



Datasheets

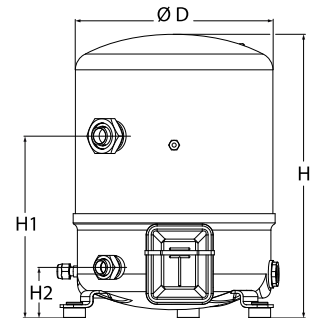
Maneurop[®] Reciprocating compressors MT / MTZ / MPZ / NTZ



General Characteristics

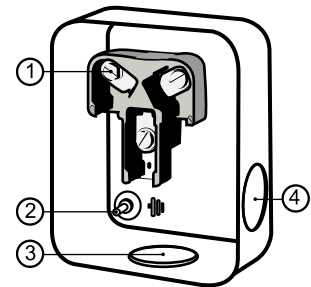
Model number (on compressor nameplate)		MTZ80HP3BVE
Code number for Singlepack*		MTZ80-3VI
Code number for Industrial pack**		MTZ80-3VM
Drawing number		8502011e
Suction and discharge connections		Rotolock
Suction connection		1-3/4 " Rotolock
Discharge connection		1-1/4 " Rotolock
Suction connection with supplied sleeve		1-1/8 " ODF
Discharge connection with supplied sleeve		3/4 " ODF
Oil sight glass		Threaded
Oil equalization connection		3/8" flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		435 psi / 115 psi
Cylinders		2
Swept volume		8.29 in3/rev
Displacement @ Nominal speed		1007 cfm @ 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

Dimensions



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

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	200-230V/3/60Hz
Voltage range	180-253 V
Winding resistance (between phases) +/- 7% at 77°F	0.49 Ω
Maximum Continuous Current (MCC)	36 A
Locked Rotor Amps (LRA)	140 A
Motor protection	Internal overload protector

Recommended Installation torques

Oil sight glass	37 ft.lbs
Power connections / Earth connection	2 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)

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

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.

POE lubricant, 160PZ, 1 liter can	7754019
POE lubricant, 160PZ, 2 liter can	7754020

Crankcase heaters
Code no.

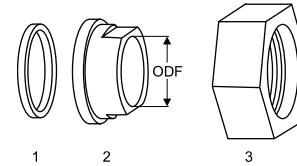
PTC heater 27W	120Z0459
Belt type crankcase heater, 65 W, 110 V, CE mark, UL	7773109
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107

Miscellaneous accessories
Code no.

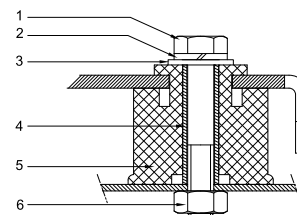
Acoustic hood for 2 cylinder compressor	7755002
Oil equalisation nut	8153127

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 96 x 115 mm, including 1 cover, 1 clamp, 1 T block connector 52 x 57 mm, 1 cable gland	8156135
T block connector 2.1" x 2.3"	8173230

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

Cooling capacity in Btu/h

100	40 460	53 701	61 257	69 481	78 406	88 067	98 497	109 729	121 799
110	36 763	49 314	56 467	64 249	72 696	81 840	91 714	102 354	113 792
120	-	44 759	51 457	58 746	66 661	75 236	84 503	94 497	105 251
130	-	40 068	46 258	53 003	60 334	68 287	76 894	86 190	96 208
140	-	-	40 903	47 050	53 745	61 024	68 919	77 464	86 694
150	-	-	-	-	46 926	53 478	60 608	68 351	76 740

Power input in W

100	4 857	5 504	5 807	6 094	6 359	6 601	6 817	7 003	7 156
110	5 033	5 749	6 093	6 423	6 736	7 030	7 301	7 546	7 762
120	-	5 962	6 351	6 730	7 097	7 447	7 779	8 088	8 373
130	-	6 134	6 573	7 007	7 432	7 845	8 242	8 621	8 979
140	-	-	6 751	7 245	7 733	8 213	8 682	9 136	9 572
150	-	-	-	-	7 991	8 543	9 088	9 623	10 144

Current consumption in A

100	17.62	19.44	20.33	21.18	22.00	22.79	23.52	24.20	24.83
110	18.08	20.11	21.11	22.10	23.06	23.99	24.89	25.75	26.56
120	-	20.71	21.84	22.97	24.09	25.19	26.27	27.31	28.32
130	-	21.21	22.50	23.79	25.08	26.36	27.63	28.88	30.11
140	-	-	23.06	24.53	26.01	27.49	28.97	30.44	31.89
150	-	-	-	-	26.85	28.55	30.25	31.96	33.66

Mass flow in lbs/h

100	526	685	774	869	972	1 083	1 201	1 327	1 462
110	504	663	752	847	950	1 060	1 177	1 303	1 437
120	-	638	726	820	922	1 031	1 147	1 271	1 404
130	-	610	696	789	889	996	1 110	1 233	1 363
140	-	-	662	753	851	955	1 067	1 187	1 315
150	-	-	-	-	807	909	1 018	1 134	1 259

Energy Efficiency Ratio (E.E.R.)

100	8.33	9.76	10.55	11.40	12.33	13.34	14.45	15.67	17.02
110	7.30	8.58	9.27	10.00	10.79	11.64	12.56	13.56	14.66
120	-	7.51	8.10	8.73	9.39	10.10	10.86	11.68	12.57
130	-	6.53	7.04	7.56	8.12	8.70	9.33	10.00	10.71
140	-	-	6.06	6.49	6.95	7.43	7.94	8.48	9.06
150	-	-	-	-	5.87	6.26	6.67	7.10	7.57

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

Cooling capacity	76 894	Btu/h	Current consumption	27.63	A
Power input	8 242	W	Mass flow	1 110	lbs/h
E.E.R.	9.33				

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 acoustic 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	28 603	38 394	49 890	63 260	70 700	78 672	87 197	96 296	105 990
110	25 950	35 331	46 327	59 108	66 220	73 842	81 994	90 699	99 976
120	23 246	32 158	42 596	54 730	61 486	68 729	76 480	84 761	93 592
130	20 505	28 890	38 713	50 143	56 512	63 347	70 669	78 497	86 853
140	-	25 542	34 692	45 359	51 314	57 712	64 574	71 921	79 774
150	-	-	-	40 393	45 905	51 837	58 211	65 047	72 368
160	-	-	-	-	-	45 737	51 593	57 891	64 650

Power input in W

100	3 613	4 107	4 596	5 068	5 294	5 511	5 718	5 914	6 096
110	3 706	4 234	4 765	5 286	5 539	5 786	6 024	6 252	6 469
120	3 774	4 341	4 918	5 493	5 776	6 054	6 326	6 589	6 843
130	3 809	4 420	5 048	5 682	5 997	6 309	6 617	6 918	7 211
140	-	4 464	5 149	5 846	6 196	6 545	6 890	7 232	7 567
150	-	-	-	5 979	6 366	6 753	7 140	7 524	7 904
160	-	-	-	-	-	6 928	7 358	7 787	8 214

Current consumption in A

100	13.61	14.78	15.98	17.19	17.80	18.40	19.00	19.58	20.16
110	13.83	15.10	16.41	17.76	18.45	19.13	19.81	20.49	21.17
120	13.99	15.36	16.81	18.31	19.07	19.85	20.62	21.40	22.18
130	14.07	15.56	17.15	18.82	19.67	20.54	21.41	22.30	23.19
140	-	15.69	17.44	19.28	20.23	21.20	22.18	23.17	24.18
150	-	-	-	19.68	20.74	21.81	22.91	24.02	25.15
160	-	-	-	-	-	22.37	23.59	24.83	26.08

Mass flow in lbs/h

100	417	547	695	863	955	1 052	1 155	1 264	1 379
110	398	529	678	847	938	1 036	1 138	1 247	1 362
120	377	509	658	826	918	1 015	1 117	1 225	1 339
130	354	485	634	802	893	989	1 091	1 198	1 311
140	-	458	606	773	863	958	1 059	1 165	1 277
150	-	-	-	738	827	921	1 021	1 125	1 236
160	-	-	-	-	-	878	976	1 079	1 187

Energy Efficiency Ratio (E.E.R.)

100	7.92	9.35	10.86	12.48	13.35	14.27	15.25	16.28	17.39
110	7.00	8.34	9.72	11.18	11.95	12.76	13.61	14.51	15.45
120	6.16	7.41	8.66	9.96	10.65	11.35	12.09	12.86	13.68
130	5.38	6.54	7.67	8.82	9.42	10.04	10.68	11.35	12.04
140	-	5.72	6.74	7.76	8.28	8.82	9.37	9.95	10.54
150	-	-	-	6.76	7.21	7.68	8.15	8.65	9.16
160	-	-	-	-	-	6.60	7.01	7.43	7.87

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

Cooling capacity	56 512	Btu/h	Current consumption	19.67	A
Power input	5 997	W	Mass flow	893	lbs/h
E.E.R.	9.42				

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 acoustic hood	0	dB(A)

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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

Cooling capacity in Btu/h

90	22 829	30 699	40 327	51 922	65 693	81 849	100 599	111 013	122 153
100	19 027	26 507	35 577	46 442	59 310	74 389	91 886	101 606	112 009
110	15 461	22 432	30 823	40 838	52 682	66 562	82 683	91 648	101 251
120	12 145	18 483	26 073	35 116	45 813	58 369	72 988	81 134	89 873
130	-	14 669	21 333	29 278	38 701	49 804	62 787	70 046	77 851
140	-	10 996	16 602	23 314	31 325	40 831	52 029	58 324	65 117

Power input in W

90	4 417	5 141	5 879	6 614	7 329	8 007	8 632	8 919	9 187
100	4 519	5 267	6 041	6 824	7 600	8 351	9 062	9 396	9 714
110	4 550	5 330	6 149	6 989	7 835	8 668	9 472	9 858	10 231
120	4 510	5 331	6 203	7 109	8 032	8 956	9 863	10 305	10 737
130	-	5 269	6 203	7 183	8 193	9 216	10 234	10 737	11 232
140	-	5 143	6 148	7 211	8 316	9 446	10 585	11 152	11 715

Current consumption in A

90	15.70	17.56	19.47	21.41	23.35	25.25	27.07	27.95	28.80
100	15.98	17.91	19.93	22.01	24.12	26.23	28.31	29.32	30.31
110	16.07	18.09	20.24	22.49	24.80	27.15	29.50	30.66	31.81
120	15.96	18.10	20.40	22.84	25.39	28.00	30.64	31.97	33.29
130	-	17.93	20.41	23.07	25.87	28.77	31.74	33.24	34.74
140	-	17.57	20.26	23.16	26.24	29.45	32.77	34.46	36.16

Mass flow in lbs/h

90	471	619	790	988	1 214	1 472	1 764	1 924	2 093
100	430	582	757	958	1 186	1 445	1 737	1 897	2 065
110	389	545	722	923	1 152	1 411	1 702	1 860	2 028
120	348	504	682	884	1 112	1 368	1 657	1 814	1 980
130	-	461	638	838	1 064	1 318	1 602	1 757	1 920
140	-	414	589	787	1 008	1 257	1 537	1 688	1 848

Energy Efficiency Ratio (E.E.R.)

90	5.17	5.97	6.86	7.85	8.96	10.22	11.65	12.45	13.30
100	4.21	5.03	5.89	6.81	7.80	8.91	10.14	10.81	11.53
110	3.40	4.21	5.01	5.84	6.72	7.68	8.73	9.30	9.90
120	2.69	3.47	4.20	4.94	5.70	6.52	7.40	7.87	8.37
130	-	2.78	3.44	4.08	4.72	5.40	6.13	6.52	6.93
140	-	2.14	2.70	3.23	3.77	4.32	4.92	5.23	5.56

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

Cooling capacity	45 813	Btu/h	Current consumption	25.39	A
Power input	8 032	W	Mass flow	1 112	lbs/h
E.E.R.	5.70				

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	84	dB(A)
With acoustic hood	78	dB(A)