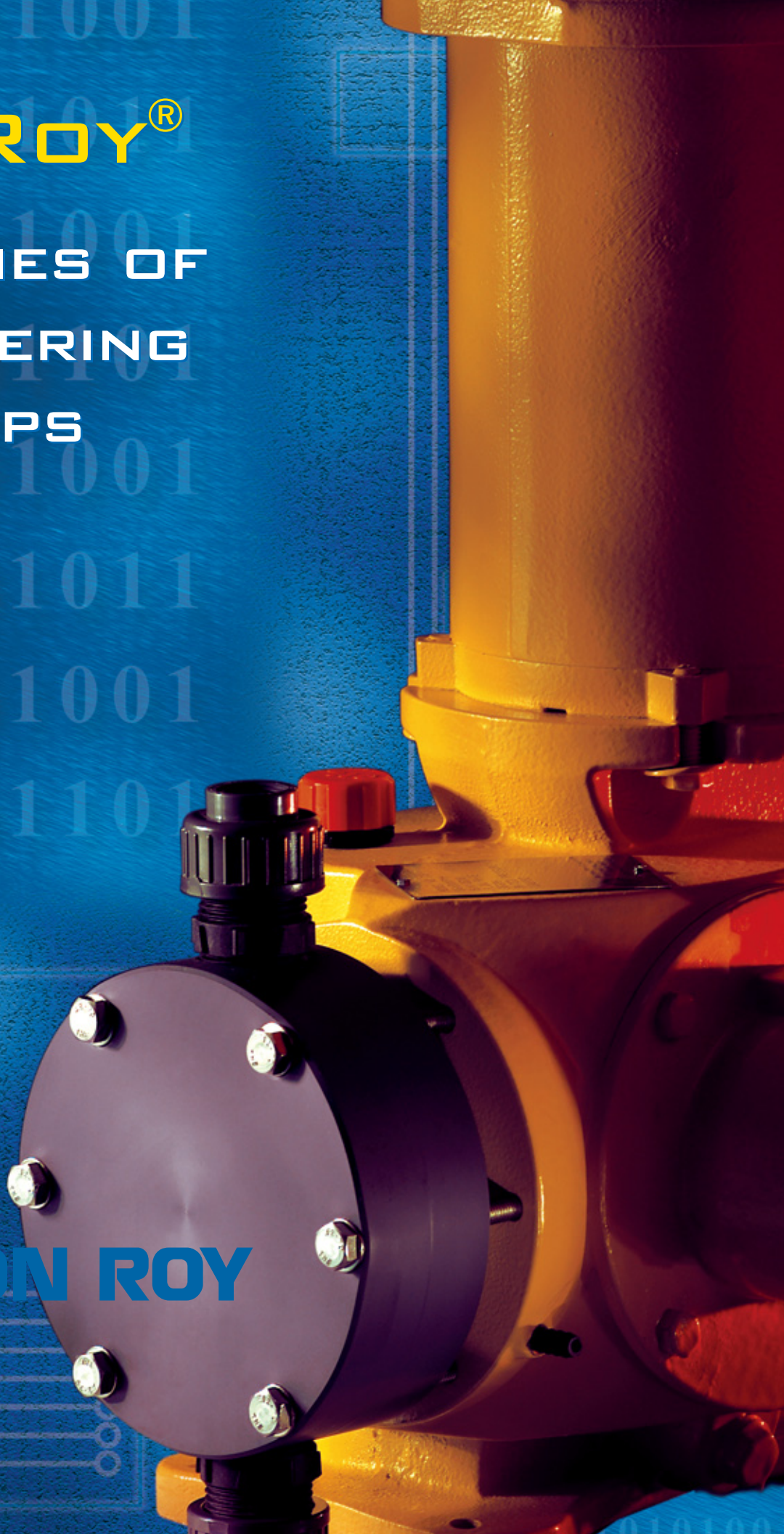


MACROY[®]

**SERIES OF
METERING
PUMPS**



MILTON ROY

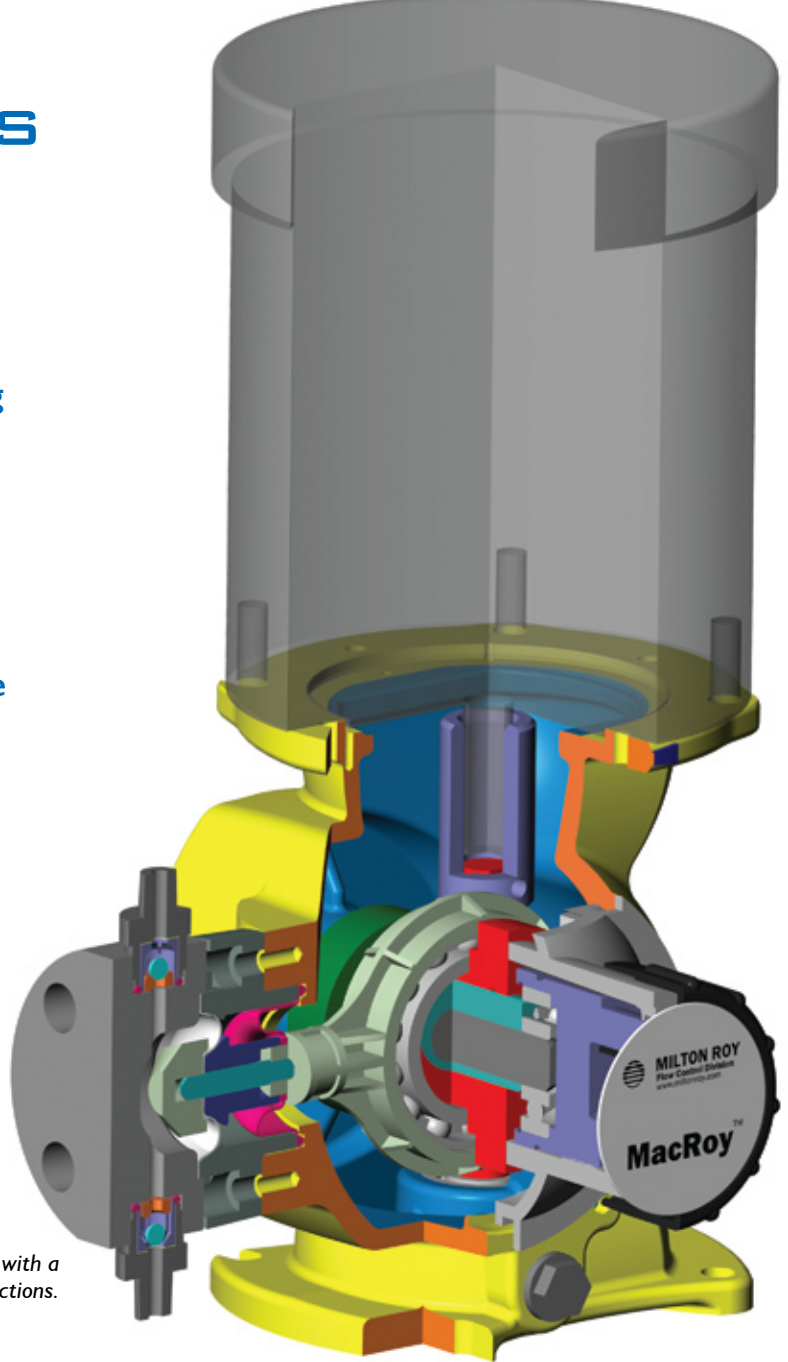


MACROY® SERIES

The MacRoy® Series of metering pumps offer traditional Milton Roy reliability with outstanding value for applications up to 175 psi (12 Bar).

Milton Roy has combined its heavy-duty industrial drive technology with state of the art design and manufacturing processes in creating the MacRoy® Series metering pump. This family of Mechanically Actuated Diaphragm metering pumps is designed for durability and cost effectiveness.

Illustrated to the right is a D4 with a PVC liquid end, featuring NPT connections.

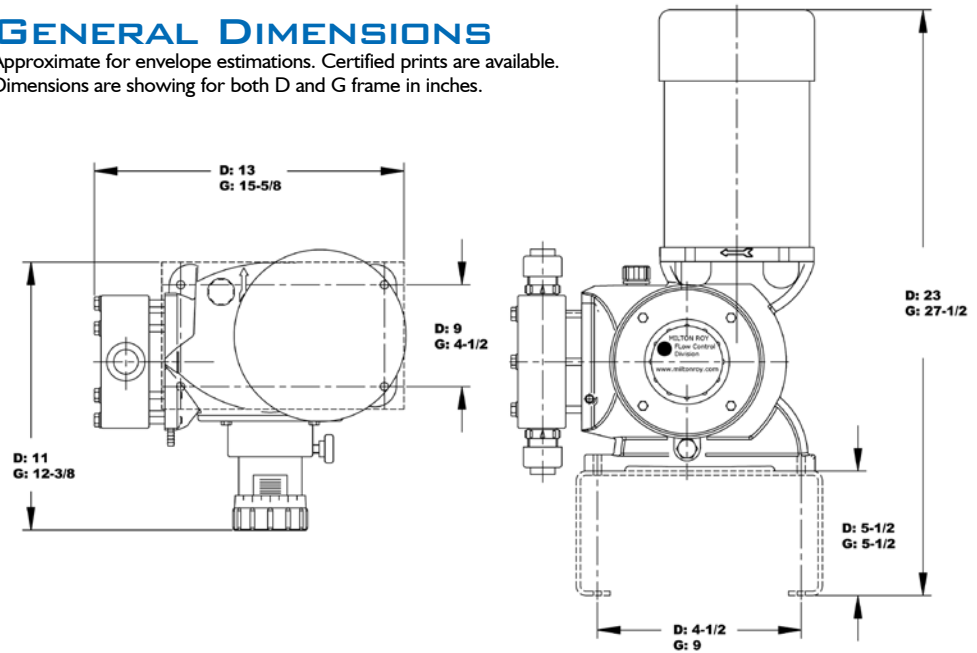


MACROY FEATURES AND SPECIFICATIONS

- Flow Rates up to 312 GPH (1180 Liters/hr)
- Mechanically Actuated Diaphragm liquid end eliminates flow restrictions
- Durable, metallic housing designed to withstand tough environments
- High efficiency motors minimize heat buildup
- A robust, metallic, worm gear drive coupled with the industrial duty variable eccentric stroke adjustment mechanism yields a 10 to 1 turn down ratio with smooth velocity profiles as compared to the pulsating flows of solenoid pumps or lost motion designs
- Smooth running, low friction bronze gears
- The PTFE, high performance, diaphragm design increases diaphragm life by eliminating the stresses inherent in most designs
- Reliable low flow performance is a result of high performance check valves with machined seats
- All gear components operate in an oil bath for long life
- Precision stroke adjustment can be operated while the pump is running or stopped
- Steady State Accuracy – $\pm 1\%$ of full capacity over the 10 to 1 turndown ratio
- Liquid Temperature Range – 14° to 122° F (-14° to 50° C)
- Coating – 2 part epoxy
- Average Weight with motor – Frame D: 45 lbs (20 kgs)
Frame G: 105 lbs (48 kgs)

GENERAL DIMENSIONS

Approximate for envelope estimations. Certified prints are available.
Dimensions are showing for both D and G frame in inches.



NPT CONNECTION SIZES

| FRAME | LIQUID END SIZE | CONNECTION PORT SIZE FOR THE FOLLOWING MATERIALS | | | |
|-------|-----------------------|--|--------------|-----------|-----------|
| | | BLACK PP, PVC, PVDF & ACRYLIC | APPLICATIONS | | 316 SS |
| D | 2 | 1/4" Male | 1/4" Male | 1/4" Male | 1/4" Male |
| | 4 | | 1/2" Male | | 1/2" Male |
| | 7 & 8 | 1/2" Female | | | |
| G | 5 | 1/2" Female | | | |
| | 6 & 7 | 1" Female | 1" Male | 1" Female | 1" Male |

MATERIALS OF CONSTRUCTION

| MATERIAL | FRAME | LIQUID END SIZE | HEAD | CHECK VALVE | SEALS | SEATS | BALLS | DIAPHRAGM |
|------------------------|---------|-----------------------|----------|----------------|-------|-----------|---------|-----------|
| Black Polypropylene | D | 2 | Black PP | PVDF | Aflas | Alloy C22 | Ceramic | PTFE |
| | | 4 | | | | PTFE | | |
| | | 7 & 8 | | | Viton | PVC | | |
| | G | 5 | | | | | | |
| | 6 & 7 | PP | | | | | | |
| PVC | D | 2 | PVC | PVDF | Aflas | Alloy C22 | | |
| | | 4 | | | | PTFE | | |
| | | 7 & 8 | | | Viton | PVC | | |
| | G | 5 | | | | | | |
| | 6 & 7 | PVC | | | | | | |
| PVDF | D | 2 | PVDF | PVDF | Aflas | Alloy C22 | | |
| | | 4 | | | | PTFE | | |
| | | 7 & 8 | | | PTFE | PVDF | | |
| | G | All | | | | | | |
| | Acrylic | D | | | 2 | Acrylic | PVDF | Aflas |
| 4 | | | PTFE | | | | | |
| 7 & 8 | | | Viton | PVC | | | | |
| G | | 5 | | | | | | |
| 6 & 7 | | PVC | | | | | | |
| Polymer Applications | D & G | All | PVC | PVC | Viton | 316 SS | 316 SS | |
| Slurry Applications | D & G | All | | 316 SS | Aflas | CA 20 | CA 20 | |
| H2SO4 Applications | D & G | All | | PVDF | PTFE | 316 SS | 316 SS | |
| 316 SS | D | 2 | 316 SS | 316 SS | PTFE | 316 SS | 316 SS | |
| | | 4 | | | | PTFE | | |
| | | 7 & 8 | | | Viton | 316 SS | | |
| | G | 5 | | | | | | |
| | 6 & 7 | PTFE | | | | | | |

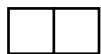
PUMP SELECTION BY CAPACITY AND PRESSURE

| PUMP SELECTION | | | MAXIMUM RATINGS | | | | | | |
|----------------|------------|-----------|------------------|----------|------------------|----------|----------|-----|----------------------------------|
| MACROY | | | CAPACITY @ 60 HZ | | CAPACITY @ 50 HZ | | PRESSURE | | |
| FRAME | LIQUID END | GEAR CODE | (1725 RPM) | | (1425 RPM) | | PSI | | |
| | | | GPH | LITER/HR | GPH | LITER/HR | BAR | | |
| D | 2 | 1 | 0.18 | 0.7 | 0.15 | 0.6 | 175 | 12 | Ratings based on 1/4 HP (.25 kW) |
| | | 2 | 0.35 | 1.3 | 0.29 | 1.1 | | | |
| | | 6 | 0.48 | 1.8 | 0.40 | 1.5 | | | |
| | | 3 | 0.7 | 2.6 | 0.58 | 2.2 | | | |
| | 4 | 1 | 3.0 | 11.4 | 2.5 | 9.5 | 150 | 10 | |
| | | 2 | 6.6 | 25 | 5.5 | 21 | | | |
| | | 6 | 10 | 38 | 6.9 | 26 | | | |
| | | 3 | 14.4 | 45 | 12 | 45 | | | |
| | 7 | 1 | 13 | 99 | 10 | 39 | 100 | 7 | |
| | | 2 | 25 | 95 | 21 | 79 | | | |
| | | 6 | 34 | 129 | 28 | 106 | | | |
| | | 3 | 50 | 189 | 42 | 159 | | | |
| | 8 | 1 | 31 | 117 | 26 | 98 | 75 | 5 | |
| | | 2 | 57 | 216 | 47 | 178 | | | |
| | | 6 | 87 | 329 | 72 | 273 | | | |
| | | 3 | 127 | 481 | 106 | 401 | | | |
| G | 5 | 1 | 26 | 98.4 | 22 | 82 | 150 | 10 | Ratings based on 1 HP (.75 kW) |
| | | 2 | 53 | 200.6 | 44 | 167 | | | |
| | | 6 | 75 | 283.9 | 62 | 237 | | | |
| | | 3 | 106 | 401.2 | 88 | 334 | | | |
| | | 8 | — | — | 110 | 416 | | | |
| | 6 | 1 | 37 | 140.0 | 31 | 117 | 100 | 7 | |
| | | 2 | 74 | 280.1 | 62 | 233 | | | |
| | | 6 | 104 | 393.6 | 87 | 328 | | | |
| | | 3 | 147 | 556.4 | 122 | 464 | | | |
| | | 8 | — | — | 154 | 583 | | | |
| | 7 | 1 | 75 | 283.9 | 62 | 237 | 50 | 3.5 | |
| | | 2 | 150 | 567.8 | 125 | 473 | | | |
| | | 6 | 213 | 806.2 | 177 | 672 | | | |
| | | 3 | 300 | 1135.5 | 250 | 946 | | | |
| | | 8 | — | — | 312 | 1181 | | | |

MacRoy G with PVC liquid end and manual micrometer stroke adjustment.



MACROY D & G PRODUCT CODE



Frame and
Liquid End



Gear
Ratio



Motor &/
or Mount



Liquid
End
Material



Connections



Capacity
Control



Double
Diaphragm



Base



Stroke
Counting

Frame and Liquid End

D Frame

D2

D4

D7

D8

G Frame

G5

G6

G7

Gear Ratio Code

1 = 43 SPM

2 = 86 SPM

6 = 120 SPM

3 = 173 SPM

8 = 180 SPM @

1450 RPM

Motor &/or Mount

8 = 1 ph 60 Hz 115/230 VAC

1725 RPM TE

J = 3 ph 60 Hz 230/460 VAC

1725 RPM TE

9 = 1 ph 50 Hz 115/230 VAC

1450 RPM TE

L = 3 ph 50 Hz 220/380 VAC

1450 RPM TE

M = IEC 71, F130 V1 Flange

Mount Less Motor

N = IEC 80, F165 V1 Flange

Mount Less Motor

(G Frame only)

X = Nema 56C Mount

Less Motor

Liquid End Material

2 = PVDF

4 = Black Polypropylene
(UV Stable)

7 = 316 ss

8 = PVC

A = Acrylic

P = Polymer Service

L = Slurry Applications

N = H₂SO₄ Applications

Connections

P = NPT

T = Tubing

B = Bleed Valve NPT

C = Bleed Valve Tubing

Capacity Control

M4 = Manual

E1 = 4-20, Nema 4, 115V

E2 = 4-20, Nema 4, 230V

EA = 4-20, Ex Prf, 115V

EB = 4-20, Ex Prf, 230V

Double Diaphragm

N = None

D = Double Diaphragm

3 = Double Diaphragm w/
Gauge

4 = Double Diaphragm
w/Nema 4

Rupture Detection

7 = Double Diaphragm
w/Nema 7

Rupture Detection

Base Code

N = None

I = Simplex Optional Base

Stroke Counting

N = None

I = Stroke Counting
(20 to 250 VAC/DC)

The photograph to the right is a D4 with a
PVC liquid end, featuring NPT style check valves.



MACROY, DEPENDABLE AND VERSATILE

The MacRoy™ series of pumps has proven its exceptional value over years of solid performance in a wide range of applications and industries. Water treatment chemicals, process additives, acids, out-gassing fluids, slurries, and many more applications are all handled with ease by this robust metering pump design. Your local representative can assist you in applying the MacRoy™ metering pump to your process.



ACCESSORIES



Safety Valves

Protect pump and piping from overpressure.



Back Pressure Valves

Provide smooth, artificial pressure in pump discharge line for atmospheric or low pressure systems to ensure pumping accuracy.

Pulsation Dampeners

Minimize pressure and flow surges in the pump discharge. When applied to pump inlet, more favorable NPSH conditions result.



Calibration Columns

Allow periodic verification of pump performance during routine checks or after system maintenance.

