

HYDRAULIC INTENSIFIERS

pneumatic – hydraulic, single-acting/double-acting

Description:

This hydraulic intensifier transmits the energy from a pneumatic system connected ahead onto the hydraulic system.

The transmission is loss-free in a set ratio without interfering oscillations. Electrical signal processing systems control the sequence in the pneumatic part. Due to the high flow speed the converted energy is quickly provided to the hydraulic consumers.

With the aid of the hydraulic intensifier, hydraulic consumers that require higher pressure can be actuated by a lower pneumatic incoming pressure that way.

Operating condition:

Before operation the hydraulic intensifier is to be filled with hydraulic oil and must be de-aerated in the hydraulic system.

In order to check the oil level, the hydraulic intensifiers are equipped with an oil level window as standard.

An electrical oil level control is available as accessory part (see page 2). This electrical control automatically detects a minus and with that makes oil level control in the hydraulic part easier.

Functionality:

Once compressed air is supplied a piston with high-pressure pipe is pushed against a plunger. After a short length of stroke a non-return element with sealing separates the high pressure chamber from the reserve chamber.

The area ratio of piston and plunger affect the increase in pressure in the hydraulic intensifier. The increase of pressure during the stroke is depending on the force that the pressure inlet. The back stroke is made through de-aeration of the compressed air part.

Single-acting

The oil volume of the driving cylinder is pushed backwards until the non-return element opens. Compensation of the pressurizing medium is made automatically. For that, the piston is pulled by a magnet into its end position (up to pneumatic-piston \varnothing up to 140 mm).

There is no oil loss by leakage. Secured by non-return element and sealing losses are always directed into a reserve chamber. That makes the ingress of air impossible.

In order to shorten compensation time we recommend to provide a constant feed pressure to the hydraulic intensifier of 0.5 to 1 bar. For those types with pneumatic piston $\varnothing > 140$ mm this is mandatory as these to not have a magnetically controlled back stroke.

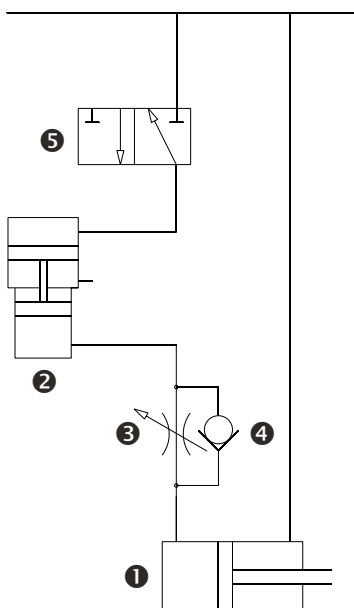
Double-acting

In order to increase driving power and speed, the hydraulic intensifier can be operated double-acting. In doing so, feed pressure is to be 0.5 to 12 bar. With this procedure it is prevented to cause under pressure in pipes and driving cylinder. In addition a quick aeration valve can be implemented.

Application example:

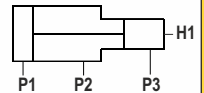
Hydropneumatic drive with hydraulic intensifier

- ① Hydropneumatic cylinder
- ② Hydraulic intensifier
- ③ Throttle check valve
- ④ Check valve
- ⑤ Pneumatic directional valve



Webcode: 043004

Other designs are available on request



Connections:

- ⊗ G1/4, G3/8 or G1/2 threaded port

Operating medium:

- ⊗ Compressed air, filtered, oiled or unoled
- ⊗ Hydraulic oil, ISO VG 32, DIN 51 524

Operating pressure:

- ⊗ Compressed air side 0.5 to 10 bar

Operating temperature:

- ⊗ 15° C up to 80° C, with electrical oil level control up to 60° C

Advantages:

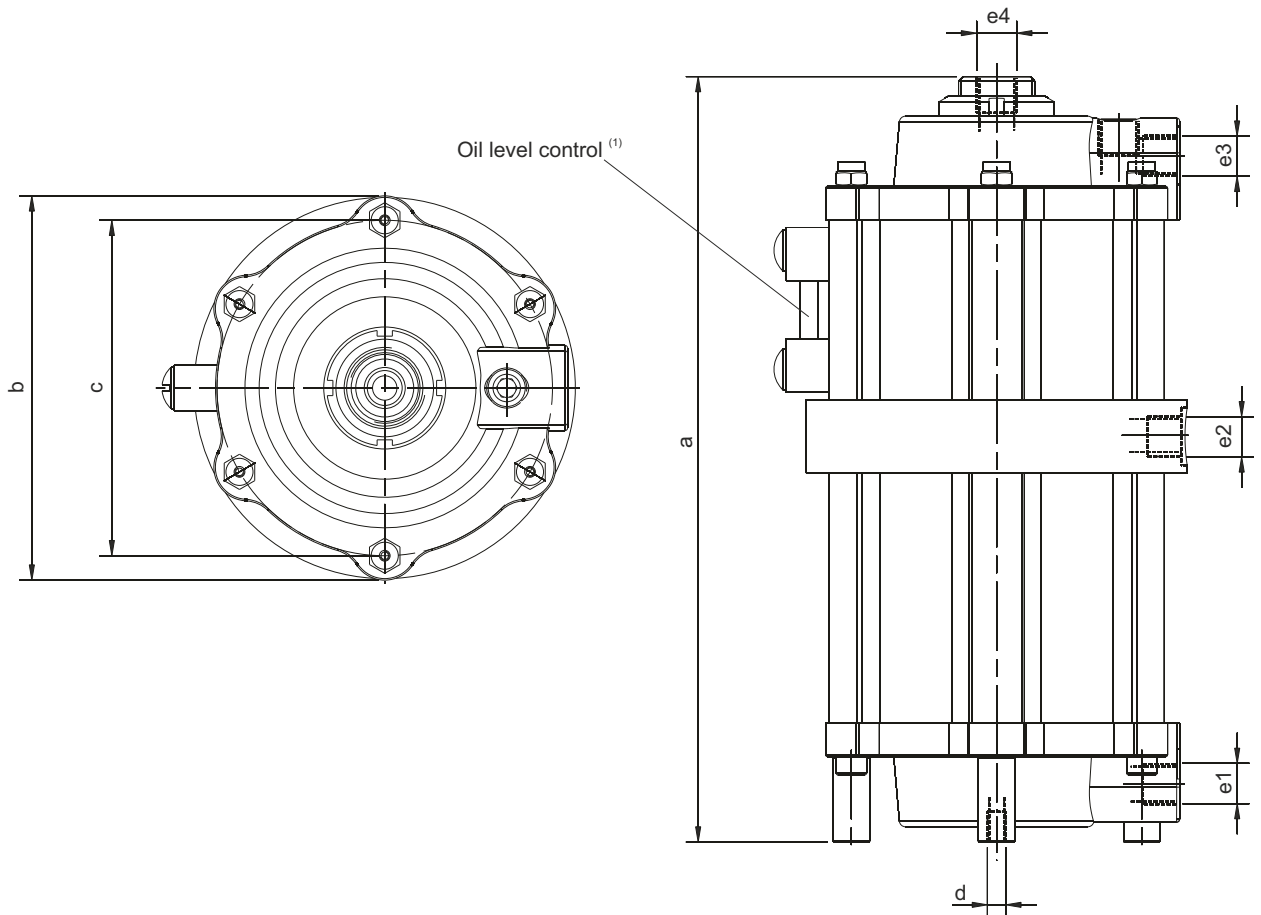
- ⊗ Fast loss-free pressure transfer
- ⊗ No interfering oscillations
- ⊗ No underpressures in the system
- ⊗ Leakage-free operation with reserve
- ⊗ With oil level control
- ⊗ Low-wear construction



Siemensstraße 16, 35325 Mücke (Germany)
 Phone: +49 6401 225999-0
 Fax: +49 6401 225999-50
 E-mail: info@hydrokomp.de
 Internet: www.hydrokomp.de



Hydraulic intensifier pneumatic – hydraulic



Technical data:

Piston Ø pneumatic	[mm]	100	100	100	140	140	140	200	200	200
Piston Ø hydraulic	[mm]	32	32	50	32	50	63	63	100	100
Intensification ratio		10:1	10:1	4:1	19:1	8:1	5:1	10:1	4:1	4:1
Sequence pressure	[bar]	05-10	05-10	05-10	05-10	05-10	05-10	05-10	05-10	05-10
Oil volume	[cm ³]	40	100	250	120	250	400	400	800	1600
Oil reserve	[cm ³]	300	750	500	2000	1450	1250	3300	1900	3800
a	[mm]	255	415	415	470	430	430	460	410	610
b	[mm]	125	125	125	168	168	168	236	236	236
c	[mm]	110	110	110	152	152	152	214	214	214
d	[mm]	M6	M6	M6	M8	M8	M8	M10	M10	M10
e1/e2/e3		G1/4	G1/4	G1/4	G3/8	G3/8	G3/8	G1/2	G1/2	G1/2
e4		G1/4	G1/4	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2	G1/2
Weight approx.	[kg]	4,4	6,1	7,6	11,2	11,2	13,0	24,2	25,7	33,7
Order number ⁽¹⁾	DUPH...	-010-0040	-010-0100	-004-0250	-019-0120	-008-0250	-005-0400	-010-0400	-004-0800	-004-1600

⁽¹⁾with oil level control (standard)

Replacement seals are available on request.

Electrical oil level control (accessories)

Switching power	10 VA
Voltage	up to 250 V (0,5 A)
Temperature max.	60° C
Protection class	IP 54
Order number	DUPH-EO-001

