

Parts Manual

Rotary Vacuum Pump E2M28

Description	Part Number
E2M28, 100/200 V, 50 Hz, or 100-105/200-210 V, 60 Hz, single-phase	A373-15-904
E2M28, 115/230 V, 60 Hz, single-phase	A373-15-981
E2M28, 110/200-240 V, 50 Hz, or 115-120/200-230 V, 60 Hz, single-phase, fomblin filled	A373-25-984
E2M28, 220-240 V, 50 Hz, or 230-240 V, 60 Hz, single phase	A373-15-903
E2M28, 200-220/380-415 V, 50 Hz, or 200-230/460 V, 60 Hz, three phase	A373-10-940
E2M28, 220-240 V, 50 Hz, or 230-240 V, 60 Hz, single phase (Amphenol)	A373-16-903
E2M30, 100/200 V, 50 Hz, or 100-105/200-210 V, 60 Hz, single-phase	A374-15-904
E2M30, 115/230 V, 60 Hz, single phase	A374-15-981
E2M30, 220-240 V, 50 Hz, or 230-240 V, 60 Hz, single-phase	A374-15-903
E2M30, 220-230 V, 50Hz, or 230-240 V, 60Hz, single-phase	A374-35-903
E2M30, 200-220/380-415 V, 50 Hz, or 200-230/460 V, 60 Hz, three-phase	A374-10-940
E2M28-FF, 220/240 V, 50 Hz, or 230/240 V, 60 Hz, single-phase	A373-25-903
E2M28-FF, 200-220/380-415 V, 50 Hz or 200-230/460 V 60 Hz, three phase	A373-21-940
E2M28, 110/200-240 V, 50 Hz or 115-120/200-230 V, 60 Hz, single phase	A373-17-984
E2M28, 220-240 V, 50/60 Hz, single-phase (Agilent)	A373-24-930



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1 Introduction

1.1 Scope of this manual

This manual provides information about the component parts of the Edwards E2M28 Rotary vacuum pump.

Exploded views of the pump and motor are shown in [Section 2 to 10](#), together with a list of the component parts shown and an indication of whether the components are available as spares.

1.2 Parts list

The exploded views of the E2M28 pump are shown in [Figure 1 to 9](#). The component parts referenced on these figures are listed in [Table 3 to 12](#). When you read [Table 3](#), take note of the following:

- The 'Item Number' is the number of the component part on [Figure 1](#). The Item Numbers used on [Figure 1](#) and in [Table 3](#) are the same numbers as used in the E2M28 pump General Assembly (GA) drawing.
- The entries in the 'Kit No.(s)' column are cross references to the kits described in [Section 12 and 13](#). If a part has an entry in this column, then the component part is included in the referenced maintenance kit(s).
- If a part has an entry in the 'Item Number' column, then the part is available as a spare and the entry defines the Item Number of the spare part.

1.3 Maintenance kits

The maintenance kits available for the E2M28 pump are listed in [Table 1](#) below.

When you maintain this Edwards product, we recommend you use only Edwards maintenance and service kits.

Table 1 - Maintenance kits

Table 11 cross reference	Description	Item Number
1	Blade kit	A37301135
2	Clean and overhaul kit (Hydrocarbon)	A37301131
3	Clean and overhaul kit (PFPE Filled)	A37301136

2 Pump data tables

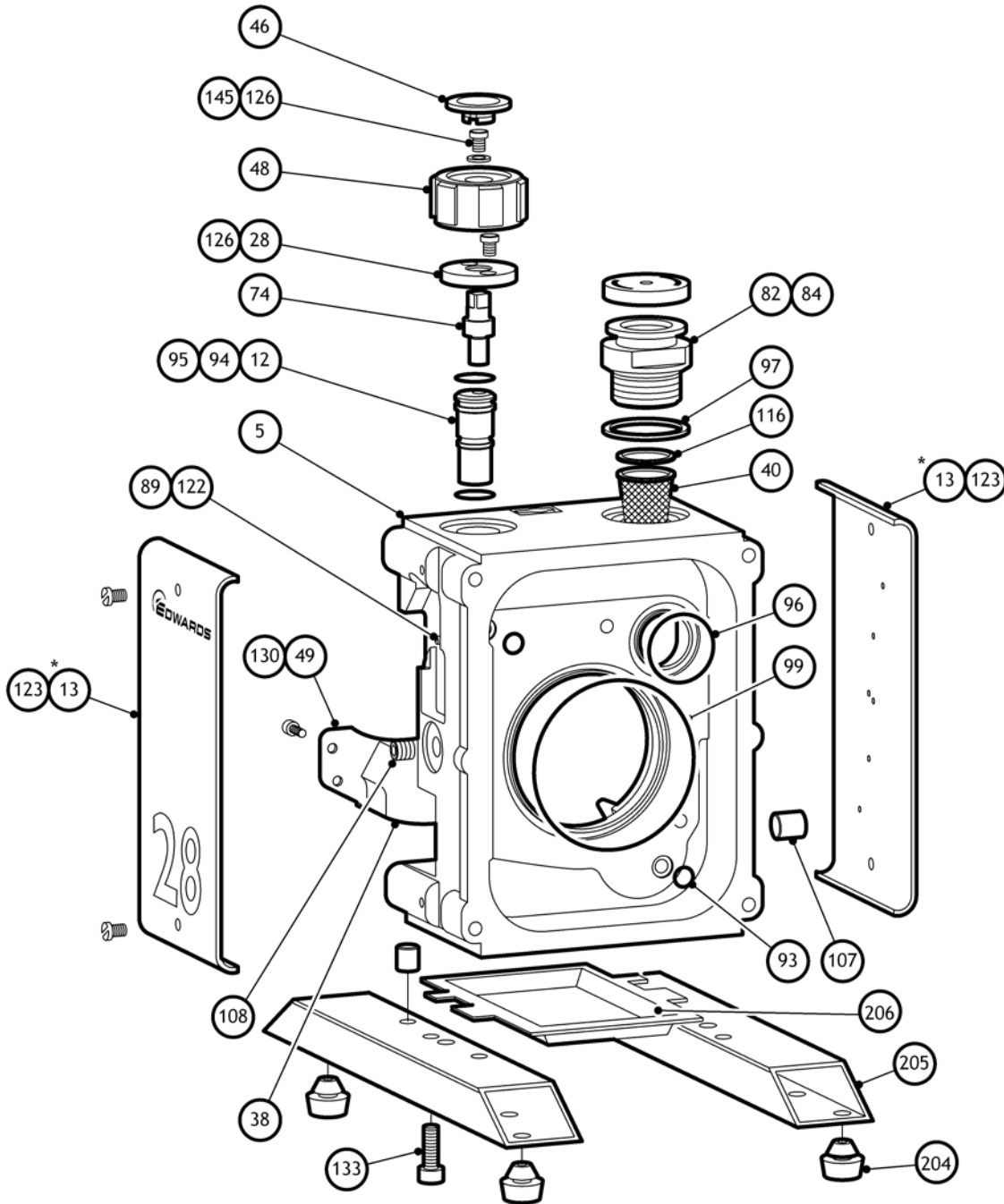
Table 2 - E2M28 data table

Pump No.	Motor Code	Voltage (V)	Phase	Frequency (Hz)	Power (kW)	Enclosure rating
A37315904 A37415904	A07110033	100-200 or 100-105/200-210	1	50/60	0.75/0.90	IP44
A37315981 A37415981	A07110032	115-230	1	60	0.90	IP44
A37315903 A37415903	A07110028	220-240 or 230-240	1	50/60	0.75/0.90	IP44
A37310940 A37410940	A07110017	200-220/380-415 or 200-230/460	3	50/60	0.75/0.90	IP54
A37316903	A07110036	220-240 or 230-240	1	50/60	0.75/0.90	IP44
A37317984	A07110039	110/200-240 115-120/200-230	1	50/60	0.75/0.90	IP44
A37325984	A07110039	110/200-240 115-120/200-230	1	50/60	0.75/0.90	IP44

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3 Adaptor sub-assembly

Figure 1 - Adaptor sub-assembly



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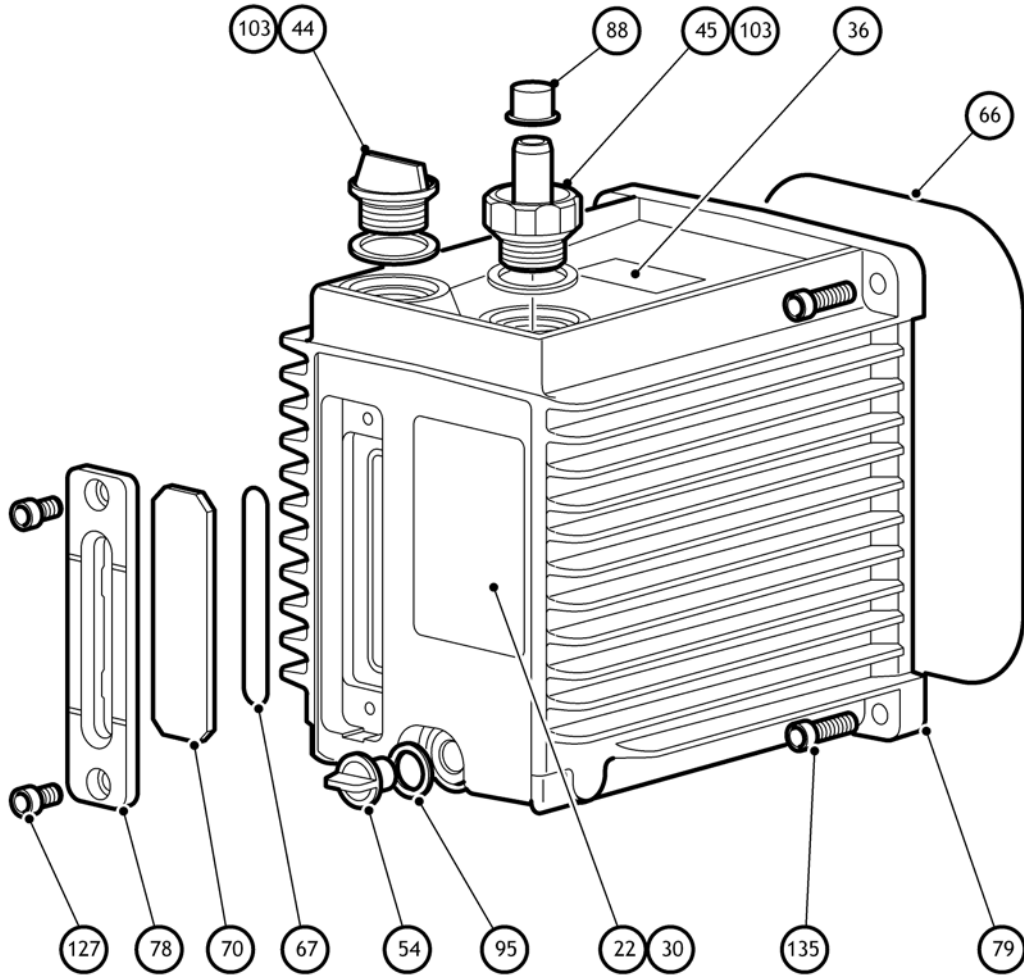
* See Table 3 for alternative side panels

Table 3 - Adaptor sub-assembly parts list

Item	Description	Item No.	Qty	Kit No.(s)
5	Adaptor - spare	A37306716	1	
12	Ballast piston	A37301010	1	
*13	Side panel (28) - 50 Hz model	A37310011	2	
*13	Side panel (30) - 60 Hz model	A37410011	2	
28	Bearing plate	A20514001	1	
38	Felt pad		1	2
40	Inlet filter	A22305037	2	
46	Ballast insert	A25908174	1	
48	Ballast knob	A25908171	1	
49	Clamp plate	A25908041	1	
74	Ballast spindle	A34301023	1	
82	Adaptor NW25 x 1 inch BSP	C10501203	1	
84	Protective cover	D32201071	1	
89	Dowty seal		1	2
93	O-ring		2	2
94	O-ring		1	2
95	O-ring		1	2
96	O-ring		1	2
97	O-ring		1	2
99	O-ring		1	2
107	Hollow taper pressure plug - 1/4 inch BSP	H03517003	1	
108	Hollow taper pressure plug - 1/8 inch BSP	H03517004	1	
116	Circlip	212081133	1	
122	Ch sl screw, M5 x 8 (ms ni)		2	
123	Pan sl screw, M5 x 12 (ms ni)		4	
126	Cap ht screw, M4 x 12 (nt)		3	
130	Cap ht screw, M5 x 10 (nt)		2	
133	Cap ht screw, M8 x 20 (nt)		4	
145	Washer, large M4 (ms ni)		1	
204	Foot - spare	A26501724	4	
205	Base skid E2M28 - spare	A37306718	2	
206	Drip tray - spare	A34306719	1	

4 Oil box sub-assembly

Figure 2 - Oil box sub-assembly



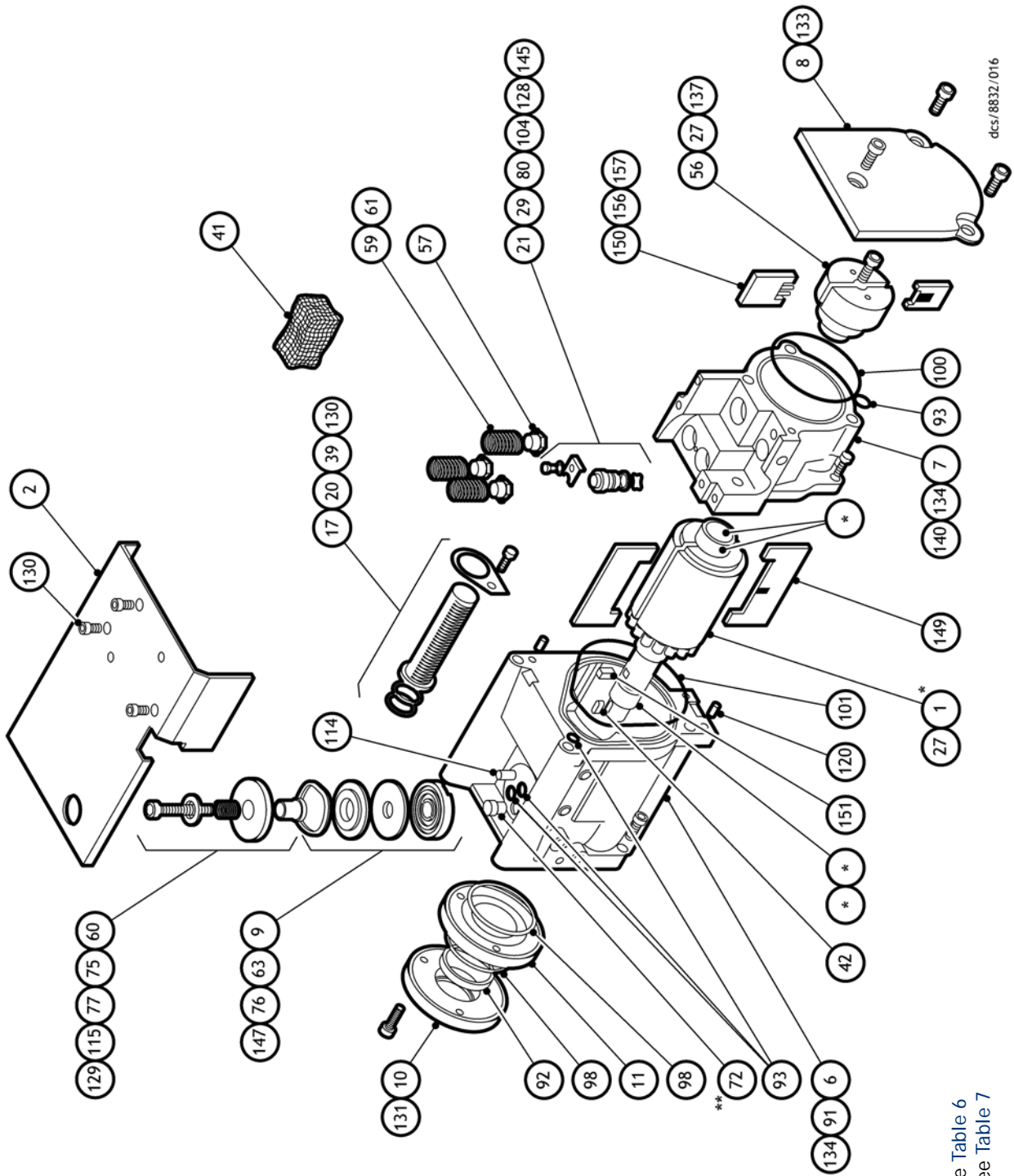
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Table 4 - Oil box sub-assembly parts list

Item	Description	Item No.	Qty	Kit No.(s)
22	Pump label	A20001356	1	
30	Pump label	A20001354	1	
36	Exhaust warning label		1	2
44	Filler plug - 3/4 inch BSP	A25908118	1	
45	Nozzle - 15 tube x 3/4 inch BSP	A25908146	1	
54	Drain plug - 1/4 inch BSP	A25908119	1	
66	O-ring, oil box 194, 5 x 3		1	2
67	O-ring, sight glass 69, 5 x 3		1	2
70	Sight glass	A29201018	1	
78	Sight glass bezel	A21035127	1	
79	Oilbox	A37306017	1	
88	Redcap-AQ330-13	H01503013	1	
95	O-ring drain plug 15, 6 x 2, 4		1	2
103	O-ring EXH/Fill plug 28, 2 x 3, 53		2	2
127	Cap ht screw, M6 x 12 ENP		2	
135	Cap ht screw M8 x 30 ENP		4	

5 High and low vacuum stator sub-assembly

Figure 3 - High and low vacuum stator sub-assembly



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*See Table 6
**See Table 7

Table 5 - High and low vacuum stator sub-assembly parts list

Item	Description	Item No.	Qty	Kit No.(s)
2	Baffle plate assembly	A37301005	1	
6	H.V. stator - spare	A37301730	1	
7	L.V. stator - spare	A37301731	1	
8	Rear cover	A37301004	1	
9	Distributor body	A37301006	1	
10	Seal carrier	A37301008	1	
11	Oil pump housing- spare	A37301709	1	
17	Filter seal		2	2
20	Filter clamp	A36401031	1	
21	Ballast valve	A25908117	1	
27	Roller bearing	A20404011	2	
29	Ballast clamp	A20528001	1	
39	Oil filter		1	2
41	Knitmesh	A22305052	1	
42	Key 6 x 6 x 15 lg rd ends	A24301014	1	
56	Low vac. rotor - spare	A26401771	1	
57	Valve pad		3	2
59	Exhaust valve spring		1	2
60	Distributor spring		1	2
61	Valve spring		2	2
63	Distributor rubber		1	2
75	Distributor sleeve	A37301022	1	
76	Distributor weight	A34301037	1	
77	Distributor cap	A34301038	1	
80	Ballast plug	A37101022	1	
91	Oil seal - 30 x 40 x 7 mm		1	2
92	Oil seal U/D poss. action		1	2
93	O-ring		5	2
98	O-ring		2	2
100	O-ring		1	2
101	O-ring		1	2
104	O-ring		2	2
114	Springpin-1/4 inch x 1/2 inch	211174099	1	
115	Washer. large 2BA (ms ni)	211814057	1	
120	D. pin p'llel. ms. nt. _ 8 x 20	212211040	2	
128	Cap ht screw, M4 x 16 (nt)		1	
129	Cap ht screw, M4 x 35 (nt)		1	
130	Cap ht screw, M5 x 10 (nt)		4	
131	Cap ht screw, M5 x 30 (nt)		3	
133	Cap ht screw, M8 x 20 (nt)		3	
134	Cap ht screw, M8 x 25 (nt)		6	
137	Cap ht screw, M10 x 25 (nt)		1	
140	Knurled set screw, M6 x 8	218121367	3	
145	Washer large M4 (ms.ni)		1	

High and low vacuum stator sub-assembly

Table 5 - High and low vacuum stator sub-assembly parts list (continued)

Item	Description	Item No.	Qty	Kit No.(s)
147	Washer, waved		1	2
149	High vac. blade	A20402648	2	
150	Low vac. blade	A20402647	2	
151	Oil pump blade	A20402538	1	
156	Spring		2	1
157	Pin		2	1
	These parts are only available as an assembly: Part No A26401073 - see Figure 4			
300	Sleeve 20 x 25 x 20	A20405024	1	
301	Sleeve 30 x 35 x 20	A20405008	1	
302	Hi vac rotor	A26401072	1	
303	O-ring 0171-16	H02122015	1	
304	Spring pin Ø4 x 18	212170758	1	
	These parts are only available as an assembly: Part No A37301018 - see Figure 5			
310	Relief valve body	A37301017	1	
311	1/16 inch dia SS ball	A20414014	1	
312	Spirol pin Ø1 x 4 SS	21237-6501	1	

6 HV rotor assembly

Figure 4 - HV rotor assembly

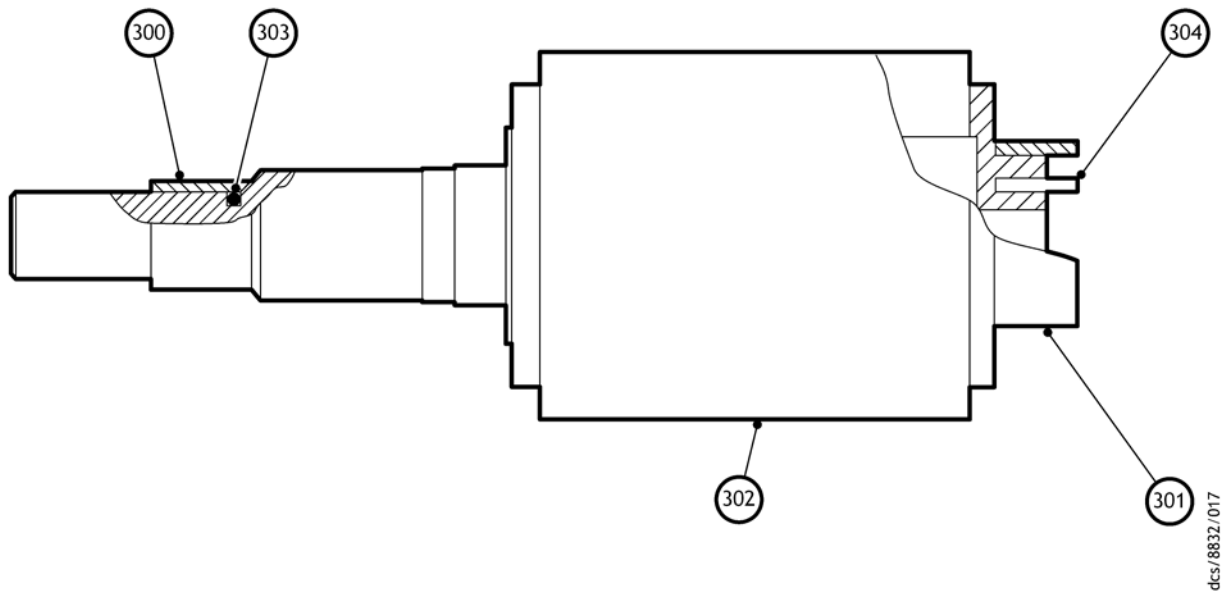


Table 6 - HV rotor assembly parts list

Item	Description	Item No.	Qty	Kit No.(s)
300	Sleeve - 20 x 25 x 20	A20405024	1	
301	Sleeve - 30 x 35 x 20	A20405008	1	
302	HV rotor	A26401072	1	
303	O-ring	H02122015	1	
304	Spring pin - Ø4 x 18	212170758	1	

- Notes:**
1. Item Numbers in Table 6 refer to GA A26401073 only.
 2. This is only available as an assembly, individual items are not supplied.

7 Relief valve assembly

Figure 5 - Relief valve assembly

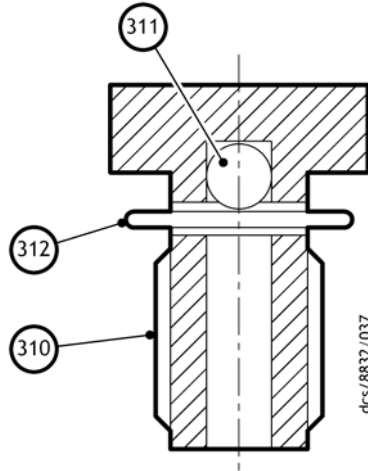


Table 7 - Relief valve assembly parts list

Item	Description	Item No.	Qty	Kit No.(s)
310	Relief valve body	A37301017	1	
311	1/16 inch diameter SS ball	A20414014	1	
312	Spirol pin 1.0 dia x 4.0 lg SS light duty	21237-6501	1	

- Notes:*
1. Item Numbers in Table 7 refer to GA A37301018 only
 2. This is only available as an assembly, individual items are not supplied

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8 Motor and adaptor plate sub-assembly

Figure 6 - Motor and adaptor plate sub-assembly

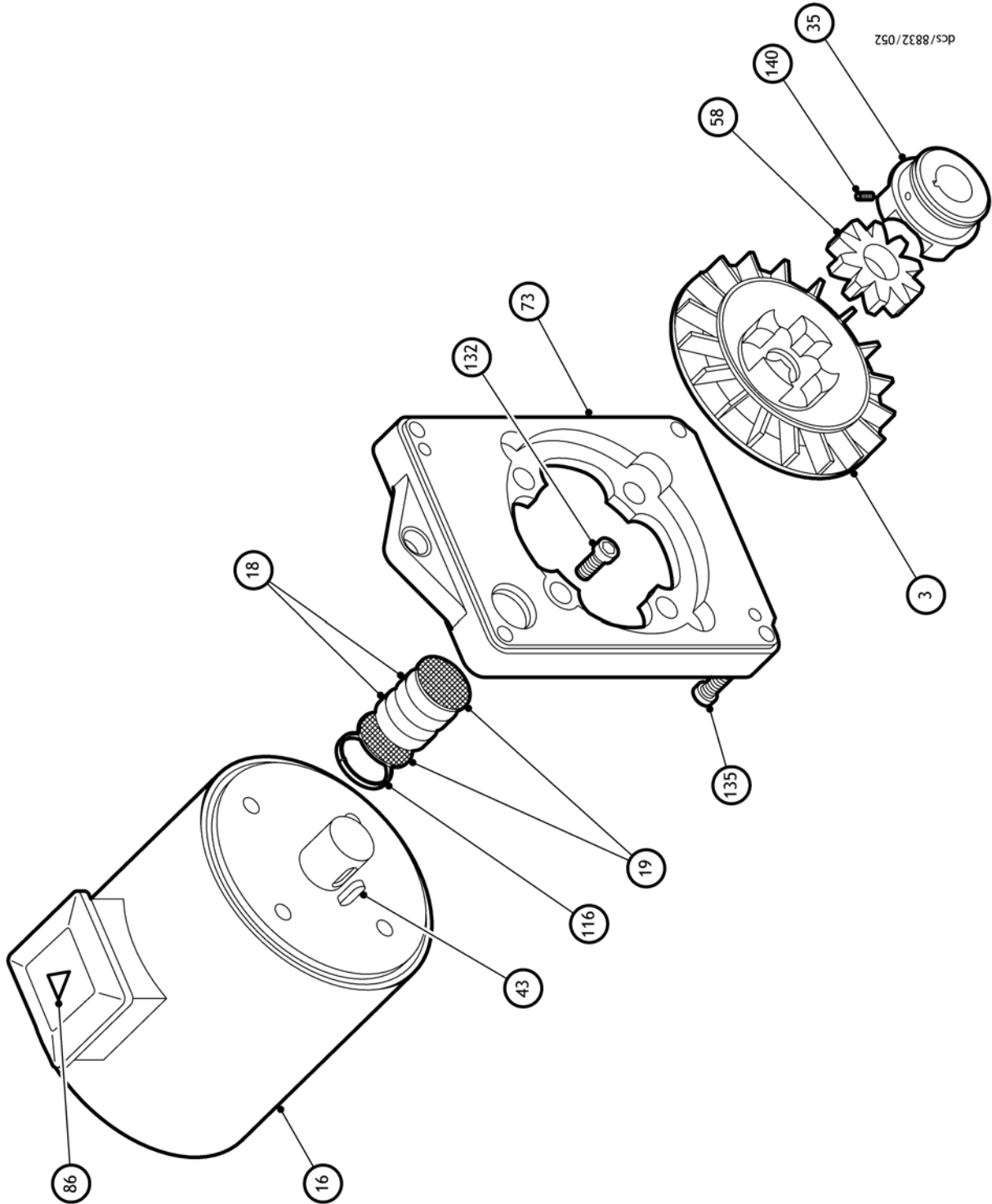
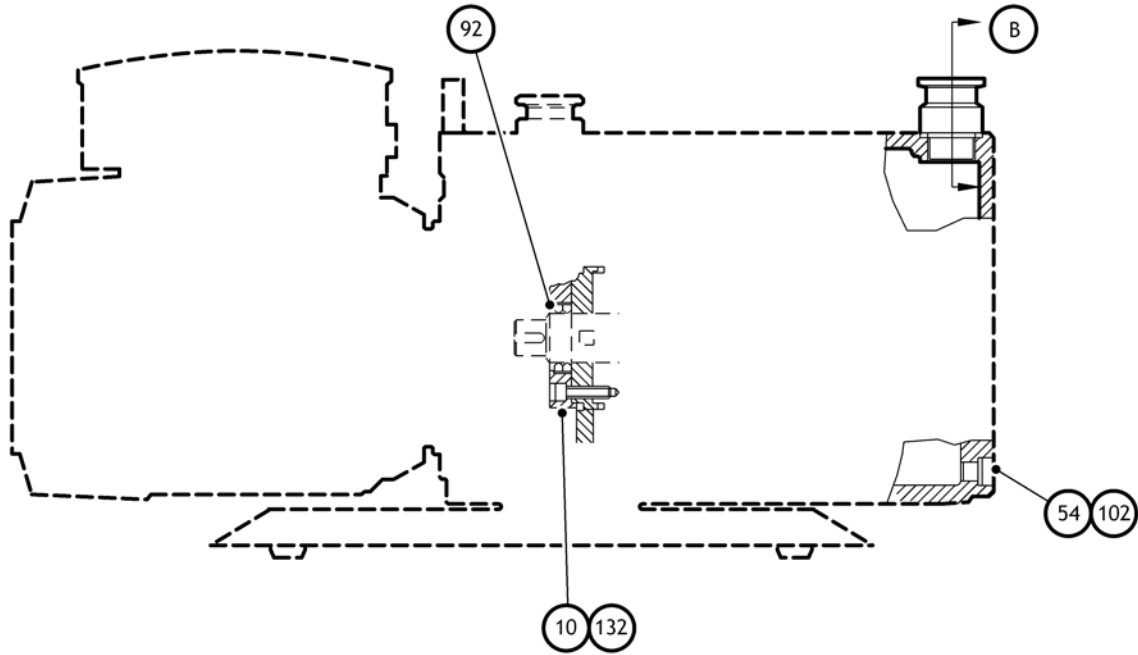


Table 8 - Motor and adaptor plate sub-assembly parts list

Item	Description	Item No.	Qty	Kit No.(s)
3	Fan (Nylon)	A25908056	1	
16	Motor - see pump data Table 2	0.75/0.90 kW	1	
18	Gas ballast filter pad		2	2
19	Gas ballast gauze		2	2
35	Coupling boss	A21071046	2	
43	Key 6 x 6 x 27 mm lg.	A24301015	1	
53	Lifting plate	A65401023	1	
58	Coupling element	A26501032	1	
73	Motor plate - spare	A34301719	1	
86	Warning label	E20001063	1	
116	Circlip	212081133	1	
132	Cap ht screw, M6 x 20 (nt)		4	
135	Cap ht screw, M8 x 30 (nt)		4	
140	Set hx knrld screw, M6 x 8 (ms. nt)		2	

9 Fomblin filled pumps

Figure 7 - Fomblin filled pumps



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This drawing applies to Fomblin filled pumps only (also suitable for Firequel application)

Table 9 - Fomblin filled pumps parts list

Item	Description	Item No.	Qty	Kit No.(s)
10	Seal carrier	A37301008	1	
44	Filler plug 3/4 inch BSP	A25908118	1	
45	Exhaust nozzle assy	A25908146	1	
54	1/4 inch BSP Plug	A25908119	1	
88	Redcap AQ330-13	H01503013	1	
95	O-ring 15,6 x 2,4	H02122037	1	
103	O-ring ref 0216	H02125026	2	
131	Cap screw M5 x 30	218091333	3	
	Assemble pumps to drawing A37315000, less items listed above			
	<i>Note: Additional Outer Seal</i>			
10	Double seal carrier (Alum)	A37315016	1	
44	Plug 3/4 inch BSP (St Steel)	A26002016	1	
45	Adapter NI PL NW25 x 3/4 inch BSP (M Steel)	C10501014	1	
54	1/4 inch BSP plug (Steel)	A26002030	1	
84	Protective cap NW25	D32201071	1	
92	Oil seal (Viton)	H02109094	1	2
102	O-ring (Viton)	H02122012	1	2
103	O-ring ref 0216 (Viton)	H02126026	2	2
132	Cap screw M5 x 35	218091334	3	
161	Fomblin grease AR555	H11350013	0,17	
319	Booklet	P30020000	1	
320	Label (Fomblin)	A20001274	1	

Notes: 1. Add items listed above to complete pump assembly A37325000

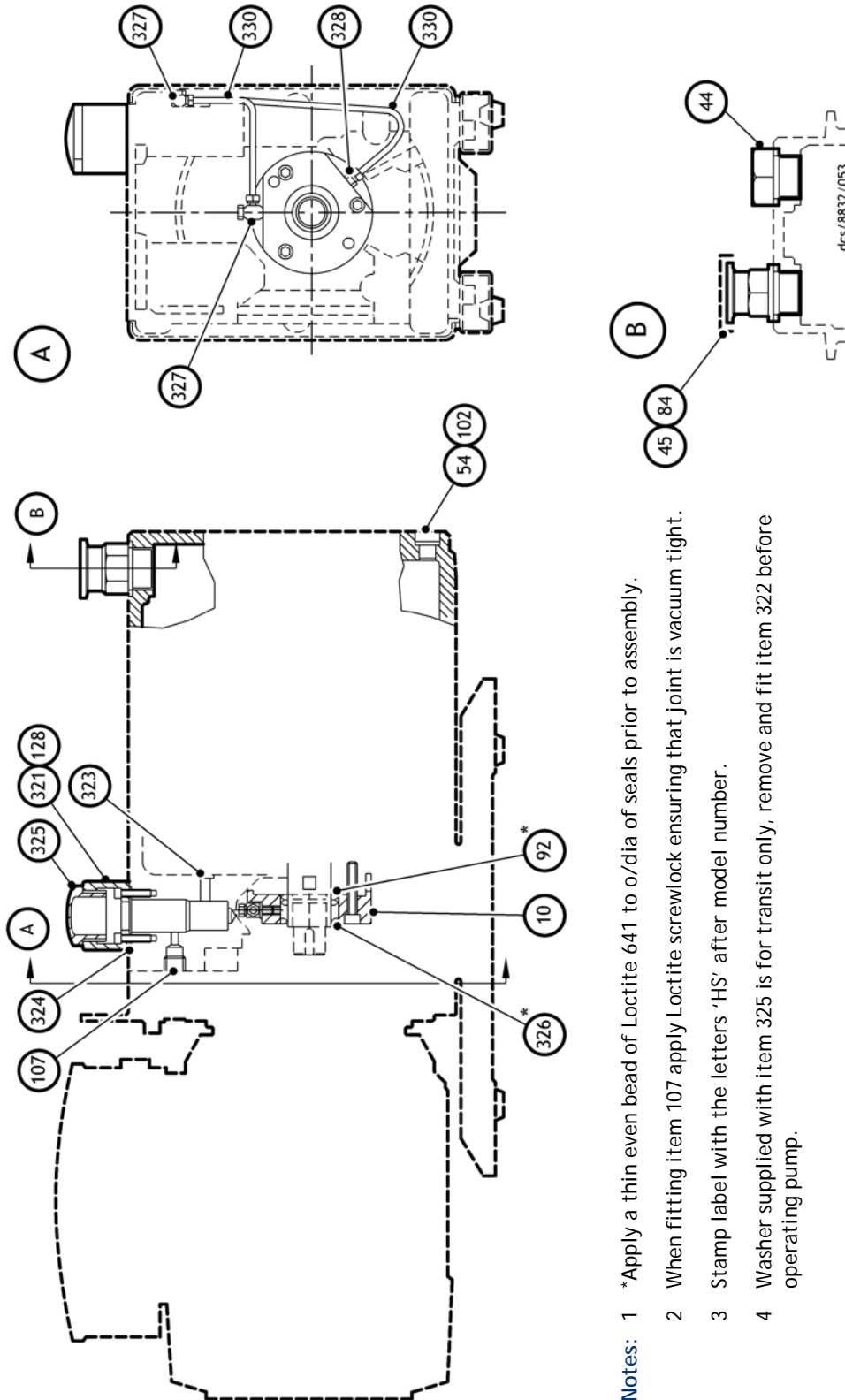
2. Above items are fitted as standard to pump assembly A37325984

Table 10 - Outfit code numbers for E2M28FF

Outfit code	Motor Code	Watts	Volts	Ph	Hz
A37325903	A07110028	750	220-240	1	50
		900	230-240	1	60
A3732940	A07110017	3 Phase Universal Motor			
A37325984	A07110039	750	110/200-240	1	50
		900	115-120/200-230	1	60

10 Hermetically sealed pumps

Figure 8 - ATEX special items



- Notes:
- 1 *Apply a thin even bead of Loctite 641 to o/dia of seals prior to assembly.
 - 2 When fitting item 107 apply Loctite screwlock ensuring that joint is vacuum tight.
 - 3 Stamp label with the letters 'HS' after model number.
 - 4 Washer supplied with item 325 is for transit only, remove and fit item 322 before operating pump.

Table 11 - Hermetically sealed pumps parts list

Item	Description	Item No.	Qty	Kit No.(s)
	Assemble pump to drg A3731500 Shts 1 and 2 less items listed below			
10	Seal carrier	A37301008	1	
12	Ballast piston	A37301010	1	
21	Ballast valve	A25908117	1	
28	Bearing plate	A20514001	1	
38	Felt pad	A22302017	1	
44	Filler plug 3/4 inch BSP	A25908118	1	
45	Exhaust nozzle assembly	A25908146	1	
46	Ballast insert	A25908174	1	
48	Ballast knob	A25908171	1	
49	Clamp plate	A25908041	1	
54	Plug 1/4 inch BSP	A26002030	1	
74	Ballast spindle	A34301023	1	
89	Dowty seal 2BA	H02104012	2	
92	Oil seal WD poss action	H02109094	1	
93	O-ring ref 0066-24	H02120028	2	
94	O-ring ref 0136-24	H02120035	1	
95	O-ring ref 0156-24	H02120037	1	
122	Screw ch SI MS NI. M5 x 8 lg	218022327	2	
145	Washer large MS NI M4	218980607		
	Add items listed below to complete pumps to basic code No A37320000			
10	Oil seal housing	A37305001	1	
44	Plug 3/4 inch BSP	A26002006	1	
45	Adaptor NW 25 x 3/4 inch BSP	C10501014	1	
54	Plug 1/4 inch BSP	A26002030	1	
84	Protective cover for NW 25	D33201070	1	
102	O-ring (Viton)	H02122012	1	
107	Hollow taper pressure plug 1/4 inch BSP	H03517002	1	
128	Screw cap Soc Hd M4 x 16 lg grade 12,9	218091290	2	
321	Reservoir	A34305002	1	
322	Split washer (supply in poly bag)	A26405068	1	
323	Special seal	A26501033	1	
324	Gasket	A27159636	1	
325	Oil level indicator	A27162004	1	
326	Oil seal Weston W13809827 R4/F1	H02109066	1	
327	Festo swivel elbow LCK-M5-PK-3	H03521001	3	
328	Festo male connector CK-M5-PK-3	H03521002	1	
330	Festo PP3 Polyamide tube	382876612	A/R	
331	Oil seal Simrit BA duo 25 x 35 x 7 matl NBR1097	H02109092	1	

Table 12 - Outfit code numbers for E2M28 HS

Outfit code	Motor Code	Watts	Volts	Ph	Hz
A37320903	A07110028	750	220-240	1	50
		900	230-240	1	60

11 Blade kits

The blade kit (A37301135) is detailed in Table 13.

Table 13 - Kit 1: E2M28 blade kit parts list

Item No.	Code No.	Description	Qty
1149	A37301145	Blade H.V. (2 blade pack)	1
1150	A37301146	Blade L.V. (2 blade pack)	1
151	A20402538	Oil pump blade	1
156	A00906077	Spring	2
157	A29203003	Pin	2

12 Clean and overhaul kit

The Clean and Overhaul Kit (Hydrocarbon filled) (A37301131) is detailed below in Table 14. For PFPE filled pumps, see Clean and Overhaul Kit (PFPE filled pumps) (A373-01-136) as detailed in Table 15.

Table 14 - Kit 2: E2M28 clean and overhaul kit parts list (hydrocarbon filled pumps)

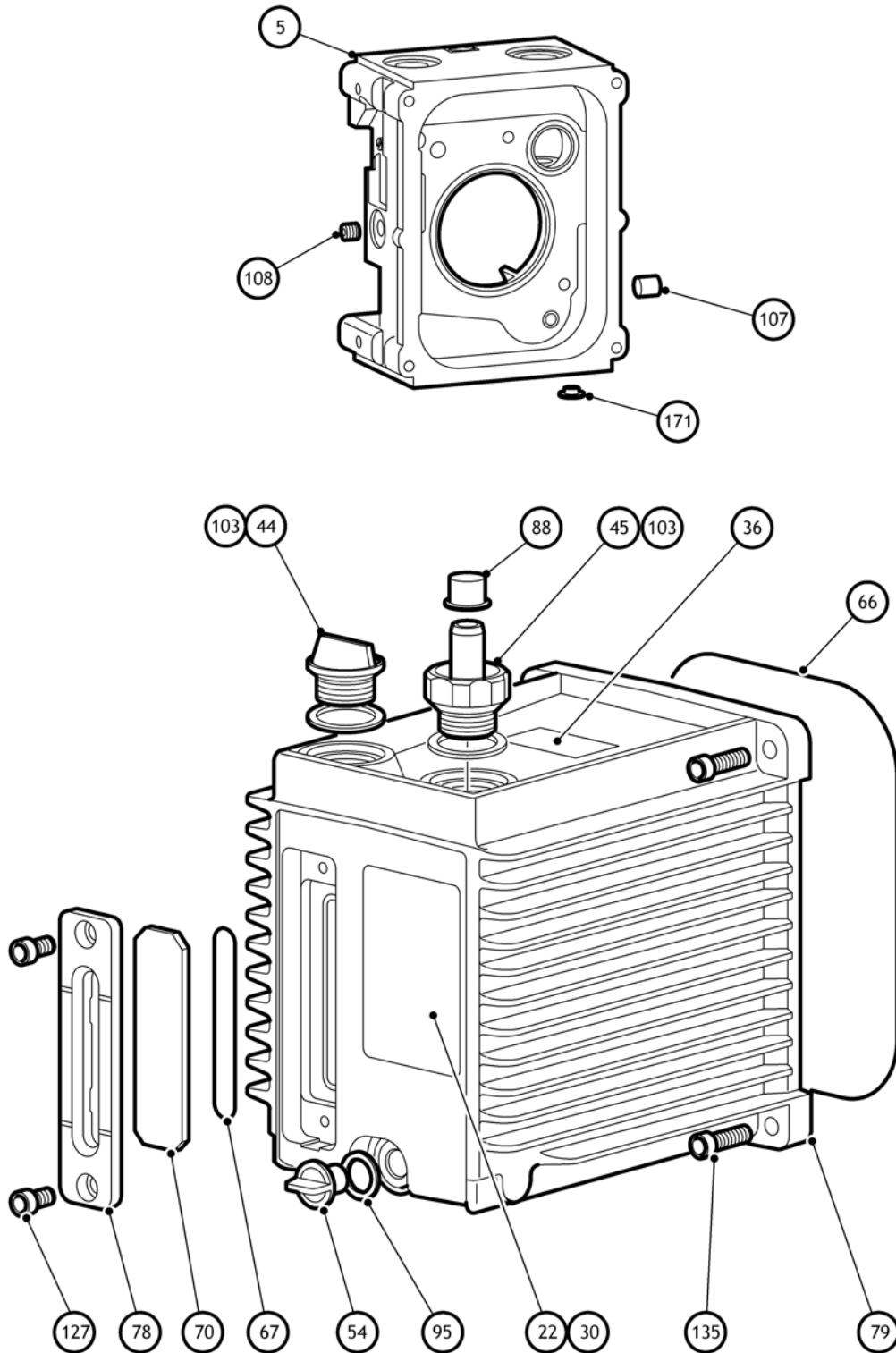
Item No.	Code No.	Description	Qty
17	A01403030	Filter seal	2
18	A02308043	Gas ballast filter	2
19	A02308044	Gas ballast gauze	2
21	A25908117	Gas ballast valve	1
36	A20001293	Exhaust warning label	1
38	A22302017	Felt pad	1
39	A22305008	Oil filter assy	1
57	A26501029	Valve pad	3
58	A26501032	Coupling element	1
59	A27102041	Exhaust spring	1
60	A27102032	Distributor spring	1
61	A27102033	Valve spring HV	2
63	A27159430	Distributor rubber	1
64	A27159530	Seal (Nitrile)	1
65	A27159532	Gasket	1
66	A27159635	Oil box gasket	1
	H02122108	Oil box O-ring	1
67	A27159638	Sight glass gasket	1
	H02122083	Sight glass O-ring	1
89	H02104012	Dowty seal	1
90	H02104030	Dowty seal	1
91	H02109064	Inner shaft seal	1
92	H02109094	Outer shaft Simrit seal	2
93	H02120028	O-ring	9
94	H02122035	Gas ballast O-ring	1
95	H02122037	Gas ballast O-ring and drain plug	2
96	H02120068	O-ring	1
97	H02120072	Inlet O-ring	1
98	H02120078	O-ring	2
99	H02120085	O-ring	1
100	H02120087	O-ring	1
101	H02124145	Dowty O-ring	1
102	H02122009	O-ring	2
	H02122012	O-ring	1
103	H02126026	O-ring	2
104	H02126116	O-ring	2
147	218990201	Waved washer	1

Table 15 - Kit 3: E2M28 clean and overhaul kit parts list (PFPE filled pumps)

Item No.	Part Number	Description	Qty
	A20001369	Spares kit label	1
	A21001113	215 x 170 x 60 internal dims	1
	A37301840	Working instructions E1/2M 1C0	1
	B20418053	4 x 6 Polythene bag	3
	B20418056	6 x 8 Polythene bag	1
	B20418062	9 x 12 Polythene bag 500 gauge	1
	C20418006	Jiffy bag No 3	1
	182355009	Bubble wrap D90 375 wide perf	0.44
0017	A01403030	Oil filter	2
0018	A02308043	Pad	2
0019	A02308044	Gauze	2
0021	A25908117	Gas ballast valve 450CA30	1
0036	A20001293	Exhaust warning label	1
0038	A22302017	Felt pad	1
0039	A22305008	Filter assy E2M 18/28	1
0057	A26501029	Valve pad	3
0058	A26501032	Coupling element	1
0059	A27102041	Spring	1
0060	A27102032	Compression spring	1
0061	A27102033	Compression spring	2
0063	A27159430	Distributor rubber	1
0066	H02122108	O-ring Viton 194.5 ID x 3.0 sec!p!	1
0067	H02122083	O-ring Viton 69.5 ID x 3.0 sec!p!	1
0089	H02104012	Dowty bonded seal 2BA	1
0091	H02109064	Oil seal Viton 30 x 40 x 7	1
0092	H02109094	U/D pos action seal	1
0093	H02120028	O-ring Nitrile 6.6 ID x 2.4 sec!p!	7
0094	H02122035	O-ring Viton 13.6 ID x 2.4 sec!p!	1
0095	H02122037	O-ring Viton 15.6 ID x 2.4 sec!p!	1
0096	H02120068	O-ring Nitrile 29.5 ID x 3.0 sec!p!	1
0097	H02120072	O-ring Nitrile 35.5 ID x 3.0 sec!p!	1
0098	H02120078	O-ring Nitrile 44.5 ID x 3.0 sec!p!	2
0099	H02120085	O-ring Nitrile 79.5 ID x 3.0 sec!p!	1
0100	H02120087	O-ring Nitrile 89.5 ID x 3.0 sec!p!	1
0101	H02124145	O-ring Dowty ref 200 156 4470	1
0102	H02122012	O-ring Viton 14.1 ID x 1.6 sec!p!	1
0103	H02126026	O-ring Viton 1.109 ID x .139 sec!pi	2
0104	H02126116	O-ring Viton 0.229 ID x .103 sec!p!	2
0147	218990201	Waved washer	1

13 E2M28 O-ring sealed oil box conversion kit

Figure 9 - E2M28 O-ring sealed oil box conversion kit



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Table 16 - E2M28 O-ring sealed oil box conversion kit parts list

Item No.	Code No.	Description	Qty
5	A37306016	Adaptor machining E2M28	1
22	A20001356	Pump label	1
30	A20001354	Pump label (common wet pumps)	1
36	A20001293	Exhaust warning label	1
44	A25908118	Oil filler plug N6 25% GF grey	1
45	A25908146	Nozzle 3/4 inch BSP N6 50% GF grey	1
54	A25908119	Oil drain plug N6 25% GF grey	1
66	H02122108	O-ring Viton 194.5 I/D x 3.0 sec (oil box)	1
67	H02122083	O-ring Viton 69.5 I/D x 3.0 sec (sight glass)	1
70	A29201018	Sight glass (RV)	1
78	A21035127	Bezel (pressure die casting)	1
79	A37306017	Oil box machining E2M28	1
88	H01503013	Redcap plug Aq330-13	1
95	H02122037	O-ring Viton 15.6 I/D x 2.4 sec	1
103	H02125026	O-ring Nitrile 1.109 inch I/D x 0.139 inch sec	2
107	H03517003	1/4 inch BSPT Taper pressure plug	1
108	H03517004	1/8 inch BSPT Taper pressure plug	1
127	218092369	Scr cap hd M6 x 12 HT	2
135	27522-050	Scr cap hd M8 x 30 MS ENP	4
171	27052-019	6.5 mm Av seal	1

14 E2M28 Motor terminal box lid up-grade kits

The upgrade kits detailed in Table 17 and 18 below are the multiple lid kit and the single lid kit respectively.

Table 17 - E2M28 motor terminal box lid upgrade kit multiple piece A37301830

Description	Quantity
3 Point lid	40
Gasket	40
Screw	120

Table 18 - E2M28 motor terminal box lid upgrade kit single piece A37301831

Description	Quantity
3 Point lid	1
Gasket	1
Screw	3

Appendix A1 Removed pages

The following pages have been retained for information purposes only.

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A1.1 Pre O-ring sealed oil box superceded assemblies

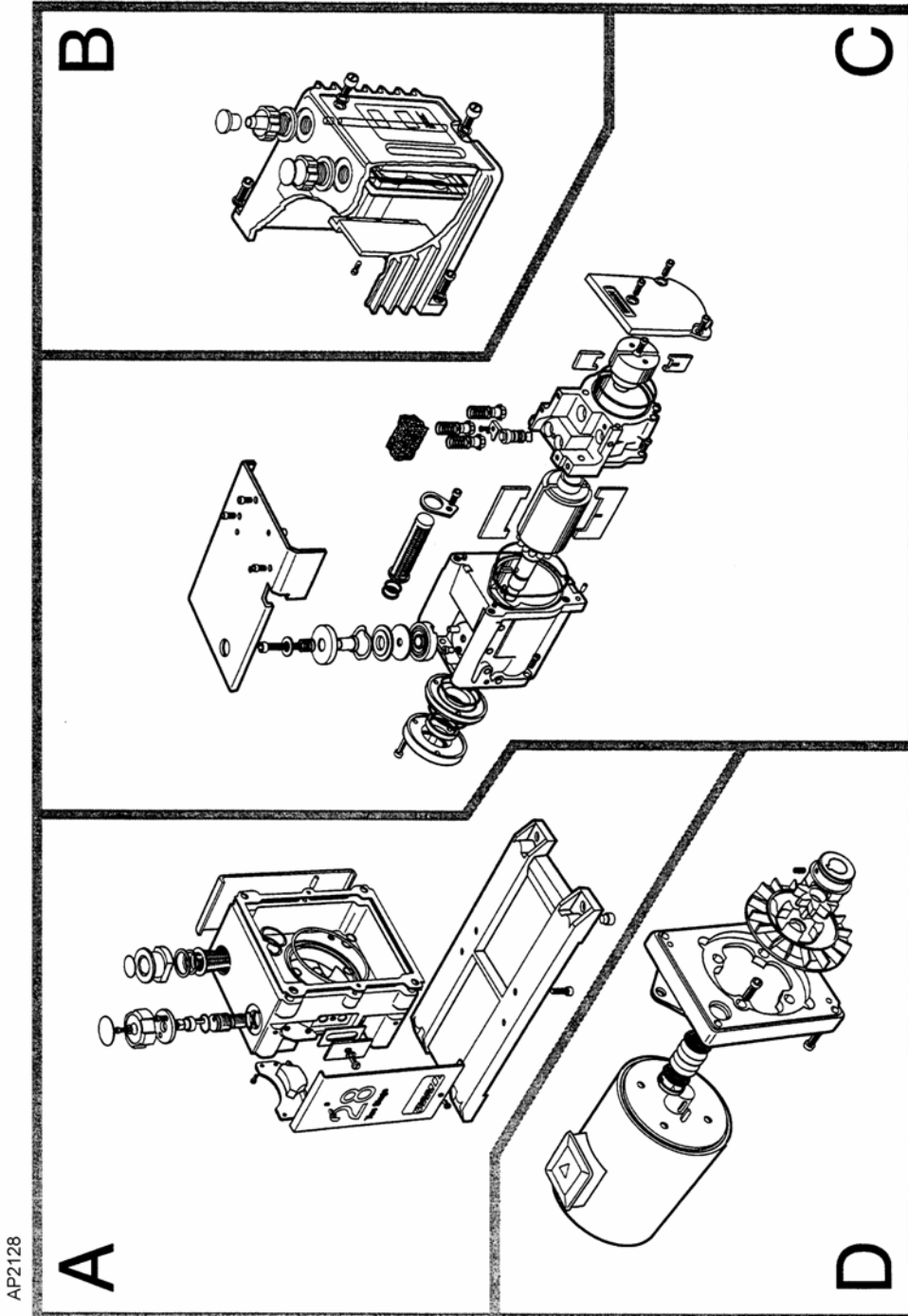
Description	Item Number
E2M28, 100/200V, 50Hz, or 100-105/200-210V, 60Hz, single-phase	A37315904
E2M28, 115/230V, 60Hz, single-phase	A37315981
E2M28, 220-240V, 50Hz, or 230-240V, 60Hz, single phase	A37315903
E2M28, 200-220/380-415V, 50Hz, or 200-230/460V, 60Hz, three phase	A37310940
E2M28, 220-240, 50Hz, or 230-240V, 60Hz, single phase (Amphenol)	A37316903

Table A1 - Table 1 - Maintenance kits

Tables 3-6 cross reference	Description	Item Number
1	Blade kit	A37101135
2	Clean and overhaul kit	A37101131

A1.2 3. Major sub-assemblies

Figure A1 - Figure 1 - Major sub-assemblies

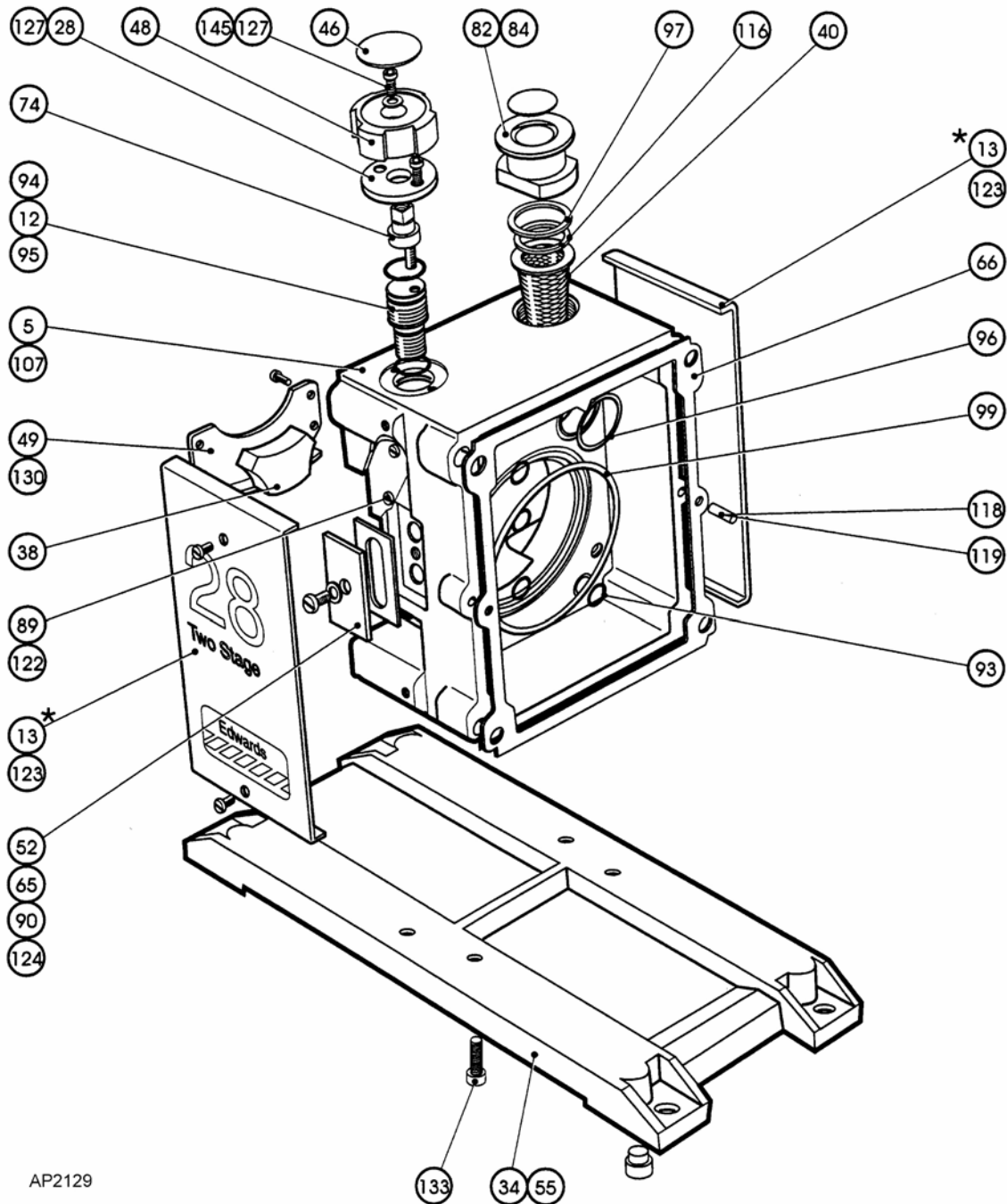


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- A. Adaptor sub-assembly
- B. Oil box sub-assembly
- C. High and low vacuum stator sub-assembly
- D. Motor and adaptor plate sub-assembly

A1.3 3(A) Adaptor sub-assembly

Figure A2 - Figure 2 - Adaptor sub-assembly



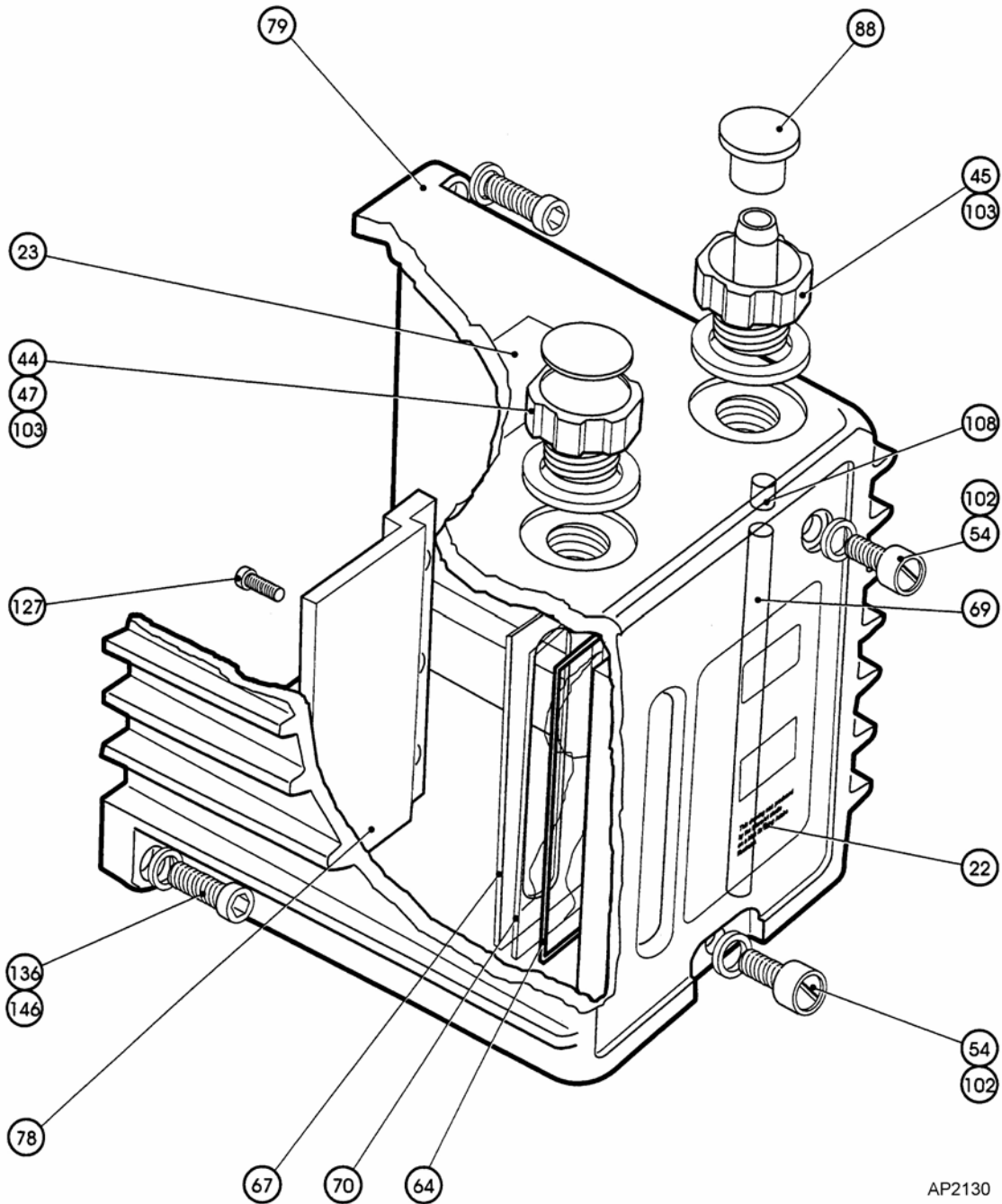
* See Table 2 for alternative side panels

Table A2 - Table 3 - Adaptor sub-assembly items

Item	Description	Item No.	Qty	Kit No.(s)
5	Adaptor - Spare	A37301701	1	
12	Ballast piston	A37301010	1	
*13	Side panel(28) - 50 Hz model	A37301011	2	
*13	Side panel(30) - 60 Hz model	A37401011	2	
28	Bearing plate	A20514001	1	
34	Base plate	A20499026	1	
38	Felt pad	A22302017	1	
40	Inlet filter	A22305037	1	
46	Ballast insert	A25908034	1	
48	Ballast knob	A25908038	1	
49	Clamp plate	A25908041	1	
52	Blanking plate	A25942010	1	
55	Isolator rubber	A26501031	4	
65	Gasket		1	2
66	Oil box gasket		1	2
74	Ballast spindle	A34301023	1	
82	Adaptor NW25 x 1 inch BSP	C10501203	1	
84	Protective cover	D32201071	1	
89	Dowty seal		1	2
90	Dowty seal		1	2
93	O-ring		4	2
94	O-ring		1	2
95	O-ring		1	2
96	O-ring	H02120068	1	
97	O-ring		1	2
99	O-ring		1	2
107	Hollow taper pressure plug - 1/4 inch BSP	H03517003	1	
116	Circlip	212081133	1	
118	R. pin lgt dt. ms. nt. Ø5x16 mm lg	212170132	2	
119	R. pin lgt dt. ss. Ø5x16 mm lg.	212174132	2	
122	Ch sl screw, M5 x 8 (ms ni)		1	
123	Pan sl screw, M5 x 8 (ms ni)		4	
124	Pan sl screw, M8 x 20 (ms ni)		1	
127	Cap ht screw, M4 x 12 (nt)		3	
130	Cap ht screw, M5 x 10 (nt)		2	
133	Cap ht screw, M8 x 20 (nt)		4	
145	Washer, large M6 (ms ni)		1	

A1.4 (B) Oil box sub-assembly

Figure A3 - Figure 3 - Oil box sub-assembly



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Table A3 - Table 4 - Oil box sub-assembly items

Item	Description	Item No.	Qty	Kit No.(s)
22	Label	A20001065	1	
36	Hazard warning label	A20001084	1	
44	Filter plug - 3/4 inch BSP	A25908027	1	
45	Nozzle - _ 15 tube x 3/4 inch BSP	A25908029	1	
47	Filter plug insert	A25908035	1	
54	Plug-1/8 inch BSP	A26002027	2	
64	Seal		1	2
67	Gasket		1	2
69	Drain tube	A27858001	1	
70	Sight glass	A29201010	1	
78	Sight glass clamp	A25908059	1	
79	Oilbox	A36301011	1	
88	Redcap-AQ330-13	H01503013	1	
102	O-ring		2	2
103	O-ring	H02125026	2	
108	Hollow taper pressure plug 1/8 inch BSP	H03517004	1	
127	Cap ht screw, M4x 12 (nt)		6	
136	Cap ht screw M8 x 40 (nt)		4	
146	Washer, s.coil sq. M8 (ms nt)		4	

Table A4 - Table 5 - High and low vacuum stator sub-assembly items

Item	Description	Item No.	Qty	Kit No.(s)
1	H.V. rotor assy.	A26401073	1	
2	Baffle plate assy.	A37301005	1	
6	H.V. stator - Spare	A37301730	1	
7	L.V. stator - Spare	A37301731	1	
8	Rear cover	A37301004	1	
9	Distributor body	A25908058	1	
10	Seal carrier	A37301008	1	
11	Oil pump housing - Spare	A37301709	1	
17	Filter seal		2	2
20	Filter clamp	A11101054	1	
21	Ballast valve	A25908117	1	
27	Roller bearing	A20404011	2	
29	Ballast clamp	A20528001	1	
39	Oil filter		1	2
41	Knitmesh	A22305052	1	
42	Key 6 x 6 x 27 rd ends	A24301014	1	

Table A4 - Table 5 - High and low vacuum stator sub-assembly items (continued)

Item	Description	Item No.	Qty	Kit No.(s)
56	Low vac. Rotor	A26401071	1	
57	Valve pad		3	2
59	Exhaust valve spring		1	2
60	Distributor spring		1	2
61	Valve spring		2	2
63	Distributor rubber		1	2
72	Relief valve assy.	A37301018	1	
75	Distributor sleeve	A37301022	1	
76	Distributor weight	A34301037	1	
77	Distributor cap	A34301038	1	
80	Ballast plug	A37101022	1	
91	Oil seal - 30 x 40 x 7mm		1	2
92	Oil seal UID poss. action		1	2
93	O-ring		5	2
98	O-ring		2	2
100	O-ring		1	2
101	O-ring		1	2
104	O-ring		2	2
114	Springpin-1/4 inch x 1/2 inch	211174099	1	
115	Washer. large 2BA (ms ni)	211814057	1	
120	D.pin p'llel. ms. nt. _ 8 x 20	212211040	2	
128	Cap ht screw, M 4x 16 (nt)		1	
129	Cap ht screw, M4 x 35 (nt)		1	
130	Cap ht screw, M5 x 10 (nt)		4	
131	Cap ht screw, M5 x 30 (nt)		3	
133	Cap ht screw, M8 x 20 (nt)		3	
134	Cap ht screw, M8 x 25 (nt)		6	
137	Cap ht screw, M10 x 25 (nt)		1	
145	Washer large M4 (ms.ni)		1	
147	Washer, waved		1	2
149	High vac. Blade	A20402622	2	
150	Low vac. Blade	A20402640	2	
151	Oil pump blade	A20402538	1	
156	Spring		2	1
157	Pin		2	1

Figure A4 - Figure 5a - HV rotor assembly

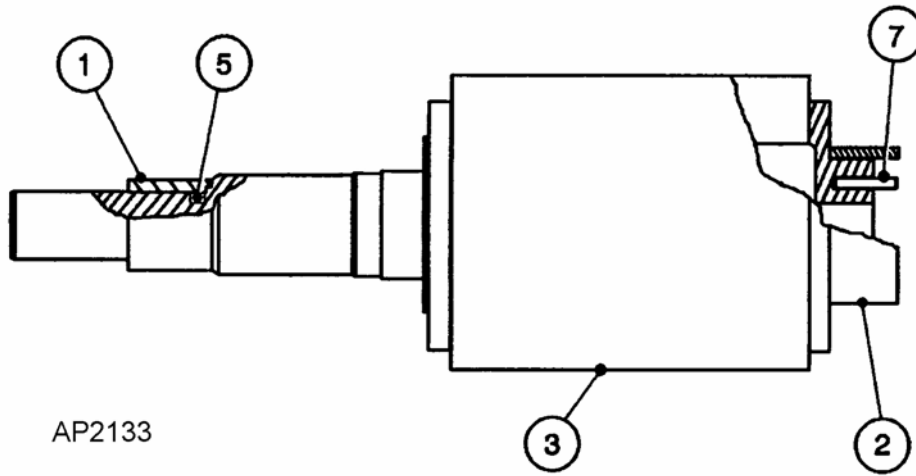


Table A5 - Table 5a - HV rotor assembly items

Item	Description	Item No.	Qty	Kit No.(s)
1	Sleeve - 20 x 25 x 20	A20405024	1	
2	Sleeve - 30 x 35 x 20	A20405008	1	
3	HV rotor	A26401072	1	
5	O-ring	H02120015	1	
7	Spring pin - Ø4 x 18	212170758	1	

Note: Item Numbers in Table 6a refer to GA A2640173 only

Table A6 - Table 7 - Motor and adaptor plate sub-assembly items

Item	Description	Item No.	Qty	Kit No.(s)
3	Coupling and fan assy.(UK)	A37301012	1	
16	Motor - see pump data table 2	0.75/0.90kW	1	
18	Gas Ballast filter pad		2	2
19	Gas Ballast gauze		2	2
35	Coupling boss (UK)	A21071046	1	
43	Key 6 x 6, 7mm lg.	A24301015	1	
53	Lifting plate	A25971017	1	
58	Coupling element	A26501032	1	
73	Motor plate -spare	A34301712	1	
86	Warning label	E20001063	1	
116	Circlip	212081133	1	
132	Cap ht screw, M6 x 20 (nt)		6	
135	Cap Ht screw, M8 x 30 (nt)		4	
140	Set hx knrld screw, M6 x 12 (ms. nt)		1	
144	Washer. M6 (ms ni)		2	

Figure A6 - Figure 5 - E2M18/28 interim oil sight glass assembly

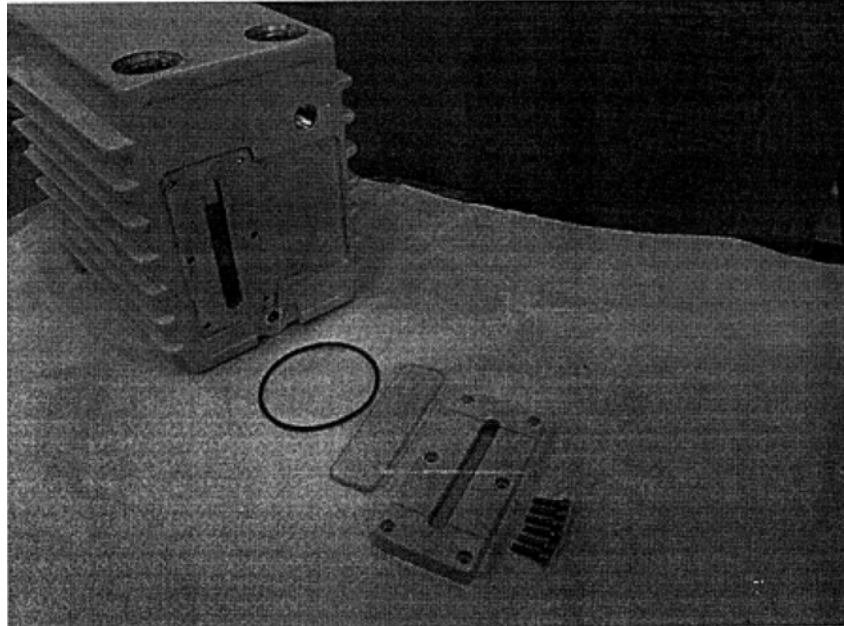


Table A7 - Table 5 - E2M18/28 interim oil sight glass assembly

Description	Part Number	Qty
E2M18/28 Oil box	A36301012	1
Sight glass clamp	A36301016	1
Sight glass	A29201018	1
O-ring	23724-072	1
Cap screws(M4 x 16 (St Stl))	218231290	6

A1.6 4 Blade kits

The blade Kit (A37301135) is detailed in Table 8.

Table A8 - Table 8 - Kit 1 - E2M28 blade kit items

Code No.	Description	Qty
A37301132	Blade H.V. (2 blade pack)	1
A37301140	Blade L.V. (2 blade pack)	1
A20402538	Oil pump blade	1
A00906077	Spring	2
A29203003	Pin	2

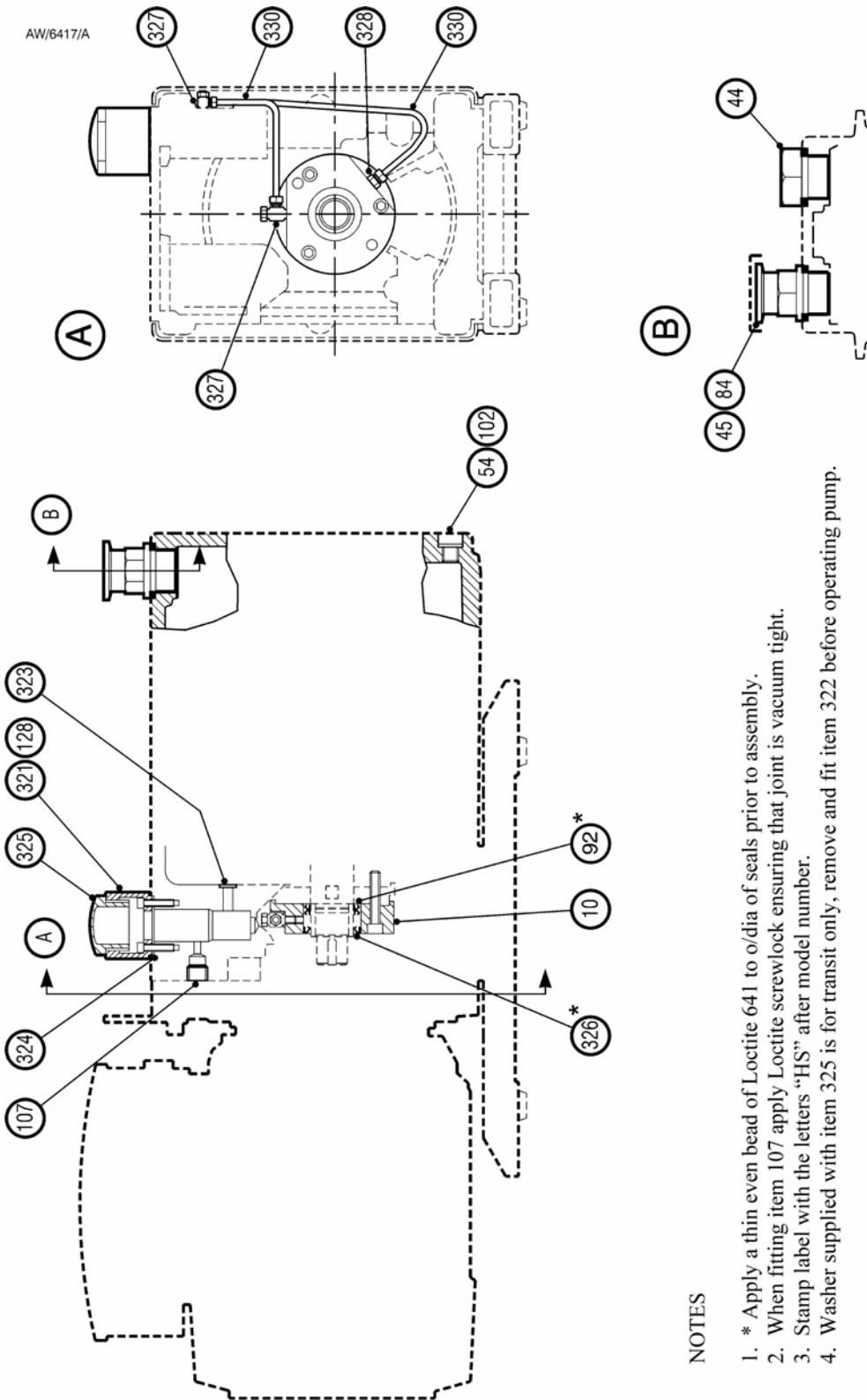
A1.7 5 Clean and overhaul kit

The Clean and Overhaul Kit (A37301131) is detailed below in Table 9.

Table A9 - Table 9 - Kit 2 - E2M28 overhaul kit items

Code No.	Description	Qty
A37301026	Fitting pack	1
A01403030	Filter seal	2
A02308043	Gas ballast filter	2
A02308044	Gas ballast gauze	2
A11301045	Gas ballast valve	1
A22305008	Oil filter assy	1
A26501029	Valve pad	3
A26501032	Coupling element	1
A27102041	Exhaust spring	1
A27102032	Distributor spring	1
A27102033	Valve spring HV	2
A27159430	Distributor rubber	1
A27159530	Seal (Nitrile)	1
A27159532	Gasket	1
A27159635	Oil box gasket	1
A27159638	Sight glass gasket	1
H02104012	Dowty seal	1
H02104030	Dowty seal	1
H02109064	Inner shaft seal	1
H02109094	Outer shaft simrit seal	1
H02120028	O-ring	9
H02122035	Gas ballast O-ring	1
H02122037	Gas ballast O-ring	1
H02122038	O-ring	1
H02120072	Inlet O-ring	1
H02120078	O-ring	2
H02120085	O-ring	1
H02120087	O-ring	1
H02124145	Dowty O-ring	1
H02122009	O-ring	2
H02126026	O-ring	2
H02126116	O-ring	2
218990201	Waved washer	1
A20001293	Exhaust warning label	1

Figure A8 - Figure 9 - E2M28 O-ring sealed oil box conversion kit



NOTES

1. * Apply a thin even bead of Loctite 641 to o/dia of seals prior to assembly.
2. When fitting item 107 apply Loctite screwlock ensuring that joint is vacuum tight.
3. Stamp label with the letters "HS" after model number.
4. Washer supplied with item 325 is for transit only, remove and fit item 322 before operating pump.

**A1.8 9 Interim oil box assembly spares replacement
Part no. A36301801**

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Figure A9 - Figure 7 - Interim oil box assembly spares replacement
Part No A36301801

Table A10 - Table 9 - Interim oil box assembly spares replacement - Part No A36301801

Item	Description	Item No.	Qty	Kit No.(s)
	Spares kit label	A20001369	1	
	Carton	A21001019	1	
	Oil fil plug N6 25% GF GRY K40	A25908118	1	
	Nozzle 3/4 inch BSP N6 50% GF GRY KM90	A25908146	1	
	Plug 1/8 inch BSP	A26002027	2	
	Oilbox gasket	A27159635	1	
	Drain tube	A27858001	1	
	Sight glass (RV)	A29201018	1	
	Oilbox c/w mod sight glass m/c	A36301012	1	
	Sight glass clamp E2M28	A36301016	1	
	O-ring Viton 11.1 ID x 1.6 sec (P)	H02122009	2	
	O-ring Viton 69.5 ID x 3.0 sec (P)	H02122083	1	
	O-ring Viton 1.109 ID x 139 sec (P)	H02125026	2	
	1/8 inch BSP taper pressure plug	H03517004	1	
	Scr cap s stl M4 x 16	218231290	6	

Table A11 - Table 3 - Adaptor sub-assembly items

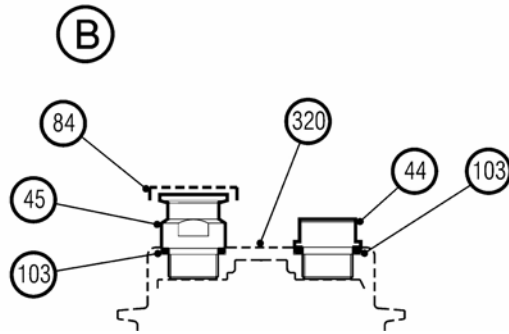
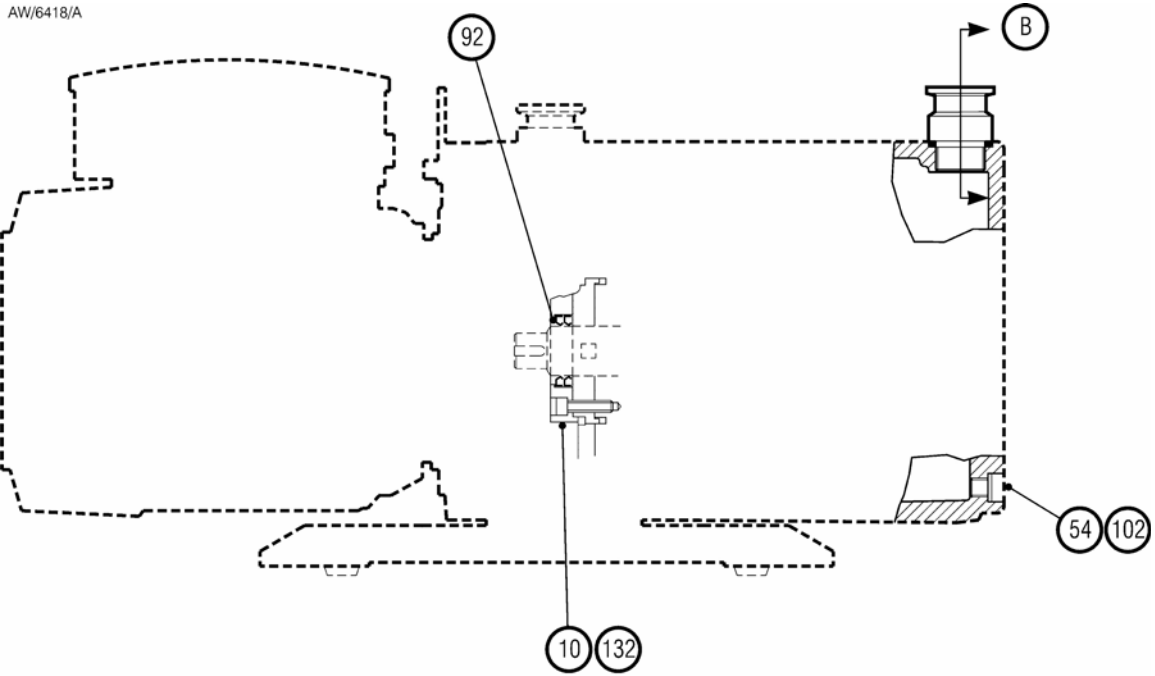
Item	Description	Item No.	Qty	Kit No.(s)
5	Adaptor - Spare	A37306716	1	
12	Ballast piston	A37301010	1	
*13	Side panel (28) - 50 Hz model	A37310011	2	
*13	Side panel (30) - 60 Hz model	A37410011	2	
28	Bearing plate	A20514001	1	
34	Base plate	A21035077	1	
38	Felt pad		1	2
40	Inlet filter	A22305037	2	
46	Ballast insert	A25908174	1	
48	Ballast knob	A25908171	1	
49	Clamp plate	A25908041	1	
55	Isolator rubber	A26501031	4	
74	Ballast spindle	A34301023	1	
82	Adaptor NW25 x 1 inch BSP	C10501203	1	
84	Protective cover	D32201071	1	
89	Dowty seal		1	2
93	O-ring		2	2
94	O-ring		1	2
95	O-ring		1	2
96	O-ring		1	2
97	O-ring		1	2
99	O-ring		1	2
107	Hollow taper pressure plug - 1/4 inch BSP	H03517003	1	
108	Hollow taper pressure plug - 1/8 inch BSP	H03517004	1	
116	Circlip	212081133	1	
122	Ch sl screw, M5 x 8 (ms ni)		2	
123	Pan sl screw, M5 x 12 (ms ni)		4	
126	Cap ht screw, M4 x 12 (nt)		3	
130	Cap ht screw, M5 x 10 (nt)		2	
133	Cap ht screw, M8 x 20 (nt)		4	
145	Washer, large M4 (ms ni)		1	

Table A12 - Table 8 - Motor and adaptor plate sub-assembly items

Item	Description	Item No.	Qty	Kit No.(s)
3	Fan (Nylon)	A25908056	1	
16	Motor - see pump data Table 2	0.75/0.90 kW	1	
18	Gas ballast filter pad		2	2
19	Gas ballast gauze		2	2
35	Coupling boss	A21071046	2	
43	Key 6 x 6 x 27 mm lg.	A24301015	1	
53	Lifting plate	A65401023	1	
58	Coupling element	A26501032	1	
73	Motor plate - Spare	A34301712	1	
86	Warning label	E20001063	1	
116	Circlip	212081133	1	
132	Cap ht screw, M6 x 20 (nt)		6	
135	Cap ht screw, M8 x 30 (nt)		4	
140	Set hx knrld screw, M6 x 8 (ms. nt)		2	
144	Washer. M6 (ms ni)		2	

A1.11 9 Fomblin filled pumps

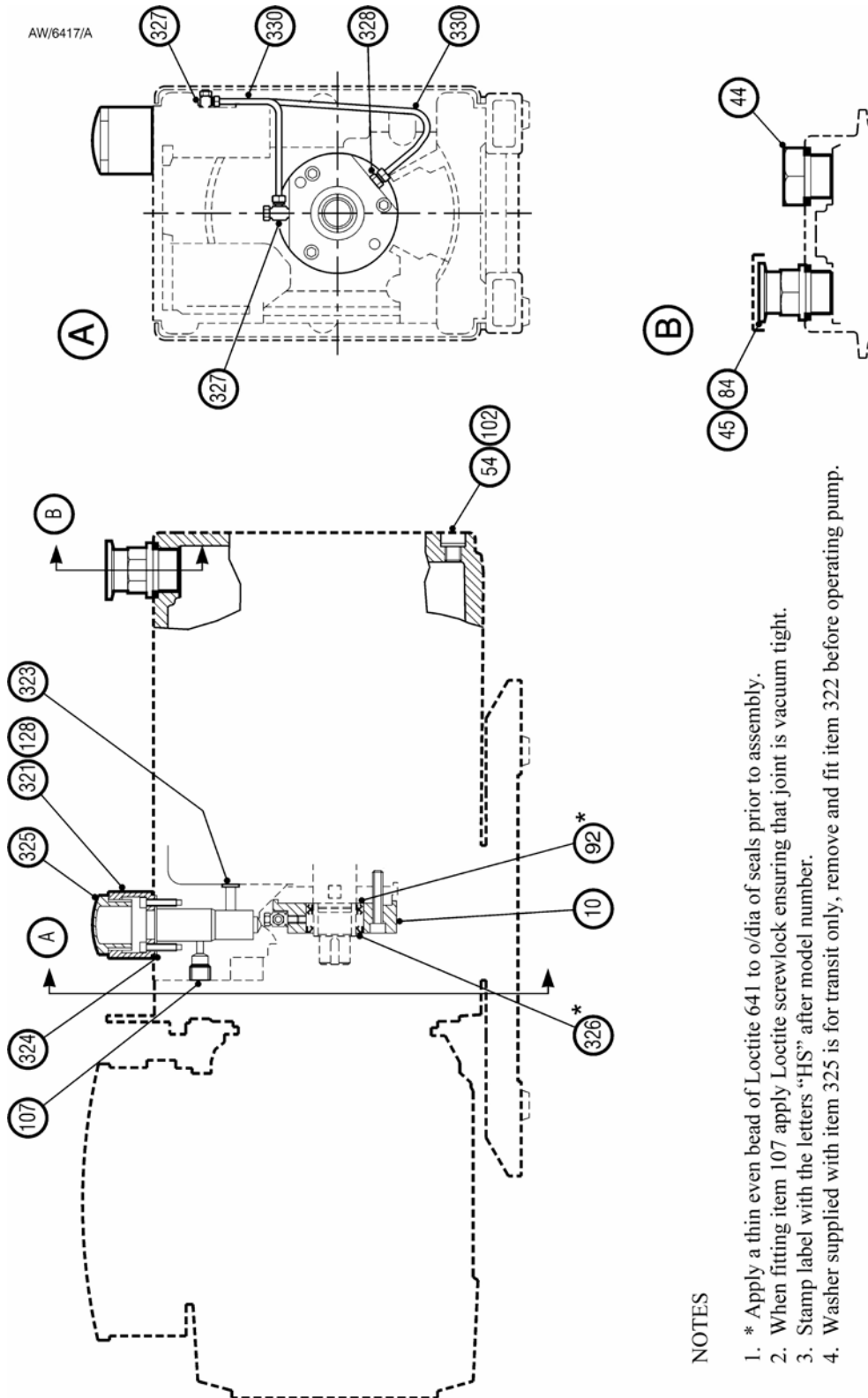
Figure A12 - Figure 7 - Fomblin filled pumps



This drawing applies to Fomblin filled pumps only (also suitable for Firequel application)

A1.12 10 Hermetically sealed pumps

Figure A13 - Figure 8 - ATEX special items



NOTES

1. * Apply a thin even bead of Loctite 641 to o/dia of seals prior to assembly.
2. When fitting item 107 apply Loctite screwlock ensuring that joint is vacuum tight.
3. Stamp label with the letters "HS" after model number.
4. Washer supplied with item 325 is for transit only, remove and fit item 322 before operating pump.

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