EECO
Elevator Equipment Corporation

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UV-7B (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.
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-7BC** 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 - Note: UA** must be on preset (CW to stop). Car at lower floor with **no load**. Disconnect **U2**. Register an up call. Turn **BP** CW until car moves, then CCW until car stalls plus a minimum of 1/2 turn. Stop pump motor and 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 2 1/2 feet (.8 m). **DO NOT** drag out acceleration.

3) **UL** **Up Leveling -** Car at lower floor with **no load**. Disconnect **U1**. Register an up call. Adjust **UL** to set up leveling speed at 10 to 13 fpm (.05 to .07 m/sec). Reconnect **U1**.

4) **UT** **Up Transition -** Car at lower floor with **no load**. 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 100 mm) 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, 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 2 1/2 turns from fully open position position. Disconnect **D1**. Register a down call. Adjust **DL** to set down leveling speed at 7 to 9 fpm (.04 to .05 m/s). 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 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):

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.
2. Close main line valve and turn **RV** and **UA** out CCW to stop.
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).
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.

CW = Clockwise (IN) ↻ — **Adjuster Presetting** — ↺ **CCW** = Counter Clockwise (OUT)

		ADJUSTER	PRESETTING	FUNCTION
Up	**BP**	**Bypass**	CCW to stop, then CW 2 turns.	(CCW - Delays up start)
	UA	**Up Acceleration**	CW to stop (flush with end of lock nut).	(CCW - Faster acceleration)
	UL	**Up Leveling**	CCW to stop.	(CW - Faster speed)
	UT	**Up Transition**	CCW to stop, then CW 2 1/2 turns.	(CW - Slower transition)
	US	**Up Stop**	CCW to stop.	(CW - Softer stop)
	RV	**Relief Valve**	Factory set at 500 psi (34 bars).	(CW - Increase pressure)
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**	CW to stop (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)

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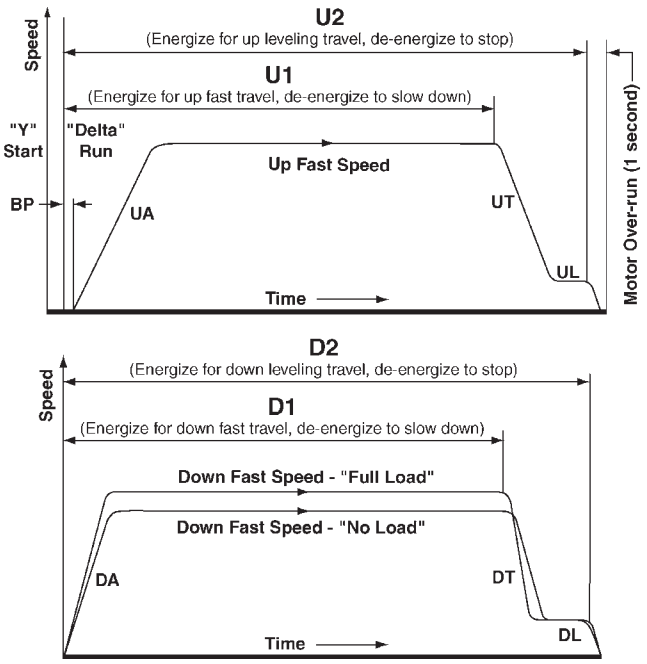
UV-7B Operational Data

PERFORMANCE CHART FOR UV-7B VALVES



PRESSURE

CSA-B44/UL Minimum/Maximum: 50 - 500 psi (3.5 - 34.5 bars).

FLOW RATE

Minimum 75 gpm to maximum 400 gpm (284 -1514 l/min). For higher flow rates contact EECO.

OPERATING TEMPERATURE

80°F (27°C) minimum to 150°F (65°C) maximum.

GAGE PORTS

Gage ports are 1/8" NPT and are provided on the top of the valve. Please refer to the illustration at right. Optional quick connect/disconnect fittings as well as 0-1000 psi liquid filled pressure gage can be 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-7B is also compatible with 46 grade as well as biodegradable (vegetable) oil.

STANDARD CSA/UL APPROVED SOLENOID COILS

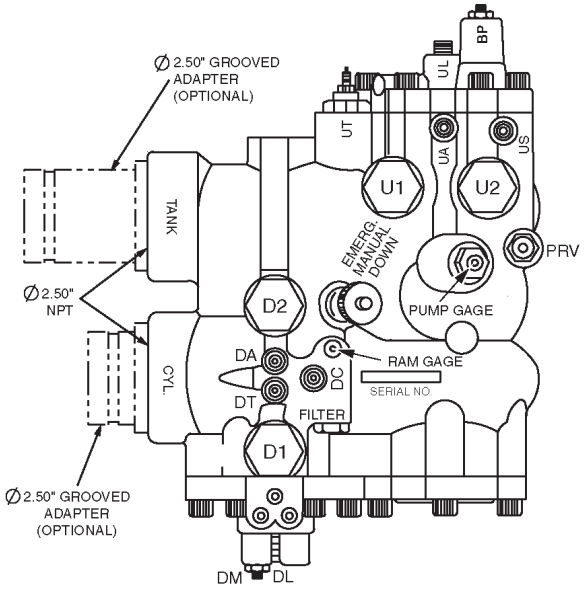
110 VAC, 208 VAC, 220 VAC, 440 VAC, 110 VDC, 220 VDC, For other coil options, please contact EECO.

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**)

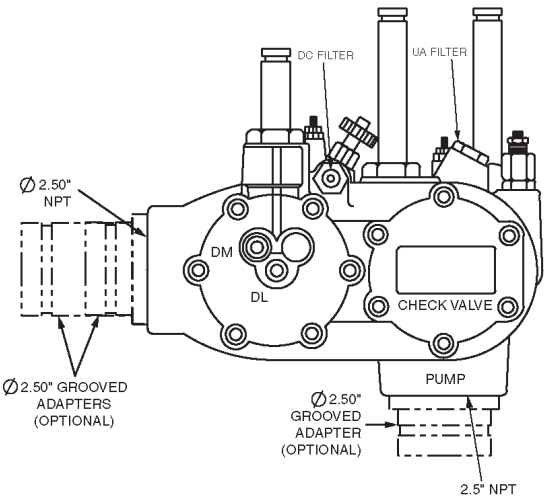
Adjuster: **US** - Up Stop - (was **UD**)

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



B44 ASME 17.1 C US

LISTED



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.