

pressure

# JOFRA<sup>®</sup>

## calibration

### » Pressure ranges

Up to 1,000 bar / 14,500 psi  
Also vacuum and absolute ranges

### » High accuracy

Down to +/- 0,020% F.S., full temperature compensation 0 to 50°C

### » Large color display

High resolution TFT color display, great overview and easy to read

### » Measuring

Measure pressure, voltage and current, and supplies 24VDC as source for transmitters

### » Pressure units

15 different pressure units available, one additional pressure unit can be defined

### » Selectable language user-interface

Choose between English, German, Italian, French and Spanish

### » Easy pressure switch test

Automatically records opening and closing point values on the display

### » External reference sensors

10 reference sensors of different pressure ranges can be used with the same DPC-501 calibrator

### » Documentation made easy

JOFRACAL calibration software makes documentation easy

## Documenting Pressure Calibrator DPC-501



The DPC-501 is a user-friendly, accurate and compact solution for pressure comparison calibrations. The electronic pressure calibrator DPC-501 is used for high-precision calibration of pressure instruments, e.g. pressure gauges, pressure transmitter, digital manometer, pressure switches, overpressure protection valves, etc.

The DPC-501 measures pressure, voltage and current and supplies 24 VDC as source for transmitters. Calibration procedures can be predefined and used for calibrations on site. The DPC-501 is featured with USB and RS232 interfaces and is powered by a Lithium-Ion battery (rechargeable without memory-effect).

The built-in reference sensor is changeable, whereby several pressure ranges can be covered with one DPC-501 unit. All standard pressure ranges between vacuum and 1000 bar (14,500 psi) are available as well as vacuum and absolute pressure ranges.

In "measuring" operation, the DPC-501 displays simultaneous:

- Reference pressure
- Output of unit under test
- Deviation (in selected pressure unit)
- Deviation (in % of full scale or of reading of unit under test)

This means that it is very easy to check if the unit under test is within its specified accuracy class.

ISO 9001 Manufacturer

Specification Sheet  
SS-DPC-501

**AMETEK<sup>®</sup>**  
TEST & CALIBRATION INSTRUMENTS

**Display**

High resolution TFT color display great overview and easy to read

**Setup - menu**

Set-up menu for choosing measuring, calibration or switch-test operation mode. Selectable user-interface in 5 different languages

**Switch test**

Perform semi-automatic pressure switch tests. Check and adjust the switch point of pressure switches. Hysteresis is calculated and displayed on the screen

**Calibration**

Predefine calibration procedures and work with them. Upload calibration data to a PC using JOFRACAL calibration software



**Enter**

Confirms the numeric input

**Clear**

Deletes the numeric input

**1 step back**

**Measuring**

Measure pressure and calibrate without documentation

**Pressure connections**

Pressure ranges to 1000 bar (14,500 psi), vacuum and absolute ranges

## JOFRACAL CALIBRATION SOFTWARE

JOFRACAL calibration software ensures easy calibration of RTD's, thermocouples, transmitters, thermostats, pressure gauges and pressure switches. JOFRACAL can be used with all JOFRA calibration instruments. When used with ASM-800 signal multi scanner, JOFRACAL can perform a simultaneous semi automatic calibration on up to 24 pressure and/or temperature devices under test in any combination.

JOFRACAL software controls the complete calibration procedure, stores the results and provides a calibration audit trail through hard-copy certificates. All calibration data are stored for each sensor to monitor drift and optimise recalibration intervals. A scheduler feature allows planning of future calibrations.



Power supply 24 VDC for pressure transmitters (activated via menu)

Measuring Input (sockets 4 mm female)  
Voltage

Measuring Input (sockets 4 mm female)  
Current and Switch-test

Socket for battery charger (charging starts automatically when charger is connected)

Connection cable for DPC-J reference sensors



USB and RS232 interface for communication with a PC

## FUNCTIONAL SPECIFICATIONS

### Pressure range

The DPC-501 does all its reference measurements via the DPC-J reference sensors. It is therefore always delivered with one user-specified DPC-J reference sensor.

### Pressure accuracy

Pressure ranges from 2.5 to 250 bar (36 to 3,600 psi).....  
..... ±0.020% F.S.\*)

Both ranges included

Other pressure ranges ..... ±0.025% F.S.\*)

F.S. (full scale) is the numerical value of the pressure range or compound range. The accuracy includes non-linearity, hysteresis, repeatability and temperature effect 0 to 50°C / 32 to 122°F and one year typical drift.

### Temperature compensation

Full temperature compensation ..... 0 to 50°C / 32 to 122°F

### Engineering units (built-in)

User selectable ..... 15 units  
(bar, mbar, hPa, psi, inHg, cmHg, MPa, kPa, Pa, mH<sub>20</sub>, cmH<sub>20</sub>, mmH<sub>20</sub>, kg/cm<sub>2</sub>, inH<sub>20</sub>, mmHg and 1 user-defined

### Resolution

..... adjustable, max. six digits + prefix + decimal point

### Input / output

Measurement voltage..... 0-10 V, 0-5 V, 0-1 V

Resolution .....display x 0,1 mV, accuracy ±0.5 mV

Measurement current..... 0-20 mA, 4-20 mA

Resolution ..... display x 1 µA, accuracy ±1.6 µA

Voltage supply..... 24 VDC min. 20 mA, max. 50 mA

..... tolerance ±1V

### Pressure connection

..... 1/2" BSP male

### Operation conditions

0°C to 50°C ..... max. 80% r.h. non-cond.

During battery charging..... 0 to 45°C

### Storage:

-20°C to 60°C ..... max. 80% r.h. non-condensing

### Graphic display

Display type..... Color TFT  
Display resolution ..... up to 6 digits, user selectable

### Storage capacity

.....16 test devices each with 22 test points

### Power supply

Charging plug 9V/450 mA ±50 mA with metal protection cap

Battery ..... Lithium-Ion with intelligent charging electronics

Battery charger .....230 VAC 50/60 Hz (other on request)

Battery operational time .....8 hours

Low battery indicator.....icon on display

Protocol .....ASCII command language

Media compatibility .....All wetted parts are stainless steel

### Communication interface

USB ..... with metal protection cap

RS232 ..... with metal protection cap

Serial ..... 4800, 9600 or 11200 Baud, adjustable

Connectors..... Binder type 464

### Measurement plugs

4 mm safety plugs for..... current measurement 0/4-20 mA

voltage measurement 0-1/5/10 V, pressure switch

Transmitter supply..... 24 V / 50 mA

### Instrument dimensions

Calibrator W x H x D..... 12.5 x 21 x 8 cm

Weight ..... approx. 1.1 kg

## ACCESSORIES

### Complete aluminium carrying case

The DPC-501 is available as a calibrator alone or in one of six test-ready systems that are complete and equipped to meet all pressure calibration needs.

The complete ready-to-use system is delivered in a practical aluminium carrying case with space for the DPC-501, up to five reference sensors, set of cables, battery charger, pump, fittings etc.



## DPC-J PRESSURE RANGES

### Absolute sensors

| Pressure range bar | Pressure range psi | Type     | Part number |
|--------------------|--------------------|----------|-------------|
| 0 to 0.4 bar       | 0 to 6 psi         | absolute | DPCJA104    |
| 0 to 0.6 bar       | 0 to 9 psi         | absolute | DPCJA108    |
| 0 to 1 bar         | 0 to 14.5 psi      | absolute | DPCJA112    |
| 0 to 1.6 bar       | 0 to 32 psi        | absolute | DPCJA116    |
| 0 to 2.5 bar       | 0 to 36 psi        | absolute | DPCJA120    |
| 0 to 4 bar         | 0 to 58 psi        | absolute | DPCJA124    |
| 0 to 6 bar         | 0 to 87 psi        | absolute | DPCJA128    |
| 0 to 10 bar        | 0 to 145 psi       | absolute | DPCJA132    |
| 0 to 16 bar        | 0 to 230 psi       | absolute | DPCJA136    |

### Compound sensors

| Pressure range bar | Pressure range psi | Type     | Part number |
|--------------------|--------------------|----------|-------------|
| ± 0.25 bar         | ± 3.6 psi          | compound | DPCJC204    |
| ± 0.4 bar          | ± 6 psi            | compound | DPCJC208    |
| ± 0.6 bar          | ± 9 psi            | compound | DPCJC212    |
| -1 to 1.5 bar      | -14.5 to 22 psi    | compound | DPCJC216    |
| -1 to 3 bar        | -14.5 to 43 psi    | compound | DPCJC220    |
| -1 to 5 bar        | -14.5 to 72 psi    | compound | DPCJC224    |
| -1 to 9 bar        | -14.5 to 130 psi   | compound | DPCJC228    |
| -1 to 15 bar       | -14.5 to 220 psi   | compound | DPCJC232    |
| -1 to 20 bar       | -14.5 to 290 psi   | compound | DPCJC234    |
| -1 to 24 bar       | -14.5 to 350 psi   | compound | DPCJC236    |
| -1 to 39 bar       | -14.5 to 560 psi   | compound | DPCJC240    |

### Gauge sensors

| Pressure range bar | Pressure range psi | Type  | Part number |
|--------------------|--------------------|-------|-------------|
| 0 to 0.25 bar      | 0 to 3.6 psi       | gauge | DPCJG304    |
| 0 to 0.4 bar       | 0 to 6 psi         | gauge | DPCJG308    |
| 0 to 0.6 bar       | 0 to 9 psi         | gauge | DPCJG312    |
| 0 to 1 bar         | 0 to 15 psi        | gauge | DPCJG316    |
| 0 to 1.6 bar       | 0 to 32 psi        | gauge | DPCJG320    |
| 0 to 2.5 bar       | 0 to 36 psi        | gauge | DPCJG324    |
| 0 to 4 bar         | 0 to 58 psi        | gauge | DPCJG328    |
| 0 to 6 bar         | 0 to 87 psi        | gauge | DPCJG332    |
| 0 to 10 bar        | 0 to 145 psi       | gauge | DPCJG336    |
| 0 to 16 bar        | 0 to 230 psi       | gauge | DPCJG340    |
| 0 to 25 bar        | 0 to 360 psi       | gauge | DPCJG344    |
| 0 to 40 bar        | 0 to 580 psi       | gauge | DPCJG348    |
| 0 to 60 bar        | 0 to 870 psi       | gauge | DPCJG352    |
| 0 to 100 bar       | 0 to 1,450 psi     | gauge | DPCJG356    |
| 0 to 160 bar       | 0 to 2,300 psi     | gauge | DPCJG360    |
| 0 to 250 bar       | 0 to 3,600 psi     | gauge | DPCJG364    |
| 0 to 400 bar       | 0 to 5,800 psi     | gauge | DPCJG368    |
| 0 to 600 bar       | 0 to 8,700 psi     | gauge | DPCJG372    |
| 0 to 1000 bar      | 0 to 14,500 psi    | gauge | DPCJG376    |

### Vacuum sensors (bar)

| Pressure range bar | Pressure range psi | Type   | Part number |
|--------------------|--------------------|--------|-------------|
| -0.4 to 0 bar      | -6 to 0 psi        | vacuum | DPCJV404    |
| -0.6 to 0 bar      | -9 to 0 psi        | vacuum | DPCJV408    |
| -1 to 0 bar        | -14.5 to 0 psi     | vacuum | DPCJV412    |

## DPC-J REFERENCE SENSORS

The DPC-J series are high precision reference sensors with accuracies to ± 0,020% FS (0 to 50°C including non-linearity, hystereses and repeatability). The DPC-J reference sensors are compatible with the DPC-501 calibrator. The units are available in a series of ranges, units, and pressure references, from vacuum to absolute pressure, offering a lot of opportunities to the need of any pressure calibration.

The reference sensors are engineered for in-plant, field, or laboratory use. They are ready-to-use with the DPC-501 pressure calibrator as the protocol allows for immediate recognition and use of the module once it is plugged into the calibrator. Digital signal compensation and build in microprocessor ensures minimal drift over time in the temperature range from 0 to 50°C.

Up to 10 DPC-J sensors can be allocated to each DPC-501. When combined with the DPC-501 calibrator and pump systems these reference sensors make for a powerful arsenal of calibration tools.

Weight: .....300 g  
Wetted parts..... stainless steel, welded



### DPC-J STANDARD DELIVERY

- DPC-J reference sensors
- Communication cable to DPC-501
- Traceable calibration certificate

### DPC-J ORDERING INFORMATION

| Order No. | Description   |
|-----------|---|
| DPCJ      | Documenting reference sensor  |
| XXXX      | <b>Reference sensor</b><br>Last four digits of DPC-J reference sensor part number |
|           | Certificate   |
| F         | Traceable calibration certificate (standard)                                      |
| H         | Accredited calibration certificate  |

**DPCJC240F** **Sample order number**  
DPC-J reference sensor -1 to 39 bar with standard accessories and traceable calibration certificate

**DPC-501  
System A**

- 0 to 2 bar (0 to 30 psi)
- 0 to 40 bar (0 to 580 psi)



This system includes the DPC-501 calibrator together with one of the following pneumatic hand pumps: T-960 or T-970, depending on the chosen pressure range. System A is an easy-to-use, single-hand-operated calibration system. No need for a flat surface to operate the system - just hold it in your hand.

System A comes in an aluminium carrying case with cutouts for fittings, hose and the complete assembled calibration unit - no time is required to assemble the unit every time you need it. The calibrator can at any time be used separately for other pressure test tasks.

A special quick connector between the pump and the calibrator makes it possible to separate the system in seconds and to swivel the calibrator for easy viewing.

**T-960 and T-970 pumps for system A**

Model T-960 pneumatic pressure pump features an extended range vernier adjustment for precisely controlling pump pressure and comfortable pistol grip handle.

Model T-970 pneumatic pressure pump is similar to the T-960, but generate pressure up to 40 bar (580 psi).

Pressure range, T-960 ..... 0 to 2 bar / 0 to 30 psi  
 Pressure range, T-970.....0 to 40 bar / 0 to 580 psi  
 Type..... Pneumatic  
 Test medium..... Air  
 Operation .....Scissor  
 "O"-rings ..... Buna-N  
 Wetted parts..... Aluminium, brass, stainless, steel, nylon, Nylatron GS  
 Connection to test object ..... Hose 0.6 m / 24 in .....with 1/4" BSP and NPT female terminations  
 Size..... 21.6 x 12.1 x 6.2 cm / 8.5 x 4.8 x 2.4 in  
 Weight ..... 1.4 kg / 3.0 lb

**Included with System A delivery**

- Standard delivery (see page 12)
- Hand pump T-960 or T-970
- 3/8" BSP female adapter with 1/4" BSP and NPT female terminations
- 0.6 m / 24 in hose with 1/4" BSP and NPT female terminations
- Quick connector between pump and calibrator
- One roll of Teflon tape
- Extension cable 2 m between DPC-501 and DPC-J reference sensor
- Protective carrying case

**Accessories**

- Service kit for T-960 pump
- Service kit for T-970 pump
- Pressure hose for T-960/970, 0.6 m std.
- Pressure hose for T-960/970, 0.5 m
- Pressure hose for T-960/970, 1.0 m
- Pressure hose for T-960/970, 2.0 m
- Pressure hose for T-960/970, 5.0 m
- Set of BSP female fittings, teflon tape, packings  
 \* Fitting size : 1x1/8", 1x3/8", 1x1/2"
- Set of NPT female fittings, teflon tape, packings  
 \* Fitting size : 1x1/8", 1x1/4", 1x3/8" 1x1/2"
- Cable for RS232, DPC-501
- Cable for USB, DPC-501
- Set of five pcs of O-rings for DPC-J sensor
- Connecting cable 2 m for DPC-J and DPC-501
- Quick connector set for DPC-501 sys. A/B

**Ordering information System A**

| Order No.   | Description  |
|---|--|
| DPC   | DPC-501 pressure calibrator  |
| <b>Total number of reference sensors</b>                                |  |
| SX  | S1/S2/S3/S4/S5 (S2 = Two sensors)  |
| NONE  | Pump system only (no calibrator)   |
| <b>System</b>   |  |
| AXX   | DPC-501 System A (pump T-960)  |
| AHX   | DPC-501 System A (pump T-970)  |
| <b>Primary reference sensor to be mounted on the system at delivery</b> |  |
| XXXX  | Last four digits of DPC-J reference sensor part number found on page 5 (the additional reference sensors should be stated separately on the order) |
| <b>Certificate</b>  |  |
| F   | Traceable calibration certificate (std.)   |
| H   | Accredited calibration certificate   |

**DPCS2AXXG320F Sample order number**

JOFRA DPC-501 calibrator in pressure System AXX with pneumatic pressure hand pump, optional primary reference sensor 0 to 1.6 bar and one additional reference sensor, both with traceable calibration certificate.

**DPC-501  
System B**

- -0.91 bar (-13 psi) to 40 bar (580 psi)



This system includes the dual function pneumatic hand pump. With this pump you can calibrate both vacuum and pressure applications. It takes just a few seconds to switch between vacuum and pressure, just push one button (valve) on the T-965/T-975 handpump.

System B comes in an aluminium carrying case with cutouts for fittings, hose and the complete assembled calibration unit - no time is required to assemble the unit every time you need it.

The calibrator and the pump are fitted with a special quick connector that makes it possible to separate the system in seconds without any tool. This quick connector also makes it possible to use the assembled system with the calibrator twisted to any angle.

**T-965 and T-975 hand pumps for system B**

Model T-965 and T-975 pneumatic pressure pumps feature both vacuum and pressure generation. A quick switch (valve) makes it easy to switch from vacuum to pressure measurement. A built-in release valve, volume adjuster for fine adjustment and dual pressure output enable a safe and simple operation. The unit offers both metric and imperial threads on the reference connection and the hose.

Press. range, T-965.....-0.65 bar (-9.4 psi) to 2 bar (30 psi)  
 Press. range, T-975...-0.91 bar (-13 psi) to 40 bar (580 psi)  
 Type..... Pneumatic  
 Test medium..... Air  
 Operation..... Scissor  
 "O"-rings ..... Buna-N  
 Wetted parts.....Aluminum, brass, stainless steel, nylon, Nylatron GS  
 Connection to test object.....Hose 0.6 m/24 in with 1/4" BSP and NPT female terminations  
 Size..... 21.6x12.1x6.2 cm / 8.5x4.8x2.4 in  
 Total system weight .....5.5 kg / 12.2 lb

**Included with System B delivery**

- Standard delivery (see page 12)
- Hand pump T-965/T-975
- 3/8" BSP female adapter with 1/4" BSP and NPT female terminations
- 0.6 m / 24 in hose with 1/4" BSP and NPT female terminations
- One roll of Teflon tape
- Quick connector between pump and calibrator
- Extension cable 2 m between DPC-501 and DPC-J reference sensor
- Protective carrying case

**Accessories**

- Service kit for T-965/T-975 pump
- Pressure hose for T-965/T-975, 0.6 meter std.
- Pressure hose for T-965/T-975, 0.5 meter
- Pressure hose for T-965/T-975, 1.0 meter
- Pressure hose for T-965/T-975, 2.0 meter
- Pressure hose for T-965/T-975, 5.0 meter
- Set of BSP female fittings, teflon tape, packings  
 \* Fitting size : 1x1/8", 1x3/8", 1x1/2"
- Set of NPT female fittings, teflon tape, packings  
 \* Fitting size : 1x1/8", 1x1/4", 1x3/8" 1x1/2"
- Cable for RS232, DPC-501
- Cable for USB, DPC-501
- Set of 5 pcs of O-rings for DPCJ sensor
- Connecting cable 2 meters for DPCJ and DPC-501
- Quick connector set for DPC-501 system A/B

**Ordering information System B**

| Order No.   | Description  |
|---|--|
| DPC   | DPC-501 pressure calibrator  |
| <b>Total number of reference sensors</b>                                |  |
| SX  | S1/S2/S3/S4/S5 (S2 = Two sensors)  |
| NONE  | Pump system only (no calibrator)   |
| <b>System</b>   |  |
| BHX   | DPC-501 System BHX (pump T-965)  |
| BXX   | DPC-501 System BXX (pump T-975)  |
| <b>Primary reference sensor to be mounted on the system at delivery</b> |  |
| XXXX  | Last four digits of DPC-J reference sensor part number found on page 5 (additional reference sensors should be stated separately on the order) |
| <b>Certificate</b>  |  |
| F   | Traceable calibration certificate (std)  |
| H   | Accredited calibration certificate   |

**DPCS2BHXC236F Sample order number**

JOFRA DPC-501 calibrator in pressure System BHX kit with pneumatic combination handpump with optional primary reference sensor -1 to 24 bar and one additional reference sensor, both with traceable calibration certificate.

**DPC-501  
System C**

- 0 to 200 bar (3,000 psi)
- 0 to 350 bar (5,000 psi)



This system consists of an DPC-501 calibrator together with a hydraulic, high pressure hand pump T-620 or T-620H, which features an oil reservoir to prime the system.

System C is an easy-to-use, single-hand-operated calibration system. No need for a flat surface (table) to operate the system. The system includes release valve and vernier valve for fine adjustment to enable safe and simple operation of the pump.

System C comes in an aluminium carrying case with cutouts for fittings, hose, and the complete assembled calibration unit - no time is required to assemble the unit every time you need it. Easy and fast connection between pump and calibrator makes it easy to use the pressure calibrator separately for other pressure test tasks.

**AMETEK hydraulic hand pump**

This easy-to-use hand pump is specially designed for high pressure applications. The pump has a built-in reservoir, vent valve and vernier valve for fine adjustment. The pump has a dual pressure output - one for the test object and one for the calibrator.

|                                 |   |
|---------------------------------|---|
| Pressure range, T-620 .....     | 0 to 200 bar / 3,000 psi                  |
| Pressure range, T-620H.....     | 0 to 350 bar / 5,000 psi                  |
| Type.....                       | Hydraulic                                 |
| Test medium.....                | Oil                                       |
| Reservoir capacity .....        | 200 ml / 0.42 pint                        |
| Operation .....                 | Pistol-grip                               |
| “O”-rings .....                 | Buna-N                                    |
| Wetted parts.....               | Aluminum, brass, stainless steel, Lexan   |
| Connection to test object ..... | Hose 0.6 m / 24 in                        |
| .....                           | with 1/4” BSP and NPT female terminations |
| Size.....                       | 21.6 x 12.1 x 6.2 cm / 8.5 x 4.8 x 2.4 in |
| Weight .....                    | 1.4 kg / 3.0 lb                           |

**Included with System C delivery**

- Standard delivery (see page 12)
- Hand pump T-620 or T-620H
- 0.6 m (24 in) hose with 1/4” NPT female and 1/4” BSP terminations
- One roll of teflon tape
- Extension cable 2 m between DPC-501 and DPC-J reference sensor
- Protective carrying case

**Accessories**

- Service kit for T-620 and T-620H pumps
- Pressure hose for T-620/T-620H pumps
- 1 m hose with 1/4” BSP female termination  
Max. pressure 350 bar (5,000 psi)
- 2 m hose with 1/4” BSP female termination  
Max. pressure 350 bar (5,000 psi)
- Cable for RS232, DPC-501
- Cable for USB, DPC-501
- Set of five pcs of O-rings for DPC-J sensor
- Connecting cable 2 m for DPC-J and DPC-501
- Oil for T-620 & T-1 pump AAA OIL in 1 gal can
- Oil for T-620 & T-1 pump AAA OIL in 1 qt can

**Ordering information System C**

| Order No.   | Description  |
|---|--|
| DPC   | DPC-501 pressure calibrator  |
| <b>Total number of reference sensors</b>                                |  |
| SX  | S1/S2/S3/S4/S5 (S2 = two sensors)  |
| NONE  | Pump system only (no calibrator)   |
| <b>System</b>   |  |
| CXX   | DPC-501 System C (pump T-620)  |
| CHX   | DPC-501 System C (pump T-620H)   |
| <b>Primary reference sensor to be mounted on the system at delivery</b> |  |
| XXXX  | Last four digits of DPC-J reference sensor part number found on page 5 (additional reference sensors should be stated separately on the order) |
| <b>Certificate</b>  |  |
| F   | Traceable calibration certificate (std)  |
| H   | Accredited calibration certificate   |

**DPCS2CXXG360F Sample order number**

JOFRA DPC-501 calibrator in pressure System C with hydraulic pressure hand pump, optional primary reference sensor 0 to 160 bar and one additional reference sensor, both with traceable calibration certificate.

**DPC-501  
System D**

- 0 to 350 bar (5,000 psi)



This system consists of an DPC-501 calibrator with a rugged, hydraulic, high pressure screw pump.

System D is an easy-to-use calibration system. Place the pump on a flat surface and turn the handle to generate pressure. You can adjust the calibrator to fit the best viewing angle. The system includes a manifold for connection of the test device, a fine adjustment vernier valve (optional) and a reservoir for extra oil or water (optional).

System D comes in an aluminium carrying case with cut-outs for fittings and the complete assembled calibration unit - no time is required to assemble the unit every time you need it. Easy and fast connection between pump and calibrator makes it easy to use the pressure calibrator separately for other pressure test tasks screw pump.

**AMETEK screw pump**

The 65-P016 and 65-P017 screw pump are designed for very easy generation of high pressure. Screw pumps have a 4-connection manifold. Fine adjustment, vernier valve, liquid reservoir and fittings are optional. The AMETEK screw pump may be delivered for two different test media: hydraulic oil or water.

|                                  |   |
|----------------------------------|---|
| Pressure range.....              | 350 bar / 0 to 5,000 psi                    |
| Type.....                        | Hydraulic                                   |
| Test media.....                  | Hydraulic oil, water                        |
| Reservoir capability.....        | 250 ml / 0.53 pint                          |
| Operation .....                  | Screw pump                                  |
| "O"-rings .....                  | Buna-N                                      |
| Wetted parts.....                | Aluminum, brass, stainless steel            |
| Connections to test objects..... | 4 x 1/4" BSP female                         |
| Size.....                        | 36.6 x 19.5 x 10.5 cm / 14.4 x 7.7 x 4.1 in |
| Weight .....                     | 3.7 kg / 8.2 lb                             |

**Included with System D delivery**

- Standard delivery (see page 12)
- Screw pump 65-P016 for hydraulic oil or 65-P017 for water
- One roll of Teflon tape
- 10 bonded seals
- 6 mm Allen key
- Protective carrying case

**Accessories**

- Reservoir set with seals, valve and bonded seal
- Valve for oil reservoir
- 1 m Pressure hose, (Max. 350 bar / 5,000 psi) \*
- 2 m Pressure hose, (Max. 350 bar / 5,000 psi) \*
- 1.5 m Pressure hose, (Max. 700 bar/10,000 psi) \*
- 5 m Pressure hose, (Max. 700 bar / 10,000 psi) \*
- Extension tube, 120 mm (Max. 350 bar / 5,000 psi) \*  
\* 1/4" BSP female to 1/4" BSP male
- Cable for RS232, DPC-501
- Cable for USB, DPC-501
- Set of five pcs of O-rings for DPC-J sensor
- Connecting cable 2 m for DPC-J and DPC-501
- Quick connector set, female 1/4" BSP to 1/4" BSP

**Ordering information System D**

| Order No.   | Description  |
|---|--|
| DPC   | DPC-501 pressure calibrator  |
| <b>Total number of reference sensors</b>                                |  |
| SX  | S1/S2/S3/S4/S5 (S2 = two sensors)  |
| NONE  | Pump system only (no calibrator)   |
| <b>System</b>   |  |
| DOX   | DPC-501 System D (pump 65-P016)  |
| DWX   | DPC-501 System D (pump 65-P017)  |
| <b>Primary reference sensor to be mounted on the system at delivery</b> |  |
| XXXX  | Last four digits of DPC-J reference sensor part number found on page 5 (additional reference sensors should be stated separately on the order) |
| <b>Certificate</b>  |  |
| F   | Traceable calibration certificate (std)  |
| H   | Accredited calibration certificate   |

**DPCS2DOXG364F Sample order number**

JOFRA DPC-501 calibrator in pressure System D with hydraulic oil screw pump with optional primary reference sensor 0 to 250 bar and one additional reference sensor, both with traceable calibration certificate.

**DPC-501  
System E**

- 0 to 700 bar (10,000 psi)



This system consists of an DPC-501 calibrator together with a rugged, hydraulic, high pressure pump.

System E is an easy-to-use calibration system. The hydraulic pump makes it very easy to prime the system. You can adjust the calibrator to fit the best viewing angle. The system includes a manifold for connection of two test devices and the fine adjustment vernier valve is standard.

System E comes in an aluminium carrying case with cut-outs for fittings and the complete assembled calibration unit - no time is required to assemble the unit every time you need it. Easy and fast connection between pump and calibrator makes it easy to use the pressure calibrator separately for other pressure test tasks.

**AMETEK high pressure hydraulic oil pump**

The 65-P014 hydraulic pump is designed for high pressure applications. The pump has a 4-connection output manifold. Fine adjustment vernier valve and fittings are optional.

|                                  |   |
|----------------------------------|---|
| Pressure range.....              | 0 to 700 bar / 10,000 psi                   |
| Type.....                        | Hydraulic                                   |
| Test media.....                  | Oil   |
| Reservoir capability.....        | 500 ml / 1 pint                             |
| Operation .....                  | Jack pump                                   |
| "O"-rings .....                  | Buna-N                                      |
| Wetted parts.....                | Aluminum, brass, stainless steel            |
| Connections to test objects..... | 4 x 1/4" BSP female                         |
| Size.....                        | 36.5 x 20.0 x 14.2 cm / 14.4 x 7.9 x 5,6 in |
| Weight .....                     | 5.3 kg / 11.6 lbs                           |

**Included with System E delivery**

- Standard delivery (see page 12)
- Hydraulic pump 65-P014 for hydraulic oil
- One roll of Teflon tape
- 10 bonded seals
- 6 mm Allen key
- Protective carrying case
- Vernier valve for fine adjustment

**Accessories**

- Vernier valve for fine adjustment
- 1.5 m Pressure hose, (Max. 700 bar/10,000 psi)\*
- 5 m Pressure hose, (Max. 700 bar / 10,000 psi) \*  
\* 1/4" BSP female to 1/4" BSP male
- Cable for RS232, DPC-501
- Cable for USB, DPC-501
- Set of five pcs of O-rings for DPC-J sensor
- Connecting cable 2 m for DPC-J and DPC-501
- Quick connector set, female 1/4"BSP to 1/4"BSP

**Ordering information System E**

| Order No.   | Description  |
|---|--|
| DPC   | DPC-501 pressure calibrator  |
| <b>Total number of reference sensors</b>                                |  |
| SX  | S1/S2/S3/S4/S5 (S2 = two sensors)  |
| NONE  | Pump system only (no calibrator)   |
| <b>System</b>   |  |
| EXX   | DPC-501 System E (pump 65-P014)  |
| <b>Primary reference sensor to be mounted on the system at delivery</b> |  |
| XXXX  | Last four digits of DPC-J reference sensor part number found on page 5 (additional reference sensors should be stated separately on the order) |
| <b>Certificate</b>  |  |
| F   | Traceable calibration certificate (std)  |
| H   | Accredited calibration certificate   |

**DPCS2EXXG372F Sample order number**

JOFRA DPC-501 calibrator in pressure System E with high pressure pump for hydraulic oil with optional primary reference sensor 0 to 600 bar and one additional reference sensor, both with traceable calibration certificate.

**DPC-501  
System F**

- 0 to 1,000 bar (14,500 psi)



System F is an easy-to-use calibration system. The hydraulic pump makes it very easy to prime the system. The pump contains 75 in<sup>3</sup> / 1.23 l of liquid.

The system includes a manifold for connection of two test devices and the fine adjustment vernier valve is standard. System F comes in a aluminium carrying case with cut-outs for fittings. Easy and fast connection between pump and calibrator makes it easy to use the pressure calibrator separately for other pressure test tasks.

**AMETEK Type T hydraulic oil or water pump**

The Type T pump is designed for high pressure applications up to 15,000 psi (1,000 bar).

The pump and system may be ordered with either oil or a water/alcohol mixture as the pressure medium. The pump is constructed of 300 series stainless steel and Monel allowing for the use of other hydraulic media. There are three available seal packages for the system: Buna-N, Viton®, and EPT. <sup>1)</sup>

The Type T pump features a dual pressure output manifold, fine adjustment vernier valve, relief valve, and dual volume control for rapid pressure increase at lower pressures and easier pumping at higher pressures.

Pressure range..... 0 to 1,000 bar / 14,500 psi  
 Type.....Hydraulic  
 Test media..... Hydraulic oil, water  
 Reservoir capacity ..... 1.23 l / 75 in<sup>3</sup>  
 Operation ..... Jack pump  
 "O"-rings .....Buna-N (standard) or EPT / Viton (optional)  
 Wetted part..... Stainless steel, Monel  
 Connections to test objects..... 1/4" and 1/2" BSP terminations; 1/4" and 1/2" PT female terminations  
 Size..... 79.4 x 22.9 x 50.8 cm / 31.3 x 9 x 20 in  
 Weight .....9.1 kg / 20 lbs

<sup>1)</sup> Customer must verify compatibility of seals and pump materials with pressure medium. Viton is a registered trademark.

**Included with System F delivery**

- Standard delivery (see page 12)
- Type T Hydraulic pump
- Allen key 6 mm
- One roll of teflon tape
- Protective carrying case

**Accessories**

- Service kit for T pump with Buna N O-rings
- Service kit for T pump with VITON N O-rings
- Service kit for T pump with EPT N O-rings
- 1.5 m Pressure hose, (Max. 700 bar/10,000 psi)\*
- 5 m Pressure hose, (Max. 700 bar / 10,000 psi)\*  
 \* 1/4" BSP female to 1/4" BSP male
- Cable for RS232, DPC-501
- Cable for USB, DPC-501
- Set of five pcs of O-rings for DPC-J sensor
- Connecting cable 2 m for DPC-J and DPC-501
- Oil for T-620 & T-1 pump AAA OIL in 1 gal can
- Oil for T-620 & T-1 pump AAA OIL in 1 qt can

**Ordering information System F**

| Order No.   | Description  |
|---|--|
| DPC   | DPC-501 pressure calibrator  |
| <b>Total number of reference sensors</b>                                |  |
| SX  | S1/S2/S3/S4/S5 (S2 = two sensors)  |
| NONE  | Pump system only (no calibrator)   |
| <b>System</b>   |  |
| FWB   | DPC-501 System F (pump T-1)  |
| FWV   | DPC-501 System F (pump T-1/VITON)  |
| FWE   | DPC-501 System F (pump T-1/EPT)  |
| FOB   | DPC-501 System F (pump T-1/OIL)  |
| FOV   | DPC-501 System F (pump T-1/OIL/VITON)  |
| FOE   | DPC-501 System F (pump T-1/OIL/EPT)  |
| <b>Primary reference sensor to be mounted on the system at delivery</b> |  |
| XXXX  | Last four digits of DPC-J reference sensor part number found on page 5 (additional reference sensors should be stated separately on the order) |
| <b>Certificate</b>  |  |
| F   | Traceable calibration certificate (std)  |
| H   | Accredited calibration certificate   |

**DPCS2FOEG376F Sample order number**

JOFRA DPC-501 calibrator in pressure System F with Type T pump for oil, with optional primary reference sensor 0 to 1,000 bar and one additional reference sensor, both with traceable calibration certificate.

## ORDERING INFORMATION

| Order No. | Description   |
|-----------|---|
| DPC       | <b>Pressure calibrator</b><br>DPC-501 Pressure Calibrator   |
| SX        | <b>Total number of reference sensors</b><br>S1/S2/S3/S4/S5 (S2 = two sensors)   |
| IND       | <b>Base model number</b><br>DPC-501 calibrator with standard accessories  |
| XXXX      | <b>Primary reference sensor to be mounted on the system at delivery</b><br>Last four digits of DPC-J reference sensor part number found on page 5 (additional reference sensors should be stated separately on the order) |
| F<br>H    | <b>Certification</b><br>Traceable calibration certificate (std.)<br>Accredited calibration certificate  |

### DPCS2INDC240A136F Sample order number

JOFRA DPC-501 with standard accessories, optional primary reference sensor -1 to 39 bar and one additional reference sensor 0 to 16 bar both with traceable calibration certificate.

## STANDARD DELIVERY

- DPC-501 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads: red and black
- Connection cable for RS232
- JOFRACAL calibration software
- DPC-CAL Windows software
- One DPC-J reference sensor (user specified)



### AMETEK Test & Calibration Instruments

A business unit of AMETEK Measurement & Calibration Technologies Division offering the following industry leading brands for test and calibration instrumentation.

### JOFRA Calibration Instruments

#### Temperature Calibrators

Portable dry-block calibrators, precision thermometers and liquid baths. Temperature ranges from -90°C (-130°F) to 1205°C (2200°F). Temperature sensors for industrial and marine use.

#### Pressure Calibrators

Convenient electronic systems ranging from -25 mbar to 1000 bar - fully temperature-compensated for problem-free and accurate field use.

#### Signal Instruments

Process signal measurement and simulation for easy control loop calibration and measurement tasks.

### M&G Pressure Testers & Pumps

Pneumatic floating-ball or hydraulic piston dead weight testers with accuracies to 0.015% of reading. Pressure generators delivering up to 1,000 bar.

### Lloyd Instruments

Materials testing machines and software from Lloyd Instruments guarantees expert materials testing solutions. The comprehensive program also covers Texture Analysers to perform rapid, general food testing and detailed texture analysis on a diverse range of foods and cosmetics.

### Davenport Polymer Test Equipment

Allows measurement and characterization of moisture-sensitive PET polymers and polymer density.

### Chatillon Force Measurement

The hand held force gauges and motorized testers have earned their reputation for quality, reliability and accuracy and they represent the de facto standard for force measurement.

### Newage Testing Instruments

Hardness testers, durometers, optical systems and software for data acquisition and analysis.

**AMETEK®**  
TEST & CALIBRATION INSTRUMENTS

**UK**  
AMETEK Calibration Instruments  
Tel +44 (0)1243 833 302  
jofra@ametek.co.uk

**France**  
AMETEK S.A.S.  
Tel +33 (0)1 30 68 89 40  
general.lloyd-instruments@ametek.fr

**Germany**  
AMETEK GmbH  
Tel +49 (0)2159 9136 510  
info.mct-de@ametek.de

**Denmark**  
AMETEK Denmark  
Tel +45 4816 8000  
jofra@ametek.com

**USA**  
AMETEK Mansfield & Green  
Tel +1 (800) 527 9999  
cal.info@ametek.com

**India**  
AMETEK Instruments India Pvt Ltd.  
Tel +91 22 2836 4750  
jofra@ametek.com

**Singapore**  
AMETEK Singapore Pte Ltd  
Tel +65 6484 2388  
jofra@ametek.com

**China**  
AMETEK Inc. - Shanghai  
Tel +86 21 5868 5111  
AMETEK Inc. - Beijing  
Tel +86 10 8526 2111

AMETEK Inc. - Guangzhou  
Tel +86 20 8363 4768  
jofra.sales@ametek.com.cn

Information in this document is subject to change without notice. ©2012, by AMETEK, Inc., www.ametek.com. All rights reserved.

[www.jofra.com](http://www.jofra.com)