

FLEX-PRO A3 & A4

Feed Rates to 158.5 GPH
Pressures to 125 PSI
2500:1 Turndown ratio
Tube Failure Detection
Brushless DC Motor
NEMA 4X (IP 66) Washdown
2 Year Warranty



Model A4

Model A3

NEMA 4X **CE**



Exclusive:



Patents: 4,496,295 7,001,153 and other patents pending

Applications:

- Chemical Metering
- Wastewater Treatment
- Chlorination
- Chloramination
- Fluoridation
- Polymer Injection
- Pulp & Paper Slurries
- Printing Inks
- Oil Based Fluids
- Gaseous Fluids
- Shear Sensitive Fluids
- Caustics
- Chemical Slurries
- Food and Beverage

Features:

- Peristaltic pump design does not have valves that can clog requiring maintenance.
- Self priming - even against maximum line pressure. By-pass valves are not required. Cannot vapor lock or lose prime.
- Output rates to: 158.5 GPH (600 LPH) and pressures to 125 PSI (8.6 Bar).
- No maintenance brushless variable speed motor.
- Specially engineered tubing for long life at high pressures.
- Patented Tube Failure Detection (TFD) system. Senses tube failure by detecting chemical in the pump head. No false triggering.
- 2500:1 turndown ratio.
- SCADA Inputs include: 4-20mA, 0-10Vdc, and Pulse inputs for remote external speed control and 0-30 VDC / contact closure remote start/stop.
- Operator friendly digital touch pad with menu driven software.
- VGA Graphic multi-color backlit LCD displays remote/local control status, motor speed, output rate, input signal values, service and alarm status.
- Outputs include: Scalable 4-20mA or pulse, one 250V/6A relay and three 115V/1A contact closures assignable to monitor up to 17 different pump functions including TFD, FVS, remote/local control setting, motor on, fault, current operating mode, and others.
- Two CNC precision machined squeeze rollers and two alignment rollers for optimum squeeze, unparalleled accuracy, and tube life.
- Heavy duty rotor - single piece plastic rotor means no flexing and increased accuracy with no metal springs or hinges to corrode.
- Inject at maximum pressure in either direction (clockwise and counter clockwise).
- Patent pending feature to extended tube life.
- Compatible with Blue-White's output Flow Verification Sensor (FVS) system.

Engineering Specifications:

Maximum working pressure (excluding pump tubes):

125 psig (8.6 bar)

Note: see individual pump tube assembly maximum pressure ratings.

Maximum Fluid temperature (excluding pump tubes):

3/8" OD x 1/4" ID tubing connections: 130° F (54° C)

M/NPT connections: 185° F (85° C)

Note: see individual pump tube assembly maximum temperature ratings.

Ambient Operating Temperature

14°F to 115°F (-10°C to 46°C)

Ambient Storage Temperature

-40°F to 158°F (-40°C to 70°C)

Operating Voltage:

A3 MODELS: 96 to 264VAC-50/60Hz, 220W

A4 MODELS: 96 to 264VAC-50/60Hz, 350W

Power Cord Options:

115V60Hz = NEMA 5/15 (USA)

230V60Hz = NEMA 6/15 (USA)

220V50Hz = CEE 7/II (EU)

240V50Hz = AS 3112 (Australia/New Zealand)

Accuracy:

+/- 0.5% of full scale

Repeatability +/- 0.5%

Duty cycle:

Continuous

Motor speed adjustment range 2,500:1:

0.05% - 100% motor speed

Motor speed adjustment resolution:

0.1% increments > 1% motor speed

0.01% increments < 1% motor speed

Maximum viscosity:

20,000 Centipoise

Maximum suction lift:

30 ft. Water, 0 psig (4.5 m, 0 bar)

Display

3 color VGA backlit LCD, UV resistant.

Display Languages

English, Spanish, French or German selectable.

Keypad

Ten button positive action tactile switch keypad.

Security

Programmable 4-digit password.

Enclosure:

NEMA 4X (IP66), Polyester powder coated aluminum.

Maximum Overall Dimensions:

A3 models: 8-1/8"W x 10-3/4"H x 15-1/4"D (20.6W x 27.3H x 38.9D cm)

A4 models: 12-1/8"W x 14-1/4"H x 18-5/8"D (30.8W x 36.1H x 47.3D cm)

Approximate shipping wt:

A3 models: 33 lb. (15.0 Kg)

A4 models: 56 lb. (25.4 Kg)

Materials of Construction:

Wetted components:**Pump Tube Assembly (Model Specific - 2 provided):**

Tubing: Norprene® or Norprene® Chemical or Tygothane®

Adapter fittings: .PVDF

Injection / Back-flow Check valve:

Body & insert: PVDF

Check Ball: Ceramic

Spring: Hastelloy C-276

Ball Seat O-ring: Viton® (optional EP)

Static Seal O-ring: Viton® (optional EP)

Duckbill anti-scale valve: Santoprene®

Ancillary Items provided**With "S" tubing type connections only:**

Suction Tubing: 3/8" OD x 1/4" ID x 10' Clear PVC

Discharge Tubing: 3/8" OD x 1/4" ID x 10' Polyethylene (LLDPE)

Suction Strainer: Polypropylene

With "B" tubing and "M" M/NPT connections only:**Suction Strainer:**

Body: PVDF

Check Ball: Ceramic

Ball Seat O-ring: Viton® (optional EP)

With "C" Tri-clamp connections only:

none

Non-Wetted components:**Enclosure:**

413 Aluminum (Polyester powder coated)

Pump Head:

Valox® (PBT) thermoplastic

Pump Head Cover:

Clear Acrylic - Annealed for added strength and chemical resistance.

Permanently lubricated sealed motor shaft support ball bearing.

Brass shaft support bearing retainer.

Cover Screws:

Stainless Steel

Roller Assembly:

Rotor:.....Valox® (PBT)

Rollers:Nylon

Roller Bearings:SS Ball Bearings

Motor Shaft:

Chrome plated steel

TFD System Sensor pins:

Hastelloy C-276

Power Cord:

3 conductor, SJTW-A Water-resistant

Tube Installation Tool:

GF Nylon

Mounting Brackets and Hardware:

316 Stainless Steel

Output Specifications:

A3 Models

Feed Rate		Max Speed	Max Pressure	Max Temperature	A3 Model Numbers				
Norprene® A3 Tube Pumps									
Meets FDA criteria for food Excellent chemical resistance CIP SIP									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.001 - 2.10	.003 - 7.8	.05 - 132	125	125 (8.6)	185 (85)	A3V24-*ND	A3V25-*ND	A3V26-*ND	
.007 - 17.4	.026 - 65.8	.4 - 1097	125	125 (8.6)	185 (85)	A3V24-*NH	A3V25-*NH	A3V26-*NH	
.010 - 25.3	.038 - 96.0	.6 - 1596	125	125 (8.6)	185 (85)	A3V24-*NJ	A3V25-*NJ	A3V26-*NJ	
.013 - 33.3	.050 - 126	.8 - 2100	125	125 (8.6)	185 (85)	A3V24-*NK	A3V25-*NK	A3V26-*NK	
Norprene® A3 Tube Pumps									
Meets FDA criteria for food Excellent chemical resistance Extra long life at low pressures									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.013 - 33.3	.050 - 126	.8 - 2100	125	30 (2.1)	185 (85)	A3V24-*NKL	A3V25-*NKL	A3V26-*NKL	
Norprene® Chemical A3 Tube Pumps									
Meets FDA criteria for food Superior chemical resistance									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.006 - 14.5	.022 - 55.1	.4 - 920	125	50 (3.4)	130 (54)	A3V24-*TH	A3V25-*TH	A3V26-*TH	
.011 - 28.5	.043 - 108.0	.7 - 1800	125	50 (3.4)	130 (54)	A3V24-*TK	A3V25-*TK	A3V26-*TK	
Tygothane® A3 Tube Pumps									
Meets FDA criteria for food Resistant to oils, greases and fuels									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.002 - 4.6	.007 - 17.4	.1 - 290	125	65 (4.5)	130 (54)	A3V24-*GE	A3V25-*GE	A3V26-*GE	
.004 - 10.1	.015 - 38.4	.3 - 637	125	65 (4.5)	130 (54)	A3V24-*GG	A3V25-*GG	A3V26-*GG	
.010 - 24.9	.038 - 94.2	.6 - 1570	125	65 (4.5)	130 (54)	A3V24-*GH	A3V25-*GH	A3V26-*GH	
.011 - 28.5	.043 - 108.0	.7 - 1800	125	65 (4.5)	130 (54)	A3V24-*GK	A3V25-*GK	A3V26-*GK	

A4 Models

Feed Rate		Max Speed	Max Pressure	Max Temperature	A4 Model Numbers				
Norprene® A4 Tube Pumps									
Meets FDA criteria for food Excellent chemical resistance CIP SIP									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.01 - 28.5	.04 - 108	.7 - 1800	125	125 (8.6)	185 (85)	A4V24-*NH	A4V25-*NH	A4V26-*NH	
.02 - 44.4	.07 - 168	1.1 - 2800	125	100 (6.9)	185 (85)	A4V24-*NJ	A4V25-*NJ	A4V26-*NJ	
.02 - 50.7	.08 - 192	1.5 - 3200	125	100 (6.9)	185 (85)	A4V24-*NK	A4V25-*NK	A4V26-*NK	
.04 - 100.0	.15 - 378	2.5 - 6300	125	50 (3.4)	185 (85)	A4V24-*NL	A4V25-*NL	A4V26-*NL	
.06 - 158.5	.24 - 600	4.0 - 10000	125	30 (2.0)	185 (85)	A4V24-*NP	A4V25-*NP	A4V26-*NP	
Norprene® A4 Tube Pumps									
Meets FDA criteria for food Excellent chemical resistance Extra long life at low pressures									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.02 - 50.7	.08 - 192	1.3 - 3200	125	30 (2.1)	185 (85)	A4V24-*NKL	A4V25-*NKL	A4V26-*NKL	
Norprene® Chemical A4 Tube Pumps									
Meets FDA criteria for food Superior chemical resistance									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.01 - 20.6	.03 - 78	.5 - 1300	125	30 (2.1)	130 (54)	A4V24-*TH	A4V25-*TH	A4V26-*TH	
.02 - 42.8	.06 - 162	1.1 - 2700	125	30 (2.1)	130 (54)	A4V24-*TK	A4V25-*TK	A4V26-*TK	
Tygothane® A4 Tube Pumps									
Meets FDA criteria for food Resistant to oils, greases and fuels									
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC	
.01 - 34.8	.05 - 132	.9 - 2200	125	65 (4.5)	130 (54)	A4V24-*GH	A4V25-*GH	A4V26-*GH	
.02 - 58.6	.09 - 222	1.5 - 3700	125	65 (4.5)	130 (54)	A4V24-*GK	A4V25-*GK	A4V26-*GK	

- The Flex-Pro Peristaltic Pump's output is linear over the entire 0.05% to 100% adjustment range.
- Output versus pressure is nearly linear in all models. Larger tubes exhibit greater losses.
- For optimum tube life, specify the pump so that it operates at the lowest possible RPM and pressure.

- * Inlet/outlet connection type
- S = 3/8" OD x 1/4" ID tubing compressions type connections
- M = 1/2" male NPT
- B = 1/2" ID tubing barb type connections (available on A4 models only)
- C = 3/4" tri-clamp connections

Chemical Resistance of Tubing:

Norprene® Tubing

Meets FDA criteria for food | Excellent chemical resistance

Alcohol general Aluminum Sulfate (Alum) Ammonium chloride Ammonium hydroxide Benzyl alcohol Bleach Brine solutions Calcium hypochlorite 20% Ethylene glycol	Ferric chloride Ferric nitrate Ferric sulfate Ferrous chloride - 43% in water Ferrous sulfate Fluosilicic Acid (up to 25%) Formic acid Glucose Hydrochloric acid 33%	Hydrogen peroxide Hypochlorous acid Iodine Lactic acid Magnesium chloride Magnesium sulfate Phosphoric acid Plating solutions Potassium hydroxide	Potassium permanganate Propylene glycol Sodium hydroxide 50% Sodium Bisulfite Sodium Hypochlorite 12.5% Sodium sulfide Sulfuric acid up to 50% Tannic acid
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Norprene® Chemical Tubing - Ultra smooth plasticizer-free bore (inner liner)

Meets FDA criteria for food | Superior chemical resistance

Ferrous Chloride (up to 40%) Fluoboric Acid (up to 48%) Fluosilicic Acid (up to 25%) Hydrofluoric Acid (up to 48%) Nitric Acid (up to 71%)	Phosphoric Acid (up to 85%) Potassium Hypochlorite (up to 70%) Sodium Phosphate (up to 30%) Sulfuric Acid (up to 98%)	Bases Salts Ketones Alcohols Isobutyl Alcohol	Applications: Ink and solvent production Battery acid filling Specialty chemical production / processing Sensitive fluid transfer
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Tygothane® Tubing

Meets FDA criteria for food | Resistant to oils, greases and fuels

Cyclohexane Diesel Fuel Fatty acids Gasoline Heptane Hexane	Kerosene Lard Mineral spirits Soap solutions Turpentine	Oils: ASTM reference No.1,2,3 Castor Coconut Fuel	Oils: Linseed Lubricating Mineral
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Norprene® is a registered trademark of Saint-Gobain.
Tygothane® is a registered trademark of Saint-Gobain.
Note: Data shown at 72 degrees F.

Pump Tube Assembly Output Specifications:

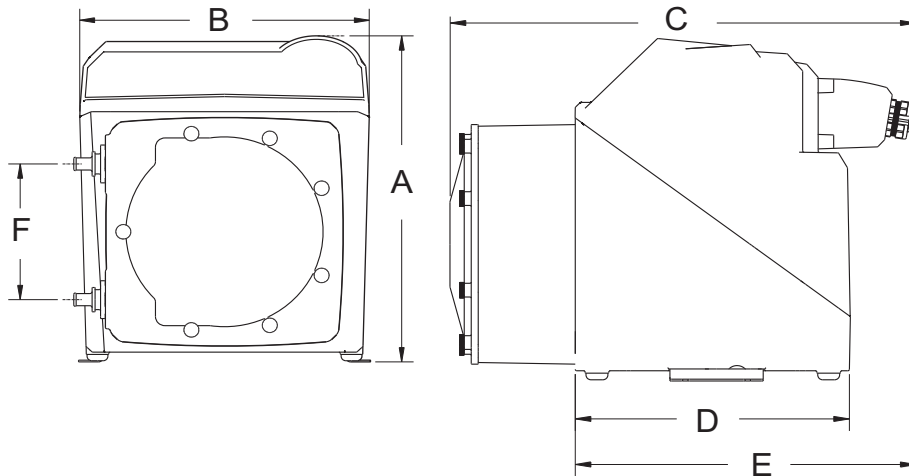
Model A3 - Available Pump Tubes and Output Ranges						
Tube Material	Tube Size	Max Pressure	Max Temp	Output Range		
Material	Code	PSI (bar)	F (C)	GPH	LPH	ML/Min
Norprene	ND	125 (8.6)	185 (85)	.001 - 2.1	.003 - 7.8	.05 - 132
Norprene	NH	125 (8.6)	185 (85)	.007 - 17.4	.026 - 65.8	.4 - 1097
Norprene	NJ	125 (8.6)	185 (85)	.010 - 25.3	.038 - 96.0	.6 - 1596
Norprene	NK	125 (8.6)	185 (85)	.013 - 33.3	.050 - 126.0	.8 - 2100
Norprene	NKL	30 (2.1)	185 (85)	.013 - 33.3	.050 - 126.0	.8 - 2100
Norprene Chemical	TH	50 (3.4)	130 (54)	.006 - 14.5	.022 - 55.1	.4 - 920
Norprene Chemical	TK	50 (3.4)	130 (54)	.010 - 28.5	.043 - 108.0	.7 - 1800
Tygothane	GE	65 (4.5)	130 (54)	.002 - 4.60	.007 - 17.4	.1 - 290
Tygothane	GG	65 (4.5)	130 (54)	.004 - 10.1	.015 - 38.4	.3 - 637
Tygothane	GH	65 (4.5)	130 (54)	.010 - 24.9	.038 - 94.2	.6 - 1570
Tygothane	GK	65 (4.5)	130 (54)	.011 - 28.5	.043 - 108.0	.7 - 1800

Model A4 - Available Pump Tubes and Output Ranges						
Tube Material	Tube Size	Max Pressure	Max Temp	Output Range		
Material	Code	PSI (bar)	F (C)	GPH	LPH	ML/Min
Norprene	NH	125 (8.6)	185 (85)	.01 - 28.5	.04 - 108	.7 - 1800
Norprene	NJ	100 (6.9)	185 (85)	.02 - 44.4	.07 - 168	1.1 - 2800
Norprene	NK	100 (6.9)	185 (85)	.02 - 50.7	.08 - 192	1.5 - 3200
Norprene	NL	50 (3.4)	185 (85)	.04 - 100.0	.15 - 378	2.5 - 6300
Norprene	NP	30 (2.0)	185 (85)	.06 - 158.5	.24 - 600	4.0 - 10000
Norprene	NKL	30 (2.0)	185 (85)	.02 - 50.7	.08 - 192	1.5 - 3200
Norprene Chemical	TH	30 (2.0)	130 (54)	.01 - 20.6	.03 - 78	.5 - 1300
Norprene Chemical	TK	30 (2.0)	130 (54)	.02 - 42.8	.06 - 162	1.1 - 2700
Tygothane	GH	65 (4.5)	130 (54)	.01 - 34.8	.05 - 132	.9 - 2200
Tygothane	GK	65 (4.5)	130 (54)	.02 - 58.6	.09 - 222	1.5 - 3700

FLEX-PRO® Peristaltic Metering Pump

Engineering and Technical Data

Dimensions:



Dim	A3 Series		A4 Series	
	Inches	cm	Inches	cm
A	10-3/4"	27.3	14-1/4"	36.1
B	8-1/8"	20.6	12-1/8"	30.8
C	15-1/4"	38.9	18-5/8"	47.3
D	10"	25.4	11"	27.9
E	12-1/4"	31.0	13-5/8"	34.6
F	4-1/4"	10.7	6"	15.2

Model Number Matrix:

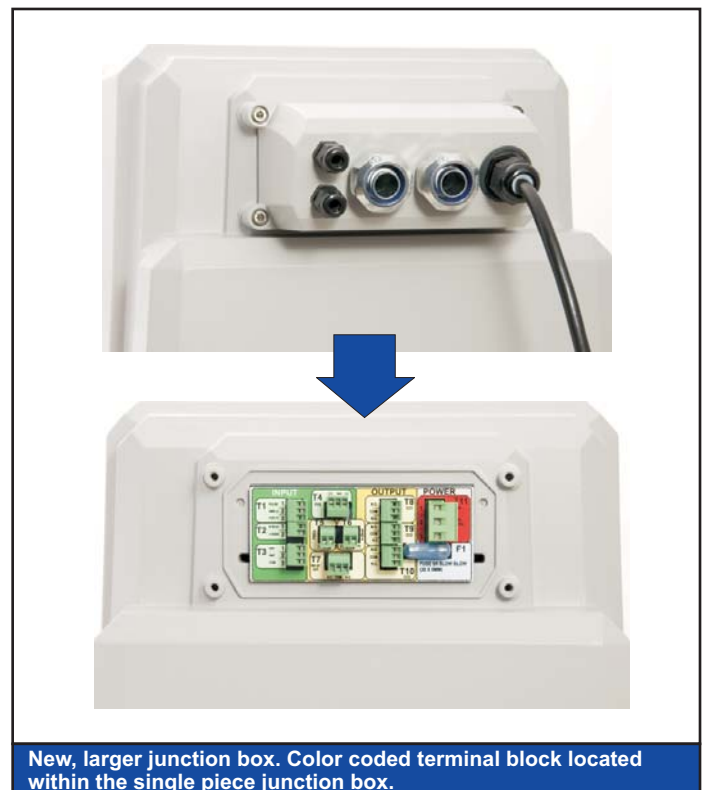
Flex-Pro Model Number							
A3	Flex-Pro A3 Peristaltic Metering Pump						
A4	Flex-Pro A4 Peristaltic Metering Pump						
Control Features							
V	Multiple automatic input output control and alarm modes (remote control)						
Maximum Motor Speed							
2	125 RPM (maximum rotor rotation speed)						
Power Cord (note: pump will operate on any voltage from 96VAC to 264VAC)							
4	115V / 60Hz, power cord NEMA 5/15 plug (US)						
5	230V / 60Hz, power cord NEMA 6/15 plug (US)						
6	220V / 50HZ, power cord CEE 7/VII plug (EU)						
8	240V / 50HZ, power cord AS 3112 plug (Australia/New Zealand)						
X	No Power Cord						
Inlet/Outlet Connection Size, Connection Type, Connection Material							
S	3/8" OD x 1/4" ID Tube Compression Fitting, Natural PVDF (Kynar) - A3 models only						
M	1/2" Male NPT Fitting, Natural PVDF (Kynar)						
B	1/2" ID Tubing Barb Fitting, Natural PVDF (Kynar) - A4 models only						
C	3/4" Tri-clamp connections, Natural PVDF (Kynar)						
Pump Tube Material, Pump Tube Size							
ND	Norprene® .075 ID - A3 models only	NKL	Norprene® .375 ID (30 PSI max pressure)				
NF	Norprene® .155 ID - A3 models only	GE	Tygothane® .125 ID - A3 models only				
NH	Norprene® .250 ID	GG	Tygothane® .187 ID - A3 models only				
NJ	Norprene® .312 ID	GH	Tygothane® .312 ID				
NK	Norprene® .375 ID	GK	Tygothane® .375 ID				
TH	Norprene® Chemical .250 ID	NL	Norprene® .500 ID - A4 models only				
TK	Norprene® Chemical .375 ID	NP	Norprene® .750 ID - A4 models only				
Options (leave this blank for standard model)							
1	TI40-6V Threadless injection check valve, replaces A-104NK-6A threaded check valve						
2	C340A Foot valve, replaces standard C-342 inlet strainer (no check valve)						
R	Right facing pump head, input / output (Left facing fluid input / output is standard)						
D	Down facing pump head, input / output (Left facing fluid input / output is standard)						
A3	V	2	4	-	S	NH	Sample Model Number

Features list:

Feature
TFD (Tube Failure Detection) System Alarm
FVS (Flow Verification System) Alarm *
Motor reverse (rotor reversible)
Three position pump head rotation
Tube life timer
Output: One, 6 amp alarm relay
Output: Three, dry contact or maximum 30VDC/115VAC 1 amp contact closures
Output: Programmable 4-20mA signal or high speed pulse, proportional to pump output
Input: One, contact closure (remote start / stop)
Input: Remote speed control via 4-20mA, 0-10VDC, high speed digital pulse, contact closure pulse
Remote/Local control settings
Password protection
Display: Motor speed, Tube Failure Detection (TFD) system and Flow Verification System (FVS) alarm status
Display: Output in ml/min, oz/min, L/hr, Gal/hr, Gal/day, RPM, and input signal values
Automated PPM chemical dosing system
Available Operating Modes:
Manual (local): speed adjustment
Remote input: 4-20mA
Remote input: 0-10 VDC
Remote input: high speed frequency (pulse) input
Remote input: pulse triggered batch dispensing
Remote input: proportional PPM (parts per million) dosing with high speed frequency (pulse) input
Manual (local): batch dispensing
Manual (local): repeating cycle timer
Manual (local): fixed speed PPM (parts per million) dosing

* Requires Micro-Flo Sensor sold separately

AUTHORIZED BLUE-WHITE DISTRIBUTOR



New, larger junction box. Color coded terminal block located within the single piece junction box.

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 www.blue-white.com Email: sales@blue-white.com

Patents: 4,496,295 - 7,001,153 - 7,284,964 and other patents pending
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