MAKING MODERN LIVING POSSIBLE

Datasheets

Maneurop® Reciprocating compressors
MT / MTZ / MPZ / NTZ

FRCC.UD.120808.210937

www.danfoss.com/odsg

Maneurop®
Reciprocating Compressors

General Characteristics

Model number (on compressor nameplate)		**MTZ72HN3BVE**
Code number for Singlepack*		MTZ72-3VI
Code number for Industrial pack**		MTZ72-3VM
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 equalization connection		3/8'' flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		435 psi / 115 psi
Cylinders	2	
Swept volume	7.38 in3/rev	
Displacement @ Nominal speed	897 cfh @ 3500 rpm	
Net weight	88 lbs	
Oil charge	61 oz, POE - 160PZ	
Maximum system test pressure Low Side / High side	363 psi / 435 psi	
Maximum differential test pressure	435 psi	
Maximum number of starts per hour	12	
Refrigerant charge limit	11 lbs	
Approved refrigerants	R404A, R507A, R134a, R407C	

Electrical Characteristics

Nominal voltage	200-230V/3/60Hz
Voltage range	180-253 V
Winding resistance (between phases) +/- 7% at 77°F	0.55 Ω
Maximum Continuous Current (MCC)	30 A
Locked Rotor Amps (LRA)	135 A
Motor protection	Internal overload protector

Recommended Installation torques

Oil sight glass	37 ft.lbs
Power connections / Earth connection	ft.lbs / 1 ft.lbs
Mounting bolts	11 ft.lbs

Parts shipped with compressor

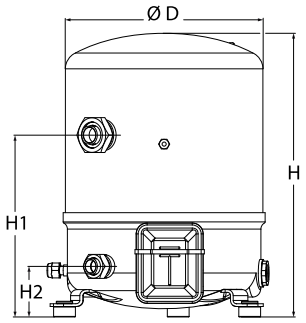
Mounting kit with grommets, bolts, nuts, sleeves and washers
Suction & Discharge solder sleeves, rotolock nuts and gaskets (shipped with rotolock version only)
Initial oil charge
Installation instructions

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

*Singlepack: Compressor in cardboard box

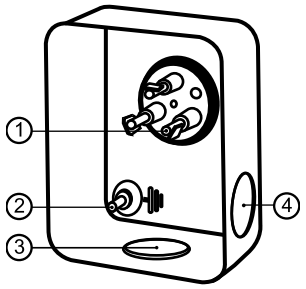
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

Dimensions



D=11.3 inch, H=16.3 inch,
H1=10.4 inch, H2=2.9 inch

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")

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

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

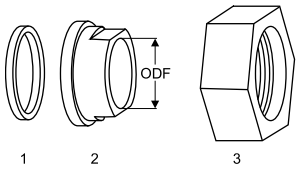
Oil / lubricants	Code no.
POE lubricant, 160PZ, 1 liter can	7754019
POE lubricant, 160PZ, 2 liter can	7754020

Crankcase heaters	Code no.
PTC heater 27W	120Z0459
Belt type crankcase heater, 65 W, 110 V, CE mark, UL	7773109
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107

Miscellaneous accessories	Code no.
Acoustic hood for 2 cylinder compressor	7755002
Oil equalisation nut	8153127

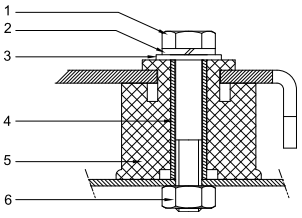
Spare parts	Code no.
Mounting kit for 1 and 2 cylinder compressor, including 3 grommets, 3 bolts	8156001
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (black chloroprene)	8156145
Service kit for terminal box 80 x 96 mm, including 1 cover, 1 clamp	8156134

Gaskets, sleeves and nuts



1: Gasket
2: Solder sleeve
3: Rotolock nut

Mounting kit



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

Performance data at 60 Hz, ARI rating conditions

R407C

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)								
	10	20	25	30	35	40	45	50	55
Cooling capacity in Btu/h									
100	35 204	47 026	53 792	61 170	69 192	77 889	87 294	97 438	108 353
110	31 962	43 158	49 558	56 536	64 124	72 352	81 253	90 859	101 201
120	-	39 094	45 082	51 613	58 718	66 430	74 780	83 800	93 522
130	-	34 871	40 399	46 435	53 011	60 158	67 910	76 297	85 350
140	-	-	35 543	41 036	47 035	53 572	60 677	68 383	76 721
150	-	-	-	-	40 827	46 704	53 116	60 094	67 670
Power input in W									
100	4 262	4 820	5 079	5 320	5 542	5 740	5 913	6 057	6 169
110	4 423	5 045	5 341	5 623	5 889	6 136	6 360	6 559	6 730
120	-	5 235	5 573	5 902	6 217	6 516	6 797	7 056	7 291
130	-	5 382	5 768	6 147	6 517	6 874	7 216	7 540	7 843
140	-	-	5 916	6 351	6 780	7 200	7 608	8 002	8 378
150	-	-	-	-	6 998	7 486	7 965	8 434	8 888
Current consumption in A									
100	16.42	18.00	18.76	19.49	20.18	20.84	21.44	21.99	22.48
110	16.85	18.63	19.50	20.35	21.18	21.98	22.73	23.45	24.12
120	-	19.18	20.18	21.17	22.14	23.09	24.02	24.92	25.77
130	-	19.63	20.77	21.91	23.05	24.18	25.29	26.37	27.43
140	-	-	21.27	22.58	23.89	25.21	26.52	27.81	29.09
150	-	-	-	-	24.66	26.18	27.70	29.22	30.73
Mass flow in lbs/h									
100	458	600	679	765	858	957	1 064	1 178	1 301
110	438	580	660	745	838	937	1 043	1 156	1 278
120	-	557	636	721	812	910	1 015	1 127	1 247
130	-	531	608	691	781	878	981	1 091	1 209
140	-	-	576	657	745	839	940	1 048	1 163
150	-	-	-	-	702	794	892	997	1 109
Energy Efficiency Ratio (E.E.R.)									
100	8.26	9.76	10.59	11.50	12.49	13.57	14.76	16.09	17.56
110	7.23	8.56	9.28	10.05	10.89	11.79	12.78	13.85	15.04
120	-	7.47	8.09	8.75	9.44	10.19	11.00	11.88	12.83
130	-	6.48	7.00	7.55	8.13	8.75	9.41	10.12	10.88
140	-	-	6.01	6.46	6.94	7.44	7.98	8.55	9.16
150	-	-	-	-	5.83	6.24	6.67	7.13	7.61

Nominal performance at to = 45 °F, tc = 130 °F

Cooling capacity	67 910	Btu/h	Current consumption	25.29	A
Power input	7 216	W	Mass flow	981	lbs/h
E.E.R.	9.41				

Pressure switch settings

Maximum HP switch setting	426	psi(g)
Minimum LP switch setting	3	psi(g)
LP pump down setting	19	psi(g)

T 0 : Evaporating temperature at dew point

T C : Condensing temperature at dew point

Rating conditions : Superheat = 20 °F , Subcooling = 15 °F

All performance data +/- 5%

Sound power data

Sound power level	0	dB(A)
With accoustic hood	0	dB(A)

Performance data at 60 Hz, ARI rating conditions

R134a

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)								
	10	20	30	40	45	50	55	60	65
Cooling capacity in Btu/h									
100	24 930	33 654	43 906	55 843	62 491	69 617	77 243	85 385	94 065
110	22 566	30 953	40 795	52 249	58 628	65 468	72 788	80 607	88 944
120	20 077	28 080	37 465	48 388	54 475	61 004	67 995	75 466	83 438
130	17 442	25 013	33 894	44 239	50 010	56 204	62 842	69 943	77 526
140	-	21 732	30 061	39 781	45 212	51 048	57 310	64 016	71 186
150	-	-	-	34 993	40 060	45 515	51 376	57 664	64 397
160	-	-	-	-	-	39 583	45 020	50 866	57 139
Power input in W									
100	3 095	3 523	3 941	4 336	4 522	4 697	4 861	5 012	5 148
110	3 176	3 640	4 100	4 546	4 759	4 965	5 160	5 345	5 517
120	3 226	3 729	4 238	4 739	4 983	5 221	5 451	5 672	5 882
130	3 241	3 790	4 351	4 913	5 190	5 463	5 730	5 989	6 240
140	-	3 820	4 438	5 065	5 378	5 688	5 995	6 295	6 589
150	-	-	-	5 193	5 544	5 894	6 242	6 587	6 927
160	-	-	-	-	-	6 078	6 471	6 862	7 250
Current consumption in A									
100	12.21	13.25	14.31	15.39	15.93	16.46	16.99	17.52	18.03
110	12.40	13.54	14.72	15.95	16.56	17.19	17.81	18.43	19.05
120	12.53	13.78	15.11	16.49	17.19	17.91	18.63	19.35	20.08
130	12.59	13.97	15.45	17.00	17.80	18.62	19.45	20.28	21.13
140	-	14.11	15.75	17.49	18.39	19.32	20.26	21.21	22.18
150	-	-	-	17.94	18.96	19.99	21.05	22.13	23.23
160	-	-	-	-	-	20.64	21.83	23.04	24.27
Mass flow in lbs/h									
100	363	479	612	762	844	931	1 024	1 121	1 224
110	346	464	597	749	831	919	1 011	1 109	1 212
120	325	444	579	730	813	901	993	1 091	1 194
130	300	420	555	707	790	877	970	1 067	1 170
140	-	390	526	678	761	848	940	1 037	1 140
150	-	-	-	642	725	812	904	1 000	1 102
160	-	-	-	-	-	769	860	956	1 057
Energy Efficiency Ratio (E.E.R.)									
100	8.06	9.55	11.14	12.88	13.82	14.82	15.89	17.04	18.27
110	7.11	8.50	9.95	11.49	12.32	13.19	14.10	15.08	16.12
120	6.22	7.53	8.84	10.21	10.93	11.68	12.47	13.31	14.19
130	5.38	6.60	7.79	9.00	9.64	10.29	10.97	11.68	12.42
140	-	5.69	6.77	7.85	8.41	8.97	9.56	10.17	10.80
150	-	-	-	6.74	7.23	7.72	8.23	8.75	9.30
160	-	-	-	-	-	6.51	6.96	7.41	7.88

Nominal performance at to = 45 °F, tc = 130 °F

Cooling capacity	50 010	Btu/h	Current consumption	17.80	A
Power input	5 190	W	Mass flow	790	lbs/h
E.E.R.	9.64				

Pressure switch settings

Maximum HP switch setting	328	psi(g)
Minimum LP switch setting	3	psi(g)
LP pump down setting	7	psi(g)

T 0 : Evaporating temperature at dew point

T C : Condensing temperature at dew point

Rating conditions : Superheat = 20 °F , Subcooling = 15 °F

All performance data +/- 5%

Sound power data

Sound power level	0	dB(A)
With accoustic hood	0	dB(A)

Performance data at 60 Hz, ARI rating conditions

R404A

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)								
	-20	-10	0	10	20	30	40	45	50
Cooling capacity in Btu/h									
90	20 206	27 209	35 820	46 242	58 676	73 327	90 397	99 902	110 088
100	16 621	23 277	31 390	41 160	52 789	66 477	82 427	91 313	100 840
110	13 305	19 506	27 013	36 025	46 739	59 356	74 076	82 287	91 099
120	10 266	15 903	22 696	30 839	40 528	51 963	65 339	72 818	80 856
130	-	12 471	18 437	25 599	34 150	44 284	56 196	62 880	70 082
140	-	9 214	14 235	20 294	27 580	36 283	46 595	52 414	58 708
Power input in W									
90	3 830	4 427	5 036	5 644	6 235	6 798	7 318	7 558	7 783
100	3 946	4 565	5 206	5 855	6 500	7 127	7 722	8 004	8 273
110	3 996	4 643	5 323	6 023	6 729	7 427	8 105	8 432	8 749
120	3 974	4 657	5 384	6 141	6 915	7 693	8 462	8 838	9 207
130	-	4 601	5 382	6 205	7 055	7 920	8 786	9 216	9 640
140	-	4 470	5 313	6 208	7 142	8 102	9 074	9 560	10 044
Current consumption in A									
90	13.95	15.65	17.39	19.13	20.83	22.45	23.97	24.68	25.34
100	14.28	16.05	17.89	19.76	21.62	23.45	25.20	26.04	26.85
110	14.41	16.27	18.23	20.26	22.32	24.37	26.38	27.36	28.32
120	14.33	16.31	18.42	20.62	22.90	25.20	27.49	28.62	29.74
130	-	16.13	18.41	20.82	23.33	25.90	28.50	29.80	31.09
140	-	15.72	18.19	20.83	23.60	26.47	29.40	30.88	32.35
Mass flow in lbs/h									
90	415	547	701	879	1 084	1 319	1 585	1 731	1 886
100	376	511	668	849	1 056	1 291	1 559	1 705	1 860
110	335	474	633	815	1 022	1 258	1 525	1 670	1 825
120	294	434	594	776	983	1 218	1 483	1 628	1 781
130	-	392	551	733	939	1 171	1 434	1 577	1 728
140	-	347	506	685	888	1 118	1 376	1 517	1 667
Energy Efficiency Ratio (E.E.R.)									
90	5.28	6.15	7.11	8.19	9.41	10.79	12.35	13.22	14.15
100	4.21	5.10	6.03	7.03	8.12	9.33	10.67	11.41	12.19
110	3.33	4.20	5.07	5.98	6.95	7.99	9.14	9.76	10.41
120	2.58	3.42	4.22	5.02	5.86	6.75	7.72	8.24	8.78
130	-	2.71	3.43	4.13	4.84	5.59	6.40	6.82	7.27
140	-	2.06	2.68	3.27	3.86	4.48	5.14	5.48	5.85

Nominal performance at to = 20 °F, tc = 120 °F

Cooling capacity	40 528	Btu/h	Current consumption	22.90	A
Power input	6 915	W	Mass flow	983	lbs/h
E.E.R.	5.86				

Pressure switch settings

Maximum HP switch setting	402	psi(g)
Minimum LP switch setting	3	psi(g)
LP pump down setting	13	psi(g)

T 0 : Evaporating temperature at dew point

T C : Condensing temperature at dew point

Rating conditions : Superheat = 20 °F , Subcooling = 0 °F

All performance data +/- 5%

Sound power data

Sound power level	82	dB(A)
With accoustic hood	75	dB(A)