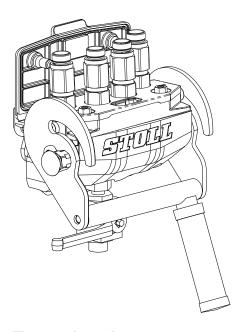




Installation instructions

Retrofitting the Hydro-Fix



Front loader

ProfiLine Solid

Status: 07/2022

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The original instructions were written in the German language.

Instructions in other languages were translated from German.



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ABOUT THESE INSTALLATION INSTRUCTIONS



1 About these installation instructions

1.1 Use and purpose of the installation instructions

These installation instructions are aimed at specialist workshops. Experience in installing hydraulic components and basic knowledge of vehicle electrical systems are required in particular.

Directions refer to the forward direction of travel, unless otherwise specified.

For better readability, Wilhelm STOLL Maschinenfabrik GmbH will hereinafter be called "STOLL".

1.2 Validity of the installation instructions

The installation instructions apply for retrofitting the equipment listed in the overview (see *3 Overview*). The equipment may only be used with ProfiLine and Solid front loaders.

The installation instructions describe the different versions of the hydraulic interface "Hydro-Fix". Please also note the installation instructions supplied for the hydraulic equipment or front loader mounting kits, which take into account individual connection points and mounting brackets for the respective tractor.

2 Safety

2.1 Basic safety information

2.1.1 Instructions to avoid hazards during the assembly and installation

Secure the tractor against accidental start-up and rolling away!

Danger when working on the hydraulic system!

- Hydraulic oil can escape under high pressure/at high-speed and people in the immediate vicinity can be seriously injured!
- Hydraulic equipment can move unexpectedly when the pressure drops (e.g. disconnecting a line)!
- Before starting work on the hydraulic system, depressurize the system and secure it against restarting. Please refer to the operating instructions of the tractor.
- For work that must be performed on a pressurised hydraulic system (e.g. bleeding): Protect yourself from escaping oil!
 Make sure that no other people are at risk!
- For work on the chassis hydraulics (e.g. detaching and turning the lines of the steering hydraulics): Support the axles of the tractor to prevent sagging while working.

2.1.2 Instructions to prevent hazards caused by a defective installation

If the hydraulic lines are routed incorrectly, this may endanger the operator and other people!

- Route the hydraulic lines correctly! Follow the instructions for installing the hydraulic lines (see 4 Installation)!
- Follow the occupational health and safety regulations and technical regulations for hydraulic lines that are applicable for the place of assembly and use.

If the screws are tightened with the incorrect torque or screws are inserted with dirt, they may loosen and cause an accident!

- Make sure that the threads are clean. If necessary, clean them!
- Screws and threads must be free from grease!
- To finish installation, tighten all the screws with a torque wrench at the correct tightening torque (see 6 Tightening torques for screws)!



3 Overview

ld. no.	Designation	Notes
3645170	Hydro-Fix cpl. for single-lever control unit 58,861-11-16	Retrofit kit for tractors with single-lever control unit, complete, without electrical system
3645180	Hydro-Fix complete standard 58.861-11-17	Retrofit kit for tractors with Standard or Comfort hydraulic system, complete, without electrical system
3618680	Hydro-Fix lower part for single-lever control unit, with electrical system 58.861-11-11	Retrofit kit for tractors with single-lever control unit, lower part only, incl. electric interface
3618690	Hydro-Fix lower part, standard, with electrical system 58,861-11-12	Retrofit kit for tractors with Standard or Comfort hydraulic system, lower part only, incl. electric interface
3645200	Hydro-Fix cpl. for single-lever control unit, with electrical system 58.861-11-19	Retrofit kit for tractors with single-lever control unit, incl. Hydro-Fix upper part, incl. electric interface
3645220	Hydro-Fix cpl. standard, with electric 58,861-11-20	Retrofit kit for tractors with Standard or Comfort hydraulic system, incl. Hydro-Fix upper part, incl. electric interface
3645190	Hydro-Fix upper part 58.861-11-18	Hydro-Fix upper part, without electrical system
3645230	Hydro-Fix upper part 58.861-11-21	Hydro-Fix upper part, incl. electric interface

Hydro-Fix upper part

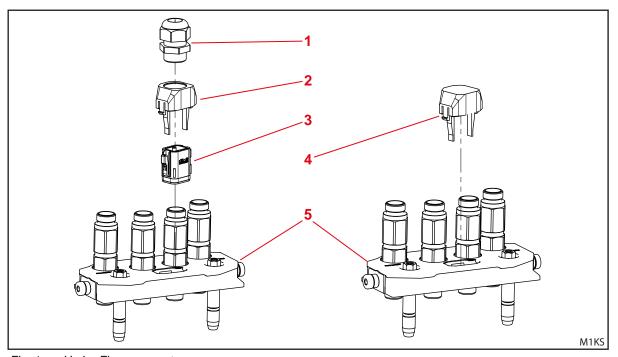


Fig. 1 Hydro-Fix upper part

Pos.	Qty.	Designation	Notes			
1	1	PG gland	only with the integrated electrical interface, included			
2	1	Cap for strain relief	with 3645200, 3645220, 3645230			
3	1	Socket housing				
3.1	7	Pin contacts	only with the integrated electrical interface, included with 3645200, 3645220 (no illustration)			
4	1	Stopper cap	included in 3645170, 3645180			
5	1	Hydro-Fix upper part	included with 3645170, 3645180, 3645200, 3645220,			
6	1	Dust cap	3645230 (dust cap not shown)			



Hydro-Fix lower part

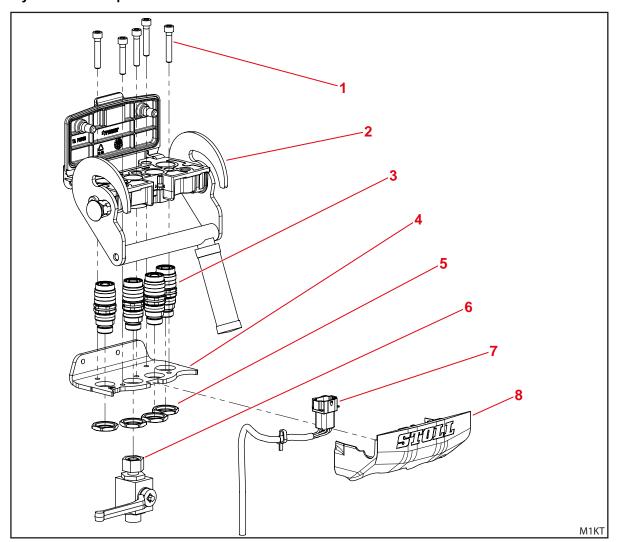


Fig. 2 Hydro-Fix lower part

Pos.	Qty.	Designation	Notes			
1	5	Cylinder screw M8x45 8.8	included with 3645170, 3645180, 3618680,			
2	1	Hydro-Fix lower part	3618690, 3645200, 3645220			
3	4	Coupling sleeve	Only for Standard or Comfort hydraulic system,			
4	1	Bracket incl. 2 hexagonal screws M8x20 8.8 with detent-edged rings	included with 3645180, 3618690, 3645220			
5	4	Nut for coupling sleeve	Part of the coupling sleeves			
6	1	Shut-off valve	Part of the standard hydraulic system			
7	1	Electrical kit	only with the integrated electrical interface, included with 3645200, 3645220			
8	1	Cover	included with 3645170, 3645180, 3618680, 3618690, 3645200, 3645220			



4 Installation

⚠ WARNING

Serious risk of injury due to uncontrolled lowering of the front loader!

During installation work, a raised front loader can be lowered unexpectedly and crush and injure nearby persons.

Only perform installation work when the front loader is completely lowered.

⚠ WARNING

Risk of injury due to the front loader tipping over!

When the front loader is put down on the parking supports, it does not have sufficient stability to perform installation work. The front loader can tip over and cause serious injury to persons standing nearby.

- Only perform installation work when the front loader is mounted.
- If mounting is not possible, secure the front loader against overturning using a crane or with load-bearing ropes or chains.



For the hydraulic installation, the following instructions must be observed

- Before starting work on the hydraulic system, depressurize the system and secure it against restarting. To do so, refer to the operating instructions of the tractor.
- Set up the drip trays ready to catch any residual oil that leaks.
- Only use the supplied hose lines and fittings. These are designed to bear the load.
- Avoid torsion. Hydraulic hoses must not be twisted in their routing.
- First connect hydraulic lines "N RKA90" or "A RKN90" with the 90° end, then remove all possible torsion (twisting) of the hose lines. You can only connect the straight end after you have done this.
- Avoid tensile and compressive loads on the hoses.
- Route the hoses in such a way that there are no points where they bend or rub. Be especially
 mindful that the hoses are routed straight from the connecting points. A bend in the hose right by
 the connecting point may tear the hose.
- Hydraulic hoses must be routed in such a manner that if a line breaks, nobody is endangered by the spraying hydraulic fluid. As such, do not route the hydraulic hoses through the driver's cab.
- If the driver is not protected by the cab or other components, a minimum distance of one metre must be kept between the driver's body and the hydraulic lines. Install splash guard hoses if this distance cannot be provided. Also make sure it is still possible to open the front or rear widows! The safety of the driver must be guaranteed even if the pane is open!
- Hydraulic hoses can be easily laid under the cab usually after removing the right-side rear wheel. Take account of the travel of the cab's suspension. Be especially careful that the hydraulic lines do not rub on the electrical lines that move through the cab's suspension!
- The hydraulic lines are partially pre-assembled. The fittings are not tightened to avoid any
 unnecessary torsions as they are being installed. After routing the lines, retighten all of the screws!



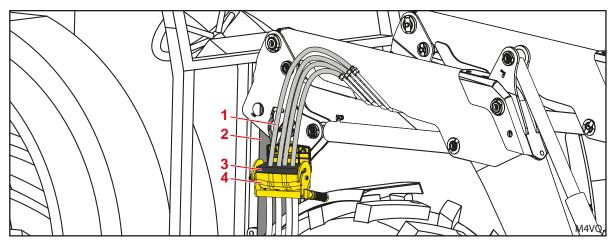


Fig. 3 Overview of the assembly

Legend

- 1 Hydraulic lines of the front loader
- 2 Right mounting part

- 3 Hydro-Fix upper part
- 4 Hydro-Fix lower part

STOLL recommends the following procedure for the mounting and installation work:

- (1) If available, prepare the electrical interface (see 4.1 Preparing the electrical interface).
- (2) Fit the Hydro-Fix upper part to the hydraulic lines of the front loader (see 4.2 Installing the Hydro-Fix upper part).
- (3) Install the Hydro-Fix lower part on the right mounting part (see 4.3 Mounting the Hydro-Fix lower part).
- (4) Check for proper installation and function (see 5 Completing the assembly).

4.1 Preparing the electrical interface

The new plug connectors replace the existing 7-pin plugs and sockets.

- If diodes are mounted in or on the 7-pin socket, read the notes at *Information on diodes*!
- (1) Label the wires to the cables of the socket and the plug with the contact number and remove them.
- (2) Remove the socket.
- The contact numbers on the 7-pin plugs and sockets and on the new 8-pin plug connectors match.

The assignment of the wire colours on the front loader and the functions to the contact numbers can be found in the table.

The table shows the maximum equipment. Depending on the front loader equipment and type, some cables might be missing.

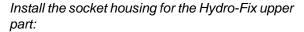
Front loader additional functions	Wire colour	8-pin plug Contact no.
4th control circuit (FS, FZ, Solid)	Brown (bn)	1
3rd control circuit (FS, FZ, Solid)	Black (bk)	2
Rapid emptying (FS+) or quick emptying (FZ-L)	Blue (bu)	3
Return To Level (FZ-L)	White (wh)	4
Comfort Drive	Yellow (ye)	5
Hydro-Lock (hydraulic implement locking mechanism)	Red (rd)	6
Ground	Green (gn)	7
	not assigned	8



Information on diodes

Diodes are required for some front loaders and front loader equipment. If these diodes are mounted in or on the 7-pin socket, proceed as follows:

- Mark the diodes and remove them.
- Connect the diodes correspondingly at the other end of the respective cable/wires.
- When installing the diodes, the installation direction is crucial. Diodes allow the electrical current to flow in just one direction, what is known as the forward direction. No current is allowed through in the reverse direction, the blocked direction.
- In circuit diagrams, diodes are represented by a symbol. The triangle in the symbol shows the direction of the flow, the vertical line indicates the blocked side.
- On the diodes, the blocked side is marked by a ring.



- (1) Push the PG gland and cap onto the cable.
- (2) Attach the socket contacts onto the individual wires (see *Fig. 6*).
- (3) Insert the socket contacts in the housing at positions 1 to 7 (see *Fig. 6*).
 - Push the contact through the gasket until it clicks into place.
 - Check that the contact is properly engaged by gently pulling on the cable.
- (4) Insert the blind plugs on the wedge (see *Fig.* 6).
- (5) Insert the wedge and press firmly (see *Fig.* 6).
- ✓ The socket housing is installed.

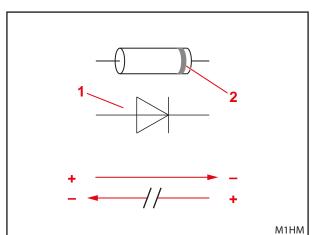


Fig. 4 Installation direction of the diodes

Legend

- 1 Diode
- 2 Blocked side

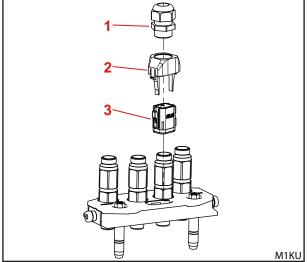


Fig. 5 Socket housing of the Hydro-Fix upper part

- 1 PG gland
- 2 Cap
- 3 Socket housing



Install the plug housing for the Hydro-Fix lower part:

- (1) Remove the gasket from the plug housing.
- The gasket is no longer required.
- Attach the pin contacts onto the individual wires.
- (3) Insert the pin contacts in the housing at the positions 1 to 7 (see Table on page 8).
 - Push in the contact until it clicks into place.
 - Check that the contact is properly engaged by gently pulling on the cable.
- (4) Insert the wedge and press firmly.
- (5) Insert the ground cable in slot 7.
- ✓ The plug housing is installed.

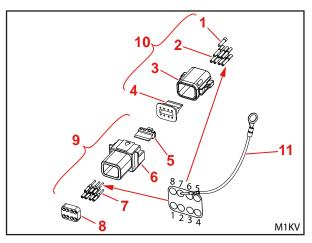


Fig. 6 Installing the socket housing and plug housing

Legend

- 1 Blind plug
- 2 Socket contacts
- 3 Socket housing
- 4 Wedge
- 5 Wedge
- 6 Housing
- 7 Pin contacts
- 8 Gasket
- 9 Hydro-Fix lower part
- 10 Hydro-Fix upper part
- 11 Ground cable

4.2 Installing the Hydro-Fix upper part

Install the Hydro-Fix upper part:

- If necessary, dismantle the existing hydraulic couplings from the hydraulic lines of the front loader.
- (2) Connect hydraulic lines A1, B1, A2, B2 of the front loader to the Hydro-Fix upper part.

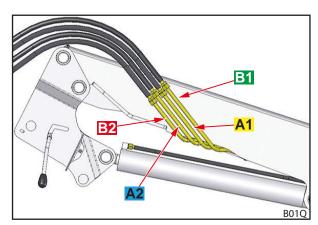


Fig. 7 Hydraulic lines on the front loader



In front loaders without electricity:

(3) Insert the stopper cap on the Hydro-Fix upper part (wide side towards the hydraulic connections).

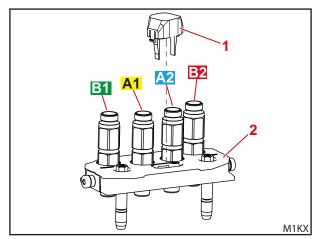


Fig. 8 Inserting the stopper cap (front loader without electrical system)

Legend

- 1 Stopper cap
- 2 Hydro-Fix upper part

On front loaders with electrical system:

- (4) Insert the socket housing on the Hydro-Fix upper part so that the "lugs" (see red arrow in *Fig. 9*) are pointing to the front.
- (5) Insert the cap (wide side towards the hydraulic connections).
- (6) Screw the PG gland on the cap.
- (7) Tighten the compression nut of the cable gland. (Strain relief)
- ✓ The Hydro-Fix upper part is installed.

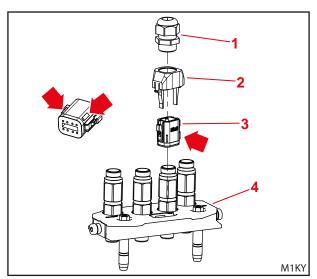


Fig. 9 Installing the Hydro-Fix upper part (front loader with electrical system)

- 1 PG gland
- 2 Cap
- 3 Socket housing
- 4 Hydro-Fix upper part



4.3 Mounting the Hydro-Fix lower part

4.3.1 Attaching the Hydro-Fix lower part on Standard or Comfort hydraulics

Required tools:

- ★ Allen key WAF 6
- ★ Screwdriver
- ★ Open-ended spanner WAF 13, WAF 24, WAF 27, WAF 30, WAF 34

4.3.1.1 Assembling the bracket

- (1) Fasten the bracket with 2 screws M8x20 on the right mounting part.
- Note the position of the bracket. The angle must face upwards (see *Fig. 10*).
- (2) Fasten 4 hydraulic couplings with the nuts on the bracket.
- (3) For Standard hydraulic system: Install the shut-off valve on the coupling for the lifting line.
- (4) Connect 4 hydraulic lines below on the couplings and/or on the shut-off valve.
- Follow the installation instructions for the mounting kit and the hydraulic system.

 Pay attention to the correct assignment of the hydraulic lines.
- ✓ The bracket is installed.

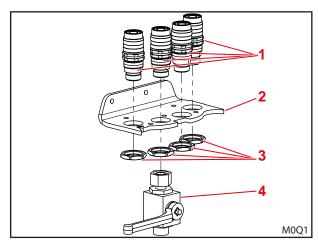


Fig. 10 Installing the bracket

- 1 Hydraulic couplings
- 2 Bracket
- 3 Nuts
- 4 Shut-off valve



4.3.1.2 Mounting without electrics

- (1) Slide the cover onto the bracket (not all the way to the back).
- (2) Slide the Hydro-Fix lower part onto the bracket (not all the way down).
- (3) Carefully lift the lug with a screwdriver and slide the cover in all the way so that the lug rests on both supports.
- (4) Slide the Hydro-Fix lower part all the way on.
- (5) Secure the Hydro-Fix lower part with the 5 screws M8x45.
- Observe the tightening torque: 27 Nm.
 Tighten the middle screw first. Tighten the screws evenly.
- ✓ The Hydro-Fix lower part is installed.

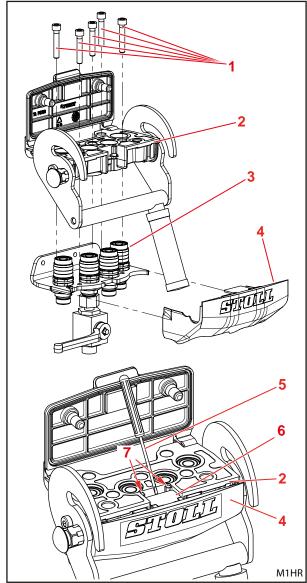
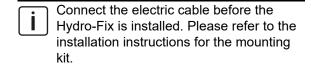


Fig. 11 Installing the Hydro-Fix lower part without electrical system

- 1 Screws M8x45
- 2 Hydro-Fix lower part
- 3 Bracket
- 4 Cover
- 5 Screwdriver
- 6 Lug
- 7 Supports



4.3.1.3 Mounting with integrated electrical interface



- (1) Remove the lug on the cover.
- (2) Slide the cover onto the bracket (not all the way to the back).
- (3) Insert electrical plug connectors on the cover.
- The groove of the plug connector points to the Hydro-Fix lower part, and the spring to the cover.
- (4) Route the electric cable and ground cable on the side and secure with cable ties.
- Make sure that the cables are not crushed.
- (5) Slide the Hydro-Fix lower part onto the bracket (not all the way down).

- (6) Set the electric plug connector at a slight angle so that it slides into the guides and support plates (see Fig. 13) when you put the cover and the Hydro-Fix lower part together.
- (7) Slide the cover on completely. At the same time, gently press down on the Hydro-Fix lower part.
- (8) Secure the Hydro-Fix lower part with the 5 screws M8x45.
- Observe the tightening torque: 27 Nm.
 Tighten the middle screw first. Tighten the screws evenly.
- (9) Slide the ground connection of the ground cable from the below onto one of the screws M8x45 and fasten with 1 hexagonal nut M8.
- ✓ The Hydro-Fix lower part is installed.

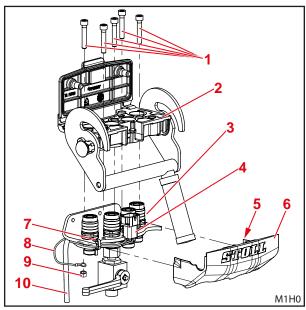


Fig. 12 Installing the Hydro-Fix lower part with integrated electrical interface

Legend

- 1 Screws M8x45
- 2 Hydro-Fix lower part
- 3 Bracket
- 4 Electrical plug connector
- 5 Lug
- 6 Cover
- 7 Cable tie
- 8 Ground cable
- 9 Hexagonal nut M8
- 10 Electric cable

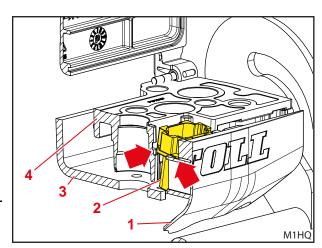


Fig. 13 Installing the Hydro-Fix lower part with integrated electrical interface – Electric plug connector

- 1 Cover
- 2 Electrical plug connector
- 3 Bracket
- 4 Hydro-Fix lower part



4.3.2 Installing the Hydro-Fix lower part on Hydac valves (single-lever control unit)

Also observe the instructions for the single-lever control unit.

Required tools:

- ★ Allen key WAF 6
- ★ Screwdriver

4.3.2.1 Mounting without electrics

- (1) Unscrew the 5 screws on the valve.
- (2) Remove the lug on the cover.
- (3) Slide the cover on the valve until it is about 5 mm from the edge of the sheet.
- (4) Slide the Hydro-Fix lower part on the valve (not all the way down).

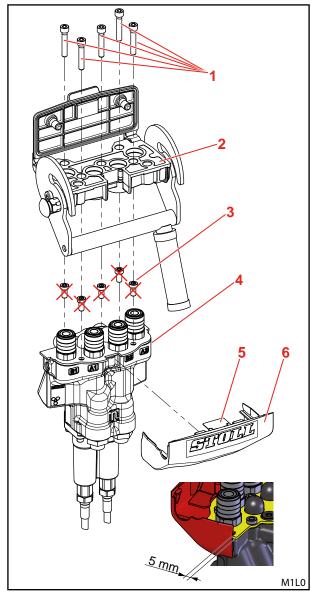


Fig. 14 Installing the Hydro-Fix lower part on Hydac valves (without electrical system)

- 1 Screws M8x45
- 2 Hydro-Fix lower part
- 3 Screws
- 4 Valve
- 5 Lug
- 6 Cover



- (5) Carefully lift the lug with a screwdriver and slide the cover in all the way so that the lug rests on both supports.
- (6) Slide the Hydro-Fix lower part all the way on.
- (7) Secure the Hydro-Fix lower part with the 5 screws M8x45.
- Observe the tightening torque: 27 Nm.
 Tighten the middle screw first. Tighten the screws evenly.
- ✓ The Hydro-Fix lower part is installed.

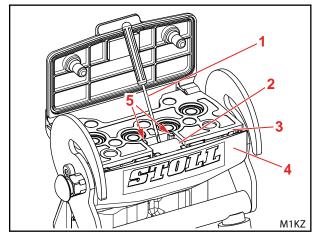


Fig. 15 Installed Hydro-Fix lower part (without electrical system)

Legend

- 1 Screwdriver
- 2 Lug
- 3 Hydro-Fix lower part
- 4 Cover
- 5 Supports

4.3.2.2 Mounting with integrated electrical interface

- (1) Unscrew the 5 screws on the valve.
- (2) Remove the lug on the cover.
- (3) Slide the cover on the valve until it is about 5 mm from the edge of the sheet.
- (4) Insert electrical plug connectors on the cover.
- The groove of the electric plug connector points to the Hydro-Fix lower part, and the spring to the cover.

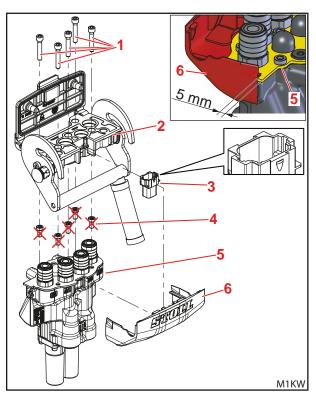


Fig. 16 Installing the Hydro-Fix lower part on Hydac valves (with integrated electrical interface)

- 1 Screws M8x45
- 2 Hydro-Fix lower part
- 3 Electrical plug connector
- 4 Screws
- 5 Valve
- 6 Cover



(5) Route the electric cable and ground cable along the side.

i

Make sure that the cables are not crushed.

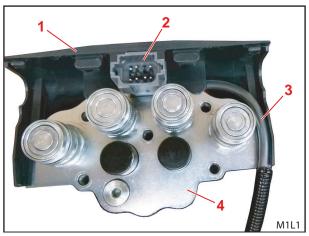


Fig. 17 Inserted electrical plug connector

Legend

- 1 Cover
- 2 Electrical plug connector
- 3 Electric cable
- 4 Valve
- (6) Slide the Hydro-Fix lower part on the valve (not all the way down).
- (7) Set the electric plug connector at a slight angle so that it slides into the guides and support plates (see arrows in *Fig. 18*) when you put the cover and the Hydro-Fix upper part together.
- (8) Slide the cover on completely, and at the same time, gently press down on the Hydro-Fix lower part.
- (9) Secure the Hydro-Fix lower part with the 5 screws M8x45.
- Observe the tightening torque: 27 Nm.
 Tighten the middle screw first. Tighten the screws evenly.
- (10) Fasten the ground connection of the ground cable with one of the screws of the proportional valve.
- ✓ The Hydro-Fix lower part is installed.

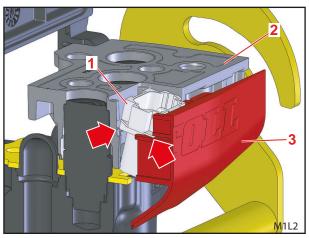


Fig. 18 Installing the Hydro-Fix lower part – Electric plug connector and cover

- 1 Electrical plug connector
- 2 Hydro-Fix lower part
- 3 Cover

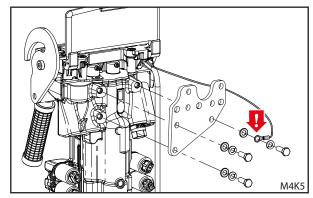


Fig. 19 Fastening the earth cable



5 Completing the assembly

<u> </u>	Observe the operating instructions!
L	Operation is explained in detail in the operating instructions.
>	Check for proper installation and function: Are all the screws tight? Are all cables routed so that they do not rub or bend? Is the installed hydraulic system airtight? Has the cover been correctly attached to the Hydro-Fix lower part?
i	If the cover is not fitted correctly or not fitted at all, the cover of the Hydro-Fix lower part will not close tightly.
	 Can the lever of the Hydro-Fix lower part be swivelled up and down without colliding with other components (e.g. mudguards)? Do the operating elements work properly? Does the assignment of operating elements concur with the functions?
i	Upon completion of the installation, pass these installation instructions on to the end user. These installation instructions should be stored in a safe location and given to the new owner if the front loader or the tractor fitted with the front loader changes hands. The information in 3 Overview is also used for ordering spare parts.



6 Tightening torques for screws

	n category					
Thread	8.8		10.9		12.9	
	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft
M4	3	2	4.5	3	5	4
M6	11	8	15	11	17	13
M8	27	20	36	27	42	31
M8x1	29	21	38	28	45	33
M10	54	40	71	52	83	61
M10x1.25	57	42	75	55	87	64
M12	93	69	123	91	144	106
M12x1.5	97	72	128	94	150	111
M12x1.25	101	74	133	98	155	114
M14	148	109	195	144	229	169
M14x1.5	159	117	209	154	244	180
M16	230	170	302	223	354	261
M16x1.5	244	180	320	236	374	276
M18	329	243	421	311	492	363
M18x2	348	257	443	327	519	383
M18x1.5	368	271	465	343	544	401
M20	464	342	592	437	692	510
M20x2	488	360	619	457	724	534
M20x1.5	511	377	646	476	756	558
M22	634	468	807	595	945	697
M22x2	663	489	840	620	984	726
M22x1.5	692	510	873	644	1022	754
M24	798	589	1017	750	1190	878
M24x2	865	638	1095	808	1282	946
M27	1176	867	1496	1103	1750	1291
M27x2	1262	931	1594	1176	1866	1376
M30	1597	1178	2033	1499	2380	1755
M30x2	1756	1295	2216	1634	2594	1913
5/8" UNC (normal)	230	170	302	223		
5/8" UNF (fine)	244	180	320	236		
3/4" UNC (normal)	464	342	592	437		
3/4" UNF (fine)	511	377	646	476		

Make sure that the threads are clean! The specified tightening torques are valid for screws and threads that are clean, dry and free of grease.

Address of the dealer						



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