
**JOSLYN HI-VOLTAGE
INSTALLATION AND OPERATING INSTRUCTIONS
FOR
INDOOR AND OUTDOOR LOWERING DEVICES
OPERATED BY JOSLYN 9915 MOTORIZED WINCH
(Fixed and Portable Winch Applications)**

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(Fixed and Portable Winch Applications)

This document (Engineering Publication No. I. 765-504) is technically accurate including all text, illustrations , tables and drawings contained herein.

Design Engineer : _____ , Date: _____.

Engineering Manager: _____ , Date: _____.

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DISCLAIMER NOTICE

The purpose of this manual is to present basic and recommended equipment operating information for use by operating personnel utilizing Joslyn Winch Model 9915 for both indoor and outdoor lowering devices having motorized winches (fixed and portable). Operation and maintenance information presented is not intended or implied to be a replacement for the application of common sense in the operation of the equipment mentioned herein.

The JOSLYN HI-VOLTAGE CORPORATION will not be held liable or accountable for damages, resulting liability, equipment damage, bodily injury, death, or any incident which may result from the misuse of equipment or the content of this service manual, including vendor supplied original equipment manufacturer (O.E.M.) literature. It is expected that operating personnel will frequently review operating procedures and O.E.M. product literature as prevention against undesirable consequences.

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Section I: Overview

1.1 Introduction

This manual presents information necessary to familiarize the reader with the Installation and Operation of Joslyn HI-Voltage Lowering Devices incorporating Joslyn 9915 motorized winch for indoor and outdoor installations having fixed and portable winch applications.

Manual content consists of Revision information, Safety Precautions, Inspection Requirements, Operating Instructions, Maintenance and Troubleshooting Procedures, Repair Parts; and reference to Related Engineering Drawings.

It is expected that the user of this manual will adhere to the information contained herein and apply common sense in the operation of equipment.

1.1.1 Revision Information

The following is a listing of engineering revisions incorporated into this issue of the JOSLYN HI-VOLTAGE LOWERING DEVICES Instruction Manual for motorized winch Model 9915. Revisions are as follows:

<u>Engr.</u>	<u>ECN/Date</u>	<u>Content</u>	<u>Resp.</u>
	C064 (7/98)	Created new instruction.	L. Poling

Section 2: Safety

2.1 Safety Precautions

Read and comply with safety precautions and operational instructions contained in this manual. Keep this manual and all vendor information readily available at all times. Contact the Joslyn Hi-Voltage Corporation, 4000 East 116th Street, Cleveland, Ohio (44105) for additional copies.

WARNING: Exercise extra caution when raising and lowering fixture. Failure to observe the following safety precautions can result in injury to operating personnel and possible death.

Observe, and do not exceed the following Drum Capacities, Cable Diameters, and Motor Characteristics.

Drum Capacity at Cable Diameters of: 3/16" 110 ft.
5/32" 150 ft.
1/8" 250 ft.

Motor/ Load Characteristics:

Drum Wound

Load Rating, lbs:	Two Layers: 300 lbs.	Full: 300 lbs.
Current, amps:	Two Layers: 3.4 amps.	Full: 5.5 amps
Lifting Speed, in./sec:	Two Layers: 4 in./sec.	Full: 8 in./sec.
Load Limit (Per Joslyn):	Two Layers: 85 lbs.	Full: 85 lbs.

- Visually Inspect and check lubrication before each use.
- Do not stand under any part of fixture while fixture is being raised or lowered, or when lowering device is being latched or unlatched.
- Do not walk under or work under a suspended load, or in the line of force of any load.
- Do not allow persons to walk under a suspended load. Keep persons out of the general work area. If necessary, mark off the work area with safety ribbons and/or barricades.
- Do not divert your attention from the operation. Stay alert to the possibility of accidents. Try to prevent accidents from happening.
- Do not leave a suspended load unattended. Lower the load to the ground.
- Do not use damaged or malfunctioning equipment. Use of damaged or malfunctioning equipment can result in equipment failure and injury to operating personnel and other persons in the general work area.

- Do not modify winch. For example, trying to replace the variable speed drive with a substitute drive, will result in injury to personnel , damage to equipment, or both.
- Do not attempt to stop a falling fixture with your hands or any part of your body. Attempting to stop a falling fixture in this manner can result in serious personal injury.
- Watch the progress of the fixture while operating the variable speed drive (lowering and raising).
- Allow for clearance between the fixture and neighboring structures and equipment.
- Keep hands and clothing away from gears, cable and drum when operating winch.
- Use only the cable supplied by JOSLYN HI-VOLTAGE. The cable supplied is a special high quality, high strength material with very high flexibility.
- Use only end connections supplied by JOSLYN HI-VOLTAGE for attaching the winch cable to the operating cable (see Figure 2-1).
- Use only the cable anchor supplied. Torque cable anchor nut to 75 in.-lbs. (Figure 2-2).
- For safe operation, maintain a minimum of four wraps on the cable drum. Wind cable from underside of drum (Figure 2-2 and Repair Parts List, Section 7).
- Keep winch and accessories clean and lubricated. Excessive wear and signs of overloading cannot be detected under an accumulation of dirt.
- Do not operate winch with safety guards removed or improperly installed.

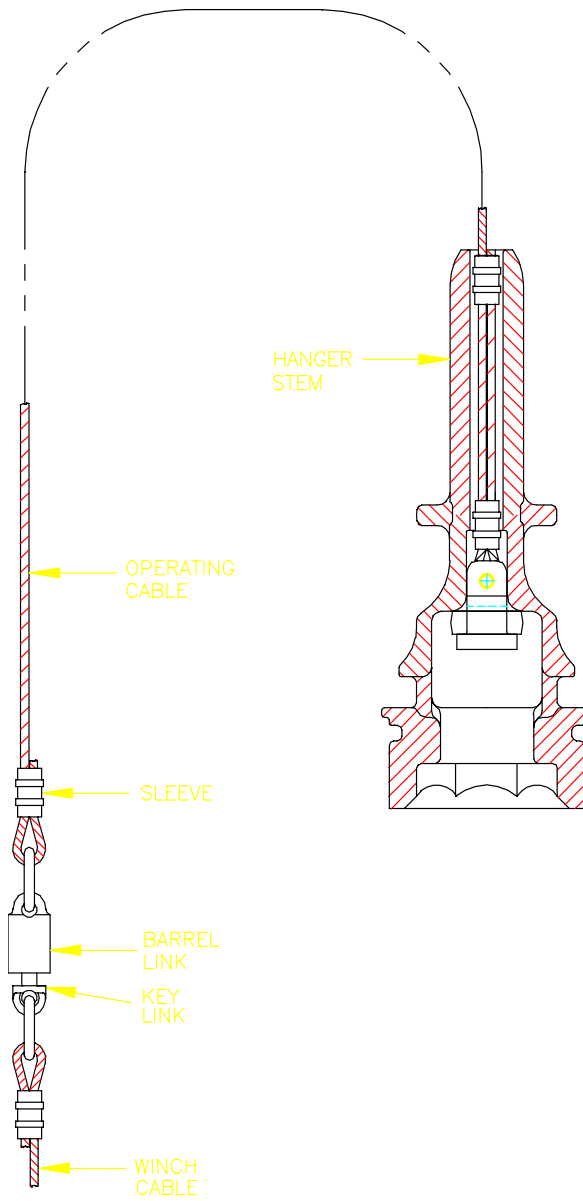
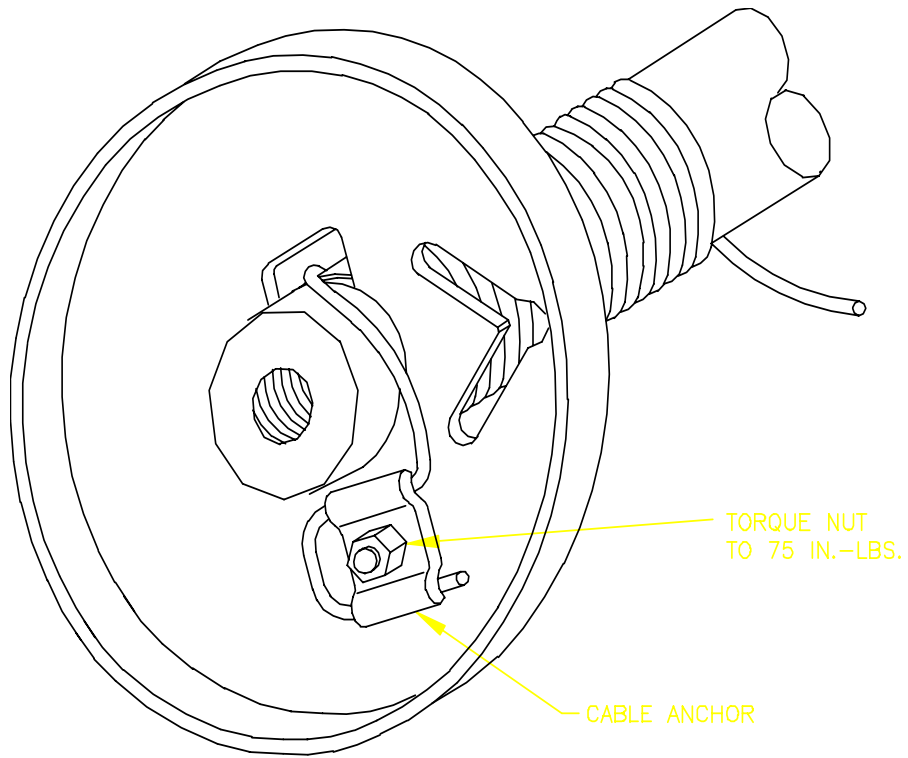


Figure 2-1. Cables and Connections (Portable Winch)



JOSLYN 9915

Figure 2-2. Winch Drum and Cable Anchor

Section 3: Inspection

3.1 Inspection of Components

At each use inspect the following :

- (1) Inspect winch, winch cable, operating cable; and the variable speed motor (drill motor).

CAUTION: Do not use cable that has loose, stretched, or poorly attached connections. Do not use cable that has a reduced diameter due to wear or stretching. **Inspect cable for kinks, cuts, broken strands; and crushed, unstranded, or broken sections which greatly reduce cable strength and thereby system reliability.**

When a fixture is in the raised or lowered position and the operating cable or winch cable is found to be damaged, replace cable before proceeding. JOSLYN HI- VOLTAGE CORPORATION technical representatives are available for advice.

Inspect variable speed drive (drill motor) for proper operation before each use.

- (2) Insure that the drill motor power cable is not frayed, cut, and/or damaged. Inspect electrical plugs (male and female) for corrosion and/or damage. Clean and replace electrical cable and plugs (connections) as required. Visually inspect winch variable speed motor (drill motor) for damage. If motor is found to be damaged, replace motor. Contact Joslyn HI-Voltage for technical assistance.

- (3) Inspect mounting bracket for bent parts and/or a warped frame. Bracket framework should

be straight and square. If framework is bend or warped, contact JOSLYN HI-VOLTAGE for assistance. Insure that all mounting hardware (nuts, bolts, washers, and mounting clamps, etc.) are tight and secure. Tighten and/or replace mounting hardware as required before operation of winch.

CAUTION: Failure to ensure that all mounting hardware (including customer furnished mounting clamps and bolts) is in good working order can result in failure of the lowering system and serious injury to operating personnel and damage to equipment.

- (4) Inspect winch shafts and bearings (Figure 7-1).

Note: Shafts should be straight and fit snugly in bushings. Polished areas on shafts are normal where shafts turn in bushings, but a fit that allows the shaft to move from side-to-side more than 1/64" indicates a worn out part which must be replaced. For repair parts see Repair Parts List (Figure 7-2).

- (5) Inspect gears, and gear cross pins.

Note: Gears should fit tightly on gear shafts. Cross pins should be intact and tight. The faces of gear teeth should not have excessive wear.

- (6) Inspect winch disc brake for worn, damaged, or poorly operating parts (Figure 7-1).

WARNING: Do not use winch if the disc brake shows signs of damage or poor operation. Replace all damaged or poorly operating parts with Joslyn repair parts only. Use of the winch when the disc brake is in poor operating condition can result in injury to operating personnel and damage to equipment.

- (7) Listen to disc brake while winch is in operation. When power is applied (to raise the fixture), there should be a firm clicking noise as the ratchet pawl drops from one tooth to another on the ratchet wheel.

CAUTION: If no clicking noise is heard while attempting to raise the fixture, the ratchet was incorrectly installed, or is damaged or worn excessively. Call the JOSLYN HI-VOLTAGE CORPORATION for technical assistance.

If the ratchet makes a weak sound, the spring may not be forcing the ratchet pawl to seat firmly against the bottom of the ratchet teeth. If the ratchet pawl is failing to seat properly this may be caused by rusty, or damaged parts and is a hazardous condition. Repair by cleaning or replacement of parts as applicable (see parts list Figure 7-2).

Section 4: Operating Instructions

4.1 Operation

Note: This instruction is to be used in conjunction with installation guide I.765-303, or I.765-304.

CAUTION: The operating and winch cables are the main components of the lowering system, and subject to more stress than other parts. **Worn or damaged cable will cause failure of the lowering system and damage to equipment.**

The hanger and customer's luminaire should be plumb within 1° of true vertical for trouble free operation of the lowering device.

Exercise care when performing latching procedures. **Jerking or bouncing the lowering system recklessly during latching may damage electrical contact insulators, and/or lamp filaments.**

Keep winch and accessories clean and lubricated. **Excessive wear and signs of overloading cannot be detected beneath an accumulation of dirt.**

4.1.1 Mounting of Winch Bracket (with Joslyn 9915 Winch)

- (1) Mount winch assembly to mounting surface as shown on applicable engineering drawing 3163B0024 or 3163B0025.
- (2) Check all fasteners and associated hardware (including customer furnished hardware) to make sure that the winch bracket is secured to the mounting surface (wall or pole) properly. In addition, make sure the bracket and winch assemblies are fastened together properly and that all nuts, bolts, and fasteners are tight and secure. Bolts securing winch to bracket should be torqued to 236 in.-lbs.

4.1.2 Portable Winch Operations

4.1.2.1 Connecting and Disconnecting Cable Link Assembly

WARNING: Before attempting to disconnect the operating cable link assembly, make sure the operating cable is slack. A slack operating cable indicates that the upper and lower fixture hanger halves are latched together (see Figure 4-1).

Failure to ensure that the operating cable is slack (hanger halves latched) will cause the fixture to drop causing serious injury to operating personnel and damage to equipment.

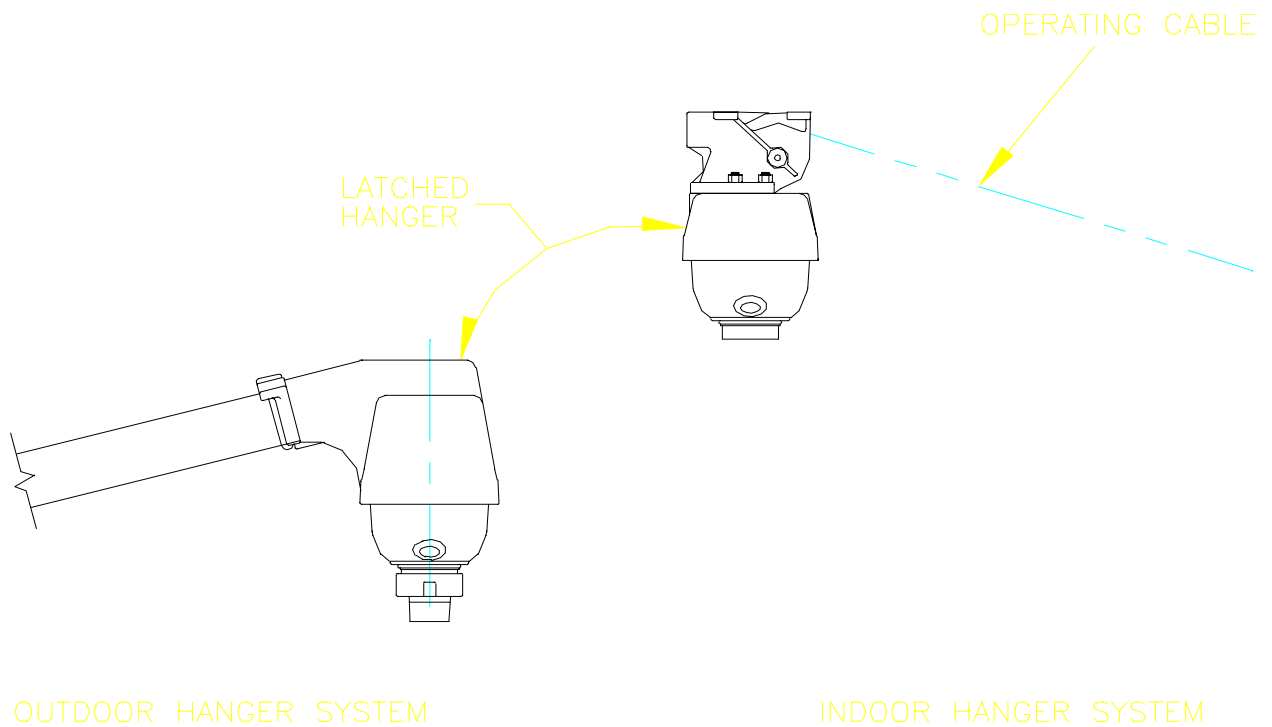


Figure 4-1. Latched Hanger Halves

When you are certain that the hanger and winch are in safe operating condition, with upper and lower hanger halves latched together, proceed as follows:

- (1) Remove the terminal link from fastening hook (Figure 4-2).
- (2) Remove the termination assembly from the operating cable (Figure 4-2). See connect/disconnect procedures (Figure 4-3).
- (3) Connect the winch cable key link to the operating cable barrel link (Figures 2-1).

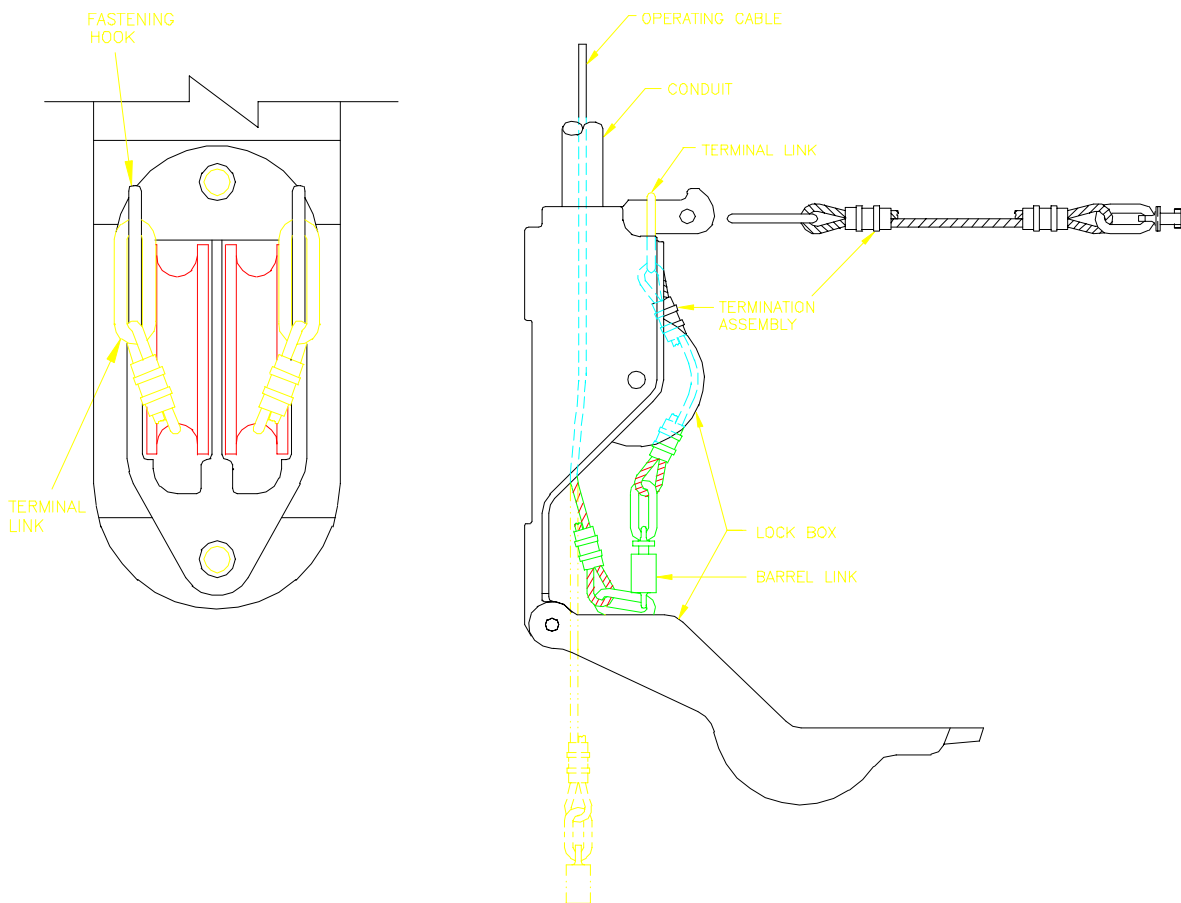
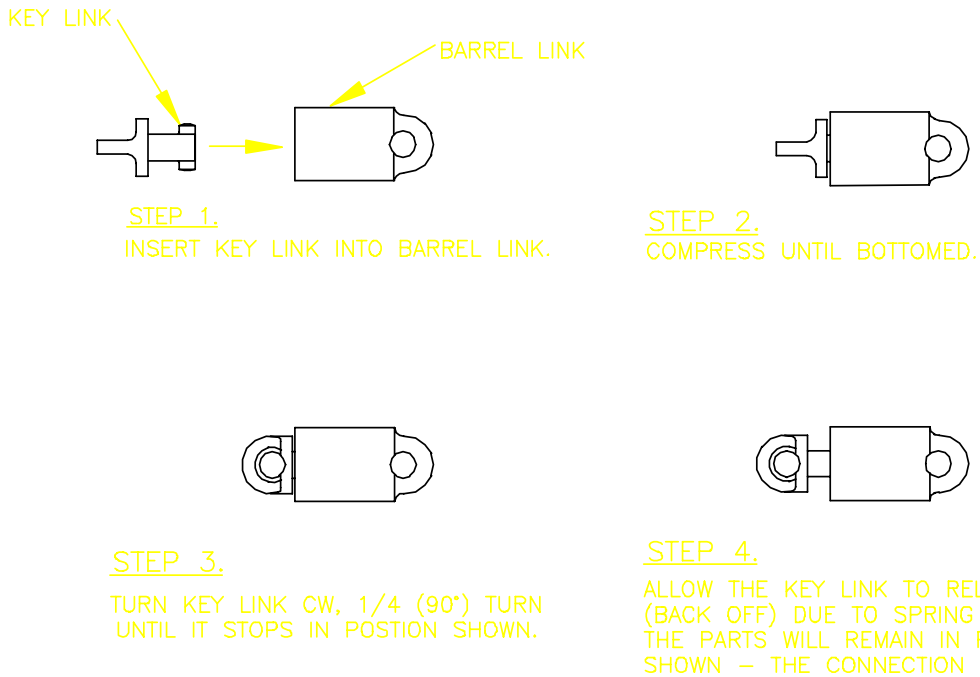


Figure 4-2. Operating Cable Termination (Portable Winch)

PRINCIPLES OF CONNECTING AND DISCONNECTING LINK ASSEMBLY

CONNECTING



DISCONNECTING

REVERSE CONNECTING STEPS:

1. COMPRESS ASSEMBLY
2. TURN KEY LINK 1/4 TURN CCW
3. RELEASE PRESSURE
4. PULL KEY LINK OUT OF BARREL LINK

Figure 4-3. Link Assembly Connect/Disconnect Procedures

4.1.2.2 Unlatching Hanger Assembly and Lowering Fixture

CAUTION: Use only the end connections supplied by the JOSLYN HI-VOLTAGE CORPORATION when attaching winch cable to operating cable. Failure to use the proper cable connections will cause damage to equipment and possible injury to operating personnel.

- (1) Make sure that key link and barrel link are properly joined before attempting to use winch. See Figure 4-3 for connect/disconnect procedures.
- (2) Set drill motor switch to the forward mode, apply power, and turn winch in the forward direction (clockwise) until a slight resistance is indicated.
- (3) Set drill motor to the reverse mode, apply power, and introduce slack in operating cable by turning winch drum counterclockwise approximately $\frac{1}{4}$ turn.
- (4) Grasp the trip lever handle and pull back firmly with 30 to 40 pounds of force (for a 50 pound fixture [Figure 4-4]). The force required depends on the weight of the fixture.

Note: At this stage the mechanism has raised, unlatched, and is ready for hanger separation.

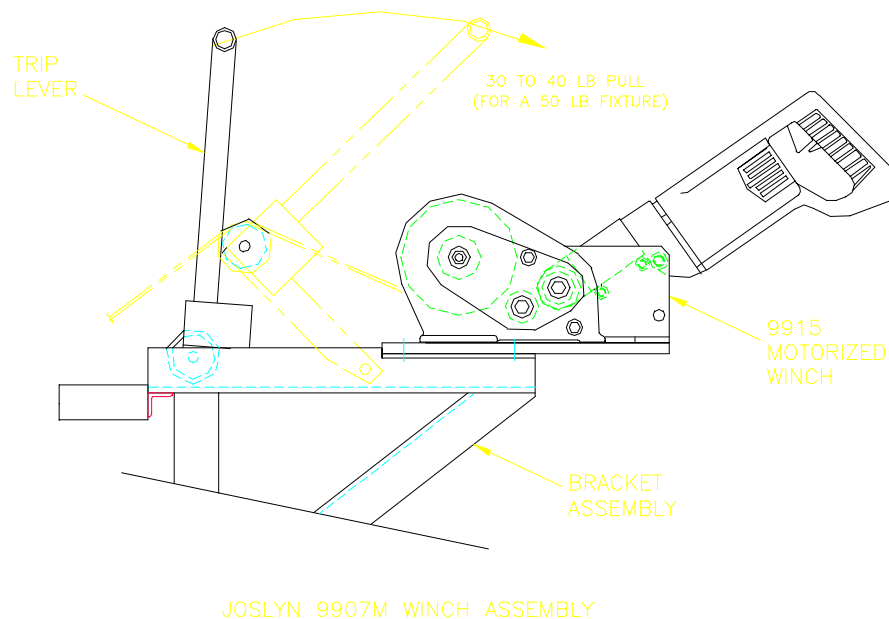


Figure 4-4. Winch and Trip Lever Handle

(5) Release (let go of) trip lever handle and allow trip lever to suddenly fly downward and stop against the winch bracket (see Figure 4-4). At this stage the latch has released in the hanger assembly and the two halves are separated.

(6) Gently tug on cable leaving the pole or mounting surface to determine cable tension.

If

cable tension is apparent continue with lowering procedures.

Note: If there is tension on the cable (not slack), the hanger halves have separated and the hanger is unlatched. If the cable is slack, the hanger halves have not separated and the hanger assembly remains latched. In this case (hanger halves still latched), reduce existing cable slack (increase cable tension), and repeat steps (2) through (6).

Note: During lowering operations the fixture may be stopped and held at any desired height by releasing the drill motor trigger. Releasing the drill motor trigger will automatically engage the winch brake and suspend the fixture at its current level. To continue lowering fixture see step (7).

(7) Set drill motor switch to the reverse mode, apply power, and lower fixture to the working level. At this stage fixture lowering procedures are complete.

4.1.2.3 Raising Fixture and Latching the Hanger Assembly

(1) Set drill motor switch to the forward mode, apply power, and turn winch in a clockwise direction raising the fixture.

CAUTION: Raising the fixture may proceed at any comfortable rate of speed until the housing halves are about six inches apart. Housing halves are about six inches apart when the cable linking assembly emerges from the pole handhole or lock box (see Figure 4-2). **At this stage the rate of speed must be slowed to a near stop for a moment to allow for realignment of the hanger halves to take place.** When realignment begins, it can be sensed as a sudden increase in the motor force

required

at the winch.

Failure to slow the cranking speed will cause damage to contact insulators, and/or lamp filaments; or cause the hanger halves to jam.

- (2) Stop raising the fixture when contacts are seated (the winch brake will engage and hold the fixture in place). At this stage, with instant starting fixtures, the seating of contacts is obvious (the fixtures light).
- (3) Using 30 to 40 pounds of force (for a 50 pound fixture) pull slowly and firmly on the trip lever handle (Figure 4-4). Stop pulling when a strong resistance is felt; indicating the unit is ready for latching.

CAUTION: In step (4), if the trip lever is not lowered slowly enough, the hanger will not latch.

- (4) **Very slowly** lower trip lever handle allowing trip lever to come to rest against the winch bracket. At this stage the hanger should be latched.
- (5) Set drill motor switch to the reverse mode, and turn winch counterclockwise. The cable should become slack (loose); indicating that the housing halves are properly latched. If the cable is taut (tight), the housing halves are not latched and the latching procedure must be repeated using slightly more force at the trip lever handle (repeat steps (3) through (5)).
- (6) When hanger halves are latched, disconnect power source from drill motor. Remove winch cable key link from operating cable barrel link (see Figure 4-3).
- (7) Attach termination assembly key link to operating cable barrel link (Figures 4-2 and 4-3).

CAUTION: In step (8), make sure that the termination assembly is properly secured to its fastening hook. Securing the termination assembly to the fastening hook is a back-up safety precaution to prevent the fixture from falling should the hanger mechanism become disengaged.

- (8) Secure termination assembly terminal link to its original fastening hook in the pole handhole or lock box (Figure 4-2).

At this stage Raising and Latching procedures are complete.

4.1.3 Fixed Winch Operation

Note: The fixed winch installation has one continuous cable from hanger to winch.

4.1.3.1 Unlatching Hanger Assembly and Lowering Fixture

- (1) Set drill motor switch to the forward mode, apply power, and turn winch in the forward direction (clockwise) until a slight resistance is indicated.
- (2) Set drill motor switch to the reverse mode, apply power, and introduce slack in operating cable by turning winch drum counterclockwise approximately $\frac{1}{4}$ turn.
- (3) Grasp the trip lever handle and pull back firmly with 30 to 40 pounds of force (for a 50 pound fixture [Figure 4-4]).

Note: At this stage the mechanism has raised, unlatched, and is ready for hanger separation.

- (4) Release (let go of) the trip lever handle and allow trip lever to suddenly fly downward and stop against the winch bracket (Figure 4-4). At this stage the latch has released in the hanger assembly and the two halves are separated.
- (5) Gently tug on cable leaving the pole or mounting surface to determine cable tension.

Note: If there is tension on the cable (not slack), the hanger halves have separated and the hanger is unlatched. If the cable is slack, the hanger halves have not separated and the hanger assembly remains latched. In this case (hanger halves still latched), reduce existing cable slack (increase cable tension), and repeat steps (1) through (5).

Note: During lowering operations the fixture may be stopped and held at any desired height by releasing the drill motor trigger. Releasing the drill motor trigger will automatically engage the winch brake and suspend the fixture at its current level. To continue lowering the fixture see step (6).

- (6) With drill motor switch in the reverse mode, apply power, and lower fixture to the working level. At this stage fixture lowering procedures are complete.

4.1.3.2 Raising Fixture and Latching the Hanger Assembly

- (1) Set the drill motor switch to the forward mode, apply power, and turn winch in a clockwise direction raising the fixture.

CAUTION: Raising the fixture may proceed at a comfortable rate of speed until the housing halves are about six inches apart. **At this stage the rate of speed must be slowed to a near stop for a moment to allow for realignment of the hanger halves to take place.** When realignment begins it can be sensed as a sudden increase in the motor force required at the winch.

Failure to slow the cranking speed will cause damage to contact insulators, and/or lamp filaments; or cause the hanger halves to jam.

- (2) Stop raising the fixture when contacts are seated (the winch brake will engage and hold the fixture in place). At this stage, with instant starting fixtures, the seating of contacts is obvious (the fixtures light).
- (3) Using 30 to 40 pounds of force (for a 50 pound fixture), pull slowly and firmly on the trip lever handle (Figure 4-4). Stop pulling when a strong resistance is felt; indicating the unit is ready for latching.

CAUTION: In step (4), if the trip lever is not lowered slowly enough, the hanger will not latch.

- (4) **Very slowly** lower trip lever handle allowing trip lever to come to rest against the winch bracket. At this stage the hanger should be latched.
- (5) Set drill motor switch to the reverse mode, and turn winch counter clockwise. The cable should become slack (loose); indicating that the housing halves are properly latched. If the cable is taught (tight), the housing halves are not latched and the procedure must be repeated using slightly more force at the trip lever handle (repeat steps (3) through (5)).

- (6) When hanger halves are latched, disconnect power source from drill motor.

At this stage Raising and Latching procedures are complete.

Section 5: Maintenance

5.1 Cable Replacement (Joslyn Portable Winch 9915)

Note: To service key link end of winch cable see publication I.765-303.

Note: Cable must be replaced when worn or damaged (see **CAUTION** para. 3.1). To replace cable ref. para. 5.1.1.

5.1.1 Portable Winch Cable Replacement

To replace cable proceed as follows:

- (1) Acquire a new cable assembly from Joslyn Hi-Voltage.
- (2) Disconnect old cable from winch drum cable anchor (Figure 2-2).
- (3) Unwind and remove existing cable from winch drum.
- (4) Pass new cable end through hole in drum flange (from inside to outside).
- (5) Loop cable end through cable anchor and secure to drum flange with anchor bolt and nut. **Torque cable anchor nut to 75 in.-lbs.**
- (6) **Coil cable around drum (starting from underside of drum) a minimum of four turns**, beyond the number of turns required to lower the fixture to the ground servicing level.

5.1.2 Fixed Winch Cable Replacement (Cable Diameter 1/8th inch)

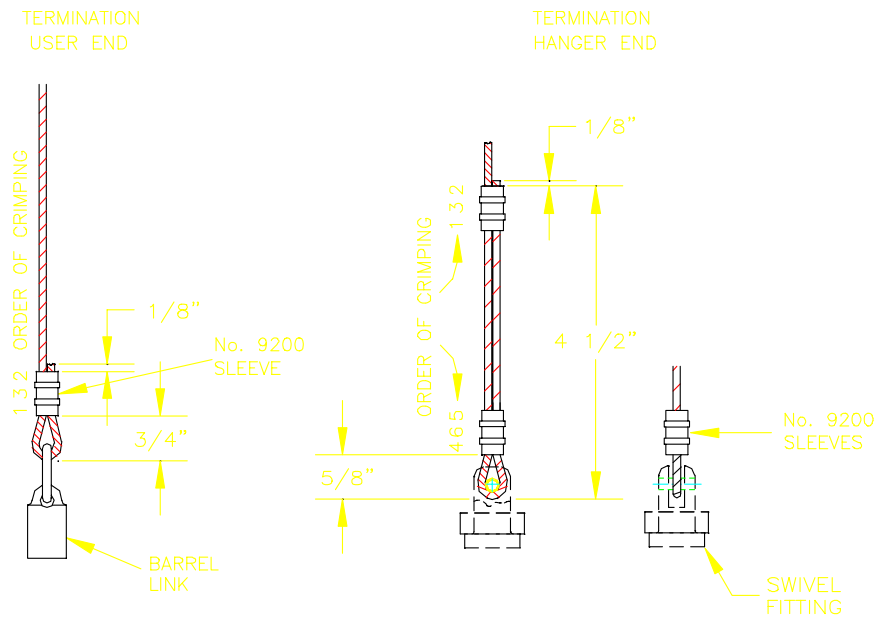
To replace cable proceed as follows:

- and
- (1) Acquire new cable (having 1/8th inch diameter), two number 9200 serving sleeves, and crimping tool number 9260 from Joslyn HI-Voltage.
 - (2) Unlatch hanger, and lower fixture to ground level (working level).
 - (3) Disconnect cable from winch drum.
 - (4) Using a butt splice, attach the new cable to the old cable (end to end), and then tape over the cable splice with approximately two or three wraps of duct tape.

Note: Because the connection (cable splice) must pass through the pulleys of the lowering device system, the taped connection must be compact. Use judgment when taping the cable splice, do not over tape.

- (5) Pull the cable through the system.
 - (6) Remove old cable from hanger as follows:
 - a. Disconnect fixture from hanger.
 - b. Push cable down through hanger to expose swivel fitting.
 - c. Punch cross pin out of fitting, and remove cable from fitting.
- NOTICE THRUST BEARING ORIENTATION.**
- Save pin, fitting, and thrust bearing for reuse.
- d. Pull cable out of hanger.
 - (7) Separate old and new cable at splice and discard old cable.
 - (8) Place new cable into hanger by inserting cable into pointed nose of stem and pushing through to expose several feet of the cable.
 - (9) Assemble end of the cable, swivel end assembly, and 9200 sleeves (see Figure 5-1). Using crimping tool 9260, crimp sleeves in the order shown.
 - (10) Pull the cable back through the hanger to seat the swivel end assembly up inside the hanger.
 - (11) Reconnect the fixture to the hanger.
 - (12) Attach the other end of the new cable to the winch as stated in para. 5.1.1, steps (3) through (5).

At this stage cable replacement is complete. The fixture can now be raised and the hanger assembly latched.



NOTES:

1. ALL DIMENSIONS PRIOR TO CRIMPING.
2. USE JOSLYN TOOL No. 9260 TO SWAGE No. 9200 SLEEVES. DO NOT USE A SUBSTITUTE TOOL. A SUBSTITUTE MAY NOT DEVELOPE THE REQUIRED STRENGTH OF THE OPERATING LINE.

Figure 5-1. Termination and Crimping Instructions

5.1.3 Fixed Winch Cable Replacement (Cable Diameters 5/32nd or 3/16th inch)

- (1) From Joslyn HI-Voltage, acquire a new cable made to the required length (having appropriate diameter[5/32nd or 3/16th]) with end fitting assembly.
- (2) Unlatch hanger and lower fixture to ground level (working level).
- (3) To remove old cable from hanger proceed as follows:
(DO NOT DISCONNECT CABLE FROM WINCH AT THIS TIME.)
 - a. Disconnect fixture from hanger.
 - b. Push cable down through hanger to expose swivel end fitting.
 - c. To remove fitting, cut cable above fitting assembly.
 - d. Pull cable out of hanger.

- (4) Acquire new cable assembly, and insert free end (opposite of fitting end) into bottom of hanger. Push cable through hanger and out stem.
- (5) Using a butt splice, attach the new cable to the old cable (end to end), and then tape over the cable splice with two or three wraps duct tape.

Note: Because the connection (cable splice) must pass through the pulleys of the lowering device system, the taped connection must be compact. Use judgment when taping the cable splice, do not over tape.
- (6) Pull all of the new cable through the hanger to seat the swivel end assembly up inside the hanger.
- (7) Reconnect the fixture to the hanger.
- (8) At winch location, disconnect cable from winch; and pull old cable through the lowering device system (which will also pull the new cable through the system).
- (9) When the splice has been pulled through the system, separate old and new cables. Discard old cable.
- (10) Attach end of new cable to winch as stated in para. 5.1.1, steps (3) through (5).
- (11) The cable replacement is now complete. The excess cable can be wound onto the winch using the motor drive, the fixture raised, and the hanger assembly latched.

5.1.4 Scheduled Maintenance

It is recommended that a regular maintenance schedule be established with an inspection log showing the dates and names of persons assigned to inspection, and the actions taken. A regular maintenance schedule must incorporate the procedures set fourth in this manual and be assigned to a responsible person. Such a maintenance schedule, carefully administered, assures safe and reliable operation of the JOSLYN HI-VOLTAGE Lowering Device System.

On a scheduled basis perform the following maintenance requirements:

- After each use, lubricate bearings on winch at junctions with shafts with 2 or 3 drops of 150 grade gear oil. Rotate winch drum several times to allow oil to penetrate.

- Brush MOBILTEMP SHC 32 (Mobil Oil Corp.) grease, or Sprayon 201 (or equivalent open gear lube) onto gear teeth to maintain a protective coating across the working face of the gears.

For dirty conditions, clean surfaces and use a dry lubricant such as dry graphite or Moly (Dow Corning).

WARNING: Do not over lubricate brake. Over lubrication of brake will cause oil to leak onto brake friction discs causing discs to operate poorly (slip). This situation can result in possible injury to personnel and damage to equipment and components.

- At brake lubrication point (oil hole in brake housing [Figure 5-2]), lubricate brake bushing with 1 or 2 drops of 150 grade gear oil. Turn the brake several times to allow oil to penetrate.
- Clean on a scheduled basis with oily rag to remove dirt and grease.
- Wipe off excessive amounts of oil to prevent the accumulation of dirt.
- Leave a light film of oil on all surfaces to protect against rust and corrosion.

CAUTION: Do not allow grease or dirt to accumulate. The accumulation of grease or dirt accelerates wear and hides faults that may alert the operator, or maintenance personnel to more dangerous conditions.

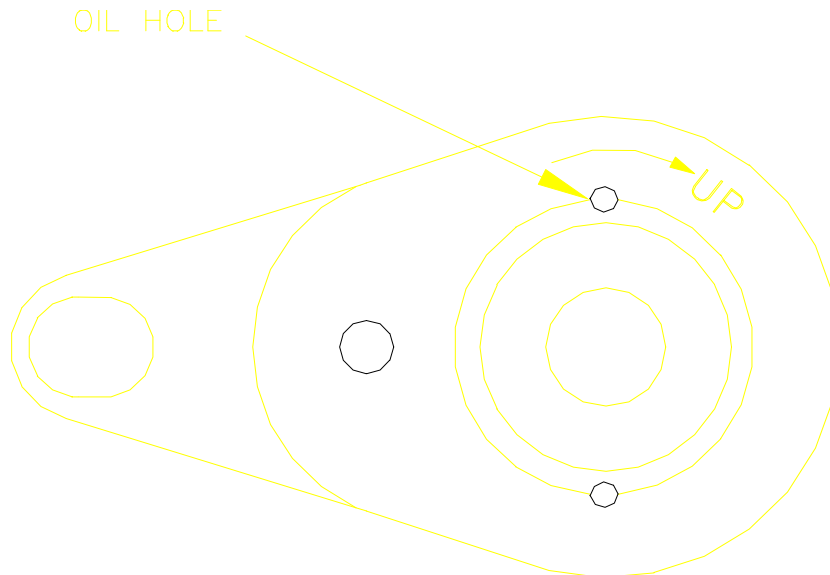


Figure 5-2. Brake Lubrication Point

Section 6: Troubleshooting

The following table presents troubleshooting procedures required for the identification, repair and/or replacement of damaged components that constitute a part of the JOSLYN HI-VOLTAGE Lowering Device System incorporating Joslyn motorized winches for both fixed and portable applications.

Included herein are troubleshooting procedures and information relating to the repair and maintenance of the Joslyn 9915 Motorized Winch which forms a part of the Joslyn Lowering Device System.

Table 6.1 Troubleshooting Procedures

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTION
Lowering system jammed.	<ol style="list-style-type: none"> 1. Hanger did not separate because hanger is not plumb. 2. Conduit crooked or bent and/or pulleys bent or out of line. 3. Winch cable tangled or wound wrong on drum. 4. Worn or damaged operating, or winch cable. 	<p>Plumb hanger. Hanger should be within 1° of true vertical. Contact Joslyn for technical assistance.</p> <p>Reinstall conduit in straight sections. Replace bent or damaged pulleys at turns, etc. Contact Joslyn for technical assistance.</p> <p>If fixture is raised and latched disconnect operating cable from winch cable (see para. 4.1.2). Rewind cable, or if necessary, replace cable (see Section 5). Contact Joslyn for technical assistance.</p> <p>Replace damaged cable (see Section 5). Contact Joslyn for technical assistance.</p>

Table 6.1 Troubleshooting Procedures

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTION
<p>Fixture lights will not illuminate.</p>	<ol style="list-style-type: none"> 1. Fixture halves not aligned and latched properly. 2. Fixture contacts damaged. 3. If fixture is not self illuminating, main power or fixture switch may be in "OFF" position 4. If fixture still will not light. 	<p>Hanger is not plumb (should be within 1° of true vertical). Review Section 4, and repeat procedure. Contact Joslyn for technical assistance.</p> <p>Replace contacts. Contact Joslyn for tech. assistance.</p> <p>Check fixture power switch.</p> <p>Check main power panel circuit breakers, etc.</p> <p>Contact Joslyn for technical assistance.</p>
<p>Winch not secure on mounting surface.</p>	<ol style="list-style-type: none"> 1. Fasteners and associated hardware not secured properly. 	<p>Secure all fasteners, and mounting hardware to ensure that equipment is in good operating condition (all nuts and bolts tight and secure, etc.).</p>
<p>Unable to disconnect operating cable link from winch cable link.</p>	<ol style="list-style-type: none"> 1. Hanger halves unlatched (tension on cable). 2. Unable to disengage operating/winch cable linkage. 	<p>Make sure that hanger halves are latched together (see Section: 4).</p> <p>Clean, or replace as required (see Section: 4) Contact Joslyn for technical assistance.</p>

Table 6.1 Troubleshooting Procedures

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTION
Winch turns, cable drum does not turn.	1. Loose or broken spring pins, stripped or broken gears.	Inspect winch and brake, repair as necessary. Contact Joslyn for technical assistance.
Winch turns hard or not at all.	1. Load too heavy (see para. 2.1) 2. Hanger and luminaire hang crooked. 3. Spring pins loose or broken on winch or brake. 4. Disc brake damaged or locked. 5. Gears or bearings broken or locked.	Lighten load. Contact Joslyn for technical assistance. Plumb hanger and luminaire within 1° of true vertical. Contact Joslyn for technical assistance. Repair as necessary. Contact Joslyn for technical assistance. Inspect brake and repair as necessary. Contact Joslyn for technical assistance. Inspect and repair as necessary. Contact Joslyn for technical assistance.
While operating winch, winch experiences excessive backlash.	1. Load too heavy. 2. Poor lubrication of gears or bearings.	Lighten load. Contact Joslyn for tech. assistance. Inspect and lubricate (see para. 5.1.4). If gears or bearings are in poor condition, replace. Contact Joslyn for technical assistance.

Table 6.1 Troubleshooting Procedures

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTION
Brake does not operate properly	<ol style="list-style-type: none"> 1. Friction discs worn or damaged. 2. Friction discs damaged from over lubrication. 3. Disc brake ratchet pawl damaged. 	<p>Inspect and replace as necessary. Contact Joslyn for technical assistance.</p> <p>Inspect and repair as necessary. Contact Joslyn for technical assistance.</p> <p>Inspect and replace as necessary. Contact Joslyn for technical assistance.</p>
Winch overheating.	<ol style="list-style-type: none"> 1. Operating too fast 2. Poor lubrication. 3. Load too heavy. 	<p>Allow winch to cool. Slow down operating speed.</p> <p>Inspect and lubricate as required. See para. 5.1.4 for lubricating instructions. Contact Joslyn for technical assistance.</p> <p>Contact Joslyn for technical assistance.</p>
Unusual noises. (high pitched squeak or grinding noise.)	<ol style="list-style-type: none"> 1. Poor lubrication 2. Contaminated lubricants. 	<p>Inspect and lubricate as required. (refer to para. 5.1.4). Contact Joslyn for technical assistance.</p> <p>Clean and/or repair as required.</p>

Table 6.1 Troubleshooting Procedures

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTION
Unusual noises, high pitched squeak or grinding noise (cont'd).	3. Dirt in brake or winch gears. 4. Broken or misaligned gears or bearings.	Clean and/or repair as required. Contact Joslyn for technical assistance.
Rattling noise or uneven clicking noise in brake.	1. Loose bolts, set screws, or fasteners. 2. Broken gear tooth in brake. 3. Spring or ratchet pawl dirty or damaged. 4. Worn brake ratchet pawl, gear, or spring.	Tighten all loose bolts, set screws and fasteners as necessary. Inspect brake gear teeth. If gear teeth are broken, replace brake gear. Contact Joslyn for technical assistance. Inspect, clean, and/or repair as required. Contact Joslyn for technical assistance. Inspect and replace as required. Contact Joslyn for technical assistance.
No clicking noise in brake.	1. Ratchet installed wrong. 2. Ratchet pawl damaged or worn excessively.	Disassemble and install correctly. Contact Joslyn for technical assistance. Inspect and replace as required. Contact Joslyn for technical assistance.

Section 7: Repair Parts

7.1 Parts Replacement (Joslyn 9915 Motorized Winch)

Replace damaged or malfunctioning parts of winch and disk brake with Joslyn repair parts only. Locally manufactured repair parts may not meet design requirements, or required safety margins.

WARNING: Substitution of locally manufactured parts for original factory parts is potentially dangerous to persons and property. It is the responsibility of the owner of the Joslyn HI-Voltage Lowering Device System to determine that repairs to malfunctioning components have been properly made; and the Lowering Device System has been returned to a safe operating condition.

Cable selection and the proper assembly of crimped sleeves is essential to safe operation of the fixture lowering system. Cable used in Joslyn Lowering Systems is specifically designed for strength and flexibility. **Do not substitute cable assemblies from any other source. Cable assemblies from the Joslyn Hi-Voltage Corporation assure safe and reliable operation of the Joslyn Lowering Device System.**

7.1.1 Repair Parts Lists (Joslyn 9915 Motorized Winch)

For repair parts listings see the following:

- Objects drawings (Figure 7-1 and 7-1a).
- Parts list (Figure 7-2).

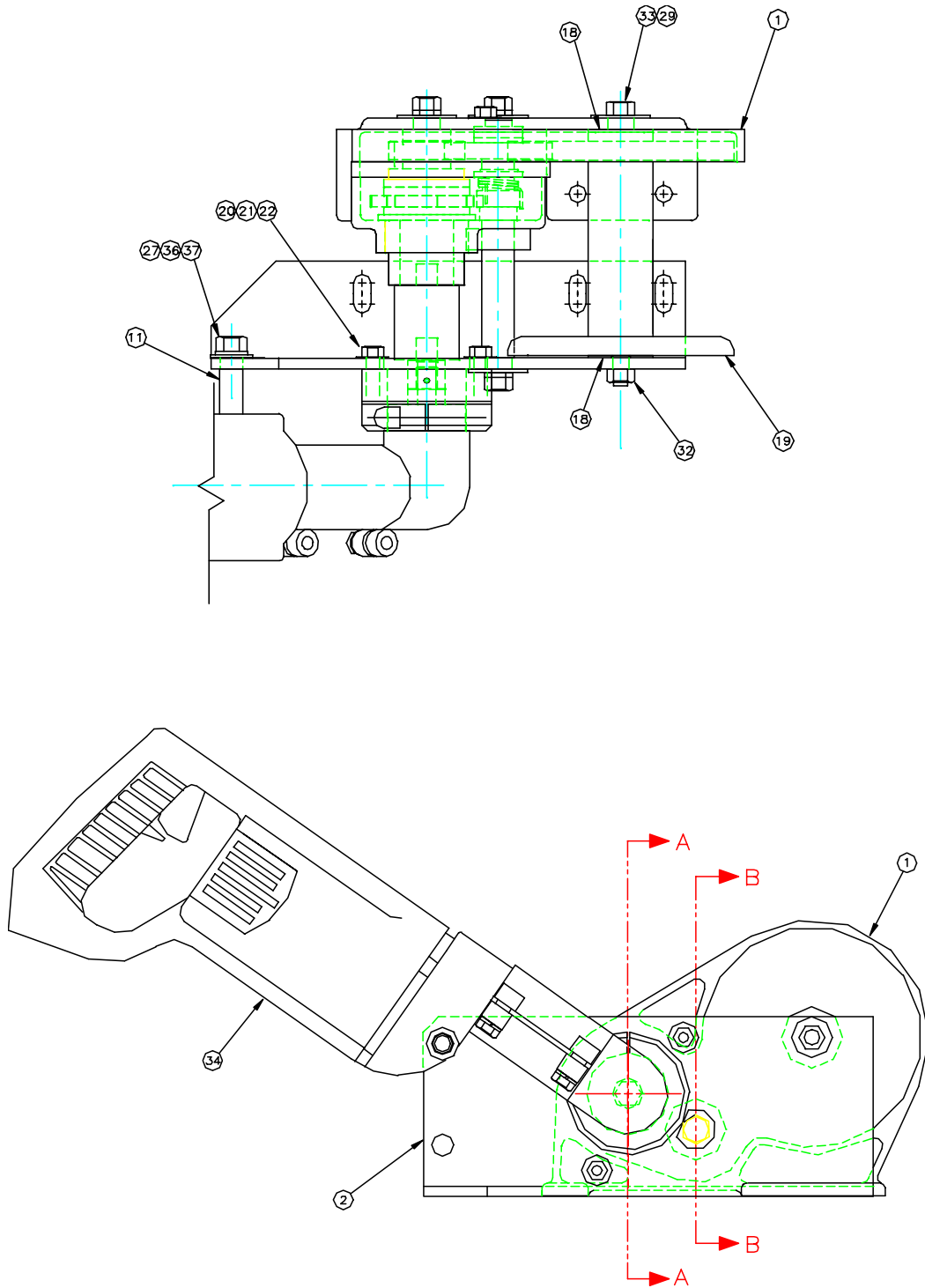
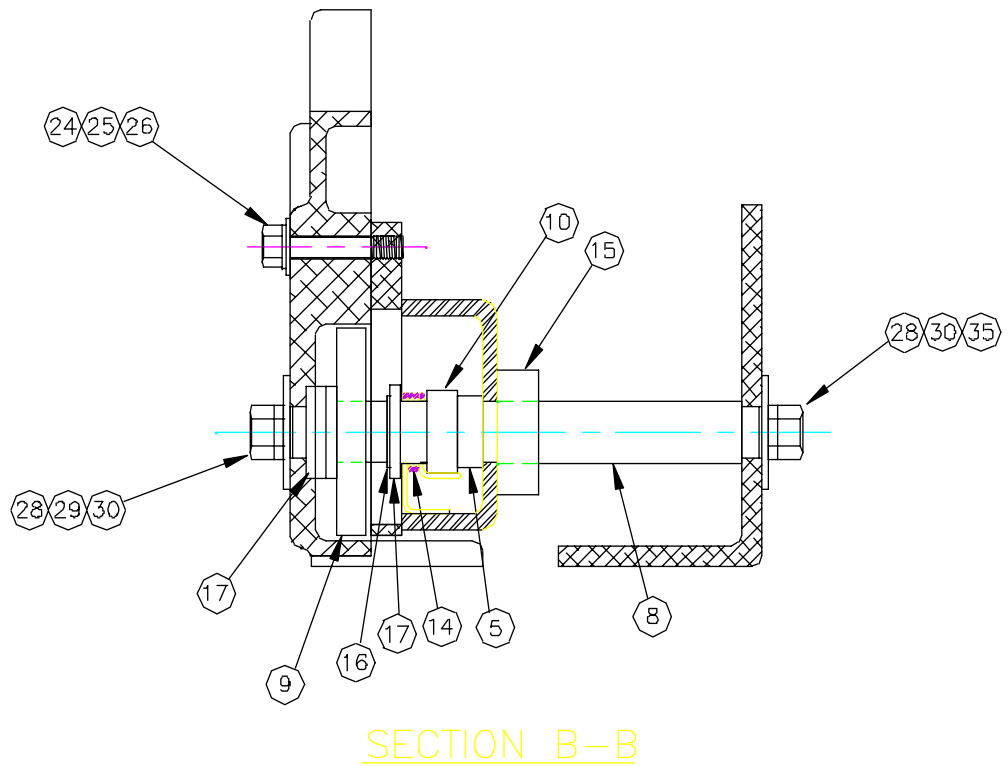
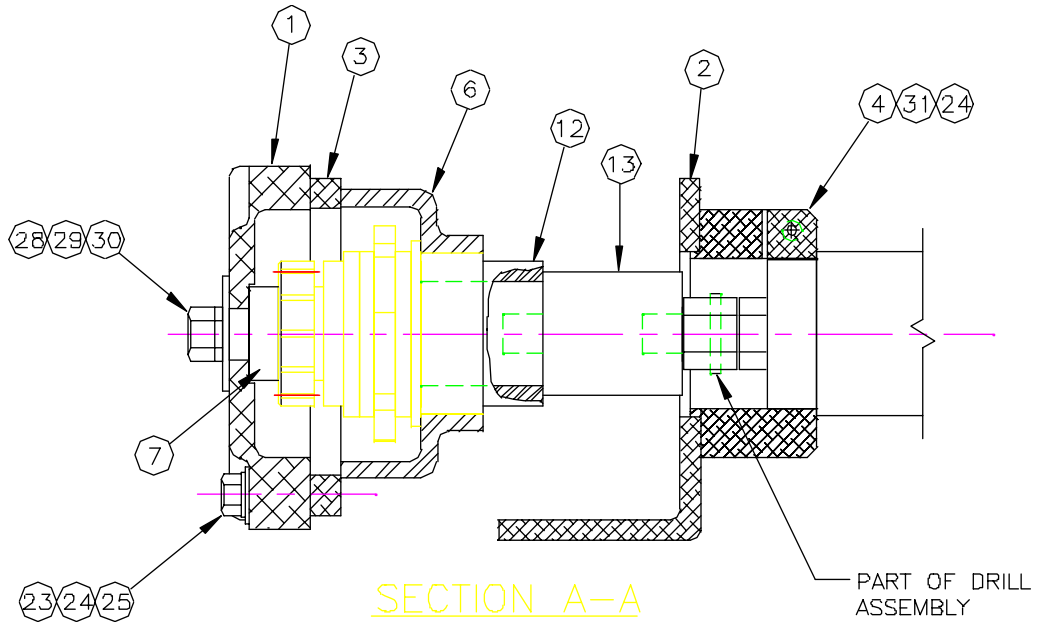


Figure 7-1. Joslyn 9915 Motorized Winch



**Figure 7-1a. Joslyn 9915 Motorized Winch
(Sectional Views A-A and B-B)**

ITEM	NAME	QTY	DESCRIPTION
1	L.H. SUPPORT	1	3163C0014 P1
2	R.H. SUPPORT	1	3163C0012 P1
3	GUARD	1	3163A0001 P1
4	MOUNT	1	3163B0011 P1
5	SPACER	1	3163A0005 P1
6	HOUSING	1	3163B0015 P1
7	SHAFT	1	3163A0009 P1
8	SHAFT	1	3163A0007 P1
9	GEAR	1	3163A0008 P1
10	PAWL	1	3163A0006 P1
11	SPACER	1	3163A0003 P2
12	BRAKE ASSEMBLY	1	3163B0019 G1
13	LIMITER	1	3070A0477 P2
14	SPRING	1	3163B0016 P1
15	COLLAR	1	3070A0476 P1
16	RETAINING RING	1	3070A0480 P1
17	SPACER	3	438A839 P21
18	WASHER	2	3070A0481 P1
19	DRUM ASSEMBLY	1	3070C0509 G1
20	HEX HEAD SCREW	4	5/16-18UNC-2A X 7/8 LG. SST.
21	LOCK WASHER	4	5/16 STD. SPLIT SST.
22	FLAT WASHER	4	5/16 STD. SST.
23	HEX HEAD SCREW	1	1/4-20UNC-2A X 1 1/4 LG SST
24	LOCK WASHER	3	1/4 STD. SPLIT SST.
25	FLAT WASHER	2	1/4 STD. SST
26	HEX HEAD SCREW	1	1/4-20 UNC-2A X 1 1/2 LG. SST.
27	HEX HEAD SCREW	1	7/16-14 UNC-2A X 2" LG SST
28	LOCK WASHER	3	3/8 STD. SPLIT SST.
29	FLAT WASHER	3	3/8" STD. SST.
30	HEX HEAD SCREW	3	3/8-16UNC-2A X 3/4" LG. SST.
31	SOCKET HEAD SCREW	1	1/4-20UNC-2A X 1 1/4" LG. SST
32	LOCK NUT	1	3/8 SST.
33	HEX HEAD SCREW	1	3070A0478 P1
34	MOTOR	1	3163B0031 G1
35	FLAT WASHER	1	3070A0821 P1
36	LOCK WASHER	1	7/16 STD. SPLIT SST.
37	FLAT WASHER	1	7/16 STD SPLIT SST

Figure 7-2. Joslyn 9915 Motorized Winch Repair Parts List