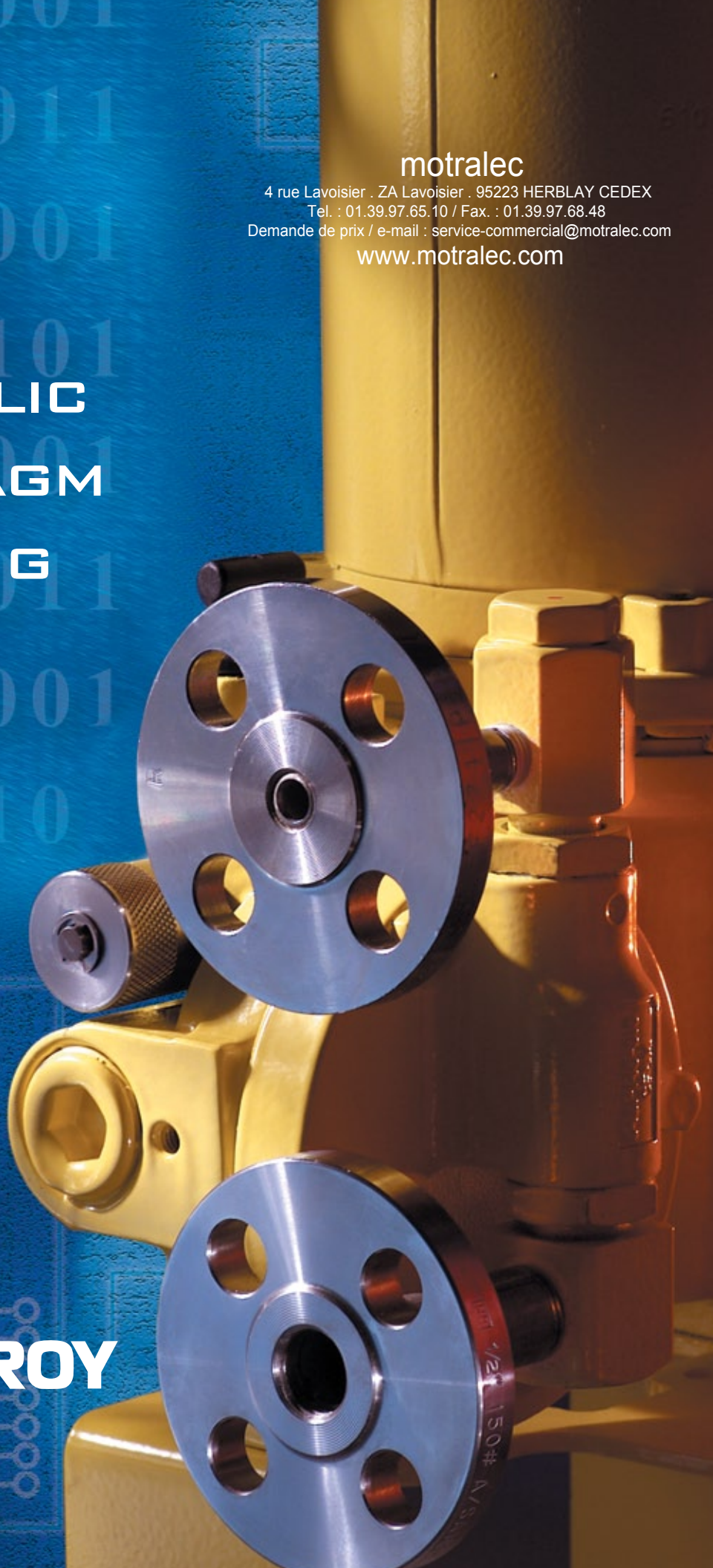


mRoy™

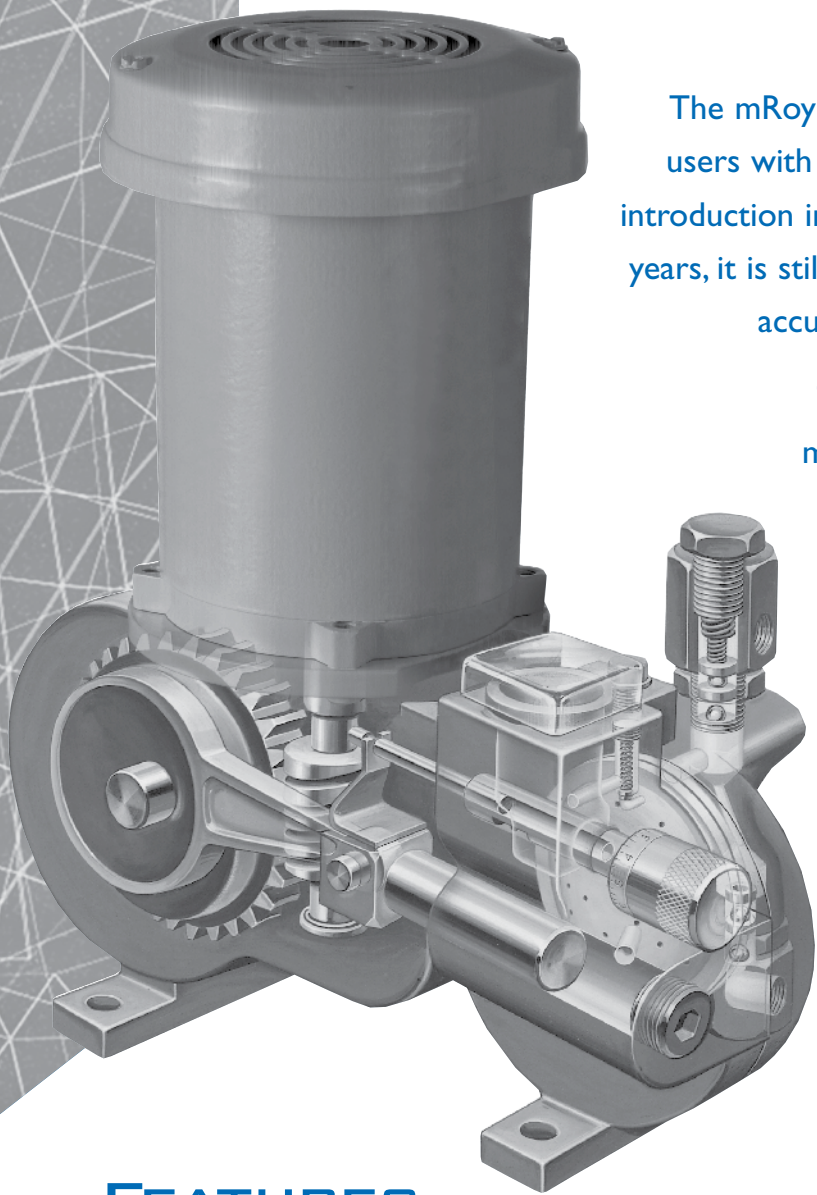
motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48
Demande de prix / e-mail : service-commercial@motralec.com
www.motralec.com

**SERIES
HYDRAULIC
DIAPHRAGM
METERING
PUMPS**



MILTON ROY



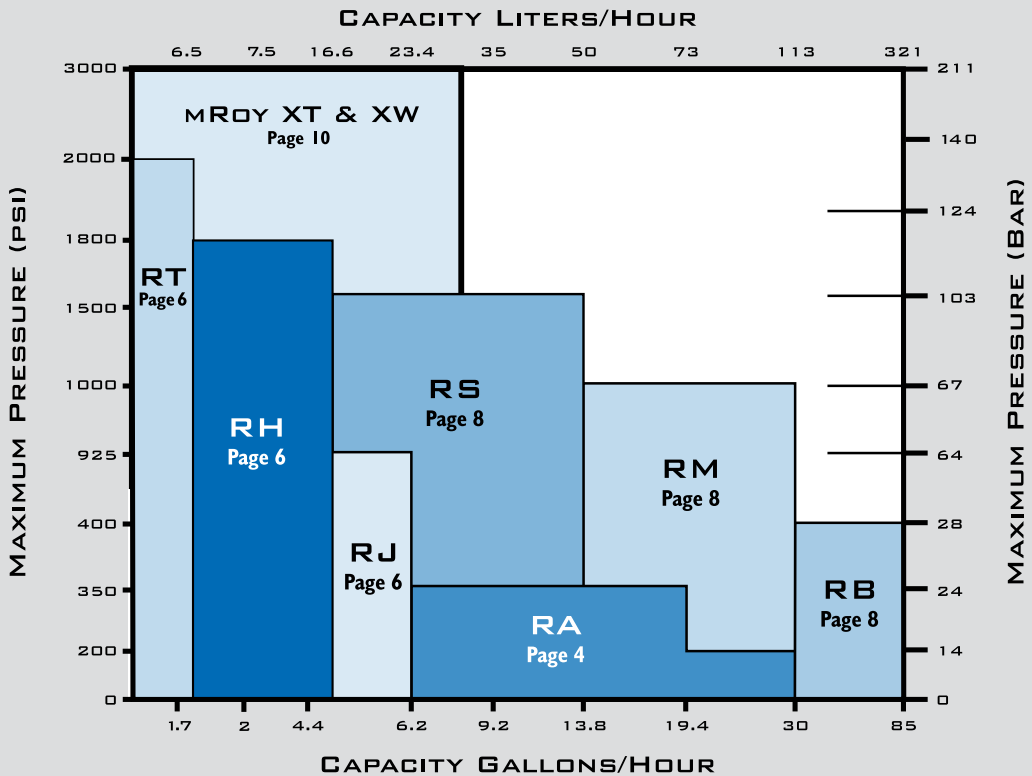
The mRoy series of metering pumps have provided users with high performance and reliability since its introduction in 1962. Enhanced and improved over the years, it is still the industry standard for durability and accuracy in the most demanding applications.

The mRoy is available in several different model series to meet the demands of any application with optimum performance and efficiency.

FEATURES

- ▶ Electric, hydraulic or air motor drives ensure that your mRoy will operate in all environments and power supplies
- ▶ Dust-tight cast iron drive housing provides a rugged enclosure that will operate in all plant and field environments
- ▶ Worm & pinion drive produces a smooth, continuous mechanical motion that eliminates “wear and tear” of mechanical “lost motion” designs
- ▶ Oil bath lubrication eliminates the continuous maintenance of packed grease, or auxiliary oil lubrication systems
- ▶ Tapered roller-bearing pinion shaft support maintains pinion gear and motor shaft alignment
- ▶ One piece connecting rod with integral bearing surfaces
- ▶ One piece floating cross head/plunger assembly designed to eliminate plunger seals
- ▶ Micrometer capacity adjustment for accurate output flow control
- ▶ Double or single ball high-performance cartridge-type check valves provide positive, repeatable sealing on every pump stroke
- ▶ Metallic and non-metallic liquid end materials for corrosion resistance in any chemical application
- ▶ Solid PTFE diaphragm provides seal-less design and eliminates plunger packing maintenance
- ▶ Automatic hydraulic system bypass maintains accurate balance between hydraulic and process flow
- ▶ Internal hydraulic pressure relief valve automatically protects the hydraulic system from over pressure conditions
- ▶ Front mount oil fill and sight provide convenient location for oil replacement and level monitoring

PERFORMANCE RANGE



APPLICATIONS

The reliability of the mRoy has been proven in hundreds of thousands of installations worldwide. The mRoy provides a great deal of value to customers whether they have routine or demanding applications. Its outstanding performance has allowed process engineers to trust the mRoy in the most critical of services. Installations are found in every applicable industry including chemical or hydrocarbon processing, water treatment, food and beverage, mining, power, pulp and paper, textile and many others.

Once installed, the mRoy's "uptime" design makes it one less thing for operators and maintenance personnel to worry about. The mRoy is built to run 24 hours a day, 7 days a week. It's not unusual to find mRoy pumps still operating at design performance after 20 or more years in service.

For decades, customers have been secure in their choice of mRoy pumps. Your application can also benefit from mRoy's durability and Milton Roy's experience.

PERFORMANCE MAXIMUM RANGE:

Simplex: 30 GPH (329 liter/hr)
 Duplex: 60 GPH (658 liter/hr)
 350 psi (24 Bar)

GENERAL SPECIFICATIONS

Liquid End Type:

Hydraulically Actuated Disc Diaphragm

Capacity Adjustment:

Hydraulic Bypass from 0 to 100%
 While Running or Stopped

Capacity Control:

Manual Micrometer (standard)
 Electronic (optional)
 Pneumatic (optional)
 Variable Speed (optional)

Steady State Accuracy:

± 1.0 % over 10:1 Turndown

Internal Relief Valve:

Adjustable (Standard)

Number of Pumping Heads:

Simplex Standard, Duplex Optional

Liquid Temperature Range:

Metallic Heads: 20° to 200° F (-7° to 93° C)
 Plastic Heads: 20° to 145° F (-7° to 62° C)

Coating System:

Polyester TGIC Powdercoating

Warranty:

Three Year Standard (details available separately)

Average Shipping Weight:

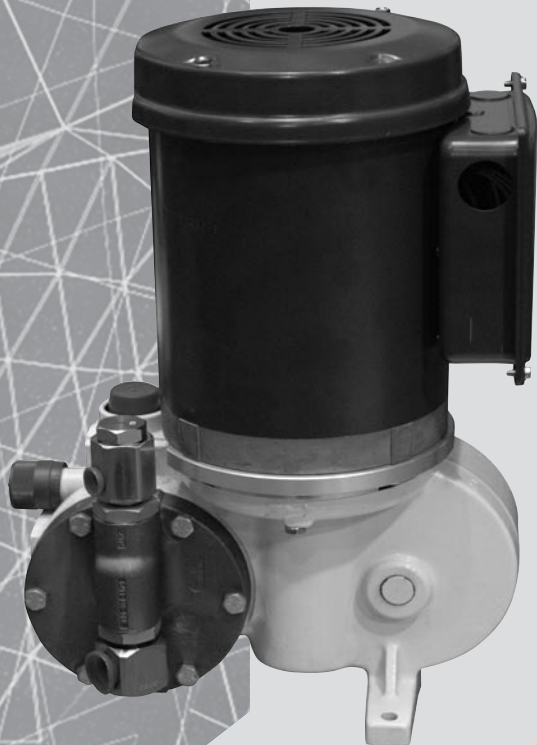
Simplex - 75 lbs (34 kg)
 Duplex - 85 lbs (38.5 kg)

Stroke Length:

0.7" (17.8 mm)

Motor Requirements:

Simplex - 1/4 Horsepower (0.25 kW)
 Duplex - 1/3 Horsepower (0.25 kW)



mRoy A simplex with manual micrometer capacity adjustment, metallic liquid end, close coupled motor mount.

CAPACITY/PRESSURE TABLE

Capacities are based on simplex liquid end configurations

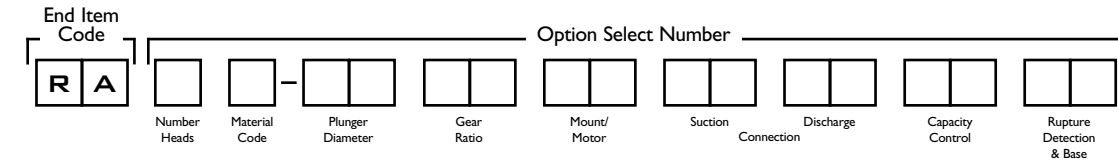
SERIES	GEAR RATIO CODE	SPM@ 1725 RPM	METALLIC LIQUID ENDS						PLASTIC LIQUID ENDS	
			CAPACITY WITH MOTOR OPERATING AT 1725 RPM							
			100 PSI (7 BAR)		200 PSI (14 BAR)		350 PSI (24 BAR)		150 PSI (10 BAR)	
			GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR
7/16" (11 mm) Plunger	77	23	See mRoy H Page 6						0.46	1.7
	48	37							0.62	2.3
	24	73							1.5	5.7
	15	117							2.4	9.1
5/8" (16 mm) Plunger	48	37	1.8	6.8	1.7	6.4	1.6	6.1	1.5	5.7
	24	73	3.8	14.4	3.7	14.0	3.5	13.2	3.4	12.9
	15	117	6.2	23.5	6.0	22.7	5.7	21.6	5.5	20.8
1 1/16" (27 mm) Plunger	48	37	6.1	23.1	5.9	22.3	5.5	20.8	5.6	21.2
	24	73	12.3	46.6	12.1	45.8	11.2	42.4	11.2	42.4
	15	117	19.4	73.4	19.2	72.7	18.1	68.5	18.0	68.1
	10	185	30.0	113.6	29.0	109.8	-	-	-	-

HIGH VISCOSITY OPTION

The "A" series is available with a high viscosity option. The pump is renamed a "P" series and capacities above are reduced by 10%. Gear ratio code 10 is not available for "P" series.

MODEL CODE SELECTION

Additional options are available. Consult with your representative



Number Heads

Code	Description
1	Simplex
2	Duplex

Material Code

Code	Description
0	Cast Iron
1	316 SS
2	PVC (N/A with Gear Code 10)
7	PVDF (N/A with Gear Code 10)
5	Alloy 20
6	Alloy C22

Plunger Diameter

Code	Description
07	7/16" (11 mm)
10	5/8" (16 mm)
17	1-1/16" (27 mm)

Gear Ratio

Code	SPM @ RPM	
	1725	1425
77	23 spm	19 spm
48	37 spm	30 spm
24	73 spm	60 spm
15	117 spm	96 spm
10	185 spm	152 spm

Motor/Motor Mount

Mount with Motor	
Code	Description
A1	1/4 HP TE 1/60/115 Close Coupled (STANDARD)
A8	1/4 HP TE 3/60/230/460 Close Coupled

Motor Mount

Code	Description
SR	Close Coupled NEMA 56C
SS	Close Coupled IEC Frame 71, B5 Flange
FR	API Flange NEMA 56C
FS	API Flange IEC Frame 71, B5 Flange

(Other Available)

Suction Connection

Metallic Heads	
Code	Description
SE	NPT Female (STANDARD)
T1	ANSI 150# RF 1/2" Threaded
T3	ANSI 300# RF 1/2" Threaded
S1	ANSI 150# RF 1/2" Socket Welded
S3	ANSI 300# RF 1/2" Socket Welded

Plastic Heads

Code	Description
SE	NPT Male (STANDARD)
T1	150# 1/2" Threaded Flange

Discharge Connection

Codes are same as suction connections

Capacity Control

Code	Description
M2	Manual Micrometer (STANDARD)
E1	Electronic - NEMA 4, 4-20 mA, 115 Volt
E2	Electronic - NEMA 4, 4-20 mA, 220 Volt
EA	Electronic - Ex Proof, 4-20 mA, 115 Volt
EB	Electronic - Ex Proof, 4-20 mA, 220 Volt
PN	Pneumatic, 3-15 psi, Direct Acting

***When using control other than manual, derate pump capacity by 5% for plunger codes 07 and 10, and 10% for plunger code 17.**

Rupture Detection & Base

Metallic Liquid Ends	
Code	Description
NN	None (STANDARD)
NB	Base Only - Recommended with Flanges
C5	Rupture Detection with Base & Gauge
SN	Rupture Detect with Base, Gauge, & NEMA 4 Switch
S7	Rupture Detect with Base, Gauge, & Ex Proof Switch
DD	Double Diaphragm with Base
DP	Double Diaphragm with Base & Conductivity Probe

Plastic Liquid Ends

Code	Description
NB	Base Only (STANDARD)
DD	Double Diaphragm with Base
DP	Double Diaphragm with Base & Conductivity Probe

***When using rupture detection or double diaphragm, derate pump capacity by 5%.**

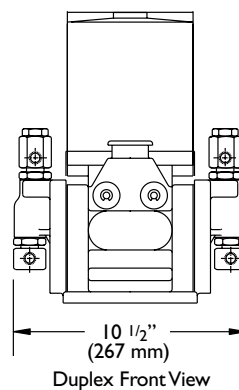
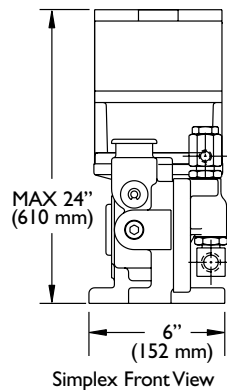
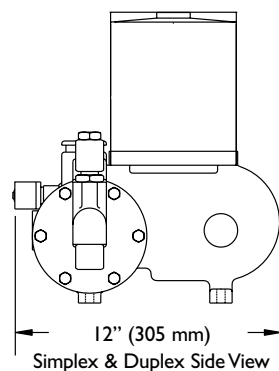
MATERIALS OF CONSTRUCTION

Liquid End Material	Diaphragm	Head	Valve Body	Seats	Balls	Seals	Contour Plate	Check Valve Spring
Cast Iron	PTFE	Cast Iron	316 ss	316 ss	316 ss	Viton & Buna N	316 ss	316 ss
316 ss		316 ss	316 ss	316 ss	316 ss		316 ss	316 ss
PVC		PVC	PVC	Ceramic	PVC		N/A	
PVDF		PVDF	PVDF	Ceramic	PVDF		N/A	
Alloy 20		Alloy 20	Alloy 20	Alloy 20	Alloy 20		Alloy C	
Alloy C22		Alloy C22	Alloy C22	Alloy C22	Alloy C22		Alloy C	

PIPING CONNECTION SIZES

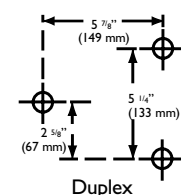
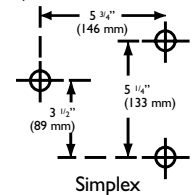
Description	Suction	Discharge
Metallic Liquid Ends (Codes 0, 1, 5, & 6)	1/2" NPT Female	1/4" NPT Female
Plastic Liquid Ends (Codes 2, 7)	1/2" NPT Male	1/2" NPT Male

DIMENSIONS Approximate for envelope estimations. Certified prints are available



BOLT HOLE DIMENSIONS

Bolt holes accommodates 5/16" (8 mm) diameter bolts



PERFORMANCE MAXIMUM RANGE:

Simplex: 6.2 GPH (23.5 liter/hr)
 Duplex: 12.4 GPH (47 liter/hr)
 2000 psi (124 Bar)

GENERAL SPECIFICATIONS

Liquid End Type:

Hydraulically Actuated Disc Diaphragm

Capacity Adjustment:

Hydraulic Bypass from 0 to 100%
 While Running or Stopped

Capacity Control:

Manual Micrometer (standard)
 Electronic (optional)
 Pneumatic (optional)
 Variable Speed (optional)

Steady State Accuracy:

± 1.0 % over 10:1 Turndown

Internal Relief Valve:

Adjustable (Standard)

Number of Pumping Heads:

Simplex Standard, Duplex Optional

Liquid Temperature Range:

Metallic Heads: 20° to 200° F (-7° to 93° C)

Coating System:

Polyester TGIC Powdercoating

Warranty:

Three Year Standard
 (details available separately)

Average Shipping Weight:

Simplex - 75 lbs (34 kg)
 Duplex - 85 lbs (38.5 kg)

Stroke Length:

0.7" (17.8 mm)

Motor Requirements:

Simplex - 1/4 Horsepower (0.25 kW)
 Duplex - 1/3 Horsepower (0.25kW)



mRoy H simplex with manual micrometer stroke adjustment.

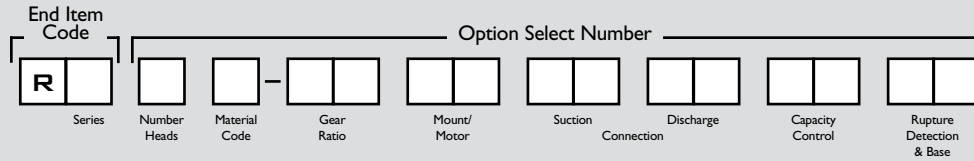
CAPACITY/PRESSURE TABLE

Capacities are based on simplex liquid end configurations

SERIES	GEAR RATIO CODE	SPM@ 1725 RPM	CAPACITY WITH MOTOR OPERATING AT 1725 RPM													
			100 PSI (7 BAR)		500 PSI (34 BAR)		700 PSI (48 BAR)		925 PSI (64 BAR)		1500 PSI (103 BAR)		1800 PSI (124 BAR)		2000 PSI (140 BAR)	
			GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR
mRoy T 3/8" (9.5 mm) Plunger	77	23	0.46	1.7	0.41	1.6	0.37	1.4	0.35	1.3	0.28	1.1	0.24	0.9	0.21	0.8
	48	37	0.73	2.8	0.66	2.5	0.6	2.3	0.56	2.1	0.45	1.7	0.38	1.4	0.34	1.3
	24	73	1.45	5.5	1.31	5.0	1.18	4.5	1.11	4.2	0.89	3.4	0.75	2.8	0.68	2.6
	15	117	2.32	8.8	2.1	7.9	1.9	7.2	1.78	6.7	1.43	5.4	1.2	4.5	1.09	4.1
	10	185	3.67	13.9	3.32	12.6	3	11.4	2.81	10.6	2.26	8.6	2	7.6	1.72	6.5
mRoy H 7/16" (11 mm) Plunger	77	23	0.57	2.2	0.54	2.0	0.5	1.9	0.5	1.9	0.43	1.6	0.4	1.5		
	48	37	0.8	3.0	0.7	2.6	0.6	2.3	0.6	2.3	0.6	2.3	0.6	2.3		
	24	73	1.7	6.4	1.6	6.1	1.5	5.7	1.5	5.7	1.3	4.9	1.2	4.5		
	15	117	2.8	10.6	2.6	9.8	2.5	9.5	2.4	9.1	2.1	7.9	2	7.6		
	10	185	4.4	16.7	4.1	15.5	4	15.1	3.8	14.4	3.3	12.5	3.1	11.7		
mRoy J 5/8" (16 mm) Plunger	48	37	1.8	6.8	1.5	5.7	1.4	5.3	---	---						
	24	73	3.8	14.4	3.4	12.9	3.2	12.1	3.1	11.7						
	15	117	6.2	23.5	5.6	21.2	5.3	20.1	5.1	19.3						

MODEL CODE SELECTION

Additional options are available. Consult with your representative



Series

Code	Description
T	3/8" Plunger
H	7/16" Plunger
J	5/8" Plunger

Number Heads

Code	Description
1	Simplex
2	Duplex

Material Code

Code	Description
0	Cast Iron (not available on J series)
1	316 SS
5	Alloy 20

Gear Ratio

Code	SPM @ RPM	
	1725	1425
77	23 spm	19 spm
48	37 spm	30 spm
24	73 spm	60 spm
15	117 spm	96 spm

Motor/Motor Mount

Mount with Motor

Code	Description
A1	1/4 HP TE 1/60/115 Close Coupled (STANDARD)
A8	1/4 HP TE 3/60/230/460 Close Coupled

Motor Mount

Code	Description
SR	Close Coupled NEMA 56C
SS	Close Coupled IEC Frame 71, B5 Flange
FR	API Flange NEMA 56C
FS	API Flange IEC Frame 71, B5 Flange
(Other Available)	

Suction Connection

Metallic Heads

Code	Description
SE	NPT Female (STANDARD)
T1	ANSI 150# RF 1/2" Threaded
T3	ANSI 300# RF 1/2" Threaded
S1	ANSI 150# RF 1/2" Socket Welded
S3	ANSI 300# RF 1/2" Socket Welded

Discharge Connection

Codes are same as suction connections

Capacity Control

Code	Description
M2	Manual Micrometer (STANDARD)
E1	Electronic - NEMA 4, 4-20 mA, 115 Volt
E2	Electronic - NEMA 4, 4-20 mA, 220 Volt
EA	Electronic - Ex Proof, 4-20 mA, 115 Volt
EB	Electronic - Ex Proof, 4-20 mA, 220 Volt
PN	Pneumatic, 3-15 psi, Direct Acting

*When using control other than manual, derate pump capacity by 5%.

Rupture Detection & Base

Code	Description
NN	None (STANDARD)
NB	Base Only - Recommended with Flanges
C5	Rupture Detection with Base & Gauge
SN	Rupture Detect with Base, Gauge, & NEMA 4 Switch
S7	Rupture Detect with Base, Gauge, & Ex Proof Switch

*When using rupture detection, derate pump capacity by 5%.

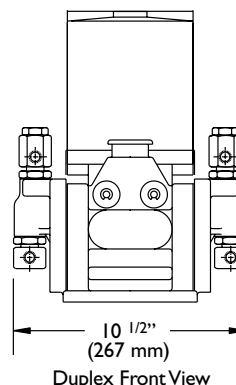
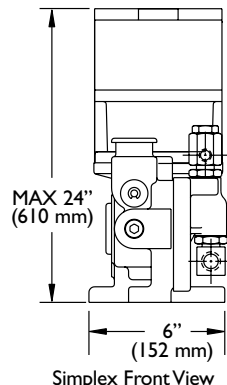
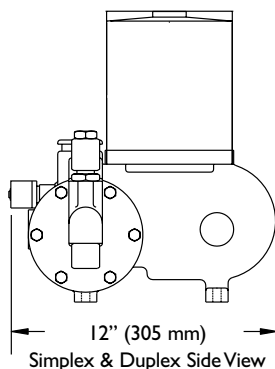
MATERIALS OF CONSTRUCTION

LIQUID END MATERIAL	DIAPHRAGM	HEAD	VALVE BODY	SEATS	BALLS	SEALS	CONTOUR PLATE	CHECK VALVE SPRING
Cast Iron	PTFE	Cast Iron	316 ss	316 ss	316 ss	Viton & Buna N	316 ss	316 ss
316 ss		316 ss	316 ss	316 ss	316 ss		316 ss	
Alloy 20		Alloy 20	Alloy 20	Alloy 20	Alloy 20		Alloy 20	Alloy C

PIPING CONNECTION SIZES

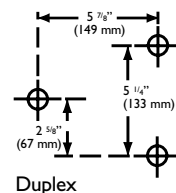
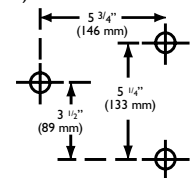
DESCRIPTION	SUCTION	DISCHARGE
All liquid ends (codes 0,1,5)	1/2" NPT Female	1/4" NPT Female

DIMENSIONS Approximate for envelope estimations. Certified prints are available



BOLT HOLE DIMENSIONS

Bolt holes accommodates 5/16" (8 mm) diameter bolts



SERIES S, M, AND B

PERFORMANCE MAXIMUM RANGE:

Simplex: 87 GPH (329 liter/hr)
 Duplex: 174 GPH (658 liter/hr)
 1500 psi (103 Bar)

GENERAL SPECIFICATIONS

Liquid End Type:

Hydraulically Actuated Disc Diaphragm

Capacity Adjustment:

Hydraulic Bypass from 0 to 100%
 While Running or Stopped

Capacity Control:

Manual Micrometer (standard)
 Electronic (optional)
 Pneumatic (optional)
 Variable Speed (optional)

Steady State Accuracy:

± 1.0 % over 10:1 Turndown

Internal Relief Valve:

Adjustable (Standard)

Number of Pumping Heads:

Simplex Standard, Duplex Optional

Liquid Temperature Range:

Metallic Heads: 20° to 200° F (-7° to 93° C)
 Plastic Heads: 20° to 145° F (-7° to 62° C)

Coating System:

Polyester TGIC Powdercoating

Warranty:

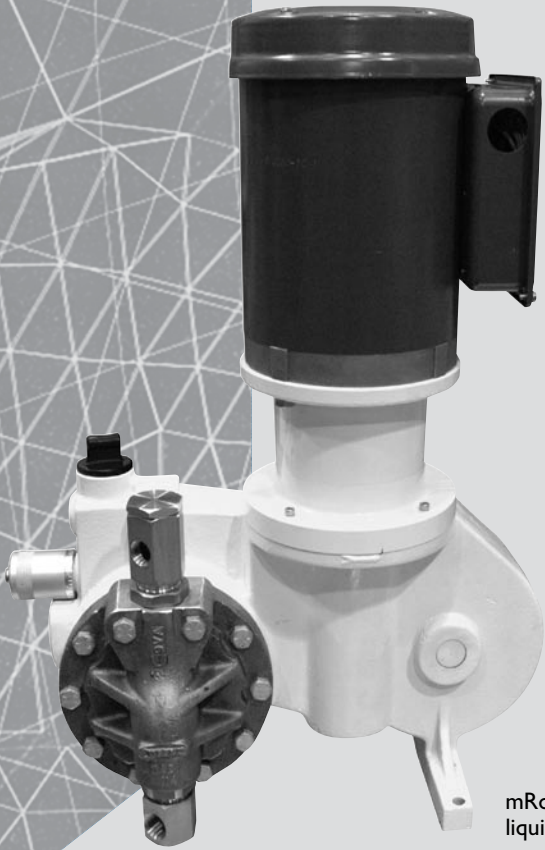
Three Year Standard (details available separately)

Average Shipping Weight:

Simplex - 95 lbs (43 kg)
 Duplex - 165 lbs (75 kg)

Stroke Length:

1.5" (38 mm)



mRoy B simplex with metallic liquid end and API motor mount.

CAPACITY/PRESSURE TABLE

Capacities are based on simplex liquid end configurations

SERIES	GEAR RATIO CODE	SPM@ 1725 RPM	CAPACITY WITH MOTOR OPERATING AT 1725 RPM												
			PLASTIC & METALLIC						METALLIC ONLY						
			100 PSI (7 BAR)		150 PSI (10 BAR)		400 PSI (28 BAR)		600 PSI (41 BAR)		1000 PSI (67 BAR)		1500 PSI (103 BAR)		
		GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR	GPH	LITER/HR		
mRoy S 1 9/32" (15.1 mm) Plunger	38	48	4.7	17.8	4.6	17.4	4.4	16.7	4.2	15.9	3.8	14.4	3.3	12.5	
	25	72	7.0	26.5	6.9	26.1	6.7	25.4	6.5	24.6	6.1	23.1	5.6	21.2	
	19	96	9.5	36	9.4	36	8.9	34	8.6	33	7.9	30	7.1	27	
	12	144	13.3	50	13.2	50	12.8	48	12.5	47	12.0	45	11.4	43	
mRoy M 7/8" (22.2 mm) Plunger	38	48	10	38	10	37	8	31	7	26	5	18			
	25	72	16	61	16	59	14	54	13	50	11	42			
	19	96	21	79	21	78	19	73	18	69	16	61			
	12	144	30	115	30	114	29	109	28	106	26	97			
mRoy B 1 7/16" (36.5 mm) Plunger	38	48 (a)	27	102	26	98	21	79							
	25	72 (a)	42	159	41	155	36	136							
	19	96 (b)	57	216	56	212	51	193							
	12	144 (b)	85	322	84	318	79	299							
			Gear code 10 (below) available at 1425 RPM & below. Ratings are @ 1425 RPM												
	10	148	87	329	86	326	80	303							

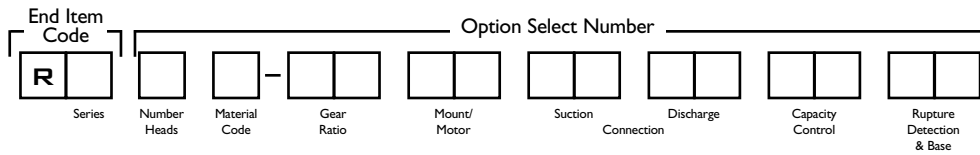
MINIMUM MOTOR HP (KW)

	3 PHASE	1 PHASE
Non-Shaded	1/2 HP (0.37 KW)	3/4 HP (0.55 KW)
Shaded	3/4 HP (0.55 KW)	1 HP (0.75 KW)

(a). Duplex | 7/16" plunger pumps gear codes 38 & 25 are limited to 350 psi (24 BAR).
 (b). Duplex | 7/16" plunger pumps gear codes 19, 12, & 10 are limited to 250 psi (17 BAR).

MODEL CODE SELECTION

Additional options are available --- Consult with your representative



Series

Code	Description
S	19/32" Plunger S Series
M	7/8" Plunger M Series
B	1 7/16" Plunger B Series

Number Heads

Code	Description
1	Simplex
2	Duplex

Material Code

Code	Description
1	316 SS
2	PVC (not available on "S" series)
5	Alloy 20
7	PVDF (Only available on "M" & "B" series)

Gear Ratio

Code	SPM @ RPM	
	1725	1425
38	48 spm	40 spm
25	72 spm	60 spm
19	96 spm	80 spm
12	144 spm	120 spm
10	N/A	148 spm

Motor Mount

Code	Description
FR	API Flange NEMA 56C (STANDARD)
F4	API Flange Mount, NEMA 143TC/145TC
F8	Flange Mount IEC Frame 80, B5 Flange
F9	Flange Mount IEC Frame 90, B5 Flange

Suction Connection

Metallic Heads (Material Code 1 or 5)	
Code	Description
SE	NPT Female (STANDARD)
T1	ANSI 150# RF 1/2" Threaded
T3	ANSI 300# RF 1/2" Threaded
S1	ANSI 150# RF 1/2" Socket Welded
S3	ANSI 300# RF 1/2" Socket Welded

Plastic Heads (Material Code 2 or 7)

Code	Description
SE	NPT Male (STANDARD)
T1	150# 1/2" Threaded Flange

Discharge Connection

Codes are same as suction connections

Capacity Control

Code	Description
AL	Manual Micrometer (STANDARD)
E1	Electronic - NEMA 4, 4-20 mA, 115 Volt
E2	Electronic - NEMA 4, 4-20 mA, 220 Volt
EA	Electronic - Ex Proof, 4-20 mA, 115 Volt
EB	Electronic - Ex Proof, 4-20 mA, 220 Volt
PN	Pneumatic, 3-15 psi, Direct Acting

***When using control other than manual, derate pump capacity by 10% series "M" & "B" only.**

Rupture Detection & Base

All Liquid Ends	
Code	Description
NN	None (STANDARD)
NB	Base Only - Recommended with Flanges
Metallic Heads (Material Code 1 or 5)	
C5	Rupture Detection with Base & Gauge
SN	Rupture Detect with Base, Gauge, & NEMA 4 Switch
S7	Rupture Detect with Base, Gauge, & Ex Proof Switch
Plastic Heads (Material Code 2 or 7)	
DD	Double Diaphragm with Base
DP	Double Diaphragm with Base & Conductivity Probe

***When using rupture detection or double diaphragm, derate pump capacity by 5%.**

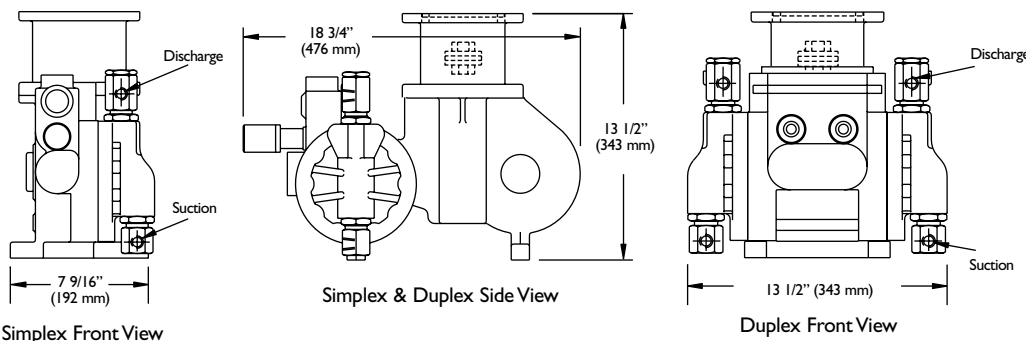
MATERIALS OF CONSTRUCTION

LIQUID END MATERIAL	DIAPHRAGM	HEAD	VALVE BODY	SEATS	BALLS	SEALS	CONTOUR PLATE	CHECK VALVE SPRING	
316 ss	PTFE	316 ss	316 ss	316 ss	316 ss	Viton & Buna N	316 ss	316 ss	
PVC		PVC	PVC	PVC	Ceramic		PVC	N/A	
PVDF		PVDF	PVDF	PVDF	PVDF		Ceramic	PVDF	N/A
Alloy 20		Alloy 20	Alloy 20	Alloy 20	Alloy 20		Alloy 20	Alloy 20	Alloy C

PIPING CONNECTION SIZES

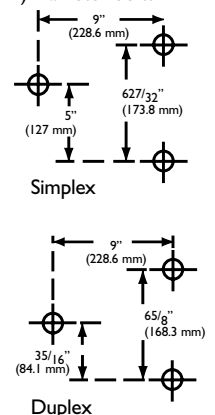
DESCRIPTION	S SERIES		M & B SERIES	
	SUCTION	DISCHARGE	SUCTION	DISCHARGE
Metallic Liquid Ends (Codes 1, 5)	1/2" NPT Female	1/4" NPT Female	1/2" NPT Female	3/8" NPT Female
Plastic Liquid Ends (Codes 2, 7)	Not Available			

DIMENSIONS (LESS MOTOR) Approximate for envelope estimations. Certified prints are available



BOLT HOLE DIMENSIONS

Bolt holes accommodates 5/16" (8 mm) diameter bolts



SERIES XT AND XW

PERFORMANCE MAXIMUM RANGE:

XT: 2.2 GPH (8.3 liter/hr)
 XW: 9.2 GPH (34.8 liter/hr)
 3000 psi (211 Bar)

GENERAL SPECIFICATIONS

Liquid End Type:
 Hydraulically Actuated Disc Diaphragm

Liquid Temperature Range:
 Metallic Heads: 20° to 200° F (-7° to 93° C)

Capacity Adjustment:
 Hydraulic Bypass from 0 to 100%
 While Running or Stopped

Coating System:
 Polyester TGIC Powdercoating

Capacity Control:
 Manual Micrometer (standard)
 Electronic (optional)
 Variable Speed (optional)

Warranty:
 Three Year Standard
 (details available separately)

Steady State Accuracy:
 ± 1.0 % over 10:1 Turndown

Average Shipping Weight:
 XT - 75 lbs (34 kg)
 XW - 95 lbs (43 kg)

Internal Relief Valve:
 Adjustable (Standard)

Stroke Length:
 XT - 0.7" (17.8 mm)
 XW - 1.5" (38 mm)

Number of Pumping Heads:
 Simplex Standard



mRoy XT

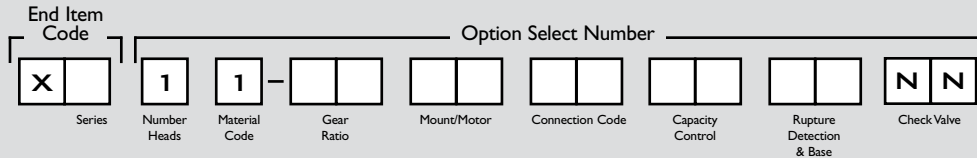
CAPACITY/PRESSURE TABLE

Capacities are based on simplex liquid end configurations

SERIES	GEAR RATIO CODE	STROKES PER MINUTE		METALLIC LIQUID ENDS						
				GPH AT 2000 PSI		GPH AT 2500 PSI		GPH AT 3000 PSI		
		60 HZ	50 HZ	60 HZ	50 HZ	60 HZ	50 HZ	60 HZ	50 HZ	
mRoy XT 1 1/32" (9 mm) Plunger	77	23	19	0.27	0.23	0.26	0.21	0.24	0.20	Requires 1/2 HP minimum
	48	37	30	0.44	0.37	0.41	0.34	0.38	0.32	
	24	73	60	0.87	0.73	0.80	0.67	0.74	0.62	
	15	117	96	1.37	1.14	1.27	1.06	1.19	0.99	
mRoy XW 1/2" (13 mm) Plunger	10	185	152	2.2	1.8	2.1	1.7	1.9	1.6	Requires 1 HP minimum
	38	48	40	2.8	2.3	2.6	2.2	2.5	2.1	
	25	72	60	4.3	3.6	4.0	3.3	3.8	3.1	
	19	96	80	5.8	4.8	5.4	4.5	5.0	4.2	
	12	144	120	9.2	7.7	8.6	7.2	8.0	6.7	Requires 1.5 HP minimum

MODEL CODE SELECTION

Additional options are available. Consult with your representative



Series

Code	Description
T	T Frame
W	W Frame

Gear Ratio

XT Code	SPM @ RPM	
	1725	1425
77	23 spm	19 spm
48	37 spm	30 spm
24	73 spm	60 spm
15	117 spm	96 spm
10	185 spm	152 spm

XW Code

XW Code	SPM @ RPM	
	1725	1425
38	47 spm	39 spm
25	72 spm	60 spm
19	95 spm	79 spm
12	144 spm	120 spm

Motor Mount

Code	Description
FR (XT & XW)	API Flange NEMA 56C
F4 (XT & XW)	API Flange NEMA 143/145C
SR (XT)	Close Coupled NEMA 56C
SS (XT)	Close Coupled IEC Frame 71, B5 Flange
FS (XT)	API Flange IEC Frame 71, B5 Flange
MD (XT)	API Flange IEC Frame 80 B5 Flange

Connection Code

Code	Description
NN	NPT Female (STANDARD)
I1	ANSI 150# RF 1/2" Threaded
33	ANSI 300# RF 1/2" Threaded
AA	ANSI 150# RF 1/2" Socket Welded
BB	ANSI 300# RF 1/2" Socket Welded
EE	ANSI 1500# RF 1/2" Socket Welded
66	ANSI 600# RF 1/2" Threaded

Capacity Control

Code	Description
M1	316 SS Manual Micrometer (STANDARD)
E1	Electronic - NEMA 4, 4-20 mA, 115 Volt
E2	Electronic - NEMA 4, 4-20 mA, 220 Volt
EA	Electronic - Ex Proof, 4-20 mA, 115 Volt
EB	Electronic - Ex Proof, 4-20 mA, 220 Volt

Rupture Detection & Base

Code	Description
NN	None (STANDARD)
C5	Rupture Detection with Base & Gauge
SN	Rupture Detect with Base, Gauge, & NEMA 4 Switch
S7	Rupture Detect with Base, Gauge, & Ex Proof Switch

***When using control other than manual, derate pump capacity by 5%.**

***When using rupture detection, derate pump capacity by 5%.**

MATERIALS OF CONSTRUCTION

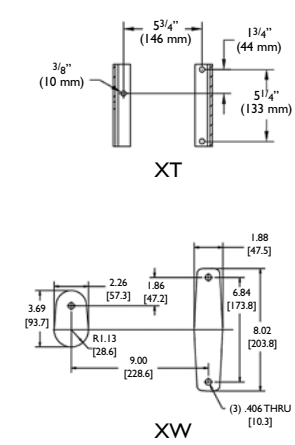
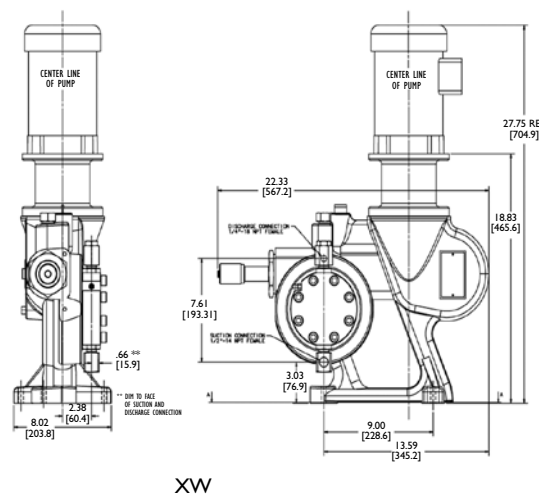
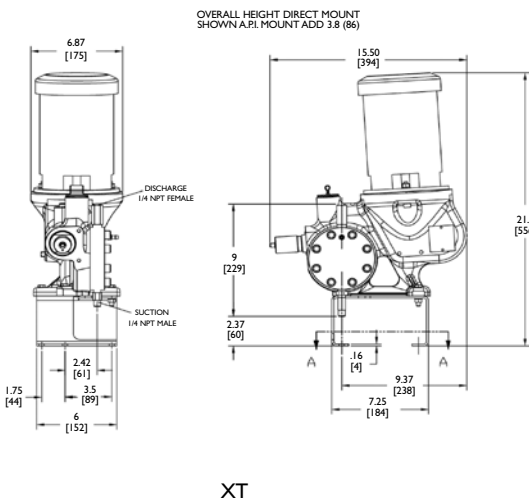
LIQUID END MATERIAL	DIAPHRAGM	HEAD	VALVE BODY	SEATS	BALLS	SEALS	CONTOUR PLATE	CHECK VALVE SPRING
316 ss	PTFE	316 ss	316 ss	316 ss	316 ss	Viton & Buna N	316 ss	316 ss

PIPING CONNECTION SIZES

DESCRIPTION	SUCTION	DISCHARGE
XT	1/4" NPT Male	1/4" NPT Female
XW	1/2" NPT Female	1/4" NPT Female

DIMENSIONS Approximate for envelope estimations. Certified prints are available

BOLT HOLE DIMENSIONS
Bolt holes accommodates 5/16" (8 mm) diameter bolts



SERIES OPTIONS

ELECTRONIC CAPACITY CONTROL

The mRoy series Electronic Capacity Control enables the pump to accept capacity changes from a remote location, or automatically by process signal.

Features:

- 100% Duty Cycle
- Manual Handwheel
- No Clutches or Brakes
- Direct or Reverse Acting
- Superior Accuracy
- Split Signal Configurable
- Low Maintenance

GENERAL SPECIFICATIONS

Enclosure:

Class I, Div I, Groups B, C, D, T5
 Class II, Div I, Groups E, F, G, T5
 NEMA 4X
 EEx d IIB + H2T5 IP55
 CE Ex II 3 GD

Input Power:

1 phase, 50/60 hz, 115 VAC
 1 phase, 50/60 hz, 220 VAC

Control Signal:

4-20 mA (250 ohm load) configurable for split range or reverse acting

Position Output Signal:

4-20 mA or 1-5VDC

Accuracy:

± 0.5%

Duty Cycle:

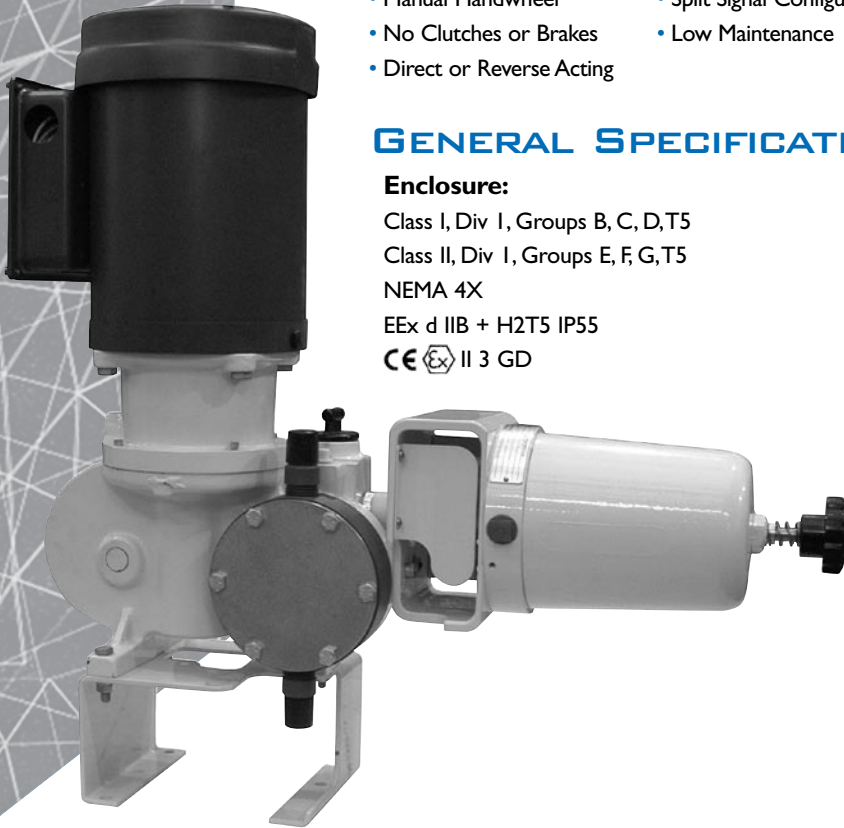
100%

Temperature:

-40° to 120° F (-40° to 50° C)

Materials:

Cover & Housing -- Aluminum TGIC Powder Coating
 Handwheel Shaft & Stem Adapter - Stainless Steel
 Handwheel - Plastic



mRoy A Simplex with plastic liquid end, API coupled motor flange and electronic capacity control options.

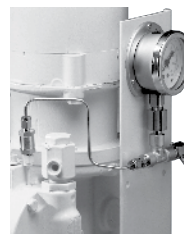
DIAPHRAGM RUPTURE DETECTION

General Information

The mRoy's diaphragm liquid ends are, by design, leakproof and durable. In some applications, however, added assurance is desired to protect the pump internals from extremely hostile chemicals, or protect the process from potential contamination by hydraulic fluids.

Operation

Depending upon the pump selected there are two similar designs consisting of two diaphragms separated by a hollow intermediate ring or a series of special shims. The two diaphragms are pushed tightly together and are separated only on their outer edge. Because there is no fluid and very little air between the two diaphragms, the area between the two diaphragms does not experience pressure from the process unless one of the diaphragms fails. Should a diaphragm fail, a pressure gauge provides visual indication or an optional pressure switch provides a contact closure for alarm and/or system shutdown.



Specifications

Materials: Diaphragms -- PTFE
 Intermediate ring or shims & tubing -- Stainless Steel

Flow Rate: Reduced standard flow rate by 5%

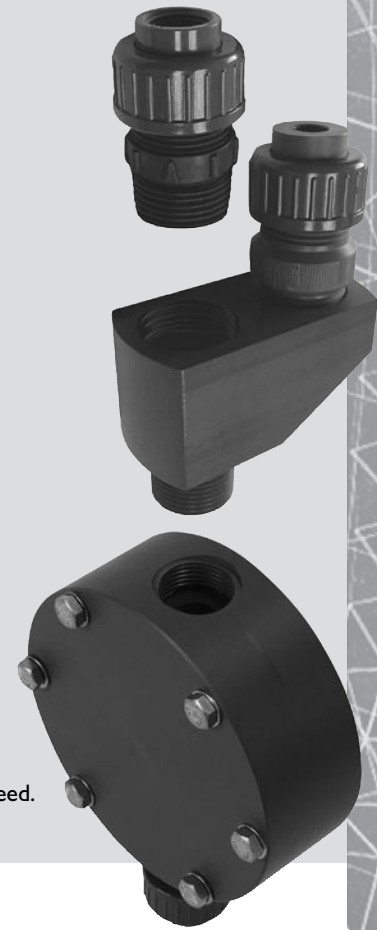
Pressure: Based on Maximum pump rating

Availability: Metallic liquids ends - mRoy A, J, M, B, XT & XW

DEGASSING

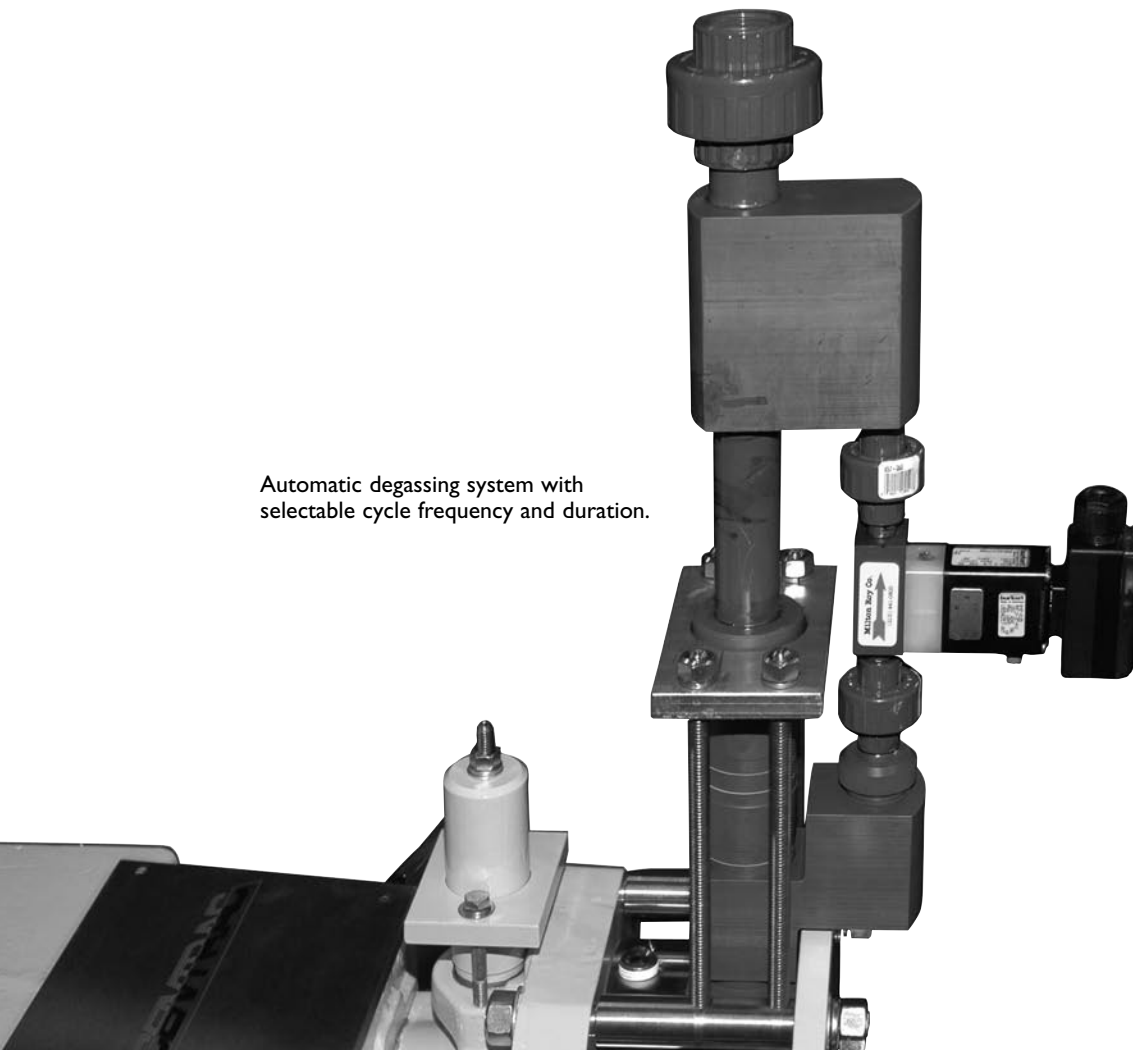
Chemical decomposition causes certain chemicals to exhibit off-gassing within the process. Gas can accumulate within the piping system and also within the liquid end of the pump and cause vapor lock. This situation is common, especially for pumps used in intermittent service. Sodium Hypochlorite is the most common chemical with this characteristic.

Milton Roy offers several solutions based on your application. The options range from a simple bleed valve to facilitate start-up to automatic degassing systems that can be custom configured to your process.



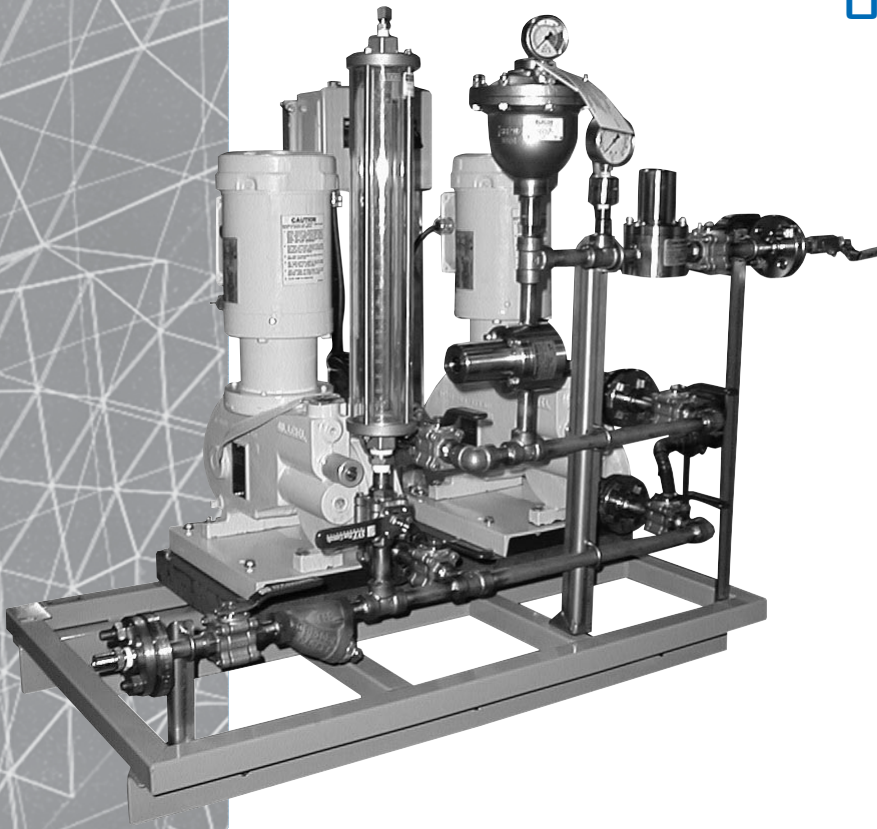
Degassing valve option featuring continuous bleed.

Automatic degassing system with selectable cycle frequency and duration.



OTHER OPTIONS

- ▶ Integral Duplex
- ▶ Double Diaphragm
- ▶ Pneumatic Capacity Control
- ▶ Remote Liquid Ends
- ▶ Liquid end venting (outgassing liquids)
- ▶ Heating/cooling liquid end jackets
- ▶ Slurry or Viscous Fluid Options
- ▶ Numerous Motor Choices
- ▶ Pipe connection options
- ▶ Special Modifications



ACCESSORIES

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.



Safety Valves

Protect pump and piping from overpressure.



Calibration Columns

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



motralec

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MILTON ROY