

## Compressors

# Standard Reciprocating Compressor Packages

M&M Carnot reciprocating compressor packages use heavy-duty compressors designed for use in all types of industrial refrigeration and heat pump applications. These reciprocating compressors are suitable for Ammonia and CO<sub>2</sub>.

### Customer Benefits:

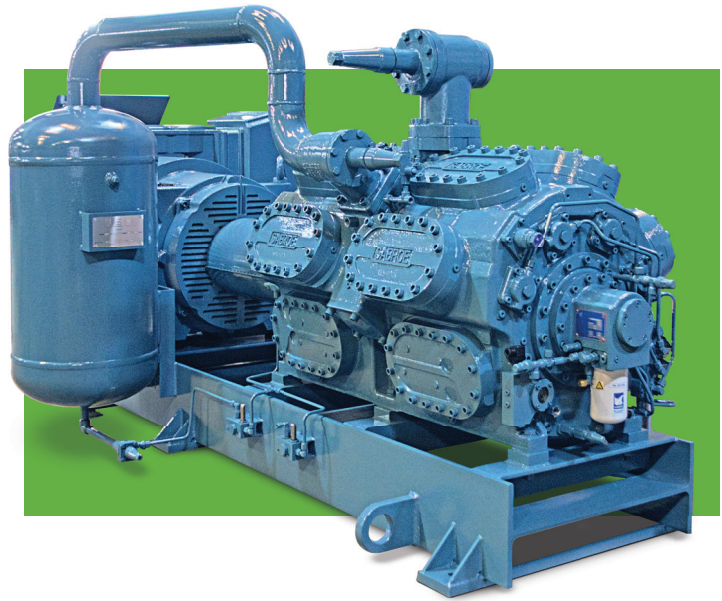
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- Exceptional performance at full and part load conditions ensures lowest operating cost
- Optional variable frequency drive (VFD) for higher efficiency gains
- Low oil carry-over separator design reduces the need for larger, more costly separators
- Large range of sizes available to meet all application sizes
- Comes standard with most capable reciprocating compressor control panel

### Design Features:

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- Suction and discharge stop valves
- Suction strainer
- Electric oil heater
- Oil pump and filter
- Internal relief valve
- Solenoid valves for capacity control
- Packaged on steel base frame with isolation mounts
- Motor mounted with direct drive flexible coupling and OSHA-approved coupling guard



### Available Reciprocating Compressor Package Options:

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- High pressure ammonia compressor packages available for heat pumps to produce water temps from 140°F up to 200°F
- High pressure CO<sub>2</sub> compressor packages available for subcritical CO<sub>2</sub> applications with condensing from 10°F to 65°F
- Hot gas defrost options available for CO<sub>2</sub> applications (CO<sub>2</sub>)
- Alternative compressor motor enclosures
- Numerous compressor motor starter configurations
- Coalescing oil separator
- Refrigerant cooling
- Discharge stop/check valves (ship loose)
- Belt drive

### Reciprocating Controller:

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- Built on latest V4 hardware to ensure sustainability for years to come
- Updates available using industrial grade USB drive
- Easy to use HMI and menu structure, with trend logs and graphical display of compressor status
- Retrofits with most reciprocating compressor controls to increase energy efficiency, reliability, maintainability and functionality.
- Industry standard communications for integration with the outside world (Modbus RTU or TCP)

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The natural solution.

## Two-Stage Compressors



| M&M Model No. | Rating R717 -40°F/+95°F |     | Approximate Dimensions<br>(Excluding Intercooler) LxWxH | Approximate Weight Without<br>Motor (Lbs) |
|---------------|-------------------------|-----|---|---|
|               | TR                      | BHP |   |   |
| TCMO 28       | 7.1                     | 21  | 69" x 30" x 32"   | 1260                                      |
| TSMC 108 S    | 17                      | 50  | 89" x 40" x 45"   | 2340                                      |
| TSMC 108 L    | 23                      | 65  | 89" x 40" x 45"   | 2340                                      |
| TSMC 108 E    | 24                      | 68  | 89" x 40" x 45"   | 2340                                      |
| TSMC 116 S    | 35                      | 93  | 112" x 47" x 52"  | 4190                                      |
| TSMC 116 L    | 46                      | 123 | 112" x 47" x 52"  | 4190                                      |
| TSMC 116 E    | 48                      | 136 | 112" x 47" x 52"  | 4190                                      |

Ratings are based on 10°F liquid subcooling. TCMO at 1800 rpm. TSMC S and L at 1800 rpm, TSMC E at 1500 rpm

Minimum/Maximum Speeds: TCMO 700/1800 rpm, TSMC S and L 500/1800 rpm,

TSMC E 500/1500 rpm

Design Pressure: 406 psig

Maximum Differential Pressure: 363 psid

## Single-Stage Compressors

| M&M Model No. | Rating R717n -40°F/+15°F |     | Rating R717 +15°F/+95°F |     | Approximate Dimensions<br>LxWxH | Approximate Weight<br>Without Motor (Lbs) |
|---------------|--------------------------|-----|-------------------------|-----|---------------------------------|---|
|               | TR                       | BHP | TR                      | BHP |                                 |   |
| CMO 24        | 4.7                      | 6.4 | 19                      | 24  | 64" x 34" x 39"                 | 950                                       |
| CMO 26        | 7.1                      | 9.7 | 28                      | 36  | 65" x 34" x 39"                 | 1040                                      |
| CMO 28        | 9.4                      | 13  | 37                      | 47  | 66" x 34" x 39"                 | 1100                                      |
| SMC 104 S     | 11                       | 15  | 44                      | 55  | 84" x 39" x 43"                 | 1830                                      |
| SMC 104 L     | 15                       | 20  | 57                      | 70  | 84" x 39" x 43"                 | 1830                                      |
| SMC 104 E     | 16                       | 21  | 60                      | 72  | 84" x 39" x 43"                 | 1830                                      |
| SMC 106 S     | 17                       | 21  | 66                      | 81  | 90" x 39" x 45"                 | 2040                                      |
| SMC 106 L     | 22                       | 29  | 86                      | 104 | 90" x 39" x 45"                 | 2040                                      |
| SMC 106 E     | 24                       | 31  | 90                      | 108 | 92" x 40" x 44"                 | 2180                                      |
| SMC 108 S     | 22                       | 28  | 89                      | 107 | 90" x 39" x 45"                 | 2040                                      |
| SMC 108 L     | 30                       | 37  | 114                     | 137 | 92" x 40" x 44"                 | 2180                                      |
| SMC 108 E     | 32                       | 43  | 121                     | 145 | 112" x 43" x 53"                | 3660                                      |
| SMC 112 S     | 34                       | 39  | 133                     | 158 | 92" x 40" x 44"                 | 2180                                      |
| SMC 112 L     | 45                       | 54  | 172                     | 203 | 112" x 43" x 53"                | 3660                                      |
| SMC 112 E     | 49                       | 64  | 181                     | 217 | 114" x 45" x 53"                | 3880                                      |
| SMC 116 S     | 45                       | 52  | 177                     | 210 | 112" x 43" x 53"                | 3660                                      |
| SMC 116 L     | 60                       | 70  | 229                     | 270 | 114" x 45" x 53"                | 3880                                      |
| SMC 116 E     | 65                       | 85  | 241                     | 289 | 114" x 45" x 53"                | 3880                                      |

Ratings are based on 10°F liquid subcooling. CMO at 1800 rpm. SMC S and L at 1800 rpm, SMC E at 1500 rpm

Minimum/Maximum Speeds: CMO 700/1800 rpm, SMC S and L 500/1800 rpm, SMC E 500/1500 rpm

Design Pressure: CMO and SMC 406 psig

Maximum Differential Pressure: CMO and SMC 305 psid

## High Pressure Compressors



| M&M Model No. | Heating Rating R717 |     |              |     | Cooling Rating R744 |     | Defrosting Rating R744 |     |             |     | Approximate Dimensions LxWxH | Approximate Weight Without Motor (Lbs) |
|---------------|---------------------|-----|--------------|-----|---------------------|-----|------------------------|-----|-------------|-----|------------------------------|--|
|               | +95°F/+165°F        |     | +95°F/+194°F |     | -55°F/+20°F         |     | +5°F/+46°F             |     | -40°F/+50°F |     |                              |  |
|               | MBH                 | BHP | MBH          | BHP | TR                  | BHP | MBH                    | BHP | MBH         | BHP |                              |  |
| HPO 24        | 1119                | 65  | N/A          | N/A | 35                  | 54  | 1551                   | 75  | N/A         | N/A | 72" x 34" x 39"              | 1100                                   |
| HPO 26        | 1678                | 98  | N/A          | N/A | 53                  | 80  | 2327                   | 113 | N/A         | N/A | 72" x 37" x 39"              | 1200                                   |
| HPO 28        | 2237                | 130 | N/A          | N/A | 71                  | 107 | 3103                   | 150 | N/A         | N/A | 72" x 37" x 39"              | 1300                                   |
| HPC 104S      | 2638                | 156 | N/A          | N/A | 69                  | 102 | N/A                    | N/A | N/A         | N/A | 100" x 52" x 48"             | 3000                                   |
| HPC 106S      | 3953                | 233 | N/A          | N/A | 104                 | 150 | N/A                    | N/A | N/A         | N/A | 102" x 53" x 50"             | 3500                                   |
| HPC 108S      | 5269                | 309 | N/A          | N/A | 138                 | 199 | N/A                    | N/A | N/A         | N/A | 103" x 59" x 49"             | 3700                                   |
| HPC 112S      | 7898                | 462 | N/A          | N/A | 208                 | 289 | N/A                    | N/A | N/A         | N/A | 137" x 60" x 57"             | 5500                                   |
| HPC 116S      | N/A                 | N/A | N/A          | N/A | 277                 | 373 | N/A                    | N/A | N/A         | N/A | 139" x 62" x 59"             | 5900                                   |
| HPX 704       | 1282                | 76  | 1205         | 105 | 41                  | 61  | N/A                    | N/A | 801         | 91  | 101" x 48" x 48"             | 2700                                   |
| HPX 706       | 1923                | 114 | 1807         | 157 | 61                  | 92  | N/A                    | N/A | 1202        | 136 | 102" x 50" x 50"             | 3200                                   |
| HPX 708       | 2564                | 152 | 2409         | 210 | 81                  | 123 | N/A                    | N/A | 1603        | 182 | 103" x 50" x 50"             | 3300                                   |
| HPX 712       | 3846                | 228 | 3614         | 314 | 121                 | 184 | N/A                    | N/A | 2404        | 272 | 137" x 57" x 57"             | 5300                                   |
| HPX 716       | 5128                | 304 | 4819         | 419 | 162                 | 246 | N/A                    | N/A | 3205        | 363 | 139" x 54" x 57"             | 5700                                   |

Ratings are based on 10°F liquid subcooling. HPO at 1800 rpm. HPC at 1800 rpm for R717 and 1500 rpm for R744. HPX at 1800 rpm.

Minimum/Maximum Speeds: HPO 700/1800 rpm, HPC 500/1800 rpm (1500 rpm max for R744), HPX 500/1800 rpm

Design Pressure: HPO 725 psig, HPC 580 psig, HPX 870 psig

Maximum Differential Pressure: HPO/HPC 363 psid, HPX 580 psid