



# SEA-BIRD<sup>®</sup>

An ISO 9001:2000 Organization

Refrigeration Technologies



## Slow-Speed

### OPEN RECIPROCATING COMPRESSORS



**R22 R134a R404A R507A**



ENVIRONMENT  
FRIENDLY



LESS ELECTRICITY  
CONSUMPTION



WORLD CLASS  
TECHNOLOGY



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## THE SEA BIRD GROUP

The SEABIRD Group is today diversified into different industries, also at the forefront of Asian Compressors production. Since 1983 SEABIRD has enjoyed continuous growth, and has invested heavily in highly advanced computerised production machinery, to ensure that quality and reliability of our products remain the foundation of our success. SEABIRD has production facilities in different parts of India and four service centres abroad, from where we service customers around the globe.

SEABIRD is now market leader in the segment of high quality Compressors, Condensing Units, Pressure Vessels, Chillers and Cold Rooms which has always been the core business of the company's activities.

SEABIRD is also ventured into Plastic industry, Automobile industry, Automation industry and software industry.

Continuing investments for research and development into new products, together with the design of ultramodern plant, options and design.

This is a success that has been consolidated over the years by the work of a flexible, dynamic and enthusiastic organization, in which the company culture is very much oriented towards quality, customer care and efficiency.



Prestigious National  
Award Winner



An ISO 14001:2004 Organization

An ISO 9001:2000 Organization

## SLOW SPEED OPEN TYPE RECIPROCATING COMPRESSORS

### Open Type Reciprocating compressors 200/IIIL to 300/VL, AK6, AK7.5

This model series has proved successful over decades all over the world. By a continuous development and the use of high-quality materials it sets up - now as ever - the international quality standard.

The deciding feature of Sea-Bird open type compressors

High efficient, robust and wear resistant drive gear

1. Reduced friction aluminium pistons
2. Exchangeable bearing bushes (from type 200/IIIL)
3. Splash lubrication for safe oil supply
4. Hard chrome plated piston rings
5. Special piston pin bearings with super finish
6. Widely insensitive to liquid slugging due to robust design and low speed

Efficient and stable valve plate design

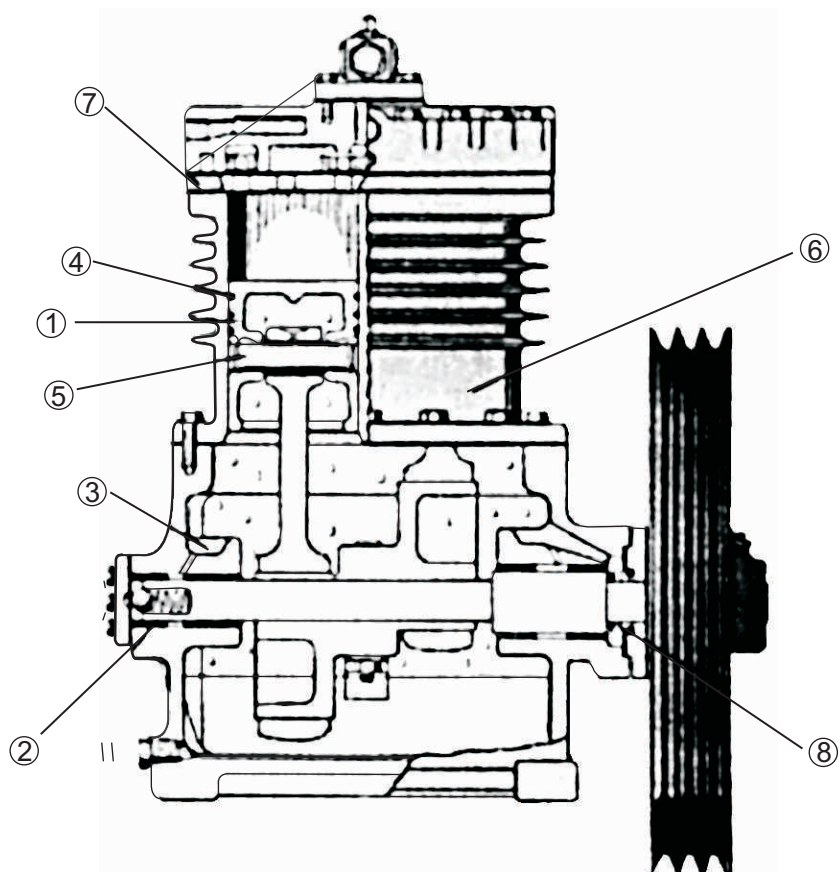
7. High volumetric efficiency due to optimised working valves

Maintenance friendly design

8. No special tools required, good accessibility of the shaft seal

Optional extras

- Water-cooled cylinder heads
- Additional fan for type
- Crankcase heater from type 200 / III L
- Adaptor for oil and gas equalization from 250 / IV L



# R134a

## Refrigerating Capacity in Watt

relating to 20°C suction gas temperature, without liquid subcooling, motor speed = 1450min<sup>-1</sup>

Compressor type	Motor pulley ø mm	Displacement m <sup>3</sup> h	Necessary driving motor KW			Cond. temp. °C	Evaporating temperature °C									
			A	M	L		Air- conditioning range (A)				Medium range (M)			Low temperature refrigeration range (L)		
							+10	+7.5	+5	0	-5	-10	-15	-20	-25	-30
200/III L	90	4.7	0.75	0.75	0.55	30	3770	3430	3110	2530	2040	1620	1270	970	715	505
			1.1	0.75	0.55	40	32900	2990	2700	2200	1760	1390	1070	805	580	395
			1.1	0.75	0.55	50	2830	2570	2320	1880	1490	1170	890	655	460	300
	110	5.79	1.1	0.75	0.55	30	4650	4220	3830	3120	2520	2000	1560	1190	880	625
			1.1	1.1	0.75	40	4060	3680	3330	2700	2170	1710	1320	990	715	490
			1.1	1.1	0.75	50	3490	3160	2860	2310	1840	1440	1100	810	570	365
	130	6.83	1.1	1.1	0.75	30	5480	4980	4510	3680	2970	2360	1840	1410	1040	735
			1.1	1.1	0.75	40	4790	4340	3930	3190	2560	2020	1560	1170	845	575
			1.5	1.1	0.75	50	4120	3730	3370	2730	2170	1700	1290	955	670	430
	150	7.9	1.1	1.1	1.1	30	6340	5760	5220	4260	3430	2730	2130	1630	1200	850
			1.5	1.1	1.1	40	5530	5020	4540	3690	2960	2330	1800	1350	980	665
			1.5	1.5	1.1	50	4760	4310	3900	3150	2510	1960	1500	1100	775	500
	180	9.42	1.5	1.5	1.1	30	7560	6870	6230	5080	4090	3250	2540	1940	1440	1020
			1.5	1.5	1.1	40	6600	5990	5420	4400	3530	2780	2150	1610	1170	790
			2.2	1.5	1.1	50	5680	5150	4650	3760	2990	2340	1790	1320	920	595
250/IV L	110	8.34	1.5	1.1	0.75	30	6700	6080	5510	4500	3620	2880	2250	1720	1270	900
			1.5	1.1	0.75	40	5840	5300	4800	3900	3120	2460	1900	1430	1030	700
			1.5	1.5	0.75	50	5030	4560	4120	3330	2650	2070	1580	1160	815	525
	130	9.85	1.5	1.1	1.1	30	7810	7090	6430	5240	4230	3360	2620	2000	1480	1050
			1.5	1.5	1.1	40	6810	6180	5590	4540	3640	2870	2220	1660	1200	815
			2.2	1.5	1.1	50	5860	5310	4800	3880	3090	2420	1840	1360	950	615
	150	11.34	1.5	1.5	1.1	30	8990	8160	7400	6030	4860	3870	3020	2300	1710	1210
			2.2	1.5	1.1	40	7840	7110	6440	5230	4190	3310	2550	1920	1380	940
			2.2	2.2	1.1	50	6750	6120	5520	4470	3560	2780	2120	1560	1100	705
	180	13.33	2.2	1.5	1.5	30	10560	9600	8700	7090	5720	4550	3550	2710	2000	1420
			2.2	2.2	1.5	40	9220	8360	7570	6150	4930	3890	3000	2250	1630	1110
			3	2.2	1.5	50	7940	7190	6490	5250	4180	3270	2490	1840	1290	830
	200	14.92	2.2	2.2	1.5	30	11820	10740	9730	7940	6400	5090	3970	3030	2240	1590
			3	2.2	1.5	40	10320	9360	8470	6880	5510	4350	3360	2520	1820	1240
			3	2.2	1.5	50	8880	8050	7270	5860	4680	3680	2790	2060	1440	930
300/V L	110	14.38	2.2	2.2	1.5	30	11910	10820	9800	7990	6440	5120	3990	3040	2250	1590
			3	2.2	1.5	40	10320	9860	8470	6880	5520	4350	3360	2520	1820	1240
			3	3	2.2	50	8830	8060	7230	5850	4660	3650	2790	2060	1450	940
	130	16.95	3	2.2	1.5	30	13920	12650	11460	9340	7530	5980	4670	3560	2630	1860
			3	2.2	1.5	40	12070	10950	9900	8040	6450	5090	3930	2950	2130	1450
			4	3	2.2	50	10320	9350	8450	6830	5450	4250	3260	2410	1690	1100
	150	19.4	3	2.2	2.2	30	15940	14470	13120	10690	8620	6850	5340	4070	3010	2130
			3	3	2.2	40	13810	12530	11340	9210	7380	5820	4490	3380	2440	1660
			4	3	2.2	50	11810	10700	9670	7820	6240	4880	3730	2750	1940	1260
	180	23.1	3	3	2.2	30	18980	17230	15620	12730	10260	8150	6360	4850	3580	2530
			4	3	2.2	40	16450	14920	13500	10960	8790	6930	5350	4020	2900	1970
			5.5	4	2.2	50	14060	12470	11510	9310	7430	5810	4440	3280	2310	1490
	200	25.96	3	3	2.2	30	21300	19370	17550	14310	11530	9160	7150	5450	4030	2840
			4	4	3	40	18480	16760	15170	12320	9880	7790	6010	4520	3260	2220
			5.5	4	3	50	15800	14320	12940	10470	8350	6530	4990	3660	2590	1680
220	28.61	4	3	3	30	23500	21350	19340	15770	12710	10100	7890	6010	4440	3130	
		5.5	4	3	40	20350	18490	16720	13580	10880	8580	6630	4980	3590	2440	
		5.5	4	3	50	17420	15780	14260	11540	9200	7200	5500	4060	2650	1850	

\*Additional cooling & suction superheat (max 20K)

■ Additional cooling or limited suction gas temp.

Conversion factors:  
Tons = Watt / 3518.6

1 Watt = 0.86 kcal/h  
1 kcal/h = 1.163 Watt

1 Watt = 3.41 Btu/h  
1 Btu/h = 0.293 Watt

1kW = 1.36PS  
1PS = 0.739kW

# R22

## Refrigerating Capacity in Watt

relating to 20°C suction gas temperature, without liquid subcooling, motor speed = 1450 min<sup>-1</sup>

Compressor type	Motor pulley ø mm	Displacement m <sup>3</sup> h	Necessary driving motor KW		Cond. temp. °C	Evaporating temperature °C								
						Medium range (M)			Low temperature refrigeration range (L)					
						A	L	-5	-10	-15	-20	-25	-30	-35
200/III L	90	4.7	1.1	1.1	30	3210	2630	2140	1710	1320	1030	770	550	370*
			1.1	1.1	40	2870	2340	1890	1490	1140	880	640*	450*	290*
			1.5	1.1	50	2610	2120	1700	1340	1040*	790*	580*	405*	
	110	5.79	1.5	1.1	30	3950	3250	2630	2110	1630	1270	955	680	460*
			1.5	1.1	40	3540	2880	2330	1830	1400	1080	790*	550*	360*
			1.5	1.1	50	3200	2610	2100	1660	1270*	970*	715*	500*	
	130	6.83	1.5	1.1	30	4660	3830	3110	2480	1920	1490	1120	800	540*
			2.2	1.5	40	4180	3410	2750	2160	1660	1270	930*	650*	425*
			2.2	1.5	50	3790	3080	2480	1950	1510*	1150*	840*	585*	
	150	7.90	2.2	1.5	30	5400	4430	3590	2870	2220	1730	1300	930	620*
			2.2	1.5	40		3940	3180	2500	1910	1480	1080*	750*	490*
			2.2	1.5	50			2870	2260	1740*	1330*	975*	680*	
180	9.42	2.2	1.5	30			4290	3430	2650	2060	1550	1110	745*	
		-	2.2	40				2980	2290	1760	1290*	895*	585*	
		-	2.2	50					2700	2080*	1590*	1160*	815*	
250/IV L	110	8.34	2.2	1.5	30	5690	4670	3790	3030	2350	1830	1370	980	660*
			2.2	1.5	40	5100	4160	3360	2640	2020	1560	1130*	790*	520*
			3	2.2	50	4590	3760	3030	2380	1840*	1400*	1030*	720*	
	130	9.85	2.2	1.5	30	6720	5520	4480	3580	2770	2160	1620	1160	780*
			3	2.2	40	6020	4910	3970	3120	2390	1840	1340*	935*	610*
			3	2.2	50	5450	4440	3580	2810	2170*	1660*	1220*	850	
	150	11.34	3	2.2	30	7750	6350	5160	4120	3190	2480	1870	1330	895*
			3	2.2	40	6930	5660	4570	3590	2750	2120	1550*	1080*	705*
			3	2.2	50		5110	4120	3250	2500*	1910*	1400*	975*	
	180	13.33	3	2.2	30		7470	6070	4840	3750	2920	2200	1560	1050*
			3	2.2	40			5370	4220	3230	2490	1810*	1270*	830*
			-	3	50				3820	2940*	2250*	1650*	1150*	
200	14.92	3	3	30			6790	5420	4200	3270	2460	1750	1180*	
		-	3	40				4720	3620	2790	2040*	1420*	930*	
		-	3	50				4270	3200*	2510*	1840*	1290*		
300/V L	110	14.38	4	3	30	10050	8230	6710	5360	4160	3240	2440	1740	1180*
			4	3	40	9010	7350	5940	4670	3590	2770	2030*	1420*	950*
			4	3	50	8130	6610	5360	4200	3260*	2490*	1840*	1280*	
	130	16.95	4	3	30	11850	9700	7910	6320	4900	3820	2880	2050	1390*
			4	3	40	10620	8660	7000	5510	4230	3260	2390*	1670*	1120*
			5.5	3	50	9580	7790	6320	4950	3840*	2940*	2170*	1510*	
	150	19.4	4	3	30	13570	11100	9050	7230	5610	4370	3290	2360	
			5.5	4	40	12150	9920	8010	6300	4840	3730	2730*	1910*	1590*
			5.5	4	50	10970	8910	7220	5660	4400*	3370*	2480*	1730*	1280*
	180	23.10	5.5	4	30		13210	10770	8610	6680	5200	3920	2800	1900*
			5.5	4	40			9540	7510	5770	4440	3260*	2280*	1520*
			-	4	50				6750	5240*	4010*	2940*	2060*	
200	25.96	5.5	4	30		14850	12110	9680	7490	5840	4410	3140	2130*	
		5.5	5.5	40			10710	8450	6480	4990	3660*	2560*	1710*	
		-	5.5	50					7590	5900*	4510*	3320*	2310*	
220	28.61	5.5	5.5	30			13340	10670	8260	6440	4860	3460	2340*	
		-	5.5	40				9310	7140	5500	4030*	2830*	1880*	
			-	5.5	50				6510*	4970*	3660*	2540*		

\*Additional cooling & suction superheat (max 20K)

■ Additional cooling or limited suction gas temp.

Conversion factors:  
Tons = Watt / 3518.6

1 Watt = 0.86 kcal/h  
1 kcal/h = 1.163 Watt

1 Watt = 3.41 Btu/h  
1 Btu/h = 0.293 Watt

1kW = 1.36PS  
1PS = 0.739kW

# R404A/ R507A

## Refrigerating Capacity in Watt

relating to 20°C suction gas temperature, without liquid subcooling, motor speed = 1450 min<sup>-1</sup>

Compressor type	Motor pulley ø mm	Displacement m <sup>3</sup> h	Necessary driving motor KW		Cond. temp. °C	Evaporating temperature °C							
			A	L		-10	-15	-20	-25	-30	-35	-40	-45
200/III L	90	4.7	1.1	1.1	30	2960	2410	1930	1530	1180	885	640	430
			1.5	1.1	40	2430	1960	1560	1210	920	670	460	285
			1.5	1.1	50	1920	1530	1200	920	680	475	300	
	110	5.79	1.5	1.1	30	3650	2970	2380	1880	1450	1090	785	530
			1.5	1.5	40	2990	2420	1920	1500	1130	825	565	350
			2.2	1.5	50	2360	1890	1480	1140	840	585	370	
	130	6.83	1.5	1.5	30	4300	3500	2810	2220	1720	1290	925	625
			2.2	1.5	40	3530	2850	2270	1760	1340	975	670	415
			2.2	1.5	50	2780	2230	1750	1340	990	690	435	
	150	7.9	2.2	1.5	30	4980	4050	3250	2570	1980	1490	1070	720
			2.2	2.2	40	4080	3300	2620	2040	1550	1130	770	480
			-	2.2	50			2020	1550	1140	795	505	
180	9.42	2.2	2.2	30		4830	3880	3060	2370	1780	1280	860	
		-	2.2	40			3120	2430	1850	1340	920	570	
		-	2.2	50				1850	1360	950	600		
250/IV L	110	8.34	2.2	1.5	30	5260	4280	3440	2710	2100	1570	1130	760
			2.2	2.2	40	4300	3480	2760	2150	1630	1190	820	505
			3	2.2	50	3390	2720	2140	1640	1210	845	540	
	130	9.85	2.2	2.2	30	6140	4990	4010	3160	2440	1830	1320	885
			3	2.2	40	5020	4050	3220	2510	1900	1390	950	590
			3	2.2	50	3950	3170	2490	1910	1410	985	630	
	150	11.34	3	2.2	30	7070	5750	4610	3640	2810	2110	1520	1020
			3	2.2	40	5780	4670	3710	2890	2190	1600	1100	680
			3	3	50	4550	3650	2870	2200	1620	1140	725	
	180	13.33	3	3	30	8310	6760	5420	4280	3310	2480	1780	1200
			3	3	40		5490	4360	3400	2580	1880	1290	800
			-	3	50			3370	2580	1910	1330	850	
200	14.92	3	3	30		7560	6070	4790	3700	2780	1990	1340	
		-	3	40			4880	3800	2880	2100	1440	895	
		-	3	50				2890	2140	1490	950		
300/V L	110	14.38	4	3	30	9280	7560	6070	4790	3710	2790	2010	1360
			4	3	40	7630	6160	4900	3820	2900	2120	1460	910
			5.5	4	50	6040	4840	3810	2920	2160	1510	970	
	130	16.95	4	3	30	10850	8830	7090	5600	4340	3260	2350	1590
			4	4	40	8920	7210	5730	4470	3390	2480	1710	1060
			5.5	4	50	7060	5660	4450	3410	2520	1770	1130	
	150	19.4	4	4	30	12420	10110	8120	6410	4960	3730	2690	1820
			5.5	4	40	10200	8250	6560	5120	3890	2840	1950	1220
			5.5	5.5	50	8080	6480	5090	3900	2890	2020	1290	
	180	23.1	5.5	4.4	30	14790	12040	9670	7640	5910	4440	3200	2160
			5.5	4.4	40		9820	7810	6090	4630	3380	2330	1450
			-	5.5	50			6060	4650	3440	2410	1540	
200	25.96	5.5	5.5	30	16620	13530	10860	8580	6640	4990	3590	2430	
		5.5	5.5	40		11040	8780	6850	5200	3800	2610	1630	
		-	5.5	50			6810	5220	3870	2710	1730		
220	28.61	5.5	5.5	30		14910	11970	9460	7320	5500	3960	2680	
		-	5.5	40			9680	7550	5730	4180	2880	1800	

\*Additional cooling & suction superheat (max 20K)

■ Additional cooling or limited suction gas temp.

Conversion factors:  
Tons = Watt / 3518.6

1 Watt = 0.86 kcal/h  
1 kcal/h = 1.163 Watt

1 Watt = 3.41 Btu/h  
1 Btu/h = 0.293 Watt

1kW = 1.36PS  
1PS = 0.739kW

## Technical Data

Compressor type	Motor Pulley mm	Compressor speed with motor speed 1450 min <sup>-1</sup>	Displacement m <sup>3</sup> /hr	Cylinder			Oil charge Ltr	Weight kg	V-belts Number x Profile according to DIN 2215	SL Suction line		connections DL Discharge line		Cooling water Q
				Number	Bore mm	Stroke mm				mm	inch	mm	Inch	
<b>200 / IIIIL</b>	90	500	4.70	2	50	40	0.9	22	1 x 13 (1 x 17)	16 L	5/8"	12 L	1/2"	G3/8
	110	615	5.79											
	130	725	6.83											
	150	840	7.90											
	180	1000	9.42											
<b>250 / IVL</b>	110	425	8.45	2	65	50	1.5	45.5	2 x 17	22 L	7/8"	18 L	3/4"	G3/8
	130	495	9.85											
	150	570	11.34											
	180	670	13.33											
	200	750	14.92											
<b>300 / VL</b>	110	355	14.50	2	85	60	2.5	80.5	2 x 17	28 L	1 1/8"	22 L	7/8"	G½
	130	415	16.95											
	150	475	19.40											
	200	635	25.96											
	220	700	28.61											
<b>AK6</b>	110	392	31.63	2	101.6	76.2	3.5	120	3 x 17	35 L	1 3/8"	28 L	1 1/8"	G½
	130	464	37.44											
	150	536	43.26											
<b>AK7.5</b>	110	392	28.79	3	82.55	85	3.5	130	3 x 17	35 L	1 3/8"	28 L	1 1/8"	G¾
	130	464	34.08											
	150	536	39.37											

Compressor type	Min. compressor speed rpm	Max. compressor speed rpm
<b>200 / IIIIL</b>	430	1000
<b>250 / IVL</b>	370	750
<b>300 / VL</b>	310	700
<b>AK6</b>	310	565
<b>AK7.5</b>	365	565



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