SERVICE MANUAL

SD55 Axle

EN - 9823/0100 - ISSUE 1 - 06/2018

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

Copyright 2017 © JCB SERVICE
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any other means, electronic, mechanical, photocopying or otherwise, without prior permission from JCB SERVICE.

www.jcb.com

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.

Contents

01 - Machine
27 - Driveline
30 - Hydraulic System
72 - Fasteners and Fixings
75 - Consumable Products
78 - After Sales

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 Order the manual at mid-west-tech.com >

01 - Machine

Contents **Page No.**

01-03 Safety
- 01-03-03 Safety - Yours and Others 01-3
- 01-03-06 Safety Warnings 01-4
- 01-03-09 General Safety 01-5
- 01-03-12 Maintenance Safety 01-6
- 01-03-18 Operating Safety 01-8

01-06 About this Manual
- 01-06-00 General 01-13

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 **Order the manual at mid-west-tech.com >**

03 - Safety

Contents **Page No.**

01-03-03 Safety - Yours and Others 01-3
01-03-06 Safety Warnings 01-4
01-03-09 General Safety 01-5
01-03-12 Maintenance Safety 01-6
01-03-18 Operating Safety 01-8

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 Order the manual at mid-west-tech.com >

27 - Driveline

Contents **Page No.**

Acronyms Glossary 27-2

27-20 Axle(s)
- 27-20-00 General 27-3

27-22 Drivehead
- 27-22-00 General 27-21
- 27-22-06 Crownwheel 27-41
- 27-22-09 Pinion Gear 27-43

27-24 Differential
- 27-24-00 General 27-47

27-27 Hub
- 27-27-00 General 27-67

27-47 Propshaft
- 27-47-00 General 27-83

27-51 Driveshaft
- 27-51-00 General 27-89
- 27-51-15 Shaft Hub Side 27-93

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 **Order the manual at mid-west-tech.com >**

Disassemble and Assemble

Special Tools

Description	Part No.	Qty.
Temperature Probe	892/00285	1
Ram Piston Nut Removal Installation Spanner 55mm A/F	993/99512	1
Ram Piston Nut Removal Installation Spanner 60mm A/F	993/99513	1
Ram Piston Nut Removal Installation Spanner 65mm A/F	993/99514	1
Ram Piston Nut Removal Installation Spanner 70mm A/F	993/99515	1
Ram Piston Nut Removal Installation Spanner 80mm A/F	SSP0046	1
Ram Piston Nut Removal Installation Spanner 95mm A/F	SSP0047	1

Consumables

Description	Part No.	Size
Cleaner/Degreaser - General purpose solvent based parts cleaner	4104/1557	0.4 L
Special HP Grease	4003/2020	0.5 kg
	4003/2017	0.4 kg
	4003/2006	12.5 kg
	4003/2005	50 kg

Disassemble and Assemble (without Dowel)

⚠ **CAUTION** If air or hydraulic pressure is used to force out the piston assembly, ensure that the end cap is securely installed. Severe injury can be caused by a suddenly released piston rod.

CAUTION To avoid burning, wear personal protective equipment when handling hot components. To protect your eyes, wear goggles when using a brush to clean components.

Disassemble

Refer to Figure 90.

1. Make the machine safe.

   Refer to: PIL 01-03.

2. Disassemble the cylinder ram in the numerical sequence.
3. Put the cylinder assembly on a clean workbench.
4. Use the special spanner to loosen the end cap assembly and remove the piston rod assembly from the cylinder.

   Special Tool: Ram Piston Nut Removal Installation Spanner 55mm A/F (Qty.: 1)
   Special Tool: Ram Piston Nut Removal Installation Spanner 60mm A/F (Qty.: 1)
   Special Tool: Ram Piston Nut Removal Installation Spanner 65mm A/F (Qty.: 1)
   Special Tool: Ram Piston Nut Removal Installation Spanner 70mm A/F (Qty.: 1)
   Special Tool: Ram Piston Nut Removal Installation Spanner 80mm A/F (Qty.: 1)
   Special Tool: Ram Piston Nut Removal Installation Spanner 95mm A/F (Qty.: 1)
5. Position the piston rod assembly on bench in place of cylinder.
6. Remove the seal and wear rings from the piston head.
7. Remove the locking ring.
8. Heat the piston head (180-210 °C) to degrade the Loctite between piston head and rod.

   8.1. Use the surface temperature probe to check the temperature.

   Special Tool: Temperature Probe (Qty.: 1)

   8.2. Do not exceed 300 °C or the Loctite will char, causing thread pick-up.
9. Use special spanner to remove the piston head from rod.
10. Remove end cap from the piston rod and remove the seals and O-ring.
11. Make sure that the metal components are free from scoring, nicks and burrs.

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 Order the manual at mid-west-tech.com >

Technical Data

Table 50. Locking Fluids Approved Product Information

Subsection	Commercial name	Product Number	Colour	Shelf life	Strength	Comments
High strength	Loctite 270[1]	4101/0100	Green fluorescent	365 d	80 –120 bar (1,159.4 – 1,739.1 psi) breakaway strength	For the retention of threads up to M20 diameter where disassembly is unlikely and for locking bearings etc. onto shafts and into housing. Has a maximum gap fill of 0.05 mm.
	R.A.S. threadlock for studs[1]		Red			
High strength	Loctite 638	4101/1400	Green, UV fluorescent	365 d	More than 250 bar (3,623.2 psi) compressive shear strength	Maximum gap fill of 0.25 mm. Maximum strength at room temperature.
High strength	Permabond A115[1]	4101/0500	Red, fluorescent	365 d	100 – 150 bar (1,449.3 – 2,173.9 psi) prevailing strength	Fast curing (10 –15 min) thread locking up to M20, especially for use on oily surfaces, plated and clean parts.
	Loctite 262					
High strength	Loctite 648[1]	4101/0600	Green, fluorescent	365 d	More than 250 bar (3,623.2 psi) compressive shear strength	Designed for holding gears and sprockets onto gearbox shafts and rotors on electric motor shafts.
	Permabond A118					
High strength	Loctite 2701	4101/1700	Green	365 d	260 – 500 bar (3,768.1 – 7,246.3 psi) breakaway torque	Designed for permanent locking and sealing of threaded fasteners. Particularly suited for use on inactive substrates and/or where maximum resistance to hot oil is required.
Medium to high	Loctite 243	4101/1100	Blue	365 d	140 – 340 bar (2,029.0 – 4,927.5 psi) breakaway torque	Suitable for all nuts, bolts, screws up to M36.
Medium strength	Permabond A119[1]	4101/0900	Blue	365 d	80 –120 bar (1,159.4 – 1,739.1 psi) static shear strength	Maximum gap fill of 0.25 mm. Handling strength in 10 –15 min.
Medium strength	Loctite 640	4101/1200	Green, fluorescent	365 d	150 – 330 bar (2,173.9 – 4,782.6 psi) static shear strength	Product has a slow cure rate, used on parts unlikely to be disassembled.

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 Order the manual at mid-west-tech.com >

Figure 94.



1.5. Before you install the rod seals, check that the seal grooves are free of contamination and sharp edges.

1.6. Locate the seal in the end cap groove. When the seal is in position, open the tool to release the seal. Make sure the seal is correctly installed in its grooved and remove the tool.

Figure 95.

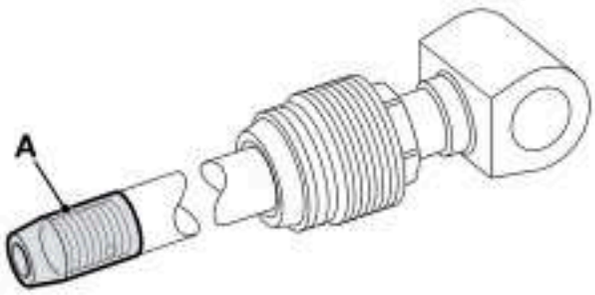


1.7. Install the rod wiper seal into the seal groove. Make sure that the seal is correctly installed as shown. Note: Some rod wipers, i.e. power track rod, may use a metal encased seal which is pressed into the housing. Care must be taken to make sure that the seal is square before it is pressed in.

1.8. A special sleeve must be used to protect the rod seals from damage, when installing the end cap on to the piston rod. There are various sizes of sleeve, make sure you use the correct size sleeve and also make sure that the hexagon on the end cap is towards the eye end of the rod.

Special Tool: Ram Protection Sleeve (25mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (30mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (40mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (50mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve - Slew (50mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (60mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve - Slew (60mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (65mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (70mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (75mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (80mm rod diameter) (Qty.: 1)
Special Tool: Ram Protection Sleeve (90mm rod diameter) (Qty.: 1)

Figure 96.



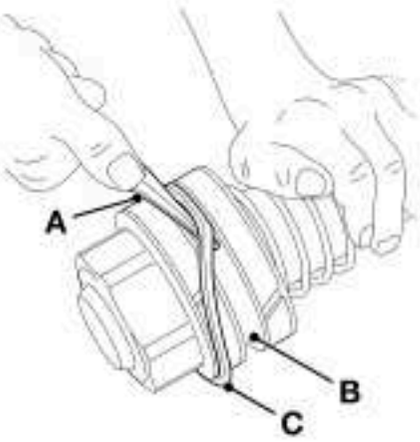
A Protection Sleeve (various sizes)

2. Install new head piston seals.

2.1. Use the Piston seal assembly tool to lever the inner seal into the piston head seal groove. Do not let the seal twist. There are identification marks on the outer diameter of the seal, make sure that the marks are visible and the seal is free to rotate, if not remove the seal and retry.

Special Tool: Ram Seal Assembly Tool (Qty.: 1)

Figure 97.



A Piston seal assembly tool
B Inner seal
C Outer seal

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 Order the manual at mid-west-tech.com >

03 - Parts List

Introduction

Introduction 78-12
Component Identification 78-14

27 - Driveline

Tool Category	Part No.	Description	Qty.	Comments
General Tool	892/00179	Bearing Press	1	
Special Tool	892/00224	Impulse Extractor	1	
Special Tool	892/00225	Bearing Removal Tool	1	
General Tool	892/00333	Heavy Duty Socket 19mm A/F x 3/4 in Drive	1	
Special Tool	892/00812	Drive Coupling Spanner	1	
General Tool	892/00822	Splined Bolt Socket	1	
Special Tool	892/00918	Setting Tool Kit	1	
Special Tool	892/01092	Wheel Hub Service Kit	1	
Special Tool	921/52600	Spacer Kit	1	
Special Tool	921/53300	Spacer Kit	1	
Special Tool	921/M0229	Shim Kit	1	
Special Tool	992/07608	Adaptor	1	
Special Tool	992/07609	Bearing Adaptor	1	
Special Tool	993/59500	Adaptor	1	
General Tool	993/70111	Torque Wrench (10-100Nm)	1	
Special Tool	997/11000	Support Bracket	1	
Special Tool	998/M1374	Reaction Plate M14 Studs	4	
Special Tool	998/M1375	Reaction Plate	1	

30 - Hydraulic System

Tool Category	Part No.	Description	Qty.	Comments
Special Tool	892/00167	Ram Protection Sleeve (90mm rod diameter)	1	
Special Tool	892/00285	Temperature Probe	1	
Special Tool	892/00334	Ram Seal Installation Tool	1	
Special Tool	892/01016	Ram Protection Sleeve (25mm rod diameter)	1	
Special Tool	892/01017	Ram Protection Sleeve (30mm rod diameter)	1	
Special Tool	892/01018	Ram Protection Sleeve (40mm rod diameter)	1	
Special Tool	892/01019	Ram Protection Sleeve (50mm rod diameter)	1	
Special Tool	892/01020	Ram Protection Sleeve - Slew (50mm rod diameter)	1	
Special Tool	892/01021	Ram Protection Sleeve (60mm rod diameter)	1	

MidWestTech | JCB SD55 Axle Service Manual | Publication 9823-0100 Order the manual at mid-west-tech.com >