

Accurate, versatile chemical pumps



**WATSON
MARLOW
Pumps**

Now certified for use
in food and beverage
processing

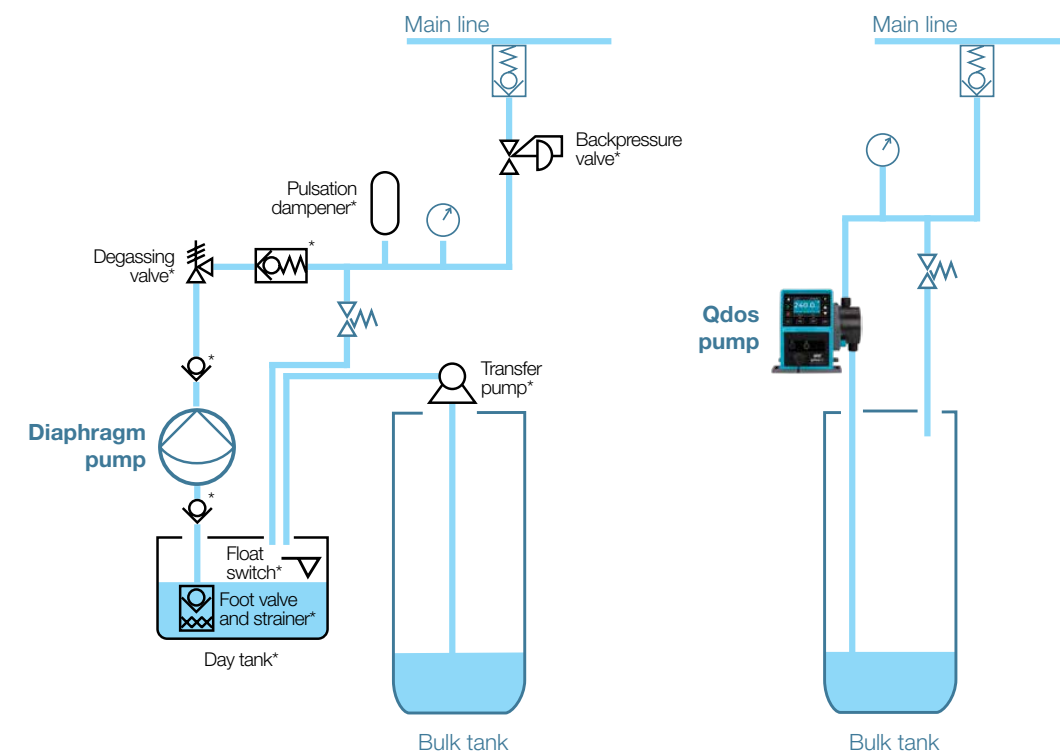


- Cut chemical cost through higher accuracy metering
- Simple drop-in installation eliminates ancillary equipment
- Reduced maintenance with single, no-tools, component replacement
- Flow rates from 0.001 to 32 USGPH (0.1 to 2,000 ml/min) at up to 100 psi (7 bar)

Total cost of ownership is less than a diaphragm pump

Typical installation comparing a diaphragm metering pump with the Qdos peristaltic metering pump

*Not required for Qdos system



Diaphragm metering pumps require high maintenance ancillaries to function. The Qdos range eliminates this equipment while maintaining accurate, linear and repeatable metering for all process conditions.

- No backpressure valves
- No pulsation dampener
- No degassing valves
- No foot valves and strainers
- No float switches



Revolutionary pumphead technology

The unique design of the patented ReNu™ pumphead enables accurate and repeatable flow for fluids of wide ranging viscosities.

No-tools maintenance means quick, safe and easy pumphead replacement with no specialist training or maintenance technicians.

NEW ReNu PU pumphead for polymers

The contained pumphead design with integral leak detection reduces wastage and eliminates operator exposure to chemicals.



Optional HMI protective screen

Rugged NEMA 4X pump drive, designed for industrial environments

Easy access high-visibility interface

Keypad and 3.5" TFT color display provide easy access and high-visibility status indication. Configurable in 7 languages

Reduce your chemical costs

Accurate, linear and repeatable flow, with varying process conditions. Keeps pumping even when gassing-off occurs or when the chemical contains solids. No need to over-meter chemicals

Certified for food and beverage processing

- EC1935/2004, EU regulation 10/2011
- FDA regulation 21CFR parts 170-199

Simplify your system design

High suction lift and viscous handling eliminates the need for flooded suction, day tanks and specialist piping systems

Safe maintenance

The sealed ReNu pumphead with integral leak detection eliminates operator exposure to chemicals. No chemicals on the floor, no parts to clean and rebuild

Replace your pump in seconds

Process uptime is maximized with **no-tools maintenance** quick and easy pumphead replacement

Low maintenance

No valves or seals to clog, leak or corrode, giving minimal maintenance. Drop-in replacement for diaphragm metering pumps

Four models in the range

Qdos 20, Qdos 30, Qdos 60 and Qdos 120

12-24V DC Optional

For mobile skids or remote locations without mains power



Features of the Qdos range

Simplicity in installation, operation and maintenance were key considerations when designing the Qdos range of pumps.

An intuitive menu offers advanced control features including:

- Fluid level monitoring
- Line priming
- Flow calibration

The 3.5" TFT color display provides instant pump status, and can be configured to display in 7 different languages.

Qdos pumps can be ordered with the ReNu pumphead mounted on the left or right of the pump. The keypad, display and input/output connections are readily accessible for easy operation and maintenance. All models are NEMA 4X rated for use in washdown environments.

Qdos pump model range functionality



| Universal+ | Universal | Manual |
|---|------------------------------|----------------------|
| Flexibility for automatic and manual control together with configurable 4-20mA input and output | Automatic and manual control | Manual speed control |



| Remote | PROFIBUS |
|--|-----------------------------|
| Remote control for absolute process security | Manual and PROFIBUS control |



Features overview

| Functionality | Universal + | Universal | Manual | Remote | PROFIBUS |
|---|-------------|-----------|--------|--------|----------|
| Operational modes | | | | | |
| Manual | • | • | • | | • |
| Contact | • | • | | | |
| 4-20mA | • | • | | • | |
| Fluid recovery | • | • | • | • | • |
| Fault reporting | • | • | • | • | • |
| PROFIBUS control and diagnostics | | | | | • |
| Manual control | | | | | |
| Numerical flow display | • | • | • | | • |
| Numerical speed display | • | • | • | | • |
| Numerical percentage of max speed display | • | • | • | | • |
| Fluid level monitor | • | • | • | | • |
| Max (prime) | • | • | • | | • |
| Auto restart | • | • | • | | • |
| Pumphead failure alarm | • | • | • | | • |
| Remote control | | | | | |
| 4-20mA input | • | • | | • | |
| 4-20mA input two point calibration | • | | | | |
| 4-20mA output | • | | | • | |
| Contact input (pulse/batch) | • | • | | | |
| Run stop input | • | • | | • | |
| Run status output | • | • | | • | |
| Alarm output | • | • | | • | |
| Remote fluid recovery | • | • | | • | |
| Optional 24V or 110V industrial logic* | • | • | | | |
| LED status icons | | | | | |
| Pump status | | | | • | |
| 4-20mA status | | | | • | |
| Fault | | | | • | |
| Security | | | | | |
| Keypad lock | • | • | • | | • |
| PIN lock | • | • | • | | • |
| Power supply | | | | | |
| 12-24V DC | • | • | • | • | |
| ~100-240V AC | • | • | • | • | • |

*Control options – Universal and Universal+ models

| | |
|---------|---|
| Variant | Standard pump (L) |
| Input | 5-24V DC |
| Output | Open collector |
| Variant | Relay module (H) |
| Input | 110V AC |
| Output | Contact rating 110V AC, 5A 30V DC, 5A |
| Variant | Relay module (R) |
| Input | 5-24V DC |
| Output | Contact rating 110V AC, 5A 30V DC, 5A |



Standard pump (L)

Input and output control option



Relay module (H) or (R)

Input and output control option



◀ Metering polymer flocculants

A major utility provider on Lake Michigan, Illinois had a requirement to clean-up wastewater run-off from a limestone quarry. They needed a solution for accurately dosing polymer flocculants.

Installing a Qdos pump fitted with a ReNu PU pumphead allowed them to meet water quality standards with a low maintenance, reliable solution. The unique ReNu PU pumphead is compatible with aliphatic hydrocarbons, making it perfect for long consumable life when dosing oil based polymers. The contained pumphead ensures easy changeover with minimal mess. In addition, precision dosing of $\pm 1\%$, even under varying conditions, minimizes chemical expenditure.

Maintenance downtime cut from 1.5 hours to just five minutes ▶

An important stage of wastewater purification at Selters, Germany, is the elimination of phosphates with the addition of precipitants, including ferric chloride.

Ferric chloride is both chemically aggressive and abrasive and attacked the diaphragms of the pumps previously used at the sites' metering station. Technicians were replacing pump diaphragms every 3 to 4 months, and each one took at least one hour to change, plus clean up time for leaked chemical.

Qdos pumps were installed in the precipitant metering station and immediately reduced maintenance time to five minutes.



◀ Precise delivery of electroplating chemicals

BIA Kunststoff- und Galvanotechnik is involved in electroplating plastic components with metallic surfaces for the automotive industry.

The Qdos pumps employed by BIA precisely dose the chemical additives to the electroplating machines with minimal pulsation, and avoid them being "shattered".

In addition to low pulse dosing, virtually no pump downtime and no additional accessories such as check valves, makes Qdos pumps the best choice for electroplating duties.



◀ Ensuring the supply of safe drinking water

High concentrations of iron and manganese in the Canadian Barrie region, mean that a sequestering agent is required for potable water. The City of Barrie Water Operations Branch uses sodium silicate (Na_2SiO_3) to bind the Fe/Mn and prevent it from oxidising. The effect is aesthetic to avoid staining sanitary ware.

Diaphragm metering pumps had been chosen to meter between 4-6 parts sodium silicate, until sticking ball valves and clogging caused serious maintenance issues at the unmanned site.

Investing in Qdos pumps was easy for the Water Operations Department to justify on the costs of downtime and spare parts alone.

Chemical metering with no vapor locking ▶

Victoria Water Treatment Plant use Qdos chemical metering pumps to meter fluoride, chlorine and polyphosphate in the water filtration, clarification and distribution process.

The pumps are employed to eliminate the gas locking problems previously experienced with pulsation diaphragm pumps. A Qdos 20 model with a tube material specifically formulated for high pressure sodium hypochlorite applications, has joined the chemical metering process.

Running at between 70 and 100psi and controlled by a 4-20mA input signal, the Qdos pumps at the Victoria WTW have significantly reduced maintenance downtime.



◀ Rare mineral recovery process

In vital floatation duties at British Fluorspar, twelve Qdos pumps meter reagents from mixer tanks to header tanks.

Acid grade fluorspar (fluorite) is a relatively rare industrial mineral and its extraction involves precise metering of reagents such as methyl isobutyl carbinol, sodium isopropyl xanthate, caustic soda pearl and other chemicals. Overdosing of these chemicals is a costly business which must be avoided.



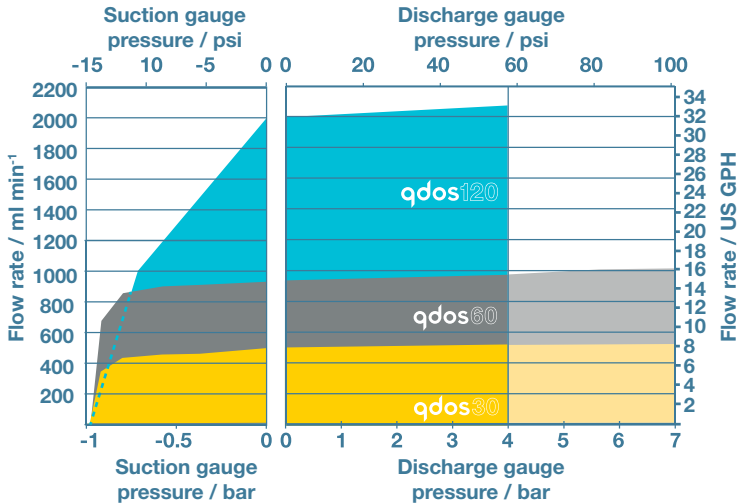
High precision chemical metering on the go

Qdos pumps are available with either mains power or 12-24V DC. If your chemical metering application involves a mobile skid or a remote location without mains power, then 12-24V Qdos meets your requirements. The 12-24V DC power option further increases the range of applications for Qdos pumping.

Performance data

| Model | Flow (ml/min) | | | | |
|---|---------------|-------------|--------------|---------------|--------------|
| | Qdos 20 | Qdos 20 PU | Qdos 30 | Qdos 60 | Qdos 120 |
| Universal+, Universal, Manual, PROFIBUS | 0.1 – 333 | 0.1 – 484 | 0.1 – 500 | 0.1 – 1000 | 0.1 – 2000 |
| Remote | 0.2 – 333 | - | 0.3 – 500 | 0.6 – 1000 | 1.2 – 2000 |
| | Flow (USGPH) | | | | |
| | Qdos 20 | Qdos 20 PU | Qdos 30 | Qdos 60 | Qdos 120 |
| Universal+, Universal, Manual, PROFIBUS | 0.001 – 5.3 | 0.001 – 7.7 | 0.001 – 7.93 | 0.001 – 15.85 | 0.001 – 31.7 |
| Remote | 0.003 – 5.3 | - | 0.005 – 7.93 | 0.01 – 15.85 | 0.02 – 31.7 |

Performance curves



Recommended for a wide variety of chemical metering applications including sodium hypochlorite below 4bar (60psi)

Pumphead options

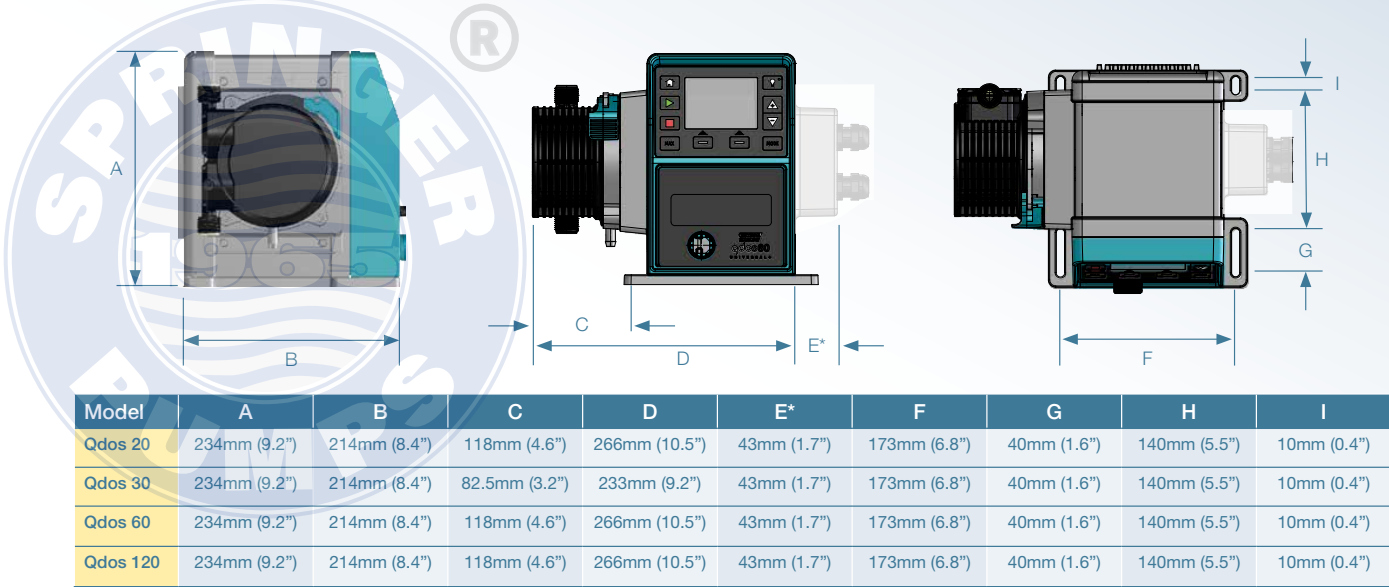
- Santoprene or SEBS
- Santoprene or SEBS
- Santoprene
- Santoprene
- Santoprene

Weight

| Model | kg | lb |
|----------|-----|----------|
| Qdos 20 | 5.7 | 12lb 9oz |
| Qdos 30 | 5.0 | 11lb 2oz |
| Qdos 60 | 5.7 | 12lb 9oz |
| Qdos 120 | 5.7 | 12lb 9oz |

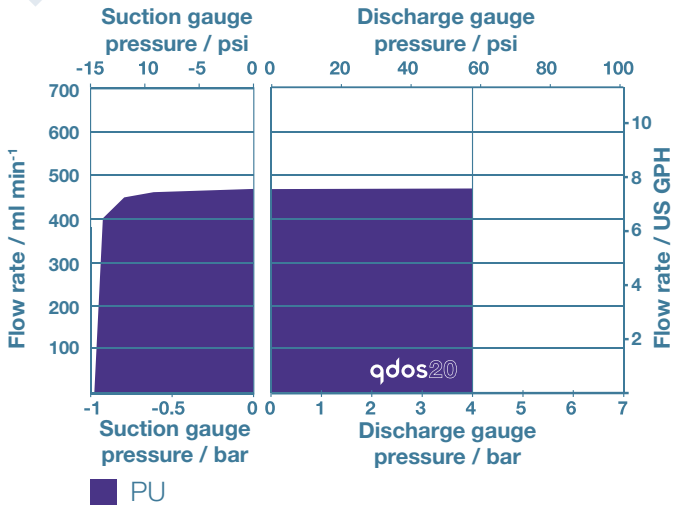
Important note - The ReNu Pumphead contains lubricant. It is the user's responsibility to comply with local health and safety regulations, including ensuring chemical compatibility between the tubing, lubricant and the duty fluid before use. For guidance refer to www.wmftg.com/chemical

Dimensions

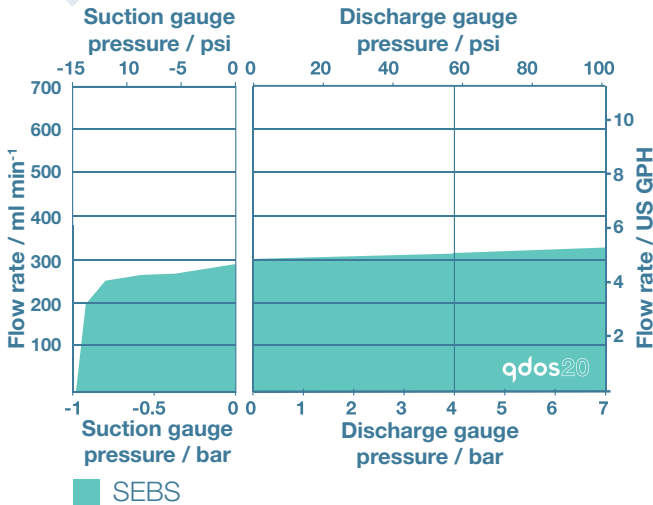


* Optional relay module

Recommended for use with Aliphatic Hydrocarbons such as polymer metering for dewatering and coagulation applications



Recommended for Sodium hypochlorite applications with discharge pressure from 4 to 7Bar (60 to 100psi)



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