Service Manual

JCB 8250 Fastrac

Service Manual - JCB 8250 Fastrac

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World Class
Customer Support

Notes:

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Contents Page No.

Identifying the Machine

Serial Numbers

Serial Number Plate

Each machine has a serial number plate **X** located inside the cab**.** The 17 digit Vehicle Identification Number (VIN), and the serial numbers of the engine and transmission are stamped on the plate.

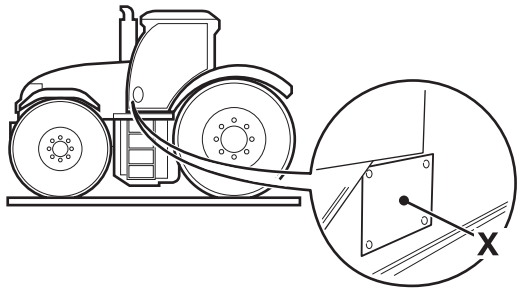
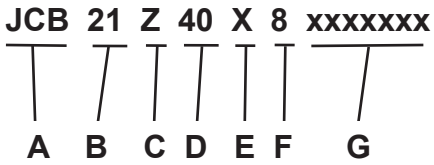


Fig 1.

Typical Vehicle Identification No. (VIN)



C038640-B1

Fig 2.

A **Manufacturing code**

B **Engine type**

C **Transmission type (gearbox & axle combination)**

D **Vehicle max. speed**

40 = 40 kph

50 = 50 kph

65 = 65 kph

E **Authenticity Code**

F **Year Code** (e.g. 8 = 2008)

G **Serial number**

Unit Identification

The serial number of each major unit is also stamped on the unit itself as shown below. If a major unit is replaced by a new one, the serial number on the plate will be wrong. Either stamp the new number of the unit on the identification plate, or simply stamp out the old number. This will prevent the wrong unit number being quoted when replacement parts are ordered.

Engine	**M**
Gearbox	**N**
Front axle	**P**
Rear axle	**R**

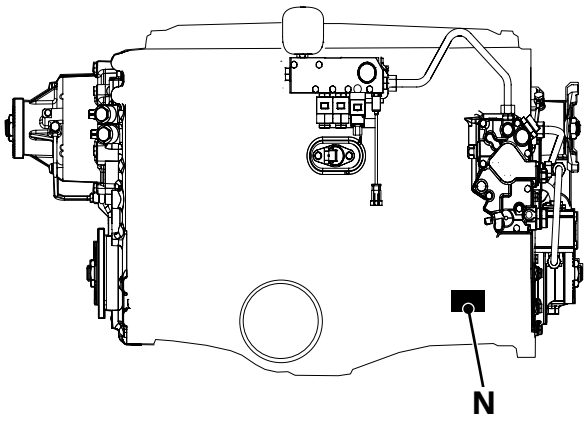


Fig 4.

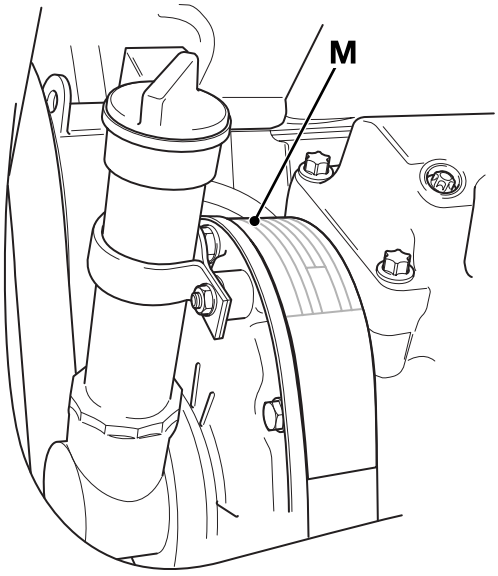


Fig 3.

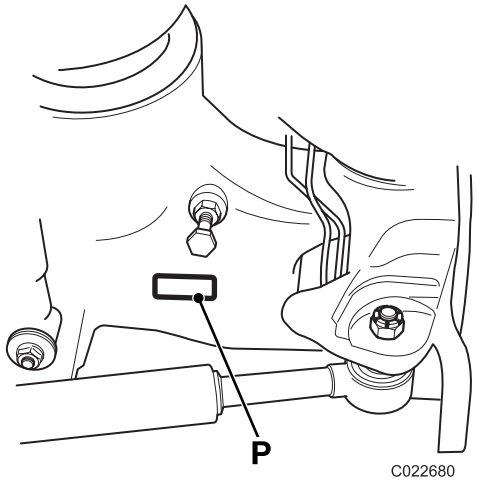


Fig 5.

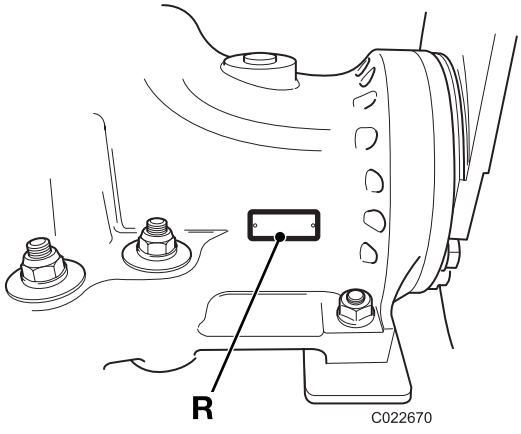


Fig 6.

Standard Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Introduction

Some external fasteners on Fastrac machines are assembled using an improved type of corrosion resistant finish. This type of finish is called Dacromet and replaces the original Zinc and Yellow plating used on earlier machines.

The two types of fasteners can be readily identified by colour and part number suffix as follows:

Fastener Type	Colour	Part Number
Zinc and Yellow	Golden finish	Z (e.g. 1315/3712Z)
Dacromet	Mottled silver finish	D (e.g. 1315/3712D)

As the Dacromet fasteners have a lower torque setting than the Zinc and Yellow fasteners, the torque figures used must be relevant to the type of fasteners.

A Dacromet bolt should not be used in conjunction with a Zinc and Yellow plated nut, as this could change the torque characteristics of the torque settings further. For the same reason, a Dacromet nut should not be used in conjunction with a Zinc and Yellow plated bolt.

Dacromet bolts, due to their high corrosion resistance are used in areas where rust could occur. Dacromet bolts are only used for external applications. They are not used in applications such as gearbox and engine joint seams or internal applications.

Note: *All bolts used on JCB machines are high tensile and must not be replaced by bolts of a lesser tensile specification.*

Zinc Plated Fasteners (golden finish)

Use the values on these pages 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.

Metric Grade 8.8 Bolts

Size			Torque Settings		
			Nm	kgf m	lbf ft
Diameter (mm)		Hexagon (A/F) mm			
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
M18	(18)	27	350	36	258
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 10.9 Bolts

Size			Torque Settings		
			Nm	kgf m	lbf ft
Diameter (mm)		Hexagon (A/F) mm			
M6	(6)	8	16	1.6	12
M8	(8)	13	39	4	29
M10	(10)	17	78	8	57
M12	(12)	19	137	14	101
M16	(16)	24	343	35	253
M20	(20)	30	657	67	485
M24	(24)	36	1157	118	853

Metric - All Internal Hexagon Headed Cap Screws

Diameter	Torque Settings		
mm	Nm	kgf m	lbf ft
M3	2	0.2	1.5
M4	6	0.6	4.5
M5	11	1.1	8
M6	19	1.9	14
M8	46	4.7	34
M10	91	9.3	67
M12	159	16.2	117
M16	395	40	292
M18	550	56	406
M20	770	79	568
M24	1332	136	983

Verbus Ripp Bolts

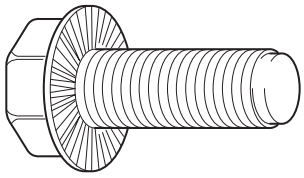


Fig 7.

Torque settings for these bolts are determined by the application. Refer to the relevant procedure for the required settings.

Dacromet Fasteners (mottled silver finish)

Use the values on these pages only where no torque setting is specified in the text.

Note: *Dacromet fasteners are lubricated as part of the plating process. Do not lubricate*

Metric Grade 8.8 Bolts

Bolt size	Torque Settings		
Dia.	Nm	kgf m	lbf ft
M6 x 1.0	9	0.9	7
M8 x 1.25	22.5	2.3	17
M10 x 1.5	47.5	4.8	35
M12 x 1.75	80	8.2	59
M14 x 2	133	13.6	98
M16 x 2	200	20.4	148
M18 x 2.5	278	28.4	205
M20 x 2.5	392	40	289
M24 x 3	675	69	498
M30 x 3.5	1348	138	994

Metric Grade 10.9 Bolts

Bolt size	Torque Settings		
Dia.	Nm	kgf m	lbf ft
M6 x 1.0	13.5	1.4	10
M8 x 1.25	35	3.6	26
M10 x 1.5	62.5	6.4	46
M12 x 1.75	115	11.7	85
M14 x 2	175	17.9	129
M16 x 2	300	30.6	221
M18 x 2.5	395	40	291
M20 x 2.5	559	57	412
M24 x 3	962	98	710
M30 x 3.5	1920	196	1416

Metric Grade 12.9 Bolts

Bolt size	Torque Settings		
Dia.	Nm	kgf m	lbf ft
M6 x 1.0	15	1.5	11
M8 x 1.25	40	4.1	29
M10 x 1.5	80	8.2	59
M12 x 1.75	133	13.6	98
M14 x 2	225	23	166
M16 x 2	350	35.7	258
M18 x 2.5	463	47	342
M20 x 2.5	654	67	482
M24 x 3	1125	115	830
M30 x 3.5	2247	229	1657

Hydraulic Connections

T11-003

'O' Ring Face Seal System

Adaptors Screwed into Valve Blocks

Adaptor screwed into valve blocks, seal onto an 'O' ring which is compressed into a 45° seat machined into the face of the tapped port.

Table 1. Torque Settings - BSP Adaptors

BSP Adaptor Size	Hexagon (A/F)			
in.	mm	Nm	kgf m	lbf ft
1/4	19.0	18.0	1.8	13.0
3/8	22.0	31.0	3.2	23.0
1/2	27.0	49.0	5.0	36.0
5/8	30.0	60.0	6.1	44.0
3/4	32.0	81.0	8.2	60.0
1	38.0	129.0	13.1	95.0
1 1/4	50.0	206.0	21.0	152.0

Table 2. Torque Settings - SAE Connections

SAE Tube Size	SAE Port Thread Size	Hexagon (A/F)			
		mm	Nm	kgf m	lbf ft
4	7/16 - 20	15.9	20.0 - 28.0	2.0 - 2.8	16.5 - 18.5
6	9/16 - 18	19.1	46.0 - 54.0	4.7 - 5.5	34.0 - 40.0
8	3/4 - 16	22.2	95.0 - 105.0	9.7 - 10.7	69.0 - 77.0
10	7/8 - 14	27.0	130.0 - 140.0	13.2 - 14.3	96.0 - 104.0
12	1 1/16 - 12	31.8	190.0 - 210.0	19.4 - 21.4	141.0 - 155.0
16	1 5/16 - 12	38.1	290.0 - 310.0	29.6 - 31.6	216.0 - 230.0
20	1 5/8	47.6	280.0 - 380.0	28.5 - 38.7	210.0 - 280.0

Hoses Screwed into Adaptors

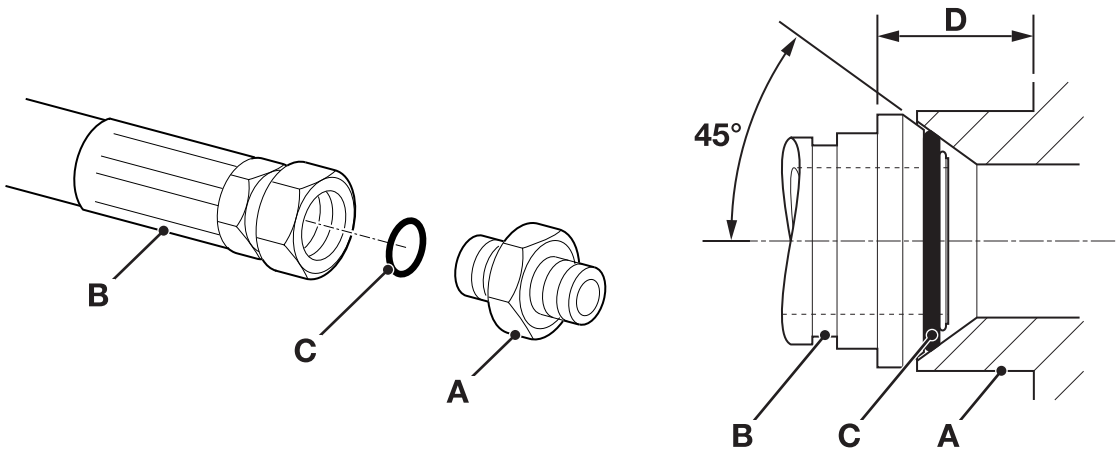


Fig 8.

Hoses **8-B** screwed into adaptors **8-A** seal onto an `O' ring **8-C** which is compressed into a 45° seat machined into the face of the adaptor port.

Note: *Dimension **8-D** will vary depending upon the torque applied.*

Table 3. BSP Hose - Torque Settings

BSP Hose Size	Hexagon (A/F)			
in.	mm	Nm	kgf m	lbf ft
1/8	14.0	14.0 - 16.00	1.4 - 1.6	10.3 - 11.8
1/4	19.0	24.0 - 27.0	2.4 - 2.7	17.7 - 19.9
3/8	22.0	33.0 - 40.0	3.4 - 4.1	24.3 - 29.5
1/2	27.0	44.0 - 50.0	4.5 - 5.1	32.4 - 36.9
5/8	30.0	58.0 - 65.0	5.9 - 6.6	42.8 - 47.9
3/4	32.0	84.0 - 92.0	8.6 - 9.4	61.9 - 67.8
1	38.0	115.0 - 126.0	11.7 - 12.8	84.8 - 92.9
1 1/4	50.0	189.0 - 200.0	19.3 - 20.4	139.4 - 147.5
1 1/2	55.0	244.0 - 260.0	24.9 - 26.5	180.0 - 191.8

Adaptors into Component Connections with Bonded Washers

Table 4. BSP Adaptors with Bonded Washers - Torque Settings

BSP Size			
in.	Nm	kgf m	lbf ft
1/8	20.0	2.1	15.0
1/4	34.0	3.4	25.0
3/8	75.0	7.6	55.0
1/2	102.0	10.3	75.0
5/8	122.0	12.4	90.0
3/4	183.0	18.7	135.0
1	203.0	20.7	150.0
1 1/4	305.0	31.0	225.0
1 1/2	305.0	31.0	225.0

'Torque Stop' Hose System

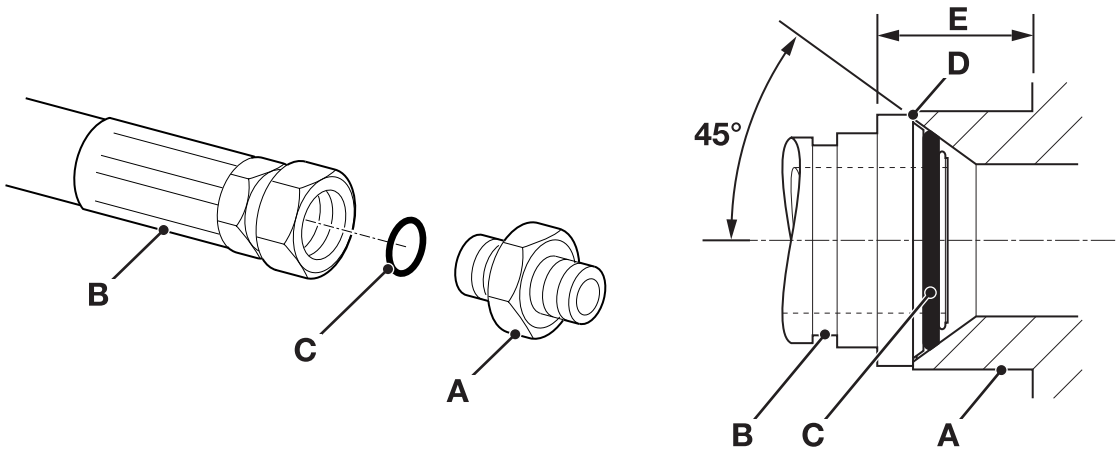


Fig 9.

`Torque Stop' Hoses **9-B** screwed into adaptors **9-A** seal onto an 'O' ring **9-C** which is compressed into a 45° seat machined in the face of the adaptor port. To prevent the 'O' ring being damages as a result of over tightening, 'Torque Stop' Hoses have an additional shoulder **9-D**, which acts as a physical stop.

Note: *Minimum dimension **9-E** fixed by shoulder **9-D**.*

Table 5. BSP `Torque Stop' Hose - Torque Settings

BSP Hose Size	Hexagon (A/F)			
in.	mm	Nm	kgf m	lbf ft
1/8	14.0	14.0	1.4	10.0
1/4	19.0	27.0	2.7	20.0
3/8	22.0	40.0	4.1	30.0
1/2	27.0	55.0	5.6	40.0
5/8	30.0	65.0	6.6	48.0
3/4	32.0	95.0	9.7	70.0
1	38.0	120.0	12.2	89.0
1 1/4	50.0	189.0	19.3	140.0
1 1/2	55.0	244.0	24.9	180.0

Special Tools

Numerical List

The tools listed in the table are special tools required for removal and replacement of Body and Framework parts. These tools are available from JCB Service.

Note: *Tools other than those listed will be required. It is expected that such general tools will be available in any well equipped workshop or be available locally from any good tool supplier.*

Part Number	Description	Tool Detail Reference
1406/0011	Bonded Washer	⇨ Fig 30. (1-21)
1406/0014	Bonded Washer	⇨ Fig 30. (1-21)
1406/0018	Bonded Washer	⇨ Fig 30. (1-21)
1406/0021	Bonded Washer	⇨ Fig 30. (1-21)
1406/0029	Bonded Washer	⇨ Fig 30. (1-21)
1604/0003A	Adapter	⇨ Fig 23. (1-20)
1604/0004A	Adapter	⇨ Fig 23. (1-20)
1604/0006A	Adapter	⇨ Fig 31. (1-22)
1604/2055	Adapter	⇨ Fig 23. (1-20)
1606/0004	Adapter	⇨ Fig 23. (1-20)
1606/0007A	Adapter	⇨ Fig 23. (1-20)
1606/0008	Adapter	⇨ Fig 23. (1-20)
1606/0009	Adapter	⇨ Fig 23. (1-20)
1606/0012	Adapter	⇨ Fig 23. (1-20)
1606/0014	Adapter	⇨ Fig 23. (1-20)
1606/0015	Adapter	⇨ Fig 23. (1-20)
1606/0016	Adapter	⇨ Fig 23. (1-20)
1606/0017	Adapter	⇨ Fig 23. (1-20)
1606/2052	Adapter	⇨ Fig 23. (1-20)
1612/2054	Adapter	⇨ Fig 31. (1-22)
816/00017	Adapter	⇨ Fig 26. (1-21)
816/00189A	Blanking Cap	⇨ Fig 28. (1-21)
816/00190A	Blanking Cap	⇨ Fig 28. (1-21)
816/00439	Adapter	⇨ Fig 23. (1-20)
816/00440	Adapter	⇨ Fig 23. (1-20)
816/15007A	Adapter	⇨ Fig 23. (1-20)
816/15008	Adapter	⇨ Fig 23. (1-20)
816/15118	Adapter	⇨ Fig 24. (1-20)

Numerical List

Part Number	Description	Tool Detail Reference
816/20008	Adapter	⇨ Fig 31. (1-22)
816/20013	Adapter	⇨ Fig 31. (1-22)
816/50005	Adapter	⇨ Fig 26. (1-21)
816/50043	Adapter	⇨ Fig 26. (1-21)
816/55038	Adapter	⇨ Fig 25. (1-20)
816/55040	Adapter	⇨ Fig 25. (1-20)
816/55045	Adapter	⇨ Fig 25. (1-20)
816/60096	Adapter	⇨ Fig 26. (1-21)
816/90022	Blanking Cap	⇨ Fig 28. (1-21)
816/90045	Blanking Cap	⇨ Fig 28. (1-21)
816/90205	Blanking Cap	⇨ Fig 28. (1-21)
816/90274	Blanking Cap	⇨ Fig 28. (1-21)
826/01099	Rivet Nut	⇨ Fig 11. (1-14)
826/01101	Rivet Nut	⇨ Fig 11. (1-14)
826/01102	Rivet Nut	⇨ Fig 11. (1-14)
826/01103	Rivet Nut	⇨ Fig 11. (1-14)
826/01104	Rivet Nut	⇨ Fig 11. (1-14)
826/01105A	Rivet Nut	⇨ Fig 11. (1-14)
892/00047	Adapter	⇨ Fig 26. (1-21)
892/00048	Adapter	⇨ Fig 26. (1-21)
892/00049	Adapter	⇨ Fig 26. (1-21)
892/00055A	Blanking Cap	⇨ Fig 27. (1-21)
892/00056A	Blanking Cap	⇨ Fig 27. (1-21)
892/00057	Blanking Cap	⇨ Fig 27. (1-21)
892/00058A	Blanking Cap	⇨ Fig 27. (1-21)
892/00059A	Blanking Cap	⇨ Fig 27. (1-21)
892/00060	Blanking Cap	⇨ Fig 27. (1-21)
892/00051	Adapter	⇨ Fig 26. (1-21)
892/00074	Connector	⇨ Fig 29. (1-21)
892/00075	Connector	⇨ Fig 29. (1-21)
892/00076	Connector	⇨ Fig 29. (1-21)
892/00077	Connector	⇨ Fig 29. (1-21)
892/00078	Connector	⇨ Fig 31. (1-22)
892/00137	Hose	⇨ Fig 34. (1-23)
892/00179	Bearing Press	⇨ Fig 39. (1-24)
892/00201	Replacement Gauge	⇨ Fig 32. (1-22)
892/00202	Replacement Gauge	⇨ Fig 32. (1-22)

Numerical List

Part Number	Description	Tool Detail Reference
892/00203	Replacement Gauge	⇨ Fig 32. (1-22)
892/00223	Hand Pump	⇨ Fig 34. (1-23)
892/00224	Impulse Extractor	⇨ Fig 40. (1-25)
892/00225	Adapter for Impulse Extractor	⇨ Fig 41. (1-25)
892/00254	Replacement Hose	⇨ Fig 33. (1-23)
892/00255	Adapter	⇨ Fig 24. (1-20)
892/00256	Adapter	⇨ Fig 24. (1-20)
892/00257	Adapter	⇨ Fig 24. (1-20)
892/00258	Adapter	⇨ Fig 24. (1-20)
892/00259	Adapter	⇨ Fig 24. (1-20)
892/00260	Adapter	⇨ Fig 24. (1-20)
892/00261	Adapter	⇨ Fig 24. (1-20)
892/00262	Adapter	⇨ Fig 34. (1-23)
892/00263	Adapter	⇨ Fig 25. (1-20)
892/00264	Adapter	⇨ Fig 25. (1-20)
892/00265	Adapter	⇨ Fig 25. (1-20)
892/00266	Adapter	⇨ Fig 25. (1-20)
892/00267	Adapter	⇨ Fig 25. (1-20)
892/00268	Flow Monitoring Unit	⇨ Fig 31. (1-22)
892/00269	Sensor Head	⇨ Fig 31. (1-22)
892/00270	Load Valve	⇨ Fig 31. (1-22)
892/00271	Adapter	⇨ Fig 31. (1-22)
892/00272	Adapter	⇨ Fig 31. (1-22)
892/00273	Sensor Head	⇨ Fig 31. (1-22)
892/00274	Adapter	⇨ Fig 31. (1-22)
892/00275	Adapter	⇨ Fig 31. (1-22)
892/00276	Adapter	⇨ Fig 31. (1-22)
892/00277	Adapter	⇨ Fig 31. (1-22)
892/00278	Gauge	⇨ Fig 34. (1-23)
892/00279	Gauge	⇨ Fig 33. (1-23)
892/00280	Gauge	⇨ Fig 33. (1-23)
892/00284	Tachometer	⇨ Fig 20. (1-17)
892/00285	Hydraulic Oil Temperature Probe	⇨ Fig 19. (1-17)
892/00293	Connector Pipe	⇨ Fig 31. (1-22)
892/00298	Fluke Meter	⇨ Fig 18. (1-17)
892/00311	Brake Test Kit	⇨ Fig 42. (1-25)
892/00314	Accumulator Adapter	⇨ Fig 43. (1-26)

Numerical List

Part Number	Description	Tool Detail Reference
892/00314	Accumulator and Gas Spring Pressure Test Adapter	⇨ Fig 43. (1-26)
892/00318	Hose and Adapter Kit	⇨ Fig 35. (1-23)
892/00333	Heavy Duty Socket, 19 mm A/F	⇨ Fig 38. (1-24)
892/00347	Connector	⇨ Fig 32. (1-22)
892/00706	Test Probe	⇨ Fig 34. (1-23)
892/00801	Clutch spanner	⇨ Fig 13. (1-16)
892/00802	Rotor puller set	⇨ Fig 15. (1-16)
892/00803	Rotor installer set	⇨ Fig 17. (1-16)
892/00807	Front plate puller	⇨ Fig 14. (1-16)
892/00808	Shaft protector	⇨ Fig 16. (1-16)
892/00817	Heavy Duty Socket, 17 mm A/F	⇨ Fig 38. (1-24)
892/00818	Heavy Duty Socket, 22mm A/F	⇨ Fig 38. (1-24)
892/00819	Heavy Duty Socket, 15 mm A/F	⇨ Fig 38. (1-24)
892/01174	Data Link Adapter Kit	⇨ Fig 21. (1-18)
892/01053	Adapter for impulse extractor (PTO intermediate shaft, wet clutch transmission)	⇨ Fig 40. (1-25)
993/45400	Torque Multiplier	⇨ Fig 37. (1-24)
993/68101	Slide Hammer	⇨ Fig 10. (1-14)
993/68102	End Stops	⇨ Fig 10. (1-14)
993/68103	Adapter	⇨ Fig 10. (1-14)
993/68104	Adapter	⇨ Fig 10. (1-14)
993/68105	Adapter	⇨ Fig 10. (1-14)
993/68106	Adapter	⇨ Fig 10. (1-14)
993/68107	Bar	⇨ Fig 10. (1-14)
993/68108	Adapter	⇨ Fig 10. (1-14)
993/68109	Adapter	⇨ Fig 10. (1-14)
993/68110	Adapter	⇨ Fig 10. (1-14)
993/68111	Adapter	⇨ Fig 10. (1-14)
993/69800	Seal Kit	⇨ Fig 32. (1-22)

Tool Detail Reference

Section B - Body and Framework

Note: *Not all service tools are illustrated.*

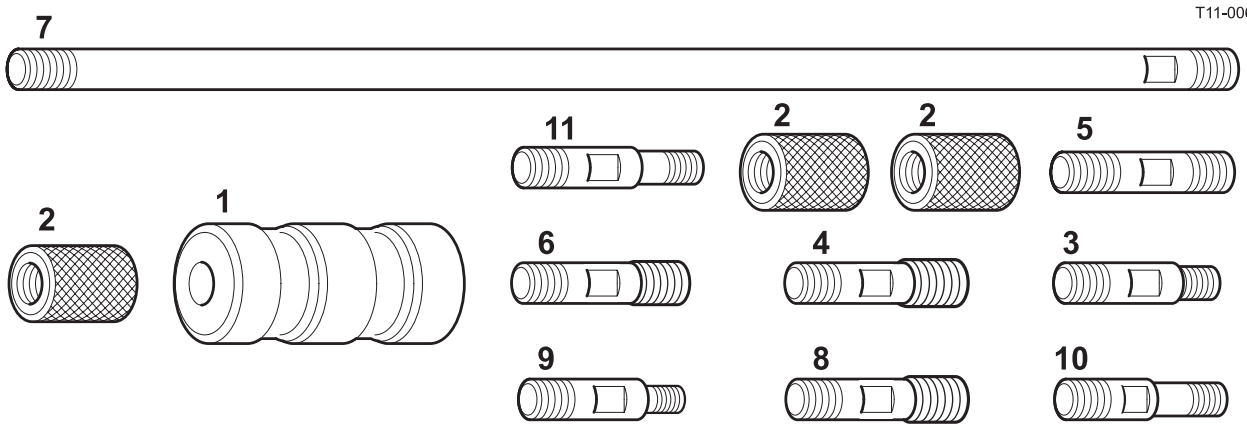


Fig 10. 993/68100 Slide Hammer Kit

1	993/68101	Slide Hammer	**7**	993/68107	Bar - M20 x M20 X 800 mm
2	993/68102	End Stops	**8**	993/68108	Adaptor - M20 x 7/8" UNF
3	993/68103	Adaptor - M20 x 5/8" UNF	**9**	993/68109	Adaptor - M20 x M12
4	993/68104	Adaptor - M20 x 1" UNF	**10**	993/68110	Adaptor - M20 x 5/8" UNF (Shoulder)
5	993/68105	Adaptor - M20 x M20	**11**	993/68111	Adaptor - M20 x 1/2" UNF
6	993/68106	Adaptor - M20 x M24			

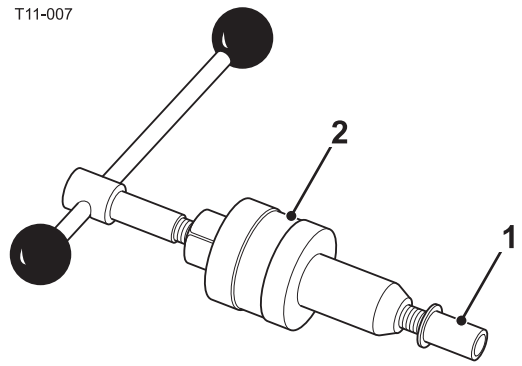


Fig 11. Rivet Nut Tool

1	826/01099	M6 x 16 mm Rivet Nut
	826/01101	M6 x 19 mm Rivet Nut
	826/01102	M8 x 18 mm Rivet Nut
	826/01103	M8 x 21 mm Rivet Nut
	826/01104	M10 x 23 mm Rivet Nut
	826/01105A	M10 x 26 mm Rivet Nut
2	-	Installation Tool available from: Bollhoff Fastenings Ltd (***www.bollhof.com***)

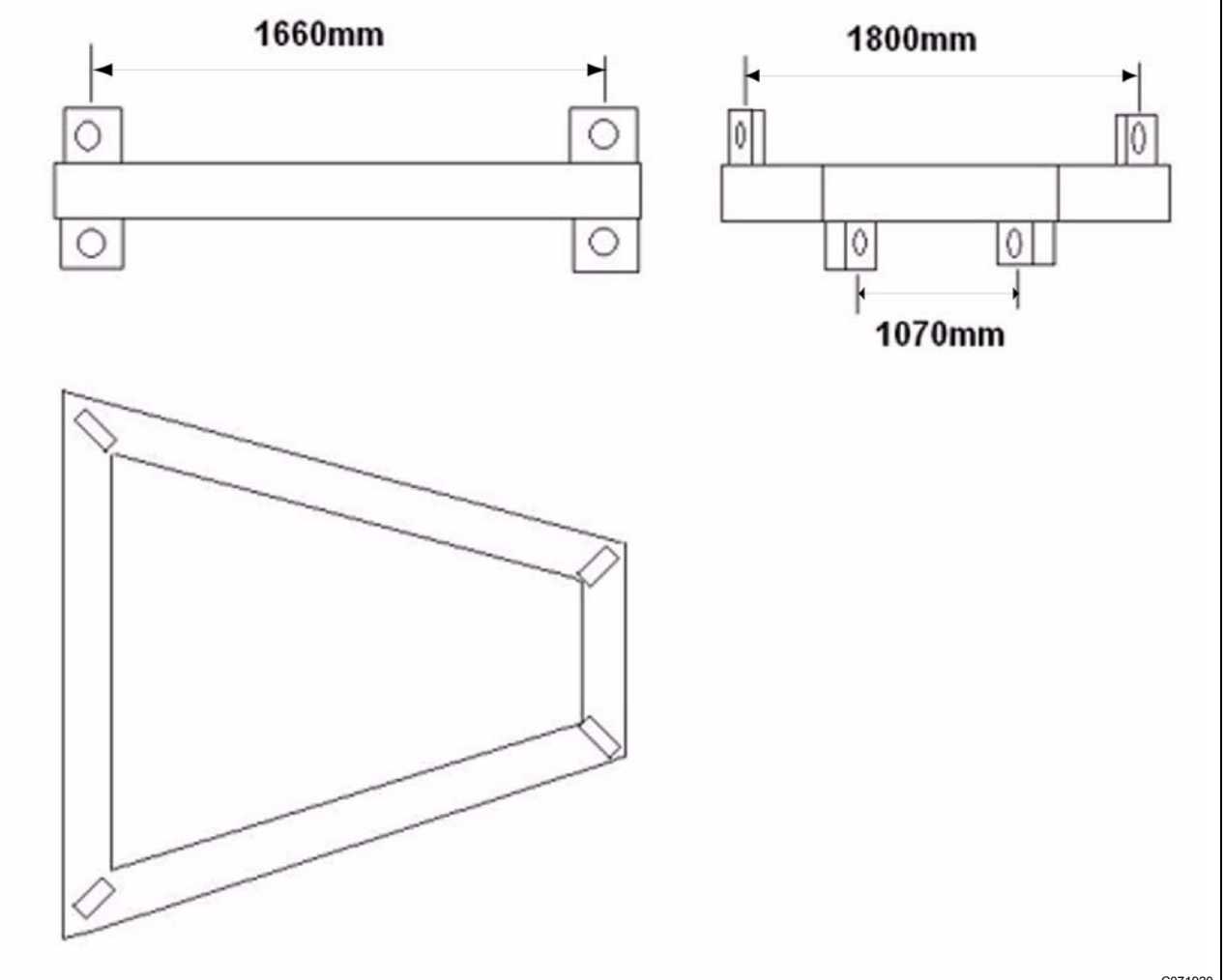


Fig 12.

Cab Lifting Frame: Produce locally to dimensions shown. Test to Safe Working Load (SWL) of 1200 kg (2645 lb).

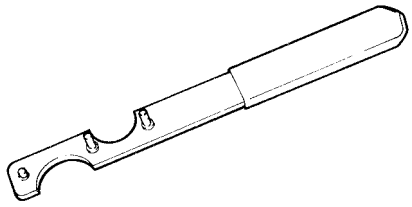


Fig 13.
892/00801 Clutch Spanner for air conditioning compressor

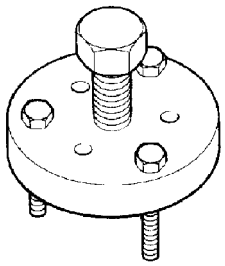


Fig 14.
892/00807 Font Plate Puller for air conditioning compressor

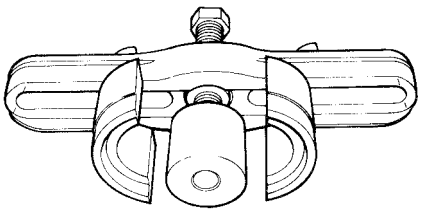


Fig 15.
892/00802 Rotor Puller Set for air conditioning compressor

Fig 16.
892/00808 Shaft Protector for air conditioning compressor

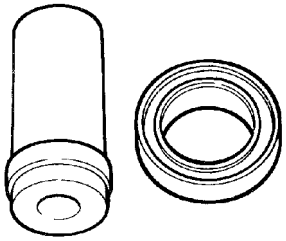


Fig 17.
892/00803 Rotor Installer Set for air conditioning compressor