SPARE PARTS SUPPLEMENT LIST

4S-190 DIGGER DUMPER

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INTRODUCTION

This Parts Supplement Manual is a re-print of the manual last published in 1981 and contains some amended part numbers. It is important that it is used in conjunction with the TWOSE 190 Digger and 4S Dumper Operators Manuals and Parts Lists.

Health & Safety legislation and working practices applicable to Site Dumpers, both 2 and 4 wheel Drive, Rigid Chassis and Articulated Chassis have changed considerably in the years since this manual was last published and immediately following this Introduction are notes on the Safe Use of Site Dumpers. These notes supersede and replace all previous 'Dumper Safety' notes issued with Winget 4S Two Wheel Drive Dumpers

Reference is made on a number of pages to 'bolt c/w nut and washer', this no longer the case, fixings such as nuts, bolts, screws and washers should be ordered as individual items. A number of Whitworth and B.S.F fixings are now no longer available, in these cases the nearest metric equivalent size will be supplied.

The contents of this manual although correct at the time of publication, may be subject to alteration by the manufacturers without notice and Winget Limited can accept no responsibility for any errors or omissions contained within the following pages. Nor can we accept any liability whatsoever arising from the use of this manual howsoever caused.

Winget Limited operate a policy of continuous product development. Therefore, some illustrations or text within this publication may differ from your machine.

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Safety is the responsibility of all persons working with this machine. Think "safety" at all times. ***Read and remember the contents of this handbook.***

The safe working recommendations for specific tasks are found with the instructions for the relevant operation in this Handbook.

MACHINE MODIFICATION

WARNING Any modifications to the machine will affect its working parameters and safety factors. Refer to the Manufacturers before fitting any non-standard equipment or parts.

The Manufacturers accept no responsibility for any modifications made after the machine has left the factory, unless previously agreed by the Manufacturers in writing; the Manufacturers will accept no liability for damage to property, personnel or the machine if failure is brought about due to such modifications, or fitment of spurious parts.

TRAINING

WARNING Only trained operators should use this machine.

Operators should hold an appropriate full motor vehicle driving licence and undergo both a safety awareness course and a driver training course for Site dumpers run by the C.ITB or equivalent body leading to the award of a CTA.

It is strongly recommended that operators read the H.S.E. publication "Safe Working with Small Dumpers" which is available from government bookshops (HMSO) or from other bookshops quoting the following number ISBN O11 8836935. Another useful publication is British Standard number BS 6264, "Procedure for Operator Training For Earth Moving Machinery" available from the British Standard Institution.

RUNNING-IN

WARNING While a gradual 'running-in' of a new engine is not necessary, it is extremely important that the instructions given in *Section 2 "Operation"* on "Running-in a new engine" should be followed very closely during the first fifty hours of operation.

DRIVING

WARNING *NEVER* use the machine for purposes other than those for which it was designed. This machine was designed to carry loads such as soil, clay, sand, wet concrete, stone or other similar materials. It was not designed to carry loads which may move around in the skip uncontrollably, nor to carry any loads or materials which overhang the skip in any way. If in any doubt as to the suitability of this machine for a particular task, contact your nearest Distributor or the Manufacturer for advice.

ALWAYS be aware of local and national regulations governing the use of the machine.

NEVER commence work with the machine until the "Daily (or every ten hours)" service checks have been made. (*See Service Section* for details)

ALWAYS check wheel nut tightness daily.

NEVER carry passengers.

Ensure that the seat is securely fixed to the machine. Where seat belt restraints are fitted as part of Rops/Fops protection they must be worn. Check that the seat belt is in good condition, free from cuts and frayed edges.

ALWAYS remain in the driving seat whenever the engine is running. Never attempt to operate any controls unless seated.

ALWAYS apply the parking brake before leaving the driver's seat.

NEVER dismount with the engine running, and never leave the machine unattended with the key in the starter switch.

When Battery Isolators are fitted they must be activated only when the engine is turned off except in cases of emergency.

Activating a Battery Isolator when the engine is running can result in damage to the electrical components and circuits.

NEVER fill the fuel or hydraulic tanks with the engine running.

ALWAYS drive only on surfaces that are known to be stable.

ALWAYS keep the floor plates and walkways clean.

NEVER drive the machine close to the edge of any excavation. Always use effective wheel stops to prevent the machine running close to the edge. Make sure that the stops are in proportion to the size of the wheels and are set sufficiently far enough back from the edge of any excavation to prevent the weight of the load causing a collapse.

NEVER adjust the tyre pressures in an attempt to improve traction on soft ground or obtain a softer ride on hard ground. Incorrectly adjusted tyres can affect the steering and handling characteristics.

NEVER attempt to free a machine which is 'bogged down' by pushing with the bucket of a backhoe loader, tracked excavator or other similar machine.

NEVER make unnecessary "crash stops" when travelling at speed, especially in forward direction.

NEVER work under an unpropped skip. If the dumper was supplied with a special skip support always ensure that it is used.

SKIPS AND LOADING

WARNING *NEVER* exceed the rated payload. The weights of all loads above skip water level must be checked.

NEVER remain on the machine when loading the skip with excavators or loaders. Stop the engine, apply the parking brake, dismount, and stand well clear.

ALWAYS ensure that the load is evenly distributed in the skip.

NEVER carry loads or heap materials in such a manner as to affect the forward vision.

ALWAYS take extra care when tipping non free running loads.

NEVER use the skip in a tipped position to bulldoze heaped materials level or to backfill material into excavations.

TOWING

WARNING *NEVER* attempt to start the engine of a dumper by towing or pushing.

Dumpers are not designed as towing vehicles. However, trailers may be towed provided that:

1 The combined weight of the trailer and its load does not exceed the dumper "drawbar pull of 250kg (2500N)" and dumper "drawbar load of 50kg (500N)".

2 Trailers may be towed in first gear on level dry ground, provided a purpose made towing pin is used.

3 The dumper skip must be loaded with half the rated payload to ensure tyre adhesion when braking.

NEVER tow loads up, down or across gradients.

GRADIENTS

WARNING *NEVER* operate ***Two Wheel Drive rigid chassis dumpers*** on any gradients which exceed 10% (1 in 10), or across gradients which exceed 10% (1 in 10).

ALWAYS remember that slippery or loose surface conditions can adversely affect safe machine operation, including braking, particularly on gradients.

ALWAYS choose routes that avoid steep, slippery or loose gradients.

NEVER coast down gradients. Always negotiate gradients in first gear.

ALWAYS drive forwards up gradients when loaded.

ALWAYS reverse down gradients when loaded.

ALWAYS keep the load facing uphill.

NEVER park on a gradient. If this is unavoidable, *ALWAYS* chock the wheels.

NEVER attempt to turn on a gradient

NEVER tow up, down or across a gradient.

NEVER operate high discharge or rotating skips on gradients.

HYDRAULICS

WARNING *ALWAYS* "Dump" residual pressure from the system before leaving the machine or before carrying out any maintenance or adjustments.

If maintenance work requires the skip to be in the raised position, then it must be raised and supported before dumping the pressure.

Dump pressure by switching off the engine, then moving the hydraulic control lever several times in each direction.

NEVER leave the machine unattended with pressure in the system.

ALWAYS purge hydraulic rams before commencing work. With the engine running operate the hydraulic control to fully extend and retract the rams.

ALWAYS practise the greatest cleanliness in maintaining hydraulic components.

SERVICING

WARNING *ALWAYS* report any defect at once, before an accident or consequential damage can occur.

ALWAYS conform to service schedules except where:

1 Warning lights or warning indicators call for immediate attention.

2 Adverse conditions necessitate more frequent servicing.

ALWAYS wear correctly fitting protective clothing. Loose or baggy clothing can be extremely dangerous when working on running engines or machinery.

ALWAYS, where possible, work on or close to engines or machinery only when they are stopped. If this is not practical, remember to keep tools, test equipment and all parts of your body well away from the moving parts.

ALWAYS "Dump" pressure from the hydraulic system before carrying out any kind of maintenance or adjustment. ***(see Service - Hydraulic system).***

ALWAYS avoid contact with exhaust pipes, exhaust manifolds and silencers when the engine is running; these can be very hot.

ALWAYS work out of doors, or in a well-ventilated area.

NEVER run an engine in an enclosed space. Exhaust fumes in enclosed areas can kill.

ALWAYS disconnect battery cables and remove battery before using an external charger, carrying out welding repairs or to prevent unauthorised usage when unattended or during a repair.

NEVER allow unqualified personnel to attempt to repair, remove or replace any part of the machine, or anyone to remove large or heavy components without adequate lifting tackle.

NEVER attempt to modify or repair Rops Frames or Fops Canopies by welding, drilling or any other means. Attempts to do so will invalidate Rops/Fops Certification.

ALWAYS obtain advice before mixing oils; some are incompatible. If in doubt drain and refill.

NEVER allow oils and fuels to come into regular contact with skin. This can lead to serious skin diseases including, medical evidence suggests, skin cancer. *ALWAYS* wear protective gloves when handling oils and fuels whether topping up, draining or refilling. *ALWAYS* wash hands if oils or fuels come into contact with the skin.

Many liquids used in this machine are harmful if taken internally or splashed into the eyes. In the event of accidentally swallowing oils, fuels, anti-freeze, battery acid etc, *DO NOT* encourage vomiting, seek qualified medical assistance immediately.

ALWAYS dispose of waste oils and fuels into waste oil storage tanks. If storage tanks are not available consult your distributor or local authority for addresses of local designated disposal points. It is illegal to dispose of waste oil into drains or water courses or to bury it.

Equipment which includes friction materials will sometimes contain asbestos. When removing friction material dust from components, such as when servicing brakes or clutches, do not blow out with an airline; it could be harmful to inhale the dust. Remove the dust with a vacuum cleaner or wipe clean with a damp rag. Waste should be placed in a sealed container, marked, and disposed of in accordance with local or national regulations.

The accumlated dust found in clutch housings may contain lead/antimony. No food should be eaten at a work place contaminated by this dust. Hands must be washed before eating. Do not blow out dust with an airline.

NEVER work under an unpropped skip. ***If the dumper was supplied with a special Skip Support always ensure that it is used.***

ALWAYS ensure that when using a starting handle that it is clean and in good condition. Keep the engine starting dog and the part of the starting handle that mates with it lightly lubricated *(Refer to the Engine Handbook).*

RECOMMENDED LUBRICATING OILS

COMPANY		ENGINE	TRANSFER BOX & DRIVE AXLE	GEARBOX	WHEEL BEARINGS & OTHER GREASE POINTS	HYDRAULIC SYSTEM
(U.K.)	SUMMER	ESSOLUBE HDX 20W	GEAR OIL GP 90/140	ESSOLUBE HDX 30	BEACON 2	NUTO H44
	WINTER					
ESSO						
	ABOVE 32°C	ESSOLUBE HDX 30	GEAR OIL GP 140			NUTO H 54
	0–32°	ESSOLUBE HDX 20W	GEAR OIL GP 90/140	ESSOLUBE HDX 30	BEACON 2	NUTO H 44
(Overseas)	BELOW 0°C	ESSOLUBE HDX 10W	GEAR OIL GP 80			NUTO H 40
(U.K.)	SUMMER	DEUSOL CRB 20	DEUSOL GEAR EP 90	DEUSOL CRB 30	CASTROL SPHEEROL APT 2	
	WINTER					
CASTROL						CASTROL HYSPIN AWS 32
	ABOVE 32°C	DEUSOL CRB 30	DEUSOL GEAR EP 140			
	0–32°C	DEUSOL CRB 20	DEUSOL GEAR EP 90	DEUSOL CRB 30	CASTROL SPHEEROL APT 2	
	BELOW 0°C	DEUSOL CRB 10	DEUSOL GEAR EP 80			
(U.K.)	SUMMER	ROTELLA SX OIL 20/20W	SPIRAX 90 EP	ROTELLA SX OIL 30	RETINAX A	
	WINTER					
SHELL						TELLUS OIL 27
	ABOVE 32°C	ROTELLA SX OIL 30	SPIRAX 140 EP			
	0–32°C	ROTELLA SX OIL 20/20W	SPIRAX 90 EP	ROTELLA SX OIL 30	RETINAX A	
(Overseas)	BELOW 0°C	ROTELLA SX OIL 10W	SPIRAX 80 EP			
(U,K,)	SUMMER	VANELLUS M20W	GEAR OIL SAE 90 EP	VANELLUS M30	ENERGREASE L2	
	WINTER					
BP						ENERGOL HLP 65
	ABOVE 32°C	VANELLUS M30	GEAR OIL SAE 140 EP			
	0–32°C	VANELLUS M20W	GEAR OIL SAE 90 EP	VANELLUS M30	ENERGREASE L2	
(Overseas)	BELOW 0°C	VANELLUS M10W	GEAR OIL SAE 80 EP			
(U.K.)	SUMMER	DELVAC 1220	MOBILUBE HD 90	DELVAC 1230		
	WINTER		MOBILUBE GX 90			
MOBIL					MOBILGREASE MP	
			MOBILUBE HD 140			DTE 24
	ABOVE 32°C	DELVAC 1230	MOBILUBE GX 140		MOBILGREASE SUPER	
			MOBILUBE HD 90			
	0–32°C	DELVAC 1220	MOBILUBE GX 90			
			MOBILUBE HD 80			
(Overseas)	BELOW 0°C	DELVAC 1210	MOBILUBE GX 80			
ALL TEMPERATURES		DELVAC SPECIAL 10W–30		DELVAC 1230		
(U.K.)	SUMMER	CENTLUBE HD 20	CENTURY EP 90	CENTLUBE HD 30	REGULUS A2	CENTURY PWLA HYD OIL
	WINTER					
WALKERS						
CENTURY	ABOVE 32°C	CENTLUBE HD 30	CENTURY EP 140			
	0°C–32°C	CENTLUBE HD 20	CENTURY EP 90	CENTLUBE HD30	REGULUS A2	CENTURY PWLA HYD OIL
Overseas	BELOW 0°C	CENTLUBE HD 10	CENTURY EP 80			

IN THE UNLIKELY EVENT OF THE ABOVE OILS NOT BEING AVAILABLE
EQUIVALENT OILS SUPPLIED BY A REPUTABLE MANUFACTURER MAY BE USED

THIS BOOK TO BE USED IN CONJUNCTION WITH THE

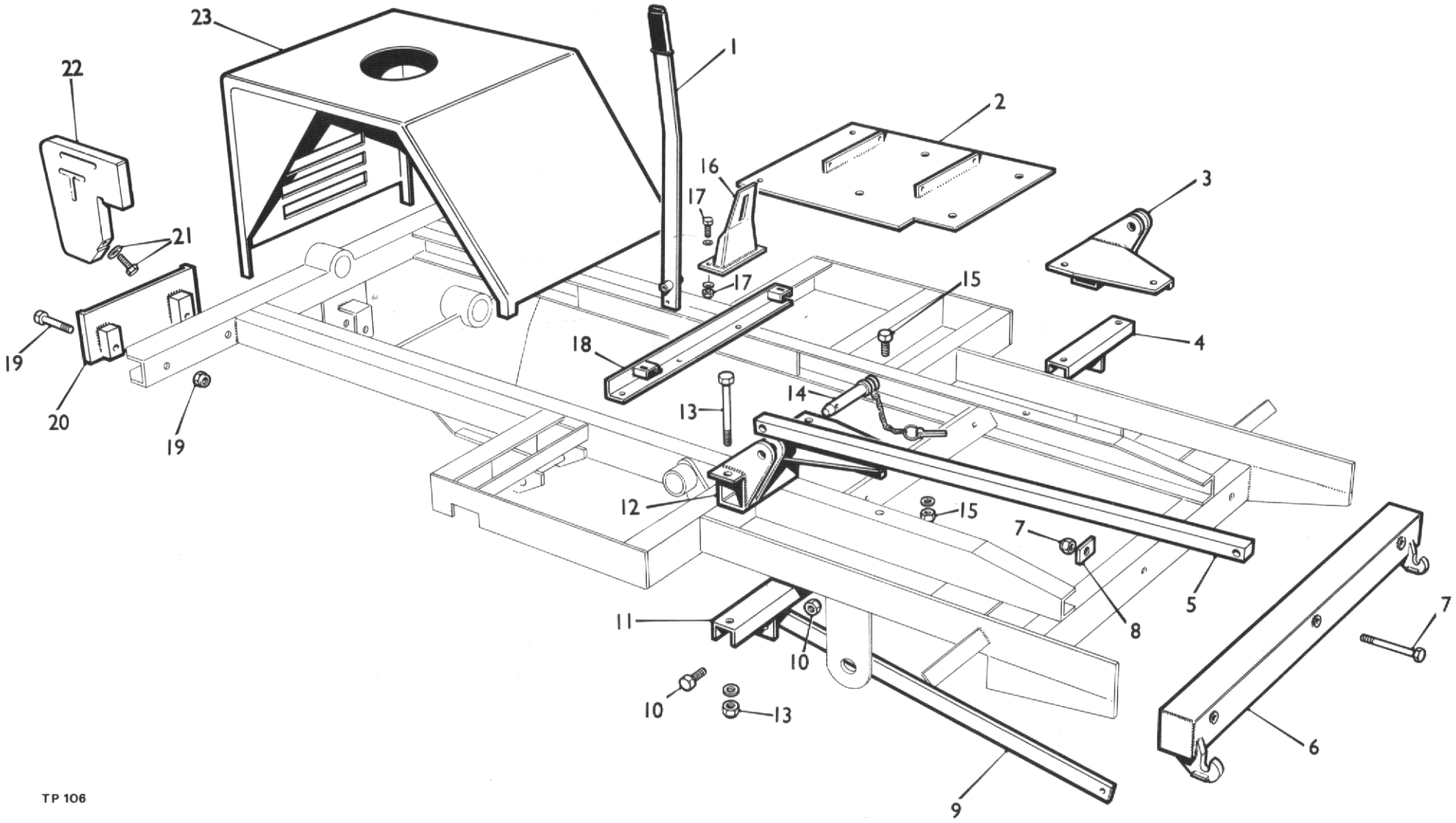
TWOSE 190 DIGGER

AND

4S DUMPER

SPARE PARTS LISTS

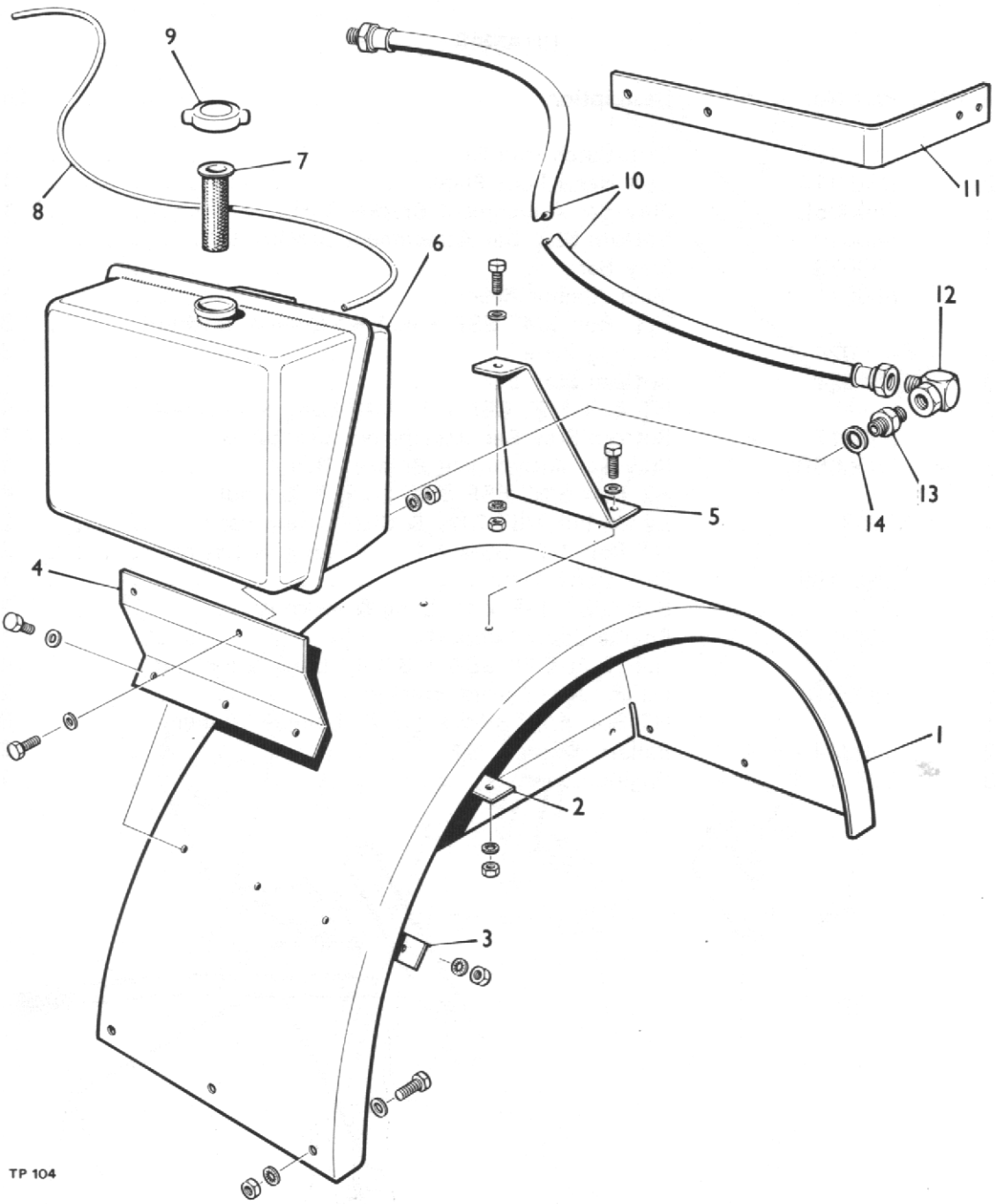
LIST OF CONTENTS



TP 106

CHASSIS

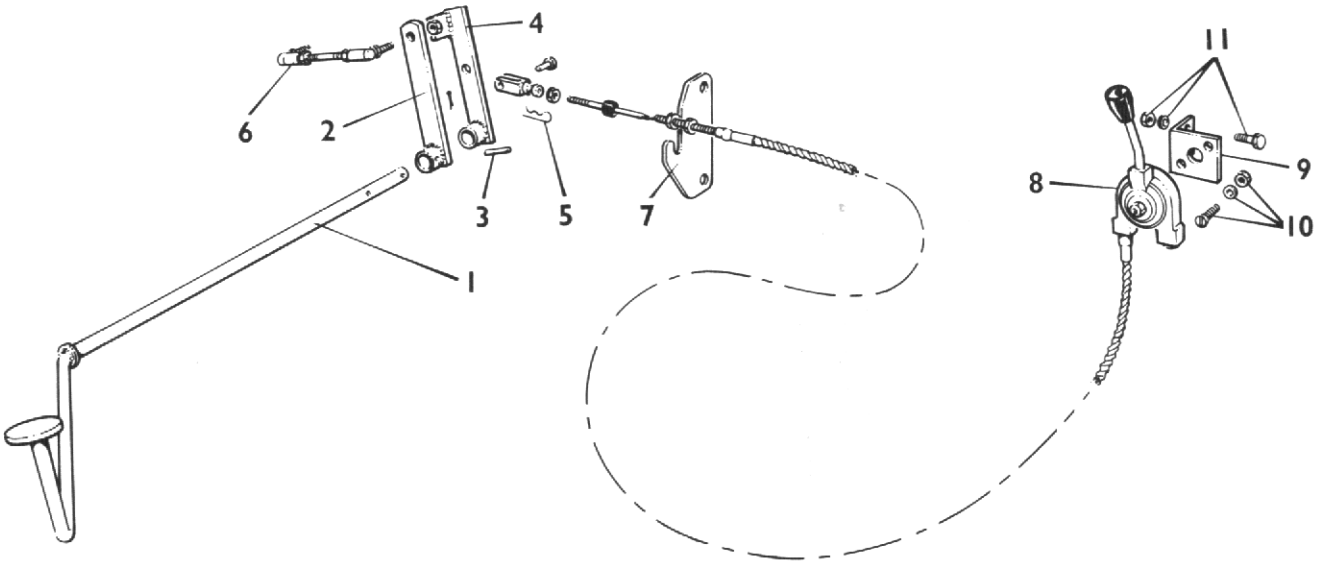
Item No.	Part No.	Description	Qty
1	DSE 106	Skip Catch Handle	1
2	DSE 110	Left Hand Foot Plate	1
3	680005L	Stay Bar Attachment Bracket L.H.	1
4	680020	Bottom Stay Bar Attachment Bracket L.H.	1
5	680023	Stay Bar	2
6	680011	Main Anchor Beam	1
7		H.T. Bolt 3/4" BSF x 6. 1/4" Long & Locknut	3
8	680024	Backing Plate	3
9	680022	Bottom Stay Bar	2
10		HT Bolt 1/2" BSF x 1. 3/4" Long & Locknut	4
11	680017	Bottom Stay Bar Attachment Bracket R.H.	1
12	680005R	Stay Bar Attachment Bracket R.H.	1
13		HT Bolt 5/8" BSF x 6" Long & locknut	4
14	0853	Lynch Pin 7/8" DIA, & Chain, Ring Assy	2
15		HT Bolt 1/2" BSW x 1. 1/2" Long & locknut	2
16	DSE 105	Skip Catch Gate	1
17		Bolt 3/8" BSF x 1" Long & locknut	2
18	DSE 112	Engine Cover Support	1
19		H.T. Bolt 5/8" BSW x 3.3/4" Long & locknut	4
20	680001	Weight Attachment Bracket	2
21		HT Bolt 5/8" BSW x 1.1/4" Long & Washer	8
22	680029	Ballast Weight	8
23	5ST 3	Engine Cover	1



FUEL SYSTEM

	Item No.	Part No.	Description	Qty
	1	4S162	Mudwing L.H.	1
	2	4S159	Backing Strip –(Upper)	1
	3	4S158	Backing Strip –(Lower)	1
	4	4S157	Tank Bracket –(Lower)	1
	5	4S160	Tank Bracket –(Upper)	1
*	6	BAE7E	Fuel tank – BA Type – 4 gall	1
*	7	JE13	Strainer	1
	8		Leak Back Tube – 34" long	1
*	9	CE12	Fuel Tank Cap	1
*	10	253873	Fuel Pipe – 30" long	1
	11	4S161	Filter Bracket	1
	12	2ST72N	Fuel Pipe Elbow	1
	13	4–60–189	Adaptor 1/4" BSP x 3/8" BSP	1
	14	4–35–364	Sealing Washer	1

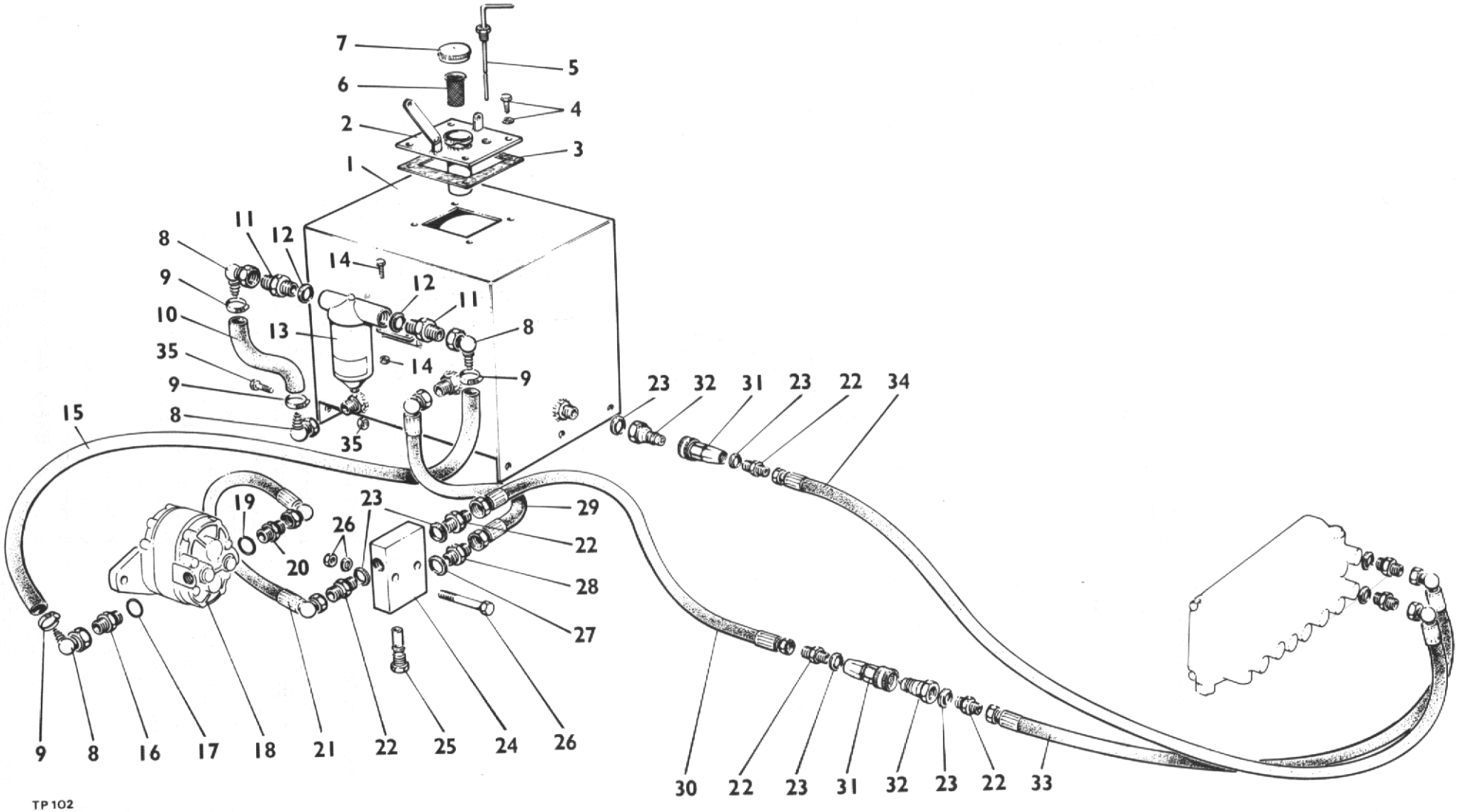
Note: * Items 6,7 9 and 10 are obtainable from Petter Agents only.



TP 105

THROTTLE SETTING DEVICE

Item No.	Part No.	Description	Qty
1	DSE 127	Accelerator Pedal	1
2	F.522	Accelerator lever	1
3	C 251–1	Tension Pin	1
4	DSE128	Hand Throttle link	1
5	F4–45–77	Spring Pin	1
6	5ST–22	Accelerator Rod	1
7	DSE 126	Outer Cable Support	1
8	DSE 129	Hand throttle Unit	1
9	DSE 125	Hand throttle Unit mounting Bracket	1
10		Countersunk screws 1/4" UNF x 3/4" long, nut & Spring washer	2
11		Bolt 1/4" BSF x 3/4" long, nut & spring washer	2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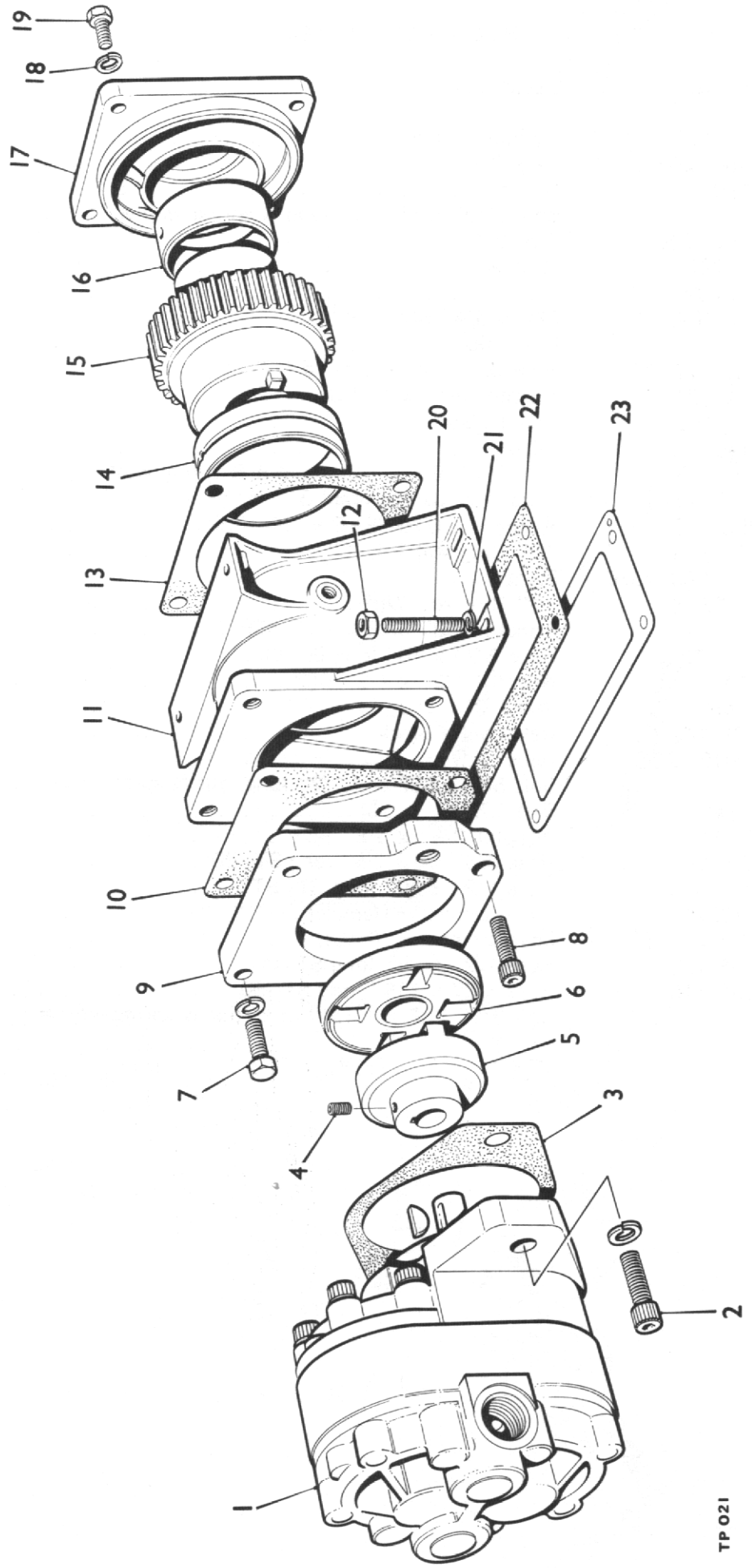
TP 102

HYDRAULIC SYSTEM

Item No.	Part No.	Description	Qty
1	DSE 116	Hydraulic Tank	1
2	4–60–206	Tank Top	1
3	T18B	Gasket	1
4		Bolt 5/16" UNF x 1" long & spring washer	4
5	4–60–226	Dip stick	4
6	P–1263–3	Strainer	1
7	P–2792	Cap	1
8	BSE 109	Elbow 3/4" BSP x 90°	4
9	T634	Hose clip	4
10	DSE 117–23	Hose 3/4" cotton braid 5.1/2" long	1
11	DSE 121	Adaptor 3/4" x 1" BSP	2
12	DSE 122	Seal 1" BSP	2
13	2445	Filter	1
14		Bolt 1/4" BSF x 1" long, nut & spring washer	2
15	DSE 117–1	Hose 3/4" cotton braid 31" long	1
16	DSE 113	Adaptor 1.1/16" SAE x 3/4" BSP	1
17	ASE 138	"O" Ring seal 1.1/16"	1
18	200–100–LDE	Pump	1
19	S9698	"O" Ring seal 7/8"	1
20	DSE 115	Adaptor 7/8" SAE x 1/2" BSP	1
21	2 ST 72E	Hose 1/2" x 16" long 90–90	1
22	T14K	Adaptor 1/2" x 1/2" BSP	5
23	T14H	Seal 1/2"	6
24	ASE 160	Relief valve block	1
25	32018–Q9	Relief valve	1
26		Bolt 5/16" BSF x 2.1/2" long, nut & spring washer	2
27	T 14I	Seal 3/8"	1
28	T 14J	Adaptor 3/8" x 3/8" BSP	1
29	2ST72C	Hose 3/8" x 13.1/4" long ST–90	1
30	DSE 118	Hose 1/2" x 29" long ST–ST	1
31	C23071	Snap connector (female)	2
32	C23072	Snap connector (Probe)	2
33	DSE 120	Hose 1/2" x 84" long ST–90	1
34	DSE 119	Hose 1/2" x 115" long ST–90	1
35		Bolt 3/8" BSF x 1.1/4" long, nut & spring washer	6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TP 021

HYDRAULIC PUMP AND DRIVE

Item No.	Part No.	Description	Qty
1	200–100–LDE	Pump Complete	1
2		Cap Screw	2
3	334932	Joint	1
4	724202	Socket Screw 1/4" BSF x 5/16" Long	1
5	334931	Coupling (Pump Half)	1
6	266185	Coupling Assy	1
7	725049	Bolt 3/8" BSF x 1" Long	2
8	724056	Cap Screw 3/8" BSF x 3/4" Long	2
9	292709	Spigot Plate	1
10	266159	Joint	1
11	2–197597	Pump Housing	1
12	726003	Nut 3/8"BSF	4
13	264702	Joint	1
14	2–264704	Bearing	1
15	334968	Gearwheel	1
16	2–202485	Bearing	1
17	264701	Cover – Pump Housing	1
18	786029	Spring Washer – 5/16"	4
19	722024	Bolt 5/16" BSF x 5/8" Long	4
20	760061	Stud 3/8" BSF x 1.3/8" Long	4
21	786030	Spring Washer – 3/8"	4
22	264700	Joint	1
23	264706	Shim	As req'd

DECIMAL, FRACTIONAL AND METRIC EQUIVALENTS

Inches		Milli-metres	Inches		Milli-metres
Fractions	Decimals		Fractions	Decimals	
1/64	0.015625	0.397	33/64	0.515625	13.097
1/32	0.03125	0.794	17/32	0.53125	13.494
3/64	0.046875	1.191	35/64	0.546875	13.891
1/16	0.0625	1.588	9/16	0.5625	14.288
5/64	0.078125	1.984	37/64	0.578125	14.684
3/32	0.09375	2.381	19/32	0.59375	15.081
7/64	0.109375	2.778	39/64	0.609375	15.478
1/8	0.125	3.175	5/8	0.625	15.875
9/64	0.140625	3.572	41/64	0.640625	16.272
5/32	0.15625	3.969	21/32	0.65625	16.669
11/64	0.171875	4.366	43/64	0.671875	17.066
3/16	0.1875	4.763	11/16	0.6875	17.463
13/64	0.203125	5.159	45/64	0.703125	17.859
7/32	0.21875	5.556	23/32	0.71875	18.256
15/64	0.234375	5.953	47/64	0.734375	18.653
1/4	0.250	6.350	3/4	0.750	19.050
17/64	0.265625	6.747	49/64	0.765625	19.447
9/32	0.28125	7.144	25/32	0.78125	19.844
19/64	0.296875	7.541	51/64	0.796875	20.241
5/16	0.3125	7.938	13/16	0.8125	20.638
21/64	0.328125	8.334	53/64	0.828125	21.034
11/32	0.34375	8.731	27/32	0.84375	21.431
23/64	0.359375	9.128	55/64	0.859375	21.828
3/8	0.375	9.525	7/8	0.875	22.225
25/64	0.390625	9.922	57/64	0.890625	22.622
13/32	0.40625	10.319	29/32	0.90625	23.019
27/64	0.421875	10.716	59/64	0.921875	23.416
7/16	0.4375	11.113	15/16	0.9375	23.813
29/64	0.453125	11.509	61/64	0.953125	24.209
15/32	0.46875	11.906	31/32	0.96875	24.606
31/64	0.484375	12.303	63/64	0.984375	25.003
1/2	0.500	12.700	1	1.000	25.400

INCHES INTO MILLIMETRES

Inches	0	1	2	3	4	5	6	7	8	9
0	0	25.40	50.80	76.20	101.60	127.00	152.40	177.80	203.20	228.60
10	254.00	279.40	304.80	330.20	355.60	381.00	406.40	431.80	457.20	482.60
20	508.00	533.40	558.80	584.20	609.60	635.00	660.40	685.80	711.20	736.60
30	762.00	787.40	812.80	838.20	863.60	889.00	914.40	939.80	965.20	990.60
40	1016.00	1041.40	1066.80	1092.20	1117.60	1143.00	1168.40	1193.80	1219.20	1244.60
50	1270.00	1295.40	1320.80	1346.20	1371.60	1397.00	1422.40	1447.80	1473.20	1498.60
60	1524.00	1549.40	1574.80	1600.20	1625.60	1651.00	1678.40	1701.80	1727.20	1752.60
70	1778.00	1803.40	1828.80	1854.20	1879.60	1905.00	1930.40	1955.80	1981.20	2006.60
80	2032.00	2057.40	2082.80	2108.20	2133.60	2159.00	2184.40	2209.80	2235.20	2260.00
90	2286.00	2311.40	2336.80	2362.20	2387.60	2413.00	2438.40	2463.80	2489.20	2514.61

Use in conjunction with above table.

Example: Find equivalent mm. for 84 5/8".

84" = 2133.60 mm.

5/8" = 15.875 mm.

84 5/8" = 2149.475 mm.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm