

# HYDRAULICALLY ACTUATED DIAPHRAGM METERING PUMPS

## KEY SPECIFICATION FEATURES : m-Roy SERIES



- Conforms to API-675 Standard
- Hydraulic By Pass Drive Mechanism
- Steady State Accuracy of  $\pm 1\%$
- Repeatability  $\pm 3\%$
- Turn Down Ratio 10:1
- Hydraulically actuated PTFE diaphragm provides extra long diaphragm life.
- Long-life rugged construction, cast iron gear box housing.
- High precision Check valves for reliable sealing Manual or automatic flow control, adjustable while running or stopped.
- Adjustable internal hydraulic relief valve for pump protection.
- Compact Size
- Diaphragm Rupture Detection System (DRDS) with or without Pressure Switch available
- Capacity adjustment by
  - Manual Micrometer (Standard)
  - Variable Speed Drive (Optional)
  - Electronic Capacity Controller (Optional)
  - Pneumatic Actuator (Optional)
- Suction & Discharge connection may be rotated  $150^\circ$  for mounting convenience.
- Liquid End Material of Construction in SS-316 / CF8M





# SERIES m-Roy HYDRAULICALLY ACTUATED DIAPHRAGM TYPE METERING PUMPS

Plastic liquid ends can be offered in specific cases for a maximum pressure of 10KG/cm<sup>2</sup>. Consult factory.

## m-Roy A

PUMP MODEL	PLUNGER DIAMETER	GEAR RATIO	SPM	STROKE LENGTH MM	CAPACITY - LPH Vs PRESSURE											VISCOSITY IN CPS
					7kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	14kg/cm <sup>2</sup>	21kg/cm <sup>2</sup>	24.5kg/cm <sup>2</sup>	28kg/cm <sup>2</sup>	56kg/cm <sup>2</sup>	84kg/cm <sup>2</sup>	105kg/cm <sup>2</sup>	126kg/cm <sup>2</sup>		
MRA11H	7/16"	77:1	19	17.8	1.7	1.7	1.7	1.7	1.7	1.7	1.5	1.3	1.3	1.0	2400	
MRA12H	7/16"	48:1	30	17.8	2.3	2.0	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.7	1460	
MRA13H	7/16"	24:1	60	17.8	5.2	5.2	5.2	5.0	5.0	5.0	4.5	4.2	4.0	3.6	460	
MRA14H	7/16"	15:1	96	17.8	8.5	8.3	8.3	8.3	8.0	8.0	7.7	7.0	6.5	6.0	250	
MRA15H	7/16"	9.5:1	152	17.8	13.50	12.50	12.50	12.50	12.50	12.50	12.50	11.0	10.0	9.5	90	
MRA32	1-1/16"	48:1	30	17.8	19	18.50	18.50	17.80	17.0	-	-	-	-	-	130	
MRA33	1-1/16"	24:1	60	17.8	38.5	38.0	38.0	36.0	35.0	-	-	-	-	-	60	
MRA34	1-1/16"	15:1	96	17.8	60.8	60.50	60.0	58.0	57.0	-	-	-	-	-	30	
MRA35	1-1/16"	9.5:1	152	17.8	94	92.50	91.0	-	-	-	-	-	-	-	90	

## m-Roy A PUMPS WITH DRDS

### Diaphragm Rupture Detection System

PUMP MODEL	PLUNGER DIAMETER	GEAR RATIO	SPM	STROKE LENGTH MM	CAPACITY - LPH Vs PRESSURE					VISCOSITY IN CPS
					7kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	14kg/cm <sup>2</sup>	21kg/cm <sup>2</sup>	24.5kg/cm <sup>2</sup>	
MRA11D	7/16"	77:1	19	17.8	1.5	1.5	1.5	1.5	1.5	2400
MRA12D	7/16"	48:1	30	17.8	2.3	1.9	1.9	1.9	1.9	1460
MRA13D	7/16"	24:1	60	17.8	4.9	4.9	4.9	4.8	4.8	460
MRA14D	7/16"	15:1	96	17.8	8.1	7.9	7.9	7.9	7.6	250
MRA23D	5/8"	24:1	60	17.8	11.2	10.9	10.9	10.5	10.5	220
MRA32D	1-1/16"	48:1	30	17.8	18.1	17.60	17.60	16.90	16.20	130
MRA33D	1-1/16"	24:1	60	17.8	36.60	36.10	36.10	34.20	33.30	60
MRA34D	1-1/16"	15:1	96	17.8	57.80	57.50	57.00	55.10	54.20	30
MRA35D	1-1/16"	9.5:1	152	17.8	89.30	87.90	86.50	-	-	90

## m-Roy P PUMPS

PUMP MODEL	PLUNGER DIAMETER	GEAR RATIO	SPM	STROKE LENGTH MM	CAPACITY - LPH Vs PRESSURE					VISCOSITY IN CPS
					7kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	14kg/cm <sup>2</sup>	21kg/cm <sup>2</sup>	24.5kg/cm <sup>2</sup>	
MRP11	7/16"	77:1	19	17.8	1.5	1.5	1.5	1.5	1.5	12200
MRP12	7/16"	48:1	30	17.8	2.0	1.8	1.8	1.8	1.8	7500
MRP13	7/16"	24:1	60	17.8	4.5	4.5	4.5	4.0	4.0	4000
MRP14	7/16"	15:1	96	17.8	7.5	7.0	7.0	7.0	6.5	2000
MRP23	5/8"	24:1	60	17.8	10.0	9.5	9.5	9.0	9.0	2500
MRP32	1-1/16"	48:1	30	17.8	16.0	15.5	15.5	15.2	14.0	1000
MRP33	1-1/16"	24:1	60	17.8	32.5	32.0	32.0	30.0	29.0	500
MRP34	1-1/16"	15:1	96	17.8	52.0	51.0	51.0	49.0	48.0	300



# SERIES m-Roy HYDRAULICALLY ACTUATED DIAPHRAGM TYPE METERING PUMPS

## m-Roy P WITH DRDS

### Diaphragm Rupture Detection System

PUMP MODEL	PLUNGER DIAMETER	GEAR RATIO	SPM	STROKE LENGTH MM	CAPACITY - LPH Vs PRESSURE					VISCOSITY IN CPS
					7kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	14kg/cm <sup>2</sup>	21kg/cm <sup>2</sup>	24.5kg/cm <sup>2</sup>	
MRP11D	7/16"	77:1	19	17.8	1.4	1.4	1.4	1.4	1.4	12200
MRP12D	7/16"	48:1	30	17.8	1.9	1.7	1.7	1.7	1.7	7500
MRP13D	7/16"	24:1	60	17.8	4.3	4.3	4.3	3.8	3.8	4000
MRP14D	7/16"	15:1	96	17.8	7.1	6.7	6.7	6.7	6.2	2000
MRP23D	5/8"	24:1	60	17.8	9.5	9.0	9.0	8.6	8.6	2500
MRP32D	1-1/16"	48:1	30	17.8	15.2	14.7	14.7	14.5	13.3	1000
MRP33D	1-1/16"	24:1	60	17.8	30.9	30.4	30.4	28.5	27.6	500
MRP34D	1-1/16"	15:1	96	17.8	49.4	48.5	48.5	46.6	45.6	300

## m-Roy B

PUMP MODEL	PLUNGER DIAMETER (MM)	GEAR RATIO	SPM	STROKE LENGTH MM	CAPACITY - LPH Vs PRESSURE							VISCOSITY IN CPS
					7kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	28kg/cm <sup>2</sup>	41kg/cm <sup>2</sup>	65kg/cm <sup>2</sup>	83kg/cm <sup>2</sup>	100kg/cm <sup>2</sup>	
MRB11	15.0	25:1	58	34	18.0	17.5	17.0	16.5	16.0	15.0	14.0	130
MRB12	15.0	15:1	96	34	27.50	27.0	26.5	26.0	25.0	24.5	24.0	59
MRB13	15.0	10:1	144	34	45.0	44.0	42.0	40.0	39.0	38.0	36.0	39
MRB21	22.0	25:1	58	34	34.0	33.0	32.0	31.0	30.0	-	-	325
MRB22	22.0	15:1	96	34	65.50	65.0	60.0	57.0	50.0	-	-	143
MRB23	22.0	10:1	144	34	88.0	87.0	83.0	80.0	75.0	-	-	94

## m-Roy B WITH DRDS

### Diaphragm Rupture Detection System

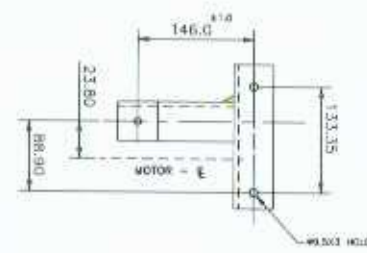
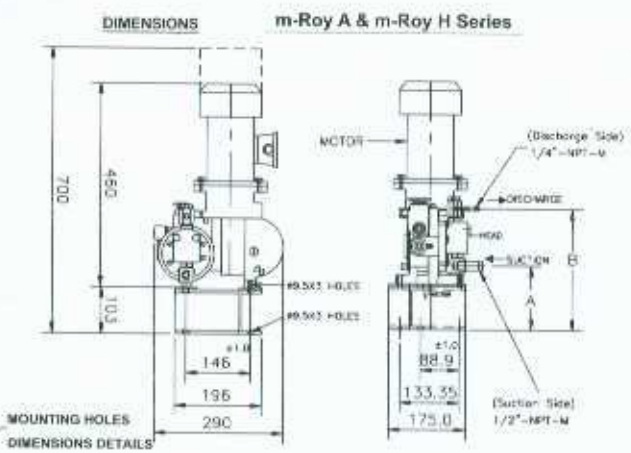
PUMP MODEL	PLUNGER DIAMETER (MM)	GEAR RATIO	SPM	STROKE MM	CAPACITY - LPH Vs PRESSURE					VISCOSITY IN CPS
					7kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	28kg/cm <sup>2</sup>	41kg/cm <sup>2</sup>	65kg/cm <sup>2</sup>	
MRB21D	22.0	25:1	58	34	32.0	31.0	30.0	29.0	28.0	325
MRB22D	22.0	15:1	96	34	62.0	61.0	57.0	54.0	47.0	143
MRB23D	22.0	10:1	144	34	83.0	82.0	78.0	76.0	71.0	94

## DRIVE DETAILS

PUMP MODEL	DRIVE DETAILS
m-Roy A & P Model	TEFC INDUCTION MOTOR, 0.5HP, 415V, 1440RPM, 50Hz 3Phase, AC, Class 'F' - Insulation Explosion Proof Motors Available on Request.
m-Roy B ALL MODEL	TEFC INDUCTION MOTOR, 1.0HP, 415V, 1440RPM, 50Hz 3Phase, AC, Class 'F' - Insulation Explosion Proof Motors Available on Request.

NOTE: Diaphragm Rupture Detection System ( DRDS ) is offered with Pressure gauge as standard. Can be offered with pressure switch as an option.



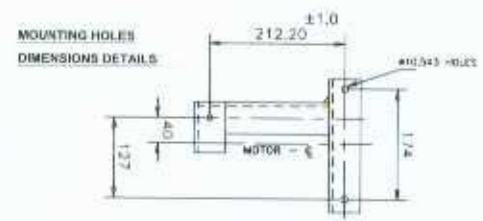


PUMP	DIMENSIONS DETAILS	
	A ±3.0	B ±3.0
MRA	140	250
MRA-H	150	255

Pump Weight  
m-Roy A & H  
TOTAL WEIGHT OF PUMP  
WITH MOTOR - 34 Kg

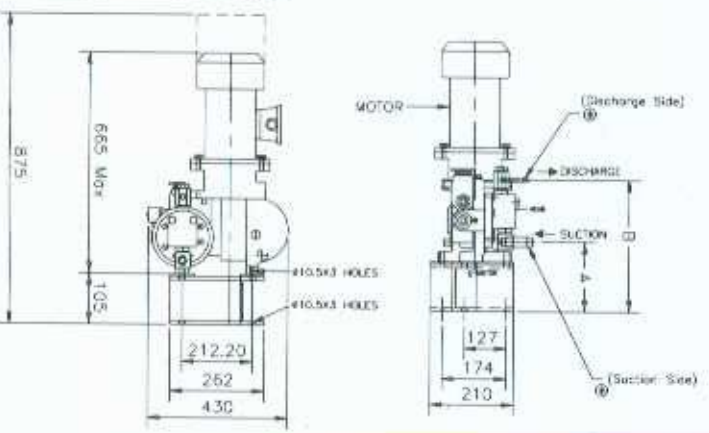
### Material of construction

PARTS	MATERIAL
Diaphragm Head	CF8M
Cartridge	SS-316
Ball Checks	SS-316
Seats	SS-316
Contour Plate	SS-316
Diaphragm	PTFE



Pump	Plunger Size mm	Dimensions details		End connection details	
		A ± 3	B ± 3	Suction	Discharge
MROY-B	15.0 mm	140 mm	330 mm	1/2" -NPT-M	1/4" -NPT-M
MROY-B	22.0 mm	123 mm	340 mm	1/2" -NPT-M	3/8" -NPT-M

### m-Roy B PUMPS SERIES



Pump Weight  
mRoy B  
TOTAL WEIGHT OF PUMP  
WITH MOTOR - 45 Kg

NOTE: All dimensions are in "mm".



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