

Type: Semi-hermetic twin screw compressors

Producer: Frascold

Series: R-TSH

Model: R-TSH8-80 240 Y

Technical data

Nominal motor power [kW/HP]:	60 / 80
Displacement [m ³ /h]:	240
Capacity control [%]:	100 - 75 - 50
RPM [min ⁻¹]:	2960
Weight net [kg]:	320
Weight gross [kg]:	352

Electrical data

	<u>PWS</u>
Power supply [V/~/Hz]:	400/3/50
Locked rotor current [A]:	333
Locked rotor current (D.O.L. - $\Delta\Delta$) [A]:	546
Max. operating current [A]:	148
Max. power input [kW]:	90

Connections

	<u>milimeters</u>	<u>inches</u>
Suction line:	80	3 1/8
Discharge line:	54	2 1/8

R22

Cooling capacity [W]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	299 570	253 140	212 370	176 790	145 820	119 010	95 910
40	292 610	269 340	226 970	189 800	157 380	129 200	104 820	83 850
50	260 160	239 060	200 660	167 010	137 690	112 240	90 250	71 360
55	246 060	225 880	189 170	157 010	129 020	104 730	83 770	65 780

Power input [kW]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	55.57	52.17	48.77	45.63	42.71	40.37	39.02
40	62.96	61.87	59.15	56.13	53.25	50.63	48.79	48.48
50	75.75	74.30	70.85	67.10	63.67	60.57	58.35	57.87
55	89.46	87.00	81.81	76.85	72.54	69.10	67.29	68.66

Current [A]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	93.10	88.00	83.00	78.50	74.40	70.90	68.70
40	104.60	102.80	98.60	94.00	89.60	85.70	83.10	82.60
50	124.90	122.60	117.10	111.20	105.70	100.80	97.40	96.60
55	147.30	143.30	134.80	126.70	119.80	114.30	111.50	113.60

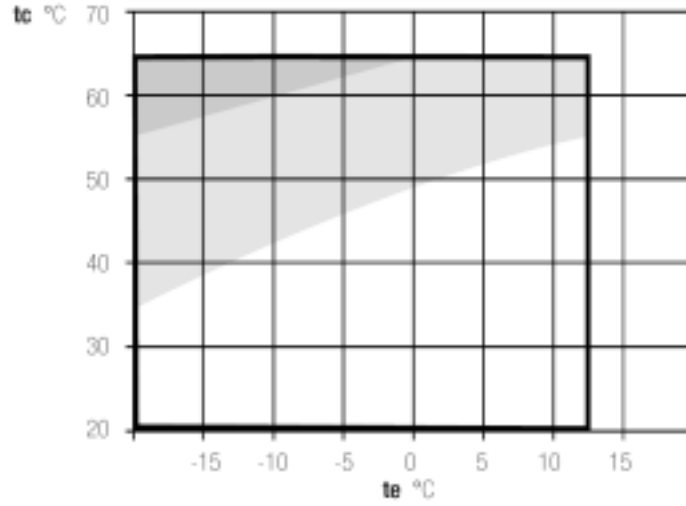
Mass flow [kg/h]

$t_c \setminus t_e$	12.5	10	5	0	-5	-10	-15	-20
30	-	5 968	5 098	4 327	3 646	3 046	2 519	2 058
40	6 245	5 781	4 930	4 174	3 507	2 919	2 402	1 950
50	6 042	5 586	4 749	4 007	3 351	2 773	2 265	1 821
55	5 992	5 536	4 699	3 956	3 300	2 721	2 213	1 768

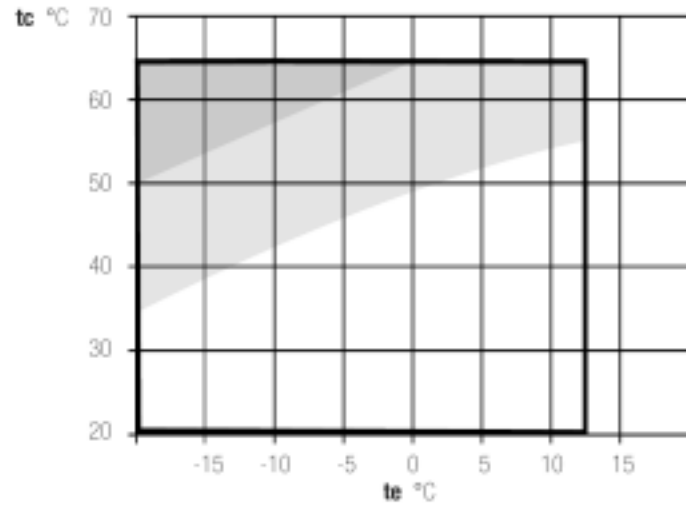
Operating conditions: suction gas overheating 10K, 0K subcooling

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	-	-	-	-	137 780	111 900	89 950
40	-	218 650	181 560	149 560	122 070	98 630	78 810
50	231 700	192 880	159 300	130 390	105 610	84 540	66 770
55	200 230	165 430	135 420	109 650	87 630	68 980	53 310

Power input [kW]

$t_c \setminus t_e$	20	15	10	5	0	-5	-10
30	-	-	-	-	29.59	28.10	26.84
40	-	39.82	38.12	36.33	34.69	33.43	32.90
50	47.83	47.03	45.68	44.12	42.61	41.43	40.93
55	58.36	57.10	55.44	53.71	52.18	51.20	51.28

Current [A]

$t_c \setminus t_e$	20	15	10	5	0	-5	-10
30	-	-	-	-	55.40	53.60	52.00
40	-	70.00	67.40	64.70	62.30	60.50	59.80
50	81.70	80.50	79.60	76.40	74.30	72.60	71.80
55	97.40	95.40	92.90	90.30	88.00	86.60	86.70

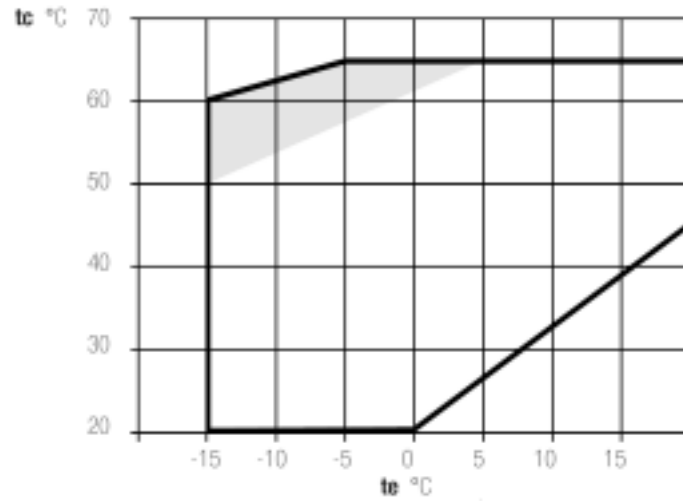
Mass flow [kg/h]

$t_c \setminus t_e$	20	15	10	5	0	-5	-10
30	-	-	-	-	2 991	2 477	2 030
40	-	4 912	4 157	3 492	2 910	2 401	1 960
50	5 641	4 791	4 040	3 380	2 801	2 296	1 857
55	5 465	4 618	3 870	3 212	2 636	2 130	1 691

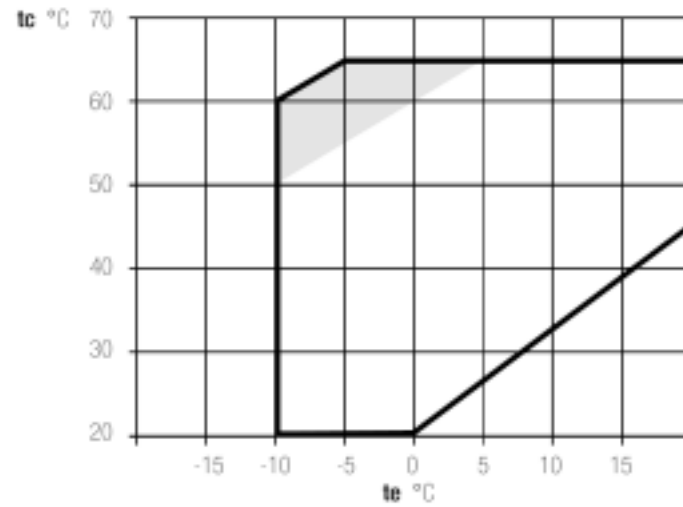
Operating conditions: suction gas overheating 10K, 0K subcooling

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	295 050	269 860	225 200	186 570	154 000	125 530	101 430
40	250 540	228 470	189 400	155 680	127 330	102 650	81 860
50	202 200	183 350	150 060	121 470	97 520	76 830	59 520
55	179 990	162 780	132 450	106 470	84 780	66 130	50 600

Power input [kW]

$t_c \setminus t_e$	7.5	5	0	-5	-10	-15	-20
30	45.68	46.99	48.74	49.32	49.21	48.31	46.99
40	64.18	63.85	62.65	60.69	58.55	56.12	53.92
50	80.70	79.17	75 387.00	72.13	68.65	65.32	62.87
55	90.84	88.64	84.22	79.68	75.76	72.31	70.30

Current [A]

$t_c \setminus t_e$	7.5	5	0	-5	-10	-15	-20
30	78.60	80.50	83.00	83.80	83.70	82.40	80.50
40	106.50	106.00	104.10	101.00	97.70	93.90	90.60
50	133.00	130.50	125.10	119.10	113.60	108.30	104.40
55	149.60	146.00	138.70	131.30	124.90	119.40	116.20

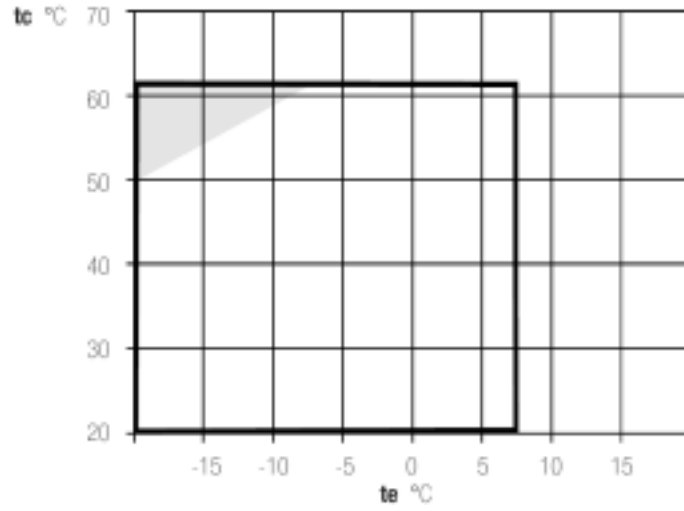
Mass flow [kg/h]

$t_c \setminus t_e$	7.5	5	0	-5	-10	-15	-20
30	7 701	7 116	6 067	5 142	4 347	3 633	3 013
40	7 429	6 853	5 822	4 911	4 128	3 425	2 814
50	7 082	6 510	5 485	4 579	3 799	3 098	2 489
55	6 993	6 422	5 396	4 490	3 710	3 008	2 398

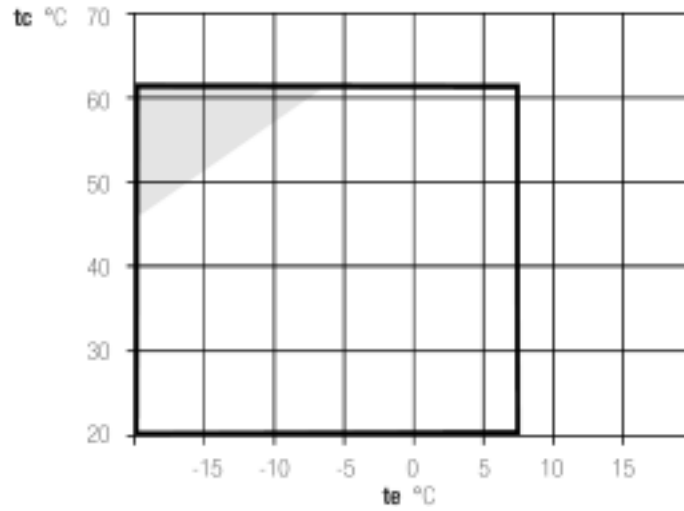
Operating conditions: suction gas overheating 10K, 0K subcooling

Application limits

Full load operation



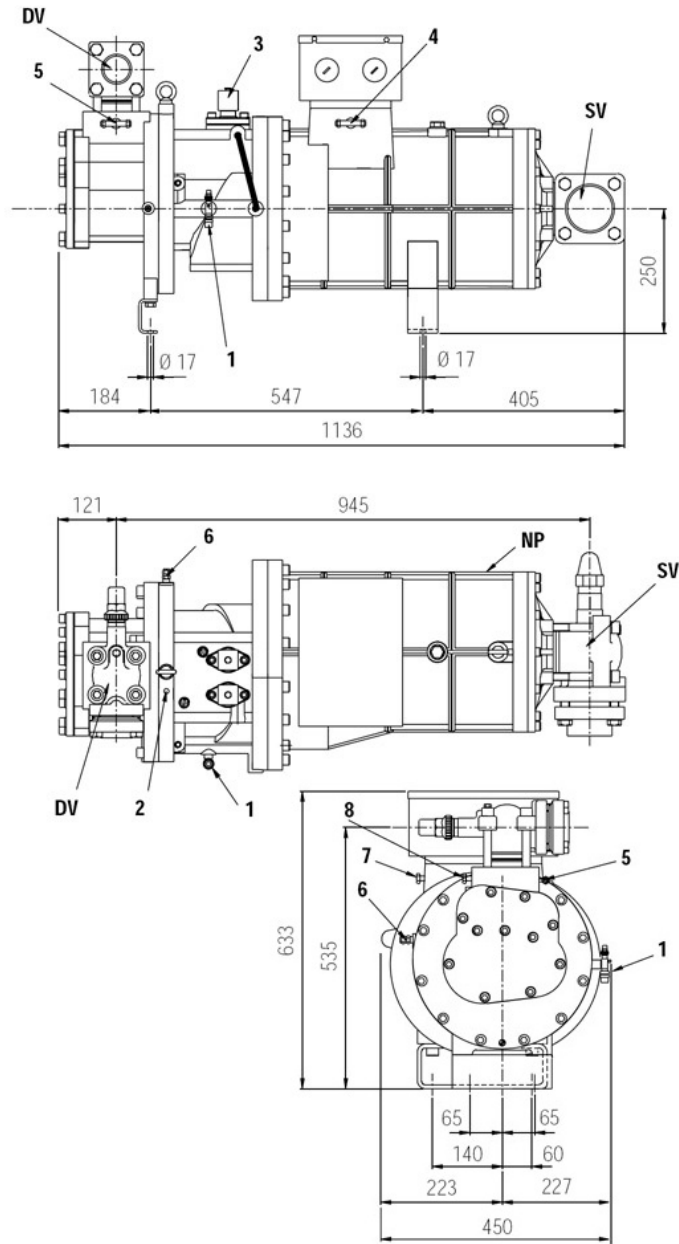
Capacity control



- 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 | 2: | max. discharge temperature sensor |
| 3: | capacity control valve | 4: | low pressure plug |
| 5: | high pressure plug | 6: | liquid injection/economizer conn. |
| 7: | plug for low pressure connection | 8: | plug for high pressure connection |
| DV: | discharge valve | NP: | name plate |
| SV: | suction valve | | |

