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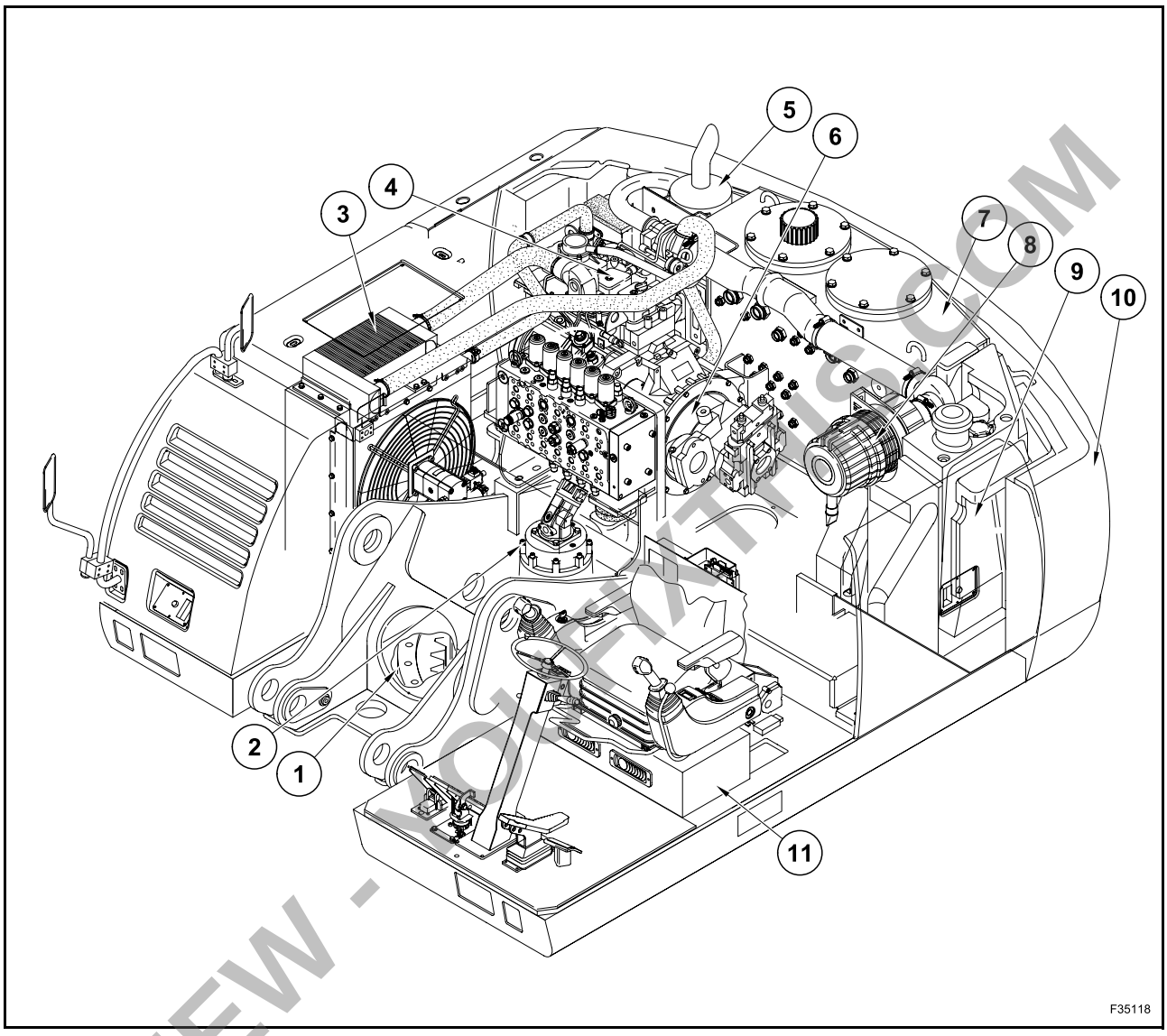
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2300	2550	430	1220	1750	300	2890	2520	3010	3900	345	4560	930	2540	1070	8040	8180

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1. MAIN COMPONENTS



1. Slewing bearing
2. Rotation gearmotor
3. Multi-cooler
4. Diesel engine
5. Muffler
6. Hydraulic pumps
7. Hydraulic oil tank
8. Air filter
9. Counterweight
10. Fuel tank
11. Cab and operator's seat

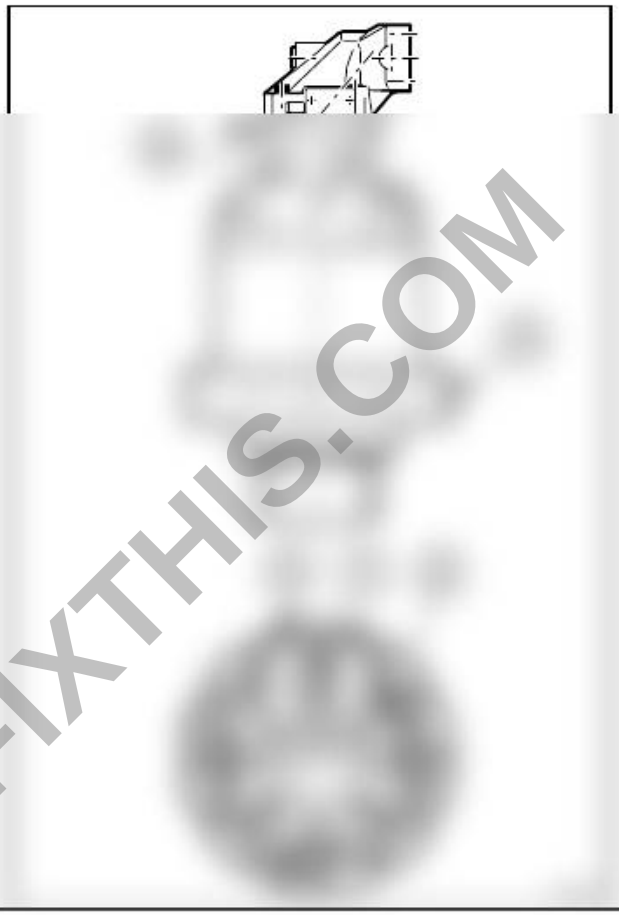
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LUBRICATION

The gearmotor has two screw plugs (1) and (2) for oil filling and a plug (3) to be unscrewed for draining.



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3.2 DISASSEMBLY AND ASSEMBLY

DISASSEMBLY

Park the machine on a level and firm surface.

Lower the attachment to the ground.

Lower the blade and the stabilizers to the ground.

Engage the parking brake.

Lock the upper structure.

Stop the engine.

Move both hydraulic control levers in all directions, to release possible residual pressure inside the hydraulic system.

Disconnect the pilot control.

Place some wedges under the wheels so as to prevent the machine from moving.

Mark and disconnect all hydraulic hoses.

Disconnect the hose of the expansion tank (2) and remove the speed sensor (3) from the rotation gearbox (1).

Close all openings on hoses and rotation gearbox with plugs in order to prevent dirt from entering.

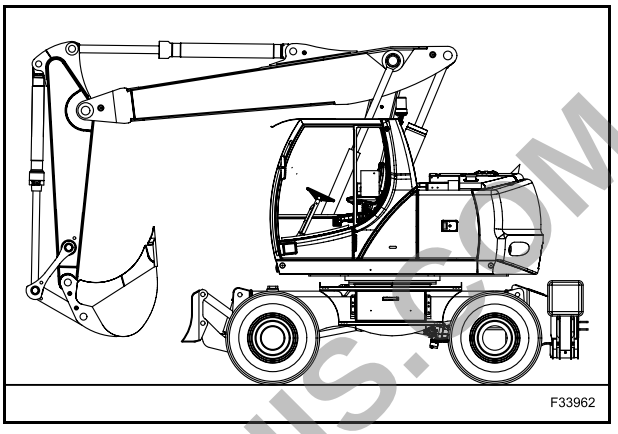
Using ropes, hook the slewing bearing (1) by means of eyebolts (5) and connect to a crane.

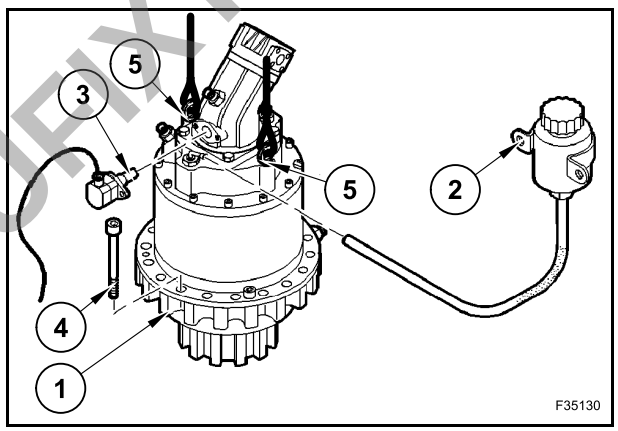
Mark the position of the rotation gearbox.

Unscrew and remove the screws (4).

Using the crane, lift and remove the slewing bearing (1).

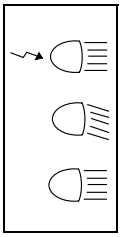
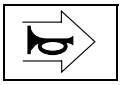
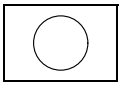
The slewing bearing is glued to the supporting surface. To detach the glue, slightly hit the borders of the flange with a hammer.





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Ref.	Description		Operation	Symbol
4	Push-button	Power Boost	Generates an engine rpm and pressure increase (for short work stages).	
		Independent stabilizers (optional)	Allows to raise the stabilizers independently one from another.	
5	Push-button	Dipper/blade and stabilizers controls switch-over	The controls for dipper/blade and stabilizers switch over. (With blade/stabilizers activated the buzzer sounds).	
		Independent stabilizers (optional)	Allows to lower the stabilizers independently one from another.	
6	Push-button	Hydraulic hammer	Hydraulic hammer engagement.	
7	Push-button	Clamshell rotation (optional)	Left clamshell rotation.	
8	Pedal	Placing boom/ attachment	With placing boom: extension/retraction of boom adjusting cylinder. With hammer: hammer control. With rotary cutter: rotary cutter control. With shears: shears control.	
		Off-set digging	By depressing pedal on the upper side: the off-set boom turns to the right. By depressing the pedal on the bottom side: the off-set boom turns to the left.	
9	Footrest			
10	Lever	Lights	It selects the lights type. Main beams signal: by pushing the lever upward. Low beams: lever in middle position. Main beams: by pushing the lever downward.	
11	Lever	Horn	Acoustic signal.	
12	Lever	Lights	Lights off.	

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8. TYRES

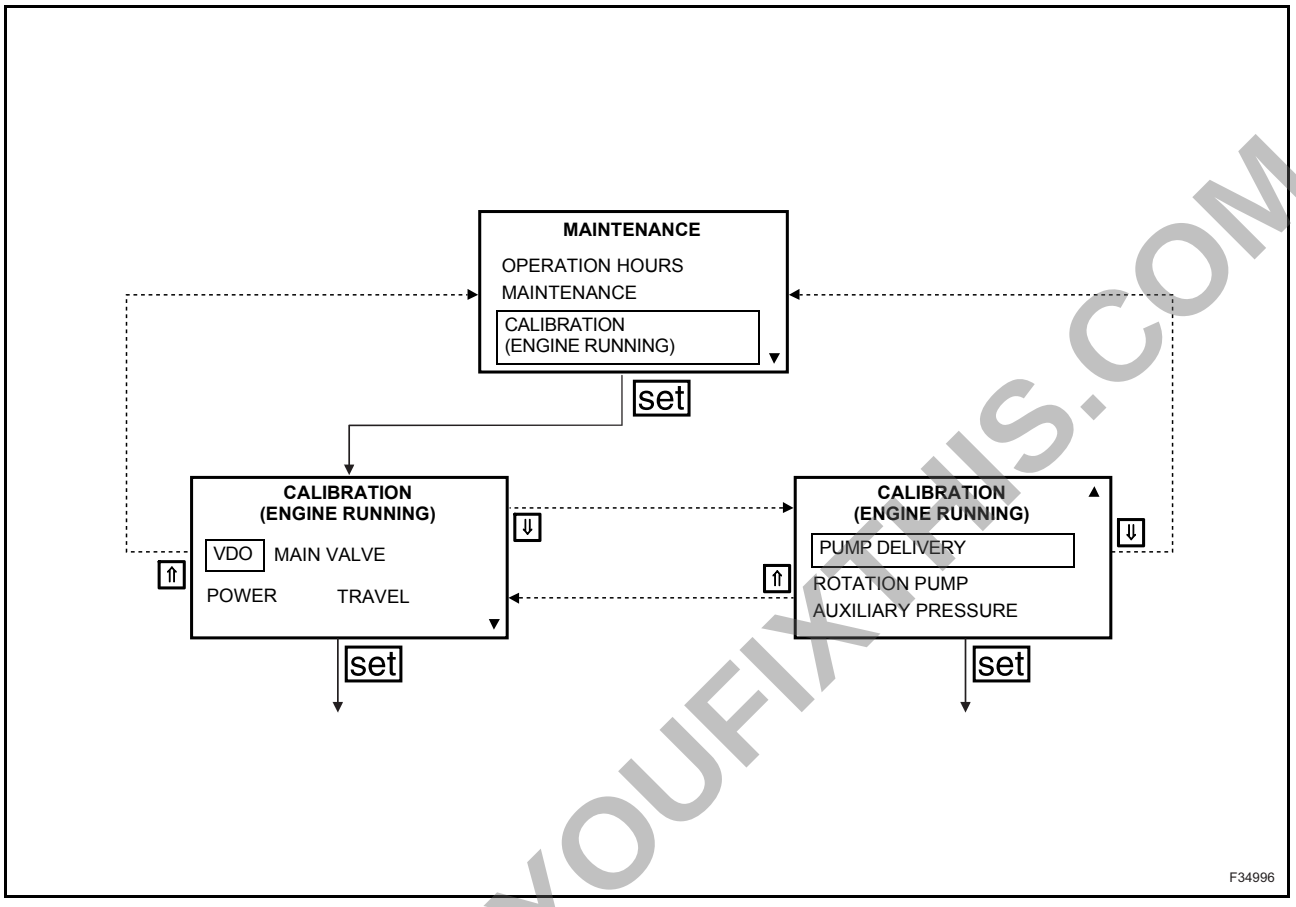
Tyre	Manufacturer	Type	Pressure (bar)	V (max) [km/h]

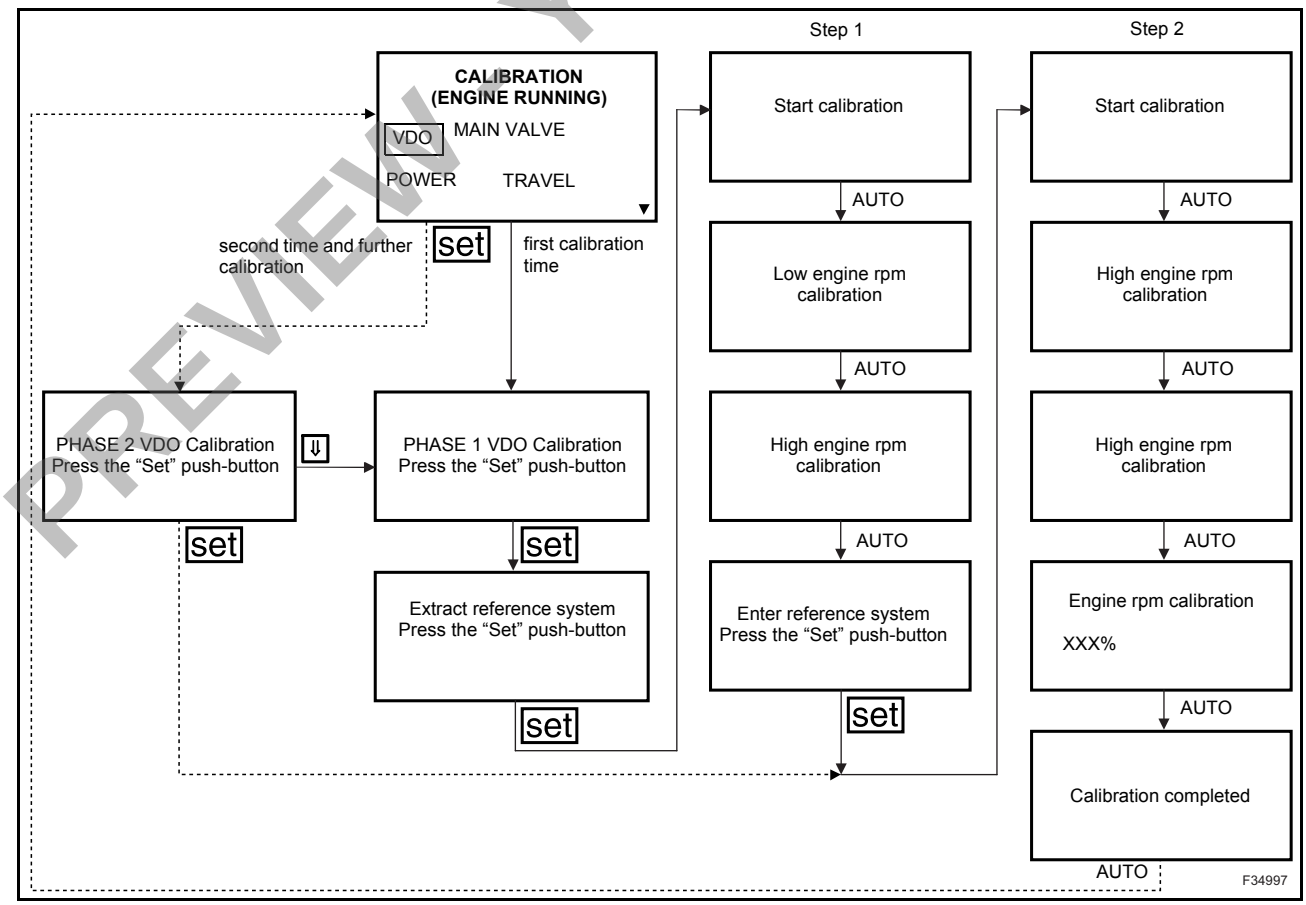
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3.1 VDO CALIBRATION

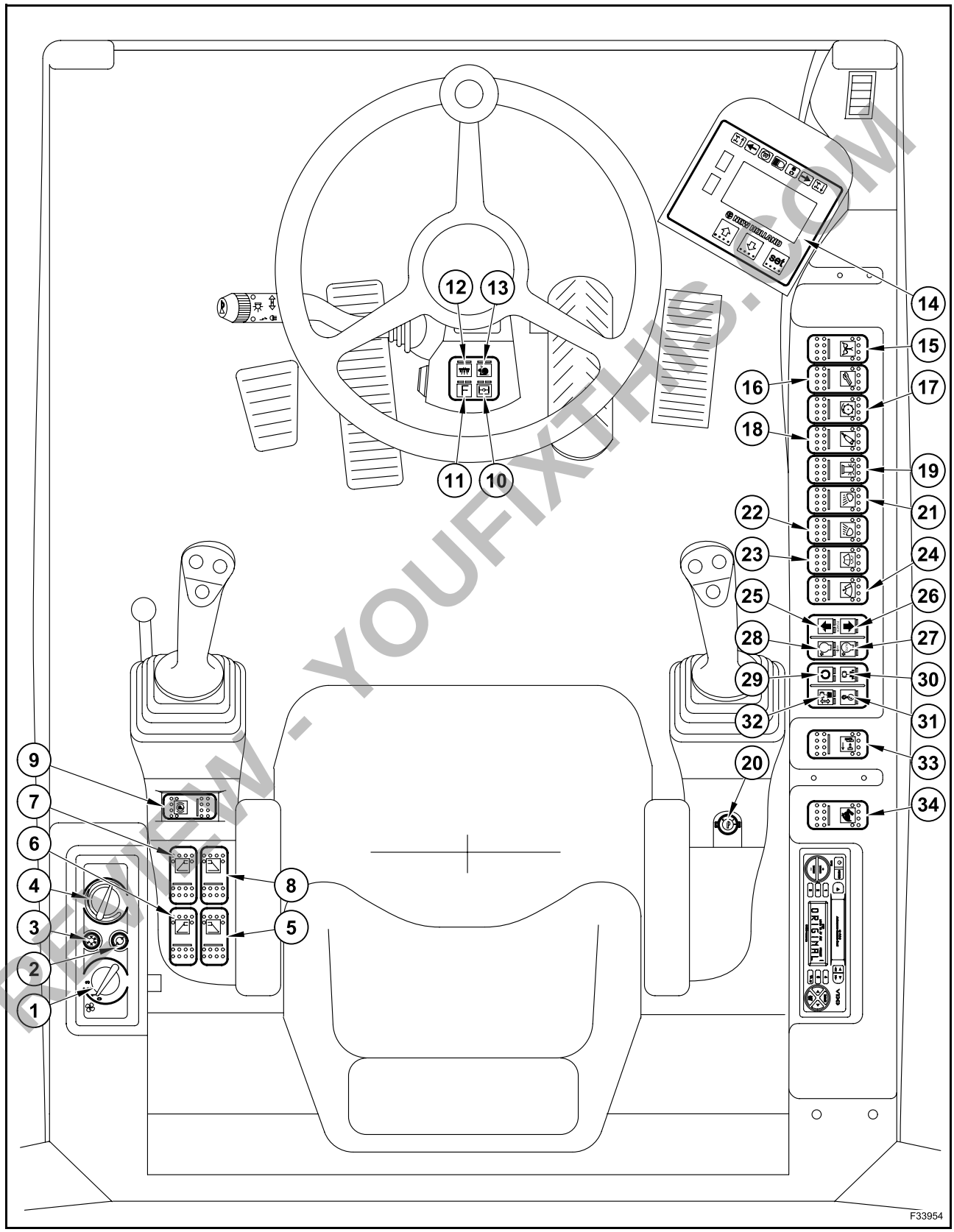




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1. SWITCHES AND PUSH-BUTTONS



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1. TYPES OF FRONT ATTACHMENT

According to the type of job, wheel excavators may have three different outfits:

- front attachment with monoboom;
- front attachment with placing boom;
- attachment with off-set boom.

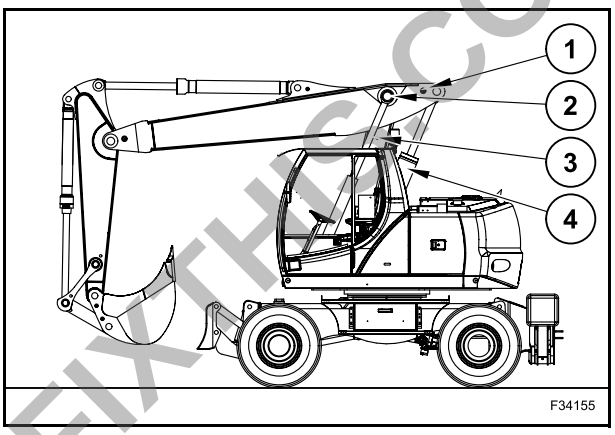
PLACING BOOM ATTACHMENT

On this attachment, between the boom (3) and the placing boom (1), there is a further articulation point (2).

By means of a further hydraulic cylinder, boom adjusting cylinder (4) the placing boom can be adjusted (1).

The adjusting attachment offers advantages both while travelling and while working:

- enlarging the visual range;
- better attachment mobility;
- easy transport of machine on trailers;
- compliance with the prescribed dimensions for road travel.



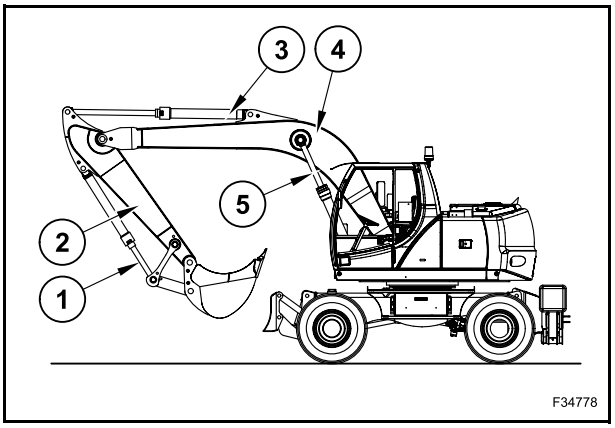
MONOBOOM ATTACHMENT

This type of attachment is composed of two booms:

- the boom (4) and the dipper (2);

and of three cylinders:

- the boom cylinders (5);
- the dipper cylinder (3);
- the bucket cylinder (1).



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INDEX

SECTION 01 - SAFETY PRECAUTIONS

1. GENERAL SAFETY INSTRUCTIONS 2
2. USE INSTRUCTION 11

SECTION 02 - CONTROLS AND INSTRUMENTS

1. SWITCHES AND PUSH-BUTTONS 1
2. CONTROLS AND PEDALS 6
3. MULTI-FUNCTION DISPLAY 10

SECTION 03 - TECHNICAL SPECIFICATIONS

1. MAIN COMPONENTS 1
2. DIMENSIONS - OPERATING WEIGHTS 3
3. DIGGING PERFORMANCE 19
4. LIFTING CAPACITIES 33
5. HYDRAULIC SYSTEM 39
6. ROTATION 40
7. TRAVEL 41
8. TYRES 42
9. BRAKES 42
10. STEERING 42
11. ELECTRICAL SYSTEM 42
12. BUCKETS 43
13. TIGHTENING TORQUES 44
14. CENTRALIZED LUBRICATION PUMP (OPTIONAL) 44
15. FUEL SYSTEM 44
16. ENGINE 45
17. SUPPLY SUMMARIZING CHART 46

SECTION 04 - UPPER STRUCTURE

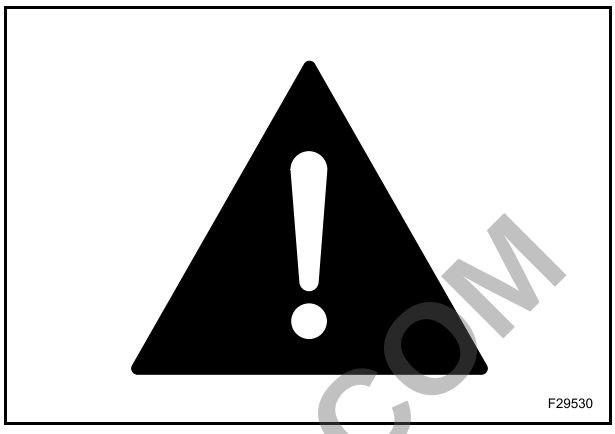
1. MAIN COMPONENTS 1
2. SLEWING BEARING 2
3. ROTATION GEARMOTOR 7
   3.1 DISASSEMBLY AND ASSEMBLY 12
   3.2 SPECIAL TOOLS 34
4. MULTI-COOLER 35
   4.1 TECHNICAL SPECIFICATIONS 36
5. HYDRAULIC PUMPS 39
6. MUFFLER 40
7. HYDRAULIC OIL TANK 41
8. AIR FILTER 47
9. COUNTERWEIGHT 47
10. FUEL SYSTEM 48

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Carefully read the safety rules contained herein and follow advised precautions to avoid potential hazards and to safeguard your safety and personal integrity.

In this manual you will find the following indications:



⚠ WARNING

This symbol warns about the possibility of potential damages to the machine that can involve the operator's safety.

⚠ DANGER

With specific warnings about potential dangers for the operator's or other persons integrity directly or indirectly involved.

The non compliance with the warning preceded by the above mentioned key-words (**WARNING** and **DANGER**) can cause serious accidents or even the death of the persons involved.

Moreover in the present Manual have been given some instructions with texts in italics, preceded by the words **NOTE** and **CAUTION**, with following meanings for machine protection:

NOTE: it emphasizes and underlines to the operator the correct technique or correct procedure to follow.

⚠ WARNING

It warns the operator of a possible hazard of machine damage in case he does not follow a determined procedure.

Your safety and that of people around you depends on you. It is essential that you understand this manual for the correct operation, inspection, lubrication and maintenance of this machine.

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SAFETY INSTRUCTION



This warning symbol points out important messages involving your safety.

Carefully read the safety rules contained herein and follow advised precautions to avoid potential hazards and to safeguard your safety and personal integrity.

In this manual you will find this symbol together with the following key-words:

⚠ WARNING
This symbol warns about the possibility of potential damages to the machine that can involve the operator's safety.

⚠ DANGER
With specific warnings about potential dangers for the operator's or other persons integrity directly or indirectly involved.

The non compliance with the warning preceded by the above mentioned key-words (**WARNING** and **DANGER**) can cause serious accidents or even the death of the persons involved.

Moreover in the present Manual have been given some instructions with texts in italics, preceded by the words **NOTE** and **CAUTION**:

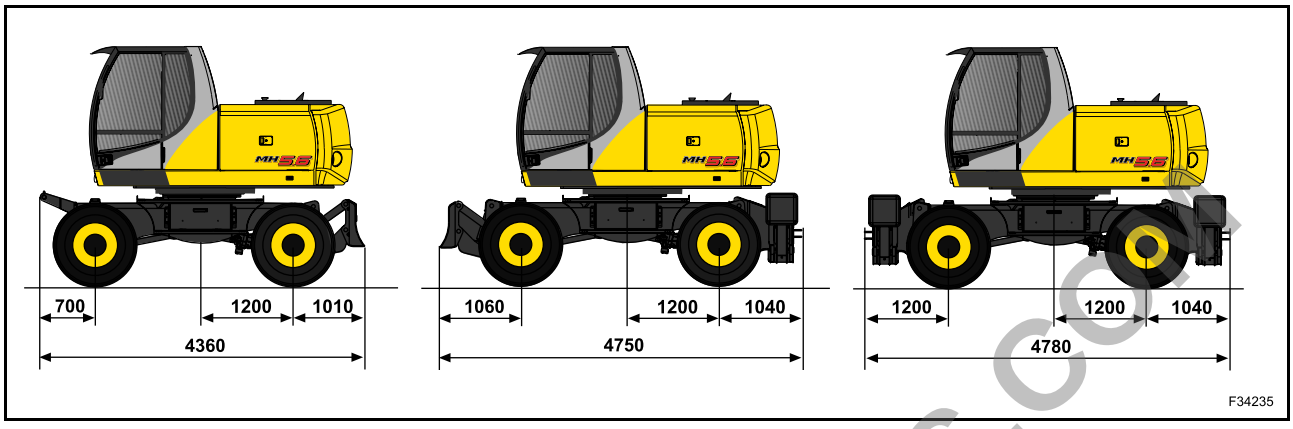
NOTE: it emphasizes and underlines to the operator the correct technique or correct procedure to follow.

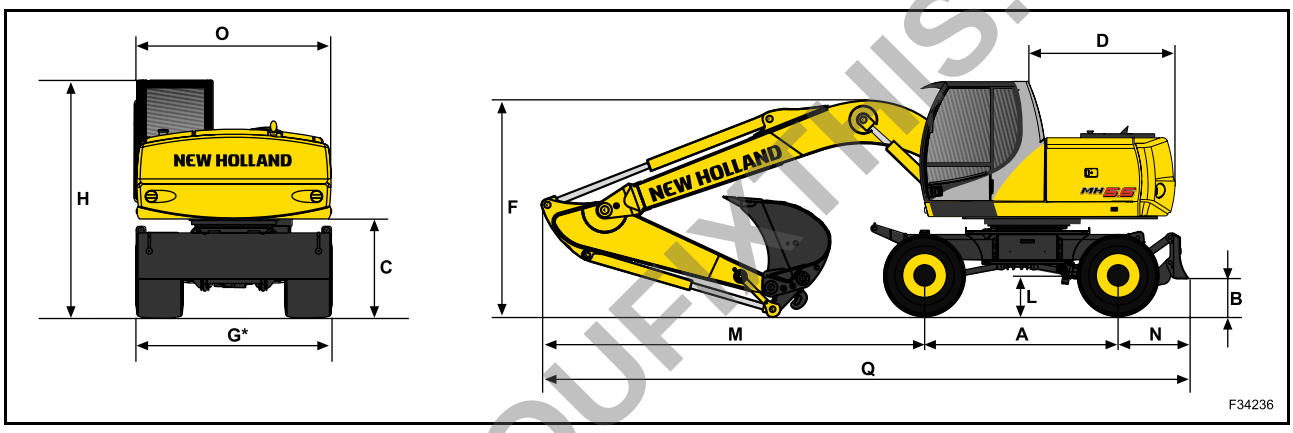
⚠ CAUTION
It warns the operator of a possible hazard of machine damage in case he does not follow a determined procedure.

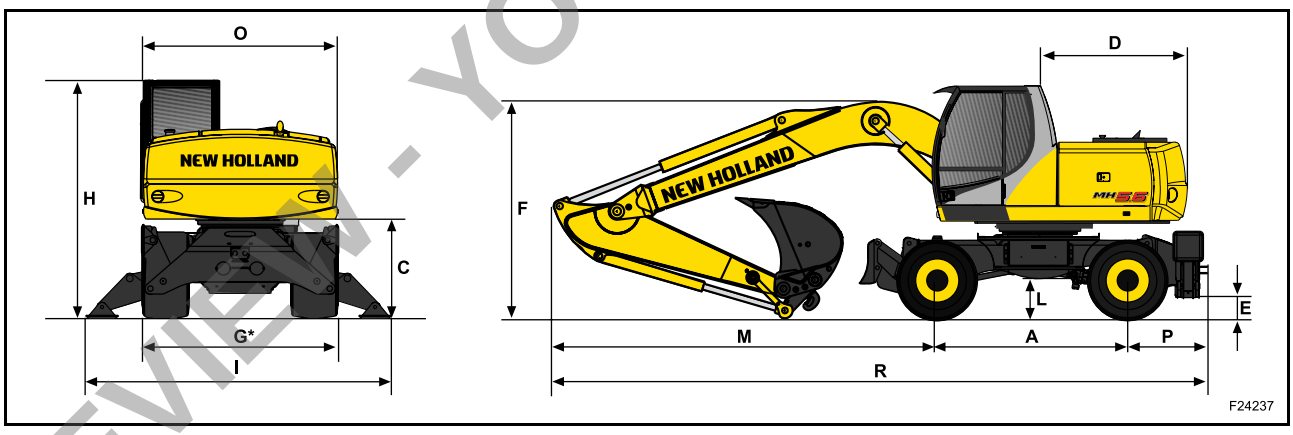
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OUTFIT WITH MONOBOOM



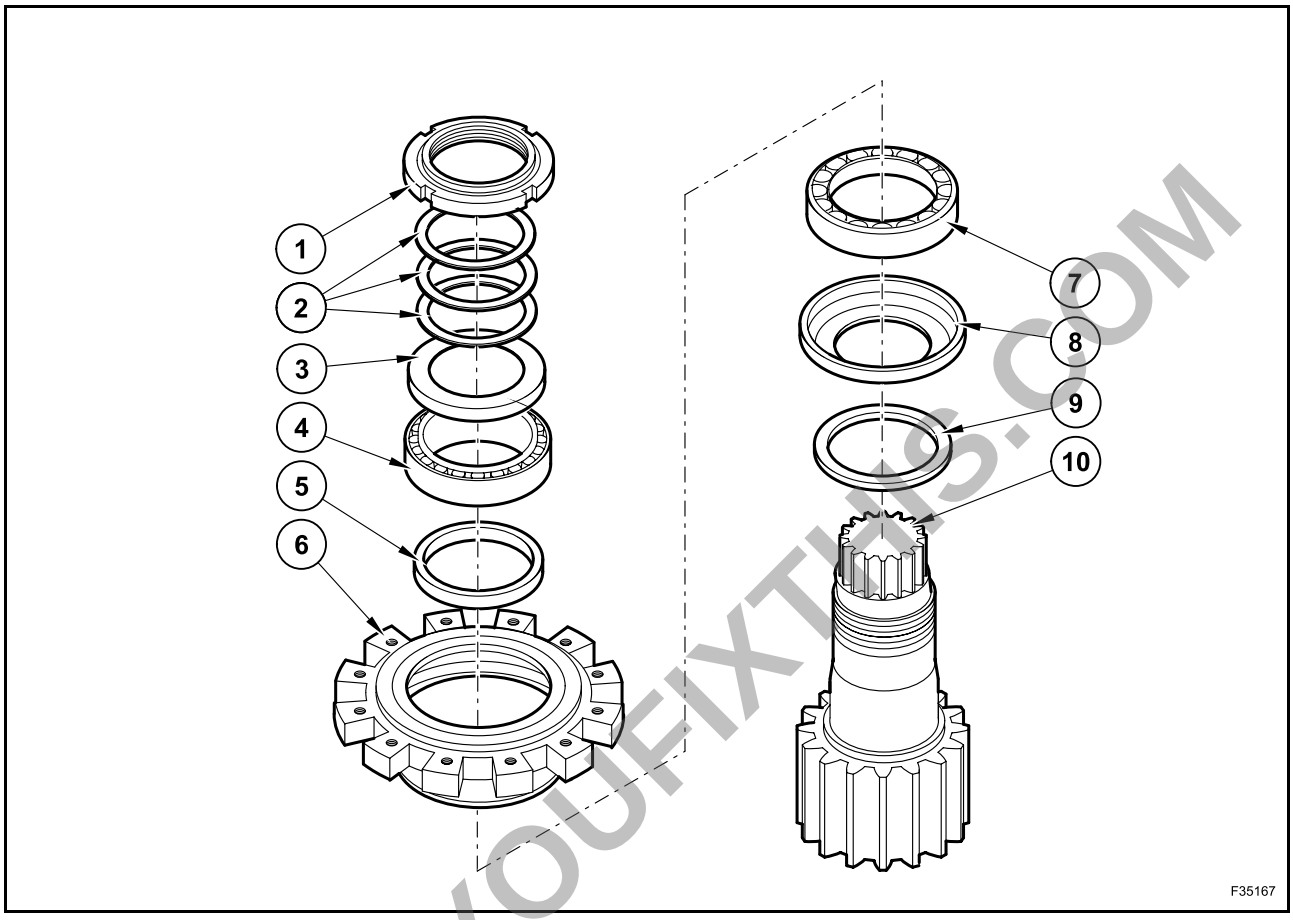




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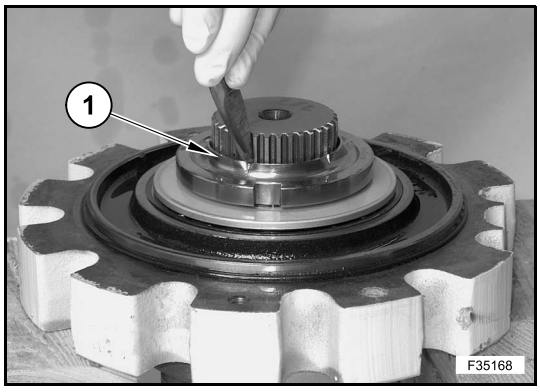
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BEARINGS



Disassembly

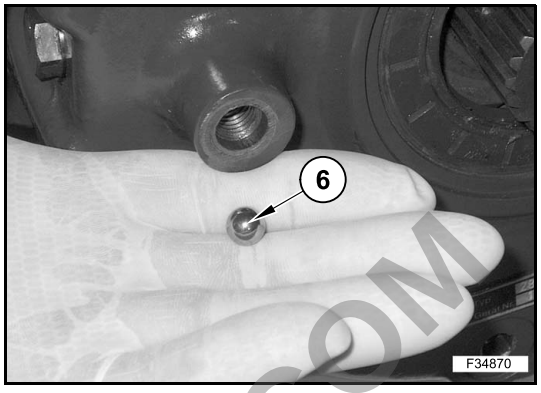
Remove the ring nut caulking (1).



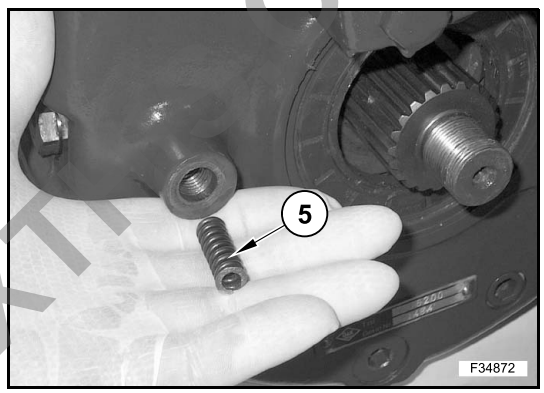
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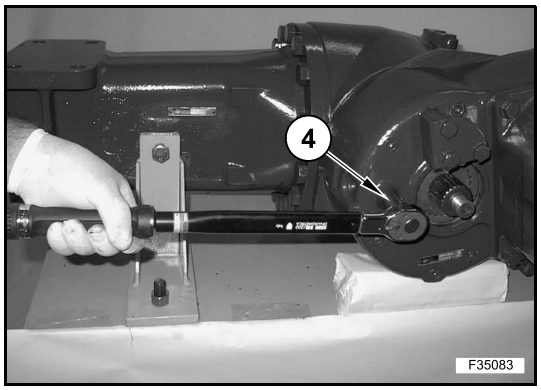
Assemble the ball (6).



Assemble the spring (5).

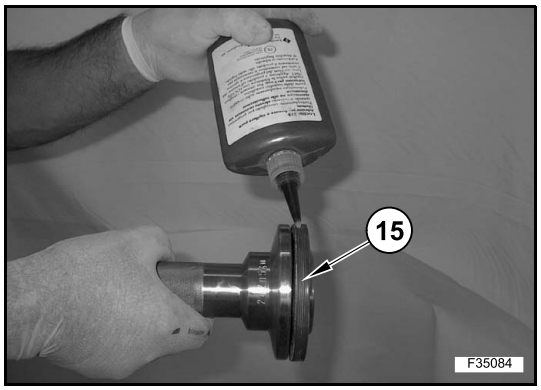


Tighten the screw (4) to the prescribed torque 80 Nm (59.00 lbf·ft).



Fit seal ring (15) inside tool 2897005.

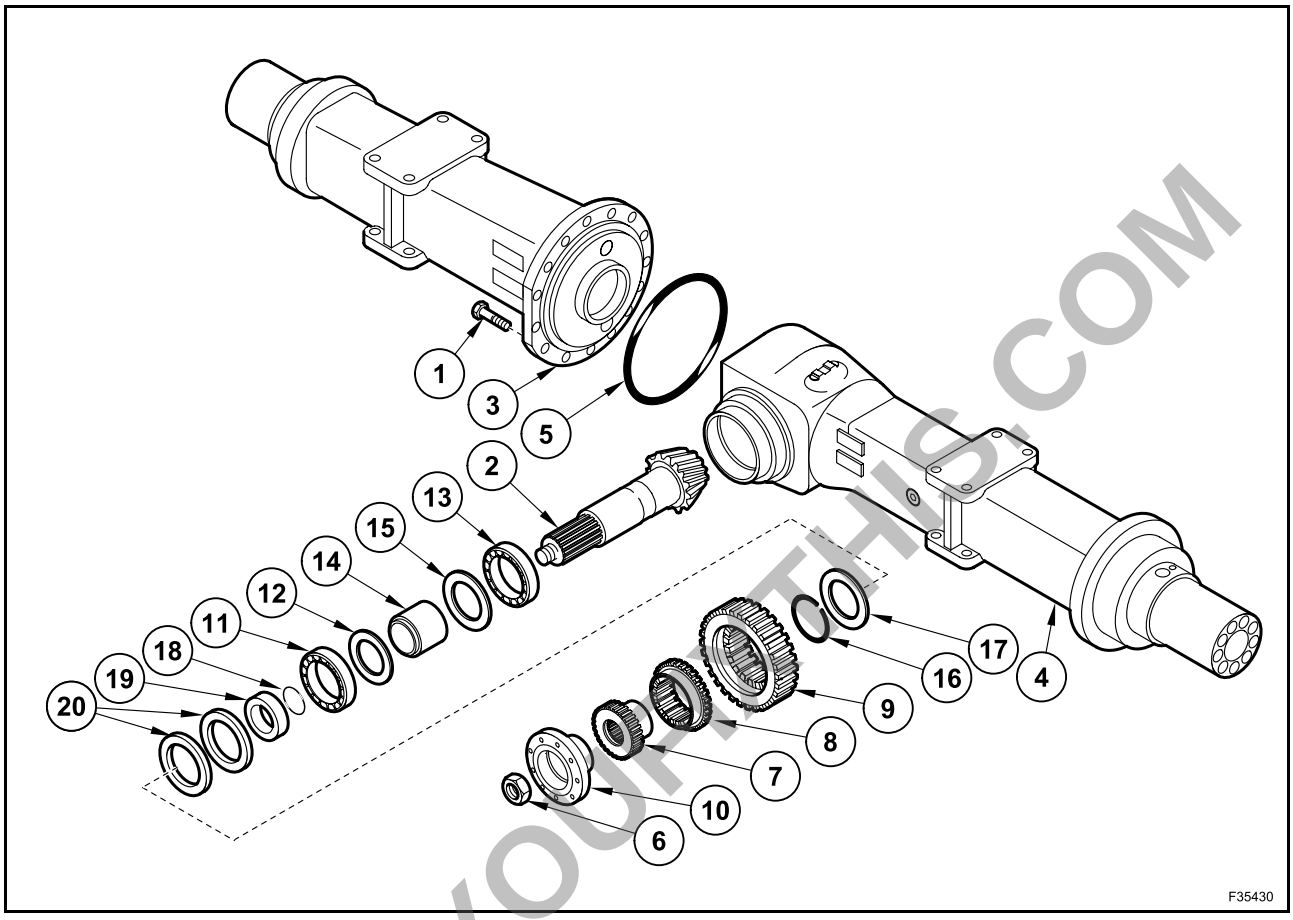
Apply Loctite® 510 on the outer face of the seal ring.



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PINION ASSY

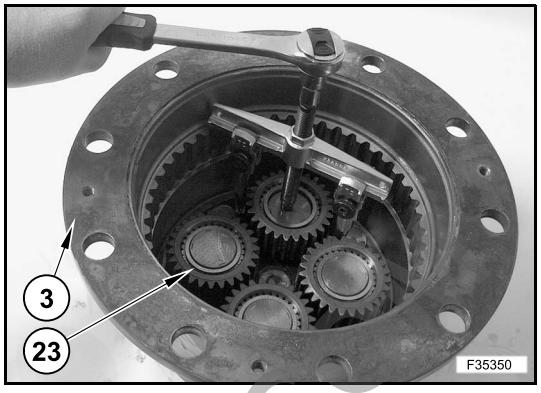


1. Screw
2. Pinion
3. Axle beam
4. Body and axle beam
5. O-ring
6. Nut
7. Gear
8. Gear
9. Gear
10. Flange
11. Bearing
12. Shim
13. Bearing
14. Spacer
15. Shim
16. Snap ring
17. Disc
18. O-ring
19. Seal ring
20. Seal ring

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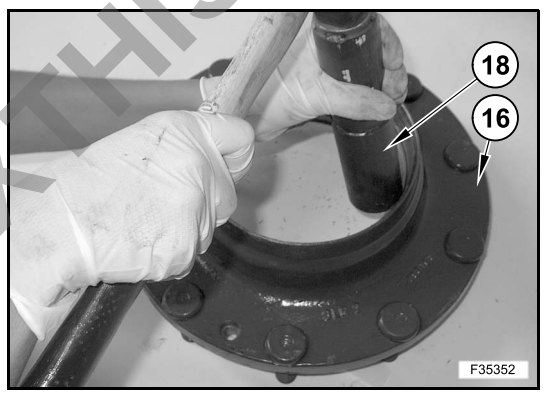
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Remove the planetary gears (23) from the planet carrier cover (3).

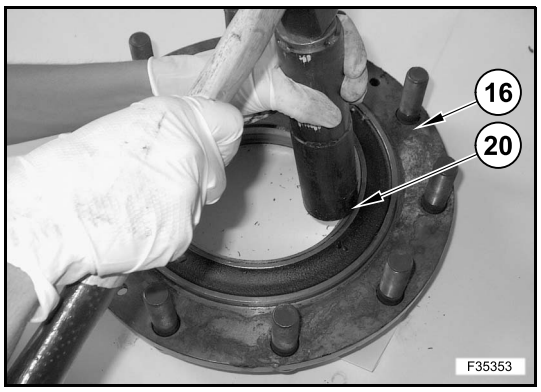


Assembly

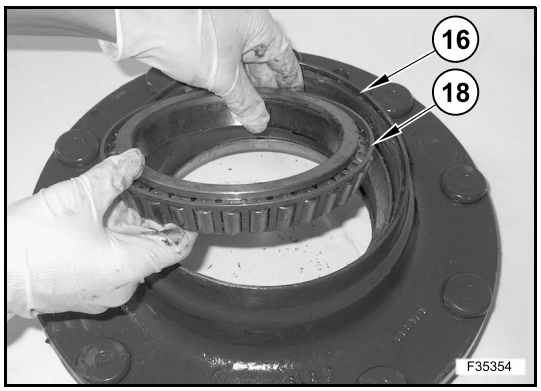
Assemble the bearing cup (18) onto wheel hub (16).



Assemble the bearing cup (20) onto wheel hub (16).



Assemble the bearing (18) onto wheel hub (16).



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Do not overinflate the tyres, because if bumped they can break easily and under extreme conditions the rim can get deformed and the tyre can burst.

⚠ CAUTION

The tyres inflating pressure varies according to the load applied to axles.

Park the machine on level and firm ground with sufficient strength.

Rest the working attachment on the ground.

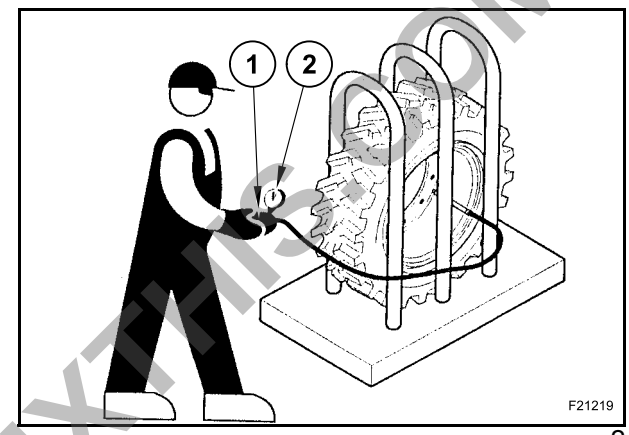
Engage the parking brake.

Stop the engine.

Attach the self-locking nozzle of the inflating equipment to the tyre filling valve (1).

The device is equipped with a pressure gauge (2), that when connected, allows to check the pressure value.

If the pressure results to be lower than expected, proceed to the inflation.



2

Recommended pressures

Tyres	Manufacturer	Type	Pressure bar (psi)
Twin	Mitas	10.00-20 PR16 NB38	7.50 (109)
	Mitas	11.00-20 PR16 NB38	7.25 (105)
	Bridgestone	10.00-20 PR16 FGF	7.50 (109)
	Bridgestone	11.00-20 PR16 FGF	7.00 (102)
	Bridgestone	10.00-20 PR14 FG	6.5 (94)
	Bandenmarkt	Excavator PR18 315/80 R 22.5	8.0 (123
	Bandenmarkt	Grader PR18 315/80 R 22.5	8.5 (123)
Single	Michelin	18 R 19.5 XF	8.00 (116)
	Mitas	600/40 - 22.5 I-331	6.00 (87)

The pressures are valid for the types of tyres and equipment listed and to following conditions:

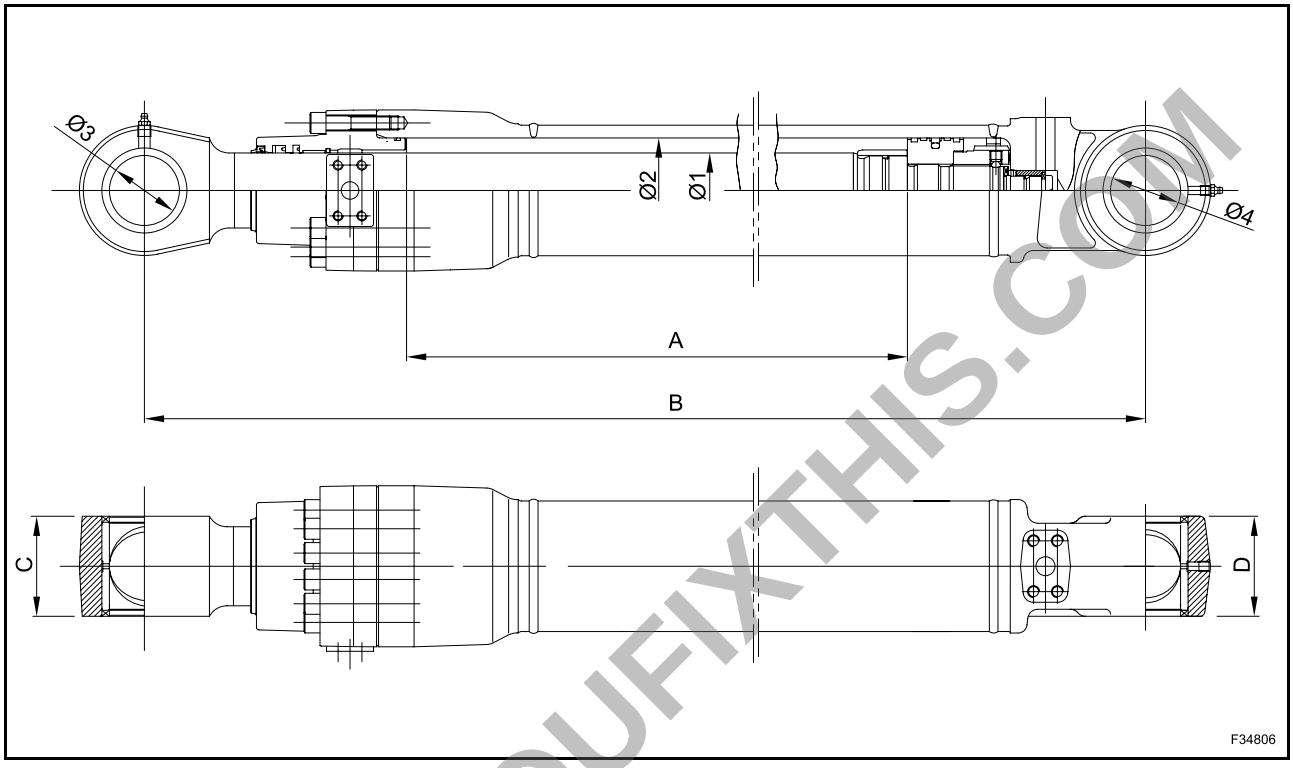
- working attachment installed;
- bucket empty;
- tyres at environment temperature (about 20 °C (68 °F));
- fuel tank full.

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2.2 DIPPER CYLINDER

TECHNICAL SPECIFICATIONS



		MH City	MH Plus	MH 5.6
$Ø_1$ Rod	mm (in)	75 (2.95)	80 (3.15)	90 (3.54)
$Ø_2$ Liner	mm (in)	105 (4.13)	120 (4.72)	130 (5.11)
$Ø_3$ Rod connection	mm (in)	70 (2.75)	80 (3.15)	80 (3.15)
$Ø_4$ Bottom connection	mm (in)	70 (2.75)	80 (3.15)	80 (3.15)
A Stroke	mm (in)	1176 (46.29)	1085 (42.71)	1290 (50.78)
B Completely retracted	mm (in)	1676 (65.98)	1605 (63.18)	1832 (72.12)
C Rod connection	mm (in)	100 (3.93)	96 (3.77)	112 (4.41)
D Bottom connection	mm (in)	100 (3.93)	96 (3.77)	112 (4.41)
Weight	kg (lb)	139 (306)	153 (337)	234 (515)

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STEERING TO THE RIGHT

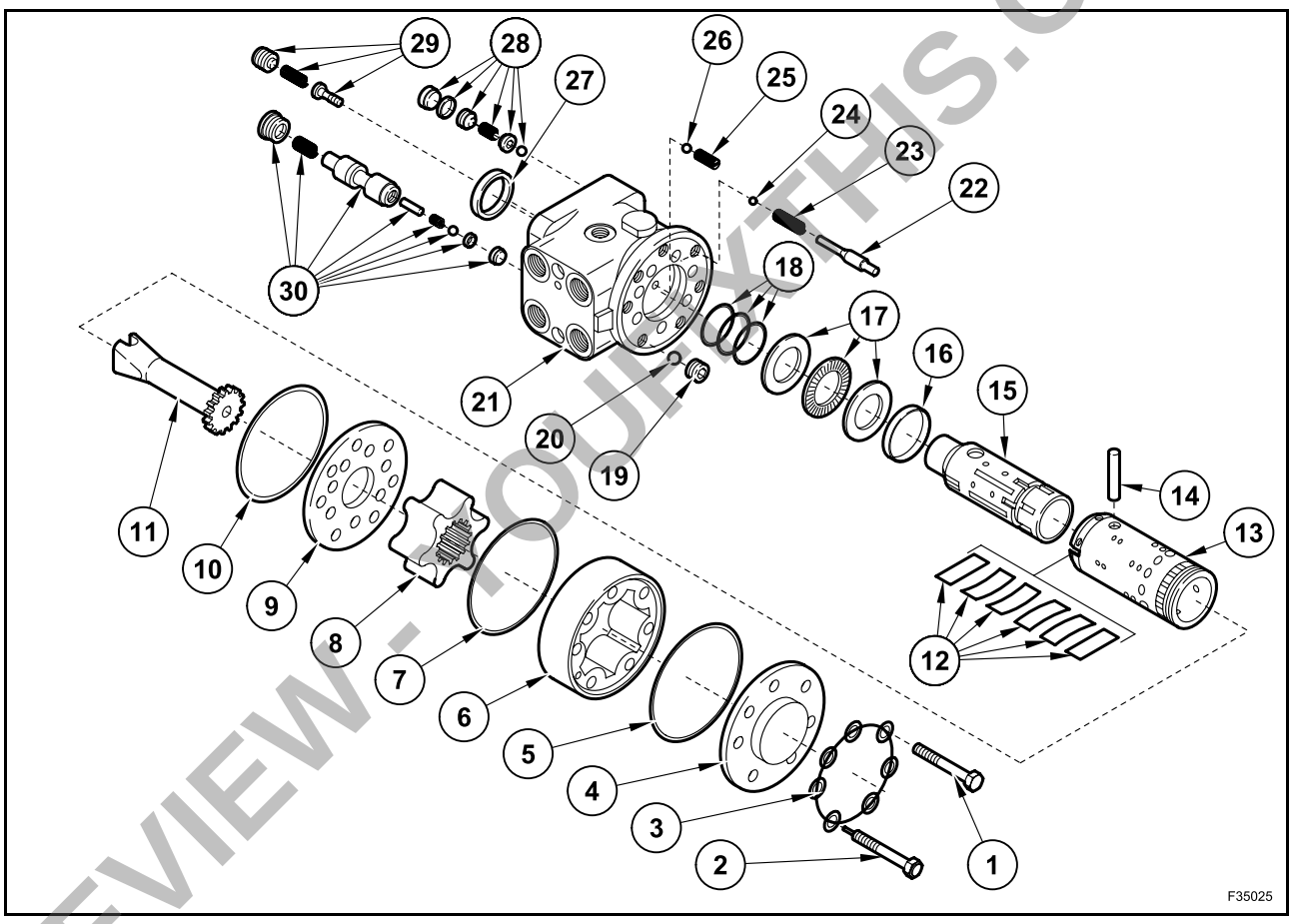
When steering to the right, the oil flows in the opposite direction.

EMERGENCY STEERING

The power steering is equipped with a check valve which enables manual steering also in case of problems with the oil supply.

2.3 DISASSEMBLY AND ASSEMBLY

COMPONENTS



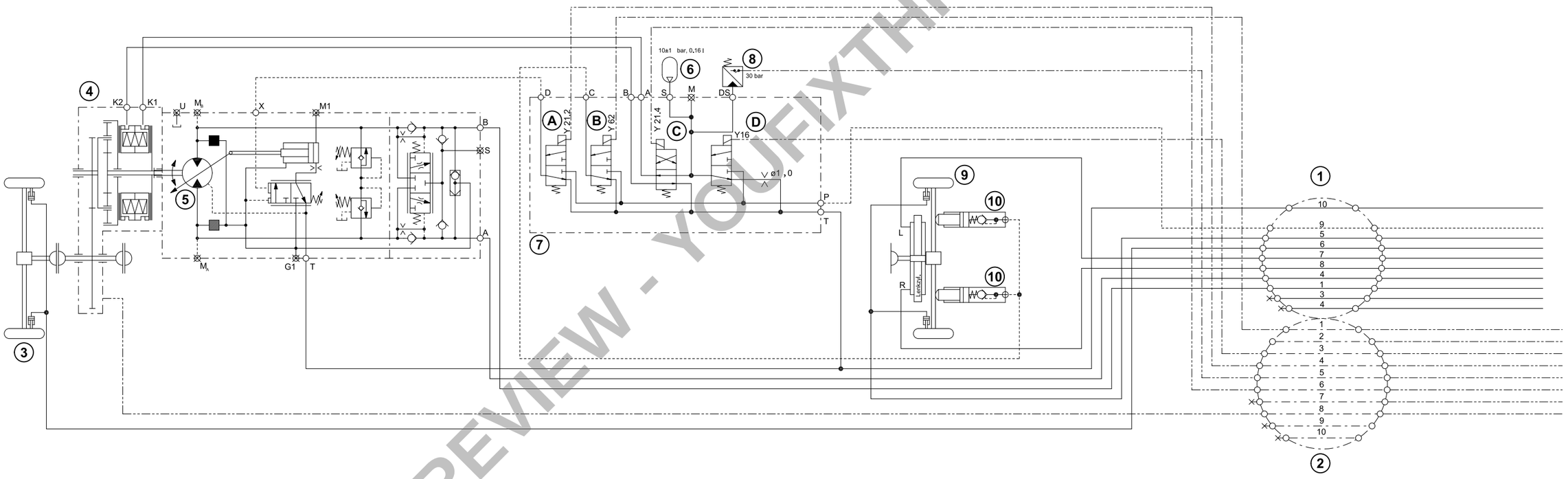
1. Screw
2. Special screw
3. Washer
4. End cover
5. O-ring
6. Stator gear
7. O-ring
8. Rotor gear
9. Distributor plate
10. O-ring
11. Cardan shaft
12. Springs
13. Sleeve
14. Cross pin
15. Spool
16. Ring
17. Bearing
18. O-ring
19. Check valve
20. Ball
21. Power steering body
22. Pin
23. Spring
24. Ball
25. Pin
26. Ball
27. Dust sealing ring
28. Relief valve
29. Anticavitation valve
30. Pressure relief valve

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2.2 HYDRAULIC SYSTEM DIAGRAMS - UNDERCARRIAGE

HYDRAULIC SYSTEM DIAGRAM - UNDERCARRIAGE



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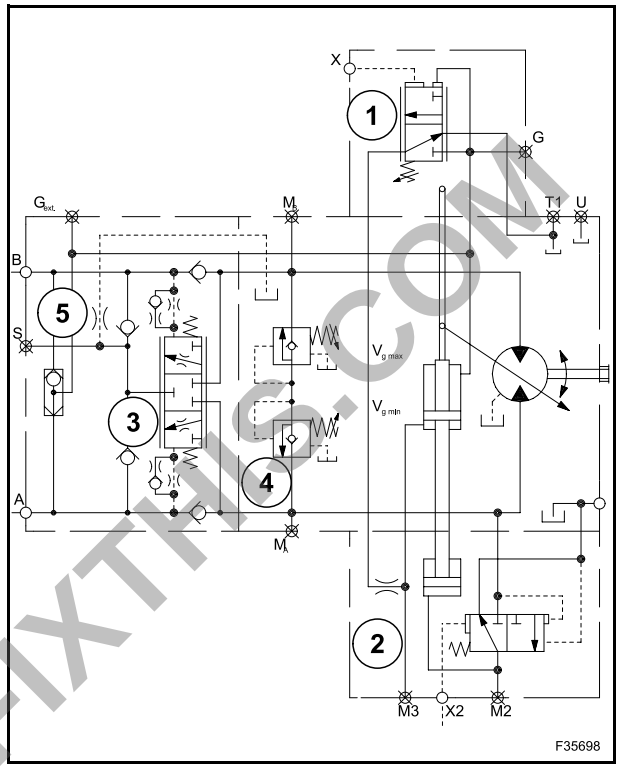
Additional adjustment (25 km/h and 30 km/h versions only)

On 25 km/h (15.53 mph)and 30 km/h (18.64 mph) machines, the travel motor is set to a lower oil volume absorption, in order to obtain higher rpms.

In order to protect it against non-allowable excessive rpms, e.g. when travelling downhill, and to improve braking behaviour, the motor is equipped with an additional hydraulic adjustment (2). This Vgz adjustment consists of a preloaded-spring engagement piston, which provides delivery to a positioning piston, located under the adjusting piston.

The adjustment (2) is only operational when travelling forwards in 2nd gear. Connection B is the delivery side for forward travel. The return oil coming from the motor must reach connection A, by passing around the brake valve piston as braking pressure. Connection A receives pressure for reverse travel.

When travelling downhill in 2nd gear, at first the travel motor is in its Vgmin position. By means of the low traction torque, a high braking pressure builds up between the motor and the brake valve piston.



1. Regulator
2. Hydraulic adjustment Vgz
3. Brake valve
4. Secondary valve
5. Cooling oil nozzle
M3. Measuring point for regulation start
M2. Measuring point for Vgz adjustment

As soon as the braking pressure reaches the engagement pressure of the Vgz adjustment, the engagement piston shifts against the spring, letting pressure arrive under the positioning piston.

The positioning piston lifts the adjusting piston, so that the motor body inside the motor is adjusted to an angle which remains ca. in the middle of the adjustment range.

With the angle increasing, the motor's rpm is reduced. The traction torque increases, while the braking pressure decreases.

In 1st gear, the Vgz adjustment is not operational. The engagement pressure, which engages the 2nd gear clutch, also moves to the engagement piston of the Vgz adjustment.

The travel motor is also equipped with a nozzle for cooling oil (5), for pressure limitation.

Thanks to the nozzle, the return oil flows into the motor casing and then into the tank through the leakage oil line.

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FAULT	POSSIBLE CAUSE	ACTION
Hydraulic system does not operate regularly.	Oil level low.	Top up system.
	Hydraulic filter clogged.	Replace hydraulic filter.
	Hydraulic system faulty.	Consult your Dealer.
Hydraulic oil overheated.	Oil level high or low.	Top up oil level.
	Oil filter element clogged.	Replace filter.
	Delivery control wrongly adjusted.	Adjust delivery control for lower delivery.
Standard bucket inoperative.	Pilot control pressure limiting valve faulty.	Consult your Dealer.
	Malfunction of primary and secondary pressure limiting valves.	Consult your Dealer.
	Right hydraulic control lever defective.	Consult your Dealer.
Standard bucket opening/ closing not operational.	Pilot control pressure limiting valve faulty.	Consult your Dealer.
	Malfunction of primary and secondary pressure limiting valves.	Consult your Dealer.
	Right hydraulic control lever defective.	Consult your Dealer.
Dipper not operational.	Pilot control pressure limiting valve faulty.	Consult your Dealer.
	Malfunction of primary and secondary pressure limiting valves.	Consult your Dealer.
	Left hydraulic control lever defective.	Consult your Dealer.
Dipper extension and retraction not operational.	Pilot control pressure limiting valve faulty.	Consult your Dealer.
	Malfunction of primary and secondary pressure limiting valve.	Consult your Dealer.
	Left hydraulic control lever defective.	Consult your Dealer.
Boom adjusting cylinder inoperative.	Pilot control pressure limiting valve faulty.	Consult your Dealer.
	Malfunction of primary and secondary pressure limiting valve.	Consult your Dealer.
	Auxiliary travel pedal defective.	Consult your Dealer.
Boom adjusting cylinder extension/retraction not operational.	Pilot control pressure limiting valve faulty.	Consult your Dealer.
	Malfunction of primary and secondary pressure limiting valve.	Consult your Dealer.
	Auxiliary travel pedal defective.	Consult your Dealer.

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SECTION 11 - ELECTRONICS

1. MAIN COMPONENTS 1
2. COMPONENTS OF LINE 1 5
3. COMPONENTS OF LINE 2 9
4. ENGINE SPEED ACTUATOR 25
5. COOLANT TEMPERATURE DETECTION 26
6. CHARGE AIR TEMPERATURE DETECTION 27
7. HYDRAULIC OIL TEMPERATURE DETECTION 28
8. PROPORTIONAL VALVE - FAN MOTOR 29
9. PROPORTIONAL VALVES - CONTROL BLOCK 30

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