

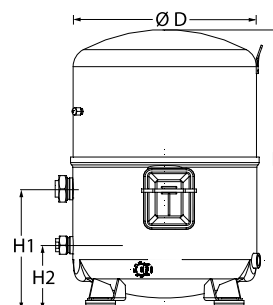
Datasheets

Danfoss Reciprocating compressors **MT / MTZ / NTZ**



General Characteristics

Model number (on compressor nameplate)		MT144HV4AVE
Code number for Singlepack*		MT144-4VI
Code number for Industrial pack**		MT144-4VM
Drawing number		8504011e
Suction and discharge connections		Rotolock
Suction connection		1-3/4 " Rotolock
Discharge connection		1-1/4 " Rotolock
Suction connection with supplied sleeve		1-1/8 " ODF
Discharge connection with supplied sleeve		3/4 " ODF
Oil sight glass		Threaded
Oil equalisation connection		3/8" flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		30 bar / 8 bar
Cylinders		4
Swept volume		241.87 cm ³ /rev
Displacement @ Nominal speed		42.1 m ³ /h @ 2900 rpm - 50.8 m ³ /h @ 3500 rpm
Net weight		67 kg
Oil charge		3.9 litre, Mineral - 160P
Maximum system test pressure Low Side / High side		25 bar(g) / 30 bar(g)
Maximum differential test pressure		30 bar
Maximum number of starts per hour		12
Refrigerant charge limit		10 kg
Approved refrigerants		R22, R417A-160PZ

Dimensions


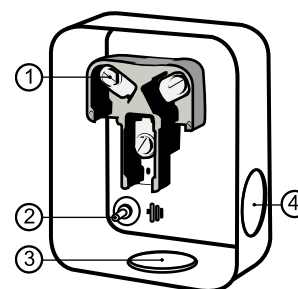
D=352 mm

H=540 mm

H1=233 mm

H2=125 mm

H3=- mm

Terminal box


IP54 (with cable gland)

1: Screw connectors 10-32 UNF x 9.5

2: Earth M4-12

3: Knock-out Ø 29 mm (1.14")

4: Knock-out Ø 25.5 mm (1.00")

Electrical Characteristics

Nominal voltage	380-400V/3/50Hz - 460V/3/60Hz
Voltage range	340-440 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance (between phases) +/- 7% at 25°C	1.19 Ω
Maximum Continuous Current (MCC)	36 A
Locked Rotor Amps (LRA)	130 A
Motor protection	Internal overload protector

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Mounting bolts	50 Nm

Parts shipped with compressor

Mounting kit with grommets, bolts, nuts, sleeves and washers
Suction & Discharge solder sleeves, rotolock nuts and gaskets (shipped with rotolock version only)
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA6873), -

*Singlepack: Compressor in cardboard box

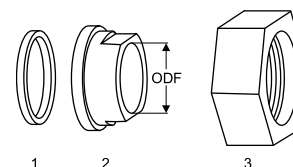
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

Rotolock accessories, suction side

Code no.

Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Gasket, 1-3/4"	8156132

Gaskets, sleeves and nuts



- 1: Gasket
- 2: Solder sleeve
- 3: Rotolock nut

Rotolock accessories, discharge side

Code no.

Solder sleeve, P04 (1-1/4" Rotolock, 3/4" ODF)	8153008
Angle adapter, C04 (1-1/4" Rotolock, 3/4" ODF)	8168006
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Rotolock accessories, sets

Code no.

Angle adapter set, C02 (1-3/4"~1-1/8"), C04 (1-1/4"~3/4")	7703014
Valve set, V02 (1-3/4"~1-1/8"), V04 (1-1/4"~3/4")	7703009
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants

Code no.

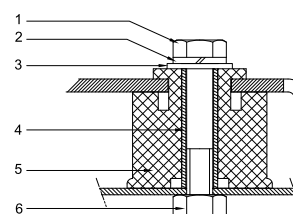
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

Crankcase heaters

Code no.

PTC heater 27W, CE mark, UL	120Z0459
Belt type crankcase heater, 75 W, 230 V, CE mark, UL	7773108
Belt type crankcase heater, 75 W, 400 V, CE mark, UL	7773118
Belt type crankcase heater, 75 W, 460 V, CE mark, UL	120Z0464

Mounting kit



- 1: Bolt (4x)
- 2: Lock washer (4x)
- 3: Flat washer (4x)
- 4: Sleeve (4x)
- 5: Grommet (4x)
- 6: Nut (4x)

Miscellaneous accessories

Code no.

Electronic soft start kit, MCI 25 C	7705007
Soft start kit with statoric resistors, prewired box, SCR03	7705001
Acoustic hood for 4 cylinder compressor	120Z0473
Oil equalisation nut	8153127

Spare parts

Code no.

Mounting kit for 4 cylinder compressor & MS, including 4 grommets, 4 bolts	8156007
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (black chloroprene)	8156145
Service kit for terminal box 96 x 115 mm, including 1 cover, 1 clamp	8156135
T block connector 52 x 57 mm	8173230

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Performance data at 50 Hz, EN 12900 rating conditions

R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

30	10 160	13 427	17 398	22 165	27 824	34 469	42 196	51 100	61 277
35	9 062	12 190	15 978	20 519	25 908	32 239	39 609	48 111	57 840
40	8 058	11 019	14 596	18 883	23 976	29 966	36 951	45 023	54 278
45	7 160	9 926	13 266	17 273	22 041	27 664	34 236	41 851	50 604
50	-	8 925	12 002	15 702	20 119	25 347	31 479	38 610	46 832
55	-	-	10 816	14 182	18 222	23 028	28 694	35 312	42 978
60	-	-	-	12 727	16 364	20 722	25 894	31 973	39 054
65	-	-	-	-	14 556	18 440	23 093	28 606	35 073

Power input in W

30	5 449	6 085	6 687	7 231	7 695	8 054	8 286	8 366	8 272
35	5 732	6 406	7 058	7 664	8 200	8 645	8 974	9 164	9 191
40	5 972	6 692	7 402	8 077	8 696	9 234	9 669	9 976	10 133
45	6 162	6 936	7 712	8 465	9 174	9 814	10 362	10 795	11 089
50	-	7 131	7 981	8 821	9 627	10 377	11 047	11 614	12 054
55	-	-	8 202	9 136	10 049	10 917	11 717	12 426	13 020
60	-	-	-	9 404	10 432	11 426	12 365	13 223	13 979
65	-	-	-	-	10 768	11 897	12 982	13 999	14 926

Current consumption in A

30	13.09	13.88	14.65	15.38	16.01	16.50	16.82	16.93	16.77
35	13.48	14.30	15.13	15.95	16.69	17.33	17.82	18.12	18.20
40	13.79	14.67	15.59	16.51	17.39	18.20	18.88	19.40	19.73
45	14.03	14.98	16.00	17.06	18.10	19.09	19.99	20.75	21.35
50	-	15.23	16.38	17.58	18.80	20.00	21.14	22.16	23.05
55	-	-	16.69	18.07	19.50	20.93	22.32	23.63	24.82
60	-	-	-	18.52	20.17	21.85	23.52	25.14	26.67
65	-	-	-	-	20.82	22.77	24.74	26.68	28.57

Mass flow in kg/h

30	222	290	371	465	576	704	851	1 020	1 212
35	205	273	353	447	557	684	831	998	1 188
40	190	257	336	429	537	662	807	972	1 160
45	177	242	319	409	515	638	779	942	1 126
50	-	228	302	389	492	611	749	907	1 088
55	-	-	287	370	468	583	716	870	1 045
60	-	-	-	350	443	553	681	829	998
65	-	-	-	-	418	522	643	785	948

Coefficient of performance (C.O.P.)

30	1.86	2.21	2.60	3.07	3.62	4.28	5.09	6.11	7.41
35	1.58	1.90	2.26	2.68	3.16	3.73	4.41	5.25	6.29
40	1.35	1.65	1.97	2.34	2.76	3.25	3.82	4.51	5.36
45	1.16	1.43	1.72	2.04	2.40	2.82	3.30	3.88	4.56
50	-	1.25	1.50	1.78	2.09	2.44	2.85	3.32	3.89
55	-	-	1.32	1.55	1.81	2.11	2.45	2.84	3.30
60	-	-	-	1.35	1.57	1.81	2.09	2.42	2.79
65	-	-	-	-	1.35	1.55	1.78	2.04	2.35

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	31 479	W
Power input	11 047	W
Current consumption	21.14	A
Mass flow	749	kg/h
C.O.P.	2.85	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	80	dB(A)
With acoustic hood	74	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

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Performance data at 50 Hz, ARI rating conditions
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

30	10 790	14 249	18 448	23 485	29 460	36 470	44 615	53 994	64 706
35	9 659	12 982	17 000	21 814	27 521	34 221	42 013	50 994	61 265
40	8 624	11 780	15 590	20 151	25 563	31 924	39 333	47 889	57 690
45	7 697	10 660	14 232	18 513	23 600	29 593	36 591	44 692	53 995
50	-	9 635	12 941	16 912	21 646	27 243	33 801	41 418	50 195
55	-	-	11 731	15 363	19 716	24 888	30 977	38 083	46 304
60	-	-	-	13 882	17 824	22 542	28 134	34 700	42 337
65	-	-	-	-	15 986	20 221	25 287	31 283	38 308

Power input in W

30	5 449	6 085	6 687	7 231	7 695	8 054	8 286	8 366	8 272
35	5 732	6 406	7 058	7 664	8 200	8 645	8 974	9 164	9 191
40	5 972	6 692	7 402	8 077	8 696	9 234	9 669	9 976	10 133
45	6 162	6 936	7 712	8 465	9 174	9 814	10 362	10 795	11 089
50	-	7 131	7 981	8 821	9 627	10 377	11 047	11 614	12 054
55	-	-	8 202	9 136	10 049	10 917	11 717	12 426	13 020
60	-	-	-	9 404	10 432	11 426	12 365	13 223	13 979
65	-	-	-	-	10 768	11 897	12 982	13 999	14 926

Current consumption in A

30	13.09	13.88	14.65	15.38	16.01	16.50	16.82	16.93	16.77
35	13.48	14.30	15.13	15.95	16.69	17.33	17.82	18.12	18.20
40	13.79	14.67	15.59	16.51	17.39	18.20	18.88	19.40	19.73
45	14.03	14.98	16.00	17.06	18.10	19.09	19.99	20.75	21.35
50	-	15.23	16.38	17.58	18.80	20.00	21.14	22.16	23.05
55	-	-	16.69	18.07	19.50	20.93	22.32	23.63	24.82
60	-	-	-	18.52	20.17	21.85	23.52	25.14	26.67
65	-	-	-	-	20.82	22.77	24.74	26.68	28.57

Mass flow in kg/h

30	221	289	369	463	573	700	847	1 014	1 205
35	204	272	351	445	554	681	826	993	1 182
40	189	256	334	426	534	659	802	967	1 153
45	176	241	317	407	512	634	775	936	1 120
50	-	227	301	387	489	608	745	902	1 082
55	-	-	285	368	465	580	712	865	1 039
60	-	-	-	348	441	550	677	824	993
65	-	-	-	-	416	519	640	780	942

Coefficient of performance (C.O.P.)

30	1.98	2.34	2.76	3.25	3.83	4.53	5.38	6.45	7.82
35	1.69	2.03	2.41	2.85	3.36	3.96	4.68	5.56	6.67
40	1.44	1.76	2.11	2.49	2.94	3.46	4.07	4.80	5.69
45	1.25	1.54	1.85	2.19	2.57	3.02	3.53	4.14	4.87
50	-	1.35	1.62	1.92	2.25	2.63	3.06	3.57	4.16
55	-	-	1.43	1.68	1.96	2.28	2.64	3.06	3.56
60	-	-	-	1.48	1.71	1.97	2.28	2.62	3.03
65	-	-	-	-	1.48	1.70	1.95	2.23	2.57

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	34 340	W
Power input	11 955	W
Current consumption	22.75	A
Mass flow	781	kg/h
C.O.P.	2.87	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	80	dB(A)
With acoustic hood	74	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

Tolerance according EN12900

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Performance data at 60 Hz, EN 12900 rating conditions
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

30	12 192	16 113	20 877	26 598	33 389	41 363	50 636	61 320	73 532
35	10 875	14 628	19 173	24 622	31 089	38 687	47 531	57 733	69 408
40	9 670	13 223	17 515	22 660	28 771	35 960	44 341	54 027	65 133
45	8 591	11 911	15 920	20 728	26 450	33 197	41 083	50 221	60 725
50	-	10 710	14 402	18 842	24 143	30 416	37 775	46 331	56 199
55	-	-	12 979	17 019	21 867	27 634	34 433	42 375	51 573
60	-	-	-	15 273	19 637	24 866	31 073	38 368	46 864
65	-	-	-	-	17 468	22 128	27 711	34 327	42 088

Power input in W

30	6 539	7 302	8 024	8 678	9 234	9 665	9 943	10 039	9 927
35	6 878	7 687	8 469	9 196	9 841	10 374	10 769	10 997	11 030
40	7 167	8 030	8 882	9 693	10 435	11 081	11 602	11 971	12 159
45	7 394	8 323	9 254	10 158	11 009	11 777	12 435	12 954	13 307
50	-	8 557	9 577	10 585	11 553	12 453	13 257	13 937	14 465
55	-	-	9 842	10 963	12 059	13 101	14 061	14 911	15 624
60	-	-	-	11 285	12 518	13 711	14 837	15 868	16 775
65	-	-	-	-	12 921	14 276	15 578	16 799	17 911

Current consumption in A

30	13.09	13.88	14.65	15.38	16.01	16.50	16.82	16.93	16.77
35	13.48	14.30	15.13	15.95	16.69	17.33	17.82	18.12	18.20
40	13.79	14.67	15.59	16.51	17.39	18.20	18.88	19.40	19.73
45	14.03	14.98	16.00	17.06	18.10	19.09	19.99	20.75	21.35
50	-	15.23	16.38	17.58	18.80	20.00	21.14	22.16	23.05
55	-	-	16.69	18.07	19.50	20.93	22.32	23.63	24.82
60	-	-	-	18.52	20.17	21.85	23.52	25.14	26.67
65	-	-	-	-	20.82	22.77	24.74	26.68	28.57

Mass flow in kg/h

30	266	348	444	558	690	844	1 021	1 224	1 454
35	246	328	424	537	669	821	997	1 198	1 426
40	228	308	403	514	644	795	968	1 166	1 392
45	212	290	383	491	618	765	935	1 130	1 352
50	-	274	363	467	590	733	899	1 089	1 306
55	-	-	344	444	561	699	859	1 044	1 254
60	-	-	-	420	532	663	817	994	1 198
65	-	-	-	-	502	626	772	942	1 138

Coefficient of performance (C.O.P.)

30	1.86	2.21	2.60	3.07	3.62	4.28	5.09	6.11	7.41
35	1.58	1.90	2.26	2.68	3.16	3.73	4.41	5.25	6.29
40	1.35	1.65	1.97	2.34	2.76	3.25	3.82	4.51	5.36
45	1.16	1.43	1.72	2.04	2.40	2.82	3.30	3.88	4.56
50	-	1.25	1.50	1.78	2.09	2.44	2.85	3.32	3.89
55	-	-	1.32	1.55	1.81	2.11	2.45	2.84	3.30
60	-	-	-	1.35	1.57	1.81	2.09	2.42	2.79
65	-	-	-	-	1.35	1.55	1.78	2.04	2.35

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	37 775	W
Power input	13 257	W
Current consumption	21.14	A
Mass flow	899	kg/h
C.O.P.	2.85	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	83	dB(A)
With acoustic hood	77	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

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Performance data at 60 Hz, ARI rating conditions
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

30	12 948	17 099	22 138	28 182	35 351	43 764	53 538	64 793	77 647
35	11 591	15 578	20 400	26 177	33 025	41 065	50 415	61 193	73 518
40	10 348	14 137	18 708	24 182	30 676	38 309	47 199	57 466	69 228
45	9 237	12 792	17 079	22 215	28 320	35 512	43 909	53 630	64 794
50	-	11 562	15 529	20 294	25 975	32 691	40 561	49 702	60 234
55	-	-	14 077	18 436	23 659	29 865	37 172	45 699	55 565
60	-	-	-	16 659	21 389	27 051	33 761	41 639	50 804
65	-	-	-	-	19 183	24 265	30 345	37 540	45 969

Power input in W

30	6 539	7 302	8 024	8 678	9 234	9 665	9 943	10 039	9 927
35	6 878	7 687	8 469	9 196	9 841	10 374	10 769	10 997	11 030
40	7 167	8 030	8 882	9 693	10 435	11 081	11 602	11 971	12 159
45	7 394	8 323	9 254	10 158	11 009	11 777	12 435	12 954	13 307
50	-	8 557	9 577	10 585	11 553	12 453	13 257	13 937	14 465
55	-	-	9 842	10 963	12 059	13 101	14 061	14 911	15 624
60	-	-	-	11 285	12 518	13 711	14 837	15 868	16 775
65	-	-	-	-	12 921	14 276	15 578	16 799	17 911

Current consumption in A

30	13.09	13.88	14.65	15.38	16.01	16.50	16.82	16.93	16.77
35	13.48	14.30	15.13	15.95	16.69	17.33	17.82	18.12	18.20
40	13.79	14.67	15.59	16.51	17.39	18.20	18.88	19.40	19.73
45	14.03	14.98	16.00	17.06	18.10	19.09	19.99	20.75	21.35
50	-	15.23	16.38	17.58	18.80	20.00	21.14	22.16	23.05
55	-	-	16.69	18.07	19.50	20.93	22.32	23.63	24.82
60	-	-	-	18.52	20.17	21.85	23.52	25.14	26.67
65	-	-	-	-	20.82	22.77	24.74	26.68	28.57

Mass flow in kg/h

30	264	346	442	555	687	840	1 016	1 217	1 445
35	245	326	422	534	665	817	991	1 191	1 418
40	227	307	401	512	641	791	963	1 160	1 384
45	211	289	381	489	615	761	930	1 124	1 344
50	-	273	361	465	587	729	894	1 083	1 298
55	-	-	342	441	558	695	855	1 038	1 247
60	-	-	-	418	529	660	812	989	1 191
65	-	-	-	-	500	623	768	937	1 131

Coefficient of performance (C.O.P.)

30	1.98	2.34	2.76	3.25	3.83	4.53	5.38	6.45	7.82
35	1.69	2.03	2.41	2.85	3.36	3.96	4.68	5.56	6.67
40	1.44	1.76	2.11	2.49	2.94	3.46	4.07	4.80	5.69
45	1.25	1.54	1.85	2.19	2.57	3.02	3.53	4.14	4.87
50	-	1.35	1.62	1.92	2.25	2.63	3.06	3.57	4.16
55	-	-	1.43	1.68	1.96	2.28	2.64	3.06	3.56
60	-	-	-	1.48	1.71	1.97	2.28	2.62	3.03
65	-	-	-	-	1.48	1.70	1.95	2.23	2.57

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	41 207	W
Power input	14 346	W
Current consumption	22.75	A
Mass flow	937	kg/h
C.O.P.	2.87	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	83	dB(A)
With acoustic hood	77	dB(A)

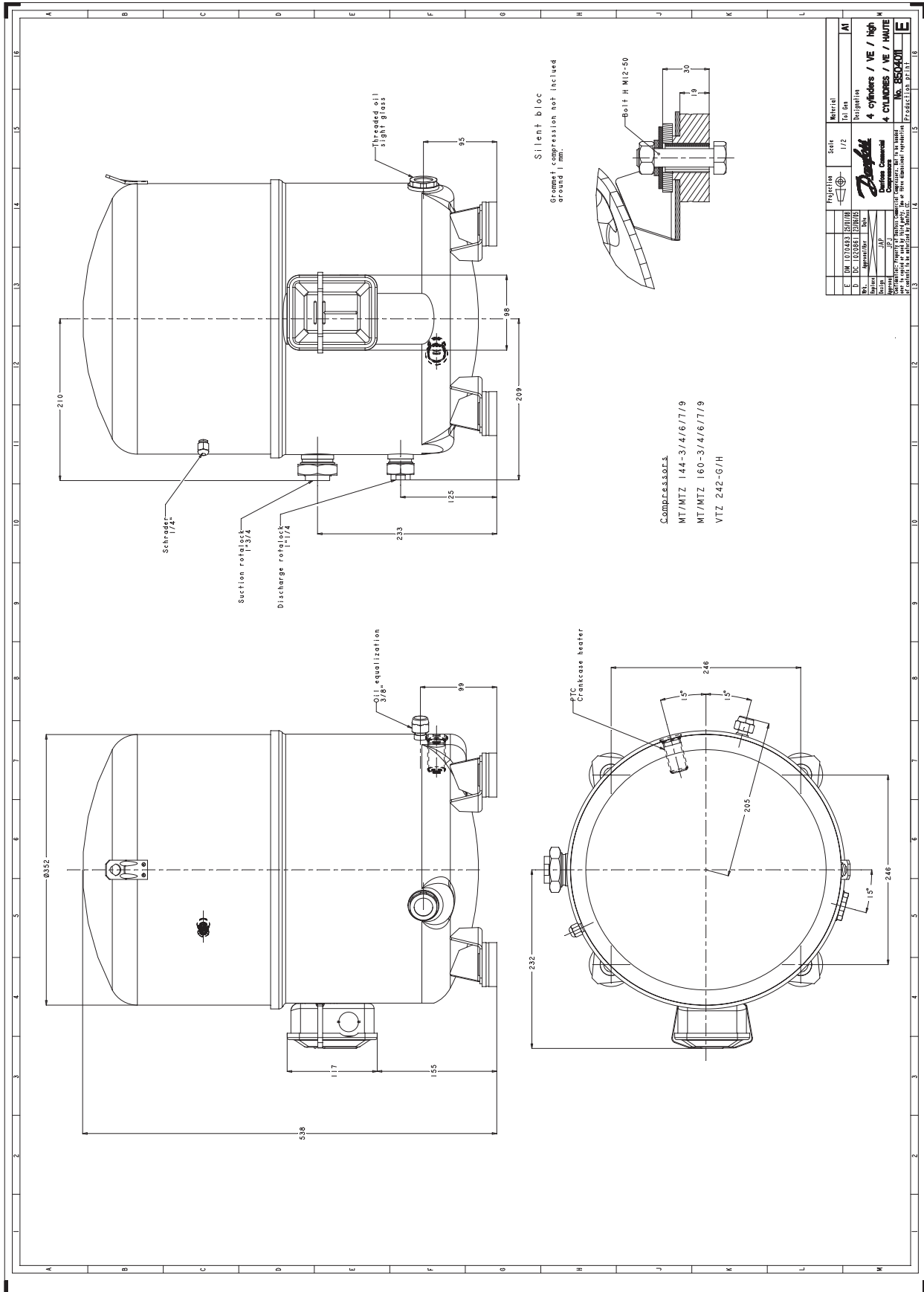
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

Tolerance according EN12900

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