



**ROEMHELD**  
HILMA ■ STARK

Issue 10-17 E

## D 8.757

### Intensifier 1 - 2.6 l/min

Intensification ratio 1.5 to 5, max. operating pressure 500 bar  
double acting, with pilot-operated check valve



#### Advantages

- Compact design
- Pipe thread and manifold mounting connection possible
- Continuous flow rate
- Pressure regulation low-pressure side
- Expensive high-pressure pump not required
- High-pressure only where needed
- Cost-saving piping
- Pilot-controlled check valve integrated
- Sequence valve can be adapted

High pressure



Low pressure

#### Application

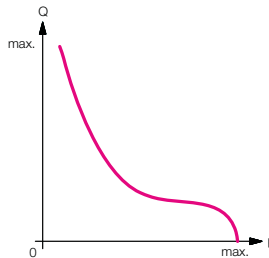
Hydraulic intensifiers convert a low input pressure into a higher output pressure according to the intensification ratio.

In principle, smaller clamping elements can be used with higher pressure and thus more workpieces can be machined on one fixture. A single hydraulic cylinder, a complete group of cylinders or a complete hydraulic clamping fixture can be connected to the hydraulic intensifier.

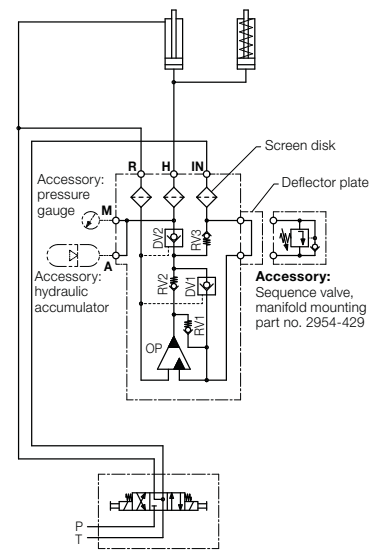
The integrated pilot-controlled check valve prevents a pressure drop in the high-pressure range on uncoupled pallets.

Prerequisite is the use of leakage-free clamping elements.

#### Pressure - flow rate diagram



#### Hydraulic circuit diagram



Power unit with a pressure filter 10 µm is required.

#### Description

An oscillating pump piston, that will be automatically reversed in the end positions by a hydraulically-operated valve, is installed in the intensifier. The ratio of the piston areas corresponds to the intensification ratio.

For unhindered flow in the low-pressure range, the pump piston will be bypassed by means of a bypass-line. A pilot-controlled check valve shuts off the high pressure.

#### Functional principle

The flow rate is supplied without pressure through input IN via the check valves RV3 and DV2 to the output H and thereby to the hydraulic cylinders.

At the same time, the oscillating pump OP starts working. The flow rate at output H is getting smaller and smaller and is nearly zero when reaching the maximum operating pressure.

The pump holds constant the pressure at H as long as low-pressure is available at IN.

Between the ports IN and R there will be leakage of approx. 50 cm<sup>3</sup>/min, since due to functional reasons the pump elements cannot be sealed without leakage.

If the input IN is depressurised, the check valve DV2 prevents a pressure drop at port H. To retract the cylinders, port IN will be depressurised and port R pressurised. The check valves DV1 and DV2 will be unlocked and allow a free return.

#### Single-acting cylinders

If only single-acting cylinders are connected, a double-acting valve function is required to control the pilot-operated check valves for unclamping (see hydraulic circuit diagram).

#### Important notes!

The intensifier can produce extremely high hydraulic pressures. The manufacturer of the system must provide effective safety valves for protection against excessive pressures.

The intensifier must always be connected for double acting use, also if only a single acting cylinder will be operated. For oil supply, port R must be depressurised, so that the pump and the pilot-operated check valves can work without failure.

As long as pressure is available at IN, the pump piston has an internal leakage by design that drains at return port R.

#### Accessory: Sequence valve

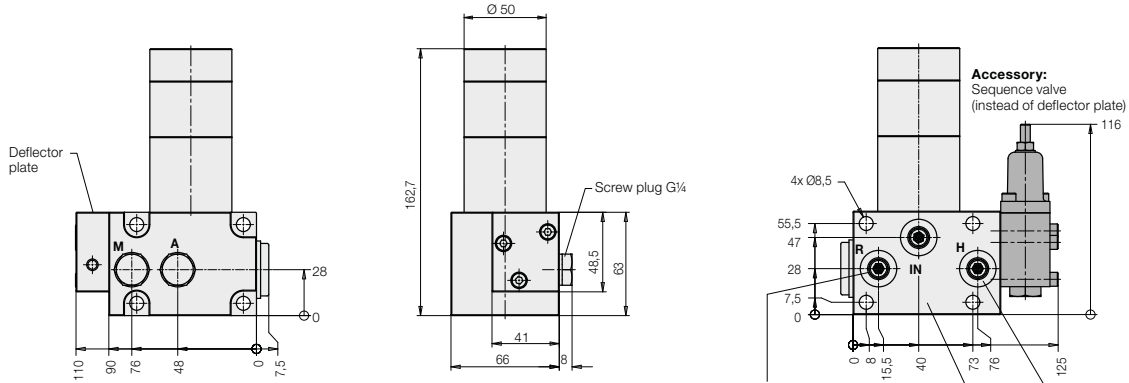
As soon as pressure is available at port IN the oscillating pump starts working and thereby consumes already a part of the available flow rate. Thus, the clamping time is extended.

By means of the manifold mounting sequence valve, the pump is only switched on when really required. This allows a significant reduction of the clamping time, particularly

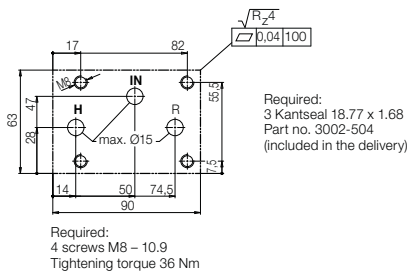
- in systems with a relatively small low pressure pump and/or
- if a relatively large volume is to be filled at the high-pressure side.

It is also possible to activate the high pressure only when a certain pressure is reached in the system.

## Dimensions Technical data



### Connecting scheme for manifold-mounting



### Inputs

- IN** = Low pressure  
**R** = Unlock check valves DV1 and DV2

### Outputs

- H** = High pressure for hydraulic cylinders  
**A, M** = High pressure for accessories (hydraulic accumulator, pressure gauge...)  
(Do not use as a cylinder port!)

### Connecting thread 5 x G $\frac{1}{4}$

		1.5	2	3.2	4	5
Max. operating pressure						
Low pressure IN	[bar]	200	200	156	125	100
High pressure H	[bar]	300	400	500	500	500
Min. operating pressure	[bar]	20	20	20	20	20
Max. flow rate						
Low pressure IN	[l/min]	8	12	15	14	14
High pressure H*	[l/min]	2.6	2.4	1.6	1.3	1
Seals		NBR	NBR	NBR	NBR	NBR
Temperature range	[°C]	-30...+100	-30...+100	-30...+100	-30...+100	-30...+100
Max. degree of pollution	[ISO 4406]	Class 19/16	Class 19/16	Class 19/16	Class 19/16	Class 19/16
Required filter mesh size	[mm]	0.01	0.01	0.01	0.01	0.01
Screen filter (installed)	[mm]	0.63	0.63	0.63	0.63	0.63
Weight	[kg]	2.8	2.8	2.8	2.8	2.8
<b>Part no.</b>		<b>8755-715</b>	<b>8755-720</b>	<b>8755-732</b>	<b>8755-740</b>	<b>8755-750</b>

\*) in case of a counter pressure of 300 bar.  
With increasing counter pressure the flow rate tends to zero (see page 1).

### Accessory:

Sequence valve as per data sheet C 2.954  
Adjusting range 10 - 150 bar

**Part no. 2954-429**

Required for mounting:

3 screws M5x35 - 8.8

**Part no. 3300-215**

### Hydraulic symbol

