

SUNSTAR商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有10多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一，是一家专业代理和分销世界各大品牌IC芯片和电子元器件的连锁经营综合性国际公司。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商，已在全国范围内建成强大统一的供货和代理分销网络。我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。专业以现代信息产业（计算机、通讯及传感器）三大支柱之一的传感器为主营业务，专业经营各类传感器的代理、销售生产、网络信息、科技图书资料及配套产品设计、工程开发。我们的专业网站——**中国传感器科技信息网（全球传感器数据库）www.SENSOR-IC.COM** 服务于全球高科技生产商及贸易商，为企业科技产品开发提供技术交流平台。欢迎各厂商互通有无、交换信息、交换链接、发布寻求代理信息。欢迎国外高科技传感器、变送器、执行器、自动控制产品厂商介绍产品到**中国**，共同开拓市场。本网站是关于各种传感器-变送器-仪器仪表及工业自动化大型专业网站，深入到工业控制、系统工程计 测量、自动化、安防报警、消费电子等众多领域，把最新的传感器-变送器-仪器仪表买卖信息，最新技术供求，最新采购商，行业动态，发展方向，最新的技术应用和市场资讯及时的传递给广大科技开发、科学研究、产品设计人员。本网站已成功为石油、化工、电力、医药、生物、航空、航天、国防、能源、冶金、电子、工业、农业、交通、汽车、矿山、煤炭、纺织、信息、通信、IT、安防、环保、印刷、科研、气象、仪器仪表等领域从事科学研究、产品设计、开发、生产制造的科技人员、管理人员、和采购人员提供满意服务。**我公司专业生产、代理、经销、销售各种传感器、变送器、敏感元器件、开关、执行器、仪器仪表、自动化控制系统：专门从事设计、生产、销售各种传感器、变送器、各种测控仪表、热工仪表、现场控制器、计算机控制系统、数据采集系统、各类环境监控系统、专用控制系统应用软件以及嵌入式系统开发及应用等工作。如热敏电阻、压敏电阻、温度传感器、温度变送器、湿度传感器、湿度变送器、气体传感器、气体变送器、压力传感器、压力变送、称重传感器、物（液）位传感器、物（液）位变送器、流量传感器、流量变送器、电流（压）传感器、溶氧传感器、霍尔传感器、图像传感器、超声波传感器、位移传感器、速度传感器、加速度传感器、扭距传感器、红外传感器、紫外传感器、火焰传感器、激光传感器、振动传感器、轴角传感器、光电传感器、接近传感器、干簧管传感器、继电器传感器、微型电泵、磁敏（阻）传感器、压力开关、接近开关、光电开关、色标传感器、光纤传感器、齿轮测速传感器、时间继电器、计数器、计米器、温控仪、固态继电器、调压模块、电磁铁、电压表、电流表等特殊传感器。同时承接传感器应用电路、产品设计和自动化工程项目。**

欢迎索取免费详细资料、设计指南和光盘；产品凡多，未能尽录，欢迎来电查询。

更多产品请看本公司产品专用销售网站：

商斯达中国传感器科技信息网：<http://www.sensor-ic.com/>

商斯达工控安防网：<http://www.pc-ps.net/>

商斯达电子元器件网：<http://www.sunstare.com/>

商斯达微波光电产品网：[HTTP://www.rfoe.net/](http://www.rfoe.net/)

商斯达消费电子产品网：<http://www.icasic.com/>

商斯达军工产品网：<http://www.junpinic.com/>

商斯达实业科技产品网：<http://www.sunstars.cn/>传感器销售热线：

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GE Druck

PV 411A

Multi-function Hand Pump

- Multi-function "4 In 1" handpump
- 60 bar pneumatic, 700 bar hydraulic
- Generates vacuum to 95%
- Vacuum priming for hydraulic systems
- Excellent low pressure control
- Adjustable overpressure protection



PV 411A

Multi-function Hand Pump

The revolutionary PV 411A (4 In 1) multi-function pressure generator is a remarkable new hand pump for generating vacuum, gas and hydraulic pressures from a few mbar up to 700 bar. It replaces four conventional hand pumps and sets the following new standards of performance:

Vacuum:	to 95%
Low pressure (gas):	0.1 mbar resolution
Medium pressure (gas):	to 60 bar
High pressure (hydraulic):	to 700 bar

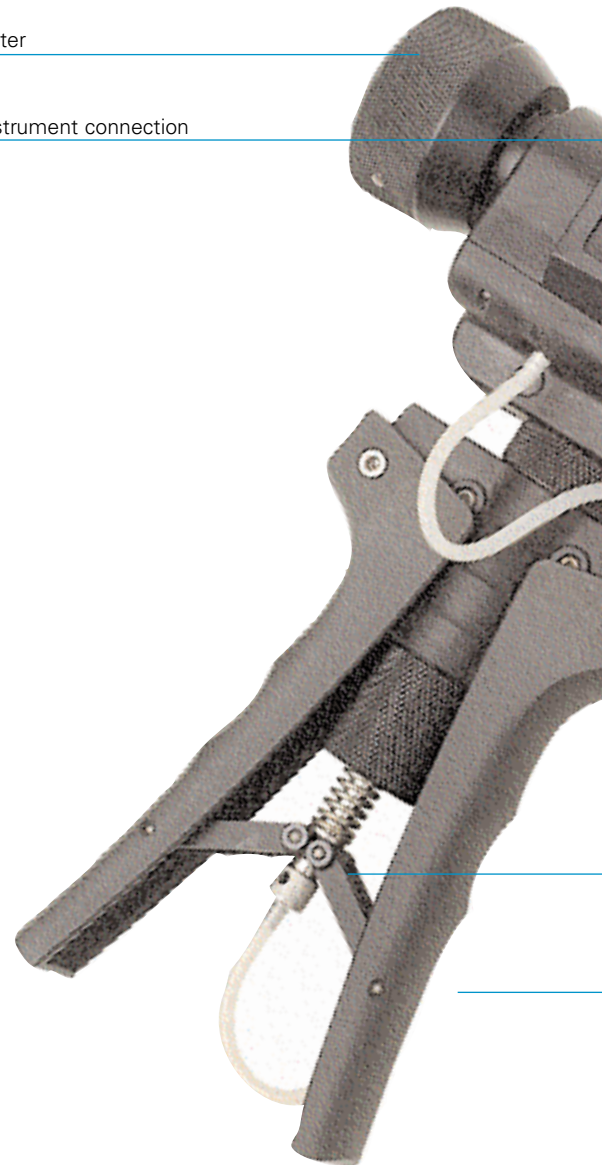
For many years Druck have produced pneumatic and hydraulic pressure generation systems for a wide range of portable pressure calibrators. This experience has resulted in the PV 411A, which combines four common pressure generation requirements into a single, easy to use unit. The PV 411A standard features include:

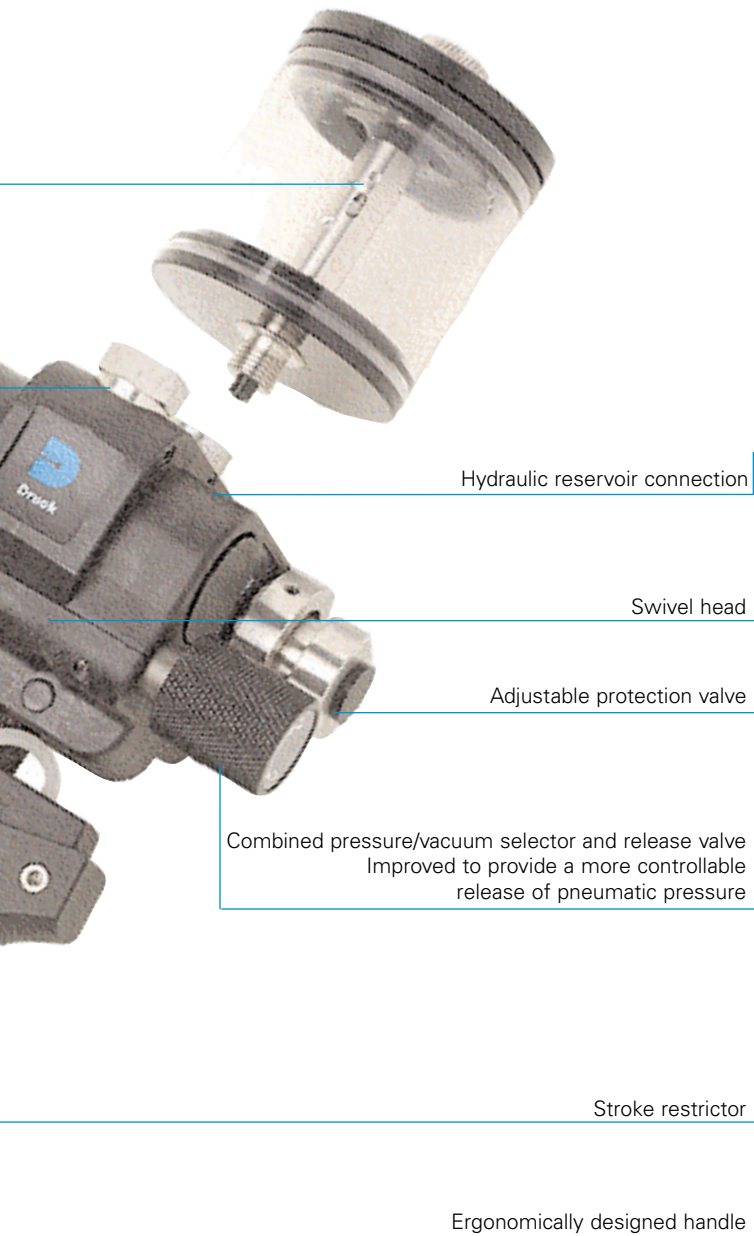
Large volume (pressure) adjuster:	Easy to turn for accurate pressure/vacuum setting
Pressure/vacuum valve:	Pressure/vacuum selection and fine control release
Stroke restrictor:	Limits the pressure generated per stroke
Adjustable protection valve:	Adjustable overpressure protection from 30 to 700 bar
Swivel head:	Provides optimum viewing angle for reference indicators
Ergonomically designed:	Comfortable grip for frequent single or two handed operation
Teflon anodised parts:	Reduces friction and wear on moving parts
Multi-axis G¹/₄ ports:	Convenient connection of gauges, hoses and reservoir
High viscosity capability:	Hydraulic pressure media upto 150 cSt @ 40°C
Compact and lightweight:	26 cm x 13.5 cm x 9.5 cm, weight 1kg nominal

Hydraulic reservoir (optional)

Volume adjuster

Reference instrument connection





The PV 411A is the ideal field tool for applying test and calibration pressures to sensors, gauges, switches, indicators and recorders. It is also a low cost pressure source for workshops and laboratories. This wide capability removes the need to carry several hand pumps.

Vacuum

Applying vacuum to absolute, negative gauge and differential field instruments is no longer a problem. With just a few strokes, the PV 411A generates up to 95% vacuum (-950 mbar at 1000 mbar ambient).

Low Pressure (pneumatic)

For sensitive low pressure applications, the PV 411A volume adjuster alone generates 300 mbar to within 0.1 mbar. The stroke restrictor varies the pressure generated and prevents accidental overpressure.

Medium Pressure (pneumatic)

The PV 411A generates gas pressure up to 60 bar, exceeding conventional hand pumps by more than 30 bar. This combined with an improved P/V selector valve provides a more controllable release of pneumatic pressure. This extended capability enables many new applications to be addressed.

High Pressure (hydraulic)

The PV 411A solves the problems of priming hydraulic systems; eliminating airlocks and fluid leakage. This is achieved with a unique vacuum priming facility. The volume adjuster is used to quickly and accurately generate pressure up to 700 bar.

Specification Parameter	Pneumatic			Hydraulic
	Vacuum	Low Pressure	Medium Pressure	High Pressure
Range *	0 to 95%	0 to 60 bar		0 to 700 bar
Adjuster contribution *	200 mbar @ 0 bar	300 mbar @ 0 bar	8.5 bar @ 30 bar	0 to 700 bar
Adjuster sensitivity *	< 0.1 mbar	< 0.1 mbar	10 mbar @ 30 bar	1 bar @ 700 bar
Minimum strokes *	5 (0 - 90%)	2 @ 2 bar	30 @ 60 bar	N/A

* Note: specifications are based on minimum volumes

Hydraulic Pressure Media: Any fluid compatible with stainless steel, nitrile, teflon, nylon, polypropylene, acrylic. De-mineralised water or low viscosity mineral oil is recommended.

The hydraulic and pneumatic systems are common and therefore residual fluid could remain within the system.

PV 411A

Multi-function Hand Pump

TEST KITS

Complete test kits can be ordered or individual items, as below:

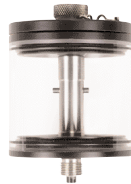
PV 411A-P Pneumatic test kit includes:

- PV 411A:** Multi-function pressure generator and user manual.
PV-411-100: A rigid lightweight transit case for the PV 411A and accessories. Size 36 cm x 34 cm x 13 cm.
PV-411-105: A 50 cm length of high pressure flexible hose terminated in 1/4" BSP (female), rated to 700 bar.
● 1/4" BSP (male) to 1/4" and 1/8" BSP (male) adaptors
● 1/4" BSP (male) to 1/8" NPT (male) adaptor
PV-411-110: A set of stainless steel BSP test point adaptors:
● 1/4" BSP (male) to 1/4" BSP (female) swivel
● 1/4" BSP (male) to 1/8", 3/8", and 1/2" BSP (female)
● 1/4" BSP (male) to 1/4" BSP (male)
PV-411-130: Bonded seals for hose and adaptors. Includes spare 'O' ring seals for reservoir and swivel adaptors.



PV 411A-HP: Pneumatic and hydraulic test kit also includes:

- PV-411-115:** A 100 cc hydraulic reservoir which fits directly onto the PV 411A input port. It is self sealing to prevent leakage when disconnected, but can be refilled in use. If accidentally connected to a high pressure gas source it will vent safely.



ACCESSORIES

In addition the following items can be ordered as accessories/spares:

- PV-411-120:** A set of stainless steel NPT test point adaptors:
● 1/4" BSP (male) to 1/4" NPT (female) swivel
● 1/4" BSP (male) to 1/8", 3/8", 1/4" and 1/2" NPT (female)
● 1/4" BSP (male) to 1/4" BSP (male)
● 1/4" BSP (male) to 1/4" NPT (male)
PV-411-125: A set of stainless steel metric test point adaptors:
● 1/4" BSP (male) to M20 (female) swivel
● 1/4" BSP (male) to M20 and M14 (female)
● 1/4" BSP (male) to 1/4" BSP (male)

REFERENCE INSTRUMENTS

DPI 705 Reference pressure indicator

- Ranges 70 mbar to 700 bar
- 0.1% FS accuracy
- Rugged, lightweight handheld design
- Leak test, tare, max/min, filter, alarm
- °C and °F ambient temperature
- Intrinsically Safe version available



UPS-III Loop Calibrator

- Measure or Source 0 to 24 mA
- Accuracy 0.01% of reading
- Dual mA and % readout, linear or flow
- Step, Span Check, Valve Check, Ramp
- 60 Vd.c. measurement and continuity
- HART® compatible



Please refer to product datasheets for further information and ordering codes.

RELATED PRODUCTS

GE Druck manufacture a wide range of portable field calibrators, deadweight testers, pressure controllers and indicators for the laboratory/workshop. A wide range of pressure sensors are also available. A selection of these products are shown below.



ORDERING INFORMATION

Please state the code numbers shown in bold type e.g. **PV 411A - P**.

Continuing development sometimes necessitates specification changes without notice.