

Datasheets

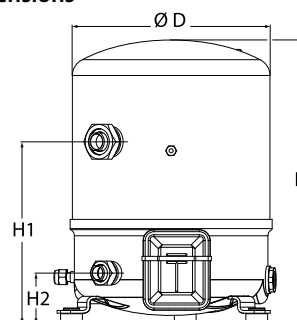
# Danfoss Reciprocating compressors **MT / MTZ / NTZ**



**General Characteristics**

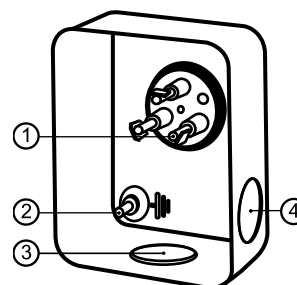
Model number (on compressor nameplate)		<b>MT50HK4CVE</b>
Code number for Singlepack*		MT50-4VI
Code number for Industrial pack**		MT50-4VM
Drawing number		8502012g
Suction and discharge connections		Rotolock
Suction connection		1-3/4 " Rotolock
Discharge connection		1-1/4 " Rotolock
Suction connection with supplied sleeve		7/8 " 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		2
Swept volume		85.64 cm3/rev
Displacement @ Nominal speed		14.9 m3/h @ 2900 rpm - 18.0 m3/h @ 3500 rpm
Net weight		37 kg
Oil charge		1.8 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		5 kg
Approved refrigerants		R22, R417A-160PZ

**Dimensions**



D=288 mm  
H=413 mm  
H1=265 mm  
H2=74 mm  
H3=- mm

**Terminal box**



IP55 (with cable gland)  
1: Spade connectors 1/4"  
2: Earth M4-12  
3: Knock-out Ø 21 mm (0.83")  
4: Hole Ø 21 mm (0.83")

**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	3.35 Ω
Maximum Continuous Current (MCC)	12 A
Locked Rotor Amps (LRA)	48.5 A
Motor protection	Internal overload protector

**Recommended Installation torques**

Oil sight glass	50 Nm
Power connections / Earth connection	2 Nm / 2 Nm
Mounting bolts	15 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), CCC certified

\*Singlepack: Compressor in cardboard box

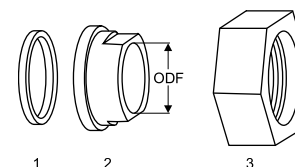
\*\*Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

**Rotolock accessories, suction side**

**Code no.**

Solder sleeve, P07 (1-3/4" Rotolock, 7/8" ODF)	8153013
Angle adapter, C07 (1-3/4" Rotolock, 7/8" ODF)	8168008
Rotolock valve, V07 (1-3/4" Rotolock, 7/8" ODF)	8168032
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, C07 (1-3/4"~7/8"), C04 (1-1/4"~3/4")	7703013
Valve set, V07 (1-3/4"~7/8"), V04 (1-1/4"~3/4")	7703006
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

**Oil / lubricants**

**Code no.**

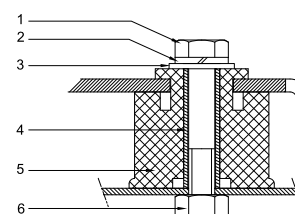
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

**Crankcase heaters**

**Code no.**

PTC heater 27W, CE mark, UL	120Z0459
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	7773117
Belt type crankcase heater, 65 W, 460 V, CE mark, UL	120Z0466

**Mounting kit**



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

**Miscellaneous accessories**

**Code no.**

Electronic soft start kit, MCI 15 C	7705006
Acoustic hood for 2 cylinder compressor	120Z0472
Oil equalisation nut	8153127

**Spare parts**

**Code no.**

Mounting kit for 1 and 2 cylinder compressor, including 3 grommets, 3 bolts	8156001
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (black chloroprene)	8156145
Service kit for terminal box 80 x 96 mm, including 1 cover, 1 clamp	8156134

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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	15

**Cooling capacity in W**

30	2 978	4 246	5 785	7 619	9 777	12 284	15 167	18 453	22 170
35	2 649	3 850	5 306	7 042	9 085	11 462	14 199	17 324	20 863
40	2 327	3 456	4 824	6 457	8 381	10 623	13 210	16 168	19 525
45	2 018	3 071	4 347	5 871	7 672	9 774	12 206	14 994	18 164
50	-	2 702	3 881	5 293	6 965	8 924	11 196	13 808	16 787
55	-	-	3 435	4 730	6 269	8 079	10 187	12 619	15 402
60	-	-	-	4 188	5 590	7 247	9 185	11 433	14 015
65	-	-	-	-	4 935	6 434	8 199	10 257	12 635

**Power input in W**

30	1 873	2 115	2 319	2 489	2 629	2 744	2 838	2 915	2 981
35	1 920	2 204	2 446	2 652	2 825	2 970	3 091	3 192	3 279
40	1 940	2 272	2 558	2 805	3 016	3 196	3 349	3 480	3 593
45	1 930	2 313	2 649	2 943	3 197	3 417	3 608	3 773	3 918
50	-	2 323	2 714	3 059	3 362	3 628	3 861	4 066	4 247
55	-	-	2 747	3 148	3 506	3 823	4 104	4 354	4 577
60	-	-	-	3 206	3 622	3 995	4 330	4 630	4 900
65	-	-	-	-	3 706	4 141	4 534	4 889	5 212

**Current consumption in A**

30	4.29	4.53	4.76	4.99	5.19	5.37	5.52	5.64	5.73
35	4.37	4.65	4.92	5.17	5.40	5.60	5.77	5.91	6.00
40	4.41	4.74	5.06	5.36	5.63	5.87	6.07	6.23	6.35
45	4.39	4.79	5.18	5.53	5.86	6.15	6.40	6.60	6.76
50	-	4.79	5.25	5.68	6.08	6.43	6.74	7.00	7.21
55	-	-	5.26	5.78	6.26	6.70	7.09	7.42	7.70
60	-	-	-	5.83	6.41	6.94	7.42	7.84	8.20
65	-	-	-	-	6.50	7.14	7.73	8.25	8.70

**Mass flow in kg/h**

30	65	91	123	159	202	251	306	369	439
35	60	86	117	153	195	243	297	359	428
40	55	80	111	146	187	234	288	348	416
45	50	75	104	139	179	225	277	336	403
50	-	69	97	131	170	215	266	324	389
55	-	-	91	123	160	204	253	310	373
60	-	-	-	115	151	193	241	295	357
65	-	-	-	-	141	181	227	280	340

**Coefficient of performance (C.O.P.)**

30	1.59	2.01	2.49	3.06	3.72	4.48	5.34	6.33	7.44
35	1.38	1.75	2.17	2.66	3.22	3.86	4.59	5.43	6.36
40	1.20	1.52	1.89	2.30	2.78	3.32	3.94	4.65	5.43
45	1.05	1.33	1.64	2.00	2.40	2.86	3.38	3.97	4.64
50	-	1.16	1.43	1.73	2.07	2.46	2.90	3.40	3.95
55	-	-	1.25	1.50	1.79	2.11	2.48	2.90	3.37
60	-	-	-	1.31	1.54	1.81	2.12	2.47	2.86
65	-	-	-	-	1.33	1.55	1.81	2.10	2.42

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

Cooling capacity	11 196	W
Power input	3 861	W
Current consumption	6.74	A
Mass flow	266	kg/h
C.O.P.	2.90	

**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	73	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	15

**Cooling capacity in W**

30	3 162	4 506	6 134	8 073	10 351	12 997	16 036	19 499	23 410
35	2 824	4 100	5 645	7 486	9 650	12 166	15 061	18 362	22 098
40	2 490	3 695	5 153	6 890	8 935	11 317	14 061	17 197	20 752
45	2 169	3 298	4 663	6 292	8 214	10 456	13 046	16 011	19 381
50	-	2 917	4 185	5 701	7 494	9 591	12 022	14 813	17 992
55	-	-	3 725	5 123	6 783	8 731	10 997	13 609	16 594
60	-	-	-	4 568	6 089	7 883	9 980	12 407	15 193
65	-	-	-	-	5 420	7 056	8 979	11 217	13 800

**Power input in W**

30	1 873	2 115	2 319	2 489	2 629	2 744	2 838	2 915	2 981
35	1 920	2 204	2 446	2 652	2 825	2 970	3 091	3 192	3 279
40	1 940	2 272	2 558	2 805	3 016	3 196	3 349	3 480	3 593
45	1 930	2 313	2 649	2 943	3 197	3 417	3 608	3 773	3 918
50	-	2 323	2 714	3 059	3 362	3 628	3 861	4 066	4 247
55	-	-	2 747	3 148	3 506	3 823	4 104	4 354	4 577
60	-	-	-	3 206	3 622	3 995	4 330	4 630	4 900
65	-	-	-	-	3 706	4 141	4 534	4 889	5 212

**Current consumption in A**

30	4.29	4.53	4.76	4.99	5.19	5.37	5.52	5.64	5.73
35	4.37	4.65	4.92	5.17	5.40	5.60	5.77	5.91	6.00
40	4.41	4.74	5.06	5.36	5.63	5.87	6.07	6.23	6.35
45	4.39	4.79	5.18	5.53	5.86	6.15	6.40	6.60	6.76
50	-	4.79	5.25	5.68	6.08	6.43	6.74	7.00	7.21
55	-	-	5.26	5.78	6.26	6.70	7.09	7.42	7.70
60	-	-	-	5.83	6.41	6.94	7.42	7.84	8.20
65	-	-	-	-	6.50	7.14	7.73	8.25	8.70

**Mass flow in kg/h**

30	64	91	122	159	201	249	304	367	436
35	60	86	116	152	194	242	296	357	426
40	55	80	110	145	186	233	286	346	414
45	50	74	104	138	178	223	276	335	401
50	-	69	97	130	169	213	264	322	386
55	-	-	90	122	160	203	252	308	371
60	-	-	-	114	150	192	239	294	355
65	-	-	-	-	140	180	226	278	338

**Coefficient of performance (C.O.P.)**

30	1.69	2.13	2.65	3.24	3.94	4.74	5.65	6.69	7.85
35	1.47	1.86	2.31	2.82	3.42	4.10	4.87	5.75	6.74
40	1.28	1.63	2.01	2.46	2.96	3.54	4.20	4.94	5.78
45	1.12	1.43	1.76	2.14	2.57	3.06	3.62	4.24	4.95
50	-	1.26	1.54	1.86	2.23	2.64	3.11	3.64	4.24
55	-	-	1.36	1.63	1.93	2.28	2.68	3.13	3.63
60	-	-	-	1.42	1.68	1.97	2.30	2.68	3.10
65	-	-	-	-	1.46	1.70	1.98	2.29	2.65

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

Cooling capacity	12 234	W
Power input	4 186	W
Current consumption	7.20	A
Mass flow	277	kg/h
C.O.P.	2.92	

**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	73	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	15

**Cooling capacity in W**

30	3 707	5 146	6 898	8 999	11 485	14 391	17 755	21 612	26 000
35	3 384	4 750	6 406	8 386	10 726	13 464	16 633	20 272	24 416
40	3 061	4 358	5 919	7 781	9 979	12 550	15 528	18 951	22 854
45	2 740	3 969	5 439	7 185	9 243	11 649	14 439	17 648	21 313
50	-	3 583	4 964	6 596	8 517	10 761	13 365	16 363	19 793
55	-	-	4 494	6 016	7 802	9 886	12 306	15 096	18 292
60	-	-	-	5 444	7 096	9 024	11 262	13 845	16 809
65	-	-	-	-	6 400	8 173	10 231	12 609	15 344

**Power input in W**

30	2 270	2 533	2 755	2 943	3 101	3 233	3 344	3 440	3 525
35	2 356	2 667	2 934	3 161	3 354	3 517	3 656	3 775	3 878
40	2 413	2 779	3 096	3 371	3 606	3 808	3 981	4 129	4 258
45	2 432	2 860	3 235	3 563	3 849	4 096	4 310	4 496	4 657
50	-	2 902	3 342	3 731	4 073	4 373	4 636	4 865	5 067
55	-	-	3 409	3 866	4 272	4 631	4 949	5 230	5 480
60	-	-	-	3 959	4 436	4 862	5 243	5 582	5 886
65	-	-	-	-	4 557	5 057	5 507	5 912	6 277

**Current consumption in A**

30	3.97	4.29	4.56	4.78	4.96	5.09	5.18	5.22	5.20
35	4.08	4.44	4.75	5.03	5.26	5.45	5.59	5.68	5.73
40	4.16	4.56	4.93	5.26	5.54	5.79	5.99	6.15	6.26
45	4.20	4.66	5.08	5.46	5.81	6.12	6.38	6.61	6.79
50	-	4.72	5.21	5.65	6.06	6.43	6.77	7.07	7.32
55	-	-	5.30	5.81	6.29	6.73	7.14	7.52	7.85
60	-	-	-	5.95	6.50	7.02	7.50	7.95	8.37
65	-	-	-	-	6.68	7.28	7.85	8.38	8.88

**Mass flow in kg/h**

30	81	111	146	188	237	294	358	432	515
35	77	106	141	182	230	285	348	420	501
40	72	101	136	176	223	277	338	408	487
45	68	97	130	170	215	268	328	396	473
50	-	91	125	163	208	259	317	383	458
55	-	-	119	156	200	249	306	371	443
60	-	-	-	149	191	240	295	358	428
65	-	-	-	-	183	230	284	344	413

**Coefficient of performance (C.O.P.)**

30	1.63	2.03	2.50	3.06	3.70	4.45	5.31	6.28	7.38
35	1.44	1.78	2.18	2.65	3.20	3.83	4.55	5.37	6.30
40	1.27	1.57	1.91	2.31	2.77	3.30	3.90	4.59	5.37
45	1.13	1.39	1.68	2.02	2.40	2.84	3.35	3.93	4.58
50	-	1.23	1.49	1.77	2.09	2.46	2.88	3.36	3.91
55	-	-	1.32	1.56	1.83	2.13	2.49	2.89	3.34
60	-	-	-	1.38	1.60	1.86	2.15	2.48	2.86
65	-	-	-	-	1.40	1.62	1.86	2.13	2.44

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

Cooling capacity	13 365	W
Power input	4 636	W
Current consumption	6.77	A
Mass flow	317	kg/h
C.O.P.	2.88	

**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	76	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	3 937	5 461	7 315	9 535	12 160	15 226	18 773	22 836	27 455
35	3 606	5 059	6 816	8 915	11 394	14 291	17 643	21 487	25 862
40	3 276	4 659	6 323	8 304	10 640	13 369	16 529	20 157	24 291
45	2 946	4 262	5 835	7 700	9 896	12 461	15 432	18 846	22 742
50	-	3 868	5 352	7 105	9 163	11 566	14 350	17 554	21 214
55	-	-	4 875	6 517	8 441	10 685	13 285	16 280	19 707
60	-	-	-	5 938	7 730	9 817	12 236	15 025	18 222
65	-	-	-	-	7 029	8 962	11 203	13 789	16 759

**Power input in W**

30	2 270	2 533	2 755	2 943	3 101	3 233	3 344	3 440	3 525
35	2 356	2 667	2 934	3 161	3 354	3 517	3 656	3 775	3 878
40	2 413	2 779	3 096	3 371	3 606	3 808	3 981	4 129	4 258
45	2 432	2 860	3 235	3 563	3 849	4 096	4 310	4 496	4 657
50	-	2 902	3 342	3 731	4 073	4 373	4 636	4 865	5 067
55	-	-	3 409	3 866	4 272	4 631	4 949	5 230	5 480
60	-	-	-	3 959	4 436	4 862	5 243	5 582	5 886
65	-	-	-	-	4 557	5 057	5 507	5 912	6 277

**Current consumption in A**

30	3.97	4.29	4.56	4.78	4.96	5.09	5.18	5.22	5.20
35	4.08	4.44	4.75	5.03	5.26	5.45	5.59	5.68	5.73
40	4.16	4.56	4.93	5.26	5.54	5.79	5.99	6.15	6.26
45	4.20	4.66	5.08	5.46	5.81	6.12	6.38	6.61	6.79
50	-	4.72	5.21	5.65	6.06	6.43	6.77	7.07	7.32
55	-	-	5.30	5.81	6.29	6.73	7.14	7.52	7.85
60	-	-	-	5.95	6.50	7.02	7.50	7.95	8.37
65	-	-	-	-	6.68	7.28	7.85	8.38	8.88

**Mass flow in kg/h**

30	80	110	146	187	236	292	356	430	512
35	76	106	140	181	229	284	347	418	498
40	72	101	135	175	222	275	336	406	484
45	67	96	130	169	214	266	326	394	470
50	-	91	124	162	207	257	315	381	455
55	-	-	118	155	199	248	305	369	441
60	-	-	-	148	190	239	293	356	426
65	-	-	-	-	182	229	282	342	410

**Coefficient of performance (C.O.P.)**

30	1.73	2.16	2.65	3.24	3.92	4.71	5.61	6.64	7.79
35	1.53	1.90	2.32	2.82	3.40	4.06	4.83	5.69	6.67
40	1.36	1.68	2.04	2.46	2.95	3.51	4.15	4.88	5.70
45	1.21	1.49	1.80	2.16	2.57	3.04	3.58	4.19	4.88
50	-	1.33	1.60	1.90	2.25	2.64	3.10	3.61	4.19
55	-	-	1.43	1.69	1.98	2.31	2.68	3.11	3.60
60	-	-	-	1.50	1.74	2.02	2.33	2.69	3.10
65	-	-	-	-	1.54	1.77	2.03	2.33	2.67

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

Cooling capacity	14 690	W
Power input	5 038	W
Current consumption	7.26	A
Mass flow	333	kg/h
C.O.P.	2.92	

**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	76	dB(A)

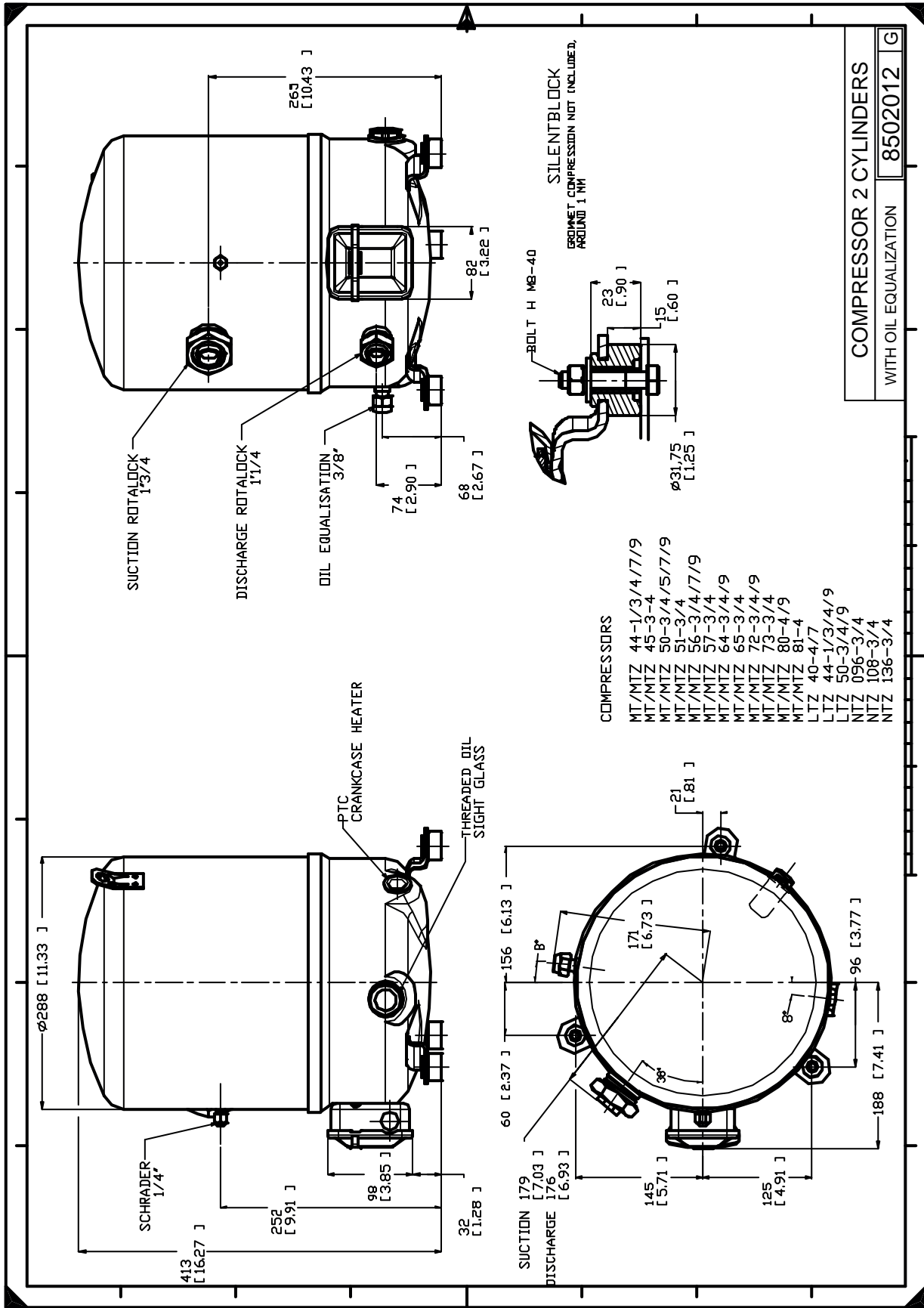
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

Tolerance according EN12900

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