

JS200-JS260 - Tier III Auto

[Section 1 - General Information](#)

[Section 2 - Care and Safety](#)

[Section 3 - Maintenance](#)

[Section B - Body & Framework](#)

[Section C - Electrics](#)

[Section E - Hydraulics](#)

[Section F - Transmission](#)

[Section J - Track and Running Gear](#)

[Section K - Engine](#)



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Section 1 - General Information

Contents	Page No.
Introduction	
About this Manual	1-1
Identifying Your Machine	1-3
Torque Settings	
Zinc Plated Fasteners and Dacromet Fasteners	1-5
Hydraulic Connections	1-9
Service Tools	
Numerical List	1-13
Tool Detail Reference	1-16
Service Consumables	
Sealing and Retaining Compounds	1-37
Terms and Definitions	
Colour Coding	1-39

Introduction

About this Manual

Machine Model and Serial Number

This manual provides information for the following model(s) in the JCB machine range:

JCB JS200-220 from serial number 1610000 to 1612499 and 1459000 to 1461999.

JCB JS235 from serial number 1314000 to 1314099

JCB JS240-260 from serial number 1504700 to 1505099.

JCB JS240 - JS260 from serial number 1773500 to 1774499

Using the Service Manual

T11-004

This publication is designed for the benefit of JCB Distributor Service Engineers who are receiving, or have received, training by JCB Technical Training Department.

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

The illustrations in this publication are for guidance only. Where the machines differ, the text and/or the illustration will specify.

General warnings in Section 2 are repeated throughout the manual, as well as specific warnings. Read all safety statements regularly, so you do not forget them.

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.

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.

The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this publication.

Finally, please remember above all else safety must come first!

Section Numbering

T11-005

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 and Safety - includes warnings and cautions pertinent to aspects of workshop procedures etc.
- 3 Maintenance - includes service schedules and recommended lubricants for all the machine.

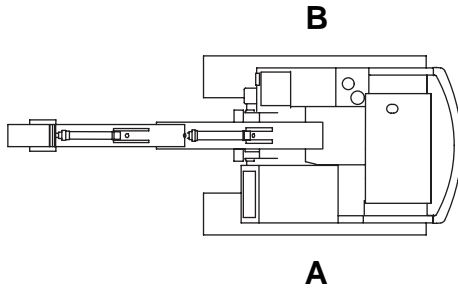
The remaining sections are alphabetically coded and deal with Dismantling, Overhaul etc. of specific components, for example:

- A Attachments
- B Body and Framework, etc.

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

Left Side, Right Side

In this manual, 'left' **A** and 'right' **B** mean your left and right when you are seated correctly in the machine.



Cross References

T1-004_2

In this publication, page cross references are made by presenting the subject title printed in bold, italic and underlined. It is preceded by the 'go to' symbol. The number of the page upon which the subject begins, is indicated within the brackets. For example: [⇒ ***Cross References*** \(1-2\)](#).

Identifying Your Machine

Machine Identification Plate

Your machine has a data plate, located on the outside the cab as shown at **A**. The machine serial number is inscribed at **B** which is the base plate of the rear frame.

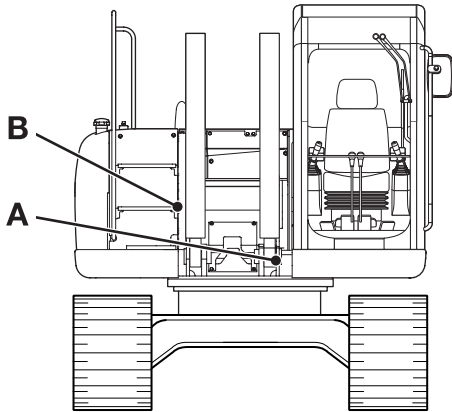


Fig 1.

T103401

Typical Product Identification Number (PIN)

1	2	3	4
JCB	JS20C	C	01421200

- 1 World Manufacturer Identification (JCB)
- 2 Machine Type and Model (J20C= JS200)
- 3 Randomly Generated Check Letter.
- 4 Machine Serial Number (01421200)

	JCB HEAVY PRODUCTS LTD LAKE SIDE WORKS ROCESTER UNITED KINGDOM ST14 5JP	
<input type="text"/>		
PIN	Product Identification Number	ISO 10261
MACHINE TYPE	<input type="text"/>	
OPERATING MASS kg ISO 6016	<input type="text"/>	
ENGINE SERIAL No.	<input type="text"/>	
ENGINE POWER kw / RPM ISO 14396	<input type="text"/>	
CONSTRUCTION YEAR	<input type="text"/>	

Fig 2.

732821

Typical Engine Identification Number

If the engine is replaced by a new one, the data plate serial number will be wrong. Either stamp the new number on the plate or stamp out the old one. This will prevent the wrong number being quoted when you order replacement parts.

The engine number is at **A**.

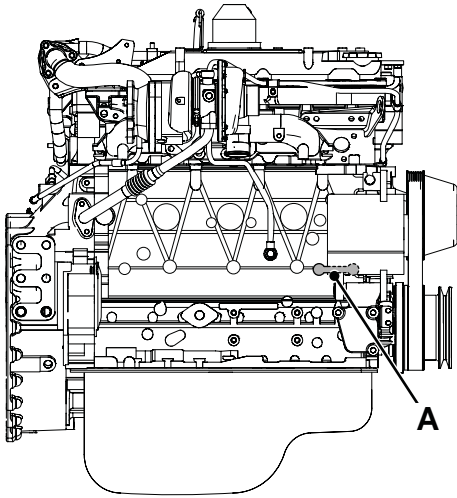


Fig 3. 4HK

T016910-1

a	b
4HK1	578550

a Engine Type

b Engine Serial Number

Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

T11-002

Introduction

Some external fasteners on JCB machines are manufactured 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. ⇒ [Table 1. Fastener Types](#) (1-5).

Table 1. Fastener Types

Fastener Type	Colour	Part No. Suffix
Zinc and Yellow	Golden finish	'Z' (e.g. 1315/3712Z)
Dacromet	Mottled silver finish	'D' (e.g. 1315/3712D)

Note: 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 fastener.

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

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

Note: 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 or engine joint seams or internal applications.

Bolts and Screws

Use the following torque setting tables only where no torque setting is specified in the text.

Note: Dacromet fasteners are lubricated as part of the plating process, do not lubricate.

Torque settings are given for the following conditions:

Condition 1

- Un-lubricated fasteners
- Zinc fasteners
- Yellow plated fasteners

Condition 2

- Zinc flake (Dacromet) fasteners
- Lubricated zinc and yellow plated fasteners
- Where there is a natural lubrication. For example, cast iron components

Verbus Ripp Bolts

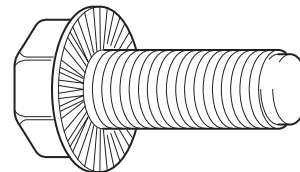


Fig 1.

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



Section 1 - General Information Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 2. Torque Settings - UNF Grade 'S' Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
in.	mm	in.	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
1/4	6.3	7/16	11.2	1.1	8.3	10.0	1.0	7.4
5/16	7.9	1/2	22.3	2.3	16.4	20.0	2.0	14.7
3/8	9.5	9/16	40.0	4.1	29.5	36.0	3.7	26.5
7/16	11.1	5/8	64.0	6.5	47.2	57.0	5.8	42.0
1/2	12.7	3/4	98.0	10.0	72.3	88.0	9.0	64.9
9/16	14.3	13/16	140.0	14.3	103.2	126.0	12.8	92.9
5/8	15.9	15/16	196.0	20.0	144.6	177.0	18.0	130.5
3/4	19.0	1 1/8	343.0	35.0	253.0	309.0	31.5	227.9
7/8	22.2	1 15/16	547.0	55.8	403.4	492.0	50.2	362.9
1	25.4	1 1/2	814.0	83.0	600.4	732.0	74.6	539.9
1 1/8	31.7	1 7/8	1181.0	120.4	871.1	1063.0	108.4	784.0
1 1/4	38.1	2 1/4	1646.0	167.8	1214.0	1481.0	151.0	1092.3

Table 3. Torque Settings - Metric Grade 8.8 Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
ISO Metric Thread	mm	mm	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M5	5	8	5.8	0.6	4.3	5.2	0.5	3.8
M6	6	10	9.9	1.0	7.3	9.0	0.9	6.6
M8	8	13	24.0	2.4	17.7	22.0	2.2	16.2
M10	10	17	47.0	4.8	34.7	43.0	4.4	31.7
M12	12	19	83.0	8.5	61.2	74.0	7.5	54.6
M16	16	24	205.0	20.9	151.2	184.0	18.8	135.7
M20	20	30	400.0	40.8	295.0	360.0	36.7	265.5
M24	24	36	690.0	70.4	508.9	621.0	63.3	458.0
M30	30	46	1372.0	139.9	1011.9	1235.0	125.9	910.9
M36	36	55	2399.0	244.6	1769.4	2159.0	220.0	1592.4



Section 1 - General Information Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 4. Metric Grade 10.9 Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
ISO Metric Thread	mm	mm	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M5	5	8	8.1	0.8	6.0	7.3	0.7	5.4
M6	6	10	13.9	1.4	10.2	12.5	1.3	9.2
M8	8	13	34.0	3.5	25.0	30.0	3.0	22.1
M10	10	17	67.0	6.8	49.4	60.0	6.1	44.2
M12	12	19	116.0	11.8	85.5	104.0	10.6	76.7
M16	16	24	288.0	29.4	212.4	259.0	26.4	191.0
M20	20	30	562.0	57.3	414.5	506.0	51.6	373.2
M24	24	36	971.0	99.0	716.9	874.0	89.1	644.6
M30	30	46	1930.0	196.8	1423.5	1737.0	177.1	1281.1
M36	36	55	3374.0	344.0	2488.5	3036.0	309.6	2239.2

Table 5. Metric Grade 12.9 Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
ISO Metric Thread	mm	mm	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M5	5	8	9.8	1.0	7.2	8.8	0.9	6.5
M6	6	10	16.6	1.7	12.2	15.0	1.5	11.1
M8	8	13	40.0	4.1	29.5	36.0	3.7	26.5
M10	10	17	80.0	8.1	59.0	72.0	7.3	53.1
M12	12	19	139.0	14.2	102.5	125.0	12.7	92.2
M16	16	24	345.0	35.2	254.4	311.0	31.7	229.4
M20	20	30	674.0	68.7	497.1	607.0	61.9	447.7
M24	24	36	1165.0	118.8	859.2	1048.0	106.9	773.0
M30	30	46	2316.0	236.2	1708.2	2084.0	212.5	1537.1
M36	36	55	4049.0	412.9	2986.4	3644.0	371.6	2687.7



Section 1 - General Information Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 6. Torque Settings - Rivet Nut Bolts/Screws

Bolt Size		Nm	kgf m	lbf ft
ISO Metric Thread	mm			
M3	3	1.2	0.1	0.9
M4	4	3.0	0.3	2.0
M5	5	6.0	0.6	4.5
M6	6	10.0	1.0	7.5
M8	8	24.0	2.5	18.0
M10	10	48.0	4.9	35.5
M12	12	82.0	8.4	60.5

Table 7. Torque Settings - Internal Hexagon Headed Cap Screws (Zinc)

Bolt Size		Nm	kgf m	lbf ft
ISO Metric Thread				
M3		2.0	0.2	1.5
M4		6.0	0.6	4.5
M5		11.0	1.1	8.0
M6		19.0	1.9	14.0
M8		46.0	4.7	34.0
M10		91.0	9.3	67.0
M12		159.0	16.2	117.0
M16		395.0	40.0	292.0
M18		550.0	56.0	406.0
M20		770.0	79.0	568.0
M24		1332.0	136.0	983.0

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 8. Torque Settings - BSP Adaptors

BSP Adaptor Size	Hexagon (A/F)	Nm	kgf m	lbf ft
	in.			
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 9. Torque Settings - SAE Connections

SAE Tube Size	SAE Port Thread Size	Hexagon (A/F)	Nm	kgf m	lbf ft
		mm			
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

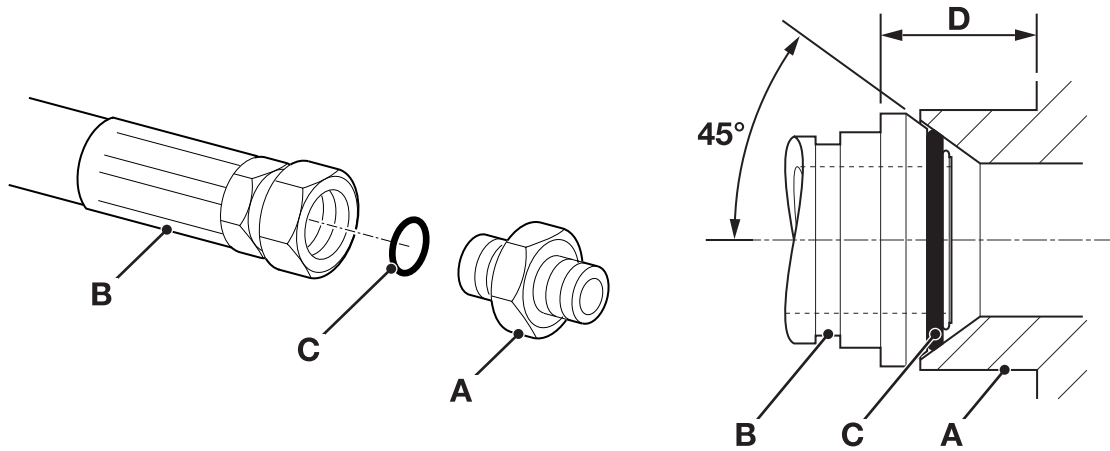


Fig 2.

Hoses **2-B** screwed into adaptors **2-A** seal onto an 'O' ring **2-C** which is compressed into a 45° seat machined into the face of the adaptor port.

Note: Dimension **2-D** will vary depending upon the torque applied.

Table 10. BSP Hose - Torque Settings

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



Section 1 - General Information Torque Settings

Hydraulic Connections

Adaptors into Component Connections with Bonded Washers

Table 11. 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

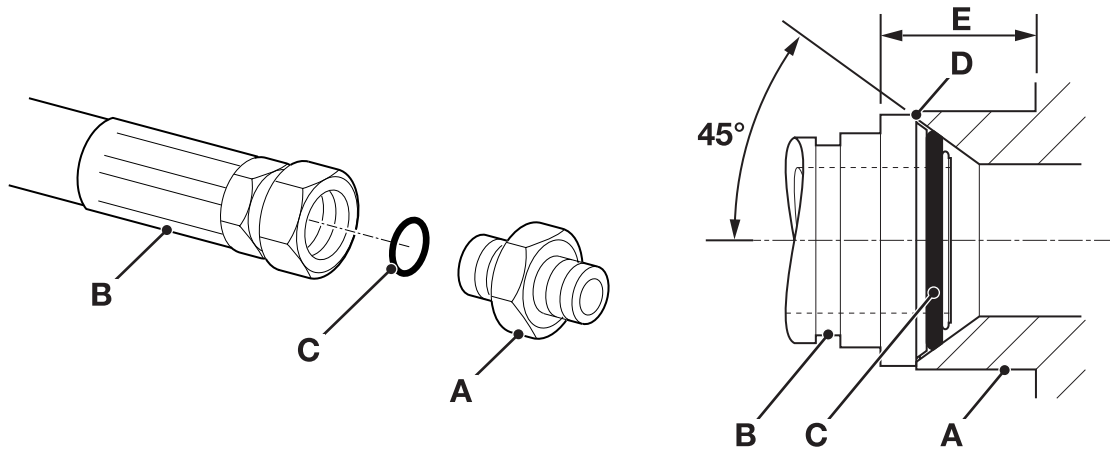


Fig 3.

'Torque Stop' Hoses **3-B** screwed into adaptors **3-A** seal onto an 'O' ring **3-C** which is compressed into a 45° seat machined in the face of the adaptor port. To prevent the 'O' ring being damaged as a result of over tightening, 'Torque

Stop' Hoses have an additional shoulder **3-D**, which acts as a physical stop.

Note: Minimum dimension **3-E** fixed by shoulder **3-D**.

Table 12. BSP 'Torque Stop' Hose - Torque Settings

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

Service Tools

Numerical List

The tools listed in the table are special tools required for carrying out the procedures described in this manual. These tools are available from JCB Service.

Some tools are available as kits or sets, the part numbers for parts within such kits or sets are not listed here. For full

details of all tools, including the content of kits and sets, refer to **Tool Detail Reference, Section 1**.

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	See Section
993/68100	Slide Hammer Kit - see Tool Detail Reference (Section 1) for content	B
-	Rivet Nut Tool - see Tool Detail Reference (Section 1)	B
892/00842	Glass Lifter	B
892/00843	Folding Stand for Holding Glass	B
892/00845	Cartridge Gun	B
892/00846	Glass Extractor (Handles)	B
892/00847	Nylon Spatula	B
892/00848	Wire Starter	B
892/00849	Braided Cutting Wire	B
926/15500	Rubber Spacer Blocks	B
992/12300	12V Mobile Oven	B
992/12400	240V Static Oven (2 Cartridge)	B
992/12800	Cut-Out Knife	B
992/12801	'L' Blades	B
4104/1310	Hand Cleaner	B
892/00281	AVO Meter (not illustrated)	C
892/00298	Fluke Meter	C
892/00285	Hyd. Oil Temperature Probe	C
892/00284	Digital Tachometer	C
892/01174	DLA Kit	C
331/22966	Pump Drive Alignment Tool (not illustrated)	E
-	Male Adapters - BSP x BSP - see Tool Detail Reference (Section 1)	E
-	Male Adapters - BSP x NPT (USA only) - see Tool Detail Reference (Section 1)	E
-	Pressure Test Points - Adaptors - see Tool Detail Reference (Section 1)	E
-	Pressure Test Points - 'T' Adaptors - see Tool Detail Reference (Section 1)	E
-	'T' Adaptors - see Tool Detail Reference (Section 1)	E



Section 1 - General Information Service Tools

Numerical List

Part Number	Description	See Section
-	Female Blanking Caps - see <i>Tool Detail Reference (Section 1)</i>	E
-	Male Cone Blanking Caps - see <i>Tool Detail Reference (Section 1)</i>	E
-	Female Connectors - see <i>Tool Detail Reference (Section 1)</i>	E
-	Bonded Washers - see <i>Tool Detail Reference (Section 1)</i>	E
-	Ram Protection Sleeves - see <i>Tool Detail Reference (Section 1)</i>	E
892/00334	Ram Seal Fitting Tool	E
	Hexagon Spanners - see <i>Tool Detail Reference (Section 1)</i>	E
892/01027	Piston Seal Assembly Tool	E
-	Hydraulic Flow Test Equipment - see <i>Tool Detail Reference (Section 1)</i>	E
-	Hydraulic Circuit Pressure Test Kit - see <i>Tool Detail Reference (Section 1)</i> for content	E
-	Hydraulic Hand Pump Equipment - see <i>Tool Detail Reference (Section 1)</i>	E
992/10100	Spool Clamp	E
892/00039	Spool Clamp	E
992/02800	ARV Extractor	E
331/31069	Test Block for A.R.V.	E
892/00891	Valve Spool Seal Fitting Tool	E
892/00346	Gauge	E
892/00279	Gauge	E
892/00280	Gauge	E
892/00347	Connector	E
892/00254	Hose	E
-	Ram Jigs - see <i>Tool Detail Reference (Section 1)</i>	E
-	Ram Piston Nut Spanners - see <i>Tool Detail Reference (Section 1)</i>	E
-	Socket Box Wrench	E
-	Nut Adapter	E
-	Seal Ring Tool	E
-	Stopper	E
-	Bearing Rig	E
-	Inserting Seal Ring and Correction Jig - see <i>Tool Detail Reference (Section 1)</i>	E
-	Jig for Pulling Out, Press-fitting Bushing - see <i>Tool Detail Reference (Section 1)</i>	E
-	Jig for Press-fitting Wiper Ring - see <i>Tool Detail Reference (Section 1)</i>	E
-	Jig for Inserting Cylinder Head - see <i>Tool Detail Reference (Section 1)</i>	E
-	Seal Ring and Connector Jig - see <i>Tool Detail Reference (Section 1)</i>	E
-	Bush Removal Jig - see <i>Tool Detail Reference (Section 1)</i>	E
-	Bush Fitting Jig - see <i>Tool Detail Reference (Section 1)</i>	E
-	Wiper Ring Fitting Jig - see <i>Tool Detail Reference (Section 1)</i>	E
-	Wiper Ring Fitting Jig - see <i>Tool Detail Reference (Section 1)</i>	E



Section 1 - General Information Service Tools

Numerical List

Part Number	Description	See Section
892/00041	De-glazing Tool	K

Tool Detail Reference

Section B - Body and Framework

Note: Not all service tools are illustrated.

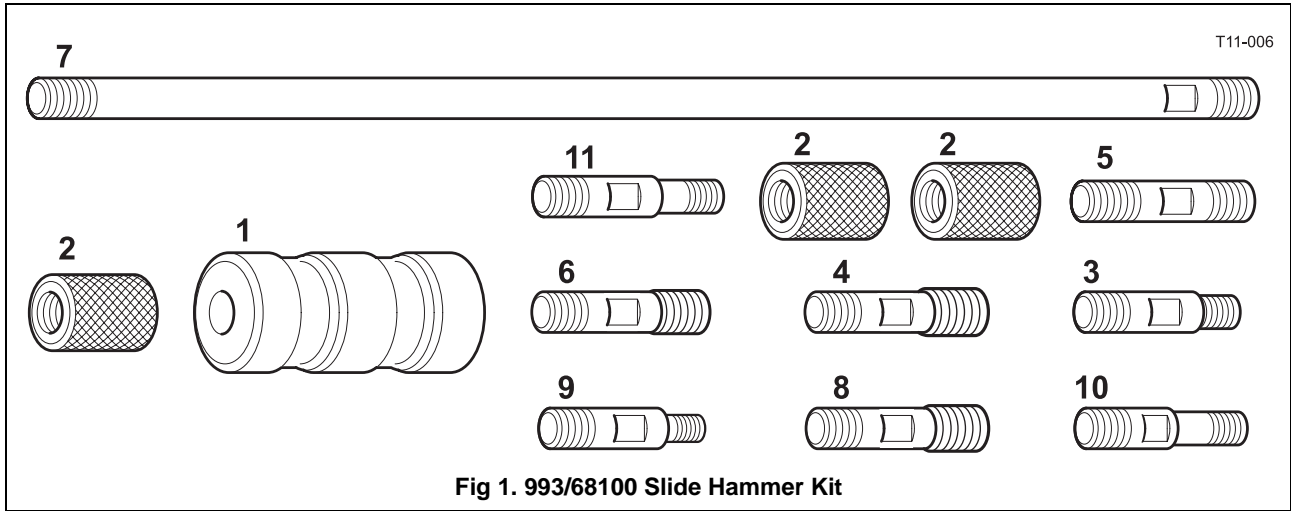


Fig 1. 993/68100 Slide Hammer Kit

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			

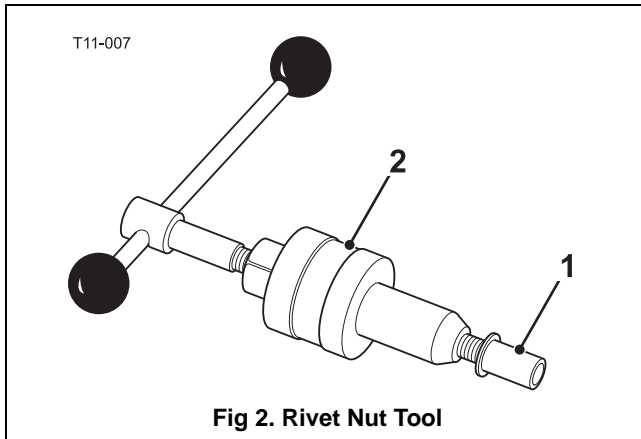


Fig 2. Rivet Nut Tool

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.bollhoff.com)

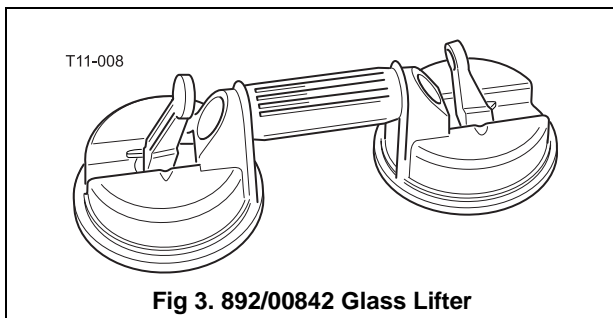


Fig 3. 892/00842 Glass Lifter

Minimum 2 off - Essential for glass installation, 2 required to handle large panes of glass. Ensure suction cups are protected from damage during storage.

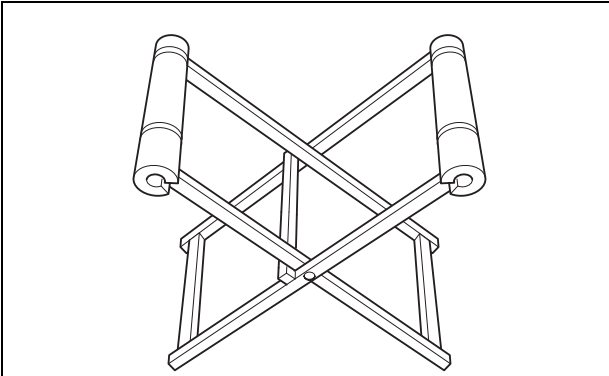
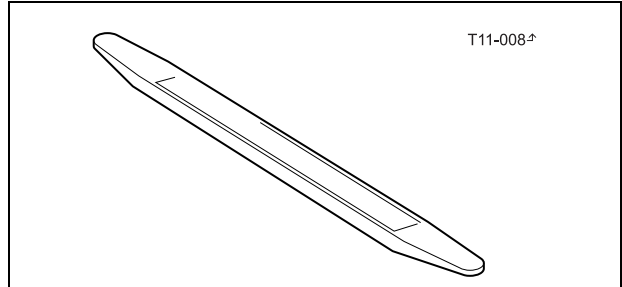


Fig 4. 892/00843 Folding Stand

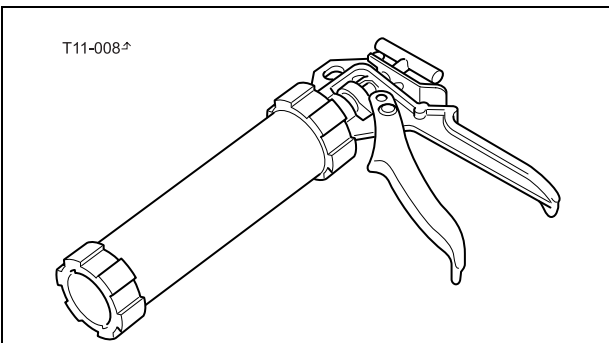
Essential for preparing new glass prior to installation.



T11-008-⁺

Fig 7. 892/00847 Nylon Spatula

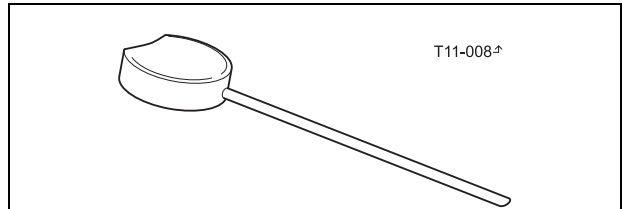
General tool used for smoothing sealants - also used to re-install glass in rubber glazing because metal tools will chip the glass edge.



T11-008-⁺

Fig 5. 892/00845 Cartridge Gun

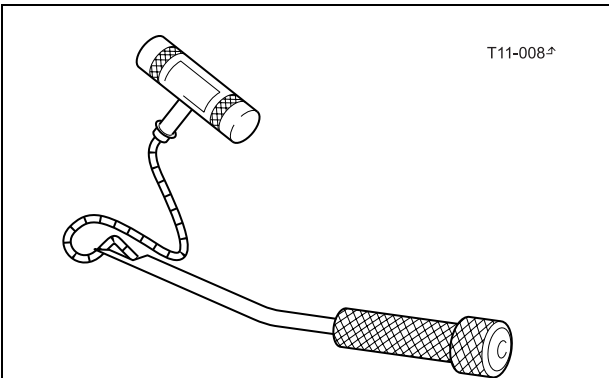
Hand operated. Essential for the application of sealants, polyurethane materials etc.



T11-008-⁺

Fig 8. 892/00848 Wire Starter

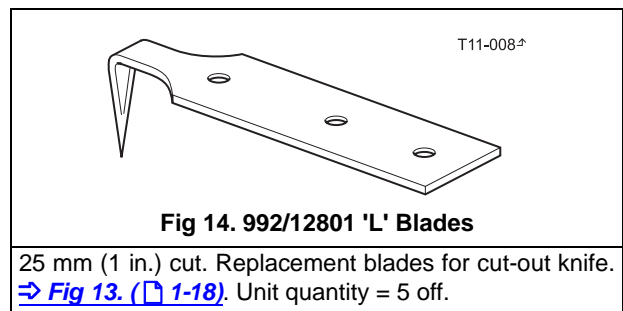
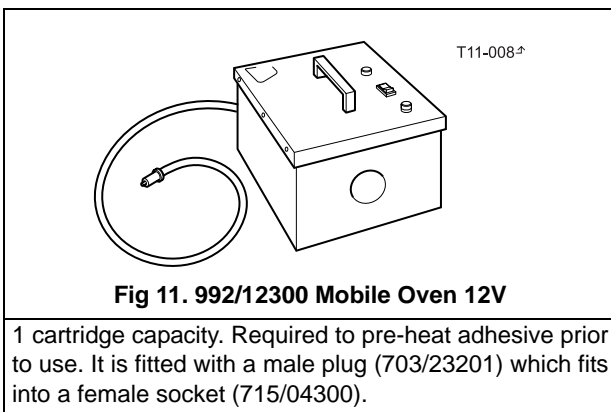
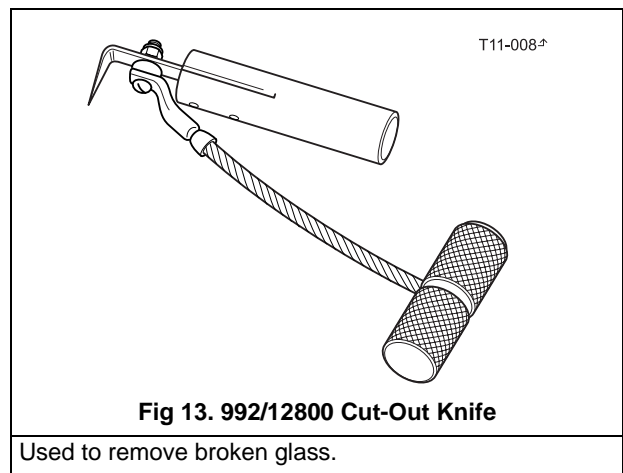
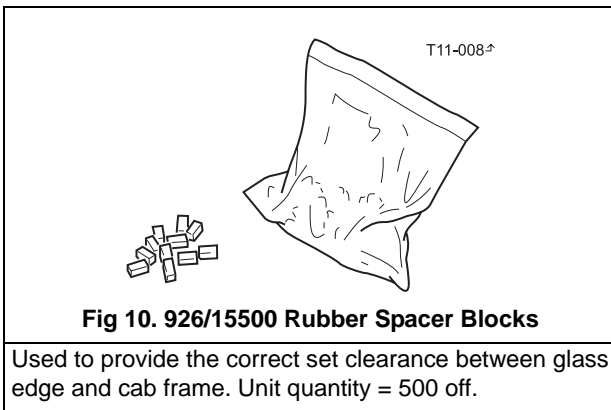
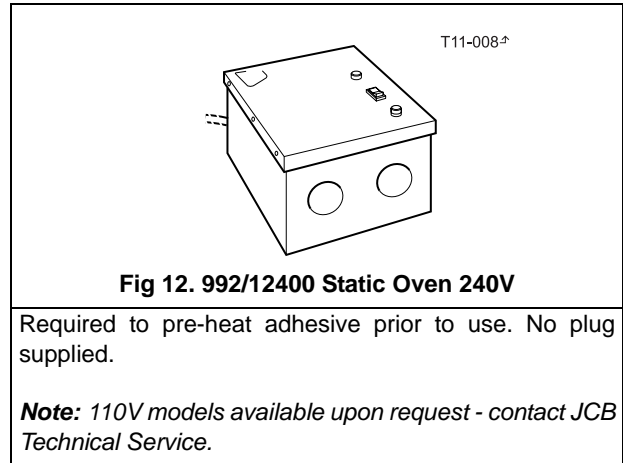
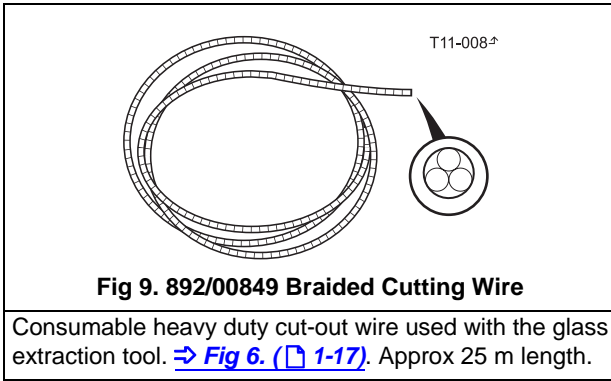
Used to access braided cutting wire through original polyurethane seal. → [Fig 9. \(□ 1-18\)](#).

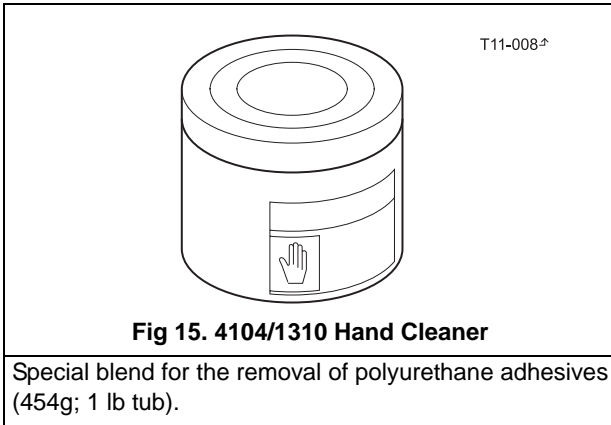


T11-008-⁺

Fig 6. 892/00846 Glass Extractor (Handles)

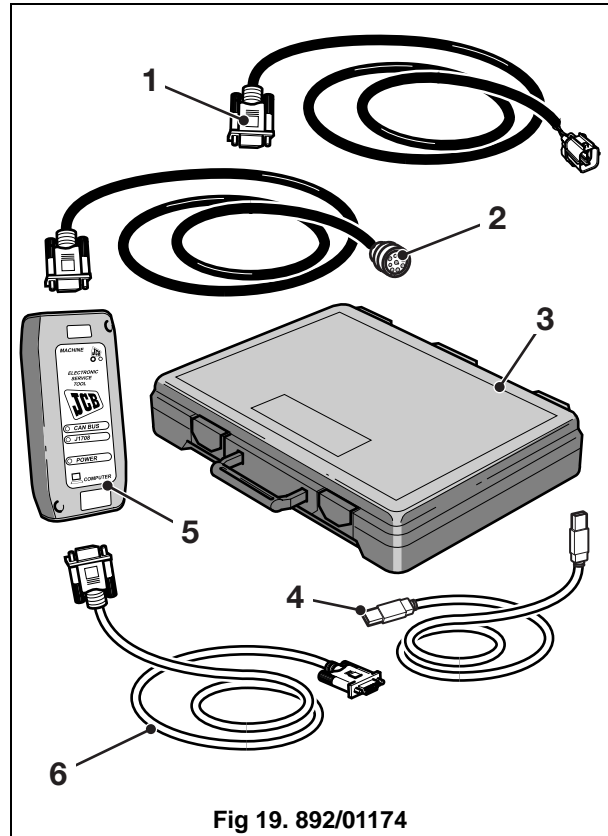
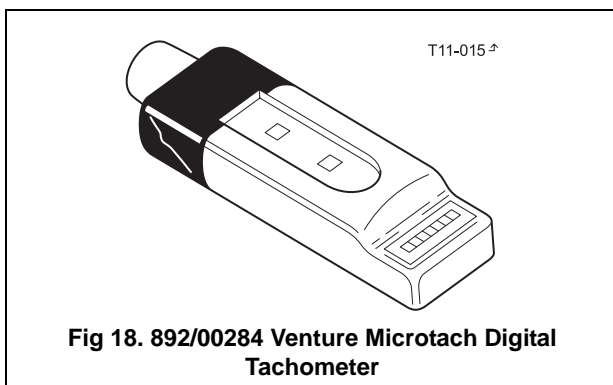
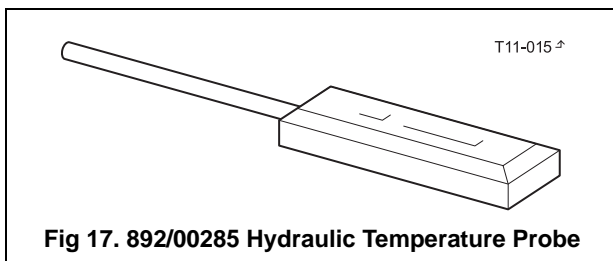
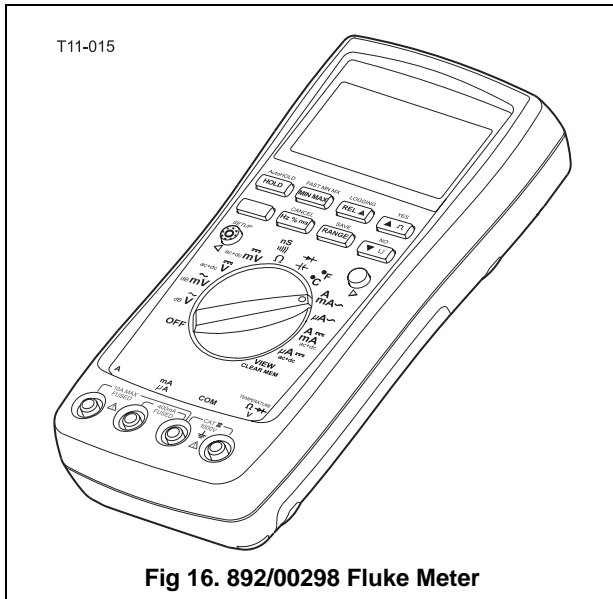
Used with braided cutting wire to cut out broken glass. → [Fig 9. \(□ 1-18\)](#).





Section C - Electrics

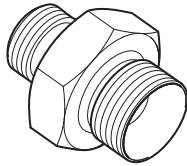
Note: Not all service tools are illustrated.

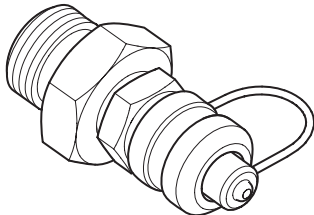


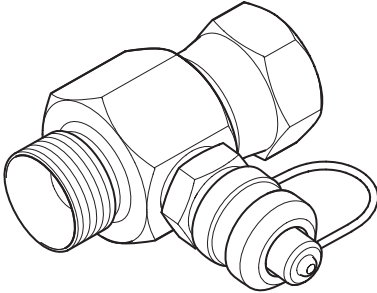
1	Interconnecting cable, DLA to machine ECU diagnostics socket.
2	Interconnecting cable, DLA to machine ECU diagnostics socket.
3	Kit carrying case.
4	Interconnecting cable, DLA to laptop PC.
5	Data Link Adaptor (DLA), enables data exchange between the machine ECU (Electronic Control Unit) and a laptop PC loaded with the applicable diagnostics software.
6	Interconnecting cable, DLA to laptop PC.

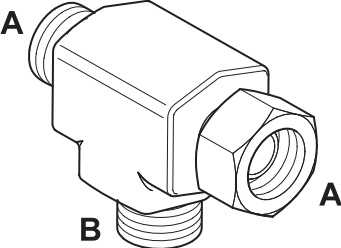
Section E - Hydraulics

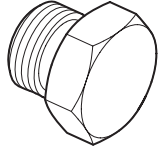
Note: Not all service tools are illustrated.

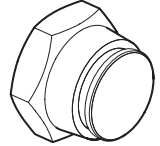
<p>T11-010</p>  <p>Fig 20. Male Adaptors</p>		Male Adaptors - BSP x BSP		
		1606/2052	3/8 in. x 1/4 in.	
		1604/0003A	3/8 in. x 3/8 in.	
		892/00071	3/8 in. x 3/8 in. taper	
		1606/0004	1/2 in. x 1/4 in.	
		1606/0007A	1/2 in. x 3/8 in.	
		1604/0004A	1/2 in. x 1/2 in.	
		1606/0017	5/8 in. x 1/2 in.	
		1606/0008	3/4 in. x 3/8 in.	
	Male Adaptors - BSP x NPT (USA only)		1606/0009	3/4 in. x 1/2 in.
816/00439	3/8 in. x 1/4 in.	1604/2055	3/4 in. x 3/4 in.	
816/00440	1/2 in. x 1/4 in.	1606/0012	3/4 in. x 1 in.	
816/15007A	3/8 in. x 3/8 in.	1606/0014	3/4 in. x 1.1/4 in.	
816/15008	1/2 in. x 3/8 in.	1606/0015	1 in. x 1.1/4 in.	

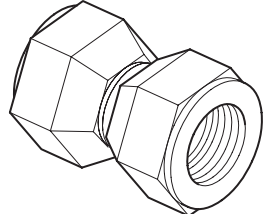
<p>T11-010[±]</p>  <p>Fig 21. Pressure Test Adaptors</p>	892/00255	1/4 in. BSP x Test Point
	892/00256	3/8 in. BSP x Test Point
	892/00257	1/2 in. BSP x Test Point
	892/00258	5/8 in. BSP x Test Point
	816/15118	3/4 in. BSP x Test Point
	892/00259	1 in. BSP x Test Point
	892/00260	1.1/4 in. BSP x Test Point
	892/00261	5/8 in. UNF x Test Point

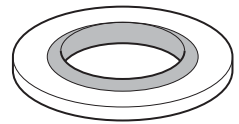
<p>T11-010[±]</p>  <p>Fig 22. Pressure Test 'T' Adaptors</p>	816/55045	1/4 in. M BSP x 1/4 in. F BSP x Test Point
	816/55038	3/8 in. M BSP x 3/8 in. F BSP x Test Point
	816/55040	1/2 in. M BSP x 1/2 in. F BSP x Test Point
	892/00263	5/8 in. M BSP x 5/8 in. F BSP x Test Point
	892/00264	3/4 in. M BSP x 3/4 in. F BSP x Test Point
	892/00265	1 in. M BSP x 1 in. F BSP x Test Point
	892/00266	1.1/4 in. M BSP x 1.1/4 in. F BSP x Test Point
	892/00267	1.1/4 in. M BSP x 1.1/2 in. F BSP x Test Point

<p>T11-010[±]</p>  <p>Fig 23. 'T' Adapters</p>	892/00047	3/8 in. BSP (A) x 1/4 in. BSP (B)
	892/00048	1/2 in. BSP (A) x 1/4 in. BSP (B)
	892/00049	5/8 in. BSP (A) x 1/4 in. BSP (B)
	816/50043	3/4 in. BSP (A) x 1/4 in. BSP (B)
	892/00051	1 in. BSP (A) x 1/4 in. BSP (B)
	816/50005	1/2 in. BSP (A) x 1/2 in. BSP (B)
	816/60096	3/4 in. BSP (A) x 3/4 in. BSP (B)
	816/00017	1 in. BSP (A) x 1 in. BSP (B)

<p>T11-010[±]</p>  <p>Fig 24. Female Blanking Caps</p>	892/00055A	1/4 in. BSP
	892/00056A	3/8 in. BSP
	892/00057	1/2 in. BSP
	892/00058A	5/8 in. BSP
	892/00059A	3/4 in. BSP
	892/00060	1 in. BSP

<p>T11-010[±]</p>  <p>Fig 25. Male Cone Blanking Caps</p>	816/90045	1/4 in. BSP
	816/00189A	3/8 in. BSP
	816/00190A	1/2 in. BSP
	816/90022	5/8 in. BSP
	816/90274	3/4 in. BSP
	816/90205	1 in. BSP

<p>T11-010[±]</p>  <p>Fig 26. Female Connectors</p>	892/00074	3/8 in. BSP x 3/8 in. BSP
	892/00075	1/2 in. BSP x 1/2 in. BSP
	892/00076	5/8 in. BSP x 5/8 in. BSP
	892/00077	3/4 in. BSP x 3/4 in. BSP

<p>T11-010[±]</p>  <p>Fig 27. Bonded Washers</p>	1406/0011	1/4 in. BSP
	1406/0018	1/2 in. BSP
	1406/0014	5/8 in. BSP
	1406/0021	3/4 in. BSP
	1406/0029	1.1/4 in. BSP



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