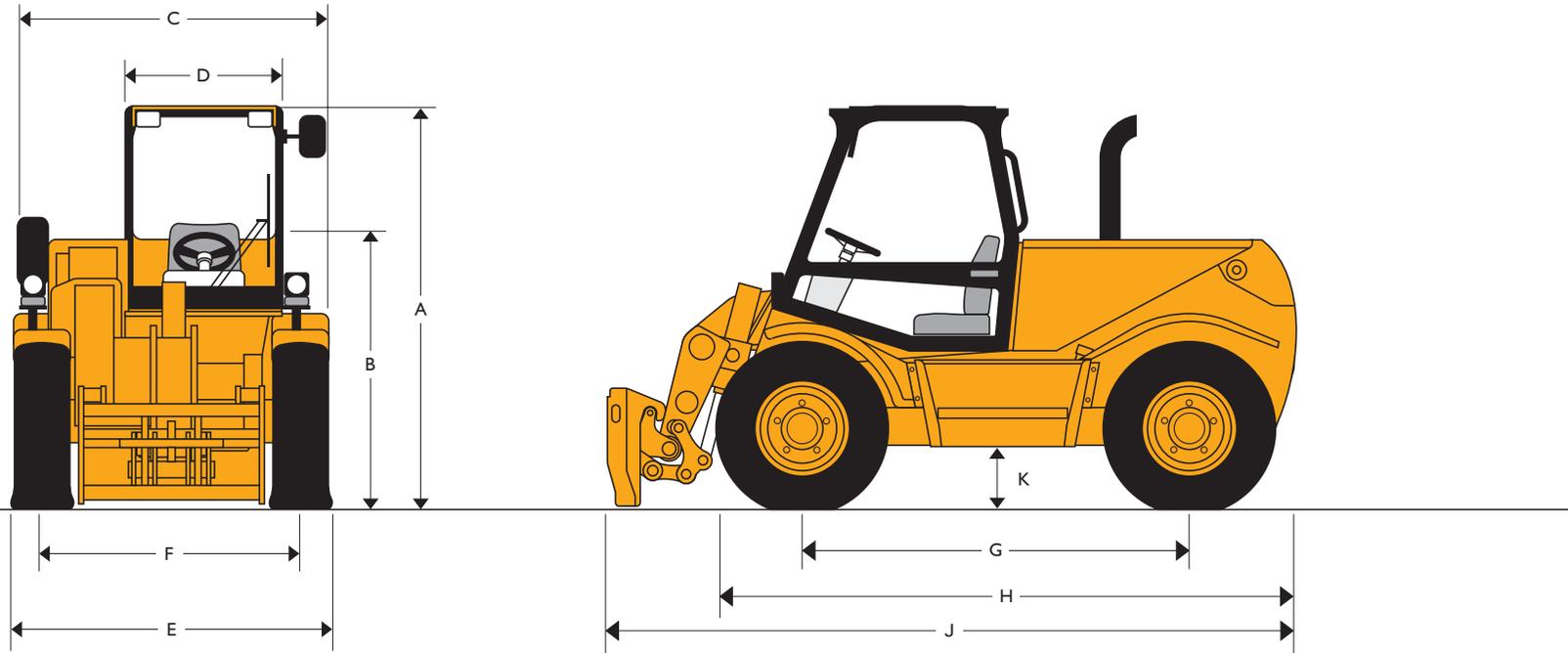




MAX. PAYLOAD: 2.5 tonnes (5510lb)
 MAX. LIFT HEIGHT: 5.0 metres (16ft-5in)
 MAX. HORSEPOWER: 57.5 kW (77hp)



STATIC DIMENSIONS

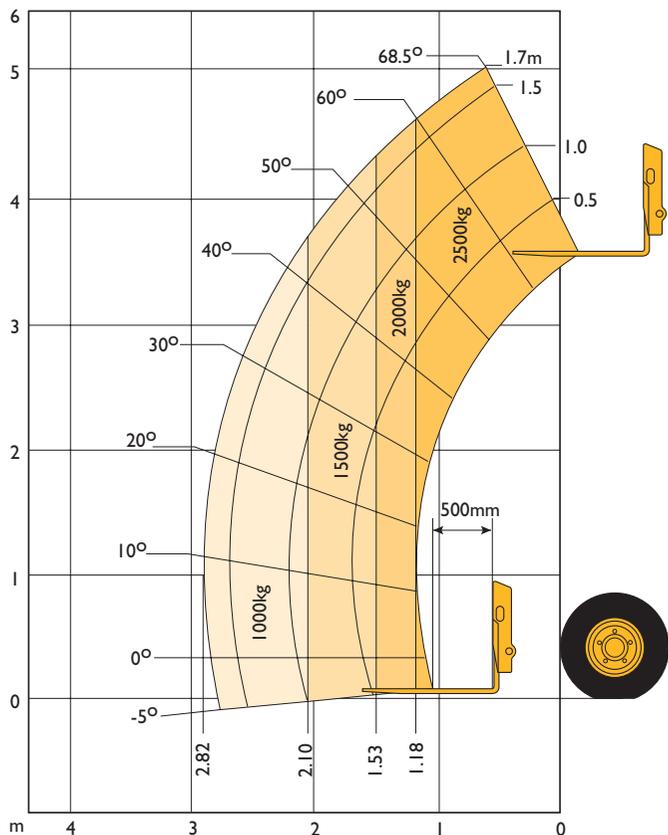
Machine model	525-50
	m (ft-in)
A Overall height (std cab)	2.19 (7-2)
B Height to top of steering wheel	1.57 (5-2)
C Overall width	1.82 (6-0)
D Inside width of cab	0.83 (2-9)
E Width over tyres	1.82 (6-0)
F Wheelbase	1.49 (4-11)
G Wheelbase	2.00 (6-7)
H Overall length to front tyres	3.13 (10-3)

Machine model	525-50
	m (ft-in)
J Overall length to front carriage	3.62 (11-10)
K Ground clearance	0.36 (1-2)
Outer turn radius over tyres	3.71 (12-1)
Obstruction/departure angle with/without quickhitch	degrees 30°/58°
Weight	kg (lb) 5400 (11002)
Power to weight ratio 57.5kW (77hp) Engine	9.8kW/tonne
Tyres	12.5 x 18 10pr

Sample of manual. Download All 290 pages at:
<https://www.aresairmanual.com/downloads/jcb-520-50-loadall-telescopic-handler-service-repair-manual/>



LIFT PERFORMANCE



LOADER PERFORMANCE

Machine Model	525-50	
	Standard GP bucket	
Bucket rated capacity	m ³ (yd ³)	0.90 (1.20)
Bucket struck capacity	m ³ (yd ³)	0.76 (1.02)
Breakout force	kgf (lbf)	2800 (6172)
Dump height (max)	m (ft-in)	4.46 (14-6)
Dump angle at max height	degrees	40°
Loadover height (max)	m (ft-in)	5.09 (16-8)
Rollback angle at ground	degrees	40°
Carriage rotation angle (total)	degrees	150°
Payload (max)	kg (lb)	1620 (3571)
Bucket width	m (ft-in)	1.95 (6-5)

ENGINE

Latest technology and advanced design provides low fuel consumption, reduced noise, high torque and power output, total reliability and minimal maintenance.

Easily replaceable pre-finished dry liners, five bearing, heat treated crankshaft. Expansion controlled pistons. Two-stage, dry type air filter with primary and safety elements.

Engine conforms with EC mobile off-highway emissions regulations (stage I).

Engine	525-50	
Displacement	ltr (in ³)	4.20 (256)
No. of cylinders		4
Bore size	mm (in)	103 (4.06)
Stroke	mm (in)	127 (5)
Aspiration		Naturally aspirated
Power rating @ 2000rpm		
Gross SAE J1349	kW (HP)	57.5 (77)
Torque rating @ 1200rpm		
SAE J1349	Nm (lbf ft)	290 (214)
Noise level directive 2000/14/EC	dBA	104

LIFT PERFORMANCE

Machine Model	525-50	
Lift capacity to full height	kg (lb)	2500 (5510)
Lift capacity at full reach	kg (lb)	1000 (2204)
Lift height	m (ft-in)	5.00 (16-5)
Reach at max lift height	m (ft-in)	0.50 (1-8)
Maximum forward reach	m (ft-in)	2.82 (9-3)
Reach with full bucket load	m (ft-in)	2.82 (9-3)

Sample of manual. Download All 290 pages at <https://www.aresairmanual.com/downloads/jcb-520-50-loadall-telescopic-handler-service-repair-manual/>



TRANSMISSION

JCB Syncro Shuttle transmission incorporating torque converter, reversing shuttle and all synchromesh 4-speed gearbox in one resiliently mounted unit.

Electro-hydraulic direction control through a steering column mounted switch for modulated forward/reverse shuttling.

Gear lever and loader control transmission disconnect switches for fast gearchanging.

Travel speed 30km/h (18mph).

Front and rear axles: Epicyclic hub reduction type with drop box on front axle. 4WS and permanent 4WD.

BRAKES

Service brakes: Hydraulically activated, power assisted multi disc type brakes. They are oil immersed for long life and fade free braking. Mounted within the planetary hub means that the brakes are direct acting to each wheel, greatly increasing deceleration and eliminating skid potential.

Parking brake: Is an electro/hydraulically operated oil immersed multi disc brake on the transmission output shaft and will hold the machine on 1 in 4 gradients.

BOOM AND CARRIAGE

Boom is manufactured from high tensile steel.

Low maintenance, hard wearing pads.

JCB tool carrier parallel lift carriage with pin locking accepts fork frame with integral pallet forks and a wide range of attachments.

SAFETY CHECK VALVES

Fitted to carriage tilt, telescopic and boom lift rams.

SERVICE CAPACITIES

Fuel tank	litres (UK gal)	90 (9.5)
Hydraulic tank	litres (UK gal)	70 (15.5)
Coolant	litres (UK gal)	20 (4.4)

HYDRAULICS

Single gear pump, with suction strainer and filter. One boom end auxiliary hydraulic service fitted as standard.

Operating system pressure	bar (psi)	241 (3500)
Flow at system pressure (@ 2200rpm)	ltr/min	65
Cycle times		seconds
Boom raise		7.4
Boom lower		5.3
Extend		5.7
Retract		3.2
Bucket dump		2.3
Bucket crowd		3.2

ELECTRICS

12 V negative earth. 92 AH heavy duty battery with isolator. 65 amp alternator. Full road lighting. Direction indicators. Hazard warning.

CAB

Quiet, safe and comfortable cab conforms to ROPS 86/295/EEC and FOPS 86/296/EEC Directives. Toughened glass all round. Tinted with laminated roof screen. Roof bars, front screen and roof screen wipers and heater/screen demister. Rear opening window with wash/wipe. Audio-visual warning system for coolant temperature, engine oil pressure, air-cleaner, battery charge, transmission oil temperature and pressure. Hourmeter and tachometer. Multi lever direct acting hydraulic control levers with joystick control of lift and crowd, gear lever, parkbrake. Throttle and brake pedals. Adjustable deluxe suspension seat.

Load moment indicator: Automatic eye level audio-visual load moment indicator warning system receiving a signal from a load sensor housed on the rear axle. This system continuously monitors the machine's forward stability and leaves the operator in control at all times.

STEERING

Full power hydrostatic steering. Permanent 4WS with 32° lock front and rear axles provides exceptional manoeuvrability.

4WS is provided by a steer priority flow from the main hydraulic pump. Flow is directed through a steer alignment valve to double acting steer rams (1 per axle).

Steering option: Three steer mode options: front wheel steer; all wheel steer; crab steer; operated from in the cab by a selection switch, with automatic alignment.

OPTIONS AND ACCESSORIES

Options: Low cab, working lights, reversing light, reverse alarm, rotating flashing beacon, fire extinguisher, front screen guard, tinted glass, mechanical or hydraulic tow hitch for maximum gross weight of 5 tonnes. Complete with trailer light socket and trailer tip hydraulics, hydraulic pin locking for attachments, 2 boom end auxiliary services. Low ground pressure bearing tyres, spark arrester, catalyst, air conditioning, limited slip differential in front and rear axle.

Attachments: 525-50 is available with hydraulic quickhitch. Contact your local dealer for details of the comprehensive range.



A GLOBAL COMMITMENT TO QUALITY

JCB's total commitment to its products and customers has helped it grow from a one-man business into Britain's largest privately owned manufacturer of backhoe loaders, crawler excavators, wheeled excavators, telescopic handlers, wheeled loaders, dump trucks, rough terrain fork lifts, industrial fork lifts, mini/midi excavators, skid steer loaders and tractors.

By making constant and massive investments in the latest production technology, the JCB factories have become some of the most advanced in Europe.

By leading the field in innovative research and design, extensive testing and stringent quality control, JCB machines have become renowned all over the world for performance, value and reliability.

And with a global sales and service network of over 400 distributors and agents, the company exports over 70% of its production to all five continents.

Through setting the standards by which others are judged, JCB has become one of Britain's most impressive success stories.

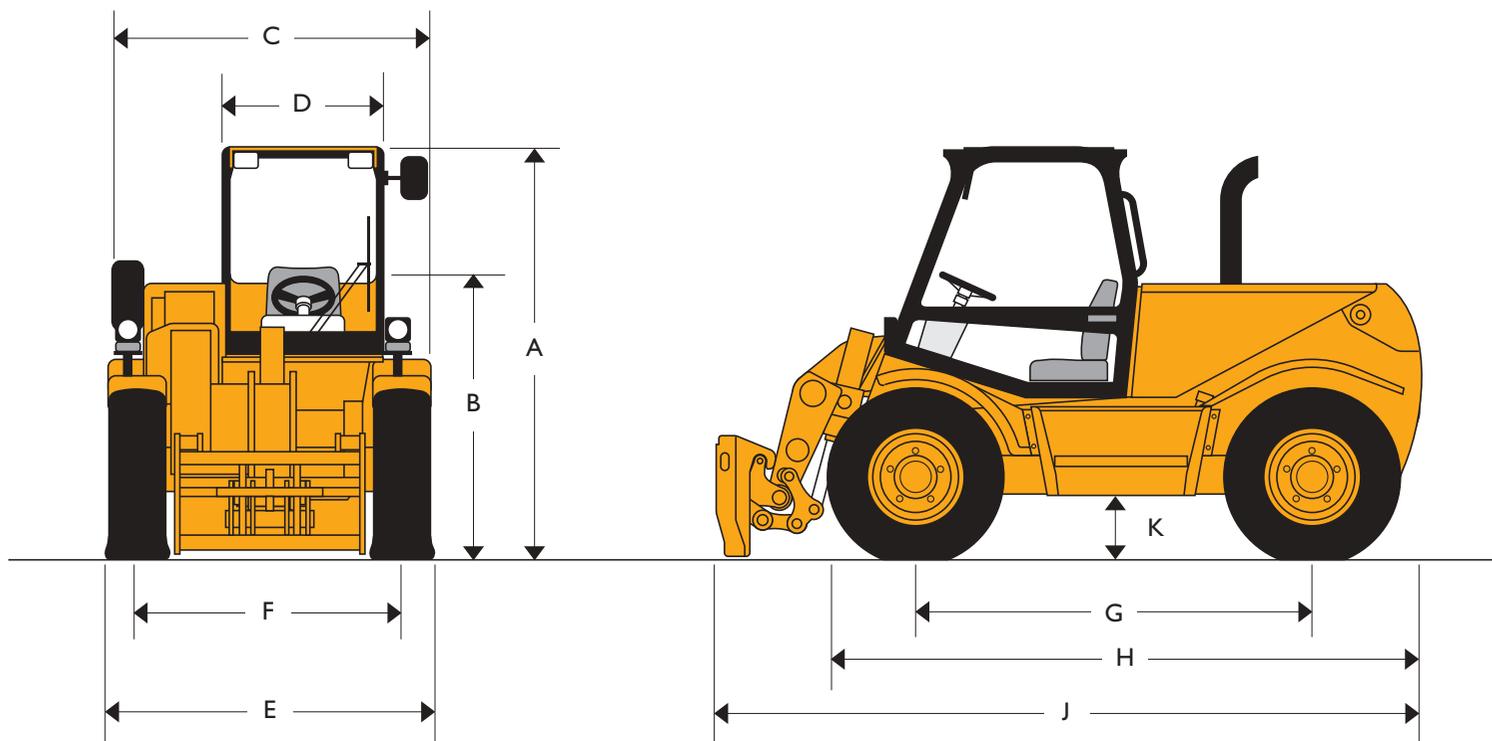




JCB LOADALL FARM SPECIAL | 525-50/525-50S



MAX. PAYLOAD: 2.5 tonnes (5510lb)
MAX. LIFT HEIGHT: 5.0 metres (16ft-5in)
MAX. HORSEPOWER: 57.5/74.6 kW (77/100hp)



STATIC DIMENSIONS

Machine model	525-50/525-50S
	m (ft-in)
A Overall height (std cab)	2.19 (7-2)
B Height to top of steering wheel	1.57 (5-2)
C Overall width	1.82 (6-0)
D Inside width of cab	0.83 (2-9)
E Width over tyres	1.82 (6-0)
F Front track	1.49 (4-11)
G Wheelbase	2.00 (6-7)
H Overall length to front tyres	3.13 (10-3)

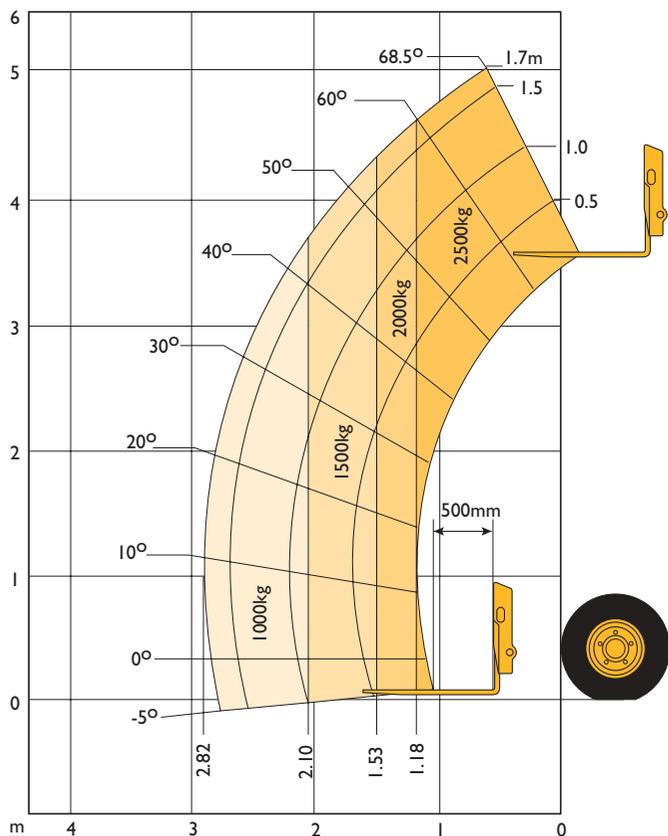
Machine model	525-50/525-50S
	m (ft-in)
J Overall length to front carriage	3.62 (11-10)
K Ground clearance	0.36 (1-2)
Outer turn radius over tyres	3.71 (12-1)
Obstruction/departure angle with/without quickhitch	degrees 30°/58°
Weight	kg (lb) 5400 (11002)
Power to weight ratio 57.5kW (77hp) Engine	9.8kW/tonne
Tyres	12.5 x 18 10pr



JCB LOADALL FARM SPECIAL | 525-50/525-50S



LIFT PERFORMANCE



LIFT PERFORMANCE

Machine Model	525-50/525-50S	
Lift capacity to full height	kg (lb)	2500 (5510)
Lift capacity at full reach	kg (lb)	1000 (2204)
Lift height	m (ft-in)	5.00 (16-5)
Reach at max lift height	m (ft-in)	0.50 (1-8)
Maximum forward reach	m (ft-in)	2.82 (9-3)
Reach with 1 tonne load	m (ft-in)	2.82 (9-3)
Placing height	m (ft-in)	4.60 (15-1)

Complies with stability test EN 1459 Annex B.

LOADER PERFORMANCE

Machine Model	525-50/525-50S	
	Standard GP bucket	
Bucket rated capacity	m ³ (yd ³)	0.90 (1.20)
Bucket struck capacity	m ³ (yd ³)	0.76 (1.02)
Breakout force	kgf (lbf)	2800 (6172)
Dump height (max)	m (ft-in)	4.46 (14-6)
Dump angle at max height	degrees	40°
Loadover height (max)	m (ft-in)	5.09 (16-8)
Rollback angle at ground	degrees	40°
Carriage rotation angle (total)	degrees	150°
Payload (max)	kg (lb)	1620 (3571)
Bucket width	m (ft-in)	1.95 (6-5)

ENGINE

Latest technology and advanced design provides low fuel consumption, reduced noise, high torque and power output, total reliability and minimal maintenance.

Easily replaceable pre-finished dry liners, five bearing, heat treated crankshaft. Expansion controlled pistons. Two-stage, dry type air filter with primary and safety elements.

Engine conforms with EC mobile off-highway emissions regulations (stage I).

Engine options		525-50	525-50S
Displacement	ltr (in ³)	4.20 (256)	3.99 (244)
No. of cylinders		4	4
Bore size	mm (in)	103 (4.06)	100 (3.94)
Stroke	mm (in)	127 (5)	127 (5)
Aspiration		Naturally aspirated	Turbo charged
Power rating @ 2000rpm			
Gross SAE J1349	kW (HP)	57.5 (77)	74.6 (100)
Torque rating @ 1200rpm			
SAE J1349	Nm (lbf ft)	290 (214)	402 (297)
Noise level directive 2000/14/EC	dBA	104	105



JCB LOADALL FARM SPECIAL | 525-50/525-50S



TRANSMISSION

JCB Syncro Shuttle transmission incorporating torque converter, reversing shuttle and all synchromesh 4-speed gearbox (3-speed gearbox in Turbo charged option) in one resiliently mounted unit.

Electro-hydraulic direction control through a steering column mounted switch for modulated forward/reverse shuttling.

Gear lever and loader control transmission disconnect switches for fast gearchanging.

Travel speed 30km/h (18mph).

Front and rear axles: Epicyclic hub reduction type with drop box on front axle. 4WS and permanent 4WD.

BRAKES

Service brakes: Hydraulically activated, power assisted multi disc type brakes. They are oil immersed for long life and fade free braking. Mounted within the planetary hub means that the brakes are direct acting to each wheel, greatly increasing deceleration and eliminating skid potential.

Parking brake: Is an electro/hydraulically operated oil immersed multi disc brake on the transmission output shaft and will hold the machine on 1 in 4 gradients.

BOOM AND CARRIAGE

Boom is manufactured from high tensile steel.

Low maintenance, hard wearing pads.

JCB tool carrier parallel lift carriage with pin locking accepts fork frame with integral pallet forks and a wide range of attachments.

SAFETY CHECK VALVES

Fitted to carriage tilt, telescopic and boom lift rams.

SERVICE CAPACITIES

Fuel tank	litres (UK gal)	90 (9.5)
Hydraulic tank	litres (UK gal)	70 (15.5)
Coolant	litres (UK gal)	20 (4.4)

HYDRAULICS

Single gear pump, with suction strainer and filter. One boom end auxiliary hydraulic service fitted as standard.

Operating system pressure	bar (psi)	241 (3500)
Flow at system pressure (@ 2200rpm)	ltr/min	65
Cycle times		seconds
Boom raise		7.4
Boom lower		5.3
Extend		5.7
Retract		3.2
Bucket dump		2.3
Bucket crowd		3.2

ELECTRICS

12 V negative earth. 92 AH heavy duty battery with isolator. 65 amp alternator. Full road lighting. Direction indicators. Hazard warning.

CAB

Quiet, safe and comfortable cab conforms to ROPS 86/295/EEC and FOPS 86/296/EEC Directives. Toughened glass all round. Tinted with laminated roof screen. Roof bars, front screen and roof screen wipers and heater/screen demister. Rear opening window with wash/wipe. Audio-visual warning system for coolant temperature, engine oil pressure, air-cleaner, battery charge, transmission oil temperature and pressure. Hourmeter and tachometer. Multi lever direct acting hydraulic control levers with joystick control of lift and crowd, gear lever, parkbrake. Throttle and brake pedals. Adjustable deluxe suspension seat.

Load moment indicator: Automatic eye level audio-visual load moment indicator warning system receiving a signal from a load sensor housed on the rear axle. This system continuously monitors the machine's forward stability and leaves the operator in control at all times.

STEERING

Full power hydrostatic steering. Permanent 4WS with 32° lock front and rear axles provides exceptional manoeuvrability. 4WS is provided by a steer priority flow from the main hydraulic pump. Flow is directed through a steer alignment valve to double acting steer rams (1 per axle).

Steering option: Three steer mode options: front wheel steer; all wheel steer; crab steer; operated from in the cab by a selection switch, with automatic alignment.

OPTIONS AND ACCESSORIES

Options: Low cab, working lights, reversing light, reverse alarm, rotating flashing beacon, fire extinguisher, front screen guard, tinted glass, mechanical or hydraulic tow hitch for maximum gross weight of 5 tonnes. Complete with trailer light socket and trailer tip hydraulics, hydraulic pin locking for attachments, 2 boom end auxiliary services. Low ground pressure bearing tyres, spark arrester, catalyst, air conditioning, limited slip differential in front and rear axle.

Attachments: 525-50 is available with hydraulic quickhitch. Contact your local dealer for details of the comprehensive range.



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And with a global sales and service network of over 400 distributors and agents, the company exports over 70% of its production to all five continents.

Through setting the standards by which others are judged, JCB has become one of Britain's most impressive success stories.



JCB LOADALL | 525-50M



FAST FACTS

JCB Military Loadall

- Compact machine designed to work where access and headroom are restricted including ISO containers
- Lifts 2,500kg to a height of 5.0 metres and 1,000kg to full forward reach
- Permanent 4 wheel drive and steering on 4 equal sized wheels for great traction and turning circle
- Military specific options enables correct specification machine for all applications



High Performance
by Design

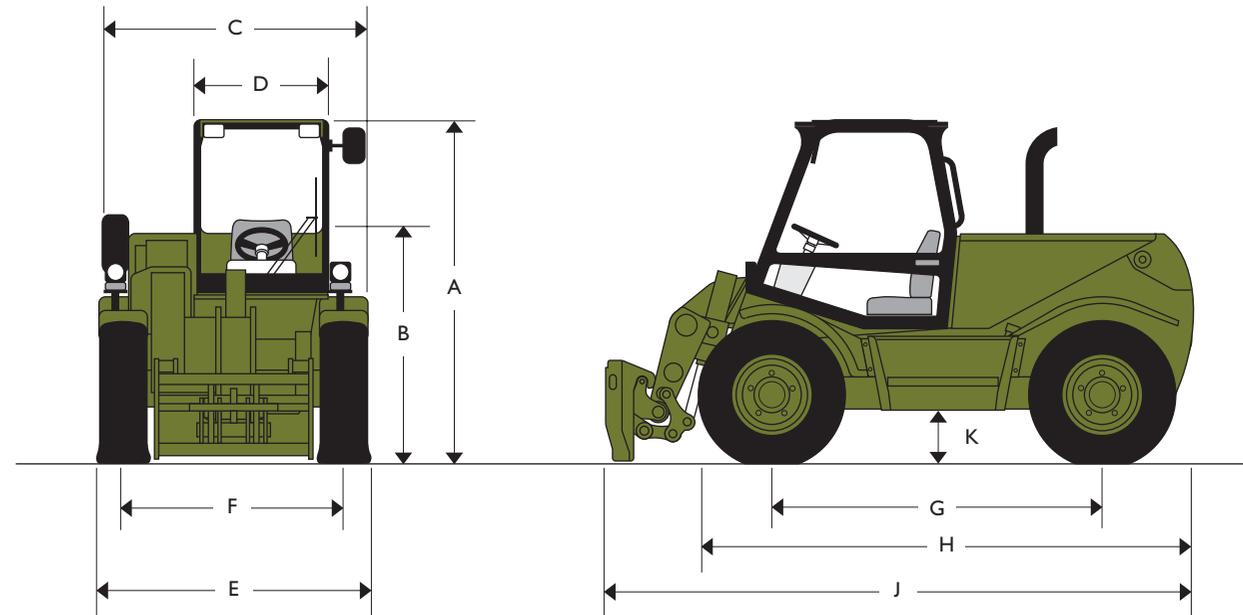




JCB LOADALL | 525-50 MILITARY



MAX. PAYLOAD: 2.5 tonnes (5510lb)
 MAX. LIFT HEIGHT: 5.0 metres (16ft-5in)
 MAX. HORSEPOWER: 57.5/74.6 kW (77/100hp)



STANDARD STATIC DIMENSIONS

Machine model	525-50M
	m (ft-in)
A Overall height (std cab)	2.19 (7-2)
B Height to top of steering wheel	1.57 (5-2)
C Overall width	1.82 (6-0)
D Inside width of cab	0.83 (2-9)
E Width over tyres	1.82 (6-0)
F Front track	1.49 (4-11)
G Wheelbase	2.00 (6-7)
H Overall length to front tyres	3.13 (10-3)

Machine model	525-50M
	m (ft-in)
J Overall length to front carriage	3.62 (11-10)
K Ground clearance	0.36 (1-2)
Outer turn radius over tyres	3.71 (12-1)
Obstruction/departure angle with/without quickhitch	30°/58°
Weight	kg (lb) 5400 (11904)
Power to weight ratio 57.5kW (77hp) Engine	9.8kW/tonne
Tyres – Michelin XM37	335 x 80 R18

STANDARD LIFT PERFORMANCE

Machine Model	525-50M
Lift capacity to full height	kg (lb) 2500 (5510)
Lift capacity at full reach	kg (lb) 1000 (2204)
Lift height	m (ft-in) 5.00 (16-5)
Reach at max lift height	m (ft-in) 0.50 (1-8)
Maximum forward reach	m (ft-in) 2.82 (9-3)
Reach with 1 tonne load	m (ft-in) 2.82 (9-3)
Placing height	m (ft-in) 4.60 (15-1)

Complies with stability test EN 1459 Annex B.

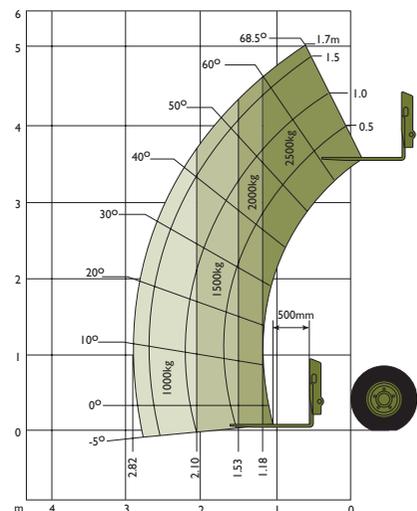


JCB LOADALL | 525-50 MILITARY

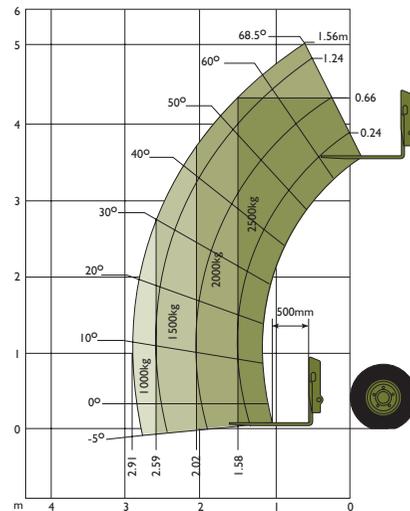


LIFT PERFORMANCE

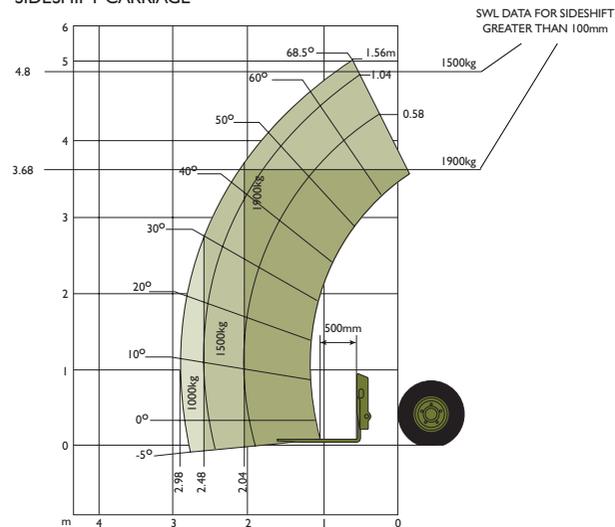
STANDARD CARRIAGE ONLY



FOR MACHINES FITTED WITH 200MM STROKE SIDESHIFT CARRIAGE



FOR MACHINES FITTED WITH 1200MM STROKE SIDESHIFT CARRIAGE



SWL DATA FOR SIDESHIFT LESS THAN 100mm

LOADER PERFORMANCE

Machine Model	525-50M	
	Standard GP bucket	
Bucket rated capacity	m ³ (yd ³)	0.90 (1.20)
Bucket struck capacity	m ³ (yd ³)	0.76 (1.02)
Breakout force	kgf (lbf)	2800 (6172)
Dump height (max)	m (ft-in)	4.46 (14-6)
Dump angle at max height	degrees	40°
Loadover height (max)	m (ft-in)	5.09 (16-8)
Rollback angle at ground	degrees	40°
Carriage rotation angle (total)	degrees	150°
Payload (max)	kg (lb)	1620 (3571)
Bucket width	m (ft-in)	1.95 (6-5)

ENGINE

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Easily replaceable pre-finished dry liners, five bearing, heat treated crankshaft. Expansion controlled pistons.

Two-stage, dry type air filter with primary and safety elements.

Engine conforms with EC mobile off-highway emissions regulations (stage 1).

Engine options	525-50M	
Displacement	ltr (in ³)	4.20 (256)
No. of cylinders		4
Bore size	mm (in)	103 (4.06)
Stroke	mm (in)	127 (5)
Aspiration	Naturally aspirated	
Power rating @ 2000rpm		
Gross SAE J1349	kW (HP)	57.5 (77)
Torque rating @ 1200rpm		
SAE J1349	Nm (lbf ft)	290 (214)
Noise level directive 2000/14/EC	dBA	104

TRANSMISSION

JCB Syncro Shuttle transmission incorporating torque converter, reversing shuttle and all synchromesh 4-speed gearbox in one resiliently mounted unit.

Electro-hydraulic direction control through a steering column mounted switch for modulated forward/reverse shuttling.

Gear lever and loader control transmission disconnect switches for fast gearchanging.

Travel speed 30km/h (18mph).

Front and rear axles: Epicyclic hub reduction type with drop box on front axle. 4WS and permanent 4WD.

SAFETY CHECK VALVES

Fitted to carriage tilt, telescopic and boom lift rams.

High Performance
by Design



JCB LOADALL | 525-50 MILITARY



BRAKES

Service brakes: Hydraulically activated, power assisted multi disc type brakes. They are oil immersed for long life and fade free braking. Mounted within the planetary hub means that the brakes are direct acting to each wheel, greatly increasing deceleration and eliminating skid potential.

Parking brake: Is an electro/hydraulically operated oil immersed multi disc brake on the transmission output shaft and will hold the machine on 1 in 4 gradients.

STEERING

Full power hydrostatic steering. Permanent 4WS with 32° lock front and rear axles provides exceptional manoeuvrability. 4WS is provided by a steer priority flow from the main hydraulic pump. Flow is directed through a steer alignment valve to double acting steer rams (1 per axle).

Steering option: Three steer mode options: front wheel steer; all wheel steer; crab steer; operated from in the cab by a selection switch, with automatic alignment.

SERVICE CAPACITIES

Fuel tank	litres (UK gal)	90 (9.5)
Hydraulic tank	litres (UK gal)	70 (15.5)
Coolant	litres (UK gal)	20 (4.4)

ELECTRICS

Option 1: 12 V negative earth. 103 AH heavy duty battery with isolator. 65 amp alternator. Full road lighting. Direction indicators. Hazard warning.

Option 2: 24 V negative earth. Twin 115 AH heavy duty battery. 55amp alternator. Full road lighting. Direction indicators. Hazard warning. Lockable battery isolator. Inter-vehicle start socket. heated side and rear screen.

TRANSPORTABILITY

Air transportable in C130, C141 and C-5. Can be slung beneath heavy lift helicopter. Recovery points front and rear. Lifting and tie down points.

ATTACHMENTS

Hydraulic or mechanical quickhitch tool carrier allows rapid change of front end attachments. Standard class 2 carriage. 200mm stroke or 1200mm stroke sideshift fork frame allows placement and recovery of loads from either side of an ISO container. 0.9m³ shovel for loose material handling. Standard carriage load guard.

HYDRAULICS

Single gear pump, with suction strainer and filter. One boom end auxiliary hydraulic service fitted as standard.

Operating system pressure	bar (psi)	241 (3500)
Flow at system pressure (@ 2200rpm)	ltr/min	65
Cycle times		seconds
Boom raise		7.4
Boom lower		5.3
Extend		5.7
Retract		3.2
Bucket dump		2.3
Bucket crowd		3.2

CAB

Quiet, safe and comfortable cab conforms to ROPS 86/295/EEC and FOPS 86/296/EEC Directives. Toughened glass all round. Tinted with laminated roof screen. Roof bars, front screen and roof screen wipers and heater/screen demister. Rear opening window with wash/wipe. Audio-visual warning system for coolant temperature, engine oil pressure, air-cleaner, battery charge, transmission oil temperature and pressure. Hourmeter and tachometer. Multi lever direct acting hydraulic control levers with joystick control of lift and crowd, gear lever, parkbrake. Throttle and brake pedals. Adjustable deluxe suspension seat with retractable seat belt.

Load moment indicator: Automatic eye level audio-visual load moment indicator warning system receiving a signal from a load sensor housed on the rear axle. This system continuously monitors the machine's forward stability and leaves the operator in control at all times.

BOOM AND CARRIAGE

Boom is manufactured from high tensile steel.

Low maintenance, hard wearing pads.

JCB tool carrier parallel lift carriage with pin locking accepts fork frame with integral pallet forks and a wide range of attachments.

OPTIONS AND ACCESSORIES

Options: Low cab, working lights, reversing light, reverse alarm, rotating flashing beacon, fire extinguisher, front screen guard, tinted glass, mechanical or hydraulic tow hitch for maximum gross weight of 5 tonnes. Complete with trailer light socket and trailer tip hydraulics, hydraulic pin locking for attachments, 2 boom end auxiliary services. Low ground pressure bearing tyres, spark arrester, catalyst, air conditioning, limited slip differential in front and rear axle.

Category 'C' protection, 4 tonne NATO tow pintle, jack box and 5 tonne jack, tool box, spare wheel carrier, gun net rack, rifle holder, cab mounted search lights, light guards, winterisation, lifting eyes.





Service Manual

LOADALL

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Introduction

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.

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 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 & Framework** ...etc.

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

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

READ the section contents to locate machine types, machine type identification **IS NOT** listed on individual pages.

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

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.

This Service Manual covers the following machines:

520-50 (520 N. Am.) - from Machine Serial Number 754001

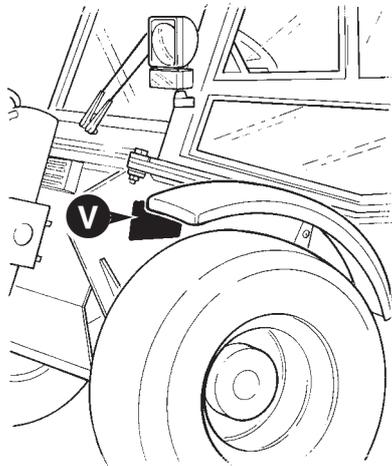
525-50 - from Machine Serial Number 789308

525S - from Machine Serial Number TBA

Contents	Page No.
Identification	1 - 1
Torque Settings	2 - 1
Service Tools	
- Numerical List	3 - 1
- Section C	4 - 1
- Section E	5 - 1
- Section F	6 - 1
- Section H	7 - 1
- Section K	7 - 1
Sealing and Retaining Compounds	8 - 1

Identification Plate

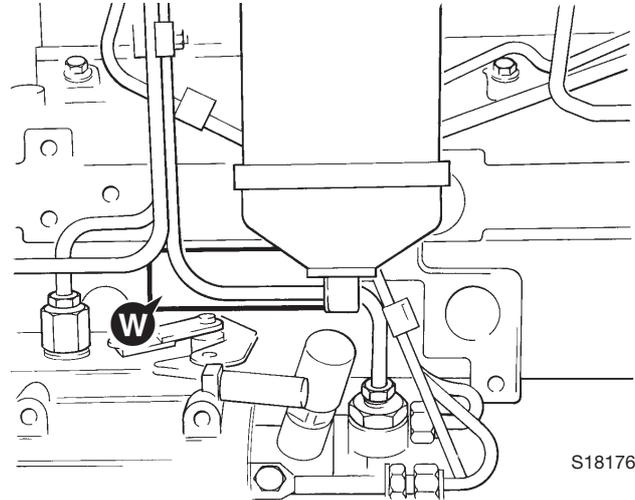
Your machine has an identification plate **V** mounted as shown. The serial numbers of the machine and its major units are stamped on the plate.



S245621

Unit Identification

The engine serial number is stamped on a label **W** which is fastened to the right side of the cylinder block, near the fuel filter.



S181760

Explanation of Vehicle Identification Number (VIN)

SLP52050RE0754001

A B C D E

A	World Manufacturer Identification	SLP = JCB
B	Machine Model	520-50
C	Year of Manufacture	S
	P = 1993	V = 1997
	R = 1994	W = 1998
	S = 1995	X = 1999
	T = 1996	Y = 2000
D	Manufacturing Location	E = England
E	Machine Serial Number	0754001

Machine Model Explanation

520 - 50
F G H

- F** 500 Series machine range
- G** 2.0 tonnes lift capacity
- H** 5.0 meters lift height

The serial number of each major unit is also stamped on the unit itself. If a major unit is replaced by a new one, the serial number on the identification 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.

The machine and engine serial numbers can help identify exactly the type of equipment you have.

Typical Engine Identification Number

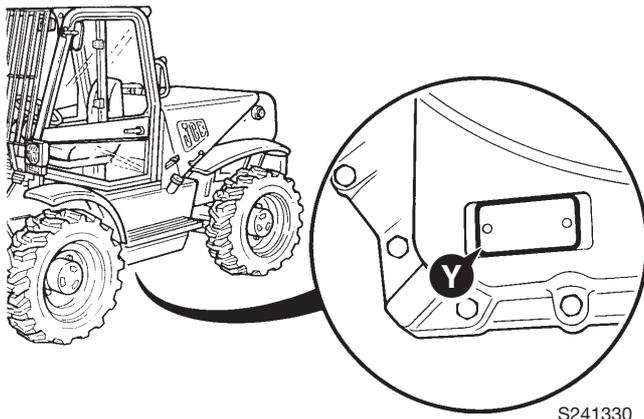
AA 50261 U 500405 P
A B C D E

- A** Engine Type
AA = 4 cylinder naturally aspirated
AB = 4 cylinder turbo
- B** Build Number
- C** Country of Origin
- D** Engine Sequence Number
- E** Year of Manufacture

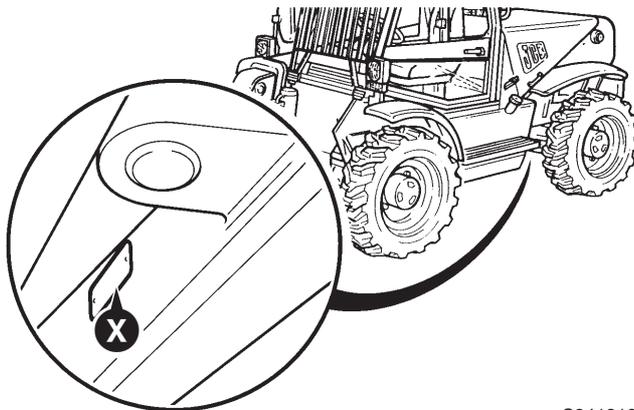
The Transmission serial number is stamped on label **Y** which is mounted on the rear face.

The rear axle serial number is stamped on plate **X** mounted to the front face of the axle.

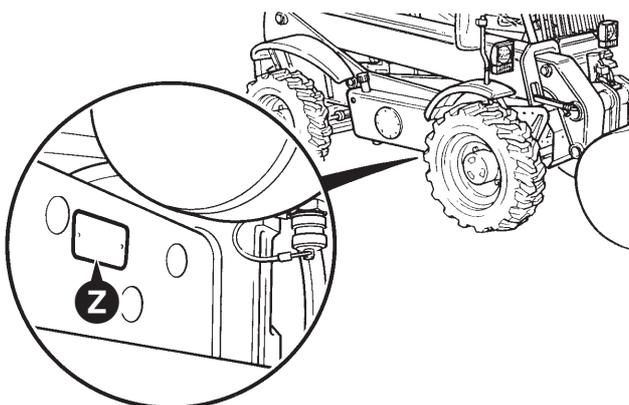
The front axle serial number is stamped on plate **Z** mounted on the rear face of the arm.



S241330



S241310



S241320

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	Torque Settings		
			Nm	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	Torque Settings		
			Nm	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

Rivet Nut Bolts/Screws

Bolt Size	(mm)	Torque Settings (for steel rivet nuts)		
		Nm	kgf m	lbf ft
M3	(3)	1.2	0.12	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

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

Service Tools

Numerical List		Page No	Page No		Page No
1406/0011	Bonded Washer	5-1	892/00223	Hand Pump	5-3
1406/0014	Bonded Washer	5-1	892/00225	Adapter - Impulse Extractor	6-2
1406/0021	Bonded Washer	5-1	892/00253	Pressure Test Kit	5-1
1406/0029	Bonded Washer	5-1	892/00255	1/4" BSP Test Point	5-3
1604/0003	Adapter	5-3	892/00256	3/8" BSP Test Point	5-3
1604/0004	Adapter	5-3	892/00257	1/2" BSP Test Point	5-3
1604/0006	Adapter	5-1	892/00258	5/8" BSP Test Point	5-3
1606/0003	Adapter	5-3	892/00259	1" BSP Test Point	5-3
1606/0004	Adapter	5-3	892/00260	1 1/4" BSP Test Point	5-3
1606/0007	Adapter	5-3	892/00261	5/8" UNF Test Point	5-3
1606/0008	Adapter	5-3	892/00262	1/4" M BSP 1/4" F BSP	5-1
1606/0009	Adapter	5-3	892/00263	5/8" M BSP 5/8" F BSP	5-1
1606/0012	Adapter	5-3	892/00264	3/4" M BSP 3/4" F BSP	5-1
1606/0014	Adapter	5-3	892/00265	1" M BSP 1" F BSP	5-1
1606/0015	Adapter	5-3	892/00268	Flow Monitoring Unit	5-1
1606/0017	Adapter	5-3	892/00269	Sensor Head	5-1
1612/0006	Adapter	5-1	892/00270	Load Valve	5-1
4101/0251	Threadlocker and Sealer	8-1	892/00271	Adapter	5-1
4101/0451	Threadlocker	8-1	892/00272	Adapter	5-1
4101/0552	Threadlocker and Sealer (High Strength)	8-1	892/00274	Adapter	5-3
4101/0651	Retainer (High Strength)	8-1	892/00275	Adapter	5-1
4102/0551	High Strength Threadlocker	8-1	892/00276	Adapter	5-1
4102/1201	Multi-Gasket	8-1	892/00277	Adapter	5-1
4102/1951	Threadseal	8-1	892/00279	Gauge	5-3
4104/0251	Activator (Aerosol)	8-1	892/00281	AVO Meter	4-1
4104/0253	Activator (Bottle)	8-1	892/00282	Shunt	4-1
4104/1557	Cleaner/Degreaser	8-1	892/00283	Tool Kit Case	4-1
816/00189	Blanking Cap	5-2	892/00284	Digital Tachometer	4-1
816/00190	Blanking Cap	5-2	892/00285	Hyd. Oil Temperature Probe	4-1
816/00193	Blanking Cap	5-2	892/00286	Surface Temperature Probe	4-1
816/00196	Blanking Cap	5-2	892/00295	End Float Setting Tool	6-1
816/00197	Blanking Cap	5-2	892/00301	Flow Test Adapter	6-1
816/00294	Blanking Cap	5-2	892/00302	Flow Test Adapter	6-1
816/15118	Pressure Test Adapter	5-3	892/00304	Flow Test Adapter	6-1
816/20008	Adapter	5-1	892/00333	Heavy Duty Socket	6-2
816/55038	Pressure Test Adapter	5-1	892/00706	Test Probe	5-3
816/55040	Pressure Test Adapter	5-1	892/00817	Heavy Duty Socket	6-2
816/50043	'T' Adapter	5-2	892/00818	Heavy Duty Socket	6-2
892/00039	Spool Clamp	5-2	892/00819	Heavy Duty Socket	6-2
892/00041	De-glazing Tool	7-1	892/00891	Seal Fitting Adaptor	6-2
892/00047	'T' Adapter	5-2	892/00893	Torque Converter Alignment Bar	6-2
892/00048	'T' Adapter	5-2	892/00923	Test Block for ARV	5-3
892/00049	'T' Adapter	5-2	992/02800	ARV Extractor	5-2
892/00051	'T' Adapter	5-2	992/04000	Torque Multiplier	6-2
892/00055	Blanking Plug	5-2	992/04800	Drive Coupling Spanner	6-1
892/00056	Blanking Plug	5-2	992/07603	Replacer- Bearing Cup	6-1
892/00057	Blanking Plug	5-2	992/07608	Bearing Adapter	6-1
892/00058	Blanking Plug	5-2	992/07609	Bearing Adapter	6-1
892/00059	Blanking Plug	5-2	992/07610	Bearing Adapter	6-1
892/00060	Blanking Plug	5-2	992/07611	Bearing Adapter	6-1
892/00071	Adapter	5-3	992/07612	Bearing Adapter	6-1
892/00074	Female Connector	5-2	992/07613	Bearing Adapter	6-1
892/00075	Female Connector	5-2	992/09500	Spanner	5-2
892/00076	Female Connector	5-2	992/09700	Spanner	5-2
892/00077	Female Connector	5-2	992/10100	Spool Clamp	5-2
892/00121	Discharge Tester	4-1	992/10900	Test Harness for S.L.I	4-1
892/00137	Micro-Bore Hose	5-3	993/59300	2/4 Wheel Pressure Tester & Clamp	6-2
892/00179	Bearing Press	6-1	993/59500	Adapter - Impulse Extractor	6-2
892/00180	Seal Fitting Tool	7-1	993/99412	Adaptor Harness	4-1
892/00181	Plastic Boss	7-1			

Service Tools (cont'd)**Numerical List****Page No**

The following parts are replacement items for kits and would normally be included in the kit numbers above.

Replacement item for kit no. 892/00180

892/00181 Replacement Boss 7-1

Replacement item for kit no. 892/00253

892/00201 Replacement Gauge 5-1

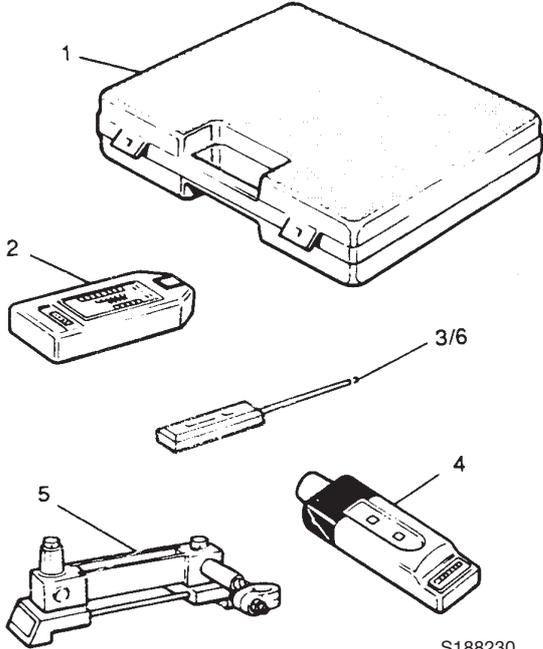
892/00202 Replacement Gauge 5-1

892/00203 Replacement Gauge 5-1

892/00254 Replacement Hose 5-1

Service Tools

Section C - Electrics

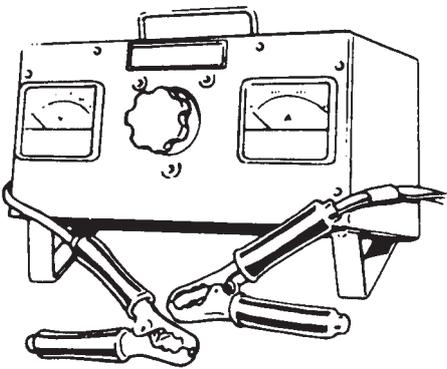


1
2
3/6
4
5

AVO Test Kit

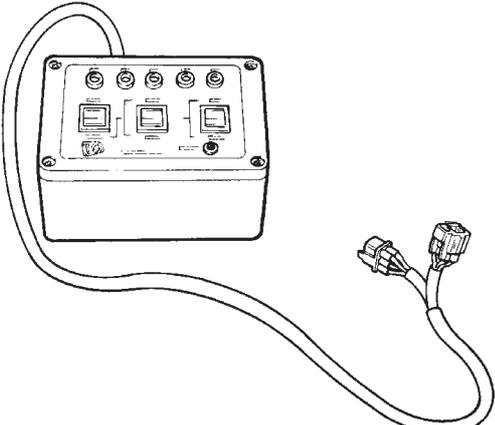
1	892/00283	Tool Kit Case
2	892/00281	AVO Meter
3	892/00286	Surface Temperature Probe
4	892/00284	Venture Microtach Digital Tachometer
5	892/00282	100 amp Shunt - open type
6	892/00285	Hydraulic Temperature Probe

S188230



892/00121 High Rate Discharge Tester (400 amps) for testing battery condition

S188240



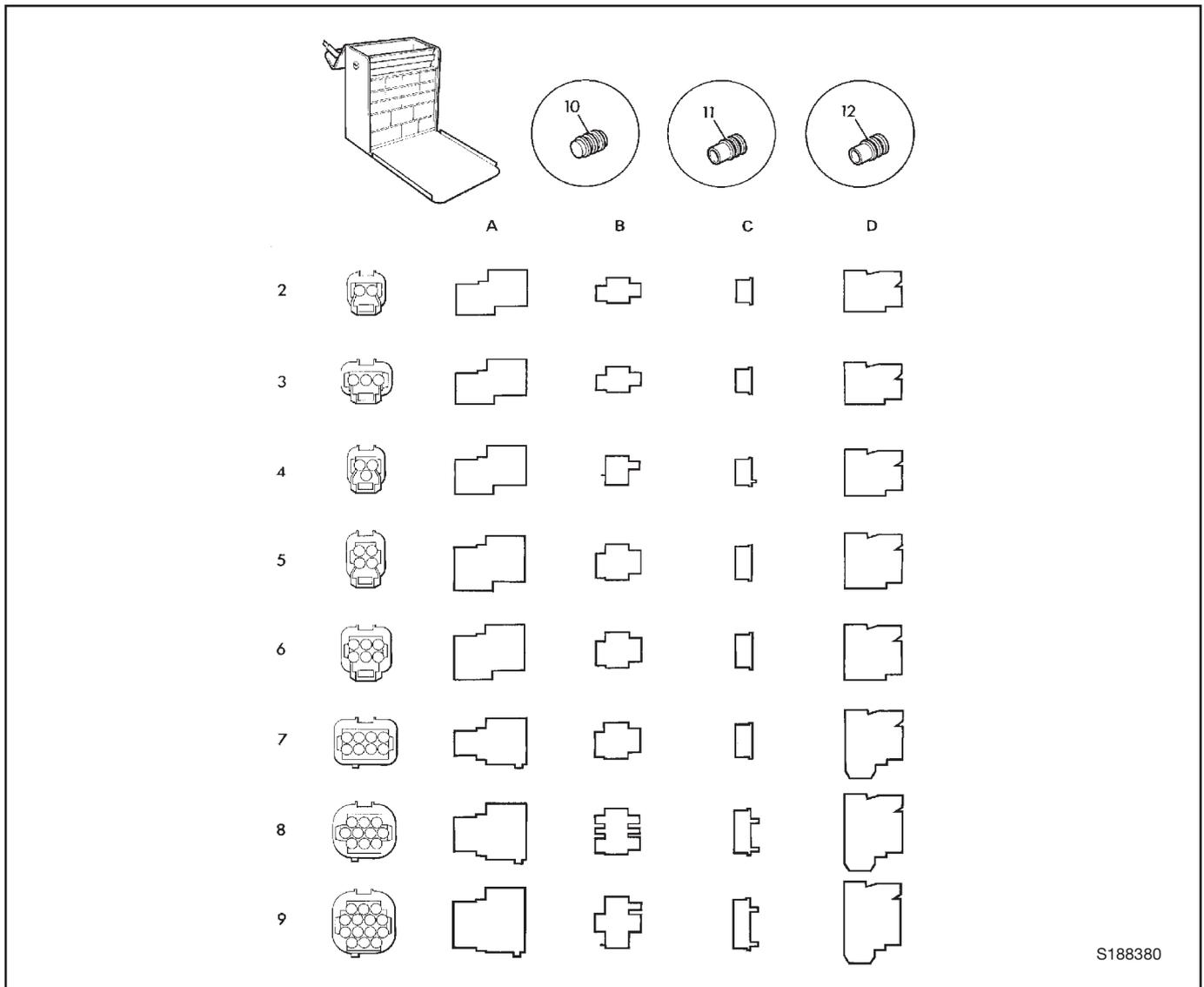
892/00905 Test Box for Safe Load Indicator

S244961

Service Tools

Section C - Electrics

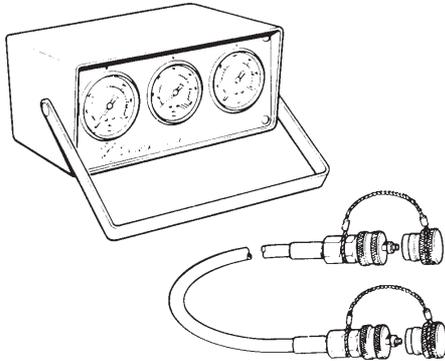
	Electrical Repair Kit		
2A :7212/0002	2 Way Pin Housing	6A :7216/0002	6 Way Pin Housing
2B :7212/0004	2 Way Pin Retainer	6B :7216/0004	6 Way Pin Retainer
2C :7212/0003	2 Way Socket Retainer	6C :7216/0003	6 Way Socket Retainer
2D :7212/0001	2 Way Socket Connector	6D :7216/0001	6 Way Socket Connector
3A :7213/0002	3 Way Pin Housing	7A :7218/0002	8 Way Pin Housing
3B :7213/0004	3 Way Pin Retainer	7B :7218/0004	8 Way Pin Retainer
3C :7213/0003	3 Way Socket Retainer	7C :7218/0003	8 Way Socket Retainer
3D :7213/0001	3 Way Socket Connector	7D :7218/0001	8 Way Socket Connector
4A :7213/0006	3 Way Pin Housing (DT)	8A :7219/0002	10 Way Pin Housing
4B :7213/0008	3 Way Pin Retainer (DT)	8B :7219/0004	10 Way Pin Retainer
4C :7213/0007	3 Way Socket Retainer (DT)	8C :7219/0003	10 Way Socket Retainer
4D :7213/0005	3 Way Socket Connector (DT)	8D :7219/0001	10 Way Socket Connector
5A :7214/0002	4 Way Pin Housing	9A :7219/0006	14 Way Pin Housing
5B :7214/0004	4 Way Pin Retainer	9B :7219/0008	14 Way Pin Retainer
5C :7214/0003	4 Way Socket Retainer	9C :7219/0007	14 Way Socket Retainer
5D :7214/0001	4 Way Socket Connector	9D :72190005	14 Way Socket Connector
		10 :7210/0001	Dummy Plug
		11 :7210/0002	Wire Seal (1.4 - 2.2 mm dia.)
		12 :7210/0003	Wire Seal (2.2 - 2.9 mm dia.)



S188380

Service Tools (cont'd)

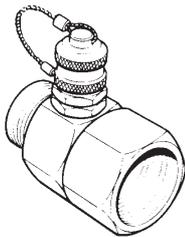
Section E - Hydraulics



Hydraulic Circuit Pressure Test Kit

892/00253	Pressure Gauge Kit
892/00201	Replacement Gauge 0-20 bar (0-300 lbf/in ²)
892/00202	Replacement Gauge 0-40 bar (0-600 lbf/in ²)
892/00203	Replacement Gauge 0-400 bar (0-6000 lbf/in ²)
892/00254	Replacement Hose

S188120



S188130

*Pressure Test 'T' Adaptors

892/00262	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



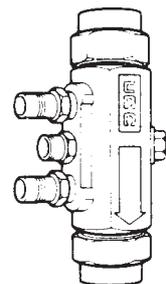
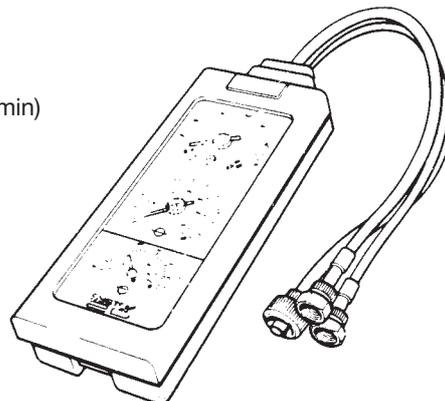
S188140

* Bonded Washers

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

Flow Test Equipment

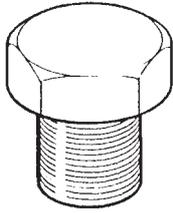
892/00268	Flow Monitoring Unit
892/00269	Sensor Head 0 to 100 l/min (0 to 22 UK gal/min)
892/00270	Load Valve
1406/0021	Bonded Washer
1604/0006	Adapter 3/4 in M x 3/4 M BSP
1612/0006	Adapter 3/4 in F x 3/4 M BSP
892/00271	Adapter 3/4 in F x 5/8 M BSP
892/00272	Adapter 5/8 in F x 3/4 M BSP
816/20008	Adapter 3/4 in F x 1/2 M BSP
892/00275	Adapter 1/2 in F x 3/4 M BSP
892/00276	Adapter 3/4 in F x 3/8 M BSP
892/00277	Adapter 3/4 in F x 3/4 M BSP



S188150

Service Tools (cont'd)

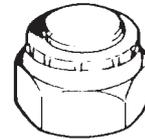
Section E - Hydraulics



S193870

Female Cone Blanking Cap

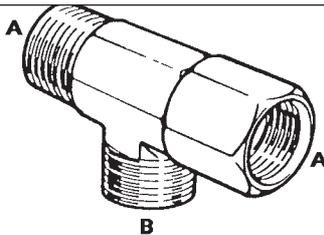
892/00055	1/4 in. BSP
892/00056	3/8 in. BSP
892/00057	1/2 in. BSP
892/00058	5/8 in. BSP
892/00059	3/4 in. BSP
892/00060	1 in. BSP



S193880

Male Cone Blanking Cap

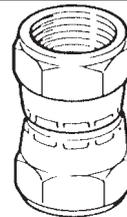
816/00294	1/4 in. BSP
816/00189	3/8 in. BSP
816/00190	1/2 in. BSP
816/00197	5/8 in. BSP
816/00196	3/4 in. BSP
816/00193	1 in. BSP



S193890

T' Adapters

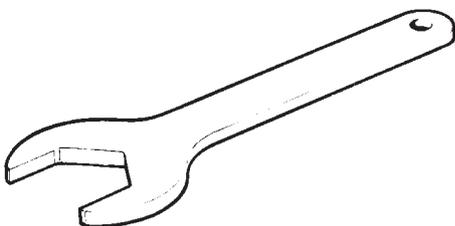
892/00047	3/8 in. BSP (A) x 1/4 in. BSP (B)
892/00048	1/2 in. BSP (A) x 1/4 in. BSP (B)
892/00049	5/8 in. BSP (A) x 1/4 in. BSP (B)
816/50043	3/4 in. BSP (A) x 1/4 in. BSP (B)
892/00051	1 in. BSP (A) x 1/4 in. BSP (B)



S193900

Female Connectors

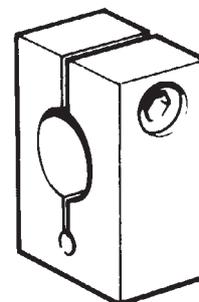
892/00074	3/8 in. BSP x 3/8 in. BSP
892/00075	1/2 in. BSP x 1/2 in. BSP
892/00076	5/8 in. BSP x 5/8 in. BSP
892/00077	3/4 in. BSP x 3/4 in. BSP



S192420

Hexagon Spanners for Ram Pistons and End Caps

992/09500	75mm A/F
992/09700	95mm A/F



S192410

Spool Clamps

892/00039	Spool Clamp
992/10100	Spool Clamp
992/02800	ARV Extractor

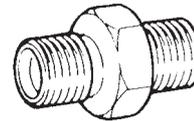
S188150

Service Tools (cont'd)

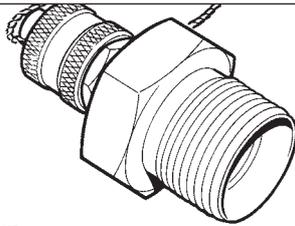
Section E - Hydraulics

Male Adapters - BSP x BSP

1606/0003	$\frac{3}{8}$ in. x $\frac{1}{4}$ in.
1604/0003	$\frac{3}{8}$ in. x $\frac{3}{8}$ in.
892/00071	$\frac{3}{8}$ in. x $\frac{3}{8}$ in. taper
1606/0004	$\frac{1}{2}$ in. x $\frac{1}{4}$ in.
1606/0007	$\frac{1}{2}$ in. x $\frac{3}{8}$ in.
1604/0004	$\frac{1}{2}$ in. x $\frac{1}{2}$ in.
1606/0017	$\frac{5}{8}$ in. x $\frac{1}{2}$ in.
1606/0008	$\frac{3}{4}$ in. x $\frac{3}{8}$ in.
1606/0009	$\frac{3}{4}$ in. x $\frac{1}{2}$ in.
1604/0006	$\frac{3}{4}$ in. x $\frac{3}{4}$ in.
1606/0012	$\frac{3}{4}$ in. x 1 in.
1606/0014	$\frac{3}{4}$ in. x $1\frac{1}{4}$ in.
1606/0015	1 in. x $1\frac{1}{4}$ in.

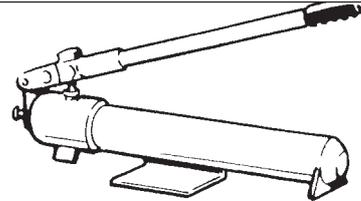


S193860



Pressure Test Adapters

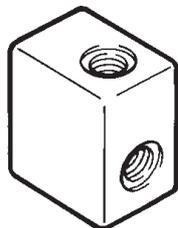
892/00255	$\frac{1}{4}$ in. BSP x Test Point
892/00256	$\frac{3}{8}$ in. BSP x Test Point
892/00257	$\frac{1}{2}$ in. BSP x Test Point
892/00258	$\frac{5}{8}$ in. BSP x Test Point
816/15118	$\frac{3}{4}$ in. BSP x Test Point
892/00259	1 in. BSP x Test Point
892/00260	$1\frac{1}{4}$ in. BSP x Test Point
892/00261	$\frac{5}{8}$ in. UNF x Test Point



S193850

Hand Pump Equipment

892/00223	Hand Pump
892/00137	Micro-bore Hose $\frac{1}{4}$ in BSP x 5 metres
892/00274	Adapter $\frac{1}{4}$ in M BSP x $\frac{3}{8}$ in M BSP Taper
892/00262	$\frac{1}{4}$ in M BSP x $\frac{1}{4}$ in F BSP x Test Point
892/00706	Test Probe
892/00279	Gauge 0 - 400 bar (0-6000 lbf/in ²)



S270650

*892/00923

Test Block for A. R. V

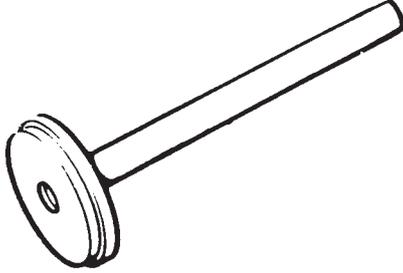
Service Tools (cont'd)

Section F - Transmission



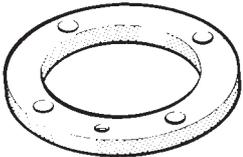
S188160

992/07608 Bearing Adapter
 992/07609 Bearing Adapter
 992/07610 Bearing Adapter
 992/07611 Bearing Adapter
 992/07612 Bearing Adapter
 992/07613 Bearing Adapter



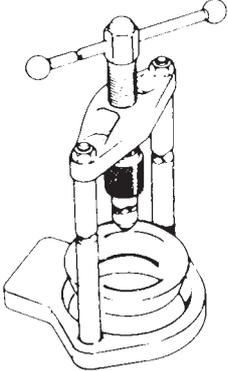
S188170

992/07603 Replacer- Bearing Cup



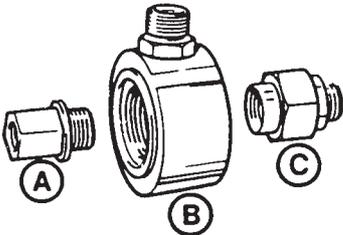
S188190

892/00295 End Float Setting Tool



S188200

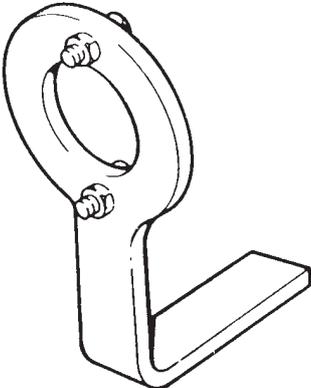
892/00179 Bearing Press



S188210

892/00237 Flow Test Adaptor Complete

A 892/00304 Flow Test Adapter
B 892/00301 Flow Test Adapter
C 892/00302 Flow Test Adapter

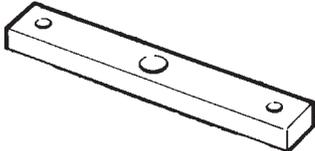


S188220

992/04800 Flange Spanner
 For locking pinion flange while nut is
 slackened or torque set

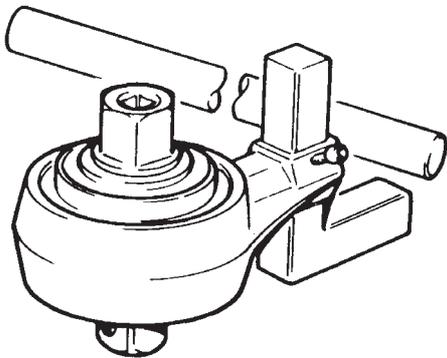
Service Tools (cont'd)

Section F - Transmission



892/00893
Torque Converter Alignment Bar

S228921



992/04000 Torque Multiplier S197030

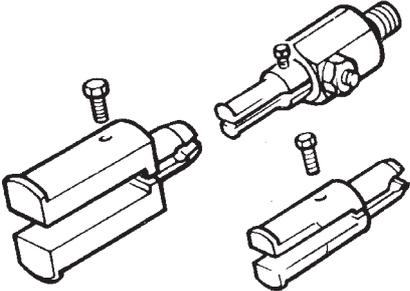
Use in conjunction with a torque wrench to give a 5:1 multiplication when tightening pinion nuts etc.



S197250

Heavy Duty Sockets for Durlok bolts

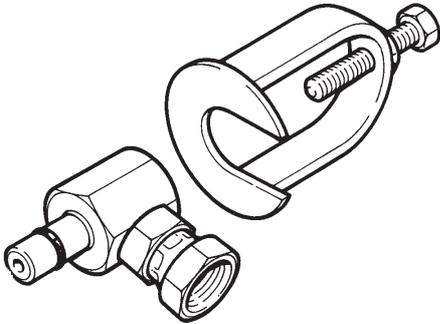
892/00817 17mm A/F x 3/4in square drive
 892/00818 22mm A/F x 3/4in square drive
 892/00819 15mm A/F x 1/2in square drive
 892/00333 19mm A/F x 3/4in square drive



892/00225 Adapter - Impulse Extractor
 Small 17mm to 25mm
 Medium 25mm to 45mm
 Large 45mm to 80mm

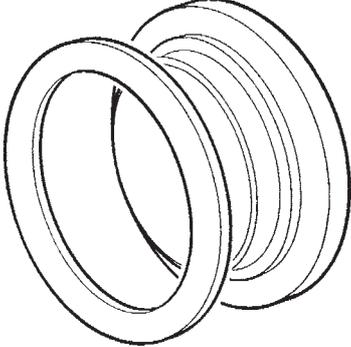
993/59500 Adapter - Extractor

S197080



993/59300
2/4 Wheel Drive Clutch Pressure Test Adaptor & Clamp

S196750



892/00891
Seal Fitting Adaptor

S227760

Sample of manual. Download All 290 pages at:

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