

KNIGHT®

DAIRY FARM CLEANING & SANITATION

Knight has an extensive line of precision chemical dispensing systems designed to meet the sanitation and cleaning demands of the dairy environment, whether you are dealing with parlor sanitation, pipeline and tank cleaning, teat dip dispensing, hose drop, or hoof baths.



TEAT DIP MIXING
AND DISPENSING



CHEMICAL METERING
PUMPS



CONTROLLERS



FOAMING SYSTEMS



HOSE DROP
CONTROLLER



ON FARM LAUNDRY

Welcome to **KNIGHT**

Knight LLC, a unit of IDEX Corporation, is renowned for its expertise in highly engineered fluidics systems, and components. We strive for Innovation, Diversity, and Excellence.

Founded in 1972 by William Knight Russell, Knight has built a long-standing history as a pioneer in chemical dispensing systems. Our company takes pride in its reputation for dependable products, and superior service among customers worldwide. As a manufacturer with in-house engineering, stainless steel fabrication, and assembly capabilities, we can custom build our products to fit the customer's precise needs.

What's the "Knight Advantage" ? We attribute that success to our knowledgeable people, 1st Class Customer Service and Quality Products that enable our customers to achieve an extremely low Total Cost of Ownership with our equipment. Come experience the "Knight Advantage" for yourself - we look forward to serving you!

Dairy Farm Cleaning & Sanitation Systems

Knight has developed the most extensive and technologically advanced chemical dispensers devoted to the needs of the dairy industry. New modular micro-processor driven systems reduce labor during installation and deliver greater chemical control accuracy to produce consistently clean and sanitary milk contact surfaces.

Teat Dip Mixing and Dispensing

- Dairy-Chem Plus
- Dairy-Chem
- SprayGuard

Chemical Metering Pumps

- PMP
- PMP Plus
- Uniflow & Liquidrol
- CleanGuard
- ControlGuard ACCS

Foaming Systems

- FoamClean Mobile & Wall Mount Foamer

Hose Drop Controllers

- ParlorGuard

On Farm Laundry

- One-Shot

Other Knight Product Lines

- Laundry Chemical Dispensing Systems
- Kitchen / Warewash Chemical Dispensing Systems
- Chemical Proportioning Systems
- Dishwashing Machines
- Food and Beverage Chemical Application



DAIRY-CHEM^{Plus}

Teat Dip Mixing and Dosing Systems

The KNIGHT Dairy-Chem Plus teat dip blending systems are designed to produce factory quality dairy farm hygiene chemistries in real time as they are consumed by the dairy farm. This simple yet sophisticated system relies on advanced patent pending flow metering and embedded control software technology to produce consistent high quality teat dips from concentrate. The Dairy-Chem Plus can produce a variety of dairy cow udder treatment solutions including Iodine, Chlorine Dioxide and Chlor Hexidine tailor made to current farm conditions. Dairy Chem Plus's valuable reporting tools gather useful data to better monitor parlor procedures, track usage, and assure optimal utter hygiene.



Increased Profits

Factory Quality Dips

Data Management Reports

Rugged/Reliable Performance

- Increased profitability by blending on-site from concentrate
- Easily adjust your iodine or emollient concentrations depending on herd conditions
- Blend unique teat dip formulations not available in factory ready to use form
- Change formulations in an instant using concentrates already on the farm
- Precise and controlled metered blending with patent pending flow meter technology
- Reporting software allows for complete monitoring of usage, costs, trends, alarms, and production

KNIGHT

IDEX
FLUID & METERING

INDUSTRIAL SYSTEMS

Precise and Accurate "Smart Dosing"

The Dairy-Chem Plus flow meter "Smart Dosing" volumetric based formulation blending is superior to any water powered chemical blending system. Consider these important performance advantages over water powered pumping solutions:

- "Smart" control software and flow meter feed back does not allow formulations to vary from the prescribed recipe
- Out of product conditions (pumping air) produce an immediate alarm message and system shut down to prevent use of improper dip on cows
- Concentrates are metered to +/- 2% accuracy
- Fluid line components will not corrode
- Flow meter feed back provides precise chemical usage data for managing teat dip usage and enforcing good teat health processes
- Commercial dairy farmers desire useful information to control their costs and enforce good herd management practices.

Features and Benefits



Precise, Controlled Blending

Patent pending elliptical gear flow meter controlled formulating functions provide accurate concentrate/water blending and dispensing control for a wide variety of Iodine and Chlorine Dioxide based ready to use teat dip formulations



Main Controller

State of the art microprocessor based digital blending controller includes SD card based programming and report retrieval. Highly reliable electric diaphragm pumps deliver precise fluid volumes based on flow meter signals and formulation composition

Formula Name	Iodine	Emulsifier
Shift 06:00 AM	37.436	0.000
Shift 11:30 AM	49.381	0.000
Shift 03:00 PM	37.436	0.000
Shift 08:00 PM	49.381	0.000
Total	174.933	0.000

Data Management Reports

Data Management Reports detail every batch of finished teat dip solution produced and provide actual consumption related data to help you control costs, enforce consistent product usage and promote effective teat hygiene practices



Blended Teat Dip

Blended teat dip solutions are freshly made to your specific requirements and pumped into a storage tank. A float switch mounted in the storage tank triggers the system to blend and replace the solution used when levels get low.

.25% - 1%
.50% - 5%
1% - 10%

On Site Teat Dip Blending

"On the fly" teat dip formulation modifications using the same set of chemical concentrates eliminate the need to swap chemical supplies when conditions change. Just recalibrate the system to the desired formulation and start making dip.



Increased Profitability

Producing factory quality teat dips on the farm from concentrate dramatically reduces your delivery costs since you no longer ship water. You also reduce the frequency of delivery.

Programming

Precise and reliable automatic teat dip blending made possible by patent pending flow meter and "smart" control software.

The system can be programmed for the first time using the Dairy-Chem Plus user interface panel or by programming a system setup file using the Dairy-Chem Plus PC software and uploading the settings to the system using an SD card.



CHANGE PASSCODE

Formulations and all program parameters are pass code protected.

BLEND VOLUME P1 IN PARTS: 01.00

Teat Dip formulations are programmed as fluid "parts" (3:1, 5:1, 1:1, etc.)

TEST BLEND 01XBL 'UP' TO START

Use this function to test the final teat dip solution for accuracy/stability

TEST FLOW METER 1 UP TO START/STOP

This is your primary troubleshooting tool for diagnosing flow related alarm conditions. Use this screen only after you have calibrated the pump.

CAL. VOL. 0444 ML P1 [UP] TO START

Flow meter calibrations are done on site by measuring the chemical concentrate flow rates as measured by the flow meter

ENTER REPORT DATE RANGE

Logged data can be downloaded from the system for viewing in the PC application or in Excel. Select the date range required for your report.

TRANSFER SETUP "UP" TO START

Setup files with formulations and all run parameters can be created using the DC Plus PC software then uploaded via the SD card

TEST BATCH

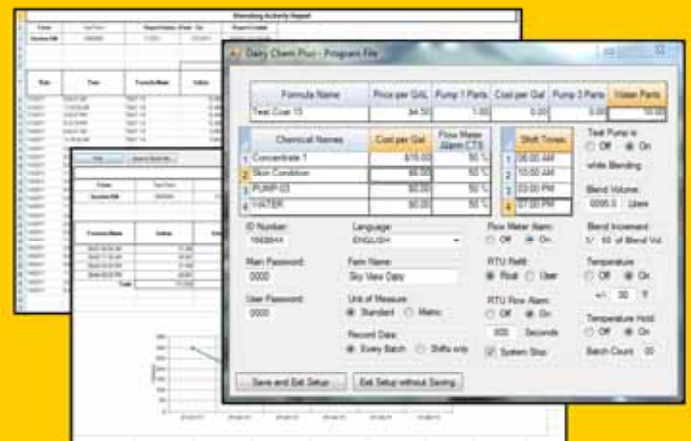
After calibration a test batch can be run and measured as a secondary calibration check

RTU REFILL IS: STARTED BY USER / FLOAT

Depending on how the system is to be used the teat dip blending process can be started by the user (user start mode) for filling dip cups or jugs or by the storage tank float (float start mode) when levels fall below the desired tank level.

Windows Based System Management Tools

The dairy farm industries first on farm data logging teat dip blending system provides critical usage data including teat dip consumption, user activity, trends, production times, and costs. This critical information will help management gain control of overall teat dip usage and identify shift by shift variations that can adversely effect teat hygiene.



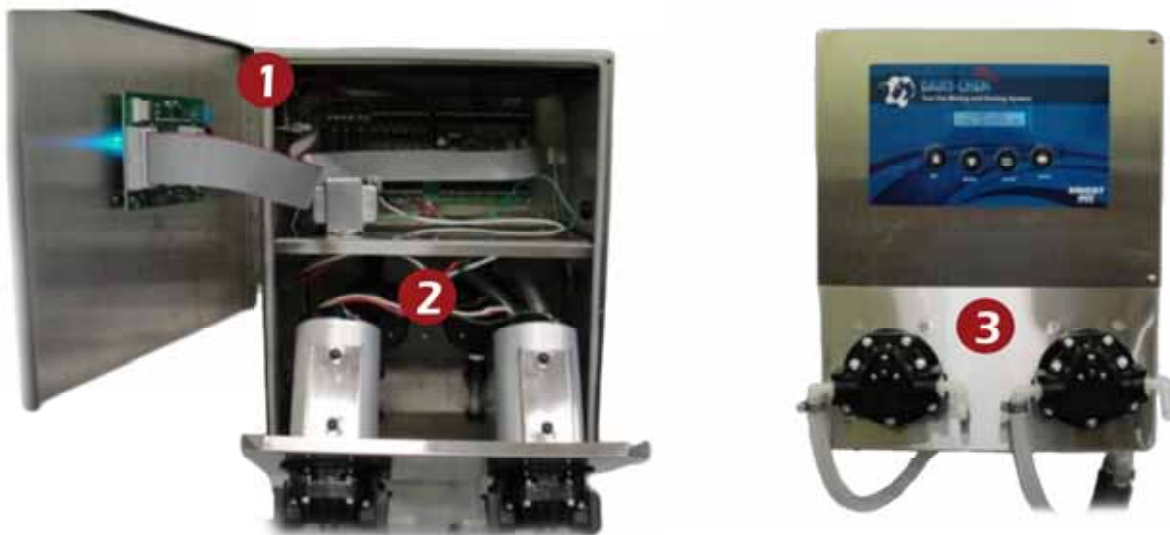
Useful reports include the following data:

- Track total teat dip usage and compare it to daily targeted usage
- Monitor teat dip usage by each milking shift
- Record date and time teat dip is produced
- Precise ingredients blended into each batch
- Alarm codes for out of product conditions

Dairy-Chem Plus 3 Part System Components (7667090)



Dairy-Chem Plus CD 2 Part System Components (7667120, 7667130, 7667140)



- ① Mixing/Dosing Controller with I/O board , Memory Module and SD Card drive
- ② Elliptical Gear Flow Meters on pump discharge lines provide volumetric feedback to controller as chemical and water are pumped in accordance with the teat dip formulas
- ③ Reliable electric diaphragm pumps dispense teat dip fluid components anytime the storage tank float switch triggers a refill sequence
- ④ Integral static mixer assembly receives chemical concentrates and water and creates the necessary agitation and turbulence required to produce a well mixed and stable ready to use formulation. (7667090 Only)
- ⑤ Ball valves connected to static mixing manifold allow concentrate calibration or finished teat dip pumping into the storage tank. (7667090 Only)

Optional Components



- ① 11 gallon water tank with float valve provides a consistent source of water for water based formulations.
- ② Optional 11 gallon RTU storage tank with dual horizontal floats, cover, and stainless steel wall bracket. Use for 50-50 Chlorine Dioxide based dips or small farm Iodine dip storage
- ③ Optional 1 Liter RTU tank with dual horizontal floats with suction and discharge ports and overflow fitting. (800ml working volume)
- ④ Optional Air Regulator/Solenoid Valve for delaying transfer of product during batching sequence

ORDERING INFORMATION

Dairy-Chem Plus

Part Number	Description
7667090	3 Part System: Two Chemical Concentrate + Water Teat Dip Blending System: Two .4 GPM(1.5 LPM) chemical pumps, One 1.5 GPM(5.7 LPM) water pump, water tank w/float and filter, tank mounting shelf, PVDF flow meters, controller, static mixer and mounting kit.
7667120	2 Part System: Two Chemical Concentrate Teat Dip Blending System: Two 1.5 GPM(5.7 LPM) EDP pumps, with PVDF flow meters, controller and mounting kit.
7667130	2 Part System: Two Chemical Concentrate Teat Dip Blending System: One 1.5 GPM(5.7 LPM) & One .4 GPM(1.5 LPM) EDP pumps, with PVDF flow meters, controller and mounting kit.
7667140	2 Part System: Two Chemical Concentrate Teat Dip Blending System: Two .4 GPM(1.5 LPM) EDP pumps, with PVDF flow meters, controller and mounting kit.

Options

Part Number	Description
7667052	Air Solenoid/Regulator kit for 7667090
7667056	Air Solenoid/Regulator Kit for 7667120, 7667130, 7667140
7667053	One Liter RTU tank w/ dual floats, wall bracket and fittings
7667054	11 Gallon RTU tank w/ dual floats, wall bracket and fittings
7667028	11 Gallon water tank w/ float assembly, fittings, wall bracket and mounting kit.
7110196	Temperature Probe (comes standard w/7667090)
7600871	Level Switch Kit w/50' cable for bulk tank, 1/2" NPT

KNIGHT LIMITED WARRANTY

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IDEX CORPORATION

TEAT DIP CHEMICAL DISPENSER

SINGLE PUMP SYSTEM

The Knight Dairy-Chem single pump teat dip dispenser offers two efficient models – DC-I and DC-IS. The standard **DC-I** model is powered by compressed air and plumbs directly to an onsite air supply line. The **DC-IS** model comes with an air solenoid valve and a 24VAC transformer. When connected to a teat dip vacuum switch, this system can power-on and power-off with vacuum from the pipeline.

DUAL PUMP SYSTEM

The dual pump system is capable of dispensing teat dip products to two areas in the milking parlor or it can also be employed as a redundant system with built-in "backup" pump that guarantees 100% uptime performance.

MODEL	PART #	DESCRIPTION
DC-I	7659101	SYSTEM W/ONE 3GPM AIR OPERATED PUMP. PRESSURE REGULATOR W/FILTER DRYER, PLASTIC ROTATIONAL MOLDED WATERTIGHT CASE AND STAINLESS STEEL MOUNTING BRACKETS.
DC-IS	7659103	SYSTEM W/ONE 3 GPM AIR OPERATED PUMP W/AIR SOLENOID. PRESSURE REGULATOR W/FILTER DRYER, PLASTIC ROTATIONAL MOLDED WATERTIGHT CASE AND STAINLESS STEEL MOUNTING BRACKETS. 24 VAC SOLENOID VALVE, 115 TO 24 VCD POWER SUPPLY. <i>**Requires vacuum switch assembly</i>
DC-II	7659601	SYSTEM W/TWO 3 GPM AIR OPERATED PUMP. THREE WAY VALVE PUMP SELECTOR. PRESSURE REGULATOR W/FILTER DRYER, STAINLESS STEEL WATERTIGHT CASE AND STAINLESS STEEL MOUNTING BRACKETS.
DC-IIS	7659602	SYSTEM W/TWO 3 GPM AIR OPERATED PUMP W/AIR SOLENOID. THREE WAY VALVE PUMP SELECTOR. PRESSURE REGULATOR W/FILTER DRYER, STAINLESS STEEL WATER TIGHT CASE AND STAINLESS STEEL MOUNTING BRACKETS. <i>**Requires vacuum switch assembly</i>
TDVS	7659502	VACUUM SWITCH ASSEMBLY



Dairy-Chem DC-I



Dairy-Chem DC-II



DC-I without solenoid



DC-IS with solenoid



DC-II without solenoid



DC-IIS with solenoid



SPRAYGUARD™

Teat Dip Feed Products

Knight's new SprayGuard electric operated teat dip pump satisfies all the needs of today's traditional and high production milking parlors. SprayGuard is geared and designed to maintain consistent spray pressure, while reducing over all cost of ownership. Several innovative features including the industries only 24VAC pump eliminates the added expense of electrical conduit and lengthy installations.



24 VAC



Adjustable Teat Spray Wand

Economical spray wand with adjustable pattern

- Rugged, durable hose fitting connection
- Includes alternate low flow misting nozzle
- Spray tip rotates 360°



NEW!

- Exclusive low voltage (24 VAC) operation
- 115/230 VAC to 24 VAC power supply eliminates need for expensive electrical installation
- Continuous duty rated motor
- Anyone can install in minutes
- Operates up to six teat spray wands or delivery points at a flow rate of 54 oz/min (1.6 liters/min)
- Smooth "non-pulsing" dispensing
- Attractive, rugged #304 stainless steel cabinet
- Fuse protection with main power on-off switch
- Viton wetted internal parts with polypropylene pump head.

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INDUSTRIAL SYSTEMS

SprayGuard Teat Dip Feed Pump



Fast electrical disconnect



Quick release fittings

Pump Features

1. Quick release fittings
2. 60 PSI pressure switch turns pump off/on
3. Motor is internally sealed against moisture
4. Quick disconnect electrical connection to pump
5. Fuse protection with main power on-off switch

Features and Benefits



Smooth, "non-pulsing" dispensing

Smooth, reliable dispensing to ensure consistent supply of teat dip



Operates up to six teat dip wands

SprayGuard flow rate: 54oz/min
1.6 liters/min



Easy Installation

Anyone can install within minutes

SprayGuard Adjustable Teat Dip Wand

Economical spray wand with adjustable pattern

Includes alternate low flow misting nozzle

Hanging hook

Rugged, durable hose fitting



Spray tip rotates 360°

Oversize trigger

Misting nozzle flow rate and patterns

Fixed Low Flow
Flow = .2oz/sec
7ml/sec

Variable Spray

Min.
.3oz/sec
10ml/sec

Max.
.5oz/sec
14ml/sec



ORDERING INFORMATION

TEAT DIP FEED SYSTEM		
PART #	DESCRIPTION	DIMENSION
7640620-04	SprayGuard Teat Dip Feed Pump	9 1/2"W x 11 1/2"H x 5 1/2"D (24cm x 29cm x 14cm)
7641267	SprayGuard Teat Spray Wand	3/4"W x 4"H x 19"L (2cm x 10cm x 48cm)
7641268	Replacement Teat Spray Wand handle	
7641269	Replacement Teat Spray Wand handle pin	
7641270	Replacement Teat Spray Wand 45° connector	

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PMP SERIES

PERISTALTIC METERING SYSTEM



The PMP Series peristaltic metering pump system is designed to dispense a variety of cleaning and sanitizing chemicals.

Positive, accurate metering of liquids can be triggered manually or by a process control signal. The PMP Series offer variable speed output or fixed speed output with a choice of programmable limit-timer or repeating cycle timer.

PMP is built with Knight's field proven, long-life peristaltic pumps. Moisture sensitive motor and controllers are enclosed in a corrosion resistant, watertight, powder coated case that stands up well for indoor and outdoor applications.

KEY FEATURES/BENEFITS:

- Auto-Start or Optional Manual Button Activation **NEW!**
- Watertight, Secure Locking Enclosure **NEW!**
- Single or Multi-Product Remote Activator (Optional) **NEW!**
- Long-Life Peristaltic Pumps
- Water Resistant Case w/"D" Shaped Silicone Gasket **NEW!**
- Long Lasting Squeeze Tube
- Fixed or Variable Pump Speed
- Wide Range of Flow Rates
- Microprocessor, Push Button Programming Available **NEW!**
- Pumps Up to 30 PSI
- Self Priming, Easy to Service
- Pump Lockout Option **NEW!**

PMP SYSTEM APPLICATIONS

FOOD & BEVERAGE PROCESSING PLANTS

- CIP/COP
- Grease Traps
- Sewage Treatment

DAIRY

- Pipeline Cleaning/Sanitizing
- Teat Dip Chemical
- Wash Pen Chemical Injection

INDUSTRIAL

- General Cleaning
- Machinery Lubrication
- Cooling Towers
- Boilers

TRANSPORTATION

- Car Wash Stations





PMP SERIES

PERISTALTIC METERING SYSTEM

PMP SPECIFICATIONS

- Enclosure: Powder coated #304 stainless steel.
 Pump Drive: Shaded pole AC or variable DC.
 Squeeze Tube: Material available for most chemical applications.
 Control: Limiting timer or repeating cycle timer.
 Power Supply: 115VAC/60HZ, 230VAC/60HZ, 230VAC/50HZ
 Dimensions: PMP-500: 9.3"H x 5.8"W x 5"D (23.6cm x 14.7cm x 12.7cm)
 PMP-800: 9.3"H x 5.8"W x 5"D (23.6cm x 14.7cm x 12.7cm)
 PMP-900: 13.6"H x 8"W x 7.5"D (34.5cm x 20.3cm x 19.1cm)



PMP 800

Snap-on Mounting Clips And Plug-On Barrier Strips Provide Quick And Easy Service of Circuit Board

Secure Locking Enclosure

"D" Shaped Silicon Gasket Provides Water Resistant Seal

PMP AC FIXED SPEED

ELECTRONIC CONTROL OPTIONS



KTM-600

Electronic variable limiting timer, standard on time, 0-12 minutes. Pump activates by a momentary switch or an electrical signal. Pump lock-out feature prevents abuse and over use of products. **NEW!**

- Add -21 to Part # for 115/60 HZ
 Add -22 to Part # for 230/60 HZ
 Add -23 to Part # for 230/50 HZ



CT-200

Electronic Repeating Cycle Timer. Selectable off period from 0-90 minutes. Pump on time adjustable from 0-2 minutes.

- Add -31 to Part # for 115/60 HZ
 Add -32 to Part # for 230/60 HZ
 Add -33 to Part # for 230/50 HZ

PMP w/o Control.

- Add -01 to Part # for 115/60 HZ
 Add -02 to Part # for 230/60 HZ
 Add -03 to Part # for 230/50 HZ

PMP 500 SERIES (UP TO 4.4 GPH)

Model	Part #	Tube	Max PSI	Oz/Min	mL/Min	GPH
PMP-530	8452134	T-50E	30	2.4	70	1.1
PMP-5100	8453142	T-50E	30	9.3	275	4.4

PMP 800 SERIES (UP TO 19 GPH)

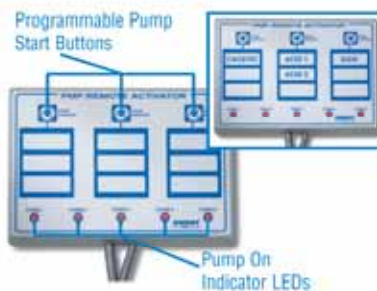
Model	Part #	Tube	Max PSI	Oz/Min	mL/Min	GPH
PMP-8120A	8457143	T-50E	30	23	670	11
PMP-8120B	8457830	T-50E	30	40	1180	19

PMP 900 SERIES (UP TO 105 GPH)

Model	Part #	Tube	Max PSI	Oz/Min	mL/Min	GPH
PMP-9130	8457760	T-86E	30	149	4400	70
MP-9270	8457765	T-86E	30	223	6600	105

PUMP ACTIVATOR OPTIONS

New!



Multi-Product Remote Activator
P/N 7655140



Case Mounted Manual Start Button
P/N 1900452

Single Product Remote Activator
P/N 7111460

PMP DC VARIABLE SPEED

Power Options

- Add -01 to Part # for 115/60 HZ
 Add -02 to Part # for 230/60 HZ
 Add -03 to Part # for 230/50 HZ

PMP 500 SERIES (UP TO 5.3 GPH)

Model	Part #	Tube	Max PSI	Oz/Min	mL/Min	GPH
PMP-515-3VS	8453405	T-53E	30	.88	26	.41
PMP-515VS	8453410	T-50E	30	1.45	43	.68
PMP-560VS	8453415	T-50E	30	5.10	152	2.65
PMP-5110VS	8453425	T-50E	30	11.2	332	5.3

PMP 800 SERIES (UP TO 16.8 GPH)

Model	Part #	Tube	Max PSI	Oz/Min	mL/Min	GPH
PMP-8110VS	8453440	T-50E	30	21	614	9.7
PMP-8120B	8453445	T-66E	30	36	1081	16.8

PMP 900 SERIES (UP TO 63.4 GPH)

Model	Part #	Tube	Max PSI	Oz/Min	mL/Min	GPH
PMP-9100VS	8450170	T-86E	30	135	4000	63.4

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Plus PMP SERIES

Chemical Metering System

The PMP Plus Series is Knight's newest line of variable speed metering pumps built on the industry's most reliable and consistent platform. The high performance chemical metering system is designed to offer a wide array of flow rates and multi-functional controls to meet your pumping application needs. With the choice of peristaltic or electric diaphragm metering pumps, the PMP Plus offers the versatility to dispense a variety of process fluids or chemicals for food & beverage cleaning and sanitation, dairy farms, industrial process, and large laundry.



- New multi-function electronics with high resolution variable speed control (manual adjustment or 4–20 mA input) to vary pump delivery volume depending on the application
- One pump can serve a variety of your applications and reduce the need to stock multiple flow rates
- Optimize delivery speed for more efficient cleaning and reduced cycle time
- “All in One” control with selectable operating modes (limit timer, repeat cycle, relay input)
- PMP Plus Series offers the choice of Electric Diaphragm Pumps (2.8 gpm, 1.2 gpm, .6 gpm) [10.6 lit/min, 4.5 lit/min, 2.3 lit/min] or Peristaltic Metering Pumps (.6 gpm, .33gpm) [2.3 lit/min, 1.2 lit/min]
- Simple dip switch and push button programming
- Watertight, secure locking enclosure with powder coated IP-65 rated stainless steel
- Case mounted manual start activation or remote switch
- Delay on and lock out functions

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INDUSTRIAL SYSTEMS

PMP Plus Electric Diaphragm Pump (PMPE)



The PMP Plus Electric Diaphragm Pump is a highly reliable and simple design with few moving parts that features a heavy duty, long life motor that produces high pressure yet, low pulsation pumping action. These field proven pumps are engineered for aggressive chemical, high duty cycle applications.

- High resolution variable speed controls allow you to "dial in" the precise flow rate required for a wide variety of metering applications
- Flow Rates: 3.1, 2.8, 1.2 and .6 gal/min (11.6, 10.6, 4.5 and 2.3 lit/min)
- Long lasting EPDM or Viton seals for a variety of chemicals
- More consistent dosing as flow rates "hold" for life of the valves
- No squeeze tubes to change or service
- Quick connect "bayonet" style inlet/outlet fittings
- Continuous duty rated motors
- Engineered for aggressive chemical, high duty cycle applications
- 70 PSI (4.83 bar) pressure switch option

PMP Plus Peristaltic Metering Pump (PMPP)



The PMP Plus Peristaltic Metering Pump System features Knight's industry best peristaltic pump design that has become the bench mark for reliability and quality for the chemical dispensing industry.

- High resolution variable speed control allows you to "dial in" the precise flow rate required for a wide variety of metering applications
- Flow Rates: .6 and .33 gal/min (2.3 and 1.2 lit/min)
- Long lasting squeeze tubes
- Self Priming, Easy to Service
- Watertight, secure locking enclosure with powder coated IP-65 rated stainless steel
- Only the tube gets wet
- Max Pressure: 30 PSI (2.1 bar)

Pump Activator Options

Pump activators are available for all PMP Plus models



Single Product Remote Activator
P/N 7640616-25



Case Mounted Manual Start Button
P/N 1900452

Note: All models include suction and discharge fittings (barb type), gear clamps, suction stand pipe and 6 ft. (1.8 meter) power cord.

Recommended Applications



Food & Beverage Processing Facilities
CIP Sanitizer Injection
COP Dosing
Bucket/Bottle Fill
Conveyor Lube Injection
Bottle Warmer



Machine Shops
Cutting Fluids

Life Sciences
Cart Washer
Tunnel Washer
Bucket Fill



Dairy Farm
Pipeline Cleaning/Sanitizing
Teat Dip Chemical Dispensing
Wash Pen Chemical Injection
Foot Bath



Laundry Operations
CBW/Tunnel Machines
Washer Extractors

Water/Waste Water
Cooling Tower Biocide
Caustic Injection
Chlorine Metering
Lift Station Dosing

PMP Plus Control Board

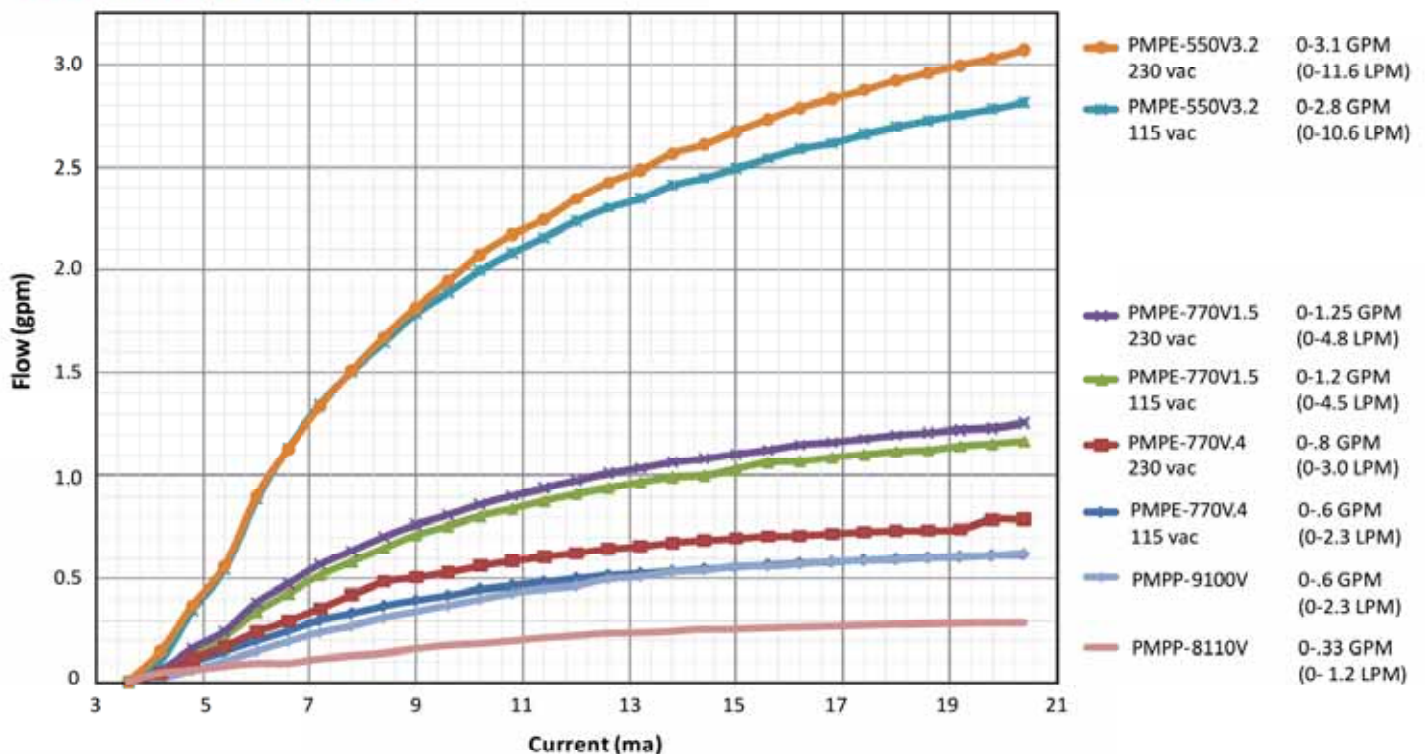
The PMP Plus chemical metering systems come standard with a unique microcontroller that provides extreme versatility of use. The multi-function pump controller varies the speed of the pump to provide accurate, precise injections for almost any chemical batch feed application, repeat cycle injection, pumped misting applications and direct closed loop injection. The circuit board has dual dip switch program/mode selectors to set the PMP Plus speed control and timer programming.



Programming Settings

Operating Mode	Signal Input	Pump "On" Time	Pump "Off" Time	Delay On Time	On First	Off First
KTM	14–240 VAC/VDC	0-12 min 42 Sec		0-12 min 45 sec	Select	Select
CT	14–240 VAC/VDC	0-12 min 42 Sec	0-255 min.	0-12 min 45 sec	Select	Select
Relay	14–240 VAC/VDC	1 second to continuous				
4-20 mA	External Input from PLC					

PMP Plus MFSC Flow Chart



Variable Flow Rates based on 4-20 ma current input at 0 PSI head pressure

ORDERING INFORMATION

PMP Plus Peristaltic Pump

PMPP-8110V

Power: 115VAC/60hz, 230 VAC/50Hz

Dimensions: 9.3" H x 5.8" W x 5" D (23.6 cm x 14.7 cm x 12.7 cm)

Part Number	Description	Electrical	Flow Rate
8457773-01	PMPP-8110V w/ peristaltic pump and EPDM squeeze tube, 30 PSI (2 bar)	110V	.33 gpm (0-1.2 LPM)
8457773-02	PMPP-8110V w/ peristaltic pump and EPDM squeeze tube, 30 PSI (2 bar)	230V	.33 gpm (0-1.2 LPM)
8457774-01	PMPP-8110V w/ peristaltic pump and Viton squeeze tube, 30 PSI (2 bar)	110V	.29 gpm (0-1.1 LPM)
8457774-02	PMPP-8110V w/ peristaltic pump and Viton squeeze tube, 30 PSI (2 bar)	230V	.29 gpm (0-1.1 LPM)
7600775	PMPP-8110V Accessory Kit		

PMPP-9100V

Power: 115VAC/60hz, 230 VAC/50Hz

Dimensions: 13.6"H x 8"W x 7.5"D (34.5cm x 20.3cm x 19.1 cm)

Part Number	Description	Electrical	Flow Rate
8457763-01	PMPP-9100V w/ peristaltic pump and EPDM squeeze tube, 30 PSI (2 bar)	110V	.6 gpm (0-2.3 LPM)
8457763-02	PMPP-9100V w/ peristaltic pump and EPDM squeeze tube, 30 PSI (2 bar)	230V	.6 gpm (0-2.3 LPM)
P7600776	PMPP-9100V Accessory Kit		

PMP Plus Electric Diaphragm Pump

PMPE-770V

Power: 115VAC/60hz, 230 VAC/50Hz

Dimensions: 13.6"H x 8"W x 7.5"D (34.5cm x 20.3cm x 19.1 cm)

Part Number	Description	Electrical	Flow Rate
8457768-01	PMPE-770V.4 w/ EDP and EPDM valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	110V	.6 gpm(0-2.3 LPM)
8457768-02	PMPE-770V.4 w/ EDP and EPDM valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	230V	.8 gpm(0-3.0 LPM)
8457769-01	PMPE-770V.4 w/ EDP and Viton valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	110V	.6 gpm (0-2.3 LPM)
8457769-02	PMPE-770V.4 w/ EDP and Viton valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	230V	.8 gpm (0-3.0 LPM)
8457766-01	PMPE-770V1.5 w/ EDP and EPDM valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	110V	0-1.2 gpm (0-4.5 LPM)
8457766-02	PMPE-770V1.5 w/ EDP and EPDM valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	230V	0-1.25 gpm (0-4.8 LPM)
8457770-01	PMPE-770V1.5 w/ EDP and Viton valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	110V	0-1.2 gpm (0-4.5 LPM)
8457770-02	PMPE-770V1.5 w/ EDP and Viton valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	230V	0-1.25 gpm (0-4.8 LPM)
8457771-01	PMPE-770V1.5 w/ EDP and EPDM valve seals/diaphragm, w/ 70 PSI (4.8 Bar) pressure switch	110V	0-1.2 gpm (0-4.5 LPM)
8457772-01	PMPE-770V1.5 w/ EDP and Viton valve seals/diaphragm, w/ 70 PSI (4.8 Bar) pressure switch	110V	0-1.2 gpm (0-4.5 LPM)
P7600785	PMPE-770V Accessory Kit, EDP 1.5 / 0.4, EPDM		
P7600770	PMPE-770V Accessory Kit, EDP 1.5 / 0.4, Viton		

PMPE-550V

8457764-01	PMPE-550V3.2 w/ EDP and EPDM valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	110V	0-2.8 gpm (0-10.6 LPM)
8457764-02	PMPE-550V3.2 w/ EDP and EPDM valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	230V	0-3.1 gpm (0-11.6 LPM)
8457767-01	PMPE-550V3.2 w/ EDP and Viton valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	110V	0-2.8 gpm (0-10.6 LPM)
8457767-02	PMPE-550V3.2 w/ EDP and Viton valve seals/diaphragm w/ bypass at 100 PSI (6.9 bar)	230V	0-3.1 gpm (0-11.6 LPM)
P7600770	PMPE-550V Accessory Kit, EDP 3.2, EPDM		
P7600784	PMPE-550V Accessory Kit, EDP 3.2, Viton		

Pump Activator Options

1900452	Case Mounted Manual Start Button
7640616-25	Single Product Remote Activator

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AODD Pumps & Liquidtrol

Air Operated Pumps and Pump Controls for Automatic or Manual Dispensing

Knight's Air Operated Double Diaphragm pump is the engine that drives an entire range of new chemical management solutions for the Food Chain Hygiene, Laundry, and Industrial markets. In combination with the Liquidtrol, the Uniflow becomes a cost-effective chemical control system with accurate liquid dispensing for food & beverage, dairy, laundry, and industrial applications.



KAP-50



KAP-25

Push Button Timer Feed



Liquidtrol - ATC 500

24 Hour Program Feed



Liquidtrol - ATC 300

Repeat Cycle Timer Feed



Liquidtrol - ATC 200

Manual Button Feed



**Pneumatic Pump
Activator**

Air Operated Double Diaphragm Pumps

- AODD's are engineered for aggressive chemical, heavy duty applications.
- Extensive range of plastics and elastomers for all chemicals
- Reliable bolted design
- High Speed Flow: KAP-50 (14 gpm) and KAP-25 (4 gpm)
- Optional stainless steel cabinets
- Value Pricing

KNIGHT

IDEX
FLUID & METERING

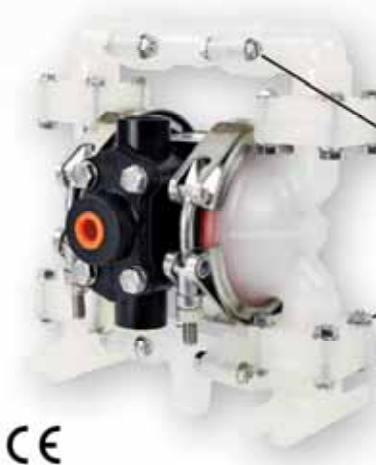
INDUSTRIAL SYSTEMS

KAP-25 1/4" Pump

The KAP-25 is a proven and reliable 1/4" air operated double diaphragm pump that delivers 4 gallons per minute pumping power. The condensate AODD design is ideal for on-demand intermittent pumping requirements. The KAP-25 is built for years of operation and low cost of ownership.

The KAP-25 features a patented ESADS+Plus system. This in-line serviceable air valve system ensures reliable and accurate performance.

Available in Polypropylene and Kynar wetted materials of construction, with Santoprene, Viton or PTFE interior.



4 gal/min
15 liters/min

Simple and Reliable
Fewer moving parts for reliable performance and longer life

Reliable Construction
All bolted construction allows for ease of maintenance and low repair costs.

Durable
Diaphragm connecting rod is corrosion resistant and guaranteed not to yield under tension.

UNIFLOW KAP-50 1/2" Pump

The Uniflow KAP-50 1/2" pumps feature an Air Valve System with Shoe Valve technology. Multiple suction/discharge ports that provide several liquid and plumbing options.

Constructed of **heavy duty plastic**, the center section resists corrosion from even the most aggressive chemicals, while providing injection speed and uniform flow under the most rigorous environmental conditions.

Fast priming and the industry's best life cycle performance will improve your chemical process with the **lowest possible cost of ownership**.

The KAP-50 1/2" size pumps are for the jobs that require higher flow rates with accuracy and reliability.



14 gal/min
53 liters/min

Multiple Porting Options
Top, side and end porting for both inlet and discharge

Accurate
Repeatable, high output, or controlled metering.

Adaptable Footprint
Allows for drop-in placement in existing system configurations

UNIFLOW Pump Enclosures for KAP-25 and Uniflow KAP-50 AODD pumps

Knight Uniflow AODD pump enclosures satisfy the need of plant operators and chemical suppliers who require the protection and safety advantages offered by a rugged stainless steel enclosure for high pressure chemical feed pumps that operate in, wet and hostile plant environments.



KAP-25
Pump Enclosure



KAP-50
Pump Enclosure



Features and Benefits

- #304 stainless steel body, cover with hinge
- Protect plant personnel from exposure to chemicals
- Prevent tampering by plant personnel
- Optional regulator/filter/gauge installed
- Chemical name label pack included
- Private label available
- Optional KAP-25/50 AODD pumps installed
- Wall mount
- Bottom suction/discharge
- Bottom air inlet/air regulator location

LIQUIDTROL Electronic Pump Controller

Advanced Technology for Controlling and Pumping Industrial Chemicals and Other Liquids

The Liquidtrol Chemical Control System is an advanced controller for the Uniflow Air Operated Double Diaphragm Pump. In combination with the Uniflow, Liquidtrol's cost-effective microprocessor electronics initiates, limits, cycles, triggers or regulates pumping activity. Knight offers three versions depending whether you want to control the pumping activity through a time feed, event feed, or cycle feed.



ATC500 "Time Feed"

Microprocessor Limit Time with 0-12 min Programmable Run Time w/Lock-out Function

- Start Feed By Pressing Button
- Start Feed By Electronic Signal
- Control Feed By Electronic Signal
- Optional Remote Activator



ATC300 "Event Feed"

Microprocessor Event Timer

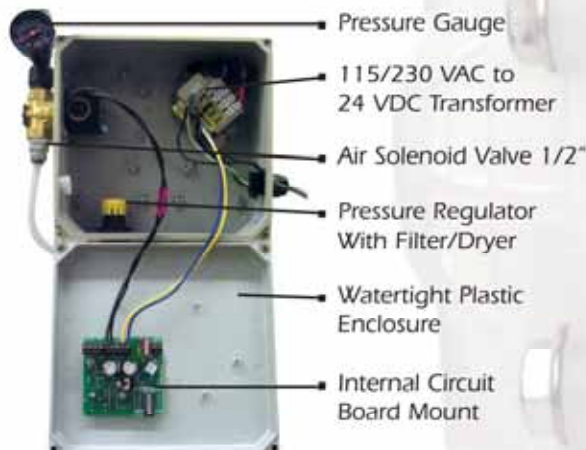
- 20 Programmable Feed Events/Per Day
- Battery Backup 24 Hour Clock
- LCD Display
- Non-Volatile Memory



ATC200 "Cycle Feed"

Microprocessor Cycle Timer

- 0 - 2 Minute Pump On Time
- 0 - 90 Minute Pump Off Time
- Apply Power To Start Cycle



Features & Benefits:

- Preassembled/Configured Pump Control
- Quick, Simple Installation and Programming
- Watertight Thermo Plastic Control Enclosure w/Built-in Air Solenoid Pressure Regulator, Pressure Gauge and Filter/Dryer
- Private Labeling Available

Liquidtrol Applications

- Fill Jeri Jugs, Portable Foamers, Buckets And Other Containers
- Automatic Feed For CIP Tanks
- Automatic Feed For COP Tanks
- Track/Conveyor Lube Feed
- Bulk Transfer To Day Tanks
- Waste Water Treatment
- Municipal Water Treatment



UNIFLOW Pneumatic Pump Activator

Introducing the industries first "out of box" pneumatic air pump switch for manual fluid feed applications.

This manually operated air switch is designed to operate any air operated double-diaphragm pump up to 1/2" port size or 12 SCFM. The built-in spring return provides "momentary" operation of the air pump. The pump activator turns the air supply off when the button is not fully depressed. The pump activator eliminates the worry of employees becoming distracted, leaving their chemical fill task unmanaged, creating an unsafe environment, or a costly chemical spill. This is the "safe and full proof" alternative to ball valves and on-off air switches that can be left accidentally running by operators.

Features and Benefits

- #304 stainless steel case with mounting
- Spring return to off state
- Large palm style button
- Color stickers to identify chemical/fluid color
- Optional pressure regulator mounts on side
- Easy to install/use



Great for jug or bucket fill operations

Cost effective alternative to timer feed

ORDERING INFORMATION

Air Operated Double Diaphragm Pump Units

KAP-25

Includes: Kynar suction and discharge fittings

Part Number	Description
1600826	KAP-25SP 1/4" AODD Pump, Polypropylene/Santoprene, 4 GPM (15 LPM)
1600827	KAP-25TP 1/4" AODD Pump, Polypropylene/PTFE, 4 GPM (15 LPM)
1600828	KAP-25SK 1/4" AODD Pump, Kynar/Santoprene, 4 GPM (15 LPM)

CABINET FOR KAP-25 AODD PUMPS

Part Number	Description
7640638	AODD Pump Cabinet, Stainless Steel for 1/4" AODD Pumps w/ Mounting hardware

KAP-50

Includes: Kynar suction and discharge fittings

Part Number	Description
1600968	KAP-50 AODD Pump Poly Santoprene w/ Fittings, Hose Clamps and Suction Screen
1600945	KAP-50 AODD Pump Poly/PTFE w/ Fittings, Hose Clamps and Suction Screen
1600979	KAP-50 AODD Pump Kynar/Santoprene w/ Fittings, Hose Clamps and Suction Screen
1600986	KAP-50 AODD Pump Kynar/PTFE w/ Fittings, Hose Clamps and Suction Screen
1600979-1	KAP-50SK 1/2" AODD Pump Kynar Body/Santo W/O Kit
1600968-1	KAP-50SP 1/2" AODD Pump Polypro Body/Santo W/O Kit
1600986-1	KAP-50TK 1/2" AODD Pump Kynar Body/PTFE W/O Kit
1600945-1	KAP-50TP 1/2" AODD Pump Polypro Body/PTFE W/O Kit

CABINET FOR KAP-50 AODD PUMPS

Part Number	Description
7640631	AODD pump cabinet, stainless steel for 1/2" AODD pumps w/ mounting hardware
7407128	Regulator/ Filter/ Gauge mounted in case

KAP-25 & KAP-50 OPTIONS

Part Number	Description
0600508	Air pressure Regulator/gauge Kit with mounting bracket, air fitting and ball valve
2200082	Air Operated A/S valve with PTFE seals 3/8"
0200905	Plastic wall bracket for AODD pumps with mounting hardware
7541100	Stainless steel container shelf for 2, 2.5 or 5 gallons containers

Air Pump Controllers

LIQUIDTROL AIR PUMP TIMER CONTROLS

Part Number	Description
7641075-07	ATC-500: Air Pump Control w/ Limit Timer, Air Solenoid, Regulator, Filter/Dryer, Gauge (115/230 VAC)
7641073-07	ATC-300: Air Pump Control w/ Programmable Event Timer, Air solenoid, Regulator, Filter/Dryer, Gauge (115/230 VAC)
7641072-07	ATC-200: Air Pump Control w/Cycle Timer, Air Solenoid, Regulator, Filter/Dryer, Gauge (115/230 VAC)

AIR PUMP PNEUMATIC PUMP ACTIVATOR

Part Number	Description
7640619	AODD momentary switch
7407013	Kit, regulator, w/ bracket and hardware

KAP-25 System Specifications

	English	Metric
Flow Rate		
Adjustable to :	0-4 gpm	0-15 lpm
Port Size		
Inlet and Outlet	1/4" NPTF (BSP)	
Air Inlet	0.25" NPTF	
Air Exhaust	0.25" NPTF	
Max. Particle Size		
Diameter	0.10"	2.5 mm
Dimensions		
Length	7.2"	235 mm
Width	7.0"	198 mm
Height	5.5"	140 mm
Suction Lift	Dry	Wet
Santoprene	10' (3.0m)	20' (6.0m)
PTFE	5' (2.0m)	10' (3.0m)

KAP-50 System Specifications

	English	Metric
Flow Rate		
Adjustable to :	0-14 gpm	0-53 lpm
Port Size		
Inlet and Outlet	1" 150# ANSI DIN #25 Flange	
Air Inlet	0.375" NPTF	
Air Exhaust	0.375" NPTF	
Max. Particle Size		
Diameter	0.0625"	1.6 mm
Dimensions		
Length	8.5"	216 mm
Width	9.30"	236 mm
Height	10.06"	256 mm
Suction Lift	Dry	Wet
Santoprene	15' (4.5m)	25' (7.5m)
PTFE	5' (1.5m)	10' (3.0m)



Mounting Bracket

- * Economical thermoplastic
- * Fits KAP-25 and KAP-50
- * Strong, chemical resistant
 - * Easy to work with
 - * Includes mounting hardware

Part Number: 0200905



Stainless Steel Shelf

Rugged container shelf with adjustable rack and drip tray. New drip tray design offers more effective chemical drainage. Fits 2, 2.5 or 5 gallon containers.

Part Number: 7541100

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CLEANGUARD™

Reliable Electric Diaphragm Pumps for Cleaning Chemistry and other Industrial Fluids

At last, a chemical feed pump simple and reliable enough to challenge peristaltic and air operated pumps. This unique pump features a heavy duty, long life DC motor drive that connects to an offset cam/wobbler plate that produces a mechanical movement similar to the human heart. This low friction, low stress pumping action produces smooth laminar flow at pressures up to 70 PSI (4.83 bar). Available in 5 chamber (3.2 GPM) (12.1 LPM), 3 chamber (1.5 GPM) (5.7 LPM), and a low flow (.4 GPM) (1.5 LPM) configurations.

Food & Beverage Plants • Dairy Farms • Fertigation • Industrial Fluids



CleanGuard with EPDM

Part Number	Description
7640623-01	CleanGuard "E" Electric Diaphragm Pump (3.2 GPM) (12.1 LPM) w/ Stainless Steel Case, Power Switch, 70 PSI (4.83 bar), Fittings w/ EPDM Valve Seals and Diaphragm
7640621-01	CleanGuard "E" Electric Diaphragm Pump (1.5 GPM) (5.7 LPM) w/ Stainless Steel Case, Power Switch, 70 PSI (4.83 bar), Fittings w/ EPDM Valve Seals and Diaphragm
7640636-01	CleanGuard "E" Electric Diaphragm Pump (.4 GPM) (1.5 LPM) w/ Stainless Steel Case, Power Switch, 70 PSI (4.83 bar), Fitting w/ EPDM Valve Seals and Diaphragm

Note: Add suffix -02 for 230 VAC units

CleanGuard with Viton

Part Number	Description
7640624-01	CleanGuard "E" Electric Diaphragm Pump (3.2 GPM) (12.1 LPM) w/ Stainless Steel Case, Power Switch, 70 PSI (4.83 bar), Fittings w/ Viton Valve Seals and Diaphragm
7640622-01	CleanGuard "E" Electric Diaphragm Pump (1.5 GPM) (5.7 LPM) w/ Stainless Steel Case, Power Switch, 70 PSI (4.83 bar), Fittings w/ Viton Valve Seals and Diaphragm
7640637-01	CleanGuard "E" Electric Diaphragm Pump (.4 GPM) (1.5 LPM) w/ Stainless Steel Case, Power Switch, 70 PSI (4.83 bar), Fitting w/ Viton Valve Seals and Diaphragm

Note: Add suffix -02 for 230 VAC units

Features and Benefits

- Rugged #304 stainless steel cabinet
- Quick connect inlet/outlet fittings
- EPDM or Viton seals for a variety of chemicals
- 70 PSI (4.83 bar) pressure switch built-in
- Continuous duty rated motors
- 110 VAC or 230 VAC

Typical Applications

- CIP/COP chemical dispensing
- Food & Beverage plant chemical allocation
- Laundry chemical feed
- Industrial spraying/misting applications
- Conductivity control chemical pump
- Waste water chemical feed

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Control Guard ACCS

Next Gen Concentration Control System

The Control Guard ACCS (Advanced Chemical Concentration System) is designed with ease of setup and use in mind. By utilizing flow meter technology, the ACCS measures high concentrations of caustic, acid, rinse water or other liquids with an extremely high degree of accuracy ($\pm 2\%$) thereby ensuring precise chemical feed control. The Control Guard offers multiple 4-20 mA analog inputs which provide the flexibility of being utilized by any "Off the Shelf" probe whether it is pH, ORP, conductivity or other analytical measurements from a variety of popular manufacturers (Rosemount, Sorex, etc.). These features can be maximized by employing the Control Guard's distinctive data logging and reporting capabilities.

The Control Guard ACCS has the ability to operate up to 3 pumps of various designs including: Peristaltic, Air Operated Diaphragm (AOD) and Electric Diaphragm Pumps (EDP). These can be employed in any of 4 modes of operation (signal, relay, repeat cycle and probe) either in conjunction or independently of one another. This allows for more complete and accurate control of your CIP process. The improved user interface employs an enhanced 64X128 RGB backlit display that is combined with our easy to program 4 button control keypad which makes programming extremely user friendly and reduces the amount of set up time while providing critical process information with just a quick glance. With data management and subsequent reports playing a crucial role in today's process environment the Control Guard ACCS enables Sanitation Managers to clearly address process parameters and status conditions with accurate reports as required by current regulatory requirements.



- IP 65 rated (pending) waterproof enclosure (pending)
- Easy to view 64X128 RGB backlit display with enhanced electronics design
- Peristaltic pumps feature removable faceplates for quick squeeze tube replacement
- Dual regulated power supply options (115/230 VAC, 24 VDC)
- Ability to manage 3 pump styles (Peristaltic, AOD, EDP)
- Capable of operating in 4 modes (signal, relay, repeat cycle and probe)
- Order with flow meters for extremely precise dosing ($\pm 2\%$) or in simple time based mode
- UL/CSA/CE approvals (pending)
- USB port for data uploads and downloads
- 4-20 mA inputs (3) that can be used for any "off the shelf" probe
- Inductive probe option with 3 inputs
- Low level capability with 3 inputs for dry contacts
- Case Dimensions: W 18" X H 10.5" X D 8" (46 cm X 27 cm X 20 cm)

KNIGHT

INEX
FLUID & METERING

INDUSTRIAL SYSTEMS

Control Guard ACES Specifications

Case Dimensions	Voltage	Case Ratings	Certifications
W 18" x H 10.5" x D 8" 46cm x 27cm x 20cm	115-230VAC	IP-65 (Protected from total dust ingress, and low pressure water jets from any direction –pending)	UL/CE/CSA (pending)

Flow Metered Dispensing and Pump Speed Control



Peristaltic, EDP and AOD Pumping Options



4-20mA Analog Inputs for Probe Flexibility



PC Application and Reporting Data Management Tool

- Simple system setup and data acquisition via a USB drive mounted internally to the case
- Reporting software that allows for complete monitoring of product usage, trends and any process alarm conditions
- Obtain verification of sanitation process procedures to assure optimal cleaning





PARLOR SANITIZER SYSTEM

ParlorGuard Control and Pumps

Injecting a sanitizer solution into the parlor rinse water is an excellent way to fight environmental mastitis. The ParlorGuard's no-voltage flow switch plumbs directly in line with the hot or cold water line leading to the parlor and automatically signals the diaphragm metering pump to inject sanitizer into the water line at the precise concentration as needed.

“Sanitize milking gloves, manual back flush milker units, and any other milk contact surface that you want to kill mastitis causing bacteria.”



Premium Solenoid Pump



Flow Controller



Economical Mechanical Pump



ParlorGuard

- No voltage flow switch and controller turns pump on-off
- Controller includes power pigtails for pump and one constant 115 VAC source
- External prime button
- Fast, easy, profitable
- No conduit required
- Variable concentration levels based on stroke / frequency
- No effect on water pressure

KNIGHT

IBEX
FLUID & METERING

INDUSTRIAL SYSTEMS

Parlor sanitizer System Typical Installation



ParlorGuard
Knight Parlor Hose Drop Pump Controller

Pulsatron E
Pulsatron solenoid drive diaphragm pump Series E, 5.0 GPH/120 GPD, 100 PSI (110 VAC)

Pump Mount Bracket
Pump mount bracket with mounting hardware

Simple Power Connection

Sanitizer Injection Point

Flow Switch
Flow Switch connects to control with low voltage cable

Mixing Chamber
Mixing Chamber for sanitizer/water solution

Watts 9D Backflow Preventer

Parlor Hot Water Line

ORDERING INFORMATION

Parlor Sanitizer System

CONTROLGUARD BASE CONTROL SYSTEM

Part Number	Model	Description
8000153	X100-XA-BBAAXXX	ChemTech Series 100 Metering Pumps (115 VAC) Low Cost Parlor Hose Drop Sanitizer Pump with: 100 GPD, 60 PSI, PVC Pump Head, Viton O-Rings and Seals
8000103	LEH6SA-VTC3XXX	Pulsatron Series E 5.0 GPH/120 GPD (18.9 LPH) 100 PSI (110 VAC) Manual Stroke Length and Frequency Adjustment with: PVC Head and Fittings, PTFE seats, PTFE Diaphragm, Ceramic check balls, 3/8" I.D. x 1/2" O.D. Tubing, Bleed Valve, Foot Valve, and Injection Valve. Note: Replaces LMI-B131-460TI (Wash Pen Injection)
8000117	FC-20003	Flow Controller 3/4" Pulsatron for Hose Drop with: Flow Switch, Pump Power Output Pigtail, Utility Power Pigtail, Check System Button
8000118	FC-20003C	Flow Controller 1" Pulsatron for Hose Drop with: Flow Switch, Pump Power Output Pigtail, Utility Power Pigtail, Check System Button

KNIGHT LIMITED WARRANTY

Knights controls and pump systems are warranted against defects in material and workmanship for a period of ONE YEAR. All Electronic Control Boards have a TWO YEAR warranty. Warranty applies only to the replacement or repair of such parts when returned to the factory with a KRA number, freight prepaid and found to be defective upon factory inspection. Rubber and synthetic rubber parts such as "O" rings, diaphragms, squeeze tubing and gaskets are considered expendable and are not covered under warranty. Warranty does not cover liability resulting from performance of this equipment nor the labor to replace this equipment. Product abuse or misuse voids warranty. Knight products are not for use in potentially explosive environments. Any use of our equipment in such an environment is at the risk of the user. Knight does not accept any liability in such circumstances.

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FOAMCLEAN™

Mobile and Wall Mount Foam Cleaning Systems

FoamClean is designed to reliably produce consistent and controllable foam quality through the use of premixed foam cleaning chemicals. The FoamClean Mobile and Wall Mount Foamer dispenses a rich lather of foam at 50 gal/min (foam) [190 lit/min (foam)] with a projection distance of up to 30 feet (9 meters).

"Efficient, Reliable, and Convenient"



**FoamClean Mobile Foamer
15 gallon (57 liter)**



**FoamClean Mobile and
Wall Mount Foamer
is powered by the
4 GPM or 5GPM
(15 LPM or 18.9 LPM)
air operated pump**

- Super durable, Polyethylene hand-truck is chemical and corrosion resistant
- High foaming capacity
- Most versatile foam quality of any air operated system
- Long lasting, Polypropylene air operated pump with Viton, Santoprene or Teflon seals
- Longer throw and broader coverage
- Air pump is engineered for aggressive acids, alkalines, and chlorine
- Simple operation and user friendly

KNIGHT

IDEX
FLUID & METERING

INDUSTRIAL SYSTEMS

Air Operated Pump



Knight's FoamClean Mobile and Wall Mount system is powered by 5 GPM (18.9 LPM) Polypropylene double-diaphragm pump with Viton or Santoprene seals or 4 GPM (15 LPM) pump with Teflon seals for extended product life, giving you maintenance-free pump operation. The pump is protected in a chemical and corrosion resistant Polyethylene case protecting the pump for years of reliable service.

Applications and Benefits



FoamClean foamers have a higher and longer throw than competitors with a projection distance of 30 feet (9 meters).



The dryness or wetness of the foam can be adjusted for different cleaning applications with a simple turn of a knob.



FoamClean produces consistent foam quality to adhere to irregular surfaces and provide better coverage than liquid cleaning chemicals.



FoamClean can be used throughout the food processing, transportation, dairy, industrial, and agricultural industries.

Aqua-Minder

15 gal (57 L) Dilution Management Unit

The Aqua-Minder automatically mixes cleaning chemical with water and maintains chemical supply level at all times. The Aqua-Minder saves time, increases workplace safety and improves efficiency in all cleaning processes. Can be used on Car Wash, with FoamClean Foamers, filling scrubbers and many other Industrial applications.



FOAMCLEAN SPECIFICATIONS

	Wall Mount FCW-5.0S, Mobile FCM-5.0S,	Wall Mount FCW-5.0V, Mobile FCM-5.0V	Wall Mount FCW-4.0T, Mobile FCM-4.0T
Chemical Compatibility	Acids, Chlorinated Cleaners, Alkalines, Soaps	Acids, Chlorinated Cleaners, D-limonene, Hydrocarbons	All Acids, Chlorinated Cleaners, Caustics, Alkalines
Air Pump Materials	Santoprene	Viton	Teflon
Foam Output	50 Gallons/Minute 190 Liters/Minute	50 Gallons/Minute 190 Liters/Minute	50 Gallons/Minute 190 Liters/Minute
Foaming Distance	30 Feet 9 Meters	30 Feet 9 Meters	30 Feet 9 Meters
Air Consumption	20-100 PSI, 1.4 to 6.9 bar	20-100 PSI, 1.4 to 6.9 bar	40-80 PSI, 5-10 bar
Hose	50 ft (15 m) Reinforced, 3/4" ID w/Wand	50 ft (15 m) Reinforced, 3/4" ID w/Wand	50 ft (15 m) Reinforced, 3/4" ID w/Wand

ORDERING INFORMATION

FOAMCLEAN WALL MOUNT FOAMER SYSTEM

PART #	DESCRIPTION
7649309	Wall Mount, 5 GPM (18.9 ltr/min) Air Operated Pump w/Santoprene Seals/Diaphragm
7649308	Wall Mount, 5 GPM (18.9 ltr/min) Air Operated Pump w/Viton Seals/Diaphragm
7649302	Wall Mount, 4 GPM (15 ltr/min) Air Operated Pump w/Teflon Seals/Diaphragm
1800980	15 Gallon (57 liters) Heavy-Duty Polypropylene Tank w/Cap
7113500	Aquaminder 4 GPM Proportioning System w/ Vacuum Breaker
7113510	Aquaminder 4 GPM Proportioning System w/o Vacuum Breaker

DIMENSION / WEIGHT (w/HOSE)

28"W x 12"H x 8"D/30 lbs. (71cm x 31cm x 20cm/13.6 kg.)
28"W x 12"H x 8"D/30 lbs. (71cm x 31cm x 20cm/13.6 kg.)
28"W x 12"H x 8"D/30 lbs. (71cm x 31cm x 20cm/13.6 kg.)
22"H x 16" D/8 lbs. (55.9cm x 50.7cm/3.8 kg.)

FOAMCLEAN MOBILE FOAMER SYSTEM

PART #	DESCRIPTION
7649410	Mobile, 5 GPM (18.9 ltr/min) Air Operated Pump w/Santoprene Seals/Diaphragm
7649420	Mobile, 5 GPM (18.9 ltr/min) Air Operated Pump w/Viton/Diaphragm
7649312	Mobile, 4 GPM (15 ltr/min) Air Operated Pump w/Teflon Seals/Diaphragm
7649316	Mobile, 4 GPM (15 ltr/min) Air Operated Pump w/Santoprene Seals/Diaphragm

DIMENSION / WEIGHT (w/HOSE)

17"W x 45"H x 24"D/49 lbs. (42cm x 115cm x 61cm/22.2 kg.)
17"W x 45"H x 24"D/49 lbs. (42cm x 115cm x 61cm/22.2 kg.)
17"W x 45"H x 24"D/51 lbs. (42cm x 115cm x 61cm/23.1 kg.)
17"W x 45"H x 24"D/51 lbs. (42cm x 115cm x 61cm/23.1 kg.)

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Knights' Reputation For Quality Assures Your Chemical Pro

ONE-SHOT

LIQUID AND SOLID DISPENSING SYSTEMS FOR 1 AND 2 PRODUCTS

This field proven chemical dispensing system is engineered to dispense one or two chemicals into laundry machines ranging in size from 17 lb. to 125 lb. capacity. Chemical feed is triggered by direct interface to the washer or manually activated by the user via the dispenser or optional remote activator. A unique "Product Lockout" feature helps you control costs and product consumption.

- Watertight, Impact Resistant, Thermoplastic Case
- One Touch Microprocessor Based Programming
- Relay Mode Function For Microprocessor Washers
- Proven Reliable Peristaltic Pump (10 oz./min.)
- Exclusive Programmable Product Lockout
- Delay Time Activation
- One Second Manual Start
- Manual or Automatic Dispensing
- Trigger Input 14 VAC – 250 VAC
- Built in Transformer 115 / 230 VAC to 24 VAC
- Optional Remote Activator
- Long Life, Low Noise Gear Motors
- Start Button Disable Option

APPLICATIONS : Top Load or On-Premise Laundry Machines in Nursing Homes, Restaurants, Motels, Shirt Laundries, Hotels, Car Wash Stations. Also Restaurant Pot & Pan Sinks and Multi Purpose Mop Bucket Dispensing Applications.

ORDERING INFORMATION:

Model	Part Number	Description	Dimensions
OS-100L	8600201-07	1 Product Liquid Dispenser w/Internal Transformer	8" W x 4 7/8" D x 6 1/2" H
OS-100LXT	8600201-P1	1 Product Liquid Dispenser w/External Transformer	
OS-100S	8600600-07	1 Product Solid Dispenser w/Internal Transformer	
OS-100SXT	8600600-P1	1 Product Solid Dispenser w/External Transformer	
RA-1P	7652000	Remote Activator, One Product w/6 ft. Cable	
OS-200L	8600604	2 Product Liquid Dispenser w/Internal Transformer	11 1/2" W x 5" D x 8" H
OS-200S	8600602	2 Product Solid Dispenser w/Internal Transformer	
OS-200LS	8600606	2 Product Liquid & Solid Dispenser w/Internal Transformer	
RA-2P	7652002	Remote Activator, Two Product w/6 ft. Cable	

ONE SHOT AND ULTRA BOWL SYSTEM - Ready to install One Shot and Ultra Power Bowl Combination with Stainless Steel Mounting Panel.

- One-Shot Solid Dispensing System In Plastic Watertight Enclosure
- Stainless Steel Mounting Panel
- Reliable Ultra Power Bowl with Vacuum Breaker (Brass or Plastic)
- Manual or Automatic Dispensing

APPLICATIONS : Top Load or On-Premise Laundry Machines in Nursing Homes, Restaurants, Motels, Shirt Laundries, Hotels, Car Wash Stations. Also Restaurant Pot & Pan Sinks and Multi Purpose Mop Bucket Dispensing Applications.

ORDERING INFORMATION:

Model	Part Number	Description	Dimensions
OS-100SBP	8600612	1 Shot Bowl Combo w/Plastic Vacuum Breaker	16" W x 7 1/2" D x 18" H (w/ Vacuum Breaker)
OS-100SBB	8600614	1 Shot Bowl Combo w/Brass Vacuum Breaker	

OPTIONS FOR ONE-SHOT

Part Number	Description
7407118	Plastic Pressure Regulator 1/4" FPT
7407119	Water Tempering Valve 1/2" FPT



OS-100L



OS-100S



1 Product Remote Activator



OS-200L



2 Product Remote Activator



OS-200S



One-Shot / Bowl Combination

