

Type: Semi-hermetic twin screw compressors

Producer: Frascold

Series: R-TSH

Model: R-TSH8-120 360 Y

Technical data

Nominal motor power [kW/HP]:	89 / 120
Displacement [m ³ /h]:	360
Capacity control [%]:	100 - 75 - 50
RPM [min ⁻¹]:	2960
Weight net [kg]:	353
Weight gross [kg]:	388

Electrical data

	<u>PWS</u>
Power supply [V/~/Hz]:	400/3/50
Locked rotor current [A]:	634
Locked rotor current (D.O.L. - $\Delta\Delta$) [A]:	1036
Max. operating current [A]:	216
Max. power input [kW]:	136

Connections

	<u>milimeters</u>	<u>inches</u>
Suction line:	80	3 1/8
Discharge line:	67	2 5/8

R22

Cooling capacity [W]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	450 400	380 480	319 090	265 510	218 890	178 500	143 730
40	439 370	404 410	340 750	284 900	236 190	193 840	157 210	125 700
50	390 790	359 090	301 420	250 870	206 840	168 600	135 570	107 200
55	369 610	339 300	284 150	235 860	193 810	157 330	125 840	98 820

Power input [kW]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	70.81	68.89	66.02	62.81	59.37	56.21	53.79
40	84.54	83.38	80.19	76.40	72.60	68.93	66.01	64.62
50	102.98	100.78	95.74	90.47	85.61	81.26	78.16	77.49
55	119.77	116.35	109.23	102.47	96.64	92.01	89.63	91.46

Current [A]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	121.00	118.40	114.60	110.40	105.90	102.00	99.00
40	140.40	138.70	134.10	128.70	123.40	118.50	114.60	112.70
50	167.70	164.40	157.00	149.20	141.90	135.60	131.20	130.30
55	193.10	187.90	177.00	166.90	158.30	151.50	147.90	150.70

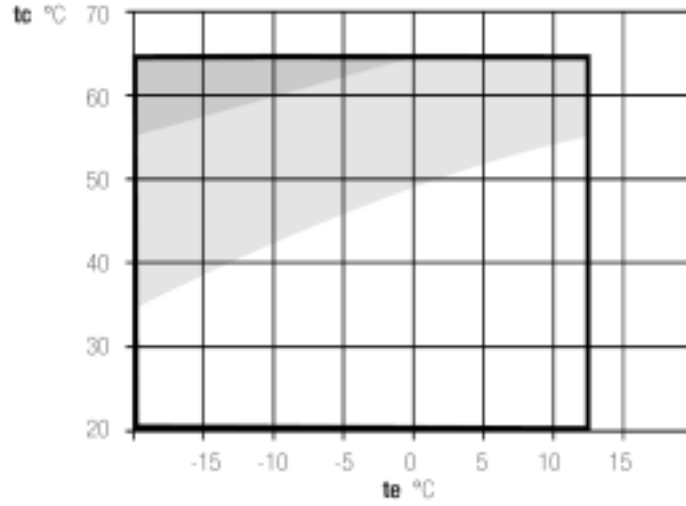
Mass flow [kg/h]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	8 973	7 663	6 501	5 475	4 572	3 778	3 084
40	9 378	8 680	7 401	6 265	5 262	4 379	3 602	2 924
50	9 076	8 391	7 134	6 019	5 034	4 166	3 402	2 735
55	9 000	8 316	7 058	5 942	4 957	4 088	3 324	2 656

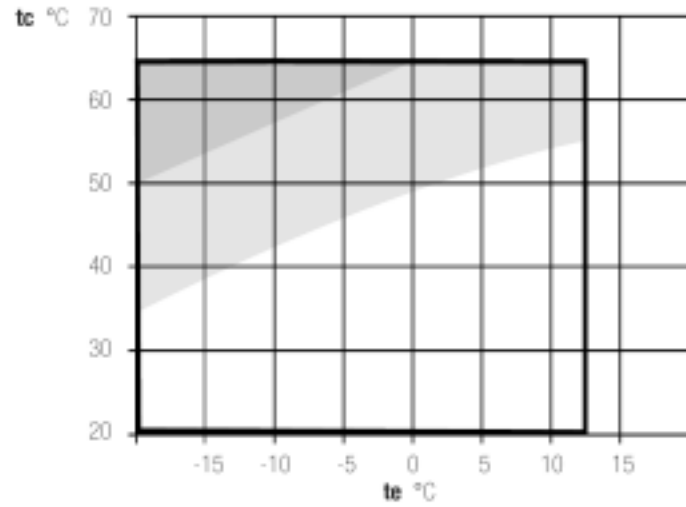
Operating conditions: suction gas overheating 10K, 0K subcooling

Application limits

Full load operation



Capacity control



- With oil cooler
- With liquid injection and oil cooler

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

R134a

Cooling capacity [W]

$t_c \setminus t_e$	20	15	10	5	0	-5	-10
30	-	-	-	-	206 630	167 910	135 080
40	-	328 090	272 480	224 500	183 290	148 150	118 430
50	347 610	289 420	239 100	195 770	158 630	127 050	100 410
55	300 360	248 220	203 250	164 630	131 640	103 690	80 210

Power input [kW]

$t_c \setminus t_e$	20	15	10	5	0	-5	-10
30	-	-	-	-	40.50	39.44	38.02
40	-	52.08	51.42	50.10	48.48	46.83	45.40
50	64.59	63.95	62.47	60.55	58.52	56.66	55.25
55	79.85	78.03	75.67	73.21	71.00	69.46	69.23

Current [A]

$t_c \setminus t_e$	20	15	10	5	0	-5	-10
30	-	-	-	-	82.20	81.00	79.50
40	-	596.70	95.80	94.00	91.90	89.80	88.00
50	112.70	111.90	109.90	107.50	104.90	102.50	100.80
55	133.60	131.00	127.70	124.30	121.30	119.20	118.90

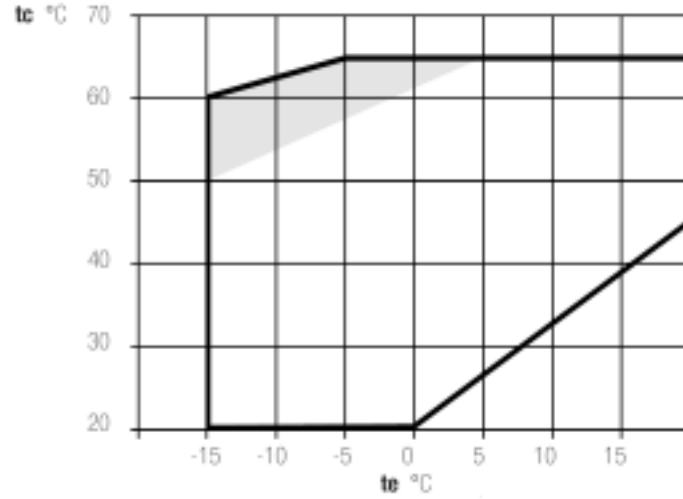
Mass flow [kg/h]

$t_c \setminus t_e$	20	15	10	5	0	-5	-10
30	-	-	-	-	4 486	3 717	3 048
40	-	7 371	6 238	5 242	4 369	3 607	2 945
50	8 463	7 189	6 064	5 075	4 207	3 450	2 792
55	8 198	6 929	5 809	4 823	3 958	3 202	2 544

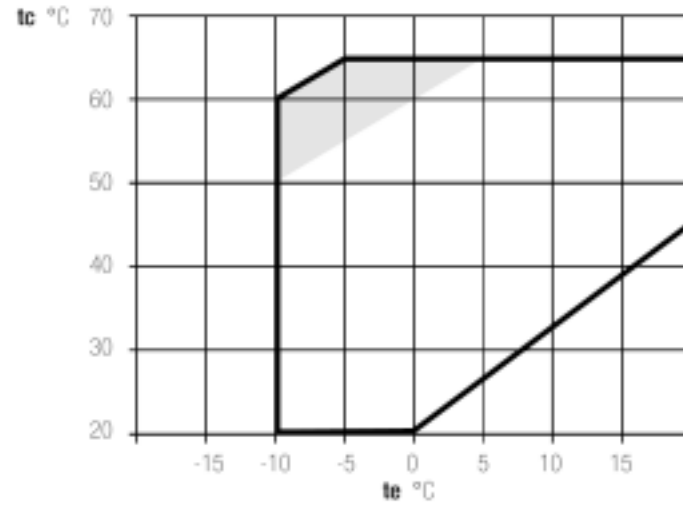
Operating conditions: suction gas overheating 10K, 0K subcooling

Application limits

Full load operation



Capacity control



- With oil cooler
- With liquid injection and oil cooler

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

R404A/R507

Cooling capacity [W]

$t_c \setminus t_e$	7.5	5	0	-5	-10	-15	-20
30	442 850	405 020	337 950	279 930	231 010	188 260	152 080
40	376 320	343 150	284 450	233 800	191 190	154 120	122 870
50	303 690	275 360	225 350	182 390	146 410	115 320	89 310
55	270 320	244 460	198 890	159 860	127 270	99 240	75 910

Power input [kW]

$t_c \setminus t_e$	7.5	5	0	-5	-10	-15	-20
30	63.82	65.65	68.11	68.92	68.74	67.40	65.38
40	86.73	86.62	85.58	83.34	80.63	77.22	73.69
50	110.76	108.92	104.75	99.73	94.70	89.41	84.57
55	124.04	121.25	115.55	109.30	103.39	97.42	92.27

Current [A]

$t_c \setminus t_e$	7.5	5	0	-5	-10	-15	-20
30	111.70	114.10	117.40	118.40	118.20	116.40	113.70
40	143.60	143.40	141.90	138.60	134.70	129.90	125.00
50	179.30	176.60	170.30	162.90	155.50	147.60	140.40
55	199.80	195.40	186.60	177.10	168.30	159.50	151.90

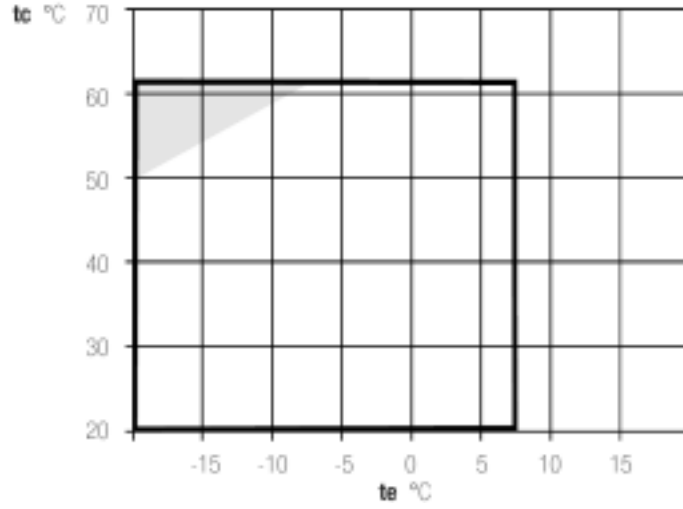
Mass flow [kg/h]

$t_c \setminus t_e$	7.5	5	0	-5	-10	-15	-20
30	11 559	10 680	9 105	7 715	6 521	5 448	4 517
40	11 158	10 294	8 744	7 375	6 199	5 142	4 225
50	10 636	9 778	8 237	6 876	5 704	4 650	3 735
55	10 502	9 644	8 103	6 741	5 569	4 514	3 598

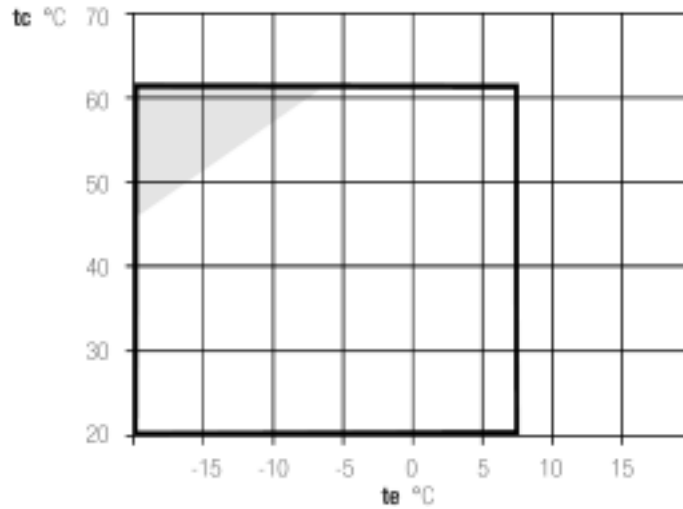
Operating conditions: suction gas overheating 10K, 0K subcooling

Application limits

Full load operation



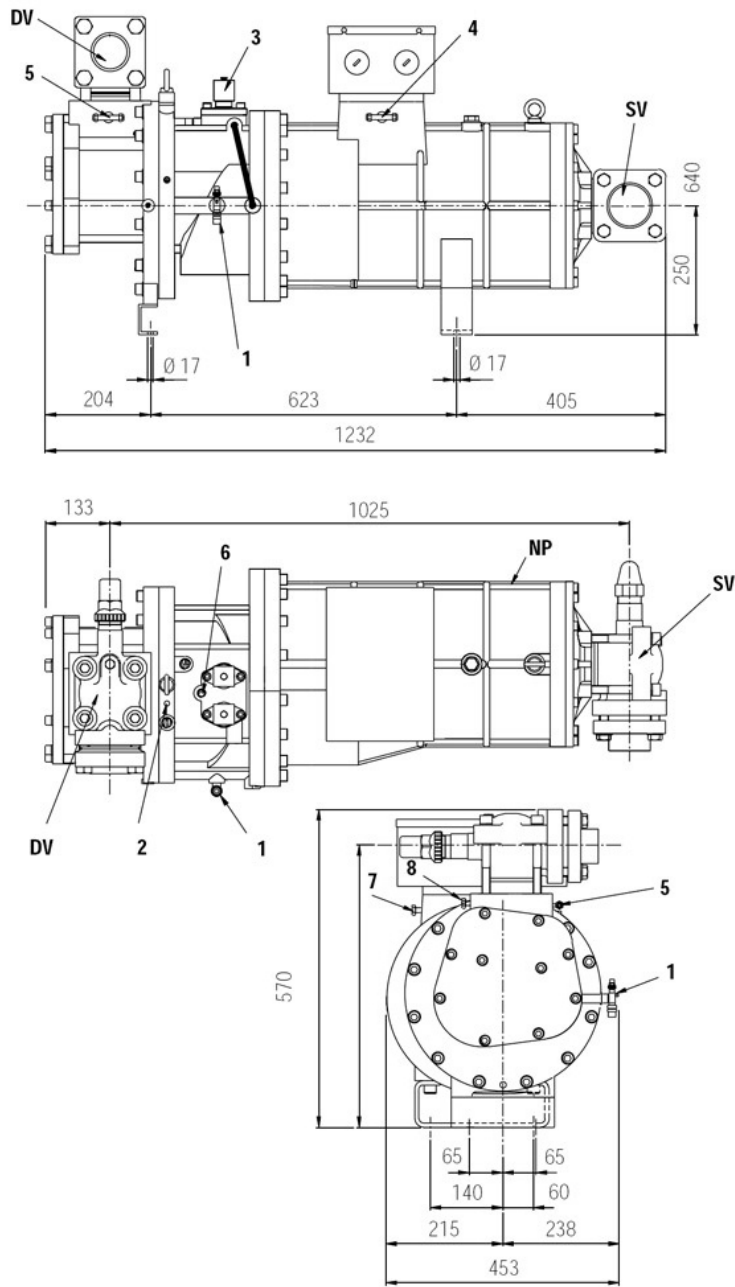
Capacity control



- With oil cooler
- With liquid injection and oil cooler

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]



- 1: connection of oil return valve
 3: capacity control valve
 5: high pressure plug
 7: plug for low pressure connection
 DV: discharge valve
 SV: suction valve

- 2: max. discharge temperature sensor
 4: low pressure plug
 6: liquid injection/economizer conn.
 8: plug for high pressure connection
 NP: name plate

