2465 Piston Gauge, manual mode, Setup in COMPASS for Pressure Software



This procedure is intended for Fluke Calibration customers trained on use of 2465 Piston Gauge and COMPASS for Pressure Calibration Software

Purpose

This document instructs how to setup a 2465 Piston Gauge for manual operation in COMPASS for Pressure software.

Note

If you have a CD or electronic version of the .pc and .ms WinPrompt files use the COMPASS for Pressure import feature. See the document "Import individual Ruska PC, MS into COMPASS.pdf" and the Application Note, "How to set up COMPASS® for Pressure software for use with Ruska Model 2400 piston gauges"

Instructions

First setup the piston-cylinder, mass set and trim mass set (if applicable) setup files so they can be chosen in the PG setup. See the document "2465 PG mass set and piston-cylinder units, Setup in COMPASS for Pressure.pdf". Then setup the 2465 Piston Gauge as a Piston Gauge.



Select "Piston Gauge > Piston Gauge" in the "Setup" menu to open the PG Editor

Click the white piece of paper to create a new item		
Piston Gauge Platform Editor		
Record Label Sample PG7601		נ
Header Calibration Tolerance Communications Comment	Ē	ð
Platform Device Type Simple Device		
Record Type Individual	• • • • • • • •	0

Type in the information as shown below (but with your serial number). It's best to make one setup for gauge mode and one for absolute mode to ensure operation is correct.

Piston Gauge Platform Editor				×
Record Label 2465 Manu	al (gauge only)		5/15	. D
		<u> </u>		 Be
Header Calibration P-C/MS Source:	s Comment			
Platform Device Type	Simple Device	-		
Record Type	Individual	•		Lo
Manufacturer	Fluke Calibration	•	# \$	- '
Model	PG	•		$+ \times$
Serial Number	123456789			
Identification				- F
Customer ID				
	This device can be used as a DUT.			
Platform Type	Piston Gauge	•		
	Close			

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Everything in the Calibration tab is optional

Piston Gauge Platform Editor		×
Record Label 2465	Manual (gauge only)	D
Header Calibration P-C/MS S	ources Comment	eð,
Calibration Date	12/12/2012 Calibration Due Date 12/12/2012	
Calibration Performed By	Certification ID	_⊾⊃
Calibration Setting1	Calibration Setting3	
Calibration Setting2	Calibration Setting4	\sim
M&TE Device		
Record Last Edited	7/25/2018 2:23:35 PM	\bigcirc
Record Last Edited By	Admin	

Choose "Support All" or click the [Edit] button to select items. Do this for "Piston-Cylinder", "Mass Set", "Trim Mass Set" and "Mass Bell".

Piston Gauge Platform Editor				×
Record Label 2465 Ma	anual (gauge only)		5/15	D
Header Calibration P-C/MS Sou	rces Comment	1	Þ	
Piston-Cylinder	Ruska 2465-725 TL-1024	-	<u>E</u> dit	
Mass Set	Support All	-	<u>E</u> dit	. K⊃
Trim Mass Set	Support All	-	<u>E</u> dit	\mathbf{x}
Mass Bell	Support All	-	<u>E</u> dit	· · ·
Default Medium	N2 NITROGEN	-		
	🔽 Limited to Defaul Medium			
Default Measurement Mode	Gauge	•		(2)
	Limted to Default Measurement Mode			$\mathbf{\overline{v}}$
	Close			

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Choose "Manual Entry" or "None" on the "Sources" tab as shown below

Piston Gauge Platform Editor	×
Record Label 2465 Manual (gauge only)	
Header Calibration P-C/MS Sources Comment	93
Platform Condition Sources Reference Vacuum Manual Entry	
P-C Temperature Manual Entry	- ×
Piston Position None	
Piston Rotation Rate None	
Close	

Save the 2465 Piston Gauge setup by clicking the black disk icon.

Run a sample manual test to check operation. Select "Run Manual Test..." in the Run menu.

ے	OMPASS	for Pre	ssure E	nhance	d					
Run	Setup	Tools	Data	Databa	ase	Wind	low	Help		
	Run Test	Definiti	on		lle	шт	ſđ) 🚇	1 ¥ 2 ¥	li
	Run Man	ual Test	t		15	יחי			4	
	Exit									

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Click the [Clear Previous Selections] button to clear the prior test history. Select the pressure units you want to use.

∯ Run	Manual Test (Hardware Setup)		—	x נ
- Select I The ur selecti Select	Inits of Measure it lists below define the units of measure ons also represent the default display unit the desired units and press [Next].	to use when logging outputs to the of devices that output the corresp	data file. The onding quantity.	
	Test Pressure Uni	psi	•	
	Select/enter user name Timed Macro Time Interval(ms)	Admin None 0	•	
		<u>C</u> lear Previous S	Selections	
0	<u>C</u> ancel <u>B</u> ack	Next	E	inish

Don't select a DUT, press [Next]

🕴 Run Manual Test (Hardware Setup)			×
Select DUT Add DUTs by double clicking the desired DUTs in the list. Use the [Remove] butto from the support list. The specific setup of DUTs is handled in a later step.	on to remov	e DUTs	
🔺 Label Manufacture	er	Mode	~
0, 0 to 200 mV, -125 to 0 kPa Mfg		Mod	
0, 0 to 200 mV, 25 to -100 kPa Mfg		Mode	
0, 40 to 200 mV, 0 to -100 kPa Mfg		Mode	
0, 40 to 200 mV, -100 to 0 kPa Mfg		Mode	
00 - 0-10 mV 100 psig Mfg		Mode	~
<		>	
	<u>s</u> <u>B</u> i	earch emove	
Cancel Back Next		<u>F</u> inish	

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For "Reference Pressure" choose the record label from your 2465 Piston Gauge, "2465 Manual (gauge only) / PG Pressure" in the example below. The other selections will automatically populate as "Manual Entry" or "Manual Control". Leave them as is.

🕴 Run Manual Test (Hardware Setu	p) — 🗆	×
Test Hardware Configuration	<u>-</u>	_
	Manual Entry	픡
Ambient Humiditu	Manual Entry	픡
		<u> </u>
Reference Pressure	2465 Manual (gauge only) / PG Pressure	픡
Test Pressure Control	Manual Control	
	11	_
Multiplexer	None	-
Valve Driver	None	-
	<u>D</u> efault Hardware Setu	1P
	Setup Picture	
	Back Next Eini	ish

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Don't select any auxiliary devices, press [Next]

🦉 Run Manual Test (Hardware Setup)	_		×
 Select Auxiliary Device Add devices by double clicking the desired item in the list. Use the [from the list. The specific setup of the device is handled in a later store 	Remove] button to re ep.	move an item	
	Manufacturer	Mod	~
0.0 to 200 mV -125 to 0 kPa	Manaracturer	Mod	
0,0 to 200 mV, 123 to 0 kl a	Mig	Mod	
0, 40 to 200 mV, 0 to -100 kPa	Mfa	Mod	
0, 40 to 200 mV, -100 to 0 kPa	Mfg	Mode	
00 - 0-10 mV 100 psig	Mfg	Mode	\mathbf{v}
<		>	
		<u>S</u> earch <u>R</u> emove	
Cancel Back	Next	<u> </u>	

Choose which piston-cylinder, mass set, mode, etc. to use

🅴 Run Manual Test (Hard	ware Setup)		_		×
Configure Device (1 / 1) 246	5 Manual (gauge only)				
Manufacturer Fluk	e Calibration	Customer ID			_
Model PG		Manual Interface Ma	nual		
Serial Number 123	456789	Parameter ID			_
Identification					
Reference Pressure: Piston	Gauge Settings				
Piston-Cylinder	Ruska 2465-725 TL-1024 💌	Head Height	0.0	cm	
Mass Set	Ruska 2465A-799 66923 💌	Medium	N2 NIT	ROGEN	-
Mass Bell	2465A-799 heavy 💌	DOT .	, 		_'
Trim Mass Set	Trim Mass Set 👻	P-L Temperture	Manual E	: ntry	4
Measurement Mode	Gauge	P-C Position	None		4
Nominal Bange: 0.00 / 202 7	71 nsi	P-C Rotation	None		4
	, p.,	Reference Vacuum	None		~
	Back	Next		<u>F</u> inish	

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Press [Finish] on the final screen.

🕴 Run	Manual Test (Hardware	Setup)								×
- Initializa The ini correct	ation Complete itialization process is compl t for each device. Press [I	lete. Veri Finish] to	ify that the begin the	remote test.	interfac	e connect	ions and	setting	IS are	
	Test	Manual	Test							
	DUTs	0	N/A							
	Reference Pressure	0.0072	202.71 psi							
0	Cancel	<u>B</u>	ack			<u>N</u> ext			<u>F</u> inish	

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If the PG Calculator window doesn't appear click the "Display Device Window" icon then choose "2465 Manual (gauge only...) device to display the PG Calculator.

le co	COMPASS for Pressure Enhanced										
<u>R</u> un	<u>S</u> etup	<u>T</u> ools	<u>D</u> ata	Data <u>b</u> ase	<u>W</u> indow	<u>H</u> elp					
		ť	Σ	• 🕲	Ś [STOP	Fiel 2 Fiel 2 To+1 To+1	2465 Manual (gauge only)/ SN123456789	
										Manual Device/ SNN/A	

Enter the values for "Ambient Temperature", "Ambient Humidity" etc. Click on the unit to change it (e.g. change psi to mbar)

lanual (gauge only)			— C	x c
Piston Gauge Platform	2465 Manual (gauge only)		Masses To	Load
Piston-Cylinder	Ruska 2465-725 TL-1024]
Mass Set	Ruska 2465A-799 66923			
Trim Mass Set	Trim Mass Set			
Mass Bell	2465A-799 heavy			
Medium	N2 NITROGEN	Ψ.		
Measurement Mode	Gauge	-		
Ambient Temperature (C)	21.000 Mass Li	t <<		
Ambient Humidity(%RH)	35.0 Piston 0.047	000 kg		
Ambient Pressure (psi)	14.7000 1 Bell 0.1170	000 kg) ka		
Ambient Pressure Height (cm)	0.00) kg	Calculations	
Vent Height (cm)	0.0) kg		1 1007
Head Height (cm)	0.0) kg ka	Mass Density:	7.8000E
	8 0.3000000	kg	Area (P,T) (m2):	3.3572E-04
P-C Temperature (C)	21.000	kg kg	Head Total (Pa):	-0.0090
		kg ka	Density 1: Head 1 (Pa):	8.2137 0.0000
Piston Position (mm)	0 5 1.0000000	kg	Density 2: Head 2 (Pa):	0.0000 0.0000
Local Gravity (m/s^2)	9.806650	kg	Piston Height (m): Piston Head (Pa):	0.0087 -0.0090
Mass Loading Resolution	100g 💌 Trim Mass(g)		ATM Head (Pa):	0.0000
Pressure Display Resolution	0.000001 💌	,	(* Density in kg	ı/m3)
	0.00000			
Pressure (psi)	0.000000			
True Mass (kg)	0.0000000		1	
Nominal Mass (kg)	Vent			
0	Pressure is Ready			

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Alternately enter the pressure that you want in the Pressure (unit) box and press [Enter] on your keyboard, or click the masses that you want to load. Either method will calculate the actual pressure (in yellow to the right of the Pressure (unit) box). If you want to get closer to the desired pressure, change the "Trim Mass" to a non-zero value and the box to the right of it will show you what trim mass to load.

When the piston and masses are floating, and all values are entered and confirmed, press the [Pressure is Ready] button. The pressure in yellow is the actual reference pressure.

lanual (gauge only)			— 🗆 X
Piston Gauge Platform	2465 Manual (gauge only)		Masses To Load
Piston-Cylinder	Ruska 2465-725 TL-1024		Piston 0.0473000 kg
Mass Set	Ruska 2465A-799 66923		1 Bell 0.1170000 kg 2 1.0000000 kg
Trim Mass Set	Trim Mass Set		3 1.0000000 kg 4 1.0000000 kg
Mass Bell	2465A-799 heavy		
Medium	N2 NITROGEN	-	
Measurement Mode	Gauge	-	
Ambient Temperature (C) Ambient Humidity(%RH) Ambient Pressure (psi)	21.000 Mass List 35.0 ✓ Piston 0.0473000 14.7000 ✓ 1 Bell 0.1170000 k	<< kg	
Ambient Pressure Height (cm)	0.00 13 0.0200000 kg		0.1.1 <i>4</i>
Vent Height (cm)	0.0 12 0.0300000 kg		Lalculations
Head Height (cm)	0.0 = 10 0.1000000 kg 9 0.2000000 kg		Air Density (P,T): 1.1967 Mass Density: 7.8000E +03
P-C Temperature (C)	21.000 kg ✓ 21.0000 kg ✓ 21.000000 kg ✓ 31.0000000 kg ✓ 41.0000000 kg		Area (P,T) (m2): 3.3573E-04 Head Total (Pa): 0.0978 Density 1: 2.3477 Head 1 (Pa): 0.0000
Piston Position (mm)	0 51.0000000 kg		Density 2: 0.0000 Head 2 (Pa): 0.0000
Local Gravity (m/s^2)	9.806650		Piston Height (m): 0.0087 Piston Head (Pa): 0.0978
Mass Loading Resolution	100g 💌 Trim Mass(g) 0.00	00	ATM Head (Pa): 0.0000
Pressure Display Resolution	0.000001 💌		(* Density in kg/m3)
Pressure (psi)	15.025992		
True Mass (kg)	3.5473084		1
Nominal Mass (kg)	3.5000000		
0	Pressure is Ready		

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If you want to record the pressure in a datafile, click the yellow folder icon at the top left of the COMPASS software window. This will create a datafile and open the data grid at the bottom of the window.



To record the pressure, click the red notebook with pen icon. The data point will be recorded in the data grid.



C:\DHI\COMPASS for Pressure\Data\20221018_001.dat									
Point	Time	Set Point (psi)	Set Time (sec)	DUT Raw Outl (MPa)	DUT Pressure (psi)	Reference Pressure (psi)			
1	17:25:22		0.0			15.025992			

End of Procedure

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