Elevator Equipment Corporation

"Simplicity in Motion"

THE LEADER IN CONTROL VALVE TECHNOLOGY

HYDRAULIC ELEVATOR CONTROL VALVES

All EECO Products are Green Compatible

Revision: 3/14/2017

The EECO Hydraulic Control Valve Family

UV-5AT

UV-4R

UV-5ATC

UV-5BT

UV-5BT Rear

UV-5BTC

UV-7B

EECO™

Elevator Equipment Corporation

"Simplicity in Motion"

UV-7BC

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For Valve Technical Support Call: (888) 577-3326

Hydraulic Elevator Control Valve Catalog

Includes Elevator Components & Accessories

For EECO Sales & Valve Technical Support Call: (888) 577-3326*

*Monday through Friday, 8:00 AM Eastern time to 4:30 PM Pacific time, excluding holidays.

Revised 3/14/2017

Note: This revision supersedes **all** previous versions of this document.

All information in this Catalog is subject to change without notice.

Please Note:

The following solenoid and adjuster designations were changed for simplification on all EECO valves 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 33 (UV-5AT) & 45 (UV-7B) for complete solenoid coil descriptions.

Not all coils have colored wires.

The following abbreviations are also used in this Catalog:

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

To determine when a valve was manufactured.

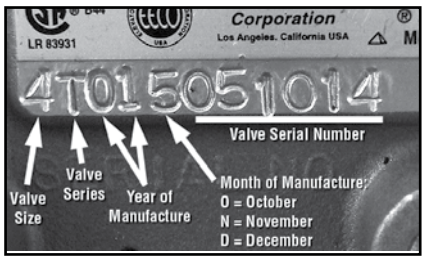
The valve serial number, located on top of each valve, provides important information which helps during troubleshooting of the valve. It is very important to identify the complete valve serial number when you call EECO to discuss a valve problem.

Character	Description
1st	Valve Size
2nd	Valve Series
3rd & 4th	Year of Manufacture (10 = 2010)
5th	Month of Manufacture * (1 = January)
Remaining	Actual Serial Number

* O = October, N = November, D = December

If two characters preceed "Valve Series"

1st Character = Bypass Size, 2nd Character = Down Size



About EECO

Los Angeles, CA

Richmond, IN

Lansdale, PA

Elevator Equipment Corporation (EECO) was founded in 1946 as Elevator Equipment Company by Mr. Alvin Conley and manufactured and sold single function brass valves and jack units. Through the years EECO developed and has been manufacturing unit valves, power units, switches, and other components used in the installation of hydraulic elevators. The industry standard UV-5AT, UV-5ATC, UV-7B, and UV-7BC hydraulic control valves are manufactured and assembled in our original plant in Los Angeles, California, where jack units, hatchway switches, car slings and platforms as well as other hydraulic elevator components are also produced.

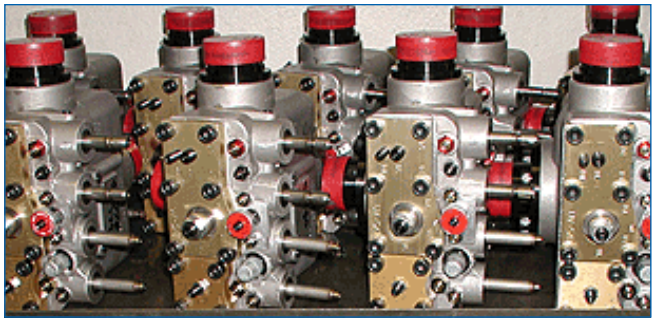
Since 1946 Elevator Equipment Corporation (EECO) has set the standards and is a leader in the Hydraulic Elevator Industry. EECO has three facilities located in Richmond, Indiana, Los Angeles, California, and Lansdale, Pennsylvania. Our continuous growth has allowed us to continue expanding our product lines.

We consider ourselves an Engineering Company dedicated to solving manufacturing, service and construction requirements constantly improving our products to better serve our customers' needs more efficiently. EECO continues to supply quality hydraulic elevator products to all Major and Independent Elevator Companies for installations in the U.S., Canada, Mexico, and throughout the rest of the world.

EECO's engineering, management and research staff consists of highly trained individuals who have many years of experience in the manufacture and design of hydraulic elevator equipment. With our extensive knowledge in elevator products and systems, EECO is sure to find the right solution for any project our customers have. Our websites also offer customers access to product information 24 hours a day, seven days a week.

Our commitment to innovative technology and customer support is second to none. EECO is a long time supplier member of both the NAEC (US) and the CECA (Canada) associations. Most EECO products are certified by both UL and CSA organizations.

For more information visit us at: **www.elevatorequipment.com** or **www.eecovalves.com**.



Elevator Equipment Corporation

"Simplicity in Motion"

Equipment Warranty

Elevator Equipment Corporation products carry a **ONE YEAR** limited warranty (except **new** control valves which carry a **TWO YEAR** limited warranty) from the date of shipment from our plant against any manufacturing defects in material and workmanship which develop in service for which they were intended or recommended. Any material which is returned to our plant with transportation charges **PREPAID**, and which after our inspection is found to be defective will be, at our discretion, either repaired or replaced free of charge. Call EECO Sales for details.

Conditions Of Sale

All technical advice and recommendations are furnished by the seller gratis, and are believed by the seller to be reliable. They are intended for use by persons having skill and know how, at their own risk. Seller assumes **NO** responsibility for damages incurred from use by buyer.

From and after the date of shipment, the buyer assumes all liability and expense because of injury, sickness or death sustained by any person, or damage to or destruction of property arising from the use of the equipment sold hereunder.

WE WILL NOT sustain any claim for consequential damages, loss of time or labor charges, or expense in making repairs or adjustments. Our liability is limited to defective material or defective repairs made in our plant in Los Angeles, California, or Richmond, Indiana.

Corporate Headquarters - 4035 Goodwin Avenue, Los Angeles, CA 90039

Mid-West/Southeast Office - 2230 N. W. 12th Street, Richmond IN 47374

Northeast Office - 565 West 3rd Street, Lansdale, PA 19446

EECO Sales & Valve Technical Support: (888) 577-3326*

E-mail: sales@eecomail.com

Visit us on the web at: www.elevatorequipment.com & www.eecovalves.com

*Monday through Friday, 8:00 AM Eastern time to 4:30 PM Pacific time, excluding holidays (see page 5).

Call Toll Free:
(888) 577-3326

NOTE: Control Valve Technical Support is available Monday through Friday (except holidays) between the hours of 8:00 AM Eastern time to 4:30 PM Pacific time.

Los Angeles, CA - (800) 423-2800

Valve Technical Support:

Peter Aguirre, Ext. 128

Benny Vazquez, Ext. 124

Robert Alterman, Ext. 150

Abe Salehpour, Ext. 141

Quality Control:

Mike Young, Ext. 129

Valve Sales:

Peter Aguirre, Ext. 128

Ruben Rocha, Ext. 143

Richmond, IN - (800) 428-6564

Extended Hours Valve Support:

Gale Huntsman, Ext. 229

Kevin Antrim, Ext. 215

Quality Control:

Jim Snyder, Ext. 230

Valve Sales:

Daryl Frith, Ext. 219

SAFE USE RECOMMENDATIONS

EECO control valves could have a life greater than 2.5 million cycles with ideal operating conditions. However, very few installations have ideal conditions. Cleanliness of oil is very important and could have a major effect on the life of a control valve, especially if it is also running constantly at temperatures in excess of the normal operating range of the valve. With the presence of any of the conditions which may adversely affect the longevity of the control valve, EECO recommends to service or replace the valve every five years.

EECO control valves are the most user friendly valves in the market and can be easily serviced by using the seal kits and solenoid kits offered by EECO. Upgrade kits are also available from EECO to incorporate in older EECO valves to bring them to the current standards. Obviously, all service work on the control valves have to be done by professionals who are trained in installing and servicing hydraulic elevator systems. It is very important that the main power is shutoff and the system pressure is relieved by opening the manual lowering valve to allow the elevator to rest on the buffers. It is also recommended that if the solenoid kits are used to service a valve (recommended every 5 years), the orifice seats and the needles to be replaced at the same time.

In addition to service and upgrade kits, EECO also offers the Valve Rebuild Program (VRP) and EECO Exchange Program (EEP), which could actually be more cost effective. Both VRP and EEP are offered through the EECO factory service center. The valves received by either of these two programs are fully tested at the factory and carry a two-year limited warranty, the same as the new control valves. Only control valves received through the VRP and EEP are supported by EECO. EECO neither supports nor recommends any other facility to service the control valves, since this is highly specialized and requires unique tools and testing procedures.

EECO neither manufactures nor supports the single function brass valves or the "F" series UV-5A valves. It is recommended that the old hydraulic systems that are operated by brass valves to be modernized using the latest EECO unit valves.

The "Valve Rebuild Program"

EECO also offers our customers a **Valve Rebuild Program** (**VRP**) through the EECO **Factory Service Center**. Customers needing their valves rebuilt, should contact the Sales Department for a Return Material Authorization (RMA) number. Please allow at least ten (10) business days for the valve to be checked, rebuilt, and tested before it can be shipped back. If a faster turnaround is required, you may wish to consider the EECO Exchange as mentioned above. The rebuild program only includes the cleaning of the valve and replacement of the adjusters, seals and solenoid components. If, upon inspection by EECO, it is determined that other major components of the valve must be replaced or the valve has missing components, the customer will be contacted and additional charges may apply. All EECO rebuilt valves carry a **two**-year limited warranty.

NOTE: All older EECO brass valves and F series UV-5A valves are exempt from the EECO Exchange and VRP Programs. EECO no longer manufactures nor supports these valves.

NOTE: EECO reserves the right to revise, change and/or amend the provisions of its valve exchange and valve rebuild programs at any time without prior notice.

The "EECO Exchange Program"

Elevator Equipment Corporation has developed the **EECO Exchange Program (EEP)**, to provide our customers a convenient alternative to sending their valves to EECO to be rebuilt, which can cause unacceptable delays at the job site. The EECO Exchange offers an immediate, and economical alternative that allows our customers to receive a rebuilt valve, with a **two**-year limited warranty. Rebuilt valves come with all new internal parts, including the latest features now available in our standard valves.

HOW IT WORKS

The customer orders a rebuilt valve through the EECO Exchange Program. The EEP rebuilt valve can usually be shipped to the customer within one business day, subject to availability. The customer must then return the old, **undamaged**, valve that is being replaced to our Los Angeles facility within fifteen (45) business days (see below). Please retain your original coils as rebuilt valves are not furnished with coils. If you need new coils please advise the Sales Department at the time of order.

Customers will not be able to exchange one valve model for a completely different model. For example, a UV-5AT valve will only be exchanged for a UV-5AT valve, not for a UV-7B valve. EECO will provide the customer with an Return Material Authorization (RMA). The customer will be invoiced for the rebuilt valve. You will have 45 business days to return the core to our Los Angeles facility. If the valve body is deemed reusable and has been returned within the allowable time frame, a core credit may be applied to your account which may be used towards future purchases.

NECESSARY INFORMATION

Prior to ordering a rebuilt valve through the EECO Exchange Program, the following information is needed:

- **Old valve serial number (Required)**
- **Valve type (i.e. UV-5A, UV-5AT, UV-5ATC, UV-7B or UV-7BC)**
- **Line connections for UV-5A, UV-5AT & UV-5ATC - 2" NPT or Grooved**
  UV-7B & UV-7BC = 2 1/2" NPT or Grooved
- **Purchase Order Number**
- **"Ship to" Address and method of shipment**

How To Size An EECO Control Valve

UV-5ATC shown

UV-7B - shown with optional 2.5" grooved connections.

We encourage you to have EECO size your control valve to assure the proper valve for your specific application. To have EECO size your valve, please fill out the Quote Request/Order form at the back of the Hydraulic Control Valves Catalog and fax it to: (888) 577-3116. This form can also be found on our website, which can be emailed to EECO at sales@eecomail.com.

A major consideration for proper operation of a hydraulic elevator system is proper sizing of the control valve in that system. By valve sizing, we are only referring to the proper selection of the internal components of the valve, not to the physical size of the valve or the size of its ports.

If **down contract speed** (full down speed with rated load on the car) is the same as the up, then the size of the valve is the same in the up and down directions. Sizing of the valve requires only static (minimum) pressure and flow rate. Locating the intersection of static pressure and flow rate on the sizing charts in Figure 1 and Figure 2 (on pages 15 and 16) provides the size of the valve. If **down contract speed** is different from the up, each side should be sized according to the sized conditions.

If the valve is for an existing installation, then the static pressure can be read from a pressure gauge installed in the jack (ram) gauge port of the existing valve when the empty car is resting at the bottom landing. However, if the valve is for a new installation or static pressure can not be physically measured, then empty car weight (weight of everything above the platen plate plus 1/2 of the piston weight) and jack piston diameter are required. With this information on hand, you can then calculate the static pressure by dividing the empty car weight by the cross sectional area of the piston, or use Table 1A (or 1B, metric), on pages 9 (or 10), to obtain the static pressure.

If the flow rate is known, the valve can now be sized. However, if the flow rate is not known, the car speed and jack piston diameter are required. Table 2A (or 2B, metric), provided on pages 11 (or 12), can then be used to obtain the flow rate. The flow rate can also be calculated by multiplying the car speed by the displacement factor for the specified piston diameter in Table 3 on page 13. For assistance with calculating the necessary information, please use the reference formulas found on page 14.

As mentioned before, down contract speed is down speed with full load on the car. Down speed with empty car is less than contract speed depending on the ratio of full-load to no-load pressures (approximately 25% less for a two to one pressure ratio). If Constant Down Speed is required between no-load and full-load conditions, UV-5(A/B)TC or UV-7BC valves should be used. Again, static pressure and flow rate are required to size the valve by using Figure 1 and Figure 2 (on pages 15 and 16).

Sometimes changes in the system specification would make it necessary to modify the operating condition in the field. The change may require the size of an existing valve to be changed at the job. This means that the bypass, check and down pistons may have to be replaced. If the size of the valve is changed in the field, we recommend that you indicate the new valve size on top of the valve. This will prevent confusion when the valve is serviced in the future.

Also available at www.eecovalveapp.com is our

Engineering & Control Valve Selection Calculator

If you still have questions? Give us call and we'll help get you the right size valve for your application.

(888) 577-3326

Don't forget to download the

Control Valve Field Service Companion

Available on the App Store

ANDROID APP ON Google play

TABLE 1A - PRESSURE, PSI (for one jack)

Load Above Piston - Pounds

Piston Diameter (Inches)

	2	2 1/2	2 3/4	3	3 7/16	3 1/2	3 7/8	4	4 3/8	4 1/2	5	5 7/16	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9 1/2	10 5/8	12 5/8	13 7/8	15 7/8	
1000	318	204	168	141	108	104	85	80	67	63	51	43	42	35	30	26	23	20	18	14	11	8	7	5	1000
1500	477	306	253	212	162	156	127	119	100	94	76	65	63	53	45	39	34	30	26	21	17	12	10	8	1500
2000	637	407	337	283	216	208	170	159	133	126	102	86	84	71	60	52	45	40	35	28	23	16	13	10	2000
2500	796	509	421	354	269	260	212	199	166	157	127	108	105	88	75	65	57	50	44	35	28	20	17	13	2500
3000	955	611	505	424	323	312	254	239	200	189	153	129	126	106	90	78	68	60	53	42	34	24	20	15	3000
3500	1114	713	589	495	377	364	297	279	233	220	178	151	147	124	105	91	79	70	62	49	39	28	23	18	3500
4000		815	673	566	431	416	339	318	266	252	204	172	168	141	121	104	91	80	70	56	45	32	26	20	4000
4500		917	758	637	485	468	382	358	299	283	229	194	189	159	136	117	102	90	79	63	51	36	30	23	4500
5000		1019	842	707	539	520	424	398	333	314	255	215	210	177	151	130	113	99	88	71	56	40	33	25	5000
5500		1120	926	778	593	572	466	438	366	346	280	237	231	195	166	143	124	109	97	78	62	44	36	28	5500
6000			1010	849	647	624	509	477	399	377	306	258	253	212	181	156	136	119	106	85	68	48	40	30	6000
6500			1094	920	700	676	551	517	432	409	331	280	274	230	196	169	147	129	115	92	73	52	43	33	6500
7000				990	754	728	594	557	466	440	357	301	295	248	211	182	158	139	123	99	79	56	46	35	7000
7500				1061	808	780	636	597	499	472	382	323	316	265	226	195	170	149	132	106	85	60	50	38	7500
8000				1132	862	832	678	637	532	503	407	345	337	283	241	208	181	159	141	113	90	64	53	40	8000
8500					916	883	721	676	565	534	433	366	358	301	256	221	192	169	150	120	96	68	56	43	8500
9000					970	935	763	716	599	566	458	388	379	318	271	234	204	179	159	127	102	72	60	45	9000
9500					1024	987	806	756	632	597	484	409	400	336	286	247	215	189	167	134	107	76	63	48	9500
10000					1078	1039	848	796	665	629	509	431	421	354	301	260	226	199	176	141	113	80	66	51	10000
12000							1018	955	798	755	611	517	505	424	362	312	272	239	211	169	135	96	79	61	12000
14000								1114	931	880	713	603	589	495	422	364	317	279	247	198	158	112	93	71	14000
16000									1064	1006	815	689	673	566	482	416	362	318	282	226	180	128	106	81	16000
18000										1132	917	775	758	637	542	468	407	358	317	254	203	144	119	91	18000
20000											1019	861	842	707	603	520	453	398	352	282	226	160	132	101	20000
25000												1077	1052	884	753	650	566	497	441	353	282	200	165	126	25000

Load Above Piston - Pounds

Pressure (psi) = Load (lbs.) / (.7854 x (piston diameter in inches)^2)

TABLE 1B - PRESSURE, BAR (for one jack)

Load Above Piston - Kilograms

Piston Diameter (Millimeters)

	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	
200	6.9	3.9	2.5	1.7	1.3	1.0	0.8	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	200
400	13.9	7.8	5.0	3.5	2.6	2.0	1.5	1.3	1.0	0.9	0.7	0.6	0.6	0.5	0.4	0.4	0.3	0.3	400
600	20.8	11.7	7.5	5.2	3.8	2.9	2.3	1.9	1.5	1.3	1.1	1.0	0.8	0.7	0.6	0.6	0.5	0.5	600
800	27.8	15.6	10.0	6.9	5.1	39	3.1	2.5	2.1	1.7	1.5	1.3	1.1	1.0	0.9	0.8	0.7	0.6	800
1000	34.7	19.5	12.5	8.7	6.4	4.9	3.9	3.1	2.6	2.2	1.8	1.6	1.4	1.2	1.1	1.0	0.9	0.8	1000
1200	41.7	23.4	15.0	10.4	7.7	5.9	4.6	3.8	3.1	2.6	2.2	1.9	1.7	1.5	1.3	1.2	1.0	0.9	1200
1400	48.6	27.3	17.5	12.2	8.9	6.8	5.4	4.4	3.6	3.0	2.6	2.2	1.9	1.7	1.5	1.4	1.2	1.1	1400
1600	55.6	31.3	20.0	13.9	10.2	7.8	6.2	5.0	4.1	3.5	3.0	2.6	2.2	2.0	1.7	1.5	1.4	1.3	1600
1800	62.5	35.2	22.5	15.6	11.5	8.8	6.9	5.6	4.6	3.9	3.3	2.9	2.5	2.2	1.9	1.7	1.6	1.4	1800
2000	69.4	39.1	25.0	17.4	12.8	9.8	7.7	6.3	5.2	4.3	3.7	3.2	2.8	2.4	2.2	1.9	1.7	1.6	2000
2200	76.4	43.0	27.5	19.1	14.0	10.7	8.5	6.9	5.7	4.8	4.1	3.5	3.1	2.7	2.4	2.1	1.9	1.7	2200
2400		46.9	30.0	20.8	15.3	11.7	9.3	7.5	6.2	5.2	4.4	3.8	3.3	2.9	2.6	2.3	2.1	1.9	2400
2600		50.8	32.5	22.6	16.6	12.7	10.0	8.1	6.7	5.6	4.8	4.1	3.6	3.2	2.8	2.5	2.3	2.0	2600
2800		54.7	35.0	24.3	17.9	13.7	10.8	8.8	7.2	6.1	5.2	4.5	3.9	3.4	3.0	2.7	2.4	2.2	2800
3000		58.6	37.5	26.0	19.1	14.6	11.6	9.4	7.7	6.5	5.5	4.8	4.2	3.7	3.2	2.9	2.6	2.3	3000
3200		62.5	40.0	27.8	20.4	15.6	12.3	10.0	8.3	6.9	5.9	5.1	4.4	3.9	3.5	3.1	2.8	2.5	3200
3400		66.4	42.5	29.5	21.7	16.6	13.1	10.6	8.8	7.4	6.3	5.4	4.7	4.2	3.7	3.3	2.9	2.7	3400
3600		70.3	45.0	31.3	23.0	17.6	13.9	11.3	9.3	7.8	6.7	5.7	5.0	4.4	3.9	3.5	3.1	2.8	3600
3800		74.2	47.5	33.0	24.2	18.6	14.7	11.9	9.8	8.2	7.0	6.1	5.3	4.6	4.1	3.7	3.3	3.0	3800
4000		78.1	50.0	34.7	25.5	19.5	15.4	12.5	10.3	8.7	7.4	6.4	5.6	4.9	4.3	3.9	3.5	3.1	4000
4500			56.3	39.1	28.7	22.0	17.4	14.1	11.6	9.8	8.3	7.2	6.3	5.5	4.9	4.3	3.9	3.5	4500
5000			62.5	43.4	31.9	24.4	19.3	15.6	12.9	10.9	9.2	8.0	6.9	6.1	5.4	4.8	4.3	3.9	5000
5500			68.8	47.7	35.1	26.9	21.2	17.2	14.2	11.9	10.2	8.8	7.6	6.7	5.9	5.3	4.8	4.3	5500
6000			75.0	52.1	38.3	29.3	23.1	18.8	15.5	13.0	11.1	9.6	8.3	7.3	6.5	5.8	5.2	4.7	6000
7000				60.8	44.6	34.2	27.0	21.9	18.1	15.2	12.9	11.2	9.7	8.5	7.6	6.8	6.1	5.5	7000
8000				69.4	51.0	39.1	30.9	25.0	20.7	17.4	14.8	12.8	11.1	9.8	8.7	7.7	6.9	6.3	8000
9000				78.1	57.4	43.9	34.7	28.1	23.2	19.5	16.6	14.3	12.5	11.0	9.7	8.7	7.8	7.0	9000
10000					63.8	48.8	38.6	31.3	25.8	21.7	18.5	15.9	13.9	12.2	10.8	9.6	8.7	7.8	10000
15000						73.2	57.9	46.9	38.7	32.6	27.7	23.9	20.8	18.3	16.2	14.5	13.0	11.7	15000
20000							77.2	62.5	51.7	43.4	37.0	31.9	27.8	24.4	21.6	19.3	17.3	15.6	20000

Load Above Piston - Kilograms

Pressure (bar) = Load (kg) / (.007854 x (piston diameter in mm)²)

TABLE 2A - FLOW RATE (gallons per minute, gpm)

Jack Piston Diameter (Inches)	Car Speed - Feet Per Minute (fpm)																				
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
2	2	3	5	7	8	10	11	13	15	16	18	20	21	23	24	26	28	29	31	33
2 1/2	3	5	8	10	13	15	18	20	23	26	28	31	33	36	38	41	43	46	48	51
2 3/4	3	6	9	12	15	19	22	25	28	31	34	37	40	43	46	49	52	56	59	62
3	4	7	11	15	18	22	26	29	33	37	40	44	48	51	55	59	62	66	70	73
3 7/16	5	10	14	19	24	29	34	39	43	48	53	58	63	67	72	77	82	87	92	96
3 1/2	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
3 7/8	6	12	18	25	31	37	43	49	55	61	67	74	80	86	92	98	104	110	116	123
4	7	13	20	26	33	39	46	52	59	65	72	78	85	91	98	104	111	118	124	131
4 3/8	8	16	23	31	39	47	55	62	70	78	86	94	102	109	117	125	133	141	148	156
4 1/2	8	17	25	33	41	50	58	66	74	83	91	99	107	116	124	132	140	149	157	165
5	10	20	31	41	51	61	71	82	92	102	112	122	133	143	153	163	173	184	194	204
5 7/16	12	24	36	48	60	72	84	97	109	121	133	145	157	169	181	193	205	217	229	241
5 1/2	12	25	37	49	62	74	86	99	111	123	136	148	160	173	185	197	210	222	234	247
6	15	29	44	59	73	88	103	118	132	147	162	176	191	206	220	235	250	264	279	294
6 1/2	17	34	52	69	86	103	121	138	155	172	190	207	224	241	259	276	293	310	328	345
7	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
7 1/2	23	46	69	92	115	138	161	184	207	230	252	275	298	321	344	367	390	413	436	459
8	26	52	78	104	131	157	183	209	235	261	287	313	339	366	392	418	444	470	496	522
8 1/2	29	59	88	118	147	177	206	236	265	295	324	354	383	413	442	472	501	531	560	590
9 1/2	37	74	110	147	184	221	258	295	331	368	405	442	479	516	552	589	626	663	700	736
10 5/8	46	92	138	184	230	276	322	368	415	461	507	553	599	645	691	737	783	829	875	921
12 5/8	65	130	195	260	325	390	455	520	585	650	715	780	845	910	975	1041	1106	1171	1236	1301
13 7/8	79	157	236	314	393	471	550	628	707	785	864	943	1021	1100	1178	1257	1335	1414	1492	1571
15 7/8	103	206	308	411	514	617	720	823	925	1028	1131	1234	1337	1440	1542	1645	1748	1851	1954	2056
17 7/8	130	261	391	521	652	782	913	1043	1173	1304	1434	1564	1695	1825	1955	2086	2216	2347	2477	2607

NOTE: Flow rate (gallons per minute, gpm) = car speed (feet per minute, fpm) x displacement (gallons per foot, gpf)

Displacement (gallons per foot, gpf) = 0.0408 x (piston O. D. in inches)^2

TABLE 2B - FLOW RATE (liter per minute, lit./min.)

Car Speed - Meters Per Minute (mpm)

Jack Piston Diameter (Millimeters)

	1	2	3	4	5	6	7	8	9	10	15	20	25	30	35	40	45	50	55	60	65
60	3	6	8	11	14	17	20	23	25	28	42	57	71	85	99	113	127	141	156	170	184
80	5	10	15	20	25	30	35	40	45	50	75	101	126	151	176	201	226	251	276	302	327
100	8	16	24	31	39	47	55	63	71	79	118	157	196	236	275	314	353	393	432	471	511
120	11	23	34	45	57	68	79	90	102	113	170	226	283	339	396	452	509	565	622	679	735
140	15	31	46	62	77	92	108	123	139	154	231	308	385	462	539	616	693	770	847	924	1001
160	20	40	60	80	101	121	141	161	181	201	302	402	503	603	704	804	905	1005	1106	1206	1307
180	25	51	76	102	127	153	178	204	229	254	382	509	636	763	891	1018	1145	1272	1400	1527	1654
200	31	63	94	126	157	188	220	251	283	314	471	628	785	942	1100	1257	1414	1571	1728	1885	2042
220	38	76	114	152	190	228	266	304	342	380	570	760	950	1140	1330	1521	1711	1901	2091	2281	2471
240	45	90	136	181	226	271	317	362	407	452	679	905	1131	1357	1583	1810	2036	2262	2488	2714	2941
260	53	106	159	212	265	319	372	425	478	531	796	1062	1327	1593	1858	2124	2389	2655	2920	3186	3451
280	62	123	185	246	308	369	431	493	554	616	924	1232	1539	1847	2155	2463	2771	3079	3387	3695	4002
300	71	141	212	283	353	424	495	565	636	707	1060	1414	1767	2121	2474	2827	3181	3534	3888	4241	4595
320	80	161	241	322	402	483	563	643	724	804	1206	1608	2011	2413	2815	3217	3619	4021	4423	4825	5228
340	91	182	272	363	454	545	636	726	817	908	1362	1816	2270	2724	3178	3632	4086	4540	4994	5448	5901
360	102	204	305	407	509	611	713	814	916	1018	1527	2036	2545	3054	3563	4072	4580	5089	5598	6107	6616
380	113	227	340	454	567	680	794	907	1021	1134	1701	2268	2835	3402	3969	4536	5104	5671	6238	6805	7372
400	126	251	377	503	628	754	880	1005	1131	1257	1885	2513	3142	3770	4398	5027	5655	6283	6912	7540	8168

NOTE: *F*low rate (liters per minute, lit./min.) = car speed (meters per minute, mpm) x displacement (liters per meter, lit./m)

Displacement (liters per meter, lit./m) = 0.0007854 x (piston O. D. in mm)^2

TABLE 3 - PISTON DATA

PISTON DIAMETER		PISTON AREA		DISPLACEMENT	
INCHES	*MILLIMETERS*	IN^2	CM^2	GALLONS PER FOOT (gpf)	*LITERS PER METER (lit./m)*
2	*51*	3.142	*20.268*	0.163	*2.027*
2 1/4	*57*	3.976	*25.652*	0.207	*2.565*
2 1/2	*64*	4.909	*31.669*	0.255	*3.167*
2 3/4	*70*	5.940	*38.320*	0.309	*3.832*
3	*76*	7.069	*45.604*	0.367	*4.560*
3 7/16	*87*	9.281	*59.875*	0.482	*5.987*
3 1/2	*89*	9.621	*62.072*	0.500	*6.207*
3 3/4	*95*	11.045	*71.256*	0.574	*7.126*
3 7/8	*98*	11.793	*76.085*	0.613	*7.609*
4	*102*	12.566	*81.073*	0.653	*8.107*
4 1/4	*108*	14.186	*91.524*	0.737	*9.152*
4 3/8	*111*	15.033	*96.987*	0.781	*9.699*
4 1/2	*114*	15.904	*102.608*	0.826	*10.261*
4 3/4	*121*	17.721	*114.326*	0.921	*11.433*
5	*127*	19.635	*126.677*	1.020	*12.668*
5 1/4	*133*	21.648	*139.661*	1.125	*13.966*
5 7/16	*138*	23.221	*149.815*	1.206	*14.982*
5 1/2	*140*	23.758	*153.279*	1.234	*15.328*
5 3/4	*146*	25.967	*167.530*	1.349	*16.753*
6	*152*	28.274	*182.415*	1.469	*18.242*
6 1/4	*159*	30.680	*197.933*	1.594	*19.793*
6 1/2	*165*	33.183	*214.084*	1.724	*21.408*
6 3/4	*171*	35.785	*230.869*	1.859	*23.087*
7	*178*	38.485	*248.287*	1.999	*24.829*
7 1/2	*191*	44.179	*285.023*	2.295	*28.502*
7 3/4	*197*	47.173	*304.341*	2.451	*30.434*
8	*203*	50.265	*324.293*	2.611	*32.429*
8 1/2	*216*	56.745	*366.096*	2.948	*36.610*
8 3/4	*222*	60.132	*387.948*	3.124	*38.795*
9	*229*	63.617	*410.433*	3.305	*41.043*
9 1/2	*241*	70.882	*457.303*	3.682	*45.730*
9 3/4	*248*	74.662	*481.689*	3.879	*48.169*
10	*254*	78.540	*506.707*	4.080	*50.671*
10 1/4	*260*	82.516	*532.360*	4.287	*53.236*
10 1/2	*267*	86.590	*558.645*	4.498	*55.865*
10 5/8	*270*	88.664	*572.025*	4.606	*57.203*
10 3/4	*273*	90.763	*585.564*	4.715	*58.557*
11	*279*	95.033	*613.116*	4.937	*61.312*
11 1/4	*286*	99.402	*641.302*	5.164	*64.130*
11 1/2	*292*	103.869	*670.121*	5.396	*67.012*
11 3/4	*298*	108.434	*699.573*	5.633	*69.957*
12	*305*	113.097	*729.659*	5.875	*72.966*
12 1/4	*311*	117.859	*760.378*	6.123	*76.038*
12 1/2	*318*	122.718	*791.730*	6.375	*79.173*
12 5/8	*321*	125.185	*807.644*	6.503	*80.765*
13 7/8	*352*	151.201	*975.491*	7.855	*97.549*
15 7/8	*403*	197.933	*1276.982*	10.282	*127.699*
17 7/8	*454*	250.947	*1619.010*	13.036	*161.901*

NOTE: Gallons per Minute (gpm) or Liters per Minute (lit./min) = Displacement (gpf or lit./m) x Car Speed (fpm or mpm)

REFERENCE FORMULAS

English / Metric

Displacement

Displacement (gallons per foot, gpf) = **0.0408** x (**Piston Outside Diameter** (in))^2

Displacement (liters per meter, lit/m) = **0.0007854** x **Piston Outside Diameter** (mm))^2

Piston Area

Piston Area (in^2) = **0.7854** x (**Piston Outside Diameter** (in))^2

Piston Area (cm^2) = **0.007854** x (**Piston Outside Diameter** (mm))^2

Mass

Gross Weight (lbs.) = **Car Weight** (lbs.) + **Capacity** (lbs.) +**1/2 Piston**(s) **Weight** (lbs.)

Gross Load (lbs.) = **Car Weight** (lbs.) + **Capacity** (lbs.) + **Piston**(s) **Weight** (lbs.)

Gross Weight (kg) = **Car Weight** (kg) + **Capacity** (kg) +**1/2 Piston**(s) **Weight** (kg)

Gross Load (kg) = **Car Weight** (kg) + **Capacity** (kg) + **Piston**(s) **Weight** (kg)

Flow Rate

Flow Rate (gallons per minute, gpm) = **Car Speed** (feet per minute, fpm) x **Displacement** (gallons per foot, gpf)

Flow Rate (liters per minute, lit/m) = **Car Speed** (meters per minute, mpm) x **Displacement** (liters per meter, lit/m)

Pressure

Pressure (psi) = **Mass** (lbs.) / **Piston Area** (in^2)

Pressure (bar) = **Mass** (kg) / **Piston Area** (cm^2)

Static Pressure (psi) = **Gross Weight** (lbs.) / **Piston Area**

Static Pressure (bar) = **Gross Weight** (kg) / **Piston Area**

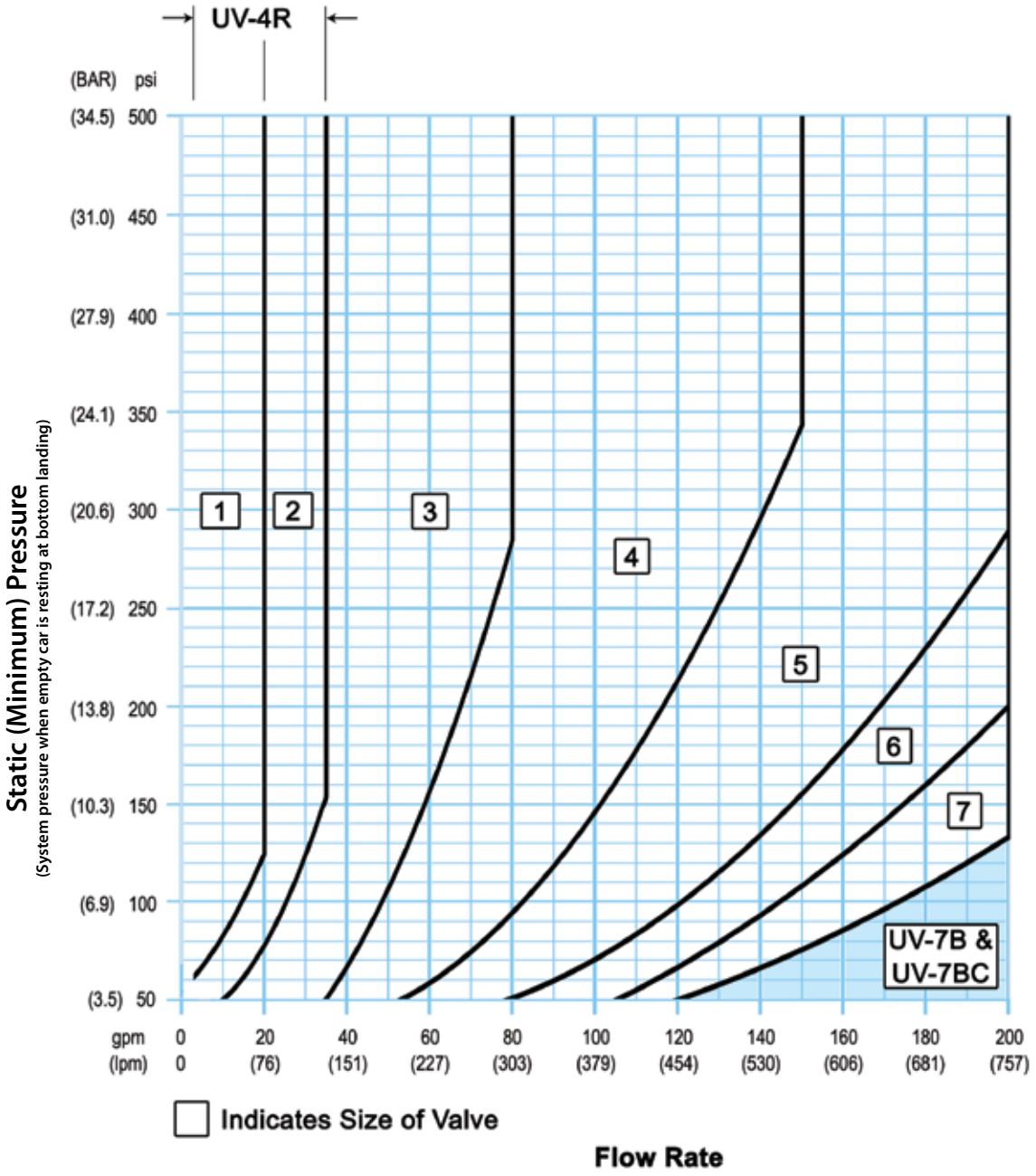
Full Load Pressure (psi) = **Gross Load** (lbs.) / **Piston Area**

Full Load Pressure (bar) = **Gross Load** (kg) / **Piston Area**

Working Pressure (psi) = **Full Load Pressure** (psi) x **Pressure Loss** (as a Percentage of System Pressure)

Working Pressure (bar) = **Full Load Pressure** (bar) x **Pressure Loss** (as a Percentage of System Pressure)

FIGURE 1 - SIZING CHART FOR UV-4R, UV-5(A/B)T (Standard) & UV-5(A/B)TC (Constant Down Speed) VALVES

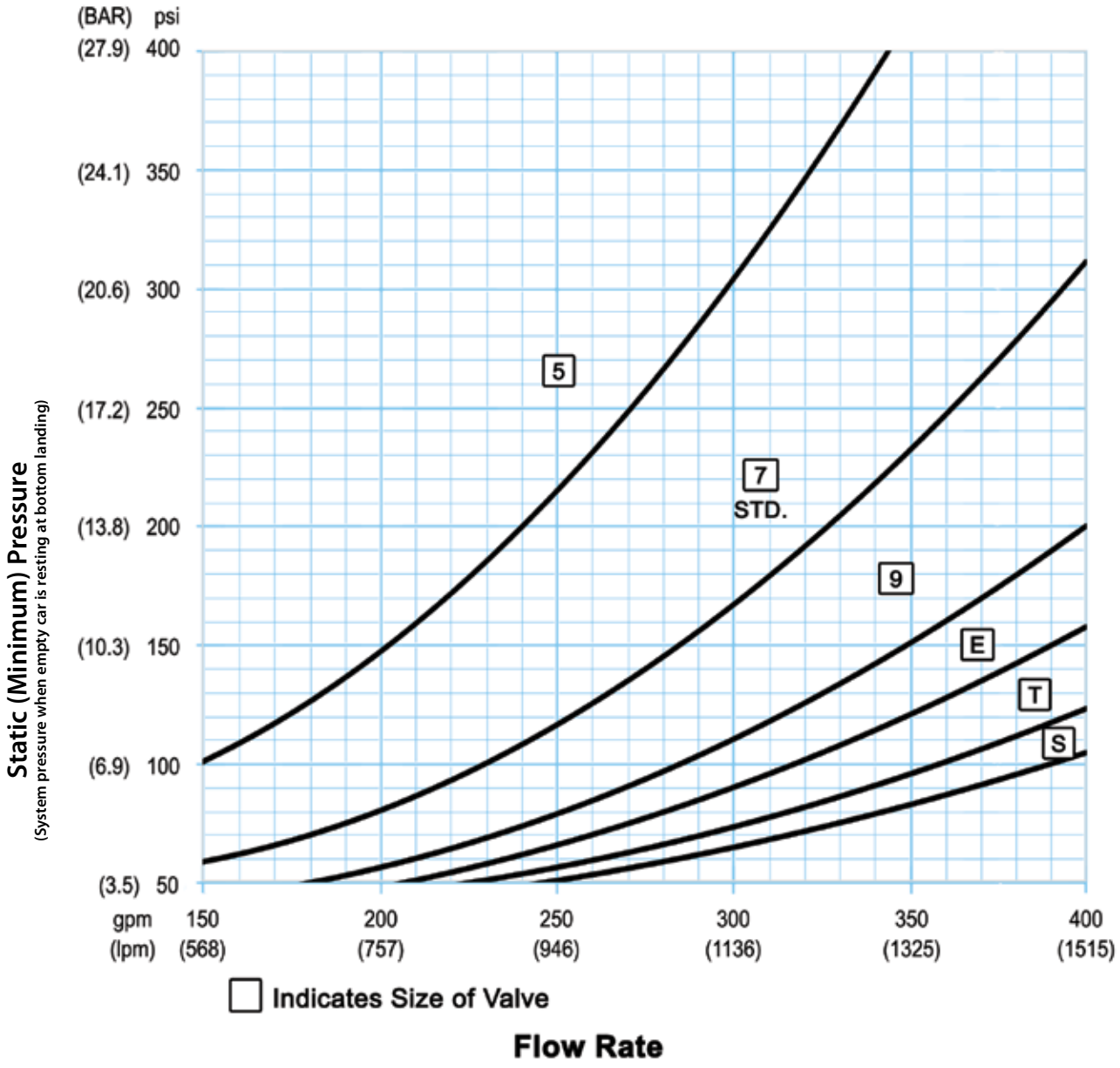


NOTES:

1. The point of intersection of "**Static Pressure**" and "**Flow Rate**" identifies the correct valve size.
2. It is assumed that up and down contract speeds are the same. If the down contract speed is different from the up, each side should be sized according to the required conditions.
3. **Down contract speed** is full down speed with rated load on the car.
4. Constant down speed is a standard feature of the **UV-4R** control valve.

CAUTION: When adjusting the **UV-5(A/B)T** valve, set the empty car down speed at 25% **LESS** than the down contract speed. If constant down speed is required between no-load and full-load conditions, use the **UV-5(A/B)TC** valve.

FIGURE 2 - SIZING CHART FOR UV-7B (Standard Valve) & UV-7BC (Constant Down Speed)



NOTES: 1. The point of intersection of "**Static Pressure**" and "**Flow Rate**" identifies the correct valve size.

2. It is assumed that up and down contract speeds are the same. If the down contract speed is different from the up, each side should be sized according to the required condition.
3. **Down contract speed** is full down speed with rated load on the car.

CAUTION: When adjusting the **UV-7B** valve, set the empty car down speed at 25% **LESS** than the down contract speed. If constant down speed is required between no-load and full-load conditions, use the **UV-7BC** valve.

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UV-4R Control Valve

UV-4R

Smooth Up Start
Allows the pump motor to reach full running speed before load is applied to the motor.

Up Transition
Provides unvarying transition through a wide pressure range.

Up Leveling
Maintains leveling speed regardless of change of system pressure, oil viscosity or pump output.

Up Stop
Provides smooth up stop which is solenoid operated and adjustable.

Check Valve
Locks the elevator on a column of oil while the car is stopped.

Lowering Valve
Provides controlled down acceleration, precise contract down speed, transition, adjustable leveling speed and soft stop.

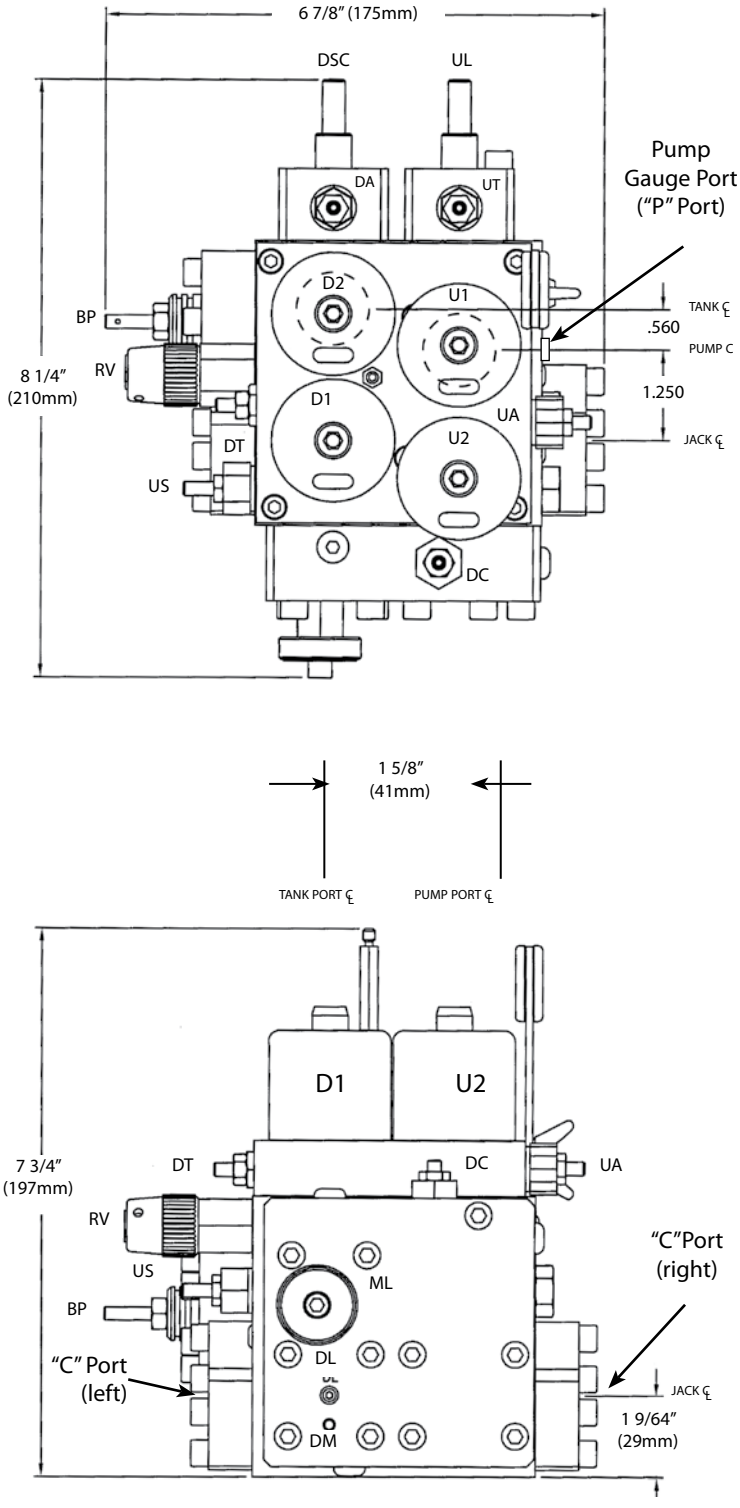
Small Control Valves for **Residential & LULA** *Applications!*

Continuing our tradition of providing the elevator industry with innovative quality products, EECO now offers a small, compact hydraulic elevator control valve for residential, LULA & handicapped applications.

The UV-4R has all the performance qualities of larger commercially available hydraulic control valves. Qualities such as full leveling in the up and down directions and pressure regulation to maintain constant down speed.

UV-4R jack ports are provided on both the right and left sides of the valve to provide options for easy installation.

UV-4R Valve External Dimensions



NOTE: The cylinder gauge port ("C" port) is located on the unused jack port cover.

UV-4R Adjustment Prodecure

For residential, LULA and low flow applications.

1. **This information is provided with the understanding that it is only to be used by qualified hydraulic elevator professionals.**
2. Optimum oil temperature for adjusting valve is 80°F (27°C) min. to 100°F (38°C) maximum.
3. Each new valve is adjusted to a set of standard conditions at the factory. You only need to adjust **DM** and **BP** settings. Other minor adjustments may be required to suit your application. Final adjustments are made 1/8 turn (or less) at a time for optimum performance.
4. After valve adjustments are finalized, snug tighten lock nuts. **(DO NOT over tighten)**.
5. Valve must be mounted with solenoids in vertical position.inches (127mm) minimum clearance is required to remove the valve cover for service.
6. When disconnecting solenoids, do it electrically, not physically.
7. It is important to keep system oil clean. EECO recommends use of a 5 micron filtration system.
8. If **DC** requires further adjusting after **DA** is adjusted, first preset **DA**, adjust **DC** as required, then readjust **DA**.
9. **DO NOT** adjust valve to suit switches (vanes/magnets). Adjust the switches to suit the valve. Recommended slowdown distance is 2 in. for every 10 fpm of car speed.

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. Turn **BP** CW until car moves, then CCW until car stalls plus 1/2 0.5139 inturn. Stop pump motor and reconnect **U2**.
2. **UA** **Up Acceleration** - Car at lower floor with **no load**. Register an up call and observe up acceleration. Turn **UA** a small step at a time CCW for faster or CW for slower up acceleration. **DO NOT** drag out acceleration.
3. **UL** **Up Leveling** - Car at lower floor with **no load**. Disconnect **U1**. Register an up call. Turn **UL** CW (faster) or CCW (slower) to set up leveling speed at 9 to 12 fpm (.05 to .06 m/s). Leave **U1** disconnected.
4. **UT** **Up Transition** - Car at lower floor with **no load**. Register an up call. Car will move up at leveling speed. Turn **UT** CW until car speeds up, then slowly CCW until car slows down to leveling speed again. Reconnect **U1**. Cycle car and observe up transition. Turn **UT** CW for slower transition or CCW for faster transition. Slowdown switch should be set to give 3 to 4 inches (75 mm to 100 mm) of stabilized leveling.
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 slowly CCW until car stops again. Reconnect **U2**. Cycle car 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**. Disconnect **D1**. Register a down call. If car does not move, turn **DC** CW (1/8" turn at a time) until car moves down. 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** and **DSC** on preset. Register a down call. Turn **DM** CW (slower) or CCW (faster). To set down speed at contract (full load) speed.
3. **DC** **Down Closing** - Cycle **empty** car and observe down stop. Turn **DC** CW for softer stop or CCW for firmer stop until down stop is satisfactory **(see note 8)**
4. **DT** **Down Transition** - Cycle car and turn **DT** CCW (slower) or CW (faster) until down transition is satisfactory.
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** CCW (faster) or CW (slower) until down acceleration is satisfactory.
6. **DSC** **Down Speed Control** - Car at upper floor with **full load**. Register a down call. Turn **DSC** CW from preset to slow car to down contract speed. Remove the load, cycle car and recheck empty car speed (should be the same as set before).

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

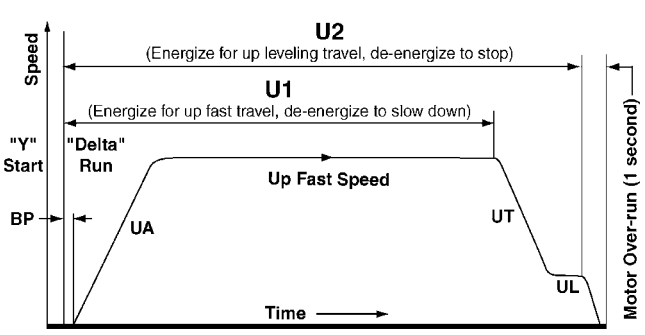
Relief Valve (RV):

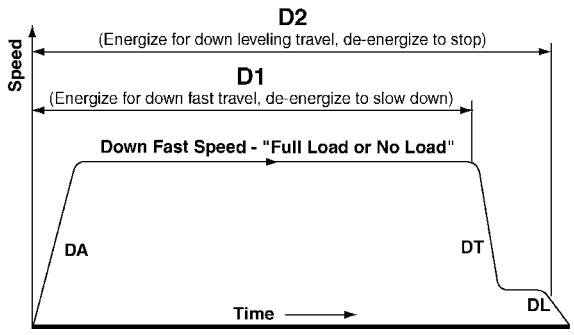
1. With fully loaded car and a pressure gauge installed on the **pump gauge** port, register an up call and record maximum pressure as car nears top landing.
2. With fully loaded car at bottom landing, close main line valve and turn **RV** and **UA** out CCW to stop.
3. Register an up call. Turn **RV** in CW to set relief pressure as required by local code (not to exceed 50% above maximum pressure recorded earlier).
4. Restart pump to check the RV 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.	(CCW - Delays up start)
	UA Up Acceleration	Flush with locknut then CCW 9 turns.	(CCW - Faster acceleration)
	UL Up Leveling	CW to stop then CCW 5 turns.	(CW - Faster speed)
	UT Up Transition	CCW to stop.	(CW - Slower transition)
	US Up Stop	CCW to stop.	(CW - Softer stop)
	RV Relief Valve	Factory set at 550 psi (38 bar).	(CW - Increase pressure setting)
Down	**DL Down Leveling**	CCW to stop then CW 6 turns.	(CW - Slower speed)
	DM Down Main	CW to stop then CCW 6 turns.	(CW - Slower speed)
	DC Down Closing	CCW to stop, then CW 15 turns.	(CW - Softer Stop)
	DT Down Transition	CW to stop.	(CCW - Slower transition)
	DA Down Acceleration	CCW to stop.	(CW - Slower acceleration)
	DSC Down Speed Control	CCW to stop.	(CW - Slower down speed with full load)
	ML Manual Lowering	CW to stop.	(CCW - Opens valve)

Performance Chart for the UV-4R Valve





Additional Features

Connections

- 3/4" Inch NPT standard
- Easy setup for left or right hand jack port connection.

Gauge Ports

- "JG"(Jack Port) and "PG" (Pump Port) are 1/8" NPT.

Construction

- Lightweight, heat-treated, high strength aluminum body.
- The valve has a fully adjustable pressure relief valve.
- High temperature viton seals are used throughout.

Ratings

- Pressure rated at 50 psi (3.5 bar) min and 1200 psi (84 bar) max.
- The temperature range is 80° F (27° C) min, 150° F (65° C) max.
- Handles flow rate range of 3 gpm (11lpm) min, 35 gpm (133 lpm) max.
- Maintains Constant Down Speed irrespective of the load.

Recommendations

Use of a good brand of grade 32 turbine oil with a viscosity of 150 ssu at 100° F (38° C) and a minus pour point is recommended. Also compatible with grade 46 and biodegradable (vegetable) oil.

Notes

- Can be converted to 3 coil application
- Uses CSA and UL approved coils

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) "Wye" start: Pump motor "ON" (reduced voltage).
"Delta" run: Pump motor "ON" full voltage, then
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 "Wye" 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.

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UV-5AT

Green Compatible

B44 ASME A17.1

Smooth Up Start
Allows the pump motor to reach full running speed before load is applied to the motor.

Up Transition
Provides unvarying transition through a wide pressure range.

Up Leveling
Maintains leveling speed regardless of change of system pressure, oil viscosity or pump output.

Up Stop
Provides smooth up stop which is solenoid operated and adjustable.

Check Valve
Locks the elevator on a column of oil while the car is stopped.

Lowering Valve
Provides controlled down acceleration, precise contract down speed, transition, adjustable leveling speed and soft stop.

UV-5ATC

Green Compatible

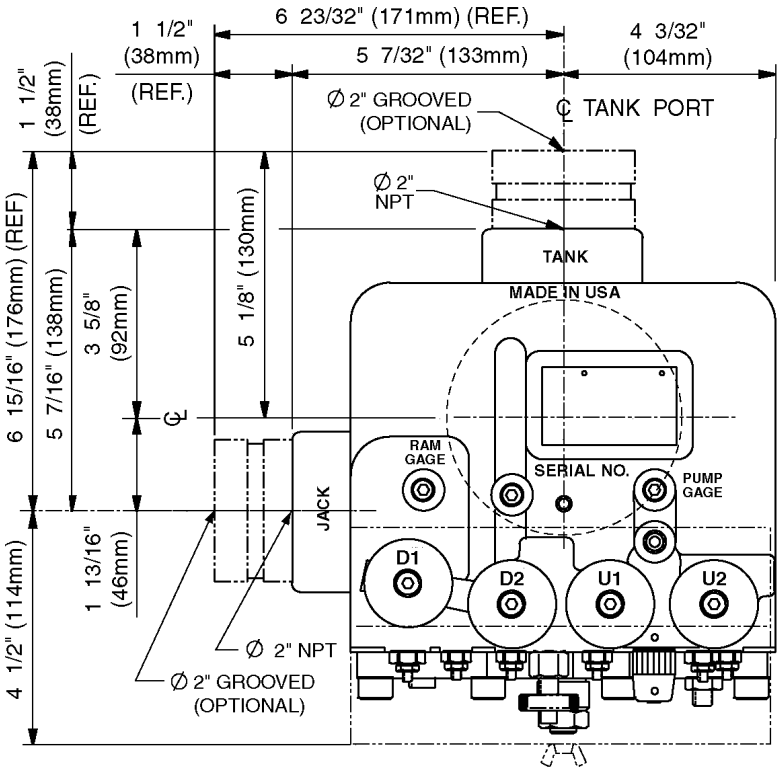
The UV-5(A/B)T is equipped with full **Temperature Compensation** over its entire operational temperature range of 80° to 150° F (27° C to 65° C) by compensating for variations in oil temperature and viscosity, maintaining consistent elevator operation regardless of oil temperature.
The UV-5AT is capable of handling flow rates of 20 (76 lpm) to 200 (757 lpm) gpm.

The optional UV-5ATC also offers **Pressure Compensation** for constant down speed control.
This modification of the down piston assembly delivers constant down speed between no-load and full-load conditions.

EECO also offers owners of older UV-5A control valves the **ability to upgrade existing valves** currently in service with both the temperature and pressure compensation features using simple in-the-field retrofit kits.
For more information about these kits see Pages 60 through 63.

The UV-5AT is also available with an Explosion Proof Coil Canister modification. Contact EECO for more details.

UV-5AT & UV-5ATC Valve Dimensions



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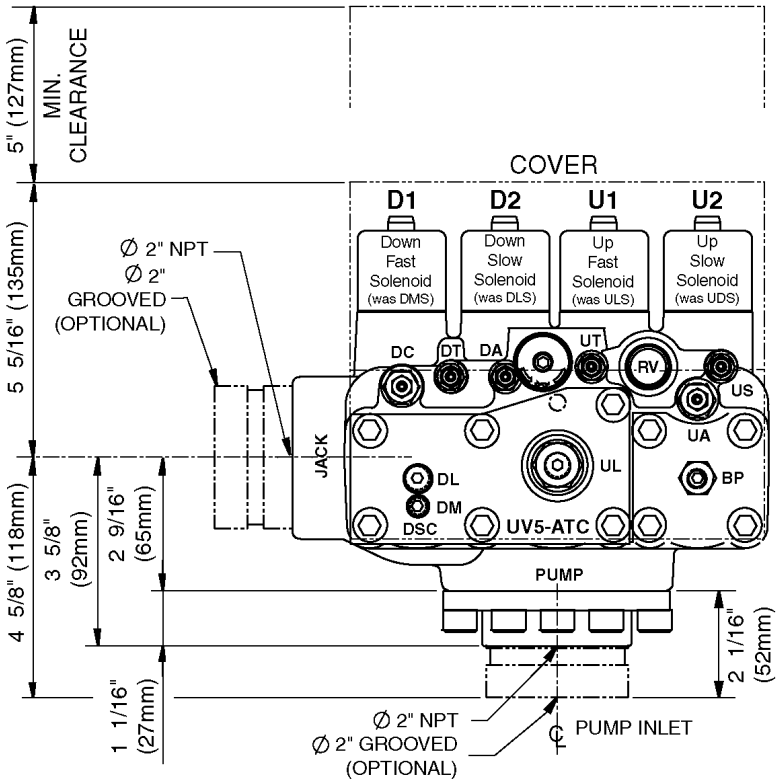
UV-5AT Only



Valve Dimensions:

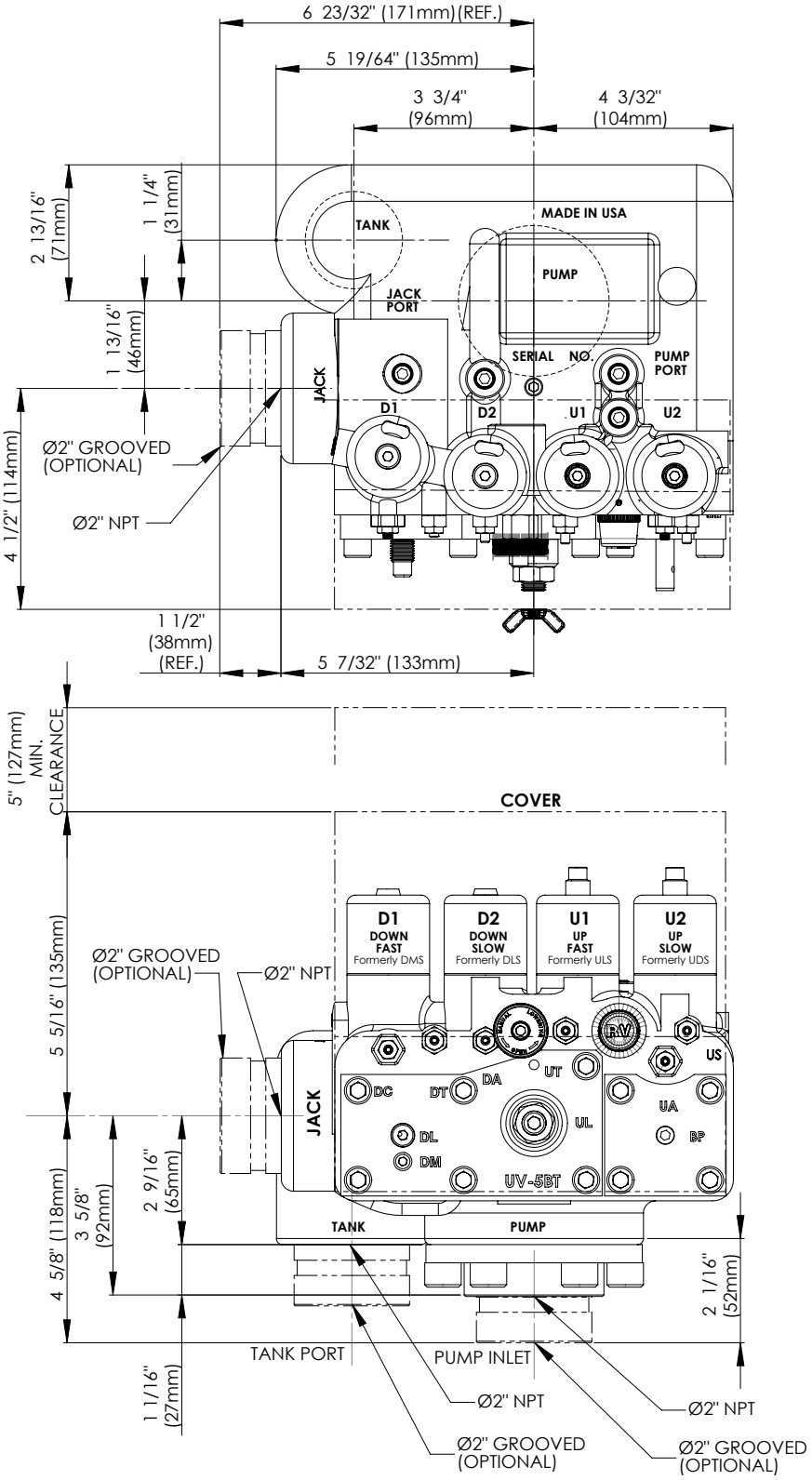
Standard 2" NPT ports: Width 9 5/16" (237mm), Height 8 15/16" (227mm), Depth 9 15/16" (252mm), Weight (including coils) 29 lbs. (13.2 Kg).
Optional 2" Grooved ports: Width 10 13/16" (275mm), Height 9 15/16" (252mm), Depth 11 7/16" (291mm), Weight (including coils) 33 lbs. (15 Kg).

EECO introduces the latest addition to our hydraulic control valve product line.

The UV-5BT & UV-5BTC Control Valves

- Tank Return Port is at the bottom
- Requires less space in tank
- Temperature Compensation standard
- Available with Pressure Compensation
- Can retrofit any previous EECO UV-5A Valve
- Ports can be either 2" Threaded or Grooved
- Contact EECO for more information

UV-5BT & UV-5BTC Valve Dimensions



Valve Dimensions:

Standard 2" NPT ports: Width 9 5/16" (237mm), Height 8 15/16" (227mm), Depth 9 15/16" (252mm), Weight (including coils) 29.7 lbs. (13.5 Kg).
Optional 2" Grooved ports: Width 10 13/16" (275mm), Height 9 15/16" (252mm), Depth 11 7/16" (291mm), Weight (including coils) 33.7 lbs. (15.3 Kg).

UV-5(A/B)T (Standard Valve) & *UV-5(A/B)TC* (Constant Down Speed) Adjustment Procedure

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) min. 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 for standard UV-5AT control valves, 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. Recommended slowdown distance is 2 in. for every 10 fpm of car speed. (not to exceed 2.5 in. per 10 fpm)

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**. Disconnect **D1**. Register a down call. If car does not move, turn **DC** CW (1/8″ turn at a time) until car moves down. Adjust **DL** to set down leveling speed at 7 to 9 fpm (.04 to .05 m/sec). Reconnect **D1**.
2. **DM** — **Down Main** - For UV-5AT valves, 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)**. For UV-5ATC valves DSC should be on preset and set down speed at full contract speed.
3. **DSC** — **Down Speed Control** - Put full load on car and check speed in down direction, If speed is more than 5% different from contract speed turn **DSC** (CW) to decrease or (CCW) to increase speed within 5% of contract speed. Final **DSC** adjustment should be in 1/8 turn increments
4. **DC** — **Down Closing** - Cycle **empty** car and observe down stop. Turn **DC** CW (softer stop and slower transition) or CCW (firmer stop and faster transition) until down stop is satisfactory (see note 8). For most applications, there is no need to adjust **DT** since down transition is satisfactory when **DC** is set. However, if **DT** requires further adjustment, go to step 4, otherwise go to step 5.
5. **DT** — **Down Transition** - Car at upper floor with **no load**. 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)**.
6. **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!

RV Relief Valve

1) With fully loaded car and a pressure gauge installed on the **pump gauge** 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.

Adjuster Presetting

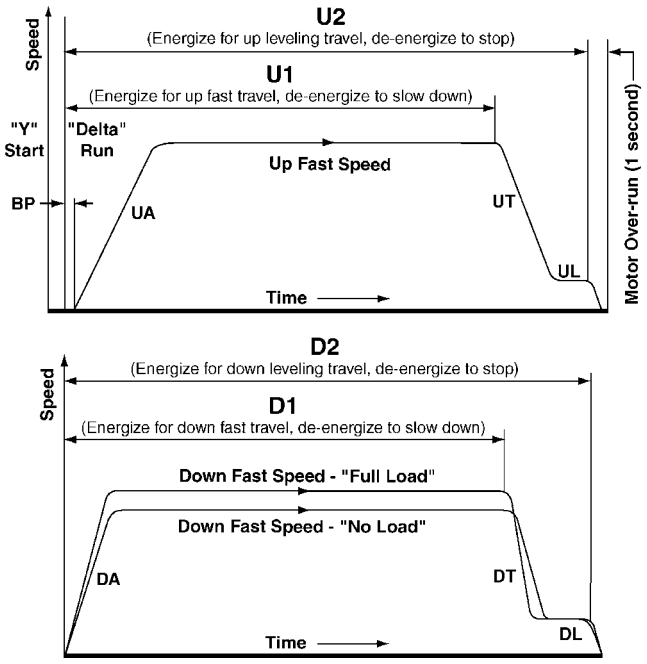
CW = Clockwise (IN) ↻ — ↺ **CCW** = Counter Clockwise (OUT)

	PRESETTING	FUNCTION
Up	**BP** CCW to stop, CW 2 turns.	(CCW - Delays up start)
	UA CW to stop.	(CCW - Faster acceleration)
	UL CW to stop.	(CCW - Faster speed)
	UT CCW to stop, CW 7 1/2 turns.	(CW - Slower transition)
	US CCW to stop, CW 7 1/2 turns.	(CW - Softer stop)
	RV Factory set at 550 psi (38 bar).	(CW - Increase pressure)

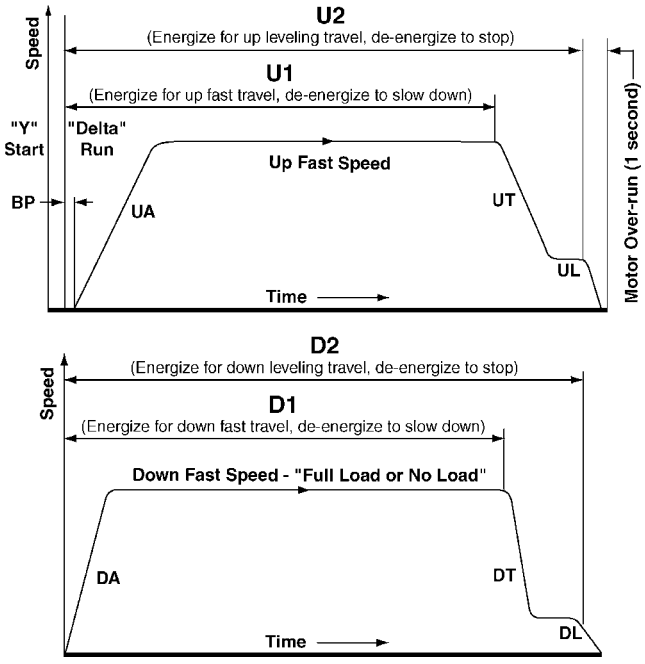
	PRESETTING	FUNCTION
Down	**DL** CW to stop, CCW 5 1/2 turns.	(CW - Slower speed)
	DM CW to stop, CCW 5 1/2 turns.	(CW - Slower speed)
	DSC CW to snap ring, CCW 6 turns.	(CW - Slower speed)
	DC CCW to stop, CW 8 1/2 turns.	(CCW - Firmer stop)
	DT Closed flush with lock nut.	(CCW - Slower transition)
	DA CCW to stop.	(CCW - Faster acceleration)

UV-5(A/B)T & UV-5(A/B)TC Valve Performance

Performance Chart for UV-5(A/B)T Valves



Performance Chart for UV-5(A/B)TC Valves



Additional Features

Connections

- 2 inch NPT standard
- Grooved connections for all three ports. **(Optional)**
- Left hand jack port connection standard.
- Right hand jack port connection adapter. **(Optional)**

Gauge Ports

- "Ram"(Jack) and "Pump" gauge ports are 1/8" NPT and are provided on top of the valve.

Construction

- Lightweight, heat-treated, high strength aluminum body. • All adjustments are made from the front of the valve.
- Moving parts are restricted to sliding sealed pistons.
- The valve has a fully adjustable pressure relief valve.
- High temperature viton seals throughout.

Upgrade Options

- Pressure Compensation (Down Constant Speed) Kit
- Temperature and Pressure Compensated Valve - **UV-5(A/B)TC**

Ratings

- Certified by both UL & CSA-B44 - ASME A17.1.
- UL and CSA-B44 rated at 50 psi (3.4 bar) min and 800 psi (55.2 bar) max.
- The temperature range is 80° F (27° C) min, 150° F (65° C) max.
- Handles flow rate up to 200 gpm (836 lpm) max.
- UV-5(A/B)TC maintains Constant Down Speed irrespective of the load.

Recommendations

For oil service, use of a good brand of grade 32 turbine oil with a viscosity of 150 ssu at 100° F (38° C) and a minus pour point. Also compatible with grade 46 and biodegradable (vegetable) oil.

Notes

- Size all UV-5(A/B)T & UV-5(A/B)TC valves to bypass entire capacity of pump at **minimum** pressure.

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

Adjuster Changes:
US - Up Stop - was **UD**

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) "Wye" 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.

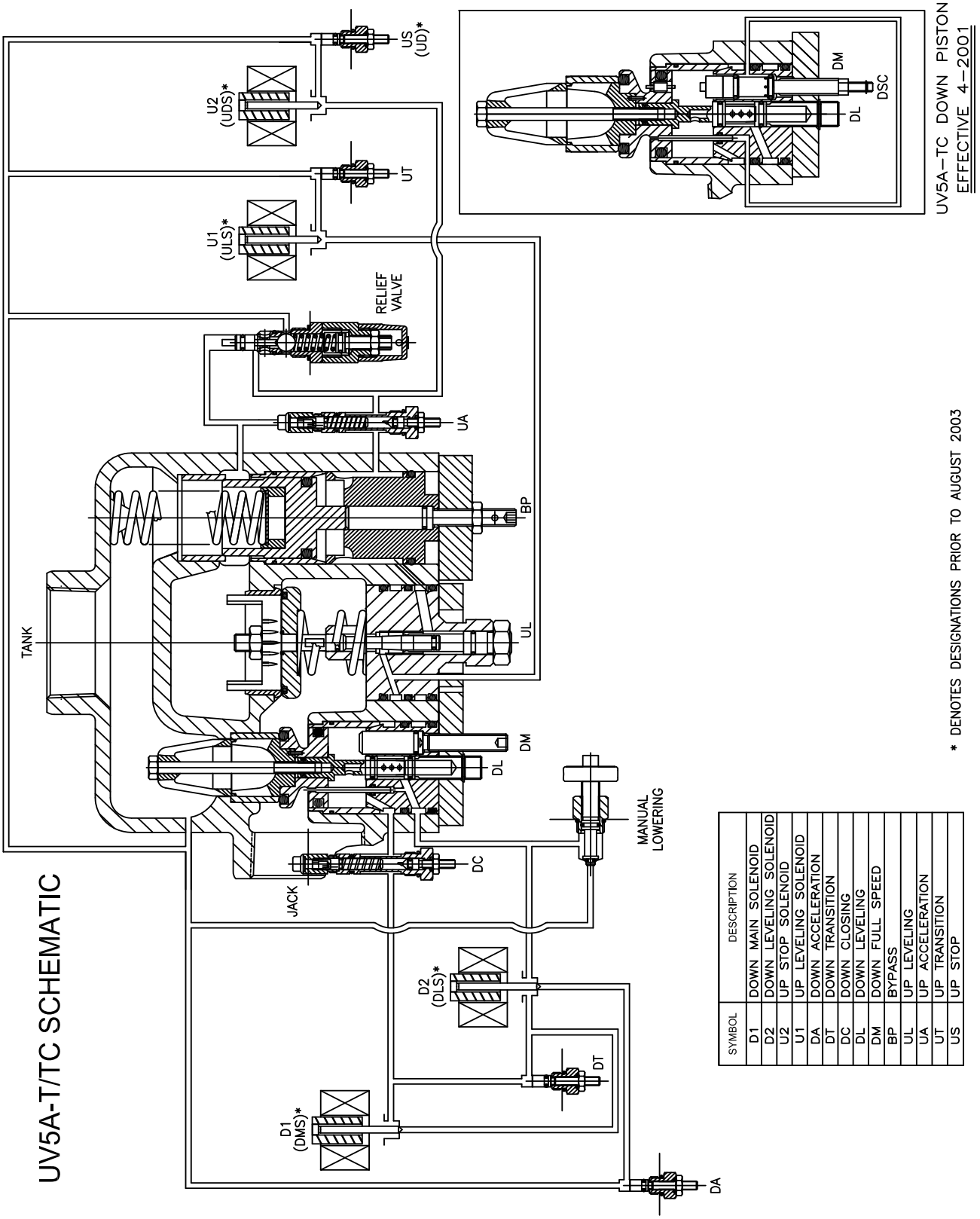
CAUTION**:** Never energize **U2** and **U1** during "Wye" start, only after "Delta" run!

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.

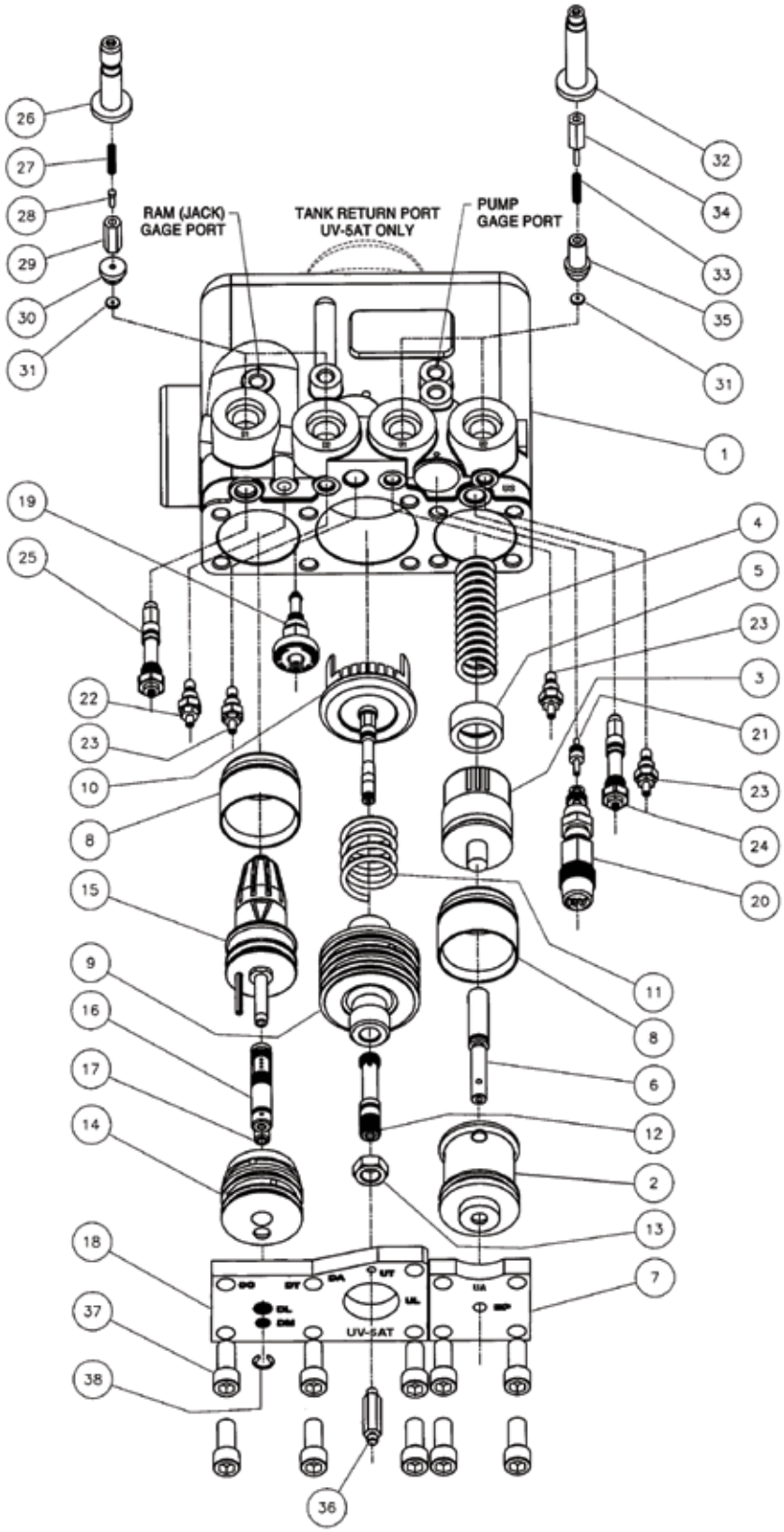
Note 1: For additional clarification on the sequence of operation, please refer to the Performance Chart above.
Note 2: Pump motor must be timed to run approximately 1 second after car has stopped.

UV-5AT & UV-5ATC VALVE SCHEMATIC



SYMBOL	DESCRIPTION
D1	DOWN MAIN SOLENOID
D2	DOWN LEVELING SOLENOID
U2	UP STOP SOLENOID
U1	UP LEVELING SOLENOID
DA	DOWN ACCELERATION
DT	DOWN TRANSITION
DC	DOWN CLOSING
DL	DOWN LEVELING
DM	DOWN FULL SPEED
BP	BYPASS
UL	UP LEVELING
UA	UP ACCELERATION
UT	UP TRANSITION
US	UP STOP

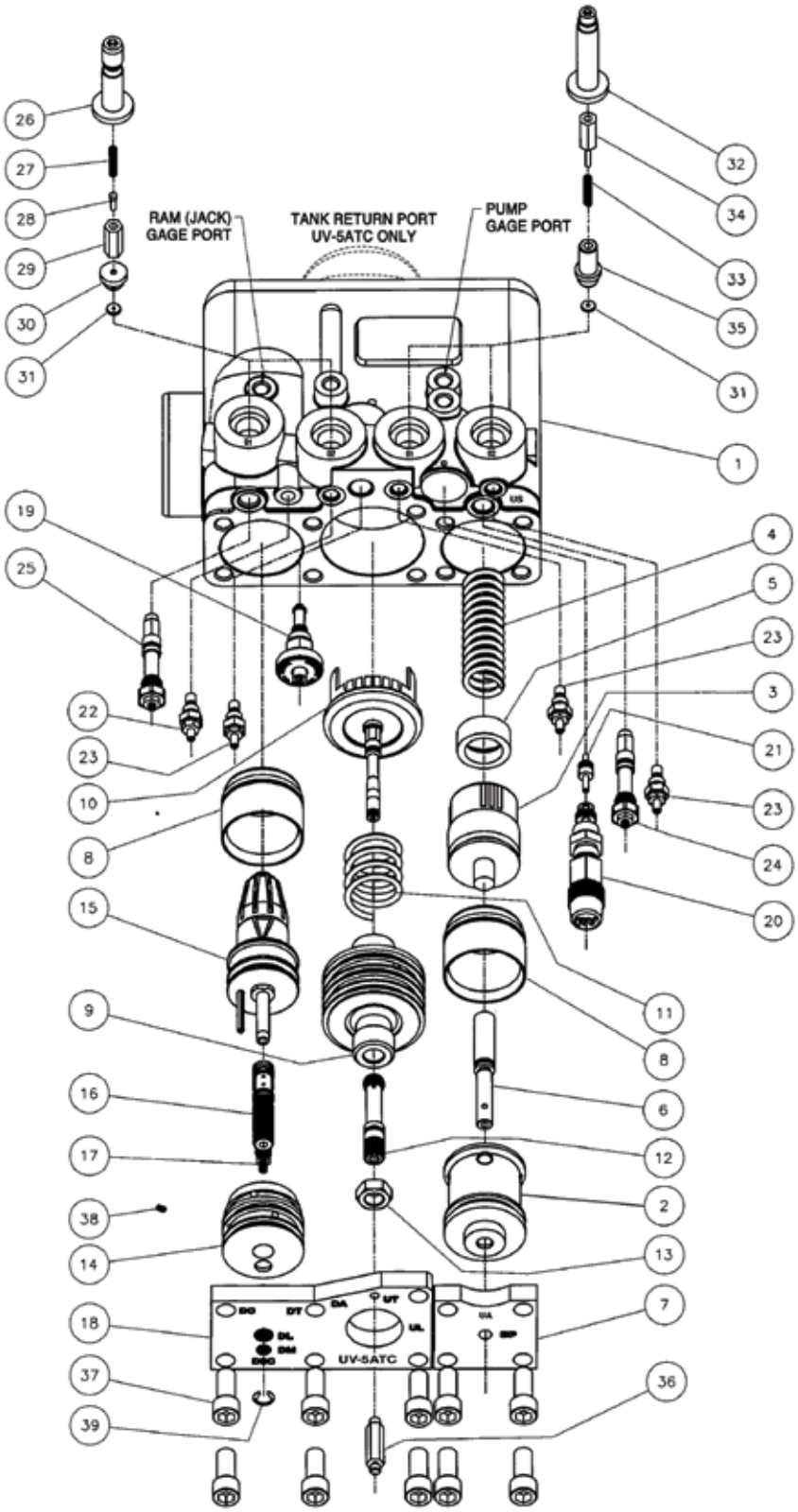
UV-5(A/B)T Valve Exploded View



ITEM	PART NO.	DESCRIPTION	QTY.
1	5000BA	UV-5AT BODY	1
2	5012C	BYPASS CLOSURE	1
3	5007-TAB	BYPASS PISTON	1
4	5006-1	BYPASS SPRING	1
5	5132A	SPRING CAP ASSEMBLY	1
6	5010	UP FLOW CONTROL SCREW (BP)	1
7	5104G	BYPASS FLANGE	1
8	5023A	BYPASS/DOWN SLEEVE	2
9	5045D	CHECK CLOSURE	1
10	5611A-TAB	CHECK PISTON ASSEMBLY	1
11	5018	CHECK SPRING	1
12	5022B	UP LEVELING ADJUSTER (UL)	1
13	5224	CHECK JAMB NUT	1
14	5036B	DOWN CLOSURE	1
15	5623A-TAB	DOWN PISTON ASSEMBLY	1
16	5033B	DOWN LEVELING ADJUSTER (DL)	1
17	5029B	DOWN FLOW CONTROL SCREW (DM)	1
18	5609G	UV-5AT DOWN/CHECK FLANGE	1
19	5211BA	MANUAL LOWERING ASSEMBLY	1
20	5079A	RELIEF VALVE ASSEMBLY	1
21	5122BA	RELIEF VALVE PISTON	1
22	5137A	DOWN TRANSITION ADJUSTER (DT)	1
23	2400A	ADJUSTER ASSEMBLY (US, UT, DA)	3
24	5604A	UA ADJUSTER ASSEMBLY	1
25	5606A	DC ADJUSTER ASSEMBLY	1
26	5129A	N/C PLUNGER TUBE ASSEMBLY	2
27	5055	N/C NEEDLE HOLD OUT SPRING	2
28	5059	N/C HAMMER NEEDLE	2
29	5732	N/C SOLENOID HAMMER	2
30	5062	N/C NEEDLE ORIFICE BODY	2
31	5065-4	ORIFICE NEEDLE SEAT	4
32	5128A	N/O PLUNGER TUBE ASSEMBLY	2
33	5054	N/O HAMMER LIFT OFF SPRING	2
34	5130A	N/O PLUNGER ASSEMBLY	2
35	5066BA	N/O NEEDLE ORIFICE BODY ASSEMBLY	2
36	5108	COVER STAND OFF SCREW	1
37	5005	FLANGE BOLT	16
38	5035	DL RETAINING RING	1

BYPASS PISTON	CHECK PISTON	DOWN POSITION	SIZE
5007-1	5611A-3	5623A-1	1
5007-2	5611A-3	5623A-2	2
5007-3	5611A-3	5623A-3	3
5007-4	5611A-4	5623A-4	4
5007-5	5611A-5	5623A-5	5
5007-6	5611A-6	5623A-6	6
5007-7	5611A-7	5623A-7	7

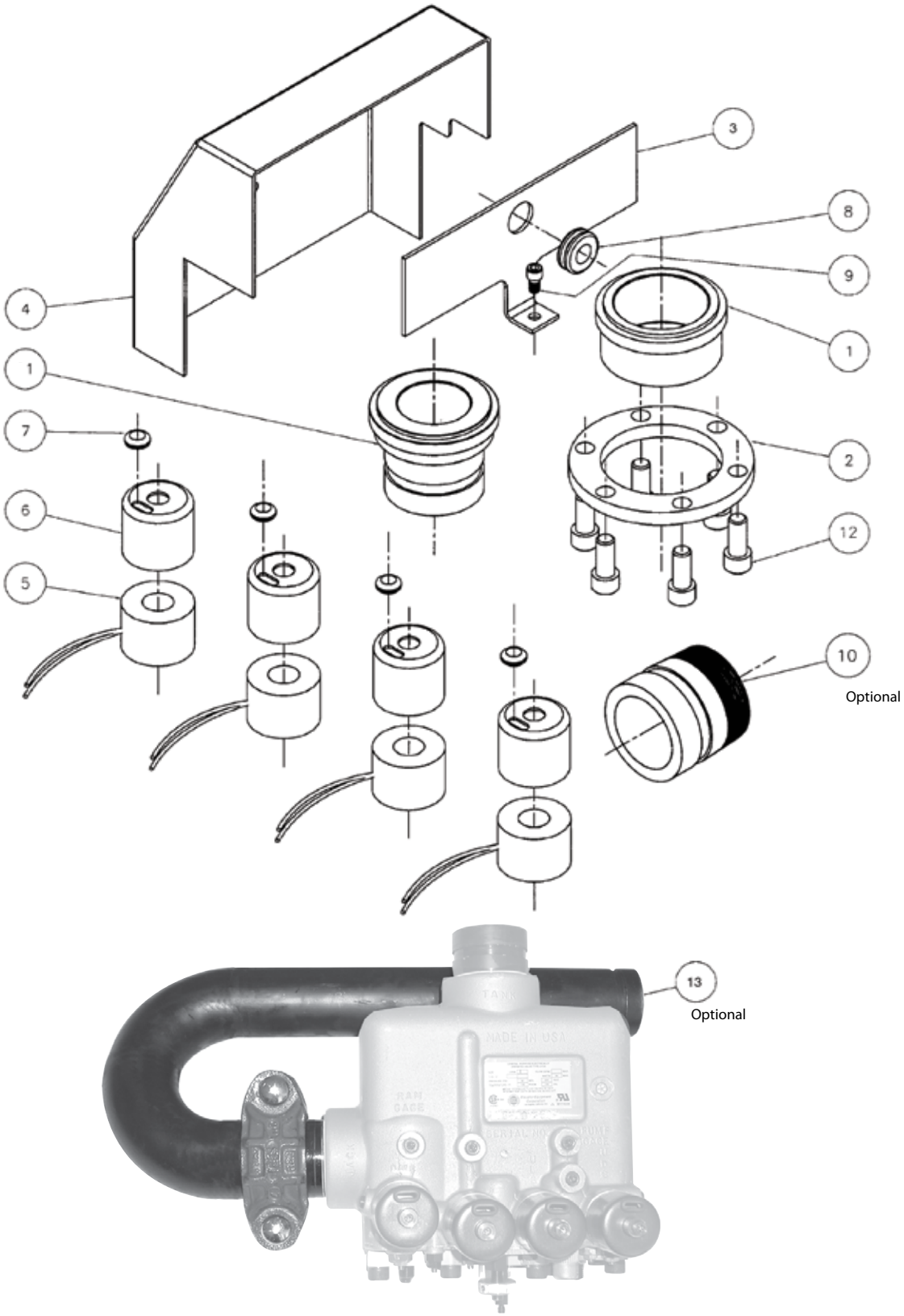
UV-5ATC Valve Exploded View



ITEM	PART NO.	DESCRIPTION	QTY.
1	5000BA	UV-5AT BODY	1
2	5012C	BYPASS CLOSURE	1
3	5007-TAB	BYPASS PISTON	1
4	5006-1	BYPASS SPRING	1
5	5132A	SPRING CAP ASSEMBLY	1
6	5010	UP FLOW CONTROL SCREW (BP)	1
7	5104B	BYPASS FLANGE	1
8	5023A	BYPASS/DOWN SLEEVE	2
9	5045D	CHECK CLOSURE	1
10	5611A-TAB	CHECK PISTON ASSEMBLY	1
11	5018	CHECK SPRING	1
12	5022B	UP LEVELING ADJUSTER (UL)	1
13	5224	CHECK JAMB NUT	1
14	5739	DSC DOWN CLOSURE	1
15	5509A-TAB	DOWN PISTON ASSEMBLY	1
16	5033B	DOWN LEVELING ADJUSTER (DL)	1
17	5735A-TAB	DSC COMPENSATOR BODY ASSEMBLY	1
18	5609B	UV-5AT DOWN/CHECK FLANGE	1
19	5211BA	MANUAL LOWERING ASSEMBLY	1
20	5079A	RELIEF VALVE ASSEMBLY	1
21	5122BA	RELIEF VALVE PISTON	1
22	5137A	DOWN TRANSITION ADJUSTER (DT)	1
23	2400A	ADJUSTER ASSEMBLY (US, UT, DA)	3
24	5604A	UA ADJUSTER ASSEMBLY	1
25	5606A	DC ADJUSTER ASSEMBLY	1
26	5129A	N/C PLUNGER TUBE ASSEMBLY	2
27	5055	N/C NEEDLE HOLD OUT SPRING	2
28	5059	N/C HAMMER NEEDLE	2
29	5732	N/C SOLENOID HAMMER	2
30	5062	N/C NEEDLE ORIFICE BODY	2
31	5065-4	ORIFICE NEEDLE SEAT	4
32	5128A	N/O PLUNGER TUBE ASSEMBLY	2
33	5054	N/O HAMMER LIFT OFF SPRING	2
34	5130A	N/O PLUNGER ASSEMBLY	2
35	5066BA	N/O NEEDLE ORIFICE BODY ASSEMBLY	2
36	5108	COVER STAND OFF SCREW	1
37	5005	FLANGE BOLT	16
38	5520	CLOSURE PLUG	1
39	5035	DL RETAINING RING	1

BYPASS PISTON	CHECK PISTON	DOWN PISTON	SIZE
5007-1	5611A-3	5509A-1	1
5007-2	5611A-3	5509A-2	2
5007-3	5611A-3	5509A-3	3
5007-4	5611A-4	5509A-4	4
5007-5	5611A-5	5509A-5	5
5007-6	5611A-6	5509A-6	6
5007-7	5611A-7	5509A-7	7

UV-5AT & UV-5ATC External Parts - Exploded View



UV-5AT & UV-5ATC External Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	5231	2"NPT PUMP INLET NIPPLE	1
2	5232	PUMP INLET CLAMP RING	1
3	5040	CONDUIT PLATE	1
4	5107	VALVE COVER	1
5	-	COILS(SEE CHART FOR VOLTAGE)	4
6	5047A	COIL TUBE COVERS	4
7	5042-1	COIL TUBE GROMMET	4
8	5038	CONDUIT PLATE GROMMET	1
9	5039	CONDUIT PLATE SCREW 1/4-20 X 1/4"	1
*10	5366	2" GROOVED ADAPTER	2
*11	5231-VC	2" GROOVED PUMP INLET NIPPLE	1
12	5005	FLANGE BOLT	6
*13	5620A	RIGHT HAND JACK PORT ADAPTER	1

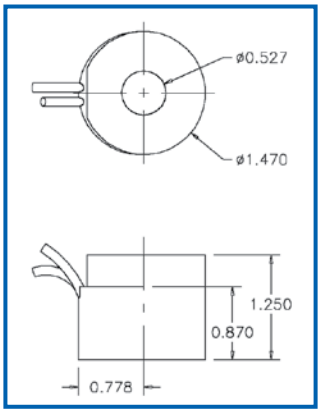
* OPTIONAL PARTS

NOTE: NOT ALL PARTS LISTED, SOLD SEPARATELY

UV-5AT & UV-5ATC Solenoid Coils

PART NO.	VOLTAGE (V)	FREQUENCY (Hz)	IN RUSH CURRENT (A)	HOLDING CURRENT (A)	RESISTANCE (Ohm)
SOLENOID COILS FOR UV-5A, UV-5AT, UV-5ATC AND UV-4R VALVES ONLY					
S461 *	110 VAC	60	0.64	0.34	113
S462	208 VAC	60	0.35	0.22	276
S453	220 VAC	50	0.18	0.15	560
S463/S401 *	220 VAC/110 VDC	60/DC	0.20/0.15	0.15	434
S464/S403	440 VAC/220 VDC	60/DC	0.11/0.08	0.08	1765
S455	24 VDC	DC	0.12	0.12	24
S465 ** see drawing below	110 VAC/12 VDC	60/DC	0.64	0.34	
	Black Lead - 12 VDC				4.7
	Yellow Lead-Common				
	Red Lead- 110 VAC				84

NOTE: All solenoid coils are supplied with 96" leads

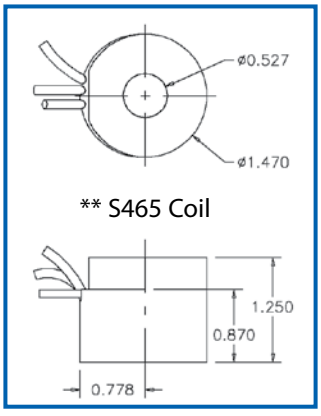


UV-5A, UV-5AT, UV-5ATC & UV-4R SOLENOID COILS

* Supplied with the following colored wires to simplify valve wiring:

U1 coils = **Red** wires
U2 coils = **Yellow** wires
D1 coils = **Black** wires
D2 coils = **Blue** wires

NOTE: All other solenoid coils have black wires only.



** S465 Coil

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UV-7B & UV-7BC Control Valves

UV-7B

Smooth Up Start
Allows the pump motor to reach full running speed before load is applied to the motor.

Up Transition
Provides unvarying transition through a wide pressure range.

Up Leveling
Maintains leveling speed regardless of change of system pressure, oil viscosity or pump output.

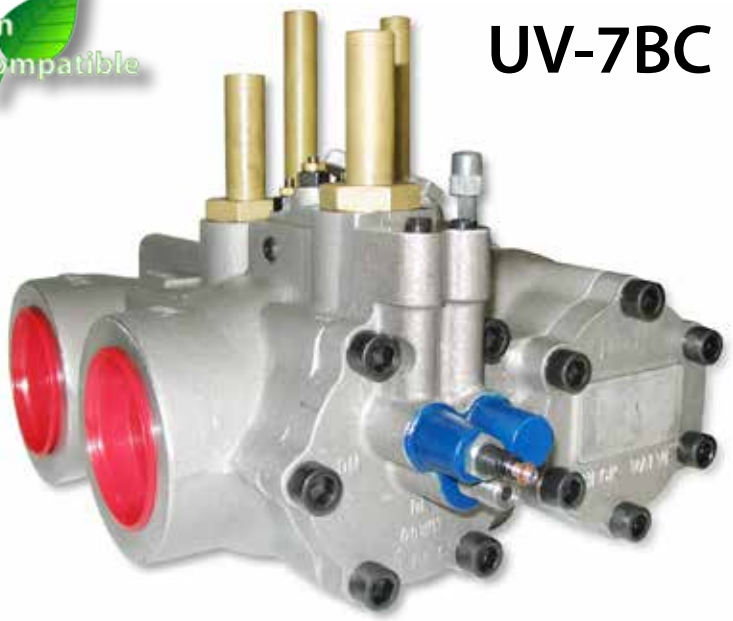
Up Stop
Provides smooth up stop which is solenoid operated and adjustable.

Check Valve
Locks the elevator on a column of oil while the car is stopped.

Lowering Valve
Provides controlled down acceleration, precise contract down speed, transition, adjustable leveling speed and soft stop.

Green Compatible

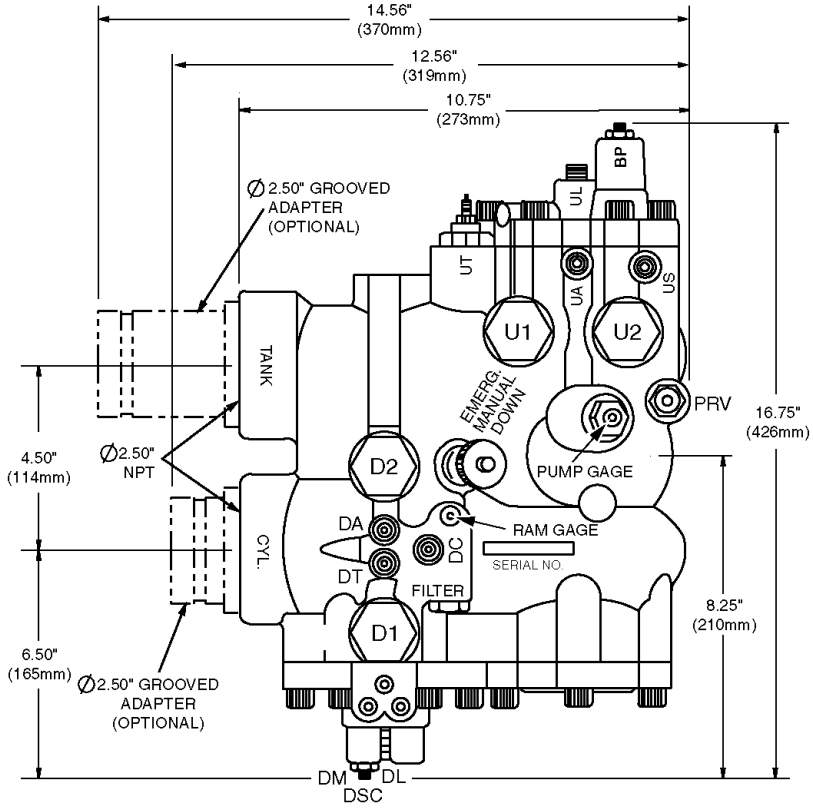
UV-7BC



The UV-7B hydraulic control valve performs all the necessary functions for the operation of a hydraulic elevator in both directions of travel. The UV-7B is the ideal solution for low pressure, high flow rate applications. The UV-7B is capable of handling flow rates of 150 (568 lpm) to 400 (1514 lpm) gpm.

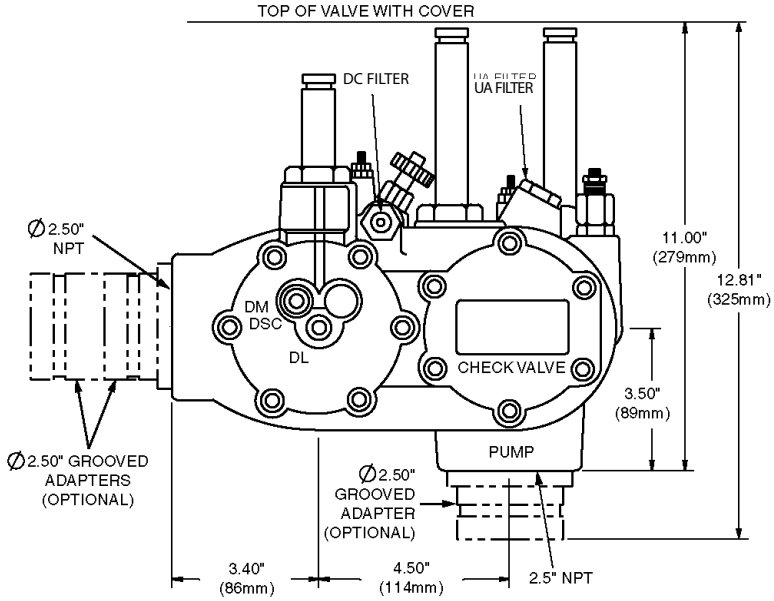
The optional UV-7BC also offers **Pressure Compensation** for constant down speed control. This modification of the down piston assembly delivers constant down speed between no-load and full-load conditions.

UV-7B & UV-7BC VALVE DIMENSIONS



B44
ASME
17.1

UV-7B Only



Valve Dimensions:

Standard 2.5" NPT ports: Width 16 3/4" (426mm), Height 11" (279mm), Depth 10 3/4" (273mm), Weight (including coils) 49 lbs. (22.2 Kg).
Optional 2.5" Grooved ports: Width 16 3/4" (426mm), Height 12 3/16" (325mm), Depth 14 9/16" (291mm), Weight (including coils) 53 lbs. (24 Kg).

UV-7B (Standard Valve) & *UV-7BC* (Constant Down Speed) Adjustment Procedure

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) min. 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 for standard UV-7B control valves, down speed with empty car is less than contract speed depending on the ratio 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. Recommended slowdown distance is 2 in. for every 10 fpm of car speed. (not to exceed 2.5 in. per 10 fpm)

U1 - Up Fast solenoid — **U2 - Up Slow solenoid**

Up Adjustments (From Preset)

1. **BP** **Bypass** - Note: **UA** must be on preset (CW to stop) with 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 — **D2 - Down Slow solenoid**

Down Adjustments (From Preset)

1. **DL** **Down Leveling** - Car at upper floor with **no load**. Disconnect **D1**. Register a down call. If car does not move, turn **DC** CW (1/8″ turn at a time) until car moves down. Adjust **DL** to set down leveling speed at 7 to 9 fpm (.04 to .05 m/s). Reconnect **D1**.
2. **DM** **Down Main** - For UV-7B valves, 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)**. For UV-7BC valves DSC should be on preset and set down speed at full contract speed.
3. **DSC** **Down Speed Control** - Put **full load** on car and check speed in down direction, If speed is more than 5% different from contract speed turn **DSC** (CW) to decrease or (CCW) to increase speed within 5% of contract speed. Final **DSC** adjustment should be in 1/8 increments.
4. **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).**
5. **DT** **Down Transition** - Car at upper floor with **no load.** 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)**.
6. **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!

RV Relief Valve

1) With fully loaded car and a pressure gauge installed on the **pump gauge** 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.

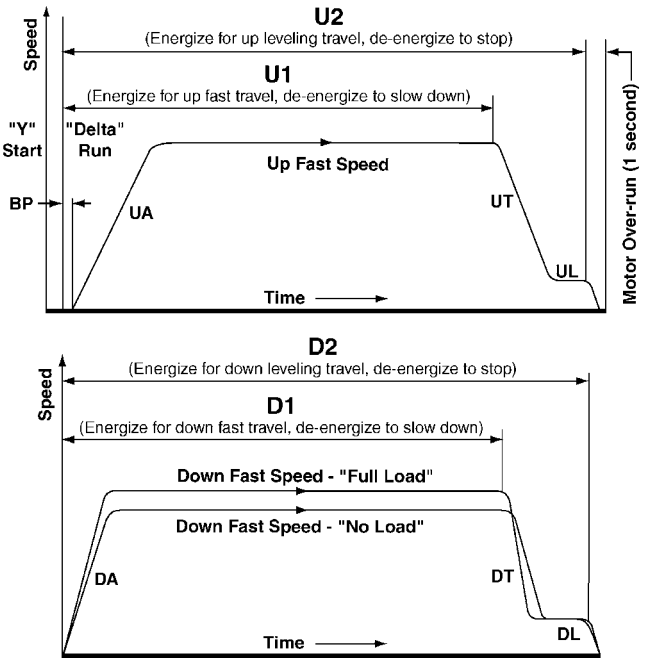
CW = Clockwise (IN) ↻ — **Adjuster Presetting** — ↺ **CCW** = Counter Clockwise (OUT)

	PRESETTING	FUNCTION
Up	**BP** CCW to stop, then CW 2 turns.	(CCW - Delays up start)
	UA CW to stop.	(CCW - Faster acceleration)
	UL CCW to stop.	(CW - Faster speed)
	UT CCW to stop, CW 2 1/2 turns.	(CW - Slower transition)
	US CCW to stop.	(CW - Softer stop)
	RV Factory set at 500 psi (34 bar).	(CW - Increase pressure)

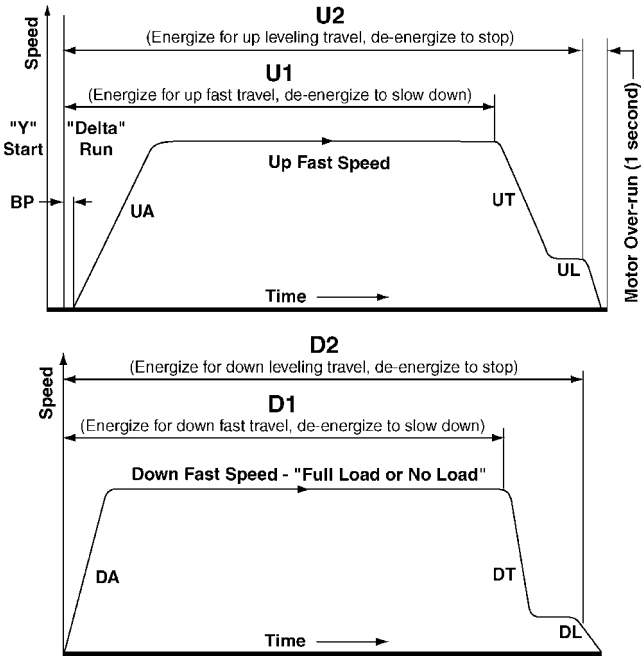
	PRESETTING	FUNCTION
Down	**DL** CW to stop, CCW 5 1/2 turns.	(CW - Slower speed)
	DM CW to stop, CCW 5 1/2 turns.	(CW - Slower speed)
	DSC CW to snap ring, CCW 6 turns.	(CW - Slower speed)
	DC CCW to stop, CW 2 1/2 turns.	(CCW - Firmer stop)
	DT CW to stop.	(CCW - Slower transition)
	DA CCW to stop.	(CCW - Faster acceleration)

UV-7B & UV-7BC PERFORMANCE

Performance Chart for UV-7B Valves



Performance Chart for UV-7BC Valves



Additional Features

Connections

- 2 1/2" inch NPT standard
- Grooved connections for all three ports. **(Optional)**

Construction

- Lightweight, heat-treated, high strength aluminum body.
- Moving parts are restricted to sliding sealed pistons.
- The valve has a fully adjustable pressure relief valve.
- High temperature viton seals throughout.

Upgrade Options

- Pressure Compensation (Down Constant Speed) Kit
- Pressure Compensated Valve - **UV-7BC**

Ratings

- UV-7B certified by both UL & CSA-B44 - ASME A17.1.
- UL and CSA-B44 rated at 50 psi (3.4 bar) min to 500 psi (34.5 bar) max.
- The temperature range is 80˚ F (27˚ C) min to 150˚ F (65˚ C) max.
- Flow rate range of 150 gpm (568 lpm) min to 400 gpm (1514 lpm) max.
- UV-7BC maintains Constant Down Speed irrespective of the load.

Recommendations

Use of a good brand of grade 32 turbine oil with a viscosity of 150 ssu at 100˚ F (38˚ C) and a minus pour point is recommended. Also compatible with grade 46 and biodegradable (vegetable) oil.

Notes

- Size all UV-7B & UV-7BC valves to bypass entire capacity of pump at **minimum** pressure.

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

Adjuster Changes:
US - Up Stop - was **UD**

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) "Wye" 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 "Wye" start, only after "Delta" run!

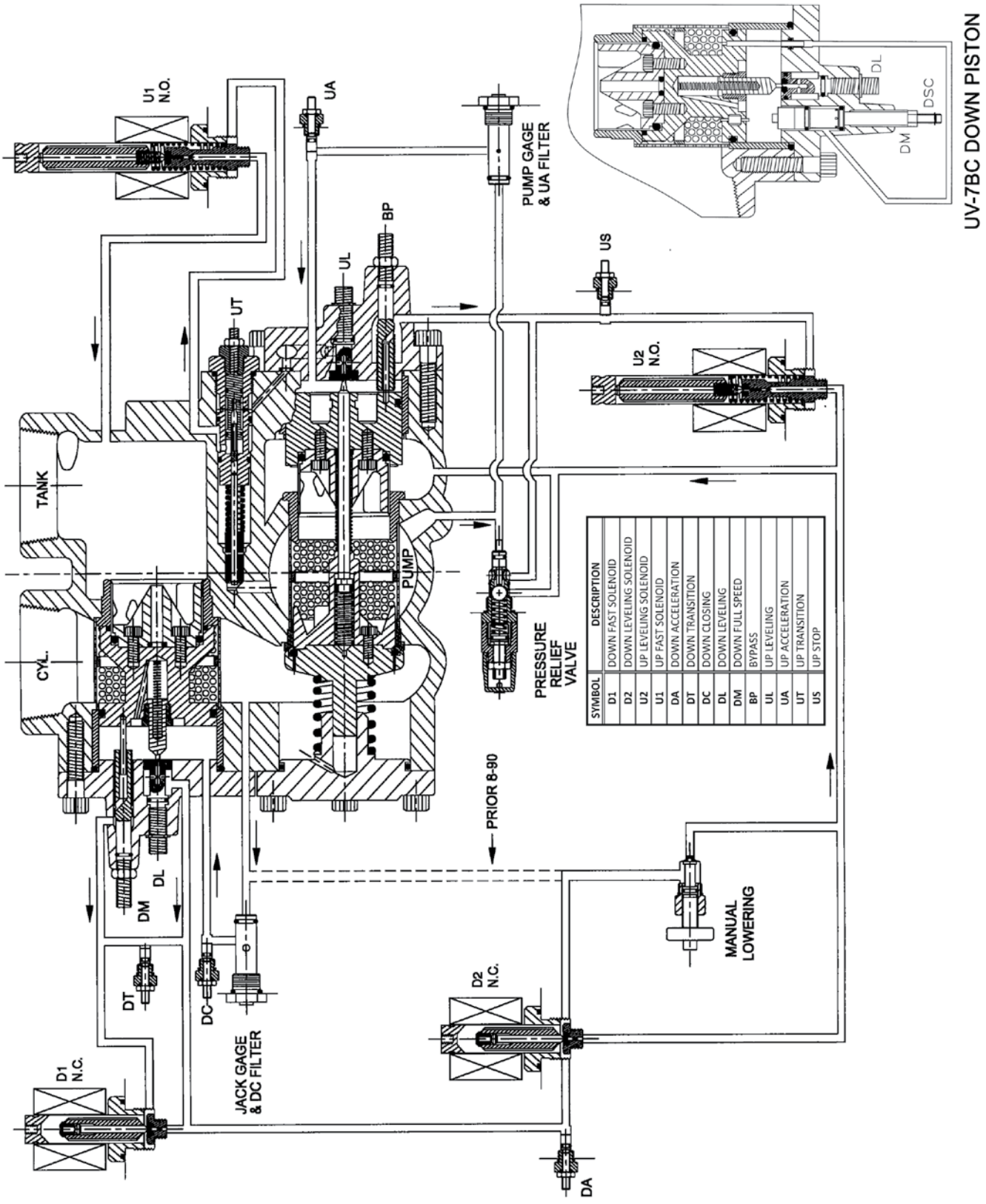
Down Start:

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.

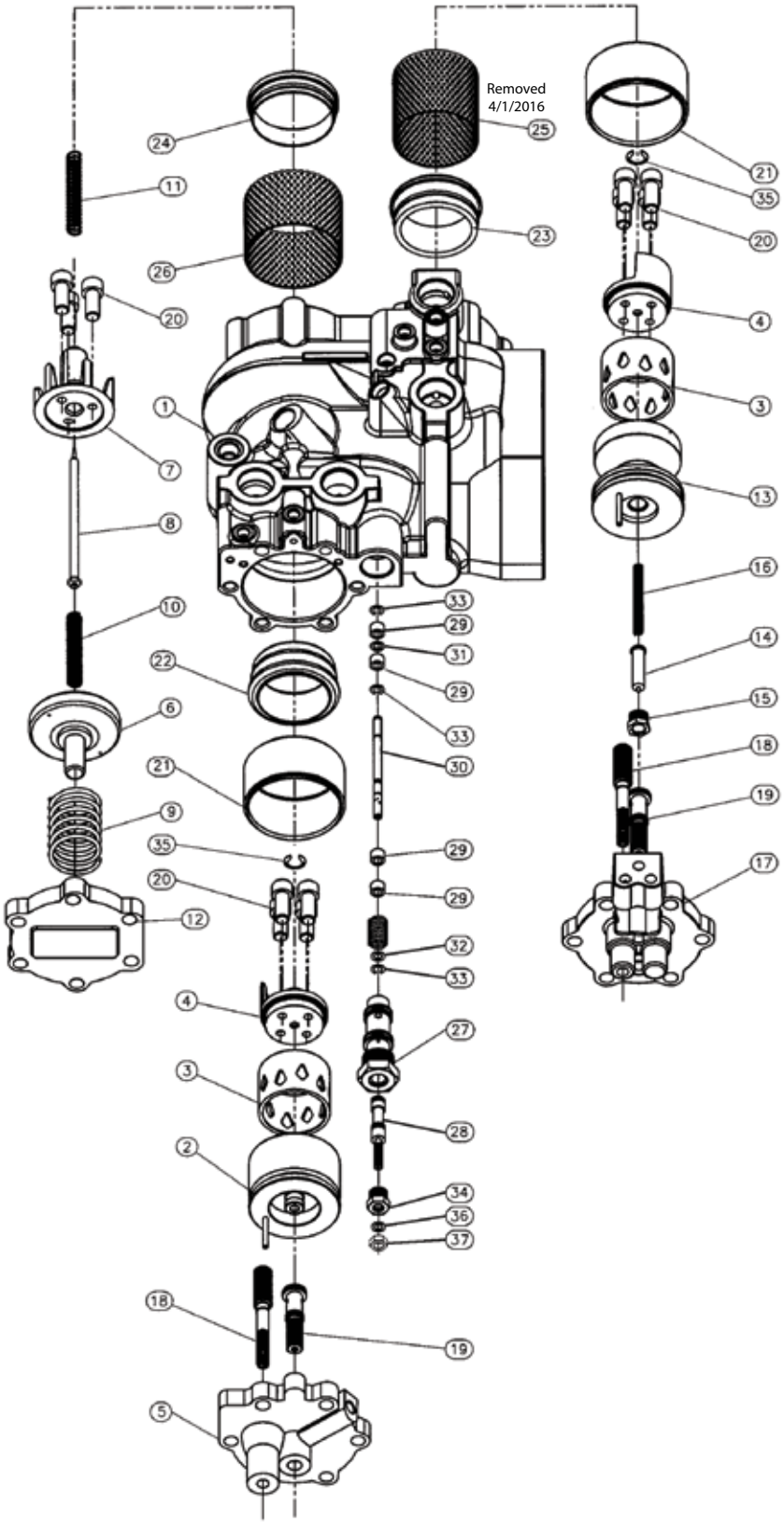
Note 2: Pump motor must be timed to run approximately 1 second after car has stopped.

UV-7B & UV-7BC VALVE SCHEMATIC



SYMBOL	DESCRIPTION
D1	DOWN FAST SOLENOID
D2	DOWN LEVELING SOLENOID
U2	UP LEVELING SOLENOID
U1	UP FAST SOLENOID
DA	DOWN ACCELERATION
DT	DOWN TRANSITION
DC	DOWN CLOSING
DL	DOWN LEVELING
DM	DOWN FULL SPEED
BP	BYPASS
UL	UP LEVELING
UA	UP ACCELERATION
UT	UP TRANSITION
US	UP STOP

UV-7B Valve Exploded View

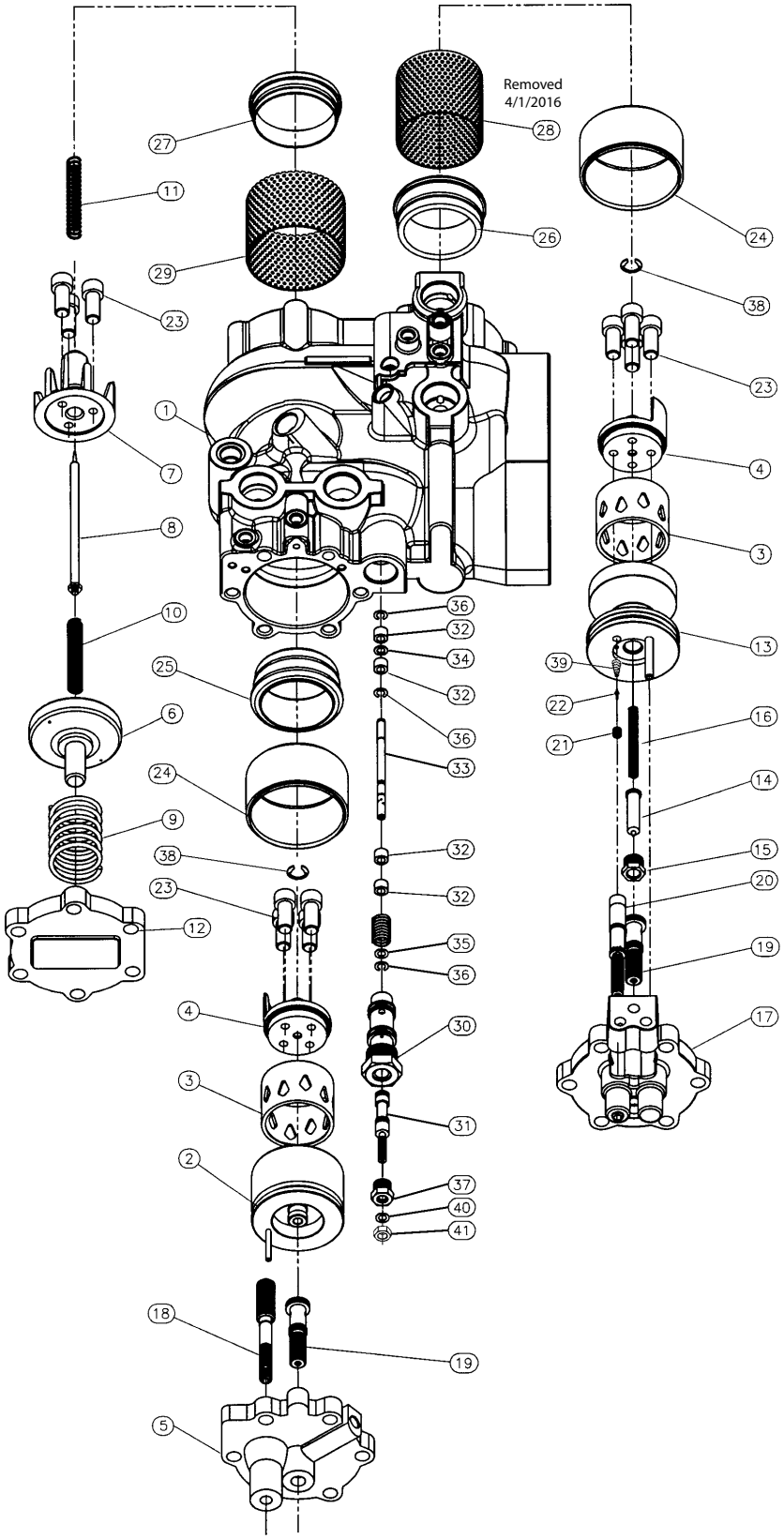


ITEM	PART NO.	DESCRIPTION	QTY.
1	5250M	UV-7B BODY	1
2	5261	BYPASS PISTON	1
3	5269-TAB	BYPASS/DOWN PORT RING	2
4	5270	PORT SHIELD	2
5	5258	BYPASS FLANGE	1
6	5255	CHECK VALVE POPPET	1
7	5268	CHECK POPPET GUIDE STEMM	1
8	5284BA	UP LEVEL NEEDLE ASSEMBLY	1
9	5308	CHECK PISTON SPRING	1
10	5281	NEEDLE EXTENSION SPRING	1
11	5315B	BYPASS RETURN SPRING	1
12	5252	CHECK FLANGE	1
13	5273	LOWERING PISTON	1
14	5262	DOWN LEVEL NEEDLE	1
15	5263	DOWN LEVEL NEEDLE RETAINING GUIDE NUT	1
16	5280	DOWN LEVEL NEEDLE SPRING	1
17	5251	DOWN FLANGE	1
18	5267	BYPASS/DOWN MAIN SPEED ADJUSTER	2
19	5191BA	LEVELING ADJUSTER ASSEMBLY	2
20	5292A	CAP SCREW 1/4"-20 x 5/8"	11
21	5271	BYPASS/LOWERING CYLINDER SLEEVE	2
22	5272	BYPASS INSERT SEAT RING	1
23	5283	DOWN INSERT SEAT RING	1
24	5282	CHECK INSERT SEAT RING	1
25	5304A	DOWN SCREEN ASSEMBLY	1
26	5306A	PUMP INLET SCREEN ASSEMBLY	1
27	5276	UT BODY ASSEMBLY	1
28	5274	UT ADJUSTER BODY	1
29	5279	UT COMPENSATOR SHAFT PISTON SLEEVE	4
30	5275B	UT COMPENSATOR SHAFT	1
31	5294V	O-RING	1
32	1630V	O-RING	1
33	5303	RETAINER RING	2
34	5277	UT RETAINER NUT	1
35	5367	PORT SHIELD SNAP RING	2
36	5227V	0-RING	1
37	5291	NUT	1

Removed 4/1/2016

NOTE: NOT ALL PARTS SHOWN SOLD INDIVIDUALLY

UV-7BC Valve Exploded View



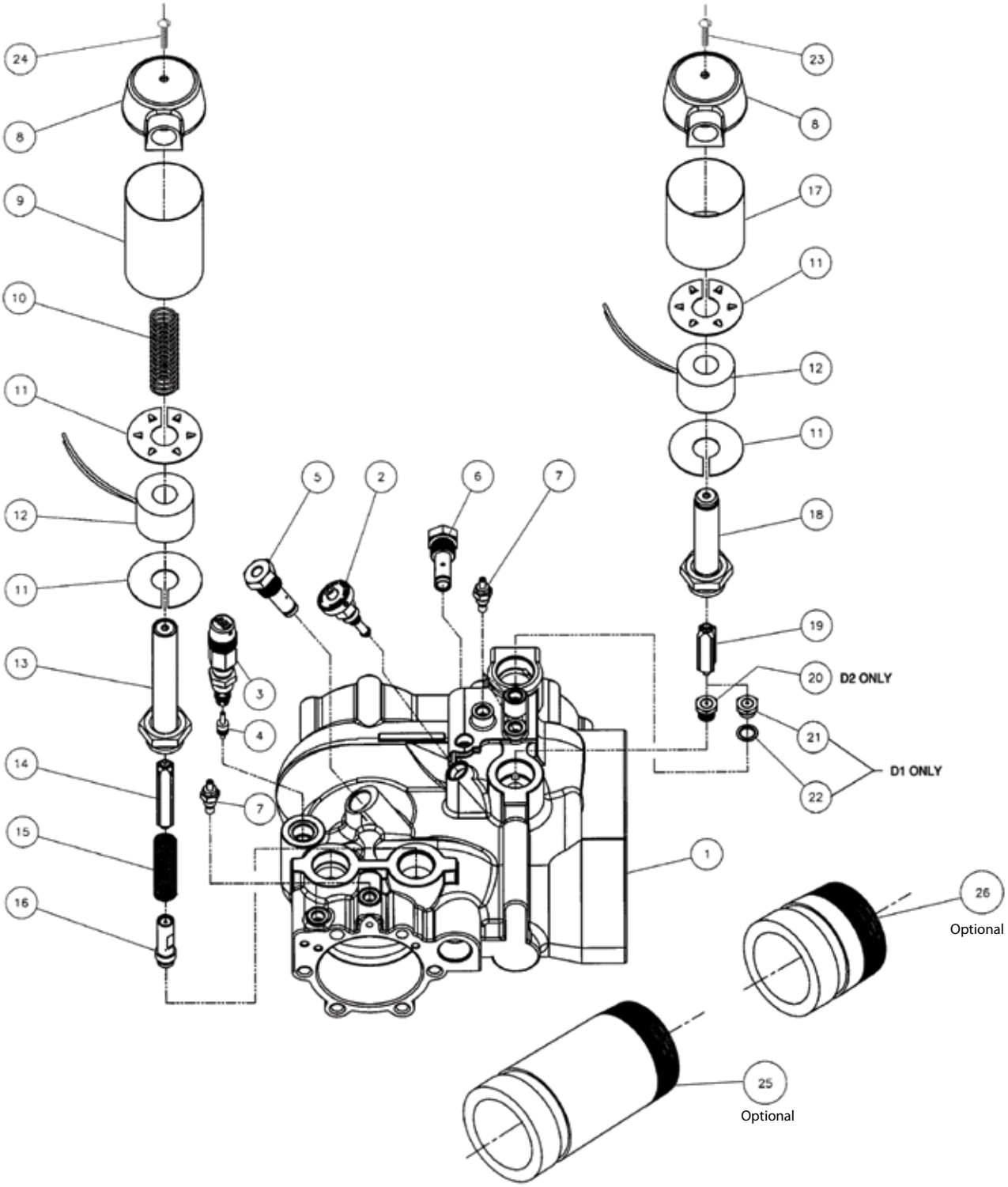
UV-7BC (Constant Down Speed) Valve Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	5250M	UV-7B BODY	1
2	5261	BYPASS PISTON	1
3	5269-TAB	BYPASS/DOWN PORT RING	2
4	5270	PORT SHIELD	2
5	5258	BYPASS FLANGE	1
6	5255	CHECK VALVE POPPET	1
7	5268	CHECK POPPET GUIDE STEMM	1
8	5284BA	UP LEVEL NEEDLE ASSEMBLY	1
9	5308	CHECK PISTON SPRING	1
10	5281	NEEDLE EXTENSION SPRING	1
11	5315B	BYPASS RETURN SPRING	1
12	5252	CHECK FLANGE	1
13	5453	DSC LOWERING PISTON	1
14	5262	DOWN LEVEL NEEDLE	1
15	5263	DOWN LEVEL NEEDLE RETAINING GUIDE NUT	1
16	5280	DOWN LEVEL NEEDLE SPRING	1
17	5458	DSC DOWN FLANGE	1
18	5267	BYPASS MAIN SPEED ADJUSTER	1
19	5191BA	LEVELING ADJUSTER ASSEMBLY	2
20	5736A-TAB	DSC COMPENSATOR BODY ASSEMBLY	1
21	5512	DSC CHECK VALVE BODY	1
22	5514	DSC CHECK VALVE PISTON	1
23	5292A	CAP SCREW 1/4"-20 x 5/8"	11
24	5271	BYPASS/LOWERING CYLINDER SLEEVE	2
25	5272	BYPASS INSERT SEAT RING	1
26	5283	DOWN INSERT SEAT RING	1
27	5282	CHECK INSERT SEAT RINGS	1
28	5304A	DOWN SCREEN ASSEMBLY	1
29	5306A	PUMP INLET SCREEN ASSEMBLY	1
30	5276	UT BODY ASSEMBLY	1
31	5274	UT ADJUSTOR BODY	1
32	5279	UT COMPENSATOR SHAFT PISTON SLEEVE	4
33	5275B	UT COMPENSATOR SHAFT	1
34	5294V	O-RING	1
35	1630V	O-RING	1
36	5303	RETAINER RING	2
37	5277	UT RETAINER NUT	1
38	5367	PORT SHIELD SNAP RING	2
39	5628	DSC CHECK VALVE SPRING	1
40	5227V	O-RING	1
41	5291	NUT	1

Removed 4/1/2016

NOTE: NOT ALL PARTS SHOWN SOLD INDIVIDUALLY

UV-7B & UV-7BC Valve External Parts Exploded View



UV-7B & UV-7BC Valve External Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	5250M	UV-7B BODY	1
2	5211BA	MANUAL LOWERING ASSEMBLY	1
3	5079A	RELIEF VALVE ASSEMBLY	1
4	5122BA	RELIEF VALVE PISTON	1
5	5363A	UA FILTER INPUT	1
6	5260-1	DC FILTER INPUT	1
7	5349A	ADJUSTER ASSEMBLY	5
8	2133	COIL COVER CAP	4
9	2122	N/O COIL COVER TUBE	2
10	1275	N/O PISTON SPRING	2
11	1062	COIL WASHER	8
12	-	COILS (SEE CHART FOR VOLTAGE)	4
13	2129A	N/O PLUNGER ENCLOSURE	2
14	2125A	N/O SOLENOID PLUNGER ASSEMBLY	2
15	2132	N/O PLUNGER SPRING	2
16	2391A	N/O NEEDLE ORIFICE ASSEMBLY	2
17	2120	N/C COIL COVER TUBE	2
18	2164A	N/C PLUNGER ENCLOSURE	2
19	1456DA	N/C SOLENOID HAMMER ASSEMBLY	2
20	5353A	NEEDLE ORIFICE SEAT ASSY. (D2)	1
21	1465BA	NEEDLE ORIFICE SEAT ASSY. (D1)	1
22	1458B	NEEDLE ORIFICE WASHER	1
23	1051-4	N/C LONG SCREW SPACER	2
24	1051-1	N/O SHORT SCREW SPACER	2
25	5633	2.5" LONG GROOVED ADAPTER (OPTIONAL)	1
26	5632	2.5" SHORT GROOVED ADAPTER (OPTIONAL)	2

NOTE: NOT ALL PARTS SHOWN SOLD INDIVIDUALLY

UV-7B & UV-7BC Solenoid Coils

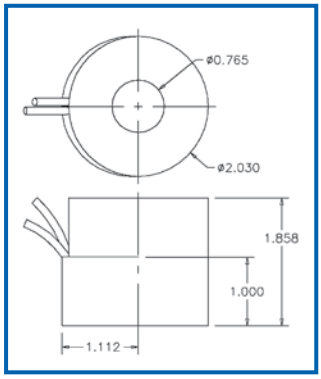
PART NO.	VOLTAGE (V)	FREQUENCY (Hz)	IN RUSH CURRENT (A)	HOLDING CURRENT (A)	RESISTANCE (Ohm)	COIL COLOR
SOLENOID COILS FOR UV-7B AND UV-7BC VALVES ONLY						
S651 *	110 VAC	60	1.41	0.60	32	BLACK
S652	208 VAC	60	0.75	0.32	102	
S653 *	220 VAC	60	0.70	0.30	136	
S654	440 VAC	60	0.35	0.15	520	
S655	550 VAC	60	0.26	0.11	833	
S656	220 VAC	50	0.59	0.25	199	
S752 *	110 VDC	DC	0.40	0.40	245	
S753	220 VDC	DC	0.20	0.20	985	

NOTE: All solenoid coils are supplied with 96" leads

* Supplied with the following colored wires to simplify valve wiring:

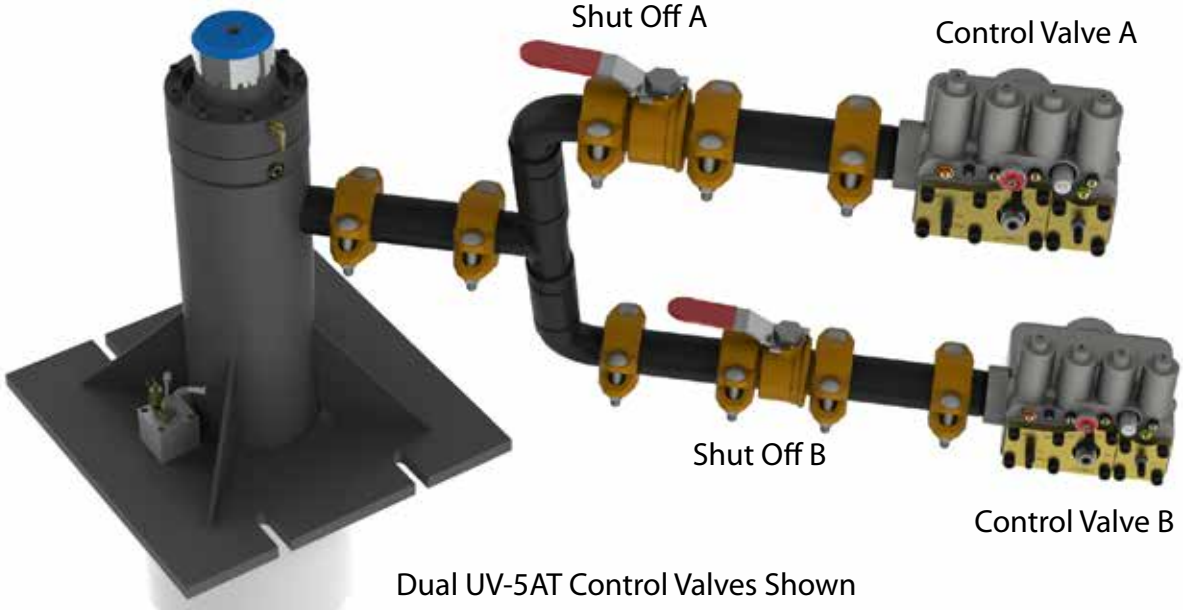
U1 coils = **Red** wires
U2 coils = **Yellow** wires
D1 coils = **Black** wires
D2 coils = **Blue** wires

NOTE: All other solenoid coils have black wires only.



UV-7B & UV-7BC
SOLENOID COILS

Adjusting Multiple Control Valves in a System



Dual UV-5AT Control Valves Shown

Adjust each control valve independently

Electrically disconnect **Pump B** and close **Shut Off B** to isolate **Control Valve A**.
Adjust **Control Valve A** following adjustment procedure.

Refer to Page 26 for UV-5AT & UV-5ATC; and Page 53 for UV-7B & UV-7BC.

NOTE: Down contract speed for each control valve is the car contract speed divided by number of control valves in the system.

Electrically disconnect **Pump A** and close **Shut Off Valve A** to isolate **Control Valve B**.
Adjust **Control Valve B** following adjustment procedure.

Refer to Page 26 for UV-5AT & UV-5ATC; and Page 53 for UV-7B & UV-7BC.

NOTE: Once all control valves have been reconnected, fine tuning must be done equally between all control valves in the system.

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EECO Valve Troubleshooting Guide

Forward

The information presented herein is intended for use by persons having skill and experience in hydraulic elevator or lift servicing, and used at their own risk. We believe the information to be reliable, and assume no liability or expense due to injury, sickness, or death sustained by any person, or damage or destruction of property arising from information hereunder. Please read our Equipment Warranty.

Troubleshooting

Before changing any adjustments, or removing any operating section of a valve, be sure that the electrical controller is supplying the proper information, in the correct sequence, to the valve solenoids (coils).

For a normal Up run, both **U1** & **U2** solenoids must be energized.

For an Anti-Creep or slow up run, only the **U2** solenoid must be energized.

When the elevator is making a normal Up run, and is approaching a floor for which it has been programmed to stop, the **U1** solenoid must be de-energized, by some means, at a certain distance below the floor, allowing the valve enough time to respond to the signal so as to smoothly effect a transition from high speed to low speed and to be at a stabilized leveling speed for a distance of 3 - 4 inches before the car reaches the floor. The **U2** solenoid must remain energized until the approximate floor level is reached and the motor must be allowed to run for 1 to 1 1/2 seconds after **U2** is de-energized so as to obtain the desired soft stop.

For a normal Down run, both **D1** and **D2** solenoids must be energized to obtain full down speed. For a slow or leveling speed Down run, only the **D2** solenoid must be energized.

When the elevator is making a normal Down run, and is approaching a floor for which it has been programmed to stop, the **D1** solenoid must be de-energized, by some means, at a certain distance above the floor, allowing the valve enough time to respond to the signal so as to smoothly effect a transition from high speed to low speed and to be stabilized leveling speed for a distance of 3-4 inches before the car reaches the floor. The **D2** solenoid must remain energized until the approximate floor level is reached.

In the following instructions, the terms CW & CCW are abbreviations for clockwise and counterclockwise. CW means turn to the right. CCW means turn to the left.

Caution

Be absolutely certain that the pressure has been shut off from the valve section of the system before removing or disassembling any part of the valve. Either lower the elevator car down to the pit supports and/or close the main line gate valves and tank valves. Disconnect the main electrical power switch. Always open the manual lowering valve before you close the tank shut-off.

IMPORTANT: After a valve is adjusted according to instructions, if the transition and/or leveling zones are either too long or too short, **DO NOT** readjust the valve! Move the appropriate switches or vanes/cams.

UV-4R

UV-5AT

UV-7B

NOTE: References to 'down piston seal disc' refer to UV-5A valves manufactured before November 2005. The seal disc was replaced with an O-ring Seal on valves manufactured after November 2005.

UP SECTION

1. MAKES HAMMERING NOISE (PUMP RUNNING)

(a) Check oil level in tank. Check suction tank shutoff, rotation of motor.

2. CAR WILL NOT MOVE OR GO INTO FULL SPEED (PUMP RUNNING)

(a) Check voltage at disconnect switch, controller, and valve coils. Check solenoids to see if they correspond with control voltage.
(b) Check main line shutoff to cylinder.
* (c) Check belt tension. If belts are too hot, they are slipping.
(d) Check relief valve setting with gauge.
(e) Turn **UA** adjuster CCW. See adjustment procedure on inside of valve cover (**UV-5(A/B)T**).
(f) Worn pump.
(g) Check down valve to see if piston is stuck in open position. Turn **DM** CW to stop and turn **DC** CCW to stop, then return **DM** CCW to 5 turns.
* (h) Check plunger assembly, plunger enclosure, and needle orifice.

3. UP START SLOW

(a) Check **BP** adjuster to see if it is set properly. See adjustment procedure.
* (b) Check **UA** adjuster screen to see if it is filled with debris. **UV-7B** has a separate screen.
(c) Check **U1** and **U2** solenoids. Both must be energized.
* (d) Inspect **U1** and **U2** needle orifice.
* (e) Check belts on pump motor for proper tension and that they are not slipping. (If belts are hot, they are slipping).

4. UP START ROUGH

(a) Check **BP** to see that it is set properly. See adjustment procedure.
(b) Check **UA** adjuster to see that it is set properly. See adjustment procedure.
* (c) Close **UA** adjuster. If car starts up readily, check o-rings on **UA** adjuster, **BP** piston, and **UL** stem. One of these is leaking.
(d) Check jack assembly packing to see if it is adjusted properly.
(e) Check guide shoe adjustment and rails.
(f) Check car speed (fpm) and static pressure (PSI) with empty car to see if valve is proper size. (If valve is too small, you will get a rough start and car will not stall).
* (g) Inspect bypass piston spring to see if it might be broken or on the wrong side of the piston. The spring goes in first.
* (h) Bypass piston stuck in closed position.

5. UP SPEED SLOW

* (a) Check belts on pump and motor to see if they have proper tension and are not slipping.
(b) Be sure **U1** and **U2** coils are energized
(c) Check relief valve to see that it is set properly.
(d) Check jack packing to see that it is not too tight on the piston.
(e) Check suction to pump to see that it is not being restricted. Pump will be noisy.
(f) Check oil level. If low, pump will be noisy.
* (g) Check **UA** screen to see that it is not filled with debris. **UV-7B** has separate screen.
* (h) Clean valve of all foreign material.
(i) Check motor horsepower and line voltage drop.
(j) Be sure adjustments are made with oil at normal operating temperature and not when oil is cold. Normal temperature is approximately 80° to 100° F.

6. TRANSITION FROM UP SPEED TO LEVELING SPEED TOO SMOOTH CAUSING DRIFTING UP THROUGH FLOOR LEVEL

(a) Turn **UT** CCW. Remember **UT** must be opened more than **UA**. If up start is too abrupt, see (b) of section 4.

Also see (a) of section 11.

* (b) Inspect solenoid, needle orifice, needle assembly, and plunger enclosure for dents or debris.

(c) Check controller and hatch switches to see if they are properly set; 2" per 10 fpm speed.

7. TRANSITION FROM UP SPEED TO UP LEVELING SPEED TOO ROUGH OR QUICK

(a) Turn **UT** adjuster CW. See adjustment procedure.

8. CAR STALLS AS CAR ENTERS LEVELING ZONE FROM HIGH SPEED OR WILL NOT ANTI-CREEP

(a) Be sure **U1** and **U2** coils are not reversed.

(b) Check **UL** adjustment. See adjustment procedure.

(c) Check **UL** assembly. (Note: To check **UL** assembly, lower car to lowest floor. Disconnect **U1** coil. Start pump and slowly turn **UL** adjuster CCW (CW for **UV-7B & BC**) from the closed position until car pulls out of stall).

* (d) Examine **UA** screen for debris.

* (e) Inspect middle O-ring on check valve closure (**UV-5A & UV-4R** only).

(f) Check up level switch, check all electrical circuits pertaining to up leveling.

9. CAR STALLS WITH CAPACITY LOAD

(a) Check relief valve adjustment. See adjustment procedure.

* (b) Check belts on pump and motor to see if they have proper tension and are not slipping.

10. HARD STOP AT FLOOR LEVEL

(a) Turn **US** CW. See adjustment procedure.

(b) Check to see that pump continues to run electrically for about one second after car stops at the floor level.

(c) Broken check valve spring. Car will settle very hard after a stop.

11. CAR CONTINUES TO LEVEL THROUGH FLOOR IN LEVELING SPEED

(a) Turn **US** adjuster CCW. See adjustment procedure.

* (b) **U2** needle orifice plugged with debris.

* (c) **US** adjuster plugged with debris.

12. CAR WILL NOT STALL. PUMP RUNNING - UA Adjuster TURNED OFF.

(a) Check **UA** adjuster to make sure it is turned off. Turn CW until stopped position is reached).

(b) Turn **BP** flow control screw to open position CCW until stopped). 14 turns open maximum on **UV-5(A/B)T & UV-4R**.

* (c) If car will not stall, install larger bypass piston. Note: On **UV-7B**, piston area may be increased (or decreased) by rotation of port ring after (removing snap ring, if existing) and loosening bolts holding port shield. Re-tighten bolts (replace snap ring) & reset **BP.** See adjustment procedure.

* (d) Inspect **BP** piston spring position. Spring goes in first.

13. CAR WILL NOT "HOLD" POSITION AFTER UP RUN, BUT LOWERS IMMEDIATELY TO PIT

* (a) Check valve stuck open.

* (b) Down valve stuck open.

* (c) Manual lowering open.

*** DISCONNECT ELECTRICALLY FOR YOUR SAFETY**

DOWN SECTION

1. CAR WILL NOT LOWER (DOWN MAIN)

(a) Check voltage supply and coils on valve for proper voltage and/or open circuits.

(b) Turn **DM** CCW.

(c) Turn **DA** CCW.

(d) Turn **DC** CW slowly - remember that **DA** must be open more than **DC**. Closing **DC** too much may cause the car to lower into the pit at full speed!

(e) Open pit or tank valve, if closed.

(f) Check guide shoe adjustment.

(g) Check jack packing adjustment.

* (h) Inspect needle orifice for debris.

* (i) Inspect **DA** adjuster cavity for debris.

* (j) Inspect down piston O-ring or piston ring for size.

2. CAR WILL NOT LOWER (DOWN LEVEL ONLY)

* (a) Inspect down level spool on end of piston - if broken - replace. **UV-7B** has spring loaded needle.

3. SLOW DOWN START (BOUNCY)

(a) Bleed jack of air.
(b) Check jack packing adjustment.
(c) Check guide shoe adjustment.
(d) Check piston O-ring for size. An oversize or swollen ring can prevent a valve from opening or closing in a smooth manner. **Note: UV-7B** down piston O-ring is oversized on valves up to S/N C802. Do not change to smaller size unless you order a complete new down piston assembly.

4. SUDDEN DOWN START

(a) Check jack packing adjustment (too tight).
(b) Check **DA** adjustment to see if it is set properly. See adjustment procedure.

5. VALVE WILL NOT CLOSE

(a) Check **DT** adjustment. Turn CW to stop on **UV-7B**. Turn CW until flush with nut on **UV-5AT & UV-4R** .
* (b) Check filter screen in **DC** adjuster to see if it is full of debris. When checking this screen, do not change the adjustment. Clean screen first. If minor adjustments are required, do so after cleaning screen. **UV-7B** has a separate screen.
* (c) Check solenoid plunger tubes for damage. Plunger should slide freely in all positions.
* (d) Check solenoid needle and seat for damage. If damaged (leaking), replace.
(e) Check hatch switches, relays, or other electrical devices which could hold solenoid in open (energized) position.
* (f) Clean valve of all solid debris.
* (g) Inspect 'V' guide. Piston and 'V' guide should move freely in bore.
* (h) Inspect piston O-ring for size. A badly oversized or swollen ring may prevent a valve from closing. See note 3 (d) (in Down Section).

6. DOWN STOP ROUGH (QUICK)

(a) Turn down valve **DC** closing adjuster CW. See adjusting sheet.
(b) Check main piston O-ring to see if it has shrunk.

7. DOWN STOP SLOW OR BOUNCY

(a) Bleed jack of air.
(b) Turn **DC** adjuster CCW. Disconnect **D1** coil when checking.
* (c) Check filter screen in **DC** adjustment. When checking this screen, be sure not to change adjuster until after you have cleaned screen). The **UV-7B** has separate screen.
(d) Check guide shoe adjustment.

8. DOWN TRANSITION ROUGH (WITHOUT DT ADJUSTER)

(a) Turn **DC** CW. (Check stop after making **DC** adjustment, hatch switch adjustment might have to be made). See adjustment procedure.
* (b) Check down piston O-ring to see if it has shrunk.

9. DOWN TRANSITION ROUGH (WITH DT ADJUSTER)

* (a) Check **DT** adjuster to see if it is plugged with debris. (See adjusting sheets for **UV-5A**, **UV-5AT, UV-5ATC & UV-4R**).

10. DOWN LEAK

(a) Check jack packing and fittings.
(b) Close manual lowering valve.
* (c) Inspect down valve seal disc** or o-ring seal and seat area.
* (d) Inspect check valve seal and seat area.
* (e) Inspect both down solenoid needle orifices and needles for sealing.
* (f) Inspect innermost O-rings on **UL** stem and check flange, **UV-5A & UV-4R** only.

*** DISCONNECT ELECTRICAL FOR YOUR SAFETY**

**** Down piston seal disc in UV-5A valve replaced with an o-ring seal after November 2005. Seal Disc no Longer Available**

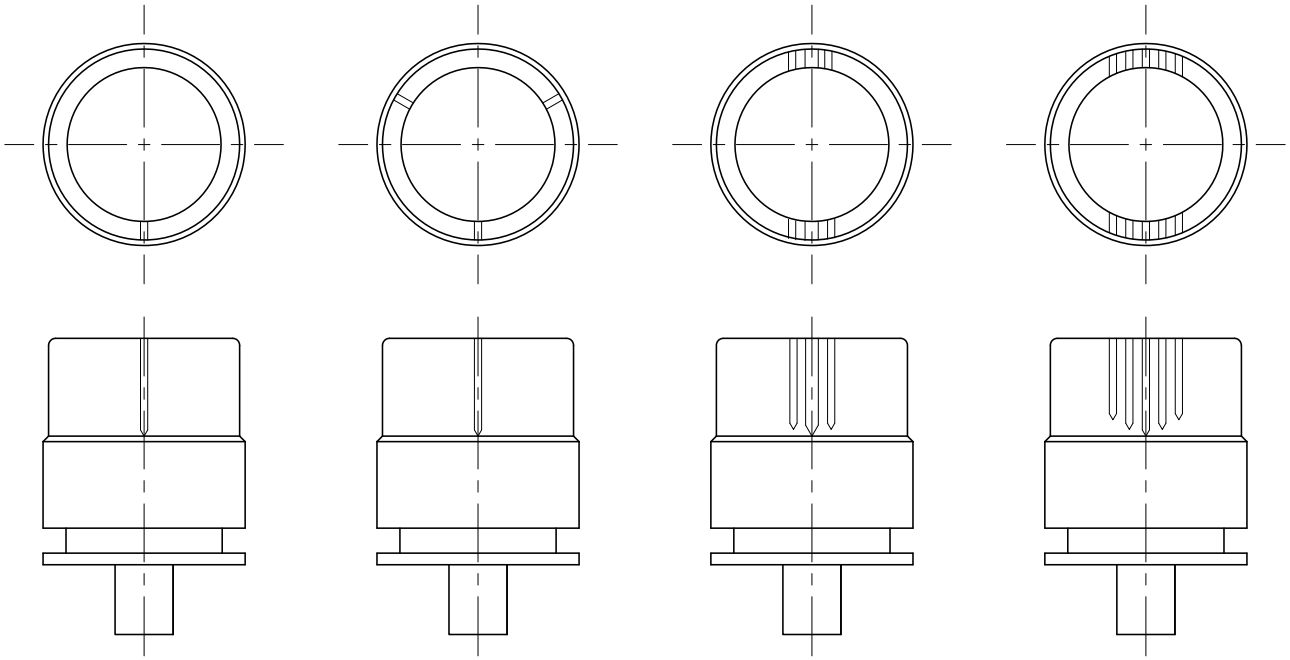
For EECO Valve Technical Support please call:

(888) 577-EECO

Between 8:00 AM Eastern and 4:30 PM Pacific time, Monday through Friday.

UV-5(A/B)T & TC Bypass Pistons

Note: When replacing the bypass piston on older **S-series** (or earlier) **UV-5A** valves, you **MUST** use the UV-5A Bypass Piston & Spring Replacement Kit (Part Number 5006A-X) on page 61.

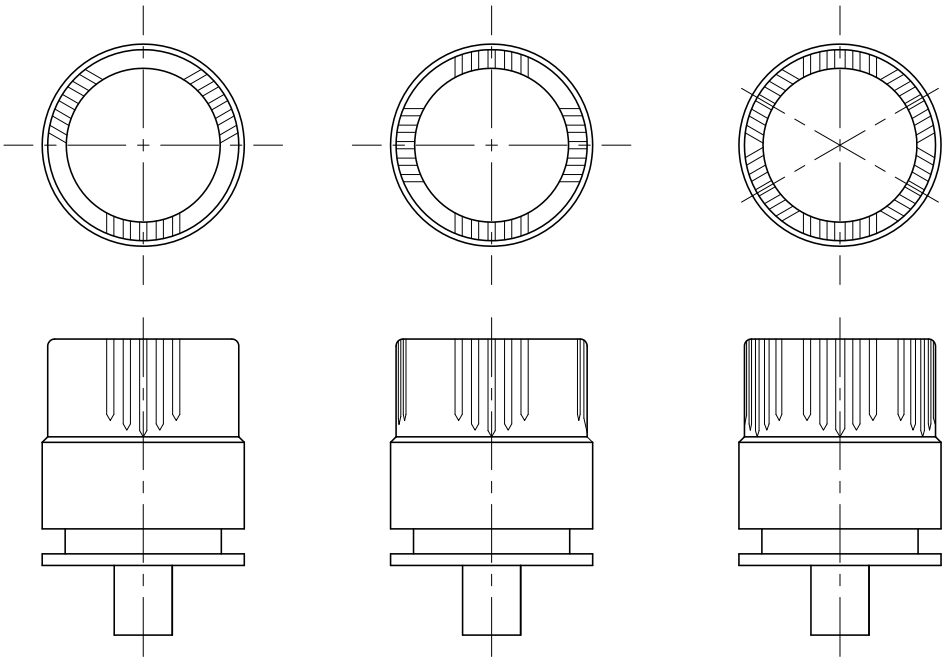


"1" Valve
5007-1

"2" Valve
5007-2

"3" Valve
5007-3

"4" Valve
5007-4

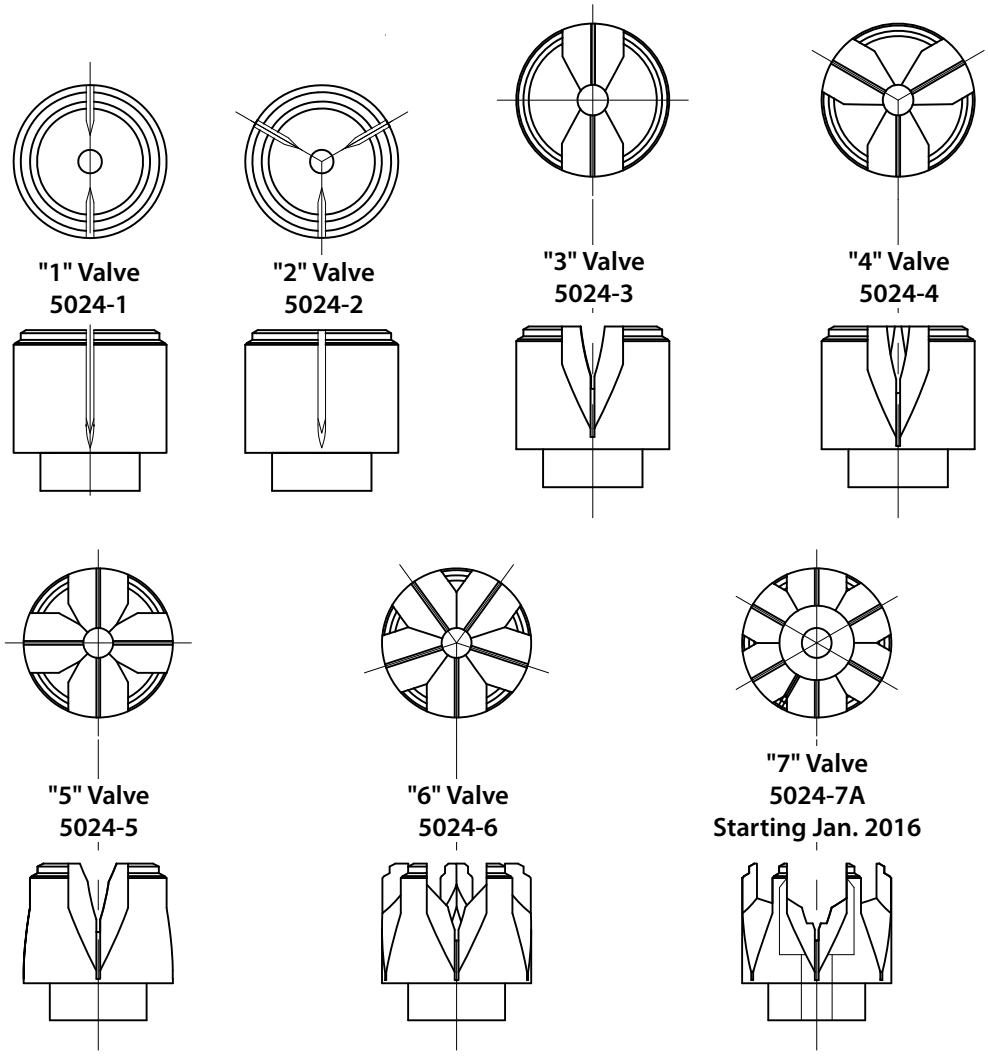


"5" Valve
5007-5

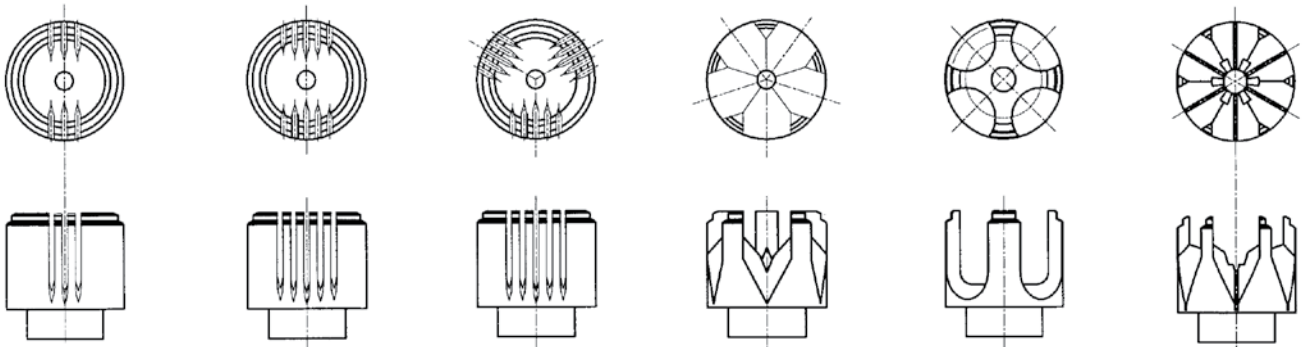
"6" Valve
5007-6

"7" Valve
5007-7

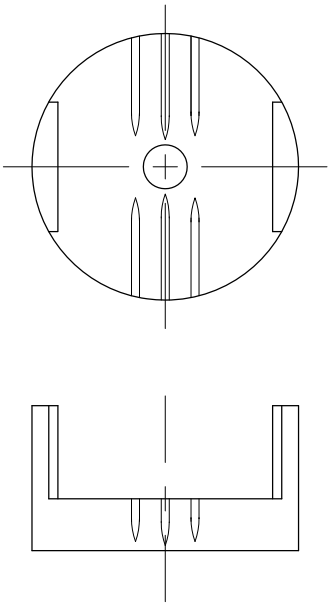
Note: When replacing the down piston in a **UV-5A** valve manufactured before November 2005, you **MUST** replace the down piston and down closure assembly (kit number 5627A-( ) on page 60).



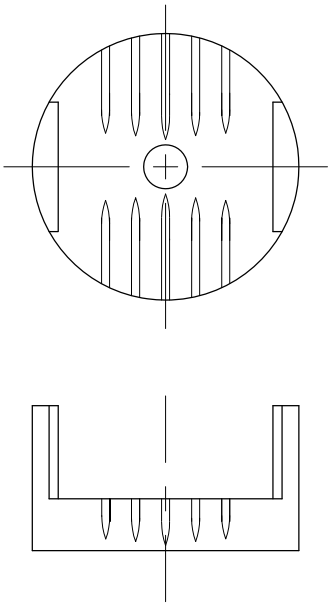
PREVIOUS DESIGN



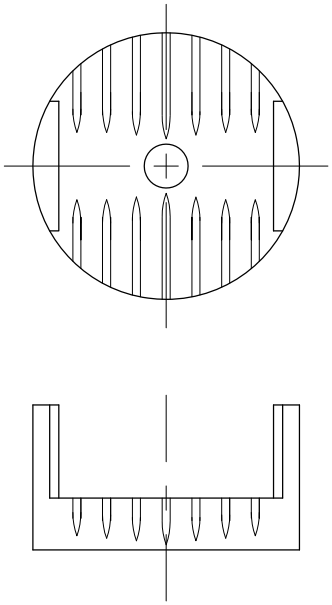
UV-5(A/B)T & UV-5(A/B)TC Check Poppet V-Guides



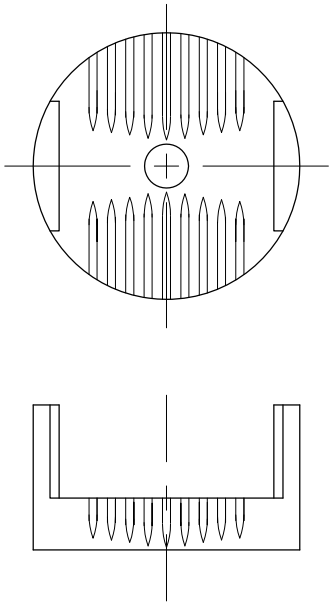
"1", "2" & "3" Valve
5603-3



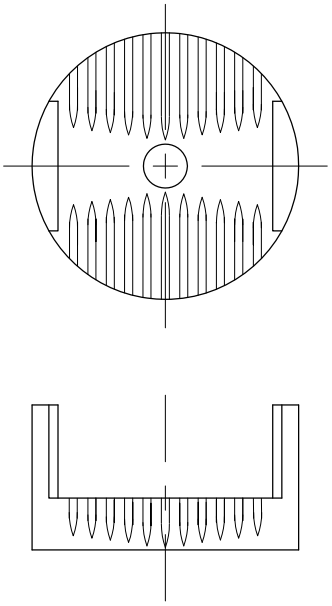
"4" Valve
5603-4



"5" Valve
5603-5



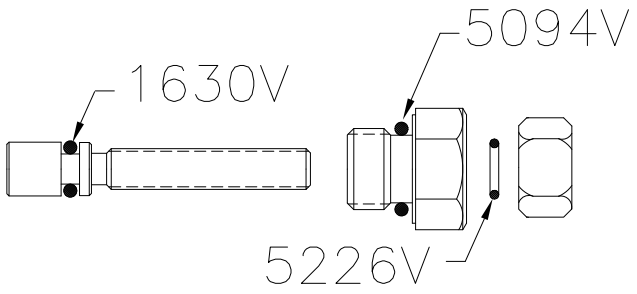
"6" Valve
5603-6



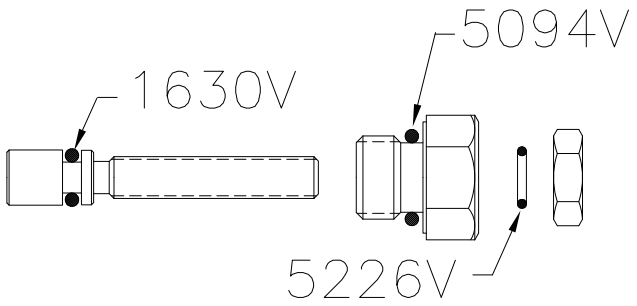
"7" Valve
5603-7

KIT # 5131V - UV-5A, UV-5(A/B)T & UV-5(A/B)TC VITON SEAL KIT

NOTE: We do not recommend rebuilding the DSC adjuster of the UV-5(A/B)TC valve in the field.



DT Adjuster Assembly
5137A

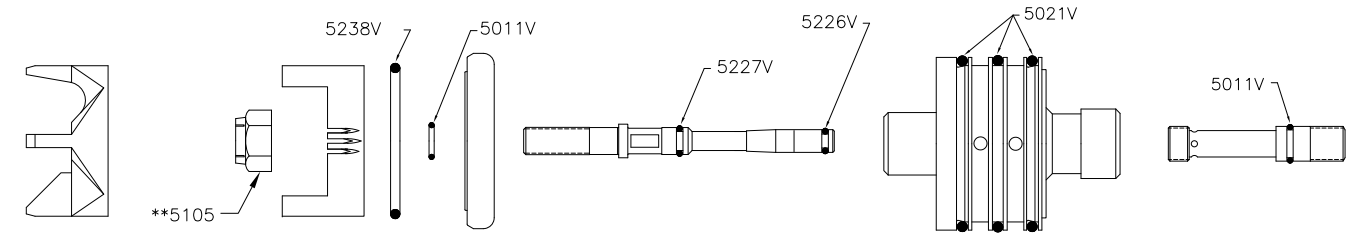


US, UT, DA, Adjuster Assembly
2400A

Parts Included with Kit 5131V

PART NO.	QTY	LOCATION & DESCRIPTION
1181V	1	DOWN PISTON O-RING (NOVEMBER 2005 AND LATER)
5025V	1	DOWN PISTON SEAL DISK
5009V	2	O-RINGS FOR BYPASS & DOWN PISTONS
A504V	1	O-RINGS FOR PUMP INLET
5021V	3	O-RINGS FOR CHECK CLOSURE
5238V	1	O-RINGS FOR CHECK PISTON ASSEMBLY
5013V	3	O-RINGS FOR BYPASS & DOWN CLOSURES
5111V	2	O-RINGS FOR BYPASS & DOWN PISTON SLEEVES
5034V	1	O-RING FOR PRESSURE RELIEF VALVE (RV) ASSY.
5030V	1	O-RING FOR MANUAL LOWERING ASSY.
5020V	2	O-RINGS FOR UA & DC ADJUSTERS
5011V	7	O-RINGS FOR DL, DM, UL, BP, RV & UP LEVELING STEM
5094V	8	O-RINGS FOR DA, DT, DC, UT, UD, UA, RV & DOWN SPOOL
5227V	2	O-RINGS FOR UP LEVELING STEM AND MANUAL LOWERING ASSEMBLIES
5063V	1	O-RINGS FOR PRESSURE RELIEF VALVE (RV)
5226V	8	O-RINGS FOR DA, DC, DT, UT, UD, UA ADJUSTERS, UP LEVELING STEM & DOWN CLOSURE
1630V	6	O-RINGS FOR DA, DC, DT, UT, UD, UA ADJUSTERS
5237V	1	O-RING FOR MANUAL LOWERING ASSEMBLY

KIT # 5131V - UV-5A, UV-5(A/B)T & UV-5(A/B)TC VITON SEAL KIT (cont.)



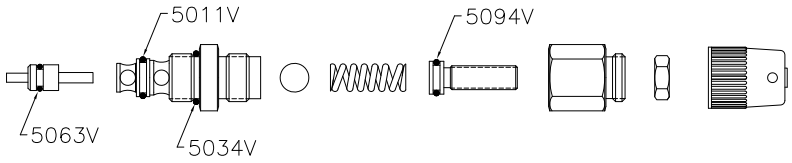
V-Guide (Prior to 4-2001)

V-Guide | Check Plate | Up Leveling Stem

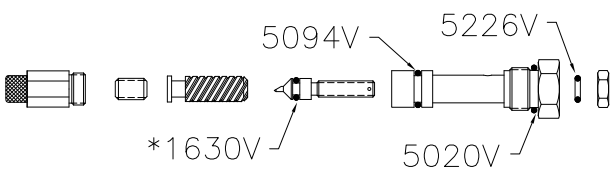
Check Poppet Assembly
5611A-TAB

Check Closure | Up Leveling Adjuster (UL)

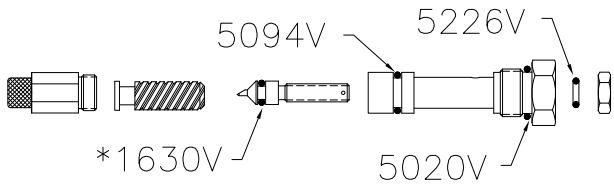
Check Closure Assembly
5045DA



Pressure Relief Assembly (RV)
5079A

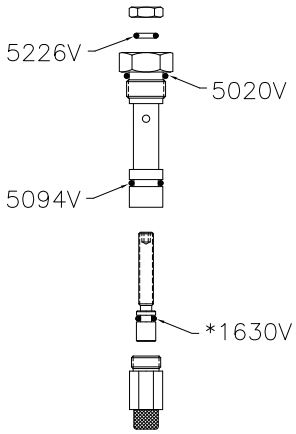


UA Adjuster Assembly
5604A (Effective 4-2001)

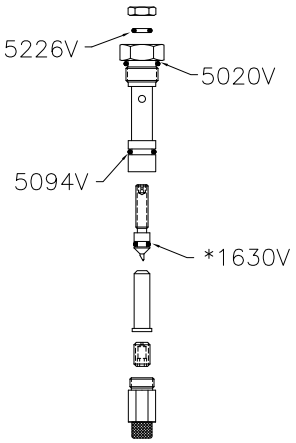


DC Adjuster Assembly
5606A (Effective 4-2001)

- For Information Only -
UA Adjuster Assembly
5089A (Prior to 4-2001)



- For Information Only -
DC Adjuster Assembly
5101A (Prior to 4-2001)

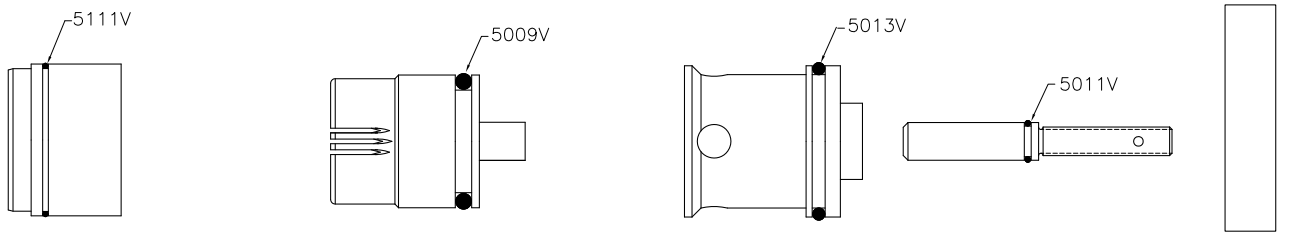


* Replacement of internal O-rings in the field is not recommended. However if O-rings are replaced, apply Locktite 222MS to threads of input cap assembly and tighten it snug tight to the adjuster body.

** Torque the check poppet jamb nut to 90 in.-lbs.

KIT # 5131V - UV-5A, UV-5(A/B)T & UV-5(A/B)TC

VITON SEAL KIT (cont.)



Sleeve

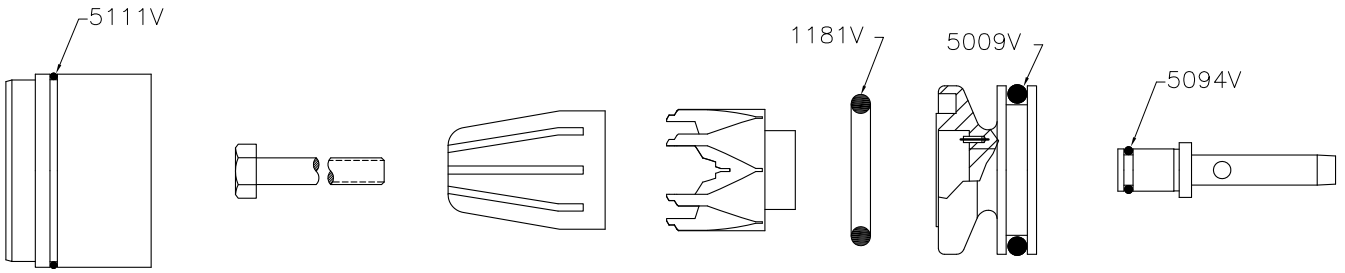
Removable Sleeve 5023A

Piston

Bypass Piston 5007-TAB

Closure | Adjuster (BP) | Flange

Bypass Closure Assembly 5012CA



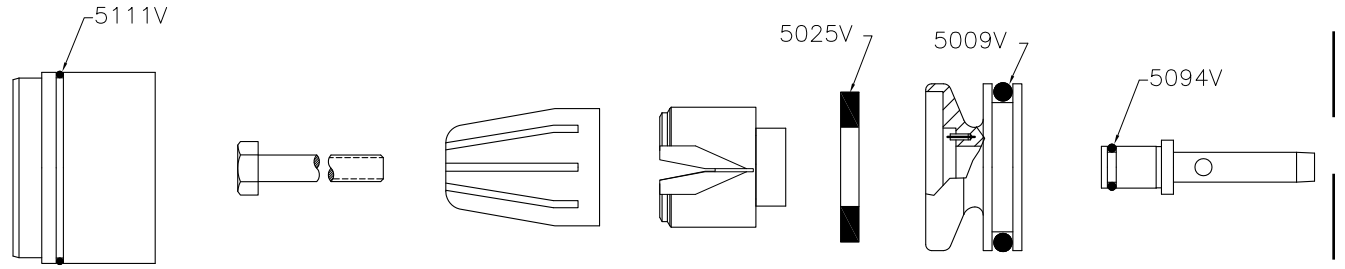
Removable Sleeve | Diffuser Bolt | Diffuser | V-Guide | O-ring Seal After 11-05 | Down Piston After 11-05 | Leveling Spool

Down Piston Assembly, 5623A-TAB

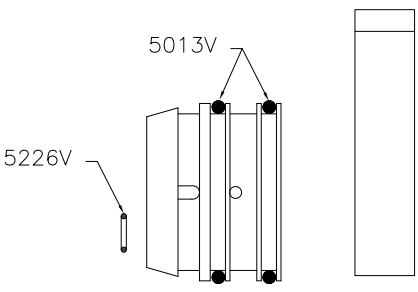
For Information Only

Down Piston Assembly Prior to November 2005

Note: Seal Disc 5025V No Longer Available

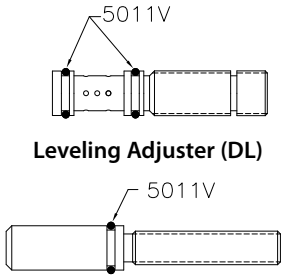


Removable Sleeve | Diffuser Bolt | Diffuser | V-Guide | Seal Disc | Down Piston | Leveling Spool



Closure

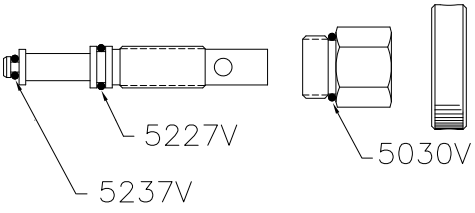
Flange



Leveling Adjuster (DL)

Main Adjuster (DM)

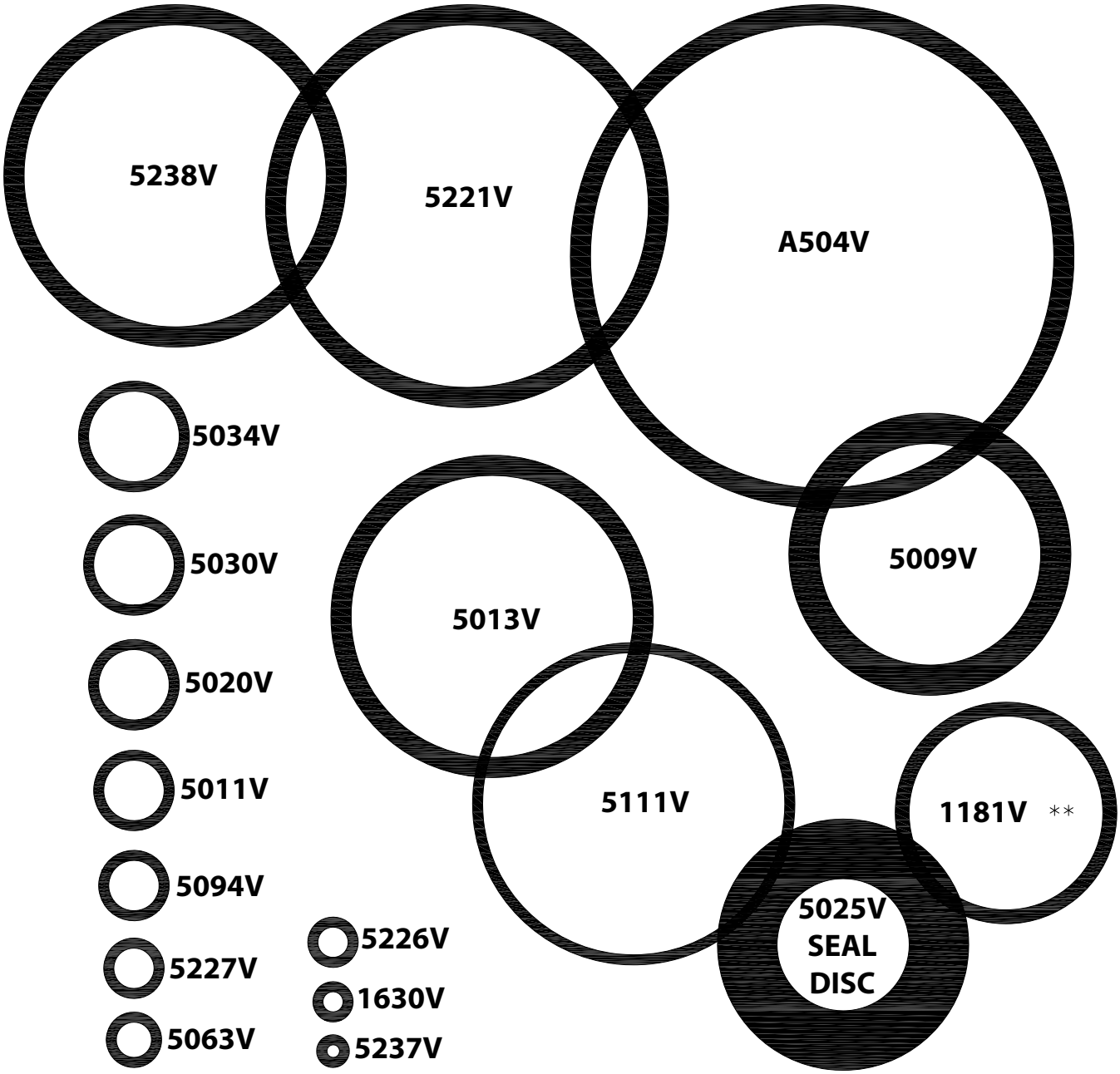
Down Closure Assembly, 5622A



Adjuster | Body | Knob

Manual Lowering Assembly, 5211BA

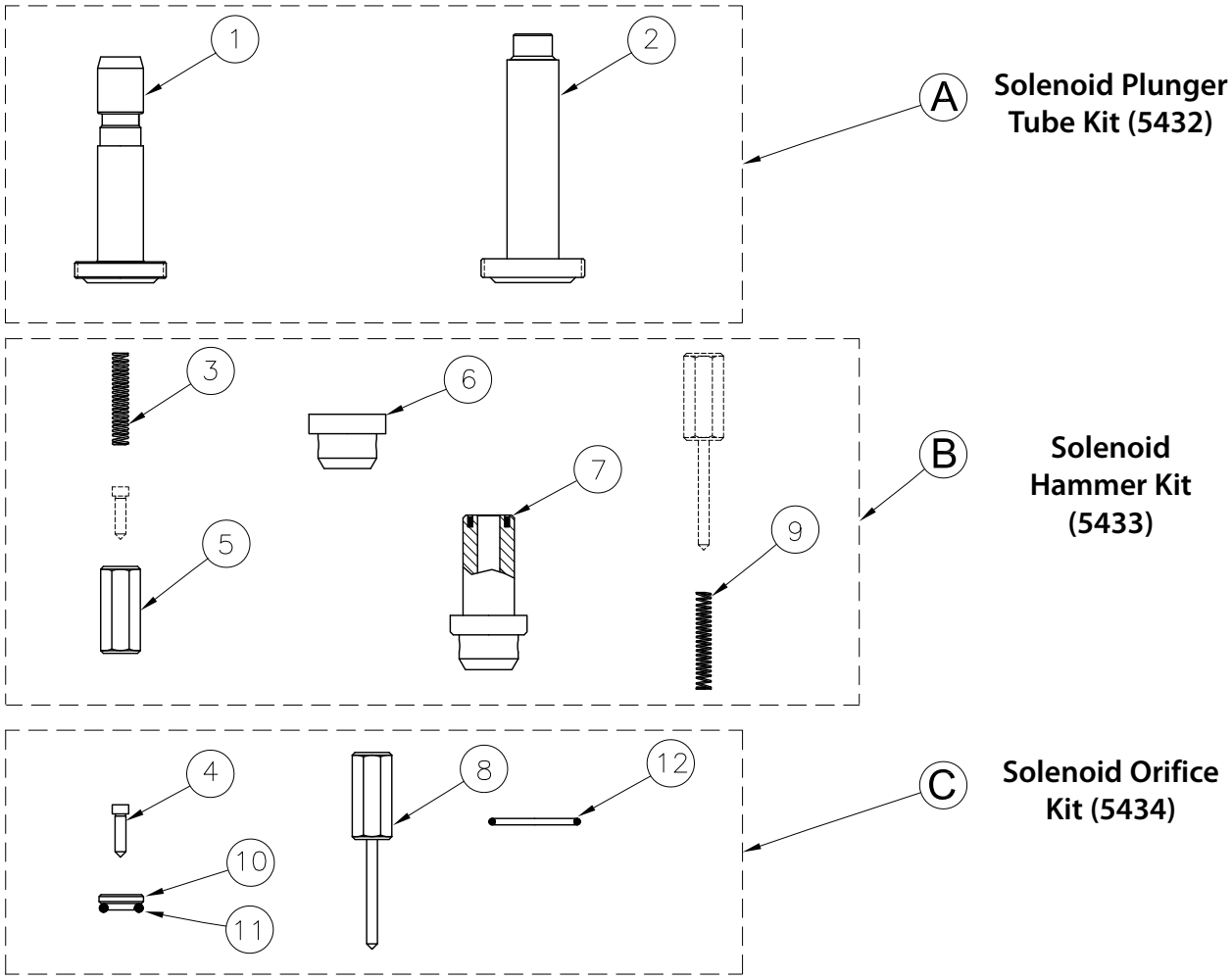
KIT # 5131V - UV-5A, UV-5(A/B)T & UV-5(A/B)TC
VITON SEAL KIT, O-RINGS



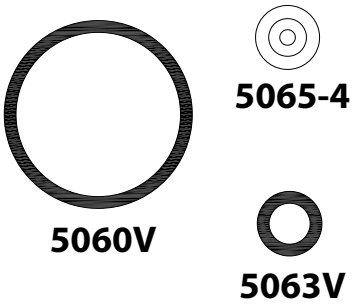
Prior to November 2005
*Note: Seal Disc 5025V No Longer Available

NOTE: When replacing down piston o-ring seal** on down piston assembly, and reusing diffuser bolt, apply locktite compound #680 on diffuser bolt thread and torque the bolt to 90 in.-lbs. max.

** After November 2005



Note: The three solenoid kits shown above can be order together as Part # 5106V, or individually as Part No.'s 5432, 5433 or 5434.



Parts Included with Kit 5106V

ITEM	PART NUMBER	QTY	LOCATION & DESCRIPTION
A	**SOLENOID PLUNGER TUBE KIT(5432)**		
2	5128A	2	N/O PLUNGER TUBE ASSEMBLY
1	5129A	2	N/C PLUNGER TUBE ASSEMBLY
B	**SOLENOID HAMMER KIT (5433)**		
9	5054	2	N/O HAMMER LIFT OFF SPRING
7	5061A	2	N/O NEEDLE ORIFICE ASSEMBLY
6	5064A	2	N/C NEEDLE ORIFICE ASSEMBLY
5	5732	2	N/C SOLENOID HAMMER
3	5055	2	N/C NEEDLE HOLD OUT SPRING
C	**SOLENOID ORIFICE KIT (5434)**		
12	5060V	4	O-RING N/C & N/O PLUNGER TUBES
11	5063V	4	O-RING N/C & N/O NEDDLE ORIFICE ASSY
10	5065-4	4	N/C & N/O NEEDLE ORIFICE INSERT
8	5130A	2	N/O PLUNGER ASSEMBLY
4	5059	2	N/C HAMMER NEEDLE

KIT # 5627A-( ) - DOWN PISTON UPGRADE KIT FOR UV-5A & UV-5(A/B)T

You **MUST** use this upgrade kit when replacing the down piston assembly (2)
in **UV-5A** and **UV-5AT** valves manufactured before November 2005.
The new down piston assembly will not fit in the old down closure manufactured prior to this date.

Replacement Procedure

1) Close supply shut-off valve to jack.
2) Relieve pressure in the valve by opening **Manual Lowering**.
3) Remove 6 bolts from UV-5A down/check flange.
4) Remove UV-5A down/check flange from the valve.
   The down closure will come off as well.
5) Remove UV-5A down piston assembly from the valve.
6) If removable sleeve is also removed, inspect its O-ring
   to make sure it is in good condition.
   Replace O-ring (3) if necessary.
7) Insert provided UV-5(A/B)T down piston assembly into the
   new UV-5(A/B)T down closure flange assembly (1) and
   insert them into the valve.
8) Replace and tighten bolts.
9) Close manual lowering and slowly open supply shut off
   valve.
10) Cycle car and refer to UV-5(A/B)T "Adjustment Procedure" to
    readjust the valve.

Kit Part Number & Sizes

ASSEMBLY NO.	SIZE
5627A-1	1
5627A-2	2
5627A-3	3
5627A-4	4
5627A-5	5
5627A-6	6
5627A-7	7

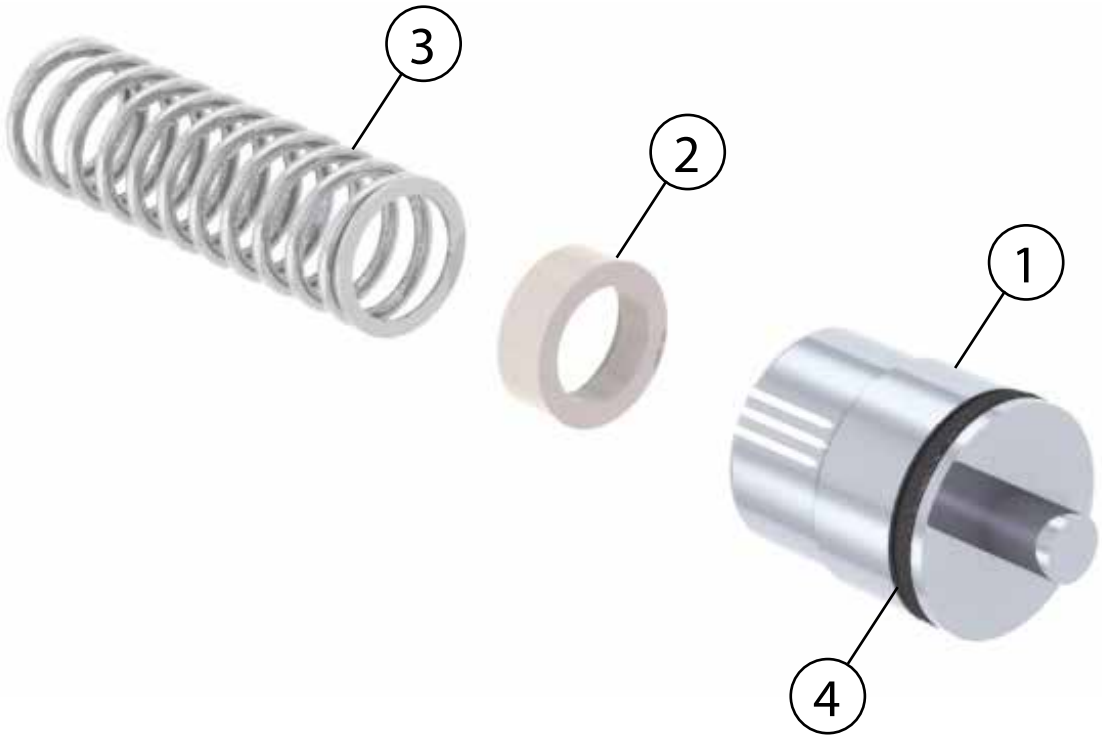
Parts Included with Kit 5627A - ( )

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	5622A	DOWN CLOSURE ASSEMBLY
2	1	5623A-TAB	DOWN PISTON ASSEMBLY
3	1	5111V	REMOVABLE SLEEVE O-RING

KIT # 5006A-( ) - BYPASS PISTON & SPRING REPLACEMENT KIT FOR UV-5A, UV-5(A/B)T & UV-5(A/B)TC

This kit **MUST** be used when replacing the bypass piston in an older **S-series** (or earlier) **UV-5A** valve. Due to improvements in the current EECO bypass piston, the spring must also be replaced when replacing the bypass piston. The replacement kit includes a new bypass piston with seal (1 & 4), spring cap assembly (2) and a new, shorter, bypass spring (3).

NOTE: This kit can also be used in current **UV-5(A/B)T** & **UV-5(A/B)TC** valves.



Installation Procedures

1. Snap Spring (3) into Spring Cap Assembly (2)
2. Insert Cap Assembly/Spring Assembly, Cap Assembly first, into Bypass Piston (1)
3. Insert Piston Assembly and Closure into Bypass Section of valve

Kit Part Number & Sizes

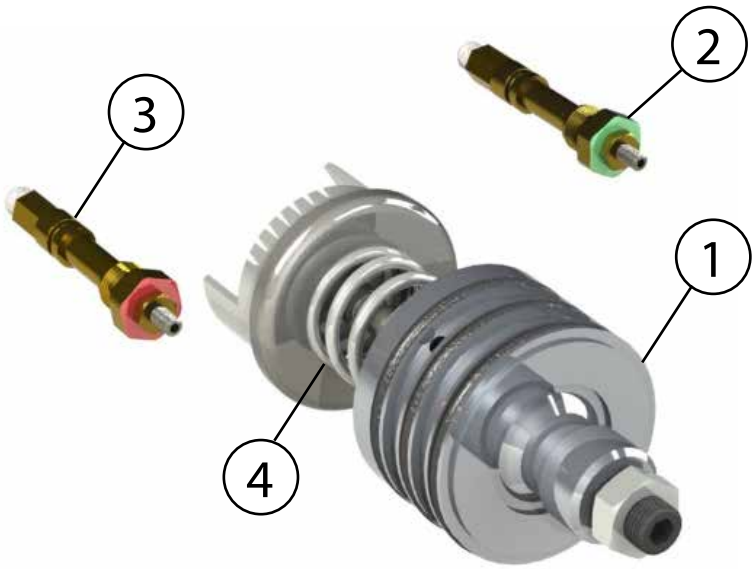
PART NO.	PISTON SIZE
5006A-1	1
5006A-2	2
5006A-3	3
5006A-4	4
5006A-5	5
5006A-6	6
5006A-7	7

Parts Included with Kit 5006A- ( )

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	5007A-TAB	BYPASS PISTON
2	1	5132A	SPRING CAP ASSEMBLY
3	1	5006-1	BYPASS SPRING
4	1	5009V	BYPASS PISTON O-RING

KIT # 5600A-( ) - TEMPERATURE COMPENSATION UPGRADE KIT FOR UV-5A

EECO has developed a temperature compensation kit 5600A-( ) to upgrade standard S-series and earlier UV-5A valves currently in service. This upgrade provides **Full Temperature Compensation** over the valve's entire operational temperature range of 80° to 150° F (27° to 66° C). These changes will allow consistent elevator operation by maintaining floor-to-floor travel time and up leveling speed. EECO recommends that when a temperature compensation kit is installed in a valve, the rest of the seals in the rest of the valve also be replaced with high temperature Viton seals using EECO's standard seal kit 5131V. When ordering a temperature compensation kit and the 5131V seal kit, please have the existing valve size and/or serial number available.



Upgrade Procedure

1) Close supply shut off valve to jack.
2) Relieve pressure in the valve by opening **Manual Lowering**.
3) Remove 6 bolts from UV-5A down/check flange.
4) Remove UV-5A down/check flange from the valve.
5) Remove UV-5A check piston assembly from the valve.
6) Insert provided UV-5(A/B)T check piston assembly into valve.
7) Remove DC adjuster from valve and replace it with provided UV-5(AT DC adjuster (painted red).
8) Remove UA adjuster from valve and replace it with provided UV-5(AT UA adjuster (painted green).

NOTE: It is strongly recommended that at this time the rest of the valve be rebuilt with seal kit 5131V, which contains high temperature Viton O-rings. To order this kit please contact EECO sales.

9) Replace down/check flange back into valve and replace and tighten bolts.
10) Close manual lowering and open supply shut off valve.
11) Refer to the UV-5(A/B)T "Adjustment Procedure" to readjust the valve.

NOTE: The optimum oil temperature range for adjusting the valve is 80° F to 100° F (27° to 38° C).

Kit Part Number & Sizes

ASSEMBLY NO.	SIZE
5600A-3	1
	2
	3
5600A-4	4
5600A-5	5
5600A-6	6
	7

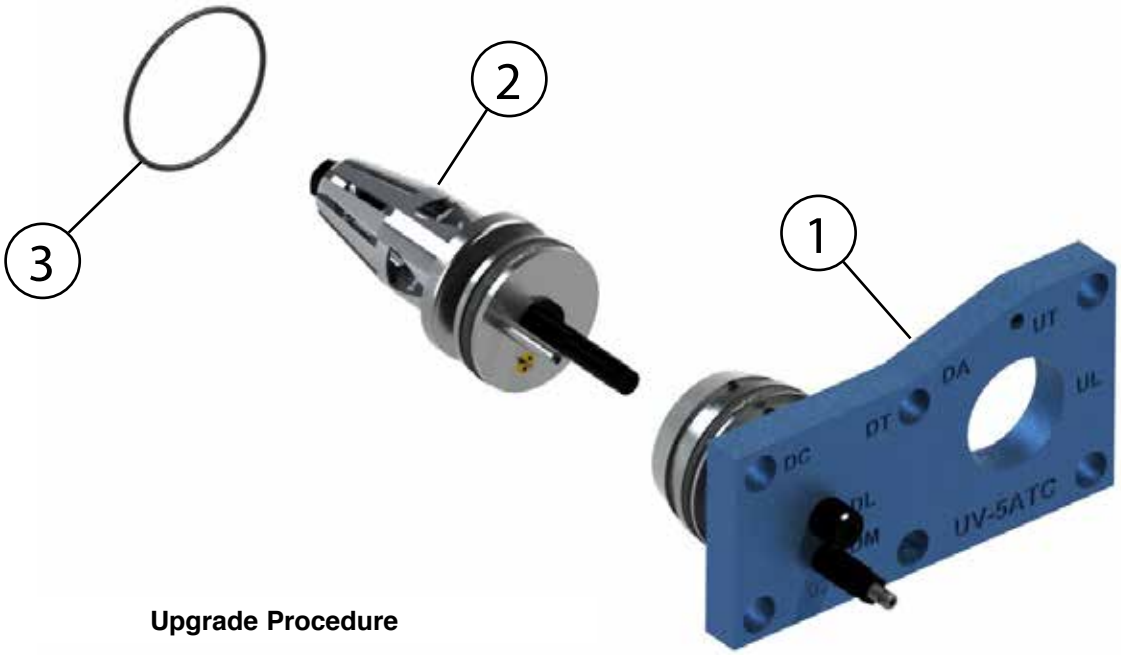
Parts Included with Kit 5600- ( )

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	5601A-TAB	CHECK CLOSURE ASSEMBLY
2	1	5604A	UA ADJUSTER ASSEMBLY
3	1	5606A	DC ADJUSTER ASSEMBLY
4	1	5018	** CHECK SPRING

** Spring is Included in 5601A

KIT # 5500A-( ) - PRESSURE COMPENSATION (CONSTANT DOWN SPEED) UPGRADE KIT FOR UV-5A & UV-5(A/B)T

EECO has developed a pressure compensation kit 5500A-( ) to upgrade all UV-5A and UV-5(A/B)T valves currently in service. Kit works separately from the temperature compensation kit. With this upgrade the valve will maintain **Constant Down Speed** between no load and full load conditions. Please have down contract speed and piston diameter (or flow rate), as well as empty car and full load pressures when ordering this kit.



Upgrade Procedure

1) Close supply shut-off valve to jack.
2) Relieve pressure in the valve by opening **Manual Lowering**.
3) Remove 6 bolts from UV-5A down/check flange.
4) Remove UV-5A down/check flange from the valve. The down closure will come off as well.
5) Remove UV-5A down piston assembly from the valve.
6) If removable sleeve (3) is also removed, inspect its O-ring to make sure it is in good condition. Replace O-ring (4) if necessary.
7) Insert removable sleeve (3) back into valve.
8) Insert provided UV-5ATC down piston assembly (2) into the new UV-5ATC down closure flange assembly (1) and insert them into the valve.
9) Replace and tighten bolts.
10) Close manual lowering and slowly open supply shut off valve.
11) Cycle car and refer to UV-5(A/B)T & UV-5(A/B)TC "Adjustment Procedure" to readjust the valve.

Kit Part Number & Sizes

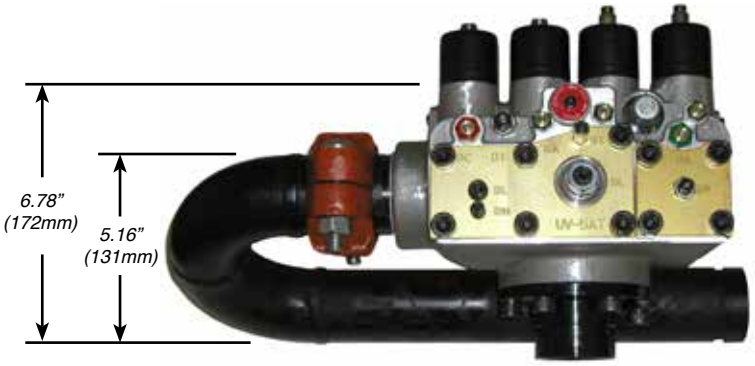
ASSEMBLY NO.	SIZE
5500A-1	1
5500A-2	2
5500A-3	3
5500A-4	4
5500A-5	5
5500A-6	6
5500A-7	7

Parts Included With Kit 5500A - ( )

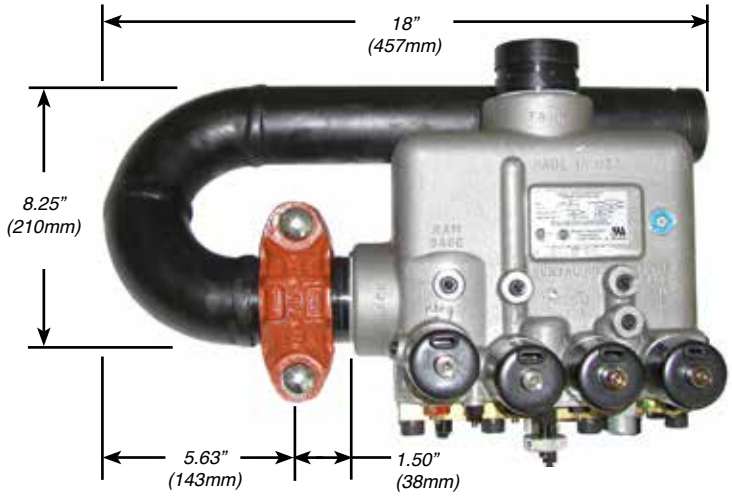
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	5515-TAB	DSC CLOSURE ASSEMBLY
2	1	5509A-TAB	DOWN PISTON ASSEMBLY
3	1	5111V	REMOVABLE SLEEVE O-RING

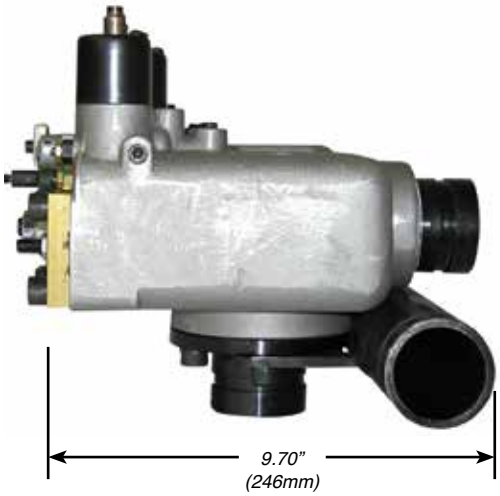
UV-5AT & UV-5ATC Accessories - UV-5AT & UV-5ATC Right Hand Jack Port Adapter Part # 5709

The Right Hand Adapter attaches to the jack port of the UV-5A series control valve and is designed to provide a right hand jack port connection.



Adapter attached to bottom flange

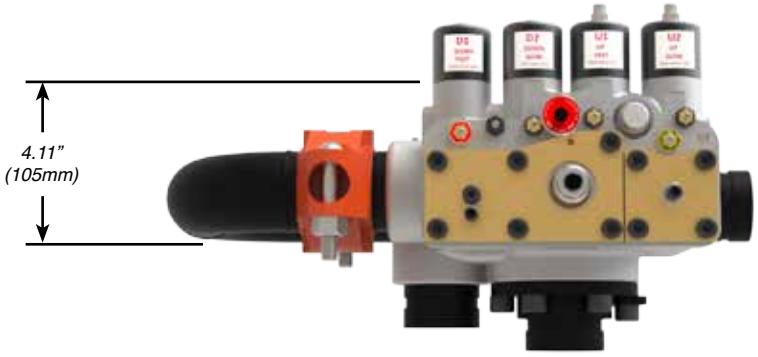


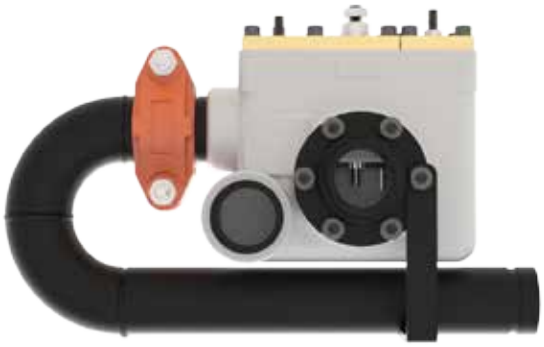


ITEM	PART NO.	DESCRIPTION	QTY.
1	5620A	RIGHT HAND ADAPTER ASSEMBLY	1
2	5366	GROOVED ADAPTER	1
3	GC-20	GROOVE CLAMP	1

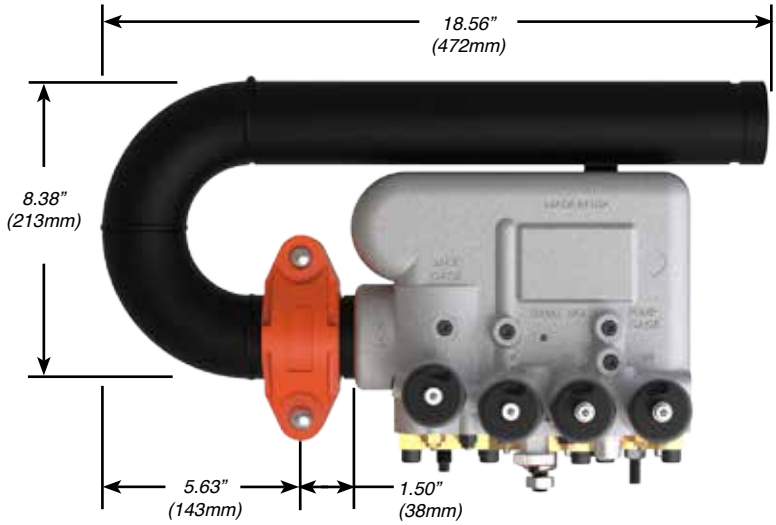
UV-5BT & UV-5BTC Accessories - UV-5BT & UV-5BTC Right Hand Jack Port Adapter Part # 5753

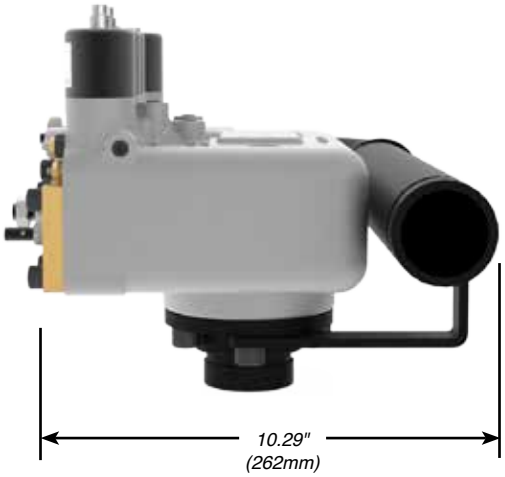
The Right Hand Adapter attaches to the jack port of the UV-5B series control valve and is designed to provide a right hand jack port connection.





Adapter attached to bottom flange





ITEM	PART NO.	DESCRIPTION	QTY.
1	5750A	RIGHT HAND ADAPTER ASSEMBLY	1
2	5366	GROOVED ADAPTER	1
3	GC-20	GROOVE CLAMP	1

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The **Grooved Adapter** was designed to convert the Jack and Tank port of the UV-5A, UV-5(A/B)T, & UV-5(A/B)TC control valve from the standard NPT. This adapter threads directly into each port. **Part No. 5366**

The **Pump Grooved Nipple** was designed to convert the Pump port of the UV-5A, UV-5(A/B)T, & UV-5(A/B)TC control valve from the standard NPT. This adapter is install using the existing pump port flange and hardware. **Part No. 5231-VC**

The **Pressure Gauge Fitting System** is used to provide a means of attaching a Pressure gauge to the control valve. It is provided with a 1/8 brass shut off valve and a male quick disconnect fitting. Individual fittings can be purchased to create your own arrangements. Contact EECO for details. **Part No. 5703**

The **Pressure Gauge Fitting & Low Pressure Switch System** is used to provide a means of attaching a Pressure gauge to the control valve. It is provided with a 1/8 brass shut off valve and a male quick disconnect fitting and a low pressure switch. The option of a N.O or N.O./N.C switch is available. See page 74 for details. Individual fittings can be purchased to create your own arrangements. See page 75 for more details. **Part No. 5704**

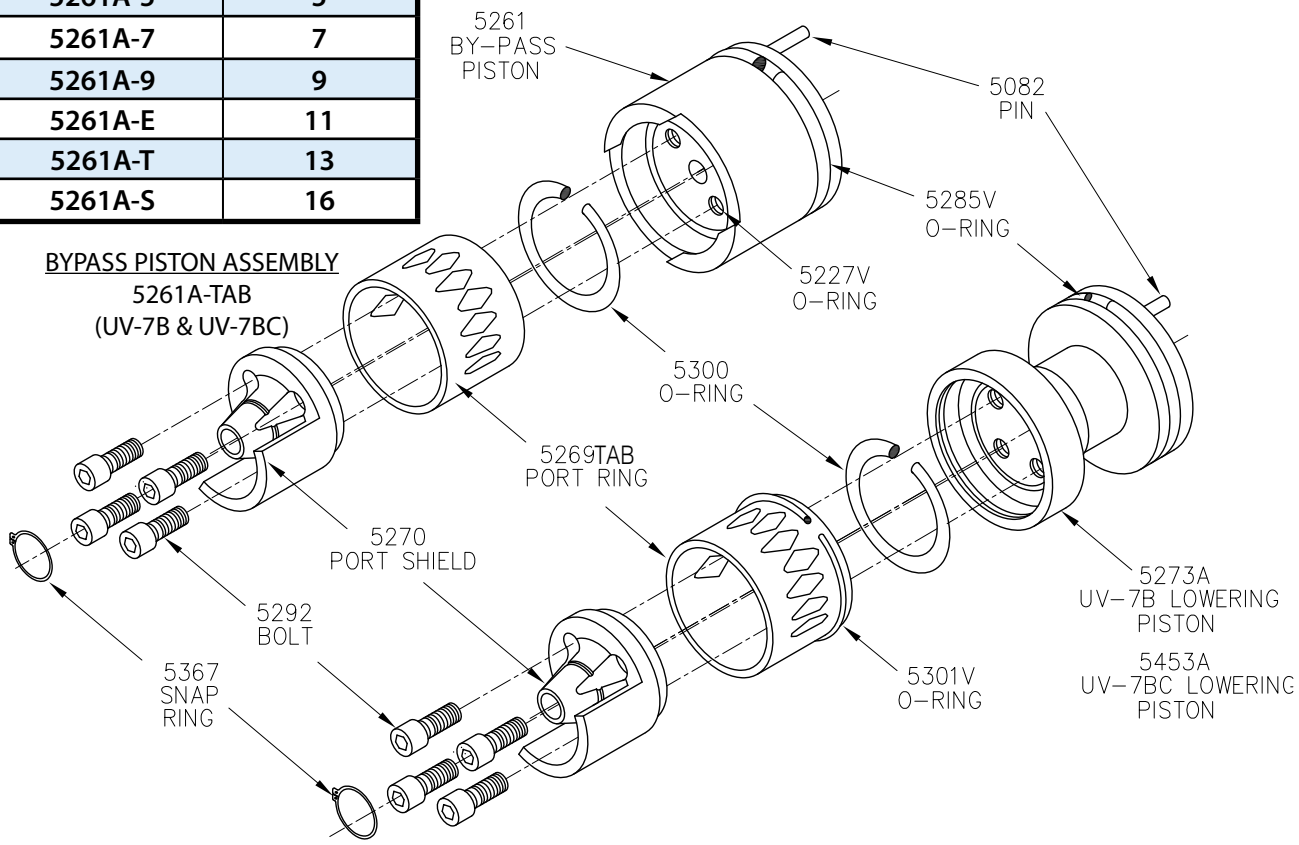
The **Trouble Shooting Kit** was created to provide mechanics with the most common parts needed to service UV-5A, UV-5(A/B)T, & UV-5(A/B)TC Series valves in the field. Contact EECO for details. **Model No. UV-5AT-TSK**

ITEM	PART NO.	DESCRIPTION	QTY.
1	5106V	SOLENOID KIT	1
2	5131D	DYNAMIC SEAL KIT	1
3	S461-BLK	COIL 110VAC/60HZ - BLACK WIRE	1
4	5712	VALVE ADJUSTING WRENCH	1
5	UV-TSG	TROUBLESHOOTING GUIDE	1
6	CAT-VALVE	VALVE CATALOG	1

UV-7B & UV-7BC Bypass Piston Assembly, Part # 5261A-TAB
UV-7B Down Piston Assembly, Part # 5273A-TAB
UV-7BC Down Piston Assembly, Part # 5453A-TAB

UV-7B & UV-7BC Bypass Piston Assembly
Kit Part Number & Open Ports

UV-7B ASSY NO.	OPEN PORTS
5261A-5	5
5261A-7	7
5261A-9	9
5261A-E	11
5261A-T	13
5261A-S	16



BYPASS PISTON ASSEMBLY
5261A-TAB
(UV-7B & UV-7BC)

DOWN PISTON ASSEMBLY
5273A-TAB (UV-7B)
5453A-TAB (UV-7BC)

UV-7B & UV-7BC Down Piston Assembly
Kit Part Number & Open Ports

UV-7B ASSY NO.	UV-7BC ASSY NO.	OPEN PORTS
5273A-7	5453A-7	7
5273A-9	5453A-9	9
5273A-E	5453A-E	11
5273A-T	5453A-T	13
5273A-S	5453A-S	16

Procedure for Replacing the Down and Bypass Port Shields

1. Remove the bolts holding the port shield in place.
2. Clean the bolts and remove all loose material from the threads.
3. Use a non-CFC solvent surface activator such as Loctite activator 7649 to clean the surface of the threads. Wait at least five minutes for the solvent to dry.
4. Apply Loctite 680 compound to the threads.
5. Put the new port shield inside the port ring. Make sure the correct number of ports are open in each of the port rings.
6. Secure the port shields by the bolts and tightethe bolts to 40 in-lbs. torque.
7. Snap the supplied snap ring on the port shield.
8. Be sure that the snap rings are properly installed.

Adjustable flow piston assemblies:

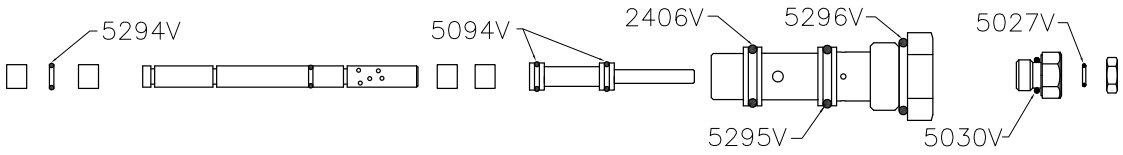
To increase or decrease flow capability, loosen bolts #5292 enough to allow the port ring #5269 to be rotated to the desired flow rate.

Re-tighten locking bolts #5292 evenly to 40 in. lbs. of torque which is about as tight as you can get them using a 3/16"T-handle Allen driver by hand.

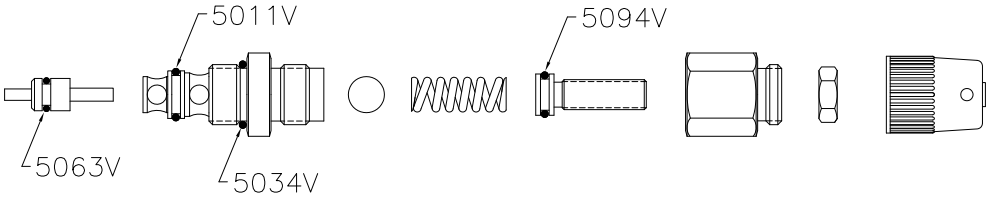
NOTE: If bolts are replaced, please be sure to use Loctite 680 on clean threads of the bolts.

KIT # 5317V - UV-7B & BC VITON SEAL KIT

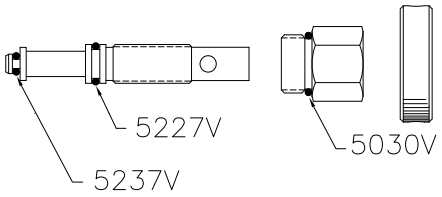
NOTE: We do not recommend rebuilding the DSC adjuster of the UV-7BC valve in the field.



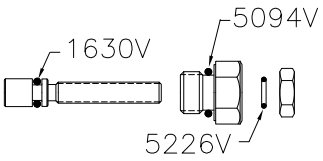
Up Transition (UT) Compensator Assembly
Part # 5276A



Relief Valve (RV)
Part # 5079A



Manual Lowering Assembly (ML)
Part # 5211BA

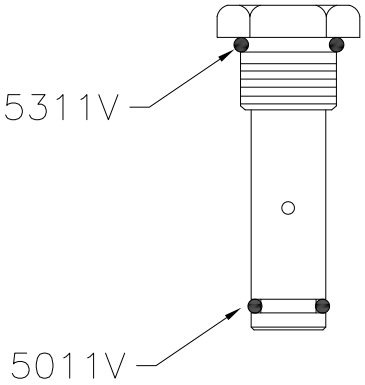


UA, US, DA, DC, DT Adjuster Assembly
Part # 5349A

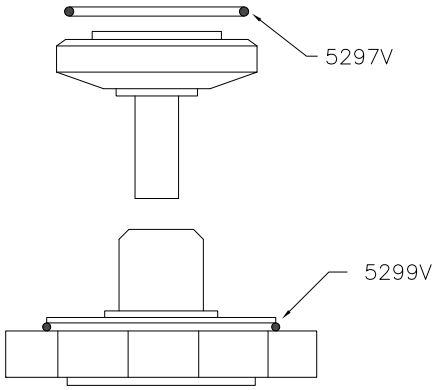
Parts Included with Kit 5317V

PART NUMBER	QTY	LOCATION & DESCRIPTION
5285V	2	O-RINGS FOR BYPASS & DOWN PISTONS
5297V	1	O-RINGS FOR CHECK PISTONS
5300V	2	O-RINGS FOR BYPASS & DOWN PISTONS
5299V	3	O-RINGS FOR BYPASS & DOWN SLEEVE,CHECK FLANGE
5301V	1	O-RINGS FOR DOWN PISTON PORT
5296V	1	O-RINGS FOR UT COMPENSATOR ASSY
5295V	1	O-RINGS FOR UT COMPENSATOR ASSY
2406V	1	O-RINGS FOR UT COMPENSATOR ASSY
5294V	1	O-RINGS FOR UT COMPENSATOR ASSY
5311V	2	O-RINGS FOR DC & UA FILTER ASSY
5193V	2	O-RINGS FOR LEVELING ADJUSTER ASSY
5034V	1	O-RINGS FOR RELIEF VALVE (RV)
5030V	2	0-RINGS FOR UT COMPENSATOR & MANUAL LOWERING
5020V	2	O-RINGS FOR BYPASS & DOWN ADJUSTER ASSY'S
5011V	3	O-RINGS FOR RELIEF VALVE (RV), DC & UA FILTER ASSY
5094V	7	O-RINGS FOR RELIEF VALVE (RV), ADJUSTERS (5), UT COMPENSATOR ASSY
5227V	12	O-RINGS FOR BYPASS PISTON ASSY, UT COMPENSATOR, ML, DOWN FLANGE, BYPASS FLANGE, BYPASS ADJUSTER ASSY & DOWN ADJUSTER ASSY
5063V	1	O-RING FOR RELIEF VALVE (RV)
5226V	5	O-RINGS FOR ADJUSTERS (5)
1630V	6	O-RINGS FOR ADJUSTERS (5) & UT COMPENSATOR ASSY
5237V	1	O-RING FOR ML

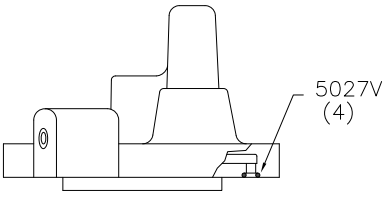
KIT # 5317V - UV-7B & BC VITON SEAL KIT (cont.)



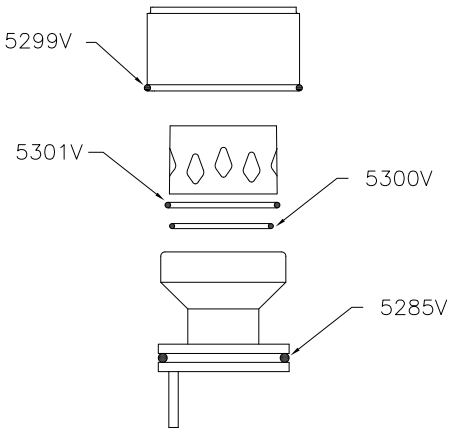
Up Acceleration (UA) Filter Assembly
Part # 5363A



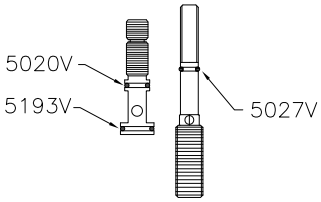
Check Piston Assembly
Part # 5255A



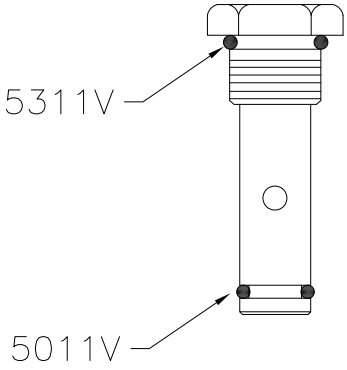
Bypass Flange



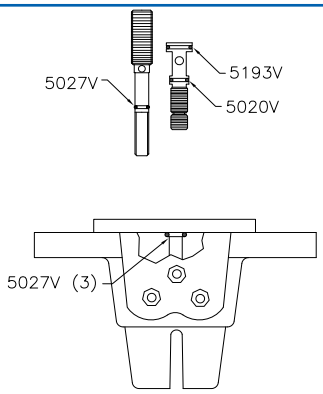
Down Adjuster Assembly
Part # 5273A-TAB (UV-7B)
Part # 5453A-TAB (UV-7BC)



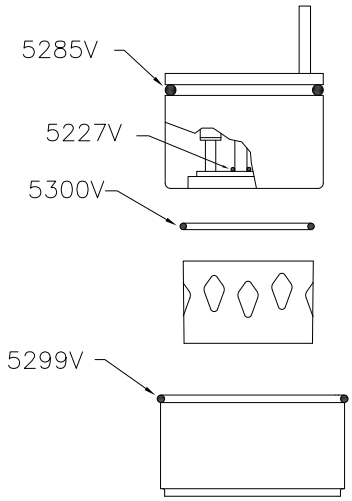
Bypass Adjuster Assemblies
Part # 5258A



Down Closing (DC) Filter Assembly
Part # 5260-1A



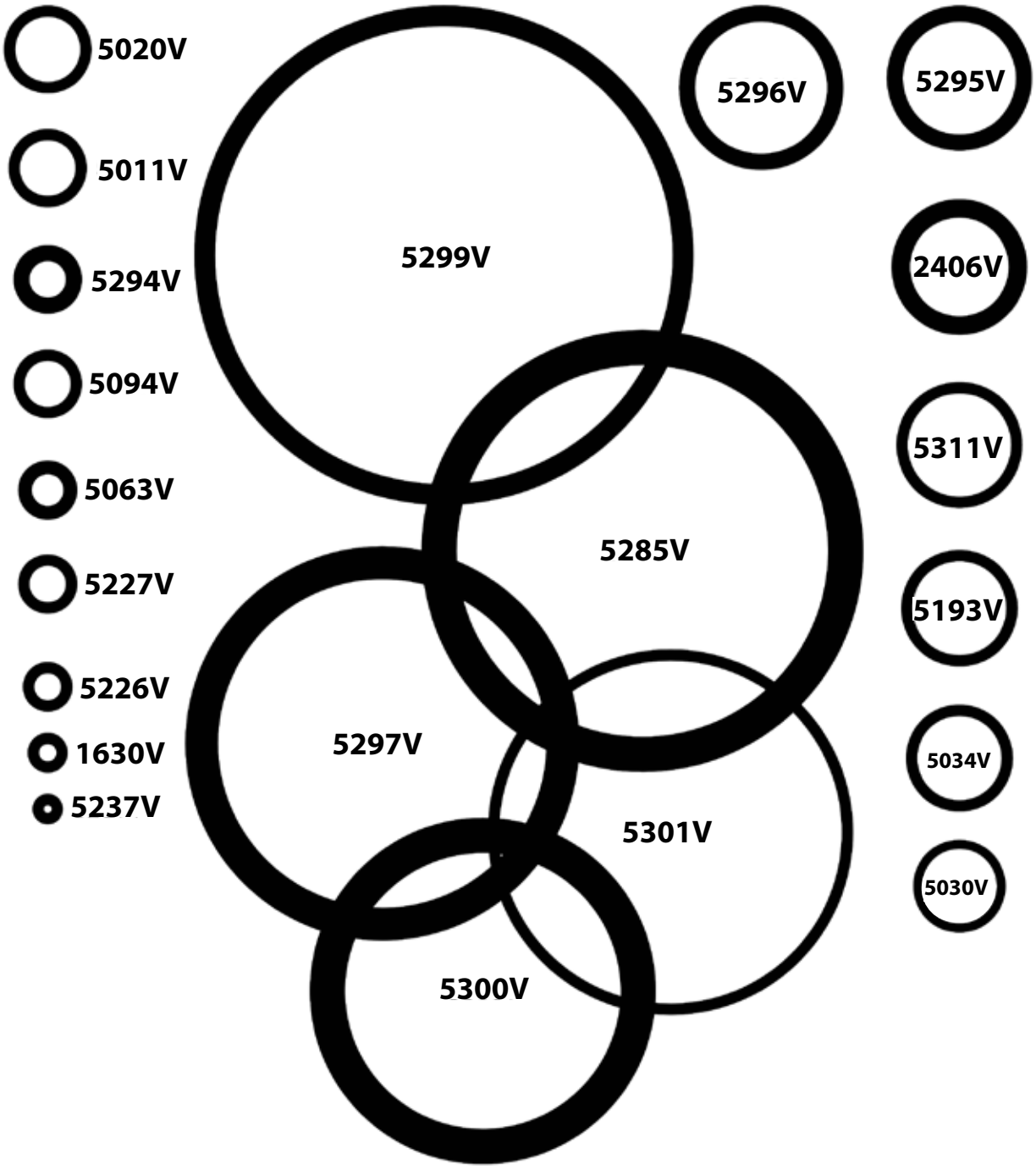
Down Flange Assembly
Part # 5251A (UV-7B)
Part # 5258A (UV-7BC)



Bypass Piston Assembly
Part # 5261A-TAB

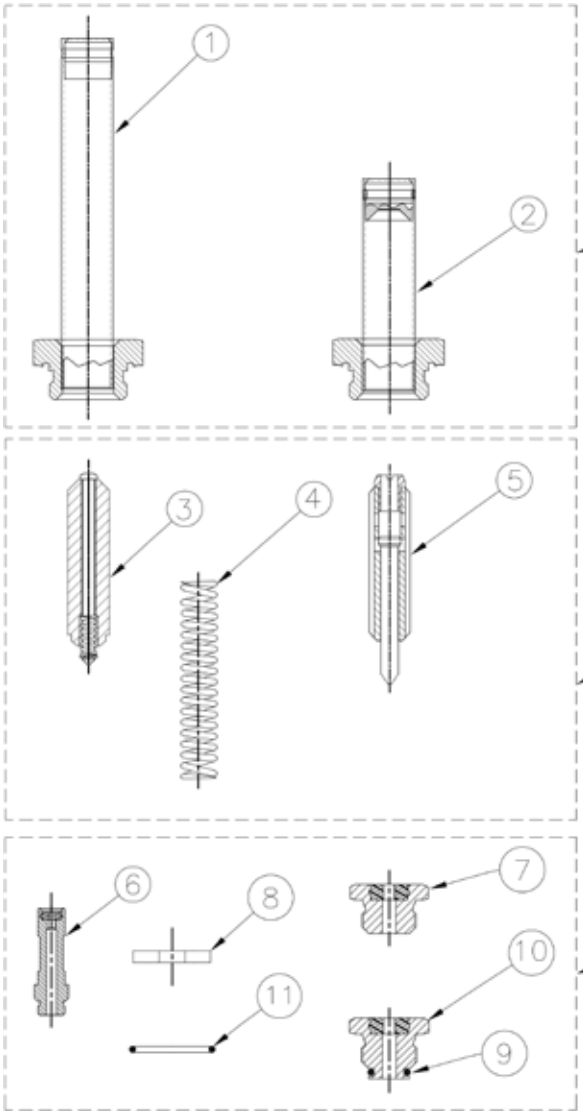
NOTE: When replacing o-rings on down, by-pass & check piston assemblies, apply locktite compound #680 on screw thread & torque the screws 40 in.-lbs.

KIT # 5317V - UV-7B & BC VITON SEAL KIT, O-RINGS



Items shown not to scale.

KIT # 5428 - UV-7B & UV-7BC SOLENOID KIT

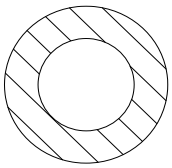


A Solenoid Plunger Tube Kit (5431)

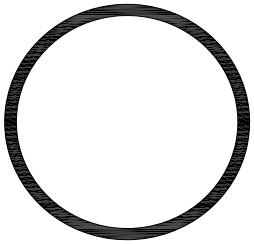
B Solenoid Hammer Kit (5430)

C Solenoid Orifice Kit (5429)

5094V



1458B



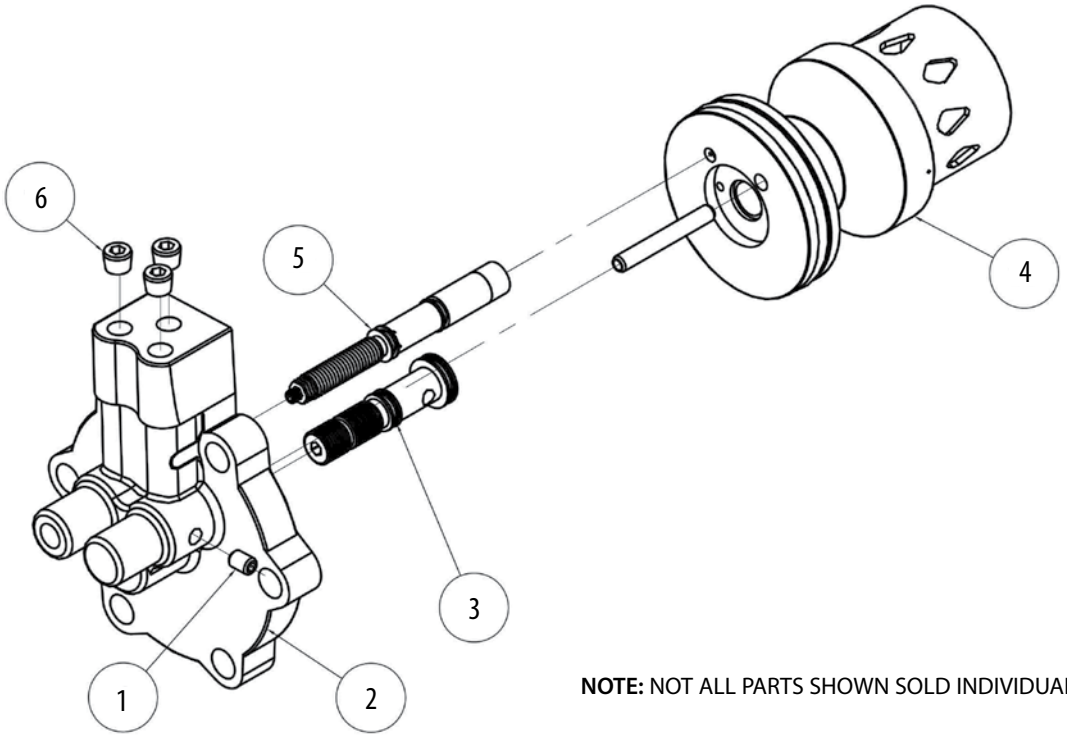
1730V

Parts Included With Kit 5428

ITEM	PART NO	QTY	LOCATION & DESCRIPTION
A	**PLUNGER TUBE KIT (5431)**		
1	2129A	2	N/O PLUNGER TUBE ASSY
2	2164A	2	N/C PLUNGER TUBE ASSY
B	**HAMMER KIT (5430)**		
3	2125A	2	N/O SOLENOID PLUNGER ASSEMBLY
4	2132	2	N/O PLUNGER ASSEMBLY SPRING
5	1456DA	2	N/C SOLENOID HAMMER ASSEMBLY
C	**ORIFICE KIT (5429)**		
6	2391A	2	N/O NEEDLE ORIFICE ASSEMBLY
7	1465BA	1	N/C NEEDLE ORIFICE SEAT ASSEMBLY (D1)
8	1458B	1	N/C NEEDLE ORIFICE WASHER
9	5094V	1	O-RING FOR N/C NEEDLE ORIFICE SEAT ASSEMBLY (D2 ONLY)
10	5353A	1	N/C NEEDLE ORIFICE ASSEMBLY (D2)
11	1730V	4	O-RINGS FOR N/O & N/C PLUNGER ENCLOSURE ASSEMBLIES

KIT # 5458A-( ) - PRESSURE COMPENSATION (CONSTANT DOWN SPEED) UPGRADE KIT FOR UV-7B

This kit is used to convert an existing, in-service, UV-7B valve into a UV-7BC (Constant Down Speed) valve.



NOTE: NOT ALL PARTS SHOWN SOLD INDIVIDUALLY

Kit Part Number & Sizes

SIZE	ASSEMBLY NO.
5	5458A-5
7	5458A-7
9	5458A-9
E	5458A-11
T	5458A-13
S	5458A-16

Parts Included With Kit 5458A-( )

ITEM	QTY	PART NO.	DESCRIPTION
1	1	5520	1/4-20 X 1/4" Long Brass Tube
2	1	5458	DSC Down Flange
3	1	5191BA	Leveling Adjustor Assembly
4	1	5453A-TAB	DSC Down Piston
5	1	5736A-TAB	DSC Compensator Body Assembly
6	3	5113	Pipe Plug

UV-7B & UV-7BC Accessories

The **Grooved Adapter Short** was designed to convert the Jack and Pump port of the UV-7B, & UV-7BC control valve from the standard NPT. This adapter threads directly into each port. **Part No. 5632**

The **Grooved Adapter Long** was designed to convert the Tank port of the UV-7B, & UV-7BC control valve from the standard NPT. This adapter is install using the existing pump port flange and hardware. **Part No. 5633**

The **Pressure Gauge Fitting System** is used to provide a means of attaching a Pressure gauge to the control valve. It is provided with a 1/8 brass shut off valve and a male quick disconnect fitting. Individual fittings can be purchased to create your own arrangements. Contact EECO for details. **Part No. 5706**

The **Pressure Gauge Fitting & Low Pressure Switch System** is used to provide a means of attaching a Pressure gauge to the control valve. It is provided with a 1/8 brass shut off valve and a male quick disconnect fitting and a low pressure switch. The option of a N.O or N.O./N.C switch is available. See page 74 for details. Individual fittings can be purchased to create your own arrangements. See page 75 for more details. **Part No. 5707**

Low Pressure Switch

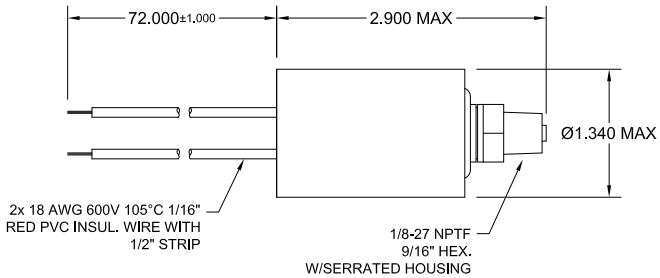
N.O. Low Pressure Switch
Part # 5253

SWITCH SPECIFICATIONS:

CONTACTS ..... N.O.
ACTUATION PRESSURE..... 90 ± 10 PSIG
RELEASE PRESSURE..... 50 ± 10 PSIG
MAX PRESSURE (UL) ..... 750 PSIG
MAX PRESSURE (NON-UL)..... 1000 PSIG
BURST PRESSURE..... 5000 PSIG
TEMPERATURE RANGE..... AMBIENT: -20°F TO 150°F
..... FLUID: -65°F TO 275°F
ELECTRICAL RATING ..... 120VAC - 13A, 13FLA, 65LRA, 480VA
..... 240VAC - 10A, 10FLA, 45LRA, 720VA
DIELECTRIC STRENGTH ..... 750 VRMS OPEN SWITCH
1550 VRMS TERMINALS TO SWITCH
UL RECOGNIZED..... FILE SA995, GUIDE SDFY 2
UL CANADA RECOGNIZED .... FILE SA995, GUIDE SDFY 8

SWITCH CONFIGURATIONS
SPST AT ATMOSPHERIC PRESSURE: OPEN

THE MECHANICAL CONNECTION IS 1/8-27 NPTF MALE CONNECTION.
LEAD WIRES ARE 72" ± 1.000 OF #18 AWG WITH INSULATION RATED FOR 105° IN OIL.



N.O./N.C. Low Pressure Switch
Part # 5245

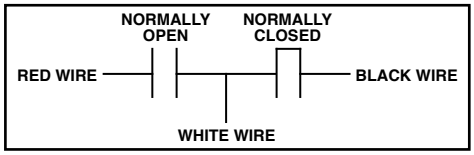
SWITCH SPECIFICATIONS:

CONTACTS ..... N.O. / N.C
ACTUATION PRESSURE..... 100 ± 10 PSIG
RELEASE PRESSURE..... 60 ± 5 PSIG
MAX PRESSURE (UL) ..... 750 PSIG
MAX PRESSURE (NON-UL)..... 1000 PSIG
BURST PRESSURE..... 5000 PSIG
TEMPERATURE RANGE..... FLUID: -65°F TO 275°F
ELECTRICAL RATING ..... 120VAC - 5.8 FLA, 34.8 LRA
..... 240VAC - 2.9 FLA, 17.4 LRA

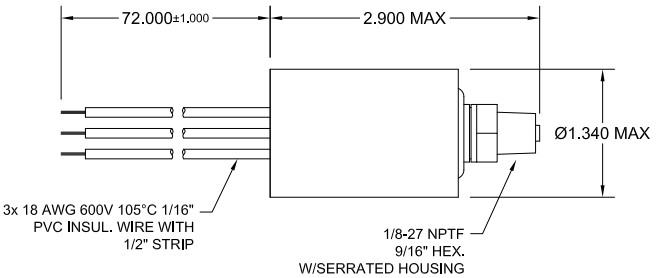
SWITCH CONFIGURATIONS
SPDT AT ATMOSPHERIC PRESSURE: OPEN

THE MECHANICAL CONNECTION IS 1/8-27 NPTF MALE CONNECTION.
LEAD WIRES ARE 72" ± 1.000 OF #18 AWG WITH INSULATION RATED FOR 105° IN OIL.

PRESSURE SWITCH CIRCUITRY

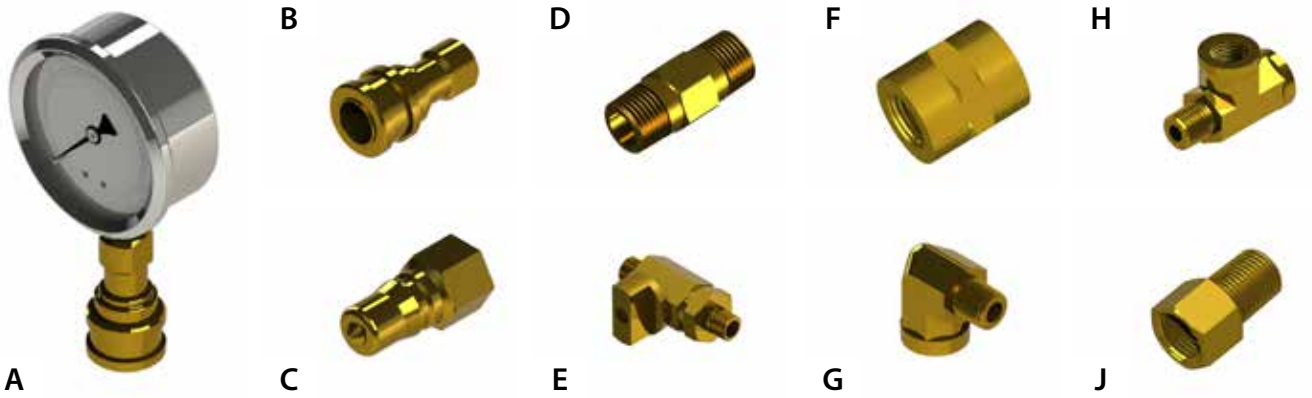


THE WHITE WIRE WILL ALWAYS BE CONNECTED TO THE CIRCUIT



Actual delivered product may differ in appearance from above images. EECO reserves the right to substitute items based on product availability or other considerations.

Control Valve Fittings



The **Pressure Gauge Fittings** are available to provide a means of attaching a Pressure gauge and or Pressure Switch to the Control Valve. All threaded fittings are 1/8 NPT brass.

ITEM	PART NO.	DESCRIPTION
A	P10200	0 - 1200 PSI LIQUID FILLED PRESSURE GAUGE
B	P10201	FEMALE QUICK DISCONNECT
C	P10202	MALE QUICK DISCONNECT
D	P10203	MALE - MALE HEX NIPPLE
E	P10204	MALE - MALE SHUTOFF VALVE
F	P10206	FEMALE - FEMALE COUPLING
G	P10207	FEMALE - MALE 90° ELBOW
H	P10208	FEMALE - FEMALE - MALE - TEE
J	P10209	FEMALE - MALE ADAPTER

Self Closing Manual Lowering Valve

The **Self Closing Manual Lowering Valve** can replace the current Manual Lowering in all EECO Control Valves.

To open the Self Closing Manual Lowering Valve the knob needs to be turned a 1/4 turn counter clockwise (CCW). Once the knob is released, the manual lowering valve will automatically close. Because of the 1/4 turn and automatic closing features, the manual lowering valve can be adapted for machine roomless or hard to reach installations. **Part No. 5713**

Control Valve Adjusting Tools

The **Combination Valve Adjusting Wrench** is a handy tool used to make the neccesary adjustments to any EECO Control Valve. This tool has a convient pen climp to store in your pocket. **Part No. 5712**

The **Valve Adjusting "Z" Wrench** is a tool used to make the neccesary fine tuning adjustments to any EECO Control Valve. **Part No. ####**

The **Valve Troubleshooting Guide** is a quick reference guide to common issues with control valves found in hydraulic elevators . It provides symptoms and solutions for most problems that may arise. This guide is laminated to prevent destruction with contact of oil. For assistanace with troubleshooting contact EECO at (888) 577-3326. **Model No. UV-TSG**

The **EECO Control Valve Adjusting Kit** was created to provide the mechanic with the tools to troubleshoot and adjust an EECO Control Valve. The flash drive includes a step by step training of the UV-5AT, as well as other helpful documentation about other EECO products. **Model No. UV-VAK**

Actual delivered product may differ in appearance from above images. EECO reserves the right to substitute items based on product availability or other considerations.

Hydraulic Elevator Control Valve
Quotation Request Form

Elevator Equipment Corporation

Date _____

Required Date _____ ☐ *Out of Service*

Company _____ Contact _____

Address _____ Phone _____ Ext. _____ Fax _____

City _____ St. _____ Zip _____ Cell Phone _____

Project Name _____ St. _____ Zip _____ Email _____

Project Data

Static Pressure _____ psi
(empty car at bottom landing)

Flow Rate _____ gpm

or

Empty Car Weight _____ lbs

Piston Diameter _____ in

or Circumference _____ in

Car Speed Up _____ fpm

Down _____ fpm
(if different)

☐ Constant Down Speed then:

Max. Operating Pressure _____ psi

or

Capacity _____ lbs

Piston Weight _____ lbs

OR

Piston Wall Thickness _____ in

Total Travel _____ ft _____ in
(Total Floor Travel + Top & Bottom Overtravels)

☐ Machine Room Adjacent

☐ Machine Room Remote _____ ft

☐ Machine Room Location _____ Landing

☐ Special Requirements

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Control Valve

Quantity Required _____

☐ UV-4R ☐ UV-5AT ☐ UV-5BT ☐ UV-7B

Serial No. _____
(If Replacement Valve)

Oil Line Connections (NPT Ports Standard)	Pump	Jack	Return
Grooved	☐	☐	☐
Street Elbow			☐

☐ Include Coils

Voltage _____ V ☐ AC ☐ DC _____ Hz

☐ Emergency Lowering Dual Voltage Coil
110 AC / 12 DC (not for use with UV-7B)

☐ Explosion Proof

☐ Self Closing Manual Lowering

Accessories

☐ Adjustable Load Weighing Switch Kit

☐ Low Pressure Switch
☐ N.O. ☐ N.O./N.C.

☐ Right Hand Jack Port Adapter (UV-5AT Only)

☐ Valve Return Filter (installs on valve return port)
☐ Female NPT ☐ Male NPT ☐ Grooved

☐ EECO Control Valve Adjusting Kit

☐ Troubleshooting Kit

☐ Troubleshooting Guide

☐ Combination Valve Adjusting Wrench

☐ Valve Training DVD

☐ Valve Catalog

1/8" Pressure Gauge Accessories

Fitting Kits

☐ 0 - 1000 Liquid Filled Pressure Gauge Assembly

☐ Pressure Gauge Fittings Kit

☐ Pressure Gauge Fittings & Low Pressure Switch Kit

Individual Fittings

☐ 0 - 1000 Liquid Filled Pressure Gauge

☐ Female Quick Disconnect

☐ Male Quick Disconnect

☐ Hex Male Adapter

☐ Shut Off Valve Male - Male

☐ Coupling Female - Female

☐ Tee Male - Female - Female

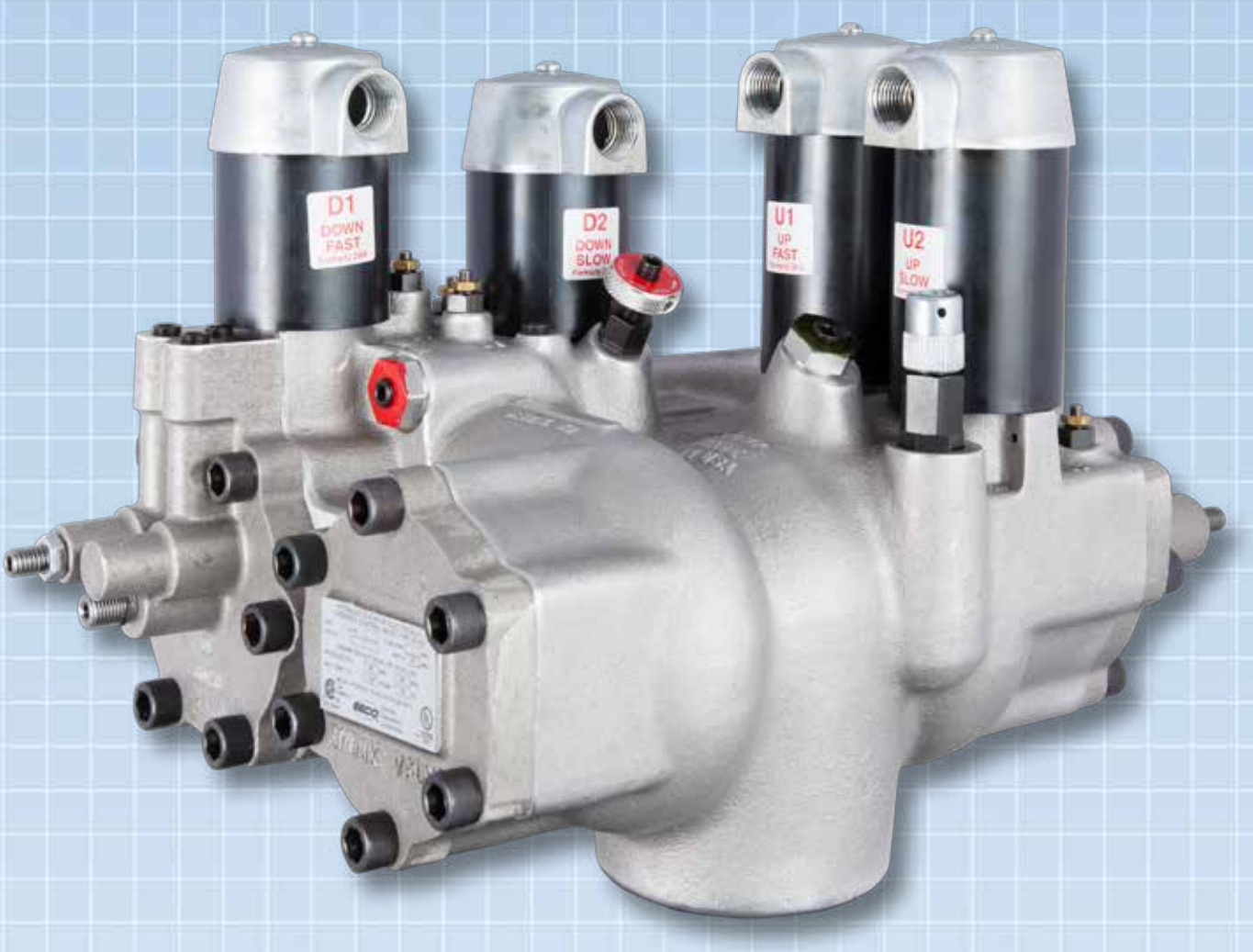
☐ Adapter Male - Female

☐ 90° Elbow Male - Female

EECO™

Elevator Equipment Corporation

"Simplicity in Motion"



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