

DURAPAC
ENGINEERED FOR RELIABILITY

Instruction Manual

Digital Pressure Gauge
Model – PGD-75



Maximum Operating Pressure – 800 bar



This is a safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid injury or death

1.0 Product Information

DURAPAC – PGD-75 is a low power consumption digital pressure gauge. Each gauge consists of single chip, LCD display, pressure sensor and a stainless-steel case. The gauges are well sealed, offer high accuracy and excellent stability.

Special skill, knowledge and training may be required for a specific task and the product may not be suitable for all jobs. The user must ultimately make the decision regarding suitability of the product for any given task and assume the responsibility of safety for all in the work area. Contact a Durapac representative if you are unsure of your digital pressure gauge's suitability for a particular application.

2.0 Receiving Instructions

It is recommended prior to use that an inspection be done by qualified personnel and that any missing or damaged parts, decals, warning/safety labels or signs are replaced with Durapac authorised replacement parts only. Any digital pressure gauge that appears to be damaged in any way, is worn, leaking or operates abnormally should be removed from service immediately until such time as repairs can be made. Any digital pressure gauge that has been or suspected to have been subject to a shock load should be removed from service immediately until inspected by a Durapac authorised service centre. Owners and operators of this equipment should be aware that the use and subsequent repair of this equipment may require specialised training and knowledge.

3.0 Safety

Save these instructions. For your safety, read and understand the information contained within. The owner and operator should have an understanding of this product and safe operating procedures before attempting to use this product. Instructions and safety information should be conveyed in the operator's native language before use of this product is authorised. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorised manual, remove from service immediately.



DANGER:

- To avoid personal injury keep hands and feet away from work area during operation
- **Do NOT** handle pressurised hoses. Escaping oil under pressure can penetrate the skin causing serious injury. If oil is injected under the skin, see a doctor immediately



WARNING:

- The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Pressure gauges in the system monitor operating pressure. It is your window to what is happening in the system
- Always wear protective gear when operating hydraulic equipment. The operator must take precaution against injury due to failure of the tool or work piece(s)

- **Do NOT** hold or stand directly in line with any hydraulic connections while pressurising
- **Do NOT** attempt to disconnect hydraulic connections under pressure. Release all line pressure before disconnecting hoses
- All personnel must be clear before lowering load or depressurising the system

**IMPORTANT:**

- If at any stage, the safety related decals become hard to read, these must be replaced
- Minimum age of the operator must be 18 years. The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the equipment. The operator is responsible for this activity towards other persons
- Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Durapac authorised service centre in your area. To protect your warranty, use only high-quality hydraulic oil

**CAUTION:**

- **KEEP HYDRAULIC EQUIPMENT AWAY FROM FLAMES AND HEAT.** Hydraulic fluid can ignite and burn. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65°C (150°F) or higher. Protect all equipment from weld spatter
- No alteration should be made to this device

3.1 Digital Pressure Gauges

- Installation and operation of this digital pressure gauge must be strictly in accordance with this manual
- **Do NOT** use the pressure gauge in an environment of explosive gas. This digital pressure gauge does NOT have explosion prevention
- **Do NOT** overload equipment. Overloading can cause equipment failure and possible personal injury.
- Protect the gauge and LCD display screen; damage can occur from heavy impact or scratching with sharp objects
- Use only Durapac approved accessories and components

FAILURE TO HEED THESE WARNINGS MAY RESULT IN PERSONAL INJURY AS WELL AS PROPERTY DAMAGE.

4.0 Installation and Operation



IMPORTANT:

- Always secure threaded port connections with high grade, non-hardening pipe thread sealant. Teflon tape can be used if only one layer of tape is used and it is applied carefully, two threads back, to prevent the tape from being introduced into hydraulic system, which could cause jamming of precision-fit parts
- Please select the installation location with care. There should be minimum vibration, rubbish, dust or erodent gas. These items may cause inaccurate readings, damage to the gauge or fire
- Zero adjustment of gauge should be done before the installation of the gauge. If done after installation then it should be done prior to operation
- When installing the connecting pipe, please consider the length and position. The installation requires a horizontal or vertical position

4.1 Panel Display and Operation

Gauge Face Display:



Gauge Window Display:



Table 1 – Gauge Face Display:

Controls	Description
P	Access the program menu and adjust the parameters
Unit	Press [Unit] for one second and the unit will change/convert to bar, psi, kN, kg and tonne. Press once to convert to next measurement. The last set measurement will be saved so when gauge is next connected to power, it will retain this pressure measurement
On/Off ◀	If the display is on, press [On/Off] once to turn the pressure digit display off. If the display is off, press [On/Off], the pressure digits will be active. If [On/Off] has not been pressed then it will display pressure and control according to the LC parameter
▲	Hi./Lo. display & adjust Hi./Lo. (Max./Min.) values

Table 2 – Gauge Window Display:

Controls	Description
Pressure Process Display	Value of the measured pressure

Controls	Description
Pressure value display	Value of the measured pressure Note – If 'CIP' is displayed, this indicates that the measured pressure exceeds the valid measuring range
Hi / Lo value display	Value of the Hi. (maximum) & Lo. (minimum) pressure/force display
Hi / Lo	Hi. (maximum) or Lo. (minimum) value display
Battery sign	Battery power indicator. Battery needs to be changed when the power sign is flashing
Units display	Pressure unit measure, eg. bar, psi, kN, kg, tonne

4.2 Parameter Values

The following program parameters can be used to modify the working status and functions of the digital pressure gauge:

Table 3 – Parameter Values:

Parameter	Description	Range	Default	Unit	Details
C	Effective area of cylinder	0.0001~ 999.9999 ~99999999 Note – four decimals	1	cm ²	Cannot be set at 0
G	Gravitational acceleration	0.0001~ 999.9999 ~99999999 Note – four decimals	9.8	N/kg	Cannot be set at 0
CO	Scanning cycle	00-99 Note – 00 means continuous scanning. A higher scanning cycle value will conserve battery power	00	second	The instrument shows update time interval
LC	Screen display time	00-99 Note – 00 means continuous display. A lower display time will conserve battery power	5	minute	The instrument shows continuous time. 0 stands for normal open. 1-99 stands for the opening time for the screen
CHL	Reset the Hi./Lo. (Max./Min.) value	N/Y	N		N does not reset the Hi./Lo. value Y = reset the Hi./Lo. value
ZEr	Zero adjusting	N/Y	N		N = do not execute zero adjusting operation. Y = execute the operation

4.3 Parameter Setting

Note - This step needs to be repeated for all 4 parameters.

4.3.1 Press [P] for one second to update the parameter(s).

⚠ The screen will display “CXXXX”, “GXXXX”, etc. (where “XXXX” denotes the parameter value)

4.3.2 Press the [▲] and [◀] to change the parameter values.

4.3.3 Pressing the [▲] will display the new input value, eg. “ 0”. Pressing the [▲] will increment the number by 1 (0,1,2,...9) or for Adjustment of Zero this will toggle between “Zer_N” and “Zer_Y”.

4.3.4 Pressing the [◀] will shift the ‘update’ left by one digit. Pressing the [▲] will increment the number by 1 (0,1,2,...9) and then the decimal point will be displayed. Press the [◀] to cycle back through the numbers

Note for CXXXX and GXXXX – A decimal point can only be added after two digits have been entered. Then pressing the [▲] will increment the number by 1 (0,1,2,...9) and then the decimal point. Press the [▲] to cycle back through the numbers.

4.3.5 Press [Unit] for 3 seconds to confirm (save) the inputted value. Press [P] to display the submenu and disregard (not save) the inputted value.

4.4 Gauge Installation

4.4.1 Gauge Position

⚠ The gauge should be mounted in a place that is well ventilated, dry, shaded from the sun, with minimum temperature variances and without corrosion. If mounted in the open air, then a protection cover should also be installed

⚠ The gauge should not touch with corrosive or superheated materials

According to the measuring position, choose a suitable place and direction to mount the gauge.

4.4.2 Mounting the Gauge

When mounting the pressure gauge, **do NOT** move the body of the gauge with your hand. This may cause damage to the gauge. Only use tools to mount the gauge (as shown below in Figure 2).

Figure 1 – Incorrect method

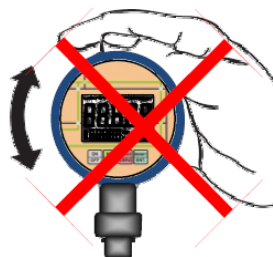


Figure 2 – Correct method



5.0 Maintenance



IMPORTANT:

- Equipment must only be serviced by a qualified technician. For repair service, contact your local Durapac authorised service centre
- Tighten connections as needed. Use non-hardening pipe thread compound when servicing connections

Dirt, sand, etc. will quickly ruin any hydraulic system. Ensure that couplings are clean and free of foreign matter. After each use, clean couplings and attach dust caps.

Maintenance is required when wear or leakage is noticed. Periodically inspect all components to detect any problem that may require service and maintenance.

5.1 Calibration

The PGD-75 Digital Pressure Gauge is supplied already calibrated. The gauge would only need to be recalibrated after 2 years of normal operating conditions or if inaccurate values were being displayed. For recalibration, contact your local Durapac authorised service centre.

5.2 Battery Replacement

Do NOT change batteries during operation

Battery type AAA x 4 will need to be installed following these steps:

- 5.2.1 Open the rear cover with a Phillips-head screwdriver. Take off the battery bracket. Remove the old tape and/or batteries. Install battery according to polarity.
- 5.2.2 Bind the battery with strapping tape to maintain correct battery contact during gauge vibration. Replace the battery bracket.
- 5.2.3 Carefully replace the O-ring to protect the seal of the gauge. Reattach the rear cover.

5.3 Storage

- 5.3.1 When not in use, disconnect the gauge from the application.
- 5.3.2 Wipe thoroughly clean and put the protection lid on the pressure connecting port.
- 5.3.3 Store in a clean, dry environment. Avoid temperature extremes.

6.0 Specifications

Characteristic	Measurement
Media	Liquids compatible with wetted materials
Case Material	SUS304
Case Size	75mm
Accuracy	0.25%FS

Operating Temperature	-10 to 60°C
Storage Temperature	-20 to 70°C
Relative Humidity	0 to 90% non-condensing
Medium Temperature	-10 to 80°C
Pressure Range	0 – 800 bar
Temperature Stability	≤0.05%FS/C
Power	6VDC (AAA 4 pieces)
Display	5-bit LCD, digits height 18 mm
Burst Pressure	3xFS
Over Pressure	1.5xFS@>350 bar
Wetted Parts Material	Stainless Steel SUS316
Connection Thread	¼" NPT Male
Lifetime	1200h (min)
Weight	992 g
Sealing	IP65