Sabro

R-134a

Air Cooled Screw Chillers

(36 RT - 483 RT)

Sabro technologies is a wholly owned subsidiary of **Sabro group Pvt.,Ltd.,** specializing in research, development and manufacturing of Screw type Products.

The company sells **Air cooled Screw Chillers**-with-optimum-COP(HIGH ENERGY EFFICIENCY RATIO).

Adhering to the principle of integrity, innovation and excellence, the company constantly creates new products every year according to the market demands. The Air cooled Screw Chillers have the features of high energy efficiency ratio, high reliability, high efficiency, and high automation etc., which continues to lead the domestic refrigeration energy industry, opening a new era of high efficiency screw type of products.

Sabro Air cooled Package SCREW Chillers **(ACSC)** are the most efficient **Screw Chillers** of their class, generally suitable for central air conditioning application such as multi-story buildings, motels, hotels, hospitals, restaurants, arcades, shopping malls, pharmaceuticals, offices and industries complexes etc.

- Propeller/Centrifugal Condenser Fan
- VFD based Condenser Fan Motor
- Screw Compressor. Soft starter energized
- Economizer (for liquid cooling) provided with each compressor
- Microprocessor Controller
- Chiller designed for steady operation at temperatures as high as 48°C
- Chiller Customized for high external static pressure.

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website www.sabrotechnology.com

Technical specification of air-cooled screw chiller (50Hz) (Single compressor)

Model Number ACS			127-S	180-S	216-S	265-S	310-S	373-S	445-S	520-S	600-S
Nominal cooling capacity Standard conditions		Tons	36	50.7	61.4	75.3	88	106	126.5	148	170
		KW	126.5	178	216	265	309	373	445	520	598
Compressor Power input		KW	39	54	65.5	80.5	90	111	132	153	178
Compressor EER/COP			11.0/3.2	11.3/3.3	11.3/3.3	11.2/3.3	11.6/3.4	11.6/3.4	11.5/3.4	11.5/3.4	11.5/3.4
Compressor r ated current		Amps.	70	94	113	136	150	188	230	270	318
Chiller Water flow rate		GPM / l/s	86/5.45	122/7.7	147/9.3	181/11.4	211/13.3	254/16	303/19.1	355/22.3	408/25.7
Cooling capacity High ambient conditions		Tons	31.8	44.9	54.3	66.6	77.7	94.0	112.0	131.0	150.0
		KW	112	158	191	234	273	330	394.0	460.5	527.5
Compressor Power input		KW	51	70	85	102	114	142	168	196	225
EER/COP			7.5/2.2	7.7/2.26	7.6/2.22	7.6/2.3	8.0/2.34	8.0/2.32	8.0/2.34	8.0/2.34	8.0/2.34
Compressor r ated current		Amps.	88.0	116	142.0	172	190	236	285	330	390
Chiller Water flow rate		GPM / l/s	76/4.8	108/6.8	130/8.2	160/10.0	187/11.7	225/14.3	269/16.9	314/19.8	360/22.7
Compressor		Type	Semi hermetic Twin screw								
Compressor qty/ numbers of refrigerant circuits			1	1	1	1	1	1	1	1	1
Capacity steps		%	35-50-75-100 / stepless								
Starting method			y-Δ(star - delta)								
Refrigerant			R134-a								
Power supply			380-415-3-50Hz								
Refrigerant control			electronic expansion valve								
Evaporator (cooler)	Type		Shell and bundle of tubes								
	Water Pr. drop app.	KPa/feet	27/9	30/10	35.8/12	41.84/14	47.8/16	51/17	47.8/16	53.8/18	59.7/20
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN76	DN100	DN100	DN100	DN100	DN125	DN125	DN125	DN125
		Inch	3	4	4	4	4	5	5	5	5
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins								
	Copper tube	Size	3/8"OD (Rifled)								
	Fins/inch	FPI	14	14	14	14	14	14	14	14	14
	Coil test pressure	KPa/PSI	3100/450 under water.								
Condenser Fan	Type		Propeller direct drive								
		Qty	2	4	4	6	6	8	8	10	12
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30	762/30	762/30	762/30	762/30
	Motor power (each)	Watts	1500	1500	1500	1500	1500	1500	1500	1500	1500
Dimensions (MM)		length	1200	2000	2000	3000	3000	4000	4000	5000	6000
		width	2286	2286	2286	2286	2286	2286	2286	2286	2286
		Height	2446	2446	2446	2446	2446	2446	2446	2446	2446
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,								
Operating limits	Leaving Chilled water temp.		5°C-15°C (42 °F – 59°F)								
	Entering condenser air temp.		20°C-51.6°C (68 °F – 125 °F)								

Specifications are based on following conditions,
Entering/leaving chilled water 12.7°C/7.2°C (55°F/45°F)
* Nominal cooling capacity at 35°C (95°F) and high temperature capacity at 46°C (115°F) condenser enter air temp.
Fouling factor 0.0001Btu/hr/ft²/°F
Specifications are subject to change keeping in view improvement in product.

Technical specification of air-cooled screw chiller (50Hz) (Double compressor)

Model Number ACS			432-D	492-D	530-D	580-D	620-D	650-D
Nominal cooling capacity Standard conditions		Tons	122.8	140	150.6	165	176	185
		KW	432	492	530	580	618	650.5
Compressor Power input		KW	66 x 2	74 x2	80.5 x2	88 x2	90 x2	97 x2
Compressor EER/COP			11.3/3.3	11.3/3.3	11.3/3.3	11.3/3.3	11.6/3.4	11.4/3.35
Compressor rated current		Amps.	113x 2	126X2	136 x2	146 x2	150 x2	166 x2
Chiller Water flow rate		GPM / l/s	295/18.6	336/21.1	361/22.7	396/24.9	422/26.6	444/27.9
Cooling capacity High ambient conditions		Tons	108.6	123.8	133	146	155.0	163.7
		KW	382	435.4	468	513	545	575.8
Compressor Power input		KW	84x2	95 X 2	102 x2	112 x2	114 x2	123 x2
Compressor EER/COP			7.8/2.3	7.8/2.3	7.8/2.3	8.0/2.3	8.0/2.34	8.0/2.34
Compressor rated current		Amps.	140.0 x2	160 x2	172 x2	186 x2	190 x2	208 x2
Chiller Water flow rate		GPM / l/s	260/16.4	297/18.7	319/20.1	350/22.0	372/ 23.4	393/24.7
Compressor		Type	Semi hermetic Twin screw					
Compressor qty/ numbers of refrigerant circuits			2	2	2	2	2	2
Capacity steps		%	35-50-75-100 / step less					
Starting method			y-Δ (star-delta)					
Refrigerant			R134a					
Power supply			380-415-3-50Hz					
Refrigerant control			electronic expansion valve					
Evaporator (cooler)	Type		Shell and bundle of tubes					
	Water pressure drop app.	KPa/feet	35.8/12	41.84/14	47.8/16	51/17	47.8/16	53.8/18
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN125	DN125	DN125	DN125	DN125	DN150
		Inch	5	5	5	5	5	6
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins					
	Copper tube	Size	3/8"OD (Rifled)					
	Fins/inch	FPI	14	14	14	14	14	14
	Coil test pressure	KPa /PSI	3100/450 under water.					
Condenser Fan	Type		Propeller direct drive					
		Qty	8	8	12	12	12	12
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30	762/30
	Motor power (each)	Watts	1500	1500	1500	1500	1500	1500
Dimensions (MM)		Length	4000	6000	6000	6000	6000	6000
		width	2286	2286	2286	2286	2286	2286
		Height	2446	2446	2446	2446	2446	2446
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,					
Operating limits	Leaving Chilled water temp.		5°C-15°C (42°F – 59°F)					
	Entering condenser air temp.		20°C-51.6°C (68°F – 125°F)					

Specifications are based on following conditions,
Entering/leaving chilled water 12.7°C/7.2°C (55°F/45°F)
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Technical specification of air-cooled screw chiller (50Hz) (Double compressor)

Model Number ACS			745-D	830-D	890-D	1040-D	1196-D
Nominal cooling capacity Standard conditions		Tons	212	235.8	253	296	340
		KW	745.4	829	890	1041	1196
Compressor Power input		KW	111 x2	121 x 2	132 x2	153 x2	178 x2
Compressor EER/COP			11.6/3.4	11.6/3.4	11.6/3.4	11.6/3.4	12.3/3.6
Compressor rated current		Amps.	188 x2	208x 2	230 x2	270 x2	318 x2
Chiller Water flow rate		GPM / l/s	509/32	566/35.6	607/38.2	710/44.7	816/25.7
Cooling capacity High ambient conditions		Tons	188	208	224	262	300
		KW	661	731	787.6	921	1055
Compressor Power input		KW	142	156 x2	168 x2	196 x2	225 x2
Compressor EER/COP			8.0/2.32	8.0/2.34	8.0/2.34	8.0/2.35	8.0/2.34
Compressor rated current		Amps.	236 x2	260 x2	285 x2	330 x2	390 x2
Chiller Water flow rate		GPM / l/s	451/28.4	499/31.4	538/33.9	629/39.6	720/45.3
Compressor		Type	Semi hermetic Twin screw				
Compressor qty/ numbers of refrigerant circuits			2	2	2	2	2
Capacity steps		%	35-50-75-100 / step less				
Starting method			y-Δ (star-delta)				
Refrigerant			R134a				
Power supply			380-415-3-50Hz				
Refrigerant control			electronic expansion valve				
Evaporator (cooler)	Type		Direct expansion Shell and bundle of tubes				
	Water pressure drop app.	KPa/feet	47.8/16	51/17	47.8/16	53.8/18	59.7/20
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN150	DN150	DN150	DN150	DN200
		Inch	6	6	6	6	8
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins				
	Copper tube	Size	3/8"OD (Rifled)				
	Fins/inch	FPI	14	14	14	14	14
	Coil test pressure	KPa /PSI	3100/450 under water.				
Condenser Fan	Type		Propeller direct drive				
		Qty	16	16	16	20	24
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30
	Motor power each	Watts	1500	1500	1500	1500	1500
Dimensions (MM)		length	8000	8000	8000	10000	12000
		width	2286	2286	2286	2286	2286
		Height	2497	2497	2497	2547	2547
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,				
Operating limits	Leaving Chilled water temp.		5°C-15°C (42°F – 59°F)				
	Entering condenser air temp.		20°C-51.6°C (68°F – 125°F)				

Specifications are based on following conditions,
Entering/leaving chilled water 12.7°C/7.2°C (55°F/45°F)
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Technical specification of air-cooled screw chiller (50Hz) (Double compressor)

Model Number ACS			1310-D	1415-D	1515-D	1610-D	1700-D
Nominal cooling capacity Standard conditions	Tons		373	402	431	457	483
	KW		1311	1413	1515	1607	1698
Compressor Power input	KW		193 x 2	193+ 216	216 x2	216 +243	243 x2
Compressor EER/COP			11.6/3.4	11.8 / 3.45	11.96 /3.5	11.95/ 3.5	11.95/ 3.5
Compressor rated current	Amps.		340 x2	340 +380	380 x2	380 +430	430 x2
Chiller Water flow rate	GPM / l/s		895 /56.4	965 /60.7	1034 /65.1	1097 /69.0	1159 /73.0
Cooling capacity High ambient conditions	Tons		330	355	381	403	426
	KW		1160	1248	1340	1417	1498
Compressor Power input	KW		248 x2	248 +278	278 x2	278 +312	312 x2
Compressor EER/COP			8.0/ 2.34	8.18987	8.2 /2.4	8.2 /2.4	8.2 /2.4
Compressor rated current	Amps.		430	430 +475	475	475 +540	540 x2
Chiller Water flow rate	GPM / l/s		792 /49.9	852 /53.7	914 /57.6	967 /61.0	1022 /64.4
Compressor	Type		Semi hermetic Twin screw				
Compressor qty/ numbers of refrigerant circuits			2	2	2	2	2
Capacity steps	%		35-50-75-100 / step less				
Starting method			y-Δ (star-delta)				
Refrigerant			R134a				
Power supply			380-415-3-50Hz				
Refrigerant control			electronic expansion valve				
Evaporator (cooler)	Type		Direct expansion Shell and bundle of tubes				
	Water pressure drop app.	KPa/feet	47.8/16	51/17	47.8/16	53.8/18	59.7/20
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN150 x2	DN150 x2	DN150 x2	DN150 x2	DN150 x2
		Inch	6 x2	6 x2	6 x2	6 x2	6 x2
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins				
	Copper tube	Size	3/8"OD (Rifled)				
	Fins/inch	FPI	14	14	14	14	14
	Coil test pressure	KPa /PSI	3100/450 under water.				
Condenser Fan	Type		Propeller direct drive				
		Qty	24	28	28	32	32
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30
	Motor power each	Watts	1500	1500	1500	1500	1500
Dimensions (MM)		length	12000	14000	14000	16000	16000
		width	2286	2286	2286	2286	2286
		Height	2547	2547	2547	2547	2547
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,				
Operating limits	Leaving Chilled water temp.		5°C-15°C (42°F – 59°F)				
	Entering condenser air temp.		20°C-51.6°C (68°F – 125°F)				

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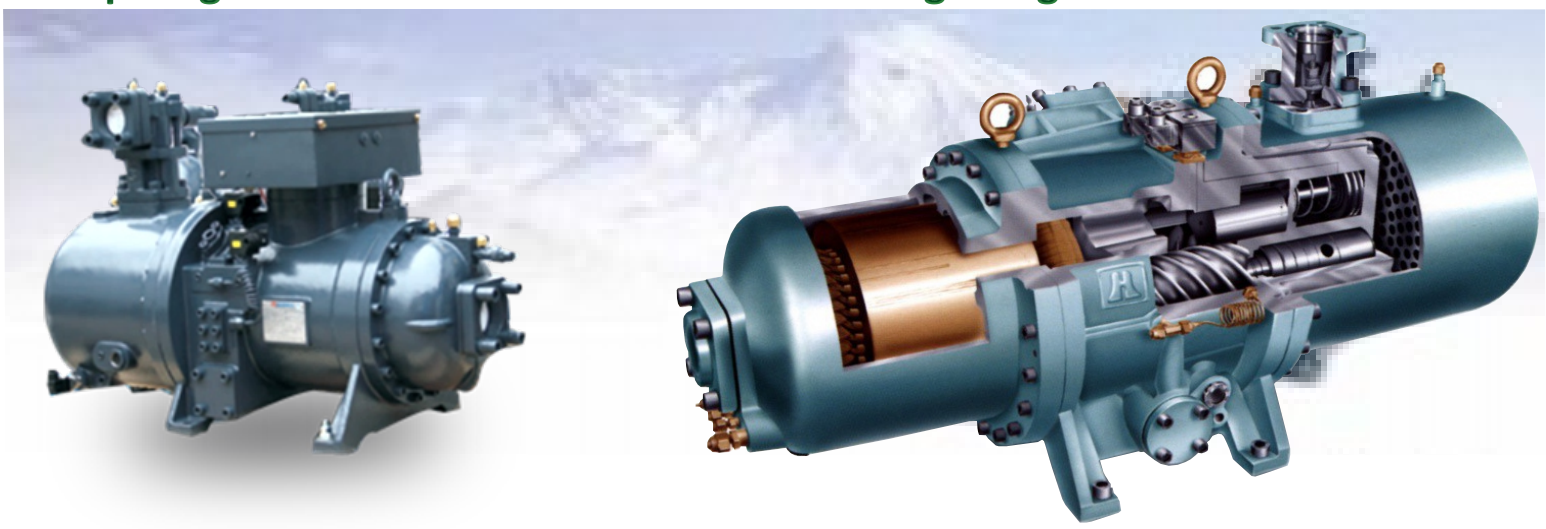

Inspired By The Stimulus to Grow through Knowledge, interlaced with the zeal and sheer commitment, of an enthusiastic team and **Gripped by the Obsession of Three Brothers** of turning the dream- into reality, Sabro has evolved, grown and expanded since its inception in 1969.

It was the fruit of commitment, hope and hard work that enabled us to be the pioneers of HVAC manufacturing in Pakistan, exporting to over 22 countries, encapsulating 3 continents. We now thrive as an agile manufacturer for a complete range of HVAC manfacture including Chillers, Self-Contained units, Air-Side Equipment, Mini Split Units & a menagerie of customised HVAC manufacture tailored to suit every HVAC requirement of the customer.

For over five decades, Sabro has been a trusted brand name that has exceeded expectations nationwide & internationally, catering to the needs of both domestic as well international customers.

2014: Obtained BS EN ISO 9001:2008

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