Shop Manual

VEBM470104

WA420-3

Wheel Loader

Serial Number

WA420H20051 and up

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AIR-CONDITIONER

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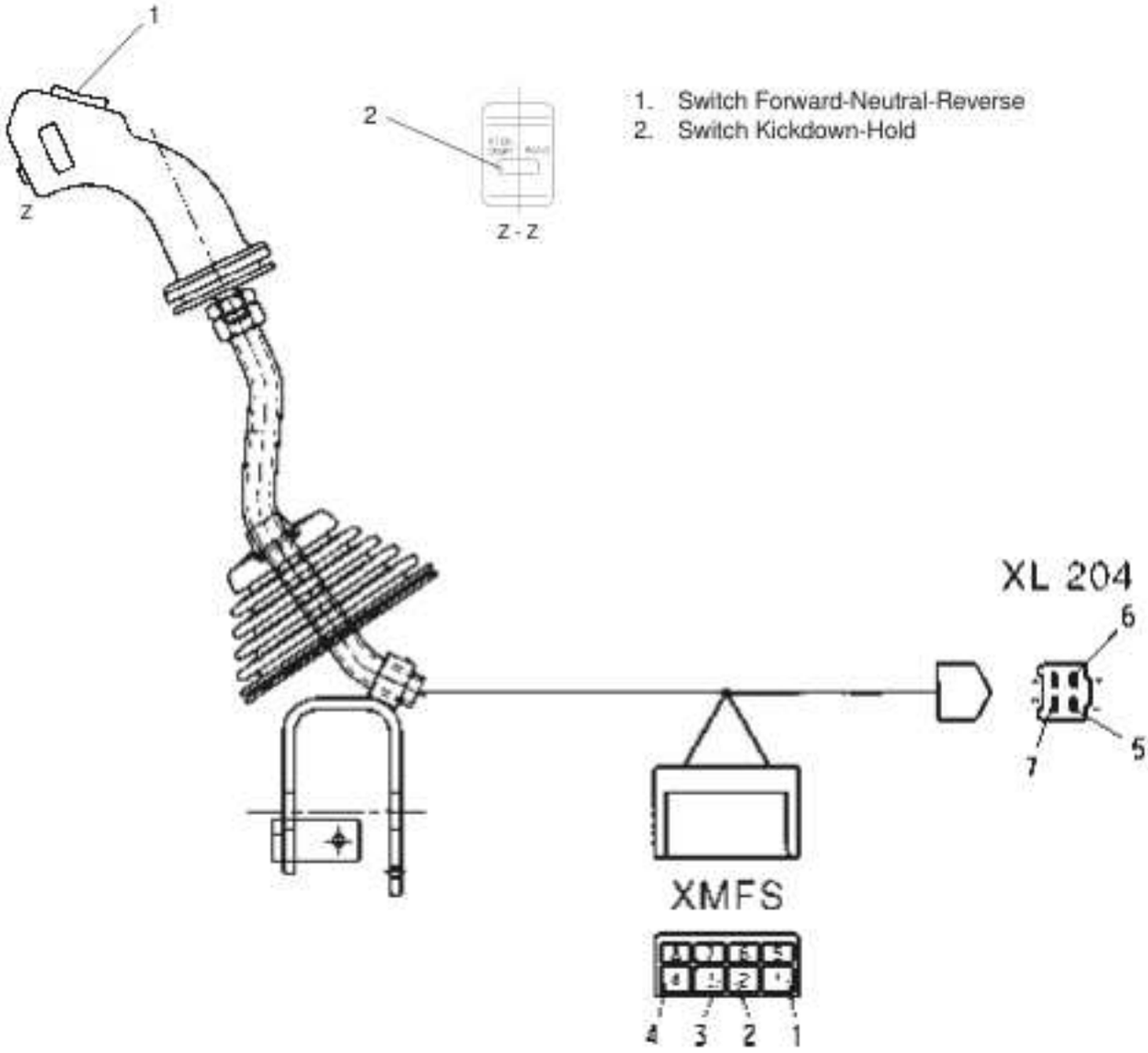
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PPC VALVE (MULTIFUNCTION LEVER) / OPTION



1. Switch Forward-Neutral-Reverse
2. Switch Kickdown-Hold

XMFS (Section 12 /Page 1 wiring diagram)
1. Forward
2. (+)
3. Neutral
4. Reverse

XL 204 (Section 25 /Page 1 wiring diagram)
5. Kickdown
6. (-)
7. Hold

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S-11 Oil is in cooling water, or water spurts back, or water level goes down

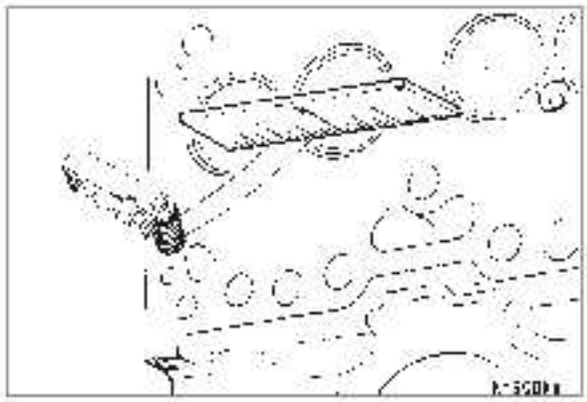
General causes why oil is in cooling water
- Internal leakage in lubrication system
- Internal leakage in cooling system

Legend
- ○ : Possible causes (judging from Questions and check items)
- ◎ : Most probable causes (judging from Questions and Check items)
- △ : Possible causes due to length of use (used for a long period)
- ● : Items to confirm the cause

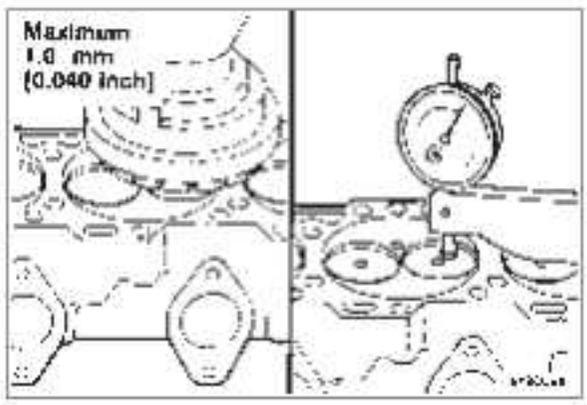
			Causes: Broken oil cooler core, O-ring	Broken head, head gasket	Insufficient protrusion of liner	Broken oil cooler for power train	Broken liner O-ring, holes caused by pitting	Internal cracks in cylinder block
Questions	Confirm recent repair history							
	Degree of use	Operated for long period	△				△	
	Oil level	Suddenly increased	○	○		○		
		Gradually increased					○	○
Check items	Hard water is being used as cooling water		○				○	
	Engine oil level has risen, oil is cloudy white		◎				○	○
	Excessive air bubbles inside radiator, spurts back			◎	◎			
	Hydraulic oil, torque converter transmission oil is cloudy white					○		
	When hydraulic oil, torque converter transmission oil is drained, water found					○		
Troubleshooting	Pressure-tightness test of oil cooler shows there is leakage		●			●		
	Pressure-tightness test of cylinder head shows there is leakage			●				
	Remove cylinder head and check directly				●			
	Remove oil pan and check directly						●	●
Remedy			Replace	Replace	Replace	Replace	Replace	Replace

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Use a small 51 mm [2.0 inch] straight edge and a 0.0254 mm [0.001 inch] feeler gauge to measure local flatness. Check between the cylinder bores and also between the coolant passages. If the 0.001 inch feeler gauge fits under the 2.0 inch straight edge, the cylinder head **must** be replaced or resurfaced.



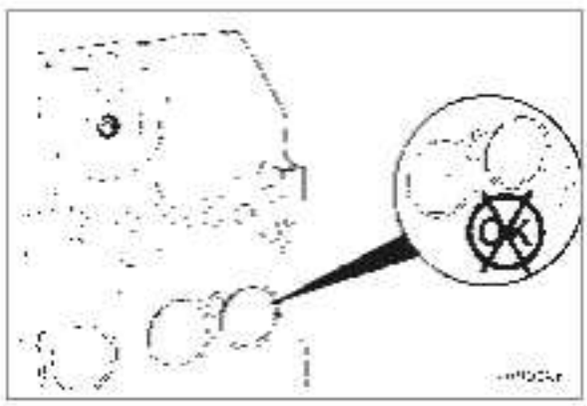
NOTE: A maximum of 1.00 mm [0.040 inch] can be machined from the combustion surface of the cylinder head.



If the cylinder head is machined, place the valve in the respective bore and check the valve depth dimension. If the depth is less than the minimum specification, the valve seat will require machining. Refer to the C Series Shop Manual.

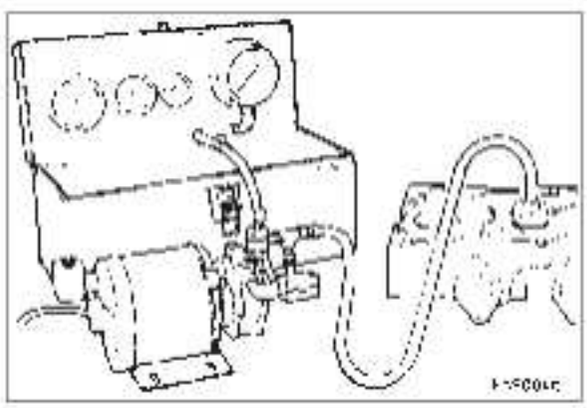
Valve Recess in Cylinder Head			
	mm		in
Exhaust	1.09	MIN	0.043
	1.26	MAX	0.064
Intake	0.59	MIN	0.0023
	1.12	MAX	0.0440

Visually inspect the valves for indications of leakage or burning.



Valve and Seat - Leakage Testing

NOTE: If a leaking valve is suspected, vacuum test the valves and valve seats. The vacuum **must** not drop more than 25.4 mm Hg (1.0 inch Hg) in 5 seconds.

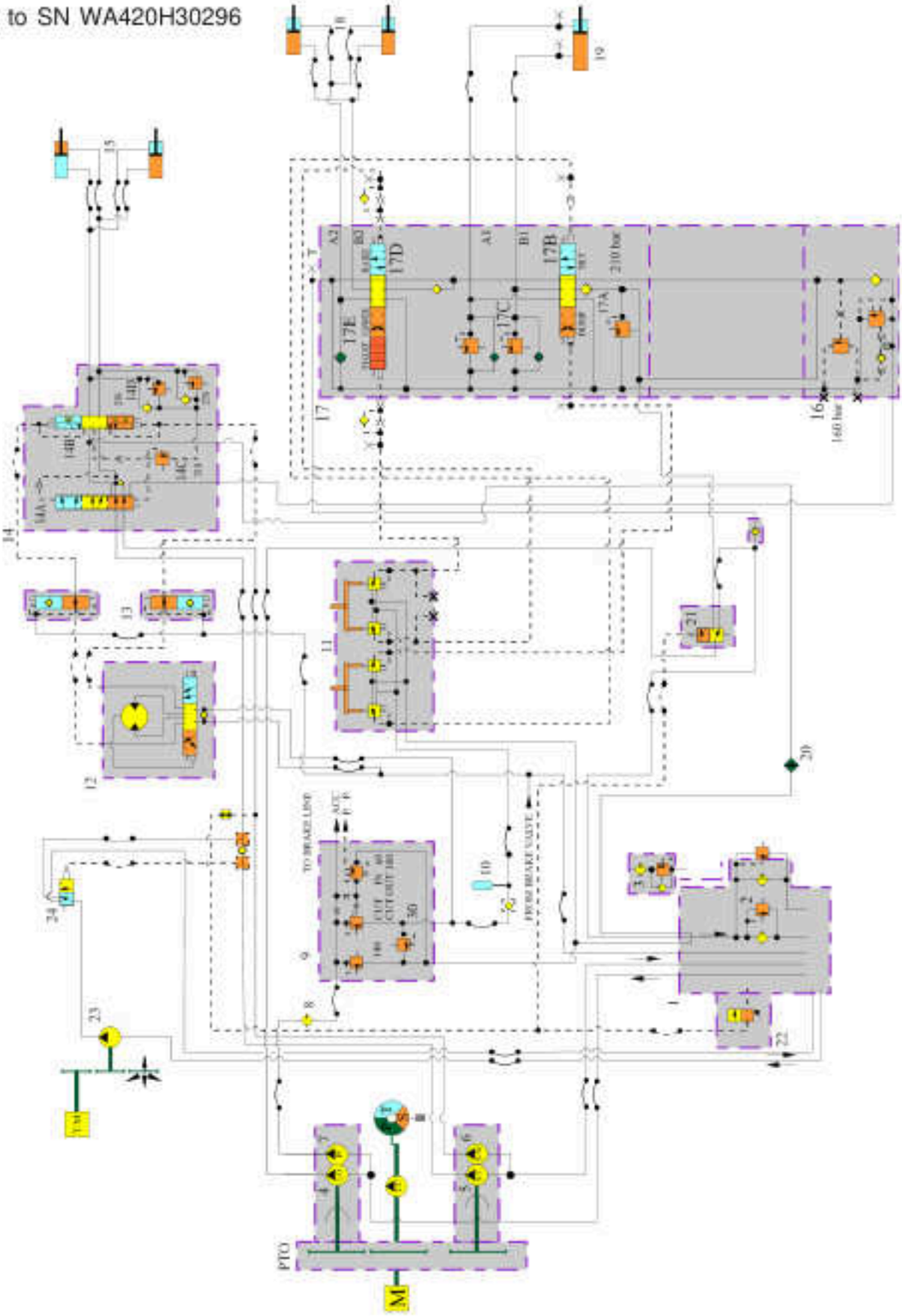


Valve to Valve Seat Vaccum		
mmHg		in Hg
457	Used	18
635	New	25

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WORK EQUIPMENT HYDRAULIC CIRCUIT DIAGRAM

Up to SN WA420H30296



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