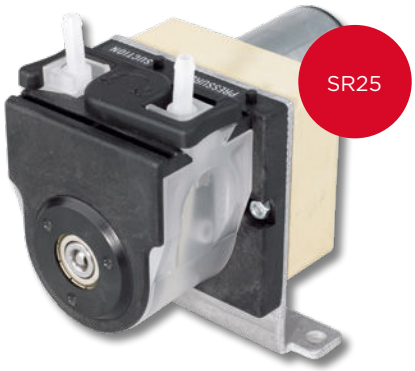
Peristaltic Pumps











www.gd-thomas.com

THOMAS

Peristaltic Pumps

P3 **Overview**

P6 **ETL200 Series**

P7 **SR10/30 Series**

P10 **SR10/50 Series**

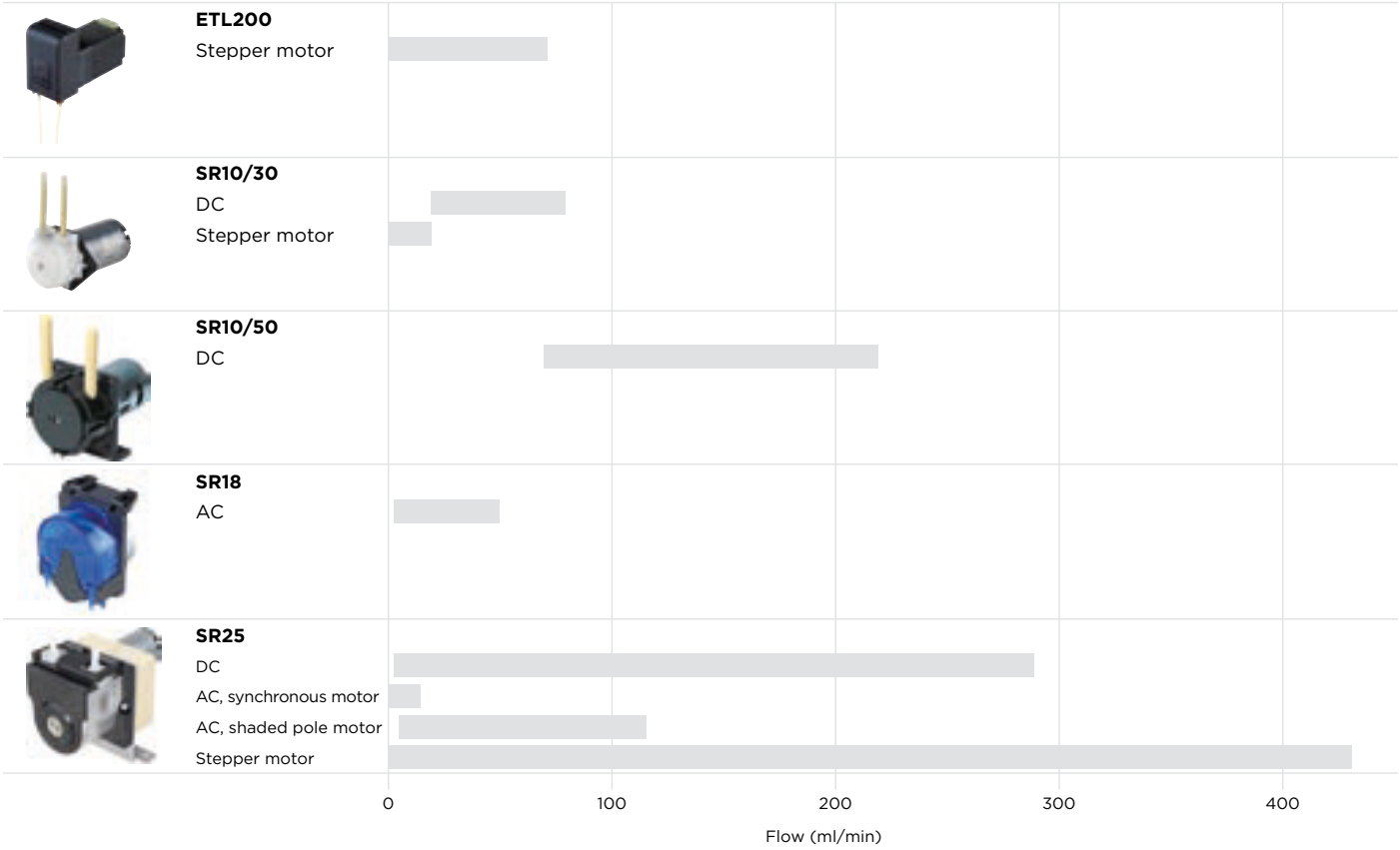
P12 **SR18 Series**

P13 **SR25 Series**

P18 **Pumps Tubing**

Peristaltic Pumps Overview

CHARACTERISTICS OVERVIEW



PRESELECTION

		Drive				Operation mode		Stand-by pump		Page
		12/24 V DC	12/24 V DC LC motor	230 V AC	Stepper motor	Continuous operation	Short time operation	IP54	IP54, adjustable	
	**ETL200**				●					6
	**SR10/30**	●	●		●		●			7 – 9
	**SR10/50**		●				●			10
	**SR18**			●		●[1)]	●			12
	**SR25**	●		●	●	●	●		●	13 – 18

[1)] pumps with sequencer

Peristaltic Pumps Overview

ETL 200

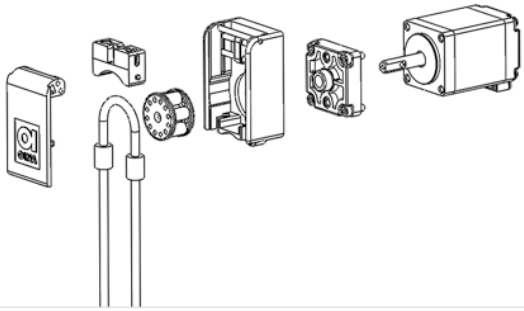


Features

- Dual spring-loaded occlusion for maximum tube lifetime and accuracy
- Easy tube loading with one movement
- Usage of bridged tubing
- Stepper motor
- Controller board available

Applications

- Transfer of fluids in analytical and biopharma processes
- Dispensing of reagents in in-vitro diagnostics (IVD)



SERIES SR10



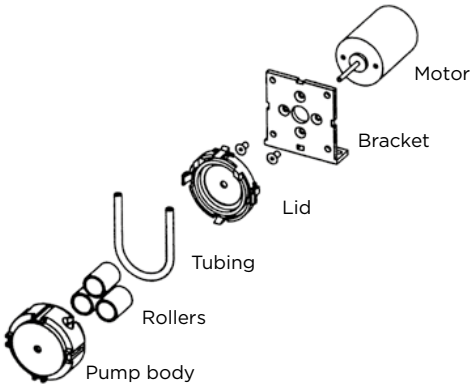


Features

- Speed reduction through frictional connection from the motor shaft to the rollers.
- Very simple construction with the use of few parts only.
- Easy change of the cassette.
- Generally 3 rollers.
- For short time operation only.
- If the pump is stored longer than three months, we recommend to take the cassette off the motor shaft and store it separately.
- Different motors available (DC, low cost DC, AC and stepper motor).

Applications

- Transfer of fluids in bioprocessing
- Dispensing of reagents in in-vitro diagnostics (IVD)
- Dispensing of detergent in washers / disinfectors
- Dispensing of foods and beverages



SERIES SR18

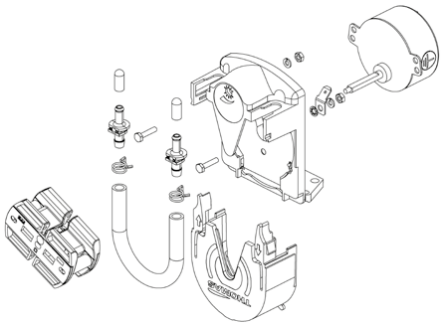


Features

- Peristaltic pump with QuiXchange system
- Tube exchange without tooling within seconds
- Spring loaded roller carrier with two rollers for extremely long durability
- Optional „sequencer“ for flow adjustment
- AC-motor

Applications

- Dispensing of detergent in industrial dishwashers



SERIES SR25

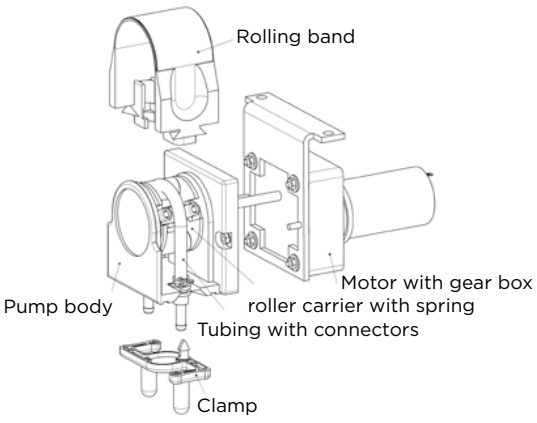


Features

- Protection of the tubing due to spring loaded rollers and guiding side rollers.
- Quick and easy change of the tubing.
- Roller carrier with two rollers.
- Also suitable for continuous operation, depending on the drive.
- If stored longer than three months, we recommend to remove the tubing.
- Different gear motors available (DC, AC and stepper motor).

Applications

- Deaeration of dialysate in dialysis devices
- Condensate removal in environmental emissions monitoring

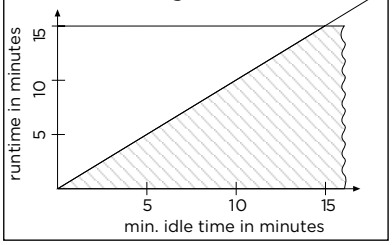


Peristaltic Pumps Overview

DUTY CYCLES

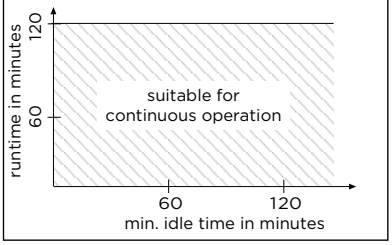
SR10

SR10/30 and SR10/50 Drive: Permanent magnet motor (DC)



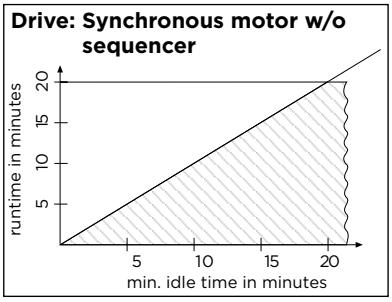
ETL200

Drive: Stepper motor

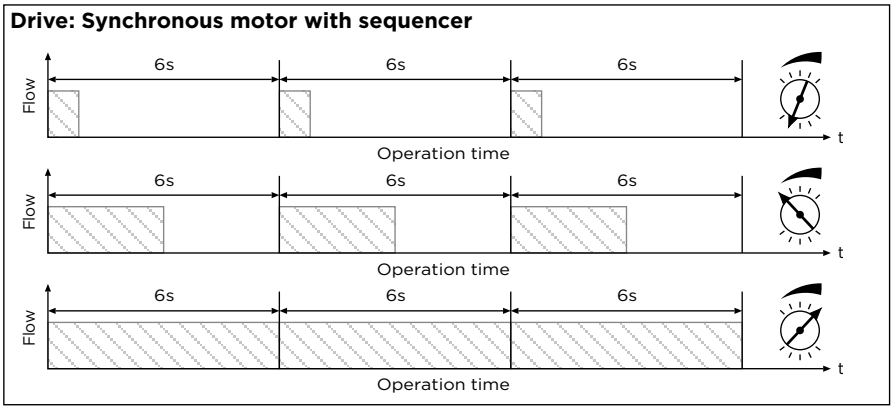


SR18

Drive: Synchronous motor w/o sequencer

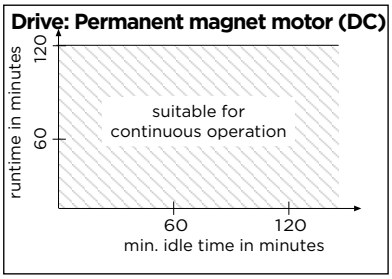


Drive: Synchronous motor with sequencer

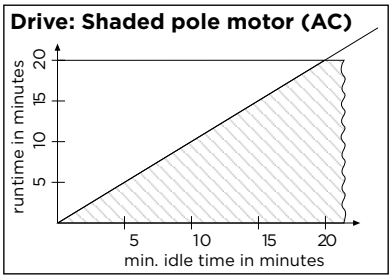


SR25

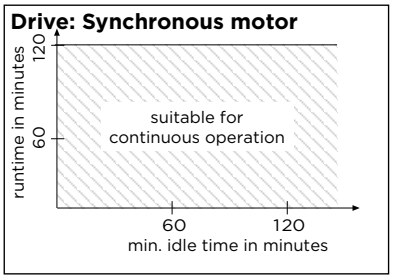
Drive: Permanent magnet motor (DC)



Drive: Shaded pole motor (AC)



Drive: Synchronous motor



DUTY CYCLES	ETL200	SR10		SR18	SR25	
	100 rpm	SR10/30	SR10/50	SR18 – 15 rpm	SR25 – 10 rpm	SR25 – 300 rpm
		Lifetime of the tubing				
Novoprene Norprene® PharMed BPT®	–	500 h	500 h [2]	4000 h	> 5000 h	500 h
Pharm-A-Line™	3500 h	–	–	–	–	–
Silicone	–	200 h	200 h	500 h	500 h	100 h
		Other wearing parts				
Roller carrier Rolling band/lid	–	Change the complete cassette [1] (see lifetime of the tubing)		2500 h	> 5000 h	500 h
		Drive				
DC motor	–	1000 h	1000 h	–	3000 h	
AC motor	–	–	–	–	5000 h	2000 h
AC synchronous motor	–	–	–	4000 h	10000 h	–
Stepper motor	10000 h	–	–	–	–	–

GENERAL DATA	ETL200	SR10	SR18	SR25
Max. suction height	9 m H_2O	8 m H_2O	8 m H_2O	8 m H_2O
Max. pressure height	20 m H_2O	8 m H_2O	10 m H_2O	10 m H_2O
Max. ambient temperature	40 °C	40 °C	40 °C	40 °C
Media temperature	50°C (short t. 90°C)	50 °C (short time 90 °C)	50°C (short t. 90°C)	50 °C (short time 90 °C)

1) We recommend to roughen the shaft in axial direction when changing the cassette (sand paper grit size 150).
2) Ø 4 inner diameter on request

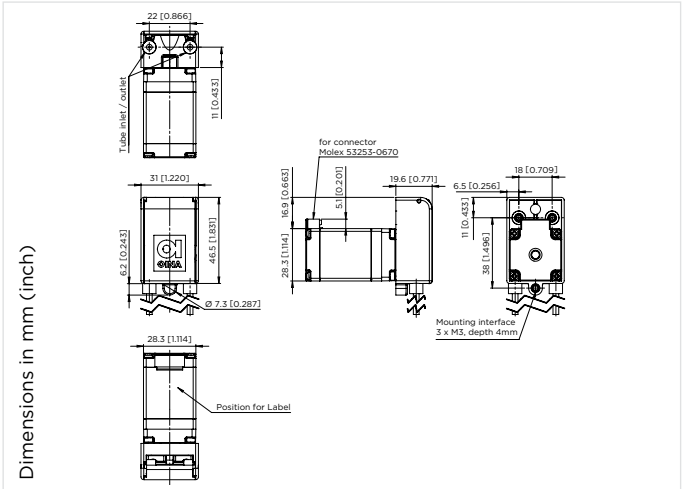
Norprene®, PharMed BPT® Norton Co. Reg. TM's

Peristaltic Pumps **ETL200**

24 V DC with stepper motor
Circuit board recommended for test purposes

Flow	0 – 60 ml/min





Hydraulic performance & part numbers	Flow/revolution ml/rev	Min. Flow @ 0.15 rpm ml/min	Max. Flow @ 400 rpm ml/min
Pharm-A-Line™ 1.0 x 1.05 mm Part number	0.04 ml/rev 59005820	0.006	16
Pharm-A-Line™ 2.0 x 1.05 mm Part number	0.12 ml/rev 59005810	0.018	48
Pharm-A-Line™ 2.5 x 1.05 mm Part number	0.15 ml/rev 59005800	0.0225	60
Max. pressure height	20 m H_2O		
Max. suction height	9 m H_2O		

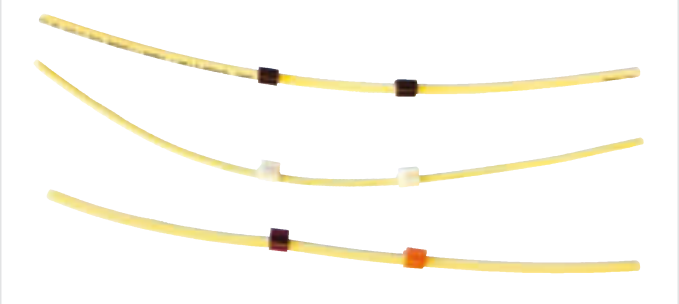
Electrical Data	
Motor type	Stepper motor, stepping angle 1.8°
Nominal voltage	24 V DC
Motor speed	0.15 - 480 rpm
Max. recommended motor speed intermittent operation	400 rpm
Max. recommended motor speed continuous operation	200 rpm
Max. current consumption	1100 mA (with optional controller board)
Motor insulation class	B
Inductance at 1 kHz, 1 V	5.1 mH
Winding resistance	7.2 Ω

General Data	
Ambient temperature	5 - 40 °C
Media temperature	5 - 80 °C
Weight	250 g

OPTIONS
6 roller configuration for low pulsation
Silicone tubing
Drive kit (incl. controller board, motor connection cable, power cable, manual) – part number 39999800
Manual potentiometer with cable – part number 39999890

Spare parts ETL200

Tubing



Tubing	Inner diameter (ID) x wall thickness	Part number	Stopper colour
Pharm-A-Line™	1.0 x 1.05 mm	59999020	White
Pharm-A-Line™	2.0 x 1.05 mm	59999010	Purple
Pharm-A-Line™	2.5 x 1.05 mm	59999000	Purple / Orange

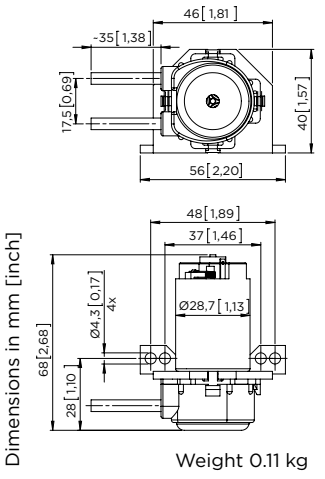
Peristaltic Pumps **SR10/30**

12/24 V low cost DC
For short time operation only

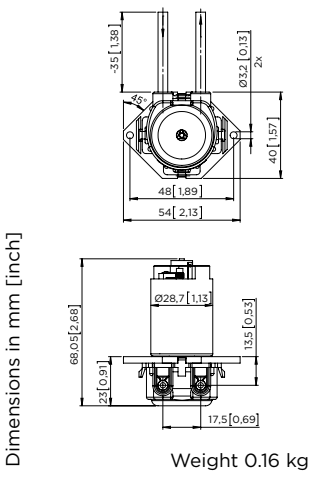
Flow	16 – 55 ml/min



SR10/30 DC
angled fixing
(straight without drawing)



Weight 0.11 kg



Weight 0.16 kg

Tubing Novoprene		Tubing PharMed BPT®		Fixing	Inner tubing Ø	Flow 2)
12 V DC	24 V DC	12 V DC	24 V DC		mm	ml/min
		20300512	20300542	straight	1.0	16
		20300513	20300543	angled		
20300314	20300344	20300514	20300544	straight	1.5	28
20300315	**20300345**	20300515	20300545	angled		
20300316	20300346			straight	2.0	38
20300317	20300347			angled		
20300318	**20300348**	20300235	20300237	straight	2.5	55
20300319	**20300349**	20300236	20300238	angled		

Tubing Silicone		Fixing	Inner tubing Ø	Flow 2)
12 V DC	24 V DC		mm	ml/min
20300412	20300442	straight	1.0	16
20300413	20300443	angled		
20300414	20300444	straight	1.5	28
20300415	20300445	angled		
20300416	20300446	straight	2.0	38
20300417	20300447	angled		
20300418	20300448	straight	2.5	55
20300419	20300449	angled		

2030... Stock programme

Current consumption depending on the tubing diameter,
at free flow and nominal voltage 12 V DC: 180 – 300 mA
24 V DC: 90 – 150 mA

2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

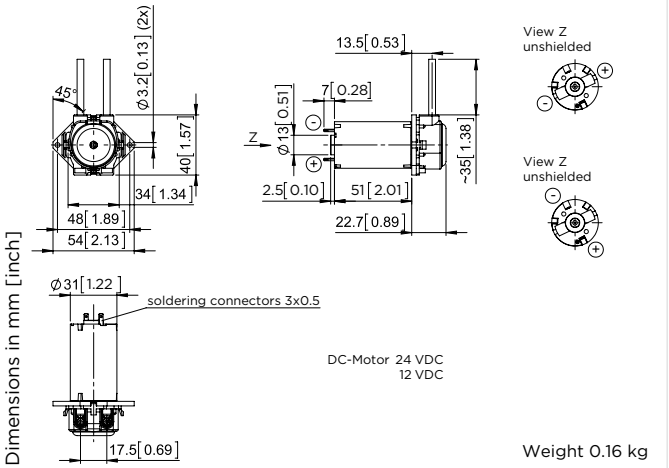
Peristaltic Pumps **SR10/30**

12/24 V Direct current motor
For short time operation only

Flow	20 – 80 ml/min

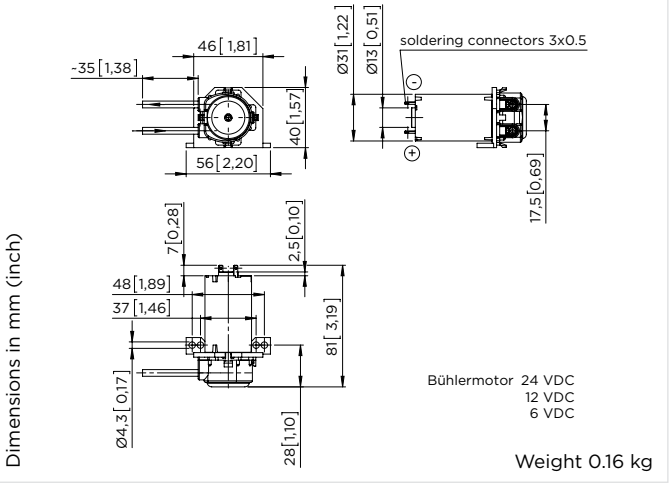


SR10/30 DC
Straight flange





SR10/30 DC
Angled flange



Tubing Novoprene [1]			Fixing	Inner tubing Ø	Flow [2]
12 V DC	24 V DC			mm	ml/min
			straight	1.0	20
			angled		
20300122	20300130		straight	1.5	37
20300126	20300134		angled		
20300123	20300131		straight	2.0	55
20300127	20300135		angled		
20300124	20300132		straight	2.5	80
20300128	20300136		angled		

1) other tubing materials on request

Current consumption depending on the tubing diameter,
at free flow and nominal voltage 12 V DC: 180 – 300 mA
24 V DC: 90 – 150 mA

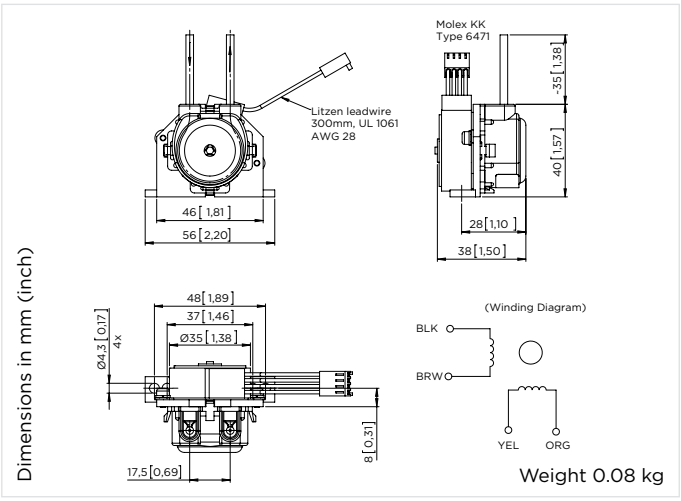
2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

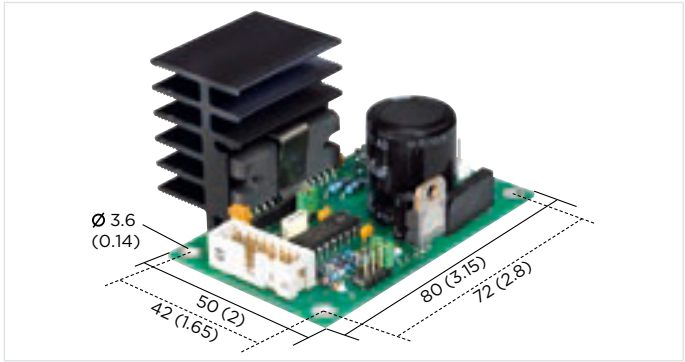
Peristaltic Pumps **SR10/30**

24 V DC with stepper motor
For short time operation only
Circuit board recommended for test purposes

Flow	**0.5 – 20 ml/min**

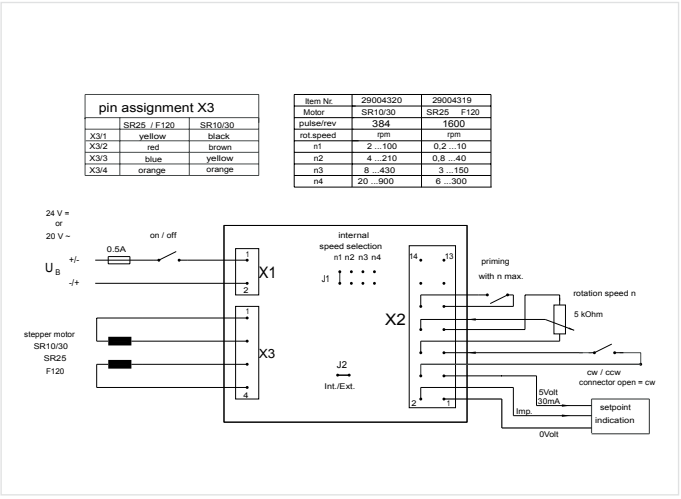






4 possible operating methods
- internal speed selection via jumper – option with wiring set[1)]
- external speed selection
- analog input via pc
- digital input (clocked pulse)

Features
- speed pre-selection
- clockwise, counter clockwise operation
- instant priming
- selective operating method



Adjustable range	**I**	**II**	**III**	**IV**
Speed	4 – 100 rpm	8 – 210 rpm	16 – 430 rpm	40 – 900 rpm

Tubing PharMed BPT®	**Max. flow[2)] ml/min (adjustable range 4 – 100%)**			
Ph 1.0 x 1.1	0.5	1	2	4
Part number – pump without circuit board	20301012			
Part number – pump with circuit board	20301002			
Ph 1.5 x 1.1	1	2	5	10
Part number – pump without circuit board	20301013			
Part number – pump with circuit board	20301003			
Ph 2.5 x 1.0	2	5	10	20
Part number – pump without circuit board	20301014			
Part number – pump with circuit board	20301004			

Electrical Data	**Max. flow[2)] ml/min (adjustable range 4 – 100%)**
Nominal voltage (drive through electronic board)	24 V/DC oder 20 V/AC
Motor	Stepper motor, bipolar, stepping angle 7.5°
Current consumption	0.4 A
Max. restart consumption	3 A*
Inductance at 1 kHz, 1 V	13 mH
Winding resistance	13 Ω

* Delay fuse to be used.

1) Option: 14-pole connecting cable with plug,
rocker switch for clockwise and lefthanded running
Potentiometer and speed-push-button, part number 29000702

2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

Peristaltic Pumps **SR10/50**

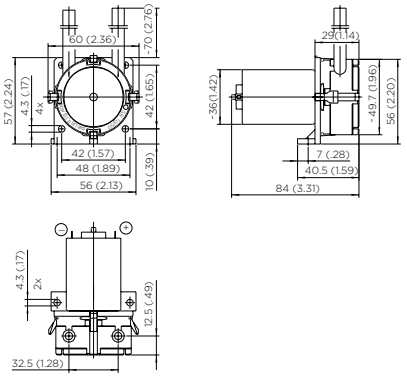
12/24 V Direct current motor
For short time operation only

Flow	52 – 220 ml/min



[1] **SR10/a DC**

Dimensions in mm (inch)



Weight 0.2 kg

Tubing Novoprene		Tubing PharMed BPT®		Tubing dimensions	Flow [2]
12 V DC	24 V DC	12 V DC	24 V DC	mm	ml/min
20500501	20500505	20500702	20500705	2.4 x 1.6	100
20500502	20500506			3.2 x 1.6	170
20500503	**20500507**			4.1 x 1.6	220
		20500703	20500706	4.0 x 1.6	

Tubing Silicone		Tubing PharMed BPT®		Tubing dimensions	Flow [1]
12 V DC	24 V DC	12 V DC	24 V DC	mm	ml/min
20500602	20500606			2.5 x 1.6	100
20500603	20500607			4.0 x 1.6	220

2050... Stock programme

1) on request in white
Option: Straight flange for flush mounting part number 20501 ...
12/24 V DC – with additional circuit board (on request)

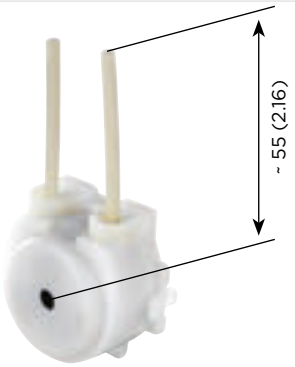
Current consumption depending on the tubing diameter,
at free flow and nominal voltage 12 V DC: 0.4 – 0.54 A
24 V DC: 0.2 – 0.27 A

2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

Peristaltic Pumps **SR10**

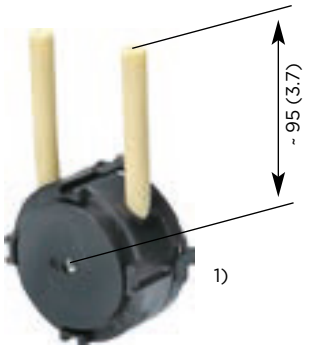
Spare parts SR10 series

Model SR10/30



Dimensions in mm (inch)

Model SR10/50



Dimensions in mm (inch)

Tubing		Drive	
Inner Ø x Wall thickness		DC Std. Page 7	DC Performance Pages 8/9
Novoprene	1.5 x 1.0 mm	92030703	92030514
Novoprene	2.0 x 1.0 mm	92030702	92030513
Novoprene	2.5 x 1.0 mm	92030701	92030704
PharMed BPT®	1.0 x 1.1 mm	92030548	92030604
PharMed BPT®	1.5 x 1.1 mm	92030534	92030549
PharMed BPT®	2.5 x 1.0 mm	92030611	92030603
Silicone	1.0 x 1.0 mm	92030800	92030505
Silicone	1.5 x 1.0 mm	92030802	92030554
Silicone	2.0 x 1.0 mm	92030804	92030555
Silicone	2.5 x 1.0 mm	92030806	92030553

Novoprene	2.4 x 1.6 mm	92050576
Novoprene	3.2 x 1.6 mm	92050577
Novoprene	4.1 x 1.6 mm	92050594
PharMed BPT®	2.4 x 1.6 mm	92050586
PharMed BPT®	4.0 x 1.6 mm	92050587
Silicone	2.0 x 1.6 mm	92050581
Silicone	2.5 x 1.6 mm	92050582
Silicone	4.0 x 1.6 mm	92050583

Tubing dimensions
1.5 x 1.0 mm
Inner Ø — Wall thickness

Peristaltic Pumps **SR18**

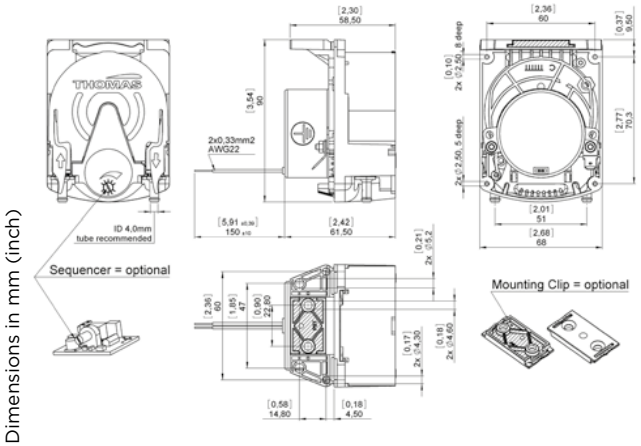
230 V/50 Hz, synchronous gear motor
Suitable for continuous running

Flow	5 – 50 ml/min



Tubing QuiXchange

Features
Sequencer to adjust
on/off-time (0% – 100%)



	Nominal speed	QuiXchange
	15 rpm	

Tubing Novoprene (ID x WT)	Flow[2] ml/min	Tubing only
N 6.0 x 1.6 mm	50	
Part number – pump without sequencer	**20180251**	92018551
Part number – pump with sequencer	**20181251**	92018551
N 4.1 x 1.6 mm	20	
Part number – pump without sequencer	20180252	92018552
Part number – pump with sequencer	20181252	92018552
N 2.4 x 1.6 mm	10	
Part number – pump without sequencer	20180253	92018553
Part number – pump with sequencer	20181253	92018553
N 1.6 x 1.6 mm	5	
Part number – pump without sequencer	20180254	92018554
Part number – pump with sequencer	20181254	92018554

Tubing Silicone (ID x WT)	Flow[1] ml/min	Tubing only
S 5.0 x 1.6 mm	40	
Part number – pump without sequencer	20180202	92018502
Part number – pump with sequencer	20181202	92018502
S 4.0 x 1.6 mm	25	
Part number – pump without sequencer	20180203	92018503
Part number – pump with sequencer	20181203	92018503
S 2.5 x 1.6 mm	10	
Part number – pump without sequencer	**20180201**	92018501
Part number – pump with sequencer	**20181201**	92018501

Running Data		
Rotation direction	clockwise	

Electrical Data		
Voltage	230 V/50 Hz	
Motor	synchronous	
Motor insulation class	E	
Power consumption	5.5 W	

General Data		
Connector material	PP	
Weight	0.23 kg	

2018... Stock programme

2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

Options: mounting clip Art. Nr. 29027360
compression fitting Art. Nr. 29027298

Peristaltic Pumps **SR25**

12/24 V, Direct current motor	
Flow	**2 – 287 ml/min**

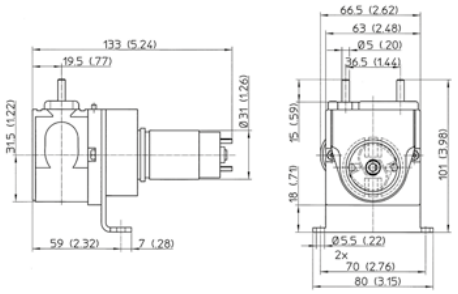


SR25, 10 to 80 rpm
Direct current motor

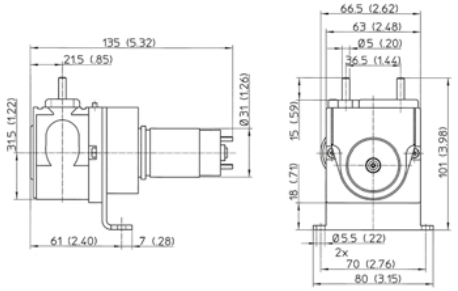


SR25 –170 rpm[1)]
Direct current motor

Dimensions in mm (inch)



Dimensions in mm (inch)



	Nominal speed				
	10 rpm	30 rpm	65 rpm	80 rpm	170 rpm[1)]
Tubing Novoprene		**Flow[2)] ml/min**			
N 1.6 x 1.6 mm	2	7			
Part number 12 V		20251397			
Part number 24 V	**20251388**	20251401			
N 3.2 x 1.6 mm	8.4	25	56		
Part number 12 V		20251398	20251411		
Part number 24 V	20251371	**20251255**			
N 4.1 x 1.6 mm		36	82	102	204
Part number 12 V		20251399	20250083		20251261
Part number 24 V		20251402	20250082	20251010	20250396
N 4.8 x 1.6 mm	17	48	125	132	285
Part number 12 V		20251400	20250426		**20251224**
Part number 24 V	20251247	20251403	**20251413**	20250287	**20250130**
Tubing Silicone		**Flow[2)] ml/min**			
S 2.0 x 1.0 mm	3.5				
Part number 12 V					
Part number 24 V	**20251394**				
S 3.0 x 1.5 mm	6.5	19			
Part number 12 V		20251405			
Part number 24 V	20251395	20251408			
S 4.0 x 1.5 mm	13	38		103	
Part number 12 V		20250302			
Part number 24 V	20251396			20251434	
S 5.0 x 1.5 mm	18	54		143	287
Part number 12 V		20251406			20251441
Part number 24 V	20250092	20251366		20251435	20251444

Electrical Data			
Motor	Direct current motor		
Power consumption	2 W	3.5 W	7 W

General Data	
Weight	0.6 kg

1) Pump with counter bearing

2025... Stock programme

Material of tubing connectors:
Tubing Silicone: for all Ø PVC
Tubing Novoprene: Ø 1.6/3.2 mm – PVC Ø 4.1/4.8 mm – PP
Option: Recommended inference suppression according to EN 55011 B (CE-conform) 12/24 V DC – with additional circuit board (on request)

2) Note: The indicated values are average measured with water. The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity. Please see page 4 for recommended running times and general data.

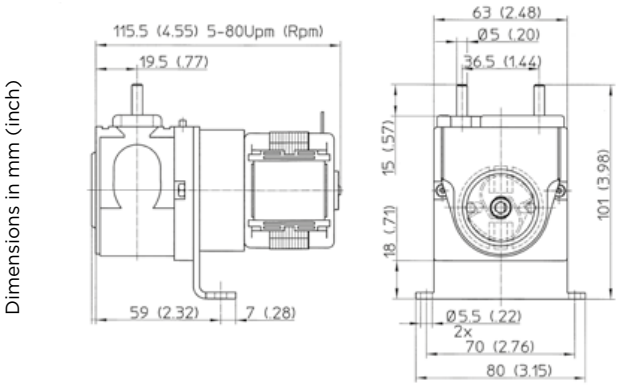
Peristaltic Pumps **SR25**

230 V/50 Hz, shaded pole motor
For short time operation only

Flow	**6 – 119 ml/min**



SR25, 30 bis 80 rpm
shaded pole motor



Nominal speed			
	30 rpm	65 rpm	80 rpm
Tubing Novoprene	**Flow[2] ml/min**		
N 1.6 x 1.6 mm	6	12	15
Part number	20250009		**20250893**
N 3.2 x 1.6 mm	21	47	56
Part number	**20250010**		20250892
N 4.1 x 1.6 mm	30	68	85
Part number	20250881	20250886	20250891
N 4.8 x 1.6 mm	40≠	90	110
Part number	**20250880**	20250884	20250020
Tubing Silicone	**Flow[2] ml/min**		
S 4.0 x 1.5 mm	32	70	86
Part number	20251280	20250888	
S 5.0 x 1.5 mm	45	88	119
Part number	20250047	20250887	20250057

Electrical Data	
Voltage	230 V/50 Hz
Motor	Shaded pole motor
Power consumption	16 W
Motor insulation class	E

General Data	
Protection class	IP00
Weight	0.7 kg

1) Pump with counter bearing
3) Fan

2025... Stock programme

Material of tubing connectors:
Tubing Silicone: for all Ø PVC
Tubing Novoprene: Ø 1.6/3.2 mm – PVC
Ø 4.1/4.8 mm – PP

2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

Peristaltic Pumps **SR25**

230 V/50 Hz, synchronous motor
Suitable for continuous operation

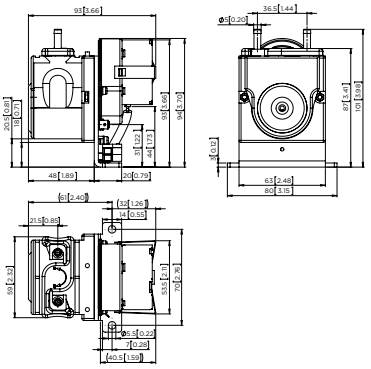
Flow	**0.2 – 14 ml/min**



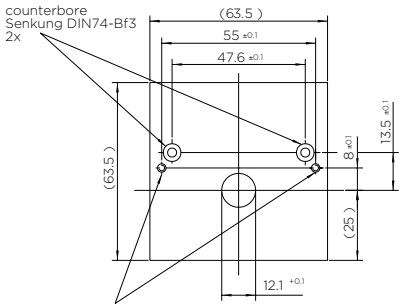
SR25, 1 to 10 rpm
Synchronous motor

Bore pattern to fit in a housing
(not illustrated)

Dimensions in mm [inch]



Dimensions in mm (inch)

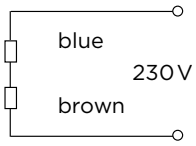


	Nominal speed		
	1 rpm	5 rpm	10 rpm
Tubing Novoprene	**Flow [2] ml/min**		
N 1.6 x 1.6 mm	0.2		
Part number	20251737		
N 3.2 x 1.6 mm		3.5	7.0
Part number		**20251351**	**20251355**
N 4.1 x 1.6 mm	1.0	5.0	10
Part number	20251739	**20251352**	**20251356**
N 4.8 x 1.6 mm	1.3	6.8	14
Part number	20251740	**20251353**	**20251357**

Electrical Data	
Voltage	230 V/50 Hz
Motor	Synchronous
Power consumption	2 W
Motor insulation class	E

General Data	
Protection class	IP00
Weight	0.39 kg

Electrical wiring:



2025... Stock programme

Material of tubing connectors:
Tubing Novoprene: Ø 1.6/3.2 mm – PVC
Ø 4.1/4.8 mm – PP

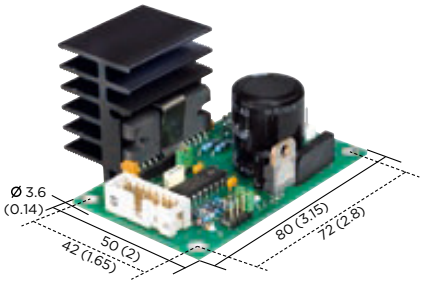
2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

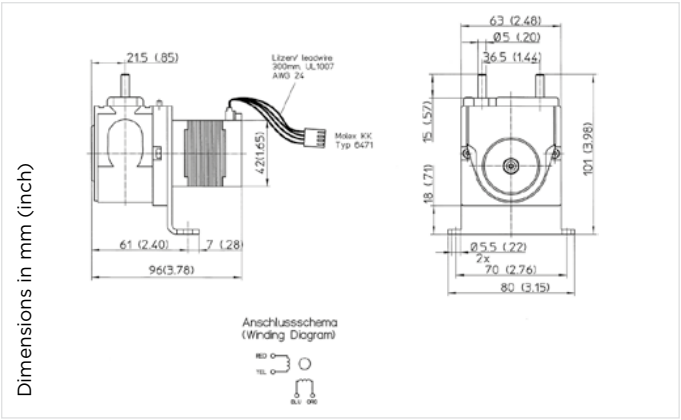
Peristaltic Pumps **SR25**

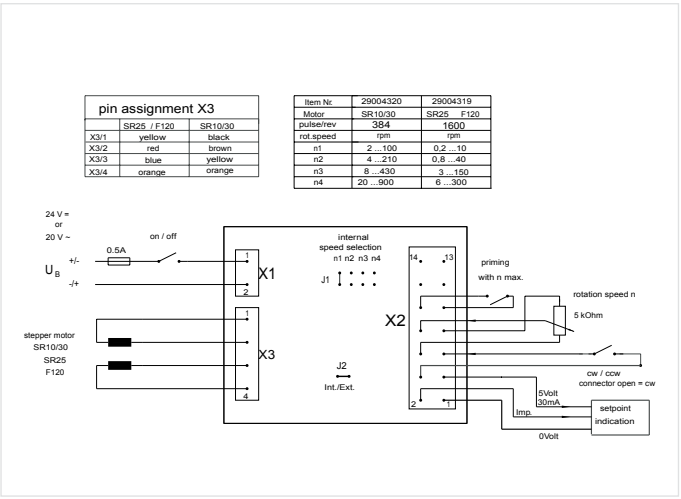
24 V DC with stepper motor
Circuit board recommended for test purposes

Flow	**0.1 – 430 ml/min**









4 possible operating methods
- internal speed selection via jumper – option with wiring set [1)]
- external speed selection
- analog input via pc
- digital input (clocked pulse)

Features
- speed pre-selection
- clockwise, counter clockwise operation
- instant priming
- selective operating method

Adjustable range	**I**	**II**	**III**	**IV**
Speed	0.4 – 10 rpm	1.6 – 40 rpm	6 – 150 rpm	12 – 300 rpm

Tubing Novoprene	**Max. flow[2)] ml/min**			
N 1.6 x 1.6 mm	0.1 – 2	0.3 – 7	1 – 26	2 – 55
Part number – pump without circuit board	20252200			
Part number – pump with circuit board	20252100			
N 3.2 x 1.6 mm	0.3 – 7	1 – 30	4 – 110	9 – 210
Part number – pump without circuit board	20252201			
Part number – pump with circuit board	20252101			
N 4.8 x 1.6 mm	0.6 – 14	2 – 60	9 – 215	20 – 430
Part number – pump without circuit board	20252202			
Part number – pump with circuit board	20252102			

Running Data	
On-time	Continuous operation
Recommended rotating direction at continuous operation	Clockwise

Electrical Data	
Nominal voltage (drive through electronic board)	24 V/DC oder 20 V/AC
Motor	Stepper motor, bipolar, stepping angle 1.8°
Current consumption	0.8 A
Max. restart consumption	5 A*
Inductance at 1 kHz, 1 V	14 mH
Winding resistance	6 Ω
Motor insulation class	B

General Data	
Material of the hose clip	PVDF
Weight of the pump	0.5 kg

* Delay fuse to be used.

1) Option: 14-pole connecting cable with plug,
rocker switch for clockwise and lefthanded running
Potentiometer and speed-push-button, part number 29000702

2) Note: The indicated values are average measured with water.
The actual values depend on different parameters like quality and age of tubing, pressure of tubing beds, pressure ratios, viscosity.
Please see page 4 for recommended running times and general data.

◀ RETURN TO CONTENTS

Peristaltic Pumps **SR25**

Spare parts SR25

Tubing with connectors



Tubing	Diameter x wall thickness	Connectors	Part number
Novoprene	1.6 x 1.6 mm	PVC	92025500
Novoprene	3.2 x 1.6 mm	PVC	92025501
Novoprene	4.1 x 1.6 mm	PE	92025502
Novoprene	4.8 x 1.6 mm	PE	92025503
Test-set with all tubings			92025856
Silicone	2.0 x 1.0 mm	PVC	92025507
Silicone	3.0 x 1.5 mm	PVC	92025508
Silicone	4.0 x 1.5 mm	PVC	92025509
Silicone	5.0 x 1.5 mm	PVC	92025532
Test-set with all tubings			92025857
Option			
PharMed BPT®	4.0 x 1.6 mm	PVDF	92025849
PharMed BPT®	4.8 x 1.6 mm	PVDF	92025843
Novoprene	1.6 x 1.6 mm	PVDF	92025552
Novoprene	3.2 x 1.6 mm	PVDF	92025533
Novoprene	4.1 x 1.6 mm	PVDF	92025549
Novoprene	4.8 x 1.6 mm	PVDF	92025563

Roller carrier



Speed	SR25 AC	SR25 12 V DC	SR25 24 V DC	SR25 Synchron
1 rpm	–	–	–	92025799 2)
5 rpm	–	–	–	92025799 2)
10 rpm	–		92025804 1)	92025799 2)
30 rpm	92025803 1)	92025803 1)	92025803 1)	–
65 rpm	92025803 1)	92025803 1)	92025803 1)	–
80 rpm	92025803 1)	–	92025803 1)	–
170 rpm	92025801 1)	92025806 1)	92025806 1)	–
300 rpm	–	–	92025801 1) (Steppermotor)	

Rolling band



Part number
29028215

1) Clockwise direction
2) Counter clockwise direction

Pumps Tubing

Tubing Properties		
Tube	**Characteristics**	**Limitations**
Novoprene	Standard tubing for the SR10/30, SR10/50 and SR25 Long lifetime Wide range of applications	May swell up with oil or oily liquids
Norprene®	Standard tubing for the SR10/100 Long lifetime Suitable especially for alkaline solutions	
PharMed BPT / Pharm-A-Line™	High quality for medical, laboratory and research use Homogeneous structure and therefore comparatively better chem. resistance Autoclavable Biocompatible Long lifetime	
Silicone	Suitable for polar solvents (with the exception of chlorinated aliphatic and aromatizised hydrocarbon) No detachment of softening agents Very stable elasticity over a wide temperature range (–30 bis 180 °C)	Not recommended with strong acids or alkaline solutions Swells up in many organic solutions

Choice of tubing depending on flow medium						
		Novoprene	**Norprene®**	**PharMed BPT**	**Pharm-A-Line™**	**Silicone**
Acids	weak medium strong	very good good not recommended				good unsatisfactory not recommended
Alkaline solution	weak medium strong	very good good not recommended	very good very good good			good unsatisfactory not recommended
Hydro-carbons	aliphatic aromatizised halogenated	not recommended				
Standards/ physiological behaviour		basis material meets FDA (21 CFR 177.2600) doesn't fulfill the EU food requirement 2002/72/EC	not recommended for food, drinks or medicine	USP, class VI ISO 10993 Parts 4,5 and 11	USP, class VI ISO 10993 Parts 4, 5 FDA (21 CFR 177.2600)	physiologically inert
Chemical structure		thermoplastic elastomer on PP-Basis with cross linked EPDM parts	thermoplastic elastomer on PP-Basis	thermoplastic elastomer on PP-Basis	thermoplastic elastomer on PP-Basis	high cross linked Polysiloxane with anorganic fillers

Pumps Tubing

Chemical Resistance of Tubing Materials
N = Novoprene Nor = Norprene® Ph = PharMed BPT / Pharm-A-Line™ S = Silicone

	N	Ph/Nor	S		N	Ph/Nor	S
Acetaldehyde	C	C	C	Hydrogen peroxide	A	A	C
Acetate	C	B	D	Hydrogen sulphide	A	A	C
Acetic acid	A	A	A	Isoprophyl alcohol	A	B	A
Acetic anhydride	A	A	C	Jodine	A	A	C
Acetone	C	C	A	Kaliumhydroxyde	A	A	C
Aluminium chloride	A	A	D	Ketones	C	C	–
Aluminium sulfate	A	A	A	Lactic acid	A	A	C
Ammonia	A	A	C	Magnesium chloride solution	A	A	A
Amyl acetate	C	B	C	Mercury salts	A	A	C
Amyl alcohol	A	C	C	Methanol	A	A	A
Amyl chloride	C	C	C	Methyl ethyl ketone	B	C	C
Aniline	A	B	C	Nitrous acid 10 %	B	A	C
Aqua regia	C	C	C	Oil, animal	B	B	B
Arsenic acid	C	C	A	Oil, hydraulic	C	C	D
Barium hydroxide	A	A	A	Oil, linseed	B	B	A
Benzaldehyde	C	C	C	Oil, mineral	C	C	C
Benzene	C	C	C	Oil, vegatable	C	B	A
Benzoic acid	A	B	B	Oleic acid	C	C	C
Benzylalcohol	–	A	B	Oxalic acid	B	B	B
Bleaching agent	B	A	A	Paraffins	C	C	–
Boric acid	A	A	A	Perchloric acid	C	C	C
Break liquid	A	A	A	Perchloroethylene	C	C	C
Bromine	C	C	C	Petrol	C	C	C
Butane	A	A	C	Phenol	A	A	C
Butanol	B	C	C	Phosphoric acid, 25 %	A	A	C
Calcium hypochlorite	A	A	B	Photograpic solutions	B	B	A
Carbon disulphide	C	C	C	Phtalic acid, 9 %	–	A	A
Chloracetic acid	A	B	–	Potassium salts	A	A	A
Chlorine, liquid	C	C	C	Pyridine	C	C	C
Chlorobenzene	C	C	C	Soap solution	A	A	A
Chloroform	C	C	C	Sodium carbonate	A	A	A
Chromic acid 50 %	C	C	C	Sodium chloride	A	A	A
Chromium salts	A	A	C	Sodium hydroxide 40 %	A	A	B
Citric acid	B	B	A	Sodium hypochlorite <5%	A	A	B
Cyclohexane	C	C	C	Sodium hypochlorite 12 %	A	A	B
Diesel fuel	C	C	C	Sodium salt	A	A	A
Ethanol	A	A	C	Stearic acid, 5 %	B	A	B
Ether	C	C	C	Sulphurdioxide, wet gas	A	A	B
Ethyl alcohol	A	A	A	Sulphuric acid, 30 %	A	A	C
Ethyl chloride	A	A	C	Sulphuric acid, 75-100%	C	C	C
Ethylene glycol	–	A	A	Sulphurtrioxide	–	B	–
Ferric sulfate	A	A	A	Tannic acid	A	B	A
Fluor silicium acid	C	C	–	Tetrahydrofurane	C	C	C
Fluoroboric acid, 48 %	B	B	–	Toluole	C	C	C
Formaldehyde	B	C	B	Trichloroehtylene	B	B	C
Formamide	A	B	–	Turpentine	C	C	C
Formic acid	A	B	A	Urea	A	A	A
Furfural	C	C	–	Uric Acid	A	A	–
Hydrochloric acid	A	A	C	Xylene	C	C	C
Hydrocyanic acid	A	A	C	Zinc chloride	B	B	B

A = small or no effect
B = minor or moderate effect
C = severe effect
D = no reliable data, please test before use
– = no available data

The material resistance is influenced by temperature and concentration of the medium.
The data have to be seen as indications and do not guarantee the material properties.

Norprene®, PharMed BPT®, Norton Co. Reg. TM's,

Notes

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