



*Elevator Equipment Corporation*

*"Simplicity in Motion"*



# **ELEVATOR EQUIPMENT CORPORATION PRODUCT CATALOG**



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**Elevator Equipment Corporation (EECO)** was founded in 1946 as the Elevator Equipment Company. At that time we manufactured and sold single function valves and jack units. Through the years EECO also developed and manufactured unit valves, power units, switches, and other components used in hydraulic elevators. The industry standard UV-5AT/TC and UV-7B/BC hydraulic control valves are manufactured and assembled at our original plant in California. In addition, jack units, hoistway switches, car slings and platforms, doors & entrances, as well as other hydraulic elevator components are produced there. Since its beginning in Los Angeles, CA, EECO has expanded to an additional modern 140,000 square foot facility in Richmond, IN. Jacks, power units, car slings, and platforms are also manufactured there, including the new UV-4R control valve for Residential/LULA & low flow applications.

We are an engineering company dedicated to solving manufacturing, service, and construction challenges. EECO is constantly improving our products to better serve our customers' needs. We continue to supply quality hydraulic elevator products to major and independent Elevator Companies for installations in the U.S., Canada, Mexico, and throughout the world.

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

For more information visit us at: [www.elevatorequipment.com](http://www.elevatorequipment.com).

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

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# GROUP ONE ELEVATORS



Dual Roped Holeless



In-Ground Direct Acting Freight



Cantilever Roped Holeless

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# Group One Systems

Elevator Equipment Corporation (EECO) offers Group One Systems. They include a jack unit, pit support/buffers, power unit, sling & platform, guide rails, guide shoes, rail brackets, oil line material, and engineering layout drawings.

EECO has developed various pre-engineered systems in standard sizes which offer minimum lead times. EECO Group One Systems are available in either in-ground or holeless configurations and all are designed and manufactured in accordance with the Safety Code for Elevators & Escalators, ASME A17.1/CSA B44.

The following section contains a listing of all components included in the EECO Group One systems.



## Hydraulic Jacks

EECO manufactures jack units with precision equipment, skilled and experienced production personnel, and a knowledgeable engineering staff to comply with the exacting standards required to produce a quality product. Additional equipment included with jack units is described below per system type.

- In-ground, Direct Acting
  - Buffers
  - Pit channels
  - Sealed PVC with Evacuation System
- Holeless, Direct Acting
  - Connection Bolt
- Roped Hydraulic
  - Sheaves and Stabilizer
  - Wire Rope and Shackles

## Power Units

EECO has manufactured hydraulic elevator equipment since 1946, and is one of the leading suppliers in the industry for hydraulic elevator power units. We can provide power units for any application, from small capacity residential to the largest freight elevators.



- Submersible or Belted
  - Tank
  - Pump
  - Motor
  - EECO UV-5AT or UV-7B Control Valve
    - Low Pressure Switch (if required)
    - 1/8" Pressure Gauge Fittings
    - Optional Down Speed Control
  - Grooved Outlet (Threaded when required)
- Dampener or Muffler
- Thermal Switch
- Low Oil Switch
- Oil Level Liquid Gauge
- Magnet
- Optional Pre-Wired Junction Box
- Optional Motor Control



## Car Frame and Platform

In the Group One System, EECO can design and manufacture a car frame and/or platform to any size for any requirement that you may have. From home elevators to commercial passenger elevators to freight elevators, EECO can handle the job.

- **Guide Shoes**
  - Speed Up To 149 fpm Slide Guides
  - Speed 150 – 200 fpm Roller Guides with Polyurethane Wheels
- Platform has two (2) layers of 1/2" plywood subflooring with an undercoating of Fire Retardant Paint or sheet metal if required.
- Tie Rods
- Car Cam
- Toe Guard
- Strike Plate
- Optional Limit Switches
- Removable Isolated Platen Connection Plate
- Safeties and Slack Rope Switch
- Governor
  - Tension Weight
  - Wire Rope
  - Mounting Bracket



## Rail and Rail Brackets

EECO provides the highest quality rail equipment, including seismic components when required.

- 8, 15, and 18.5" lb/ft Guide Rails
- Fishplate and Hardware (Seismic when required)
- 12" wide Rail Brackets (9" wide for Telescopic when Piston Followers are required)



## Oil Line Components

EECO's Group One System provides the basic components you need for your elevator installation.

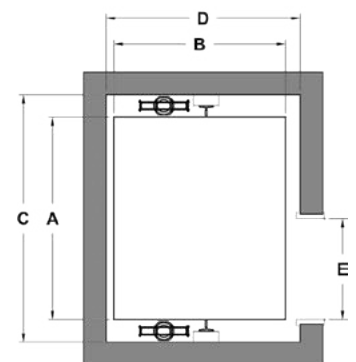
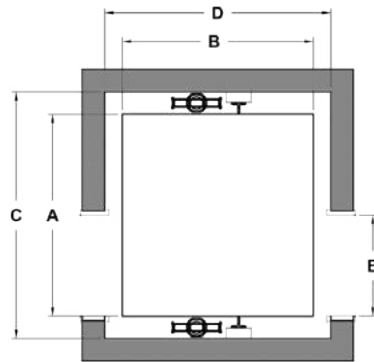
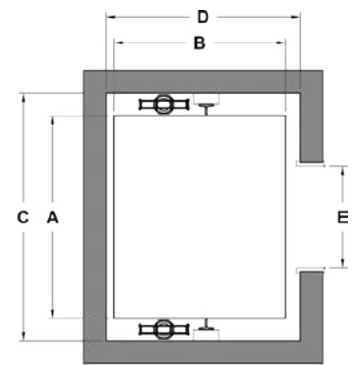
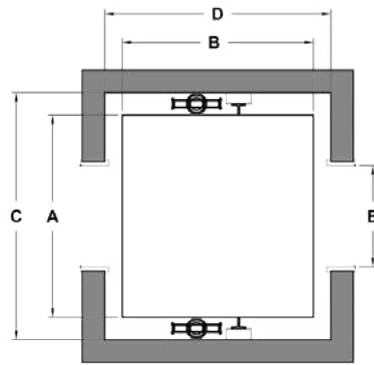
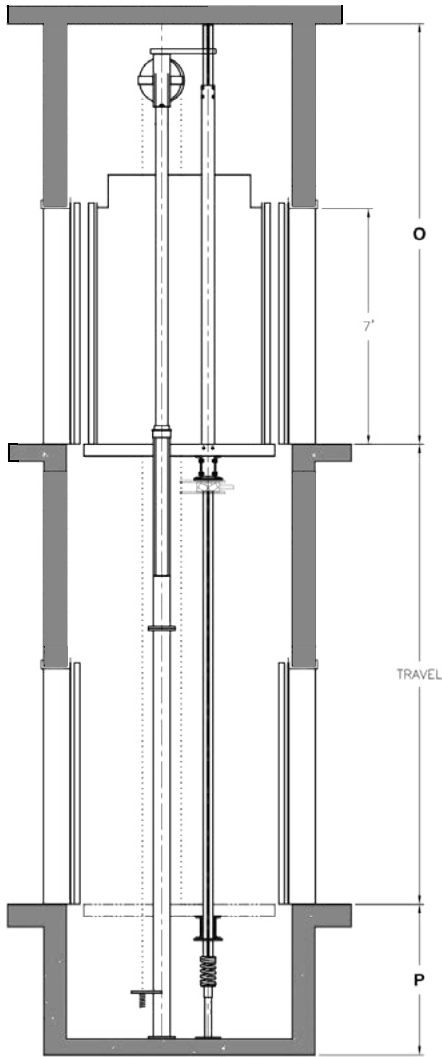
- Black Pipe
- Grooved Fittings (Threaded when required)
- Pipe Stands
- Shut Off Valve
- Isolation Coupling
- Pipe Rupture Valve (when required)

# Group One Components





# Group One Dual Roped Holeless



**A = PLATFORM WIDTH    C = HOISTWAY WIDTH    E = CLEAR DOOR OPENING**  
**B = PLATFORM DEPTH    D = HOISTWAY DEPTH    O = OVERHEAD**

EECO engineering presents one of the most efficient, easy-to-access Group One packages available.

The EECO Dual Roped holeless design uses wire ropes in conjunction with dual hydraulic jacks to lift the elevator at a 2:1 ratio. For each foot the jacks rise, the elevator rises two feet.

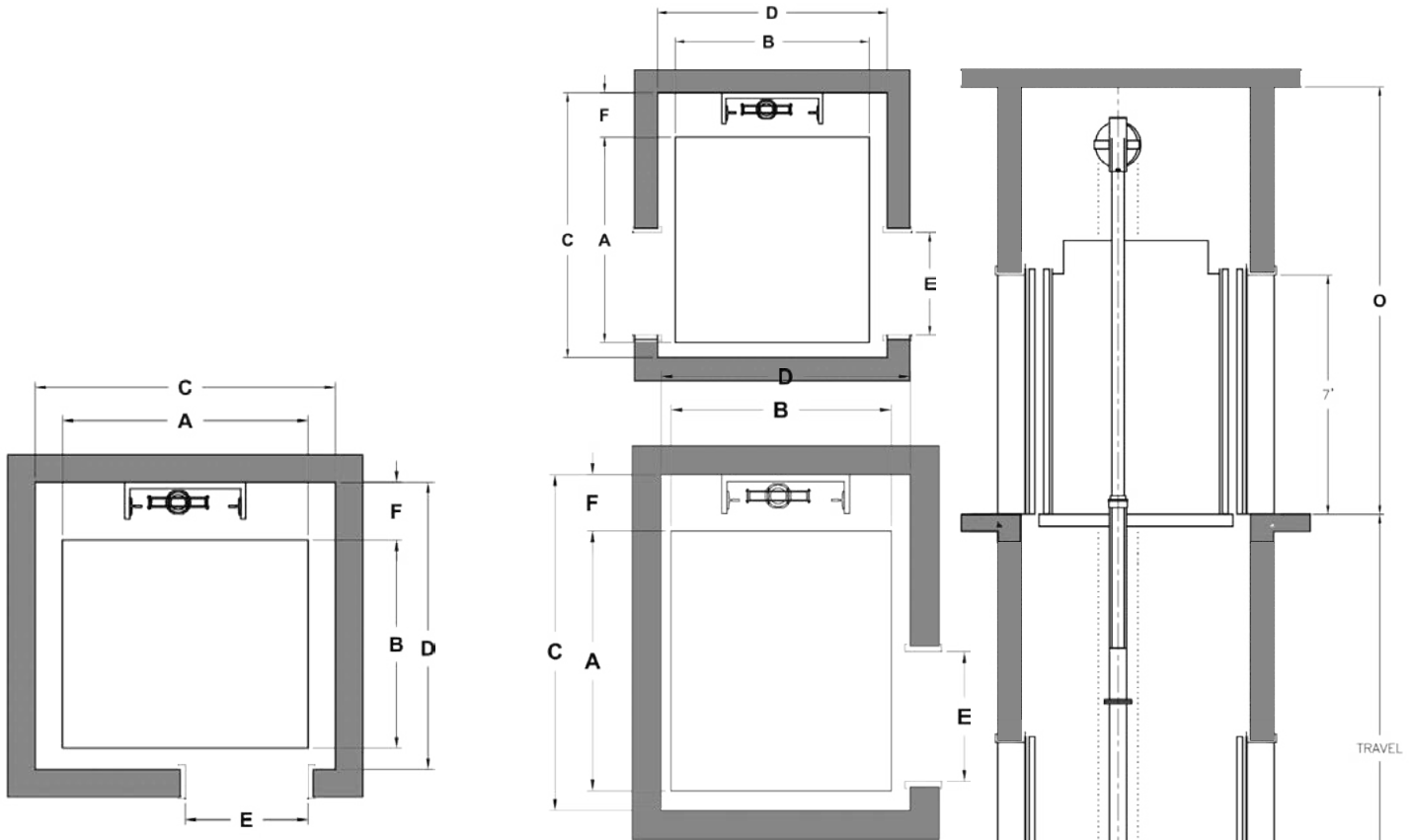
This design eliminates the cost of drilling.

Capacity (lbs)	Platform A x B	Hoistway C x D	Front/Rear	Clear Inside w x d	Door Type	Door Width E
2100	6' -0" x 5' -1"	7' -8" x 5' -9"	F	5' -8" x 4' -3"	1-SP	3' -0"
2100	6' -0" x 5' -8"	7' -8" x 6' -8 1/2"	F/R	5' -8" x 4' -4"	1-SP	3' -0"
2500	7' -0" x 5' -1"	9' -0" x 5' -9"	F	6' -8" x 4' -3"	1-SP	3' -6"
2500	7' -0" x 5' -8"	9' -0" x 6' -8 1/2"	F/R	6' -8" x 4' -4"	1-SP	3' -6"
3000	7' -0" x 5' -6"	9' -0" x 6' -2"	F	6' -8" x 4' -8"	1-SP	3' -6"
3000	7' -0" x 6' -1"	9' -0" x 7' -1 1/2"	F/R	6' -8" x 4' -9"	1-SP	3' -6"
3500	7' -0" x 6' -2"	9' -0" x 6' -10"	F	6' -8" x 5' -4"	1-SP	3' -6"
3500	7' -0" x 6' -9"	9' -0" x 7' -9 1/2"	F/R	6' -8" x 5' -5"	1-SP	3' -6"
4500H	6' -0" x 9' -2"	8' -2" x 10' -0"	F	5' -8" x 8' -2 1/2"	2-SP	4' -0"
4500H	6' -0" x 9' -10 1/2"	8' -2" x 11' -2"	F/R	5' -8" x 8' -3 1/2"	2-SP	4' -0"

Verify all dimensions with EECO prior to construction. Consult EECO for required overhead and pit depth dimensions. [Request a quote here.](#)



# Group One Cantilever Roped Holeless



**A = PLATFORM WIDTH      D = HOISTWAY DEPTH      O = OVERHEAD**  
**B = PLATFORM DEPTH      E = CLEAR DOOR OPENING      P = PIT DEPTH**  
**C = HOISTWAY WIDTH      F = 20 INCHES**

Capacity (lbs)	Platform A x B	Hoistway C x D	Front/Rear	Clear Inside w x d	Door Type	Door Width E
<b>Cantilever Roped Holeless Rear Slung</b>						
2100	6'-0" x 5'-1"	7'-4" x 7'-3"	F	5'-8" x 4'-3"	1-SP	3'-0"
2500	7'-0" x 5'-1"	8'-4" x 7'-3"	F	6'-8" x 4'-3"	1-SP	3'-6"
3000	7'-0" x 5'-6"	8'-4" x 7'-8"	F	6'-8" x 4'-8"	1-SP	3'-6"
3500	7'-0" x 6'-2"	8'-4" x 8'-4"	F	6'-8" x 5'-4"	1-SP	3'-6"
<b>Cantilever Roped Holeless Side Slung</b>						
2100	6'-0" x 5'-1"	8'-2" x 5'-9"	F	5'-8" x 4'-3"	1-SP	3'-0"
2100	6'-0" x 5'-8"	8'-2" x 6'-8 1/2"	F/R	5'-8" x 4'-4"	1-SP	3'-0"
2500	7'-0" x 5'-1"	9'-2" x 5'-9"	F	6'-8" x 4'-3"	1-SP	3'-6"
2500	7'-0" x 5'-8"	9'-2" x 6'-8 1/2"	F/R	6'-8" x 4'-4"	1-SP	3'-6"
3000	7'-0" x 5'-6"	9'-2" x 6'-2"	F	6'-8" x 4'-8"	1-SP	3'-6"
3000	7'-0" x 6'-1"	9'-2" x 7'-1 1/2"	F/R	6'-8" x 4'-9"	1-SP	3'-6"
3500	7'-0" x 6'-2"	9'-2" x 6'-10"	F	6'-8" x 5'-4"	1-SP	3'-6"
3500	7'-0" x 6'-9"	9'-2" x 7'-9 1/2"	F/R	6'-8" x 5'-5"	1-SP	3'-6"

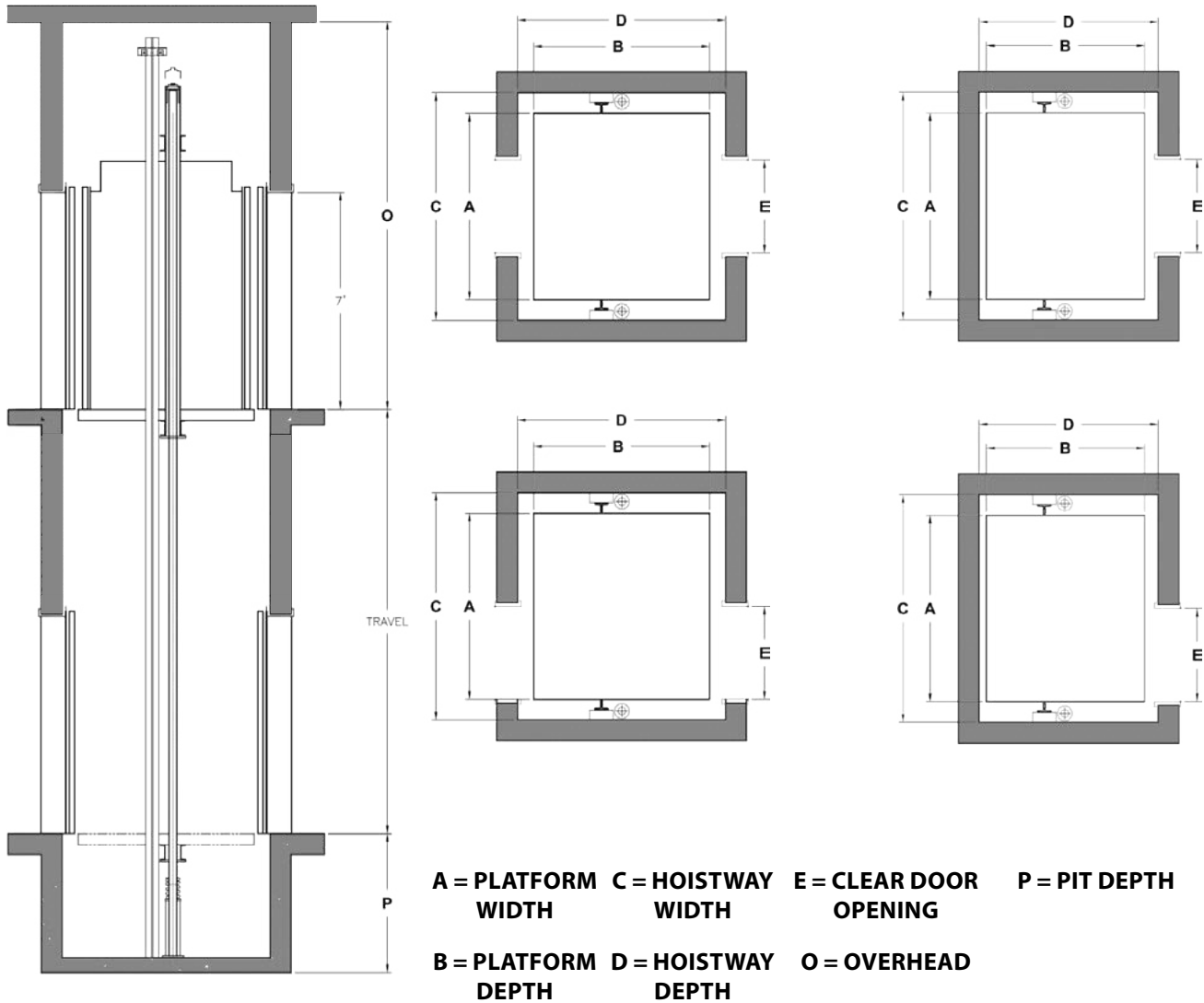
Verify all dimensions with EECO prior to construction. Consult EECO for required overhead and pit depth dimensions. [Request a Quote Here.](#)

The EECO Cantilever Roped holeless design uses wire ropes in conjunction with a single hydraulic jack to lift the elevator at a 2:1 ratio. For each foot the jack rises, the elevator rises two feet.

EECO only uses the highest quality industry standard components in all our products for reliability and easy availability.

This design also eliminates the cost of drilling.

# Group One Dual Holeless Single Stage & 2 Stage Telescopic



EECO's Dual Holeless elevator features dual single-stage or two-stage telescopic jacks to meet your projects requirements.

As always, EECO only uses the highest quality, industry standard parts for reliability and easy availability.

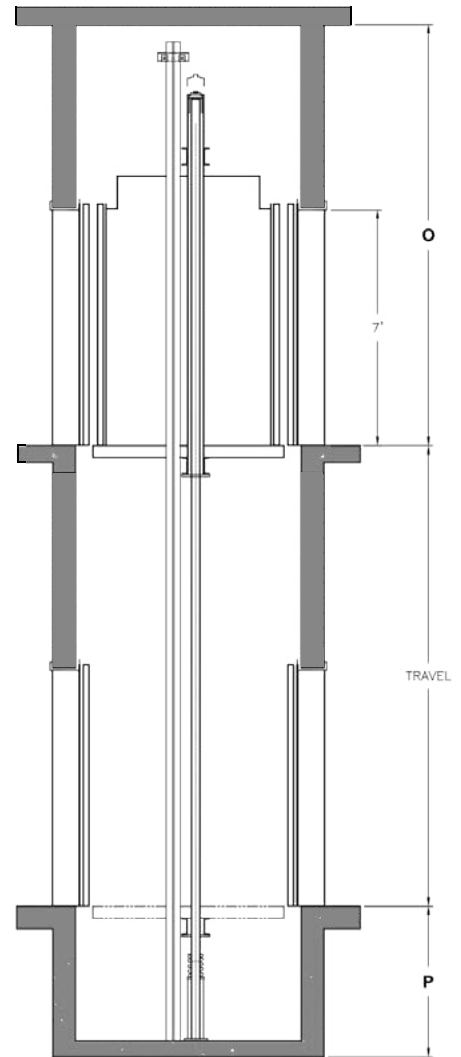
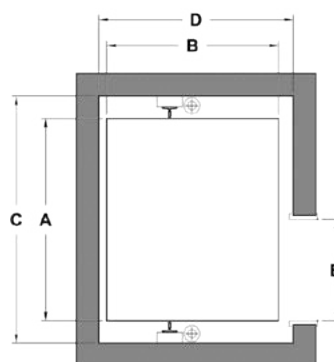
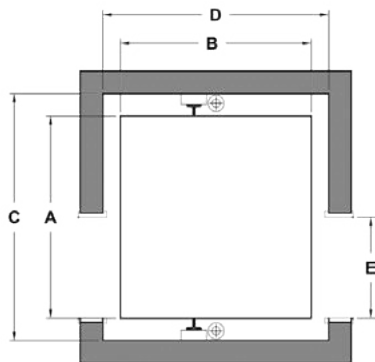
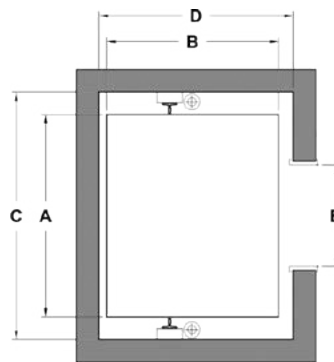
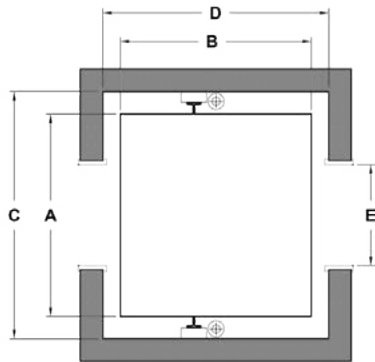
This holeless design eliminates the cost of drilling.

Capacity (lbs)	Platform A x B	Hoistway C x D	Front/Rear	Clear Inside w x d	Door Type	Door Width E
2100	6' -0" x 5' -1"	7' -4" x 5' -9"	F	5' -8" x 4' -3"	1-SP	3' -0"
2100	6' -0" x 5' -8"	7' -4" x 6' -8.5"	F/R	5' -8" x 4' -4"	1-SP	3' -0"
2500	7' -0" x 5' -1"	8' -4" x 5' -9"	F	6' -8" x 4' -3"	1-SP	3' -6"
2500	7' -0" x 5' -8"	8' -4" x 6' -8.5"	F/R	6' -8" x 4' -4"	1-SP	3' -6"
3000	7' -0" x 5' -6"	8' -4" x 6' -2"	F	6' -8" x 4' -8"	1-SP	3' -6"
3000	7' -0" x 6' -1"	8' -4" x 7' -1.5"	F/R	6' -8" x 4' -9"	1-SP	3' -6"
3500	7' -0" x 6' -2"	8' -4" x 6' -10"	F	6' -8" x 5' -4"	1-SP	3' -6"
3500	7' -0" x 6' -9"	8' -4" x 7' -9.5"	F/R	6' -8" x 5' -5"	1-SP	3' -6"
4500H	6' -0" x 9' -2"	7' -6" x 10' -0"	F	5' -8" x 8' -2.5"	2-SP	4' -0"
4500H	6' -0" x 9' -10.5"	7' -6" x 11' -2"	F/R	5' -8" x 8' -3.5"	2-SP	4' -0"

Verify all dimensions with EECO prior to construction. Consult EECO for required overhead and pit depth dimensions. [Request a Quote Here.](#)



# Group One - Dual Holeless 3 Stage Telescopic



**A = PLATFORM WIDTH**    **C = HOISTWAY WIDTH**    **E = CLEAR DOOR OPENING**    **P = PIT DEPTH**  
**B = PLATFORM DEPTH**    **D = HOISTWAY DEPTH**    **O = OVERHEAD**

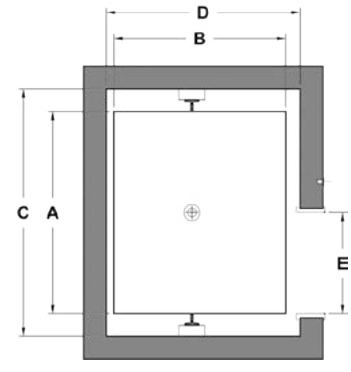
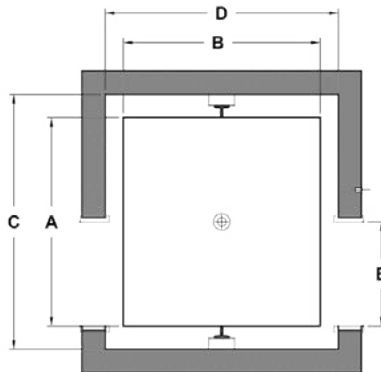
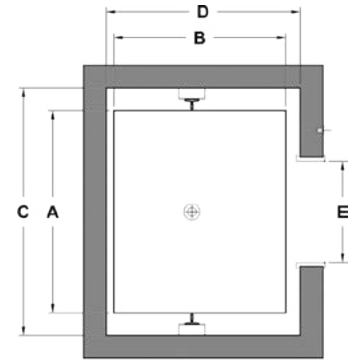
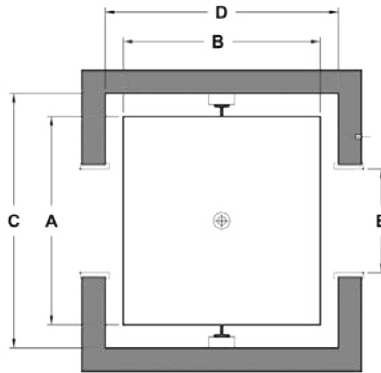
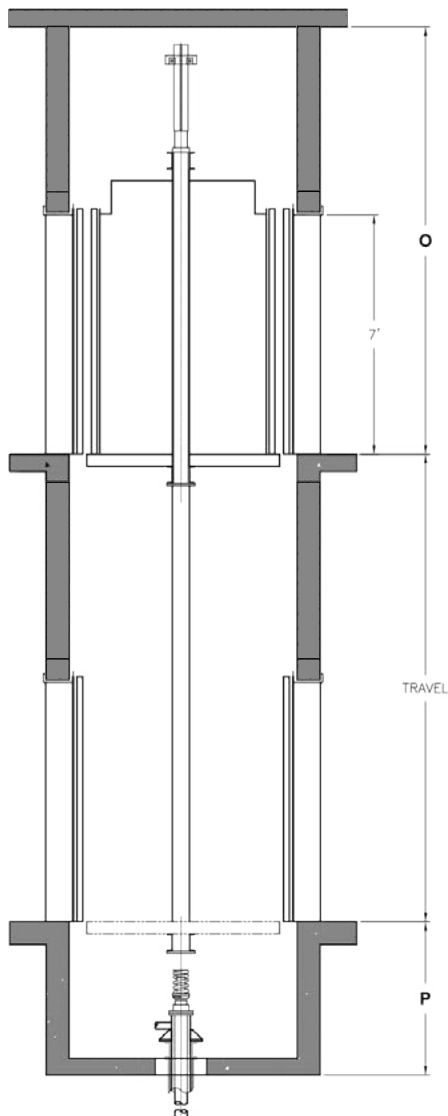
Capacity (lbs)	Platform A x B	Hoistway C x D	Front/Rear	Clear Inside w x d	Door Type	Door Width E
2100	6'-0" x 5'-1"	7'-8" x 5'-9"	F	5'-8" x 4'-3"	1-SP	3'-0"
2100	6'-0" x 5'-8"	7'-8" x 6'-8 1/2"	F/R	5'-8" x 4'-4"	1-SP	3'-0"
2500	7'-0" x 5'-1"	8'-8" x 5'-9"	F	6'-8" x 4'-3"	1-SP	3'-6"
2500	7'-0" x 5'-8"	8'-8" x 6'-8 1/2"	F/R	6'-8" x 4'-4"	1-SP	3'-6"
3000	7'-0" x 5'-6"	8'-8" x 6'-2"	F	6'-8" x 4'-8"	1-SP	3'-6"
3000	7'-0" x 6'-1"	8'-8" x 7'-1 1/2"	F/R	6'-8" x 4'-9"	1-SP	3'-6"
3500	7'-0" x 6'-2"	8'-8" x 6'-10"	F	6'-8" x 5'-4"	1-SP	3'-6"
3500	7'-0" x 6'-9"	8'-8" x 7'-9 1/2"	F/R	6'-8" x 5'-5"	1-SP	3'-6"
4500H	6'-0" x 9'-2"	7'-8" x 10'-0"	F	5'-8" x 8'-2 1/2"	2-SP	4'-0"
4500H	6'-0" x 9'-10 1/2"	7'-8" x 11'-2"	F/R	5'-8" x 8'-3 1/2"	2-SP	4'-0"

EECO's Dual Holeless elevator with dual three-stage jacks can solve space limitation problems.

This holeless design eliminates the cost of drilling.

Verify all dimensions with EECO prior to construction. Consult EECO for required overhead and pit depth dimensions. [Request a Quote Here.](#)

# Group One - In-Ground Direct Acting Single, 2 & 3 Stage Telescopic



**A = PLATFORM WIDTH    C = HOISTWAY WIDTH    E = CLEAR DOOR OPENING    P = PIT DEPTH**  
**B = PLATFORM DEPTH    D = HOISTWAY DEPTH    O = OVERHEAD**

EECO engineering presents one of the simplest elevator systems available.

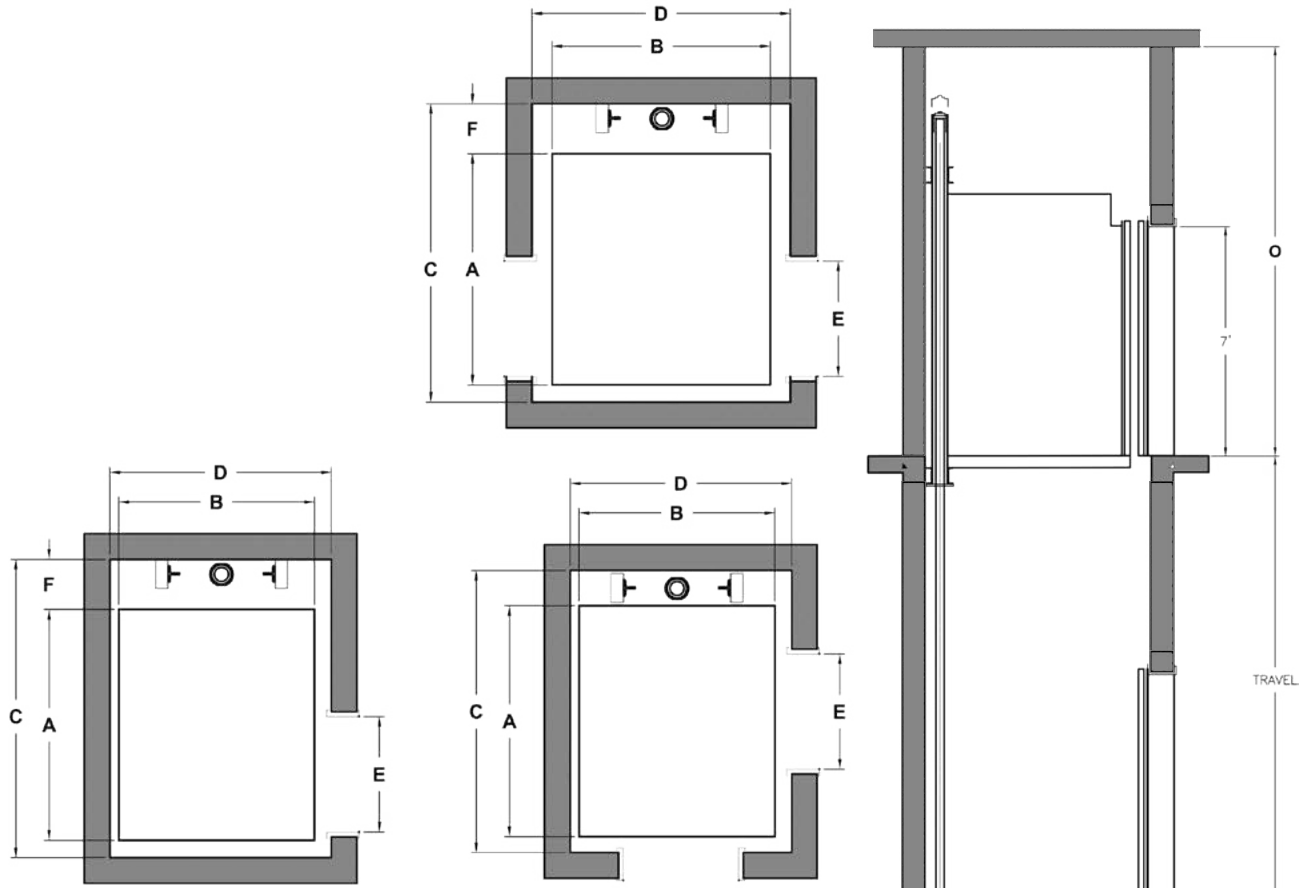
It utilizes either a single-stage or a multi-stage telescopic hydraulic jack installed in the ground.

The jack is located directly under the car, near the center of the platform.

Capacity (lbs)	Platform A x B	Hoistway C x D	Front/Rear	Clear Inside w x d	Door Type	Door Width E
2100	6' -0" x 5' -1"	7' -4" x 5' -9"	F	5' -8" x 4' -3"	1-SP	3' -0"
2100	6' -0" x 5' -8"	7' -4" x 6' -8 1/2"	F/R	5' -8" x 4' -4"	1-SP	3' -0"
2500	7' -0" x 5' -1"	8' -4" x 5' -9"	F	6' -8" x 4' -3"	1-SP	3' -6"
2500	7' -0" x 5' -8"	8' -4" x 6' -8 1/2"	F/R	6' -8" x 4' -4"	1-SP	3' -6"
3000	7' -0" x 5' -6"	8' -4" x 6' -2"	F	6' -8" x 4' -8"	1-SP	3' -6"
3000	7' -0" x 6' -1"	8' -4" x 7' -1 1/2"	F/R	6' -8" x 4' -9"	1-SP	3' -6"
3500	7' -0" x 6' -2"	8' -4" x 6' -10"	F	6' -8" x 5' -4"	1-SP	3' -6"
3500	7' -0" x 6' -9"	8' -4" x 7' -9 1/2"	F/R	6' -8" x 5' -5"	1-SP	3' -6"
4500H	6' -0" x 9' -2"	7' -4" x 10' -0"	F	5' -8" x 8' -2 1/2"	2-SP	4' -0"
4500H	6' -0" x 9' -10 1/2"	7' -4" x 11' -2"	F/R	5' -8" x 8' -3 1/2"	2-SP	4' -0"

Verify all dimensions with EECO prior to construction. Consult EECO for required overhead and pit depth dimensions. [Request a Quote Here.](#)

# Group One Direct Acting Cantilever Holeless



- A = PLATFORM WIDTH**      **D = HOISTWAY DEPTH**      **O = OVERHEAD**
- B = PLATFORM DEPTH**    **E = CLEAR DOOR OPENING**    **P = PIT DEPTH**
- C = HOISTWAY WIDTH**      **F = 20 INCHES**

Capacity (lbs)	Platform A x B	Hoistway C x D	Front/Rear	Clear Inside w x d	Door Type	Door Width E
2100	6' -0" x 5' -1"	7' -8" x 5' -9"	F	5' -8" x 4' -3"	1-SP	3' -0"
2100	6' -0" x 5' -8"	7' -8" x 6' -8 1/2"	F/R	5' -8" x 4' -4"	1-SP	3' -0"
2500	7' -0" x 5' -1"	8' -8" x 5' -9"	F	6' -8" x 4' -3"	1-SP	3' -6"
2500	7' -0" x 5' -8"	8' -8" x 6' -8 1/2"	F/R	6' -8" x 4' -4"	1-SP	3' -6"
3000	7' -0" x 5' -6"	8' -8" x 6' -2"	F	6' -8" x 4' -8"	1-SP	3' -6"
3000	7' -0" x 6' -1"	8' -8" x 7' -1 1/2"	F/R	6' -8" x 4' -9"	1-SP	3' -6"
3500	7' -0" x 6' -2"	8' -8" x 6' -10"	F	6' -8" x 5' -4"	1-SP	3' -6"
3500	7' -0" x 6' -9"	8' -8" x 7' -9 1/2"	F/R	6' -8" x 5' -5"	1-SP	3' -6"
4500H	6' -0" x 9' -2"	7' -8" x 10' -0"	F	5' -8" x 8' -2 1/2"	2-SP	4' -0"
4500H	6' -0" x 9' -10 1/2"	7' -8" x 11' -2"	F/R	5' -8" x 8' -3 1/2"	2-SP	4' -0"

EECO's Direct Acting Cantilever Holeless elevator can solve space limitation problems.

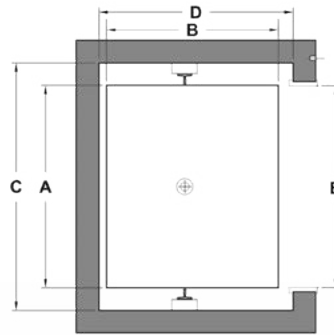
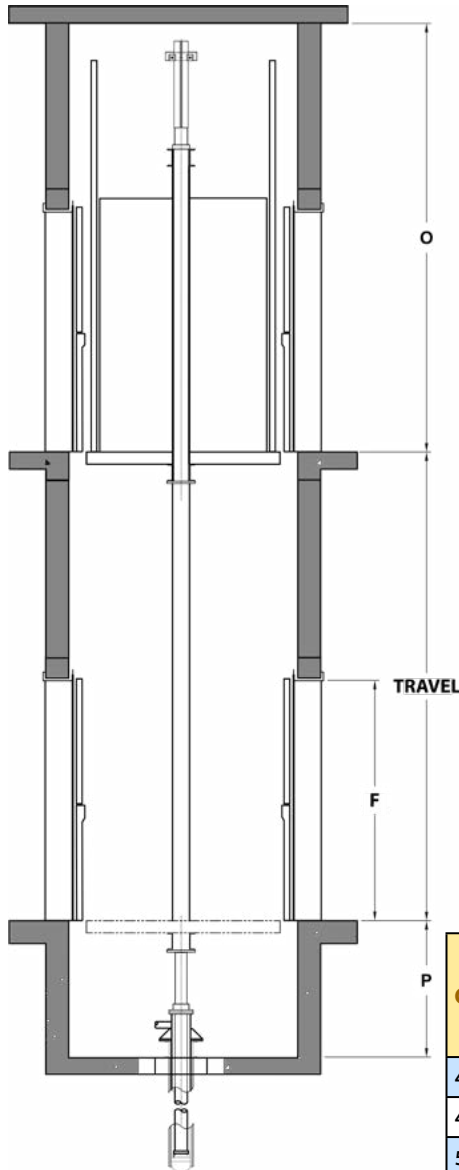
As always, EECO only uses the highest quality, industry standard parts for reliability and easy availability.

This holeless design eliminates the cost of drilling.

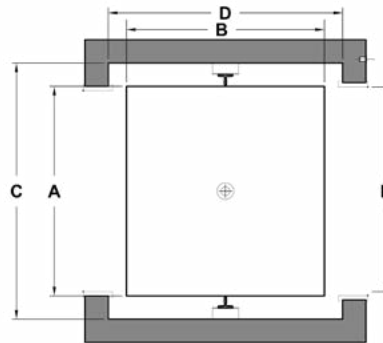
Verify all dimensions with EECO prior to construction. Consult EECO for required overhead and pit depth dimensions. [Request a Quote Here.](#)



# Group One In-Ground Direct Acting Freight Elevator



FRONT OPENING



FRONT & REAR OPENINGS

A = PLATFORM WIDTH    C = HOISTWAY WIDTH    E = CLEAR DOOR OPENING    P = PIT DEPTH  
 B = PLATFORM DEPTH    D = HOISTWAY DEPTH    O = OVERHEAD

EECO presents one of the simplest freight elevator systems available.

It utilizes a single-stage in-ground hydraulic jack.

\*EECO will design a platform to match any type of gate.

Cap.	Platform (A) x (B)	Hoistway (C) X (D)	Front/Rear	*Clear Inside Cab W/Single Section Gate	*Gate Type (Power Reg. Gates )	Gate Size (E) x (F)	Pit Depth
4000	7'-0" X 8'-0"	9'-2" X 8'-8"	F	6'-8" X 7'-5 1/2"	Vertical Bi-Part	6'-8" X 8'-0"	4'-6"
4000	7'-0" X 8'-0"	9'-2" X 8'-10"	F / R	6'-8" X 7'-3"		6'-8" X 8'-0"	4'-6"
5000	8'-0" X 9'-0"	10'-2" X 9'-8"	F	7'-8" X 8'-5 1/2"		7'-8" X 8'-0"	4'-6"
5000	8'-0" X 9'-0"	10'-2" X 9'-10"	F / R	7'-8" X 8'-3"		7'-8" X 8'-0"	4'-6"
6000	10'-4" X 10'-0"	12'-6" X 10'-8"	F	10'-0" X 9'-5 1/2"		10'-0" X 8'-0"	4'-6"
6000	10'-4" X 10'-0"	12'-6" X 10'-10"	F / R	10'-0" X 9'-3"		10'-0" X 8'-0"	4'-6"
8000	10'-4" X 12'-0"	12'-6" X 12'-8"	F	10'-0" X 11'-5 1/2"		10'-0" X 8'-0"	4'-6"
8000	10'-4" X 12'-0"	12'-6" X 12'-10"	F / R	10'-0" X 11'-3"		10'-0" X 8'-0"	4'-6"
10000	10'-4" X 14'-0"	12'-6" X 14'-8"	F	10'-0" X 13'-5 1/2"		10'-0" X 8'-0"	4'-6"
10000	10'-4" X 14'-0"	12'-6" X 14'-10"	F / R	10'-0" X 13'-3"		10'-0" X 8'-0"	4'-6"
12000	12'-4" X 12'-0"	14'-6" X 12'-8"	F	12'-0" X 11'-5 1/2"		12'-0" X 8'-0"	4'-6"
12000	12'-4" X 12'-0"	14'-6" X 12'-10"	F / R	12'-0" X 11'-3"		12'-0" X 8'-0"	4'-6"
15000	12'-4" X 16'-0"	14'-6" X 16'-8"	F	12'-0" X 15'-5 1/2"		12'-0" X 8'-0"	5'-0"
15000	12'-4" X 16'-0"	14'-6" X 16'-10"	F / R	12'-0" X 15'-3"		12'-0" X 8'-0"	5'-0"
20000	12'-4" X 20'-0"	14'-6" X 20'-8"	F	12'-0" X 19'-5 1/2"		12'-0" X 8'-0"	5'-0"
20000	12'-4" X 20'-0"	14'-6" X 20'-10"	F / R	12'-0" X 19'-3"		12'-0" X 8'-0"	5'-0"

Verify all dimensions with EECO prior to construction. Consult EECO for required overhead and pit depth dimensions. [Request a Quote Here.](#)

# Group One Freight Elevator Information

Elevator Equipment Corporation (EECO) provides Group One Freight Elevators in various configurations to meet your project requirements. Contact EECO for more information.

## CONFIGURATIONS

### ***IN-GROUND DIRECT ACTING***

- Max speed 150 fpm
- Max rise 50' -0"
- Max Capacity: 20,000 lbs

### ***DUAL ROPED HOLELESS***

- Max speed 150 fpm
- Max rise 75' -0"
- Max Capacity: 20,000 lbs

### ***CANTILEVER ROPED HOLELESS***

- Max speed 150 fpm
- Max rise 75' -0"
- Max Capacity: 5,000 lbs

### ***TWIN JACK HOLELESS SINGLE STAGE***

- Max speed 150 fpm
- Max rise 14' -6"
- Max Capacity: 12,000 lbs

### ***TWIN JACK HOLELESS 2 STAGE***

- Max speed 150 fpm
- Max rise 38' -0"
- Max Capacity: 14,000 lbs

### ***TWIN JACK HOLELESS 3 STAGE***

- Max speed 150 fpm
- Max rise 43' -0"
- Max Capacity: 5,500 lbs

### ***MATERIAL LIFT***

- Max speed 24 fpm
- Max rise 22' -0"
- Max Capacity: 8,000 lbs



In-Ground Direct Acting Group One  
Freight Elevator

# HYDRAULIC JACKS



Single Stage Jack



Multi-Piece Piston



Two Stage Jack

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# Hydraulic Jack Units

**Elevator Equipment Corporation (EECO)** is a leading supplier of hydraulic jack units, replacement cylinders, and pistons. EECO can provide jack units for any application, from small capacity residential to the largest freight elevators. We have over 30 standard size jack units with many piston wall thicknesses available to meet your specifications. Our engineering and sales staff can work with you to determine which EECO Jack Unit is right for your application.

All EECO jack units are designed by our knowledgeable engineering staff and manufactured by experienced production personnel using precision equipment. The latest CNC equipment and technology are utilized to assure strict adherence to essential dimensions and tolerances. All EECO products are designed and manufactured in accordance with the Safety Code for Elevators and Escalators, ASME A17.1/CSA B44. With years of testing and field study, EECO has designed jack units that are unparalleled in the industry for performance and reliability. The primary objective of Elevator Equipment Corporation is to provide a quality product that consistently meets or exceeds the contractual demands and expectations of our customers.

All EECO Products are "Green Compatible" as a standard when used with biodegradable (vegetable) oils that **do not** contain a high acidic property.



## **QUALITY ASSURANCE**

Quality Control is an essential part of our manufacturing process. Every phase of production is monitored to assure that each jack unit is manufactured in accordance with engineering and customer specifications. From the initial process of receiving material, to the final step of placing the product on the truck, you can be assured that our high quality standards are met and that the finished product meets your requirements.

## **MATERIAL & WELDING**

All steel parts are fabricated and machined from high strength carbon steel. All welding is in accordance with the requirements of Part 8 of ASME A17.1/CSA B44. All our facilities are AWS Certified and our Richmond, Indiana Facility is CWB certified.



## **JACK, PISTON OR CYLINDER REPLACEMENT**

EECO specializes in Jack Unit replacement. We can provide an exact replacement, either piston, cylinder, or complete jack unit, regardless of original make or manufacturer. Before 1972 many companies installed hydraulic elevators with flat bottom in-ground jack units, and many without any corrosion protection at all. Failures of these older designs may cause rupturing of the cylinder and uncontrolled decent of the elevator. Today's ASME A17.1/CSA B44, Section 3.13.3.4 requires single bottom jack units (cylinders) to be replaced with double bottom cylinders.

## **DELIVERY TIMES**

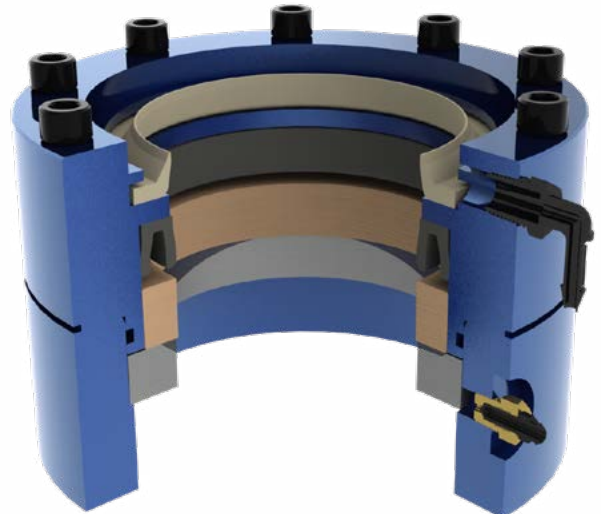
It is our goal to provide a jack unit when needed. If rush delivery is required, EECO can manufacture and ship certain jack units in as little as 48 hours. Contact EECO for current lead times.

# Hydraulic Jacks – Standard Features

## HEAD, BEARING & PACKING GLAND

Our jack heads are designed for ease of disassembly when repacking. An oil collection groove is provided and an oil return kit is included to reclaim oil that collects in the groove (it is necessary for the piston to carry a film of oil through the packing in order to provide smooth and quiet operation). The packing gland arrangement consists of a "pressure balanced" "U" type seal, a bearing, and a wiper ring. Seals are designed for 150°F (65°C) maximum operating temperature.

We recommend a brand of ISO VG 32 turbine oil with a viscosity of 150 ssu @ 100° F (38° C). A biodegradable (vegetable)oil that **does not** contain a high acidic property is acceptable if it meets the same specifications.



## PISTON DETAILS

The upper end of the piston is provided with a tapped plate, to receive a standard bolt for attachment to the platen plate (special mounting arrangements can be provided). The bottom of the piston is closed with a steel plate and is fitted with a stop ring to prevent the piston from leaving the cylinder. The piston is ground and polished to a surface finish of 15 to 20  $\mu\text{in}$  (.38 to .50  $\mu\text{m}$ ). Allowable variation in diameter after polishing is  $\pm .015$ " (.381 mm).

Multi-section pistons are joined with an internally threaded coupling, using Acme type thread for ease of assembly with O-rings for a proper seal. All sections are assembled, sanded, and polished across the joints to ensure a matching surface.



## CYLINDER DETAILS

Jack units manufactured for in-ground, or partial in-ground installations are furnished with a safety bulkhead and seamless steel pipe cap at the bottom of the cylinder. Holeless units include a flat steel mounting plate, all in accordance with ASME A17.1/CSA B44. Bleeder plugs are included to purge air from the jack unit.

Standard pit supports are welded to the cylinder for mounting to pit channels when required (various designs can be provided to suit any requirement). A threaded or grooved oil line connection is provided. All cylinders are thoroughly cleaned, inspected, and tested for oil leaks. They are then painted with a heavy coat of an anti-corrosive material. All in-ground jack units are equipped with inspection ports on the base plate.





# Single Stage Jack Units

## DESCRIPTION OF A SINGLE STAGE

Single stage jack units (PJR & LJ series) consist of a single piston in a cylinder with head bearing and packing gland at the upper end where the piston collapses into the cylinder. Single stage jacks are designed for “guided” applications only. The jack unit is rigidly supported and guided through the use of guide rails and guide shoes. They are designed for in-ground and holeless cantilever or dual holeless system applications.

Single stage jack units can be provided in one section up to 70 ft (21.3 m). Multi-section jack units can be provided in as many sections as required for the application.

## SPECIALTY JACK UNITS

When an application involves lifting a load by means of a hydraulic jack that is internally guided without the need of external guide rails, an EECO double bearing jack is the solution. These jacks are designed so the double bearing span assures a safe and smooth operation of the elevator system. The seals in this type of jack are capable of withstanding rotational movement of the elevator cab while moving with no adverse effect on the life of the seals.

EECO is the leading manufacturer of hydraulic elevator jacks of standard holeless, and in-ground both single and multi-stage jacks. In addition, EECO designs and manufactures specialty jacks such as double bearing, double acting, and double cylinder jacks.

Model				Piston Wall Thickness		Piston Weight	
Piston Dia.		Cylinder Dia.					
in	(mm)	in	(cm)				
Area of Piston		Piston Disp.					
in <sup>2</sup>	(cm <sup>2</sup> )	gal/ft	(lit/m)				
<b>PJR-275RS (Holeless Only)</b>				0.178	(4.5)	5.7	(8.5)
2.750	(69.9)	4.50	(11.4)	0.240	(6.1)	6.5	(9.7)
5.94	(38.3)	0.31	(3.8)	0.303	(7.7)	8.5	(12.6)
				0.365	(9.3)	9.8	(14.6)
<b>PJR-275</b>				0.240	(6.1)	6.5	(9.7)
2.750	(69.9)	4.50	(11.4)	0.303	(7.7)	8.5	(12.6)
5.94	(38.3)	0.31	(3.8)	0.365	(9.3)	9.8	(14.6)
<b>PJR-3NET</b>				0.240	(6.1)	7.1	(10.6)
3.000	(76.2)	4.50	(11.4)	0.365	(9.3)	10.9	(16.2)
7.07	(45.6)	0.37	(4.6)				
<b>PJR-3R</b>				0.268	(6.8)	10.4	(15.5)
3.437	(87.3)	5.56	(14.1)	0.568	(14.4)	18.2	(27.1)
9.28	(59.9)	0.48	(6.0)				
<b>PJR-387</b>				0.256	(6.5)	11.6	(17.3)
3.875	(98.4)	6.63	(16.8)	0.365	(9.3)	15.1	(22.5)
11.79	(76.1)	0.61	(7.6)	0.574	(14.6)	21.2	(31.5)
<b>PJR-4NET</b>				0.240	(6.1)	9.8	(14.6)
4.000	(101.6)	6.63	(16.8)	0.303	(7.7)	13.7	(20.4)
12.57	(81.1)	0.65	(8.1)	0.365	(9.3)	15.7	(23.4)
<b>PJR-4</b>				0.275	(7.0)	14.4	(21.4)
4.375	(111.1)	6.63	(16.8)	0.375	(9.5)	18.1	(26.9)
15.03	(97.0)	0.78	(9.7)	0.468	(11.9)	21.9	(32.6)
				0.611	(15.5)	26.0	(38.7)
<b>PJR-5NET</b>				0.240	(6.1)	12.5	(18.6)
5.000	(127.0)	8.63	(21.9)	0.303	(7.7)	18.2	(27.1)
19.64	(126.7)	1.02	(12.7)	0.365	(9.3)	20.8	(31.0)
				0.490	(12.4)	26.0	(38.7)
				0.615	(15.6)	30.8	(45.8)
<b>PJR-5</b>				0.312	(7.9)	20.8	(31.0)
5.437	(138.1)	8.63	(21.9)	0.437	(11.1)	26.7	(39.7)
23.22	(149.8)	1.21	(15.0)	0.562	(14.3)	32.2	(47.9)
				0.687	(17.4)	37.3	(55.5)
<b>PJR-6NET</b>				0.240	(6.1)	15.3	(22.8)
6.000	(152.4)	8.63	(21.9)	0.365	(9.3)	26.3	(39.1)
28.27	(182.4)	1.47	(18.2)	0.490	(12.4)	32.7	(48.7)
				0.615	(15.6)	38.8	(57.7)
<b>PJR-6</b>				0.365	(9.3)	29.2	(43.5)
6.500	(165.1)	8.63	(21.9)	0.369	(9.4)	29.5	(43.9)
33.18	(214.1)	1.72	(21.4)	0.499	(12.7)	36.8	(54.8)
				0.656	(16.7)	45.2	(67.3)
				0.801	(20.3)	52.4	(78.0)
<b>PJR-6SPL</b>				0.365	(9.3)	29.2	(43.5)
6.500	(165.1)	10.75	(27.3)	0.369	(9.4)	29.5	(43.9)
33.18	(214.1)	1.72	(21.4)	0.499	(12.7)	36.8	(54.8)
				0.656	(16.7)	45.2	(67.3)
				0.801	(20.3)	52.4	(78.0)
<b>PJR-7NET</b>				0.240	(6.1)	20.2	(30.0)
7.000	(177.8)	10.75	(27.3)	0.365	(9.3)	30.1	(44.8)
38.48	(248.3)	2.00	(24.8)	0.490	(12.4)	39.7	(59.1)
<b>PJR-7</b>				0.240	(6.1)	19.6	(29.2)
7.500	(190.5)	10.75	(27.3)	0.365	(9.3)	35.1	(52.2)
44.18	(285.0)	2.30	(28.5)	0.490	(12.4)	43.3	(64.4)
<b>PJR-8NET</b>				0.240	(6.1)	21.0	(31.3)
8.000	(203.2)	10.75	(27.3)	0.365	(9.3)	36.4	(54.2)
50.27	(324.3)	2.61	(32.4)	0.490	(12.4)	44.9	(66.8)
				0.615	(15.6)	55.7	(82.9)
<b>PJR-8</b>				0.260	(6.6)	24.2	(36.0)
8.500	(215.9)	10.75	(27.3)	0.437	(11.1)	45.7	(68.0)
56.75	(366.1)	2.95	(36.6)	0.656	(16.7)	61.1	(90.9)
				0.812	(20.6)	71.8	(106.9)
<b>PJR-8SPL</b>				0.260	(6.6)	24.2	(36.0)
8.500	(215.9)	12.75	(32.4)	0.437	(11.1)	45.7	(68.0)
56.75	(366.1)	2.95	(36.6)	0.656	(16.7)	61.1	(90.9)
				0.812	(20.6)	71.8	(106.9)

## PRESSURE RATINGS

PJR-275 - PJR-4NET series: 1000 psi (68.9 bar) maximum working pressure

PJR-4 - PJR-8SPL series: 680 psi (46.9 bar) maximum working pressure

LJ series: 500 psi (34.5 bar) maximum working pressure

Model				Piston Wall Thickness		Piston Weight	
Piston Dia.		Cylinder Dia.					
in	(mm)	in	(cm)				
Area of Piston		Piston Disp.					
in <sup>2</sup>	(cm <sup>2</sup> )	gal/ft	(lit/m)				
<b>LJ-9</b>				0.240	(6.1)	25.6	(38.1)
9.500	(241.3)	12.75	(32.4)	0.365	(9.3)	41.3	(61.5)
70.88	(457.3)	3.68	(45.7)	0.490	(12.4)	51.6	(76.8)
<b>LJ-10</b>				0.303	(7.7)	35.8	(53.3)
10.625	(269.9)	12.75	(32.4)	0.437	(11.1)	57.9	(86.2)
88.66	(572.0)	4.61	(57.2)	0.532	(13.5)	66.6	(99.1)
				0.781	(19.8)	88.7	(132.0)
<b>LJ-10SPL</b>				0.303	(7.7)	35.8	(53.3)
10.625	(269.9)	14.00	(35.6)	0.437	(11.1)	57.9	(86.2)
88.66	(572.0)	4.61	(57.2)	0.532	(13.5)	66.6	(99.1)
				0.781	(19.8)	88.7	(132.0)
<b>LJ-12</b>				0.437	(11.1)	72.9	(108.5)
12.625	(320.7)	16.00	(40.6)	0.625	(15.9)	93.6	(139.3)
125.19	(807.6)	6.50	(80.8)	0.939	(23.9)	126.7	(188.6)
<b>LJ-14</b>				0.437	(11.1)	80.4	(119.6)
13.875	(352.4)	16.00	(40.6)	0.688	(17.5)	110.9	(165.0)
151.20	(975.5)	7.85	(97.5)				
<b>LJ-14SPL</b>				0.437	(11.1)	80.4	(119.6)
13.875	(352.4)	18.00	(45.7)	0.688	(17.5)	110.9	(165.0)
151.20	(975.5)	7.85	(97.5)				
<b>LJ-16</b>				0.437	(11.1)	97.3	(144.8)
15.875	(403.2)	20.00	(50.8)	0.594	(15.1)	119.7	(178.1)
197.93	(1277.0)	10.28	(127.7)	0.781	(19.8)	145.5	(216.5)
<b>LJ-18</b>				0.437	(11.1)	90.6	(134.8)
17.875	(454.0)	22.00	(55.9)	0.500	(12.7)	119.6	(178.0)
250.95	(1619.0)	13.04	(161.9)	0.688	(17.5)	137.7	(204.9)
<b>LJ-20</b>				0.750	(19.1)	184.7	(274.9)
20.000	(508.0)	24.00	(61.0)				
314.16	(2026.8)	16.32	(202.7)				

# Telescopic Jack Units

## DESCRIPTION OF A TELESCOPIC JACK

Two stage telescopic jack units (TJR series) consist of upper and lower pistons, a cylinder, and a head bearing with packing gland for each piston. The lower piston is fitted with an additional packing gland at the lower end which rides against the internally honed cylinder.

Three stage telescopic jack units (TJ3 series) consist of upper, intermediate, and lower pistons, a cylinder, and a head bearing and packing gland for each piston. The intermediate and lower pistons are fitted with additional packing glands at their lower ends which ride against the internally honed cylinder and lower piston.

All telescopic jacks have a synchronous design where all pistons raise and lower at the same speed and at the same time. Telescopic jacks are designed for in-ground, holeless cantilever, or dual system applications.

Telescopic jacks are designed for "guided" applications only, where the Jack unit is rigidly supported and guided through the use of guide rails and guide shoes. In some applications a piston follower guide may be required on all moving heads to meet code requirements. (Contact EECO).

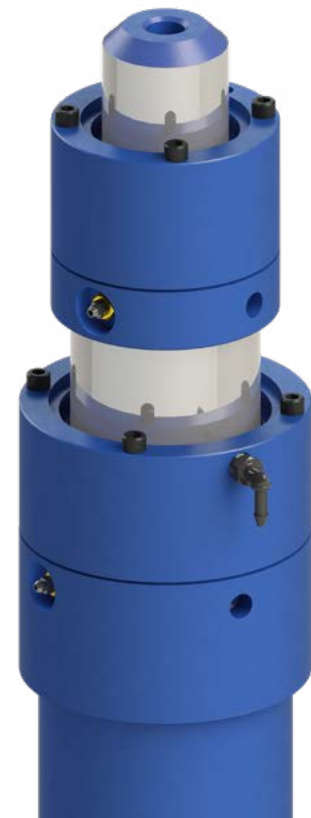
Two stage telescopic jacks are available from 1.6" to 4.5" (41 to 114 mm) upper piston diameter, in a wide range of wall thicknesses. Three stage telescopic jacks are available in 1.6" and 2.5" (41 and 64 mm) upper piston diameter. TJR & TJ3 series Jacks are all rated at 1200 psi (82.7 bar) maximum working pressure. Telescopic jacks are available in one section only (no multi-section).

### Telescopic Jack Sizes

Model				Upper Piston Wall Thickness		Piston(s) Weight per Total Travel	
Upper Piston Dia.		Cylinder Dia.					
in	(mm)	in	(cm)	in	(mm)	lbs/ft	(kg/m)
Piston Disp. per Total Travel							
gal/ft		(lit/m)					
<b>Two Stage Jack Unit</b>							
<b>TJR-160</b>							
1.600	(40.6)	3.60	(9.1)	Solid	Solid	4.0	(5.9)
0.20		(2.5)					
<b>TJR-175</b>							
1.750	(44.5)	3.75	(9.5)	Solid	Solid	4.7	(7.0)
0.22		(2.7)					
<b>TJR-250</b>							
2.500	(63.5)	5.00	(12.7)	0.375	(9.5)	4.3	(6.3)
0.41		(5.1)		0.500	(12.7)	5.3	(7.9)
				0.625	(15.9)	6.4	(9.5)
				0.750	(19.1)	7.0	(10.4)
<b>TJR-275</b>							
2.750	(69.9)	5.75	(14.6)	0.375	(9.5)	4.8	(7.1)
0.51		(6.3)		0.500	(12.7)	6.0	(8.9)
				0.625	(15.9)	7.1	(10.6)
				0.750	(19.1)	8.0	(11.9)
<b>TJR-350</b>							
3.500	(88.9)	6.50	(16.5)	0.375	(9.5)	6.3	(9.4)
0.67		(8.4)		0.500	(12.7)	8.0	(11.9)
				0.625	(15.9)	9.6	(14.3)
				0.750	(19.1)	11.0	(16.4)
<b>TJR-400</b>							
4.000	(101.6)	7.50	(19.1)	0.375	(9.5)	7.3	(10.8)
1.00		(12.4)		0.500	(12.7)	9.3	(13.9)
				0.625	(15.9)	11.3	(16.8)
				0.750	(19.1)	13.0	(19.4)
<b>TJR-450</b>							
4.500	(114.3)	8.00	(20.3)	0.375	(9.5)	8.3	(12.3)
1.14		(14.2)		0.500	(12.7)	10.7	(15.9)
				0.625	(15.9)	12.9	(19.2)
				0.750	(19.1)	15.0	(22.4)
<b>Three Stage Jack Unit</b>							
<b>TJ3-160</b>							
1.600	(40.6)	5.25	(13.3)	Solid	Solid	5.5	(8.2)
0.31		(3.8)					
<b>TJ3-250</b>							
2.500	(63.5)	7.25	(18.4)	0.375	(9.5)	9.4	(14.0)
0.62		(7.7)		0.500	(12.7)	10.7	(15.9)
				0.625	(15.9)	11.8	(17.5)
				0.750	(19.1)	12.7	(18.9)

### Recommended Overtravels

Car Speed		Bottom Overtravel		Top Overtravel	
ft/min	(m/s)	in	(mm)	in	(mm)
100	(0.5)	7	(178)	9	(229)
125	(0.6)	9	(229)	11	(279)
150	(0.8)	10	(254)	12	(305)
175	(0.9)	11	(279)	13	(330)
200	(1.0)	12	(305)	14	(356)



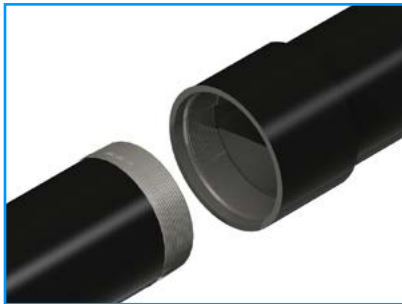
# Cylinder Joint Couplings

EECO has four different means of Cylinder Joints available to fit any job site requirements.



## **THREADED NO WELD JOINT**

The threaded no weld cylinder joint is available up to 10" cylinder diameters. This joint system is designed with a double O-ring that will protect the cylinder joint from internal and external leakage. These joints can be welded, filling the 1/2 inch gap between couplings, if the specifications require or at the discretion of the Installation Company.



## **THREADED JOINT**

The threaded cylinder joint is available 12" through 16" cylinder diameters. The female threaded coupling is welded to the upper side of the next joint. The cylinder opposite section is threaded to screw into coupling where it is then welded in the field.



## **SLIP-FIT JOINT**

The slip-fit cylinder joint is available up to 16" cylinder diameters. A slip coupling is welded to the upper side of the next joint. The cylinder opposite section is then slid into the coupling where it is welded in the field. This joint type does not contain any threads.

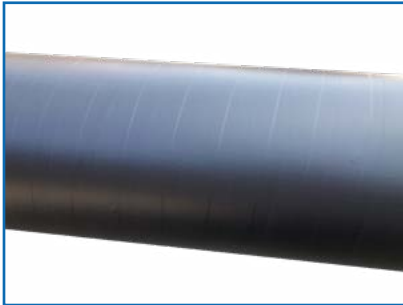


## **BUTT-WELD JOINT**

The butt-weld cylinder joint is available on all cylinder diameters. Each end of the cylinder section is beveled for welding in the field. This joint type is supplied with bolt lugs to line up and bolt the sections together during assembly and welding. Once welding is complete simply "knock off" or remove the bolt lugs from each joint area.

# Cylinder Protection

EECO can provide optional types of cylinder protection beyond the standard coating material, including:



## **TAPE WRAP**

Tape wrap or polyvinyl chloride tape is wrapped to a minimum of 20 mil in thickness or more if required. Tape wrap is a good means of protection for the cylinder against moisture, rather than standard paint alone.



## **EPOXY PAINT**

Epoxy paint is a better means of protection for the cylinder of the jack unit from moisture than the standard paint. It is applied in three separate coats to ensure proper coverage.

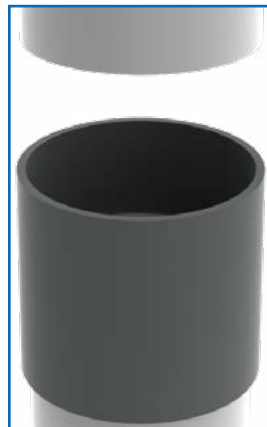
Note: For added protection combine epoxy paint and tape wrap.

## **SEALED PVC**

Sealed PVC is attached by a grooved coupling to a welded metal ring. As required by ASME A17.1/CSA B44, inspection ports are provided as a standard feature. Sealed PVC is available in schedule 40 or schedule 80 wall thicknesses and is furnished in as many sections as required, with a pipe end cap for sealing the lower end. Other connection types available include our flush threaded PVC pipe, which is available from sizes 8" through 12".



***Bell End Joint***



***Coupling Joint***



***Flush Threaded***

## Options & Accessories



**Model No. ELMS - 01**

### **ELECTRONIC LEAK MONITORING SYSTEM**

The **Electronic Leak Monitoring System (ELMS)** is designed as a discriminating device. That is, the LED monitor array is designed to report the presence of a liquid trapped between the jack cylinder and the sealed PVC liner. It also determines whether the liquid is water or oil. A secondary test for verification of leakage can be made by applying a suction pump to the test line at the monitor control block. The minimum required space between the largest outside diameter of the cylinder assembly and inside diameter of the PVC should be 1.5".

**NOTE:** This system can only be utilized on new jack installations, or jack unit replacements, with sealed PVC liners.



**Model No. EVS - 01**

### **EVACUATION SYSTEM**

The **Evacuation System (EVS)** is to be used to evacuate / inspect fluid leakage into the cavity between the cylinder and PVC liner of in-ground hydraulic jack system. The minimum required space between the largest outside diameter of the cylinder assembly and inside diameter of the PVC should be ½".

## Product Highlight – Telescopic Jack Units

### ***2 & 3 STAGE FOR DIRECT ACTING, CANTILEVER, & DUAL JACK SYSTEM APPLICATIONS***

- *Up to 14,000 lbs capacity*
- *Replace any Telescopic Jack irrespective of manufacturer*
- *Holeless Design can handle up to 5 Stop Installations with minimum overhead Requirements*
- *Complies with all the latest code requirements*



***Telescopic Lifting Clamp***

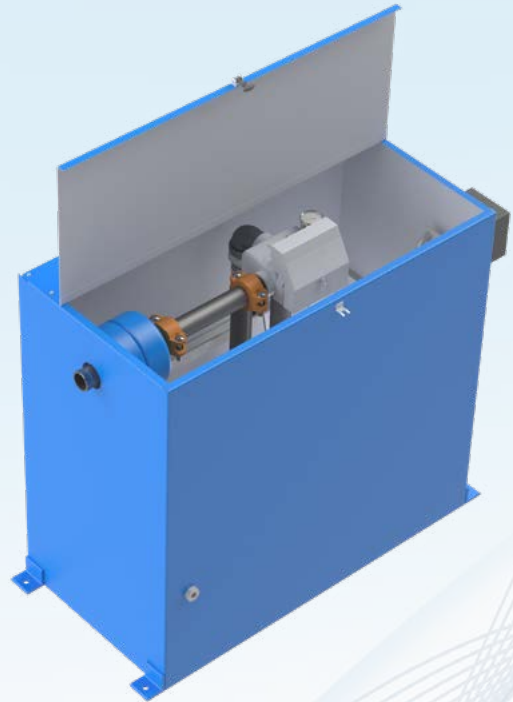
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# POWER UNITS



**Belt Drive (Dry) Power Unit**

**Submersible Power Unit**

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# Power Unit – General Information

Elevator Equipment Corporation can provide power units for any application, from small capacity residential to the largest freight elevators. EECO can furnish a standard model power unit, in accordance with your specifications, or we can perform the necessary calculations, based on your data, to select and recommend a power unit to meet your requirements.

EECO manufactures power units with precision equipment, skilled and experienced production personnel, and a knowledgeable engineering staff to comply with the exacting standards required to produce a quality product. The latest CNC equipment and technology is utilized to assure strict adherence to essential dimensions and tolerances. All EECO products are designed and manufactured in accordance with the Safety Code for Elevators and Escalators, ASME A17.1/CSA B44. With years of testing and field study, EECO has designed submersible and belt drive power units that are unequalled in the industry for performance and reliability. The primary objective of Elevator Equipment Corporation is to provide a quality product that consistently meets or exceeds the contractual demands and expectations of our customers.



## **QUALITY ASSURANCE**

Quality Control is an essential and integral part of our manufacturing process. Every phase of production is monitored to assure that each power unit is assembled in accordance with engineering and shop order specifications. Throughout the manufacturing process, you can be assured that our high quality standards are met and that the finished product meets your requirements.

## **SPECIAL ENVIRONMENTAL CONDITIONS**

EECO can provide units for installation in hazardous or humid environments using moisture resistant or explosion proof components. Explosion Proof Valves have a NEMA 7 rating and comply with all requirements of Class I, Division 1, Groups A, B, C, D, and Class II, Division 1, Groups E, F, and G. Contact EECO for more information.

All EECO Products are "Green Compatible" as a standard when used with biodegradable (vegetable) oils that **do not** contain a high acidic property.



***Explosion Proof UV-5AT***

## **DELIVERY TIMES**

It is our goal to deliver a power unit when needed. If a rush order is required, EECO will make every effort possible to meet your requirements. Contact EECO for current lead times.

## **GENERAL SPECIFICATIONS**

Units are designed to fit through a standard Machine Room Door (see dimensional chart). The tank is constructed with a 12 GA. Steel body and a 14 GA. Steel cover. A means for checking oil level is provided along with a junction box for connecting the motor, Low Oil Switch, Thermostat Switch, and control valve wires. The junction box can be installed internally or externally.

# Power Unit – Specifications

## GENERAL NOTES

- Tank Size required is based on space needed for pump & motor assembly and amount of oil needed for operation.
- All dimensions may vary slightly due to assembly tolerances.
- All units are designed to be mounted on 3/4" (2 cm) thick isolation pads. Overall height when set is 3/4" higher.
- Actual "Usable Oil" has an allowance for 10 Gal. (38 Liters) of reserve oil.
- "Usable Oil" and "Oil Required to Fill Tank" are based on standard tank heights. If greater oil volume is required, the tank height can be increased accordingly.
- Power Units are furnished with EECO control valves as a standard. Other manufacturers' control valves can be substituted, if requested.

## PERFORMANCE CHARACTERISTICS

### **Construction**

All units are designed and constructed in accordance with applicable requirements of ASME A17.1 / CSA B44. A grooved outlet is standard. A male threaded outlet is available.

### **Electrical**

Available voltages are 208 Vac, 230/460 Vac or 575 Vac, 3-Phase, 60 Hz. Provision can be made for operation on 50Hz.

Units can also be provided with voltages of 208 Vac or 230 Vac Single Phase, 60 Hz although motor horsepower is limited to 10 hp (7.5 kW).

### **Horsepower**

2 ½ hp (1.9 kW) up to 50 hp (37.3 kW) for single submersible pump / motor combinations.  
5 hp (3.7 kW) thru 100 hp (74.6 kW) for single belt drive pump / motor combinations.



### **Flow Rate**

Submersible - 3 gpm (15 lpm) up to 255 gpm (852 lpm).

Belt Drive - 15 gpm (57 lpm) thru 500 gpm (1893 lpm).

### **Heat Output**

BTU/Hr = Hp \* (1 - Motor Efficiency) \* 2545

### **Working Pressure**

Varies depending on car speed and gross load.

### **Oil Recommendations**

Recommended Operating Fluid: Use a good brand of ISO VG 32 turbine oil with a viscosity of 150 ssu @ 100° F (38° C). A minus pour point is recommended. A biodegradable (vegetable)oil that **does not** contain a high acidic property is acceptable if it meets the same specifications.

All EECO Products are "Green Compatible" as a standard when used with biodegradable (vegetable) oils that **do not** contain a high acidic property.



# Submersible Power Units

## DESCRIPTION OF A SUBMERSIBLE POWER UNIT

EECO Submersible Power Units are designed with the directly connected pump and motor submerged in the oil reservoir. An EECO Silencer is located between the pump and the control valve as standard. The control valve and an optional muffler or dampener are mounted in the tank above the maximum oil level, providing access for valve adjustment. These components can also be located above the tank when greater oil capacity is required.

Submersible pumps and motors are less costly than comparable air cooled components and are designed to allow for quick and easy installation. The insertion of the pump and motor in the oil helps to dampen noise generated during operation.

Because the pump and motor are directly connected, the pump output flow rate is a result of the speed (RPM) of the motor. Therefore, the output flow rate is a consequence of available pump sizes.

## COMMERCIAL SUBMERSIBLE POWER UNITS

### Standard Features

- EECO UV5-BT Control Valve
- EECO Silencer
- Thermal Switch (Preset To 145°F)
- Isolation Anchoring System
- Oil Level Liquid Gauge
- 80 Starts Per Hour
- Pressure Gauge Fitting with 1/8" Shut Off Valve

### Available Options

- Valve Return Filter (VRF)
- 120 Starts Per Hour
- Tank Mounted Starter Enclosure
- Motor Starter
  - Wye-Delta
  - ATL
  - Solid State
- Adjustable Load Weighing Switch
- EECO Muffler
- EECO Highly Effective Dampener
- Oil Heater
- Maxton Control Valves
- Low Pressure Switch
  - N.O
  - N.O./N.C.
- Viscosity Switch
- Low Oil Switch
- Hand Pump
- OSHPD Approved Anchoring System
- Constant Down Speed
- Pre-Wired (JBox and Terminals)
- Charcoal Breather

### Flat Bottom Commercial Power Units

EECO Commercial Flat Bottom Submersible Power Units are available in two depths, 18" and 24". The 18" power units are the most compact and are particularly useful where Machine Room space is at a premium. They are lightweight for ease of handling, very quiet, and highly efficient. They are also our most economical units. EECO can also design and manufacture fully customized power units per the customer's specifications.

MODEL	Dimensions in Inches(in)								Gallons(gal)		
	Dimensions in Centimeters(cm)								Liters(lit)		
	A	B	C	D	With UV-5				Usable Oil	Charge Oil	Total
E	F	G	H								
SPUF-36	36.00	24.48	44.00	41.00	35.19	38.00	12.30	6.88	68.28	47.92	116.20
	91.44	62.18	111.76	104.14	89.38	96.52	31.24	17.48	258.10	181.14	439.24
SPUFO-36	36.00	24.48	44.00	41.00	49.80	52.60	12.30	6.88	107.50	47.92	155.42
	91.44	62.18	111.76	104.14	126.49	133.60	31.24	17.48	406.35	181.14	587.49
SPUF-48	47.00	24.48	44.00	52.00	35.19	38.00	12.30	6.88	89.46	63.19	152.65
	119.38	62.18	111.76	132.08	89.38	96.52	31.24	17.48	338.16	238.86	577.02
SPUFO-48	47.00	24.48	44.00	52.00	49.80	52.60	12.30	6.88	140.76	63.19	203.95
	119.38	62.18	111.76	132.08	126.49	133.60	31.24	17.48	532.07	238.86	770.93
SPUF-60	60.00	24.48	44.00	65.00	35.19	38.00	12.30	6.88	114.50	81.24	195.74
	152.40	62.18	111.76	165.10	89.38	96.52	31.24	17.48	432.81	307.09	739.90
SPUFO-60	60.00	24.48	44.00	65.00	49.80	52.60	12.30	6.88	180.06	81.24	261.30
	152.40	62.18	111.76	165.10	126.49	133.60	31.24	17.48	680.63	307.09	987.71



Tank Mounted Controllers are Available



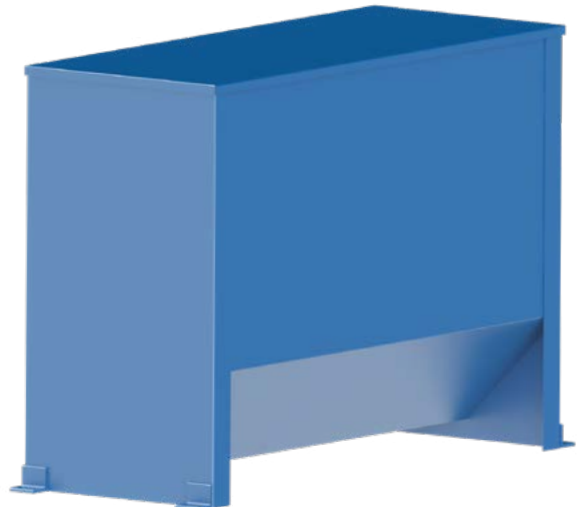
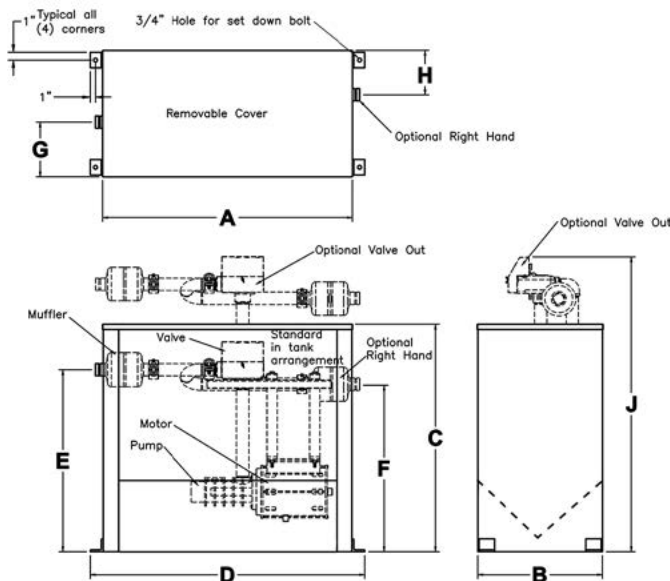
# Submersible Power Units Cont'd

## Special Application V-Bottom Commercial Power Units

EECO's Commercial V-Bottom Submersible Power units are available in 60", 72", 84", and 96" lengths and are 24" deep. Usable oil volumes range from 71 gal. to 180 gal. depending on size and configuration.

Model	Dimensions in Inches (in)													
	Dimensions in Centimeters (cm)													
	A	B	C	D	With UV-5AT					With UV-7B				
					E	F	G	H	J	E	F	G	H	J
SPU-72	72.25	24.00	44.00	76.50	38.00	34.88	10.50	8.50	56.00	35.25	35.25	9.63	9.63	58.00
	(183.5)	(61.0)	(111.8)	(194.3)	(96.5)	(88.6)	(26.7)	(21.6)	(142.2)	(89.5)	(89.5)	(24.4)	(24.4)	(147.3)
SPU-84	84.25	24.00	44.00	88.50	38.00	34.88	10.50	8.50	56.00	35.25	35.25	9.63	9.63	58.00
	(214.0)	(61.0)	(111.8)	(224.8)	(96.5)	(88.6)	(26.7)	(21.6)	(142.2)	(89.5)	(89.5)	(24.4)	(24.4)	(147.3)
SPU-96	96.25	24.00	44.00	100.25	38.00	34.88	10.50	8.50	56.00	35.25	35.25	9.63	9.63	58.00
	(244.5)	(61.0)	(111.8)	(254.6)	(96.5)	(88.6)	(26.7)	(21.6)	(142.2)	(89.5)	(89.5)	(24.4)	(24.4)	(147.3)

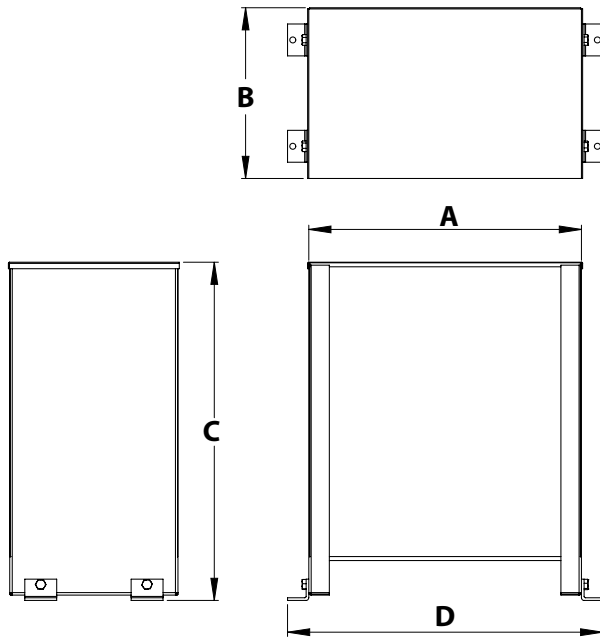
Model	Capacities in Gallons (gal)									
	Capacities in Liters (lit)									
	Usable Oil					Oil Required to Fill Tank				
	With UV-5AT		With UV-7B			With UV-5AT		With UV-7B		
	Valve in Tank LH	Valve in Tank RH	Valve Out	Valve in Tank	Valve Out	Valve in Tank LH	Valve in Tank RH	Valve Out	Valve in Tank	Valve Out
SPU-72	109.00	86.00	135.00	86.00	135.00	190.00	167.00	246.00	167.00	246.00
	(413)	(326)	(511)	(326)	(511)	(719)	(632)	(931)	(632)	(931)
SPU-84	127.00	100.00	157.00	100.00	157.00	222.00	195.00	287.00	195.00	287.00
	(481)	(379)	(594)	(379)	(594)	(840)	(738)	(1086)	(738)	(1086)
SPU-96	145.00	114.00	180.00	114.00	180.00	253.00	222.00	328.00	222.00	328.00
	(549)	(432)	(681)	(432)	(681)	(958)	(840)	(1242)	(840)	(1242)





# Submersible Power Units Cont'd

## Residential, LULA, and MRL Submersible Power Units



Model	Dimensions in Inches(in)				Gallons(gal)
	Dimensions in Centimeters(cm)				Liters(lit)
	A	B	C	D	Usable Oil
RPU	25.00	16.00	29.75	28.00	20
	(63.8)	(40.6)	(58.4)	(71.5)	(76)
LPU	36.00	16.00	31.50	40.00	15
	(91.4)	(40.6)	(80.0)	(101.6)	(57)
SMPU	31.00	11.25	52.75	34.75	33
	(78.7)	(28.3)	(134.3)	(88.0)	(125)



*Residential Power Unit (RPU)*



*LU/LA Power Unit (LPU)*



*SMRL Power Unit (SMPU)*



*PMRL Power Unit (SMPU)*

# Belt Drive (Dry) Power Units

## **DESCRIPTION OF A BELT DRIVE POWER UNIT**

EECO Belt Drive (Dry) power units are designed with the pump and motor mounted on a sub-base located below the oil reservoir tank and is enclosed with sound isolation panels to limit transmission of noise during operation. The exposed control valve which is located above the tank allows for easy access to adjustments. A removable belt guard is provided to allow access to the pump and motor compartment for maintenance or adjustment of the drive system. Because the pump and motor are connected by means of "v"-belts and sheaves, the pump RPM can be adjusted, by selecting the proper ratio of pump and motor sheaves, to obtain the required flow.



## **GENERAL SPECIFICATIONS**

The tank is constructed with a 12 ga. steel body, and removable 16 ga. cover, belt guard, and rear panel. Units are designed to fit through a standard machine room door (see dimensional charts). A means for checking oil level is provided. The pump and motor are mounted on a structural steel sub-frame that is secured to the main Frame. Optional isolation mounts are available to limit transmission of mechanically generated noise and vibration. Provisions are included to allow for easy adjustment of belt tension and alignment of sheaves. The outlet in the tank is protected by a removable strainer to allow for easy cleaning. A removable oil drip pan is provided. Mounting feet are provided with holes to allow for securing to the floor and Isolation Anchor Kit is also included for installation to the pit floor.

### ***Standard Features***

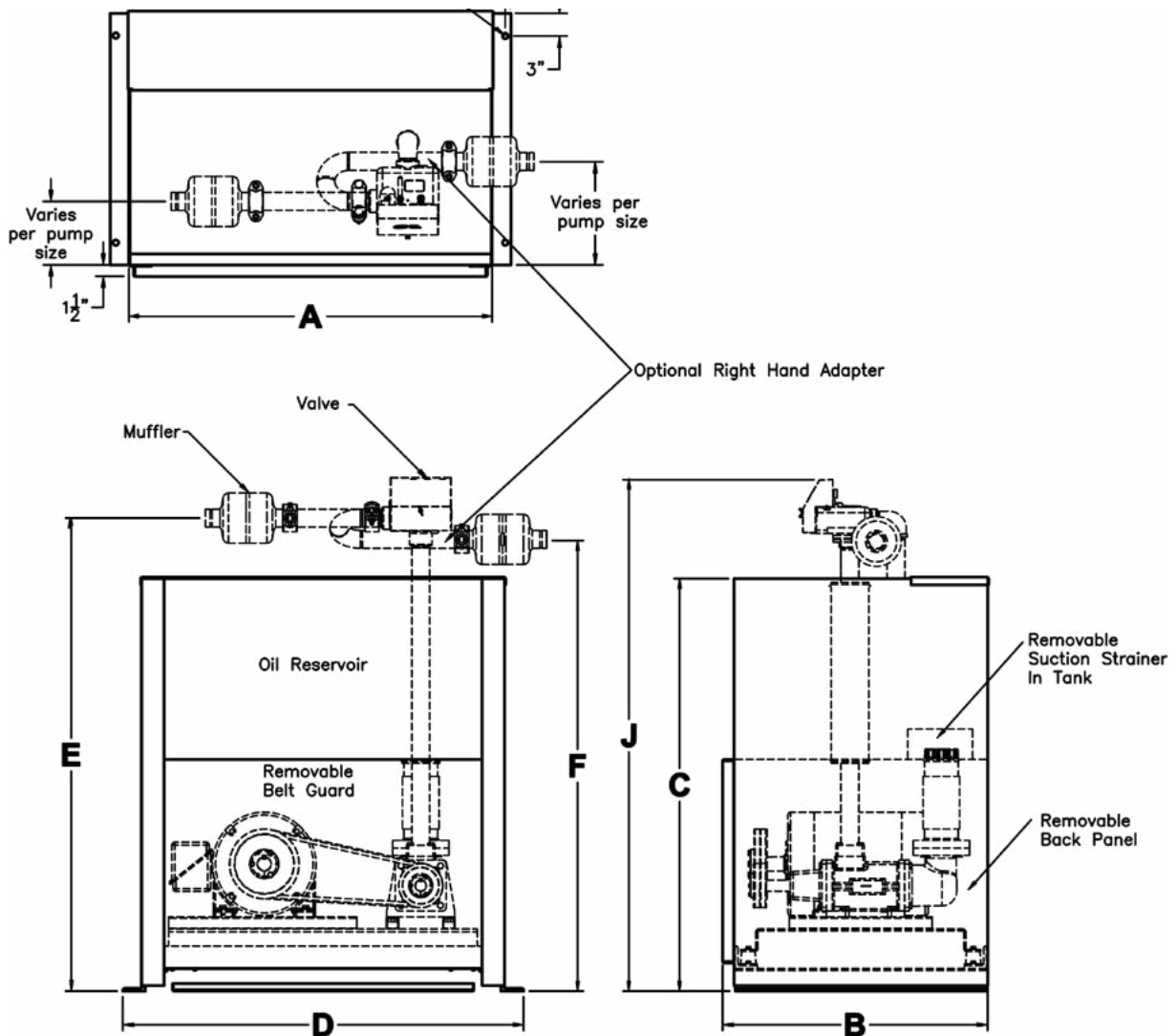
- EECO UV-5AT or UV-7B Control Valve mounted above Tank
- EECO Muffler
- Thermal Switch (Preset To 145°F)
- Isolation Anchoring System
- Oil Level Liquid Gauge
- 80 Starts Per Hour
- Pressure Gauge Fitting with 1/8" shut off valve
- Sound Isolation Panels
- Removable Belt Guard
- Screened Pump Inlet

### ***Available Options***

- Valve Return Filter
- 120 Starts Per Hour
- Tank Mounted Starter Enclosure
- Motor Starter
  - Wye-Delta
  - ATL
  - Solid State
- Adjustable Load Weighing Switch
- EECO Highly Effective Dampener
- Oil Heater with Thermostat
- Viscosity Switch
- Low Oil Switch
- Hand Pump
- OSHPD Approved Anchoring System
- Constant Down Speed
- 3/4" Tank Drain Valve
- Magnetic Tank Drain Plug
- Shut Off Valve between Tank and Pump
- Tank Vent
- Charcoal Breather

# Belt Drive (Dry) Power Units Cont'd

Model	Dimensions in Inches (in)										Gallons (gal)	
	Dimensions in Centimeters (cm)										Liters (lit)	
	A	B	C	D	With UV-5AT			With UV-7B			Usable Oil	Oil Required to Fill Tank
					E	F	J	E	F	J		
DPU-48	48.25	35.50	54.50	52.50	60.25	58.25	65.50	60.00	60.00	67.50	99.00	155.00
	(122.6)	(90.2)	(138.4)	(133.4)	(153.0)	(148.0)	(166.4)	(152.4)	(152.4)	(171.5)	(375)	(587)
DPU-60	60.25	42.00	60.50	64.50	66.25	64.25	71.50	66.00	66.00	73.50	187.00	270.00
	(153.0)	(106.7)	(153.7)	(163.8)	(168.3)	(163.2)	(181.6)	(167.6)	(167.6)	(186.7)	(708)	(1022)
DPU-72	72.25	42.00	60.50	76.50	66.25	64.25	71.50	66.00	66.00	73.50	225.00	324.00
	(183.5)	(106.7)	(153.7)	(194.3)	(168.3)	(163.2)	(181.6)	(167.6)	(167.6)	(186.7)	(852)	(1226)
DPU-84	84.25	42.00	60.50	88.50	66.25	64.25	71.50	66.00	66.00	73.50	262.00	378.00
	(214.0)	(106.7)	(153.7)	(224.8)	(66.3)	(64.3)	(71.5)	(66.0)	(66.0)	(73.5)	(992)	(1431)



# Custom Power Units

**EECO specializes in the design and construction of custom power units to meet your customer's unique demands. Provide EECO with your project requirements and we'll design and build the proper power unit for you.**

## **DUAL POWER UNITS**

A double pump/motor combination can be supplied in both submersible and belt drive (dry) arrangements. This dual arrangement may be desired in facilities where the elevator is critical to the facility's operation, as the system can be arranged so that the elevator will still operate at a reduced speed if one pump or motor fails.

A dual unit may also be needed when the amount of oil flow required to lift the car at the specified speed exceeds the output of a single pump / motor combination.

Dual arrangements can be provided with the pump/motor combinations in a single tank or in two separate tanks.



***Belt Drive Dual Pump & Motor  
with Single Valve***



***Belt Drive Dual Pump & Motor  
with Dual Valves***

## **TWO PIECE (BREAKDOWN) POWER UNITS**

Special two-piece belt drive (dry) units can be furnished in any required size and arrangement. Access to the building, or into the machine room, may be such that the only way to install a unit is in pieces, with final assembly on the job. For any arrangement, EECO can design a solution and provide you with a "footprint" of the proposed unit to verify available space requirements.

# Power Unit – Standard Features



## **PUMP**

Submersible pumps are positive displacement, low slip, three screw design, and are directly connected to the motor.

Belted pumps are foot mounted, positive displacement, low slip, three-screw design.



## **MOTOR**

Submersible motors are designed to operate submerged in oil and are rated at 80 starts/hr or 120 starts/hr. 3-Phase motors are 3400 rpm and include leads for Across-the-Line, Wye-Delta, or Solid State starting. Single-Phase motors are 1750 rpm or 3400 rpm for 10hp (7.4kW) and include the starting capacitors for Across-the-Line starting. These motors include a built in thermal detector which should be wired to the controller to shut the power unit down in case of overheating.

Belted motors are specially designed for oil hydraulic elevator service with squirrel cage construction and are 1800 rpm.



[Download Valve Catalog](#)



## **CONTROL VALVE**

All power units include an EECO control valve as standard. A Constant Down Speed control valve can be furnished as an option. All units are supplied with 1/8" brass shut off valve and male quick-disconnect fittings.

Other manufacturer's control valves can be furnished upon request.



## **HYDRAULIC MUFFLER OR SILENCER**

The Hydraulic Muffler (EHM) or Silencer (EHS) provide superior noise suppression and are included with each unit. They can be omitted if desired.





# Power Unit – Standard Features Cont'd

## **PRESSURE GAUGE FITTINGS**

The **Pressure Gauge Fitting System** is used to provide a means of attaching a Pressure Gauge (sold separately) to the control valve. This system is provided with a 1/8" brass shut off valve and a male quick disconnect fitting. Individual fittings can be purchased to create your own arrangements. Contact EECO for details.

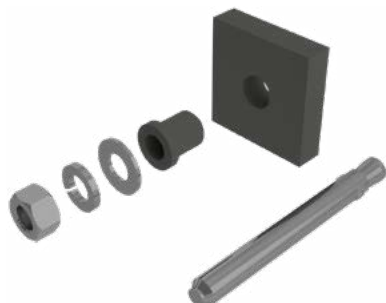


## **OIL LEVEL LIQUID GAUGE**

The **Oil Level Liquid Gauge** is made of corrosion and rust resistant milled aluminum. The end pieces are permanently secured through a staking process. Fluid enters through the cross hole in the hollow lower bolt and is communicated back into the tank through the cross hole in the hollow top bolt.

## **THERMAL SWITCH**

The **Thermal Switch Assembly (TSW-1)** is required to be installed on all Hydraulic Power Units, per ASME A17.1/CSA B44 3.26.6.5, to prevent the liquid temperature from rising above its maximum operating temperature. These switches are factory preset at a temperature setting of 145° F (63° C).



## **ISOLATION ANCHOR KIT**

The **Isolation Anchor Kit** allows the installer to secure the power unit to the machine room floor while isolating the unit from transferring vibration and noise through the building. Optional **OSHPD Approved** anchoring kit available. Contact EECO for more information.



# Power Unit – Optional Features



## **HYDRAULIC DAMPENER**

The **Hydraulic Dampener (EHDN)** is extremely effective in suppressing the sound and pulsation present in hydraulic elevator systems. The EHDN has a minimum burst pressure of 6000 psi with an ASME A17.1/CSA B44 allowable working pressure of 1200 psi. They are available in 2.0", 2.5", 3.0", and 4.0" with combinations of grooved and/or threaded outlets.

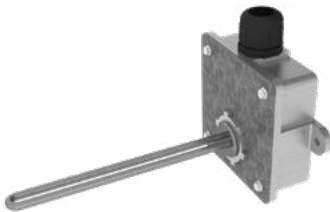
## **OIL COOLER**

The **Oil Cooler (OC)** is extremely efficient in cooling the oil in the hydraulic elevator machine room in which it is installed. The heart of the unit consists of a triple screw pump which is highly reliable and quiet. A Thermal Control System is included.



## **TANK HEATER**

The **Tank Heater (TH)** is simple to install and operate. It is designed to keep your hydraulic oil at the optimum operating temperature in cooler environments which provides optimum operation of your hydraulic elevator system. Pre-Set 110° F Thermostat, 120 Volt AC, 250 Watts, 2.1 Amps, Oil-Tight Fittings included.



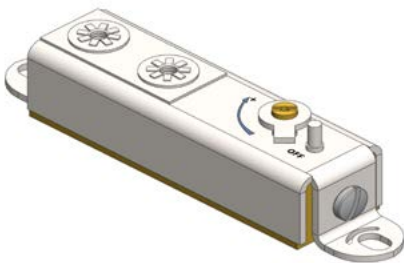
## **SHUT OFF VALVE**

The **Shut Off Valve (SOV)** is used to isolate one section of the system from another. All Shut Off Valves are constructed of ductile iron bodies and use a stainless steel ball. A locking device is standard on all sizes.



## **VISCOSITY SWITCH**

A thermostat that is field adjustable by a fine adjustment trim screw which can activate a viscosity control system. The thermostat is UL and CSA recognized for a maximum of 1500 watts at 230 volts AC with a single contact. The unit has a heat sensitive base plate which can be mounted directly to the outside of a hydraulic tank or by an aluminum "L" bracket with little loss of sensitivity.



This switch can be used to control pump/motor running in bypass mode to heat up the oil in lieu of a tank heater or as a control to turn on/off an oil cooler and/or a tank heater. The switch is normally closed and is open above the set temperature.

## Power Unit – Optional Features Cont'd

### **VALVE RETURN FILTER KIT**

The **Valve Return Filter (VRF)** attaches to the tank return port of the valve. The filter bag is easily replaceable. The EECO VRF allows you to easily capture particles 5 microns in size and larger as well as helping to prevent the buildup of debris within the tank, making it easier to clean.



### **LOW OIL SWITCH**

A **Low Oil Switch (LOS)** is used to detect the oil level in a reservoir. The 1-3/16" diameter float helps to limit surges that might occur. The switch is UL recognized and CSA listed for a maximum of 3 amps @ 250 VAC with a SPST.

The standard configuration is normally open which can be changed to normally closed, by inverting the float on the units stem. Mounting is accomplished by 1/4" NPT and electrical termination are two 18 AWG, 39" long wires.

### **LOAD WEIGHING KIT**

EECO's **Load Weighing Kit (LWK)** is an addition to a new or existing Power Unit to prevent the elevator from being overloaded. The switch can be wired into the controller, if the provision is available, through either a normally open or normally closed contact.



### **OIL LEVEL SIGHT GLASS**

The **Oil Level Sight Glass** for hydraulic elevator power units is used to visually inspect the oil level in the tank. It is available in 1" Diameter with NPT threads.

### **CARBON DESICCANT BREATHER**

The EECO **Carbon Desiccant Breather (ECDB)** is provided as a contamination control breather technology to reduce particulate, moisture contamination, and hydraulic oil odors by moisture absorption. These are supplied as Replacement Desiccant/Filter Cartridges for ease of service and fully disposable.

The size available is a 5" dia. by 8" long with a slip fit 2" FNPT Connection. The medium is an activated carbon, synthetic graphite, and silica gel. Applications: MRL Hydraulic Elevators and standard machine rooms requiring substantial hydraulic oil odor control on hydraulic elevator systems.







# EECO CONTROL VALVES

All EECO  
Products are  
Green  
Compatible



**UV-5AT**



**UV-5BT**



**UV-5BT Rear**



**UV-7B**



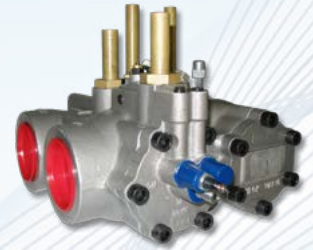
**UV-5ATC**



**UV-5BTC**



**UV-4R**



**UV-7BC**

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# Control Valves – Standard Features

### ***Smooth Up Start***

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

### ***Up Transition***

Provides unvarying transition through a wide pressure range.

## UV-4R



### ***Up Leveling***

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

### ***Up Stop***

Provides smooth up stop which is solenoid operated and adjustable.

## UV-5AT



### ***Check Valve***

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

### ***Lowering Valve***

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

## UV-7B



## Product Highlight – UV-5BT Compact Valve

# *The UV-5BT & UV-5BTC Compact Valve*



The EECO UV-5BT and UV-5BTC have a relocated Tank Return Port facing downward which allows their use in more compact Power Units. They both maintain the same great performance and serviceability of our UV-5AT series valves with a smaller footprint. These control valves are fully compatible with the parts and accessories for the UV-5AT(C) valves.

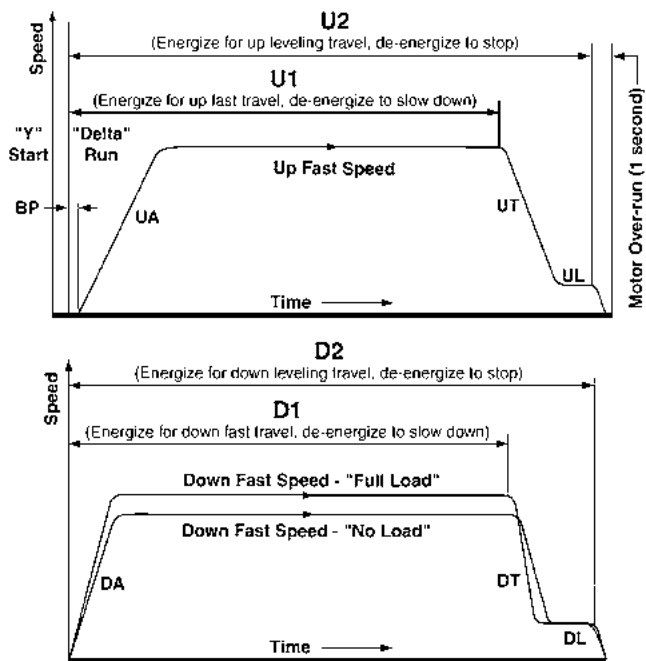
The UV-5BT has Temperature Compensation over its entire operational temperature range (80 to 150 °F). The UV-5BTC offers Temperature Compensation as well as Pressure Compensation, maintaining a Constant Down Speed between no load and full load conditions.

For more information, refer to the EECO Control Valve Catalog or look online at [www.elevatorequipment.com](http://www.elevatorequipment.com).

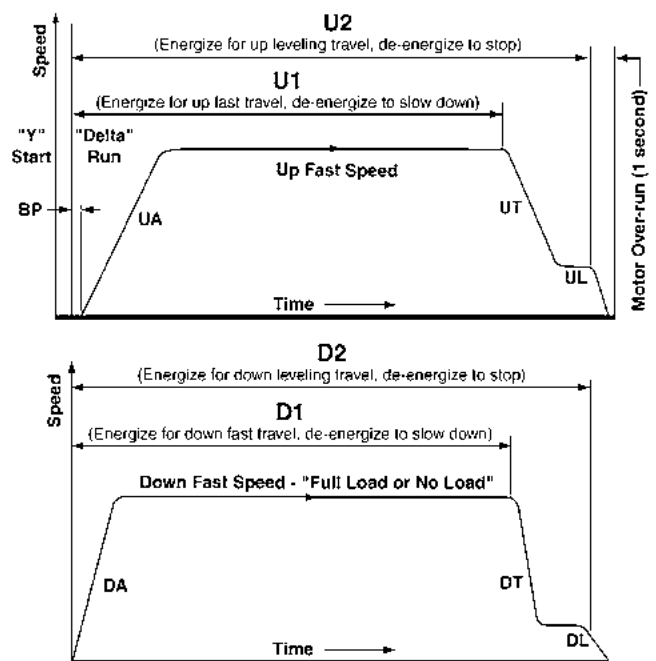


# Control Valve – Performance

## STANDARD VALVES



## PRESSURE COMPENSATED VALVES



## SEQUENCE OF OPERATION

### Up Start:

- A) "ATL" (Across The Line) start: pump motor "ON".  
Energize both U2 and U1 solenoids to run up at fast speed
- B) "Y" start: Pump motor "ON" (reduced voltage).  
"Delta" run: Pump motor "ON" full voltage.  
Energize both U2 and U1 solenoids to run up at fast speed.  
De-energize U1 to slowdown to leveling speed.  
De-energize U2 to stop at floor.

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

### Down Start:

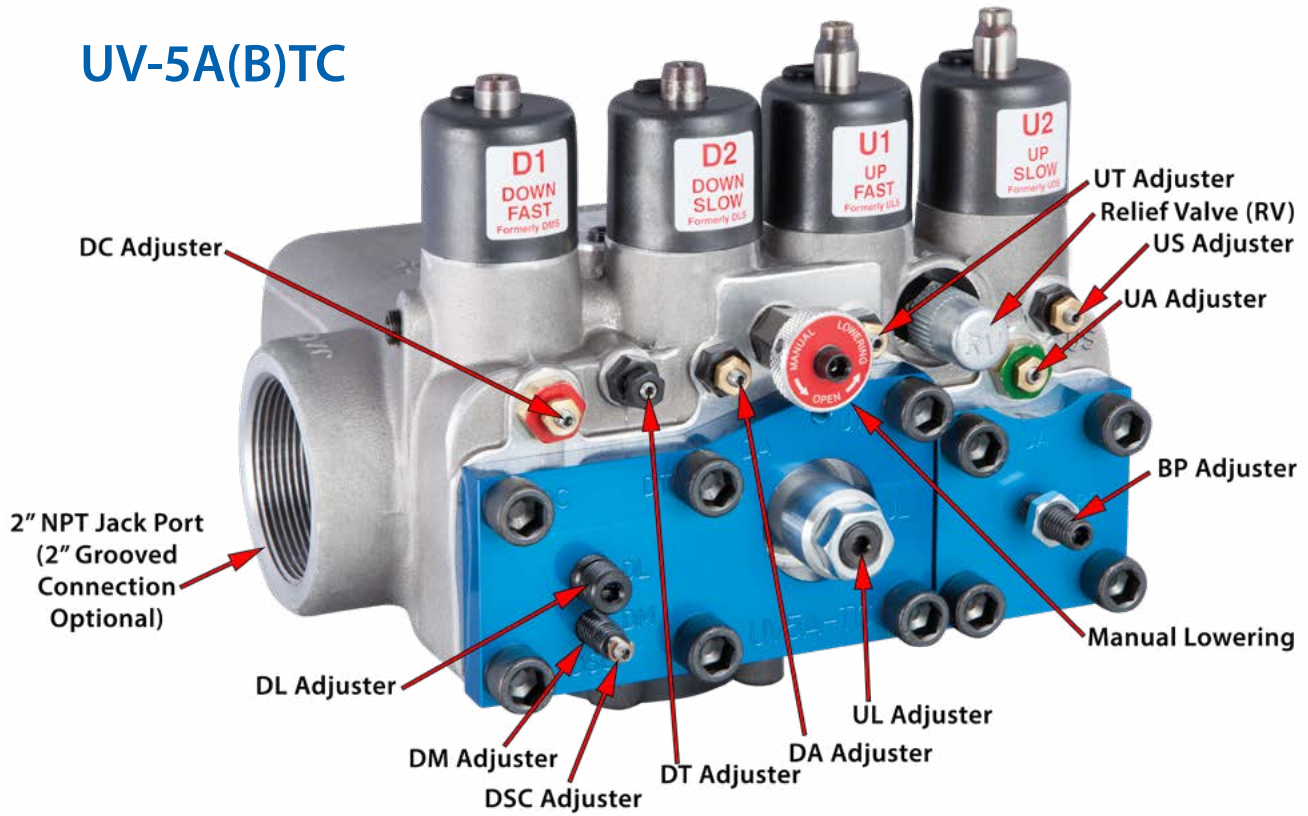
Energize D1 and D2 to lower car at fast speed.  
De-energize D1 to slowdown to leveling speed.  
De-energize D2 to stop at floor.

**Note 1:** For additional clarification on the sequence of operation, please refer to chart above.

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

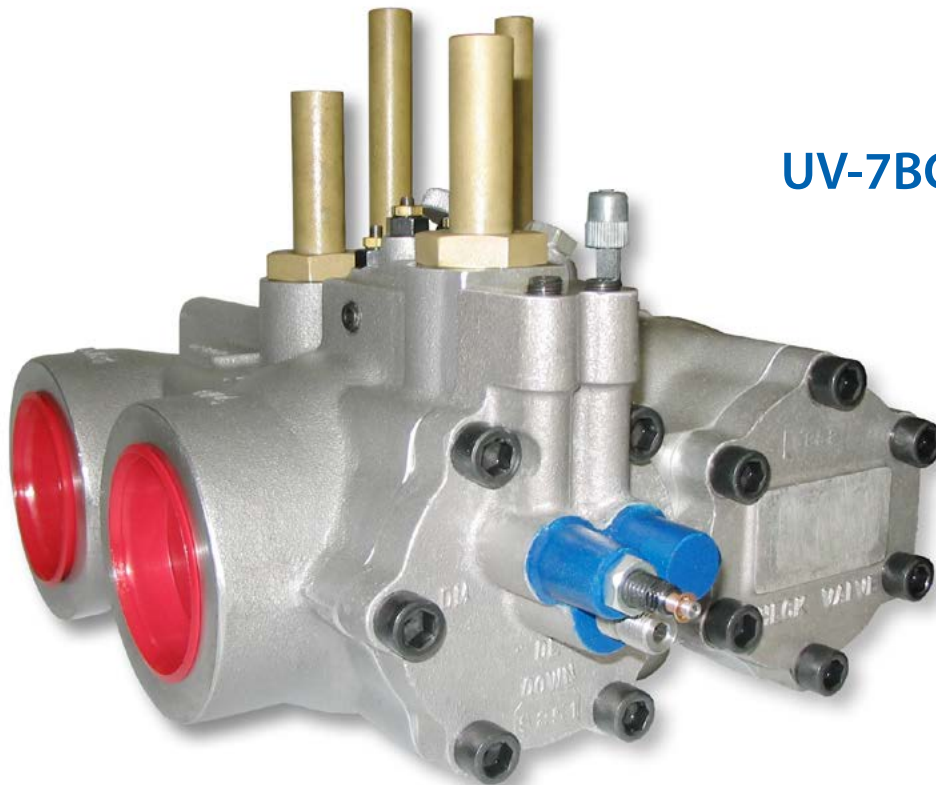
# Control Valve – Pressure Compensation

## UV-5A(B)TC



The optional *Pressure Compensation* for constant down speed control modification of the down piston assembly delivers constant Down Speed Control between no load and full load conditions. This option is available for the UV-5 and UV-7 series Control Valves.

## UV-7BC



# UV-5 Series Upgrade Kits

## **TEMPERATURE COMPENSATION UPGRADE KIT**

EECO has developed a temperature compensation kit 5600A-( ) to upgrade standard S-series and earlier UV-5A valves currently in service. This upgrade provides **Full Temperature Compensation** over the valve's entire operational temperature range of 80° to 150° F (27° to 66° C). These changes will allow consistent elevator operation by maintaining floor-to-floor travel time and up leveling speed.

EECO recommends that when a temperature compensation kit is installed in a valve, all of the seals in the valve also be replaced with high temperature Viton seals using EECO's standard seal kit 5131V. When ordering a temperature compensation kit and the 5131V seal kit, please have the existing valve size and/or serial number available.



## **DOWN PISTON UPGRADE KIT**

EECO has developed a down piston upgrade kit 5600A-( ) to upgrade standard S-series and earlier UV-5A valves currently in service. This kit will provide better adjustment and improves the seal locking your elevator on a column of oil.

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

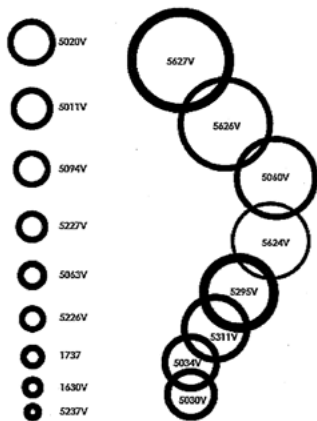


# Control Valve – Seal Kits

## COMPLETE CONTROL VALVE SEAL KITS

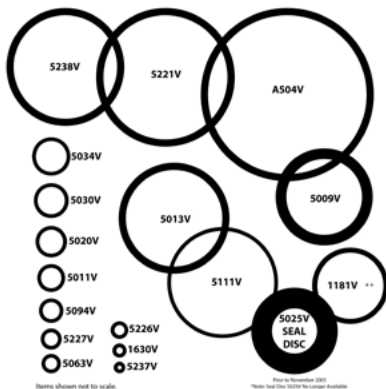
When servicing any EECO Control Valve in the field it may be necessary to replace old or worn O-rings and seals. EECO offers complete viton seal kits for hydraulic control valves. Each kit comes complete with every O-ring required to completely rebuild the control valve on site. No need to send the entire control valve back to the factory to be rebuilt.

Another great feature of EECO Hydraulic Control Valves is the simplicity of disassembly and reassembly without the fear of losing lose parts or springs.



### **KIT # 8088V - UV-4R VITON SEAL**

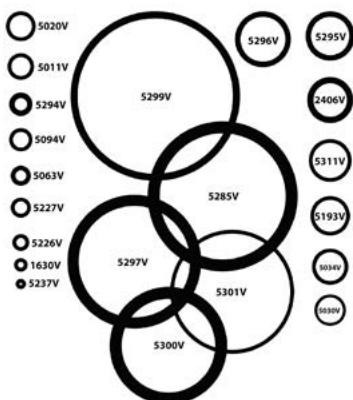
A complete seal replacement kit (P/N 8088V) for your in-service UV-4R series control valves.



### **KIT # 5131V - UV-5 SERIES VITON SEAL KIT**

A complete seal replacement kit (P/N 5131V) for your in-service UV-5 series valves including UV-5A, UV-5(A/B)T, & UV-5(A/B)TC control valves.

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



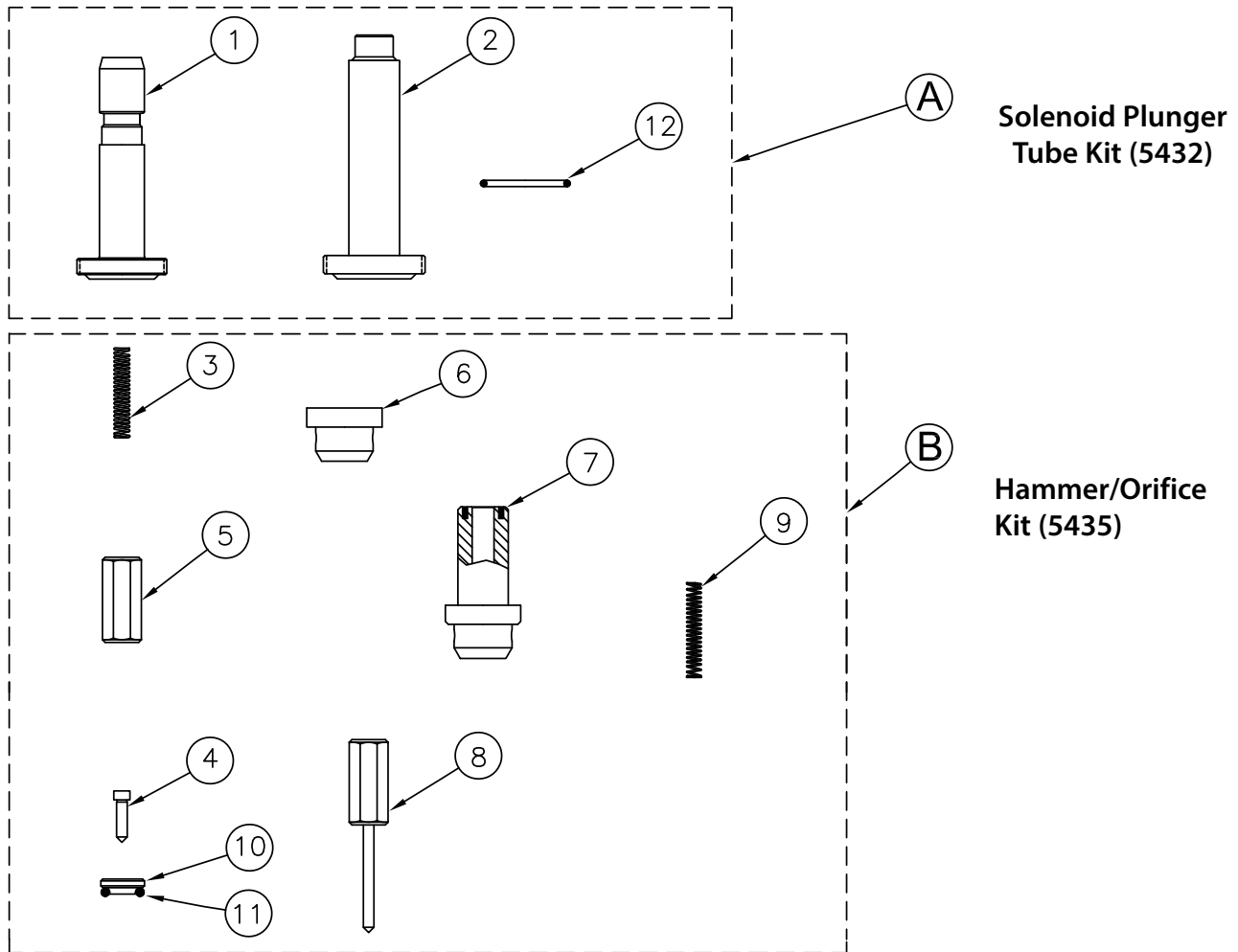
### **KIT # 5317V - UV-7B & BC VITON SEAL KIT**

A complete seal replacement kit (P/N 5317V) for your in-service UV-7B(C) series valves.

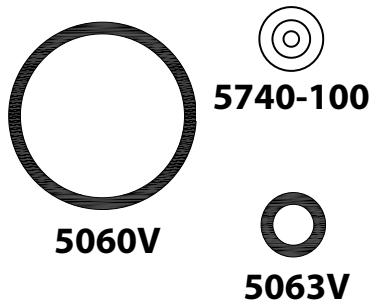
Items on this page are not shown to scale.

# Control Valve – Solenoid Kits

## SOLENOID KITS FOR UV-5(A/B)T(C)



Note: The solenoid kits shown above can be ordered together as Part # 5106V, or individually as Part No.'s 5432 and 5435. A high pressure version of the Hammer/Orifice Kit (5435) is available, order 5435HP.

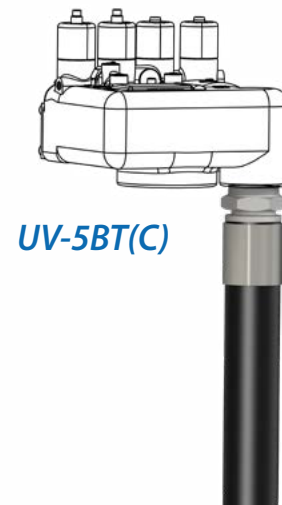
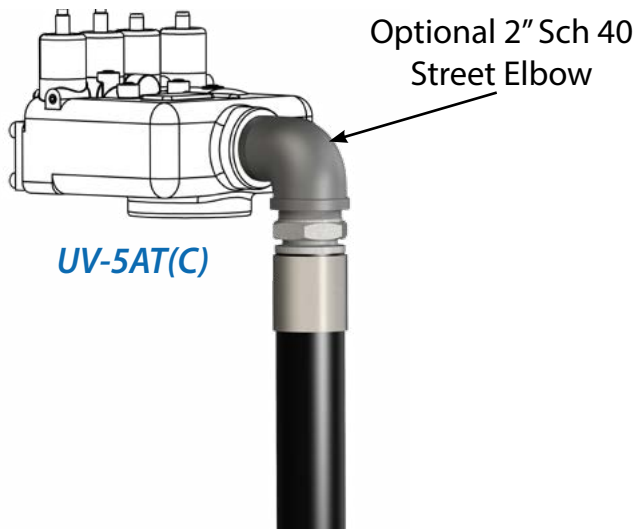


Parts included with Kit 5106V

ITEM	PART NUMBER	QTY	LOCATION & DESCRIPTION
<b>A</b>			
<b>SOLENOID PLUNGER TUBE KIT(5432)</b>			
1	5129A	2	N/C PLUNGER TUBE ASSEMBLY
2	5128A	2	N/O PLUNGER TUBE ASSEMBLY
12	5060V	4	O-RING N/C & N/O PLUNGER TUBES
<b>B</b>			
<b>HAMMER/ORIFICE KIT(5435)</b>			
9	5054	2	N/O HAMMER LIFT OFF SPRING
7	5066BA	2	N/O NEEDLE ORIFICE ASSEMBLY
6	5062	2	N/C NEEDLE ORIFICE ASSEMBLY
5	5732	2	N/C SOLENOID HAMMER
3	5055	2	N/C NEEDLE HOLD OUT SPRING
11	5063V	4	O-RING N/C & N/O NEEDLE ORIFICE ASSY
10	5740-100	4	NEEDLE ORIFICE INSERT
8	5130A	2	N/O PLUNGER ASSEMBLY
4	5059	2	N/C HAMMER NEEDLE

## Product Highlight - UV-5 Series Return Port Hose

Elevator Equipment Corporation offers a flexible rubber hose for the Return Port of our UV-5 Series Control Valves. This part is composed of a 2" male NPT fitting along with a 2 foot long rubber hose. The free end of the hose can be directed to any desired position in the Power Unit and secured.



## Hand Pump



The EECO Hand Pump (EHP) is designed for emergency operation to lift a hydraulic elevator.

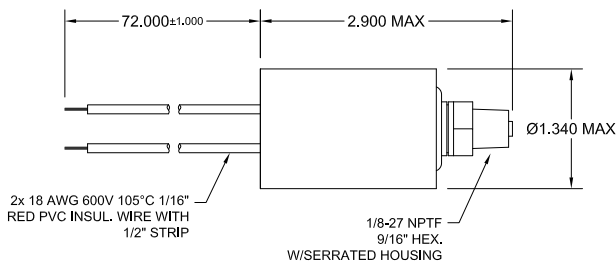


# Low Pressure Switches

## N.O. LOW PRESSURE SWITCH



**Model No. 5253**



**SWITCH SPECIFICATIONS:**

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

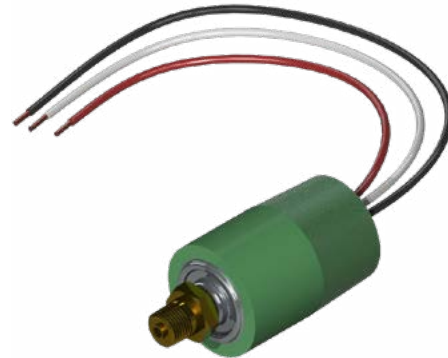
**SWITCH CONFIGURATIONS**

SPST AT ATMOSPHERIC PRESSURE: OPEN

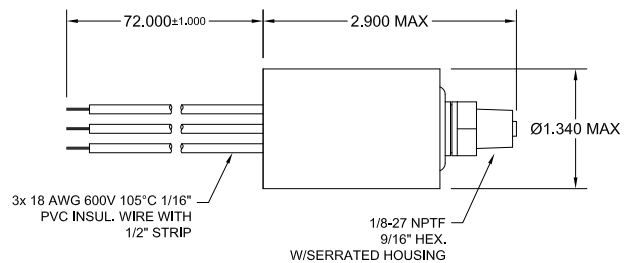
THE MECHANICAL CONNECTION IS 1/8-27 NPTF MALE CONNECTION.

LEAD WIRES ARE 72" ± 1.000 OF #18 AWG WITH INSULATION RATED FOR 105° IN OIL.

## N.O. / N.C. LOW PRESSURE SWITCH



**Model No. 5245**



**SWITCH SPECIFICATIONS:**

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

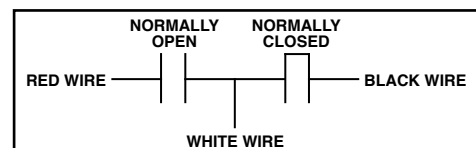
**SWITCH CONFIGURATIONS**

SPDT AT ATMOSPHERIC PRESSURE: OPEN

THE MECHANICAL CONNECTION IS 1/8-27 NPTF MALE CONNECTION.

LEAD WIRES ARE 72" ± 1.000 OF #18 AWG WITH INSULATION RATED FOR 105° IN OIL.

**PRESSURE SWITCH CIRCUITRY**



THE WHITE WIRE WILL ALWAYS BE CONNECTED TO THE CIRCUIT

# Load Weighing Switches & Kits

## **LOAD WEIGHING SWITCH**

The **Load Weighing Switch (LWS)** is a field adjustable switch. It has a normally open and normally closed contact and is supplied with 48" leads. The switch is mounted by a 1/4" NPT fitting and has a provision to attach a 1/2" conduit.

### Specifications:

- SPDT, 5 Amp @125/250 VAC
- Temperature Range: -20° to +165°
- UL Recognized and CSA Listed
- Pressure Rated to 7000 psi
- Adjustable Range ±2%
- Increasing 250 - 600 psi
- Decreasing 190 - 450 psi



*Model No. LWS - 01*

## **LOAD WEIGHING KIT**

EECO's **Load Weighing Kit (LWK)** is an addition to a new or existing Power Unit to prevent the elevator from being overloaded. The switch can be wired into the controller, if the provision is available, through either a normally open or normally closed contact. The kit consists of a field adjustable pressure switch with 48" wire leads, a 4-1/2" long grooved nipple (2", 2-1/2", 3", & 4" sch 80), a 1/2" flex 90° screw-in conduit fitting, and (3) 5'-0" extensions of 18 AWG wire with butt splices and #8 spade terminals.



MODEL NO	OIL LINE SIZE
LWK-20	2"
LWK-25	2.5"
LWK-30	3"
LWK-40	4"

# Control Valve – Troubleshooting Kits

## CONTROL VALVE TOOLS - CONTINUED



The EECO Control Valve Adjustment Kit was created to provide the mechanic with the tools to troubleshoot and adjust an EECO Control Valve.

**Model No. VAK**



The **Troubleshooting Kit** was created to provide mechanics with the most common parts needed to service UV-4R, UV-5A, UV-5A(B) T(C), and UV-7B(C) Series valves in the field.

**Model No. TSK4 For UV-4R**

**Model No. TSK5 For UV-5A(B)T(C)**

**Model No. TSK7 For UV-7B(C)**

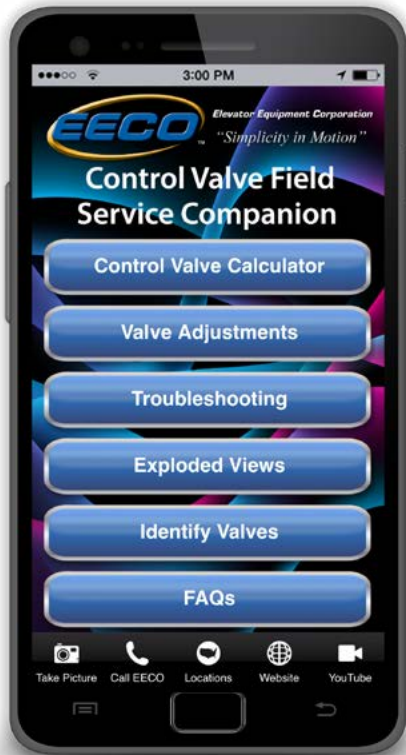


The **Combination Valve Adjustment Wrench** is a handy tool used to make the necessary adjustments to any EECO Control Valve. This tool has a convenient pen clip to store in your pocket.

**Part No. 5712**

# Control Valve – Apps & Calculators

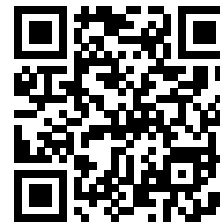
## CONTROL VALVE FIELD SERVICE COMPANION



This mobile application was developed to provide an easy-to-use means of obtaining and verifying engineering information for your application, checking the proper control valve size, adjusting procedures, troubleshooting, and more!

This robust application will provide all the information a field mechanic requires at the job site to efficiently service, adjust, and maintain EECO Control Valves.

*Available on*



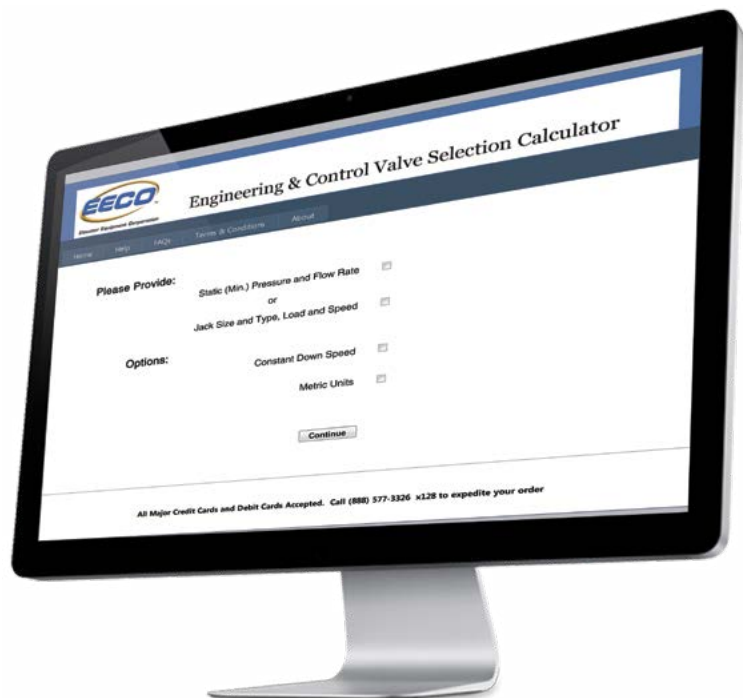
## ENGINEERING & CONTROL VALVE SELECTION CALCULATOR

This website was developed to provide an easy-to-use means of obtaining engineering information for your application and selecting the proper EECO Control Valve.

This versatile calculator can be used for all types of hydraulic elevator systems and will allow the user to order the selected control valve along with available accessories.

**Access Calculator Online at:**

[www.eecovalveapp.com](http://www.eecovalveapp.com)





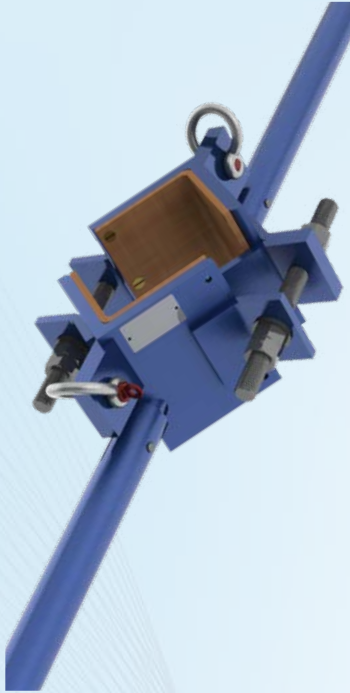




# EECO SERVICE TOOLS

All EECO  
Products are

Green  
Compatible



Piston Clamp/Wrench



PVC Clamp



Piston Hoist Ring



Temporary Power Unit

EECO Control Valves for Commercial and Residential/LULA Applications

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# Lifting Tools

## Piston Clamp / Wrench



Model No.	Size Range
PCW-24	2 1/2"-4"
PCW-47	4 1/8"-7"
PCW-712	7 1/8"-12"

**Piston Clamp / Wrenches (PCW)** are designed to safely lift, hold, and tighten pistons during construction. The welded steel construction with replaceable tension pads and tensioning bolts for applying equal pressure around a piston ensures higher gripping force than wooden clamps. The maximum rated load for the Piston Clamp / Wrench is 1,950 lbs.

## Cylinder Lifting Clamp



Model No.	Cylinder O.D.	Rated Load	Bolt Torque
CLC-05	5 9/16"	500 lbs	50 ft-lbs
CLC-06	6 5/8"	500 lbs	50 ft-lbs
CLC-08	8 5/8"	800 lbs	65 ft-lbs
CLC-10	10 3/4"	800 lbs	65 ft-lbs
CLC-12	12 3/4"	800 lbs	65 ft-lbs
CLC-14	14"	1050 lbs	65 ft-lbs
CLC-16	16"	1400 lbs	75 ft-lbs
CLC-18	18"	1400 lbs	75 ft-lbs
CLC-20	20"	2000 lbs	75 ft-lbs

**Cylinder Lifting Clamps (CLC)** are designed to lift and hold hydraulic jack cylinders safely during construction. Constructed of formed steel bar for light weight and easy handling. These clamps are equipped with shackles for lifting and tensioning bolts for applying pressure around cylinder pipe.

## Telescopic Cylinder Lifting Clamp

Model No.	Jack Model
TLC-2250	TJR-250
TLC-2275	TJR-275
TLC-2400	TJR-400
TLC-2450	TJR-450
TLC-3160	TJ3-160
TLC-3250	TJ3-250



**Telescopic Lifting Clamp Assemblies (TLC)** are specifically designed to lift EECO Telescopic Jacks, and are to be mounted on the cylinder under the lower head. These clamps are designed to lift and hold hydraulic jack cylinders safely during construction. Constructed of formed steel bar for light weight and easy handling. These clamps are equipped with shackles for lifting and tensioning bolts for applying pressure around cylinder pipe. The maximum rated load for the Telescopic Cylinder Lifting Clamp is 2,000 lbs.

## PVC Lifting Clamp

Model No.	Description	PVC O.D.
PVCC-06	6" PVC Lifting Clamp Assembly	6 5/8"
PVCC-08	8" PVC Lifting Clamp Assembly	8 5/8"
PVCC-10	10" PVC Lifting Clamp Assembly	10 3/4"
PVCC-12	12" PVC Lifting Clamp Assembly	12 3/4"
PVCC-14	14" PVC Lifting Clamp Assembly	14"
PVCC-16	16" PVC Lifting Clamp Assembly	16"
PVCC-18	18" PVC Lifting Clamp Assembly	18"
PVCC-20	20" PVC Lifting Clamp Assembly	20"
PVCC-24	24" PVC Lifting Clamp Assembly	24"



**PVC Lifting Clamps (PVCC)** are designed to lift and hold flush joint PVC pipe safely. Constructed of formed and welded 1/4" steel plate for light weight and easy handling, these clamps are equipped with two holding tabs and shackles for lifting. A tee bolt tensioner is used to apply pressure around PVC pipe with cupped set screws for gripping. The maximum rated load for the PVC Lifting Clamp is 3,000 lbs.

## Piston Hoist Ring

The **Piston Hoist Rings** are specifically designed to lift EECO Jack Pistons. The hoist ring attaches to a Lifting Bonnet which is then screwed onto the top of the piston. Lifting Bonnets are available for all EECO Pistons. The maximum rated load for the Piston Hoist Ring is 3,000 lbs. Contact EECO for more information.



## Telescopic Piston Lifting Ring

**Telescopic Piston Lifting Rings** are specifically designed to lift EECO Telescopic Jacks. The hoist ring attaches to lifting plates which in turn are attached to the flanges of the jack. Lifting Plates are available for all sizes of EECO's Telescopic jacks. The maximum rated load for the Telescopic Jack Hoist Ring is 3,000 lbs.



Model No.	Description	Item Number
TPL-2175	TJR-175 Piston Lifting Assembly	46.175213464000
TPL-2250	TJR-250 Piston Lifting Assembly	46.250213465000
TPL-2275	TJR-275 Piston Lifting Assembly	46.275213466000
TPL-2350	TJR-350 Piston Lifting Assembly	46.350213467000
TPL-2400	TJR-400 Piston Lifting Assembly	46.400213468000
TPL-2450	TJR-450 Piston Lifting Assembly	46.450213469000
TPL-3250	TJ3-250 Piston Lifting Assembly	46.250313470000

## No Weld Cylinder Lifting Ring

**No Weld Cylinder Lifting Rings** are specifically designed to lift EECO Cylinders with Threaded No Weld Joints. The Lifting ring attaches to a cylinder coupling which then is screwed into the inner threads of the Jack Cylinder. These Cylinder Lifting Rings are available for all sizes of EECO Jack Cylinders with Threaded No Weld Joints. The maximum rated load for the Cylinder Hoist Ring is 3,000 lbs.

Model No.	Description	Item Number
NWCL-06	LIFTING ASSY 6" CYLINDER	11.004671260600
NWCL-08	LIFTING ASSY 8" CYLINDER	11.001671260700
NWCL-10	LIFTING ASSY 10" CYLINDER	11.001671260800



## Lubricants – EECOLube



EECOLube is a performance improving friction modifier oil additive formulated to reduce “Stick Slip”, rough starts & stops, and prevent noise in hydraulic elevator systems. EECOLube is not meant to fix all issues associated with hydraulic elevators, but has been proven to greatly improve ride performance under demanding conditions. EECOLube is compatible with petroleum or biodegradable oils.

## Adhesives – PeViCol PVC Cement

**PeViCol<sup>®</sup> PVC Cement**

The **PeViCol PVC Cement (PVC-1)** was specially designed for gluing PVC pipe. This non-flammable cement does not require a primer. The low odor and low emissions allows it to be used indoors with minimal ventilation. The cement can be used in a temperature range from 32° - 175° F (0° - 80° C). PeViCol PVC Cement, a NordColl product, is not classified as an environmental toxin and the solvents in solution are biologically degradable.



# Service Tools – Installation & Repair



## Adjustable Spanner Wrench

The **Adjustable Spanner Wrench (AWS-12)** can be used on the Telescopic Jack's Head Flanges. The wrench's drop forged jaws are 3/8" thick with 11 adjustable positions for a capacity from 4-3/4" to 12-3/4" outside diameter and the handle is 1" in diameter and 24" long.

## Evacuation Pump Assembly

This **Evacuation Pump (EP-01)** is used to drain residual oil remaining in the space between the cylinder(s) and the piston(s) while disassembling the Telescopic Jacks to service the internal head(s). The pump has a 1/4" shaft to fit a drill motor (minimum speed of 800 rpm) and is supplied with 25'-0" of flexible tubing. Longer tubing lengths are available. The pump has a maximum head of 55'-0", 1.8 gpm based on 1200 rpm, and operating temperature of 120° F. Do not pump gasoline or other flammable fluids.



## Piston Repair Kit

This **Piston Repair Kit (PRK-01)** is designed to repair damaged pistons with deep scratches or pits that cause excessive weeping of oil through the seals. The two part metal filled epoxy is ideal for filling in deep scratches and pits that are too deep to be removed with just light sanding. Using this kit, once properly applied, can prolong a damaged piston and seal life.

# The EECO Portable Oil Filtration System

The EECO Portable Oil Filtration System is a self-contained unit. It is designed primarily to filter hydraulic oil and it can be also used as a transfer pump.



Shown with optional Water Removal Filter

The system is mounted on a heavy duty cart with a drip pan for easy mobility. Simply plug the provided power cord into the Unit and into a 110 VAC/13 amp rated outlet, place the inlet and outlet wands in the appropriate reservoirs, open the ball valves, and flip the on/off power switch.

The Unit is equipped with:

- 1 HP Motor
- 10 gpm Pump
- 3 ft. long Steel Wands with Ball Valves attached to 10 ft. Hoses
- 10 Micron Spin-On Filter\*
- 5 Micron Final Filter\*
- 10 ft. Power Cord
- On/Off Switch
- Optional Canister Water Removal Filter\* (15 oz. holding Capacity)

\* Replacement Filters available

# The Temporary Power Unit (TPU-001)

The Temporary Power Unit (TPU-001) is used to operate a “running platform” during construction when only temporary power is available.



Plug or wire this unit into a 208/230V, single phase, 60 Hertz, circuit, plumb to the jack assembly, and insert the provided wand into an oil reservoir to operate the “running platform”.

This unit is supplied with 2” grooved coupling for jack assembly connection.

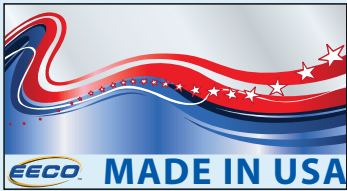
The Unit is equipped with:

- 5 HP Motor - 23/21 FLA
- 17 gpm Pump
- 3 ft. long Steel Wand
- 10 Micron Spin-On Filter\*
- Run Station with 100' cable

\*Replacement filter inserts available







# EECO COMPONENTS

All EECO  
Products are

Green  
Compatible



Buffers



Limit Switches



PRV



Doors & Entrances

## EECO Control Valves for Commercial and Residential/LULA Applications

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# HOISTWAY & MACHINE ROOM



## Spring Buffers

We custom manufacture each car buffer to EECO's demanding standards of quality and durability. Each set of car buffers is designed and manufactured based on the requirements of a given job. You can be assured that the car buffers you receive are the correct ones for that specific installation.

## Pipe Stands

The **Pipe Stand** is a simple and economical design that allows the mounting of oil lines and electrical conduit clear of the pit floor. For 2", 2-1/2" & 3" hydraulic lines. Standard unit is 24" tall with clamps. Order by pipe size.



## Oil Buffers

EECO Oil Buffers are easy to install and are reliable. They conform to ASME 17.1 & B44 Codes and are approved by CSA and the State of California. These Oil Buffers come with a pre-installed limit switch.



EECO has a large assortment of Oil Line Components from Grooved Clamps, Tee Fittings, Reducers, and more. Also available are standardized Oil Line Kits which are available with the most common length of oil line and fittings. Contact EECO for more details.



# OIL LINE COMPONENTS

## Isolation Couplings



Model No.	Oil Line Size	Inlet Type	Outlet Type
ISO-20GG	2"	Grooved	Grooved
ISO-20GT		Grooved	NPT
ISO-20TT		NPT	NPT
ISO-25GG	2.5"	Grooved	Grooved
ISO-25GT		Grooved	NPT
ISO-25TT		NPT	NPT
ISO-30GG	3"	Grooved	Grooved
ISO-30GT		Grooved	NPT
ISO-30TT		NPT	NPT

The **Isolation Couplings (ISO)** are available in three sizes both grooved and threaded. These couplings are designed for electrical isolation with a Dielectric Strength of 42 kV. They will also help reduce vibration and reduce noise transmission to the cab. The maximum operating temperature for these Isolation Couplings is 225° F (107° C).

All Isolation Couplings are designed to meet or exceed ASME A17.1/CSA B44.

## Pipe Rupture Valves



Model No.	Oil Line Size	Inlet Type	Trip Flow Range
PRV-075G	.75"	Grooved	2-26
PRV-075T		NPT	
PRV-100G	1"	Grooved	27-45
PRV-100T		NPT	
PRV-150G	1.5"	Grooved	46-110
PRV-150T		NPT	
PRV-200G	2"	Grooved	111-208
PRV-200T		NPT	
PRV-250G	2.5"	Grooved	209-318
PRV-250T		NPT	
PRV-300G	3"	Grooved	319-546
PRV-300T		NPT	

The **Pipe Rupture Valve (PRV)** is a simple but effective way to quickly and smoothly stop a car should an overspeed of the elevator occur. The PRV is connected directly to the pressure line between the control valve and the jack. The supplied connections on the PRV make installation quick and easy. The PRV comes with either NPT or grooved connections. Trip flow range is GPM x 1.25.

## Shut Off Valves



Model No.	Oil Line Size	Inlet Type
SOV-20G	2"	Grooved
SOV-20T		NPT
SOV-25G	2.5"	Grooved
SOV-25T		NPT
SOV-30G	3"	Grooved
SOV-30T		NPT
SOV-40G	4"	Grooved
SOV-40T		NPT

The **Shut Off Valve (SOV)** is used to isolate one section of the system from another. All Shut Off Valves are constructed of ductile iron bodies, use a stainless steel ball, and are "Full Port". A locking device is standard on all sizes.

## Limit Switches



The **Limit Switch (LS)** is designed primarily for use in elevator hoistways as Access, Slow Down, Normal, and Final Limits. The light weight durable construction of the LS-1B results in a reduced noise level and is designed for repeated reliable operation.

Switches are available in two configurations, SPDT with one normally open and one normally closed contact and DPDT with two normally open and two normally closed contacts. These switches are UL and CSA listed.

Model No.	Description
LS-1B	Single Contact -SPDT
LS-1BD	Double Contact - DPDT
LS-1BW	Single Contact - Weather Resistant
LS-1BDW	Double Contact - Weather Resistant
LS-1BN	Single Contact - NEMA 4X
LS-1BDN	Double Contact - NEMA 4X

## Magnetic Switches

The **Permanent Magnet Switch (MV)** is designed primarily for applications requiring trouble free service. This switch provides a cost effective and simple solution for environments where mechanical contact between the actuating vane and switch is not desired.

Switches are available in two configurations, SPDT with one normally open & one normally closed contact and DPDT with two normally open & two normally closed contacts. These switches are UL and CSA listed.

Model No.	Description
MV-4C	Single Contact -SPDT
MV-4CD	Double Contact - DPDT
MV-4CN	Single Contact - NEMA 4X
MV-4CDN	Double Contact - NEMA 4X



## Inductor Switch



The **Permanent Magnet Inductor Switch (LDS-3004A)** is intended for use on hydraulic and electric elevators with speeds up to 400 feet per minute and one floor run control. The LDS-3004A is made to interface with either relay logic, micro-processor, or programmable logic controllers. The horseshoe shaped inductor switch provides noiseless sensing of slowdown and landing positions of the elevator.

The LDS-3004A Inductor Switch features solid metal construction and uses both a normally open and a normally closed contact reed switch as standard.

# Elevator Doors and Entrances

Elevator Equipment Corporation has expanded our product line. We offer Elevator Doors and Entrances in various finishes, manufactured in our Los Angeles, California, and Richmond, Indiana facilities. They also provide nationwide sales and support.

## Door Frames:

- Units come with knocked-down frames for shipping
- Save on installation costs
- Adjustable 7 gauge sill angle included
- Set of "Z" brackets from bottom of frame to sill angle, holds a ridged clear opening

## Complete unit frame consists

### Of U.L. approved:

- Door, sight guards, gibs, door retainer brackets, and fire tabs
- 14 ga frames-prime or stainless
- Set of strut angles
- Standard aluminum sill
- Dust cover plate
- Fascia plates available
- Nuts, bolts, etc.
- Units drilled to manufacturer's equipment

## Door sizes:

- Single Speed - Up to 48" x 84"
- Center Opening - Up to 48" x 84"
- 2 speed Handed - Up to 48" x 84"
- 2 speed Center Opening - Up to 96" x 84"

## Finishes Available:

- Primed
- #4 Stainless
- Powder Coat
- Other finishes available, Call EECO

## Sill Options:

- Aluminum
- Nickel Silver
- Stainless Steel



Hall Doors & Entrances are UL Fire Rated



File # R7883



File # R13907

Our EECO Entrance and Door team has over 75 years of experience in the design and fabrication of elevator entrances and doors.





**SINGLE SPEED**



**CENTER OPENING**



**HOISTWAY VIEW**



**HALLWAY VIEW**

# NOTABLE PROJECTS

Here are a few projects that have EECO equipment



### National Air and Space Museum

- National Air & Space Museum - Smithsonian Institute
- National Museum of The American Indian - Smithsonian Institute
- Social Security Administration - Washington DC
- The White House - Washington DC
- The U.S. Capitol Visitors Center - Washington DC



### M & M Store - Times Square - NYC

- The M & M Store - Times Square - NYC
- Apple Store - 5th Ave. NY, NY
- Macy's Department Store - NYC
- Multiple Long Island Railroad Stations - NYC
- Headquarters Of The United Nations - NYC
- Yale University Art Gallery - New Haven, CT
- United States Military Academy West Point - Orange County New York

- Naval Submarine Base New London - Groton, CT
- National Institute Of Standards And Technology - Gaithersburg, MD-Multiple Buildings
- Amway Center - Orlando, FL
- Southeast Pennsylvania Transportation Authority - Multiple Stations Multiple Cities
- Metropolitan Transit Authority - Multiple Stations Multiple Cities
- Washington Metro Area Transit Authority - Multiple Stations Multiple Cities
- O'Hare International Airport - Chicago, IL



### Wrigley Field

- Wrigley Field - Chicago, IL
- Ronald Reagan Washington Airport - Arlington, VA
- Microsoft Campus - Redmond, WA
- Department of Interior Library - Washington DC
- U.S. Nuclear Weapons Complex - Undisclosed Location
- Many, Many U.S. Military Bases, VA Hospitals And Other Government Installations.



# Notable Projects Cont'd



**J. Paul Getty Museum**

- J. Paul Getty Museum - Los Angeles, CA
- Autry Resources Center - Burbank, CA
- Nordstrom Del Amo - Torrance, CA
- San Diego State University - San Diego, CA
- Courtyard Marriott - Anaheim, CA
- LA City College Holmes Hall - Los Angeles, CA
- LA City College Student Services - Los Angeles, CA
- LAPD Metropolitan Division - Los Angeles, CA
- Long Beach City College - Long Beach, CA
- Glendale Galleria - Glendale, CA
- Chapman University - Orange, CA
- Safeway Supermarkets - Various Locations
- LA Trade Tech - Los Angeles, CA
- University of Southern California Heritage Hall - Los Angeles, CA
- Nordstrom The Grove - Los Angeles, CA
- McCarran Airport - Paradise, NV
- Los Angeles International Airport - Los Angeles, CA



**Griffith Park Observatory**

- Griffith Park Observatory - Los Angeles, CA
- Target San Francisco - San Francisco, CA
- The Broad Museum - Los Angeles, CA
- Los Angeles County Museum of Art - Los Angeles, CA
- Wallis Annenberg Center for Performing Arts - Beverly Hills, CA
- Los Angeles Pierce College - Woodland Hills, CA
- Children's Hospital Los Angeles - Los Angeles, CA
- Cal Poly Pomona - Pomona, CA
- Santa Monica City Hall - Santa Monica, CA
- Bay Area Rapid Transit - San Francisco, CA



**J. Paul Getty Villa**

- J. Paul Getty Villa - Pacific Palisades, CA
- Caltech Jorgensen Laboratory - Pasadena, CA
- Grossmont College - El Cajon, CA
- Los Angeles Metro Stations - Various Locations
- LA Live - Los Angeles, CA
- Kodak Building - Hollywood, CA

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**Elevator Equipment Corporation**

*"Simplicity in Motion"*



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