NEW HOLLAND

COMPACT EXCAVATORS

E27

SERVICE MANUAL

87360159 NA

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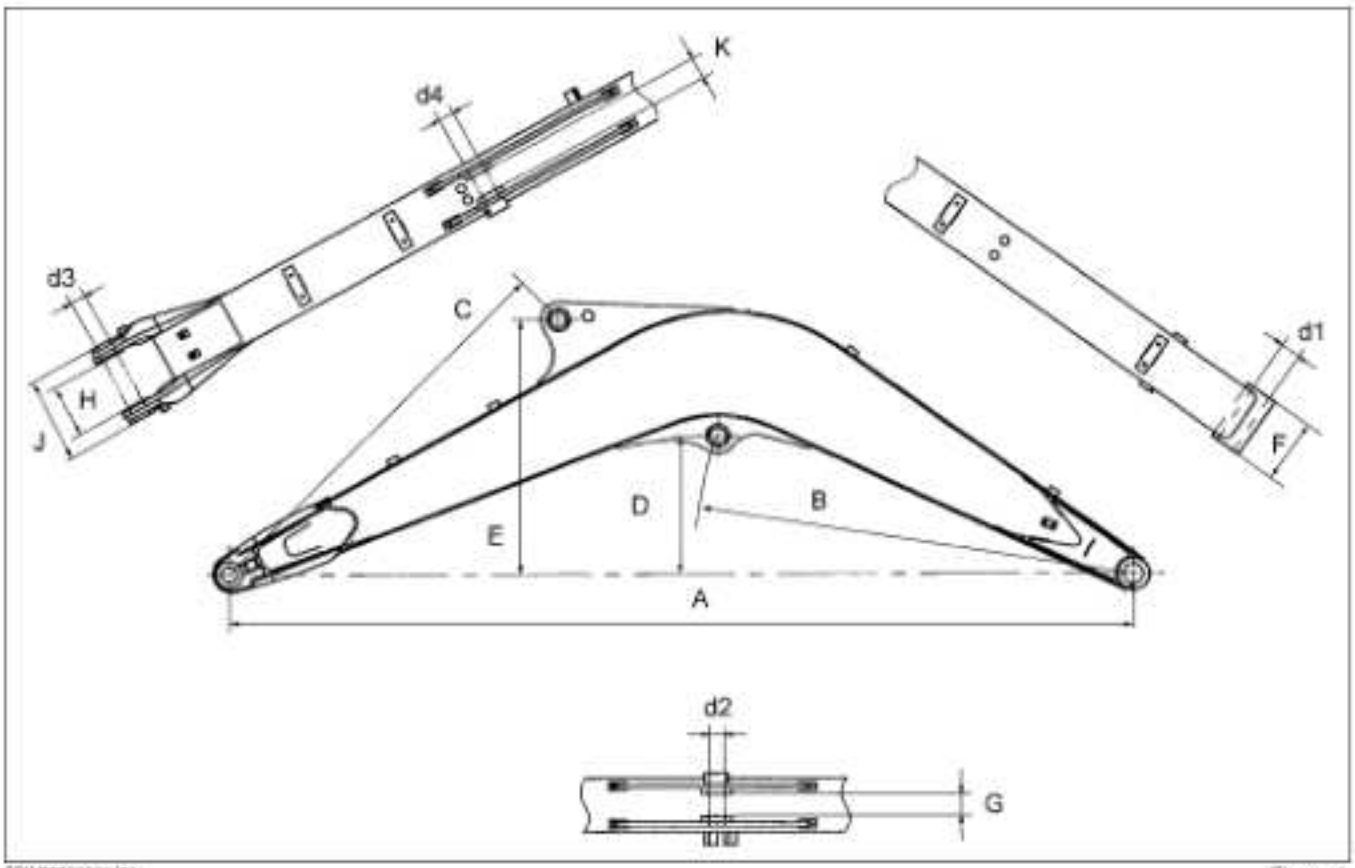
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3.1 BOOM

3.1.1 BOOM DIMENSIONAL DRAWINGS



SPW0300001JC1

Figure 1

Boom DimensionS		
No.	NAME	DIMENSIONS Unit: MM. (ft-in)
A	Boom length	2150 (7'0.65")
B	Distance between pins of boss	R1030.5 (3'4.57")
C	Distance between pins of bracket	R1084.5 (3'6.70")
D	Height of boom cylinder rod pin	262 (10.31")
E	Height of arm cylinder (head side) pin	640 (2'1.20")
F	Boom foot width	160 (6.30")
G	Inner width of bracket for boom cylinder (rod side) mounting	56 (2.20")
H	Boom end inner width	125 (4.92")
J	Boom end outer width	195 (7.68")
K	Inner width of bracket for arm cylinder (head side)	56 (2.20")
d1	Boom foot pin dia. [Bushing outer dia.]	ø40 (1.57") [ø50 (1.97")]
d2	Boom cylinder (rod side) pin dia.	ø40 (1.75")
d3	Pin dia. of arm end	ø40 (1.75")
d4	Arm cylinder (head side) pin dia.	ø40 (1.57")

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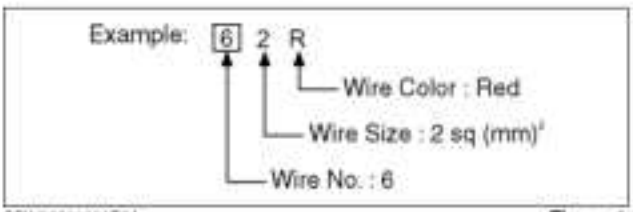
23.1 HOW TO READ CIRCUIT DIAGRAM AND HARNESS CONNECTION

23.1.1 ELECTRIC CIRCUIT DIAGRAM

NOTE: *For the electric circuit diagram, refer to Fold Out Schematic.*

In the diagram, the number, size and color of wires are shown on the wiring line.

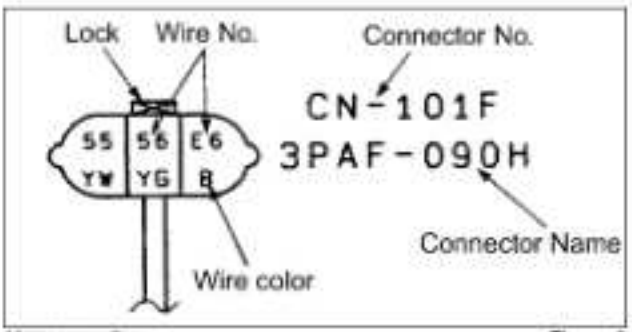
The size of the wire is to be 0.75 sq. (square mm = mm^2) unless otherwise specified.



SPW23000001E01 Figure 1

SYMBOL	COLOR	SYMBOL	COLOR
B	Black	P	Pink
Br	Brown	R	Red
G	Green	Sb	Sky Blue
Gr	Gray	V	Violet
L	Blue	W	White
Lg	Light Green	Y	Yellow
O	Orange		

23.1.2 HARNESS CONNECTION



SPW23000002E01 Figure 2

1. Indication for Connector
   1. The figure for the connector pin arrangement is shown by putting the lock (nail) to upper portion, and looking from the fitting face.
   2. The numbers in the connector show the wire No., and alphabetical letters show the wire color.
   3. On the side face of connector, the connector name and serial number of the connector No. are indicated.
   4. At the place indicated as DOUBLE SPLICE, Two wires are connected to one place.
   2. The connector is to be connected by engaging the male (M) and female (F) connectors of the same number.

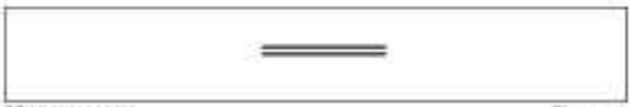
      Example: CN-101M and CN-101F

      Where: M for Male, and F for Female.



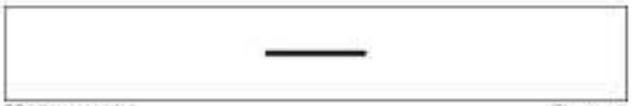
SPW23000037J01 Figure 3

   3. This mark means a connector with a diode. The direction for diode is shown by the arrow.
   4. The AVSS wires are to be used for the size between 0.75 sq. and 2 sq. AVS wires between 3 sq. and 5 sq. and others are AV wires, unless otherwise specified.
   5. The wire size is 0.75 sq., unless otherwise specified.
   6. The treatment for the harness end is to be as follows:



SPW23000038J01 Figure 4

      1. After roughly applying harness taping, wires are installed in a corrugated tube.



SPW23000039J01 Figure 5

      2. Harness taping by two plies.



SPW23000040J01 Figure 6

      3. No harness treatment for connection.
   7. The length for the above (6)-3) is to be 30 ± 10 mm. (1.2 ± 0.4 in), and the length includes in the total length of wire shown in the diagram.

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42.1 GENERAL PRECAUTIONS

Troubleshooting provides a process to investigate the cause of trouble. This manual describes how to solve a specific problem systematically and as quickly as possible. For the troubleshooting concerning a specific components, refer to the troubleshooting for each component.

42.1.1 CONFIRM ACTUAL TROUBLED CONDITIONS AT SITE

1. Verify the machine model, serial number, problem, notify possible arrival time of service crew to the user.



FIG. 42-1 MAKE FIELD INVESTIGATION

2. Verify background of trouble.
   - A. Model name and serial number.
   - B. Kind of attachment.

     Check that the combination of attachments was proper and that the operating manner was not unreasonable.
   - C. Operating time on the hour-meter.
   - D. Record of problems.

     First occurrence or repeated problems.
   - E. History of the problem and additional modifications.

     Reoccurrence of the same problem in the past or due to additional modification.



FIG. 42-2 VERIFYING BACKGROUND OF TROUBLE OCCURRED.

3. How to diagnose
   - A. Verify defective part.
   - B. Reproduce the conditions.
   - C. Where the defective part can not be verified, surmise the possible causes systematically.
   - D. Verify the surmised cause.
   - E. Report estimated repairing method/ procedures to the user.



FIG. 42-3 DIAGNOSING TROUBLE BY MEANS TROUBLESHOOTING.

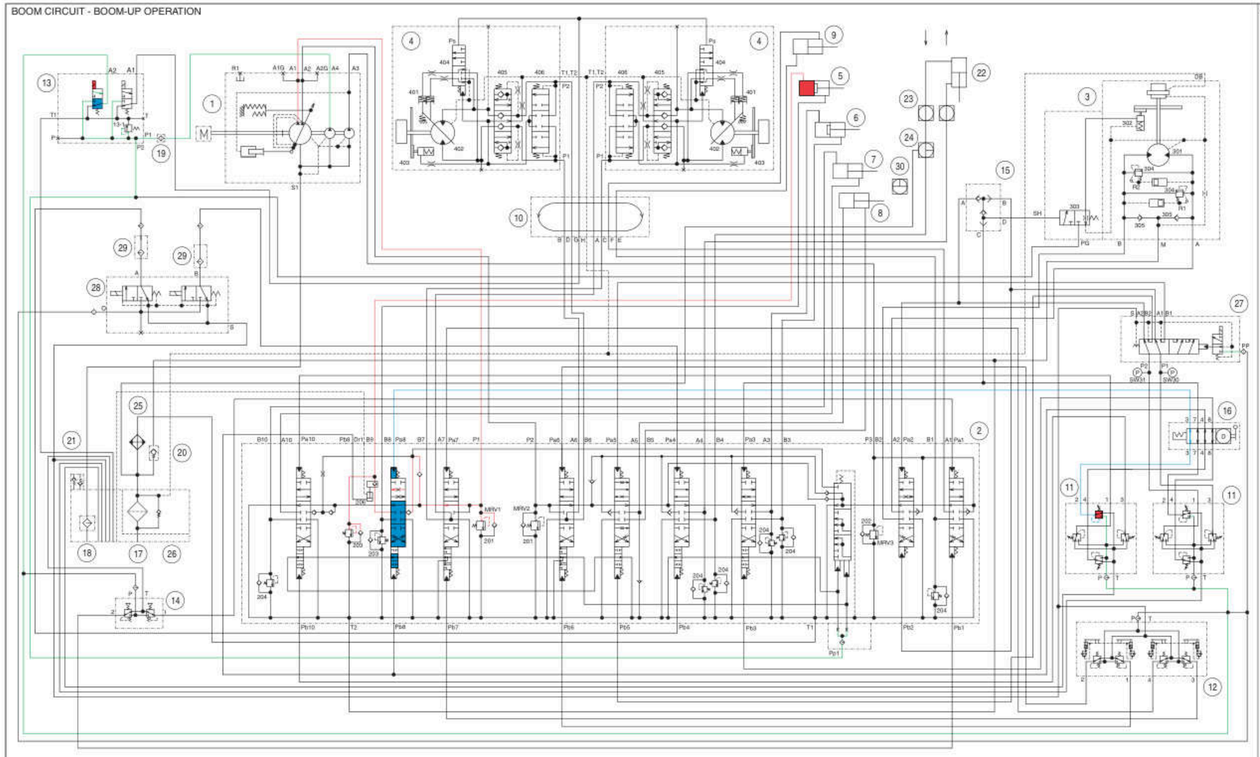
4. Explanation of the cause
   - A. Explain the cause to the user.

     For example, explain the oil leakage through the piston is caused by defect on the piston rod. And the proper operating manner of the machine should be explained to the user to prevent reoccurrence of the same kind of trouble.
   - B. Handling of damaged parts

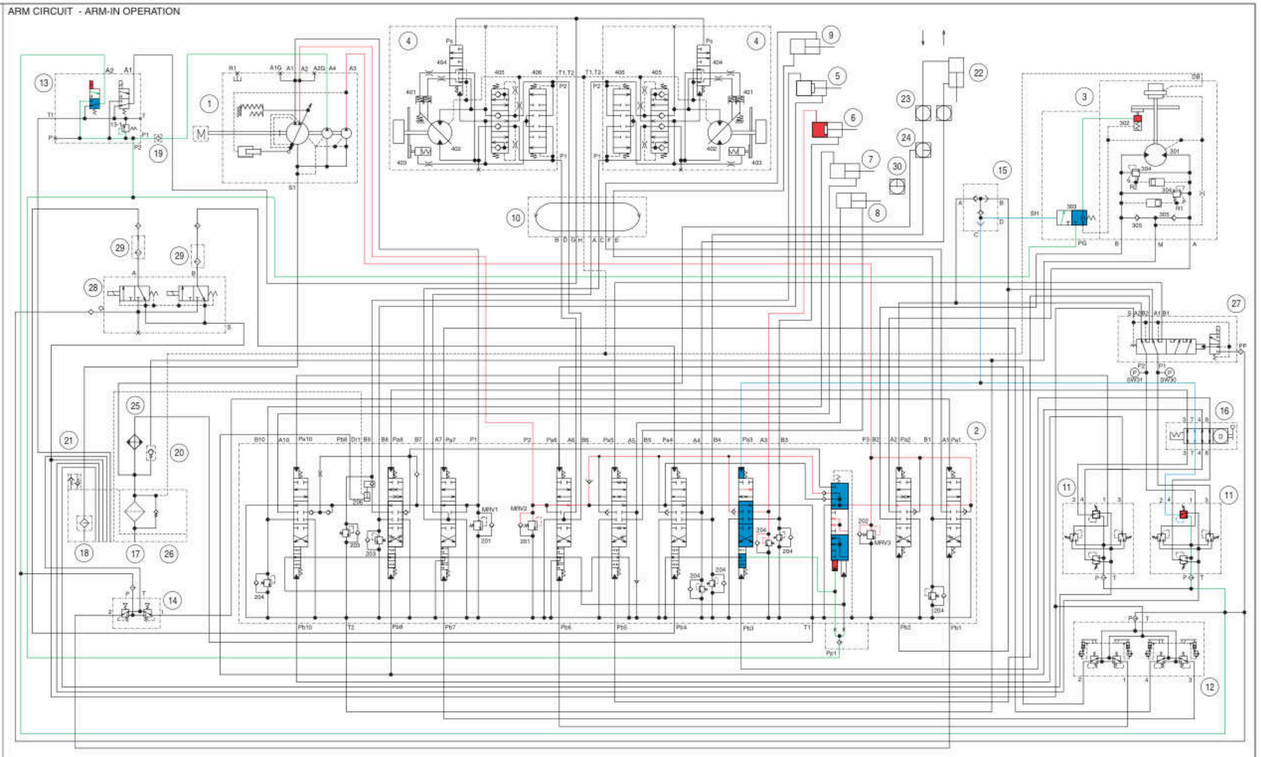
     The damaged parts to be claimed and returned are the evidence, so they should be handled with care. For example, protect them from contamination of water, soil, etc., from getting into ports on a hydraulic system. Also use care not to damage or break removed components.

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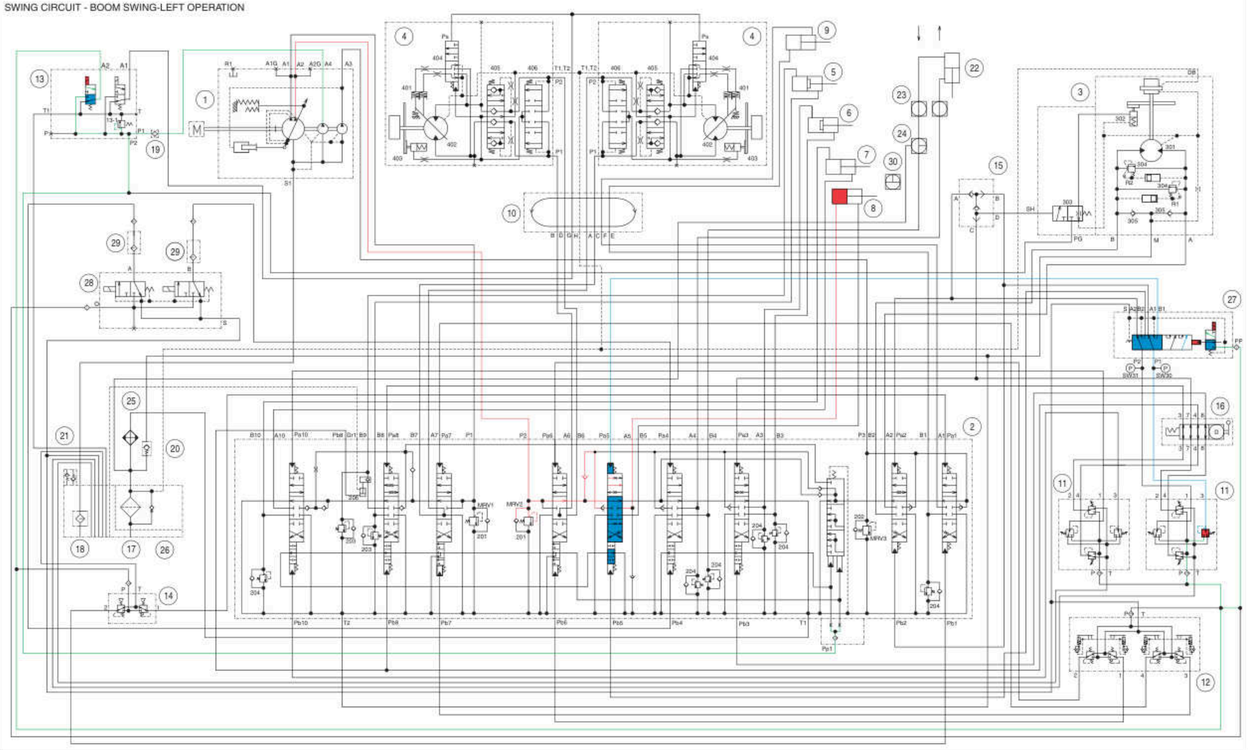
BOOM CIRCUIT - BOOM-UP OPERATION



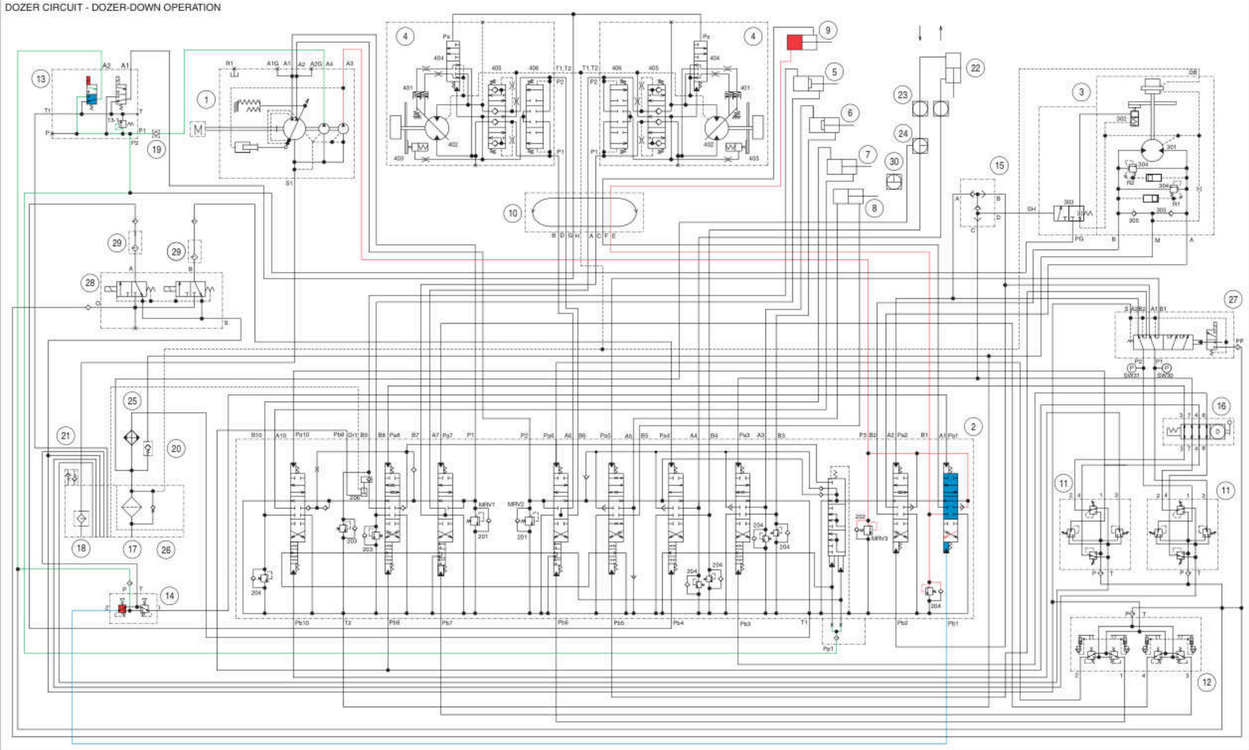
ARM CIRCUIT - ARM-IN OPERATION



SWING CIRCUIT - BOOM SWING-LEFT OPERATION



DOZER CIRCUIT - DOZER-DOWN OPERATION



COMPONENT IDENTIFICATION

1. PUMP ASSEMBLY
2. CONTROL VALVE
3. SLEWING MOTOR
4. TRAVEL MOTOR
5. BOOM CYLINDER / CANOPY CAB
6. ARM CYLINDER
7. BUCKET CYLINDER
8. SWING CYLINDER
9. DOZER CYLINDER
10. SWIVEL JOINT
11. PILOT VALVE (ATT)
12. PILOT VALVE (TRAVEL)
13. SOLENOID VALVE
14. PILOT VALVE (DOZER)
15. SHUTTLE VALVE
16. MULTI CONTROL VALVE
17. RETURN FILTER (ELEMENT)
18. SUCTION STRAINER
19. INLINE FILTER
20. CHECK VALVE
21. HYDRAULIC RESERVOIR VENT
22. NIBBLER CYLINDER
23. STOP VALVE
24. SELECTOR VALVE
25. OIL COOLER
26. HYDRAULIC OIL TANK
27. SOLENOID VALVE
28. SOLENOID VALVE
29. ORIFICE

NOTES

1. 201 (MAIN RELIEF VALVE P1,P2) 23.0 MPa (3340 psi)
2. 202 (MAIN RELIEF VALVE P3) 23.0 MPa (3340 psi)
3. 203 (OVERLOAD RELIEF VALVE) 27.5 MPa (4000 psi)
4. 204 (OVERLOAD RELIEF VALVE) 25.5 MPa (3700 psi)
5. 304 (SLEW RELIEF VALVE) 18.5 MPa (2680 psi)
6. 13-1 (PILOT RELIEF VALVE) 3.5MPa (508 psi)

HYDRAULIC SYMBOLS

PRESSURE
PILOT MAIN PRESSURE
PILOT SEC PRESSURE
CASE DRAIN
COMPONENT
54 COMPONENT NUMBER
SHOWS CIRCUIT CROSSING NOT CONNECTED
SHOWS CIRCUIT CONNECTED
CHECK VALVE
RESTRICTOR
FILTER OR SCREEN
OIL COOLER

HYDRAULIC SCHEMATIC
E27 HYDRAULIC EXCAVATORS

Additional copies of this Hydraulic and Electrical Schematic can be ordered through Technical Publications Distribution System. The part number is 6-80910

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