



MANITOU

Cylinder Handler



- a) Attachment purpose
- b) Customer benefits
- c) Sales Technical guideline
- d) Current range combinations



a) Attachment purpose



Attachment purpose

- Answer the following questions:
 - How to safely handle an heavy cylinder off an excavator?
 - How to increase operator safety by getting rid off a freely suspended load working condition while changing a cylinder?
 - How to reduce human presence around a dangerous working area?
 - How to handle high cost cylinder with care?
 - How to answer these questions without purchasing a dedicated equipment?



Attachment purpose

- Pick up, carry, place heavy and costly cylinders safely with the capabilities of a human wrist.



Click on window to start video

Attachment purpose

- Operating and efficient in any mining conditions, from the workshop job to the on field duties.





b) Customer benefits



Customer benefits

- Operator safety first :
 - ROPS & FOPS Cabin
 - Pressure gauge to eye check clamp tightening.
 - Clamping pressure maintained through an accumulator.
- Shielded and compact design :
 - Hoses, jacks, motors, manifolds..
- Adjustable fit for enhanced versatility :
 - Adjustable pad shoes to work on a wide diameter range.
- Smooth and mighty handling :
 - Limited risks of damaging cylinders.
 - Precise positioning in working area (hydrostatic transmission)



Customer benefits

- Safety at will:

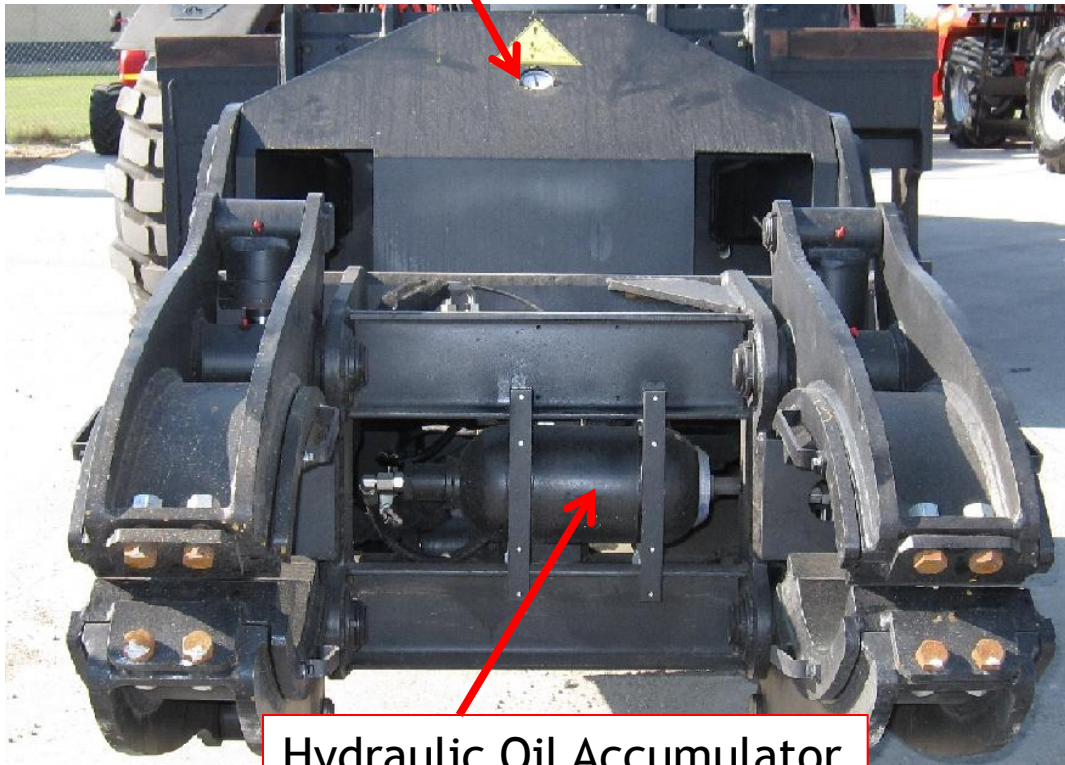
- Aggravating movements automatic cut out (LMI available) even on remote controlled operational mode.
- Transmission cut off while operating with remote control.
- Hydrostatic transmission offering softness and precisness of moves during critical working phases.
- Accumulator back up in case of failure on the auxiliary hydraulic line. Clamping failure almost imposible.
- Clamping pressure gauge to eye check if the clamping is well done.

Clamping ≠ Tight and secure clamping

Customer benefits

- Safety in details : 2 features to ensure a good and permanent tightening of the cylinder even in case of auxiliary line failure.

Tightening pressure gauge



Hydraulic Oil Accumulator

The safest and most reliable sensor :
Human check.



Customer benefits

- Remote controlled operating mode:
 - Enhanced operator safety (1 man operation)
 - Increase the preciseness of the process



Radio remote set up to also operate Tyre Handler .

Customer benefits

- Remote controlled operating mode:
 - Control the moves in safety conditions, with a direct view on the critical approach points.



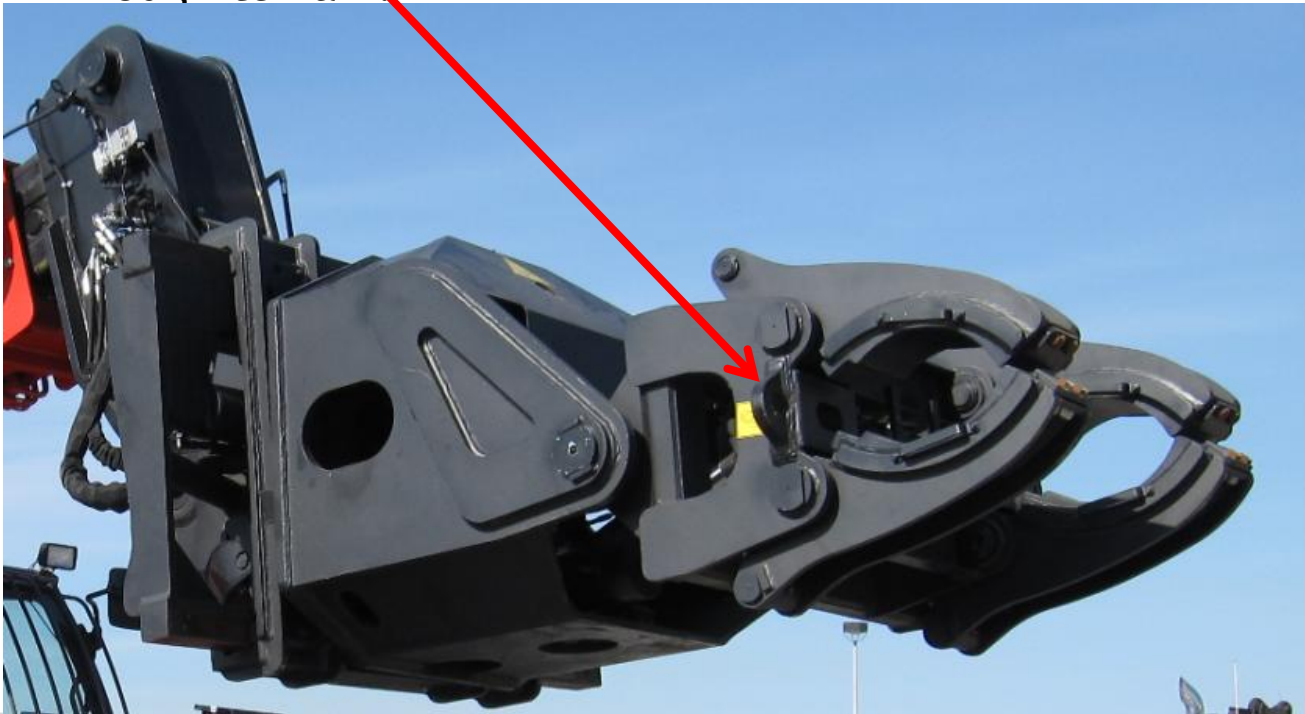


Customer benefits

- Tremendously reduced downtimes:
 - 4 to 6 hours needed to change a cylinder, instead of 12 + hours.
 - Cylinder is clamped, no need to guess the location of the center of gravity neither to adjust the slings or chains to balance the load.
 - Cylinder is no longer hanged and swinging freely. Amplitude of free movements is annihilated on MANITOU's solution which allows an easier placing.
 - Proportional controls offers the guaranty of a quick and precise positioning.

Customer benefits

- Compact and safety oriented design:
 - ✓Weight of 3400 Kg.
 - ✓Length from carriage of 2,429 m.
 - ✓Main components protected.
 - ✓Hooking points to secure the load will carrying over rough terrain.



Customer benefits

• Cylinder clamp designed to combine:

- 4 functions on the attachment
 - ✓ Side shifting (+/- 300mm)
 - ✓ Rotation (+140° / -200°)
 - ✓ Tilting (90°)
 - ✓ Clamping (3,4" to 25" Ø) (85 to 630 mm)

With

- 4 functions on the machine
 - ✓ Lifting / lowering
 - ✓ Levelling (frame)
 - ✓ Tilting (machine carriage)
 - ✓ Telescoping In / out

TOTAL of 8 Functions



**Flexible as a wrist.
Endless positioning solutions to ensure
a precise alignment with boom axles.
Smooth movements (less than an inch).**

Customer benefits

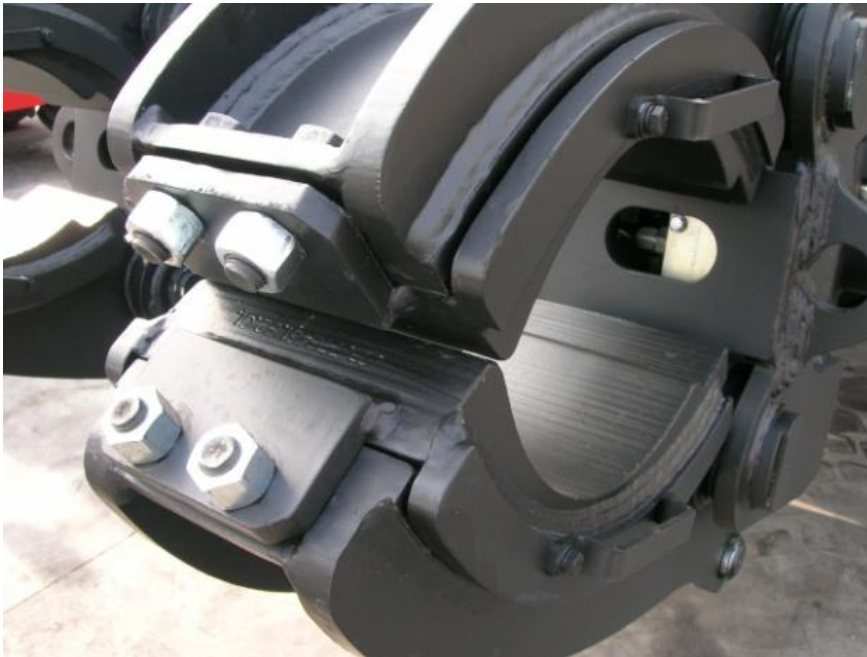
- Ability to catch and carry in various conditions:
 - Mostly due the high freedom of moves of the machine + attachment.
 - 90° tilt of the clamp allows a comfortable carrying position.



Customer benefits

- Adjustable wrapping of the product:

- Pads shoes exchangeable to enable a nice fit for several Diameters (2,3" up to 25" / 85mm to 630 mm). No loose catch.
- Soft material used to catch the cylinder to don't scratch or damage the product.



Customer benefits



- ✓ Suitable on MHT 10120, 10160 & 10210 (according to capacity)
- ✓ MANITOU Quick hitch mounted attachment.



Customer benefits

- Real rough terrain capabilities.

- 4 WD transmission.
- 4 WS and 3 steering modes.
- Heavy duty axles with planetary gears.



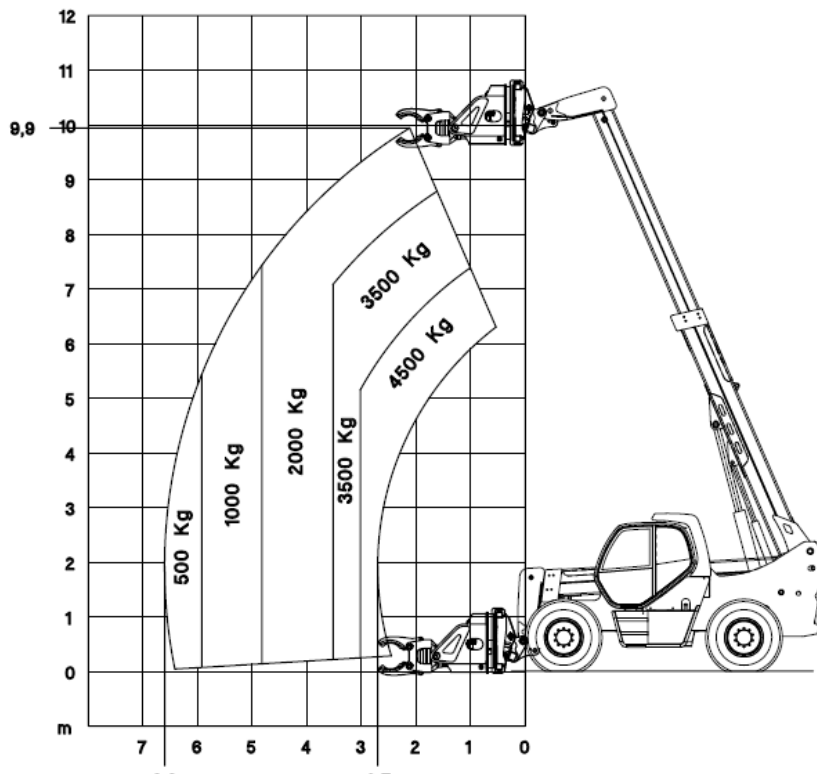
- Hydrostatic transmission (smooth engagement of power).
- Ground clearance.
- Impressive draw bar pull.

Customer benefits

- High residual lifting and outreaching capacities.

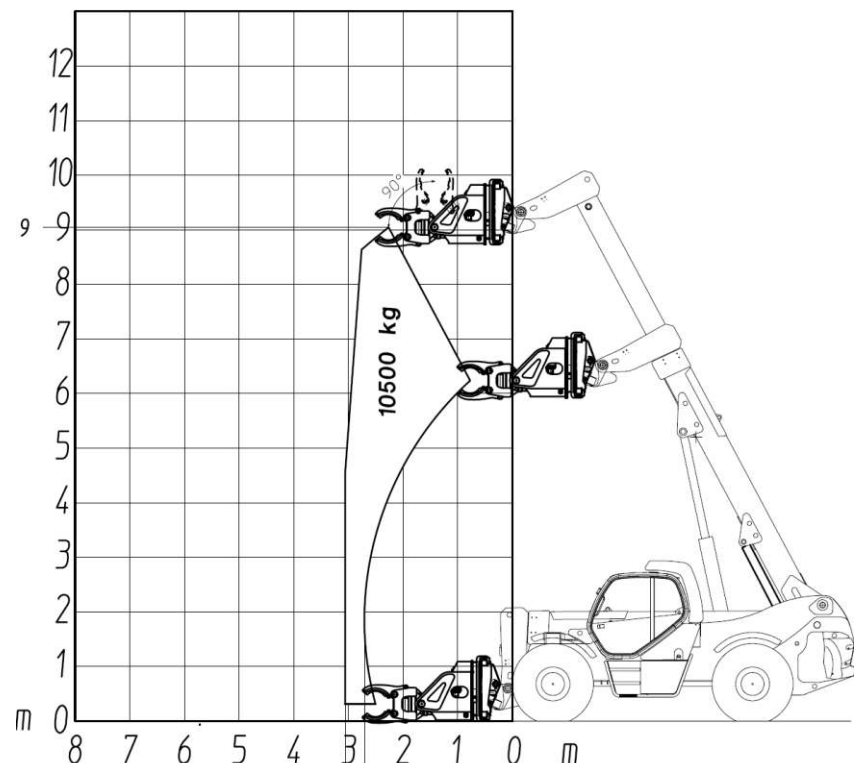
MHT 10120

ATTREZZATURA PER CILINDRI IDRAULICI
EQUIPMENT FOR SHOVEL'S HYDRAULIC CYLINDERS



MHT 10210

ATTREZZATURA PER CILINDRI IDRAULICI
EQUIPMENT FOR SHOVEL'S HYDRAULIC CYLINDERS



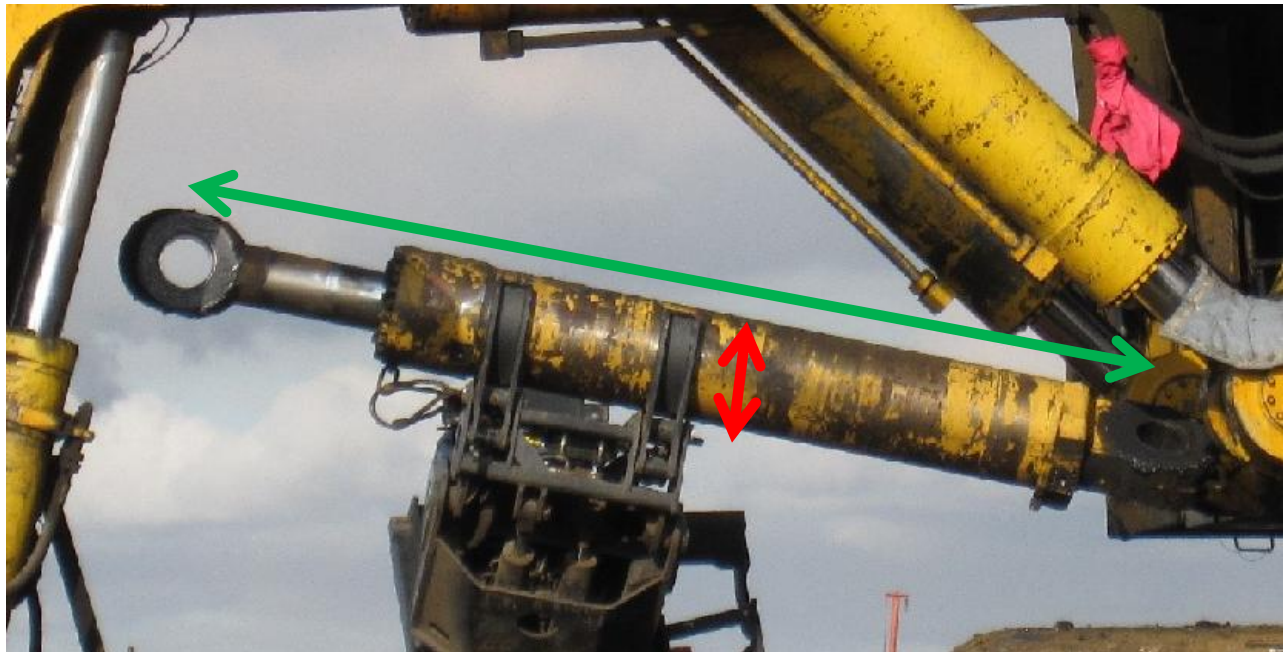
Wide capacity range due to several product combinations from 4,5 T up to 10,5 T



c) Sales technical guidelines

Sales technical guideline

- Critical data required to define your Cylinder handler:



Ø: Outside Diameter of the cylinder.

L : Length of the cylinder retracted.

W: Max Weight of the cylinder (+ oil if piston extended).



Sales technical guideline

- Points to be cautious about:
 - Oil added weight on a cylinder can overpass your capacity. Check cylinder chamber volume when piston fully extended.
 - Hoses around the cylinder may interfere with clamp.
- Attachment available in the Manitou price list.
- For technical validation send all these data to:
 - MBF Mining Specialists: Olivier TRACCUCCI and/or Baptiste GODARD
- Specify the Machine type already working or being quoted.



d) Current range combinations

Current range combination

MHT 10120

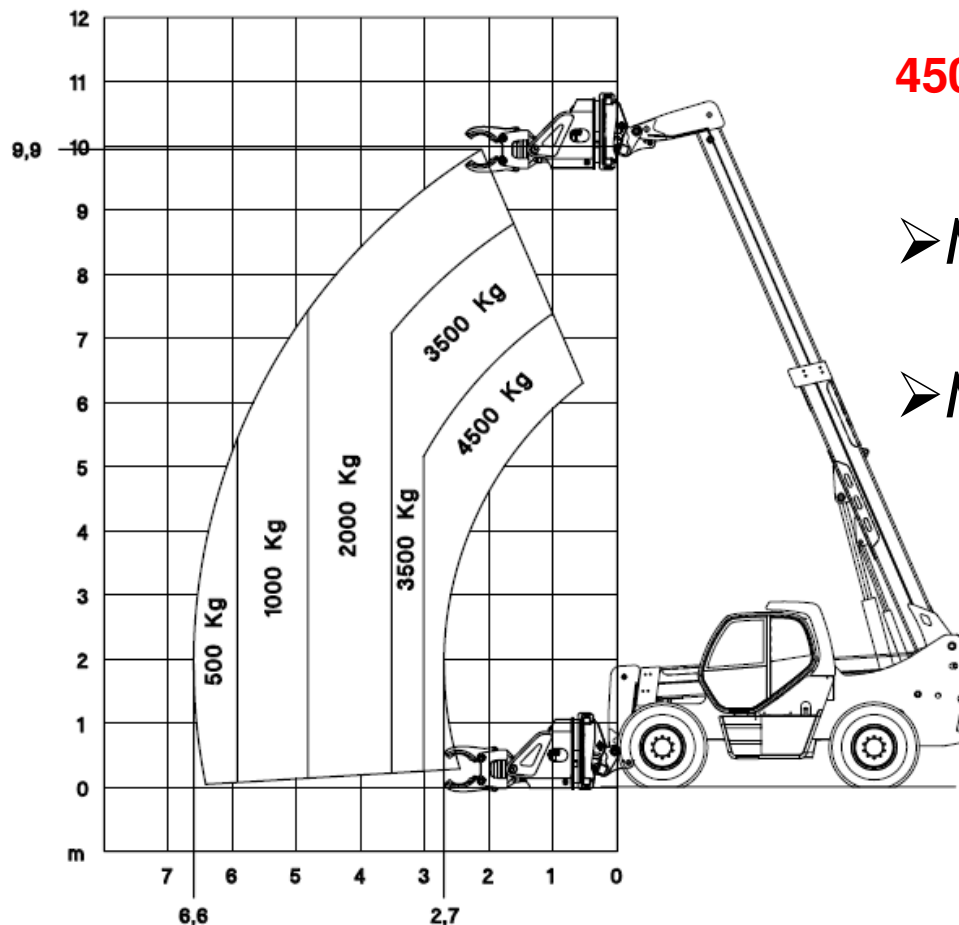
ATTREZZATURA PER CILINDRI IDRAULICI
EQUIPMENT FOR SHOVEL'S HYDRAULIC CYLINDERS

MHT 10120 + CH10

4500 kg Max Lifting Capacity

➤ Max height of 9.9 m (32,7 ')

➤ Max reach of 6 m (21.8 ')



Current range combination

MHT 10160

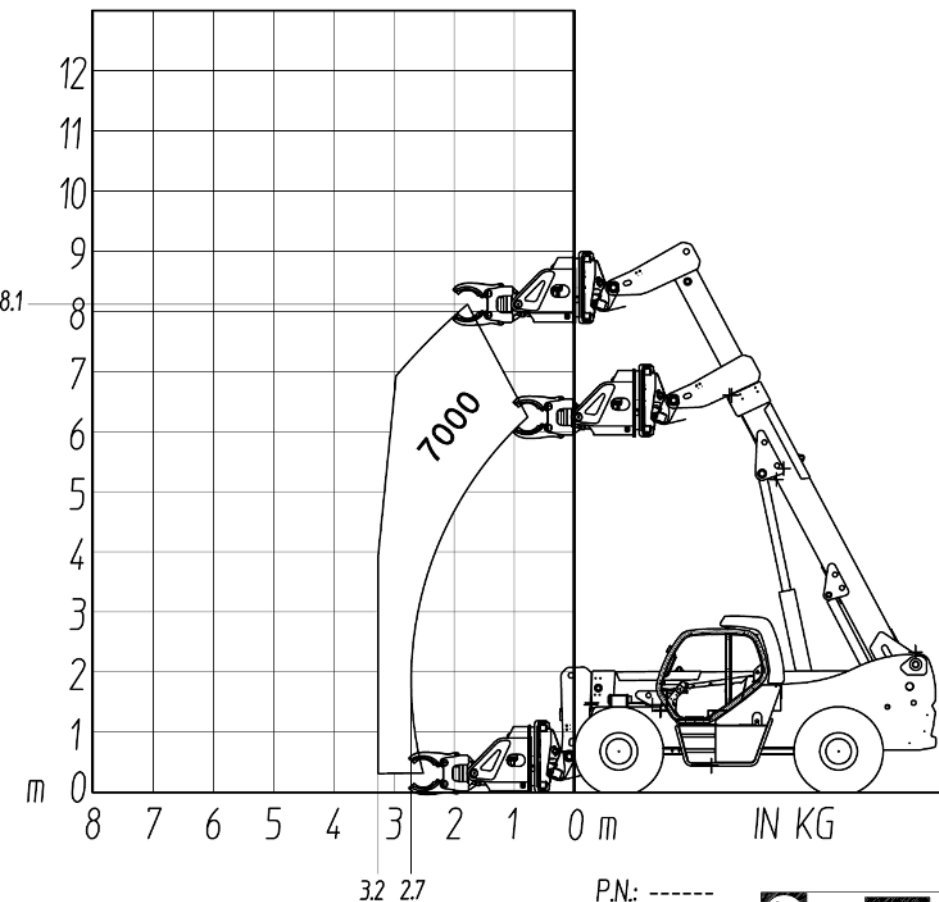
ATTREZZATURA PER CILINDRI IDRAULICI - 7T
EQUIPMENT FOR HYDRAULIC CYLINDERS HANDLER - 7T

MHT 10160 + CH10

3 existing load charts 2T, 4T, and 7T

➤ In between LC available upon request.

➤ Working envelop defined per capacity.



P.N.: -----
07/07/2009



Current range combination

MHT 10210 + CH10

3 existing load charts 5T, 7,5T, and 10,5T

- In between LC available upon request.
- Working envelop defined per capacity.

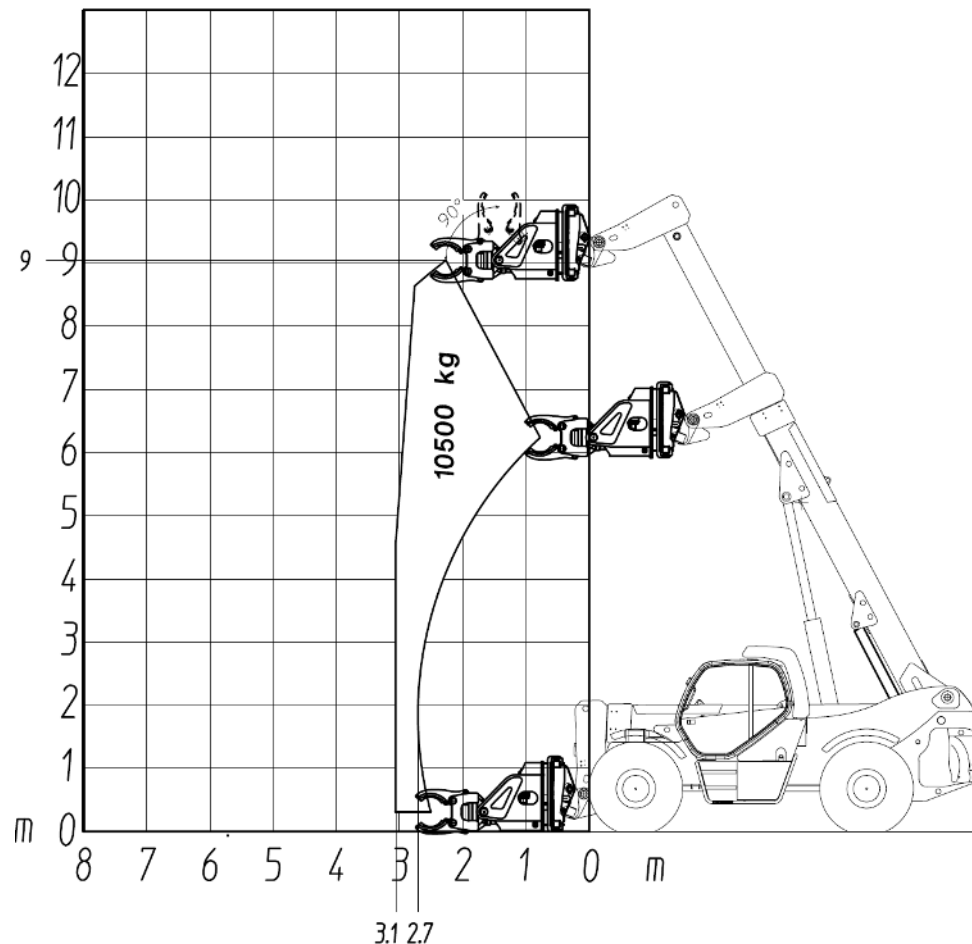


Current range combination

MHT 10210 + CH10

MHT 10210

ATTREZZATURA PER CILINDRI IDRAULICI
EQUIPMENT FOR SHOVEL'S HYDRAULIC CYLINDERS





MANITOU

Thank You