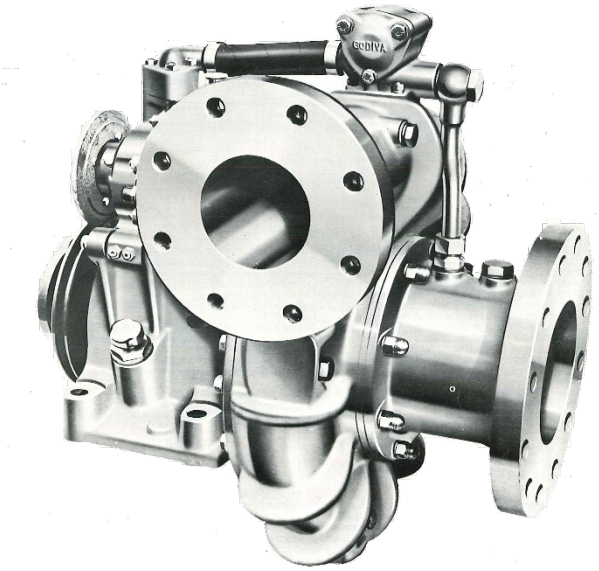
Vehicle Mounted Fire Pump GV10000 Model

Installation Manual
Operation Manual
Workshop Manual
Parts List



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AMENDMENT RECORD **Model: GV10000**				
Mod No.	**Date**	**Page/s**	**Amendment**	**New Issue No.**
	July 2002		New Issue	1
1	Sep 2021	39	Insertion of installation manual with corresponding drawings. Addition of shipping details and lifting locations. Layout of manual also updated; previous content remains the same.	2

CONTENTS

SAFETY

Please read this manual before operating the machinery.
Safety notices -

= Non-compliance could affect safety

IMPORTANT = In case of damage to pump

ATTENTION = In case of personal hazards

In operation

- Rotating parts **must** be guarded against accidental contact.
- Water ring primer pulley, lift off cylinder area and assembly **need to be guarded** by vehicle builder.
- **Do not** insert items into the suction tube when pump is running.
- Discharge hoses **must not** be disconnected when the unit is running.
- **No** components must be unfastened when the unit is running.
- When installing or removing the pump, suitable lifting equipment **must be used.**
- Suitable ear protection **must be worn** when pump is running – if necessary.
- **Maximum** allowable inlet pressure is **12 bar**.
- **Do not** run the pump without water for more than one minute.

Training

Godiva pumps must only be operated by trained personnel.

Maintenance

The user must maintain the equipment in an operational condition, as per regulation 5 in the Provision and Use of Work Equipment Regulations 1998.

Environmental Protection

Used oil from the pump bearing housing must be disposed of in accordance with your local regulations

Risk Assessment

It is the duty of the pump installer to make a method statement and risk assessment of their operations when installing the pump, please contact Godiva Ltd. if assistance is required.

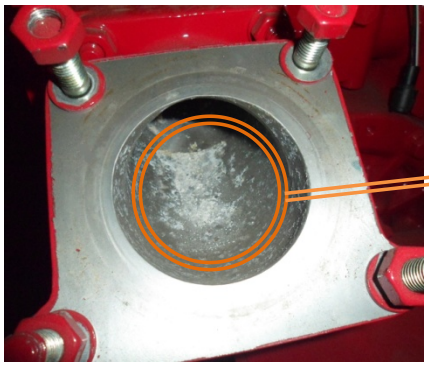
Transportation and Storage

The pump is supplied mounted on a wooden pallet and covered with a tri-walled cardboard box. This protection is suitable for standard methods of freight handling using forklift trucks. No more than one pump should be stacked on top of another. The tri-walled

cardboard box is not suitable for storage outside, or when open to the elements. The pump is sprayed internally with a moisture inhibitor when leaving the factory, this treatment may be required if the pump is in long term storage (6 months or more) before use. On receipt of the pump a full inspection must be carried out, if any damage has occurred please contact Godiva Ltd.

Post-production Cleaning Fluid

Immediately after production a special cleaning solution is used to clear the pump of any oil or grease that may be remaining inside the pump. Occasionally this cleaning solution leaves a deposit. This deposit has no effect on the performance and will be flushed away when the pump is first used.



Cleaning fluid deposit – will be flushed away when pump is used

Warranty

For all issues relating to warranty claims please contact Godiva Ltd. Please be prepared to quote the six-figure pump serial number located on the pump volute.

Essential installation data

Fastening bolts, pump to chassis cross-member	Use 3/4” UNC or M18 fasteners four off, minimum strength grade 8.8.
Alignment of pump drive lines	7° Effective joint angle – maximum.
Tank to suction pipework	No tank to pump connection.
Pump speed sensor (accessory)	A mechanical tachometer is available Godiva part UFP2568. Please contact sales for the drive cable.
Pump weight	321kg
Pump connections	Flexible joints are required to be fitted by the vehicle builder to include the drive coupling, the suction coupling, and the delivery connection.
Cooling	A thermal relief valve, to prevent overheating If the pump is operated without discharging water for a long period, is available to purchase from Godiva. If this option is not chosen, the vehicle builder should install a cooling system to prevent overheating.
Pressure	If the pump will be used above the **18 Bar** discharge pressure, then the vehicle builder **must** add a way to ensure this does not happen. For instance by incorporating a pressure relief valve.

INSTALLATION

1) Before installation check the pump for any transit damage.

2) Water Ring Primer (WRP)

   This type requires a header tank (4.5 litres, 1 gallon capacity minimum) to be installed by the vehicle builder. Information sheet ref. DS325 (page 22) provides details.

   In cold weather a suitable anti-freeze concentration must be maintained in the tank.

3) Pump draining

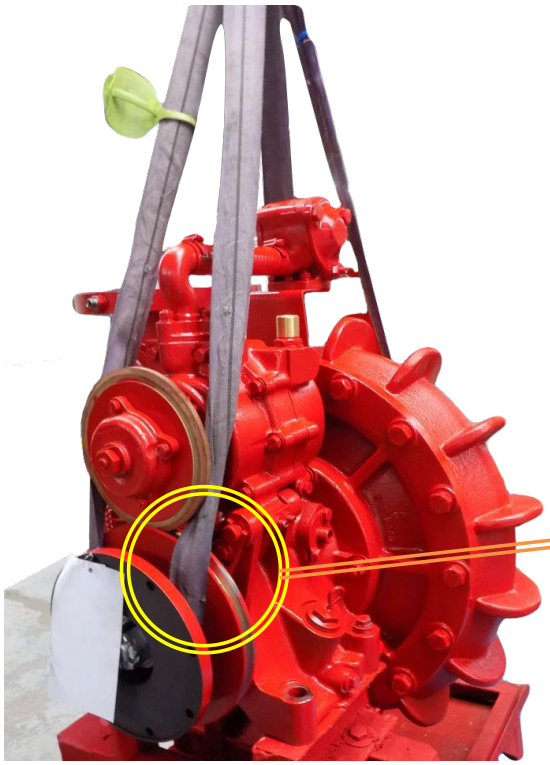
   The pump can be fitted with a drain system from the plug (G ½”) at the bottom of the volute. This should terminate at a ball valve located lower than the pump.

LIFTING POINTS

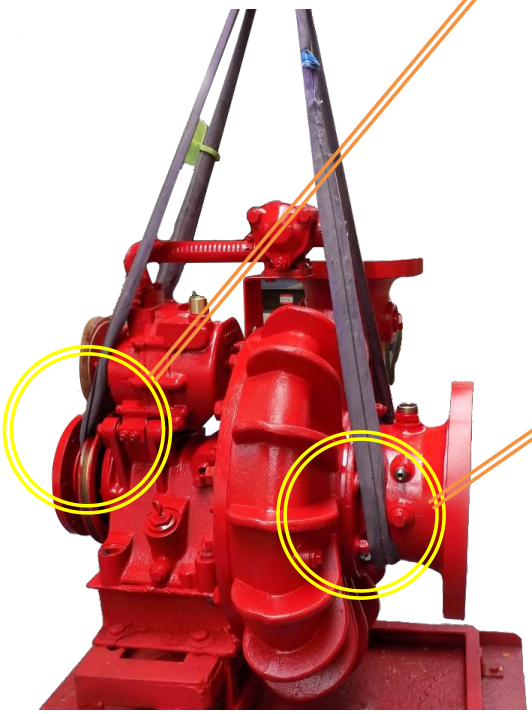
Weight:

Mk21 – Gunmetal
321Kg.

Use lifting straps that can support the respective weights above.



Mount strap around the pump driving shaft.



Mount strap around the suction tube flange.

OPERATION

Basic Operation
The Godiva Prima pump is designed for extinguishing fires with an unrestricted water source. Water must be as clean as possible and can be fresh water or sea water.

Operator Controls
Operation of the pump is by two basic controls – discharge valve and pump speed control.
After use:
If pump has been used with foam, stale water or contaminated water, flush after use.

- **Do not** use the pump in explosive environments.
- **Do not** use the pump without the inlet screen fitted.
- **Do not** run the pump without water for longer than one minute, as dry running will damage the seal.
- **Do not** exceed the maximum inlet pressure of 12 bar.

GENERAL DESCRIPTION

The Godiva single-stage centrifugal pump is driven in a clockwise direction as viewed from the drive end. The pump drive shaft is stainless steel and runs on ball bearings in an oil bath. Shaft sealing is by a special mechanical face seal ensuring efficiency and long life without adjustment. The tachometer drive gears provide a 4:1 reduction ratio.

Priming is achieved automatically by means of a water ring primer. When the pump is started, the primer is driven via a pulley on the pump shaft and a fibre wheel on the primer shaft. The water ring primer impeller is thus turned to cause a depression in the priming pipes, so allowing atmospheric pressure to force water into the suction tube. When the water reaches the pump impeller and pressure builds up in the volute, this pressure is transmitted to the disengaging unit which lifts the primer out of engagement with the pump drive pulley.

A non—return valve is provided on the water ring primer to prevent air from passing through the primer and into the pump.

The GVB10000 is made of phosphor-bronze (Gunmetal).

The Pump is fitted with 203mm (8”) diameter suction flange and 127mm (5”) diameter discharge flange.

Shipping details:
case size: 76 x 760 x 910
Weight 336Kg

LUBRICATION

The oil bath provided for the pump shaft ball bearings has a capacity of approximately 2 pints (1.14 litres) and should be topped up when necessary with S.A.E.30 oil until the oil reaches the top of the filler hole. It is suggested that the oil bath is drained and refilled with fresh oil every six months.

The bearings for the water ring primer are sealed with grease and it should be necessary to re-sealed with grease only if the primer is dismantled. Use a good quality general purpose grease.

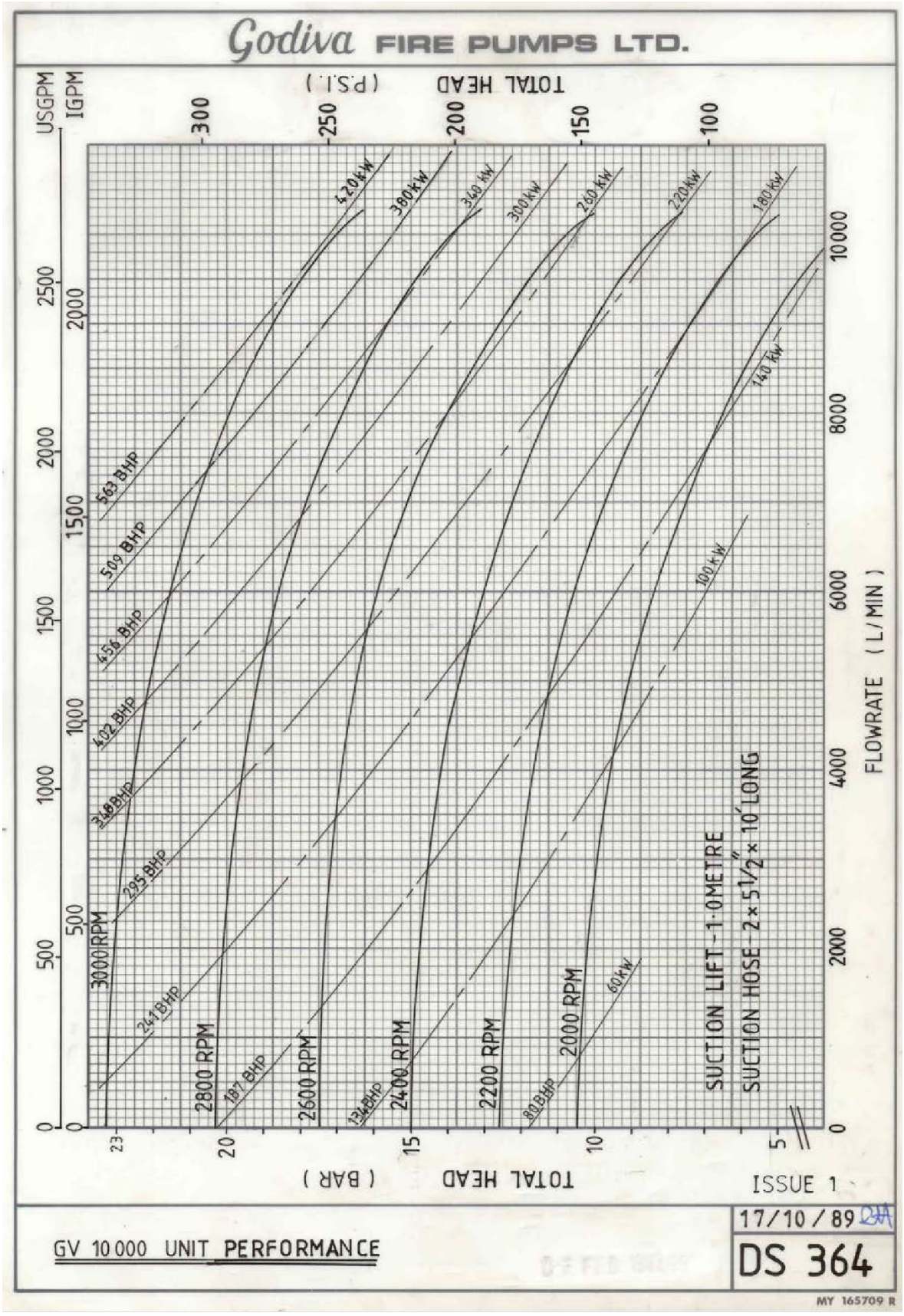
PROTECTION AGAINST FROST

As a precautionary measure when frost is anticipated, drain the water from the pump and its ancillaries.

The pump itself is drained by removing the drain plug from the underside of the volute.

The water ring primer should also be drained, the method of doing this will depend on the installation of the pump

PERFORMANCE CURVE



PUMP OVERHAUL

CHAPTER 1

SUCTION TUBE & SUCTION TUBE SEALING RING

Removing and Refitting

To remove the suction tube, undo the union nuts at each end of the priming suction pipe and take off the pipe.

Remove the eight bolts and sealing washers securing the suction tube to the volute body and take off the suction tube. This will reveal the suction tube sealing ring which has four holes tapped ½" UNC to allow jacking bolts to be used.

Joint washers are fitted between the volute body and the sealing ring, and between the sealing ring and the suction tube.

When refitting the suction tube sealing ring and the suction tube, ensure that the flanges are clean. Fit new joint washers with a smear of jointing compound.

CHAPTER 2

SUCTION TUBE SEALING RING

Maintenance Attention

Check diameter 'A' of the suction tube sealing ring (see Fig. 1). If it exceeds 207.3mm (8.163") the suction tube sealing ring should be renewed.

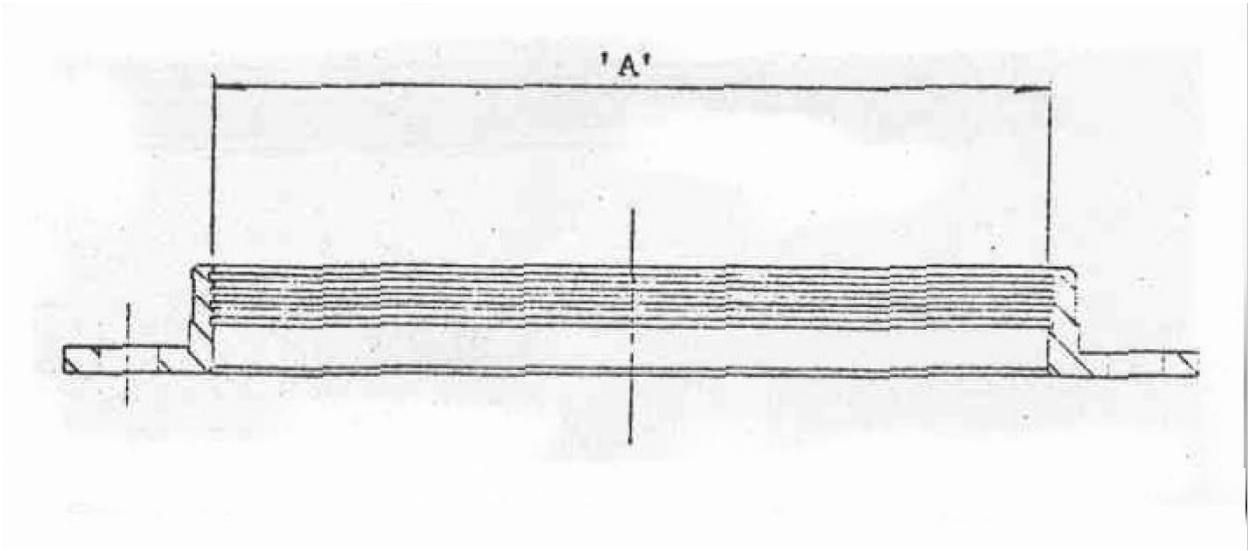


Figure 1

CHAPTER 3

VOLUTE BODY

Removing & Refitting

Slacken the clips and disconnect the rubber hose from the priming valve to the primer. Remove the sixteen bolts and sealing washers which attach the volute body to the pump head and remove the volute body.

When re-assembling, ensure that the flange faces are clean. Fit a new joint washer with a smear of jointing compound.

A 5/8" UNC stud, fitted temporarily into one of the tapped holes in the volute body, will be useful in guiding the volute body into position when re-assembling.

CHAPTER 4

PRIMING VALVE

Maintenance Attention

The priming valve may be left in position for examination of internal components, but if it is necessary to remove the valve, remove the priming pipe and rubber hose from the valve and remove the nuts, spring washers, plain washers and bolts which secure it to its bracket. Lift off the valve.

To dismantle the valve, remove the three nuts, spring washers, plain washers and bolts which retain the end plates. These can then be removed together with the spring. The diaphragm is exposed and may be examined for deterioration, cracks, wear etc.

To examine the valve sealing washer, unscrew the self-locking nut from the centre bolt and remove the spring washer, large stepped washer, and the nitrile rubber seal. The seal and its seating should be examined for damage. Should the diaphragm require renewing, this should be carried out at this stage.

When refitting the end covers ensure that the flange faces are clean. Use a new paper gasket with jointing compound on the inlet cover, (this is at the end opposite to the diaphragm) and replace in position. Fit the return spring. Push the three bolts through the cover and the body and refit the diaphragm end cover plate. Replace the nuts and washers to complete the assembly.

CHAPTER 5

IMPELLER

Removing & Refitting

In order to remove the impeller, take off the volute body as in Chapter 3. Undo the impeller nut and remove the impeller from the splined shaft, carefully levering between the impeller and the pump head if necessary.

When refitting the impeller, use a new split pin to secure the slotted nut. There is a hole through the shaft to receive the split pin.

CHAPTER 6

IMPELLER

Maintenance Attention

Check dimensions ‘B1’ and ‘B2’ on the impeller (see Fig. 2). If ‘B1’ is less than 204.5mm, (8.05”) or if ‘B2’ is less than 203.2mm (8.00”), fit a replacement impeller.

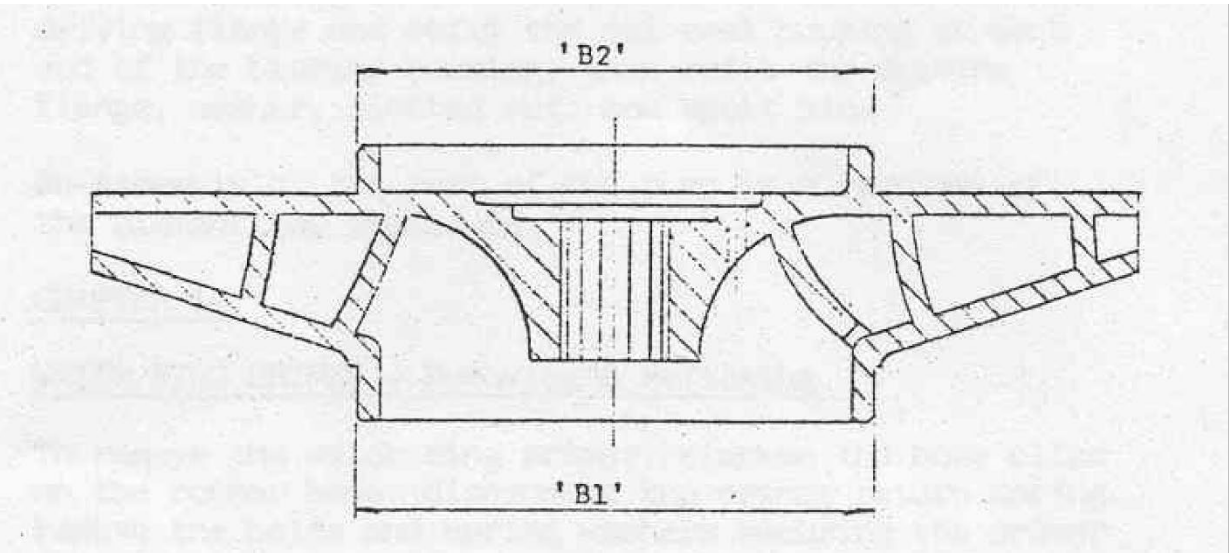


Figure 2

CHAPTER 7

CARBON SEAL & SEALING RING ETC

Maintenance Attention

With the impeller removed, (see Chapter 5), access is gained to the carbon seal seating ring, its spring, the carbon seal and the wearing ring.

In the event of excessive leakage past the carbon seal or from the drain hole in the pump head, first examine the two O-rings (one under the carbon seal, and one in the carbon seal seating ring). Renew if necessary.

To remove the O-rings, pull the shaft sleeve off the shaft complete with carbon seal seating ring.

The seating ring can be removed from the shaft sleeve by removing the round wire circlip which retains it. The O-ring can then be seen inside the seating ring.

The carbon seal can now be removed from the housing and will reveal the other O-ring. Examine the carbon seal. If the end face which bears on the seating ring is scored, a new carbon seal must be fitted. In this case it is advisable to also renew the seating ring. The original seating ring can be re-used if the sealing face is lapped flat.
Re-assembly is straight forward, the round wire circlip to retain the seating ring on the shaft sleeve.

To install the seal **do not** use grease, **use** a water-based lubricant. Clean the faces with a solvent and wet faces with clean water before assembly.

CHAPTER 8

WEARING RING

Maintenance Attention

Check diameter ‘C’ (Fig. 3) of the wearing ring. If it exceeds 205. 9mm (8.107”), fit a new wearing ring. This entails the removal of six bolts and washers. Two 5/16” UNC jack bolts may be used.

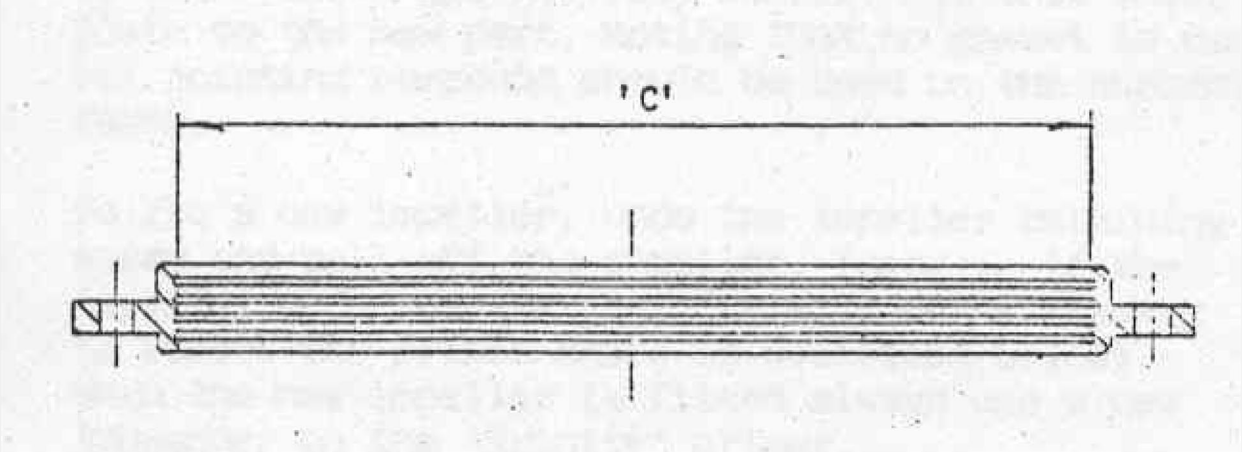


Figure 3

CHAPTER 9

TACHOMETER DRIVE

Maintenance Attention

To remove the tachometer drive, remove the two bolts and spring washers securing the tacho drive housing to the bearing housing. Take out the drive assembly.

Normally requires no attention, but if a new pinion has to be fitted, a new thrust button must also be fitted.

CHAPTER 10

OIL SEALS

Removing & Refitting

In the remote event of an oil leak from the bearing housing, then one, or both, oil seals must be replaced.

To remove the oil seal from the drive flange end, remove the split pin, slotted nut, and washer, from the pump shaft, and pull off the drive flange. The oil seal housing will now be exposed and can be removed by undoing the six bolts and washers which secure it.

Press out the old oil seal towards the stepped face of the housing. Press in the new oil seal in the opposite direction, making sure that the open end of the seal is towards the stepped face of the housing.

To remove the oil seal from the impeller end of the bearing housing it is necessary to remove the volute body (see Chapter 3), the impeller (Chapter 5), and the carbon seal, undo the six nuts and washers which join the pump head to the bearing housing and remove the pump head. The oil seal housing is now exposed and can be removed by undoing the six bolts and washers which retain it. Press out the old oil seal towards the flat face of the housing. Press in the new oil seal in the opposite direction making sure that the open end of the seal is towards the stepped face side of the housing.

CHAPTER 11

DRIVE SHAFT BEARINGS

Removing & Refitting

To gain access to the drive shaft bearings the pump has to be dismantled by removing the volute body, impeller, pump head, tachometer drive, and both oil seal housings, as detailed in the previous chapter. The water ring primer can also be removed if necessary (see Chapter 12). The shaft may then be tapped out towards the impeller end, with the bearing and the tachometer gear piece. Should the bearing remain in the bearing housing it should be tapped out with a soft drift.

The drive end bearing will remain in the housing after the shaft has been tapped out. It can be removed by tapping with a soft drift.
To re-assemble, the impeller end bearing must first be pressed on to the shaft, ensuring that it fits firmly against the shoulder on the shaft. The shaft and bearing assembly are fitted into the bearing housing from the impeller end. Fit the tachometer gear piece to the shaft by sliding on from the flange end.

The bearing at the drive end should now be fitted. The driving flange and slotted nut can be fitted temporarily and used to draw the bearing into the housing.

When the bearing is fitted, remove the slotted nut and driving flange and refit the oil seal housing at each end of the bearing housing, then refit the driving flange, washer, slotted nut, and split pin.

Reassembly of the rest of the pump is a reversal of the dismantling procedure.

CHAPTER 12

WATER RING PRIMER

Removing & Refitting

To remove the water ring primer, slacken the hose clips on the rubber hose, disconnect the primer return spring, remove the bolts and spring washers securing the primer fulcrum shaft keep plate, slacken the locknuts and grubscrews in the primer pivot, then tap out the primer fulcrum shaft.

On refitting the primer, it is advisable to rotate the fulcrum shaft from its original position so that the grubscrews bear on a new part of the shaft. Before tightening the grubscrews, ensure that both sides of the primer fibre wheel bear on the sides of the groove in the pump pulley. Ensure that the fibre wheel is correctly lined with the drive pully.

CHAPTER 13

WATER RING PRIMER

Maintenance Attention

To dismantle the primer, remove the nuts and washers from the studs in the primer body. Remove the bearing housing complete with shaft, bearings, impeller and pulley. Examine the inner diameter of the impeller, and the corresponding surface of the suction and delivery cover for excessive scoring, renewing these parts if necessary.

To fit a new suction and delivery cover, remove the self-locking screws which secure the cover plate to the suction and delivery cover. Fit this cover plate to the new part, noting that no gasket is used, but a jointing compound should be used on the contacting faces.

To fit a new impeller, undo the impeller retaining screw and pull off the impeller. (note - if the impeller binds on the shaft it will be necessary to remove the primer shaft as described below).

To remove the primer shaft, take off the impeller as detailed above. If the impeller binds on the shaft, then remove the impeller retaining screw. At the other end of the shaft, knock back the tab— washer and remove the nut securing the pulley to the shaft. Remove the pulley and extract the woodruff key and the circlip. Tap out the shaft from the impeller end. The shaft will bring the bearing with it and these can now be replaced if necessary. The shaft seal will remain in position and If this requires renewing it should be drifted out, together with its backing washer, towards the impeller end.

When fitting a new seal ensure that the lip on the backing washer and the open end of the seal face is towards the impeller.

To fit a new friction drive pulley, remove the pulley from the shaft as detailed above, undo the four nuts, bolts, and washers securing the pulley to the centre piece. Fit the new pulley.

To examine the non-return valve, remove the three nuts and washers securing the primer elbow to the primer body. If the non-return valve O-ring is faulty, a new one must be fitted.

CHAPTER 14

PRIMER DISENGAGING UNIT

Maintenance Attention

To remove the disengaging unit, slacken the hose clips and remove the rubber priming hose. Disengage the primer return spring, and swing the primer upwards and clear of the disengaging unit.

Disconnect the pipe union on the underside of the disengaging unit and unscrew the disengaging unit from the bracket.

The primer release pipe may now be removed from the pump body if necessary.

The disengaging unit is dismantled by removing the circlip, washer and rubber cap from the spindle, then unscrewing the six nuts and washers from the studs in the housing.

The diaphragm should now be examined for deterioration cracks, etc. To dismantle the diaphragm assembly, unscrew the self-locking nut from the end of the spindle.

When re-assembling the diaphragm assembly, ensure that the diaphragm pressure plate is fitted and use a new self-locking nut.

SPARE PARTS LIST

TO ORDER SPARE PARTS:
ALWAYS QUOTE:
1. The pump serial number as identified on the unit. The serial number is stamped on the volute casing, near the delivery flange.
2. The item number, part number and the description, as given in the parts list below.

The company cannot accept responsibility for parts not ordered in accordance with these instructions.

GENERAL:

1. PAYMENT:
In the absence of an approved account, goods will be invoiced “Pro Forma” or sent C.O.D. Delivery is ex-works, carriage and packing being extra.

2. DAMAGE:
The company does not hold itself responsible for goods lost or damaged in transit. All packages should be signed for on receipt as “unexamined”. In the event of loss or damage, a claim should be made on the carrier without delay.

3. PARTS CLAIMED TO BE DEFECTIVE AND REPLACEABLE UNDER GUARANTEE.
Such parts must be returned to the works, carriage paid, for examination.
THE DATE OF DELIVERY AND SERIAL NUMBERS MUST ALWAYS BE GIVEN. The cost of carriage and of any work entailed in refitting replacement parts is chargeable to the claimant.

4. PATTERNS
If there is any doubt, send the old parts as patterns. Such patterns must be CLEARLY LABELLED, INDICATING THE SENDER’S NAME AND ADDRESS.
If the patterns are to be returned, they must be marked accordingly, otherwise they will be scrapped.

5. WARNING.
It is of the greatest importance that only genuine spare parts supplied by GODIVA LTD. are used, otherwise the guarantee will be null and void.

6. All sales are made subject to the Company' s Standard Conditions of Sale in force at the time of the sale.

HOW TO READ THE SPARE PARTS LIST

The lay-out of this spare parts list enables the composition of the various assemblies to be ascertained immediately.
It should be noted that in some cases the parts listed under a particular assembly are not all parts used to make up the assembly concerned. This is because it is essential that certain parts are issued only in a pre-assembled form.
Parts which are called “UNITS” differ from “ASSEMBLIES” in that none of their component parts can be supplied separately but only in a pre-assembled form.

GVB10000 Spare parts

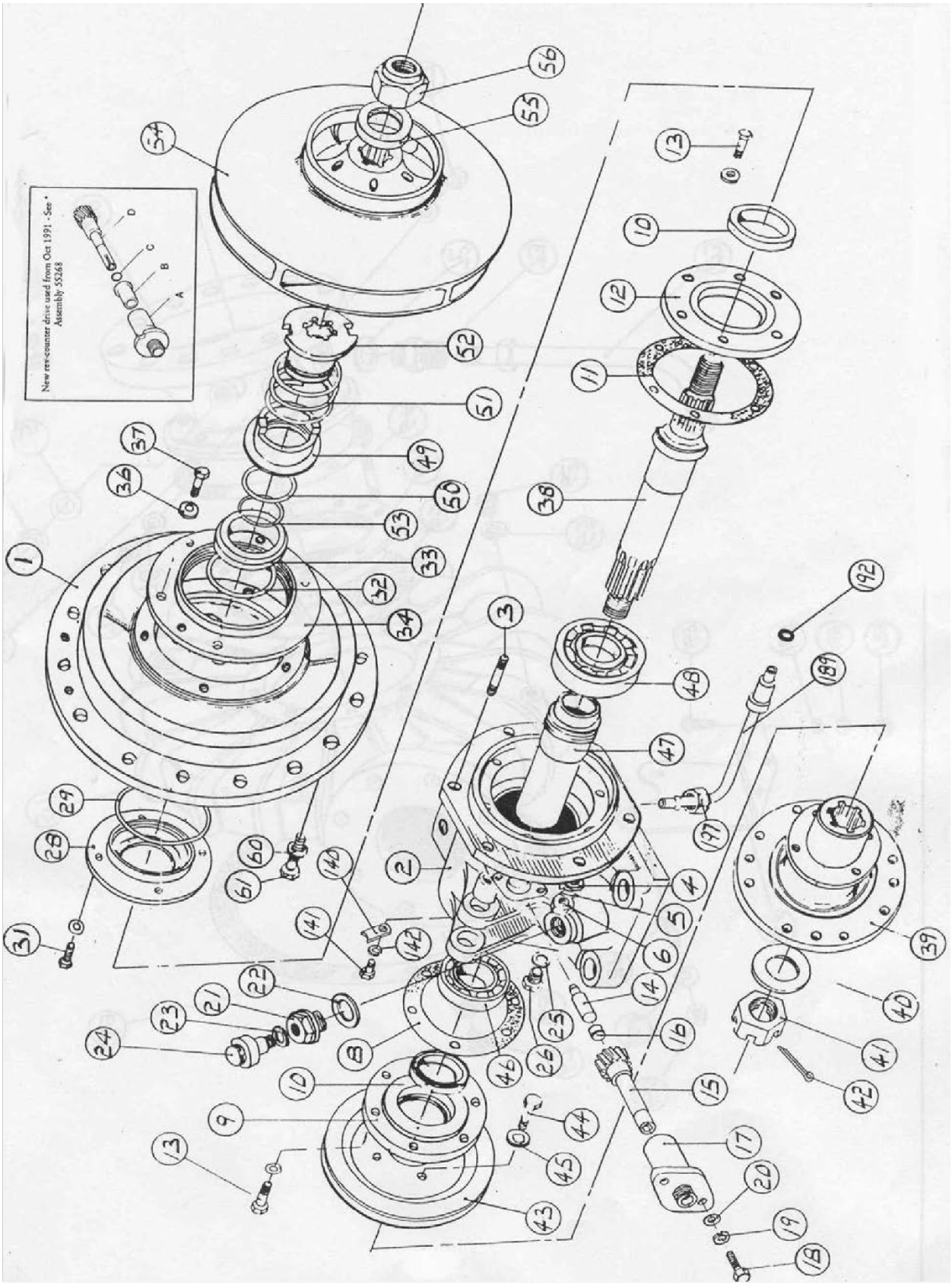
ITEM No.	PART No.	GVB 10000 – Gunmetal Version DESCRIPTION		No. PER UNIT
		PUMP HEAD		
B1	UFPM 6980/1	Pump head		1
B2	UFPM 6978/1	Bearing housing		1
B3	S167/13C	1/2in UN stud		6
B4	S21/7C	1/2in Plain washer		6
B5	S20/7C	1/2in Spring washer		6
B6	S214/7C	1/2in UNF Nut		6
B7	UFPM 6949/7	5/16in UNC helicoil Scr/lock		12
B8	UFPM 6965	Joint – bearing housing		1
B9	UFPM 6964	Oil seal housing		1
B10	UFPM 6956	Oil seal		2
B11	UFPM 6966	Joint – bearing housing		1
B12	UFPM 6967	Oil seal housing		1
B13	S186/8C	5/16in UNC bolt		12
B14	UFP 2273	Locating pin		1
B15*	1842	Rev. counter drive pinion		1
B16*	1312	Thrust button		1
B17*	1290	Rev. counter drive pinion		1
B18	A187/8C	3/8in UNC bolt		2
B19	S20/5C	3/8in Spring washer		2
B20	S21/5C	3/8in Plain washer		2
B21	UFP2510	1 in BSP Plug		1
B22	UFP 2303/13	Sealing washer		1
B23	UFP 2303/5	Sealing washer		1
B24	UFP 2493	Breather		1
B25	UFP 2303/7	Sealing washer		1
B26	FWP 1059/1U	3/8in BSP Shoulder plug		1
B27	S165/7C	3/8in UN styd		2
B28	UFPM 6959	Carbon seal housing		1
B29	UFPM 6951	'O' ring – carbon seal housing		1
B30	UFPM 6949/5	1/4in. UNC helicoil S/lock insert		4
B31	S185/5C	1/4in. UNC bolt		4
B32	FTF 1985	'O' ring carbon seal		1
B33	UFPM 6953	Sealing element		1
B34	UFPM 6970/2	Wearing ring		1
B35	UFPM 6949/7	5/16in. UNC helicoil S/lock insert		6
B36	UFP 2553	Washer		6
B37	UFP 2298	5/16in. UNC bolt		6
		PUMP DRIVE SHAFT		
B38	UFPM 6977	Pump shaft		1
B39	UFPM 6975/1	Driving flange		1
B40	UFPM 6951	Washer		1
B41	S216/12C	1in. Slotted nut		1
B42	S31/J16	Split pin5/32in x 13/4in		1
B43	UFPM 6974	Pulley		1
B44	S206/5C	5/16in UNF Bolt		6
B45	S60/8C	5/16in. Shakeproof washer		6
B46	S50/90	55mm bearing		1
B47	UFPM 6971	Rev. counter gear piece		1
B48	S50/91	60mm bearing		1
B49	UFPM 6963	Carbon seal sealing ring		1
B50	UFP 2301	'O' ring		1
B51	UFPM 6955	Seal spring		1
B52	UFPM 6973	Shaft sleeve		1
B53	UFPM 6954	Circlip		1
B54	UFPM 6989/1	Impeller		1
B55	UFPM 6962	Impeller nut washer		1
B56	S235/14C	1.1/4in. UNF 'Nyloc' nut	Early models	1
B56	UFPM 8535/1	Slotted nut	Later models	1
B56	UFPM 9329	Split pin 2.1/2in. long	Later models	1

*		Note: From October 1991 use:		
Inset on pump head illustration P.21	55268	Rev-counter drive assembly	1	
A	1290/2	Housing	1	
B	52138/05	Bush	1	
C	FWMP 5150/1	'O' ring	1	
D	1842/3	Pinion, rev-counter drive	1	
		VOLUTE BODY ASSEMBLY		
B57	UFPM 6981/1	Volute body	1	
B58	UFPM 6976	Joint washer – volute body	1	
B59	11117/14	5/8" UNC helicoil insert	16	
B60	UFP 2303/6	5/8" Sealing washer	16	
B61	UFPM 6960	5/8" UNC hex head bolt	16	
B62	S29/4	½" BSP plug	4	
B63	UFP 2303/8	Sealing washer – dowty	4	
B64	UFPM 7242	½" UN stud	8	
B65	UFPM 6982	Joint – suction tube sealing ring	2	
B66	UFPM 6972/1	Suction tube sealing ring	1	
B67	FWP 1121/1	¼" BSP union	1	
B68	UFP 2303/5	Sealing washer	1	
		SUCTION TUBE ASSEMBLY		
B69	UFPM 6979/1	Suction tube	1	
B70	UFP 2303/5	Sealing washer – dowty	8	
B71	S25/7C	½" UNF nut	8	
B72	UFP 2303/10	Sealing washer – dowty	1	
B73	CDB 1169	Stud coupling	1	
B74	S29/4	½" BSP plug	2	
B75	UFP 2303/8	Sealing washer – dowty	2	
B76	FWP 1121/1	¼" BSP union	1	
B77	S29/2	¼" BSP plug	1	
B78	UFP 2303/5	sealing washer - dowty	2	
		WATER RING PRIMER'		
B79	50628/01	Water ring primer assembly	1	
B80	WRP 7934/1	Water trap housing	1	
B81	UFP 2303/9	5/8" BSP sealing washer	1	
B82	WRP 7977/1	7/8" Water pipe connection	1	
B83	UFP 2303/5	¼" BSP sealing washer	2	
B84	WRP 7945/1	½" Water pipe connection	1	
B85	1590	¼" BSP shoulder plug	1	
B86	WRP 7953	Gasket	1	
B87	S153/18C	5/16" UN stud	6	
B88	S153/26C	5/16" UN stud	1	
B89	S153/28C	5/16" UN stud	3	
B90	WRP 7936	Cover plate	1	
B91	WRP 7990	¼" washer	5	
B92	WRP 7992	¼" UNC socket head screw	5	
B93	WRP 7952/1	Suction & delivery cover	1	
B94	WRP 7954	Gasket	1	
B95	WRP 7970	¼" UNF set screw x 5/8" long	1	
B96	WRP 7971	Washer	1	
B97	WRP7931/1	Impeller	1	
B98	WRP 7985	32 x 22 7mm seal	1	
B99	WRP 7982	Seal backing washer	1	
B100	WRP 7941/1	Primer bearing housing	1	
B101	WRP 7973	Elbow gasket	1	
B102	WRP 7949/2	Spring retainer	1	
B103	WRP 7972	Spring	1	
B104	WRP 7948	Non-return valve	1	
B105	WRP 7993	'O' ring	1	
B106	WRP 7974	Valve sleeve	1	
B107	WRP 7967/1	Suction elbow	1	
B108	S164/18	5/16" UN stud	3	
B109	S21/4C	5/16" Plain washer	3	
B110	S20/4C	5/16" Spring washer	3	
B111	S214/4C	5/16" UNF nut	3	
B112	UFP 2275	Primer fulcrum pin	1	

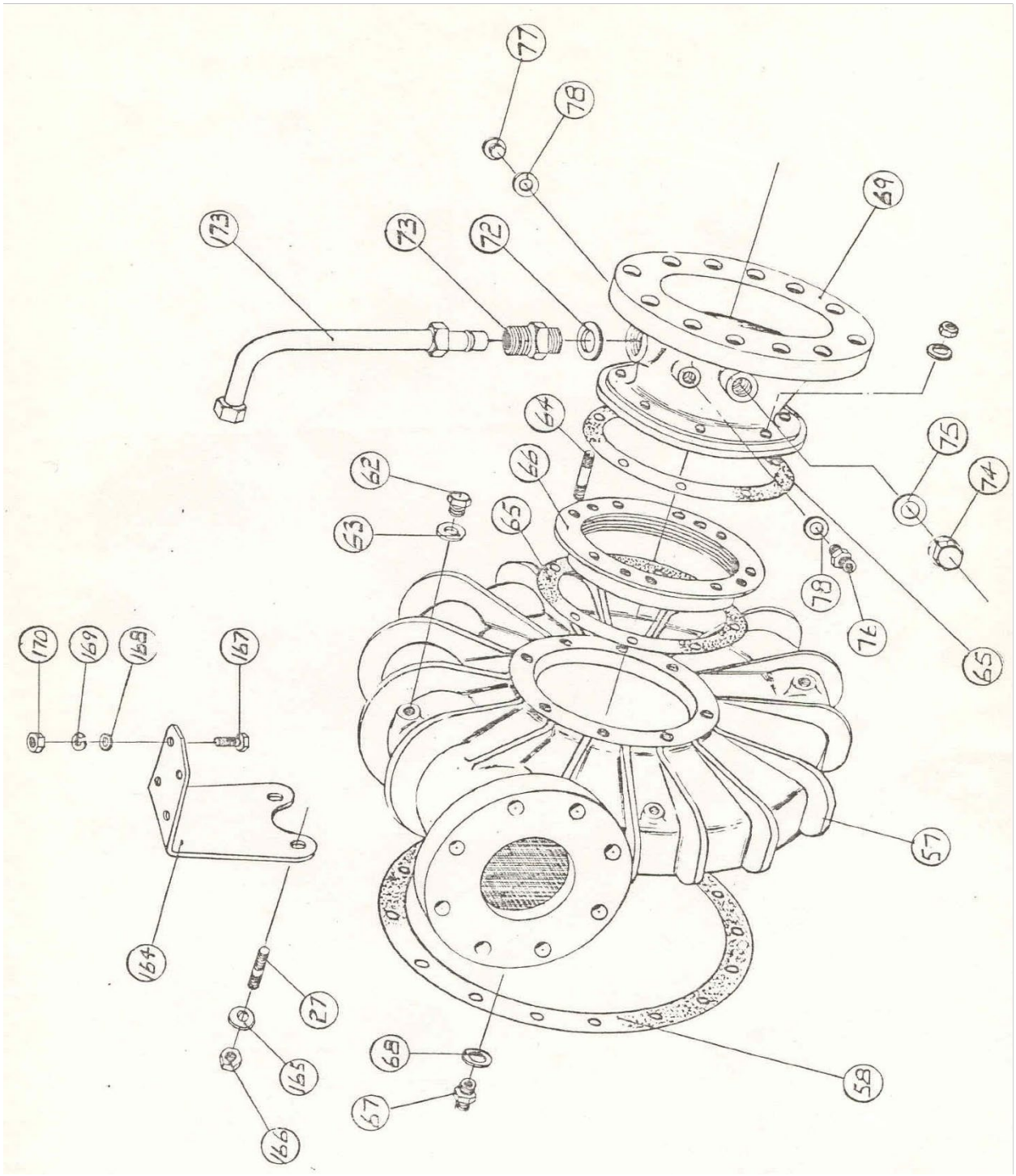
B113	S234/21EC	UNC hollow set screw	2	
B114	S255/4C	5/16" UNC nut	2	
B115	WRP 7947	Spring anchor	1	
B116	UFP 5962	Spring	1	
B117	S21/4C	5/16" Plain washer	10	
B118	S20/4C	5/16" Spring washer	10	
B119	S214/4C	5/16" UNF nut	10	
B120	WRP 7940	Primer shaft	1	
B121	WRP 7942	Key	1	
B122	S25/3	Woodruff key	1	
B123	WRP 7986	20mm Ball bearing	1	
B124	WRP 7943	Bearing spacer	1	
B125	WRP 7944	Bearing locating ring	1	
B126	S79/28	Internal circlip	1	
B127	WRP 7987	20mm Ball bearing	1	
B128	WRP 7937	Pulley centre piece	1	
B129	WRP 7938	Tab washer	1	
B130	WRP 7939	Nut (7/16") UNF	1	
B131	UMP 7915	Pulley	1	
B132	S205/10C	¼" UNF bolt	4	
B133	S20/3C	¼" Spring washer	4	
B134	S214/3C	¼" UNF nut	4	
B135	Deleted	¼" Plain washer	4	
B136	WRP 7978	'Lit Off' pad	1	
B137	Deleted	¼" Plain washer	1	
B138	S255/4C	5/16" UNC bolt	1	
B139	UFP 2277	Bush	2	
B140	UFP 2274	Locating plate	1	
B141	S186/5C	5/16" UNC bolt	1	
B142	S20/4C	5/16" Spring washer	1	
B143	UMP 2314/2	Priming hose	1	
B144	E1703	1 ½" diameter hose clip	2	
		PRIMING VALVE		
B145	SA UFP 6498/3	Sub assembly of priming valve	1	
B146	UFP 6493	Priming valve housing	1	
B147	UFP 6482	Spacer	1	
B148	UFP 6486	Diaphragm plate	1	
B149	UFP 6489	Diaphragm	1	
B150	UFP 6485	Washer	2	
B151	S2056/20C	5/16" UNF bolt	1	
B152	UFP 6484	Seal	1	
B153	UFP 6483	Washer	1	
B154	UFP 2303/2	Dowty washer	2	
B155	S236/4C	5/16" UNF 'Nyloc' nut	1	
B156	UFP 6488	Spring	1	
B157	UFP 6490	Gasket	1	
B158	UFP 6491	End cap	1	
B159	UFP 6492	End cap	1	
B160	S207/32C	3/8" UNF bolt	3	
B161	S21/5C	3/8" Plain washer	3	
B162	S20/5C	3/8" Spring washer	3	
B163	S214/5C	3/8" UNF nut	3	
B164	UFPM 7048	Priming valve bracket	1	
B165	S21/5C	3/8" Plain washer	2	
B166	S235/5C	3/8" UNF nut	2	
B167	S206/8C	5/16" UNF bolt	4	
B168	S21/4C	5/16" Plain washer	4	
B169	S20/4C	5/16" Spring washer	4	
B170	S214/4C	5/16" UNF nut	4	
B171	UFP 2303/10	Sealing washer	1	
B172	CDB 1169	Stud coupling	1	
B173	UFPM 6969/1	Priming pipe	1	
		PRIMER DISENGAGING UNIT		
B174	SA UFP 6005/3	Assembly of primer disengaging unit	1	
B175	UFP 5953/1	Diaphragm housing cover	1	
B176	UFP 5957	Plunger	1	
B177	UFP 5955/1	Diaphragm plate	1	
B178	UFP 5954	Diaphragm	1	
B179	UFP 5940	Washer	1	
B180	MS 126/9	5/16" UNF 'Nyloc' nut	1	
B181	UFP 5952/1	Diaphragm housing base	1	

B182	S164 /8C	5/16" UN stud	6	
B183	S21/4C	5/16" Plain washer	6	
B184	S20/4C	5/16" Spring washer	6	
B185	S214/4C	5/16" UNF nut	6	
B186	UFP 5956	Washer	1	
B187	FWMP 5012/2	Circlip	1	
B188	UFP 5958	Cap	1	
B189	SA UFPM 6952/1	Primer release pipe assembly	1	
B190	UFPM 6958/1	Primer release pipe	1	
B191	UFP 6007/2	Adaptor	1	
B192	UFP 2290	'O' ring	1	
B193	UFP 5962	Spring	1	
B194	UFP 5963	Spring anchor	1	
B195	S205/5C	¼" UNF bolt	1	
B196	S20/3C	¼" Spring washer	1	
B197	UFP 2602	Coupling set	1	

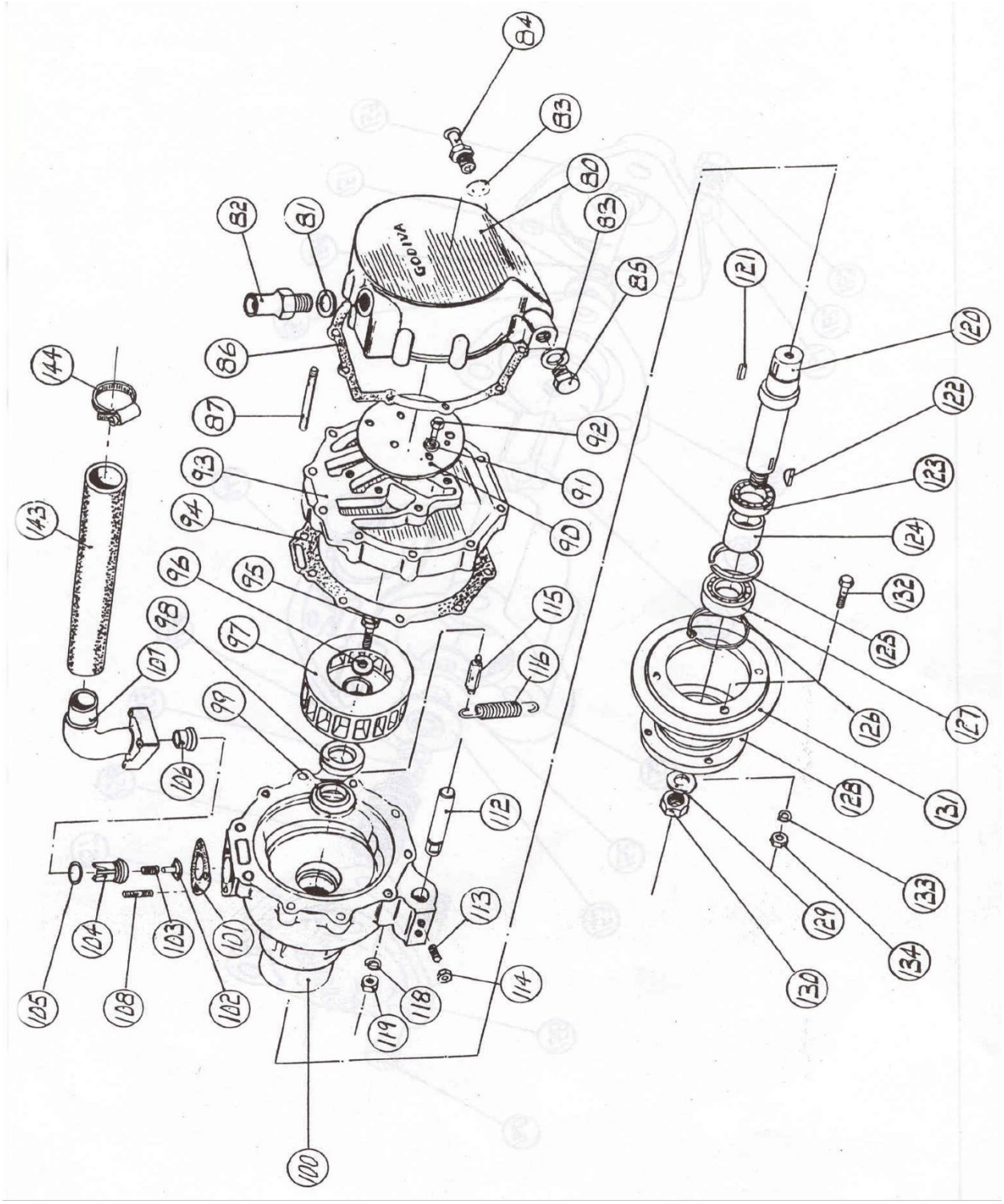
Pump Head and Pump Drive Shaft



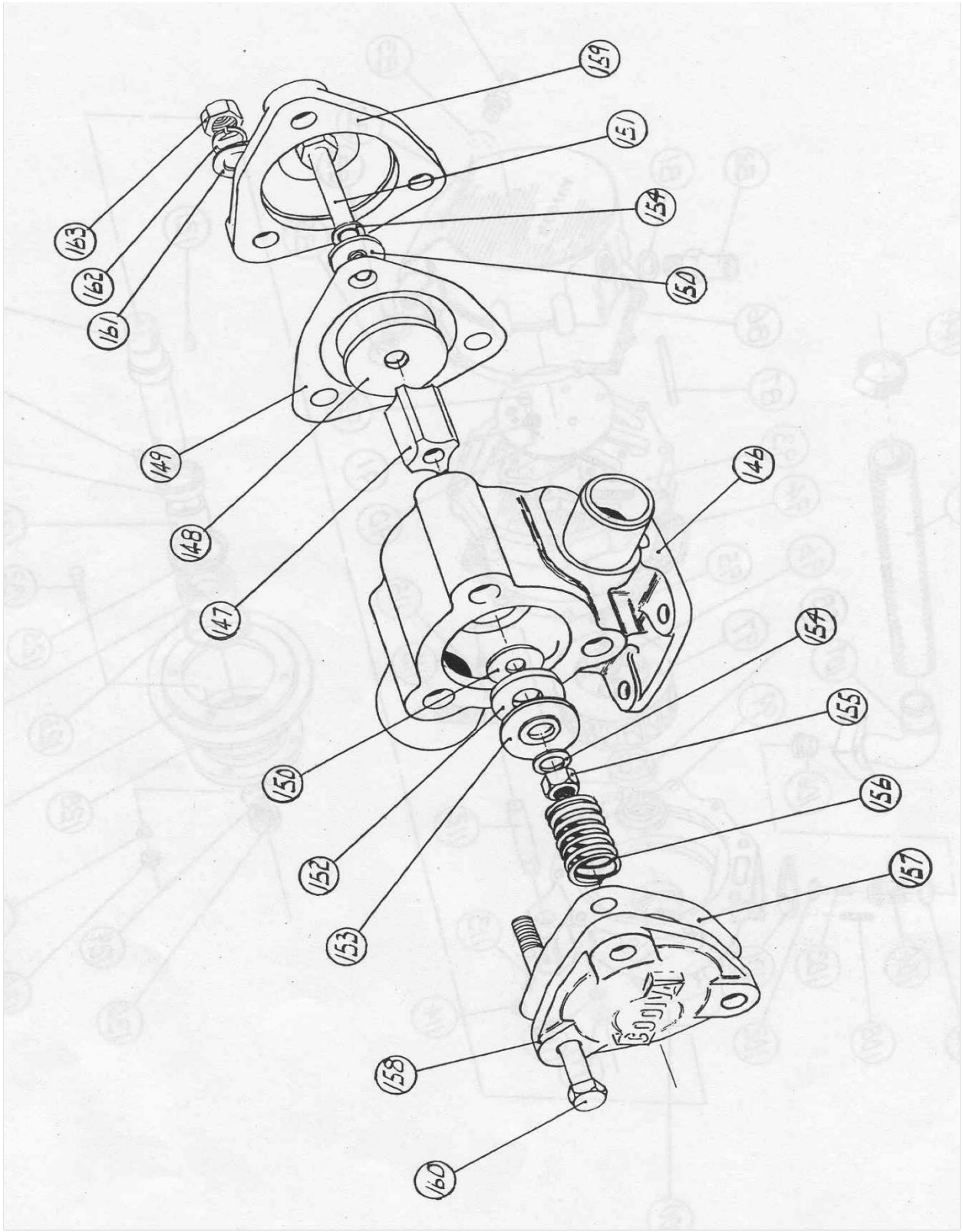
Volute Body and Suction Tube Assembly



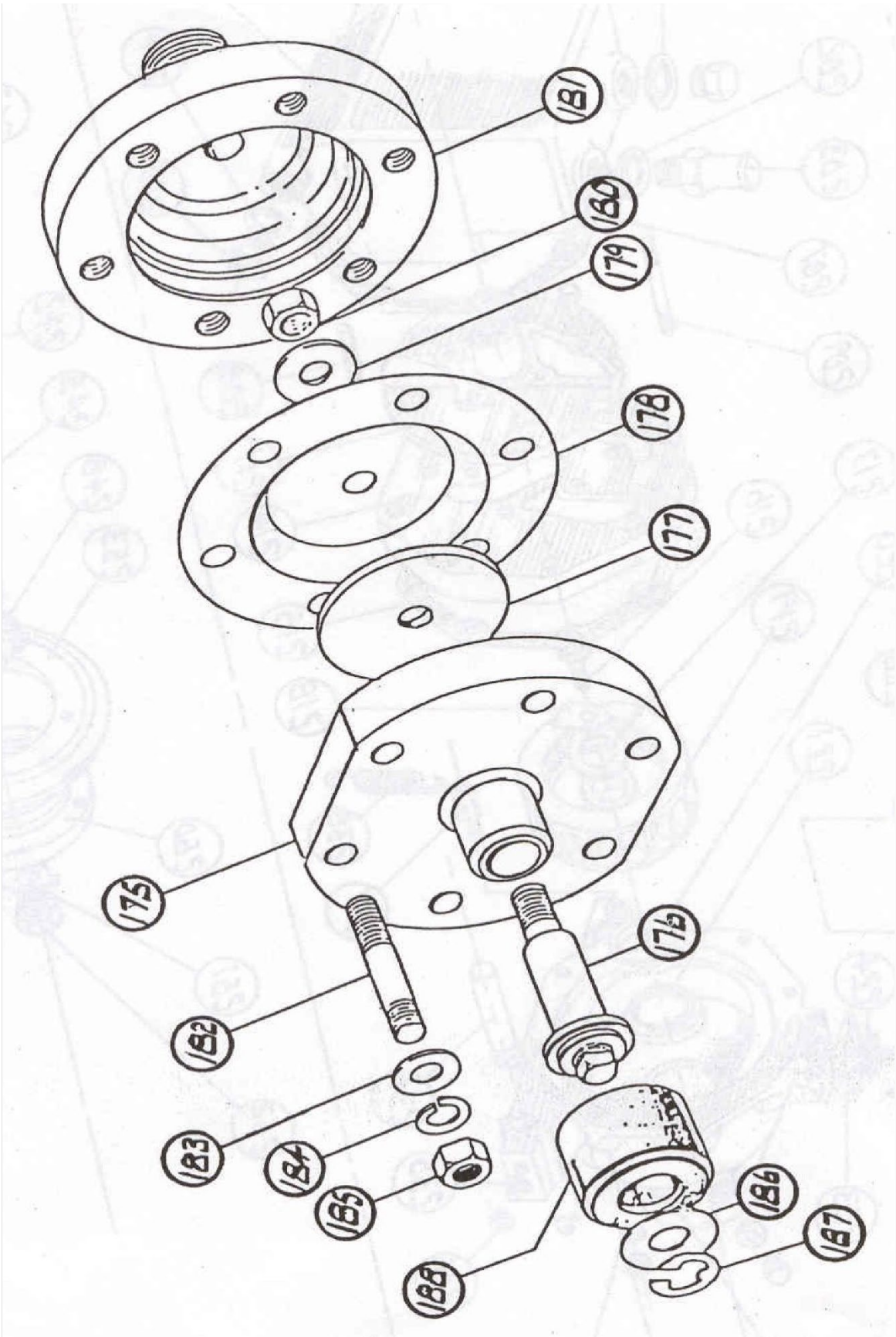
Water Ring Primer



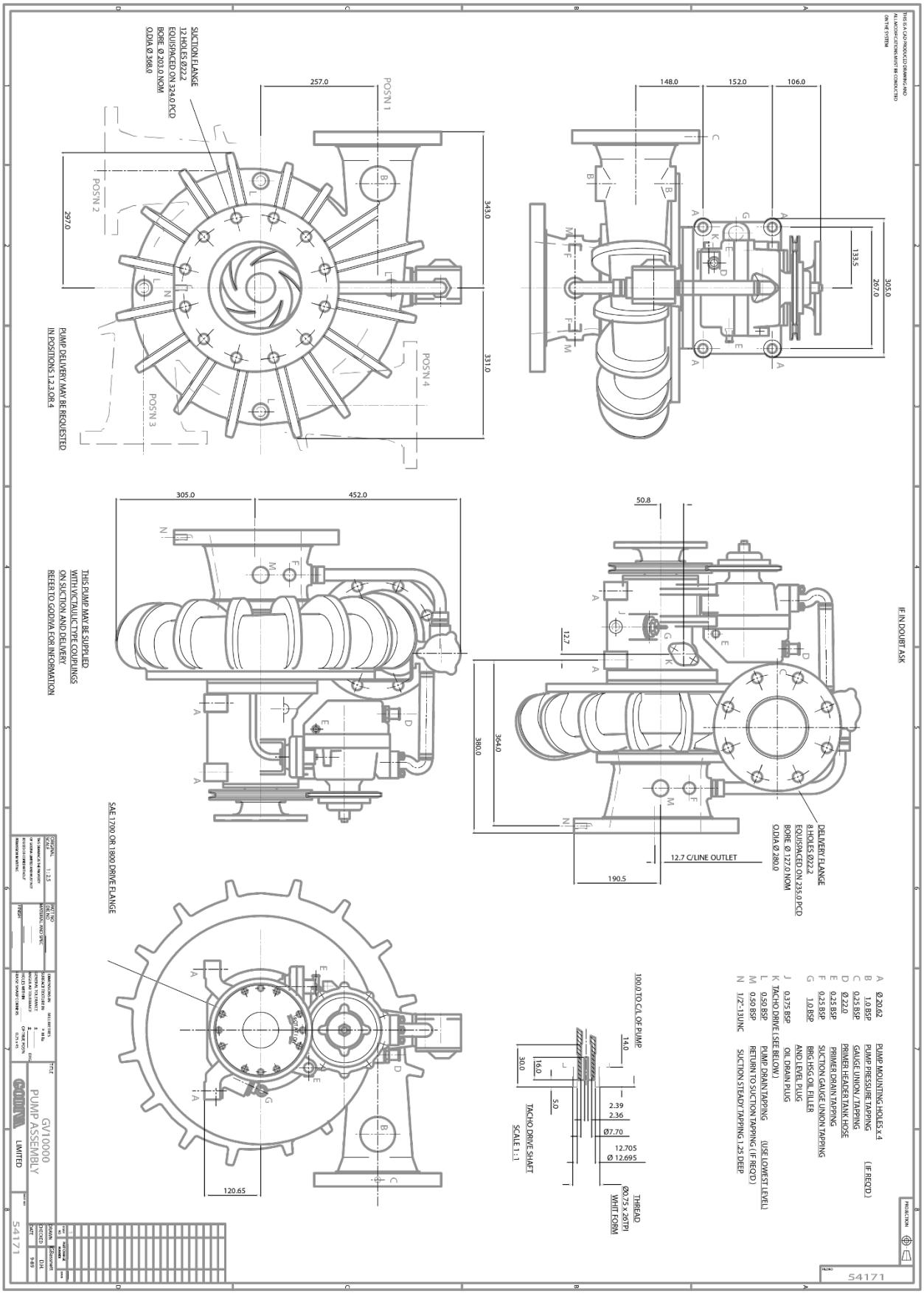
Priming Valve



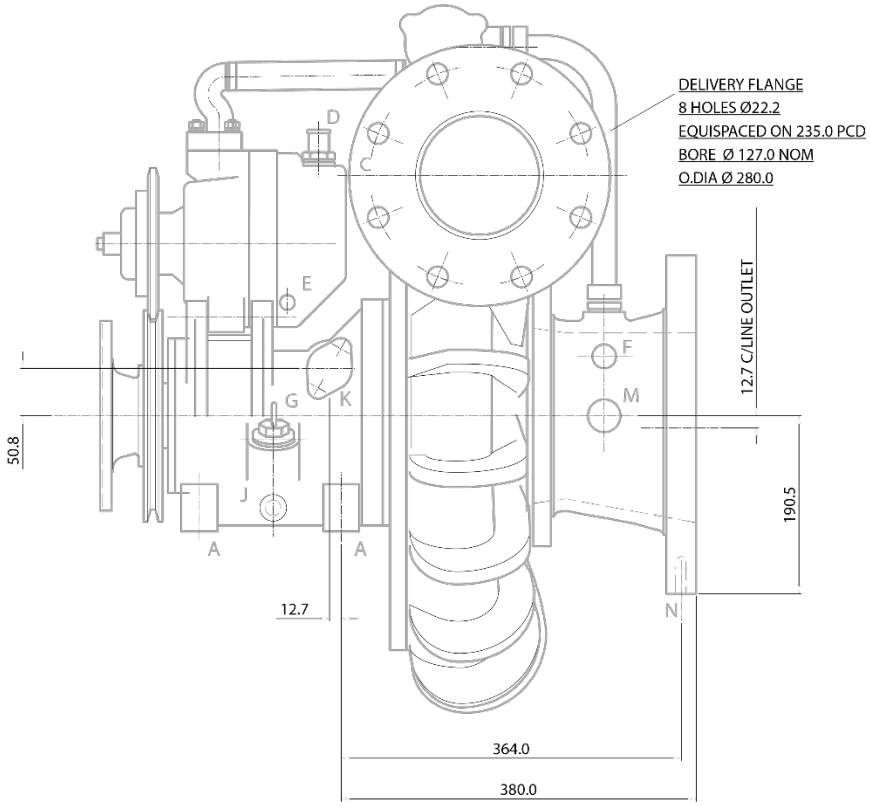
Primer Disengaging Unit



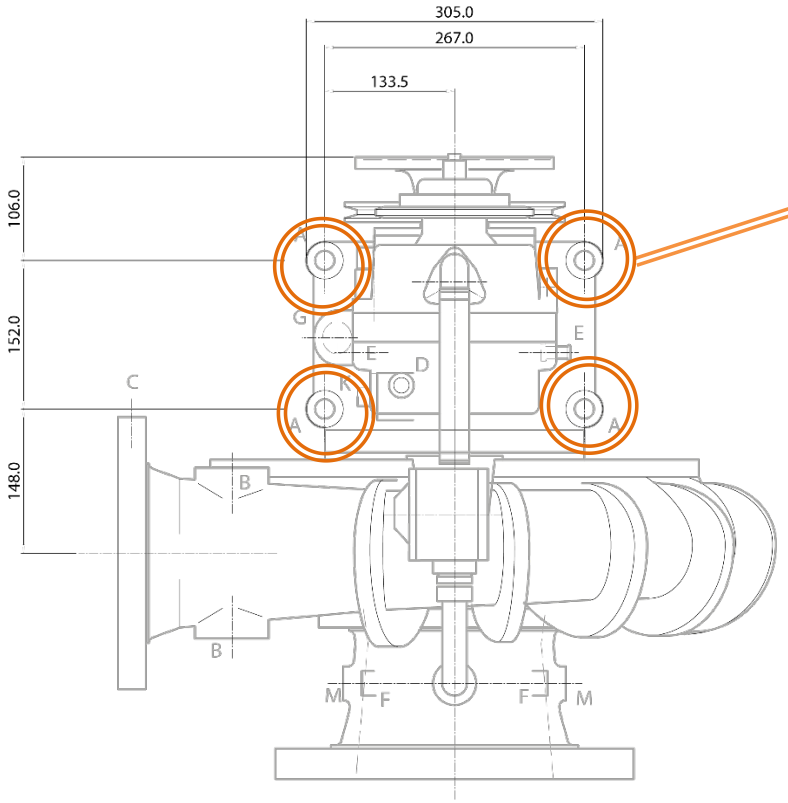
GV10000 Pump Assembly Drawing



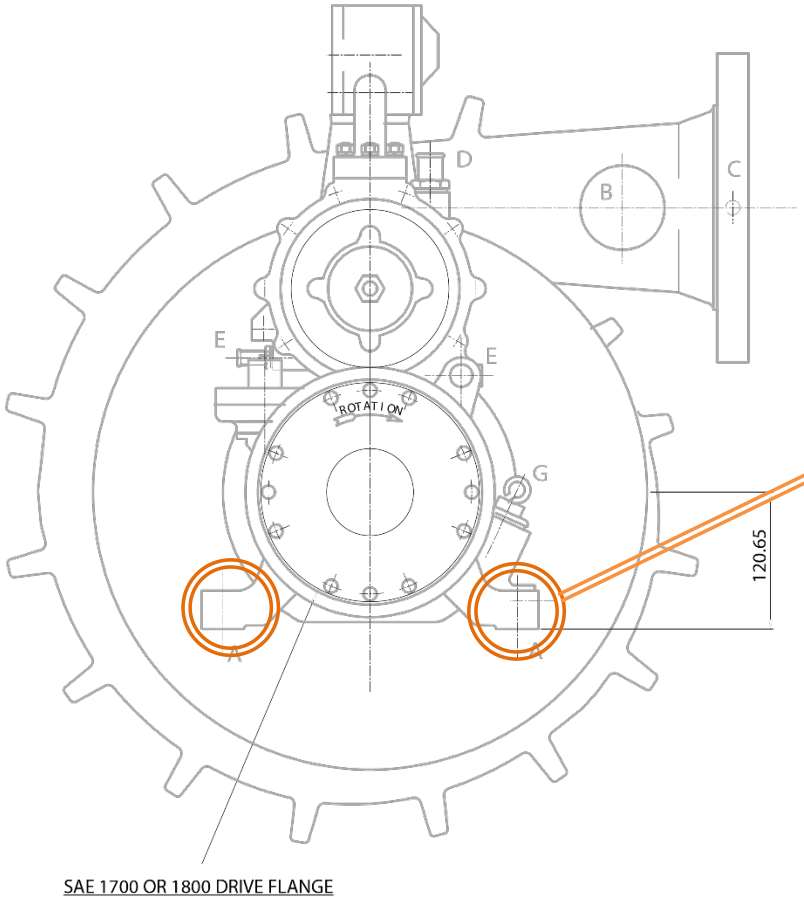
A	Ø 20.62	PUMP MOUNTING HOLES x 4
B	1.0 BSP	PUMP PRESSURE TAPPING (IF REQ'D)
C	0.25 BSP	GAUGE UNION / TAPPING
D	Ø 22.0	PRIMER HEADER TANK HOSE
E	0.25 BSP	PRIMER DRAIN TAPPING
F	0.25 BSP	SUCTION GAUGE UNION TAPPING
G	1.0 BSP	BRG HSG OIL FILLER AND LEVEL PLUG
J	0.375 BSP	OIL DRAIN PLUG
K	TACHO DRIVE (SEE BELOW)	
L	0.50 BSP	PUMP DRAIN TAPPING (USE LOWEST LEVEL)
M	0.50 BSP	RETURN TO SUCTION TAPPING (IF REQ'D)
N	1/2"-13UNC	SUCTION STEADY TAPPING 1.25 DEEP



Installation points

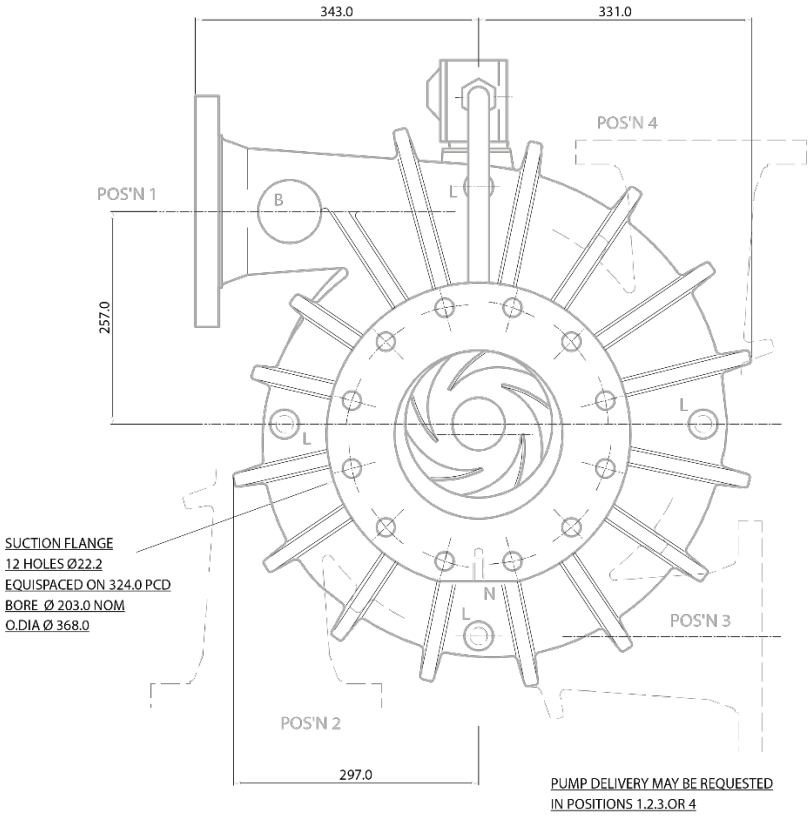


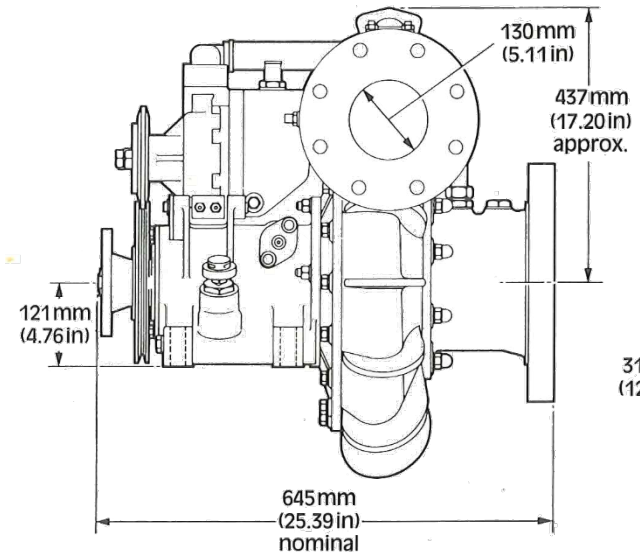
Pump Mounting Holes with a 20.62mm diameter. Use 3/4" UNC or M18 fasteners four off, minimum strength grade 8.8.

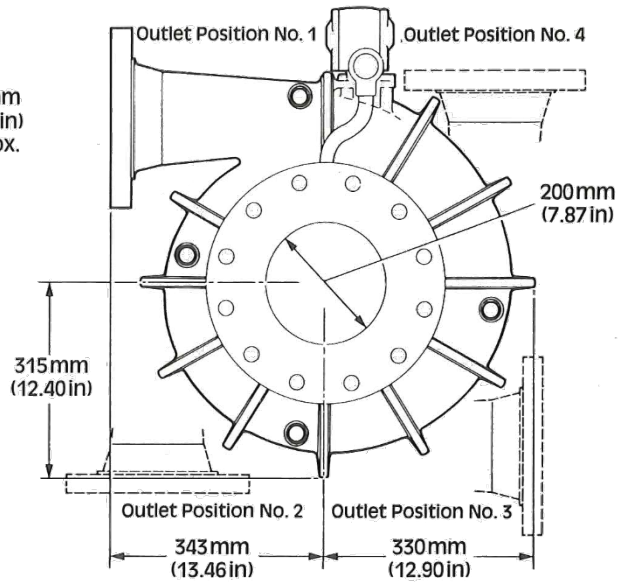


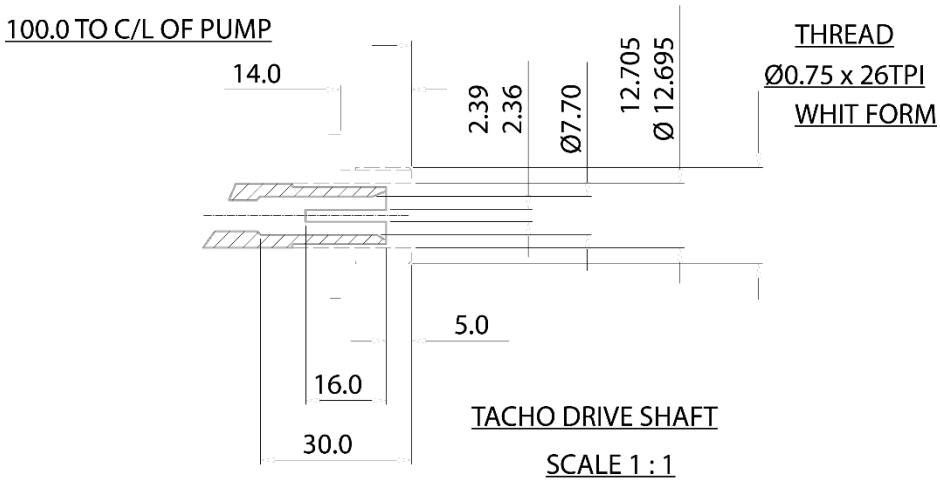
Pump Mounting Holes with a 20.62mm diameter. Use 3/4" UNC or M18 fasteners four off, minimum strength grade 8.8.

SAE 1700 OR 1800 DRIVE FLANGE









SPECIFICATION

The UFPM Mk20 and UFPM Mk21 pumps are identical except that in the UFPM Mk20 the impeller and casings are in aluminium alloy, while in the UFPM Mk21 these parts are in gunmetal.

This is a single-stage centrifugal pump. The impeller is mounted on a stainless-steel shaft, which runs on two heavy-duty ball bearings continuously lubricated in an oil bath.
Shaft sealing is by a carbon face seal, which being spring-loaded, is self-adjusting and therefore requires no attention. The pump discharge flange can be in any of the four positions shown in the drawing.

Priming is affected by a water-ring primer which is completely automatic in action. The bearings in the primer are pre-packed with grease and require no attention.

For simplicity of installation, the pump has a single, four-bolt mounting face.
Tapped bosses are provided for all normal auxiliary connections.
The only regular maintenance required is to check the level of oil in the oil bath at six-monthly intervals. There are no grease nipples.

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