Calibration Solutions for Pressure and Flow™

Interconnection Kit
For MPG1 with RPM4 or PG7302

P/N 402265

Instruction Sheet

INTERCONNECTION KIT FOR MPG1 WITH RPM4 OR PG7302, P/N 402265, INCLUDES:

DESCRIPTION	PRESSURE RATING	QTY	PART NO.
Nipple, 6 in. (152 mm), DH500	500 MPa (72 500 psi)	1	103975
Nipple, 12 in. (305 mm), DH500	500 MPa (72 500 psi)	1	103976
Nipple, 5 in. x 1/8 in. (127 mm x 3 mm), DH500 tips	200 MPa (30 000 psi)	2	123019
Tee DH500	400 MPa (60 000 psi)	1	100291
Plug DH500/DH700	700 MPa (100 000 psi)	1	100285
Adaptor, DH500F x 1/8 in. (3 mm) NPTM	200 MPa (30 000 psi)	2	102819

INTRODUCTION

This kit provides the tubing and fittings necessary to connect an MPG1 pressure controller to either an RPM4 reference pressure monitor or to a PG7302 piston gauge, and also to a device under test. This document contains instructions for connecting the fittings and tubing.

INSTALLATION OF INTERCONNECTIONS

❶ **Remove Plugs from MPG1 and RPM4 or PG7302:** Unscrew the glands from the test ports of the MPG1 and RPM4 or PG7302. Remove the collar and plug from inside each gland. There should be two plastic plugs and one stainless steel plug. The plastic plugs will not be used. Keep the stainless steel plug.

❷ **Install glands and collars onto flexible 5 in. nipples:** Slide a gland over a nipple so that the threads of the gland face outward. Next, screw a collar onto the nipple by turning it to the LEFT. Allow two nipple threads to show between the collar and nipple tip.

❸a **RPM4 – Install glands and collars onto the 6 in. nipple.**

❸b **PG7302 – Install glands and collars onto the 12 in. nipple.**

❹ **Install nipples into three way tee:** Install the 5 in. nipple into the center port of the three way tee. Install either the 6 in. or 12 in. nipple into either of the end ports on the three way tee as shown in Figure 1. Tighten the nipples with a 5/8 in. wrench or crescent wrench. The thick nipple on the right connects to the MPG1. The thin nipple in the center of the plug connects to the RPM4 or to the PG7601. In Figure 1 the left port is currently plugged, but the remaining thin 5 in. nipple can go in the left port and connect to the DUT.

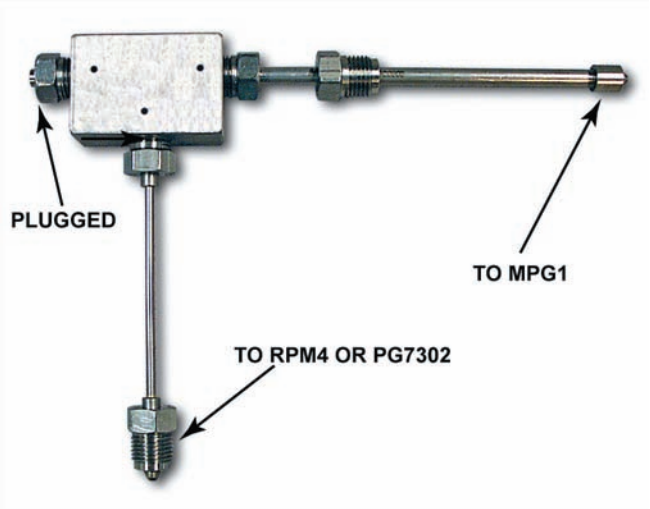

Figure 1: Two nipples installed in 3-way tee.

❺ **Optional: Extend the front feet on RPM4:** The front feet of the RPM4 can be extended so that the RPM4 is inclined for easier reading and display access.

❻ **RPM4 A70M or less - install NPT adaptor into RPM4.** RPM4s that have ranges of 70 MPa (10 000 psi) or less have 1/8 in. NPTF test ports. These ports require the use of one of the DH500F by 1/8 in. NPTM adaptors. Wrap Teflon® thread tape around the NPT threads of the adaptor three times, and install the adaptor into the RPM4.

❼ **Install the free end of the center nipple into RPM4 or PG7302:** The center, thin, 5 in. nipple should be inserted into the test port of the RPM4 or PG7302. Screw in the gland loosely by hand. The nipple can be bent slightly to ensure that nipple enters straight into the test port. Do not tighten the gland in the RPM4 or PG7302 yet, since it will be tightened when the system is primed.

❽ **Install the 6 in. or 12 in. nipple into the MPG1.** Screw in the glands loosely by hand. Tighten the gland with a 5/8 in. wrench or crescent wrench.

❾ **Install a DH500M to 1/8" NPT male adaptor in the DUT if necessary:** The 1/8 in. NPT male adaptor can be used to connect the remaining thin 5 in. nipple to DUTs with 1/8 in NPT female ports. If you intend to use the adaptor, wrap Teflon® thread tape around the NPT threads three times and install it into the DUT.

❿ **Install the Device Under Test (DUT).** The DUT will be connected to the test line with the remaining thin 5 in. nipple. This nipple can be installed either in the 3-way tee, or in the port on top of the MPG1. The tube can be slightly bent if necessary. Install the nipple in the desired location. Tighten the gland in the tee or MPG1, but do not tighten the gland that connects to the DUT.

⓫ **Plug the open test port:** There is an open test port either on the top of the MPG1, or on the 3-way tee. Insert the stainless steel plug into a gland. Insert the plug and gland into the open port. Do not tighten.

⓬ **Prime the system, tighten fittings:** Pump fluid through the nipples by using the MPG1. See the appropriate section of the MPG1 Operation and Maintenance Manual for this procedure. Make sure that all air is purged from the test lines. There are 3 loose fittings: one on the DUT, one on the RPM4 or PG7302, and the other on the plug. Tighten each of the loose fittings when oil without bubbles begins to flow through it.

⚠ The maximum operating pressure of the variable volume is 100 MPa (15 000 psi) in MPG1-100M and 200 MPa (30 000 psi) in MPG1-200M. Do not generate pressure greater than the maximum operating pressure.

⚠ High pressure fluids are potentially hazardous. Energy stored in pressurized fluids can be released unexpectedly and with extreme force. High pressure systems should be assembled and operated only by personnel who have been instructed in proper safety practices.

⚠ ALWAYS use external tubing and fittings rated for pressures equal to or greater than the maximum pressure which MPG1 will be used to generate.

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