



Rail clamps
Elektro-hydraulic ZWA

601

Pos. A

503

548

552

611

510

Wälzlager

geschraube

Stlager

530

532

525

532

53

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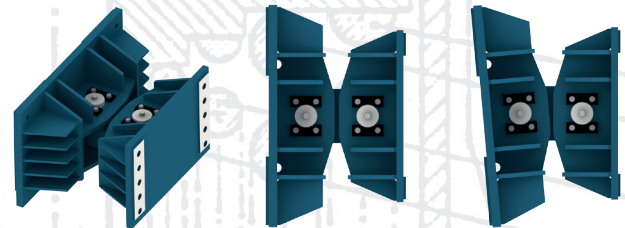


Operation

- ➔ Closing through spring force
- ➔ Adjustable throttle (time delay 3-120 sec.)
- ➔ Opening through hydro-cylinder and hydro-aggregate incl. emergency hand-pump in case of power failure
- ➔ With power failure the rail clamp closes automatically (fail-safe)

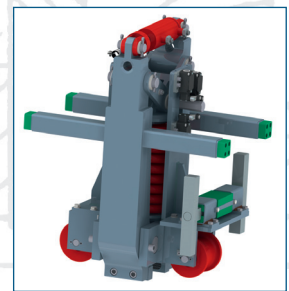
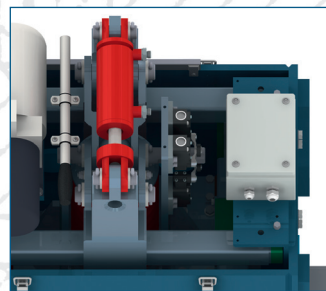
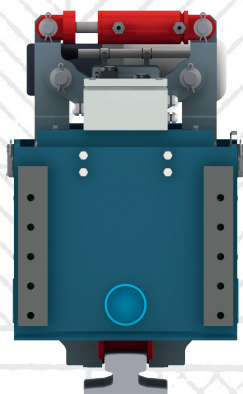
Special features

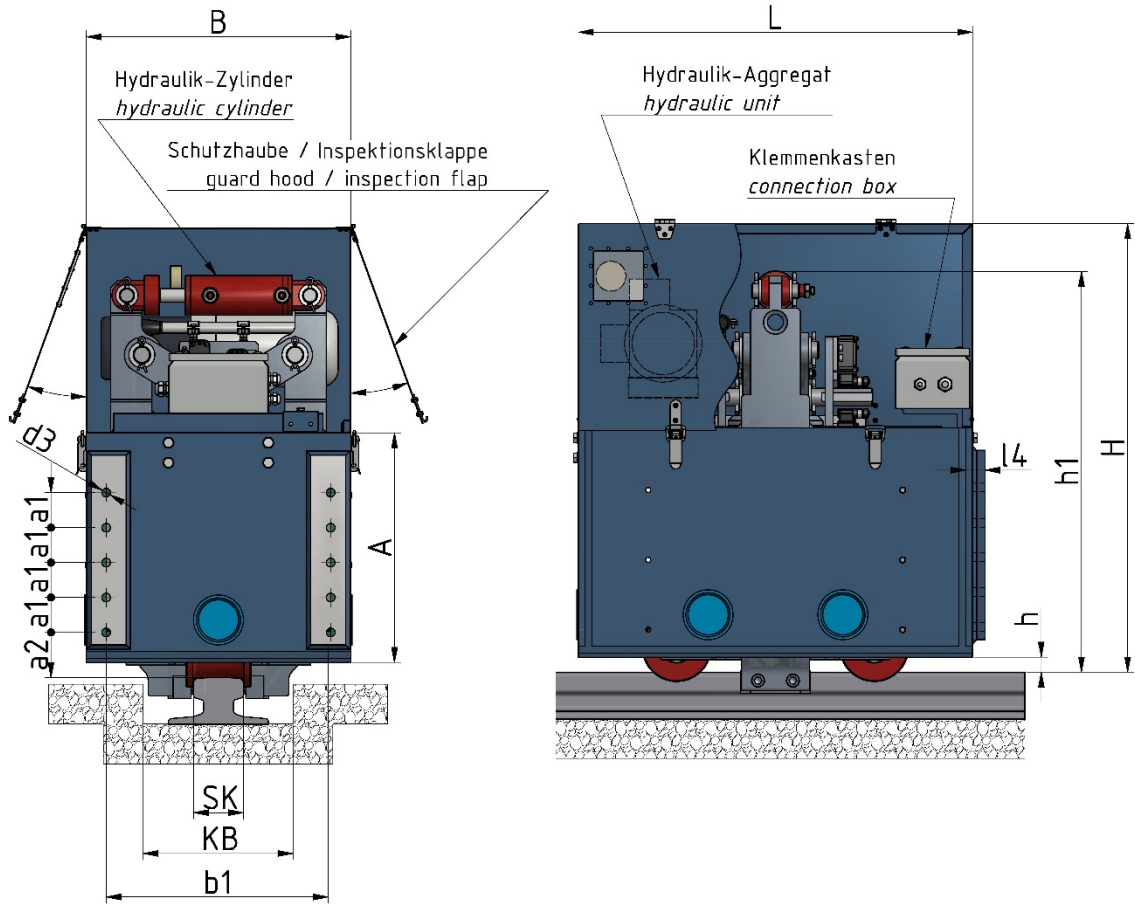
- ➔ Gripper wagons are led on the rail through closely calibrated flangewheels which are flanged to the endcarriage, so that the gripper wagon can move horizontally ± 25 mm and vertically ± 20 mm, thus ensuring the lever is vertically over the rail under any travel conditions.
- ➔ No loss of clamping force resulting from jaw wear because reduced spring force is compensated by increasing the toggle lever transmission
- ➔ Limit switch controls the position of rail clamps "clamp open", "clamp closed", "jaw wear"
- ➔ Pressure switch in hydro aggregate redundant to mechanical limit switch at the clamp car
- ➔ Exchangeable clamping jaws
- ➔ Emergency hand-pump in case of power loss
- ➔ Rail clamp completely wired with terminal box
- ➔ Hydraulic system, hydro-aggregate and hydro-cylinder are ready for operation, hydraulic oil is included



Articulating joint for side balance of ± 50 mm

- ➔ Rollers for gripper wagons hardened. ZWA-carriage guide system (IFS) for low-wear operation of the rail clamp at high speed > 240 m/min. belongs to the scope of supply
- ➔ The rail clamp is protected against environmental influences by a stainless steel cover. On demand the sides of the cover can be turned around, so that 2 big vertical openings develop
- ➔ 160 μ m paint with four layers standard
- ➔ Rapid interchangeability of the units, like hydro-cylinder, hydro-aggregate, rollers and clamp jaws





Functional principle

- Closing by spring force with toggle lever system – adjustable by throttle, closing time 9 – 25 s.
- Opening by hydraulic-cylinder, hydraulic unit inclusive. An emergency hand-pump can be used in case of emergency.
- No loss of clamping force resulting from jaw wear, because the reduced spring force is compensated by the increasing toggle lever transmission.
- Limit switches control the position of rail clamp “clamp open“, “clamp closed“ and “jaw wear“.
- Vertical movement compensation ± 20 mm
- Horizontal movement compensation ± 25 mm floating by guidance of idlers

Holding force and dimensions

Size	Holding force			Gew. kg	A mm	a1 mm	a2 mm	B mm	b1 mm	d3 mm	H mm	h mm	h1 mm	SK max mm	KB 1) mm	L mm	l4 mm
	$\mu =$ 0,25 kN	0,4 kN	0,5 kN														
ZWA - 40	40	64	80														
ZWA - 60	60	96	120	640	460	70	90	550	450	M20	910	30	805	100	> 300	820	40
ZWA - 80	80	128	160														
ZWA - 100	100	160	200														
ZWA - 130	130	208	260	940	455	70	100	650	500	M24	970	35	870	120	> 350	920	45
ZWA - 160	160	256	320														
ZWA - 200	200	320	400														
ZWA - 260	260	416	520														
ZWA - 320	320	512	640														
ZWA - 400	400	640	800	1580	510	80	110	820	700	M30	1080	40	980	120	> 370	1060	50
ZWA - 500	500	800	1000														
ZWA - 600	600	960	1200														

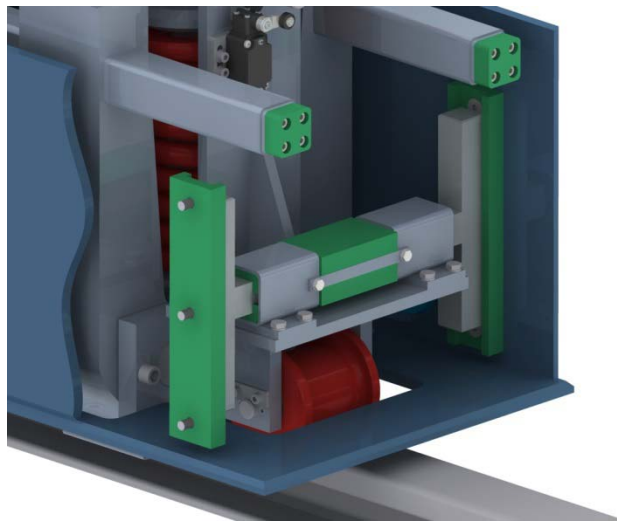
Note: 1) Limiting size is valid for clamping jaw cassettes – variation of standard dimension on request as a special design.

Guide idlers align the rail clamp and compensate vertical and horizontal movement in relation to the rail. The clamp car mounted inside the clamp housing, which is attached to the crane, is guided so it floats free horizontally and vertically within limits.

In addition there is a IBS guidance system (IFS) between clamp car and housing to assure a vertical position by prohibiting the clamp car from tilting round the longitudinal axis (parallel to the rail). The general arrangement of the guidance system shows the horizontal guidance of the clamp car by a rod IFS. The rod stays in horizontal position by a support IFS connected to a guide bar to keep it from tipping.

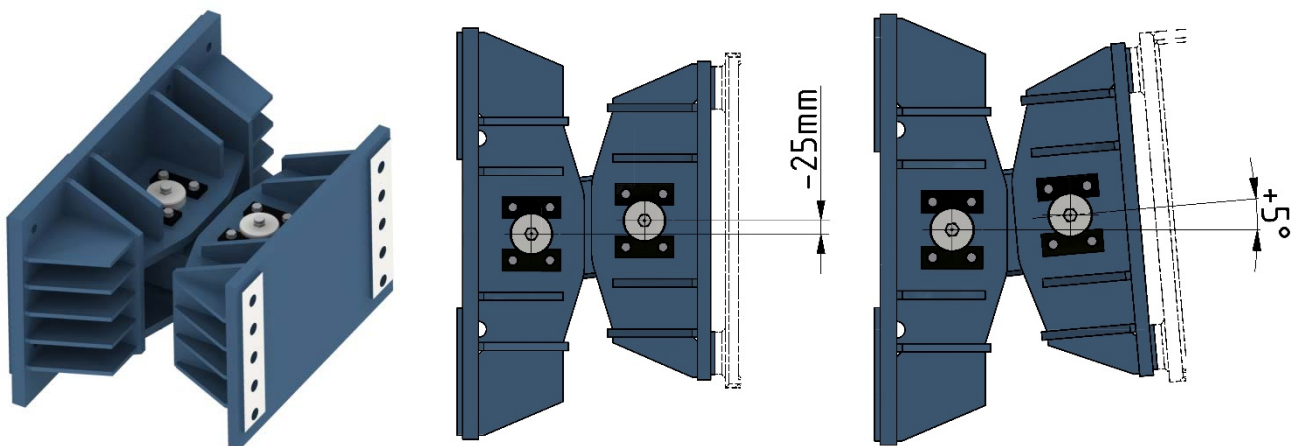
ZWA carriage guide system (IFS) belongs to the scope of supply and is specially designed for speeds > 240m/min.

The prevention of clamp car tilting assures an even wear on both guide idler and avoids rubbing wear at the linings of the clamping jaws.



Picture 1: Rail clamp floating guidance system IFS

OPTIONS



Picture 2: Articulating joint

The Articulating joint connection allows the entire lateral compensation of ± 50 mm and an angular compensation of $\pm 5^\circ$. The Articulating joint is offered as an option and adapted to each project.