POWER TEAM
HYDRAULIC TECHNOLOGIES

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Form No. 102968

Operating Instructions for:

100991	**100994**
100992	**100995**
100993	**100996**

MODEL A
HYDRAULIC INTENSIFIER
Max. Capacity: 5,000 PSI

DESCRIPTION

The Hytec intensifier is a unique, self-contained device which boosts inlet pressure by up to a 5:1 ratio without the use of external power. In addition, the intensifier maintains the high pressure and automatically compensates for the consumption of oil on the high pressure side. Since the high pressure outlet is directly proportional to the inlet pressure, high pressure adjustment is achieved simply by varying the inlet pressure. Models are available work at inlet pressures up to 1560 PSI. All models provide outlet pressures of up to 5,000 PSI.

Intensifiers are used in applications where an existing low pressure hydraulic source is available. They amplify low pressure to a range better suited to workholding systems.

Intensifiers use a reciprocating pumping mechanism to generate the high pressure flow so their volume is not limited as with “single shot” piston style intensifiers. This allows the intensifier to compensate for any oil consumption on the high pressure side.

Flow from the low pressure source is directed through the intensifier to the downstream circuit. As system pressure increases, the intensifier begins to cycle and intensifies the system pressure by the ratio specified.

Models without a dump valve do not allow reverse flow so directional control must take place downstream in the high pressure circuit. Models with the dump valve allow directional control in the low pressure supply circuit.

The optional directional valve manifold block has standard Vickers C-10-4 cavity to accept a variety of manual and solenoid valves. This manifold should be used only with intensifiers with the dump valve.

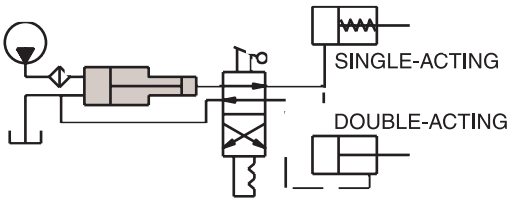
It is cost effective for use on any hydraulic system where a sub-system requires higher pressure than the system pressure. In addition, on stand alone power packs, using the intensifier means that two types of capacity can be obtained from one unit - high flow combined with low pressure and low flow combined with high pressure.

Because of its compact size and no need for external power such as air, the intensifier can be installed at the point of use. This minimizes the need for high pressure tubing and other components. The self compensating feature of the intensifier means that high pressure is maintained using virtually no energy where only small losses have to be compensated for. This means that there is very little heat input to the high pressure system.

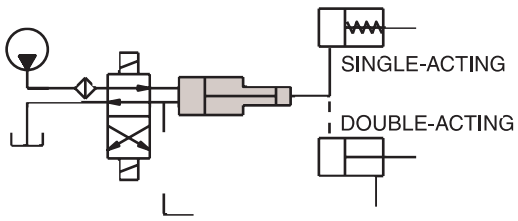
Litho in USA

SPECIFICATIONS

WITHOUT DUMP VALVE



WITH DUMP VALVE



Cat. No.		Pressure Intensification Ratio	Inlet Flow Max. (Cu. In./min.)	Outlet Flow Max. (Cu. In./min.)	Inlet Pressure (Cu. In./min.	
With Dump Valve	W/O Dump Valve				Min. (PSI)	Max. (PSI)
100991	100994	3.2 to 1	610	150	300	1,560
100992	100995	4.0 to 1	580	120		1,250
100993	100996	5.0 to 1	550	95		1,000

The chart above lists the maximum operating flows and pressure by intensification ratio. The design of the intensifier means that outlet flow and pressure are directly proportional to inlet flow and pressure.

IMPORTANT: To prevent damage to the intensifier, the values shown for inlet flow must not be exceeded. If the design of the hydraulic system is such that inlet flow can exceed the value shown, a means to limit inlet flow must be installed upstream of the intensifier. The preferred method is to install a fixed orifice.
The minimum inlet pressure required to operate the intensifier is 300 PSI.

Approximate inlet to outlet leakage is 1 cu. in./min. This device requires 10 micron nominal filtration. Hytec filter #100919 is ideal for protecting the inlet port.

IMPORTANT: Demands created by the addition of this device to an existing hydraulic system can cause fluctuations in available pressure and flow to that system. The effects of these fluctuations on the original system must be evaluated by the designer of that system.

The external male thread on the outlet module is a bulkhead fitting for mounting purposes only. This is not a pressure fitting. Bulkhead nuts are included.

Flow characteristic are greatly influenced by system design. Contact Hydraulic Technologies if flow characteristics are critical for your application.

INSTALLATION REQUIREMENTS

The Hytec intensifier is a rugged device designed to minimize maintenance. However, as with other hydraulic components, there are certain recommendations to assure a trouble-free start-up and operation. Following are steps which should be taken during design, installation, and operation.

A. System Design

1. Filtration of fluid is required to a minimum of 10 micron nominal.

2. There must not be any restrictions downstream of the the Return port which would cause back pressure on the unit. Because the Outlet pressure is based on the differential between Inlet and Return, any back pressure on Return will proportionately reduce outlet pressure.

3. System design should be such that inlet pressure is maintained at all times when high pressure is required at the outlet. The intensifier is designed to automatically compensate for downstream losses, but sufficient inlet pressure and flow is required to maintain this capacity.

4. The system fluid must be compatible with Buna-N o-ring seals.

B. System Preparation

1. Prior to installation, the system should be flushed to remove any debris which may have entered piping during fabrication.

2. Breed all air from the system prior to use.

3. The intensifier should be securely mounted using either a bulkhead nut or a U-clamp around the body.

MAINTENANCE

With proper installation, 10 micron filtration of the hydraulic fluid, and by following the operation recommendations, the intensifier should provide long-term, trouble-free operation.

The Hytec intensifier requires no routine maintenance and it is also not field serviceable. If you experience trouble with the unit, please return it to Hytec for evaluation and service.