



DSD[®] Technology

Reinventing metering pumps

Dynamic Stiffness Diaphragm - High hydraulic performance



NEW

Plunger liquid end performances with the diaphragm liquid end safety

- Internal protection of the metallic parts
- No leakage
- 100% leakproof and unbreakable diaphragm

Diaphragm liquid end - DSD[®] (Dynamic Stiffness Diaphragm) technology

- Low flow injection of highly concentrated chemicals
- Injection of high viscosity liquids
- No hydraulic cavitation: high number of operational cycles and stops to production are limited
- Flow rate accuracy: designed according to API 675, dead volumes reduced as possible
- Optimization of the Life Cycle Cost:
 - => Long service life rigid diaphragm (> 25,000 h)
 - => Liquid end made up of a limited number of components
 - => Reduced consumables (only 40 ml of oil in liquid end)

A **hydraulic compensation** system allowing the following functions: suivantes:

- Continuous air bleed
- Refill valve
- Visual oil level indication: easy maintenance
- Oil tank

Compatible with most chemicals used

PVC: the most economical solution. Suitable for a wide range of applications, in particular in the field of water treatment and agriculture.

Inox : particularly recommended for the dosing of food products, solvents or fatty products such as acetone, nitric acid, liquid fertilizer, sodium hydroxide etc.

PVDF : suitable for use with concentrated acids and bases and oxidants.

PEEK diaphragm: very wide chemical compatibility; not suitable for the chemicals as follows: Sulfuric acid (whatever concentration), hydrofluoric acid, bromine and chlorine peroxide

GTMA series DOSING PUMPS / DSD[®] Technology

Up to 7.71 l/h and 65 bar / Technical characteristics



General technical characteristics

Accuracy	±2% over a range of 10 to 100% of nominal flow rate
Flow rate adjustment	Adjustment of nominal flow rate while running from 0 to 100% Stroke speed limited to 36 spm mini.
Thrust	100 daN
Stroke length 100%	4 mm / 6 mm
Temperature of the fluids	S.S. liquid ends (codes XR and XV): -5 °C to +40 °C in standard. Pressure limited to 65 bar under 20 °C / The pressure has to be derated: 1 bar / 5 °C PVC liquid end (code CR): +10 °C to +40 °C. Pressure limited to 25 bar under 20 °C / The pressure has to be derated: 3 bar / 5 °C PVDF liquid end (code CR): -5 °C to +40 °C. Pressure limited to 35 bar under 20 °C / The pressure has to be derated: 2.5 bar / 5 °C
Max. ambient temperature	40 °C
Leakage	IP55
Maximum viscosity	Standard liquid ends: 45 cP XV liquid ends for viscous products: please consult
Suction lift	6 mWater when the pump is primed. At 6 mWater: flow rate has to be derated by -5% Flooded suction and NPSH calculation are mandatory for viscous liquids

Available liquid ends (Materials in contact with the pumped liquid)

LIQUID END	CR67	VR67	XR67 / XV67
Liquid end body	PVC	PVDF	316L
Check valve cartridge	PVC	PVDF	316L
Seats	Hastelloy C	Hastelloy C	316L
Balls	Hastelloy C	Hastelloy C	Hastelloy C
Diaphragm	PEEK	PEEK	PEEK
Seals	PTFE	PTFE	NA

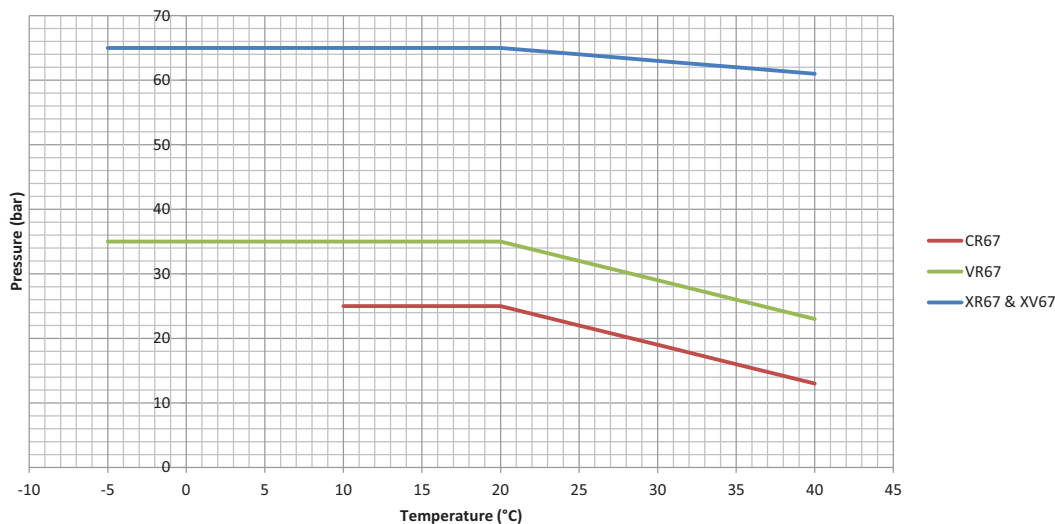
Available valves

Valves	Description
Standard	Double valves / double ball
XV liquid end for viscous products	Ø4 spring loaded ball Spring loaded ball - at suct. side: 0.2 bar / at disch. side: 1 bar

Connections

Valves	XR67 / XV67	CR67 / VR67	Description
Standard	W2 F	W1 F	Vertical on suction and discharge sides
Connection direction	W	W	Vertical on suction and discharge sides
Type of connection	NPT f	GAZ f	

Pressure - Temperature chart



GTMA series DOSING PUMPS / DSD[®] Technology

Up to 7.71 l/h and 65 bar / Performances and Codification



XR67 and XV67 - S.S. liquid ends

Ø plunger mm	Stroke length plunger mm	Flow rate		Pressure max. bar	Pressure Max. suction bar	Frequency max. spm	Max. viscosity (*)		Motor speed rpm	Motor power		Connections
		10 bar l/h	P max. l/h				Standard mPa.s	XV liquid end mPa.s		3-Ph Watt	1-Ph Watt	
16	4	1.29	1.16	50	48	36		Consult us	1500	90		
16	4	2.57	2.31	50	48	72		Consult us	3000			
16	6	3.86	3.47	50	48	72		Consult us	3000			
16	4	5.14	4.63	50	48	144	45	NA	3000	120	180	1/4" NPT female
14	6	5.91	5.09	65	63	144		NA	3000			
16	6	7.71	6.94	50	48	144		NA	3000			

(2) At the maximum viscosity, flow rate has to be derated by 10% for XV liquid ends

CR67 - PVC liquid ends

Ø plunger mm	Stroke length plunger mm	Flow rate		Pressure max. bar	Pressure Max. suction bar	Frequency max. spm	Max. viscosity Standard mPa.s	Motor speed rpm	Motor power		Connections
		10 bar l/h	P max. l/h						3-Ph Watt	1-Ph Watt	
16	4	1.20	1.03			36		1500	90		
16	4	2.40	2.06			72		3000			
16	6	3.60	3.08			72		3000			
16	4	4.79	4.11	25	23	144	45	3000	120	180	1/4" Gas female
14	6	5.51	4.72			144		3000			
16	6	7.19	6.17			144		3000			

VR67 - PVDF liquid ends

Ø plunger mm	Stroke length plunger mm	Flow rate		Pressure max. bar	Pressure Max. suction bar	Frequency max. spm	Max. viscosity Standard mPa.s	Motor speed rpm	Motor power		Connections
		10 bar l/h	P max. l/h						3-Ph Watt	1-Ph Watt	
16	4	1.20	0.91			36		1500	90		
16	4	2.40	1.83			72		3000			
16	6	3.60	2.74			72		3000			
16	4	4.79	3.66	35	33	144	45	3000	120	180	1/4" Gas female
14	6	5.51	4.20			144		3000			
16	6	7.19	5.48			144		3000			

The stroke and flow rates are given for a 50 Hz motor - with a 60 Hz motor these increase by 20%.

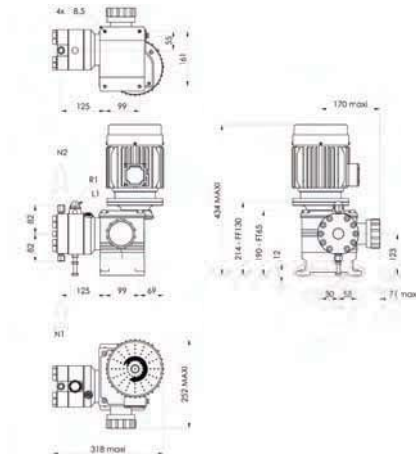
1 mPa.s = 1 CP

GTMA serie DOSING PUMPS / DSD[®] Technology

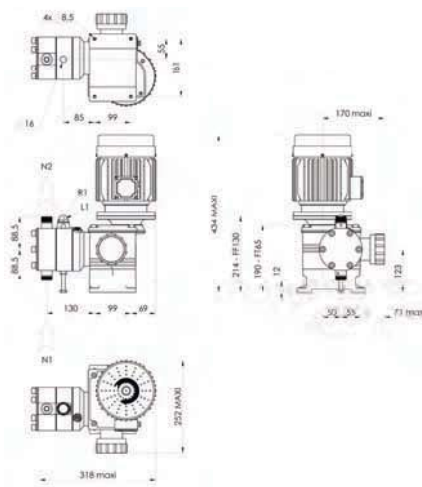
Up to 7.71 l/h and 65 bar / Dimensions and Packing



GTMA pump with DSD S.S. liquid ends: XR67 and XV67 ((Dimensions in mm)



GTMA pump with DSD plastic liquid ends: CR67 et VR67 (Dimensions in mm)



N1: Suction
 N2: Discharge
 L1: Hydraulic oil level
 R1: Hydraulic oil filling

GTMA pump with DSD plastic liquid end: Weight and Packing

	Standard packing	Net weight (*) kg	Gross weight (*) kg	Packing (L x W x H) (mm)
G TM A with XR67 / XV67 liquid end	Cardboard	9	11	400 x 300 x 490
G TM A with CR67 / VR67 liquid end	Cardboard	7.5	9.5	400 x 300 x 490

(*) Approximately - Without motor

G^{TMM} serie DOSING PUMPS / DSD[®] Technology

Up to 11.95 l/h and 70 bar / Technical characteristics



General technical characteristics

Accuracy	±2% over a range of 10 to 100% of nominal flow rate
Flow rate adjustment	Adjustment of nominal flow rate while running from 0 to 100% Stroke speed limited to 36 spm mini.
Thrust	100 daN
Stroke length 100%	4 mm / 6 mm
Temperature of the fluids	S.S. liquid ends (codes XR and XV): -5 °C to +40 °C in standard. Pressure limited to 65 bar under 20 °C / The pressure has to be derated: 1 bar / 5 °C PVC liquid end (code CR): +10 °C to +40 °C. Pressure limited to 25 bar under 20 °C / The pressure has to be derated: 3 bar / 5 °C PVDF liquid end (code CR): -5 °C to +40 °C. Pressure limited to 35 bar under 20 °C / The pressure has to be derated: 2.5 bar / 5 °C
Max. ambient temperature	40 °C
Leakage	IP55
Maximum viscosity	Standard liquid ends: 45 cP XV liquid ends for viscous products: please consult
Suction lift	6 mWater when the pump is primed. At 6 mWater: flow rate has to be derated by -5% Flooded suction and NPSH calculation are mandatory for viscous liquids
Discharge pressure (min)	2 bar
Hydraulic compensation system	Continuous air bleed / Refill valve / Visual oil level indication / Oil tank

Available liquid ends (Materials in contact with the pumped liquid)

LIQUID END	CR67	VR67	XR67 / XV67
Liquid end body	PVC	PVDF	316L
Check valve cartridge	PVC	PVDF	316L
Seats	Hastelloy C	Hastelloy C	316L
Balls	Hastelloy C	Hastelloy C	Hastelloy C
Diaphragm	PEEK	PEEK	PEEK
Seals	PTFE	PTFE	NA

Available valves

Valves	Description
Standard	Double valves / double ball
XV liquid end for viscous products	Ø4 spring loaded ball Spring loaded ball - at suct. side: 0.2 bar / at disch. side: 1 bar

Connections

Valves	XR67 / XV67	CR67 / VR67	Description
Standard	W2 F	W1 F	Vertical on suction and discharge sides
Connection direction	W	W	Vertical on suction and discharge sides
Type of connection	NPT f	GAS f	

Available paint systems

System	Description	Description
Standard	FELOR polyurethane 100 µ	Application of 1 coat: Feloxane HES, colour RAL 1018 yellow, thickness 100 µ
Food grade	Food grade Epoxy 100 µ No ACS certification (French Sanitary Conformity Certificate)	Application of 1 coat: sand blasting S.A. 2.5 + 1 coat of food grade processing Epoxy + colour RAL 9010 white
160 µ	Epoxy 160 µ	Application of 2 coats: - sand blasting S.A. 2.5- 1 epoxy coat Hempadur 4588 - 1 final polyurethane coat, Hemptane 5521 polyurethane, colour RAL 1018 yellow

Milton Roy Europe is committed to minimising the impact of its paints on the environment and therefore strongly recommends the use of its standard paints



XR67 and XV67 - S.S. liquid ends

Ø plunger mm	Stroke length plunger mm	Flow rate		Pressure max. bar	Pressure Max. suction bar	Frequency max. spm	Max. viscosity (*)		Motor speed rpm	Motor power		Connections	
		10 bar l/h	P max. l/h				Standard mPa.s	XV liquid end mPa.s		3-Ph Watt	1-Ph		
16	4	1.49	1.31	70	68	36	45	1500	180	180	1/4" NPT female		
16	4	2.99	2.63			72						Consult us	90
14	6	3.43	3.02			72						Consult us	
14	8	4.58	4.03			72						Consult us	
16	8	5.98	5.26			72						Consult us	
14	6	6.86	6.04			144						NA	
14	8	9.15	8.05			144						NA	
16	8	11.95	10.52			144						NA	

(2) At the maximum viscosity, flow rate has to be derated by 10% for XV liquid ends

CR67 - PVC liquid ends

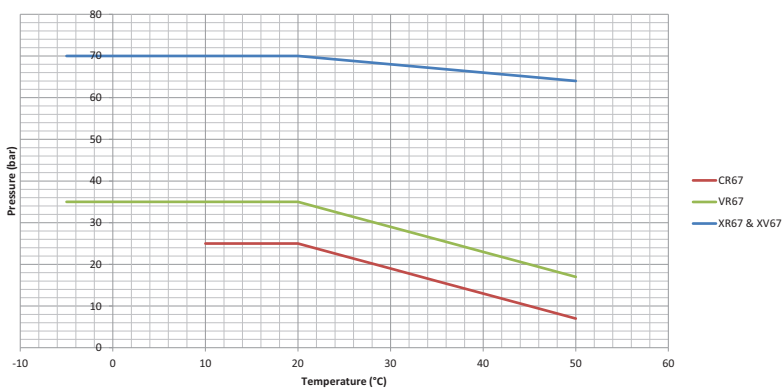
Ø plunger mm	Stroke length plunger mm	Flow rate		Pressure max. bar	Pressure Max. suction bar	Frequency max. spm	Max. viscosity Standard mPa.s	Motor speed rpm	Motor power		Connections		
		10 bar l/h	P max. l/h						3-Ph Watt	1-Ph			
16	4	1.42	1.27	25	23	36	45	1500	180	180	1/4" Gas female		
16	4	2.85	2.55			72							90
14	6	3.27	2.93			72							
14	8	4.36	3.90			72							
16	8	5.70	5.10			72							
14	6	6.54	5.86			144							
14	8	8.72	7.81			144							
16	8	11.40	10.20			144							

VR47 - PVDF liquid ends

Ø plunger mm	Stroke length plunger mm	Flow rate		Pressure max. bar	Pressure Max. suction bar	Frequency max. spm	Max. viscosity Standard mPa.s	Motor speed rpm	Motor power		Connections		
		10 bar l/h	P max. l/h						3-Ph Watt	1-Ph			
16	4	1.42	1.18	35	33	36	45	1500	180	180	1/4" Gas female		
16	4	2.85	2.35			72							90
14	6	3.27	2.70			72							
14	8	4.36	3.60			72							
16	8	5.70	4.70			72							
14	6	6.54	5.40			144							
14	8	8.72	7.20			144							
16	8	11.40	9.40			144							

The stroke and flow rates are given for a 50 Hz motor - with a 60 Hz motor these increase by 20%.
1 mPa.s = 1 CP

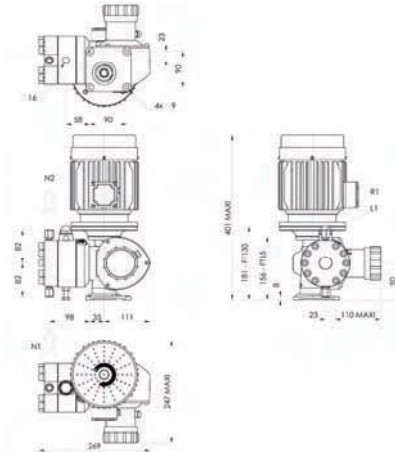
Pressure - Temperature chart



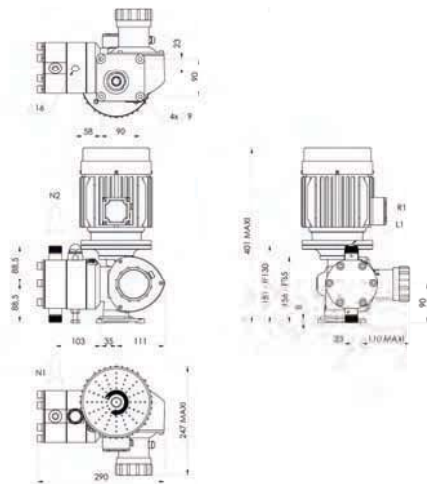
GTMM series DOSING PUMPS / DSD[®] Technology
Up to 12.23 l/h and 70 bar / Dimensions and Packing



GTMM pump with DSD S.S. liquid ends: XR67 and XV67 (Dimensions in mm)



GTMM pump with DSD plastic liquid ends: CR67 and VR67 (Dimensions in mm)



N1: Suction
 N2: Discharge
 L1: Hydraulic oil level
 R1: Hydraulic oil filling

GTMM pump with DSD plastic liquid end: Weight and Packing

	Standard packing	Net weight (*) kg	Gross weight (*) kg	Packing (L x W x H) (mm)
G TM M with XR67 / XV67 liquid end	Cardboard	12	14	400 x 300 x 490
G TM M with CR67 / VR67 liquid end	Cardboard	10.5	12.5	400 x 300 x 490

(*) Approximately - Without motor