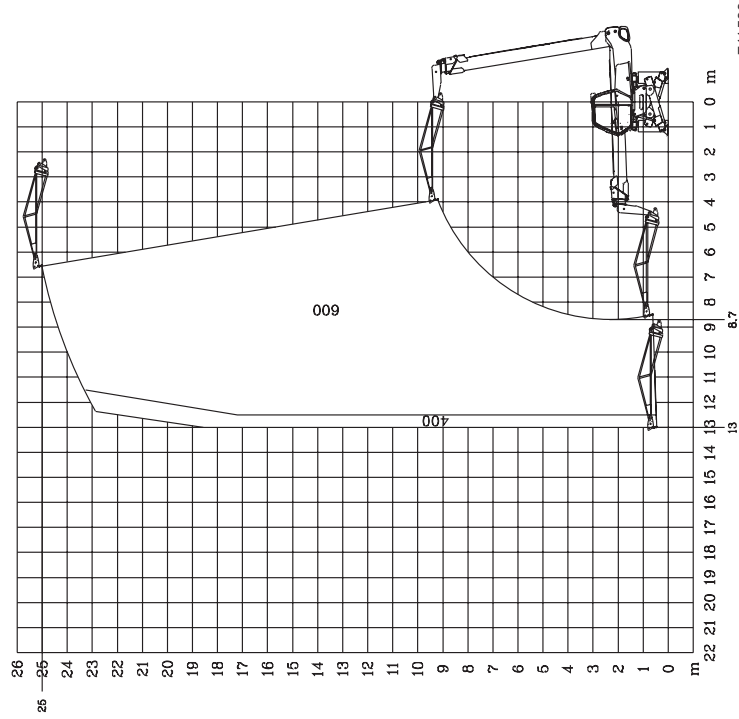
691209

MRT 2150		pos. D
P 600		20,9 m
		600 Kg


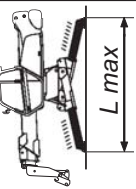

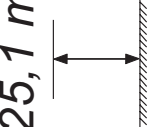


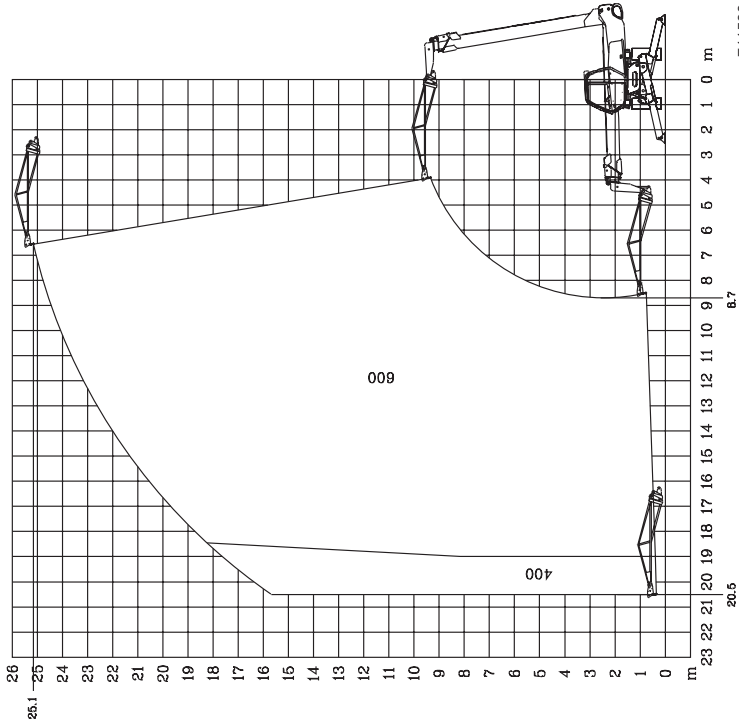
691210

<b>MRT 2540</b>		<b>pos. D</b>	
<b>P 600</b>		<b>600</b>	<b>25 m</b>
			

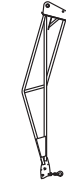





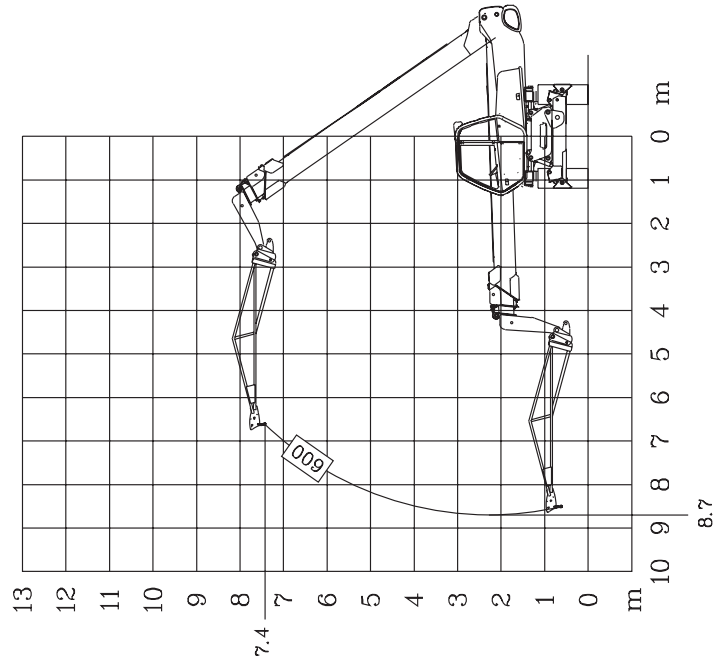
711599

<b>MRT 2540</b>		<b>pos. D</b>	
<b>P 600</b>		<b>600</b>	<b>25,1 m</b>
			







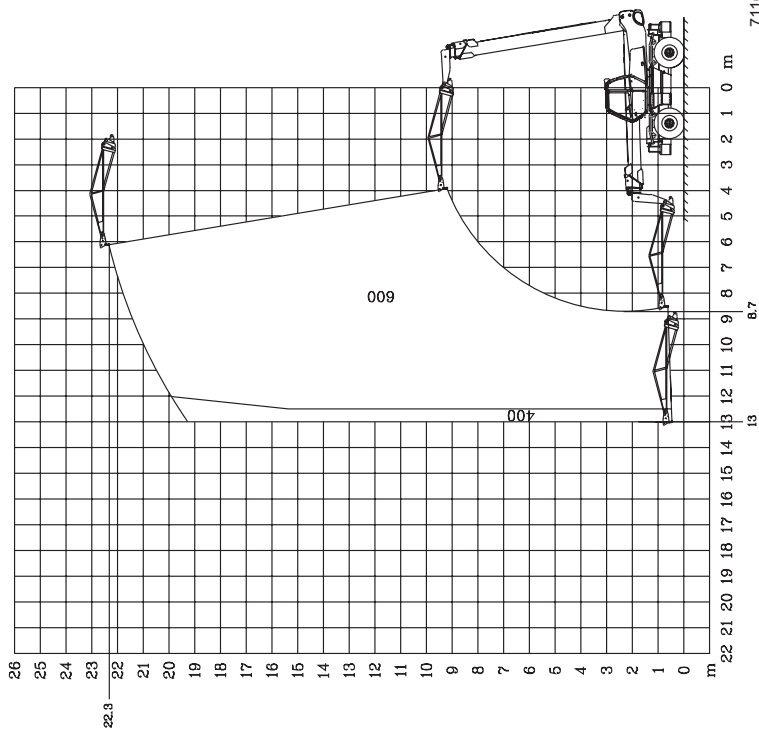
711598

MRT 2540	pos. D
P 600	7,4 m
	
	


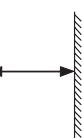
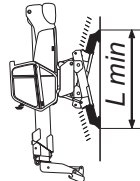


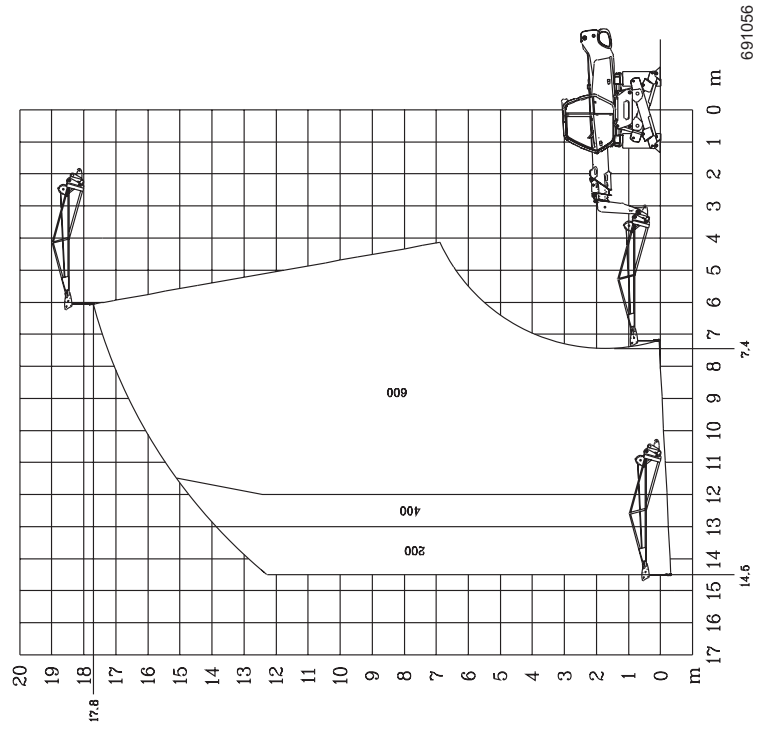
711601

MRT 2540	pos. D
P 600	22,3 m
	
	


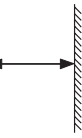
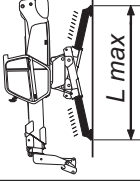


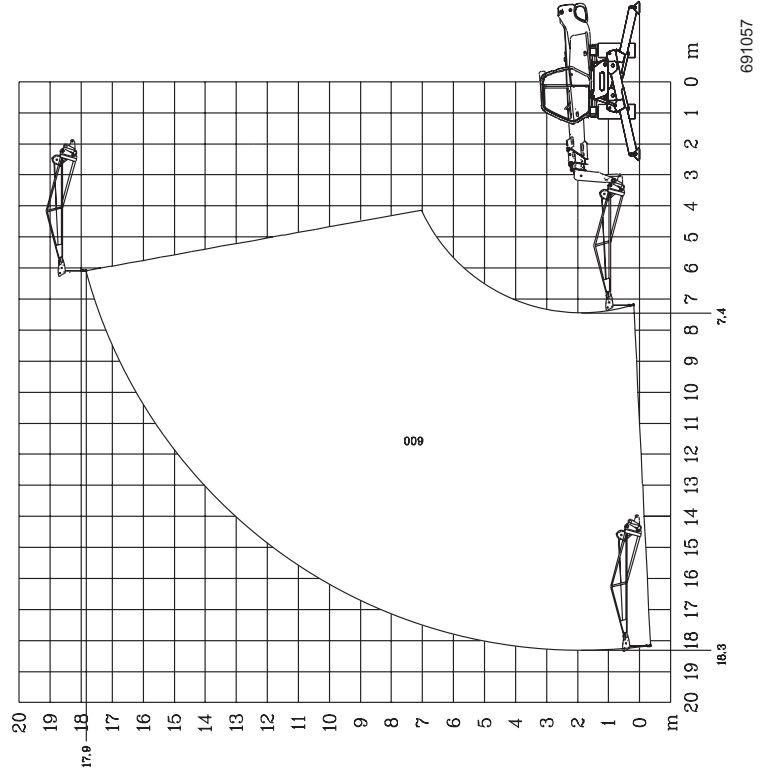
711600

<b>MRT 1850</b>		<b>pos. D</b>
<b>PT 600</b>		
		<b>600 Kg</b>
		<b>17,8 m</b>



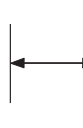


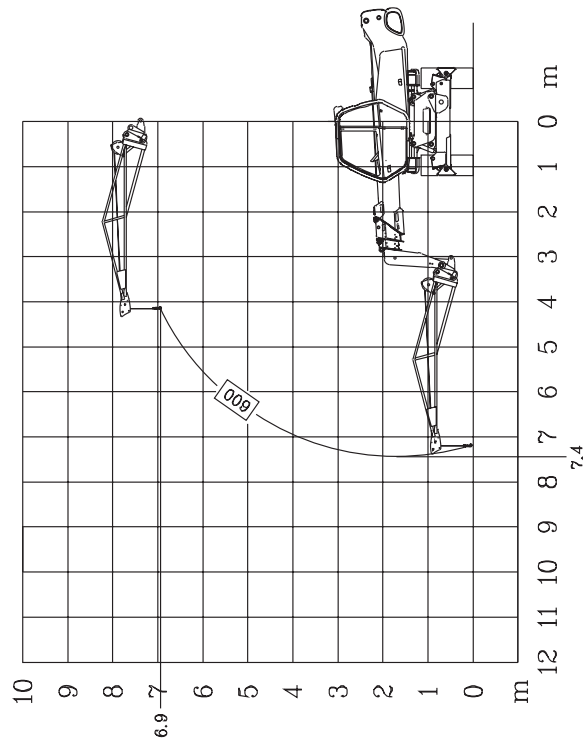
691056

<b>MRT 1850</b>		<b>pos. D</b>
<b>PT 600</b>		
		<b>600 Kg</b>
		<b>17,9 m</b>






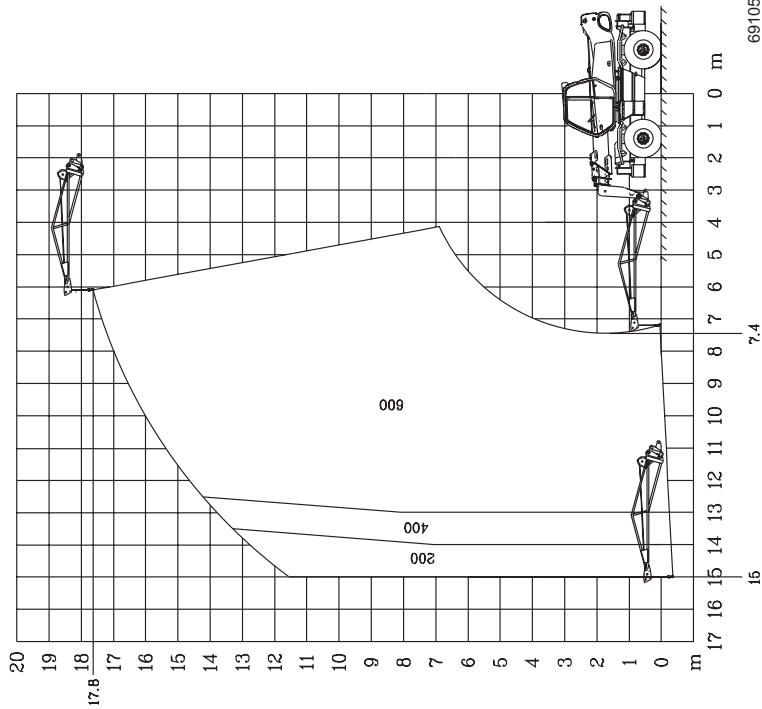
691057

MRT 1850		pos. D
PT 600		6,9 m
		600 Kg
		


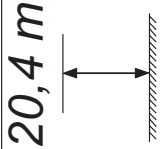
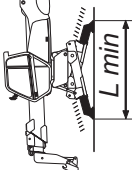



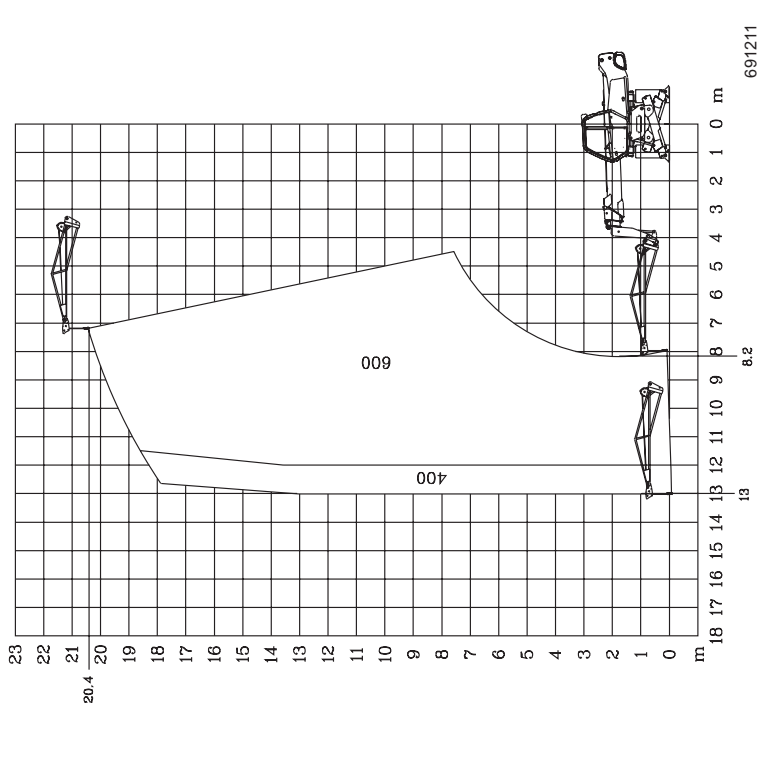
691059

MRT 1850		pos. D
PT 600		17,8 m
		600 Kg
		


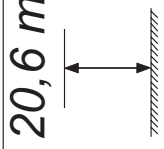
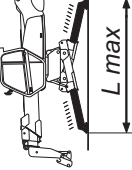



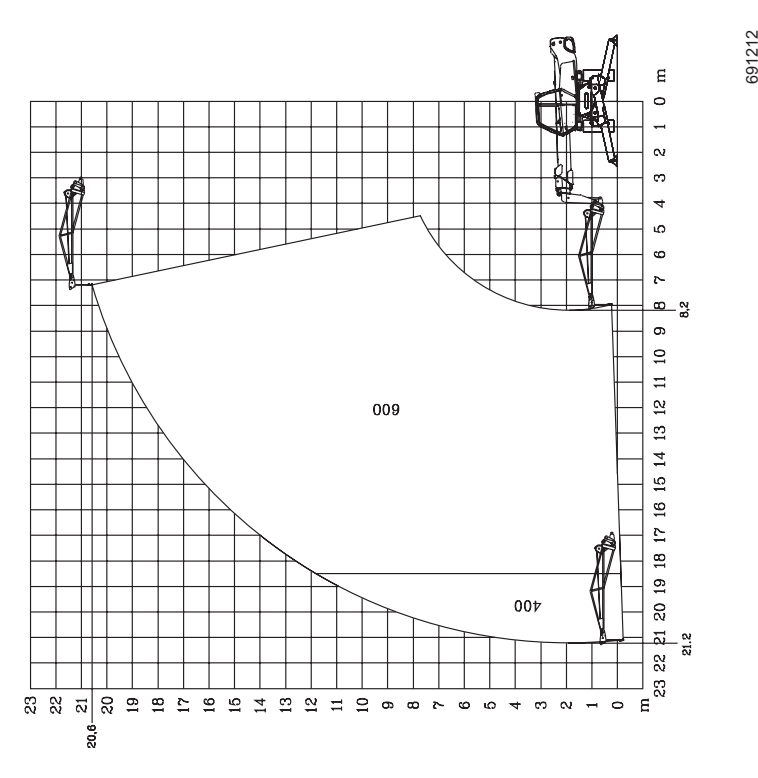
691058

MRT 2150		pos. D
PT 600		
		600 





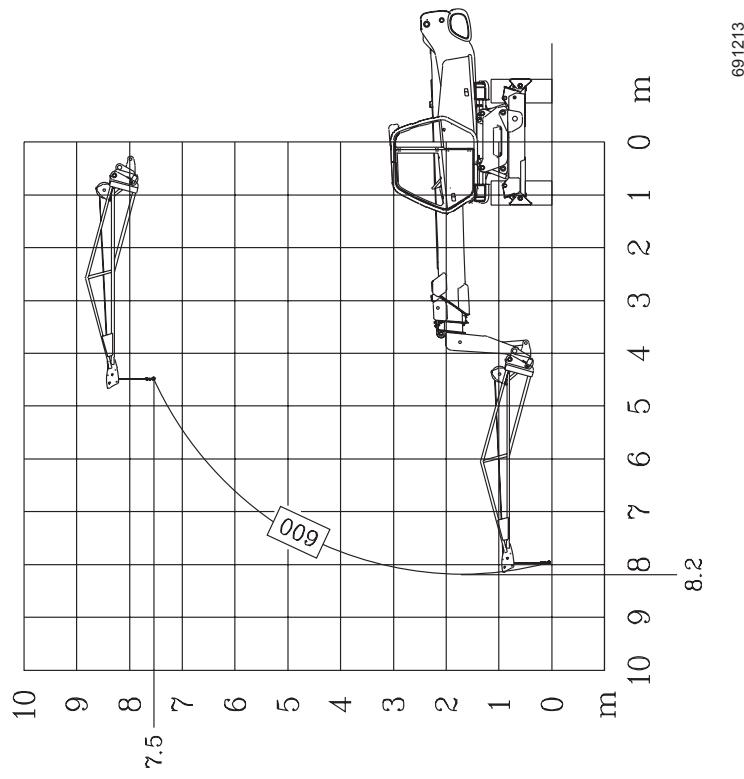
691211

MRT 2150		pos. D
PT 600		
		600 





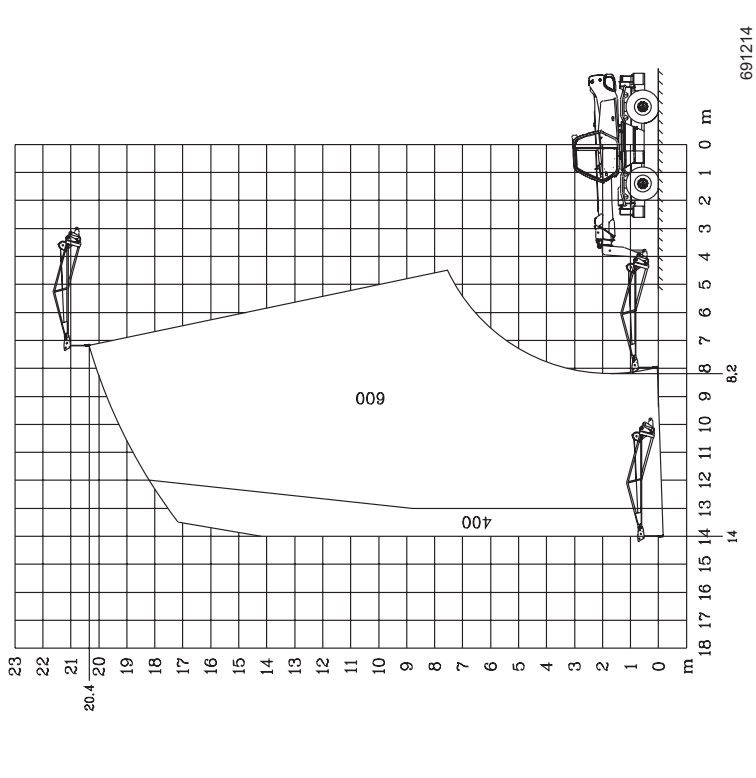
691212

MRT 2150		pos. D
PT 600		7,5 m
		600 Kg

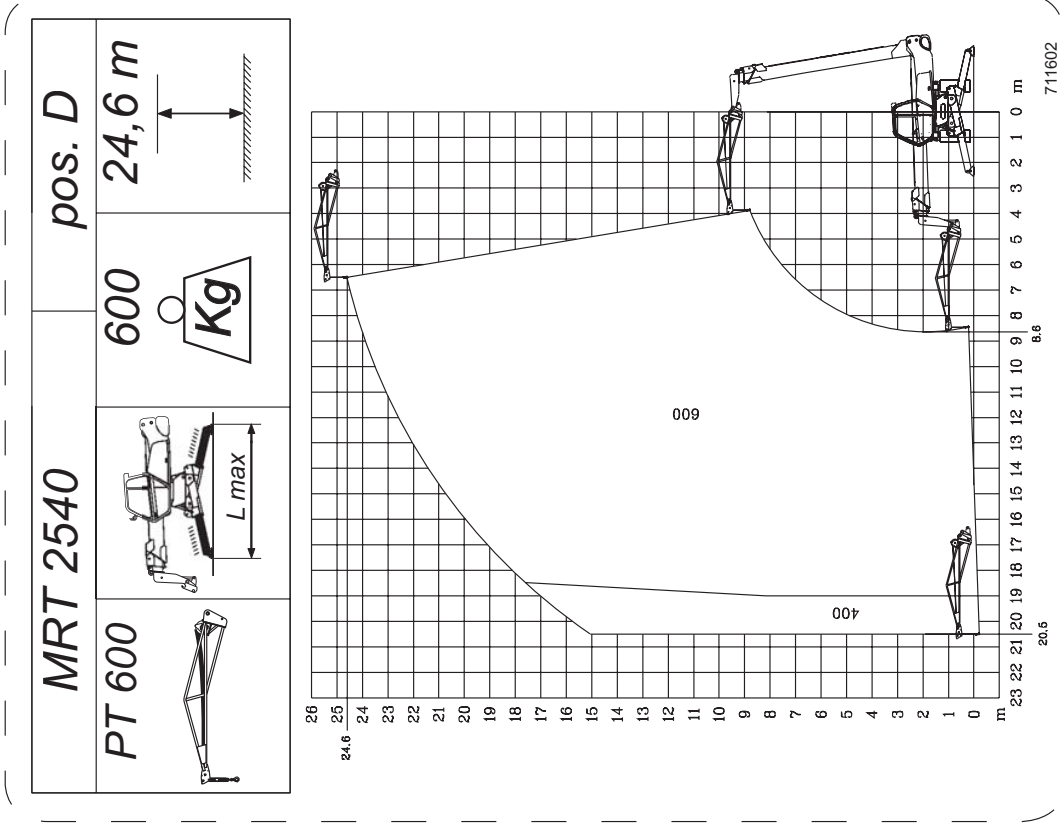
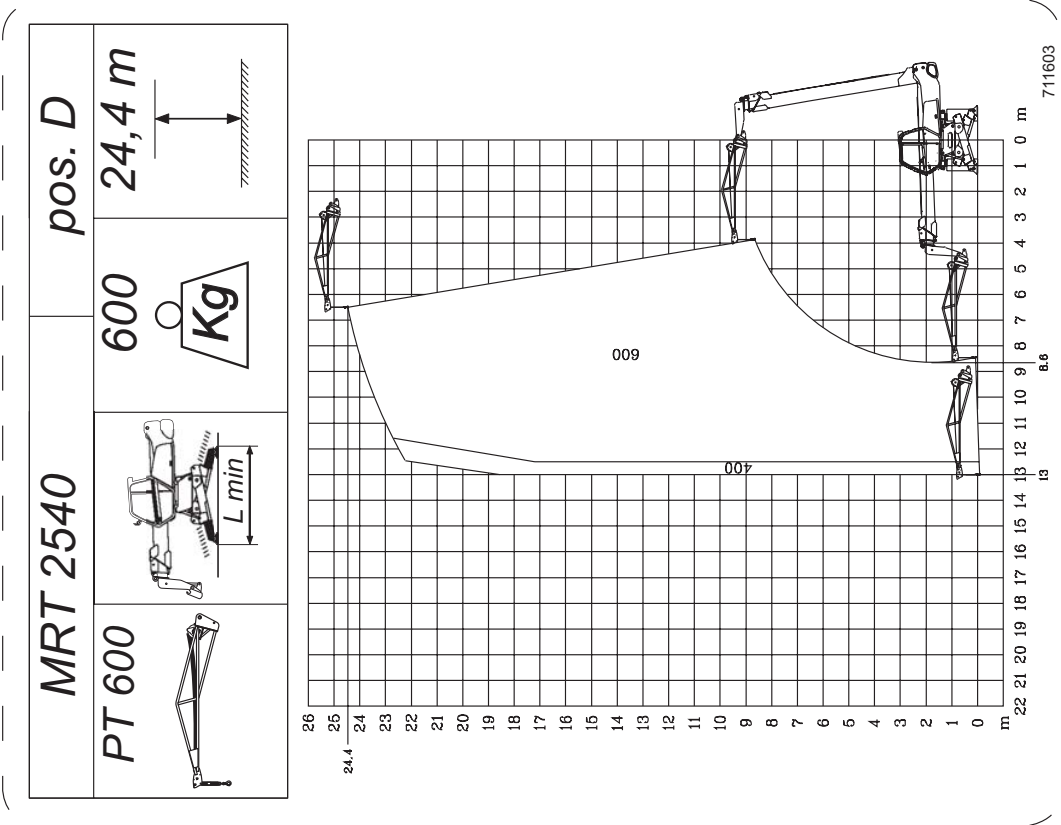


691213


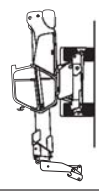
MRT 2150		pos. D
PT 600		20,4 m
		600 Kg

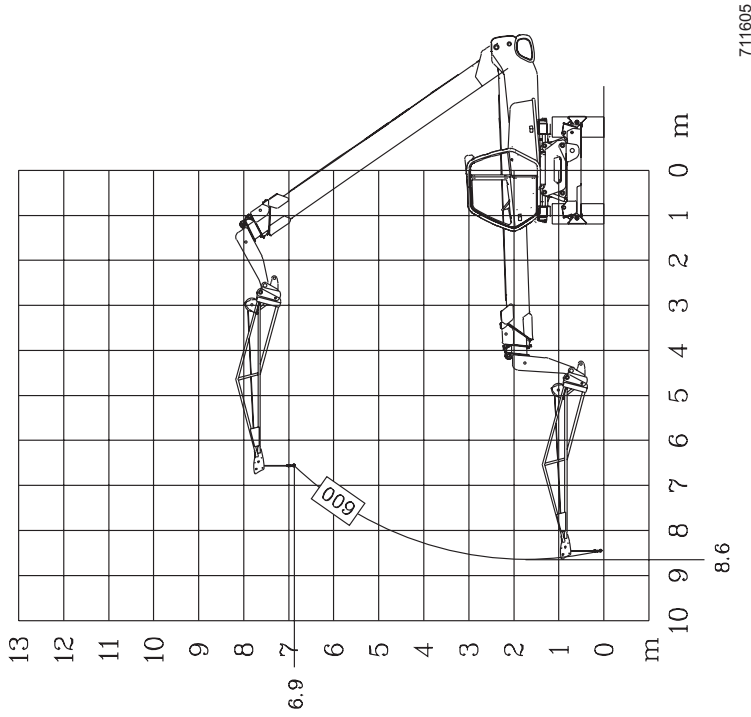


691214





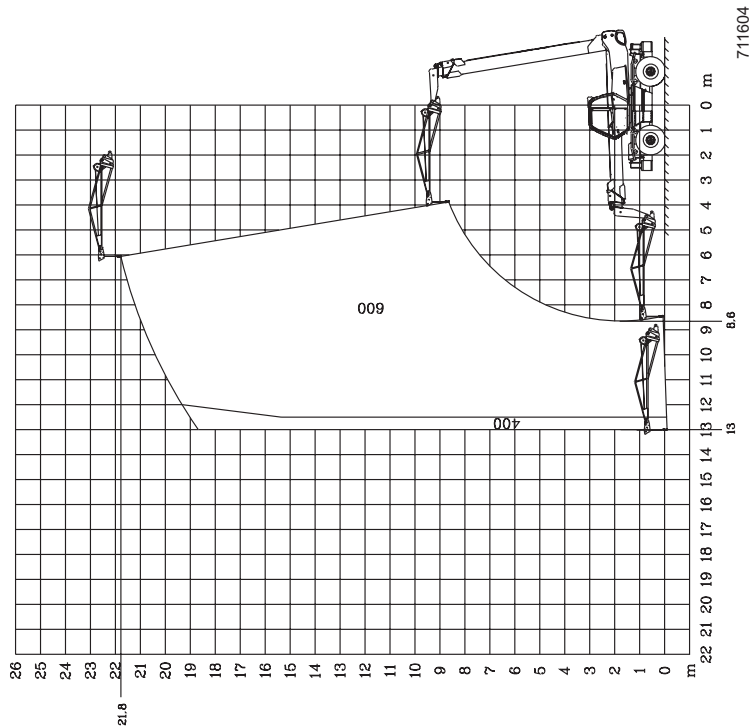


MRT 2540		pos. D
PT 600		6,9 m
		600 Kg



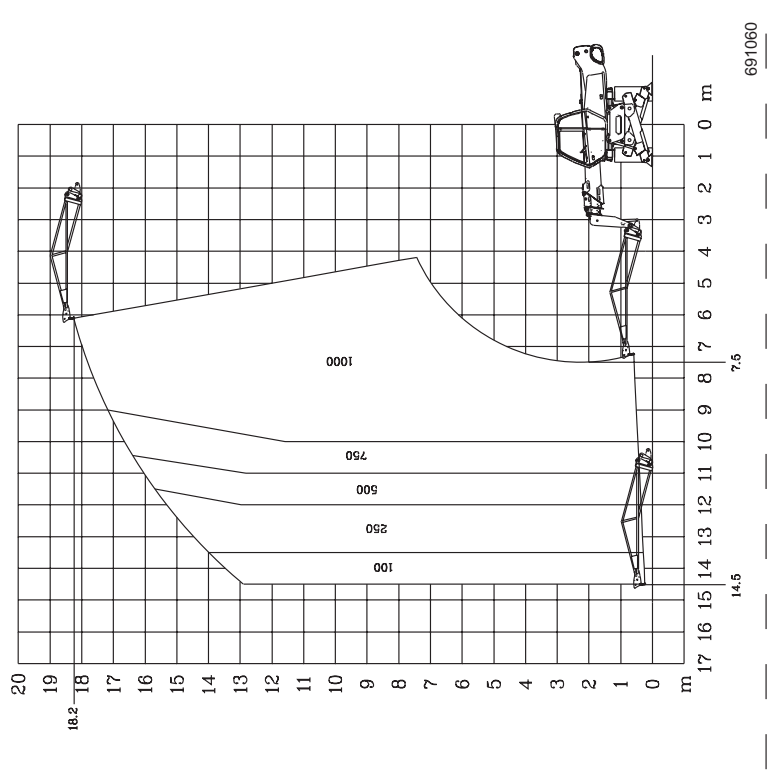
711605

MRT 2540		pos. D
PT 600		21,8 m
		600 Kg



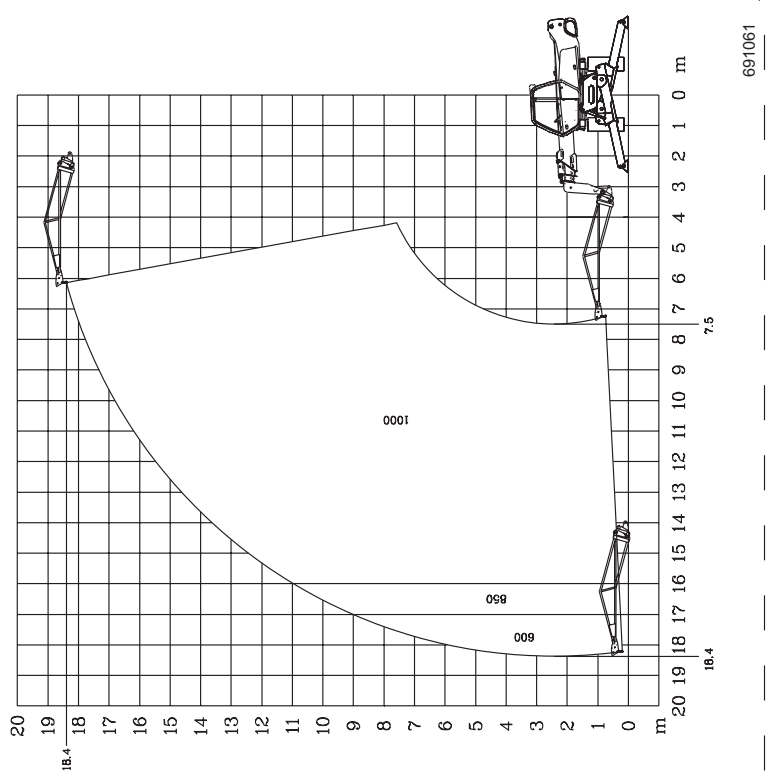
711604

MRT 1850		pos. E	
		1000	18,2 m
P 1000			

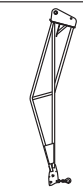
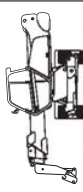


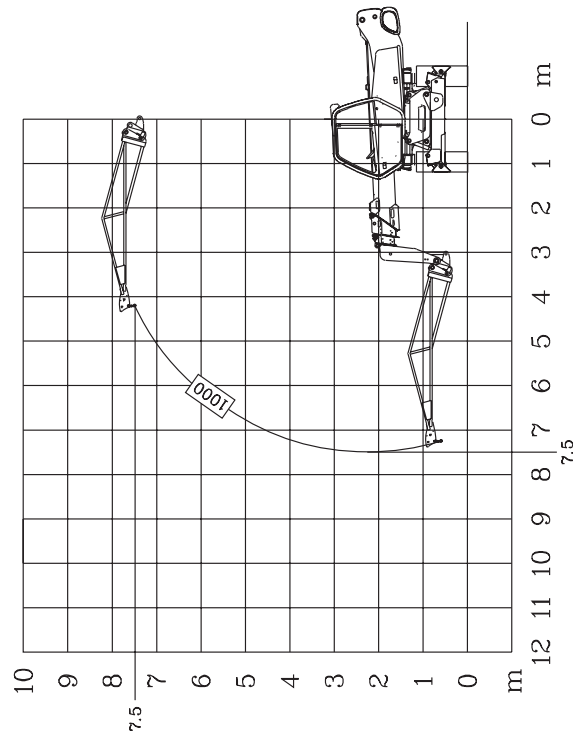
691060

MRT 1850		pos. E	
		1000	18,4 m
P 1000			





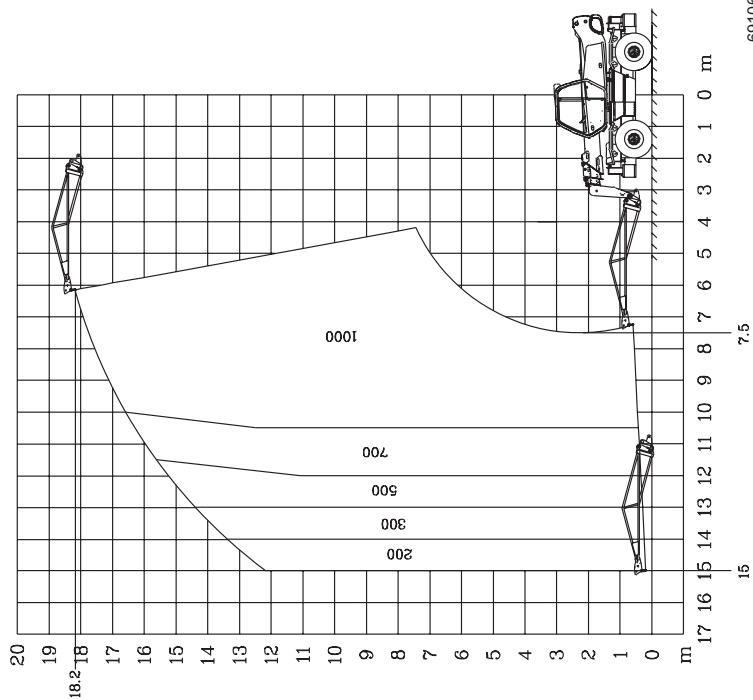
691061

MRT 1850		pos. E
P 1000		7,5 m
		1000 Kg



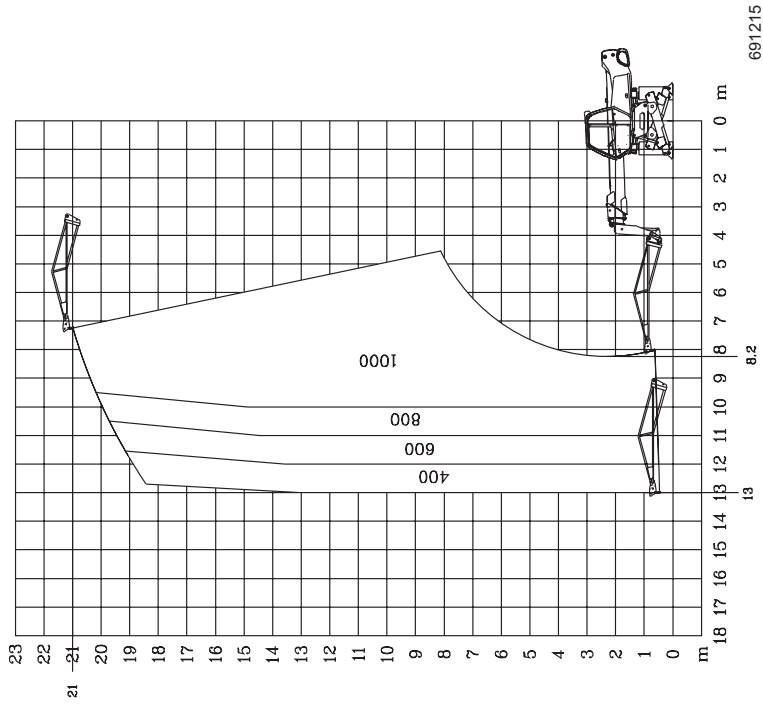
691063

MRT 1850		pos. E
P 1000		18,2 m
		1000 Kg



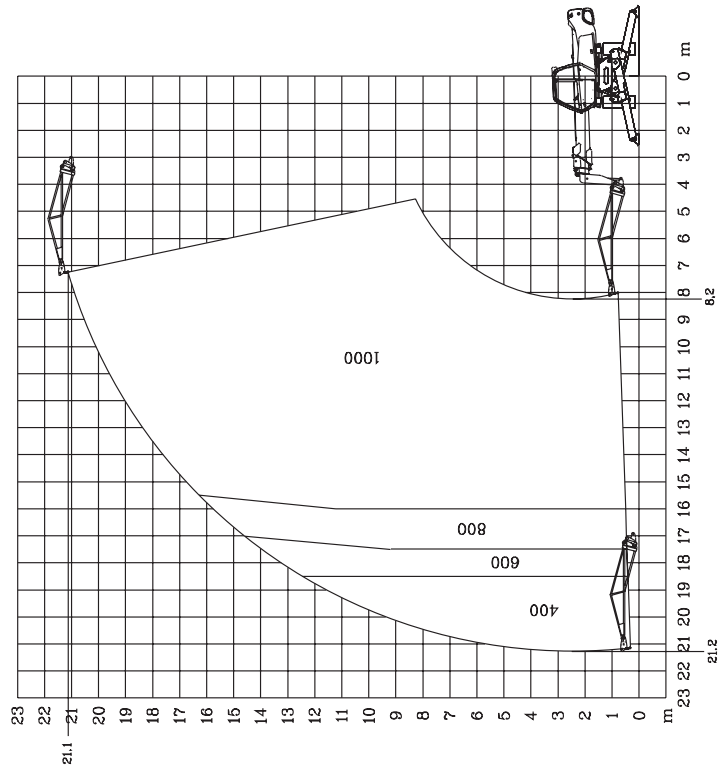
691062

MRT 2150	pos. E
P 1000	1000 Kg
	21 m

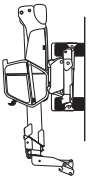
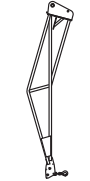



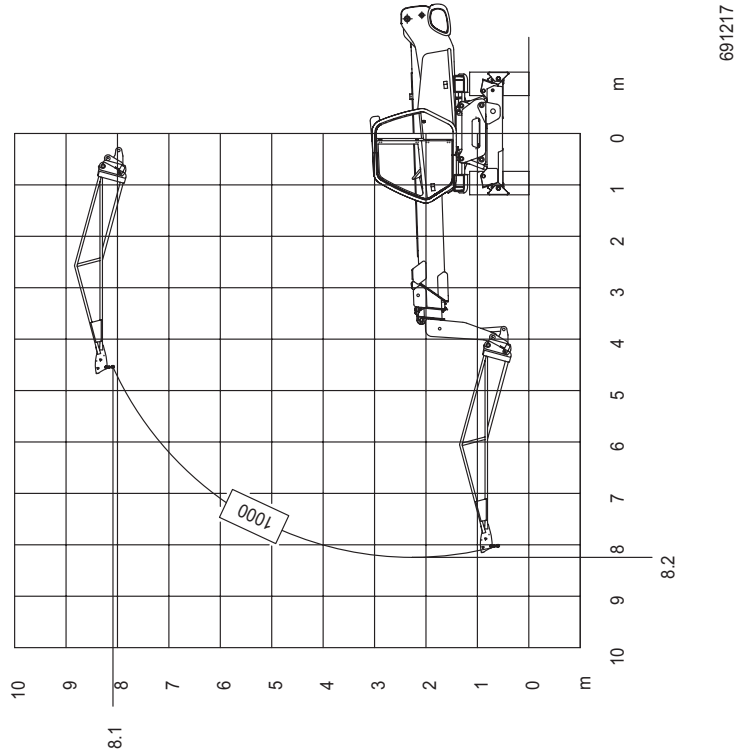
691215


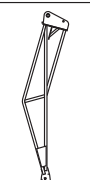

MRT 2150	pos. E
P 1000	1000 Kg
	21,1 m

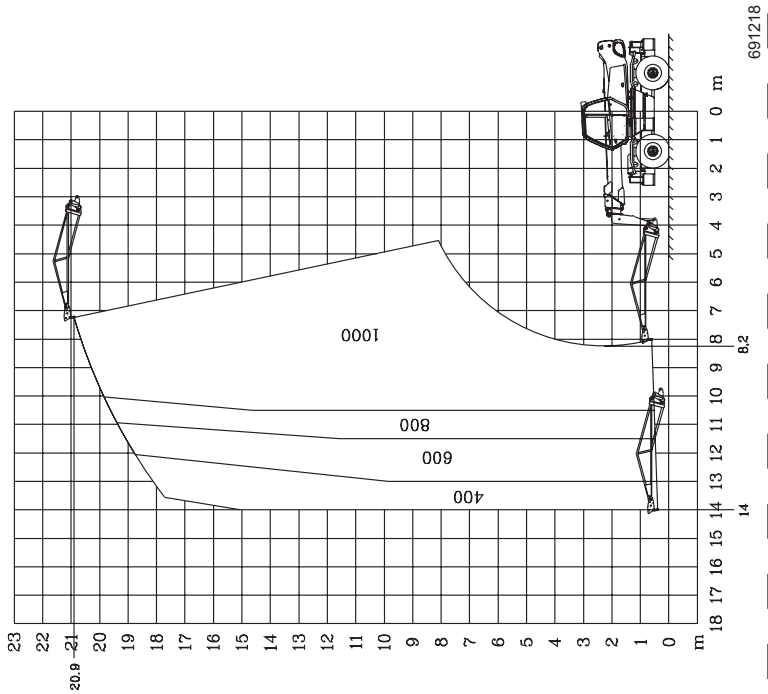



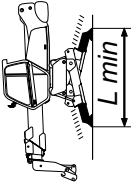
691216

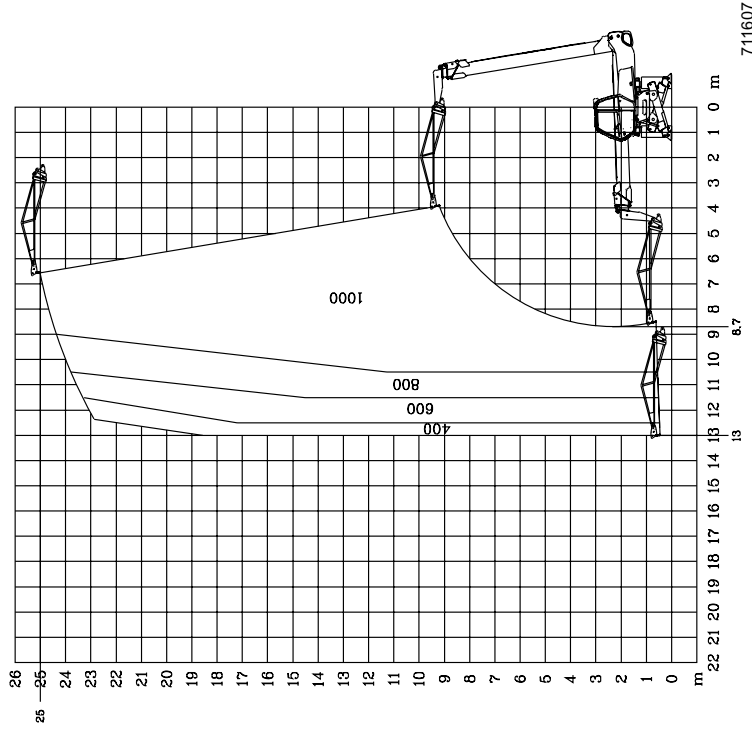
MRT 2150		pos. E
P 1000		1000
		8,1 m




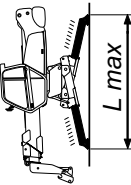
MRT 2150		pos. E
P 1000		1000
		20,9 m

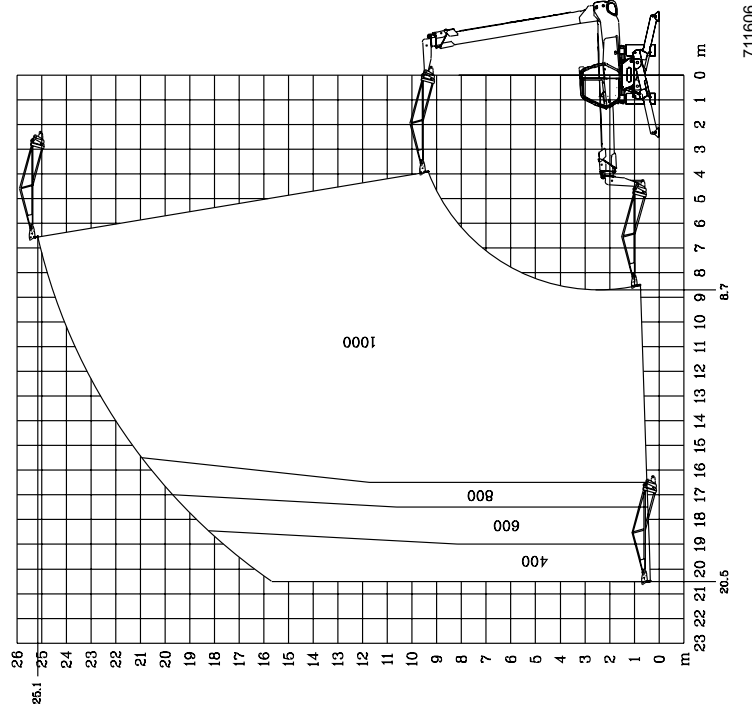


MRT 2540		pos. E
		25 m
P 1000		1000 Kg
		


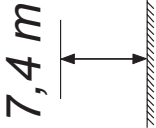
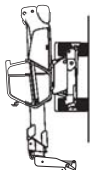



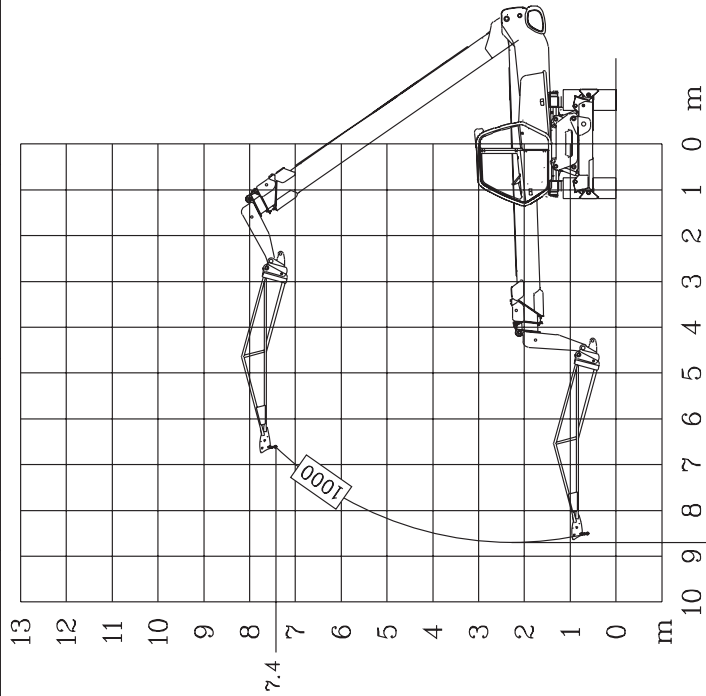
711607

MRT 2540		pos. E
		25,1 m
P 1000		1000 Kg
		







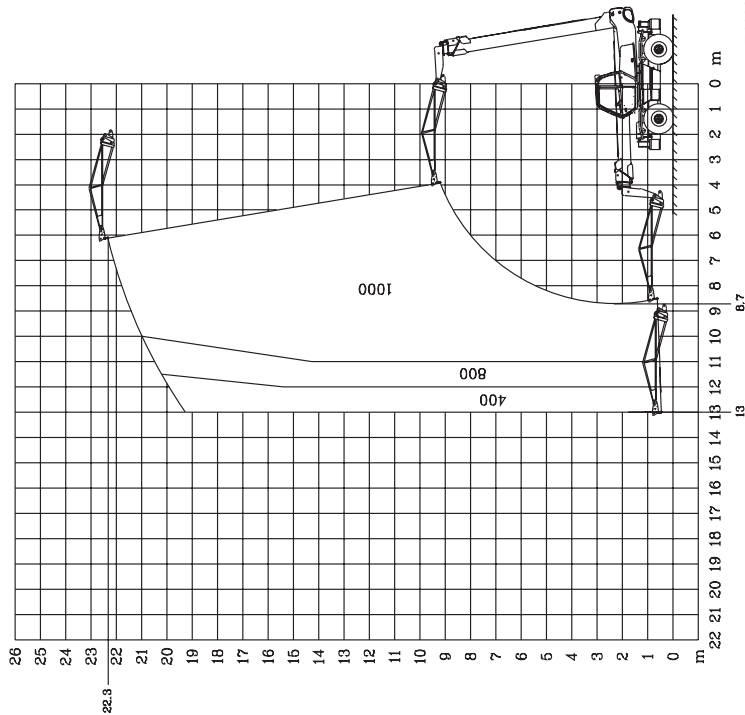
711606

MRT 2540		pos. E
P 1000		
		1000
		


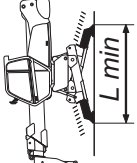
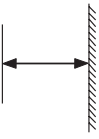


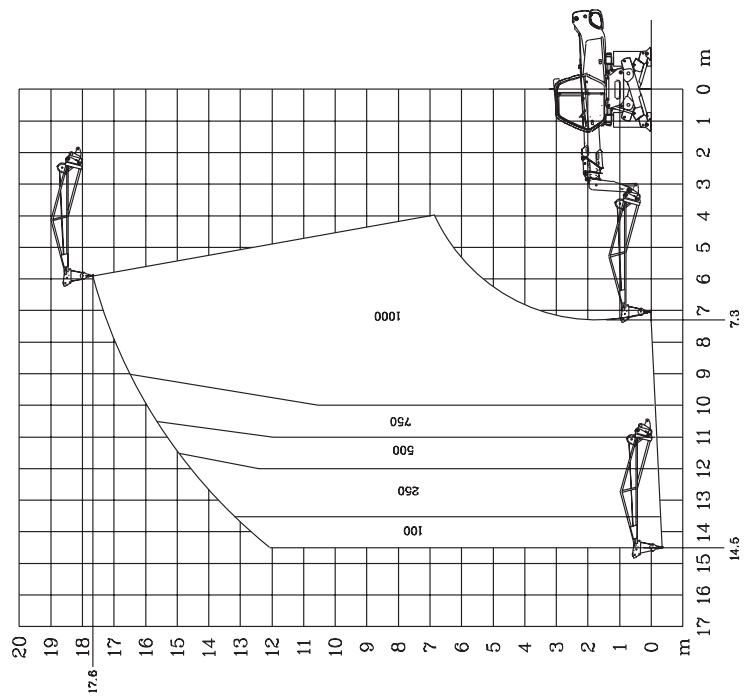
711609

MRT 2540		pos. E
P 1000		
		1000
		


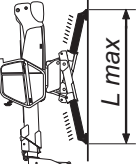
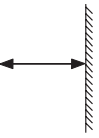


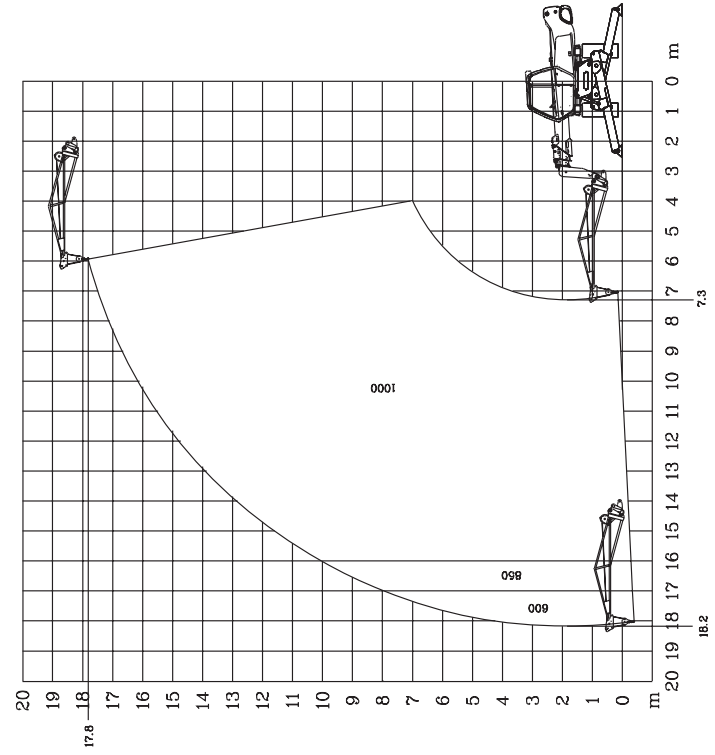
711608

<b>MRT 1850</b>		<b>pos. E</b>	
<b>PT 1000</b>		<b>1000</b>	<b>17,6 m</b>
		<b>Kg</b>	



691064

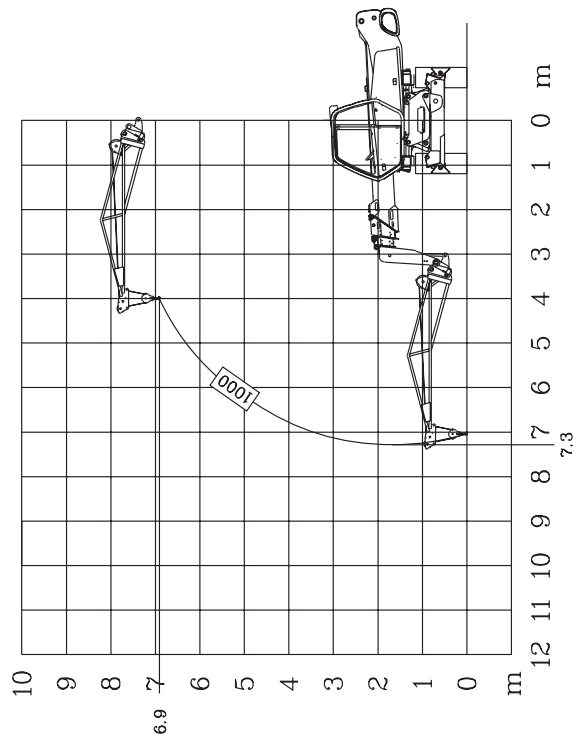
<b>MRT 1850</b>		<b>pos. E</b>	
<b>PT 1000</b>		<b>1000</b>	<b>17,8 m</b>
		<b>Kg</b>	



691065

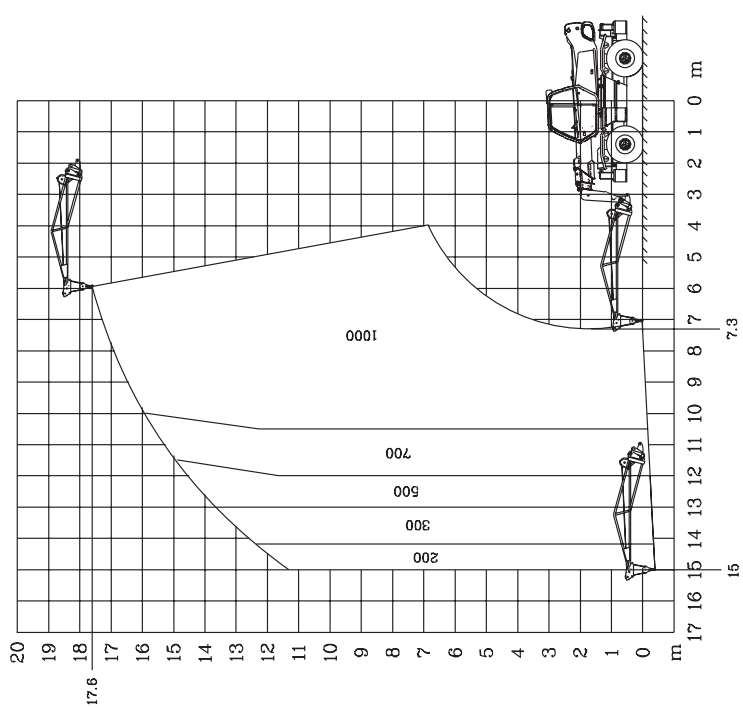


MRT 1850		pos. E
PT 1000	1000 Kg	6,9 m

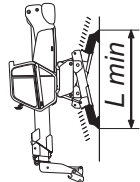


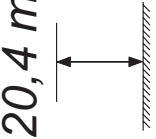


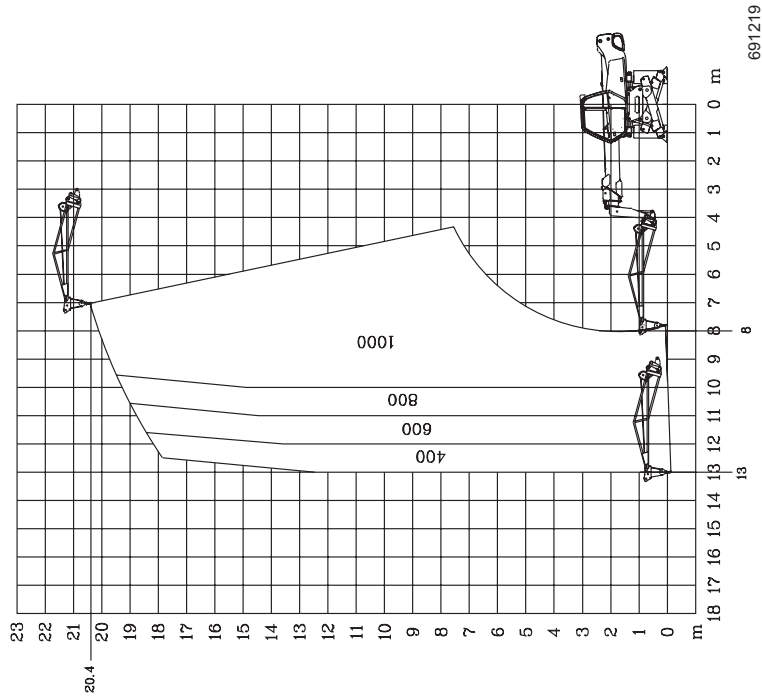
691067

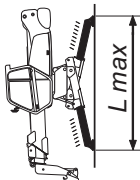


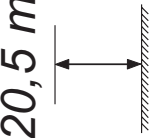
MRT 1850		pos. E
PT 1000	1000 Kg	17,6 m

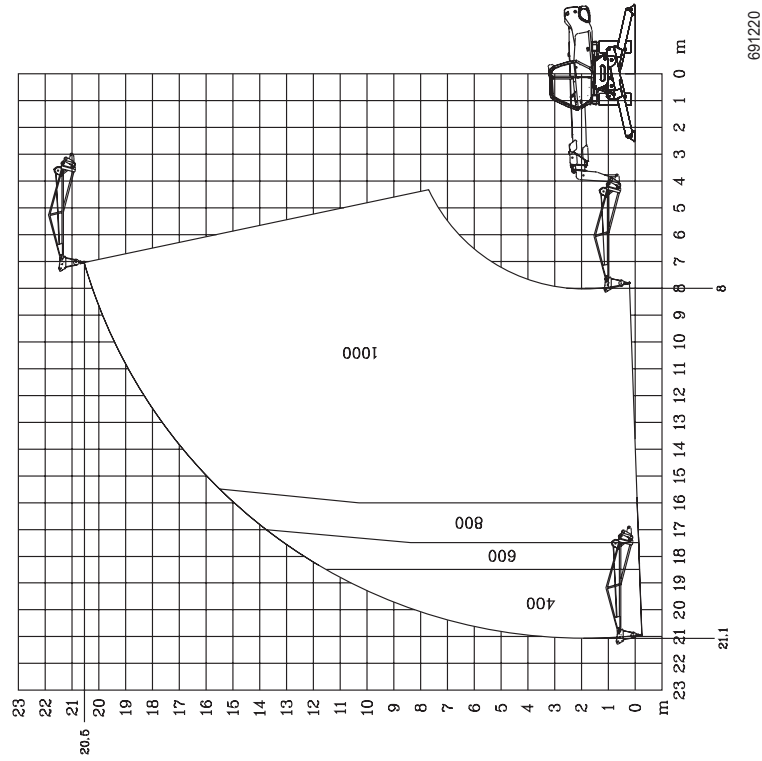


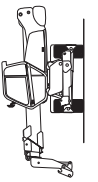


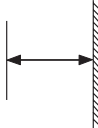
691066

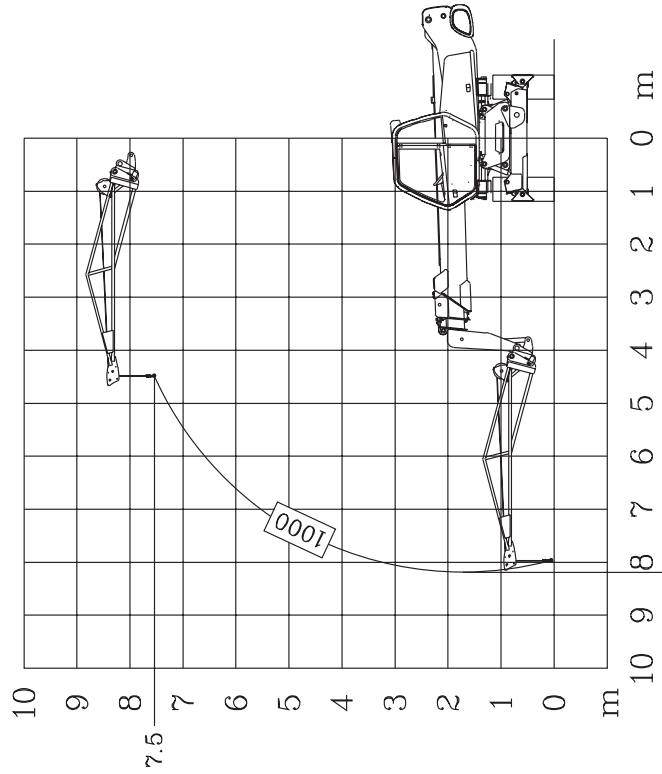
MRT 2150		pos. E
PT 1000		1000 
		20,4 m 



MRT 2150		pos. E
PT 1000		1000 
		20,5 m 




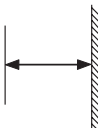


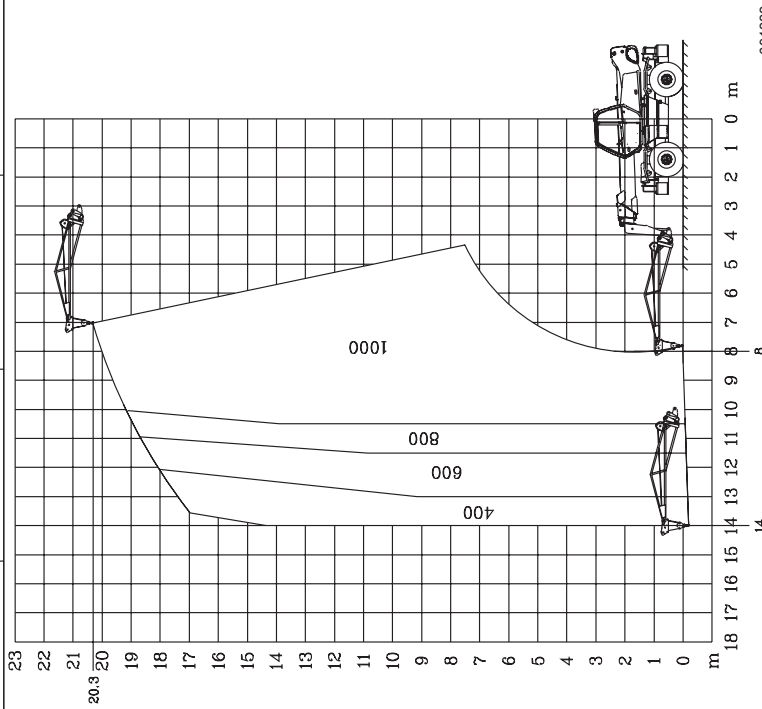
MRT 2150		pos. E	
PT 1000		1000	7,5 m
			



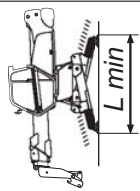


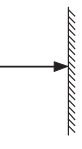
8.2

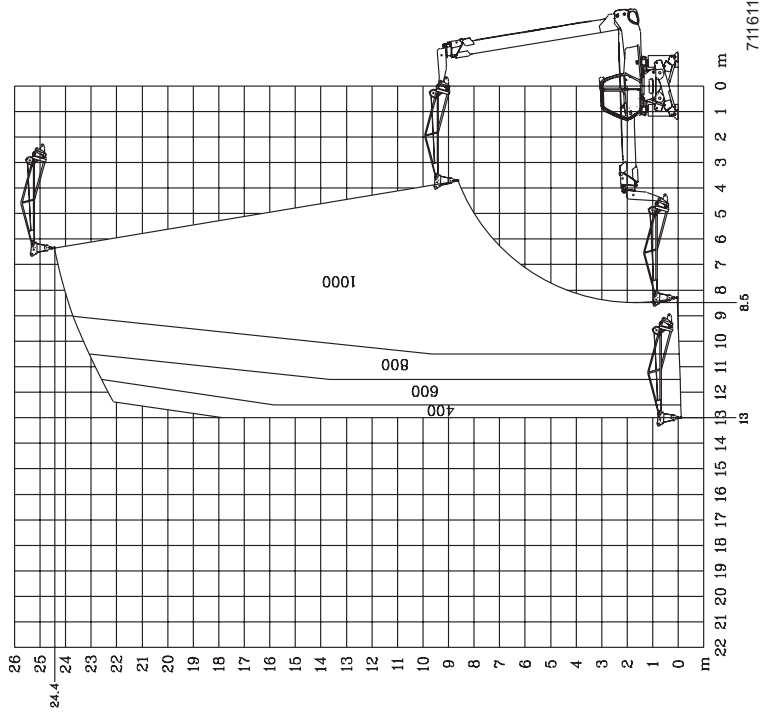
691221

MRT 2150		pos. E	
PT 1000		1000	20,3 m
			

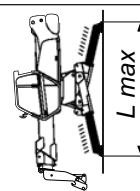


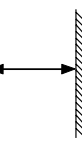


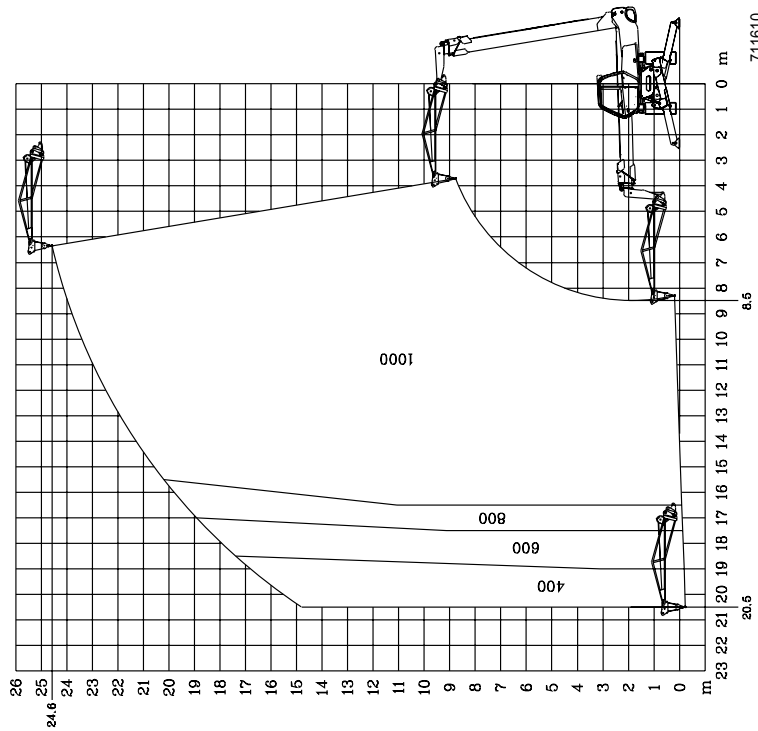
691222

MRT 2540		pos. E
PT 1000		1000 
		24,4 m 


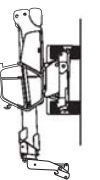


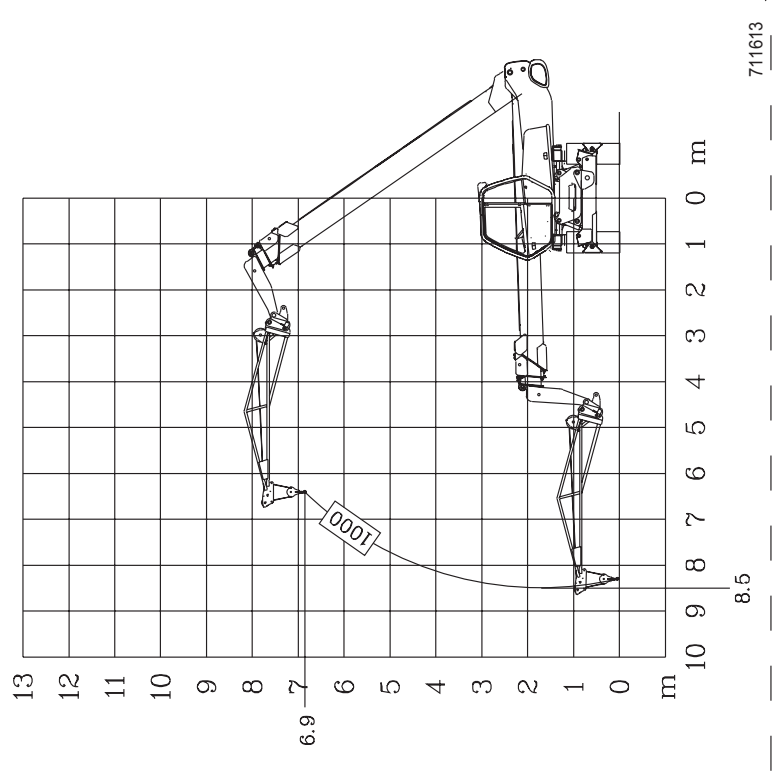
711611



MRT 2540		pos. E
PT 1000		1000 
		24,6 m 

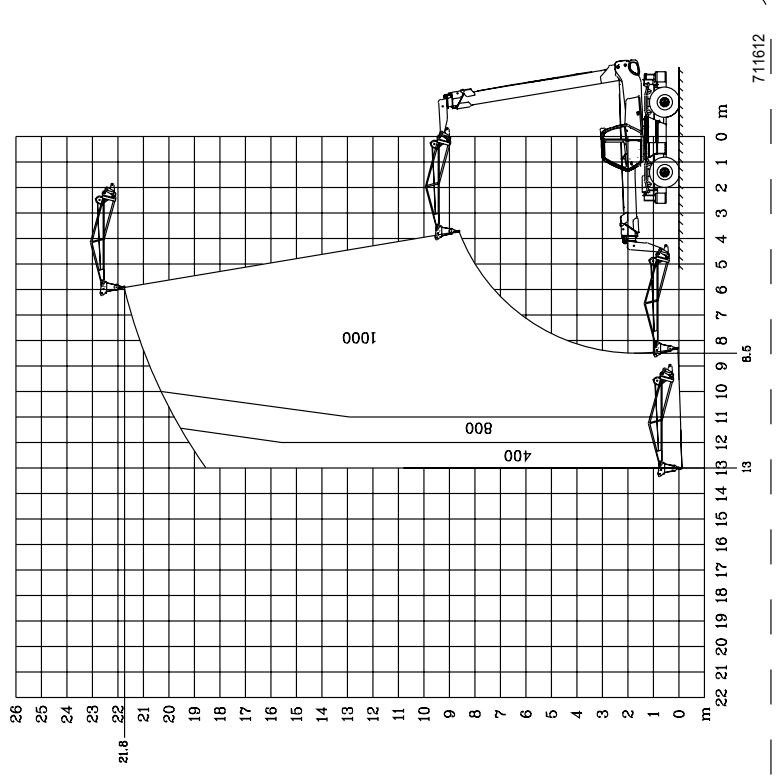


711610

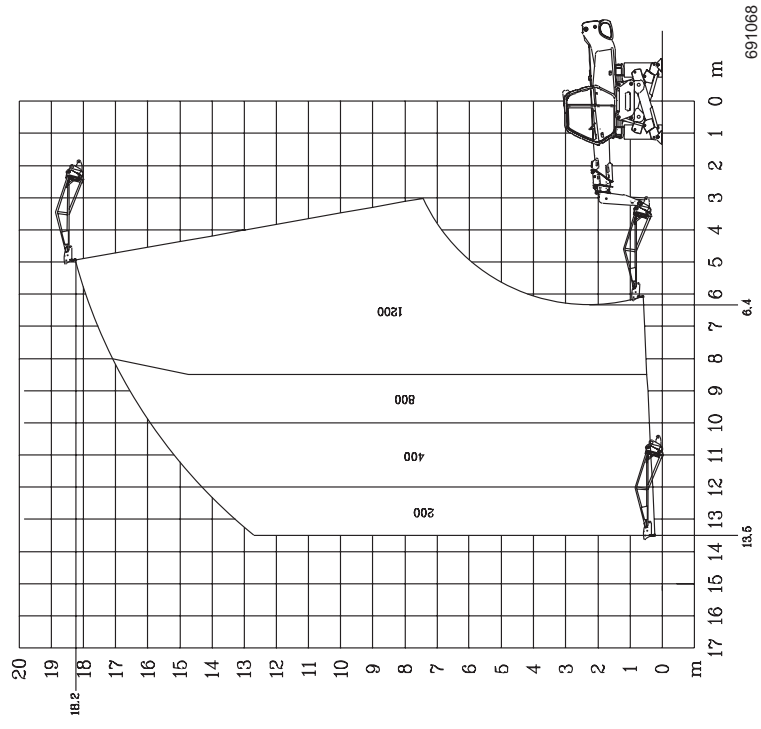
MRT 2540	pos. E
PT 1000	1000 Kg
	
	6,9 m



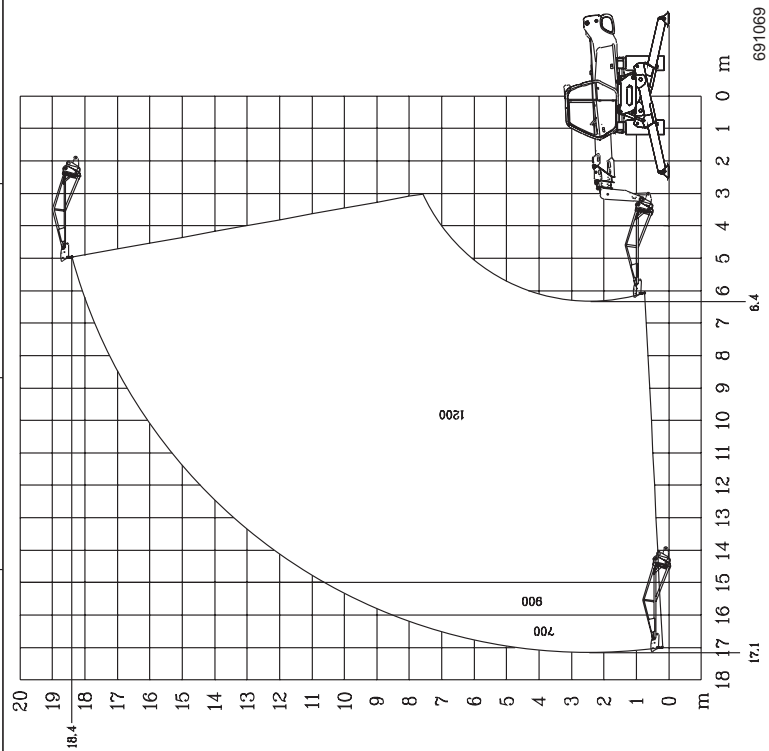
MRT 2540	pos. E
PT 1000	1000 Kg
	
	21,8 m

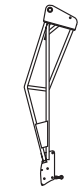
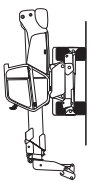

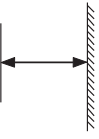


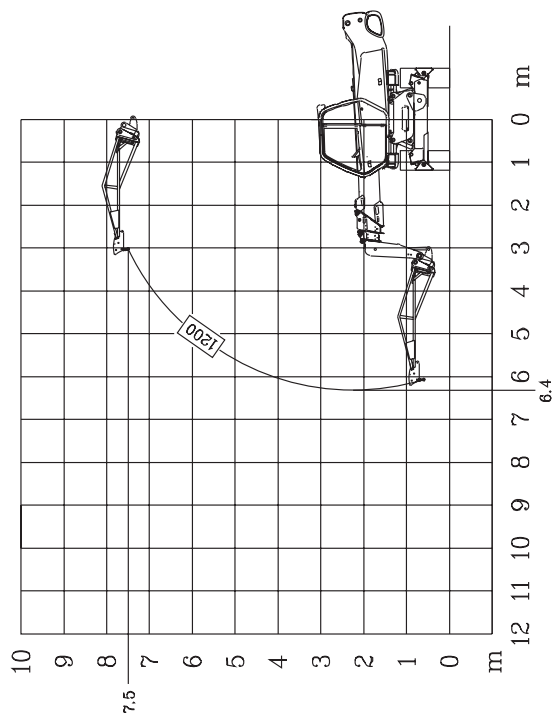
MRT 1850	pos. F
P 1200	1200
	18,2 m



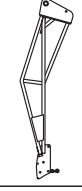


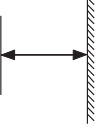
MRT 1850	pos. F
P 1200	1200
	18,4 m

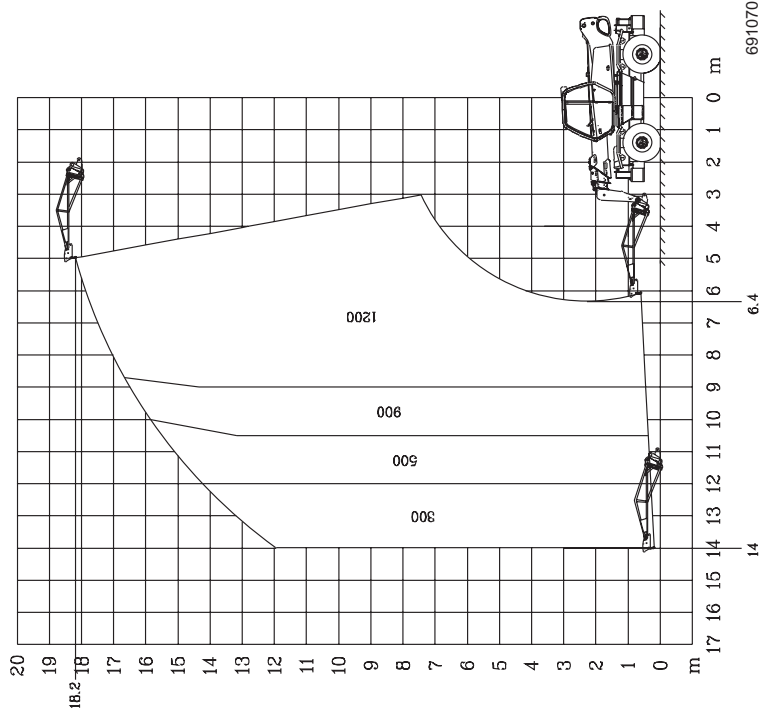


MRT 1850		pos. F	
P 1200		1200	7,5 m
			

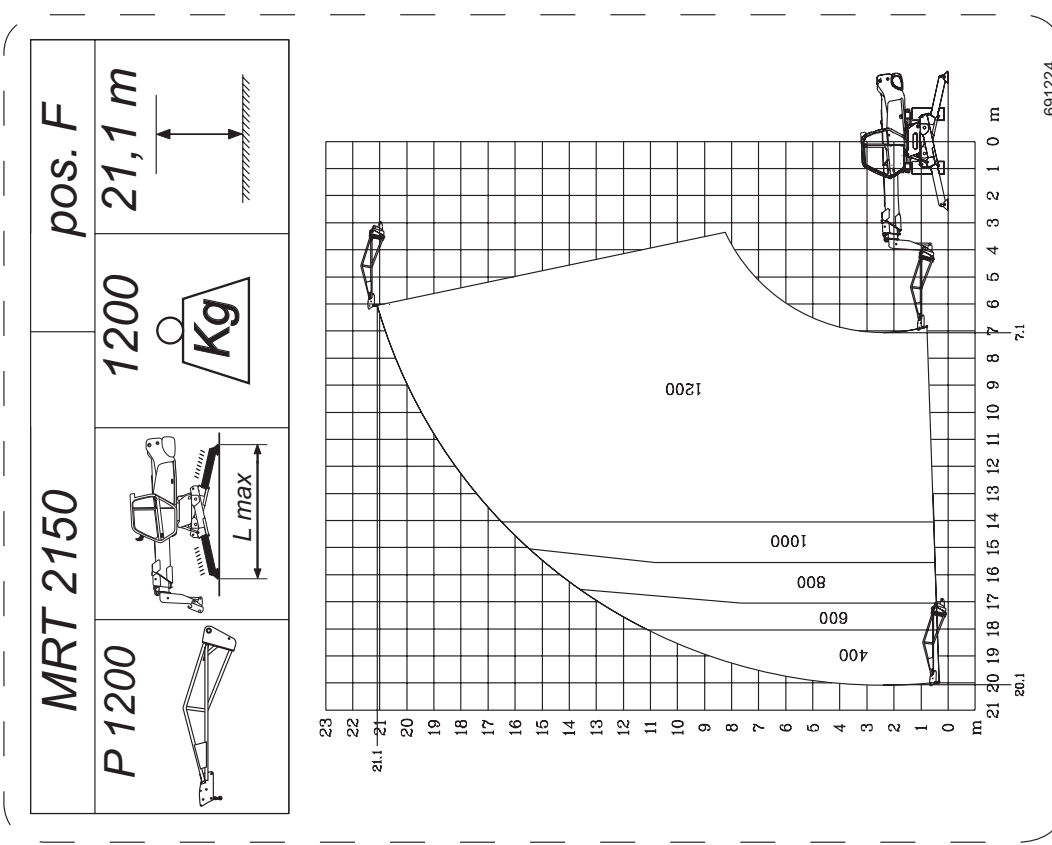
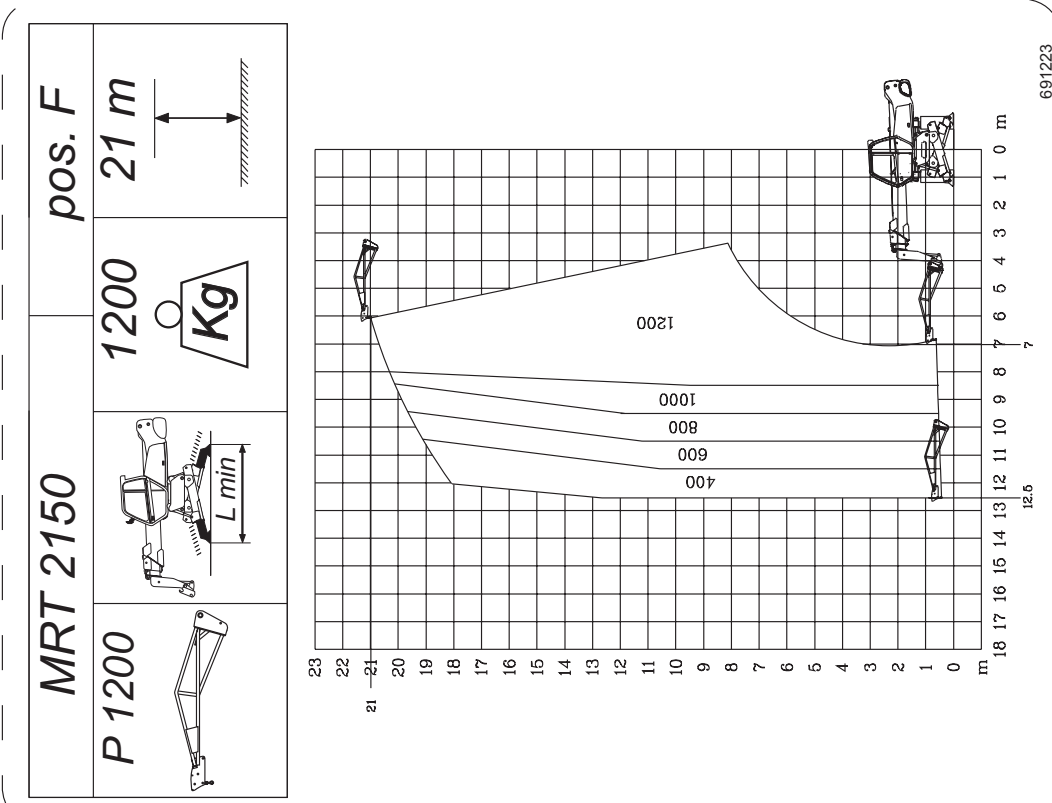


691071

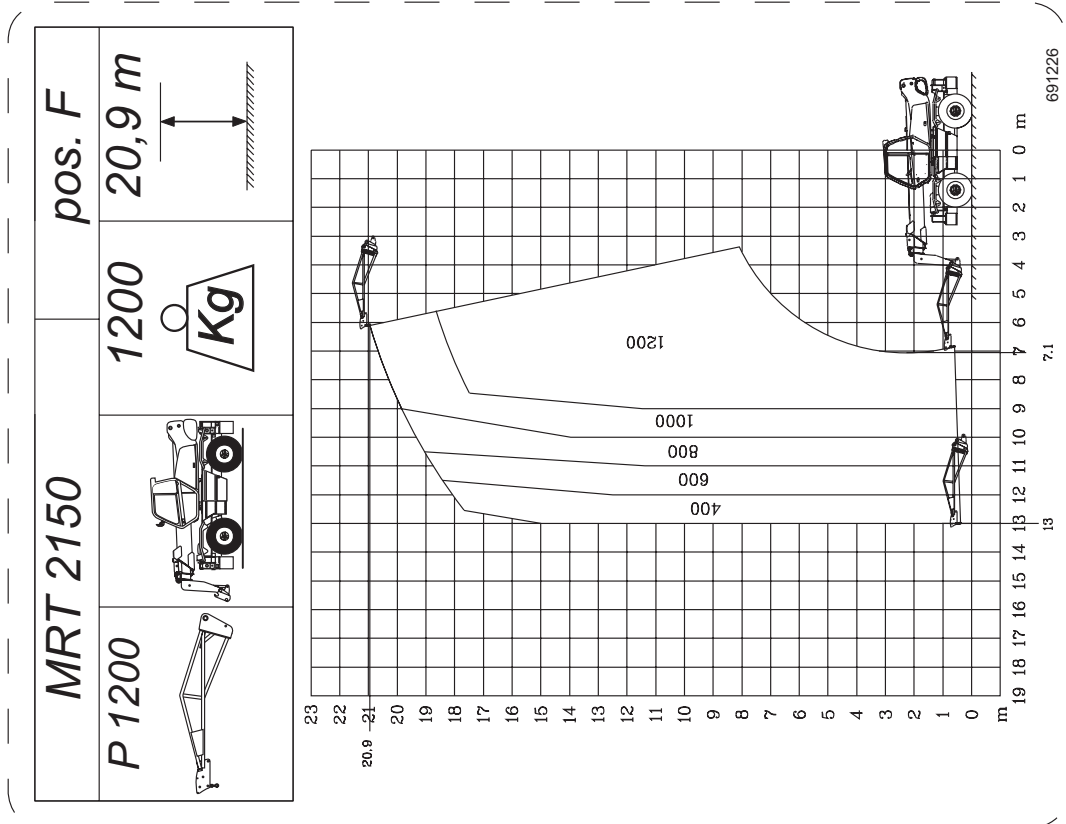
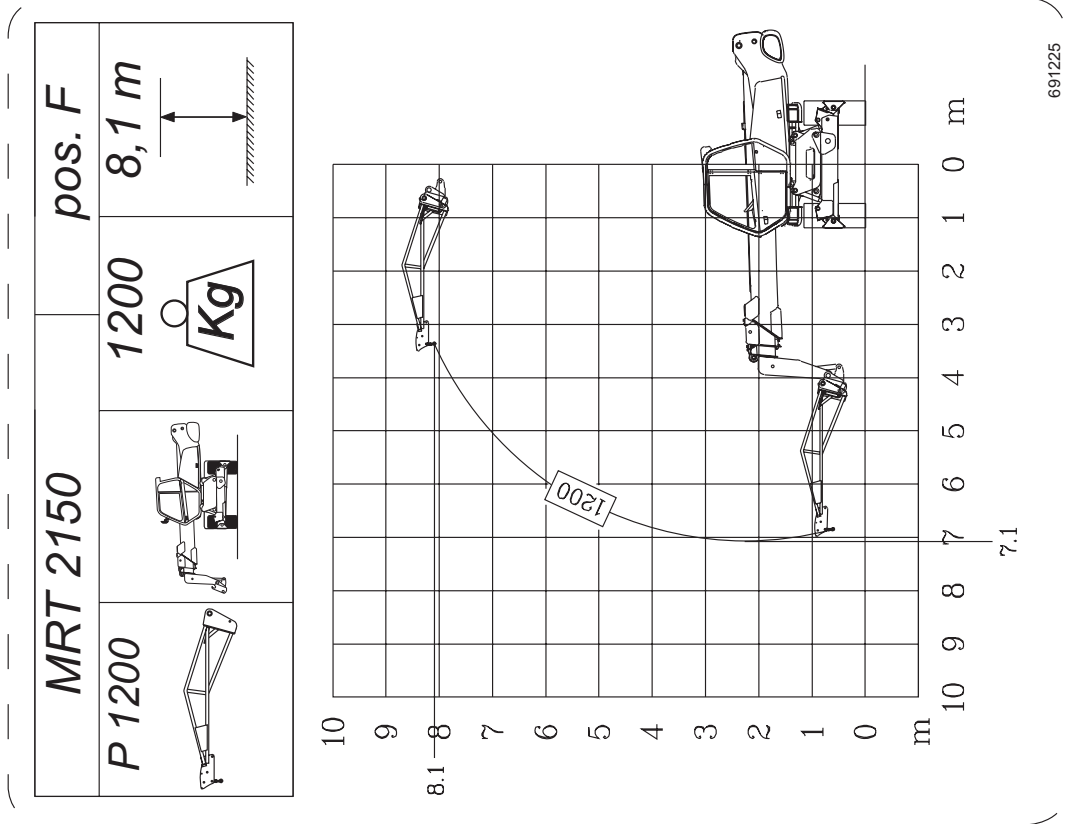
MRT 1850		pos. F	
P 1200		1200	18,2 m
			

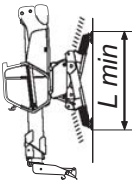



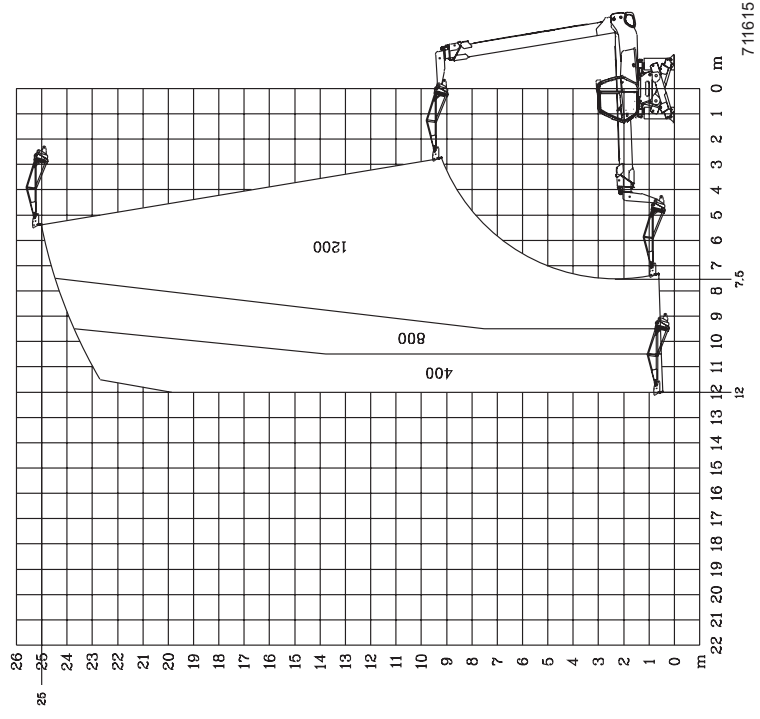
691070

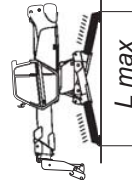



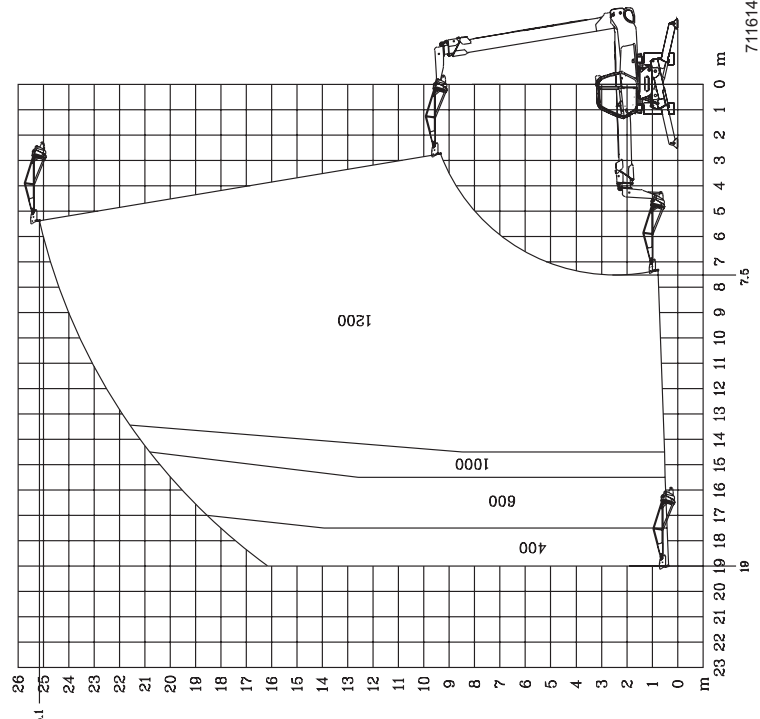


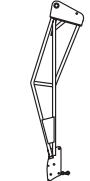

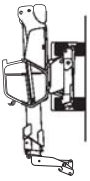
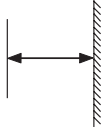


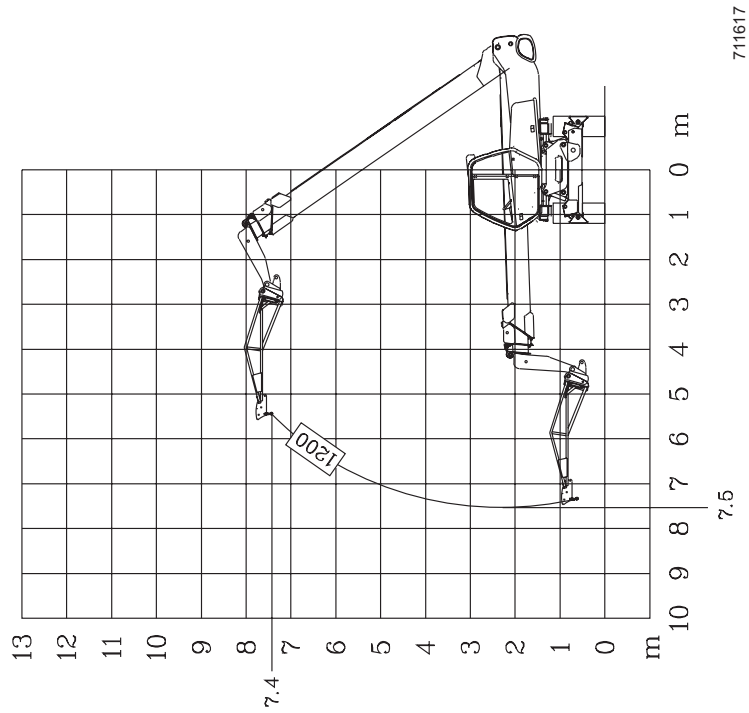
MRT 2540		pos. F
P 1200		1200 Kg
		25 m

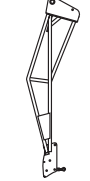


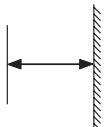


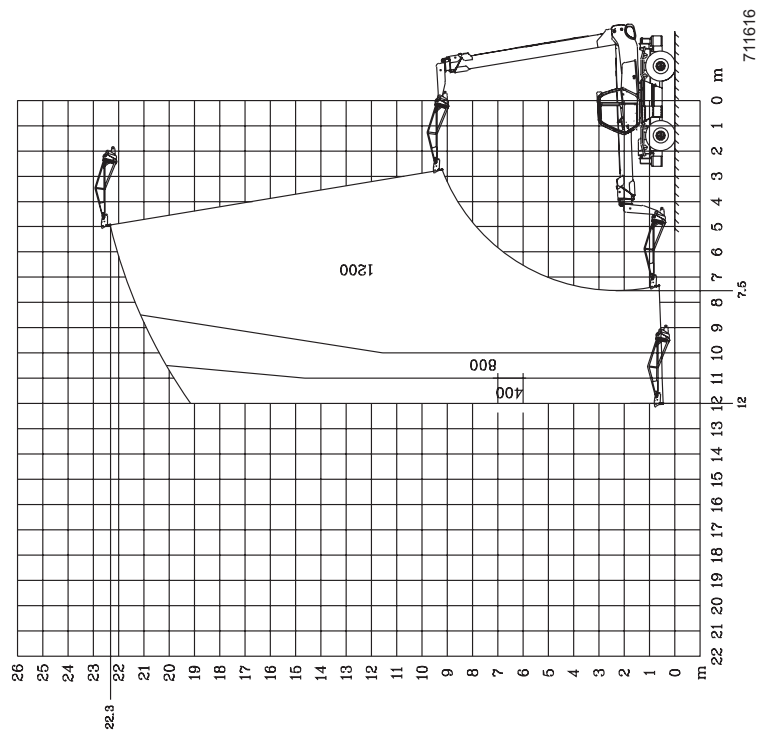
MRT 2540		pos. F
P 1200		1200 Kg
		25,1 m


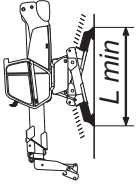


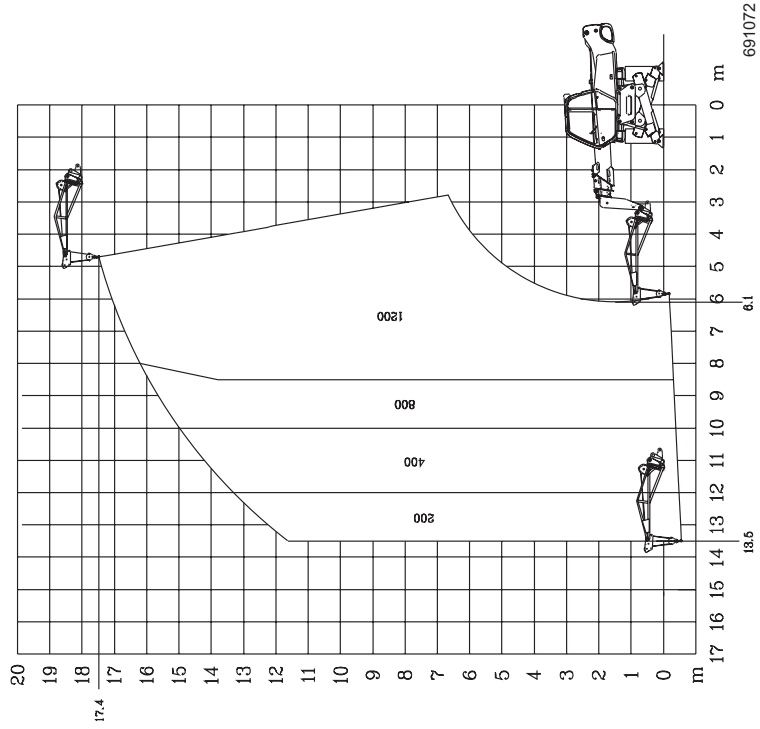
MRT 2540	pos. F
P 1200	7,4 m
	
	



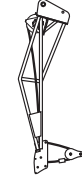
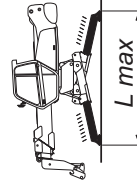
MRT 2540	pos. F
P 1200	22,3 m
	
	

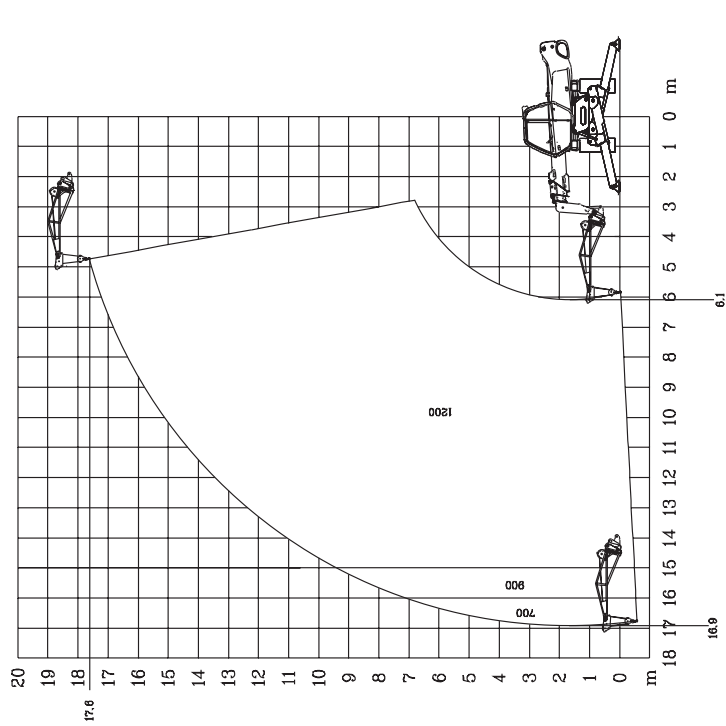


MRT 1850		pos. F
PT 1200		17,4 m
		1200 Kg


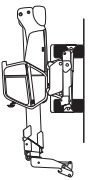
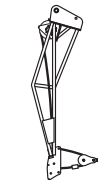



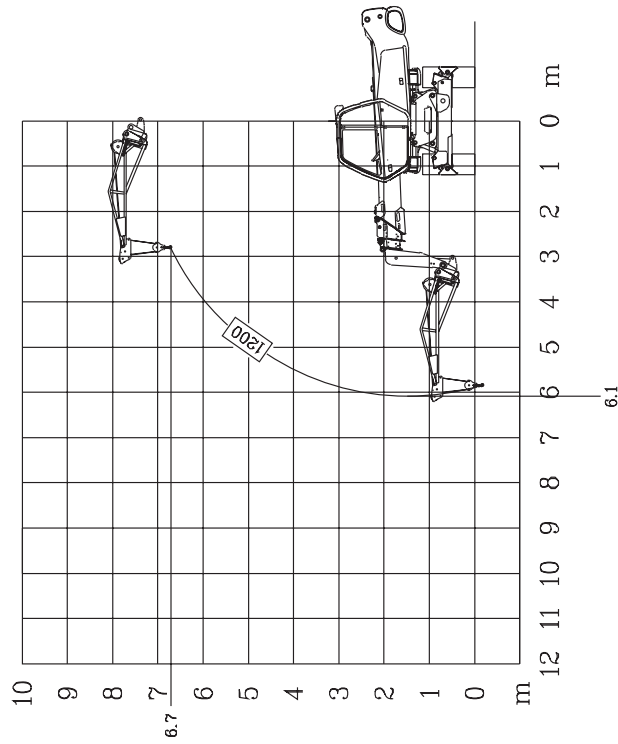
691072

MRT 1850		pos. F
PT 1200		17,6 m
		1200 Kg







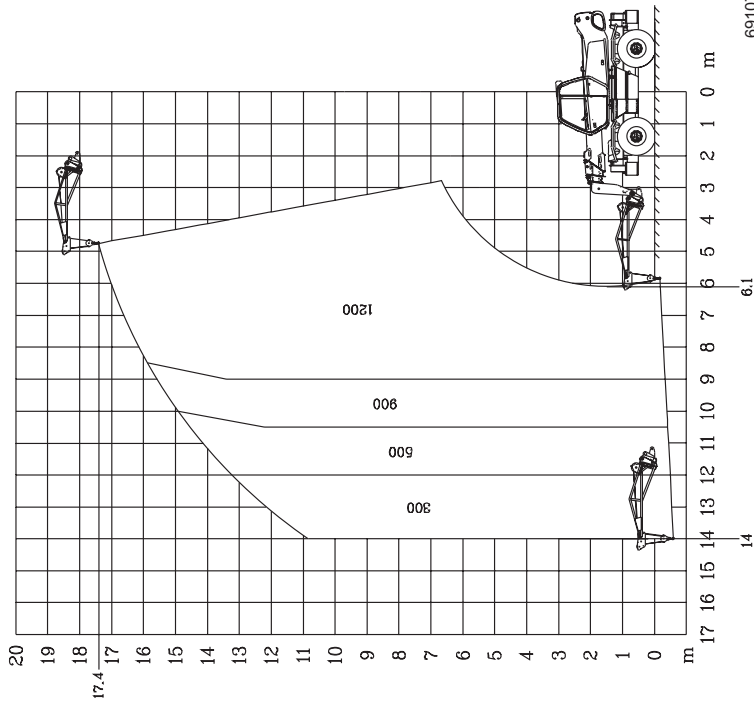
691073

MRT 1850	1200	pos. F
PT 1200		6,7 m
		

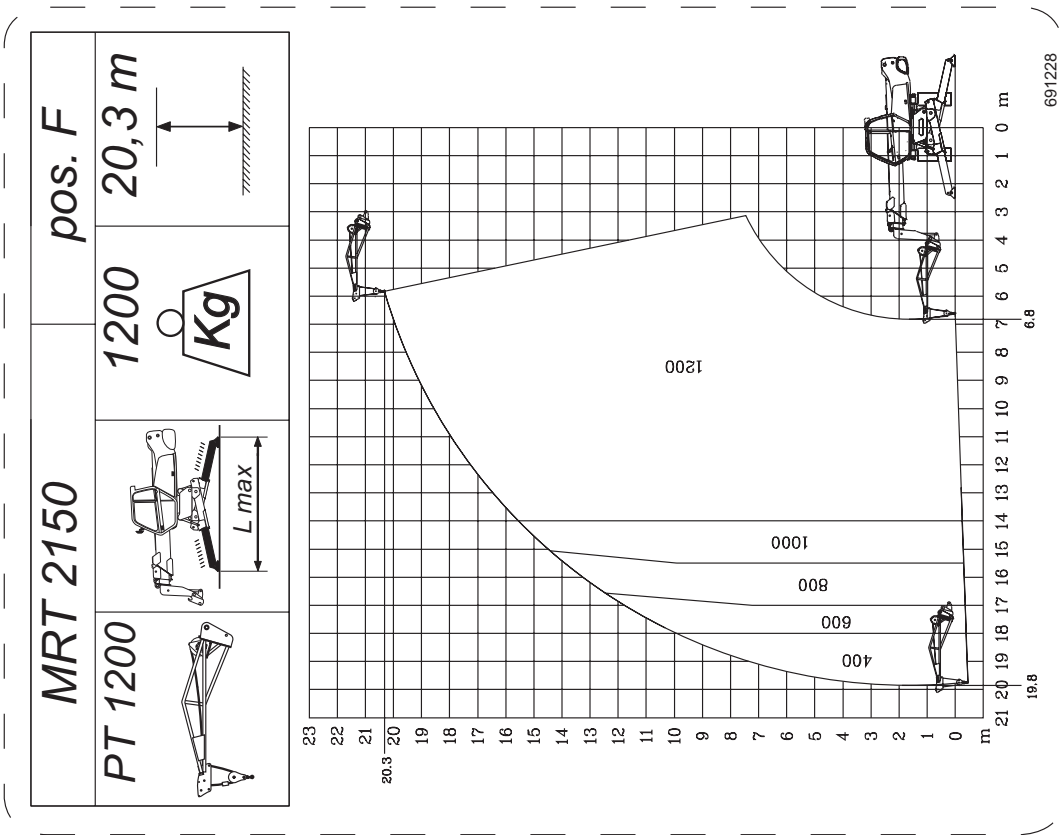
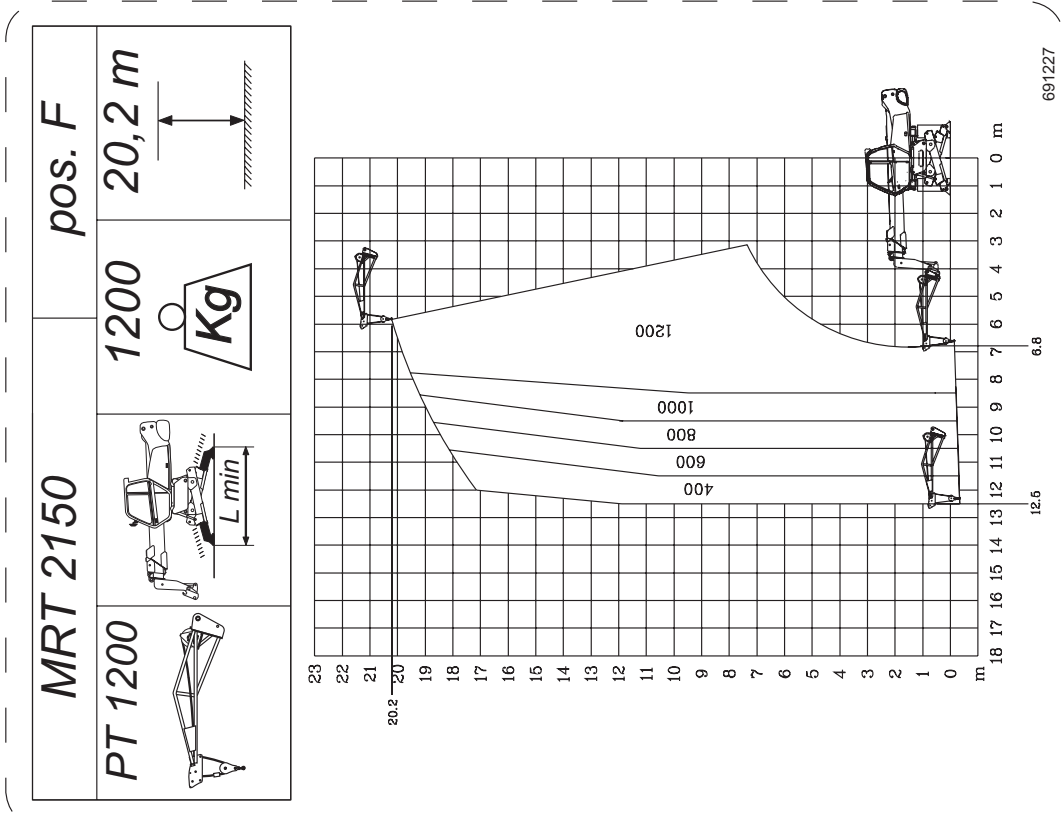



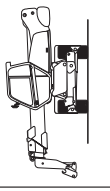
691075

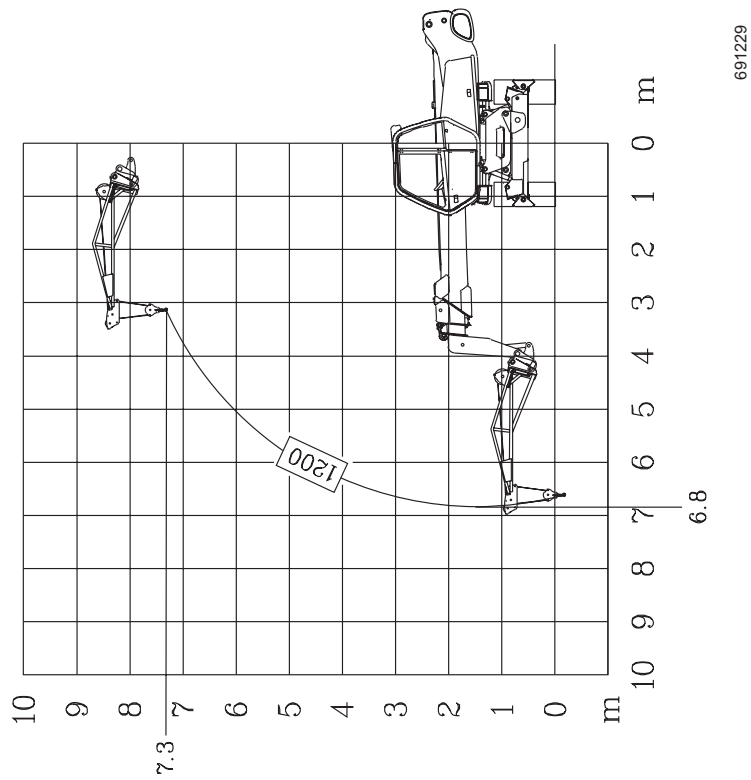
MRT 1850	1200	pos. F
PT 1200		17,4 m
		

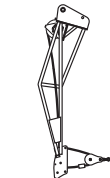



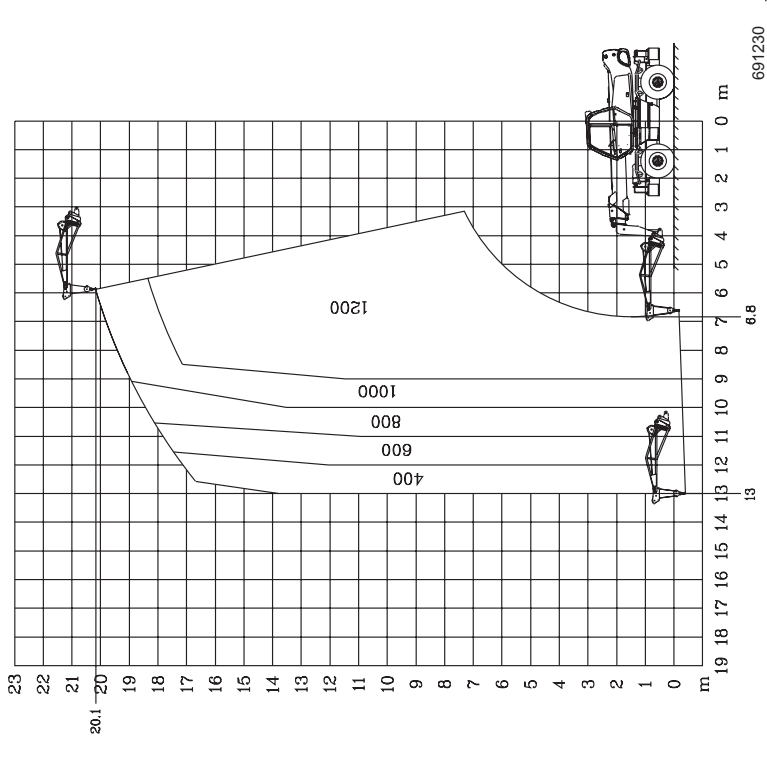
691074

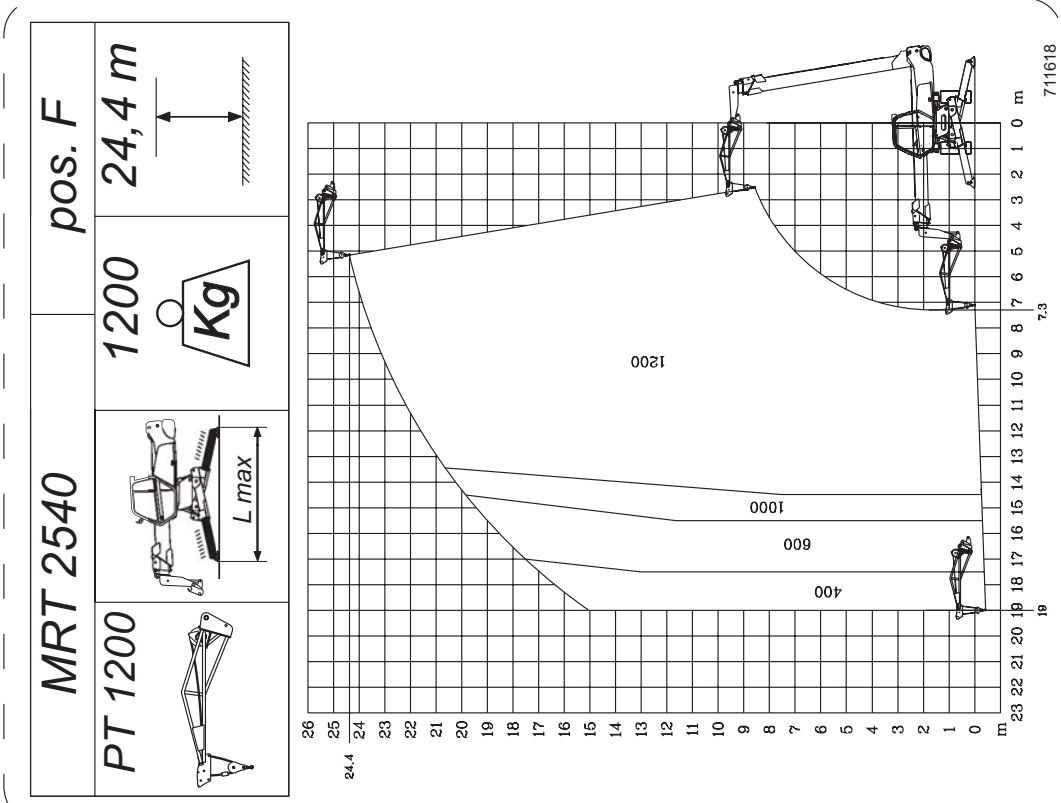
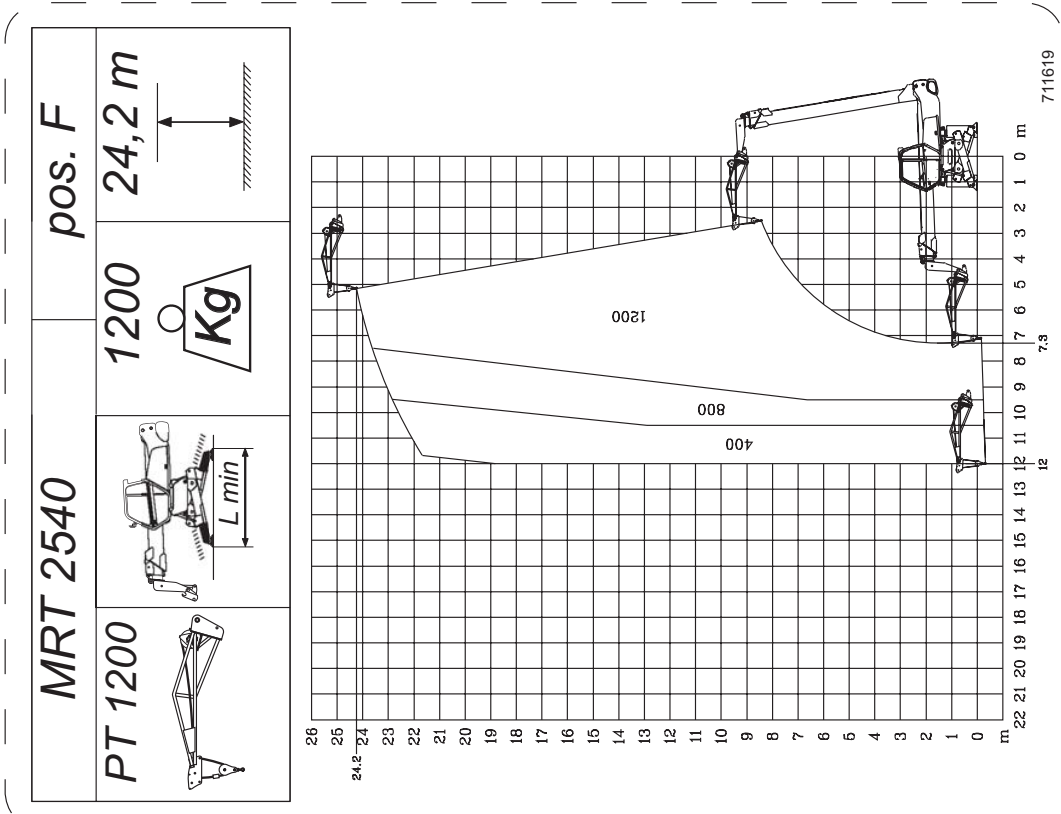


MRT 2150		pos. F
PT 1200		7,3 m
		1200 Kg

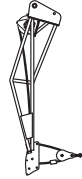






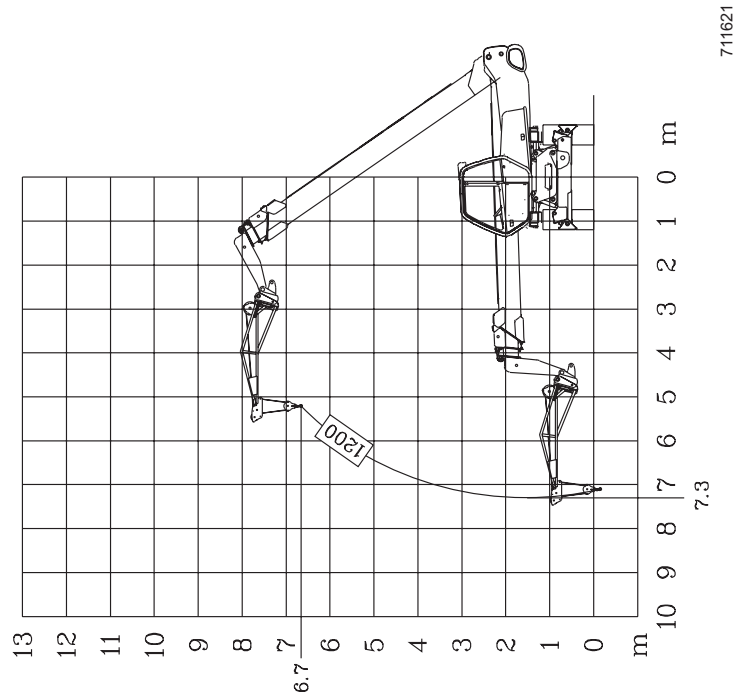
MRT 2150		pos. F
PT 1200		20,1 m
		1200 Kg

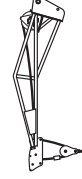






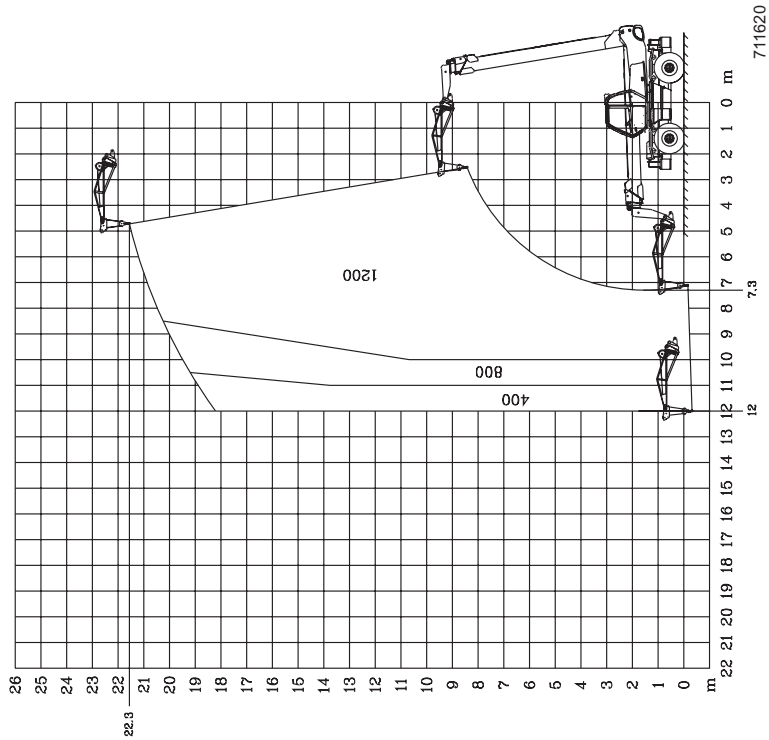



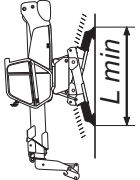
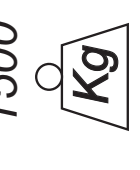


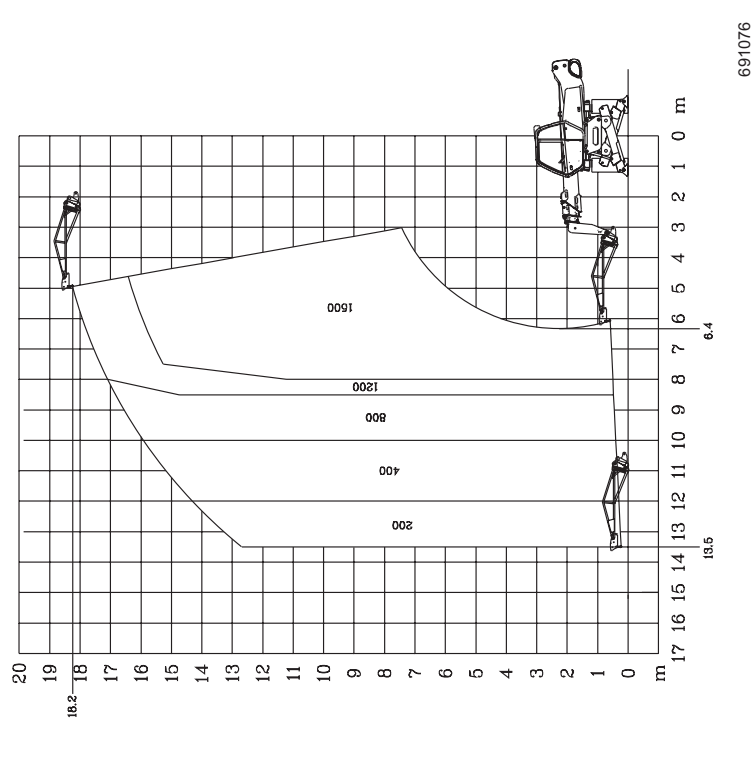
MRT 2540		pos. F
PT 1200		
		1200
		



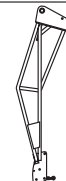
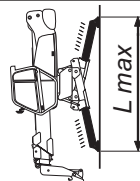
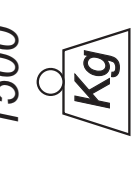
MRT 2540		pos. F
PT 1200		
		1200
		

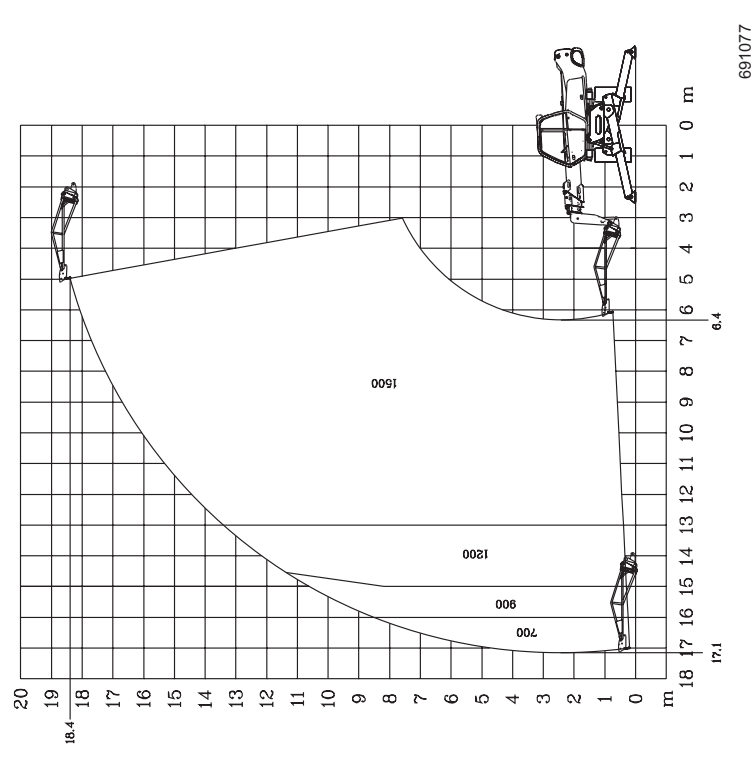


MRT 1850	pos. G
P 1500	18,2 m
	1500 Kg
	


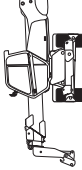
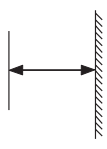


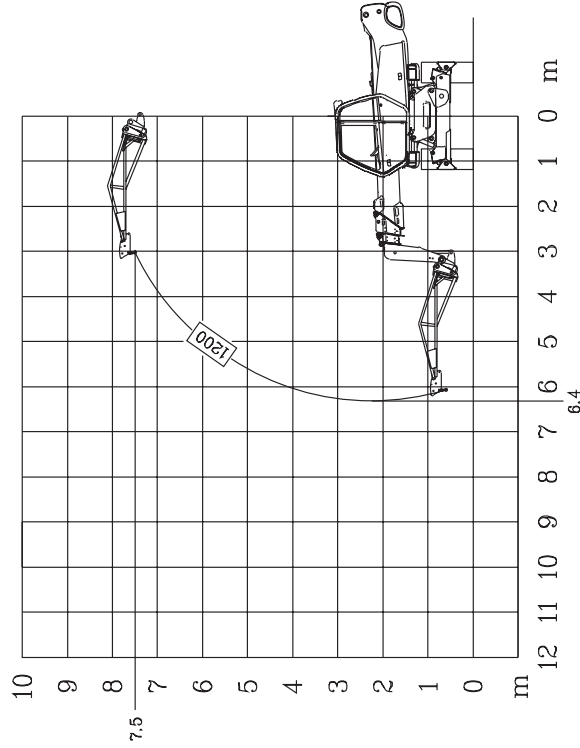
691076

MRT 1850	pos. G
P 1500	18,4 m
	1500 Kg
	

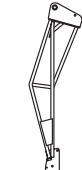

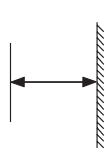


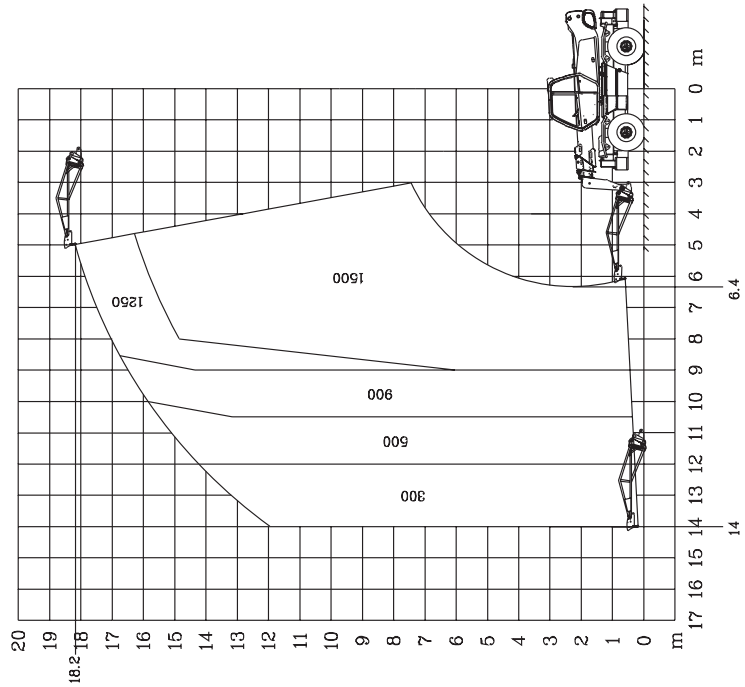
691077

MRT 1850		pos. G
P 1500		7,5 m
		1200 Kg
		

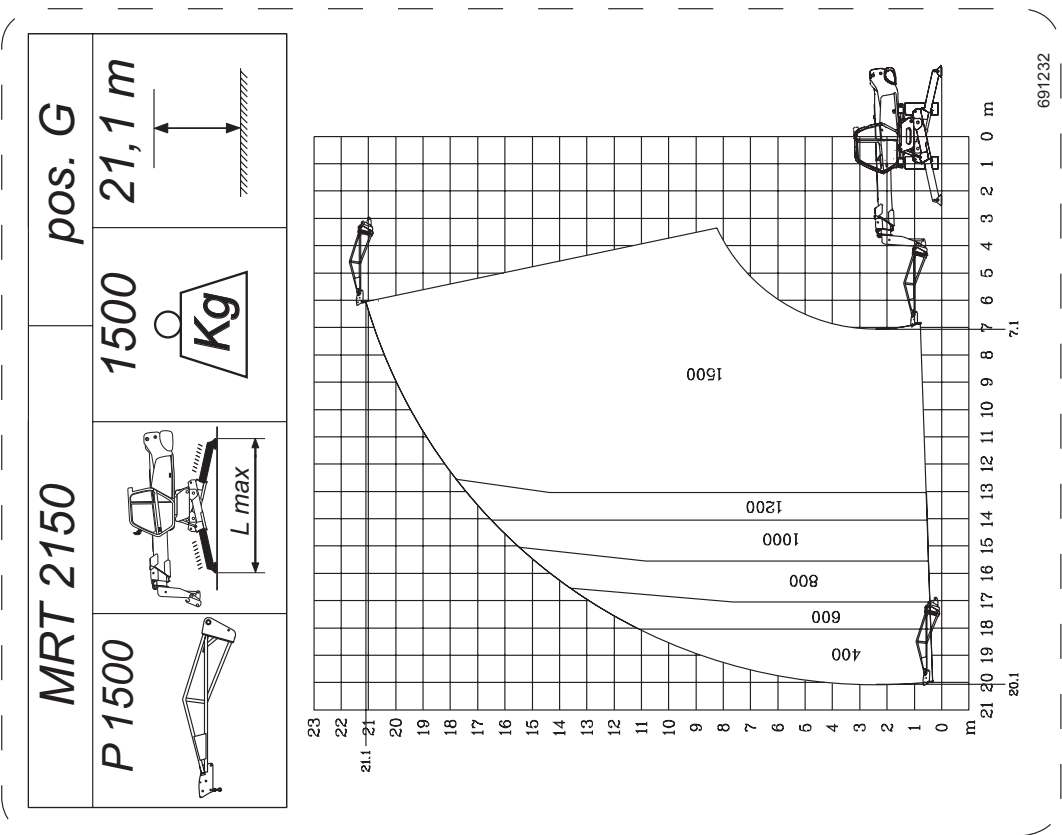
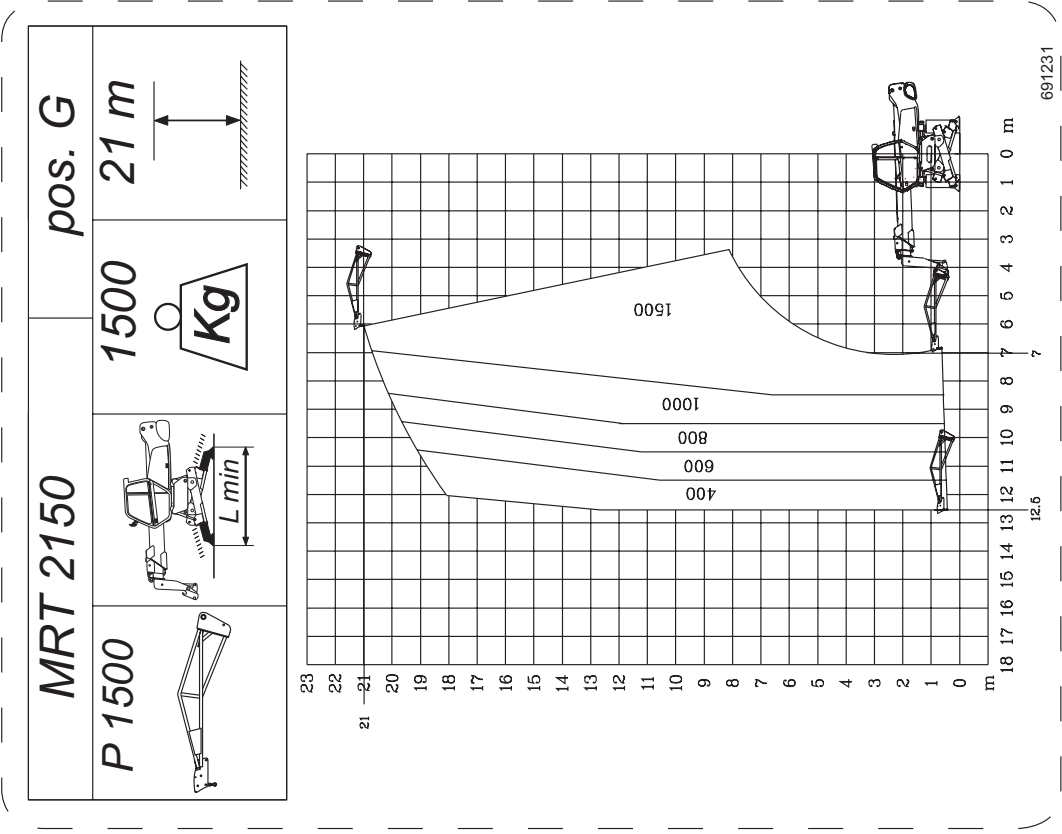


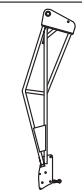
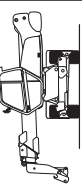
691079

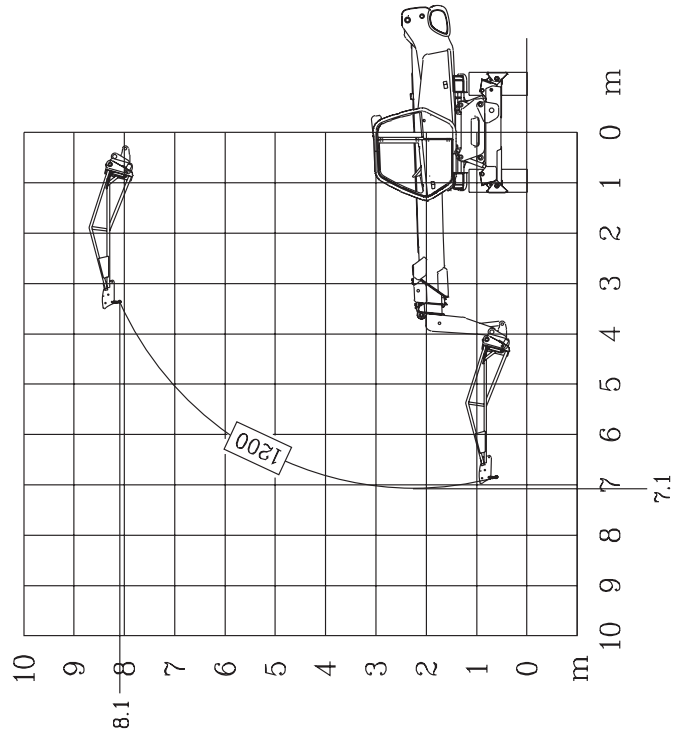
MRT 1850		pos. G
P 1500		18,2 m
		1500 Kg
		



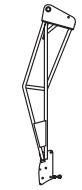

691078

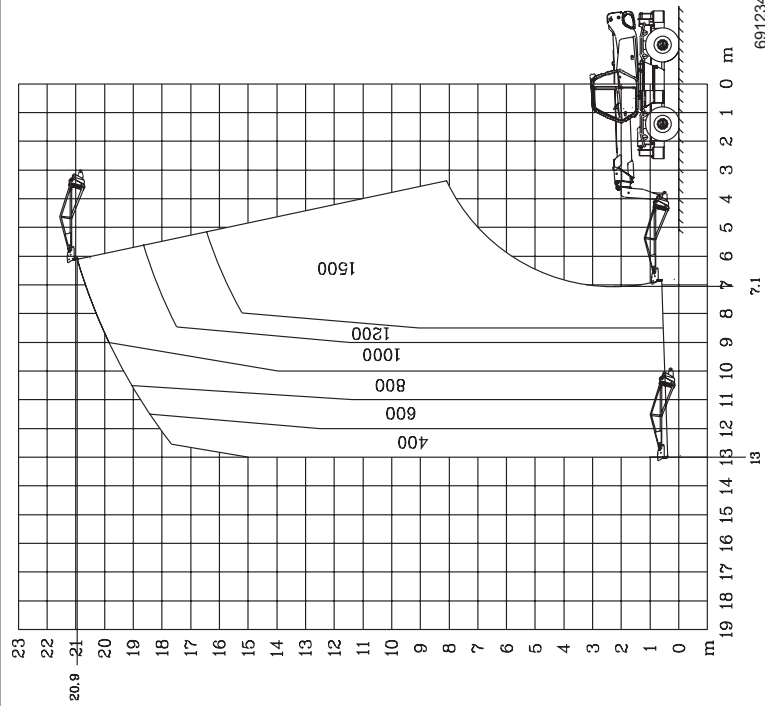


MRT 2150		pos. G
P 1500		8,1 m
		1200 Kg



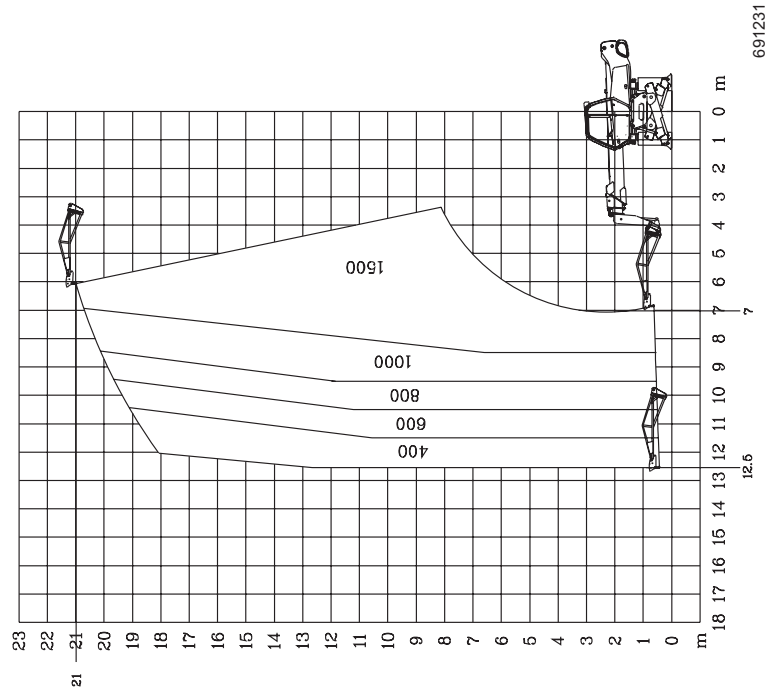
691233

MRT 2150		pos. G
P 1500		20,9 m
		1500 Kg



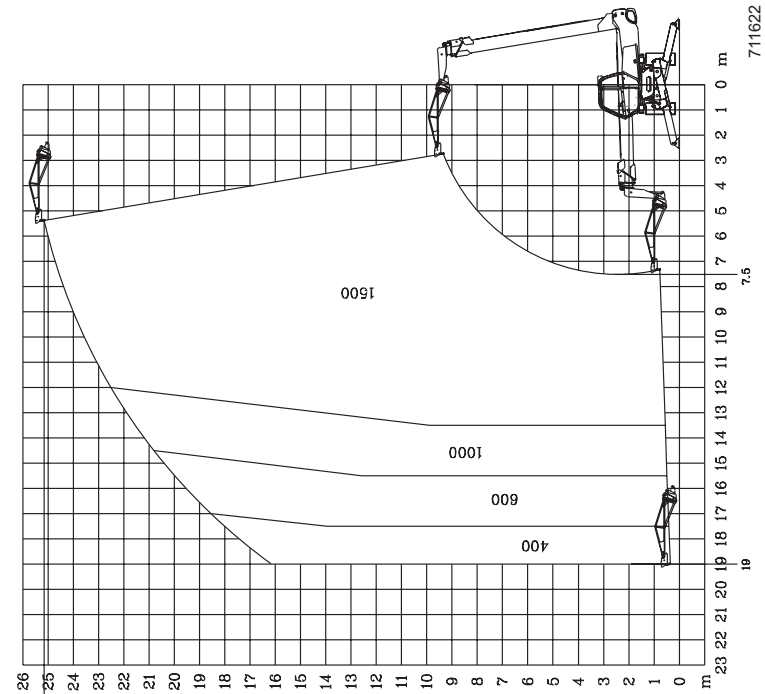
691234

MRT 2150		pos. G
P 1500		1500 Kg
		21 m






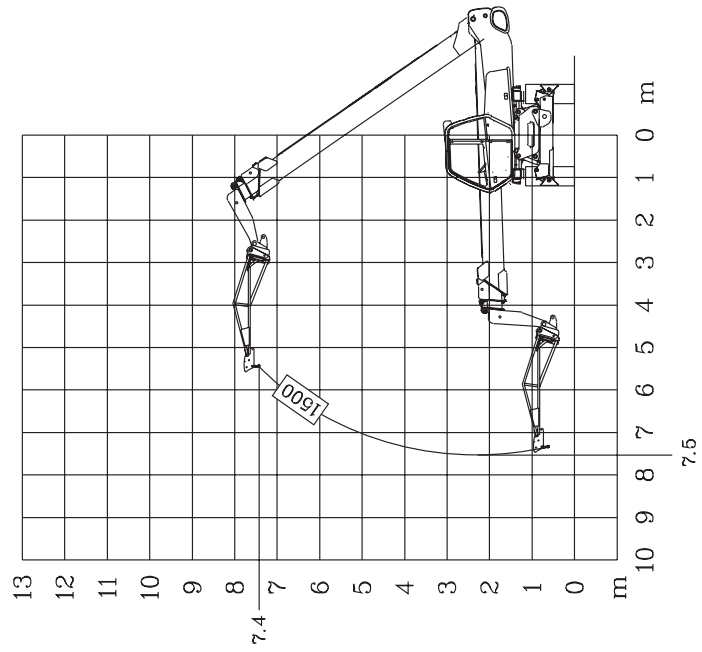
691231

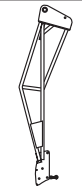


MRT 2540		pos. G
P 1500		1500 Kg
		25,1 m

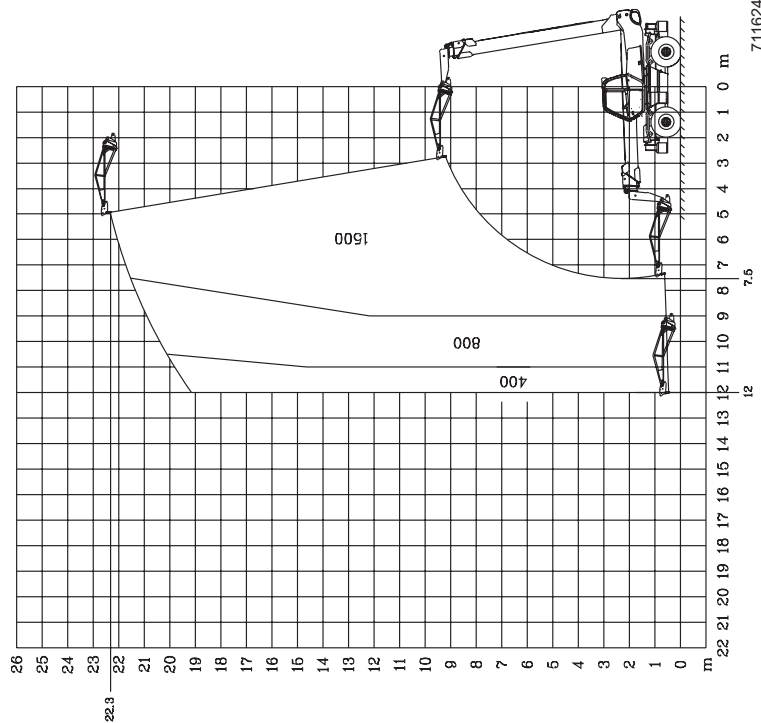


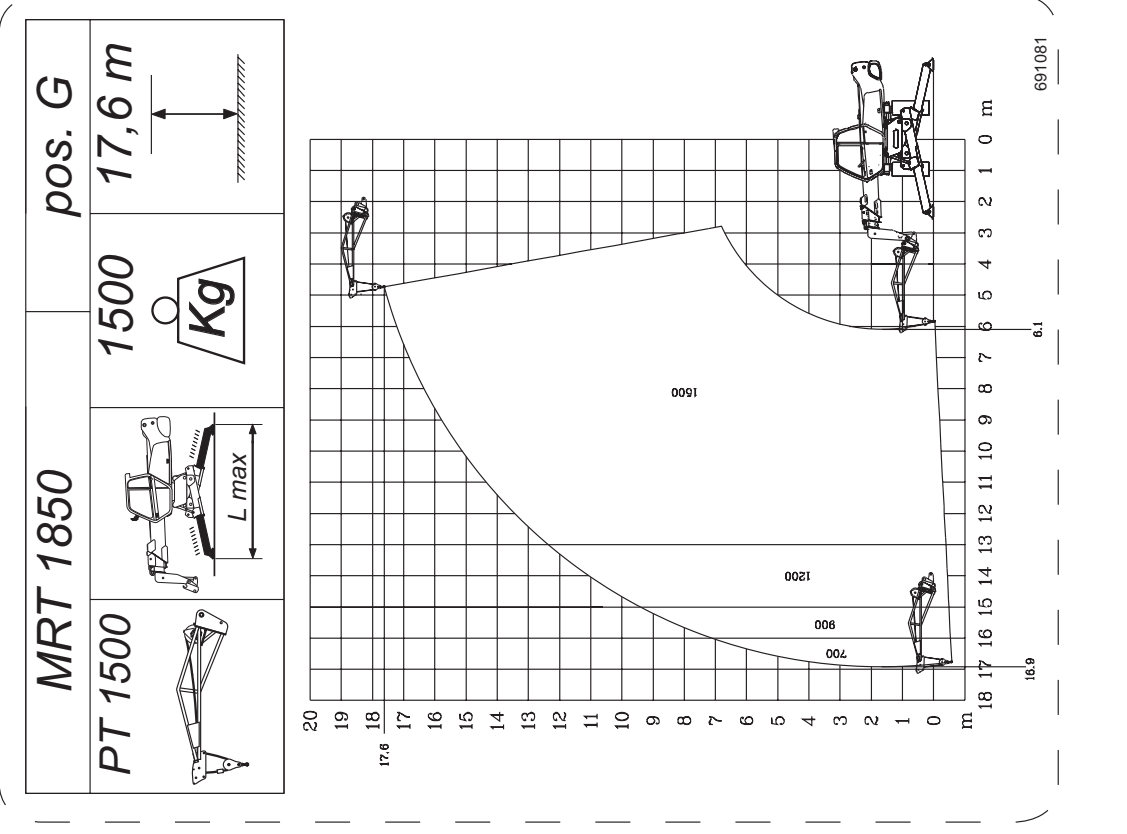
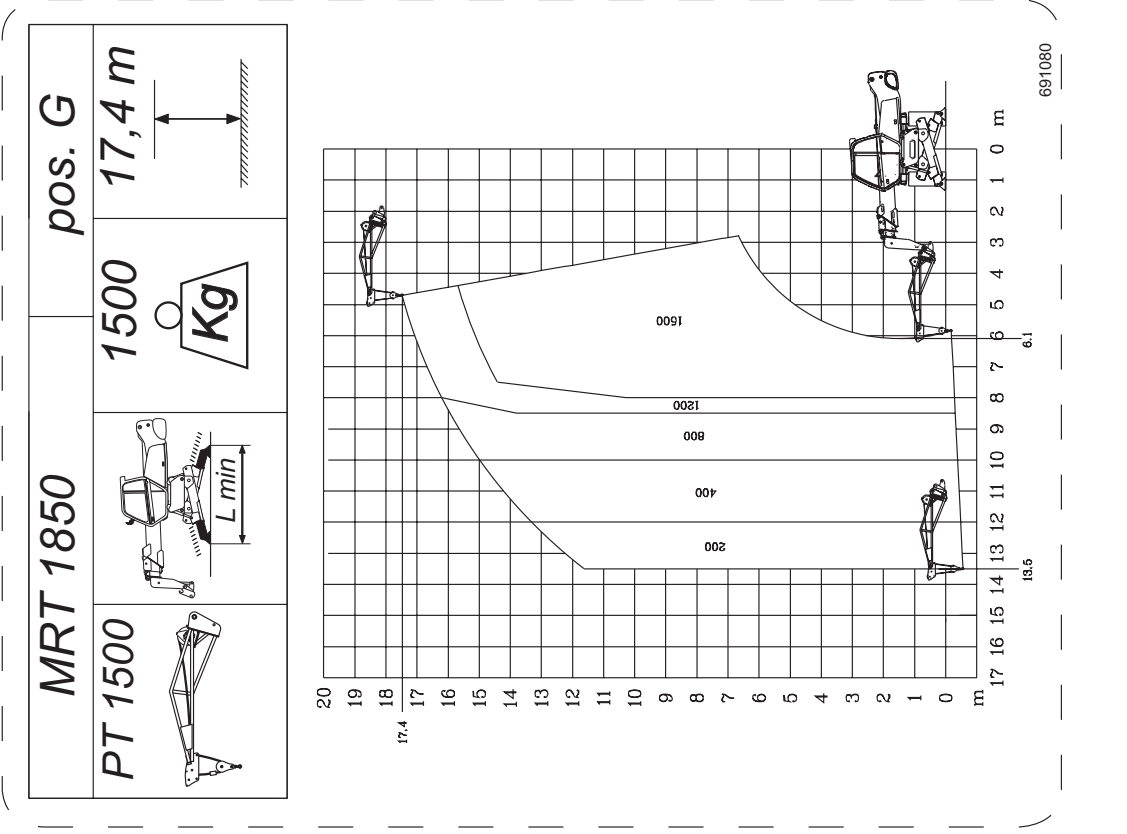
711622

MRT 2540		pos. G
P 1500		
		7,4 m



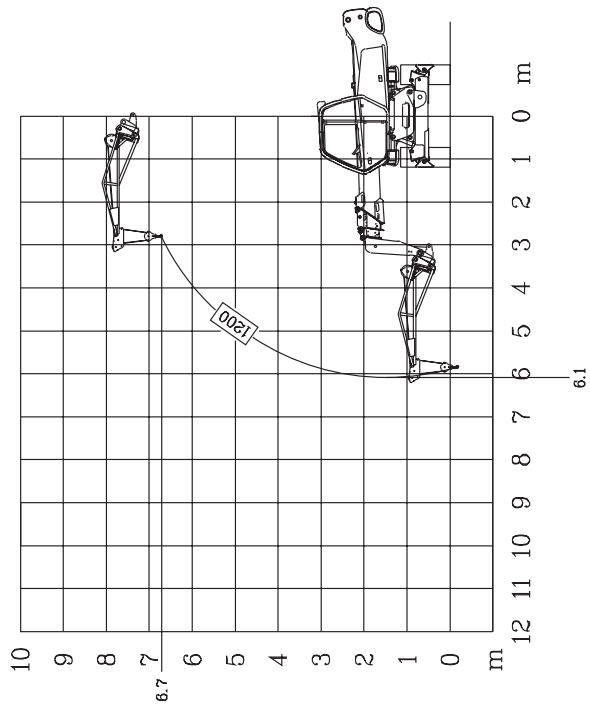
MRT 2540		pos. G
P 1500		
		22,3 m





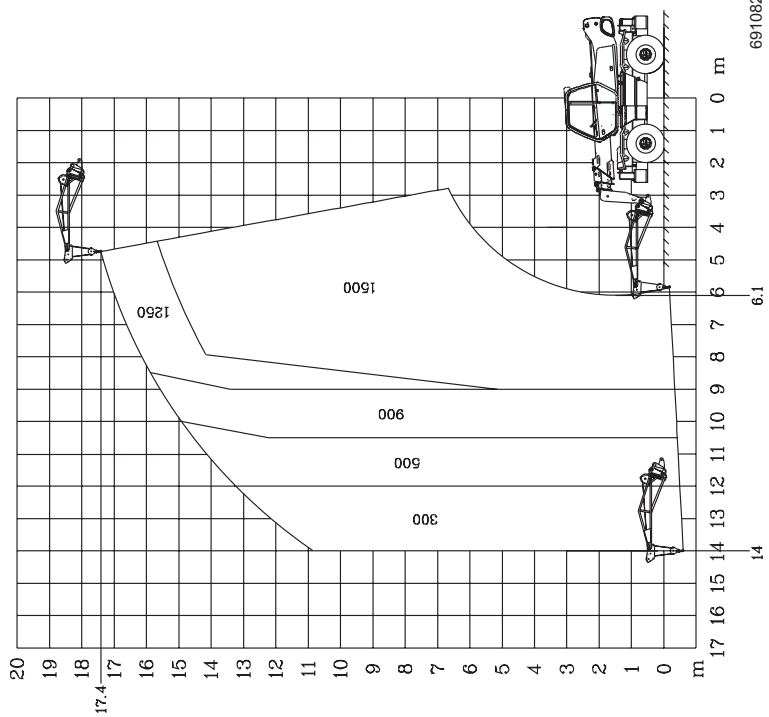


MRT 1850		pos. G
PT 1500	1200 Kg	6,7 m


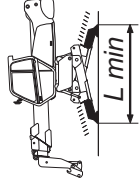


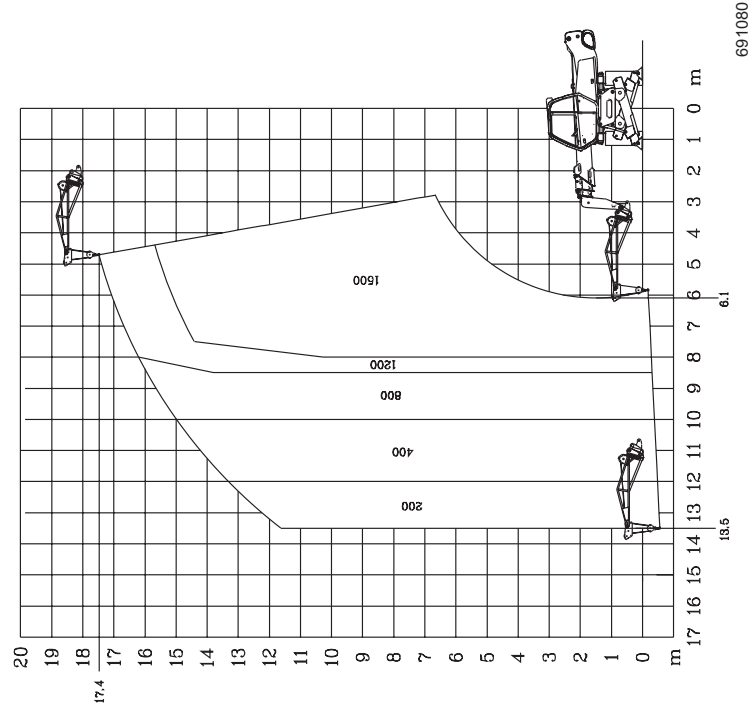
691083


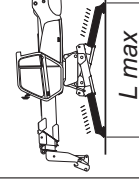
MRT 1850		pos. G
PT 1500	1500 Kg	17,4 m

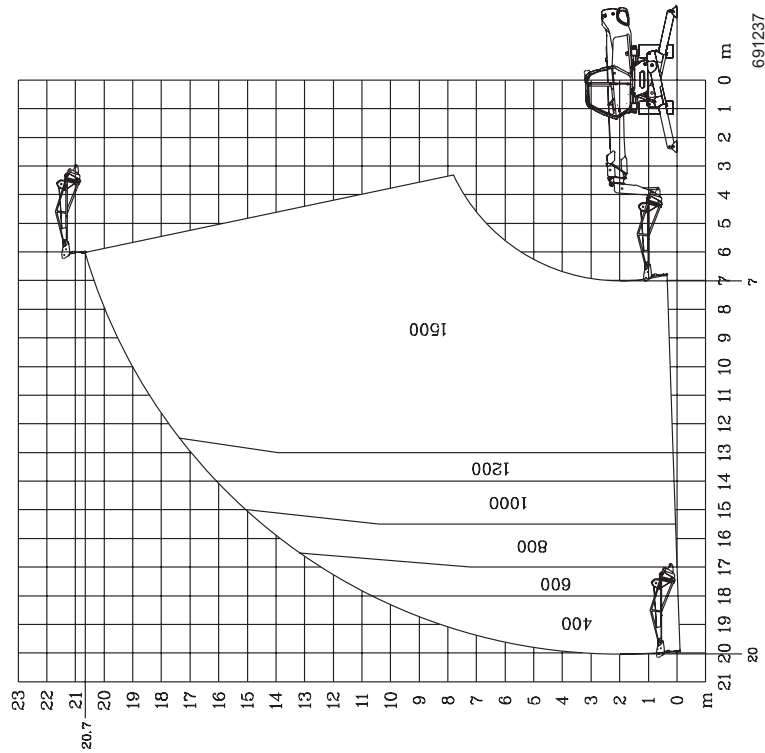



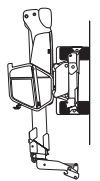
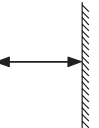

691082

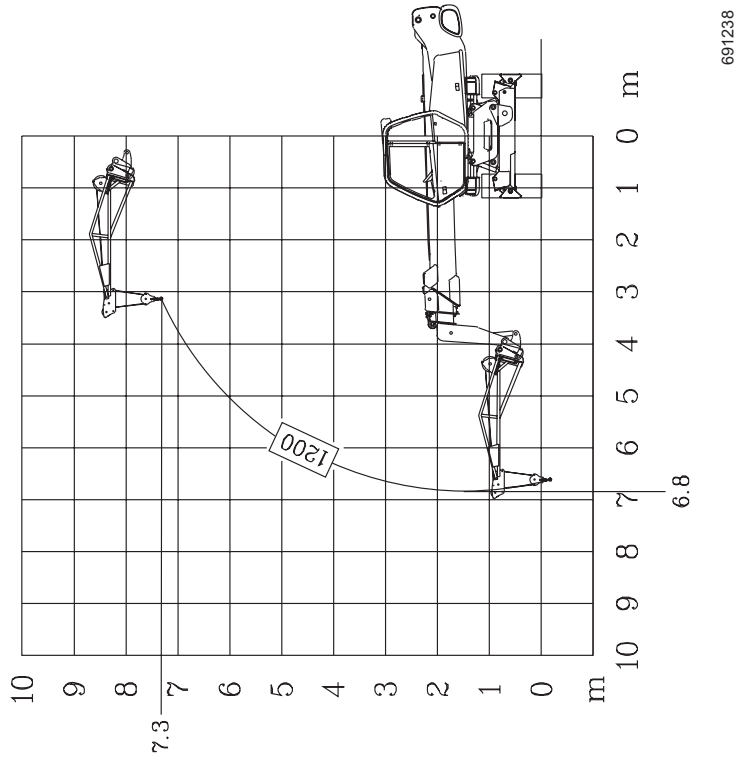
MRT 1850		pos. G
PT 1500		17,4 m
		1500 Kg




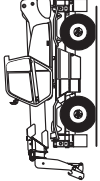
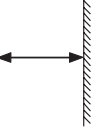

MRT 2150		pos. G
PT 1500		20,7 m
		1500 Kg

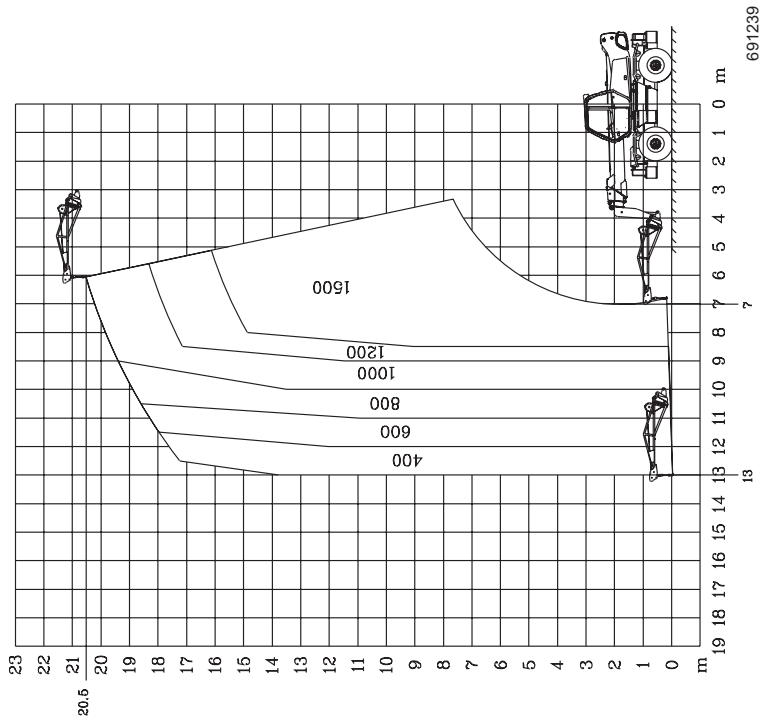


MRT 2150		pos. G
PT 1500	1200	7,3 m
		
		



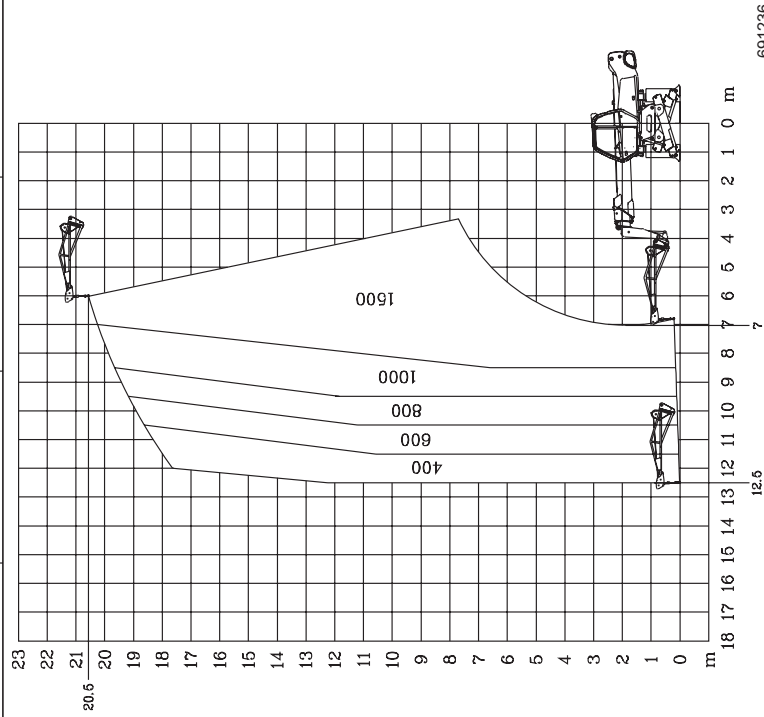
691238

MRT 2150		pos. G
PT 1500	1500	20,5 m
		
		



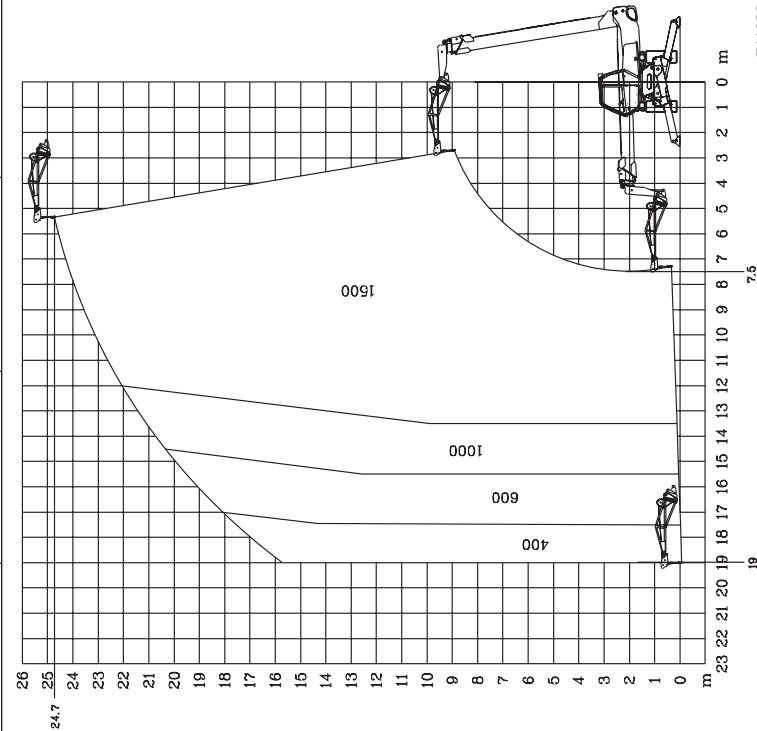
691239

MRT 2150	pos. G
PT 1500	20,5 m
	1500 Kg

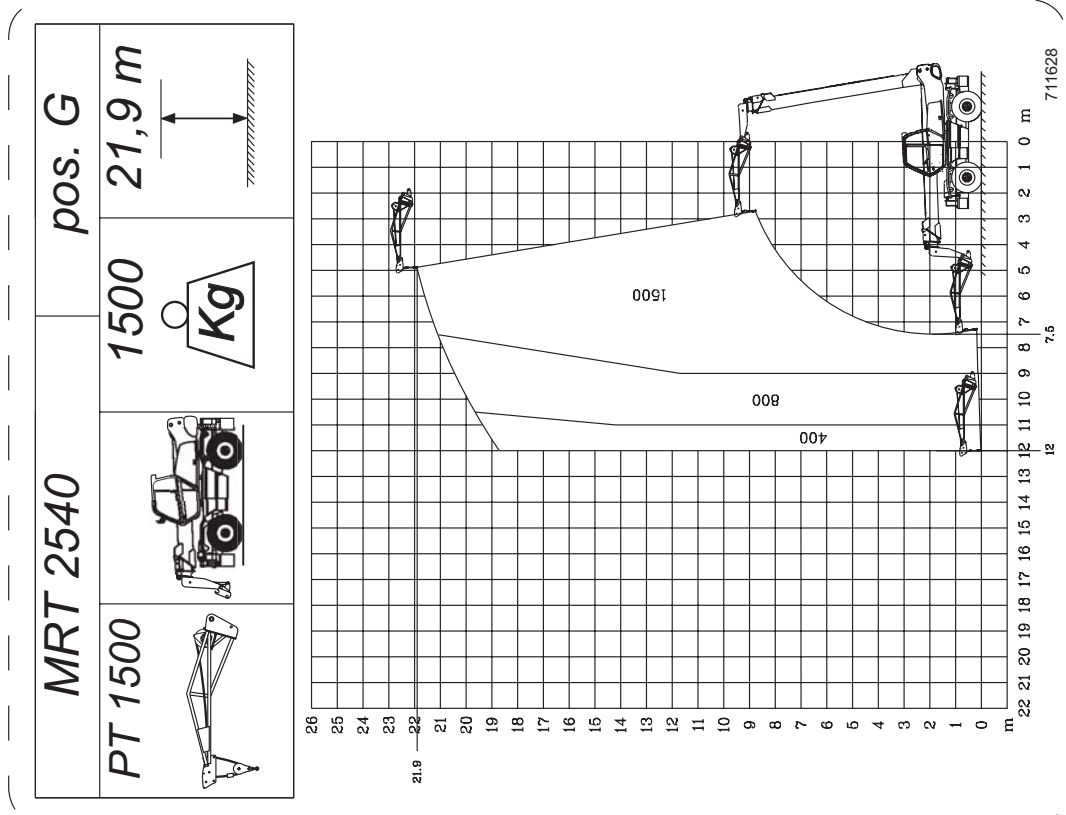
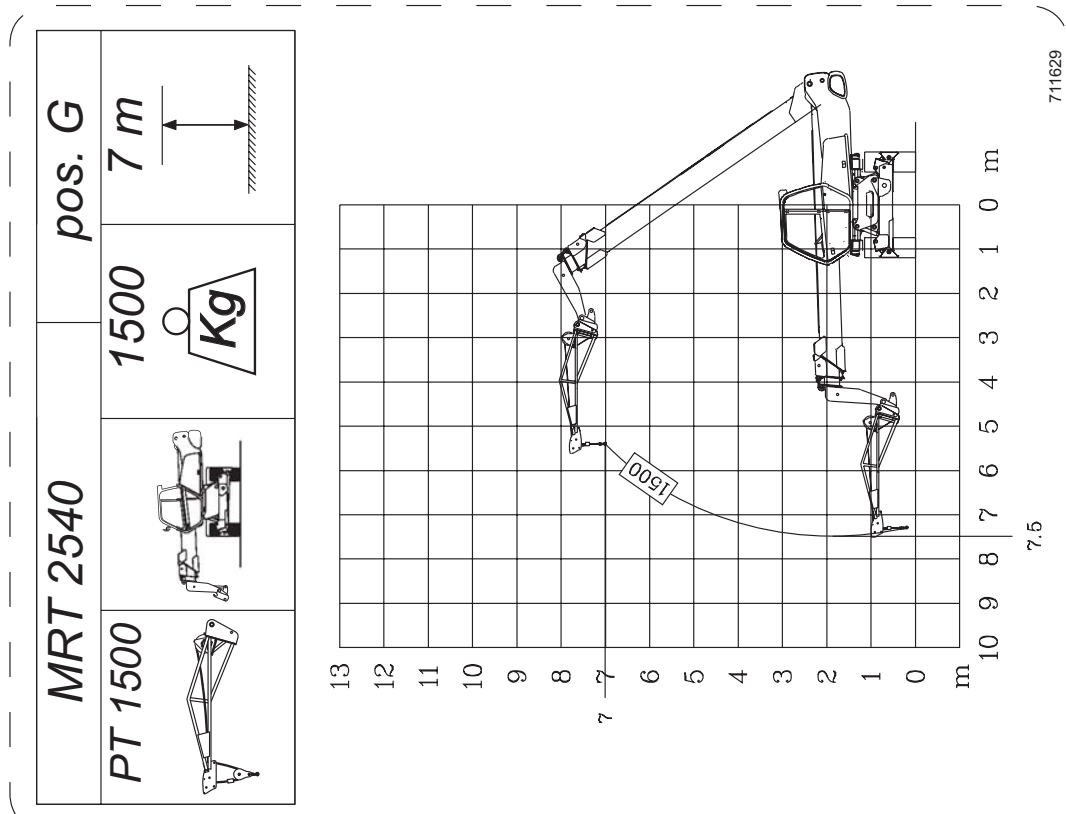


691236

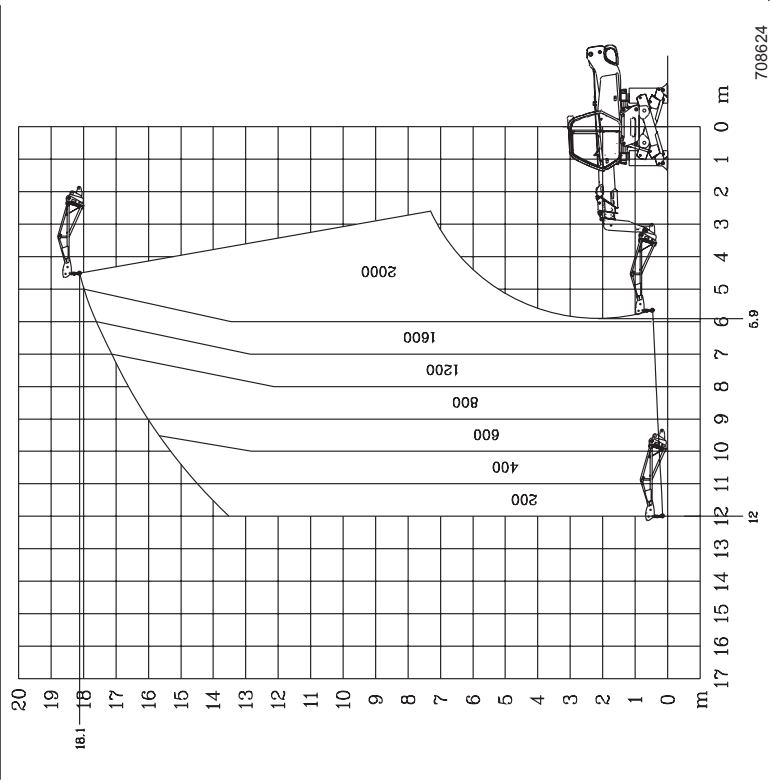
MRT 2540	pos. G
PT 1500	24,7 m
	1500 Kg



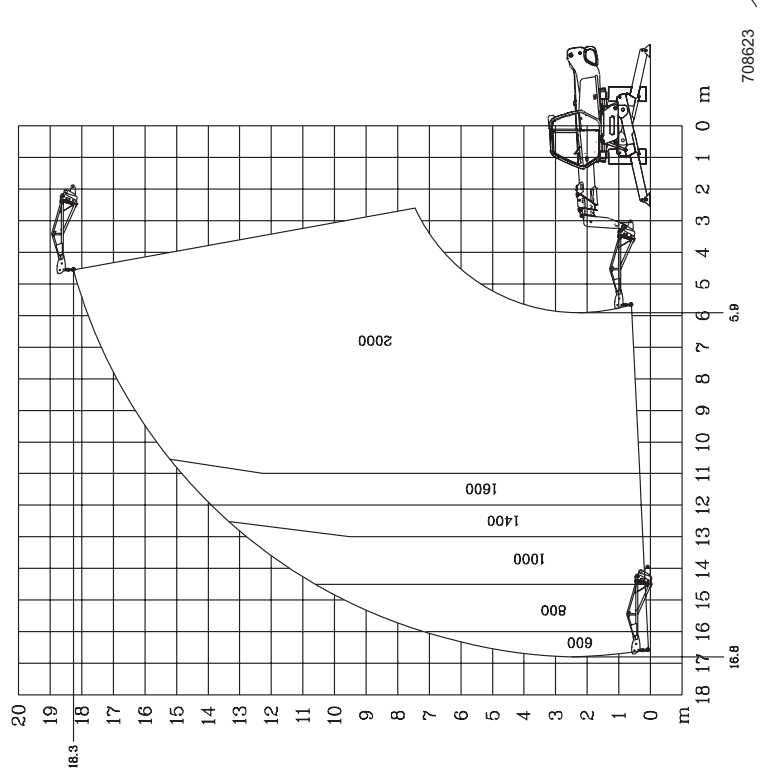
711626

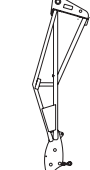
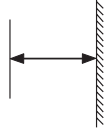
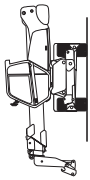



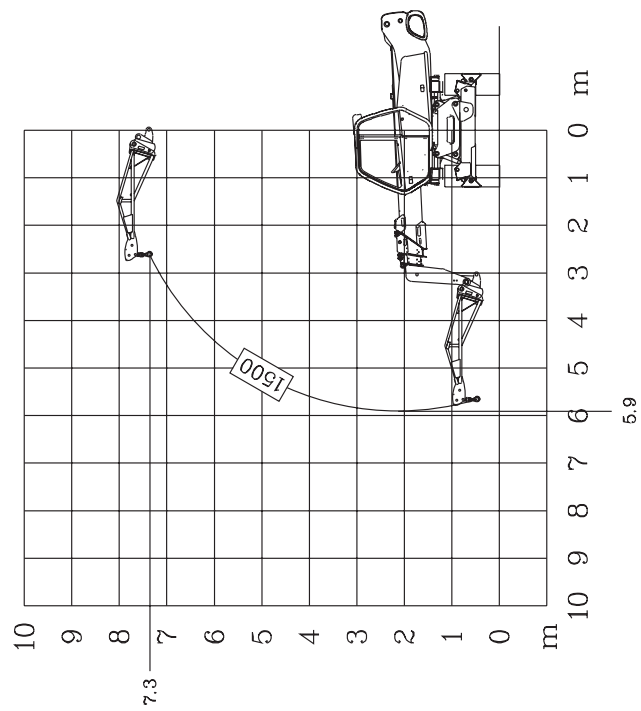
MRT 1850	pos. H
P 2000	18,1 m
	2000 Kg



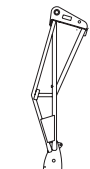
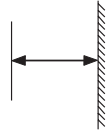


MRT 1850	pos. H
P 2000	18,3 m
	2000 Kg

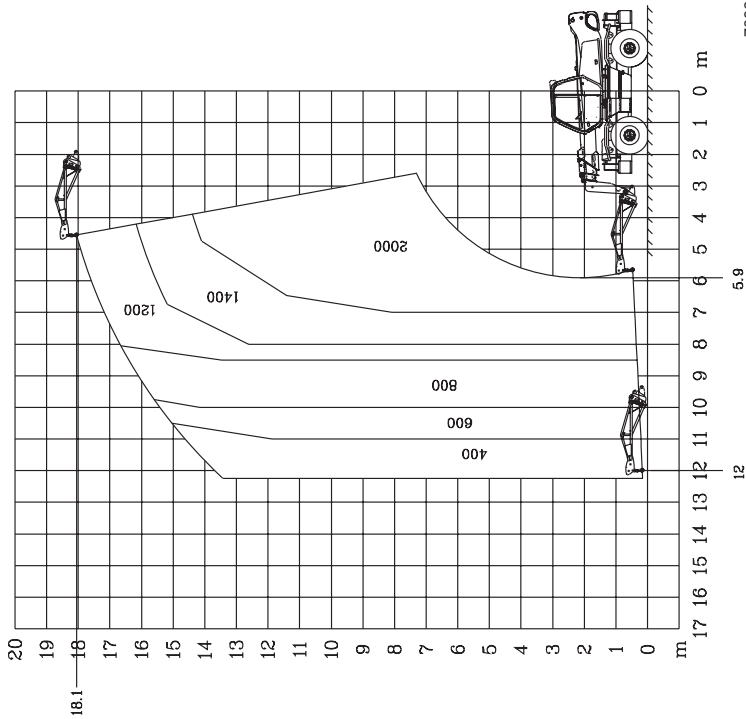


MRT 1850		pos. H
P 2000		7,3 m 
		1500 Kg 

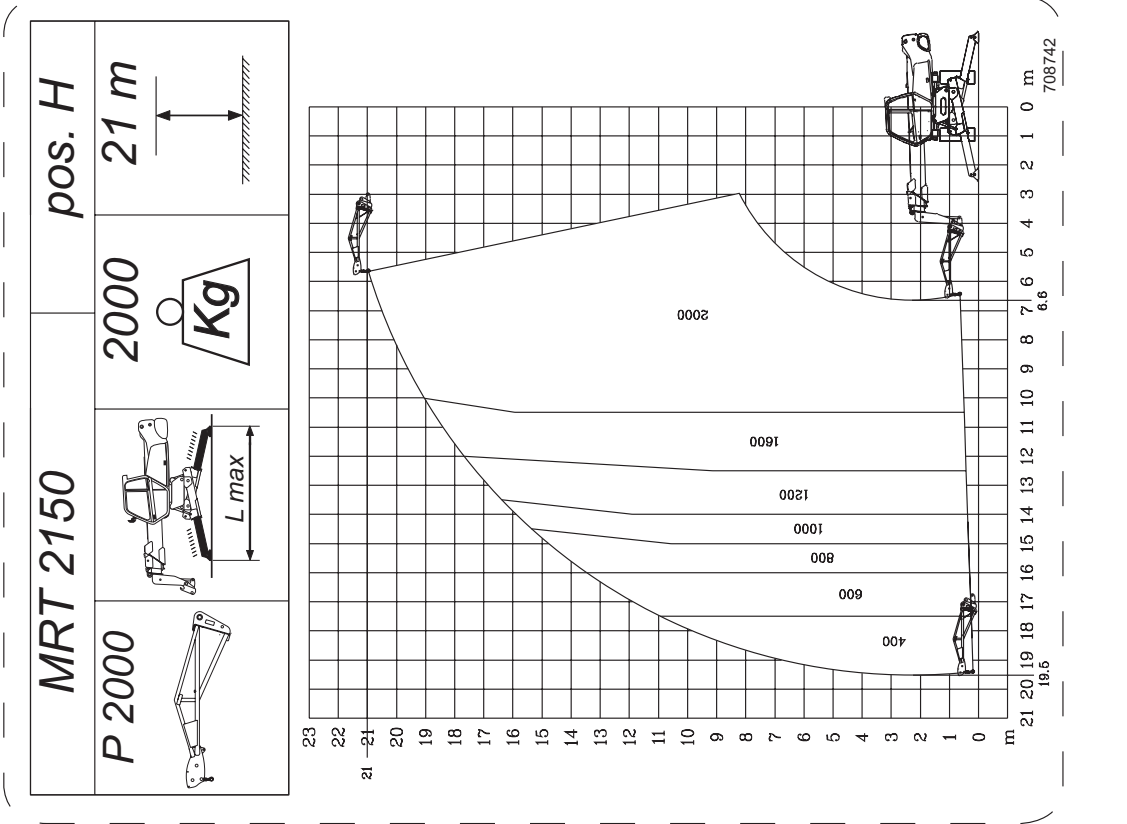
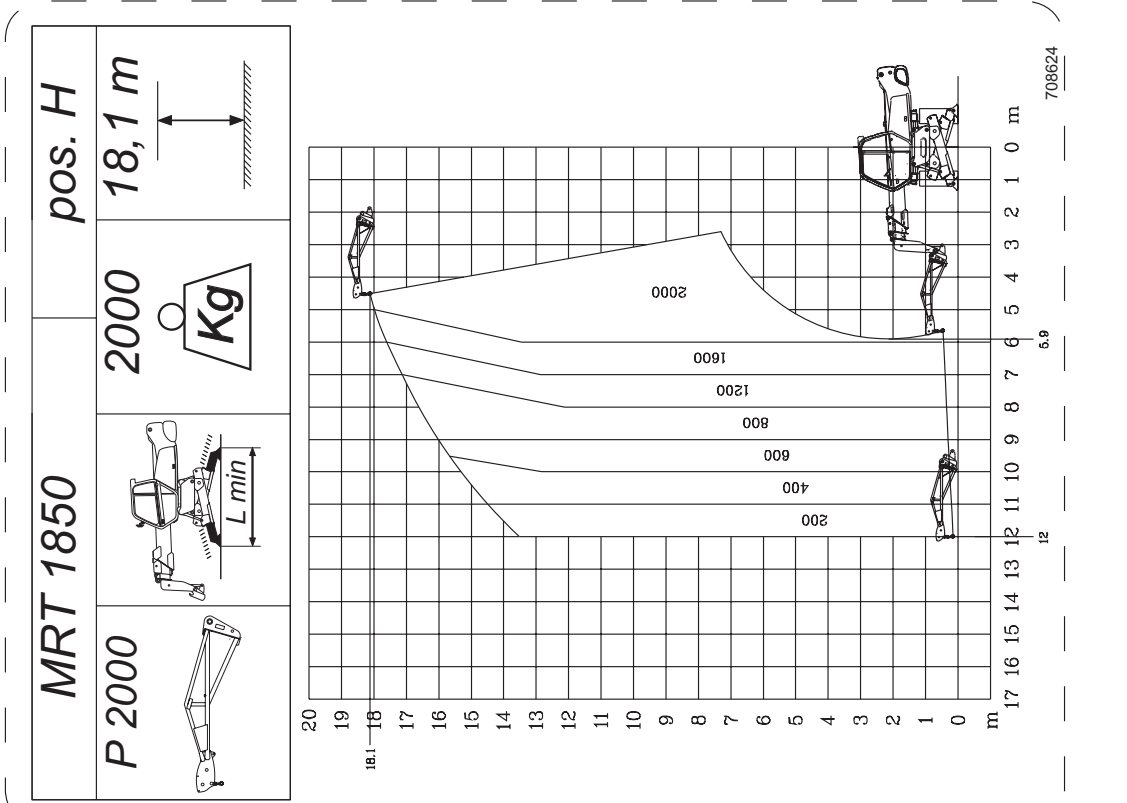


708621

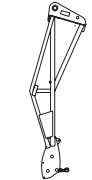
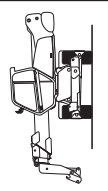
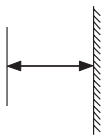
MRT 1850		pos. H
P 2000		18,1m 
		2000 Kg 

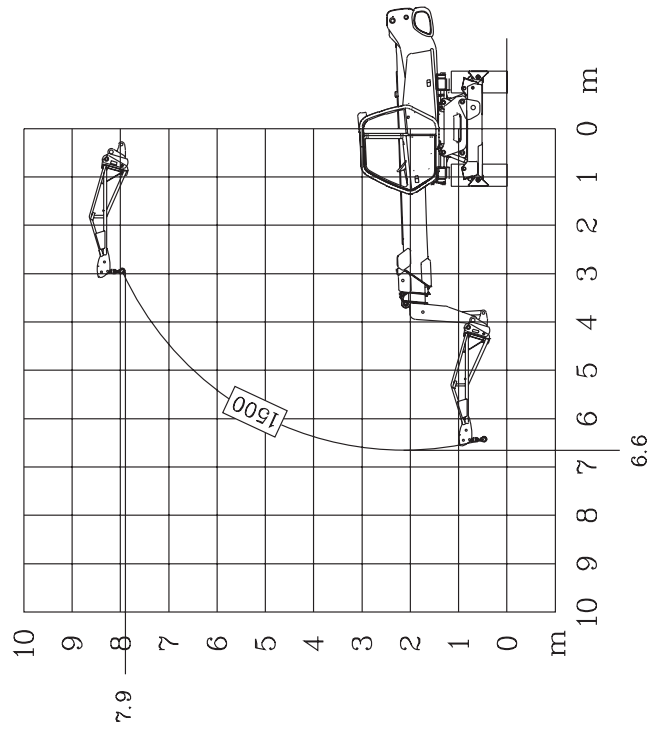


708622

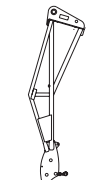
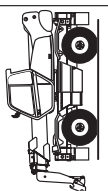
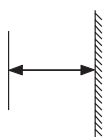


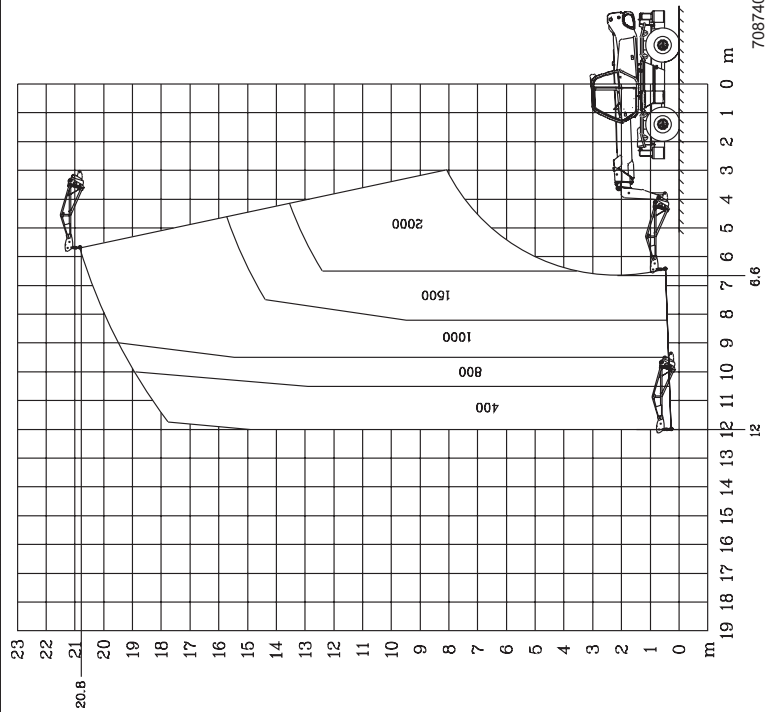


<b>MRT 2150</b>		<b>pos. H</b>
<b>P 2000</b>		<b>7,9 m</b>
	<b>1500 Kg</b>	

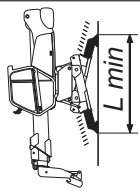
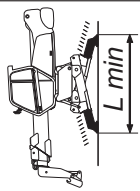


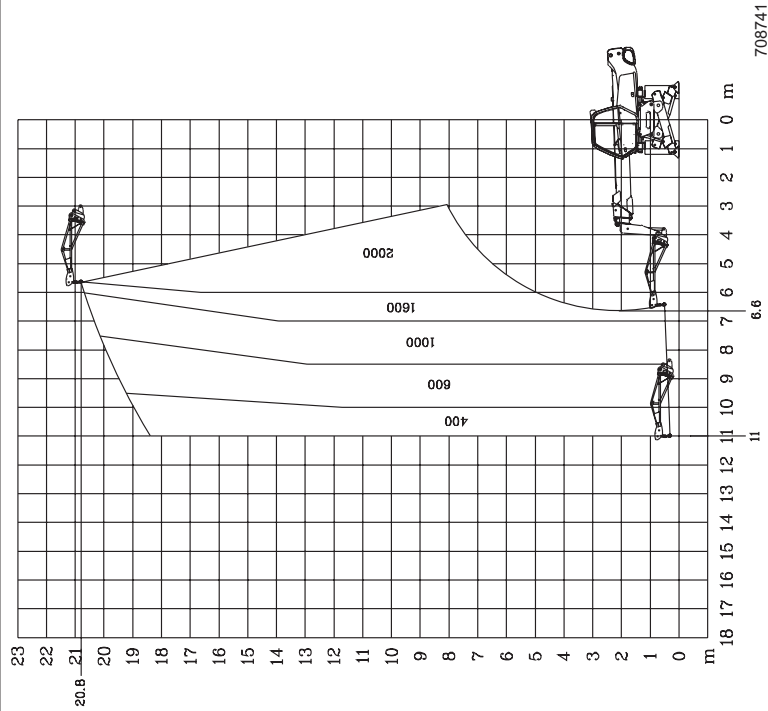
708739

<b>MRT 2150</b>		<b>pos. H</b>
<b>P 2000</b>		<b>20,8 m</b>
	<b>2000 Kg</b>	

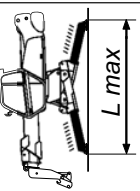
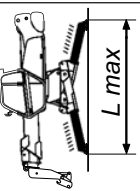


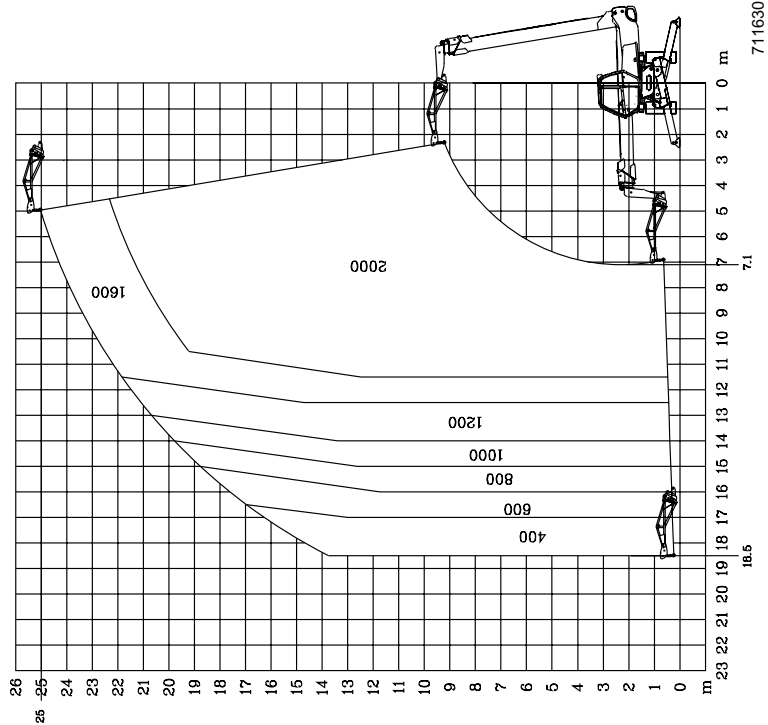
708740

MRT 2150	pos. H 20,8 m
P 2000	2000 Kg
	

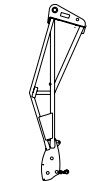
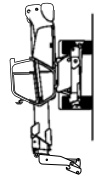


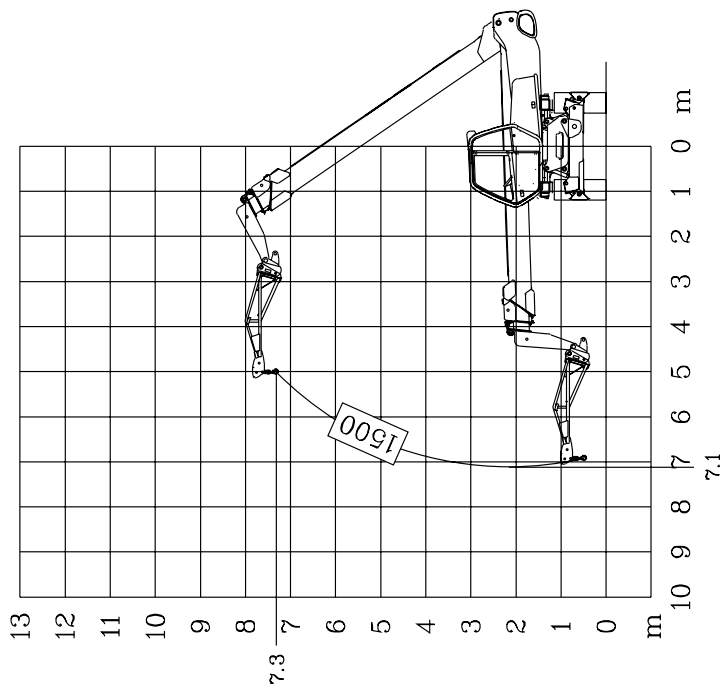
708741

MRT 2540	pos. H 25 m
P 2000	2000 Kg
	

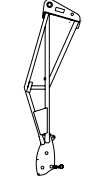
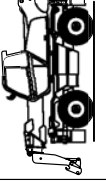


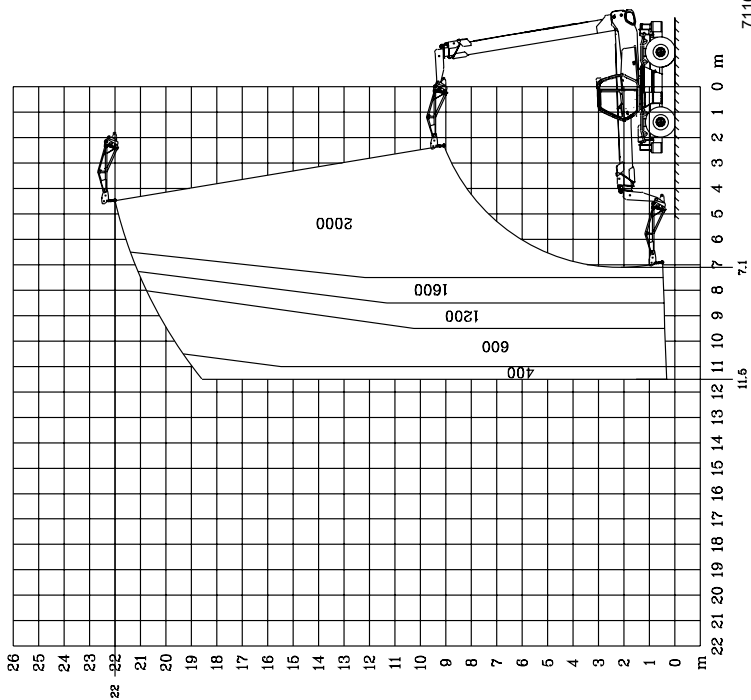
711630

MRT 2540		pos. H
P 2000		7,3 m
		1500 Kg


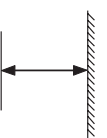
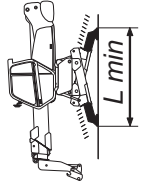



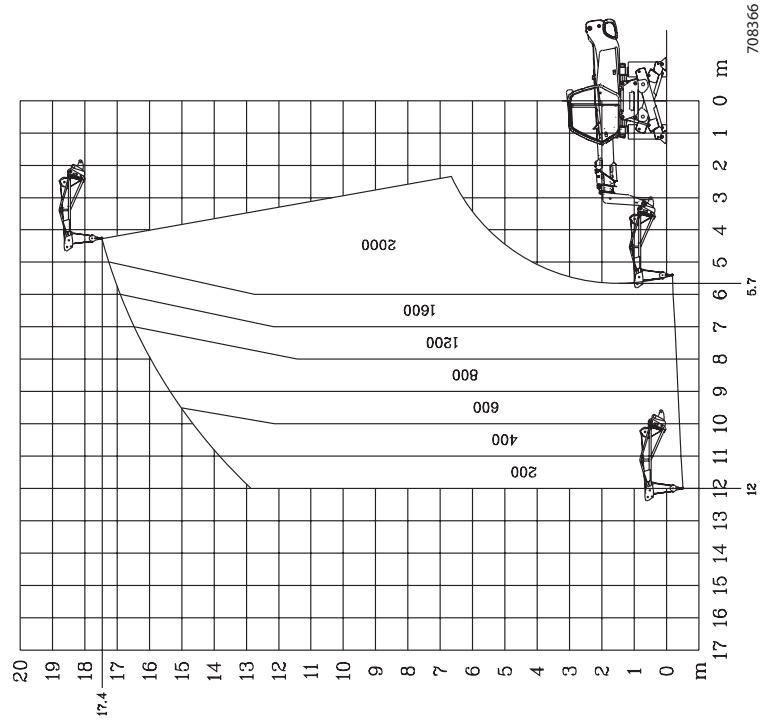
711633


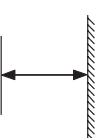
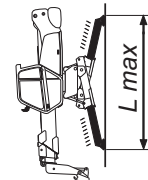

MRT 2540		pos. H
P 2000		22 m
		2000 Kg

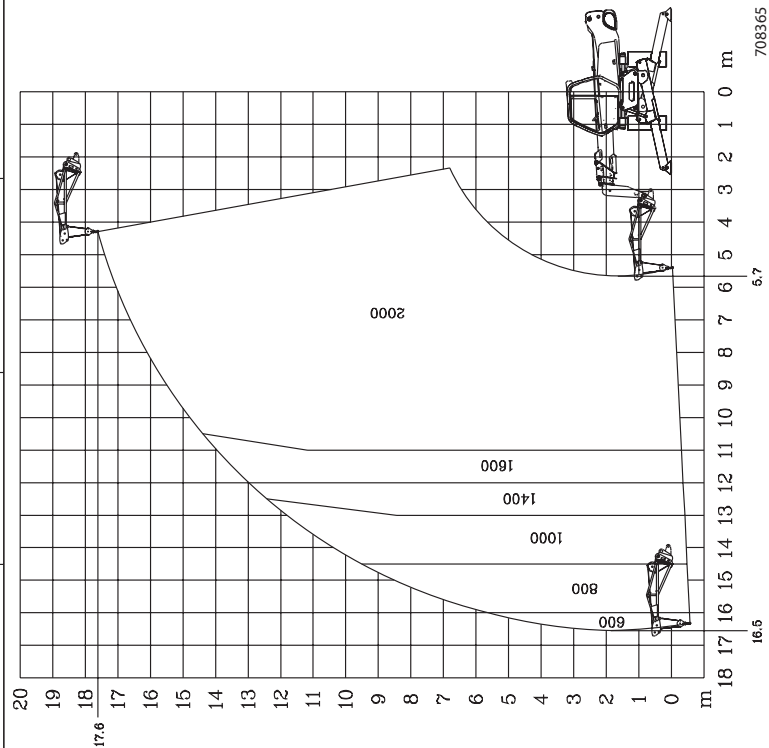


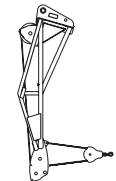
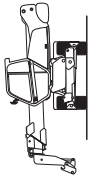
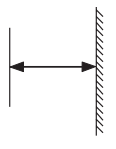
711632

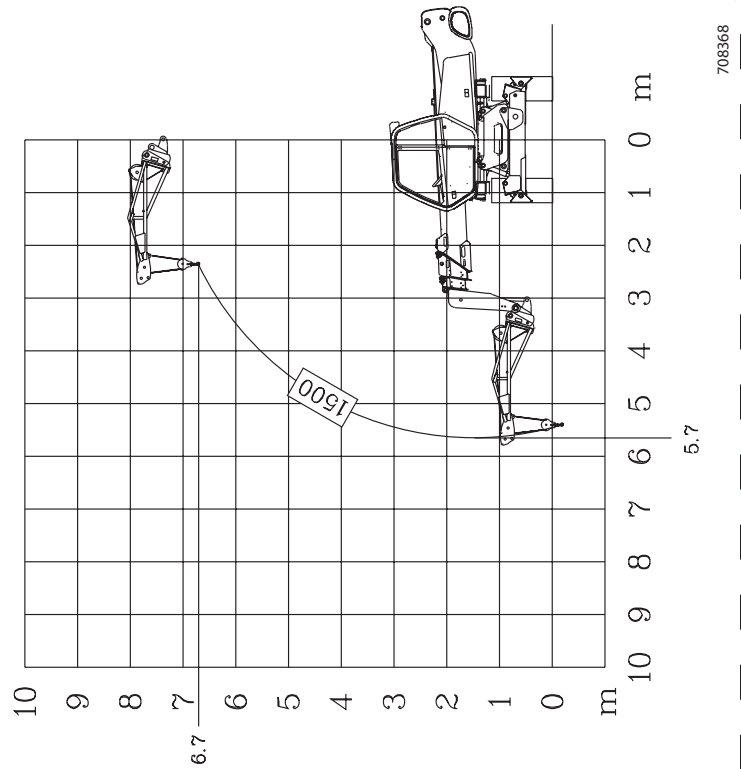
<b>MRT 1850</b>		pos. H
<b>PT 2000</b>		
	2000 	17,4 m



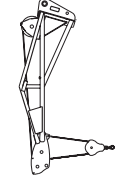
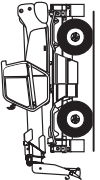
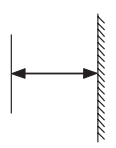
<b>MRT 1850</b>		pos. H
<b>PT 2000</b>		
	2000 	17,6 m

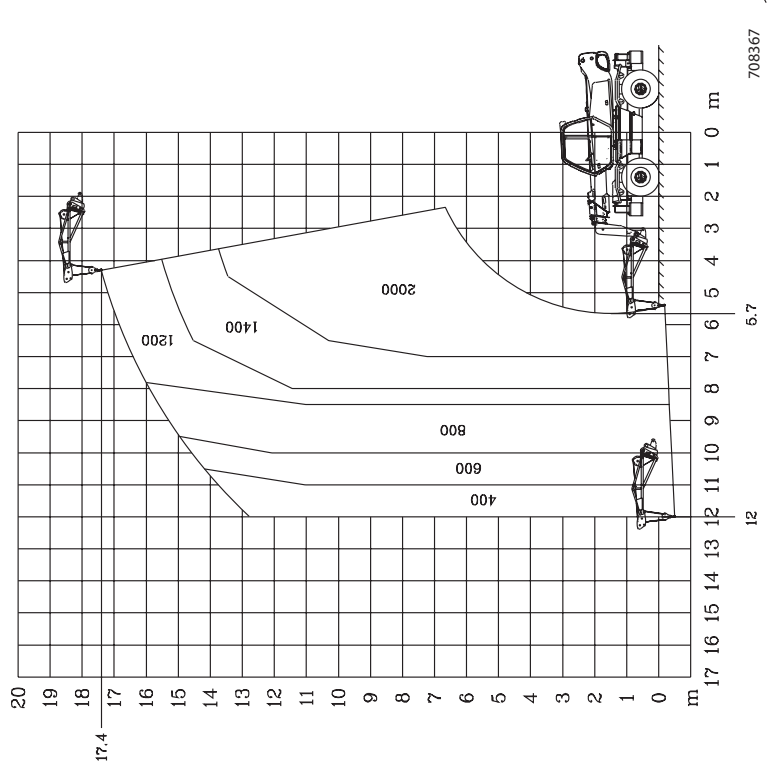


MRT 1850		pos. H
PT 2000	1500 Kg	6,7 m
		


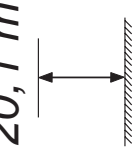
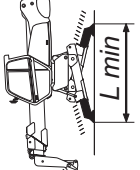



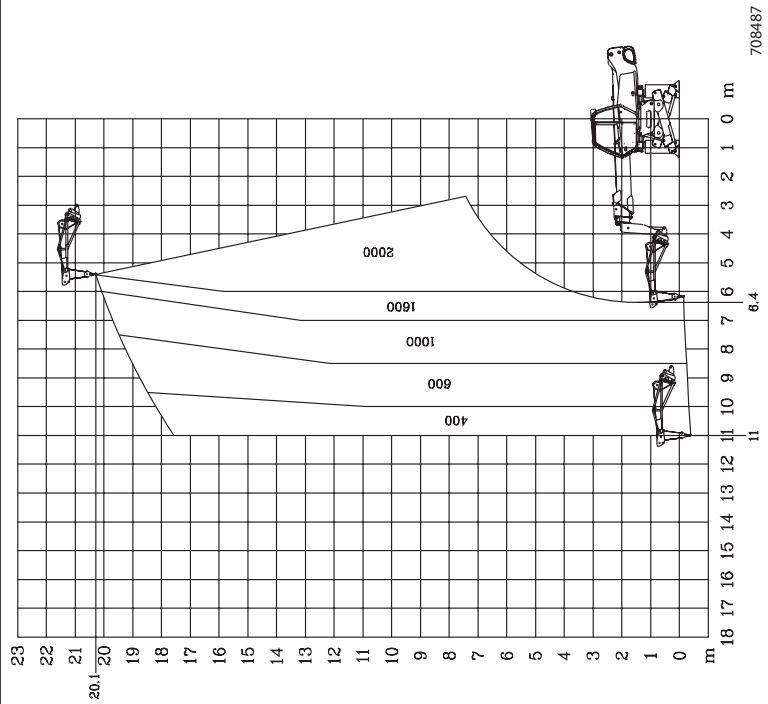
708368

MRT 1850		pos. H
PT 2000	2000 Kg	17,4 m
		

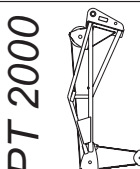
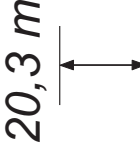
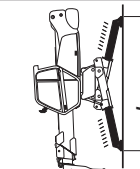



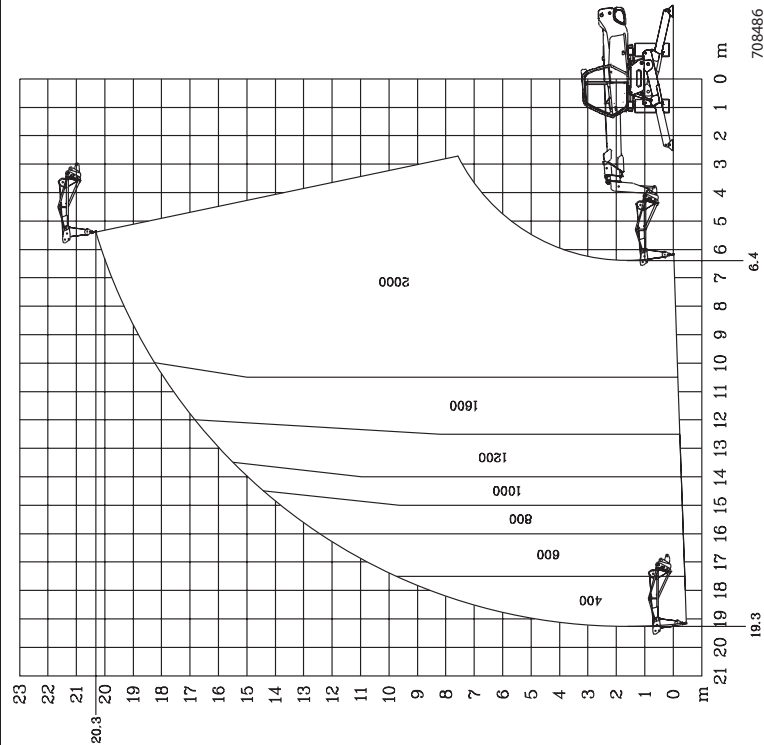
708367

<b>MRT 2150</b>		<b>pos. H</b>
<b>PT 2000</b>		
	<b>2000</b>	<b>20,1 m</b>
		

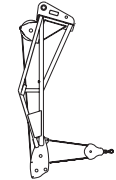

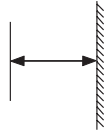
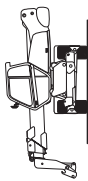


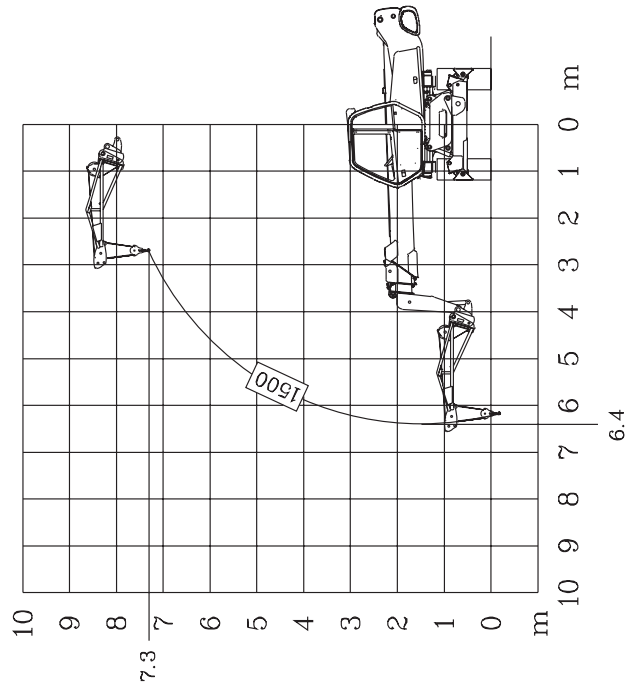
708487

<b>MRT 2150</b>		<b>pos. H</b>
<b>PT 2000</b>		
	<b>2000</b>	<b>20,3 m</b>
		

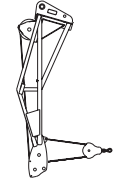

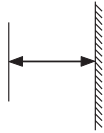



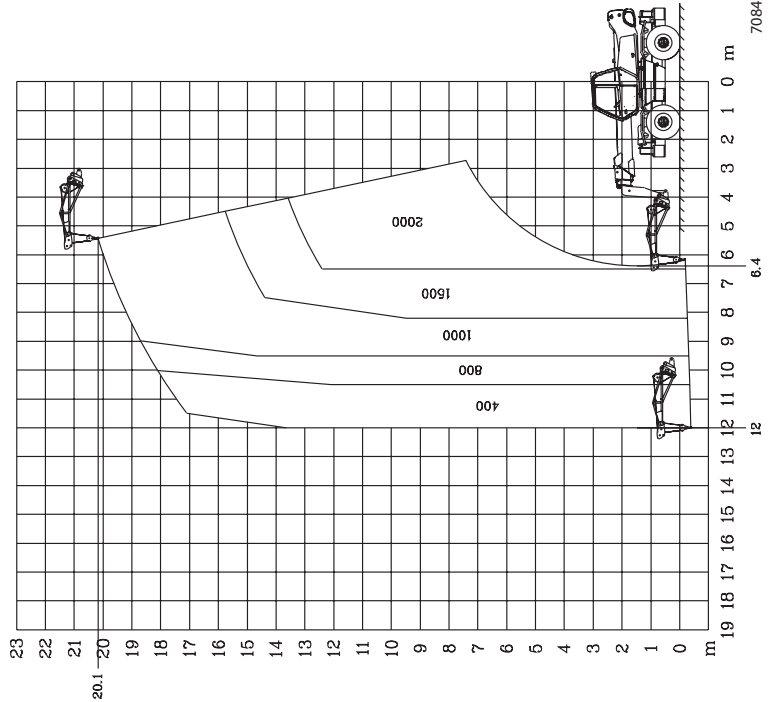
708486

MRT 2150		pos. H
PT 2000	1500	7,3 m
		
		



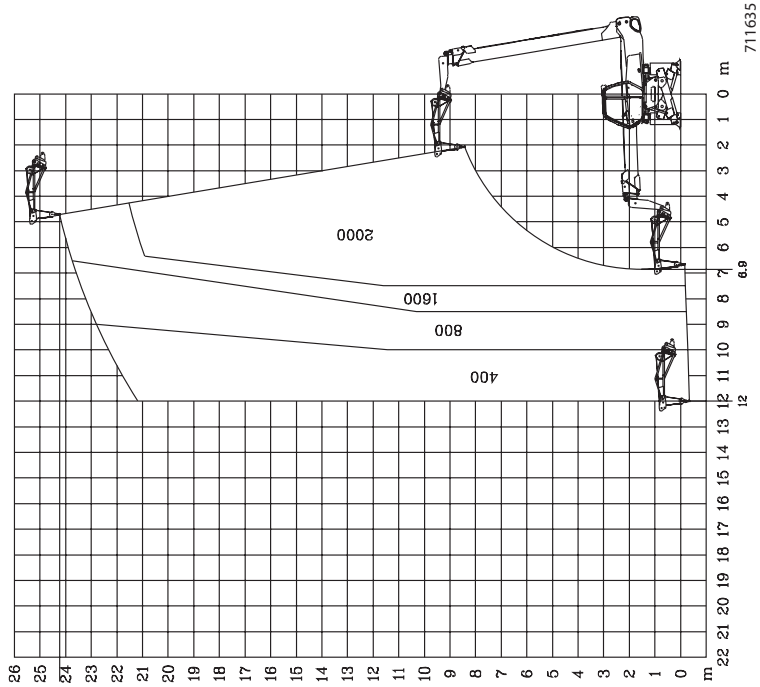
708489

MRT 2150		pos. H
PT 2000	2000	20,1 m
		
		

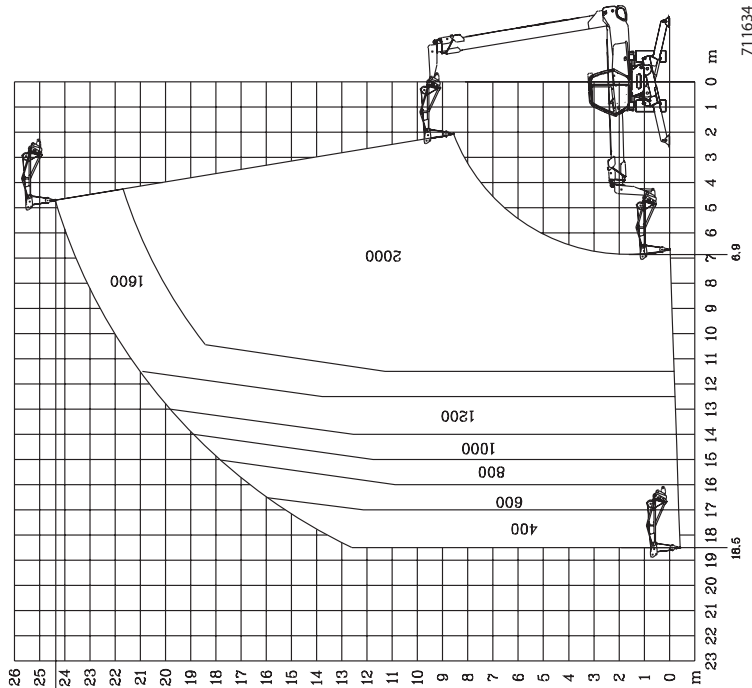


708488

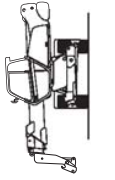
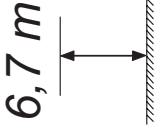
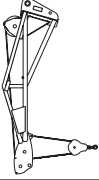

MRT 2540		pos. H
PT 2000		24,2 m

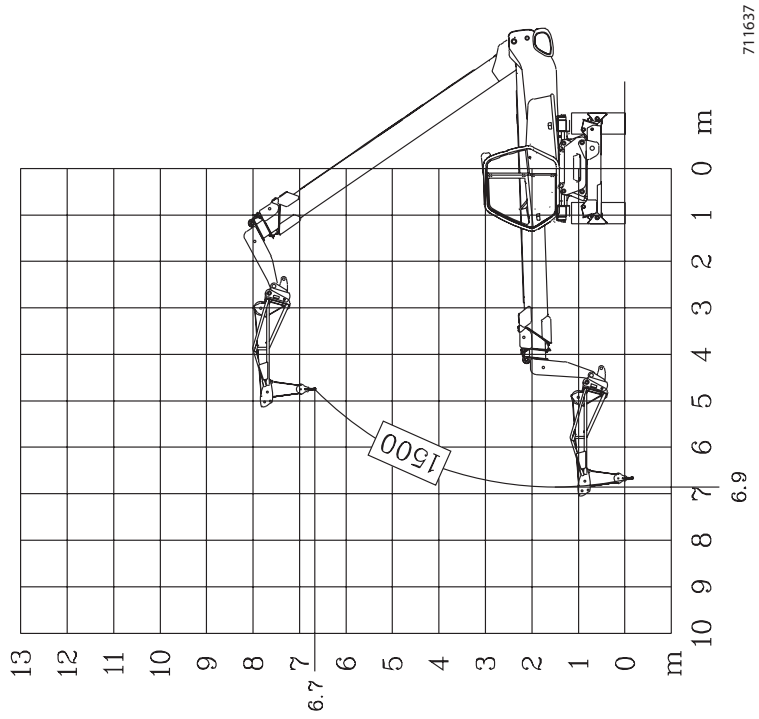


MRT 2540		pos. H
PT 2000		24,4 m

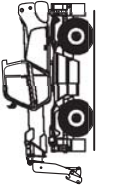
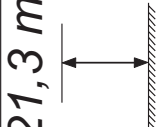
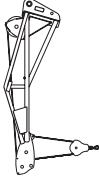



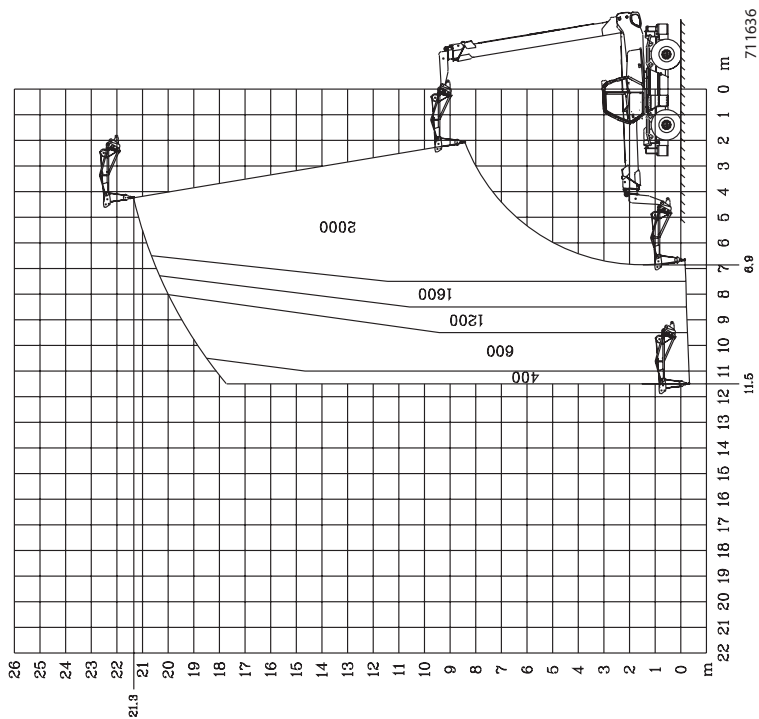


MRT 2540		pos. H
PT 2000		6,7 m 
		1500 Kg 

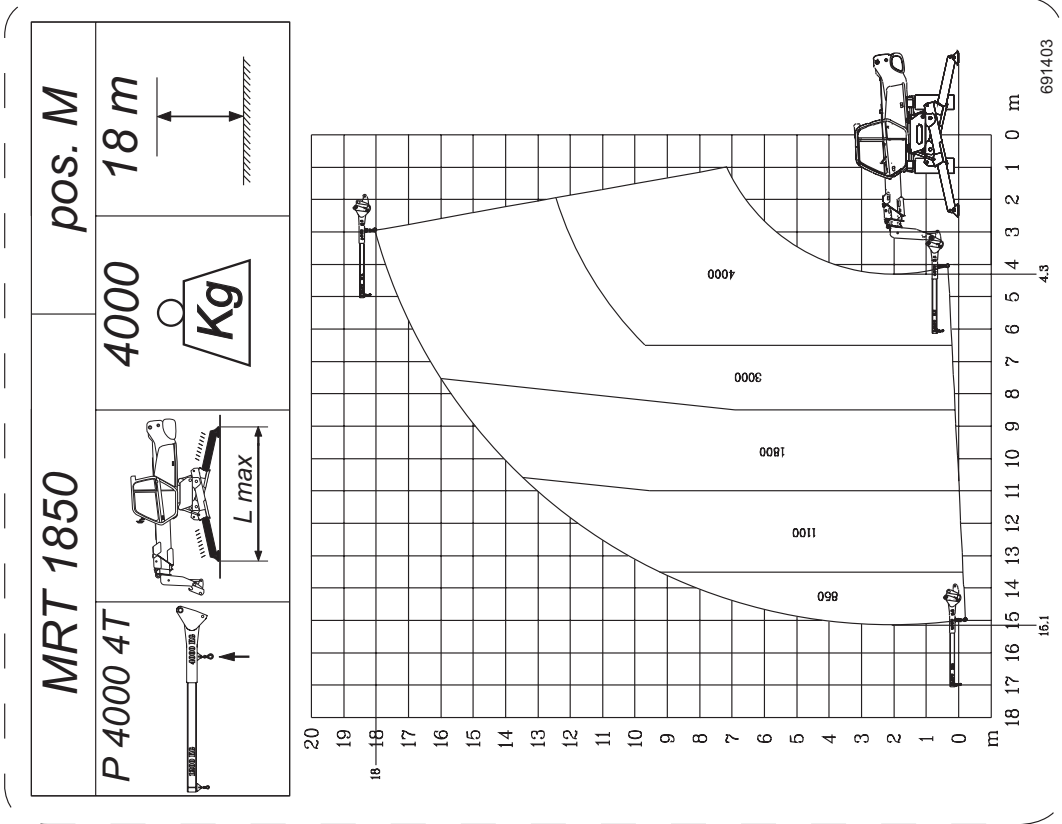
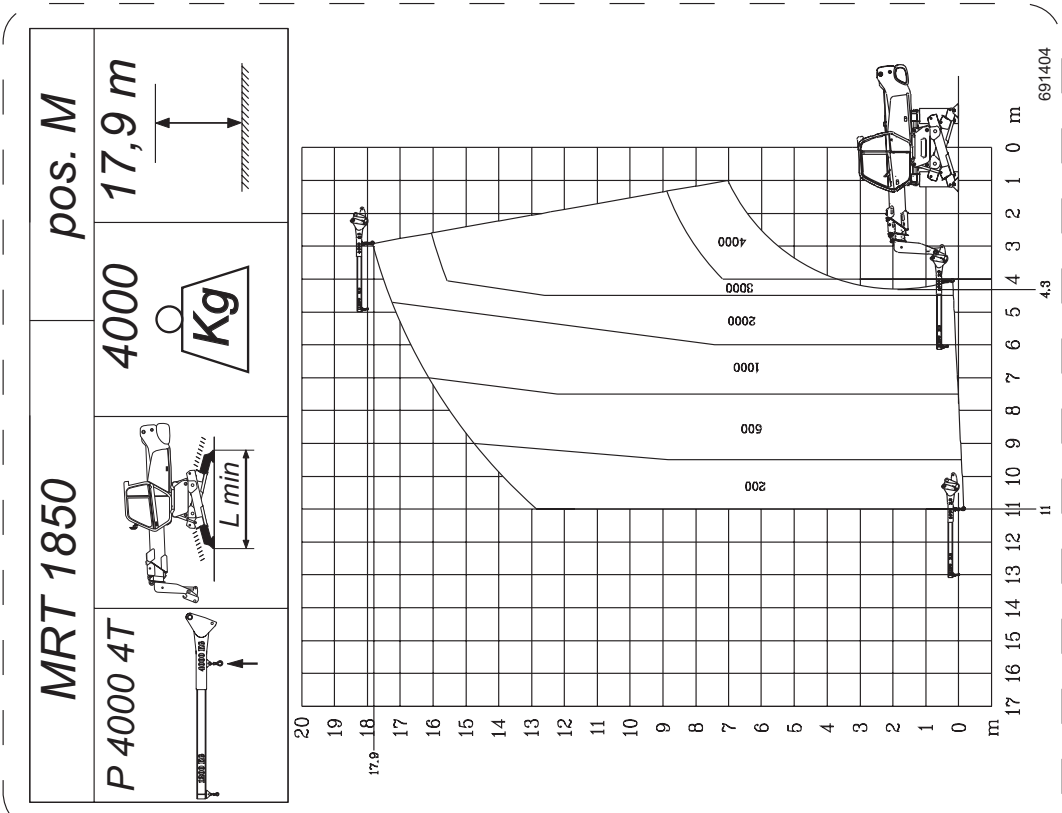




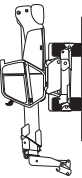
711637

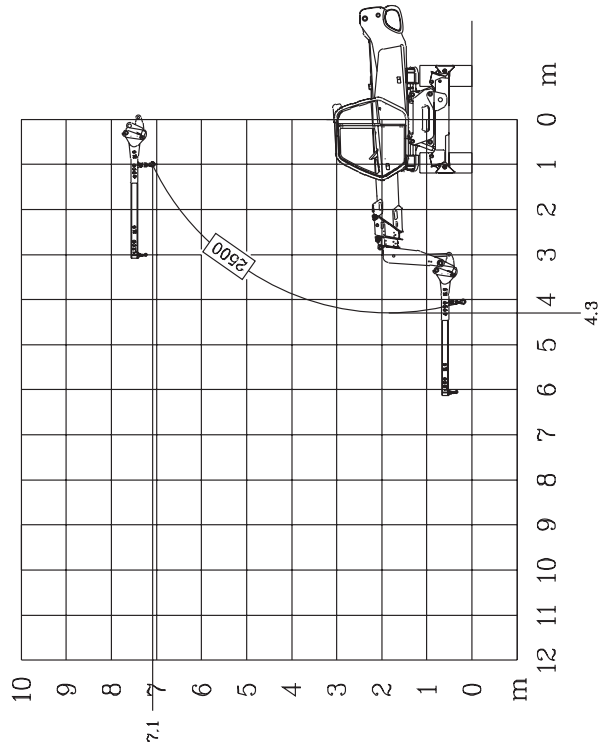
MRT 2540		pos. H
PT 2000		21,3 m 
		2000 Kg 



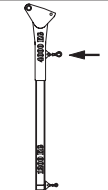


711636

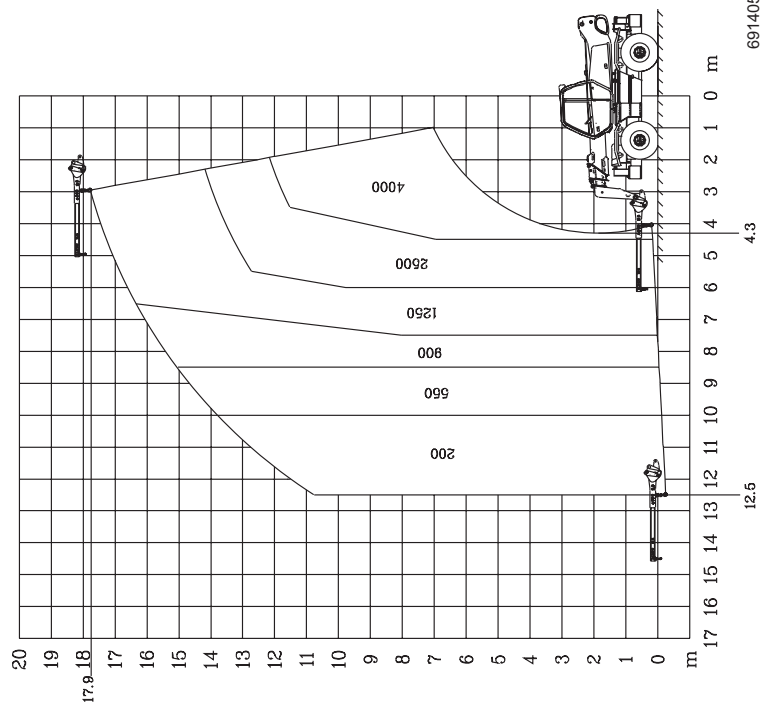


MRT 1850		pos. M
P 4000 4T		
		7,1 m

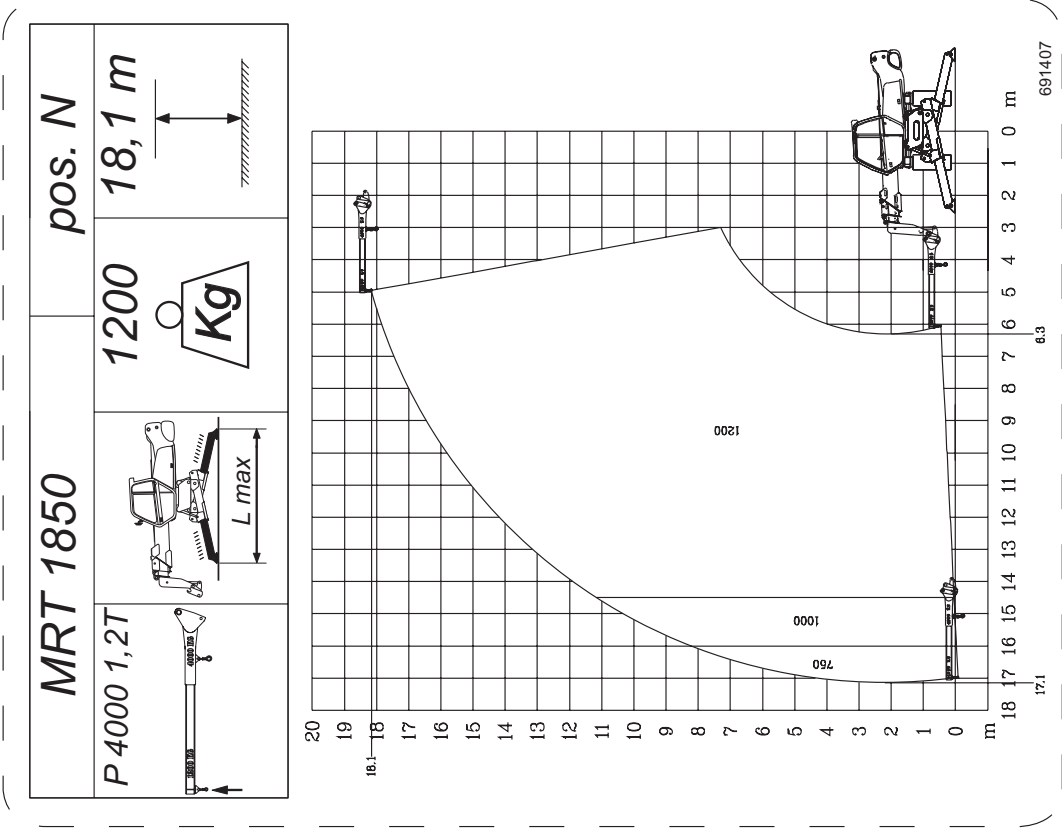
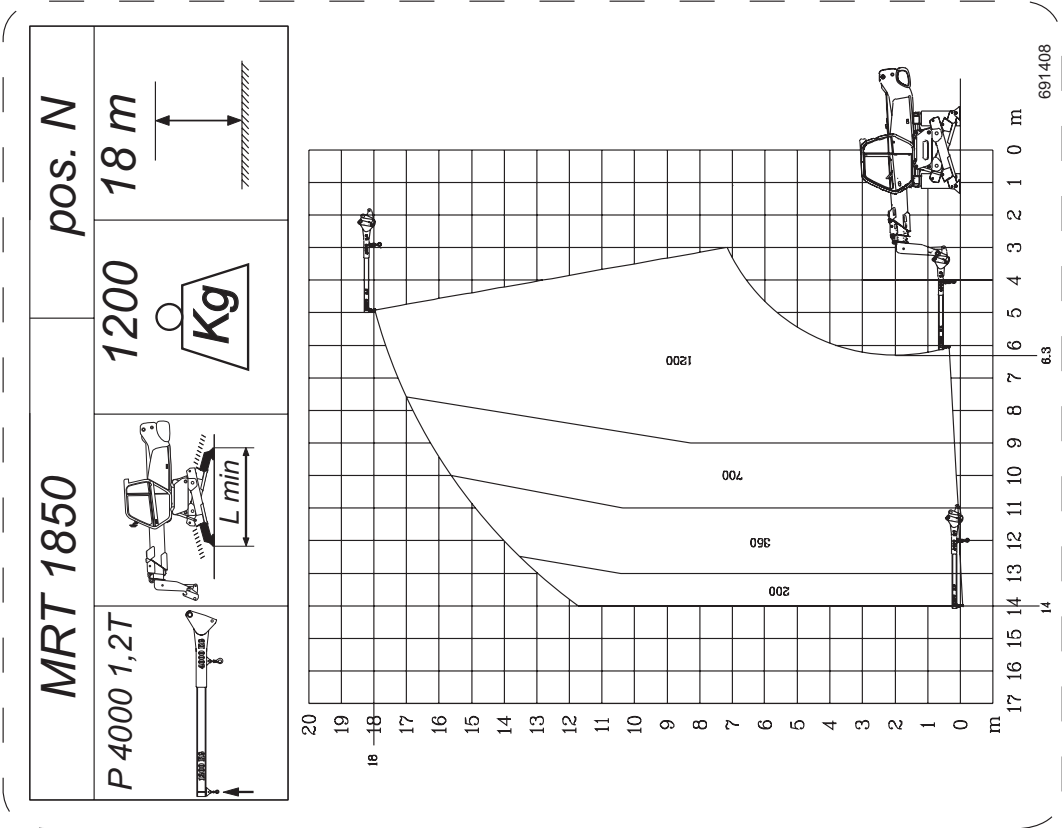


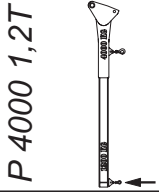
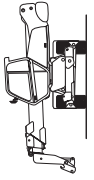


691406

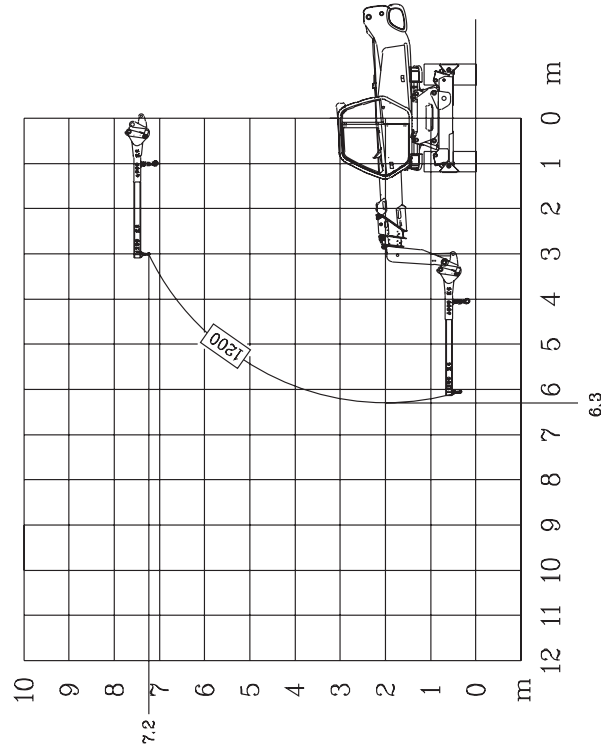
MRT 1850		pos. M
P 4000 4T		
		17,9 m



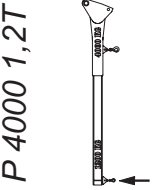
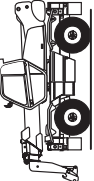


691405

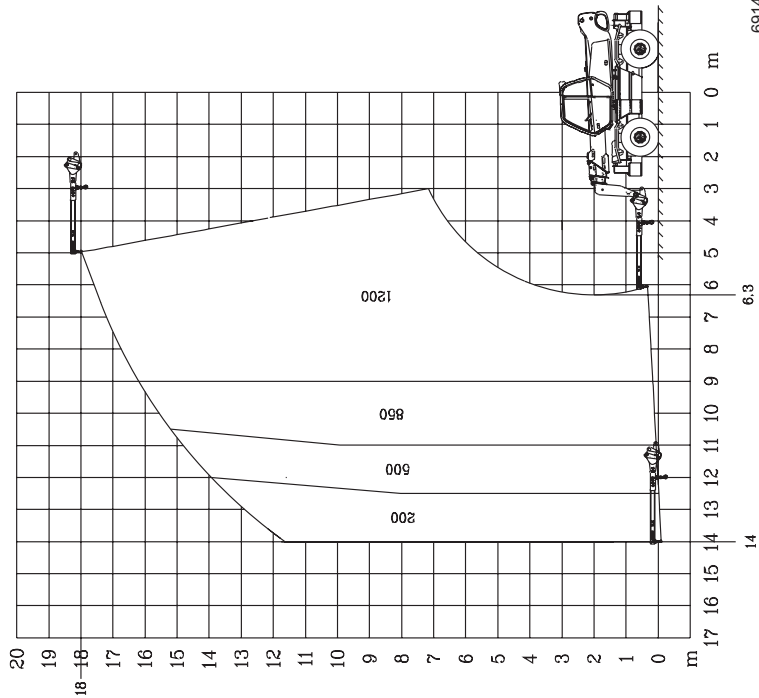


<b>MRT 1850</b>		<b>pos. N</b>	
P 4000 1,2T			
	1200		7,2m

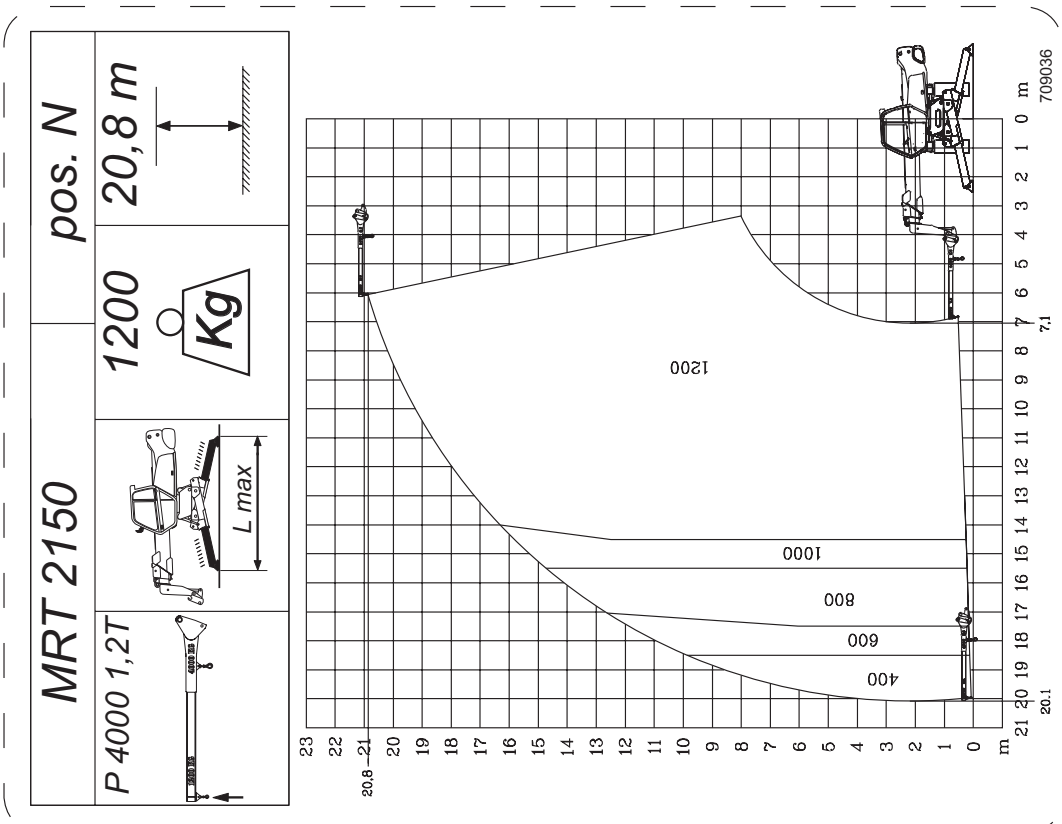
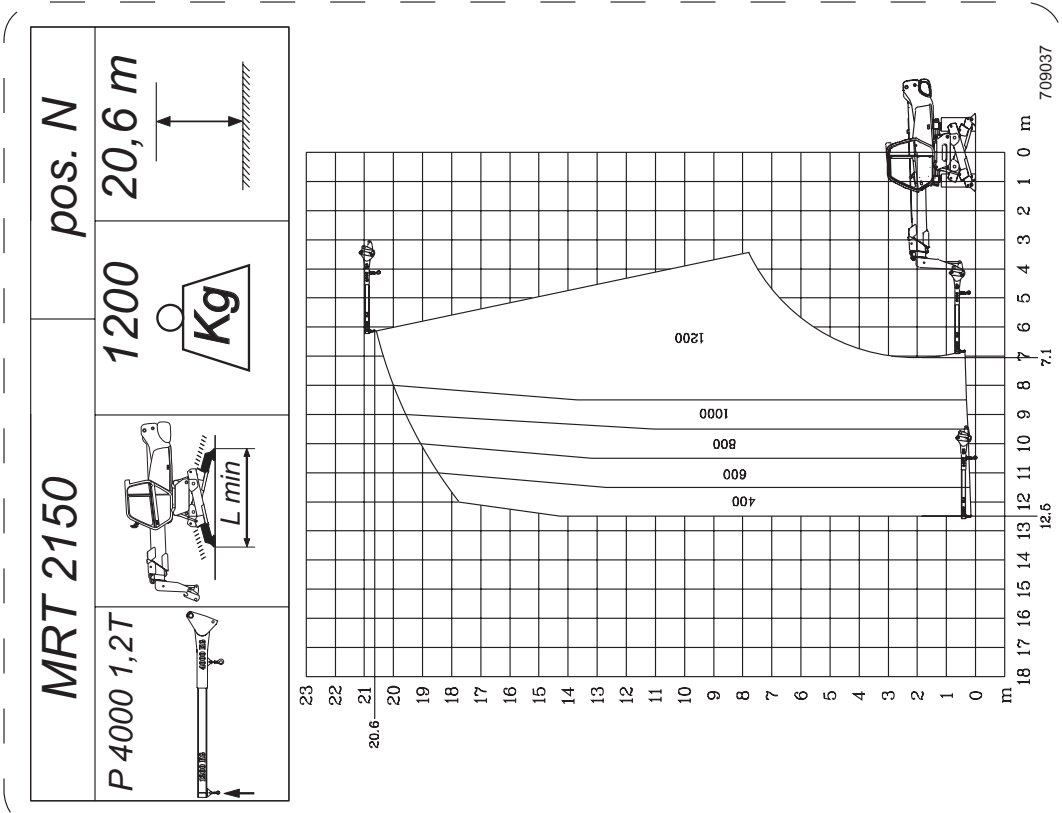


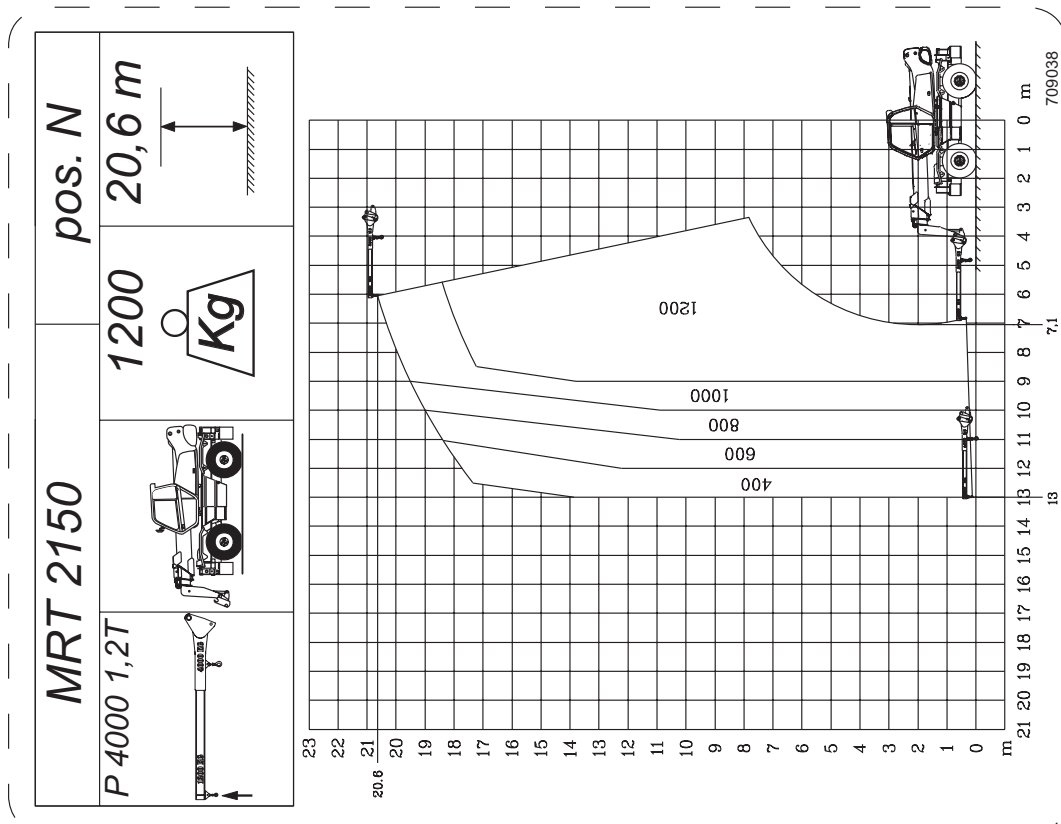
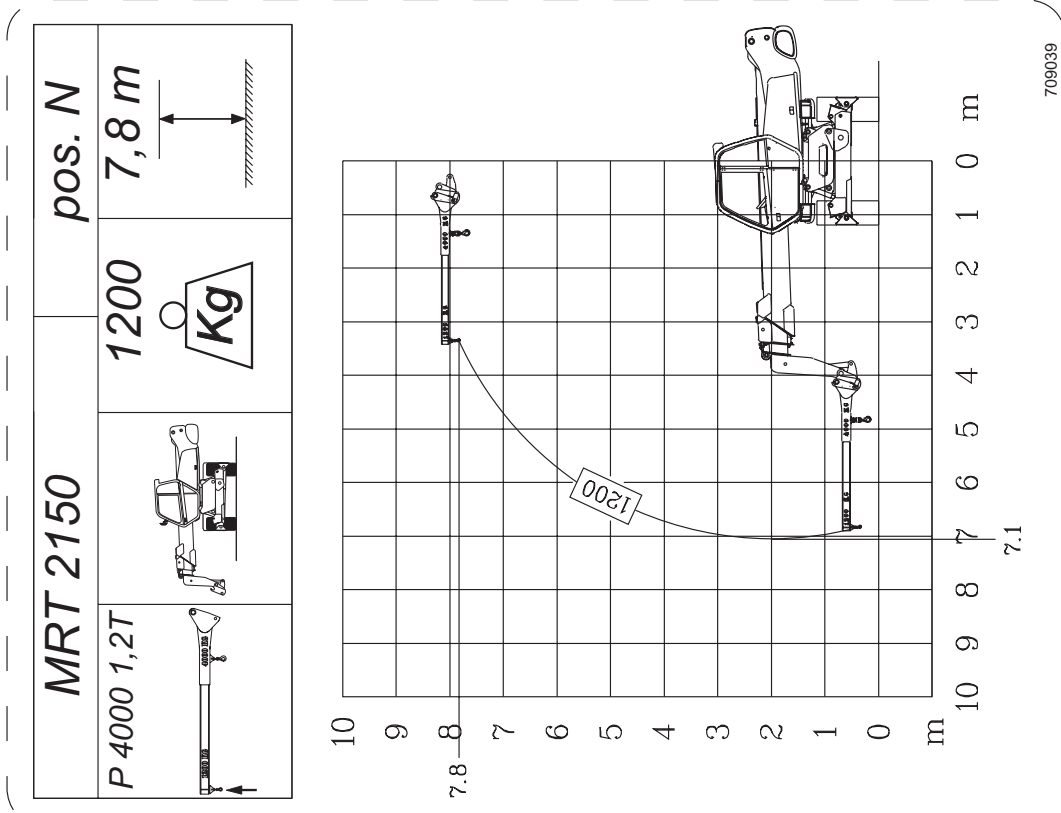
691410

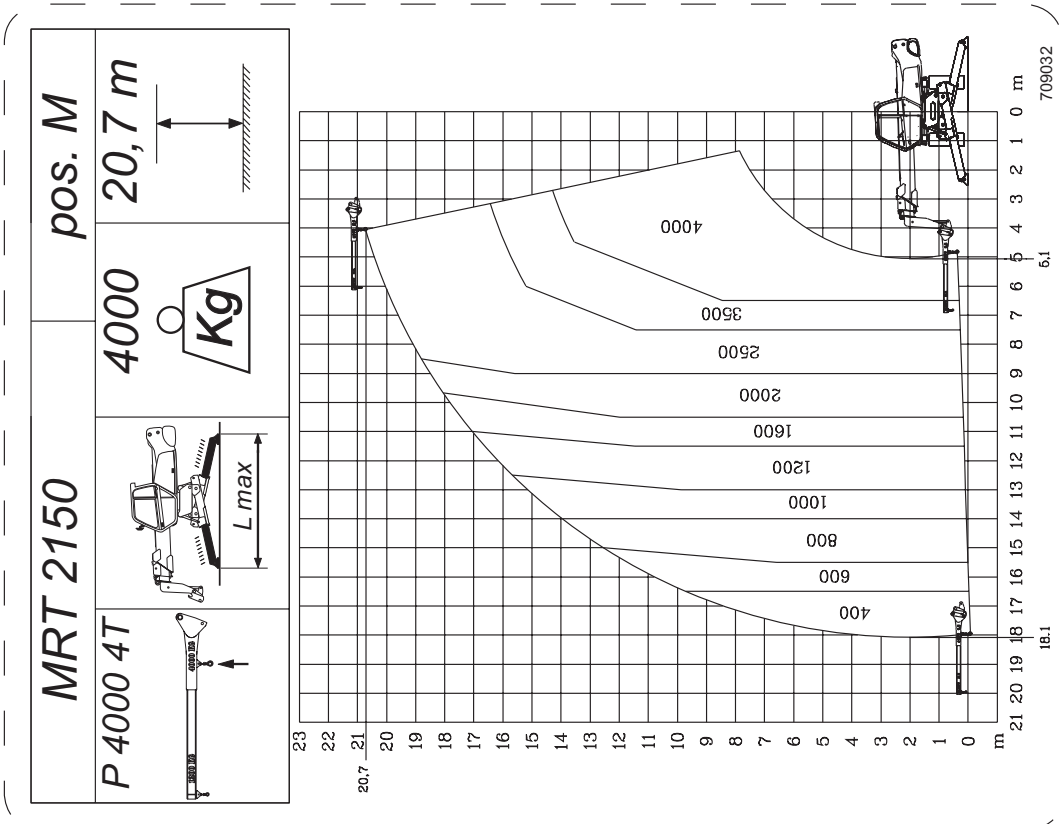
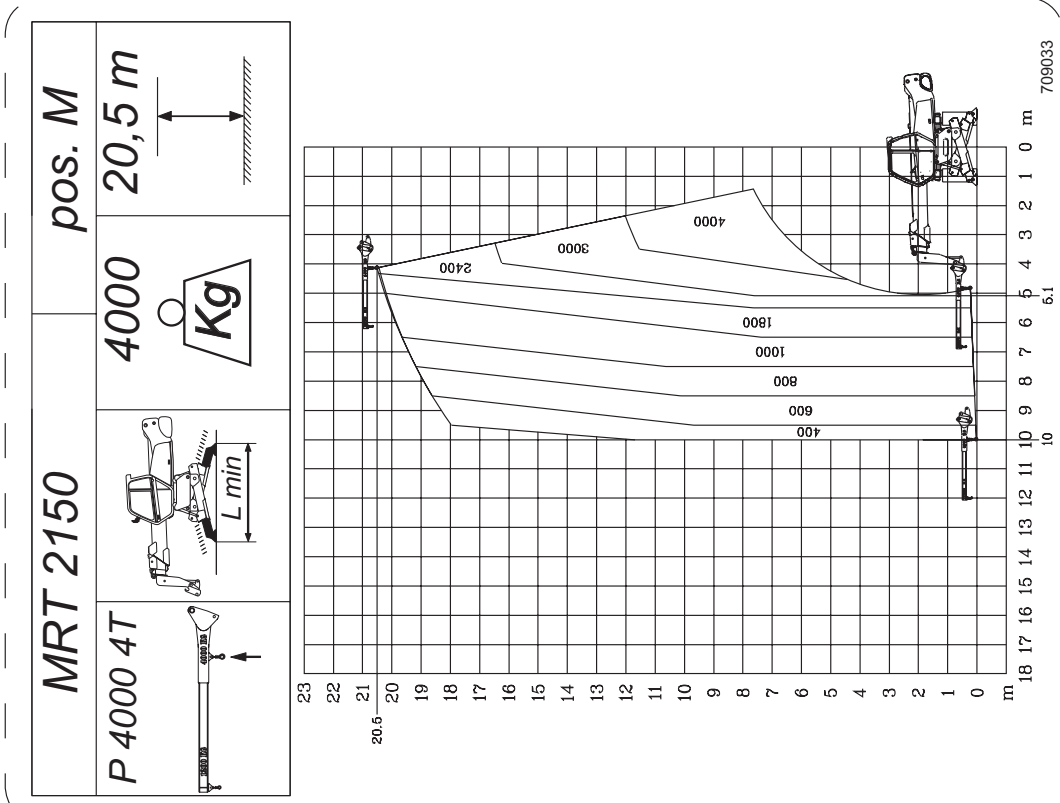
<b>MRT 1850</b>		<b>pos. N</b>	
P 4000 1,2T			
	1200		18 m



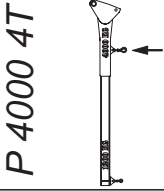
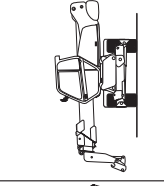
691409

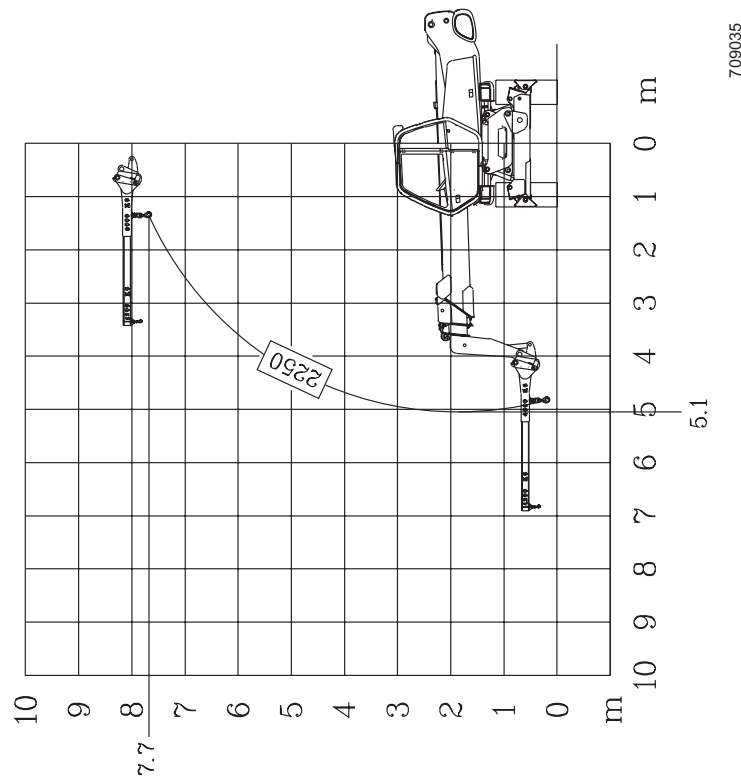


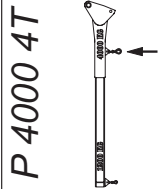
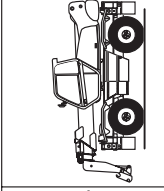


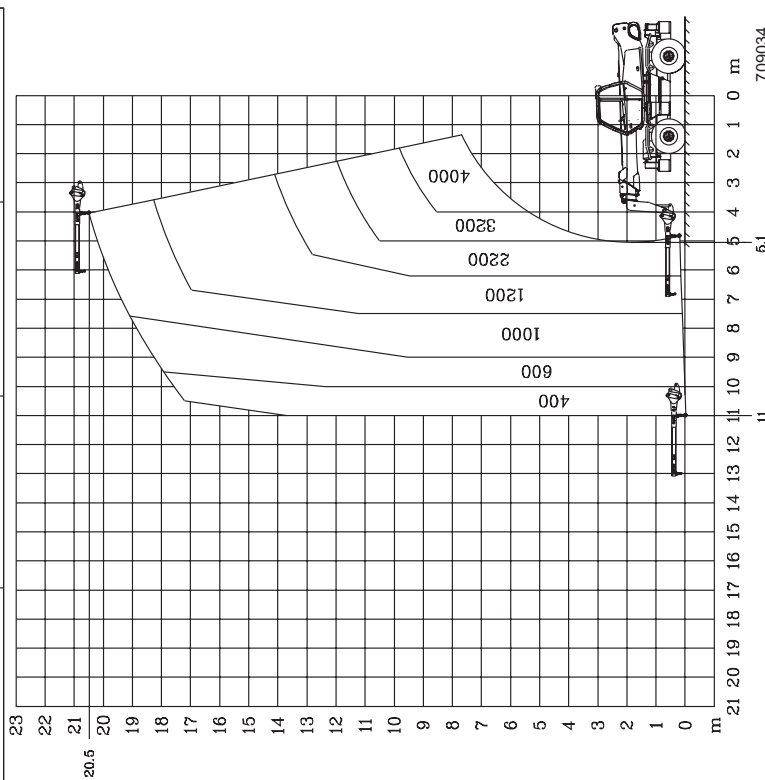


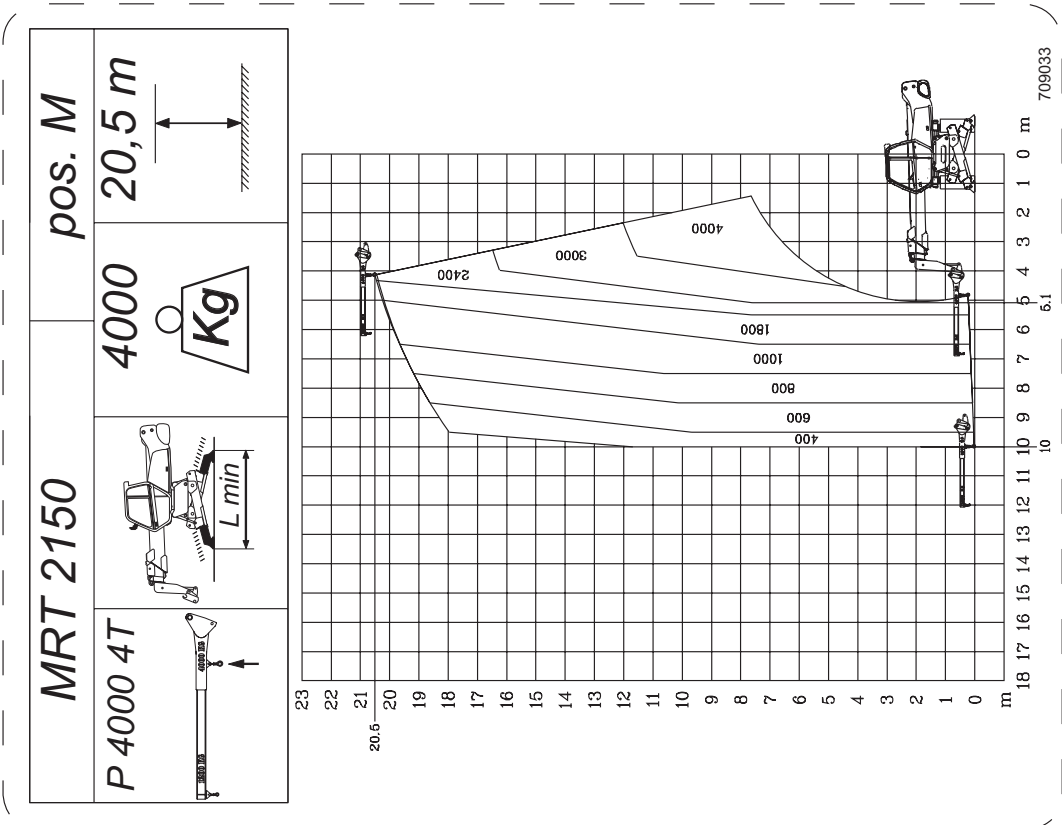


MRT 2150		pos. M
P 4000 4T		7,7 m
		2250 Kg

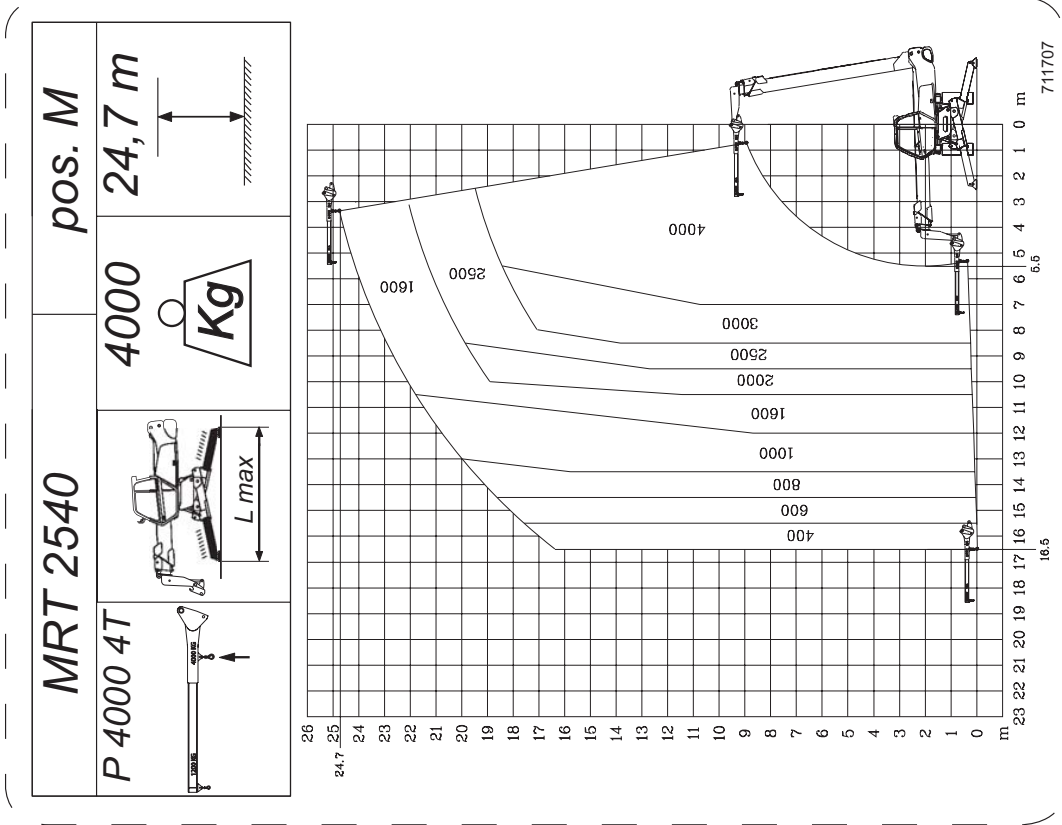


MRT 2150		pos. M
P 4000 4T		20,5 m
		4000 Kg

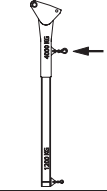

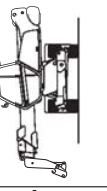
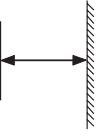


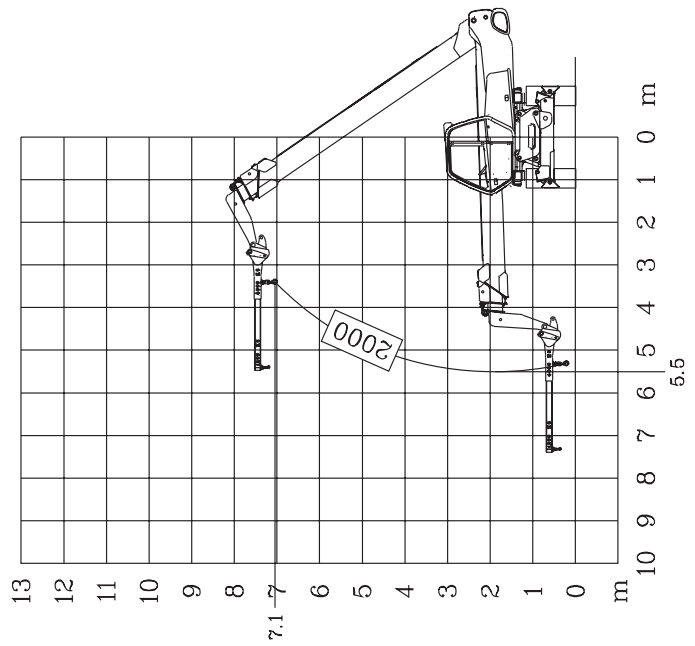


709033



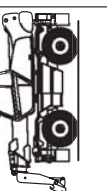
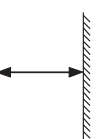


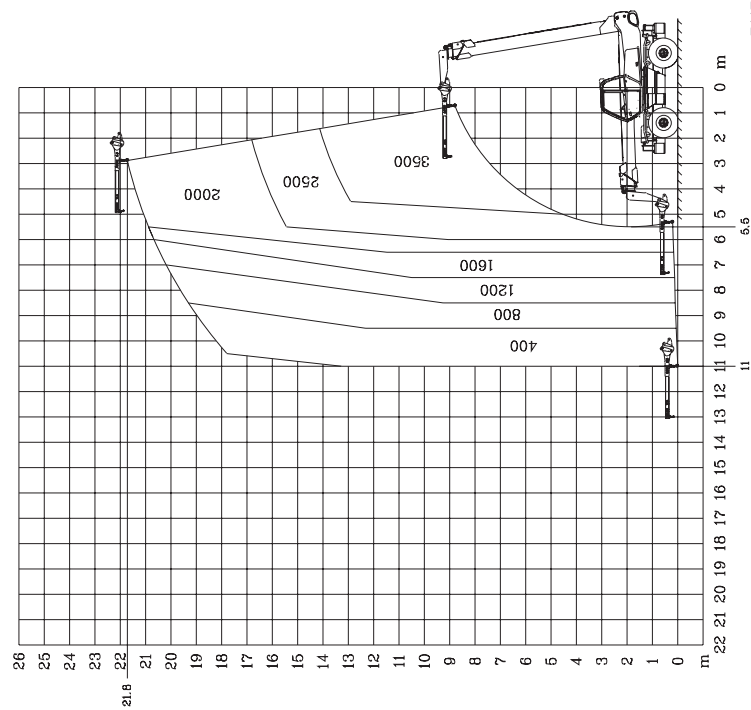
711707

<b>MRT 2540</b>		pos. M
P 4000 4T		2000 
		7,1 m 

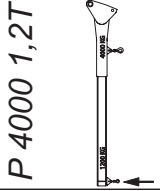
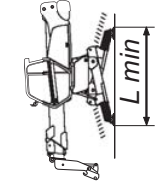



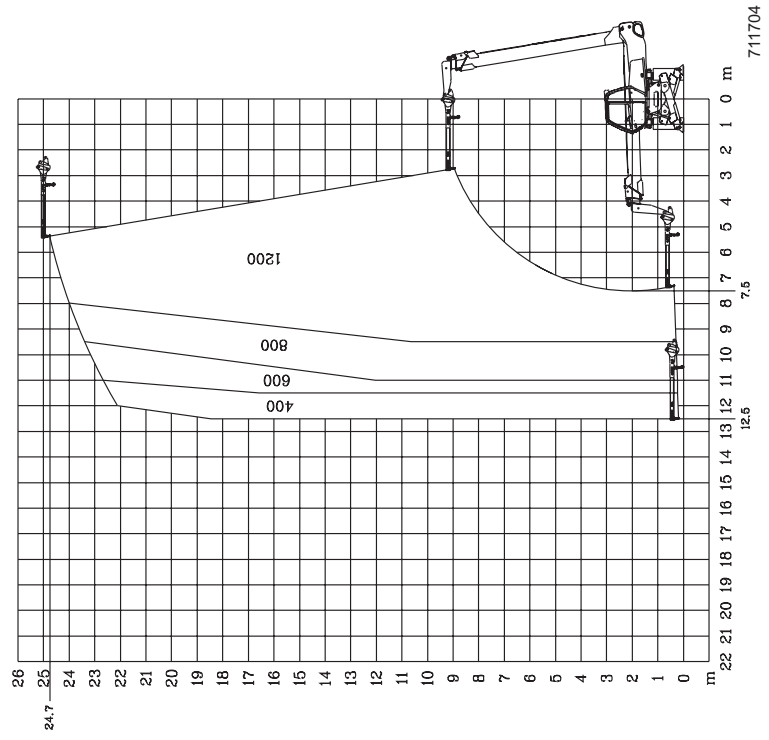
711710

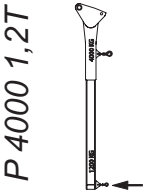
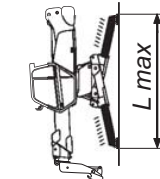

<b>MRT 2540</b>		pos. M
P 4000 4T		4000 
		21,6 m 

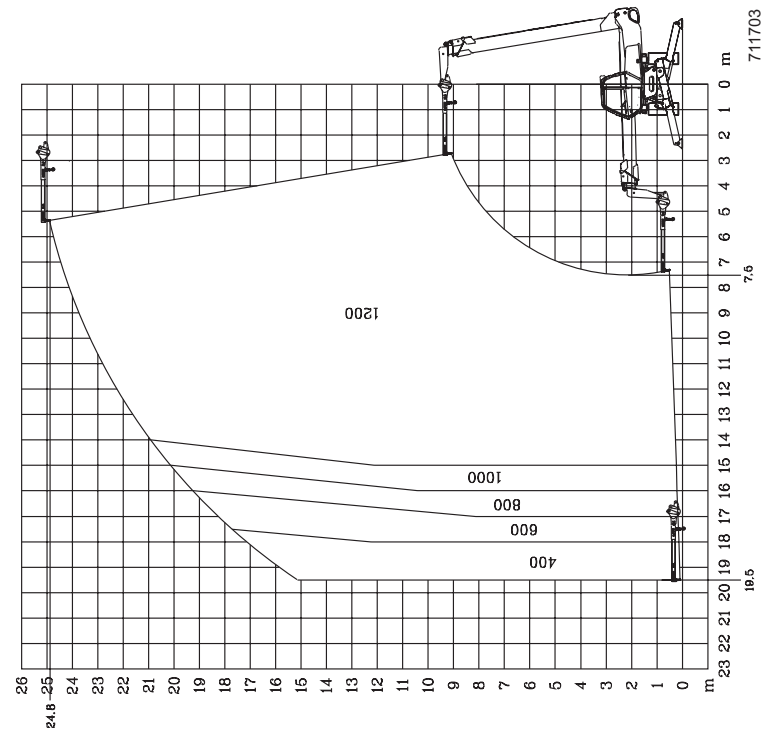


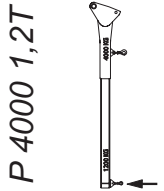
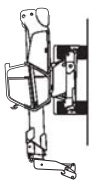
711709

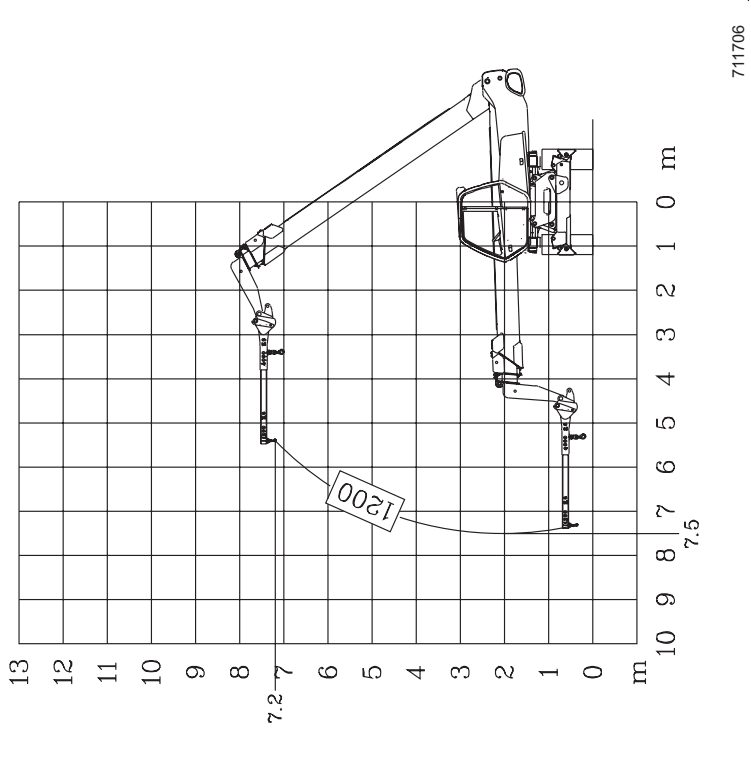
<b>MRT 2540</b>		pos. N
P 4000 1,2T		24,7 m
	1200 Kg	

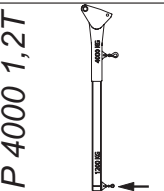



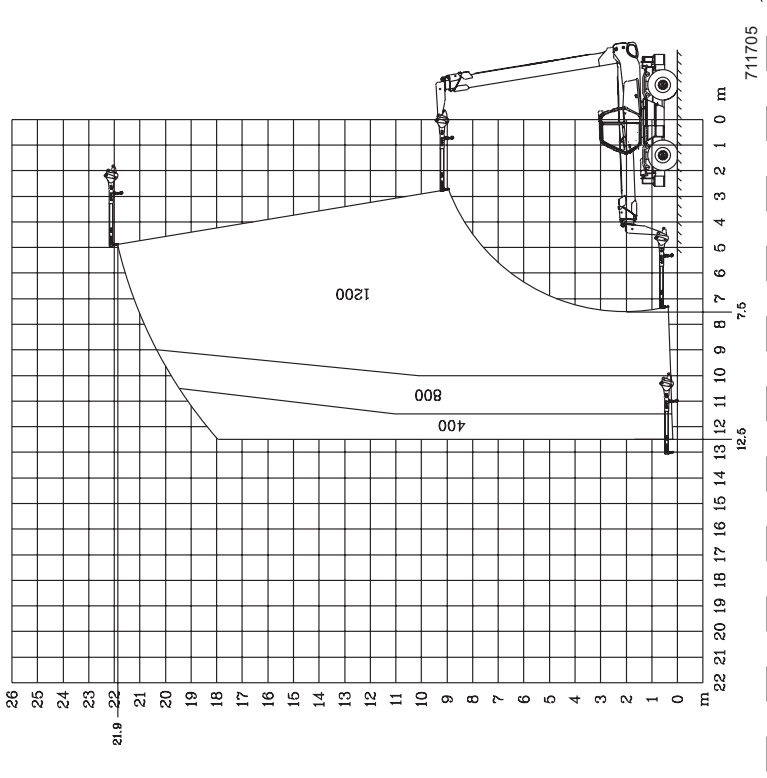
<b>MRT 2540</b>		pos. N
P 4000 1,2T		24,8 m
	1200 Kg	


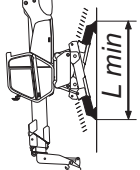
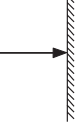


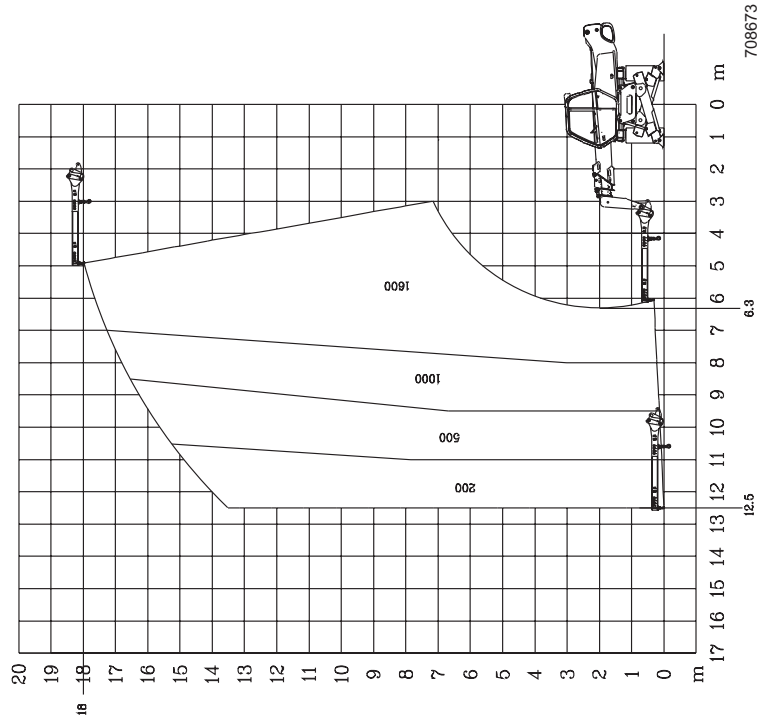
<b>MRT 2540</b>		pos. N
P 4000 1,2T		7,2 m
		1200 Kg


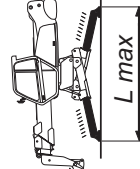
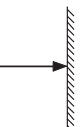


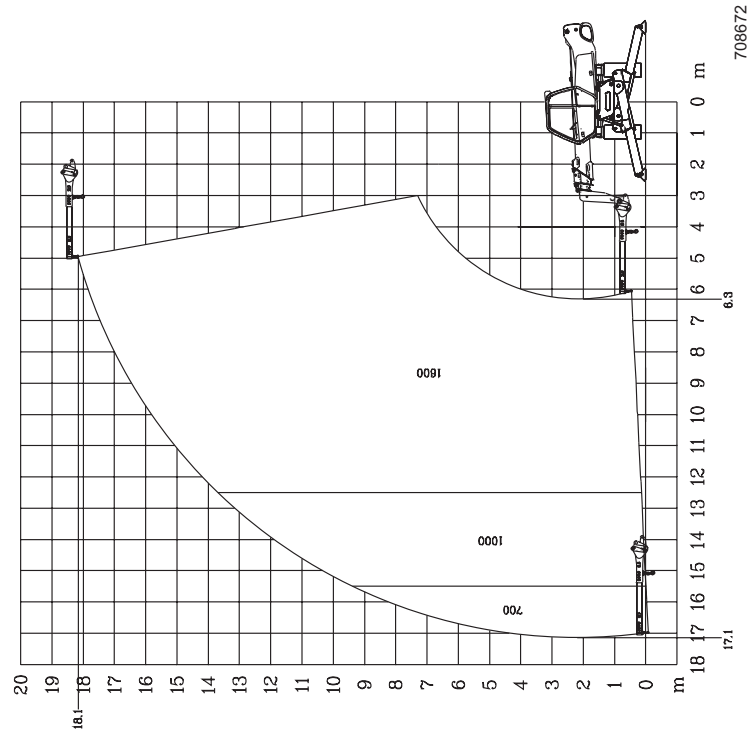
<b>MRT 2540</b>		pos. N
P 4000 1,2T		21,9 m
		1200 Kg

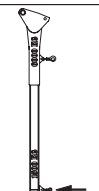

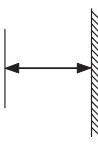
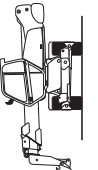
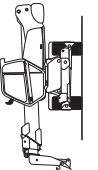


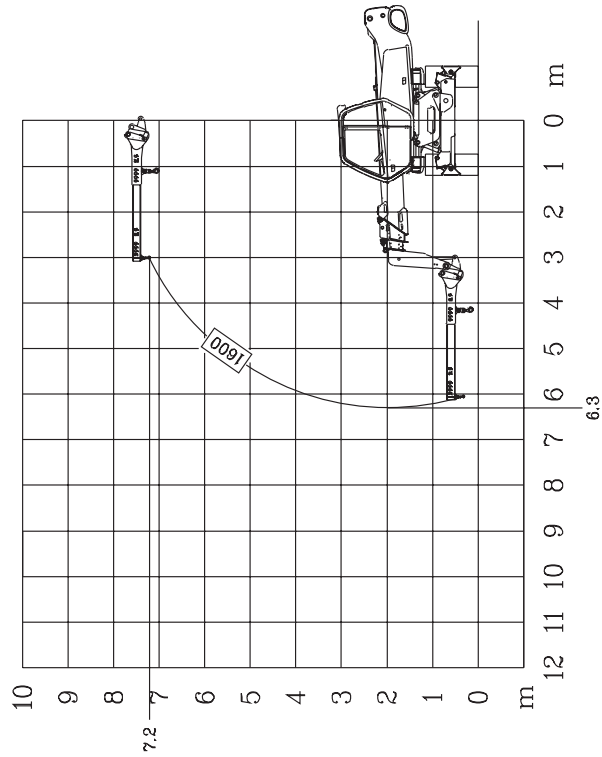
MRT 1850		pos. P
P 6000 1,6T		18 m
	1600 Kg	





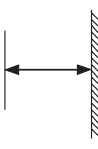


MRT 1850		pos. P
P 6000 1,6T		18,1 m
	1600 Kg	

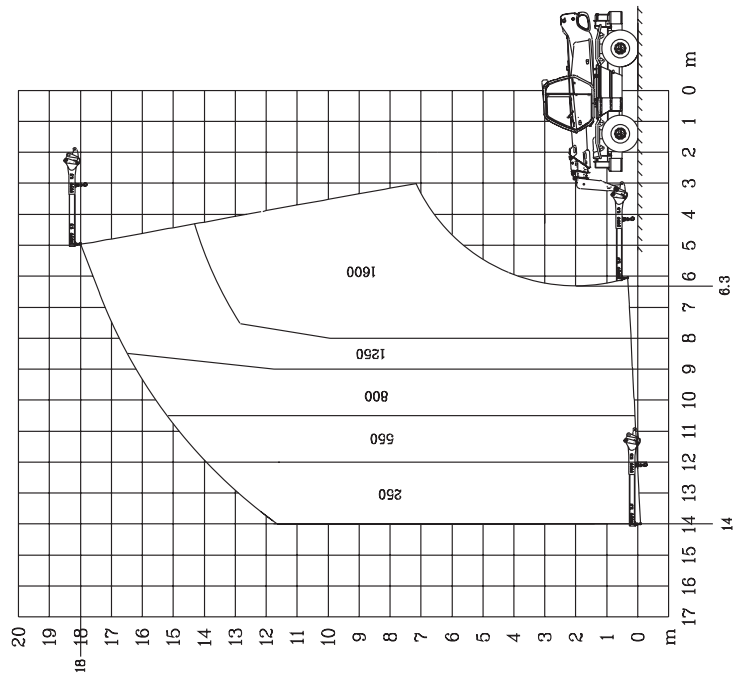


<b>MRT 1850</b>		<b>pos. P</b>	
<b>P 6000 1,6T</b>		<b>1600</b> 	<b>7,2 m</b> 
			

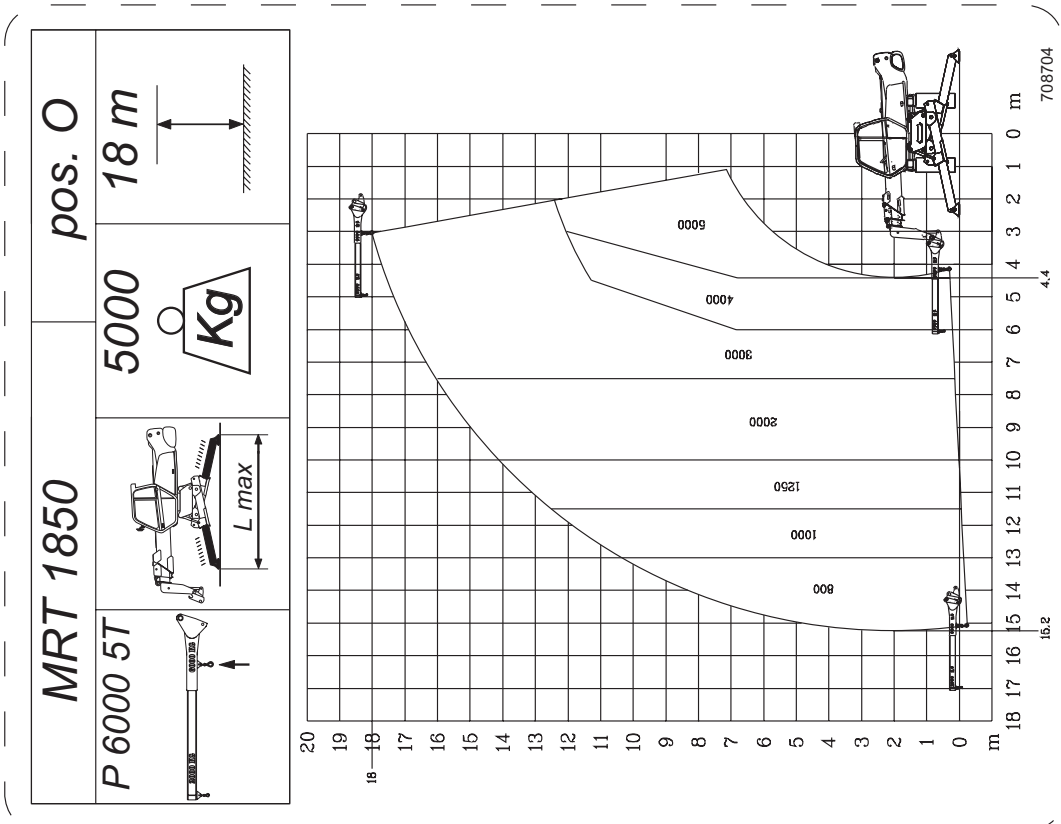
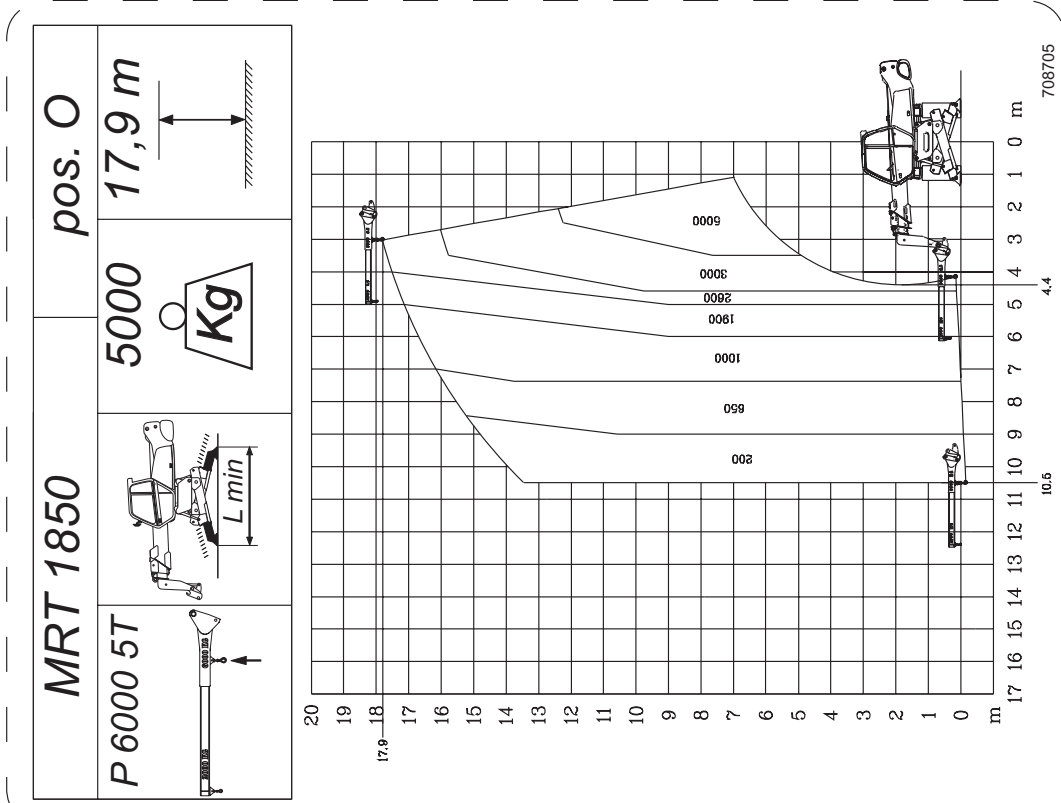


708670


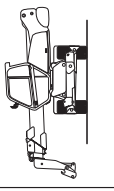

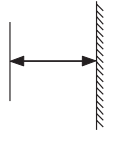
<b>MRT 1850</b>		<b>pos. P</b>	
<b>P 6000 1,6T</b>		<b>1600</b> 	<b>18 m</b> 
			

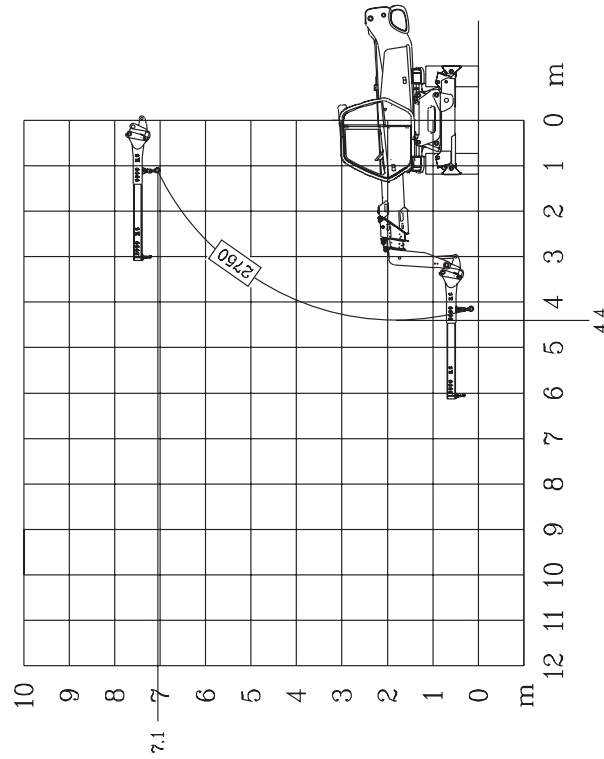


708671


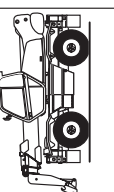

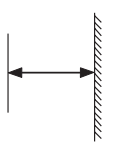


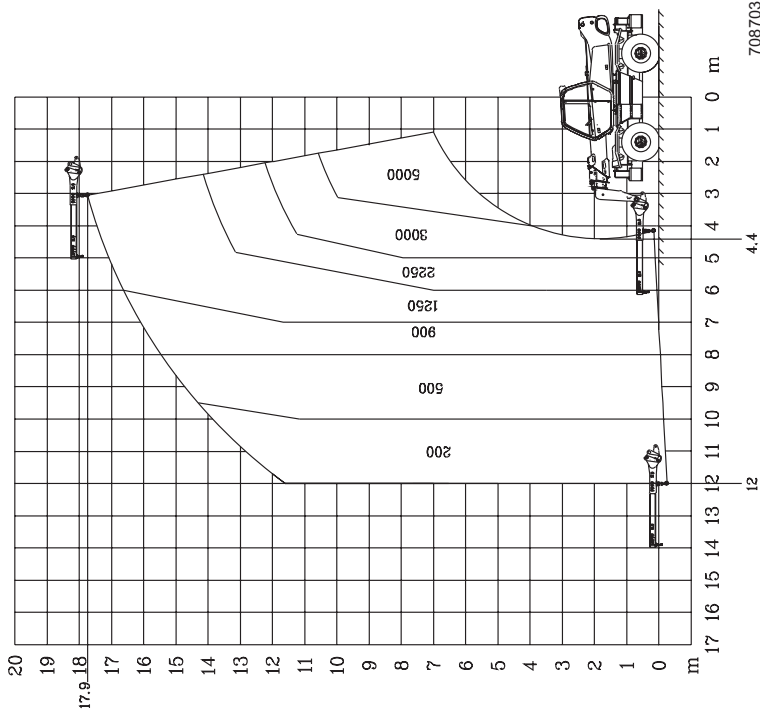


MRT 1850		pos. O
P 6000 5T		7,1 m
		
		



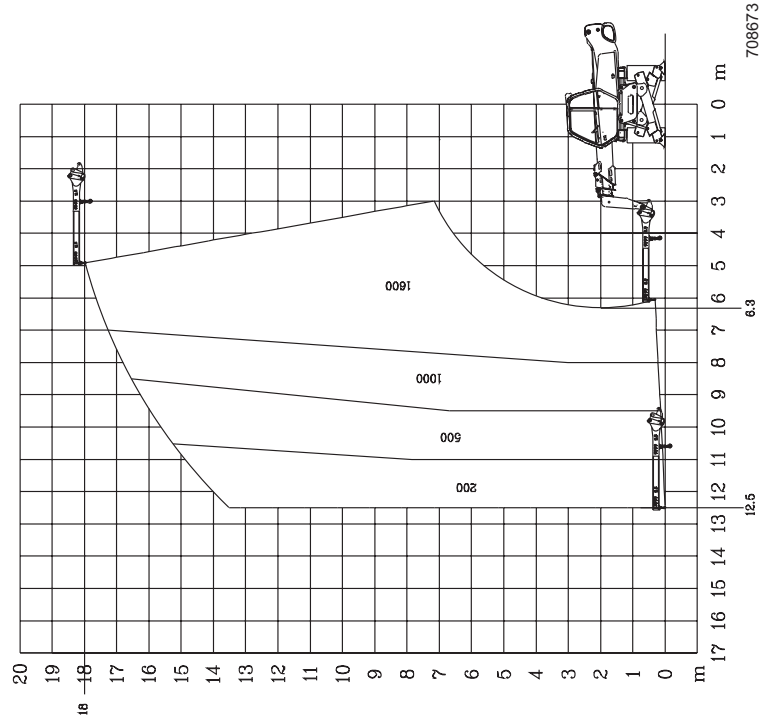
708702

MRT 1850		pos. O
P 6000 5T		17,9 m
		
		

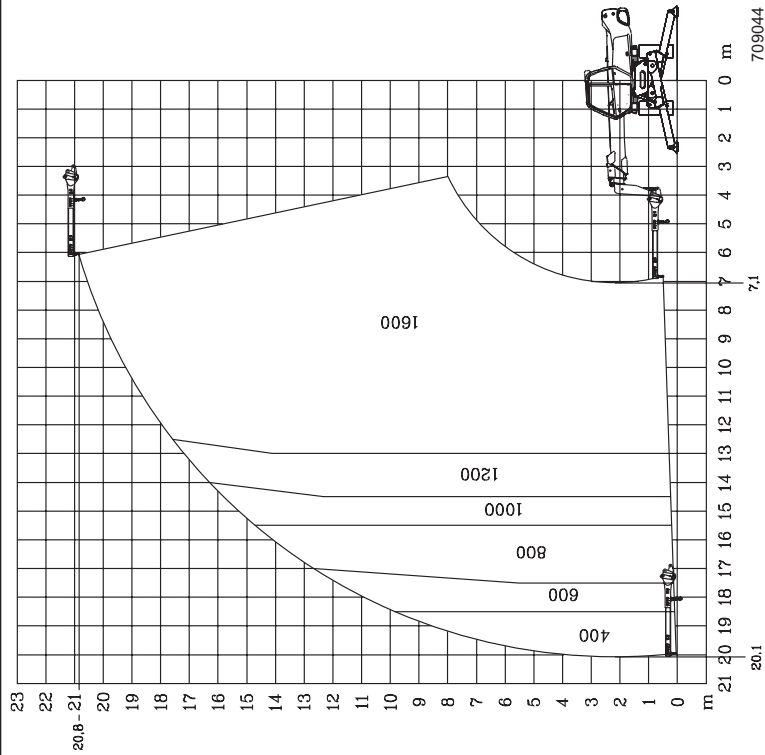



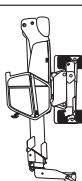
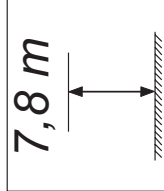
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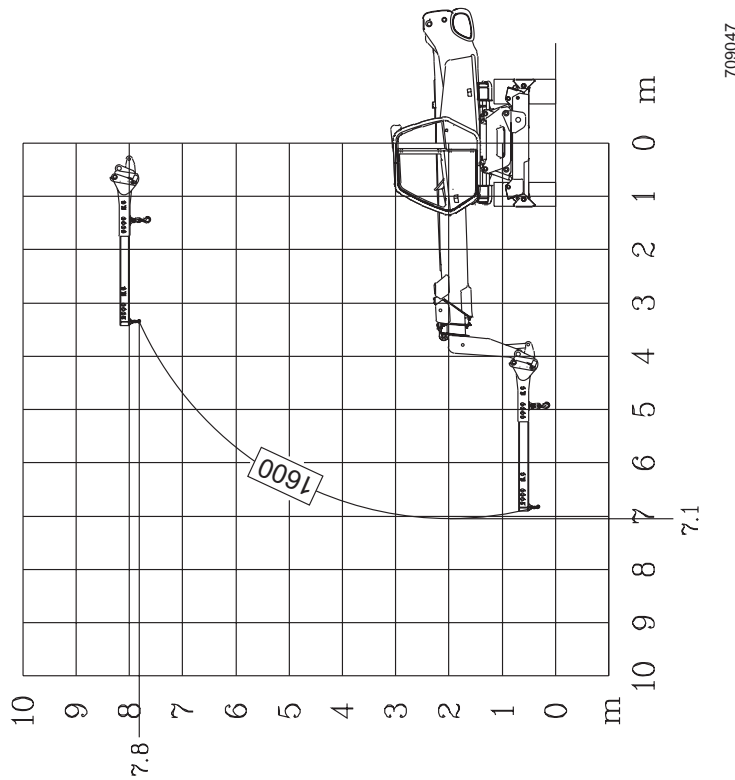
MRT 1850		pos. P	
		1600	18 m
P 6000 1,6T		Kg	



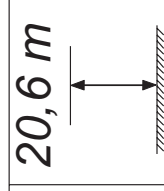


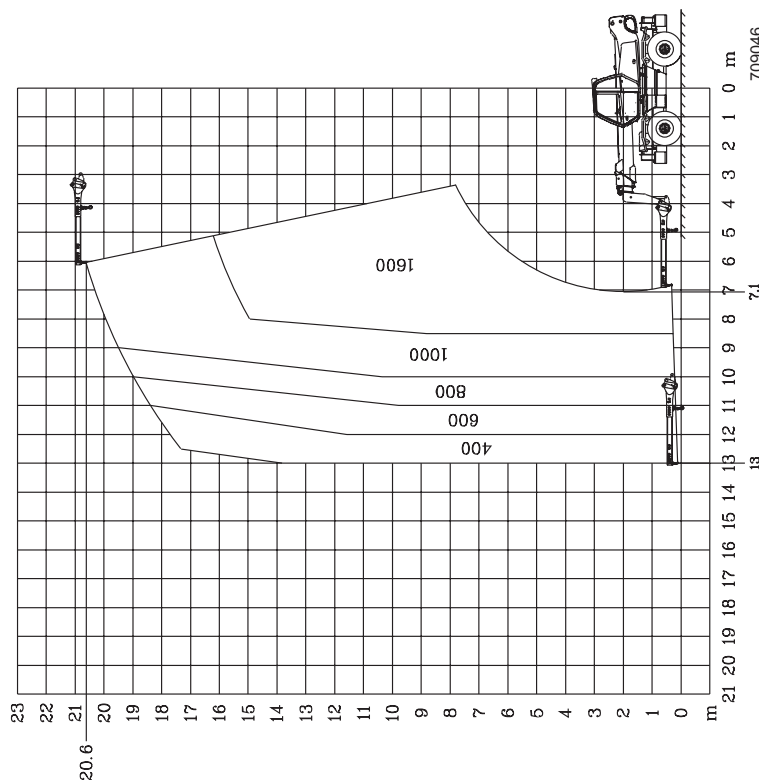
MRT 2150		pos. P	
		1600	20,8 m
P 6000 1,6T		Kg	


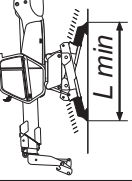

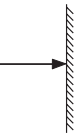


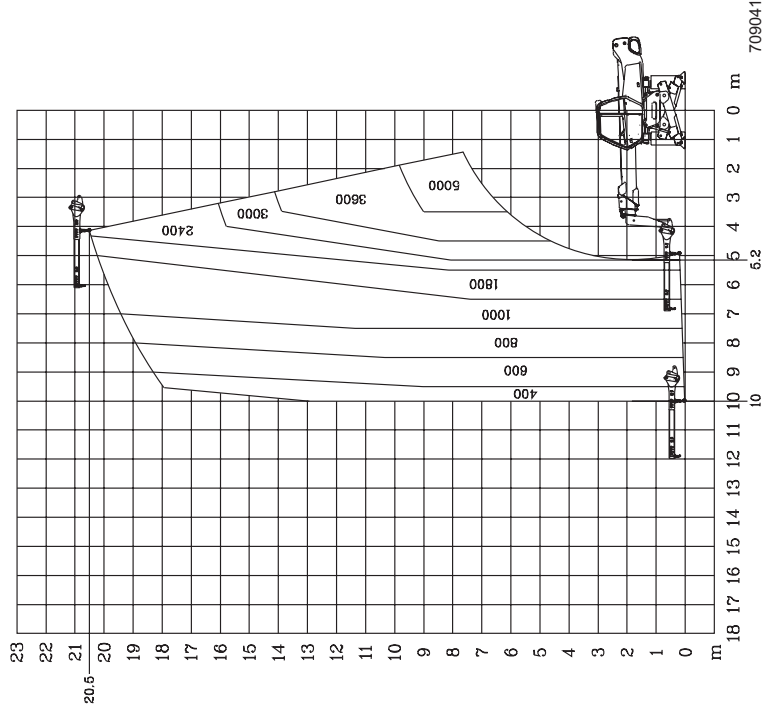
<b>MRT 2150</b>		<b>pos. P</b>	
P 6000 1,6T			
		1600 Kg	7,8 m


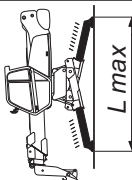

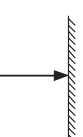


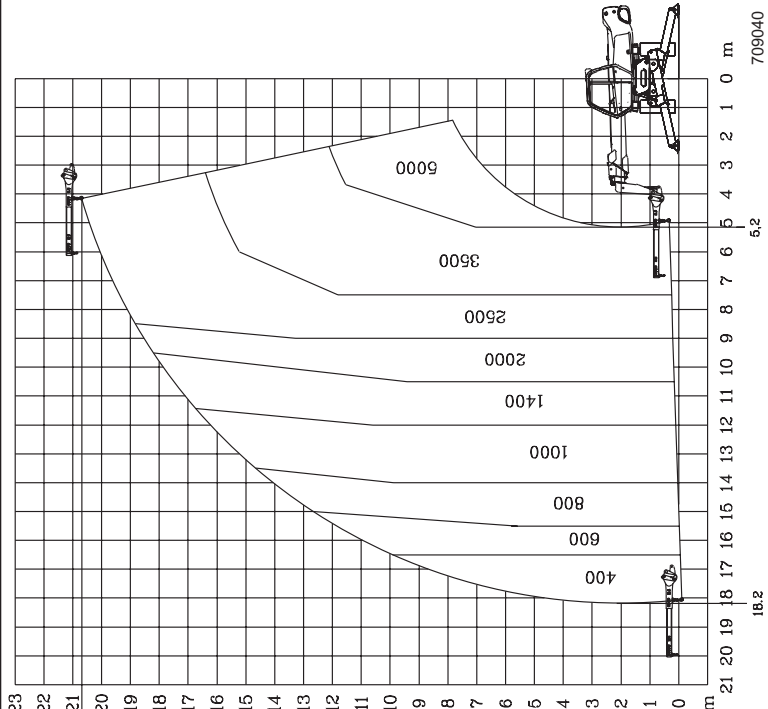
<b>MRT 2150</b>		<b>pos. P</b>	
P 6000 1,6T			
		1600 Kg	20,6 m



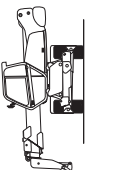


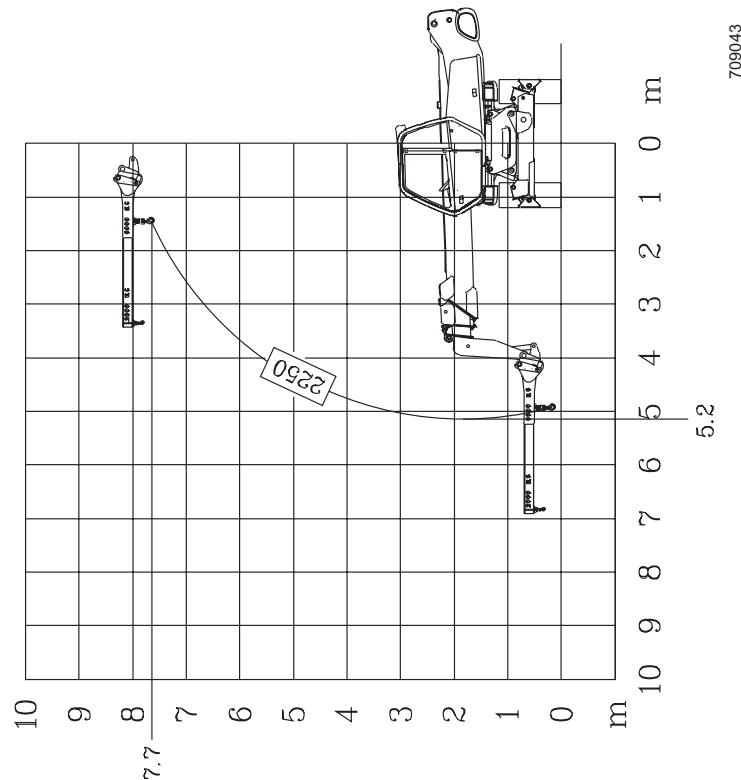
MRT 2150		pos. O	
P 6000 5T		5000 Kg	20,5 m
	L min		



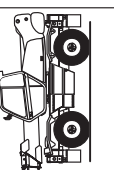


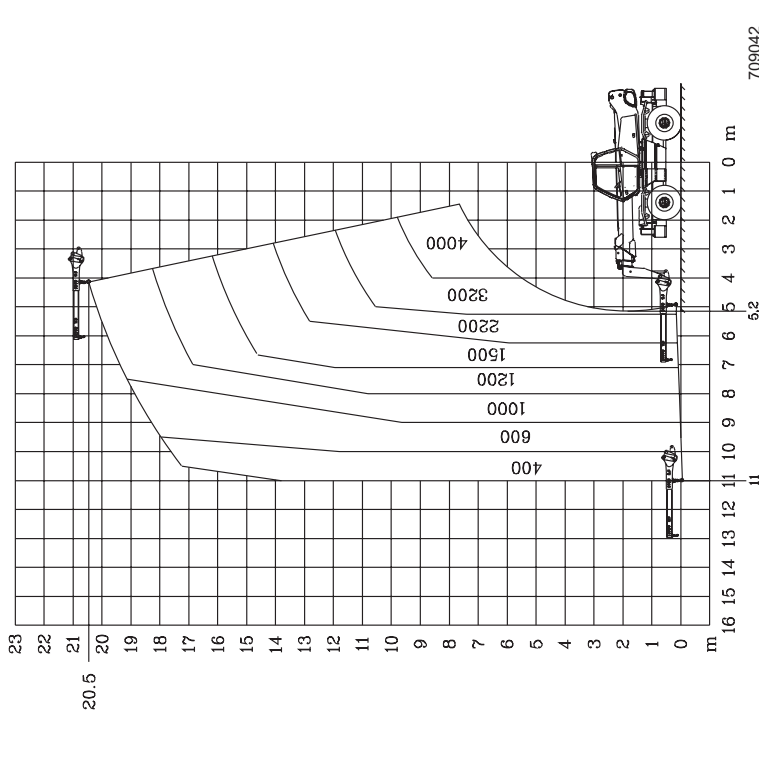
MRT 2150		pos. O	
P 6000 5T		5000 Kg	20,7 m
	L max		

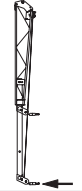
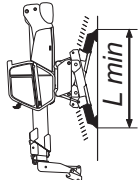
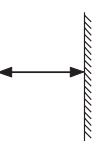


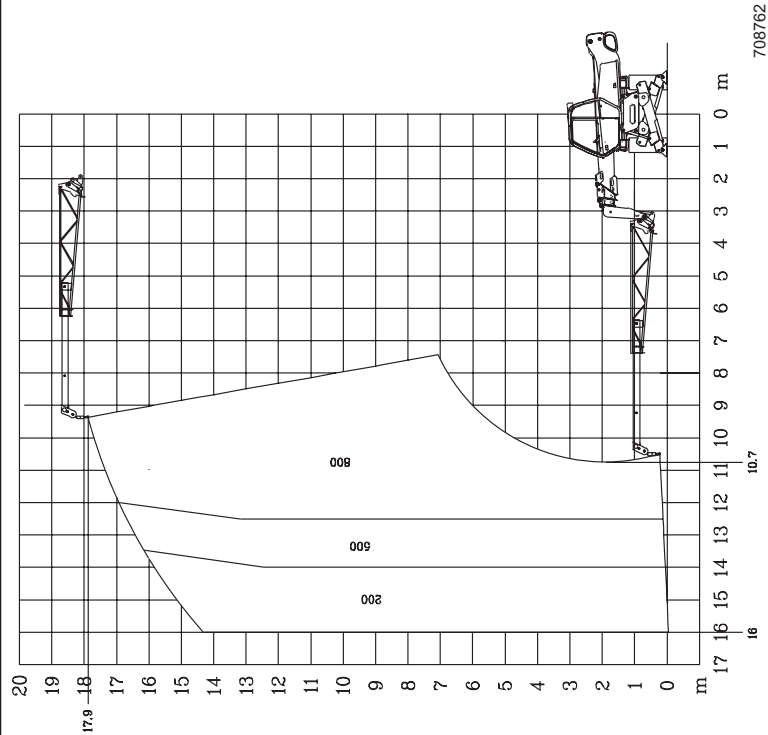
MRT 2150		pos. O
P 6000 5T		
	2250	7,7 m


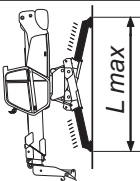
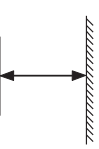


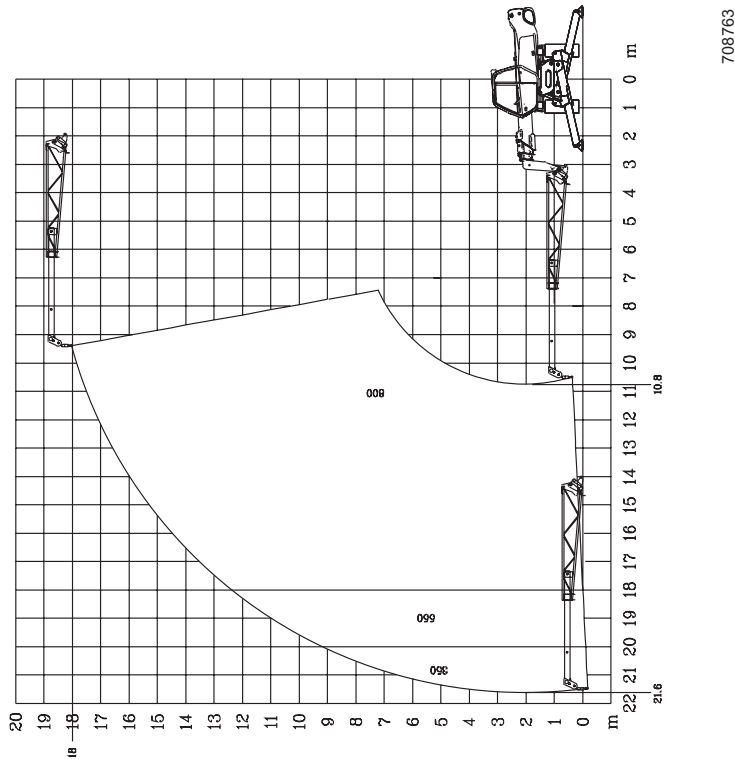
MRT 2145		pos. O
P 6000 5T		
	4000	20,5 m

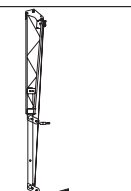

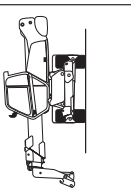
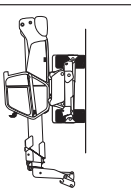
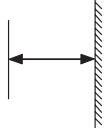


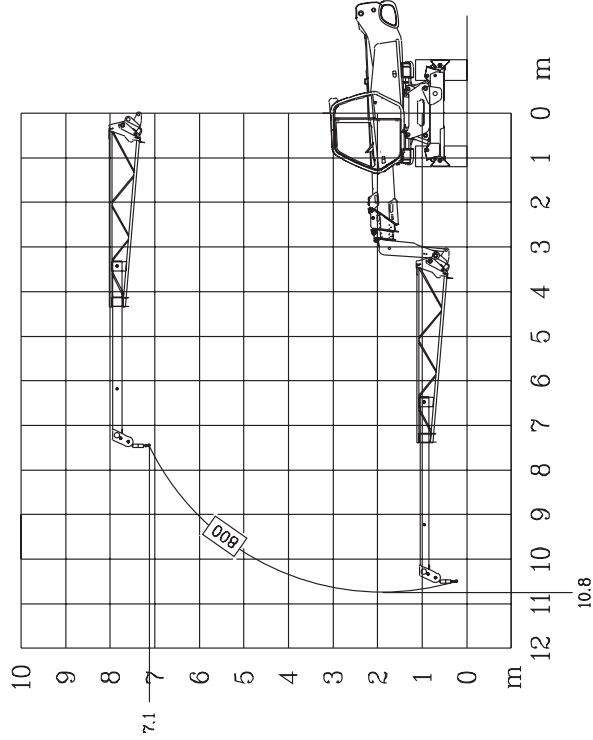
<b>MRT 1850</b>		pos. L
PT 800 0,8T		17,9 m
	800 Kg	



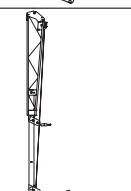

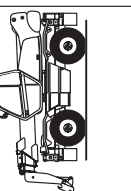
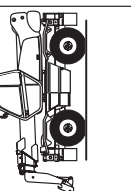
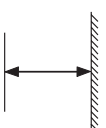
<b>MRT 1850</b>		pos. L
PT 800 0,8T		18 m
	800 Kg	

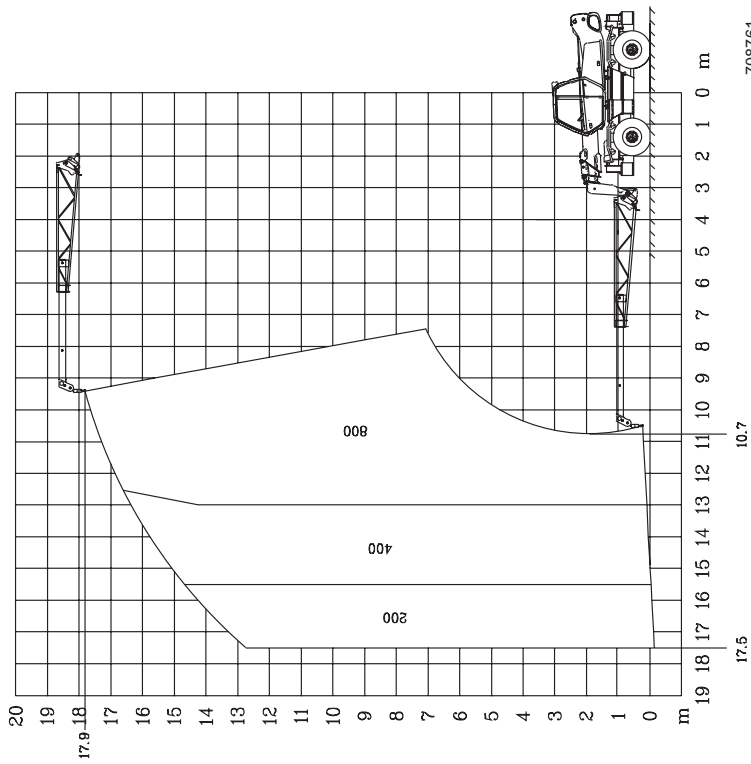


<b>MRT 1850</b>		pos. L
PT 800 0,8T		800 
		7,1 m 

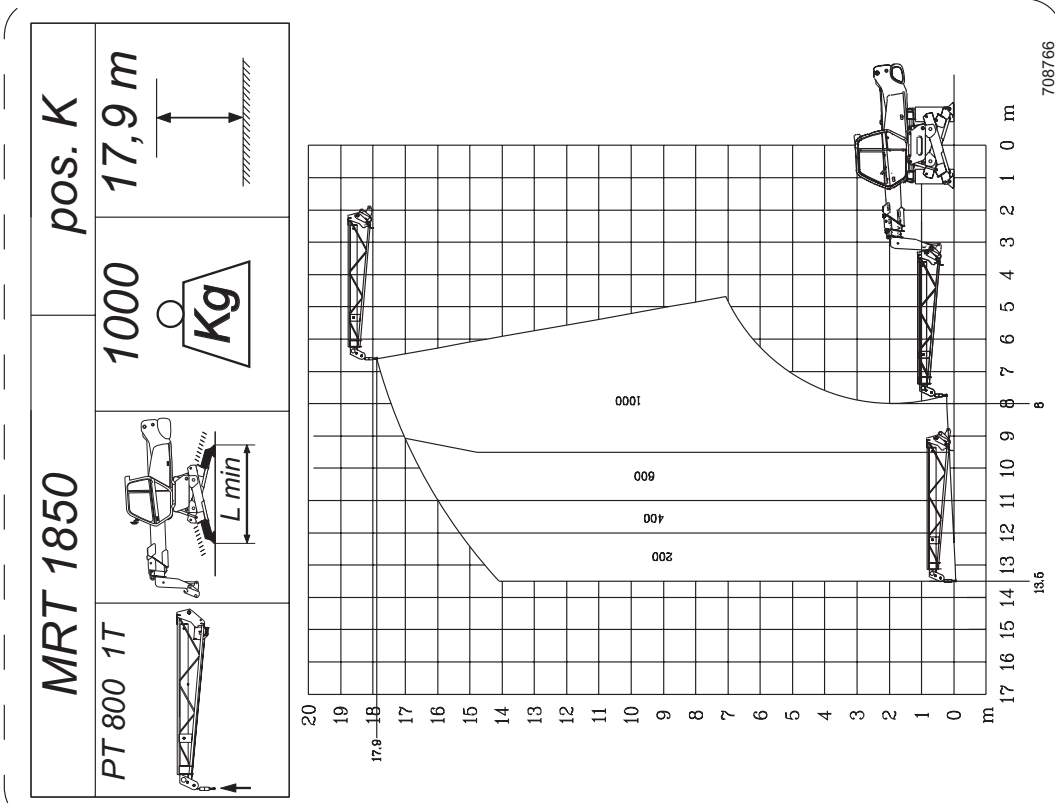


708760

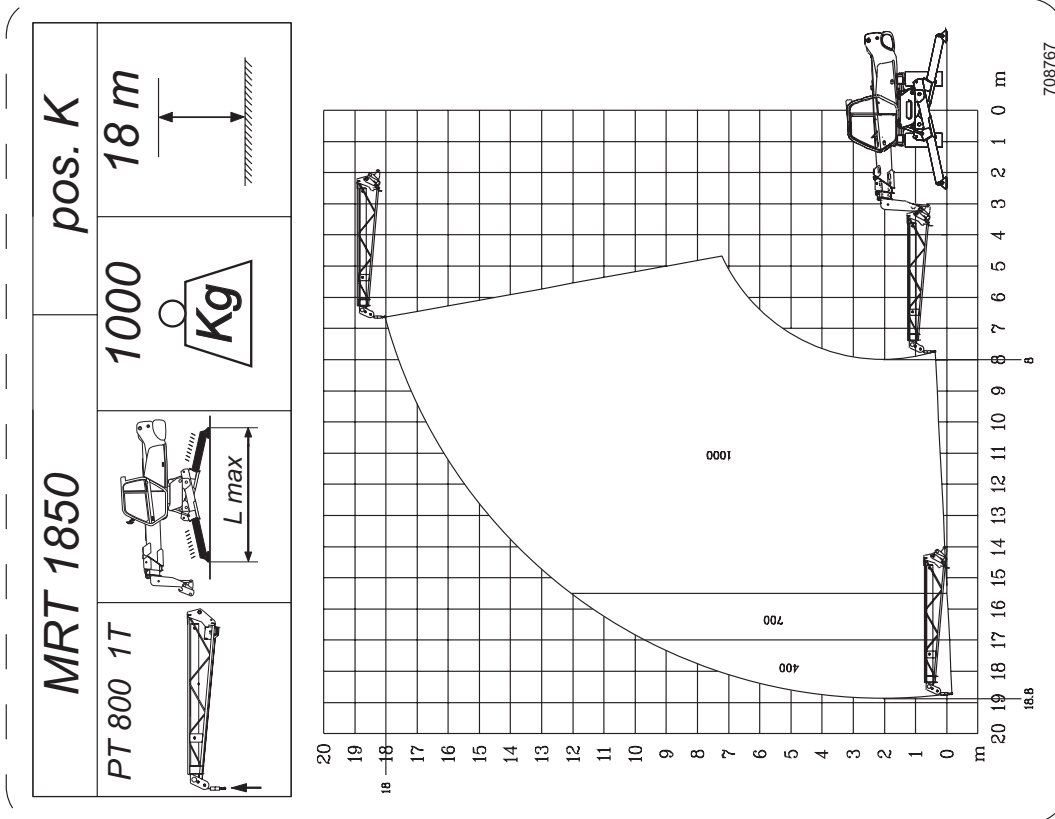
<b>MRT 1850</b>		pos. L
PT 800 0,8T		800 
		17,9 m 



708761

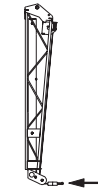
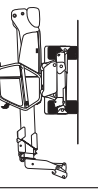


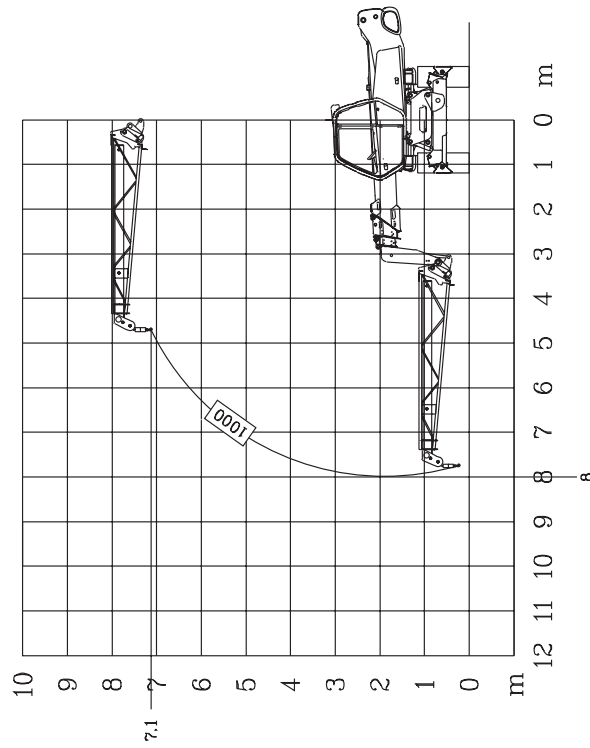
708766



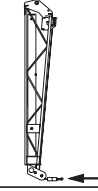
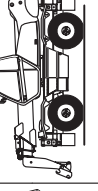
708767

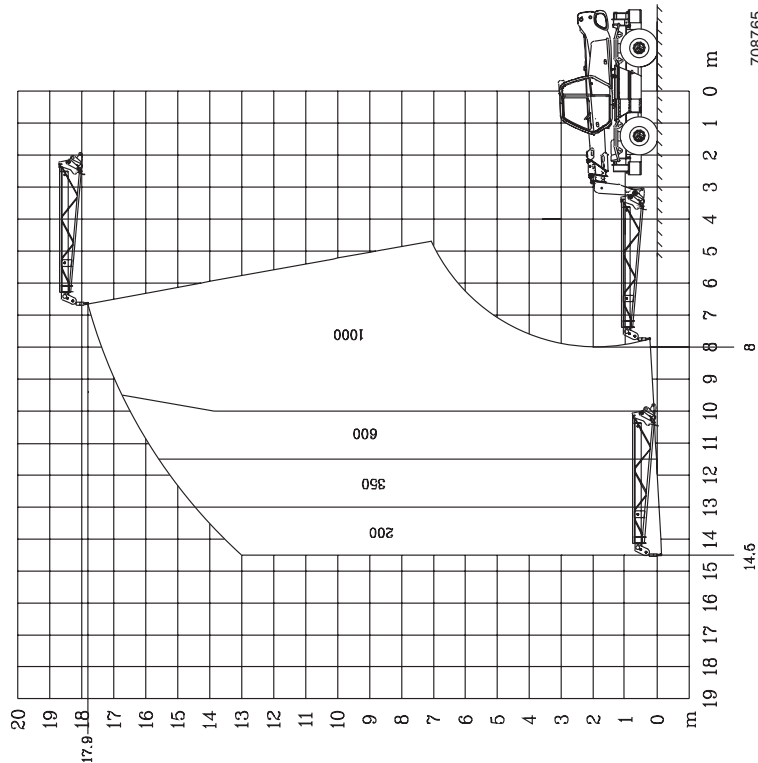


<b>MRT 1850</b>		<b>pos. K</b>	
PT 800 1T		1000 Kg	7,1 m
			

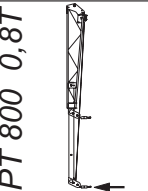
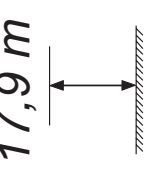
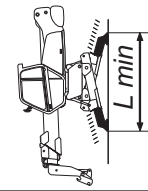


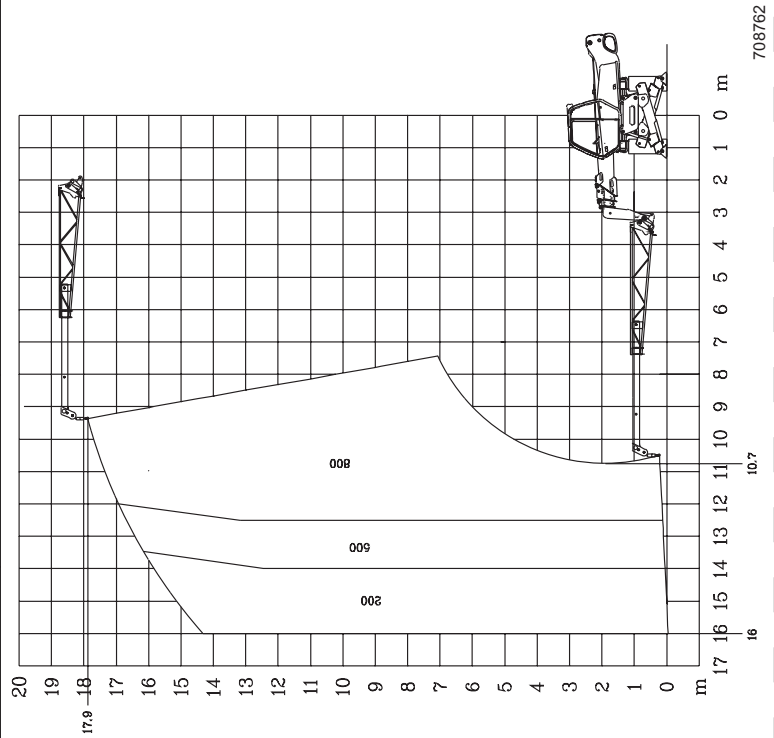
708764

<b>MRT 1850</b>		<b>pos. K</b>	
PT 800 1T		1000 Kg	17,9 m
			

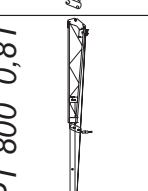
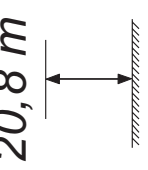
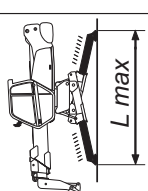


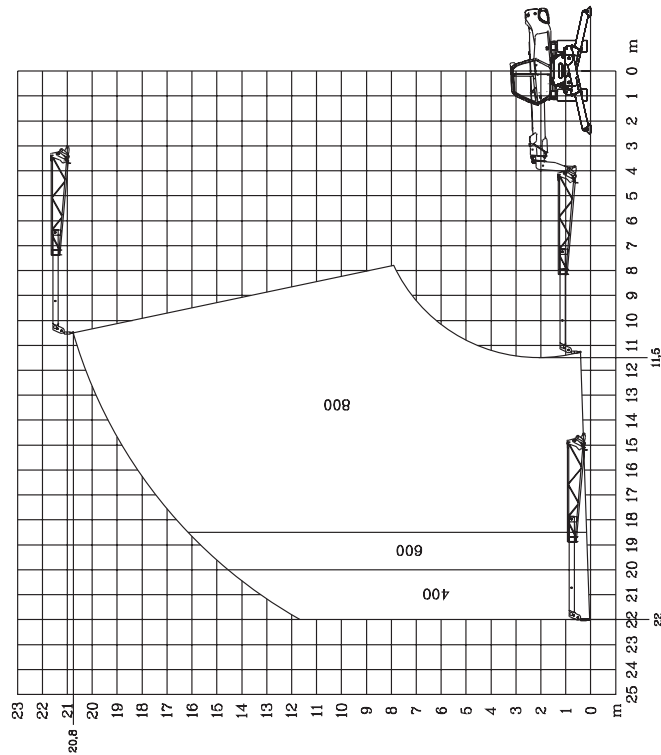
708765

<b>MRT 1850</b>		pos. L
PT 800 0,8T		
		800 Kg

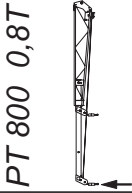
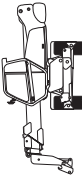


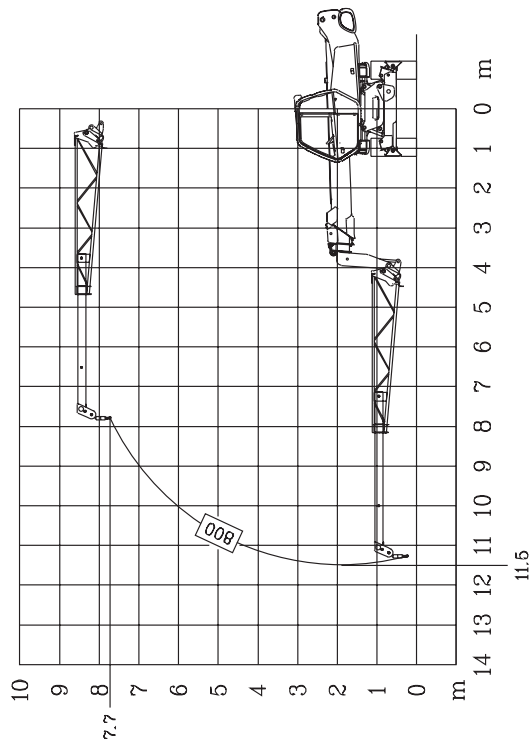
708762

<b>MRT 2150</b>		pos. L
PT 800 0,8T		
		800 Kg

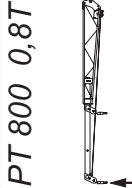



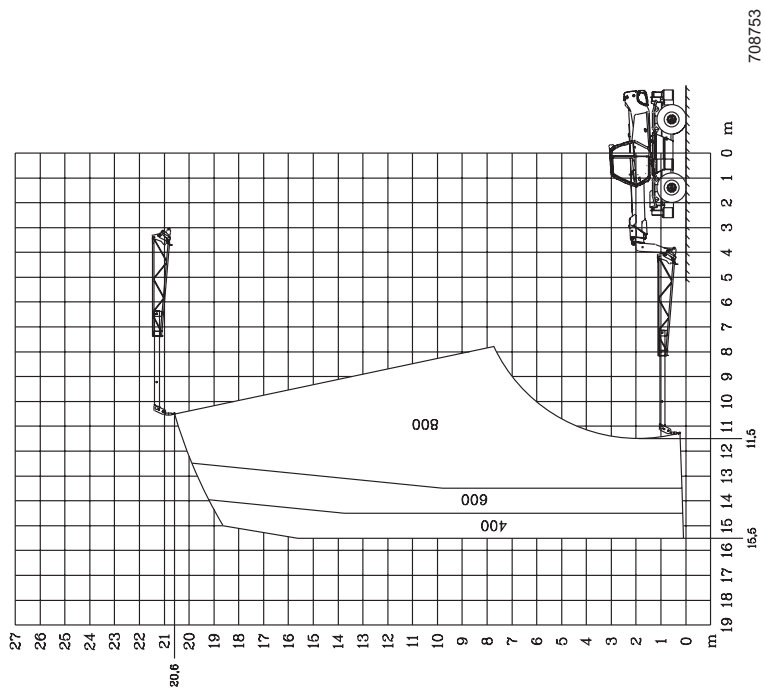
708755

<b>MRT 2150</b>		pos. L
PT 800 0,8T		7,7 m
		800 Kg



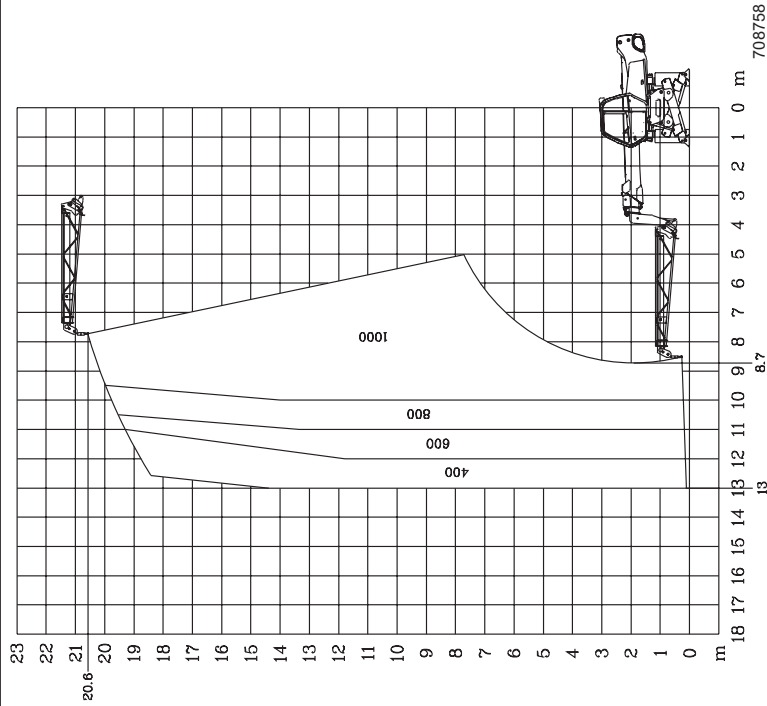
708752

<b>MRT 2150</b>		pos. L
PT 800 0,8T		20,6 m
		800 Kg

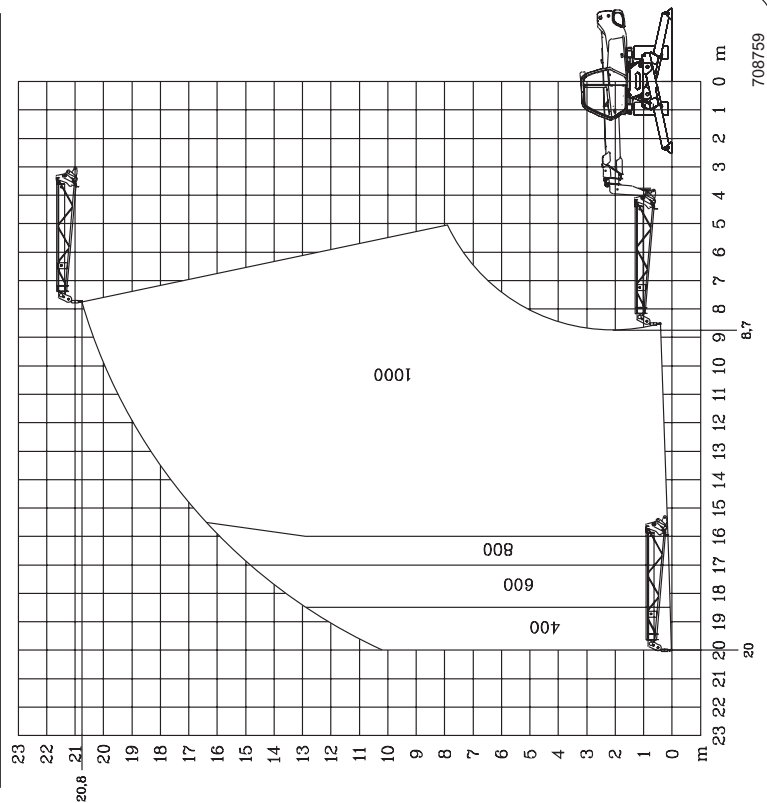


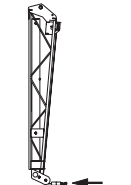
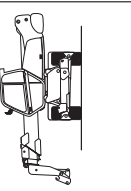
708753

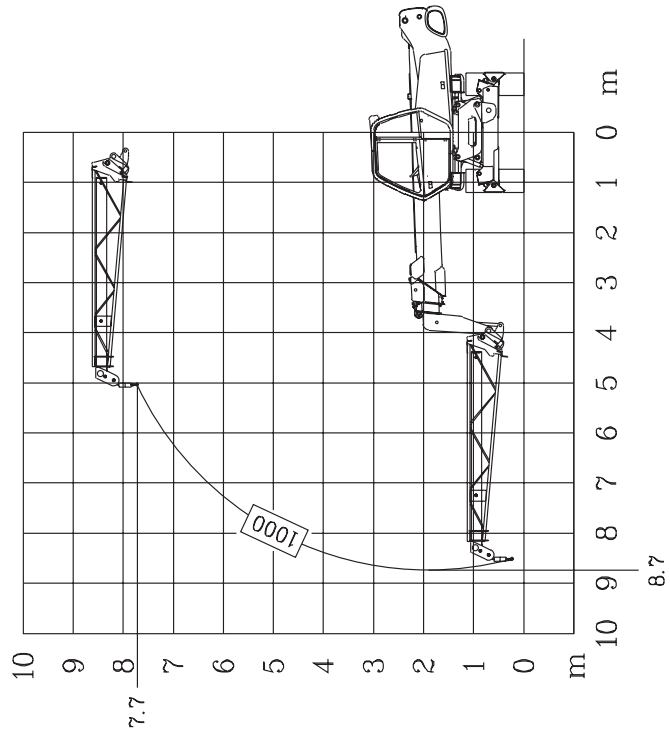
<b>MRT 2150</b>		pos. K
PT 800 1T		1000
		20,6 m



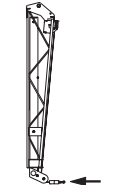
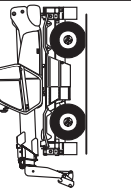
<b>MRT 2150</b>		pos. K
PT 800 1T		1000
		20,8 m

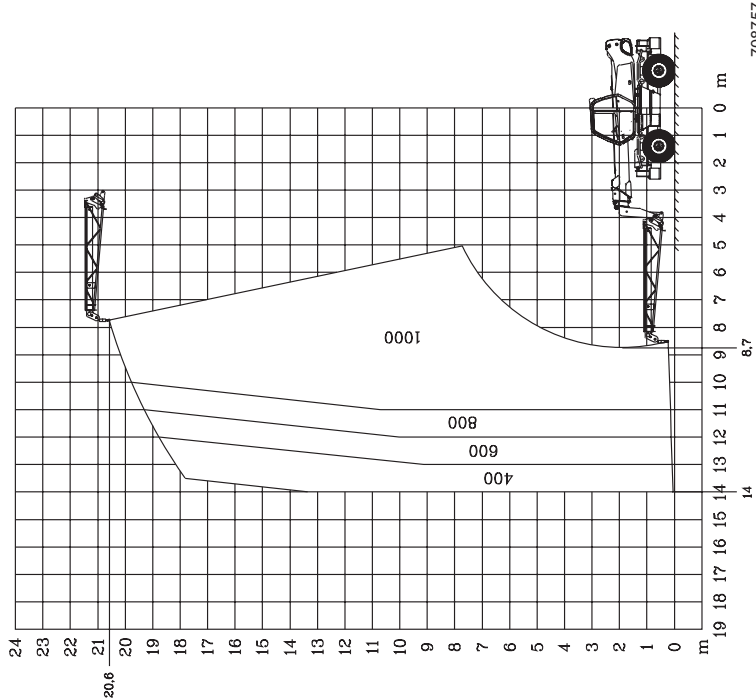


<b>MRT 2150</b>		pos. K
PT 800 1T		7,7 m
		1000 Kg

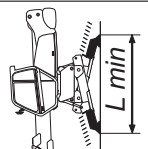

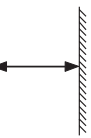
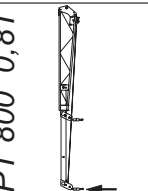


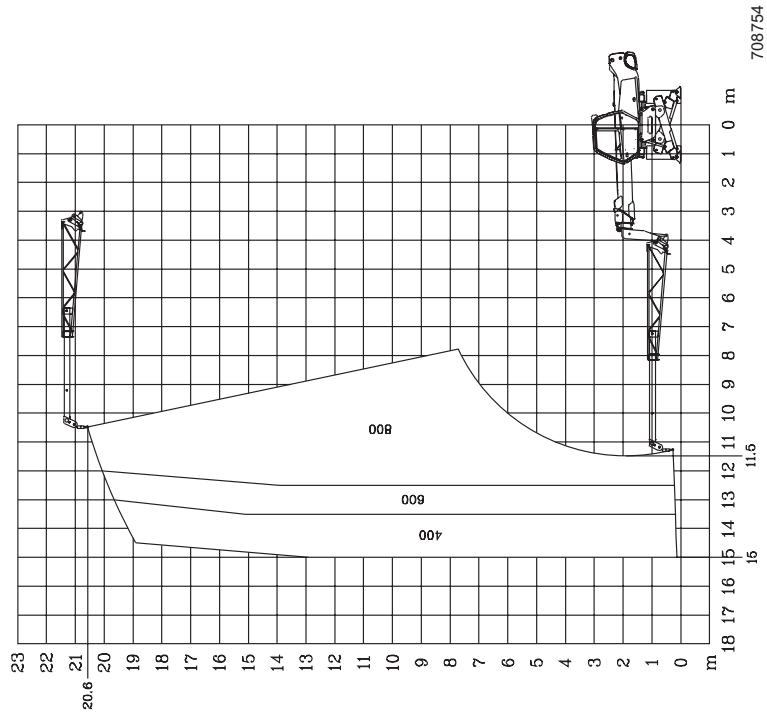
708756

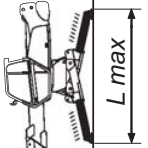

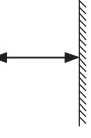
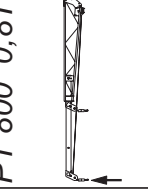
<b>MRT 2150</b>		pos. K
PT 800 1T		20,6 m
		1000 Kg

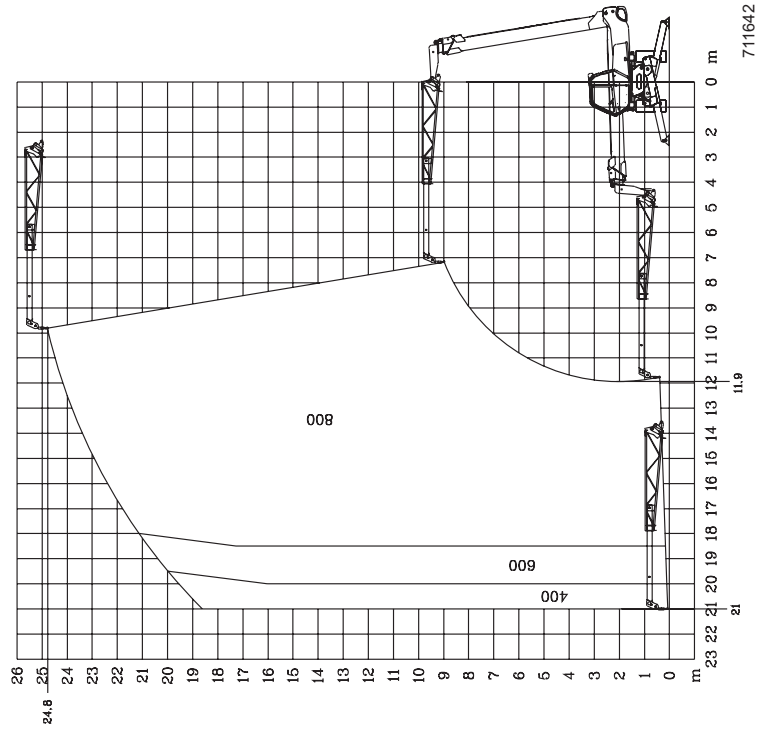


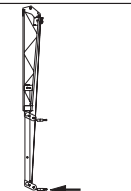
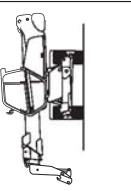
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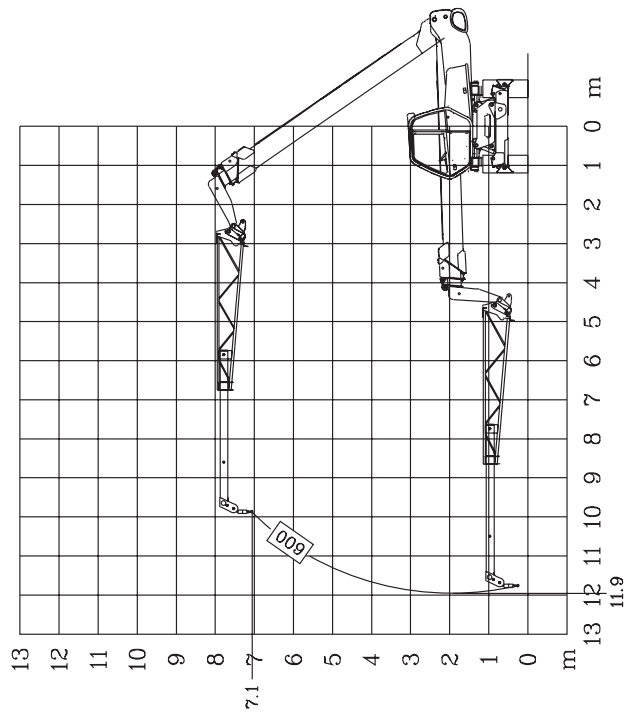
<p><b>MRT 2150</b></p> 	<p>800 </p>	<p>pos. L 20,6 m</p> 
<p>PT 800 0,8T</p> 		



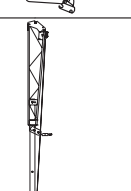
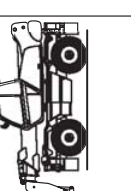
<p><b>MRT 2540</b></p> 	<p>800 </p>	<p>pos. L 24,8 m</p> 
<p>PT 800 0,8T</p> 		

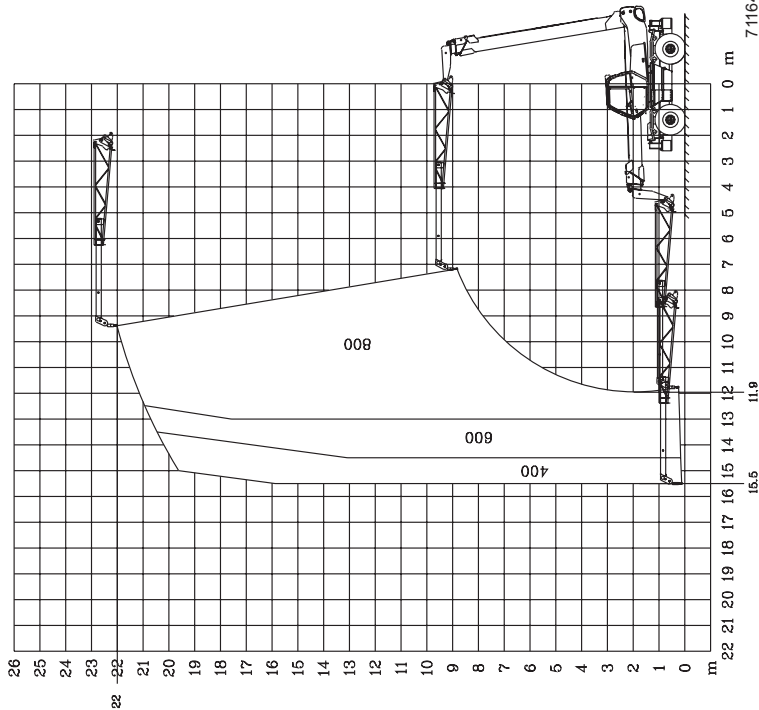


<b>MRT 2540</b>		pos. L
PT 800 0,8T		7,1 m
		600 Kg

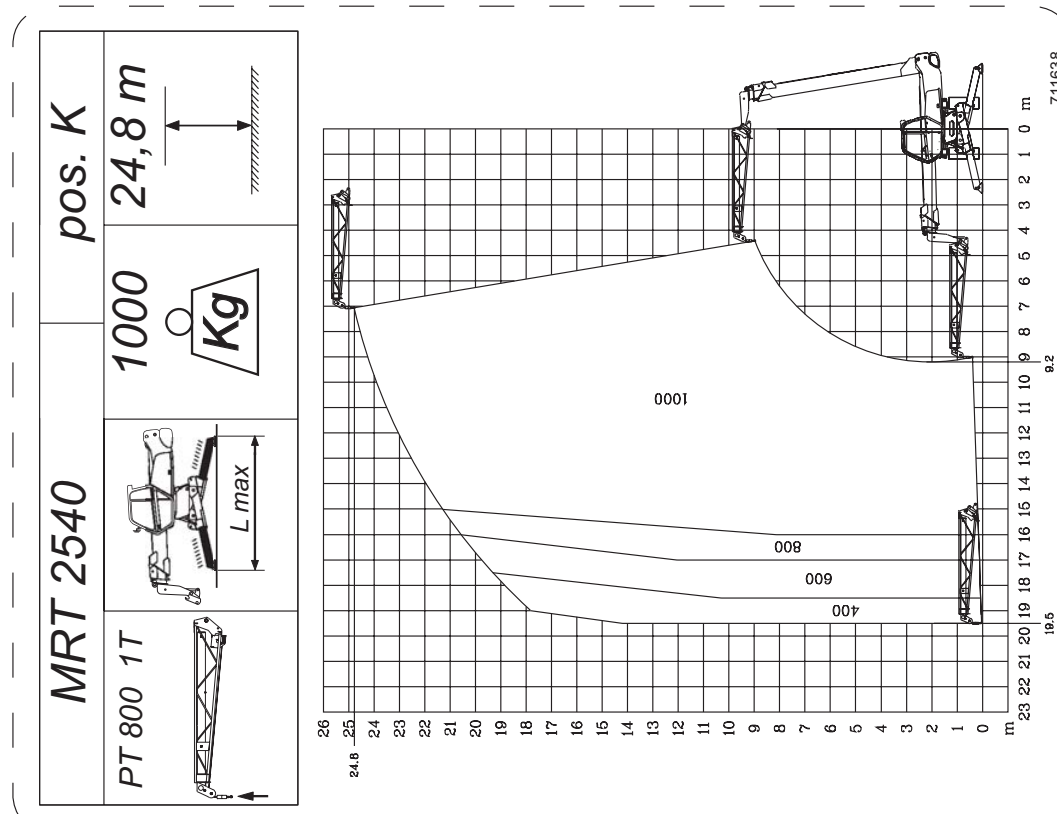
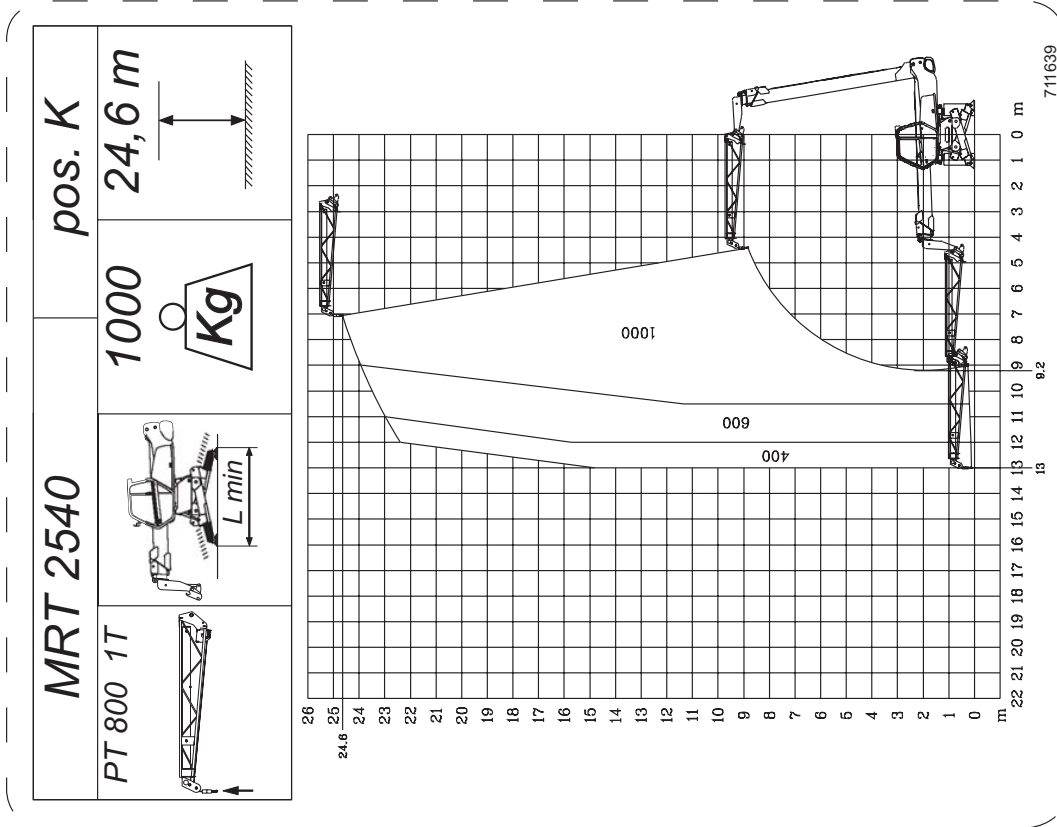


711645

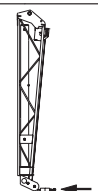
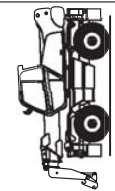

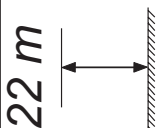
<b>MRT 2540</b>		pos. L
PT 800 0,8T		22 m
		800 Kg

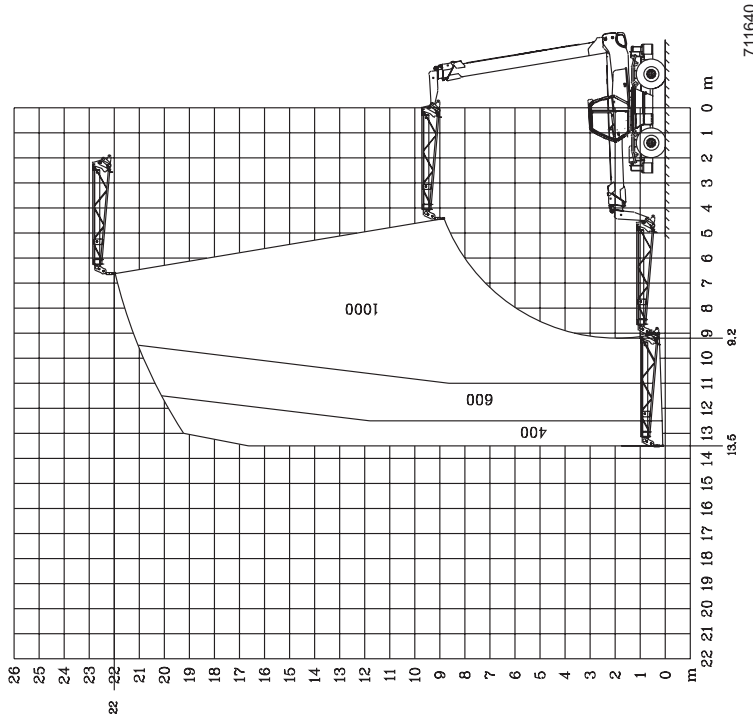


711644

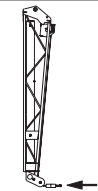
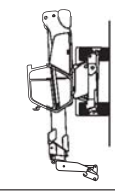

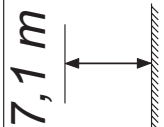


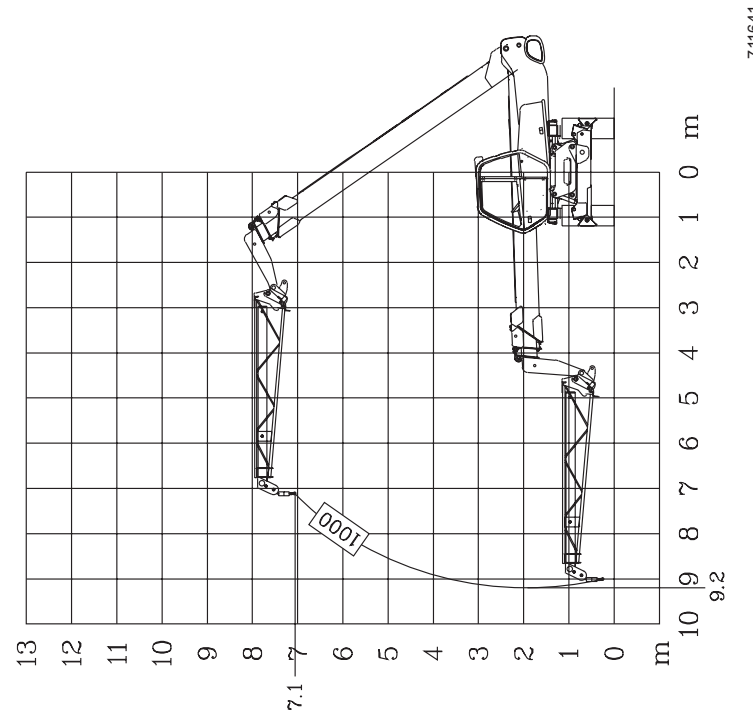


<b>MRT 2540</b>		<b>pos. K</b>	
<b>PT 800 1T</b>		<b>1000</b>	<b>22 m</b>
			

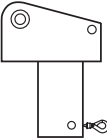
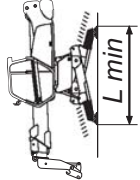


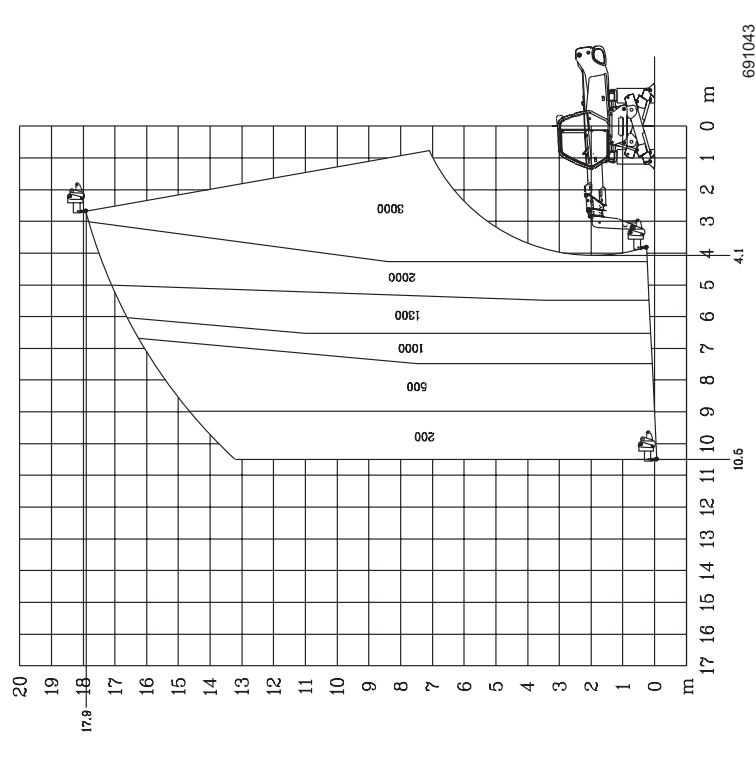
711640

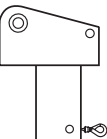
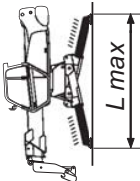
<b>MRT 2540</b>		<b>pos. K</b>	
<b>PT 800 1T</b>		<b>1000</b>	<b>7,1 m</b>
			

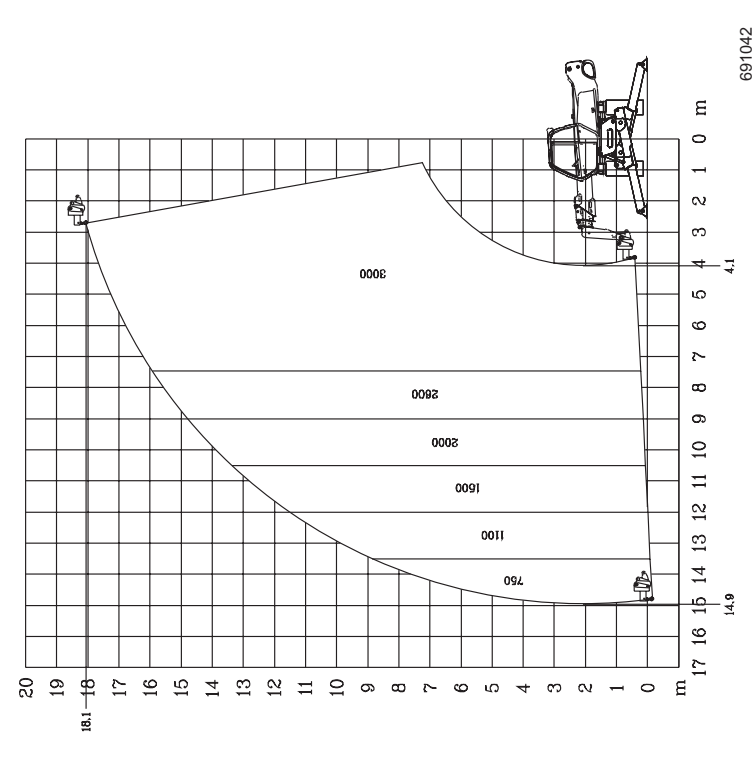


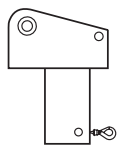
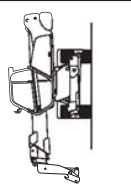

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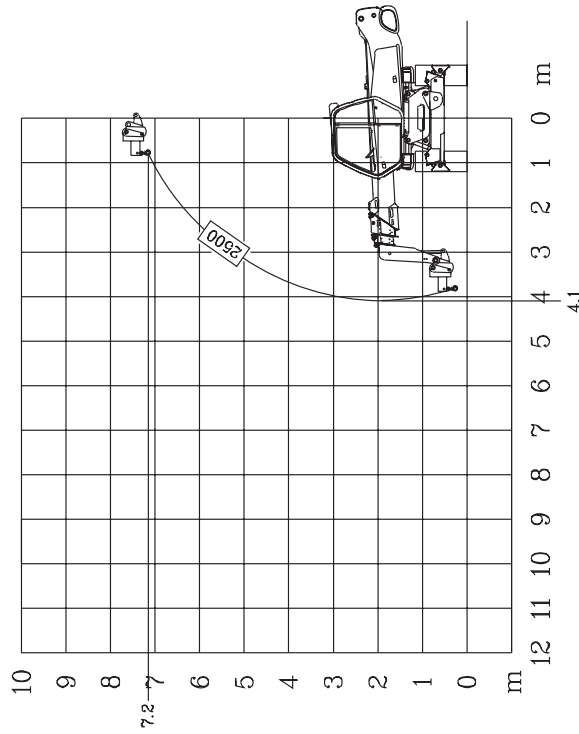
<b>MRT 1850</b>		pos. Q
Jib 3T		3000 Kg
		17,9 m



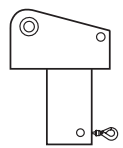
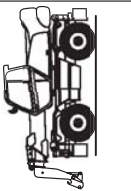

<b>MRT 1850</b>		pos. Q
Jib 3T		3000 Kg
		18,1 m

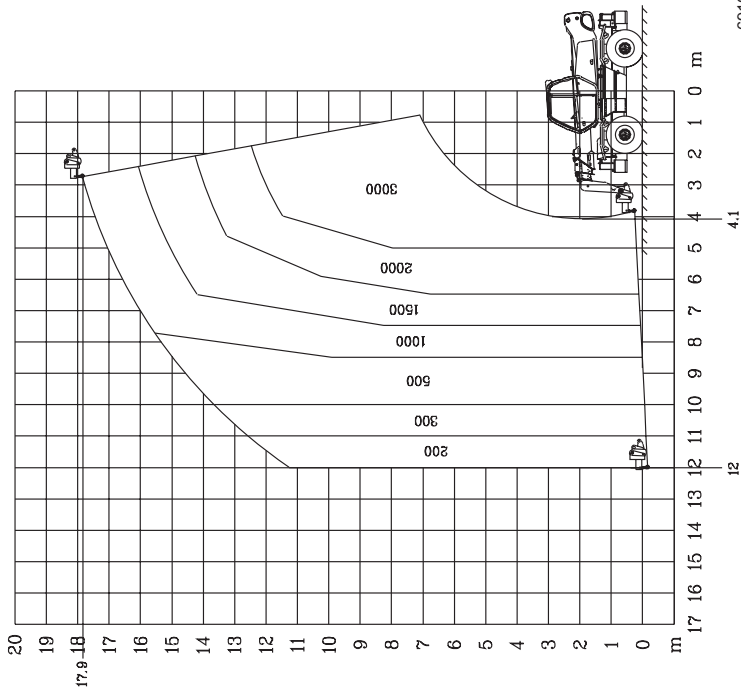


<b>MRT 1850</b>		pos. Q
Jib 3T	2500 Kg	7,2 m
		


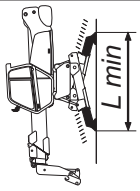
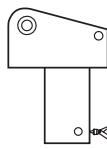
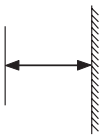


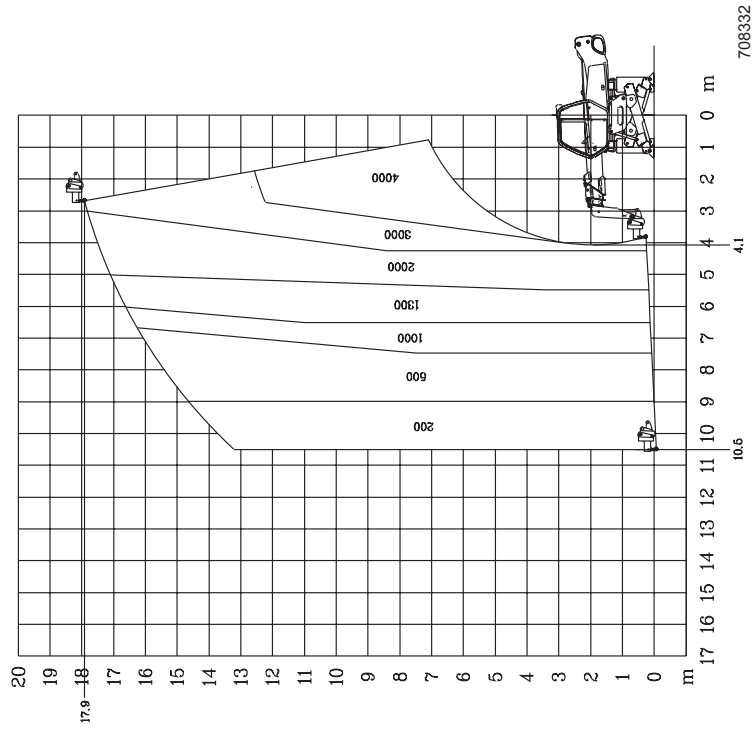
691045

<b>MRT 1850</b>		pos. Q
Jib 3T	3000 Kg	17,9 m
		


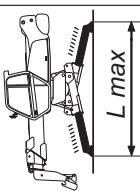
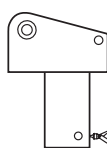
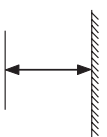


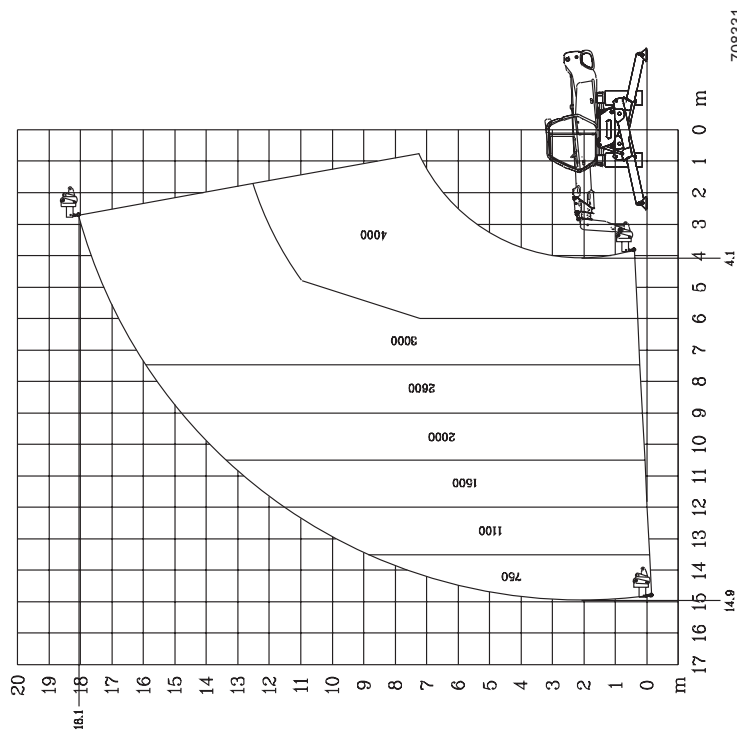
691044

<b>MRT 1850</b>		pos. R
Jib 4T		4000
		17,9 m
		

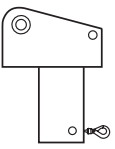

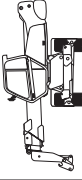



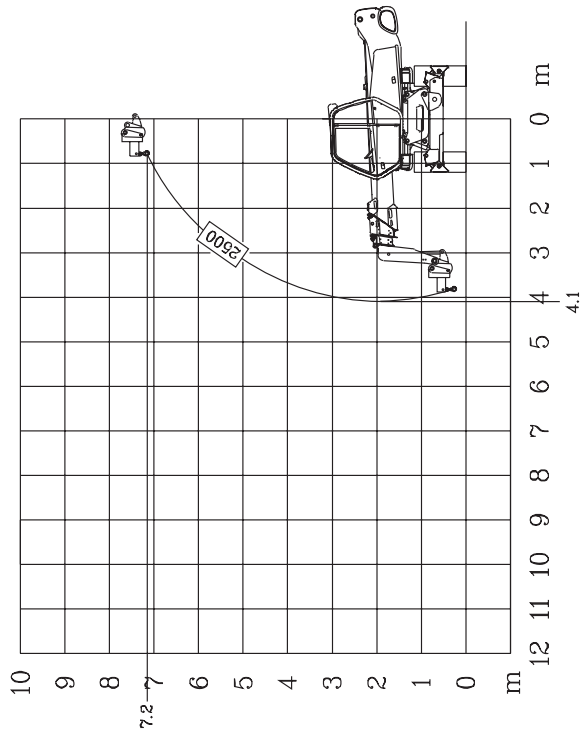
708332

<b>MRT 1850</b>		pos. R
Jib 4T		4000
		18,1 m
		

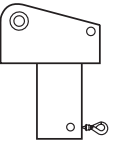





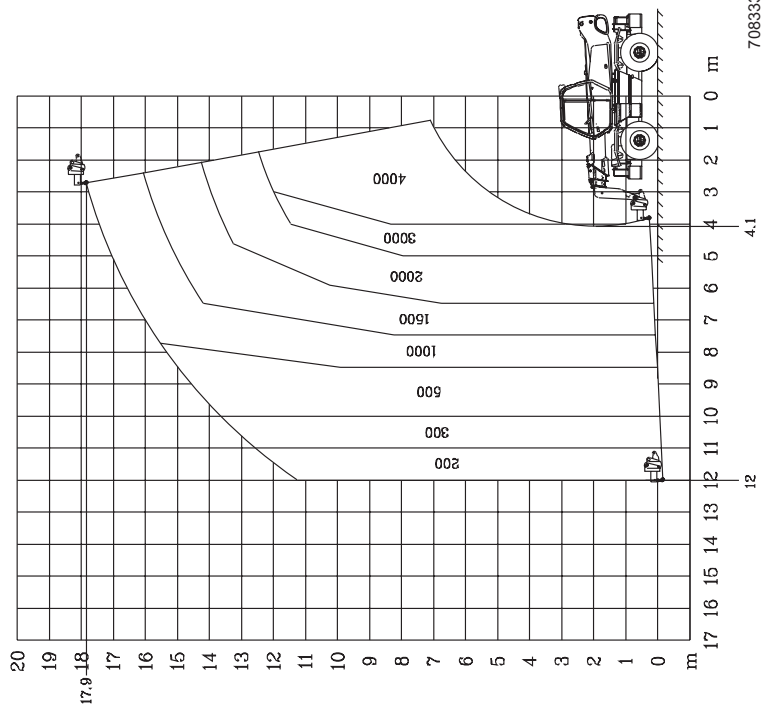
708331

<b>MRT 1850</b>		pos. R
Jib 4T		
	2500	7,2 m
		


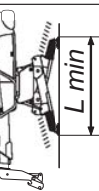
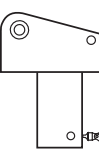


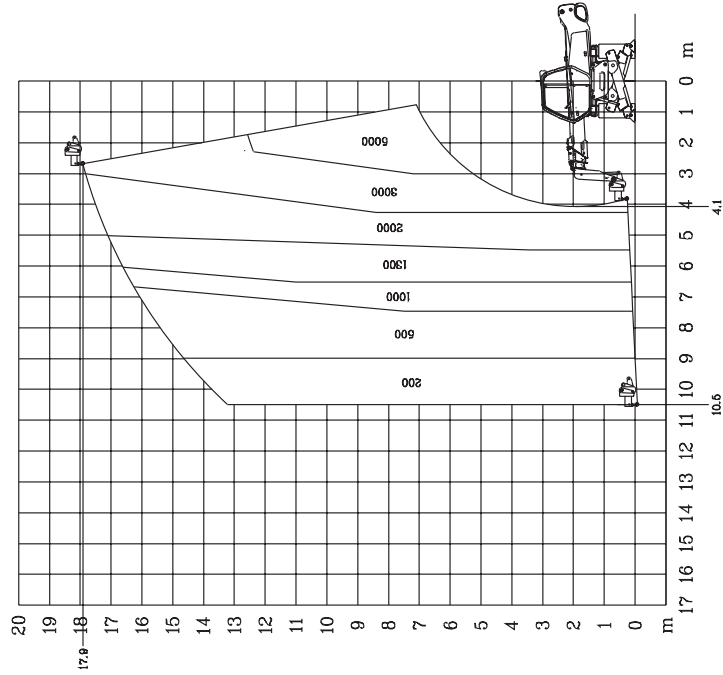
708354

<b>MRT 1850</b>		pos. R
Jib 4T		
	4000	17,9 m
		



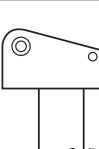


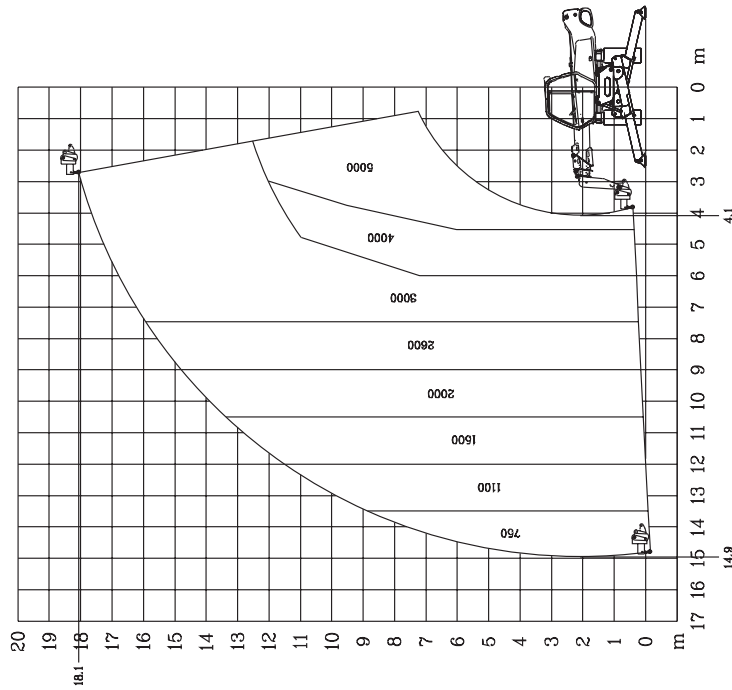
708333

<b>MRT 1850</b>		<b>pos. S</b>
<b>Jib 5T</b>		<b>5000</b>
		<b>17,9 m</b>

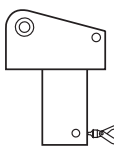
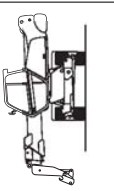



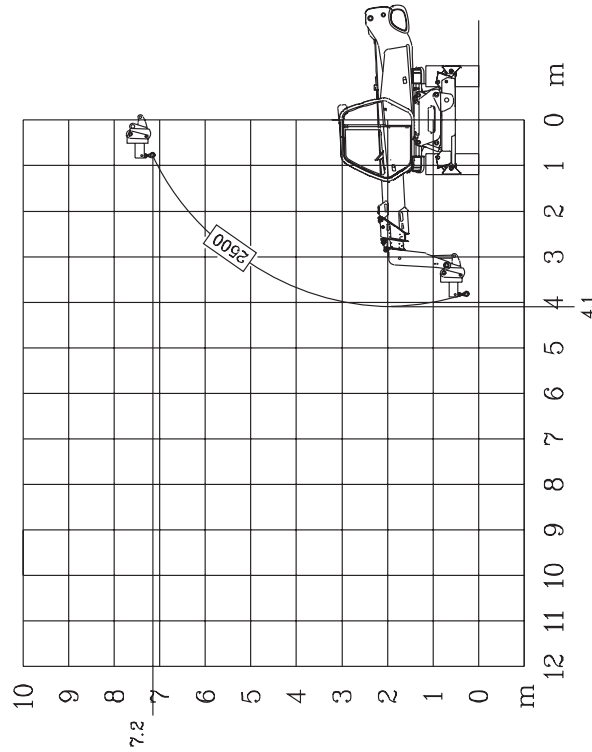
691047

<b>MRT 1850</b>		<b>pos. S</b>
<b>Jib 5T</b>		<b>5000</b>
		<b>18,1 m</b>

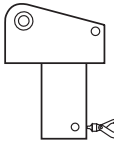
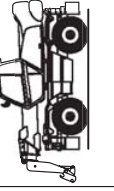



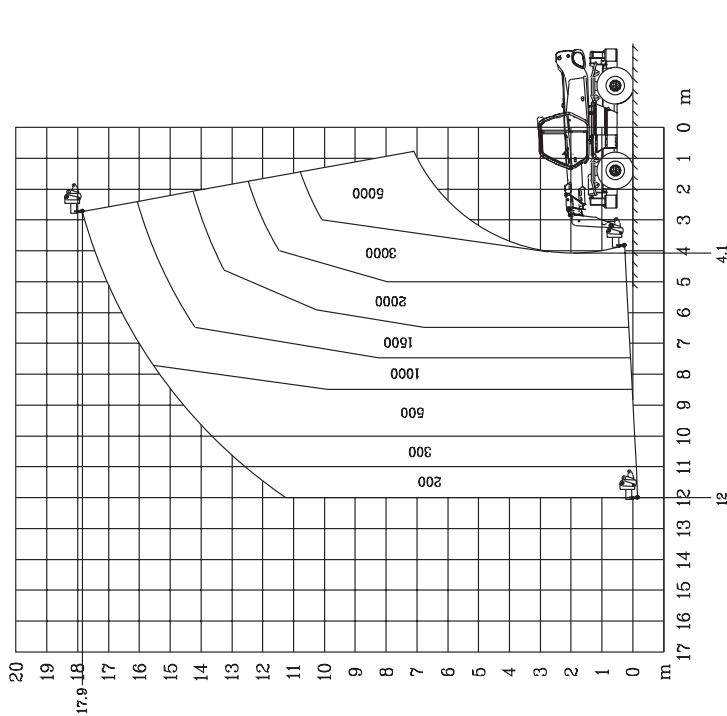
691048

<b>MRT 1850</b>		<b>pos. S</b>
<b>Jib 5T</b>		<b>2500 Kg</b>
		<b>7,2 m</b>

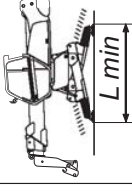


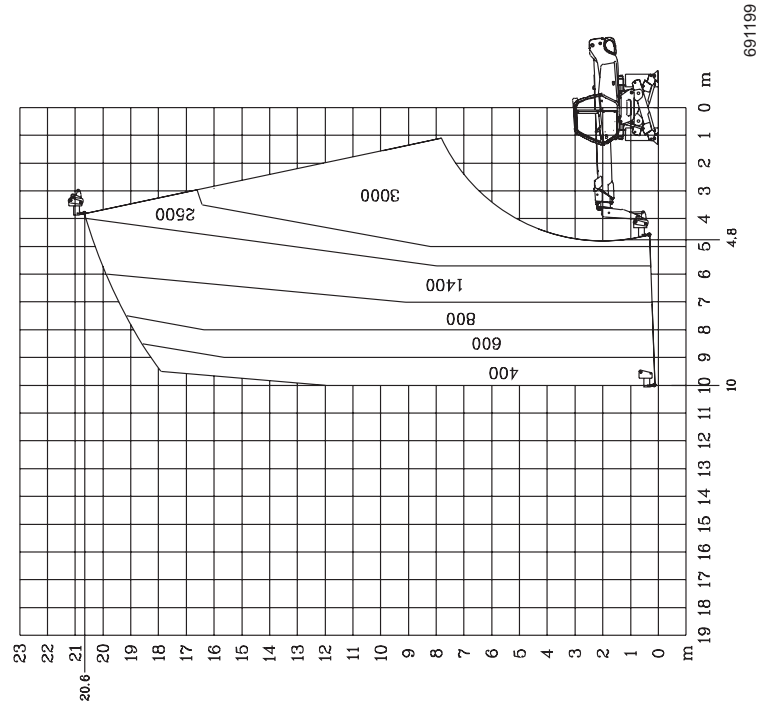
691051

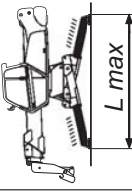
<b>MRT 1850</b>		<b>pos. S</b>
<b>Jib 5T</b>		<b>5000 Kg</b>
		<b>17,9 m</b>

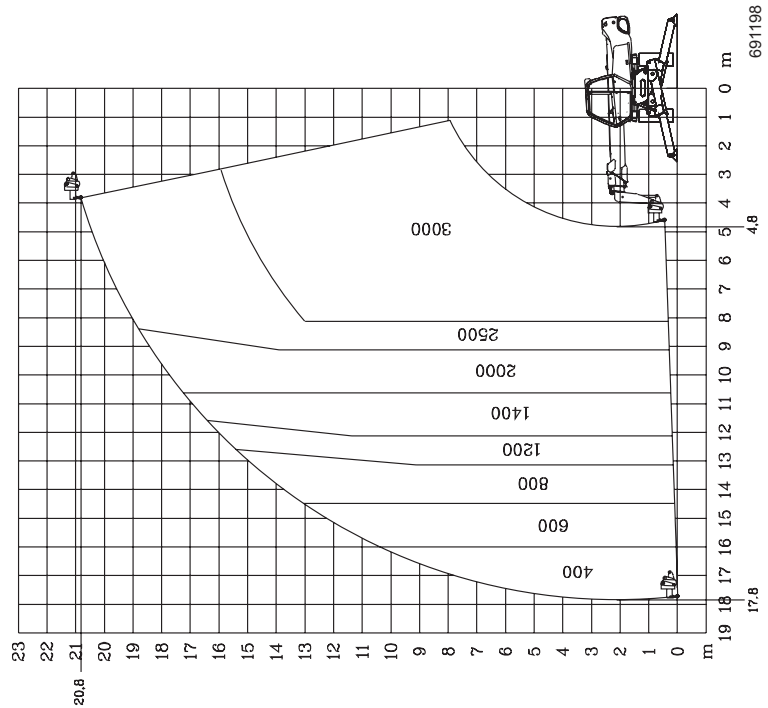


691050

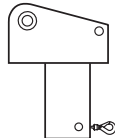

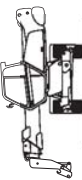
<b>MRT 2150</b>	<b>pos. Q</b>
<b>Jib 3T</b>	<b>3000</b> <b>Kg</b>
	<b>20,6 m</b>

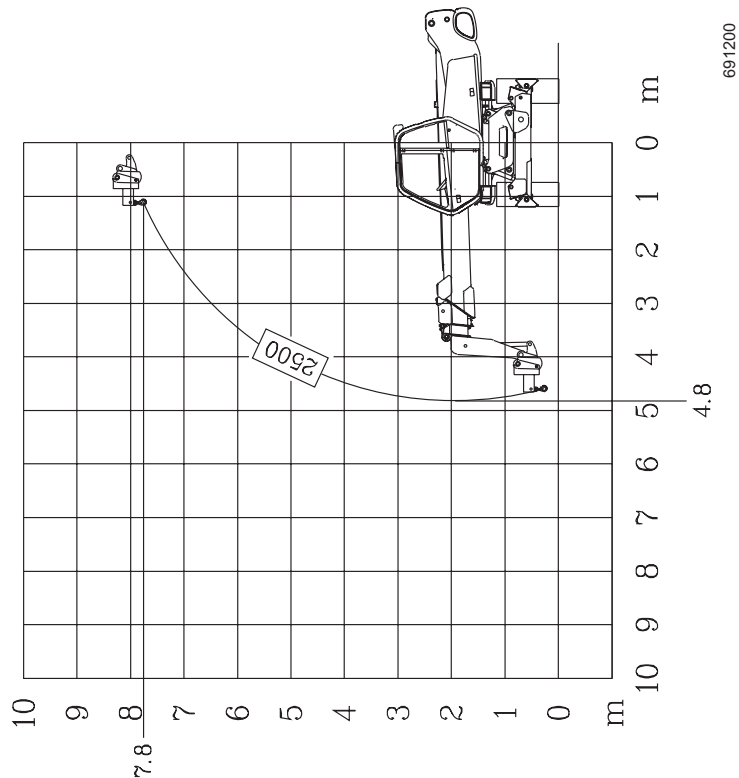


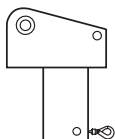


<b>MRT 2150</b>	<b>pos. Q</b>
<b>Jib 3T</b>	<b>3000</b> <b>Kg</b>
	<b>20,8 m</b>

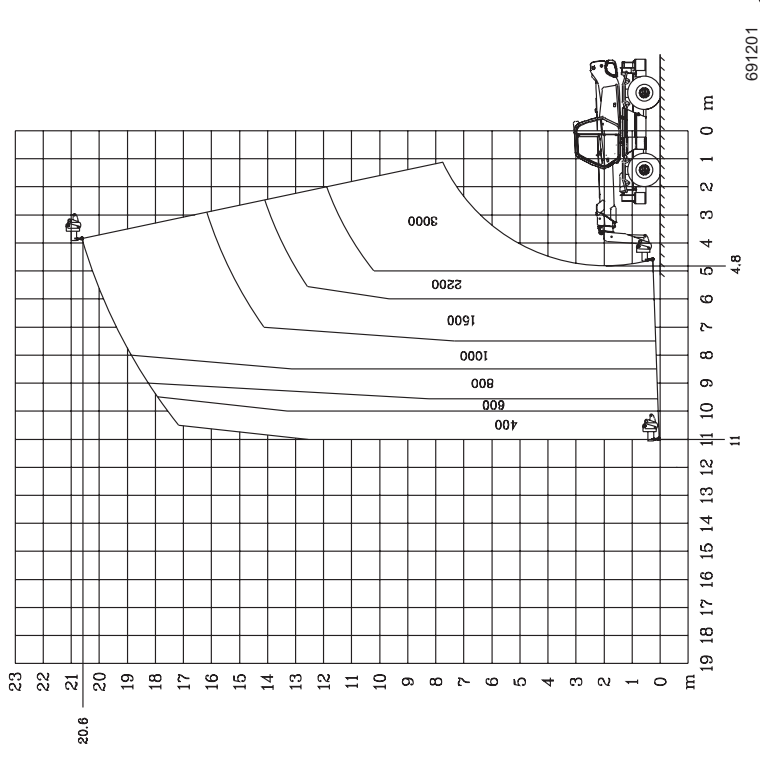


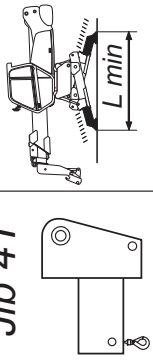
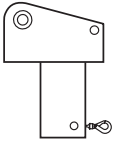
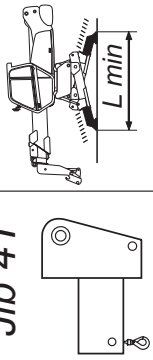
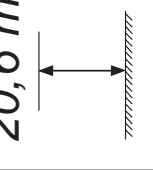


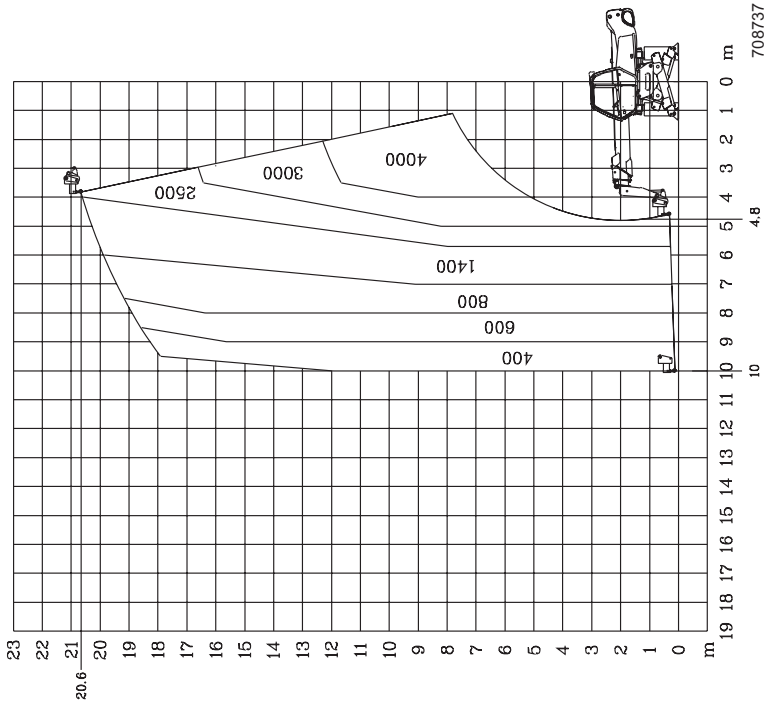
<b>MRT 2150</b>		pos. Q
Jib 3T		
	2500	7,8 m

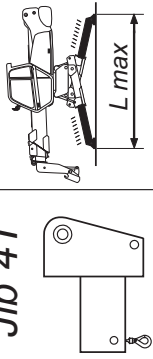
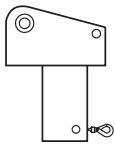
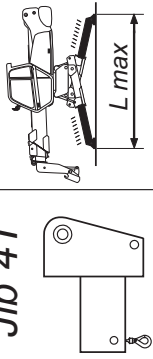
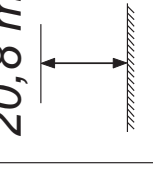


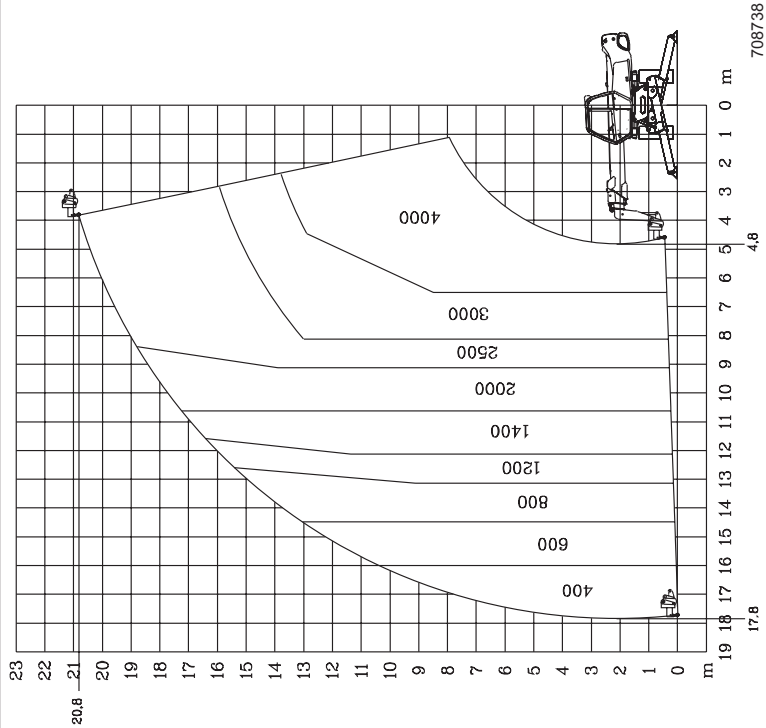
<b>MRT 2150</b>		pos. Q
Jib 3T		
	3000	20,6 m

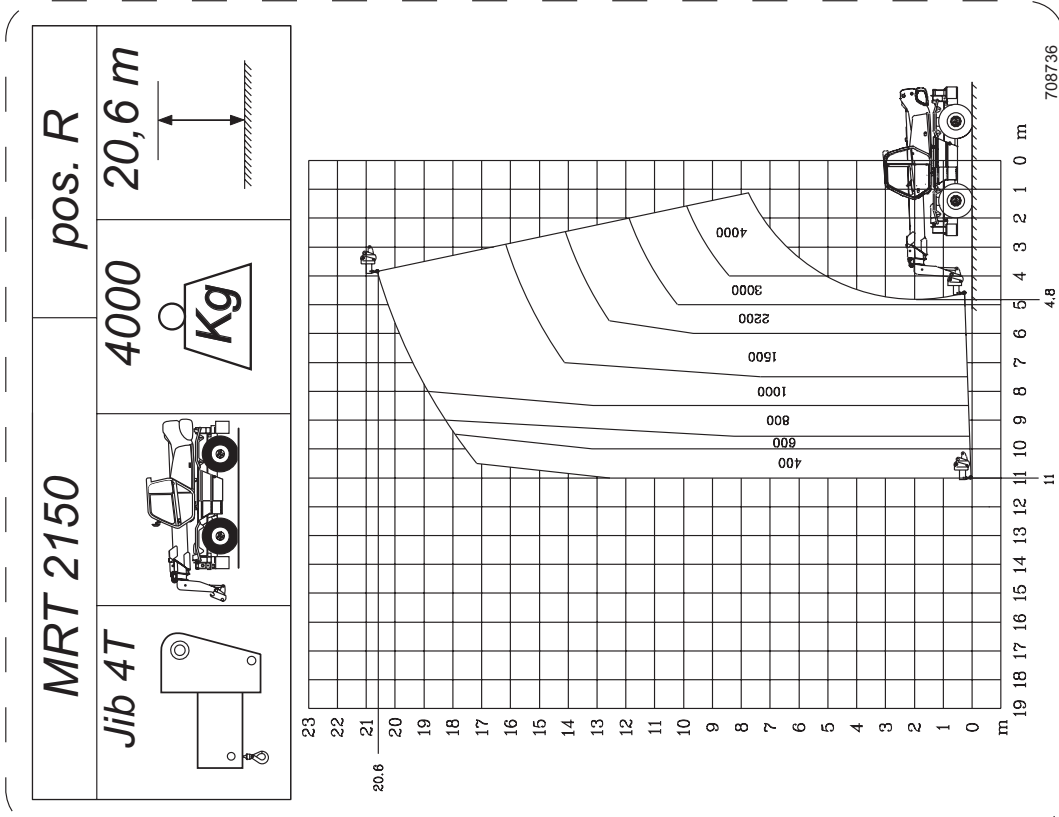
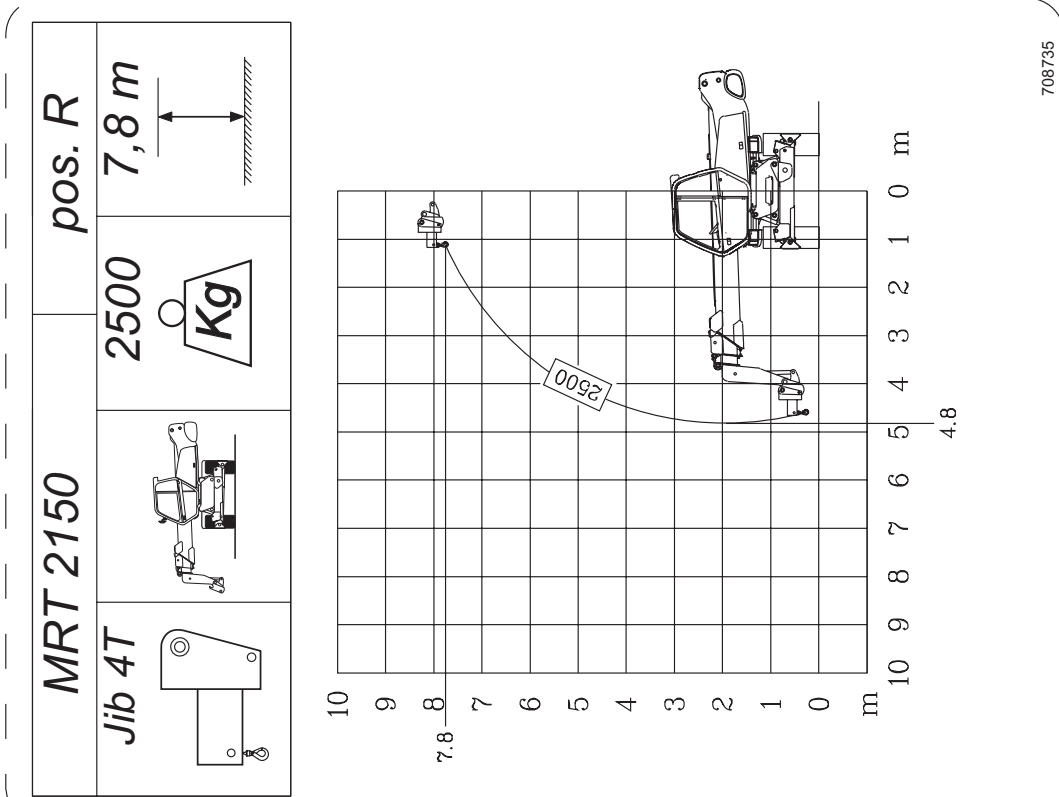


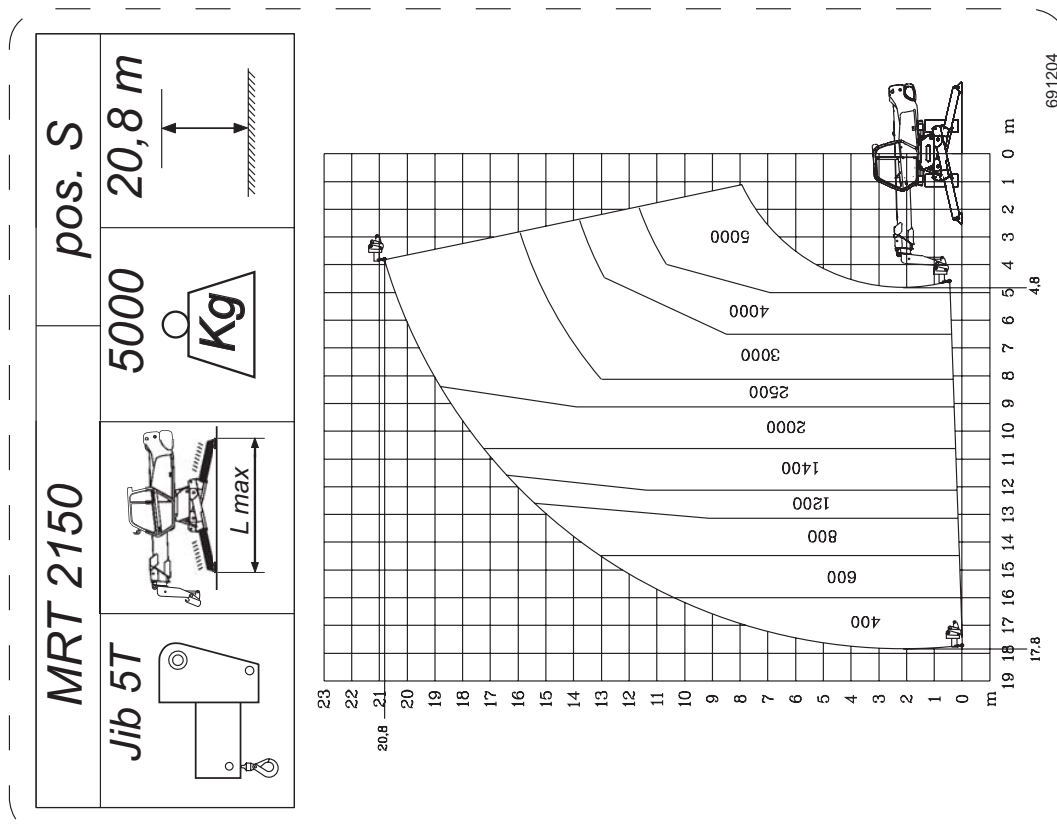
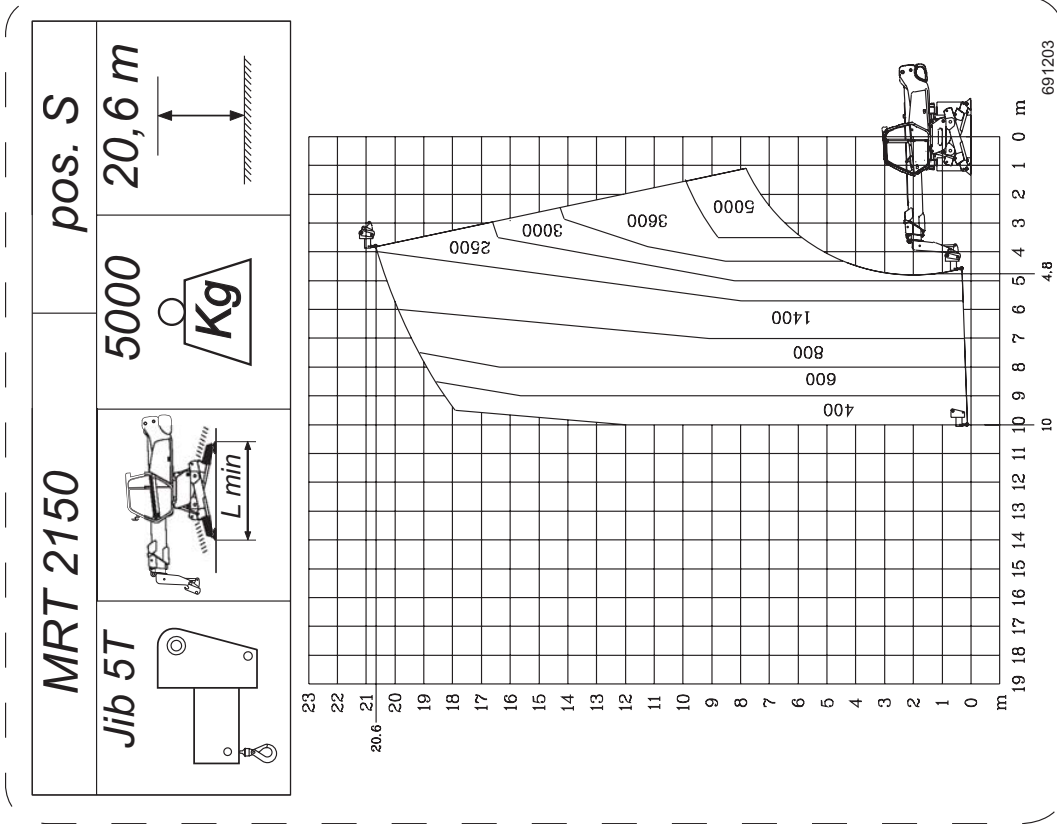
<b>MRT 2150</b>		<b>pos. R</b>	
<b>Jib 4T</b>		<b>4000 Kg</b>	<b>20,6 m</b>
			

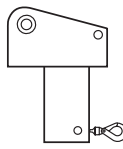
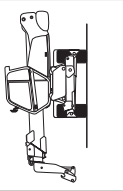
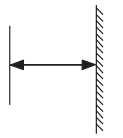


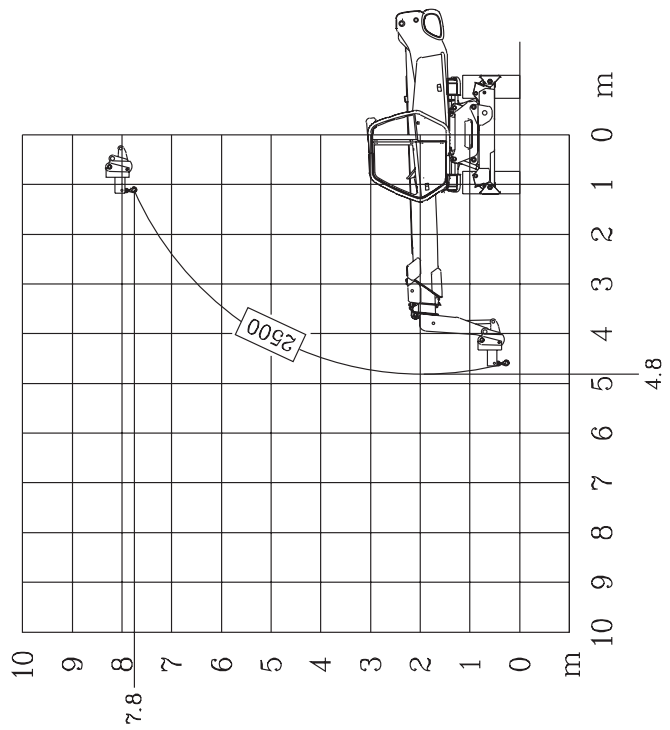
<b>MRT 2150</b>		<b>pos. R</b>	
<b>Jib 4T</b>		<b>4000 Kg</b>	<b>20,8 m</b>
			



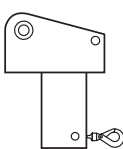
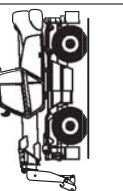
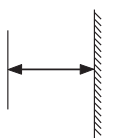


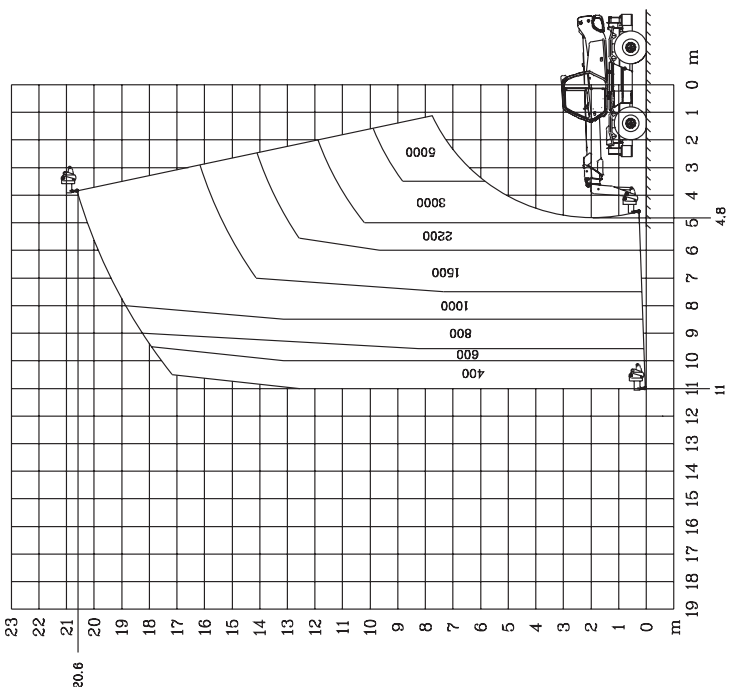


MRT 2150		pos. S
Jib 5T	2500 Kg	7,8 m
		

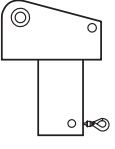
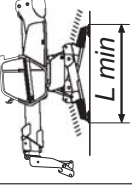


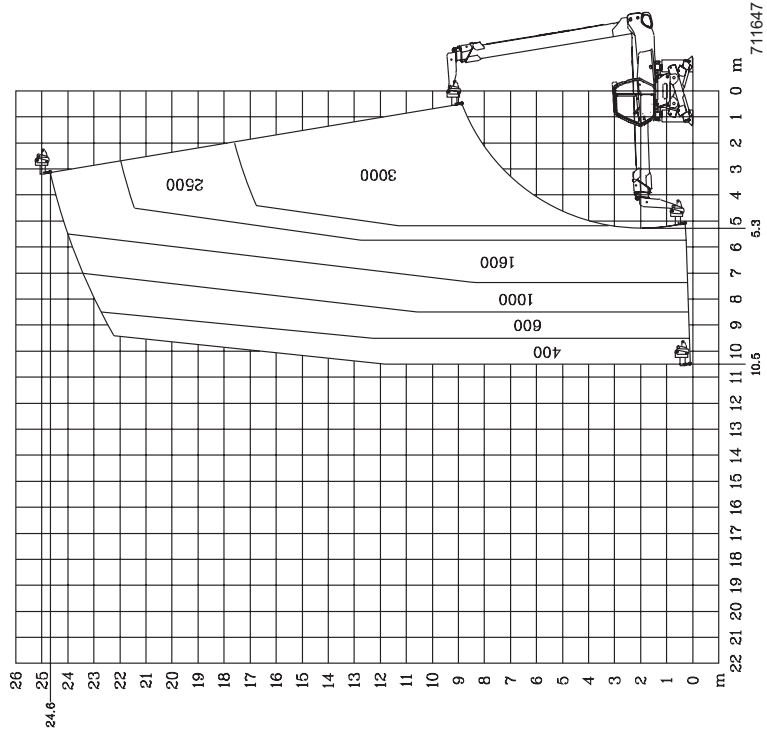
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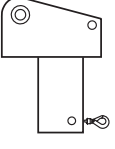
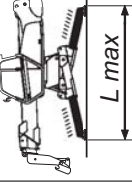
MRT 2150		pos. S
Jib 5T	5000 Kg	20,6 m
		

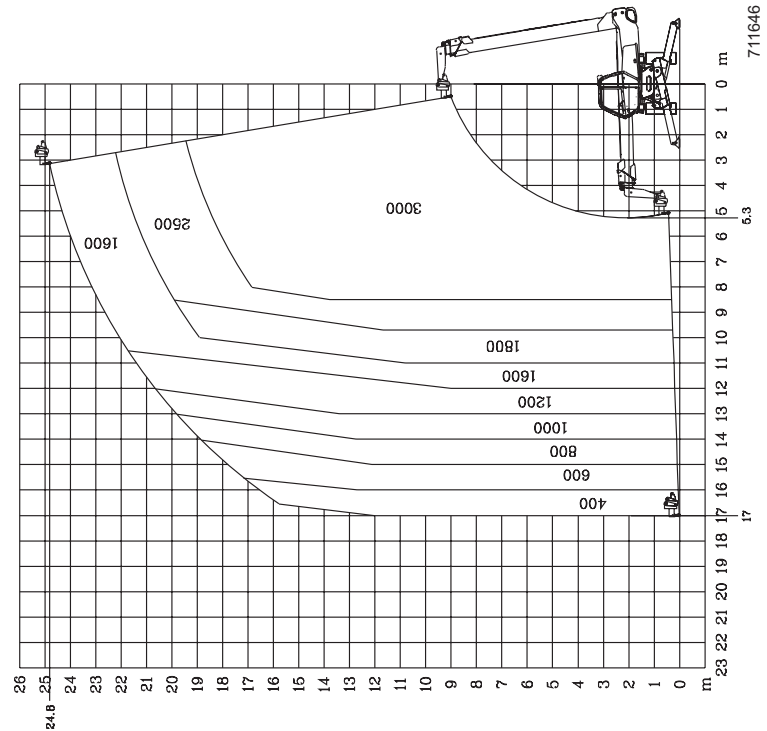


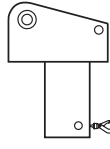
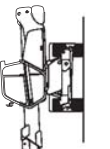

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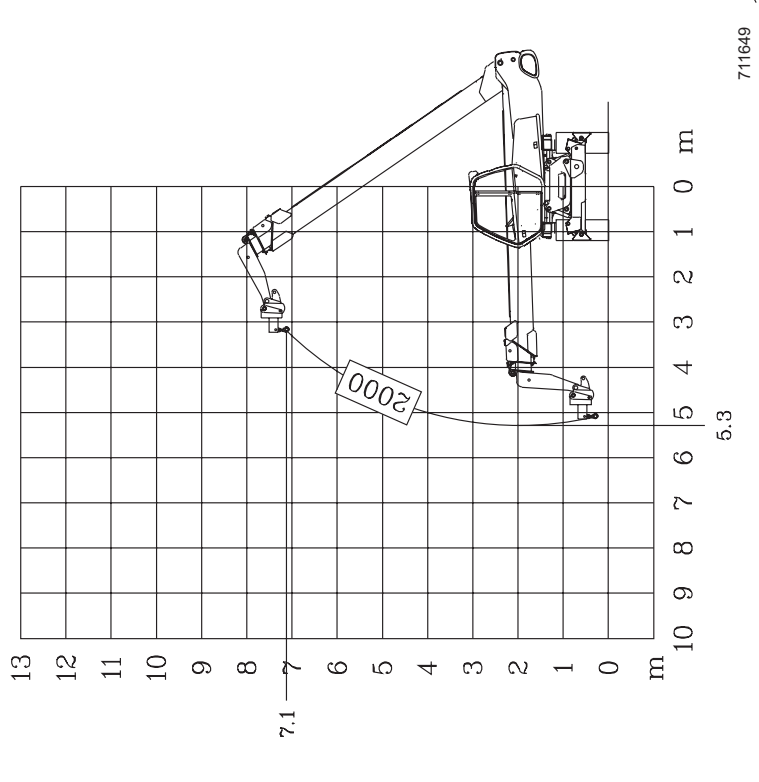
<b>MRT 2540</b>		pos. Q
Jib 3T		3000 Kg
	L min	24,6 m

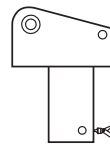




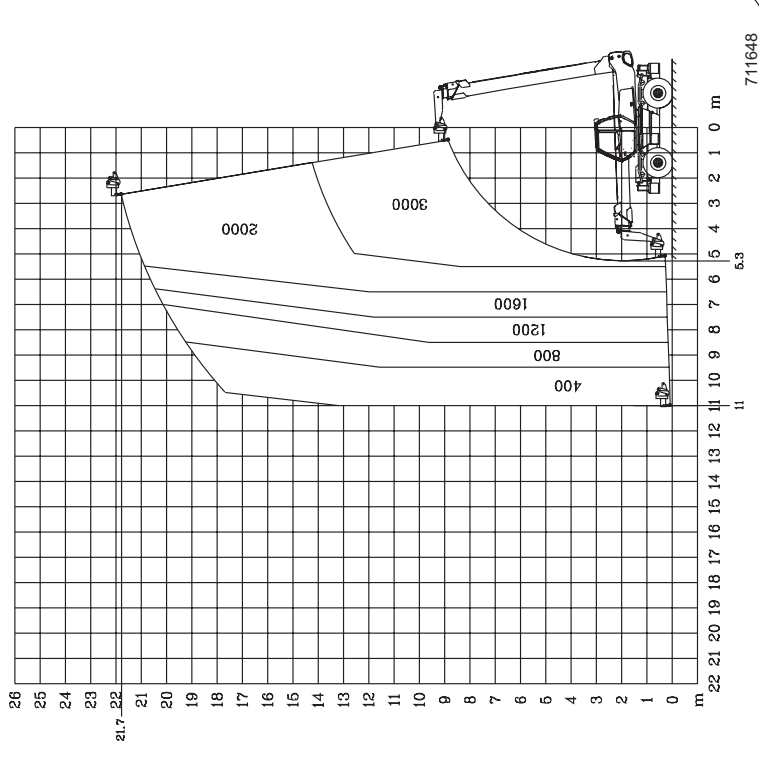
<b>MRT 2540</b>		pos. Q
Jib 3T		3000 Kg
	L max	24,8 m

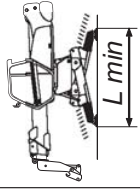
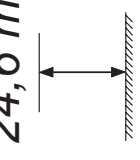



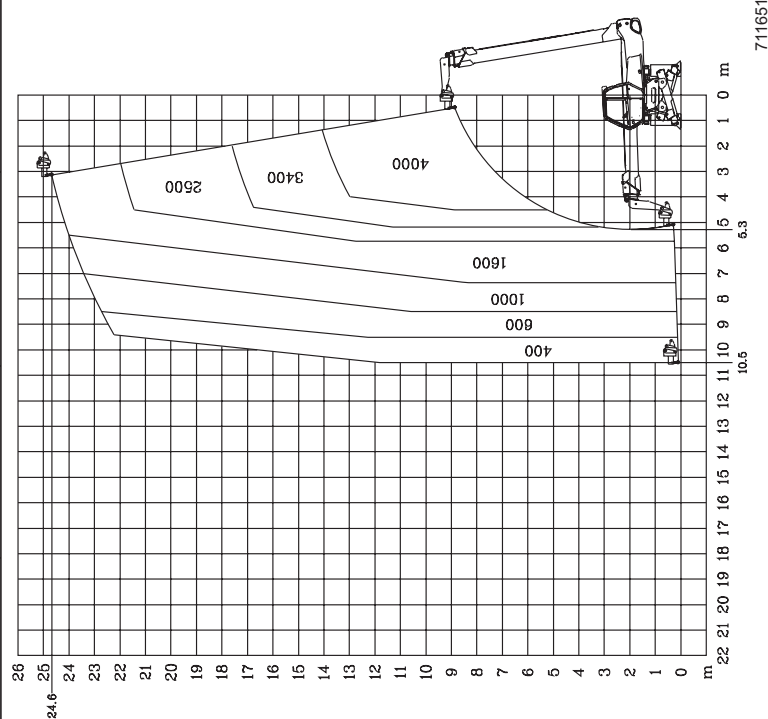
<b>MRT 2540</b>		pos. Q
Jib 3T		
	2000 Kg	7,1 m



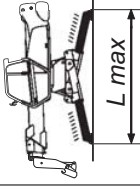
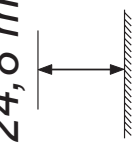

<b>MRT 2540</b>		pos. Q
Jib 3T		
	3000 Kg	21,7 m

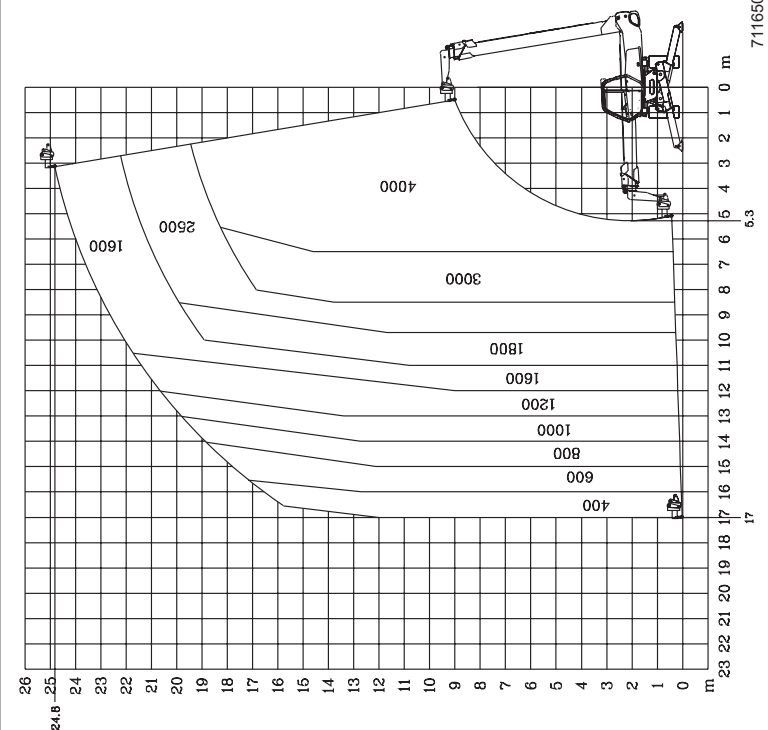


<b>MRT 2540</b>		<b>pos. R</b>
<b>Jib 4T</b>		
4000		4000



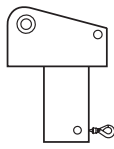

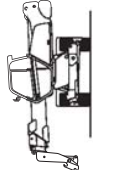

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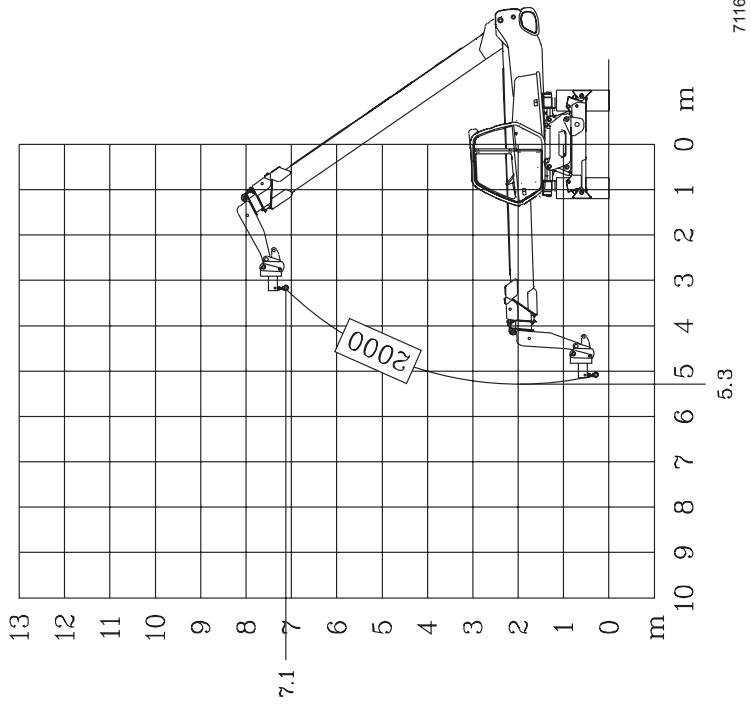
<b>MRT 2540</b>		<b>pos. R</b>
<b>Jib 4T</b>		
4000		4000

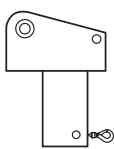

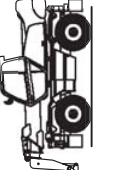



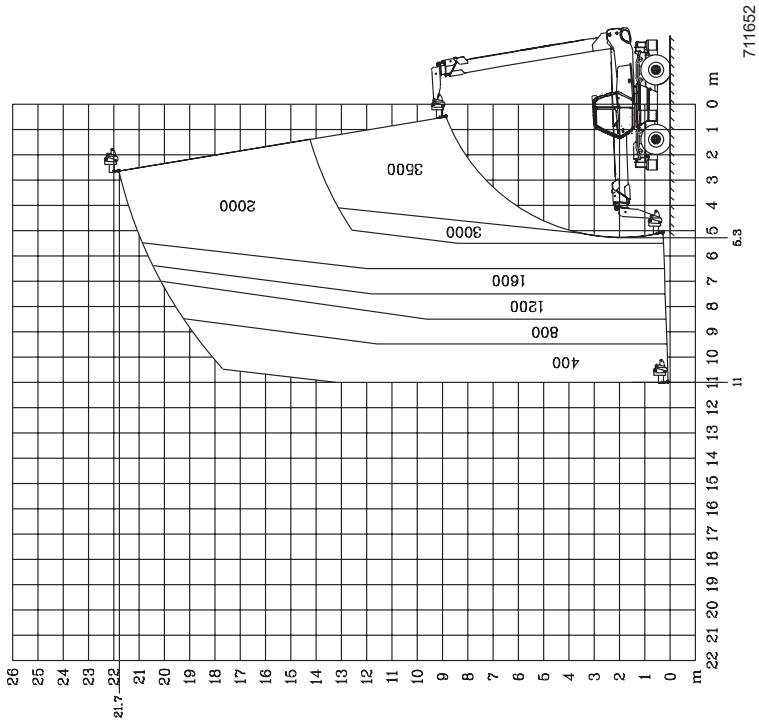
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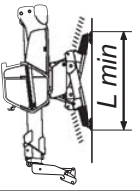




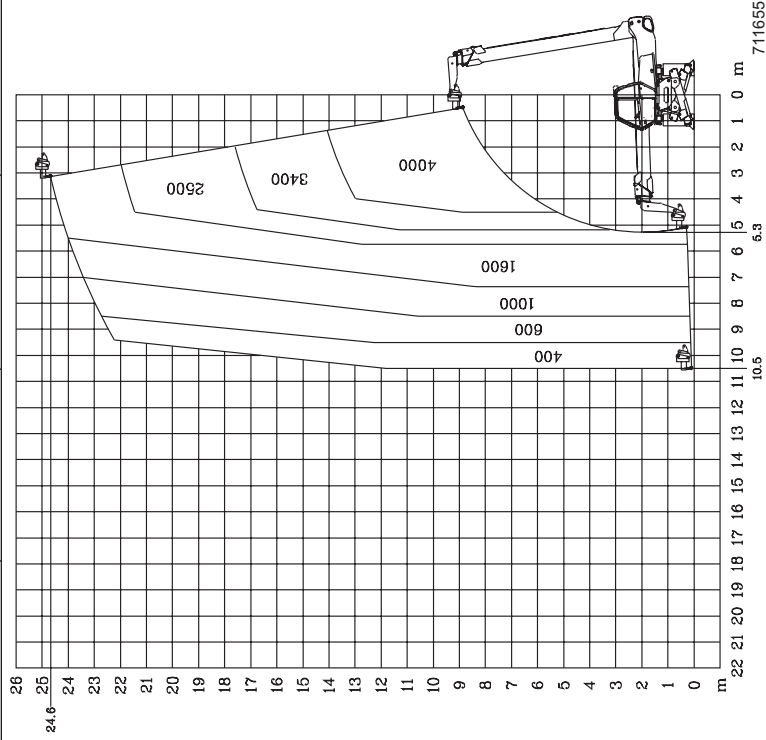
<b>MRT 2540</b>		pos. R
Jib 4T		2000 
		7,1 m 

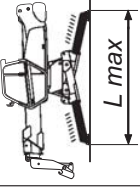




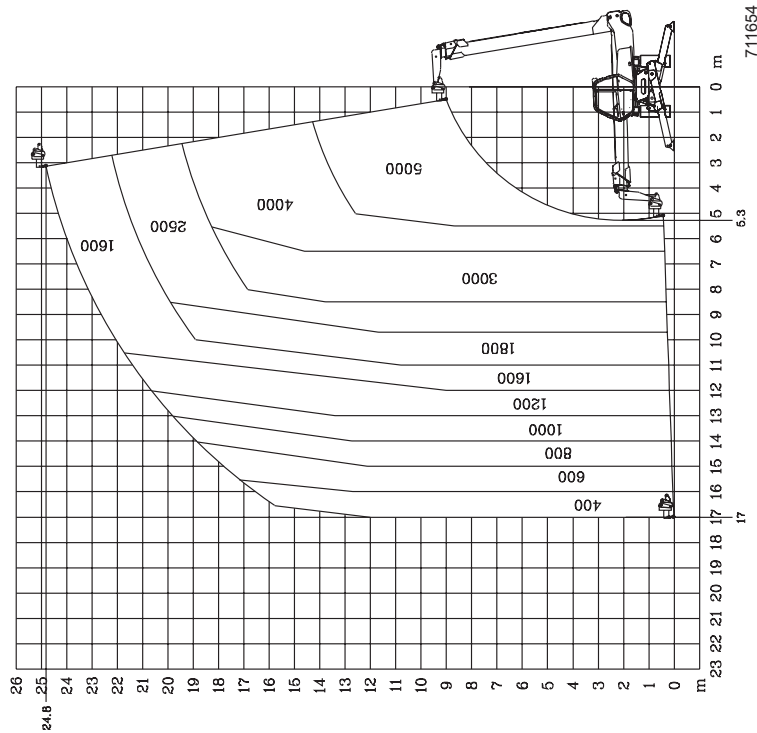
<b>MRT 2540</b>		pos. R
Jib 4T		3500 
		21,7 m 

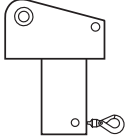
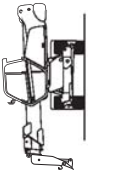



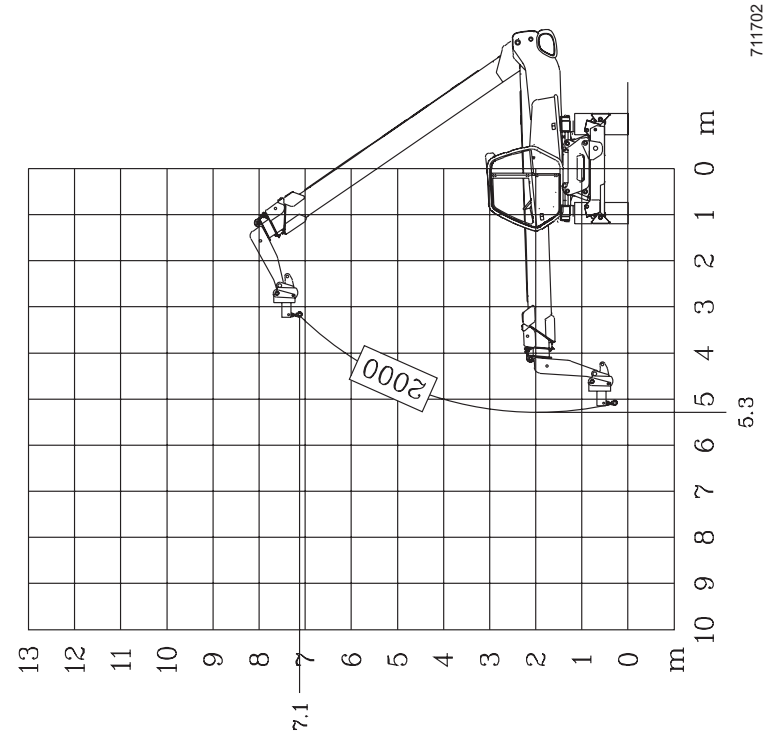
<b>MRT 2540</b>		<b>pos. S</b>	
<b>Jib 5T</b>		<b>4000</b>	<b>24,6 m</b>
			

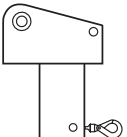
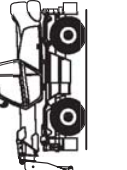



<b>MRT 2540</b>		<b>pos. S</b>	
<b>Jib 5T</b>		<b>5000</b>	<b>24,8 m</b>
			



<b>MRT 2540</b>		pos. S
Jib 5T		2000
		7,1 m



<b>MRT 2540</b>		pos. S
Jib 5T		3500
		21,7 m

