EV Trouble Shooting (2019)

UP Travel

EN ISO 9001

Problem	Possible cause	Remedy
No up-start (elevator remains at floor)	Test: Turn adjustment **5** all the way in. If the elevator now starts upwards the problem is at solenoid **A**.	
	Coil **A** not energised or voltage too low.	Check electrics. See Ⓐ below.
	Solenoid **A** tube not screwed down tight.	Tighten solenoid **A** tube.
	Solenoid **A:** needle **AN** and seat **AS** contaminated or damaged.	Clean or change needle and seat.
	Adjustment **2** (up acceleration) closed too far.	Turn out adjustment **2**.
	Adjustment **1** opened too far. Not enough pilot pressure.	Adjust bypass pressure.
	Pressure of relief valve **S** is set too low.	Set relief valve higher (turn in).
	Adjustment **8** completely closed (car sits on the buffer).	Turn out adjustment **8**. Turn in adjustment **7** completely to close the down valve, then turn out again to required speed.
	Bypass flow guide **U** is too large (slots too wide).	Insert smaller bypass flow guide (see 'flow guide charts' on EV-datasheet).
	Pump running in the wrong direction.	Check motor direction and install the pump correctly.
	The pump connection flange is leaking excessively.	Seal the pump connection.
	The pump is undersized, worn or crack in the housing.	Select bigger pump or change pump.
	Test: If by turning adjustment **1** with the pump running the pressure does not rise above 5 bar, even with a smaller bypass valve inserted, the problem should be sought at the pump, at the connection between the pump and the valve or the pulsation damper, if available.	
Up-start, but no full speed	Test: Turn adjustment **3** all the way in. If the elevator now travels upwards at full speed the problem is at solenoid **B**.	
	Coil **B** not energised or voltage too low.	Check electrics. See Ⓐ below.
	Solenoid **B** tube not screwed down tight.	Tighten solenoid **B** tube.
	Solenoid **B:** needle **AN** and seat **AS** contaminated or damaged.	Clean or change needle and seat.
	The pump connection flange is leaking excessively.	Seal the pump connection.
	The pump is undersize or worn.	Select bigger pump or change pump.
Up-start too hard	Adjustment **1** closed too far.	Adjust bypass pressure.
	Adjustment **2** opened too far.	Turn in adjustment **2**.
	Bypass flow guide **U** too small (slots too narrow).	Insert larger bypass flow guide (see 'flow guide charts' on EV-datasheet).
	O-Ring **UO** on bypass flow guide **U** is leaking.	Change O-Ring → see EV spare parts list.
	Star to delta motor switch period is too long.	0.2-0.3 sec. is sufficient.
	Excessive friction on the guide rails or in the cylinder head.	Cannot be eliminated through valve adjustment.
No deceleration into levelling speed	Coil **B** does not de-energise.	Check electrics. See Ⓐ below. Slow down switch is set to high (too late).
	Adjustment **3** closed too far.	Turn out adjustment **3**.
	O-Ring **UO** on bypass flow guide **U** is leaking.	Change O-Ring → see EV spare parts list.
Levelling too fast	Adjustment **4** is opened too far.	Turn in adjustment **4** to about 0.05 m/s levelling speed.
Deceleration into levelling speed but overtravel of floor level	Coil **A** is de-energised too late.	Check electrics. See Ⓐ below. Change position in the shaft.
	Adjustment **5** (soft-stop) is closed too far.	Turn out adjustment **5**.
	Adjustment **1** is closed too far.	Adjust bypass pressure.
	Up levelling speed too high.	Turn in adjustment **4** until the lift stops level with the floor or to about 0.05 m/s (recommendation).
Bypass-pressure not adjustable	Restriction on the return line.	Enlarge return line.
	Bypass flow guide **U** too small (slots too narrow).	Insert larger bypass flow guide (see 'flow guide charts' on EV-datasheet).
Elevator stops before reaching the floor (no levelling)	Coil **A** and **B** reversed.	Swap coil **A** and **B**. See Ⓐ below.
	Up levelling speed too slow.	Turn out adjustment **4** until the lift stops level with the floor or to about 0.05 m/s (recommendation).
	Middle O-Ring **FO** of flange **4F** is leaking.	Change O-Ring → see EV spare parts list.

Valves are already adjusted according to available data. Check electrical operation before changing valve settings.

Ⓐ To check the operation of the coils, remove hexagon nut (19 mm). By lifting the coil, the noticeable magnetic force of a live coil can be felt. In addition, the lift function can be changed by lifting off the coils, for example, it is possible to simulate levelling speeds, to test accelerations and decelerations.

If the coil gets too hot, the coil has to be mounted onto the solenoid and the following adjustments have to be carried out on normal travels from floor to floor until the coil cooled down again.

Standard settings: adj. **1** level with flange face, adjust bypass pressure (see document quick adjustments); adj. **4** level with flange face, then turn out adj. **4** for ½ a turn; turn in pressure relief valve **S** completely, then turn out **S** for 1½ turns; turn in adj. **2,3** & **5** completely, turn out adj. **3** & **5** for 2½ turns and turn out adj. **2** for EV ¾": 1½ turns and for EV 1½" - 2½": 2½ turns.

EV Trouble Shooting (2019)

DOWN Travel

EN ISO 9001

Problem	Possible cause	Remedy
No down start	Coil **D** not energised or voltage too low.	Check electrics. See Ⓐ below.
	Adjustment **6** is closed too far.	Turn out adjustment **6**.
	Adjustment **8** is opened too far.	Turn in adjustment **8** cautiously. **Attention**: Danger of travelling through!
	O-Ring **UO** on down valve **X** is leaking.	Change O-Ring → see EV spare parts list.
	Filter on solenoid **D** contaminated.	Check filter, clean if necessary.
No full speed	Coil **C** not energised or voltage too low.	Check electrics. See Ⓐ below.
	Adjustment **7** (full speed) closed too far.	Turn out adjustment **7**.
	Down valve flow guide **X** too small (slots too narrow).	Insert larger down valve flow guide (see 'flow guide charts' on EV-datasheet).
	Filter on solenoid **D** contaminated.	Check filter, clean if necessary.
No down levelling. Elevator stops before floor level	Coil **C** and **D** reversed.	Swap coil C and D. See Ⓐ below.
	Adjustment **9** turned in too far.	Turn out adjustment **9** to about 0.05 m/s levelling speed.
	Spring **9F** in adjustment **9** is broken or down levelling valve **Y** is blocked.	Clean the down levelling valve or change the spring.
	Pressure setting of **KS** too high.	Turn out adjustment **KS**.
Deceleration into levelling speed. Elevator travels through floor level	Adjustment **8** closed too far. Filter of adjustment **8** contaminated or adjustment **8** is damaged.	Turn out adjustment **8** about ½ turn, clean the filter or change adjustment **8**.
	Down levelling speed is too fast.	Turn in adjustment **9** until the lift stops level with the floor or to about 0.05 m/s (recommendation).
No deceleration into levelling speed. Elevator travels through floor level	Solenoid **C**: needle **DN** and seat **DS** contaminated or damaged.	Clean or change needle and seat.
	Inner O-Ring **FO** on flange **7F** is leaking.	Change O-Ring → see EV spare parts list.
Elevator sinks quickly	Solenoid **D** tube not screwed down tight.	Tighten solenoid **D** tube.
	Adjustment **8** is closed too far.	Turn out adjustment **8** about ½ turn.
	Damage on down valve **X** or check valve **V**.	Check parts and change them if necessary.
Elevator sinks slowly due to inner leakage (relevelling)	For possible down leakage points see technical documentation 'System Leakage'.	
	Solenoid **D**: needle **DN** and seat **DS** contaminated or damaged.	Clean or change needle and seat.
	O-Ring **XO** of down valve **X** is leaking.	Change O-Ring → see EV spare parts list. When down valve is compensated, replace down valve.
	O-Ring **VO** of check valve **V** is leaking.	Change check valve → see EV spare parts list.
	O-Ring **WO** of check valve **V** is leaking.	Change O-Ring → see EV spare parts list.
	Inner O-Ring **FO** in flange **4F** is leaking.	Change O-Ring → see EV spare parts list.
	O-Ring **HO** of manual lowering **H** is leaking.	Change O-Ring **HO** or change manual lowering.
Elevator sinks due to inner leakage of auxiliary equipment	**HP**: Handpump is leaking.	Seal the hand pump.
	HX/MX: Adjustment **8M** turned in too far.	Turn out adjustment **8M**.
	HX/MX: Down valve **9M** is leaking. Dirt or damage between the needle **DN** and seat **DS**.	Clean or change needle and seat.
	HX/MX: O-Ring **XO** of down valve **YM** is leaking.	Change O-Ring → see EV spare parts list.
	HX/MX: Manual lowering is leaking (**HX/MX**).	Change manual lowering.
	Contraction of oil during cooling especially from 35°C or above.	Consider oil cooler if hot oil is a problem.
	Micro drive **MD**, door lock valve **L10** or **L20** are leaking.	When possible isolate and check.

Valves are already adjusted according to available data. Check electrical operation before changing valve settings.

Ⓐ To check the operation of the coils, remove hexagon nut (19 mm). By lifting the coil, the noticeable magnetic force of a live coil can be felt. In addition, the lift function can be changed by lifting off the coils, for example, it is possible to simulate levelling speeds, to test accelerations and decelerations.

If the coil gets too hot, the coil has to be mounted onto the solenoid and the following adjustments have to be carried out on normal travels from floor to floor until the coil cooled down again.

Standard settings: adj. **7** & **9** level with flange faces, then turn out adj. **9** for ½ a turn; turn in adj. **6** & **8** completely, then for EV¾": turn out adj. **6** for 2½ turns and turn out adj. **8** for 1 turn; for EV1½" - 2½": turn adj. **6** for 2 to 2½ turns out and adj. **8** for 1½ turns out.

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