MOTOR GRADER

SERVICE MANUAL

HG170

HYUNDAI

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Dimensions of tire and spoke

Tire's Dimensions

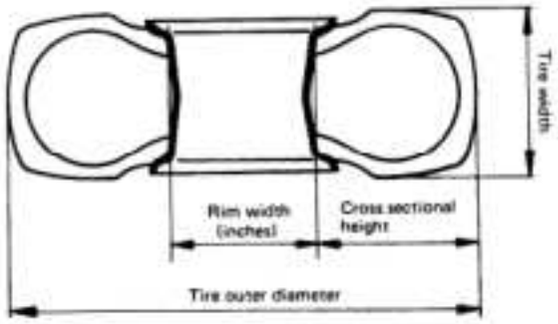
The dimensions of tire include the tire width (in inch), inner diameter (in inch), tire layers indicating with dimensions and the three values connecting together by using of "-" symbol.

e.g.

13.00 – 24 – 12PR (Narrow Base Tire)

Width Inner Diameter Layers

17.5 – 25 – 12PR (Normal Tire)



Dimensions of Spokes

The dimensions include the spoke diameter indicated in inch and spoke's type and the spoke width indicated in inch.

e.g.

8.50V×24

Spoke Width
Spoke's Type
Spoke's Diameter

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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. Motor internal leak.	1. Turn the motor and test the oil pressure. 2. Check the pumps and valves in the entire circuit. 3. Exchange 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 output volum in idling condition and check the drain flow of valves. 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. Exhaust 3. Exchange pump 4. Exchange motor 5. Exhaust
Abnormal temperature raise	1. Cooling system is abnormal; 2. The capacity of oil tank is not enough 3. The pressure is too high 4. Using swing mechanism frequently	1. Check and repair cooler; 2. Increase capacity or cooler 3. Adjust the overflow valve to normal pressure.

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BRAKES

	HG170-3
Service brake	Foot operated, hydraulically actuated on four tandem wheels, 3,671 ㎠ total braking surface
Parking brake	Flexible shaft control, drum brake

FRAME

	HG170-3
Height	302mm
Width	280 mm
Side	16 mm
Upper, Lower	25mm

DRAWBAR

	HG170-3
	A-shaped, u-section press formed and welded construction for maximum strength with a replacable drawbar ball
Drawbar frame	210*16 mm

CIRCLE

	HG170-3
	Four circle support shoes with replaceable wear surface. Circle teeth hardened on front 180°of circle
Diameter (outside)	1410 mm
Circle reversing control hydraulic rotation	360 °

MOLDBOARD

	HG170-3
	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

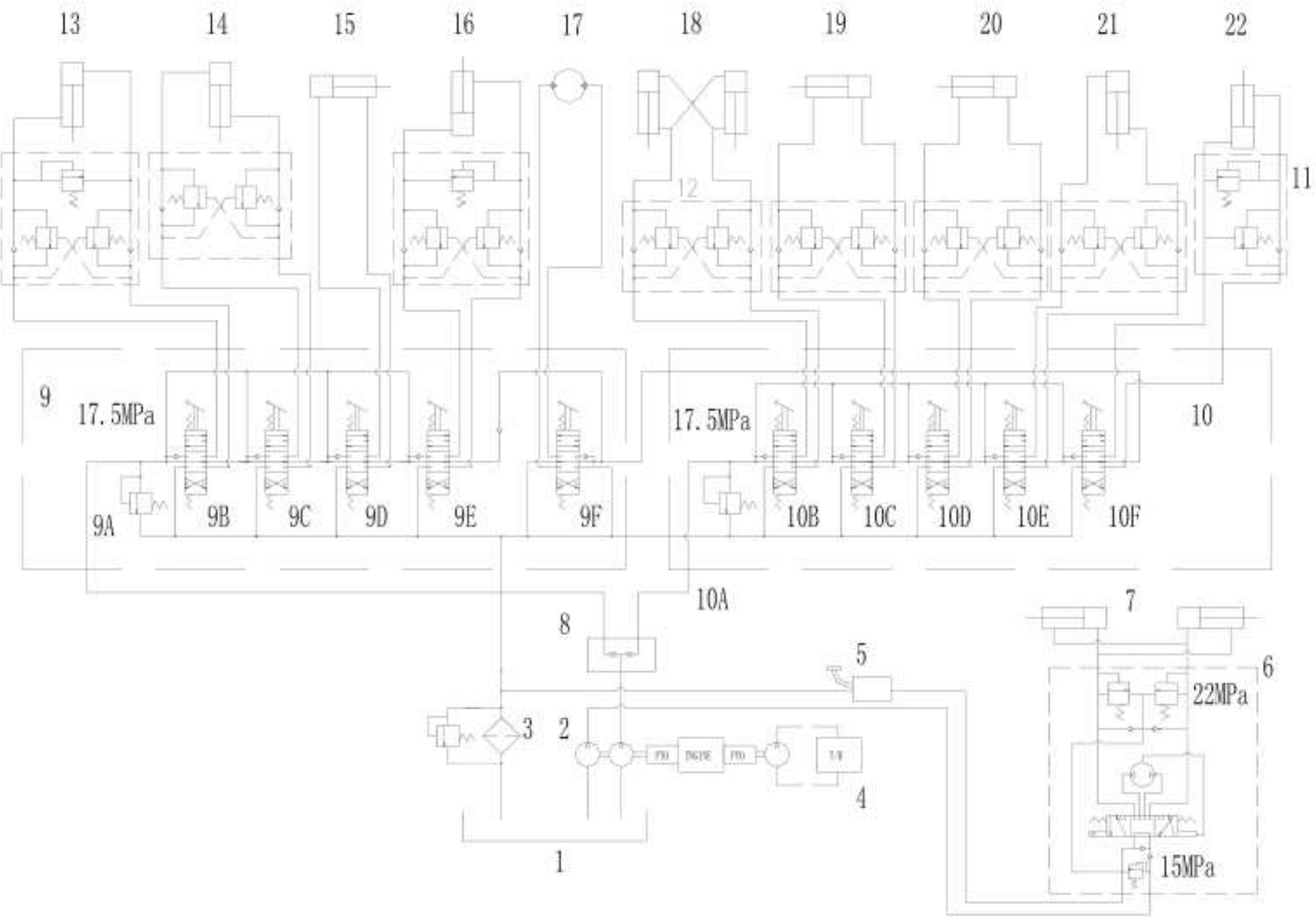
		HG170-3
Circle center shift	Right	525 mm
	Left	530 mm
Moldboard side shift	Right	815 mm
	Left	840 mm
Maximum shoulder reach outside rear tire (frame straight)	Right	1,886 mm
	Left	1,916 mm
Maximum lift above ground		450 mm
Maximum cutting depth		535mm
Maximum blade angle, right or left		90 °
Blade tip angle		29-77 °

HYDRAULICS

	HG170-3
	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)	99 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 booster
6.Steering gear
7.Turning cylinder
8.Distributing valve
9.Left Control Valve
9A.Overflow valve
9B.Rear scarifier control valve (optional)
9C.Lifting cylinder (left) control valve
9D.Scraper plate 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.Scraper plate lifting cylinder control valve (right)
10F.Scarifier control valve (left)
11.Hydraulic-control check valve (with safety valve)
12.Hydraulic-control check valve
13.Scarifier cylinder (optional)
14.Lifting cylinder (left)
15.Scraper plate side moving oil cylinder
16.Power incline oil cylinder
17.Turning motor
18.Hinge oil cylinder
19.Traction frame side swing oil cylinder
20.Front wheel incline oil cylinder
21.Scraper plate lifting oil cylinder (right)
22.Scarifier oil cylinder (optional)

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