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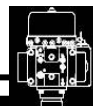
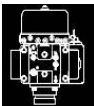
- The information contained herein is for use by skilled hydraulic elevator professionals.
- Before disassembly of the valve, make sure the power is off by turning the main disconnect switch off and that the elevator is resting on the bumpers (zero system pressure).

The possible problems and causes are listed in order of likelihood and ease of checking.

The first section of the guide deals with the UP SECTION, while the second deals with the DOWN SECTION.

It is important to use the following reference materials in conjunction with the trouble shooting procedures:

- UC4, UC4MB44 Operating Sequence
- UC4, UC4MB44 Adjustment Procedure
- UC4, UC4MB44 Schematic

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UP SECTION**PUMP RUNS, CAR DOES NOT MOVE**

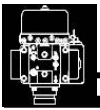
- Check valve for proper sizing in accord with adjustment procedures.
- Make sure gate valves are open in system as required.
- Turn US (Up Stop) adjuster in clockwise (CW) until it stops.
 1. If car moves, check for proper voltage to coils.
 2. If voltage is correct, remove US solenoid assembly. Visually inspect parts for foreign material and / or damage. Ball Cage must operate freely within the solenoid tube.
 3. Replace solenoid seat.
 4. Remove transfer line. Check up control fluid strainer on the end of the transfer line for lint. If clogged remove debris (in this case oil in the system must be filtered).
- If car does not move, remove valve closure. Examine bypass piston ring for damage.

SLOW UP ACCELERATION

- Turn UA (Up Acceleration) adjuster out counterclockwise (CCW).
- Check relief valve for proper setting. Refer to adjustment procedures.
- Check belts and pulleys on pump and motor to make sure they are not slipping.
- Check motor for proper HP rating and line voltage for excessive voltage drop.
- Remove control plate and check up control fluid strainer for lint, especially the bottom of strainer. If clogged, remove debris (in this case oil in the system must be filtered).
- Remove valve closure. Examine bypass piston ring for damage.
- Turn UT (Up Transition) and US (Up Stop) adjusters in (CW) fully. If car then accelerates properly, check both U and US solenoid assemblies for damage to seats, debris and free movement of Ball Cage.

UP ACCELERATION ROUGH

- Check jack packing and guide shoes for excessive tightness.
- Check valve for proper sizing.
- Turn US (Up Stop) and UT (Up Transition) adjusters in (CW) fully (count the number of turns to avoid lengthy readjustment).
 1. Register an up call; if problem continues replace BPS adjuster.
 2. If car accelerates properly, or stalls in BPS sizing operation, either the US or UT ball check assembly must be replaced. Turn either US or UT adjuster out (CCW) one at a time and register an up call. When valve does not respond properly, replace respective ball check assembly or consult MAXTON regarding replacement.



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UP SECTION (CONTINUED)

UP SPEED SLOW

- Check belts and pulleys on pump and motor to make sure they are not slipping.
- Check relief valve for proper setting.
- Check for proper voltage on up coils
- Check motor for proper HP rating and line voltage for excessive voltage drop.
- Check both U and US solenoid for damage to seats, debris and free movement of Ball Cage.

CAR OVERSHOOTS FLOOR

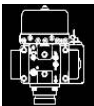
- Turn the UT (Up Transition) adjuster out (CCW) more.
- Check UL speed, 9-12 FPM
- Disconnect U and US coils, place call. Car should not move.
 1. If car moves turn US adjuster out (CCW) more.
 2. Reset BPS adjuster.
- Check hatch slow down switch and stopping circuit to make sure there is no delay (one second lost means a three foot delay at 180 feet per minute).
- Replace the BPS adjuster.
- Remove the US solenoid assembly and check for foreign material and / or damage.
Ball Cage must operate freely within solenoid tube

CAR STALLS OR LEVELING SPEED VARIES IN LEVELING ZONE

- Make sure the US (Up Stop) and U (Up) coils are connected in proper operating sequence. Refer to Adjustment Procedure.
- Make sure LS (Leveling Speed) adjuster dot is referenced to the line between F and S.
- Check relief valve for proper setting.
- If car will not adjust using LS (Leveling Speed) adjuster, turn US (Up Stop) adjuster in (CW), then if car moves;
 1. Check for proper coil voltage.
 2. Remove US (Up Stop) solenoid assembly and check for debris and / or damage.
Ball Cage must operate freely within the solenoid tube.
 3. Replace the solenoid seat.
- Remove the valve closure, examine bypass piston for damage.

HARSH UP STOP

- Turn US (Up Stop) adjuster in (CW) for smoother stop.
- Check that the pump continues to run after car has stopped for ½ second.
- As a check to determine adequate pump time, turn US (Up Stop) adjuster in (CW) fully. Car should then level and stop above the floor. If not, there is not enough pump time.
- Check for tight packing or guide shoes. If jack packing and guide shoes are in good condition, a soft stop will be accomplished by following the standard Adjustment Procedures.

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DOWN SECTION**CAR WILL NOT LOWER**

- Check coil voltage.
- Check line shut off valve and tank shut off valve.
- Turn DS (Down Stop) adjuster in clockwise (CW) to stop.
- Turn DA (Down Acceleration) adjuster out counterclockwise (CCW) more.
- Turn DT (Down Transition) adjuster in (CW) slowly. If car will not lower, turn ML (Manual Lowering) screw out (CCW) all the way. If car lowers with ML screw open, first check for proper coil voltage. If voltage is correct, then check both D and DL solenoid assemblies for debris and / or damage. Ball Cage must operate freely within the solenoid tube.
- Replace the solenoid seat.
- Check down piston ring for damage
- Check piston guide and seat for freedom of movement.

SLOW DOWN START

- Turn DA (Down Acceleration) adjuster out (CCW).
- Turn DS (Down Stop) adjuster in (CW).
- Check jack packing and guide shoes for any binding.
- Remove D solenoid assembly. Check for debris and / or damage. Ball Cage must operate freely within solenoid tube.
- Replace solenoid seats.

HARSH OR BOUNCY START

- Bleed air from jack.
- Check for packing or guide shoe friction.

FAST DOWN START

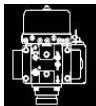
- Turn DA (Down Acceleration) adjuster in (CW).

CAR COMES DOWN IN LEVELING SPEED ONLY

- Check coil voltage to D (Down valve) solenoid.
- Land car and remove D solenoid assembly. Check for debris and /or damage. Ball Cage must operate freely within solenoid tube.
- Replace solenoid seats.

MAIN DOWN SPEED TOO SLOW

- Make sure gate valves are open between valve and jack and between valve and tank.
- Turn D (Down speed) adjuster out (CCW).
- Install pressure gauge at "B" port. Check pressure during full down speed and compare to flow chart. If there is any abnormal pressure drop, check for restriction in piping from valve to jack and from valve to tank.
- Check flow capacities of pipe between valve and jack and between valve and tank.
- Replace solenoid seats.
- Check down piston for damage.

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DOWN SECTION (CONTINUED)**DOWN TRANSITION TOO SLOW**

- Turn DT (Down Transition) adjuster out (CCW).
- Check slow down switch and relays for possible delay
- Remove D solenoid assembly and check for debris and / or damage. Ball Cage must operate freely within solenoid tube.
- Replace solenoid seat..
- Check down control fluid strainer assembly for lint. If clogged remove debris (in this case oil in the system should be filtered).

NO DOWN LEVELING SPEED

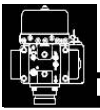
- Turn DA (Down Acceleration) adjuster out (CCW).
- Turn ML (Manual Lowering) screw out (CCW).
- If car lowers:
 - (1) Check voltage to DL solenoid coil.
 - (2) Remove DL solenoid assembly and check for debris and / or damage. Ball Cage must operate freely within solenoid tube.
 - (3) Replace solenoid seat.
- If car does not lower, remove valve closure, check down leveling spool and spring to make sure it is not sticking (or broken) and is assembled in proper order.

DOWN STOP TOO SMOOTH OR INACCURATE

- Turn DS (Down Stop) adjuster out (CCW). This will necessitate readjusting the DA (Down Acceleration) adjustment.
- Check hatch switches and relays for possible delay.
- Remove DL solenoid assembly and check for debris and / or damage. Ball Cage must operate freely within solenoid tube.
- Check down control fluid strainer assembly (under control plate) for lint. If clogged remove debris (in this case oil in the system should be filtered).

DOWN STOP TOO ROUGH

- Turn DS (Down Stop) adjuster in (CW).
- Check for tight jack packing or guide shoes.



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DOWN SECTION (CONTINUED)

CAR WILL NOT STOP IN DOWN DIRECTION

- Make sure coils are not energized.
- Turn DT (Down Transition) adjuster out (CCW) fully.
- Remove D solenoid assembly and check for debris and / or damage. Ball Cage must operate freely within solenoid tube.
- Replace solenoid Ball Cage.
- Replace solenoid seat.
- Remove valve closure and check piston guides to make sure they operate freely within their respective seats.
- Check down control fluid strainer assembly (under control plate) for lint. If clogged remove debris (in this case oil in the system should be filtered).

CAR DRIFTS SLOWLY DOWN

- Send car to upper floor. Open main power disconnect switch.
- Close pit valve. If car still drifts the leak is in the jack assembly.
- Turn ML (Manual Lowering) screw out (CCW) and then turn in (CW) fully to insure a good seat.
- Turn DA (Down Acceleration) adjuster in clockwise (CW) fully. If leak stops, this indicates a leak at the down solenoids. Replace D and DL solenoid seats. Refer to Solenoid Kit #292920.
- If leak does not stop, this indicates a leak at the down guide seal. Remove Down / Check guide and examine seal on guide for damage and / or debris. Examine Down / Check seat. It must be free from nicks or scratches on the small internal radius.