Service Manual

2DX Backhoe Loader

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Kingpost & Carriage

Removal and Replacement

Before removing the kingpost/carriage, slew the kingpost to dead centre and remove the boom and dipper. Support the kingpost using a suitable hoist and lifting slings.

⇨ *Fig 42. (🗋 33)*. The numerical sequence shown on the illustration is intended as a guide to dismantling.

Dismantling

1 Before starting, disconnect the backhoe hydraulic hoses to the kingpost **6**. Label each hose before disconnecting, this will ensure correct re-fitting. Blank off all open ports to prevent ingress of dirt and loss of hydraulic fluid.

⚠ WARNING

Hydraulic Pressure

Hydraulic fluid at system pressure can injure you. Before connecting or removing any hydraulic hose, residual hydraulic pressure trapped in the service hose line must be vented. Make sure the hose service line has been vented before connecting or removing hoses. Make sure the engine cannot be started while the hoses are open.

INT-3-1-11_2

2 On both slew rams **10** remove bolt **1**, then using a suitable drift remove the pivot pin **2**.

3 Swing the rod ends of the slew rams outwards, clear of the assembly.

4 Ensure that the kingpost **6** is securely supported on the hoist. Remove the capscrews **3** through the upper and lower pivot pins, then using a suitable drift remove the lower pivot pin **4** followed by the upper pivot pin **5**. The kingpost can now be lifted clear. Retrieve the thrust washers **7**. Note the locations of the thrust washers so that they can be returned to their original positions during re-assembly.

5 Disconnect the slew ram hoses. Blank off all open ports to prevent ingress of dirt.

6 Remove the bolts **8** and slew ram trunnion plate **9**. Note that when the trunnion plate is unbolted from the carriage the slew rams **10** will tend to drop. Ensure that they are safely supported.

7 Remove the slew rams **10** and retrieve the thrust washers **11**. Note the locations of the rams and thrust washers so that they can be returned to their original positions during re-assembly.

8 Disconnect the feed hoses to the hydraclamp units. Blank off all open ports to prevent ingress of dirt.

9 Ensure that the carriage **15** is securely supported on the hoist. Remove the bolts **12** and the lower clamp bar **13**. Loosen the bolts **14** through the upper clamp bar. With the bolts sufficiently loosened, the carriage can now be lifted clear of the rearframe rails.

Note: *The bearing bushes **X** need only be removed if they are damaged and are required to be renewed. Ensure that grease holes in the bushes align with the appropriate holes in the fabrication or casting.*

Assembly

Assembly is the reverse of the dismantling sequence.

Make sure that all pivot bores and pivot pins are clean and greased when assembling. Grease the bearing bushes through their respective grease nipples on the assembly.

When re-fitting the pivot pins, ensure that their drill holes align with the appropriate holes in the fabrication or casting.

Table 7. Torque Settings

Item	Nm	kgf m	lbf ft
12	660	67.3	486
14	660	67.3	486

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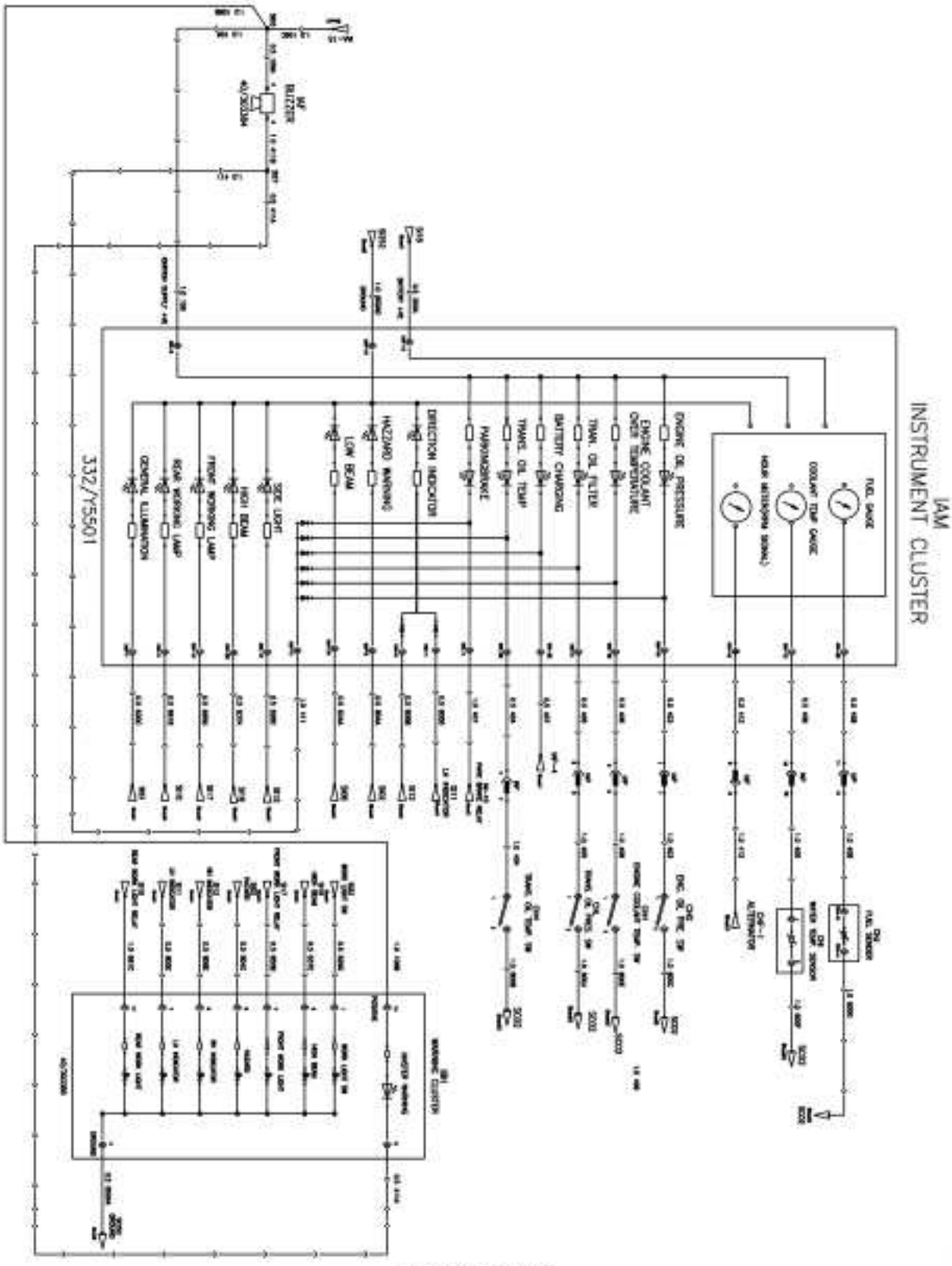


Fig 8. Sheet 2 of 5

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Introduction to Hydraulic Schematic Symbols

TE-001

General (Basic and Functional Symbols)

Complex hydraulic components and circuits can be described to the engineer by using graphical symbols. The following pages illustrate and give a brief description for some of the more common symbols used.

There are many symbols in use and it would be impossible to include them all here. However it should be noted that most are only variations or refinements on the basic principles explained here. If more detailed information is required you are recommended to obtain a copy of BS2917 or IS01219.

Once familiar with the symbols, the engineer can use hydraulic circuit diagrams as an aid to fault finding. It will be possible to see the complete hydraulic circuit and decipher the relationship between hydraulic components.

Table 1. General

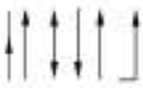
	Spring
	Flow restriction affected by viscosity
	Direction of flow
	Indication of rotation
	Indication of direction and paths of flow
	Variable control

Table 2. Rams

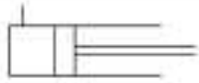
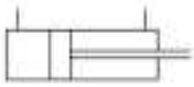
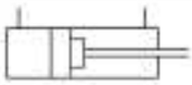
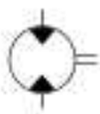
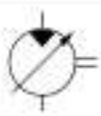
	Single acting
	Double acting
	Double ended
	Double acting with damping at rod area end

Table 3. Pumps and Motors

	Variable capacity pump two directions of flow
	Fixed capacity motor one direction of flow
	Fixed capacity motor two directions of flow
	Variable capacity motor one direction of flow
	Variable capacity motor two directions of flow

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input shaft A3 to the appropriate clutch (piston 10 or 5) in the unit. Pressure from the other clutch is vented to the sump via the solenoid valve spool. Oil is prevented from leaking by seals 6 on the pistons and ring seals 7 on the input shaft A3.

The valve E is shown using symbols.

2/4 Wheel Drive Clutch Operation

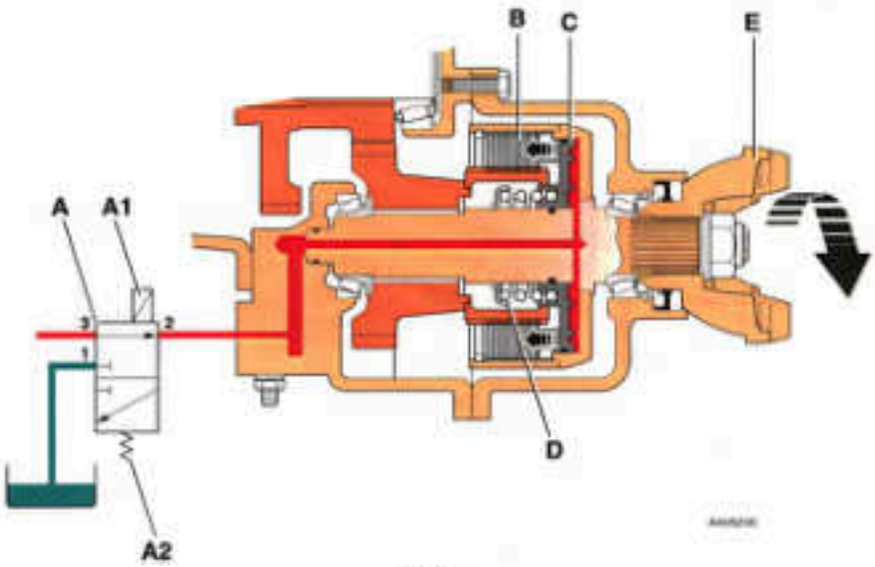


Fig 72.

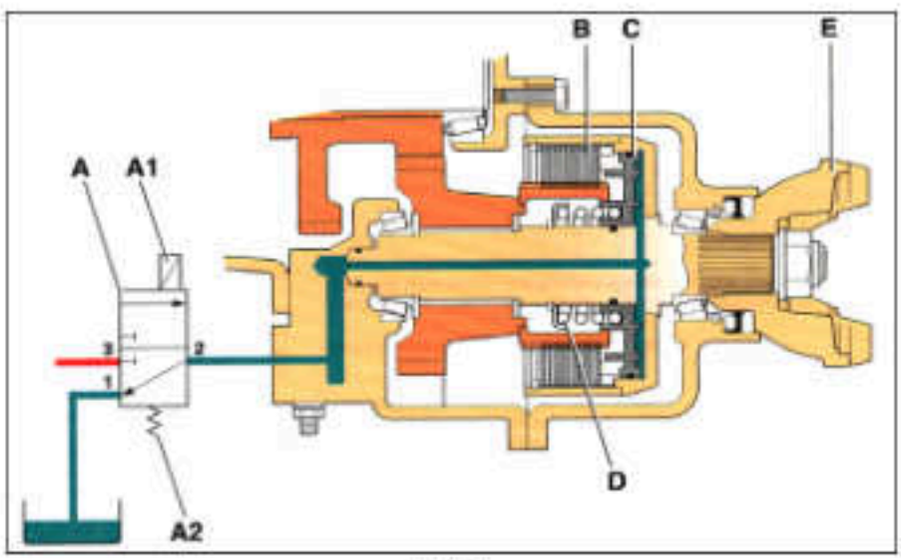


Fig 73.

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Component Identification

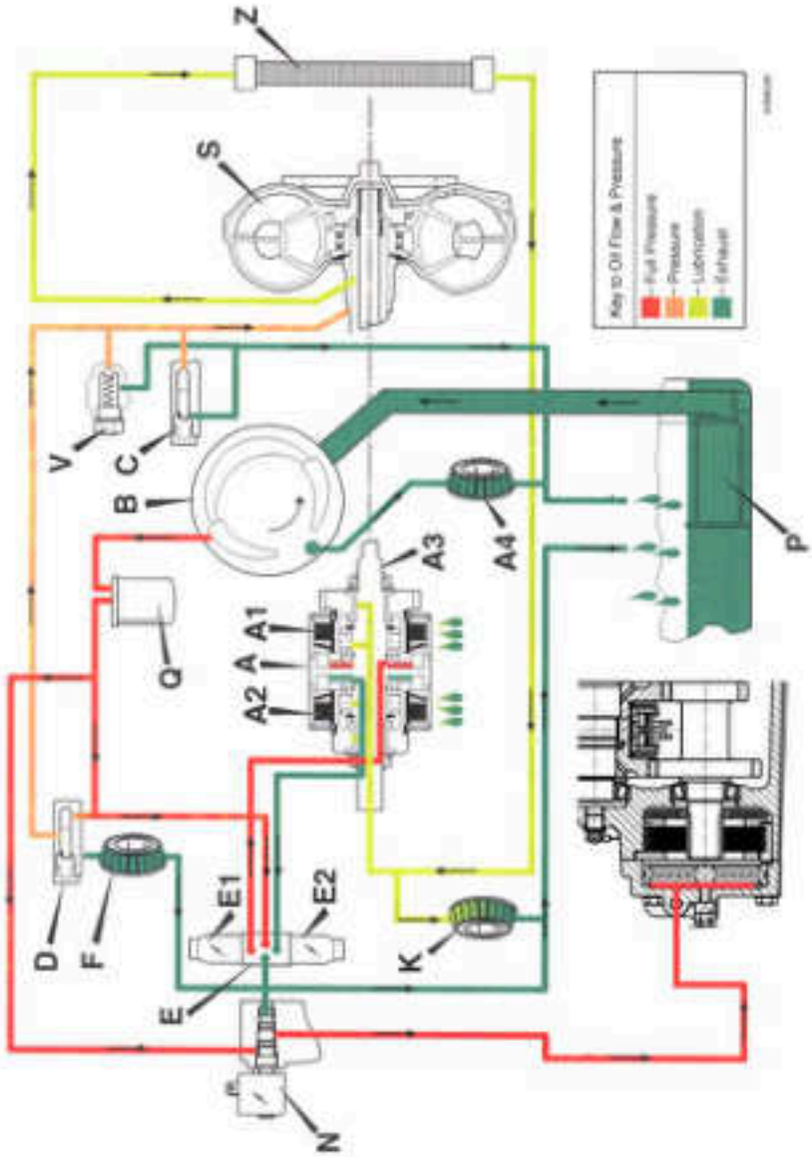


Fig 2.

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