

RUPTURE VALVE VC 3006 - types A, B, C, E, G, R

This device consists of a valve which stops (completely or partially) the oil flow when downward speed exceeds the preset value. This device ensure a deceleration lower than g_n ($9,81 \text{ m/s}^2$).

This valves are designed and manufactured to a safety factor greater than 1,7 with respect to the proof stress (non-proportional elongation) calculated on a pressure 2,3 times the maximum static one (45 bar).

SETTING OF THE RUPTURE VALVE:

- Calculate the tripping flow with the following formula:

$$Q_i = \frac{(V_d \cdot 1,3) \cdot 6 \cdot A \cdot N_{vc}}{c_m}$$

where:

Q_i = maximum tripping flow of the valve [l/min]

V_d = rated downward speed of the car [m/s]

A = ram area [cm^2]

N_{vc} = number of jack connected to the rupture valve

c_m = reeving ratio (1 for direct installation 1:1, 2 for indirect installation 2:1)

Table 1 - area for single ram jacks

| ram | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 150 | 180 | 200 | 238 |
|---------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| A [cm^2] | 19,63 | 28,27 | 38,48 | 50,27 | 63,62 | 78,54 | 95,03 | 113,10 | 132,73 | 176,71 | 254,47 | 314,16 | 444,88 |

Table 2 - equivalent area for telescopic jacks with hydraulic synchronization

| jack type | | T42 | T50 | T63 | T70 | T85 | T100 |
|---------------|---------------------|-------|-------|-------|-------|--------|--------|
| C2 (2 stages) | A [cm^2] | 21,14 | 29,40 | 44,22 | 59,59 | 84,94 | 117,61 |
| C3 (3 stages) | | 33,25 | 44,04 | 66,63 | 88,83 | 132,27 | 176,15 |

Table 3 - equivalent area for telescopic jacks with mechanical synchronization (by chains)

| jack type | | (TCS/EC 45) | TCS/EC 60 | TCS/EC 75 | TCS/EC 90 | TCS/EC 105 | TCS/EC 120 |
|-------------------|---------------------|-------------|-----------|-----------|-----------|------------|------------|
| -2N, Y (2 stages) | A [cm^2] | (22,50) | 36,76 | 54,55 | 75,87 | 100,73 | 129,12 |
| -3Y (3 stages) | | (29,93) | 45,95 | 65,50 | 88,59 | 115,22 | **** |

- Remove the cap from the adjusting screw and untight the locking nut.
- Screw the adjustment screw in to stop and measure the quote X_o (valve completely closed).
- Read on the diagram for valve setting the quote X with respect to the tripping flow and to the valve dimension (e.g.: VC 3006/B 1"1/4; $Q_i = 150 \text{ l/min}$; $X = 9\text{mm}$)
- Screw out the adjustment screw to obtain the requested quote $X + X_o$

CHECKING OF THE RUPTURE VALVE:

- Call the car with full load to the top floor.
- Tight screw #5 to stop and call the lift back to the bottom floor.
- When the lift reaches the downward speed according the tripping flow, the rupture valve closes and the car stops. In case of ruture valve with by-pass, the car will continue to descend with low speed. If the valve does not close it is necessary to re-adjust it:
- Untight the locking nut and screw in the adjustment screw one turn.
- Call the lift to the top floor and then back to the bottom floor.
- Repeat these operation until the valve closes.
- Screw out #5 to stop and be sure the valve does not trip during a normal down travel.

IMPORTANT!!!

Once the check is done re-assemble the cap on the adjusting screw.

RUPTURE VALVE AND DISTRIBUTOR "3010"

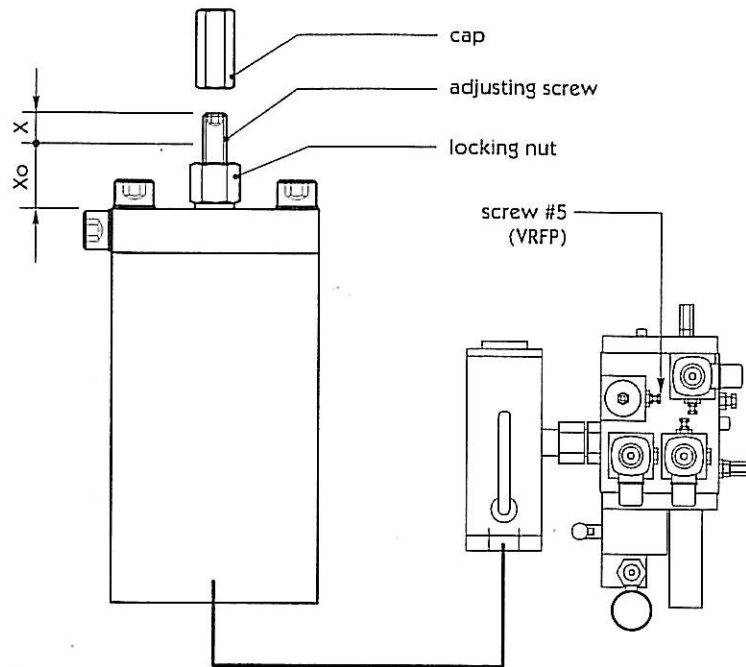
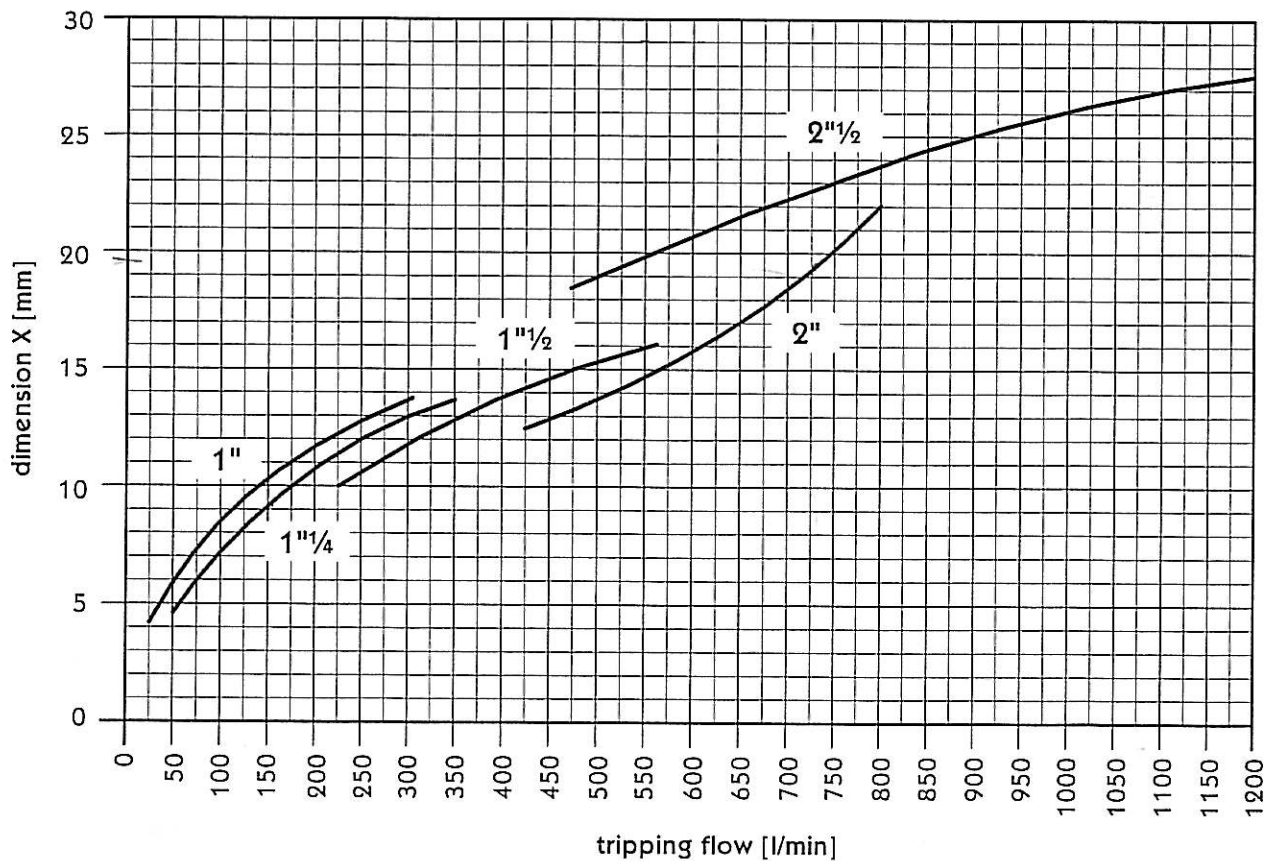


Table of quote "Xo" (indicative) according to the valve size

| valve size | 1" | 1" 1/4 | 1" 1/2 | 2" | 2" 1/2 |
|------------|------|--------|--------|------|--------|
| Xo [mm] | 13,5 | 14 | 13,5 | 11,0 | 22,0 |

DIAGRAM FOR VC 3006 ADJUSTMENT





Rupture valve test

2-Jack installation and one rupture valve / Jack :

A connection pipe between the rupture valves has to be connected.

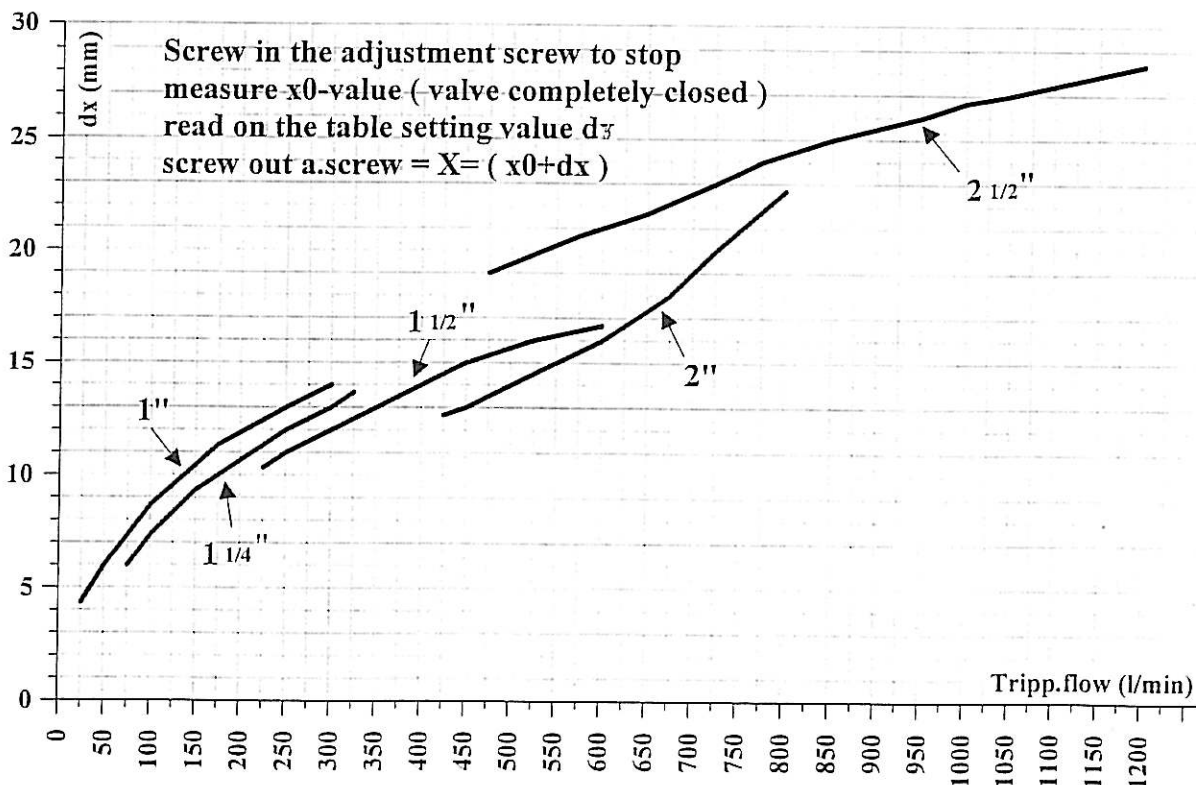
- Load in the car at top floor, to obtain overspeed.
- Tight screw no.5 to stop (valve system 3010, pilot valve VRFP).
- Call the lift to the bottom floor. Downward speed has to exceed nominal speed.
- The rupture valve must close according to tripping flow, 120% of nominell speed.**
- After test, screw out no.5 to stop and be sure the valve does not trip during a normal down travel.

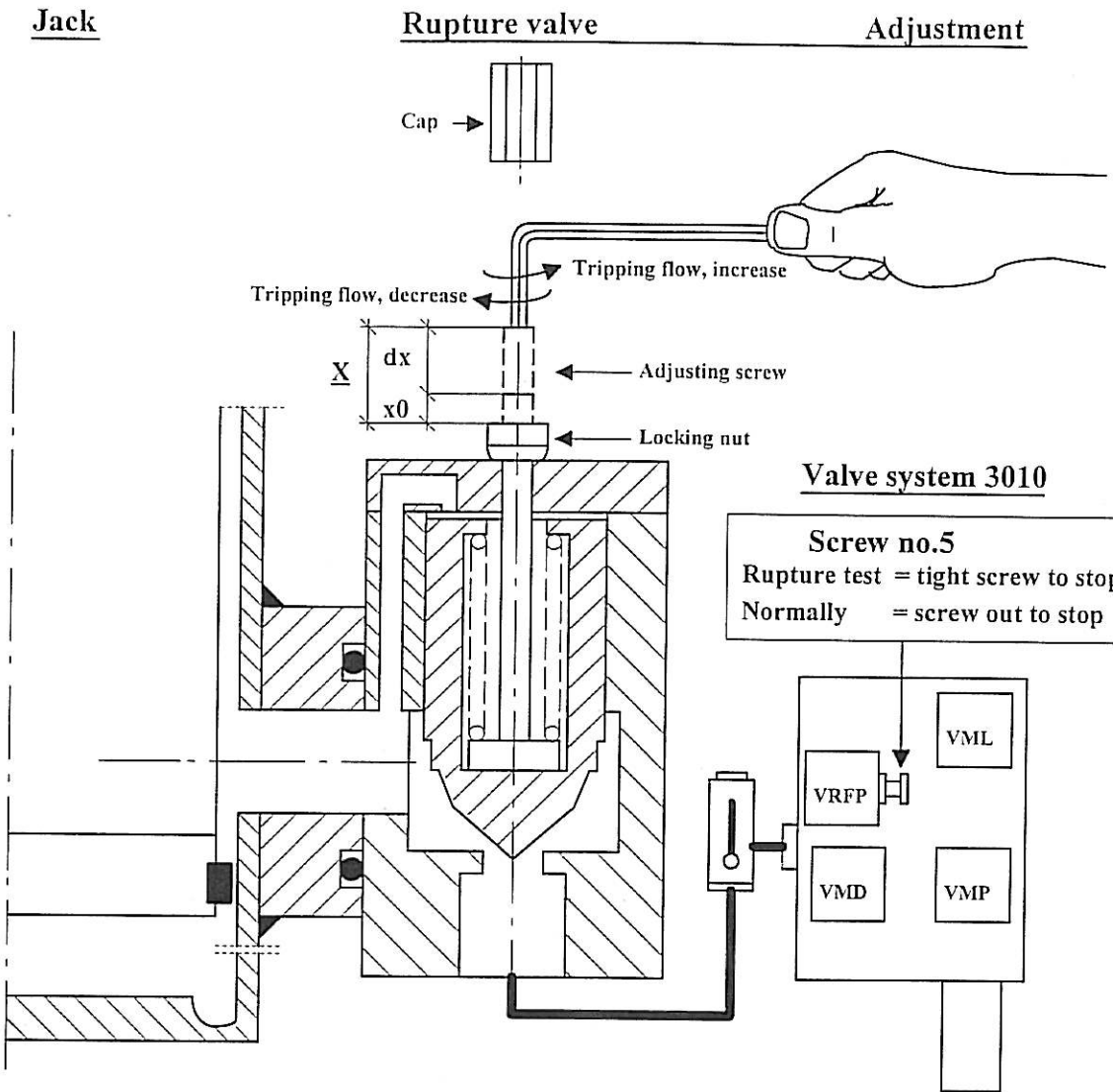
Fine adjustment, if the valve does not close

If the valve does not close / or close to early it is necessary to re-adjust it.
 Remove the cap which cover the adjusting screw on rupture valve.
 Untight the locking nut and screw in the adjustment screw one turn if the valve does not close.
 Screw out the adjustment screw one turn if the valve closes to early.
 Repeat these operations until the valve close according to tripping flow.

Check-up of coarse adjustment, if the valve does not close

The rupture valve is preadjusted from factory, Tripping flow = 20% over pump flow.
 Ex. of adjustment : Rupture valve 1 1/4", pump flow 150 l/min :
 TRIPPING FLOW = 150 x 1,2 = 180 l/min
 Adjustment screw => Screw out ca. 10mm from stop (dx according table).





2-Jack installation

2-Jack installation and one rupture valve / Jack :
A connection pipe between the rupture valves has to be connected

