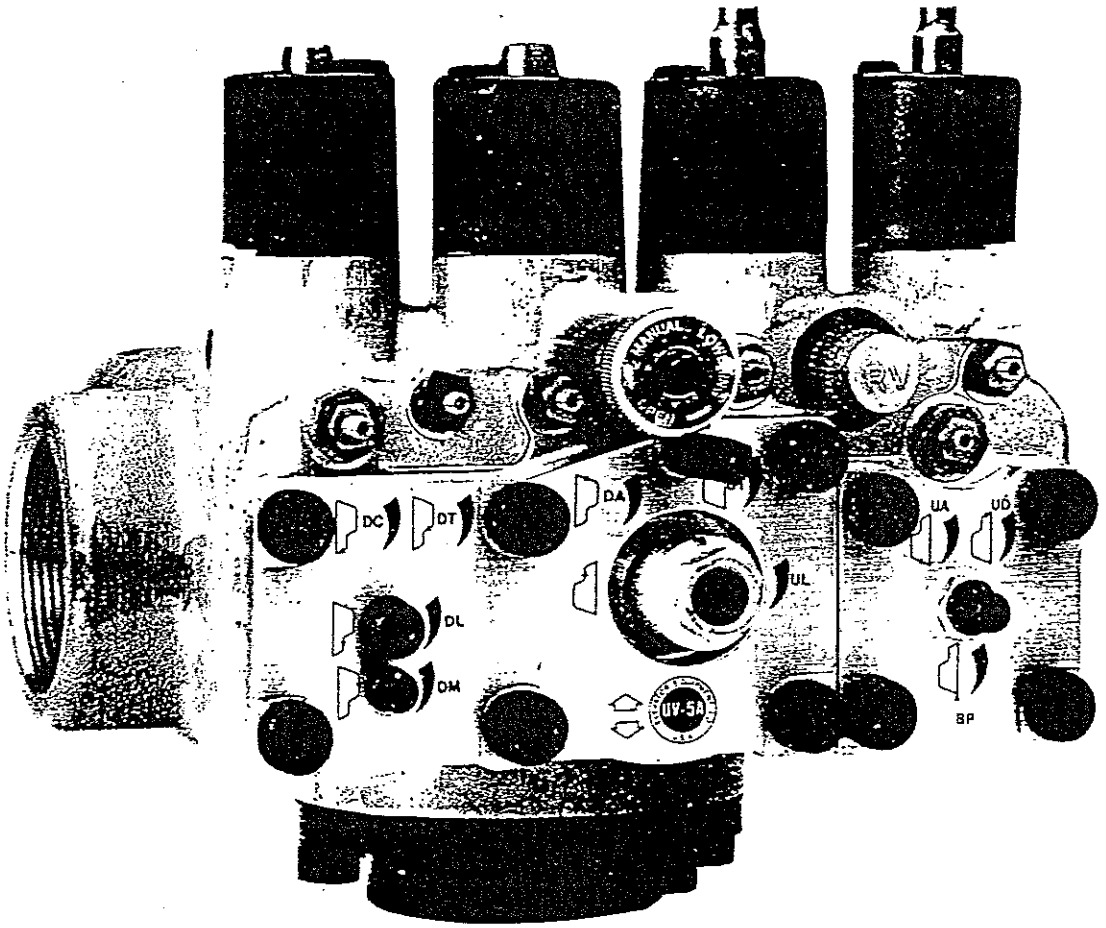
EECO

VALUES

HYDRAULIC CONTROL VALVES

TYPE UV-5A

SEPTEMBER 1, 1983



ELEVATOR EQUIPMENT CO. • BOX 39714 • LOS ANGELES • CALIFORNIA • 90039 • PHONE (800) 423-2800
TELEX 1910 497 4946 • BOX 1544 • RICHMOND • INDIANA • 47374 • PHONE (800) 428-6564

HYDRAULIC CONTROL VALVES
UV-5A

FEATURES

The fully unitized UV-5A valve performs all necessary functions for the operation of a hydraulic elevator in both directions of travel. The UV-5A valve accomplishes the following:

SMOOTH UP START

1. Allows motor to reach full running speed before load is applied to pump.
2. One adjustment for soft start and smooth acceleration.

UP TRANSITION

1. Unvarying transition through wide pressure range.

UP LEVELING

1. Maintains leveling speed regardless of change of system pressure, oil viscosity, or pump output.
2. Non-critical adjustable leveling speed.

UP STOP

1. Provides smooth up stop which is solenoid operated and adjustable.

LOWERING VALVE

1. Provides controlled down acceleration, precise contract down speed, down transition, adjustable leveling speed and soft stop. Tool-less manual lowering feature standard.

CHECK VALVE

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

ADDITIONAL FEATURES

1. Lightweight heat treated high strength aluminum body.
2. All control adjustments are made from front side of valve.
3. Fully adjustable pressure relief valve.
4. Moving parts restricted to sliding sealed pistons.

OPERATION

As the pump starts, the UV-5A Valve bypasses the full pump output to the tank. This allows the pump motor to reach full speed at no load. The BP Piston then closes at a controlled, adjustable rate and forces a smooth ever increasing flow to the elevator jack.

When the car reaches the slow-down switch at the next floor, BP piston then opens at an adjustable rate, smoothly slowing the car to a predetermined, stabilized leveling speed. The leveling speed remains constant regardless of the load on the car until the car reaches floor level.

The leveling switch opens the dump (UDS) solenoid allowing the BP port to bypass the entire pump output to the tank bringing the car to a smooth stop. NOTE! Pump motor must be timed to run approximately 2½ seconds after car has stopped. The BP piston is now in the open position ready for the next up start.

Lowering the elevator is accomplished by energizing solenoids DMS and DLS. When DMS is de-energized, the main piston partially closes causing the car to go into leveling speed. DLS is de-energized at floor level.

Manual Lowering (ML) is provided in leveling speed only.

RATINGS

FLUID

For oil service, A good grade of Turbine oil, viscosity 150 SSU and a minus pour point is recommended. See Bulletin E-7000 Page 10

PRESSURE

Rated at 90 PSI. 500 PSI maximum for UV5A, 800 PSI for UV5A-HP.

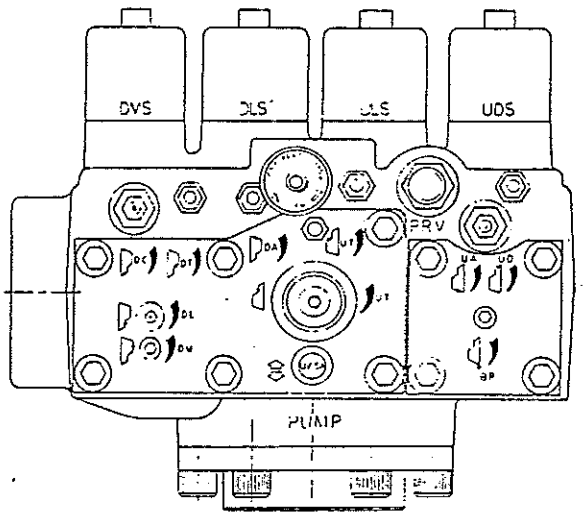
TEMPERATURE

27°C (80°F) Minimum
65°C (150°F) Maximum

SIZE

All UV-5A valves should be sized to bypass the entire capacity of the pump at MINIMUM pressure. See Flow Chart Bulletin E-7000 Page 2.

HYDRAULIC CONTROL VALVES
UV-5A
UP ADJUSTMENTS



UP PRE-SETTING

(1) "BP"-BY PASS-CCW to stop, Back in CW 2 turns
(2) "UA"-UP START-CW to stop. Do not tighten.
(3) "UL"-UP LEVELING-CW to stop.
(4) "UT"-UP TRANSITION-CCW to stop.
(5) "UD"-UP DUMP (soft stop)-CCW to stop.

(ULS)-UP LEVELING SOLENOID
(UDS)-UP DUMP SOLENOID
NOTE: CW-Clockwise
CCW-Counterclockwise

UP ADJUSTMENTS

PRE-SET **ALL** ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.

(1) "BP"-BY PASS FLOW ADJUSTOR—Car at lower floor. No load on car. Disconnect (UDS). Start pump. Turn "BP" CW till car moves, then CCW till car stalls, plus ½ turn. Stop pump. Reconnect (UDS).

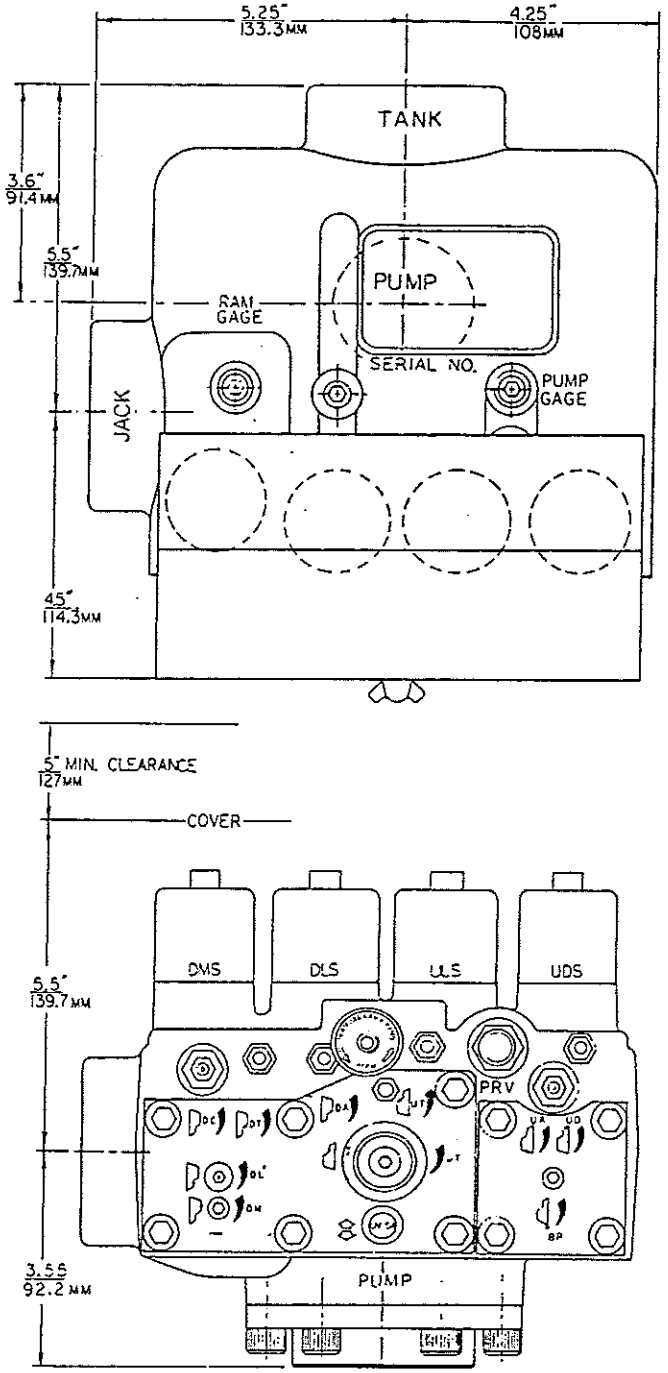
(2) "UA"-UP START ADJUSTOR—Car at lower floor. No load. Start pump. Turn "UA" CCW for fast up acceleration, CW for slower. Car should reach full speed in 2½ feet at high speed, proportionately less for lower speed installation. DO NOT DRAG OUT ACCELERATION.
NOTE: UA is a screened input and must be kept clean. Clogging will affect all other **up** adjustments.

(3) "UL"-UP LEVELING ADJUSTOR—Car at lower floor, no load. Disconnect (ULS). With pump running, turn "UL" CCW until a leveling speed of 12 to 15 F.P.M. is obtained. Reconnect (ULS) (5 feet in 20 seconds = 15 F.P.M.)

(4) "UT"-UP TRANSITION ADJUSTOR—Car at lower floor, no load, Send car up. Turn "UT" CW for slower transition (slow-down). CCW for faster transition. Continue adjustment of "UT" for smooth stepless deceleration. Slow-down switch should be set to give 3 to 4 inches of stabilized leveling. Do **NOT** adjust valve to suit switch. Adjust switch (or vane) to suit valve.

(5) "UD"-UP DUMP ADJUSTOR—(Soft Stop) Turn "UD" CCW for hard stop. CW for softer stop.
NOTE: Pump motor must be timed to run approximately 2½ seconds after car has stopped.
RELIEF VALVE—Located on front of valve body. Turn CW for higher pressure, CCW for lower pressure. Factory set at 450 P.S.I.

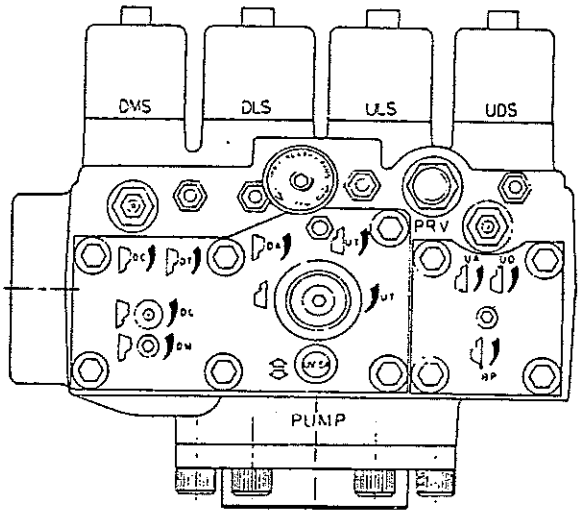
HYDRAULIC CONTROL VALVES
UV-5A
INSTALLATION & DIMENSIONS



INSTALLATION

(1) Valve **must** be mounted with solenoids in vertical position.
(2) May be mounted over, under or on the side of oil tank.
(3) Provide 5 inches clearance above solenoids for coil removal.
(4) For under tank mounting, shut-off valve and all fittings should be equal to 2" standard pipe size.
(5) Outlets of UV-5A are marked JACK and TANK. Pump input is on underside of valve.
(6) The two (normally open) up solenoids must be energized when pump motor starts. The two (normally closed) down solenoids must be energized to lower car.

HYDRAULIC CONTROL VALVES
UV-5A
DOWN ADJUSTMENTS



DOWN PRE-SETTING

(6) "DL"-DOWN LEVELING—CW to stop—CCW 5½ turns.
(7) "DM"-DOWN FULL SPEED —CW to stop—CCW 5½ turns.
(8) "DT"-DOWN TRANSITION—Closed flush with end of locknut.
(9) "DA"-DOWN ACCELERATION —Wide Open. CCW
(10) "DC"-DOWN CLOSING-Wide open. CCW
"ML"-MANUAL LOWERING (see below)
(DMS)-Down Main Solenoid
(DLS)-Down Leveling Solenoid

DOWN ADJUSTMENTS

PRE-SET **ALL** ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.
NOTE: Final adjustments are in the ⅛ of a turn range or less for optimum performance

(6) "DL-"-DOWN LEVELING ADJUSTOR—With car at upper landing or at down level zone, remove or disconnect DMS coil. Energize DLS coil. Turn DC "IN" CW until car moves down. Adjust DL for 10-15 F.P.M. Recycle car several times to determine down **Start** and **Stop** (in leveling speed). If stop is too firm, turn DC "IN" CW. Be sure stop is correct as all further adjustments are affected. Replace or reconnect DMS coil.

(7) "DM"-DOWN SPEED ADJUSTOR—With car at upper landing, energize DMS and DLS coils. Car should lower. Turn DM "OUT" CCW to obtain contract speed.

(8) "DT"-DOWN TRANSITION ADJUSTOR—Recycle car and observe down transition. If too abrupt, loosen locknut and turn DT "OUT" CCW approximately 2½ turns until smooth. Recycle car and continue to adjust DT for transition.

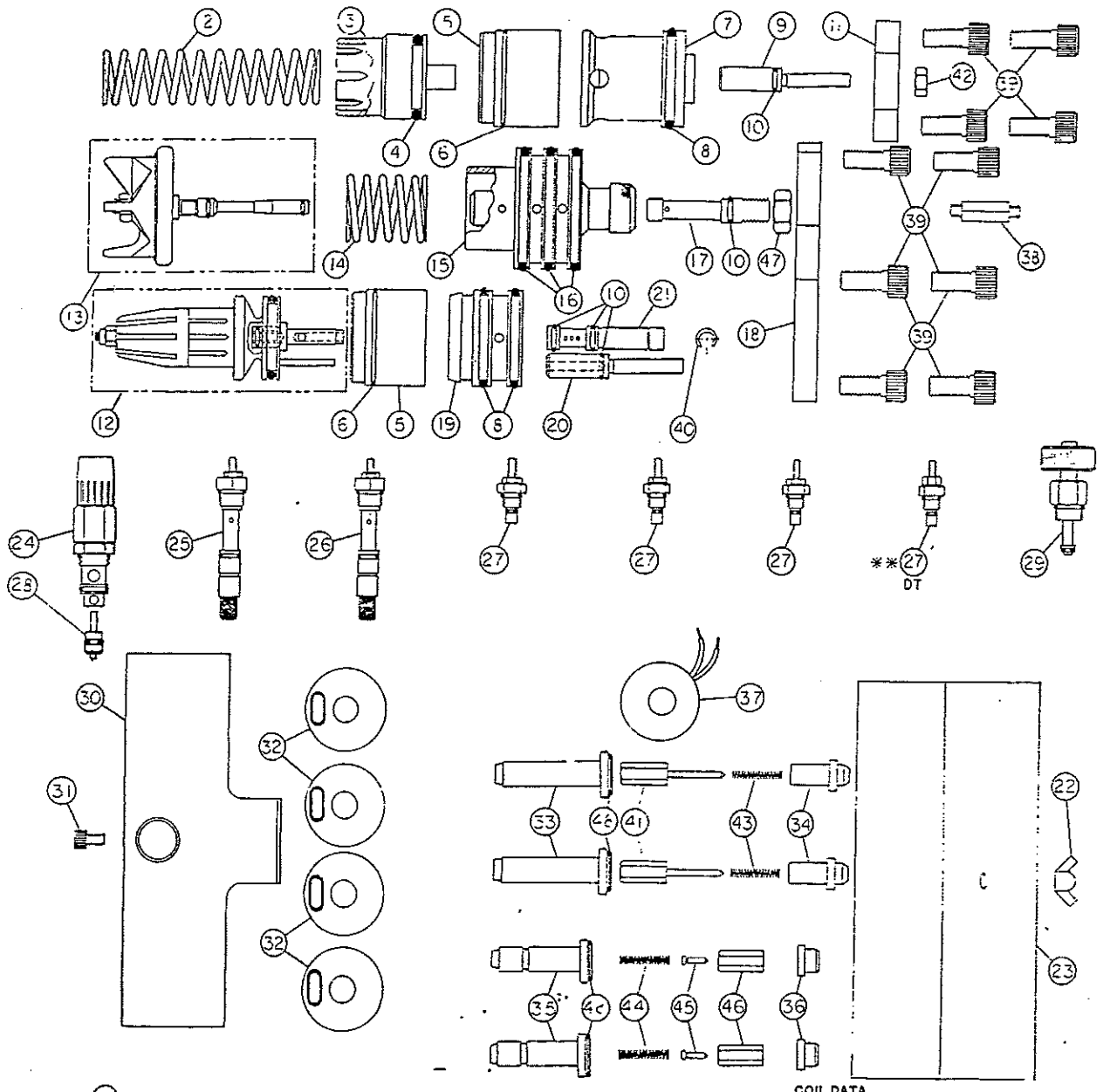
(9) "DA"-DOWN ACCELERATION ADJUSTOR—Car at upper floor. Turn "DA" CW until it stops. Energize DMS and DLS. Car should not move. Turn DA slowly CCW until valve opens. Turn "DA" CW to slow the acceleration rate.
NOTE: Down level speed will increase as DT becomes effective. Turn DL "IN" CW to maintain down level speed at 10-15 F.P.M.

(10) "DC"-DOWN CLOSING ADJUSTOR—See No. (6) above for setting.
NOTE: DC is a screened input and must be kept clean. Clogging will affect all other **down** adjustments.

*MANUAL LOWERING—Turn CCW to lower car.
CAUTION—If persons are riding the car during manual lowering, warn them to stay clear of car door.

***SAFETY NOTE:**
All electrical power **must** be off when using manual lowering!

HYDRAULIC CONTROL VALVES
UV-5A
EXPLODED VIEW



COIL DATA
Standard duty coils for types DL-UV7 valves

Coil No.	Volts	HZ (Cycles)	In Rush AMP	Holding AMP
S-651	110	60	1.41	.60
S-652	208	60	.75	.32
S-653	220	60	.70	.30
S-752	110	D.C.	.40	.40
S-753	220	D.C.	.20	.20
COILS FOR DL ONLY				
S-601	110	60	1.46	.78
S-603	220	60	.75	.40
COILS FOR TYPE UV-5 & UV-5A VALVES ONLY				
S-461	115	60	.64	.34
S-462	208	60	.35	.22
S-463	230	60	.20	.15
S-464	460	60	.11	.08
S-453	220	50	.18	.15
S-401	110	D.C.	.22	.22
S-403	220	D.C.	.12	.12

All coils Class B (encapsulated) 96" leads
Special Coils furnished on request

HYDRAULIC CONTROL VALVES
TYPE UV-5A VALVE

FEATURES

The fully unitized UV-5A valve performs all necessary functions for the operation of a hydraulic elevator in both directions of travel. The UV-5A valve accomplishes the following:

SMOOTH UP START

1. Allows motor to reach full running speed before load is applied to pump.
2. One adjustment for soft start and smooth acceleration.

UP TRANSITION

1. Unvarying transition through wide pressure range.

UP LEVELING

1. Maintains leveling speed regardless of change of system pressure, oil viscosity, or pump output.
2. Non-critical adjustable leveling speed.

UP STOP

1. Provides smooth up stop which is solenoid operated and adjustable.

LOWERING VALVE

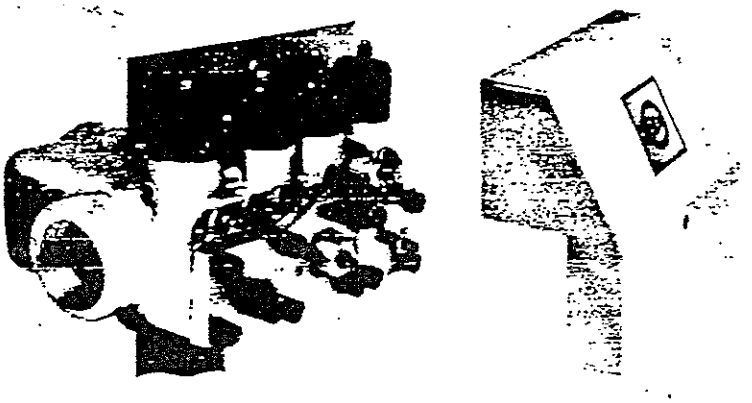
1. Provides controlled down acceleration, precise contract down speed, down transition, adjustable leveling speed and soft stop. Tool-less manual lowering feature standard.

CHECK VALVE

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

ADDITIONAL FEATURES

1. Lightweight heat treated high strength aluminum body.
2. All control adjustments are made from front side of valve.
3. Fully adjustable pressure relief valve.
4. Moving parts restricted to sliding sealed pistons.



EECO TYPE UV-5A VALVE

RATINGS

FLUID

For oil service. A good grade of Turbine oil, viscosity 150 SSU and a minus pour point is recommended. See Bulletin E-1006, Page 1.

PRESSURE

Rated at 90 PSI minimum, 500 PSI maximum

TEMPERATURE

80° F Minimum
150° F Maximum

SIZE

All UV-5A valves should be sized to bypass the entire capacity of the pump at MINIMUM pressure. See Flow Chart Bulletin E-1005, Page 5.

PRICES

Refer to Price Section #5500.

HYDRAULIC CONTROL VALVES
TYPE UV-5A VALVE

OPERATION

As the pump starts, the UV-5A Valve bypasses the full pump output to the tank. This allows the pump motor to reach full speed at no load. The BP Piston then closes at a controlled, adjustable rate and forces a smooth ever increasing flow to the elevator jack.

When the car reaches the slow-down switch at the next floor, BP piston then opens at an adjustable rate, smoothly slowing the car to a predetermined, stabilized leveling speed. The leveling speed remains constant regardless of the load on the car until the car reaches floor level.

The leveling switch opens the dump (UDS) solenoid allowing the BP port to bypass the entire pump output to the tank bringing the car to a smooth stop. NOTE! Pump motor must be timed to run approximately ½ second after car has stopped. The BP piston is now in the open position ready for the next up start.

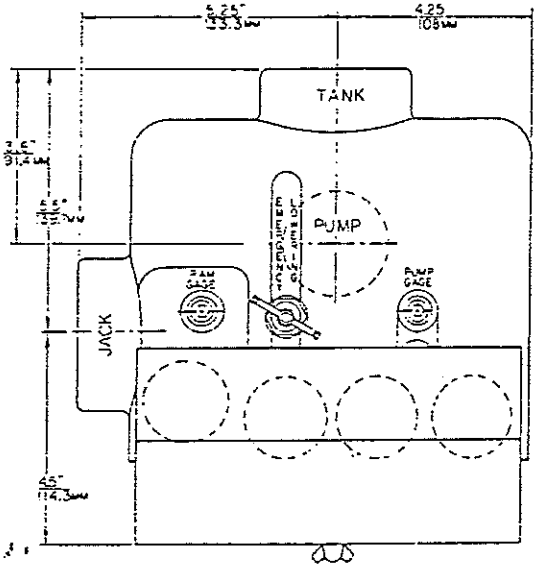
INSTALLATION

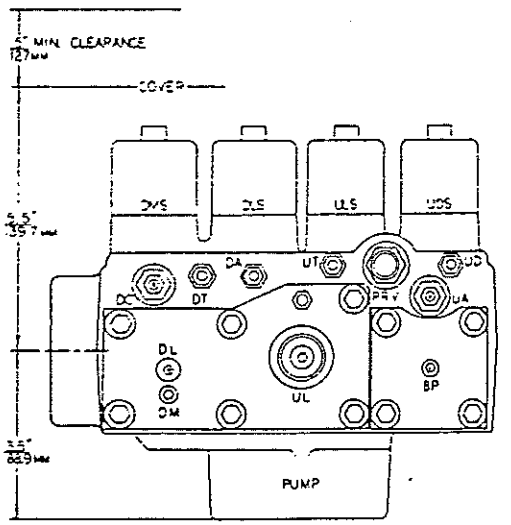
(1) Valve must be mounted with solenoids in vertical position.
(2) May be mounted over, under or on the side of oil tank.
(3) Provide 5 inches clearance above solenoids for coil removal.
(4) For under tank mounting, shut-off valve and all fittings should be equal to 2" standard pipe size.
(5) Outlets of UV-5A are marked JACK and TANK. Pump input is on underside of valve.
(6) The two (normally open) up solenoids must be energized when pump motor starts. The two (normally closed) down solenoids must be energized to lower car.

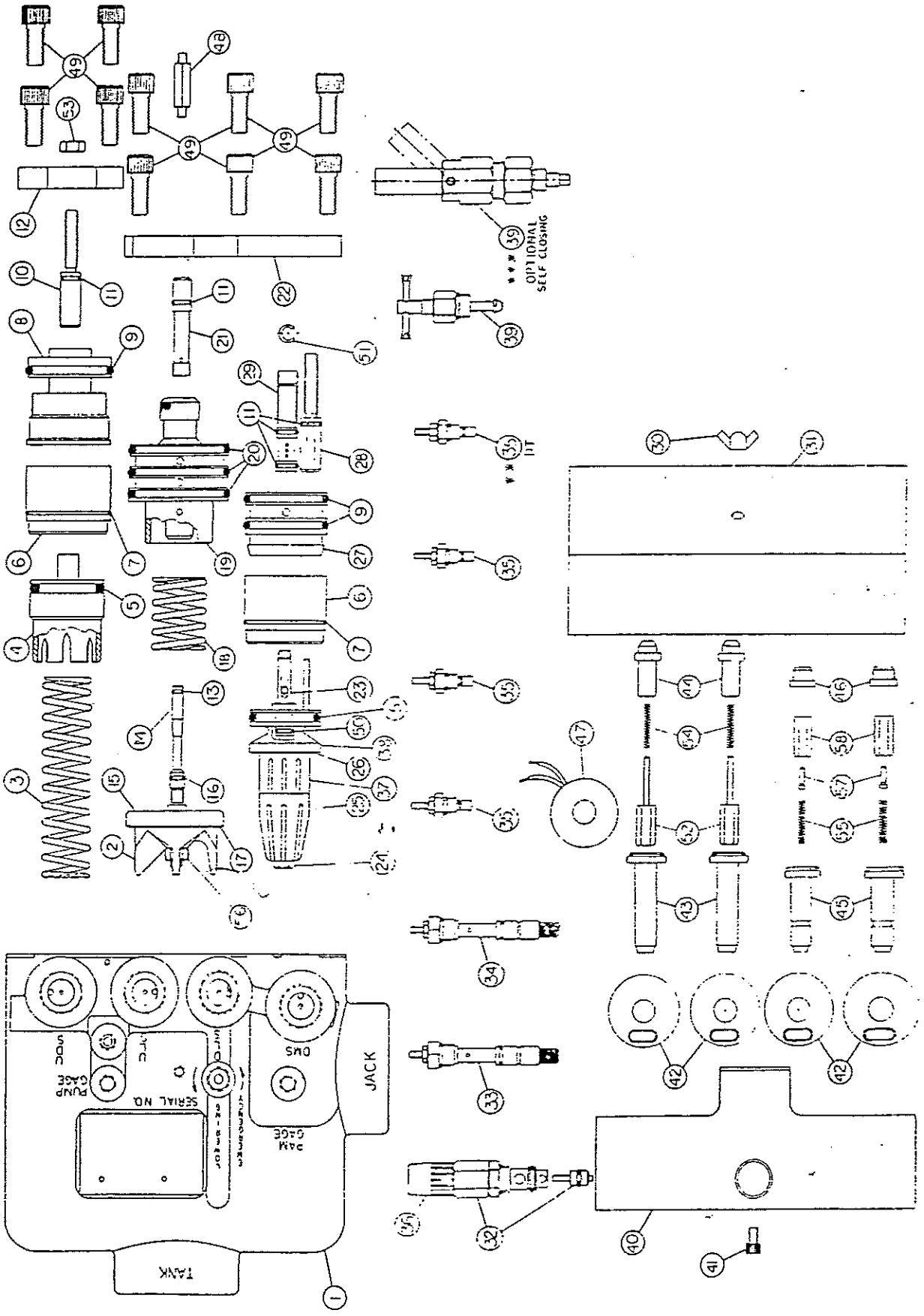
Lowering the elevator is accomplished by energizing solenoids DMS and DLS. When DMS is de-energized, the main piston partially closes causing the car to go into leveling speed. DLS is de-energized at floor level.

Manual Lowering (ML) is provided in leveling speed only.

DIMENSIONS






*** OPTIONAL SELF CLOSING
JACK
TANK
SERIAL NO.

UV-5A EXPLODED VIEW & COIL CHART

ITEM	DESCRIPTION	PART NO.
1	Valve Body, sub-assy.	EE-5000SA
2	Check "V" Guide	EE-5014B
3	Spring, By-Pass Piston	EE-5006
4	By-Pass Piston	EE-5007
5	"O" Ring, Piston	EE-5009P
6	Sleeve, Cylinder	EE-5023
7	"O" Ring, Sleeve	EE-5111
8	Closure, By-Pass	EE-5012C
9	"O" Ring, By-Pass Closure	EE-5013
10	Screw, Flow Control	EE-5010
11	"O" Ring, Flow Control Screw	EE-5011
12	Flange, By-Pass	EE-5104
13	"O" Ring (Upper), Up Leveling Stem	EE-5092V
14	Stem, Up Leveling	EE-5017B
15	Check Plate	EE-5016B
16	"O" Ring ("Lower"), Up Leveling Stem	EE-5027V
17	Seal Disc, Check Plate	EE-5015V
18	Spring, Check Poppet	EE-5018
19	Closure, Check	EE-5045B
20	"O" Ring, Check Closure	EE-5021
21	Adjustor, Up Leveling	EE-5022-5
22	Flange, Down & Check	EE-5103
23	Spool, Down Leveling	EE-5031-1
24	Diffuser Bolt	EE-5019
25	Diffuser, "V" Guide	EE-5024E
26	Seal Disc, Down Piston	EE-5025V
27	Closure, Down	EE-5036B
28	Screw, Flow Control	EE-5029B
29	Adjustor, Down Leveling	EE-5033
30	Wing Nut, Cover	EE-05109
31	Cover	EE-5107
32	Relief Valve Assembly	EE-5079A
33	Input Adjustor Assembly, UA	EE-5089A
34	Input Adjustor Assembly, DC	EE-5101A
** 35	Output Adjustor Assembly, DT, AD, UT, UD	EE-2400A
36	Cap, Relief Valve	EE-2462
* 37	"V" Guide, Down Piston	EE-5024
38	Piston, Down	EE-5026B
*** 39	Mennual Lowering Assembly	EE-5211A
40	Plate, Conduit	EE-5040
41	Screw, Conduit Plate	EE-5039
42	Coil Cover Assembly	EE-5047A
43	N.O. Plunger Tube Assembly	EE-5128A
44	N.O. Needle Orifice Assembly	EE-5061A
45	N.C. Plunger Tube Assembly	EE-5129A
46	N.C. Needle Orifice Assembly	EE-5064A
47	Coil	See Coil Chart
48	Screw, Cover Stand Off	EE-5108
49	Bolt, Flange	EE-5005
50	"O" Ring, Down Leveling Spool	EE-5094
51	Retaining Ring, Down Leveling Adjustor	EE-5035
52	N.O. Plunger Assy.	EE-5130A
53	Lock Nut 3/8"–16 UNC-2B	EE-5314
54	Spring, Hammer Lift Off	EE-5054
55	Spring, Needle Hold Out	EE-5055
56	Nut, Flex Loc 3/8"–24 UNF-2B	EE-5105
57	N.C. Hammer Needle	EE-5059
58	Hammer, Solenoid	EE-5056
59	Seal Kit	EE-5131

* By-Pass Piston
EE-5007-3 . . . . . ⅛"
EE-5007-4 . . . . . ¾"
EE-5007-5 . . . . . 1½"
EE-5007-6 . . . . . 1¼"
EE-5007-7 . . . . . 1½"

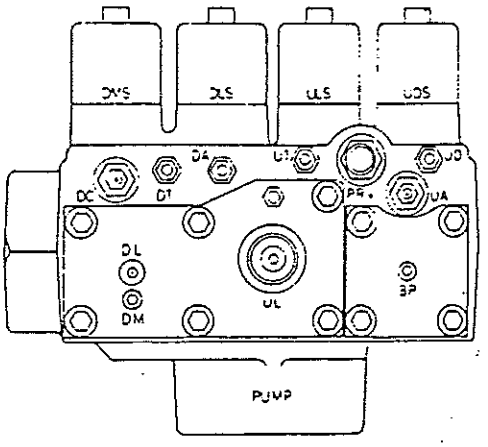
* "V" Guide, Down Piston
EE-5024-3 . . . . . ½"
EE-5024-4 . . . . . ¾"
EE-5024-5 . . . . . 1"
EE-5024-6 . . . . . 1¼"
EE-5024-7 . . . . . 1½"

** EE-5137-A DT Only
*** EE-5255A Optional (self closing)

UP PRE-SETTING

(1) "BP"-BY PASS-CCW to stop.
(2) "UA"-UP START-CW to stop. Do not tighten.
(3) "UL"-UP LEVELING-CW to stop.
(4) "UT"-UP TRANSITION-CCW to stop.
(5) "UD"-UP DUMP (soft stop)-CCW to stop.

(ULS)-UP LEVELING SOLENOID
(UDS)-UP DUMP SOLENOID
NOTE: CW-Clockwise
CCW-Counterclockwise



PRE-SET ALL ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.

UP ADJUSTMENTS

(1) "BP"-BY PASS FLOW ADJUSTOR—Car at lower floor. No load on car. Disconnect (UDS). Start pump. Turn "BP" CW till car moves, then CCW till car stalls, plus ½ turn. Stop pump. Reconnect (UDS).

(2) "UA"-UP START ADJUSTOR—Car at lower floor. No load. Start pump. Turn "UA" CCW for fast up acceleration, CW for slower. Car should reach full up speed in 2½ feet at high speed, proportionately less for lower speed installation. DO NOT DRAG OUT ACCELERATION.

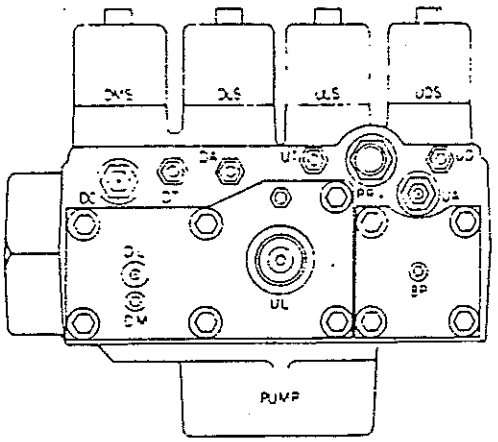
NOTE: UA is a screened input and must be kept clean. Clogging will affect all other up adjustments.

(3) "UL"-UP LEVELING ADJUSTOR—Car at lower floor, no load. Disconnect (ULS). With pump running, turn "UL" CCW until a leveling speed of 12 to 15 F.P.M. is obtained. Reconnect (ULS) (5 feet in 20 seconds = 15 F.P.M.)

(4) "UT"-UP TRANSITION ADJUSTOR—Car at lower floor, no load. Send car up. Turn "UT" CW for slower transition (slow-down). CCW for faster transition. Continue adjustment of "UT" for smooth stepless deceleration. Slow-down switch should be set to give 3 to 4 inches of stabilized leveling. Do **NOT** adjust valve to suit switch. Adjust switch (or vane) to suit valve.

(5) "UD"-UP DUMP ADJUSTOR—(Soft Stop) Turn "UD" CCW for hard stop. CW for softer stop. NOTE: Pump motor must be timed to run approximately 2½ seconds after car has stopped. **RELIEF VALVE**—Located on front of valve body. Turn CW for higher pressure, CCW for lower pressure. Factory set at 450 P.S.I.

ADJUSTMENT OF UV-5A VALVE



DOWN PRE-SETTING

(6) "DL"-DOWN LEVELING—CW to stop—CCW 5½ turns.

OUTPUT (7) "DM"-DOWN FULL SPEED—CW to stop—CCW 5½ turns.

CONTROLS (8) "DT"-DOWN TRANSITION—Closed flush with end of locknut.

(9) "DA"-DOWN ACCELERATION—Wide open.

INPUT (10) "DC"-DOWN CLOSING-Wide open.

CONTROL "ML"-MANUAL LOWERING (see below)

(DMS)-Down Main Solenoid
(DLS)-Down Leveling Solenoid

PRE-SET ALL ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.

DOWN ADJUSTMENTS

(6) "DL"-DOWN LEVELING ADJUSTOR—With car at upper landing or at down level zone, remove or disconnect DMS coil. Energize DLS coil. Turn DC "IN" CW until car moves down. Adjust DL for 10-15 F.P.M. Recycle car several times to determine down **Start** and **Stop** (in leveling speed). If stop is too firm, turn DC "IN" CW. Be sure stop is correct as all further adjustments are affected. Replace or reconnect DMS coil.

(7) "DM"-DOWN SPEED ADJUSTOR—With car at upper landing, energize DMS and DLS coils. Car should lower. Turn DM "OUT" CCWto obtain contract speed.

(8) "DT"-DOWN TRANSITION ADJUSTOR—Recycle car and observe down transition. If too abrupt, loosen locknut and turn DT "OUT" CCW approximately 2½ turns until smooth. Recycle car and continue to adjust DT for transition.

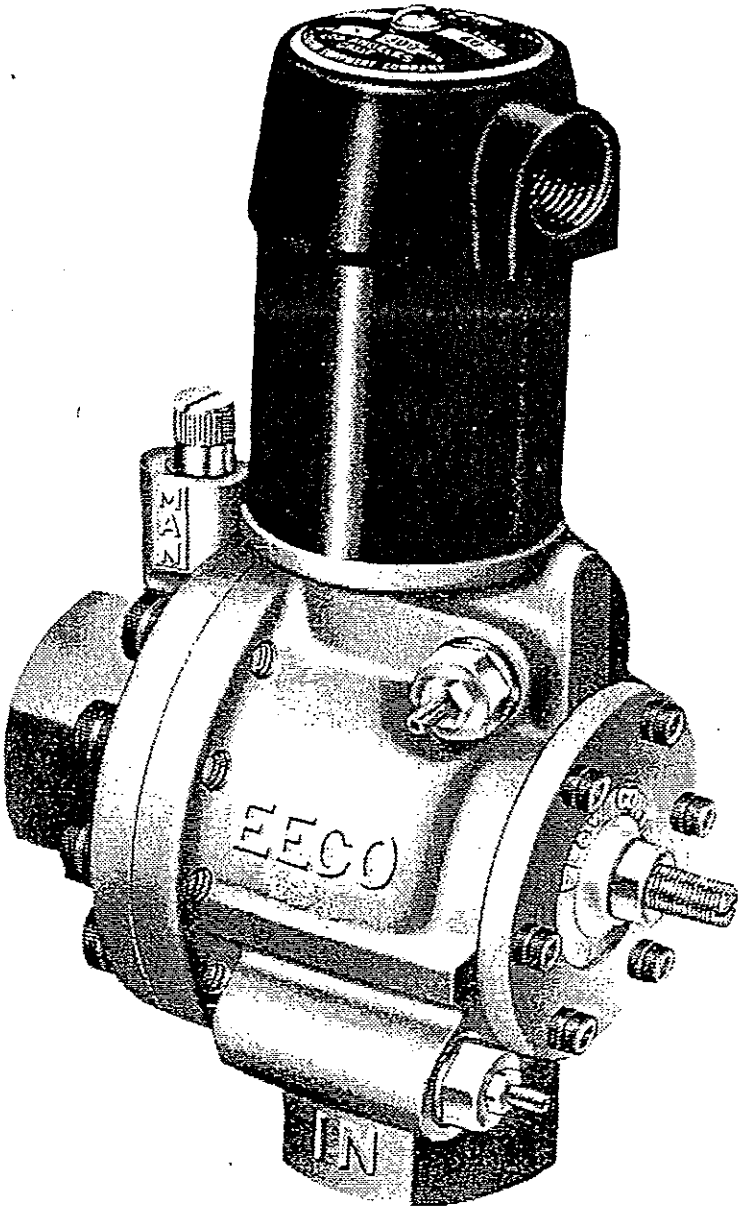
(9) "DA"-DOWN ACCELERATION ADJUSTOR—Car at upper floor. Turn "DA" CW until it stops. Energize DMS and DLS. Car should not move. Turn DA slowly CCW until valve opens. Turn "DA" CW to slow the acceleration rate.
NOTE: Down level speed will increase as DT becomes effective. Turn DL "IN" CW to maintain down level speed at 10-15 F.P.M.

(10) "DC"-DOWN CLOSING ADJUSTOR—See No. (6) above for setting.
NOTE: DC is a screened input and must be kept clean. Clogging will affect all other down adjustments.

MANUAL LOWERING—T handle is located on top of valve. Turn CCW to lower car.
CAUTION—If persons are riding the car during manual lowering, warn them to stay clear of car door.

HYDRAULIC CONTROL VALVES
DL-3
ANGLE VALVE

SEPTEMBER 1, 1983



APPLICATION

The Type DL-3 Valves are solenoid operated, 90 degree angle valves incorporating features of improved design that permit full adjustable control over rate of flow and opening and closing speed for intended fluids.

When applied to any flow line, hydraulic lift, hydro-electric elevator, or similar equipment, the rate of fluid passage through the valve can be easily adjusted-for any amount from 0 to 100% of flow, even while the valve is in operation. (See page 2, OPERATION) Adjustments for opening and closing speed are not needle type, and will give consistent repeat action indefinitely. Construction is bronze throughout with viton piston ring and teflon solenoid needle seat.

These valves are supplied with a normally closed pilot solenoid as standard. Optional normally open solenoid is available.

All DL-3 valves are equipped with a manual release feature, in case of coil or power failure.

ELEVATOR EQUIPMENT CO. • BOX 39714 • LOS ANGELES • CALIFORNIA • 90039 • PHONE (800) 423-2800
TELEX 1910 497 4946 • BOX 1544 • RICHMOND • INDIANA • 47374 • PHONE (800) 428-6564

HYDRAULIC CONTROL VALVES
DL-3
ANGLE VALVE

OPERATION

Use of Type DL-3 Valves on hydraulic piston or flow line applications permits the fullest possible range of control over the movement of fluid. All valve controls are readily accessible and easily adjusted to meet any condition of operation. Shock or hammer to the fluid system is eliminated by the use of a "Sliding V" piston guide, which produces a smooth, graduated opening and closing of the valve.

Rate of fluid flow through the valve is established with the flow control adjustment, which limits piston stroke. Because some control over opening and closing speed is lost if the valve piston is limited to less than half its stroke, the proper size valve should be selected from the flow chart on Bulletin E-7000 Page 6 Half-inch (½") valves are available with "Sliding V" piston guides of ¼" and ⅜" flow without limiting stroke. Specify ¼" DL-3 or ⅜" DL-3.

The speed of opening and closing valve action is adjusted by the operation control. Independent adjustments are provided for the closing and opening speeds. Adjustment of these controls is made by loosening the locknut, and turning the screw clockwise for slow operation or counterclockwise for fast operation. The flow and operation adjustments make the DL-3 an outstanding precision unit for hydraulic systems, filling operations and elevators.

On all DL-3 Type Valves, all moving parts are easily accessible for servicing without removing the valve from the line.

INSTALLATION

Type DL-3 Valves should be mounted in the piping arrangement so that the pilot coil is in a vertical position above the valve.

The direction of flow must enter into the valve at the opening marked with the word "IN", which is cast onto the valve.

By removing the flow control cover plate, all working parts may be easily removed for any normal service. Therefore, space should be provided to make this plate accessible. No special tools or wrenches are ever needed for service.

RATINGS

FLUID:

Designed for either Oil or Water.

PRESSURE:

Standard from 75 to 500 P.S.I.
Special from 5 to 300 P.S.I.

TEMPERATURE:

27°C (80°F) Minimum
65°C (150°F) Maximum

CONTROLS

Type DL-3 Valves are equipped with three adjustments as follows:

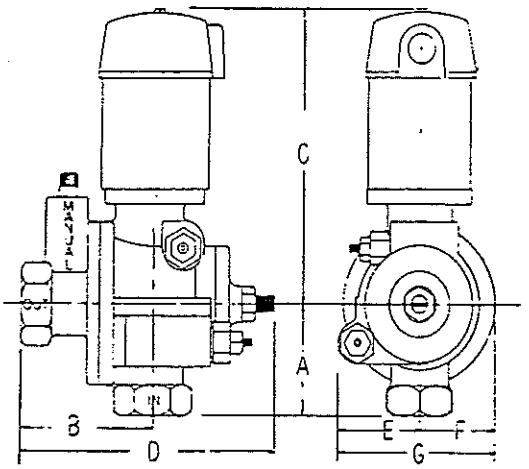
1-Flow Control—This adjustment controls the valve piston stroke, which in turn establishes the rate of flow through the valve.

2-Opening Adjustment—Controls the opening speed of the valve.

3-Closing Adjustment—Controls the closing speed of the valve.

See Page 3 for Adjusting Procedure.

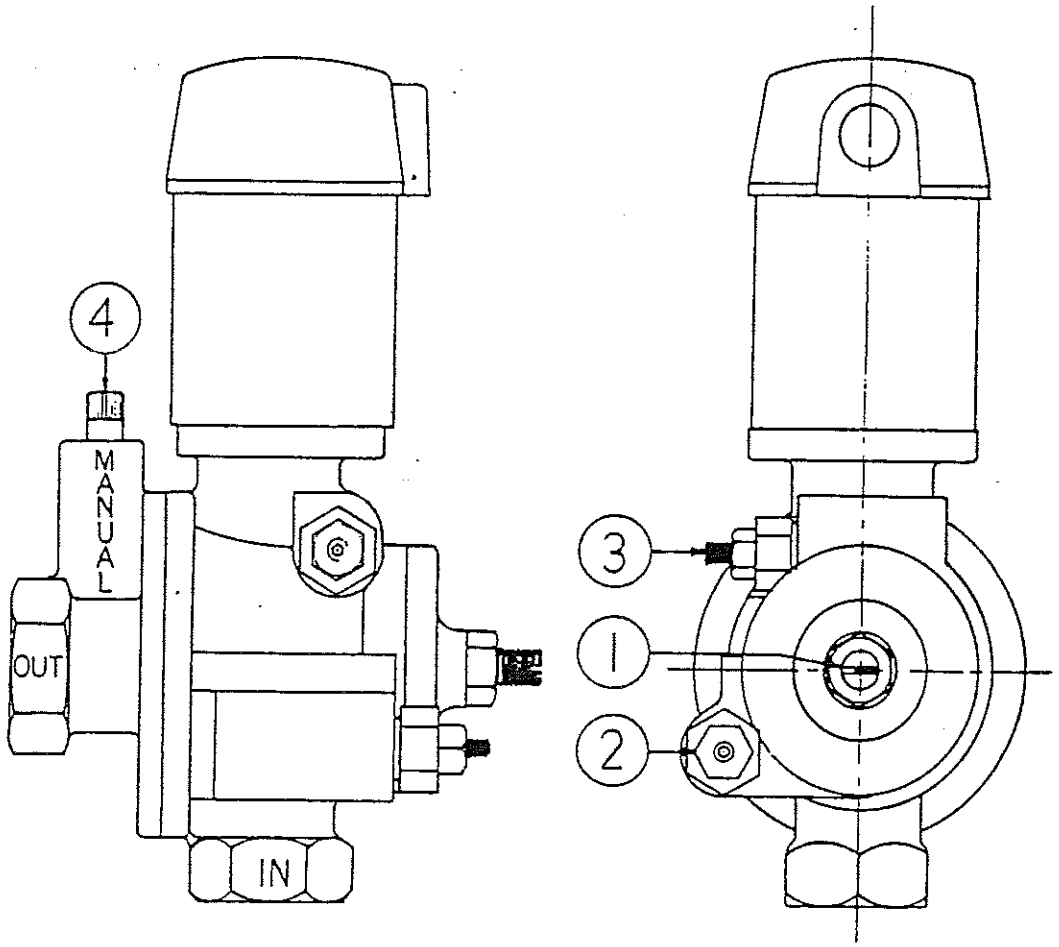
DIMENSIONS



VALVE SIZE	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	DIM. "E"	DIM. "F"	DIM. "G"
½"	2"	2⅛"	6"	4½"	1⅞"	1½"	3⅜"
¾"	2⅜"	2¾"	6¼"	5¼"	1⅞"	1¾"	3⅝"

Dimensions are for estimating purposes only. Certified dimensions furnished upon request.

HYDRAULIC CONTROL VALVES
DL-3
ADJUSTMENT



Adjustments should be made in the sequence below with a **maximum** load, and between floors of shortest travel. When valve adjustments are completed for short floor travel, duplicate switch settings should be used on remaining floors.

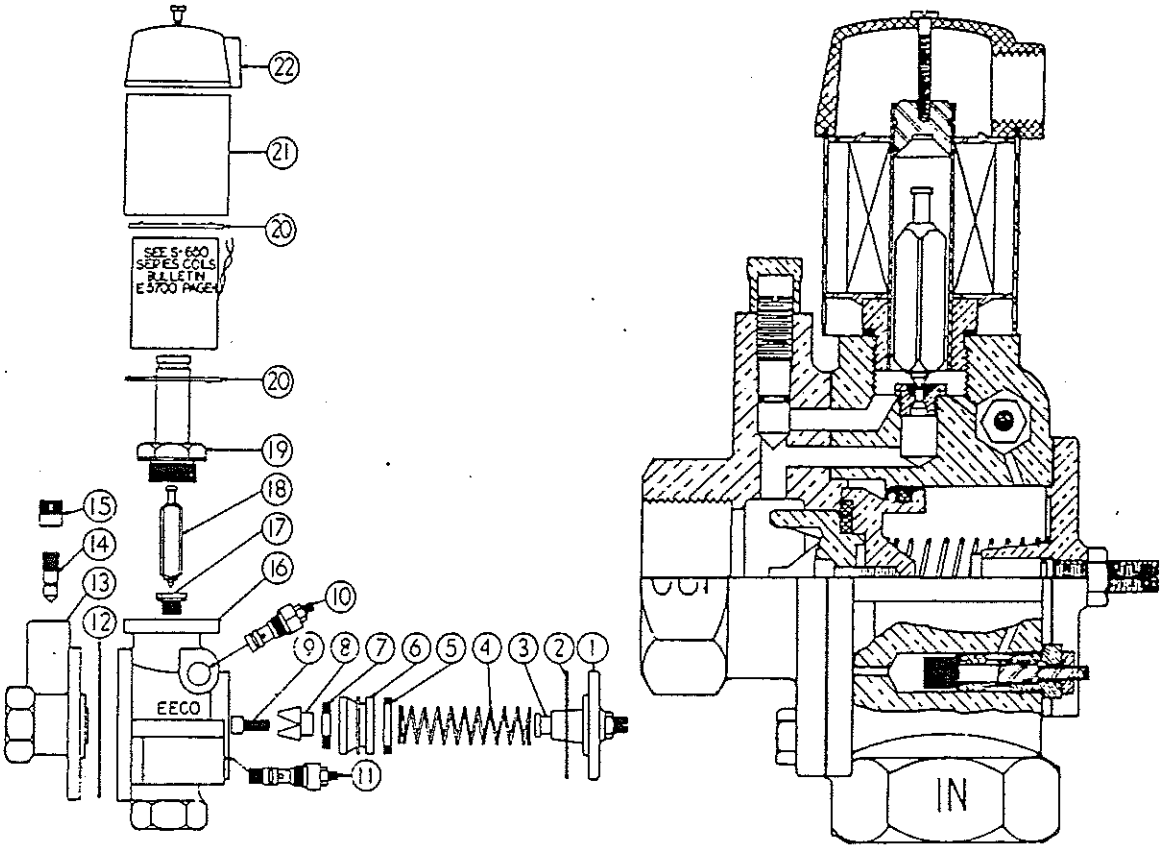
Before operating the valve, or making final adjustments, check to see that the following preliminary adjustments are made: #2 screw is turned counter-clockwise until it stops, and then 3 turns clockwise; then #3 screw counter-clockwise until it stops.

1. The Flow Control Screw, #1, is adjusted by loosening the locknut and turning the screw clockwise (in) to reduce flow, and counter-clockwise (out) to increase flow (car speed). Tighten the locknut.
2. Closing Speed Adjustment, #2, is made by loosening the locknut and turning the screw clockwise to decrease closing speed, and counter-clockwise to increase closing speed. Tighten the locknut.
3. If two valves are operating to lower the car, disconnect the power from the coil of the other valve. Turn #3, Opening Speed Adjustment, clockwise until the valve will not open (3 turns or more). Energize the coil on this valve, and turn #3 counter-clockwise until the proper opening speed is obtained. Tighten the locknut. With the elevator operating automatically on minimum load, a slight readjustment of #2 and #3 may be necessary. Do not readjust #2 without readjusting #3.
4. Manual Screw, #4, is for **manual lowering of the car.*** Remove the cap, and turn the screw counter-clockwise to lower the car. In normal use, the screw should be tightly shut off, or the car will creep down. Replace the cap.

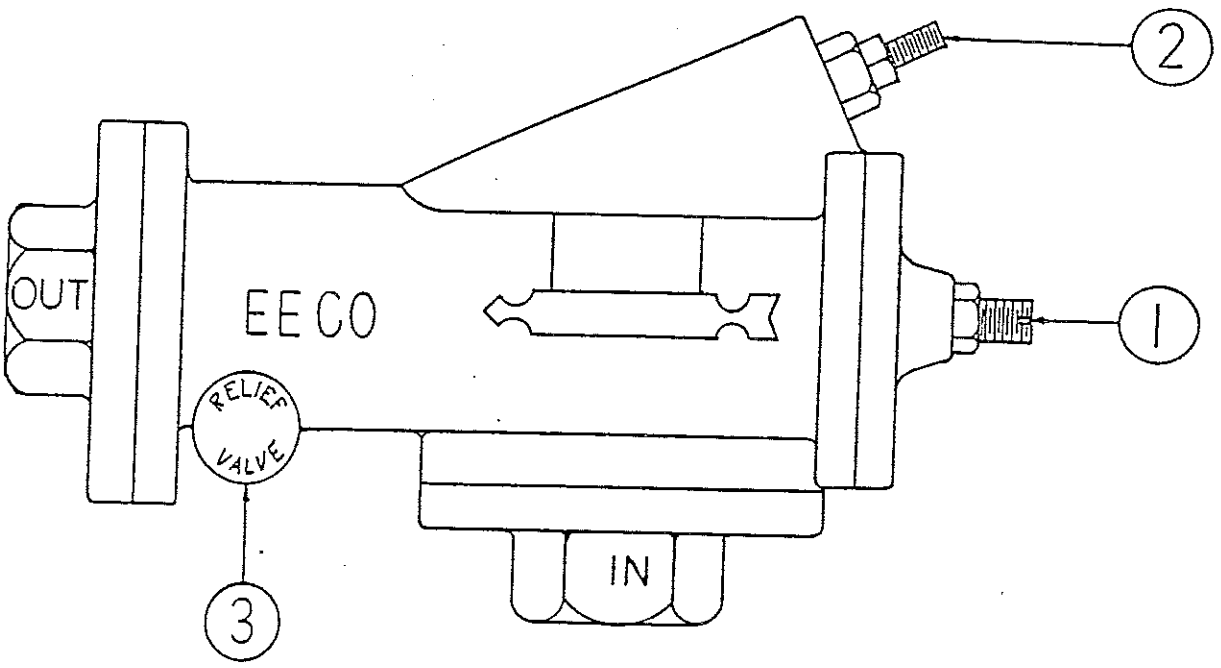
*SAFETY NOTE: All electrical power must be off when using manual lowering!

HYDRAULIC CONTROL VALVES
DL-3
PARTS LIST

RENEWAL PARTS 1/4" Through 3/4" Threaded Mounting



ITEM NO.	RENEWAL PART	VALVE SIZE & PART NUMBERS 1/4"	3/8"	1/2"	3/4"
1	Flow Control Closure Plate	1595	1595	1595	1453
2	Control Plate Gasket	1597	1597	1597	1320
3	Flow Control Screw (Complete)	1596	1596	1596	1325
4	Piston Spring	1273	1273	1273	1273
5	Piston Ring	1055-V	1055-V	1055-V	1181-V
6	Valve Piston	1448	1448	1448	1442
7	Seal Disc	1052	1052	1052	1142
8	"V" Piston Guide	1762	1778	1161	1443
9	S. S. Allen Cap Screw	1063	1063	1063	1063
10	Opening Adjustor Standard 75-500 Special 5-300	2250 2287	2250 2287	2250 2287	2250 2287
11	Closing Adjustor Standard 75-500 Special 5-300	2266 2288	2266 2288	2266 2288	2266 2288
12	Closure Gasket	2282	2282	2282	2283
13	Valve Closure	2272	2272	2272	2273
14	Manual Screw Complete	1735	1735	1735	1731
15	Manual Screw Cap	1724	1724	1724	1738
16	Valve Body	2254	2254	2254	2256
17	Needle Orifice Standard 75-500 Special 5-300	1787 1465	1787 1465	1787 1465	1787 1465
18	Plunger Assembly	1456	1456	1456	1456
19	Plunger Enclosure	2164	2164	2164	2164
20	Coil Washer (2)	1062	1062	1062	1062
21	Coil Cover Tube	2120	2120	2120	2120
22	Coil Cover Cap W/Screw	2133	2133	2133	2133
	Gasket and Ring Kit	2360	2360	2360	2361



ADJUSTMENT

Adjustment should be made in sequence below with a **minimum** load. Before starting adjustments, turn #1 counter-clockwise until it stops. Turn #2 counter-clockwise until it stops, and then clockwise six (6) turns.

1. Start the pump, and turn #1 clockwise until the car just barely moves up, then counter-clockwise until the car just stops.

2. Adjust #2 counter-clockwise until a proper start is obtained. The start should not be too fast with an empty car.

3. Number three is field set to relieve system pressure at not over 125% of full load working pressure.

   Caution: The accuracy of the pressure relief setting can only be obtained with the use of a pressure gauge. If a different relief setting is required:

   (a) Install a pressure gauge between the pump discharge and the check valve, but **not** on a BP-3 valve.

   (b) Close the gate valve in the pit, **or** weight the car to maximum load.

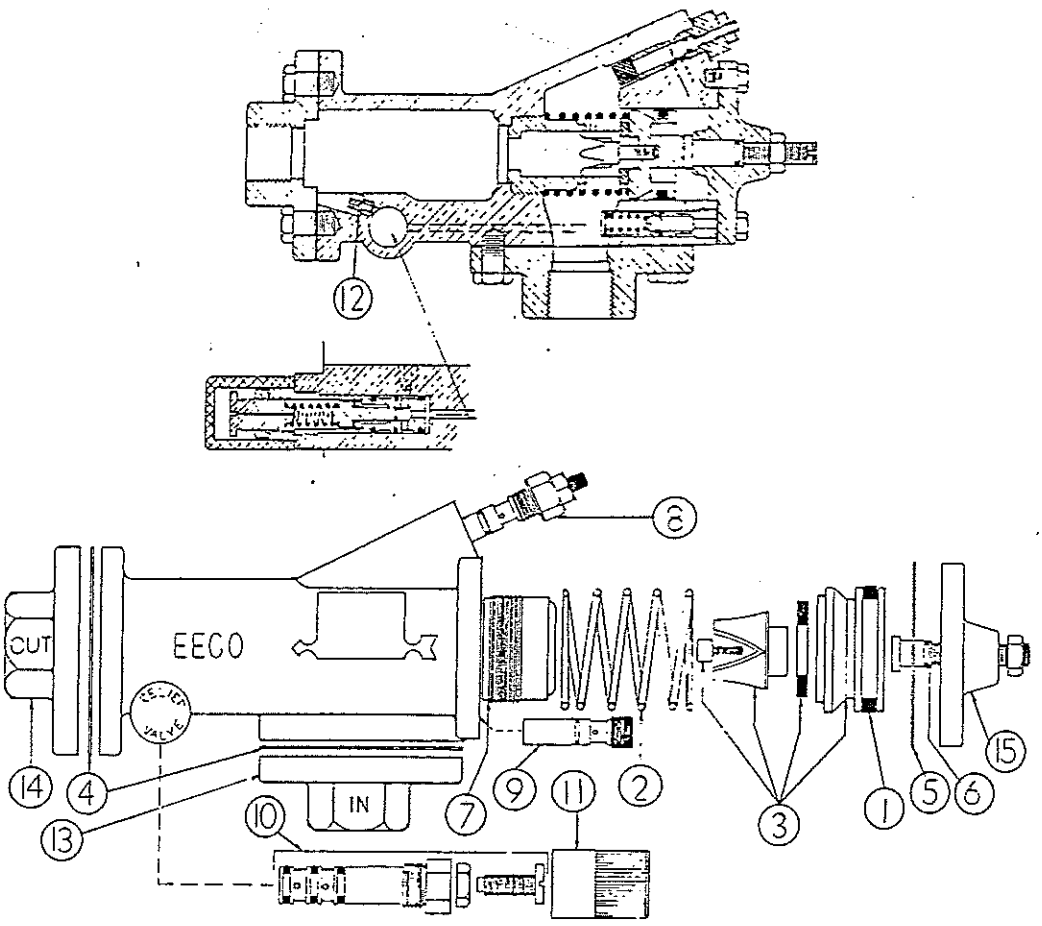
   (c) Note the position of #2, up-start adjustor. Turn #2 two turns counter-clockwise.

   (d) Remove the cover from #3, and turn the screw clockwise for higher pressure, and counter-clockwise for lower pressure. A minimum setting of 25 P.S.I. above starting surge is recommended. Refer to ANSI A17-1 Rule 303.2.

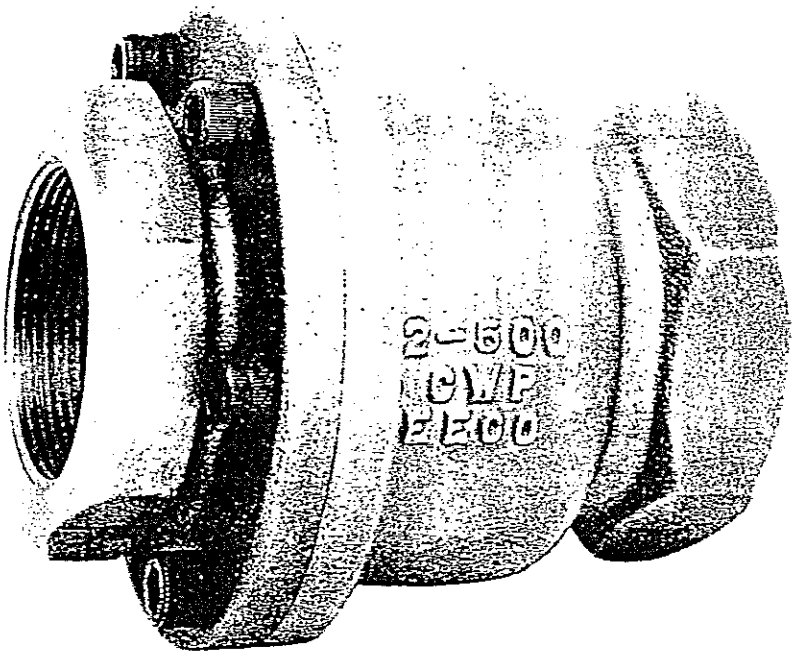
   (e) turn #2 (up-start adjustor) back to the original setting.

HYDRAULIC CONTROL VALVES
BP-3
PARTS LIST

TYPE BP-3 BY-PASS VALVE



Item No.	RENEWAL PART	Valve Size & Part Numbers ½"	¾"
1	Piston Ring	1643-V	1643-V
2	Piston Spring	1644	1644
3	Valve Piston Assembly	1638-ARR	1638-A
4	Closure Gasket	1641	1641
5	Control Plate Gasket	1642	1642
6	Flow Control Screw with Cover	2502	2502
7	"V" Guide Insert	2014	2014
8	Needle Valve Assembly (with Screen)	2266	2266
9	Recycle Ball Retainer Assembly	2268	2268
10	Relief Valve Assembly	2173	2173
11	Relief Valve Cap	2098	2098
12	Relief Valve Ball Cage Insert Assembly	2320	2320
13	Flange (IN)	2065	2065
14	Flange (OUT)	2065	2065
15	Flow Control Closure Plate	1637	1637
	Gasket and Ring Kit	2350	2350



APPLICATION

The Check Valve is a spring loaded, piston type valve for use on Water, Oil or Air at all pressures and temperatures that fall within their ratings.

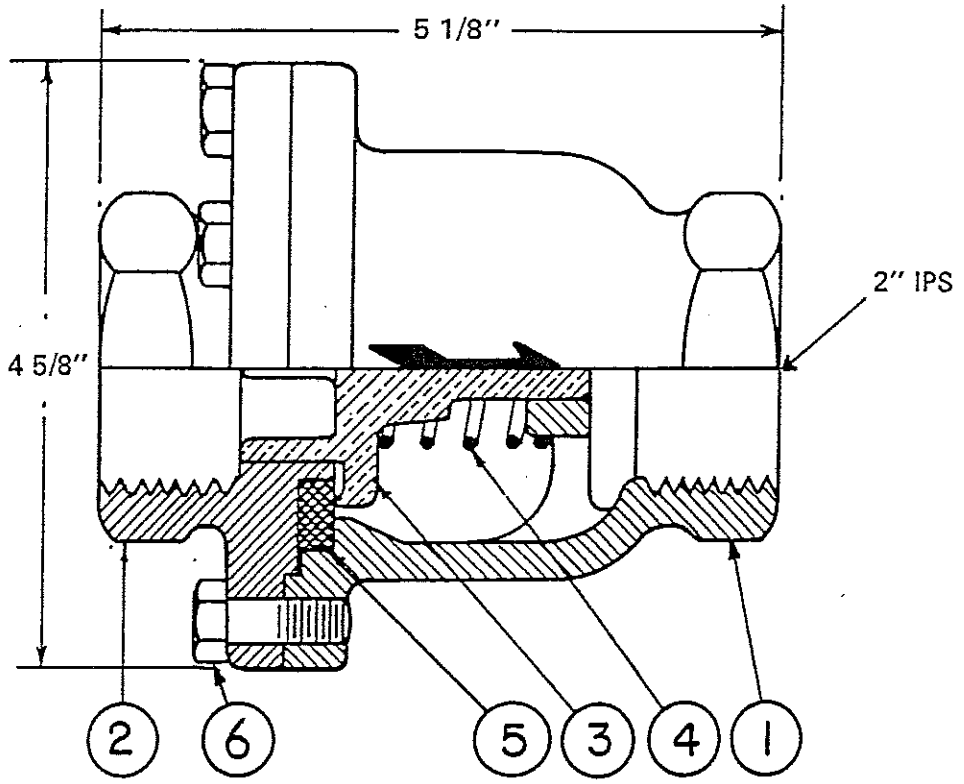
The use of this check valve is to be highly recommended for any service where line shock or fluid hammer, due to sudden loss of pressure or reversal of flow, must be eliminated.

The Check Valve can be mounted in any position from horizontal to vertical. In the vertical positon the flow can enter either the top or bottom of the valve so as to meet the required flow conditions.

OPERATION

The guided, moving piston in the Check Valve is pre-loaded with a phosphor bronze coil compression spring. The action of this spring controlled piston is to move towards the closed position as flow decreases and to be fully closed before any reversal of flow can occur to cause shock or fluid hammer in the flow line. The speed of closing of the valve will be determined by the rate at which line flow is reduced, full closing occuring as flow stops and in advance of any possible reverse flow.

HYDRAULIC CONTROL VALVES "3000" PARTS LIST



Item No.	Name of Part	Valve Size & Part Numbers
		2"
1	Check Body	1260
2	Closure	1261
3	Piston	1262
4	Spring	1206
5	Seal Ring	1263
6	Soc. Hd. Cap Scr. 3/8"—16 x 7/8" Lg.	1192

CONSTRUCTION

Check Valve is available in cast bronze construction only. The sealing surface of all valves is bronze against a molded seal ring. The piston is carried in true alignment in all positions by machined guide bearings which eliminates any chance of a binding or a wedging action.

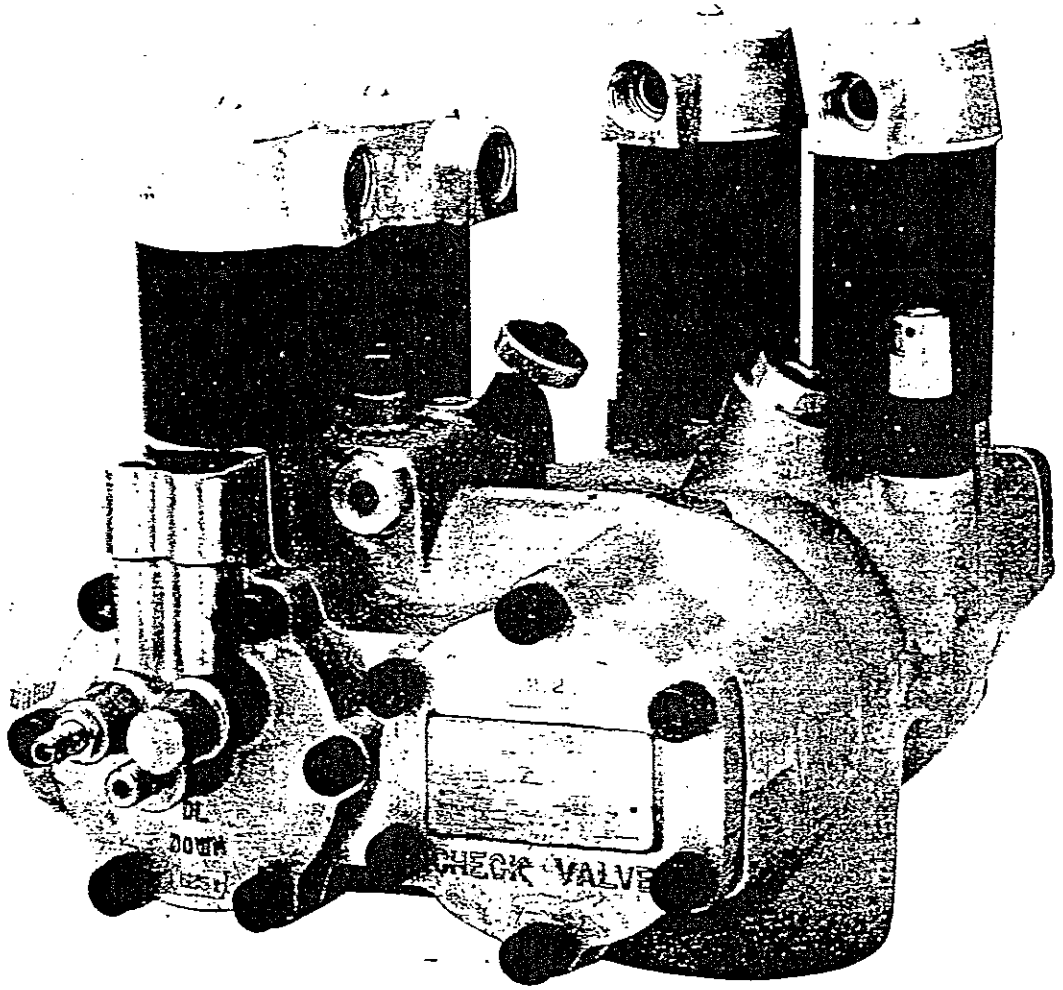
RATINGS

MEDIA;
Designed for Oil, Water or Air.

PRESSURES;
Check valves are rated at 500 P.S.I.

TEMPERATURES;
27°C (80°F) Minimum
65°C (150°F) Minimum

HYDRAULIC CONTROL VALVES
TYPE UV-7B



EECO TYPE UV-7B VALVE
U.S. PATENT #4,011,888

HYDRAULIC CONTROL VALVES
UV-5A
PARTS LIST

NOTE: NOT ALL PARTS LISTED ARE SOLD INDIVIDUALLY.

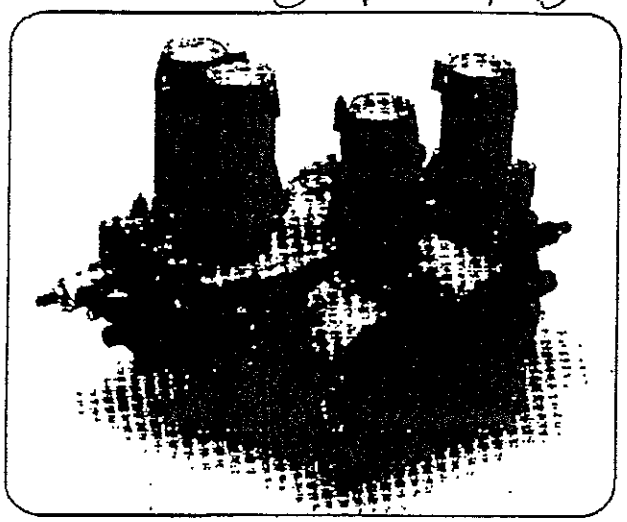
ITEM	DESCRIPTION	PART NO.
1	Valve Body, sub-assy.	EE-5000SA
2	Spring, By-Pass Piston	EE-5006
*3	By-Pass Piston ➧ EE-5007A (3-7)	EE-5007-3-7
4	"O" Ring, Piston	EE-5009
5	Sleeve, Cylinder	EE-5023
6	"O" Ring, Sleeve	EE-5111
7	Closure, By-Pass	EE-5012C
8	"O" Ring, By-Pass Closure	EE-5013
9	Screw, Flow Control	EE-5010
10	"O" Ring, Flow Control Screw	EE-5011
11	Flange, By-Pass	EE-5104
**12	Piston Assembly (Lowering)	5026EA (3-7)
13	Check Piston Assembly	5046CA
14	Spring, Check Poppet	EE-5018
15	Closure, Check ➧ EE-5045 DA	EE-5045D
16	"O" Ring, Check Closure	EE-5021
17	Adjustor, Up Leveling	EE-5022B
18	Flange, Down & Check	EE-5103
19	Closure, Down	EE-5036B
20	Screw, Flow Control	EE-5029B
21	Adjustor, Down Leveling	EE-5033B
22	Wing Nut, Cover	EE-5109
23	Cover	EE-5107
24	Relief Valve Assembly	EE-5079A
25	Input Adjustor Assembly, UA	EE-5089A
26	Input Adjustor Assembly, DC	EE-5101A
27	Output Adjustor Assembly, DA, UT, UD	EE-2400A
27A	Output Adjustor Assembly, DT	EE-5137A
28	Piston Assy., Relief Valve	EE-5122BA
29	Manual Lowering Assembly	EE-5211BA
30	Plate, Conduit	EE-5040
31	Screw, Conduit Plate	EE-5039
32	Coil Cover Assembly	EE-5047A
33	N.O. Plunger Tube Assembly	EE-5128A
34	N.O. Needle Orifice Assembly	EE-5061A
35	N.C. Plunger Tube Assembly	EE-5129A
36	N.C. Needle Orifice Assembly	EE-5064A
37	Coil	See Coil Chart
38	Screw, Cover Stand Off	EE-5108
39	Bolt, Flange	EE-5005
40	Retaining Ring, Down Leveling Adjustor	EE-5035
41	N.O. Plunger Assy.	EE-5130A
42	Lock Nut ⅜"—16 UNC-2B	EE-5314
43	Spring, Hammer Lift Off	EE-5054
44	Spring, Needle Hold Out	EE-5055
45	N.C. Hammer Needle	EE-5059
46	Hammer, Solenoid	EE-5056
47	Jam Nut, ½"—20 UNF—3B	EE-5224
48	"O" Ring, N.C. & N.O. Plunger Tube	EE-5060
49	"O" Ring, Pump Inlet	A-504
50	Nipple, 2" NPT	EE-5231
51	Clamp Ring, Pump Inlet	EE-5232
52	Seal Kit	EE-5131

*By-Pass Piston
EE-5007-3 ..... ½"
EE-5007-4 ..... ¾"
EE-5007-5 ..... 1"
EE-5007-6 ..... 1¼"
EE-5007-7 ..... 1½"

**EE-5137-A DT Only

***"V" Guide, Down Piston
EE-5026EA3 ..... ½"
EE-5026EA4 ..... ¾"
EE-5026EA5 ..... 1"
EE-5026EA6 ..... 1¼"
EE-5026EA7 ..... 1½"

UV-7B



HYDRAULIC CONTROL VALVE - UV7B

FEATURES

The fully unitized UV7B valve performs all necessary functions for the operation of a hydraulic elevator in both directions of travel. The UV7B valve accomplishes the following:

SMOOTH UP START

1. Allows motor to reach full running speed before load is applied to pump.

2. One adjustment for soft start and smooth acceleration.

UP TRANSITION

1. Unvarying transition through wide pressure and temperature range.

UP LEVELING

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

2. Noncritical adjustable leveling speed.

UP STOP

1. Provides smooth up stop which is solenoid operated and adjustable.

LOWERING VALVE

1. Provides controlled down acceleration, contract down speed, down transition, adjustable leveling speed and stop. Tool-less manual lowering feature standard.

CHECK VALVE

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

ADDITIONAL FEATURES

1. Lightweight, heat-treated, high strength aluminum body.

2. Fully adjustable pressure relief valve.

3. Moving parts restricted to sliding sealed pistons.

RATINGS

MEDIA

For oil service, a good grade of turbine oil, viscosity 150 ssu and a minus pour point is recommended.

Pressure

Rated at 50 psi minimum, 500 psi maximum.

Temperature

27° C (80° F) Minimum
65 °C (150° F) Maximum

Size

All UV7B valves should be sized to bypass the entire capacity of the pump at MINIMUM pressure.

Listed as approved by C.S.A. & UL 1988

FEATURES

The fully unitized UV-7 valve performs all necessary functions for the operation of a hydraulic elevator in both directions of travel. The UV-7 valve accomplishes the following:

SMOOTH UP START

1. Allows motor to reach full running speed before load is applied to pump.
2. One adjustment for soft start and smooth acceleration.

UP TRANSITION

1. Unvarying transition through wide pressure and temperature range.

UP LEVELING

1. Maintains leveling speed regardless of change of system pressure, oil viscosity, or pump output.
2. Non-critical adjustable leveling speed.

UP STOP

1. Provides smooth up stop which is solenoid operated and adjustable.

LOWERING VALVE

1. Provides controlled down acceleration, contract down speed, down transition, adjustable leveling speed and stop. Tooless manual lowering feature standard.

CHECK VALVE

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

ADDITIONAL FEATURES

1. Lightweight heat treated high strength aluminum body.
2. Fully adjustable pressure relief valve.
3. Moving parts restricted to sliding sealed pistons.

OPERATION

As the pump starts, the UV-7 Valve bypasses the full pump output to the tank. This allows the pump motor to reach full speed at no load. The BP Piston then closes at a controlled adjustable rate and forces a smooth ever increasing flow to the elevator jack.

When the car reaches the slow-down switch at the next floor, the ULS solenoid is de-energized and the BP piston then opens at an adjustable rate, smoothly slowing the car to a predetermined, stabilized leveling speed. The leveling speed remains constant regardless of the load on the car until the car reaches floor level.

The leveling switch opens the dump (UDS) solenoid allowing the BP port to bypass the entire pump output to the tank bringing the car to a smooth stop. NOTE! Pump motor must be timed to run approximately 2½ seconds after car has stopped. The BP piston is now in the open position ready for the next up start.

RATINGS

Fluid

For oil service, A good grade of Turbine oil, viscosity 150 SSU and a minus pour point is recommended.

Pressure

Rated at (50) PSI minimum, 500 PSI maximum.

Temperature

27°C (80°F) Minimum
65°C (150°F) Maximum

Size

All UV-7 valves should be sized to by-pass the entire capacity of the pump at **MINIMUM** pressure. See Flow Chart Bulletin E-7000 Page 4.

HYDRAULIC CONTROL VALVES
UV-7B
INSTALLATION & DIMENSIONS

INSTALLATION

(1) Valve must be mounted with solenoids in vertical position.

(2) May be mounted over, under or on the side of oil tank.

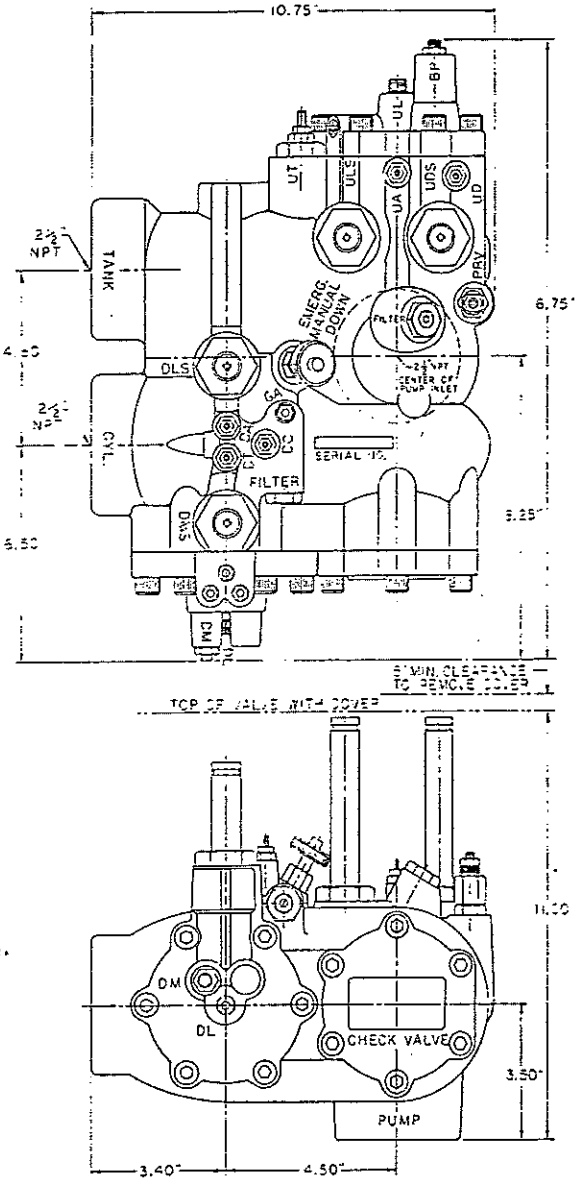
(3) Provide 5 inches clearance above solenoids for coil removal.

(4) For under tank mounting, shut-off valve and all fittings should be equal to 2½" standard pipe size.

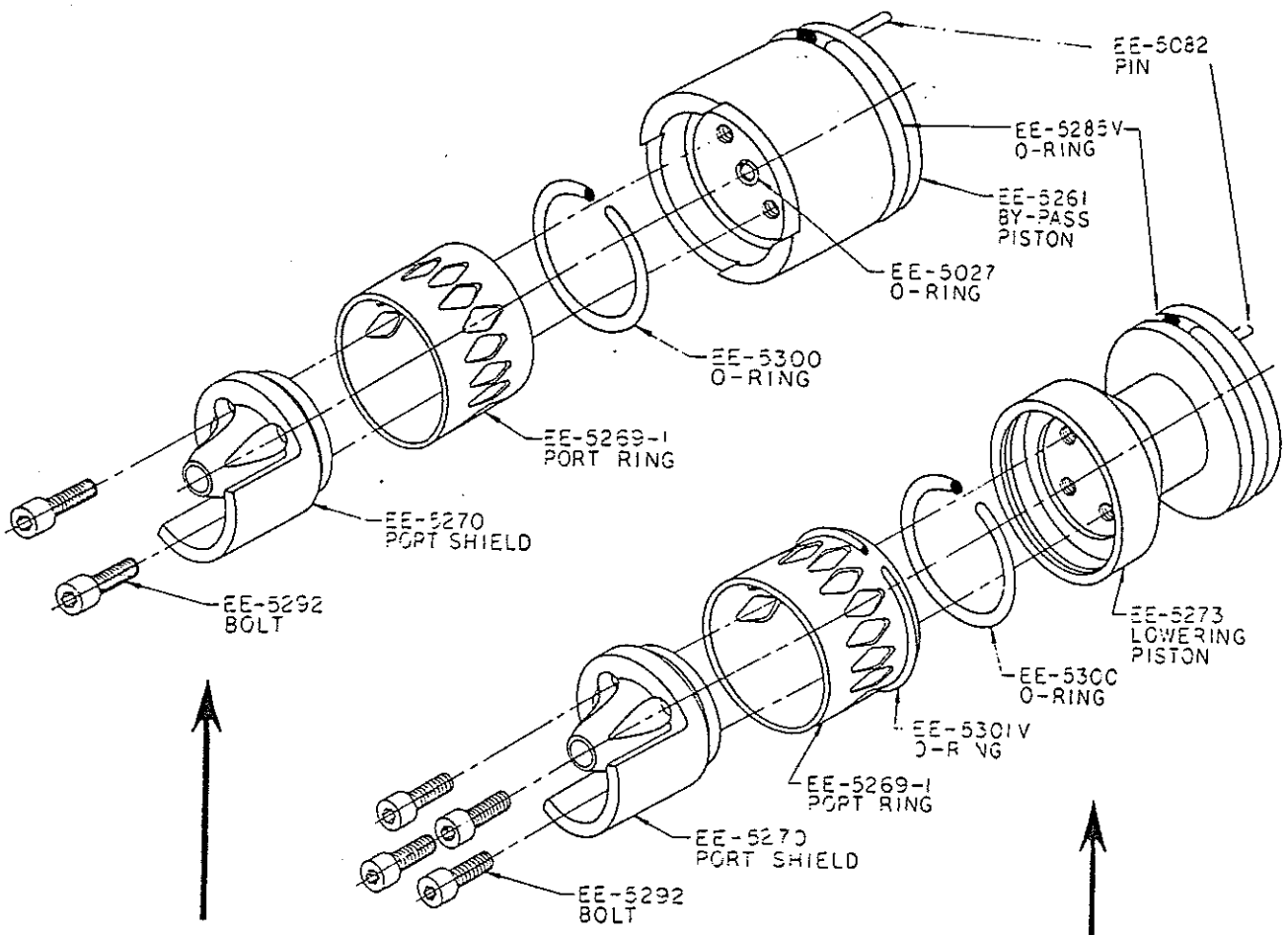
(5) Outlets of UV-7 are marked CYLINDER and TANK. Pump input is on underside of valve.

(6) The two (normally open) up solenoids must be energized when pump motor starts. The two (normally closed) down solenoids must be energized to lower car.

Lowering the elevator is accomplished by energizing solenoids DMS and DLS. When DMS is de-energized, the main piston partially closes causing the car to go into leveling speed. DLS is de-energized at floor level. Manual Lowering (ML) is provided in leveling speed only.



HYDRAULIC CONTROL VALVES
UV-7B
FLOW ADJUSTMENT



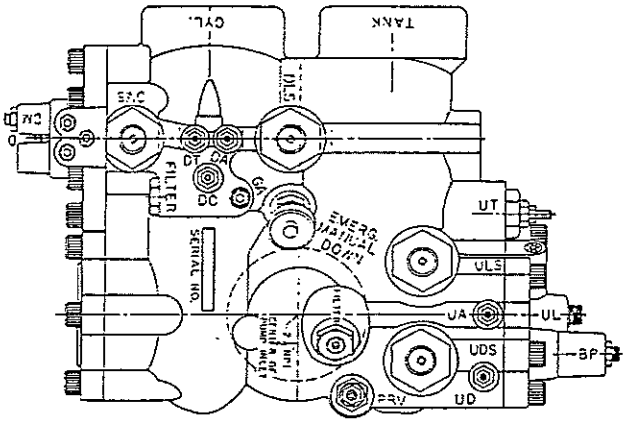
EE-5261A
BY-PASS
PISTON ASSEMBLY

EE-5273A
LOWERING
PISTON ASSEMBLY
ITEMS EE-5280, EE-5262, EE-5192
AND EE-5263 ARE NOT SHOWN

ADJUSTABLE FLOW PISTON ASSEMBLIES
TO INCREASE OR DECREASE FLOW CAPABILITY, LOOSEN BOLTS EE-5292 ENOUGH TO ALLOW THE PORT RING EE-5269 TO BE ROTATED TO THE DESIRED FLOW INCREASE OR DECREASE.

RETIGHTEN LOCKING BOLTS EE-5292 EVENLY TO 40 IN. LBS. OF TORQUE WHICH RELATES TO ABOUT AS TIGHT AS YOU CAN GET THEM BY HAND USING A 3/16" T-HANDLE ALLEN DRIVER.

HYDRAULIC CONTROL VALVES
UV-7B
UP ADJUSTMENTS



UP PRE-SETTING

(1) "BP"—BY PASS—CCW to stop.

(2) "UA"—UP START—CW flush with lock nut. Do not tighten.

(3) "UL"—UP LEVELING—CCW to stop.

(4) "UT"—UP TRANSITION—CCW to stop.

(5) "UD"—UP DUMP (soft stop)—CCW to stop.

(ULS) —UP LEVELING SOLENOID
(UDS)—UP DUMP SOLENOID

NOTE: PRE-SET ALL ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.

UP ADJUSTMENTS

(1) "BP"—BY PASS FLOW ADJUSTOR—Car at lower floor. No load on car. Disconnect (UDS). Start pump. Turn "BP" CW till car moves, then CCW till car stalls, plus ½ turn. Stop pump. Reconnect (UDS).

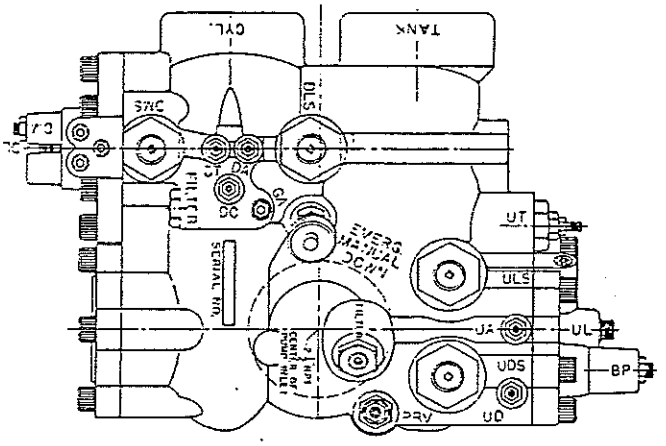
(2) "UA"—UP START ADJUSTOR—Car at lower floor. No load. Start pump. Turn "UA" CCW for fast up acceleration, CW for slower. Car should reach full up speed in 2½ feet at high speed, proportionately less for lower speed installation. DO NOT DRAG OUT ACCELERATION.

NOTE: UA is a screened input and must be kept clean. Clogging will affect all other up adjustments.

(3) "UL"—UP LEVELING ADJUSTOR—Car at lower floor, no load. Disconnect (ULS). With pump running, turn "UL" CW until a leveling speed of 12 to 15 F.P.M. is obtained. Reconnect (ULS) (5 feet in 20 seconds = 15 F.P.M.)

(4) "UT"—UP TRANSITION ADJUSTOR—Car at lower floor. No load. Send car up. Turn "UT" CW for slower transition (slow-down). CCW for faster transition. Continue adjustment of "UT" for smooth stepless deceleration. Slow-down switch should be set to give 3 to 4 inches of stabilized leveling. Do NOT adjust valve to suit switch. Adjust switch (or vane) to suit valve.

(5) "UD"—UP DUMP ADJUSTOR—(Soft Stop) Turn "UD" CCW for hard stop. CW for softer stop. NOTE: Pump motor must be timed to run approximately 2½ seconds after car has stopped. RELIEF VALVE—Located on valve body. Turn CW for higher pressure, CCW for lower pressure. Factory set at 450 P.S.I.



DOWN PRE-SETTING

(6) "DL"— DOWN LEVELING—CW to stop—CCW 5½ turns.

(7) "DM"—DOWN FULL SPEED—CW to stop—CCW 5½ turns.

(8) "DT"—DOWN TRANSITION—Closed flush with end of lock-nut.

(9) "DA"—DOWN ACCELERATION—Wide open.

(10) "DC"—DOWN CLOSING—Wide open.

"ML"—MANUAL LOWERING (see below).

(DMS)—Down Main Solenoid

(DLS)—Down Leveling Solenoid

DOWN ADJUSTMENTS

(6) "DL"—DOWN LEVELING ADJUSTOR—With car at upper landing or at down level zone. Energize DLS coil. Turn DC "IN" CW until car moves down. Adjust DL for 10-15 F.P.M. Recycle car several times to determine down Start and Stop (in leveling speed). If stop is too firm, turn DC "IN" CW. Be sure stop is correct as all further adjustments are affected. Replace or reconnect DMS coil.

(7) "DM"—DOWN SPEED ADJUSTOR—With car at upper landing, energize DMS and DLS coils. Car should lower. Turn DM "OUT" CCW to obtain contract speed.

(8) "DT"DOWN TRANSITION ADJUSTOR—Recycle car and observe down transition. If too abrupt, loosen locknut and turn DT "OUT" CCW approximately 2½ turns until smooth. Recycle car and continue to adjust DT for transition.

NOTE: Down level speed will increase as DT becomes effective. Turn DL "IN" CW to maintain down level speed at 10-15 F.P.M.

(9) "DA"—DOWN ACCELERATION ADJUSTOR—Car at upper floor. Turn "DA" CW until flush with lock-nut. Energize DMS and DLS. Car should not move. Turn DA slowly CCW until valve opens. Turn "DA" CW to slow the acceleration rate.

(10) "DC"—DOWN CLOSING ADJUSTOR—See No. (6) above for setting.

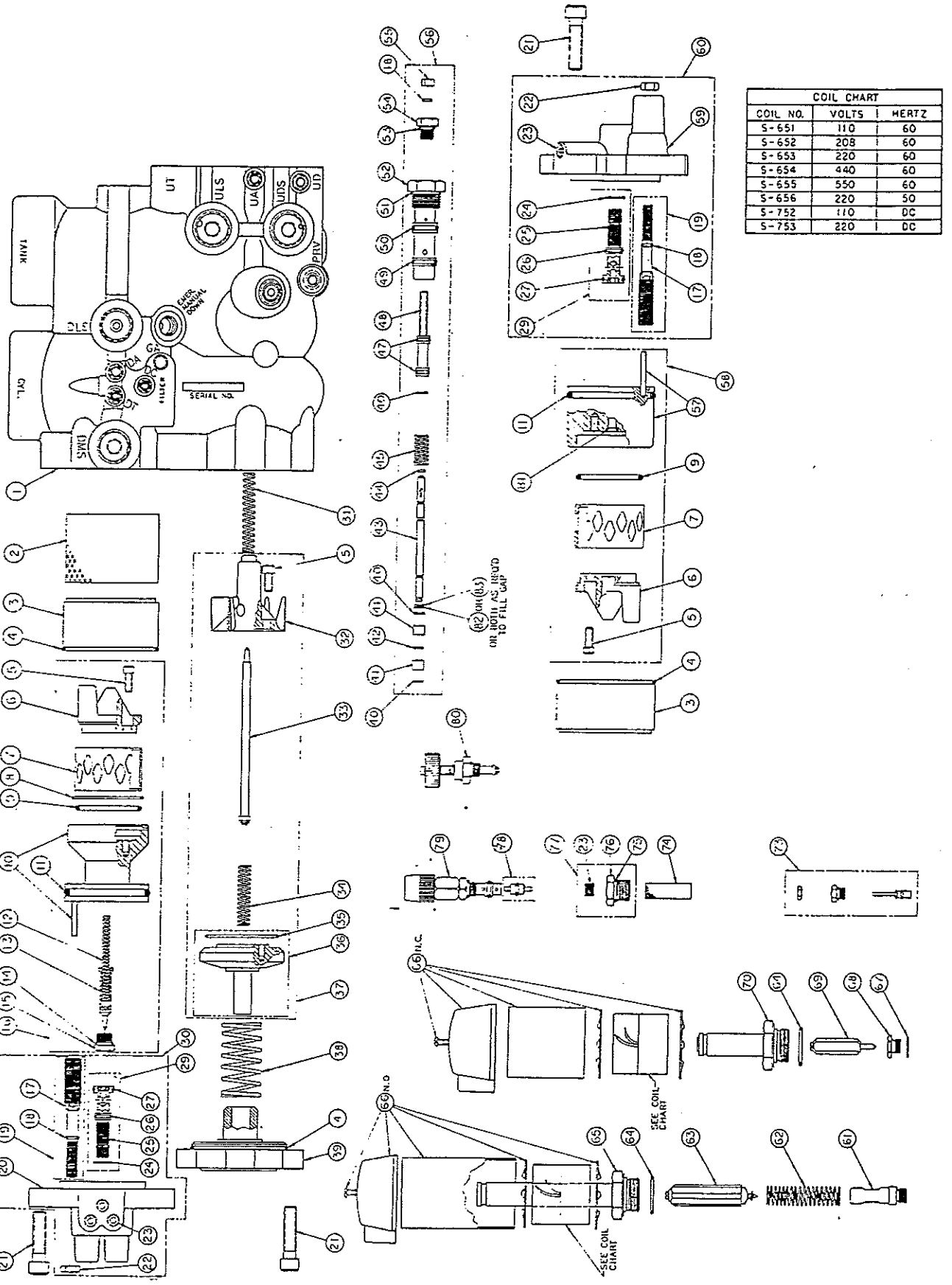
NOTE: DC is a screened input and must be kept clean. Clogging will affect all other down adjustments.

*MANUAL LOWERING—T handle is located on top of valve. Turn CCW to lower car.

CAUTION—If persons are riding the car during manual lowering, warn then to stay clear of car door.

*SAFETY NOTE: ALL electrical power MUST be off when using manual lowering!

HYDRAULIC CONTROL VALVES
UV-7B
EXPLODED VIEW



COIL CHART		
COIL NO.	VOLTS	HERTZ
S-651	110	60
S-652	208	60
S-653	220	60
S-654	440	60
S-655	550	60
S-656	220	50
S-752	110	DC
S-753	220	DC

NOTE: NOT ALL PARTS LISTED ARE SOLD INDIVIDUALLY.

ITEM NO.	RENEWAL PART	PART NUMBER
1	Valve body sub-assy (with seat rings)	EE-5250SA
2	Screen assy. (down)	EE-5304A
3	Sleeve, cylinder	EE-5271
4	"O" ring 3" X 3¼" X 1/16"	EE-5299
5	Cap screw ¼"—20 X 5/8" socket head	EE-5292
6	Port shield	EE-5270
7	Port ring, down	EE-5269-1
8	"O" ring 2¼" X 2 7/16" X 3/32"	EE-5301V
9	"O" ring 1 7/8" X 2¼" X 3/16"	EE-5300
10	Piston assy., down	EE-5273BA
11	"O" ring 2½" X 2 5/8" X 3/16"	EE-5285V
12	Spring, down level	EE-5280
13	Needle, down level	EE-5262
14	"O" ring 7/16" X 9/16" X 1/16"	EE-5192
15	Retainer nut, down level needle	EE-5263
16	Piston assy., down (complete)	EE-5273A
17	Piston stroke adjustor DM & BP	EE-5267
18	"O" ring ¼" X 3/8" X 1/16"	EE-5027V
19	Piston stroke adjustor assy. DM & BP	EE-5267A
20	Flange, down	EE-5251
21	Cap screw 7/16"—14 X 1¾" socket head	EE-5293
22	Lock nut 3/8"—16	EE-5314
23	Plug, pipe 1/8" NPT	EE-5113
24	Retainer ring	EE-5035
25	Leveling adjustor	EE-5191D
26	"O" ring 7/16" X 9/16" X 1/16"	EE-5192
27	"O" ring 5/8" X ¾" X 1/16"	EE-5193
28	Needle orifice seat screw assy.	EE-1465BA
29	Leveling adjustor assy.	EE-5191DA
30	Flange assy, down	EE-5251A
31	Spring, by-pass return	EE-5315B
32	Guide stem	EE-5268
33	Needle assy.	EE-5284BA
34	Spring, needle extension	EE-5281
35	"O" ring 2¼" X 2 5/8" X 3/16"	EE-5297
36	Piston assy, check	EE-5255BA
37	Piston assy, check (complete)	EE-5255A
38	Spring, piston, check	EE-5308
39	Flange assy, check	EE-5252A
40	Retainer ring	EE-5303
41	Sleeve, shaft, compensator	EE-5279
42	"O" ring ¼" X 7/16" X 3/32"	EE-5294
43	Shaft compensator	EE-5275B
44	"O" ring 1/8" X ¼" X 1/16"	EE-1630
45	Spring compensator	EE-5265
46		
47	"O" ring	EE-5094
48	Adjustor UT	EE-5274
49	"O" ring 1 1/16" X 1/8" X 3/32"	EE-2406
50	"O" ring ¾" X 1 5/16" X 3/32"	EE-5295
51	"O" ring 7/8" X 1 1/16" X 3/32"	EE-5296
52	Body compensator	EE-5276
53	"O" ring ½" X 5/8" X 1/16"	EE-5030
54	Retainer nut, UT adjustor	EE-5277
55	Lock nut ¼"—28UT	EE-5291
56	Compensator assy. (complete)	EE-5276A
57	Piston assy, by-pass	EE-5261BA
58	Piston assy, by-pass (complete)	EE-5261A
59	Flange, by-pass	EE-5258
60	Flange assy, by-pass	EE-5258A
61	Needle orifice assy. (normally open)	EE-2391A
62	Spring, solenoid plunger N.O.	EE-2132
63	Solenoid plunger assy. N.O.	EE-2125A
64	"O" ring 13/16" X 1 5/16" X 1/16"	EE-1730
65	Plunger enclosure assy. N.O.	EE-2129A
66	Housing assy., coil (normally open)	EE-2122A
66	Housing assy., coil (normally closed)	EE-2120A
67	Gasket, needle orifice	EE-1458
68	Needle orifice assy. (normally closed)	EE-1465BA
69	Solenoid plunger assy., N.C.	EE-1456DA
70	Plunger enclosure assy., N.C.	EE-2164A
71		
72		
73	Adjuster assembly	EE-2400A
74	Screen filter	EE-5264
75	"O" ring 1 1/16" X 13/16" X 1/16"	EE-5511
76	Cap-filter boss.	EE-5260
77	Cap-filter boss assy.	EE-5260A
78	Piston assy., relief valve	EE-5122BA
79	Relief valve assy.	EE-5079A
80	Emergency lowering valve assy.	EE-5211BA
81	Seal kit	EE-5317

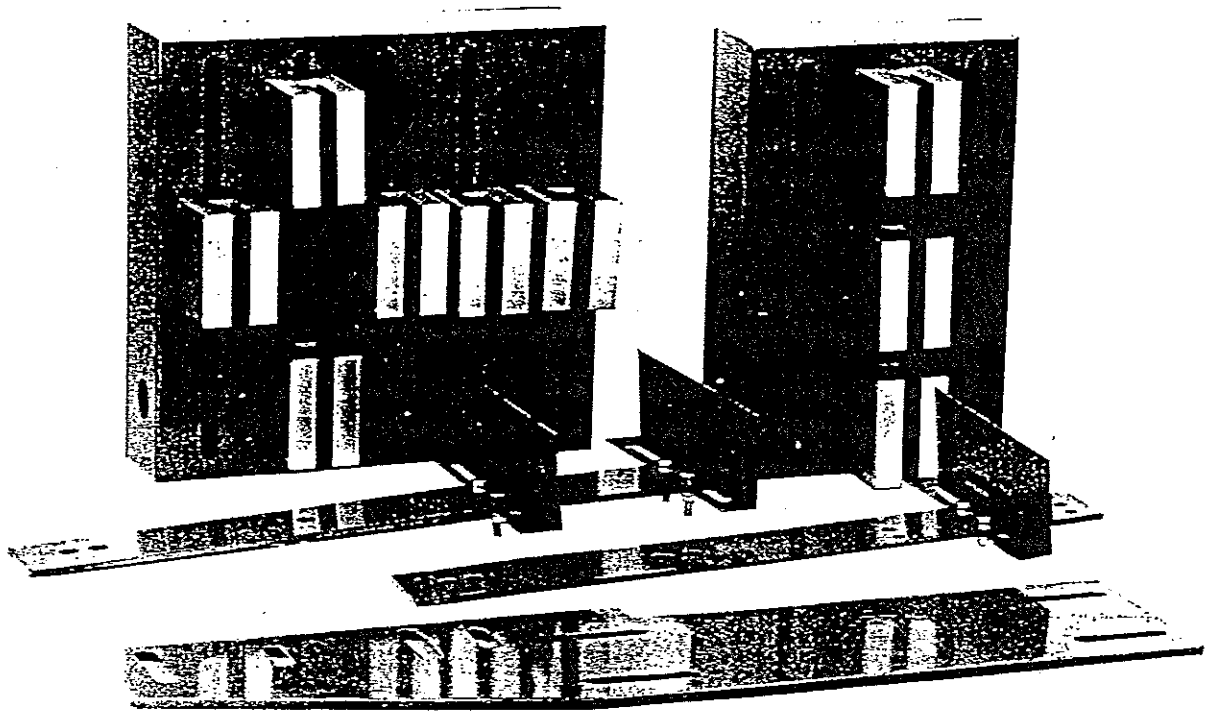
COIL NO. VOLTS

COIL NO.	VOLTS	HERTZ
S-651	110	60
S-652	208	60
S-653	220	60
S-654	440	60

COIL NO.	VOLTS	HERTZ
S-655	550	60
S-656	220	50
S-752	110	D.C.
S-753	220	D.C.

SEPTEMBER 1, 1983

LANDING SYSTEM



APPLICATION

The EECO Landing System is designed for any type of elevator equipment with speeds up to and including 400 feet per minute with One Floor Run Control. The landing system is used to sense the landings and the slowdown points between the landings in the hatch.

CONSTRUCTION

The noiseless sensing of the landing and slowdown points is achieved by using reed switches in the horseshoe shaped inductors which are mounted on the elevator. Ferromagnetic vanes, static mounted in the hatch, are sensed by the inductors on the elevator. Normally open and normally closed contacts are available in the inductor to allow a wider replacement application.

Two knockouts are provided on the inductor box. All inductors are mounted on the box, to your job specifications, and are prewired to marked terminals, ready for your traveling cable wires.

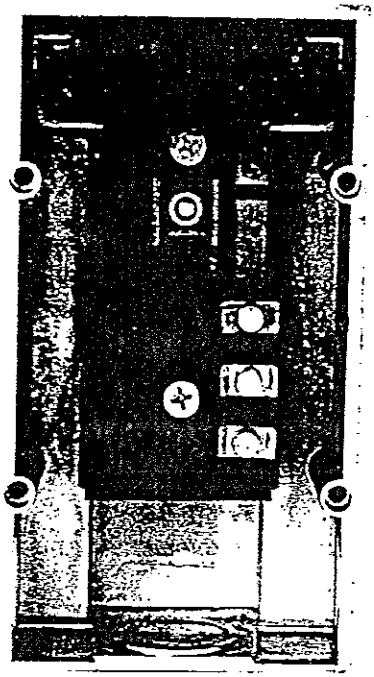
OPERATION

Each inductor assembly has been preengineered to allow for ease of installation and adjustment. The location of the inductors on the landing system are determined by the landings (Front and Rear, if applicable) served by the elevator in the building, and the speed of the elevator.

ELEVATOR EQUIPMENT CO. • BOX 39714 • LOS ANGELES • CALIFORNIA • 90039 • PHONE (800) 423-2800
TELEX 1910 497 4946 • BOX 1544 • RICHMOND • INDIANA • 47374 • PHONE (800) 428-6564

ELECTRICAL CONTROL EQUIPMENT
MV-4C
PERMANENT MAGNET SWITCH

SEPTEMBER 1, 1983



APPLICATION

Type MV-4C Permanent Magnet Switches are designed primarily for elevator leveling control units, elevator zone switches, punch presses, lift hoists, conveyor transfer systems, and other operations requiring trouble free service. Consistent repeat accuracy can be easily and economically controlled by these units where mechanical contact is not desired between the actuating vane and the switch.

CONSTRUCTION

Three ½" knockouts are provided on each box. Two slotted adjustment mounting grooves are provided in the back of each box, and are located so that this switch can be interchanged with all previous MV switches. The box is so designed that height adjustments or removal can be accomplished without removing the cover. Quarter-inch mounting bolts and nuts are provided with each switch. The MV-4C switches are furnished with one set of normally open and normally closed contacts, which are clearly marked. The switch can also be supplied with two sets of these contacts at small additional cost. Contacts in all Type MV-4C switches are silver-to-silver with single break-wiping action arrangement.

OPERATION

The MV-4C switch is **not** operated by gravity or springs. The operation is controlled by one magnet which is balanced so that when the vane is not in the sensing area of the switch, the magnet is held in the back position by ferrous material mounted permanently in the rear of the box. When the vane arrives in the sensing area of the magnet, the vane's magnetic attraction becomes larger than that of the ferrous material and causes a snap action movement towards the vane. The reverse snap action occurs when the vane leaves the sensing area, due to the magnetic influence of the material mounted in the back of the box. "Dead zone" is less than ⅛" at ¼" running clearance. The MV-4C switch is quiet in operation.

RATINGS

300 V.A.C. 8 AMP; 230 V.D.C. 1 AMP Dead Zone: Less than ⅛" at ¼" gap.

Listed As Approved by C.S.A.
(UL) Feb. 19, 1987

ELEVATOR EQUIPMENT CO. • BOX 39714 • LOS ANGELES • CALIFORNIA • 90039 • PHONE (800) 423-2800
TELEX 1910 497 4946 • BOX 1544 • RICHMOND • INDIANA • 47374 • PHONE (800) 428-6564

ELECTRICAL CONTROL EQUIPMENT
MV-4C
PERMANENT MAGNET SWITCH

INSTALLATION

Here are some typical mountings for the MV-4C switch when used in elevator service. These illustrations show the switch attached to the car frame.

Fig. I. Shows a normal relationship between the MV-4C and the actuating vane, which should be at least 3" wide.

Fig. II. The switch, however, may also be mounted as shown in Fig. II.

Fig. III. When mounting two switches in an arrangement similar to the one in Fig. III, there must be at least a 2" separation of the two switches so that the normal operation of each will not be disrupted by the magnetic force field of the adjacent switch.

Fig. IV. Two switches may be placed less than two inches apart if they are arranged as in Fig. IV.

Fig. V. The running clearance between vane and switch, as depicted in Fig. V, should be maintained under any type of service.

Fig. VI. A mounting bracket should be desighed to accommodate the dimensions shown.

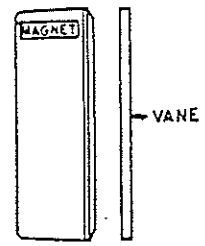


FIG I

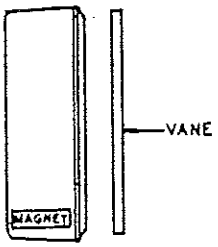


FIG II

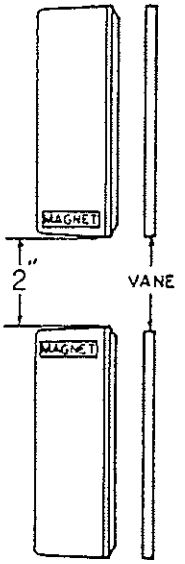


FIG III

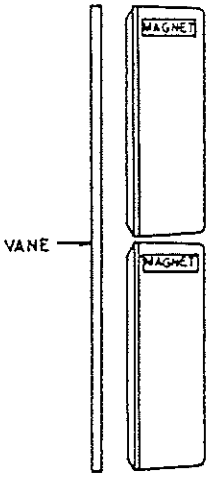


FIG IV

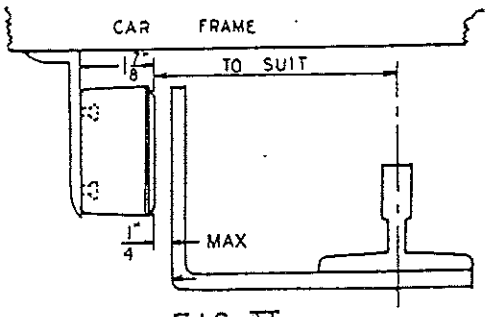


FIG V

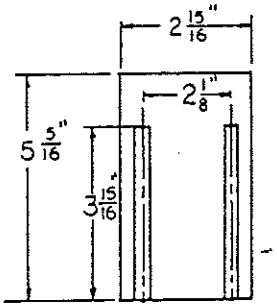


FIG VI

HYDRAULIC CONTROL VALVES
TYPE UV-7 VALVE

FEATURES

The fully unitized UV-7 valve performs all necessary functions for the operation of a hydraulic elevator in both directions of travel. The UV-7 valve accomplishes the following:

SMOOTH UP START

1. Allows motor to reach full running speed before load is applied to pump.

2. One adjustment for soft start and smooth acceleration.

UP TRANSITION

1. Unvarying transition through wide pressure and temperature range.

UP LEVELING

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

2. Non-critical adjustable leveling speed.

UP STOP

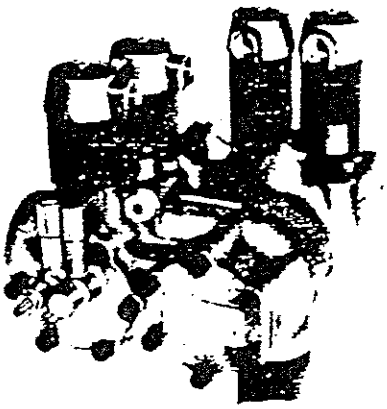
1. Provides smooth up stop which is solenoid operated and adjustable.

LOWERING VALVE

1. Provides controlled down acceleration, precise contract down speed, down transition, adjustable leveling speed and soft stop. Tool-less manual lowering feature standard.

CHECK VALVE

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



EECO TYPE UV-7 VALVE
U.S. PATENT #4,011,888

ADDITIONAL FEATURES

1. Lightweight heat treated high strength aluminum body.

2. Fully adjustable pressure relief valve.

3. Moving parts restricted to sliding sealed pistons.

RATINGS

Fluid

For oil service. A good grade of Turbine oil, viscosity 150 SSU and a minus pour point is recommended.

Pressure

Rated at 90 PSI minimum, 500 PSI maximum.

Temperature

80°F Minimum — 150°F Maximum

Size

All UV-7 valves should be sized to by-pass the entire capacity of the pump at **MINIMUM** pressure. See Flow Chart Bulletin E-1005, Page 5.

Prices

Refer to Price Section #5500.

HYDRAULIC CONTROL VALVES
TYPE UV-7 VALVE

OPERATION

As the pump starts, the UV-7 Valve by-passes the full pump output to the tank. This allows the pump motor to reach full speed at no load. The BP Piston then closes at a controlled adjustable rate and forces a smooth ever increasing flow to the elevator jack.

When the car reaches the slow-down switch at the next floor, the ULS solenoid is de-energized and the BP piston then opens at an adjustable rate, smoothly slowing the car to a predetermined, stabilized leveling speed. The leveling speed remains constant regardless of the load on the car until the car reaches floor level.

The leveling switch opens the dump (UDS) solenoid allowing the BP port to by-pass the entire pump output to the tank bringing the car to a smooth stop. NOTE! Pump motor must be timed to run approximately 1-1/2 second after car has stopped. The BP piston is now in the open position ready for the next up start.

INSTALLATION

(1) Valve must be mounted with solenoids in vertical position.

(2) May be mounted over, under or on the side of oil tank.

(3) Provide 5 inches clearance above solenoids for coil removal.

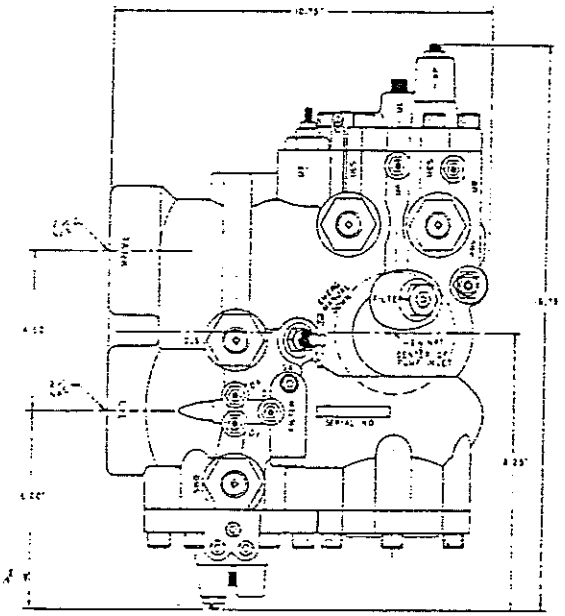
(4) For under tank mounting, shut-off valve and all fittings should be equal to 2-1/2" standard pipe size.

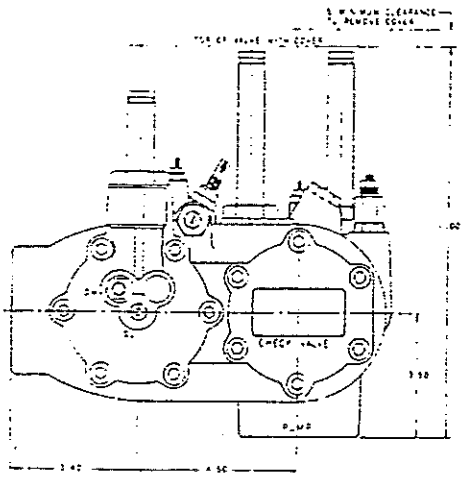
(5) Outlets of UV-7 are marked JACK and TANK. Pump input is on underside of valve.

(6) The two (normally open) up solenoids must be energized when pump motor starts. The two (normally closed) down solenoids must be energized to lower car.

Lowering the elevator is accomplished by energizing solenoids DMS and DLS. When DMS is de-energized, the main piston partially closes causing the car to go into leveling speed. DLS is de-energized at floor level. Manual Lowering (ML) is provided in leveling speed only.

DIMENSIONS





ITEM NO.	RENEWAL PART	PART NUMBER
1	Valve body sub-assy (with seat rings)	EE-5250SA
2	Screen assy. (down)	EE-5304A
3	Sleeve, cylinder	EE-5271
4	"O" ring 3" X 3 1/4" X 1/8"	EE-5299
5	Cap screw 1/4"–20 X 5/8" socket head	EE-5292
6	Port shield	EE-5270
7	Port ring, down	EE-5269-1
8	"O" ring 2 1/4" X 2 7/16" X 3/32"	EE-5301V
9	"O" ring 1 7/8" X 2 1/4" X 3/16"	EE-5300
10	Piston assy, down	EE-5273BA
11	"O" ring 2 1/2" X 2 7/8" X 3/16"	EE-5285V
12	Spring, down level	EE-5280
13	Needle, down level	EE-5262
14	"O" ring 7/16" X 9/16" X 1/16"	EE-5192
15	Retainer nut, down level needle	EE-5263
16	Piston assy, down (complete)	EE-5273A
17	Piston stroke adjustor DM & BP	EE-5267
18	"O" ring 1/4" X 3/8" X 1/16"	EE-5027V
19	Piston stroke adjustor assy. DM & BP	EE-5267A
20	Flange, down	EE-5251
21	Cap screw 7/16"–14 X 1 3/4" socket head	EE-5293
22	Lock nut 3/8"–16	EE-5314
23	Plug, pipe 1/8" NPT	EE-5113
24	Retainer ring	EE-5035
25	Leveling adjustor	EE-5191D
26	"O" ring 7/16" X 9/16" X 1/16"	EE-5192
27	"O" ring 5/8" X 3/4" X 1/16"	EE-5193
28	Needle orifice seat screw assy.	EE-1465BA
29	Leveling adjustor assy.	EE-5191DA
30	Flange assy, down	EE-5251A
31	Spring, by-pass return	EE-5315B
32	Guide stem	EE-5268
33	Needle assy.	EE-5284BA
34	Spring, needle extension	EE-5281
35	"O" ring 2 1/4" X 2 5/8" X 3/16"	EE-5297
36	Piston assy, check	EE-5255BA
37	Piston assy, check (complete)	EE-5255A
38	Spring, piston, check	EE-5308
39	Flange assy, check	EE-5252A
40	Retainer ring	EE-5303
41	Sleeve, shaft, compensator	EE-5279
42	"O" ring 1/4" X 7/16" X 3/32"	EE-5294
43	Shaft compensator	EE-5275B
44	"O" ring 1/8" X 1/4" X 1/16"	EE-1630
45	Spring compensator	EE-5265
46	Belleville washer assy.	EE-2643A
47	"O" ring 5/16" X 7/16" X 1/16"	EE-5094
48	Adjustor UT	EE-5274
49	"O" ring 11/16" X 7/8" X 3/32"	EE-2406
50	"O" ring 3/4" X 15/16" X 3/32"	EE-5295
51	"O" ring 7/8" X 1 1/16" X 3/32"	EE-5296

UV-7 PARTS LIST & COIL CHART

ITEM NO.	RENEWAL PART	PART NUMBER
52	Body compensator	EE-5276
53	"O" ring 1/2" X 5/8" X 1/16"	EE-5030
54	Retainer nut, UT adjustor	EE-5277
55	Lock nut 1/4"–28 UT	EE-5291
56	Compensator assy. (complete)	EE-5276A
57	Piston assy, by-pass	EE-5261BA
58	Piston assy, by-pass (complete)	EE-5261A
59	Flange, by-pass	EE-5258
60	Flange assy, by-pass	EE-5258A
61	Needle orifice assy. (normally open)	EE-2391A
62	Spring, solenoid plunger N.O.	EE-2132
63	Solenoid plunger assy. N.O.	EE-2125A
64	"O" ring 1 3/16" X 1 5/16" X 1/16"	EE-1730
65	Plunger enclosure assy. N.O.	EE-2129A
66	Housing assy., coil (normally open)	EE-2122A
66	Housing assy., coil (normally closed)	EE-2120A
67	Gasket, needle orifice	EE-1458
68	Needle orifice assy. (normally closed)	EE-1465BA
69	Solenoid plunger assy., N.C.	EE-1456DA
70	Plunger enclosure assy., N.C.	EE-2164A
71	Screw, adjustor	EE-2418
72	Retainer nut, adjustor screen	EE-2379
73	Lock nut 10 - 48	EE-2253
74	Screen filter	EE-5264
75	"O" ring 11/16" X 13/16" X 1/16"	EE-5311
76	Cap-filter boss.	EE-5260
77	Cap-filter boss assy.	EE-5260A
78	Piston assy., relief valve	EE-5122BA
79	Relief valve assy.	EE-5079A
80	Emergency lowering valve assy.	EE-5074A
81	Seal kit	EE-5317

COIL NO. VOLTS

COIL NO.	VOLTS	HERTZ
S-651	110	60
S-652	208	60
S-653	220	60
S-654	440	60

COIL NO.	VOLTS	HERTZ
S-655	550	60
S-656	220	50
S-752	110	D.C.
S-753	220	D C

Prices Subject To Change Without Notice.

UP PRE-SETTING

(1) "BP"—BY PASS—CCW to stop.

(2) "UA"—UP START—CW flush with lock nut. Do not tighten.

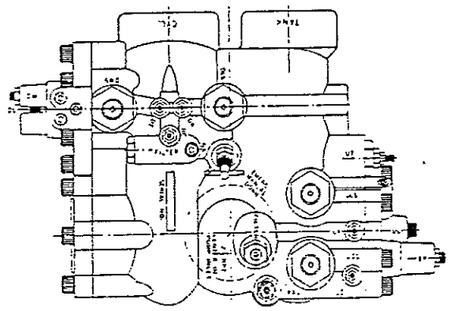
(3) "UL"—UP LEVELING—CCW to stop.

(4) "UT"—UP TRANSITION—CCW to stop.

(5) "UD"—UP DUMP (soft stop)—CCW to stop.

(ULS)—UP LEVELING SOLENOID

(UDS)—UP DUMP SOLENOID



PRE-SET ALL ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.

NOTE: CW-clockwise
CCW-counterclockwise

UP ADJUSTMENTS

(1) "BP"—BY PASS FLOW ADJUSTOR—Car at lower floor. No load on car. Disconnect (UDS). Start pump. Turn "BP" CW till car moves, then CCW till car stalls. plus 1/2 turn. Stop pump. Reconnect (UDS).

(2) "UA"—UP START ADJUSTOR—Car at lower floor. No load. Start pump. Turn "UA" CCW for fast up acceleration, CW for slower. Car should reach full up speed in 2-1/2 feet at high speed, proportionately less for lower speed installation. DO NOT DRAG OUT ACCELERATION.

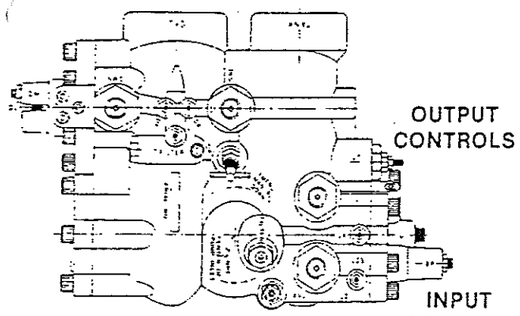
NOTE: UA is a screened input and must be kept clean. Clogging will affect all other up adjustments.

(3) "UL"—UP LEVELING ADJUSTOR—Car at lower floor, no load. Disconnect (ULS). With pump running, turn "UL" CW until a leveling speed of 12 to 15 F.P.M. is obtained. Reconnect (ULS) (5 feet in 20 seconds = 15 F.P.M.)

(4) "UT"—UP TRANSITION ADJUSTOR—Car at lower floor. No load. Send car up. Turn "UT" CW for slower transition (slow-down). CCW for faster transition. Continue adjustment of "UT" for smooth stepless deceleration. Slow-down switch should be set to give 3 to 4 inches of stabilized leveling. Do NOT adjust valve to suit switch. Adjust switch (or vane) to suit valve.

(5) "UD"—UP DUMP ADJUSTOR—(Soft Stop) Turn "UD" CCW for hard stop. CW for softer stop. NOTE: Pump motor must be timed to run approximately 1-1/2 seconds after car has stopped. RELIEF VALVE—Located on valve body. Turn CW for higher pressure, CCW for lower pressure. Factory set at 450 P.S.I.

ADJUSTMENT OF UV-7 VALVE



DOWN PRE-SETTING

(6) "DL"—DOWN LEVELING—CW to stop—CCW 5-1/2 turns.

(7) "DM"—DOWN FULL SPEED—CW to stop—CCW 5-1/2 turns.

(8) "DT"—DOWN TRANSITION—Closed flush with end of lock-nut.

(9) "DA"—DOWN ACCELERATION—Wide open.

(10) "DC"—DOWN CLOSING—Wide open.

"ML"—MANUAL LOWERING (see below).

(DMS)—Down Main Solenoid

(DLS)—Down Leveling Solenoid

PRE-SET ALL ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.

DOWN ADJUSTMENTS

(6) "DL"—DOWN LEVELING ADJUSTOR—With car at upper landing or at down level zone. Energize DLS coil. Turn DC "IN" CW until car moves down. Adjust DL for 10-15 F.P.M. Recycle car several times to determine down Start and Stop (in leveling speed). If stop is too firm, turn DC "IN" CW. Be sure stop is correct as all further adjustments are affected. Replace or reconnect DMS coil.

(7) "DM"—DOWN SPEED ADJUSTOR—With car at upper landing, energize DMS and DLS coils. Car should lower. Turn DM "OUT" CCW to obtain contract speed.

(8) "DT"—DOWN TRANSITION ADJUSTOR—Recycle car and observe down transition. If too abrupt, loosen locknut and turn DT "OUT" CCW approximately 2-1/2 turns until smooth. Recycle car and continue to adjust DT for transition.

NOTE: Down level speed will increase as DT becomes effective. Turn DL "IN" CW to maintain down level speed at 10-15 F.P.M.

(9) "DA"—DOWN ACCELERATION ADJUSTOR—Car at upper floor. Turn "DA" CW until flush with lock-nut. Energize DMS and DLS. Car should not move. Turn DA slowly CCW until valve opens. Turn "DA" CW to slow the acceleration rate.

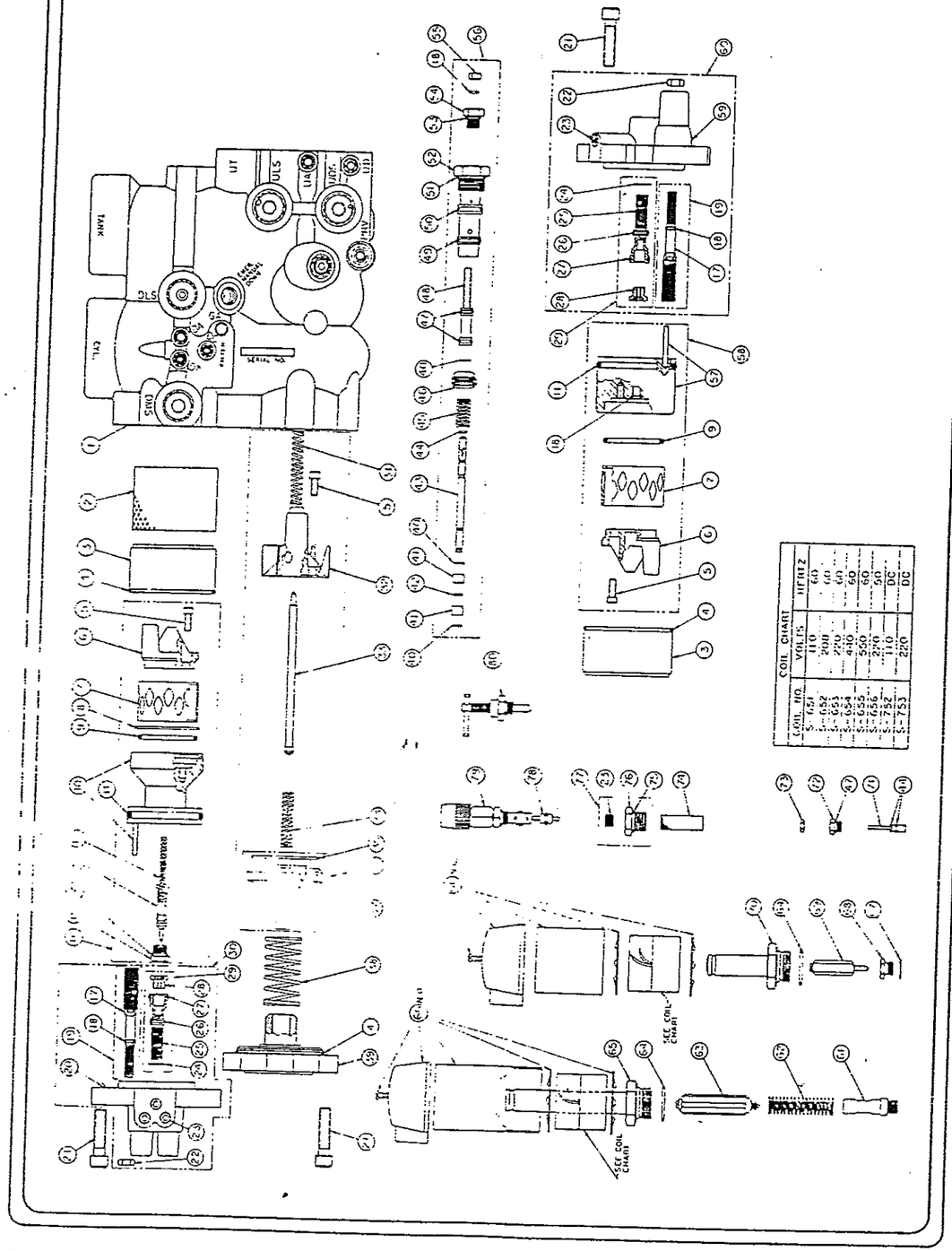
(10) "DC"—DOWN CLOSING ADJUSTOR—See No. (6) above for setting.

NOTE: DC is a screened input and must be kept clean. Clogging will affect all other down adjustments.

MANUAL LOWERING—T handle is located on top of valve. Turn CCW to lower car.

CAUTION—If persons are riding the car during manual lowering, warn them to stay clear of car door.

UV-7 EXPLODED VIEW & COIL CHART



BOTH ULS & UDS MUST BE ENERGIZED FOR AN UP RUN
ONLY UDS ENERGIZED FOR UP LEVEL OR ANTI-CREEP

UV-5 & UV-6 UP SECTION
UV-5A & UV-7

TROUBLE	SOLUTION
) PUMP RUNS – MAKES HAMMERING NOISE.	(a) Check oil level in tank. Check suction tank shut-off. rotation of motor.
) PUMP RUNS – CAR WILL NOT MOVE OR GO INTO FULL SPEED	(a) Check (Voltage) at disconnect switch, controller, and valve coils. Check solenoids to see if they correspond with control voltage. (b) Check Main line shut-off to cylinder. *(c) Check belt tension. If belts are hot, they are slipping. (d) Check relief valve setting with gauge. (e) Turn UV adjustment CCW (see adjusting sheet). (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 adjustor to see if it is set properly. See adjusting sheet. *(b) Check UA adjustor screen to see if it is filled with debris. UV-7 has separate screen. (c) Check ULS and UDS solenoids. Both must be energized. *(d) Inspect ULS and UDS needle orifice. *(e) Check belts on pump motor for proper tension and are not slipping. (If belts are hot, they are slipping).

ELECTRICAL DISCONNECT FOR YOUR SAFETY

ELEVATOR EQUIPMENT CO.

4035 GOODWIN AVENUE • BOX 39714 • LOS ANGELES • CALIFORNIA • 90039 • PHONE (213) 245-0147

TROUBLE SHOOTING GUIDE

FORWORD

The information presented herein is intended for use by persons having skill and experience in hydraulic elevator or lift servicing, and is 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.

TROUBLE SHOOTING

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 ULS & UDS solenoids must be energized.

For an "Anti-Creep" or slow up run, only the UDS 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 "ULS" solenoid must be deenergized, 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 "UDS" solenoid must remain energized until the approximate floor level itself is reached, whereas the motor must be allowed to run for 1 to 1½ secs. after "UDS" is deenergized so as to obtain the desired soft stop.

For a normal "Down" run, both DMS & DLS solenoids must be energized to obtain full down speed.

For a slow or leveling speed "Down" run, only the DLS 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 "DMS" solenoid must be deenergized, 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 at a stabilized leveling speed for a distance of 3 - 4 inches before the car reaches the floor. The "DLS" solenoid must remain energized until the approximate floor level itself is reached.

In the following instructions, the terms "CW" & "CCW" are abbreviations for "Clockwise" & "Counter Clockwise". "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 transistion and/or leveling zones are either too long or too short, DO NOT readjust the valve! Move the appropriate switches or vanes/cams.

UV-5 & UV-6 UP SECTION
UV-5 & UV-7

TROUBLE	SOLUTION
4) UP START ROUGH	(a) Check BP to see that it is set properly. See adjusting sheet. (b) Check UA adjustment to see that it is set properly. See adjusting sheet. *(c) Close UA adjustment. If car starts up readily, check "O" rings on UA adjustment, 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 (G.P.M.) and static (P.S.I.) 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 BP piston spring to see if it might be broken or on wrong side of piston. (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 <u>not</u> slipping. (b) Be sure ULS and UDS are energized. (c) Check solenoid needle for proper seating. (Note: To check this, turn UT & UD CW until they stop. If car now goes into full speed, then solenoid is not closing on seat properly. <u>Caution! If car has only 2 stops, do not let car reach top floor when making above test. There will be no slow down. Running the car full speed through top floor could result in damage to cab, packing head, or piston stop ring.</u>)

UV-5 & UV-6 UP SECTION
UV-5 & UV-7

TROUBLE	SOLUTION
) UP SPEED SLOW (Continued)	(d) Check relief valve to see that it is set properly. (e) Check packing to see that it is not too tight on the piston. (f) Check suction to pump to see that it is not being restricted. (Pump will be noisy). (g) Check oil level. (If low, pump will be noisy). *(h) Check UA screen to see that it is not filled with debris. UV-7 has separate screen. *(i) Clean valve of all foreign material. (j) Check motor horsepower and line voltage drop. (k) Be sure adjustments are made with oil at normal operating temperature and not when oil is cold. Normal temperature approximately 85 to 100° F.
) TRANSISTION FROM UP SPEED TO LEVELING SPEED TOO SMOOTH – CAUSING DRIFTING UP THROUGH FLOOR LEVEL	(a) Turn UT CCW. Remember UT must be open 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' speed.
) TRANSISTION FROM UP SPEED O UP LEVELING SPEED TOO GH OR QUICK	(a) Turn UT adjustment clockwise. See adjustment sheet.

ECTRICAL DISCONNECT FOR YOUR FETY

UV-5 & UV-6 UP SECTION
UV-5A & UV-7

TROUBLE	SOLUTION
) CAR STALLS AS CAR ENTERS LEVELING ZONE FROM HIGH SPEED OR WILL NOT ANTI-CREEP	(a) Be sure ULS and UDS are not reversed. (b) Check UL adjustment. See adjustment sheet. (c) Check UL assembly. (Note: To check UL assembly, lower car to lowest floor. Disconnect ULS coil. Start pump and slowly turn UL adjustment CCW** from the closed position until car pulls out of stall). **CW on UV-7 *(d) Examine UA screen for debris. *(e) Inspect middle "O" ring on check valve flange. UV-5, UV-5A & 6 only. (f) Check up level switch, check all electrical circuits pertaining to up leveling.
CAR STALLS WITH CAPACITY LOAD	(a) Check relief valve adjustment. See adjusting sheet. *(b) Check belts on pump and motor to see if they have proper tension and are not slipping.
) HARD STOP AT FLOOR LEVEL	(a) Turn "UD" CW. See adjusting sheet. (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.
) CAR CONTINUES TO LEVEL THROUGH FLOOR IN LEVELING SPEED	(a) Turn UD adjustment counter-clockwise. See adjustment sheet. *(b) UDS needle orifice plugged with debris. *(c) UD adjustor plugged with debris.
:CTRICAL DISCONNECT FOR YOUR 'ETY	

UV-5 & UV-6 UP SECTION
UV-5A & UV-7

TROUBLE	SOLUTION
12) CAR WILL NOT STALL. PUMP RUNNING – UA ADJUSTOR TURNED OFF	(a) Check UA adjustor to make sure it is turned off. (Turn CW until stopped position is reached). See adjustment sheet. (b) Turn BP flow control screw to open position (counter-clockwise until stopped). 12 turns open maximum on UV-5A & 6. *(c) If car will not stall, install larger bypass piston. Note: On UV-7, Piston area may be increased (or decreased) by rotation of port ring after loosening bolts holding port shield. Retighten bolts & reset BP to correct position. *(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.

ELECTRICAL DISCONNECT FOR YOUR SAFETY

BOTH DMS & DLS MUST BE ENERGIZED FOR A DOWN RUN
ONLY DLS ENERGIZED FOR DOWN LEVEL
AND CAR BEFORE DISASSEMBLING DOWN OR CHECK VALVE SECTION
DOWN SECTION
UV-5, UV-5A, UV-6, & UV-7

TROUBLE	SOLUTION
) CAR WILL NOT LOWER (MAIN DOWN)	(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 adjustment cavity for debris. *(j) Inspect down piston "O" ring or piston ring for size.
) CAR WILL NOT LOWER (DOWN LEVEL ONLY)	*(a) Inspect down level spool on end of piston – if broken – replace. UV-7 has spring loaded needle.
) SLOW DOWN START (BOUNCY)	(a) Bleed jack of air. (b) Check jack packing adjustment. (c) Check guide shoe adjustment. (d) Check DA opening adjustment. *(e) 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-7 down piston ring is oversize on valves up to S/N C802. Do not change to smaller size unless you order a complete new down piston assembly.
ND CAR AND DISCONNECT POWER	

DOWN SECTION
UV-5, UV-5A, UV-6, & UV-7

TROUBLE	SOLUTION
4) SUDDEN DOWN START	(a) Check Jack packing adjustment (too tight). (b) Check DA adjustment to see if it is set proper. See adjusting sheet.
5) VALVE WILL NOT CLOSE	(a) Check DT adjustment. Turn CW to stop, on UV-7. Turn CW till flush with nut. on UV-5A. *(b) Check filter screen in DC adjustment - 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-7 has separate screen. *(c) Check solenoid plunger tubes for damage. Plunger should slide <u>freely</u> 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. *(g) Inspect piston "O" ring for size. A badly oversize or swollen ring may prevent a valve from closing. See note (3)e.
6) DOWN STOP ROUGH (QUICK)	(a) Turn down valve DC closing adjustment CW. See adjusting sheet. (b) Check main piston "O" ring to see if it has shrunk.

ND CAR AND DISCONNECT POWER

DOWN SECTION
UV-5, UV-5A, UV-6, & UV-7

TROUBLE	SOLUTION
) DOWN STOP SLOW OR BOUNCY	(a) Bleed Jack of air. (b) Turn DC adjustment CCW. DISCONNECT DMS coil when checking. *(c) Check filter screen in DC adjustment. (When checking this screen, be sure not to to change adjustment until after you have cleaned screen). UV-7 has separate screen. (d) Check guide shoe adjustment.
DOWN TRANSISTION ROUGH (WITHOUT DT ADJUSTOR)	(a) Turn "DC" CW. (Check stop after making DC adjustment, hatch switches adjustment might have to made). See adjusting sheets. *(b) Check down piston "O" ring to see if it has shrunk.
DOWN TRANSISTION ROUGH (WITH DT ADJUSTOR)	*(a) Check DT adjustor to see if it is plugged with debris. (See adjusting sheet for UV-5).
) DOWN LEAK	(a) Check Jack packing and fittings. (b) Close manual lowering valve. *(c) Inspect down valve seal disc and seat area. *(d) Inspect check valve seal disc 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-5, UV-5A & UV-6.
D CAR AND DISCONNECT POWER	

Product Information

UNIT VALVE
TROUBLE SHOOTING GUIDE

UV5A, UV7B
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.

TROUBLE SHOOTING

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 "ULS" & "UDS" solenoids must be energized.

For an Anti-Creep or slow up run, only the "UDS" 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 "ULS" solenoid must be deenergized, 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 "UDS" solenoid must remain energized until the approximate floor level is reached and the motor must be allowed to run for 2 to 2 1/2 seconds after "UDS" is de-energized so as to obtain the desired soft stop.

For a normal Down run, both "DMS" and "DLS" solenoids must be energized to obtain full down speed.

For a slow or leveling speed Down run, only the "DLS" 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 "DMS" 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 "DLS" 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.

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" adjustment CCW. See adjustment sheet.
(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" adjustor to see if it is set properly. See adjusting sheet.
* (b) Check "UA" adjustor screen to see if it is filled with debris. UV7B has separate screen.
(c) Check "UL"S and "UDS" solenoids. Both must be energized.
* (d) Inspect "UL"S and "UDS" 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 adjusting sheet.
(b) Check "UA" adjustment to see that it is set properly. See adjusting sheet.
* (c) Close "UA" adjustment. If car starts up readily, check O-rings on "UA" adjustment, "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 (F.P.M.) and static pressure (P.S.I.) 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 "BP" 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.

(5) UP SPEED SLOW (Continued)

(d) Check relief valve to see that it is set properly.
(e) Check packing to see that it is not too tight on the piston.
(f) Check suction to pump to see that it is not being restricted. Pump will be noisy.
(g) Check oil level. If low, pump will be noisy.
* (h) Check "UA" screen to see that it is not filled with debris. UV7B has separate screen.
* (i) Clean valve of all foreign material.
(j) Check motor horsepower and line voltage drop.
(k) Be sure adjustments are made with oil at normal operating temperature and not when oil is cold. Normal temperature is approximately 85 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' F.P.M. speed.

(7) TRANSITION FROM UP SPEED TO UP LEVELING SPEED TOO ROUGH OR QUICK

(a) Turn "UT" adjustment CW. See adjustment sheet.

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

(a) Be sure "ULS" and "UDS" are not reversed.
(b) Check "UL" adjustment. See adjustment sheet.
(c) Check "UL" assembly. (Note: To check "UL" assembly, lower car to lowest floor. Disconnect "ULS" coil. Start pump and slowly turn "UL" adjustment CCW" from the closed position until car pulls out of stall).
* (d) Examine "UA" screen for debris.
* (e) Inspect middle O-ring on check valve flange. UV5, UV5A & UV6 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 adjusting sheet.
* (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 "UD" CW. See adjusting sheet.
(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 "UD" adjustment CCW . See adjustment sheet.
* (b) "UDS" needle orifice plugged with debris.
* (c) "UD" adjustor plugged with debris.

(12) CAR WILL NOT STALL. PUMP RUNNING - "UA" ADJUSTOR TURNED OFF.

(a) Check "UA" adjustor 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). 12 turns open maximum on UV5A & 6.
* (c) If car will not stall, install larger bypass piston. Note: On UV7B, piston area may be increased (or decreased) by rotation of port ring after loosening bolts holding port shield. Re-tighten bolts & reset "BP" to correct position.
* (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
** CW ON UV-7

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" adjustment 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. UV7B 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: UV7B down piston ring is oversized on valves up to S/N C902. 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 adjusting sheet.

(5) VALVE WILL NOT CLOSE

(a) Check "DT" adjustment. Turn CW to stop, on UV7B. Turn CW until flush with nut on UV5A.

* (b) Check filter screen in "DC" adjustment 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.) UV7B 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 e).

(6) DOWN STOP ROUGH (QUICK)

(a) Turn down valve "DC" closing adjustment 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" adjustment CCW. DISCONNECT "DMS" coil when checking.
* (c) Check filter screen in "DC" adjustment. (When checking this screen, be sure not to change adjustment until after you have cleaned screen). The UV-7 has separate screen.
(d) Check guide shoe adjustment.

(8) DOWN TRANSITION ROUGH (WITHOUT "DT" ADJUSTOR)

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

(9) DOWN TRANSITION ROUGH (WITH "DT" ADJUSTOR)

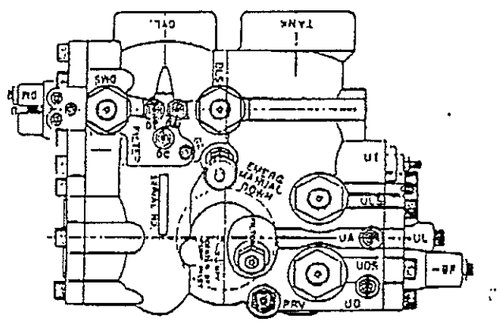
* (a) Check "DT" adjustor to see if it is plugged with debris. (See adjusting sheet for UV5).

(10) DOWN LEAK

(a) Check jack packing and fittings.
(b) Close manual lowering valve.
* (c) Inspect down valve seal disc 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. UV5, UV5A & UV6.

***ELECTRICAL DISCONNECT FOR YOUR SAFETY**

Product Information



UV7 INSTALLATION AND ADJUSTMENT

INSTALLATION

(1) Valve must be mounted with solenoids in vertical position.

(2) May be mounted over, under or on the side of oil tank.

(3) Provide 5 inches clearance above solenoids for coil removal.

(4) For under tank mounting, shutoff valve and all fittings should be equal to 2 1/2" standard pipe size.

(5) Outlets of UV7B are marked CYLINDER and TANK. Pump output is on underside of valve.

(6) The two (normally open) up solenoids must be energized when pump motor starts. The two (normally closed) down solenoids must be energized to lower the valve.

Lowering the elevator is accomplished by energizing solenoids "DMS" and "DLS". When "DMS" is de-energized, the main piston partially closes causing the car to go into leveling speed. "DLS" is de-energized at floor level.

Manual Lowering (ML) is provided in leveling speed only.

Product Information

UV7 ADJUSTMENTS

UP ADJUSTMENTS
UP PRESETTING

(1) "BP" - BYPASS - CCW to stop.
(2) "UA" - UP START - CW flush with lock nut. Do not tighten.
(3) "UL" - UP LEVELING - CCW to stop.
(4) "UT" - UP TRANSITION - CCW to stop.
(5) "UD" - UP DUMP (soft stop) - CCW to stop.

"ULS" (UP LEVELING SOLENOID).
"UDS" (UP DUMP SOLENOID)

NOTE: PRESET ALL ADJUSTORS WITH EMPTY CAR, THEN ADJUST #1 THRU #10 IN SEQUENCE.

UP ADJUSTMENTS

(1) "BP" - BYPASS FLOW ADJUSTOR - Car at lower floor. No load on car. Disconnect "UDS". Start pump. Turn "BP" CW until car moves, then CCW until car stalls, plus 1/2 turn. Stop pump.
Reconnect "UDS".

(2) "UA" - UP START ADJUSTOR - Car at lower floor. No load. Start pump. Turn "UA" CCW for fast up acceleration, CW for slower. Car should reach full up speed in 2 1/2 feet at high speed, proportionately less for lower speed installation. DO NOT DRAG OUT ACCELERATION.

NOTE: "UA" is a screened input and must be kept clean. Clogging will affect all other up adjustments.

(3) "UL" - UP LEVELING ADJUSTOR - Car at lower floor, no load. Disconnect "ULS". With pump running, turn "UL" CW until a leveling speed of 12 to 15 F.P.M. is obtained. Reconnect "ULS" (5 feet in 20 seconds = 15 F.P.M.)

(4) "UT" - UP TRANSITION ADJUSTOR - Car at lower floor, no load. Send car up. Turn "UT" CW for slower transition (slowdown), CCW for faster transition. Continue adjustment of "UT" for smooth step-less deceleration. Slowdown switch should be set to give 3 to 4 inches of stabilized leveling. Do NOT adjust valve to suit switch. Adjust switch (or vane) to suit valve.

(5) "UD" - UP DUMP ADJUSTOR - (Soft Stop) Turn "UD" CCW for hard stop, CW for softer stop.

NOTE: Pump motor must be timed to run approximately 2 1/2 seconds after car has stopped.
RELIEF VALVE - Located on valve body. Turn CW for higher pressure, CCW for lower pressure. Factory set at 450 P.S.I..

Product Information

VN PRESETTING

(6) "DL" - DOWN LEVELING - CW to stop - CCW 5 1/2 turns.
(7) "DM" - DOWN FULL SPEED - CW to stop - CCW 5 1/2 turns.
(8) "DT" - DOWN TRANSITION - Closed flush with end of locknut.
(9) "DA" - DOWN ACCELERATION - Wide open.
(10) "DC" - DOWN CLOSING - Wide open.

"ML" - MANUAL LOWERING (see below).

"DMS" (DOWN MAIN SOLENOID)
"DLS" (DOWN LEVELING SOLENOID)

DOWN ADJUSTMENTS

(6) "DL" - DOWN LEVELING ADJUSTOR - With car at upper landing or at down level zone. Energize "DLS" coil. Turn "DC" IN CW until car moves down. Adjust "DL" for 10 - 15 F.P.M.. Recycle car several times to determine down start and stop (in leveling speed). If stop is too firm, turn "DC" IN CW. Be sure stop is correct as all further adjustments are affected. Replace or reconnect "DMS" coil.

(7) "DM" - DOWN SPEED ADJUSTOR - With car at upper landing, energize "DMS" and "DLS" coils. Car should lower. Turn "DM" OUT CCW to obtain contract speed.

) "DT" - DOWN TRANSITION ADJUSTOR - Recycle car and observe down transition. If too abrupt, loosen locknut and turn "DT" OUT CCW approximately 2 1/2 turns until smooth. Recycle car and continue to adjust "DT" for transition.

NOTE: Down level speed will increase as "DT" becomes effective. Turn "DL" IN CW to maintain down level speed at 10 - 15 F.P.M..

(9) "DA" - DOWN ACCELERATION ADJUSTOR - Car at upper floor. Turn "DA" CCW until flush with locknut. Energize "DMS" and "DLS". Car should not move. Turn "DA" slowly CCW until valve opens. Turn "DA" CW to slow the acceleration rate.

(10) "DC" - DOWN CLOSING ADJUSTOR - See No.(6) above for setting.

NOTE: "DC" is a screened input and must be kept clean Clogging will affect all other down adjustments.

"MANUAL LOWERING - The knob is located on top of valve. Turn CCW to lower car.

CAUTION - If persons are riding the car during manual lowering, warn them to stay clear of car door.

"SAFETY NOTE - ALL electrical power MUST be off when using manual lowering!

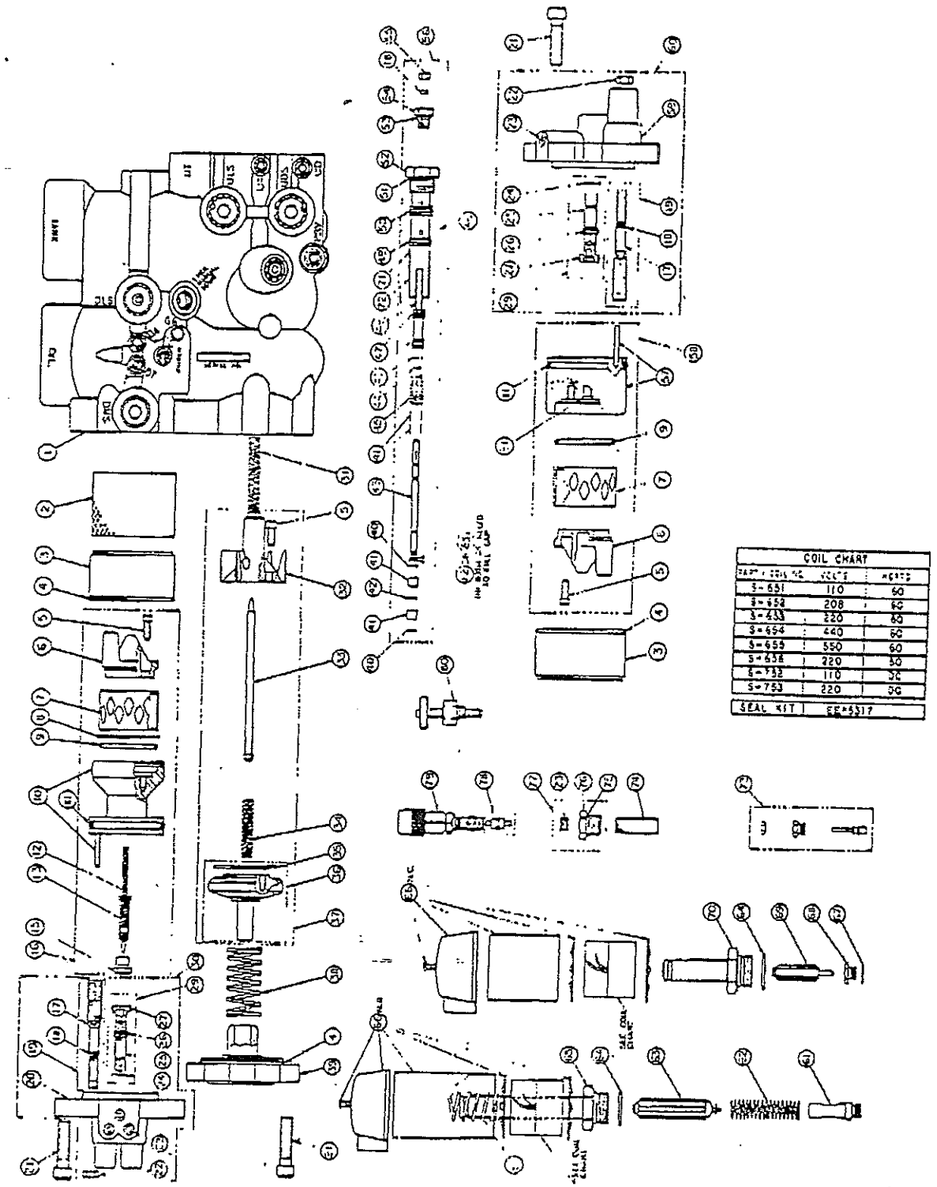
Product Information

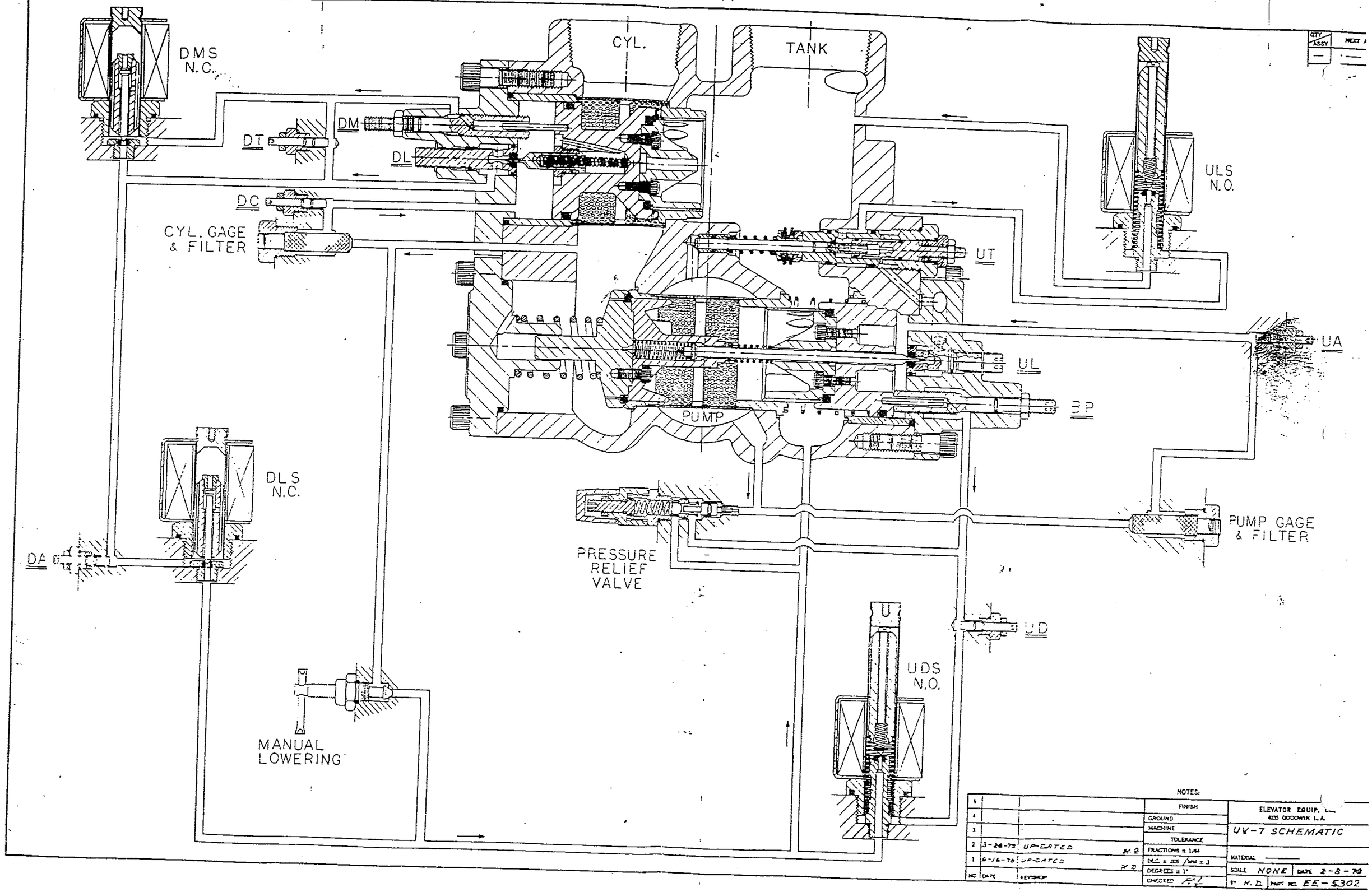
HYDRAULIC CONTROL VALVE UV7B
PARTS LIST

NOTE: NOT ALL PARTS LISTED ARE SOLD INDIVIDUALLY.

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	EE-5250SA	VALVE BODY SUB-ASSEMBLY	46	EE-5276A1	BODY ASSEMBLY, COMPENSATOR
2	EE-5304A	SCREEN ASSEMBLY (DOWN)	47	EE-5094	O-RING, ADJUSTOR
3	EE-5271	SLEEVE, CYLINDER	48	EE-5274	ADJUSTOR, UT
4	EE-5299	O-RING, SLEEVE	49	EE-2406	O-RING, COMPENSATOR
5	EE-5292	CAP SCREW 1/4" - 20 X 5/8" SOCKET HEAD	50	EE-5295	O-RING, COMPENSATOR
6	EE-5270	PORT SHIELD	51	EE-5296	O-RING, COMPENSATOR
7	EE-5268-1	PORT RING, DOWN	52	EE-5276	BODY, COMPENSATOR
8	EE-5301V	O-RING, PORT RING	53	EE-5030	O-RING, RETAINER
9	EE-5300	O-RING, PORT RING	54	EE-5277	RETAINER NUT, UT ADJUSTOR
11	EE-5265V	O-RING, PISTON	55	EE-5291	LOCK NUT 1/4" - 28, UT
12	EE-5280	SPRING DOWN LEVEL	56	EE-5278A	COMPENSATOR ASSEMBLY
13	EE-5282	NEEDLE, DOWN LEVEL	58	EE-5261A	PISTON ASSEMBLY, BYPASS
15	EE-5283	RETAINER NUT, DOWN LEVEL NEEDLE	59	EE-5258	FLANGE, BYPASS
16	EE-5273	PISTON ASSEMBLY, DOWN	60	EE-5258SA	FLANGE ASSEMBLY, BYPASS
17	EE-5267	PISTON STROKE ADJUSTOR DM & SP	61	EE-2381A	NEEDLE ORIFICE ASSEMBLY, NORMALLY OPEN (N.O.)
18	EE-5027	O-RING, ADJUSTOR	62	EE-2132	SPRING, SOLENOID PLUNGER N. O.
19	EE-5267	PISTON STROKE ADJUSTOR ASSY, DM & SP	63	EE-2125A	SOLENOID PLUNGER ASSEMBLY, N. O.
20	EE-5251	FLANGE, DOWN	64	EE-1730	O-RING, PLUNGER ENCLOSURE
21	EE-5293	CAP SCREW 7/16" - 14 X 1 3/4"	65	EE-2129A	PLUNGER ENCLOSURE ASSEMBLY, N. O.
22	EE-5314	LOCK NUT 3/8" - 16	66	EE-2122BA	HOUSING ASSEMBLY, COIL (NORMALLY OPEN)
23	EE-5113	PLUG, PIPE 1/8" - NPT	66	EE-2120A	HOUSING ASSEMBLY, COIL (NORMALLY CLOSED)
24	EE-5035	RETAINER RING	67	EE-1455B	GASKET, NEEDLE ORIFICE
25	EE-5191S	LEVELING ADJUSTOR	68	EE-1455BA	NEEDLE ORIFICE ASSEMBLY, NORMALLY CLOSED (N.C.)
26	EE-5020	O-RING, ADJUSTOR	69	EE-1456CA	SOLENOID PLUNGER ASSEMBLY, N.C.
27	EE-5183	O-RING, ADJUSTOR	70	EE-2184A	PLUNGER ENCLOSURE ASSEMBLY, N.C.
28	EE-5191SA	LEVELING ADJUSTOR ASSEMBLY	71	EE-5139	SCREW, #2 X 1/8" LONG
30	EE-5251A	FLANGE ASSEMBLY, DOWN	72	EE-5275	SHIELD, COMPENSATOR
31	EE-5316B	SPRING, BYPASS RETURN	73	EE-5349A	ADJUSTOR ASSEMBLY
32	EE-5288	GUIDE STEM	74	EE-5264	SCREEN, FILTER
33	EE-5284BA	NEEDLE ASSEMBLY	75	EE-5311	O-RING, FILTER
34	EE-5281	SPRING, NEEDLE EXTENSION	76	EE-5260	CAP-FILTER BOSS
35	EE-5297	O-RING, CHECK	77	EE-5260A	CAP-FILTER BOSS ASSEMBLY
37	EE-5266A	PISTON ASSEMBLY, CHECK	78	EE-5122SA	PISTON ASSEMBLY, RELIEF VALVE
38	EE-5305	SPRING, CHECK PISTON	79	EE-5078A	RELIEF VALVE ASSEMBLY
39	EE-5252A	FLANGE ASSEMBLY, CHECK	80	EE-5211SA	EMERGENCY LOWERING VALVE ASSEMBLY
40	EE-5303	RETAINER RING	81	EE-5227V	O-RING, BYPASS PISTON
41	EE-5279	SLEEVE, COMPENSATOR SHAFT	82	EE-5327	WASHER, COMPENSATOR
42	EE-5294	O-RING, COMPENSATOR	83	EE-5328	WASHER, COMPENSATOR
43	EE-5275S	SHAFT, COMPENSATOR	84	EE-1275	SPRING, PISTON
44	EE-1530	O-RING, COMPENSATOR	85	EE-5317	SEAL KIT
45	EE-5285	SPRING, COMPENSATOR			

Product Information





NOTES:

NO.	DATE	REVISION
5		
4		
3		
2	3-28-79	UP-DATED K2
1	6-16-78	UP-DATED K2

FINISH	
GROUND	
MACHINE	
TOLERANCE	
FRACTIONS ± 1/64	
DEC. ± .005 / .XXX ± .1	
DEGREES ± 1°	
CHECKED RL	

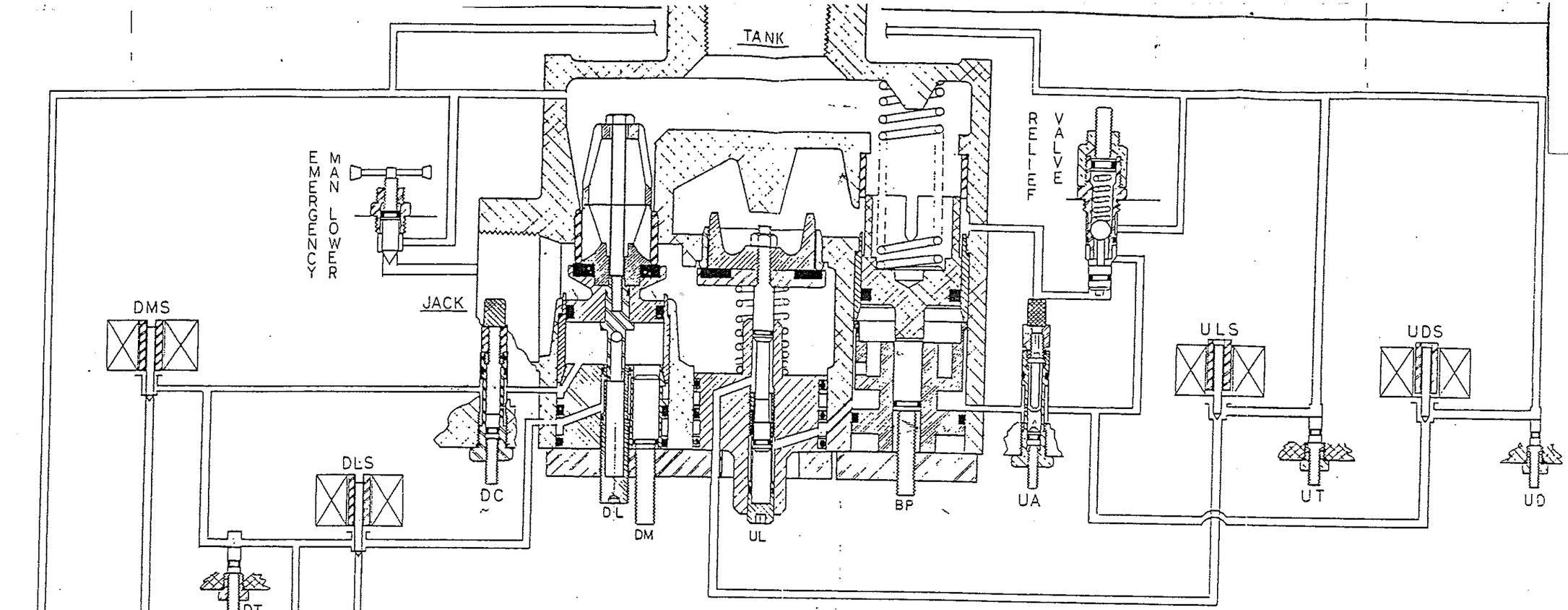
ELEVATOR EQUIP. Co.
4035 GOODWIN L.A.

UV-7 SCHEMATIC

MATERIAL

SCALE NONE DATE 2-8-78

DRAWN H.D. PART NO. EE-5302



SYMBOL	DESCRIPTION
DMS	DOWN MAIN SOLENOID
DLS	DOWN LEVELING SOLENOID
ULS	UP LEVELING SOLENOID
UDS	UP DUMP SOLENOID
DA	DOWN ACCELERATION
DT	DOWN TRANSITION
DC	DOWN CLOSING
DL	DOWN LEVELING
DM	DOWN FULL SPEED
BP	BYPASS
UL	UP LEVELING
UA	UP START
UT	UP TRANSITION
UD	UP DUMP

			ELEVATOR EQUIP. CO. 4035 GOODWIN, L.A.
			UV 5A SCHEMATIC
1	1-23-75	REWORK	