



Specialised Air Motors and Transmission

TONSON®

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Vane Air Motor Parts List



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Specialised Air Motors & Transmission (SAMT) - incorporating TONSON - was founded in 1966 and provides efficient solutions and equipment to all major industries including mining, chemical, food, paper, plastic, power transmission, manufacturing and pharmaceutical.

Our commitment to you is best service, quick lead times and very competitive prices.

Innovation & Quality

Specialised Air Motors & Transmission is committed to providing clever solutions for all hazardous environments and continues to develop smart ways to meet requirements from all different industries; our products meet CE standards ISO9002, ISO9001 and patents are registered globally including USA, Taiwan and China.

Unlike other conventional methods our products mainly use air instead of electricity as the source of power. This eliminates the chance of electricity shock and fire, which are the most crucial factors for industries involved in chemical, flammable or volatile contents.

Specialised Air Motors & Transmission products include air/electric motors, air/electric mixers and air fans which are engineered to meet the highest standards featuring 100% explosion-proof, low air consumption, light weight, high torque, reversible step less speed control, easy maintenance and various mounting methods. And can be used in very harsh conditions such as humidity, high temperature and flammable environments.

Products & Services

SAMT's other popular products include Pressure Tanks up to 200L (with and without integrated mixer), spray guns, pneumatic double diaphragm pumps, vertical pumps, magic drum carriers, non-spark drum openers, propellers, plus many more exciting and innovative products.

We also have the technical capability and expertise to provide complete power transmission solutions to meet your specific requirements, including full engineering assistance with design, selection and site installation. We also specialise in the supply of all types of Industrial gearboxes including Helical, Worm, Bevel-Helical, Bevel, screw jacks and planetary. All are interchangeable with other internationally recognised brands.


SAMT can also customise any product to suit your specific requirements and will investigate the possibilities of developing new products to satisfy your special specifications.




Features and applications

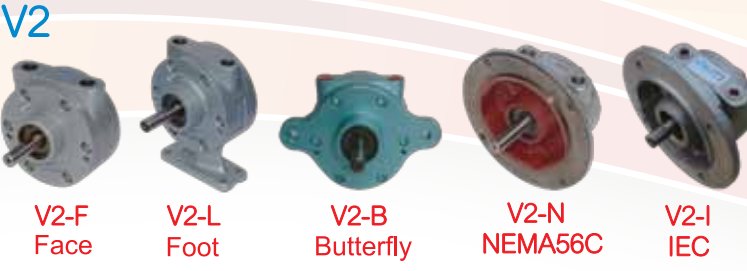
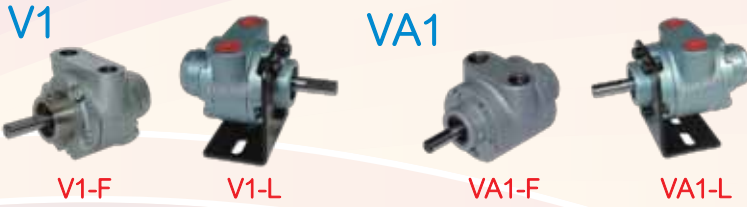


Vane Air Motor features include:

- 100% Explosion-proof
 - Stalling Safety
 - Step less Speed Control
 - Never Burn Out
 - Self-Sealing & Cool Running
 - Smooth Start
 - Mounting Flexibility (IEC, Nema, Face and Foot)
 - All Plane Operation
 - Toleration of Environment
- 

Vane Air Motor applications are unlimited including:

- Hoist / Winches
 - Pump Drives
 - Automation Devices
 - Hose Reels
 - Conveyor Drives
 - Choppers / Grinders
 - Turntables
 - Mixing Equipment
 - Food / Pharmacy Packaging
- 



MOUNT

Mass(kg)	V1	VA1	V2	V4	V6	V8	V16
F-Face	0.8	1	2.2	3.9	7.6	10.4	32.94
L-Foot	0.9	1.1	3.3	4.3	7.9	11	32.9
B-Butterfly	V2		3	4.1	7.8	10.5	(LN)36
NEMA56C	IEC#72D71C		3.8	5.1	8.4	12	32.9
IEC#72D71	4kg		4.3	5.3	8.8	13	36

SPECIFICATION

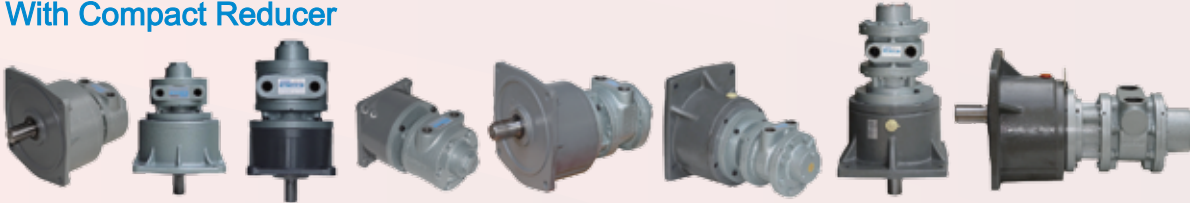
Series	Gear Ratio	Performance at Maximum Speed						Max. Torque								
		Power		Torque		Speed	Air Com.		Spd.		Torque					
		HP	kW	N-m	lb-in	RPM	l/min	CFM	RPM	N-m	lb-in					
V1	1:1	0.5	0.3	0.31	2.75	10000	590	21	650	0.65	5.75					
	3.5:1	0.4	0.3	0.82	7.26	2800			190	0.9	7.97					
	15:1	0.4	0.3	4.07	36	666			30	8.15	72					
	43:1	0.4	0.3	11.30	100	232			10	12	106					
	150:1	0.2	0.1	19.40	172	66			5	21	186					
VA1	1:1	0.50	0.4	0.60	5.31	6000	760	27	500	0.68	6.01					
	3.5:1	0.45	0.3	1.80	15.9	1700			135	2	18					
	15:1	0.46	0.3	8.13	72	400			30	8.9	71					
	43:1	0.41	0.3	21.0	186	139			10	23	204					
	150:1	0.20	0.2	36.0	319	40			3	40	354					
V2	1:1	0.9	0.7	2.20	19.5	3000	900	32	850	30	350	3.05	27			
	3:1	0.8	0.6	5.6	49.6	1000			100	7.6	67					
	5:1	0.8	0.6	9	79.7	600			60	12	106					
	10:1	0.74	0.6	17.6	156	300			30	24	212					
	15:1	0.70	0.5	25.0	221	200			20	34	301					
	20:1	0.65	0.5	31.0	274	150			15	42	372					
	30:1	0.58	0.4	41.0	363	100			10	55	487					
	40:1	0.51	0.4	48.6	430	75			7	66	584					
	60:1	0.47	0.4	67.0	593	50			5	89	788					
	80:1	0.45	0.3	85	752	37.5			3.5	112	991					
	100:1	0.44	0.3	106	934	30			3	139	1230					
	120:1	0.44	0.3	127	1121	25			2.5	167	1480					
	140:1	0.44	0.3	148	1308	21			2	195	1726					
	V4	1:1	1.7	1.3	4.10	36			3000	2000	71	1620	57	300	6.3	56
		3:1	1.3	0.9	9.20	81			1000			1700	60	100	14	124
5:1		1.3	0.9	15.4	136	600	60	24	212							
10:1		1.3	0.9	31	274	300	30	48	425							
15:1		1.3	0.9	45.2	400	200	20	72	640							
20:1		1.2	0.9	55.0	487	150	15	84	740							
30:1		1.1	0.8	75.5	668	100	10	116	1027							
40:1		1	0.7	90	800	75	7	142	1255							
50:1		0.9	0.7	105	929	60	6	161	1425							
60:1		0.8	0.6	118	1040	50	5	185	1640							
70:1		0.8	0.6	138	1220	42.9	4	207	1832							
80:1		0.8	0.6	158	1396	37.5	3.5	237	2097							
100:1		0.8	0.6	205	1814	30	3	308	2726							
120:1		0.8	0.6	237	2093	25	2.5	355	3142							
140:1		0.8	0.6	285	2522	21	2	428	3788							
V6	1:1	4	3	10	89	3000	3820	135	3620	128	300	13	115			
	3:1	3.5	2.6	25	221	1000			100	33	292					
	5:1	3.4	2.5	40	354	600			3680	130	60	52	460			
	10:1	3.4	2.5	81	720	300			30	107	950					
	15:1	3	2.2	105	929	200			20	137	1212					
	20:1	2.7	2	124	1100	150			15	175	1550					
	30:1	2.4	1.8	169	1496	100			10	220	1947					
	40:1	2.1	1.6	195	1725	75			8	283	2500					
	50:1	2	1.5	238	2106	60			6	309	2735					
	60:1	2	1.5	290	2567	50			5	377	3336					
	80:1	2	1.5	380	3363	37.5			3.8	646	5717					
	100:1	1.9	1.4	446	3947	30			3	580	5133					
	120:1	1.9	1.4	540	4779	25			2.5	703	6222					
	150:1	1.9	1.4	675	5974	20			2	878	7770					
	200:1	1.8	1.3	900	7965	15			1.8	1170	10355					
360:1	1.8	1.3	1600	14160	8	1.7	2080	18408								
V8	1:1	5.3	3.9	15	132	2500	5010	177	4955	175	300	21	185			
	3:1	4.6	3.5	40	354	833			100	54	478					
	5:1	4.5	3.3	63	558	500			60	85	752					
	10:1	4.5	3.3	127	1124	250			30	171	1513					
	20:1	3.7	2.8	209	1850	125			15	288	2550					
	30:1	3.1	2.3	266	2354	83			10	360	3186					
	40:1	2.7	2	309	2735	63			8	417	3690					
	50:1	2.6	2	375	3319	50			6	506	4478					
	60:1	2.5	1.9	427	3779	42			5	576	5098					
	80:1	2.5	1.9	560	4956	31.3			3.8	755	6682					
	100:1	2.5	1.9	700	6195	25			3	943	8346					
	125:1	2.5	1.9	880	7788	20			2.4	1161	10275					
	140:1	2.5	1.9	980	8673	17.9			2.1	1293	11443					
	180:1	2.5	1.9	1269	11231	13.9			1.7	1675	14824					
	V16	1:1	9.5	7.1	34	300			2000	7787	275	300	43	380		
3:1		7	5.2	75	664	666	100	92.3	817							
5:1		6.7	5	116	1027	400	60	143	1266							
10:1		6.7	5	238	2106	200	30	293	2593							
20:1		6.5	4.9	472	4177	100	15	585	5177							
30:1		5.5	4.1	592	5239	66	10	728	6443							
40:1		5.6	3.4	650	5753	50	7.5	800	7080							
60:1		4.6	3.4	975	8629	33.3	4.9	1200	10620							
80:1		4.6	3.4	1300	11505	25	3.8	1599	14151							
100:1		4.3	3.2	1530	13541	20	3	1882	16656							
120:1		4.3	3.2	1830	16196	16.7	2.5	2250	19913							

With Gearbox Reducer



V2-LG V4-FG60 V4-LG60 V6-FG10 V8-LG20 V8-LG50 V8-LG20 V16-LG30

With Compact Reducer



V2-FGS5 V2-FGS V4-FGS3 V4-FGS3 V6-FGS5 V8-FGS10 V8-FGS10 V16-FGS5

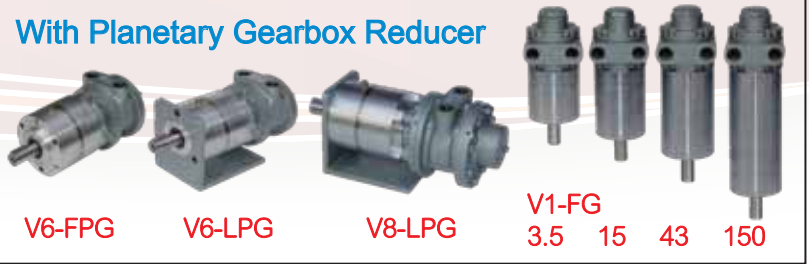
Refer to our Gearbox Division / Brochure for extensive range of gearboxes available.

With Worm Gearbox Reducer



V4-LWG50 V6-FBWG V8-LWG20

With Planetary Gearbox Reducer



V6-FPG V6-LPG V8-LPG V1-FG 3.5 15 43 150

With Hand Control Valve



V4-LBHV V4-LBG40R V6-LG20R V8-FGHCV V16-LHCV

With Remote Control



V8-FBRCV V8-LRCV

With Brake



V2-FB(IEC) V4-FB V4-FBIEC V6-LB V8-FB V16-FB V16-FBG40

With Customed Flange



V1-FG15 V1 V2 V4 V4-FG5

Special Material



V6S-I SS Stainless Steel Outside V2-I Chromium Plated V16-I Chromium Plated

Double Shaft



VA1 V2-L V4-NDS V6-LDS V8-LDSHCV

Dedicated to Mixers



V2-M V2-LM V4-M V4-LM

We can customise air motors.



AIR MOTOR ACCESSORIES

Control Vales



HV1 Mini Reverse Control

HV2 Reverse Control

HV3 Reverse Control

HV4 Reverse Control

Pressure Gauge

Air Regulator

APPLICATION

Model	Vane Air Motor							
	VA1	V1	V2	V4	V6	V8	V16	
HV1 Mini (1/4")	●	●	●	●				
HV2(1/4")	●	●	●	●				
HV3(1/2")					●	●		
HV4(1")							●	
HCV1(RCV1)1/2"					★	★		
HCV2(RCV2)3/4"								
HCV3(RCV3)1"							●	
HCV4(RCV4)1-1/4"							★	
HCV5(RCV5)1-1/2"								
HCV6(RCV6)2"								

● Standard

★ Better Performance

Silencer



Model	SC2	TC1	TC2S	TC3	TC4	MF1	MF3	MF5	MF7	MF9	MF11	NM1	NM2	NM3	SM1	SM2	SP1	SP2	SP2L	SP3	SP4	PL1	PL2	PL3	PL4	PL5	PL6
Caliber(PT)	2"	1"	1-1/2"	1-1/2"	2"	3/8"	1/2"	3/4"	1"	1-1/2"	2"	1/8"	1/4"	1/2"	1/4"	1/2"	1/8"	1/4"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Dia. O	86	100	70	100	100	80	90	100	112	132	150	48	76	78	40.5	65	16	16	20	26	28	12	19	20	24	40	49
Height mm	256	202	164	217	211	129	147	171	195	259	312	48	58	107	50	80	34	37	62	67	70	30	42	57	55	113	112
Material	Carbon Steel	Filter:Fiber Shell:Steel				Filter:A5052P.SPCC Shell:PC.A2011						Adsorb Active Carbon		Industrial Cotton		Forming Resin (5µm)			Filter: Plastic Particle Shell: Engineering Plastic								

FRL (Filter, Regulator, and Lubricator)



FRL1/4 Mini

FRL1/4 FRL1/2

FRL1

FRL2

FRL(1/4") Stainless Steel

Model	Vane Air Motor								Caliber	Mass (kg)
	VA1	V1	V2	V4	V6	V8	V16			
FRL1/4 Mini								1/4"	0.2	
FRL1/4	●	●	●	●				1/4"	0.5	
FRL1/2					●	●		1/2"	1.41	
FRL1							●	1"	4.43	
FRL1-1/4							★	1-1/4"	7.5	
FRL2								2"	12	

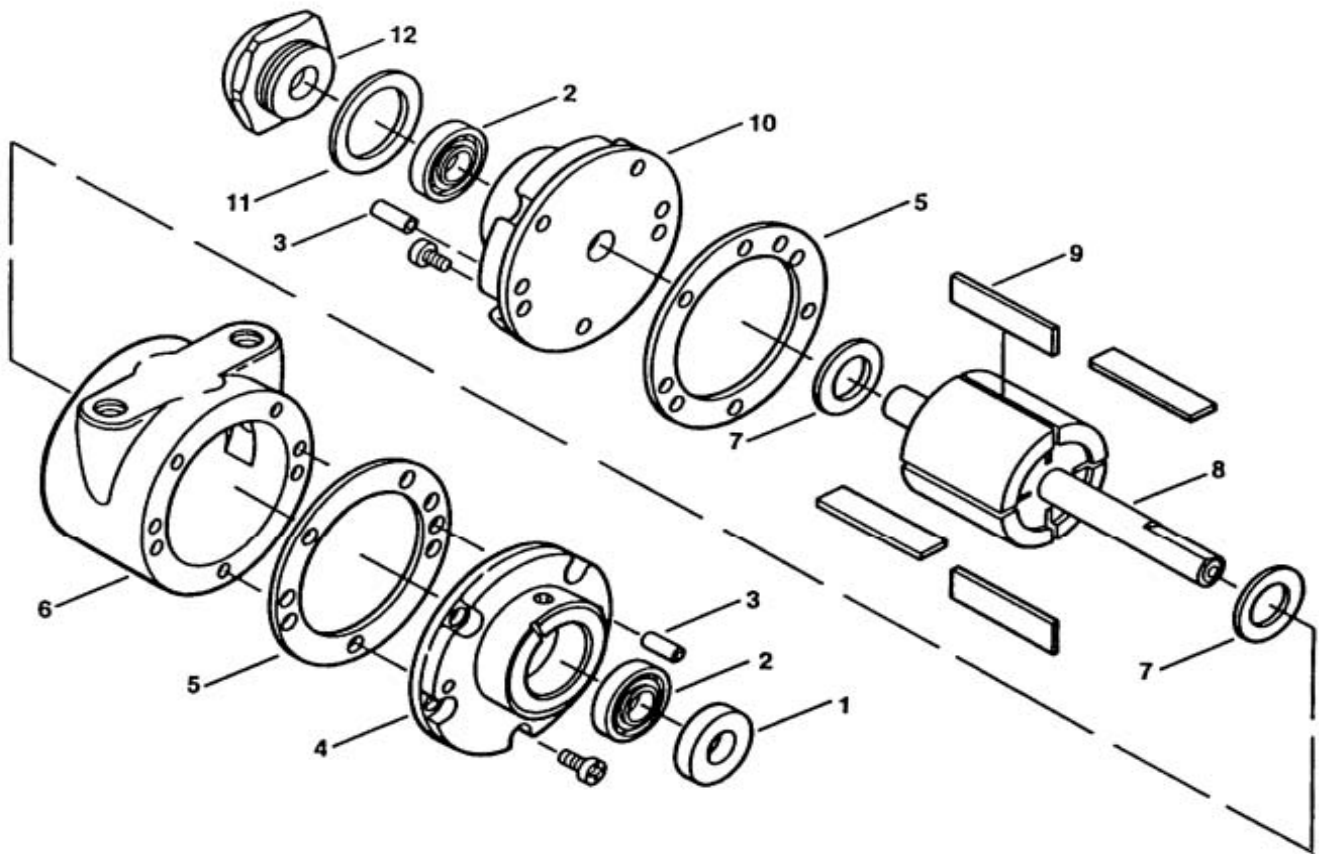
● Standard

★ Better Performance

Model	FRL1/4Mini	FRL1/4 & FRL1/2	SS1/4	FRL1	FRL2
Dimension(cm)	9x4.5x17.5	16x7x23.5	11.5x7x24.5	17.8x7x28	65x16x72

FRL (Filter, Regulator, and Lubricator) are recommend to improve air motor performance and provide longer life.

Parts List for V1 SERIES



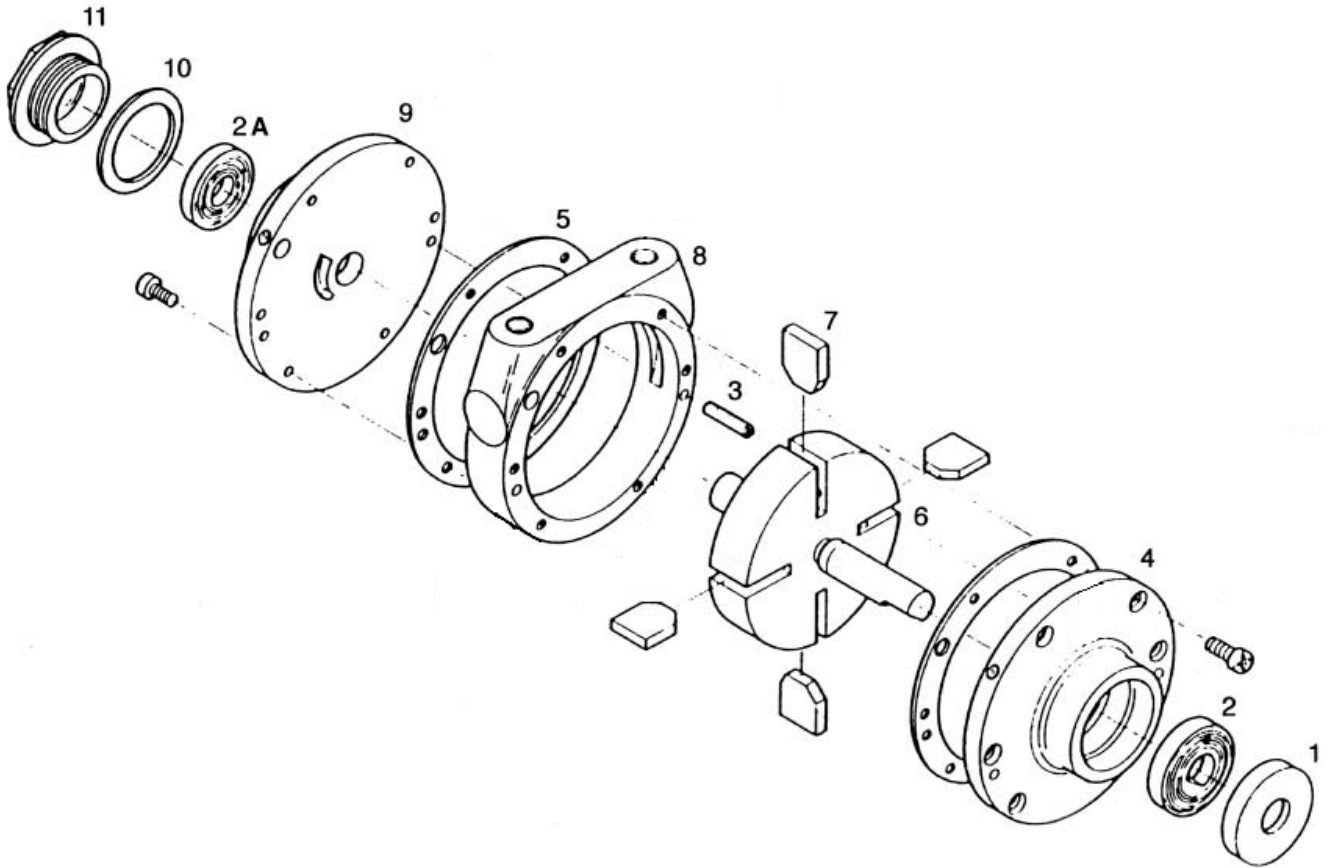
REF. No	Description	PART QTY
* 1	Shaft Seal	1
* 2	Bearing	2
3	Dowel Pin	2
4	End Plate, Drive	1
* 5	Body Gasket	2
6	Body	1
* 7	O-Ring	2
8	Rotor Assembly	1
9	Vane	4
10	End Plate, Dead	1
* 11	O-Ring	1
12	End Cap, Dead	1

All parts indicated by a * are included in a Seal Kit (SK-V1)

All parts in RED are included in a Vane Kit (VK-V1)

Repair Kit (RK-V1) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

Parts List for V2 SERIES



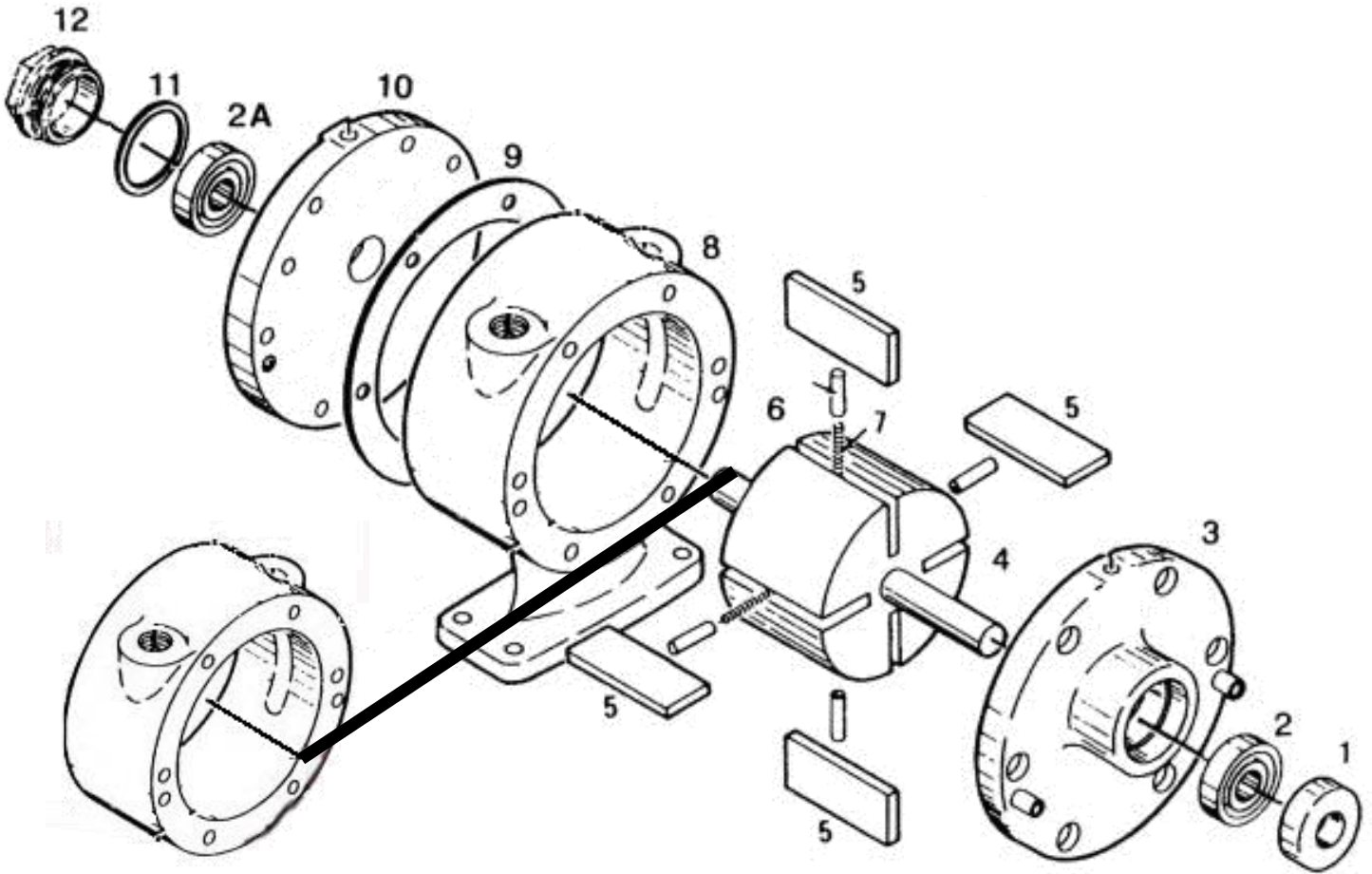
REF. No	Description	PART QTY
* 1	Shaft Seal	1
* 2	Bearing, Dead End	1
* 2A	Bearing, Drive End	1
3	Dower Pin	1
4	End Plate, Drive	1
* 5	Body Gasket	2
6	Rotor Assembly	1
7	Vane	4
8	Body	1
* 9	End Plate, Dead	1
* 10	End Cap, Gasket	1
11	End Gap, Dead	1
12	Muffler Assembly	1
13	Vane Spring	2
14	Push Pin	4

All parts indicated by a * are included in a Seal Kit (SK-V2)

All parts in RED are included in a Vane Kit (VK-V2)

Repair Kit (RK-V2) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

Parts List for V4 SERIES



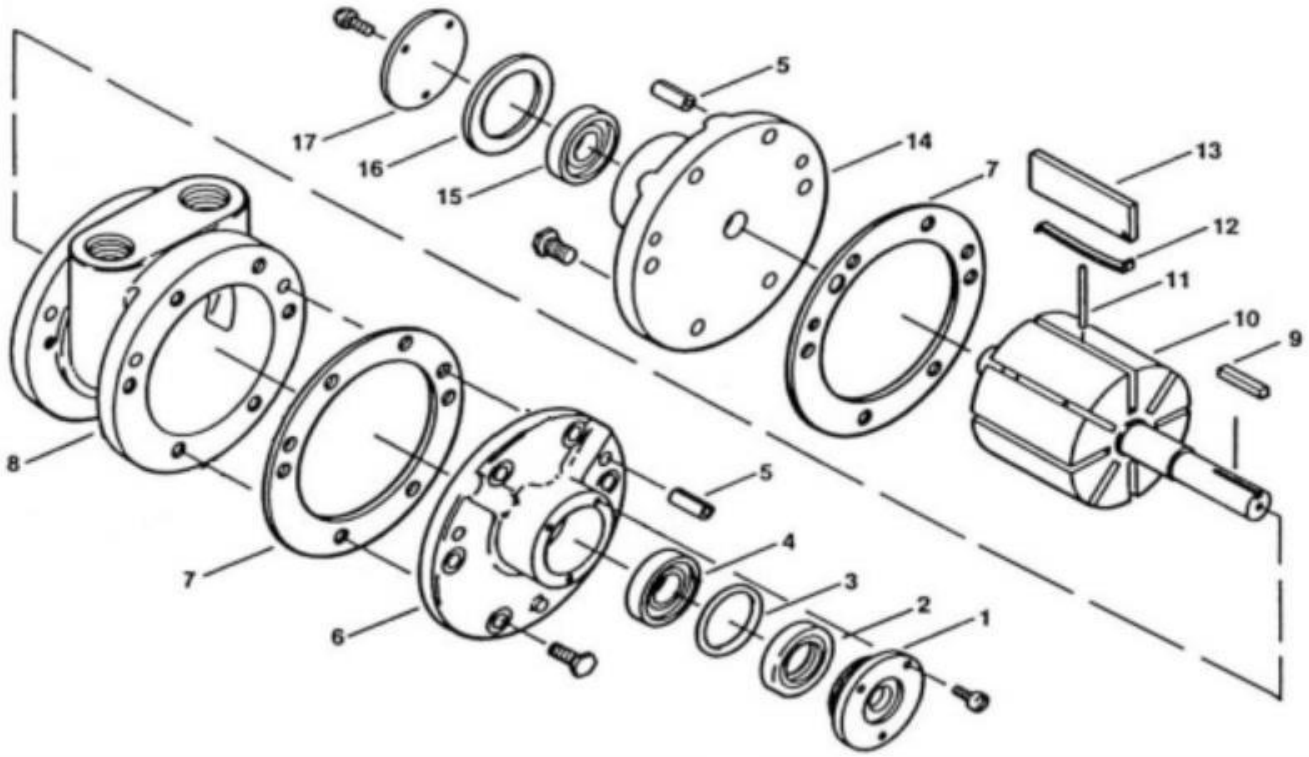
REF. No	Description	4 Vane QTY	8 Vane QTY
* 1	Shaft Seal	1	1
* 2	Bearing, Dead End	1	1
* 2A	Bearing, Drive End	1	1
3	End Plate, Drive	1	1
4	Rotor Assembly	1	1
5	Vane	4	8
6	Push Pin	4	8
7	Vane Spring	2	4
8	Body	1	1
* 9	Body Gasket	2	2
10	End Plate, Dead	1	1
* 11	End Cap, Gasket	1	1
12	End Cap, Dead	1	1
13	Muffler Assembly	1	1

All parts indicated by a * are included in a Seal Kit (SK-V4/SK-V4-8)

All parts in RED are included in a Vane Kit (VK-V4/VK-V4-8)

Repair Kit (RK-V4/RK-V4-8) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

Parts List for V6 SERIES



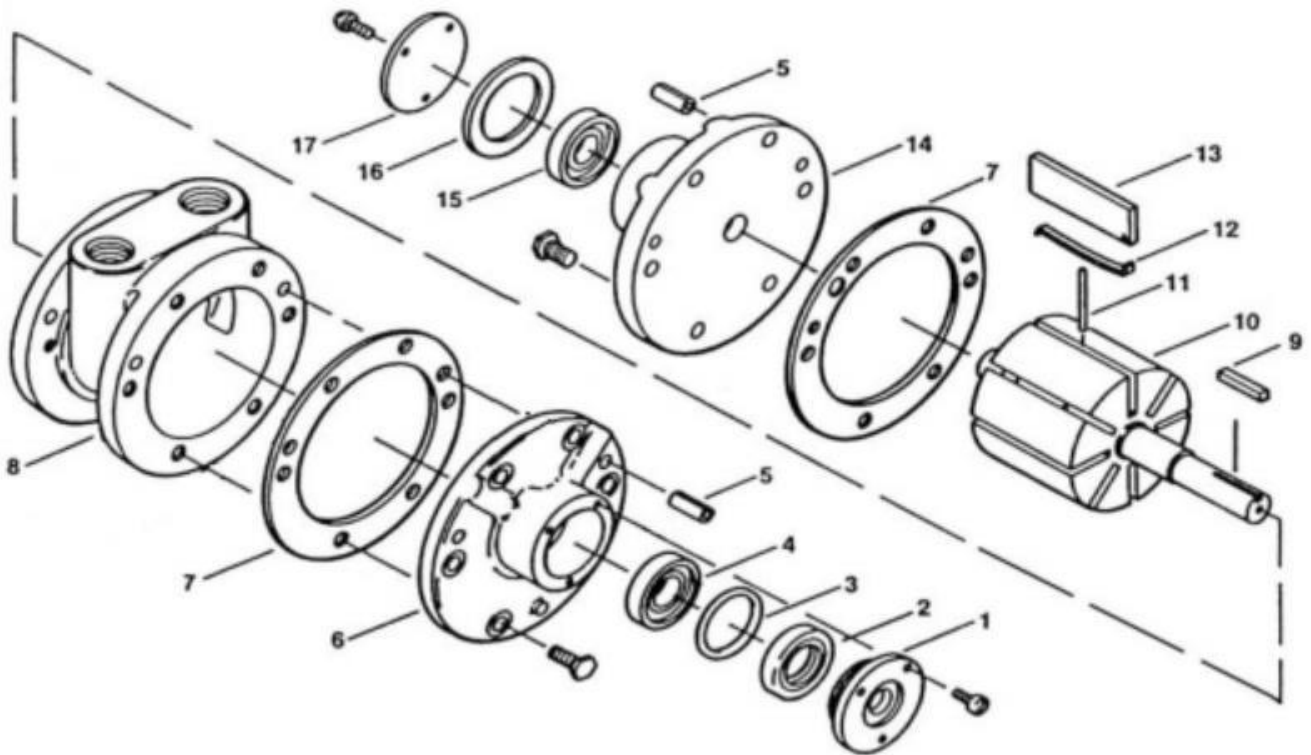
REF. No	Description	QTY
1	Drive End Cap	1
* 2	Shaft Seal	1
* 3	O-Ring	1
* 4	Bearing, Drive End	2
5	Dowel Pin	4
6	Drive End Plate	1
* 7	Body Gasket	2
8	Body	1
9	Key	1
10	Rotor Assembly (4 Vanes)	1
11	Push Pin	2
12	Spring Vane	4
13	Vane	4
14	Dead End Plate	1
* 15	Bearing, Dead End	1
* 16	Paper Gasket	1
17	Dead End Cap	1

All parts indicated by a * are included in a Seal Kit (SK-V6)

All parts in RED are included in a Vane Kit (VK-V6)

Repair Kit (RK-V6) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

Parts List for V6-8 SERIES



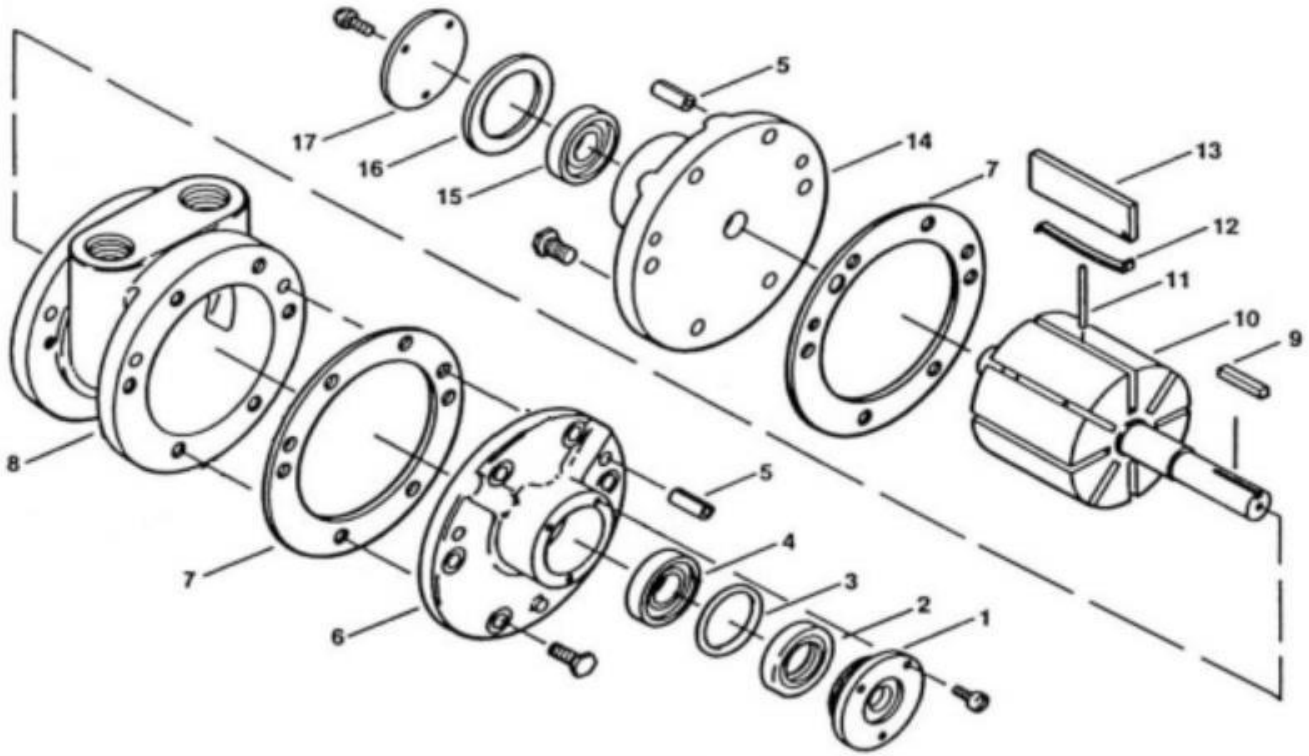
REF. No	Description	QTY
1	Drive End Cap	1
* 2	Shaft Seal	1
* 3	O-Ring	1
* 4	Bearing, Drive End	2
5	Dowel Pin	4
6	Drive End Plate	1
* 7	Body Gasket	2
8	Body	1
9	Key	1
10	Rotor Assembly (8 Vanes)	1
11	Push Pin	4
12	Spring Vane	8
13	Vane	8
14	Dead End Plate	1
* 15	Bearing, Dead End	1
* 16	Paper Gasket	1
17	Dead End Cap	1

All parts indicated by a * are included in a Seal Kit (SK-V6-8)

All parts in RED are included in a Vane Kit (VK-V6-8)

Repair Kit (RK-V6-8) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

Parts List for V8 SERIES



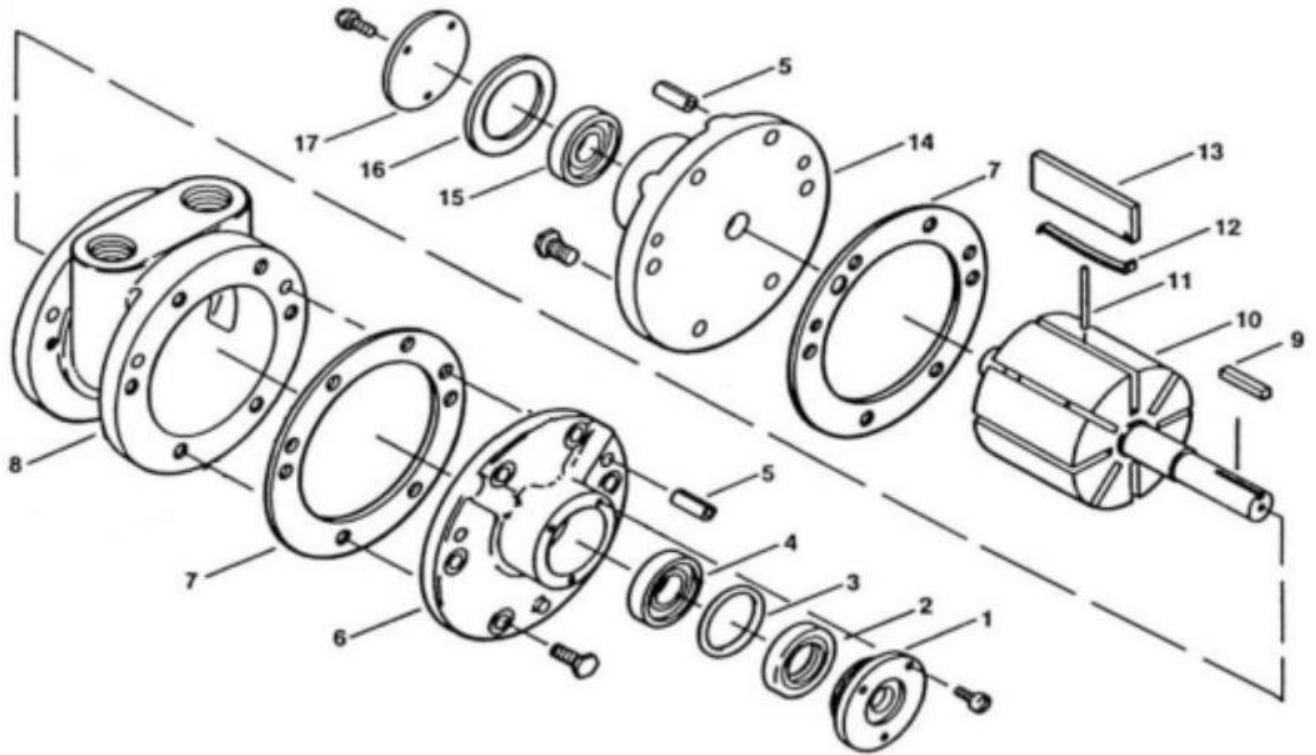
REF. No	Description	QTY
1	Drive End Cap	1
* 2	Shaft Seal	1
* 3	O-Ring	1
* 4	Bearing, Drive End	2
5	Dowel Pin	4
6	Drive End Plate	1
* 7	Body Gasket	2
8	Body	1
9	Key	1
10	Rotor Assembly (4 Vanes)	1
11	Push Pin	2
12	Spring Vane	4
13	Vane	4
14	Dead End Plate	1
* 15	Bearing, Dead End	1
* 16	Paper Gasket	1
17	Dead End Cap	1

All parts indicated by a * are included in a Seal Kit (SK-V8)

All parts in RED are included in a Vane Kit (VK-V8)

Repair Kit (RK-V8) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

Parts List for V8-8 SERIES



REF. No	Description	QTY
1	Drive End Cap	1
* 2	Shaft Seal	1
* 3	O-Ring	1
* 4	Bearing, Drive End	2
5	Dowel Pin	4
6	Drive End Plate	1
* 7	Body Gasket	2
8	Body	1
9	Key	1
10	Rotor Assembly (8 Vanes)	1
11	Push Pin	4
12	Spring Vane	8
13	Vane	8
14	Dead End Plate	1
* 15	Bearing, Dead End	1
* 16	Paper Gasket	1
17	Dead End Cap	1

All parts indicated by a * are included in a Seal Kit (SK-V8-8)

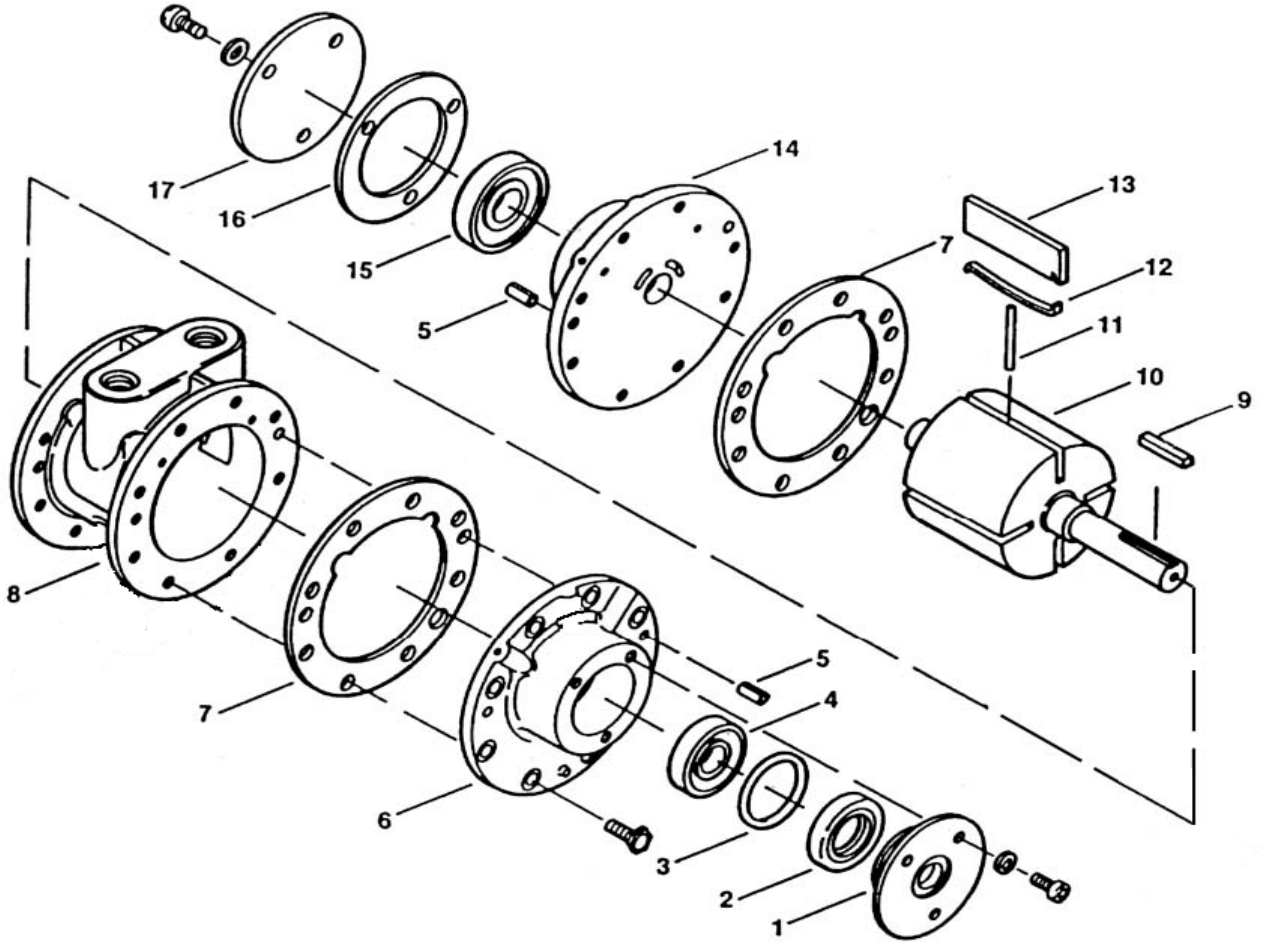
All parts in RED are included in a Vane Kit (VK-V8-8)

Repair Kit (RK-V8-8) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

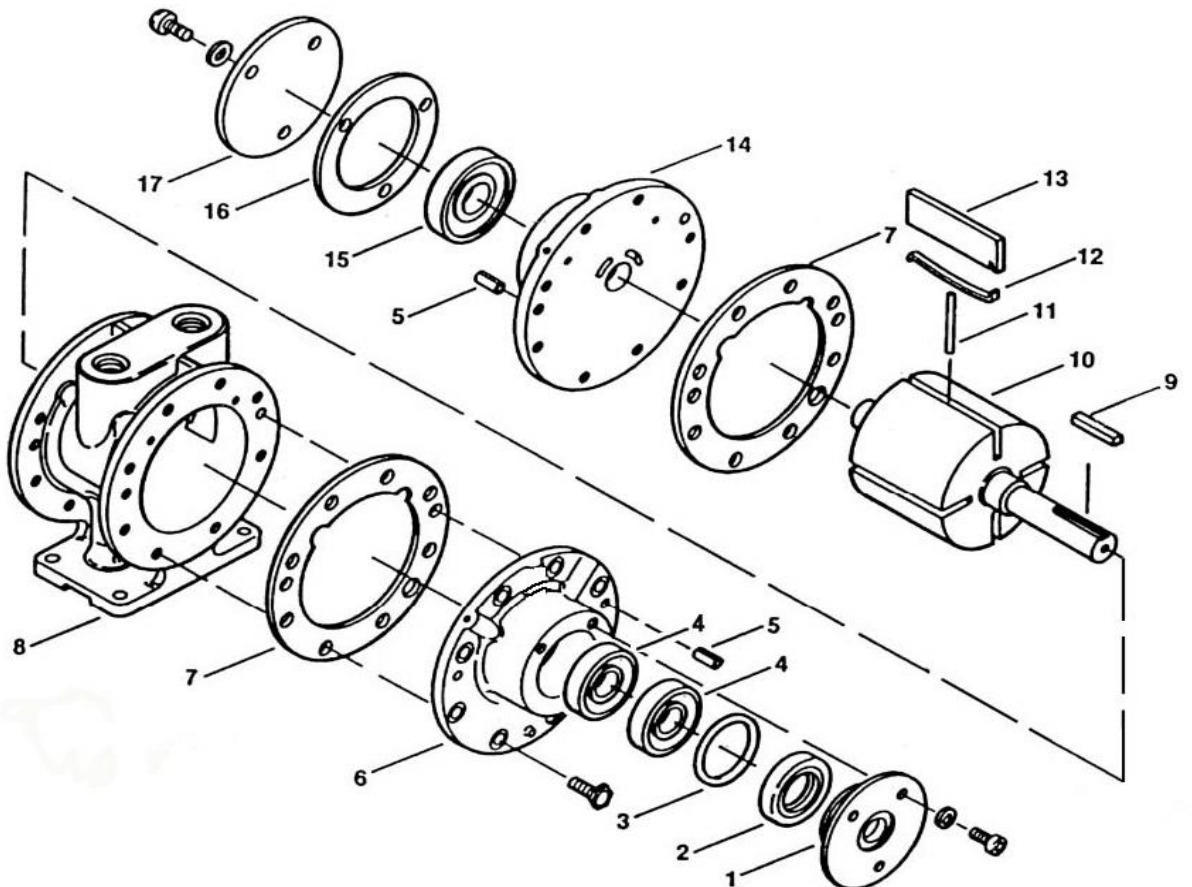
Parts List for V8-F SERIES & V8-L SERIES

Please refer to the previous pages for the parts list (V8 SERIES, V8-8 SERIES)

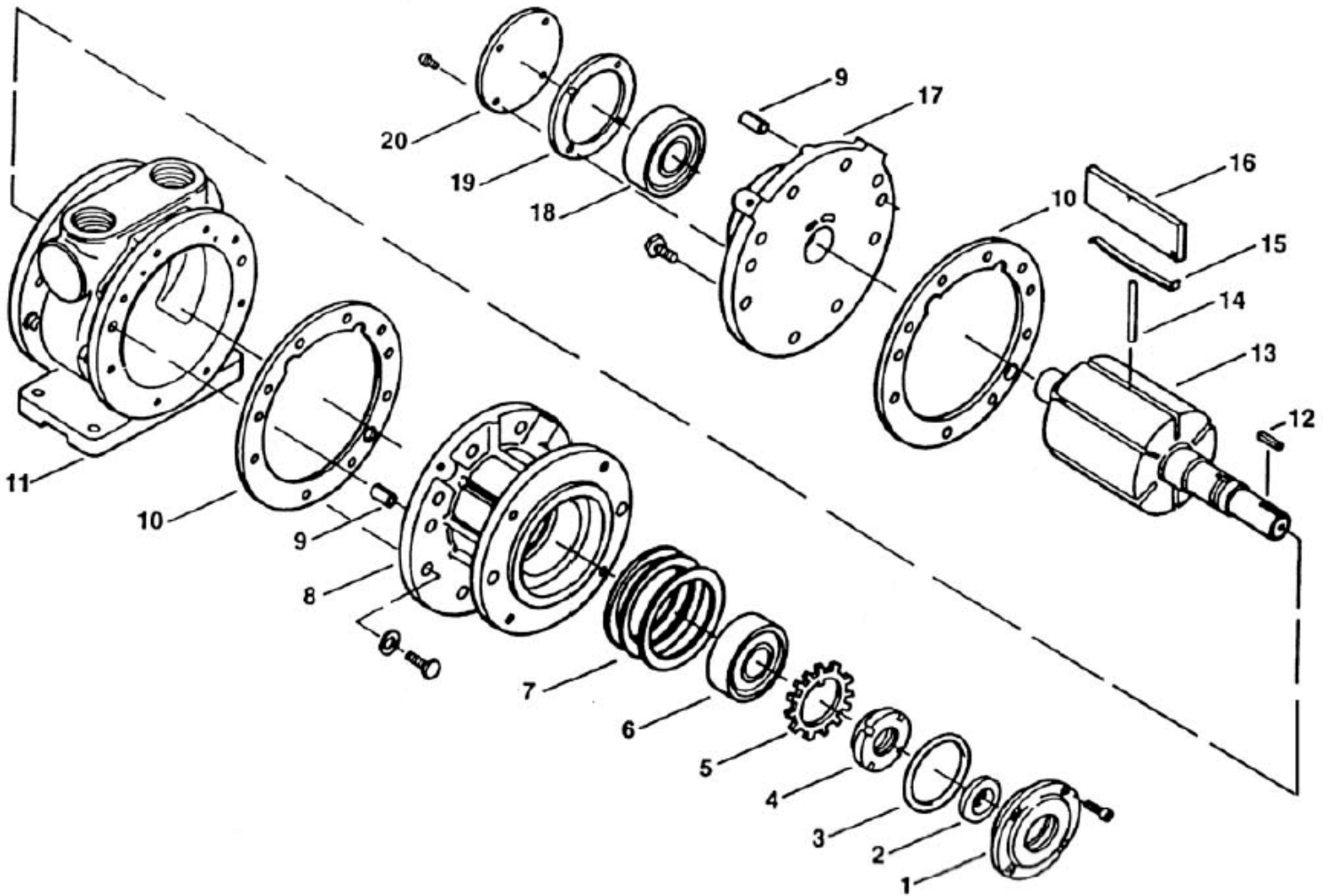
V8-F



V8-L



Parts List for V16 SERIES



V16-LI Foot & IEC #72 D90 Mounting

V16-LN Foot & NEMA 143 & 145 TC Mounting

REF. No	Description	QTY
1	Cap	1
* 2	Oil Seal	1
* 3	O-Ring	1
4	Nut	1
* 5	Washer	1
* 6	Bearing, Drive End	2
7	Ring	3
8	Drive End Plate	1
9	Dowel Pin	4
* 10	Gasket	2

REF. No	Description	QTY
11	Body	1
12	Key	1
13	Rotor Assembly	1
14	Push Pin	3
15	Vane Spring	6
16	Vane	6
17	Dead End Plate	1
18	Bearing, Dead End	1
19	Dead End Gasket	1
20	Dead End Cap	1

All parts indicated by a * are included in a Seal Kit (SK-V16)

All parts in RED are included in a Vane Kit (VK-V16)

Repair Kit (RK-V16) consist of both Seal Kit and Vane Kit, indicated by a * and in RED

SAMT[®]



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