

Variator Parts List

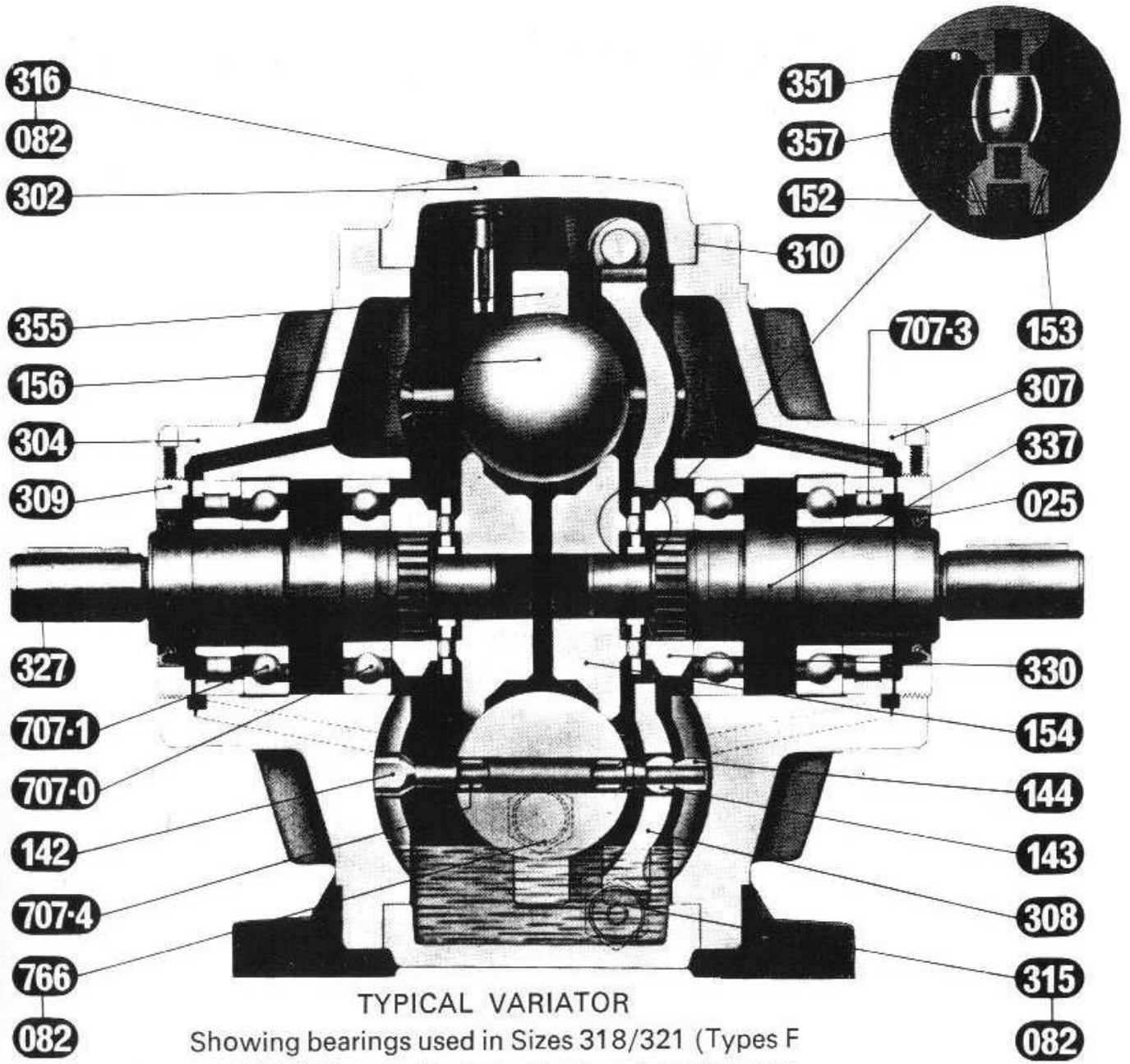
Always quote Variator Serial No. when ordering spares

PART NO.	NO. OFF	DESCRIPTION	PART NO.	NO. OFF	DESCRIPTION
025	2	Shaft seal	ELECTRICAL REMOTE CONTROL		
029	1	Locating Pin	A	2	Micro switch
030	3	Spring pin	B	1	Terminal strip
035	4	Screw	C	1	Potentiometer
041	4	Motor fixing bolt	D	1	Worm
082	6	Sealing washer	E	1	Worm wheel
142	*	Ball spindle	R	3	Fixing screw
143	*	Guide ball	S	1	Variator adaptor
144	*	Guide roller	T	1	Spindle
152	2	Roller cage ring	U	1	Seal
153	4	Preload spring	V	1	O-ring
154	2	Drive cone	W	1	Inner bush
156	*	Drive ball	X	1	Outer bush
302	1	Body	Y	1	Flanged bush
304	1	End cover-output	Z	1	Clutch assembly
307	1	End cover-input	(Note: Part Numbers are not shown as they vary with individual suppliers)		
308	1	Iris plate	FAN ASSEMBLY		
309	2	Adjustment disc	013	1	Circlip
310	2	Gasket	358	1	Fan
315	1	Magnetic plug assembly	359	1	Fan cowl
316	1	Breather plug assembly	360	1	Fan cowl guard
325	1†	Drive Shaft sub-assembly -output	HANDWHEEL CONTROL		
327	1	Drive Shaft-output	612	1	Handwheel assembly
329	*	Bearing spacer	614	1	Limit stop assembly
330	2	Splined disc	622	1	Stop plug assembly
335	1†	Drive shaft sub-assembly -input	365	1	Worm assembly
337	1	Drive shaft-input	367	2	Worm bearing assembly
351	2	Roller cage	PUMP UNIT		
355	1	Retaining ring	345	1	Pump assembly
357	*	Clutch roller	RACK CONTROL		
485	1	Motor adaptor	025/1	Set	Seals
766	2	Oil level plug	035/1	1	Rack locating screw
BEARINGS			081	1	Sealing washer
707-0	*	Radial	318	1	Rack assembly
707-1	*	Angular contact	319	2	Rack housing
707-3	*	Roller	320	2	Seal housing
707-4	*	Caged needle	321	2	Seal housing cover
707-5	*	Thrust	724	2	Locking collar

*Dependent on size of Variator.

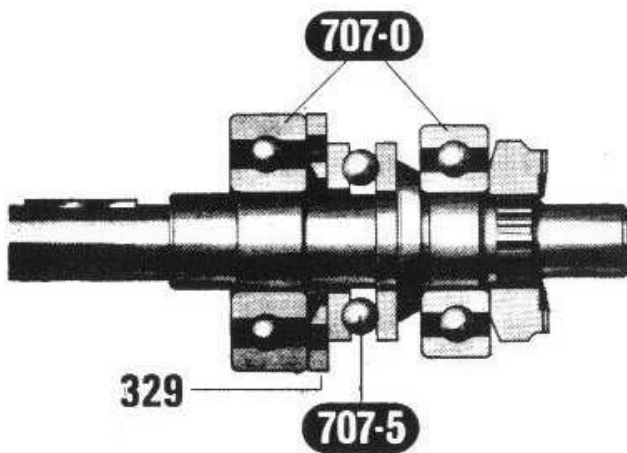
Sub-assembly comprises shaft, bearing and splined disc.

†When ordering bearings, maker's Type No. should always be quoted.

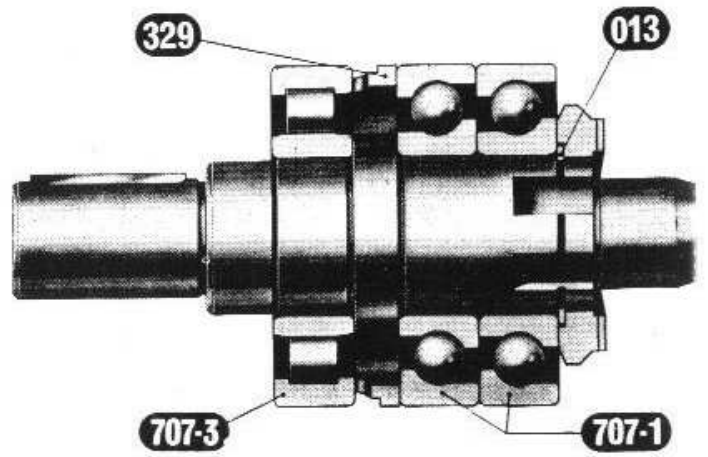


TYPICAL VARIATOR

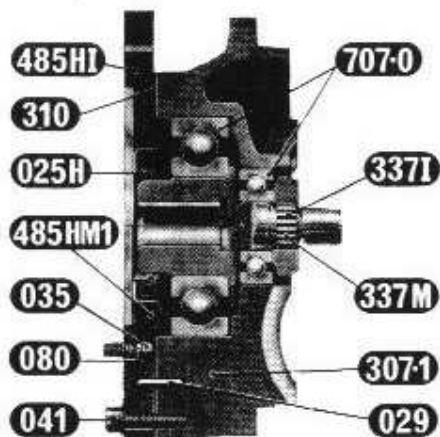
Showing bearings used in Sizes 318/321 (Types F and FR) (Also applies to hollow input shaft units)



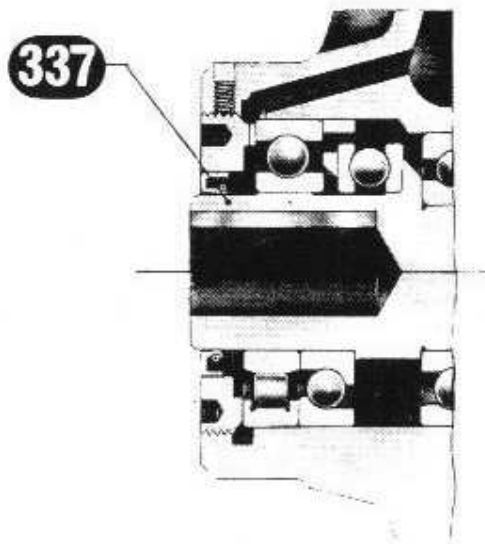
SHAFTS — SIZES 312/317
(Types F and FR only)



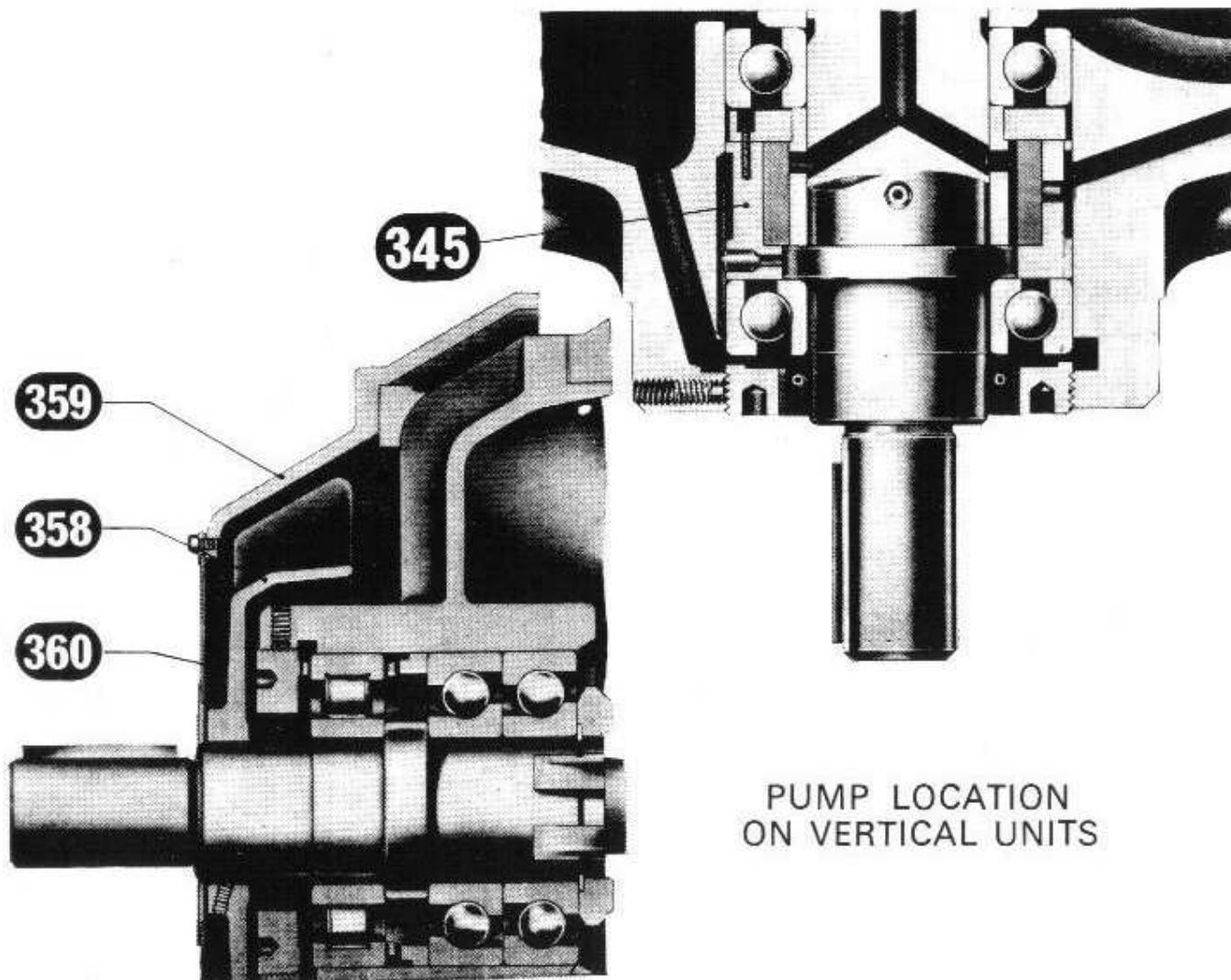
SHAFTS — SIZES 322/324
(Hollow input shafts similar)



HOLLOW INPUT SHAFTS FOR MOTORISED UNITS
SIZES 312/315

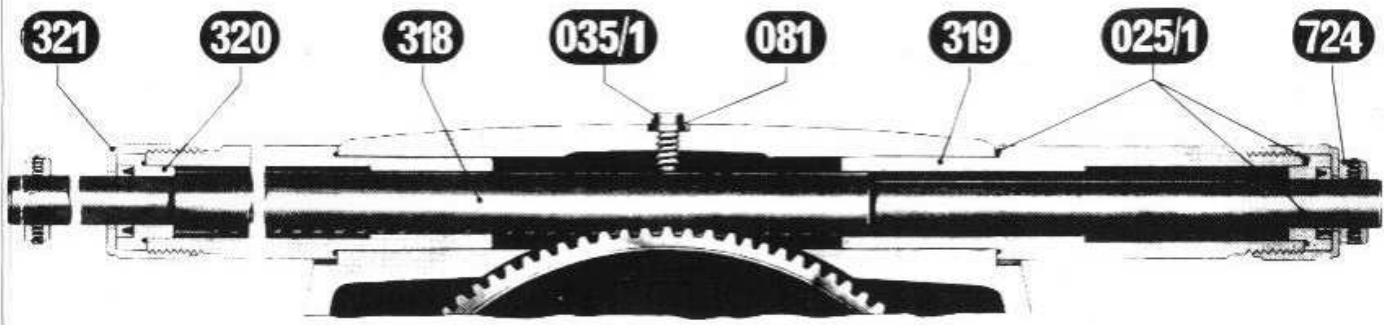


SIZES 316/321

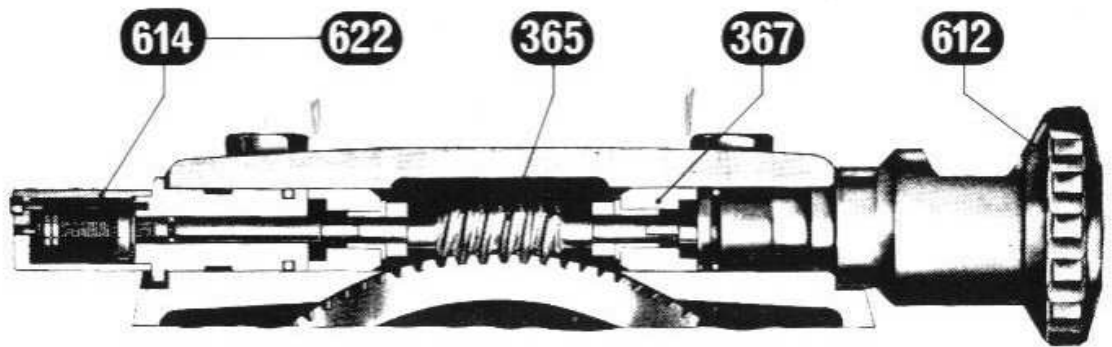


FAN ASSEMBLY (SIZES 320/324)
(Illustration—sizes 322/324)

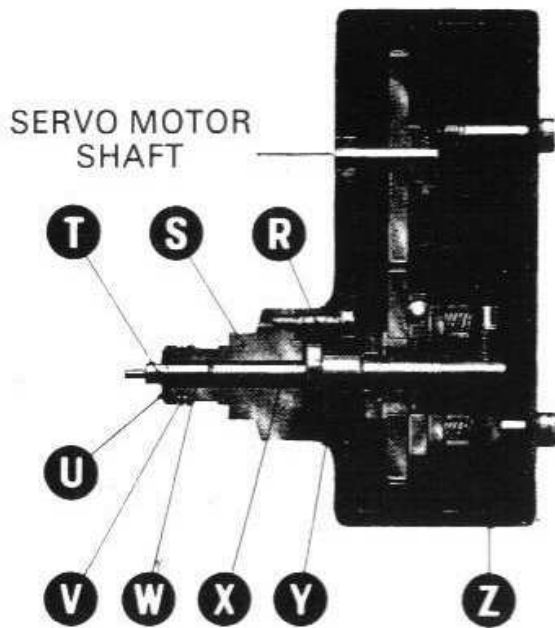
PUMP LOCATION
ON VERTICAL UNITS



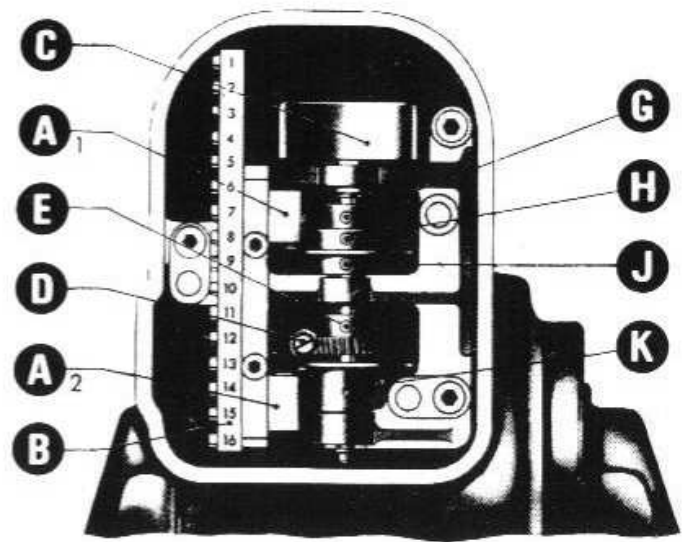
RACK CONTROL



HANDWHEEL CONTROL



Type A



Type B

ELECTRICAL REMOTE CONTROLS

SERVICE

After 100 hours of running:

- 1 – Drain the variator.
- 2 – Clean the magnet on the drain plug marked (M).
- 3 – Refill the variator to the correct level.

This operation should be carried out every 2,000 hours.

If you must dismantle the variator, you will find the following advice helpful:

- 1 – Drain both the variator and any reduction gear fitted to it.
- 2 – Remove the motor and any gear box from the variator.
- 3 – Place the variator in a vertical position. The shaft nearest to the control (input shaft) to be uppermost.
- 4 – Remove the input cover screws; turn the input shaft briskly thus breaking the seal between input end cover and the body.
- 5 – Lift off the input end cover and the shaft assembly.
- 6 – Dismantle progressively following the attached drawing.

REASSEMBLY

Before reassembling the variator, make sure that all parts are properly cleaned and lubricated with the special recommended oil. Never use grease. Very important – pay great attention to the attached drawings for the orientation of the various parts.

ADJUSTMENT OF VARIATOR

- 1 – Put the variator in a horizontal position with the control set at a 1:1 ratio.
- 2 – Feel the angular play between the two shafts.
- 3 – Eliminate this play by using the adjustment screws – item 309 but do not overtighten.
- 4 – Verify that the shafts turn freely.
- 5 – Fill the variator to the correct level with the recommended oil.

General information

STANDARD RANGE OF SIZES

VARIATOR SIZE	INPUT H.P. AT VARYING INPUT SPEEDS										F.L.C. PER PHASE AT 400 VOLTS		OIL CAPACITY (LITRES)	
	WITH STANDARD MOTORS		WITH FREE SHAFT ENDS											
	6 POLE 930 REV./MIN.	4 POLE 1410 REV./MIN.	500 REV./MIN.	750 REV./MIN.	1000 REV./MIN.	1500 REV./MIN.	930 REV./MIN.	1410 REV./MIN.	HORIZONTAL	VERTICAL				
312	1	1½	.17	.23	.29	.39	.23	.29	.39	.49	0.8	0.9	0.118	0.07
314	1	1½	.34	.46	.57	.78	.46	.57	.78	.99	1.34	1.47	0.296	0.22
315	1	1	.44	.59	.75	1.00	.59	.75	1.00	1.34	1.8	1.9	0.296	0.22
316	1	1½	.68	.90	1.15	1.55	.90	1.15	1.55	2.00	2.1	2.65	0.532	0.610
317	1½	2	.80	1.10	1.50	2.00	1.10	1.50	2.00	2.65	2.85	3.45	0.532	0.610
318	2	3 or 4	1.76	2.36	2.80	4.00	2.36	2.80	4.00	5.50	3.70	4.9 or 6.6	1.182	1.040
320	3	5½	2.40	3.24	3.90	5.50	3.24	3.90	5.50	7.50	5.0	8.6	1.330	2.560
321	4 or 5½	7½	3.30	4.42	5.50	7.50	4.42	5.50	7.50	10.40	6.8 or 9.5	11.9	1.330	2.560
322	7½	10	4.50	6.10	7.80	10.40	6.10	7.80	10.40	15.60	12.7	15.8	2.950	3.270
324	10	15	6.85	9.20	10.40	15.60	9.20	10.40	15.60	21.6	16.5	21.6	2.800	2.980

GUARANTEE

Provided our Inspector approves the claim, we agree to replace or rectify free of cost at the place of delivery and to the condition originally specified any part which fails through defective material or workmanship provided such claim is made within 12 months of delivery and provided that the unit has during this period not exceeded 2,000 running hours: but we do not accept responsibility for any consequential loss or damage arising out of defective material or workmanship or operational malfunction. This guarantee does not include equipment which is not of our manufacture, but the customer is entitled to the benefit of any guarantee given to us in respect thereof.

This guarantee is invalidated by:

- 1 – Misuse of the unit.
- 2 – Unauthorised alteration to the unit or the introduction therein of non-standard parts.
- 3 – Failure to comply with the working instructions supplied with each unit.

MOUNTING POSITIONS

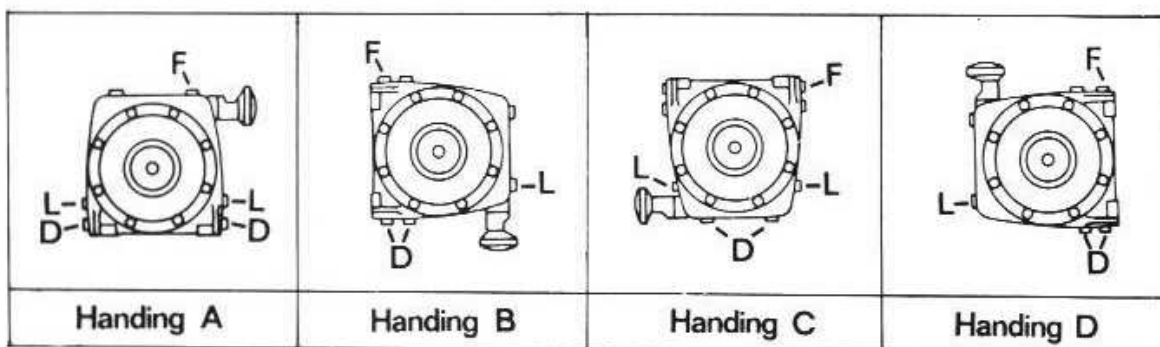
The figures below show the different mounting positions of the variator with the output shaft horizontal.

F – Filler plug

L – Level plug

D – Drain plug

One of the drain plugs (D) is equipped with a magnet and is marked (M). In the position (A) the filler plug (F) should be placed on the opposite side if there is the slightest trace of an oil leak through the breather.



Note: Unless specified at the time of the order, the level plug (L) or ceiling mounted position (C) will not be fitted to the variator.

LUBRICATION

The variator is emptied before despatch. Only fill the variator with Shell Tellus R 10. Any reduction gears supplied with the unit should be filled with the oil recommended by the manufacturer.