

## Area of application

The hydro-mechanical clamp unit type OHZ-K is designed for machine dies and special machines of various types. It is particularly suitable for clamping carriages, pallets, turn-tables and similar objects. It is rigidly installed at various points, for example, on tailstocks, machine frames or gantries. Its use requires flat clamping surfaces.

Due to the low installation cost, the hydro-mechanical clamp unit is suitable both for initial installations and retro-fits.

## Mode of Operation

A hydraulically actuated mechanically locking toggle mechanism transmits its clamping force to a tie rod that clamps the die in the tool surface.

The clamping force is applied in a purely mechanical manner whereby the toggle mechanism is moved to the clamping point by means of hydraulic pressure. The clamp unit, together with the tie rod, produces a tension effect. Due to the tension thus produced, the die is clamped between the tie rod head and the clamping surface, and at the same time is mechanically locked in place.

## Application of the clamping force by:

- Tension movement of the clamp unit

## Distinguishing features

The clamp unit is fitted with the well-proven Optima toggle mechanism. In this system, the clamping force required is transmitted by mechanical components which are actuated, with low hydraulic pressure, only during the clamping or release process. The clamping force is thus independent of the compressibility of the pressure medium, operating temperatures and line losses.

Due to the patented *Optima-“Aktivator”*, the clamping force is continuously and directly monitored. For this to function there must not be any hydraulic pressure on the clamp unit.

In this control system, the clamp units are connected to the machine control system via electrical switches (precision limit switches). In the event of failure of the clamping force, snapping of the tie rod, or plastic deformations at the clamping point, an electrical signal is produced and passed to the machine control system. Irregularities of this kind result in the machine being stopped.

This control system ensures the highest degree of safety.

When using multiple clamping surfaces, maximum thickness tolerances of  $\pm 0.2$  mm are permitted.

## Electrical control of the following functions (switches):

Continuous monitoring of clamping force (S6)

## Advantages

- Mechanical self-locking
- Limited space required due to compact dimension
- Maximum safety due to continuous monitoring of clamping force by the “Aktivator”
- Central control
- Hydraulic pressure only necessary during the clamping or release process
- High mechanical load capacity

## Construction

The individual components of the toggle mechanism are made from various hardened steels.

The clamp unit is secured by four bolts of strength class 10.9 (supplied). The thread dimension depends on the type (see technical drawing).

2.300

### Technical data

Type		OHZ-K 50 S	OHZ-K 100 S	OHZ-K 200 S
Nominal clamping force	kN	50	100	200
Set pressure	bar	70	90	90
max. load capacity	kN	63	125	250
max. operating pressure (min. set pressure + 20 bar)	bar	100	140	140
Release stroke	mm (ca.)	2	4,5	4,5
Die thickness tolerance	mm	+/- 0.2	+/- 0.2	+/- 0.2
Oil volume required (each process)	clamping	ca. 30	ca. 70	ca. 130
	release	ca. 30	ca. 70	ca. 130
Delivery rate per unit <sup>1)</sup>	l/min.	0.4 - 0.6	1.0 - 1.5	1,5 - 2.0
Weight	kg (ca.)	10	15	20
Hydraulic connections		G 1/4	G 1/4	G 1/4
max. operating temperature	°C	70		
Pressure medium		Hydraulic oil ISO Standard 3448 ISO VCE (DIN 51519)		
Viscosity		25 - 60 cSt/40° C		
Filter		20 - 25 µm		

"If a pump with a higher delivery rate then necessary is used, the oil flow must be reduced by means of flow regulating valves or one-way restrictors.

### Monitoring of clamping force

#### OHZ-K 50 S

Inductive proximity switch

Switching function: p-n-p normally open end

Supply voltage: 10-30 V DC

Switching capability: 200 mA

#### OHZ-K 100 S

#### OHZ-K 200 S

Precision limit switch

Switching function: single pole change-over snap-action contact

Supply voltage: 250 V AC

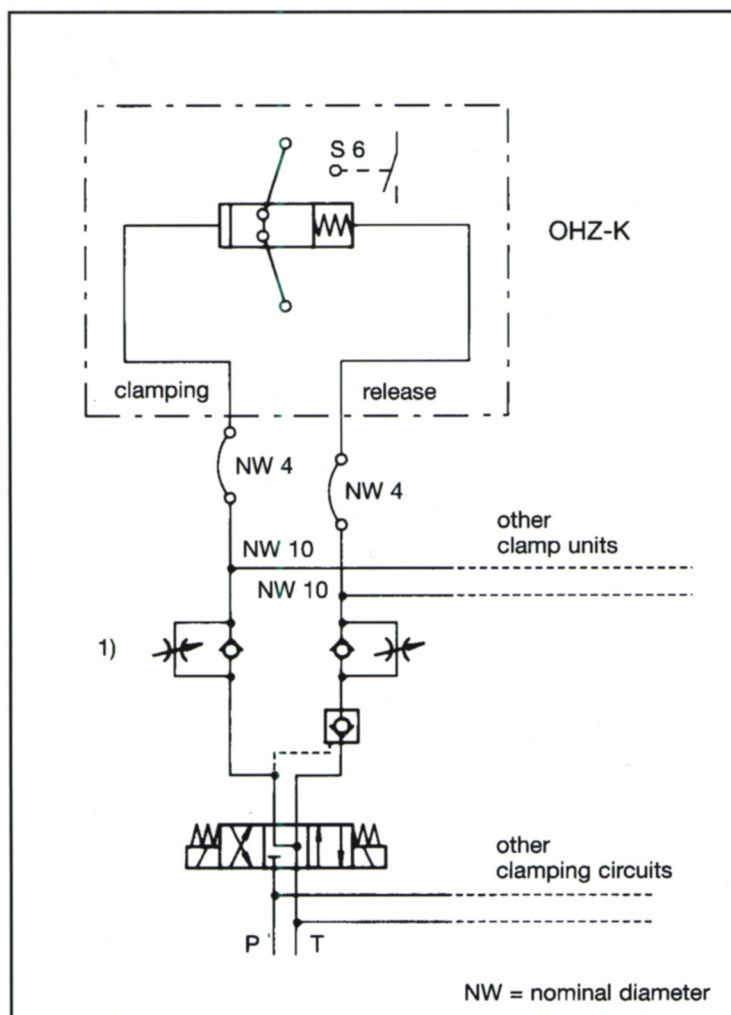
Switching capability: 2A / 230 V AC  
5A / 24 V DC

Contacts: screw connection  
Cable lead-in: armoured cable 9

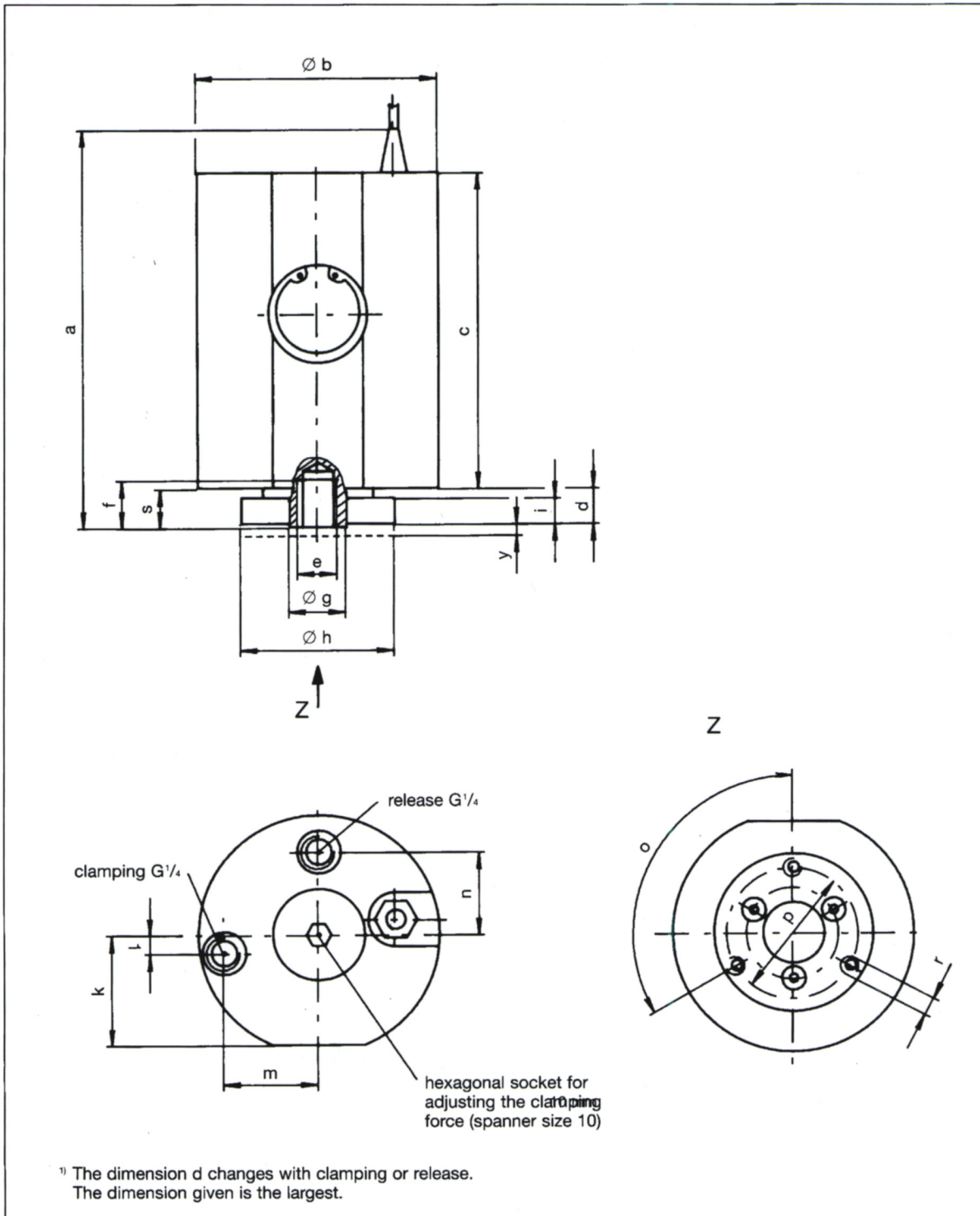
Connection cable: 3 m long

For a water- and oil-tight installation, we recommend cable screw joints, in conjunction with a protective sleeve.

### Hydraulic circuit diagram

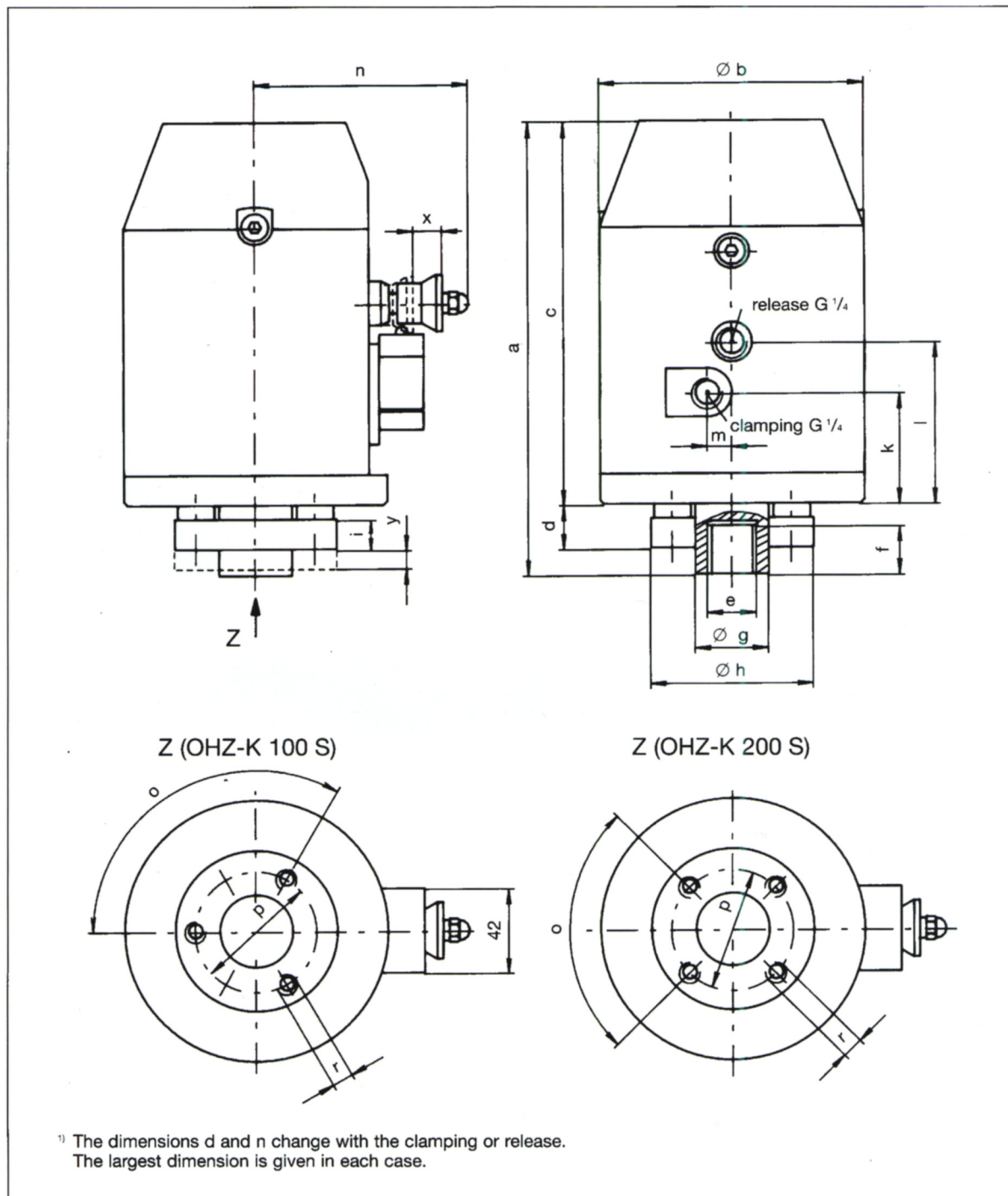






The company reserves the right to make technical changes.

Type	a	b	c	d <sup>1)</sup>	e	f	g	h	i	k	l	m	n	o	p	r	s	y ca.	Weight [kg]
OHZ-K 50 S	190	110	145	21,5	M 18 x 1,5	22	26	70	12	51	8,5	43,2	38	3 x 120°	60	M6	18	2	10



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Type	a	b	c	d <sup>1)</sup>	e	f	g	h	i	k	l	m	n <sup>1)</sup>	o	p	r	x	y ca.	Weight [kg]
OHZ-K 100 S	225	130	190	28	M24 x 1,5	42	35,5	80	15	55	80	12	112	3 x 120°	60	M8	14	4,5	15
OHZ-K 200 S	262	155	226	30	M36 x 3	55	50	100	15	76	125	20	114	4 x 90°	78	M10	14	4,5	20