

621 Simplex

## 621 Close Coupled Simplex and Duplex Pumps



621 Duplex

### Technical Information and Features

- Simplex flow rates up to 16.2 Liters/min (4.28 GPM), Duplex flow rates up to 35.6 Liters/min (9.40 GPM)
- Discharge pressures up to 4 bar (60psi) with element style pumpheads, up to 30 psi with continuous tubing pumpheads
- Fitted with 620RE, 620RE4, or 620R pumphead
- 620RE two roller or 620RE4 four roller pumphead with CIP/SIP rotor and rapid snap-fit tube loading, pumphead accepts both 12mm and 17mm industrial and sanitary LoadSure™ elements
- 620R two roller pumphead for use with continuous length tubing 6.4 – 15.9mm (1/4" – 5/8") ID and 3.2mm (1/8") wall thickness
- Compact design with foot mounted gearbox
- 24 Hr continuous duty with 2 year warrantee
- Reversible operation
- Fixed speed, pneumatic, or electronic variable speed using optional AC Variable Frequency Drive
- Fixed Speed options: 230/460VAC, 60 Hz 3-phase or 120/240VAC, 60 Hz, 1-phase
- Variable Speed options supplied with 230/3/60, 460/3/60, 120/1/60 or 220/1/60 Variable Frequency Drive
- Explosion Proof motors available for Fixed Speed or Variable Speed operation
- Optional Leak detector and door safety interlock switch
- Optional Epoxy coated aluminum or 304SS baseplate kit for a free standing pump
- Gearmotor available in orange epoxy or FDA white epoxy

## Simplex Flow Rates

### Flow Rates 620RE Element Close Coupled Pumphead

LoadSure™ Element Material	77 RPM SIMPLEX PUMP				225 RPM SIMPLEX PUMP			
	LoadSure™ 12 mm		LoadSure™ 17 mm		LoadSure™ 12 mm		LoadSure™ 17 mm	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene TM, Bioprene TM	2.85	0.75	4.54	1.20	8.33	2.20	13.3	3.51
Marprene TL, Bioprene TL	2.85	0.75	5.18	1.37	8.33	2.20	15.1	3.99
Silicone	2.98	0.79	4.69	1.24	8.71	2.30	13.7	3.62
StaPure, Neoprene	3.06	0.81	5.56	1.47	8.96	2.37	16.2	4.28

### Flow Rates 620RE4 Element Close Coupled Pumphead

LoadSure™ Element Material	77 RPM SIMPLEX PUMP				225 RPM SIMPLEX PUMP			
	LoadSure™ 12 mm		LoadSure™ 17 mm		LoadSure™ 12 mm		LoadSure™ 17 mm	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene TM Bioprene TM	2.43	0.64	3.17	0.84	7.09	1.87	9.27	2.45
Marprene TL, Bioprene TL	2.43	0.64	3.63	0.96	7.09	1.87	10.6	2.80
Silicone	2.53	0.67	3.28	0.87	7.40	1.95	9.59	2.53
StaPure, Neoprene	2.60	0.69	3.89	1.03	7.61	2.01	11.4	3.01

### Flow Rates 620R Continuous Tube Close Coupled Pumphead

Tube Material	77 RPM SIMPLEX PUMP							
	6.4 mm (1/4") ID		9.6 mm (3/8") ID		12.7 mm (1/2") ID		15.9 mm (5/8") ID	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene, Bioprene	1.00	0.26	1.93	0.51	3.08	0.81	4.21	1.11
Silicone	0.92	0.24	2.08	0.55	3.23	0.85	4.74	1.25
StaPure, Neoprene	0.92	0.24	1.93	0.51	3.08	0.81	4.70	1.24

### Flow Rates 620R Continuous Tube Close Coupled Pumphead

Tube Material	225 RPM SIMPLEX PUMP							
	6.4 mm (1/4") ID		9.6 mm (3/8") ID		12.7 mm (1/2") ID		15.9 mm (5/8") ID	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene, Bioprene	2.93	0.77	5.63	1.49	9.00	2.38	10.8	2.85
Silicone	2.70	0.71	6.08	1.61	9.45	2.50	13.5	3.57
StaPure, Neoprene	2.70	0.71	5.63	1.49	9.00	2.38	13.7	3.62

## Duplex Pump Flow Rates

### Flow Rates 620RE Element Close Coupled Pumphead

LoadSure™ Element Material	65 RPM DUPLEX PUMP				247 RPM DUPLEX PUMP			
	LoadSure™ 12 mm		LoadSure™ 17 mm		LoadSure™ 12 mm		LoadSure™ 17 mm	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene TM, Bioprene TM	4.82	1.28	7.66	2.02	18.28	4.82	29.00	7.66
Marprene TL, Bioprene TL	4.82	1.28	8.74	2.30	18.28	4.82	33.20	8.78
Silicone	5.04	1.34	7.92	2.10	19.12	5.06	30.00	7.92
StaPure, Neoprene	5.18	1.36	9.38	2.48	19.66	5.20	35.60	9.40

### Flow Rates 620RE4 Element Close Coupled Pumphead

LoadSure™ Element Material	65 RPM DUPLEX PUMP				247 RPM DUPLEX PUMP			
	LoadSure™ 12 mm		LoadSure™ 17 mm		LoadSure™ 12 mm		LoadSure™ 17 mm	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene TM Bioprene TM	4.10	1.08	5.36	1.42	15.56	4.12	20.40	5.38
Marprene TL, Bioprene TL	4.10	1.08	6.12	1.62	15.56	4.12	23.20	6.12
Silicone	4.28	1.14	5.54	1.46	16.26	4.30	21.00	5.54
StaPure, Neoprene	4.40	1.16	6.56	1.74	16.70	4.42	25.00	6.60

### Flow Rates 620R Continuous Tube Close Coupled Pumphead

Tube Material	65 RPM DUPLEX PUMP							
	6.4 mm (1/4") ID		9.6 mm (3/8") ID		12.7 mm (1/2") ID		15.9 mm (5/8") ID	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene, Bioprene	1.70	0.44	3.26	0.86	5.20	1.38	7.10	1.88
Silicone	1.56	0.42	3.52	0.92	5.46	1.44	7.88	2.08
StaPure, Neoprene	1.56	0.42	3.26	0.86	5.20	1.38	7.94	2.10

### Flow Rates 620R Continuous Tube Close Coupled Pumphead

Tube Material	247 RPM DUPLEX PUMP							
	6.4 mm (1/4") ID		9.6 mm (3/8") ID		12.7 mm (1/2") ID		15.9 mm (5/8") ID	
	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min	Liters/min	Gal/min
Marprene, Bioprene	6.42	1.70	12.36	3.26	19.76	5.22	22.60	5.98
Silicone	5.92	1.56	13.34	3.52	20.8	5.50	28.60	7.56
StaPure, Neoprene	5.92	1.56	12.36	3.26	19.76	5.22	30.20	7.98

*NOTE: Flow rates shown are max for the stated pump speed under fixed speed operation. Flow is proportional to RPM. For variable speed operation with a Variable Frequency Drive (VFD) and inverter duty motor, a 10:1 linear turndown from the listed max flow can be attained. With a pneumatic motor, 5:1 linear turndown from the listed max flow can be attained. Consult Watson-Marlow Bredel for variable speed application of 5/8" ID tubing with 620R continuous tube pump, as flow is not proportional to RPM with this tube size.*

*For duplex pumps, flow is total for both pumpheads. Flow per channel is 1/2 the flow rate listed.*

# Engineering and Technical Data

## Simplex Pump Configuration, 1/2 HP

Model	Description	Operating Speed		Estimated Weight
621F/RE	Fixed Speed 2 or 4 Roller Pump	77	225	42 lbs
621F/RE4	Available 230/460VAC 3-ph or 120/240VAC 1-ph			
621F/R				
621DF/RE	Fixed Speed Explosion Proof 2 or 4 Roller Pump <sup>1</sup>	77	225	85 lbs
621DF/RE4	Available 230/460VAC 3-ph or 120/240VAC 1-ph			
621DF/R				
621V/RE	Variable Speed 2 or 4 Roller Pump <sup>2</sup>	7.7-77	22.5-225	42 lbs*
621V/RE4	Available VFD enclosure NEMA 1 or NEMA 4			
621V/R	Available VFD mains inputs: 230/3/60, 460/3/60, 240/1/60, 115/1/60			
621DV/RE	Variable Speed Explosion Proof 2 or 4 Roller Pump <sup>1,2,3</sup>	7.7-77	22.5-225	98 lbs*
621DV/RE4	Available VFD enclosure NEMA 1 or NEMA 4			
621DV/R	Available VFD mains inputs: 230/3/60, 460/3/60			
621P/RE	Variable Speed Pneumatic 2 or 4 Roller Pump	16-77	45-225	25 lbs
621P/RE4	Requires 100 psi filtered and lubricated air source			
621P/R				

## Duplex Pump Configuration, 3/4 HP

Model	Description	Operating Speed		Estimated Weight
621FD/RE	Fixed Speed 2 or 4 Roller Pump	65	247	52 lbs
621FD/RE4	Available 230/460VAC 3-ph or 120/240VAC 1-ph			
621FD/R				
621DFD/RE	Fixed Speed Explosion Proof 2 or 4 Roller Pump <sup>1</sup>	65	247	85 lbs
621DFD/RE4	Available 230/460VAC 3-ph or 120/240VAC 1-ph			
621DFD/R				
621VD/RE	Variable Speed 2 or 4 Roller Pump <sup>2</sup>	6.5-65	24.7-247	52 lbs*
621VD/RE4	Available VFD enclosure NEMA 1 or NEMA 4			
621VD/R	Available VFD mains inputs: 230/3/60, 460/3/60, 240/1/60, 115/1/60			
621DVD/RE	Variable Speed Explosion Proof 2 or 4 Roller Pump <sup>1,2,3</sup>	6.5-65	24.7-247	108 lbs*
621DVD/RE4	Available VFD enclosure NEMA 1 or NEMA 4			
621DVD/R	Available VFD mains inputs: 230/3/60, 460/3/60			
621PD/RE	Variable Speed Pneumatic 2 or 4 Roller Pump	16-65	50-247	44 lbs
621PD/RE4	Requires 100 psi filtered and lubricated air source			
621PD/R				

<sup>1</sup> Consult Watson-Marlow Bredel for specific Division and Class XP ratings. Fixed speed pumps not inverter duty.

<sup>2</sup> VFD supplied loose for field mounting. Motors are 3 phase inverter duty ready.

<sup>3</sup> VFD's must be located outside of explosion proof area

\* Weight does not include VFD

# Engineering and Technical Data

## LoadSure™ Tube Element Codes for 620RE and 620RE4 Pumpheads

	12mm Element with 3/4" Tri-clamp Style Fittings	17mm Element with 3/4" Tri-clamp Style Fittings	12mm Element with 3/4" Male Cam & Groove Fittings	17mm Element with 3/4" Male Cam & Groove Fittings
StaPure	960.0120.PFT	960.0170.PFT	-	-
Bioprene TM	903.M120.PFT	903.M170.PFT	-	-
Bioprene TL	903.0120.PFT	903.0170.PFT	-	-
Plat. Silicone	913.0120.PFT	913.0170.PFT	-	-
Marprene TM	-	-	902.M120.PPC	902.M170.PPC
Marprene TL	-	-	902.0120.PPC	902.0170.PPC
Per. Silicone	-	-	910.0120.PPC	910.0170.PPC
Neoprene	-	-	920.0120.PPC	920.0170.PPC

## Tubing Product Codes for 620R Pumphead (15 Meter Pack)

I.D. mm	I.D. "	#	Marprene	Bioprene	Peroxide Silicone	Platinum Silicone
6.4	1/4	26	902.0064.032	903.0064.032	915.0064.032	914.0064.032
9.6	3/8	73	902.0096.032	903.0096.032	915.0096.032	914.0096.032
12.7	1/2	82	902.0127.032	903.0127.032	915.0127.032	914.0127.032
15.9	5/8	184	902.0159.032	903.0159.032	915.0159.032	914.0159.032
I.D. mm	I.D. "	#	Butyl	Neoprene	Tygon	Fluorel
6.4	1/4	26	935.0064.032	925.0064.032	950.0064.032	975.0064.032
9.6	3/8	73	935.0096.032	925.0096.032	950.0096.032	975.0096.032
12.7	1/2	82	935.0127.032	925.0127.032	950.0127.032	975.0127.032
15.9	5/8	184	935.0159.032	925.0159.032	950.0159.032	975.0159.032

## Materials of Construction/Specifications

Track: Aluminum LM24M powder coated

Guard: Outer layer - Polyurethane PBA  
Inner shell - Grilamid TR55

Guard Catch: EN34 case hardened Xlan 5200 coated

Rotor

Hub & Roller Arms: Fortron 1140L4 (PPS)

Cover: Dupont Hytrel G5544

Main Rollers: Stainless steel 304

Main Roller Bearings: Carbon steel

Guide Rollers: Nylatron

Tube Clamp Sets: Polypropylene

Tri-Clamp Style Fittings: PVDF

Cam & Groove Fittings: Polypropylene

Gearbox: Cast Iron

Motor: TEFC or TENV

Construction of XP or alternate motors subject to vary

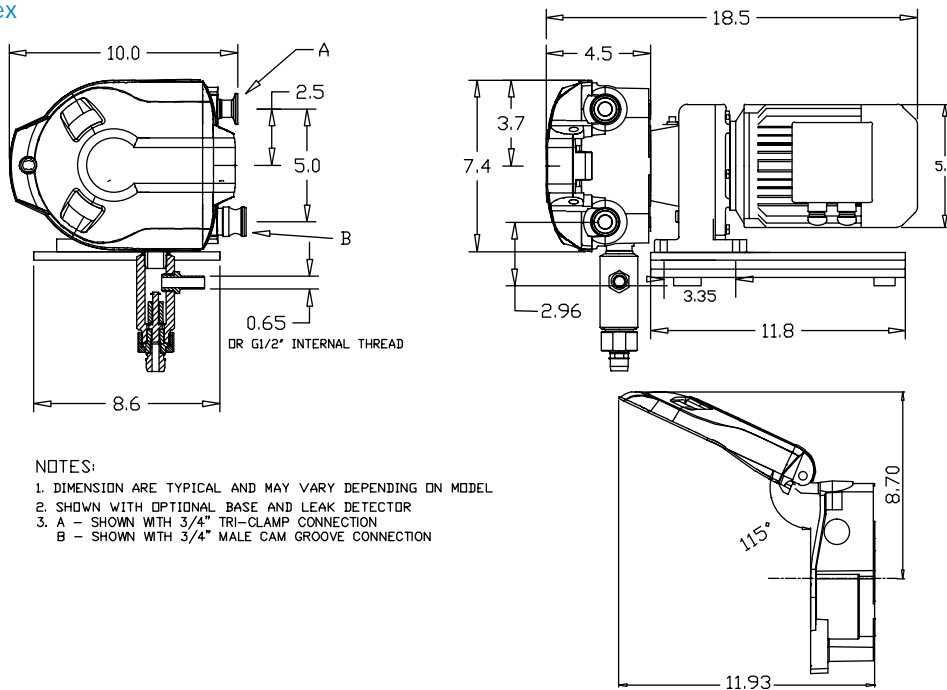
Operational Temperature Range: 5 deg C to 40 deg C

Noise: Max 75dBA at 1 meter

Standards: In conformity with CE, BS0800, IEC335-1, EN60529

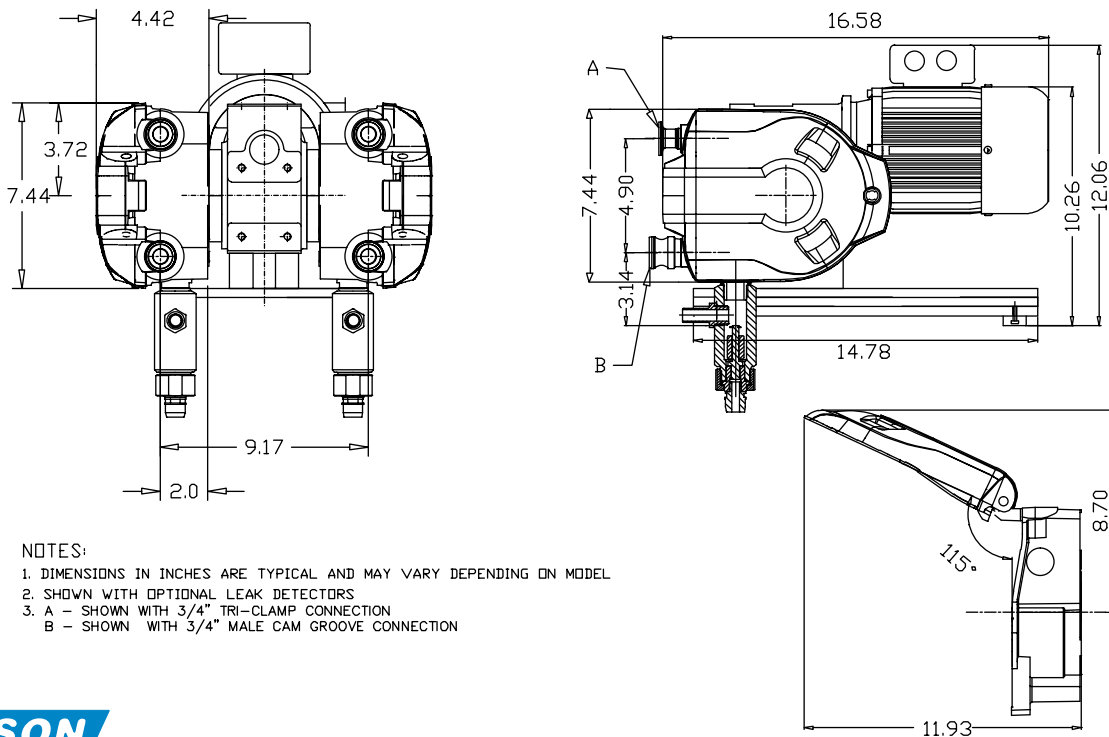
# Engineering and Technical Data

## 621 Simplex



- NOTES:
1. DIMENSIONS ARE TYPICAL AND MAY VARY DEPENDING ON MODEL
  2. SHOWN WITH OPTIONAL BASE AND LEAK DETECTOR
  3. A - SHOWN WITH 3/4" TRI-CLAMP CONNECTION  
B - SHOWN WITH 3/4" MALE CAM GROOVE CONNECTION

## 621 Duplex



- NOTES:
1. DIMENSIONS IN INCHES ARE TYPICAL AND MAY VARY DEPENDING ON MODEL
  2. SHOWN WITH OPTIONAL LEAK DETECTORS
  3. A - SHOWN WITH 3/4" TRI-CLAMP CONNECTION  
B - SHOWN WITH 3/4" MALE CAM GROOVE CONNECTION



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