

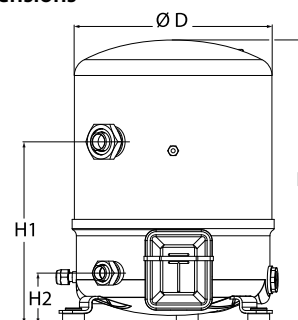
Datasheets

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

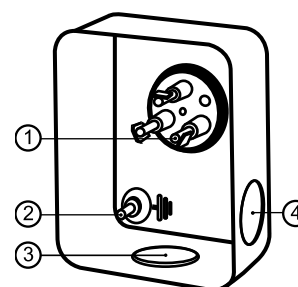


General Characteristics

Model number (on compressor nameplate)		MT56HL4BVE
Code number for Singlepack*		MT56-4VI
Code number for Industrial pack**		MT56-4VM
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		96.13 cm ³ /rev
Displacement @ Nominal speed		16.7 m ³ /h @ 2900 rpm - 20.2 m ³ /h @ 3500 rpm
Net weight		39 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	2.39 Ω
Maximum Continuous Current (MCC)	12 A
Locked Rotor Amps (LRA)	64 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

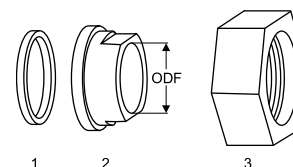
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

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.

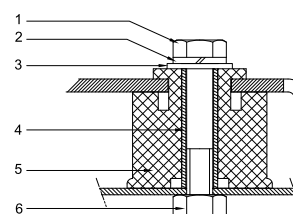
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

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	3 254	4 579	6 238	8 261	10 682	13 530	16 839	20 639	24 962
35	2 967	4 195	5 741	7 638	9 915	12 606	15 742	19 355	23 476
40	2 712	3 837	5 266	7 030	9 160	11 688	14 646	18 066	21 980
45	2 496	3 513	4 819	6 445	8 422	10 782	13 558	16 780	20 480
50	-	3 229	4 407	5 890	7 709	9 897	12 484	15 503	18 985
55	-	-	4 037	5 372	7 028	9 038	11 432	14 243	17 502
60	-	-	-	4 898	6 386	8 213	10 409	13 006	16 037
65	-	-	-	-	5 791	7 429	9 421	11 801	14 598

Power input in W

30	2 019	2 270	2 495	2 695	2 871	3 025	3 158	3 273	3 369
35	2 093	2 376	2 632	2 864	3 073	3 259	3 426	3 573	3 702
40	2 154	2 470	2 761	3 027	3 270	3 492	3 693	3 875	4 040
45	2 199	2 551	2 878	3 181	3 461	3 720	3 959	4 179	4 382
50	-	2 618	2 984	3 326	3 645	3 943	4 222	4 482	4 725
55	-	-	3 076	3 459	3 820	4 160	4 480	4 783	5 068
60	-	-	-	3 579	3 984	4 368	4 733	5 080	5 410
65	-	-	-	-	4 136	4 566	4 978	5 372	5 750

Current consumption in A

30	5.09	5.34	5.59	5.84	6.07	6.26	6.42	6.52	6.56
35	5.20	5.46	5.74	6.01	6.26	6.49	6.69	6.83	6.91
40	5.30	5.59	5.89	6.20	6.49	6.76	7.00	7.19	7.33
45	5.37	5.70	6.04	6.39	6.73	7.05	7.34	7.59	7.79
50	-	5.78	6.17	6.57	6.97	7.35	7.70	8.02	8.29
55	-	-	6.27	6.73	7.19	7.64	8.06	8.46	8.80
60	-	-	-	6.85	7.38	7.91	8.41	8.89	9.33
65	-	-	-	-	7.53	8.14	8.73	9.30	9.84

Mass flow in kg/h

30	71	98	132	173	221	276	340	412	494
35	67	94	127	166	213	267	330	401	482
40	64	89	121	159	204	258	319	389	469
45	62	85	115	152	196	248	308	377	454
50	-	82	111	146	188	238	296	363	440
55	-	-	106	140	180	228	284	350	424
60	-	-	-	134	172	218	273	336	408
65	-	-	-	-	165	209	261	322	392

Coefficient of performance (C.O.P.)

30	1.61	2.02	2.50	3.07	3.72	4.47	5.33	6.31	7.41
35	1.42	1.77	2.18	2.67	3.23	3.87	4.60	5.42	6.34
40	1.26	1.55	1.91	2.32	2.80	3.35	3.97	4.66	5.44
45	1.14	1.38	1.67	2.03	2.43	2.90	3.42	4.02	4.67
50	-	1.23	1.48	1.77	2.11	2.51	2.96	3.46	4.02
55	-	-	1.31	1.55	1.84	2.17	2.55	2.98	3.45
60	-	-	-	1.37	1.60	1.88	2.20	2.56	2.96
65	-	-	-	-	1.40	1.63	1.89	2.20	2.54

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

Cooling capacity	12 484	W
Power input	4 222	W
Current consumption	7.70	A
Mass flow	296	kg/h
C.O.P.	2.96	

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	78	dB(A)
With acoustic hood	71	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	3 456	4 859	6 614	8 754	11 310	14 316	17 804	21 808	26 359
35	3 163	4 468	6 109	8 120	10 533	13 381	16 698	20 515	24 866
40	2 903	4 103	5 625	7 502	9 766	12 452	15 591	19 216	23 361
45	2 683	3 773	5 170	6 907	9 017	11 534	14 490	17 919	21 853
50	-	3 486	4 752	6 343	8 294	10 637	13 405	16 631	20 349
55	-	-	4 379	5 819	7 604	9 767	12 342	15 360	18 857
60	-	-	-	5 343	6 956	8 934	11 309	14 115	17 385
65	-	-	-	-	6 360	8 146	10 317	12 905	15 944

Power input in W

30	2 019	2 270	2 495	2 695	2 871	3 025	3 158	3 273	3 369
35	2 093	2 376	2 632	2 864	3 073	3 259	3 426	3 573	3 702
40	2 154	2 470	2 761	3 027	3 270	3 492	3 693	3 875	4 040
45	2 199	2 551	2 878	3 181	3 461	3 720	3 959	4 179	4 382
50	-	2 618	2 984	3 326	3 645	3 943	4 222	4 482	4 725
55	-	-	3 076	3 459	3 820	4 160	4 480	4 783	5 068
60	-	-	-	3 579	3 984	4 368	4 733	5 080	5 410
65	-	-	-	-	4 136	4 566	4 978	5 372	5 750

Current consumption in A

30	5.09	5.34	5.59	5.84	6.07	6.26	6.42	6.52	6.56
35	5.20	5.46	5.74	6.01	6.26	6.49	6.69	6.83	6.91
40	5.30	5.59	5.89	6.20	6.49	6.76	7.00	7.19	7.33
45	5.37	5.70	6.04	6.39	6.73	7.05	7.34	7.59	7.79
50	-	5.78	6.17	6.57	6.97	7.35	7.70	8.02	8.29
55	-	-	6.27	6.73	7.19	7.64	8.06	8.46	8.80
60	-	-	-	6.85	7.38	7.91	8.41	8.89	9.33
65	-	-	-	-	7.53	8.14	8.73	9.30	9.84

Mass flow in kg/h

30	70	98	132	172	220	275	338	410	491
35	67	93	126	165	212	266	328	399	479
40	64	89	120	158	203	256	317	387	466
45	61	85	115	151	195	247	306	374	452
50	-	82	110	145	187	237	295	361	437
55	-	-	106	139	179	227	283	348	422
60	-	-	-	133	171	217	271	334	406
65	-	-	-	-	165	208	260	320	390

Coefficient of performance (C.O.P.)

30	1.71	2.14	2.65	3.25	3.94	4.73	5.64	6.66	7.82
35	1.51	1.88	2.32	2.83	3.43	4.11	4.87	5.74	6.72
40	1.35	1.66	2.04	2.48	2.99	3.57	4.22	4.96	5.78
45	1.22	1.48	1.80	2.17	2.61	3.10	3.66	4.29	4.99
50	-	1.33	1.59	1.91	2.28	2.70	3.18	3.71	4.31
55	-	-	1.42	1.68	1.99	2.35	2.75	3.21	3.72
60	-	-	-	1.49	1.75	2.05	2.39	2.78	3.21
65	-	-	-	-	1.54	1.78	2.07	2.40	2.77

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

Cooling capacity	13 750	W
Power input	4 582	W
Current consumption	8.19	A
Mass flow	312	kg/h
C.O.P.	3.00	

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	78	dB(A)
With acoustic hood	71	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	4 380	6 059	8 065	10 435	13 204	16 409	20 086	24 271	29 001
35	3 927	5 525	7 427	9 669	12 286	15 316	18 795	22 757	27 241
40	3 483	5 002	6 801	8 918	11 386	14 243	17 525	21 268	25 507
45	3 049	4 491	6 190	8 183	10 504	13 191	16 279	19 803	23 801
50	-	3 992	5 593	7 465	9 642	12 161	15 056	18 365	22 122
55	-	-	5 013	6 765	8 800	11 152	13 858	16 953	20 472
60	-	-	-	6 085	7 979	10 167	12 684	15 567	18 850
65	-	-	-	-	7 179	9 204	11 535	14 207	17 255

Power input in W

30	2 577	2 879	3 145	3 381	3 589	3 773	3 937	4 085	4 219
35	2 637	2 984	3 294	3 569	3 813	4 031	4 225	4 400	4 558
40	2 676	3 075	3 434	3 755	4 043	4 300	4 531	4 739	4 927
45	2 683	3 142	3 557	3 931	4 268	4 572	4 846	5 094	5 319
50	-	3 175	3 653	4 086	4 480	4 837	5 161	5 455	5 724
55	-	-	3 713	4 213	4 669	5 086	5 466	5 814	6 134
60	-	-	-	4 301	4 827	5 310	5 754	6 162	6 538
65	-	-	-	-	4 944	5 500	6 013	6 488	6 928

Current consumption in A

30	4.89	5.24	5.52	5.76	5.95	6.13	6.30	6.46	6.65
35	4.87	5.27	5.61	5.90	6.15	6.38	6.59	6.82	7.05
40	4.87	5.33	5.73	6.07	6.38	6.67	6.94	7.22	7.51
45	4.88	5.40	5.86	6.26	6.63	6.98	7.32	7.65	8.01
50	-	5.45	5.97	6.45	6.88	7.30	7.70	8.10	8.52
55	-	-	6.06	6.61	7.11	7.60	8.07	8.54	9.03
60	-	-	-	6.72	7.30	7.86	8.41	8.95	9.52
65	-	-	-	-	7.43	8.07	8.69	9.32	9.96

Mass flow in kg/h

30	95	130	171	218	273	335	406	485	574
35	89	123	164	210	264	325	394	472	559
40	82	116	156	202	254	314	382	458	544
45	75	109	148	193	245	303	370	444	528
50	-	102	140	185	235	292	357	430	512
55	-	-	132	176	225	281	345	416	496
60	-	-	-	167	215	270	332	402	480
65	-	-	-	-	205	259	320	388	464

Coefficient of performance (C.O.P.)

30	1.70	2.10	2.56	3.09	3.68	4.35	5.10	5.94	6.87
35	1.49	1.85	2.25	2.71	3.22	3.80	4.45	5.17	5.98
40	1.30	1.63	1.98	2.37	2.82	3.31	3.87	4.49	5.18
45	1.14	1.43	1.74	2.08	2.46	2.89	3.36	3.89	4.47
50	-	1.26	1.53	1.83	2.15	2.51	2.92	3.37	3.86
55	-	-	1.35	1.61	1.88	2.19	2.54	2.92	3.34
60	-	-	-	1.41	1.65	1.91	2.20	2.53	2.88
65	-	-	-	-	1.45	1.67	1.92	2.19	2.49

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

Cooling capacity	15 056	W
Power input	5 161	W
Current consumption	7.70	A
Mass flow	357	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	81	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 60 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	4 652	6 430	8 552	11 056	13 980	17 361	21 237	25 646	30 624
35	4 186	5 884	7 902	10 279	13 052	16 258	19 935	24 121	28 854
40	3 728	5 348	7 265	9 516	12 140	15 174	18 655	22 621	27 111
45	3 278	4 823	6 641	8 770	11 247	14 111	17 399	21 148	25 396
50	-	4 310	6 031	8 040	10 374	13 070	16 167	19 701	23 711
55	-	-	5 438	7 329	9 521	12 053	14 961	18 283	22 057
60	-	-	-	6 637	8 691	11 060	13 782	16 894	20 435
65	-	-	-	-	7 884	10 093	12 631	15 536	18 846

Power input in W

30	2 577	2 879	3 145	3 381	3 589	3 773	3 937	4 085	4 219
35	2 637	2 984	3 294	3 569	3 813	4 031	4 225	4 400	4 558
40	2 676	3 075	3 434	3 755	4 043	4 300	4 531	4 739	4 927
45	2 683	3 142	3 557	3 931	4 268	4 572	4 846	5 094	5 319
50	-	3 175	3 653	4 086	4 480	4 837	5 161	5 455	5 724
55	-	-	3 713	4 213	4 669	5 086	5 466	5 814	6 134
60	-	-	-	4 301	4 827	5 310	5 754	6 162	6 538
65	-	-	-	-	4 944	5 500	6 013	6 488	6 928

Current consumption in A

30	4.89	5.24	5.52	5.76	5.95	6.13	6.30	6.46	6.65
35	4.87	5.27	5.61	5.90	6.15	6.38	6.59	6.82	7.05
40	4.87	5.33	5.73	6.07	6.38	6.67	6.94	7.22	7.51
45	4.88	5.40	5.86	6.26	6.63	6.98	7.32	7.65	8.01
50	-	5.45	5.97	6.45	6.88	7.30	7.70	8.10	8.52
55	-	-	6.06	6.61	7.11	7.60	8.07	8.54	9.03
60	-	-	-	6.72	7.30	7.86	8.41	8.95	9.52
65	-	-	-	-	7.43	8.07	8.69	9.32	9.96

Mass flow in kg/h

30	95	130	170	217	271	333	403	482	571
35	88	123	163	209	262	323	392	469	556
40	82	116	155	201	253	312	380	455	540
45	75	109	148	192	243	302	368	442	525
50	-	101	140	184	234	291	355	428	509
55	-	-	132	175	224	280	343	414	493
60	-	-	-	166	214	269	330	400	477
65	-	-	-	-	204	258	318	386	461

Coefficient of performance (C.O.P.)

30	1.80	2.23	2.72	3.27	3.90	4.60	5.39	6.28	7.26
35	1.59	1.97	2.40	2.88	3.42	4.03	4.72	5.48	6.33
40	1.39	1.74	2.12	2.53	3.00	3.53	4.12	4.77	5.50
45	1.22	1.53	1.87	2.23	2.64	3.09	3.59	4.15	4.77
50	-	1.36	1.65	1.97	2.32	2.70	3.13	3.61	4.14
55	-	-	1.46	1.74	2.04	2.37	2.74	3.14	3.60
60	-	-	-	1.54	1.80	2.08	2.40	2.74	3.13
65	-	-	-	-	1.59	1.84	2.10	2.39	2.72

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

Cooling capacity	16 523	W
Power input	5 584	W
Current consumption	8.23	A
Mass flow	375	kg/h
C.O.P.	2.96	

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	81	dB(A)
With acoustic hood	74	dB(A)

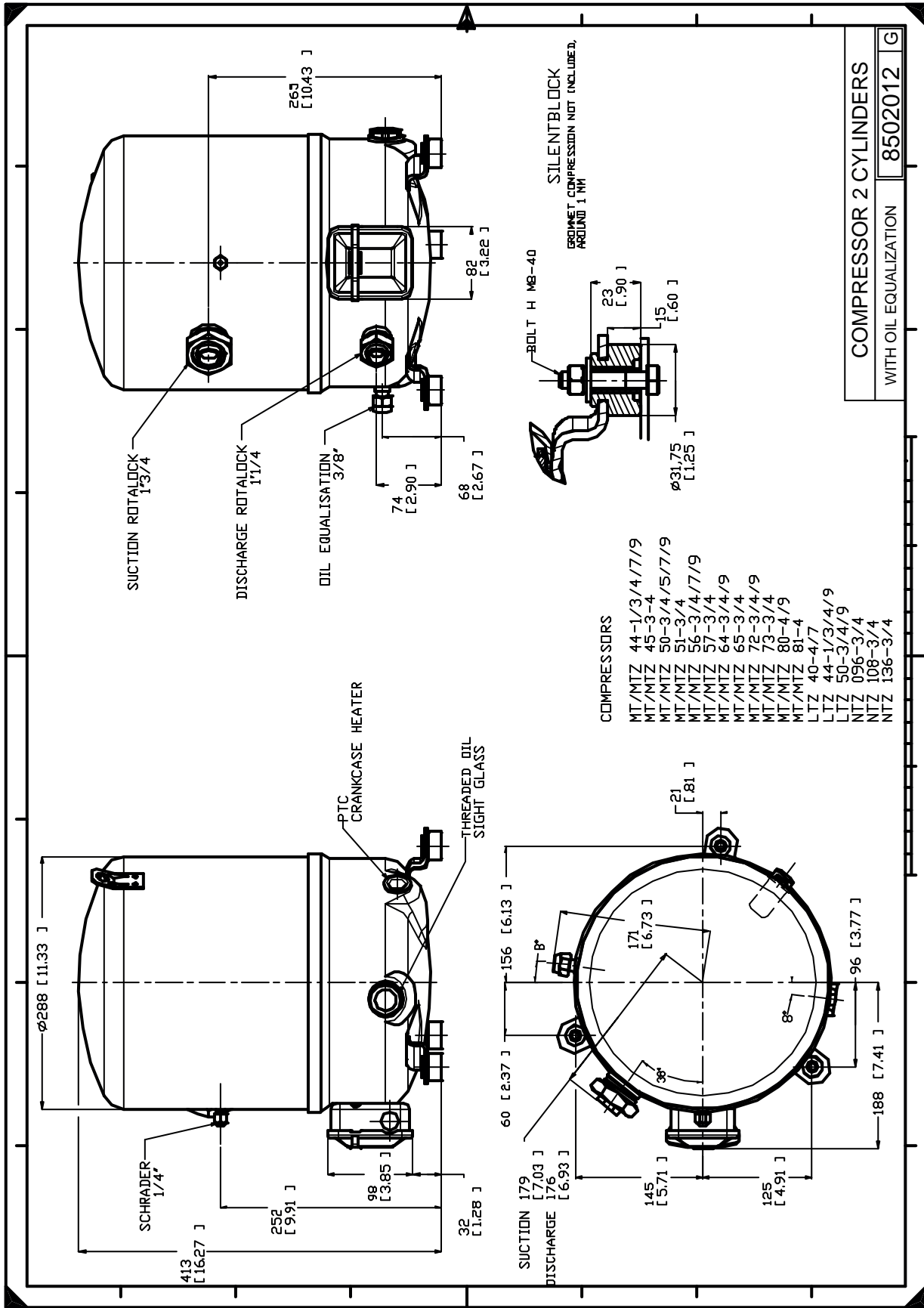
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

Tolerance according EN12900

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