



HUGH CRANE

Cleaning Equipment Limited



SOUTH WALSHAM ROAD, ACLE, NORWICH, NORFOLK, NR13 3ES
TEL: 01493 750072 - FAX: 01493 751854 - www.hughcrane.co.uk



OPERATOR INSTRUCTION MANUAL **COMMANDO 500D**

For Sales, Service and Spare Parts contact:

HUGH CRANE (Cleaning Equipment) Ltd
SOUTH WALSHAM ROAD, ACLE, NORWICH NR13 3ES
TEL: 01493 750072 FAX: 01493 751854
Email: sales@hughcrane.co.uk

INTRODUCTION

COMMANDO high pressure equipment is manufactured to rigorous quality standards.

The basic design concept is to use quality materials and proven designs to attain reliability and safe functional operation. This instruction manual is provided to assist the operator to obtain the best from the equipment, together with basic safety points.

Should you require information or technical assistance regarding the unit or any aspect of jetting or pressure cleaning, do not hesitate to contact **Hugh Crane (Cleaning Equipment) Ltd** or their approved distributor.

GUARANTEE

COMMANDO products are guaranteed for one year for parts and labour from the date of purchase (guarantees are not transferable) subject to good use and adherence to recommended service procedures. Major components are subject to individual manufacturer's warranty conditions. Wearing parts, including tyres, pump seals, valves, hoses, filters, jets and tooling are excluded from warranty cover unless subject to faulty materials or manufacture.

WHEN ORDERING SPARES - Please quote:-

- a) Your Company Name and Address
- b) Model Type and Serial Number of unit
- c) Full description of parts required
- d) Your contact name and telephone number
- e) Your order number

SPECIFICATION**MODEL No: C500D****SERIAL No:****ENGINE:**

Model:	Hatz 1B40
Power	7 kW @ 3200 rev/min
Fuel:	Diesel

PUMP:

Model	MC18/20S
Type	Udor MC 18/20-S Plunger Pump
Pump pressure	200 bar/2940psi
Pump flow	18 l/min / 3.9 gal/min

UNLOADER VALVE:

Type	ST280
Pressure setting	200 bar/2940psi

OPERATING INSTRUCTIONS

IMPORTANT

This handbook should be read and understood by the operator before using this equipment. It should be kept with the equipment and made available to anybody who is intending to use the equipment.

GENERAL HEALTH AND SAFETY DATA

BEFORE USING THE EQUIPMENT

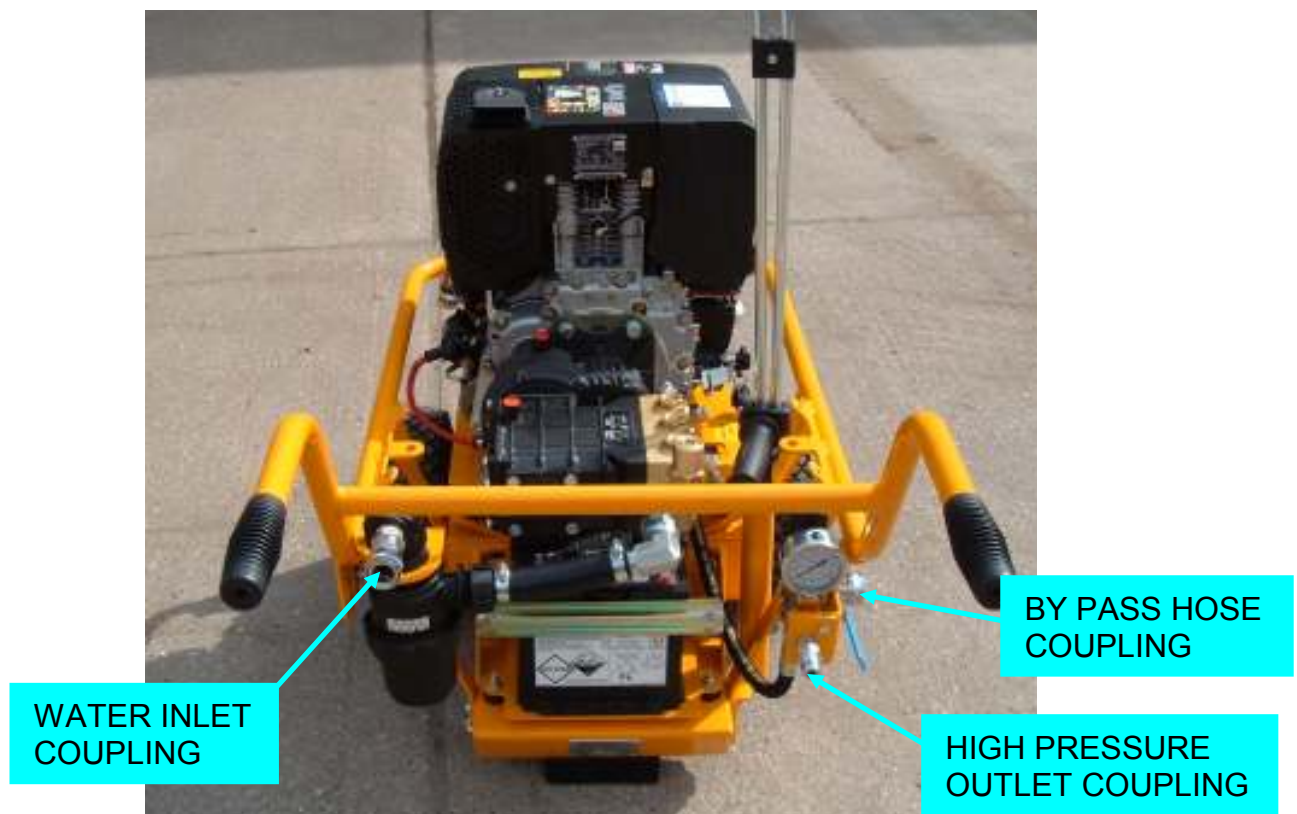
- a) Before using this equipment, operators should have undergone basic training in the safe use of high pressure washing equipment. Training courses are available from Hugh Crane (Cleaning Equipment) Ltd. if required.
- b) Suitable protective clothing should be provided and worn.
High pressure jets are dangerous if subjected to misuse.
Care should be taken to ensure that animals and children are well out of the working area.
The jet must not be directed at people, animals, the machine itself, non- waterproof, fragile or electrical equipment.
- c) User's attention is drawn to health and safety guidance note P.M.29 which deals with the use of high pressure cleaners and steam cleaners. Eye protection to BS2092/2 must be worn when this equipment is used.
- d) Repairs to this equipment must be carried out by suitably qualified personnel only. No modifications or changes to the specification of this machine should be made without consultation and approval of the manufacturer.
- e) The machine is supplied with guarding in compliance with current legislation. The machine should not be operated with any of the guards, covers or any other safety equipment removed or damaged.
- f) Components as supplied by others i.e. motors and pumps are covered by these manufacturer's handbooks, which are included for your use.
- g) Chemicals may be used in conjunction with this equipment. Only chemicals supplied or recommended by the manufacturer should be used, as other products may affect the safe use of the equipment. Consideration should also be given to environmental and COSHH regulations.
- h) **Never attempt to adjust or clean any part of the machine with the motor running.**
Always stop the motor before carrying out adjustments, especially to the high pressure pipework etc.
- i) High pressure spray guns are provided with safety lock which enables the trigger to be locked off to prevent inadvertent use.

OPERATION

PREPARING THE MACHINE FOR USE:

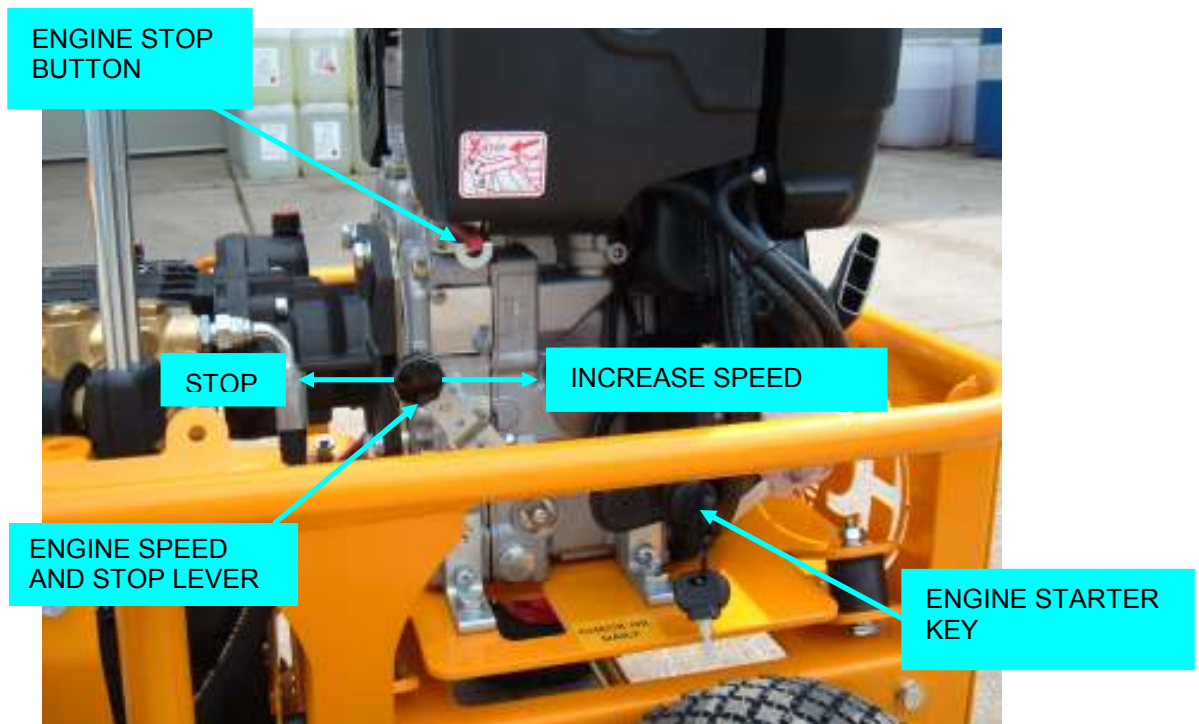
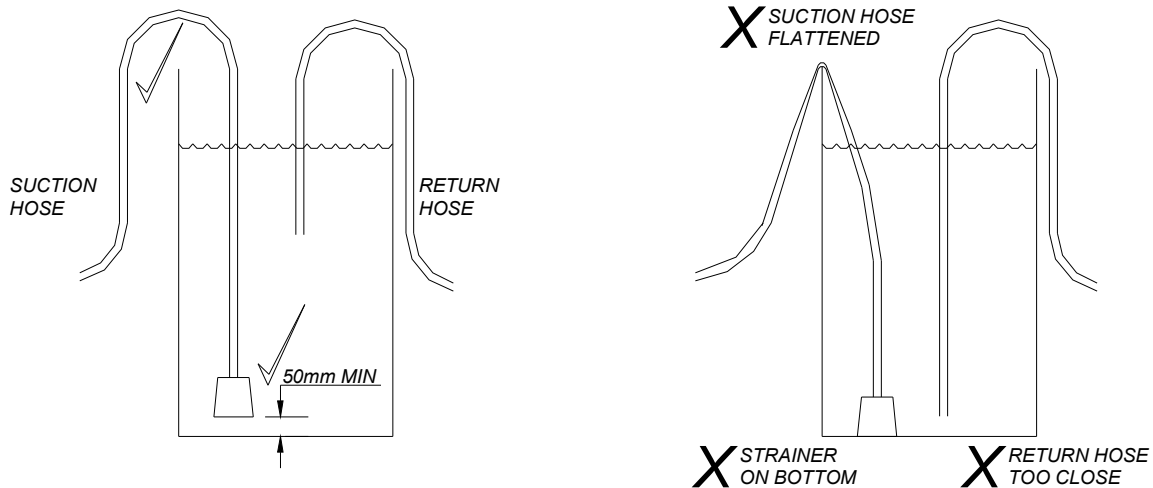
BEFORE STARTING WORK

- a) Check engine, gearbox and pump oil level and top up if required.
- b) Fill fuel tank with clean diesel fuel.
- c) Ensure unit is standing on level ground.
- d) Connect the mains supply hose to the water inlet coupling. Confirm that the water supply has sufficient capacity to keep the COMMANDO 500D supplied continuously with 20 litres/min at a positive pressure. Alternatively a suitable vessel may be used with the suction hose and strainer provided.
- e) Connect the by-pass return hose to its connection point and place the end of it in a suitable receiving vessel.



- e) Connect the high pressure hose to the outlet coupling and ensure that it is fitted with a spray gun and lance before turning on the mains water and starting the machine.

- f) When the machine is to be operated on suction connect the inlet suction hose and foot strainer to the inlet quick coupling and line strainer on the machine and connect the return hose to the female quick release coupling provided on the unloader valve. Place both hoses in a clean tank of water and secure in place. Ensure that the suction hose is not flattened or crimped and that the foot strainer is at least 50mm from the bottom of the tank and not placed too close to the return hose as illustrated below.



- f) Move the engine speed control lever to the $\frac{1}{2}$ speed position, turn the ignition key to position 'I' and the battery charge and oil pressure lights will illuminate. Then turn the key further to position 'II' to crank the engine. When the engine starts release the key so that it springs back to 'I'. In cold weather conditions the pre-heat light will illuminate, wait in position 'I' till the light illuminates before attempting to start the engine (Refer to the Hatz Engine instruction manual for further information)
- h) Now operate the wash gun to bleed air out of the hose until air free water is issuing from the lance.

- i) Increase the engine speed to the desired working level, using the hand throttle lever at the side of unit. Use of the throttle will directly affect output water volume and pressure.

DURING WORK:

- a) **Do not leave the COMMANDO 500D idling as re-circulating water heats up rapidly and will eventually boil causing severe damage to the pump.**
- b) Should any vibration, fluctuation of pressure or any other abnormal symptoms occur during operation, this should be investigated immediately.

Likely causes include:-

- i) A lack of water entering the unit causing air to be drawn into the pump.
- ii) A blockage of the main inlet filter causing water starvation at the pump.
- iii) The inlet water valve between tanks and pump not fully open.
- iv) Leaking seals or damaged valves etc.

AFTER WORK

- a) To stop the COMMANDO 500D turn the engine speed control fully anticlockwise and the engine will stop. Alternatively the engine stop button may be pressed and held until the engine stops. Turn the starter key to the 'O' position.

LIFTING THE **COMMANDO 500D**

- a) The **COMMANDO 500D** can be supplied with a bolt on lifting frame if required.
- a) The lifting frame is stamped to the safe working load of the unit and is supplied with an initial test certificate. It is the owner's responsibility to ensure that the unit is re-tested as required by local regulations.
- b) Before lifting ensure that the bolts fixing the frame to the chassis are tight.
- c) A single point lift is carried out as shown below.



- d) The lifting frame is designed and tested for use with the **COMMANDO 500D** only and must not be used for any other purpose.

REGULAR MAINTENANCE**CHECK LIST**

		Daily	Weekly	250 hrs.	500 hrs.	1000 hrs.
ENGINE:	Refer to the Hatz Instruction Book					
	Oil level	*				
	Air Cleaner oil bath	*		*		
	Check air cleaner maintenance indicator	*				
	Check water trap	*				
	Check air intake areas	*				
	Oil Change			*		
	Check & adjust valve clearances			*		
	Check Battery Terminals			*		
	Check tightness of all screws			*		
	Renew fuel filter				*	
	Clean oil filter					*

GEARBOX						
	Check oil level		*			
	Change oil				*	

PUMP						
	Clean inlet filter	*				
	Check oil level	*				
	Change oil				*	
	Hoses for security/chafing				*	

UNLOADER VALVE						
	Check break off pressure			*		

ENGINE: Refer to Engine Manufacturer's Handbook.

PUMP: Refer to Pump Manufacturer's Handbook

UNLOADER: No user serviceable parts.

Under no circumstances should any adjustments be made to unloader as serious damage to engine, gearbox or pump could result.

UNLOADER AND SAFETY VALVE

The unloader and safety valves have no user serviceable parts. Under no circumstances should any adjustments be made to the unloader OR the safety valve, as serious personal injury or damage to the pump could result.

FROST PROTECTION

It is essential to protect the unit from damage by frost. The following instructions will be adequate to protect the unit to temperatures down to - 5°C. During winter months it is strongly recommended to store the unit inside whenever possible.

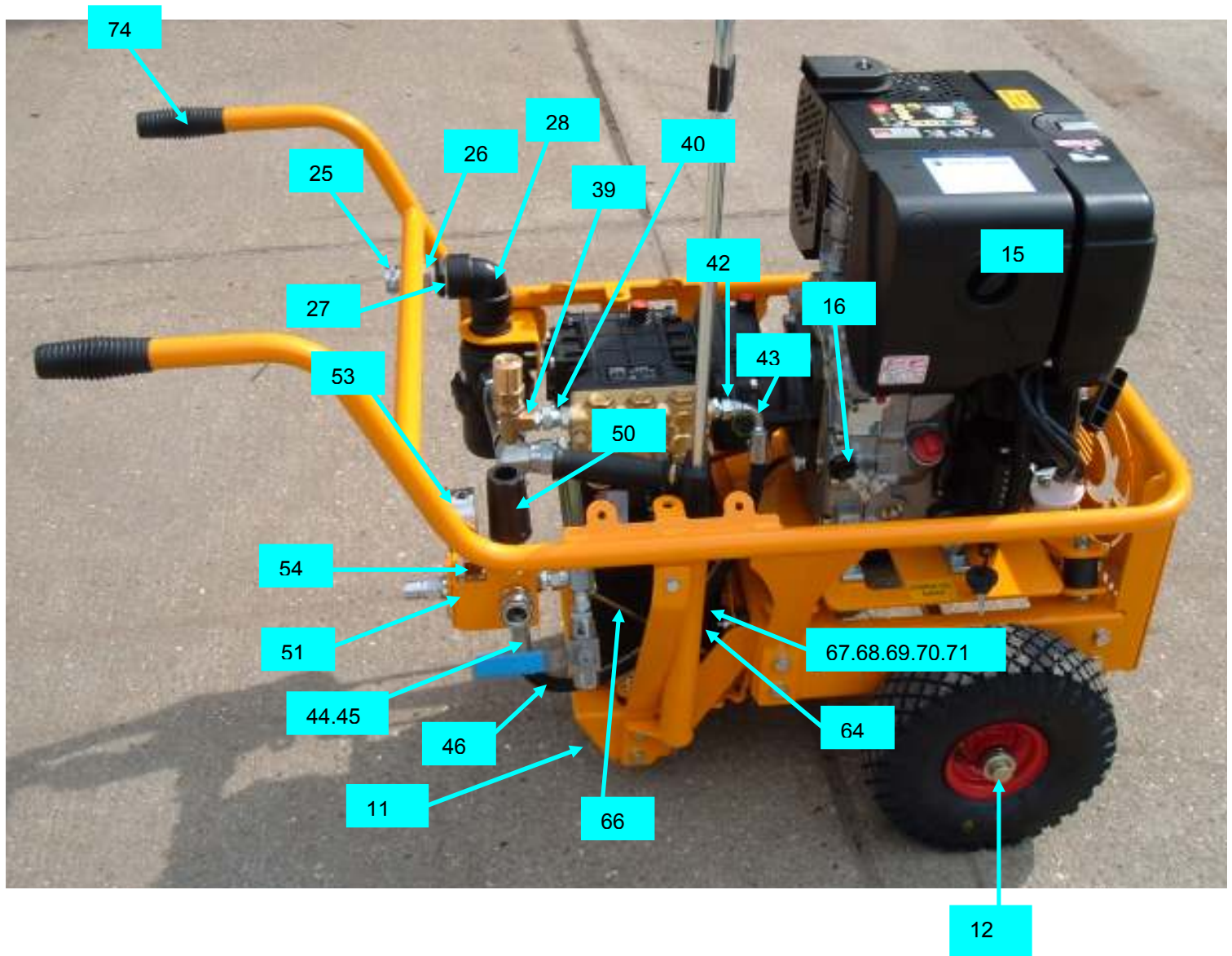
- 1) Run engine for **one minute** with open ended hoses or gun open to expel all water and stop the engine.
- 2) Remove bowl from inlet strainer and store safely together with its filter screen.
- 3) During severe weather, the unit should be stored inside, if possible. Where this is not possible a 25% anti-freeze/water mixture should be introduced into the pump, hose and gun. The antifreeze mixture can be reclaimed after use for recycling when next required.
- 4) Before starting work again the antifreeze must be emptied out of the system by running the pump and directing the using the solution back into the container. Always ensure that all anti-freeze solutions are flushed out of the system before using the unit for cleaning tasks, as anti-freeze solution can be highly detrimental to certain surfaces and materials.

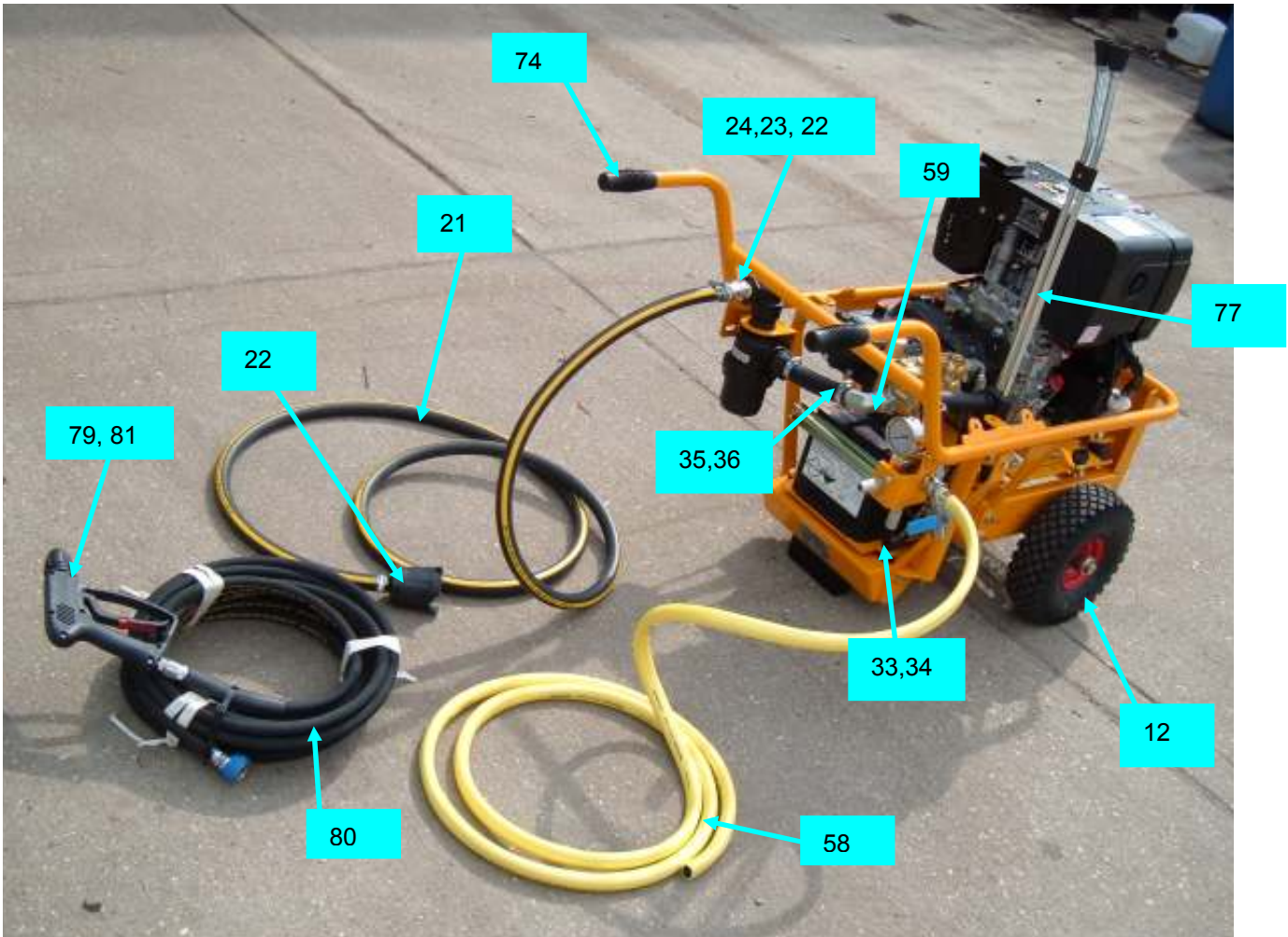
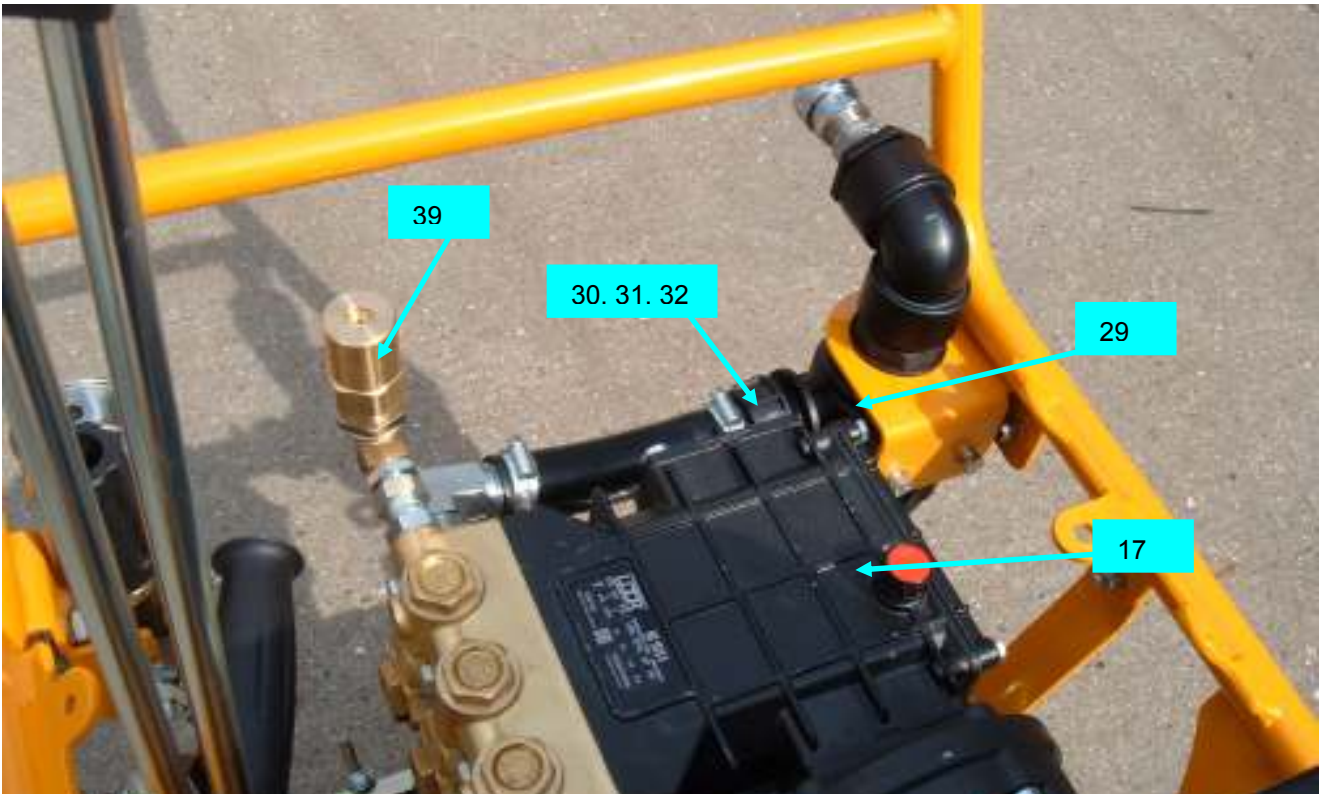
REPLACEABLE ITEMS LIST

See the following illustrations for component reference numbers.

Ref.	Description	Qty.	Part Number
11	BUFFER	1	HC93025
12	WHEEL	2	HCOB/154
15	ENGINE	1	HC01401
16	HANDWHEEL	1	HC21830
17	PUMP	1	HC52004
21	HOSE 1" TRICOFLEX	4m	2302011
22	FOOT STRAINER 1"	1	GSST35A
23	HOSE CLIP	2	HC81207
24	LP HOSE TAIL NIPPLE 1" HOSE	1	HCQC053
25	LP COUPLING 1"BSP FEM	1	HCQC050
26	HEX NIPPLE 1" S/S	1	HC66204
27	REDUCING BUSH 1¼" TO 1"	1	DP9901RB125075
28	ELBOW 1¼" FEM	1	DP9901EL12590
29	STRAINER 1¼"	1	DP8074005
30	FLYNUT 1¼"	2	DP8040301
31	FLYNUT GASKET	1	DPG00001022
32	FLNUT HOSE TAIL 1" 90°	1	DP8012301
33	HOSE 1" NOVOLINE	0.4	2302011
34	HOSE CLIP 1"	2	HC81206
35	HOSE TAIL 90° SWEPT 1" TO 1" F	1	HYIN1616NU90
36	ADAPTOR 1" BSP TO ½"NPT MM	1	HYAD100-0816
38	BONDED SEAL ¼"	1	HY502
39	SAFETY VALVE	1	GS200230600
40	ADAPTOR 3/8"NPT TO ¼"BSP MM	1	HYAD122-0406
42	ADAPTOR 3/8"NPT TO 3/8"BSP MM	1	HYAD122-0606
43	CRIMP 90° 3/8 HOSE TO 3/8 BSP F	1	HYIN0606NU90
44	CRIMP FERRULE 3/8 HOSE	2	HYSF06R12T
45	CRIMP 3/8 HOSE TO 3/8 BSP F	1	HYIN0606NU
46	HOSE 3/8	1	2301003
48	ADAPTOR 3/8"BSP MM	1	HYAD100-0606
49	BONDED SEAL 3/8"	1	HY503
50	UNLOADER UL280	1	GSST280
51	BULKHEAD FITTING 3/8"	1	HY603
52	¾" x ½" BSP BUSH	1	02ST/NT5349
53	PRESSURE GAUGE	1	GS54940
54	ADAPTOR 90° BLOCK ¼"BSP	1	GS57210
56	ADAPTOR ½" TO 3/8"BSP MM	1	HYAD100-0408
57	ADAPTOR ½"BSP MF BLOCK 90°	1	HYAD229-0808
58	HOSE ¾" TRICOFLEX	4m	2302002
59	HOSE CLIP ¾" LP FEMALE COUPLING ½"BSP	1	HC81206
61	BATTERY	1	HCOB/063
62	HOOK BOLT	2	HCFBR08240

64	BATTERY TERMINAL +	1	HCOB/065
66	BATTERY TERMINAL -	1	HCOB/066
69	TERMINAL COVER	2	HCOB/072
70	BATTERY CABLE RED	0.5	HC20300
71	BATTERY CABLE BLACK	0.5	HC20301
74	HANDGRIP	2	VIP1041
77	LANCE	1	GSST54 LANCE TWIN
79	WASH GUN	1	GSST1500SQR
80	HOSE FOR LANCE	15M	2306015C
81	SPIGOT	1	HCOB/302





ManC500DD

MANUFACTURE'S LITERATURE

Udor MC 18/20-S Plunger Pump

<Q:\SUPPLIERS\UDOR\SERVICE MANUAL\UDOR Service Manual Small Pumps>

MANUFACTURE'S LITERATURE

HATZ 1B40 ENGINE

[1B40](#)