

SERVICE MANUAL

LOADALL (ROUGH TERRAIN
VARIABLE REACH TRUCK)
**533-105, 535-v125, 540-140,
540-170, 540-200, 540-v140,
540-v180, 550-140, 550-170**

EN - 9813/7650 - ISSUE 2 - 04/2018

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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Introduction

The valve train system opens and closes the valves with correct timing in relation to the piston movements.

Each push rod has one end in a valve tappet and the other end under a rocker arm, or as applicable. The adjusting screw has a ball shaped end that locates in the push rod. The adjusting screw is used for setting the valve clearance.

The valves extend through the cylinder head. There are no sleeves or valve guides in the cylinder head. The valves are made from a special metal to provide a long service life. Damaged or worn valves cannot be lapped or reground and must be replaced with new ones. Each valve stem has an oil seal.

The Valve seat inserts are pressed into the cylinder head. The seat inserts are also made from a special metal to provide for a long service life. Damaged or worn seat inserts can be removed and replaced with new ones.

Technical Data

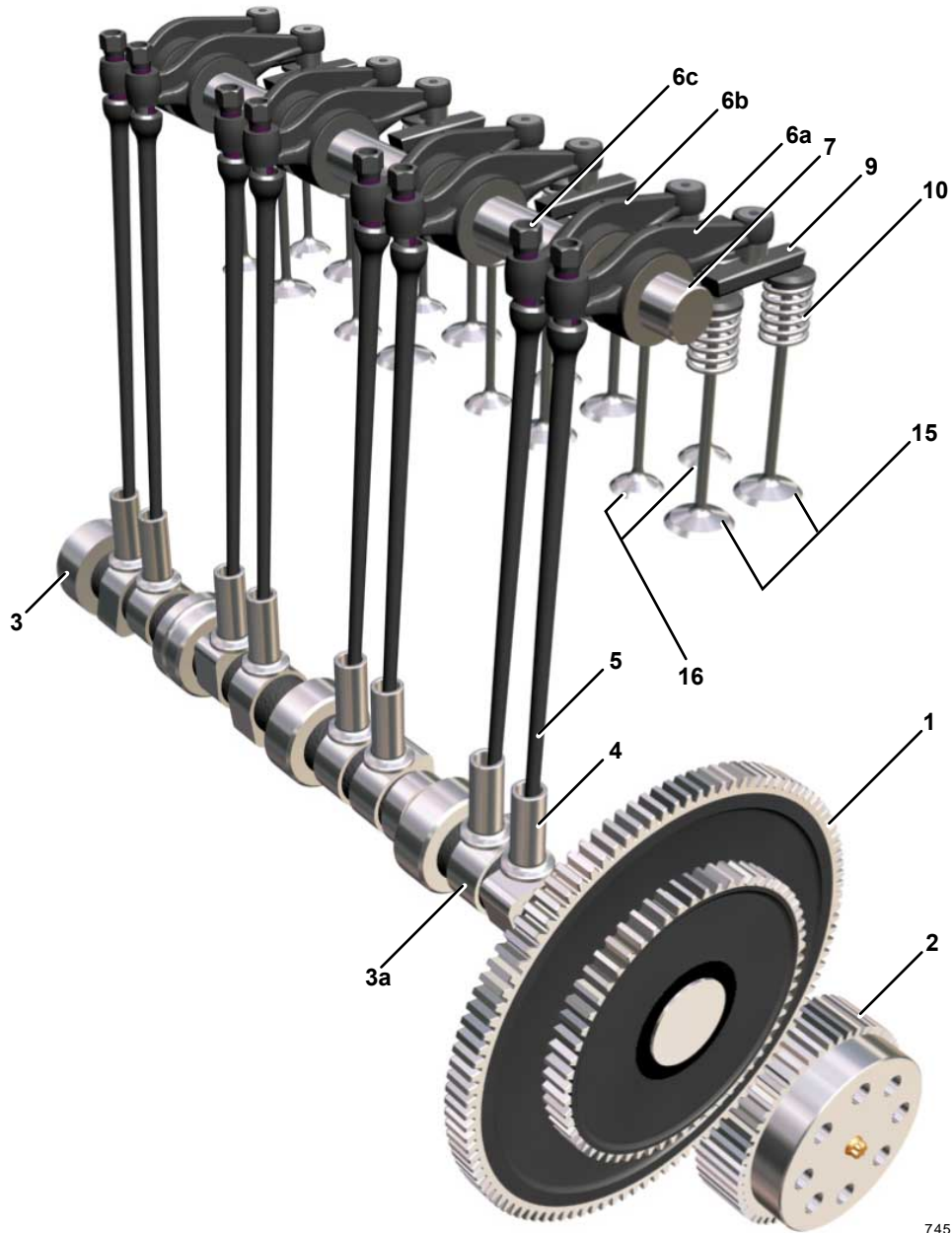
Table 113. Inlet and Exhaust Valve Data

Max lift Inlet	9.64 mm @ 101 ° AT-DC
Max lift Exhaust	9.84 mm @ 115 ° BTDC
Inlet opens (top of ramp)	6 ° BTDC
Inlet closes	28 ° ATDC
Exhaust opens	41 ° BTDC
Exhaust closes	6 ° ATDC
Valve stem diameter	
- Inlet	6.928 –6.943 mm
- Exhaust	6.918 –6.933 mm
Valve spring free length	51.1 mm
Valve guide bore diameter	
- min	6.958 mm
- max	6.973 mm
Valve face angle	
- Inlet	60.5 °
- Exhaust	45.17 °
Valve length	131.9 –132.4 mm
Valve sealing	Stem seal with sealing washer
Valve head depth (below cylinder head surface)	
- Inlet	0.89 –1.39 mm
- Exhaust	0.95 –1.45 mm
Valve rim thickness	2.98 –3.38 mm
Valve Clearances (engine cold)	
- Inlet	0.15 –0.21 mm ⁽¹⁾
- Exhaust	0.43 –0.49 mm ⁽¹⁾

(1) The values refer to the tappet adjuster end of the valve rockers.

Component Identification

Figure 380.



74570C

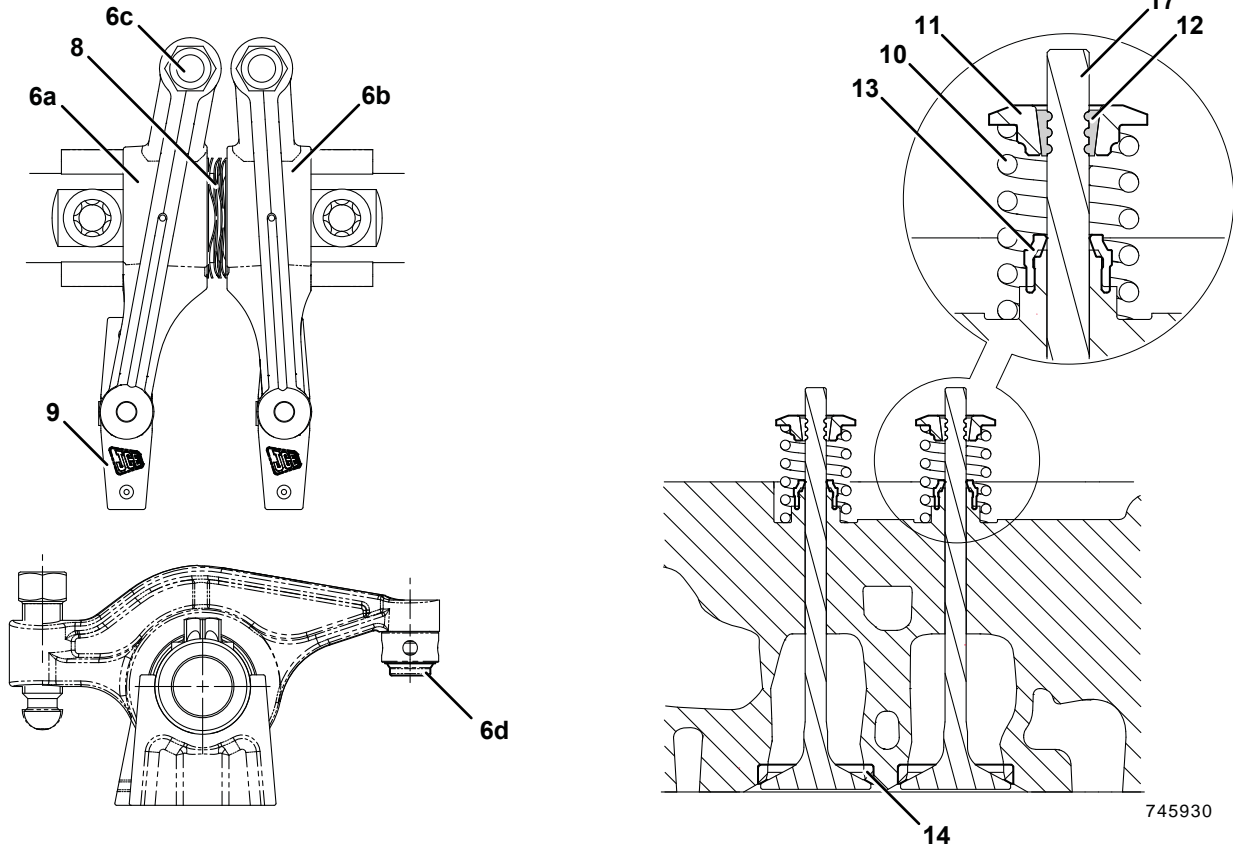
- | | | | |
|----|------------------------------|----|--------------------------|
| 1 | Camshaft drive gear | 2 | Crankshaft gear |
| 3 | Camshaft | 3a | Lobes |
| 4 | Tappets (x8) | 5 | Push rods (x8) |
| 6a | Rockers - inlet (x4) | 6b | Rockers - exhaust (x4) |
| 6c | Adjusting screws (x8) | 6d | Swivel tip - rockers |
| 7 | Rocker shaft | 8 | Wave washers (x8) |
| 9 | Bridge pieces (x8) | 10 | Valve springs (x16) |
| 11 | Retainer (x16) | 12 | Collets (x32) |
| 13 | Oil seal - valve stems (x16) | 14 | Valve seat inserts (x16) |

- 15 Inlet valves (x8)
- 17 Valve stem

- 16 Exhaust valves (x8)

Cross Sectional View

Figure 381.



- 6a Rockers - inlet (x4)
- 6c Adjusting screws (x8)
- 8 Wave washers (x8)
- 10 Valve springs (x16)
- 12 Collets (x32)
- 14 Valve seat inserts (x16)

- 6b Rockers - exhaust (x4)
- 6d Swivel tip - rockers
- 9 Bridge pieces (x8)
- 11 Retainer (x16)
- 13 Oil seal - valve stems (x16)
- 17 Valve stem

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