MANIP'DRIVE 2

The electronic proportional control system

MECATRONICVersion

Assembly and use instructions

Temporary Instruction : latest up to date 13/03/2009

MANIP' Avenue de la coopération 86200 LOUDUN (France) - Tél : +33(0)5.49.98.04.27 Fax : +33(0)5.49.22.41.32

NOTES

Contents

Principle

The aim of the electronic proportional control system is to replace the mechanical mono-lever and both control cables.

The joystick is positionned at the end of the right end side arm rest, a specific support is provided.

The joystick provides a proportional tension to the inclinaision of the lever to the electronic box which transforms this value into comprehensible informations via the BUS CAN link of the distributor engine controls. Ces moteurs actionnent une crémaillère fixée au bout du tiroir.

A BUS CAN connection connects the joystick to the electronic box.

The engines run according to the asking steps by moving the draw one side or another.

The electronic proportional control system has exactly the same functions as a traditional mono-lever.

The main differences are user friendly :

Operation effort are very low and not variable in time.

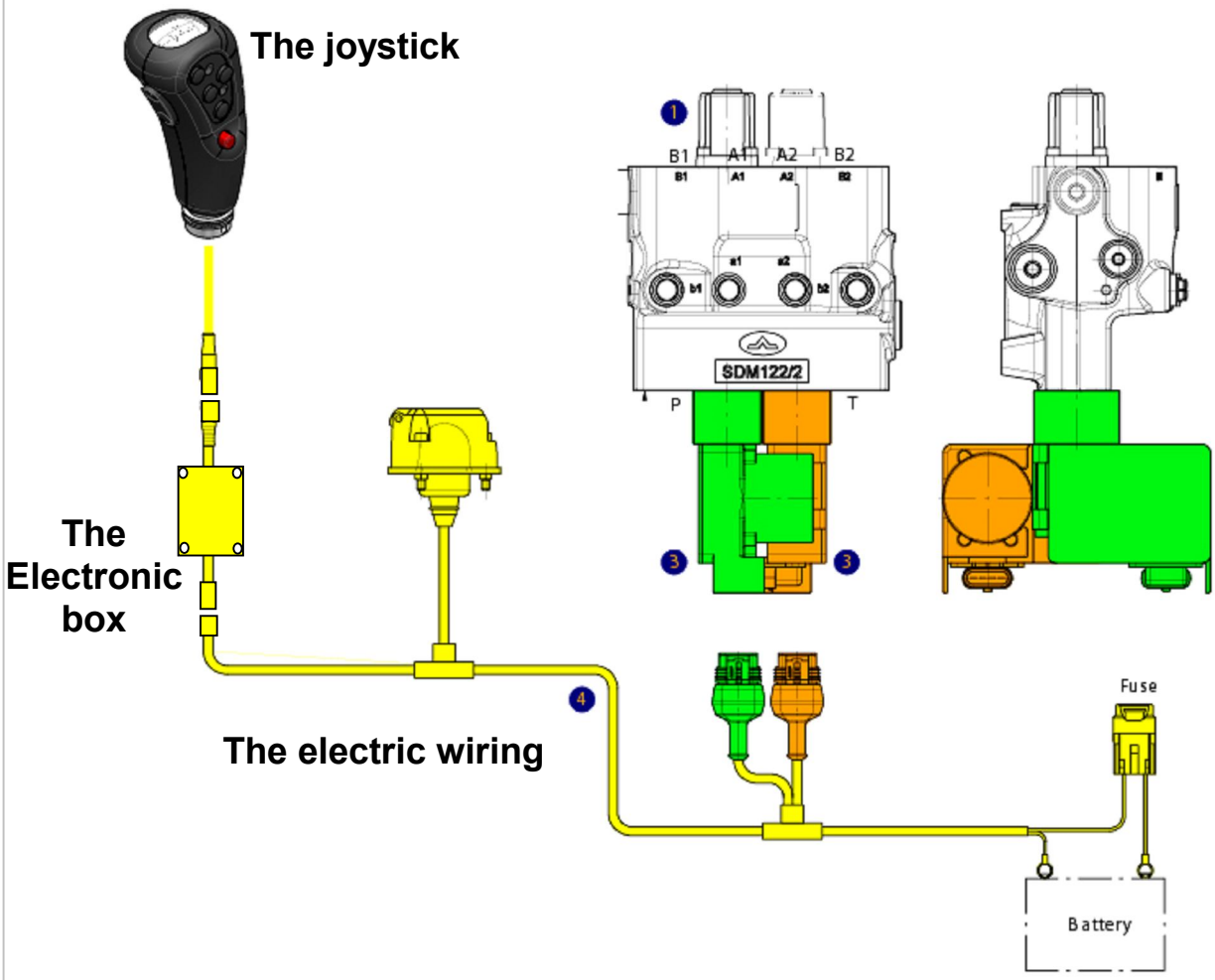
Easier instalation, no cables.

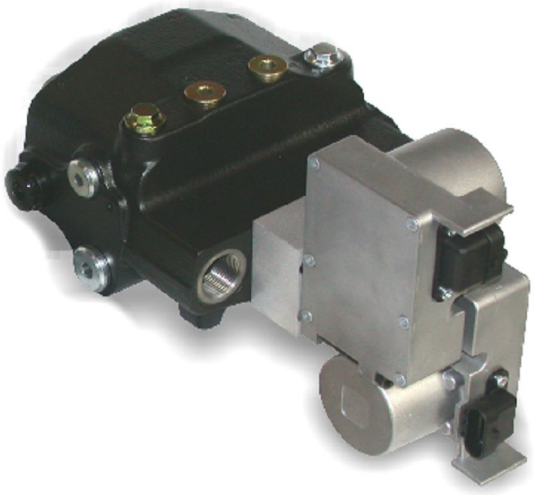
Possibility of additional functions without complicating the hydraulic system of the loader.

For example, the automatic repositioning system of the tool : HPS.

Components

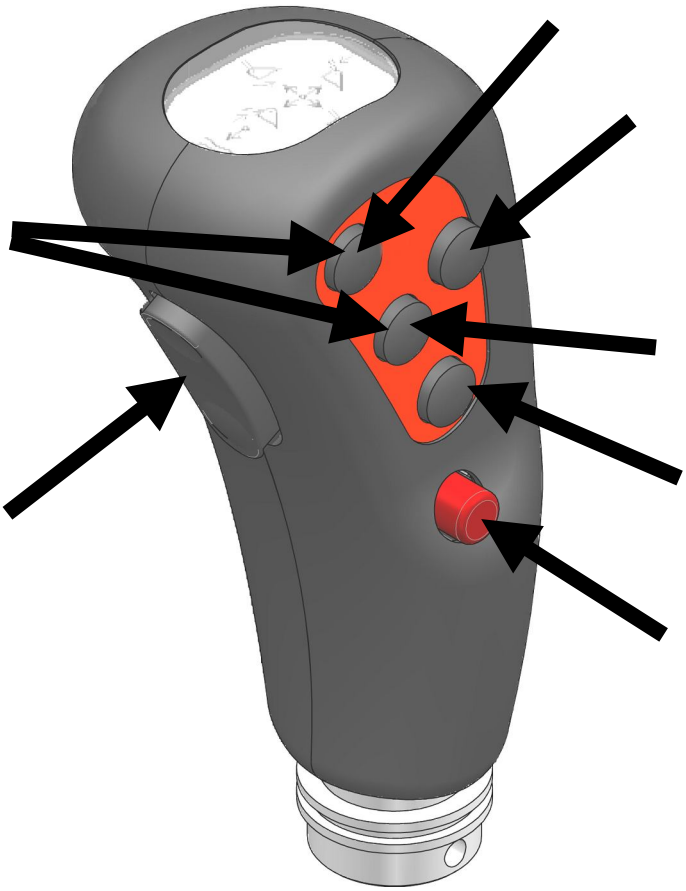
It is made up of 4 distinct parts :

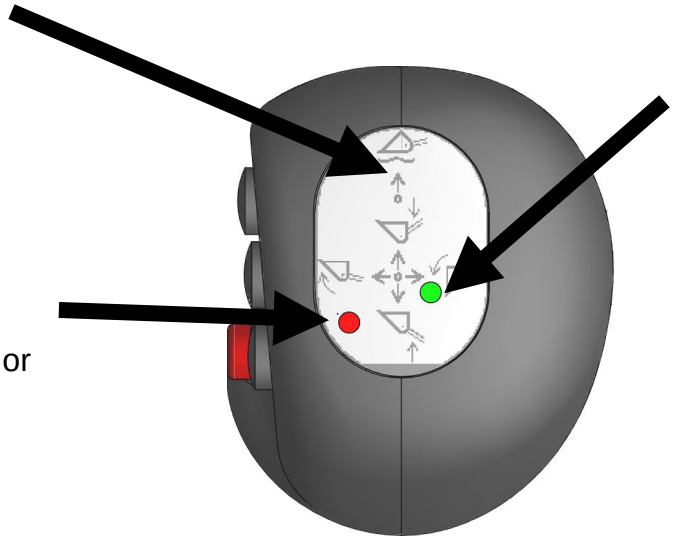




Distributor with 2 step motor

The joystick





Fonctions

1) **Two axles proportional Joystick.**

   Independent or combined movement of the loder according to the hydraulic float of the tractor.

2) **Floating position.**

   Started by acting against the spring at the end of the course during the lowering function.

   Lights up red light.

   The electro valves stay in floating position if the joystick stays in front (lowering) or in neutral position.

   The electro valves stop the floating position as soon as the joystick goes in reverse position (lifting)

3) **3rd function. (option)**

   Started by pressing on the top button.

4) **4th function. (option)**

   Started by pressing on the middle button

5) **HYDROLOC button (option) Hydraulic tool locking device.**

   Started by simultaneously pressing on the top and the middle button (3rd and 4th functions), tilt the lever to the right to unlock, and to the left to lock.

6) **HPS button (option). Levelling of the tool.**

   Started by pressing on the back button. This button is only activated if the HPS option has been fitted to the loader. See specific chapter.

7) **Basculeur (option)**

   Ce basculeur ne sert pas au fonctionnement du chargeur. Son circuit est séparé et peut-être relié au circuit de commande de passage des vitesses sous charge par exemple. Voir paragraphe spécifique.

Assembly

DISTRIBUTEUR

Install the distributor on the right hand side of the subframe.

Install the 7 pin electrical connector on the support on the right or the left hand side of the distributor.

Connect the distributor by using the hydraulic connection plan.

Fix the elctronic box in the cab.

Connect the wire to the elctronic box with the rectangular outlet.
Connect the joystick to the box with the rectangular plug.

Connect the 12V power wire to the battery.

JOYSTICK (Optimized assembly for GRAMMER seats)

Install the joystick support on the right hand side of the seat . Fit the joystick on the support using the screws provided.

Remove if necessary the plastic protection. Disassemble the arm rest .

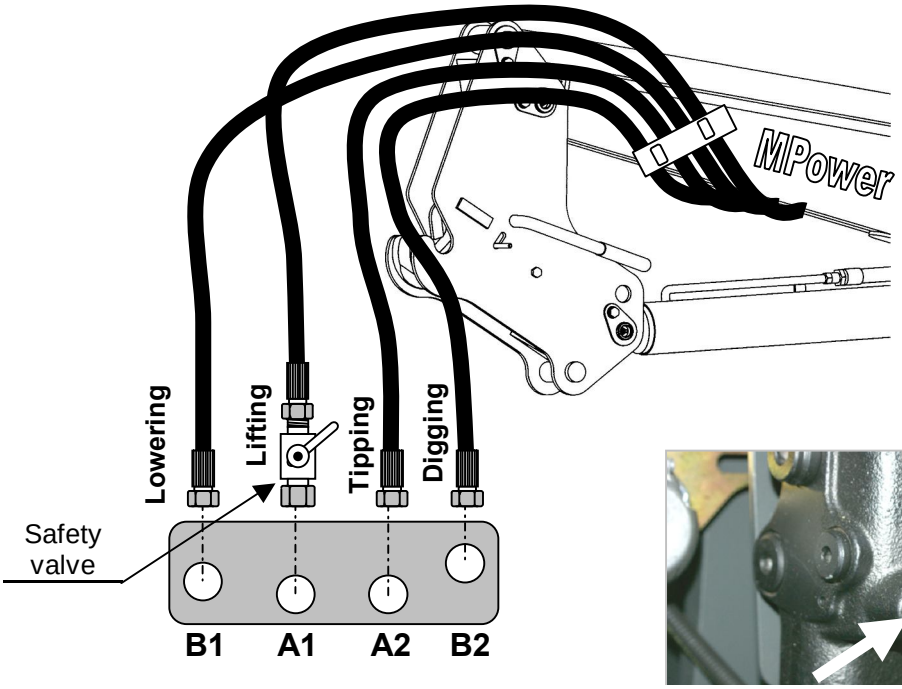
Remove the garnishing of the seat and of the back rest and replace the screw of the armrest bya HM 8 Lg 55 screw.

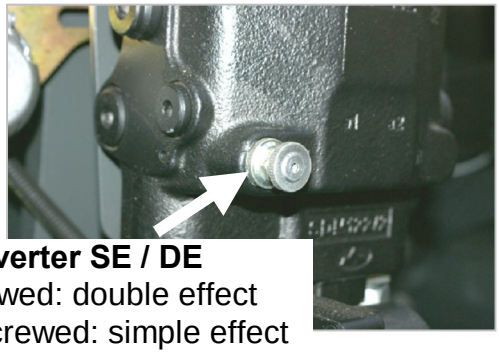
Present the arm rest on the seat and assemble it with the support of the joystick on the seat.

Put the lower screw on the edge of the seat. Usually a hole is factory set to attach the support.
Adjust the arm rest and tighten the unit.
The provided support offers multiple possibilities of adjustment for positioning the joystick depending on the driver.
Fit the joystick mass cable (see fitting instructions p.15)
Connect the joystick to the electronic box with the 12 pin outlet.

Hydraulic connection plan

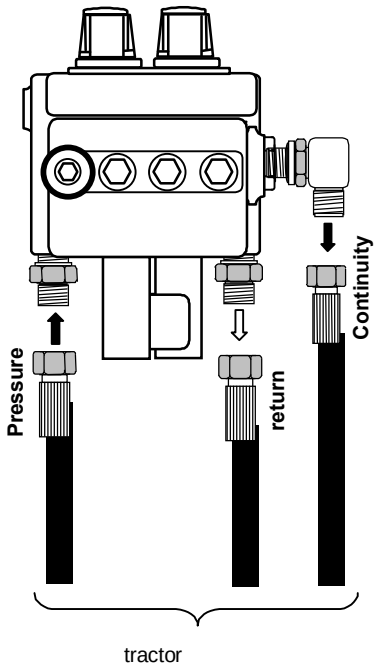
Gamme MPower



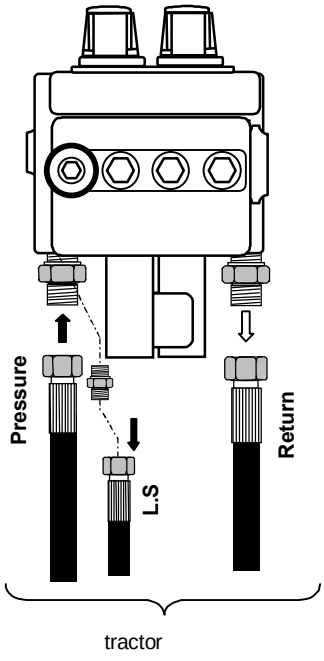


Converter SE / DE
Screwed: double effect
Unscrewed: simple effect

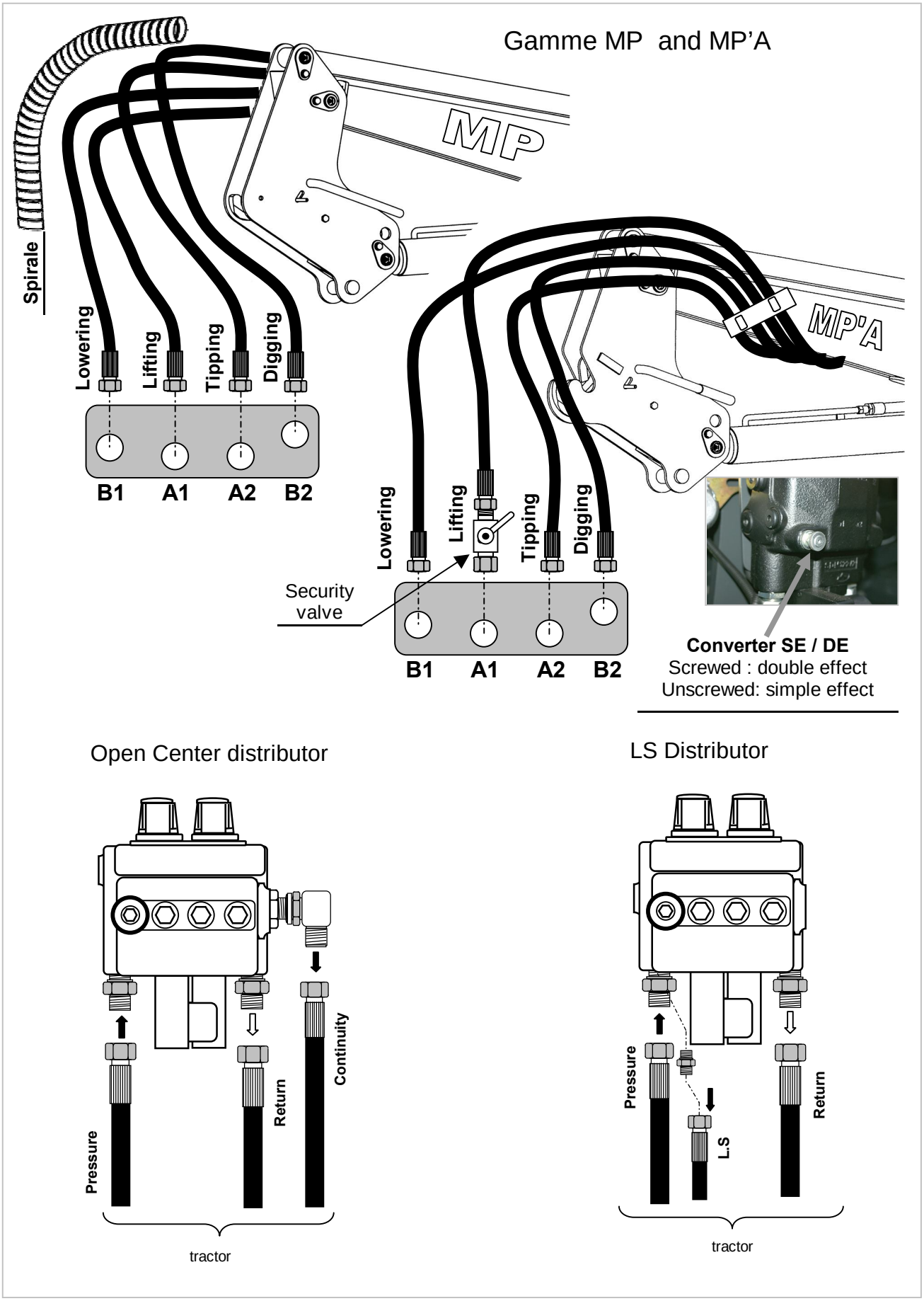
Open center distributor



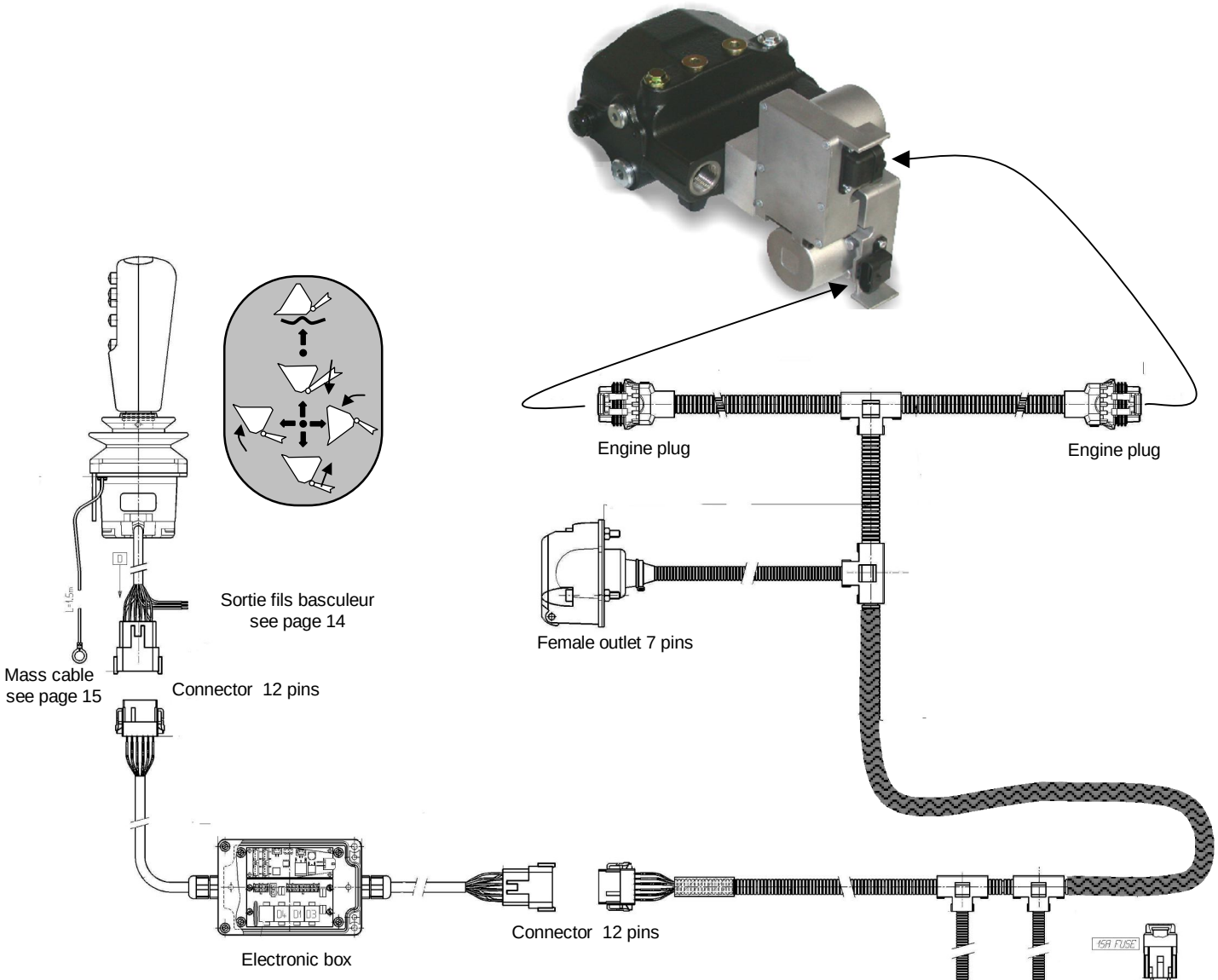
Load Sensing Distributor



Hydraulic connection plan



Electric plan



Female outlet tractor side

	Gamme MP et MP'A	Gamme MPower
1	Tool unlocking device	Resreved
2	Sensor signal NO	Sendsor signal NO
3	3rd fonction	3rd fonction
4	4th fonction	4th fonction
5	Sensor signal NF	Sensor signal NF
6	- 0 V common	- 0 V common
7	+ 12 V	+ 12 V

HPS Option (automatic tool levelling)

1) Fonction:

This function allows an automatic repositioning of the tool before each loading operation.

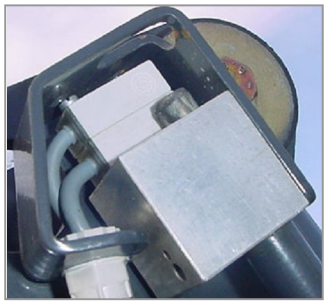
The tool can be levelled whatever its initial position and most of all no matter how high the loader can be .

One does not have to lower the loader to carry out the levelling of the tool.

2) How does it work:

The automatic levelling system is an option of the electronic proportional control system. This is why the electronic control system has to be installed first.

Two sensors fixed on the tool position indicator give permanent informations to the electronic box.



The position indicator is correctly adjusted when the tool is in flat position and when the rod extremity is between the two sensors.

On the joystick the back button controls the automatic tool levelling.

This HPS button is active only if the sensors are installed on the loader.

There are 2 ways to use it:

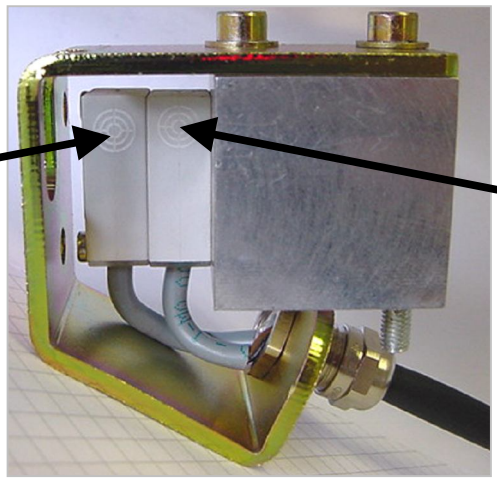
- JOYSTICK IN NEUTRAL: press on the HPS button, the tool goes back to the right position no matter its initial position.

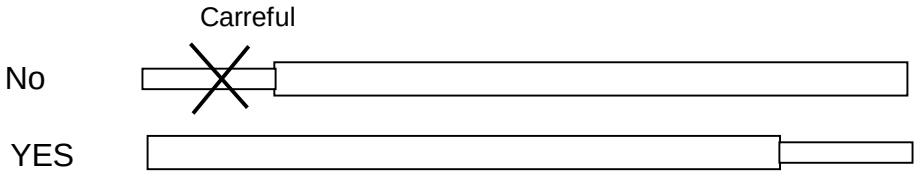
- IN DESCENDING COURSE: press on the HPS button, the descending speed is decreased to allow the automatic tool levelling whatever its initial position. Once the tool is in a flat position, the loader lowering continues at normal speed. Levelling of the tool can be done whatever the position of the loader.

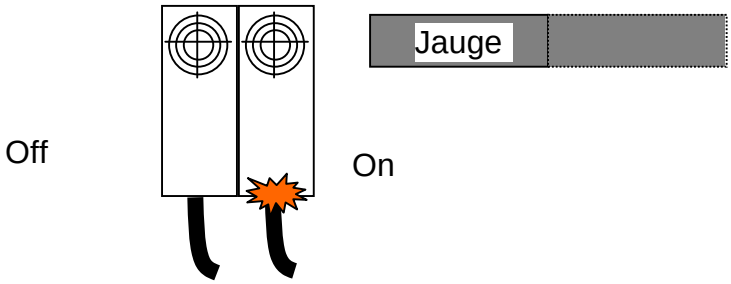
In both cases, the button should be pressed at all time during the automatic tool levelling. For safety reasons the function stops immediately as soon as the button is relaxed.

HPS option

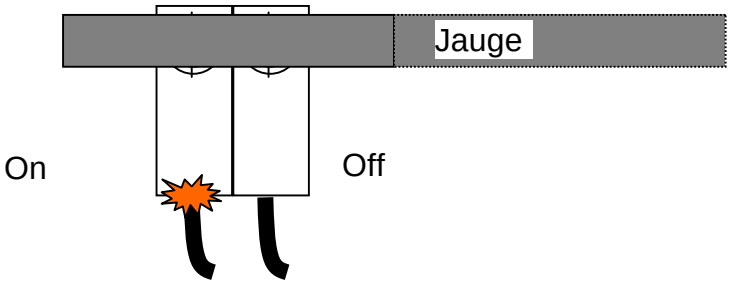
3)



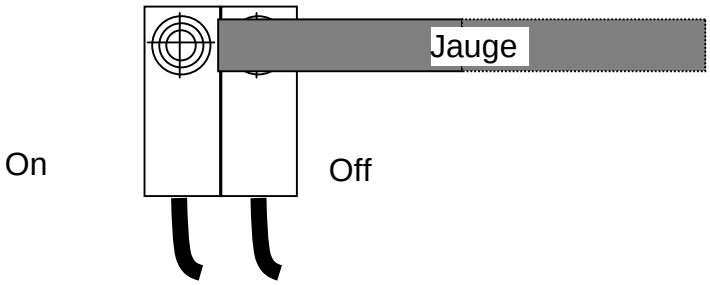




If you presse on the HPS button the tool should lift up



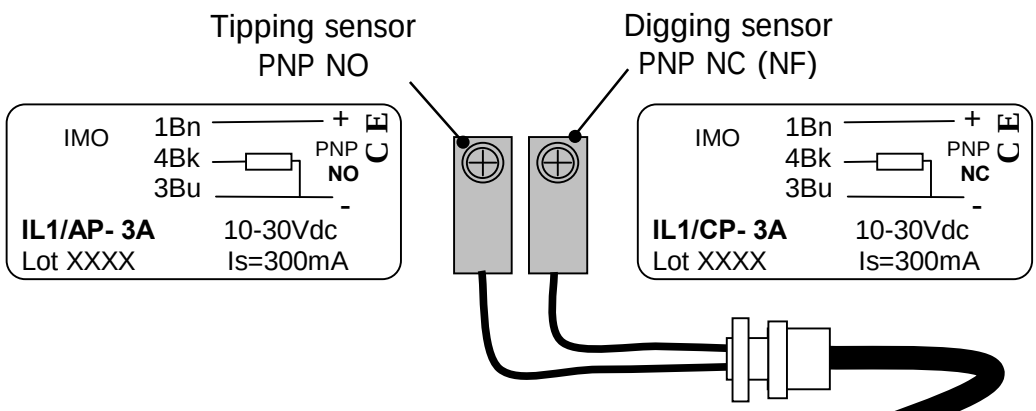
If you press on the HPS button the tool should empty



If you press on the HPS button the tool should not move, it is in the asked position

HPS Option

4) Electrical wirerring plan

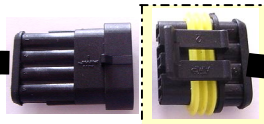


Sheathed sensore sire

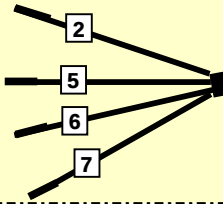
Connector AMP
SUPERSEAL
4 pins

For the MPOWER look for the connector in the cover at the front of the loader.

Extension only for MP and MP'A



Common 0V	1	Towards fil N°6
Tipping sensor outlet NO	2	Towards fil N°2
Digging sensor outlet NC	3	Towards fil N°5
Common 12V	4	Towards fil N°7



Black cable 4 x 0,75 mm²
Lg 6m00

Male outlet 7 pins	**1**	
	2	Sensor signal NO tipping
	3	
	4	
	5	Sensor signal NC(NF) digging
	6	- 0 V common
	7	+ 12 V

Rock option

We have fitted a lever with a rock option on the proportional control system which allows you to put on guear even with a load.

The rocking device is situated on the front side of the lever. It has 3 position : neutral, high, low with an automatic come back to neutral.

The lever is equipped with 3 additional wires wich unables a connections at the base of the gear lever.

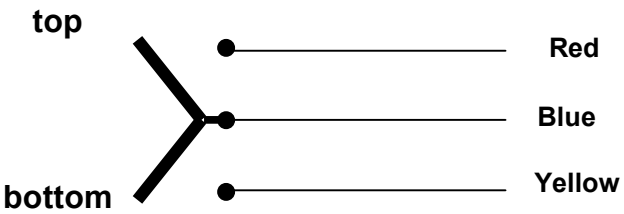
The wires are at the end of the sheated case next to the connector.

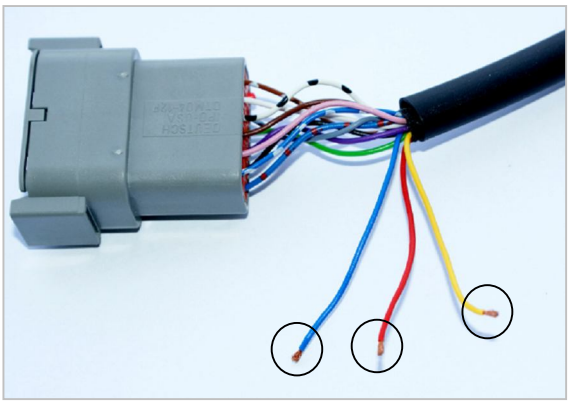
The loader and tractor circuits are totally independant. There is no electrical relationship between them.

The contacts of the rocking device have 1 common wire and 2 outlets. The contacts can hold a maximum of 0.1 A. For anything stronger you have to strengthen them.

NOTA : <u>Connect your tractor correctly as Manip will not be held responsible for any miss use.</u>

Rock cabling plan



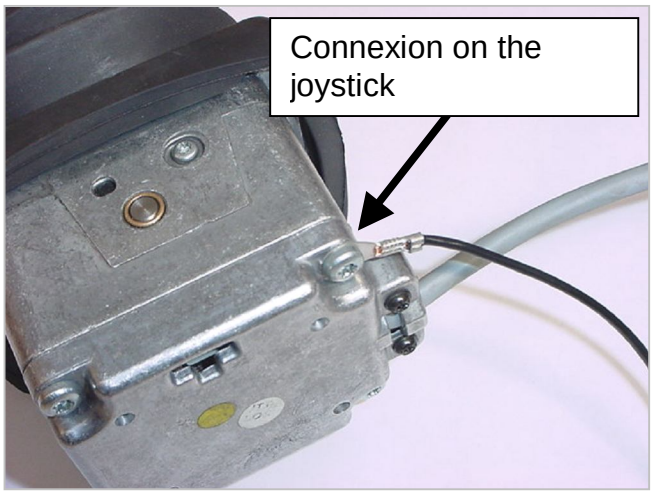


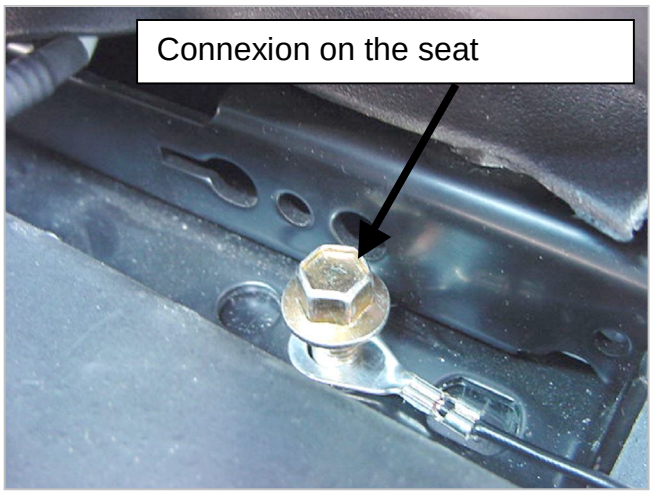
Joystic mass cable fitting

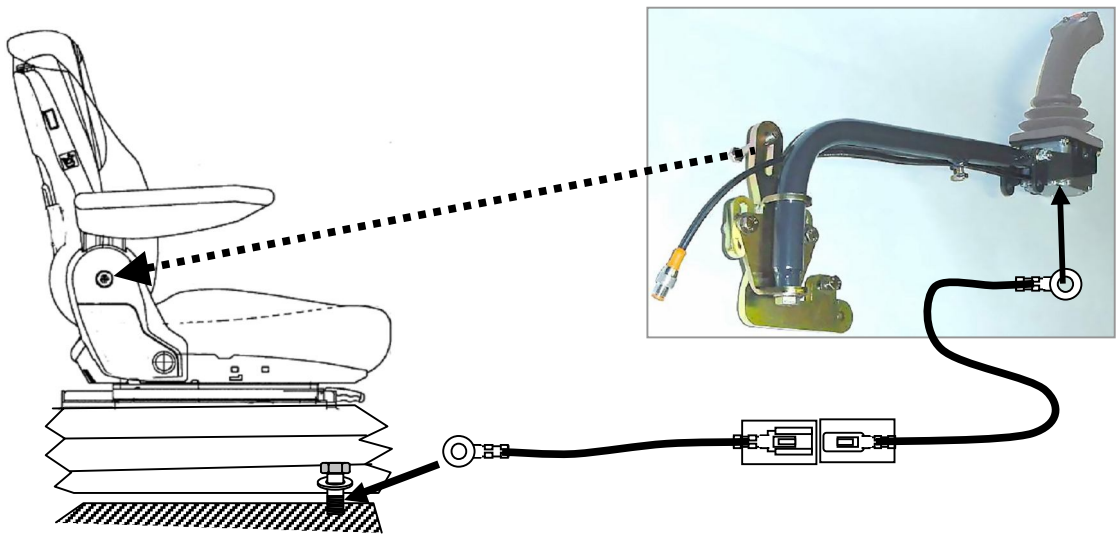
You have to plug the joystick to the mass in order to avoid electrostatic chocs and overloads created by electrical components of the seat .

To do so use an insulated wire with a coper section of 1 mm^2 minimum to link up the joystick to a mass point in the cab.

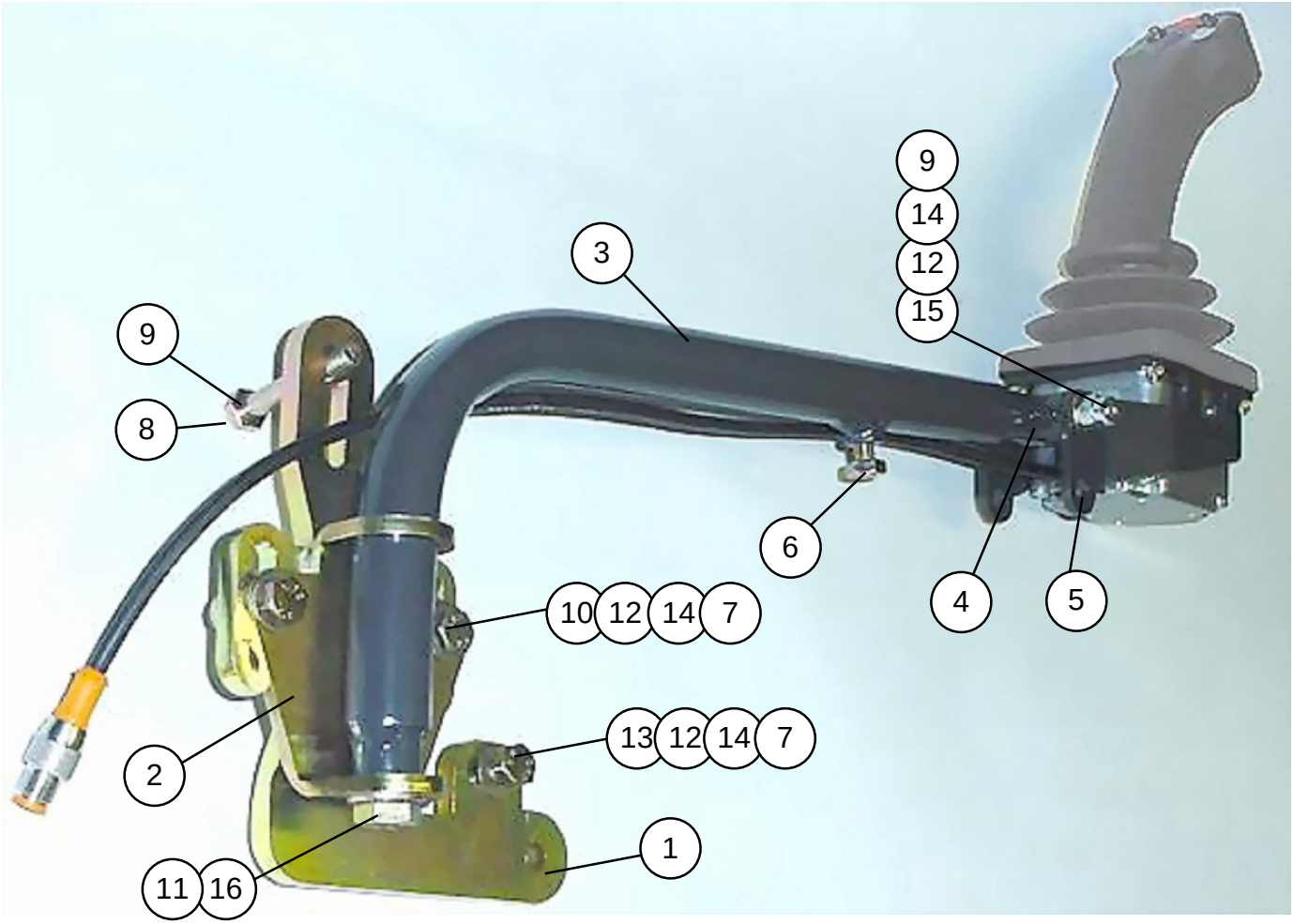
Check the state of the mass point..





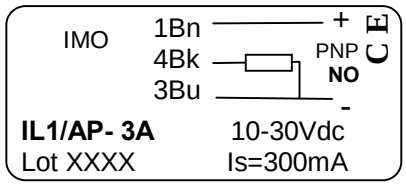


MANIP'	PIECES DETACHEES Console sur siège GRAMMER.	Réf. : 6581.1455

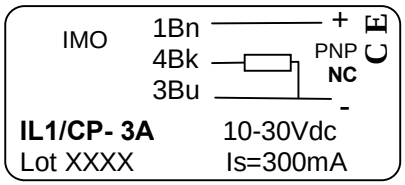


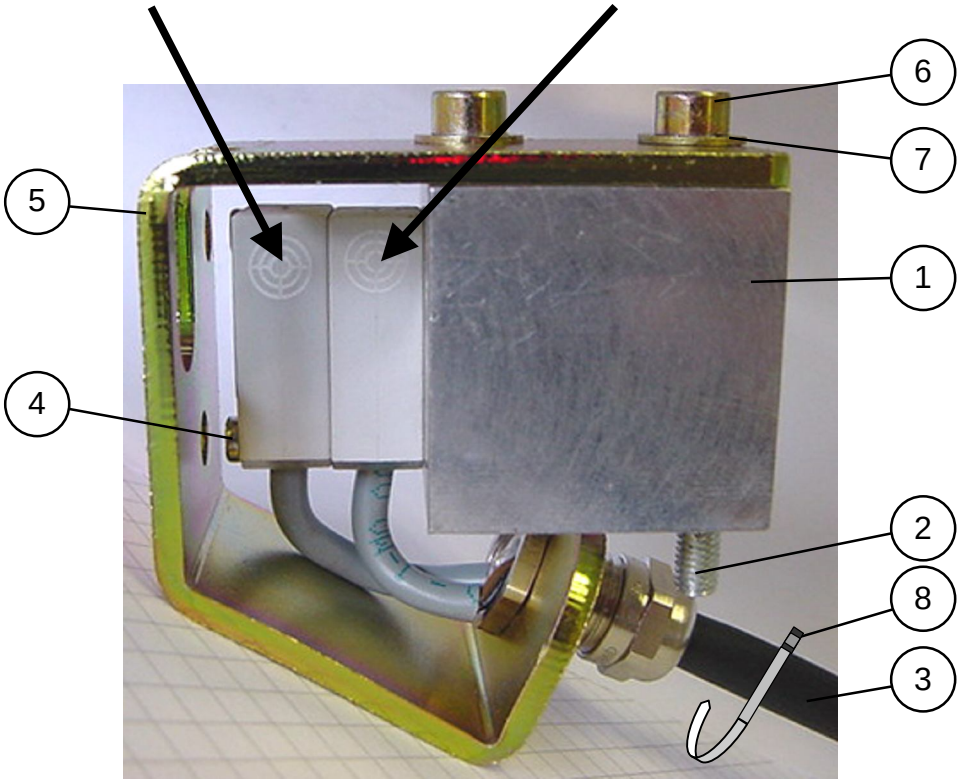
Rep.	Réf.	Désignation	Qté
1	6880.0018	Adapteur siège GRAMMER	1
2	2800.0148	Support	1
3	6880.0019	Tube de réglage assemblé	1
4	6880.0017	Tige de réglage assemblée	1
5	6880.0016	Embase assemblée	1
6	1950.6052	Vis HM 8 Lg 16	1
7	1950.6056	Vis HM 8 Lg 25	3
8	1950.6057	Vis HM 8 Lg 30	1
9	1950.6062	Vis HM 8 Lg 55	2
10	1060.3008	Ecrou frein HM 8	2
11	1950.7017	Vis HM10 Lg 30	1
12	1962.6008	Rondelle contact C8	4
13	1960.0008	Ecrou HM8	1
14	1962.0254	Rondelle plate Ø8	4
15	1960.9008	Ecrou borgne HM 8	1
16	1962.6010	Rondelle contact C10	1

Capteur BENNAGE



Capteur CAVAGE





Rep.	Réf.	Désignation	Qté
1	2800.0162	**Support capteurs**	1
2	1059.5010	Vis Ø 5 Lg 20 sans tête 6 pans creux bout cuvette	1
3	1018.9015	**Capteurs de position équipés**	1
4	1059.5090	Vis CS M 3 Lg 30	2
5	2800.0161	**Support cable**	1
6	1956.5062	Vis CHC 5 Lg 16	2
7	1962.0154	Rondelle plate Ø 5	2
8	1022.9505	Collier Sangle Lg 135 x 2.5	10

MANIP'	Gamme MP PIECES DETACHEES	Références	
		Standard	P.P.S Faster
	DISTRIBUTEUR WALVOIL 2DE Std Cde proportionnelle équipé	6581.1420	6581.1421

Pompe hydraulique centre ouvert

Rep.	Réf.	Désignation	Qté	Qté
1	**1018.2864**	**Distributeur 2DE Std WALVOIL Mécatronic**	**1**	**1**
2	**2800.0022**	Support de distributeur	**1**	**1**
3	**1950.7017**	Vis H8.8 M10 x 30	**2**	**2**
4	**1060.3010**	Ecrou frein HM10	**2**	**2**
5	**1962.6010**	Rondelle Contact C10	**2**	**2**
6	**1950.6054**	Vis HM 8 Lg 20	**4**	**4**
7	**1962.6008**	Rondelle Contact C8	**4**	**4**
8	**1518.4090**	Union simple mâle orientable 15L - 1/2	**4**	**4**
9	**1518.3900**	Raccord rapide Mâle PC 1/2 - 22x1,50	**4**	
10	**1020.0517**	Capuchon 5029-4PR Orange	**1**	
11	**1020.0513**	Capuchon 5029-4PR Vert	**1**	
12	**1020.0515**	Capuchon 5029-4PR Jaune	**1**	
13	**1020.0511**	Capuchon 5029-4PR Rouge	**1**	
14	**1518.3901**	Raccord rapide Fem. PC 1/2 - 22x 1,50	**4**	
16	**1020.0516**	Bouchon 5025-4PR Orange	**1**	
17	**1020.0512**	Bouchon 5025-4PR Vert	**1**	
18	**1020.0514**	Bouchon 5025-4PR Jaune	**1**	
19	**1020.0510**	Bouchon 5025-4PR Rouge	**1**	
20	**1018.2560**	Platine FASTER complète 4 Coupleurs		**1**
21	**1018.9680**	Dispositif de cde électrique (Mécatronic)	**1**	**1**
22	**2800.0021**	Support Prise 7 broches	**1**	**1**
23	**1022.9505**	Collier sangle Lg 135 x 2.5	**8**	**8**
24				
25				
26				
27				
28				

MANIP'	Gamme MP PIECES DETACHEES	Références	
		Standard	P.P.S Faster
	DISTRIBUTEUR WALVOIL 2DE LS Cde proportionnelle équipé	6581.1422	6581.1423

Pompe hydraulique centre fermé Load-Sensing

Rep.	Réf.	Désignation	Qté	Qté
1	**1018.2865**	**Distributeur 2DE LS WALVOIL Mécatronic**	**1**	**1**
2	**2800.0022**	Support de distributeur	**1**	**1**
3	**1950.7017**	Vis H8.8 M10 x 30	**2**	**2**
4	**1060.3010**	Ecrou frein HM10	**2**	**2**
5	**1962.6010**	Rondelle Contact C10	**2**	**2**
6	**1950.6054**	Vis HM 8 Lg 20	**4**	**4**
7	**1962.6008**	Rondelle Contact C8	**4**	**4**
8	**1518.4090**	Union simple mâle orientable 15L - 1/2	**4**	**4**
9	**1518.3900**	Raccord rapide Mâle PC 1/2 - 22x1,50	**4**	
10	**1020.0517**	Capuchon 5029-4PR Orange	**1**	
11	**1020.0513**	Capuchon 5029-4PR Vert	**1**	
12	**1020.0515**	Capuchon 5029-4PR Jaune	**1**	
13	**1020.0511**	Capuchon 5029-4PR Rouge	**1**	
14	**1518.3901**	Raccord rapide Fem. PC 1/2 - 22x 1,50	**4**	
16	**1020.0516**	Bouchon 5025-4PR Orange	**1**	
17	**1020.0512**	Bouchon 5025-4PR Vert	**1**	
18	**1020.0514**	Bouchon 5025-4PR Jaune	**1**	
19	**1020.0510**	Bouchon 5025-4PR Rouge	**1**	
20	**1018.2560**	Platine FASTER complète 4 Coupleurs		**1**
21	**1018.9680**	Dispositif de cde électrique (Mécatronic)	**1**	**1**
22	**2800.0021**	Support Prise 7 broches	**1**	**1**
23	**1022.9505**	Collier sangle Lg 135 x 2.5	**8**	**8**
24				
25				
26				
27				
28				