

Ingersoll Rand Wadco

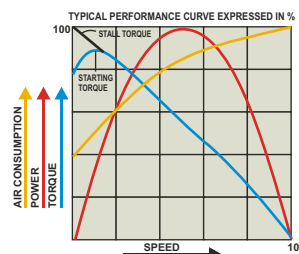
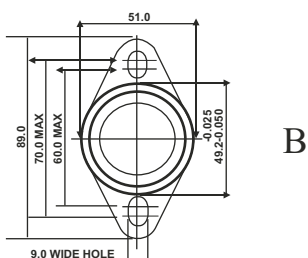
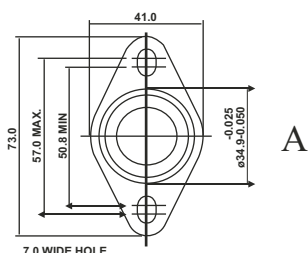
AIR MOTORS

Ingersoll Rand Wadco air motors provide compact, light weight and safe source of smooth vibrationless power. Air motors can not be damaged by overloading, frequent and continuous stalling or unlimited reversals.

Air motors are unaffected by hot, corrosive or wet atmospheres, shocks and vibrations, thereby making them suitable for operations in hazardous areas.

A typical performance curve for air motors is shown in the figure.

High power to weight ratio, easy installation, portability, minimum maintenance and simple controls are other features that make Ingersoll Rand air motors an attractive option for a number of industrial applications.



Model	Length mm	Weight kg	Max Power HP	Free Speed rpm	Speed At Max Power rpm	Torque At Max Power Nm	Stall Torque Nm
0.28 - 0.32 HP Non-Reversible, Flange Mounted							
2M-55	180	1.1	0.28	65	30*	74.5*	112.5*
2M-90	180	1.1	0.29	100	45*	48.8*	76.3*
2M-225	180	1.1	0.30	275	135	15.9	32.8
2M-400	150	0.8	0.30	450	225	9.5	18.6
2M-600	150	0.8	0.31	700	350	6.4	12.3
2M-1000	150	0.8	0.31	1100	550	4.1	7.7
2M-2500	125	0.5	0.32	3000	1500	1.5	3.1
2M-4000	125	0.5	0.32	4500	2250	1.1	1.9

Reversible Models are also available.

Models : 22M - 360/540/900/2250/3600

Horse Power Range : 0.26 - 0.28

Stall Torque Range (Nm) : 14.9 - 1.6

0.38 - 0.44 HP Non-Reversible, Flange Mounted							
202M-50	190	1.3	0.38	55	25*	119.2*	177.5*
202M-80	190	1.3	0.39	90	35*	77.2*	120.6*
202M-200	190	1.3	0.41	225	110	26.7	51.5*
202M-350	160	1.0	0.41	400	200	14.7	30.5
202M-550	160	1.0	0.42	600	300	10.1	19.7
202M-850	160	1.0	0.43	1000	500	6.1	12.9
202M-2250	135	0.7	0.43	2700	1350	2.3	4.7
202M-3500	135	0.7	0.44	4200	2100	1.5	3.1

Reversible Models are also available.

Models : 2202M-320/480/750/2000/3200

Horse Power Range : 0.36 - 0.38

Stall Torque Range (Nm) : 27.1 - 2.7

0.83 - 0.86 HP Non-Reversible, Flange Mounted							
3M-240	190	1.8	0.83	270	135	43.9	84.0
3M-450	190	1.8	0.85	500	250	24.3	48.8
3M-800	190	1.8	0.86	950	475	12.9	23.0

Reversible Models are also available.

Models : 33M-220/405/720

Horse Power Range : 0.72 - 0.75

Stall Torque Range (Nm) : 65.7 - 19.9

* For Safe working limit maximum torque to 33Nm

Starting Torques are approx. 75% of stall torques

Model	Body Dia	Air Consumption (1) (2)		Air Inlet	Hose Bore	Spindle	Moun- ting Flange
2M	40	16	11	1/4 BSP	6	Dia 9.5/9.52 1/8" SQ KEY	A
22M	40	16	11	1/4 BSP	6	Dia 9.5/9.52 1/8" SQ KEY	A
202M	40	16	11	1/4 BSP	6	Threaded Spindle 1/2"x 20 UNF	B
2202M	40	16	11	1/4 BSP	6	Dia 9.5/9.52 1/8" SQ KEY	B
3M	50	42	31	1/4 BSP	12	Threaded Spindle 1/2"x 20 UNF	B
33M	52	39	28	1/4 BSP	12	Dia 12.7h7 KEY TYPE	B

(1) Value in cfm at free speed

(2) Value in cfm at max. power

Model numbers in bold face are fast moving and will be available on shorter delivery

All performances figures are at 6.3kg/cm² (90PSI), which is optimum operating air pressure.

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0.10 – 3.80 hp

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2.20 – 9.90 hp

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0.33 – 10.5 hp

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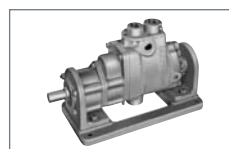
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0.25 – 2.00 hp

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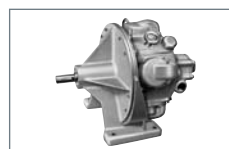
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1.75 – 5.60 hp

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2.05 – 30.00 hp

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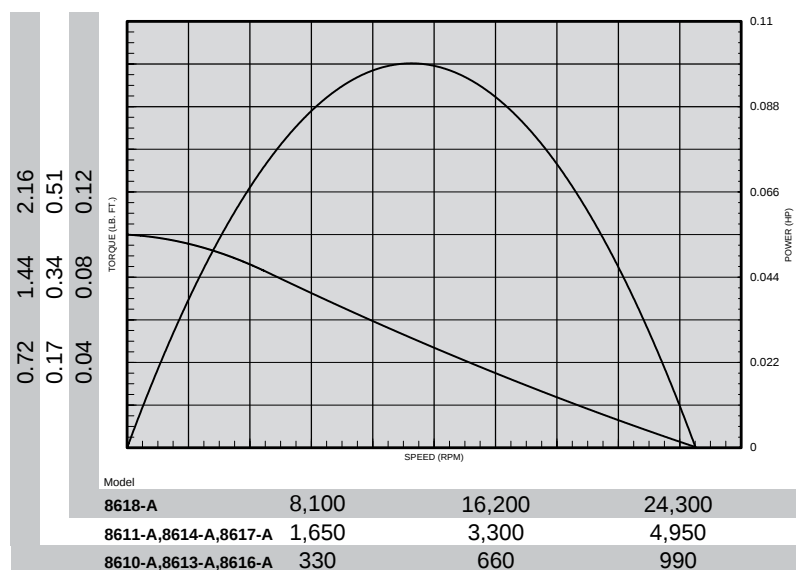
In-Line Planetary Gear, Multi-Vane Air Motors

0000-Series

Specifications

TORQUE															AIR			
		R.P.M.		OUTPUT				CONSUMPTION		SOUND LEVEL		WEIGHT		GEAR				
MODEL	SPINDLE	FREE SPEED	LOAD SPEED @MAX. H.P.	STALL lb. ft.	Nm	@MAX. H.P. lb. ft.	Nm	@FREE SPEED SCFM	L/s	@FREE SPEED dB(A)	lbs.	kg.	REDUCTION					
NON-REVERSIBLE - .10 H.P.																		
8610-A	3/8" Keyed	1,000	500	1.8	2.4	1.05	1.4	9.5	4.5	80	90	.40	Double					
8611-A	3/8" Keyed	5,000	2,500	.42	.6	.21	.3	9.5	4.5	80	80	.36	Single					
8616-A	3/8"-24 Th'd.	1,000	500	1.8	2.4	1.05	1.4	9.5	4.5	80	.90	.40	Double					
8617-A	3/8"-24 Th'd.	5,000	2,500	.42	.6	.21	.3	9.5	4.5	80	.80	.36	Single					
8618-A	3/8"-24 Th'd.	25,000	13,000	.10	.1	.04	.05	9.5	4.5	80	.80	.36	Single					
REVERSIBLE - .10 H.P.																		
8613-A	3/8" Keyed	1,000	500	1.8	2.6	1.05	1.4	11.5	5.4	80*	.90	.40	Double					
8614-A	3/8" Keyed	5,000	2,500	.42	.6	.21	.3	11.5	5.4	80*	.80	.36	Single					

* Requires installation for reversible motors - shown on page 88.



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, and muffler.



Equipment Options

41058 Flange Bracket

41057 Foot Bracket



41058



41057

Options for Motors with Thread Spindles

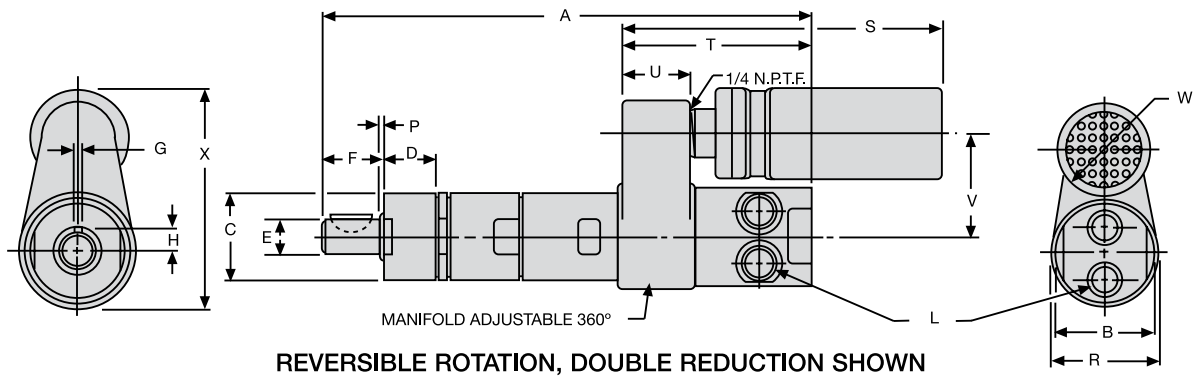
30384-5 3/8" (9.5 mm) Male Square-Drive Adapter

30384-9 1/2" (12.7 mm) Male Square-Drive Adapter

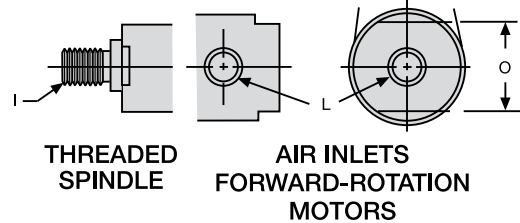
30712 1/4" (6.4 mm) Female Hex Ball-Lock Adapter for screwdriver bits

47340 1/4" (6.4 mm) Capacity Drill Chuck

0000-Series and Mounting Accessory Dimensions

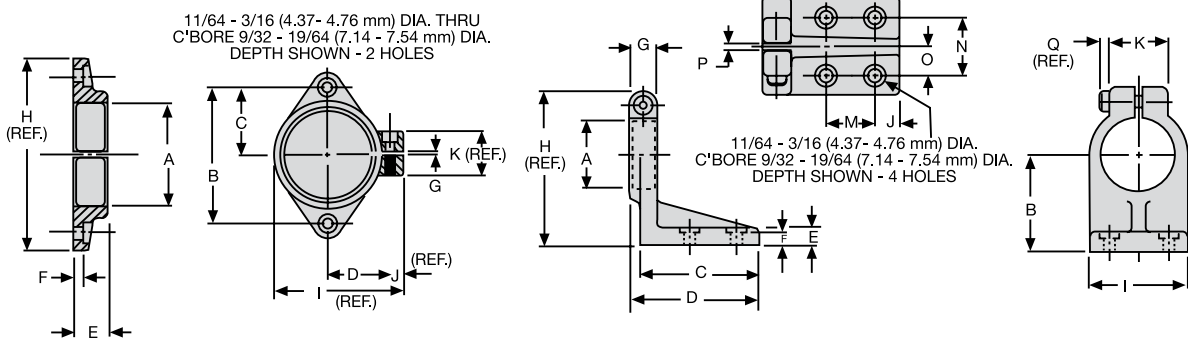


Gear Reduction	DIMENSION A			
	Models 8617-A, 8618-A	Model 8616-A	8611-A, 8612-A 8614-A, 8615-A	Models 8610-A, 8613-A
Single	4-7/16 113 mm	—	4-1/2 114 mm	—
Double	—	5-7/32 132 mm	—	5-9/32 134 mm



Scale	B	C	D	E	F-Keyed Spindle	F-Th'd. Spindle	G	H	I	L	O
Inches	1-1/16	.936 .937	.580 .590	.374 .375	.644 .691	.581 .628	.0938 .0948	.228 .238	3/8"-24 UNF-2A	1/8 NPTF	7/8
mm	27	23.77 23.80	14.73 14.99	9.50 9.53	16.36 17.55	14.76 15.95	2.38 2.41	5.79 6.05	Th'd.	Air Inlet	22

Scale	P-Keyed Spindle	P-Th'd. Spindle	R	Reversible Direction	Single Direction	T	U	V	W	X
Inches	.149 .186	.024 .061	1-1/8	3-7/16	4-7/16	2-1/32	3/4	1-1/8	1	2-3/16
mm	3.78 4.72	.61 1.55	28	87 mm	113 mm	51	19	28	25	55



41058 FLANGE MOUNTING BRACKET

41057 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F
Inches	.937 .938	1.745 1.755	.870 .880	.677 .697	.365 .385	.177 .197
mm	23.80 23.83	44.32 44.58	22.10 22.35	17.20 17.45	9.27 9.78	4.50 5.00

Scale	A	B	C	D	E	F	G	H
Inches	.937 .938	1.249 1.251	1.609 1.640	1.734 1.765	.240 .260	.177 .197	.182 .192	2-7/32
mm	23.80 23.83	31.72 31.78	40.87 41.66	44.04 44.83	6.10 6.60	4.50 5.00	4.62 4.88	56.36

Scale	G	H	I	J	K
Inches	1/64 3/64	2-1/8	1-1/2	3/16	3/4
mm	0.40 1.19	53.98	38.10	4.76	19.05

Scale	I	J	K	M	N	O	P	Q
Inches	1.234 1.265	.296 .328	.734 .765	.620 .630	.745 .755	.370 .380	.046 .078	1/8
mm	31.34 32.13	7.52 8.33	18.64 19.43	15.75 16.00	18.92 19.18	9.40 9.65	1.17 1.98	3.18

Series M002 Multi-Vane Air Motors

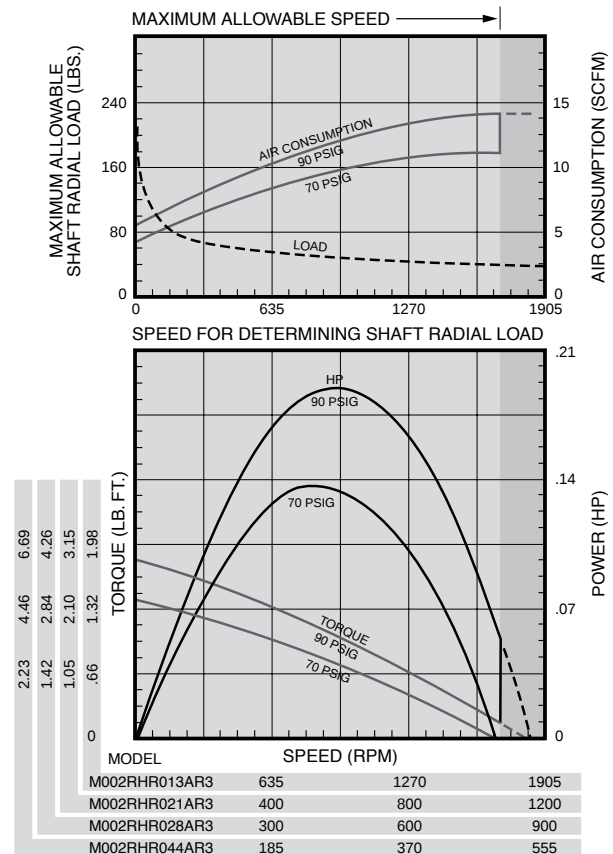
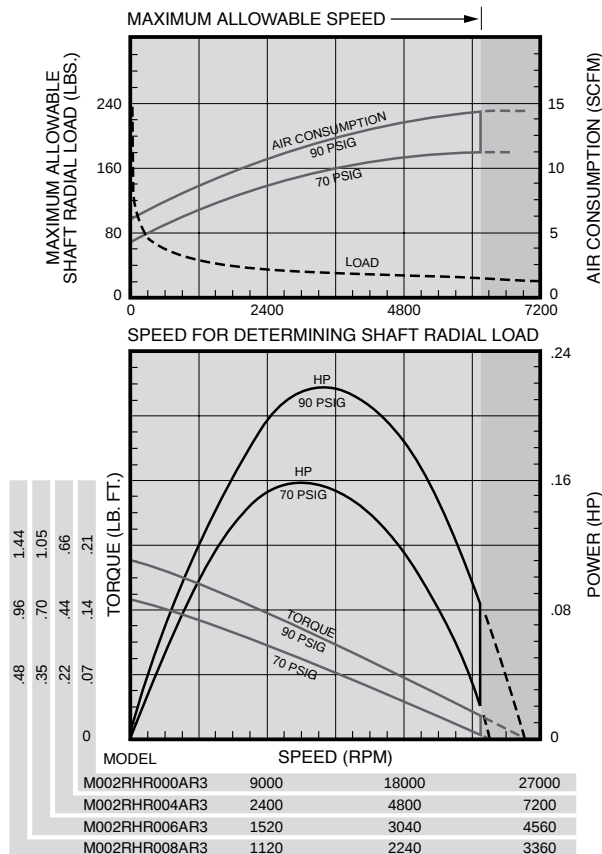
Specifications

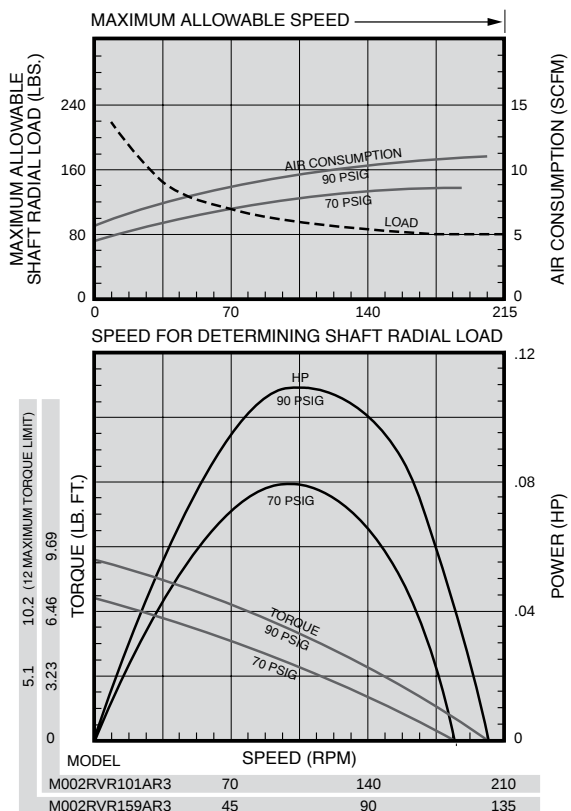
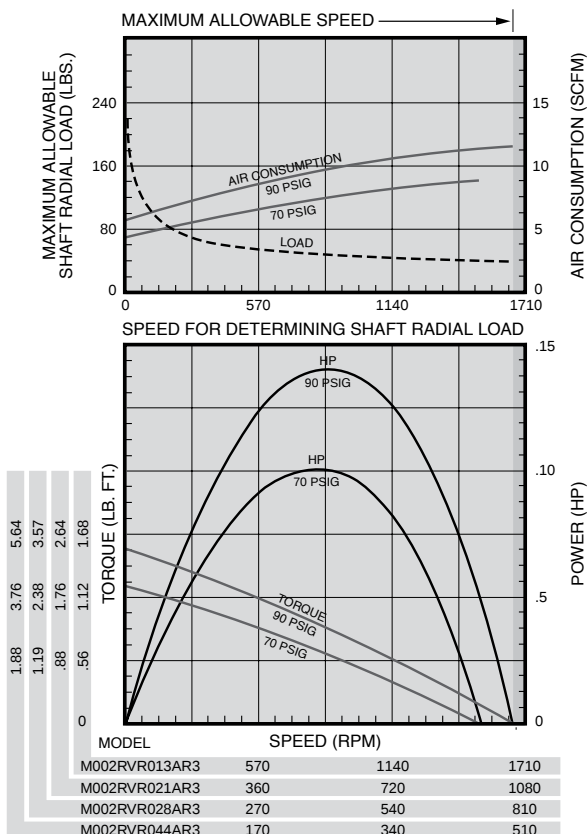
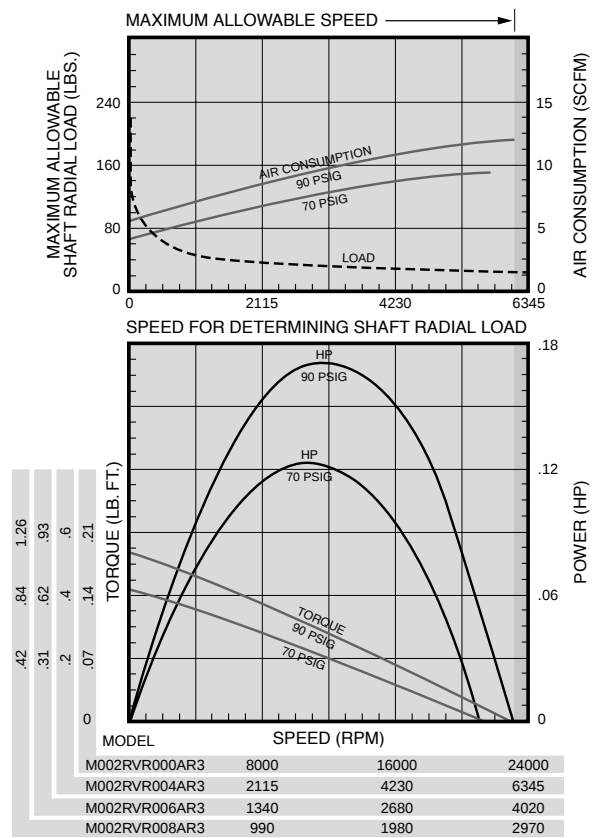
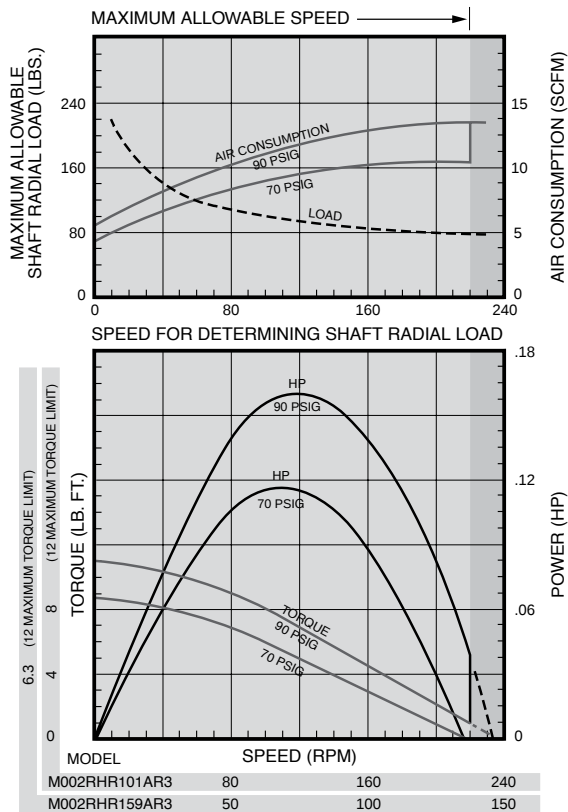
Model	Max. Power		Speed at Max. Power	Free Speed ▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m ³ /m	lb.	kg
Non-Reversible Direction of rotation is counterclockwise when facing the shaft.												
M002RHR000AR3	0.25	0.19	12,250	26,000	0.15	0.20	0.20	0.27	12.0	0.34	1	0.46
M002RHR004AR3	0.22	0.16	3250	6920	0.45	0.61	0.61	0.83	11.9	0.34	1	0.46
M002RHR006AR3	0.22	0.16	2060	4385	0.72	0.98	0.96	1.30	11.9	0.34	1½	0.49
M002RHR008AR3	0.22	0.16	1520	3240	0.98	1.33	1.31	1.78	11.9	0.34	1	0.46
M002RHR013AR3	0.19	0.14	880	1840	1.36	2.50	1.82	2.47	11.8	0.33	1½	0.50
M002RHR021AR3	0.19	0.14	555	1165	2.16	2.93	2.88	3.90	11.8	0.33	1½	0.50
M002RHR028AR3	0.19	0.14	410	860	2.92	3.96	3.90	5.29	11.8	0.33	1½	0.50
M002RHR044AR3	0.19	0.14	262	545	4.61	6.25	6.15	8.34	11.8	0.33	1½	0.50
M002RHR101AR3	0.16	0.12	112	228	*8.32	*11.2	*11.1	*15.0	11.7	0.33	1½	0.54
M002RHR159AR3	0.16	0.12	71	145	*13.1	*17.7	*17.5	*23.7	11.7	0.33	1½	0.54
Reversible												
M002RVR000AR3	0.20	0.15	11,500	23,000	0.13	0.18	0.18	0.24	9.8	0.28	1	0.46
M002RVR004AR3	0.17	0.13	3045	6090	0.40	0.54	0.54	0.73	9.7	0.27	1	0.46
M002RVR006AR3	0.17	0.13	1930	3860	0.64	0.87	0.86	1.17	9.7	0.27	1½	0.49
M002RVR008AR3	0.17	0.13	1425	2850	0.87	1.18	1.16	1.57	9.7	0.27	1	0.46
M002RVR013AR3	0.14	0.10	820	1645	1.17	1.58	1.56	2.11	9.6	0.27	1½	0.50
M002RVR021AR3	0.14	0.10	520	1045	1.85	2.51	2.47	3.35	9.6	0.27	1½	0.50
M002RVR028AR3	0.14	0.10	385	770	2.50	3.39	3.34	4.53	9.6	0.27	1½	0.50
M002RVR044AR3	0.14	0.10	240	485	3.96	5.37	5.28	7.16	9.6	0.27	1½	0.50
M002RVR101AR3	0.11	0.08	104	209	*6.78	*9.19	*9.05	*12.2	9.5	0.27	1½	0.54
M002RVR159AR3	0.11	0.08	66	132	*10.7	*14.5	*14.2	*19.3	9.5	0.27	1½	0.54

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve.

* Applications with these models must be limited to 12 lb.-ft. (16.3 Nm) torque.

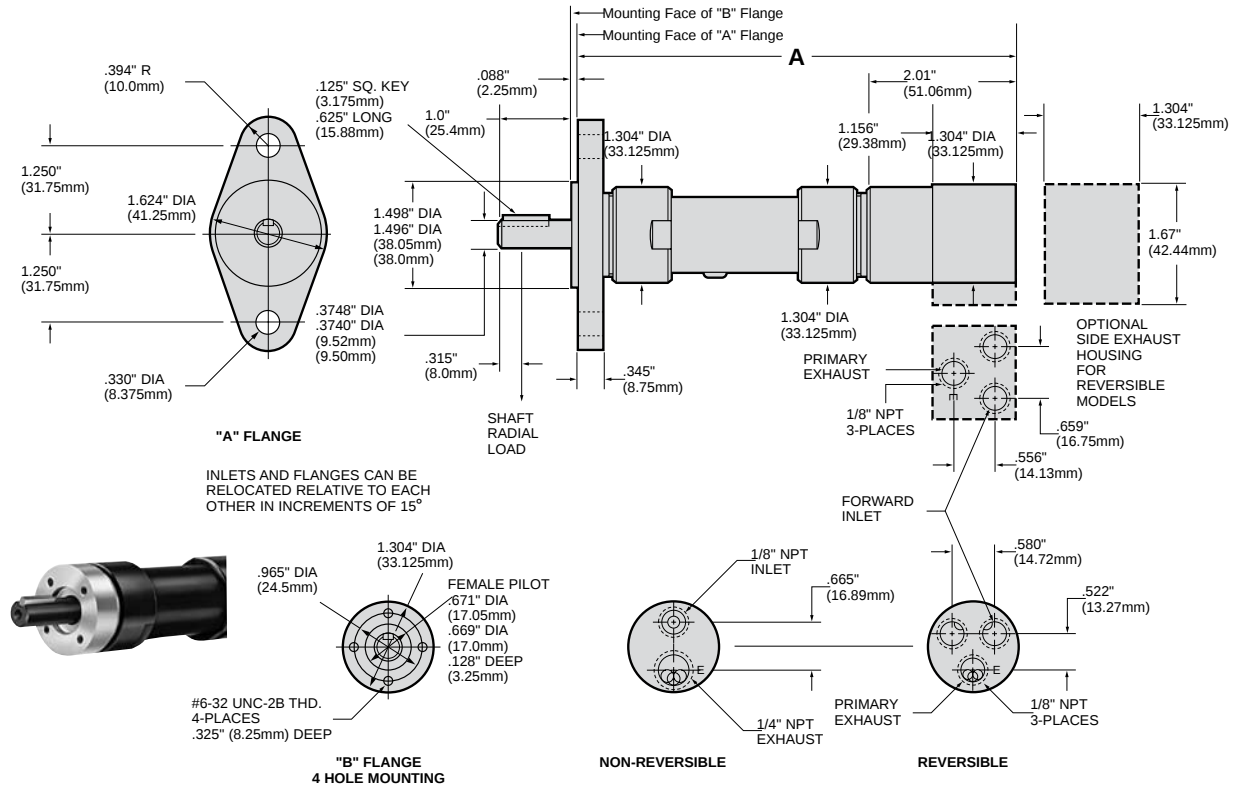
Performance figures are at 90 psig (620 kPa) air pressure.



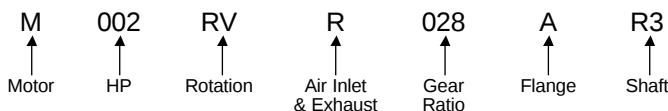


Series M002 Multi-Vane Air Motors

Dimensions



Series M002 Model Number Symbolization



HP = Approximate horsepower range (.11 to .25)

Rotation = RV Reversible

RH Non-Reversible, Right Hand from Rear of Motor (CCW facing shaft)

LH Non-Reversible, Left Hand from Rear of Motor (CW facing shaft)

Air Inlet & Exhaust = R Rear, S Side (Side Inlet and Exhaust available on Reversible Models only)

Gear Ratio = 028 is 1 to 28, 044 is 1 to 44, etc.

Flange = A 2 Hole Flange, B 4 Hole Face Mounting

Shaft = R3 3/8" Round Keyed

T3 3/8"-24 UNF-2A Threaded
Threaded Shaft Extension is 1" (25.4 mm) with Threaded Length from Shaft End of .87" (22 mm)
Threaded Shaft Pilot at End is .315" (8 mm) Dia. Max. by .374" (9.5 mm) Long

S3 3/8" Square Drive
Square Shaft Extension is 1.791" (45.5 mm)

Dimensions

Gear Ratios (Refer to Model No.)	A	
	in.	mm
000, 004, 008	4.989	126.73
006, 013, 021, 028, 044	5.510	139.93
101, 159	6.020	152.91

Equipment Options

Furnished with Cataloged Models	Standard Options	Extra Options
2 Hole Flange Mounting	4 Hole Face Mounting	R1440-212-1 3/8" Square Drive Adapter, 1" long with 3/8"-24 Female threads for use with Threaded Shaft.
3/8" Round Keyed Shaft	3/8"-24 Threaded Shaft	
	Side Inlet and Exhaust Housing (for Reversible Models only)	Required for 3/8" Adapter (2) 4UA9-561 set screws (1) 8U-722 Bail

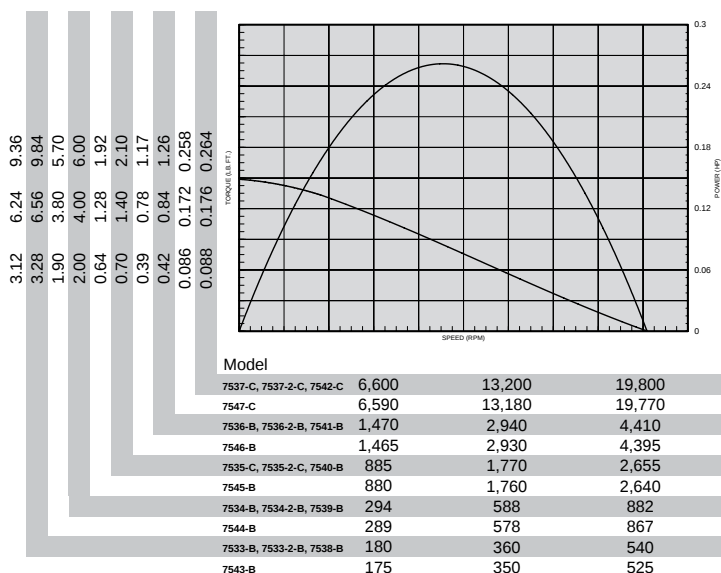
Note: On all Series M002, M004, and M007 Air Motors, performance is the same for both directions of rotation. On Non-Reversible models, direction of rotation may be easily changed without the need of additional parts by inverting cylinder.

000-Series Power Motors

Specifications

MODEL	SPINDLE	R.P.M.		TORQUE				AIR		SOUND LEVEL @FREE SPEED dB(A)	WEIGHT		GEAR REDUCTION
		FREE SPEED	LOAD SPEED @MAX. H.P.	STALL lb. ft. Nm	OUTPUT @MAX. H.P. lb. ft. Nm	CONSUMPTION @FREE SPEED SCFM L/s					lbs. kg.		
NON-REVERSIBLE - .25 H.P.													
7538-B	3/8" Keyed	550	325	8.2	11.1	4.0	5.4	18.1	8.5	75	1.82	.82	Double
7539-B	3/8" Keyed	900	550	5.0	6.7	2.4	3.2	18.1	8.5	75	1.82	.82	Double
7540-B	3/8" Keyed	2,700	1,600	1.75	2.3	.82	1.1	18.1	8.5	75	1.52	.68	Single
7541-B	3/8" Keyed	4,500	2,700	1.05	1.4	.49	.66	18.1	8.5	75	1.52	.68	Single
7542-C	3/8" Keyed	20,000	12,000	.22	.3	.11	.14	18.1	8.5	75	1.52	.68	Single
7533-B	3/8"-24 Th'd.	550	325	8.2	11.1	4.0	5.4	18.1	8.5	75	1.82	.82	Double
7534-B	3/8"-24 Th'd.	900	550	5.0	6.7	2.4	3.2	18.1	8.5	75	1.82	.82	Double
7535-C	3/8"-24 Th'd.	2,700	1,600	1.75	2.3	.82	1.1	18.1	8.5	75	1.52	.68	Single
7536-B	3/8"-24 Th'd.	4,500	2,700	1.05	1.4	.49	.66	18.1	8.5	75	1.52	.68	Single
7537-C	3/8"-24 Th'd.	20,000	12,000	.22	.3	.11	.14	18.1	8.5	75	1.52	.68	Single
REVERSIBLE - .25 H.P.													
7543-B	3/8" Keyed	550	300	7.80	10.6	4.37	5.9	20.0	9.4	75*	1.82	.82	Double
7544-B	3/8" Keyed	900	550	4.75	6.4	2.62	3.5	20.0	9.4	75*	1.82	.82	Double
7545-B	3/8" Keyed	2,700	1,500	1.60	2.2	.87	1.1	20.0	9.4	75*	1.52	.68	Single
7546-B	3/8" Keyed	4,500	2,400	.98	1.3	.55	.7	20.0	9.4	75*	1.52	.68	Single
7547-C	3/8" Keyed	20,000	11,000	.22	.3	.12	.16	20.0	9.4	75*	1.52	.68	Single

*Requires installation for reversible motors - shown on page 85.



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold and muffler.



Equipment Options

- 37898 Flange Bracket
- 37899 Foot Bracket



37898

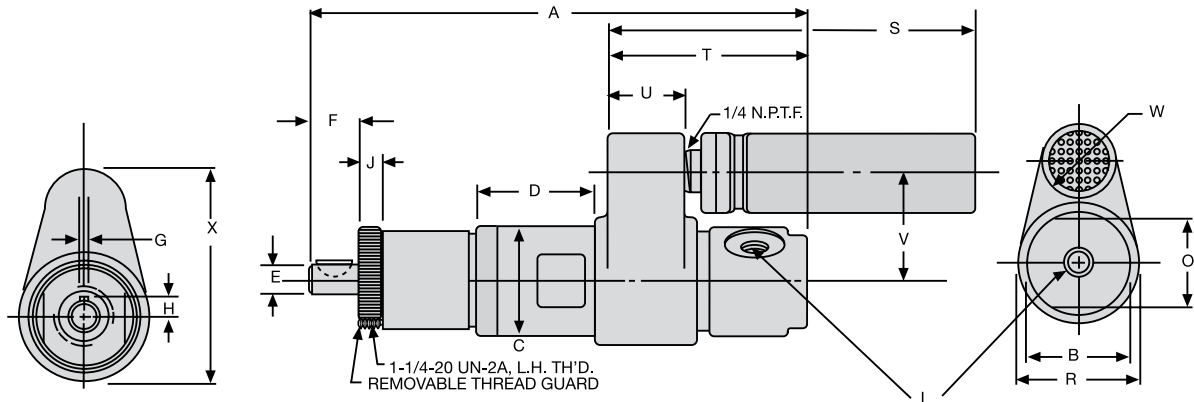


37899

Options for Motors with Thread Spindles

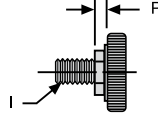
- 30384-5 3/8" (9.5 mm) Male Square-Drive Adapter
- 30384-9 1/2" (12.7 mm) Male Square-Drive Adapter
- 30712 1/4" (6.4 mm) Female Hex Ball-Lock Adapter for screwdriver bits
- 47340 1/4" (6.4 mm) Capacity Drill Chuck
- 42420 3/8" (9.5 mm) Arbor for rubber friction drive wheels up to 1" (25.4 mm) wide

000-Series Power Motors and Mounting Accessory Dimensions

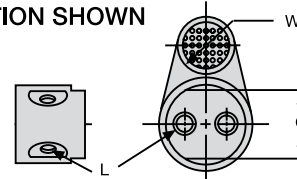


FORWARD ROTATION, DOUBLE REDUCTION SHOWN

Gear Reduction	DIMENSION A
Single	4-15/16 125 mm
Double	6 152 mm



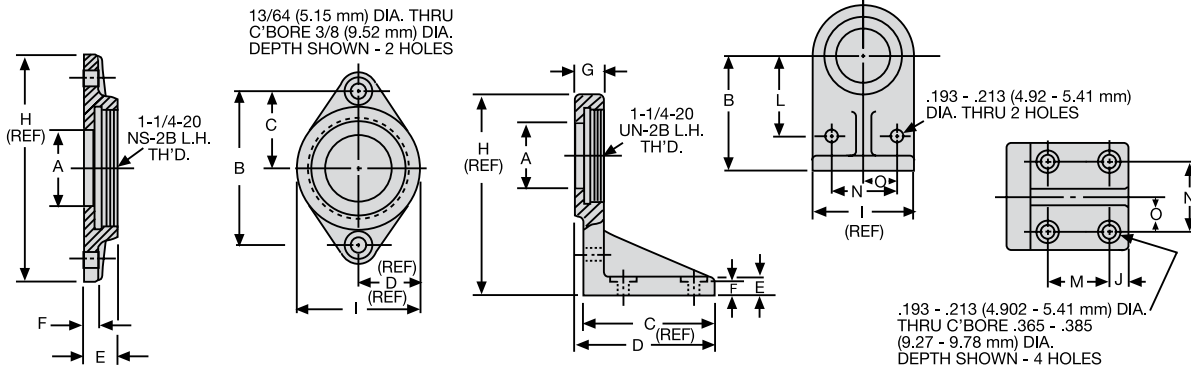
THREADED SPINDLE



AIR INLETS, REVERSIBLE MOTORS

Scale	B	C	D	E	F	G	H	I	J	L
Inches	1-3/8	1.373 1.375	1-9/32	.3748 .3751	.592 .643	.0938 .0948	.228 .238	3/8"-24 UNF-3A Thread	.251 .276	1/8" NPTF Air Inlet
mm	35	34.87 34.93	32	9.52 9.53	15.04 16.33	2.38 2.41	5.79 6.05	6.38 7.01		

Scale	O	P	R	S	T	U	V	W	X
Inches	1-1/8 Rev. 1-3/16	.086 .139	1-5/8	4-9/16	2-15/32	31/32	1-3/8	1	2-11/16
mm	28 Rev. 30	2.18 3.53	41	116	63	25	35	25	68



37898 FLANGE MOUNTING BRACKET

Scale	A	B	C	D
Inches	.865 .885	2.042 2.082	1.021 1.041	13/16
mm	21.97 22.48	51.89 52.89	25.93 26.44	20.64

Scale	E	F	H	I
Inches	.380 .400	.177 .197	2-9/16	1-5/8
mm	9.65 10.16	4.50 5.00	65.09	41.28

37899 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G
Inches	.865 .885	1.865 1.885	1.740 1.760	1-7/8	7/32 9/32	.177 .197	.380 .400
mm	21.97 22.48	47.37 47.88	44.20 44.70	47.63	5.56 7.14	4.50 5.00	9.65 10.16

Scale	H	I	J	L	M	N	O
Inches	2-11/16	1-5/8	.271 .291	1.302 1.322	.927 .947	1.052 1.072	.521 .541
mm	68.26	41.27 41.28	6.88 7.39	33.07 33.56	23.55 24.05	26.27 27.23	13.23 13.74



Series M004 Multi-Vane Air Motors

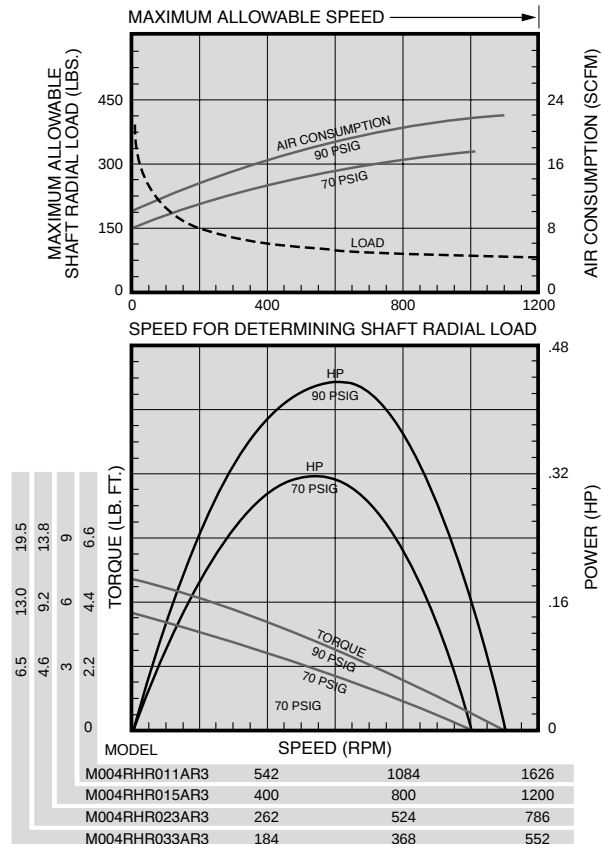
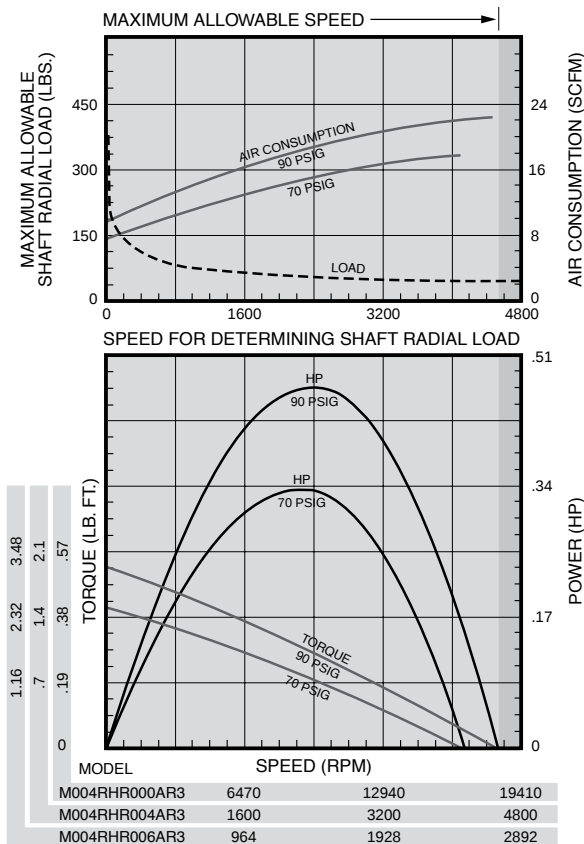
Specifications

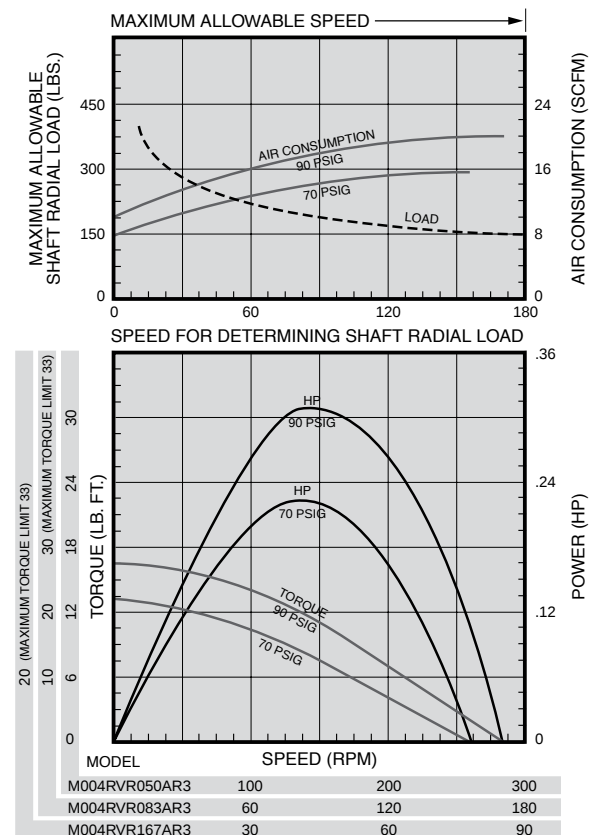
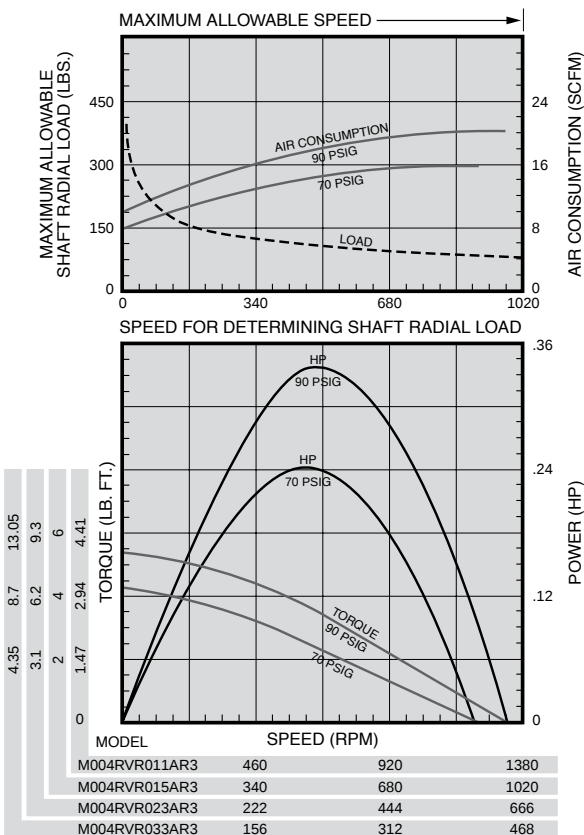
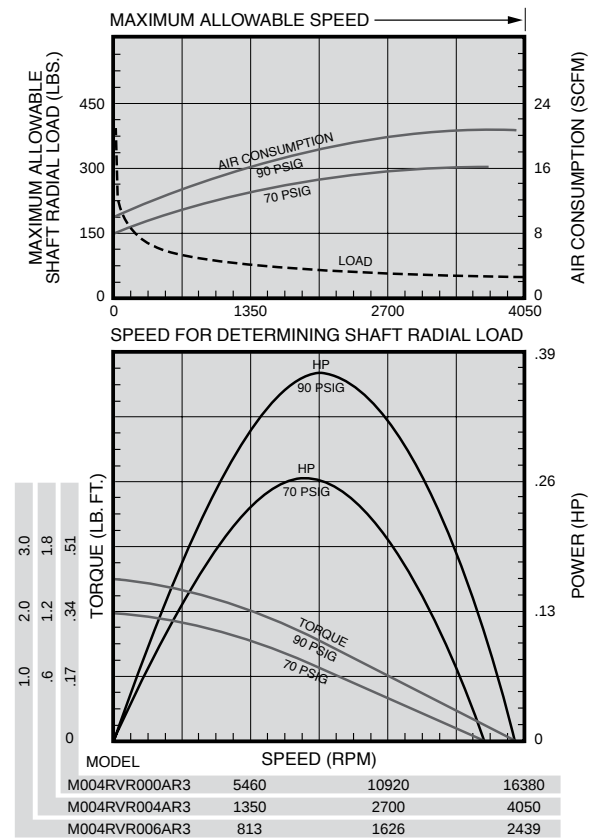
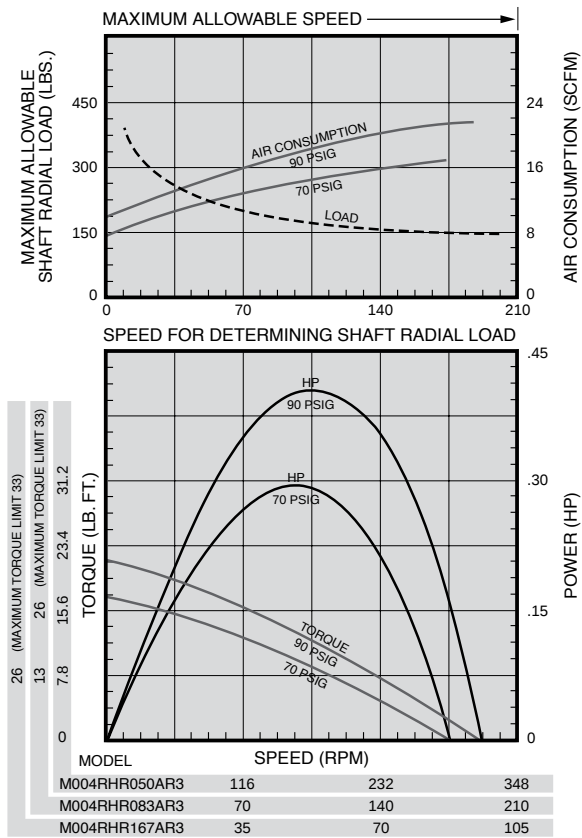
Model	Max. Power		Speed at Max. Power	Free Speed ▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Non-Reversible Direction of rotation is counterclockwise when facing the shaft.												
M004RHR000AR3	0.50	0.37	10,000	18,000	0.40	0.54	0.53	0.72	20.0	0.57	2 1/16	0.95
M004RHR004AR3	0.47	0.35	2470	4450	1.46	1.98	1.94	2.63	19.5	0.55	2 1/16	1.00
M004RHR006AR3	0.47	0.35	1490	2680	2.42	3.28	3.22	4.37	19.5	0.55	2 1/16	1.00
M004RHR011AR3	0.44	0.33	825	1490	3.92	5.32	5.22	7.08	19.0	0.54	2 1/16	1.09
M004RHR015AR3	0.44	0.33	610	1095	5.32	7.21	7.10	9.63	19.0	0.54	2 1/16	1.09
M004RHR023AR3	0.44	0.33	395	715	8.10	11.0	10.8	14.6	19.0	0.54	2 1/16	1.09
M004RHR033AR3	0.44	0.33	280	505	11.5	15.6	15.4	20.8	19.0	0.54	2 1/16	1.09
M004RHR050AR3	0.41	0.31	175	315	*16.5	*22.4	*22.1	*30.0	18.5	0.52	2 1/16	1.22
M004RHR083AR3	0.41	0.31	106	190	*27.5	*37.3	*36.7	*49.7	18.5	0.52	2 1/16	1.22
M004RHR167AR3	0.41	0.31	53	95	*55.0	*74.5	*73.3	*99.4	18.5	0.52	2 1/16	1.22
Reversible												
M004RVR000AR3	0.40	0.30	8000	16,000	0.32	0.43	0.42	0.57	19.0	0.54	2 1/16	0.95
M004RVR004AR3	0.37	0.28	1975	3955	1.13	1.53	1.51	2.05	18.5	0.52	2 1/16	1.00
M004RVR006AR3	0.37	0.28	1190	2380	1.88	2.55	2.51	3.40	18.5	0.52	2 1/16	1.00
M004RVR011AR3	0.34	0.25	660	1325	3.00	4.07	4.00	5.42	18.0	0.51	2 1/16	1.09
M004RVR015AR3	0.34	0.25	485	975	4.07	5.52	5.43	7.36	18.0	0.51	2 1/16	1.09
M004RVR023AR3	0.34	0.25	315	635	6.23	8.45	8.30	11.2	18.0	0.51	2 1/16	1.09
M004RVR033AR3	0.34	0.25	225	450	8.85	12.0	11.8	16.0	18.0	0.51	2 1/16	1.09
M004RVR050AR3	0.31	0.23	140	280	*12.3	*16.7	*16.5	*22.4	17.5	0.50	2 1/16	1.22
M004RVR083AR3	0.31	0.23	84	169	*20.6	*27.9	*27.5	*37.3	17.5	0.50	2 1/16	1.22
M004RVR167AR3	0.31	0.23	42	85	*41.3	*56.0	*55.0	*74.5	17.5	0.50	2 1/16	1.22

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve.

* Applications with these models must be limited to 33 lb.-ft. (44.7 Nm) torque.

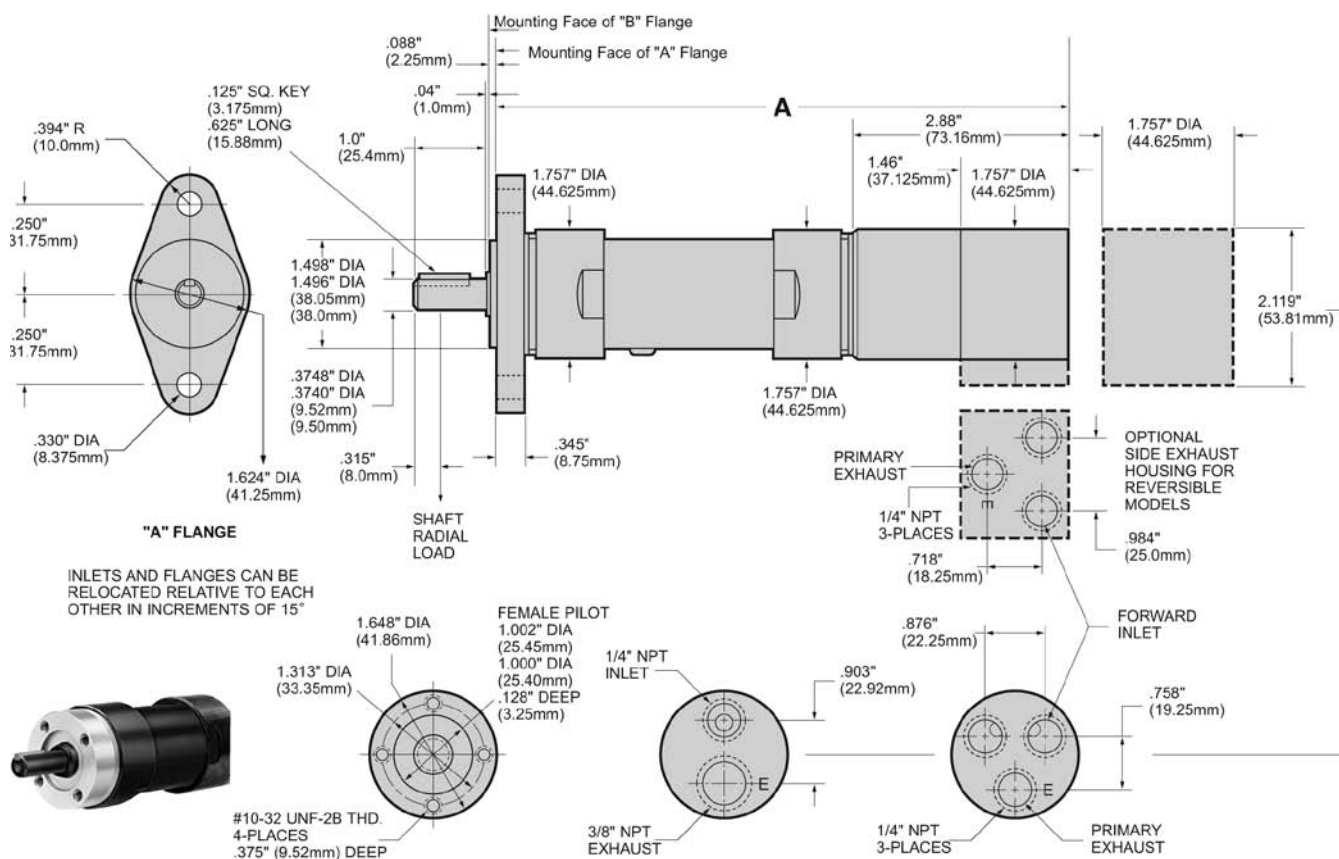
Performance figures are at 90 psig (620 kPa) air pressure.





Series M004 Multi-Vane Air Motors

Dimensions



Series M004 Model Number Symbolization

M	004	RV	R	023	A	R3
Motor	HP	Rotation	Air Inlet & Exhaust	Gear Ratio	Flange	Shaft

HP = Approximate horsepower range (.31 to .50)

Rotation = RV Reversible

RH Non-Reversible, Right Hand from Rear of Motor (CCW facing shaft)

LH Non-Reversible, Left Hand from Rear of Motor (CW facing shaft)

Air Inlet & Exhaust = R Rear, S Side (Side Inlet and Exhaust available on Reversible Models only)

Gear Ratio = 023 is 1 to 23, 033 is 1 to 33, etc.

Flange = A 2 Hole Flange, B 4 Hole Face Mounting

Shaft = R3 3/8" Round Keyed

T3 3/8"-24 UNF-2A Threaded
Threaded Shaft Extension is .512" (13 mm)
Full Thread Length is .424" (10.75 mm)

S3 3/8" Square Drive
Square Shaft Extension is 1.791" (45.5 mm)

Dimensions

Gear Ratios (Refer to Model No.)	A	
	in.	mm
000, 004, 006	6.248	158.69
011, 015, 023, 033	6.984	177.38
050, 083, 167	7.745	196.73

Equipment Options

Furnished with Cataloged Models	Standard Options	Extra Options
2 Hole Flange Mounting	4 Hole Face Mounting	R1440-212-1 3/8" Square Drive Adapter, 1" long with 3/8"-24 Female threads for use with Threaded Shaft.
3/8" Round Keyed Shaft	3/8"-24 Threaded Shaft	
	Side Inlet and Exhaust Housing (for Reversible Models only)	Required for 3/8" Adapter (2) 4UA9-561 set screws

Note: On all Series M002, M004, and M007 Air Motors, performance is the same for both directions of rotation. On Non-Reversible models, direction of rotation may be easily changed without the need of additional parts by inverting cylinder. See Assembly Instruction form number listed in price sheet.

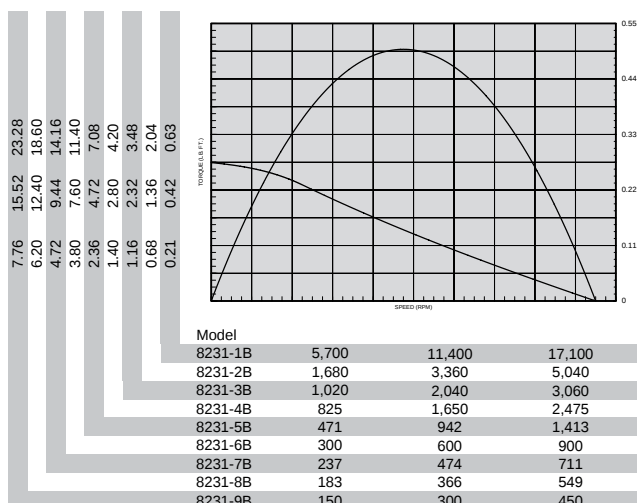
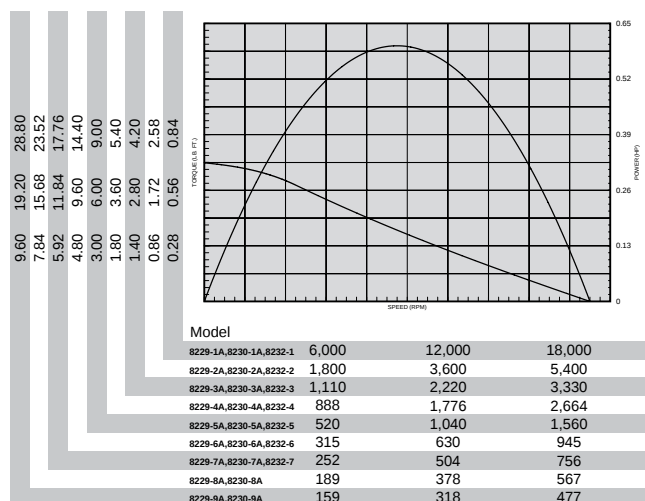
O-Series Power Motors (with O-Series Gearing)

Specifications



MODEL	SPINDLE	R.P.M.		TORQUE		AIR		SOUND LEVEL		WEIGHT		GEAR REDUCTION
		FREE SPEED	LOAD SPEED @MAX. H.P.	STALL lb. ft. Nm	OUTPUT @MAX. H.P. lb. ft. Nm	CONSUMPTION @FREE SPEED SCFM L/s	dB(A)	lbs. kg.				
NON-REVERSIBLE - .60 H.P.												
8230-1A	3/8" Keyed	19,000	9,800	.70 .9	.32 .4	41 19.3	80	2.45 1.10	Single			
8230-2A	3/8" Keyed	5,700	2,900	2.5 2.9	1.10 1.5	41 19.3	80	2.45 1.10	Single			
8230-3A	3/8" Keyed	3,500	1,750	3.50 4.7	1.80 2.4	41 19.3	80	2.45 1.10	Single			
8230-4A	3/8" Keyed	2,800	1,400	4.50 6.1	2.20 3.0	41 19.3	80	2.45 1.10	Single			
8230-5A	3/8" Keyed	1,650	840	7.50 10.2	3.80 5.1	41 19.3	80	2.98 1.34	Double			
8230-6A	3/8" Keyed	1,000	500	12.00 16.3	6.20 8.4	41 19.3	80	2.98 1.34	Double			
8230-7A	3/8" Keyed	800	390	14.80 20.0	8.00 10.8	41 19.3	80	2.98 1.34	Double			
8230-8A	3/8" Keyed	600	315	19.60 26.5	10.00 13.5	41 19.3	80	2.98 1.34	Double			
8230-9A	3/8" Keyed	500	250	24.00 32.5	12.50 16.9	41 19.3	80	2.98 1.34	Double			
8229-1A	3/8"-24 Th'd.	19,000	9,800	.70 .9	.32 .4	41 19.3	80	2.45 1.10	Single			
8229-2A	3/8"-24 Th'd.	5,700	2,900	2.15 2.9	1.10 1.5	41 19.3	80	2.45 1.10	Single			
8229-3A	3/8"-24 Th'd.	3,500	1,750	3.50 4.7	1.80 2.4	41 19.3	80	2.45 1.10	Single			
8229-4A	3/8"-24 Th'd.	2,800	1,400	4.50 6.1	2.20 3.0	41 19.3	80	2.45 1.10	Single			
8229-5A	3/8"-24 Th'd.	1,650	840	7.50 10.2	3.80 5.1	41 19.3	80	2.98 1.34	Double			
8229-6A	3/8"-24 Th'd.	1,000	500	12.00 16.3	6.20 8.4	41 19.3	80	2.98 1.34	Double			
8229-7A	3/8"-24 Th'd.	800	390	14.80 20.0	8.00 10.8	41 19.3	80	2.98 1.34	Double			
8229-8A	3/8"-24 Th'd.	600	315	19.60 26.5	10.00 13.5	41 19.3	80	2.98 1.34	Double			
8229-9A	3/8"-24 Th'd.	500	250	24.00 32.5	12.50 16.9	41 19.3	80	2.98 1.34	Double			
REVERSIBLE - .50 H.P.												
8231-1B	3/8" Keyed	18,000	9,200	.52 .7	.28 .4	32 15.1	80*	2.45 1.10	Single			
8231-2B	3/8" Keyed	5,300	2,600	1.70 2.3	1.00 1.3	32 15.1	80*	2.45 1.10	Single			
8231-3B	3/8" Keyed	3,200	1,550	2.90 3.9	1.70 2.3	32 15.1	80*	2.45 1.10	Single			
8231-4B	3/8" Keyed	2,600	1,300	3.50 4.7	2.00 2.7	32 15.1	80*	2.45 1.10	Single			
8231-5B	3/8" Keyed	1,500	780	5.90 8.0	3.50 4.7	32 15.1	80*	2.98 1.34	Double			
8231-6B	3/8" Keyed	950	480	9.50 12.9	5.50 7.4	32 15.1	80*	2.98 1.34	Double			
8231-7B	3/8" Keyed	750	380	11.80 16.0	7.00 9.5	32 15.1	80*	2.98 1.34	Double			
8231-8B	3/8" Keyed	575	290	15.50 21.0	9.00 12.2	32 15.1	80*	2.98 1.34	Double			
8231-9B	3/8" Keyed	475	240	19.40 26.2	11.00 14.9	32 15.1	80*	2.98 1.34	Double			

*Requires installation for reversible motors - shown on page 88.



Equipment Options

37896 Flange Bracket

37897 Foot Bracket



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, and muffler.

Options for Motors with Thread Spindles

30384-5 3/8" (9.5 mm) Male Square-Drive Adapter

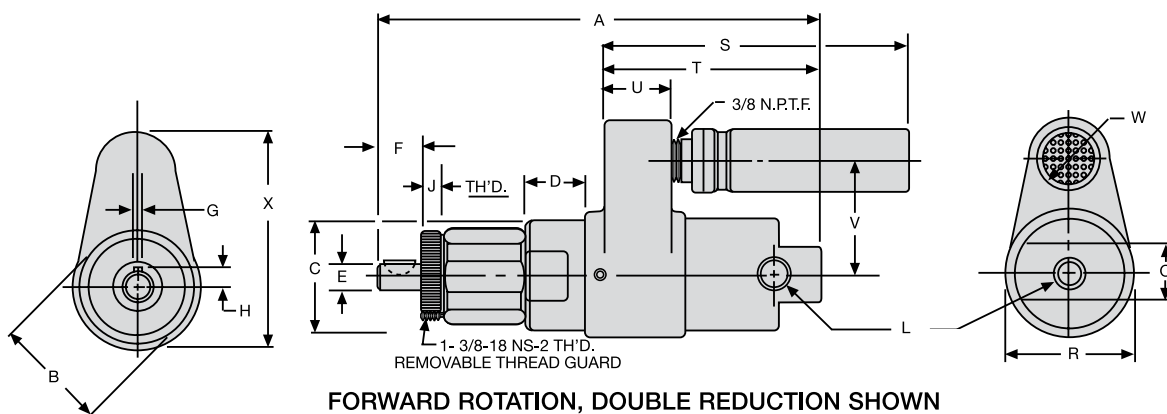
30384-9 1/2" (12.7 mm) Male Square-Drive Adapter

30712 1/4" (6.4 mm) Female Hex Ball-Lock Adapter for screwdriver bits

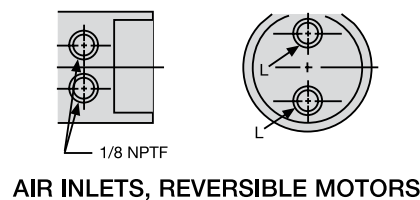
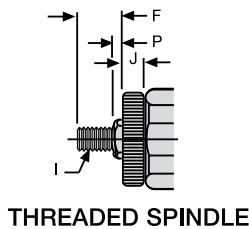
47341 5/16" (7.9 mm) Capacity Drill Chuck

47420 3/8" (9.5 mm) Arbor for rubber friction drive wheels up to 1" (25.4 mm) wide

O-Series Power Motors and Mounting Accessory Dimensions

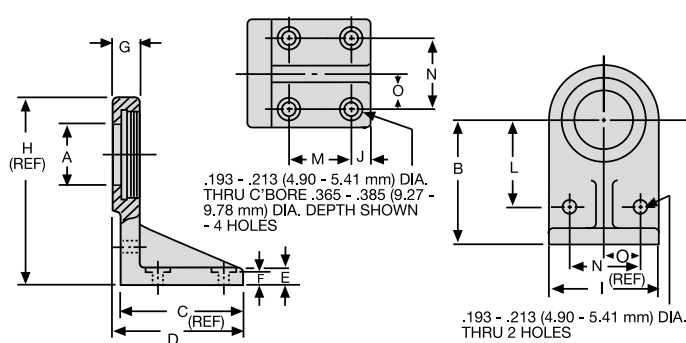
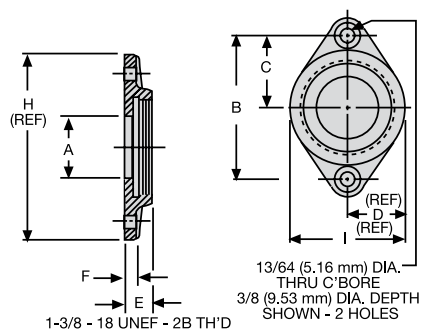


DIMENSION A		
Gear Reduction	Series 8231	Series 8229-8230
Single	5-5/8 143 mm	5-3/4 146 mm
Double	6-15/16 176 mm	7-1/16 179 mm



Scale	B	C	D	E	F	G	H	I	J	L
Inches	1-3/4	1.730 1.740	.960 .980	.3748 .3751	.688 .740	.0938 .0948	.228 .238	3/8"-24 UNF-3A Thread	.270 .292	1/4" Female NPTF Air Inlet
mm	44	43.94 44.20	24.38 24.89	9.52 9.53	17.48 18.80	2.38 2.41	5.79 6.05		6.86 7.42	

Scale	O	P	R	S	T - Forw.	T	U	V	W	X
Inches	7/8	.163-.203	2	4-7/8	3-13/32	3-9/32	1-1/16	1-13/16	1	3-7/16
mm	22	4.14 5.16	51	124	86	83	27	46	25	87



37896 FLANGE MOUNTING BRACKET

Scale	A	B	C	D
Inches	.865 .885	2.042 2.082	1.021 1.041	13/16
mm	21.97 22.48	51.89 52.88	25.93 26.44	20.64

Scale	E	F	H	I
Inches	.380 .400	.177 .197	2-9/16	1-5/8
mm	9.65 10.16	4.50 5.00	65.09	41.28

37897 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G
Inches	.865 .885	1.865 1.885	1.740 1.760	1-7/8	7/32 9/32	.177 .197	.380 .400
mm	21.97 22.48	47.37 47.88	44.20 44.70	47.63	5.56 7.14	4.50 5.00	9.65 10.16

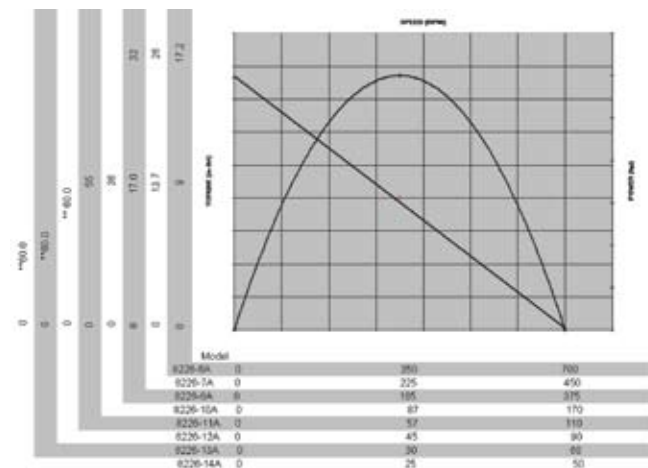
Scale	H	I	J	L	M	N	O
Inches	2-11/16	1-5/8	.271 .291	1.302 1.322	.927 .947	1.052 1.072	.521 .541
mm	68.26	41.27	6.88 7.39	33.07 33.58	23.55 24.05	26.27 27.23	13.23 13.74

O-Series Power Motors (with 2200 Series Gearing) Specifications

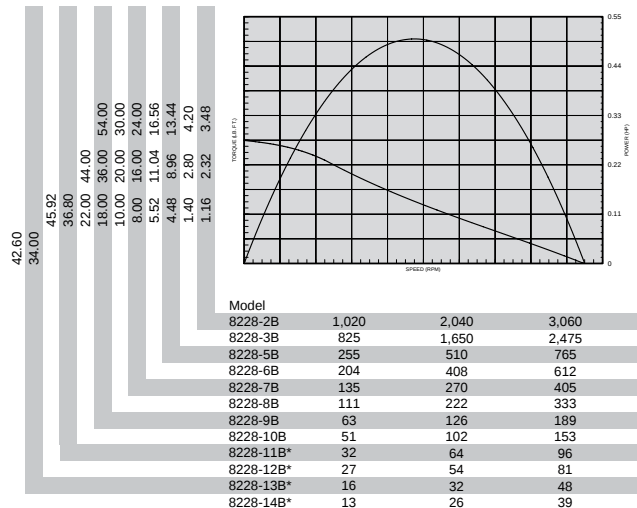
MODEL	SPINDLE	R.P.M.		TORQUE		AIR CONSUMPTION		SOUND LEVEL		WEIGHT		GEAR REDUCTION	
		FREE SPEED	LOAD SPEED @MAX H.P.	STALL lb ft	Nm	OUTPUT @MAX. H.P. lb. ft. Nm	@FREE SPEED SCFM L/s	@FREE SPEED dB(A)		lbs	kg		
NON-REVERSIBLE - .60 H.P.													
8226-6A	1/2" Keyed	700	350	17.20	23.3	9.00	12.2	40.5	19.1	80	4.25	1.91	Double
8226-7A	1/2" Keyed	450	225	26.00	35.2	13.70	18.6	40.5	19.1	80	4.25	1.91	Double
8226-8A	1/2" Keyed	375	185	32.00	43.4	17.00	23.0	40.5	19.1	80	4.25	1.91	Double
8226-10A	1/2" Keyed	170	87	**60.00	88.1	36.00	48.8	40.5	19.1	80	5.56	2.50	Triple
8226-11A**	1/2" Keyed	110	57	**60.00	134.1	55.00	74.5	40.5	19.1	80	5.56	2.50	Triple
8226-12A**	1/2" Keyed	90	45	**60.00	165.3	**60.00	94.8	40.5	19.1	80	5.56	2.50	Triple
8226-13A**	1/2" Keyed	60	30	**60.00	249.3	**60.00	139.6	40.5	19.1	80	5.56	2.50	Triple
8226-14A**	1/2" Keyed	50	25	**60.00	306.2	**60.00	169.4	40.5	19.1	80	5.56	2.50	Triple
REVERSIBLE - .50 H.P.													
8228-2B	1/2" Keyed	3,200	1,550	2.90	3.9	1.70	2.3	30	14	80*	4.25	1.91	Double
8228-3B	1/2" Keyed	2,600	1,300	3.50	4.7	2.00	2.7	30	14	80*	4.25	1.91	Double
8228-5B	1/2" Keyed	800	420	11.20	15.2	6.30	8.5	30	14	80*	4.25	1.91	Double
8228-6B	1/2" Keyed	650	330	13.80	18.7	8.00	10.8	30	14	80*	4.25	1.91	Double
8228-7B	1/2" Keyed	425	220	20.00	27.1	12.00	16.3	30	14	80*	4.25	1.91	Double
8228-8B	1/2" Keyed	350	185	25.00	33.9	14.00	19.0	30	14	80*	4.25	1.91	Double
8228-9B	1/2" Keyed	200	105	45.00	61.0	25.00	33.9	30	14	80*	5.56	2.50	Triple
8228-10B	1/2" Keyed	160	80	55.00	74.5	33.00	44.7	30	14	80*	5.56	2.50	Triple
8228-11B**	1/2" Keyed	100	54	**60.00	81.3	48.00	65.0	30	14	80*	5.56	2.50	Triple
8228-12B**	1/2" Keyed	85	43	**60.00	81.3	**60.00	81.3	30	14	80*	5.56	2.50	Triple
8228-13B**	1/2" Keyed	50	28	**60.00	81.3	**60.00	81.3	30	14	80*	5.56	2.50	Triple
8228-14B**	1/2" Keyed	40	22	**60.00	81.3	**60.00	81.3	30	14	80*	5.56	2.50	Triple

*Requires installation for reversible motors - shown on page 88.

**NOTE: Maximum torque recommended for planetary gear system on these models requires shear key with 60 ft./lbs. shear strength.



**Note: Maximum torque recommended for planetary gear system on these models is 60 ft./lbs.



**NOTE: Maximum torque recommended for planetary gear system on these models requires shear key with 60 ft./lbs. shear strength.

Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, and muffler.



Equipment Options

37895-1 Flange Bracket
Provision for flange mounting is standard on all models.

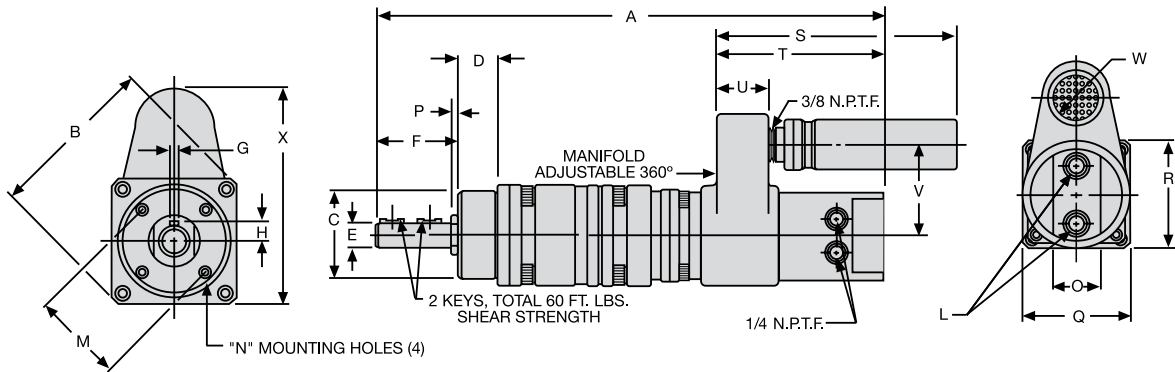


37895-1

No-Cost Options Furnished When Specified on Original Order

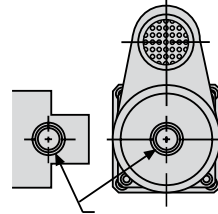
1/2"-20 Male Threaded Spindle on forward-rotation models

0/2200-Series Power Motors and Mounting Accessory Dimensions



REVERSIBLE ROTATION, TRIPLE REDUCTION SHOWN

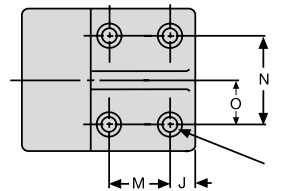
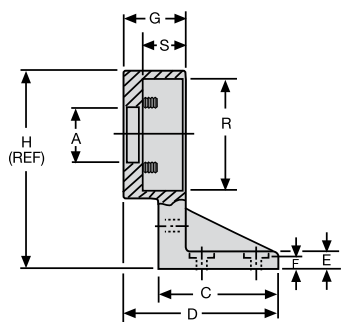
Gear Reduction	DIMENSION A	
	Series 8226	Series 8228
Double	8-11/16 221 mm	8-9/16 217 mm
Triple	10-1/2 267 mm	10-3/8 264 mm



AIR INLETS, SINGLE-DIRECTION MOTORS

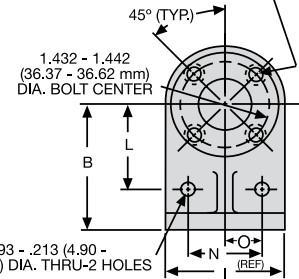
Scale	B	C	D	E	F	G	H	L	M	N
Inches	2-11/16	1.7490 1.7495	.774 .818	.4990 .4995	1.604 1.655	.125 .126	.299 .309	1/4 NPTF	1.432 1.442	10-24 UNC-2B
mm	68	44.42 44.44	19.66 20.78	12.67 12.69	40.74 42.04	3.18 3.20	7.72 7.98	Air Inlet	36.37 36.63	Thread

Scale	O	P	Q	R	S	T - Forward Rotation	T Reversible	U	V	W	X
Inches	7/8	.098 .164	2	2	4-7/8	3-13/32	3-9/32	1-1/16	1-13/16	1	3-7/16
mm	22	2.49 4.17	51	51	124	86	83	27	46	25	87



.193 - .213 (4.90 - 5.41 mm) DIA. THRU C'BORE .365 - .385 (9.27 - 9.78 mm) DIA. DEPTH SHOWN - 4 HOLES

.193 - .213 (4.90 - 5.41 mm) DIA. THRU C'BORE .365 - .385 (9.27 - 9.78 mm) DIA. X .193 - .213 DEEP (FOR Y154-51 SCREWS)



.193 - .213 (4.90 - 5.41 mm) DIA. THRU-2 HOLES

37895-1 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G	H
Inches	.865 .886	2.115 2.135	1.843 1.875	2.421 2.453	.281 .343	.177 .197	.958 .978	3-1/8
mm	21.97 22.48	53.72 54.23	46.81 47.63	61.49 62.31	7.14 8.71	4.50 5.00	24.33 24.84	79.38

Scale	I	J	L	M	N	O	R	S
Inches	2	.333 .353	1.427 1.447	.833 .853	1.240 1.260	.615 .635	1.750 1.751	.640 .687
mm	50.80	8.46 8.97	36.25 36.75	21.16 21.67	31.50 32.00	15.62 16.13	44.45 44.48	16.26 17.45

Series M007 Multi-Vane Air Motors

Specifications



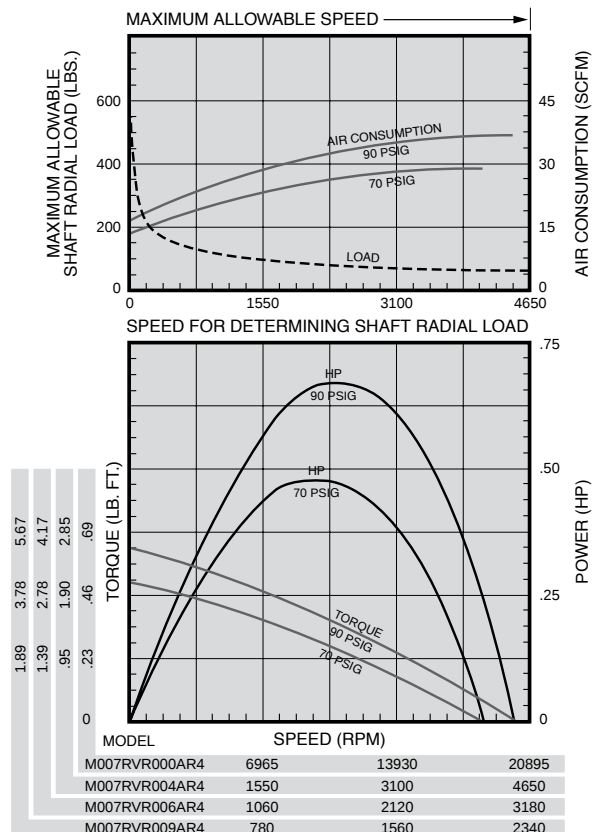
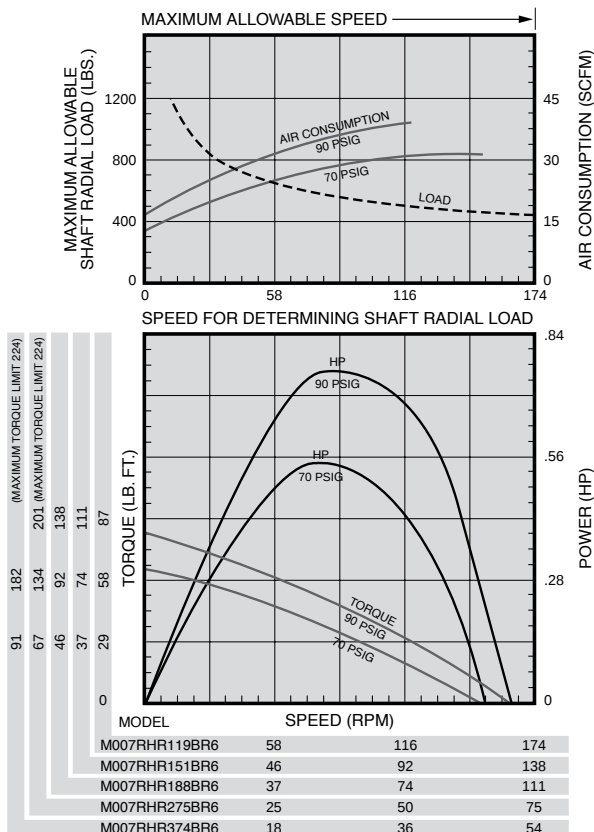
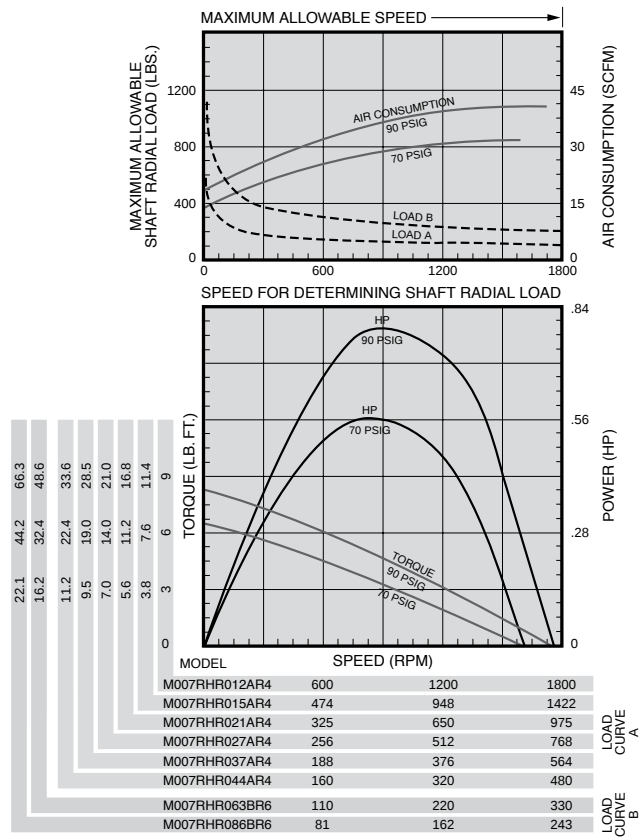
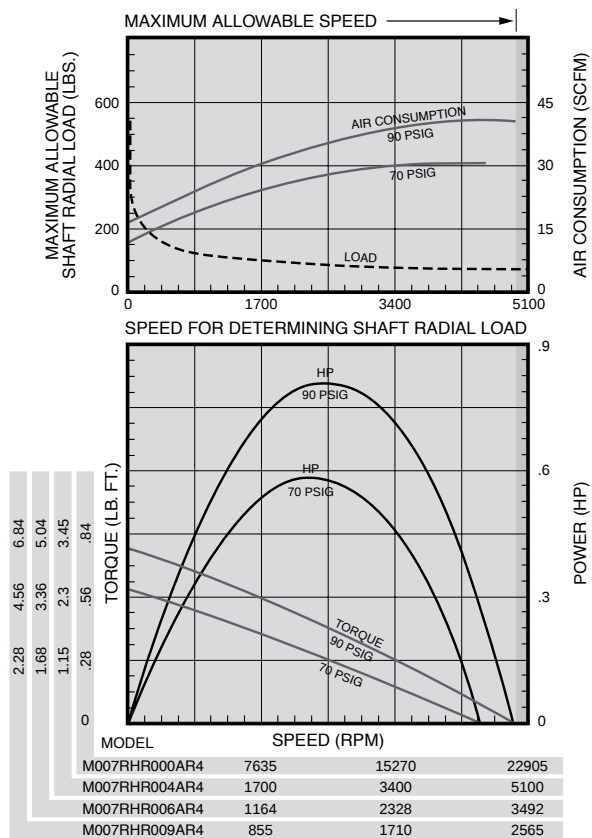
Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Non-Reversible Direction of rotation is counterclockwise when facing the shaft.												
M007RHR000AR4	0.85	0.63	11,000	22,000	0.58	0.79	0.77	1.04	36	1.02	3⅞	1.4
M007RHR004AR4	0.82	0.61	2445	4890	2.39	3.24	3.19	4.33	36	1.02	3⅞	1.4
M007RHR006AR4	0.82	0.61	1675	3350	3.50	4.75	4.66	6.32	36	1.02	3⅞	1.4
M007RHR009AR4	0.82	0.61	1230	2460	4.76	6.45	6.34	8.60	36	1.02	3⅞	1.4
M007RHR012AR4	0.79	0.59	870	1740	6.19	8.39	8.25	11.2	36	1.02	3½	1.6
M007RHR015AR4	0.79	0.59	685	1370	7.80	10.6	10.4	14.1	36	1.02	3½	1.6
M007RHR021AR4	0.79	0.59	470	940	11.5	15.6	15.3	20.7	36	1.02	3½	1.6
M007RHR027AR4	0.79	0.59	370	740	14.5	19.7	19.3	26.2	36	1.02	3½	1.6
M007RHR037AR4	0.79	0.59	270	540	19.7	26.7	26.3	35.7	36	1.02	3½	1.6
M007RHR044AR4	0.79	0.59	232	465	23.2	31.5	30.9	41.9	36	1.02	3½	1.6
M007RHR063BR6	0.79	0.59	161	321	33.5	45.4	44.7	60.6	36	1.02	7½	3.2
M007RHR086BR6	0.79	0.59	118	236	45.7	62.0	60.9	82.6	36	1.02	7½	3.2
M007RHR119BR6	0.76	0.57	82	163	60.5	82.0	80.7	109.0	36	1.02	7½	3.4
M007RHR151BR6	0.76	0.57	65	129	76.5	104.0	102.0	138.0	36	1.02	7½	3.4
M007RHR188BR6	0.76	0.57	52	103	96.0	130.0	128.0	174.0	36	1.02	7½	3.4
M007RHR275BR6	0.76	0.57	35	70	*140.0	*190.0	*187.0	*254.0	36	1.02	7½	3.4
M007RHR374BR6	0.76	0.57	26	52	*191.0	*259.0	*254.0	*344.0	36	1.02	7½	3.4
Reversible												
M007RVR000AR4	0.70	0.52	10,000	20,000	0.47	0.64	0.63	0.85	33	0.93	3⅞	1.4
M007RVR004AR4	0.67	0.50	2225	4450	1.94	2.63	2.59	3.51	33	0.93	3⅞	1.4
M007RVR006AR4	0.67	0.50	1520	3045	2.84	3.85	3.78	5.13	33	0.93	3⅞	1.4
M007RVR009AR4	0.67	0.50	1120	2240	3.86	5.23	5.14	6.97	33	0.93	3⅞	1.4
M007RVR012AR4	0.64	0.48	790	1580	4.97	6.74	6.63	8.99	33	0.93	3½	1.6
M007RVR015AR4	0.64	0.48	625	1250	6.29	8.53	8.38	11.4	33	0.93	3½	1.6
M007RVR021AR4	0.64	0.48	425	855	9.2	12.5	12.2	16.5	33	0.93	3½	1.6
M007RVR027AR4	0.64	0.48	335	675	11.6	15.7	15.5	20.1	33	0.93	3½	1.6
M007RVR037AR4	0.64	0.48	245	495	15.8	21.4	21.1	28.6	33	0.93	3½	1.6
M007RVR044AR4	0.64	0.48	210	420	18.6	25.2	24.8	33.6	33	0.93	3½	1.6
M007RVR063BR6	0.64	0.48	146	292	26.9	36.5	35.9	48.7	33	0.93	7½	3.2
M007RVR086BR6	0.64	0.48	107	215	36.7	49.8	48.9	66.3	33	0.93	7½	3.2
M007RVR119BR6	0.61	0.46	74	148	48.1	65.3	64.1	87.0	33	0.93	7½	3.4
M007RVR151BR6	0.61	0.46	58	117	61.0	82.7	81.3	110.0	33	0.93	7½	3.4
M007RVR188BR6	0.61	0.46	47	94	76.5	104.0	102.0	138.0	33	0.93	7½	3.4
M007RVR275BR6	0.61	0.46	32	64	*111.0	*151.0	*148.0	*201.0	33	0.93	7½	3.4
M007RVR374BR6	0.61	0.46	23	47	*152.0	*206.0	*202.0	*274.0	33	0.93	7½	3.4

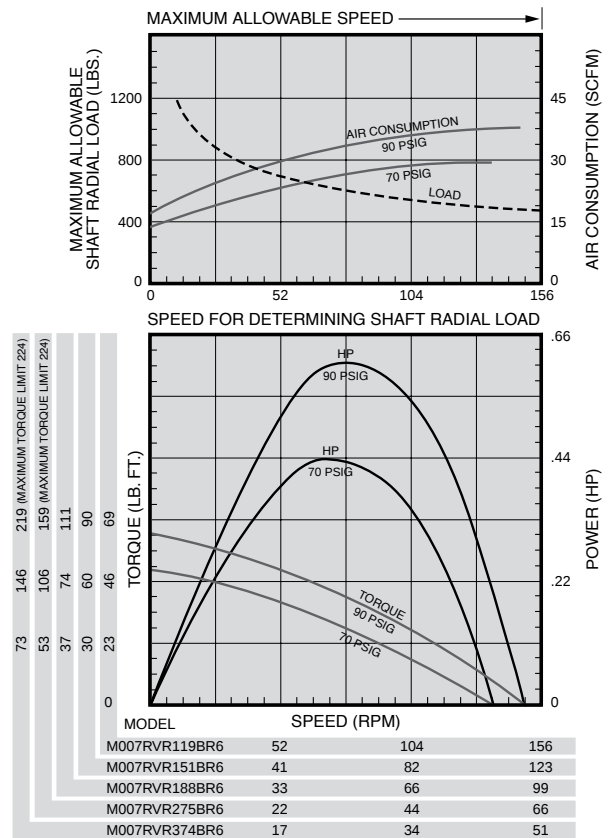
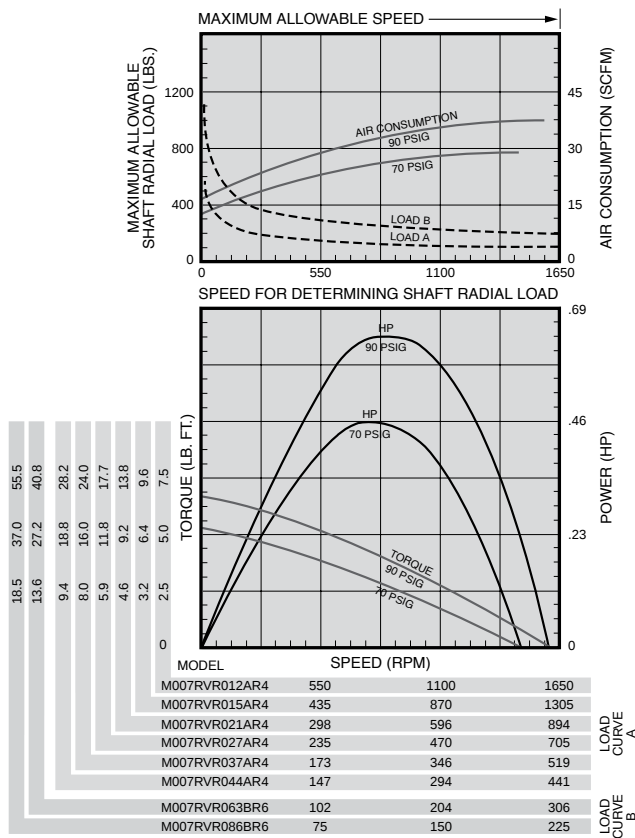
▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve.

* Applications with these models must be limited to 224 lb.-ft. (304 Nm) torque.

Performance figures are at 90 psig (620 kPa) air pressure.

Note: On all Series M002, M004, and M007 Air Motors, performance is the same for both directions of rotation. On Non-Reversible models, direction of rotation may be easily changed without the need of additional parts by inverting cylinder. See Assembly Instruction form number listed in price sheet.



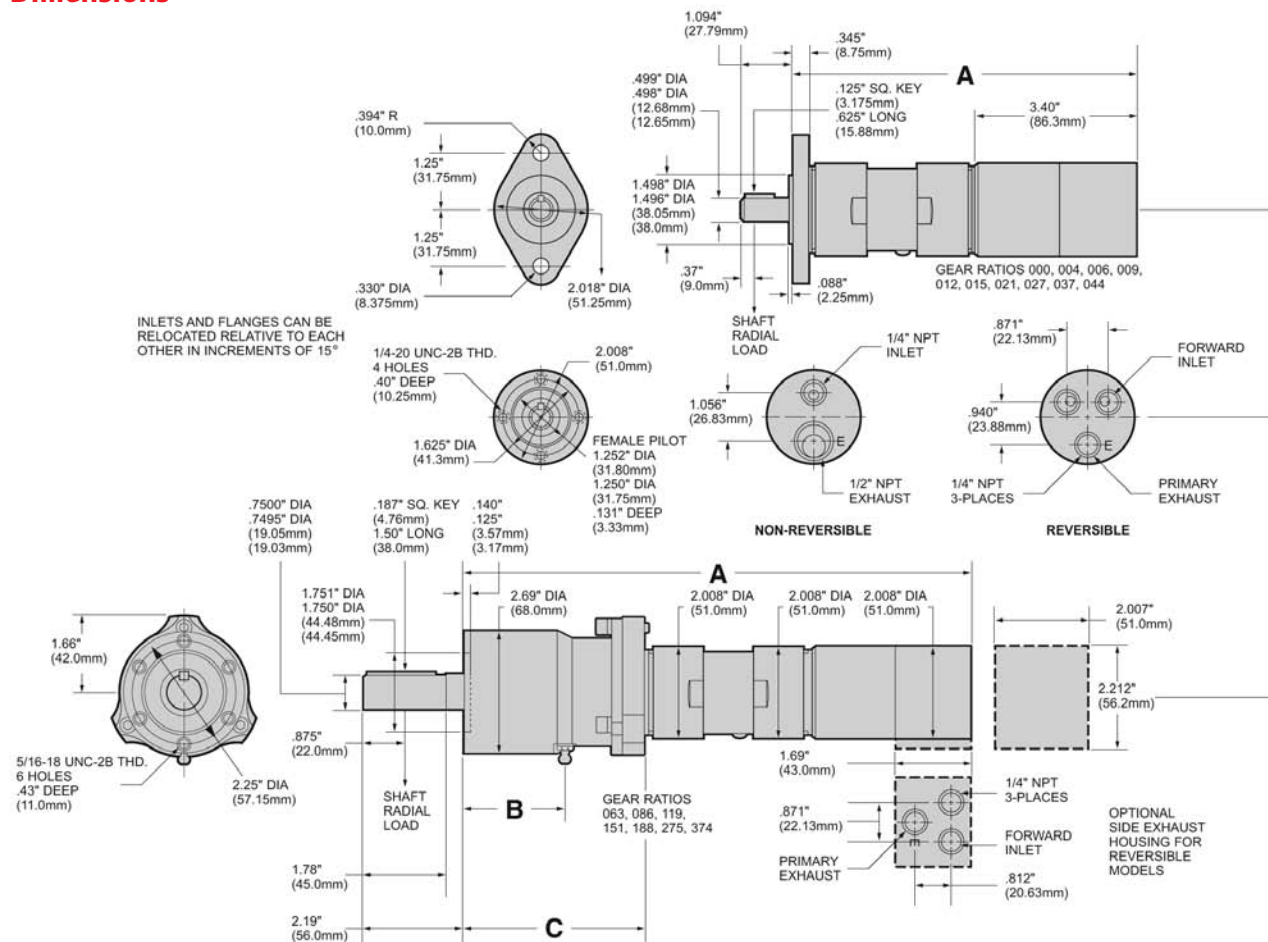


Equipment Options

Furnished with Cataloged Models	Standard Options	Extra Options
2 Hole Flange Mounting on Gear Ratios: 000, 004, 006, 009, 012, 015, 021, 027, 037, 044	4 Hole Flange Mounting on Gear Ratios: 000, 004, 006, 009, 012, 015, 021, 027, 037, 044	½" Square Drive Shaft on Gear Ratios: 000, 004, 006, 009, 012, 015, 021, 027, 037, 044
6 Hole Face Mounting on Gear Ratios: 063, 086, 119, 151, 188, 275, 374	Side Inlet and Exhaust Housing (for Reversible Models only)	⅝" Square Drive Shaft on Gear Ratios: 063, 086, 119, 151, 188, 275, 374
½" Round Keyed Shaft on Gear Ratios: 000, 004, 006, 009, 012, 015, 021, 027, 037, 044	¾"—24 or ½"—20 Threaded Shaft on Gear Ratios: 000, 004, 006, 009, 012, 015, 021, 027, 037, 044	
¾" Round Keyed Shaft on Gear Ratios: 063, 086, 119, 151, 188, 275, 374		

Series M007 Multi-Vane Air Motors

Dimensions



Series M007 Model Number Symbolization

M	007	RV	R	021	A	R4
Motor	HP	Rotation	Air Inlet & Exhaust	Gear Ratio	Flange	Shaft

HP = Approximate horsepower range (.61 to .85)

Rotation = RV Reversible

RH Non-Reversible, Right Hand from Rear of Motor (CCW facing shaft)

LH Non-Reversible, Left Hand from Rear of Motor (CW facing shaft)

Air Inlet & Exhaust = R Rear, S Side (Side Inlet and Exhaust available on Reversible Models only)

Gear Ratio = 021 is 1 to 21, 027 is 1 to 27, etc.

Flange = A 2 Hole Flange, B 4 Hole Face Mounting (on 000, 004, 006, 009, 012, 015, 021, 027, 037, 044 gear ratios), B 6 Hole Face Mounting (on 063, 086, 119, 151, 188, 275, 374 gear ratios)

Shaft = R4 1/2" Round Keyed (on 000, 004, 006, 009, 012, 015, 021, 027, 037, 044 gear ratios)

R6 3/4" Round Keyed (on 063, 086, 119, 151, 188, 275, 374 gear ratios)

S4 1/2" Square Drive (on 000, 004, 006, 009, 012, 015, 021, 027, 037, 044 gear ratios) Shaft Extension 1.31" (33.27 mm)

S5 5/8" Square Drive (on 063, 086, 119, 151, 188, 275, 374 gear ratios) Shaft Extension 1.25" (31.75 mm)

T3 3/8"-24 UNF-2A Threaded (on 000, 004, 006, 009, 012, 015, 021, 027, 037, 044 gear ratios) Shaft Extension .512" (13 mm)

T4 1/2"-20 UNF-2A Threaded (on 000, 004, 006, 009, 012, 015, 021, 027, 037, 044 gear ratios) Shaft Extension .512" (13 mm)

Dimensions

Gear Ratios (Refer to Model No.)	A		B		C	
	in.	mm	in.	mm	in.	mm
000, 004, 006, 009	7.362	187.0				
012, 015, 021, 027, 037, 044	8.133	206.56				
063, 086	9.343	237.3	.41	10	2.3	58.4
119, 188, 275, 374, 151	10.937	277.8	2.19	56	3.9	99.0

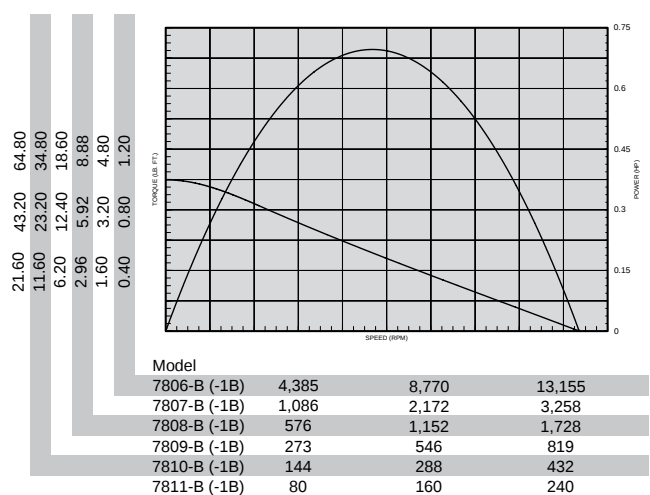
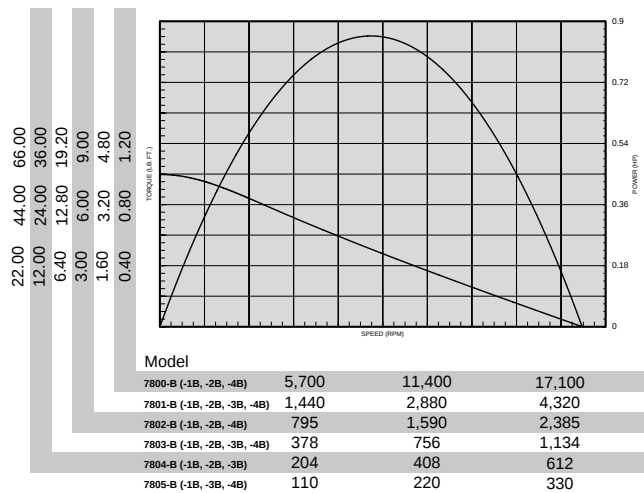


2200-Series Power Motors (with Thread-On Gearing)

Specifications

MODEL	SPINDLE	R.P.M.		TORQUE		AIR CONSUMPTION		SOUND LEVEL		WEIGHT		GEAR REDUCTION	
		FREE SPEED	LOAD SPEED @MAX. H.P.	STALL	OUTPUT @MAX. H.P.	CONSUMPTION @FREE SPEED	SCFM	@FREE SPEED	dB(A)	lbs.	kg.		
NON-REVERSIBLE - .85 H.P.													
7800-B	1/2" Keyed	18,000	9,000	1.00	1.4	.50	.68	41.7	19.7	78	4.24	1.91	Single
7801-B	1/2" Keyed	4,600	2,400	4.00	5.5	1.86	2.5	41.7	19.7	78	4.24	1.91	Single
7802-B	1/2" Keyed	2,500	1,300	7.50	10.3	3.43	4.7	41.7	19.7	78	4.24	1.91	Single
7803-B	1/2" Keyed	1,200	600	16.00	21.9	7.44	10.2	41.7	19.7	78	5.17	2.33	Double
7804-B	1/2" Keyed	650	320	30.00	41.2	13.95	19.1	41.7	19.7	78	5.17	2.33	Double
7805-B	1/2" Keyed	350	170	55.00	75.5	26.25	36.0	41.7	19.7	78	5.17	2.33	Double
7812-B	1/2"-20 Th'd.	350	170	55.00	75.5	26.25	36.0	41.7	19.7	78	5.17	2.33	Double
7813-B	1/2"-20 Th'd.	650	320	30.00	41.2	13.95	19.1	41.7	19.7	78	5.17	2.33	Double
7814-B	1/2"-20 Th'd.	18,000	9,000	1.00	1.4	.50	.68	41.7	19.7	78	4.24	1.91	Single
7815-B	1/2"-20 Th'd.	1,200	600	16.00	21.9	7.44	10.2	41.7	19.7	78	5.17	2.33	Double
7816-B	1/2"-20 Th'd.	4,600	2,400	4.00	5.5	1.86	2.5	41.7	19.7	78	4.24	1.91	Single
7817-B	1/2"-20 Th'd.	2,500	1,300	7.50	10.3	3.43	4.7	41.7	19.7	78	4.24	1.91	Single
REVERSIBLE - .70 H.P.													
7806-B	1/2" Keyed	13,500	7,000	1.00	1.4	.52	.71	37.3	17.6	85*	4.24	1.91	Single
7807-B	1/2" Keyed	3,400	1,800	4.00	5.5	2.04	2.8	37.3	17.6	85*	4.24	1.91	Single
7808-B	1/2" Keyed	1,800	1,000	7.40	10.2	3.67	5.0	37.3	17.6	85*	4.24	1.91	Single
7809-B	1/2" Keyed	850	450	15.50	21.3	8.16	11.2	37.3	17.6	85*	5.17	2.33	Double
7810-B	1/2" Keyed	450	240	29.00	39.8	15.30	21.0	37.3	17.6	85*	5.17	2.33	Double
7811-B	1/2" Keyed	250	130	54.00	74.0	28.20	38.7	37.3	17.6	85*	5.17	2.33	Double

*Requires installation for reversible motors - shown on page 88.



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, and muffler.



Equipment Options

- 37893 Flange Bracket
- 37894 Foot Bracket



37894

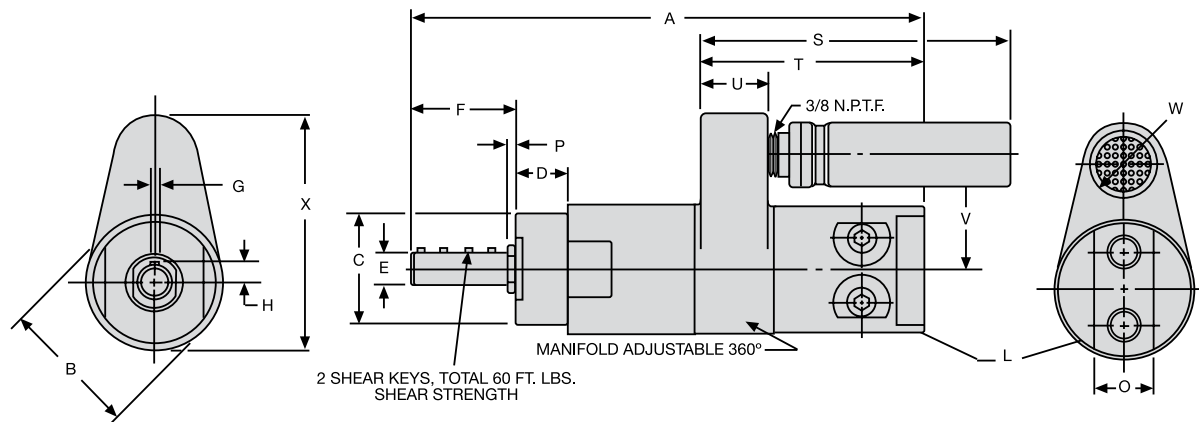
37893



Options for Forward-Rotation Models with Threaded Spindles

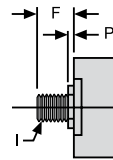
- 40768 1/2" (12.7 mm) Male Square-Drive Adapter
- 31651 1/2" (12.7 mm) I.D. Female Stirring Rod Adapter, 3/8"-24 Thd.
- 33907 3/8" (9.5 mm) Cap. Drill Chuck
- 30018 1/2" (12.7 mm) Cap. Drill Chuck

2200-Series Power Motors and Mounting Accessory Dimensions

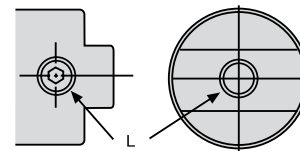


REVERSIBLE ROTATION, SINGLE REDUCTION SHOWN

DIMENSION A		
Gear Reduction	Threaded Spindle	Keyed Spindle
Single	7 178 mm	8 203 mm
Double	8-7/8 225 mm	9-3/4 248 mm



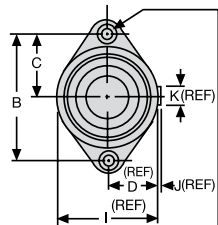
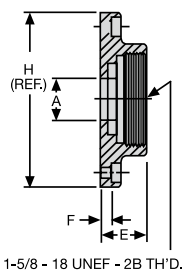
THREADED SPINDLE



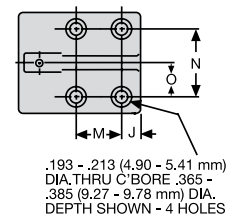
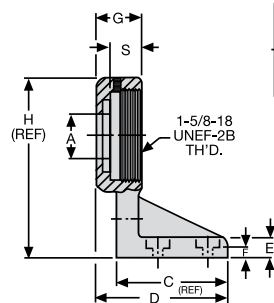
AIR INLETS,
FORWARD-ROTATION MOTORS

Scale	B	C	D	E	F-Keyed Spindle	F-Th'd. Spindle	G	H	I	L
Inches	2	1.740 1.760	.818 .838	.4990 .4995	1.588 1.646	.619 .677	.125 .126	.299 .309	1/2-20 UNF-2A	1/4 NPTF
mm	51	44.20 44.70	20.78 21.29	12.67 12.69	40.34 41.81	15.72 17.20	3.18 3.20	7.59 7.85	Thread	Air Inlet

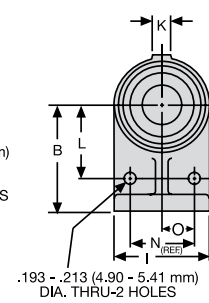
Scale	O	P	S	T	U	V	W-Fwd. Rotation	W Reversible	X-Fwd. Rotation	X Reversible
Inches	7/8	.046 .158	4-7/8	3-1/2	1-1/16	1-13/16	1-3/8	1	3-1/2	3-7/16
mm	22	1.17 4.01	124	89	27	46	35	25	89	87



.193 - .213 (4.90 - 5.41 mm) DIA. THRU C'BORE .365 - .385 (9.27 - 9.78 mm) DIA. DEPTH SHOWN - 2 HOLES



.193 - .213 (4.90 - 5.41 mm) DIA. THRU C'BORE .365 - .385 (9.27 - 9.78 mm) DIA. DEPTH SHOWN - 4 HOLES



.193 - .213 (4.90 - 5.41 mm) DIA. THRU - 2 HOLES

37893 FLANGE MOUNTING BRACKET

Scale	A	B	C	D	E
Inches	.771 .791	2.480 2.520	1.240 1.260	31/32 .771	.771 .791
mm	19.58 20.09	62.99 64.00	31.50 32.00	24.61 20.09	19.58 20.09

Scale	F	H	I	J	K
Inches	.177 .197	3	1-15/16	1/16	3/8
mm	4.50 5.00	76.20	49.21	1.59	9.53

37894 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G	H
Inches	.771 .791	2.115 2.135	1.843 1.906	2-7/32 .365	.365 .385	.177 .197	.828 .859	3-1/6
mm	19.58 20.09	53.72 54.23	46.81 48.41	56.36 9.27	9.27 9.80	4.50 5.00	21.03 21.82	77.79

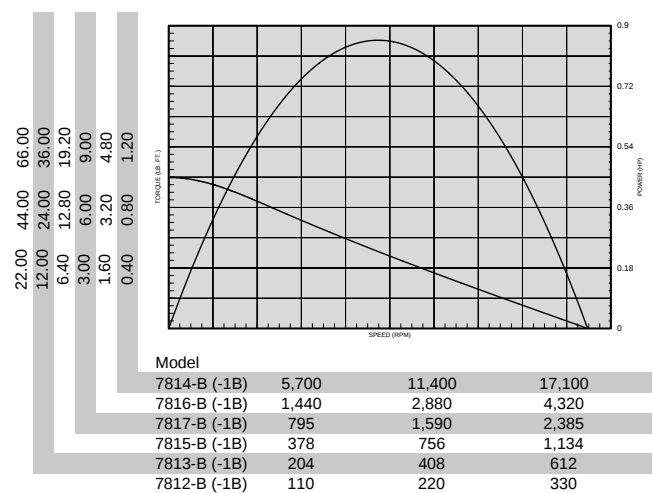
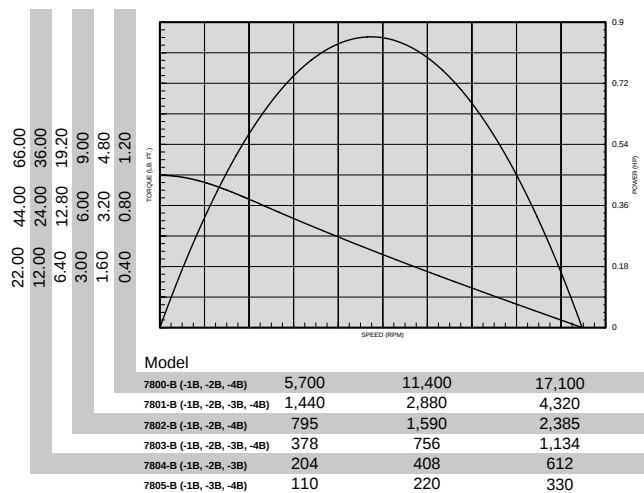
Scale	I	J	K	L	M	N	O	S
Inches	1-7/8 .334	.334 .354	.312 .437	1.427 1.447	.834 .854	1.240 1.260	.615 .635	.511 .531
mm	47.63 8.84	8.84 8.99	8.92 11.10	36.25 36.75	21.18 21.69	31.50 32.00	15.62 16.13	12.98 13.49

2200-Series Power Motors (with Bolt-On Gearing)

Specifications

MODEL	SPINDLE	R.P.M.		TORQUE		AIR		SOUND LEVEL		WEIGHT		GEAR REDUCTION	
		FREE LOAD SPEED	STALL	OUTPUT @MAX. H.P.	CONSUMPTION @FREE SPEED	SCFM	L/s	@FREE SPEED	dB(A)	lbs.	kg.		
NON-REVERSIBLE - .85 H.P.													
7800-1B	1/2" Keyed	18,000	9,000	1.00	1.4	.50	.68	41.7	19.7	78	4.24	1.91	Single
7801-1B	1/2" Keyed	4,600	2,400	4.00	5.5	1.86	2.5	41.7	19.7	78	4.24	1.91	Single
7802-1B	1/2" Keyed	2,500	1,300	7.50	10.3	3.43	4.7	41.7	19.7	78	4.24	1.91	Single
7803-1B	1/2" Keyed	1,200	600	16.00	21.9	7.44	10.2	41.7	19.7	78	5.17	2.33	Double
7804-1B	1/2" Keyed	650	320	30.00	41.2	13.95	19.1	41.7	19.7	78	5.17	2.33	Double
7805-1B	1/2" Keyed	350	170	55.00	75.5	26.25	36.0	41.7	19.7	78	5.17	2.33	Double
7812-1B	1/2"-20 Th'd.	350	170	55.00	75.5	26.25	36.0	41.7	19.7	78	5.17	2.33	Double
7813-1B	1/2"-20 Th'd.	650	320	30.00	41.2	13.95	19.1	41.7	19.7	78	5.17	2.33	Double
7814-1B	1/2"-20 Th'd.	18,000	9,000	1.00	1.4	.50	.68	41.7	19.7	78	4.24	1.91	Single
7815-1B	1/2"-20 Th'd.	1,200	600	16.00	21.9	7.44	10.2	41.7	19.7	78	5.17	2.33	Double
7816-1B	1/2"-20 Th'd.	4,600	2,400	4.00	5.5	1.86	2.5	41.7	19.7	78	4.24	1.91	Single
7817-1B	1/2"-20 Th'd.	2,500	1,300	7.50	10.3	3.43	4.7	41.7	19.7	78	4.24	1.91	Single
REVERSIBLE - .70 H.P.													
7806-1B	1/2" Keyed	13,500	7,000	1.00	1.4	.52	.71	37.3	17.6	85*	4.36	1.96	Single
7807-1B	1/2" Keyed	3,400	1,800	4.00	5.5	2.04	2.8	37.3	17.6	85*	4.36	1.96	Single
7808-1B	1/2" Keyed	1,800	1,000	7.40	10.2	3.67	5.0	37.3	17.6	85*	4.36	1.96	Single
7809-1B	1/2" Keyed	850	450	15.50	21.3	8.16	11.2	37.3	17.6	85*	5.67	2.55	Double
7810-1B	1/2" Keyed	450	240	29.00	39.8	15.30	21.0	37.3	17.6	85*	5.67	2.55	Double
7811-1B	1/2" Keyed	250	130	54.00	74.0	28.20	38.7	37.3	17.6	85*	5.67	2.55	Double

*Requires installation for reversible motors - shown on page 88.



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, and muffler.



Equipment Options

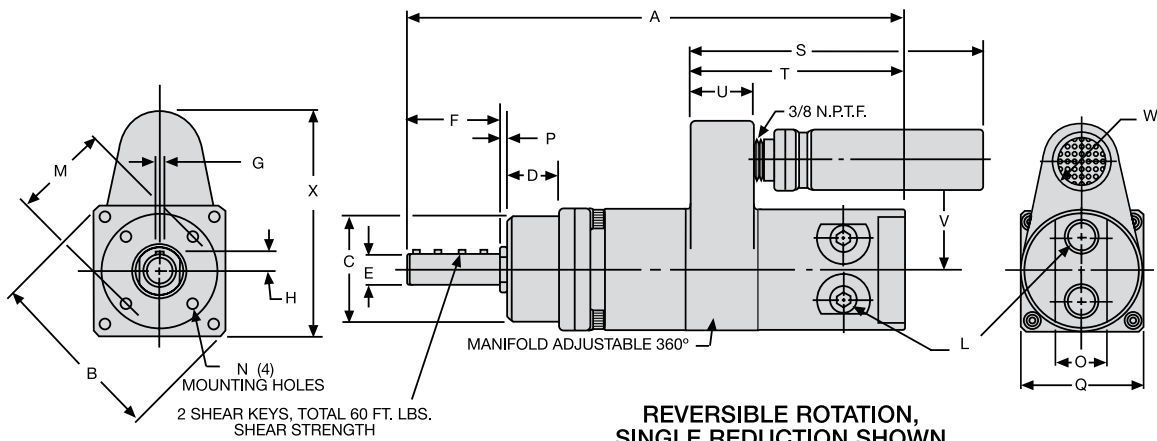
37895-1 Foot Bracket
Provisions for flange mounting is standard on all models.



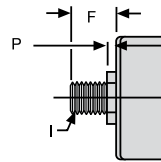
Options for Forward-Rotation Models with Threaded Spindles

- 40768 1/2" (12.7 mm) Male Square-Drive Adapter
- 31651 1/2" (12.7 mm) I.D. Female Stirring Rod Adapter
- 33907 3/8" (9.5 mm) Cap. Drill Chuck
- 30018 1/2" (12.7 mm) Cap. Drill Chuck

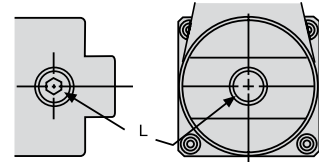
2200-Series Power Motors and Mounting Accessory Dimensions



Models	Gear Reduction	DIMENSION A
7800-1B 7801-1B 7802-1B	Single	8-1/8 206 mm
7806-1B 7807-1B 7808-1B	Double	9-29/32 252 mm
7803-1B 7804-1B 7805-1B	Single	7-5/32 182 mm
7809-1B 7810-1B 7811-1B	Double	8-15/16 227 mm



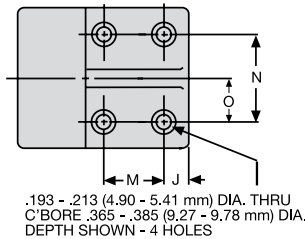
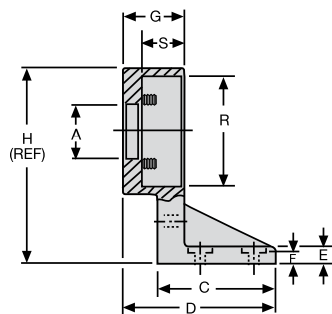
THREADED
SPINDLE



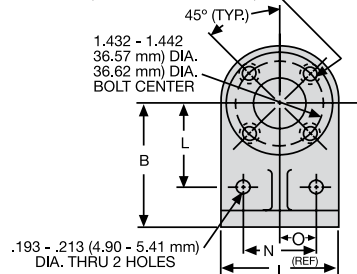
AIR INLETS,
SINGLE DIRECTION MOTORS

Scale	B	C	D	E	F-Keyed Spindle	F-Th'd. Spindle	G	H	I	L	M	N
Inches	2-11/16	1.7490 1.7495	.781 .812	.4990 .4995	1.615 1.653	.646 .684	.125 .126	.299 .309	1/2"-20 UNF-2A Thread	1/4 NPTF Air Inlet	1.432 1.442	10-24 UNC-2B Thread
mm	68	44.42 44.44	19.84 20.62	12.67 12.69	41.02 41.99	16.41 17.37	3.18 3.20	7.59 7.85		36.37 36.63		

Scale	O	P	Q	S	T	U	V	W-Fwd. Rotation	W R	X-Fwd. Rotation	X R
Inches	7/8	.113 .165	2	4-7/8	3-1/2	1-1/16	1-13/16	1-3/8	1	3-1/2	3-7/16
mm	22	2.87 4.19	51	124	89	27	46	35	25	89	87



.193 - .213 (4.90 - 5.41 mm) DIA. THRU
C'BORE .365 - .385 (9.27 - 9.78 mm) DIA. X
.193 - .213 DEEP (FOR Y154-51 SCREWS)



37895-1 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G	H
Inches	.865 .886	2.115 2.135	1.843 1.875	2.421 2.453	.281 .343	.177 .197	.958 .978	3-1/8
mm	21.97 22.48	53.72 54.23	46.81 47.63	61.49 62.31	7.14 8.71	4.50 5.00	24.33 24.84	79.38

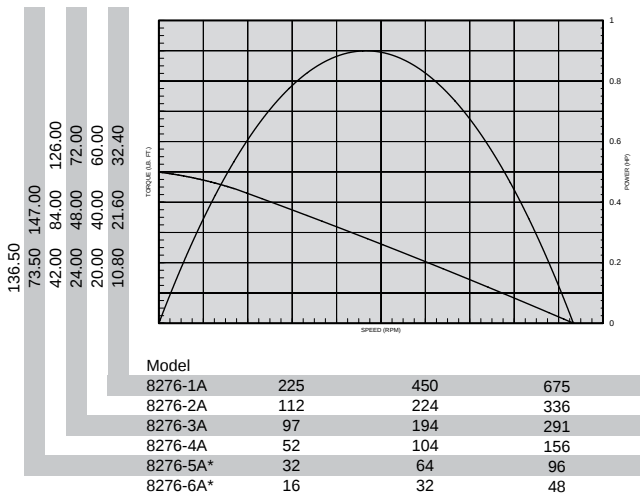
Scale	I	J	L	M	N	O	R	S
Inches	2	.333 .353	1.427 1.447	.833 .853	1.240 1.260	.615 .635	1.750 1.751	.640 .687
mm	50.80	8.46 8.97	36.25 36.75	21.16 21.67	31.50 32.00	15.62 16.13	44.45 44.48	16.26 17.45

2200-Series Power Motors (with 44-Series Gearing) Specifications

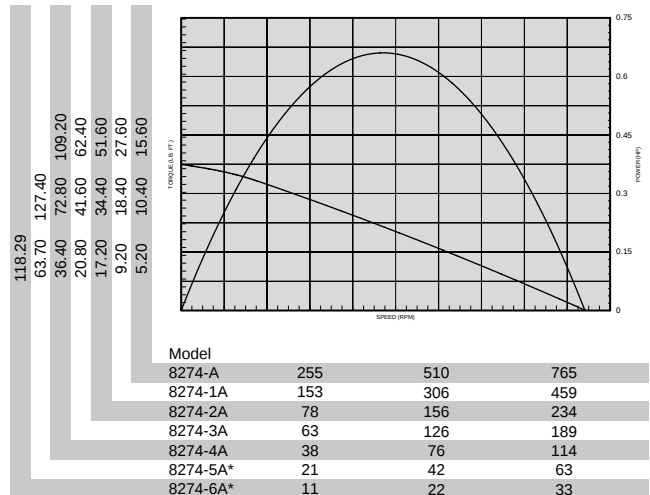
MODEL	SPINDLE	R.P.M.		TORQUE		OUTPUT		AIR		SOUND LEVEL @FREE SPEED dB(A)	WEIGHT		GEAR REDUCTION
		FREE SPEED	LOAD SPEED @MAX. H.P.	STALL lb. ft.	Nm	@MAX. H.P. lb. ft.	Nm	@FREE SPEED SCFM	L/s		lbs.	kg.	
NON-REVERSIBLE - .90 H.P.													
8276-1A	7/8" Keyed	700	350	27.0	37.0	13.5	18.5	41.6	19.6	78	10.10	4.55	2
8276-2A	7/8" Keyed	350	180	50.0	68.0	26.0	36.0	41.6	19.6	78	10.10	4.55	2
8276-3A	7/8" Keyed	300	150	60.0	82.0	32.0	43.0	41.6	19.6	78	14.50	6.52	3
8276-4A	7/8" Keyed	160	90	105.0	143.0	53.0	72.0	41.6	19.6	78	14.50	6.52	3
8276-5A**	7/8" Keyed	100	50	**150.0	206.0	95.0	130.0	41.6	19.6	78	14.50	6.52	3
8276-6A**	7/8" Keyed	50	25	**150.0	206.0	**150.0	206.0	41.6	19.6	78	14.50	6.52	3
REVERSIBLE - .65 H.P.													
8274-A	7/8" Keyed	800	450	13.0	18.0	7.6	10.5	35.0	16.5	83*	10.10	4.55	2
8274-1A	7/8" Keyed	475	250	23.0	32.0	14.0	19.0	35.0	16.5	83*	10.10	4.55	2
8274-2A	7/8" Keyed	250	130	43.0	59.0	26.0	36.0	35.0	16.5	83*	10.10	4.55	2
8274-3A	7/8" Keyed	200	110	52.0	71.0	31.0	42.0	35.0	16.5	83*	14.50	6.52	3
8274-4A	7/8" Keyed	120	60	91.0	125.0	57.0	78.0	35.0	16.5	83*	14.50	6.52	3
8274-5A**	7/8" Keyed	65	35	**150.0	206.0	98.0	134.0	35.0	16.5	83*	14.50	6.52	3
8274-6A**	7/8" Keyed	35	18	**150.0	206.0	**150.0	206.0	35.0	16.5	83*	14.50	6.52	3

*Requires installation for reversible motors - shown on page 88.

**NOTE: Maximum torque recommended for planetary gear system requires shear key with 150 ft./lbs. shear strength.



*NOTE: Maximum torque recommended for planetary gear system on these models requires shear key with 150 ft./lbs. shear strength.



*NOTE: Maximum torque recommended for planetary gear system on these models requires shear key with 150 ft./lbs. shear strength.

Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, and muffler.

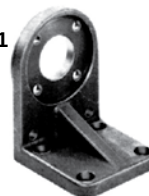


Equipment Options

37892-1 Foot Bracket

NOTE: Gear housing has precision pilot diameter and four mounting holes (5/16"-24) for flange mounting.

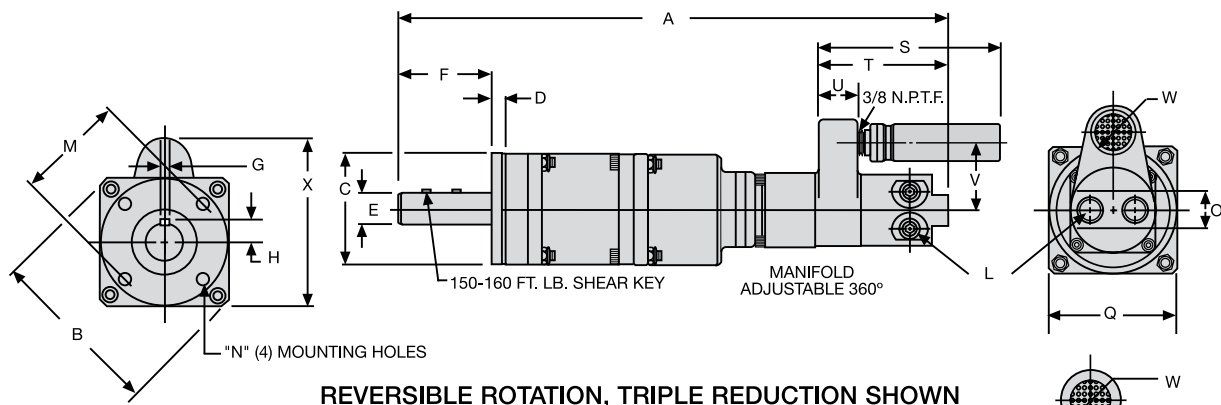
37892-1



Options for Specified Models

- 41784 3/4" (19.2 mm) Male Square-Drive Adapter for 7/8" (22.23 mm) keyed spindle
- 41512 Throttle & Bracket Assembly for forward-rotation nutsetters.
- 41512-1 Throttle & Bracket Assembly for reversible nutsetters. Includes two 41511 throttles and two 43982-1 Quick-Dump Exhaust Valves.

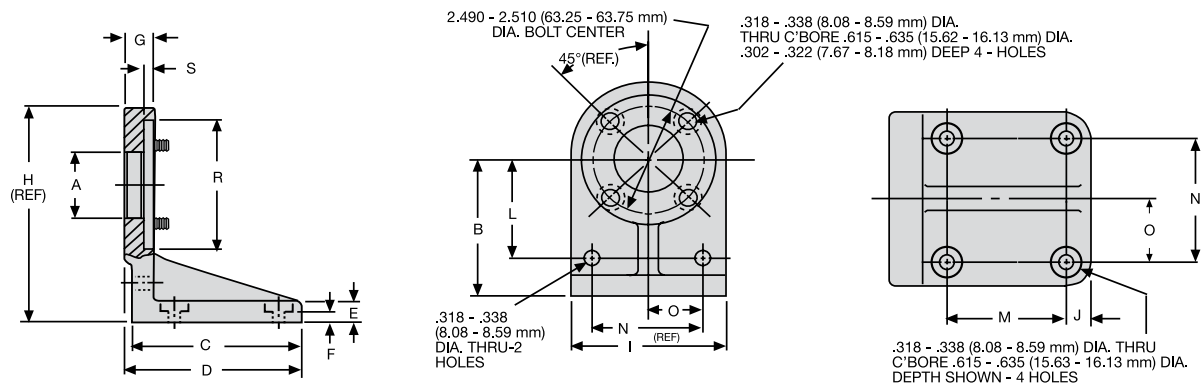
2200/44-Series Power Motors and Mounting Accessory Dimensions



Gear Reduction	Dimension A
Double	11-5/16 303 mm
Triple	14-3/4 375 mm

AIR INLETS, FORWARD-ROTATION MOTORS

Scale	B	C	D	E	F	G	H	L	M	N
Inches	4.090	2.996	.369	.8743	2.483	.1872	.528	1/4	2.495	5/16-24
	4.110	2.998	.374	.8748	2.559	.1875	.531	NPTF	2.505	UNF-2B
mm	103.89	76.10	9.37	22.21	63.07	4.75	13.41	Air	63.37	Thread
	104.39	76.15	9.50	22.22	65.00	4.76	13.49	Inlet	63.63	



37892-1 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G	H
Inches	1.490	3.115	3.781	3.968	.437	.240	.671	4.812
	1.510	3.135	3.843	4.062	.562	.260	.718	4.937
mm	37.85	79.12	96.04	100.79	11.10	6.10	17.04	122.22
	38.35	79.63	97.61	103.17	14.27	6.60	18.24	125.40

Scale	I	J	L	M	N	O	R	S
Inches	3-1/2	.490	2.240	2.365	2.490	1.240	2.999	.240
		.510	2.260	2.385	2.510	1.260	3.000	.260
mm	88.90	12.45	56.90	60.07	63.25	31.50	76.17	6.10
		12.95	57.40	60.58	63.75	32.00	76.20	6.60

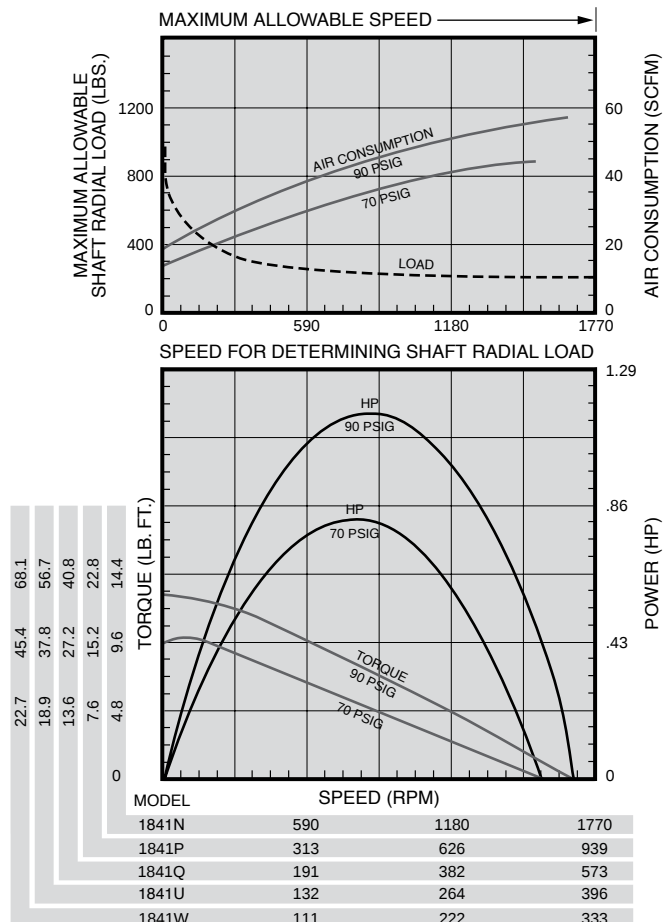
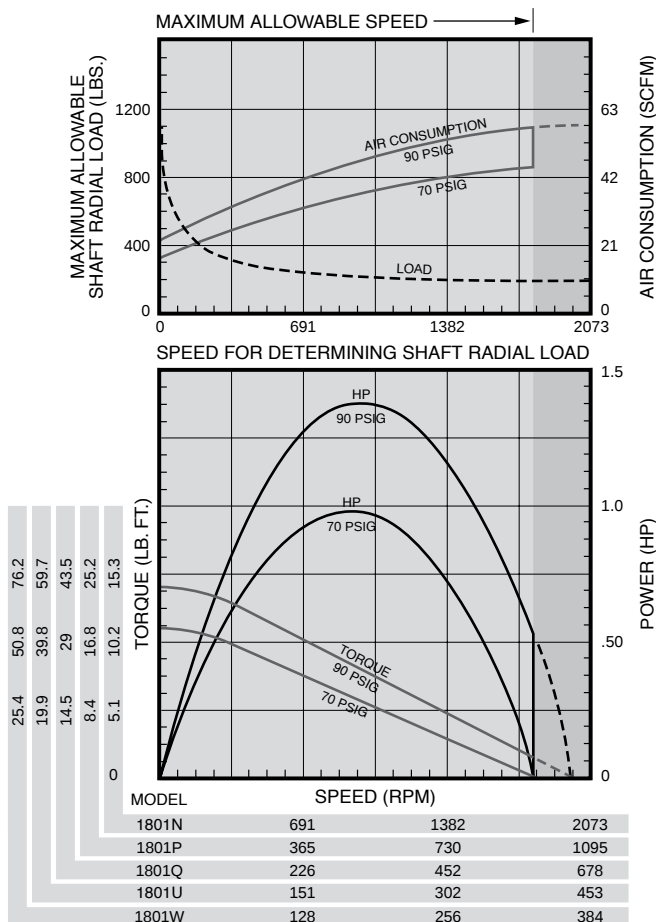
Series 1801 and 1841 Multi-Vane Air Motors

Specifications



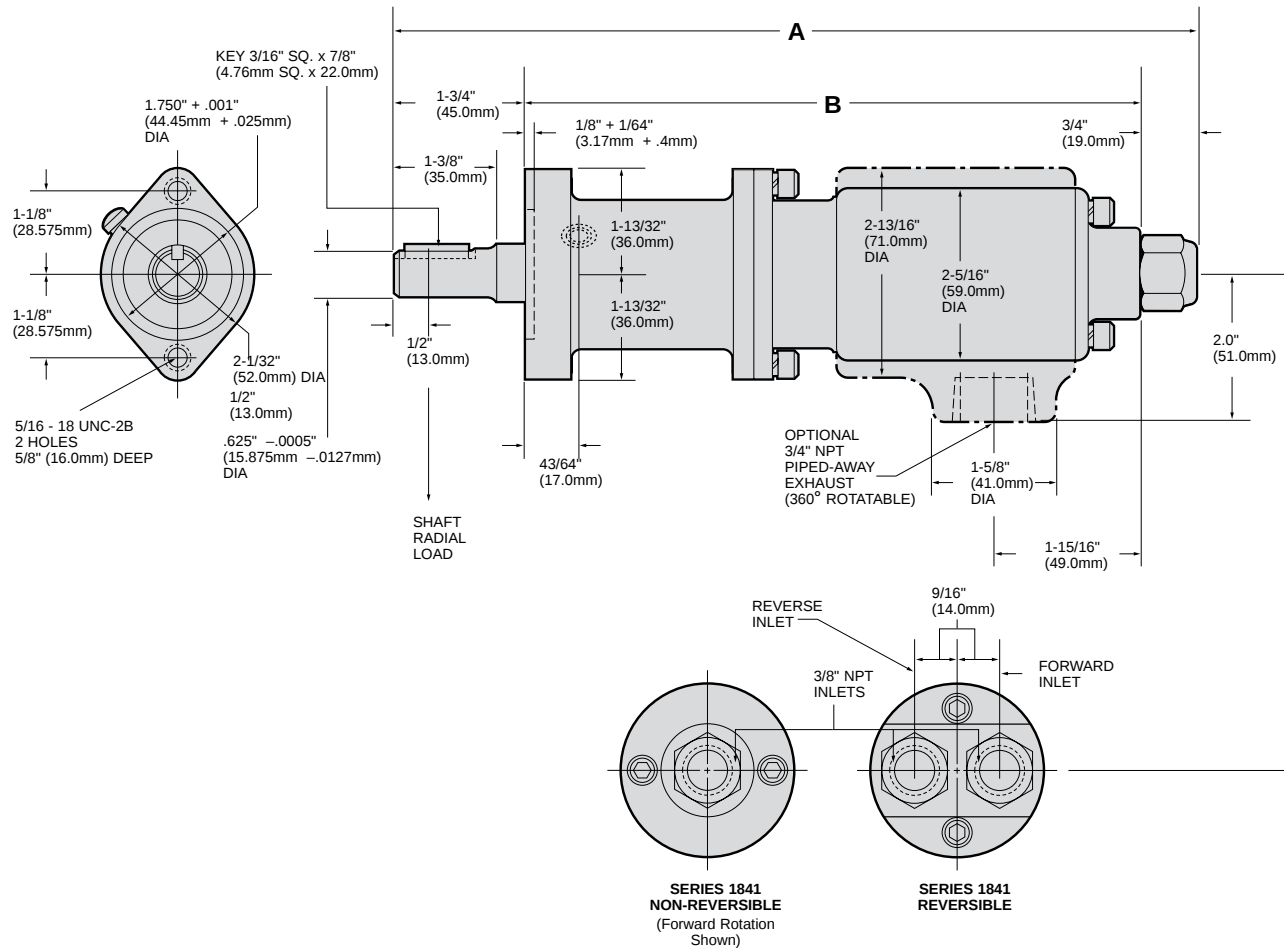
Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Non-Reversible Direction of rotation is counterclockwise when facing the shaft.												
1801N	1.40	1.04	918	1990	10.5	14.2	14	19.0	46	1.3	5½	2.44
1801P	1.35	1.01	500	1050	17.2	23.3	23	31.2	46	1.3	5½	2.61
1801Q	1.35	1.01	300	650	30.0	40.7	40	54.2	46	1.3	5½	2.61
1801U	1.35	1.01	205	435	41.0	55.6	55	74.6	46	1.3	5½	2.61
1801W	1.35	1.01	175	370	52.0	70.5	70	94.9	46	1.3	5½	2.61
Reversible												
1841N	1.2	.89	800	1700	9.3	12.6	12.5	17.0	43	1.22	5½	2.50
1841P	1.1	.82	430	900	15.0	20.3	20.0	27.1	43	1.22	5½	2.67
1841Q	1.1	.82	260	550	27.0	36.6	36.0	48.8	43	1.22	5½	2.67
1841U	1.1	.82	175	380	37.0	50.2	50.0	67.8	43	1.22	5½	2.67
1841W	1.1	.82	150	320	45.0	61.0	60.0	81.4	43	1.22	5½	2.67

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.



Series 1801 and 1841 Multi-Vane Air Motors

Dimensions



Dimensions

Models	A		B	
	in.	mm	in.	mm
1801N, 1841N	9 ⁷ / ₁₆	240	6 ¹⁵ / ₁₆	176
1801P, 1801Q, 1801U, 1801W, 1841P, 1841Q, 1841U, 1841W	10 ³ / ₁₆	275	8 ⁷ / ₁₆	211

Equipment Options

Furnished with Cataloged Models	Extra Options
2 Hole Face Mounting	R1801-A123 Exhaust Deflector Assembly with 3/8" Pipe Tap
	*1/2" Square Drive Shaft on Gear Ratios: P, Q, U Shaft Extension 1.19" (30.23mm)

*To order Motor with Square Drive Shaft, add the suffix "2" to the Model Number. Example: 1841Q2.

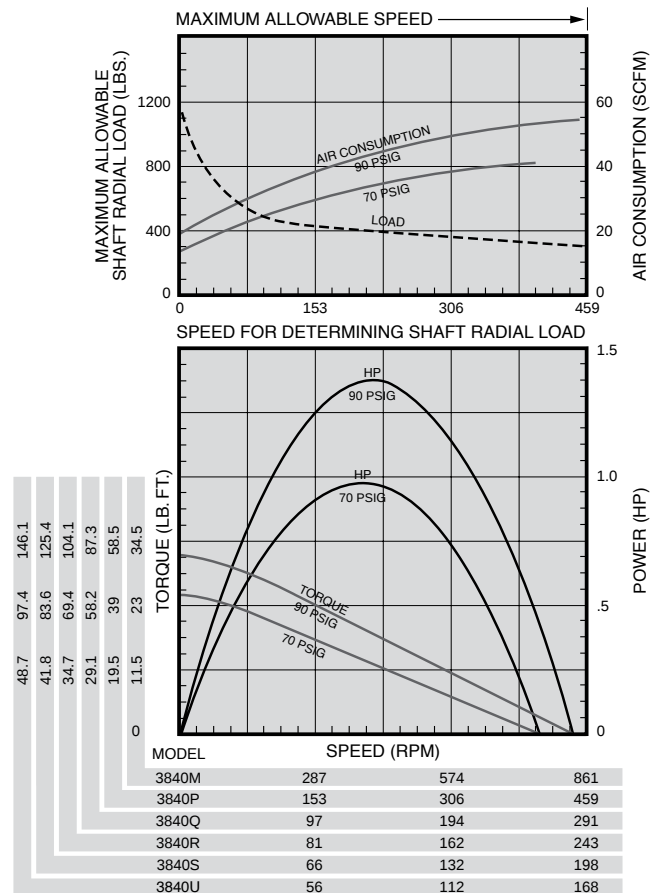
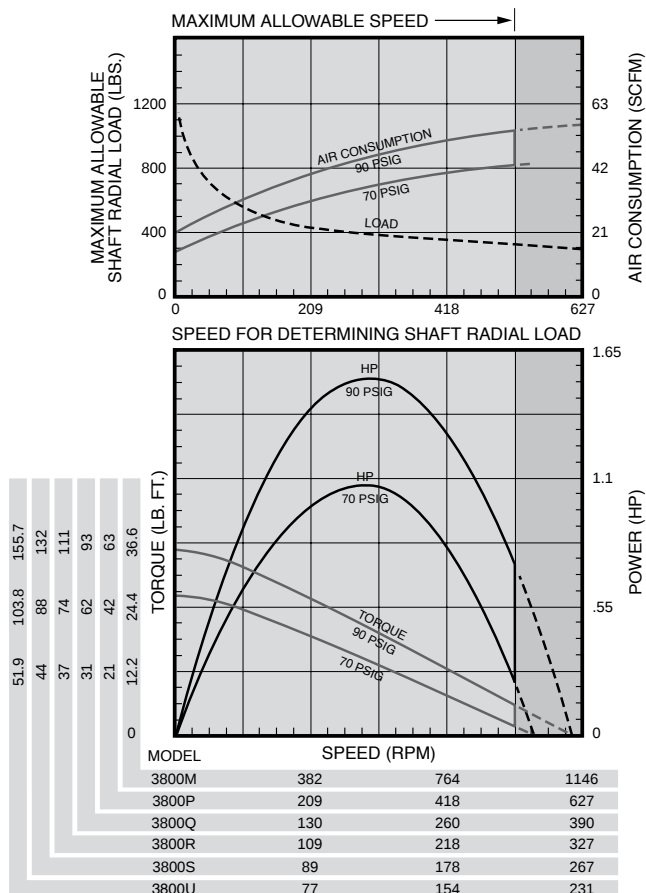
Series 3800 and 3840 Multi-Vane Air Motors

Specifications



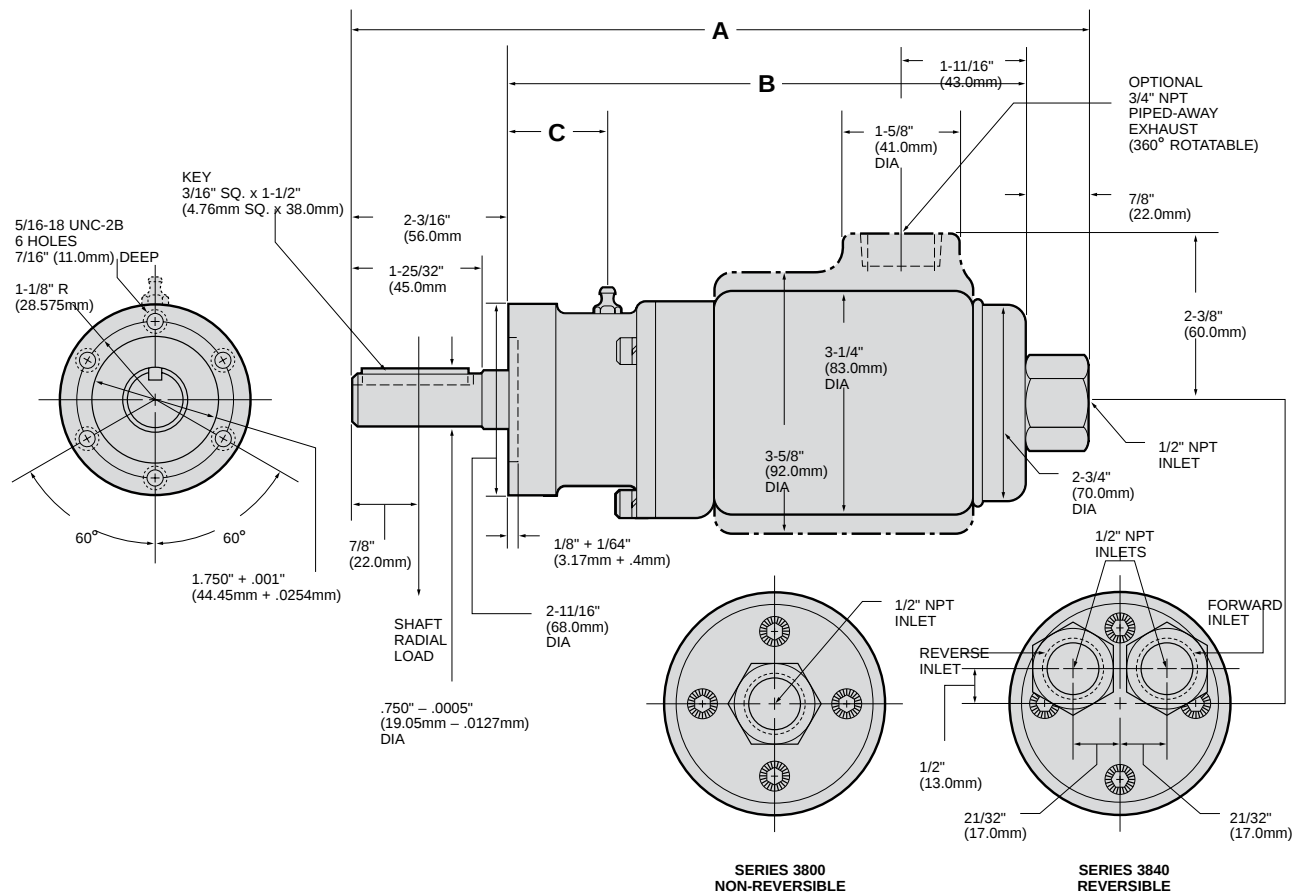
Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Non-Reversible Direction of rotation is counterclockwise when facing the shaft.												
3800M	1.55	1.16	520	1100	24	32.5	33	44.8	48	1.36	7½	3.23
3800P	1.45	1.08	285	600	42	57	56.5	76.6	48	1.36	8½	3.86
3800Q	1.45	1.08	180	375	62	84	83.5	113	48	1.36	8½	3.86
3800R	1.45	1.08	150	320	72	98	96	130	48	1.36	8½	3.86
3800S	1.45	1.08	120	255	88	119	118	160	48	1.36	8½	3.86
3800U	1.45	1.08	105	220	105	142	140	189	48	1.36	8½	3.86
Reversible												
3840M	1.40	1.04	390	825	23	31.2	31.5	42.7	44	1.25	7%	3.35
3840P	1.35	1.01	215	440	40	54.2	53.5	72.6	44	1.25	8%	3.97
3840Q	1.35	1.01	130	280	60	81.4	80	106	44	1.25	8%	3.97
3840R	1.35	1.01	122	238	69	93	92	125	44	1.25	8%	3.97
3840S	1.35	1.01	100	190	86	116	115	156	44	1.25	8%	3.97
3840U	1.35	1.01	83	162	100	135	134	181	44	1.25	8%	3.97

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.



Series 3800 and 3840 Multi-Vane Air Motors

Dimensions



Dimensions

MODELS	A		B		C	
	in.	mm	in.	mm	in.	mm
3800M, 3840M	10 $\frac{1}{16}$	256	7	178	1 $\frac{1}{16}$	27
3800P, 3800Q, 3800R, 3800S, 3800U	11 $\frac{3}{4}$	299	8 $\frac{1}{16}$	221	2 $\frac{3}{16}$	56
3840P, 3840Q, 3840R, 3840S, 3840U						

Equipment Options

Furnished with Cataloged Models	Extra Options
6 Hole Face Mounting	R3800-A123 Exhaust Deflector Assembly with 3/4" Pipe Tap
	*3/8" Square Drive Shaft Shaft Extension 1.25" (31.75mm)

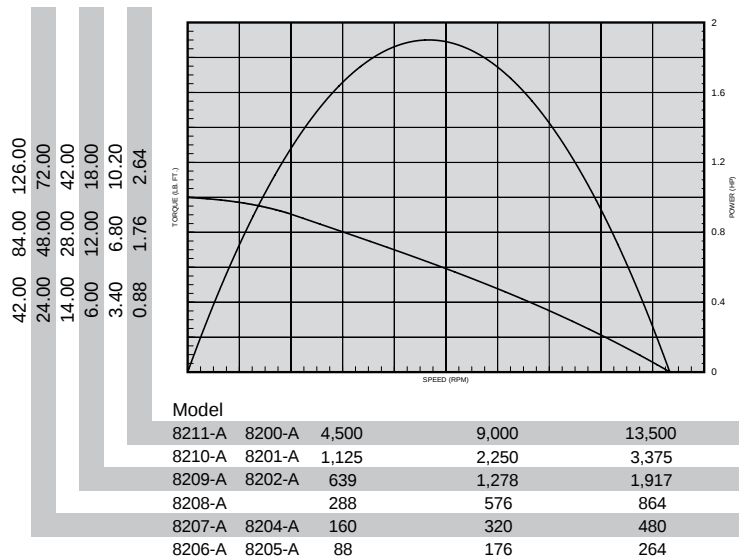
*To order Motor with Square Drive Shaft, add the suffix "2" to the Model Number. Example: 3840Q2.

44-Series Power Motors

Specifications

TORQUE														AIR			
		R.P.M.				OUTPUT		CONSUMPTION		SOUND LEVEL				GEAR			
MODEL	SPINDLE	FREE SPEED	LOAD SPEED @MAX. H.P.	STALL lb. ft.	Nm	@MAX. H.P. lb. ft.	Nm	@FREE SPEED SCFM	L/s	@FREE SPEED dB(A)	WEIGHT lbs.	kg.	REDUCTION				
NON-REVERSIBLE - 2.0 H.P.																	
8200-A	7/8" Keyed	275	140	124.00	168.0	75.00	101.6	95.0	44.8	80	18.24	8.20	Double				
8201-A	7/8" Keyed	500	255	70.50	95.5	41.00	55.5	95.0	44.8	80	18.24	8.20	Double				
8202-A	7/8" Keyed	900	445	40.50	54.9	24.00	32.5	95.0	44.8	80	18.24	8.20	Double				
8204-A	7/8" Keyed	3,500	1,740	10.20	13.8	6.00	8.1	95.0	44.8	80	13.82	5.21	Single				
8205-A	7/8" Keyed	14,000	7,000	2.85	3.9	1.50	2.0	95.0	44.8	80	13.82	5.21	Single				
REVERSIBLE - 1.9 H.P.																	
8206-A	7/8" Keyed	275	150	105.00	142.3	66.5	90.1	93.5	44.1	95*	18.24	8.20	Double				
8207-A	7/8" Keyed	500	250	60.00	81.3	39.9	54.1	93.5	44.1	95*	18.24	8.20	Double				
8208-A	7/8" Keyed	900	450	35.00	47.4	22.2	30.1	93.5	44.1	95*	18.24	8.20	Double				
8209-A	7/8" Keyed	2,000	1,000	15.0	20.3	9.97	13.5	93.5	44.1	95*	13.82	5.21	Single				
8210-A	7/8" Keyed	3,500	1,800	8.5	11.5	5.54	7.5	93.5	44.1	95*	13.82	5.21	Single				
8211-A	7/8" Keyed	14,000	7,000	2.2	3.0	1.43	1.9	93.5	44.1	95*	13.82	5.21	Single				

*Requires installation for reversible motors - shown on page 88.



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, and muffler.



Equipment Options

37892-1 Foot Bracket

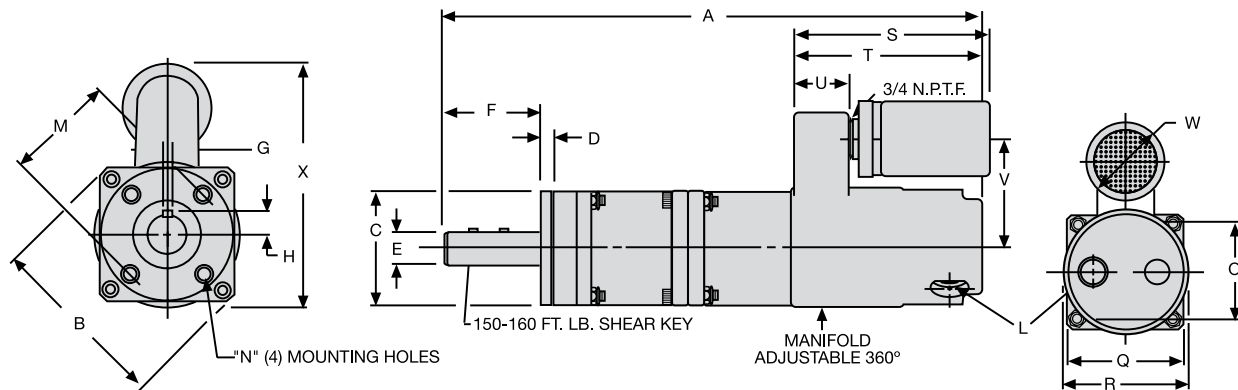
NOTE: Gear housing has precision pilot diameter and four mounting holes (5/16"-24) for flange mounting.



Options for Specified Models

- 41784 3/4" (19.1 mm) Male Square-Drive Adapter for 7/8" (22.23 mm) keyed spindle
- 41512 Throttle & Bracket Assembly for forward-rotation nutsetters.
- 41512-1 Throttle & Bracket Assembly for reversible nutsetters. Includes two 41511 throttles and two 43982-1 Quick-Dump Exhaust Valves.

44-Series Power Motors and Mounting Accessory Dimensions

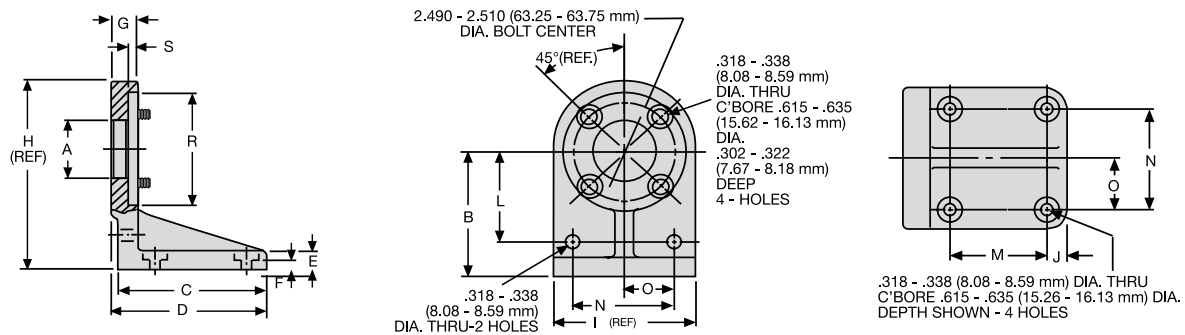


REVERSIBLE ROTATION, DOUBLE REDUCTION SHOWN

Models			Gear Reduction	Dimension A
8203-A	8204-A	8205-A	Single	11-17/64
8209-A	8210-A	8211-A		286 mm
8206-A	8207-A	8208-A	Double	14-1/16
8200-A	8201-A	8202-A		373 mm

Scale	B	C	D	E	F	G	H	L	M	N
Inches	4.090 4.110	2.996 2.998	.369 .374	.8743 .8748	2.483 2.559	.1872 .1875	.528 .531	3/8 NPTF	2.498 2.502	5/16-24 UNF-2B
mm	103.89 104.39	76.10 76.15	9.37 9.50	22.21 22.22	63.07 65.00	4.75 4.76	13.41 13.49	Air Inlet	63.45 63.55	Thread

Scale	O	Q	R	S	T	U	V	W	X
Inches	2-1/2	3	3-3/16	5-3/16	5	1-7/16	2-27/32	2	5-7/16
mm	63	76	81	132	127	36	72	51	138



37892-1 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G	H
Inches	1.490 1.510	3.115 3.135	3.781 3.843	3.968 4.062	.437 .562	.240 .260	.671 .718	4.812 4.937
mm	37.85 38.35	79.12 79.63	96.04 97.61	100.79 103.17	11.10 14.27	6.10 6.60	17.04 18.24	122.22 125.40

Scale	I	J	L	M	N	O	R	S
Inches	3-1/2	.490 .510	2.240 2.260	2.365 2.385	2.490 2.510	1.240 1.260	2.999 3.000	.240 .260
mm	88.90	12.45 12.95	56.90 57.40	60.07 60.58	63.25 63.75	31.50 32.00	76.17 76.20	6.10 6.60

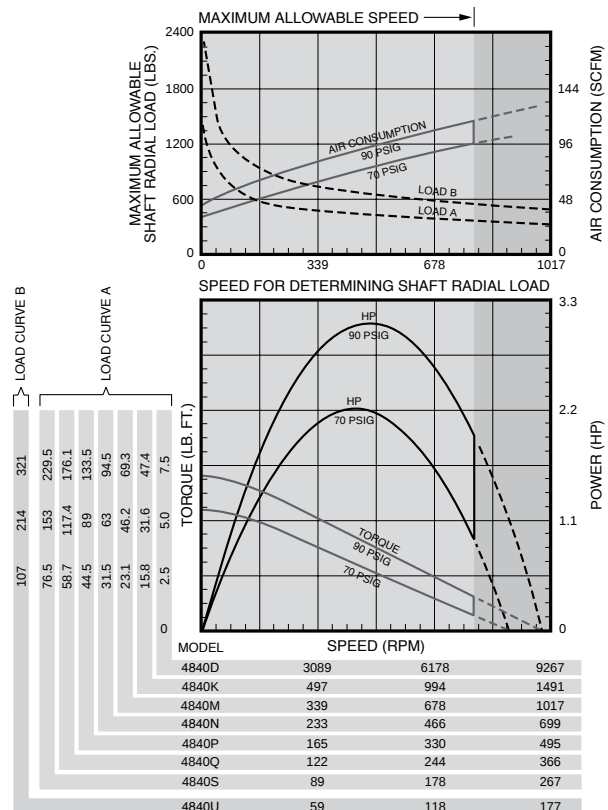
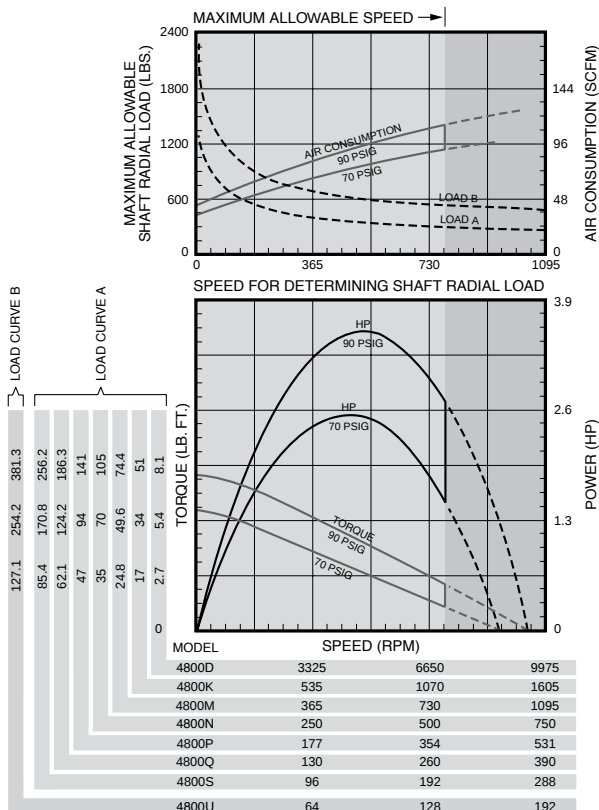
Series 4800 and 4840 Multi-Vane Air Motors

Specifications



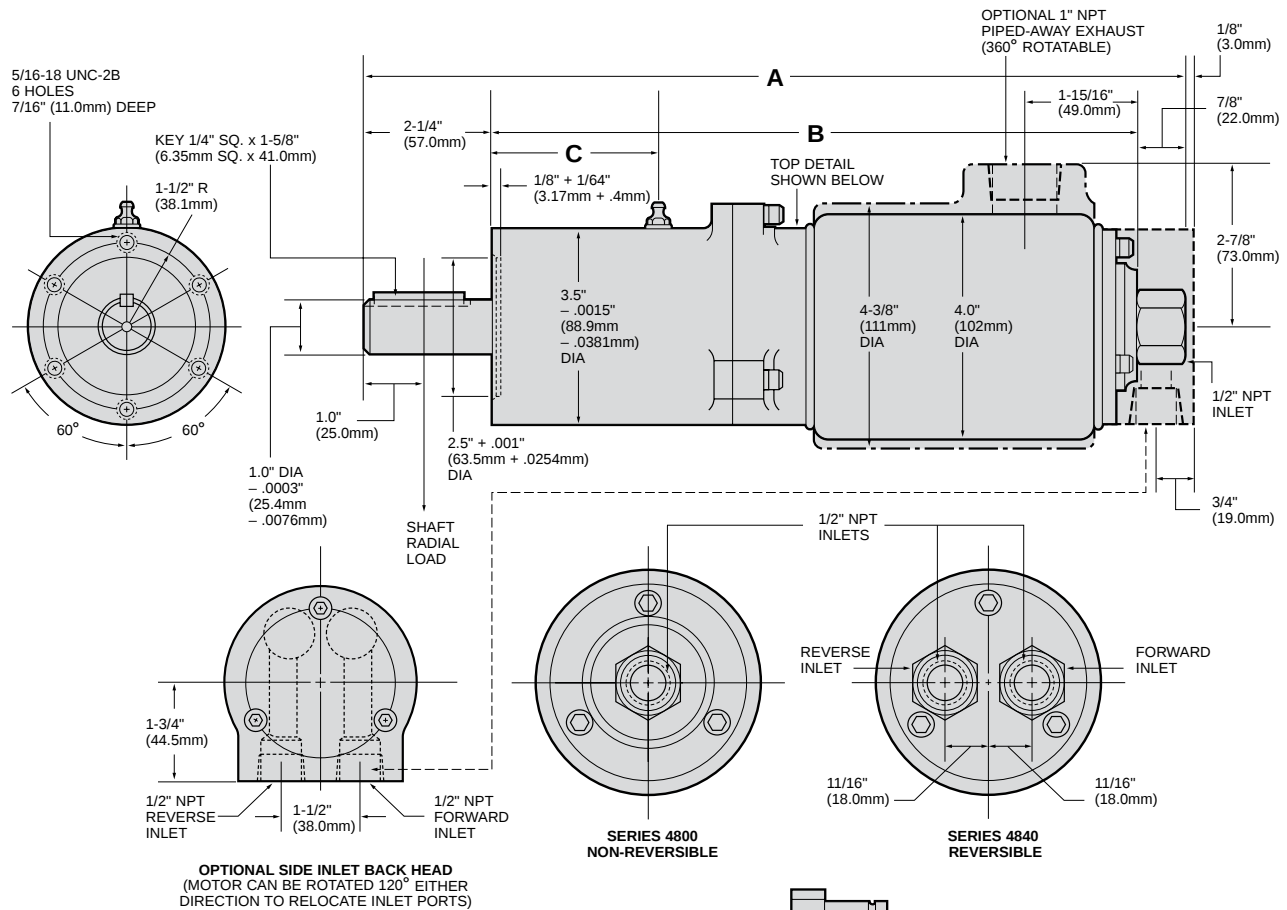
Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Non-Reversible Direction of rotation is counterclockwise when facing the shaft.												
4800D	3.8	2.83	5250	9850	5.8	7.8	7.7	10.4	98	2.77	15½	6.92
4800K	3.7	2.76	821	1538	35.3	47.8	47	63.7	95	2.69	15½	6.92
4800M	3.7	2.76	560	1050	51	69.2	69	93.6	95	2.69	15½	6.92
4800N	3.7	2.76	387	726	75	102	100	136	95	2.69	15½	6.92
4800P	3.5	2.61	260	510	98	133	131	178	95	2.69	19½	8.96
4800Q	3.5	2.61	194	375	129	175	173	235	95	2.69	19½	8.96
4800S	3.5	2.61	146	275	178	241	238	323	95	2.69	19½	8.96
4800U	3.5	2.61	97	185	265	359	354	480	95	2.69	19½	8.96
Reversible												
4840D	3.3	2.46	4550	9100	5.2	7.0	6.9	9.4	95	2.69	15½	6.92
4840K	3.2	2.39	711	1429	32	43.4	42.7	57.9	95	2.69	15½	6.92
4840M	3.2	2.39	485	975	47.3	64.0	63.0	85.4	95	2.69	15½	6.92
4840N	3.2	2.39	336	675	67.7	91.7	90.2	122	95	2.69	15½	6.92
4840P	3	2.24	228	475	93	126	125	170	95	2.69	20½	9.13
4840Q	3	2.24	167	350	123	167	165	224	95	2.69	20½	9.13
4840S	3	2.24	125	255	161	218	215	292	95	2.69	20½	9.13
4840U	3	2.24	83	170	225	305	300	407	95	2.69	20½	9.13

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.



Series 4800 and 4840 Multi-Vane Air Motors

Dimensions



Dimensions

MODELS	A		B		C	
	in.	mm	in.	mm	in.	mm
4800D, 4800K, 4800M, 4800N 4840D, 4840K, 4840M, 4840N	12 $\frac{1}{2}$	308	9	229	2 $\frac{9}{32}$	23
4800P, 4800Q, 4800S, 4800U 4840P, 4840Q, 4840S, 4840U	14 $\frac{1}{2}$	368	11 $\frac{1}{2}$	289	2 $\frac{1}{2}$	73

Equipment Options

Furnished with Cataloged Models	Extra Options
6 Hole Face Mounting	R4800-A123 Exhaust Deflector Assembly with 1" Pipe Tap ** R4901-102 Side Inlet Backhead Requires (3) 518-104 Screws
	* $\frac{5}{8}$ " Square Drive Shaft on Gear Ratio: M Shaft Extension 1.38" (35.5mm) * $\frac{3}{4}$ " Square Drive Shaft on Gear Ratios: P, Q, S, U Shaft Extension 1.47" (37.44mm)

*To order Motor with Square Drive Shaft, add the suffix "2" to the Model Number. Example: 4840Q2.

**Contact Ingersoll Rand for Model Number with these options.

Spur Gear, Multi-Vane Motors

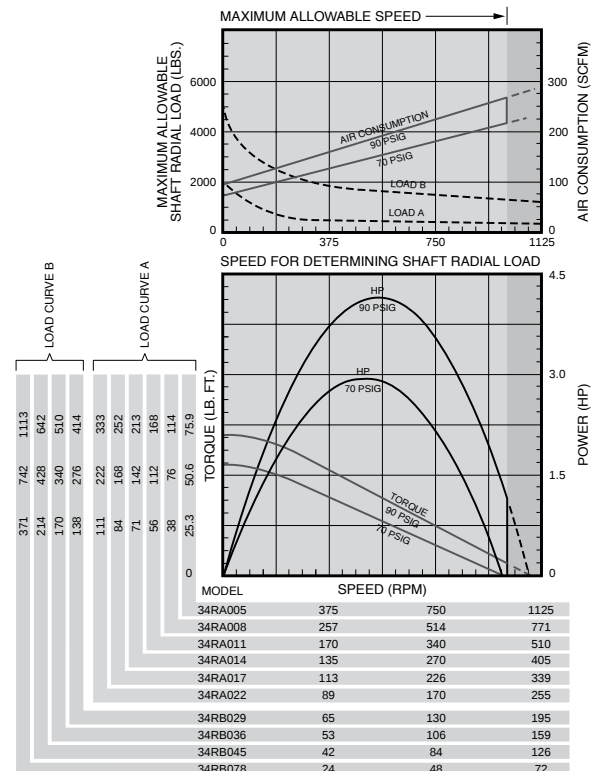
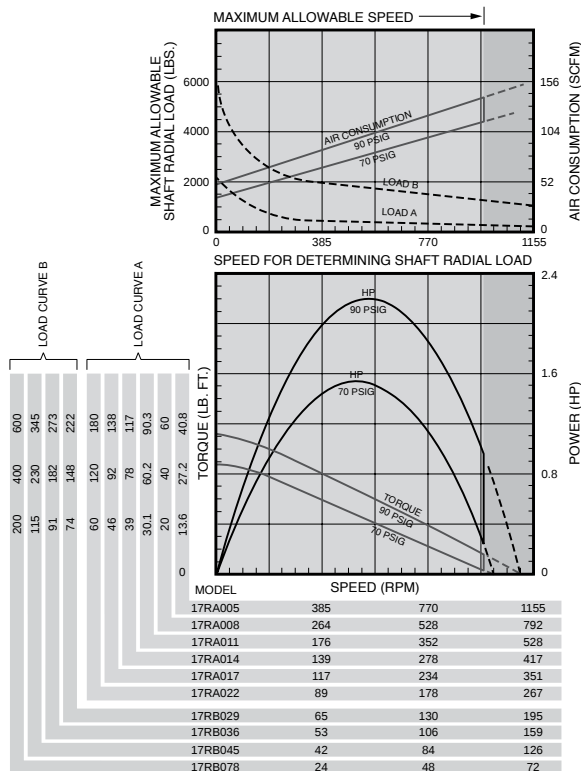
Series 17RA, 17RB, 34RA and 34RB

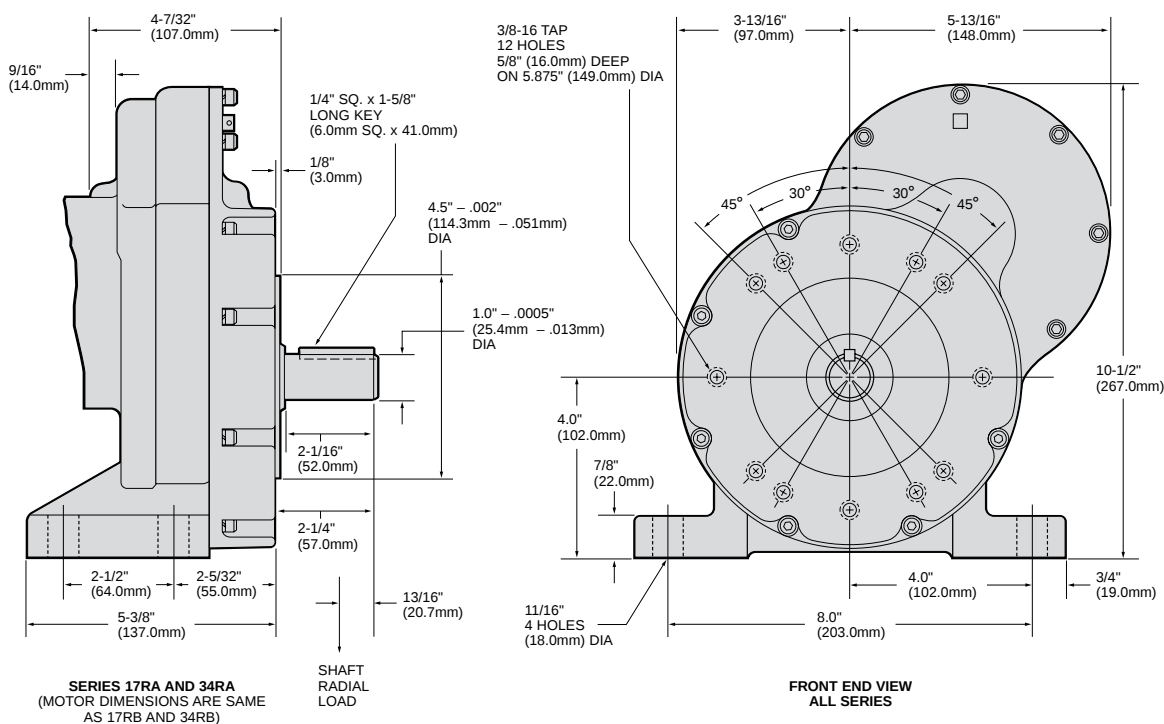
Specifications



Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Reversible												
17RA005	2.3	1.72	562	1110	24	32.5	37	50.2	103	2.92	40	18.1
17RA008	2.3	1.72	383	760	35	47.5	54.5	73.9	103	2.92	40	18.1
17RA011	2.3	1.72	254	505	53	71.9	82	111	103	2.92	40	18.1
17RA014	2.3	1.72	201	400	67	91	104	141	103	2.92	40	18.1
17RA017	2.3	1.72	169	335	80	109	124	168	103	2.92	40	18.1
17RA022	2.3	1.72	129	255	105	142	163	221	103	2.92	40	18.1
17RB029	2.2	1.64	97	187	120	163	201	273	100	2.83	72	32.7
17RB036	2.2	1.64	79	152	148	201	248	336	100	2.83	72	32.7
17RB045	2.2	1.64	62	121	187	254	312	423	100	2.83	72	32.7
17RB078	2.2	1.64	36	69	327	443	545	739	100	2.83	72	32.7
34RA005	4.1	3.06	560	1080	41	60	69	93.6	183	5.18	43	19.5
34RA008	4.1	3.06	385	740	65	88	101	137	183	5.18	43	19.5
34RA011	4.1	3.06	255	490	98	133	152	206	183	5.18	43	19.5
34RA014	4.1	3.06	201	390	124	168	192	260	183	5.18	43	19.5
34RA017	4.1	3.06	168	325	148	201	229	311	183	5.18	43	19.5
34RA022	4.1	3.06	128	245	195	264	301	408	183	5.18	43	19.5
34RB029	4	2.98	99	187	224	304	374	507	180	5.1	75	34
34RB036	4	2.98	80	152	277	376	462	627	180	5.1	75	34
34RB045	4	2.98	63	121	348	472	581	788	180	5.1	75	34
34RB078	4	2.98	36	69	606	822	1010	1370	180	5.1	75	34

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.



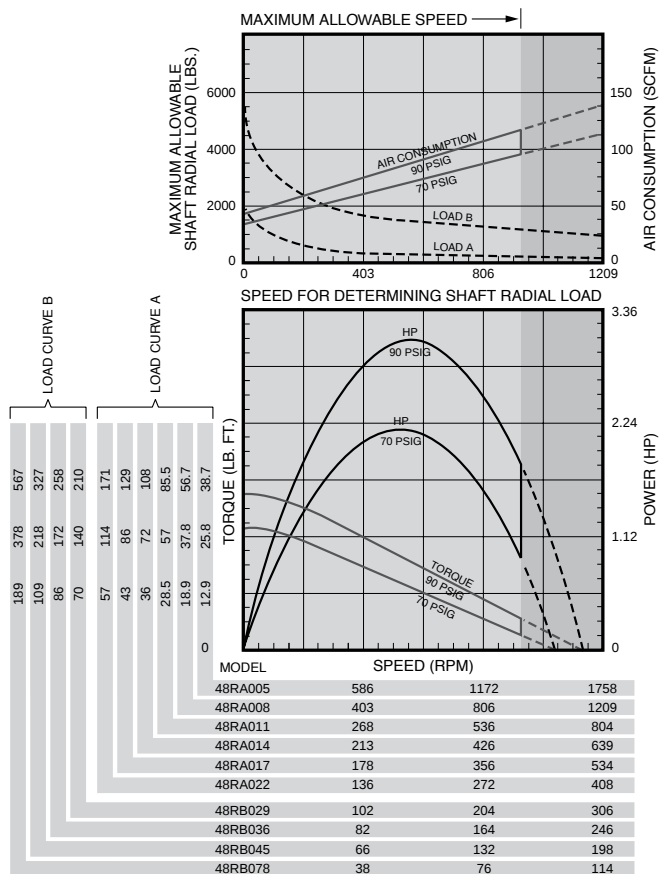


Series 48RA and 48RB Multi-Vane Air Motors

Specifications

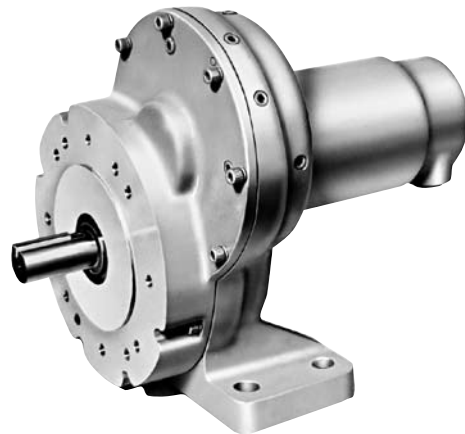
Model	Max. Power		Speed at Max. Power	Free Speed ▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m ³ /m	lb.	kg
Reversible												
48RA005	3.1	2.31	930	1690	26	35.3	35	47.5	95	2.69	44	20
48RA008	3.1	2.31	638	1160	38	51.5	51.5	69.8	95	2.69	44	20
48RA011	3.1	2.31	423	772	57	77.3	77.5	105	95	2.69	44	20
48RA014	3.1	2.31	332	612	72	97.6	98	133	95	2.69	44	20
48RA017	3.1	2.31	278	511	86	117	117	159	95	2.69	44	20
48RA022	3.1	2.31	213	390	113	153	154	209	95	2.69	44	20
48RB029	3	2.24	162	292	135	183	189	256	90	2.55	75	34
48RB036	3	2.24	131	236	167	227	234	317	90	2.55	75	34
48RB045	3	2.24	105	188	209	283	295	400	90	2.55	75	34
48RB078	3	2.24	60	108	364	494	513	696	90	2.55	75	34

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.



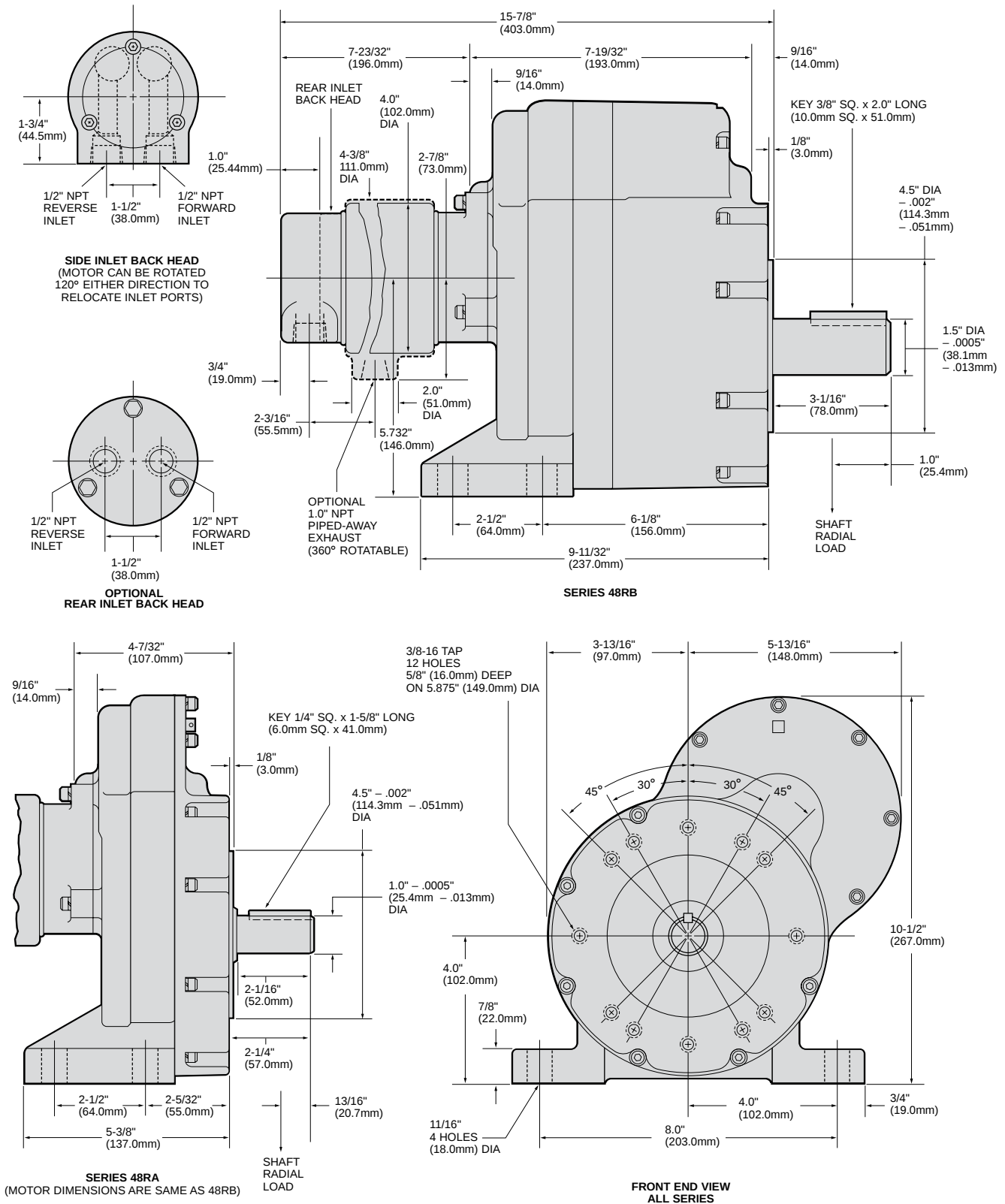
Equipment Options

Furnished with Cataloged Models	Standard Options
Side Inlet Backhead	R4840-102 Rear Inlet Backhead



Series 48RA and 48RB Multi-Vane Air Motors

Dimensions

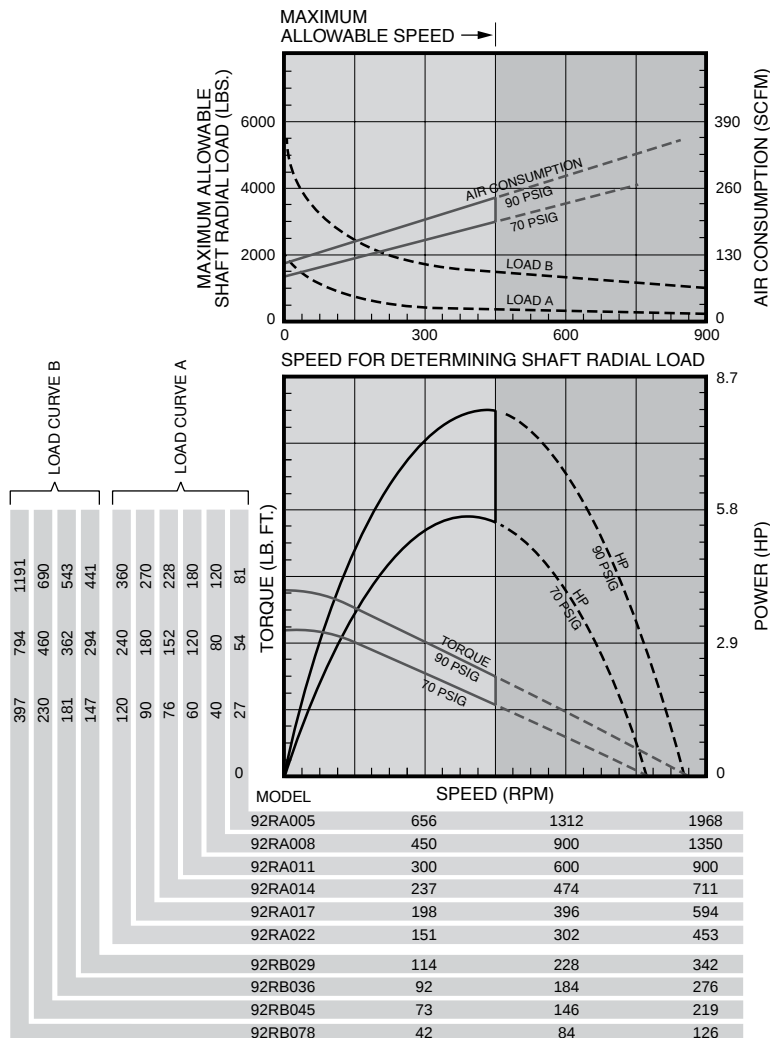


Series 92RA and 92RB Multi-Vane Air Motors

Specifications

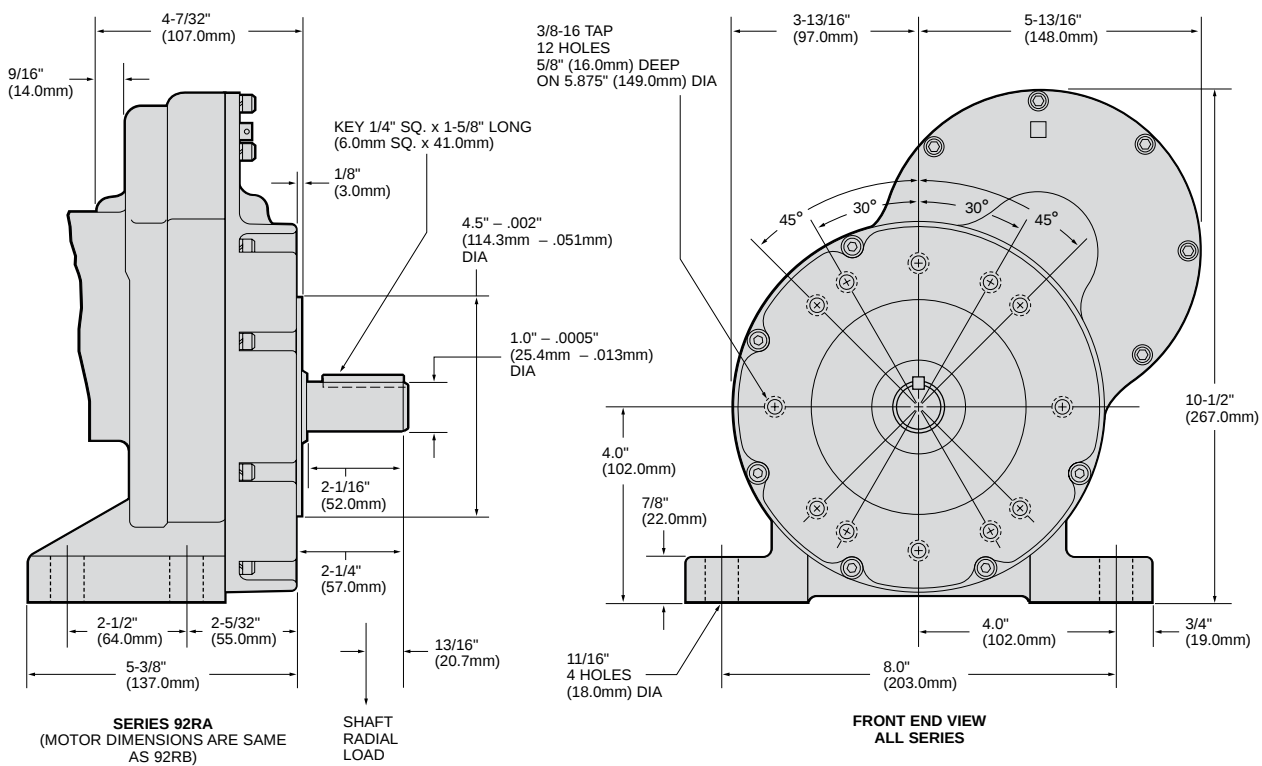
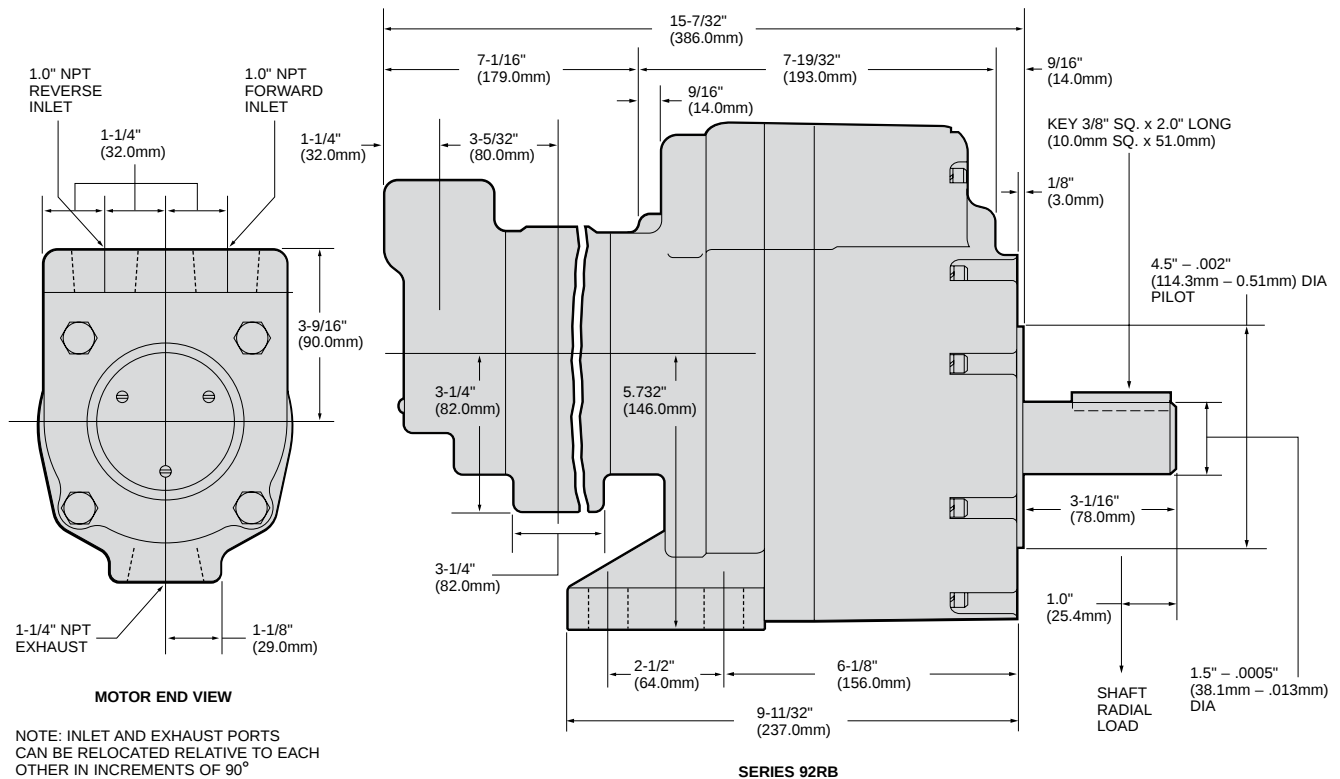
Model	Max. Power		Speed at Max. Power	Free Speed ▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m ³ /m	lb.	kg
Reversible												
92RA005	8.15	6.08	910	1390	56	75.9	75	102	230	6.51	46	20.9
92RA008	8.15	6.08	620	1296	80	109	109	148	230	6.51	46	20.9
92RA011	8.15	6.08	415	852	120	163	164.5	223	230	6.51	46	20.9
92RA014	8.15	6.08	327	682	152	206	208	282	230	6.51	46	20.9
92RA017	8.15	6.08	274	571	180	244	248	336	230	6.51	46	20.9
92RA022	8.15	6.08	209	435	235	319	326	442	230	6.51	46	20.9
92RB029	7.9	5.89	160	327	280	380	402	545	225	6.37	78	35.4
92RB036	7.9	5.89	130	264	345	468	497	674	225	6.37	78	35.4
92RB045	7.9	5.89	103	210	440	597	626	849	225	6.37	78	35.4
92RB078	7.9	5.89	59	120	770	1044	1090	1478	225	6.37	78	35.4

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve.
Performance figures are at 90 psig (620 kPa) air pressure.



Series 92RA and 92RB Multi-Vane Air Motors

Dimensions



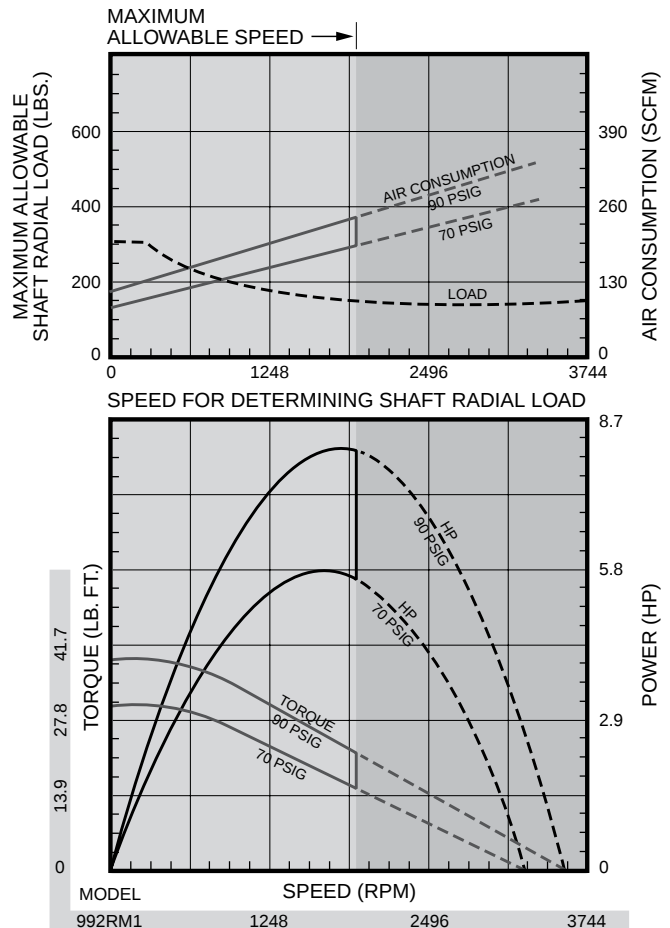
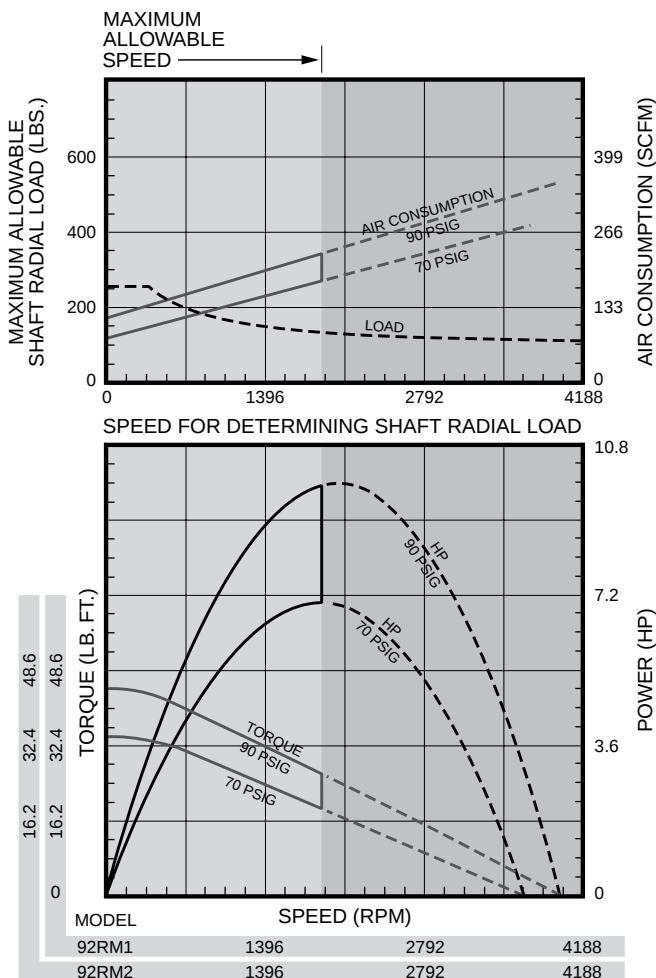
Series 92RM and 992RM Multi-Vane Air Motors Specifications



Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Non-Reversible Direction of rotation is counterclockwise when facing the shaft.												
92RM1	9.9	7.38	2095	3980	33	44.7	45	61	240	6.79	24¼	11
92RM2	9.9	7.38	2095	3980	33	44.7	45	61	240	6.79	24¼	11
Reversible												
992RM1	8.15	6.08	1730	3600	28.7	38.9	39	52.9	230	6.51	25¼	11.3

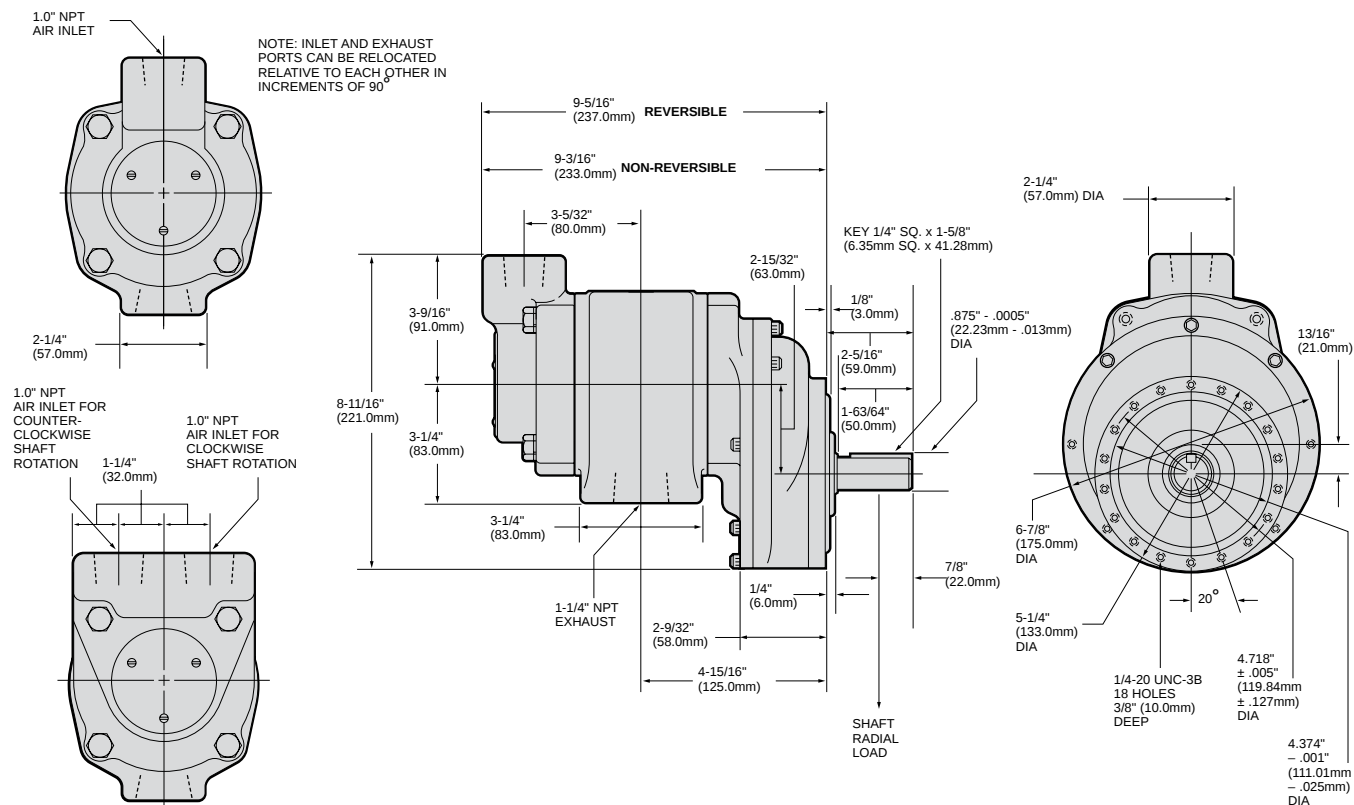
▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.

Direction of rotation of Model 92RM1 is clockwise, and of Model 92RM2 is counter clockwise when facing the shaft end of the motor.



Series 92RM and 992RM Multi-Vane Air Motors

Dimensions



Direct Drive Multi-Vane Motors

Series MVA and MOV0

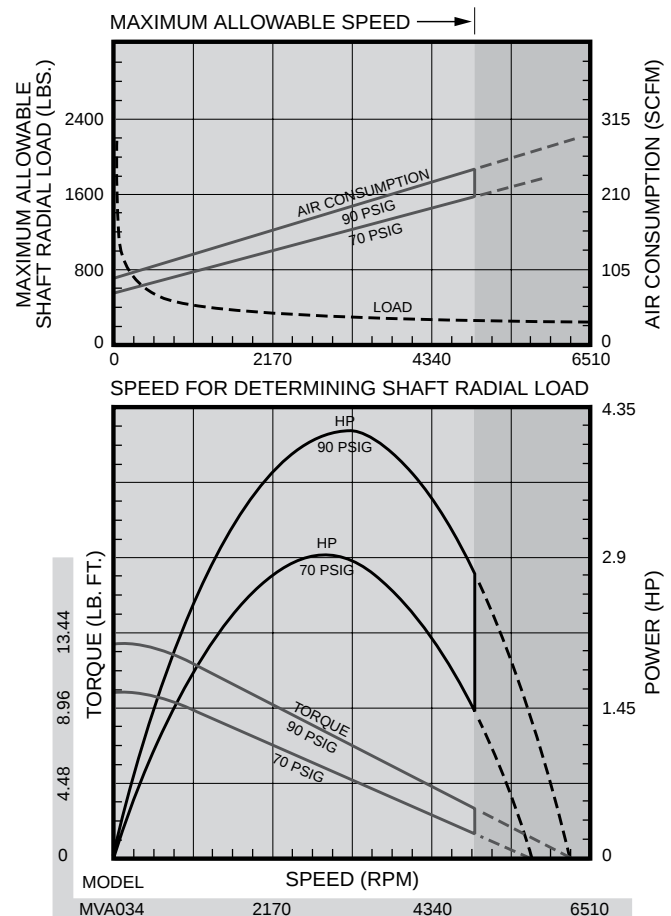
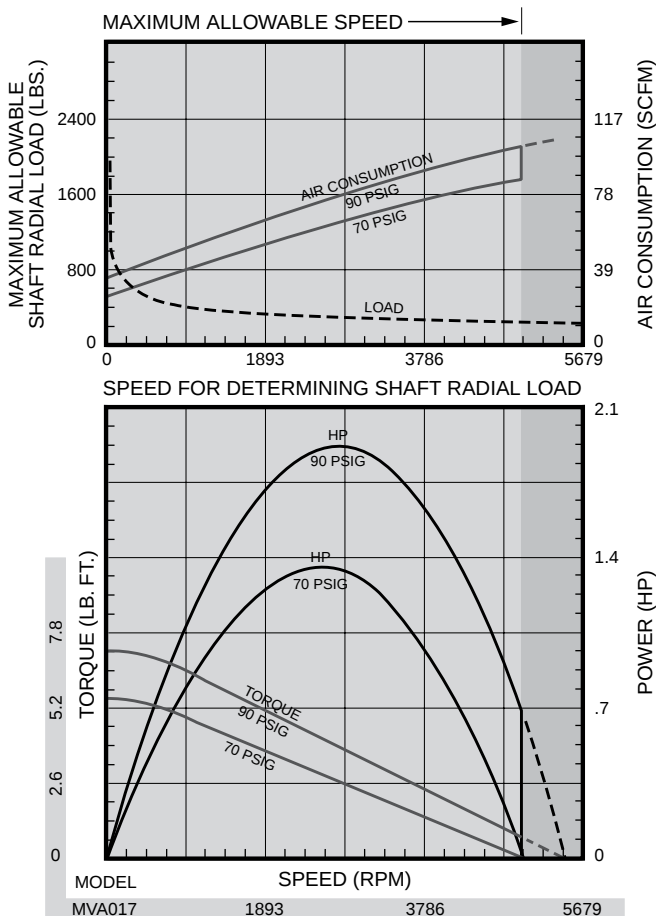
Specifications

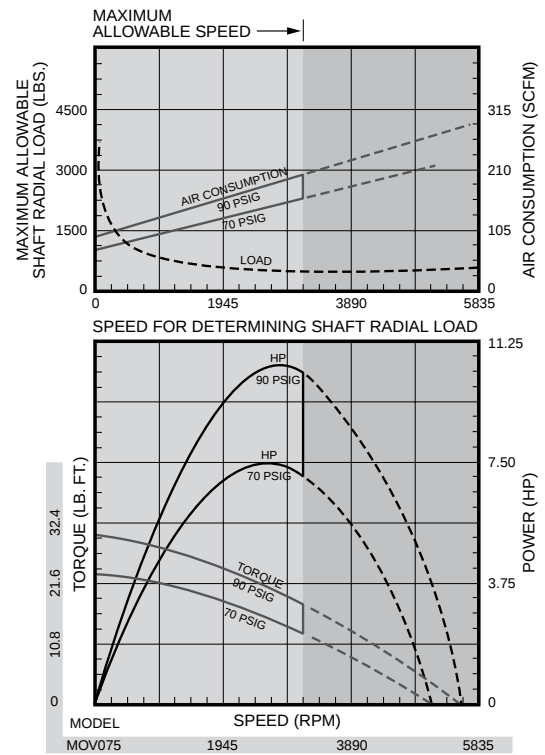
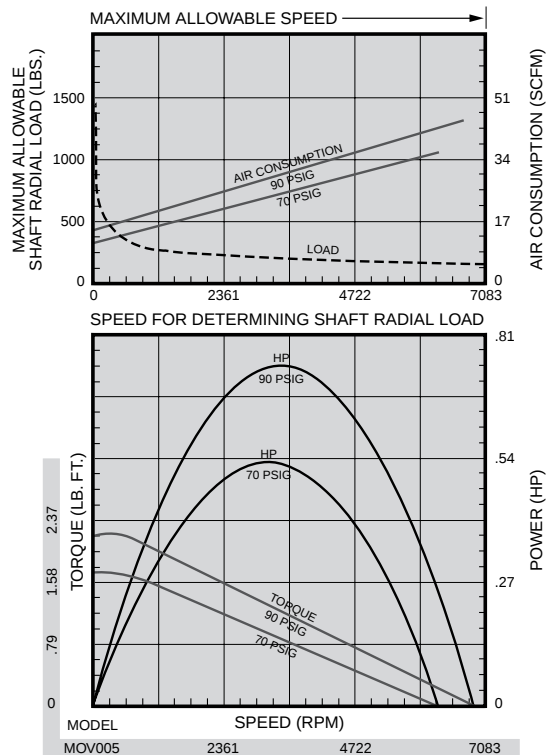


Model*	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Reversible												
MVA017A	1.93	1.44	2800	5450	4.5	6.1	7	9.5	76	2.15	12½	5.67
MVA017B	1.93	1.44	2800	5450	4.5	6.1	7	9.5	76	2.15	12½	5.67
MVA034A	4.15	3.09	3000	6250	8.3	11.3	12.8	17.4	181	5.12	16½	7.48
MVA034B	4.15	3.09	3000	6250	8.3	11.3	12.8	17.4	181	5.12	16½	7.48
MOV005AA	.75	.56	3300	6800	1.65	2.2	2.2	2.98	30	.84	6½	2.95
MOV075AA	10.5	7.8	2600	5600	22.5	30.5	30	40.7	260	7.36	64	29

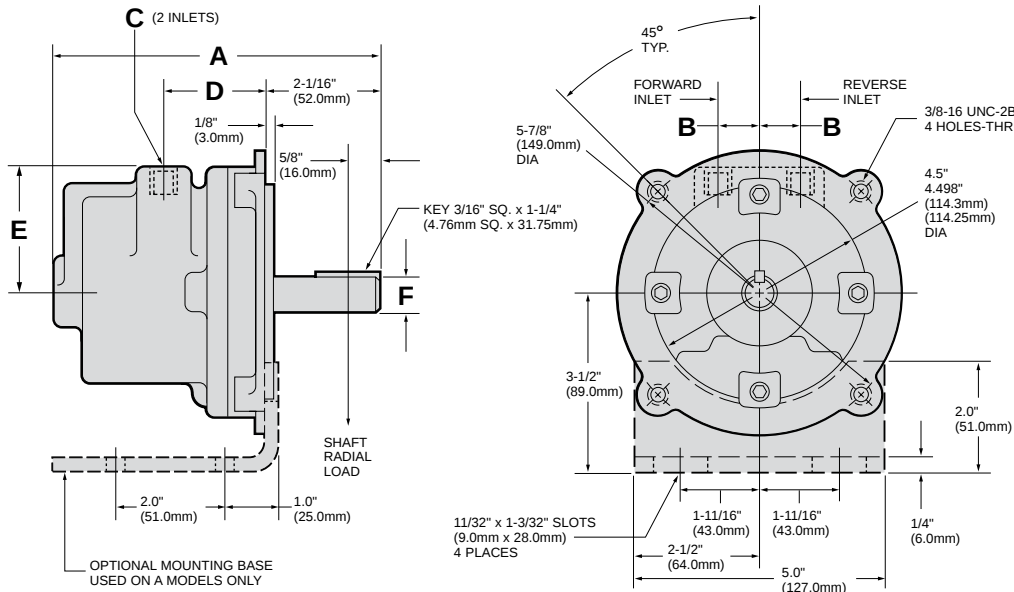
▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.

* "A" suffix denotes foot mount model, "B" suffix denotes flange mount models.





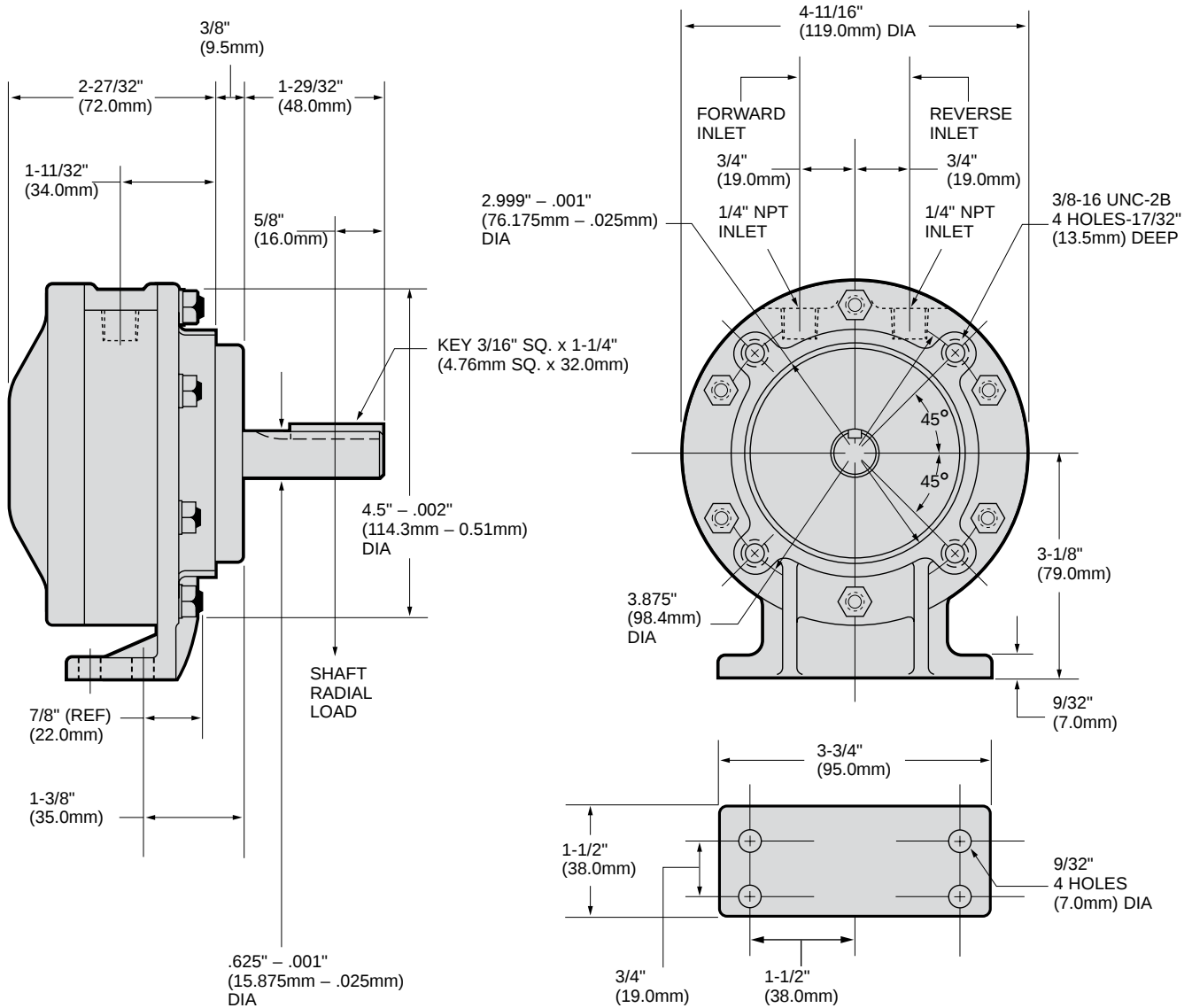
Series MVA Dimensions



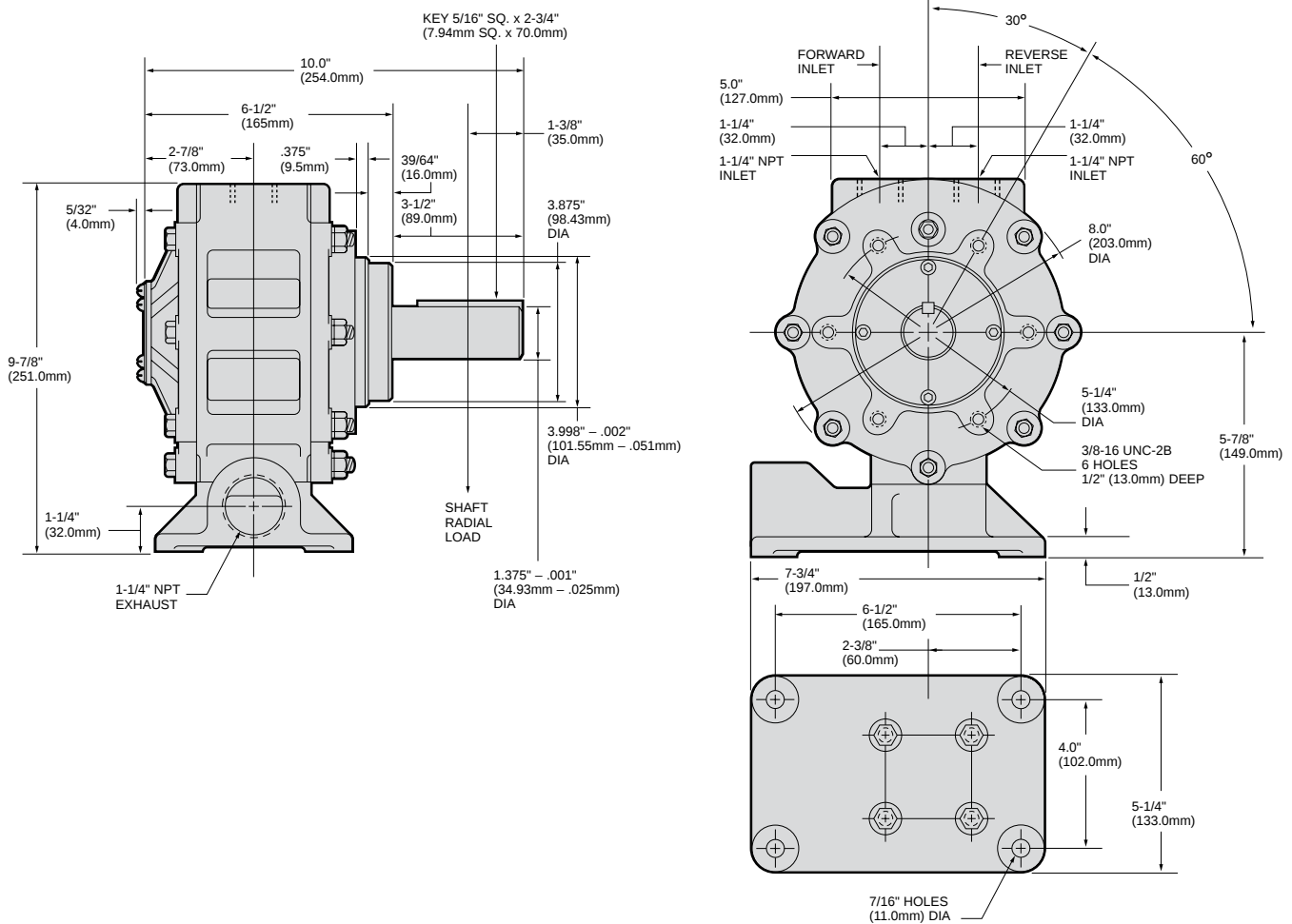
Dimensions

SERIES	A		B		C	D		E		F DIA.	
	in.	mm	in.	mm	NPT	in.	mm	in.	mm	in.	mm
MVA017	6 ¹ / ₁₆	170	7 ¹ / ₁₆	22	3/8"	1 ¹ / ₁₆	48	2 ¹ / ₁₆	64	.6250 .6245	15.88 15.86
MVA034	8 ¹ / ₁₆	214	1 ¹ / ₁₆	30	1/2"	2	51	2 ¹ / ₁₆	67	.8750 .8745	22.23 22.21

Model MOV005AA Dimensions



Model M0V075AA Dimensions



Equipment Options

Models	Furnished with Cataloged Models	Standard Options
MVA017A	*Foot Mounting	
MVA017B	NEMA C Face 56C Frame Size	MVA008-K4 Mounting Foot Kit
MVA034A	**Foot Mounting	MOV010AA-674 Muffler
MVA034B	NEMA C Face 182C Frame Size	MVA008-K4 Mounting Foot Kit MOV010AA-674 Muffler
MOV005AA	Foot/4 Hole Face Mounting	MRV015-AC 980 Muffler
MOV075AA	Foot/6 Hole Face Mounting	150BM-A674 Muffler

* Removal of Foot Mounting results in Motor having NEMA C Face Mounting, 56C Frame Size.
 ** Removal of Foot Mounting results in Motor having NEMA C Face Mounting, 182C Frame Size.

Series Select Lube Free Multi-Vane Air Motors

Specifications



Series	Max Power		Speed at Max Power	Free Speed	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
reversible												
SM1AMA	0.33	0.25	7600	15,200	0.29	0.39	0.38	0.52	17	0.5	1.5	0.7
SM1AMAL	0.33	0.25	7600	15,200	0.29	0.39	0.38	0.52	17	0.5	1.5	0.7
SM1UPC	0.60	0.37	6000	12,500	0.45	0.6	0.6	0.81	42	1.2	1.75	0.8
SM1UPCL	0.60	0.37	6000	12,500	0.45	0.6	0.6	0.81	42	1.2	1.75	0.8
SM1UPCR	0.60	0.37	6000	12,500	0.45	0.6	0.6	0.81	42	1.2	1.75	0.8
SM2AMAN	0.88	0.66	3000	8070	1.7	2.3	2.3	3.1	48	1.4	7.5	3.4
SM2AMC	0.88	0.66	3000	8070	1.7	2.3	2.3	3.1	48	1.4	7.5	3.4
SM4AMAN	1.5	1.1	3000	7900	2.6	3.5	4.1	5.6	67	1.9	8.25	3.7
SM4AMB	1.5	1.1	3000	7900	2.6	3.5	4.1	5.6	67	1.9	8.25	3.7
SM6AMA	3.6	2.7	3000	7900	5.3	7.2	8.7	11.8	120	3.4	16.25	7.4
SM6AMAN	3.6	2.7	3000	7900	5.3	7.2	8.7	11.8	120	3.4	16.25	7.4
SM8AMA	4.8	3.6	2500	7000	10	13.6	14	19	152	4.3	22.5	10.2
SM8AMAN	4.8	3.6	2500	7000	10	13.6	14	19	152	4.3	22.5	10.2

Model Designation Breakout

Select Series Air Motor	Power Series	Shaft/Interface	Rotation	Mounting
	1AM 1UP 2AM 4AM 6AM 8AM	A = Round shaft w/ square key (Round shaft on SM1AM series) B = Round shaft with Woodruff Key (#3) C = Round shaft with flat on the shaft	L=Left Hand Bias (CCW)* R=Right Hand Bias (CW)* None=Reversible *when facing shaft	N=NEMA mount None= Face or Footmount (Footmount is an optional accessory)

Equipment Options

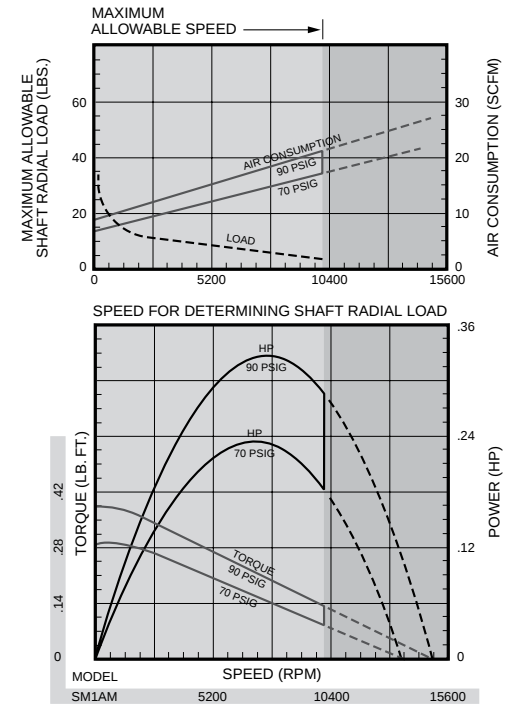
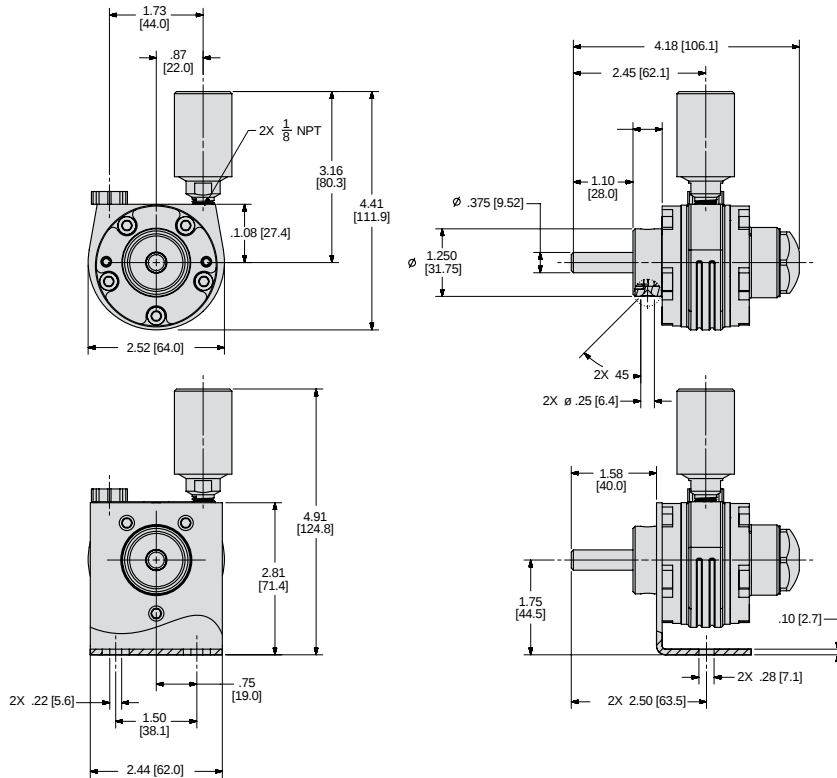
Series	Furnished with Cataloged Models	Optional Accessories
SM1AM	Hub Mounting Muffler	SM1AM-AG587 Footmount
SM1UP	Hub Mounting Muffler	SM1AM-AG587 Footmount
SM2AM	3 Hole Face Mounting Muffler NEMA 56C Flange with Model SM2AMAN	SM2AM-AH636 Footmount
SM4AM	3 Hole Face Mounting Muffler NEMA 56C Flange with Model SM4AMAN	SM4AM-AH634 Footmount
SM6AM	3 Hole Face Mounting Muffler NEMA 56C Flange with Model SM6AMAN	SM6AM-AH634 Footmount
SM8AM	4 Hole Face Mounting Muffler NEMA 182C Flange, 184C Flange Mount with Model SM8AMAN	SM8AM-AH640 Footmount

Interchange Chart

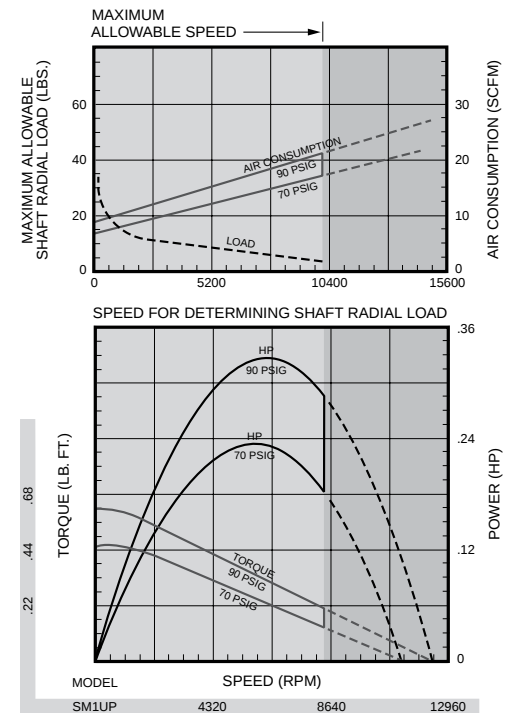
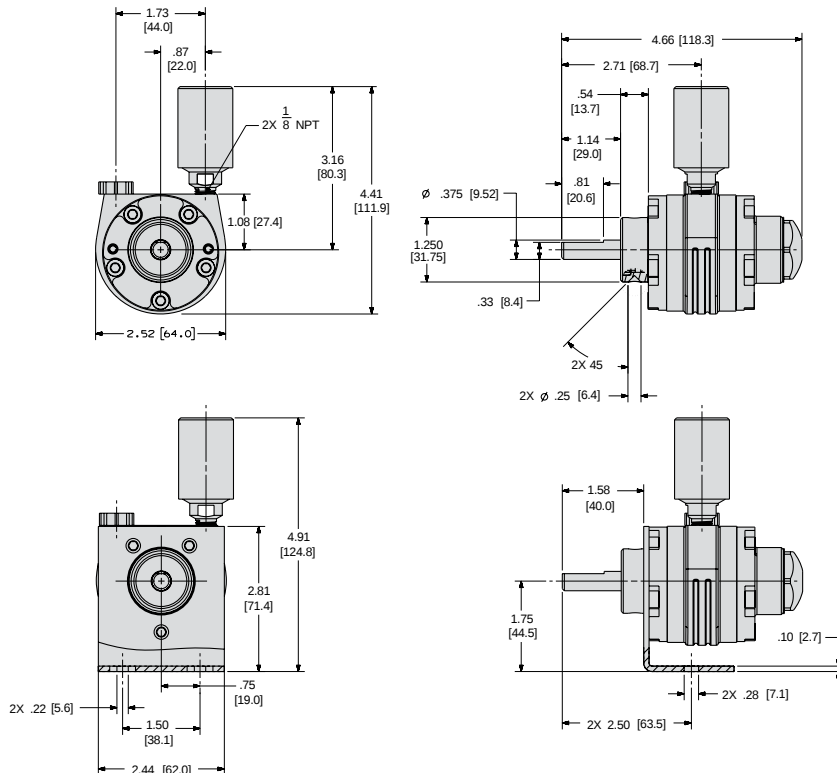
GAST Model Style	Rotation Bias	FENNER Model Style	IR SELECT Series Model Style (w/ Foot Bracket)	Max. Power (hp)	Max. Free Speed (rpm)	Mounting Style
1AM-NCC-12	Left Hand (CCW)		SM1AMAL	0.33	15,200	Hub Mount
1AM-NCW-14	Right Hand (CW)		SM1AMA	0.33	15,200	Hub Mount
1AM-NRV-39A	Reversible		SM1AMA	0.33	15,200	Hub Mount
1AM-NRV-63A	Reversible		SM1AMA	0.33	15,200	Hub Mount
1UP-NCC-1A	Left Hand (CCW)		SM1UPCL	0.60	12,500	Hub Mount
1UP-NCW-2A	Right Hand (CW)		SM1UPCR	0.60	12,500	Hub Mount
1UP-NRV-3A	Reversible	V1X	SM1UPC	0.60	12,500	Hub Mount
1UP-NRV-10	Reversible		SM1UPC	0.60	12,500	Hub Mount
AG585	1AM Foot Mount Bracket		(SM1AM-AG587)			
2AM-NCC-16	Left Hand (CCW)	2VMX/CCW	SM2AMC	0.88	8,070	Hub or Face Mount
2AM-NCC-16F	Left Hand (CCW)		SM2AMC	0.88	8,070	Hub or Face Mount
2AM-NCW-7A	Right Hand (CW)	2VMX/CW	SM2AMC	0.88	8,070	Hub or Face Mount
2AM-NCW-7B	Right Hand (CW)		SM2AMC	0.88	8,070	Hub or Face Mount
2AM-NRV-89	Reversible	VA2X	SM2AMC	0.88	8,070	Hub or Face Mount
2AM-FCC-1	Left Hand (CCW)	2VMJ/CCW	SM2AMC (w/ SM2AM-AH636)	0.88	8,070	Foot Mount
2AM-FCW-13	Right Hand (CW)	2VMJ/CW	SM2AMC (w/ SM2AM-AH636)	0.88	8,070	Foot Mount
2AM-FRV-501	Reversible	VA2J	SM2AMC (w/ SM2AM-AH636)	0.88	8,070	Foot Mount
2AM-NCC-43A	Left Hand (CCW)	2VMC/CCW	SM2AMAN	0.88	8,070	NEMA 56C Mount
	Right Hand (CW)	2VMC/CW	SM2AMAN	0.88	8,070	NEMA 56C Mount
2AM-NRV-90	Reversible	VA2C	SM2AMAN	0.88	8,070	NEMA 56C Mount
	Left Hand (CCW)	4VMX/CCW	SM4AMB	1.5	7,900	Hub or Face Mount
	Right Hand (CW)	4VMX/CW	SM4AMB	1.5	7,900	Hub or Face Mount
4AM-NRV-22B	Reversible	VA4X	SM4AMB	1.5	7,900	Hub or Face Mount
4AM-NRV-22F	Reversible		SM4AMB	1.5	7,900	Hub or Face Mount
4AM-NRV-54A	Reversible		SM4AMB	1.5	7,900	Hub or Face Mount
	Left Hand (CCW)	4VMJ/CCW	SM4AMB (w/ SM4AM-AH634)	1.5	7,900	Foot Mount
	Right Hand (CW)	4VMJ/CW	SM4AMB (w/ SM4AM-AH634)	1.5	7,900	Foot Mount
4AM-FRV-13C	Foot Mount	VA4J	SM4AMB (w/ SM4AM-AH634)	1.5	7,900	Foot Mount
4AM-FRV-13H	Foot Mount		SM4AMB (w/ SM4AM-AH634)	1.5	7,900	Foot Mount
4AM-FRV-63A	Foot Mount		SM4AMB (w/ SM4AM-AH634)	1.5	7,900	Foot Mount
	Left Hand (CCW)	4VMC/CCW	SM4AMAN	1.5	7,900	NEMA 56C Mount
	Right Hand (CW)	4VMC/CW	SM4AMAN	1.5	7,900	NEMA 56C Mount
4AM-NRV-50C	Reversible	VA4C	SM4AMAN	1.5	7,900	NEMA 56C Mount
4AM-NRV-70C	Reversible		SM4AMAN	1.5	7,900	NEMA 56C Mount
6AM-NRV-7A	Reversible	VA6X	SM6AMA	3.6	7,900	Face Mount
6AM-FRV-5A	Reversible	VA6J	SM6AMA (w/ SM6AM-AH634)	3.6	7,900	Foot Mount
6AM-FRV-23A	Reversible		SM6AMA (w/ SM6AM-AH634)	3.6	7,900	Foot Mount
6AM-NRV-11A	Reversible	VA6C	SM6AMAN	3.6	7,900	NEMA 56C Mount
6AM-NRV-22A	Reversible		SM6AMAN	3.6	7,900	NEMA 56C Mount
8AM-NRV-5B	Reversible	VA8X	SM8AMA	4.8	7,000	Face Mount
8AM-NRV-42A	Reversible		SM8AMA	4.8	7,000	Face Mount
8AM-FRV-2B	Reversible	VA8J	SM8AMA (w/ SM8AM-AH640)	4.8	7,000	Foot Mount
8AM-FRV-30A	Reversible		SM8AMA (w/ SM8AM-AH640)	4.8	7,000	Foot Mount
8AM-NRV-28A	Reversible	VA8C	SM8AMAN	4.8	7,000	NEMA 145TC Mount
8AM-NRV-32A	Reversible		SM8AMAN	4.8	7,000	NEMA 145TC Mount

NOTE: All Select Series motors are provided in our Lube Free Four Vane design.

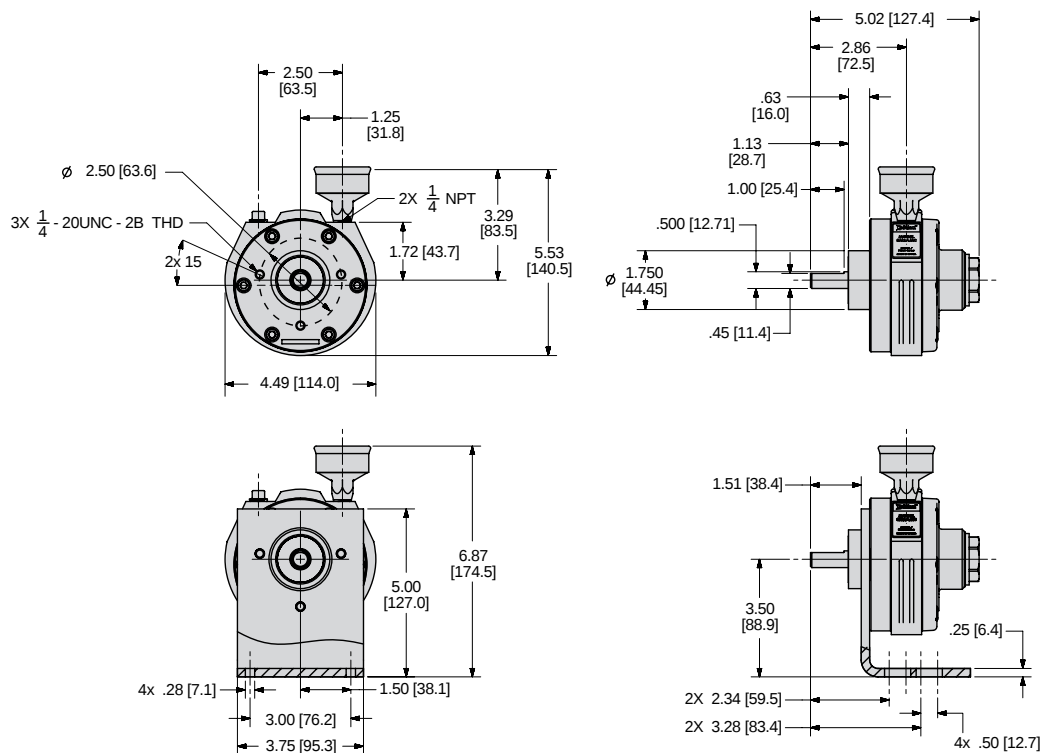
SM1AM and SM1AM-AG587 Lube Free Multi-Vane Air Motors Footmount Dimensions



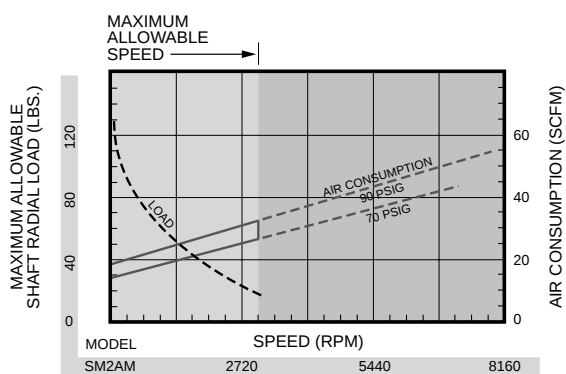
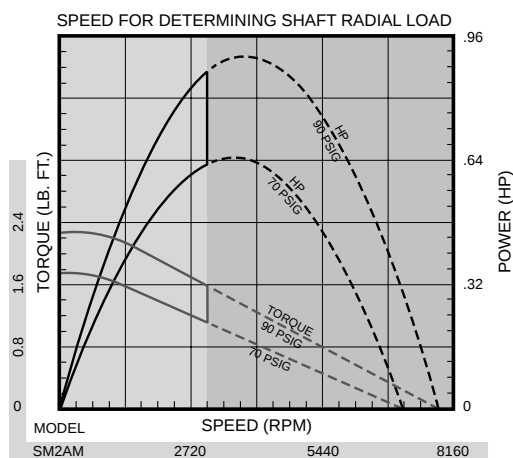
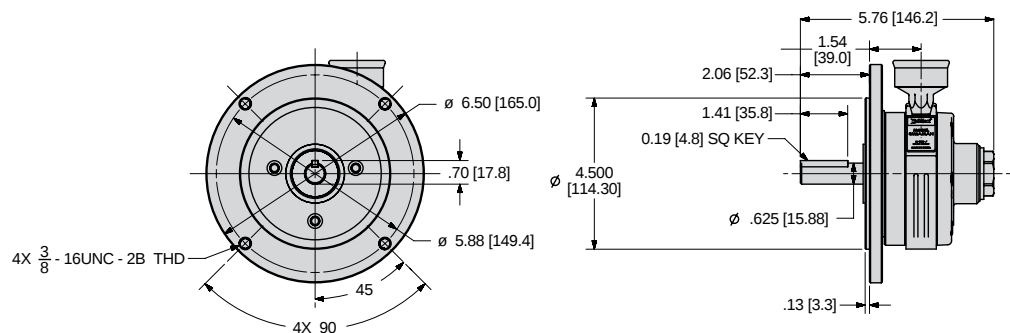
SM1UP and SM1AM-AG587 Lube Free Multi-Vane Air Motors Footmount Dimensions



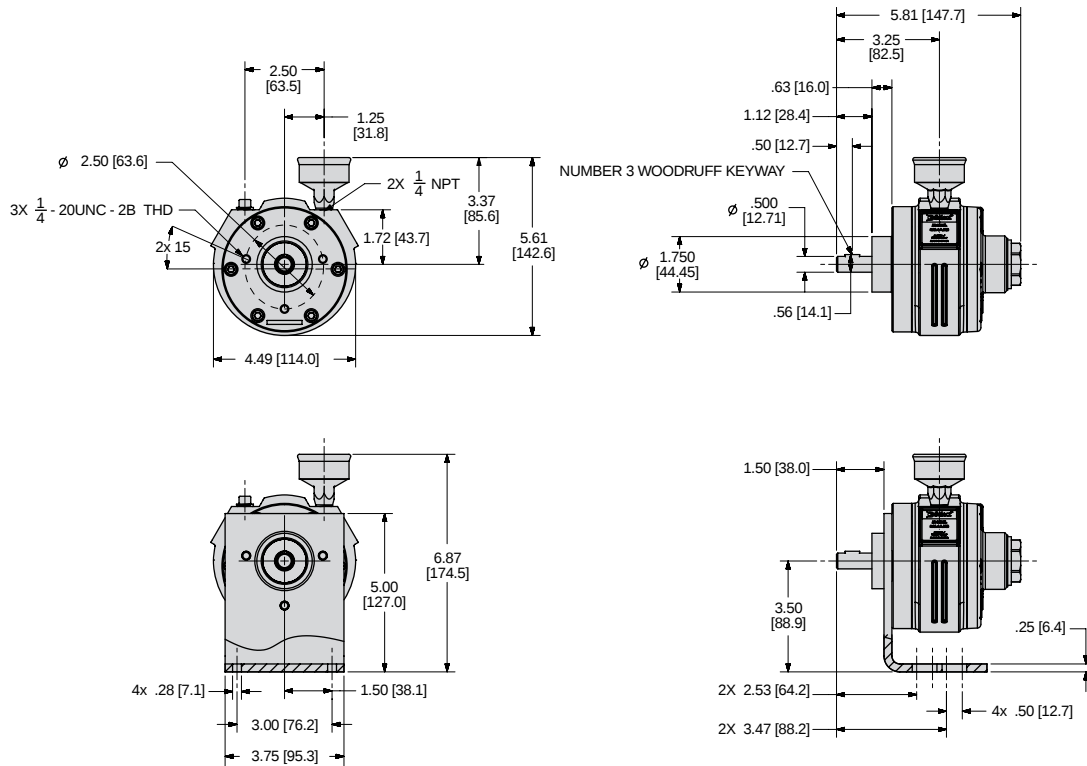
SM2AMC and SM2AM-AH636 Lube Free Multi-Vane Air Motors Footmount Dimensions



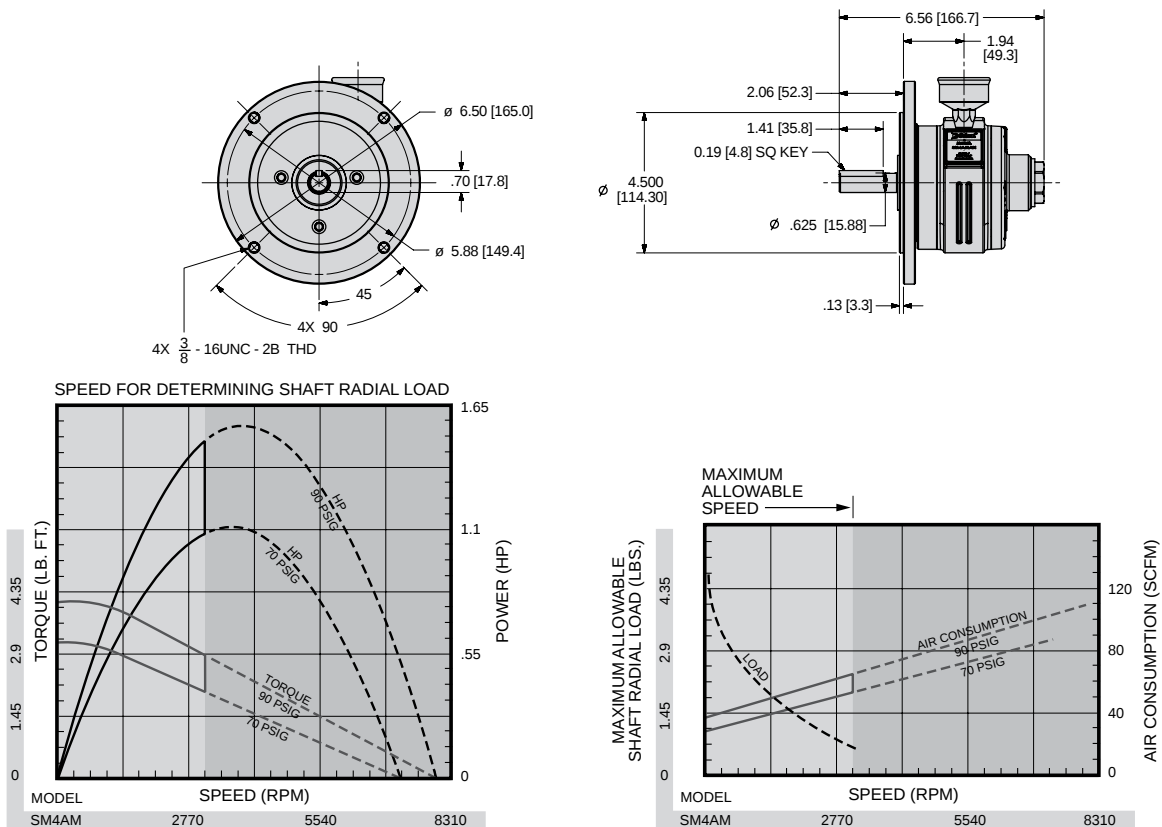
SM2AMAN Lube Free Multi-Vane Air Motors NEMA Mount Dimensions



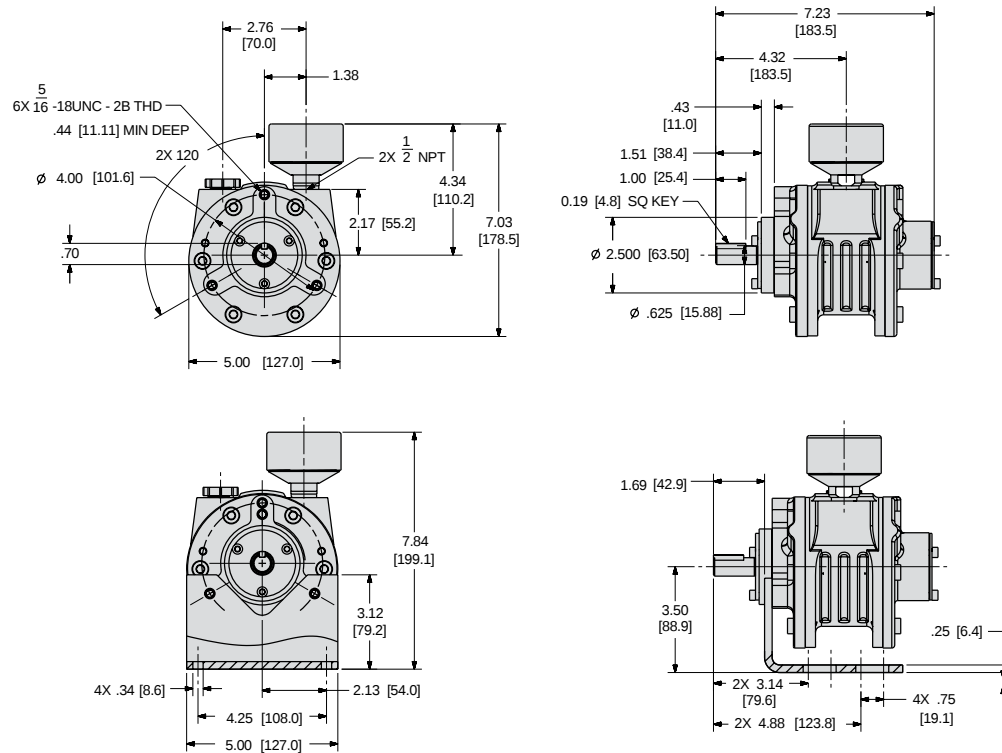
SM4AMB and SM4AM-AH634 Lube Free Multi-Vane Air Motors Footmount Dimensions



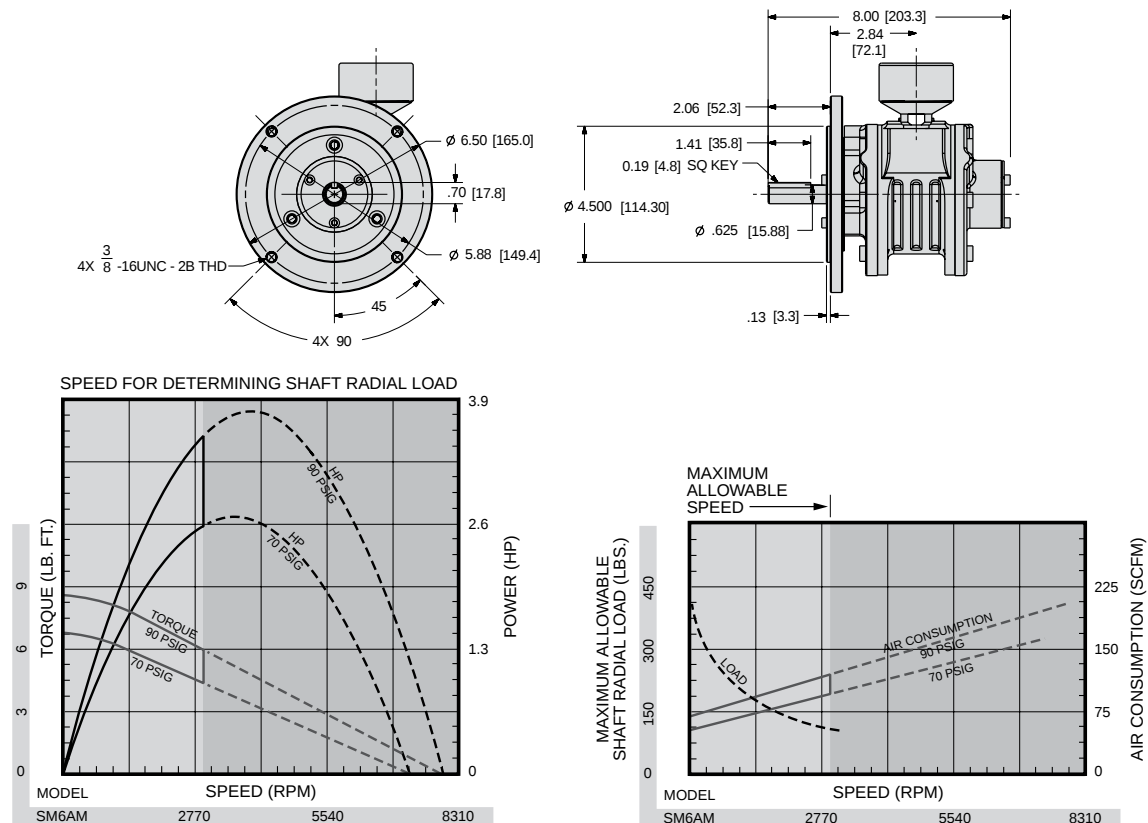
SM4AMAN Lube Free Multi-Vane Air Motors NEMA Mount Dimensions



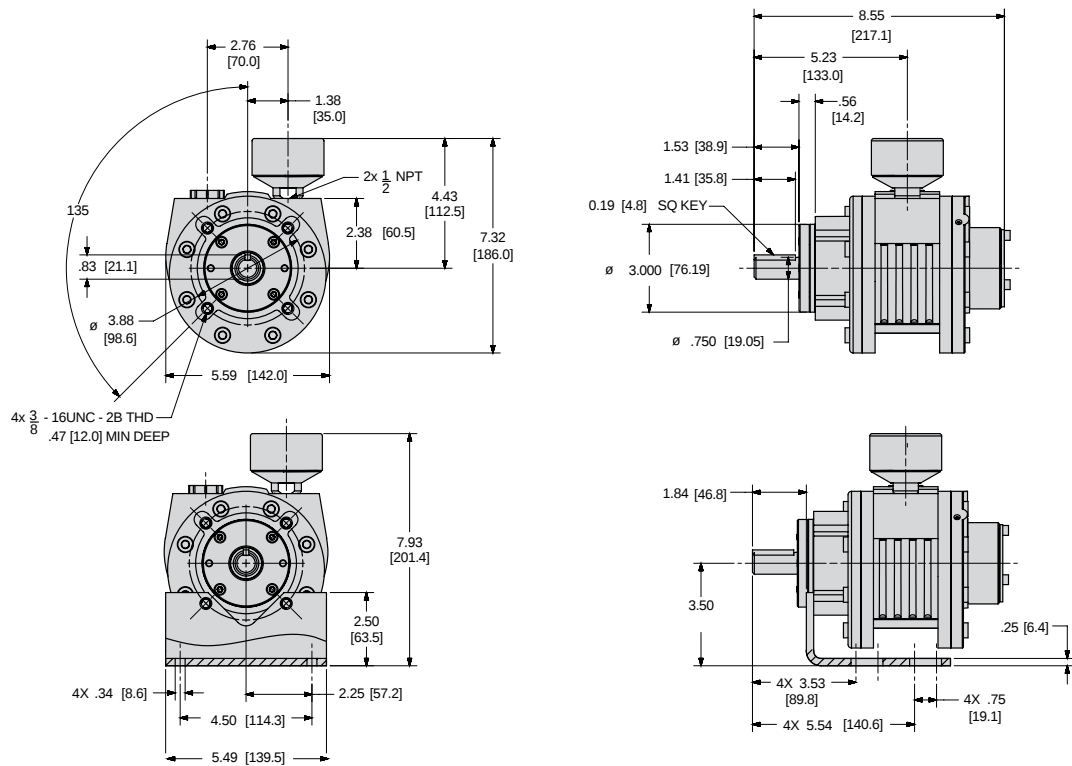
SM6AMA and SM6AM-AH636 Lube Free Multi-Vane Air Motors Footmount Dimensions



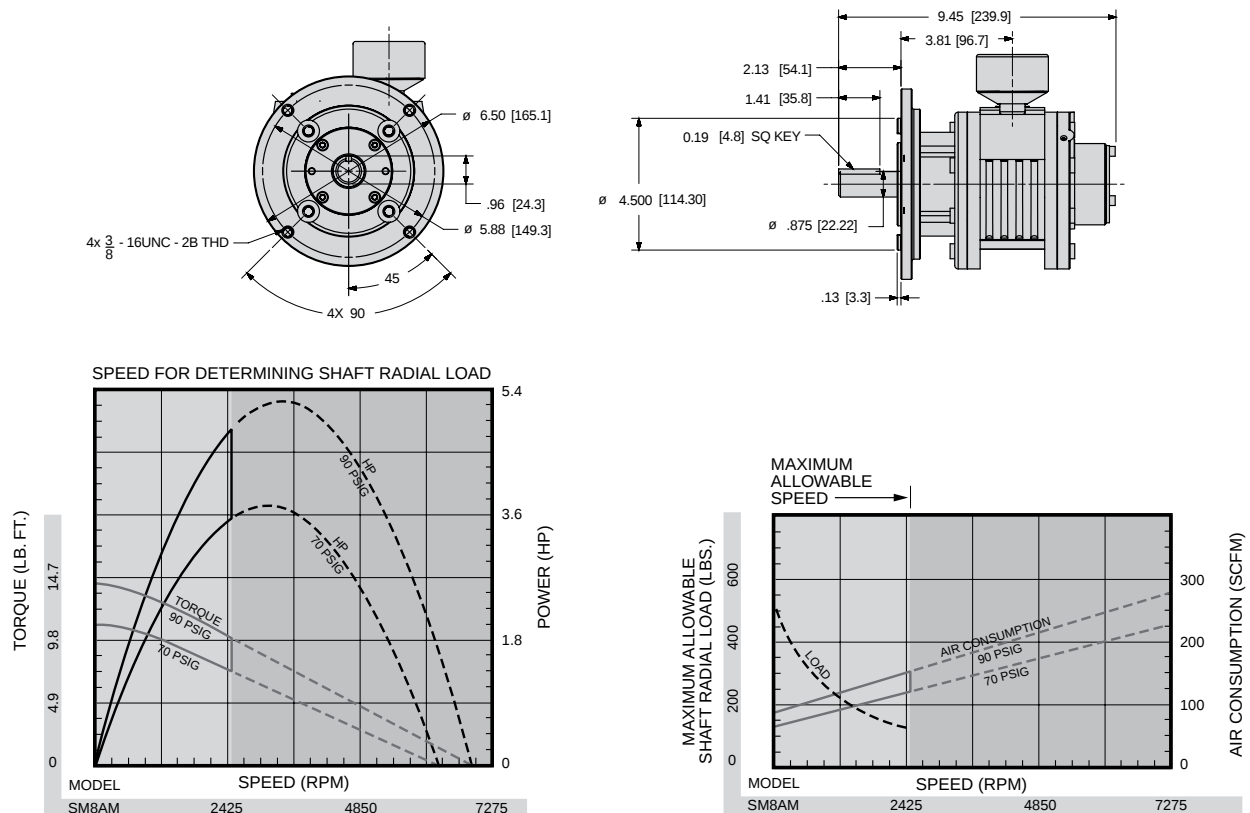
SM6AMAN Lube Free Multi-Vane Air Motors NEMA Mount Dimensions



SM8AMA and SM8AM-AH640 Lube Free Multi-Vane Air Motors Footmount Dimensions



SM8AMAN Lube Free Multi-Vane Air Motors NEMA Mount Dimensions



Rotary-Vane Pneumatic Milling and Sawing Motors



FIGURE 1

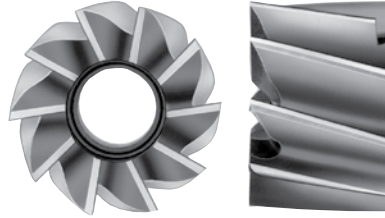


FIGURE 2



FIGURE 3



FIGURE 4

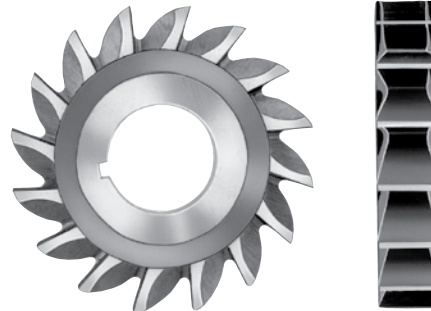


FIGURE 5



ARO milling and sawing motors have been used on such diverse applications as milling screw slots in molded fiberglass and straddle milling a 3/4" hex shape on round bar stock. For cost reduction in secondary machining, it is feasible to install a mill motor on the cross-slide of a machine to mill or spotface a slot or diameter on the outside diameter of a workpiece. ARO's mill motor range covers the majority of primary and secondary machining applications. Industrial milling cutters are available in a wide variety of kinds, sizes and shapes for specific applications. Certain basic types are normally used with ARO milling motors.

1. **End Mills.** These are designed for milling slots, keyways and pockets where arbor-type cutters cannot be applied. The cutting edges, as the name implies, are at the end of the mill rather than on the circumference.
2. **Shell End Mills.** Similar in application to standard end mills, except that they are mounted to an arbor and used whenever the diameter of a standard end mill is too small for the application.
3. **Woodruff Keyslot Cutters.** Used for cutting keyslots in arbors or shafts for standard Woodruff keys. Available in arbor-type or shank-type.
4. **Plain Metal-Slitting Saws.** These cutters are designed with teeth around the entire circumference. Sides are concave to provide clearance in cutoff operations and for slotting heads of screws and shafts.
5. **Side Milling Cutters.** Used for milling plain and flat surfaces.

Proper motor selection should be governed by the fact that motor load speed, or the point at which peak horsepower is reached, occurs at approximately one-half the catalogued free speed. Feed rate should be controlled to load the motor to peak horsepower for maximum efficiency. The load-speed column on each catalog page should be used for motor selection. Feed rate and cutting speed will determine the amount of horsepower required for a specific application.

Three factors determine correct milling motor selection:

1. Horsepower-Formula given below.
2. RPM-Refer to chart for correct speed according to type of material.
3. Feed rate on face mills, or per-tooth rate on slotting, side mills or end mills.

FORMULA FOR MODEL SELECTION

$$HP = \frac{\text{Width of cut} \times \text{depth of cut} \times \text{feed rate per min.}}{K \text{ Factor}}$$

F, feed rate = f, feed per tooth x t, number of teeth x n,
RPM of cutter. Alternately, see reference chart.

$$RPM = \frac{4 \times \text{SFM or surface feet per minute}}{D, \text{ diameter of cutter in inches}}$$

K Factors for Common Materials

Material	K	Material	K	Material	K	Material	K
Magnesium	4.0	Cast Iron	1.5	To 400	.5	220,000-260,000 p.s.i.	.4
Aluminum	4.0	Ferritic	1.0	To 500	.4	260,000-300,000 p.s.i.	.3
Copper	2.0	Pearlitic	.6	Stainless Steel	1.0	High Temperature Alloys	.4
Brass	2.5	Chilled	1.0	Free Machining	.6	Nickel Base	.4
Bronze	2.0	Steel	1.0	Other	.5	Cobalt Base	.4
Malleable Iron	1.0	To 150	.8	High-Tensile Alloys	.5	Austenitic	.4
		To 300		180,000-220,000 p.s.i.			

REFERENCE CHART

Work Material	Hardness BHN	Speed R.P.M.	Feed Per Minute Face Mills	Feed Per Tooth		Work Material	Hardness BHN	Speed R.P.M.	Feed Per Minute Face Mills	Feed Per Tooth					
				Slotting & Side Mills	End Mills					Slotting & Side Mills	End Mills				
Free Machining Steels, Plain Carbon Steels, Alloy Steels, Series 400 & 500 Stainless	150	500-900	.010-.014	.008-.010	.002-.004	Magnesium Alloys	—	900-1600	.012-.018	.010-.014	.003-.005				
	200	450-800	.010-.014	.008-.010	.002-.004	Aluminum Alloys	Low Silicon High Silicon	1200-1800 900-1200	.012-.018 .008-.012	.010-.014 .008-.010	.003-.006 .003-.005				
	250	400-700	.008-.010	.006-.008	.001-.003										
	300	350-600	.008-.010	.006-.008	.001-.003										
Stainless	350	300-450	.006-.008	.004-.006	.001-.003										
Series 200-300 Stainless Sheets	150-250	250-450	.006-.010	.006-.008	.001-.003	Titanium Pure	100-275	250-350	.004-.006	.004-.006	.002-.003				
Hot Work Tool Steels	150-250 200-250	350-450 250-350	.010-.012 .008-.010	.006-.010 .005-.008	.001-.003 .001-.002	Copper Alloys	20-70 RB 60-100 RB	900-1300 800-1000	.012-.016 .008-.012	.008-.012 .007-.010	.003-.004 .002-.004				
Cold Work Tool Steels	200-250	250-350	.007-.010	.005-.008	.001-.003	Brass & Bronze	To 200	600-900	.010-.012	.008-.010	.003-.004				
High-Manganese Steel	170-220	100-200	.007-.010	.005-.008	.002-.003	Zinc Alloys	Cast	800-1100	.006-.009	.005-.008	.002-.003				
Gray Cast Iron	110-220 220-320	300-400 125-250	.012-.016 .008-.012	.008-.012 .006-.010	.002-.004 .002-.003	Manganese	140-220	150-200	.005-.008	.004-.006	.002-.004				
Nodular Iron	140-250 250-400	325-450 225-300	.012-.016 .008-.012	.008-.012 .006-.010	.002-.004 .002-.003	Thermoplastics	—	500-1100	.006-.010	.005-.008	.003-.005				
Malleable Iron	110-220 200-280	250-350 200-300	.012-.016 .008-.012	.008-.012 .006-.010	.002-.004 .002-.003	Thermosetting Plastics	—	500-1100	.006-.010	.005-.008	.003-.005				

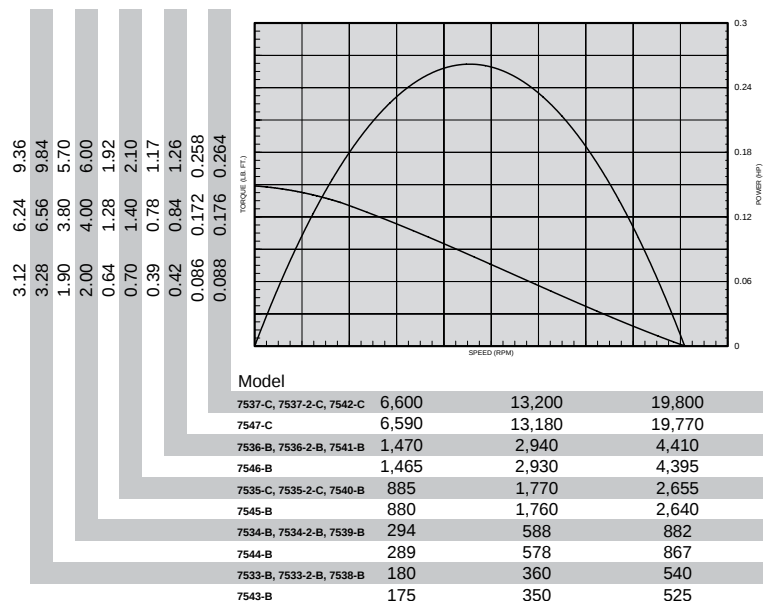
000-Series Forward-Rotation Milling Motors (1/4" Capacity)

Specifications

TORQUE														AIR			
MODEL	SPINDLE	R.P.M.		STALL	OUTPUT			CONSUMPTION		SOUND LEVEL	WEIGHT		GEAR				
		FREE	LOAD SPEED		@MAX. H.P.	@MAX. H.P.	@FREE SPEED	@FREE SPEED	lbs.		kg.						
		SPEED	@MAX. H.P.	lb. ft.	Nm	lb. ft.	Nm	SCFM	L/s	dB(A)			REDUCTION				
NON-REVERSIBLE - .25 H.P.																	
7533-2-B	1/4" Maximum Collet Capacity	550	325	8.2	10.6	4.0	5.1	18.1	8.5	75	2.07	.93	Double				
7534-2-B		900	550	5.0	6.4	2.4	3.2	18.1	8.5	75	2.07	.93	Double				
7535-2-C		2,700	1,600	1.75	2.2	.82	1.1	18.1	8.5	75	1.77	.80	Single				
7536-2-B		4,500	2,700	1.05	1.3	.49	.6	18.1	8.5	75	1.77	.80	Single				
7537-2-C		20,000	12,000	.22	.30	.11	.1	18.1	8.5	75	1.77	.80	Single				

Collet Insert No.	Size	Minimum Capacity		Maximum Capacity	
		Inches	mm	Inches	mm
31812-1	3/64"	1/64"	.40	3/64"	1.19
31812-2	5/64"	3/64"	1.19	5/64"	1.98
31812-3	3/32"	1/16"	1.59	3/32"	2.38
31812-4	1/8"	3/32"	2.38	1/8"	3.18
31812-5	5/32"	1/8"	3.18	5/32"	3.97
31812-6	3/16"	5/32"	3.97	3/16"	4.76
31812-7	7/32"	3/16"	4.76	7/32"	5.56
31812-8	1/4"	7/32"	5.56	1/4"	6.35

Approx. Tooling Penetration - 1 1/8" (28.6mm)



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, muffler, integral collet spindle with 31812-8 1/4" capacity collet for end mills and Woodruff key slot cutters, duplex bearing on drive spindle for maximum radial support.



No Cost Option

Another size collet insert may be substituted for the standard 1/4" capacity insert. Specify collet insert 31812-() in the desired size from the chart above.

Equipment Options

- 41563 Flange Bracket
- 45088 Foot Bracket

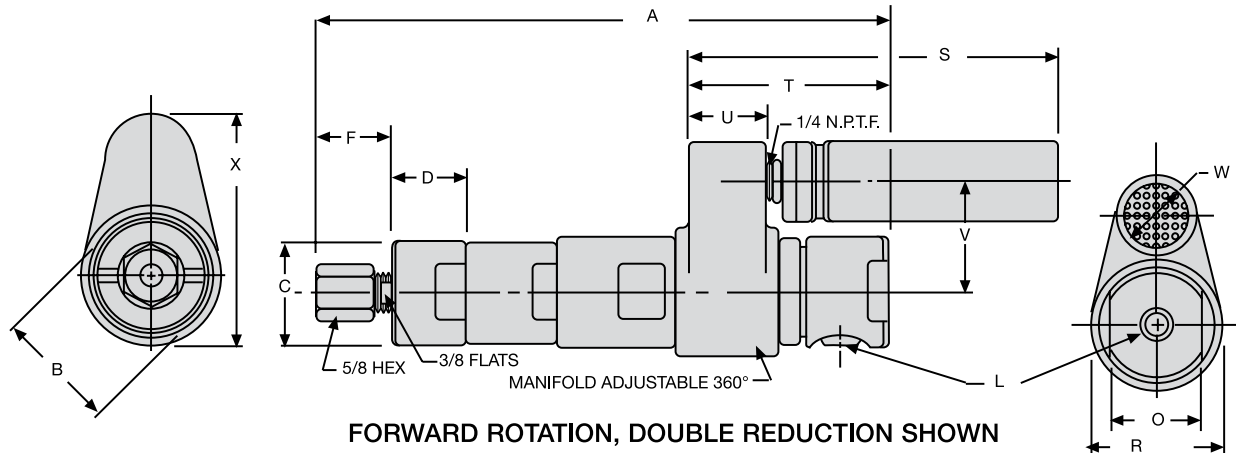


45088 FOOT
MOUNTING
BRACKET



41563 FLANGE
MOUNTING
BRACKET

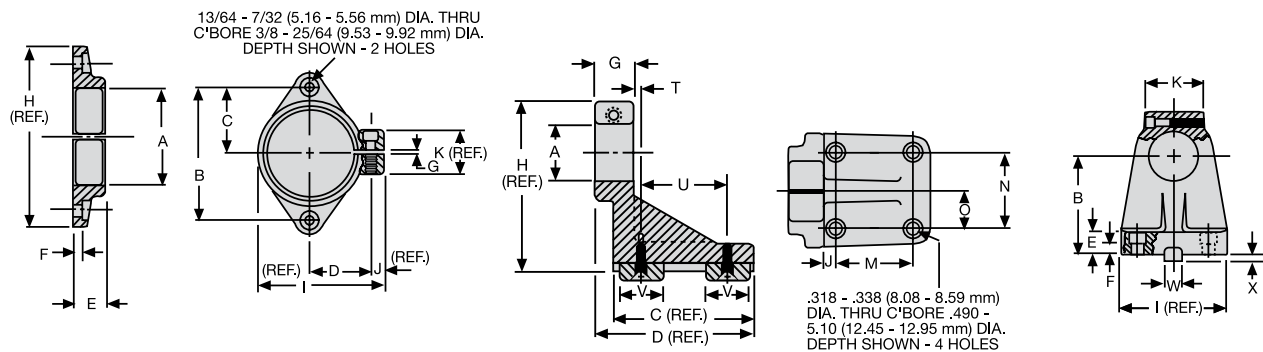
000-Series Milling Motors and Mounting Accessory Dimensions



Models	Gear Reduction	Dimension A
7535-2-C, 7536-2-B 7537-2-C	Single	5-15/16 151 mm
7533-2-B, 7534-2-B	Double	7 178 mm

Scale	B	C	D	F	L	O	R
Inches	1-3/8	1.311 1.312	.870 .890	15/16 (Approx.)	1/8 NPTF	1-1/8	1-5/8
mm	35	33.30 33.32	22.10 22.61	24 (Approx.)	Air Inlet	28	41

Scale	S	T	U	V	W	X
Inches	4-9/16	2-15/32	31/32	1-3/8	1	2-11/16
mm	116	63	25	35	25	68



41563 FLANGE MOUNTING BRACKET

Scale	A	B	C	D	E	F
Inches	1.312 1.314	2.745 2.755	1.370 1.380	1.240 1.260	.490 .510	.146 .166
mm	33.32 33.38	69.72 69.98	34.80 35.05	31.50 32.00	12.45 12.95	3.71 4.22

Scale	G	H	I	J	K
Inches	1/64 3/64	3-3/8	2-9/16	1/4	1
mm	0.40 1.19	85.73	65.09	6.35	25.40

45088 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G	H	I	J
Inches	1.312 1.313	2.749 2.751	3-1/4	3-11/16	.609 .640	.296 .328	.875 .973	4	3	.343 .375
mm	33.32 33.35	69.82 69.88	82.55	93.66	15.47 16.26	7.52 8.33	22.23 23.80	101.60	76.20	8.71 9.53

Scale	K	M	N	O	T	U	V	W	X
Inches	1.542 1.582	1.995 2.005	1.995 2.005	.995 1.005	.140 .156	1.984 2.015	.985 1.015	.499 .500	.173 .198
mm	39.17 40.18	50.67 50.93	50.67 50.93	25.27 25.53	3.56 3.96	50.39 51.18	25.02 25.78	12.67 12.70	4.39 5.03

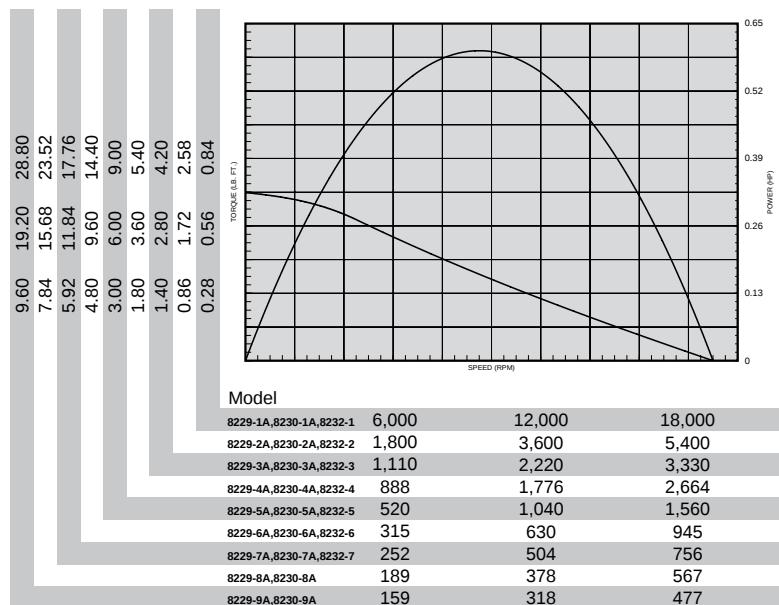
O-Series Forward-Rotation Milling Motors

Specifications

TORQUE															AIR				
		R.P.M.						OUTPUT		CONSUMPTION		SOUND LEVEL				GEAR			
MODEL	SPINDLE	FREE SPEED	LOAD @MAX. H.P.	STALL lb. ft.	Nm	@MAX. H.P. lb. ft. Nm		@FREE SCFM	L/s	@FREE dB(A)	WEIGHT lbs. kg.		REDUCTION						
NON-REVERSIBLE - .60 H.P.																			
8232-1	1/4" Maximum Collet Capacity	19,000	9,800	.70	.9	.32	.4	41.0	19.4	80	2.87	1.29	Single						
8232-2		5,700	2,900	2.15	2.9	1.10	1.5	41.0	19.4	80	2.87	1.29	Single						
8232-3		3,500	1,750	3.50	4.7	1.80	2.4	41.0	19.4	80	2.87	1.29	Single						
8232-4		2,800	1,400	4.50	6.1	2.20	3.0	41.0	19.4	80	2.87	1.29	Single						
8232-5		1,650	840	7.50	10.2	3.80	5.1	41.0	19.4	80	3.62	1.63	Double						
8232-6		1,000	500	12.00	16.3	6.20	8.4	41.0	19.4	80	3.62	1.63	Double						
8232-7		800	390	14.80	20.0	8.00	10.8	41.0	19.4	80	3.62	1.63	Double						

Collet Insert No.	Size	Minimum Capacity		Maximum Capacity	
		Inches	mm	Inches	mm
31812-1	3/64"	1/64"	.40	3/64"	1.19
31812-2	5/64"	3/64"	1.19	5/64"	1.98
31812-3	3/32"	1/16"	1.59	3/32"	2.38
31812-4	1/8"	3/32"	2.38	1/8"	3.18
31812-5	5/32"	1/8"	3.18	5/32"	3.97
31812-6	3/16"	5/32"	3.97	3/16"	4.76
31812-7	7/32"	3/16"	4.76	7/32"	5.56
31812-8	1/4"	7/32"	5.56	1/4"	6.35

Approx. Tooling Penetration - 1 1/4" (31.8mm)



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, muffler, integral collet spindle with 31812-8 1/4" capacity collet for end mills and Woodruff key slot cutters, duplex bearing on drive spindle for maximum radial support.



No Cost Option

Another size collet insert may be substituted for the standard 1/4" capacity insert. Specify collet insert 31812-() in the desired size from the chart above.

Equipment Options

45057 Foot Bracket

41561 Flange Bracket

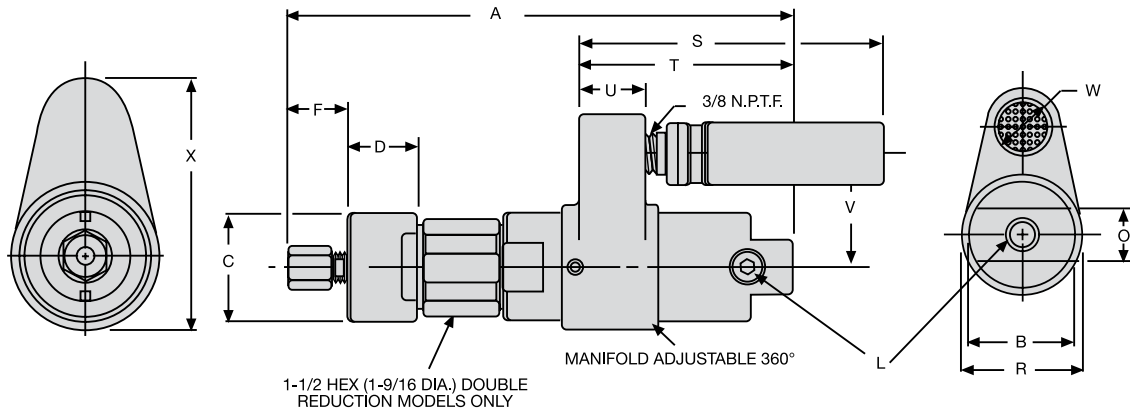


45057 FOOT MOUNTING BRACKET



41561 FLANGE MOUNTING BRACKET

O-Series Milling Motors and Mounting Accessory Dimensions

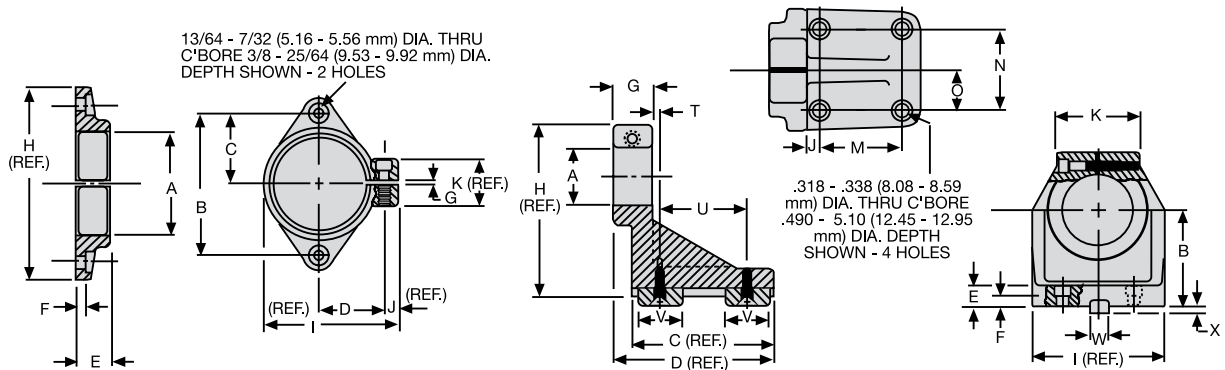


FORWARD ROTATION, DOUBLE REDUCTION SHOWN

Models	Gear Reduction	Dimension A
8232-()	Single	6-7/8 175 mm
	Double	8-3/16 208 mm

Scale	B	C	D	F	L	O	R
Inches	1-3/4	1.740 1.739	1-5/32	15/16 (Approx.)	1/4 NPTF	7/8	2
mm	44	44.20 44.17	29	24 (Approx.)	Air Inlet	22	51

Scale	S	T	U	V	W	X
Inches	4-7/8	3-13/32	1-1/16	1-13/16	1	3-7/16
mm	124	86	27	46	25	87



41561 FLANGE MOUNTING BRACKET

Scale	A	B	C	D	E	F
Inches	1.741 1.740	2.745 2.755	1.370 1.380	1.240 1.260	.490 .510	.146 .166
mm	44.22 44.20	69.72 69.98	34.80 35.05	31.50 32.00	12.45 12.95	3.71 4.22

Scale	G	H	I	J	K
Inches	1/64 3/64	3-3/8	2-9/16	1/4	1
mm	0.40 1.19	85.73	65.09	6.35	25.40

45057 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F	G	H	I	J
Inches	1.741 1.740	2.749 2.751	3-9/16	3-3/4	.609 .640	.296 .328	1"	4-3/8	3-3/4	.296 .328
mm	44.22 44.20	69.82 69.88	90.49	95.25	15.47 16.26	7.52 8.33	25.40	111.13	95.25	7.52 8.33

Scale	K	M	N	O	T	U	V	W	X
Inches	2.343 2.406	1.995 2.005	1.995 2.005	.995 1.005	.109 .140	1.984 2.015	.985 1.015	.499 .500	.173 .198
mm	59.41 61.11	50.67 50.93	50.67 50.93	25.27 25.53	2.77 3.56	50.39 51.18	25.02 25.78	12.67 12.70	4.39 5.03

2200-Series Forward-Rotation Milling Motors

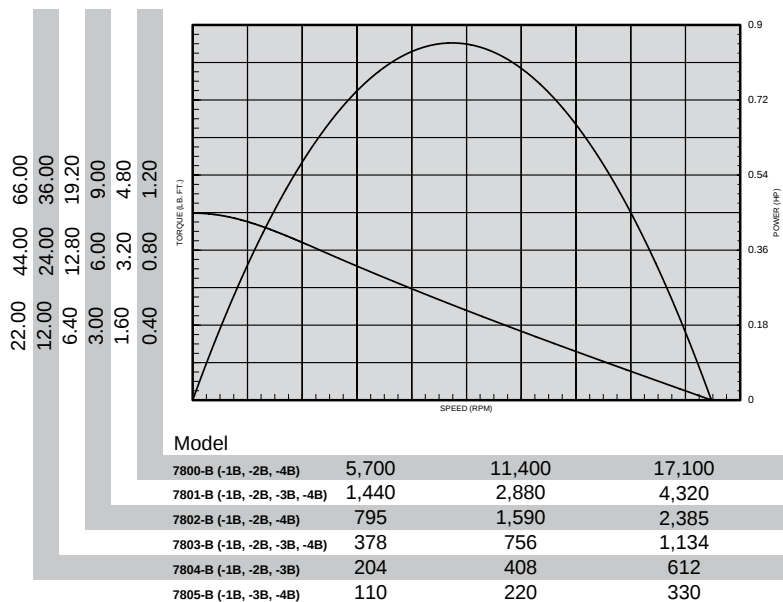
Specifications

TORQUE															AIR				
		R.P.M.						OUTPUT		CONSUMPTION		SOUND LEVEL						GEAR	
MODEL	SPINDLE	FREE SPEED	LOAD @MAX	SPEED H P	STALL lb	ft Nm	@MAX. lb	H.P. ft Nm	@FREE SCFM	SPEED L/s	@FREE dB(A)	WEIGHT lbs	kg					REDUCTION	
NON-REVERSIBLE - .85 H.P.																			
7800-2B	3/8" Maximum Collet Capacity	18,000	9,000	1.00	1.4		.50	.68	41.7	19.7	78	4.89	2.20					Single	
7801-2B		4,600	2,400	4.00	5.5		1.86	2.5	41.7	19.7	78	4.89	2.20					Single	
7802-2B		2,500	1,300	7.50	10.3		3.43	4.7	41.7	19.7	78	4.89	2.20					Single	
7803-2B		1,200	600	16.00	21.9		7.44	10.2	41.7	19.7	78	6.39	2.86					Double	
7804-2B		650	320	30.00	41.2		13.95	19.1	41.7	19.7	78	6.39	2.86					Double	

COLLET SLEEVES

Collet Insert No.	Size	Minimum Capacity		Maximum Capacity	
		Inches	mm	Inches	mm
32968-1	1/8"	3/32"	2.38	1/8"	3.18
32968-2	5/32"	1/8"	3.18	5/32"	3.97
32968-3	3/16"	5/32"	3.97	3/16"	4.76
32968-4	7/32"	3/16"	4.76	7/32"	5.56
32968-5	1/4"	7/32"	5.56	1/4"	6.35
32968-6	9/32"	1/4"	6.35	9/32"	7.14
32968-7	5/16"	9/32"	7.14	5/16"	7.94
32968-8	11/32"	5/16"	7.94	11/32"	8.73
32968-9	3/8"	11/32"	8.73	3/8"	9.53

Approx. Tooling Penetration - 2" (51 mm)



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, muffler, integral collet spindle with 32968-9 3/8" capacity collet for end mills and Woodruff key slot cutters, duplex bearing support on drive spindle for maximum radial support.



No Cost Option

Another size collet insert may be substituted for the standard 3/8" capacity insert. Specify collet insert 32968-() in the desired size from the chart above.

Equipment Options

- 45058 Foot Bracket
- 41559 Flange Bracket

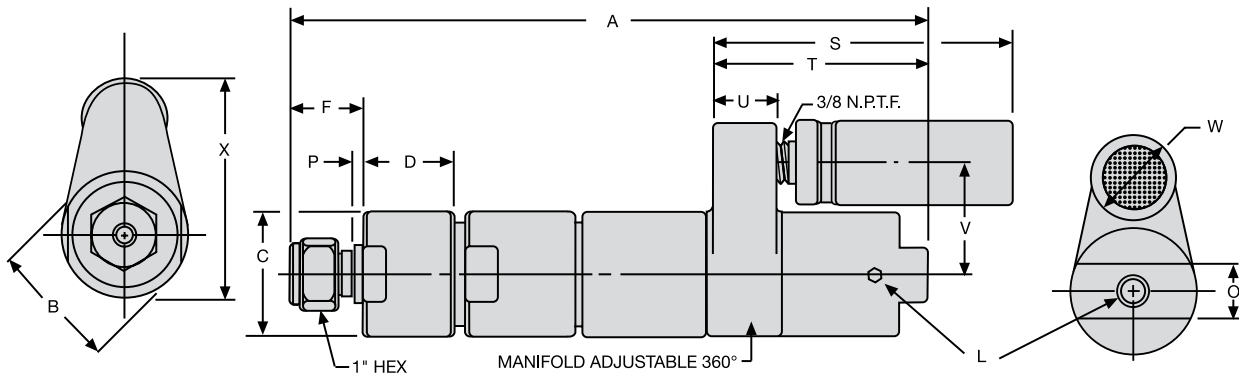


45058 FOOT MOUNTING BRACKET



41559 FLANGE MOUNTING BRACKET

2200-Series Milling Motors and Mounting Accessory Dimensions

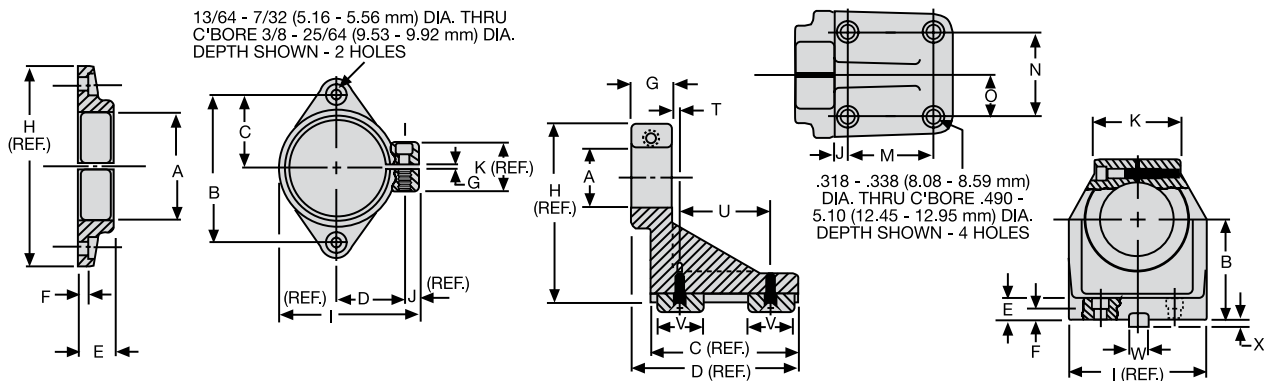


FORWARD ROTATION, DOUBLE REDUCTION SHOWN

Models	Gear Reduction	Dimension A
7800-2B, 7801-2B, 7802-2B	Single	8-11/32 212 mm
7803-2B, 7804-2B, 7805-2B	Double	10-1/16 255 mm

Scale	B	C	D	F	L	O
Inches	2	2.001 2.000	1.422 1.452	1-5/32 (Approx.)	1/4 NPTF	7/8
mm	51	50.80 50.83	36.12 36.88	29 (Approx.)	Air Inlet	22

Scale	P	S	T	U	V	W	X
Inches	.097 .157	4-7/8	3-1/2	1-1/16	1-13/16	1-3/8	3-1/2
mm	2.46 3.99	124	89	27	46	35	89



41559 FLANGE MOUNTING BRACKET

45058 FOOT MOUNTING BRACKET

Scale	A	B	C	D	E	F
Inches	2.000 2.002	2.990 3.010	1.490 1.510	1.365 1.385	.661 .681	.177 .197
mm	50.80 50.85	75.95 76.45	37.85 38.35	34.67 35.18	16.79 17.30	4.50 5.00

Scale	A	B	C	D	E	F	G	H	I	J
Inches	2.000 2.001	2.749 2.751	3-9/16	3-3/4	.609 .640	.296 .328	1"	4-3/8	3-3/4	.296 .328
mm	50.80 50.83	69.82 69.88	90.49	95.25	15.47 16.26	7.52 8.33	25.40	111.13	95.25	7.52 8.33

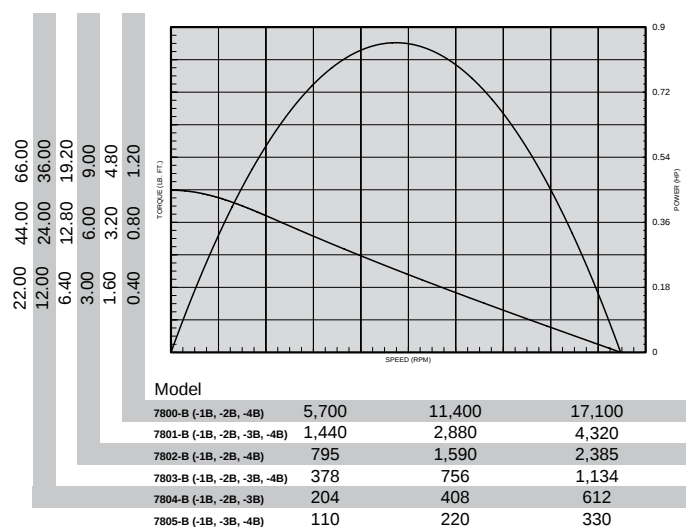
Scale	G	H	I	J	K
Inches	1/64 3/64	3-5/8	2-7/8	5/16	1
mm	0.40 1.19	92.08	73.03	7.94	25.40

Scale	K	M	N	O	T	U	V	W	X
Inches	2.343 2.406	1.995 2.005	1.995 2.005	.995 1.005	.109 .140	1.984 2.015	.985 1.015	.499 .500	.173 .198
mm	59.41 61.11	50.67 50.93	50.67 50.93	25.27 25.53	2.77 3.56	50.39 51.18	25.02 25.78	12.67 12.70	4.39 5.03

2200-Series Forward-Rotation Straddle Mount Milling Motors

Specifications

NON-REVERSIBLE - .85 H.P.													
MODEL	SPINDLE	SPEED	LOAD @MAX. H.P.	STALL lb. ft.	TORQUE Nm	OUTPUT @MAX. H.P. lb. ft.	TORQUE Nm	AIR CONSUMPTION @FREE SCFM	SOUND LEVEL @FREE L/s	WEIGHT lbs.	GEAR kg.	REDUCTION	
7801-3B	7/16"-20 UNF-3A Threaded, Plus 1/8" Sq. Key Drive	4,600	2,400	4.00	5.5	1.86	2.5	41.7	19.7	78	4.89	2.20	Single
7803-3B		1,200	600	16.00	21.9	7.44	10.2	41.7	19.7	78	6.39	2.86	Double
7804-3B		650	320	30.00	41.2	13.95	19.1	41.7	19.7	78	6.39	2.86	Double
7805-3B		350	170	55.00	75.5	26.25	36.0	41.7	19.7	78	6.39	2.86	Double



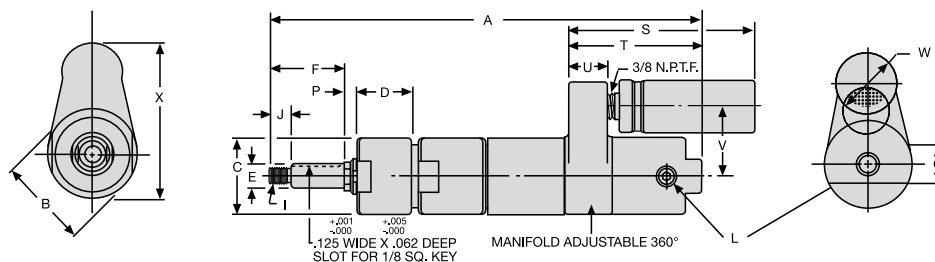
Standard Equipment

Keyed and threaded spindle for shell end mills, metal-slitting saws and side-mill cutters, duplex bearing on drive spindle to provide maximum radial support. Also steel motor housing, flush-type grease fittings, exhaust manifold and muffler.

NOTE: Key not furnished.



2200-Series and Mounting Accessory Dimensions



FORWARD ROTATION, DOUBLE REDUCTION SHOWN

Models	Gear Reduction	Dimension A
7800-3B 7801-3B 7802-3B	Single	9-1/2 241 mm
7803-3B 7804-3B 7805-3B	Double	11-9/32 286 mm

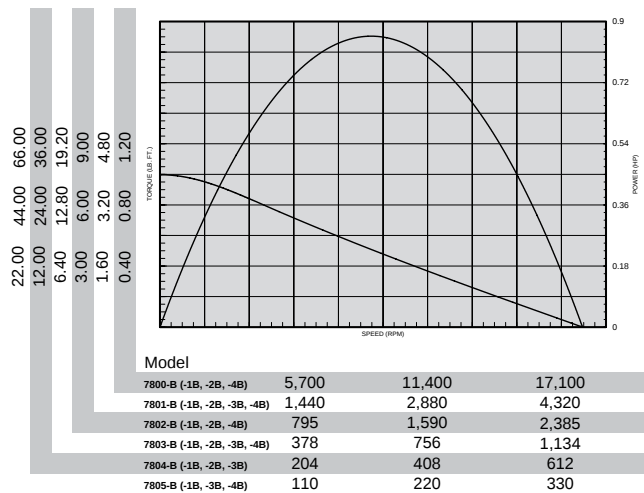
Scale	B	C	D	E	F	I	J	L
Inches	2	2.000 2.001	1.422 1.452	.6240 .6245	1.932 1.942	7/16-20 UNF-3A	.552 .557	1/4 NPTF
mm	51	50.80 50.83	36.12 36.88	15.85 15.86	40.07 49.33	Thread	14.02 14.53	Air Inlet

Scale	O	P	S	T	U	V	W	X
Inches	7/8	.270 .380	4-7/8	3-1/2	1-1/16	1-13/16	1-3/8	3-1/2
mm	22	6.86 9.65	124	89	27	46	35	89

2200-Series Forward-Rotation Side Mount Milling Motors

Specifications

TORQUE															AIR				
		R.P.M.				OUTPUT		CONSUMPTION		SOUND LEVEL				GEAR					
MODEL	SPINDLE	FREE SPEED	LOAD SPEED @MAX. H.P.	STALL lb. ft.	Nm	@MAX. H.P. lb. ft. Nm		@FREE SPEED SCFM	L/s	@FREE SPEED dB(A)	WEIGHT lbs.	kg.	REDUCTION						
NON-REVERSIBLE - .85 H.P.																			
7800-4B	3/8"	18,000	9,000	1.00	1.4	.50	.68	41.7	19.7	78	4.89	2.20	Single						
7801-4B	Maximum	4,600	2,400	4.00	5.5	1.86	2.5	41.7	19.7	78	4.89	2.20	Single						
7802-4B	Collet	2,500	1,300	7.50	10.3	3.43	4.7	41.7	19.7	78	4.89	2.20	Single						
7803-4B	Capacity	1,200	600	16.00	21.9	7.44	10.2	41.7	19.7	78	6.39	2.86	Double						
7805-4B		350	170	55.00	75.5	26.25	36.0	41.7	19.7	78	6.39	2.86	Double						



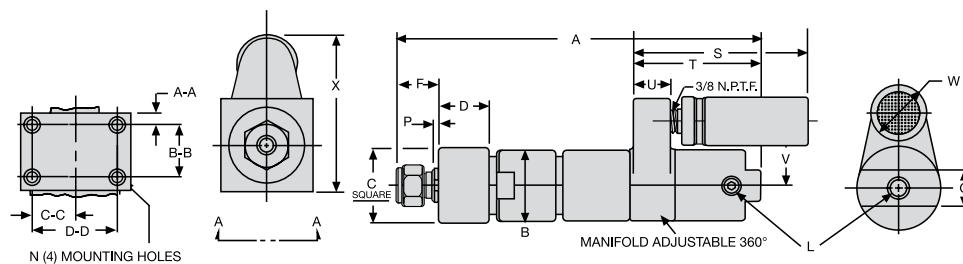
Standard Equipment

Integral collet spindle and mounting head with 4 tapped holes for close-quarter mounting. Other standard equipment same as for motors on page 66.

Equipment Options

For filter-regulator-lubricator, see listing on page 86.

2200-Series and Mounting Accessory Dimensions



FORWARD ROTATION, DOUBLE REDUCTION SHOWN

Models	Gear Reduction	Dimension A
7800-4B 7801-4B 7802-4B	Single	8-3/8 213 mm
7803-4B 7804-4B 7805-4B	Double	10-3/16 259 mm

Scale	B	C	D	F	L	N	O	P	S
Inches	2	2.115 2.135	1.422 1.452	1-5/32 (Approx.)	1/4 NPTF	1/4-28 UNF-2B	7/8	.097 .157	4-7/8
mm	51	53.72 54.23	36.12 36.88	29 (Approx.)	Air Inlet	Thread 3/8" Deep	22	2.46 3.99	124

Scale	T	U	V	W	X	A-A	B-B	C-C	D-D
Inches	3-1/2	1-1/16	1-13/16	1-3/8	3-9/16	.213 .223	1.000 1.005	.807 .817	1.62 1.63
mm	89	27	46	35	90	5.41 5.66	25.40 25.53	20.50 20.75	41.15 41.40

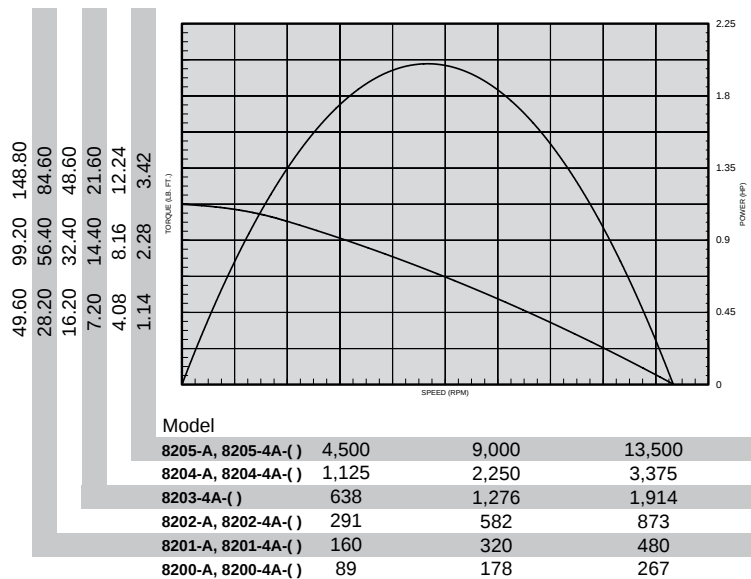
44-Series Forward-Rotation Milling Motors

Specifications

TORQUE														AIR			
		R.P.M.		OUTPUT				CONSUMPTION		SOUND LEVEL		WEIGHT		GEAR			
MODEL	SPINDLE	FREE SPEED	LOAD SPEED @MAX. H.P.	STALL lb. ft.	Nm	@MAX. H.P. lb. ft.	Nm	@FREE SPEED SCFM	L/s	@FREE SPEED dB(A)	lbs.	kg.	REDUCTION				
NON-REVERSIBLE - 2.0 H.P.																	
8200-4A-()	3/4" Maximum Collet Capacity	275	140	124.00	168.0	75.00	101.6	95.0	44.8	80	18.24	8.20	Double				
8201-4A-()		500	255	70.50	95.5	41.00	55.5	95.0	44.8	80	18.24	8.20	Double				
8202-4A-()		900	445	40.50	54.9	24.00	32.5	95.0	44.8	80	18.24	8.20	Double				
8203-4A-()		2,000	1,050	18.00	24.4	10.00	13.5	95.0	44.8	80	13.82	5.21	Single				
8204-4A-()		3,500	1,740	10.20	13.8	6.00	8.1	95.0	44.8	80	13.82	5.21	Single				
8205-4A-()		14,000	7,000	2.85	3.9	1.50	2.0	95.0	44.8	80	13.82	5.21	Single				

Collet Insert No.	Dash No.	Size	Minimum Capacity		Maximum Capacity		Collet Insert No.	Dash No.	Size	Minimum Capacity		Maximum Capacity	
			Inches	mm	Inches	mm				Inches	mm	Inches	mm
35264-1	-A	1/4"	.2187	5.56	.2500	6.35	35264-10	-K	17/32"	.5000	12.70	.5312	13.49
35264-2	-B	9/32"	.2500	6.35	.2812	7.14	35264-11	-L	9/16"	.5312	13.49	.5625	14.29
35264-3	-C	5/16"	.2812	7.14	.3125	7.94	35264-12	-M	19/32"	.5625	14.29	.5937	15.08
35264-4	-D	11/32"	.3125	7.94	.3437	8.73	35264-13	-N	5/8"	.5937	15.08	.6250	15.88
35264-5	-E	3/8"	.3437	8.73	.3750	9.53	35264-14	-P	21/32"	.6250	15.88	.6562	16.67
35264-6	-F	13/32"	.3750	9.53	.4062	10.32	35264-15	-Q	11/16"	.6562	16.67	.6875	17.46
35264-7	-G	7/16"	.4062	10.32	.4375	11.11	35264-16	-R	23/32"	.6875	17.46	.7187	18.26
35264-8	-H	15/32"	.4375	11.11	.4687	11.91	35264-17	-S	3/4"	.7187	18.26	.7500	19.05
35264-9	-J	1/2"	.4687	11.91	.5000	12.70							

Approx. Tooling Penetration - 2 7/16" (62 mm)



Standard Equipment

Steel motor housing, flush-type grease fittings at rotation points for gear and bearing lubrication, exhaust manifold rotatable within 360°, muffler, integral collet spindle with 35264-17 3/4" capacity for end mills and Woodruff key slot cutters, duplex bearing on drive spindle for maximum radial support.



No Cost Option

Another size collet insert may be substituted for the standard 3/4" capacity insert. Specify collet insert 35264-() in the desired size from the chart above.

Equipment Options

45090 Foot Bracket

41557 Flange Bracket

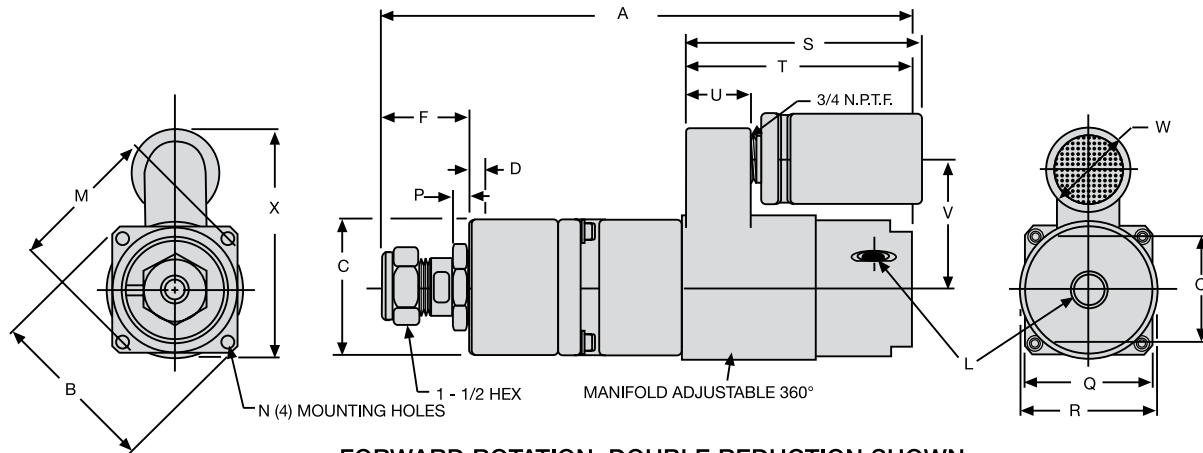


45090 FOOT MOUNTING BRACKET



41557 FLANGE MOUNTING BRACKET

44-Series Milling Motors and Mounting Accessory Dimensions

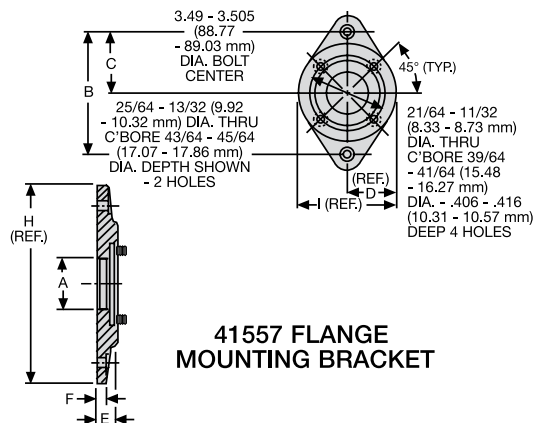


FORWARD ROTATION, DOUBLE REDUCTION SHOWN

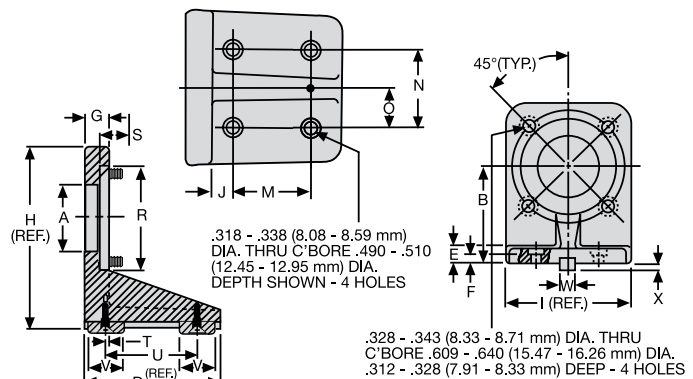
Models	Gear Reduction	Dimension A
8203-4A 8204-4A 8205-4A	Single	11-11/16 297 mm
8200-4A 8201-4A 8202-4A	Double	14-1/2 368 mm

Scale	B	C	D	F	L	M	N	O	P
Inches	4.090 4.110	2.996 2.998	.302 .322	1-15/16 (Approx.)	3/8 NPTF	3.498 3.502	5/16-24 UNF-2B	2-1/2	.335 .364
mm	103.89 104.39	76.10 76.15	7.67 8.18	49 (Approx.)	Air Inlet	86.56 88.95	Thread	63	8.51 9.25

Scale	Q	R	S	T	U	V	W	X
Inches	3	3-3/16	5-3/16	5	1-7/16	2-27/32	2	5-7/16
mm	76	81	132	127	36	72	51	138



41557 FLANGE
MOUNTING BRACKET



45090 FOOT MOUNTING BRACKET

Scale	A	B	C	D
Inches	1.927 1.947	5.745 5.755	2.870 2.880	2-1/4
mm	48.95 49.45	145.92 146.18	72.90 73.15	57.15

Scale	E	F	H	I
Inches	.708 .728	.365 .385	7-1/4	4-1/2
mm	17.98 18.49	9.27 9.78	184.15	114.3

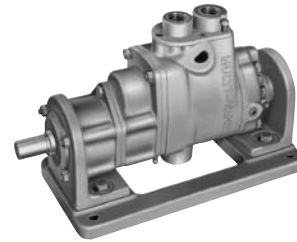
Scale	A	B	D	E	F	G	H	I	J	M
Inches	1.927 1.947	3.124 3.126	4	.468 .531	.296 .328	.671 .703	5-1/8	4	.546 .578	1.995 2.005
mm	55.12 60.20	79.35 79.40	101.6	11.89 13.49	7.52 8.33	17.04 17.78	130.18	101.6	13.87 14.68	50.67 50.93

Scale	N	O	R	S	T	U	V	W	X
Inches	1.995 2.005	.995 1.005	2.999 3.000	.833 .853	.046 .078	2.609 2.640	.985 1.015	.499 .500	.173 .198
mm	50.67 50.93	25.27 25.53	76.17 76.20	21.16 21.67	1.17 1.98	66.27 67.06	25.02 25.78	12.674 12.700	4.39 5.03

Specially Governed Motors

Model 22N51-W/RC Multi-Vane Air Motors

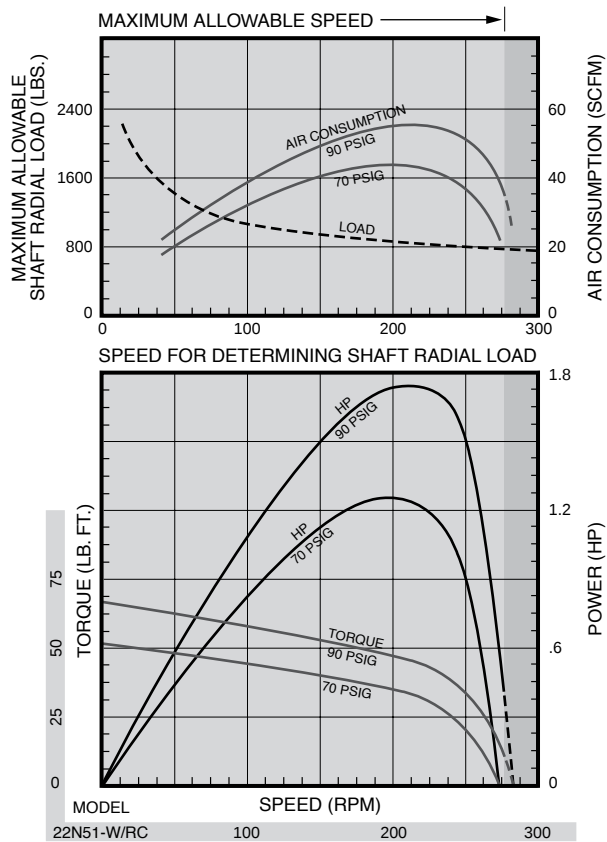
Specifications



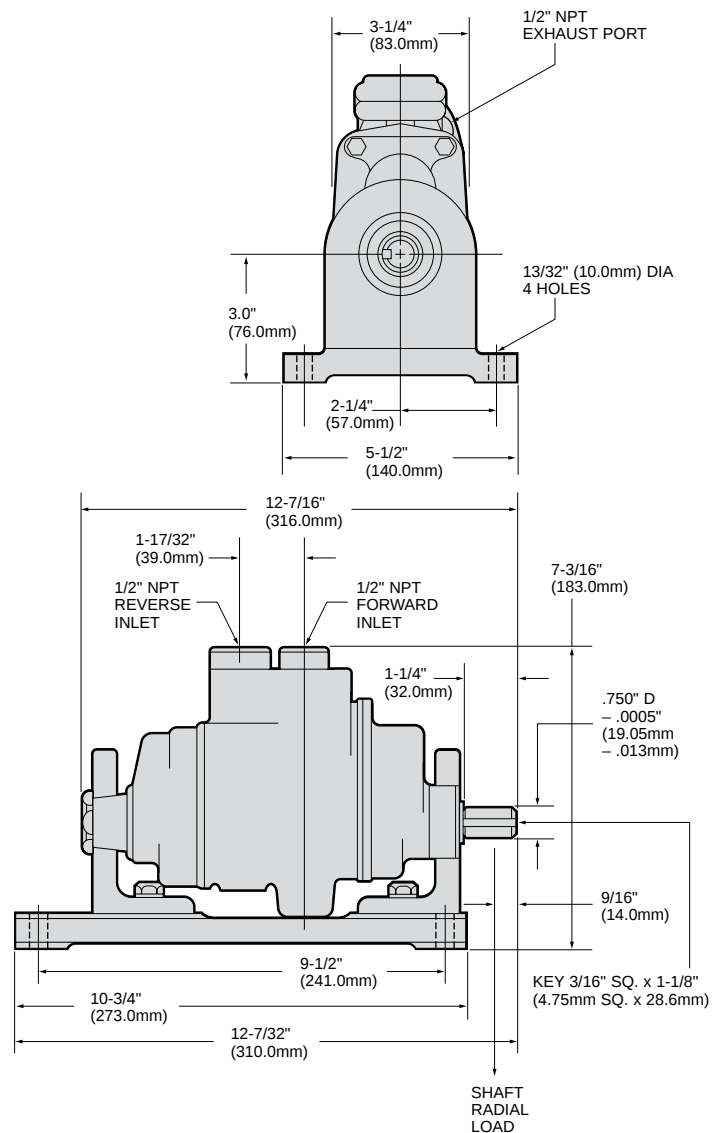
Model	Max. Power		Speed at Max. Power	Free Speed	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m ³ /m	lb.	kg
Reversible												
22N51-W/RC	1.75	1.31	208	280	49	66.4	66	89.5	55	1.6	21	9.5

Performance figures are at 90 psig (620 kPa) air pressure.

Specifications



Dimensions



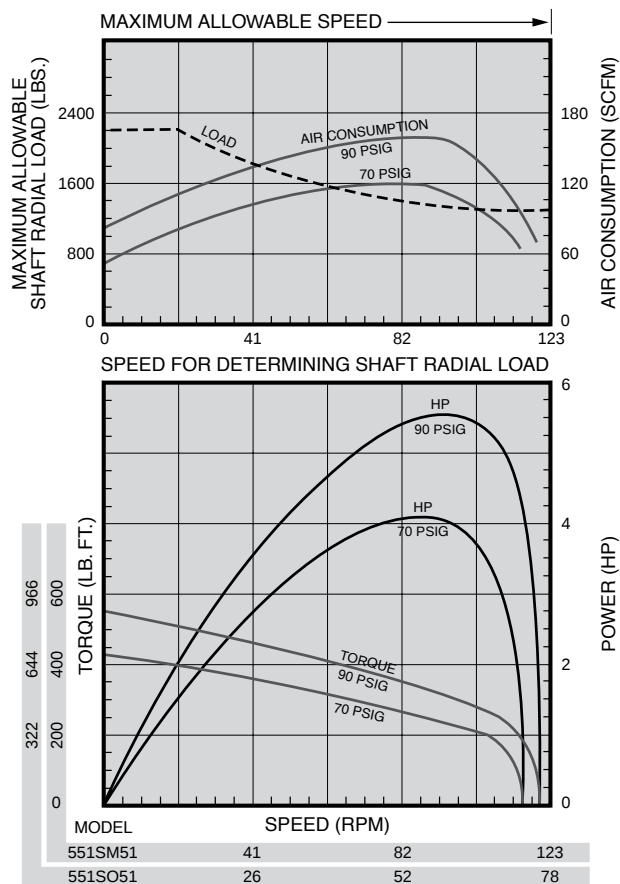
Series 551 Multi-Vane Air Motors

Specifications

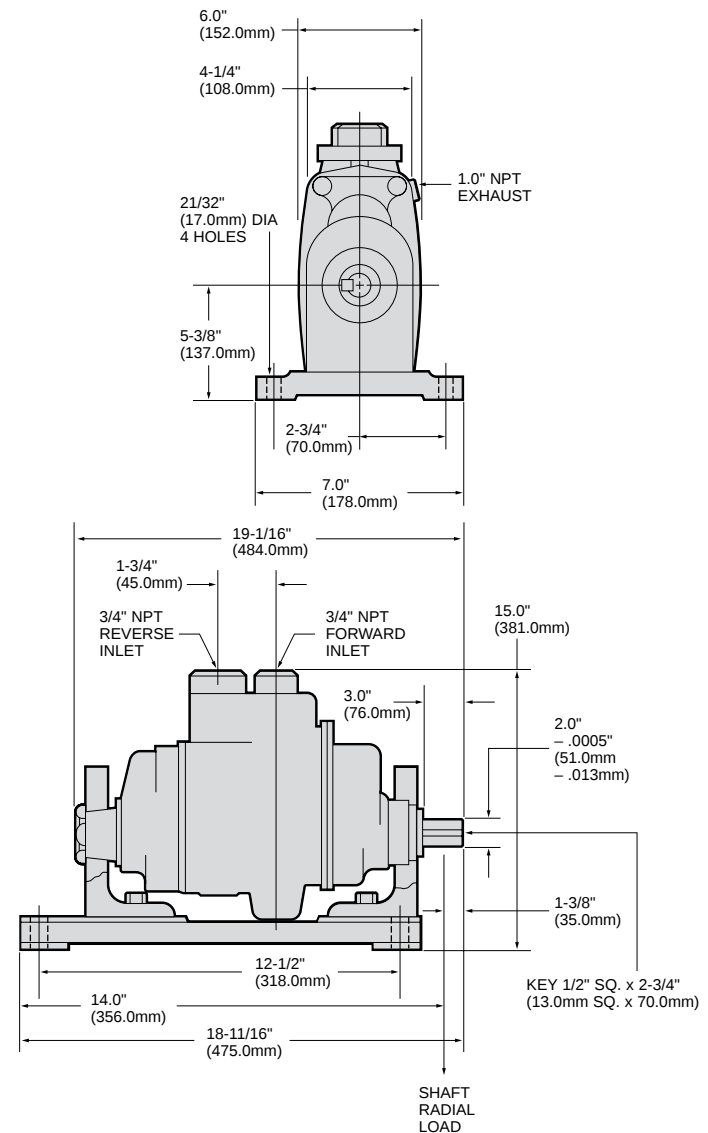
Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Reversible												
551SM51-W/RC	5.6	4.18	95	120	400	542	545	739	160	4.53	93	42.2
551SO51-W/RC	5.6	4.18	59	77	650	881	885	1200	160	4.53	93	42.2

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.

Specifications



Dimensions



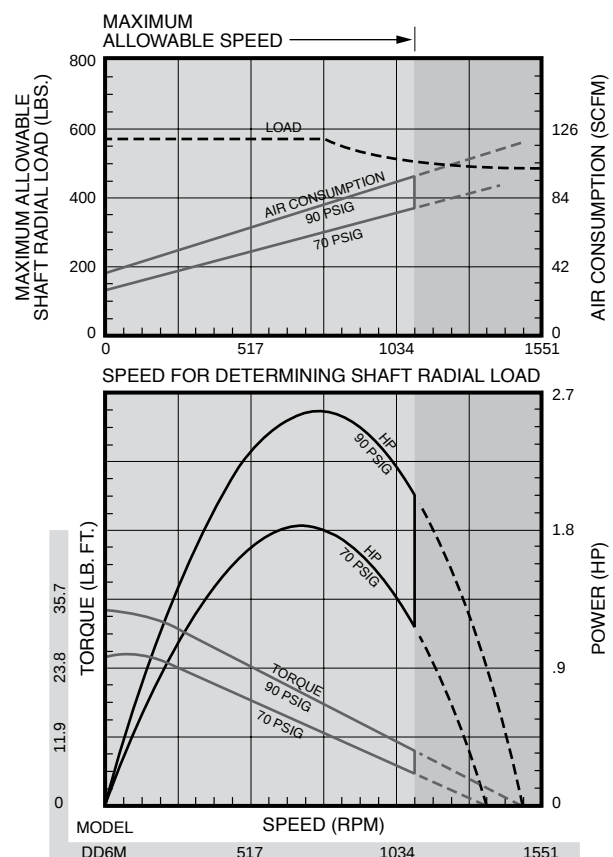
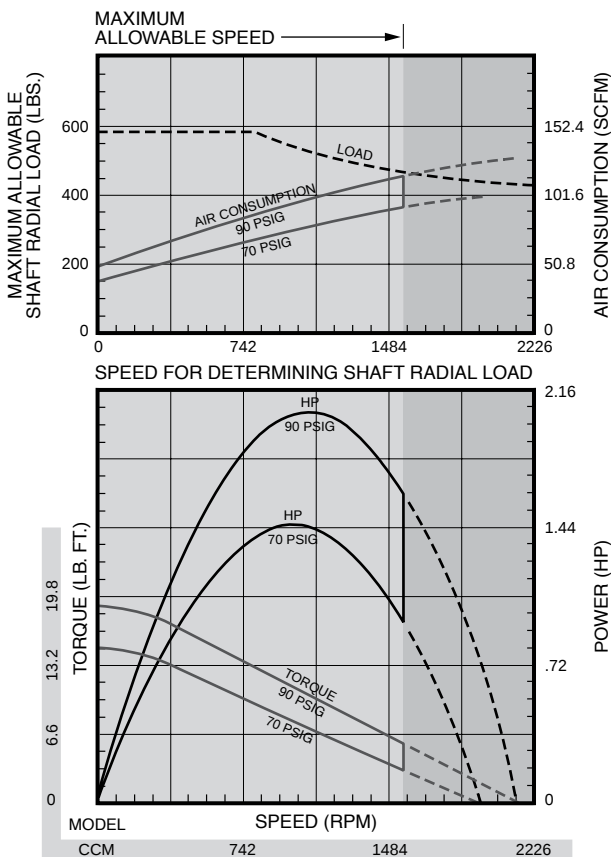
Direct and Geared Drive Piston Air Motors Specifications

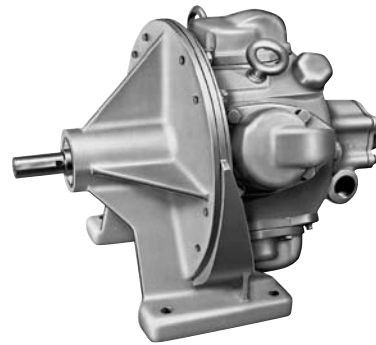
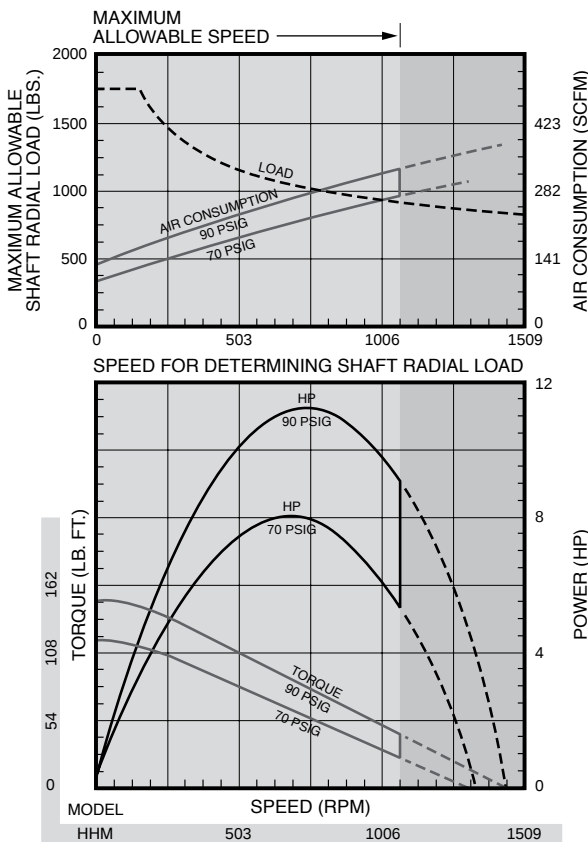
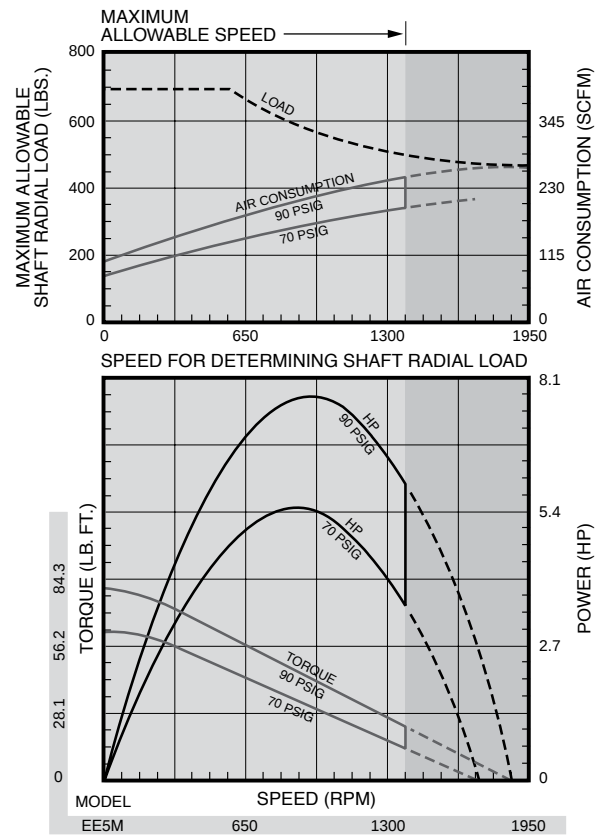
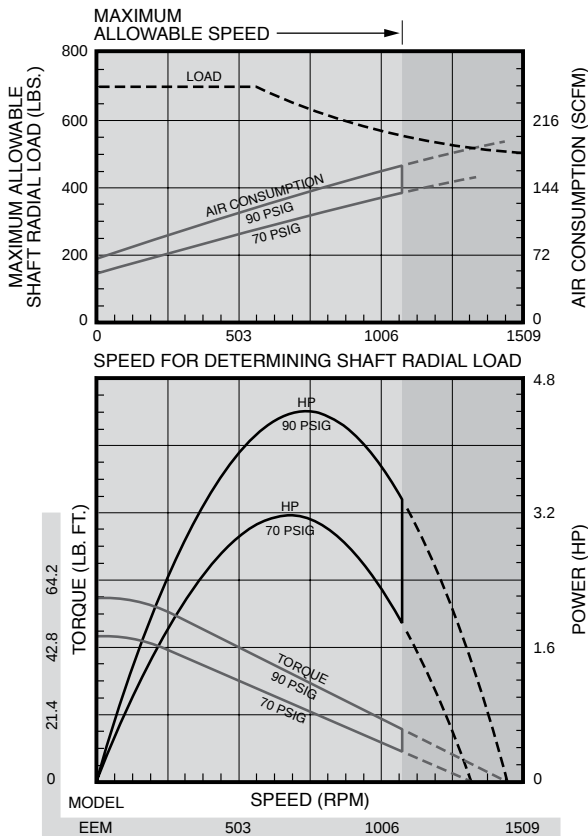
Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m ³ /m	lb.	kg
Direct Drive Reversible												
CCM	2.05	1.53	1075	2140	13.2	17.9	18.8	25.5	97	2.7	135	61.2
DD6M	2.6	1.94	750	1490	24	32.5	34.2	46.4	79	2.2	135	61.2
EEM	4.4	3.28	735	1450	41	55.6	59	80	137	3.9	200	90.7
EE5M	7.8	5.82	950	1875	60	81.4	80.5	109.2	220	6.2	210	95.3
HHM	11.3	8.43	730	1450	106	144	152	206	270	7.6	235	107
HH5M	15.2	11.33	750	1500	146	198	195	264	400	11.3	250	113
KK6M	25	18.64	755	1500	260	353	325	441	680	19.3	475	216
Geared Drive Reversible												
EE3G	5	3.73	275	560	122	165	175	237	155	4.4	200	90.7
EE53G	6.8	5.07	305	600	154	209	205	278	220	6.2	220	99.8
EE9G	4.7	3.51	92	190	357	484	510	692	155	4.4	210	95.3
EE59G	6.5	4.85	100	200	450	610	600	814	220	6.2	230	104

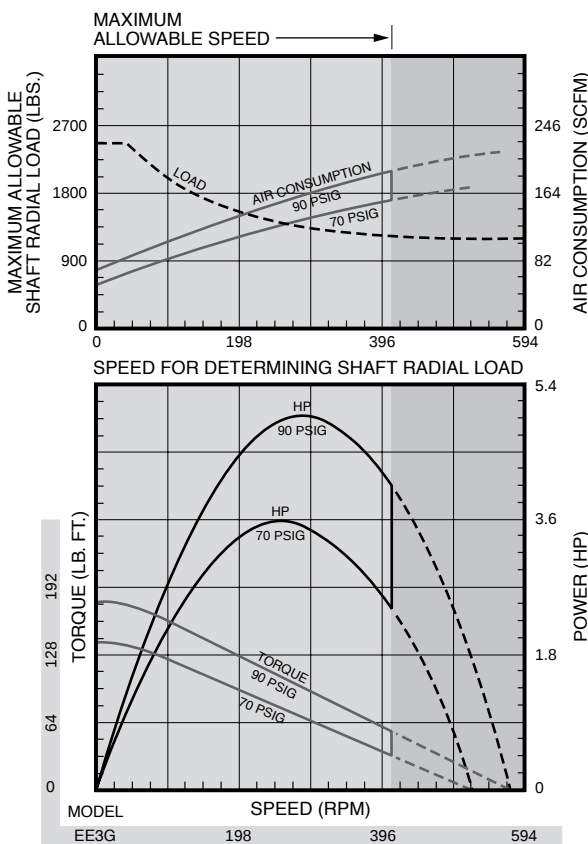
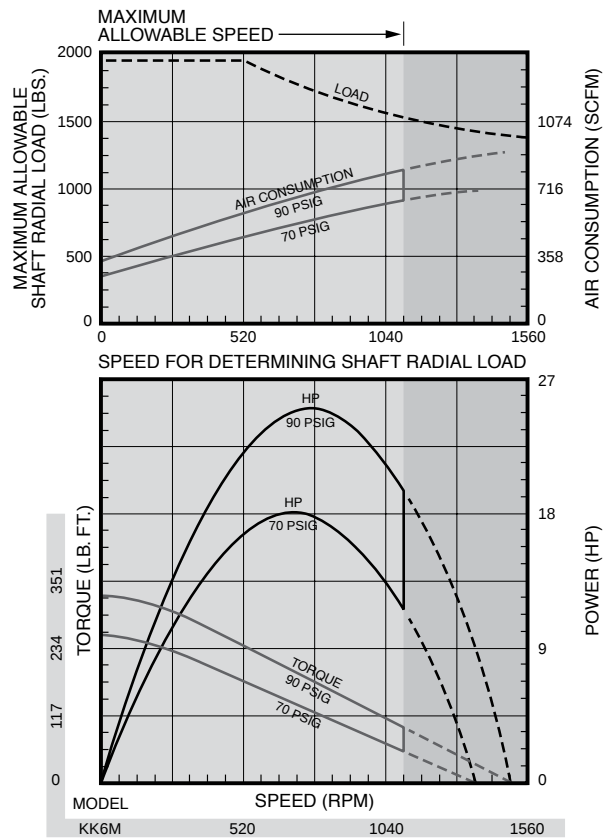
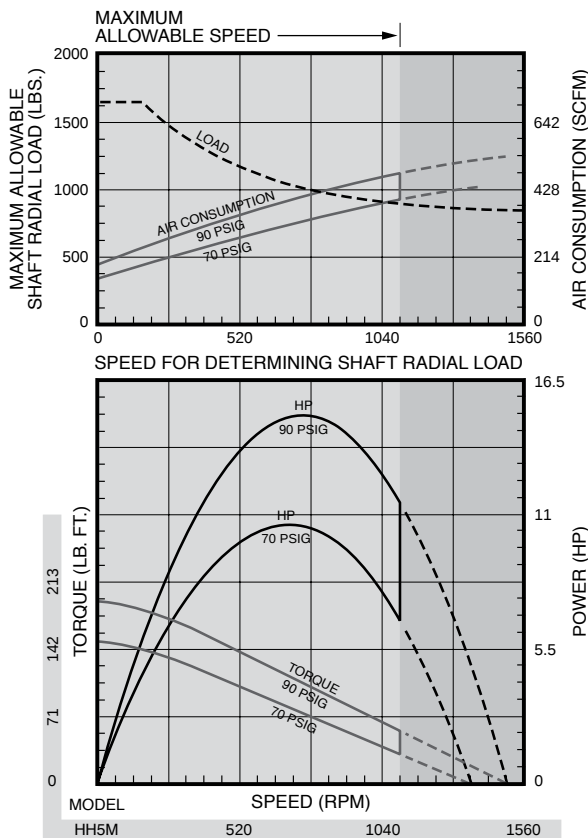
▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve.

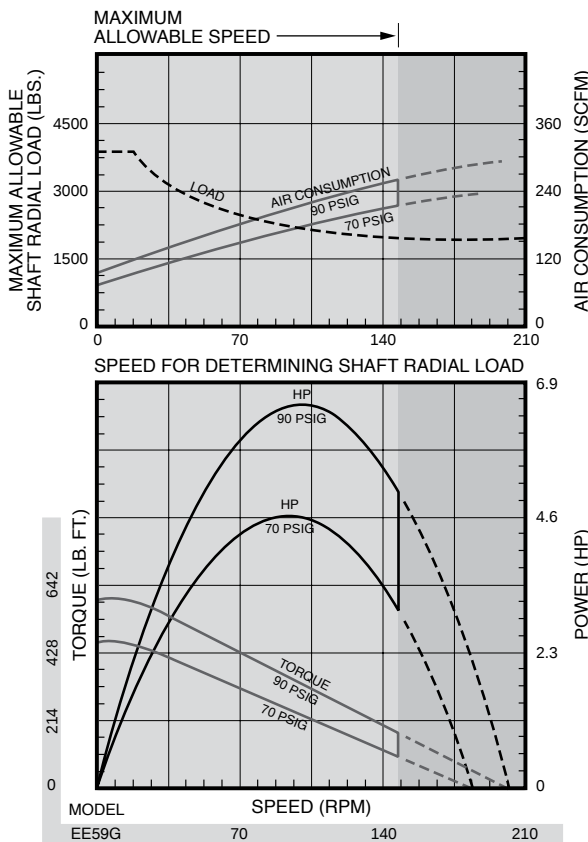
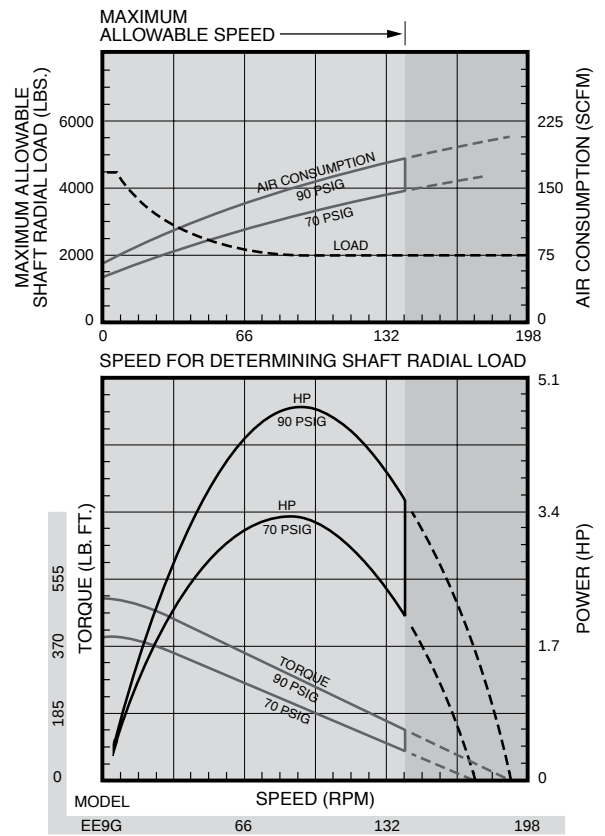
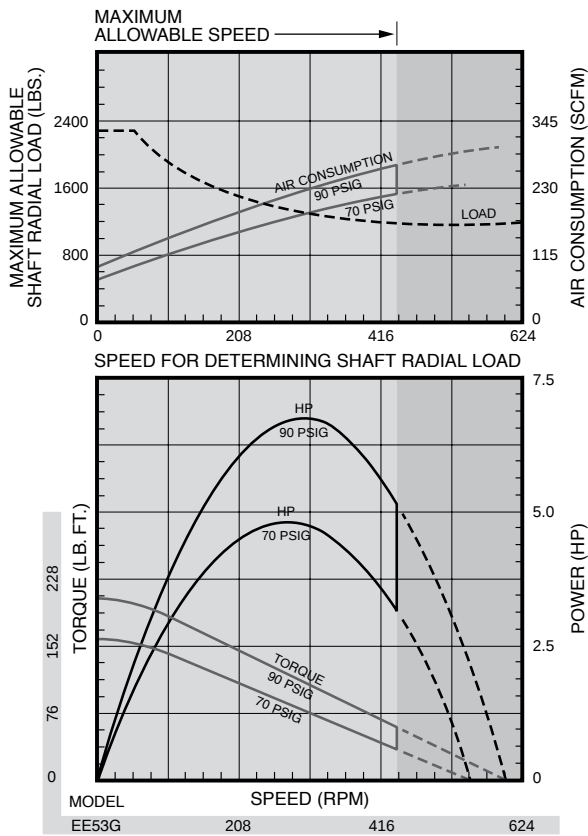
All of the above motors are furnished less valve and piping as standard.

Performance figures are at 90 psig (620 kPa) air pressure.



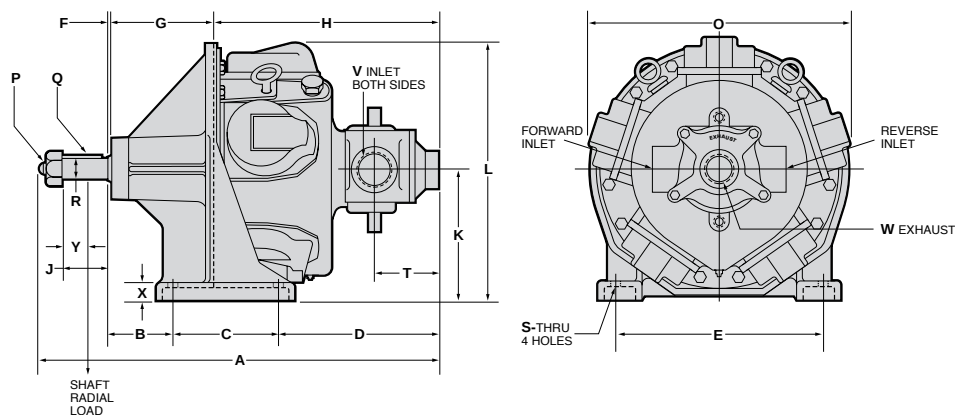






Direct Drive Piston Air Motors

Dimensions



Dimensions in Inches

Model	A	B	C	D	E	F	G	H	J	K	L	O	P** Thd.	Q Key	R*	S Dia.	T	V NPT	W NPT	X	Y
CCM, DD6M	23% ₆	3%	7%	7%	10%	2% ₃₂	7% ₃₂	11% ₆	3	8%	15%	13%	1"-8	¼ x ¼	1.125	2% ₃₂	2 11/6	¾	1	¾	2 1/4
EEM, EE5M	27	3 1/6	9%	9% ₃₂	12 1/2	2% ₃₂	9 1/2	12 1/2	3	9% ₆	16 1/6	15	1"-8	¼ x ¼	1.125	2% ₃₂	2 1/6	1	1	¾	2 1/4
HMM	24% ₆	4% ₆	7	9%	13%	¾ ₆	7	14	3	8%	17%	17%	+	¾ x ¾	1.375	2% ₃₂	3 3/6	1	1 1/4	1 1/4	1 1/6
HH5M	24% ₆	4% ₆	7	9%	13%	¾ ₆	7	14	3	8%	17%	17%	+	¾ x ¾	1.375	2% ₃₂	3 3/6	1	1 1/4	1 1/4	1 1/6
KK6M	30%	4%	8%	12%	13%	½	7 1/4	18 1/6	4%	12%	22%	22	+	¾ x ¾	1.625	2% ₃₂	4 5/6	1 1/4	1 1/2	1 1/2	1 1/6

+ The end of the shaft is not threaded on these Motors and no nut is used. *Tolerance: +0 -.0005" **Thd.—UNC2A.

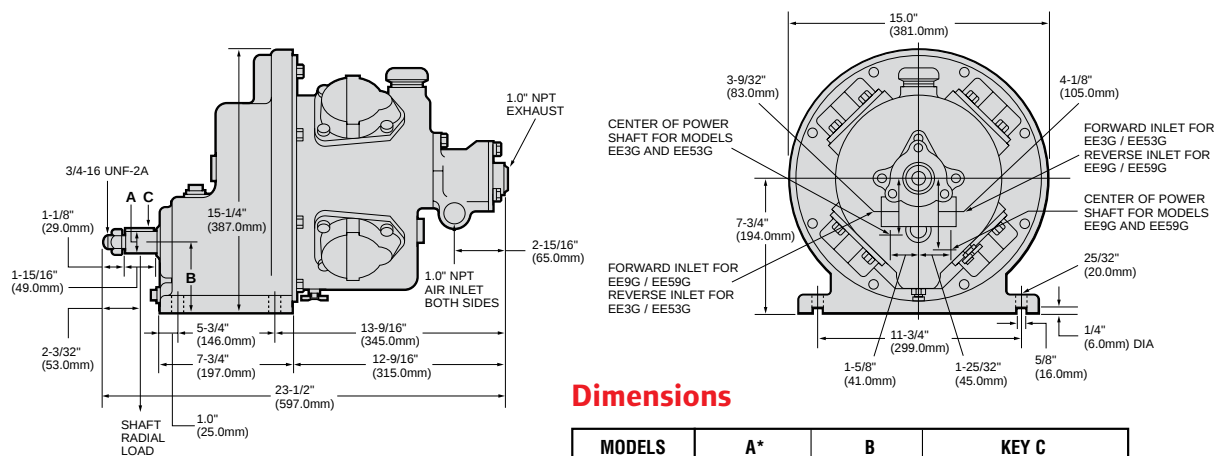
Dimensions in Millimeters

Model	A	B	C	D	E	F	G	H	J	K	L	O	P Thd.	Q Key	R*	S Dia.	T	X	Y
CCM, DD6M	599	95	197	200	267	20	188	284	76	222	397	349	1"-8	6 x 6	28	20	68	22	68
EEM, EE5M	686	97	248	236	318	20	242	318	76	237	427	381	1"-8	6 x 6	28	20	75	22	68
HMM	614	110	178	251	343	5	178	356	76	225	438	438	+	10 x 10	35	17	97	32	33
HH5M	614	110	178	251	343	5	178	356	76	225	438	438	+	10 x 10	35	17	97	32	33
KK6M	768	121	219	321	343	3	195	462	108	308	565	559	+	10 x 10	41	17	110	35	48

+ The end of the shaft is not threaded on these Motors and no nut is used. *Tolerance: $\pm 0.13\text{mm}$

Geared Drive Piston Air Motors

Dimensions



Dimensions

MODELS	A*		B		KEY C	
	in.	mm	in.	mm	in.	mm
EE3G, EE53G	1.251	31.78	4 ¹ / ₃₂	114	¹ / ₈ x ¹ / ₈ x 1 ²⁹ / ₃₂	6 x 6 x 45
EE9G, EE59G	1.501	38.13	3%	92	³ / ₈ x ³ / ₈ x 1 ¹ / ₁₆	10 x 10 x 45

*Tolerance: +0 -.0005" (0.13mm)

MMP150 Air Motors

Model Code Explanation

Example: MMP150-A-0-B-2-A

Series: **MMP150 Air Motor**

Interface/Shaft Options:

A = **Standard Spline**

D = **Keyed Shaft (Fenner RM410)**

Mounting Options:

0 = **Standard**

1 = **Base Mount**

Control Options:

A = **None**

B = **Manual Valve**

C = **Panel Mount Valve**

D = **Pendant**

E = **Accu-Trol™**

Rotary Valve Bias Options:

1 = **CCW (counter-clockwise), Standard Bias Rotation***

2 = **CW (clockwise), Reverse Bias Rotation***

Power Options:

A = **Air**

B = **Natural Gas**

*As viewed from crankshaft end of motor.

Performance

Model	Max. Power		Speed at Max. Power	Free Speed	Starting Torque		Stall Torque		Air Consumption at Max. Power	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m
MMP 150	16.0	11.9	1800	3800	61.0	82.7	78.0	105.8	425	12.0

Performance figures are at 90 psig (6.2 Bar) air pressure.

Figure 1: MMP150 Air Motor Performance
425 cfm Air Supply at 90 psi

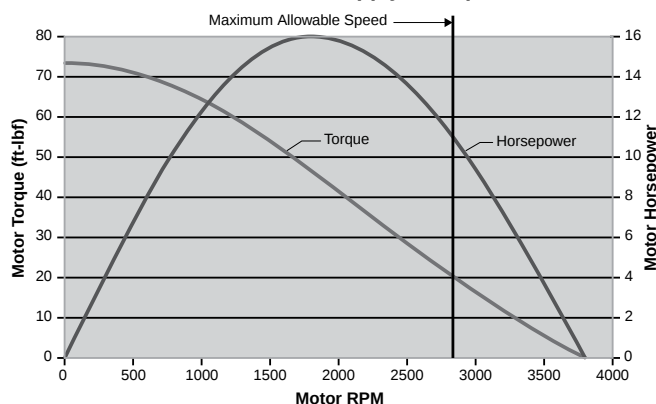
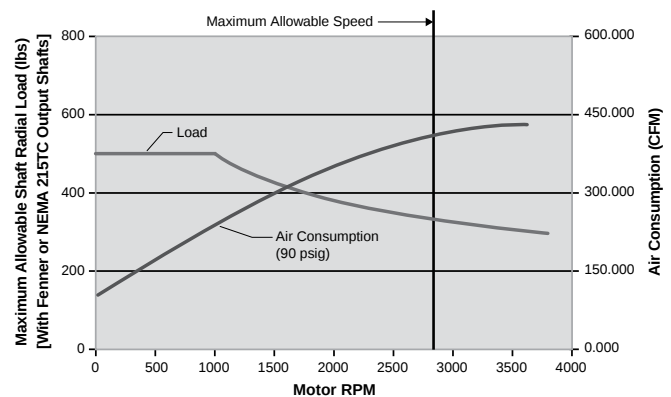
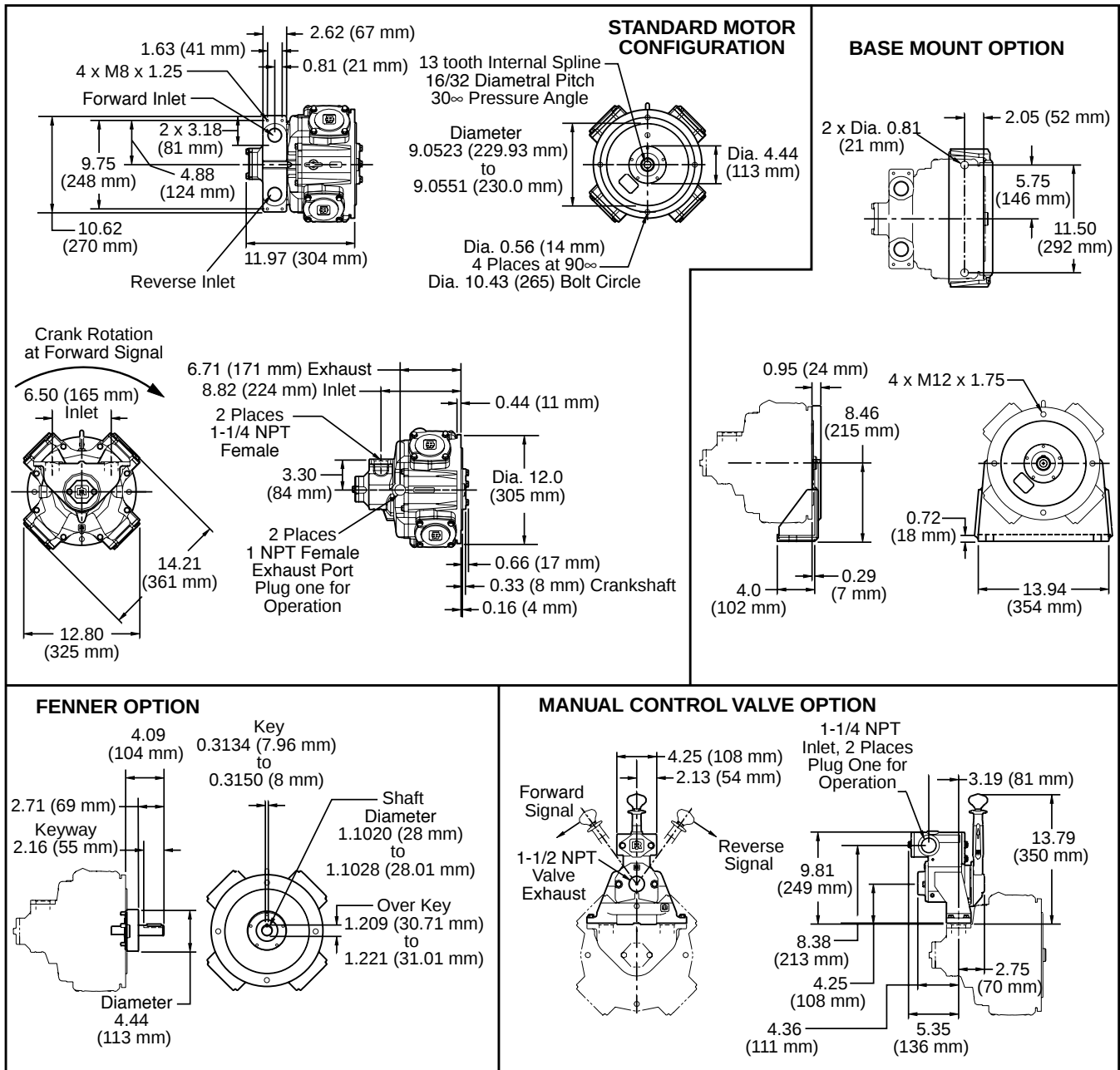


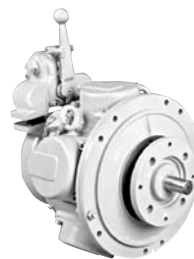
Figure 2: MMP150 Air Motor Performance





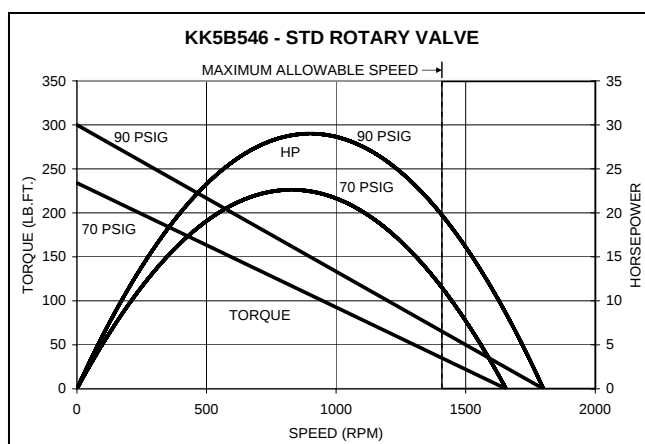
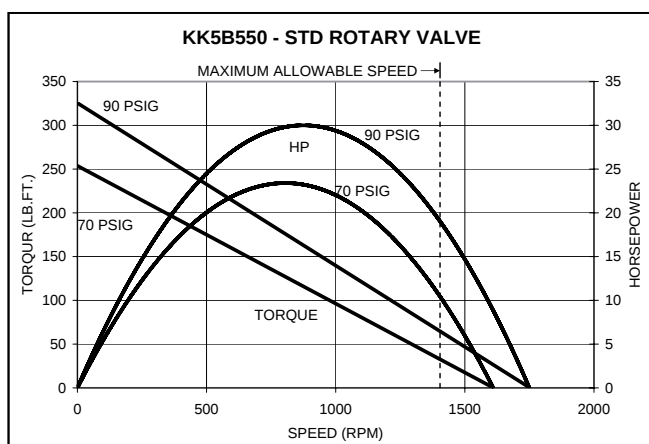
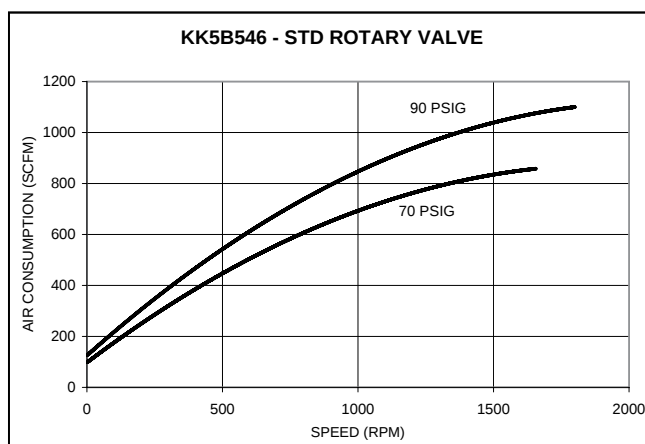
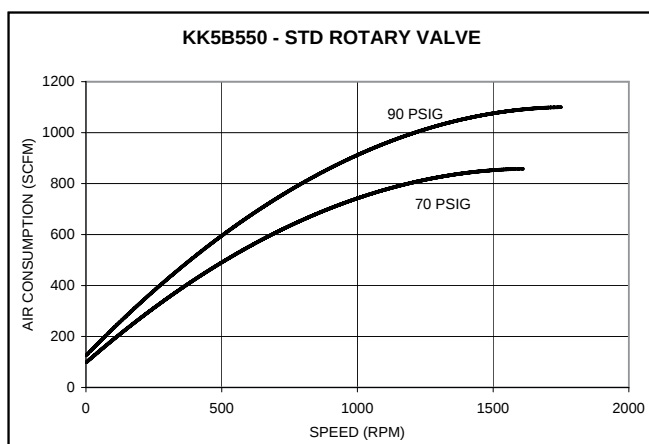
KK5B Piston Air Motors

Specifications



Model	Max. Power		Speed at Max. Power	Free Speed▲	Starting Torque		Stall Torque		Air Consumption at Max. Power		Weight	
	hp	kw	rpm	rpm	lb.-ft.	Nm	lb.-ft.	Nm	scfm	m³/m	lb.	kg
Reversible												
KK5B546	29	21.6	900	1800	183	248	300	407	795	22.5	—	—
KK5B550	30	22.3	880	1750	202	274	325	441	850	24.1	—	—

▲ ALL models must be operated with sufficient load to prevent speed from exceeding maximum allowable speed shown on performance curve. Performance figures are at 90 psig (620 kPa) air pressure.



KK5B Piston Air Motors

Model Number Symbolization

KK5B550

↑
Motor size
Options

B

↑
Mounting
Options

2

↑
Output
Shaft
Options

B

↑
Control
Options

0

↑
Controller
Options

A

↑
Rotary
Valve
Options

Example

KK5B550-B2B0A

Rotary Valve Option **A** – Equal Powered

Controller Option **0** – None

Control Option **B** – Manual Throttle

Output Shaft Option **2** – Keyed Shaft
1 1/8" Dia.

Mounting Option **B** – Base Mount

Motor Option **550** – 30 HP Motor

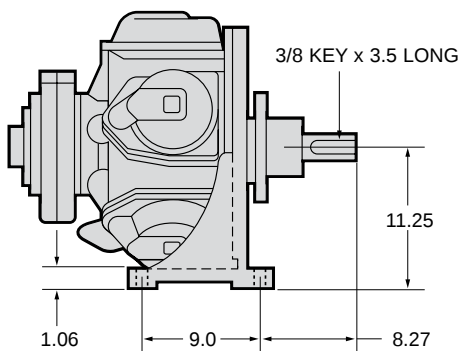
Option	Code	Description	Weight		Part Number
			lb.	kg	
Motor Options	546	29 Horsepower Motor	251	113	KK5B546
	550	30 Horsepower Motor	251	113	KK5B550
Mounting Options	A	Flange Mount, STD with SAE C 2 & 4 Bolt Mount	45	20	Standard
	B	Base Mount, Stationary Mounting			K5B - Foot
Output Shaft Options	0	*SAE C, STD with SAE C 14 Tooth Female Spline Input	13	6	Standard
	1	**NEMA 213TC and 215TC, Keyed Shaft 1 1/8" dia.			K5B - NEMA - 213
	2	***Keyed Shaft 1 1/8" dia.			K5B - Shaft - 1.625
Control Options	A	None	19	9	Standard
	B	Manual Throttle, Control Mounted Directly on Motor			K5B - Manual
	C	Pilot Air Control, Required for Remote Controller Options			K5B - Pilot
Controller Options	0	None			Standard
	1	Pendant Control, STD 2 Button Pendant			MLK-K269C
	2	Panel Control, Required for Remote Stationery Mounted Control			UWD - A686
Rotary Valve Options	A	Equal Powered			Standard
	B	Biased Powered CCW			POA
	C	Biased Powered CW			POA

*Flange Gasket Required

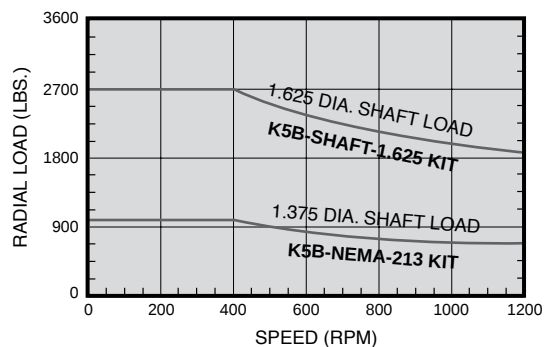
**Single Bearing Mount

***Double Bearing Mount

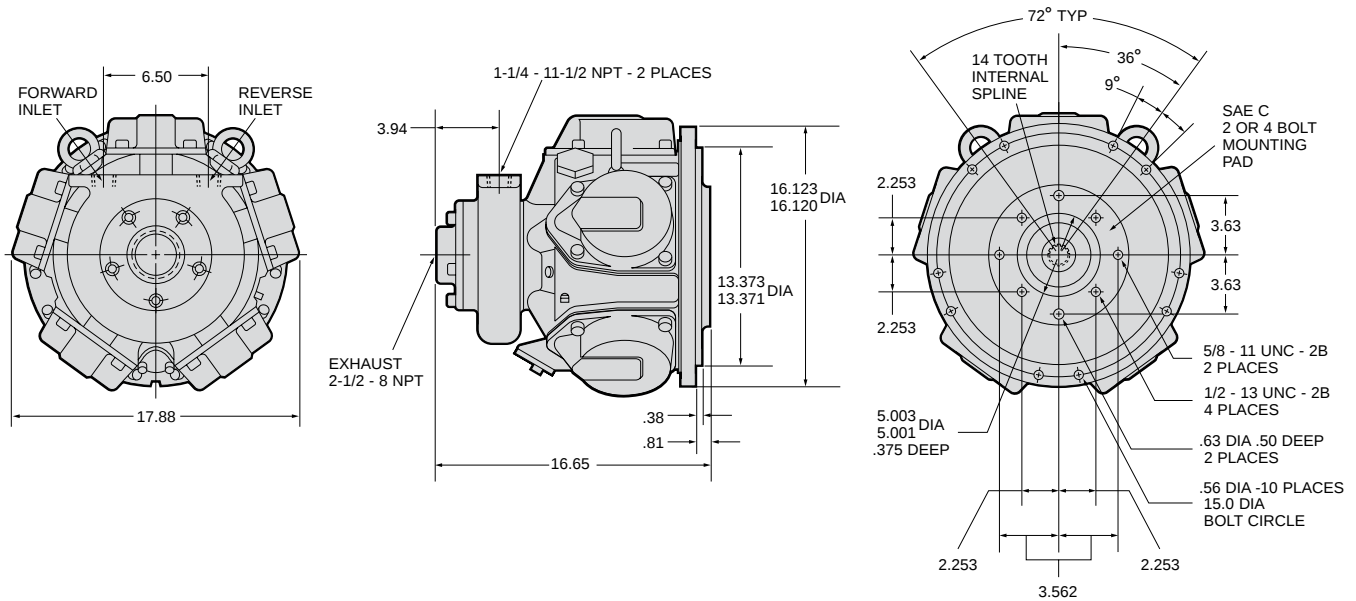
Example KK5B550 - B2A0A Arrangement



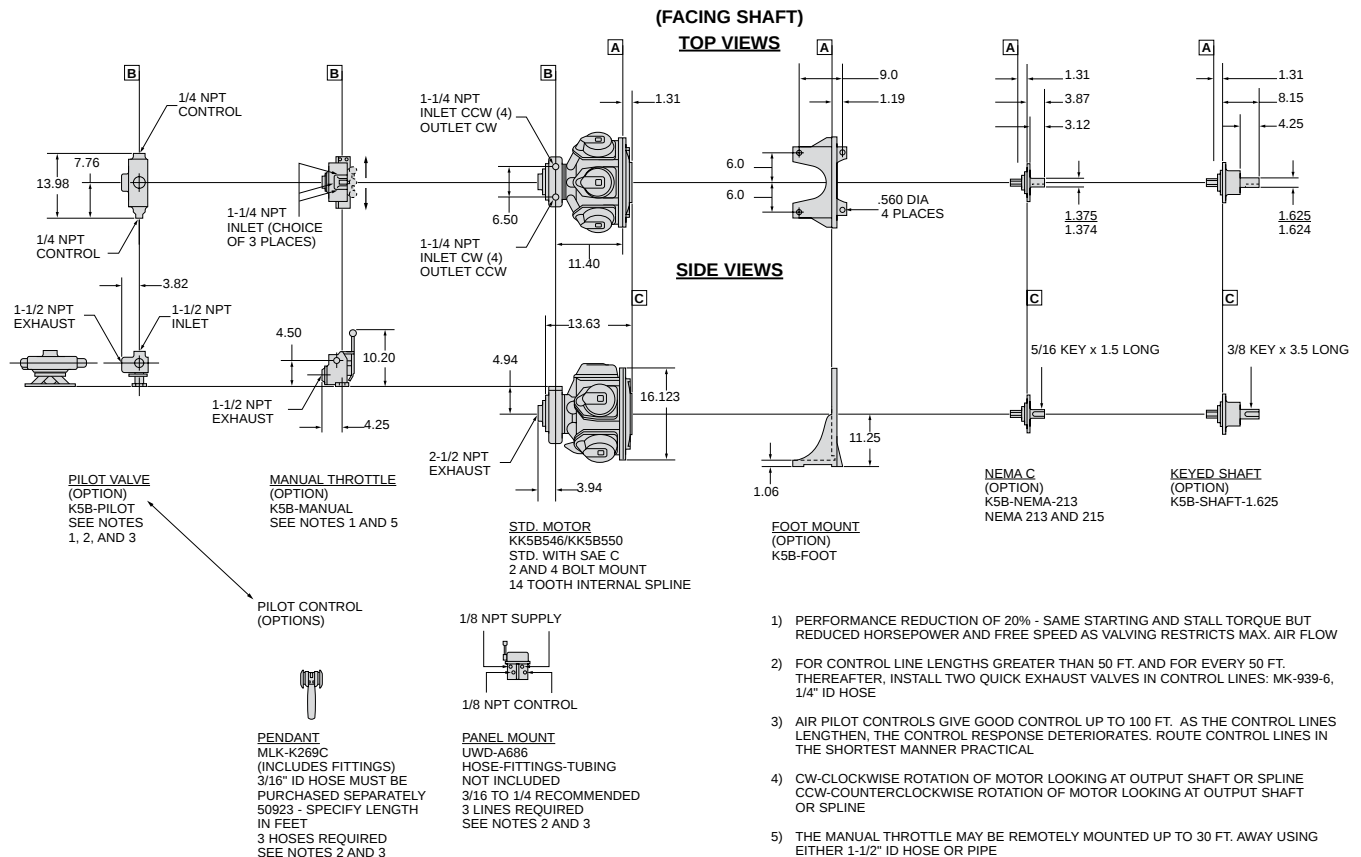
KK5B Motor



KK5B Piston Air Motor



Top and Side Views



Components, Equipment and Accessories

Filters, Regulators and Lubricators

Ingersoll Rand and ARO filters, regulators and lubricators give increased motor performance, reduce repair costs and extend motor life.

Filters

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Bowl Capacity oz.	Height in.	Width in.	Depth in.
M002, SM1AM, SM1UP	1/8"	F35121-420	1/4"	49	0.7	4.30	2.00	2.00
0, 2200, M004, M007, MOV005AA, SM2AM	1/4"	F35221-410	1/4"	73	1.20	6.00	2.30	2.30
SM4AM	1/4"	F35231-410	3/8"	107	1.20	6.00	2.30	2.30
1801, 1841	3/8"	F35331-410	3/8"	150	2.40	7.00	2.80	2.80
17RA, 17RB, MVA017	3/8"	F35341-410	1/2"	190	2.40	7.00	2.80	2.80
3800, 3840, 4800, 4840, 48RA, 48RB, 22N51-W/RC, SM6AM	1/2"	F35341-410	1/2"	190	2.40	7.00	2.80	2.80
SM8AM	1/2"	F35351-410	3/4"	211	2.40	7.00	2.80	2.80
34RA, 34RB, MVA034	1/2"	F35461-410	1"	297	5.30	10.75	3.60	3.90
551, CCM, DD6M	3/4"	F35451-410	3/4"	273	5.30	10.75	3.60	3.90
92RA, 92RB, 92RM, 992RM, EEM, EE5M, HHM, EE3G, EE9G, EE53G, EE59G	1"	F35461-410	1"	297	5.30	10.75	3.60	3.90
HH5M	1"	F42-0A-000	1-1/4"	860	13.00	14.90	8.50	8.50
KK6M, MMP150, MOV075AA	1-1/4"	F42-0A-000	1-1/4"	860	13.00	14.90	8.50	8.50
KK5B546, KK5B550	1-1/4"	F35-0B-C28	1-1/2"	1280	12.50	19.00	7.80	7.80



Regulators

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Adj. Pressure Range psi	Height in.	Width in.	Depth in.
M002, SM1AM, SM1UP	1/8"	R37121-600	1/4"	55	5 - 250	3.50	2.90	2.00
M004, M007, MOV005AA, SM2AM	1/4"	R37221-600	1/4"	73	5 - 250	4.75	2.20	2.70
SM4AM	1/4"	R37231-600	3/8"	84	5 - 250	4.75	2.20	2.70
1801, 1841	3/8"	R37331-600	3/8"	167	5 - 250	5.50	3.20	2.80
17RA, 17RB, MVA017	3/8"	R37341-600	1/2"	198	5 - 250	5.50	3.20	2.80
3800, 3840, 4800, 4840, 48RA, 48RB, 22N51-W/RC, SM6AM	1/2"	R37341-600	1/2"	198	5 - 250	5.50	3.20	2.80
34RA, 34RB, MVA034, SM8AM	1/2"	R37351-600	3/4"	200	5 - 250	5.50	3.20	2.80
551, CCM, DD6M	3/4"	R37451-600	3/4"	290	5 - 250	7.00	3.50	4.00
92RA, 92RB, 92RM, 992RM, EEM, EE5M, HHM, EE3G, EE9G, EE53G, EE59G	1"	R37461-600	1"	290	5 - 250	7.00	3.50	4.00
HH5M	1"	R30-0A-C00	1-1/4"	800	5 - 125	10.30	4.30	4.30
KK6M, MMP150, MOV075AA	1-1/4"	R30-0A-C01	1-1/4"	1200	5 - 125	10.30	4.30	4.30
KK5B546, KK5B550	1-1/4"	R40-0B-C00	1-1/2"	1200	5 - 125	11.90	5.30	5.30



Lubricators

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Bowl Capacity oz.	Height in.	Width in.	Depth in.
M002, SM1AM, SM1UP	1/8"	L36121-110	1/4"	57	0.50	5.00	2.00	2.00
M004, M007, MOV005AA, SM2AM	1/4"	L36221-110	1/4"	51	1.50	6.00	2.25	2.25
SM4AM	1/4"	L36231-110	3/8"	105	1.50	6.00	2.25	2.25
1801, 1841	3/8"	L36331-110	3/8"	85	4.00	7.70	2.75	2.90
17RA, 17RB, MVA017	3/8"	L36341-110	1/2"	156	4.00	7.70	2.75	2.90
3800, 3840, 4800, 4840, 48RA, 48RB, SM6AM, 22N51-W/RC	1/2"	L36341-110	1/2"	156	4.00	7.70	2.75	2.90
SM8AM	1/2"	L36351-110	3/4"	222	4.00	7.70	2.75	2.90
34RA, 34RB, MVA034	1/2"	L36461-110	1"	332	4.00	10.00	3.60	3.90
551, CCM, DD6M	3/4"	L36451-110	3/4"	368	4.00	10.00	3.60	3.90
92RA, 92RB, 92RM, 992RM, EEM, EE5M, HHM, EE3G, EE9G, EE53G, EE59G	1"	L36461-110	1"	332	4.00	10.00	3.60	3.90
HH5M	1"	L40-0A-000	1-1/4"	927	26.00	11.61	5.50	5.00
KK6M, MMP150, MOV075AA	1-1/4"	L40-0A-000	1-1/4"	927	26.00	11.61	5.50	5.00
KK5B546, KK5B550	1-1/4"	L40-0B-000	1-1/2"	927	26.00	11.61	5.50	5.00



IR and ARO Combination FRLs (Filter / Regulator / Lubricator)

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Adj. Pressure Range psi	Bowl Capacity oz.	Height in.	Width in.	Depth in.
M002, SM1AM, SM1UP	1/8"	C38121-820	1/4"	46	5 - 250	FILTER = 0.4 LUBRICATOR = 0.4	5.20	4.75	3.20
M004, M007, MOV005AA, SM2AM	1/4"	C38221-810	1/4"	51	5 - 250	FILTER = 1.2 LUBRICATOR = 1.5	6.60	6.60	3.20
SM4AM	1/4"	C38231-810	3/8"	63	5 - 250	FILTER = 1.2 LUBRICATOR = 1.5	6.60	6.60	3.20
1801, 1841	3/8"	C38331-810	3/8"	99	5 - 250	FILTER = 2.4 LUBRICATOR = 3.7	7.70	8.70	3.60
17RA, 17RB, MVA017	3/8"	C38341-810	1/2"	150	5 - 250	FILTER = 2.4 LUBRICATOR = 3.7	7.70	8.70	3.60
3800, 3840, 22N51-W/RC	1/2"	C38341-810	1/2"	150	5 - 250	FILTER = 2.4 LUBRICATOR = 3.7	7.70	8.70	3.60
4800, 4840, 48RA, 48RB, SM6AM	1/2"	C38341-810	1/2"	150	5 - 250	FILTER = 2.4 LUBRICATOR = 3.7	7.70	8.70	3.60
SM8AM	1/2"	C38351-810	3/4"	155	5 - 250	FILTER = 2.4 LUBRICATOR = 3.7	7.70	8.70	3.60
34RA, 34RB, MVA034	1/2"	C38461-810	1"	215	5 - 250	FILTER = 5.3 LUBRICATOR = 3.2	10.75	11.10	4.30
551, CCM, DD6M	3/4"	C38451-810	3/4"	199	5 - 250	FILTER = 5.3 LUBRICATOR = 3.2	10.75	11.10	4.30
92RA, 92RB, 92RM, 992RM, EEM, EE5M, HHM, EE3G, EE9G, EE53G, EE59G	1"	C38461-810	1"	215	5 - 250	FILTER = 5.3 LUBRICATOR = 3.2	10.75	11.10	4.30
HH5M	1"	Must use individual units							
KK5B546, KK5B550, KK6M, MMP150, MOV075AA	1/4"	Must use individual units							

Liquidator Filters

You can depend on Ingersoll Rand and ARO Liquidator Filters™ when you need clean, dry air and your regulator filter can't handle high volumes of liquid contaminants. Note that a lubricator should be installed between the air motor and the liquidator.

Features

Two stage filtration cartridges remove 99% of liquid contaminants. One micron filter element removes 99% of all dirt particles 1 micron or larger. Quick release bowls enable easy cartridge replacement. Automatic float drain with manual override. Clear polycarbonate bowl with metal guard provides for quick inspection.

Benefits

- Reduces liquid contaminants
- Increases air motor life
- Cuts maintenance costs

Lubrication

Proper lubrication of air motors is a must to prevent excessive wear of moving parts; to prevent possible rust and corrosion of bare, unprotected surfaces. Ingersoll Rand oils and greases have been tested thoroughly and are recommended without reservation. Refer to Operation Manuals and Parts Lists for lubrication instructions.

Liquidator Filters

Female NPT	IR Part Number	Flow Rate scfm	Female NPT	ARO Part Number	Flow Rate scfm
1/4"	8842-W1-035	35	1/4"	F25221-300	40
3/8"	8843-W1-035	35	3/8"	F25231-300	51
1/2"	8844-W1-090	90	1/2"	F25241-300	53
3/4"	8846-W1-090	90	3/4"	F25452-310	50
1"	8828-W2-000*	175	1"	F25462-310	150
1 1/4"	8830-W1-000	400	1 1/4"	F25472-310	150
2"	8834-W1-000	700	—	—	—

*Two separate canisters

Filters

Oils

Part Number	Oil Number	Quantity	Recommended Use
10P 10G	10 10	1 pt 1 gal	Fractional horsepower Air Motors
50P 50G	50 50	1 pt 1 gal	One horsepower and larger Air Motors

Greases

Part Number	Grease Number	Quantity lb.	Recommended Use
28 1 LB 28 8 LB	28 28	1 8	Motor gearing and bearings

Air System Components for Pneumatic Motors

Filters

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Bowl Capacity oz.	Height in.	Width in.	Depth in.
0000	1/8"	F35111-420	1/8"	38	0.70	4.30	2.00	2.00
0	1/8"	F35121-420	1/4"	49	0.70	4.30	2.00	2.00
0, 2200	1/4"	F35221-410	1/4"	73	1.20	6.00	2.30	2.30
44	3/8"	F35331-410	3/8"	150	2.40	7.00	2.80	2.80



Regulators

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Adj. Pressure Range psi	Height in.	Width in.	Depth in.
0000	1/8"	R37111-600	1/8"	43	5 - 250	3.50	2.90	2.00
0	1/8"	R37121-600	1/4"	55	5 - 250	3.50	2.90	2.00
0, 2200	1/4"	R37221-600	1/4"	73	5 - 250	4.75	2.20	2.70
SM4AM	1/4"	R37231-600	3/8"	84	5 - 250	4.75	2.20	2.70
44	3/8"	R37331-600	3/8"	167	5 - 250	5.50	3.20	2.80



Lubricators

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Bowl Capacity oz.	Height in.	Width in.	Depth in.
0000	1/8"	L36111-120	1/8"	32	0.50	5.00	2.00	2.00
0	1/8"	L36121-120	1/4"	57	0.50	5.00	2.00	2.00
0, 2200	1/4"	L36221-110	1/4"	51	1.50	6.00	2.25	2.25
SM4AM	1/4"	L36231-110	3/8"	105	1.50	6.00	2.25	2.25
44	3/8"	L36331-110	3/8"	85	4.00	7.70	2.75	2.90



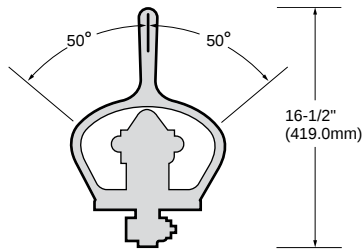
IR and ARO Combination FRLs (Filter / Regulator / Lubricator)

Motor Series	Motor Inlet Size	Part No.	NPT Size	Flow Rate scfm	Adj. Pressure Range psi	Bowl Capacity oz.	Height in.	Width in.	Depth in.
0000	1/8"	C38111-820	1/8"	34	5 - 250	FILTER = 0.4 LUBRICATOR = 0.4	5.20	4.75	3.20
0	1/8"	C38121-820	1/4"	46	5 - 250	FILTER = 0.4 LUBRICATOR = 0.4	5.20	4.75	3.20
0, 2200	1/4"	C38221-810	1/4"	51	5 - 250	FILTER = 1.2 LUBRICATOR = 1.5	6.60	6.60	3.20
44	3/8"	C38331-810	3/8"	99	5 - 250	FILTER = 2.4 LUBRICATOR = 3.7	7.70	8.70	3.60



Accessories

Self-Closing Valves



No. EU-A685

Self-Closing 4-Way Valve. Air inlet pipe tap 3/4" NPT, Motor connection pipe tap 1" NPT, exhaust pipe tap 3/4" NPT.

Mufflers

Part Number	MALE NPT Size
MRV003A-AF350**	1/8"
MRV015A-AC980*	1/4"
SRA010A1-A212***	3/8"
MRV040A-AC990**	1/2"
MOV010AA-674*	1/2"
3BM-WM07	3/4"
3BM-A674*	1"
150BM-A674*	1 1/4"
SS350-A674*	1 1/2"
ST500-674	2"
SS800-A674*	2 1/2"

* High scfm Capacity

** Medium scfm Capacity

*** Low scfm Capacity

3/8" Square Drive Adapters

These 3/8" Square Drive Adapters have a 3/8"-24 female thread, for use with Series M002 and M004 Motors equipped with threaded shafts.

Part Number	Description
R1440-212-1	3/8" square drive, 1" long
R1440-212-3	3/8" square drive, 3" long

Valves

Part Number	Female NPT Size	Flow Rate	Description
E252LM	1/4"	26 scfm	3-Way Hand Lever/Manual Return
E212LM	1/4"	26 scfm	4-Way Hand Lever/Manual Return
E312LS	1/4"	26 scfm	4-Way, 3-Position Hand Lever, Spring Return
K214LM	1/2"	90 scfm	4-Way Hand Lever/Manual Return
K314LS	1/2"	90 scfm	4-Way, 3-Position Hand Lever, Spring Return
M512LR	1/4"	41 scfm	4-Way, 3-Position Rotary Lever, Manual Return
M513LR	3/8"	65 scfm	4-Way, 3-Position Rotary Lever, Manual Return
M514LR	1/2"	85 scfm	4-Way, 3-Position Rotary Lever, Manual Return

No. K5B-REMOTE

Self-closing 4-Way Valve. Air inlet pipe tap 1 1/2" NPT, Motor connection pipe tap 1 1/2" NPT, exhaust pipe tap 1 1/2" NPT.

One-Stop Replacement Component Shopping?



ARO® motion control and air preparation components include the Alpha® valve, Economair® cylinder and Module Air® air prep lines. Routinely used throughout industry, these lines have made their own name for their precision, durability and overall efficiency.

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Tapped Exhaust Deflectors for Piped Away Exhaust

Motor Series	Part Name	Part Number	Pipe Tap NPT
1801	Exhaust Deflector Assembly	R1801-A123	3/4"
1841	Exhaust Deflector Assembly	R1801-A123	3/4"
3800	Exhaust Deflector Assembly	R3800-A123	3/4"
3840	Exhaust Deflector Assembly	R3800-A123	3/4"
4800	Exhaust Deflector Assembly	R4800-A123	1"
4840	Exhaust Deflector Assembly	R4800-A123	1"

"Special" Air Motors

While there are over 300 standard Air Motors in the complete Ingersoll Rand line, we realize that even this broad selection won't fill every need, every time. Virtually all components of our motors, from output shafts and housings to gear ratios, can be modified. Therefore we welcome the opportunity to design and build Air Motors to our customers' specifications when required.

Generally, yearly quantities of 100 plus are cost-effective. However, the opportunity to quote on lower volumes is always welcomed.

Frequently custom designed Air Motors can reduce OEM costs by easing product assembly, increasing performance, and avoiding the need to make special parts to incorporate the Air Motor in a product. We have the engineering capabilities to provide you with truly "turnkey" power units.

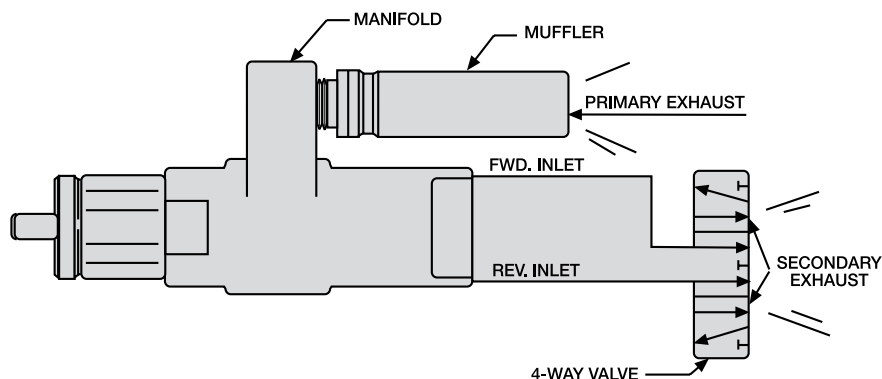
Installation of Reversible Models



1. 30712 Hex Ball Lock Adapter. 3/8"-24 mounting thread, 1/4" (6.35 mm) hex drive size. See motors on pages 9, 11, 14, 16, and 19.
2. Square-Drive Adapter. See chart below.

Part No.	Mfg. Thd.	Drive Size
30384-5	3/8" 24	3/8"
30384-9	3/8"-24	1/2"
40768	1/2"-20	1/2"

Recommended Installation for Reversible Models



On reversible air motors there are two exhausts. The primary exhaust exhausts air out through the manifold and muffler as in the forward rotation motors. Depending on which direction the motor is running, the opposite inlet port becomes the secondary exhaust and must be opened to atmosphere. A four-way valve, 3-position, spring-centered is recommended for all reversible air motors. An exhaust muffler must be threaded into the exhaust port of each valve to comply with the second level regulations as outlined in the Occupational Safety and Health Act of 1970.