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| <ol style="list-style-type: none"> <li>1. SUPPLY connection to OPG1 or MPG1 TEST Port (DH500)</li> <li>2. TEST connection to PG7302 (DH500)</li> <li>3. Intensifier</li> <li>4. LOW PRESSURE SHUTOFF valve</li> </ol> | <ol style="list-style-type: none"> <li>5. INTENSIFIER SHUTOFF valve</li> <li>6. TEST connection to Device Under Test (DUT)</li> <li>7. Safety Head with 120 MPa (17 500 psi)<br/>Rupture Disc and Muffler</li> </ol> |
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## DESCRIPTION

The Oil Intensifier System (OIS) is intended to generate pressure up to 500 MPa (75 000 psi) using an OPG1 or MPG1 (whose maximum pressure is 200 MPa (30 000 psi)). The OIS includes a 5:1 intensifier. The intensifier is used only when necessary to generate pressure > 200 MPa (30 000 psi).

## INSTALLATION

- ❶ Position the OIS between the OPG1 or MPG1 and the PG7302 with the PG7302 to the left.
- ❷ Using a DH500 coned and threaded tube, connect the OPG1 or MPG1 TEST port to the OIS SUPPLY port (1).
- ❸ Using a DH500 coned and threaded tube or two tubes and a tee, connect the PG7302 TEST port to the OIS lateral TEST port (2).

### Operation: Intensifier Not in Use (Pressure ≤ 200 MPa (30 000 psi))

- ❶ Open LOW PRESSURE SHUTOFF valve (4) and close INTENSIFIER SHUTOFF valve (5). In this condition, OPG1 or MPG1 generates pressure straight through the Intensifier System, by passing the intensifier.
- ❷ Plug TEST port (6) if it is not being used.

### Operation: Using Intensifier (Pressure > 200 MPa (30 000 psi))

OPG1 or MPG1 generates and adjusts pressure up to 200 MPa (30 000 psi). **Generally, the OIS intensifier is used only when running tests that include pressures greater than 200 MPa (30 000 psi).** The OIS may be switched into and out of use under pressure.

- ❶ When running tests that include pressures above 200 MPa (30 000 psi), connect the device under test (DUT) to the upper TEST connection (6) of the OIS.
- ❷ Set pressures under 100 MPa (15 000 psi) using the OPG1 or MPG1, without the intensifier.
- ❸ To switch in the intensifier, first close the LOW PRESSURE SHUTOFF valve (4), then open the INTENSIFIER SHUTOFF valve (5). In this condition the OPG1 or MPG1 pressure is shut off from the PG7302 and is applied to the low side of the intensifier. Increasing pressure on the low side of the intensifier results in pressure changes five times greater on the high side (PG7302 side) of the intensifier.
- ❹ Use the OPG1 or MPG1 to generate and adjust pressure as necessary to set test points and float the PG7302 piston.


- 5 Before switching out the intensifier, be sure that the PG7302 piston is fully down (LSTOP) as the pressure may change abruptly during the switching procedure. If possible, switch out the intensifier at the same pressure as it was switched in so that its pistons are back to the start position. To switch out the intensifier, first close the INTENSIFIER SHUTOFF valve (5) and then open the LOW PRESSURE SHUTOFF valve (4).

### Operation: Returning the Intensifier Pistons to Start Position

If the intensifier runs out of stroke towards the high side, adjusting the pressure on the intensifier's low side no longer affects the pressure on the high side. This procedure allows the intensifier pistons to be returned to their start position. It is only necessary to use this procedure if the intensifier pistons have become positioned near the end of stroke and cannot be returned naturally by the high pressure.

- 1 Load the entire mass set on the PG7302.
- 2 Close the OPG1 or MPG1 EXHAUST valve. Close the INTENSIFIER SHUTOFF valve (5). Open the LOW PRESSURE SHUTOFF valve (4).
- 3 Using the OPG1 or MPG1, generate about 70 MPa (10 000 psi).
- 4 Close the LOW PRESSURE SHUTOFF valve (4). Open the OPG1 or MPG1 EXHAUST valve.
- 5 Open the INTENSIFIER SHUTOFF valve (5).
- 6 If pressure on the high side of the intensifier returns to zero when the INTENSIFIER SHUTOFF valve is opened, the intensifier is not at the start position. Repeat the process until the high side of the intensifier holds pressure.

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 The Oil Intensifier System is equipped with a pressure rupture disc on its low pressure circuit. (See schematic reference 7). The disc ruptures permanently at 120 MPa (17 500 psi). Once ruptured, the disc must be replaced.

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