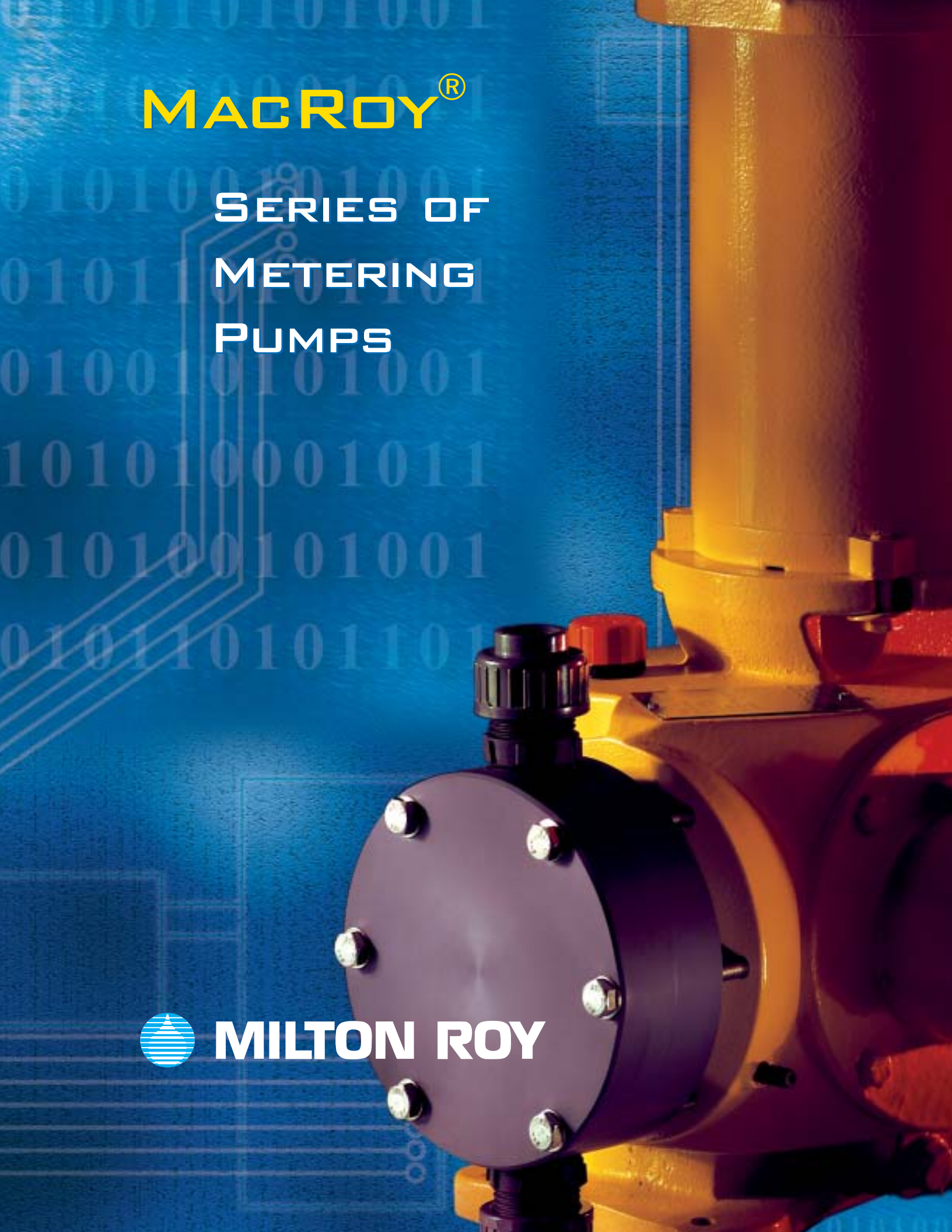
MacRoy®

Series of Metering Pumps

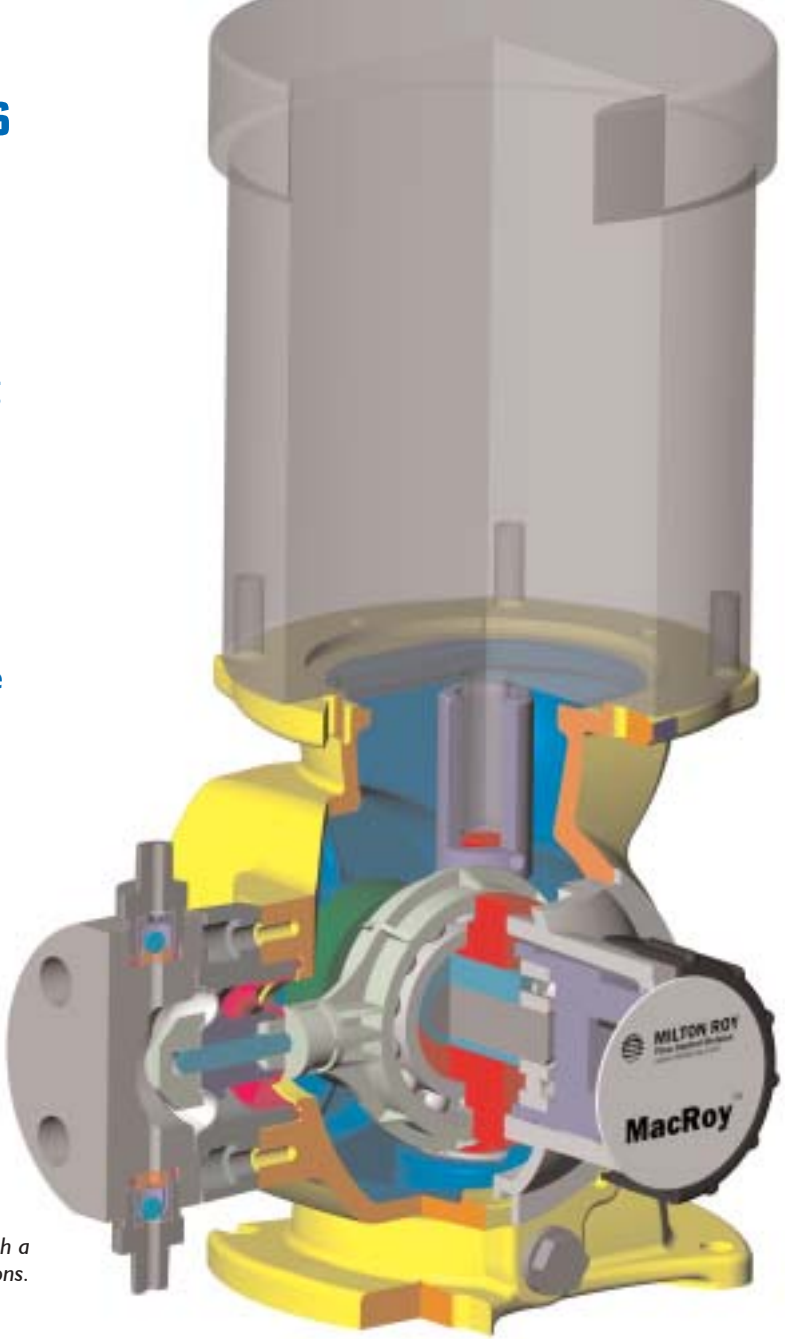


MILTON ROY

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 — ± 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 — Frame D: 45 lbs (20 kgs)
  Frame G: 105 lbs (48 kgs)

Pump Selection by Capacity and Pressure

Pump Selection MacRoy			Maximum Ratings						
			Capacity @ 60 Hz (1725 RPM)		Capacity @ 50 Hz (1425 RPM)		Pressure		
Frame	Liquid End	Gear Code	GPH	Liter/Hr	GPH	Liter/Hr	PSI	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	6.0	23	5.0	19			
		6	8.3	31.4	6.9	26			
		3	12	45	10	38			
	7	1	12.5	47	10.4	39	100	7	
		2	25	95	21	79			
		6	34	129	28	107			
		3	50	189	42	158			
	8	1	28	106	23	88	75	5	
		2	57	215	47	180			
		6	79	299	66	249			
		3	115	435	96	363			
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 = H_2SO_4 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
- 1 = Simplex Optional Base

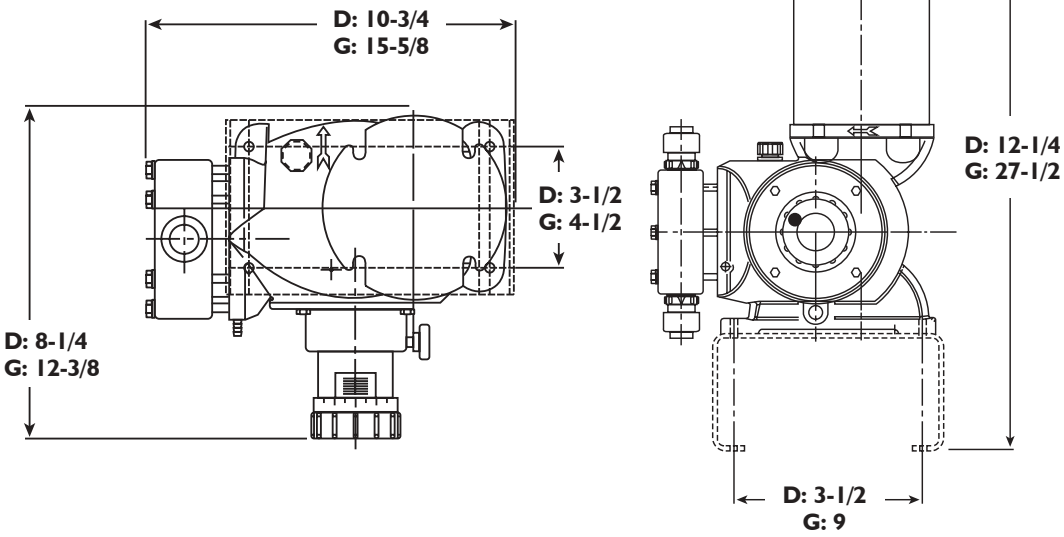
Stroke Counting

- N = None
- 1 = 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.

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
			Polymer	Slurry	HSO4	
D	2	1/4" Male	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					
	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 Polyproylene	D	2	Black PP	PVDF	Aflas	Alloy C22	Ceramic	PTFE
		4				PTFE		
		7 & 8			Viton	PVDF		
	G	5						
		6 & 7		PP		Polyethylene		
PVC	D	2	PVC	PVDF	Aflas	Alloy C22		
		4				PTFE		
		7 & 8			Viton	PVDF		
	G	5						
		6 & 7		PVC		Polyethylene		
PVDF	D	2	PVDF	PVDF	Aflas	Alloy C22		
		4				PTFE		
		7 & 8			PTFE	PVDF		
	G	All						
Acrylic	D	2	Acrylic	PVDF	Aflas	Alloy C22		
		4				PTFE		
		7 & 8			Viton	PVDF		
	G	5						
		6 & 7		PVC		Polyethylene		
Polymer Applications	D & G	All	PVC	PVC	Viton	316 SS	316 SS	
Slurry Applications	D & G	All		316 SS				
H2SO4 Applications	D & G	All		PVDF	Aflas	CA 20	CA 20	
316 SS	D	2	316 SS	316 SS	316 SS	316 SS	316 SS	
		4				PTFE		
		7 & 8			Viton	316 SS		
	G	5						
		6 & 7			PTFE			

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.

MILTON ROY

Milton Roy Company

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