# EV Control Valve

Adjustment procedure
(empty car)

EN ISO 9001



## UP Travel

| Quick Adjustment | | EV ¾" | EV 1½" - EV 2½" |
|---|---|---|---|
| **Adjustment No. 1** | Level with flange face | Adjust bypass pressure | |
| **Adjustment No. 2** | All the way "in" | 1½ turns "out" | 2 turns "out" |
| **Adjustment No. 3** | All the way "in" | 1½ turns "out" | 2½ turns "out" |
| **Adjustment No. 4** | Level with flange face | 1½ turns "out" | |
| **Adjustment No. 5** | All the way "in" | 1½ turns "out" | 2½ turns "out" |
| **Adjustment S** | All the way "in" | ½ turn "out" | |

**FINE ADJUSTMENTS**

### Adjustment No. 1: Bypass pressure

Option 1 **with** seeing the car

Loosen pressure relief valve **S** and turn it "out" until the screw head is about 3mm above flange face.
Energise motor (pump).
If the car moves upwards turn No. **1** "out" until the car stops.
If the car does not move, turn No. **1** "in" until the car begins to move, then turn No. **1** "out" until the car stops.
After that turn No. **1** "out" one more turn.

Option 2 **without** seeing the car

Close the ball valve or disconnect the valve from the cylinder line in general. Read the static pressure from the manometer.
Loosen pressure relief valve **S** and turn it "out" until the screw head is about 3mm above flange face.
Energise motor (pump).
Turn "in" No. **1** until pressure on the manometer reads 3-4 bar below static pressure.
**ATTENTION:** DO NOT UP-LEVEL WITH THIS ADJUSTMENT!

### Adjustment No. 2: Up acceleration

Energise motor and coils **A** and **B** (normal "up" call).
Observe the acceleration in up direction. If it is too quick, turn No. **2** "in" ½ turn. If it is too slow, turn No. **2** "out" ½ turn. Repeat until acceleration is satisfactory.

### Adjustment No. 3: Up deceleration

Disconnect coil **B**. Energise motor and coil **A** (normal "up-level" call).
The car will travel upwards at levelling speed. Turn No. **3** "in" until the car starts to up level faster, then turn No. **3** "out" until the original levelling speed is observed. Reconnect coil **B** and place a normal up call.
Observe the deceleration of the car. If it is too long, turn No. **3** "out" ¼ turn; if it is too short, turn No. **3** "in" ¼ turn. Repeat until deceleration is satisfactory.

### Adjustment No. 4: Up levelling

With coil **B** disconnected, energise motor and coil **A** (normal "up-level" call).
With adjustment No. **4** level with the face of the flange the car will up level. If the leveling speed is too fast, turn No. **4** "in" until the speed is as required. If the speed is too slow, turn No. **4** "out".

### Adjustment No. 5: Up soft stop

Disconnect coil **A** and energise motor. The car should not move.
Turn No. **5** "in" until the car starts upwards then, turn No. **5** "out" until the car stops. Reconnect coil **A**.
Energise motor and coil **A**. The car will travel upwards at levelling speed.
Lift coil **A** by hand briefly and observe the stopping of the car. If the stop is too hard turn No. **5** "in" ¼ turn. If the stop is too soft, turn No. **5** "out" ¼ turn. Repeat until the stop is satisfactory.

### S Pressure relief valve

Loosen pressure relief valve **S** and turn it "out" until the screw head is about 3mm above flange face.
Close the ball valve in the cylinder line and open the manual lowering **H** to lower the pressure inside the valve to zero.
Place an up call, energise motor and coils **A** and **B**. The relief pressure will be shown on the pressure gauge. To increase the relief valve setting, turn **S** "in". To decrease the relief valve setting, turn **S** "out". Open the manual lowering for ½ second with the pump still running to release locked in pressure before observing the pressure gauge reading.

Blain Hydraulics GmbH
Pfaffenstrasse 1
74078 Heilbronn
Germany

Tel. +49 7131 28210
Fax +49 7131 282199
www.blain.de
info@blain.de

BLAIN HYDRAULICS GmbH

Designer and Manufacturer of the highest quality control valves & safety components for hydraulic elevators

# EV Control Valve

Adjustment procedure
(empty car)

EN ISO 9001



## DOWN TRAVEL

| QUICK ADJUSTMENT | | EV ¾" | EV 1½" - EV 2½" |
|---|---|---|---|
| **Adjustment No. 6** | All the way "in" | 2½ turns "out" | 3 turns "out" |
| **Adjustment No. 7** | Level with flange face | | |
| **Adjustment No. 8** | All the way "in" | 1½ turns "out" | 2½ turns "out" |
| **Adjustment No. 9** | Level with flange face | ½ turn "out" | |

**FINE ADJUSTMENTS**

**Adjustment No. 6 Down acceleration**

Turn No. **6** all the way "in". Place down call (coils **C** and **D** energised).
The car will not move. Turn No. **6** "out" slowly until the car accelerates downwards.
If the acceleration is too slow, turn No. **6** "out" ¼ turn. If it is too fast, turn No. **6** "in" ¼ turn.

**Adjustment No. 7 Down full speed**

Place down call (coils **C** and **D** energised).
Observe full down speed. Turn No. **7** "in" for slower, "out" for faster speed.

**Adjustment No. 8: Down deceleration**

Place down call (coils **C** and **D** energised).
As the car approaches full speed, remove coil **C** by hand briefly from the solenoid and observe the deceleration of the car. If the deceleration is too slow, turn No. **8** "out" ¼ turn; if it is too fast, turn No. 8 "in" ¼ turn.
Repeat until deceleration is satisfactory.

**Adjustment No. 9 Down levelling speed**

Disconnect coil **C**. Place down call (**D** energised).
Observe down levelling speed. Turn No. **9** "in" for slower, "out" for faster down levelling speed.

Note: The manually operated down speed and the **D** coil operated down levelling speed are the same.

**Lifting the coils**

Much time can be saved by removing the appropriate coil from time to time during the adjustment procedure rather than allowing the car to move between two floors while adjusting individual controls. By doing this, several adjustments & corrections can be carried out.

**Warning:** If the coil is removed from the solenoid valve, it overheats after approximately 10 seconds. The maximum allowed temperature of the coil amounts to 120°C (see (i) down).

**To carry out the adjustment procedures, please follow the instructions:**

(a) Place the appropriate Allen key in the adjustment that needs to be changed.

(b) Put the elevator into operation.

(c) Raise the appropriate coil by hand and observe the reaction of the elevator.

(d) Make the adjustment accordingly.

(e) Place the coil back over the solenoid tube, until the elevator has again reached its speed.

(f) Raise the coil again in order to test how the elevator functions with the new adjustment.

(g) Repeat this process as long as it is necessary. Normally, this process can be repeated 2 to 5 times during one car travel between floors. When the coil is energised, it should be held in the hand. Energised coils shouldn't be left to one side, otherwise its overheating may not be felt.

(h) If the coil becomes too hot to hold, it must be replaced back over the solenoid tube and any further adjustment carried out with the elevator making normal floor to floor runs.

(i) Place a steel bolt, approximately 12-15 mm in diameter and 50 mm in length, or a tool through the coil to slow the rate of heating.



**BLAIN HYDRAULICS** GmbH · Pfaffenstr. 1 · D-74078 Heilbronn · Tel. +49 7131 2 8210 · Fax +49 7131 282199 · blain.de · info@blain.de