SERVICE MANUAL

BACKHOE LOADER
3CX

EN - 9813/6650 - ISSUE 3 - 02/2018

This manual contains original instructions, verified by the manufacturer (or their authorized representative).

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Foreword

The Operator's Manual

> ⚠
> You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator's Manual. You must understand and follow the instructions in the Operator's Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

Do not operate the machine without an Operator's Manual, or if there is anything on the machine you do not understand.

Treat the Operator's Manual as part of the machine. Keep it clean and in good condition. Replace the Operator's Manual immediately if it is lost, damaged or becomes unreadable.

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Technical Data

Table 43. Basic Engine Data - 444 Engine

Engine variants (Tier 2/stage 2)	
- SA	Naturally aspirated
- SB	Turbocharged
- SC	Turbocharged with inter-cooler
Engine variants (tier 3):	
- SG	Naturally aspirated
- SD	Turbocharged
- SF	Turbocharged with inter-cooler
Rated speed	
Vehicle applications	2200 RPM (Revolutions Per Minute)
Generator set application - 50 Hz	1500 RPM
Generator set application - 60 Hz	1800 RPM
Weight (dry):	
- SA, SG	472kg
- SB, SC, SD, SF	477kg
Number of cylinders	4
Nominal bore size	103mm
Stroke	132mm
Cylinder arrangement	In line
Combustion cycle	4-stroke
Firing order	1-3-4-2
Displacement	4.399L
Compression ratio	
- SA	18.6 : 1
- SB	18.3 : 1
- SC	17.5 : 1
- SD	17.2 : 1
- SF	17.2 : 1
Engine compression	see Note(1)
Direction of rotation (viewed from front (crankshaft pulley) end)	Clockwise
Valves	4 per cylinder
Valve clearances measured at the valve end of the rocker (measured cold):	
- Inlet	0.19–0.27mm
- Exhaust	0.56–0.64mm
Lubricating oil pressure(2)	>4.6bar (66.7psi)
Combustion system	Direct injection
Fuel injection pump	Rotary mechanical

(1) Compression variance between each cylinder should be no greater than 3.5bar (50.7psi).
(2) Engine at normal operating temperature and maximum revs.

Table 44. Basic Engine Data - 448 Engine

Engine variants (tier 2/stage 2)	
- DA	Naturally aspirated
- DB	Turbocharged
- DC	Turbocharged with inter-cooler
Engine variants (tier 3):	
- DG	Naturally aspirated
- DD	Turbocharged
- DF	Turbocharged with inter-cooler
Rated speed	
Vehicle applications	2200 RPM
Generator set application - 50 Hz	1500 RPM
Generator set application - 60 Hz	1800 RPM
Weight (dry):	
- DA, DG	472kg
- DB, DC, DD, DF	477kg
Number of cylinders	4
Nominal bore size	106mm
Stroke	135mm
Cylinder arrangement	In line
Combustion cycle	4-stroke
Firing order	1-3-4-2
Displacement	4.765L
Compression ratio	
- DA	18.6 : 1
- DC	18.1 : 1
Engine compression	see Note(1)
Direction of rotation (viewed from front (crankshaft pulley) end)	Clockwise
Valves	4 per cylinder
Valve clearances measured at the valve end of the rocker (measured cold):	
- Inlet	0.19–0.27mm
- Exhaust	0.56–0.64mm
Lubricating oil pressure(2)	>4.6bar (66.7psi)
Combustion system	Direct injection
Fuel injection pump	Rotary mechanical

(1) Compression variance between each cylinder should be no greater than 3.5bar (50.7psi).
(2) Engine at normal operating temperature and maximum revs.

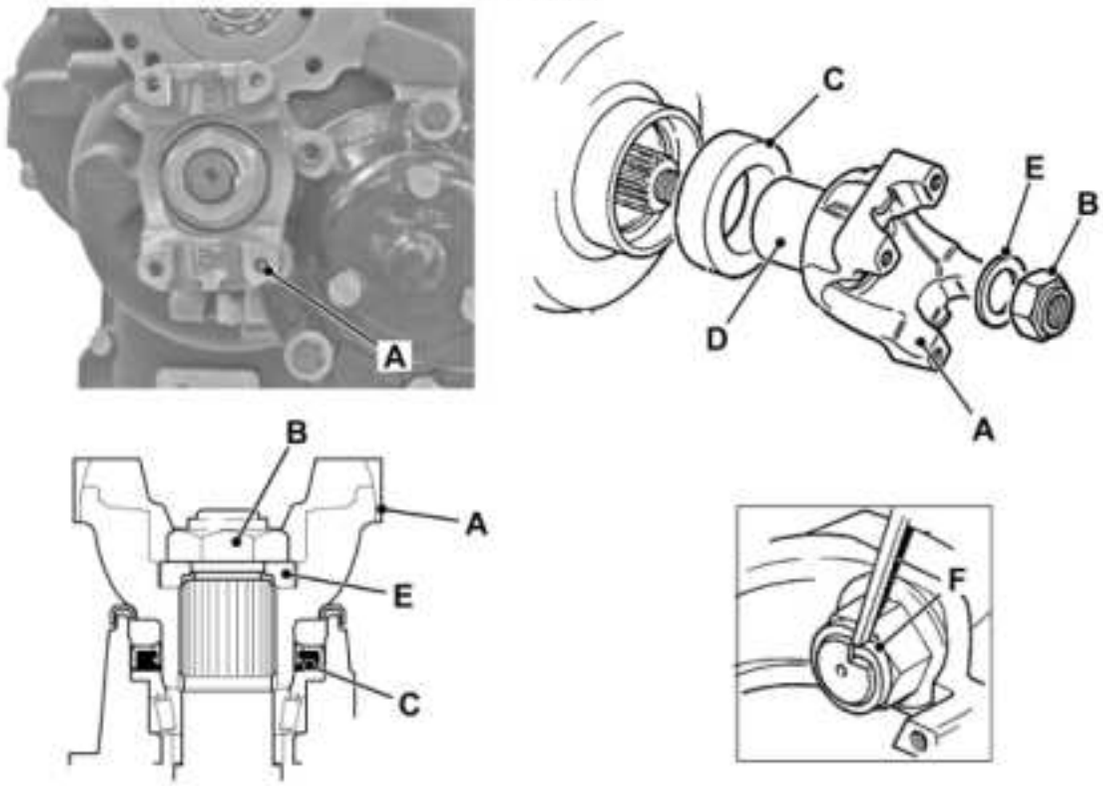
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Remove and Install

Remove

1. Remove the drive yoke, refer to Drive Yoke - Remove and Install (PIL 27-03).
2. Remove the oil seal. Do not damage the seal housing.

Figure 463.



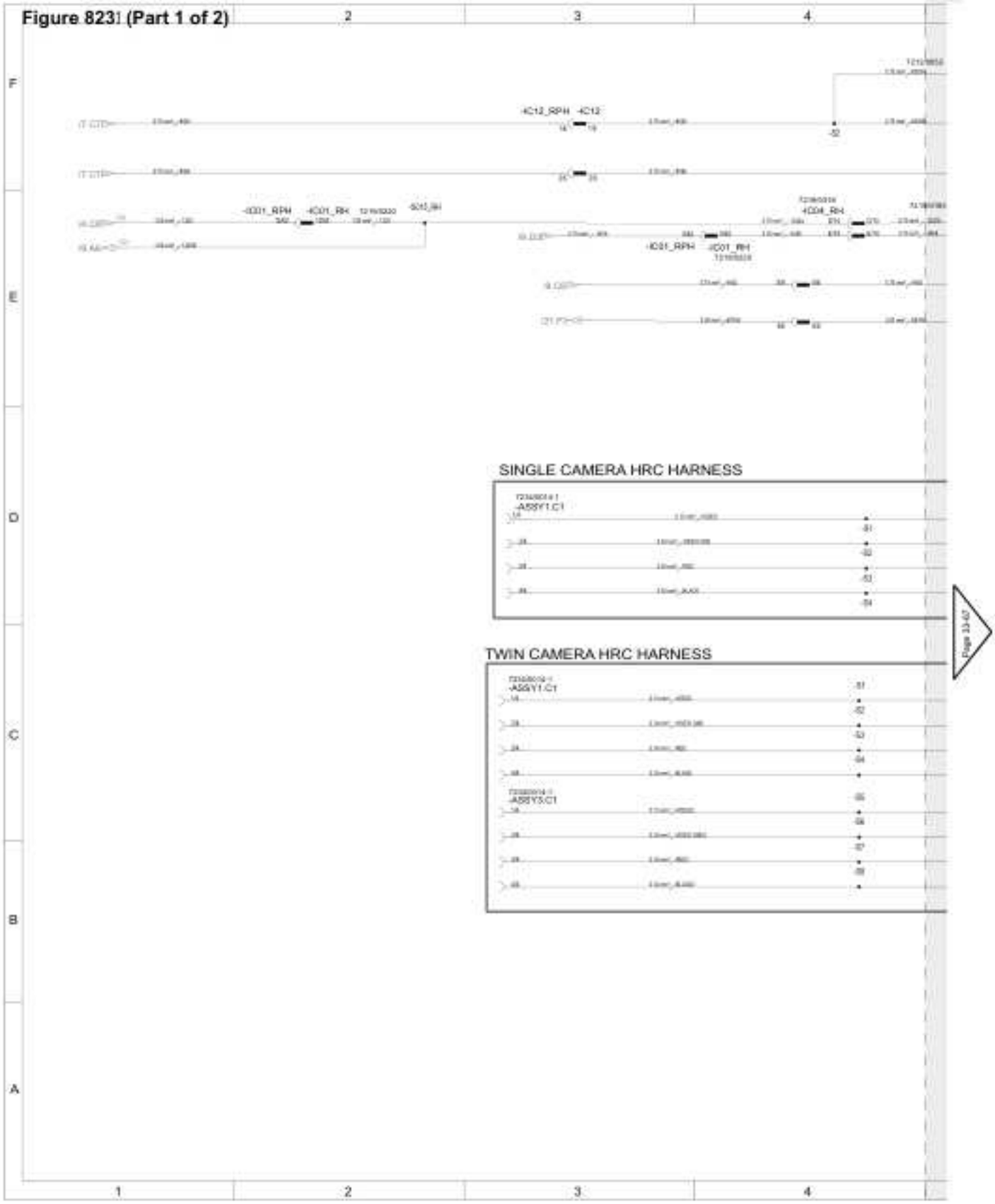
A Yoke
B Stake nut
C Oil seal
D Oil seal interface
E Washer
F Locking ring

Install

1. Make sure that the oil seal interface on the yoke is clean and free from wear or damage.
2. Install a new oil seal. Locate the seal in the position shown, the seal does not locate to the back of the housing.
3. Lubricate the lips of the oil seal.
4. Install the yoke. refer to Drive Yoke- Remove and Install (PIL 27-03).

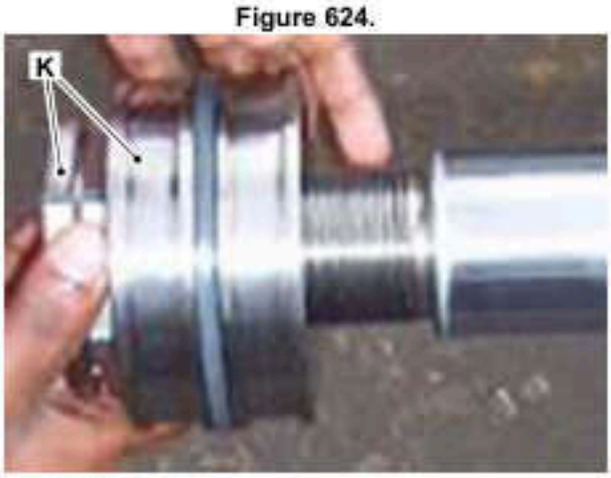
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Figure 8231 (Part 1 of 2)



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Figure 624.

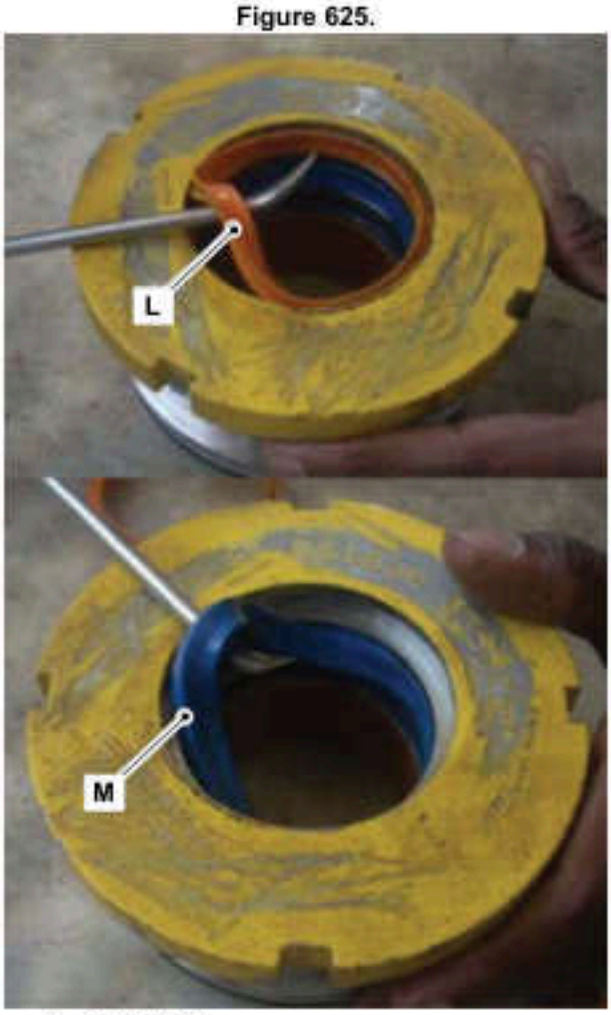


K Piston

14. Remove the head end cover. Refer to Figure 625.

15. Use a bent screwdriver to remove the wiper seal and the secondary rod seal. Refer to Figure 625.

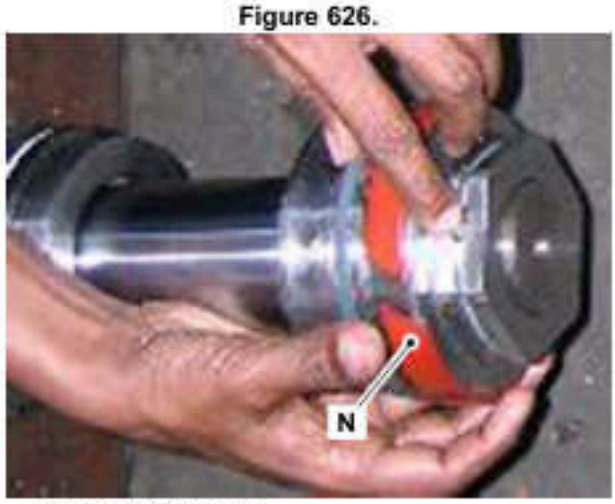
Figure 625.



L Wiper seal
M Secondary rod seal

16. Remove the piston bearing. Refer to Figure 626.

Figure 626.



N Piston bearing

17. Use a bent screwdriver to remove the piston seal. Refer to Figure 627.

Figure 627.

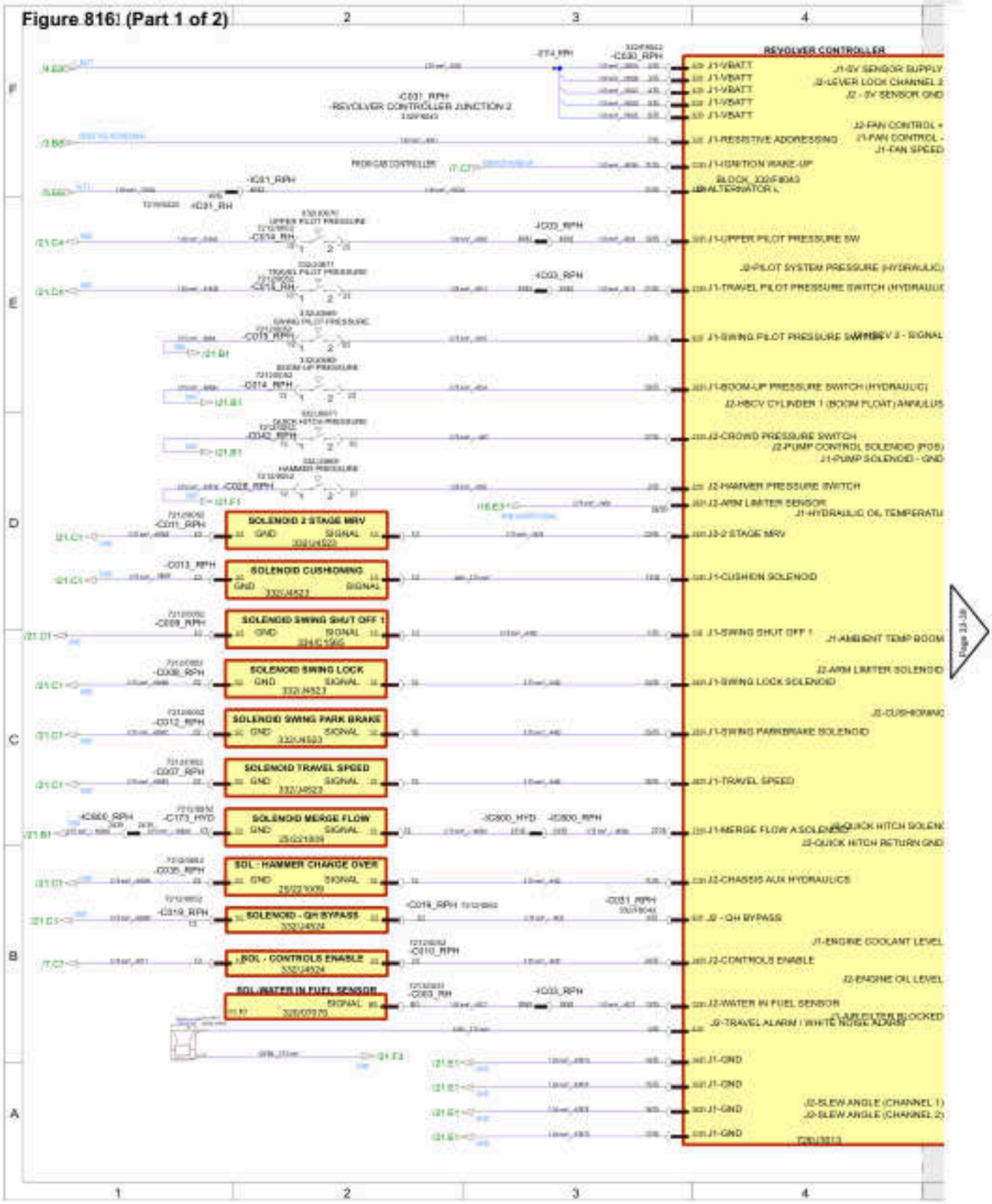


P Piston seal

18. Remove the piston O-ring and the piston backup ring. Refer to Figure 628.

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Figure 816 (Part 1 of 2)



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