MOTOR GRADER

SERVICE MANUAL

HG130

HYUNDAI

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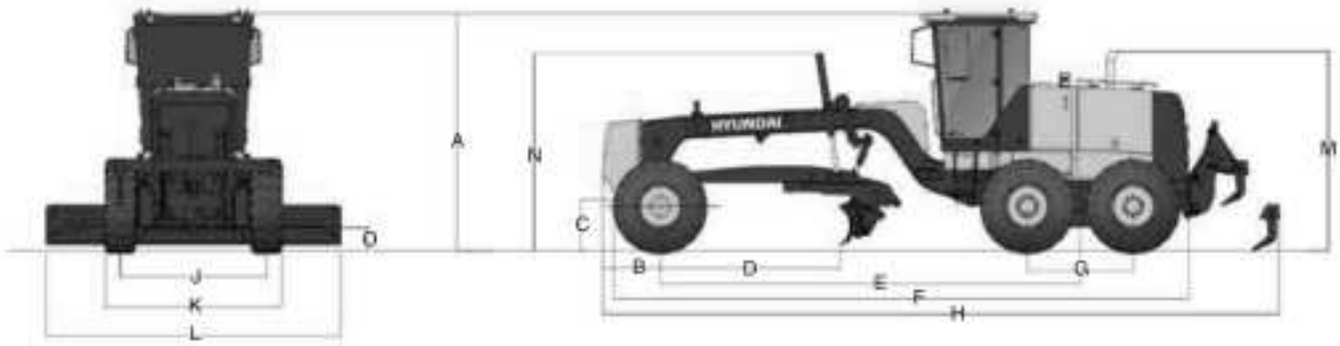
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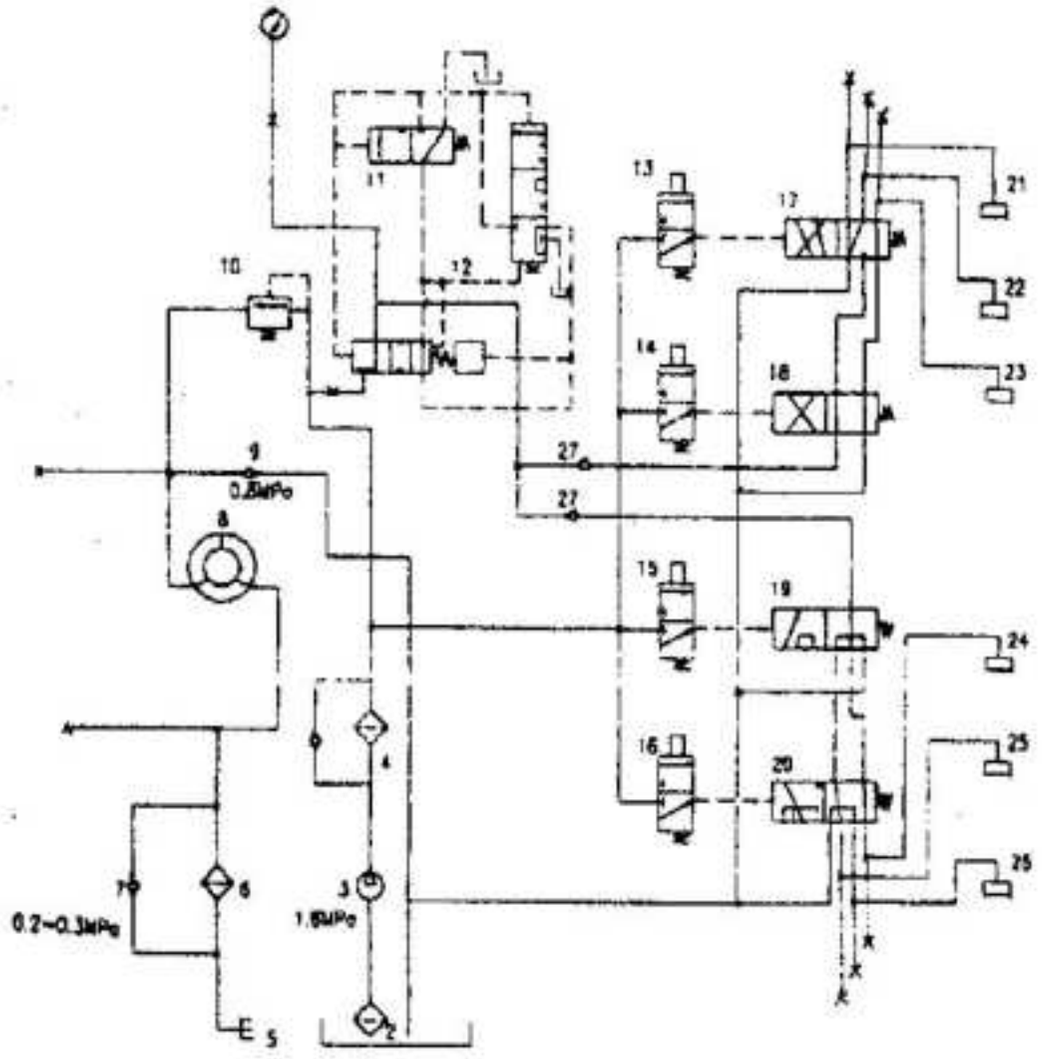
DIMENSIONS



Item	Description	HG130-3
A	Height to Top of Non-ROPS Cabin	3510 mm
	Height to Top of ROPS Frame	3635 mm
B	Center of Front Axle to counterweight	675 mm
C	Ground Clearance to Center Front Axle	869 mm
D	Length of Front Axle to Moldboard	2,470 mm
E	Length of Front Axle to Mid Tandem	5,870 mm
F	Length of Front Tire to Rear of Machine	8,125 mm
G	Length of Between Tandem Axles	1,535 mm
H	Length of Between Counterweight to Ripper	8,125 mm
J	Width of Tire Center Lines	2,120 mm
K	Width of Outside Tires	2,565 mm
L	Width of Moldboard	3,658 mm
M	Height to Exhaust Stack	2,582 mm
N	Height to Top of Cylinders	2,793 mm
O	Ground Clearance to Trans. Case	339 mm

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Hydraulic Diagram of Gearbox



1. Gearbox
2. Coarse Filter
3. Transmission Pump
4. Oil Filter
5. Lubrication Device of Gearbox
6. Oil Cooler
7. Pressure Compensator of Torque Converter
8. Torque Converter
9. Bypass Valve of Torque Converter
10. Main Control Pressure Valve
11. Reset Valve
12. Regulator Valve
13. Solenoid Valve (M3)
14. Solenoid Valve (M1)
15. Solenoid Valve (M4)
16. Solenoid Valve (M2)
17. Shift Valve
18. Shift Valve
19. Shift Valve
20. Shift Valve
21. KV Clutch
22. KR Clutch
23. K4 Clutch
24. K3 Clutch
25. K2 Clutch
26. K1 Clutch
27. One Way Valve

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Troubleshooting (Turning Motor)

Fault	Cause	Troubleshooting
Motor doesn't run	1. Dust or the oil is too dirty, radial load of shaft and shaft sleeve is too large and motor is clogged. 2. No pressure. 3. Internal drain of motor	1. Turn the motor and test the oil pressure. 2. Check the pumps and valves in the entire circuit. 3. Change the motor
The rotation speed of motor is different with the setting value	1. The oil of motor is not enough. 2. The axle temperature increases and hydraulic oil leaks and the viscidity reduce.	1. Check the flow rate of pump and motor, Check the displacement of pump and motor in idling conditions and check the drain flow of valves. Check 2. Use the oil with normal viscidity or use the normal oil temperature to drive.
The rotation speed of motor is deviated	1. Pipeline is wrong. 2. Speed adjusting is wrong.	1. Adjust pipeline 2. Change speed adjusting (means the re-installed items)
Shaft seal leaks	1. Sealing elements were worn or damaged	1. Change sealing elements.
Leak between flange and flange surface	1. The flange connection is too loose. 2. The O ring between flange and flange surface is damaged or the flange is damaged. 3. The connection seal leaks oil.	1. Re-tight (tightening torque: 26-32 N·m) 2. Check O-ring for scratch or bur and check the working surface of O-ring on the flange surface. 3. Change O-ring.
Leak from rear cover	1. The bolt of bottom cover has loosened. 2. The O-ring is worn or damaged. 3. Contacting area has dirt. 4. Contacting area has concave slot or crack.	1. Tight 7 bolts (Tightening torque: 32-35 N·m); 2. Replace O-ring; 3. Clean and reassemble it. 4. Grind the contacting area with 6# sand paper to smooth it.
The installed flange have crack (4 bolted flanges)	1. Result from the installation method	1. Change flange or use the normal bolt to tight.
Holes leak	1. Improper connection 2. Screw is damaged 3. Flange surface has crack	1. Re-connect 2. Change flange surface.
Abnormal sound	1. The axle is installed wrongly; 2. Air in the pipeline or motor; 3. Pump has clearance 4. Motor has clearance 5. Air in the oil inlet pipe	1. Reinstall 2. Displcement 3. Change pump 4. Change motor 5. Displacement
Abnormal temperature raise	1. Cooling system is abnormal; 2. The capacity of oil tank is not enough 3. The pressure is too high 4. Frequent use of rotating mechanism	1. Check and repair cooler; 2. Increase capacity or cooler 3. Adjust the overflow valve to normal pressure.

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BRAKES

	HG130-3
Service brake	Foot operated, hydraulically actuated on four tandem wheels, 3,671 ㎠ total braking surface
Parking brake	Flexible shaft control, drum brake

FRAME

	HG130-3
Height	299 mm
Width	280 mm
Side	16 mm
Upper, Lower	16 mm

DRAWBAR

	HG130-3
	A-shaped, u-section press formed and welded construction for maximum strength with a replacable drawbar ball
Drawbar frame	200*12 mm

CIRCLE

	HG130-3
	Four circle support shoes with replaceable wear surface. Circle teeth hardened on front 180°of circle
Diameter (outside)	1,300 mm
Circle reversing control hydraulic rotation	360 °

MOLDBOARD

	HG130-3
	Replaceable metal wear inserts, cutting edge and bits. Cutting edge and end bits are hardened.
Dimensions	3,658*580*18 mm
Arc radius	329 mm
Cutting edge	152*16 mm

BLADE RANGE

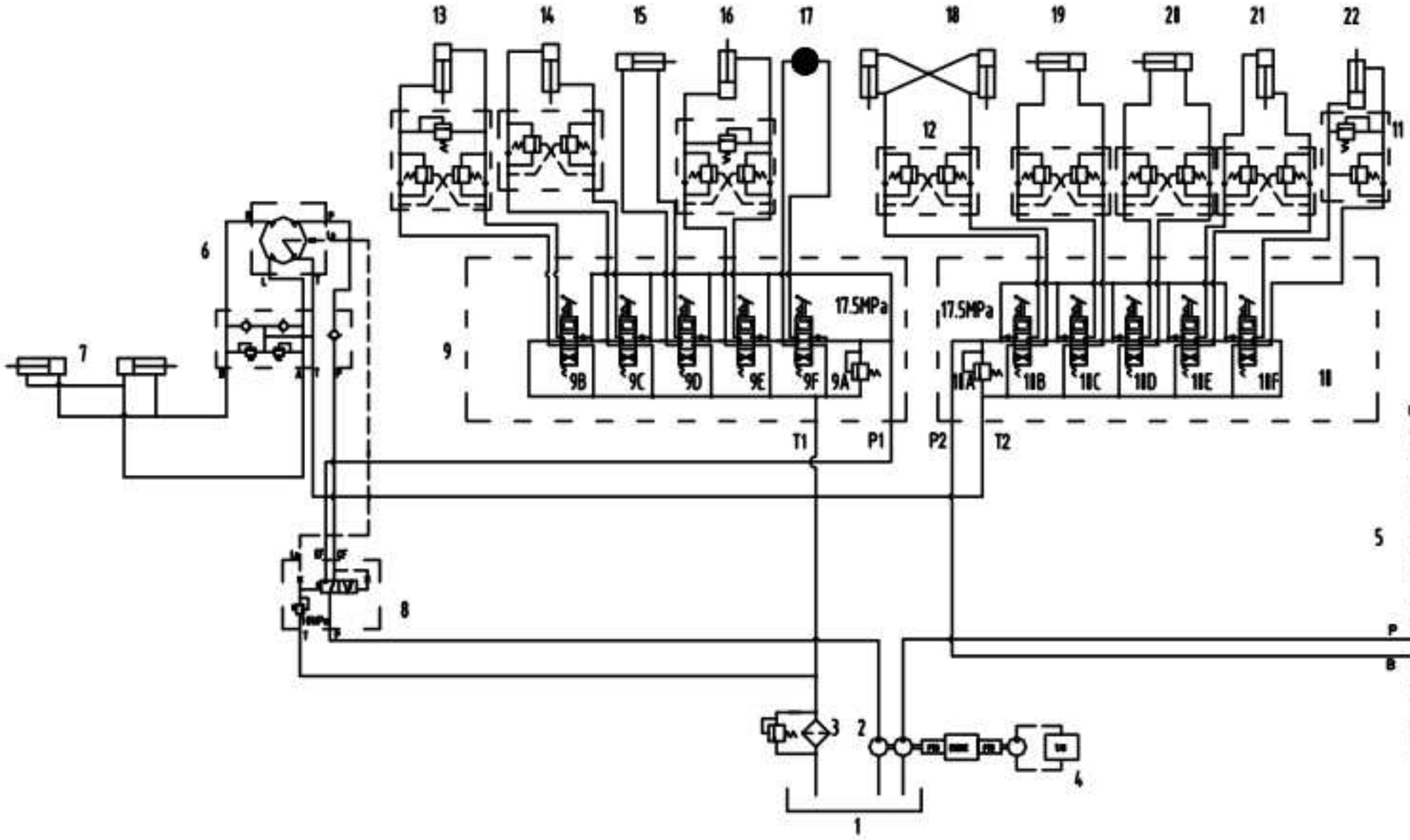
		HG130-3
Circle center shift	Right	525 mm
	Left	530 mm
Moldboard side shift	Right	815 mm
	Left	840 mm
Maximum shoulder reach outside rear tire (frame straight)	Right	1,886 mm
	Left	1,916 mm
Maximum lift above ground		410 mm
Maximum cutting depth		560 mm
Maximum blade angle, right or left		90 °
Blade tip angle		29-77 °

HYDRAULICS

	HG130-3
	Hydraulic system of double pump and double multi way valve. Priority braking and steering. There are hydraulic locks on the scraper lifting, front wheel tilting, traction frame tilting, power tilting, frame articulation and other oil circuits
Output (at engine rated prm)	140.8 L/min
Maximum system pressure	17.5 MPa

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The principle of hydraulic system



1. Hydraulic oil tank
2. Hydraulic and steering pump
3. Hydraulic oil filter
4. Hydraulic pump (gearbox)
5. Brake valve
6. Steering gear
7. Turning cylinder
8. Pilot valve
9. Left control valve
9A. Overflow valve
9B. Rear ripper control valve (optional)
9C. Lifting cylinder (left) control valve
9D. Scraper Blade side moving control valve
9E. Power incline control valve
9F. Turning control valve
10. Right control valve
10A. Overflow valve
10B. Hinge control valve
10C. Traction frame side swing control valve
10D. Incline control valve
10E. Lifting cylinder (right) control valve
10F. Scarifier control valve (optional)
11. Hydraulic-control check valve(with safety valve)
12. Hydraulic-control check valve
13. Rear ripper cylinder(optinal)
14. Lifting cylinder (left)
15. Scraper blade side moving cylinder
16. Power incline cylinder
17. Turning motor
18. Hinge cylinder
19. Traction frame side swing cylinder
20. Front wheel incline cylinder
21. Lifting cylinder (right)
22. Scarifier cylinder (optional)

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