



411 Hand Pump



Vacuum

Vacuum can now easily be generated in the field. With just a few strokes, the 411 Hand Pump achieves vacuums of up to 95%, this is equivalent to 50 mbar absolute at 1000 mbar ambient pressure.

Low pressure (pneumatic)

Suitable for sensitive sensors and pressure switches, e.g. in filter or clean room monitoring. The fine regulation feature alone achieves pressures of between 0.1 and 300 mbar, even without the pistons. The variable stroke limitation effectively protects the specimen from overpressures.

Medium pressure (pneumatic)

Conventional hand pumps sometimes require over 100 pump strokes to achieve approx. 25 bar of pressure. The 411 Hand Pump achieves the same with around just 30 strokes. Because up to 60 bar can be generated without hydraulics, the user is often saved the cumbersome job of transporting a pressure pump to the measuring location.

High pressure (hydraulic)

The 411 Hand Pump provides a clever solution for the air-free filling of hydraulic equipment. First a vacuum is generated, which guarantees fast filling without air inclusions. Pressures of up to 700 bar are then generated via the fine-regulation feature.

The ideal device for commissioning, maintenance and service.

- Vacuum generation up to 95%
- Adjustable overpressure safety valve
- Fine pressure regulation, pressure reduction with control valve
- Pneumatic up to 60 bar, hydraulic up to 700 bar
- **Combines 4 conventional hand pumps:**
 - Vacuum: up to 95%
 - Low pressure: pneumatic up to 300 mbar
 - Medium pressure: pneumatic up to 60 bar
 - High-pressure hydraulic up to 700 bar

Standard delivery:

411 Hand Pump

Optional accessories:

- Hydraulic storage tank
- Carry case
- High-pressure hose
- Adapter kits from stainless steel

Test kit:

- Pneumatic test kit:
- Pneumatic and hydraulic test kit

Technical data

Weight:	approx. 1 kg
Dimensions:	260 x 135 x 95mm
Pressure connections:	G 1 / 4" internal thread
Safety valve:	adjustable from 30 to 700 bar

The 411 Hand Pump is ideal for testing, commissioning and maintaining pressure gauges, pressure sensors and pressure switches. Thanks to its ergonomically designed handle, this unit sits easily and comfortably in the hand. The rotating head permits optimum readout from pressure gauges and the fine regulation feature enables precise pressure and/or vacuum adjustments to be made.

Media for hydraulic operation:

Liquids compatible with stainless steel, nitrile, Teflon, nylon, polypropylene, acrylic. Distilled water or fluid mineral oil are recommended.

The pneumatic and hydraulic systems are identical, therefore when the system switches to pneumatic operation, residual liquid remains in the pump.

Parameter	Pneumatic			Hydraulic
	High-pressure	Medium-pressure	Low-pressure	Vacuum
Range	0 to 95%	0 to 60 bar		0 to 700 bar
Adjustment range	200 mbar at 0 bar	300 mbar at 0 bar	8,5 bar at 30 bar	0 to 700 bar
Regulation				
Sensitivity	< 0,1 mbar	< 0,1 mbar	10 mbar at 30 bar	1 bar at 700 bar
Regulation				
QtY	5	2	30	Over
Pump strokes	(90% Vakuum)	(0 to 2 bar)	(0 to 60 bar)	Regulation

Note: Values were determined with closed pressure connections.