

EV 100 Trouble Shooting (2013)

UP Travel



Problem	Possible cause	Recommended
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 .	
	Solenoid A : not energised or voltage too low.	See A below.
	Solenoid A : tube not screwed down tight.	Tighten Solenoid A tube.
	Solenoid A : Dirt or damage between needle AN and seat AS .	Clean or change needle and seat.
	Adjustment 2 not far enough open.	Turn out adjustment 2 .
	Adjustment 1 too far back (open). Not enough pilot pressure.	Turn in adjustment 1 with the pump running.
	Pressure relief valve S is set too low.	Set relief valve higher. (turn in)
	Adjustment 8 turned in too far (car sits on the buffer).	Turn out adjustment 8 .
	Bypass flow guide U is too large.	Insert smaller bypass flow guide (see flow guide charts at EV catalogue).
	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 undersize, worn or crack in the housing.	Select bigger pump or replace 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.		
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 .	
	Solenoid B not energised or voltage too low.	See A below.
	Solenoid B tube not screwed down tight.	Tighten Solenoid B tube.
	Solenoid B : Dirt or damage between needle AN and seat AS .	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 replace pump.	
Up-Start too hard	Adjustment 1 turned in too far.	Turn out adjustment 1 .
	Adjustment 2 turned out too far.	Turn in adjustment 2 .
	Bypass flow guide U too small (slots too narrow).	Change to flow guide with wider slots.
	O-Ring UO on Bypass Valve 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.	Can not be eliminated thru valve adjustment.	
No deceleration into levelling speed	Solenoid B does not de-energise.	Lift coil to check magnetic pull. See A below. Slow down switch possibly set to high (late).
	Adjustment 3 turned in too far.	Turn out adjustment 3 . Turn in adjustment 2 .
	O-Ring UO on Bypass Valve U is leaking.	Change O-Ring → see EV Spare Parts List.
Levelling too fast	Adjustment 4 too far screwed out.	Turn in adjustment 4 to about 0.05 m/s levelling speed.
Deceleration into levelling speed but overtravel of floor level	Solenoid A is de-energised too late.	Lift coil to check pull. See A below. Switch position in the shaft.
	Adjustment 5 turned in too far.	Turn out adjustment 5 .
	Adjustment 1 turned in too far.	Turn out adjustment 1 .
	Up levelling speed too high.	Turn in adjustment 4 to about 0.05 m/s levelling speed.
Bypass-pressure not adjustable	Restriction on the return line.	Remove restriction; enlarge return line.
	Bypass flow guide U too small (slots too narrow).	Change to flow guide with wider slots.
Elevator stops before reaching the floor (no levelling)	Solenoid A and B reversed.	Swap solenoid A and B. See A below.
	Up levelling speed too slow.	Turn out adjustment 4 .
	Middle O-Ring FO of flange 4F is leaking.	Change O-Ring → see EV Spare Parts List.
	Relief valve is set too low.	Set relief valve higher.

! **Valves are already adjusted and tested.** Check electrical operation before changing valve settings. Test that the correct solenoid is energised, by removing nut and raising solenoid slightly to feel pull.

A For checking the operation of the solenoids, remove the top nuts. By lifting the coils a few millimeters, the magnetic pull of the coil can be felt. For testing, the operation of the elevator car can also be controlled by lifting and replacing the coil.

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.

Standard settings: Adjustments **1** & **4** approx. level with flange faces. Up to two turns in either direction may then be necessary. Adjustments **2**, **3** & **5** all the way in (clockwise) then for EV ¾": all adjustments 1.5 turns out (c-clockwise), for EV 1 ½" – 2 ½": adjustments **3** & **5** two and half turns out (c-clockwise), adjustment **2** two turns out. Small final adjustments may be necessary.

EV 100 Trouble Shooting (2013)

DOWN Travel



Problem	Possible cause	Recommended
No Down Start	Solenoid D not energised or voltage too low.	Lift coil to check magnetic pull. See Ⓐ below.
	Adjustment 6 turned in too far.	Turn out adjustment 6 .
	Adjustment 8 turned out 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.
No full speed	Solenoid C not energised or voltage too low.	Lift coil to check magnetic pull. See Ⓐ below.
	Adjustment 7 turned in too far.	Turn out adjustment 7 .
	Down Valve flow guide X too small.	Check insert size (see flow guide charts page 6)
No down levelling. Elevator stops before floor level	Solenoid C and D reversed.	Lift coil to check magnetic pull. See Ⓐ below.
	Solenoid D not energised or voltage too low.	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.	Replace adjustment 9 complete.
No down levelling. Elevator travels though floor level	Adjustment 8 turned in too far. Filter of adjustment 8 blocked or adjustment 8 is damaged.	Turn out adjustment 8 about ½ turn, clean the filter or replace adjustment 8 .
	Adjustment 9 turned out too far.	Turn in adjustment 9 to about 0.05 m/s levelling speed.
	Solenoid valve C : Dirt or damage between needle DN and seat DS .	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 (only full speed)	Solenoid D tube not screwed down tight.	Tighten Solenoid D tube.
	Adjustment 8 turned in too far.	Turn out adjustment 8 about ½ turn.
	Solenoid C by pollution no functional.	Clean or change.
	Adjustment 9 by pollution no functional.	
Elevator sinks slowly due to inner leakage (Relevelling)	For possible down leakage points, see technical documentation "System Leakage". Solenoid valve D : Dirt or damage between needle DN and seat DS .	Replace one seal at a time and test before proceeding to the next point of possible leakage, if still necessary. 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 on flange 4F is leaking.	Change O-Ring → see EV Spare Parts List.
	O-Ring HO of Manual Lowering H is leaking.	Replace Manual Lowering.
Elevator sinks due to inner leakage of auxiliary equipment	HP : Handpump is leaking.	Remove suction tube and observe if handpump leaks. Replace complete 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). Contraction of oil during cooling especially from 35°C or above.	Replace Manual Lowering. Consider oil cooler if hot oil is a problem.

ⓘ **Valves are already adjusted and tested.** Check electrical operation before changing valve settings. Test that the correct solenoid is energised, by removing nut and raising solenoid slightly to feel pull.

Ⓐ For checking the operation of the solenoids, remove the top nuts. By lifting the coils a few millimeters, the magnetic pull of the coil can be felt. For testing, the operation of the elevator car can also be controlled by lifting and replacing the coil.

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.

Standard settings: Adjustments **7** & **9** approx. level with flange faces. Up to two turns in either direction may then be necessary. Adjustments **6** & **8** all the way in (clockwise) then for EV ¾", adjustment **6**, 1 ½ turn and adjustment **8**, 1 turn out (c-clockwise), for EV 1 ½" – 2 ½", adjustments **6** & **8**, 1 ½ turns out (c-clockwise). Small final adjustments may be necessary.

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