

SUPERPRESSURE

HIGH PRESSURE INTENSIFIERS

CAT. NO. 46-19229 & 46-19230 RATIO 10:1
46-19252 & 46-19253 RATIO 23:1

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I INTRODUCTION

The NSI High Pressure Intensifier is a differential piston device in which differences in the area of two pistons are used for pressure multiplication. Two ratios are used: 23:1 for 100,000 psig, maximum, and 10:1 for 50,000 psig, maximum.

II INSPECTION

If damage is discovered upon unpacking equipment, an immediate request should be forwarded to the delivering carrier to perform an inspection and prepare a concealed-damage report. Concurrently, the nature and extent of damage should be reported to Newport Scientific so that action may be initiated to replace damaged parts or issue instructions for return of the apparatus, if such is necessary.

III INSTALLATION

- A. The Intensifier should be mounted in a vertical position with the high-pressure cylinder located under the low-pressure cylinder. The high-pressure cylinder head is held in place with cap screws on the 50,000 psi Intensifier; a threaded cap is employed on the 100,000 psig Intensifier.
- B. The small cylinder furnished with the Intensifier contains lubricating oil, and should be mounted next to the Intensifier as shown on Page 3. During operation, the high-pressure piston packing tends to wipe the high-pressure cylinder walls clean. Auxiliary lubrication must be supplied. The lubrication oil cylinder should be filled with SAE 10W automotive engine oil when the Intensifier piston is at the end of its pressurizing stroke. The oil level in the cylinder will fluctuate with piston position.
- C. After the Intensifier and lubricating oil cylinder have been mounted, connections should be filled with one of the oil mixtures noted below, and all air purged from the pressure system.
- D. Use the following oils in the pump, pump oil reservoir, and pressure system of this intensifier:
 1. For pressures up to 50,000 psi, use SAE 10W motor oil; however, do not use this oil at pressure greater than 50,000 psi. At these pressures, SAE 10W may solidify and burst the gauge.

2. For pressures of 0 to 100,000 psi, especially those exceeding 50,000 psi, use a mixture of two parts SAE 10W motor oil to one part kerosene, by volume.

WARNING

Do not use other oils as they may solidify under pressure and burst the Intensifier or other parts of the high pressure system.

NOTE

Make certain oil is present in the high-pressure cylinder and the tubing which connects the cylinder to the point of use.

IV OPERATION

- A. Close valve C and D, open valves A and B, and pump oil from the oil reservoir through valve A into the low-pressure cylinder of the Intensifier (see Page 3). High pressure oil from the high pressure end of the Intensifier passes through valve B to the point of use.
- B. When the piston reaches the end of its pressurizing stroke, stop pumping and return the piston for another stroke. It is suggested that a dial pressure gauge be installed in the line between A and C to indicate (by a rapid increase of pressure showing on the gauge) when the piston is at the end of its stroke in either direction.
- C. Close valves A and B to retain pressure at the point of use, and open valves C and D. Restart the pump. Oil from the pump enters the high pressure end of the intensifier through valve C to force the piston up, and drives oil from the low pressure end of the Intensifier through valve D and back to the oil reservoir.
- D. Repeat steps A, B, and C as often as necessary to build up the pressure at the point of use.

NOTE

When ordering replacement parts, please supply serial number data which is stamped on the low-pressure body and/or on the framework nameplate.