

UV-5AT (Standard Valve) Adjustment Procedure

Notes:

1. This information is to be used only by qualified hydraulic elevator professionals.
2. The optimum oil temperature to adjust the valve is between 80° to 100°F (27° to 38°C). If oil temperature exceeds 100°F (38°C), make down stop firmer.
3. The following instructions are for adjusting the valve starting with adjusters on preset. However, each new valve is adjusted to a set of standard conditions at the factory and **you do not have to preset adjusters**. You only need to adjust **DM** and **BP**. Other adjusters may require fine-tuning to suit your application.
4. Hand tighten the seal nuts on the adjusters - **DO NOT** over tighten.
5. Valve must be mounted with solenoids in vertical position. Five (5) inches (127mm) minimum clearance is required to remove valve cover for service.
6. When disconnecting solenoids, do it electrically, not physically.
7. Both **UA** and **DC** adjusters have screened inputs and must be kept clean. **Eeco** recommends use of a 5-micron filtration system.
8. If **DC** requires further fine-tuning after **DA** is adjusted, first open **DA** 3 turns, fine-tune **DC** and then readjust **DA**.
9. Down contract speed is full down speed with rated load on the car. Down speed with empty car is less than contract speed depending on the ration of full-load to no-load pressures, approximately 25% less for a 2 to 1 pressure ratio (i.e., empty car down speed = full load (contract) down speed x .75). If constant down speed is required between no-load and full-load conditions, use **UV-5ATC** valve.
10. **DO NOT** adjust the valve to suit switches. Adjust the switches (vanes / magnets) to suit the valve.

U1 - Up Fast solenoid	Up Adjustments (From Preset)	U2 - Up Slow solenoid
1) BP Bypass - Car at lower floor with no load . Disconnect U2 . Register an up call. Car should not move. Turn BP CW until car moves, then CCW until car stalls plus a minimum of 1/2 turn. Stop pump motor. Reconnect U2 .		
2) UA Up Acceleration - Car at lower floor with no load . Turn UA CCW 2 1/2 turns from fully closed position. Register an up call and observe up acceleration. Turn UA CCW for faster or CW for slower up acceleration. Car should reach full speed in no more than 2 1/2 feet (.8m). DO NOT drag out acceleration.		
3) UL Up Leveling - Car at lower floor with no load . Disconnect U1 . Register an up call. Turn UL CCW (faster) or CW (slower) to set up leveling speed at 10 to 13 fpm (.05 to .07 m/sec). Leave U1 disconnected.		
4) UT Up Transition - Car at lower floor with no load . Register an up call with U2 energized only. Car will move up at leveling speed. Turn UT CW until car speeds up, then slowly CCW until car slows down again. Reconnect U1 . Register an up call and observe up transition. Turn UT CW (slower) or CCW (faster) until up transition is satisfactory. Slowdown switch should be located to give 3 to 4 inches (75 to 100mm) of stabilized leveling (see note 10).		
5) US Up Stop - Car at lower floor with no load . Disconnect U2 . Register an up call. Car should not move. Turn US CW until car moves, then CCW until car stops again. Reconnect U2 . Register an up call and observe up stop. Turn US CW for softer stop or CCW for firmer stop. NOTE: Pump motor must run approximately 1 second after car has stopped.		

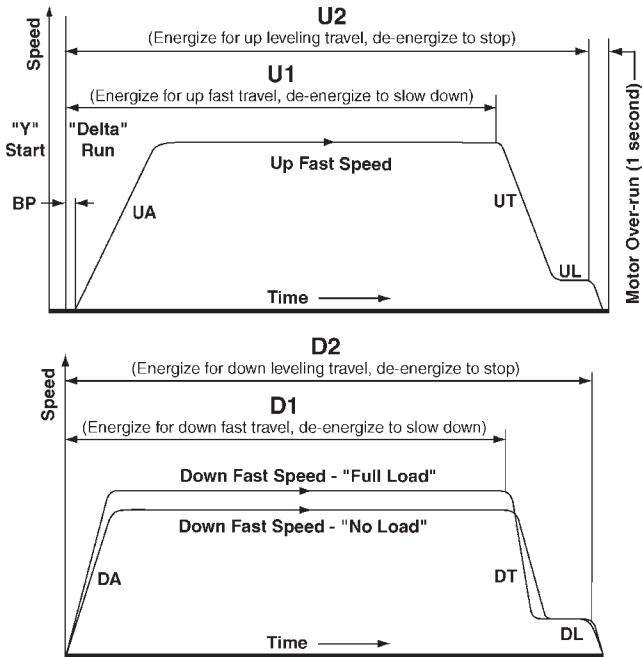
D1 - Down Fast solenoid	Down Adjustments (From Preset)	D2 - Down Slow solenoid
1) DL Down Leveling - Car at upper floor with no load . Turn DC CW 8 1/2 turns from fully open position. Disconnect D1 . Register a down call. Adjust DL to set down leveling speed at 7 to 9 fpm (.04 to .05 m/sec). Reconnect D1 .		
2) DM Down Main - Car at upper floor with no load . Register a down call. Turn DM CW (slower) or CCW (faster) to set down speed at 25% less than contract (full load) speed (see note 9).		
3) DC Down Closing - Cycle empty car and observe down stop. Turn DC CW (softer stop) or CCW (firmer stop) until down stop is satisfactory (see note 8).		
4) DT Down Transition - Cycle empty car and observe down transition. If DT requires adjustment, send empty car to upper floor. Disconnect D1 . Register a down call. Car should come down at leveling speed. Turn DT CCW until car speeds up, then slowly CW until car slows down again. Reconnect D1 . Cycle car and turn DT CCW (slower) or CW (faster) until down transition is satisfactory. Readjust DL to maintain down leveling at 7 to 9 fpm (.04 to .05 m/sec). Slowdown switch should be located to give 3 to 4 inches (75 to 100mm) of stabilized leveling (see note 10).		
5) DA Down Acceleration - Car at upper floor with no load . Turn DA CW to stop. Register a down call. Car should not move. Turn DA slowly CCW until car breaks away from the floor. Turn DA CW (slower) or CCW (faster) until down acceleration is satisfactory.		

ML Manual Lowering - Turn **ML** out CCW to lower car at leveling speed. All electrical power **MUST** be off when using manual lowering!

Relief Valve (RV):	CW = Clockwise (IN) ↻	Adjuster Presetting	↻ CCW = Counter Clockwise (OUT)	
		ADJUSTER	PRESETTING	FUNCTION
1. With fully loaded car and a pressure gage installed on the pump gage port, register an up call and record maximum pressure as car nears top landing.	Up	BP Bypass	CCW to stop, then CW 2 turns.	(CCW - Delays up start)
		UA Up Acceleration	CW to stop.	(CCW - Faster acceleration)
		UL Up Leveling	CW to stop.	(CCW - Faster speed)
		UT Up Transition	CCW to stop, then CW 7 1/2 turns.	(CW - Slower transition)
		US Up Stop	CCW to stop, then CW 7 1/2 turns.	(CW - Softer stop)
		RV Relief Valve	Factory set at 550 psi (38 bars).	(CW - Increase pressure setting)
2. Close main line valve and turn RV and UA out CCW to stop.	Down	DL Down Leveling	CW to stop, then CCW 5 1/2 turns.	(CW - Slower speed)
		DM Down Main	CW to stop, then CCW 5 1/2 turns.	(CW - Slower speed)
		DC Down Closing	CCW to stop.	(CCW - Firmer stop)
		DT Down Transition	Closed flush with end of lock nut.	(CCW - Slower transition)
		DA Down Acceleration	CCW to stop.	(CCW - Faster acceleration)
		ML Manual Lowering	CW to stop.	(CCW - Opens valve)
3. Register an up call. Turn RV CW to set relief pressure as required by local code (not to exceed 50% above maximum pressure recorded earlier).	Up	BP Bypass	CCW to stop, then CW 2 turns.	(CCW - Delays up start)
		UA Up Acceleration	CW to stop.	(CCW - Faster acceleration)
		UL Up Leveling	CW to stop.	(CCW - Faster speed)
		UT Up Transition	CCW to stop, then CW 7 1/2 turns.	(CW - Slower transition)
4. Restart pump to check pressure relief setting. Seal RV as required. Open main line valve to the jack. Readjust UA for proper up acceleration.	Down	US Up Stop	CCW to stop, then CW 7 1/2 turns.	(CW - Softer stop)
		RV Relief Valve	Factory set at 550 psi (38 bars).	(CW - Increase pressure setting)
		DL Down Leveling	CW to stop, then CCW 5 1/2 turns.	(CW - Slower speed)
		DM Down Main	CW to stop, then CCW 5 1/2 turns.	(CW - Slower speed)

UV-5AT Operational Data

PERFORMANCE CHART FOR UV-5AT VALVES

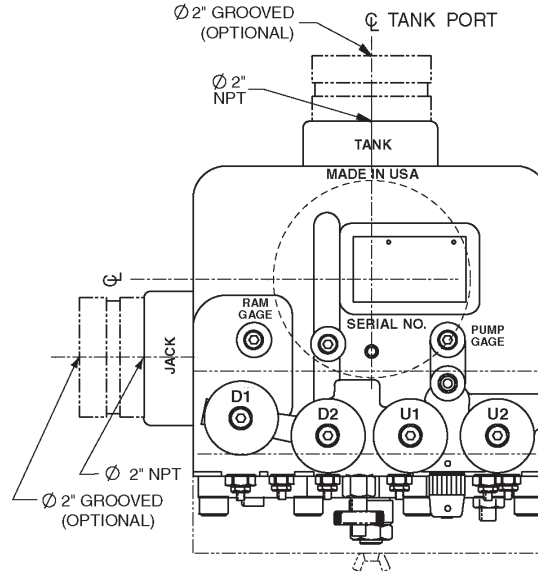


PLEASE NOTE NEW SOLENOID LABELING (since August 2003):

- Solenoids:** U1 - Up Fast (Red wires*) - (was ULS)
- U2 - Up Slow (Yellow wires*) - (was UDS)
- D1 - Down Fast (Black wires*) - (was DMS)
- D2 - Down Slow (Blue wires*) - (was DLS)

Adjuster: US - Up Stop - (was UD)

* Please see page 70 for complete solenoid coil descriptions. Not all coils have colored wires.



PRESSURE
CSA-B44/UL Minimum/Maximum: 90 - 800 psi (6.2 - 55.2 bars). Standard pressure rating 50 psi minimum to 1150 psi maximum (3.4 - 79.3 bars).

FLOW RATE
Minimum 20 gpm to maximum 200 gpm (76 - 836 l/min).

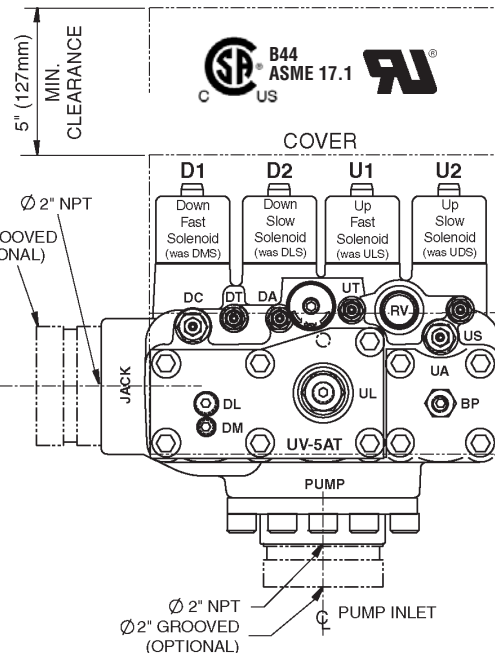
OPERATING TEMPERATURE
80°F (27°C) minimum to 150°F (66°C) maximum.

GAGE PORTS
“Ram”(jack) and “Pump” gage ports are 1/8” NPT and are provided on top of the valve. Optional quick connect/disconnect fittings as well as 0-1000 psi liquid filled pressure gages can be installed and/or supplied with the valve upon request.

OIL SPECIFICATIONS
Recommended oil: A good brand of 32 grade turbine oil with a viscosity of 150 SSU at 100°F (38° C). **Other oils:** The UV-5AT is also compatible with 46 grade as well as biodegradable (vegetable) oil.

LINE CONNECTION
Factory standard for each of the three valve ports is 2” NPT, 2” grooved ports are optional.

STANDARD CSA-B44/UL APPROVED SOLENOID COILS
24 VDC, 110 VAC, 208 VAC, 220 VAC/110 VDC, 440 VAC/220 VDC. For emergency (battery backup) lowering: 110 VAC/12 VDC (dual voltage). For other coil options, please contact EECO.



SEQUENCE OF SOLENOID OPERATION

- Up Start:**
- A) “ATL” (Across The Line) start: pump motor “ON”. Energize both U2 and U1 solenoids to run up at fast speed.
 - B) “Y” start: Pump motor “ON” (reduced voltage). “Delta” run: Pump motor “ON” full voltage. Energize both U2 and U1 solenoids to run up at fast speed. De-energize U1 to slowdown to leveling speed. De-energize U2 to stop at floor.
- CAUTION:** Never energize U2 and U1 during “Y” start, only after “Delta” run!

- Down Start:**
- Energize D1 and D2 to lower car at fast speed. De-energize D1 to slowdown to leveling speed. De-energize D2 to stop at floor.
- Note 1:** For additional clarification on the sequence of operation please refer to the Performance Chart above.
- Note 2:** Pump motor must be timed to run approximately 1 second after car has stopped.