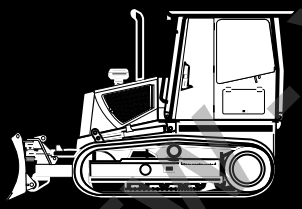
NEW HOLLAND CONSTRUCTION

DC70
DC70 LGP
DC80
DC80 LGP
DC100
DC100 LGP



SERVICE MANUAL

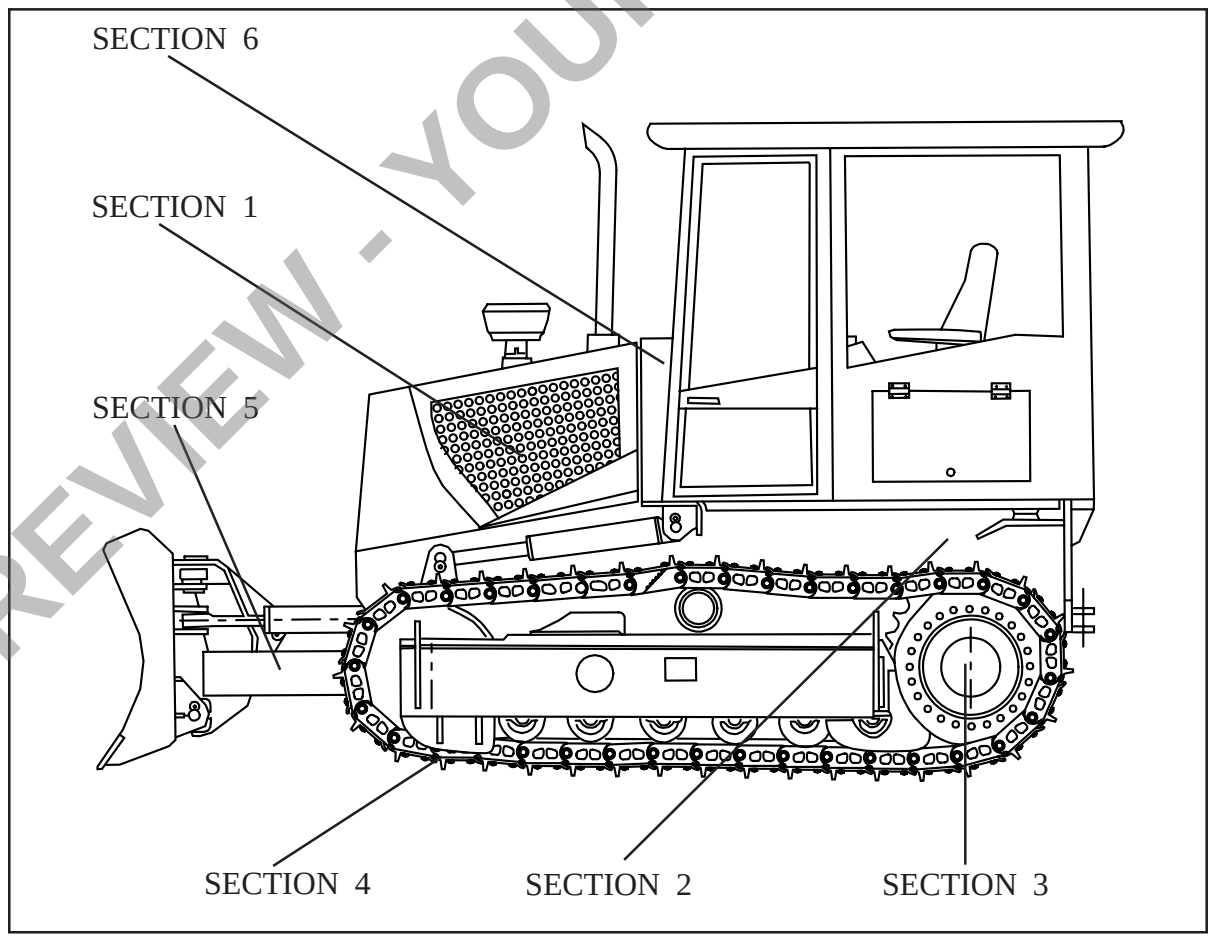
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SUMMARY

GENERALITIES	**SECTION 0**
ENGINE	**SECTION 1**
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FINAL DRIVES AND SPROCKET	**SECTION 3**
UNDERCARRIAGE	**SECTION 4**
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⚠ WARNING

Study this Manual before starting, operating, maintaining, fuelling or servicing the machine. Read and heed all safety rules before any intervention.

SAFETY RULES

- Do not allow unauthorised personnel to operate service or maintain this machine.

- Do not wear rings, wrist watches, jewellery, loose or hanging apparels, such as ties, torn clothing, scarves, unbuttoned or unzipped jackets that can catch on moving parts. Wear proper safety equipment as recommended for the job. Examples: hard hat, heavy gloves, ear protection, safety glasses or goggles, reflector vests, respirator. Consult your employer for specific safety equipment requirements.

- Keep operator's compartment, stepping points, grab-rails and handles clear of foreign objects, oil, grease, mud or snow accumulation to minimize the danger of slipping or stumbling. Clean mud or grease from shoes before attempting to mount or operate the machine.

- Do not jump on or off the machine. Keep two hands and one foot, or two feet and one hand in contact with step grab rails and handles at all times.

- Do not use controls or hoses as hand holds when climbing on or off machine. Hoses and controls are movable and do not provide a solid support. Controls also may be inadvertently moved causing accidental machine or equipment movement.

- Never attempt to operate the machine or its tools from any position other than seated in the operator's seat.

- Keep head, body, limbs, hands and feet inside operator's compartment at all times to reduce exposure to hazards outside the operator's compartment.

- Be careful of slippery conditions on stepping points, hand rails, and on the ground. Wear safety boots or shoes that have a high slip resistant sole material.

- Do not leave the machine until it is completely stopped.

- Check the seat safety belt at least twice a year. If there are signs of wear or fraying or other signs of weakness that could lead to failure, replace it.

STARTING

- NEVER START OR OPERATE AN UNSAFE MACHINE. Before operating a machine, always ensure that any unsafe condition has been satisfactorily remedied.

- Check brakes, steering and attachment controls before moving. Advise the proper maintenance authority of any malfunctioning part or system.

- Be sure all protective guards or panels are in place, and all safety devices provided are in place and in good operating conditions.

- Be sure exposed personnel in the area of operation are clear of the machine before moving it or its attachments. WALK COMPLETELY AROUND the machine before mounting. Sound horn. Obey flag men, safety signals and signs.

- Before starting machine, check, adjust and lock the operator's seat for maximum comfort and control of the machine.

- Fasten your seat belt (when provided).

- Obey all flag signals and signs.

- Due to the presence on the machine of flammable fluids, never check or fill fuel reservoirs or batteries near open flames, smoking materials or sparks.

- REMEMBER THAT STARTING FLUID IS FLAMMABLE. Follow recommendations printed on containers and in the Operation and Maintenance Manual.

- DO NOT PUNCTURE OR BURN CONTAINERS.

- Containers must be stored in fresh, well ventilated places, out of reach of unauthorised persons. Follow strictly the instructions provided by the Manufacturer.

- Never use these products near open flames, smoking materials or sparks.

OPERATION

- Do not run the engine of this machine in closed areas without proper ventilation to remove deadly exhaust gases.

- Roll Over Protective Structures are required on loaders, dozers, graders, excavators. NEVER OPERATE machines without ROPS.

- Make sure the Operator's compartment is free of foreign objects, especially if not firmly secured. Never use the machine to transport objects, unless proper securing points are provided.

- Check monitoring instruments at start-up and frequently during operation if the warning light signals an anomaly

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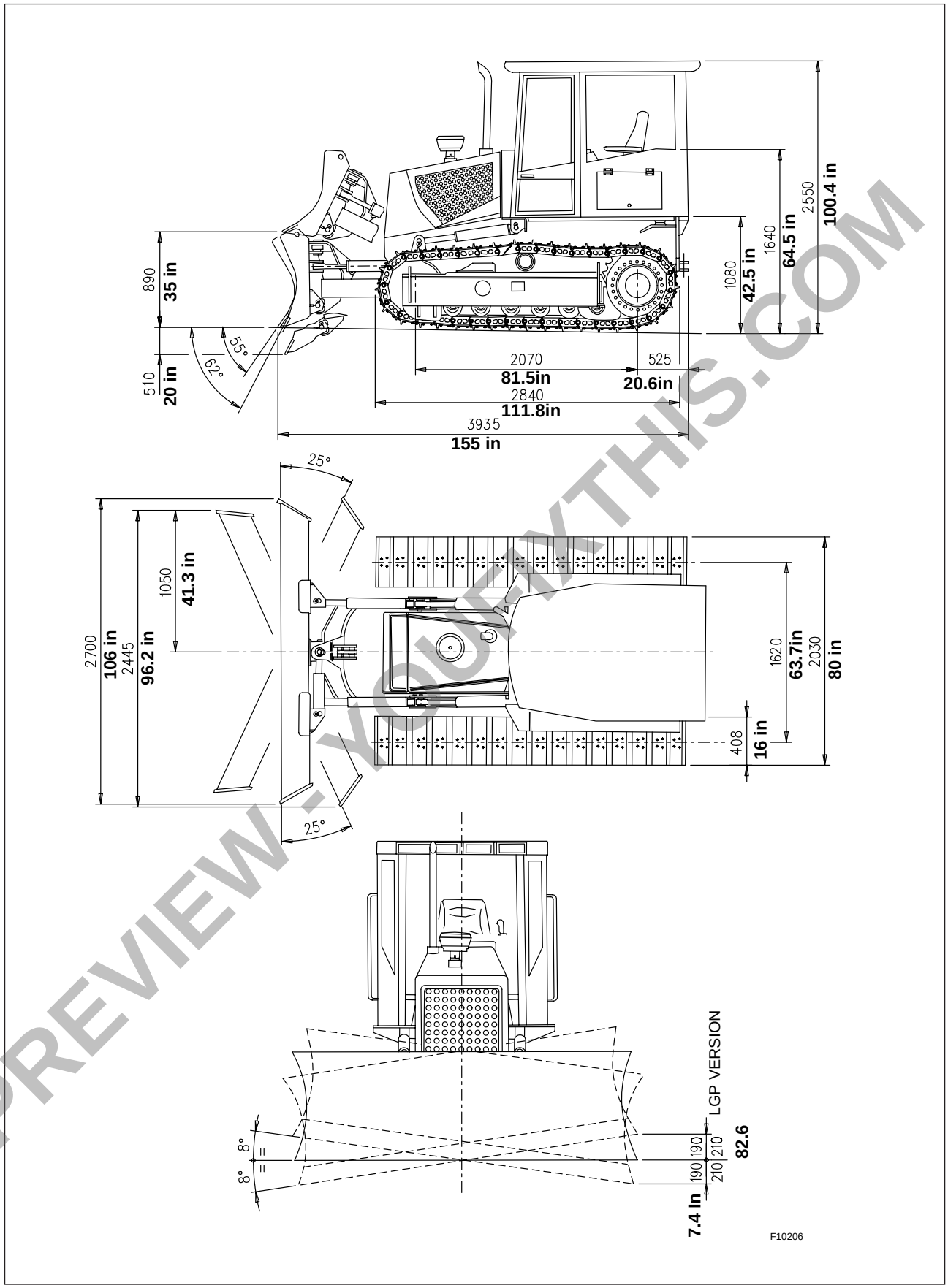


Fig. 0-1

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DIMENSIONS	Overall length (bare tractor) Overall length (with blade)		mm in mm in	2840 111.8 3935 154.5
	Overall width (bare tractor) (LGP- version 610 mm / 24 in shoes) Overall width with blade (bare tractor) (LGP version)		mm in mm in mm in mm in	2030 80 2280 89.3 2700 106 3000 118
	Overall height with ROPS canopy		mm in	2550 100
	Track gauge (bare tractor) (LGP version) Minimum distance from ground Length of track on ground Track shoe width (standard) Track shoe width (LGP version)		mm in mm in mm in mm in mm in mm in	1620 63.7 1720 67.7 370 14.5 2070 81.5 408 16 560 22
MASS	Shipping weight (including ROPS canopy, blade lift cylinders, lubricants, coolant, 10% fuel) - bare tractor - LGP version		 kg pounds kg pounds	 6600 14520 6700 14740
PERFORMANCE	SPEEDS	Fwd 1st Fwd 2nd Rev 1st Rev 2nd	Km/h miles/h Km/h miles/h Km/h miles/h Km/h miles/h	0 - 4 0 - 2.4 0 - 10 0 - 6.2 0 - 4 0 - 2.4 0 - 10 0 - 6.2
	NOISE LEVEL	Inside cab standard (Lpa) CEE 89/514 Outside (Lwa) CEE 89/514	dB dB	85 106
	GROUND PRESSURE	Track shoes width 408 mm / 16 in LGP shoes 560 mm / 22 in wide (With blade and ROPS cab)	Kg/cm^2 pound/in^2 Kg/cm^2 pound/in^2	0.40 0.020 0.30 0.021
	GRADEABILITY	(1st speed)	degree gradient	45 100%

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COLANT AND LUBRIFICANT

ITEM	Q.TY (Liter/Gallons)	MANUFACTURE PRODUCT	REFILL (International classification)	VISCOSITY	AMBIENT TEMPERATURE (C°)
COOLING SYSTEM	30 / 7.9	PARAFLU 11	50 - 50 mixture of water and reputable high quality commercial permanent fluid providing adequate oxidation, foaming, corrosion, scaling and freezing protection down to – 35°C (-31°F)	–	–
FUEL TANK	190 / 50.19	–	Diesel fuel ASTM N.2-D grade TT of reputable quality and make	–	–
ENGINE	10 / 2.6	–	Engine oil “CCMC D4” “API CF4” “MIL - L - 2104 E Level	SAE 15W-40	–15°C/+5°F ÷ +40°C/+104°F
PUMP DRIVERS	1 / 0.26	–	API GL 5	SAE 85W/90	–15°C/+5°F +40°C/+104°F
HYDRAULIC SYSTEM	75 / 19.8	–	Hydraulic oil DIN 51524/2 or MIL - H - 46152 B	ISO VG 68	–10°C/+23°F ÷ +30°C/+86°F
TRAVELLING REDUCTION UNITS (each)	3 / 0.78	–	API GL 5	SAE 85W/90	–15°C/+5°F +40°C/+104°F
TRACK IDLERS AND ROLLERS	–	–	Engine oil “CCMC D4” “API CF4” “MIL - L - 2104 E Level”	SAE 15W-40	–15°C/+5°F ÷ +40°C/+104°F
GREASE FITTINGS	–	TUTELA G9	Lithium - calcium base grease N.L.G.I. N. 2 consistency	–	–

NOTE - The quantities of oil indicated are those required for first supply.
If fuel sulphur content is over 0.5% change engine oil as follows:

% sulphur	Periodic change
0.5 to 10%	Half normal interval
Over 1.0%	Quarter normal interval

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TIGHTENING TORQUES

Tightening torques for shaft bolts (Metric ISO Standard Thread)

The values for tightening torques shown in the table are valid only for shaft bolts with metric ISO-standard threads and head support surface dimensions in accordance with DIN 912, DIN 931 and DIN 933. These values are also valid only for light or unoiled, untreated surface as well as for use only with torque-indicating wrenches and force limiting tools.

Thread size	Strength Classes 8.8	10.9	12.9
	Tightening Torque (lb.ft)		
M 3	0,8	1,2	1,4
M 4	2,1	3,0	3,6
M 5	4,4	6,3	7,4
M 6	7,4	10,3	12,5
M 8	18,4	25,8	30,2
M10	36,1	50,9	61,2
M12	63,4	88,4	106,9
M14	99,5	140,0	169,5
M16	154,8	217,4	261,6
M18	213,7	298,5	357,4
M 20	302,2	427,5	508,5
M 22	405,4	574,9	685,4
M 24	523,5	737,0	884,4
M 27	773,9	1105,5	1326,6
M 30	1068,7	1474,0	1768,8

Tightening torques for locking screws VSTI (Metric ISO fine thread)

Thread size	Designation		Tightening torques (lb.ft)
M 8 x 1	VSTI 8 x 1	-ED/SA	= 4
M 10 x 1	VSTI 10 x1	-ED	= 7
M 12 x 1,5	VSTI 12 x 1,5	-ED	= 15
M 14 x 1,5	VSTI 14 x 1,5	-ED	= 22
M 16 x 1,5	VSTI 16 x 1,5	-ED/SA	= 22
M 18 x 1,5	VSTI 18 x 1,5	-ED/SA	= 29
M 20 x 1,5	VSTI 20 x 1,5	-ED/SA	= 37
M 22 x 1,5	VSTI 22 x 1,5	-ED	= 44
M 26 x 1,5	VSTI 16 x 1,5	-ED/SA	= 51
M 27 x 2	VSTI 27 x 2	-ED	= 66
M 30 x 1 ,5	VSTI 30 x 1,5	-ED/SA	= 74
M 33 x 2	VSTI 33 x 2	-ED/SA	= 88
M 42 x 2	VSTI 42 x 2	-ED/SA	= 147
M 48 x 2	VSTI 48 x 2	-ED	= 220

Tightening torques for seal-lock nuts (Metric ISO-Standard Thread)

The values for tightening torques shown in the table are valid only for seal-lock nuts of the strength class 8.8 and with metric ISO-standard thread.

Thread size	Strength classes 8.8	10.9	12.9
	Tightening torque (lb.ft)		
M 6	7,4		
M 8	16,2		
M 10	29,5		
M 12	50,9		
M 14	81,1		
M 16	125,3		

Tightening torques for cross-slotted lens head screws DIN 7985 (Metric ISO-Standard Thread)

The values for tightening torques shown in the table are valid only for cross-slotted lens head screws DIN 7985 of the strength class 8.8 and with metric ISO-standard thread.

Thread size	Strength classes 8.8	10.9	12.9
	Tightening torques (lb.ft)		
M 3	0,8		
M 4	2,1		
M 5	4,4		
M 6	7,4		
M 8	18,4		
M10	36,1		

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2.13 HYDRAULIC SCHEMATIC

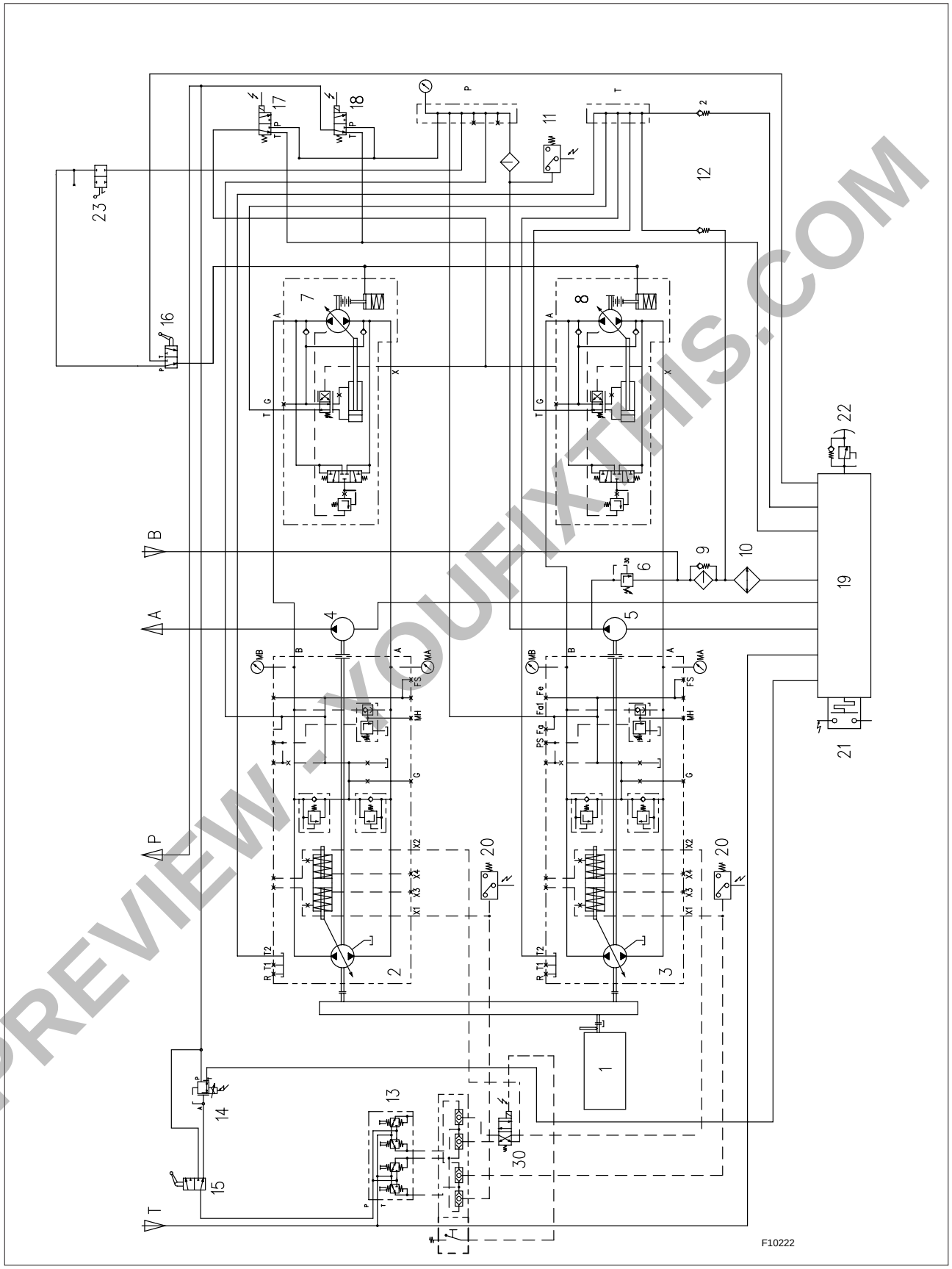


Fig. 2-93

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6.3 ELECTRICAL SYSTEM DIAGRAM

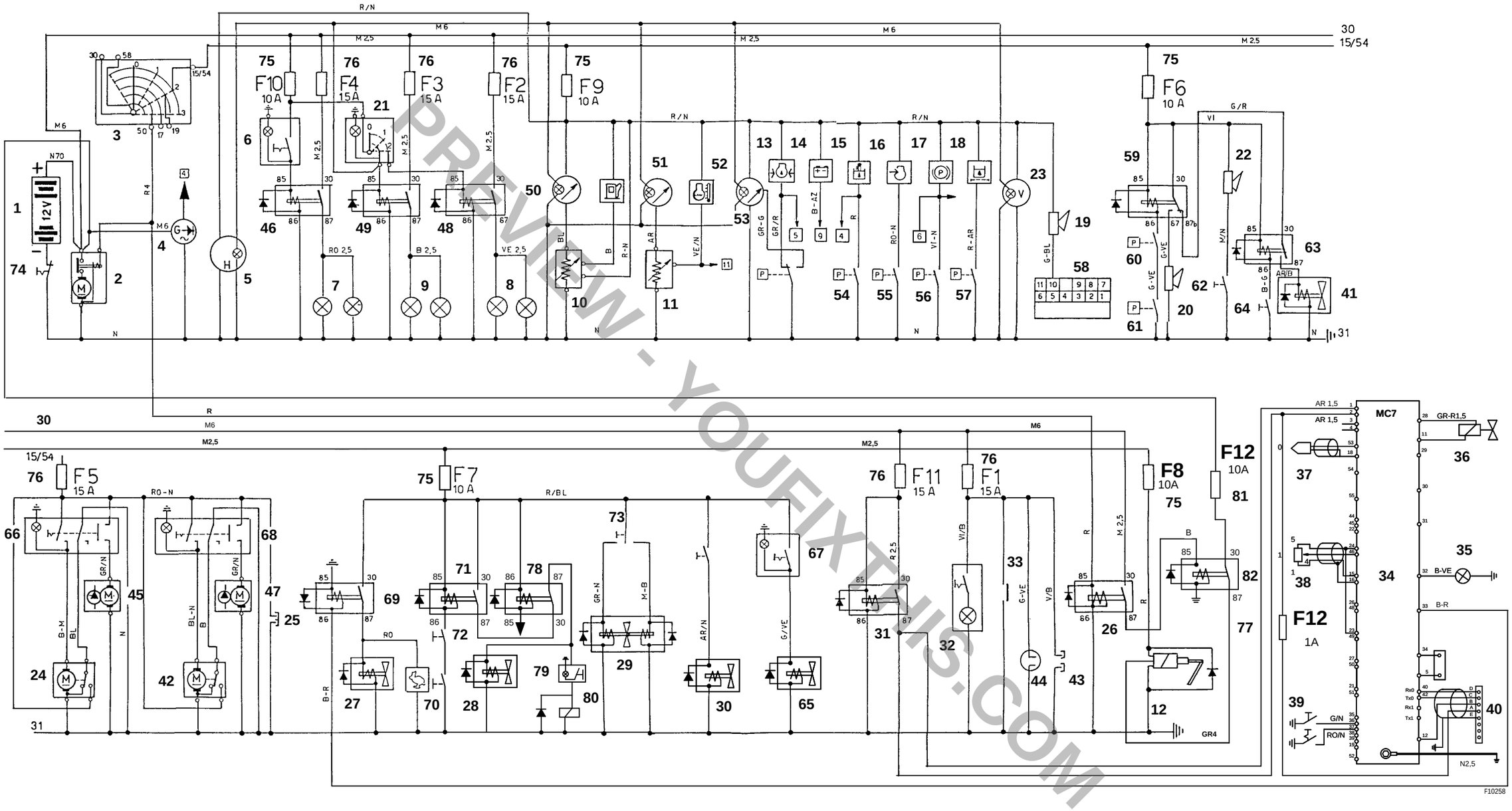


Fig. 6-5

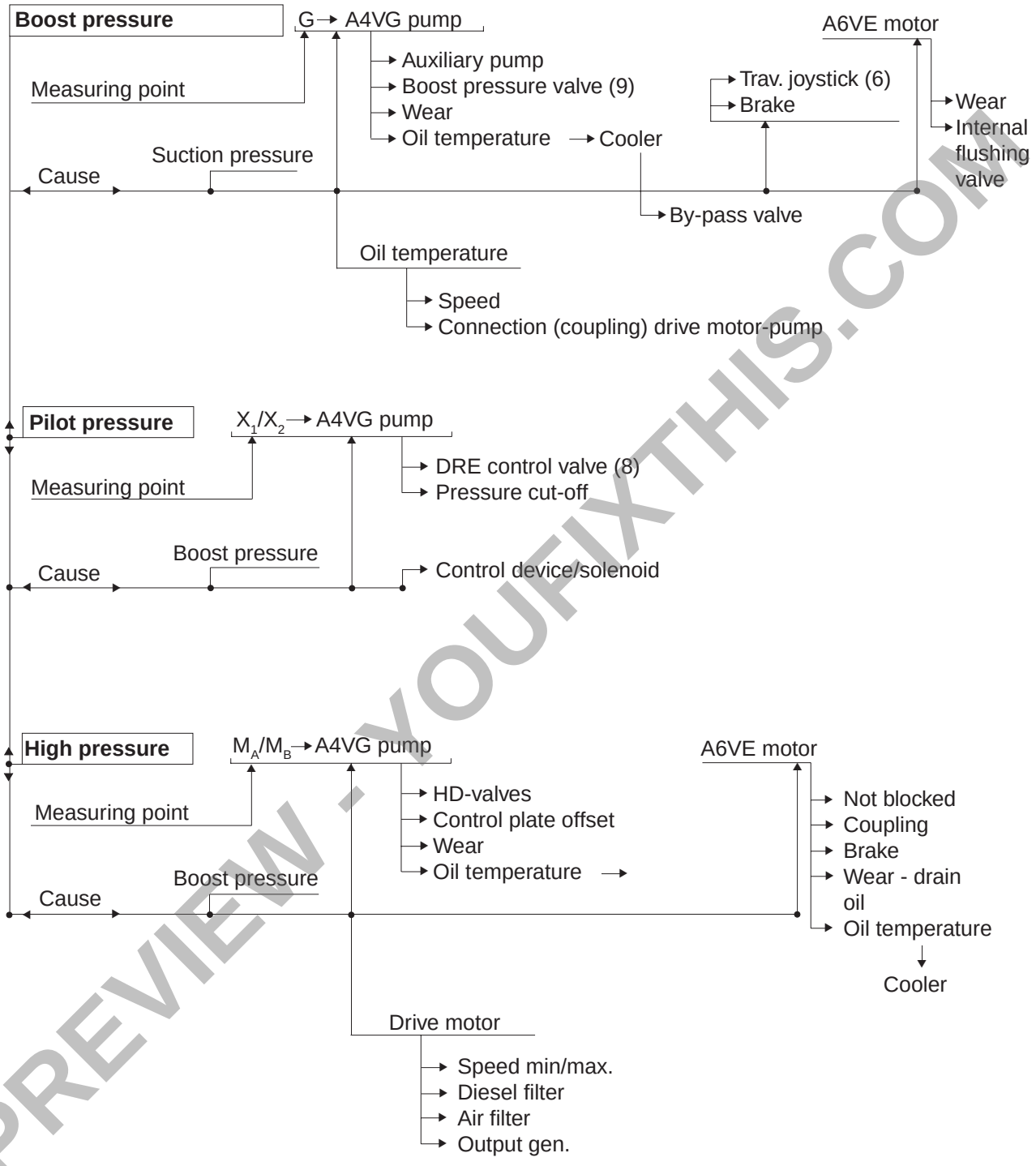
ELECTRIC WIRES COULORATION

M	Brown	VE	Green	B	White	N	Black
VI	Violet	BL	Blue	R	Red	A	Orange
G	Yellow	RO	Pink	AZ	Azure	GR	Grey

NOTE: Wires couloration is indicated with the above abbreviations: G/VE Yellow / Green (transversal couloration) - G-VE Yellow - Green (horizontal couloration)

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2.3 TROUBLESHOOTING



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3.4 GEARBOX DISASSEMBLY DC70

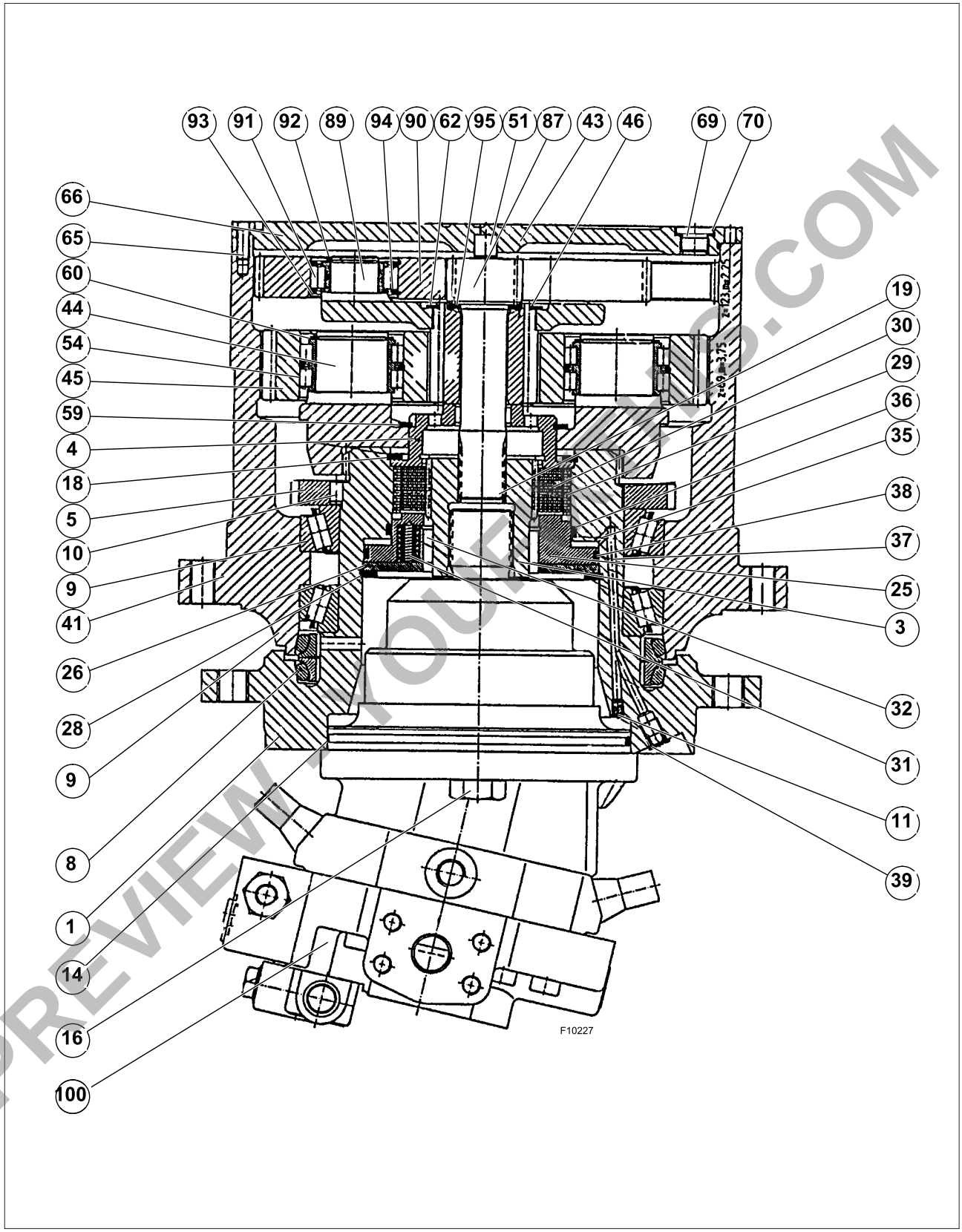


Fig. 3-10 **Gearbox exploded view**

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2.4 HYDRAULIC MOTOR A6VE

2.4.1 DISASSEMBLY

- Unscrew the two M20x45 hexagonal screws (**32**).
- Fit the two studs contained in the kit for hydraulic motor disassembly tools and tighten (**33**).
- Pull out the hydraulic motor sliding it on the guide studs and the relative O-ring (**31**).

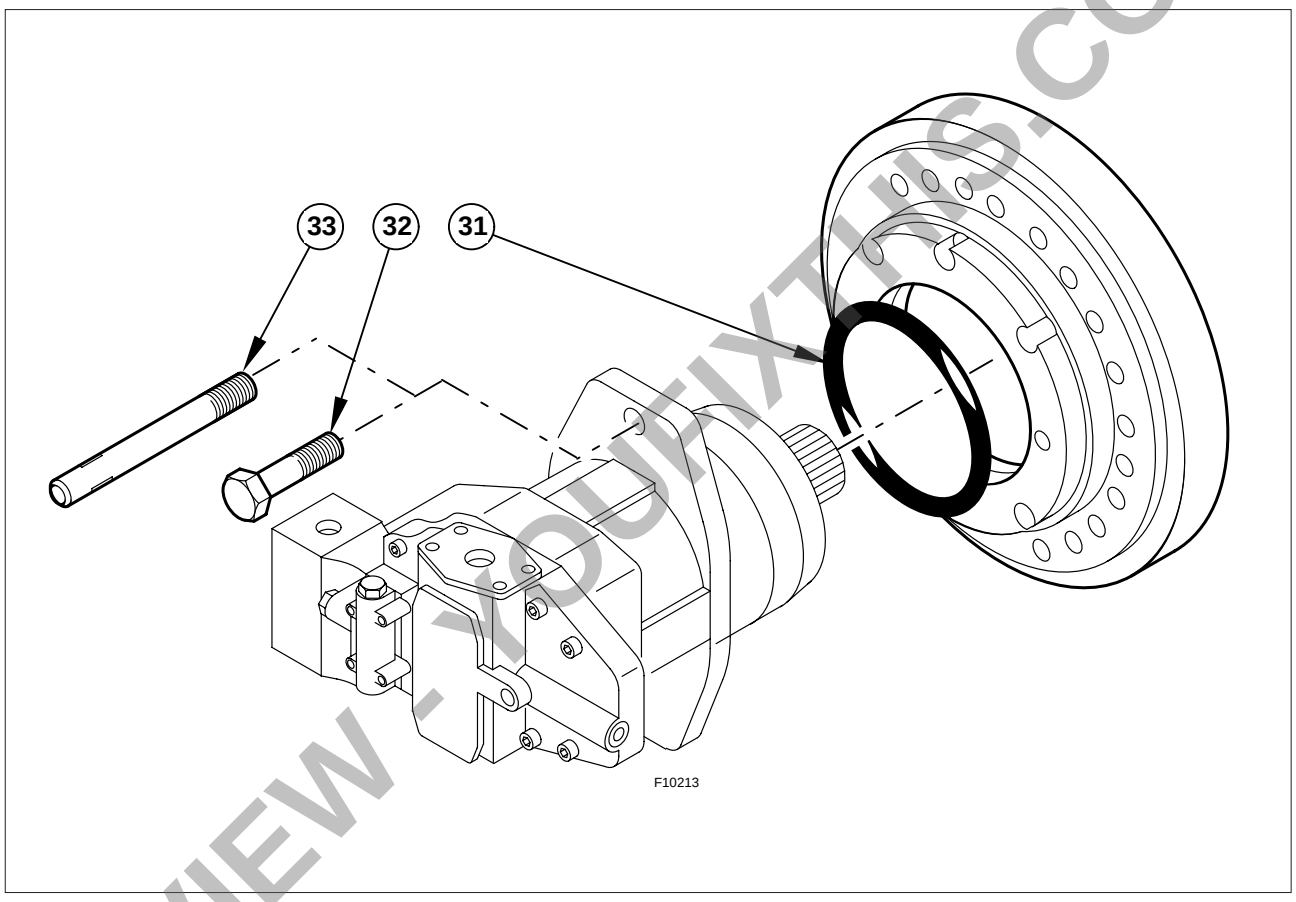


Fig. 2-7

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3.4.10 MAINTENANCE

Under normal operating circumstances, no routine maintenance is required, except routine oil checks and oil changes. As recomended in this manual, unusual operating characteristics, such as noise or overheat, should indicate further investigation.
After the first 50 working hours, check the bolts tightening of the gearbox.

3.4.11 OIL REPLACEMENT AND ROUTINE CHECKS

The first oil replacement must be carried out after about 100-150 operating hours of the gearbox.
Subsequently, replace the oil every 1000 hours or at least once per year. It is a good practice in any case to check the oil level every 100 working hours and add it if necessary.

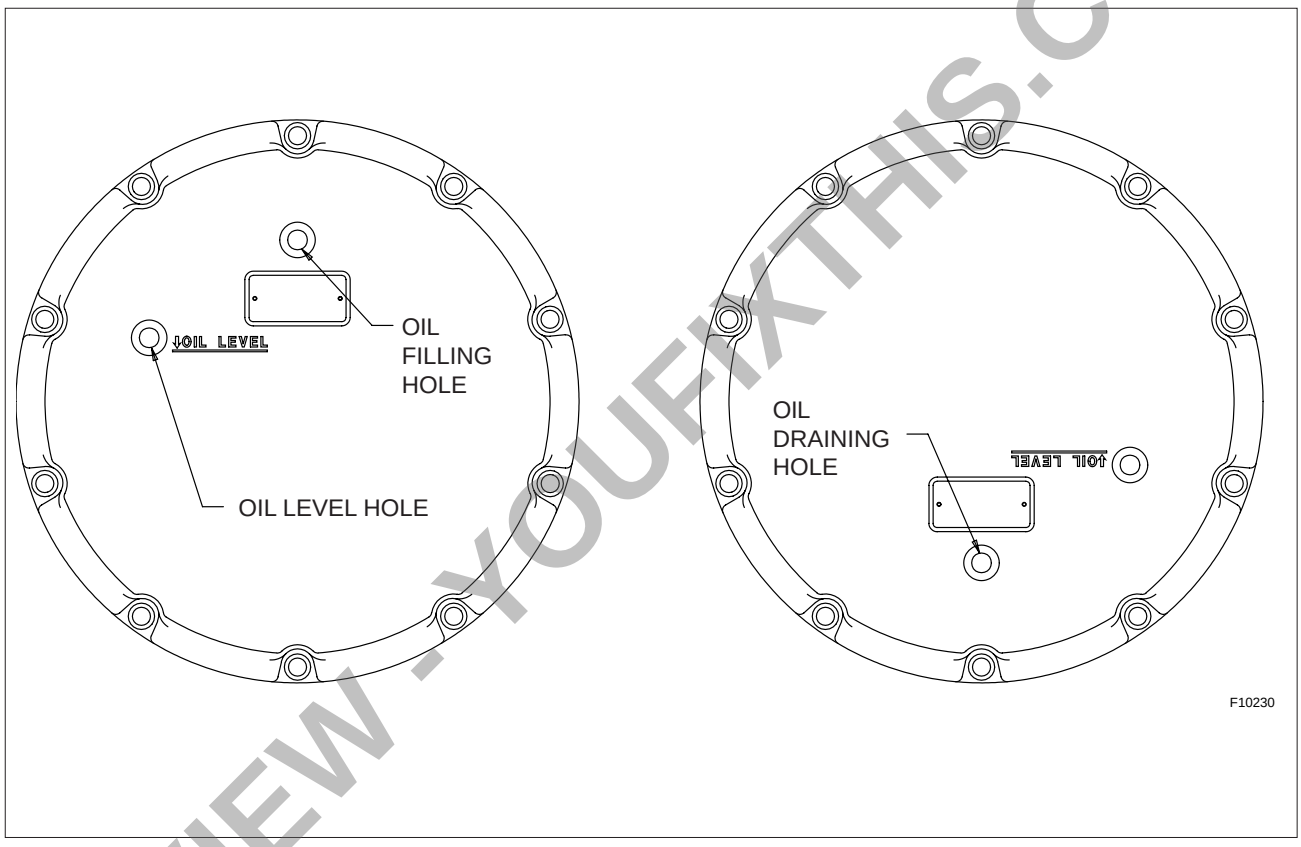


Fig. 3-17 **Filling, draining and oil level scheme**

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AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home or on the highway, are caused by the failure of some individuals to follow simple and fundamental safety rules or precautions. For this reason, MOST ACCIDENTS CAN BE PREVENTED by recognizing the real cause of doing something about it before the accident occurs.
Regardless of the care used in the design and construction of any type of equipment there are conditions that cannot be completely safeguarded against without interfering with reasonable accessibility and efficient operation.
Carefully read indications, cautions and safety warning quoted in the "SAFETY RULES" section.
A careful operator is the best insurance against an accident. The complete observance of one simple rule would prevent many thousand serious injuries each year.
That rule is:
Never attempt to clean, oil or adjust a machine while it is in motion.

WARNING

On machines having hydraulically, mechanically and/or cable controlled equipment (such as showels, loaders, dozers, scrapers etc.) be certain the equipment is lowered to the ground before servicing, adjusting and/or repairing.
If it is necessary to have the equipment partially or fully raised to gain access to certain items, be sure the equipment is suitable supported by means other than hydraulic lift cylinders, cable and/or mechanical device used for controlling the equipment.

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NOTICE

Keep the travelling joystick (**6**) in neutral position.

Please check mechanical actuation of speed control at prime mover and, if necessary, set so that, with the gas lever fully operated, the speed control lever touches the full load stop. Check direction of operation of the inch control valve.

START - FIRST RUN

Rotate the prime mover by means of the starter motor until the oil flows out of gauge port "G" of A4 VG 40 without bubbles.
Start prime mover in the normal way, checking boost pressure at gauge port "G" of A4VG/DG.

Do not drive the vehicle yet!

WARNING

Continually check the oil level in the tank. If necessary add more oil. Foaming indicates leakage in the suction line.

NOTE - An oiltight suction line is not necessarily airtight.

During the start-up phase pressure oscillations may occur at the boost pressure gauge. At idle speed the boost pressure must find its level at a constant 15-20 bar / 217 - 290 PSI with engine rpm at minimum.

Check oil level in the tank.

Check function under no load.

Check the measuring devices.

Keep installation running until it is warmed up to 50-60°C / 122 - 140 °F (measured in the circuit).

Pay attention to any noises.

CHECK SETTING DATA

The operating temperature should be kept at a predominantly constant level.

Blocked state: switch for travel direction at "0"
Increase motor speed slowly up to max. motor speed, at the same time checking measuring devices.

Boost pressure: motor at idle speed
Psp = ca. 15-20 bar / 217 - 290 PSI
max. motor speed
Psp = ca. 30-35 bar / 435 - 507 PSI
Boost pressure: travel direction switch in forward position

Checking safety relief valve HP 430 bar * / 6,236 PSI

Operate safety valves for very short period only period only (risk of overheating)

Stop prime mover.

LEAK TEST

Stop prime mover.
Tighten all fittings, flanges, plugs, even if they are already tight.
Tighten the equipment without pressure.

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2.6 TRAVELLING CHARGING AND SERVOCONTROLS GEAR PUMP

2.6.1 UNCOUPLING

Operate using the following instructions:
- flush out the oil from the bulldozer tank;

WARNING

Fluid under pressure: before removing the cap or the cover turn either slowly to let out the pressure. See the instruction and maintenance manual.

- start up the engine and leave it running for a few seconds to allow the pump aspiration tube to empty;
- detach the tank aspiration tubes (**1**) and (**2**) the distributor transmitting tubes;
- remove the screws (**3**) which fix the pump (**4**) to the travelling right pump and remove it.

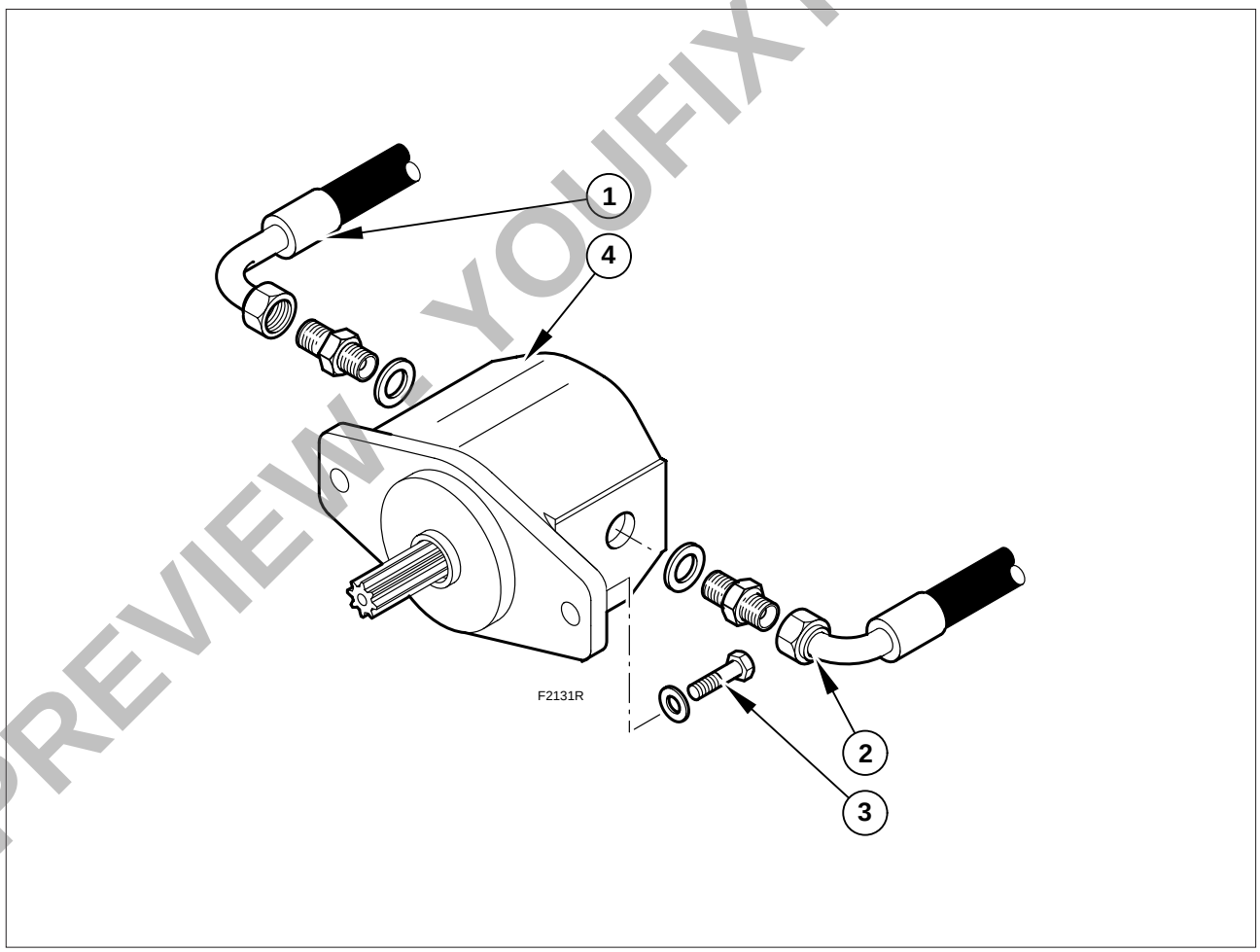


Fig. 2-71 **Equipment hydraulic pump**

1. Suction hose from tank - **2.** Flow to distributor hose - **3.** Screws TE M12 x 35, tightening torque 8,5 Kgm
4. Equipment pump

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3.4.5 INSTALLATION OF THE GEARBOX TO THE MACHINE DC100

a) Clean the mating surfaces from oils or paint and fit the gearbox to the undercarriage.
b) Fix the gearbox to the frame with 44 screws M20 minimum grade 8.8, tightened by a torque wrench at 40 daNm/88 pounds torque.
c) Clean the area which mates to the sprocket. To fit the sprocket use 48 screws M20, grade 8.8, tightened at 30 daNm/66 pounds torque.
d) Clean the ring which mates to the sprocket. Segments to fit the sprocket segments use 40 screws M16, grade 8.8, tightened at 25 Kgm/55 pounds torque.
Reassembly with Loctite 270.

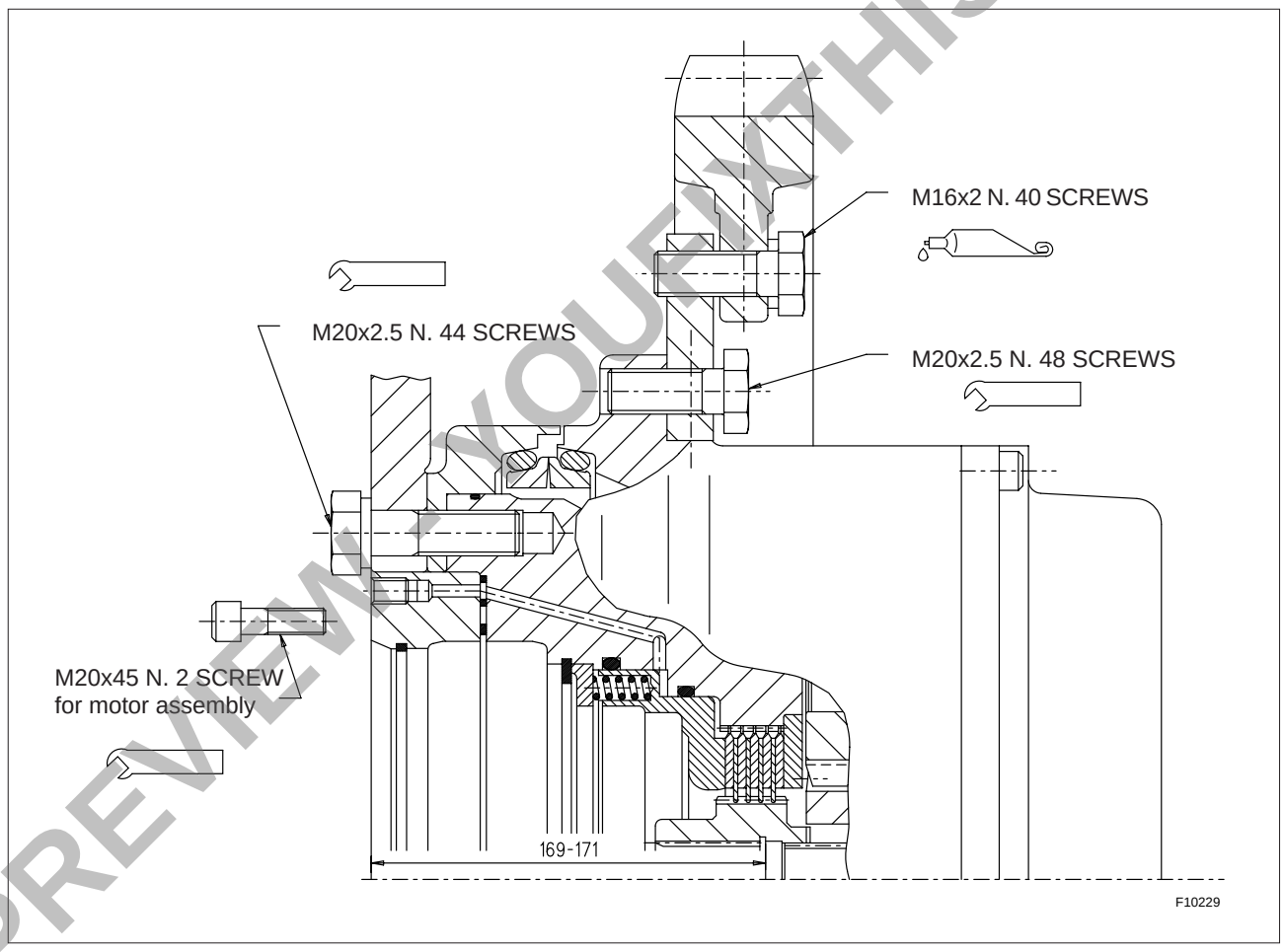


Fig. 3-16 **Gearbox installation scheme**

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NOTES

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