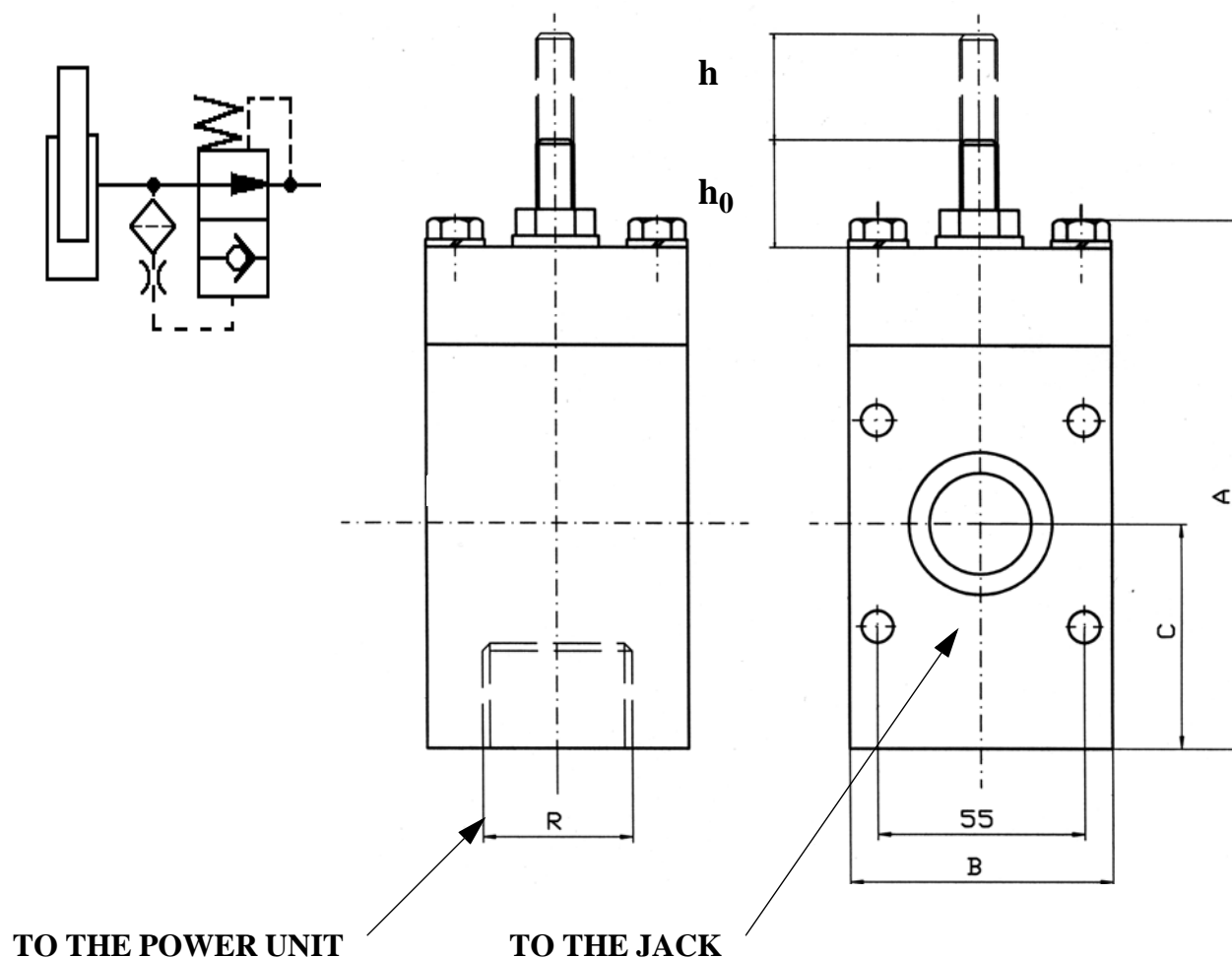


JACK RUPTURE VALVE

DRAWING AND HYDRAULIC DIAGRAM



Selection table

Valve code single jack	Valve code dou- ble jack	Reaction oil flow [l/min]	Dimensions [mm]			Fitting size
CODE	CODE	q _r	A	B	C	R
651900G02		50 - 285	152	70	70	1 ½"
651900G21	651900G31	150 - 485	163	70	61	1 ½"

SETTING SEQUENCE

Reaction flow

Reaction flow is related to rated speed + 0.3 m/sec (EN 81-2) and can be determined as follows:

- 4 From Graphic A, determine the flow in liters per minute l/min (V_d is lift rated speed, E is ram diameter)
- 5 To obtain the effective reaction flow q_r , divide the flow value by the reeving ratio.:

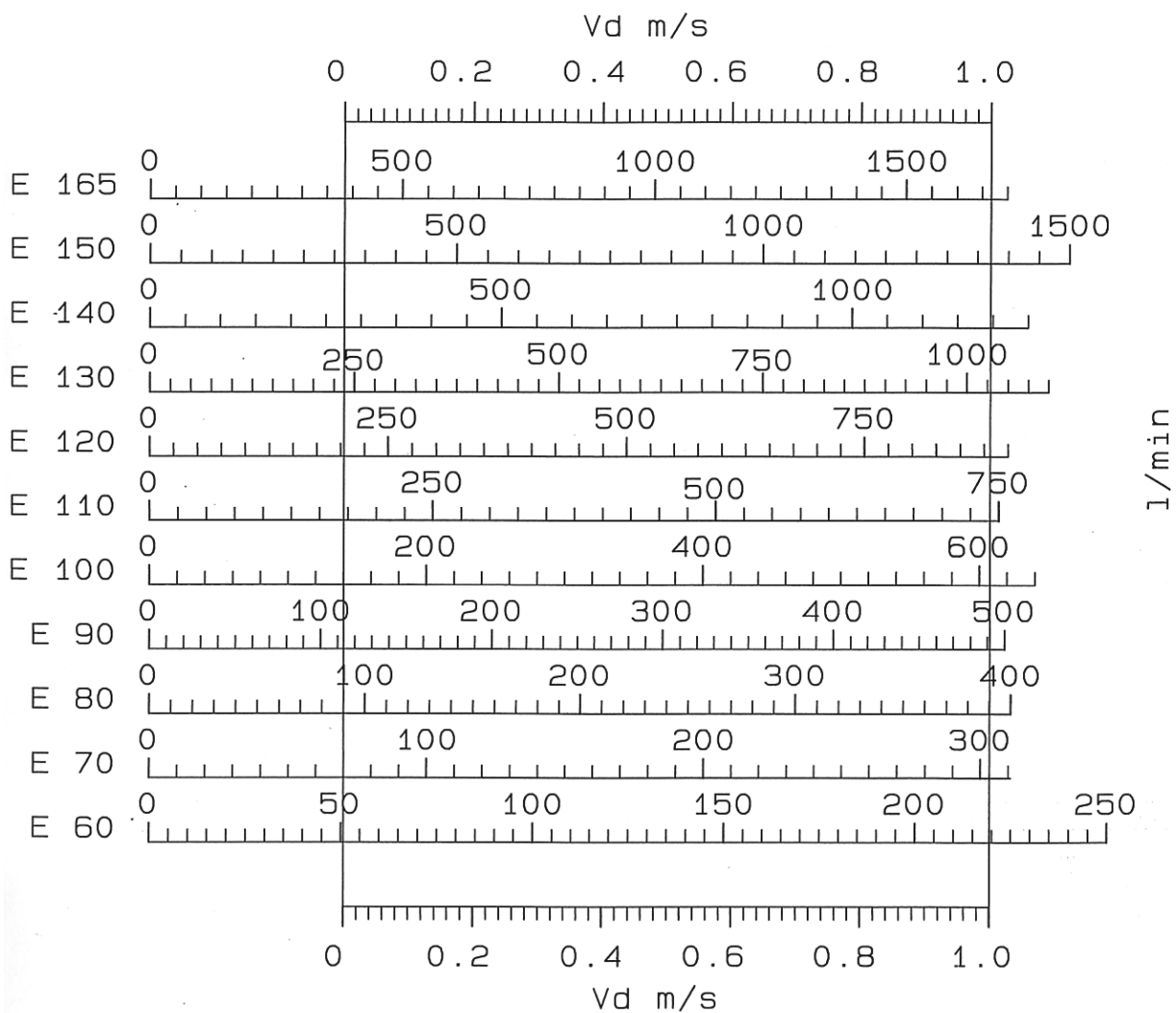


Figure 3: Graphic A

Example: piston with diameter 100 mm, reeving ratio 2:1, travel speed $V_d=0.6$ m/sec

- 1 Entering in graph. A with piston type and travel speed V_d , then flow value = 420 l/min
- 2 Effective reaction flow q_r = flow value/reeving ratio = 420/2 = 210 l/min

Calculation of the setting value h

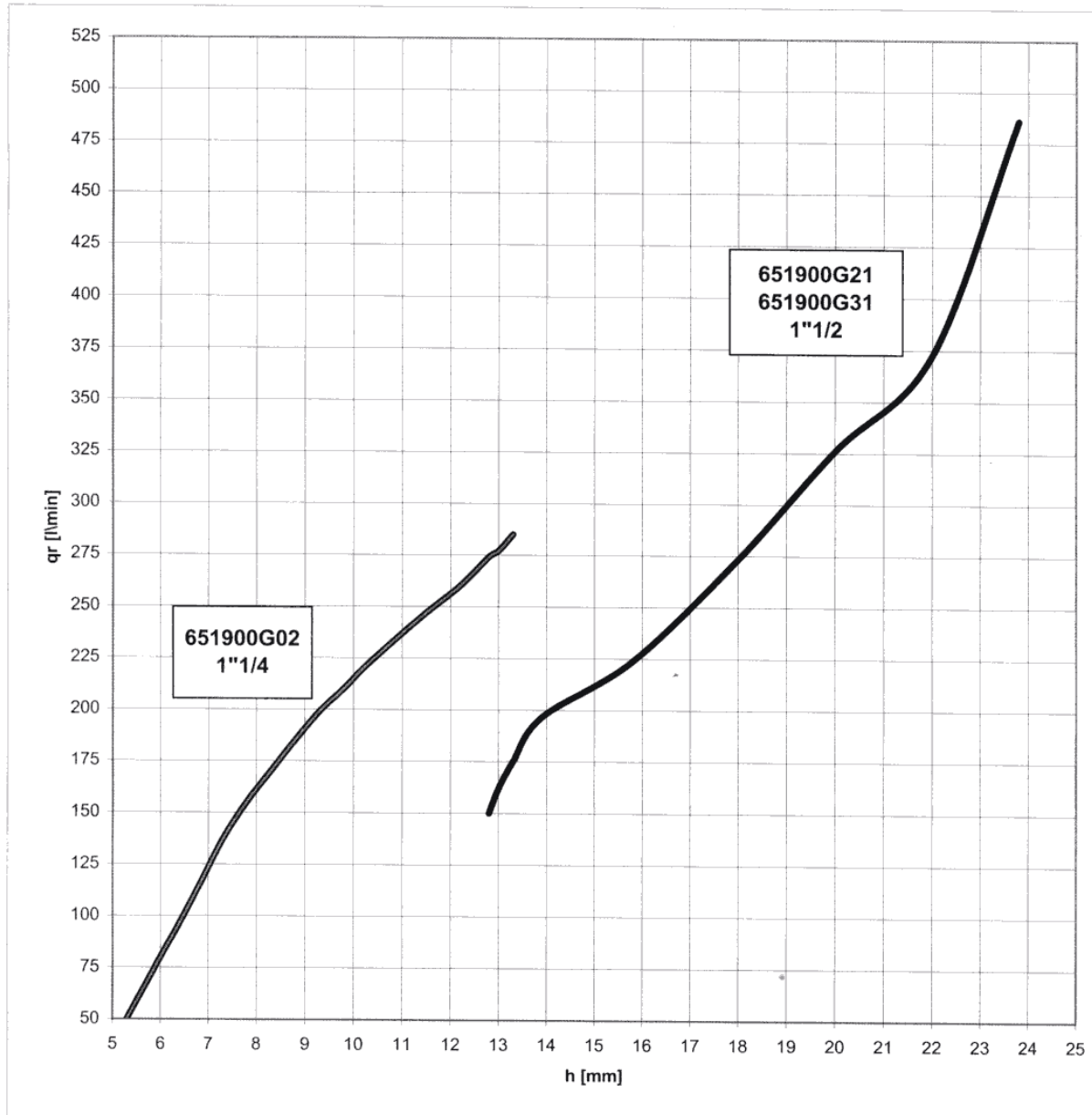


Figure 3. .Graph B (to be used with present procedure).

From graph. B determine the setting value h for the rupture valve type you are using and the calculated reaction flow q_r . When the rupture valve is fully closed the distance between screw head and valve body is h_0 . Adjust the screw to add the setting value h found in the graph to h_0 . The distance between the screw head and the valve body will be, after the setting, the sum of $h + h_0$.

Example: piston diameter 100 mm, valve type IT651900G02, reeving ratio 2:1, travel speed $V_d=0.6$ m/sec

- 1 Entering in graph. A with piston type and travel speed V_d , then flow value = 420 l/min
- 2 Effective reaction flow q_r = flow value/reeving ratio = 420/2 = 210 l/min
- 3 Entering in graph B with q_r 210 l/min and valve code IT651900G02 then, $h = 9.5$ mm.

Rupture valve screw setting

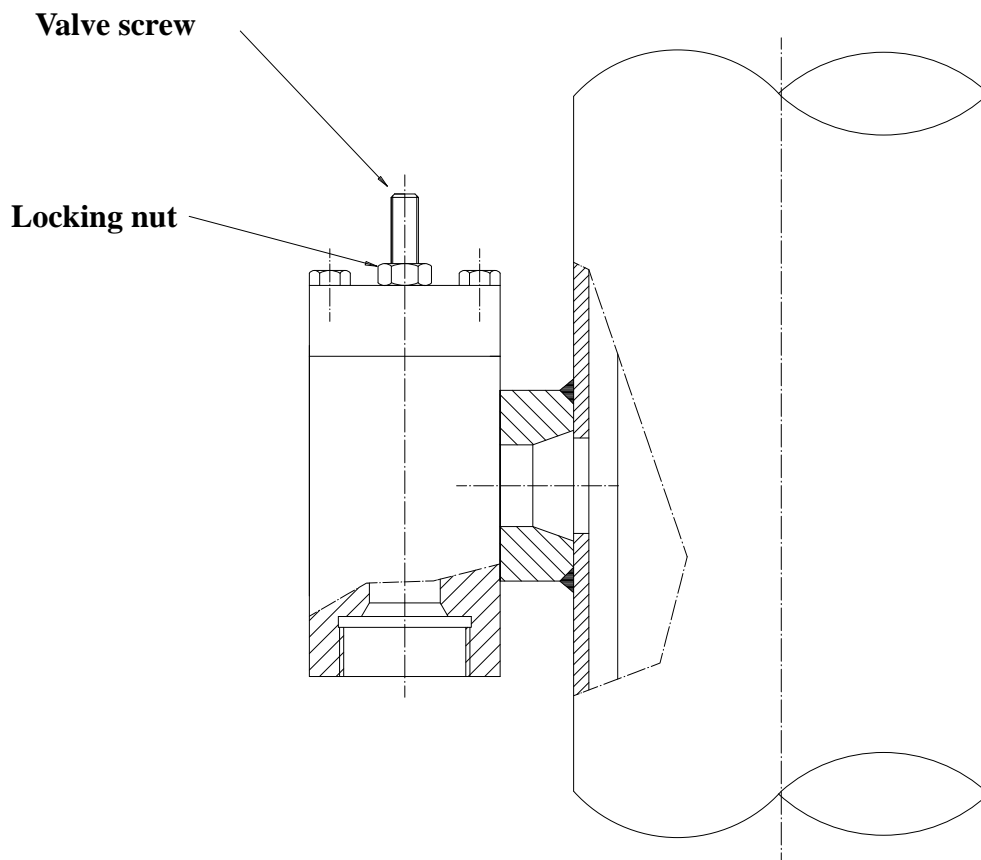


Figure 3: Rupture valve

Set the screw as follows:

- 1 Take away the protection hat (not supplied with all the type) from the rupture valve setting screw and loosen the locking nut.
- 2 Turn the screw in order to reach the setting value $\pm 0,5$ mm ($\pm 1/2$ turn; see Figure 2. Graph B), re-tighten the lock nut and the protection hat.

TESTING SEQUENCE

0.1 To check reaction flow

Once you have installed your elevator you can use the following procedure to test the rupture valve:

Note: Before carrying out the full load test you **MUST** verify the correct operation of the rupture valve with **EMPTY CAR**.

- 1 Drive the lift, (empty car) to the highest floor and switch off the power supply.
- 2 Record the exact position of the PCV adjusting screw for pressure compensation valve.
- 3 Loosen the lock nut.
- 4 Turn the adjusting screw 2...3 turns anti-clockwise.
- 5 Switch on the power supply and call the lift to the lowest floor
- 6 Turn the PCV screw clockwise to increase the lift speed until the rupture valve operates and stops the lift (the rupture valve should operate at a speed 0.3 m/s above the nominal lift speed. If your controller uses the BAR system you may use this to estimate the lift speed)
- 7 Repeat the test with full load in the car

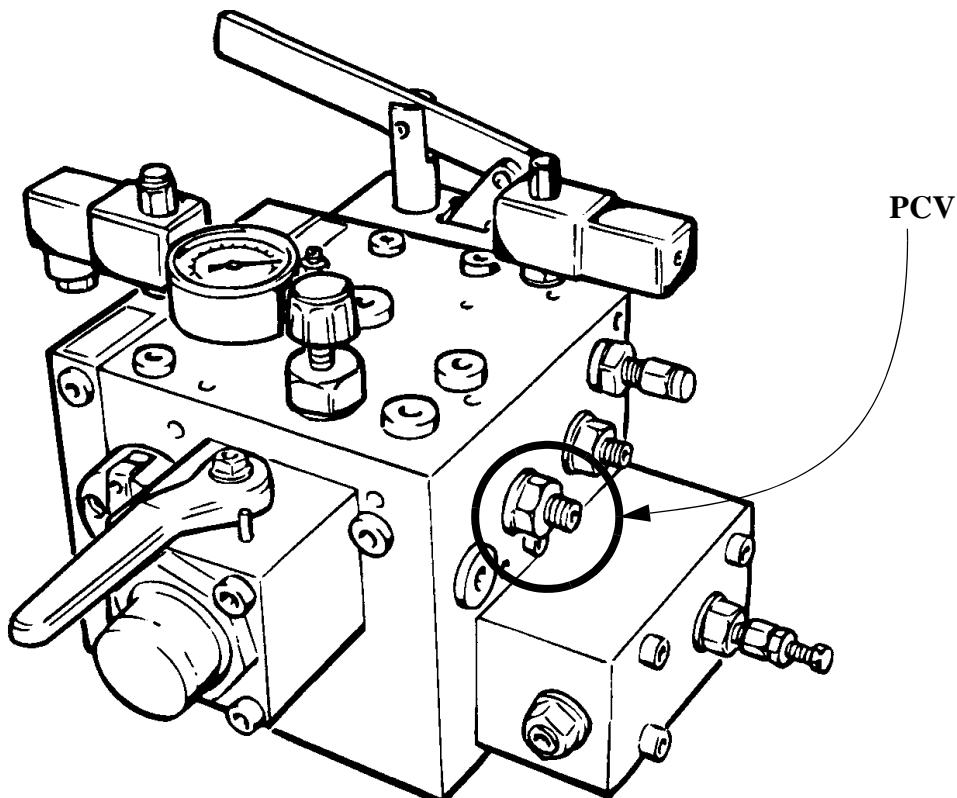


Figure 3: Hydronic Lift H300 valve.

NOTE! The rupture valve is set to close at a maximum speed 0.3 m/s above nominal speed. If the rupture valve has not operated by the time the lift is approaching the last floor either switch off the power or close the shut-off valve to prevent the lift car from landing on the buffers.

- 4 Once the test is complete turn the PCV screw back to its original position and tighten the lock nut.
- 5 Re-pressurize the system with the hand pump, then drive the lift up and down the shaft to check operation.

NOTE1! The rupture valve works as an overspeed protection device. If it stops the lift at too high a speed, or if it fails to operate and the lift hits the buffers at too high a speed, passengers in the lift car may be injured. It is, therefore recommended that, if it is to be adjusted on site, speed measuring equipment is used, (refer to your local technical support department for procedure), and that the adjustment and re-calibration is carried out by authorized, trained personnel.

NOTE2! If it is not possible to adjust the rupture valve from the car roof you must first either;

i) pull in the safety gear and fit the parking chain or

ii) if the rupture valve is low enough, install the pit prop.

NEVER GO UNDERNEATH THE LIFT CAR WITHOUT THIS PROTECTION!

WHAT IF...?

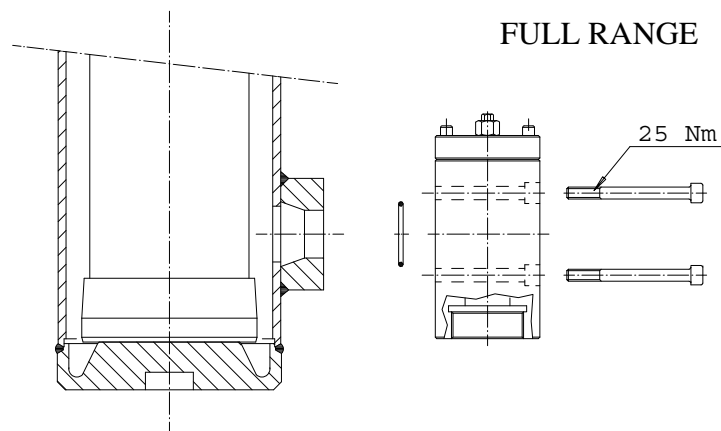
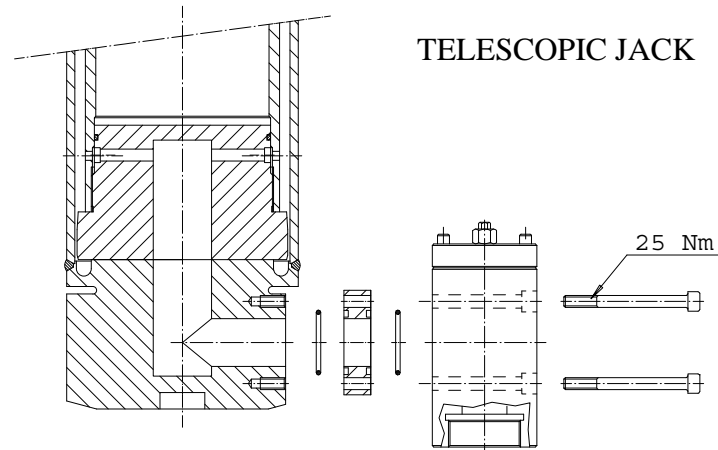
Rupture valve fails to operate

- 1 Take away the protection hat (if supplied) from the rupture valve screw
- 2 Unscrew the locking nut, close the valve-screw one complete turn and re-tighten the lock nut
- 3 Repeat the testing procedure in section 0.1 until rupture valve closes.
- 4 If it does not stop yet close the rupture-valve screw one more turn as at point 2 of this paragraph.
- 5 Record the speed at which you have finally set the valve.

Rupture valve closes too early

- 1 Take away the protection hat (if supplied) from the rupture valve screw;
- 2 Unscrew the lock nut, open the valve-screw one complete turn and re-tighten the lock nut;
- 3 Repeat the testing procedure in section 0.1 until the valve closes.
- 4 Record the speed at which you have finally set the valve.

INSTALLATION OF THE RUPTURE VALVE.



The rupture valve must be mounted directly on the jack with four screws M8 (tightening torque: 25 Nm); on the FULL RANGE jacks directly on the block that is welded on the cylinder, on the TRA 200 on the cylinder bottom plate inserting the 18 mm spacer.

N.B. : Don't forget to insert the sealing O-Rings!

Double jack rupture valve installation

The connection between rupture valve and jacks is the same as for the single jack.

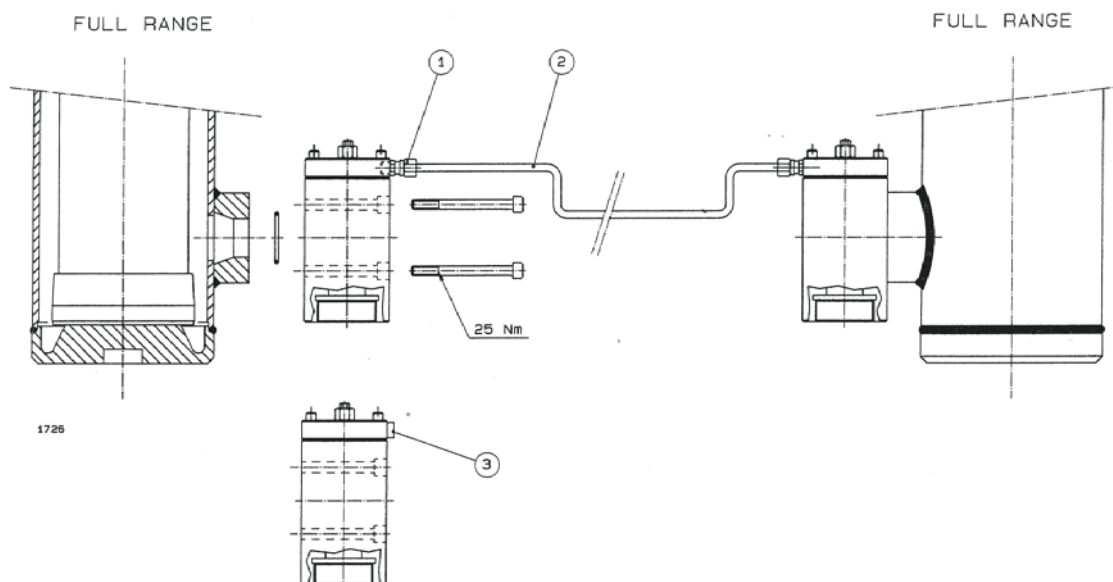
In the installation with double jacks the synchronization of the two valves is operated by a copper pipe (Nr. 2) that connected the two valves as per the following drawing.

Installation:

- remove the plug Nr. 3,
- cut the copper pipe Nr. 2 to the required length (max. length 10 meters)
- connect the pipe to the valves with the adapter Nr. 1.

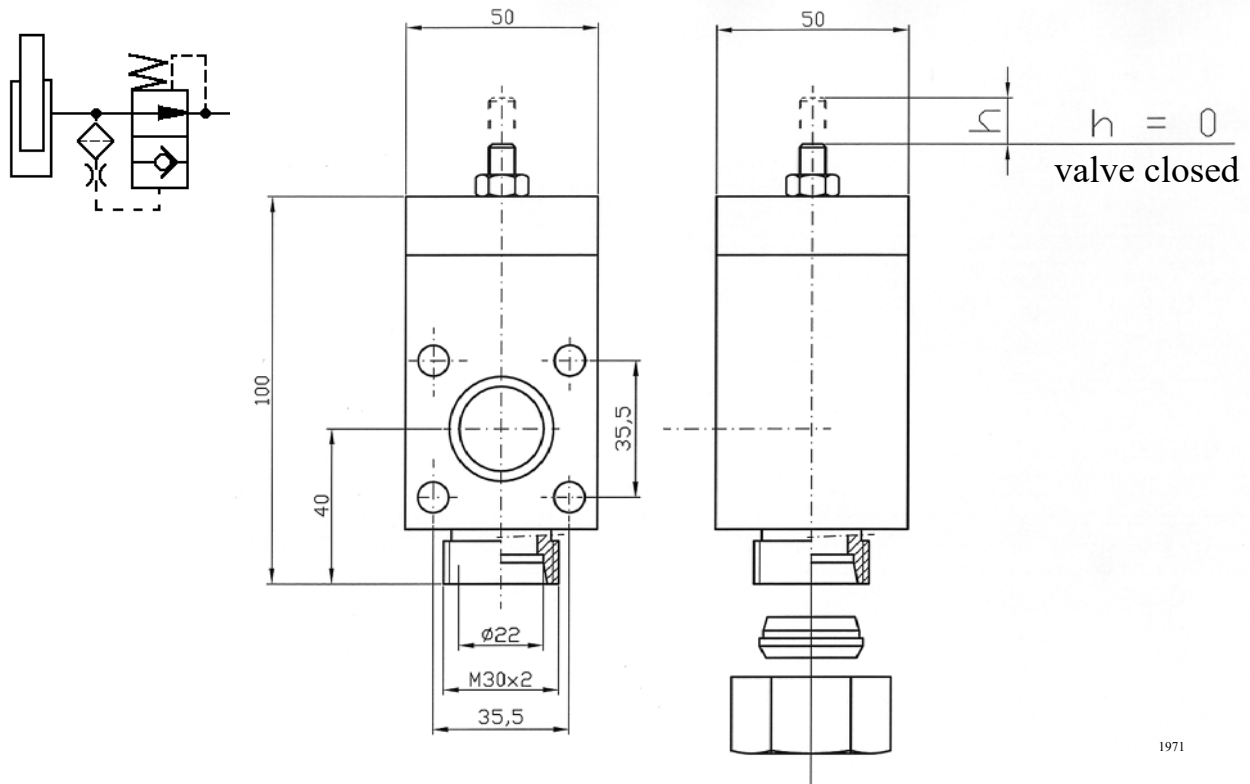
After the cutting of the copper pipe, clean the internal diameter in order to maintain the nominal dimension

NOTE: pay attention during the pipe handling, contraction or crush aren't admitted.



JACK RUPTURE VALVE TYPE 3/4" MOD. 691900G06

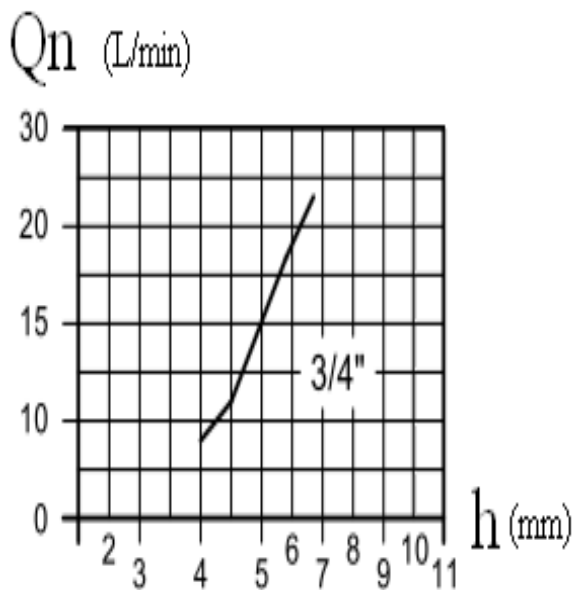
DRAWING AND HYDRAULIC DIAGRAM



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Nominal oil flow **Q_n**: maximum 23 l/m; minimum 8 l/m
Max. static pressure 50bar

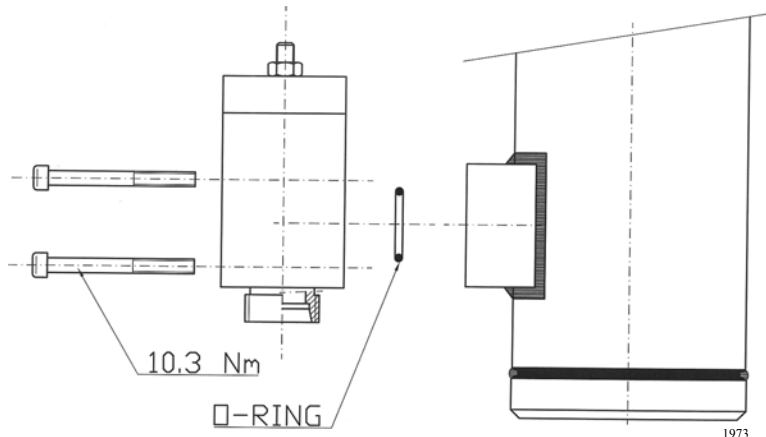
VALVE ADJUSTMENT GRAPH



Rupture valve adjustment: read on the graph the adjustment measure h for the screw of the rupture valve using the nominal oil flow of the elevator Q_n (pump oil flow).

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RUPTURE VALVE INSTALLATION



RUPTURE VALVE OPERATING TEST

Once you have installed your elevator and adjusted the rupture valve according to the graph you can use the following procedure to test the rupture valve:

Note: Before carrying out the full load test you **MUST** verify the correct operation of the rupture valve with **EMPTY CAR**.

- 1 Drive the lift, (empty car) to the highest floor and switch off the power supply.
- 2 To achieve the needed over speed you can increase the down speed at the valve by the adjustment screw Nr. 9.
- 3 Switch on the power supply and call the lift to the lowest floor
- 4 The rupture valve should operate at a speed 0.3 m/s above the nominal lift speed.
- 5 If during the test the valve doesn't operate or valve closes too early adjust the valve by turning 1/4 of a round at a time , repeat the test.
- 6 Repeat the test with full load in the car
- 7 Once the test is complete turn the Nr. 9 screw back to its original position.

NOTE! The rupture valve is set to close at a maximum speed 0.3 m/s above nominal speed. If the rupture valve has not operated by the time the lift is approaching the last floor either switch off the power or close the shut-off valve to prevent the lift car from landing on the buffers.

NOTE1! The rupture valve works as an overspeed protection device. If it stops the lift at too high a speed, or if it fails to operate and the lift hits the buffers at too high a speed, passengers in the lift car may be injured. It is, therefore recommended that, if it is to be adjusted on site, speed measuring equipment is used, (refer to your local technical support department for procedure), and that the adjustment and re-calibration is carried out by authorized, trained personnel.

NOTE2! If it is not possible to adjust the rupture valve from the car roof you must first either;

- i) pull in the safety gear and fit the parking chain or
- ii) if the rupture valve is low enough, install the pit prop.

NEVER GO UNDERNEATH THE LIFT CAR WITHOUT THIS PROTECTION!