

Parts List/Service Manual

V37 Models (PSAS)

Stationary Air Compressors

ST 16047

Iss A 08/2002



This page is intentionally left blank

Introduction

Introduction

This publication contains parts lists and service information, please read it carefully before you attempt to service or carry out adjustments on the compressor.

This publication should be used in conjunction with the User Handbook.

Note: If you need any specialist help or service, please contact your distributor or CompAir UK Ltd quoting the MODEL, TYPE and SERIAL NUMBER.

Product development

CompAir UK Ltd adopt a policy of continual product Improvement. The information in this publication, whilst fully up to date when issued, may be subject to change without notice.

Quality standards

CompAir UK Ltd Quality Management Systems are approved to BSENISO 9002.

Note: These instructions comply with the stipulation of European directive 98 / 37 / EEC concerning machine safety and are valid for machines carrying the CE label.

CompAir UK Ltd
Claybrook Drive
Washford Industrial Estate
Redditch
Worcestershire
B98 ODS
England.

Web: www.CompAir.com
E-mail: sales@compair.com
Telephone: (01527) 525522
Fax: (01527) 521140

Model range

This handbook relates to all V37 kW 50/60 Hz compressors, model types:

V37
837PSAS08-4035V100 *
837PSAS08-4636D105 **

This publication refers to compressors with serial numbers:

* 837-000976-0210 onwards

** 837-001064-0210 onwards

Terminology:-

8	=	Series
37	=	37 kW motor size
P	=	Package
S	=	Standard control
A	=	Aftercooler
S	=	Starter
08	=	8 bar delivery pressure
40, 46	=	400, 460 volt
3	=	3 phase
5, 6	=	50 Hz, 60 Hz
D & V	=	Direct On Line, Variable Speed
100	=	European specification (50 Hz)
105	=	US specification (60 Hz)

OWNERSHIP RECORDS

Model Number:	.....	Serial Number:	.....
R.P.M:	.....	kW:	.....
Maximum Bar:	.....		

Local CompAir UK Ltd Distributor

Name:	.....	Contact:	.....
Address:	.....	Telephone:	.....
	.....	Fax:	.....
	.....	Email:	.....

Introduction

Service Kits

Only use genuine CompAir UK Ltd parts and approved oils. **Oils must not be mixed.**

Service kits contents

Item	Part Number	Quantity	Description	Chapter Location
KM85 - Maintenance Kit				
1	52438	1	Air Filter 178/218/2	1A
2	59842	1	Gasket - MPV Housing	
3	59946	1	Oil Filter 218/258	1F
4	59969	1	Gasket - Oil Filter Ma	1F
5	9902	1	O Ring	
6	BM81	1	Bag 128/148/178/218/	
7	50055	1	Gasket	1D
8	50084	1	Gasket	1B
9	50118	1	P.T.F.E. Washer	
10	52109	1	O Ring	1D
11	57596	1	Vacuum Seal Valve	1D
12	58253	1	O Ring (200-136-977	1G
13	59847	1	Seal - Flow Control Valve	
14	59854	1	Gasket - O.R.P. Cover	1E
15	70166	1	Blowdown Valve Filter	1C
16	9624	2	Bonded Seal - 1	
17	9646	1	Copper Washer ½ B	
18	9717	1	O Ring	1E
19	9790	1	O Ring	1G
20	9804	1	O Ring	
21	9805	1	O Ring	
22	9806	1	O Ring	1C
23	9809	1	O Ring	1C
24	RO6000-330	1	Seating Washer	
25	W4-1	1	Sealing Ring	1D
26	W7-2	1	Fibre Washer	
27	ST15877	1	C4 Carton Plain	
KS84 - Separator Kit				
1	58798	1	Gasket (Separator Ca	
2	59180	3	Separator Element 128-158	1J
3	71191	1	Gasket Separator Cas	1J
4	BS84	1	Bag 128/148/178/845	
5	3515C	1	Thermal Motor	
6	71190	1	Gasket Separator Cover Plate	
7	9605	2	Bonded Seal - 5/16	
8	9609	1	Bonded Seal - 1/4	
9	9619	2	Bonded Seal - 3/4	1E, 1J
10	9624	1	Bonded Seal - 1	1E, 1F
11	9748	3	O Ring	1H

Item	Part Number	Quantity	Description	Chapter Location
KS84 - Separator Kit (continued)				
12	9753	2	O Ring (0166-24)	
13	9758	2	O Ring (0246-24)	1H
14	9794	1	O Ring	1H
15	9795	1	O Ring (0275-30)	1H
16	9802	1	O Ring	1H
17	ST15906	1	C6 Carton Plain	
KT87 - Top Up Kit				
1	33111	1	Seal Assembly	1K
2	50130	1	Jubilee Clip 10.5 Diameter	1K
3	56300	1	O Ring	1K
4	58789-03	2	Stator Gasket Intake	1K
5	58789-04	2	Stator Gasket Intake	1K
6	587-03	2	Stator Gasket Drive	
7	587-04	2	Stator Gasket Drive	
8	72316	1	Drive Element	1K
9	72832	1	Pressure Gauge 63 mm	
10	73557	1	Gasket I.E.C.8 Series	
11	9894	1	O Ring	1K
12	BT8	1	Bag 128/148/178/218/	
13	1846-P	1	O.R.V. Filter Assembly	
14	1846	1	O.R.V. Filter Assembly	1G
15	1728	1	O.R.V. Filter Nut	
16	3416	1	Oil Return Valve Filter	
17	58117	1	Sight Level Glass	1E
18	58426	1	Sight Glass Clip	1E
19	9605	10	Bonded Seal - 5/16	1K
20	9607	8	Bonded Seal - .40	1K
21	9613	2	Bonded Seal - 3/8	
22	9616	1	Bonded Seal - 1/2	1D
23	9619	1	Bonded Seal - 3/4	1E
24	9624	3	Bonded Seal - 1	1E, 1F
25	9703	1	O Ring	
26	9708	1	O Ring	
27	9754	1	O Ring	1E
28	9792	2	O Ring	
29	9794	2	O Ring	1F
30	9811	1	O Ring	1K
31	9896	2	O Ring	1K
32	ST15877	1	C4 Carton Plain	

Note: Spare parts to be stored in original packaging and in a dry environment. Repaired or replacement units should be protected against corrosion and mechanical damage during storage.

Introduction

Key to symbols used



Torque Setting Nm.



Spanner Required (mm) A/F



Grease Required (Specification)



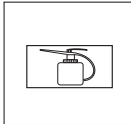
Allen key Required (mm)



Loctite Required and Specification Number



Lubricate With Sump Oil



Recommended Oils

Fluid Force Clear

Fluid Force 2000

Fluid Force HPO



Recommended Grease

Silkolene 660

Motor Grease

Esso Unirex N3

Shell Albida R2

Shell Nerita HV

SKF LGHQ3

Castrol Optimol PD2

Note: Do not mix oils.

Torque settings

Listed below are recommended torque settings.

Note: Torque settings must be applied when indicated.

Torque Settings	
Thread Size (mm)	Setting (Nm)
6	15
8	35
10	60
12	95
16	160
42	400

This page is intentionally left blank

Parts List and Service Manual

Contents

	Chapter	Page
Air-End	1	9
Main Assembly	2	37
Starter Assemblies	3	51
Adjustments and Testing	4	59
Fault Finding	5	65

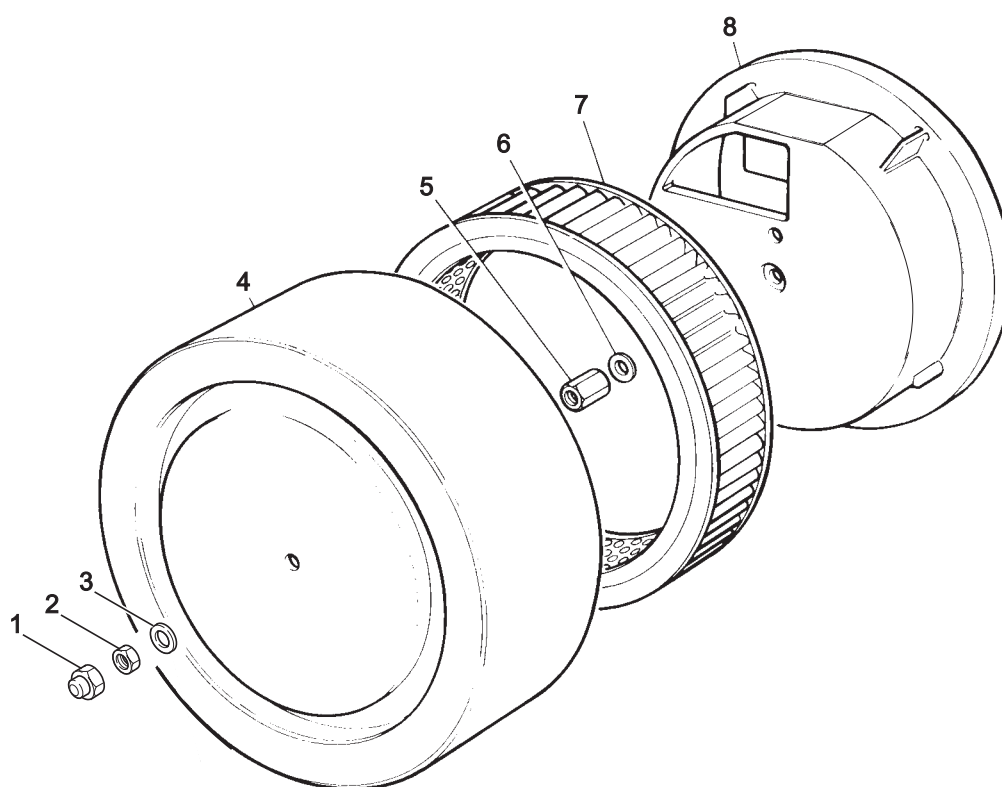
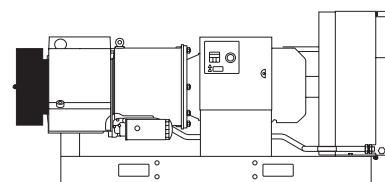
This page is intentionally left blank

Chapter 1

Contents

	Section	Page
Air Intake Filter	A	10
Valve Housing	B	12
Servo, Flow Control and Unloader Valve	C	14
Safety Valve, Vacuum Relief Valve, Intake End Cover	D	18
Oil Chamber Arrangement	E	20
Bell Housing Arrangement	F	22
Minimum Pressure Valve	G	24
Separator Manifold	H	26
Separator Case	J	28
Rotor Stator Unit (with Oil Relief Valve Assembly)	K	30
Drive End Arrangement	L	34
Air-End Part Modifications	M	36

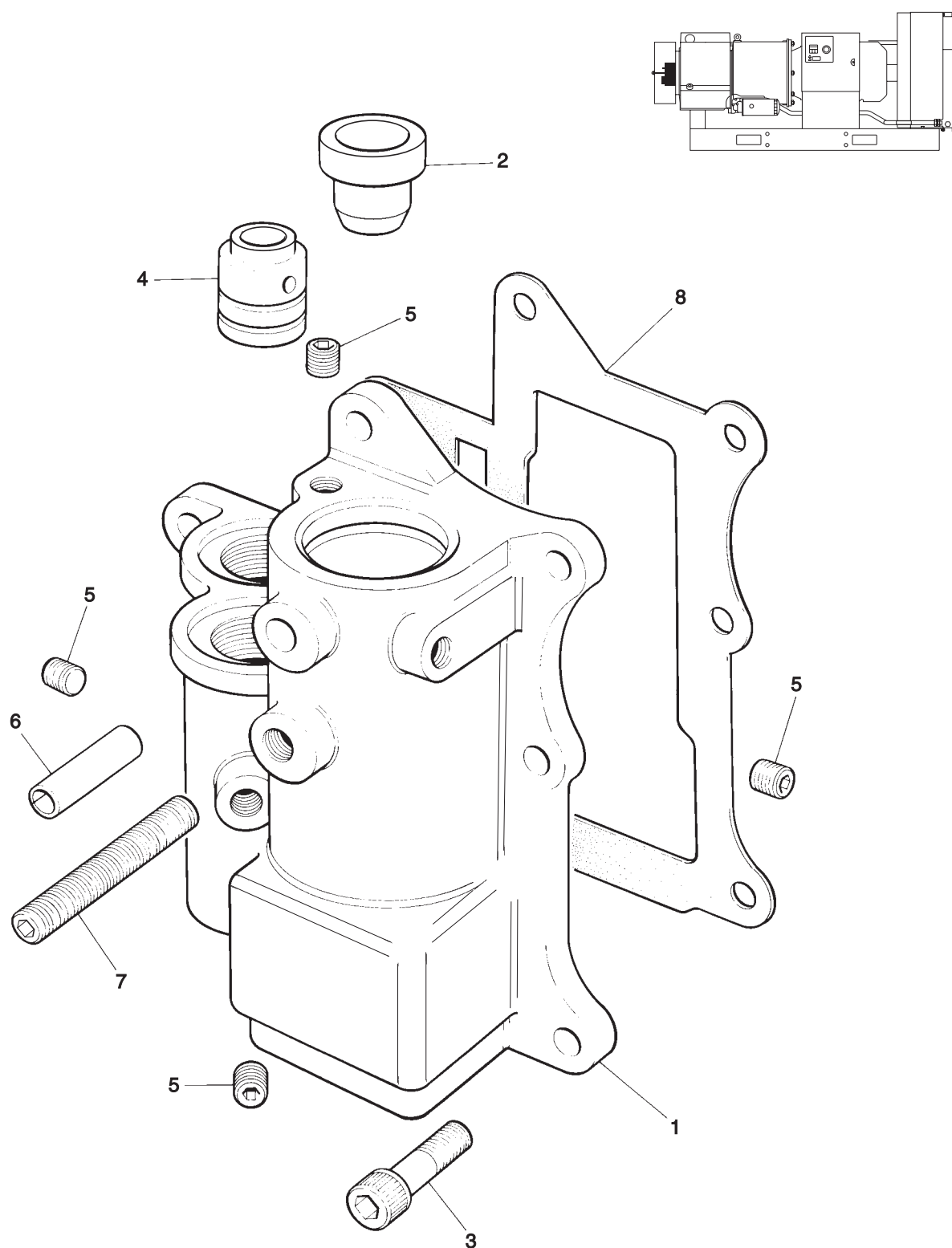
Page 10



435A328

Figure 1A - Air Intake Arrangement

Page 12

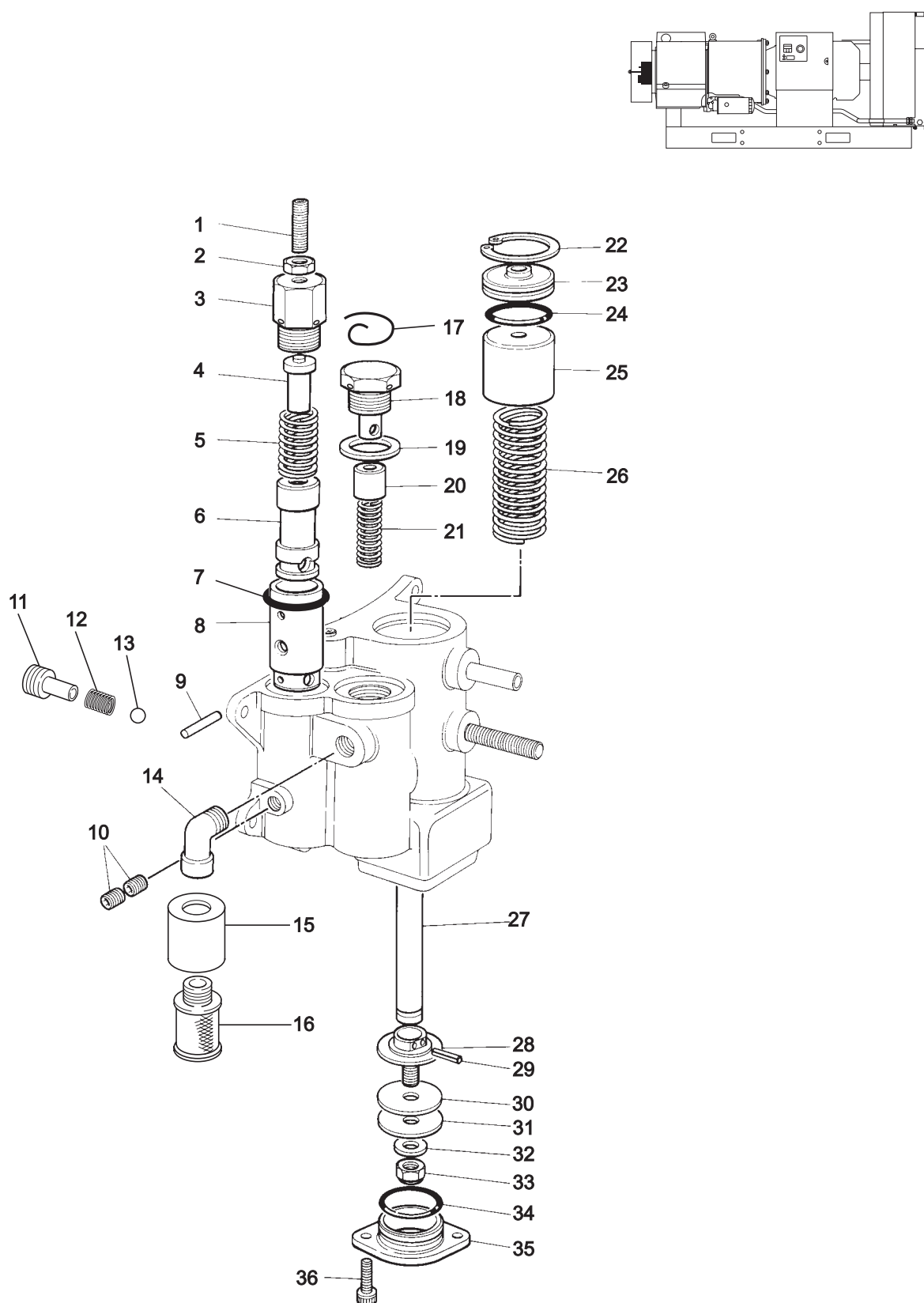


435A329

Figure 1B - Valve Housing

1C**Servo, Flow Control and Unloader Valve**

Item	Part Number	Description	Kit	Quantity
				V37
	33713	Servo valve assembly		1
1	MG708-30	M8 x 30 socket grub screw		1
2	MN108	M8 nut		1
3	71807	Servo valve end cap		1
4	50110	Spring support		1
5	RO6000-115	Servo spring		1
6	50105	Servo piston		1
7	59912	O ring		1
	33003	Servo sleeve assembly		1
8	59597	Servo sleeve		1
9	3291	Tension pin		1
10	MG1706-6	M6 x 6 socket set screw tuflock		2
11	72197	Plug non return valve		1
12	70622	Non return valve spring		1
13	59650-04	Stainless steel ball		1
14	58962	Equal elbow M/F 1/8 BSP		1
15	59014	Filter shroud		1
16	70166	Blowdown valve filter	KM85	1
	33817	Flow control valve assembly		1
17	ST10024	Locking wire		A/R
18	72189	Flow control valve plug		1
19	9617	Bonded seal 5/8		1
20	50116	Flow control valve piston		1
21	50115	Spring		1

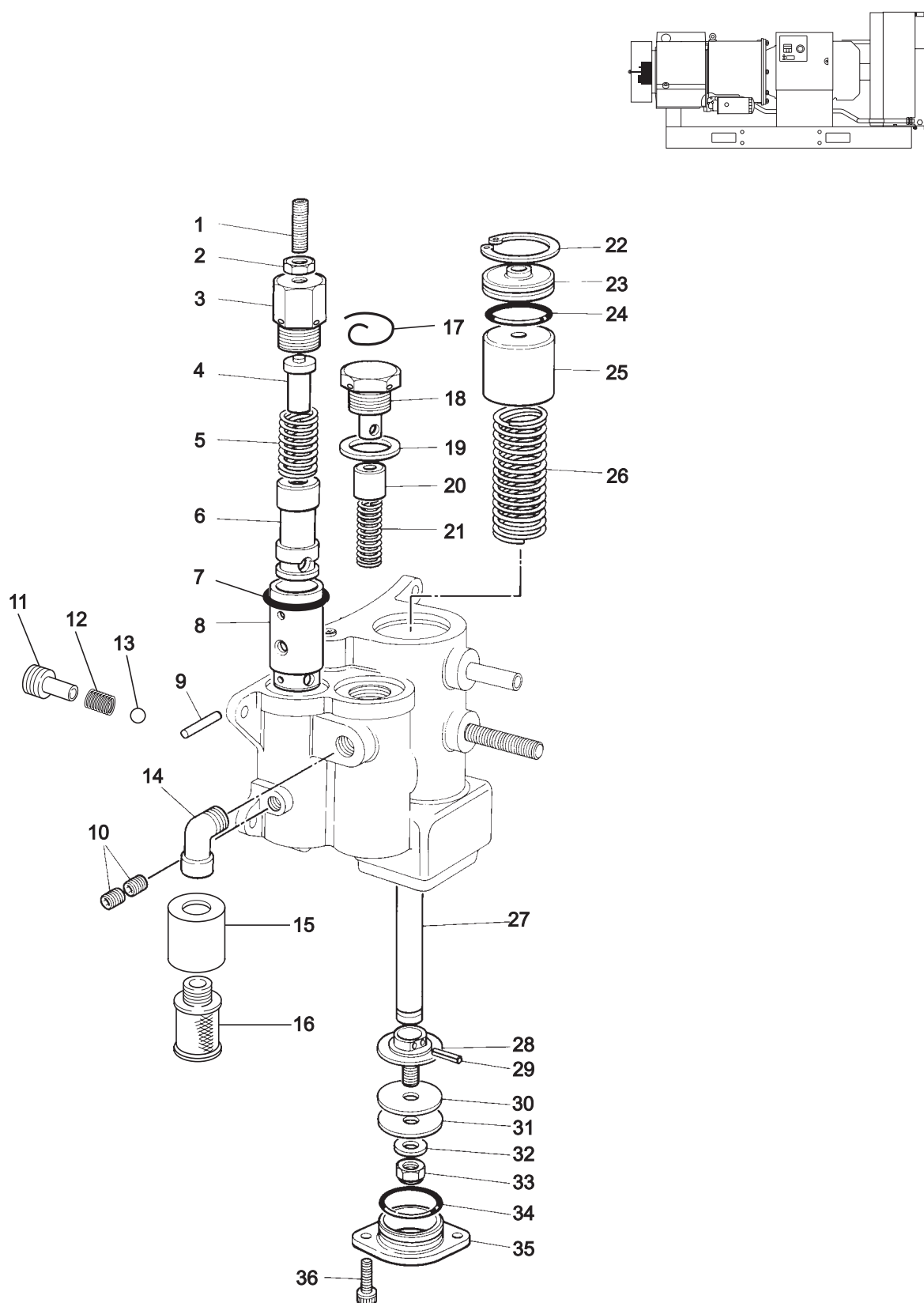


435A330

Figure 1C - Servo, Flow Control and Unloader Valve

1C**Servo, Flow Control and Unloader Valve**

Item	Part Number	Description	Kit	Quantity
				V37
	33814	Unloader valve assembly		1
22	MCI50	Circlip internal		1
23	50113	Unloader valve cap		1
24	9806	O ring	KM85	1
25	50035A	Unloader valve piston (letter stamped on piston)		1
26	50243	Unloader valve spring		1
	32334	Unloader stem assembly		1
27	57175	Valve stem		1
28	57176	Valve head		1
29	56950	Tension pin		1
30	50118	P.T.F.E. washer		1
31	50106	Front washer		1
32	MW8	M8 washer heavy gauge		1
33	MN1708	M8 nylock nut		1
34	9809	O ring	KM85	1
35	50036	Unloader valve seat		1
36	MS706-16-741	M6 x 16 socket cap screw		2

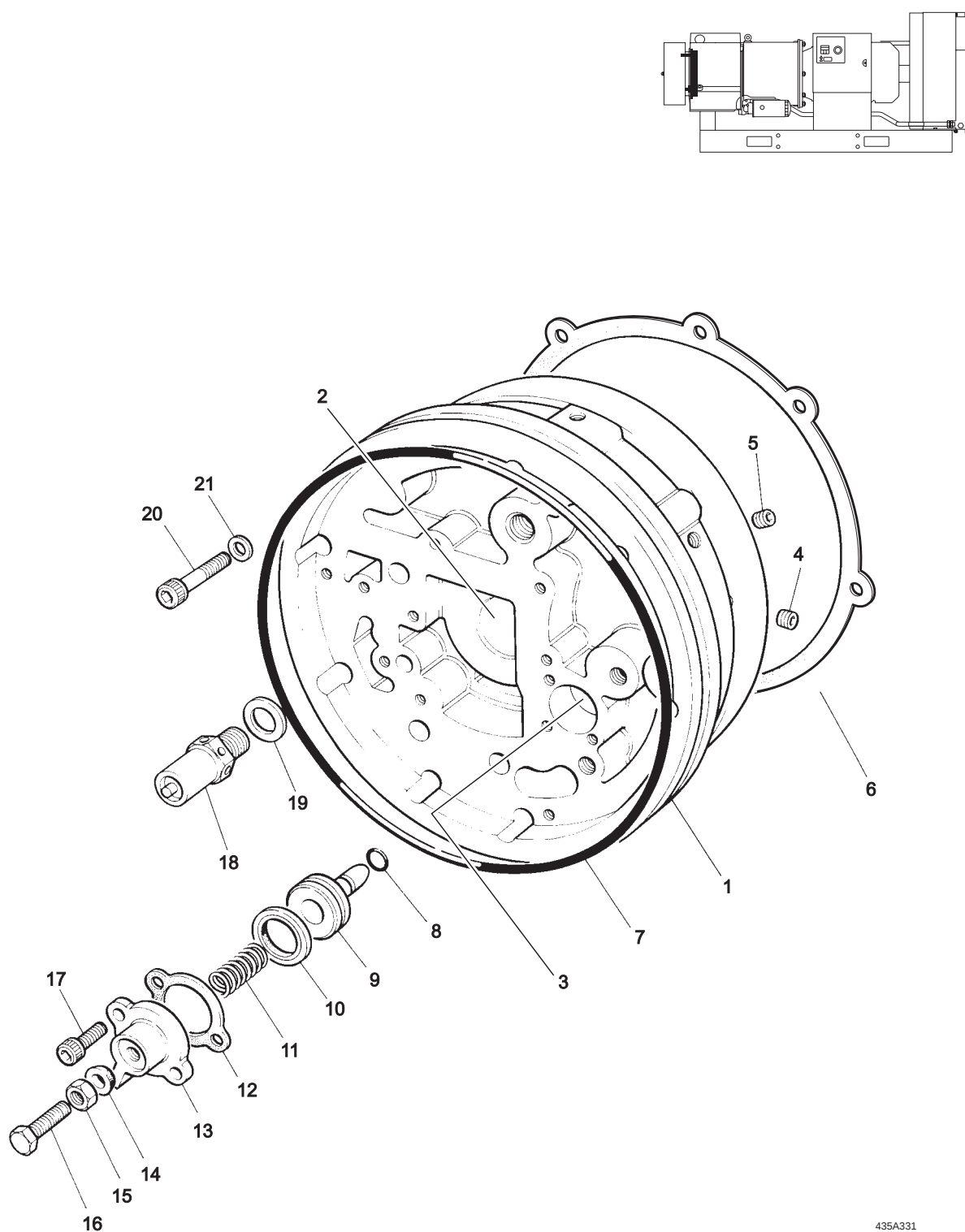


435A330

Figure 1C - Servo, Flow Control and Unloader Valve

1D Safety Valve, Vacuum Relief Valve, Intake End Cover

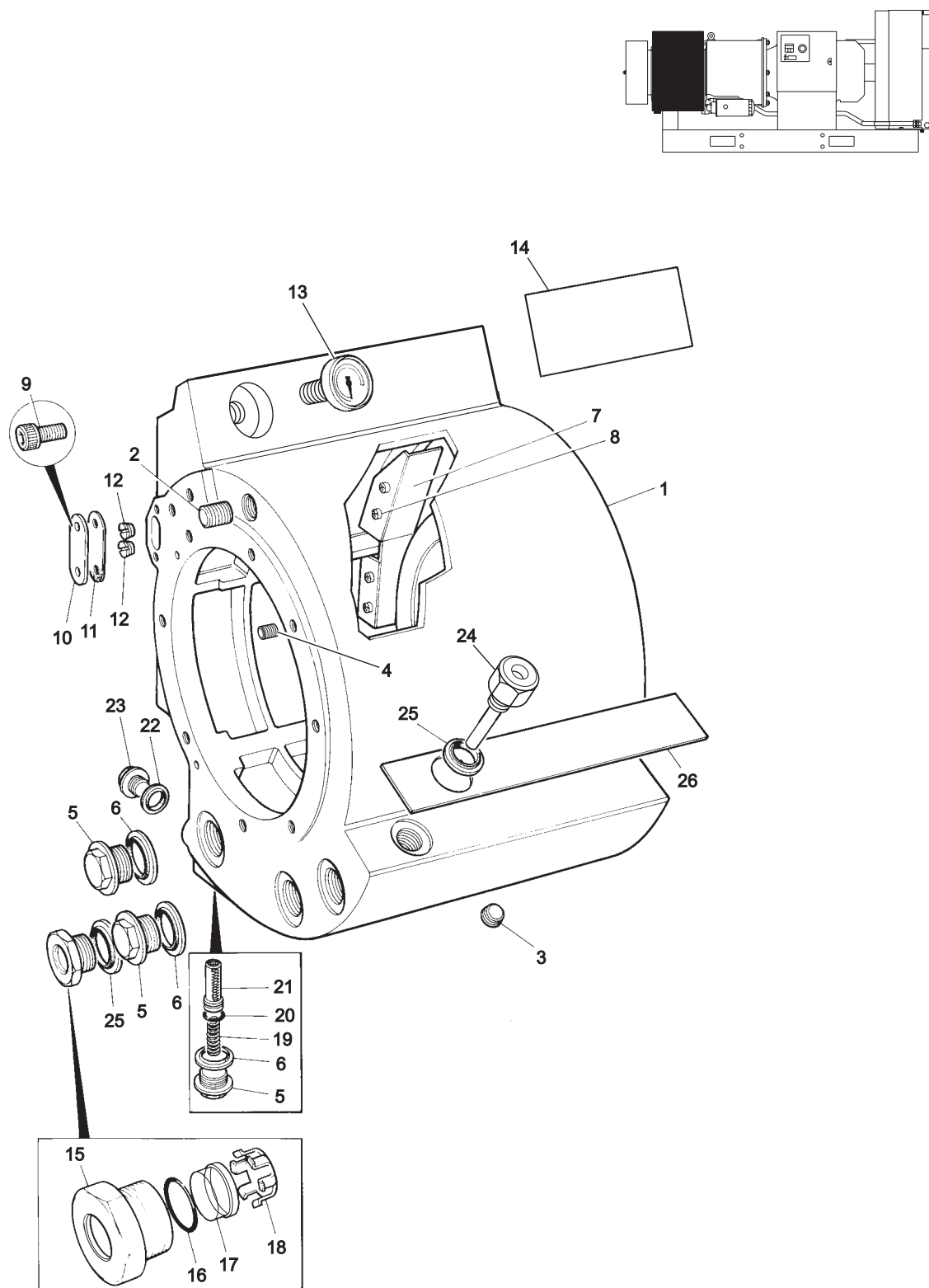
Item	Part Number	Description	Kit	Quantity
				V37
	32775-02	Intake end cover assembly		1
1	58740-02	Intake end cover		1
2	52403	Bearing		1
3	RO20000-80	Bronze bush (part of item 1)		1
4	TP1	Taper plug 1/8 BSP		6
5	TP2	Taper socket ¼ BSP		1
6	73557	Gasket		1
7	9902	O ring		1
	30011	Vacuum relief valve assembly		1
8	52109	O ring	KM85	1
9	RO20000-225	Valve		1
10	57596	Vacuum valve seal	KM85	1
11	RO20000-79	Spring		1
12	50055	Gasket	KM85	1
13	50008	Vacuum relief valve cap		1
14	W4-1	Sealing ring		1
15	MN206	M6 lock-nut		1
16	MS106-35	M6 x 35 hex head screw		1
17	MS706-16	M6 x 16 socket head screw		2
18	53399	Safety valve (150 PSI)		1
19	9616	Bonded seal 1/2	KT87	1
20	MS708-30	M8 x 30 socket head screw		8
21	9605	Bonded seal 5/16	KT87	8



435A331

Figure 1D - Safety Valve, Vacuum Relief Valve, Intake End Cover

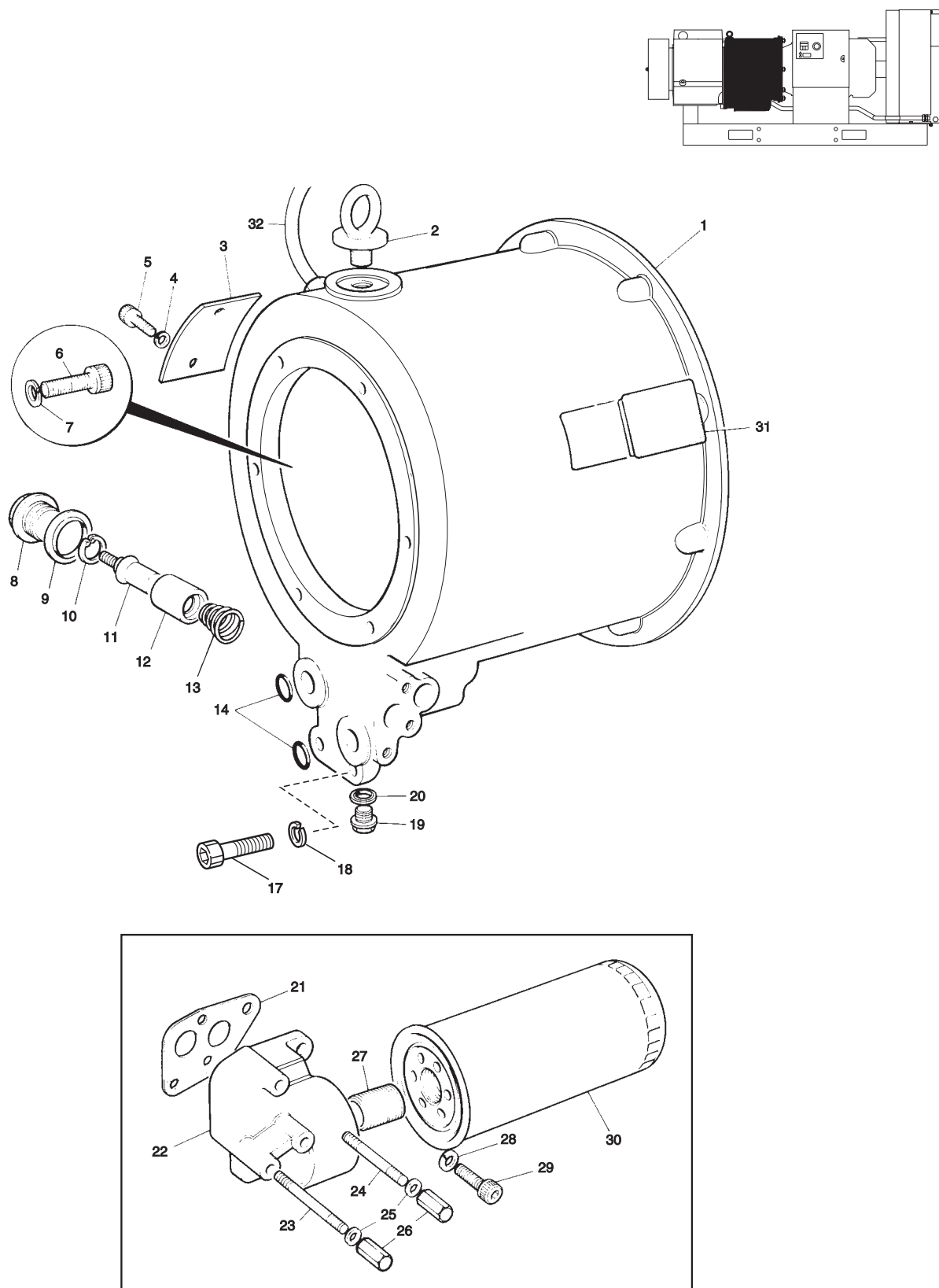
Item	Part Number	Description	Kit	Quantity
				V37
	33965	Oil chamber assembly		1
1	72920	Oil chamber		1
2	MHC16-24	M16 x 1.5D helicoil		1
3	59425-04	Taper plug brass ½ BSP		1
4	MHC8-16	M8 x 2D helicoil		8
5	3554	Drain plug 1 BSP		3
6	9624	Bonded seal	KT87	3
7	53452	Auxiliary baffle		1
8	52613	Self tapping screw		4
9	MS706-20	M6 x 20 socket head screw		2
10	50044	O.R.P. cover plate		1
11	59854	Gasket O.R.P. Cover plate	KM85	1
12	71241	Oil restrictor plug		2
13	72832	Pressure gauge 63 mm		1
14	72822	Nameplate		1
	33145	Sight glass assembly		1
15	59855	Sight glass housing		1
16	9754	O ring		1
17	58117	Sight level glass	KT87	1
18	58426	Sight glass clip	KT87	1
19	50764	Spring		1
20	9717	O ring	KT87	1
21	30152	Servo filter assembly		1
22	9619	Bonded seal 3/4	KT87	1
23	1668	Drain plug ¾ BSP		1
24	72360	Filler plug		1
25	9624	Bonded seal 1	KT87	2
26	72366	Symbolic label		1



435A332

Figure 1E - Oil Chamber Arrangement

Item	Part Number	Description	Kit	Quantity
				V37
1	70105	Bell housing		1
2	52030	Eye bolt		1
3	56447	Cover plate		1
4	MWG-6	M6 spring washer		2
5	MS106-12	M6 x 12 hex head screw		2
6	MS712-60	M12 x 60 socket head screw		6
7	MWG-12	M12 spring washer		6
	33094	Thermal bypass assembly		1
8	53191	End cap		1
9	9624	Bonded seal 1" BSP	KT87	1
10	MCI-22	Circlip 22 mm internal		1
	30661A	Bypass piston assembly		1
11	3515C	Thermal motor		1
12	74141	Piston		1
13	52487	Spring		1
14	9794	O ring	KS84	2
17	MS710-30	M10 x 30 socket head screw		2
18	MWG10	M10 spring washer		2
19	57996	Drain plug 3/8"		1
20	9613	Bonded seal 3/8"		1
	33288	Oil filter manifold assembly		1
21	59969	Gasket	KM85	1
22	70570	Oil filter manifold		1
23	70576	Stud		2
24	70575	Stud		1
25	9604	Bonded seal 1/4"		3
26	70578	Cap nut		3
27	57816	Threaded insert		1
28	MWG-8	M8 spring washer		1
29	MS108-25	M8 x 25 hex head screw		1
30	59946	Oil filter	KM85	1
31	RO10000-331	Grommet		1
32	32931	Thermistor cable assembly		1

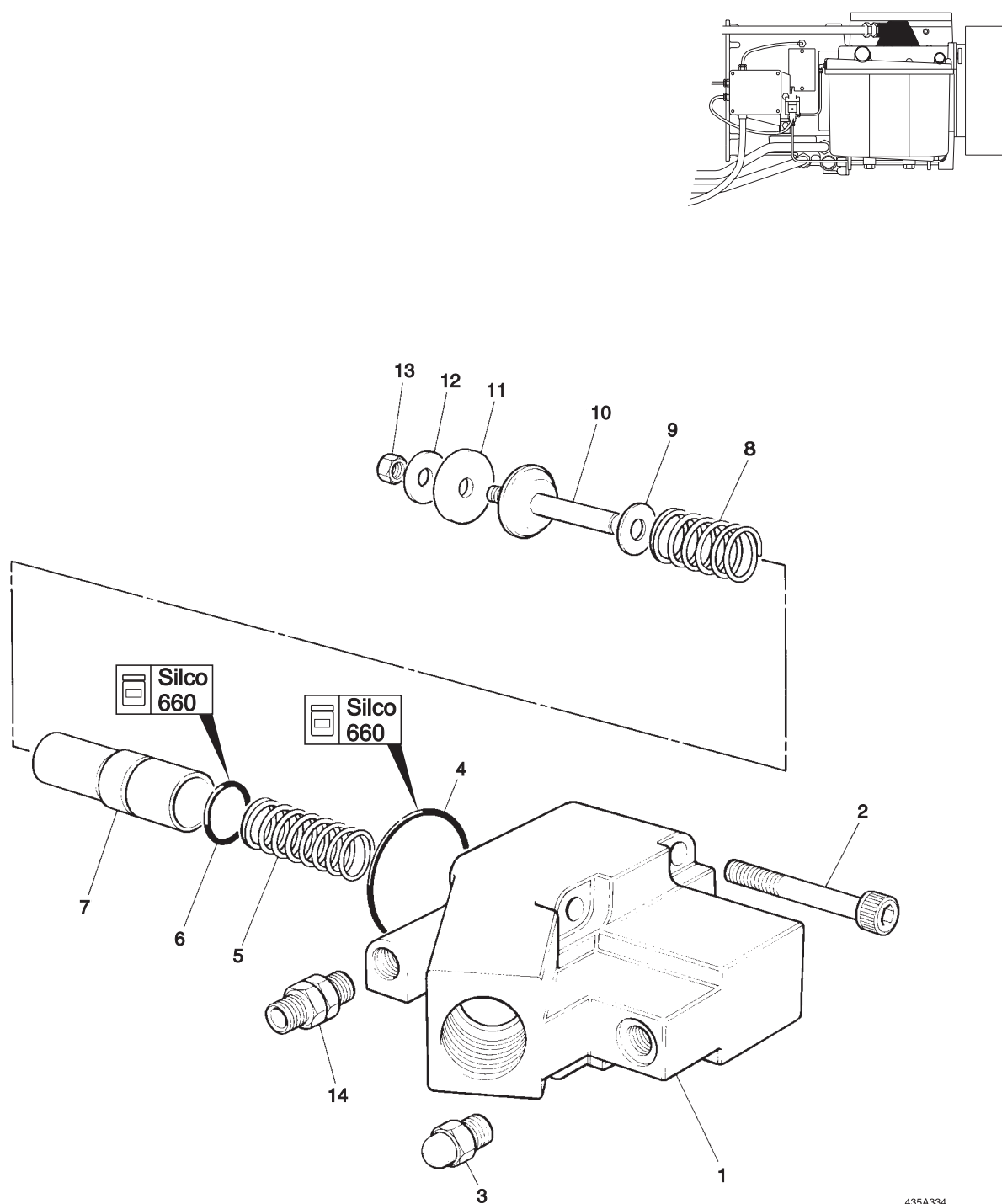


435A333

Figure 1F - Bell Housing Arrangement

Minimum Pressure Valve

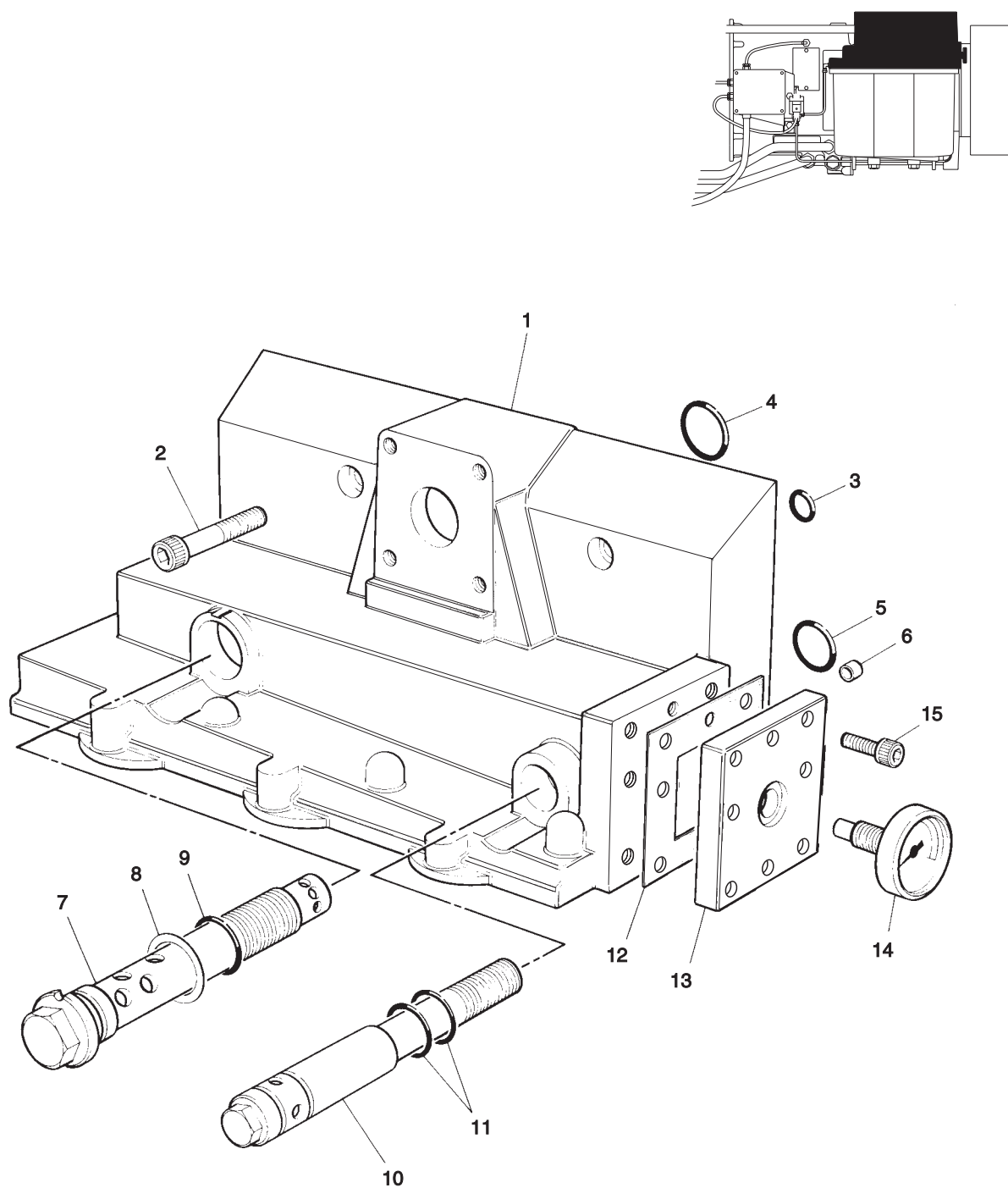
Page 24



435A334

Figure 1G - Minimum Pressure Valve

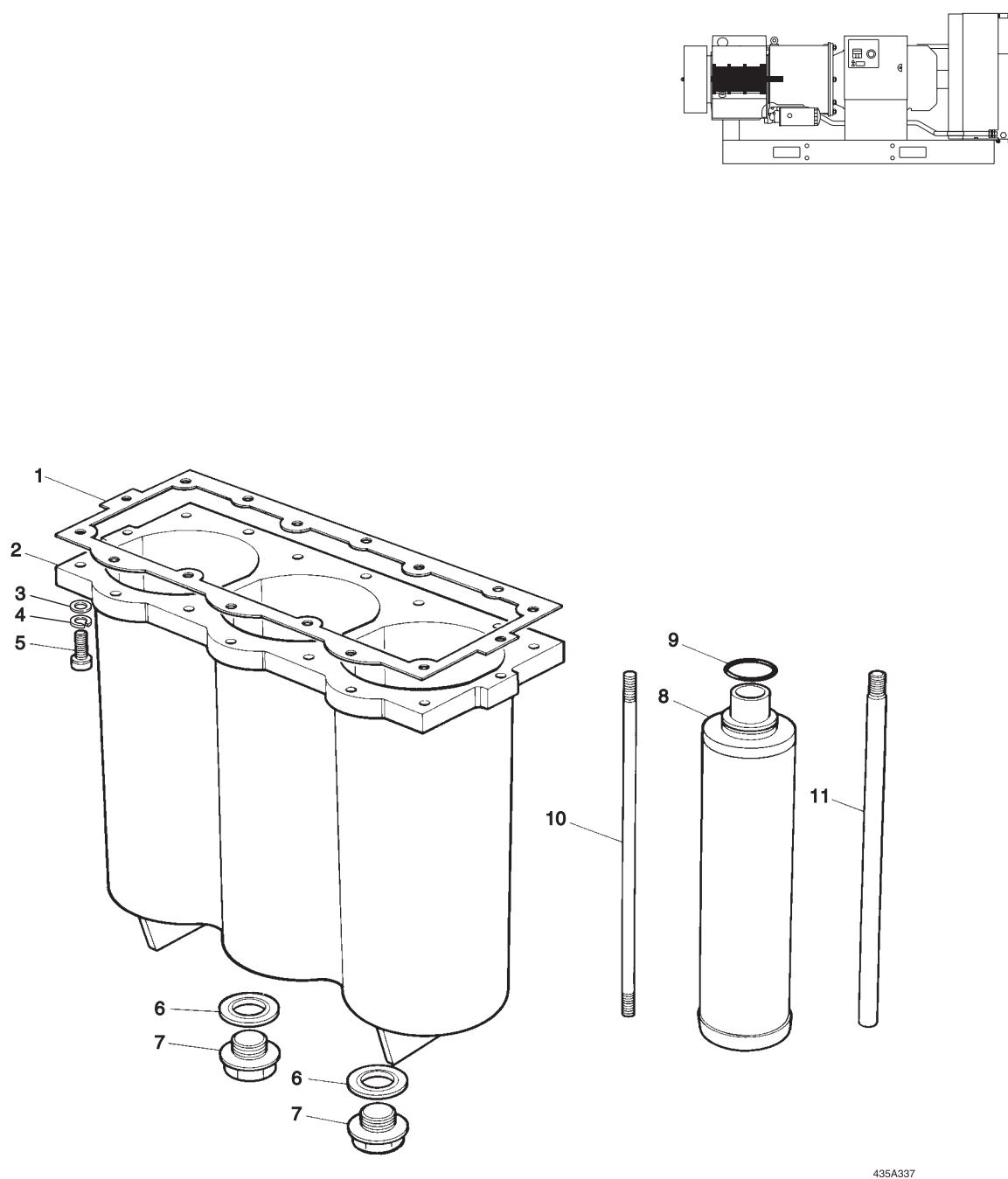
Item	Part Number	Description	Kit	Quantity
				V37
1	70045	Separator manifold		1
2	MS710-50	M10 x 50 socket head screw		2
3	9748	O ring	KS84	3
4	9802	O ring	KS84	1
5	9794	O ring	KS84	1
6	58607	Advel seal 5 mm diameter		1
7	58796	Separator bolt (air)		1
8a	70538-01	Shim separator bolt 0.125		A/R
8b	70538-02	Shim separator bolt 0.190		A/R
8c	70538-03	Shim separator bolt 0.317		A/R
9	9795	O ring	KS84	1
10	70051	Separator bolt (oil)		1
11	9758	O ring	KS84	2
	32972	Blanking plate assembly		1
12	71190	Gasket separator cover plate		1
13	71584	Blanking plate		1
14	59244	Dial thermometer		1
15	MS706-25	M6 x 25 socket head screw		8



435A336

Figure 1H - Separator Manifold

Page 28

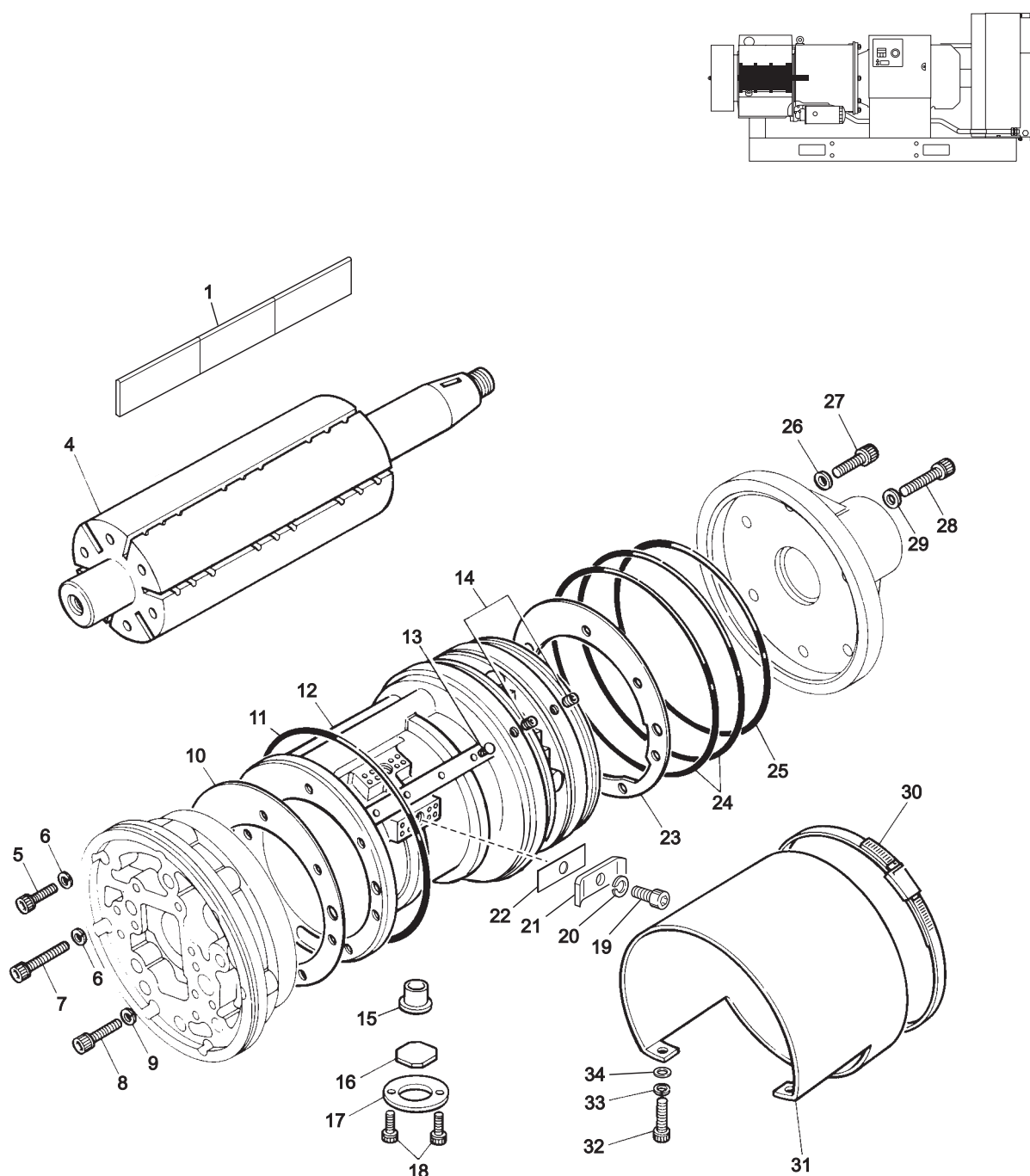


435A337

Figure 1J - Separator Case

1K**Rotor Stator Unit (with Reed Valve Assembly)**

Item	Part Number	Description	Kit	Quantity
				V37
1	58759	Drilled blade (50 and 60 Hz)		24
4	58754	Rotor		1
5	MS710-35	M10 x 35 socket head screw		4
6	MWG10	M10 spring washer		5
7	MS710-90	M10 x 90 socket head screw		1
8	MS708-80	M8 x 80 cap head screw		2
9	MWG8	M8 spring washer		2
10a	58789-03	Stator gasket intake end 0.05 mm blue (trans)		A/R
10b	58789-04	Stator gasket intake end 0.08 mm green		A/R
11	9902	O ring	KT87	1
	34164-04	Stator assembly (83708 60 Hz)		1
12	73426-04	Stator (837K08 60 Hz)		1
13	HD75120E5	Drive rivet 5/16 x No.6		6
14	MG1706-6	M6 x 6 socket set tuflock		2
15	70219	Valve seating bush		1
16	RO20000-105	Valve plate		1
17	57492	Valve washer		1
18	MS705-10	M5 x 10 socket head screw		2
	34271	Reed valve assembly		6
19	MS705-10	M5 x 10 socket head screw		1
20	MWI5	Shakeproof washer		1
21	73700	Valve guard		1
22	73198	Reed valve		1

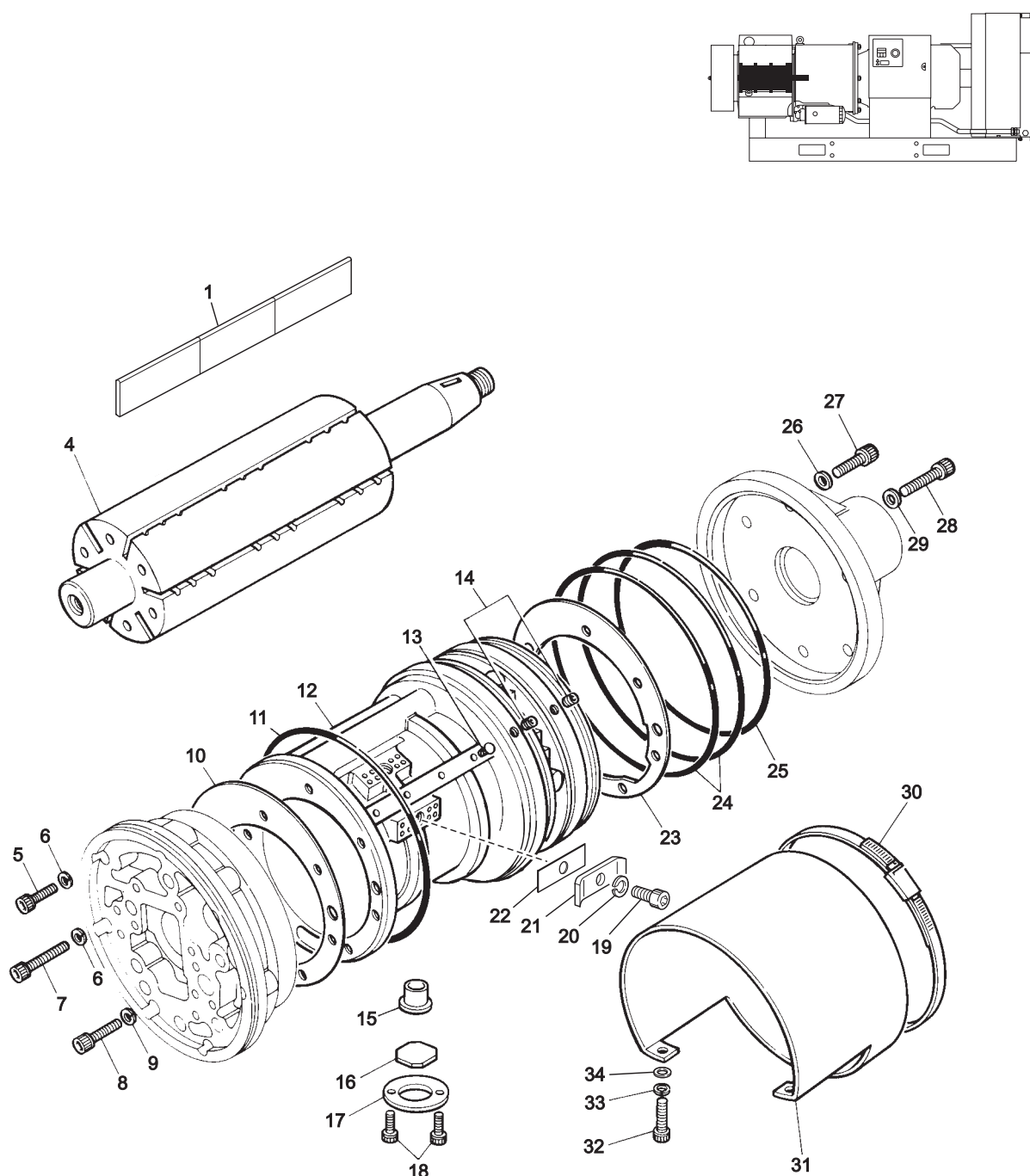


435A338

Figure 1K - Rotor Stator Unit (with Reed Valve Assembly)

Rotor Stator Unit (with Reed Valve Assembly)

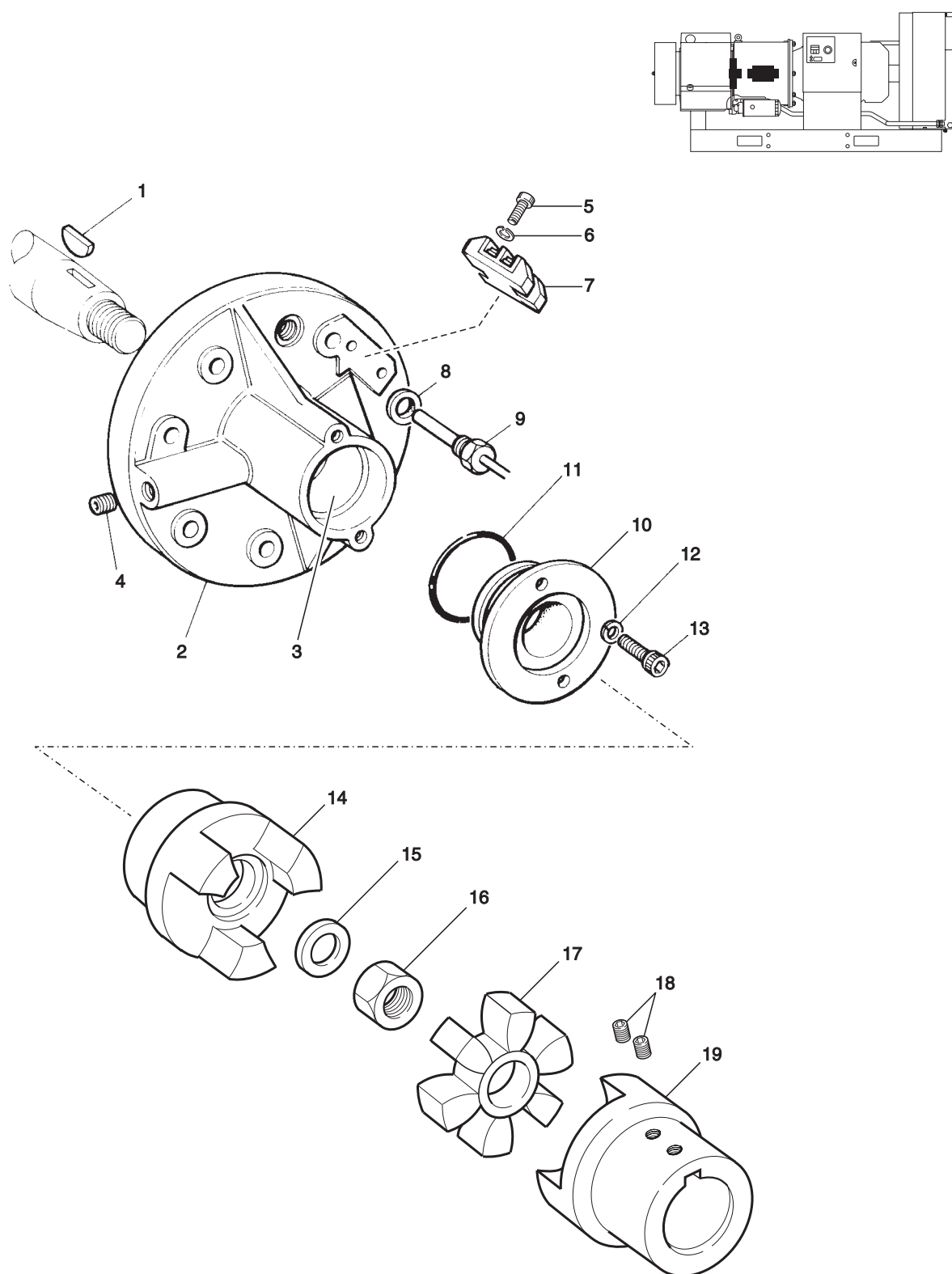
Page 32



435A338

Figure 1K - Rotor Stator Unit (with Reed Valve Assembly)

Item	Part Number	Description	Kit	Quantity
				V37
1	50050	Woodruff key		1
	32776	Drive end cover assembly		1
2	58727	Drive end cover		1
3	52403	Bearing		1
4	59425-02	Taper plug brass ¼ BSP		1
5	MS705-16	M5 x 12 socket head screw 12 long		2
6a	MW5	M5 washer, plain		2
6b	MWG5	M5 spring washer		2
6c	MN105	Nut, hex M5		2
7	33348a	Terminal block assembly		1
7a	70844	Terminal block		
7b	70857	Terminal block		
8	9607	Bonded seal 0.4	KT87	6
9	70154	Thermistor probe 110°C		1
10a	33110	Oil seal assembly (original)		1
10b	33111	Oil seal (replacement)	KT87	1
11	9811	O ring	KT87	1
12	MWG6	M6 spring washer		2
13	MS706-16-741	M6 x 16 socket cap screw		2
14	72314	Drive coupling compressor		1
15	MW30	M30 washer		1
16	52421	M30 dri-loc nut		1
17	72316	Drive element	KT87	1
18	MG710-25	M10 x 25 grub screw		2
19	72315	Drive coupling motor		1



435A339

Figure 1L - Drive End Arrangement

Air-End Part Modifications

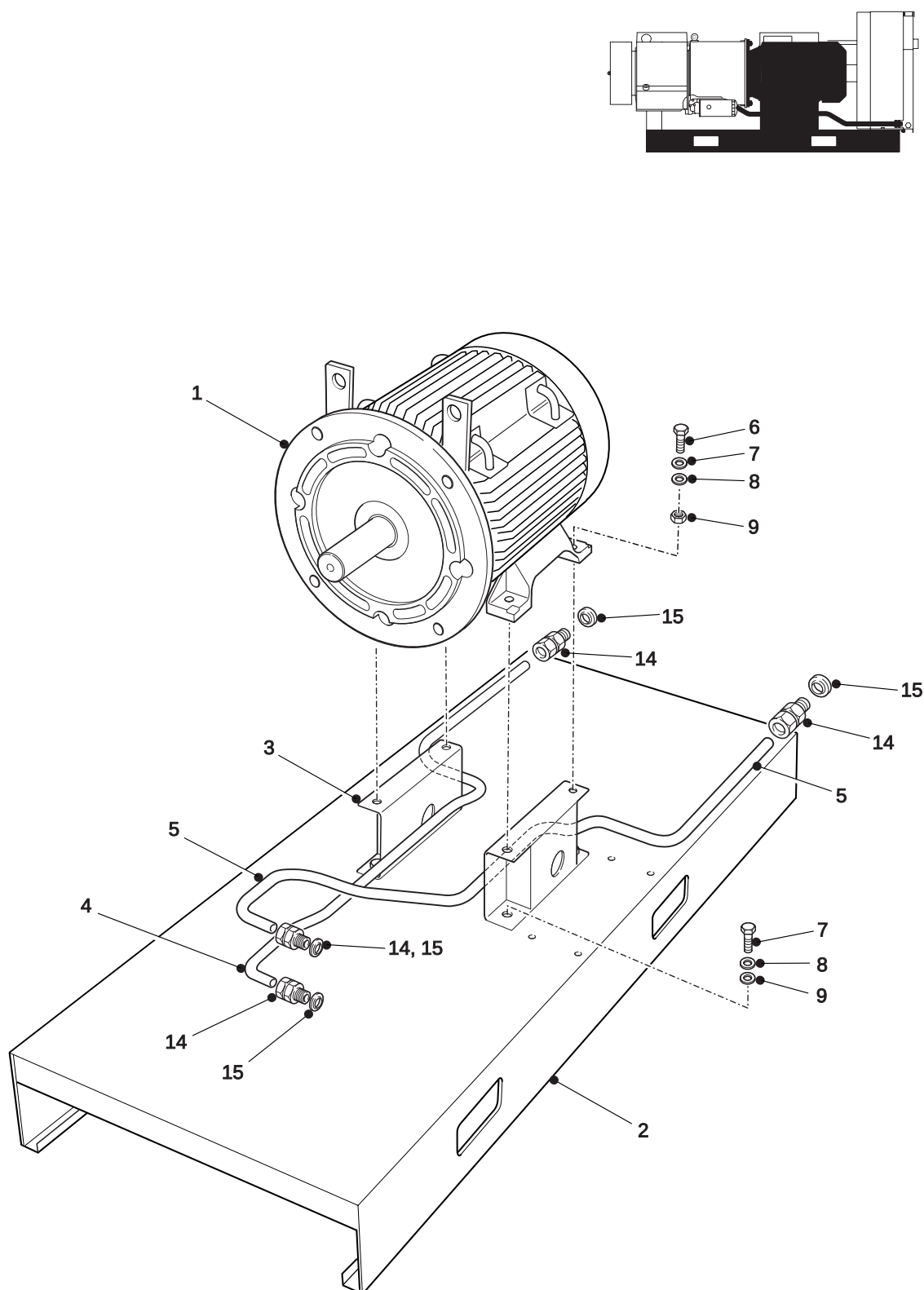
Page 36 ST 16047A

Chapter 2

Contents

	Section	Page
Base, Motor and Pipework	A	38
Air-End and Starter (Fixed Speed)	B	40
Air-End and Starter (RS)	C	42
Cooler Arrangement	D	44
D.O.L. Automatic and Regulated Speed Control	E	48
Main Assembly Part Modifications	F	50

Page 38

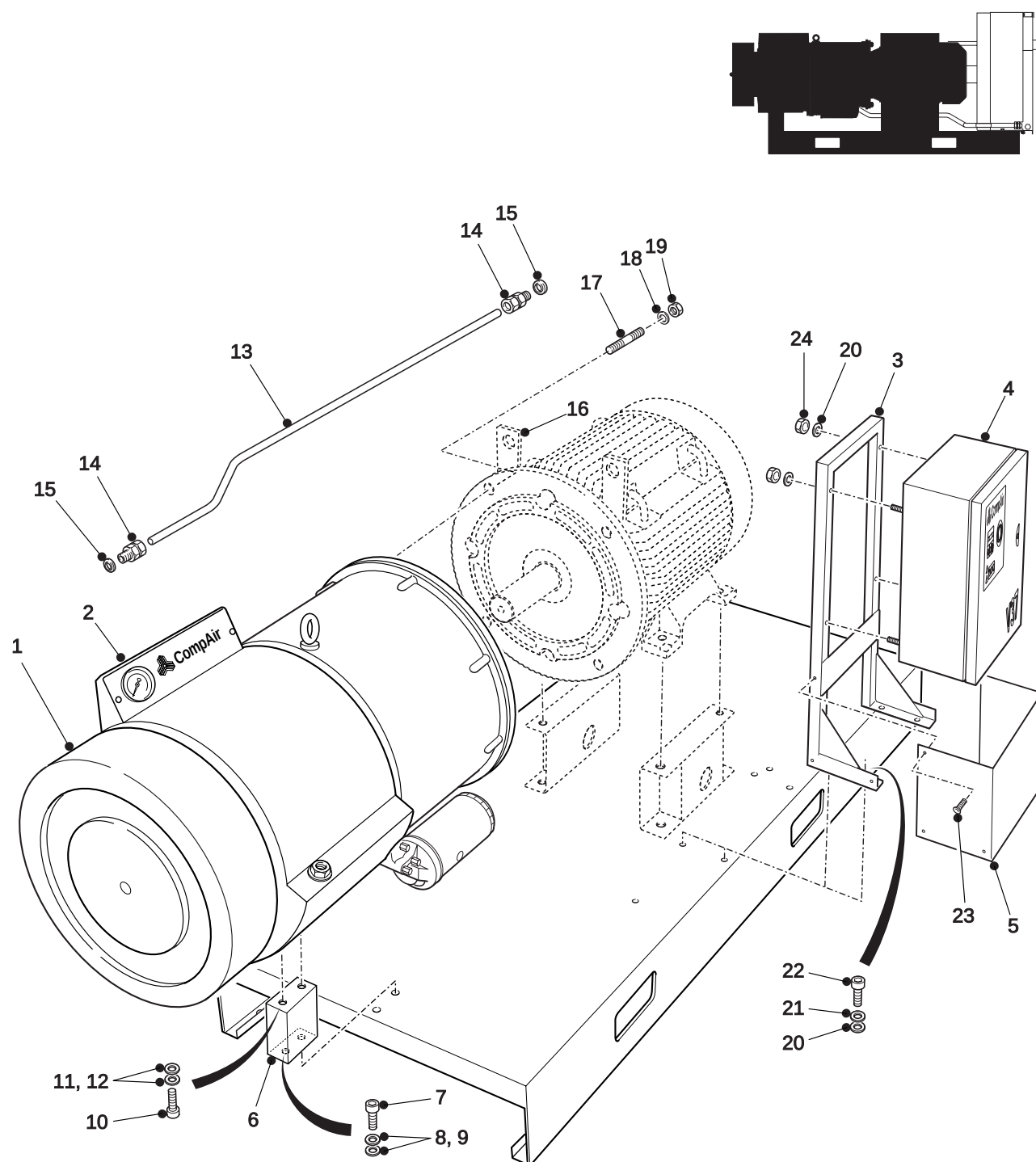


435A356

Figure 2A - Base, Motor and Pipework

2B**Air-End and Starter (Fixed Speed)**

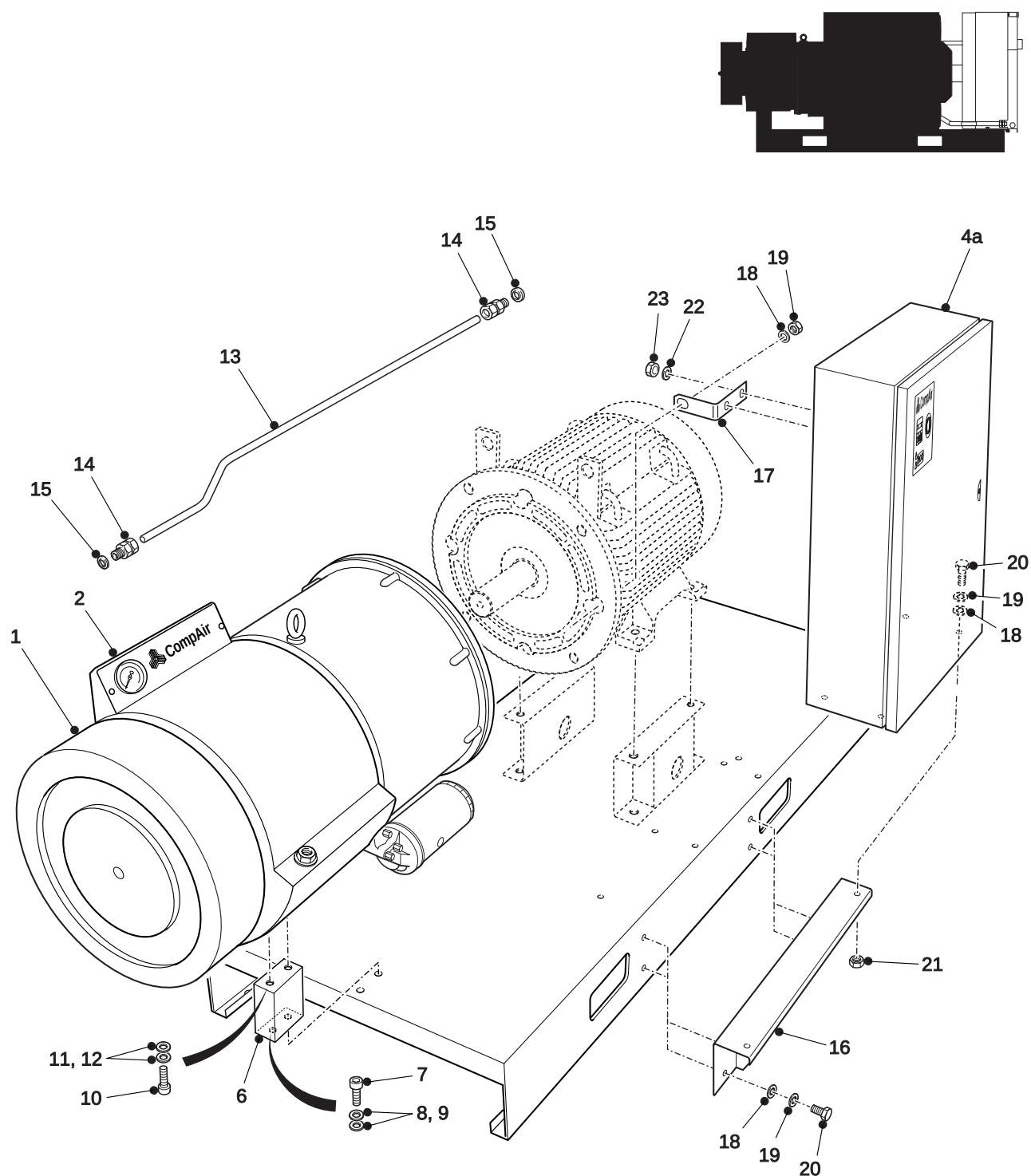
Item	Part Number	Description	Kit	Quantity
				V37
1	83708-005	37 kW metric 60 Hz air end		1
2	74445	Label kit		1
3	75173	Bracket		1
4	34723	Starter 37 kW 460 V 60 Hz		1
4a	34728	Starter 37 kW 400 V (RS)		1
5	75174	Front cover (starter)		1
6	75154	Support		1
7	MS712-25	Cap hd screw		2
8	MWG12	M12 spring washer		2
9	MW12	M12 flat washer		2
10	MS710-20	Cap hd screw		2
11	MWG10	M10 spring washer		2
12	MW10	M10 flat washer		2
13	59292	Aftercooler pipe		1
14	53461	Stud coupling		2
15	9624	Bonded seal		2
16	53344	Lifting bracket		2
17	52573	M16 stud		8
18	MWG16	M16 washer, spring		8
19	MN116	M16 hex nut		8
20	MW8	M8 flat washer		4
21	MWG8	M8 spring washer		4
22	MS108-20	M8 cap head screw		4
23	57375-01	Self tap screw		6



435A354

Figure 2B - Air-End and Starter (Fixed Speed)

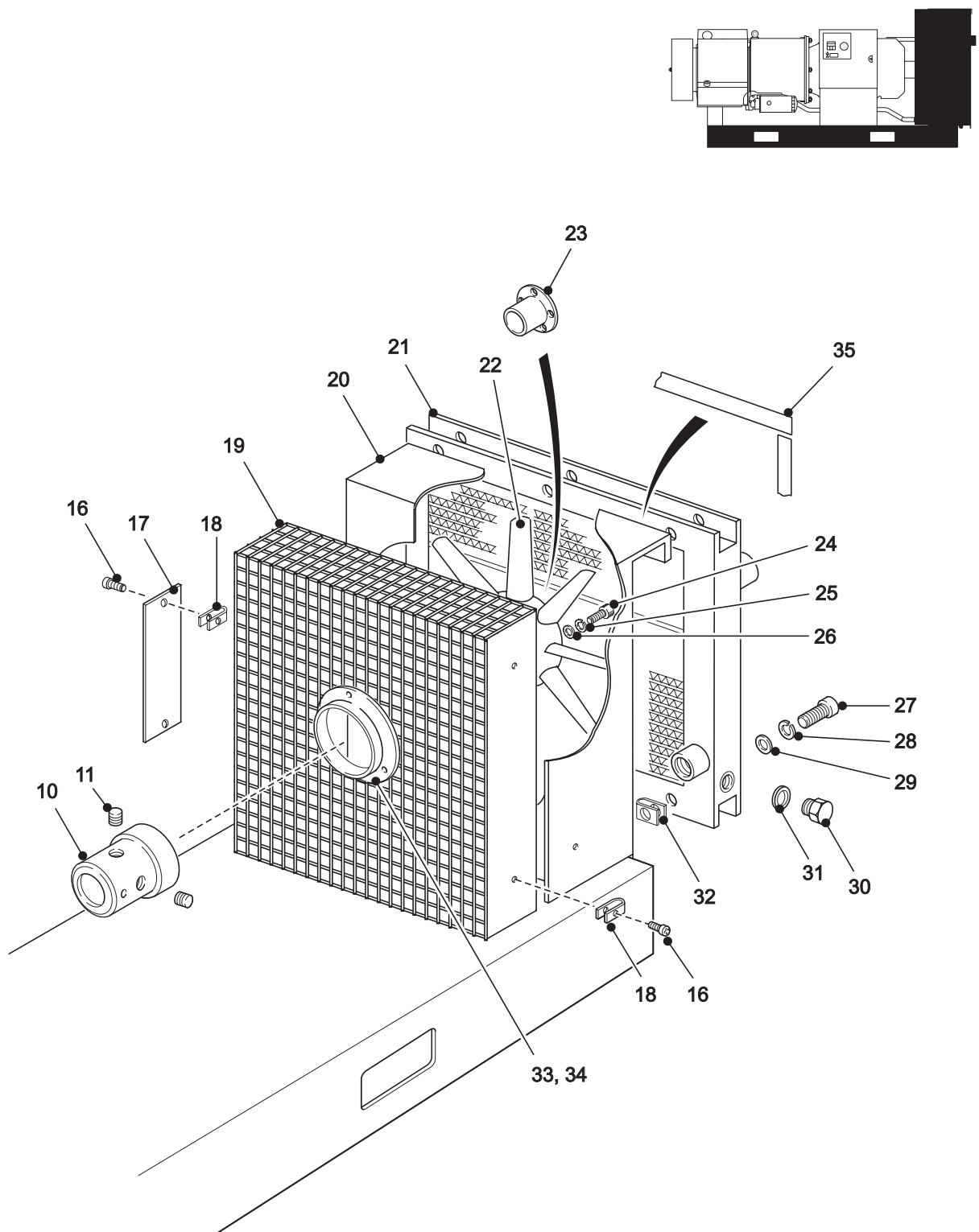
Page 42



435A359

Figure 2B - Air-End and Starter

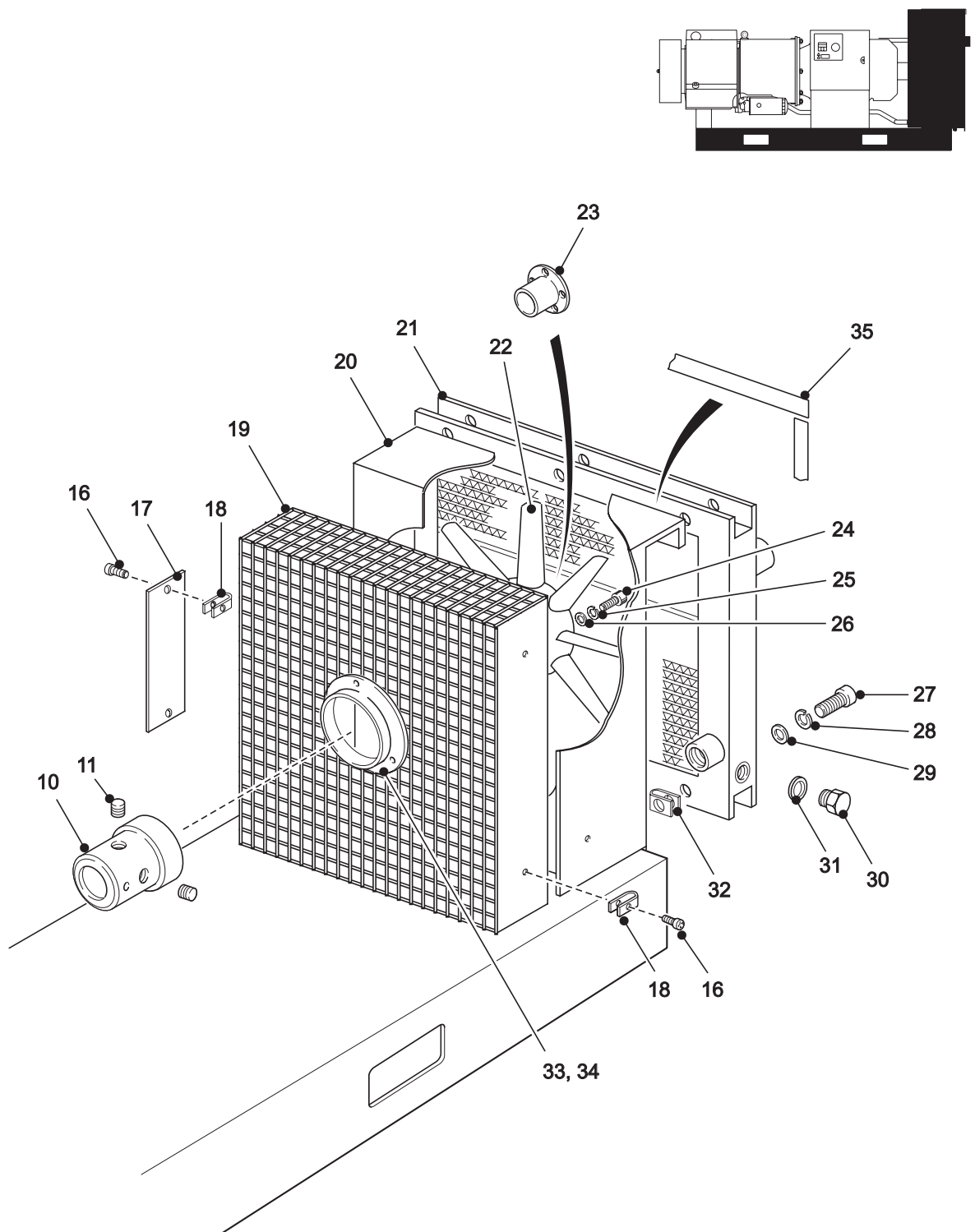
Page 44



435A355

Figure 2C - Cooler Arrangement

																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----



435A355

Figure 2C - Cooler Arrangement

D.O.L. Automatic and Regulated Speed Control

* Refer to RS Starter Assembly in Section 3.

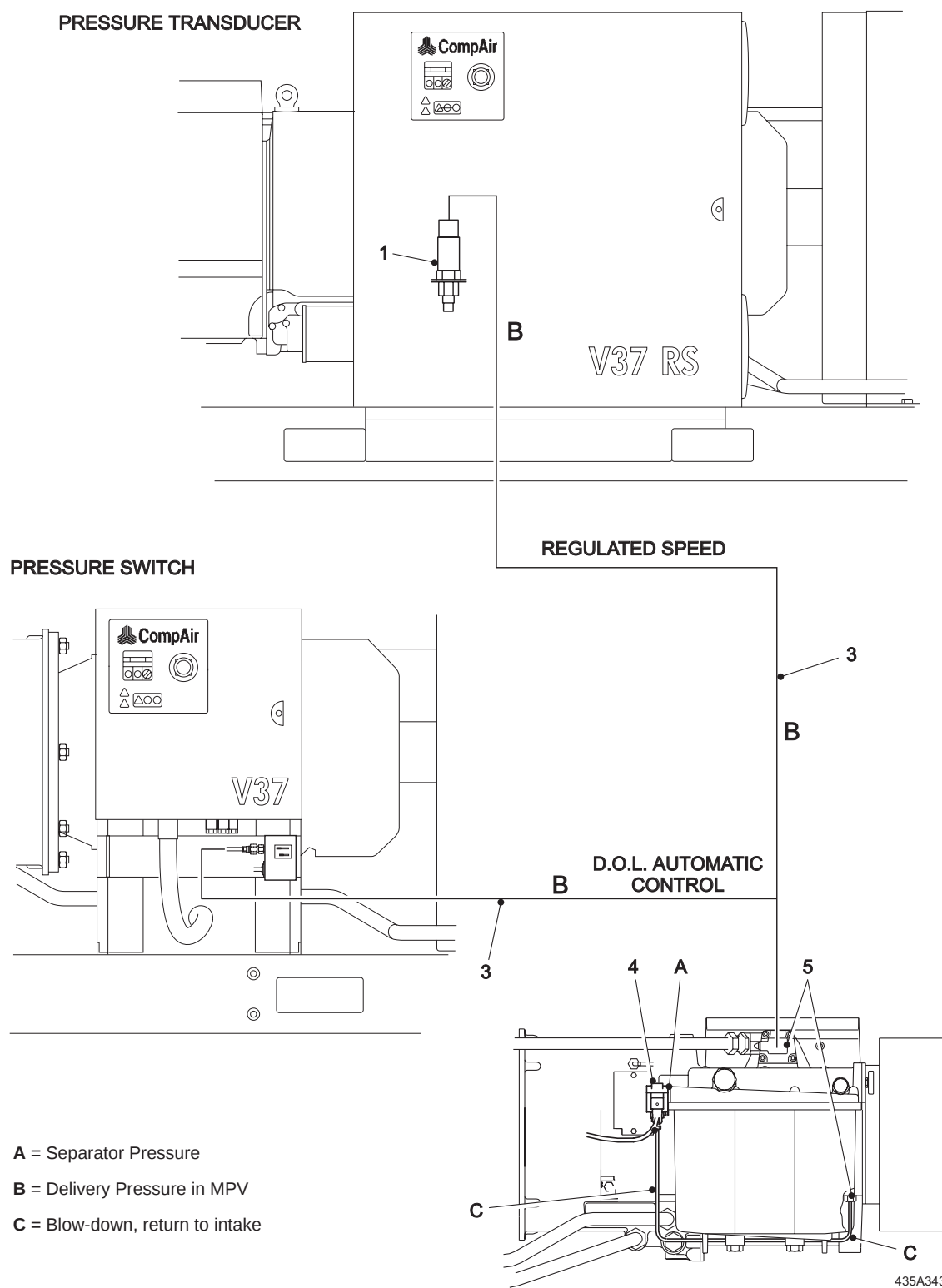


Figure 2D - D.O.L. Automatic and Regulated Speed Control

Main Assembly Part Modifications

[illegible]

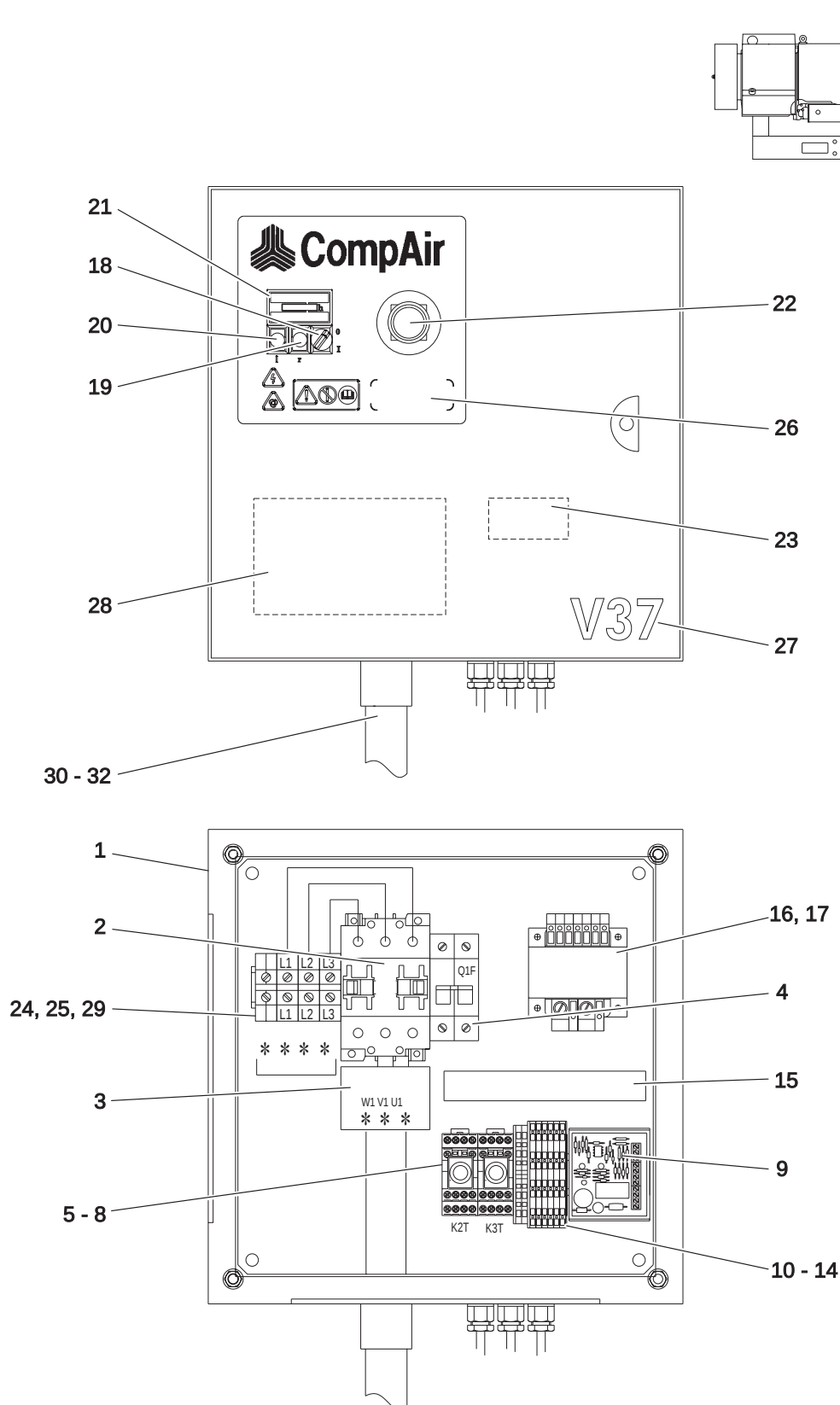
Chapter 3

Contents

	Section	Page
Starter Assembly Fixed Speed	A	52
Starter Assembly 37 kW 400 V/460 V 50/60 Hz RS	B	54
Starter Assembly Part Modifications	C	58

3A**Starter Assembly Fixed Speed**

Item	Part Number	Description	Kit	Quantity
				V37
	34728	Starter assembly		
1	-	Enclosure		1
2	74906	Contactora		1
3	74907	Thermal overload (208-230V)		1
4	74232	Circuit breaker		1
5	56121	Timer		1
6	56122	Timer		1
7	53494	Timer base		2
8	56105	Retaining clips (pair)		2
9	59344	OTC board		1
10	74024	Terminal double stack		6
11	74025	End section		2
12	-	Profile rail		A/R
13	-	Earth terminal		2
14	-	End section		2
15	-	Trunking		A/R
16	-	Transformer		1
17	74027	Fuse 1.6A (T) IEC127 F2F		2
18	74067	Knob operator (auto)		1
19	74068	Indicator lamp (reset)		1
20	72708	Push button (start)		1
21	74080	Hours counter		1
22	74249	Emergency stop push button		1
23	-	Rating label		1
24	74908	Terminal		3
25	74909	Earth terminal		1
26	75150	Facia label		1
27	75151	Label.Model logo (modify)		1
28	75171	Label.circuit diagram		1
29	-	End section		2
30	-	Motor conduit		1
31	-	Straight fitting		2
32	-	Locknut		1

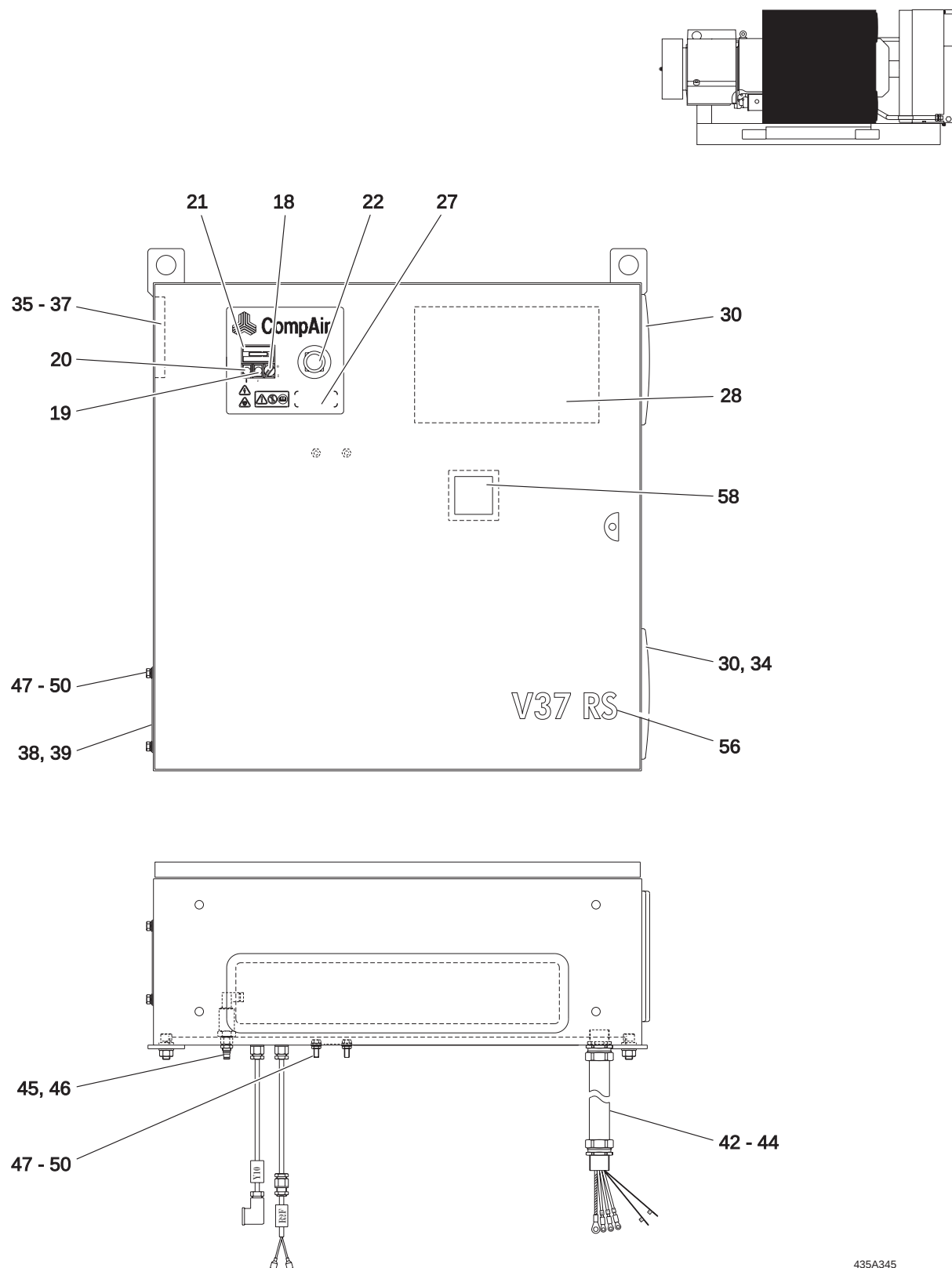


435A344
34728-A

Figure 3A - Starter Assembly Fixed Speed

3B**Starter Assembly 37 kW 400 V / 460 V 50/60 Hz RS**

Item	Part Number	Description	Kit	Quantity
				V37
	34723	Starter assembly		
1	75141	Enclosure (modified)		1
2	74906	Contactora		1
3	74371	Circuit breaker		1
4	56122	Relay (K2A)		1
5	74820	Timer (K3T)		1
6	-	Timer/relay base		2
7	56105	Retaining clips (pair)		2
8	59344	OTC board		1
9	74024	Terminal double stack		10
10	74025	End section		2
11	-	Profile rail		A/R
12	-	Earth terminal		2
13	-	Trunking		A/R
14	75101	Inverter 37 kW 400-480 Vac		1
15	74026	Transformer 4AM13496-DEC80-1FA0		1
16	-	Fuse 1.6A (T) IEC127 F2F		2
17	-	Chassis plate		1
18	74067	Knob operator (auto)		1
19	74068	Indicator lamp (reset)		1
20	72708	Push button (start)		1
21	50432	Hours counter		1
22	74249	Emergency stop push button		1
23	-	Rating label		1
24	74043	Power outlet socket		1
25	-	Terminal, P1.P+ (blue-35 mm)		2
26	74909	Earth terminal		1
27	75150	Facia label		1
28	75107	Label.circuit diagram		1
29	74908	Terminal, L1,L2 L3		1
30	75146	Filter grid c/w filter		2
31	75102	EMC filter		1

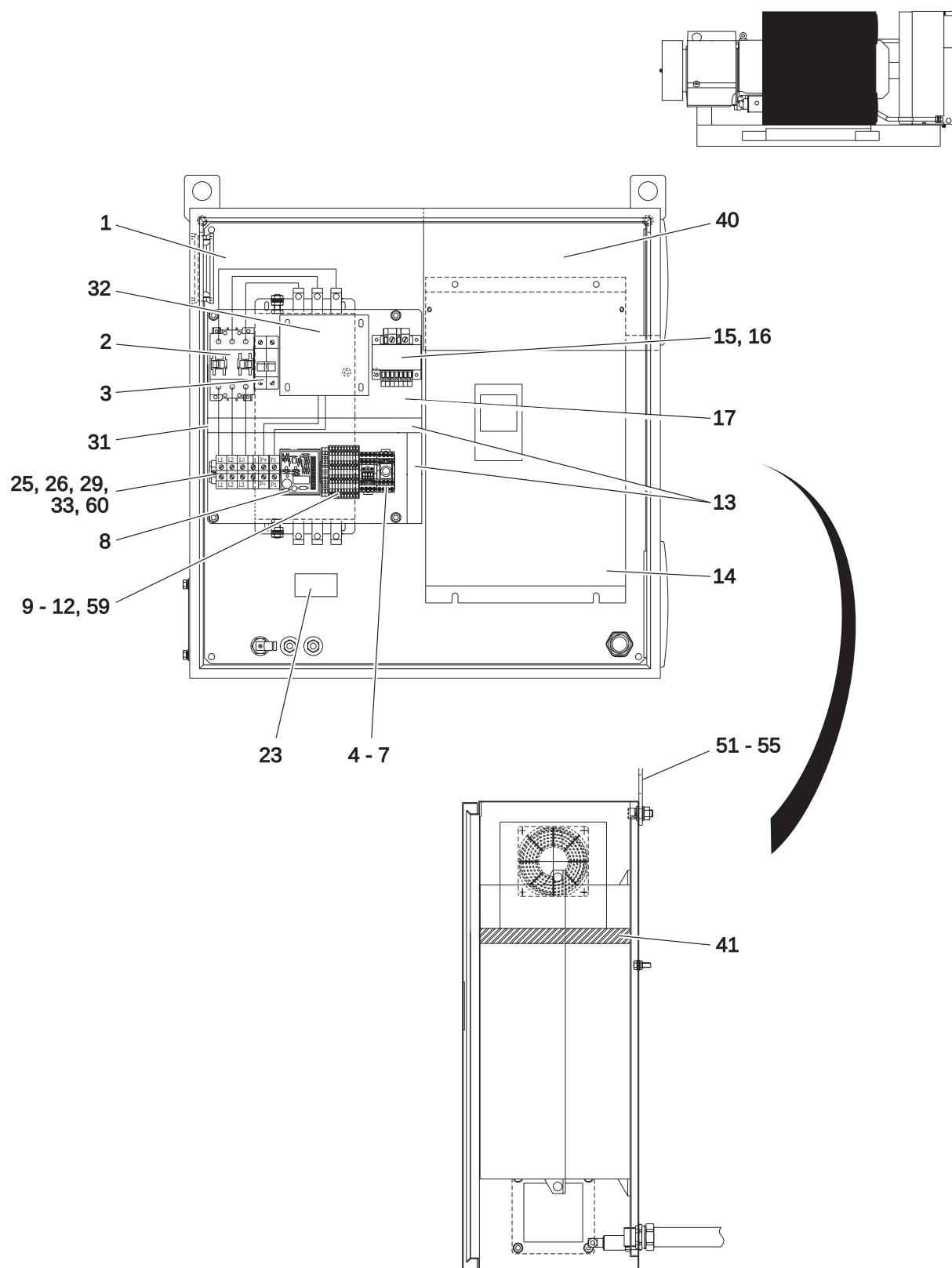


435A345
34723-A

Figure 3B - Starter Assembly 37 kW 400 V / 460 V 50/60 Hz RS

3B**Starter Assembly 37 kW 400 V / 460 V 50/60 Hz RS**

Item	Part Number	Description	Kit	Quantity
				V37
32	75103	DC choke		1
33	74864	End bracket		1
34	75149	Filtering panel		1
35	74050	Fan unit		1
36	74051	Finger guard (external)		1
37	74052	Finger guard (internal)		1
38	75142	Gland plate		1
39	75143	Gasket for item 38		1
40	75144	Baffle (inverter cooling)		1
41	75145	Foam baffle (inverter cooling)		1
42	-	Motor conduit		1
43	-	Straight fitting		2
44	-	Locknut		1
45	72118	Pressure transducer		1
46	73245	Female bulkhead connector, BSP		1
47	-	M8 x 25 long hex head set screw		6
48	-	M8 hex locknut		6
49	-	M8 spring washer		6
50	-	M8 washer		8
51	52057	Lifting bracket		2
52	-	M12 x 30 long cap head screw		2
53	-	M12 hex nut		2
54	-	M12 spring washer		2
55	-	M12 washer		4
56	75151	Label.model logo V37 RS		4
57	-	Blind grommet (not shown on drawing)		2
58	-	Perspex window, inverter read-out		1
59	75051	End section (earth)		1
60	-	End section 35 mm terminals		2



435A346
34723-A

Figure 3B - Starter Assembly 37 kW 400 V / 460 V 50/60 Hz RS

Starter Assembly Part Modifications

[illegible]

Chapter 4

Contents

	Section	Page
Minimum Pressure Valve	A.....	62
Safety Valve Lift Pressure	B.....	62
Servo Valve	C.....	62
Oil Temperature	D.....	63
Air Output	E.....	63
Leakage Check	F.....	63
Setting the Run-On Timer	G.....	63
Testing Vacuum Relief Valve	H.....	63
RS Speed Compressors	I.....	64

A - Minimum Pressure Valve (Fig 4.1)

- Start compressor.
- Open outlet valve fully to atmosphere.
- Check the lowest pressure gauge reading obtainable. This should be 5.2 - 5.5 bar.
- Adjust pressure by increasing or decreasing the number of shims (B) in valve.

B - Safety Valve Lift Pressure (Fig. 4.1)

- Close outlet valve. Start compressor (continuous run).
- Screw in servo until safety valve (A) lifts. Gauge pressure should be 10 bar.
- If lift pressure is incorrect, replace valve complete.

C - Servo Valve (Fig 4.2)

The servo valve controls pressure at a pre-set factory setting when there is no demand for air. The specified setting is a **maximum** and must not be exceeded.

Factory setting 8 bar models :- 8.5 /9.0 bar

If the servo needs minor adjustments or a lower pressure is required then carry out the following procedure:

- Turn mains electrical supply on at isolator.
- Close air outlet valve to air-line system and open test valve.
- Fit silencer to test valve.
- Select continuous run mode and start compressor.
- Adjust test valve so that the air-end pressure gauge reads approx 8.0 bar and allow compressor to warm up.
- After approximately 10 minutes, close the test valve and stop compressor.
- Remove air filter cover (A) and air filter (B).
- Release servo lock-nut (D).
- Check test valve and air outlet valve are closed.
- Start compressor and allow pressure to stabilise.
- Check compressor pressure gauge reading:

If reading too low, turn grub-screw (E) clockwise to increase pressure.

Note: Must not exceed 9.0 bar.

If reading too high or a lower operating pressure is required, turn grub-screw (B) counter-clockwise to decrease pressure.

- Open and close the test valve and check that pressure stabilises at required setting.
- Secure lock-nut (D).
- Refit air filter (A) and cover (B).

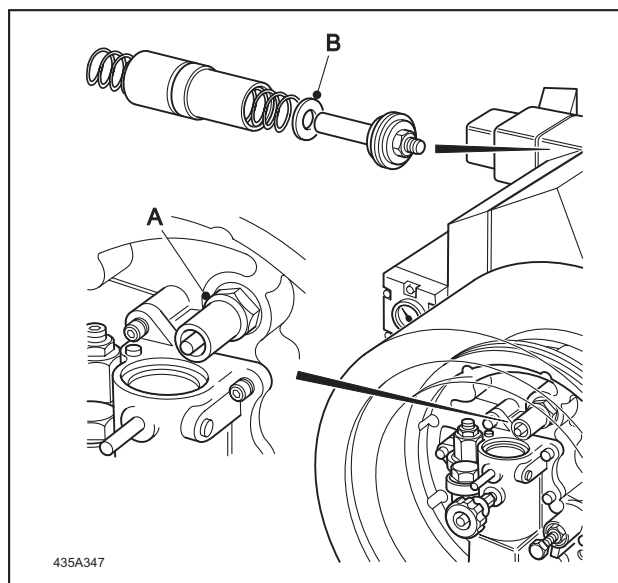


Figure 4.1 - Minimum Pressure Valve and Safety Valve Lift Pressure

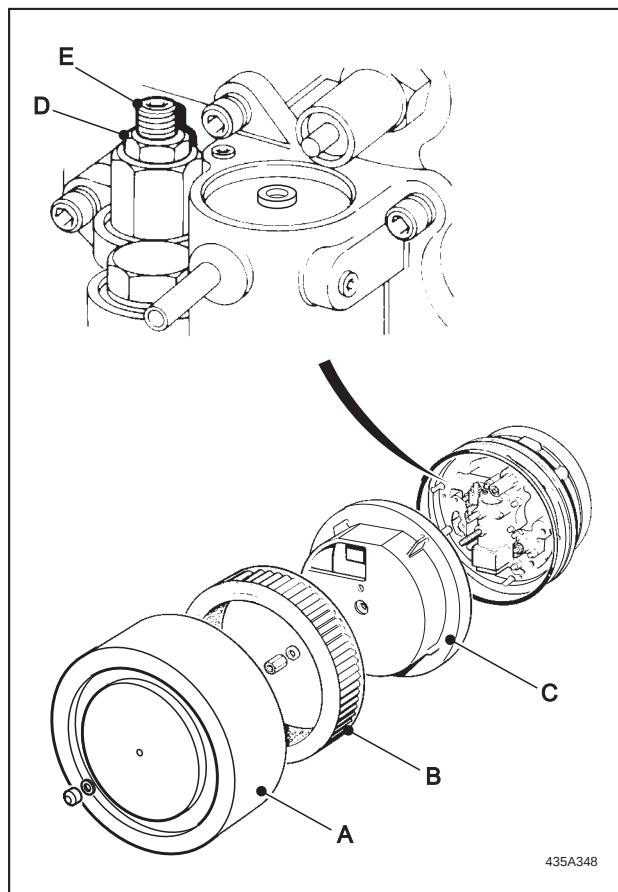


Figure 4.2 - Servo Valve

D - Oil Temperature

- Introduce a small amount of oil and a thermometer into the thermometer pocket.
- Allow compressor to run for 30 minutes in order to attain its normal working temperature.
- Average running temperature should be 85°C approx.
- Refit filler plug and its seal when testing is completed.
- Average running temperature should be approximately 50°C above ambient.

E - Air Output (Fig 4.4)

- Screw test nozzle into compressor outlet valve.
- Close outlet valve and start compressor.
- Open outlet valve fully to atmosphere.
- Pressure indicated on the compressor gauge should not fall below 7.5 bar (8 bar compressor).
- Test nozzle diameter must be reamed to a tolerance of ± 0.025 mm.

F - Leakage Check

- Examine all external seals, gaskets and pipe connections for air or oil leakage.
- No leaks are permissible.

G - Setting the Run-On Timer (located in Starter Box)

- The run-on timer sets the required duration of off-load running after which the compressor will stop.
- The timer is factory preset to 2 minutes standard control, 3 minutes electronic control, below 3 minutes constant run, but may be reset to suit the individual air system.

Note: Do not set the timer to less than 30 seconds.

- For guidance, each division between the marks **S** (short delay) and **L** (long delay) on the timer, represents approximately one minute delay time.

H - Testing Vacuum Relief Valve (Fig 4.3)

- Close air outlet valve and start compressor.
- Open and close outlet valve. If rattle is heard when outlet valve is closed, adjustment of vacuum relief valve is necessary. Stop compressor.
- Remove air intake filter and filter support.
- Slacken nut (1). Screw adjuster screw (2) fully in. DO NOT TIGHTEN.
- Unscrew adjuster screw (2) two turns.
- Close outlet valve. Start compressor. Adjust screw (2) until rattle is eliminated, then tighten nut (1).

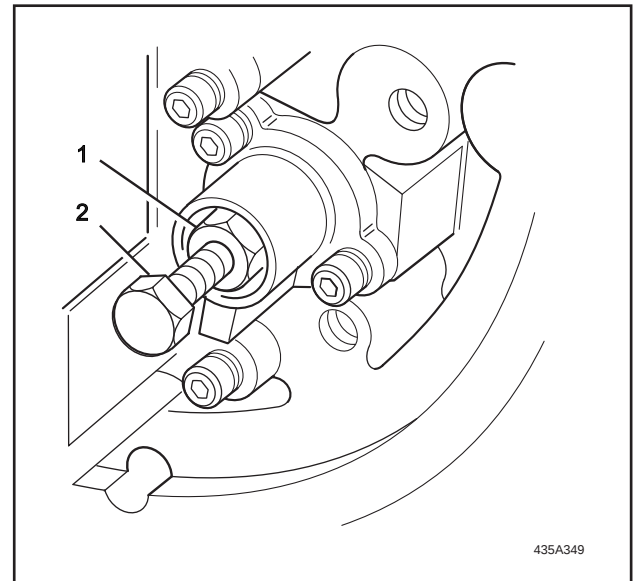


Figure 4.3 - Vacuum Relief Valve

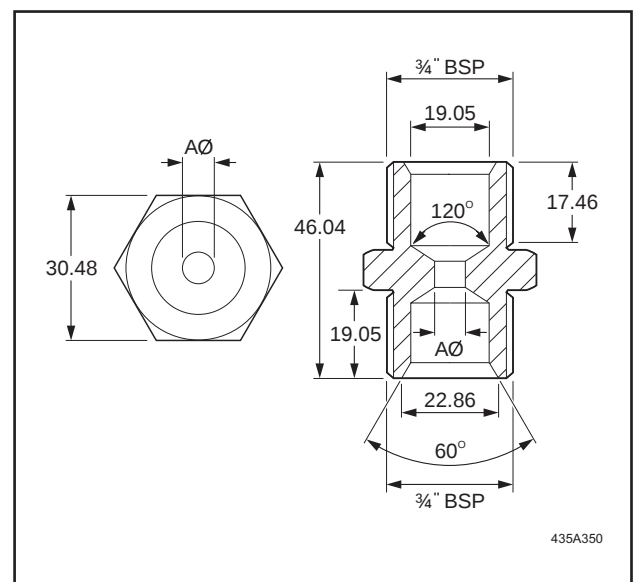


Figure 4.4 - Test Nozzle 59636-00

Nozzle orifice Dia 'A'	Model	Bar	C.F.M.
8.305 mm	V37	8	94.3

I - RS Speed Compressors

Target Pressure Setting (Fig 4.6)

The system target pressure may be adjusted by pressing the 'up' arrow on the keypad to increase pressure or 'down' arrow to decrease pressure. The pressure is indicated on the keypad LED display; with the required pressure in view press the FUNC/DATA key to store.

Speed control unit frequency setting

If the default factory pressure setting is altered the compressor motor maximum speed must also be adjusted. Operating at too high a maximum speed may result in an electric motor overload condition. Refer also to user warning above.

- Ensure that power is available at the compressor.
- If amber reset lamp 'r' is illuminated press reset button '1'.
- Turn the selector switch from position '1' to position '0'.
- Unlock keypad (see below).
- Press PRG key to obtain the program menu.
- Select program 2 (Data check) using Up/Down keys.
- Select function F03 using Up/Down keys.
- Press the Function/Data key to select the frequency (Hz) setting.
- The current frequency setting will be displayed in the LCD monitor window. Note that the right hand digit will be flashing.
- Press the Up/Down key to decrease or increase the frequency setting. Refer to chart below.
- Press the Function/Data Select key to store the new setting.
- Press PRG key to return to the LED monitor.
- Press the Function/Data Select key until the required LED display appears, e.g. motor speed.
- Re-lock keypad (see below).

Unlocking keypad

- Press PRG key to obtain the program menu.
- Select program 2 (Data check) using Up/Down keys.
- Select function code F00.
- Function/Data key will highlight a value of 1.
- Change value 1 to 0 by pressing the Down and Stop keys together.
- Press the Function/Data key to store.

Re-locking keypad

- Press PRG key to obtain the program menu.
- Select program 2 (Data check) using Up/Down keys.
- Select function code F00.
- Function/Data key will highlight a value of 0.
- Change value 0 to 1 by pressing the Down and Stop keys together.
- Press the Function/Data key to store.

Continuous running option

If the flow demands of the system result in continual and rapid stopping and starting of the motor the compressor speed control unit may be set to continuous running as follows:

- Ensure that power is available at the compressor.
- If amber reset lamp 'r' is illuminated press reset button '1'.
- Turn the selector switch from position '1' to position '0'.
- Unlock keypad (see above).
- Press PRG key to obtain the program menu.
- Select program 2 (Data check) using Up/Down keys.
- Select function F16 using Up/Down keys.
- Press the Function/Data key.
- Press the Up/Down key to select value '35'.
- Press the Function/Data Select key to store the new setting.
- Press PRG key to return to the LED monitor.
- Press the Function/Data Select key until the required LED display appears, e.g. motor speed.
- Re-lock keypad (see above).

Note: If this option is selected the compressor will continue to operate under speed control achieving energy savings compared with single speed compressor operating at part load.

Maximum pressure/frequency combination settings

Compressor model	Operating pressure	Setting F03 max output frequency	Synchronous speed	Nominal off load Servo pressure
V37	6	62	1858	7 bar
V37	7	61	1820	8 bar
* V37	8	60	1800	9 bar
V37	9	58	1766	10 bar

* Factory settings

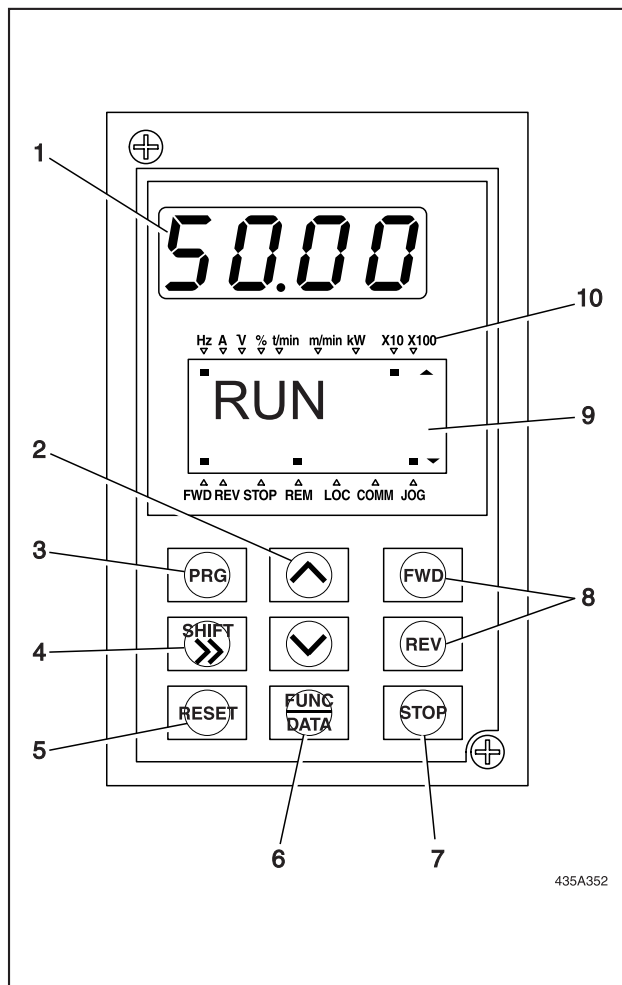


Figure 4.5 - Speed Control Unit Keypad

1. LED monitor

In operation mode: Displays the setting frequency, output current, voltage, motor speed, or line speed.
In trip mode: Displays code indicating the cause of trip.

2. Up/Down keys

In operation mode: Increases or decreases the frequency or speed.
In program mode: Increases or decreases function code number and data set value.

3. Program key

Switches the display to a menu screen or to the initial screen for operation mode or alarm mode.

4. Shift key (Column shift)

In program mode: Moves the cursor horizontally at data change. When this key is pressed with the UP or DOWN key, the screen changes to the next function block.

5. Reset key

In program mode: Cancels the current input data and shifts the screen.
In trip mode: Releases the trip-stop state.

6. LCD monitor

In operation mode: Displays various items of information such as operation condition and function data. Operation guidance, which can be scrolled, is displayed at the bottom.
In program mode: Displays functions and data.

7. Unit indication

Displays the unit for the information shown on the LED monitor.

8. FWD/REV keys

In operation mode: Starts the inverter with forward or reverse operation command. Pressing the FWD or REV key lights the RUN lamp. Invalid when the function code F02 (Operation method) is set at 1 (External signal operation).

9. Stop key

In operation mode: Stops the inverter. Invalid when the function code F02 (Operation method) is set at 1 (External signal operation).

10. Function/Data Select key

In operation mode: Changes the displayed values of LED monitor.
In program mode: Selects the function code or stores the data.

Inverter Data Index for V37

setting		default	setting		default	setting		default	Changed data only		
									setting	default	
F00	1*	0	E24	31*	10	P07	2.67%*	motor %R1	F00	1	0
F01		0	E25	1*	0	P08	16.42%*	motor %X	F02	1	0
F02	1*	0	E30		2.5Hz	P09		0.00Hz	F03	60	50
F03	60*	50	E31	33*	50				F07	2.5	6
F04		50	E32	0.0*	1	H03		0	F08	2	6
F05		400	E33		0	H04		0	F11	75	motor FLC
F06		400	E34	75.0*	motor FLC	H05		5s	F23	4	0.5
F07	2.5*	6	E35		10.0s	H06	1*	0	F25	3.5	0.2
F08	2.0*	6	E36	35	50Hz	H07		0	F40	140%	180
F09		0	E37	75.0*	motor FLC	H08	1*	0	F41	150%	100
F10		1	E40	16.0*	0.01	H09		0	E01	4	0
F11	75.0*	motor FLC	E41		0	H10		0	E02	11	1
F12		10	E42		0.5s	H11		0	E10	1	10
F13		0	E43	5*	0	H12		1	E11	1000	10
F14		0	E44		0	H13		0.5s	E20	2	0
F15		70	E45	1*	0	H14		10	E24	31	10
F16		0	E46		1	H15		470V	E25	1	0
F17		100	E47		5	H16		999s	E31	33	50
F18		0				H18		0	E32	0	1
F20		0	C01	18*	0	H19	1*	0	E34	75	motor FLC
F21		0	C02		0Hz	H20	1*	0	E36	37	50Hz
F22		0	C03		0Hz	H21		1	E37	75	motor FLC
F23	4.0*	0.5	C04	30*	3	H22	10*	0.1	E40	16	0.01
F24		0	C05		0.00Hz	H23	8*	0	E41	0	0
F25	3.5*	0.2	C06		0.00Hz	H24	2*	0.00s	E43	5	0
F26		10	C07		0.00Hz	H25		0.5s	E45	1	0
F27		0	C08		0.00Hz	H26		0	C01	18	0
F30		100	C09		0.00Hz	H27		1.6V	C04	30	3
F31		0	C10		0.00Hz	H28		0.0Hz	P02	40	motor kW
F33		1440	C11		0.00Hz	H30		0	P03	75	motor FLC
F34		0	C12		0.00Hz	H31		1	P06	20.8	motor NLC
F35		0	C13		0.00Hz	H32		0	P07	2.67%	motor %R1
F36		0	C14		0.00Hz	H33		2.0s	P08	16.42%	motor %X
F40	140%*	180	C15		0.00Hz	H34		1	H06	1	0
F41	150*	100	C16		0.00Hz	H35		0	H08	1	0
F42		0	C17		0.00Hz	H36		0	H19	1	0
			C18		0.00Hz	H37		0	H20	1	0
E01	4*	0	C19		0.00Hz	H38		0s	H22	10	0.1
E02	11*	1	C20		5.00Hz	H39		0.01s	H23	8	0
E03		2	C21		0				H24	2	0.00s
E04		3	C22		0.00s F1	A01		50Hz	A07	75	motor FLC
E05		4	C23		0.00s F1	A02		50Hz	A11	40	motor kW
E06		5	C24		0.00s F1	A03		400V	A12	75	motor FLC
E07		6	C25		0.00s F1	A04		400V	A15	20.8	motor FLC
E08		7	C26		0.00s F1	A05		0	A16	2.76%	motor %R1
E09		8	C27		0.00s F1	A06		1	A17	16.42%	motor %X
E10	1.00*	10	C28		0.00s F1	A07	75.0*	motor FLC			
E11	1000*	10	C30		2	A08		10.0min			
E12		100	C31		0.00%	A09		0			
E13		100	C32		100%	A10		4			
E14		100	C33		0.05s	A11	40.00*	motor kW			
E15		100				A12	75.0*	motor FLC			
E16		150	P01		4	A13		0			
E17		100	P02	40.00*	motor kW	A14		0			
E20	2*	0	P03	75.0*	motor FLC	A15	20.8*	motor FLC			
E21		1	P04		0	A16	2.76%*	motor %R1			
E22		2	P05		0	A17	16.42%*	motor %X			
E23		7	P06	20.8*	motor NLC	A18		0.0Hz			

435A357

Chapter 5

Contents

	Ref	Page
System Pressure Low	A	66
Low or No Air Delivered by Compressor	B	66
High Temperature	C	67
Excessive Oil Consumption	D	67
Oil Mist From Air Intake When Stopping and/or Rapid Venting	E	68
Unusual Noise or Vibration	F	68
Safety Valve Lifting	G	68
Slow/No Ventdown	H	69
Motor Overload or High Power Consumption	I	69

WARNING !**READ HEALTH AND SAFETY PRECAUTIONS BEFORE YOU START ANY SERVICE WORK.**

Servicing of the compressor must only be carried-out by authorised persons fully trained and competent in the maintenance of CompAir UK Ltd compressors. They must fully understand and adopt correct and safe working practices.

V37 Troubleshooting Chart						
Ref	Symptom	Cause (Level 1)	Cause (Level 2)	Diagnosis	Cause (Level 3)	Action
A	System Pressure Low					
1.1		Demand exceeds capacity	Air leaks in air-line system	Audible check for air leaks or time pressure decay		Identify and rectify leaks
1.2		Low output from compressor				See B
B	Low or No Air Delivered By Compressor					
2.1		Compressor not rotating	Motor not running	Visual check of cooling fan	Electrical supply failure	Restore supply
					System pressure switch fault	Repair pressure switch
			Drive coupling failure	Remove grommet from bell housing and visually check coupling	Mechanical breakdown	Replace coupling
2.2		Compressor rotating in reverse		Visual check of cooling fan against direction arrow on compressor	Motor wiring reversed	Correct motor direction (Note that compressor will be damaged if run in reverse.)
2.3		Motor speed low		Check motor speed with optical tachometer	Electrical supply fault	Check speed and rectify supply
2.4		Intake filter blocked	Heavy contamination	Dismount intake filter and check for presence of excessive dirt	Environmental conditions	Replace air filter
					Maintenance failure	Replace air filter
2.5		Safety valve lifting		Check for short loud pressure release from behind air filter and oil on air filter		See G
2.6		Minimum pressure valve closed	Adjustment incorrect	Read pressure gauge and follow adjustment procedure	Service error or Spring wear	Adjust MPV
			Valve jammed	Read pressure gauge. If no output from compressor, remove MPV and examine	Mechanical failure	Replace MPV
2.7		Servo set too low	Adjustment incorrect	Follow adjustment procedure. If rated pressure cannot be achieved inside compressor, remove and change spring	Service error	Adjust servo
			Servo spring worn or broken	Check length against new spring		Replace spring and adjust
2.8		Oil separation system blocked	Separators blocked	Read pressure gauge. If 1 bar, remove separator cap and bottle and examine	Contamination	Replace separator and return restrictors

Ref	Symptom	Cause (Level 1)	Cause (Level 2)	Diagnosis	Cause (Level 3)	Action
			Separator flooded with oil	Read pressure gauge. If 1 bar, remove separator cap and bottle and examine	Oil return restrictors blocked	Replace separator and return restrictors
2.9		Rotor blades not extended	Blades stuck in rotor	Compressor will run very quietly without producing air and no air will be sucked in through inlet	Oil too thick	Check/replace oil
				Remove intake end cover to inspect condition of rotor and blades	Blades seized	Free blades/slots
2.10		Internal air leaks in compressor	Shim breakdown	Dismantle compressor to examine rotor/stator unit		Check temperature, flow and power
						Replace stator shims
C	High Temperature					
3.1		Oil level low	Incorrectly filled			Drain and replace oil to overflow
			Oil leaks	Visually check for external oil		Repair leaks, drain and new oil
			Oil carryover	Check downstream equipment for signs of oil contamination		See D
3.2		Dirty/blocked cooler matrix		Visually examine cooler matrix for excessive dirt		Clean cooler, drain and new oil
3.3		Thermal bypass failure	Damaged thermal motor	Remove thermal motor and examine. If wax has leaked or piston rod is loose, it is rejected. Check function of piston in hot water @ 90°C		Replace thermal motor, drain and new oil
3.4		Dirty/blocked Oil filter	Oil contamination	Remove filter and visually check condition		Drain oil, clean filter, fill with fresh oil
3.5		Incorrect oil	Service error	Remove sample and compare with correct oil or check source		Drain, flush, drain, fill with fresh oil
3.6		Internal air leakage	Damaged shims	Dismantle compressor to examine rotor/stator unit		Dismantle and replace
3.7		Blocked internal oil passageways	Hydrocarbon deposits	Dismantle compressor to examine oil passageways	High temperature oil	Dismantle, clean and rebuild
D	Excessive Oil Consumption					
4.1		Oil leaks		Visually check for external oil		Identify source and rectify
4.2		Compressor running at Minimum pressure		Fit pressure gauge in test point and check internal running pressure	Excessive air demand	Rectify system leaks
4.3		Incorrect oil	Service error	Remove sample and compare with correct oil or check source		Drain, flush, drain, fill with fresh oil
4.4		Oil carryover	Flooded or broken separators	Check downstream equipment for signs of oil contamination. Remove oil return restrictor plugs and check if blocked		If restrictor plugs are blocked, remove and replace separator elements and oil return restrictors

Ref	Symptom	Cause (Level 1)	Cause (Level 2)	Diagnosis	Cause (Level 3)	Action
4.5				Remove separator cap and bottle and examine separator		If separator element are broken, Replace separator element, oil return restrictors, clean oil filter and change oil
E	Oil Mist From Air Intake When Stopping and/or Rapid Venting					
5.1		Unloader valve seats damaged		Remove air filter and support and observe where mist exits when machine is stopping		Replace damaged seats
5.2		Unloader valve body worn		Remove air filter and support and observe where mist exits when machine is stopping		Replace unloader valve body
5.3		Vacuum valve seal leaking		Remove air filter and support and observe where mist exits when machine is stopping		Replace Vacuum valve seal/gasket
5.4		Servo valve leaking		Remove air filter and support and observe where mist exits when machine is stopping		Replace servo valve
5.5		Bearing end cap gasket leaking		Remove air filter and support and observe where mist exits when machine is stopping		Replace bearing end cap gasket
F	Unusual Noise or Vibration During Running					
6.1		Vacuum valve incorrectly adjusted		Compressor makes rattling noise when running off load only		Adjust vacuum valve
6.2		Fan fouling cooler ducting		Visually check for interference		Check/realign ducting
6.3		Damaged/worn drive coupling		Remove grommet from bell housing and visually check coupling. Remove compressor from motor to verify		Check/replace motor coupling
6.4		Motor bearing failure		Listen for rumbling or screaming noise from each end of motor. Remove compressor and rotate motor by hand to check for rough feeling		Check/replace motor bearings
6.5		Seized blade in slot		Listen for uneven popping noise from compressor under load. Remove intake end cover to check condition of blades		Check/free/replace blades
G	Safety Valve Lifting					
7.1		Overpressure in compressor	Servo set too high	Read pressure gauge		Adjust servo
			Servo piston incorrectly assembled	Remove servo assembly and check orientation of piston		Reassemble servo and adjust
			Excessive Air intake during offload running	Read pressure gauge	Leaking vacuum valve	Replace vacuum valve seals and gasket
					Leaking bearing cap gasket	Replace end cap gasket

Ref	Symptom	Cause (Level 1)	Cause (Level 2)	Diagnosis	Cause (Level 3)	Action
					Leaking unloader valve	Replace unloader valve seat
7.2		Faulty safety valve	Worn spring	Read pressure gauge in test point and check internal pressure when safety valve blows		Replace safety valve
			Damaged/worn seating	Fit pressure gauge in test point and check internal pressure when safety valve blows		Replace safety valve
H	Slow/No Ventdown					
8.1		Automatic Ventdown orifice blocked		Listen for air loss into intake area after stopping. Fit pressure gauge in test point to monitor vent down of pressure		Clean orifice plate
I	Motor Overload or High Power Consumption					
9.1		High pressure setting		Fit pressure gauge in test point and check internal pressure		Check/adjust servo
9.2		Compressor overheating		Fit thermometer in oil filler pocket and check maximum temperature		See C
9.3		Faulty motor		Check impedance of motor windings		Check motor windings/bearings repair or replace
9.4		Seized blade in slot		Listen for uneven popping noise from compressor under load. Remove intake end cover to check condition of blades		Check/free/ replace blades
9.5		Compressor rotor seizing	Rotor pushed against intake end cover	Remove compressor, dismantle and examine rotor and end cover. Check setting of coupling	Motor drive coupling incorrectly fitted	Replace damaged parts
			Bearing seizing	Remove compressor, dismantle and examine rotor and bearings	Lubrication failure	Replace damaged parts

This page is intentionally left blank