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Aerospace Group
Conveyance Systems Division
Carter® Brand Ground Fueling Equipment

SM64162

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Applicable additional manuals:

NONE

Maintenance & Repair Manual

Differential Pressure Gauge

Model 64162

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MAINTENANCE, OVERHAUL & TEST INSTRUCTIONS

CARTER MODEL 64162

1.0 INTRODUCTION

This manual provides servicing information on the Carter Differential Pressure Gauge Model 64162. The gauge is designed to

require little servicing over its lifetime. Various options are available as defined in section 3.0.

2.0 EQUIPMENT DESCRIPTION

The Carter piston differential pressure gauge measures differences in pressure with highest precision. The gauge has been developed for the special conditions of filter water separators or filter monitors for aircraft refueling in accordance with API 1581 and IP but is not limited in its scope. The gauge is extremely insensitive against pressure shocks and exceeds of the measuring range.

The design of the gauge follows the principle of separation of functions. The measuring glass cylinder is built into a rigid, torque resistant metal housing. The metal housing absorbs any external shock. Forces from the outside do therefore not influence the glass cylinder.

The measuring cylinder is made of a special glass. Inside the cylinder there is a graduated piston made of the same material. This graduated piston is fitted into the measuring cylinder, which has a highly precise inner diameter, with smallest tolerances. In case of temperature variations, both the cylinder and the piston expand or contract together. As a result there are no measuring errors due to different thermal expansions.

The gauge housing is sealed with a transparent front screen, so all sensitive glass parts are protected against exterior influences. There is a double-sided cross hair built into the screen at the point of reading. Even under difficult conditions the differential pressure can be read without any parallax problems.

The piston differential pressure gauge may be equipped with various scales (see section 3, Options).

The gauge is to be calibrated with the chosen scale.

The standard edition of the gauge features a trailing piston, which is carried along by the graduated piston and remains fixed at the maximum pressure difference of the last measurement. Until the reset of the trailing piston the maximum differential pressure can be read at a separate scale of the front screen.

On the rear of the gauge there is a drilling template which determines the hole pattern of the customer's gauge carrier.

3.0 TABLE OF OPTIONS AND ORDERING INFORMATION

There are five basic part numbers to which some options can be added to arrive at the desired configuration and a complete part number. All of the basic options below include port adapters for 1/4" NPT threads.

- 64162A - Gauge with 0-2 bar scale and 1.0 bar redlined for changing filter elements.
- 64162B - Gauge with 0-30 psi scale and 15 psi redlined for changing filter elements.
- 64162C - Gauge with 0-2 bar scale and 1.5 bar redlined for changing filter elements.
- 64162D - Gauge with 0-2 bar scale and 1.7 bar redlined for changing filter elements.
- 64162E - Gauge with 0-30 psi scale and 25 psi redlined for changing filter elements.

The options that may be appended to any of the above part numbers are:

OPTION LETTER	DESCRIPTION
F	Deletes NPT port thread adapters, G1/8 SS-Tube 6 x 0.5 mm furnished.
G	Adds separate hand held circular disc calculator (64173) to convert measured pressure drop to rated flow to determine whether replacement is required. At least one of these devices should be ordered for each location (airport).
H	Adds differential pressure switch to shutdown the deadman system if the differential pressure reaches 25 psid

Examples:

64162E - Gauge with 0-30 psi scale and 25 psi redlined for changing filter elements and fitting adapters to use NPT threads for installation.

64162CG - Gauge with 0-2 bar scale and 1.5 bar redlined for changing filter elements with separate hand held circular disc calculator to convert measured pressure drop to rated flow

4.0 IMPORTANT INFORMATION

Make sure all screwed pipe joints are properly tightened before startup.

During startup the piston differential pressure gauge has to be flushed and filled from the clean side (low-pressure side) of the filter vessel (position of petcocks accordingly and reset the trailing piston). See section 5.0 for more detailed installation and operation instructions. Set either the low-pressure side petcock or the low and high-pressure side petcocks to the open position.

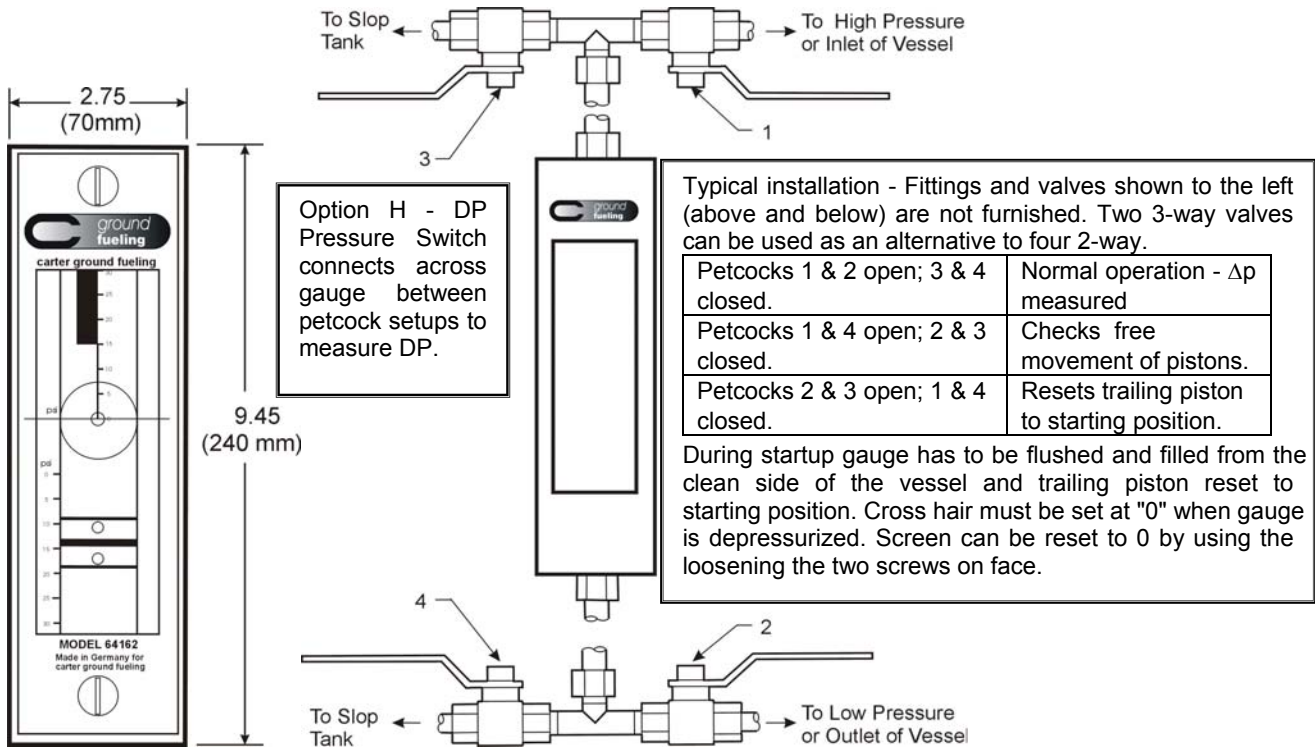
Check the "zero" position of the cross hair of the transparent front screen on a regular basis. The "zero" position of the cross hair and scale of graduated piston must be identical if gauge is depressurised. If necessary, unscrew the two slotted screws in the transparent front screen and level screen in the right position.

The installed tension spring does not show signs of fatigue even after years of use to the low distortion at maximum extension.

5.0 OPERATION & INSTALLATION

The illustrations below will assist in installation and operation.

- Options A-E is furnished with 2 - female 1/4" NPTF ports.
- Option F provides G 1/8 metric ports for 6-mm tubing.



6.0 DISASSEMBLY

The gauge has one replaceable part, the front cover. If the gauge becomes nonfunctional it must be replaced.

To replace the front Cover Plate (2) remove Screws (1) and Plate (2). Discard Plate (2).

7.0 INSPECTION

Periodic inspection of the cover plate should be performed to ascertain that the "zero" position setting is correct. If not set properly, adjustment is possible by loosening Screws (1) and moving the Plate (2) to the zero

position. Retighten the screws. If the plate becomes damaged such that it is no longer possible to properly read the gauge, the plate should be replaced.

8.0 REASSEMBLY

The Plate (2) should be reassembled using Screws (1)

being sure that the "zero" position is properly set.

9.0 ILLUSTRATED PARTS CATALOG

Table 1.0 tabulates the parts and sub-assemblies comprising the 64162 Differential Pressure Gauge. The item numbers of the table are keyed to the exploded views of the gauge diagrammed in Figure 1

TABLE 1.0

Fig. No.	Item	Part Number	Description	Units Per Assembly
1	1	88107AM6X16Y	Screw	2
	2	WL5022-36/3	Cover Plate	1

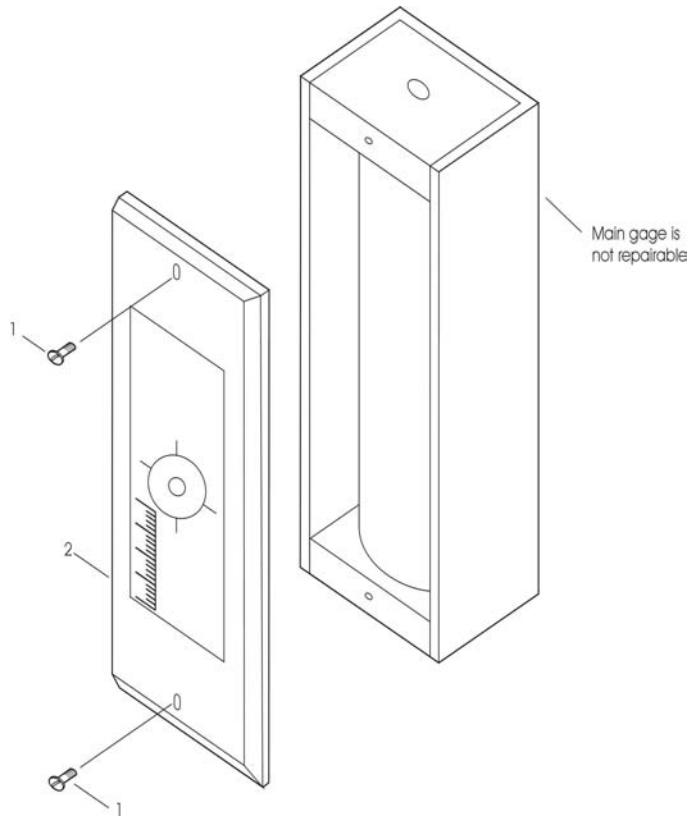


Figure 1

64162 Differential Pressure Gauge Parts Breakdown

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