

## pressure



### Pressure ranges

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

### High accuracy

$\pm 0.025\%$  F.S. for all pressure ranges

### Ideal for on-site use

Calibration procedures may be pre-defined and used for calibrations on-site

### 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 user-interface

### Easy pressure switch test

Automatically records opening and closing point values on the display

### External Reference sensors

5 different reference sensors of different pressure ranges used with the same DPC-500 calibrator

### Documentation made easy

RS232 communication, USB interface and calibration software makes documentation easy

ISO 9001 Manufacturer

# JOFRA™ DPC-500

## Documenting

## Pressure

## Calibrator

**Portable like a handheld instrument and efficient like a laboratory instrument**

The DPC-500 is a very user-friendly, accurate and compact solution for pressure comparison calibrations. The electronic pressure calibrator DPC-500 is used for high precision calibration of pressure instruments, e.g. pressure gauges, pressure transmitter, digital manometer, pressure switches, overpressure protection valves, etc.



### PRODUCT DESCRIPTION

The JOFRA DPC calibrator is the latest in the new generation of AMETEK handheld pressure calibrators.

The electronic pressure calibrator DPC-500 measures pressure, voltage and current and supplies 24 VDC as source for transmitters. Calibration procedures can be pre-defined and used for calibrations on site. The DPC-500 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-500 unit. All standard pressure ranges between vacuum and 1000 bar (0-14,500 psi) are available as well as vacuum and absolute pressure ranges.

In "measuring" operation, the DPC-500 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 it's specified accuracy class.

**AMETEK®**  
CALIBRATION INSTRUMENTS

**JOFRA DPC-500 INDICATOR**

**JOFRA DPC-J reference sensors**

The JOFRA DPC-J external reference sensors extend the range of the DPC-500, as several reference sensors are available with gauge, absolute and vacuum pressure references and in metric and imperial engineering units.

An extension cable between DPC-500 and DPC-J reference sensor adds further flexibility to the calibration setup.



**Display**

Large illuminated display, lithium-ion battery powered. Icons show current status and mode, and the smaller digits show device-under-test conditions.

**Setup - menu**

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

**SWITCH TEST**

Perform semi-automatic pressure switch tests. Check and adjust switch point of pressure swithes. Hysteresis is calculated and displayed on the DPC-500 screen.

**Calibration**

Pre-define calibration procedures and work with them. Upload of calibration data to PC is possible with the software DPC-CAL

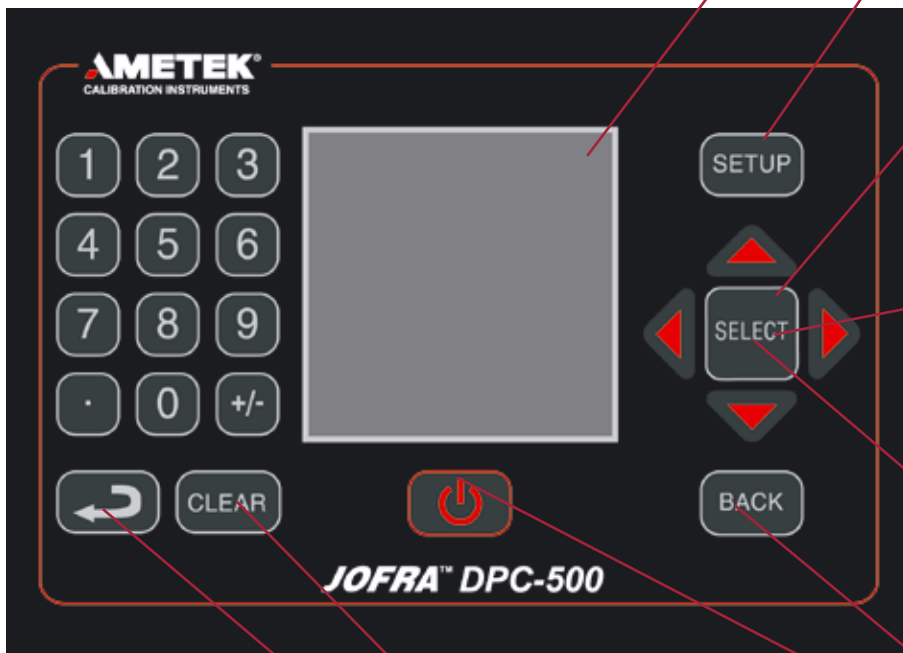
**Measuring**

DPC-500 as pressure indicator - measure pressure and calibrate without documenta-tion

**1 step back**

**ON / OFF**

Auto shut-off to extend battery life (user programmable).



**Pressure connections**

Pressure ranges 0 bar to 1000 bar (4 psi to 14,500 psi), and vacuum & absolute ranges

**Clear**

Deletes the numeric input

**Enter**

Confirms the numeric input

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

Measuring Input (Sockets 4 mm female) Voltage

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

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

Connection cable for reference sensors



USB and RS232 interface for communication with a PC.

Using the DPC-CAL software makes it possible to upload calibration data, and write out calibration certificates traceable to national standards JOFRACAL calibration software will be delivered from Q1 2007

## STANDARD DELIVERY

- DPC-500 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads
- Connection cable for USB
- DPC-CAL calibration software
- JOFRACAL calibration software (delivered from Q1 2007)
- 1 x DPC-J reference sensor (user specified)

### Complete aluminum carrying case

The DPC-500 is available as an indicator or in one of 6 test-ready systems that are complete and equipped to meet your pressure calibration needs.

The complete ready-to-use system is delivered in a practical aluminum carrying case with space for the DPC-500, up to 5 reference sensors, set of cables, battery charger, pump, fittings etc.



### DPC-CAL software

DPC-CAL software package is a simple "transfer" software for Microsoft Excel 2000, XP and 2003.

Using DPC-CAL makes it possible to transfer calibration data from the JOFRA DPC-500, and import them into predefined Excel worksheets, including predefined certificate print out.

### Specifications DPC-CAL software

Hardware requirements for DPC-CAL calibration software.

- Windows-PC (Win 98SE, 2000/SP4, XP)
- SVGA color monitor
- COM- or USB port
- Microsoft-Excel Vers. 2000, XP or 2003

### JOFRACAL pressure calibration documentation

The DPC-500 features an RS232 serial data communication interface. This allows the instrument to be serially connected to a personal computer for data storage and reporting.

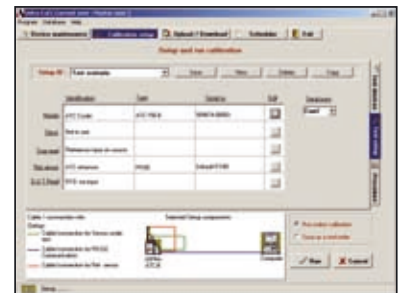
The JOFRACAL calibration software supports automatic calibration for all JOFRA dry-block calibrators equipped with an RS232 serial data interface including the JOFRA DT1050 digital thermometer, the JOFRA DTI-1000 digital thermometer and the JOFRA ASM Multi-scanner.

Now the JOFRACAL will also support pressure calibration with the DPC-500.

Using the software's "SCENARIO" function allows for combining instruments in virtually any configuration, including using the DPC-500 as an input module for the sensor-under-test.

JOFRACAL calibration software is menu-driven and easy to use, with a complete software controlled calibration procedure, which saves time. This software allows the user to customize his or her calibration routines. The software is easy-to-use so you do not have to be a programmer to configure your own calibration procedures. The software features prompts, menus, and help functions that guide you through the configuration process. Once all calibrations are completed, the JOFRACAL calibration software can be used for post-processing and printing of certificates. The calibration data collected may be stored in the personal computer for later recall or analysis.

Please see more about JOFRACAL temperature calibration software in specification sheet SS-CP-2510, which can also be found at [www.jofra.com](http://www.jofra.com)



Delivered from  
Q1 2007

### Specifications JOFRACAL software

Minimum hardware requirements:

- INTEL™ 486 processor  
(PENTIUM™ 800 MHz recommended)
- 32 MB RAM (64 MB recommended)
- 80 MB free disk space on hard disk prior to installation
- Standard VGA (800 x 600, 16 colors) compatible screen (1024 x 786, 256 colors recommended)
- CD-ROM drive for installation of the program
- 1 free RS232 serial port

## DPC-500 INDICATOR SPECIFICATIONS

### Pressure range

The DPC-500 do all it's reference measurements via the DPC-J reference sensors. It is therefore always delivered with 1 user-specified DPC-J reference sensor from vacuum to 1000 bar F.S.

### Pressure accuracy

Pressure accuracy: ..... ±0.025% FSO \*)  
 \*) calibrated at +23°C, incl. linearity, hysteresis and repeatability

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

### 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, mH2O, cmH2O, mmH2O, kg/cm 2, inH2O, mmHg and 1 user-defined)

### Resolution

.....adjustable, max. 6 digits +prefix +decimal point

### Input / output

Measurement voltage..... 0-10 V, 0-5 V, 0-2 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

Size..... 44.7 x 44.7 mm  
 Pixel..... 128 x 128p  
 Display resolution ..... up to 6 digits, user selectable

### Storage capacity

..... 16 units under test, each 32 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 life (unplugged).....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 standard plugs for ..... current measurement 0/4-20 mA  
 .....voltage measurement 0-1/2/5/10 V  
 ..... pressure switch  
 Voltage supply..... 24 V / 50 mA

### Instrument dimensions

Indicator W x H x D ..... 12.5 x 21 x 8 cm  
 Weight ..... appr. 1.1 kg

## ORDERING - DPC INDICATOR

Order No.	Description
DPC	<b>Pressure calibrator</b> DPC Pressure Calibrator
SX	<b>Total number of reference sensors</b> S1 / S2 / S3 / S4 / S5 (S2 = Two sensors)
IND	<b>Base model number</b> DPC-500 indicator with standard accessories
XXXX	<b>Primary reference sensor, which should be mounted on the system at delivery</b> Last four digits of DPC-J reference sensor partnumber found at page 5 (the additional reference sensors should be stated separately at the order)
F	<b>Certification</b> Traceable calibration certificate (std.)
H	Accredited calibration certificate
DPCS2INDC240F	<b>Sample order number</b> JOFRA DPC-500 with standard accessories, optional primary reference sensor -1 to 39 bar, two additional reference sensors and traceable calibration certificate.



### DPC-J PRESSURE RANGES

This table shows the resolutions that can be obtained by the DPC-500 indicators throughout all engineering units.

#### Absolute sensors (bar)

Pressure range	Type	Over pressure	Burst pressure	Partnumber
0 to 0,4	absolute	2	2,4	DPCJA104
0 to 0,6	absolute	4	4,8	DPCJA108
0 to 1	absolute	5	6	DPCJA112
0 to 1,6	absolute	10	12	DPCJA116
0 to 2,5	absolute	10	12	DPCJA120
0 to 4	absolute	17	20,5	DPCJA124
0 to 6	absolute	35	40	DPCJA128
0 to 10	absolute	35	42	DPCJA132
0 to 16	absolute	80	96	DPCJA136

#### Compound sensors (bar)

Pressure range	Type	Over pressure	Burst pressure	Partnumber
-0,25 to 0,25	compound	2	2,4	DPCJC204
-0,4 to 0,4	compound	4	4,8	DPCJC208
-0,6 to 0,6	compound	10	12	DPCJC212
-1 to 1,5	compound	10	12	DPCJC216
-1 to 3	compound	17	20,5	DPCJC220
-1 to 5	compound	35	42	DPCJC224
-1 to 9	compound	35	42	DPCJC228
-1 to 15	compound	80	96	DPCJC232
-1 to 24	compound	80	96	DPCJC236
-1 to 39	compound	80	96	DPCJC240

#### Gauge sensors (bar)

Pressure range	Type	Over pressure	Burst pressure	Partnumber
0 to 0,25	gauge	1,6	2,4	DPCJG304
0 to 0,4	gauge	2	2,4	DPCJG308
0 to 0,6	gauge	4	4,8	DPCJG312
0 to 1	gauge	5	6	DPCJG316
0 to 1,6	gauge	10	12	DPCJG320
0 to 2,5	gauge	10	12	DPCJG324
0 to 4	gauge	17	20,5	DPCJG328
0 to 6	gauge	35	40	DPCJG332
0 to 10	gauge	35	42	DPCJG336
0 to 16	gauge	80	96	DPCJG340
0 to 25	gauge	80	96	DPCJG344
0 to 40	gauge	80	96	DPCJG348
0 to 60	gauge	120	550	DPCJG352
0 to 100	gauge	200	800	DPCJG356
0 to 160	gauge	320	1000	DPCJG360
0 to 250	gauge	500	1200	DPCJG364
0 to 400	gauge	800	1700	DPCJG368
0 to 600	gauge	1200	2400	DPCJG372
0 to 1000	gauge	1500	3000	DPCJG376

#### Vacuum sensors (bar)

Pressure range	Type	Over pressure	Burst pressure	Partnumber
-0,4 to 0	vacuum	2	2,4	DPCJV404
-0,6 to 0	vacuum	4	4,8	DPCJV408
-1 to 0	vacuum	5	6	DPCJV412

### DPC-J REFERENCE SENSORS

The JOFRA DPC-J series are high precision reference sensors with accuracies to  $\pm 0,025\%$  FS (0 to 50 °C including non-linearity, hystereses and repeatability).

The DPC-J reference sensors are compatible with your DPC-500 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 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 5 DPC-J sensors can be allocated to each JOFRA DPC-500. When combined with the DPC 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 senore
- Communication cable to DPC-500
- Traceable Calibration Certificate

### DPC-J ORDERING INFORMATION

Order No.	Description
DPCJ	<b>Module</b> Documenting Reference sensor
XXXX	<b>Reference sensor</b> Last four digits of DPC-J reference sensor partnumber (find the partnumber at page 5)
F	<b>Certificate</b> Traceable calibration certificate (standard)
H	Accredited calibration certificate
<b>DPCJC240F</b>	<b>Sample order number</b> JOFRA DPC-J reference sensor -1 to 39 bar with standard accessories and traceable calibration certificate

# JOFRA™ DPC Series

## Advanced Pressure Calibration System A

- 0 to 2 bar (0 to 30 psi)
- 0 to 21 bar (0 to 300 psi)
- Vacuum to 0 bar (0 psi)

This system includes the JOFRA DPC calibrator together with one of the following pneumatic hand pumps: T-730, T-740 or T-750, 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.

The System A comes in an aluminum 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 (indicator) can at any time be used separately for other pressure test tasks. A special quick connector between the pump and the indicator makes it possible to separate the system in seconds and to swivel the indicator for easy viewing.



### Standard delivery:

#### DPC calibrator (indicator):

- DPC-500 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads
- Connection cable for USB
- DPC-CAL calibration software
- JOFRACAL calibration software (delivered from Q1 2007)
- 1 x DPC-J reference sensor (user specified)

#### Also included with System A delivery:

- Base model AXX: Pump T-730 (0 - 2 bar / 30 psi or 15 bar / 200 psi)
- Base model AHX: Pump T-740 (0 to 15 bar / 200 psi)
- Base model AVX: Pump T-750 (vacuum to 0 bar / 0 psi)
- Hose 24 in / 0.6 m with 1/4" BSP and NPT female connector
- 1 roll of teflon tape
- Extension cable 2 m between DPC-500 and DPC-J reference sensor
- Aluminum carrying case

### Accessories

#### Part No. Description

Recommended fitting set for the system - to interface your device-under-test with the test hose:

65R191	Fitting set BSP female: 1x1/8" 1x3/8" 1x1/2" teflon tape and packings (60R191)
65R192	Fitting set NPT female: 1x1/8" 1x1/4" 1x3/8" 1x1/2" teflon tape and packings (60R191)
60R191	Set of rubber packings for 65R191 and 65R192
T-746	Service kit for T-730 and T-740
T-747	Service kit for T-750 pump
126086	Connection cable for RS232

### T-700 series hand pumps

This hand pump is used in the DPC System A. Three pump models are available, each covering a specific pressure range.

The pump features a built-in vent valve, a vernier valve for fine adjustment, and dual pressure output. There is an easy connection between the pump and the calibrator.



Pressure range, T-730.....	0 to 2 bar / 0 to 30 psi
Pressure range, T-740.....	0 to 21 bar / 0 to 300 psi
Pressure range, T-750.....	-0.850 to 0 bar / -25 to 0 inHg
Test medium.....	Air
Wetted parts: Aluminum, brass, stainless, .....	steel, nylon, Nylatron GS
Connections to test object ....	0.6 m / 24 in hose with 1/4" BSP .....and NPT female terminations

#### Part No. Description

T-730	Pump: 0 to 2 bar (0 to 30 psi)
T-740	Pump: 0 to 21 bar (0 to 300 psi)
T-750	Pump: -0.850 to 0 bar (-25 to 0 inHg)

### Ordering information System A

Order No.	Description
DPC	Pressure calibrator DPC pressure calibrator
<b>Total number of reference sensors</b>	
SX	S1 / S2 / S3 / S4 / S5 (S2 = Two sensors)
<b>System</b>	
AXX	DPC system A (pump T-730)
AHX	DPC system A (pump T-740)
AVX	DPC system A (pump T-750)
<b>Primary reference sensor, which should be mounted on the system at delivery</b>	
XXXX	Last four digits of DPC-J reference sensor partnumber found at page 5 (the additional reference sensors should be stated separately at the order)
<b>Certificate</b>	
F	Traceable calibration certificate (std.)
H	Accredited calibration certificate

#### DPCS2AXXG320F

#### Sample order number

JOFRA DPC-500 System A T-730 hand pump, with optional primary reference sensor 0 to 1,6 bar, two additional reference sensors and traceable calibration certificate.

# JOFRA™ DPC-500 Series

## Advanced Pressure Calibration System B

- Vacuum to 35 bar (500 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-930 handpump.

The System B comes in an aluminum carrying case with cutouts for fittings, hose and the complete assembled calibration unit - no time required to assemble the unit every time.

The indicator 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 indicator twisted to any angle.

### T-930 hand pump

The T-930 pump is an easy-to-use single hand-operated pneumatic pump. The T-930 pump features both vacuum and pressure generation up to 35 bar (500 psi).



One button (valve) makes it easy to switch from vacuum to pressure measurements. Built-in release valve, vernier valve for fine adjustment and dual pressure output enable safe and simple operation.

Pressure range.....-0.95 to 35 bar / -14 psi to 500 psi  
 Test medium..... Air  
 Wetted parts..... Anodized aluminum, nickel-plated brass, stainless steel, Nylon  
 Connections to test object: .... Hose 1 m / 40 in with 1/4" BSP and NPT female terminations

Part No.	Description
T-930	Pump: -0.95 to 35 bar / -28 inHg to 500 psi

### Standard delivery:

#### DPC-500 calibrator (indicator):

- DPC-500 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads
- Connection cable for USB
- DPC-CAL calibration software
- JOFRACAL calibration software (delivered from Q1 2007)
- 1 x DPC-J reference sensor (user specified)

#### Also included with System B delivery:

- Hand pump T-930 for all ranges
- Hose 1 m / 40 in with 1/4" BSP and NPT female connector
- Quick connector between pump and indicator
- 1 roll of teflon tape
- Extension cable 2 m between DPC-500 and DPC-J reference sensor
- Aluminum carrying case

### Ordering information DPC-500 System B

Order No.	Description
DPC	Pressure calibrator DPC-500 pressure calibrator
SX	<b>Total number of reference sensors</b> S1 / S2 / S3 / S4 / S5 (S2 = Two sensors)
BXX	<b>System</b> DPC-500 System B (pump T-930)
XXXX	<b>Primary reference sensor, which should be mounted on the system at delivery</b> Last four digits of DPC-J reference sensor partnumber found at page 5 (the additional reference sensors should be stated separately at the order)
F	<b>Certificate</b> Traceable calibration certificate (std)
H	Accredited calibration certificate

**DPCS2BXXC236F** **Sample order number**  
 JOFRA DPC-500 System B T-930 hand pump with optional primary reference sensor -1 to 24 bar, two additional reference sensors and traceable calibration certificate.

### Accessories

#### Part No. Description

Recommended fitting set 65R191 or 65R192 for the system - to interface your device-under-test with the test hose:

65R191	Fitting set BSP female: 1x1/8", 1x3/8", 1x1/2" teflon tape and packings (60R191)
65R192	Fitting set NPT female: 1x1/8", 1x1/4", 1x3/8" 1x1/2" teflon tape and packings (60R191)
60R191	Set of rubber packings for 65R191 and 65R192
75P013	Service kit for T-930 pump
126086	Connection cable for RS232

# JOFRA™ DPC-500 Series

## Advanced Pressure Calibration System C

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

This system consists of an DPC-500 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.

The System C comes in an aluminum carrying case with cut-outs for fittings, hose, and the complete assembled calibration unit - no time adder to assemble the unit every time. Easy and fast connection between pump and calibrator makes it easy to use the pressure indicator separately for other pressure test tasks.

### AMETEK hydraulic hand pump with oil reservoir

This easy-to-use hand pump is specially designed for high pressure applications. The pump is used in the DPC-500 system C.



The pump has a 0.5 pint / 200 cl built-in oil 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 DPC-500 calibrator.

Pressure range, T-620 ..... 0 to 200 bar / 3,000 psi  
 Pressure range, T-620H..... 0 to 350 bar / 5,000 psi  
 Test medium.....Hydraulic oil  
 Wetted parts.....Aluminum, brass, stainless steel, Lexan  
 Connection to test object: .... Hose 20 in / 0.5 m with 1/4" BSP  
 .....and NPT female terminations

### Part No. Description

T-620	Pump: 0 to 200 bar (3,000 psi)
T-620H	Pump: 0 to 350 bar (5,000 psi)

### Standard delivery:

#### DPC-500 calibrator (indicator):

- DPC-500 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads
- Connection cable for USB
- DPC-CAL calibration software
- JOFRACAL calibration software (delivered from Q1 2007)
- 1 x DPC-J reference sensor (user specified)

#### Also included with System C delivery:

- Base model CXX: Pump T-620 (40 to 250 bar / 580 to 3,626 psi)
- Base model CHX: Pump T-620H (40 to 400 bar / 580 to 5,802 psi)
- Hose 20 in / 0.5 m with 1/4" BSP and NPT female connector
- 1 roll of teflon tape
- Extension cable 2 m between DPC-500 and DPC-J reference sensor
- Aluminum carrying case

### Accessories

#### Part No. Description

65P175	1 m hose with 1/4" BSP female termination Max. pressure 5,000 psi / 350 bar
65P180	2 m hose with 1/4" BSP female termination Max. pressure 5,000 psi / 350 bar
T-656	Service kit for pump
126086	Connection cable for RS232

### Ordering information System C

Order No.	Description
DPC-500	Pressure calibrator DPC-500 pressure calibrator
	<b>Total number of reference sensors</b> S1 / S2 / S3 / S4 / S5 (S2 = Two sensors)
SX	
	<b>System</b> CXX DPC-500 System C (pump T-620) CHX DPC-500 System C (pump T-620H)
	<b>Primary reference sensor, which should be mounted on the system at delivery</b> XXXX Last four digits of DPC-J reference sensor partnumber found at page 5 (the additional reference sensors should be stated separately at the order)
	<b>Certificate</b> F Traceable calibration certificate (std) H Accredited calibration certificate

### DPCS2CXXG360F

#### Sample order number

JOFRA DPC-500 System C hand pump for oil with optional primary reference sensor 0 to 160 bar, two additional reference sensors and traceable calibration certificate.



# JOFRA™ DPC-500 Series

## Advanced Pressure Calibration System D

- 0 to 350 bar (5,000 psi)

This system consists of an DPC-500 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 indicator 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).

The System D comes in an aluminum carrying case with cutouts for fittings and the complete assembled calibration unit - no time adder to assemble the unit every time. Easy and fast connection between pump and calibrator makes it easy to use the pressure calibrator separately for other pressure test tasks.



### Standard delivery:

#### DPC-500 calibrator (indicator):

- DPC-500 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads
- Connection cable for USB
- DPC-CAL calibration software
- JOFRACAL calibration software (delivered from Q1 2007)
- 1 x DPC-J reference sensor (user specified)

#### Also included with System D delivery:

- Base model DOX: Screw pump for oil
- Base model DWX: Screw pump for water
- 10 x 1/4" bonded seals, Allen key 6 mm
- 2 x 1/4" NPT female adapters
- 1 roll of teflon tape
- Aluminum carrying case

### Accessories

#### Part No. Description

- 65P175 1 m hose with 1/4" BSP female termination 1)
- 65P180 2 m hose with 1/4" BSP female termination 1)
- 65N000 Extension tube, 120 mm 1)  
1) Max. pressure 350 bar / 5,000 psi
- 60I156 1.5 m hose with 1/4" BSP female termination 2)
- 60I157 5 m hose with 1/4" BSP female termination 2)  
2) Max. pressure 700 bar / 10,000 psi
- 65-R975 300 ml reservoir set with valve and bonded seals
- 60P013 Vernier valve for fine adjustment
- 60R120 1/4" bonded seal
- 126069 Extension cable 2 m between DPC-500 and DPC-J reference sensor
- 126086 Connection cable for RS232

### AMETEK screw pump

The AMETEK screw pump is designed for very easy generation of high pressure.

This pump is part of system D. The screw pump has a 4 output manifold. Fine adjustment, vernier valve, liquid reservoir, and fittings are optional. The AMETEK screw pump may be delivered for 2 different test media: hydraulic oil or water.



Pressure range..... 350 bar / 0 to 5,000 psi  
 Test media..... Hydraulic oil, water  
 Wetted parts.....Aluminum, brass, stainless steel  
 Connections to test objects:..... 4 x 1/4" BSP female

#### Part No. Description

- 65-P016 Screw pump oil: 0 to 350 bar (5,000 psi) 1)
- 65-P017 Screw pump water: 0 to 350 bar (5,000 psi) 1)  
1) 0.85 oz (25 ml) reservoir

### Ordering information System D

Order No.	Description
DPC-500	Pressure calibrator DPC-500 pressure calibrator
<b>Total number of reference sensors</b> S1 / S2 / S3 / S4 / S5 (S2 = Two sensors)	
SX	<b>System</b> DPC-500 System D - oil DPC-500 System D - water
DOX DWX	
XXXX	<b>Primary reference sensor, which should be mounted on the system at delivery</b> Last four digits of DPC-J reference sensor partnumber found at page 5 (the additional reference sensors should be stated separately at the order)
	<b>Certificate</b> F Traceable calibration certificate (std) H Accredited calibration certificate

#### DPCS2DOXG364F

#### Sample order number

JOFRA DPC-500 System D screw pump for oil with optional primary reference sensor 0 to 250 bar, two additional reference sensors and traceable calibration certificate.

# JOFRA™ DPC-500 Series

## Advanced Pressure Calibration System E

- 0 to 700 bar (10,000 psi)

This system consists of an DPC-500 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 indicator 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.

The System E comes in an aluminum carrying case with cutouts for fittings and the complete assembled calibration unit - no time adder to assemble the unit every time. Easy and fast connection between pump and calibrator makes it easy to use the pressure calibrator separately for other pressure test tasks.

### AMETEK hydraulic pump for System E

The AMETEK hydraulic pump is designed for high pressure applications. The pump is used in the DPC-500 System E.

The pump has a 4 pressure output manifold. Fine adjustment vernier valve and fittings are optional.



Pressure range.....0 to 700 bar / 10,000 psi  
 Test media..... oil  
 Wetted parts.....Aluminum, brass, stainless steel  
 Connections to test objects:..... 2 x 1/4" BSP female

### Part No. Description

65-P014 Hydraulic pump for oil: 0 to 700 bar (10,000 psi) <sup>1)</sup>  
 1) 15.22 oz (450 ml) reservoir

### Standard delivery:

#### DPC-500 calibrator (indicator):

- DPC-500 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads
- Connection cable for USB
- DPC-CAL calibration software
- JOFRACAL calibration software (delivered from Q1 2007)
- 1 x DPC-J reference sensor (user specified)

#### Also included with system E delivery:

- Hydraulic pump
- 10 x 1/4" bonded seals, Allen key 6 mm
- 2 x 1/4" NPT female adapters
- 1 roll of teflon tape
- Aluminum carrying case
- Vernier valve for fine adjustment

### Accessories

#### Part No. Description

601156	1.5 m hose with 1/4" BSP female termination Max. pressure 700 bar / 10,000 psi
601157	5 m hose with 1/4" BSP female termination Max. pressure 700 bar / 10,000 psi
126069	Extension cable 2 m between DPC-500 and DPC-J reference sensor
126086	Connection cable for RS232

### Ordering information System E

Order No.	Description
DPC-500	Pressure calibrator DPC-500 pressure calibrator
SX	<b>Total number of reference sensors</b> S1 / S2 / S3 / S4 / S5 (S2 = Two sensors)
EXX	<b>System</b> DPC-500 System E - oil
XXXX	<b>Primary reference sensor, which should be mounted on the system at delivery</b> Last four digits of DPC-J reference sensor partnumber found at page 5 (the additional reference sensors should be stated separately at the order)
F	<b>Certificate</b> Traceable calibration certificate (std)
H	Accredited calibration certificate

### DPCS2EXXG372F

#### Sample order number

JOFRA DPC-500 System E hydraulic pump for oil with optional primary reference sensor 0 to 600 bar, two additional reference sensors and traceable calibration certificate.

# JOFRA™ DPC-500 Series

## Advanced Pressure Calibration 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. The System F comes in a protective carrying case with cutouts for fittings. Easy and fast connection between pump and calibrator makes it easy to use the pressure calibrator separately for other pressure test tasks.

### Standard delivery:

#### DPC-500 calibrator (indicator):

- DPC-500 calibrator
- Traceable calibration certificate
- User manual
- Battery charger
- Test leads
- Connection cable for USB
- DPC-CAL calibration software
- JOFRACAL calibration software (delivered from Q1 2007)
- 1 x DPC-J reference sensor (user specified)

#### Also included with system F delivery:

- Hydraulic pump
- 2 x 1/4" bonded seals, Allen key 6 mm
- 2 x 1/4" NPT female adapters
- 1 roll of teflon tape
- Aluminum carrying case

### Accessories

Part No.	Description
601156	1.5 m hose with 1/4" BSP female termination Max. pressure 700 bar / 10,000 psi
601157	5 m hose with 1/4" BSP female termination Max. pressure 700 bar / 10,000 psi
T-863	15/16-18 male to 1/8" NPT female
T-134	15/16-20 male to 1/4" NPT female
T-135	15/16-20 male to 1/2" NPT female
T-786	1/4" NPT male to 1/4" NPT female
T-787	1/2" NPT male to 1/4" NPT female
126069	Extension cable 2 m between DPC-500 and DPC-J reference sensor
126086	Connection cable for RS232

### AMETEK hydraulic pump for System F

The type T pump is designed for high pressure applications. The pump 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. Three seal packages are available 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.

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

Pressure range.....0 to 1000 bar / 15,000 psi  
 Test media..... Hydraulic oil, water, Skydrol  
 Wetted parts..... Stainless steel, Monel  
 Connections to test objects. BSP fittings 1/4" and 1/2" female;  
 ..... NPT fittings 1/4" and 1/2" female

Part No.	Description	Seals
T-1	Pump: 0 to 1,000 bar (15,000 psi) water	- Buna N <sup>2)</sup>
T-1/VITON	Pump: 0 to 1,000 bar (15,000 psi) water	- Viton
T-1/EPT	Pump: 0 to 1,000 bar (15,000 psi) water	- EPT
T-1/OIL	Pump: 0 to 1,000 bar (15,000 psi) oil	- Buna N <sup>2)</sup>
T-1/OIL/VITON	Pump: 0 to 1,000 bar (15,000 psi) oil	- Viton
T-1/OIL/EPT	Pump: 0 to 1,000 bar (15,000 psi) oil	- EPT

<sup>2)</sup> Standard

### Ordering information System F

Order No.	Description
DPC-500	DPC-500 pressure calibrator
<b>Total number of reference sensors</b> S1 / S2 / S3 / S4 / S5 (S2 = Two sensors)	
SX	
<b>System</b>	
FWB	DPC-500 System F - water - seals: Buna N
FWV	DPC-500 System F - water - seals: Viton
FWE	DPC-500 System F - water - seals: EPT
FOB	DPC-500 System F - oil - seals: Buna N
FOV	DPC-500 System F - oil - seals: Viton
FOE	DPC-500 System F - oil - seals: EPT
<b>Primary reference sensor, which should be mounted on the system at delivery</b> Last four digits of DPC-J reference sensor partnumber found at page 5 (the additional reference sensors should be stated separately at the order)	
XXXX	
<b>Certificate</b>	
F	Traceable calibration certificate (std)
H	Accredited calibration certificate

**DPCS2FOEG376F** **Sample order number**  
 JOFRA DPC-500 System F Hydraulic pump for oil with optional primary reference sensor 0 to 1,000 bar, two additional reference sensors and traceable calibration certificate.

AMETEK Calibration Instruments offers a complete range of calibration equipment for temperature, pressure, and signal - including calibration software. Within pressure, we have the following alternative offering:

### JOFRA APC Advanced Pressure Calibrator



This high accuracy pressure calibrator is user-friendly, extremely accurate, and expandable to meet multiple applications. Features such as RS232 capability, loop sourcing, scalability, 17 engineering units, switch test, min/max readings, and mA% calculations make this an invaluable calibration instrument.

- Accuracy to  $\pm(0.04\%$  of reading + 0.01% F. S.)
- Pressure range vacuum to 700 bar/10,000 psi

Publication No. SS-CP-2181,  
which is to be found at [www.jofra.com](http://www.jofra.com)

### JOFRA CPC Compact Pressure Calibrator



This series of digital pressure calibrators is designed for accuracy and ease of use. The CPC has the features you need in a pressure test and calibration tool: 17 engineering units, switch test, min/max readings, and mA reading.

- Accuracy to  $\pm 0.05\%$  F. S.
- Pressure range vacuum to 15 bar/200 psi

Publication No. SS-CP-2180,  
which is to be found at [www.jofra.com](http://www.jofra.com)

### JOFRA IPI Industrial Pressure Indicator



This handy instrument combines the ease of an analog gauge with the accuracy and easy-to-read display of a digital calibrator. The IPI offers a long battery life, high accuracy, and even serial communication. The accuracy of the IPI rivals that of a pressure calibrator and is temperature compensated for shop or machine room applications.

- Accuracy to  $\pm 0.05\%$  of F.S.
- Pressure range vacuum to 700 bar/10,000 psi

Publication No. SS-CP-2179,  
which is to be found at [www.jofra.com](http://www.jofra.com)



**AMETEK Calibration Instruments**  
offers a complete range of calibration equipment for temperature, pressure, and signal - including calibration software.

#### JOFRA Temperature Calibrators

Portable precision thermometer.  
Dry-block and liquid bath calibrators:  
4 series, with more than 20 models - featuring speed, portability, accuracy and advanced documenting functions with JOFRACAL temperature calibration software.

#### JOFRA Pressure Calibrators

Convenient electronic systems ranging from -1 to 700 bar (25 inHg to 10,000 psi) - multiple choices of pressure ranges, pumps and accuracies, fully temperature-compensated for problem-free and accurate field use.

#### JOFRA Signal Calibrators

Process signal measurement and simulation for easy control loop calibration and measurement tasks - from handheld field instruments for multi or single signals to laboratory reference level bench top instruments.

#### JOFRA / JF Marine Calibrators

A complete range of calibration equipment for temperature, pressure and signal, approved for marine use.

#### FP Temperature Sensors

A complete range of temperature sensors for industrial and marine use.

*...because calibration is  
a matter of confidence*

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

AMETEK Calibration Instruments is one of the world's leading manufacturers and developers of calibration instruments for temperature, pressure and process signals as well as for temperature sensors both from a commercial and a technological point of view.

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