Service Manual

Skid Steer Small Platform

Service Manual - Skid Steer Small Platform

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Section 2 - Care and Safety

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Table 2.

Specification for Distillate Diesel Fuel[1]				
Property	**Units**	**Requirements**	**"ASTM" Test**	**"ISO" Test**
Aromatics	%Volume	35% maximum	D1319	"ISO 3837"
Ash	%Weight	0.02% maximum	D482	"ISO 6245"
Carbon Residue on 10% Bottoms	%Weight	0.35% maximum	D524	"ISO 4262"
Cetane Number[2]	-	40 minimum	D613/D6890	"ISO 5165"
Cloud Point	°C	The cloud point must not exceed the lowest expected ambient temperature	D2500	"ISO 3015"
Copper Strip Corrosion	-	No. 3 maximum	D130	"ISO 2160"
Density at 15°C (59°F)[3]	Kg/M³	801 minimum and 876 maximum	No equivalent test	"ISO 3675 ISO 12185"
Distillation	°C	10% at 282°C (539.6°F) maximum 90% at 360°C (680°F) maximum	D86	"ISO 3405"
Flash Point	°C	legal limit	D93	"ISO 2719"
Thermal Stability	-	Minimum of 80% reflectance after aging for 180 minute at 150°C (302°F)	D6468	No equivalent test
Pour Point	°C	6°C (42.8°F) minimum below ambient temperature	D97	"ISO 3016"
Sulfur[1][4]	%mass	The level of sulfur that is in the fuel is controlled by emissions regulations. Refer to Table for more information. ⇨ *Table 3. (□ 3-20)*	D5453/D26222	"ISO 20846 ISO 20884"
Kinematic Viscosity[5]	"MM²/S (cSt)"	The viscosity of the fuel that is delivered to the fuel injection pump "1.4 minimum/4.5 maximum"	D445	"ISO 3405"
Water and Sediment	%weight	0.1% maximum	D1796	"ISO 3734"
Water	%weight	0.1% maximum	D1744	No equivalent test
Sediment	%weight	0.05% maximum	D473	"ISO 3735"
Gums and Resins[6]	mg/100mL	10mg per 100mL maximum	D381	"ISO 6246"
Lubricity corrected wear scar diameter at 60°C (140°F)[7]	mm	0.46 maximum	D6079	"ISO 12156-1"

(1) The specification includes the requirements for Ultra Low Sulfur Diesel (ULSD). ULSD fuel will have < or = 15 ppm (0.0015%) sulfur. Refer to "ASTM D5453", "ASTM D2622", or "ISO 20846, ISO20884" test methods. The specification includes the requirements for Low Sulfur Diesel (LSD). LSD fuel will have < or = 500 ppm (0.05%) sulfur. Refer to "ASTM 5453, ASTM D2622", "ISO 20846" and "ISO 20884" test methods. Refer to Table 3.

(2) A fuel with a higher cetane number is recommended in order to operate at a higher altitude or cold weather.

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Snow Blade

Installation and Removal

⇨ *Hydraulic Quick Hitch Control (A-16).* ⇨ *Manual Quickhitch Control (A-18).*

Installation of Optional Rubber Edge

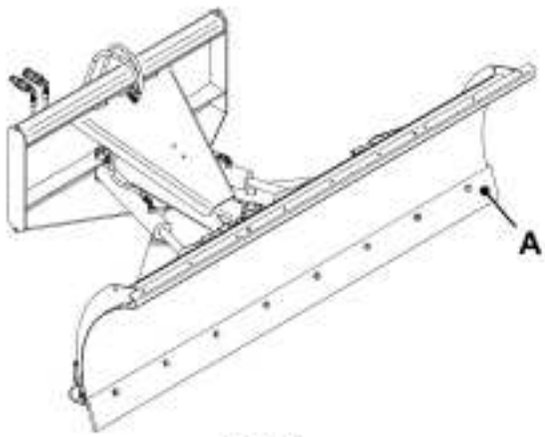


Fig 25.

1 Remove the standard wear edge **A** and set aside the wear edge and all bolts.⇨ *Replacement of Wear Edge (A-33).*



Fig 26.

2 Insert the bolts provided with the rubber edge through the steel strip, the rubber edge, and the base of the moldboard. ⇨ *Fig 26. (A-30).* Loosely secure the bolts with the lock washers and nuts that were removed in step 1.

Position the rubber edge so that no more than 1" of the edge extends below the lowest point of the moldboard and tighten the nuts to 102 Nm (75 lbs/ft).

Position the rubber edge so that no more than 1.5" of the edge extends below the lowest point of the moldboard and tighten the nuts to 203 Nm (150 lbs/ft).

Operation

Before any snowfall, inspect the site where the snow blade is to be used. Locate any obstructions (i.e. curbs, sidewalks, parking bumpers, pipes, shrubs, fences, etc.) and any variations in elevation (i.e. retaining walls, slopes, holes, etc.) so that these elements can be avoided during the snow plowing operation.

Important: *Dozing of undisturbed soil, heavy materials, or similar items can result in damage to the snow blade.*

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Example of Schematic Circuit

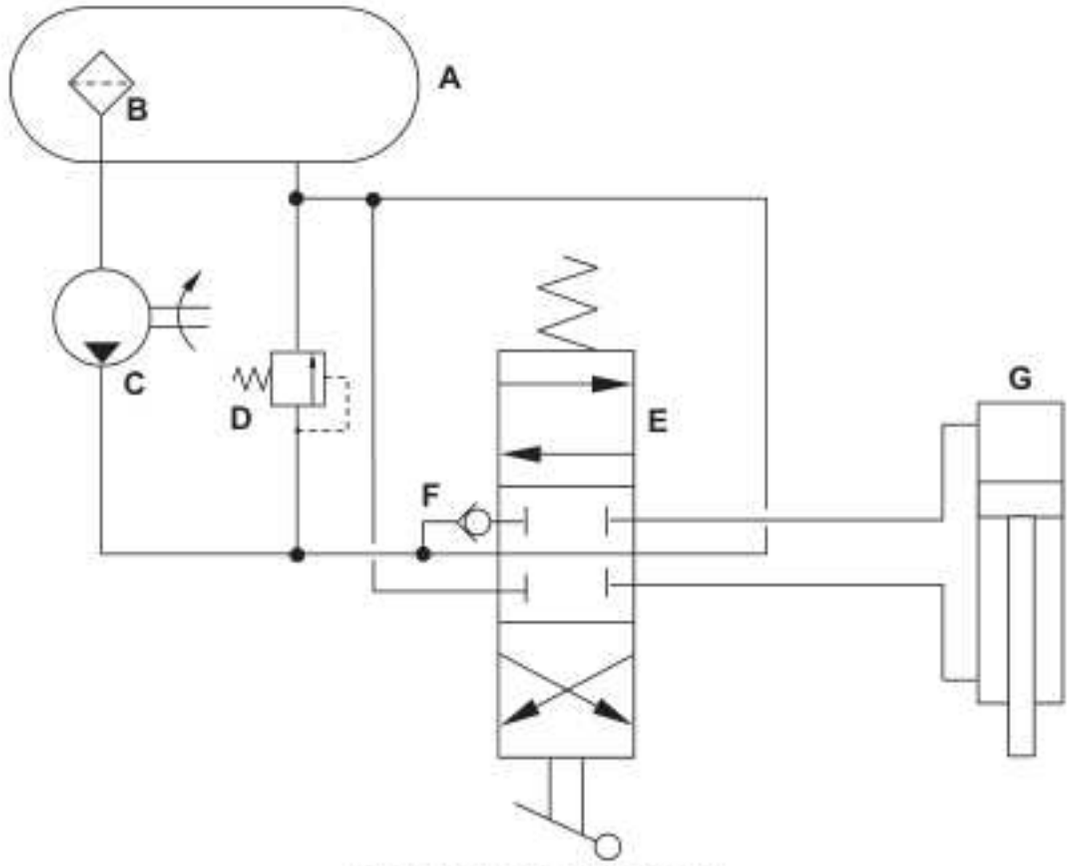


Fig 7. Simple Schematic Circuit

Some of the symbols described on the preceding pages have been arranged into a simple schematic circuit. ⇨ *Fig 7. (🗋 E-8)*.

Hydraulic tank **7-A** is a pressurised tank with an internally mounted strainer **7-B** on the suction line to the fixed displacement pump **7-C**. System pressure is limited to the setting of relief valve **7-D**.

Valve spool **7-E** is an open-centre spool that is in neutral position; flow from the pump passes through the spool and returns to the hydraulic tank.

If the lever operated spool is moved away from neutral position hydraulic fluid is directed to either head side or rod side of hydraulic ram **7-G**. Notice that the fluid must first open one way valve **7-F** before flowing to the ram.

Example Circuit Key

7-A	Hydraulic Tank
7-B	Strainer
7-C	Fixed Displacement Pump
7-D	Relief Valve
7-E	Spool
7-F	One Way Valve
7-G	Double Acting Hydraulic Ram

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Core Bars - Oxidation (Rusting)

Cause:

1 Operating in an environment which increases likelihood of oxidation (rusting), for example newly spread compost ground could increase acidic or alkali values.

2 Prolonged exposure to detergents, paint, solvents or fuel.

Prevention:

1 Clean the tracks with fresh water after operation. Make sure that the visible metallic components of the track are greased.

2 Clean the tracks with fresh water after operation in areas where chemicals can attack the tracks.



Fig 4.

Additional Notes:

If the core bars are slightly rusted, the track can be used. However, the propagation of rust under the rubber should be monitored, otherwise it is possible that the core bar will separate from the rubber.

Steel Cord - Breaking

Cause:

1 The sprocket is not appropriate for the track (the pitch does not fit).

2 Hard material (stone, metal) stuck between the track and the sprocket with excessive track tension.

3 The steel cord has been exposed and rusted.

Prevention:

1 Make sure that the sprocket is genuine JCB, ensure sprocket is in good condition.

2 Check the tension regularly. Clean the tracks regularly as recommended, particularly after operation in clay soil.

3 As soon as you see small cracks on the lug side, clean with water and repair immediately.



Fig 5.

Additional Notes:

When the steel cord is broken, the track must be replaced. As a preventive measure always check the tension.

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Drive Motors

Description and Operation

Description

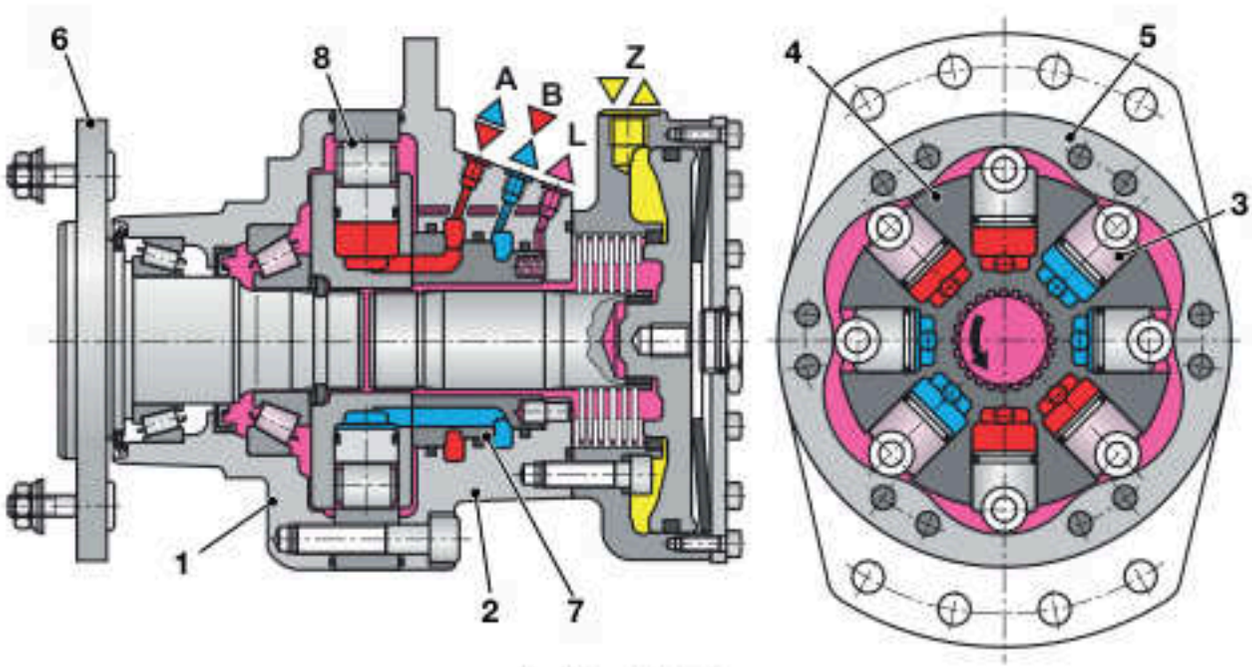


Fig 1. Typical Motor

The radial piston motor consists of a two part housing **1**and **2**, rotary group **3** and **4**, cam **5**, output shaft **6** and flow distributor **7**. It converts hydrostatic energy into mechanical energy. Hydraulic fluid is directed from the motor inlet port in the rear case **2** via the flow distributor **7** through galleries to the cylinder block **4**. The radially arranged pistons **3** in the cylinder bores face a pressure increase and perform via rollers **8** a stroke movement against the cam ring **5**. The reaction force at the cam ring generates a torque, which is transferred to the output shaft **6** via splines in the cylinder block **4**. When the torque exceeds the shaft load, the cylinder block turns, causing the pistons to stroke (working stroke). Once the end of a stroke is reached the piston is returned to its bore by the reaction force at the cam (return stroke) and the fluid is fed to the motor outlet port in the rear case. The output speed depends on the displacement and is proportional to the inward flow. The number of working and return strokes corresponds to the number of lobes on the cam multiplied by the number of pistons.

Oil from the pump is fed into the appropriate cylinder bores by means of the distributor plate. As the cylinder block rotates the distributor delivers oil to the appropriate cylinders to continue the rotating force.

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