

Motor Driven

METERING PUMPS



innovation > technology > future

Plunger piston metering pumps

PS1 Series

3

Flow rate
from 1,5 to 304 lph

Pressure
SS 316 L Pumphead
from 6 to 20 bar
PVC Pumphead
from 4 to 10 bar



PS2 Series

4

Flow rate
from 40 to 1000 lph

Pressure
SS 316 L Pumphead
from 5 to 20 bar
PVC Pumphead
from 5 to 10 bar



M2R Series

5

Flow rate
SS 316 L Pumphead
from 32,5 to 127 lph
SS 316 L/FPM Pumphead
from 127 to 860 lph

Pressure
SS 316 L Pumphead
from 24 to 40 bar
SS 316 L/FPM Pumphead
from 3 to 20 bar



E1R Series

6

Flow rate
from 32 to 1203 lph

Pressure
from 6 to 20 bar



E2R Series

7

Flow rate
from 233 to 2470 lph

Pressure
from 7 to 40 bar



E3 Series

8

Flow rate
from 233 to 2470 lph

Pressure
from 7 to 40 bar



Diaphragm metering pumps

MS1 Series

9

Mechanical diaphragm

Flow rate
from 5,5 to 500 lph

Pressure PP Pumphead
from 3 to 10 bar
SS 316 L Pumphead
from 3 to 10 bar



MS0 Series

10

Mechanical diaphragm

Flow rate
from 15 to 60 lph

Pressure
from 5 bar



SWE1R Series

11

Hydraulic diaphragm

Flow rate
from 37 to 1153 lph

Pressure
PP Pumphead
from 6 to 10 bar
SS 316 L Pumphead
from 6 to 40 bar



SWE2R Series

12

Hydraulic diaphragm

Flow rate
PP Pumphead
from 223 to 2371 lph
SS 316 L Pumphead
from 17 to 2371 lph

Pressure
PP Pumphead
from 7 to 10 bar
SS 316 L Pumphead
from 7 to 40 bar



SWE3 Series

13

Hydraulic diaphragm

Flow rate
PP Pumphead
from 151 to 3942 lph
SS 316 L Pumphead
from 89 to 3942 lph

Pressure
PP Pumphead
from 4 to 10 bar
SS 316 L Pumphead
from 7 to 40 bar



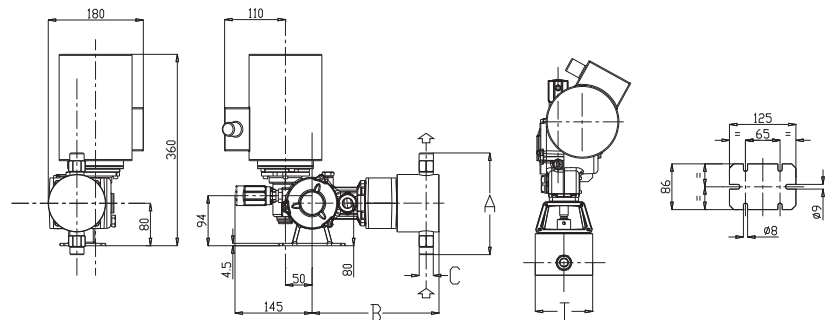


PUMP MODEL Ø Piston	Strokes/min	Flow Rate [lph]	Pressure				Connections		3-Phases Motor [kW]
			SS 316 L		PVC		SS 316 L	PVC	
			bar	psi	bar	psi			
PS1D 006	58	1,5	20	290	10	145	1/4" GF	1/4" GF	0,18
	78	2							
	116	3							
PS1D 011	58	5	20	290	10	145	1/4" GF	1/4" GF	0,18
	78	6,5							
	116	10							
PS1D 017	58	11	20	290	10	145	3/8" GF	3/8" GF	0,18
	78	15							
	116	22							
PS1D 025	58	25	20	290	10	145	3/8" GF	3/8" GF	0,18
	78	32							
	116	50							
PS1D 030	58	35	20	290	10	145	3/8" GF	3/8" GF	0,25
	78	45							
	116	70							
PS1D 038	58	55	17	246,5	10	145	1/2" GF	1/2" GF	0,25
	78	73							
	116	110							
PS1D 048	58	85	10	145	10	145	1/2" GF	1/2" GF	0,25
	78	114							
	116	170							
PS1D 054	58	110	8	116	8	116	1/2" GF	1/2" GF	0,25
	78	145							
	116	220							
PS1D 064	58	152	6	87	4	58	3/4" GF	3/4" GF	0,25
	78	204							
	116	304							

Using the 60 Hz triphases motor the performances of the pumps will suffer the following variations: **Pressure: -20%; Flow Rate: +20%**

TECHNICAL FEATURES

Flow Rate	up to 304 lph
Pressure	up to 20 bar (290 psi)
Stroke rate	58 [A] • 78 [B] • 116 [C] strokes/minute
Piston diameter	from 6 to 64 mm
Motor	Standard 0,18 and 0,25 kW [IP55]
Stroke length	SS 316 L or PVC (standard)
Liquid end	SS 316 L pump head 90° C
Max. dosage temperature	PVC pump head 40° C
Flow rate ajustement	Every pump can be equipped with an electric actuator which accepts a 4÷20 mA
SS 316 L or Ceramic Piston	The material in contact with the liquid to be dosed are listed in the "pump head materials" table (special materials may be supplied on request)



PISTON DIAMETER	SS 316 L				PVC			
	A	B	C	T	A	B	C	T
006	120	210	1/4" GF	68	157	216	1/4" GF	80
011	120	210	1/4" GF	68	157	216	1/4" GF	80
017	120	210	3/8" GF	68	147	216	3/8" GF	80
025	120	215	3/8" GF	68	147	225	3/8" GF	80
030	120	215	3/8" GF	68	147	225	3/8" GF	80
038	160	227	3/8" GF	88	168	235	3/8" GF	100
048	160	227	1/2" GF	88	196	240	1/2" GF	100
054	173	229	1/2" GF	108	216	240	1/2" GF	120
064	202	238	3/4" GF	108	222	250	3/4" GF	120

PUMP IDENTIFICATION

P	S1	D	064	B	31	B1	000
1	2	3	4	5	6	7	8
1	Model			5	Strokes rate		
2	Mechanism type			6	Pump head materials		
3	Stroke length			7	Motor		
4	Plunger diameter			8	Optional		

PUMP HEAD MATERIALS	STANDARD		ON REQUEST	
	21	31	24	34
Pump head	SS 316 L	PVC	SS 316 L	PVC
Piston	SS 316 L	Ceramic	Ceramic	Ceramic
Piston seal	FPM	FPM	EPDM	EPDM
Valves	SS 316 L	Ceramic	SS 316 L	Ceramic
Valve seats	SS 316 L	PVC	SS 316 L	PVC

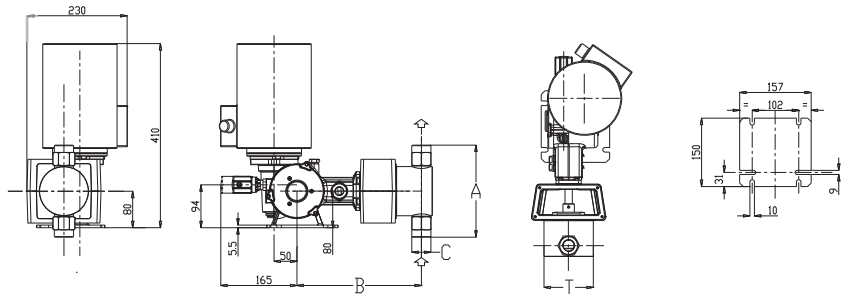


PUMP MODEL Ø Piston	Strokes/min	Flow Rate [lph]	Pressure				Connections		3-Phases Motor [kW]
			SS 316 L		PVC		SS 316 L	PVC	
			bar	psi	bar	psi			
PS2E 025	58	40	20	290	10	145	3/8" GF	3/8" GF	0,25
	78	53							
	116	80							
PS2E 030	58	55	20	290	10	145	3/8" GF	3/8" GF	0,25
	78	75							
	116	112							
PS2E 038	58	90	20	290	10	145	1/2" GF	3/8" GF	0,37
	78	120							
	116	180							
PS2E 048	58	140	20	290	10	145	1/2" GF	1/2" GF	0,55
	78	190							
	116	284							
PS2E 054	58	180	15	217,5	10	145	1/2" GF	1/2" GF	0,55
	78	242							
	116	365							
PS2E 064	58	250	10	145	10	145	3/4" GF	3/4" GF	0,75
	78	335							
	116	505							
PS2E 076	58	365	7	101,5	7	101,5	1" GF	1" GF	0,75
	78	485							
	116	730							
PS2E 089	58	495	5	72,5	5	72,5	1" GF	1" GF	0,75
	78	660							
	116	1000							

Using the 60 Hz triphases motor the performances of the pumps will suffer the following variations: Pressure: -20%; Flow Rate: +20%

TECHNICAL FEATURES

Flow Rate	up to 1000 lph
Pressure	up to 20 bar (290 psi)
Stroke rate	58 [A] • 78 [B] • 116 [C] strokes/minute
Piston diameter	from 25 to 89 mm
Motor	Standard 0,25 • 0,37 • 0,55 • 075 kW [IP55]
Stroke length	15 mm
Liquid end	SS 316 L pump head 90° C
Max. dosage temperature	PVC pump head 40° C
Flow rate adjustment	Every pump can be equipped with an electric actuator which accepts a 4÷20 mA
SS 316 L or Ceramic Piston	The material in contact with the liquid to be dosed are listed in the "pump head materials" table (special materials may be supplied on request)



PISTON DIAMETER	SS 316 L				PVC			
	A	B	C	T	A	B	C	T
025	120	258	3/8" GF	68	147	258	3/8" GF	80
030	120	258	3/8" GF	68	147	258	3/8" GF	80
038	160	268	1/2" GF	88	168	268	3/8" GF	100
048	160	268	1/2" GF	88	196	268	1/2" GF	100
054	173	268	1/2" GF	108	216	268	1/2" GF	120
064	202	273	3/4" GF	108	222	237	3/4" GF	120
076	238	288	1" GF	138	244	288	1" GF	148
089	252	288	1" GF	150	256	288	1" GF	160

PUMP IDENTIFICATION

P	S2	E	064	B	31	C4	000
1	2	3	4	5	6	7	8
1	Model			5	Strokes rate		
2	Mechanism type			6	Pump head materials		
3	Stroke length			7	Motor		
4	Plunger diameter			8	Optional		

PUMP HEAD MATERIALS	STANDARD		ON REQUEST	
	21	31	24	34
Pump head	SS 316 L	PVC	SS 316 L	PVC
Piston	SS 316 L	Ceramic	Ceramic	Ceramic
Piston seal	FPM	FPM	EPDM	EPDM
Valves	SS 316 L	Ceramic	SS 316 L	Ceramic
Valve seats	SS 316 L	PVC	SS 316 L	PVC



PUMP MODEL	50 Hz			60 Hz			Pressure		Electric motor	Suc/Dis Connec	STA
	Strokes/min	Flow Rate		Strokes/min	Flow Rate						
		lph	gph		lph	gph	bar	psi	kW	Ø BPS	
M2R 25	59	32,4	8,6	71	38,9	10,3	40	580	0,37	3/8" F	
	78	42,8	11,3	94	51,4	13,6	40	580	0,37	3/8" F	
	100	55	14,6	120	66	17,5	40	580	0,37	3/8" F	
M2R 35	59	64	16,9	71	76,8	20,3	40	580	0,37	3/8" F	
	78	85	22,5	94	102	27	31	450	0,37	3/8" F	
	100	109	28,8	120	130,8	34,6	24	348	0,37	3/8" F	
	117	127	33,6	-	-	-	31	450	0,55	3/8" F	
M2R 49	59	127	33,6	71	152	40,3	20	290	0,37	1/2" F	
	78	168	44,4	94	202	53,3	15,5	225	0,37	1/2" F	
	100	216	57,1	120	259	68,6	12	175	0,37	1/2" F	
	117	253	66,9	-	-	-	15,6	226	0,55	1/2" F	
M2R 63	59	214	56,6	71	76,8	20,3	12	174	0,37	1/2" F	
	78	282	74,6	94	102	27	9,3	135	0,37	1/2" F	
	100	362	95,8	120	130,8	34,6	7,3	106	0,37	1/2" F	
	117	424	112,2	-	-	-	9,4	136	0,55	1/2" F	
M2R 86	59	390	103,2	71	76,8	20,3	6,6	96	0,37	3/4" F	
	78	515	136,2	94	102	27	5	73	0,37	3/4" F	
	100	660	174,6	120	130,8	34,6	4	58	0,37	3/4" F	
	117	773	204,5	-	-	-	5,1	74	0,55	3/4" F	
M2R 98	59	507	134,1	71	608	161	5	73	0,37	1" F	
	78	670	177,2	94	804	212,7	4	58	0,37	1" F	
	100	860	227,5	-	-	-	3	44	0,37	1" F	

The shown pressures refer to rated values. Available motors (0,37 and 0,55 kW). For further details please contact our offices.

TECHNICAL FEATURES

Flow Rate	STA Version (SS 316 L Pump Head) up to 127 lph (33,6 gph) SVA Version (SS 316 L/FPM Pump Head) up to 860 lph (227,5 gph)
Pressure	STA Version (SS 316 L Pump Head) up to 40 bar (580 psi) SVA Version (SS 316 L/FPM Pump Head) up to 20 bar (290 psi)
Stroke rate	59 • 78 • 100 • 117 strokes/minute (50Hz)
Piston diameter	STA Version (SS 316 L Pump Head) from 25 to 35 mm SVA Version (SS 316 L/FPM Pump Head) from 49 to 98 mm
Motor	0,37[D] • 0,55[E] kW

PUMP IDENTIFICATION

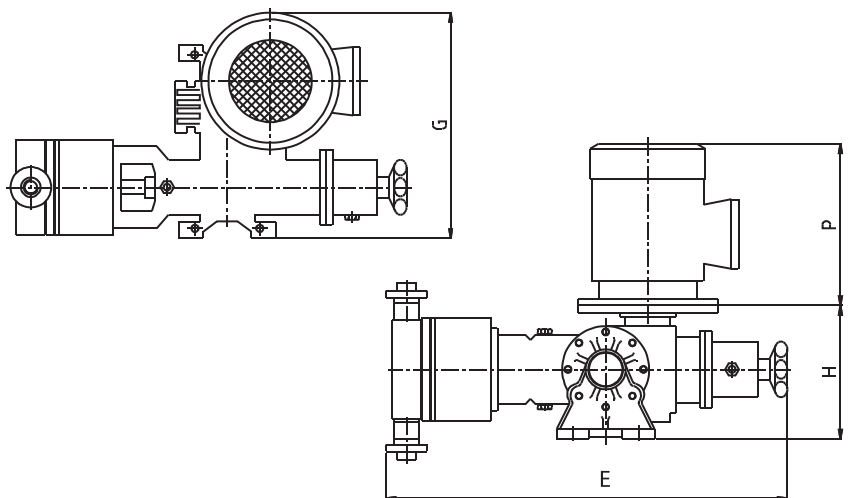
M2R	98	S	V	A	24	4	E
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1 Pump model	2 Piston diameter	3 Pump head S=SS 316 L	4 Packing: [T] PTFE • [N] NBR • [V] FPM	5 [A] Single Valves • [B] Double Valves [F] Wing Valves	6 Reduction ratio [14 • 18 • 24]	7 Motor Poles [2 • 4]	8 Motor Power

DIMENSIONS AND WEIGHT PUMPS WITHOUT MOTOR

Piston diameter	mm			Kg
	E	G	H	
25	470	236	152	16
35	470	236	152	17
49	470	236	152	18
63	470	236	152	18
86	470	236	152	25
98	470	236	152	26

DIMENSIONS AND WEIGHT OF ELECTRIC MOTORS

Power kW	0,37		0,55	
Standard	[P]	mm	230	230
		Kg	6	17
Eexd	[P]	mm	290	290
		Kg	17	17



VERSION		CONTACT PARTS MATERIALS				
Type	Bar Max.	Pump head	Plunger	Packing	Valves	Seats
STA	40	SS 316 L	SS 316 L	PTFE	SS 316 L	SS 316 L
SVA	Low Pressure	SS 316 L	SS 316 L	FPM	SS 316 L	SS 316 L



PUMP MODEL	50 Hz			60 Hz			Pressure		Electric motor	Suc/Dis Connec
	Strokes/min	Flow Rate		Strokes/min	Flow Rate		bar	psi		
		lph	gph		lph	gph				
E1R 25	59	32	8,5	71	38,4	10,2	40	580	0,55	3/8" F
	74	40	10,6	89	48	12,7	40	580	0,55	3/8" F
	93	50	13,2	112	60	15,9	40	580	0,55	3/8" F
E1R 35	74	80	21,2	89	96	25,4	40	580	0,55	3/8" F
	93	100	26,5	112	120	31,7	40	580	0,55	3/8" F
E1R 50	59	130	34,4	71	156	41,3	41	594,5	1,1	1/2" F
	74	164	43,4	89	196,8	52,1	41	594,5	1,1	1/2" F
	93	206	54,5	112	247,2	65,4	41	594,5	1,1	1/2" F
E1R 60	74	227	60,1	89	272,4	72,1	28	406	0,75	1/2" F
	93	288	76,2	112	345,6	91,4	28	406	1,1	1/2" F
E1R 70	74	324	85,7	89	388,8	102,9	21	304,5	1,1	1/2" F
	93	407	107,7	112	488,4	129,2	21	304,5	1,1	1/2" F
E1R 85	74	480	127	89	576	152,4	14	203	1,1	3/4" F
	93	603	159,5	112	723,6	191,4	14	203	1,1	3/4" F
E1R 100	74	665	175,9	89	798	211,1	10	145	0,75	1" F
	93	835	220,9	112	1002	265,1	10	145	1,1	1" F
E1R 120	74	957	253,2	89	1148,4	303,8	7	101,5	1,1	1" F
	93	1203	318,3	112	1443,6	381,9	7	101,5	1,1	1" F

The shown pressures refer to rated values. Available motors (0,55 - 0,75 and 1,1 kW). For further details please contact our offices.

PUMP IDENTIFICATION

E1R	120	S	B	A	24	4	G
1	2	3	4	5	6	7	8

- 1 Pump model
- 2 Piston diameter
- 3 Pump head S=SS 316 L
- 4 Packing: [T] PTFE • [N] NBR [V] FPM • [B] Square rings
- 5 [A] Single Valves • [B] Double Valves [F] Wing Valves
- 6 Reduction ratio [15 • 19 • 24]
- 7 Motor Poles [2 • 4]
- 8 Motor Power

TECHNICAL FEATURES

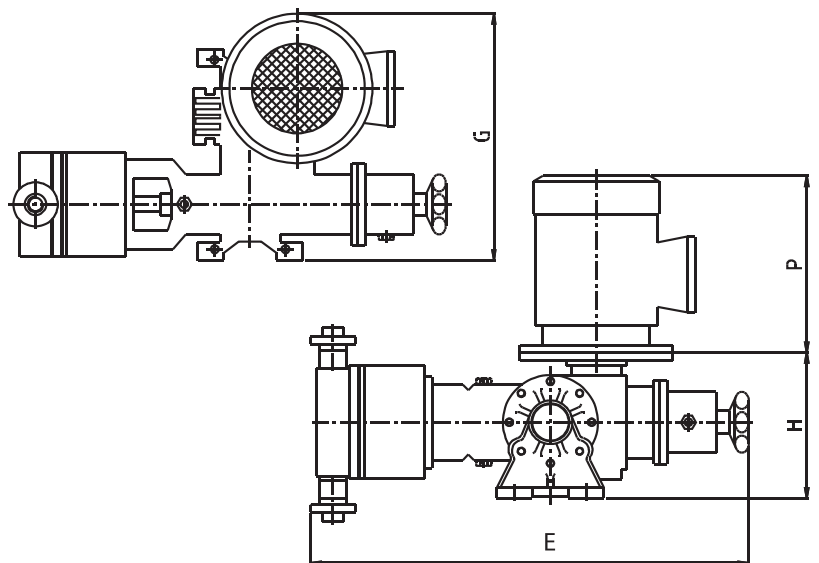
Flow Rate	up to 1203 lph (318,3 gph)
Pressure	up to 40 (580 psi)
Stroke rate	59 • 74 • 93 strokes/minute (50Hz)
Piston diameter	from 25 to 120 mm
Motor	0,55 [D] • 0,75 [E] • 1,1 [F] kW

DIMENSIONS AND WEIGHT PUMPS WITHOUT MOTOR

Piston diameter	mm			Kg
	E	G	H	
25	515	330	192	25
35	515	330	192	26
50	515	330	192	27
60	515	330	192	30
70	515	330	192	35
85	520	330	192	38
100	525	330	192	40
120	540	330	192	43

DIMENSIONS AND WEIGHT OF ELECTRIC MOTORS

Power kW		0,55	0,75	1,1
Standard	[P] mm	239	239	252
	Kg	12,5	14	18
Eexd	[P] mm	285	285	325
	Kg	22	24	29



VERSION		CONTACT PARTS MATERIALS				
Type	Bar Max.	Pump head	Plunger	Packing	Valves	Seats
STA	40	SS 316 L	SS 316 L	PTFE	SS 316 L	SS 316 L
SVA	Low Pressure	SS 316 L	SS 316 L	FPM	SS 316 L	SS 316 L



PUMP MODEL Ø Piston	50 Hz		60 Hz		Pressure		Electric motor kW	Suc/Dis Connec Ø BPS		
	Strokes/min	Flow Rate		Strokes/min	Flow Rate					
		lph	gph		lph	gph	bar	psi		
E2R 50	70	233	61,6	84	280	74	40	580	1,5	3/4" F
	93	310	82	112	372	98,4	40	580	2,2	3/4" F
E2R 70	70	460	121,7	84	552	146	30	435	2,2	3/4" F
	93	611	161,6	112	733	194	30	435	2,2	3/4" F
E2R 85	70	679	179,6	84	815	216	21	304,5	2,2	1" F
	93	901	238,4	112	1084	286	21	304,5	2,2	1" F
E2R 100	70	942	249,2	84	1130	299	15	218	2,2	1" F
	93	1253	331,5	112	1504	398	15	218	2,2	1" F
E2R 120	70	1360	359,8	84	1632	432	10	145	2,2	1 1/4" F
	93	1805	477,5	112	2166	573	10	145	2,2	1 1/4" F
E2R 140	70	1858	491,5	84	2230	590	7	101,5	2,2	1 1/4" F
	93	2470	653,4	112	2964	784	7	101,5	2,2	1 1/4" F

The shown pressures refer to rated values. Available motors (0,75 - 1,1 - 1,5 and 2,2 kW). For further details please contact our offices.

PUMP IDENTIFICATION

E2R	200	S	B	A	24	4	G
1	2	3	4	5	6	7	8
1 Pump model	2 Piston diameter	3 Pump head S=SS 316 L	4 Packing: [T] PTFE • [N] NBR [V] FPM • [B] Square rings	5 [A] Single Valves • [B] Double Valves [F] Wing Valves	6 Reduction ratio [15 • 19 • 24]	7 Motor Poles [2 • 4]	8 Motor Power

TECHNICAL FEATURES

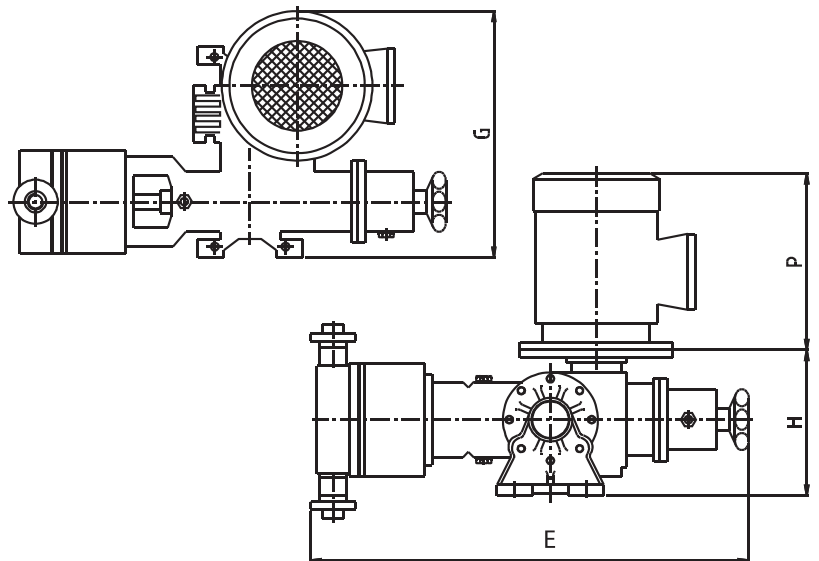
Flow Rate	up to 2470 lph (653,4 gph)
Pressure	up to 40 bar (580 psi)
Stroke rate	70 • 93 strokes/minute (50Hz)
Piston diameter	from 50 to 140 mm
Motor	0,75[F] • 1,1[G] • 1,5[H] • 2,2 [I] kW

DIMENSIONS AND WEIGHT PUMPS WITHOUT MOTOR

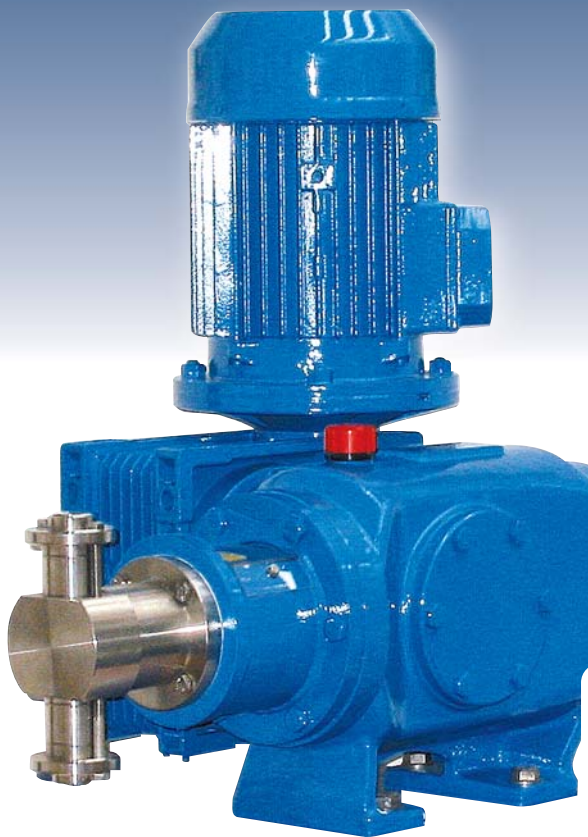
Piston diameter	mm			Kg
	E	G	H	
50	700	350	232	64
70	700	350	232	55
85	700	350	232	64
100	700	350	232	69
120	700	350	232	69
140	700	350	232	73

DIMENSIONS AND WEIGHT OF ELECTRIC MOTORS

Power kW		0,75	1,1	1,5	2,2
Standard	[P] mm	239	252	277	316
	Kg	14	18	21,5	30
Eexd	[P] mm	285	325	325	375
	Kg	24	29	31	45



VERSION		CONTACT PARTS MATERIALS				
Type	Bar Max.	Pump head	Plunger	Packing	Valves	Seats
STA	40	SS 316 L	SS 316 L	PTFE	SS 316 L	SS 316 L
SVA	Low Pressure	SS 316 L	SS 316 L	FPM	SS 316 L	SS 316 L



PUMP MODEL	50 Hz			60 Hz			Pressure		Electric motor	Suc/Dis Connec
	Strokes/min	Flow Rate		Strokes/min	Flow Rate					
		lph	gph		lph	gph	bar	psi	kW	Ø BPS
E3 50	70	387	102	84	464	123	40	580	2,2	3/4" F
	93	514	136	112	617	163	40	580	3	3/4" F
E3 60	70	537	142	84	644	170	40	580	2,2	1" F
	93	719	190	112	863	228	40	580	3	1" F
E3 70	70	766	203	84	919	243	40	580	4	1" F
	93	1018	269	112	1222	323	32	464	4	1" F
E3 85	70	1136	203	84	1363	361	29	421	4	1 1/4" F
	93	1509	269	112	1811	479	21	305	4	1 1/4" F
E3 100	70	1648	436	84	1978	523	23	334	4	1 1/4" F
	93	2190	579	112	2628	695	17	247	4	1 1/4" F
E3 120	70	2268	600	84	2722	720	14	203	4	1 1/2" F
	93	3014	797	112	3617	957	11	160	4	1 1/2" F
E3 140	70	3091	818	84	3709	981	11	160	4	1 1/2" F
	93	4107	1087	112	-	-	8	116	4	1 1/2" F

The shown pressures refer to rated values.
Available motors (2 - 3 and 4 kW). For further details please contact our offices.

PUMP IDENTIFICATION

E3	140	S	B	A	24	4	K
1	2	3	4	5	6	7	8
1 Pump model				5 [A] Single Valves • [B] Double Valves [F] Wing Valves			
2 Piston diameter					6 Reduction ratio [15 • 19 • 24]		
3 Pump head S=SS 316 L						7 Motor Poles [2 • 4]	
4 Packing: [T] PTFE • [N] NBR [V] FPM • [B] Square rings							8 Motor Power

TECHNICAL FEATURES

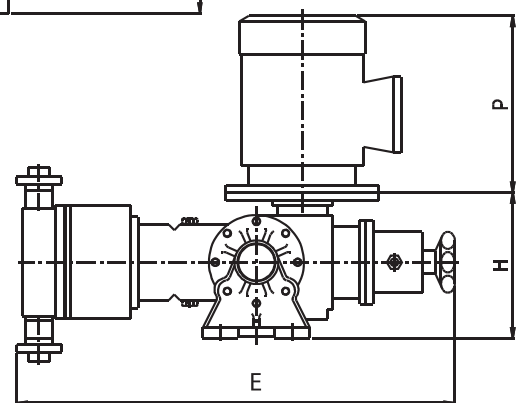
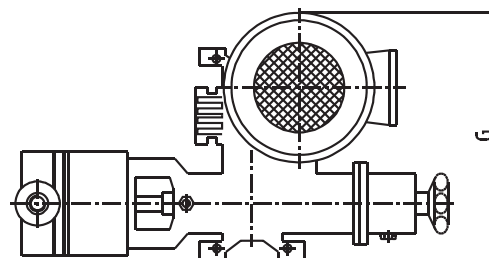
Flow Rate	up to 4107 lph (1087 gph)
Pressure	up to 40 bar (580 psi)
Stroke rate	70 • 93 strokes/minute (50Hz)
Piston diameter	from 50 to 140 mm
Motor	2,2 [I] • 3 [J] • 4 [K] kW

DIMENSIONS AND WEIGHT PUMPS WITHOUT MOTOR

Piston diameter	mm			Kg
	E	G	H	
50	850	500	357	85
70	810	500	357	85
85	810	500	357	88
100	800	500	357	88
120	800	500	357	90
140	800	500	357	92

DIMENSIONS AND WEIGHT OF ELECTRIC MOTORS

Power kW		2,2	3	4
Standard	[P] mm	316	316	332
	Kg	30	32	42
Eexd	[P] mm	375	375	410
	Kg	42	45	70



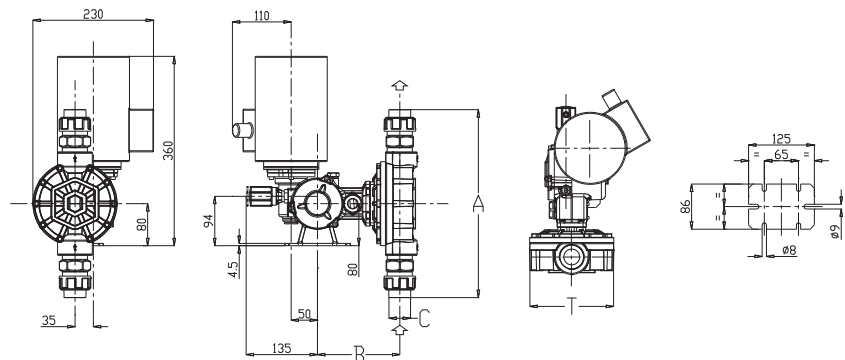
VERSION		CONTACT PARTS MATERIALS				
Type	Bar Max.	Pump head	Plunger	Packing	Valves	Seats
STA	40	SS 316 L	SS 316 L	PTFE	SS 316 L	SS 316 L
SVA	Low Pressure	SS 316 L	SS 316 L	FPM	SS 316 L	SS 316 L



PUMP MODEL	Strokes/min	Flow Rate [lph]	Pressure				Connections		3-Phases Motor [kW]
			PP		SS 316 L		PP	SS 316 L	
			bar	psi	bar	psi			
MS1A 064	58	5,5	10	145	10	145	1/4" GF	1/4" GF	0,18
	78	8							
	116	11							
MS1A 094	58	20	10	145	10	145	3/8" GF	3/8" GF	0,25
	78	26							
	116	40							
MS1B 108	58	60	10	145	10	145	3/8" GF	3/8" GF	0,37
	78	80							
	116	120							
MS1C 138	58	155	7	101,5	7	101,5	3/4" GF	3/4" GF	0,37
	78	220					3/4" GF	3/4" GF	
	116	310					1" GF	1" GF	
MS1C 165	58	230	5	72,5	5	72,5	1" GF	1" GF	0,37
	78	330							
	116	500							

Using the **60 Hz triphases motor** the performances of the pumps will suffer the following variations: **Pressure: -20%; Flow Rate: +20%**

TECHNICAL FEATURES	
Flow Rate	up to 500 lph
Pressure	up to 10 bar
Stroke rate	58 [A] • 78 [B] • 116 [C] strokes/minute
Diaphragm diameter	from 64 to 165 mm
Motor	Standard 0,18 • 0,25 • 0,37 kW [IP55]
Stroke length	2 [A] • 4 [B] • 6 [C] mm
Liquid end	SS 316 L or PP (standard)
Max. dosage temperature	SS 316 L pump head 40° C PVC pump head 40° C
Flow rate adjustment	Every pump can be equipped with an electric actuator which accepts a 4÷20 mA
PTFE Diaphragm	The material in contact with the liquid to be dosed are listed in the "pump head materials" table (special materials may be supplied on request)



DIAPHRAGM DIAMETER	PP				SS 316 L			
	A	B	C	T	A	B	C	T
064	208	149	1/4" GF	98	150	146	1/4" GF	98
094	236	144	3/8" GF	117	172	146	1/4" GF	120
108	248	144	3/8" GF	131	212	146	3/8" GF	140
138 AB	347	158	3/4" GF	160	258	157	3/4" GF	170
138 C	347	158	1" GF	160	258	157	1" GF	170
165	377	160	1" GF	193	296	157	1" GF	190

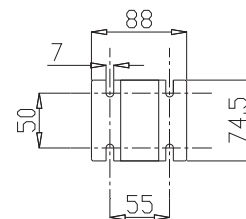
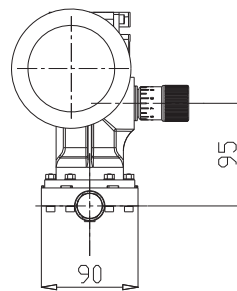
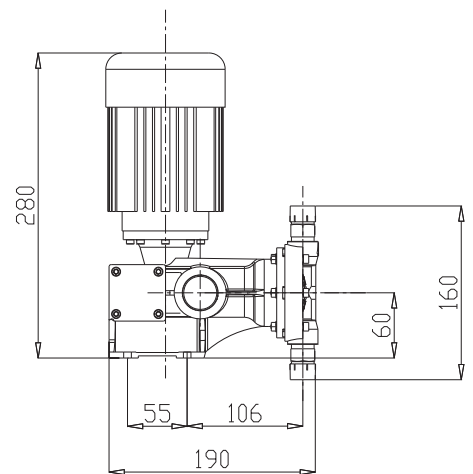
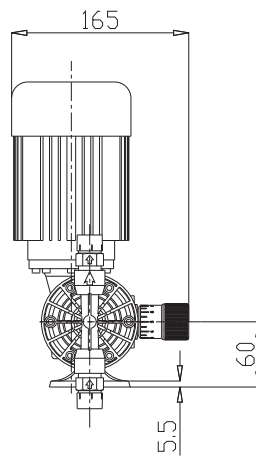
PUMP IDENTIFICATION							
M	S1	A	064	B	51	A1	000
1	2	3	4	5	6	7	8
1 Model				5 Strokes rate			
2 Mechanism type				6 Pump head materials			
3 Stroke length				7 Motor			
4 Diaphragm diameter				8 Optional			

PUMP HEAD MATERIALS	STANDARD		ON REQUEST	
	21	51	31	41
Pump head	SS 316 L	PP	PVC	PVDF
Diaphragm	PFTE	PFTE	PFTE	PFTE
Valves	SS 316 L	Ceramic	Ceramic	Ceramic
Valve seats	SS 316 L	PVC	PVC	PVDF



PUMP MODEL	Strokes/min	Flow Rate [lph]	Pressure				Connections		3-Phases Motor [kW]
			PP		SS 316 L		PP Ø	SS 316 L Ø	
			bar	psi	bar	psi			
MS0F 050	41	15	5	72,5	5	72,5	8x12	8x12	0,09
	58	20							
	82	30							
	116	42							
	160	60							

Using the **60 Hz triphases motor** the performances of the pumps will suffer the following variations: **Pressure: -20%; Flow Rate: +20%**



TECHNICAL FEATURES	
Flow Rate	up to 60 lph
Pressure	5 bar
Stroke rate	41 [E] • 58 [A] • 82 [F] • 116 [C] 164 [G] strokes/minute
Diaphragm diameter	50 mm
Motor	Standard 0,09 kW [IP55]
Stroke length	2 [A] mm
Liquid end	SS 316 L or PP (standard)
Max. dosage temperature	SS 316 L pump head 40° C PP pump head 40° C
PTFE Diaphragm	The material in contact with the liquid to be dosed are listed in the "pump head materials" table (special materials may be supplied on request)

PUMP IDENTIFICATION							
M	S0	A	050	B	51	A1	000
1	2	3	4	5	6	7	8
1 Model				5 Strokes rate			
2 Mechanism type				6 Pump head materials			
3 Stroke length				7 Motor			
4 Diaphragm diameter				8 Optional			

PUMP HEAD MATERIALS	STANDARD		ON REQUEST
	21	51	31
Pump head	SS 316 L	PP	PVC
Diaphragm	PFTE	PFTE	PFTE
Valves	SS 316 L	Ceramic	Ceramic
Valve seats	SS 316 L	PVC	PVC

51 and 31 versions are provided with a installation kit composed by:

- foot filter
- suction tube 8 x 12 PVC (2 mt.)
- delivery tube 8 x 2 PE (2 mt.)
- injection valves



PUMP MODEL	50 Hz			60 Hz			Pressure		Electric motor	Suc/Dis Connec	PTTA
	Strokes/min	Flow Rate		Strokes/min	Flow Rate						
		lph	gph		lph	gph	bar	psi	kW	Ø BPS	
SWE1R 25	74	37	9,8	89	44,4	11,7	10	145	0,55	1/2" F	PTTA
	93	47	12,4	112	56,4	14,9	10	145	0,55	1/2" F	
SWE1R 35	74	77	20,4	89	92,4	24,4	10	145	0,55	1/2" F	PTTA
	93	96	25,4	112	115,2	30,5	10	145	0,55	1/2" F	
SWE1R 51	74	164	43,4	89	196,8	52,1	10	145	0,55	1/2" F	PTTA
	93	206	54,5	112	247,2	65,4	10	145	0,55	1/2" F	
SWE1R 70	74	310	82	89	372	98,4	10	145	0,55	1/2" F	PTTA
	93	390	103,2	112	468	123,8	10	145	0,55	1/2" F	
SWE1R 86	74	471	124,6	89	565,2	149,5	40	580	0,75	1" F	PTTA
	93	592	156,6	112	710,4	187,9	9	130,5	0,75	1" F	
SWE1R 99	74	624	165,1	89	748,8	198,1	9	131	1,1	1" F	PTTA
	93	784	207,4	112	940,8	248,9	9	131	1,1	1" F	
SWE1R 120	74	917	242,6	89	1100,4	291,1	8	116	1,1	1 1/4" F	PTTA
	93	1153	305	112	1383,6	366	6	87	1,1	1 1/4" F	
SWE1R 25	74	37	9,8	89	44,4	11,7	40	580	0,55	1/4" F	STTA
	93	47	12,4	112	56,4	14,9	40	580	0,55	1/4" F	
SWE1R 35	74	77	20,4	89	92,4	24,4	40	580	0,55	1/2" F	STTA
	93	96	25,4	112	115,2	30,5	40	580	0,75	1/2" F	
SWE1R 51	74	164	43,4	89	372	52,1	35	508	1,1	1/2" F	STTA
	93	206	54,5	112	468	65,4	35	508	1,1	1/2" F	
SWE1R 70	74	310	82	89	280	98,4	18	261	1,1	3/4" F	STTA
	93	390	103,2	112	372	123,8	18	261	1,1	3/4" F	
SWE1R 86	74	471	124,6	89	565,2	149,5	13	189	1,1	1" F	STTA
	93	592	156,6	112	710,4	187,9	13	189	1,1	1" F	
SWE1R 99	74	624	165,1	89	748,8	198,1	9	131	1,1	1" F	STTA
	93	784	207,4	112	940,8	248,9	9	131	1,1	1" F	
SWE1R 120	74	917	242,6	89	1100,4	291,1	8	116	1,1	1 1/4" F	STTA
	93	1153	305	112	1383,6	366	6	87	1,1	1 1/4" F	

The shown pressures refer to rated values. Available motors (0,55 - 0,75 and 1,1 kW). For further details please contact our offices.

TECHNICAL FEATURES

Flow Rate	up to 1153 lph (305 gph)
Pressure	PTTA Version (PP Pump Head) up to 10 bar (145 psi) STTA Version (SS 316 L Pump Head) from 40 to 6 bar (580 to 87 psi)
Stroke rate	74 • 93 strokes/minute (50Hz)
Piston diameter	from 25 to 120 mm
Motor	0,55[E] • 0,75[F] • 1,1[G] kW

PUMP IDENTIFICATION

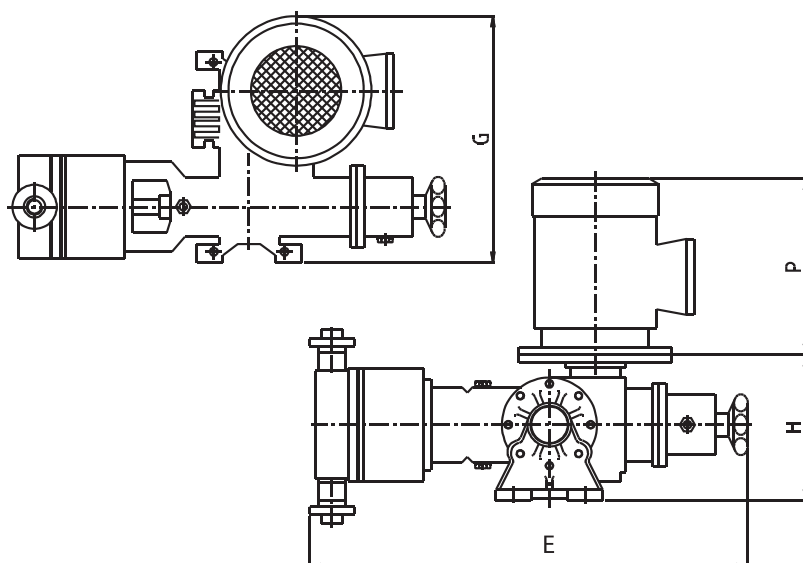
SWER1	120	S	T	A	24	4	G
1	2	3	4	5	6	7	8
1	Pump model						
2	Piston diameter						
3	Pump head [P] PP • [S] SS 316 L						
4	Diaphragms [T] PTFE						
5	[A] Single Valves • [B] Double Valves						
6	Reduction ratio [15 • 19 • 24]						
7	Motor Poles [2 • 4]						
8	Motor Power						

DIMENSIONS (mm)*

E**	H	G	KG*
538÷638	330	192	13÷60

* Without Electric motor, depending on pumphead size

** Depending on pump head size



VERSION		CONTACT PARTS MATERIALS				
Type	Bar Max.	Pump head	Diaphragms	Valve Body	Valves	Seats
PTTA	10	PP	PTFE	PP	Pyrex	PTFE
STTA	40	SS 316 L	PTFE	SS 316 L	SS 316 L	SS 316 L



TECHNICAL FEATURES

Flow Rate	PTTA Version (PP Pump Head) up to 2371 lph (627,2 gph) STTA Version (SS 316 L Pump Head) up to 2371 lph (627,2 gph)
Pressure	PTTA Version (PP Pump Head) up to 10 bar (145 psi) STTA Version (SS 316 L Pump Head) up to 40 bar (580 psi)
Stroke rate	70 • 93 strokes/minute (50Hz)
Piston diameter	PTTA Version (PP Pump Head) from 50 to 140 mm STTA Version (SS 316 L Pump Head) from 15 to 140 mm
Motor	0,75[F] • 1,1[G] • 1,5[H] • 2,2[I] kW

PUMP IDENTIFICATION

SWER2	140	S	T	A	24	4	I
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8

DIMENSIONS (mm)*

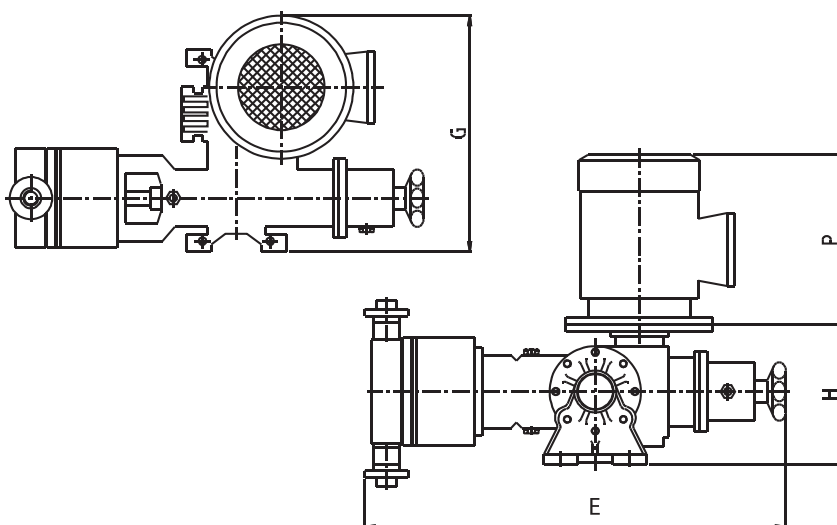
E**	H	G	KG*
650÷715	350	232	24÷40

* Without Electric motor, depending on pumphead size

** Depending on pump head size

PUMP MODEL	50 Hz		60 Hz		Pressure		Electric motor	Suc/Dis Connec		
	Strokes/min	Flow Rate		Strokes/min	Flow Rate					
		lph	gph		lph	gph	bar	psi	kW	Ø BPS
SWE2R 50	70	223	59	84	267,6	70,8	10	145	0,75	1/2" F
	93	297	78,6	112	356,4	94,3	10	145	0,75	1/2" F
SWE2R 70	70	441	116,7	84	529,2	140	10	145	0,75	1" F
	93	586	155	112	703,2	186	10	145	1,1	1" F
SWE2R 86	70	651	172,2	84	781,2	206,7	10	145	1,1	1" F
	93	865	228,8	112	1038	274,6	10	145	1,1	1" F
SWE2R 100	70	904	239,2	84	1084,8	287	10	145	1,5	1 1/4" F
	93	1202	318	112	1442,4	381,6	10	145	2,2	1 1/4" F
SWE2R 120	70	1305	345,2	84	1566	414,3	10	145	2,2	1 1/4" F
	93	1732	458,2	112	2078,4	549,8	10	145	2,2	1 1/4" F
SWE2R 140	70	1783	471,7	84	2139,5	566	7	102	2,2	1 1/2" F
	93	2371	627,2	112	2845,2	752,7	7	102	2,2	1 1/2" F
PTTA										
SWE2R 15	70	17	4,5	84	20,4	5,4	40	580	0,75	1/4" M
	93	23	6,1	112	27,6	7,3	40	580	0,75	1/4" M
SWE2R 25	70	50	13,2	84	60	15,9	40	580	0,75	1/2" F
	93	66	17,5	112	79,2	21	40	580	0,75	1/2" F
SWE2R 35	70	107	28,3	84	128,4	34	40	580	0,75	1/2" F
	93	144	38,1	112	172,8	45,7	40	580	0,75	1/2" F
SWE2R 50	70	223	59	84	267,6	70,8	40	580	1,5	3/4" F
	93	297	78,6	112	356,4	94,3	40	580	2,2	3/4" F
SWE2R 70	70	441	116,7	84	529,2	140	30	435	2,2	3/4" F
	93	586	155	112	703,2	186	30	435	2,2	3/4" F
SWE2R 86	70	651	172,2	84	781,2	206,7	21	305	2,2	1" F
	93	865	228,8	112	1038	274,6	21	305	2,2	1" F
SWE2R 100	70	904	239,2	84	1084,8	287	15	218	2,2	1 1/4" F
	93	1202	318	112	1442,4	381,6	15	218	2,2	1 1/4" F
SWE2R 120	70	1305	345,2	84	1566	414,3	10	145	2,2	1 1/4" F
	93	1732	458,2	112	2078,4	549,8	10	145	2,2	1 1/4" F
SWE2R 140	70	1783	471,7	84	2139,5	566	7	102	2,2	1 1/2" F
	93	2371	627,2	112	2845,2	752,7	7	102	2,2	1 1/2" F
STTA										

The shown pressures refer to rated values. Available motors (0,75 - 1,1 - 1,5 and 2,2 kW). For further details please contact our offices.



VERSION		CONTACT PARTS MATERIALS				
Type	Bar Max.	Pump head	Diaphragms	Valve Body	Valves	Seats
PTTA	10	PP	PTFE	PP	Pyrex	PTFE
STTA	40	SS 316 L	PTFE	SS 316 L	SS 316 L	SS 316 L



PUMP MODEL	50 Hz			60 Hz			Pressure		Electric motor	Suc/Dis Connec	PTTA
	Strokes/min	Flow Rate		Strokes/min	Flow Rate						
		lph	gph		lph	gph	bar	psi	kW	Ø BPS	
SWE3 100	70	151	399,7	84	1813	479,7	10	145	3	1 1/4" F	
	93	2007	531	112	2408	637,1	10	145	3	1 1/4" F	
SWE3 120	70	2177	575,9	84	2612	691,1	10	145	4	1 1/2" F	
	93	2893	765,3	112	3472	918,4	10	145	4	1 1/2" F	
SWE3 140	70	2967	784,9	84	3560	941,9	10	145	4	1/2" F	
	93	3942	1043	112	4730	1215,1	4	102	4	1/2" F	
SWE3 25	70	89	23,5	84	107	28,3	40	580	2,2	1/4" F	
	93	118	31,2	112	142	37,5	40	580	2,2	1/4" F	
	122	156	41,3	-	-	-	40	580	3	1/4" F	
SWE3 35	70	178	47,1	84	214	56,5	40	580	2,2	3/4" F	
	93	236	62,4	112	283	74,9	40	580	2,2	3/4" F	
	122	310	82	-	-	-	40	580	3	3/4" F	
SWE3 50	70	371	98,1	84	445	117,8	40	580	2,2	1" F	
	93	493	130,4	112	592	156,5	40	580	3	1" F	
	122	648	171,4	-	-	-	40	580	4	1" F	
SWE3 70	70	735	194,4	84	882	233,3	37	537	4	1" F	
	93	977	258,5	112	1172	310,2	32	32	4	1" F	
	122	1281	39	-	-	-	21	305	4	1" F	
SWE3 86	70	1090	288	84	1308	346	26	377	4	1 1/4" F	
	93	1448	383	112	1738	459,7	19	276	4	1 1/4" F	
	122	1900	503	-	-	-	14	203	4	1 1/4" F	
SWE3 100	70	1511	400	84	1813	479,7	21	305	4	1 1/4" F	
	93	2007	531	112	2408	637,1	15	218	4	1 1/4" F	
SWE3 120	70	2177	576	84	2612	691	13	189	4	1 1/2" F	
	93	2893	765	112	3472	918	10	145	4	1 1/2" F	
SWE3 140	70	2967	785	84	3560	942	10	145	4	1" F	
	93	3942	1043	112	4730	1251	7	102	4	1" F	

The shown pressures refer to rated values. Available motors (2,2 - 3 and 4 kW). For further details please contact our offices.

TECHNICAL FEATURES

Flow Rate	PTTA Version (PP Pump Head) up to 3942 lph (1043 gph) STTA Version (SS 316 L Pump Head) up to 3942 lph (1043 gph)
Pressure	PTTA Version (PP Pump Head) up to 10 bar (145 psi) STTA Version (SS 316 L Pump Head) up to 40 bar (580 psi)
Stroke rate	70 • 93 • 122 strokes/minute (50Hz)
Piston diameter	PTTA Version (PP Pump Head) from 100 to 140 mm STTA Version (SS 316 L Pump Head) from 25 to 140 mm
Motor	2,2[I] • 3[J] • 4[K] kW

PUMP IDENTIFICATION

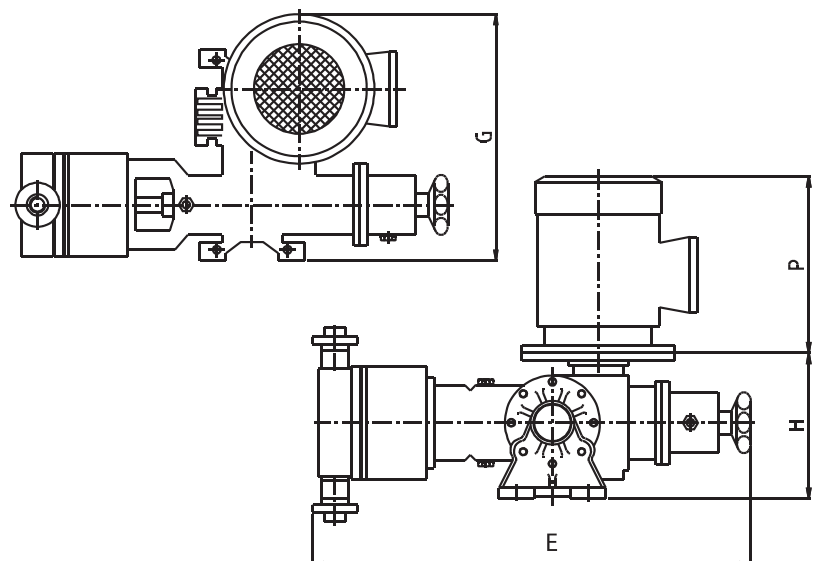
SWE3	140	S	T	A	24	4	K
①	②	③	④	⑤	⑥	⑦	⑧
① Pump model ② Piston diameter ③ Pump head [P] PP • [S] SS 316 L ④ Membrane [T] PTFE ⑤ [A] Single Valves • [B] Double Valves ⑥ Reduction ratio [15 • 19 • 24] ⑦ Motor Poles [2 • 4] ⑧ Motor Power							

DIMENSIONS (mm)*

E**	H	G	KG*
910÷943	500	357	100÷154

* Without Electric motor, depending on pumphead size

** Depending on pump head size



VERSION		CONTACT PARTS MATERIALS				
Type	Bar Max.	Pump head	Diaphragms	Valve Body	Valves	Seats
PTTA	10	PP	PTFE	PP	Pyrex	PTFE
STTA	40	SS 316 L	PTFE	SS 316 L	SS 316 L	SS 316 L

Accessories for the correct installation

The trouble-free operation of a pump depends mainly by an installation studied for the required duty; the choice of the suitable accessories and their sizing are very important to fit the pump in a functional system.



Filters

Liquids may contain impurities that can cause the malfunctioning of the valves and consequently flow fluctuation and even the clogging of the pipes. To prevent these dangerous situations it is advisable to install a filter on the suction line; the filter should be correctly sized to limit pressure losses in critical suction installations.

Safety valves

Safety valves are installed to prevent dangerous situations in case of unexpected overpressure that can damage the pump and the pipes. Metering pumps are positive displacement pumps that can reach high pressures in one stroke, therefore they should be protected by possible clogging of the pipes provoked by sedimentation or accidental closure of a valve. Hydraulic diaphragm pumps are protected with a limiting pressure valve built-in in the hydraulic circuit; the piping should be protected by an in-line pressure safety valve.



Back pressure valves

To allow the correct operation of a pump and to prevent the flow-through (siphoning) of the process liquid, the discharge pressure should be greater than the suction pressure; when this condition is not respected then a backpressure valve can be the solution.



Pulsation dampers

The reciprocating movement of the piston generates pulsations: during each stroke the liquid contained in the suction and discharge lines is accelerated from zero to the maximum speed and then decelerated to zero again. Pulsation dampers are the accessories suggested to reduce high and not permissible pressure fluctuations or to obtain a linearity of the flow. A similar result can be obtained by using a multiheaded dosing group which is more expensive.



Calibration pots

The calibration pot installed on the suction line gives the possibility to check the actual flow rate of a metering pump in the real operating conditions. The capacity of the calibration pot should be as to permit a measurement during 30 seconds approx; the calibration pot should be installed in vertical position near the pump and should be fitted with check valve to simplify the use.



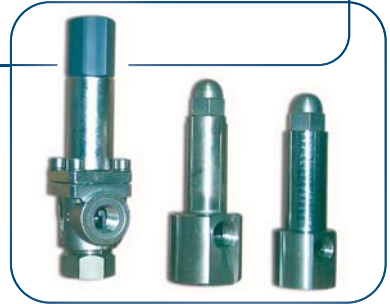
"Y" Suction filters

Model (material)	Connections [Ø BSP]	Code
FYP PVC	3/8" F	FYP3240200
	1/2" F	FYP3230040
	3/4" F	FYP3230060
	1" F	FYP3230080
FYS (SS316)	3/8" F	FYS3240098
	1/2" F	FYS3240100
	3/4" F	FYS3240110
	1" F	FYS3240120



Adjustable overpressure (SS 316 L/PTFE)

Model	Flow rate [lph]	Pressure [bar]		Connections [Ø BSP]	Code
		min	max		
VS1S	250	0	19	1/2" F	VS1S250019
		20	45		VS1S250045
		46	150		VS1S250150
VS2S	650	0	13	3/4" F	VS2S650013
		14	30		VS2S650030
		31	100		VS2S650100



Adjustable overpressure



Model (material)	Flow rate [lph]	Pressure [bar]		Connections [Ø BSP]	Code
		min	max		
PRM-S (SS316)	300	0	5	3/8" F	PRM1S03005
	800			3/4" F	PRM2S08005
	1500			1" F	PRM3S15005
PRM-P (PVC)	300	0	5	3/8" F	PRM1P03005
	800			3/4" F	PRM2P08005
	1500			1" F	PRM3P15005

Backpressure valves (SS316)

Model	Flow rate [lph]	Pressure [bar]	Connections [Ø BSP]	Code
VZX-S-02	50	2	1/4" M	VZX1S00502
	100		1/4" F	VZX3S01002
	200		3/8" F	VZX4S02002
	420		1/2" F	VZX5S04202
	800		3/4" F	VZX6S08002
	1650		1" F	VZX7S16502

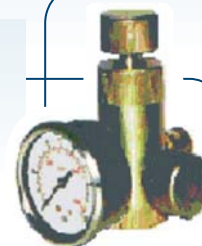


Adjustable Backpressure valves

Model (material)	Flow rate [lph]	Pressure [bar]		Connections [Ø BSP]	Code
		min	max		
VSM-S (SS316)	300	0	5	3/8" F	VSM1S03005
	800			3/4" F	VSM2S08005
	1500			1" F	VSM3S15005
VSM-P (PVC)	300	0	5	3/8" F	VSM1P03005
	800			3/4" F	VSM2P08005
	1500			1" F	VSM3P15005



Fitting-Testing unit AR series



Pressure [bar]	Code
6	AR10PM0006
12	AR11PM0012
40	AR01PM0040
60	AR02PM0060
100	AR03PM0100
160	AR04PM0160
250	AR05PM0250

Pulsation bag HTR series



Capacity [L]	Pressure [bar]	Material		Connections [Ø BSP]	Code
		Body	Diaphragm		
0,1	230	SS 316 L	NBR	3/8" F	HTRS010N23
0,35					HTRS035N23
0,5				1/2" F	HTRS050N23
0,8					HTRS080N23
1,5				3/4" F	HTRS150N23
2,3					HTRS230N23

Pulsation bag HSTP series



Pulsation bag HXR series



Capacity [L]	Pressure [bar]	Material		Connections [Ø BSP]
		Body	Diaphragm	
0,5	150	SS 316 L	NBR	3/8" F
0,7				1/2" F
1				3/4" F

Capacity [L]	Pressure [bar]	Material		Connections [Ø BSP]	Code
		Body	Diaphragm		
0,04	10	PVC	FPM	3/8" F	HSTP004V01
0,1					HSTP010V01
0,35				1/2" F	HSTP035V01
0,7					HSTP070V01
1,5				3/4" F	HSTP150V01
2,3					HSTP130V01



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