

DDI (TrueDos D)



DDI Features

- Stepper Motor drive; EC Motor 60 & 150
- 100:1 Turn Down ratio; 800:1 60 & 150
- Repeatability +/- 1.5 % over entire operating range
- 100% stroke length (no stroke length adjustment)
- Slow mode (reduced fluid acceleration on suction stroke)

Inputs:

Contact
Analog
Remote on/off
Tank empty
Dosing Controller
Diaphragm Breakage

Outputs:

Analog (0(4) -20)
Error Signal
Stroke Signal
Empty Pre-alert

DDI Features

- **Manual mode**
Direct entering of the dosing rate in l/h or gal/h
- **Contact input**
input in liter or ml per contact
- **Analog input signal**
4(0) - 20 mA with flexible adjustment
- **Slow mode**
longer suction time for viscous liquids (300 ms)
- **Batch dosing**
input of [ml] or [l] per batch
- **Timer function**
input of [ml] or [l] per batch, input start time, input duration time, input of dosing speed in l/h
- **Service counter**
Operation timer and total dosing quantity
- **Code function**
protecting against non-authorized access
- **Memory function**
saves non-executed contact signals (up to 65,000)



DDI Features (Cont'd)

- Code Protected keypad
- Calibration Function
- Batch Timer Function
- Hall Sensor (motor monitoring)
- Total Dosing Capacity Display (re-settable)
- Total Dosing Hours Display (non re-settable)
- Optional Profibus
- Front or top fitted control panel

DDI

Direct input of the pump flow rate in gph or l/h.

Enter the desired pumping rate in gph or l/h

Flow rate

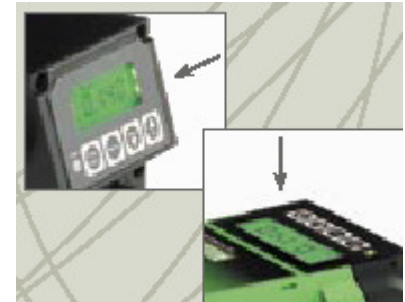


DDI

Display and Operating Panel available in two locations, top or front.

horizontal or

at an angle



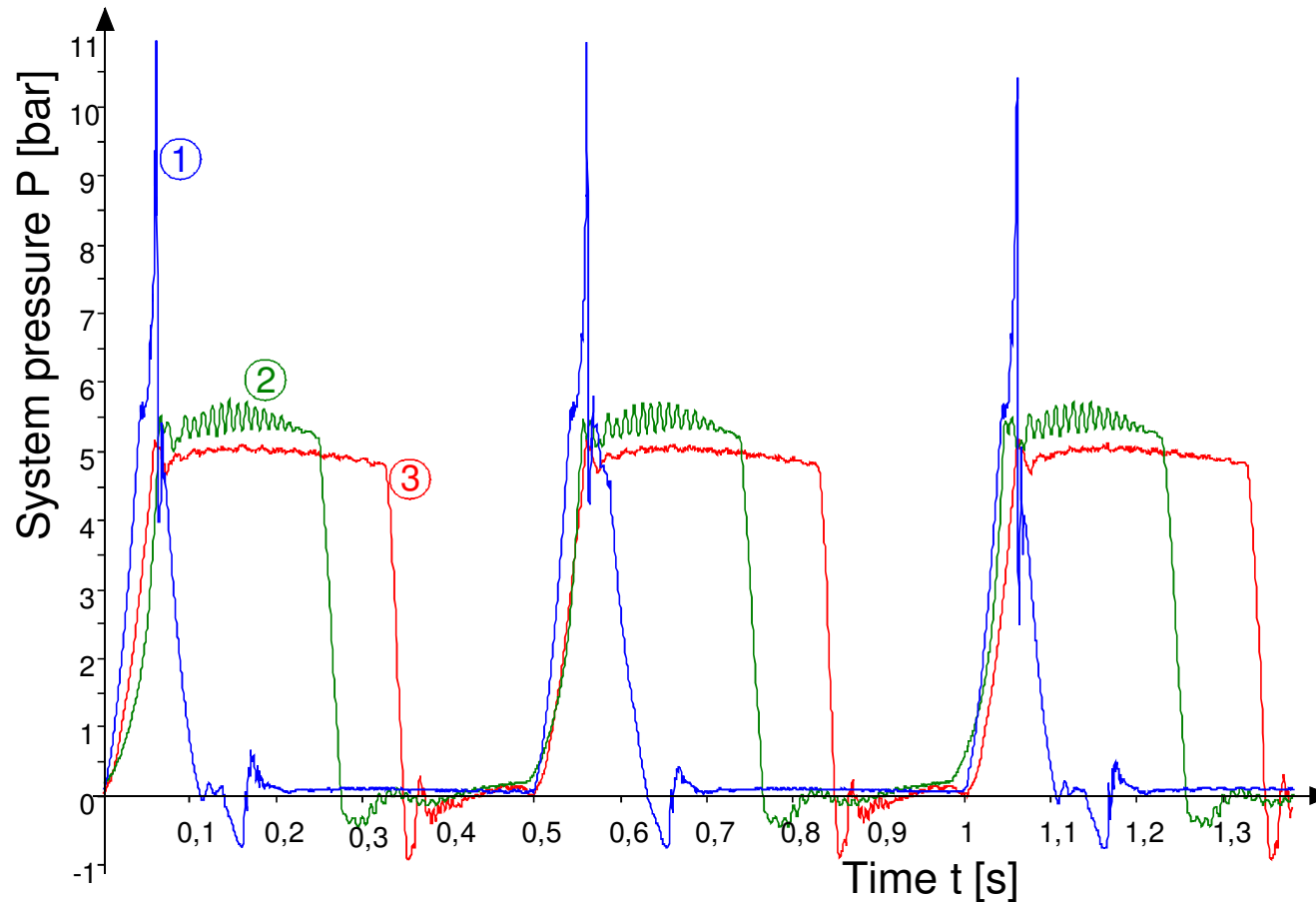


Fig. 1 Comparison of the pressure versus stroke frequency of pumps operating at 120 strokes per minute
 (1) solenoid drive
 (2) synchronous motor drive
 (3) stepper motor drive

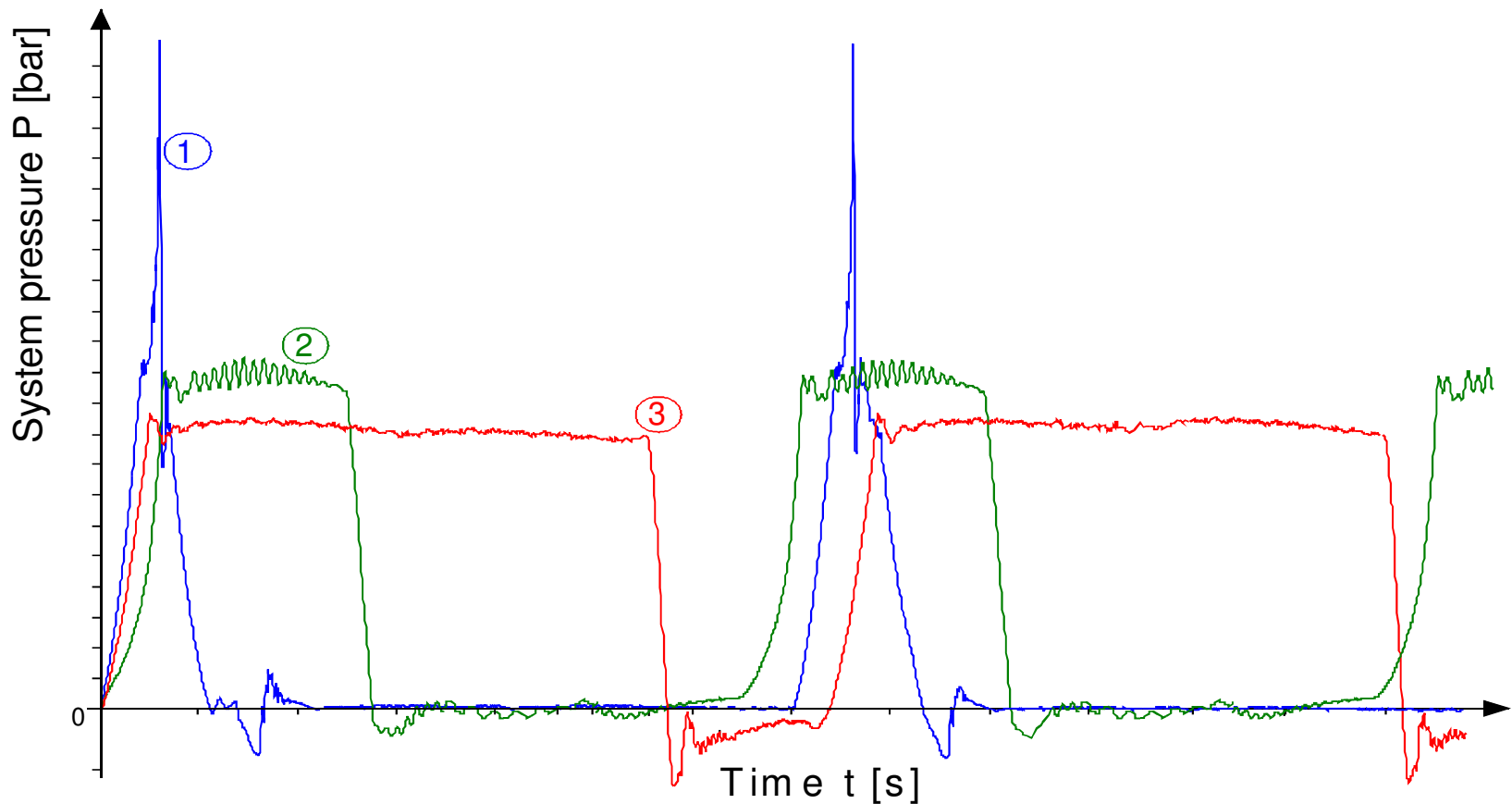


Fig. 2 Comparison of the pumps of Fig. 1. at reduced stroke frequency

DDI (normal vs slow-mode)

- Short suction stroke (0.167 s) and long discharge stroke produces virtually continuous flow.



- The “Slow Mode” setting (0.300s) slows the suction speed when pumping viscous or off-gassing fluids.



DDI Construction (Truedos D)

Materials:

Standard:

PVC Liquid End / Viton O-Rings / Glass Ball Checks

Option:

PVC / EPDM / Glass; PP / Viton / Ceramic; PP / EPDM / Ceramic; PVDF/PTFE/Ceramic; SS/Viton/SS; SS/PTFE/SS

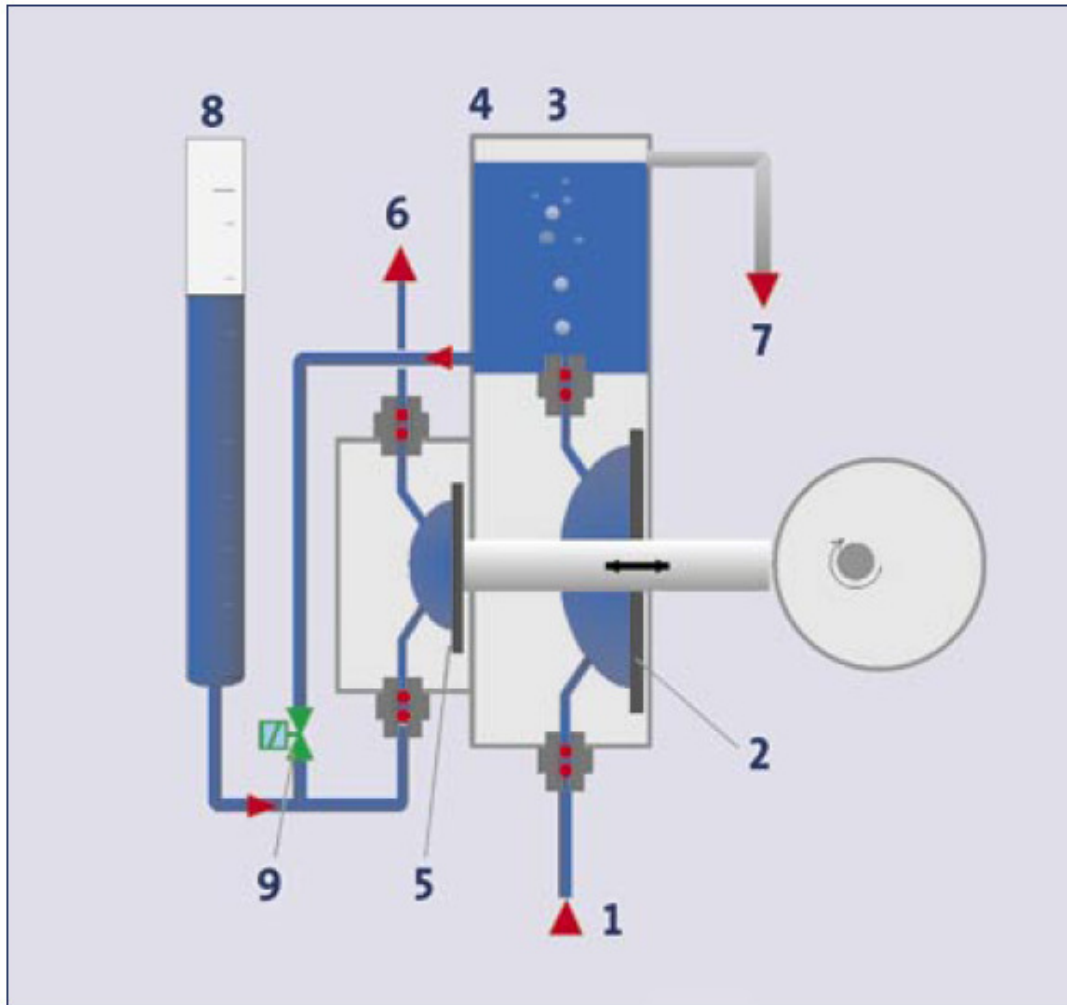
DDI with Plus3 option



The Plus3 system is:

- > Degassing and calibration unit for DDI pumps
- > Reliable dosing of volatile liquids
- > Continuous calibration
- > Change tanks during operation

DDI with Plus3 - functionality

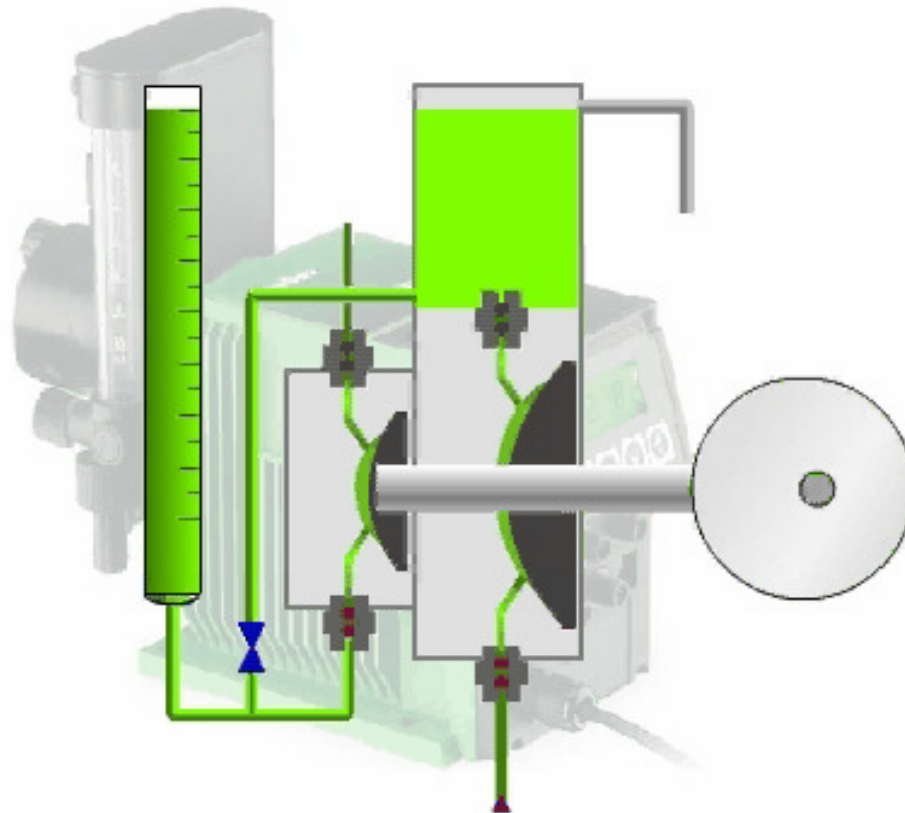


The Plus³ system employs a patented double diaphragm design to optimise dosing accuracy.

How it works

- The first diaphragm (2) draws in a large amount of dosing media from the dosing tank (1) and transfers it into the priming chamber (3) for deaeration. This eliminates the problems associated with drawing-in of very small quantities.
- (4) Any gas bubbles in the liquid are vented into the atmosphere.
- The second diaphragm (5) doses the exact amount of liquid required into the dosing line (6)
- Excess liquid is returned to the tank through the deaeration bypass (7).
- The integrated calibration tube (8) and valve (9) allow for precise calibration of the dosing flow while the pump is running.

➤ DDI with Plus3 - animation



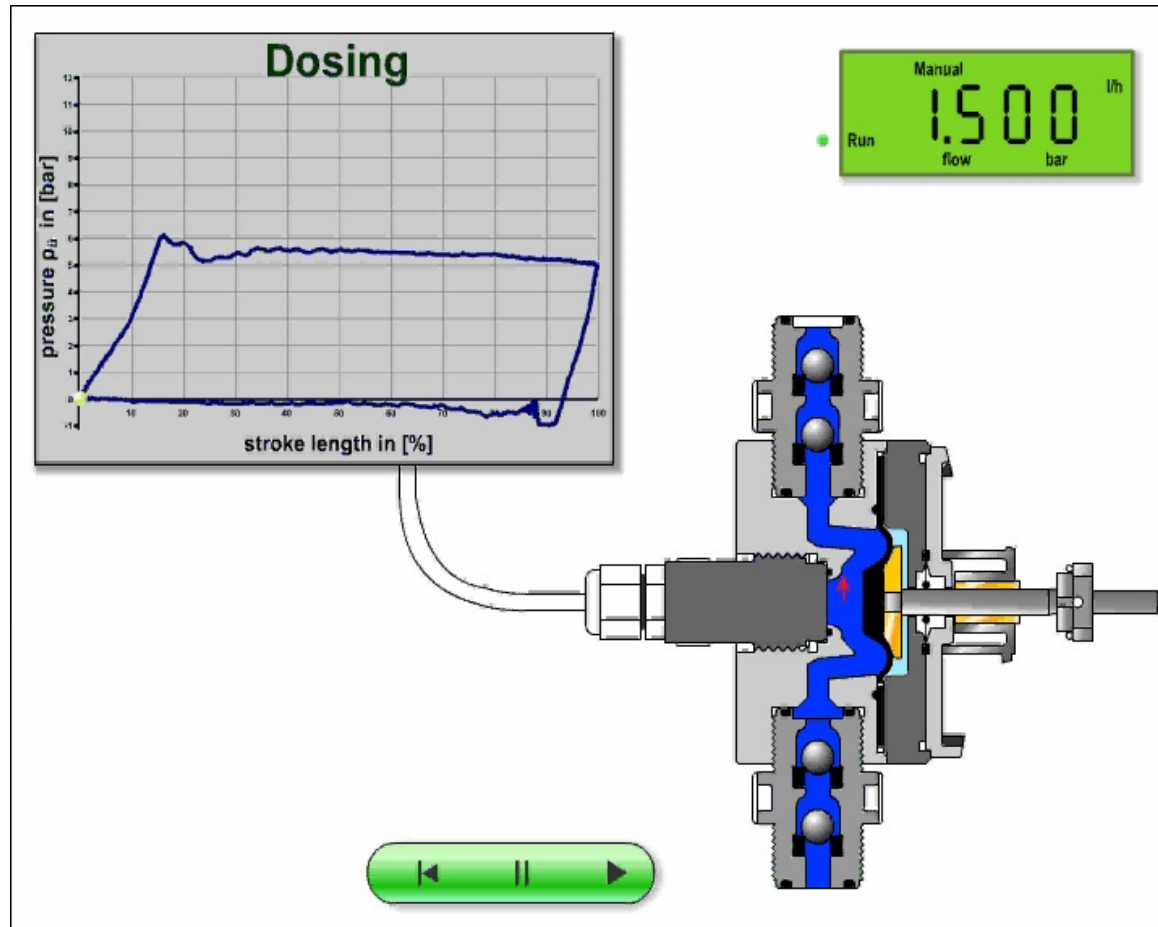
DDI with “Flow Monitor”



The unique digital dosing control

- Dosing malfunctions are immediately detected and registered, even in very small dosing flows
- Control of the system excess pressure on the pressure side: just input the maximum backpressure allowed in the dosing head, if this pressure is exceeded, the pump shuts down.
- The average pressure in the dosing head is continuously measured and can be easily queried at the touch of a button.

DDI with “Flow Monitor”



Functional Scheme

Grundfos Digital Dosing

Compelling benefits

- **Safety of investment** thanks to a flexible, future-oriented dosing system.
- **Economy of time and reduction of costs** thanks to optimised easy operation.
- **Saving of chemicals** thanks to precise dosing control
- **Exact cost control** & cost management in chemicals consumption.
- **Process reliability** thanks to precise, continuous dosing.