

- A. HEAVY DUTY ELECTRICAL DISCONNECT UNIT WITH MULTI-CONTACT CONNECTOR.
- B. DISCONNECT UNIT FITTER WITH PULLEY AND U-BOLT MOUNTING FOR INTERLOCKING NON-ROTATING ARM.
- C. DIVIDED PIPE ARM: 2-3/8 IN. O.D. SEPARATES CONTROL CABLE FROM ELECTRICAL AND SIGNAL WIRES. POSITION ALIGNED NON-ROTATING.
- D. POLE MOUNTED FITTER WITH PULLEY AND U-BOLT MOUNTING. MOUNTS DIRECTLY TO 6 INCH O.D. TENON ON POLE TOP.
- E. 6" POLE TOP JUNCTION BOX WITH COVER. J-HOOK ALSO PROVIDED FOR CABLE STRAIN RELIEF.
- F. CONNECTION BOX (OPTIONAL). DESIGN TO REPEL WATER. EASY OPEN SWING DOWN DESIGN PERMITS EASY ACCESS TO ELECTRICAL/SIGNAL WIRES FROM FIXTURE.
- G. CONTROL CABLE CONSTRUCTED OF 5/32 INCH DIA. STAINLESS STEEL 7 X 19 CONSTRUCTION CABLE (2 per pole).

- H. 3-CONDUCTOR, 14AWG. STRANDED 600 VOLT RATE IN SOOW CORD, 60". OTHER CABLE ASSEMBLIES ALSO AVAILABLE (See attached cable specs).
- I. CORROSION RESISTANT STRAIN RELIEF WITH CONNECTING LINK, FOR ELECTRICAL CABLE.
- J. CORROSION RESISTANT THREADED CONDUIT BRACKET FOR ATTACHING CONDUIT.
- K. 1 1/2" OR 1 1/4" PVC CONDUIT TO PROTECT CONTROL CABLE (CONDUIT BY OTHERS).

TOTAL EPA OF EACH ARM ASSY: 1.65
TOTAL WEIGHT PER ARM: 38 LBS (95 LBS WITH CONNECTION BOX).

Connector Current Rating: 35A/600V
Mechanical Rating: 200 LB (91 KG) with 9:1 safety factor
Wind Load Rating: 120mph w/1.3 Gust



Design

PTS6-4C-XX-GV-YY

System Specifications and Ordering Information

SYSTEM SPECIFICATIONS

Design PTS is comprised of the following major assemblies:

- ELECTRICAL DISCONNECT UNIT
- POLE TOP CONNECTION BOX
- DISCONNECT UNIT FITTER
- CONTROL CABLE
- DIVIDED PIPE ARM
- POLE MOUNTED FITTER AND ADAPTER
- ELECTRICAL WIRING AND CONNECTORS

ELECTRICAL DISCONNECT UNIT

3-WAY TRACKING GUIDE AND SUPPORT: Constructed of precision cast high strength aluminum alloy. A permanently fixed position piece incorporating a special tracking guide system, the 'maze', permitting the moveable portion of the Disconnect Unit to align in the same position every time the system is operated. This eliminates the need to re-orient the fixture. Twin high strength notches secure the load of the Lower Contact Assembly and fixture and work with the tracking guide system to assure stability.

ELECTRICAL CONTACTS: See following page.

DISCONNECT UNIT COVER: One piece hydro-spun heavy gauge aluminum cover.

GUIDE POST: Constructed of precision cast high strength stainless steel. Utilizes cast-in-place guide bar for precise alignment of Lower Contact Assembly with the fixed portion of the Disconnect Unit.

TWIN TRACKING SUPPORT ARMS: Made of precision cast high strength stainless steel. Dual arms provide balanced stability of the Disconnect Unit. When locked in the 3-Way Tracking Guide and Support notches, the Twin Tracking/Support Arms hold the weight of the light fixture and components, removing all tension from the Control Cable.

LOWER CONTACT ASSEMBLY: Constructed of precision cast high strength aluminum alloy. Features cast-in-place guide that mates with the fixed portion of the Disconnect Unit to aid in tracking and stability. All hardware used on the Lower Contact Assembly as well as the entire Disconnect Unit is corrosion resistant stainless steel.

WEATHER SEALING GASKET: Extra flexible polymer sealing gasket provides weather-tight seal between Lower Contact Assembly and Disconnect Unit Cover.

VIBRATION TEST

The electrical disconnect unit shall meet or exceed sine vibration tests of 3.5 g's within the frequency range of 5-60 Hz in all three axes for minimum of six 5-minute cycle each axes. It shall meet or exceed random vibration tests of frequency range 60-1000 HZ at .025 g2/Hz applied for 30 minutes in each of the three axes. It shall have results to exhibit no electrical discontinuities greater than 10 microseconds. Tests applicable to Electrical Disconnect Unit and attached components.

DISCONNECT UNIT FITTER

Cast of heavy duty aluminum alloy to fit 2-3/8 inch outside diameter Divided Pipe Arm. Fitter designed to completely isolate moving Control Cable from the electrical wires. A molybdenum impregnated nylon pulley provides high strength and low resistance for the moving Control Cable thereby increasing the life of the cable. Pulley uses permanently lubricated bearing.

DIVIDED PIPE ARM

A 2 inch (2-3/8 inch O.D.) steel pipe with galvanized finish standard. Divided entire length to keep Control Cable and electrical wires separate. Provides rigid support between the Disconnect Unit Fitter and Pole Mounted Fitter. Interlocking arm and fitters provides positive non-rotating positioning of pipe arm for all outdoor pole and wall mounted lowering systems.

POLE MOUNTED FITTER AND ADAPTER

Heavy duty cast aluminum alloy to fit 2-3/8 inch O.D. Divided Pipe Arm. Utilizes cast-in-place cable stop to prevent cable connections from entering pulley. Pulley is molybdenum impregnated nylon. Two U-bolt pipe clamps rigidly hold the Divided Pipe Arm. Interlocking arm and fitters provides positive non-rotating positioning of pipe arm for all outdoor pole lowering systems. Fitter designed to bolt directly to a 6 inch diameter pole top tenon using an adapter provided.

CONTROL CABLE

316 Stainless steel 5/32 inch diameter 7 x 19 construction aircraft cable (See drawing of SS1110-XX).

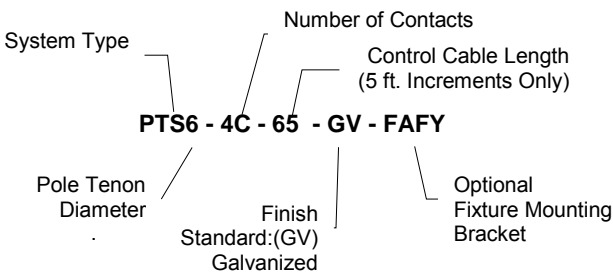
ELECTRICAL WIRING AND CONNECTORS

Systems are prewired from Disc. Unit to Pole Top Junction Box and from Disc. Unit to fixture for easy installation.

POLE TOP CONNECTION BOX

Cast aluminum round connection chamber and removable top cap to fit 6" O.D. tenon. Equipped with cord strain relief.

ORDERING INFORMATION



- Design PTS is shipped assembled and prewired.
- Standard System Finish is Raw Aluminum and Galvanized Steel. Other Painted Finishes Available-Consult Factory.
- Pole, Pole Top Connection Box, Light Fixture, and Lowering Tool Ordered Separately.
- Pole Wiring, Fixture Mounting Hardware, Pole Base and Related Hardware by others.

Contact LIGHTING & LOWERING SYSTEMS for specific catalog number codes required for your application

NOT FOR LIFTING PEOPLE OR RAISING/LOWERING OVER PEOPLE.

Specifications Guide

- ❖ The EDU shall have a 3-way tracking guide and support. It shall be constructed of precision cast high strength aluminum alloy 356-T6. A permanently fixed position piece incorporating a special tracking guide system permits the moveable portion of the *Disconnect Unit* to align in the same position every time the system is operated, thereby eliminating the need to re-orientate the fixture. The Electrical Disconnect Unit shall have twin high strength stainless steel locking cams securing the load of the *Lower Contact Assembly* and fixture. All tension on the cable is relieved when the fixture is in the raised position.

- ❖ The MULTI-CONTACT Connector assembly shall be modular for easy installation and retrofit requirements. The connector shall have 2 size 12 contacts (optional up to 8). Material of contacts shall be copper with nickel plating, and with gold plating over nickel per MIL-G-45204. Gold plating shall keep contacts from corroding. Electrical contacts shall have a rating of 20 year mean time between failures. All hardware shall be corrosion resistant stainless steel. It shall have a self-aligning and self-adjusting mechanical system comprised of two principal assemblies:

The UPPER CONTACT HALF shall house the socket contacts. It shall incorporate spring assisted polymer contact body with precision-machined stainless steel guideposts. The socket contact body shall have integral guideposts for precise contact alignment.

The LOWER CONTACT HALF shall house the pin contacts comprised of spring assisted polymer contact body with precision-machined stainless steel guidepost receivers. The pin contact body aligns with guideposts of integral socket body guideposts.

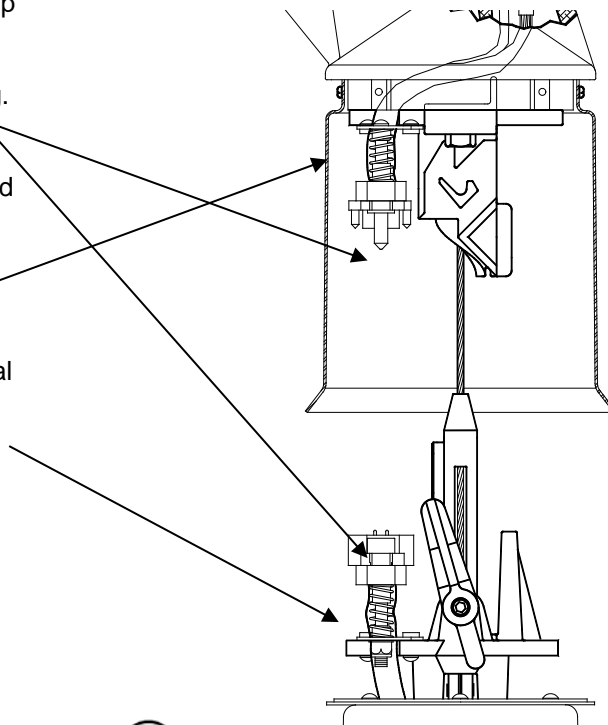
- ❖ The wire leads are potted in Superflex® Black RTV Silicone, an industrial grade sealant for bonding and sealing.

- ❖ The unit shall have a guidepost constructed of precision cast high strength stainless steel. It shall utilize a cast-in-place guide bar for precise alignment of *Lower Contact Assembly* with the fixed portion of the *EDU*.

- ❖ The **EDU shall have** twin (2) tracking support arms made of precision cast high strength stainless steel. When locked in the *3-Way Tracking Guide and Support* notches, the *Twin Tracking/Support Arms* shall hold the weight of the fixture and components and it shall remove all tension from the *Control Cable or Lowering Cable*.

- ❖ The lower contact assembly shall be constructed of precision cast high strength aluminum alloy. It shall feature a cast-in-place guide that mate with the fixed portion of the *Disconnect Unit* to aid in tracking and stability. All hardware used on the *Lower Contact Assembly* as well as the entire *Disconnect Unit* shall be made of corrosion resistant stainless steel.

- ❖ The disconnect unit shall have a **HOUSING SEAL** made up of a spun aluminum closure ring with a sealing gasket constructed of extra flexible polymer providing a weather-tight seal between *Lower Contact Assembly* and *Disconnect Unit Cover*. This provides a flexible environmental seal. Seal swipes and conforms to interior of cylinder housing during all operating stages of the disconnect unit.



U.S. Patent No.
6,261,122

Maximum Electrical Contact Rating: 35 Amps at 600 volts per contact (2 circuit, 4 contacts max).

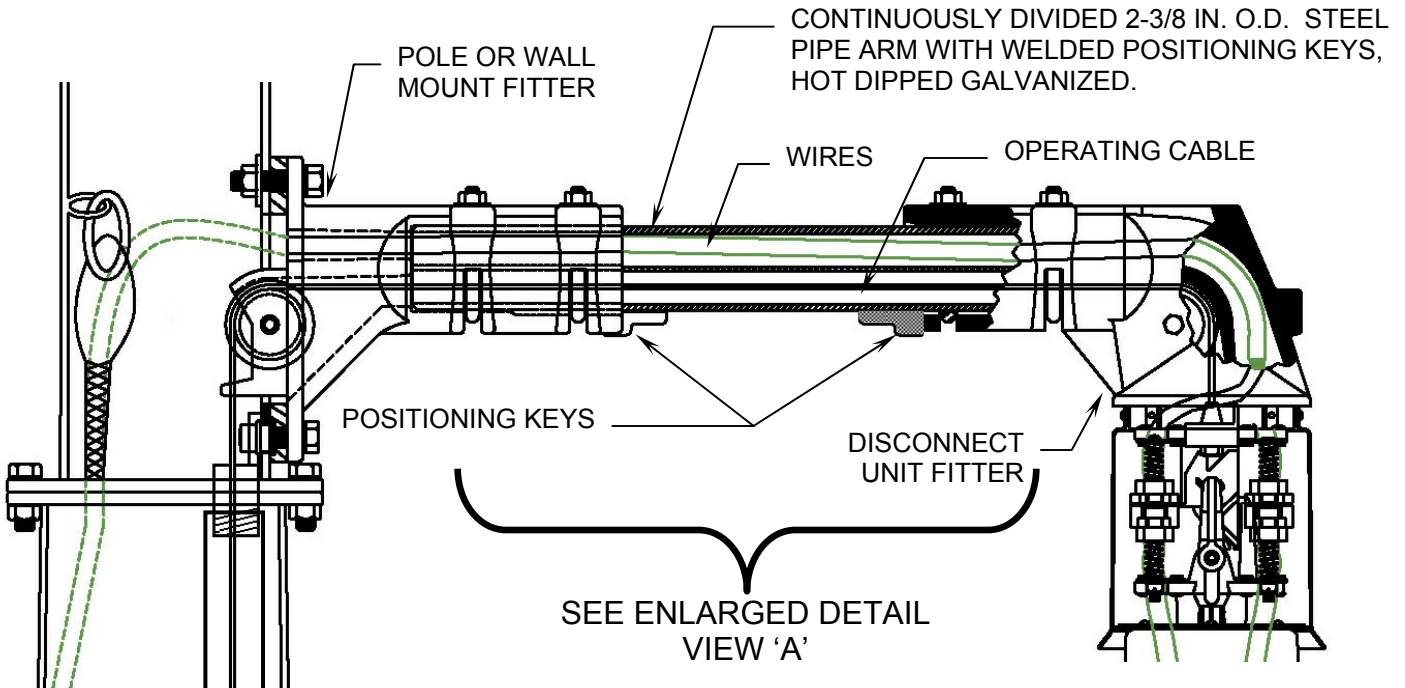
Mechanical Rating: 200 lbs (91kgs) with 10:1 safety factor

Wind Load Rating: 120MPH w/1.3 Gust with 1.65 safety factor

SYSTEM DESIGNED SPECIFICALLY FOR USE WITH LIGHT FIXTURES, CAMERAS, AND RELATED EQUIPMENT ONLY.
NOT FOR LIFTING PEOPLE OR THINGS OVER PEOPLE.
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

INTERLOCKING ARM & FITTERS

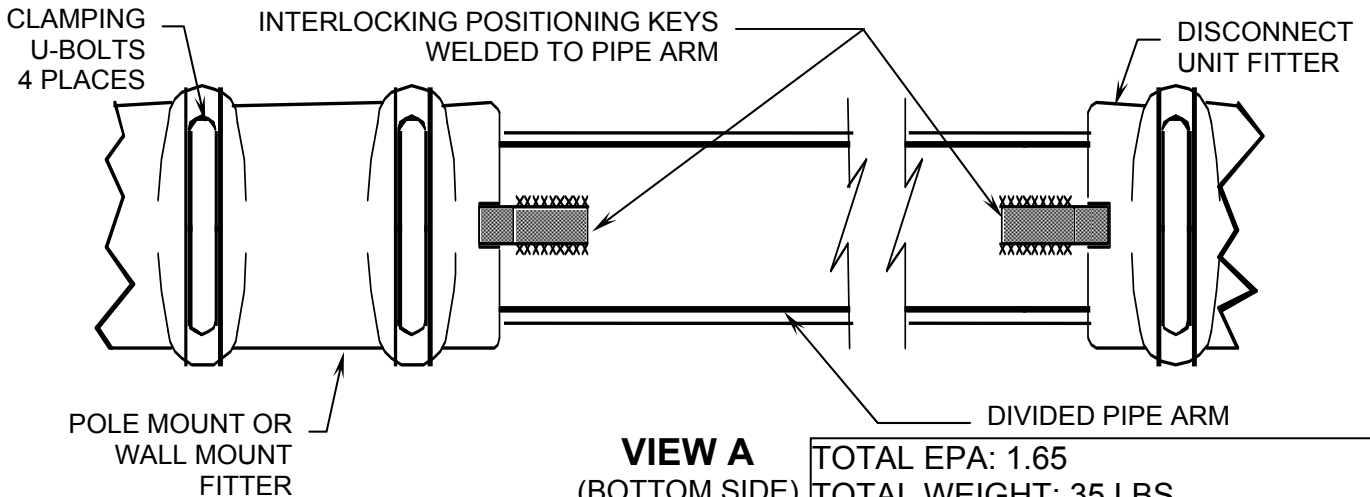
PROVIDES POSITIVE NON-ROTATING POSITIONING
OF PIPE ARM FOR ALL OUTDOOR
POLE AND WALL MOUNTED LOWERING SYSTEMS



FEATURES

Specially shaped steel keys are welded to divided pipe arm before arm is galvanized. Precise alignment of keys with corresponding notches in the pole/wall fitter and the disconnect unit fitter provide positive positioning and prevents rotating of components about the divided pipe arm during extreme environmental conditions.

Pipe arm has full length divider separating the wires from the movement of the control cable. Separate chambers within the fitters for electrical wires and the control cable assures complete protection to the wires during the operation of the system.

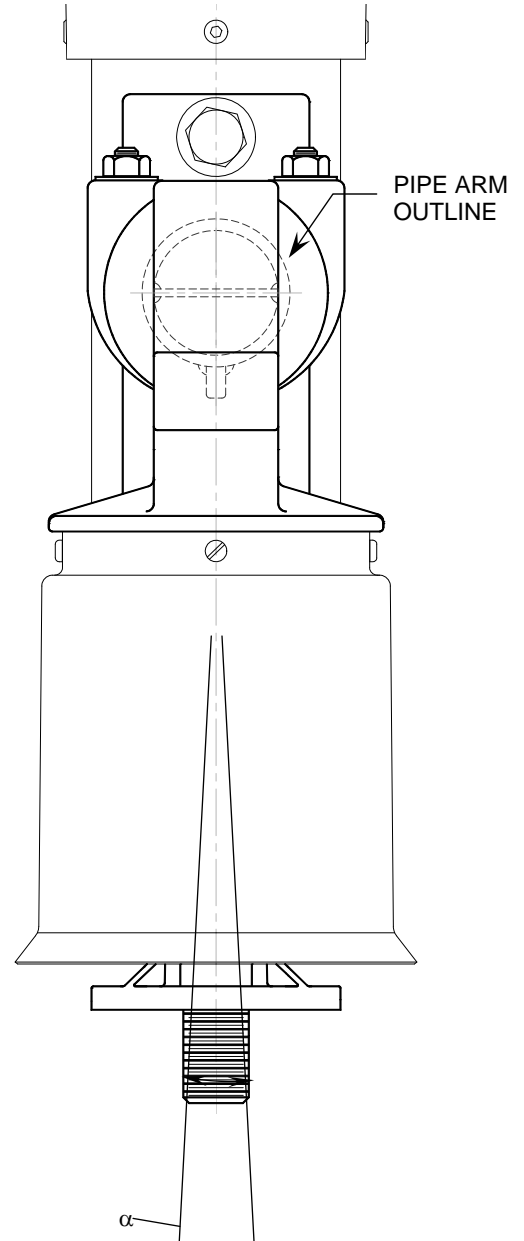
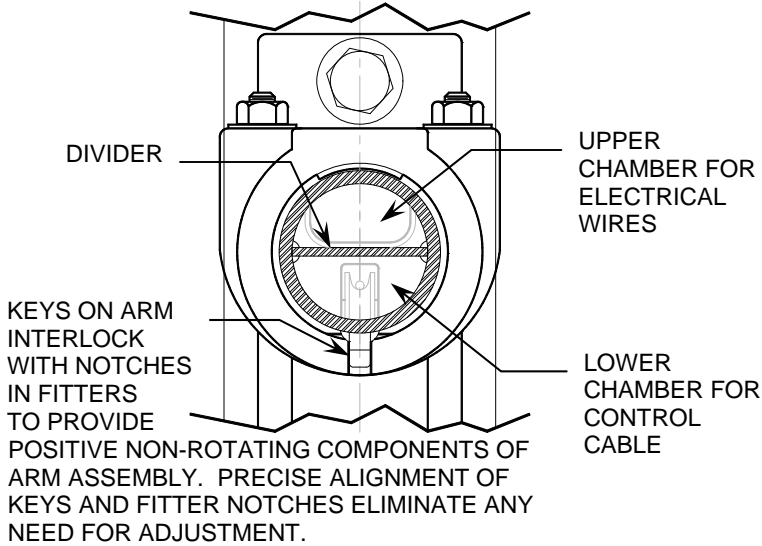


VIEW A
(BOTTOM SIDE)

TOTAL EPA: 1.65
TOTAL WEIGHT: 35 LBS
(includes arm, disconnect unit, pole top junction box)

PROVIDES POSITIVE NON-ROTATING POSITIONING
OF PIPE ARM FOR ALL OUTDOOR
POLE AND WALL MOUNTED LOWERING SYSTEMS

ARM CROSS SECTION



DETAILS OF FEATURES

NOTE: WHEN THE INTERLOCKING POSITIONING KEYS OF THE ARM ASSEMBLY ARE MATED WITH THE CORRESPONDING NOTCHES IN THE FITTERS, THE POLE SHAFT MUST BE PLUMB FOR THE PROPER OPERATION OF THE SYSTEM.

ANGLE α : The angle α shown in the END VIEW is based on mechanical tolerances between mating parts and should not exceed a total of $1/2^\circ$. This deviation from plumb will not affect the operation of the components of the arm assembly. All tolerances are based on the pole shaft being plumb when installed.

PIPE ARM: (See Fig. 1) Constructed of 2 inch structural steel pipe having an outside diameter of 2-3/8 inch. Positioning keys are permanently welded to the pipe arm at precise positions that align with notches in the ends of each of the fitters. Arm finish is hot dip galvanized after all welding is completed. Optional finishes over the galvanizing are available to match the color of the pole. Ends of the pipe arm bottom out against the inside of the fitters a small fraction of an inch before the keys bottom out in the notches to provide a secure fit.

The pipe arm is installed complete with the rest of the arm components at the factory and is pre-wired to eliminate any need for adjustment in the field.

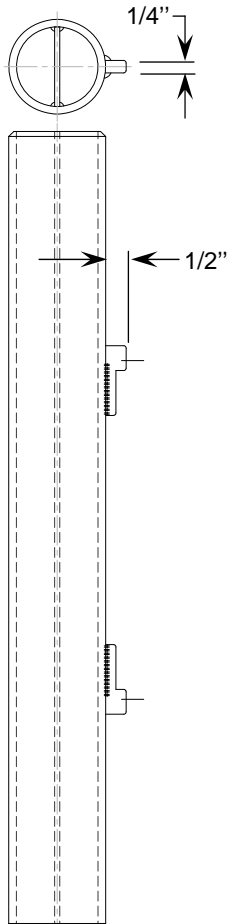
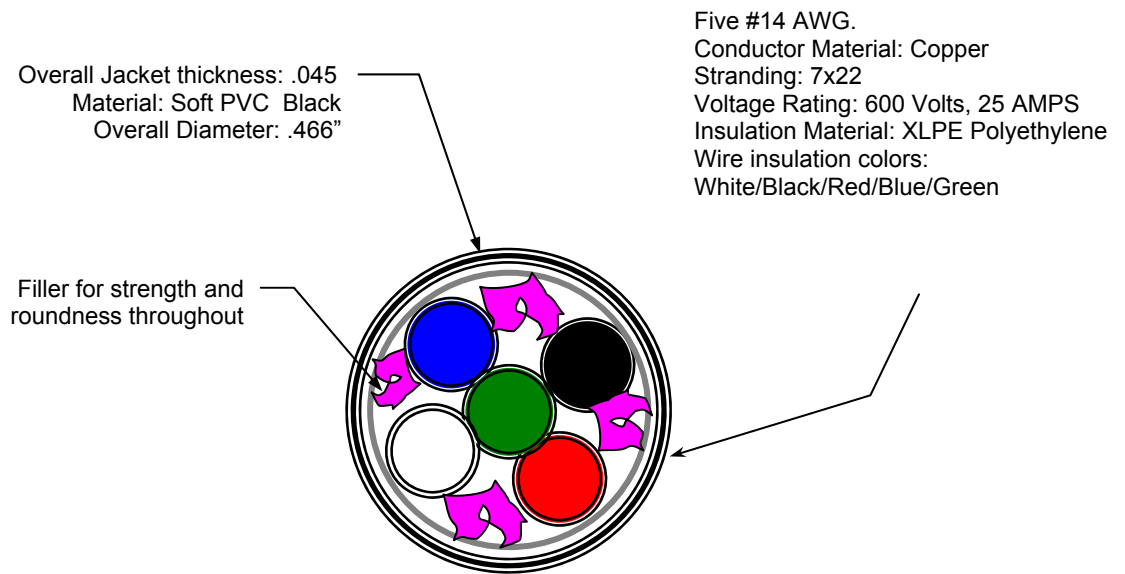


Fig. 1

END VIEW



NOTES

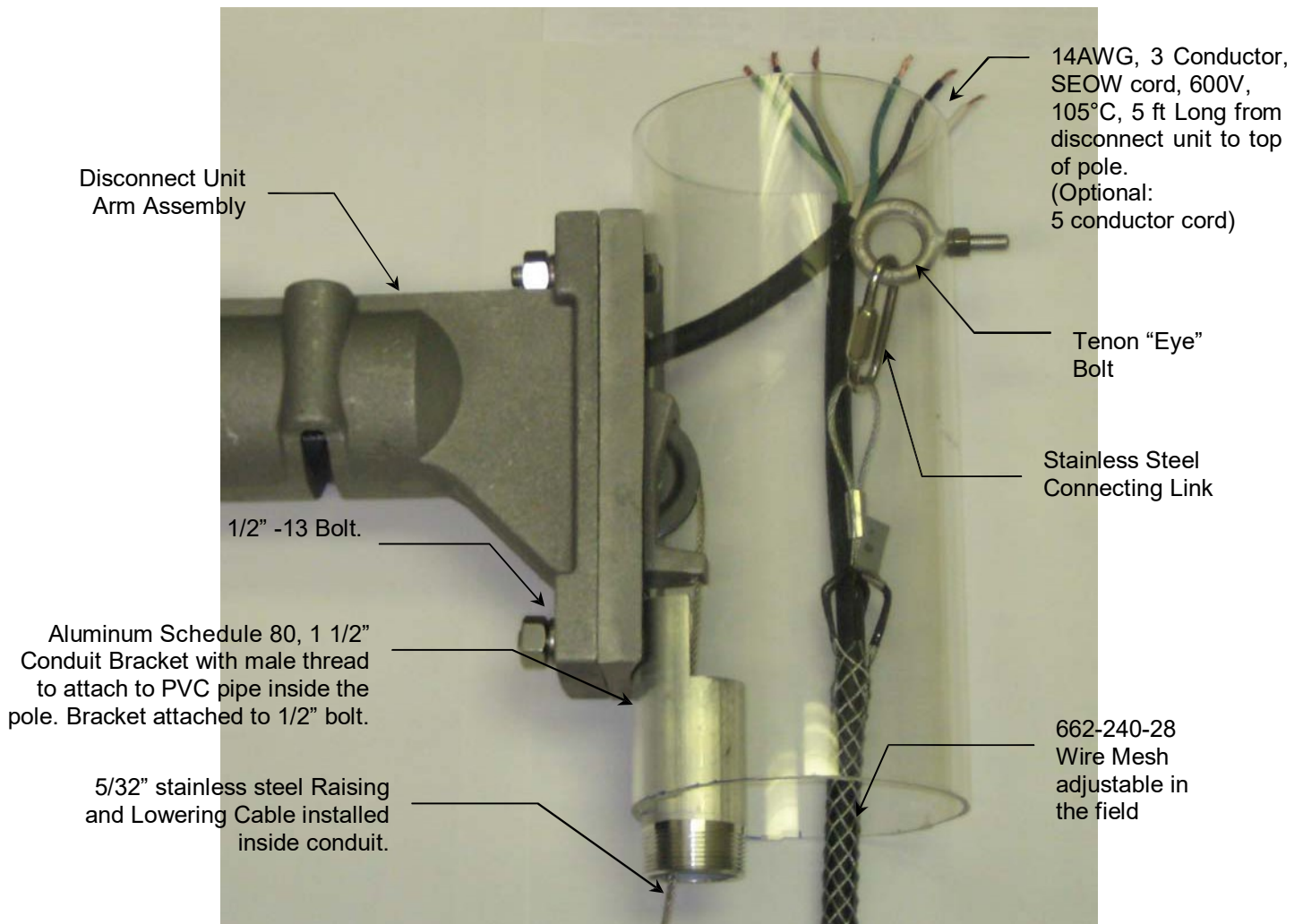
- VOLTAGE RATING FOR 14 AWG WIRE INSULATION: 600 V.
- TEMPERATURE RATING: 80° C UL 1015

Electrical Cable, Cord Grip Specifications

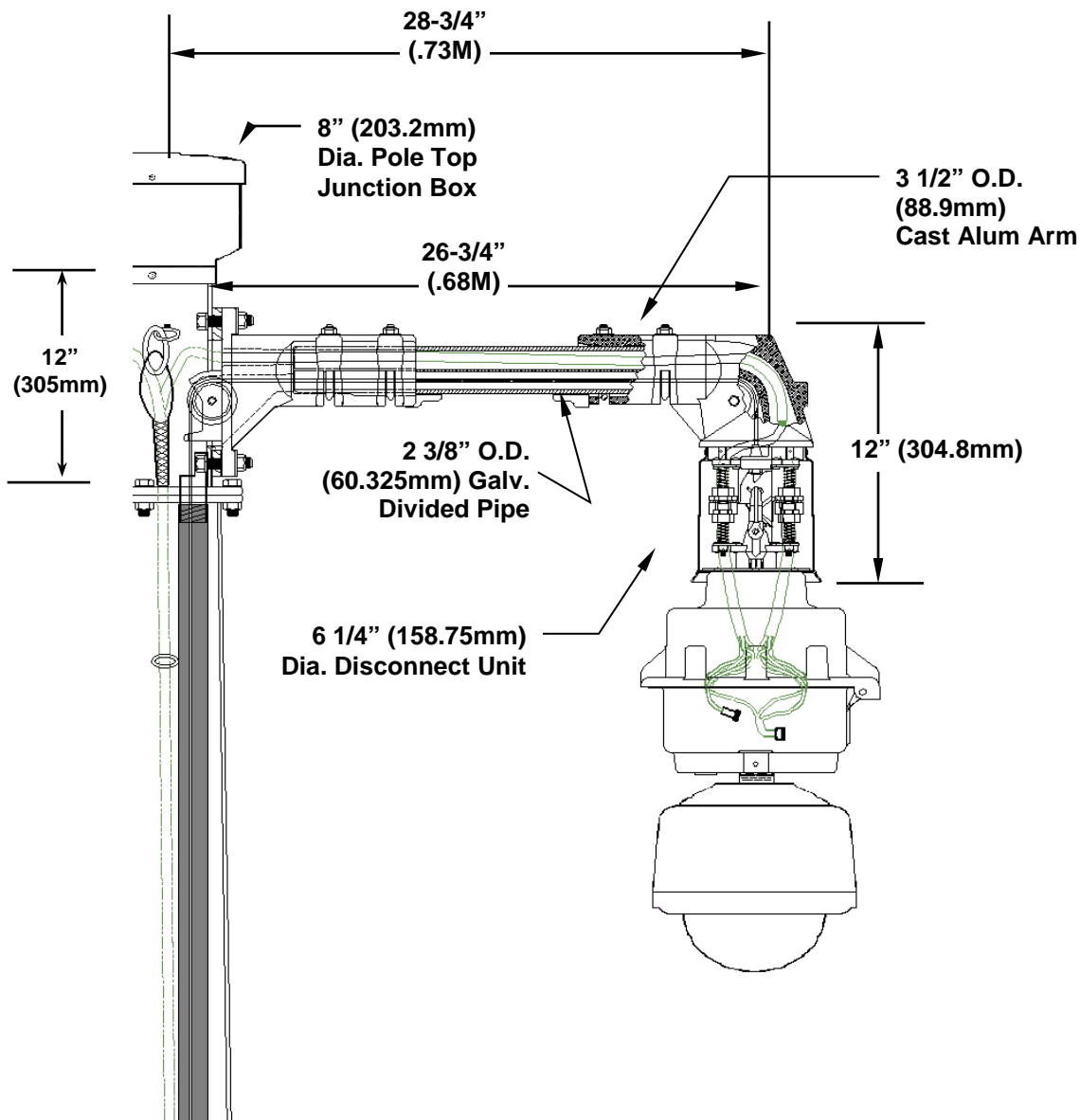
SUPPORT GRIPS Standard Duty, Closed Mesh.

Standard closed mesh support grips are designed for loads up to 600 lbs. and vertical runs of up to 100ft. The different Cord Grips are used to support electrical/signal cable with a cable diameter ranging from 0.22" to 0.99". Closed mesh support grips have a loop to hang from the eye hook at the top of the pole/tower structure. Support grips are woven of corrosion-resistant tinned-bronze wire.

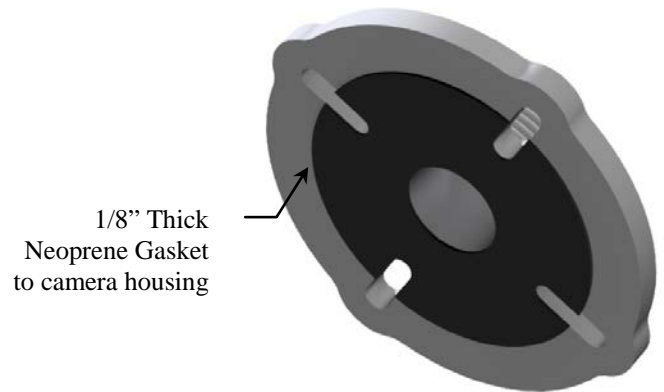
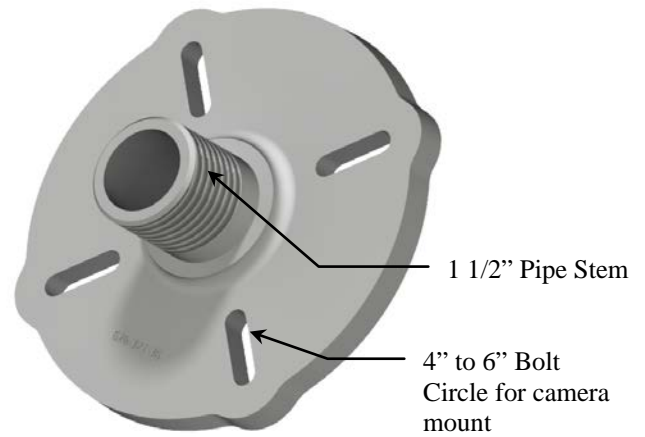
Optional Stainless-Steel wire mesh are also available.



Pole Mounting Disconnect Unit Measurements



Adaptor flange for surface mount camera housings

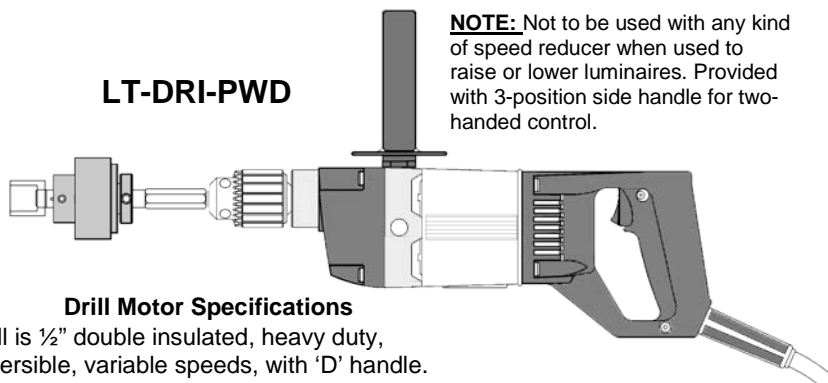


Material: Cast Aluminum
 Gasket: High Grade Neoprene with Rubber Base, 1/8" (3.18mm) Thick
 Bolt Circle Capacity: 4" to 6" (102mm-152mm) Bolt Circle
 4-Thru-Holes at 90° mounting
 Hardware size: Up to 3/8" (9.5) size bolts
 Flange Dimension: 7" (178mm) Diameter
 Flange thickness: 1/2" (12.7mm)
 Threaded Stem size: 1 1/2" Pipe, NPS, Threads into the bottom of the
 Camera Junction Box and locks with 2 set screws.
 Hardware to Camera housing: NOT INCLUDED

LT-CC-XX Lowering Tool with SS Aircraft Cable

LT-DRI-PWD Drill Motor with Clutch and adapters

All gearboxes and lowering tool frames are of heavy-duty design to provide reliability, long life, and ease of operation. They incorporate solid steel heat-treated gears for maximum durability and strength. All are equipped with a special automatically actuated disc brake for better load holding ability and the prevention of the load free wheeling. They are essential for lifting operations. Also available for permanent installation or portable use indoors or outdoors for wall mounting, tower mounting, or different kinds of pole mounting.



LT-DRI-PWD

NOTE: Not to be used with any kind of speed reducer when used to raise or lower luminaires. Provided with 3-position side handle for two-handed control.

Drill Motor Specifications

- Drill is 1/2" double insulated, heavy duty, reversible, variable speeds, with 'D' handle.
- Chuck size is 1/2" key chuck with key.
- Electrical-Nom. 5 amp universal motor 115v.AC
- Torque-Develops nominal 170 lbs.-in.
- Speed/HP-.5 H.P.
- Variable speed 0 to 600 RPM
- (Note: drill should be operated at a maximum of 300RPM to prevent damage to the winch)
- Overall length is 15-1/8"
- Weight: Approx. 7lbs. 6oz.

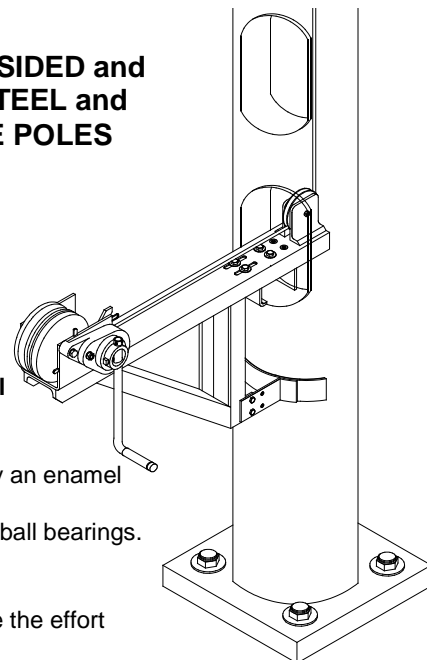
Overload Clutch Specifications

- Lubricated ball indent-totally enclosed-adjustable torque limiting.
- Coil spring type. Varied quantities depending on torque range. Torque range: 60 to 300 lb./in.
- Dimensions of clutch: 1 1/2"Dia., 1 5/8"L. Overall, 8 1/2"L
- Open-end wrench type torque-adjusting nut.
- Snap ring tool included with clutch.
- Clutch weight: 2 lbs.

Winch/Clutch/Drill Adapter

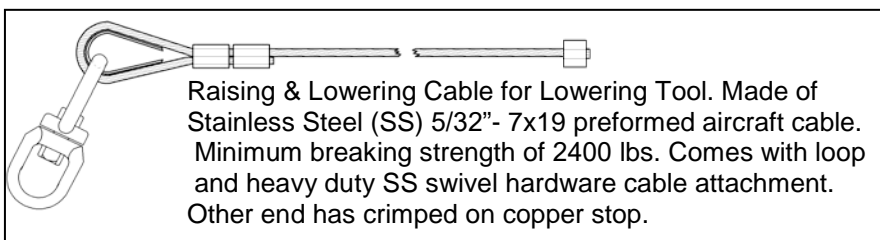
- Winch drive is 1-1/8" hex socket with 1/2" sq. drive.
- Hub shaft: 3/8" sq. w/spring loaded pin (clutch end).
- Socket shaft: 3/8" sq. w/spring loaded retaining pin.

LT-CC-XX For MULTI-SIDED and ROUND, STEEL and CONCRETE POLES



Specifications on Lowering Tool

- Tool mounts on multisided and round poles.
- Fabricated from heavy gauge aluminum.
- The winch has a primer base coat followed by an enamel finish coat. Excellent resistance to corrosion.
- Oil impregnated bronze bushings and sealed ball bearings.
- All hardware is made out of stainless steel.
- Frame bolts to pole handhole with 1/2" bolt.
- The winch has a 3:1 Gear reduction to reduce the effort required to raise and lower the assembly.
- Winch comes with heavy-duty disk brake to afford greater load holding ability. This provides a positive locking mechanism to secure cable and keep from freewheeling.
- For drum capacity: Up to 90 ft of Cable.
- **Cable:** Equipped 5/32" 7x19 stainless steel aircraft cable. • **Dimensions:** 29"L.x8"W. With handle, 12"W.
- **Weight:**34LBS.



Raising & Lowering Cable for Lowering Tool. Made of Stainless Steel (SS) 5/32"- 7x19 preformed aircraft cable. Minimum breaking strength of 2400 lbs. Comes with loop and heavy duty SS swivel hardware cable attachment. Other end has crimped on copper stop.

Catalog # (with Lowering Tool cable length)	Min Load Lbs.	Cable Quantity	Max Load Lbs.
LT-CC-85	16	85 FT	300
LT-DRI-PWD	9.5		

* All Lowering Systems gear boxes and lowering tools are designed for material handling usage only.
 * Not for lifting people.
 * Specifications subject to change without notice.