



SINGLE SPEED VALVE LEVELING ADJUSTMENT

Setting up leveling on an elevator with a single speed valve can be frustrating if you are not familiar with some basic concepts about valve function. Most leveling systems, such as our MAGLVL unit, are designed to be symmetrical - the up and down sensor distances are equal. In order to have accurate leveling at intermediate landings with a symmetrical system, the valve must function the same in both directions. Going up is pretty simple - the motor stops, the car stops with little or no coasting. Going down is a little different. The coil drops, the down spool closes, the car stops with some degree of coast. The closing of the down spool, and the resultant coasting distance, is the big variable. This is what causes most leveling adjustment problems. The up coast distance is fixed. The key is to get the down coast distance to be about the same as the up.

The first thing to do is to make the down speed the same as the up. The up speed is fixed by the motor and pump - you can't adjust it. (If it seems slow, the pressure relief is probably too low) Use a tachometer to check the up and down speed, and adjust the down speed as necessary to match the up speed.

Check the coasting distance in the down direction. With the car running down, de-energize the coil and check the distance the car coasts. If it is more than about $\frac{1}{2}$ ", you will have problems with the car overshooting and leveling back up. First check for binding and/ or debris in the down solenoid seat and the down spool. If there is no binding or debris, the down spool is slow and will have to be changed. Use the next larger size spool to decrease the coast distance. For instance, if the valve is a 20, use a 40 spool. If it is a 40, use an 80. If you have a very light or very slow elevator, a special spool may be required. If you need to contact us about the valve, the following information is useful:

- ___ Job name and number
- ___ Complete valve number
- ___ Empty and full car pressures
- ___ Empty and full car speeds up and down

Before adjusting sensors or magnets, be absolutely certain the valve is adjusted and functioning properly.

The factory sensor spacing is designed for a valve that is functioning properly. If you need to change the spacing, it usually means the valve is not functioning properly. First make sure the electrical sequence is correct. Typically, LU (or LD going down) will come in first, then DZ will come in to start the leveling operation, the floor relay will drop to cancel the call, then LU (or LD) will drop to stop the car. If LU (or LD) and DZ are not on before the floor relay drops, the car will "stutter" while it coasts into the leveling zone. If the floor relay does not drop before LU (or LD) drops, the car will overshoot the floor. If you feel you must adjust magnets:

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| Stops high both directions | Lower DZ magnet |
| Stops low both directions | Raise DZ magnet |
| Stops ok up, overshoots down | Trim bottom of DZ magnet |
| Stops ok dn, stops high up | Trim top of DZ magnet |
| Stops high up, overshoots down | Trim top and bottom of DZ magnet |

When you trim a DZ magnet, you generally will have to trim the opposite end of the corresponding floor switch magnet to prevent "stutter". You can count on repeating this at each intermediate landing. Check the terminal landings after completing intermediate adjustments.

You are usually better off spending the time on the valve instead of the leveling system!!!

CALL US AT ANY TIME IF YOU HAVE QUESTIONS ABOUT SETTING UP A SINGLE SPEED VALVE, OR ANY OTHER PROBLEM WITH YOUR ELEVATOR. WE'RE HERE TO HELP YOU!