BLAIN VALVES FOR HYDRAULIC ELEVATORS

Excellence in Simplicity and Performance

BLAIN HYDRAULICS

QUALITY GUARANTEED MADE IN GERMANY SINCE 1971

PRODUCT CATALOGUE

blain.de

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Since half a century Blain Hydraulics has focused and specialized in flow control valves for hydraulic elevators. Blain is the largest supplier of elevator valves in the world with a large global footprint. At Blain safety, reliability and quality of our products are of utmost importance. As a pioneer, Blain has been building products which are above and beyond the standards. With product support in multiple languages and across different time zones, more than a million valves in operation worldwide endorse us a leading supplier of key elevator components.

At Blain, flow control is in our DNA, we don't just manufacture a valve, we engineer it.

Anja Blain (Managing Director/CEO)

BLAIN HYDRAULICS is the leading manufacturer of high quality hydraulic elevator products for five decades. Blain products have proven their safety and quality by possessing more than one third of the global market share and one million valves in operation in more than 75 countries worldwide.

ABOUT US

A brief history of Blain Hydraulics

Incorporated in 1971 by Roy W. Blain

Roy W. Blain 1932-2014

Born in May 1932 in Salford, Manchester and lived in Ilford, Essex, until he was 6, before moving back to the North where he later studied engineering at Salford Royal Technical College.

After serving 2 years in the Merchant Navy followed by 2 years in the army, he pursued a career in industrial hydraulics in England, Switzerland, Spain, USA and finally Germany, where he founded Blain Hydraulics which is known worldwide as the finest elevator control valve manufacturer.

With customers and installations in more than 75 countries, Mr. Blain was a true pioneer and believer in the hydraulic elevator technology. A true gentleman and very good person at heart he was a visionary who worked tirelessly in the hydraulic elevator industry for more than 5 decades.

Member of

ELA ELCA NAEC AYSAD VFA

1971-1980

Blain Hydraulics GmbH was incorporated in Heilbronn. With a modest infrastructure and man power, elevator control valves like EV & KV started rolling out initially with 1 person and eventually with 5 people on the outskirts of Heilbronn. For catering to growing demand, the factory was moved within Heilbronn and steadily expanded.

1981-1990

Blain adds new KV (small lift valve) models, especially keeping in mind the home and small lift market.

Pressure lock valve (L10) was also introduced as an additional safety valve which is now known as UCM-A3 valve.

Blain gets the CSA certification for export to North America.

Company infrastructure was expanded to meet growing demands.

1991-2000

Modernisation of machines to make production cost effective and productive.

Blain is awarded the ISO 9001 certification.

Blain gets EC Type certification for pipe rupture valves.

Blain introduces the SEV (servo electronic valve).

Other new products like MD (micro levelling) drive were also introduced.

Accessories like ball valves were introduced to expand the product range.

2001-2010

Blain becomes the first company to bring explosion proof solenoid valves for elevator industry in the market.

Blain becomes the largest producer of elevator control valves both in terms of production capacity & installations worldwide. Along with introducing new pipe rupture valve models.

2011-today

Blain launches the EV4 (vvvf driven valve) together with YASKAWA as a joint product.

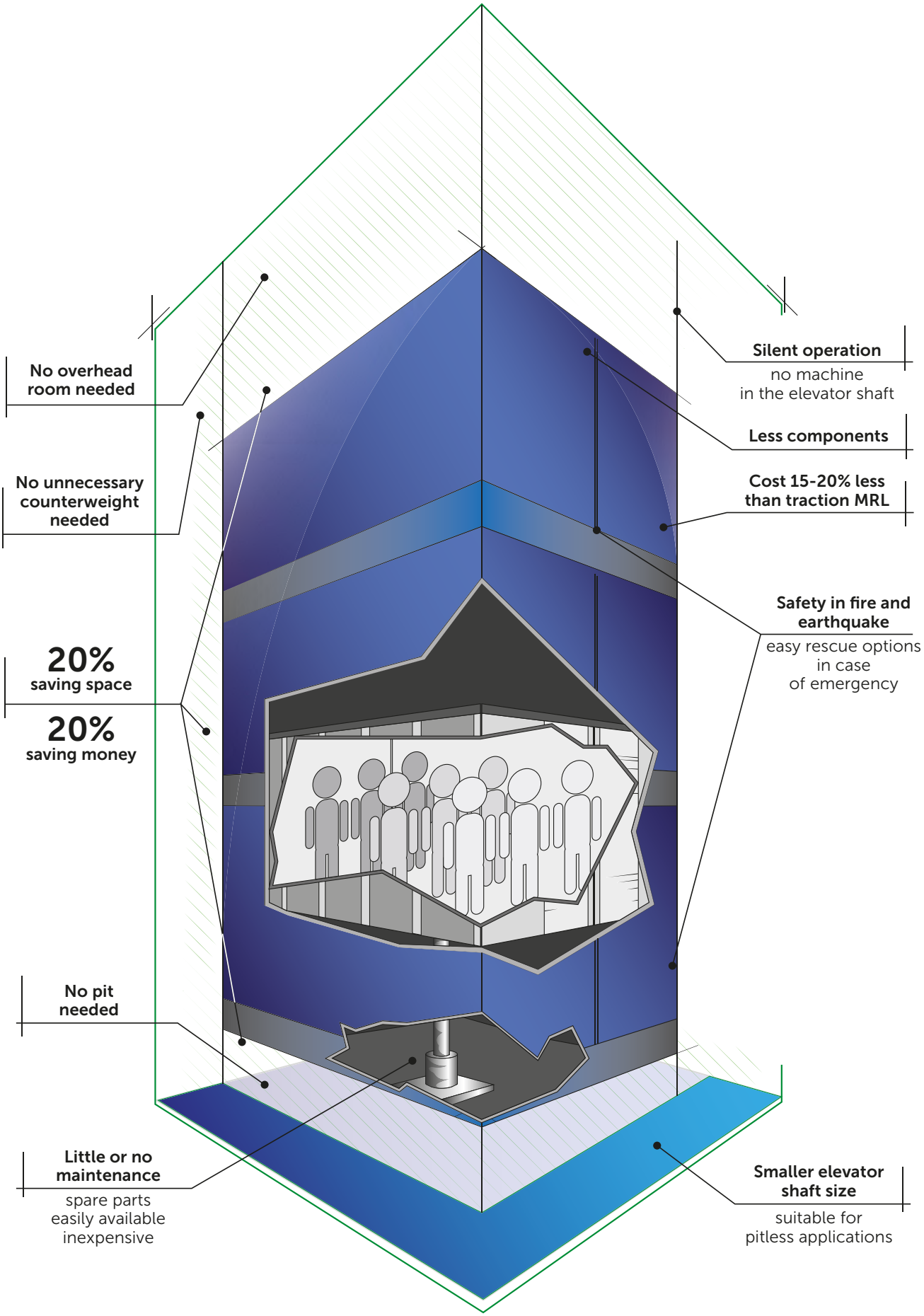
Export of Blain products achieves new record with a footprint in more than 75 countries. Blain employs around 80 people from more than 14 nationalities to support customers worldwide.

Year 2015 saw Blain enlarging its presence in India by incorporating Blain India.

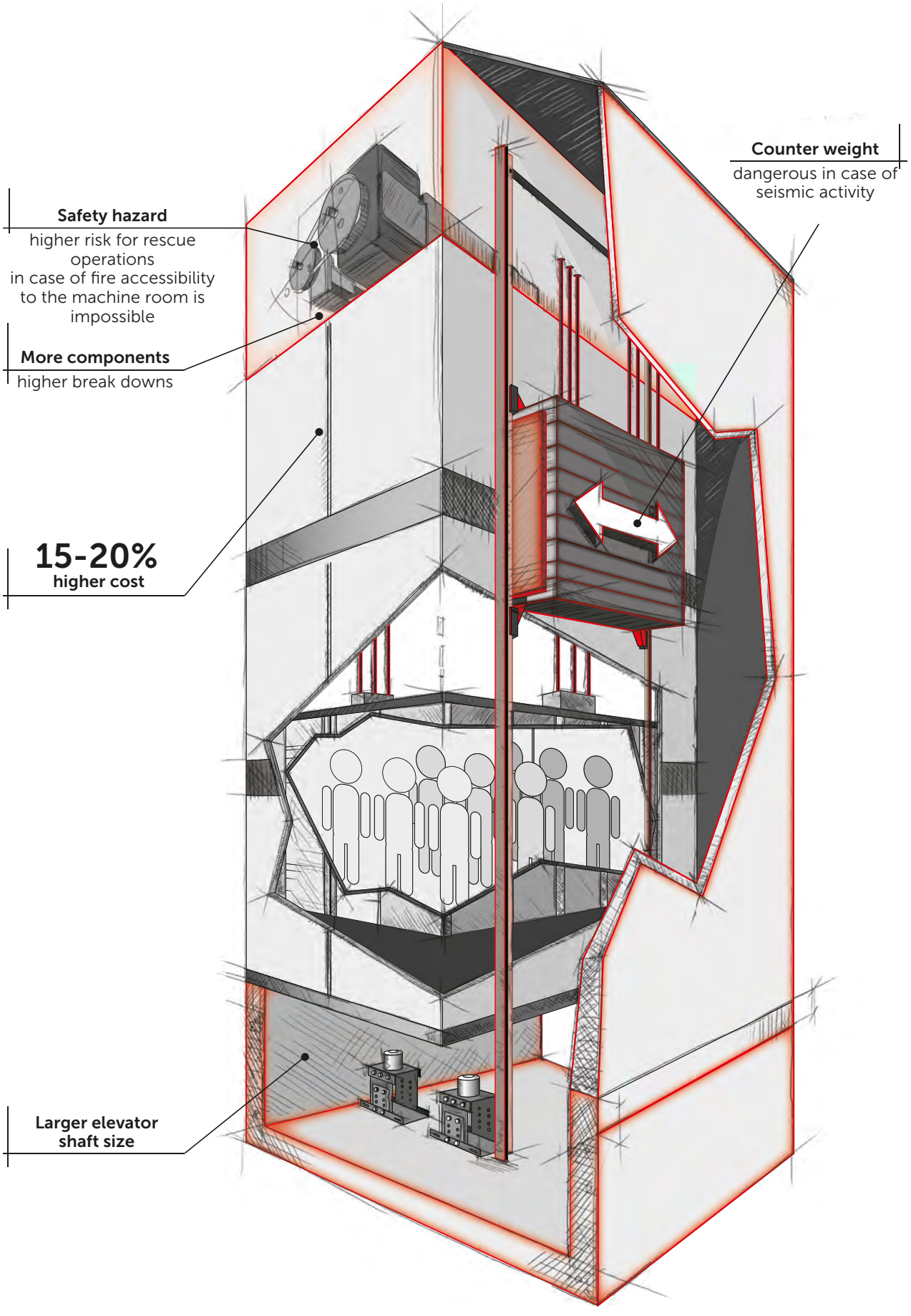
Blain has partnered with DAIKEN ELEVADORES (Brazil) to expand its presence and increase the penetration of hydraulic elevators in the Brazilian and South American market.

Summer 2017 Blain introduced the integrated pressure lock valve iL10 for EV 1½" & 2" valves and L20 for EV ¾" valves. The new UCM-A3 valve allows to modernize existing installations with less cost and efforts.

HYDRAULIC LIFTS



TRACTION/MRL LIFTS



CONTENT

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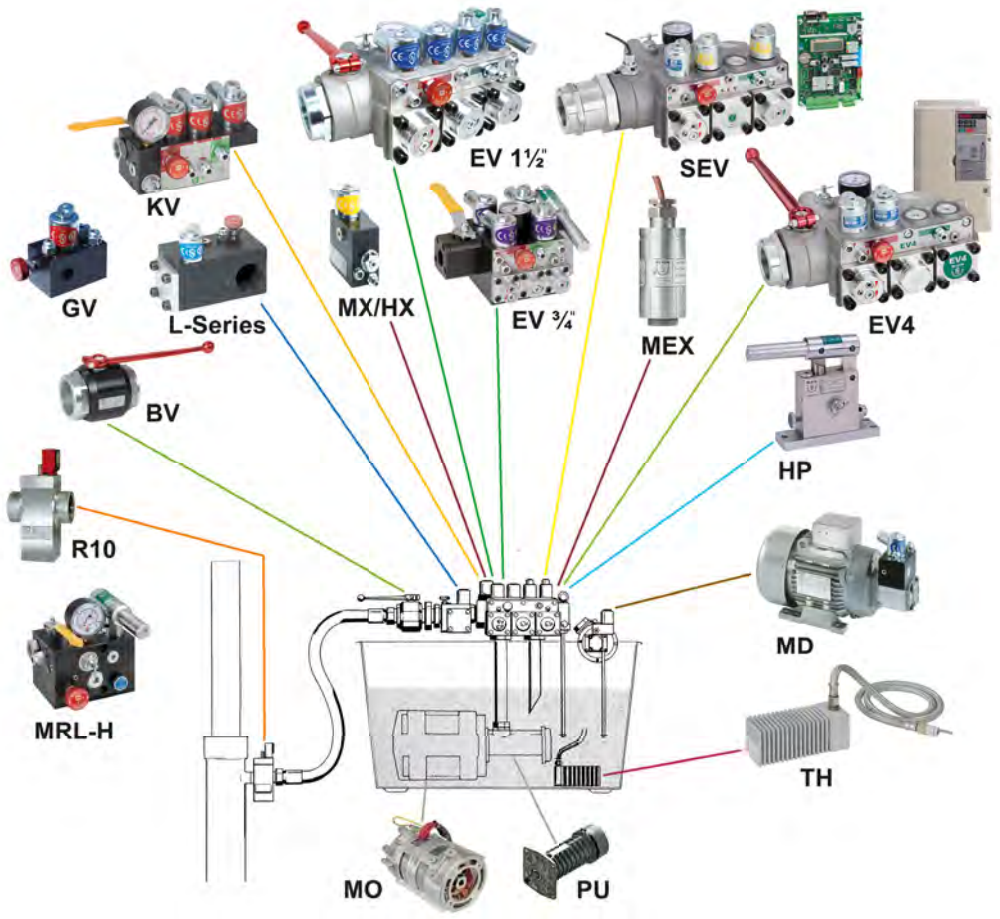


CONTROL VALVE

KV1P

KV1P

Up:	One speed
Down:	One speed
Max speed:	0.16 m/s (32 fpm)
Max flow:	80 l/min (21 US gpm)

Characteristics

Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	8–100 bar (116-1450 psi)	Min: 8 l/min (2 US gpm) Max: 80 l/min (21 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

KV valves are easy to adjust, compact & simple in design.
KV1P is suitable for platform & goods lifts.

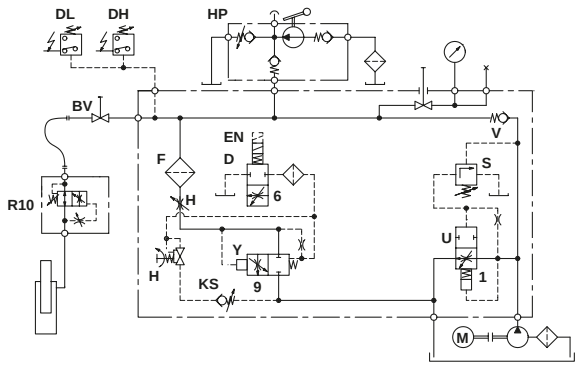
UP direction

The elevator runs with one UP speed up to 0.16 m/s (32 fpm).
The UP start has built-in damping.
The UP stop is caused by de-energizing the motor.

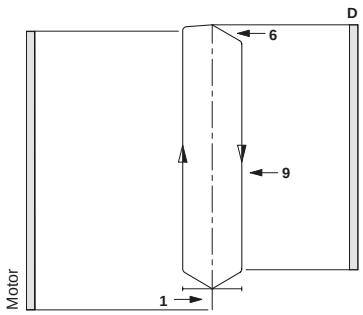
DOWN direction

The elevator runs with one DOWN speed up to 0.16 m/s (32 fpm).
The DOWN start has adjustable damping and the DOWN speed is adjustable.
The DOWN stop has built-in damping.

Hydraulic circuit



Electrical sequence



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CE

CONTROL VALVE

KV1S

Up:	One speed
Down:	One speed
Max speed:	0.16 m/s (32 fpm)
Max flow:	80 l/min (21 US gpm) with soft stop

Characteristics

Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	8–100 bar (116-1450 psi)	Min: 8 l/min (2 US gpm) Max: 80 l/min (21 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

KV valves are easy to adjust, compact & simple in design.
KV1S is suitable for platform & goods lifts.

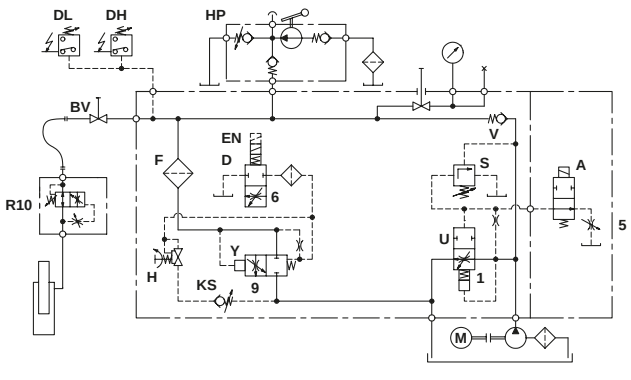
UP direction

The elevator runs with one UP speed up to 0.16 m/s (32 fpm) with an adjustable soft stop or up to 0.4 m/s (80 fpm) with overtravel and relevelling.
The UP start has built-in damping.
The UP stop has adjustable damping (delayed motor stop required).

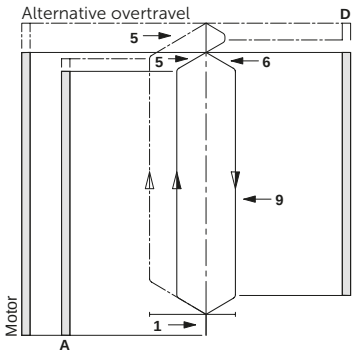
DOWN direction

The elevator runs with one DOWN speed up to 0.16 m/s (32 fpm).
The DOWN start has adjustable damping and the DOWN speed is adjustable.
The DOWN stop has built-in damping.

Hydraulic circuit



Electrical sequence



KV2P

Up:	One speed
Down:	Two speeds
Max speed:	0.16 m/s (32 fpm)
Max flow:	80 l/min (21 US gpm)

Characteristics

Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	8–100 bar (116-1450 psi)	Min: 8 l/min (2 US gpm) Max: 80 l/min (21 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

KV valves are easy to adjust, compact & simple in design.
KV2P is suitable for home lifts & goods lifts with two down speeds.

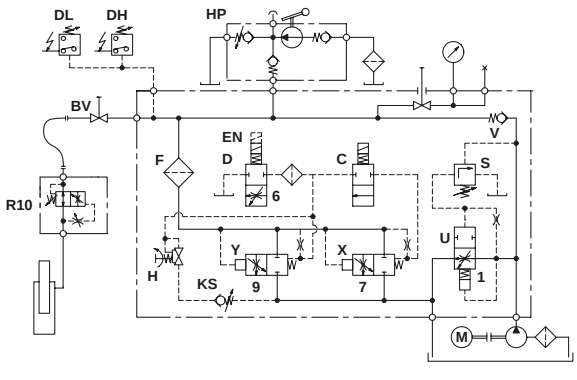
UP direction

The elevator runs with one UP speed up to 0.16 m/s (32 fpm).
The UP start has built-in damping.
The UP stop is caused by de-energizing the motor.

DOWN direction

The elevator runs with two DOWN speeds up to 1 m/s (200 fpm), one full speed and one levelling speed. The DOWN full speed and levelling speed are adjustable.
The DOWN start has adjustable damping.
The slow down and DOWN stop have built-in damping.

Hydraulic circuit



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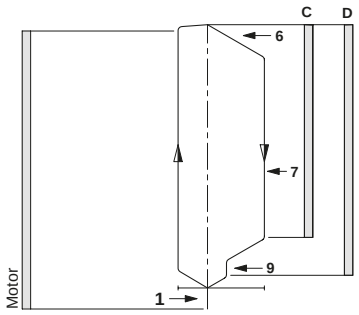

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KV2S

Up:	One speed
Down:	Two speeds
Max speed:	0.16 m/s (32 fpm)
Max flow:	80 l/min (21 US gpm)
	with soft stop

Characteristics

Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	8–100 bar (116-1450 psi)	Min: 8 l/min (2 US gpm) Max: 80 l/min (21 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

KV valves are easy to adjust, compact & simple in design.
KV2S is suitable for home lifts & goods lifts with two down speeds.

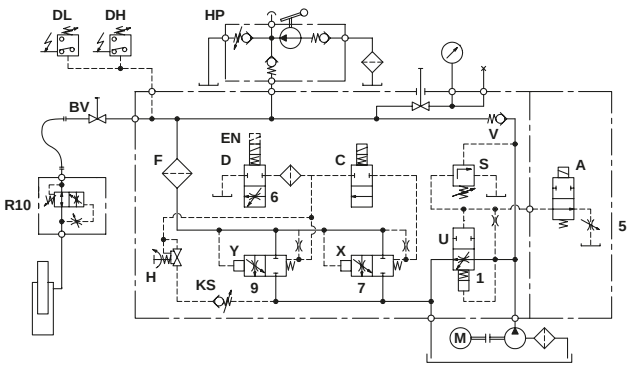
UP direction

The elevator runs with one UP speed up to 0.16 m/s (32 fpm) with an adjustable soft stop or up to 0.4 m/s (80 fpm) with overtravel and relevelling.
The UP start has built-in damping.
The UP stop has adjustable damping (delayed motor stop required).

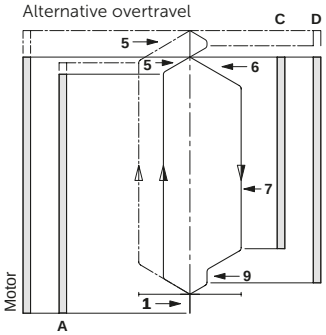
DOWN direction

The elevator runs with two DOWN speeds up to 1 m/s (200 fpm), one full speed and one levelling speed. The DOWN full speed and levelling speed are adjustable.
The DOWN start has adjustable damping.
The braking and stopping have built-in damping.

Hydraulic circuit



Electrical sequence



CONTROL VALVE

¾" EV0
10-125 l/min (2-33 US gpm)

1½" & 2" EV0
30-800 l/min (8-208 US gpm)

2½" EV0
500-1530 l/min (130-400 US gpm)

Characteristics

Operation	Medium	Operating pressure	Operating pressure CSA
solenoid, electrical	hydraulic oil	¾" 8–100 bar (116-1450 psi) 1½"/2" 8–100 bar (116-1450 psi) 2½" 8– 68 bar (116- 986 psi)	¾" 8–100 bar (116-1450 psi) 1½"/2" 8– 70 bar (116-1015 psi) 2½" 8– 47 bar (116- 690 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

Easy to install, EV's are smooth, reliable and precise in operation throughout extreme load and temperature variations. According to customers' information, valves are factory adjusted ready for operation and very simple to readjust if so desired. The up levelling system combined with compensated pilot control ensure stability of elevator operation and accuracy of stopping. Depending on the flow, available port sizes are ¾", 1½", 2" and 2½" pipe threads.

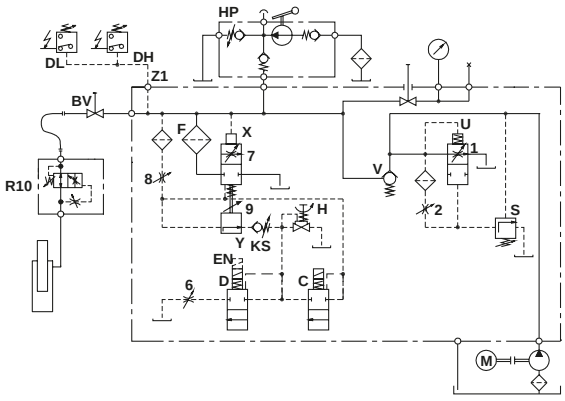
UP direction

The elevator runs with one UP speed up to 0.16 m/s (32 fpm).
The UP start is smooth and adjustable.
The UP stop is caused by de-energizing the motor.

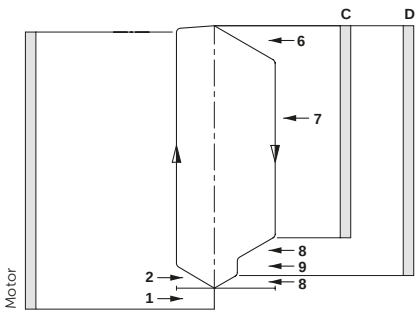
DOWN direction

The elevator runs with two DOWN speeds up to 1 m/s (200 fpm), one full speed and one levelling speed.
All DOWN functions are smooth and adjustable.

Hydraulic circuit



Electrical sequence



¾" EV1
10-125 l/min (2-33 US gpm)

1½" & 2" EV1
30-800 l/min (8-208 US gpm)

2½" EV1
500-1530 l/min (130-400 US gpm)

Characteristics

Operation	Medium	Operating pressure	Operating pressure CSA
solenoid, electrical	hydraulic oil	¾" 8–100 bar (116-1450 psi) 1½"/2" 8–100 bar (116-1450 psi) 2½" 8– 68 bar (116- 986 psi)	¾" 8–100 bar (116-1450 psi) 1½"/2" 8– 70 bar (116-1015 psi) 2½" 8– 47 bar (116- 690 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

Easy to install, EV's are smooth, reliable and precise in operation throughout extreme load and temperature variations. According to customers' information, valves are factory adjusted ready for operation and very simple to readjust if so desired. The up levelling system combined with compensated pilot control ensure stability of elevator operation and accuracy of stopping. Depending on the flow, available port sizes are ¾", 1½", 2" and 2½" pipe threads.

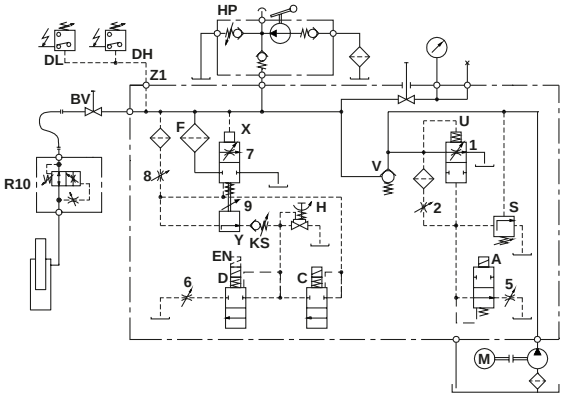
UP direction

The elevator runs with one UP speed up to 0.16 m/s (32 fpm) with an adjustable soft stop or up to 0.4 m/s (80 fpm) with overtravel and relevelling.
The UP start is smooth and adjustable.
The UP stop is smooth and exact through valve operation, because the motor is running approx. 1 second longer through a time relay.

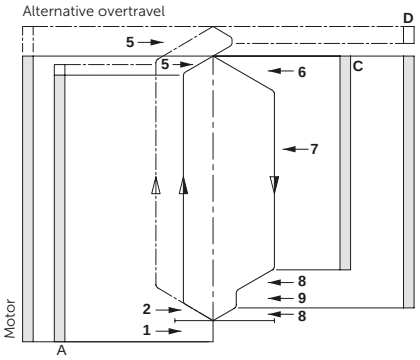
DOWN direction

The elevator runs with two DOWN speeds up to 1 m/s (200 fpm), one full speed and one levelling speed.
All DOWN functions are smooth and adjustable.

Hydraulic circuit



Electrical sequence



¾" EV10
10-125 l/min (2-33 US gpm)

1½" & 2" EV10
30-800 l/min (8-208 US gpm)

2½" EV10
500-1530 l/min (130-400 US gpm)

Characteristics

Operation	Medium	Operating pressure	Operating pressure CSA
solenoid, electrical	hydraulic oil	¾" 8–100 bar (116-1450 psi) 1½"/2" 8–100 bar (116-1450 psi) 2½" 8– 68 bar (116- 986 psi)	¾" 8–100 bar (116-1450 psi) 1½"/2" 8– 70 bar (116-1015 psi) 2½" 8– 47 bar (116- 690 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

Easy to install, EV's are smooth, reliable and precise in operation throughout extreme load and temperature variations. According to customers' information, valves are factory adjusted ready for operation and very simple to readjust if so desired. The up levelling system combined with compensated pilot control ensure stability of elevator operation and accuracy of stopping. Depending on the flow, available port sizes are ¾", 1½", 2" and 2½" pipe threads.

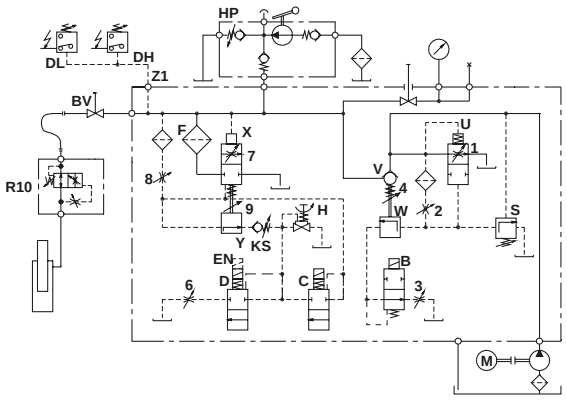
UP direction

The elevator runs with two UP speeds up to 1 m/s (200 fpm), one full speed and one levelling speed.
The UP start and slow down are smooth and adjustable.
The UP levelling speed is adjustable.
The UP stop is caused by de-energizing the motor.

DOWN direction

The elevator runs with two DOWN speeds up to 1 m/s (200 fpm), one full speed and one levelling speed.
All DOWN functions are smooth and adjustable.

Hydraulic circuit



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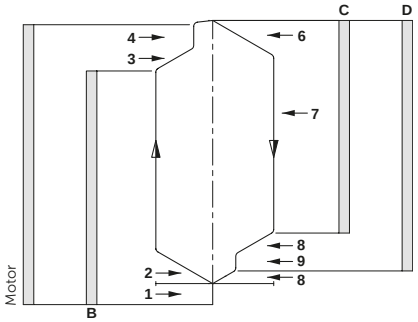


¾" EV100
10-125 l/min (2-33 US gpm)

1½" & 2" EV100
30-800 l/min (8-208 US gpm)

2½" EV100
500-1530 l/min (130-400 US gpm)

Characteristics

Operation	Medium	Operating pressure	Operating pressure CSA
solenoid, electrical	hydraulic oil	¾" 8–100 bar (116-1450 psi) 1½"/2" 8–100 bar (116-1450 psi) 2½" 8– 68 bar (116- 986 psi)	¾" 8–100 bar (116-1450 psi) 1½"/2" 8– 70 bar (116-1015 psi) 2½" 8– 47 bar (116- 690 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

Easy to install, EV's are smooth, reliable and precise in operation throughout extreme load and temperature variations. According to customers' information, valves are factory adjusted ready for operation and very simple to readjust if so desired. The up levelling system combined with compensated pilot control ensure stability of elevator operation and accuracy of stopping. Depending on the flow, available port sizes are ¾", 1½", 2" and 2½" pipe threads.

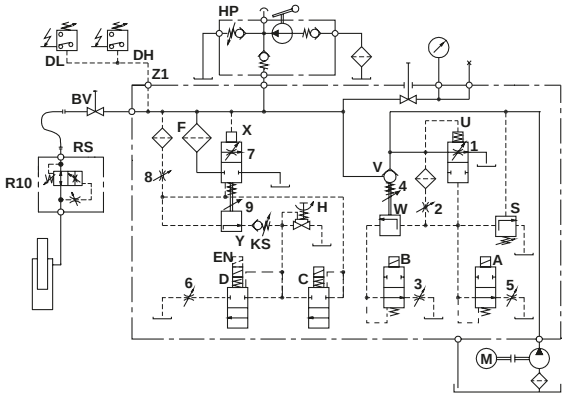
UP direction

The elevator runs with two UP speeds up to 1 m/s (200 fpm), one full speed and one levelling speed.
All UP functions are smooth and adjustable.
The UP stop is smooth and exact through valve operation, because the motor is running approx. 1 second longer through a time relay.

DOWN direction

The elevator runs with two DOWN speeds up to 1 m/s (200 fpm), one full speed and one levelling speed.
All DOWN functions are smooth and adjustable.

Hydraulic circuit



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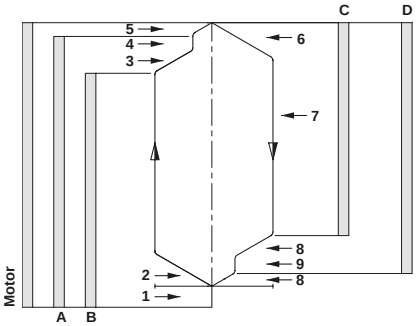


SERVO ELECTRONIC VALVE

SEV

40-1200 l/min (10-317 US gpm)

Characteristics

Operation	Medium	Operating pressure	Operating pressure CSA
solenoid, electronic controlled	hydraulic oil	1"-2" 9–100 bar (130-1500 psi) 2½" 9– 68 bar (130-1000 psi)	1"-2" 9–70 bar (130-1015 psi) 2½" 9–47 bar (130- 690 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

The Servo Electronic Valve (SEV) is controlled by closed loop digital electronics, providing consistent acceleration and deceleration of hydraulic elevators largely independent of load and oil temperature. An electronic card regulates the performance of the car via proportional solenoid valves. The elevator operation can be monitored, recorded and adjusted by a laptop computer either on site or remotely through the modem connection. Additional intermediate speeds for maintenance runs can also be programmed.

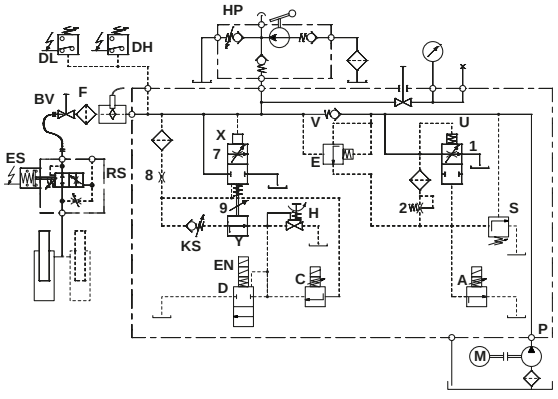
UP direction

The elevator runs with three UP speeds up to 1 m/s (200 fpm), one full speed, one levelling speed and one inspection speed.
All UP transitions are smoothly programmable.
The UP stop is smooth and exact through valve operation, because the motor is running approx. 1 second longer through a time relay.

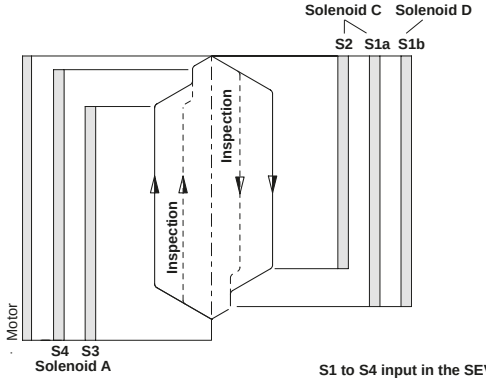
DOWN direction

The elevator runs with three DOWN speeds up to 1 m/s (200 fpm), one full speed, one levelling speed and one inspection speed.
All DOWN transitions are smoothly programmable.

Hydraulic circuit



Electrical sequence



S1 to S4 input in the SEV-Card

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CE

VVVF CONTROL VALVE

¾" EV4
10-125 l/min (2-33 US gpm)

1½" & 2" EV4
30-800 l/min (8-208 US gpm)

2½" EV4
500-1530 l/min (130-400 US gpm)

Characteristics

Operation	Medium	Operating pressure	
solenoid, electrical	hydraulic oil	¾"	8–70 bar (116-1015 psi)
		1½"/2"	8–70 bar (116-1015 psi)
		2½"	8–68 bar (116- 986 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

Description

EV4 is an easy to install, reliable and precise solution that provides up to 65% energy savings and 48% less fluid heating. It uses a L1000H drive in the up travel, while the down travel is managed by the EV4 valve itself. In this way, the EV4-vvvf solution offers the most cost-effective and energy-efficient solution and eliminates high inrush currents. It is suitable for energy-saving applications, extreme load/temperature variations and is a perfect solution for modernisations.

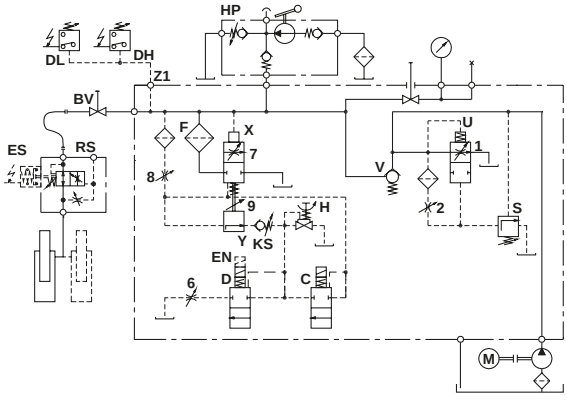
UP direction

The elevator runs with four UP speeds up to 1 m/s (200 fpm), three full speeds and one levelling speed.
All UP functions (UP start, speeds, transition times and UP stop) are adjusted by inverter parameters.

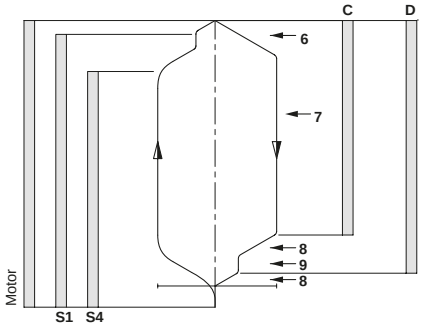
DOWN direction

The elevator runs with two DOWN speeds up to 1 m/s (200 fpm), one full speed and one levelling speed.
All DOWN functions are smooth and adjustable.

Hydraulic circuit



Electrical sequence



GV

Characteristics

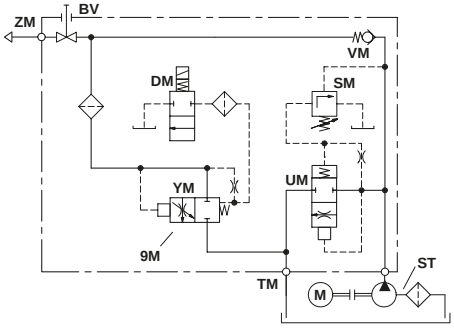
Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	3–130 bar (44-1885 psi)	Min: 1 l/min (0.3 US gpm) Max: 24 l/min (6.3 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

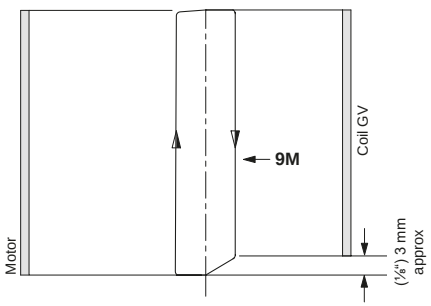
Description

The Blain car parking platform valve GV can be used in car parking applications where the platform needs to be raised above the ground to accommodate another car below the port. Alternatively, this valve is also ideal for lifting material, cargo and suitable for dumbwaiters and goods lifts. The valve offers a single up speed and an adjustable down speed.

Hydraulic circuit



Electrical sequence



CE

RUPTURE VALVE

R10
up to 2100 l/min (554 US gpm)

R10L
up to 2100 l/min (554 US gpm)

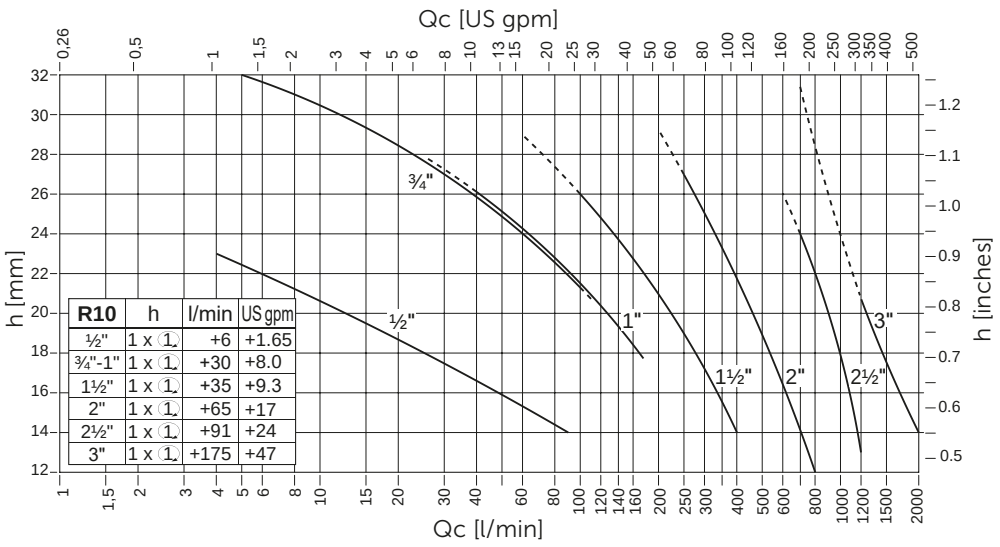
R10+DK+ES
up to 2100 l/min (554 US gpm)

Characteristics

Operation	Medium	Operating pressure	Flow rate
—	hydraulic oil	½"-2" 10–100 bar (145-1450 psi) 2½"-3" 8– 80 bar (116-1160 psi)	Min: 4 l/min (1.1 US gpm) Max: 2100 l/min (554 US gpm)

Description

In the event of failure in the main cylinder line due to hose pipe rupture or where the down speed exceeds allowable limits, the R10 valve closes, bringing the car to a smooth stop. Through additional options the closing of the R10 can be electrically signaled (option ES). Synchronized closing of tandem cylinders is also possible (option DK). The connections for the different cylinder and tank ports can be chosen freely. There are inside and outside threads as well as NPT, BSP, metric, Victaulic and flange - connection to chose from.



R10	h	l/min	US gpm
½"	1 x ①	+6	+1.65
¾"-1"	1 x ①	+30	+8.0
1½"	1 x ①	+35	+9.3
2"	1 x ①	+65	+17
2½"	1 x ①	+91	+24
3"	1 x ①	+175	+47

Range
Adjustable
Permitted*
*AR 2014/33/EU

CE

UCM (A3) SAFETY VALVE

standalone

according to european safety standards

½" L10
up to 80 l/min
(21 US gpm)

¾" L10
up to 125 l/min
(33 US gpm)

1½" L10
up to 400 l/min
(105 US gpm)

2" L10
up to 800 l/min
(211 US gpm)

2½" L10
up to 1400 l/min
(370 US gpm)

Characteristics

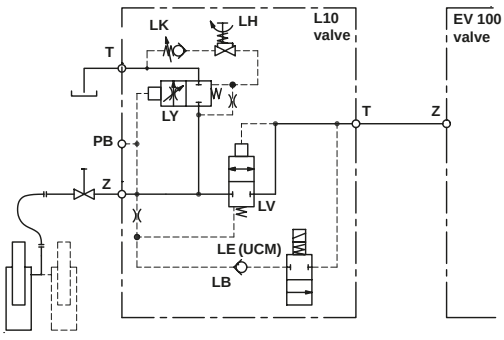
Operation	Medium	Operating pressure
solenoid, electrical	hydraulic oil	½"- ¾" 10–100 bar (145-1450 psi) 1½"-2½" 10– 59 bar (116- 856 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

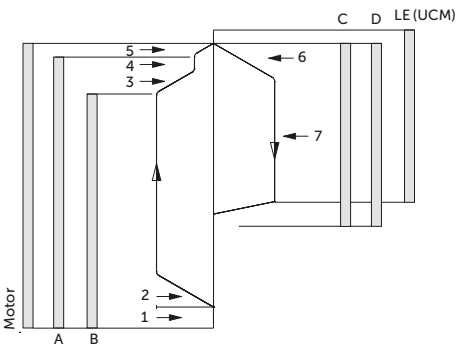
Description

The L10 pressure lock valve is a solenoid operated check valve designed for hydraulic elevators and includes a self-closing manual lowering valve. Its purpose is to allow free flow of oil from the pump unit to the cylinder for upward travel and to prevent flow in the reverse direction from the cylinder to pump until an electrical signal is given to the solenoid.
The L10 can be mounted in any position without causing any operational problems. Installed in the main cylinder line directly adjacent to the main elevator control valve, the L10 can be employed as a safety back up valve to the down system of the main control valve to prevent unintended down movement of the elevator should an electrical or mechanical malfunction occur in the main control valve (UCM case).

Hydraulic circuit



Electrical sequence



CE

UCM (A3) SAFETY VALVE

iL10

integrated

according to european safety standards

iL10

Characteristics

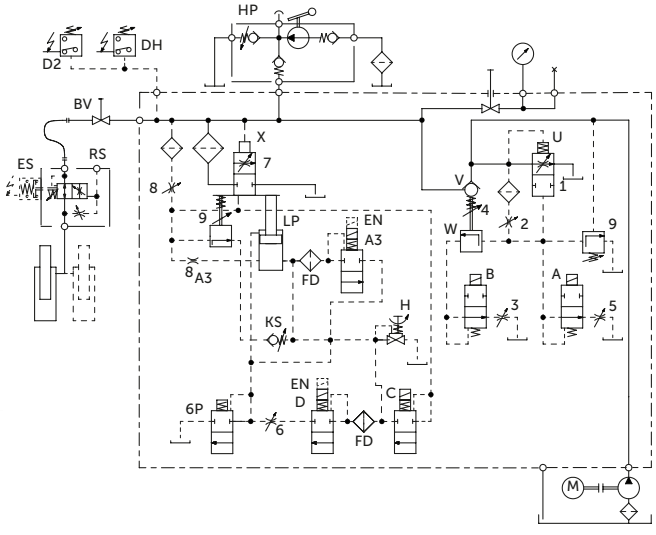
Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	1"-2" 11-80 bar (160-1160 psi)	up to 800 l/min (211 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

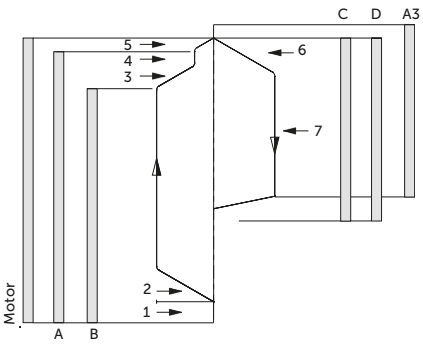
Description

iL10 has been designed to fit in all types of Blain 1½" and 2" valves. It is simply exchanged with the existing down flange on the control valve and therefore provides considerable amount of savings in labour, material (adapters/connectors) and weight. No more extra tank connection is needed for the UCM solution. It can be easily connected to the elevator controller and provides automatic monitoring during every travel. The iL10 is also a perfect product for modernisations of existing power units, simple and most economic.

Hydraulic circuit



Electrical sequence



CE

UCM (A3) SAFETY VALVE

L20

built-on

according to european safety standards

L20

Characteristics

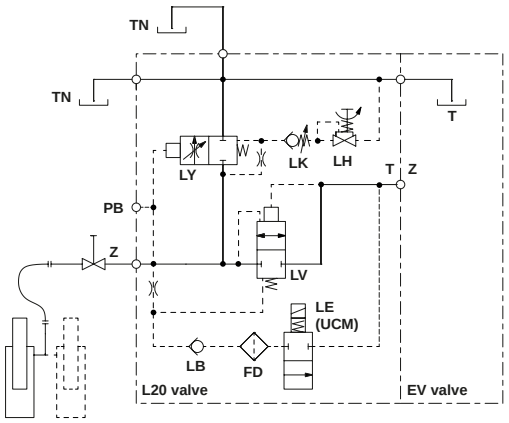
Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	8-100 bar (116-1450 psi)	Min: 10 l/min (2.6 US gpm Max: 125 l/min (211 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

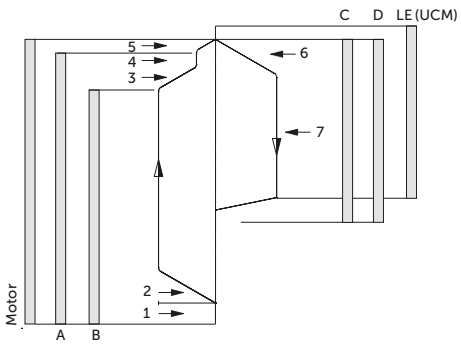
Description

The L20 has been designed to fit in all types of Blain ¾" series of valves without the need to change any existing piping and thus is ideal for renovation projects. The L20 can be either ordered pre-assembled with a new Blain control valve or alternatively ordered as an upgrade to make an existing Blain valve compliant to european safety standards (EN 81-20/50 unintended car movement - UCM). A separate tank connection is required from L20 in case of renovation, however for a new factory assembled valve, there is no need for a separate tank connection. As no extra fittings and adapters are required, the size of the complete unit remains compact. This also results in further savings and considerable less installation time. It's an easy to implement, plug and play system.

Hydraulic circuit

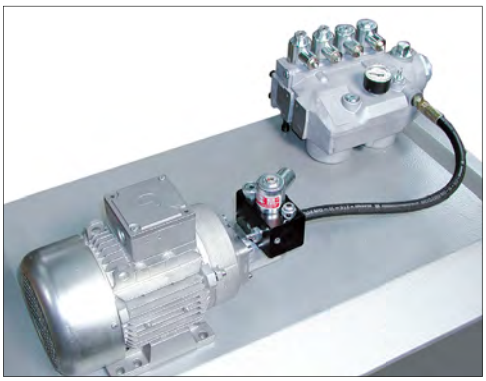


Electrical sequence



MICRO LEVELLING DRIVE

MD



MD

Characteristics

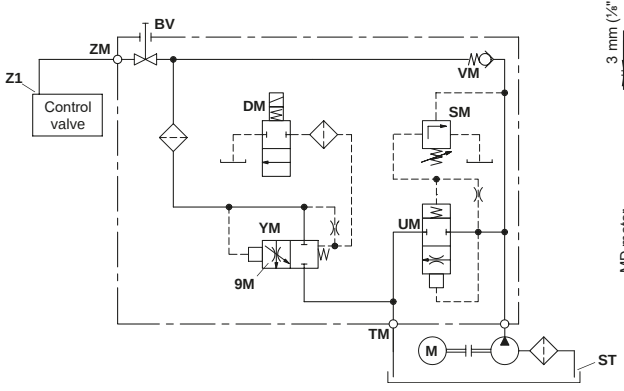
Operation	Medium	Operating pressure	Flow rate
solenoid, electrical	hydraulic oil	Max: 130 bar (1885 psi)	Min: 1 l/min (0.3 US gpm) Max: 24 l/min (6.3 US gpm)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).
Coil insulation class ~/=: IP 68.

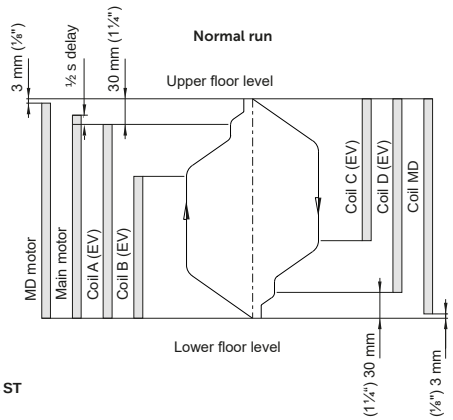
Description

The Blain Micro Drive for hydraulic elevators consists of a small motor, pump and valve unit in one assembly. Exact floor stops and relevelling operations are achieved with low electrical power requirement, low noise levels and no unnecessary heating of the oil. The MD unit is mounted on or under the cover of the main hydraulic power unit, using the same oil source. It can also be used to slowly move the car independently of the main drive during installation or in an emergency.

Hydraulic circuit



Electrical sequence



MRL-H

Characteristics

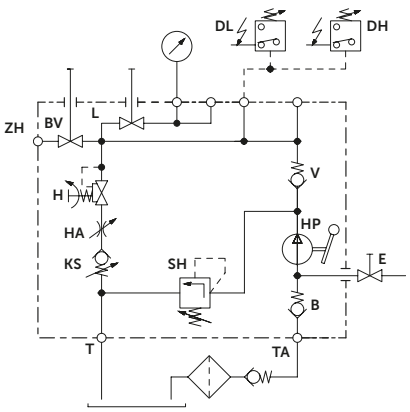
Operation	Medium	Operating pressure
manual	hydraulic oil	0–100 bar (0-1450 psi)

Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).

Description

The MRL-H has been designed for servicing and rescuing operations of machine room-less (MRL) hydraulic elevators remotely by having easy outside access, without needing to be in the pit. Many functional valves such as self-closing manual lowering valve, hand pump, slack rope valve, pressure relief valve, manual lowering speed adjustment, ball valve as well as a manometer have been added to a compact body. MRL-H can be located up to 6 metre (19 feet) away and 5 metre (16 feet) high from the main power unit at a convenient location for easy access. MRL-H can be optionally delivered with pipes and necessary accessories upon request.

Hydraulic circuit



CE

BALL VALVE

A - A

E - D

Characteristics

Type AA - Female threads / Type ED - Swivel nut

Typ	size	Q max.	P max.
B3	1½"/2"	800 l/min (211 US gpm)	100 bar (1450 psi)
B5	2½"	1600 l/min (423 US gpm)	70 bar (1015 psi)

Connection possibility: 1", 1¼", 1½", 2" & 2½" - M36x2, M45x2, M52x2, M65x2 & M78x2

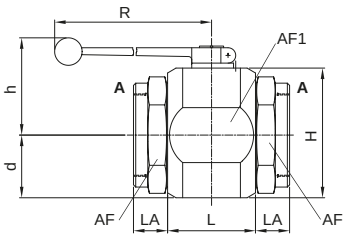
Description

The full bore ball valve provides full passage and thus causes less friction. It is universally applicable and its housing is made out of aluminium and steel.

A

Typ	A	AF*	(BSP) Typ No.	LA	(NPT) Typ No.	LA
B3	1"	70	B3G1	19	B3N1	28
	1¼"	70	B3G1.25	21	B3N1.25	28
	1½"	70	B3G1.5	24	B3N1.5	34
	2"	70	B3G2	30	B3N2	34
B5	2"	95	B5G2	31	B5N2	31
	2½"	95	B5G2.5	31	B5N2.5	35

Standard



Dimensions

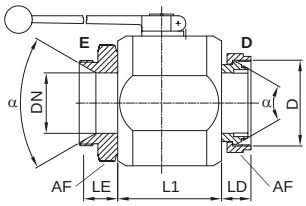
Typ	DN	L	H	AF1	d	h	R
B3	38	65	90	86	43	70	240
B5	55	80	118	114	57	82	280

DN = Ø Inside

E

Typ	DIN 2353 (24°) E	α	LE	*AF	DIN 3863 (60°) Typ No.
B3	M36x2	24°	24.5	70	B3E36
	M45x2	24°	26.5	70	B3E45
	M52x2	24°	26.5	70	B3E52
	M65x2	60°	27	70	B3E65
B5	M78x2	60°	35	95	B5E78

Option



D

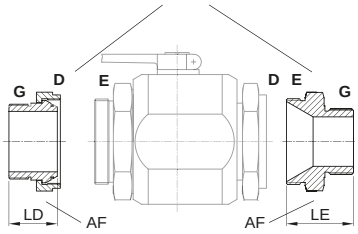
Typ	DIN 2353 (24°) D	α	L1	LD	*AF	DIN 3863 (60°) Typ No.
B3	M52x2	24°	66	35	60	D52
	M65x2	60°	66	25	75	D65
B5	M78x2	60°	94	24	90	D78

Adaptor GD

Typ	D	B	*AF	LD	Typ No.
B3	M65x2	G1½"	70	47	GD65.G1.5
	M65x2	Ø57 Weld	70	45	WD65.57
B5	M78x2	G2"	90	48	GD78.G2
	M78x2	Ø70 Weld	90	44	WD78.70

*** AF**-Across Flats

Adaptors



Adaptor GE

Size	E	B	*AF	LE	Typ No.
B3	M52x2	G1"	70	55	GE52.G1
	M52x2	G1 ¼"	70	54	GE52.G1.25
	M52x2	G1 ½"	70	52	GE52.G1.5
	M52x2	G2"	70	60	GE52.G2
	M65x2	G1 ½"	70	60	GE65.G1.5
B5	M65x2	G2"	70	52	GE65.G2
	M78x2	G2"	80	59	GE78.G2
	M78x2	G2 ½"	80	59	GE78.G2.5
	M78x2	NPT2 ½"	80	63	GE78.N2.5

CE

TANK HEATER

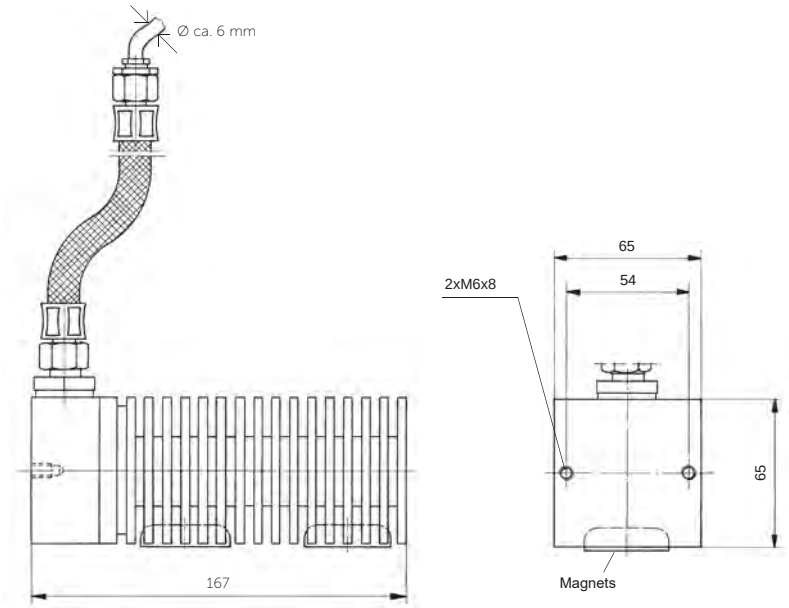
TH

Characteristics

Operation	Medium	Supply	Power rating
electrical	hydraulic oil	230 VAC, 110 VAC	250 W

Description

The TH tank heaters are intended primarily for applications in hydraulic control systems for machine tools, presses, hydraulic elevators, servo systems, etc. where overnight conditions or periods of non-operation causes the temperature of the hydraulic fluid to fall below desirable levels.
The heater is designed to maintain up to approximately 500 litres (130 US gals) of oil in an unheated room at a temperature of +20 °C to +25 °C (68 °F to 77 °F). Through the large heat dissipation area of the housing, the heaters surface temperature remains under +50 °C (120 °F) and thereby avoids oxidation or premature aging of the oil. The built-in thermostat switches the heating element ON at an oil temperature of approximately +20 °C (68 °F) and OFF again when the oil temperature has risen to approximately +25 °C (77 °F).
Should the heater in an unsubmerged state be exposed to an ambient temperature of under 20 °C (68 °F), it will switch ON for a short period before switching OFF again as heat is conducted through the housing to the thermostat. Under this condition, the hottest surface temperature of the heater would not exceed 90 °C (190 °F).



CE

HAND PUMP

H11

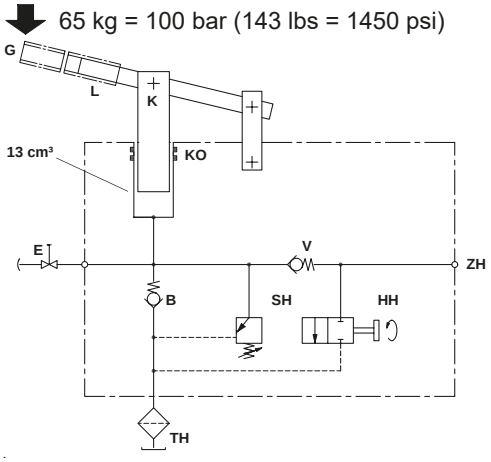
H12

Characteristics

Operation	Medium	Operating pressure
manual	hydraulic oil	150 bar (2175 psi)

Description

The H11 and the H12 hand pumps are for applications with hydraulic lifting or pressing equipment, for emergency operation of hydraulic elevators and for the pressure testing of hydraulic systems in general. The H11 is constructed for side mounting. The H12 is fitted with a base plate for standalone application.
The built-in pressure relief valve should be adjusted to prevent unintentional high pressure being applied to the system. A built-in manual valve for releasing pressure from the system is available as an option.



CE

MANUAL DOWN VALVE

Characteristics

Operation	Medium	Operating pressure	Flow rate
manual	hydraulic oil	8–100 bar (116-1450 psi)	5-880 l/min (1.3-211 US gpm) depends on size and pressure

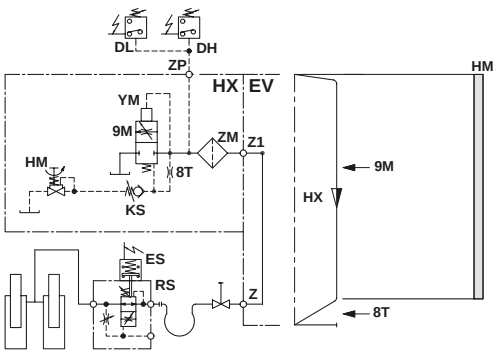
Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).

Description

The HX are manually operated down valves, adjustable in their down speed. They close automatically upon release. They can be used for emergency manual lowering or in combination with the EV down valve to achieve an overspeed of the elevator for testing the pipe rupture valve.

HX

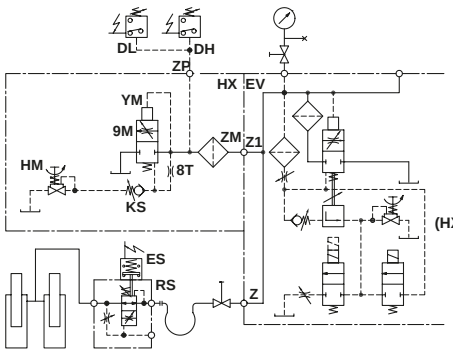
Hydraulic circuit



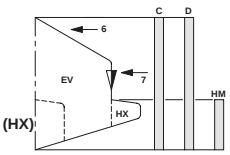
Sequence

HX+EV

Hydraulic circuit



Electrical sequence



SOLENOID DOWN VALVE

Characteristics

Operation	Medium	Operating pressure	Flow rate
manual	hydraulic oil	8–100 bar (116-1450 psi)	5-880 l/min (1.3-211 US gpm) depends on size and pressure

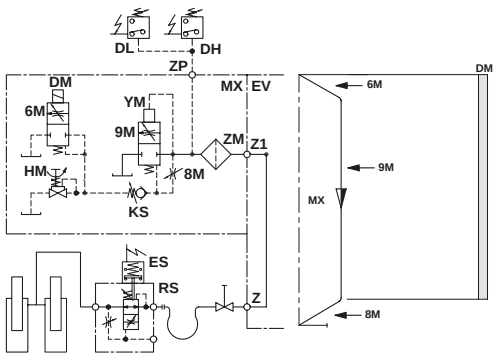
Oil temperature range: 20°-70°C (68-158°F) - (depending on viscosity grade of oil).

Description

The MX are solenoid operated down valves, adjustable in their acceleration, down speed and deceleration. They can be used for the revision or inspection travel of the elevator or as a particularly slow down speed valve in addition to the two down speeds of the EV valve to obtain extremely exact floor stops.

MX

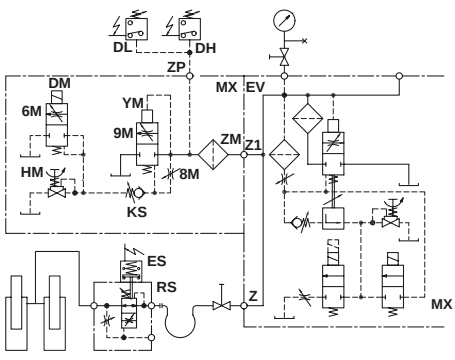
Hydraulic circuit



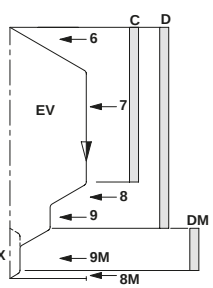
Electrical sequence

MX+EV

Hydraulic circuit



Electrical sequence



EMERGENCY POWER COIL

EN

EN

Characteristics

Emergency supply	Main supply
12 VDC (2 A)	24 VDC, 48 VDC, 110 VDC, 180 VDC, 110 VAC, 230 VAC
24 VDC (1.1 A)	24 VDC, 48 VDC, 110 VDC, 180 VDC, 110 VAC, 230 VAC

Description

Should there be an interruption of the main power to the elevator, the emergency lowering coil EN, fed by an emergency 12 VDC or 24 VDC supply, enables a command to be given from the car or elsewhere to lower the car to the floor below. When ordering please state main and emergency voltages.

CE

EXPLOSION PROOF SOLENOIDS MEX

MEX

Characteristics

Operation	Medium	Operating pressure	Temperature class
—	hydraulic oil	150 bar (2175 psi)	T4

Encapsulation	Housing protection class	Ambient temperature
m	IP68	-20°C to 60°C

Description

For use with the electrical pilot control of hydraulic valves intended for use in potentially explosive atmospheres according to directive 94/9 EG.
EC-type-examination certificate-number: PTB 02 ATEX 2193 X
Ex II 2 G EEx m II T4

CE

SLACK ROPE VALVE

½" KSB
up to 80 l/min (21 US gpm)

¾" KSB
up to 125 l/min (33 US gpm)

1½" KSB
up to 400 l/min (105 US gpm)

2" KSB
up to 800 l/min (211 US gpm)

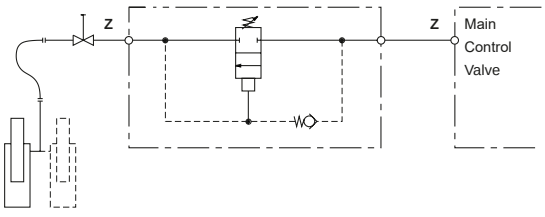
Characteristics

Operation	Medium	Operating pressure
—	hydraulic oil	10-100 bar (145-1450 psi)

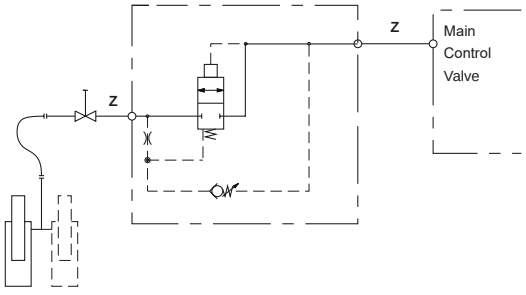
Description

Slack rope valve for separate installation. It prevents the slack rope condition caused by the lowering of the ram when the car is suspended in the safeties or resting on the buffers.

½" KSB



¾" & 1½" & 2" KSB



CE

SUBMERSIBLE SCREW PUMP PU

PU

Characteristics

Data at 50 cSt, 2750 rpm and 40 bar: PA european standard

Temperature	Pressure max.	Flow rate
0 to 100 °C (32-212 °F)	60 bar (870 psi) continuous	22.6-873 l/min (6-230 US gpm)

Data at 50 cSt, 2750 rpm and 40 bar: without bell housing

Temperature	Pressure max.	Flow rate
0 to 120 °C (32-248 °F)	75 bar (1087 psi) continuous	8-26 l/min (2-6.9 US gpm)

Description

Submersible screw pumps are ideal for use in hydraulic elevators due to the fact that they are silent in operation, offer good efficiency and low pulsation.

CE

SUBMERSIBLE MOTOR

MO

Characteristics

Type SB mini lift single phase (50 or 60 Hz) or three phase (50 Hz):

		1.5- 3.3 kW	(2 - 4.5 Hp)
- Type SB 150-A	(50 or 60 Hz):	4.7-22 kW	(6.5- 30 Hp)
- Type SB 150-B	(50 or 60 Hz):	12.5-22 kW	(17 - 30 Hp)
- Type SB 200	(50 or 60 Hz):	29.4-44.1 kW	(40 - 60 Hp)
- Type SB 250	(50 or 60 Hz):	51.5-73.5 kW	(70 -100 Hp)

Description

SB Motori submersible single and 3 phase motors are specifically designed for immersion in oil to work with submersible screw pumps and meet the requirements of low noise level and high efficiency in hydraulic lifts.

Advantages

Submersible motors offer unique advantages like:

1. Silent operation (by virtue of being submerged in oil inside the tank)
2. Direct coupling with submersible pump (no need of bell housing and coupling)
3. Very compact size and light weight (compared to big and heavy external motors)
4. Aesthetic and compact power unit design

CE

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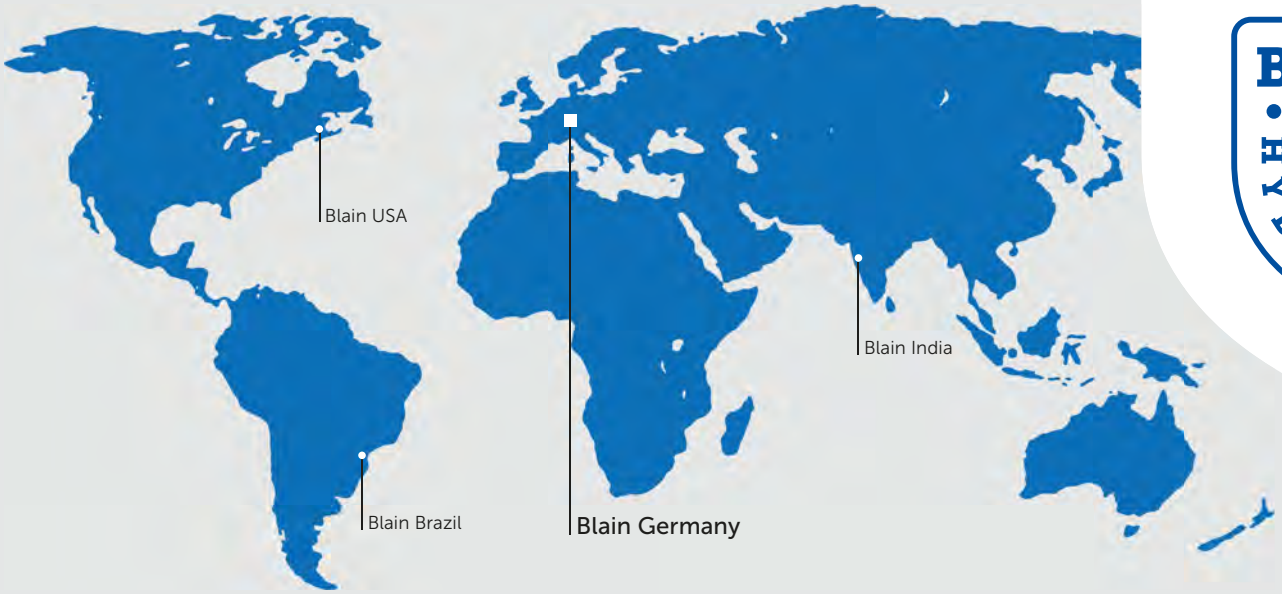

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