



**DRIVETRAIN
SYSTEMS**

Service Manual

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NOTE

All references in this manual to 'Forward' and 'Reverse' assume a front-mounted engine.

SD 55-3 PIECE AXLES

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Issue 2

Introduction

This publication is designed for the benefit of Service Engineers.

These personnel should have a sound knowledge of workshop practice, safety procedures, and general techniques associated with the maintenance and repair of hydraulic equipment.

Renewal of oil seals, gaskets, etc., and any component showing obvious signs of wear or damage is expected as a matter of course. It is expected that components will be cleaned and lubricated where appropriate, and that any opened hose or pipe connections will be blanked to prevent excessive loss of hydraulic fluid and ingress of dirt. Finally, please remember above all else

SAFETY MUST COME FIRST!

The manual is compiled in sections, the first three are numbered and contain information as follows:

- 1 = General Information** - includes torque settings and service tools.
- 2 = Care & Safety** - includes warnings and cautions pertinent to aspects of workshop procedures etc.
- 3 = Routine Maintenance** - includes service schedules and recommended lubricants etc.

The remaining sections deal with Dismantling, Overhaul etc. of specific components:

- 4 = Hydraulics**
- 5 = Axles**
- 6 = Brakes**

The page numbering in each section is not continuous. This allows for the insertion of new items in later issues of the manual.

Section contents, technical data, operation descriptions etc. are inserted at the beginning of each section.

All sections are listed on the front cover; tabbed divider cards align directly with individual sections on the front cover for rapid reference.

Page cross references are generally made by presenting the subject title printed in bold, followed by the title of the section containing the subject. For example:

“**24** If the axle is still on the machine, fit the brake calipers (see **Brake Caliper Removal and Replacement**, Section 6).”

Note: If only the subject title in bold is given, i.e. no section title, the cross reference is to another part of the same section.

Use the contents list at the beginning of each section to find the exact page number.

Where a torque setting is given as a single figure it may be varied by plus or minus 3%. Torque figures indicated are for dry threads, hence for lubricated threads may be reduced by one third.

‘Left Hand’ and ‘Right Hand’ are as viewed from the rear of the machine facing forwards.

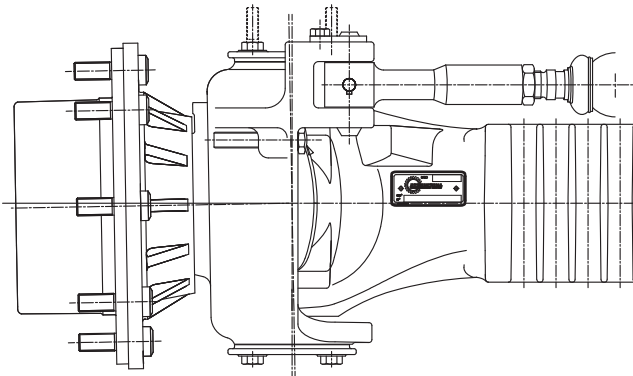
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Unit Identification

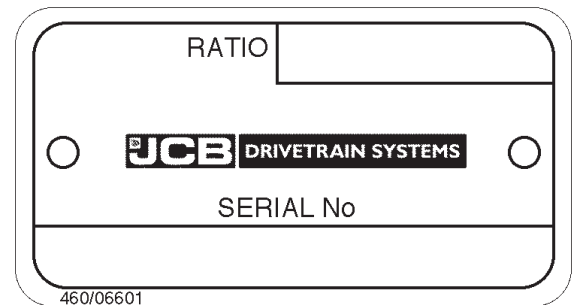
Axle Serial Plate

The axle serial number is stamped on a plate mounted on the face of the axle, as shown.

SD 55 - 3 Piece Axle



A403640



234620

Replacement Parts

- 1 When replacement parts are required, always ensure that the correct parts are obtained, e.g. in the case of gear replacements, always check the part number stamped on the gear, and the number of teeth.
- 2 When ordering replacement parts, quote the details on the serial plate shown.
- 3 It is essential that all gaskets and seals removed while dismantling, should be renewed on reassembly.
- 4 On reassembly care should be taken that all parts are correctly replaced since any component omitted or incorrectly assembled can lead to a complete failure.
- 5 Lubricants should comply with the recommended list as provided in this manual. It is important to adhere to the oil changing procedure.
- 6 It is advisable to lightly lubricate with a recommended lubricant, parts such as gears, shafts, thrust washers and oil seals during reassembly.

Axle Build Identification

To identify an axle build the number on the axle data plate should be cross-referenced with the part number in the parts information.

Example:

450 / 2760 / 1 / 0091
A B C

- A** 450/2760: Axle assembly part number (450/27600) without the final zeros.
- B** /1: Internal issue number of the main manufacturing drawing.
- C** /0091: Axle serial number. The complete 12 digit number must be quoted for warranty purposes. The parts information will detail the number of friction plates required for the axle.

Torque Settings

Use only where no torque setting is specified in the text. Values are for dry threads and may be within three per cent of the figures stated. For lubricated threads the values should be REDUCED by one third.

UNF Grade 'S' Bolts

Bolt Size in	(mm)	Hexagon (A/F) in	Nm	Torque Settings	
				kgf m	lbf ft
1/4	(6.3)	7/16	14	1.4	10
5/16	(7.9)	1/2	28	2.8	20
3/8	(9.5)	9/16	49	5.0	36
7/16	(11.1)	5/8	78	8.0	58
1/2	(12.7)	3/4	117	12.0	87
9/16	(14.3)	13/16	170	17.3	125
5/8	(15.9)	15/16	238	24.3	175
3/4	(19.0)	1 1/8	407	41.5	300
7/8	(22.2)	1 5/16	650	66.3	480
1	(25.4)	1 1/2	970	99.0	715
1 1/4	(31.7)	1 7/8	1940	198.0	1430
1 1/2	(38.1)	2 1/4	3390	345.0	2500

Metric Grade 8.8 Bolts

Bolt Size	(mm)	Hexagon (A/F) mm	Nm	Torque Settings	
				kgf m	lbf ft
M5	(5)	8	7	0.7	5
M6	(6)	10	12	1.2	9
M8	(8)	13	28	3.0	21
M10	(10)	17	56	5.7	42
M12	(12)	19	98	10	72
M16	(16)	24	244	25	180
M20	(20)	30	476	48	352
M24	(24)	36	822	84	607
M30	(30)	46	1633	166	1205
M36	(36)	55	2854	291	2105

Metric Grade 12.9 Bolts

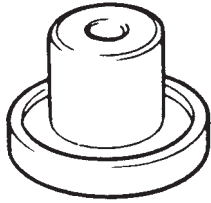
Bolt Size	(mm)	Nm	Torque Settings	
			kgf m	lbf ft
M8	(8)	48	4.9	35
M10	(10)	94	9.6	69
M12	(12)	166	16.9	122
M14	(14)	320	32.6	236
M16	(16)	400	40.8	295

Note: All bolts are high tensile and must not be replaced by bolts of a lesser tensile specification.

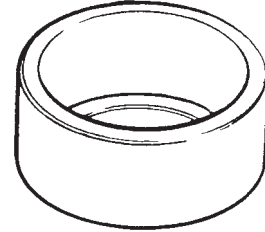
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Service Tools



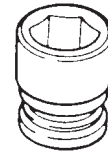
992/07604 Replacer - Crownwheel Bearing and Differential Bearing Cones



992/07606 Measuring Cup - Pinion Bearing



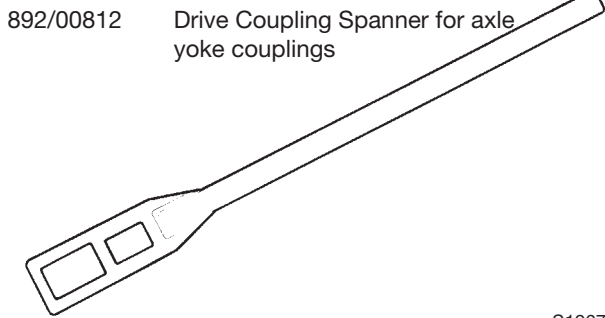
992/07609 Adapter - Steer/Drive Axle Pinion Bearing Cone



892/00817 17 mm A/F x 3/4 in square drive
892/00818 22 mm A/F x 3/4 in square drive
892/00819 15 mm A/F x 1/2 in square drive
892/00333 19 mm A/F x 3/4 in square drive

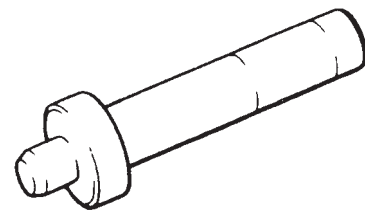


992/07607 Spacer - Pinion Bearing Preload

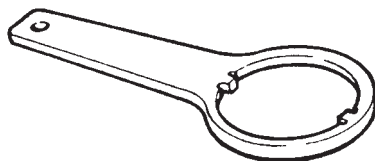


892/00812 Drive Coupling Spanner for axle yoke couplings

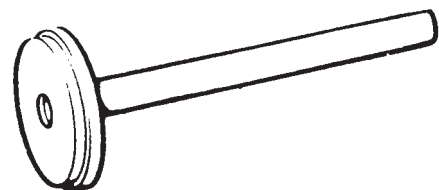
S196720



892/00182 Bearing Pad Driver

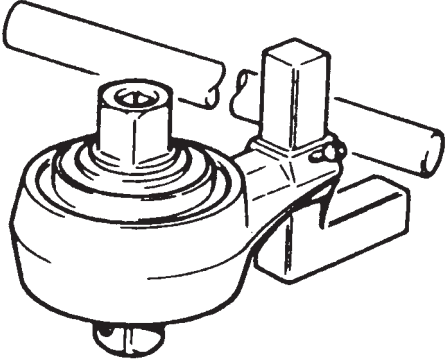


992/07601 Spanner for Half Shaft Nuts



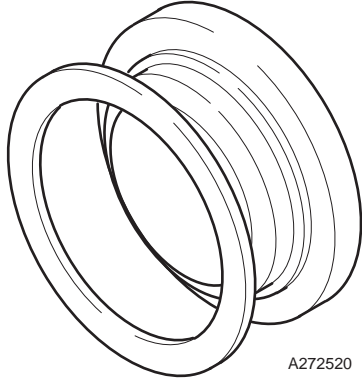
992/07603 Replacer - Pinion Head Bearing Cup

Service Tools (cont'd)



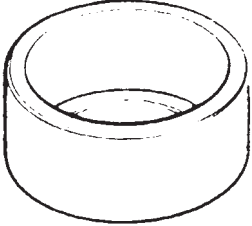
S197030

992/04000 Torque Multiplier (use in conjunction with a torque wrench to give a 5:1 multiplication when tightening pinion nuts)



A272520

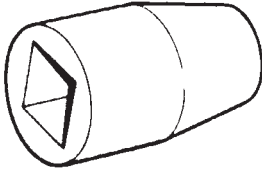
892/00891 Oil Seal Insertion Tool



892/00174

Measuring Cup - Pinion Head Bearing


S190770



892/00822

Splined Bolt Socket for driveshafts

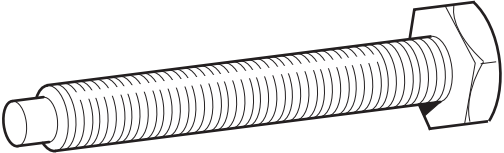
S197060



892/00224

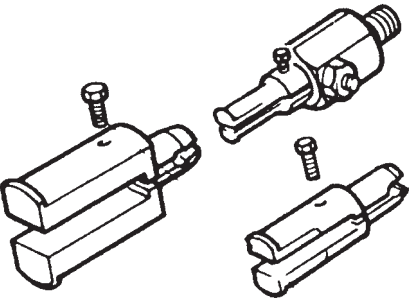
Impulse Extractor Set for Hub Bearing Seals

S197070



892/00833

Annulus Removal Tool

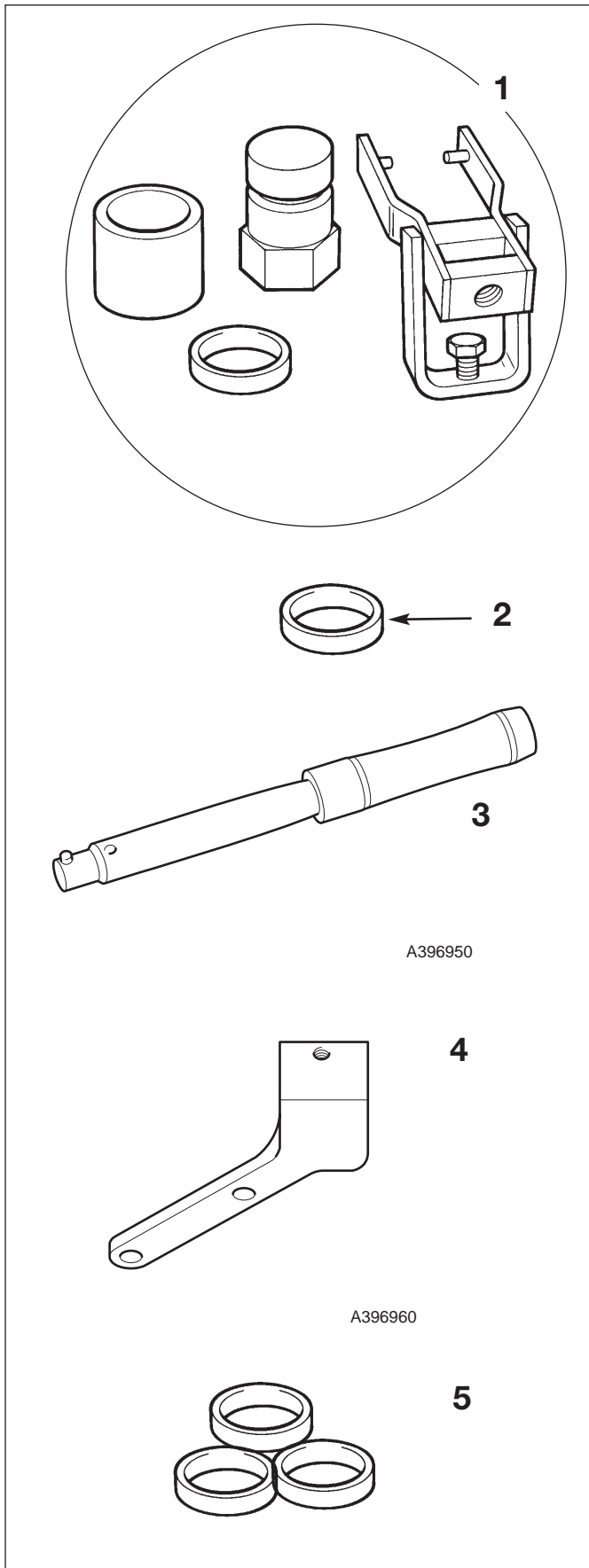


892/00225

Adapter - Impulse Extractor

Small	17 mm to 25 mm
Medium	25 mm to 45 mm
Large	45 mm to 80 mm

Service Tools (cont'd)



Solid Spacer Setting Kit

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Comprises of:

Spacer thickness mm	
921/53322	13.550
921/53323	13.575
921/53324	13.600
921/53325	13.625
921/53301	13.650
921/53302	13.675
921/53303	13.700
921/53304	13.725
921/53305	13.750
921/53306	13.775
921/53307	13.800
921/53308	13.825
921/53309	13.850
921/53310	13.875
921/53311	13.900
921/53312	13.925
921/53313	13.950
921/53314	13.975
921/53315	14.000
921/53316	14.025
921/53317	14.050
921/53318	14.075
921/53319	14.100
921/53320	14.125
921/53321	14.150

Note: After using a spacer, obtain a replacement to keep the set complete.

Sealing and Retaining Compounds

Loctite 574 or Permabond A136	A medium strength sealant suitable for all sizes of gasket flanges, and for hydraulic fittings of 25-65 mm diameter.	4102/1212	
Loctite 275 or Permabond A140	For all size of flanges where the strength of the joint is important.	† 4102/0552	
Loctite 932 or Permabond A137	For all retaining parts which are likely to be dismantled and for use on threads larger than 50 mm dia.	4101/0451	
Loctite 242 or Permabond A113	A medium strength locking fluid for sealing and retaining nuts, bolts, and screws up to 50mm diameter, and for hydraulic fittings up to 25 mm diameter.	† 4101/0251	
Loctite 243	A medium strength locking fluid similar to Loctite 242 but with greater resistance to thread contamination.	4101/0250	
Loctite 648 or Permabond A118	For retaining parts which are unlikely to be dismantled.	4101/0651	
Loctite 577	A medium strength thread sealing compound.	4102/1951	
Loctite Activator	A cleaning primer which speeds the curing rate of anaerobic products.	† 4104/0251 † 4104/0253	Aerosol Bottle
Cleaner/Degreaser	For degreasing components prior to use of anaerobic adhesives and sealants.	† 4104/1557	Aerosol
Anti-Seize Paste	A compound used for assembly and prevention of thread seizure.	† 4003/0211	

Note: The above list is the range of sealants and retaining compounds available. Items marked † are those referred to within the sections.

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Safety Notices

In this publication and on the machine, there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

DANGER

Denotes an extreme hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.

INT-1-2-1

WARNING

Denotes a hazard exists. If proper precautions are not taken, the operator (or others) could be killed or seriously injured.

INT-1-2-2

CAUTION

Denotes a reminder of safety practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the machine.

INT-1-2-3

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