
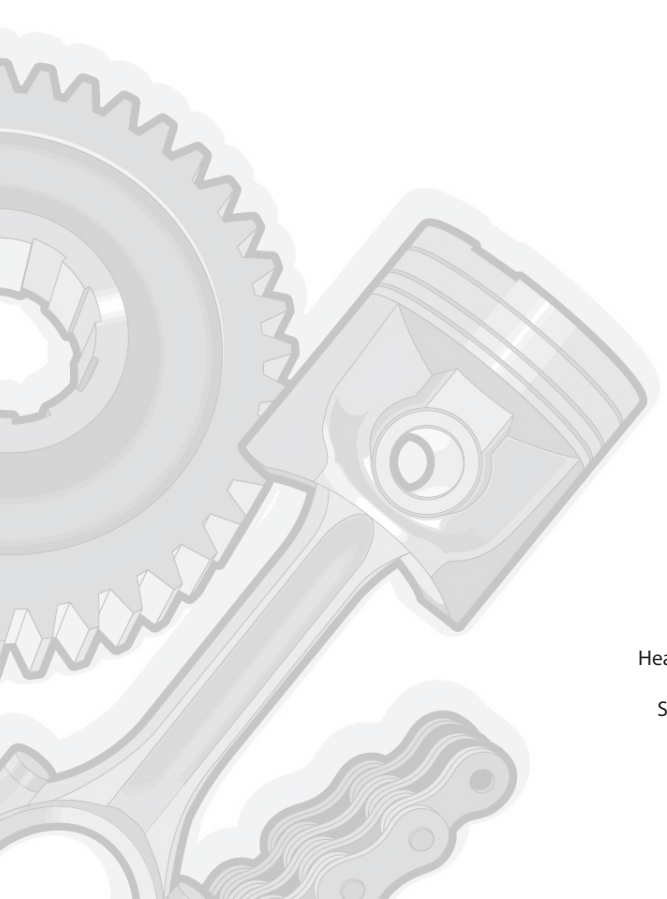




**REPAIR MANUAL  
MANUEL DE RÉPARATION  
REPARATURANLEITUNG  
MANUAL DE REPARACIÓN  
MANUALE RIPARAZIONE**

This document has been printed from  **mye doc**



**MANITOU BF**

Head office: 430, Rue de l'Aubinière  
44150 Ancenis - FRANCE  
Share capital: 39,548,949 euros  
857 802 508 RCS Nantes  
Tel: +33 (0)2 40 09 10 11  
[www.manitou.com](http://www.manitou.com)

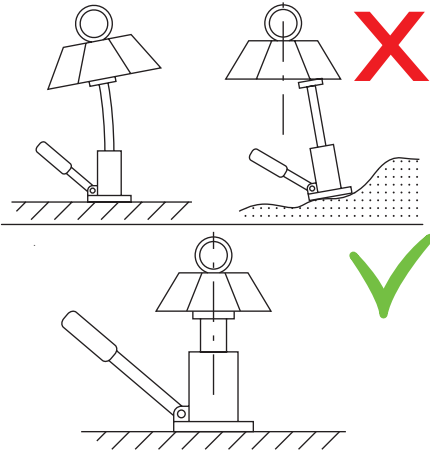
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



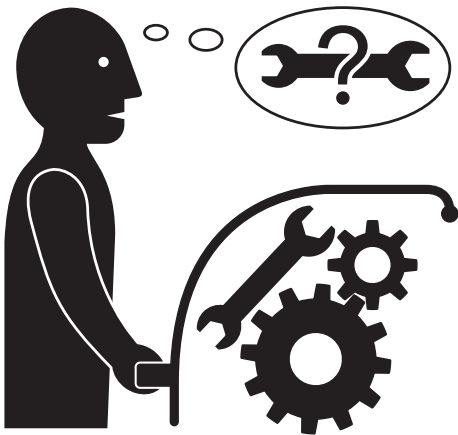
- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL



When lifting or shoring a component of the machine, make sure the equipment used is suitable for at least the load for which it is subjected by the component and that it meets the national standards for lifting devices.

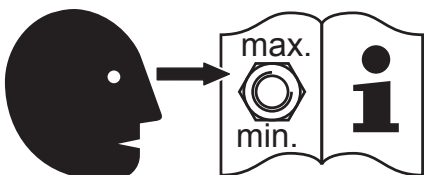
When using a jack, make sure it is used on a flat, uniform surface, is sturdy enough to support the load, that its lifting capacity is sufficient and that it is correctly placed and positioned under the machine.



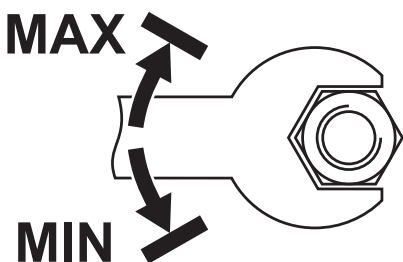
Make sure no object or tool which could cause an accident is left in the machine.



Never control any leaks using a hand.



Never adjust a component to over the maximum capacity indicated by the manufacturer.

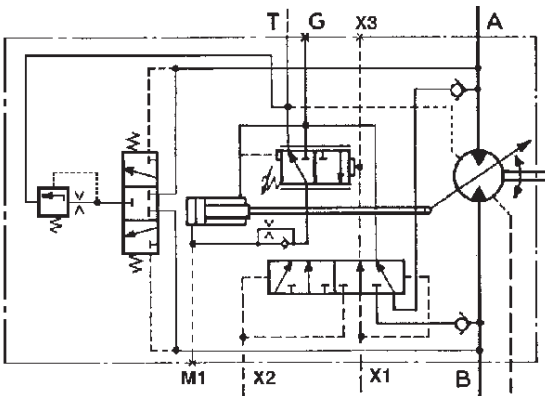
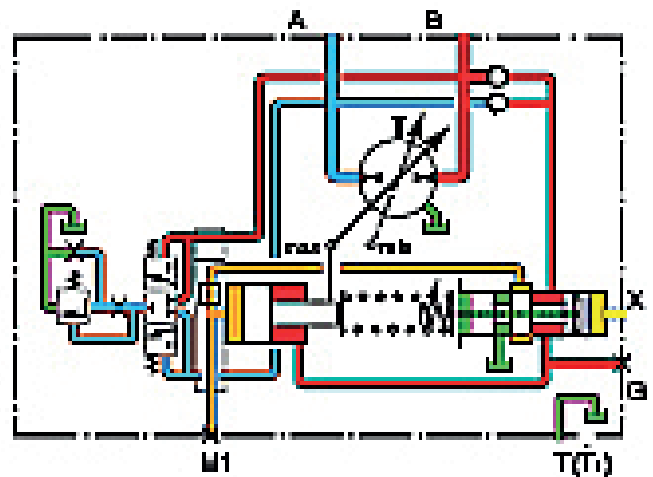
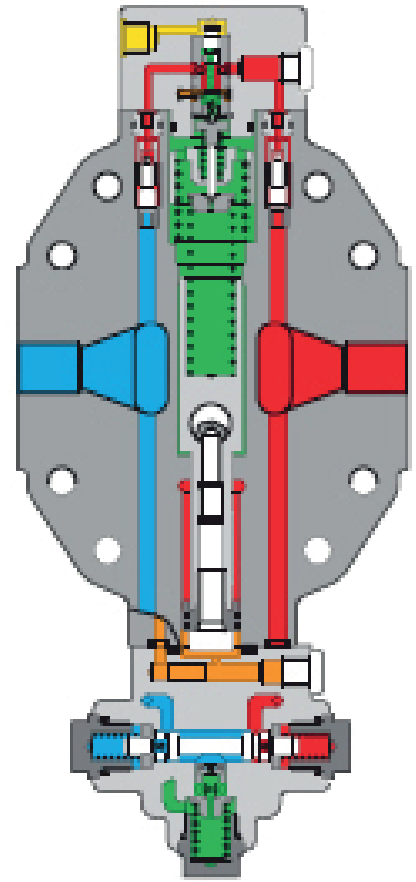
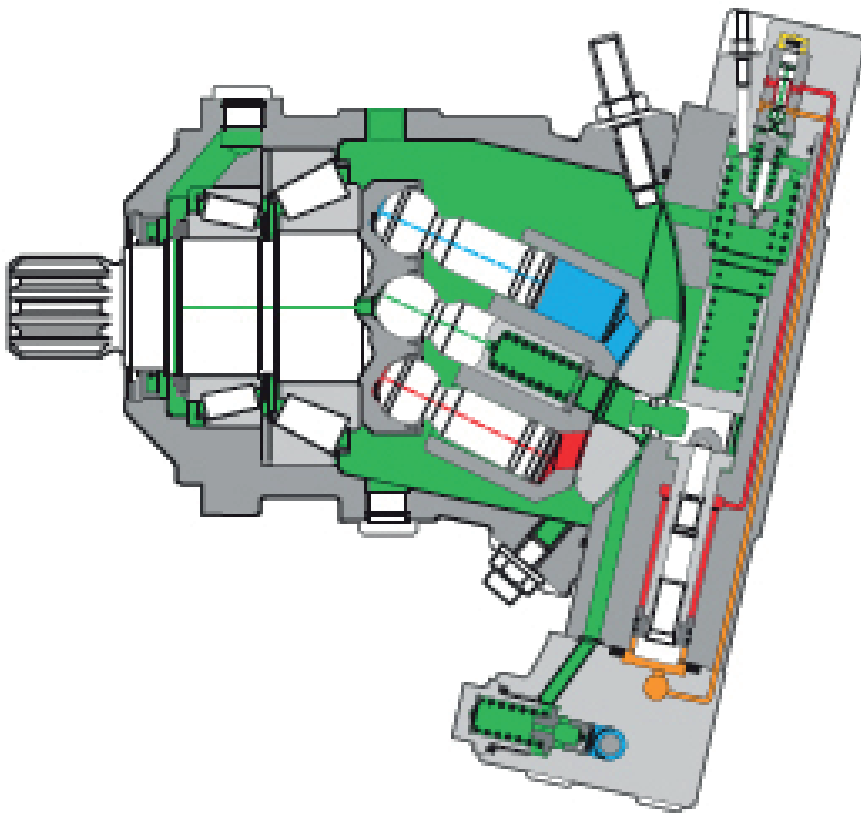






CROSS-SECTIONAL VIEWS

20

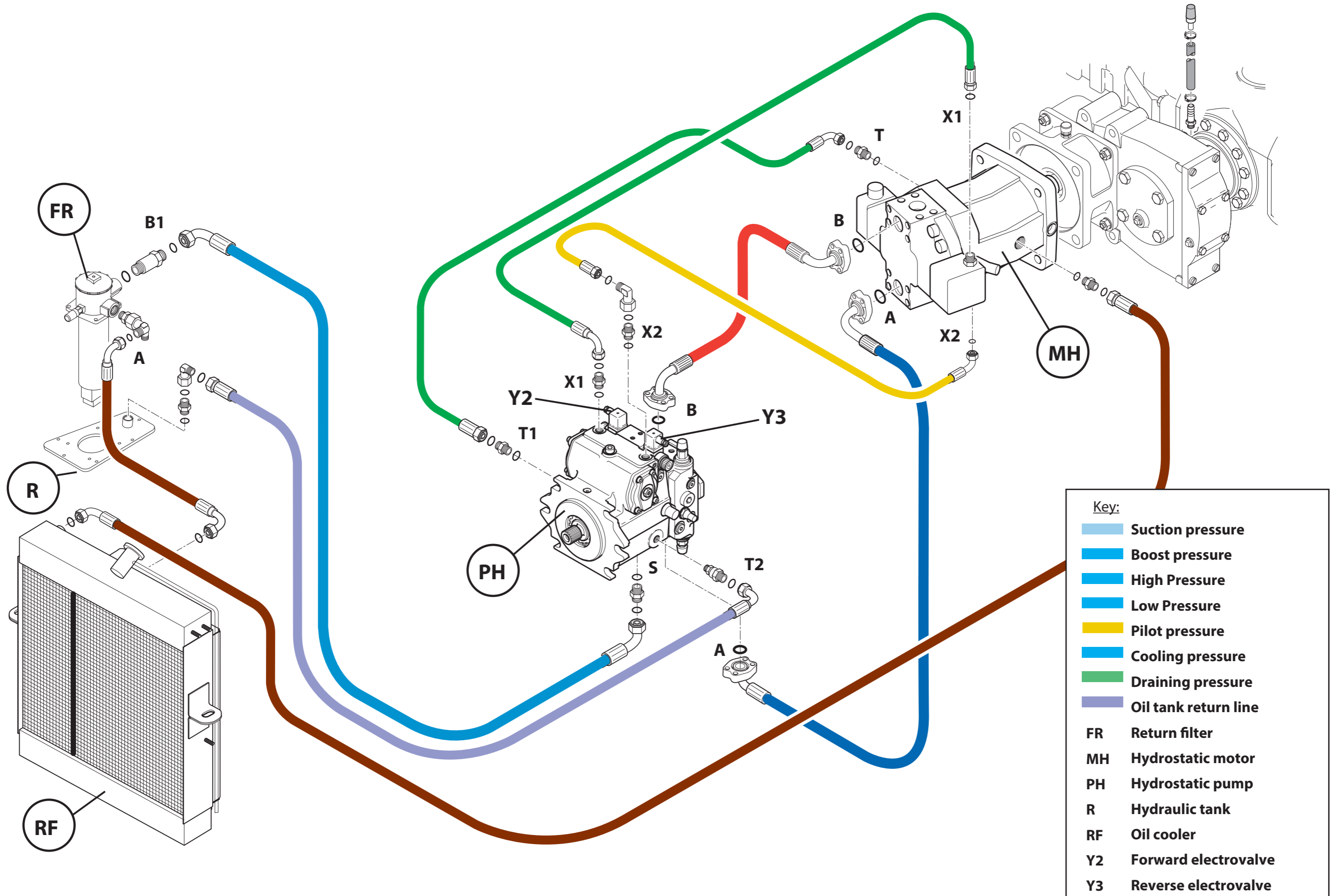


Hydraulic diagram of A6VM / DA Series 63 motor

20 - "Transmission schematic diagrams"

FLUID FLOW DISPLAY IN REVERSE GEAR

20



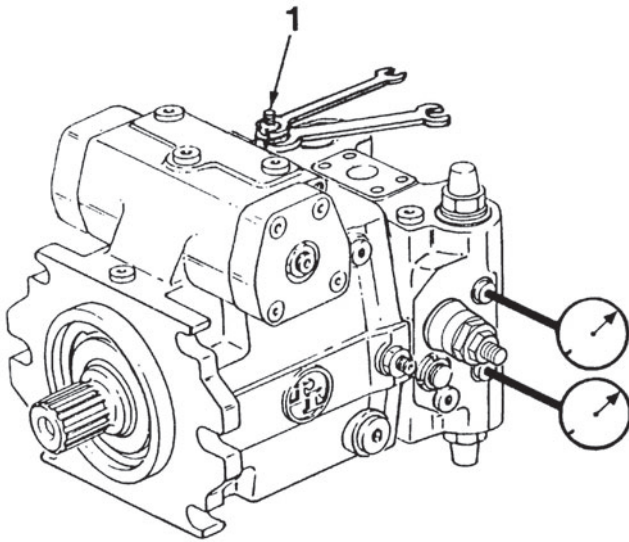
| Key: |                      |
|------|----------------------|
|      | Suction pressure     |
|      | Boost pressure       |
|      | High Pressure        |
|      | Low Pressure         |
|      | Pilot pressure       |
|      | Cooling pressure     |
|      | Draining pressure    |
|      | Oil tank return line |
| FR   | Return filter        |
| MH   | Hydrostatic motor    |
| PH   | Hydrostatic pump     |
| R    | Hydraulic tank       |
| RF   | Oil cooler           |
| Y2   | Forward electrovalve |
| Y3   | Reverse electrovalve |

**CHECKING AND SETTING OF HP RELIEF VALVES**

- HP relief valve checking and setting operations are performed with the machine on chocks (wheels off the ground) and the brakes locked.

If using the service brake, the TH 7 valve spool must remain coupled to the brake, or a hose must be connected to by-pass the valve.

Change the parking brake mode from "AUTO" to "MANUAL" via the "ADMIN" menu of the LCD screen to block the transmission.



- Increase DR valve (1) setting to check the actual setting of the HP relief valves. Tighten the screw (1) by one turn. The HP relief valves should be set to 490 / 500 bar. The engine speed will slow significantly during this test: by 500 to 600 rpm. After checking the HP relief valves, set the DR valve to a value of 480 bar.

Setting the HP relief valve pressure:

A4VG 90 series pump

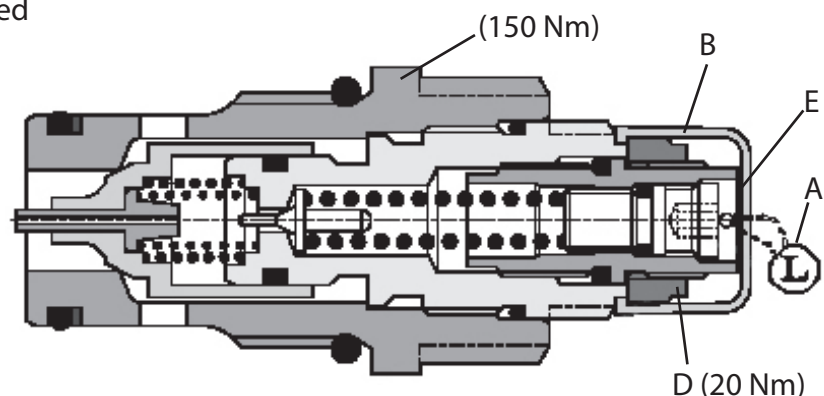
- Remove the lead seal A.
- Remove the cap B.
- Loosen the locknut D.
- Turn the screw E to increase the pressure.
- Refit the cap, having taken care to refit a new lead seal.

**UNLOCKING HP RELIEF VALVES FOR TOWING**

- Unlock both HP relief valves.
- Gradually remove the caps B without removing the lead seals A.
- Loosen the nuts C by a maximum of two turns.

Once the towing operation is completed

- Retighten the nuts C.
- Refit the caps B.

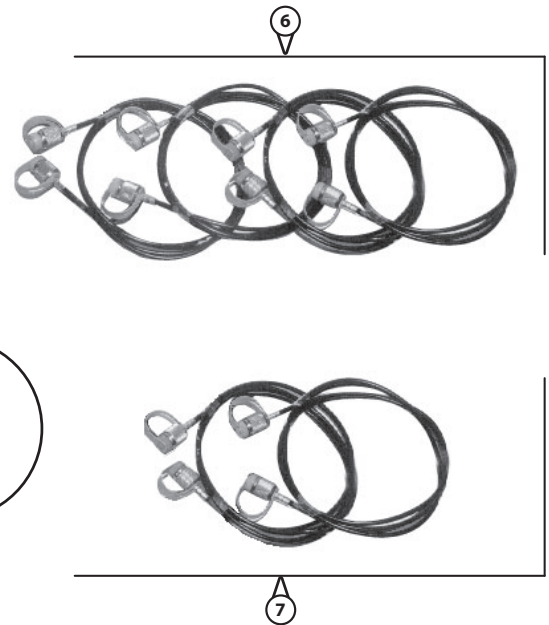
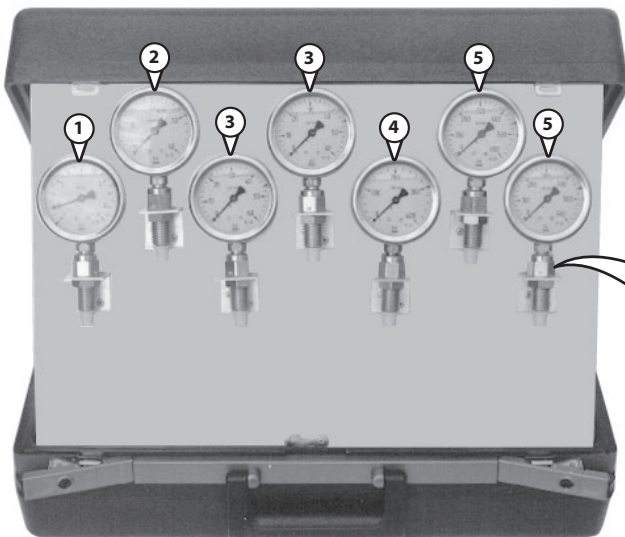


**BASIS GAUGE KIT**

20



This box contains all the components required for measuring pressure on all Manitou products.



**Basis gauge kit.....549671**

Consisting of:

- 1 - 1 gauge 1/9 bar ..... 549882
- 2 - 1 gauge 0/40 bar ..... 549883
- 3 - 2 gauge 0/60 bar ..... 549884
- 4 - 1 gauge 0/400 bar..... 549885
- 5 - 2 gauge 0/600 bar..... 549886
- 6 - 4 standard hoses ..... 549887
- 7 - 2 hoses for telehandler ..... 549888
- 8 - 7 gauge tap connectors ..... 549889



CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

## HYDRAULIC BRAKE BLEEDER

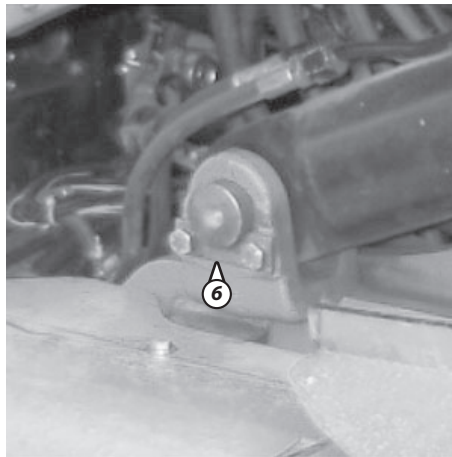
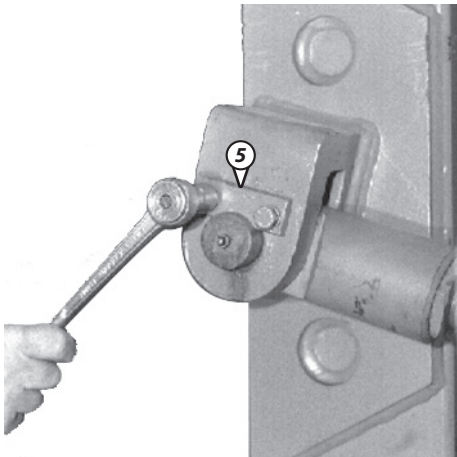


Bleeder supplied with all necessary components for bleeding the hydraulic braking systems of all Manitou products.

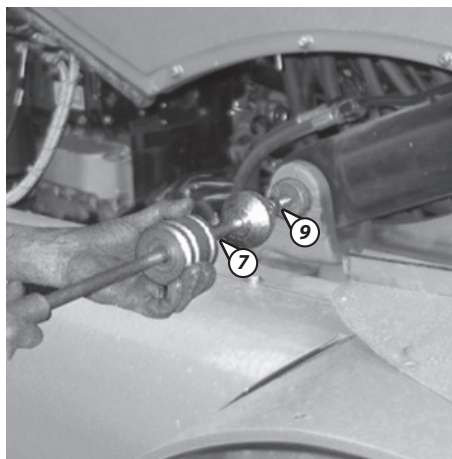
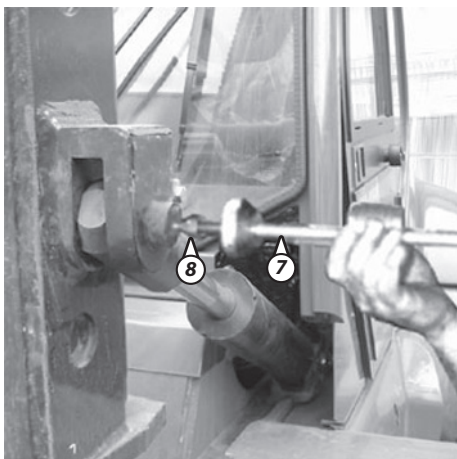
40

### MANITOU reference

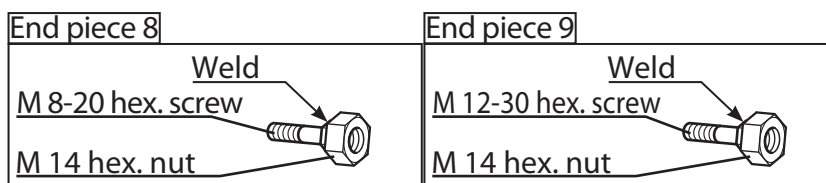
|                               |        |
|-------------------------------|--------|
| Hydraulic brake bleeder ..... | 554019 |
| Spare parts:                  |        |
| Top manometer .....           | 719980 |
| Bottom manometer .....        | 719981 |
| Diaphragm .....               | 661913 |
| Hose .....                    | 661914 |



- Remove the front and rear pivot pin lock plates 5 and 6.



- Remove the front and rear pivot pins using a slide hammer puller 7 (Facom ref U41) with end fittings 8 and 9.

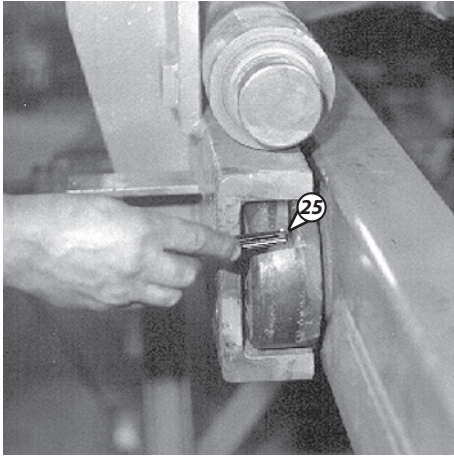


- Extract the tilting cylinder with the hoist, while holding it.

**REFITTING**

- Proceed in the reverse order to removal.

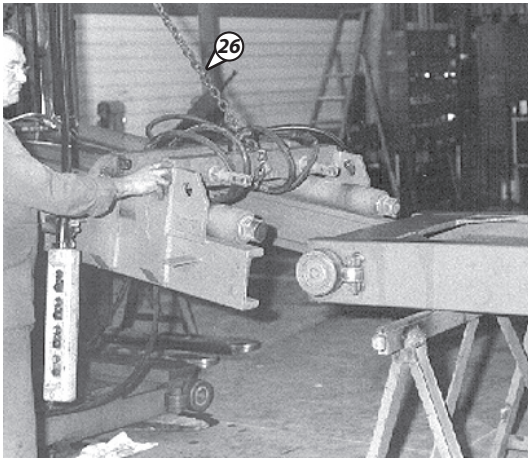
- Install pivot pins.
- Lock plates.
- Screws (Tightening torque 4,77 m.daN).



**- Checking the play on upper bearing rollers.**

*NOTE: Check to be performed at several points along the uprights.*

- To be performed using a set of feeler gauges 25 (Tolerance 0,75 to 2,25 mm).



**- Checking the play on lower guide and bearing rollers.**

*NOTE: same tolerance as for the upper rollers).*

- Separate the uprights by parting them from one another, support the fixed upright using the hoist 26 (do not damage the hoses during this operation).
- Lay the fixed upright down on the ground.

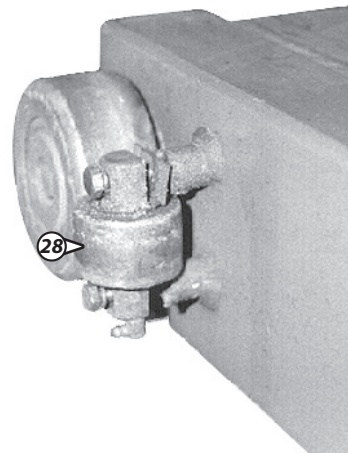
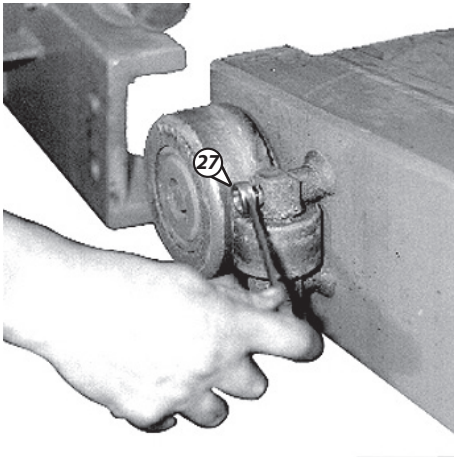
**- Check the lower guide rollers**

(flat spots, seizure, excessive play, wear)

Replace if necessary.

Original roller outside diameter: 66 mm – 0 / -0,3 (-2 mm on outside diameter, replace roller).

- Remove screws 27
- Remove the guide roller + shims 28





**SHUNT BARS**

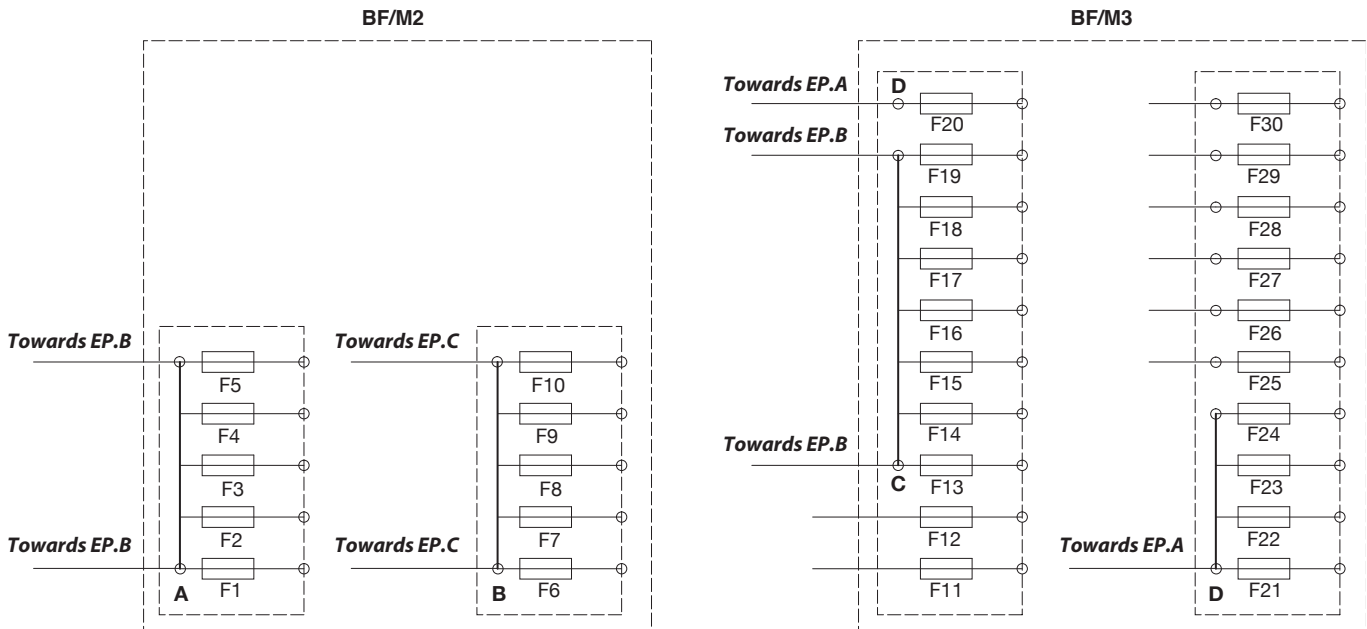
| Item        | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|-------------|---------|--------|----------------------------|---------|
| Shunt Bar A | 15/1    | ORANGE | 3                          | EP.B    |
|             | 15/5    | ORANGE | 3                          | EP.B    |

| Item        | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|-------------|---------|--------|----------------------------|---------|
| Shunt Bar B | 15/3    | ORANGE | 3                          | EP.C    |
|             | 15/7    | ORANGE | 3                          | EP.C    |

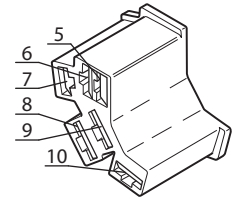
| Item        | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|-------------|---------|--------|----------------------------|---------|
| Shunt Bar C | 15/6    | ORANGE | 3                          | EP.B    |
|             | 15/8    | GREY   | 2                          | EP.B    |

| Item        | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|-------------|---------|--------|----------------------------|---------|
| Shunt Bar D | 30/11   | YELLOW | 1                          | EP.A    |
|             | 30/9    | PURPLE | 4                          | EP.A    |

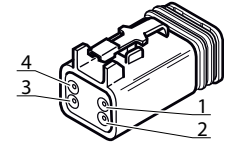
80



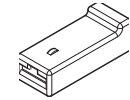
| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S1'  | 5   | 15/4    |        | 6                          | EP.C    |
|      | 6   | 15/2    |        | 6                          | EP.B    |
|      | 7   | 50a/1   |        | 3                          | F11/A   |
|      | 8   | 19/1    |        | 1                          | K2/1    |



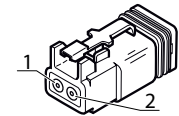
| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S2   | 1   | 600/65  |        | 1                          | EP44    |
|      | 2   | 600/66  |        | 1                          | MCT/B7  |
|      | 3   | 31/63   |        | 1                          | EP122   |
|      | 4   | 600/67  |        | 1                          | J/7     |



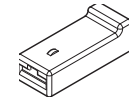
| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S3   |     | 100/30  |        | 1                          | J/9     |



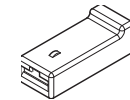
| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S4   | 1   | 100/40  |        | 1                          | J/6     |
|      | 2   | 31/10   |        | 1                          | EP123   |



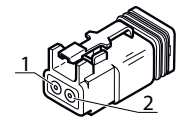
| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S5   |     | 31/11   |        | 1                          | EP103   |
|      |     | 100/50  |        | 1                          | J/10    |



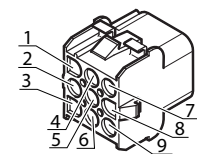
| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S6   |     | 31/12   |        | 1                          | EP122   |
|      |     | 100/60  |        | 1                          | J/12    |



| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S7   | 1   | 100/70  |        | 1                          | J11     |
|      | 2   | 31/13   |        | 1                          | EP123   |



| Item | Pos | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|-----|---------|--------|----------------------------|---------|
| S8   | 1   | 1700/1  |        | 3                          | F24/B   |
|      | 2   | 20/1    |        | 2                          | EP6     |
|      | 3   | 50/1    |        | 2                          | F27/A   |
|      | 4   | 40/1    |        | 2                          | F28/A   |
|      | 5   | 200/2   |        | 1                          | EP11    |
|      | 6   | 200/3   |        | 1                          | EP12    |
|      | 7   | 100/10  |        | 2                          | EP27    |
|      | 8   | 10/2    |        | 1                          | F29/A   |
|      | 9   | 10/1    |        | 1                          | F30/A   |



| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP42 | 800/4   |        | 2                          | CLIM/4  |
|      | 800/6   |        | 1                          | D2/2    |
|      | 800/2   |        | 2                          | K9/5    |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP43 | 600/41  |        | 1                          | MCT/B6  |
|      | 600/44  |        | 1                          | S25/1   |
|      | 600/46  |        | 1                          | S26/5   |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP44 | 600/46  |        | 1                          | A1/4    |
|      | 600/49  |        | 1                          | K8/3    |
|      | 600/47  |        | 1                          | MCT/B4  |
|      | 600/65  |        | 1                          | S2/1    |
|      | 600/45  |        | 1                          | S25/2   |
|      | 600/48  |        | 1                          | S26/9   |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP45 | 600/31  |        | 1                          | RC4/4   |
|      | CABLE   | BLUE   | 0,75                       | Y3/1    |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP46 | 600/30  |        | 1                          | RC4/30  |
|      | CABLE   | BLUE   | 0,75                       | Y2/1    |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP47 | 1600/2  |        | 1                          | S20/1   |
|      | CABLE   | BLUE   | 0,75                       | Y4/2    |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP48 | 31/76   |        | 1                          | EP121   |
|      | CABLE   | BROWN  | 0,75                       | Y4/1    |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards  |
|------|---------|--------|----------------------------|----------|
| EP49 | opt.2/3 |        | 2                          | F19/B    |
|      | opt.2   |        | 1                          | OPTION/4 |
|      | opt.3   |        | 1                          | OPTION/5 |

| Item | Wire N° | Colour | Section (mm <sup>2</sup> ) | Towards |
|------|---------|--------|----------------------------|---------|
| EP50 | 600/43  |        | 1                          | CED/A5  |
|      | 600/90  |        | 1                          | K8/1    |
|      | 600/51  |        | 1                          | S26/7   |

**KEY TO ELECTRICAL DIAGRAM 2**

| <b>Components</b> |                                       |                            |                                 |
|-------------------|---------------------------------------|----------------------------|---------------------------------|
| <b>Item</b>       | <b>Designation</b>                    | <b>Position on diagram</b> | <b>Hydraulic correspondence</b> |
| E                 | Lighting harness connection           | K 29 / K36                 |                                 |
| ED                | Front right headlight module (Option) | M 29                       |                                 |
| EG                | Front left headlight module (Option)  | M 36                       |                                 |
| ERD               | Rear right headlight module           | M 17                       |                                 |
| ERG               | Rear left headlight module            | M 22                       |                                 |
| M4                | Alarm                                 | M 11                       |                                 |
| S8                | Stalk switch                          | C 16                       |                                 |
| S8a               | Horn switch (opt. without stalk)      | K 10                       |                                 |
| S10               | Stop switch                           | K 9                        |                                 |

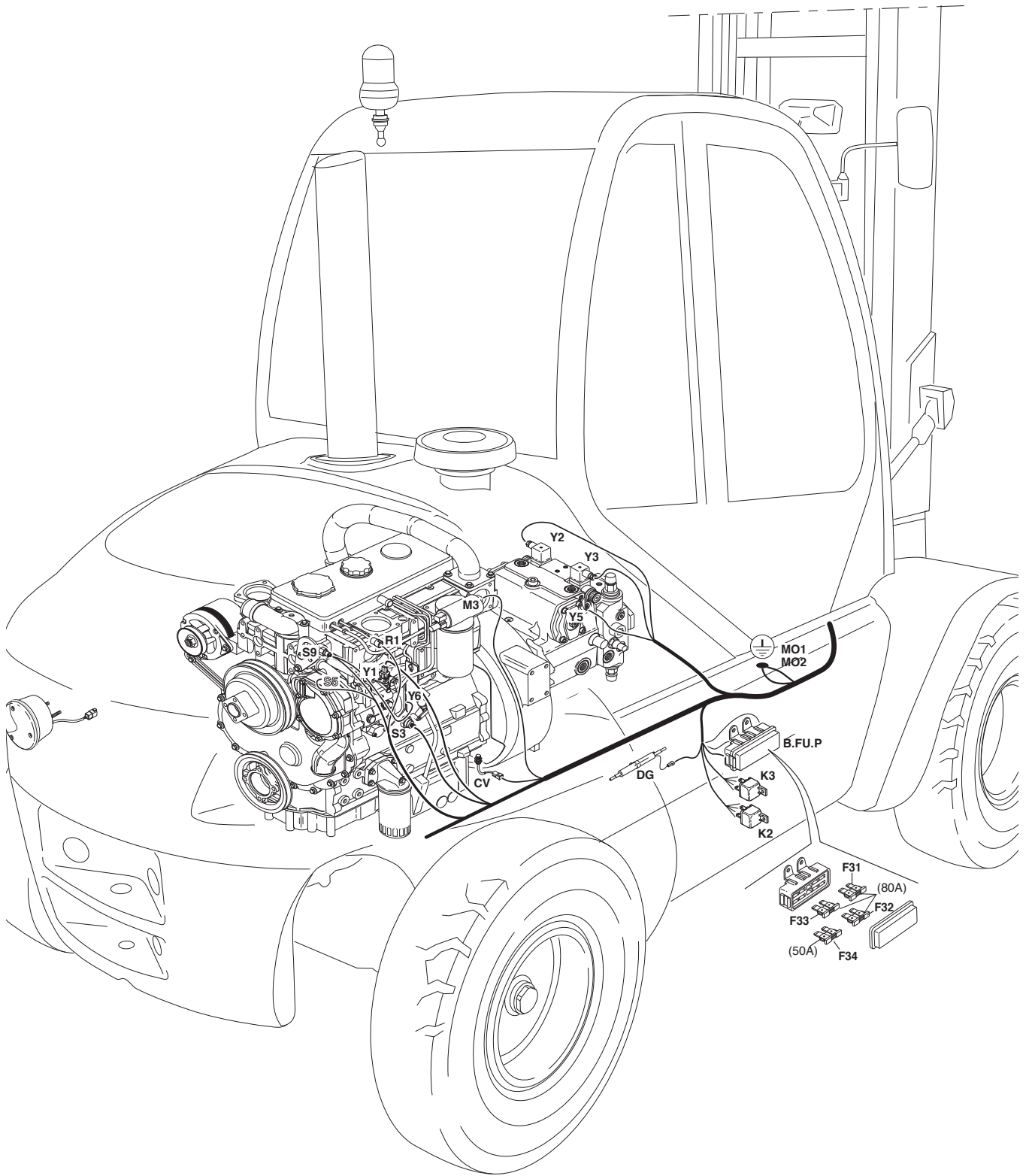
| <b>Fuses and relays</b> |   |                            |
|-------------------------|---|----------------------------|
| <b>Item</b>             | <b>Designation</b>  | <b>Position on diagram</b> |
| BF (Cab) M2             |   |                            |
| F2                      | Horn + stop switch (10A)  | C 9                        |
| BF (Cab) M3             |   |                            |
| F24                     | Lighting, horn and indicator light switch power supply (25A) (OPTION)   | C 14                       |
| F25                     | Left sidelights (3A) (OPTION)   | I 26                       |
| F26                     | Right sidelights (3A) + control instrument panel lighting (3A) (OPTION) | I 27                       |
| F27                     | Dipped beam headlights (15A) (OPTION)                                   | I 35                       |
| F28                     | Main beam headlights (15A) (OPTION)                                     | I 32                       |
| F29                     | Right indicator lights (15A) (OPTION)                                   | I 19                       |
| F30                     | Left indicator lights (15A) (OPTION)                                    | I 21                       |

| <b>Splices</b> |                            |
|----------------|----------------------------|
| <b>Item</b>    | <b>Position on diagram</b> |
| Ep4            | I 19                       |
| Ep5            | I 21                       |
| Ep6            | G 26                       |
| Ep7            | I 26                       |
| Ep8            | K 27                       |
| Ep9            | K 35                       |
| Ep10           | K 32                       |
| Ep11           | G 9                        |
| Ep12           | K 11                       |
| Ep31           | K 17                       |
| Ep102          | O 17                       |
| Ep107          | O 29 / O 35                |
| Ep123          | O 22                       |

## KEYS

| <b>CAB COMPONENTS</b> |  |                                     |  |
|-----------------------|--|-------------------------------------|--|
| <i>Item</i>           | <i>Designation</i>                           | <i>Position on harness assembly</i> | <i>Position on 3D location drawing (sheet)</i> |
| A 1                   | Keypad anti theft device (digicode) (Option) | C 32                                | 3  |
| AC                    | Cigarette lighter                            | E 36                                | 3  |
| POWER SUPPLY-AUTO     | Car radio power supply                       | C 36                                | 2 / 3  |
| AU1                   | Engine cut-off (emergency stop)              | K 36                                | 2  |
| AU2                   | Transmission cut-off                         | M 26                                | 2  |
| B 1                   | Fault buzzer                                 | C 24                                | 3  |
| B 2                   | Reversing sound alarm                        | C 4                                 | 5  |
| CED                   | Electronic interface module                  | E 36                                | 3  |
| CH                    | Heating unit connection                      | K 25                                | 2  |
| A/C                   | Air con. option output                       | G 27                                | 3  |
| E                     | Lighting harness connection                  | O 31                                | 2  |
| E15                   | Rear right working light                     | A 27                                | 2  |
| E16                   | Rear left working light                      | A 37                                | 2  |
| E17                   | Front left working light                     | M 20                                | 2  |
| E18                   | Right front work light                       | M 21                                | 2  |
| E19                   | Rotating beacon light                        | A 36                                | 2  |
| F1 -> F10             | Fuses MD2                                    | E 26                                | 3  |
| F11 -> F20            | Fuses MD3                                    | C 27 / E 27                         | 3  |
| F21 -> F30            | Fuses MD3                                    | C 28 / E 28                         | 3  |
| H 1                   | RC4 electronic unit fault indicator lamp     | I 26                                | 2  |
| H 2                   | Element 5 control lamp (Option)              | M 33                                | 2  |
| HP-AUTO               | Loudspeaker connection                       | C 36                                | 2 / 3  |
| HPD                   | Right loudspeaker                            | A 32                                | 2  |
| HPG                   | Left loudspeaker                             | A 36                                | 2  |
| J                     | Dashboard module                             | M 33                                | 2  |
| K 1                   | Starter safety relay                         | C 26                                | 3  |
| K 4                   | Flashing unit (Option)                       | E 24                                | 3  |
| K 6                   | Reverse buzzer and light relay (Option)      | E 29                                | 3  |
| K 7                   | Transmission cut-off relay                   | C 29                                | 3  |
| K 8                   | Movement neutralisation relay                | C 29                                | 3  |
| K 9                   | Compressor relay (Option)                    | E 29                                | 3  |
| K10                   | Fan/condenser relay (Option)                 | C 29                                | 3  |
| M 4                   | Alarm  | O 37                                | 1  |
| M 7                   | Front windscreen wiper motor                 | M 30                                | 2  |
| M 8                   | Rear windscreen wiper motor                  | C 36                                | 2  |
| M 9                   | Roof windscreen wiper motor                  | A 30                                | 2  |
| MC                    | Ground - control unit frame                  | G 32                                | 3  |
| MCT                   | Transmission cut-off module                  | E 33                                | 3  |
| MD1                   | 2 mini relay holder module                   | C 24                                | 3  |
| MD2                   | Maxi relay and mini fuse holder module       | C 26                                | 3  |
| MD3                   | 20 mini fuse holder module                   | C 27                                | 3  |

Sheet 4



80

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL