

EU-TYPE EXAMINATION CERTIFICATE

Issued by Liftinstituut B.V.
identification number Notified Body 0400,
commissioned by Decree no. 2016-0000038870

Certificate no. : NL17-400-1002-262-01 Revision no.: 1

Description of the product : Hydraulic valve for a brake element as part of a protection means against unintended downwards car movement

Trademark, type : Blain Hydraulics GmbH, iL10 1"-1½"-2"

Name and address of the manufacturer : Blain Hydraulics GmbH
Pfaffenstrasse 1
74078 Heilbronn
Germany

Name and address of the certificate holder : Blain Hydraulics GmbH
Pfaffenstrasse 1
74078 Heilbronn
Germany

Certificate issued on the following requirements : Lifts Directive 2014/33/EU

Certificate based on the following standard : Parts of: EN 81-20:2014, EN 81-50:2014

Test laboratory : None

Date and number of the laboratory report : None

Date of EU-type examination : May – October 2017, June 2018


Additional document with this certificate : Annex belonging to the EU-type examination certificate no.: NL17-400-1002-262-01REV.1

Additional remarks : See chapter 1 and 2 of the annex belonging to this EU- type examination certificate.

Conclusion : The safety component meets the requirements of the Lifts Directive 2014/33/EU taking into account any additional remarks mentioned above.

Amsterdam

Date : 12-06-2018
Valid until : 10-10-2022


ing. P.J. Peeters
Manager
Certification decision by

**Annex of EU-type examination certificate
NL17-400-1002-262-01**

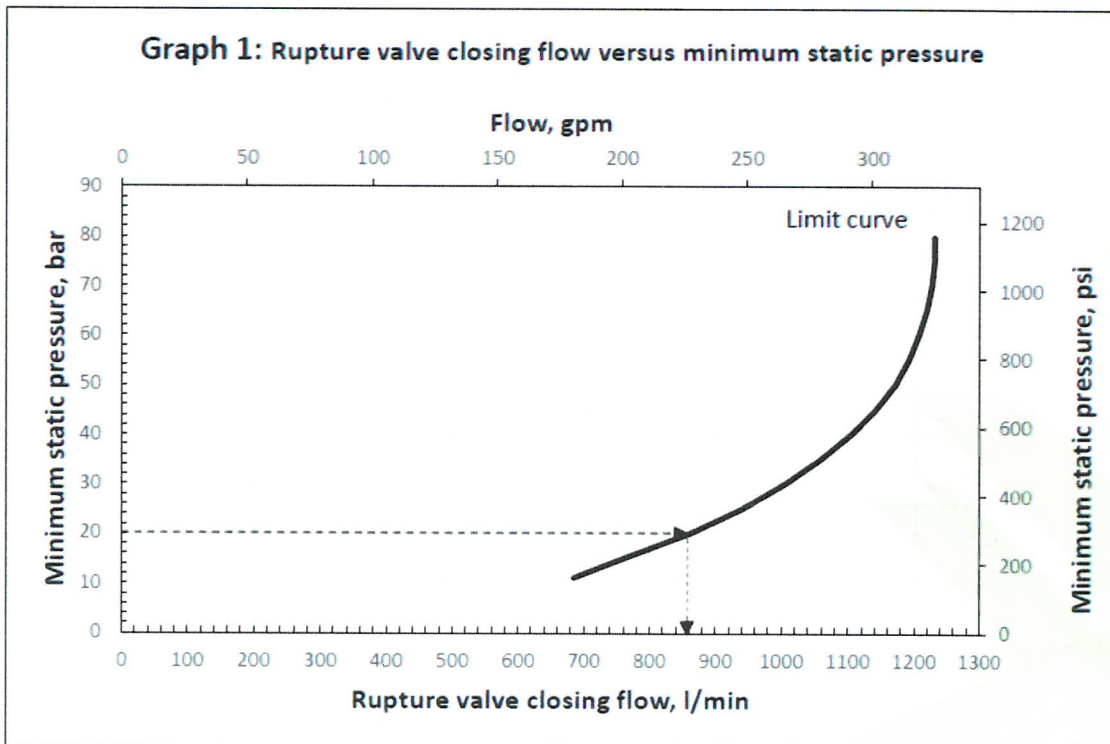
Date of original certificate : October 10, 2017
 Number & Date of revision : 1; June 12, 2018
 Project no. : P170072, P180174

1. Description

The iL10 flange is a solenoid operated lock valve designed as a safety option against Unintended Car Movement (UCM) downwards for hydraulic elevators. It is directly connected on the valve replacing the existing down flange. It includes all standard Blain EV valve adjustments as well as a self-closing manual lowering valve. Its purpose is to provide additional safety to lock the down piston X at its closed position via a lock piston LP in case of UCM situation or while the lift is stationary (See Annex 1d). Down movement of the lift is only possible by energizing down solenoid coil D on the control valve and the solenoid coil A3 on the iL10 flange. The iL10 can be mounted on any Blain EV, SEV and EV4 type valves. The existing Blain valve blocks are easily upgradable to satisfy UCM safety by the replacement of the typical EV down flange with the iL10.

The maximum flow rate that iL10 can be used for depends on the system pressure and oil viscosity. Tests have been conducted to find out the maximum flow rates that assure stopping distance of **800mm** and with less than **1g** retardation at various oil temperatures namely, around 9°C, 30°C and 56°C.

The most critical condition occurred at low oil temperatures and low pressures. Therefore, it was decided that only the lowest temperature curve (at 9°C) shall be used for critical flow calculation.



This **graph 1** shows a limit curve for rupture valve setting. Closing flow of rupture valve should always stay on the left side of the limit curve. In case of a UCM condition, the limit curve assures the stopping distance to be $\leq 800\text{mm}$ with a properly adjusted control valve. The minimum static pressure is used for obtaining the closing flow of rupture valve. The maximum allowable nominal speed of the lift can be calculated by using the following equation:

$$v_{\max_nom} = (21.22 \times \frac{Q_{rupture}}{D^2} - 0.30) \times \frac{n}{m} \text{ [m/s] } \dots\dots\dots$$

v_{\max_nom} : Maximum nominal speed of the elevator in m/s

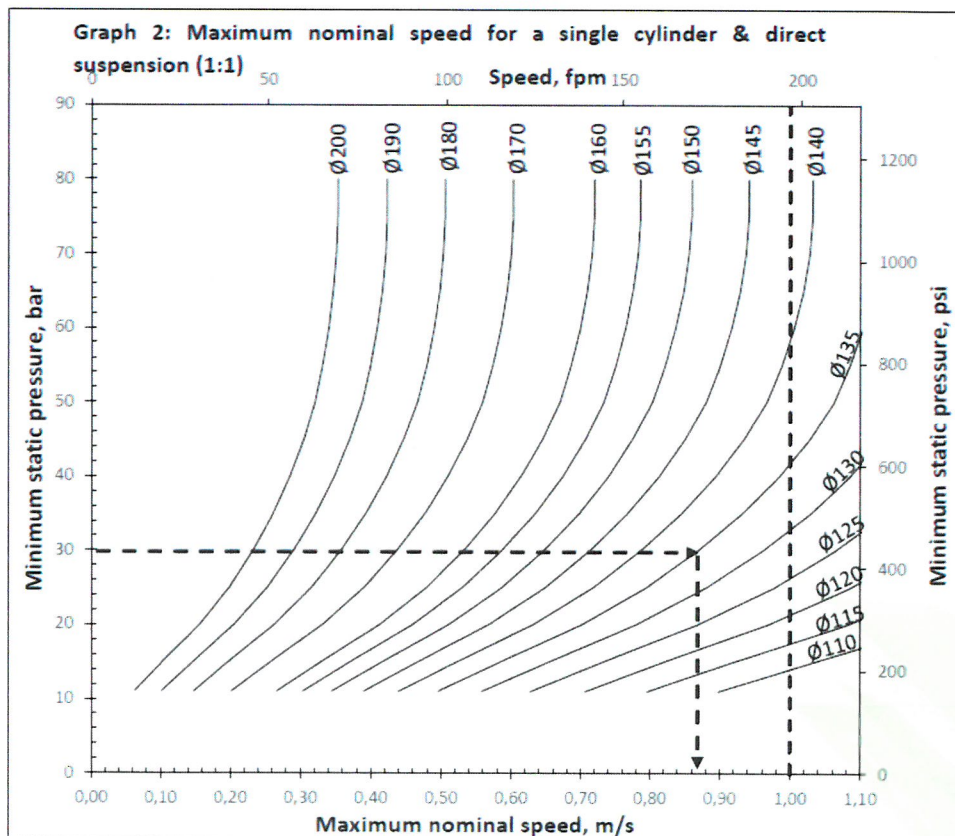
$Q_{rupture}$: Rupture valve closing flow, taken from Graph 1

D : Ram diameter [mm]

n : suspension ratio (eg. 1:1 $\rightarrow n=1$, 2:1 $\rightarrow n=2$)

m : Number of cylinders

Alternatively, **graph 2** can be used for obtaining the maximum allowable speed of the elevator directly for a single cylinder & direct suspension (1:1). The minimum static pressure should be applied while using the graph. If application has more than 1 cylinder or/and suspension is indirect, like 2:1, the speed reading should be multiplied by the suspension ratio and divided by the number of cylinders.



note: The curve is given for a single cylinder and direct suspension (1:1). When it is an indirect application (ex. 2:1 # $n=2$) with m number of cylinders, the speed reading should be multiplied by n/m . Nominal speed of the elevator cannot be bigger than 1.0 m/s.

GENERAL DATA & LIMITS

Type	iL10
Max breaking distance after triggering	800 mm
Max permissible distance between level and triggering UCM detector	150 mm
Maximum nominal speed	1,0 m/s
Maximum release speed	1,3 m/s
Permissible nominal flow 1 "	10 - 200 l/min
Permissible nominal flow 1½ "	10 - 400 l/min
Permissible nominal flow 2 "	10 - 800 l/min
Nominal pressure range	11 – 80 bar
Viscosity range	15 cSt – 300 cSt
Temperature range	9 °C - 70 °C for ISO VG46

COIL

Applicable Voltages AC	24, 42, 110, 208/230 V
Applicable Voltages DC	12, 24, 42/48/60, 80, 100/125, 180/196 V

APPLICABLE VALVES

Type	EV 0, EV1, EV10, EV100
Valve port size	1½ " - 2 "
Type	EV 4 vvvF
Valve port size	1" - 1½ " - 2 "
Type	SEV
Valve port size	1" - 1½ " - 2 "

APPLICABLE VALVE SEAT ORIFICE SIZES

Type	MV-A3
size	2,0 mm till nom pressure of 50 bar
size	1,6 mm from nom pressure above 50 bar
Type	MV-D
size	2,0 mm till nom pressure of 50 bar
size	1,6 mm from nom pressure above 50 bar

APPLICABLE SPRING SIZE PISTON 6P

location	# 6F (see annex 1C)
type	n=22 till nominal pressure of 30 bar
type	n=16 mm from nominal pressure above 20 bar

2. Conditions

On this EU type certification the following conditions apply:

- The above mentioned safety component represents only one part of the protective equipment against movements of the car in downward direction. Only in combination with a detection and triggering component (also two different components are possible), which must be subjected to an own EU type-examination according to the test procedure specified in EN 81-50:2014, clause 5.8, the total system can fulfil the requirements for a UCM protection means in accordance with EN 81-20:2014, clause 5.6.7.

- The stopping distance and the allowable maximum deceleration is guaranteed within the limits of the system, set in chapter 2 of this report. Therefore separate certificates for braking distances and decelerations at different volume flows, different pressures or different viscosity is not required, as long as the total system is tested on site. This can be done at reduced speed.
- Maximum travelled distance before the UCM is detected shall be 150mm in order to meet the requirements in clause 5.6.7 of EN81-20:2014.
- The installer shall provide suitable test instructions
- Both the A3 coil as the Down coil shall be energized according to clause 5.6.6.5 of EN81-20:2014.
- The A3 coil is energized 300-500 msec in advance of energizing the D coil and the A3 coil is de-energized 300-500 msec delayed after D coil is de-energized, by normal movement. In this way the A3 valve does not take part in the normal operation of the lift and has not be monitored for proper opening and closing. In case of UCM the A3 coil shall be de-energized according to clause 5.6.7.8 of EN81-20:2014.
- In case there is a risk of unintended car movement in the upward direction, appropriate measures shall be taken by the installer.

3. Conclusions

Based upon the results of the EU-type examination Liftinstituut B.V. issues an EU-type examination certificate.

The EU-type examination certificate is only valid for products which are in conformity with the same specifications as the type certified product. The EU-type examination certificate is issued based on the requirements that are valid at the date of issue. In case of changes of the product specifications, changes in the requirements or changes in the state of the art, the certificate holder shall request Liftinstituut B.V. to reconsider the validity of the EU-type examination certificate.

4. CE marking and EU Declaration of conformity

Every product that is placed on the market in complete conformity with the examined type must be provided with a CE marking according to art. 18 of the Lift directive 2014/33/EU under consideration that conformity with eventually other applicable Directives is proven. Also every product must be accompanied by an EU declaration of conformity according to annex II of the Directive in which the name, address and the Notified Body identification number of Liftinstituut B.V. shall be included as well as the number of the EU type-examination certificate.

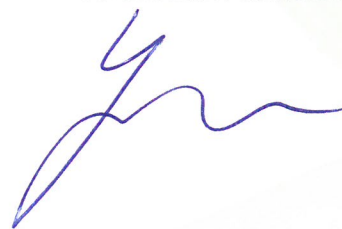
An EU-type certified safety component shall be random checked, for example according to annex IX of the Lift directive 2014/33/EU before these safety components may be CE-marked and may be placed on the market. For further information on random checking by Liftinstituut, see regulation 2.0.1 'Regulations for product certification' on www.liftinstituut.com.

Prepared by:

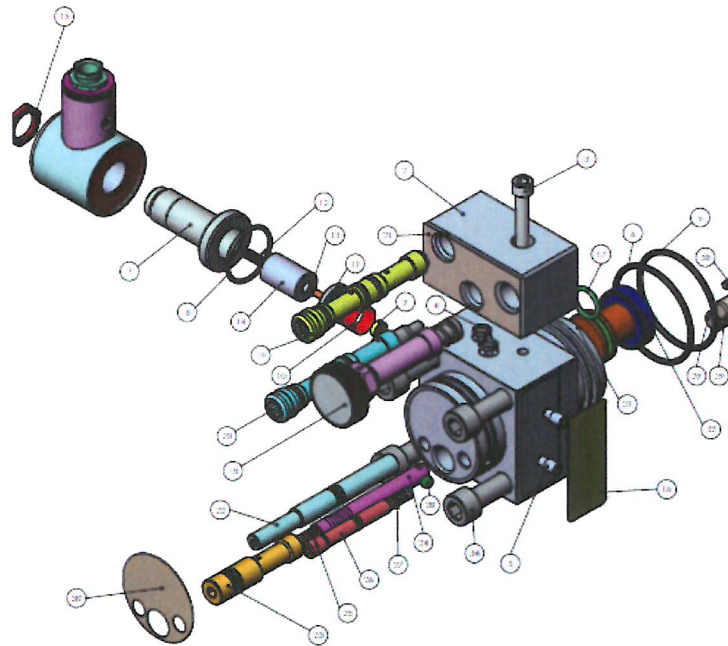


W. Visser
Product Specialist Certification
Liftinstituut BV

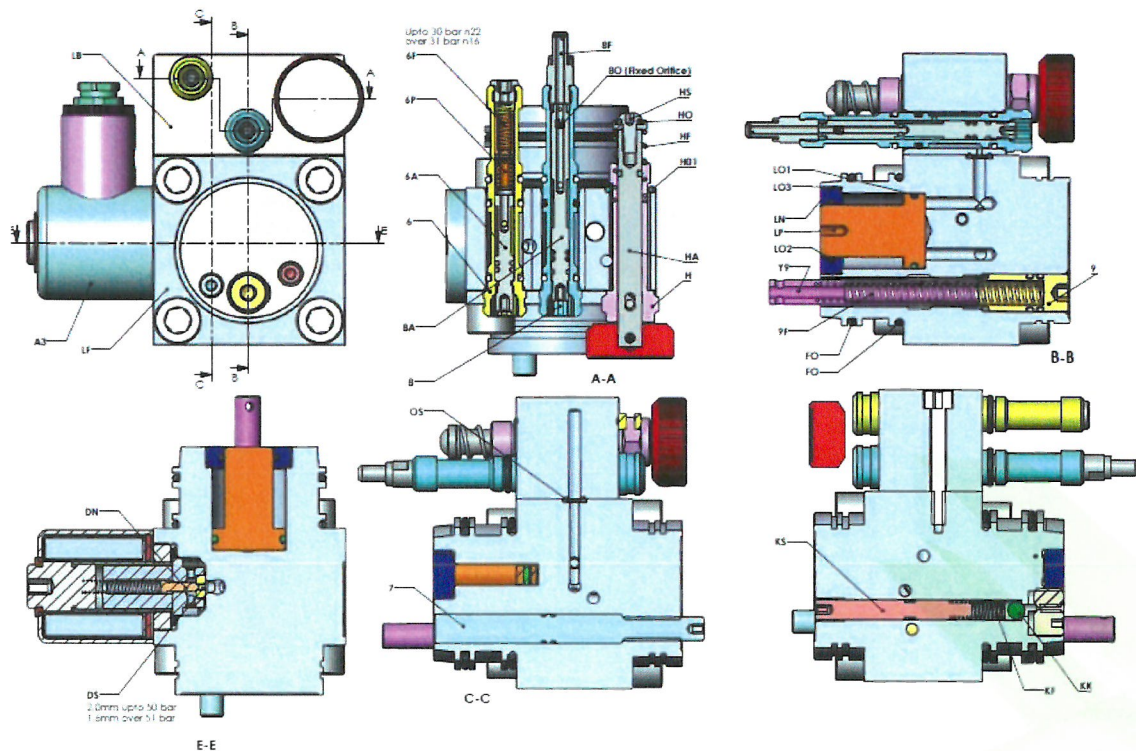
Certification decision by:



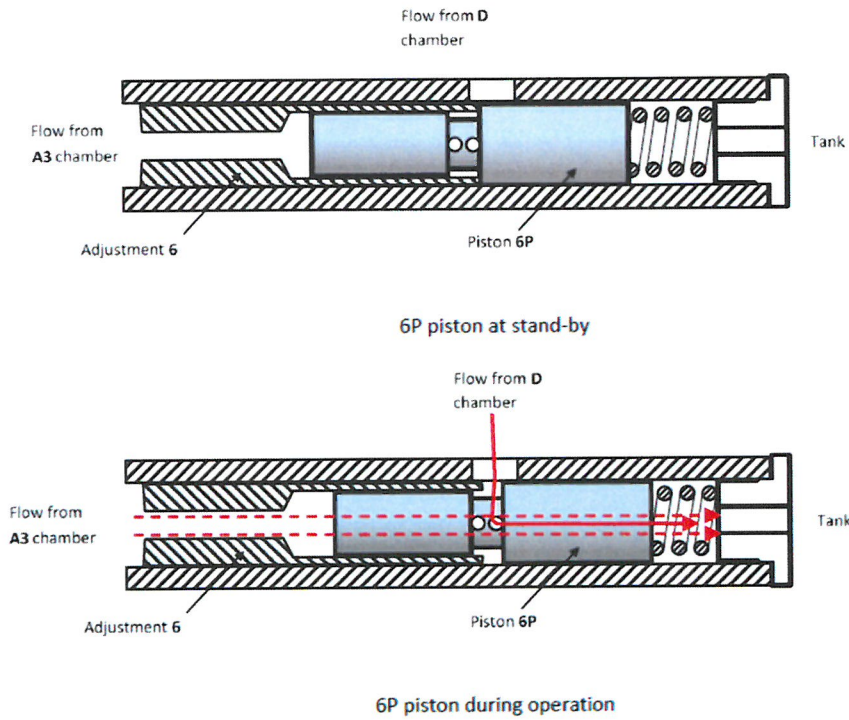
Annex 1a. iL10



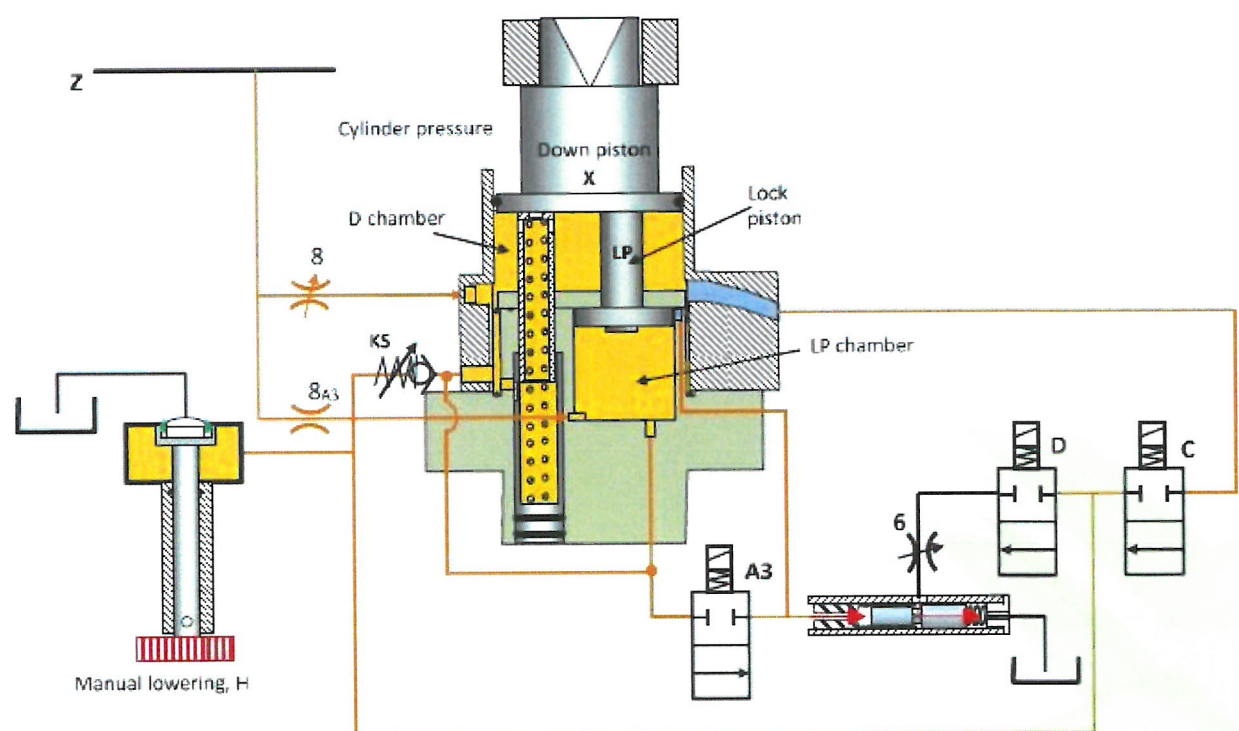
Annex 1b. iL10



Annex 1c. 6P operation



Annex 1d. Hydraulic lay-out



Annex 2. Documents of the Technical File which were subject of the examination

Title	Document number	Date
F4.66 Test report	NL17-400-1002-262-01	12-06-2018
iL10 Tech catalogue	Ver.1.0	25-07-2017
iL10 Tech file	Ver.2.0	12-06-2018
iL10 BOM	500463 / iL10 KS a	05-06-2018
RA iL10	Ver.1.0	24-07-2017
iL10 parts	500463 / iL10 KS a	05-06-2018
iL10 Messungen Liftinstituut	Ver.1.0	21-06-2017
iL10 User manual	Ver.2.0	12-06-2018

Annex 3. Reviewed deviations from the standards

EN xx-x par.	Requirement	Accepted design
No deviations		

Annex 4. Revision of the certificate and report

Rev.:	Date	Summary of revision
-	10-10-2017	Original
1	12-06-2018	Changed connection of KS in order for better adjustment