

# Model: MTZ125

## Data

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**Type: Hermetic piston compressors**

**Producer: Danfoss-Maneurop**

**Series: MTZ**

## Model: MTZ125

### Technical data

Cylinder count:	4
Displacement [m <sup>3</sup> /h]:	37,49
Cylinder capacity [cm <sup>3</sup> ]:	215,4
RPM [min <sup>-1</sup> ]:	2900
Weight [kg]:	64
Oil charge [dm <sup>3</sup> ]:	4
Oil type:	160PZ
Crankcase heater type:	PTC 35 W
Maximum system test pressure low side / high side:	25 / 30
Maximum number of starts without softstart [1/h]:	12
Refrigerant charge limit [dm <sup>3</sup> ]:	10
Refrigerant:	R134a, 404A/R507, R407C
Sound power [dB]:	84
Sound power with accoustic hood [dB]:	78

### Connections

	<u>inches</u>
Suction Rotolock valve connection:	1 3/4"
Discharge Rotolock valve connection:	1 1/4"
Suction connection with supplied sleeve:	1 1/8"
Discharge connection with supplied sleeve:	3/4"

### Approvals

CCC	-
CE	+
UL	+

# Model: MTZ125

## Capacity

R134a

### Cooling capacity [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	8 156	10 996	14 435	18 547	23 406	29 087	35 664	43 213
40	7 267	9 980	13 261	17 184	21 823	27 254	33 550	40 787
45	6 431	8 997	12 100	15 814	20 214	25 374	31 369	38 273
50	5 654	8 053	10 958	14 443	18 584	23 453	29 127	35 679
55	4 941	7 152	9 839	13 076	16 936	21 495	26 827	33 007
60	-	6 300	8 749	11 717	15 277	19 506	24 476	30 263
65	-	-	-	10 371	13 612	17 490	22 079	27 453
70	-	-	-	-	-	15 452	19 640	24 582
75	-	-	-	-	-	-	17 164	21 654

### Power input [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	3 493	3 954	4 366	4 712	4 970	5 121	5 146	5 023
40	3 581	4 082	4 545	4 950	5 278	5 509	5 622	5 599
45	3 626	4 174	4 693	5 164	5 568	5 885	6 094	6 177
50	3 627	4 227	4 809	5 353	5 840	6 249	6 560	6 754
55	3 580	4 240	4 891	5 515	6 090	6 598	7 017	7 330
60	-	4 211	4 938	5 647	6 317	6 930	7 465	7 902
65	-	-	-	5 747	6 520	7 244	7 900	8 468
70	-	-	-	-	-	7 538	8 321	9 027
75	-	-	-	-	-	-	8 727	9 576

### Current [A]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	7.66	8.13	8.55	8.91	9.20	9.39	9.47	9.41
40	7.74	8.25	8.74	9.18	9.55	9.84	10.03	10.10
45	7.77	8.35	8.90	9.43	9.90	10.30	10.61	10.82
50	7.76	8.41	9.04	9.66	10.24	10.75	11.19	11.54
55	7.71	8.43	9.15	9.87	10.55	11.20	11.77	12.27
60	-	8.40	9.22	10.04	10.85	11.63	12.35	13.00
65	-	-	-	10.18	11.12	12.03	12.91	13.73
70	-	-	-	-	-	12.41	13.45	14.45
75	-	-	-	-	-	-	13.97	15.15

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## Capacity

### Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	181.92	240.30	309.06	389.34	482.26	588.97	710.59	848.26
40	169.18	227.62	296.30	376.36	468.94	575.16	696.15	833.06
45	157.02	215.04	283.17	362.53	454.28	559.52	679.41	815.08
50	145.44	202.56	269.65	347.84	438.27	542.07	660.37	794.31
55	134.44	190.18	255.75	332.29	420.92	522.79	639.03	770.76
60	-	177.89	241.47	315.87	402.23	501.69	615.37	744.41
65	-	-	-	298.58	382.19	478.75	589.41	715.28
70	-	-	-	-	-	453.99	561.13	683.36
75	-	-	-	-	-	-	530.54	648.64

### C.O.P. [W/W]

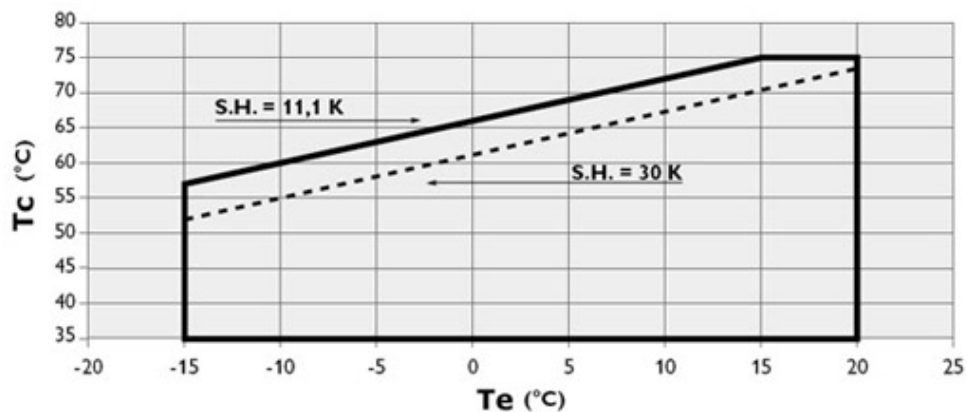
$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	2.33	2.78	3.31	3.94	4.71	5.68	6.93	8.60
40	2.03	2.44	2.92	3.47	4.13	4.95	5.97	7.28
45	1.77	2.16	2.58	3.06	3.63	4.31	5.15	6.20
50	1.56	1.91	2.28	2.70	3.18	3.75	4.44	5.28
55	1.38	1.69	2.01	2.37	2.78	3.26	3.82	4.50
60	-	1.50	1.77	2.07	2.42	2.81	3.28	3.83
65	-	-	-	1.80	2.09	2.41	2.79	3.24
70	-	-	-	-	-	2.05	2.36	2.72
75	-	-	-	-	-	-	1.97	2.26

Operating conditions: suction superheat: 11.1 K, subcooling: 8.3 K

$t_c$  - Condensing temperature [°C]

$t_e$  - Evaporating temperature [°C]

### Application range



# Model: MTZ125

## Capacity

R404A/R507

### Cooling capacity [W]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	7 283	9 943	13 245	17 267	22 089	27 791	34 451	42 148	50 963
35	6 328	8 755	11 770	15 453	19 884	25 142	31 306	38 455	46 669
40	5 457	7 649	10 377	13 721	17 760	22 574	28 242	34 842	42 455
45	4 660	6 616	9 057	12 061	15 708	20 078	25 248	31 300	38 311
50	3 927	5 648	7 800	10 464	13 719	17 643	22 316	27 818	34 227
55	-	4 734	6 598	8 921	11 782	15 261	19 436	24 387	30 194
60	-	3 865	5 440	7 422	9 889	12 922	16 599	20 999	26 202

### Power input [W]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	5 064	5 716	6 320	6 867	7 350	7 764	8 100	8 351	8 510
35	5 125	5 849	6 533	7 168	7 748	8 266	8 714	9 086	9 374
40	5 154	5 949	6 711	7 433	8 108	8 729	9 289	9 780	10 195
45	5 159	6 023	6 863	7 671	8 439	9 162	9 831	10 440	10 981
50	5 147	6 079	6 995	7 887	8 747	9 570	10 348	11 073	11 740
55	-	6 124	7 114	8 088	9 040	9 962	10 847	11 687	12 477
60	-	6 164	7 228	8 284	9 325	10 344	11 335	12 289	13 201

### Current [A]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	9.46	10.24	11.02	11.76	12.43	13.00	13.45	13.75	13.87
35	9.55	10.40	11.26	12.10	12.89	13.59	14.19	14.65	14.94
40	9.61	10.54	11.50	12.44	13.35	14.19	14.93	15.56	16.03
45	9.64	10.65	11.70	12.76	13.79	14.78	15.68	16.48	17.14
50	9.61	10.72	11.87	13.05	14.22	15.35	16.42	17.40	18.25
55	-	10.73	12.00	13.30	14.61	15.90	17.14	18.30	19.36
60	-	10.67	12.06	13.49	14.95	16.40	17.82	19.18	20.44

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## Capacity

### Mass flow [kg/s]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	228.80	305.96	397.47	504.93	629.96	774.15	939.13	1 126.50	1 337.87
35	214.25	289.02	378.01	482.84	605.11	746.43	908.41	1 092.66	1 300.79
40	200.49	272.75	359.11	461.18	580.58	718.91	877.77	1 058.79	1 263.56
45	187.69	257.31	340.92	440.12	556.53	691.74	847.37	1 025.03	1 226.32
50	175.99	242.86	323.60	419.81	533.10	665.08	817.35	991.53	1 189.23
55	-	229.56	307.31	400.40	510.46	639.08	787.88	958.47	1 152.44
60	-	217.54	292.18	382.05	488.75	613.90	759.11	925.98	1 116.12

### C.O.P. [W/W]

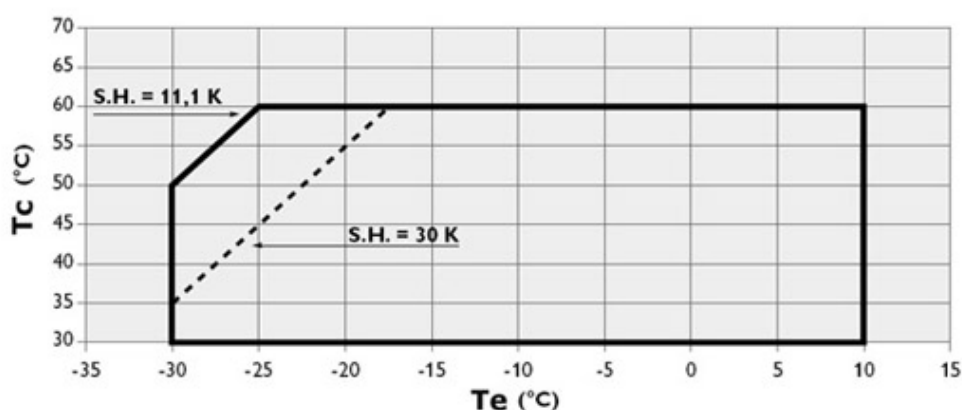
$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	1.44	1.74	2.10	2.51	3.01	3.58	4.25	5.05	5.99
35	1.23	1.50	1.80	2.16	2.57	3.04	3.59	4.23	4.98
40	1.06	1.29	1.55	1.85	2.19	2.59	3.04	3.56	4.16
45	0.90	1.10	1.32	1.57	1.86	2.19	2.57	3.00	3.49
50	0.76	0.93	1.12	1.33	1.57	1.84	2.16	2.51	2.92
55	-	0.77	0.93	1.10	1.30	1.53	1.79	2.09	2.42
60	-	0.63	0.75	0.90	1.06	1.25	1.46	1.71	1.98

Operating conditions: suction superheat: 10 K, subcooling: 0 K

$t_c$  - Condensing temperature [°C]

$t_e$  - Evaporating temperature [°C]

### Application range



# Model: MTZ125

## Capacity

R407C

### Cooling capacity [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	13 025	17 106	21 947	27 643	34 289	41 980	50 812
40	11 788	15 658	20 230	25 599	31 861	39 112	47 445
45	10 525	14 178	18 476	23 514	29 388	36 192	44 022
50	-	12 676	16 695	21 396	26 876	33 229	40 551
55	-	-	14 893	19 254	24 335	30 232	37 040
60	-	-	-	17 094	21 771	27 208	33 498
65	-	-	-	14 925	19 194	24 164	29 931

### Power input [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	5 760	6 328	6 807	7 209	7 548	7 834	8 081
40	5 986	6 676	7 265	7 766	8 191	8 552	8 861
45	6 132	6 965	7 686	8 307	8 840	9 297	9 691
50	-	7 175	8 050	8 813	9 476	10 051	10 550
55	-	-	8 336	9 262	10 077	10 791	11 418
60	-	-	-	9 635	10 622	11 498	12 274
65	-	-	-	9 911	11 093	12 152	13 099

### Current [A]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	10.20	10.99	11.67	12.29	12.91	13.58	14.34
40	10.49	11.43	12.23	12.93	13.58	14.23	14.94
45	10.62	11.79	12.76	13.60	14.34	15.03	15.74
50	-	12.01	13.22	14.25	15.14	15.94	16.70
55	-	-	13.57	14.85	15.94	16.91	17.79
60	-	-	-	15.36	16.72	17.91	18.97
65	-	-	-	15.75	17.44	18.90	20.20

# Model: MTZ125

## Capacity

### Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	282.63	365.17	460.83	571.21	697.90	842.50	1 006.60
40	268.97	351.04	445.80	554.87	679.83	822.28	983.81
45	253.75	335.26	429.05	536.72	659.86	800.08	958.96
50	-	317.74	410.46	516.65	637.90	775.79	931.94
55	-	-	389.95	494.57	613.83	749.33	902.65
60	-	-	-	470.38	587.57	720.57	870.99
65	-	-	-	443.96	559.00	689.44	836.86

### C.O.P. [W/W]

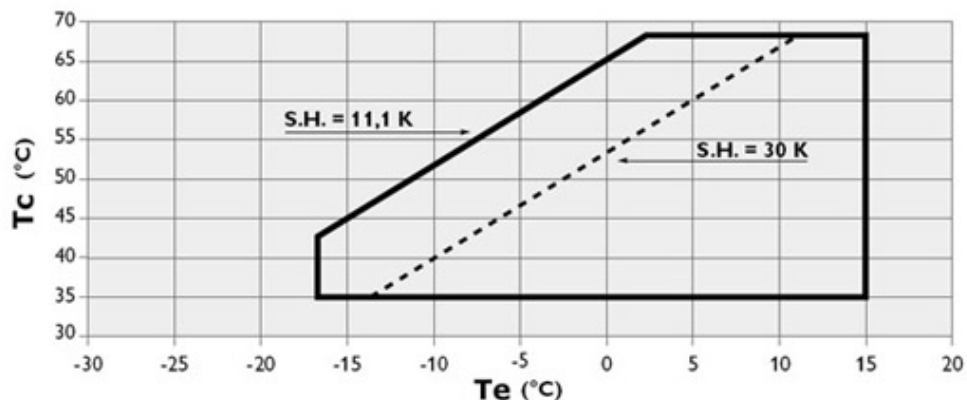
$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	2.26	2.70	3.22	3.83	4.54	5.36	6.29
40	1.97	2.35	2.78	3.30	3.89	4.57	5.35
45	1.72	2.04	2.40	2.83	3.32	3.89	4.54
50	-	1.77	2.07	2.43	2.84	3.31	3.84
55	-	-	1.79	2.08	2.41	2.80	3.24
60	-	-	-	1.77	2.05	2.37	2.73
65	-	-	-	1.51	1.73	1.99	2.29

Operating conditions: suction superheat: 10 K, subcooling: 0 K

$t_c$  - Condensing temperature [°C]

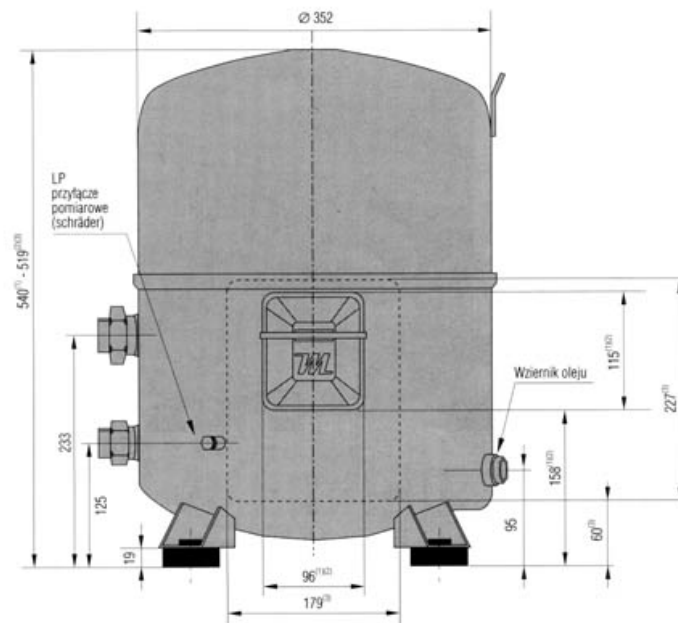
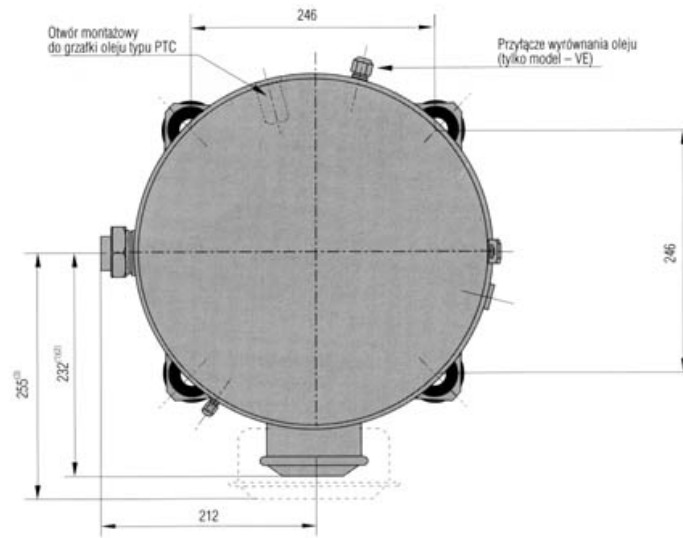
$t_e$  - Evaporating temperature [°C]

### Application range



# Model: MTZ125

## Dimensions





# Model: MTZ125

Image



# Model: MTZ125

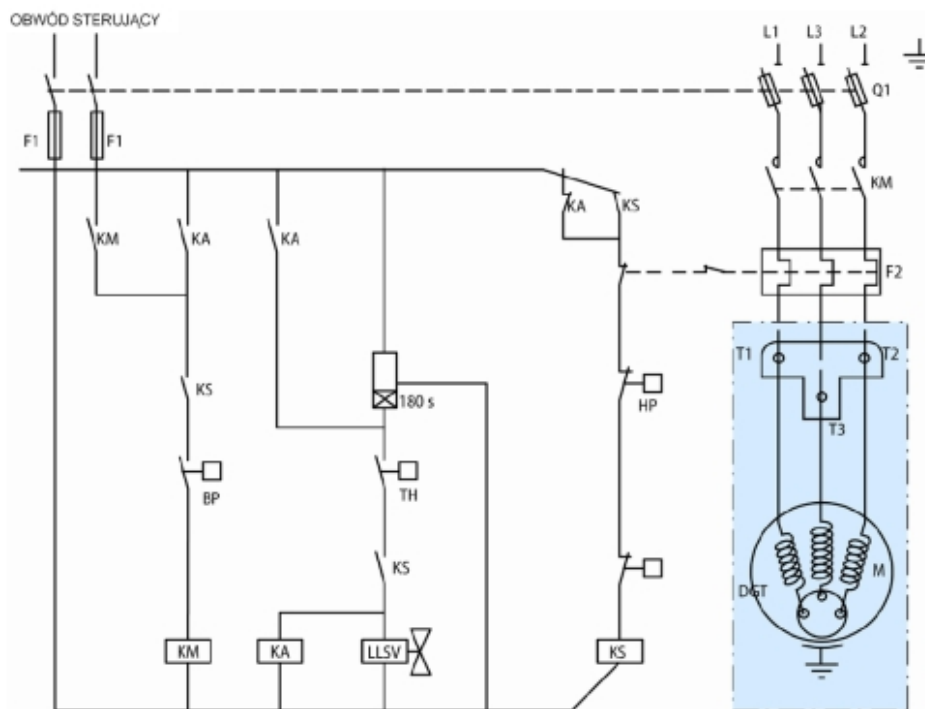
## Electrical

### Three-phase power supply

#### Electrical data

Motor voltage code:	3	4	6	7	9
Starting current [A]:	210	105	170	75	150
Maximum Continuous Current (MCC) [A]:	54	27	170	22	30
Winding resistance (between phases) [ $\Omega$ ]:	0,38	1,57	0,43	2,51	0,84

### Connection diagram for systems without refrigerant suction



TH: Thermostat

180 s: Optional short cycle timer (3min) 5 pts

KA: Control relay

LLSV: Liquid Solenoid valve

KM: Compressor contactor

KS: Safety lock out relay

BP: Low pressure switch

HP: High pressure switch

Q1: Fused disconnect

F1: Fuses

F2: External overload protection

M: Compressor's engine

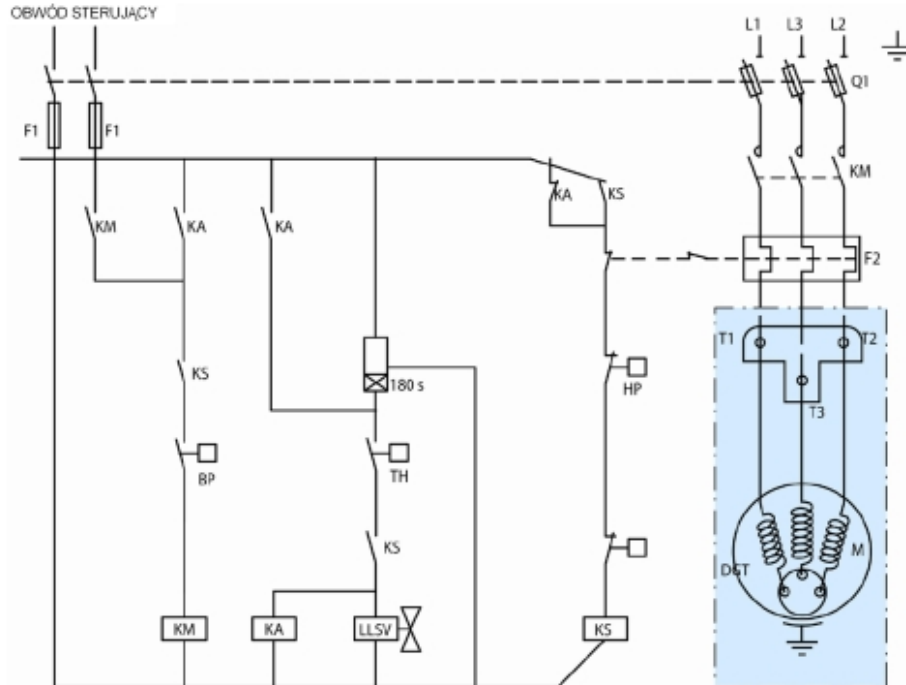
thM: Motor safety thermostat

# Model: MTZ125

## Electrical

DGT: Discharge gas thermostat

### Connection diagram for systems with refrigerant suction



TH: Thermostat

180 s: Optional short cycle timer (3min) 5 pts

KA: Control relay

LLSV: Liquid Solenoid valve

KM: Compressor contactor

KS: Safety lock out relay

BP: Low pressure switch

HP: High pressure switch

Q1: Fused disconnect

F1: Fuses

F2: External overload protection

M: Compressor's engine

thM: Motor safety thermostat

DGT: Discharge gas thermostat

### **Equipment**

- ▶ crankcase heater - PTC 35 W
- ▶ belt type heater - crankcase heater 75W, 230V
- ▶ Rotolock valves
  - suction: Rotolock valve connection 1 3/4", connection with supplied sleeve 1 1/8"
  - discharge: Rotolock valve connection 1 1/4", connection with supplied sleeve 3/4"
- ▶ soft-start kit - electronic softstart MCI 25C
- ▶ acoustic hood - acoustic shield of Danfoss catalogue number 7755003