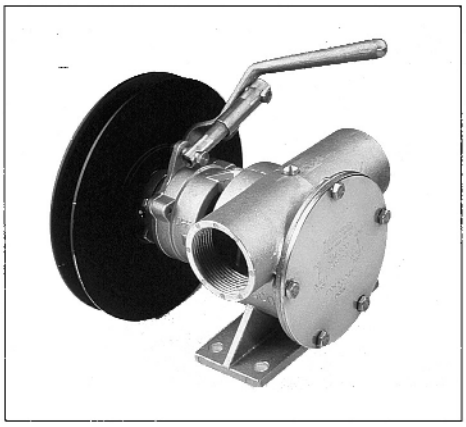
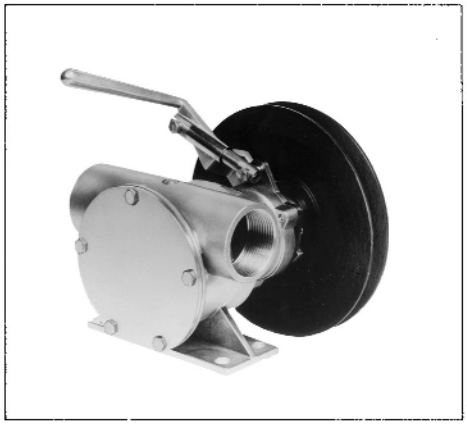
STANDARD PRODUCT RANGE

MANUAL CLUTCH PUMPS - DESIGN FEATURES



51080 SERIES

Body	Bronze
Impeller	Jabsco neoprene or nitrile compound
Shaft Seal	Lip type
Bearing	Ball
Shaft	Stainless steel 316 S31 to BS970
Wearplate	Replaceable
Pulley	Anodised Aluminium
Ports	1" BSP to BS21 (DIN2999)
Weight	5 kg



51200 SERIES

Body	Bronze
Impeller	Jabsco neoprene or nitrile compound
Shaft Seal	Mechanical carbon ceramic
Bearing	Ball
Shaft	Stainless steel 316 S31 to BS970
Wearplate	Replaceable
Pulley	Painted cast iron
Ports	1½" BSP to BS21 (DIN2999)
Weight	8 kg

51220 SERIES

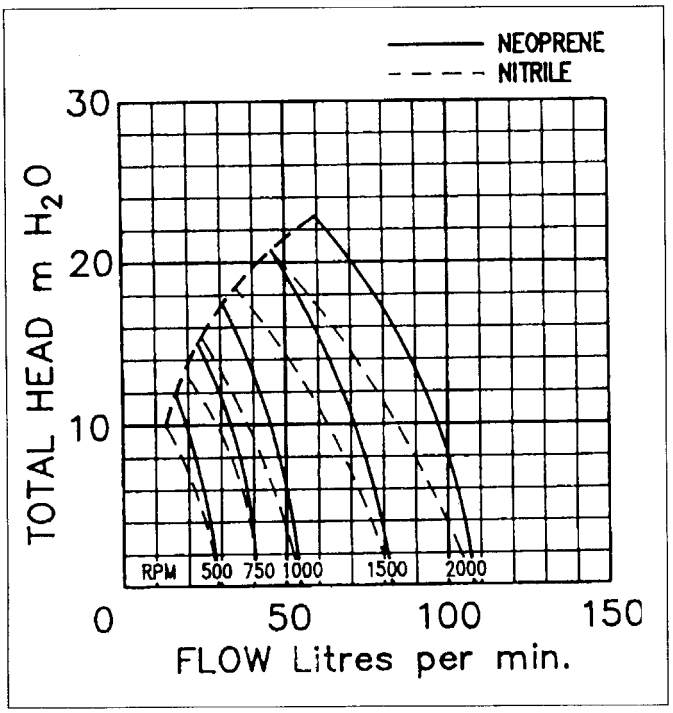
Body	Bronze
Impeller	Jabsco neoprene or nitrile compound
Shaft Seal	Mechanical carbon ceramic
Bearing	Ball
Shaft	Stainless steel 316 to BS970
Wearplate	Replaceable
Pulley	Painted cast iron
Bearing Housing	Cast iron painted protective primer
Ports	1½" Flanged
Weight	10 kg

51270 SERIES

Body	Bronze
Impeller	Jabsco neoprene or nitrile compound
Shaft Seal	Mechanical carbon ceramic
Bearing	Ball
Shaft	Stainless steel 316 to BS970
Wearplate	Replaceable
Pulley	Painted cast iron
Bearing Housing	Cast iron painted protective primer
Ports	2" BSP to BS21 (DIN2999) Available with 2" Flange
Weight	11 kg

PERFORMANCE

SIZE 080

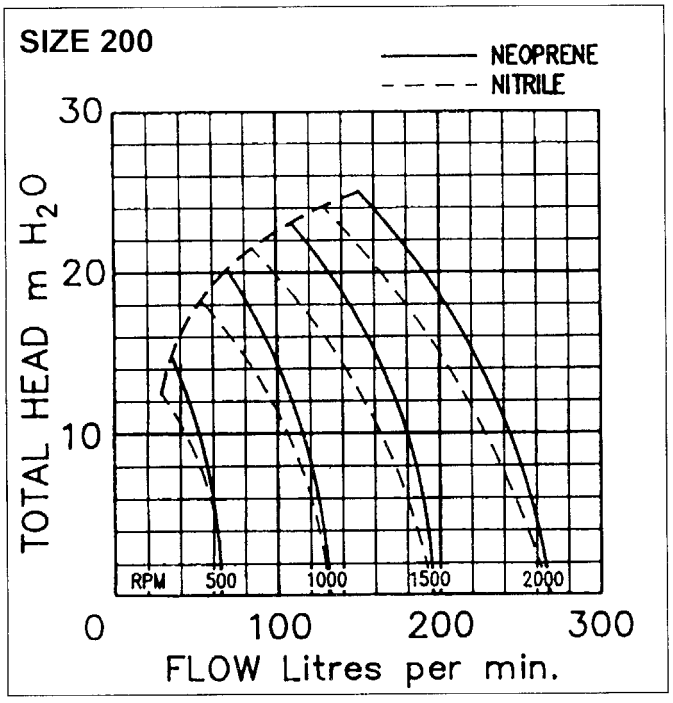


Performance Note Power (watt) figures shown are minimum recommended at pumpshaft.

Total manometric head	500 rpm	750 rpm	1000 rpm	1500 rpm	2000 rpm
	180 watt	180 watt	250 watt	550 watt	750 watt
m/H20	L/m	L/m	L/m	L/m	L/m
3	26.5	40	53	80	120.5
5	24.5	37.5	57	78	118
9	21	34.5	47.5	74	113.5
12	16.5	29	42.5	68	107
15		23	36	61	99
18			29	52.5	89.5
21				42	78
24					64.5
Suction Bore	25mm	25mm	25mm	25mm	32mm
Temp OC	Metres	Metres	Metres	Metres	Metres
20	7.2	6.9	6.2	4.1	0.5
30	7	6.7	6	3.9	0.3
40	6.6	5.3	5.6	3.5	
50	6	5.7	5	2.9	

Maximum recommended suction head in mH_2O at water temperature 20°C

SIZE 200



Performance Note Power (watt) figures shown are minimum recommended at pumpshaft.

Total manometric head	500 rpm	1000 rpm	1500 rpm	2000 rpm
250 watt	750 watt	1100 watt	1800 watt	
m/H20	L/m	L/m	L/m	L/m
3	64.5	130	195	261
5	60.5	126	191	256
9	54	118.5	183.5	248
12	45	109	173	236.5
15	33.5	96.5	159	222
18	-	81	142.5	204
21	-	63	123	183
24	-	-	100	159
Suction Bore	40mm	40mm	40mm	40mm
Temp 0C	Metres	Metres	Metres	Metres
20	7	5.8	3.6	1
30	6.8	5.6	3.4	0.9
40	6.4	5.2	3	0.5
50	5.8	4.6	2.4	

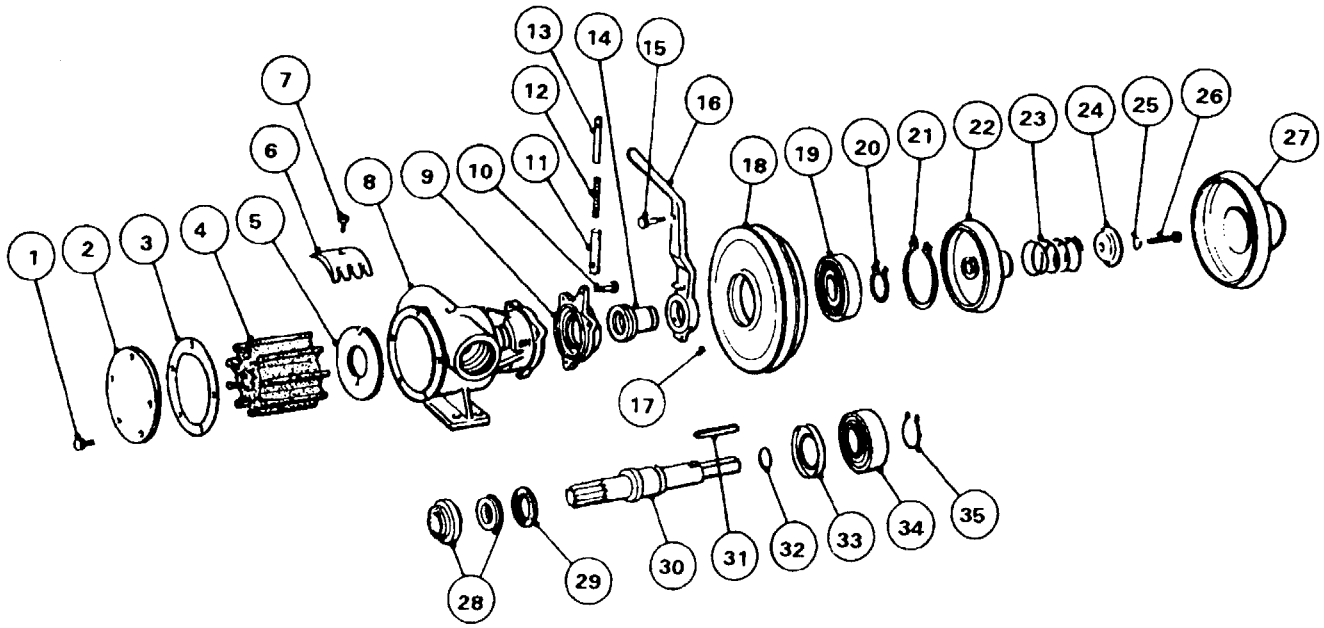
Maximum recommended suction head in mH_2O at water temperature 20°C

Pump Selection Tables and Graphs show approximate performance for new pumps with neoprene impeller pumping water (specific gravity 1.00) at 20°C, but note that performance can be affected if water temperature and suction head are higher than shown in above table. If in doubt consult your local Jabsco distributor or factory for application assistance.

***Minimum nominal recommended bore. Note: Suction Head = Vertical Suction Height + Pipe Losses.**

51080/51200 SERIES

EXPLODED VIEW



51080 SERIES

KEY	DESCRIPTION	QTY	PART NUMBER
1	Endcover Screws*	6	X3001-147F
2	Endcover	1	3993
3	Gasket*	1	890
4	Neoprene Impeller*	1	17937-0001
	or Nitrile Impeller**	1	17937-0003
5	Wearplate	1	4156
6	Cam	1	934
7	Cam Screw	1	SP1004-09
8	Body	1	50084-2100
9	Engaging Mech/Housing	1	51081-0000
10	Bolt	3	X3001-178F
11	Guide Tube Outer	1	51089-0000
12	Spring	1	51093-0000
13	Guide Tube Inner	1	51088-0000
14	Engaging Mech/Sleeve	1	51082-0000
15	Retaining Bolt	1	51094-0000
16	Handle	1	51083-0000
17	Grub Screw	2	X3009-145F
18	Pulley	1	51084-0000
19	Bearing	1	SP2600-11
20	Retaining Ring	1	SP1700-137
21	Retaining Ring	1	SP1700-245
22	Clutch Cone	1	51085-0000
23	Spring	1	X5250-001
24	Spring Retainer	1	51086-0000
25	Spring Washer	1	X3081-101C
26	Screw	1	X3001-211F
27	Cover	1	51092-0000
28	Lip Seal (not illustrated)	1	SP2700-1027
29	Slinger	1	3180
30	Shaft	1	51087-0000
31	Key	1	X4000-209A
32	Shim	1	51091-0000
33	Inner Bearing Seal	1	SP2700-48
34	Bearing	1	SP2600-06
35	Retaining Ring	1	SP1700-247

Service Kit SK406-0001 contains parts marked*
Service Kit SK406-0003 contains parts marked* plus ** in place of Neoprene Impeller.

51200 SERIES

KEY	DESCRIPTION	QTY	PART NUMBER
1	Endcover Screws*	5	X3001-176F
2	Endcover	1	9336
3	Gasket*	1	816
4	Neoprene Impeller*	1	17935-0001
	Nitrile Impeller**	1	836-0003
5	Wearplate	1	2574
6	Cam	1	834
7	Cam Screw	1	SP1005-04
8	Body	1	50204-2100
9	Engaging Mech/Housing	1	51201-0000
10	Bolt	3	X3001-180F
11	Guide Tube Outer	1	51089-0000
12	Spring	1	51213-0000
13	Guide Tube Inner	1	51088-0000
14	Engaging Mech/Sleeve	1	51202-0000
15	Retaining Bolt	1	51094-0000
16	Handle	1	51203-0000
17	Grub Screw	2	X3009-172F
18	Pulley	1	51204-0000
19	Bearing	1	SP2600-09
20	Retaining Ring	1	SP1700-137
21	Retaining Ring	1	SP1700-245
22	Clutch Cone	1	51205-0000
23	Spring	1	X5250-002
24	Spring Retainer	1	51206-0000
25	Spring Washer	1	X3081-101C
26	Screw	1	X3001-213F
27	Cover	1	51212-0000
28	Seal Assembly*	1	21849
29	Slinger	1	3181
30	Shaft	1	51207-0000
31	Key	1	X4000-270A
32	Shim	1	51211-0000
33	Inner Bearing Seal	1	SP2700-50
34	Bearing	1	SP2600-04
35	Retaining Ring	1	SP1700-245

Service Kit SK407-0011 contains parts marked*
Service Kit SK407-0003 contains parts marked* plus ** in place of Neoprene Impeller.

Refer to Operating Instructions on page 17.

Inspect all parts for wear or damage and replace if necessary.

DIS-ASSEMBLY-CLUTCH

1. Remove snap-on cover.
2. Unscrew spring retaining bolt at end of shaft. Remove retainer, spring and clutch cone.
   Note: Bolt is assembled with Loctite.
3. Remove one retaining bolt from guide tube assembly.
4. Unscrew bolts holding engaging mechanism housing to body. Remove complete clutch assembly including pulley and engaging mechanism from pump.
5. Remove key and shim from shaft.
6. To break down handle, pulley and engaging mechanism remove small retaining ring at bearing, support pulley press engaging mechanism sleeve through bearing in handle and remove handle from engaging mechanism.
7. If pulley bearing requires renewing, remove retaining from pulley and push out bearing.

DIS-ASSEMBLY - PUMP

1. Remove end cover screws, end cover and gasket.
2. Remove impeller.
3. Loosen cam screw and remove cam.
4. Remove wearplate.
5. Remove seal assembly, (Lip seal - 51080).
6. Press shaft on impeller drive end to remove shaft and from pump.
7. Remove bearing retaining ring from shaft.
8. Press shaft out of bearing supporting bearing inner.
9. Remove inner bearing seal if it needs replacing.

ASSEMBLY PUMP

1. Press new seal into bearing end of body with lip facing away from bearing bore.
2. Press shaft into bearing supporting inner race of bearing. Fit bearing retaining ring onto shaft.
3. Position slinger in body drain area. Grease seal area of shaft. Push bearing and shaft into body by pressing on outer race of bearing.
4. MODEL 51080.
   Fit lip seal into body with lip facing into impeller bore.
   MODEL 51200
   Take new seal seat (cup rubber and seal seat), lightly grease the outside edge of cup rubber and press into cavity in pump body with ceramic facing towards impeller bore. Slide mechanical seal sub assembly over shaft until it engages against ceramic face of stationary seal.
5. Fit wearplate.
6. Coat cam screw thread, top side and back of cam, with non setting jointing compound and fit into body, securing with the cam screw.
7. Lightly grease impeller bore and fit impeller.
8. Fit end cover and gasket and secure with screws.

ASSEMBLY-CLUTCH

1. Screw engaging mech/sleeve into housing approximately 1 turn. Fit handle over sleeve and set 0.25mm clearance between housing and handle, when in the dis-engaged position, by screwing sleeve in or out as required. Lock handle on sleeve with grub screws.
   Note: Lubricate thread with ANTI-SCUFFING PASTE.
2. Re-fit bearing and retaining ring into pulley. While supporting clutch mech/sleeve press pulley bearing assembly onto sleeve hard up against handle.
3. Fit pulley/handle/engaging mech. assembly to pump with 3 bolts.
4. Fit guide tube mechanism to handle and to engaging mech housing.
5. Fit shim and key onto shaft.
6. Fit clutch cone, spring and spring retainer and secure with bolt. Tighten bolt until retainer is clamped against shaft.
   Notes: Lubricate between shaft and clutch cone with ANTI-SCUFFING PASTE. Assemble screw with Loctite (nut lock).
7. Re-fit snap-on cover.

ADJUSTMENT-CLUTCH

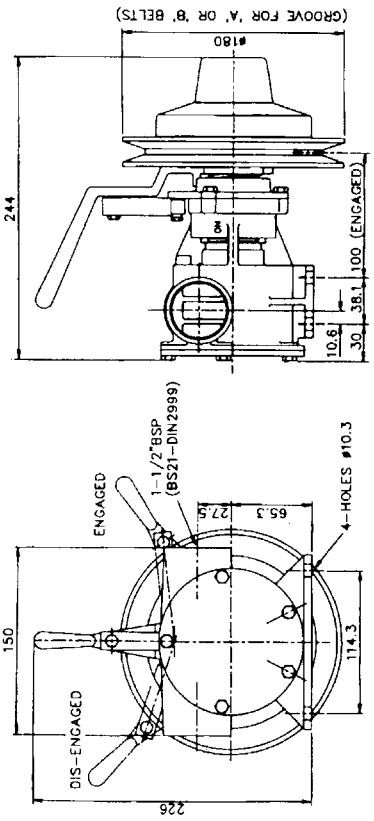
When new, the clutch will begin to engage approx. half way between the 'OFF' and 'ON' position i.e. when handle is near to the vertical position. As wear takes place the engaging position will move towards the 'ON' position. When there is little movement left between the engaging point and the 'ON' stop the clutch can be adjusted as follows:

1. When handle in the 'OFF' position remove snap on cover.
2. Unscrew spring retaining bolt at end of shaft. Remove retainer spring, clutch cone and key.
   Note: Bolt is assembled with Loctite Nut Lock.
3. Remove shim and re-assemble key, clutch cone, spring, retainer, screw and cover.
   Note: Removal of shim will restore engaging point to its original position. Once shim has been removed no further adjustment is possible and clutch cone, and possibly pulley will need to be replaced.

Refer to Operating Instructions on page 17.

INSTALLATION DETAILS

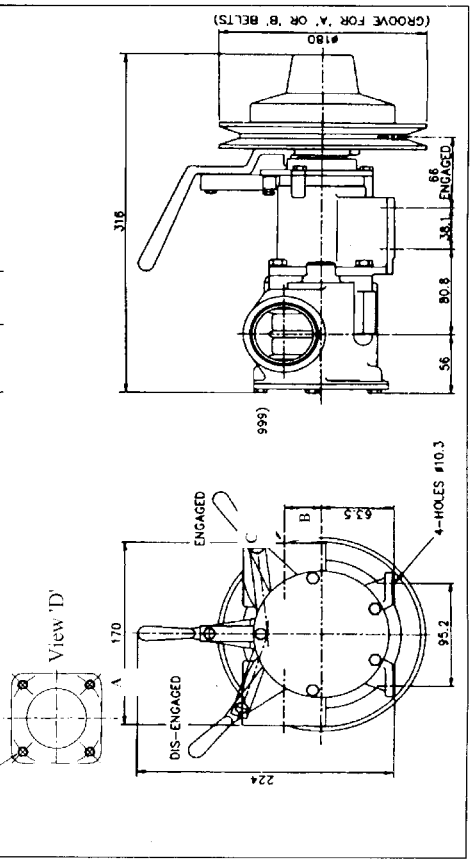
51200 SERIES



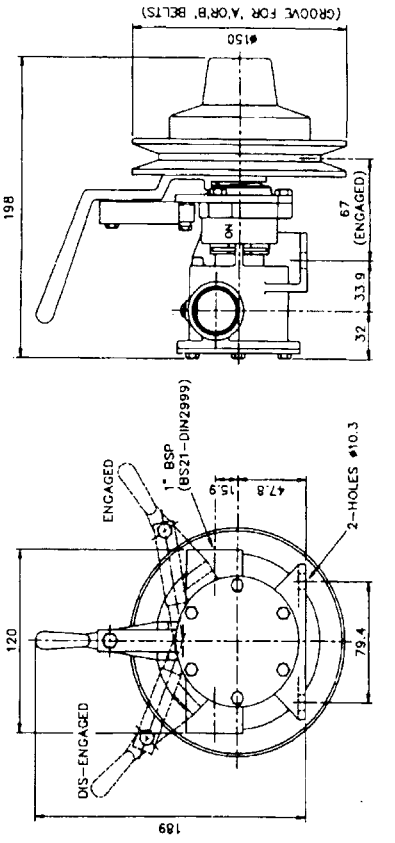
51270 SERIES

	A	B	C
51270 - 'O' Series	152.4	41.3	See View 'D'
51270 - '2' Series	170	32	2" BSP (BS21 - DIN2999)

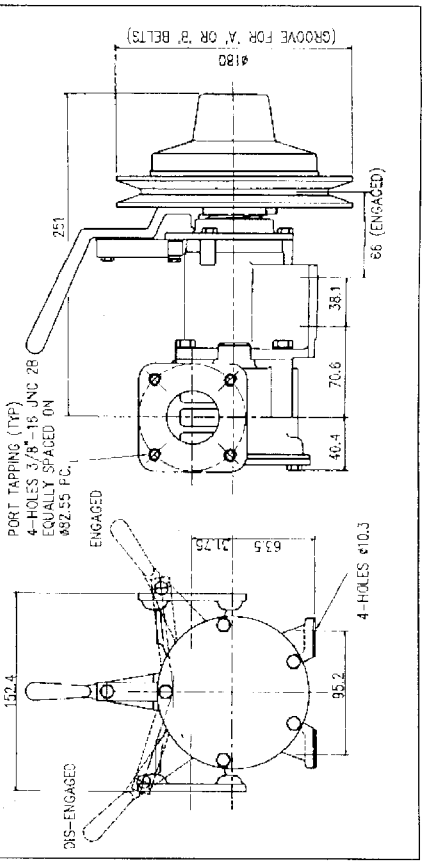
PORT TAPPING (TYP)
4 - HOLES 3/8 - 16 UNC 2B
EQUALLY SPACED ON
Ø90.47 -0.2 PC.



51080 SERIES



51220 SERIES (Flanged Ports)



JABSCO® INSTALLATION /OPERATION & SAFETY ADVICE

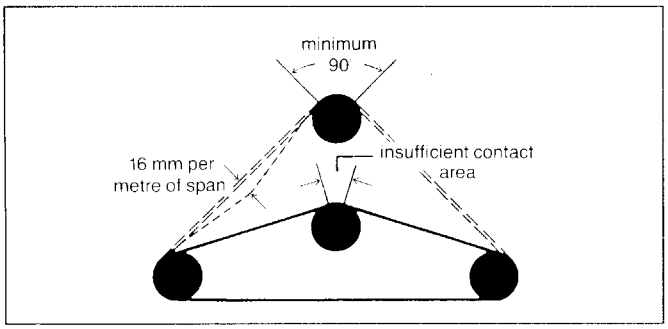
PUMP MAY BE MOUNTED in any position. When installed vertically motor must be above the pump.

THE ROTATION OF THE PUMP SHAFT determines the location of the pump inlet/outlet ports: refer to installation drawing.

BEFORE INSTALLING rotate pump shaft and impeller in the direction of the required operation.

ALL PUMP PIPEWORK must be adequately supported to avoid stress on pump and pump components and consequential leakage.

BELT DRIVEN PUMPS excessive drive belt tension will cause rapid belt wear and may result in premature bearing failure. It should be possible to deflect a correctly tensioned belt between pulleys about 16mm per metre of span by applying finger pressure. Ideally, the contact area should be about 120° but not less than 90°.



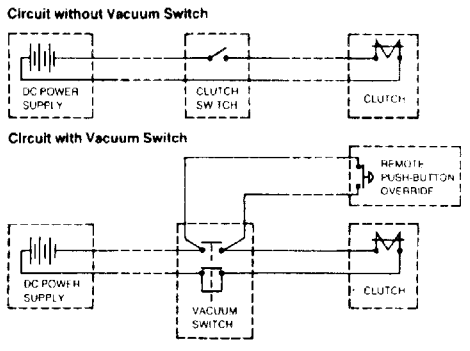
OPERATION

Pump should not be opeated above its published performance without referring to distributor.

D.C. CLUTCHES

Inadequate supply voltage at DC terminals (not less than 20% below rated voltage at full load) due to partly discharged battery or voltage loss through long or small size electric wire may cause fuses to blow or pump starting problems. If fuse fails repeatedly, identify and solve the fault. (DO NOT under any circumstances fit a heavier fuse or bridge fuse terminals).
Connect black wire or negative (-) battery terminal.
Red wire should run via a suitably rated switch and fuse to a positive (+) battery terminal. The pump should be installed where it will always remain dry. Ensure battery capacity is adequate for ALL electrical equipment (pumps, radio, TV, refrigerator, navigational instruments). Observe installation instructions of instruments likely to be affected by close proximity of a magnetic field such as navigational instruments.

WIRING DIAGRAM



Electrical installation must take into account the minimum wire size recommended.

12v Clutches need 5 amp fuse with 1.5mm² wiring.
24v Clutches need 2.5 amp fuse with 1.0mm² wiring.

TEMPERATURE: Operating range

Neoprene Impellers	4-80°C
Oil Resistant Impellers	10-90°C

PUMPS: are dry self-priming i.e. do not require to be filled with liquid start up.

RUNNING DRY: Unit depends on liquid pumped for lubrication. A dry running period of up to 30 seconds is generally a safe length of time. If pump has not been primed after 30 seconds, stop and check for air leaks in pipework, and impeller, seal or gasket damage.

SAFETY ADVICE

Ensure that all moving parts are adequately guarded to prevent accidental contact. Leakage from mechanical seal or gland could cause hazard. If liquids being pumped are toxic or corrosive, use of a drip tray is recommended.

DO NOT USE for Petrol, Toluene, Benzene or light fraction petroleum products such as solvent, thinners or other liquids with flashpoint below 37°C.

FREEZING Temperatures - do not permit liquid to freeze in pump body. Drain pump by loosening end cover.

IT IS A REQUIREMENT OF COSHH(1988) REGULATIONS THAT THE MANUFACTURER'S INSTRUCTIONS IN THE HANDLING OF HAZARDOUS SUBSTANCES MUST BE OBSERVED AT ALL TIMES.

To conform with the Health and Safety and COSHH Regulations, ITT Jabsco will require that any pump or part of a pump that is returned to this company for repair or examination, or for any reason whatsoever, will be accompanied by a letter stating what the pump/part has been pumping.

If the liquid or product is hazardous or in any way dangerous, this must be stated and the chemical make-up of it must be stated in detail.

Unless this procedure is observed then the unit will not be accepted on our company premises. The only exception to this rule is if the pump returned is new and unused.