

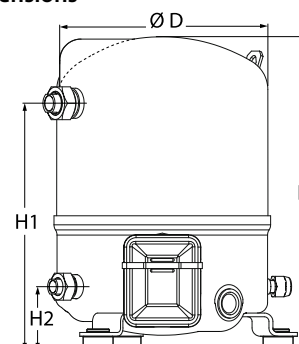
Datasheets

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



**General Characteristics**

Model number (on compressor nameplate)		<b>MTZ40JH4AVE</b>
Code number for Singlepack*		MTZ40-4VI
Code number for Industrial pack**		MTZ40-4VM
Drawing number		8501025f
Suction and discharge connections		Rotolock
Suction connection		1-1/4" Rotolock
Discharge connection		1" Rotolock
Suction connection with supplied sleeve		5/8" ODF
Discharge connection with supplied sleeve		1/2" 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		1
Swept volume		67,89 cm <sup>3</sup> /rev
Displacement @ Nominal speed		11.8 m <sup>3</sup> /h @ 2900 rpm - 14.3 m <sup>3</sup> /h @ 3500 rpm
Net weight		26 kg
Oil charge		0,95 litre, POE - 160PZ
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		2,5 kg
Approved refrigerants		R404A, R507A, R134a, R407C, R407A, R407F

**Dimensions**


D=224 mm

H=356 mm

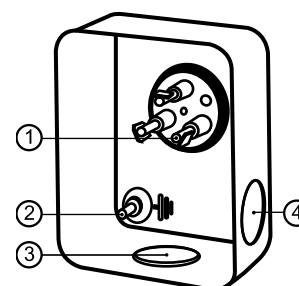
H1=263 mm

H2=68 mm

H3= mm

**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	4.56 Ω
Maximum Continuous Current (MCC)	10 A
Locked Rotor Amps (LRA)	38 A
Motor protection	Internal overload protector

**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")

**Recommended Installation torques**

Oil sight glass	50 Nm
Power connections / Earth connection	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

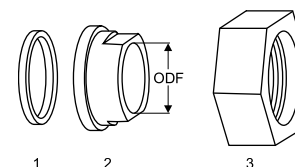
**Approvals** : CE certified, UL certified (file SA6873), CCC certified

\*Singlepack: Compressor in cardboard box

\*\*Industrial pack: 12 Unboxed compressors on pallet (order per multiples of 12)

**Rotolock accessories, suction side**
**Code no.**

Solder sleeve, P09 (1-1/4" Rotolock, 5/8" ODF)	8153011
Angle adapter, C09 (1-1/4" Rotolock, 5/8" ODF)	8168009
Rotolock valve, V09 (1-1/4" Rotolock, 5/8" ODF)	8168033
Gasket, 1-1/4"	8156131

**Gaskets, sleeves and nuts**


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

**Rotolock accessories, discharge side**
**Code no.**

Solder sleeve, P06 (1" Rotolock, 1/2" ODF)	8153007
Angle adapter, C06 (1" Rotolock, 1/2" ODF)	8168007
Rotolock valve, V06 (1" Rotolock, 1/2" ODF)	8168031
Gasket, 1"	8156130

**Rotolock accessories, sets**
**Code no.**

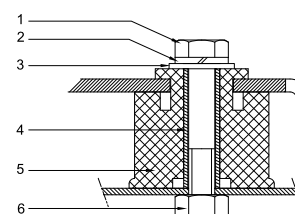
Angle adapter set, C09 (1-1/4"~5/8"), C06 (1"~1/2")	7703012
Valve set, V09 (1-1/4"~5/8"), V06 (1"~1/2")	7703005
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

**Oil / lubricants**
**Code no.**

POE lubricant, 160PZ, 1 litre can	7754019
POE lubricant, 160PZ, 2.5 litre can	120Z0573

**Crankcase heaters**
**Code no.**

PTC heater 27W, CE mark, UL	120Z0459
Belt type crankcase heater, 54 W, 230 V, CE mark, UL	7773106
Belt type crankcase heater, 54 W, 400 V, UL	7773013

**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 1 cylinder compressor	120Z0471
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

**Performance data at 50 Hz, EN 12900 rating conditions**
**R404A**

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

**Cooling capacity in W**

30	2 448	3 330	4 396	5 669	7 172	8 925	10 953	13 277	15 919
35	2 168	2 997	3 993	5 177	6 573	8 202	10 087	12 250	14 713
40	1 885	2 659	3 581	4 674	5 959	7 461	9 200	11 200	13 482
45	1 601	2 316	3 161	4 159	5 333	6 704	8 294	10 128	12 225
50	1 314	1 968	2 734	3 635	4 693	5 930	7 370	9 033	10 944
55	-	1 616	2 300	3 101	4 040	5 141	6 427	7 918	9 638
60	-	1 262	1 860	2 557	3 376	4 338	5 466	6 782	8 308

**Power input in W**

30	1 685	1 940	2 176	2 393	2 590	2 766	2 921	3 056	3 169
35	1 696	1 977	2 237	2 477	2 697	2 896	3 073	3 229	3 363
40	1 703	2 013	2 302	2 571	2 818	3 043	3 247	3 429	3 587
45	1 702	2 046	2 368	2 669	2 948	3 205	3 439	3 650	3 839
50	1 689	2 070	2 430	2 767	3 083	3 375	3 644	3 890	4 112
55	-	2 082	2 483	2 862	3 218	3 550	3 859	4 144	4 404
60	-	2 077	2 524	2 949	3 349	3 726	4 079	4 406	4 709

**Current consumption in A**

30	4.20	4.48	4.76	5.03	5.29	5.52	5.71	5.87	5.98
35	4.26	4.58	4.89	5.20	5.49	5.76	6.00	6.21	6.36
40	4.29	4.64	5.00	5.35	5.68	6.00	6.29	6.55	6.76
45	4.29	4.69	5.09	5.48	5.87	6.24	6.59	6.90	7.17
50	4.27	4.71	5.16	5.62	6.06	6.49	6.89	7.27	7.61
55	-	4.73	5.24	5.75	6.25	6.75	7.22	7.66	8.07
60	-	4.74	5.31	5.88	6.46	7.02	7.57	8.09	8.57

**Mass flow in kg/h**

30	77	102	132	166	204	249	299	355	419
35	73	99	128	162	200	243	293	348	410
40	69	95	124	157	195	238	286	340	401
45	64	90	119	152	189	231	278	331	391
50	59	85	113	146	182	224	270	322	380
55	-	78	107	139	175	215	261	311	368
60	-	71	100	131	167	206	250	300	355

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

30	1.45	1.72	2.02	2.37	2.77	3.23	3.75	4.34	5.02
35	1.28	1.52	1.78	2.09	2.44	2.83	3.28	3.79	4.38
40	1.11	1.32	1.56	1.82	2.11	2.45	2.83	3.27	3.76
45	0.94	1.13	1.33	1.56	1.81	2.09	2.41	2.77	3.18
50	0.78	0.95	1.13	1.31	1.52	1.76	2.02	2.32	2.66
55	-	0.78	0.93	1.08	1.26	1.45	1.67	1.91	2.19
60	-	0.61	0.74	0.87	1.01	1.16	1.34	1.54	1.76

**Nominal performance at to = -10 °C, tc = 45 °C**

Cooling capacity	5 333	W
Power input	2 948	W
Current consumption	5.87	A
Mass flow	189	kg/h
C.O.P.	1.81	



to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

**Pressure switch settings**

Maximum HP switch setting	27.7	bar(g)
Minimum LP switch setting	0.2	bar(g)
LP pump down setting	0.9	bar(g)

**Sound power data**

Sound power level	70	dB(A)
With acoustic hood	65	dB(A)

All performance data +/- 5%

Performance data at 50 Hz, ARI rating conditions

**R404A**

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-30	-25	-20	-15	-10	-5	0	5

**Cooling capacity in W**

30	2 725	3 697	4 868	6 262	7 904	9 815	12 020	14 541	17 402
35	2 439	3 361	4 465	5 773	7 309	9 098	11 163	13 526	16 212
40	2 149	3 020	4 052	5 271	6 701	8 364	10 286	12 489	14 997
45	1 855	2 671	3 631	4 759	6 079	7 615	9 391	11 431	13 760
50	1 557	2 318	3 203	4 237	5 445	6 851	8 481	10 357	12 504
55	-	1 959	2 768	3 707	4 802	6 078	7 560	9 271	11 237
60	-	1 595	2 329	3 174	4 157	5 303	6 638	8 186	9 974

**Power input in W**

30	1 685	1 940	2 176	2 393	2 590	2 766	2 921	3 056	3 169
35	1 696	1 977	2 237	2 477	2 697	2 896	3 073	3 229	3 363
40	1 703	2 013	2 302	2 571	2 818	3 043	3 247	3 429	3 587
45	1 702	2 046	2 368	2 669	2 948	3 205	3 439	3 650	3 839
50	1 689	2 070	2 430	2 767	3 083	3 375	3 644	3 890	4 112
55	-	2 082	2 483	2 862	3 218	3 550	3 859	4 144	4 404
60	-	2 077	2 524	2 949	3 349	3 726	4 079	4 406	4 709

**Current consumption in A**

30	4.20	4.48	4.76	5.03	5.29	5.52	5.71	5.87	5.98
35	4.26	4.58	4.89	5.20	5.49	5.76	6.00	6.21	6.36
40	4.29	4.64	5.00	5.35	5.68	6.00	6.29	6.55	6.76
45	4.29	4.69	5.09	5.48	5.87	6.24	6.59	6.90	7.17
50	4.27	4.71	5.16	5.62	6.06	6.49	6.89	7.27	7.61
55	-	4.73	5.24	5.75	6.25	6.75	7.22	7.66	8.07
60	-	4.74	5.31	5.88	6.46	7.02	7.57	8.09	8.57

**Mass flow in kg/h**

30	77	102	131	165	203	247	297	353	416
35	73	98	127	161	199	242	291	346	408
40	69	94	123	156	194	236	284	338	398
45	64	90	118	151	188	230	277	329	388
50	59	84	113	145	181	222	268	320	377
55	-	78	106	138	174	214	259	309	365
60	-	71	99	131	166	205	249	298	352

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

30	1.62	1.91	2.24	2.62	3.05	3.55	4.11	4.76	5.49
35	1.44	1.70	2.00	2.33	2.71	3.14	3.63	4.19	4.82
40	1.26	1.50	1.76	2.05	2.38	2.75	3.17	3.64	4.18
45	1.09	1.31	1.53	1.78	2.06	2.38	2.73	3.13	3.58
50	0.92	1.12	1.32	1.53	1.77	2.03	2.33	2.66	3.04
55	-	0.94	1.11	1.30	1.49	1.71	1.96	2.24	2.55
60	-	0.77	0.92	1.08	1.24	1.42	1.63	1.86	2.12

**Nominal performance at to = -10 °C, tc = 45 °C**

Cooling capacity	6 079	W
Power input	2 948	W
Current consumption	5.87	A
Mass flow	188	kg/h
C.O.P.	2.06	

**Pressure switch settings**

Maximum HP switch setting	27.7	bar(g)
Minimum LP switch setting	0.2	bar(g)
LP pump down setting	0.9	bar(g)

**Sound power data**

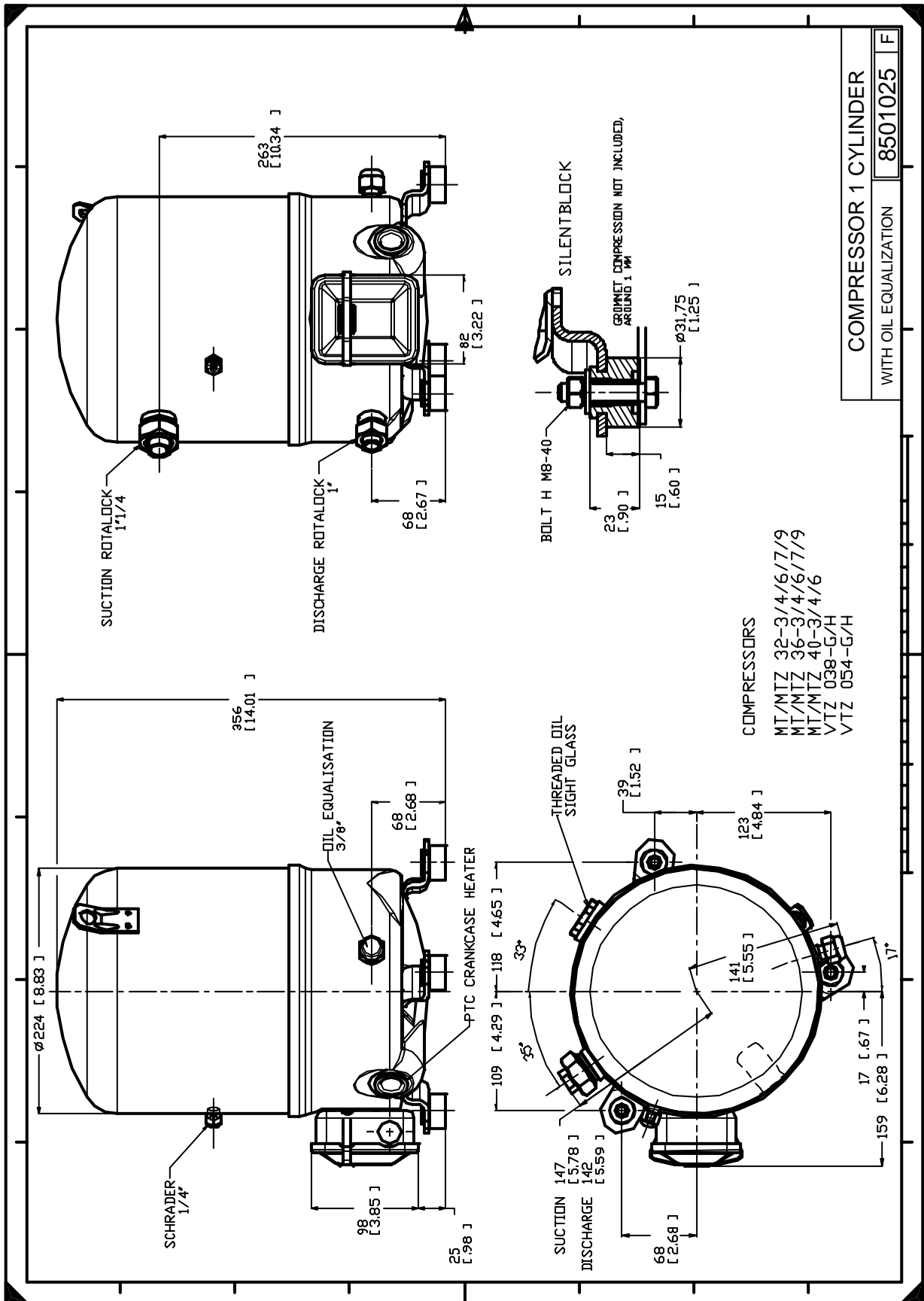
Sound power level	70	dB(A)
With acoustic hood	65	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%



COMPRESSOR 1 CYLINDER  
WITH OIL EQUALIZATION 8501025 F

- COMPRESSORS
- MT/MTZ 32-3/4/6/7/9
  - MT/MTZ 36-3/4/6/7/9
  - MT/MTZ 40-3/4/6
  - VTZ 038-G/H
  - VTZ 054-G/H

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