

RWB II *Plus*

ROTARY SCREW COMPRESSOR UNITS Models: 60 - 480

SPECIFICATIONS

RWB II PLUS Rotary Screw Compressor Units are engineered and manufactured to meet the exacting requirements of the Industrial Refrigeration Market. All components have been designed and arranged to assure reliability, accessibility, and servicing convenience. Standard units are designed for use as boosters or high-stage machines on ammonia, halocarbon, or hydrocarbon refrigerants and are shipped completely assembled.

COMPRESSOR: The Frick manufactured RWB II compressor has been designed utilizing the latest technology to offer the most reliable and energy efficient unit currently available. All screw compressor casings are designed and tested in accordance with the requirements of ASHRAE 15 safety code. The rotors are manufactured from forged steel and use the latest asymmetric profiles. The compressor incorporates a complete antifriction bearing design for reduced power consumption and the bearings selected provide an L10 life in excess of 100,000 hours at design conditions.

CAPACITY CONTROL: Capacity control is achieved by use of a slide valve which provides fully modulating capacity control from 100% to approximately 10% of full load.

“VOLUMIZER®” VARIABLE VOLUME RATIO CONTROL: The RWB II compressor includes a patented method of varying the internal volume ratio to match the system pressure ratio, eliminating the power penalty associated with over- or undercompression.

LUBRICATION SYSTEM: The RWB II compressor is designed specifically for operation without an oil pump. All oil required for main oil injection and lubrication is provided by positive gas differential pressure. All oil passes through a 15 micron filter which is designed for vertical mounting and furnished with isolation stop valves and drain connections for ease of servicing. High-stage compressors are furnished with a close-coupled, positive-displacement prelube pump for start-up only. Booster and some low pressure differential, high-stage applications will require the full-time or cycling full-time-lube oil pump option.

OIL SEPARATOR/RESERVOIR: The oil separator is a horizontal, three-stage design with integral sump. The separator is designed and constructed in accordance with ASME Section VIII, Div. 1 for a maximum design working pressure of 300 psig. Replaceable coalescent separator elements are provided for final gas/oil separation of particles down to less than 1 micron.

OIL COOLING: Cooling the compressor oil may be achieved by either liquid-refrigerant-injection oil cooling, water-cooled oil cooling, or thermosyphon oil cooling. Water-cooled and thermosyphon oil-cooled systems are supplied with ASME shell and tube heat exchangers mounted on the unit.

SBC MICROPROCESSOR CONTROL CENTER: The compressor control system is factory mounted and completely piped and wired with all the required safety and operating devices. The control system includes as standard a NEMA 4 single box control panel housing the microprocessor control panel and all electrical termination points. The microprocessor panel is supplied with 320 characters on two displays having a minimum rated life of 100,000 hours. Included in the microprocessor is time-proportioning capacity control, first-out annunciation, prealarms, volumizer control, real-time clock control, access code protection, and alternate suction pressure operation. All major operating conditions are continuously shown on the microprocessor display. All operating conditions prior to a compressor cutout are stored in memory and shown on a special **FREEZE** display mode providing the ultimate in service and troubleshooting convenience.

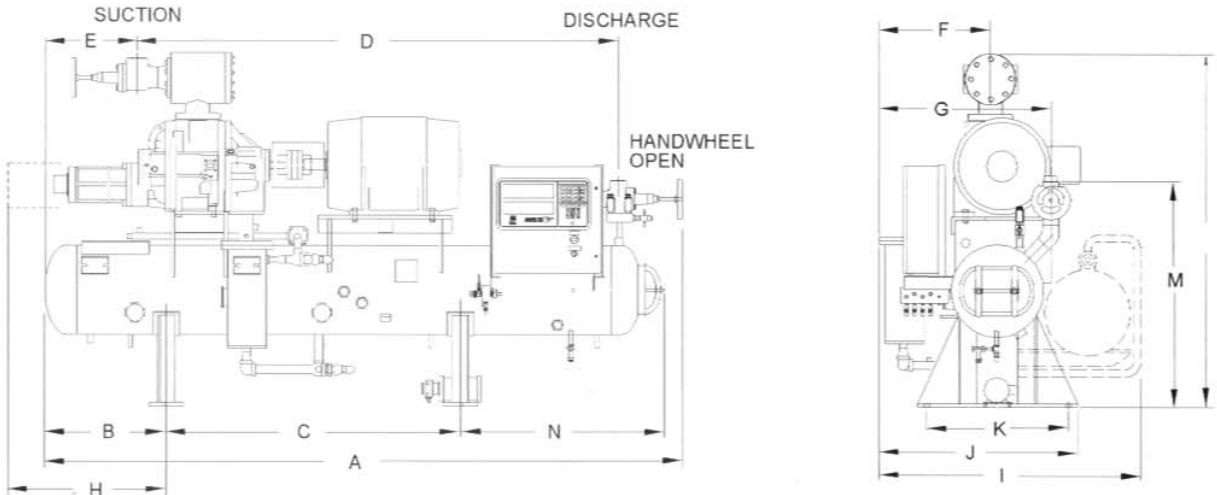
VALVES: The unit has a combination suction shutoff and check valve with strainer multivalve. The unit's discharge has a mounted combination check and shutoff valve.

OPTIONAL FEATURES: Full-Lube Oil Pump, Cycling Full-Lube Oil Pump, Dual Oil Filters, Economizer, Thermosyphon Oil Temperature Control Valve, Gauge Board, Motor, Motor Mounting, Starter Packages, and Microprocessor Service Kit, CLI, GPD, DIVII Microprocessor, Power-Regulating Control Transformer, Lead-lag sequencing, oversized Suction Valve, and Quantum Control Panel.

STANDARD DESIGN DATA (with Metric equivalents) - NOMINAL @ 3550 RPM

RWB II MODEL NO.	COMPRESSOR DISPLACEMENT		RATINGS R-717 (1)				RATINGS R-22 (2)				UNIT WEIGHT LESS MOTOR	
			CAPACITY		POWER		CAPACITY		POWER			
	CFM	M3/hr	TR	kw	BHP	kw	TR	kw	BHP	kw	lb	kg
60	357	607	126	443	146	109	115	404	157	117	4900	2222
76	450	765	159	559	184	137	145	510	197	147	5200	2358
100	592	1005	213	749	235	175	194	682	261	195	6000	2721
134	790	1342	284	999	314	234	259	911	348	260	6300	2857
177	1042	1770	384	1351	410	306	345	1213	453	338	9800	4445
222	1311	2228	483	1699	517	386	434	1526	572	427	10,000	4536
270	1589	2700	598	2103	638	476	538	1892	705	526	12,700	5760
316	1865	3169	688	2420	736	549	617	2170	814	607	13,500	6124
399	2349	3992	866	3046	926	691	778	2736	1025	764	14,000	6350
480	2824	4798	1042	3664	1114	831	936	3291	1233	919	15,000	6804

- Based on 20° F (-6.7° C) suction and 95° F (35° C) condensing with 10° F (5.5° C) liquid subcooling and 10° F (5.5° C) suction superheat.
- Based on 20° F (-6.7° C) suction and 105° F (40.6° C) condensing with 10° F (5.5° C) liquid subcooling and 10° F (5.5° C) suction superheat.



RWB II MODEL NO.	APPROXIMATE DIMENSIONS INCHES/MILLIMETERS													
	A	B	C	D (4)	E (4)	F(3)	G (3)	H (2)	I (3)	J (3)	K	L (4)	M	N (1)
60	142/3607	28/711	66/1676	107/2717	23/584	26/661	40/1016	42/1067	56/1423	45/1143	32/813	80/2032	53/1347	46/1168
76	142/3607	28/711	66/1676	108/2743	22/558	26/661	40/1016	47/1194	56/1423	45/1143	32/813	79/2007	53/1347	46/1168
100	149/3785	30/762	66/1676	109/2768	25/635	28/711	42/1067	47/1194	59/1499	49/1245	32/813	89/2261	53/1347	48/1219
134	149/3785	30/762	66/1676	111/2819	23/584	28/711	41/1042	54/1372	59/1499	47/1194	32/813	87/2210	53/1347	48/1219
177	181/4598	46/1168	75/1905	133/3378	34/863	28/711	45/1143	61/1549	64/1626	52/1321	40/1016	99/2515	65/1651	55/1397
222	181/4598	46/1168	75/1905	134/3403	32/812	28/711	45/1143	68/1727	64/1626	52/1321	40/1016	100/2540	65/1651	55/1397
270	198/5030	51/1295	88/2235	150/3810	33/839	32/813	52/1321	75/1905	72/1829	64/1626	54/1372	111/2820	72/1829	56/1423
316	198/5030	51/1295	88/2235	163/4140	20/508	32/813	52/1321	60/1524	75/1905	64/1626	54/1372	112/2845	72/1829	56/1423
399	198/5030	51/1295	88/2235	167/4242	16/406	32/813	52/1321	70/1778	75/1905	64/1626	54/1372	118/2998	72/1829	56/1423
480	201/5105	53/1346	88/2235	174/4420	14/356	33/838	28/711	74/1880	78/1981	65/1651	54/1372	114/2896	80/2032	58/1473

- Allow additional 36 in./915 mm to pull coalescer element.
- Required clearance for removal of movable slide valve/slide stop assembly.
- Maximum dimension.
- Ammonia units only. For Halocarbon units, consult FRICK.

NOTE: Drawing for reference only! Use certified drawing for erection.

RWB II MODEL NO.	STANDARD CONNECTIONS in./mm			
	R-717		R-22	
	SUCTION	DISCHARGE	SUCTION	DISCHARGE
60	4/101.6	3/76.2	4/101.6	3/76.2
76	4/101.6	3/76.2	4/101.6	3/76.2
100	5/127.0	4/101.6	5/127.0	4/101.6
134	6/152.4	4/101.6	6/152.4	4/101.6
177	6/152.4	5/127.0	6/152.4	5/127.0
222	6/152.4	5/127.0	8/203.2	5/127.0
270	8/203.2	6/152.4	10/254.0	6/152.4
316	8/203.2	6/152.4	10/254.0	6/152.4
399	8/203.2	6/152.4	10/254.0	6/152.4
480	8/203.2	6/152.4	10/254.0	8/203.2



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HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB-II 316

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG					
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5	
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. 8.7*	TR BHP	154.4 380.6	148.1 426.8	141.5 478.2	134.7 537.8	127.9 610.0
	-35. 5.4*	TR BHP	180.2 399.2	173.2 446.8	166.1 499.0	158.6 556.8	151.0 623.7
	-30. 1.6*	TR BHP	209.0 418.3	201.4 468.0	193.6 521.6	185.5 580.0	177.1 644.9
	-25. 1.3	TR BHP	241.0 437.7	232.8 489.8	224.2 545.6	215.4 605.5	206.3 670.8
	-20. 3.6	TR BHP	276.6 456.7	267.6 512.0	258.3 570.3	248.7 632.5	238.8 699.1
	-15. 6.2	TR BHP	315.9 474.8	306.2 534.0	296.1 595.6	285.6 660.5	274.7 729.7
	-10. 9.0	TR BHP	359.4 491.3	348.8 555.1	337.7 620.7	326.3 689.0	314.5 761.1
	-5. 12.2	TR BHP	407.2 506.0	395.6 574.5	383.6 645.0	371.1 717.5	358.4 793.0
	0. 15.7	TR BHP	460.1 518.7	447.0 592.2	433.9 667.8	420.4 745.4	406.5 825.3
	5. 19.6	TR BHP	518.3 528.7	503.6 607.6	489.1 688.6	474.4 771.7	459.2 856.9
	10. 23.8	TR BHP	581.6 534.6	565.9 620.5	549.5 707.0	533.3 796.0	516.9 887.1
	15. 28.4	TR BHP	650.5 536.3	633.7 629.5	615.8 723.0	597.7 817.8	579.7 915.1
	20. 33.5	TR BHP	726.0 534.1	707.1 634.0	688.3 735.5	668.1 837.0	648.2 940.8
	25. 39.0	TR BHP	809.0 530.1	787.0 633.7	766.4 743.0	745.0 853.1	722.7 963.4
	30. 45.0	TR BHP	899.3 524.2	874.7 629.8	851.2 745.5	828.2 864.2	804.1 983.1
	35. 51.6	TR BHP	997.7 516.1	970.2 625.1	943.2 742.9	917.9 869.7	892.4 998.3
	40. 58.6	TR BHP	1103.3 504.8	1074.2 617.1	1044.1 738.4	1014.9 869.7	987.1 1007.3

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.