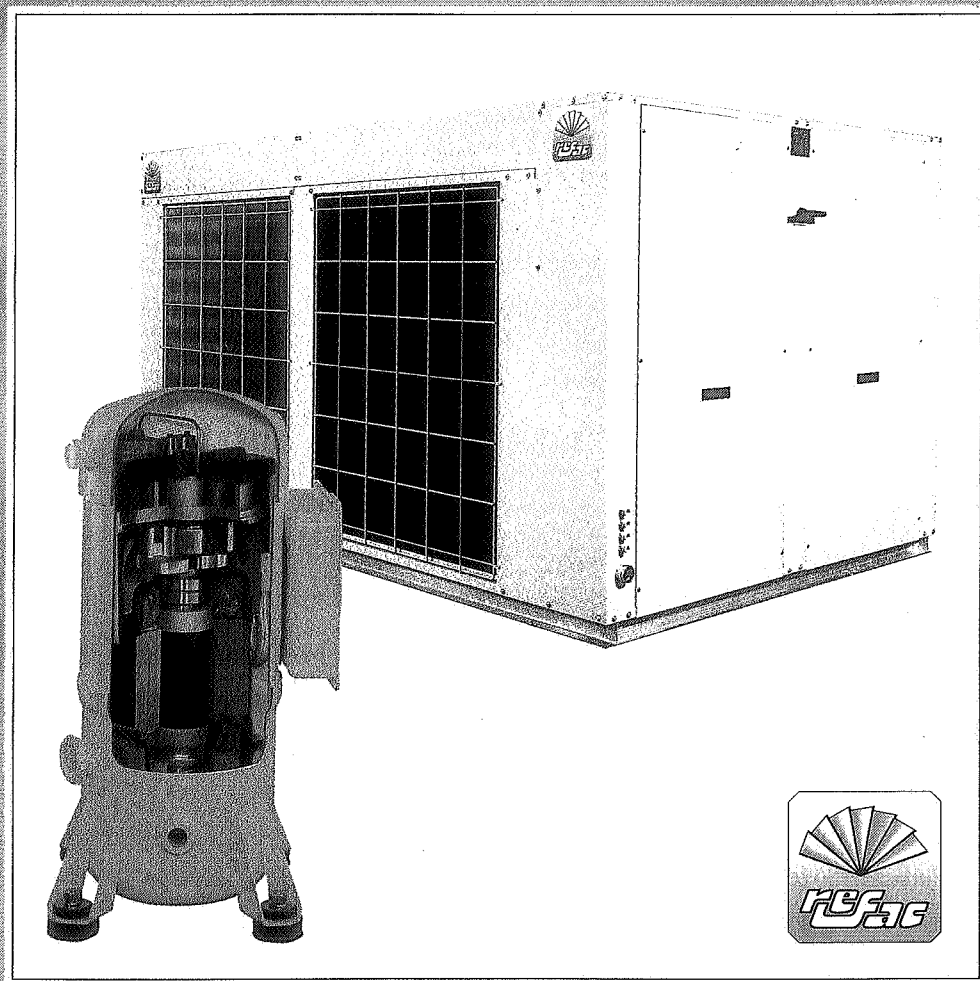


Aircube-Scrollchiller

aircooled chiller for outdoor installation,
capacity range 40-150 kW,
with scroll compressors

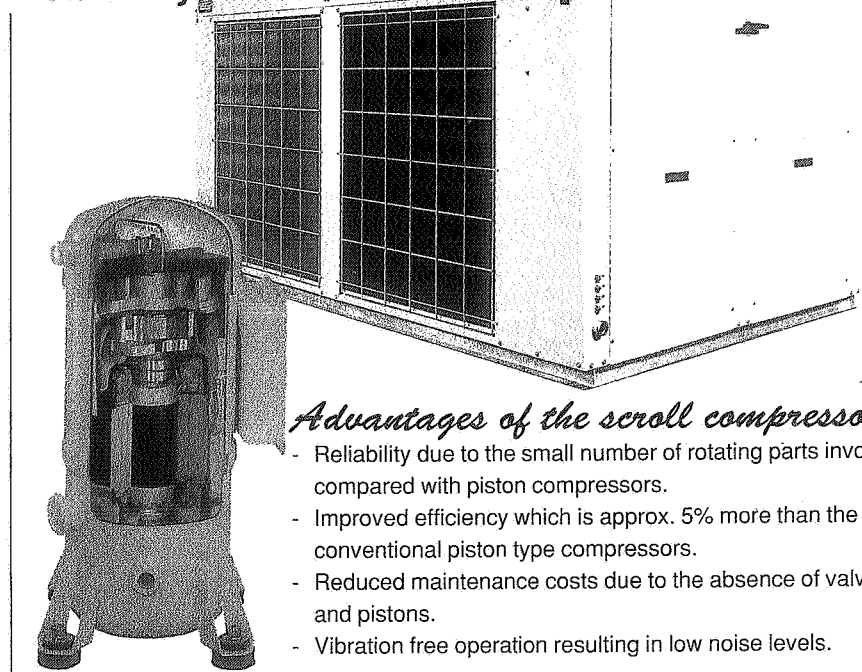


The Aircube-Scrollchiller from Refac aircooled chiller for outdoor installation capacity range 40 to 150 kW, with scroll compressors

The new generation Aircube-Scrollchillers from Refac combines the advanced scroll compressor technology with the high quality standard of the Aircube and Airtronic-Chillers. This results in a wide range of cooling capacities from 40 kW to 150 kW.

Specific advantages:

- Units have **two completely independent circuits**.
- Extremely low-noise operation as a result of combining scroll compressors with the **Refac low-noise concept** for aircooled chillers.
- The self-parametrical (**adaptive**) PLC control based on the water outlet temperature with PI control on the ATS models.
- The **extra weather resistant construction** of a fully galvanized welded steel support frame. The sendzimir sheet metal components are epoxy coated including the surrounding removable service panels, which protect the compressor/evaporator section against weather conditions. The cast aluminium axial fans also provide for a long term protection against weather.
- **Minimizing the refrigerant volume** by applying optimum selected evaporators.
- An electrical **main switch and fuses** are fitted as standard.
- Completely **separated condenser airflows** per circuit and per ventilator, which prevent counter-rotation.
- The evaporators and suction lines are **vapour-sealed**, insulated and equipped with a self-regulating trace heating, to protect against freeze-up when the unit is at stand-still during the winter. This is standard for the ATS type units, and is optional for the ASC chillers.
- The scroll compressors are provided with **valves** on the suction and liquid lines.
- The Aircube-Scrollchillers are all test run in the factory and are delivered '**ready for operation**'.



Advantages of the scroll compressor

- Reliability due to the small number of rotating parts involved compared with piston compressors.
- Improved efficiency which is approx. 5% more than the conventional piston type compressors.
- Reduced maintenance costs due to the absence of valves and pistons.
- Vibration free operation resulting in low noise levels.

Important optionals

- Unit types ASC 17D through to 34D have a winter control as standard. On types ATS 30D, 40D and 50D the winter control is an optional extra.
- Low noise option for unit types ATS 30D, 40D and 50D complete with low speed fans, oversized condensers, acoustically insulated compressor housing and flexible pipe connections in the suction and liquid lines. (Models ASC 17D through to 34D are supplied as standard in the low noise version.
- Anti-vibration mounts.
- Corrosion resistant condenser coating, or alternatively copper/copper condenser.

- Failure signalling with specific failure alarm on potential free contacts.
- Step/start resistance reducing the starting current by approx. 30%.
- Manometer panel.
- Sequence change-over switches for compressors.
- Flow switch.
- Electronic expansion valves for type ATS 30D, 40D and 50D.

R-407C as an option

The environmentally friendly R-407C refrigerant is available as an alternative to R-22.

Low-noise construction

The acoustical advantages of the **Refac low-noise concept** are even more improved because of the completely vibration free running of the scroll compressors.

The solid acoustical insulated **compressor housing** on types ATS 30D, 40D and 50D reduces the noise emitted by the compressor to a minimum level.

A considerable noise reduction in the lower frequencies up to 500 Hz is achieved with **the new generation axial fans** with special shaped fan blades.

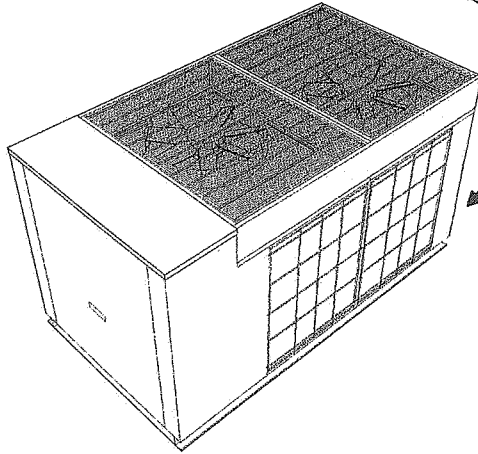
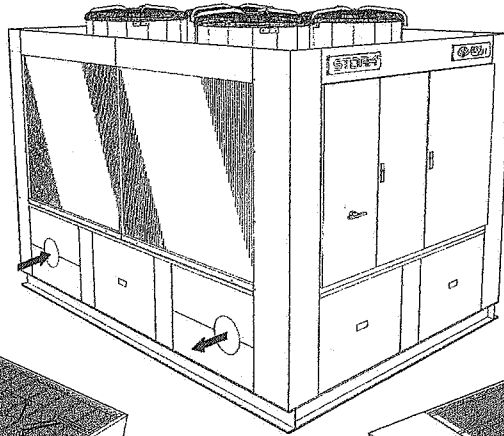
This design of fans considerably reduces turbulence which results in a much **lower power consumption**: approx. 30% can be saved with equal airflow and noise level.

The result: the excellent **Refac low-noise concept**.

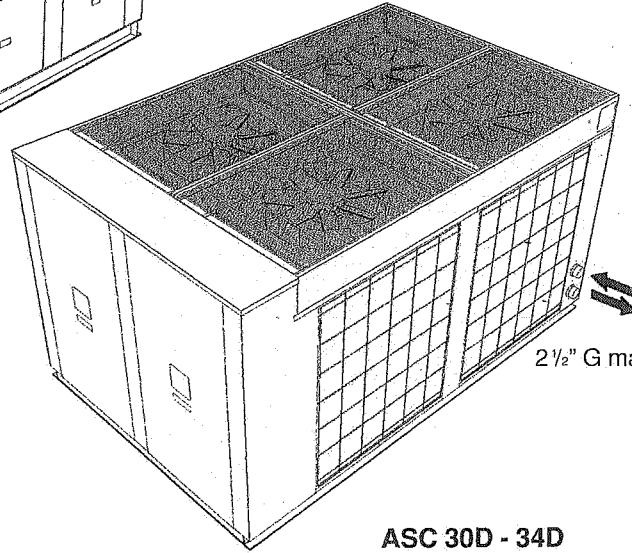
ATS 30D - 40D - 50D



ATS 30D : DN80mm
 ATS 40D - 50D : DN100mm
 FLANGE : DIN 2633



2" G male



2 1/2" G male

ASC 17D - 20D

ASC 30D - 34D

TECHNICAL DATA

Type ASC-R22, ATS-R22		ASC 17D	ASC 20D	ASC 30D	ASC 34D	ATS 30D	ATS 40D	ATS 50D
Cooling capacity ¹⁾	kW	41	49	66	78	100	121	146
Power consumption ¹⁾	kW	13,8	16,7	19,8	23,4	30,4	40,7	48,4
Operational current ¹⁾	A	29	32	43	50	62	74	90
Nominal current	A	32	44	57	66	89	104	125
Max. starting current	A	89	100	161	168	132	197	211
Power consumption each fan	kW	0,5	0,5	0,5	0,5	1,4	1,4	1,4
Nominal current each fan	A	2,3	2,3	2,3	2,3	2,9	2,9	2,9
Total electrical connection value	kVA	25	33	40	46	64	76	88
Number of compr./fans/circuits		2-2-2		2-4-2		4-4-2		
Capacity steps	%	50-100	50-100	50-100	50-100	25-50 75-100	20-50 70-100	25-50 75-100
Supply voltage		3 x 400V~50 Hz + N + PE						
Charge of refrigerant	kg	7	10	15	19	28	30	44
Flow of chilled liquid ¹⁾	dm ³ /s	1,63	1,95	2,62	3,11	3,98	4,81	5,81
Pressure drop of chilled liquid ¹⁾	kPa	40	25	15	20	20	15	20
Min. req. liquid content of system	dm ³	500	600	825	975	730	700	1060
Operational weight, standard	kg	-	-	-	-	1710	1850	1930
Operational weight, low-noise	kg	700	750	1200	1300	1910	2050	2125
Dimensions, length x width x height	mm	2204 x 1204 x 1250		2803 x 1803 x 1555		3300 x 2300 x 2300		
Sound press. level ²⁾ , Standard-vers.	dB(A)	-	-	-	-	62	63	65
Sound press. level ²⁾ , low-noise-vers	dB(A)	49	49	50	50	52	53	54

TABLE OF MULTIPLIERS FOR CAPACITY AND POWER CONSUMPTION AT VARIOUS CONDENSER AIR INTAKE TEMPERATURES.

Air in °C	Cooling-capacity	Power-consump.
+28	1.02	0.97
+30	1.00	1.00
+32	0.98	1.03
+35	0.95	1.07

TABLE OF MULTIPLIERS FOR CAPACITY AND POWER CONSUMPTION AT VARIOUS CHILLED LIQUID OUTLET TEMPERATURES.

Water out °C	Cooling-capacity	Power-consump.
+ 4	0.94	0.96
+ 6	1.00	1.00
+ 8	1.07	1.03
+10	1.14	1.07

Remarks

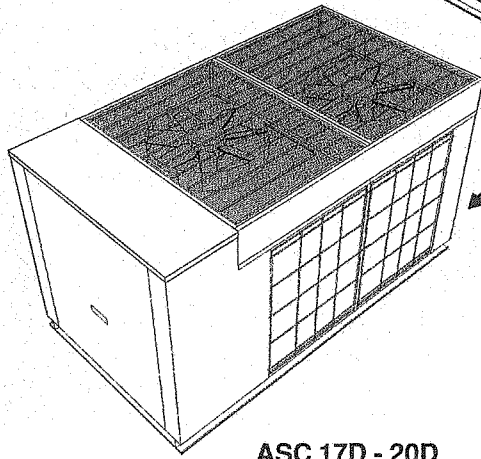
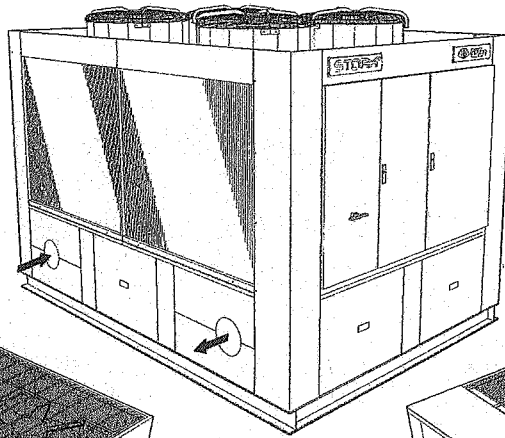
1. Condenser air inlet temperature of +30 deg.C and chilled water temperature inlet + 12 deg. C outlet + 6 deg. C.
2. Sound pressure level in dB(A) re 2 x 10⁻⁵ N/m² at 10 M distance under free field conditions.
3. The chilled water quantity to be selected such that the difference between inlet

- temperature and outlet temperature is not less than 4K and not exceeding 8K.
- 4. Fouling factor evaporator 0.44 10⁻⁴ M2 K/W.
- 5. A flow switch is to be positioned in the chilled water circuit.
- 6. Cosφ comp. motor 0.85 to 0.90.
- 7. Max. allowable variation of electrical power feed voltage: ± 10%.

ATS 30D - 40D - 50D

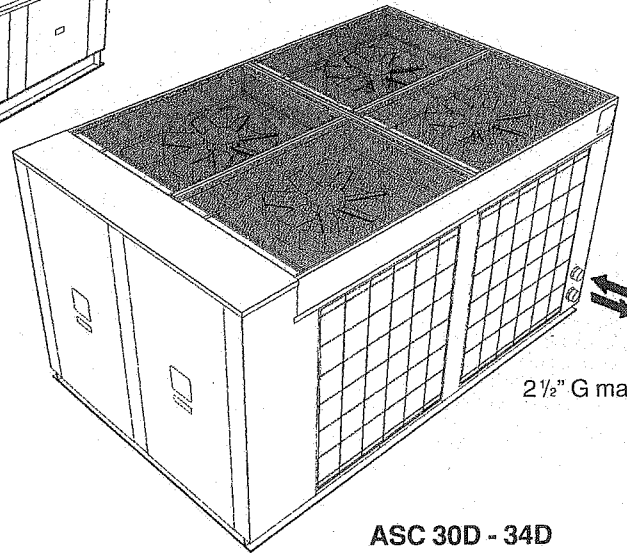


ATS 30D : DN80mm
 ATS 40D - 50D : DN100mm
 FLANGE : DIN 2633



2" G male

ASC 17D - 20D



2 1/2" G male

ASC 30D - 34D

TECHNICAL DATA

Type ASC-R407c, ATS-R407c		ASC 17D	ASC 20D	ASC 30D	ASC 34D	ATS 30D	ATS 40D	ATS 50D
Cooling capacity ¹⁾	kW	43	53	68	79	98	118	141
Power consumption ¹⁾	kW	12,8	16,2	18,7	22,8	31,8	41,2	50,8
Operational current ¹⁾	A	29	32	43	50	62	74	90
Nominal current	A	32	44	57	66	89	104	125
Max. starting current	A	89	100	161	168	132	197	211
Power consumption each fan	kW	0,5	0,5	0,5	0,5	1,4	1,4	1,4
Nominal current each fan	A	2,3	2,3	2,3	2,3	2,9	2,9	2,9
Total electrical connection value	kVA	25	33	40	46	64	76	88
Number of compr./fans/circuits		2-2-2		2-4-2		4-4-2		
Capacity steps	%	50-100	50-100	50-100	50-100	25-50 75-100	20-50 75-100	25-50 75-100
Supply voltage		3 x 400V~50 Hz + N + PE						
Charge of refrigerant	kg	4,5	6	9	11	28	38	52
Flow of chilled liquid ¹⁾	dm ³ /s	1,69	2,10	2,69	3,13	3,89	4,67	5,6
Pressure drop of chilled liquid ¹⁾	kPa	30	25	15	20	20	15	20
Min. req. liquid content of system	dm ³	500	600	825	975	730	700	1060
Operational weight, standard	kg	-	-	-	-	1710	1925	2000
Operational weight, low-noise	kg	750	800	1300	1400	1910	2125	2200
Dimensions, length x width x height	mm	2204 x 1204 x 1250		2803 x 1803 x 1555		3300 x 2300 x 2300		
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Water out °C	Cooling-capacity	Power-consump.
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+ 6	1.00	1.00
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