“BASIC” SERIES WINCH

ISO 9001 REGISTERED
&
CE CERTIFIED

MAN RATED CONFINED SPACE ENTRY/RETREIVAL “BASIC” SERIES WINCH

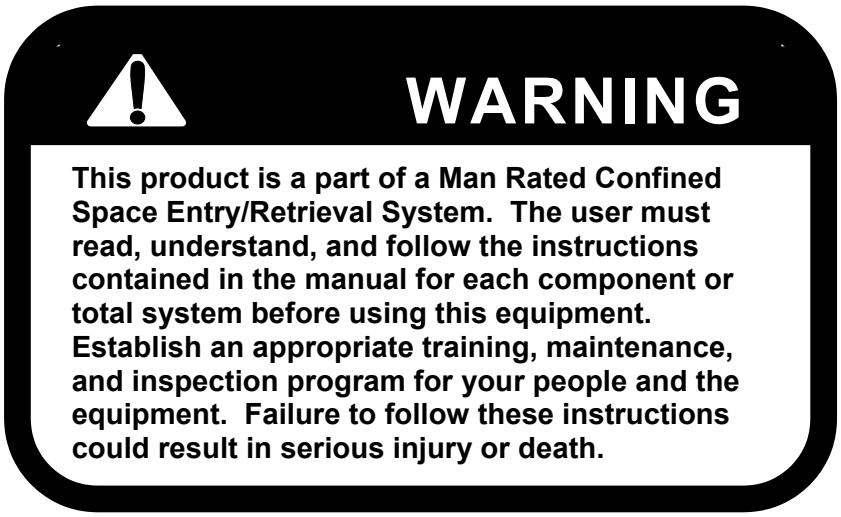
OPERATOR’S MANUAL

1 INTRODUCTION

Congratulations on your choice of a Unique Concepts Man Rated Confined Space Entry/Retrieval System Winch to compliment your entry/retrieval operation. This equipment has been designed and manufactured to comply with the requirements of **OHSA 1910, ANSI Z 359.1-1992, ANSI Z117.1-1995 & CE** to meet the needs of a discriminating operator for the efficient entry/or retrieval of people from a confined space.

Safe, efficient and trouble free operation and maintenance for your component or system requires that you or anyone else who will be operating, maintaining or inspecting the equipment, read, understand and follow all the Safety, Installation, Operation, Maintenance and Inspection instructions contained in this manual, and in any related manuals referenced in this manual and/or supplied with the system.

This manual covers the “Basic” Series Winches manufactured by Unique Concepts. Use the Table of Contents or Index as a guide when searching for specific information.



Keep this manual handy for frequent reference and to pass to new operators. Establish a regular training program for experienced and new operators per these instructions. Establish a regular maintenance and inspection program to keep the equipment in top condition.

Modular components are labeled with the capacities and rating to which they were designed, tested, and manufactured. The rating of any system is considered to be the rating of the lowest rated component contained is the system.

Do not use the equipment if rating stickers are damaged or illegible. New stickers are available from the manufacturer. When ordering replacement stickers be sure to include:

1) The part number from the bottom right hand corner of the sticker, when available.
2) The serial number of the unit.
3) The part (item) number of the component (consult the appropriate section of this manual).
4) Any other numbers stamped on the components.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert symbol identifies important safety messages on your equipment and in the manual. When you see this symbol, be alert to the possibility of personal injury of death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost You Money
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER, WARNING,** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using he following guide-lines:

DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, or for hidden or unseen hazards.

WARNING - Indicates a potentially hazardous situation that if not avoided, could result in death or serious injury, and includes obvious and hidden hazards. It may also be used to alert against unsafe practices.

CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

SAFETY

YOU are responsible of the **SAFE** operation, maintenance and inspection of your Unique Concepts Man Rated Confined Space Entry/ Retrieval System Winch. **YOU** must ensure that you and anyone else who is going to operate, maintain, inspect or work around the equipment be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety and operating practices while using the equipment.

Remember, **YOU** are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the procedures recommended and follows safety precautions. Remember, most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Owners must give operating instructions to operators or employees before allowing them to use the equipment, and at least annually thereafter.

- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.

- A person who has not read, been trained in using and understood all operating and safety instructions is not qualified to operate this equipment. An untrained operator exposes himself and others to possible serious injury or death.

- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.

- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

1. Read, understand and follow the User Manual and all safety signs before using, maintaining or inspecting the equipment.

2. Refer to and follow applicable **ANSI, OSHA, CE** or other Standards and local regulations. Comply with requirements of local regulations for your applications.

3. Establish an equipment–use training program for experienced employees. Only trained, competent persons shall use the equipment. An untrained operator is not qualified to operate the system.

4. Have a first-aid kit available for use should the need arise and know how to use it.

5. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.

6. Install and properly secure all guards and shields before operating.

7. Wear appropriate protective gear. This list includes but is not limited to:

   - A hard hat
   - Safety glasses
   - Protective shoes with slip resistant soles
   - Heavy gloves
   - Protective clothing
   - Face protection

8. Review and follow the Pre-Operation Inspection before using a component in the system or the system itself.

9. Establish a regular Maintenance and Inspection program with your equipment and maintain detailed records.

10. Review safety related items and operating instructions with all personal on a regular basis.

11. Be aware of your environmental surroundings; be sure not to use the equipment during an electrical storm. (this equipment is conductive)

12. When using our winch, the noise level does not exceed 70 d B(A).

2.2 OPERATING SAFETY

1. Read, understand and follow the Operator's Manual and signs on the equipment before using, maintaining or inspecting the equipment.

2. Train all operators before allowing them to use the equipment. An untrained operator exposes themselves, bystanders and workers to possible serious injury or death.

3. Visually inspect the equipment and all auxiliary components and equipment before using. Correct any problems before using the equipment.

4. Securely anchor the winch before using, where applicable.

5. Use only certified anchor and connector components in your system.

6. Use only an approved full body harness for the workers.

7. Always work in teams. One person works in the confined space and the other one pays out the line and reels it in.

8. Check the condition of the brake wear each time the winch is used. When the indicator moves into the red portion of the scale or 1 year in service (which ever comes first), remove from service and return to the factory for service.

9. Do not exceed 310lbs. (141 kg) on the line during operation.

10. Establish a regular training program for new and experienced workers.

11. Establish a detailed inspection program for your equipment and document the findings. Return the equipment to the manufacturer for rework if any problems are found.

12. Plan your work program before starting. Have the required people, equipment and procedures available to do the job.

13. Do not use the equipment around physical or environmental hazards. This list includes but is not limited to:
    a. Corrosion that may affect the structural integrity of the life line or other components .
    b. Chemicals which can degrade components and not be visible.
    c. Toxic gases: Rescuers or workers can be killed in toxic environments.
    d. Heat or elevated temperatures.
    e. Moving machinery: Workers or auxiliary equipment can be contacted by or pulled into moving components.
    f. Sharp edges: Workers or the equipment can be injured or damaged by sharp edges or components.
    g. Electrical hazards: Stay away from power lines or components carrying electrical power.
    h. Overload: Do not exceed 310 lbs. (141 kg) during operation.
    i. Follow confined space regulations in Standards.
    j. Noise: wear appropriate noise protection where necessary.
    k. Environmental hazards: do not operate equipment during electrical storms.

2.3 MAINTAINANCE/ INSPECTION SAFETY

1. Read, understand and follow the User Manual and signs on the equipment before using, maintaining or inspecting the equipment.

2. **ANSI, OSHA & CE** requires a regular inspection program for all Confined Space Entry/Retrieval Equipment and to maintain documented results of these inspections. Follow the inspection procedure contained in this manual and use the inspection form to document the results.

3. Keep instructional and safety signs clean and legible at all times. Clean or replace as required.

4. Lubricate winch as per instructions in Section 4 of this manual.

5. Remove the equipment from service if a problem is found during the inspection. Return to an authorized repair depot or the factory for service.

3 OPERATING, NEW OPERATOR OR OWNERS

The “Basic” Series Winch is designed to attach to a person (entrant) and allow them to enter a confined space and assist in exiting if required. Every new operator must read, understand and follow the instructions in all applicable manuals. No one should be allowed to use the equipment without training. The training should be reviewed with experienced operators on a regular basis. At regular intervals perform a detailed inspection of the equipment and document the results. Remove from service if deficiencies are found. Alterations or misuse of this equipment or failure to follow instructions, may result in serious injury of death.

It is the responsibility of the owner’s organization or operator to read this manual and to train all other operators before they start working with the equipment. Follow all safety instructions exactly. Safety is everyone’s business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to operate the equipment.

Many features incorporated into this equipment are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the equipment safely and how to set it to perform as intended. By following the operating instructions in conjunction with a good maintenance program, and diligence in annual re-certification your equipment will provide many years of trouble-free service.

OPERATING SAFETY

1. Read, understand and follow the User Manual and signs on the equipment before using, maintaining or inspecting the equipment.

2. Train all operators before allowing them to use the equipment. An untrained operator exposes themselves, bystanders and workers to possible serious injury or death.

3. Visually inspect the equipment and all auxiliary components and equipment before using. Correct any problems before using the equipment.

4. Securely anchor the winch before using.

5. Use only certified anchor and connector components in your system.

6. All anchor points, or mounting/setup locations for permanent or portable systems must be approved to local standards by a qualified engineer.

7. Use only an approved body harness for the workers.

8. Always work in teams. One person works in the confined space and the other one pays out the line and reels it in.

9. Do not use the equipment when the winch brake wear indicators display in the red or 1 year in service (which ever comes first). Return equipment to manufacturer for service.

10. Do not exceed 310lbs. (141 kg) on the personal man rated lifeline during operation.

11. Use only retractable lifelines or shock absorber with a maximum arrest force (MAF) equal to or lower than the lowest rated component of your system.

12. Establish a regular training program for new and experienced workers.

13. Establish a detailed inspection program for your equipment and document the findings. Return the equipment to the manufacturer for rework if any problems are found.

14. Plan your work program before starting. Have the required people, equipment and procedures available to do the job.

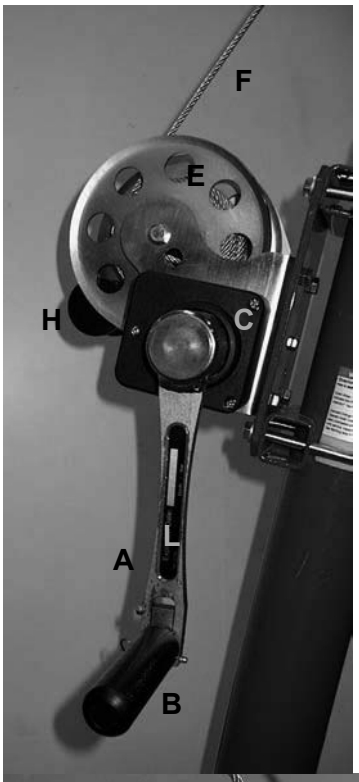
15. Do not use the equipment around physical or environmental hazards. This list includes but is not limited to:
    a. Corrosion that may affect the structural integrity of the life line or other components.
    b. Chemicals which can degrade components and not be visible.
    c. Toxic gases: Rescuers or workers can be killed in toxic environments.
    d. Heat or elevated temperatures.
    e. Moving machinery: Workers or auxiliary equipment can be contacted by or pulled into moving components.
    f. Sharp edges: Workers or the rescue equipment can be injured by or damaged by sharp edges or components.
    g. Electrical hazards: Stay away from power lines or components carrying electrical power.
    h. Overload: Do not exceed a personal load capacity of 310 lbs. (141 kg) or material load capacity of 620lbs. (282 kg) during operation.
    i. Follow confined space regulations in Standards.
    j. Noise: wear appropriate noise protection where necessary.
    k. Environmental hazards: do not operate equipment during electrical storms.

3.1 PRINCIPLE COMPONENTS

The “Basic” Series Winch is designed to extend and retract a lifeline from a drum for attaching to a person who is entering or exiting a confined space. It is designed with a double redundant braking system to hold the line in any position. Line extending or retracting is controlled by the crank handle attached to the 5.1:1 driving shaft.

The winch frame back plate mates to a mounting system that attaches to various structures. Secure the winch to the mounting system with the hand tightened bolt before using the winch. Maximum of 70 feet line can be installed on the drum and a red marker is located 10 feet from the fixed end to alert the user not to pay out more line. This prevents the line from being wrapped backward on the spool and ensures effective protection during Load Limiter Clutch activation. Line extension must occur when the handle is turned counter-clockwise and clockwise for retraction to have the internal brakes properly engaged.

To prevent accidental reversal of the cable on the drum, the cable is installed and conforms to the proper cable direction on the drum. Spooling the cable entirely off the drum is forbidden in case of accidentally spooling the cable in the reverse on the drum. **Spooling the cable on the drum in reverse will cause freewheeling of the drum and cable and may cause serious injury or death.**



A Crank Arm
B Crank Handle
C Cover
D Brake Indicator
E Drum
F Cable
G Load Indicator Snap
H Pressure Bar
I Cable Retainer Spring
J Load Limiter Window
K Load Limiter Tear Strip
L Annual Recertification Date

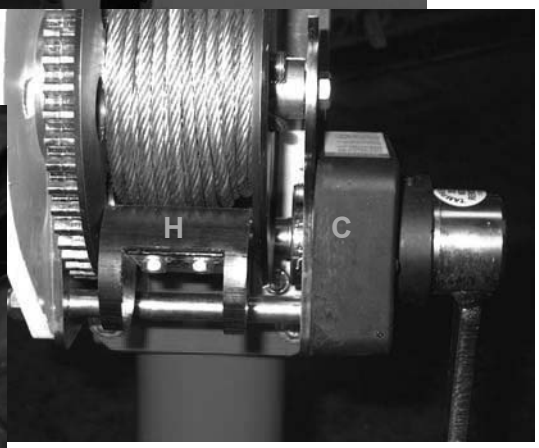


Figure 1 Winch Components

3.2 PRE-OPERATION INSPECTION

It is necessary to perform a detailed visual inspection prior to using the winch. If deficiencies are found, remove the winch from service and return to Unique Concepts Ltd. or authorized service center for rework. This checklist should be used as a guide to determine whether the equipment is in good operating condition prior to using. Equipment that is not in good condition can endanger the safety of the entrant during use.

The visual inspection must include but is not limited to the following items:

1. Check that the winch has no structural defects.
2. Be sure the winch is clean and the labels are legible.
3. Be sure the crank handle moves freely.
4. Functional check:
   a. Pull on cable and turn the crank counterclockwise to extend cable.
   b. Release the crank and pull hard on the cable.
   c. Pull on cable and turn handle clockwise to retract cable.
   d. Be sure that cable is threaded through the structure pulleys and rollers as per instructions in applicable structure manual.
5. Inspect the cable:
   a. Check cable for kinking, cuts, wear and fraying.
   b. Check that the thimble and cable crimps are in good condition.
   c. Check that the snap lock is in good condition. Be sure the gate will not open unless the lock is released to prevent rollout. Be sure the load activation indicator snap reads green according to Section 4.2.2.
6. Check brake wear indicator. Remove from service if indicator displays in the red and return winch to the factory for service.
7. Check the Annual Re-Certification date stamped into the crank handle. Remove from service if stamped date exceeds the current date of operation and return winch to factory for service. Refer to winch inspection log for details on winch servicing.
8. If the winch is not in good condition, remove from service and tag for shipment to an authorized repair depot or the factory for rework. Using a winch that is not in good condition can lead to a hazardous condition for entrant(s).
9. Go through the detailed inspection procedure on a regular basis (at least annually) per the Inspection Section of this manual. Document the results using the sample form and retain for your files.
10. A detailed inspection is required after 6 months of periodic use and records kept.

3.3 APPLICATIONS

1. **General**
   The Unique Concepts “Basic” Series Man Rated Confined Entry/Retrieval System Winch is designed to be used in work support or rescue. It extends and retracts a line as the handle is turned. When the handle is not being turned, an internal brake holds the spool and the line will not extend or retract.

2. **Scope**
   The winch works well in both vertical and horizontal applications. However, different mounting, anchoring and support systems are required for each type of application. **The user has the responsibility of reading and following the instructions for the other systems in addition to the winch.** Misuse or abuse of any component can create hazards for personnel.

3. **Work Support**
   The winch works well for supporting workers in a boatswains chair or a full body harness (single point suspension). In some applications, a back-up fall arrest system is also used. In these applications, a swing angle of less than 5° is recommended. Use only an approved mounting or anchoring system at all times. Use only approved connectors that are equipped with an anti rollout device.

4. **Emergency Rescue**
   In emergency situations, use the winch to remove personnel from a hazardous or an unsafe environment. In these situations, a back-up fall arrest system is generally not required. Be sure to use the proper mounting and anchoring system for the winch. Use only a full-body harness for personnel. Always be aware of the system limitations and follow the instructions.

5. **Limitations**
   Operators must be aware of several limitations on the use of the winch whenever it is used and plan their work accordingly. Limitations include but are not limited to:

   a. **Corrosion:**
      Do not keep the winch in an area that has a corrosive atmosphere. Corrosive vapors can be released by sewage plants or in fertilizer plants. Sea water or spray can also cause corrosion to the case, lifeline or other components. Long term exposure to these types of environment will require more frequent inspections to insure that the function of the unit has not been effected.

   b. Chemical or Toxic Environments:
      Work environments that contain strong acids, bases or other corrosive chemicals in solutions, sprays or vapors may damage the winch or auxiliary components. Inspect the unit frequently to detect any damage. Chemical damage may be difficult to detect visually and periodic lifeline replacement is recommend to insure safety.

   c. **Electrical Hazards:**
      Stay away from power lines or other components carrying electrical power. The metal lifeline can conduct electricity if it gets close to or contacts a power line or electrified component. Remember electricity can jump across an air gap and electrocute personnel using the winch. Contact your local utility to remove or disconnect the power before working around these components. Contact Unique Concepts for synthetic rope options for reduced conductivity.

d. **Load Capacity:**
Do not exceed the winch capacity of 310 lbs. (141 kg) (includes people, harness, tools etc). Do not carry more than one person at a time on the lifeline. Overloading the winch can exceed the design safety factors and could create hazards.

e. **Training:**
Do not allow anyone to use this winch unless they are trained in its limitations and use. Untrained operators can expose themselves and others to hazards. Train new operators before using the unit. Review operating procedures on a regular basis with experienced personnel.

3.4 SYSTEM REQUIREMENTS

The Unique Concepts "Basic" Series Winch is a component in a Confined Space Entry/Retrieval System. The winch and all auxiliary components must be compatible to prevent creating unexpected hazards. A list of system compatibility requirements includes but is not limited to:

a. **Anchorage**
The winch is designed to be attached to a mounting and support system that provides the required anchorage strength.
Anchorage strength requirements are defined by ANSI and OSHA Standards or local regulations and must be met to insure the safety of the entrant. If Unique Concepts has reviewed and approved the mounting or anchorage system, it has sufficient strength to fulfill the ANSI and OSHA requirements. If the winch will be used with a non-factory approved mounting or anchorage system, a qualified person must review and approved the application prior to use.

b. **Connectors**
Use only approved connectors with sufficient capacity that have an anti rollout device designed into the snap. Non-approved connectors can open during use and create unexpected hazards. Do not use them.

c. **Personnel Harness**
Use only an approved full body harness. Do not use a single belt or strap system. Only a full body harness can provide the required support for the body to prevent injury.

3.5 FIELD OPERATION

OPERATING SAFETY

1. Read, understand and follow the User Manual and signs on the equipment before using, maintaining or inspecting the equipment.

2. Train all operators before allowing them to use the equipment. An untrained operator exposes themselves, bystanders and workers to possible serious injury or death.

3. Visually inspect the equipment and all auxiliary components and equipment before using. Correct any problems before using the equipment.

4. Securely anchor the winch before using.

5. Use only certified anchor and connector components in your system.

6. All anchor points, or mounting/setup locations for permanent or portable systems must be approved to local standards by a qualified engineer.

7. Use only an approved body harness for the workers.

8. Always work in teams. One person works in the confined space and the other one pays out the line and reels it in.

9. Do not use the equipment when the winch brake wear indicators display in the red or 1 year in service (which ever comes first). Return equipment to manufacturer for service.

10. Do not exceed 310lbs. (141 kg) on the personal man rated lifeline during operation.

11. Use only retractable lifelines or shock absorber with a maximum arrest force (MAF) equal to or lower than the lowest rated component of your system.

12. Establish a regular training program for new and experienced workers.

13. Establish a detailed inspection program for your equipment and document the findings. Return the equipment to the manufacturer for rework if any problems are found.

14. Plan your work program before starting. Have the required people, equipment and procedures available to do the job.

15. Do not use the equipment around physical or environmental hazards. This list includes but is not limited to:
    a. Corrosion that may affect the structural integrity of the life line or other components .
    b. Chemicals which can degrade components and not be visible.
    c. Toxic gases: Rescuers or workers can be killed in toxic environments.
    d. Heat or elevated temperatures.
    e. Moving machinery: Workers or auxiliary equipment can be contacted by or pulled into moving components.
    f. Sharp edges: Workers or the rescue equipment can be injured by or damaged by sharp edges or components.
    g. Electrical hazards: Stay away from power lines or components carrying electrical power.
    l. Overload: Do not exceed a personal load capacity of 310 lbs. (141 kg) or material load capacity of 620lbs. (282 kg) during operation.
    m. Follow confined space regulations in Standards.

The Unique Concepts “Basic” Series Winch is designed for use in many applications including but not limited to work positioning, personnel riding, rescue or confined space entry/retrieval. It is the responsibility of the operator to be familiar with and follow all applicable OSHA and industry standards on operating guidelines for your project. If you have any questions, consult with a qualified person or call the factory.

When using the winch, follow this procedure:

1. Review and follow the Pre-Operation Inspection (Refer to Section 3.3).

2. Inspect the unit prior to each use. Visually check each component to be sure that there is no damaged or missing parts. Check that all systems and components function as intended. Do not use the equipment if any problems are found.

3. **Working Planning**
   Plan your entire work project before starting. Consider all the equipment and system requirements and comply with these requirements before starting. Anticipate the needs before, during and after the project is being done and prepare for these needs. Be prepared for the unexpected by planning in advance. Your advance planning list includes but is not limited to:

   a. **Anchorage**
      We recommend mounting the winch to only approved supporting components and systems to be sure that the anchorage has sufficient strength. All support and mounting systems must be designed to ANSI and OSHA Standards. Refer to Structural manual for specific strengths.

   b. **Connectors**
      Connectors if used should be equipped with an anti-rollout device to prevent accidental disengagement. Roll-out can occur when there is interference between the connector and load that causes the gate or keeper to accidentally open or release. Do not take a chance with safety. Only use approved components.

   c. **Hazards**
      Stay away from mechanical, chemical and electrical hazards. Moving machinery, sharp edges and other mechanical hazards can injure personnel, damage equipment or interfere with the work procedure, chemical, corrosive or toxic environments can damage equipment or affect the well-being or personnel. Electrical power can follow through the equipment and electrocute personnel even if there is no direct contact. Plan your work or rescue procedures to consider these factors and allow for them. Advance planning will allow the equipment to be used safely in a variety of conditions.

   d. **Cable Path**
      Body parts, clothing, tools or other items can get snagged when going around a corner or over obstacles during the retrieval procedure. Corners or sharp edges can also damage the lifeline as it goes by. Be prepared to do an entry rescue to assist in the retrieval of a down entrant.

   e. **Vertical Applications**
      For vertical applications, keep the swing-fall angle less than 5°. Serious injuries to personnel can occur if they swing into a solid object. Try to keep the entrant directly below the winch attachment point at all times. Two people are required at all times: the entrant and winch operator. Always maintain communication to be sure the lifeline is kept taut and that the entrant is not encountering problems.

f. **Emergency**
During rescue or emergency procedures, the winch anchorage must be capable of supporting at least 1500 lbs. Always use a full-body harness when moving people. People can be seriously injured during rescue or in an emergency situation if they are not supported in an approved full body harness. However quick response is required in any emergency or rescue operation.

4. **Personal Fall Arrest System**
In some entry/retrieval applications, OSHA and ANSI Standards require that the entrant be connected to a Personal Fall Arrest System. It is the responsibility of the operator to be aware of these requirements and follow them. Always use a full body harness on the entrant when attached to a PFAS to minimize potential injury to the entrant. Application limitations for the winch also apply to a PFAS.

5. **Installation/Removal**
The "Basic" Series Winch can be equipped with a universal mounting base that can mate with mounting hardware for any support or anchorage system.

A. Installing

a. Secure attaching hardware to the universal mounting base. Refer to appropriate Structure Manual for bracket mounting details.

b. Pin crank handle into position by lining up the holes and pin. Make sure in is pinned secure before operating.

c. Refer to Structure Manual for mounting of winches.

Figure 2 Universal Mounting Base

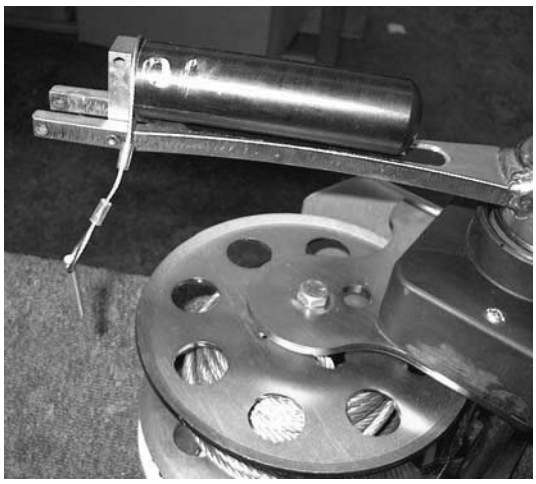


Figure 3 Crank Handle in collapsed position

d. Pull on the cable with at least 10 lbs. Force and turn the crank arm counterclockwise to extend cable.

   Refer to applicable Structure Manual(s) for cable threading instructions.

Figure 4 Cable Extended (Typical)

e. Be sure the cable crimps, thimble, swivel and snap-lock connector are in good condition and functioning as intended.
f. Attach the snap hook to the entrants full body harness.

Figure 5 Snap-lock Connector

B. Removal:

a. Disconnect the snap hook from harness. Maintain at least a 10 lb. load on the cable to keep the cable tight on the spool.
b. Turn the crank handle clockwise to retract the cable through the pulley and rollers of the structure (if applicable) while maintaining a 10 lb. pull on the cable. See appropriate structure manual.
c. Retract until copper crimps and thimble just rolls loosely onto drum.
d. Remove from mount or anchorage. Refer to structure manual for details.

Figure 6 Maintaining 10 lbs. on Cable

6. **Load Attachment**

The entrant must be attached to the winch using the snap hook on the end of the lifeline. This, and any other connector, must be equipped with an anti-rollout device on the gate. When attaching the entrant, follow this procedure:

a. Pull on the snap hook with at least 10 lbs. pull while extending the lifeline until there is sufficient slack to attach to the entrant.
b. Use two hands when attaching to the entrant.
c. Use one hand to apply a steady pull on the lifeline and to steady the snap hook.
d. Use the other hand to depress the lock and open the gate.
e. Insert the harness D-ring into the hook.

IMPORTANT

Always use a full body harness for personnel and attach to the dorsal "D" ring.

Figure 7 Snap-lock Connector

f. Close gate and be sure the lock clicks into its locked position.
g. Tighten the lifeline.
h. Reverse the above procedure when unhooking from the entrant.

7. **System-Integrity**

The entrant should always verify the intergrity of the attachment and system before entering a confined space. To verify the integrity of the system, follow this procedure:

a. Connect the snap hook to the dorsal ring of the full body harness.
b. Snug up the lifeline.
c. The entrant should slowly lift their feet off the ground and transfer all the weight to the lifeline.
d. Be sure the winch holds you in a stationary position.
e. Be sure the full body harness is comfortable and does not pinch, chafe or bind. Adjust for comfort before starting.
f. Do not enter confined space unless connectors, brakes, winch and harness are functioning properly.

8. **Crew Personnel**

A working crew requires the use of at least 2 people at all times. The entrant who is attached to the end of the lifeline and the attendant who turns the winch crank and guides the lifeline. Each must be properly trained in the use of the equipment and for their task. As the entrant enters the confined space, the entrant should maintain communication with the attendant operating the winch. Heavy gloves should be worn by the attendant when guiding the cable. The two people must work as a team to get the job done safely and efficiently.

9. **Entering Confined Space**
   When entering confined space, follow this procedure:

   a. The entrant should move slowly and smoothly into the confined space (either vertical or horizontal).

   b. The attendant should turn the winch handle counter-clockwise to pay out the lifeline.

IMPORTANT

Do not use the winch if turning the handle clockwise pays out the lifeline. The internal brakes are engaged only when the handle operating direction retrieves the lifeline when the handle is turned clockwise. The reverse cable protector should prevent backwards winding of cable.

   c. Wearing gloves, place one hand on the lifeline to guide it as it extends. Use your hand to maintain a slight pull on the cable at all times.

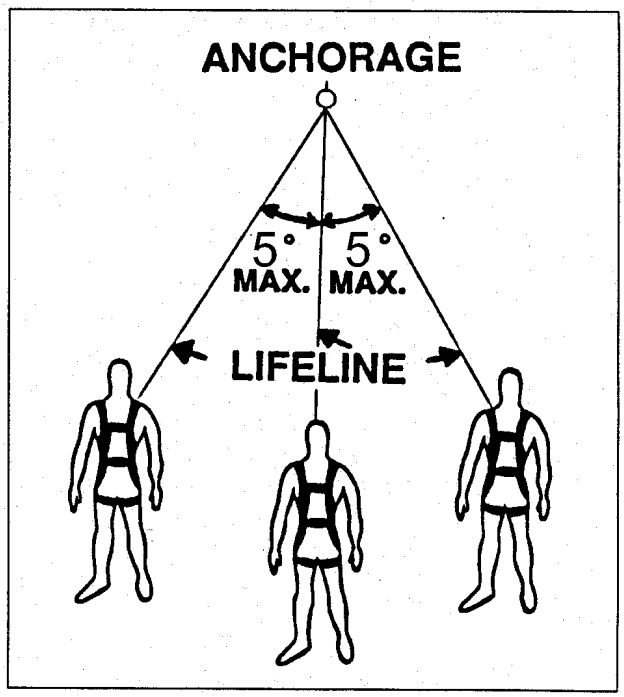


Fig. 8 SWING ANGLE

   d. For a vertical entry, maintain the swing angle at less than 5 while working. The entrant can be seriously injured if the swing angle exceeds 5°.

   e. If the entrant is not suspended and there is no chance of a fall, pay out sufficient line (2 ft. max.) so it is slack and the entrant can work. Hold the lifeline so there is a slight pull on it at all times.

   f. Extend or retract the lifeline as required to keep the line snug.

   g. Maintain communication between the entrant and attendant at all times. Be sure each knows what the other is doing.

   h. Do not go around corners when entering a confined space. Body parts, clothing, tools or other items can get snagged when going around a corner and over obstacles during retrieval procedure. Corners or sharp edges can also damage the lifeline as it goes by. Be prepared to do an entry rescue to assist in the retrieval of a down entrant.

i. If the lifeline becomes tight or slack during entry, communicate with the entrant to determine whether there is a problem. Correct the problem before proceeding.

j. **The last 10 feet of the lifeline has a red marker and should not be unwound from the drum. This length provide the required wrap on the drum to properly anchor the lifeline and insures that the lifeline wrap direction is correct. Stop extending the lifeline when you see the red marker.**

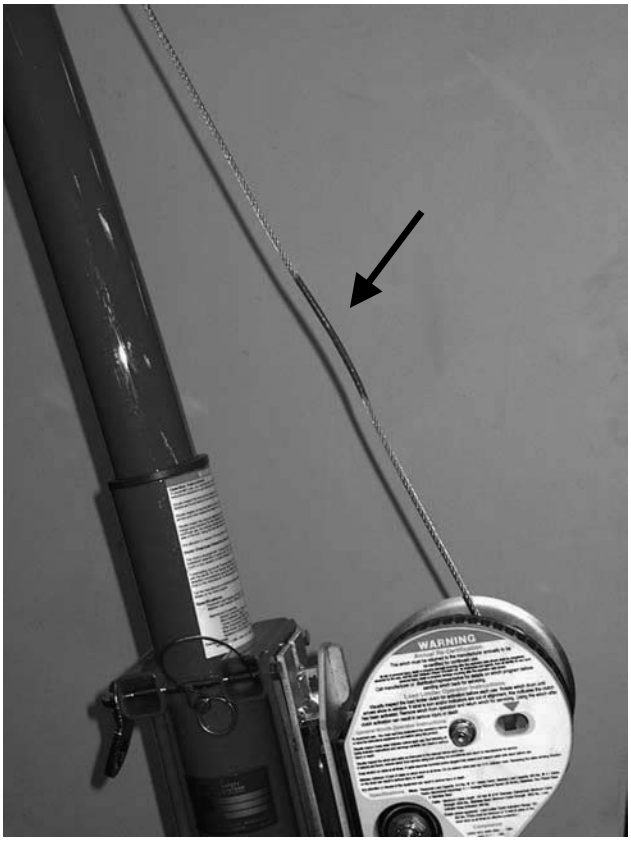


Figure 9 Cable Marker

10. **Retrieving From Confined Space**

When exiting from confined space, follow this procedure:

a. Turn the winch crank arm clockwise to retract the lifeline and retrieve the entrant from the confined space.

IMPORTANT
Do not use the winch if turning the handle counterclockwise retrieves the lifeline. The internal brakes are engaged only when the handle operating direction retrieves the lifeline when the handle is turned clockwise.

b. Maintain communication with entrant when preparing to retrieve and during the retrieval process.

c. Turn the handle smoothly to maintain an even retrieval rate.

d. If the winch handle turning load increases suddenly, stop and investigate. Determine the cause and correct before continuing the retrieval. Usually this occurrence is caused by the load catching or snagging on something. Release the snag before continuing. It may be necessary to extend the line slightly to release the snag.

e. Support the entrant or load after retrieval and disconnect snap hook.

⚠ CAUTION

Should the entrant become caught around a corner or get snagged or tangled, it may be necessary to enter the confined space and assist the original entrant. This should be considered a new entry or rescue and all regulations apply to the new entrant. E.g. Lifeline. Be prepared for a rescue.

11. **Load Limiter Clutch**

The winch is designed with a load limiter clutch that activates when a short free fall has occurred and while brakes are engaged. The clutch will slow the fall gradually until it comes to a complete stop. **There must be at least 10 feet of cable on the drum at all times for this clutch to be effective.**

When activation of the load limiter clutch occurs, the operator can still extend or retract the cable from its stopped position by turning the crank. When the entrant is out, remove the winch from service and return to the factory for rework.

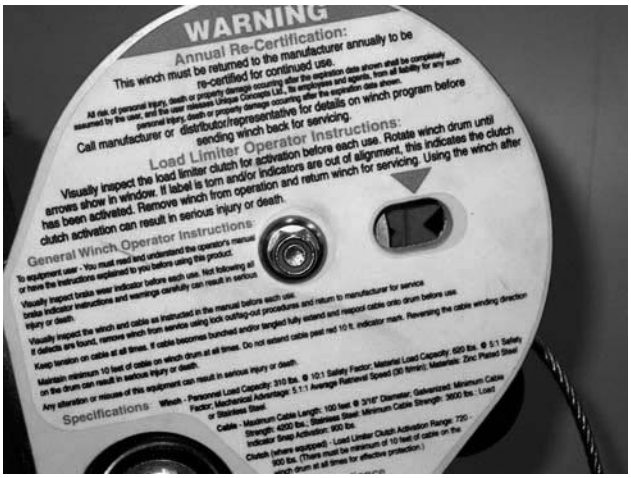


Figure 10 Load Limiter Clutch Indicator Window

12. **Rescue or Emergencies**

The winch is designed for entry and retrieval of people from confined spaces in rescue or emergency applications. Although fast response is crucial for saving lives, it is still necessary to be aware of and follow all safety and operating procedures. Do not take chances with shortcuts. Peoples lives are at stake. Use only trained competent people who know the equipment and can safely rescue people from an emergency situation.

13. Operating Hints

a. Follow all applicable OHSA and ANSI Standards and local regulations when using this equipment.

b. Train all new operators before allowing them to use the equipment. Conduct regular refresher training sessions with all experienced operators.

c. Inspect and maintain the equipment on a regular basis. Remove defective equipment from service. Keep inspection and maintenance records.

d. It is recommended that the winch be used in conjunction with other approved components and systems. Approved components and systems have the required function, strength and compatibility for all applications.

e. Review and follow the limitations for the equipment. Do not use in corrosive conditions, toxic atmosphere or around mechanical or electrical hazards without taking special precautions.

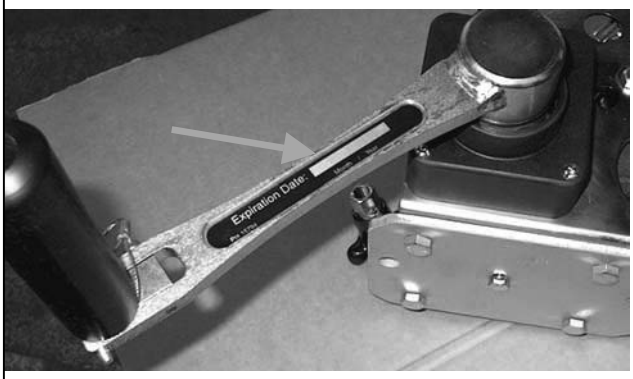
f. Plan your project before starting to work. Anticipate all the normal and unexpected needs relating to equipment and procedures and have them at hand before starting. Advance planning can save time and lives.

g. An entrant and attendant must work as a team. **Maintain communication at all times.**

h. Check the condition of the brake wear each time the winch is used. When the indicator moves into the red portion of the scale or 1 year in service (which ever comes first), remove from service and return to the factory for service.

i. Use Loctite 262 (or equivalent thread locker) to secure crank handle anchor bolts if required, Figure 11. Secure them if they come loose during use.

Brake Wear Indicator Window



Expiration Date, has to be recertified

Figure 11 Winch Safety Features

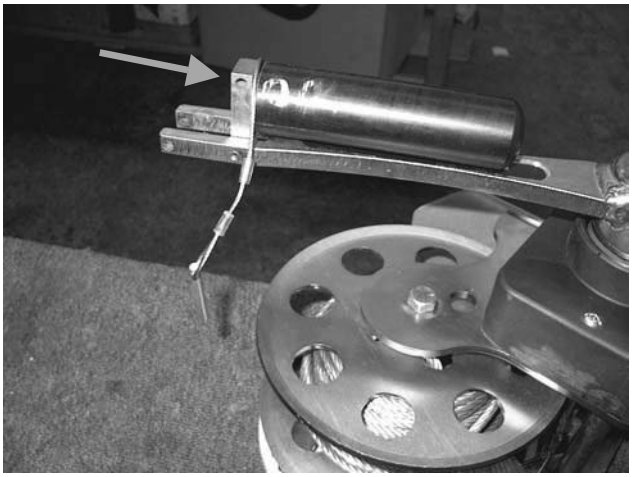


Figure 12 Handle Anchor Bolts

3.6 STORAGE

Prior to storage, the winch should be thoroughly inspected and maintained. Return winch for repair or replacement of any worn or damaged components to prevent any unnecessary down time at the next use. Follow this procedure:

1. Thoroughly clean the winch using mild soap on the body and labels. Be sure the labels are legible.

2. Use a neutralizing solution to clean lifeline. This is particularly important if the unit had been used in corrosive or toxic environments.

3. Perform a complete inspection of the unit and document the results.

4. Touch up all nicks and scratches to prevent corrosion.

5. Store in a cool dry place.

9. **Entering Confined Space**
   When entering confined space, follow this procedure:

   a. The entrant should move slowly and smoothly into the confined space (either vertical or horizontal).

   b. The attendant should turn the winch handle counter-clockwise to pay out the lifeline.

IMPORTANT

Do not use the winch if turning the handle clockwise pays out the lifeline. The internal brakes are engaged only when the handle operating direction retrieves the lifeline when the handle is turned clockwise. The reverse cable protector should prevent backwards winding of cable.

   c. Wearing gloves, place one hand on the lifeline to guide it as it extends. Use your hand to maintain a slight pull on the cable at all times.

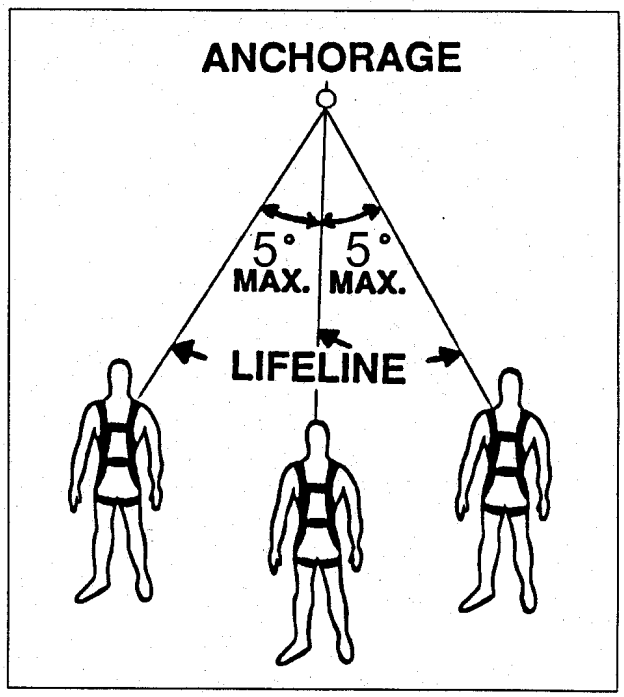


Fig. 8 SWING ANGLE

   d. For a vertical entry, maintain the swing angle at less than 5 while working. The entrant can be seriously injured if the swing angle exceeds 5°.

   e. If the entrant is not suspended and there is no chance of a fall, pay out sufficient line (2 ft. max.) so it is slack and the entrant can work. Hold the lifeline so there is a slight pull on it at all times.

   f. Extend or retract the lifeline as required to keep the line snug.

   g. Maintain communication between the entrant and attendant at all times. Be sure each knows what the other is doing.

   h. Do not go around corners when entering a confined space. Body parts, clothing, tools or other items can get snagged when going around a corner and over obstacles during retrieval procedure. Corners or sharp edges can also damage the lifeline as it goes by. Be prepared to do an entry rescue to assist in the retrieval of a down entrant.

Weekly

1. **Functional Inspection**
   Perform a functional inspection. Refer to Section 4.2.2. Record results and keep documentation.

AS REQUIRED

A) Lubricate the Cable
Use a light oil to lubricate the cable. Lubricating oil should only be applied to a clean dry cable. Use a stiff bristled brush to remove contaminants from the cable if it is dirty. Allow the oil to penetrate into the cable to reduce internal friction. Wipe the cable dry with a clean cloth as it is being retracted into the winch.

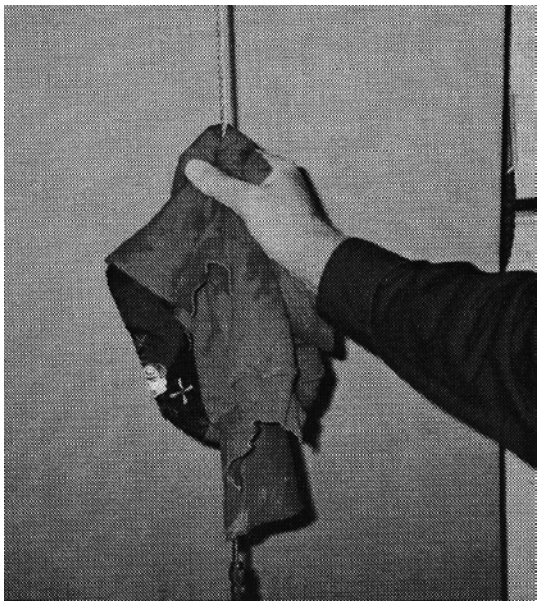


Figure 14 Cable Oiling

B) Clean Winch
Use a damp cloth and mild soap to clean the body components and labels of dirt and residue. Be sure labels are legible.

C) Complete Inspection
Perform a complete inspection. Refer to Section 4.2.3. Record results and keep documentation.

Annually

This winch must be returned to the manufacturer annually to be re-certified for continued use.

All risk of personal injury, death or property damage occurring after the expiration date shown shall be completely assumed by the user, and the user releases Unique Concepts Ltd., its employees and agents, from all liability for any such personal injury, death or property damage occurring after the expiration date shown.

Expiration date is indicated on the winch crank arm.

4.2 INSPECTION

4.2.1 Visual Inspection

A complete visual inspection should be performed on the system you are using prior to the operation. The following items should be checked; and the results recorded on the "Inspection Log" sheet (see Section 4.2.5).

1. **Labels**

   Check that all labels are clean and legible. Clean the labels if any are dirty using a mild soap and a damp cloth. Replace if any are illegible (Refer to Section 5 for a listing of all labels).

2. **Fasteners**

   Check that all screws and other fasteners are tight. If any are loose or missing, contact your local dealer or the manufacturer.

3. **Structural Components**

   Check the components for cracks, dents, bends, or breaks. Minor cosmetic damage in the component body will not affect the function of the davit system. However if there are major dents or any other structural damage, the unit should be removed form service and returned to the manufacturer for service.

4. **Corrosion**

   Check all components for damage from corrosion. Although all components resist corrosion, working in corrosive environments can lead to damage. Inspect all structural components and fasteners for signs of damage. If damage found, remove from service and return to the manufacturer for service.

Instruction Plate Side

Crank / Cover Side

Figure 15 Labels

5. Crank Arm

Check that each handle on the crank arm is tight. Use Loctite 262 (or equivalent thread locker) on the anchor screw if required to deep them tight. Check that the crank arm slides easily into each drive pocket and that it locks securely in place. If the crank arm is bent, damaged or does not fit and lock into the drive pockets, remove arm and replace. Do not use crank arm unless it is fully functional.

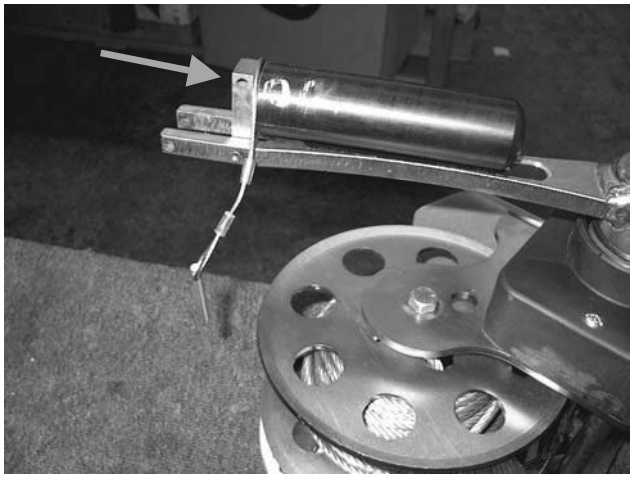


Figure 16 Handle Anchor Bolts

6. Connectors

Check the cable collar and clamp for signs of wear, distortion or cable fraying. Remove from service and return to the factory for service if any problems are found. Check the gate and gate lock on the snap hook. Both must open and close easily. If they do not, remove from service and return to the factory for service.

Figure 17 Snap-lock Connector

7. Brake Indicator and Expiration

Check the condition of the brake indicator and annual re-certification date. The indicator should be in the green. If the window shows in the red or a combination of green/red, remove from service and return to the factory for service. If the expiration date exceeds 1 year in service, remove form service and return to the factory for service.

Brake Wear Indicator Window

Expiration Date, has to be recertified

Figure 18 Winch Safety Features

4.2.2 Functional Inspection

A functional check should be performed on the winch prior to every use. The following functional tests should be done:

1. **Winch Crank Rotation Direction**
   The winch crank must turn in the clockwise direction to retract the lifeline and counterclockwise to extend for the internal brakes to engage properly. If the crank direction is reversed, the lifeline must be extended completely (including the last 10 feet past the plastic coated red mark) to remove all the cable from the spool. In this procedure, turning the crank clockwise will extend the cable. Always keep a 10 lb. pull on the cable clockwise until the cable stops extending and starts retracting. Maintain the 10 lb. tension on the line until the cable is completely retracted. If the cable has been reversed on the spool, the cable may have been damaged. Inspect the cable as in Section 4.2.3.

2. **Snap Hook**
   Manually check that the swivel on the top of the snap hook turns easily without sticking or binding. Also check that the gate locks and the gate opens and closes easily without binding and sticking. If any component sticks or binds, lubricate with a light oil. If sticking or binding persists, remove winch from service and return to the factory for service.

3. **Brake Engagement**
   The internal brake must hold the cable from extending or retracting unless the crank arm is turned. To functionally check this required feature, extend the cable in 10 foot increments by turning the crank counterclockwise. Then pull sharply on the cable to be sure the brakes hold securely. If they do not hold, remove the winch from service and return to the factory for service.

4. **Brake Ratchet Mechanism**
   The winch is designed with an internal ratchet that engages the brake continuously when the crank arm is turned. The ratchet should be making a clicking sound when the crank is turned. This ensures the spring-loaded pawls are continuously engaging the ratchet. If ratchet clicking is not heard when the crank is turned, remove from service and return to the factory for service.

a Retrieval Clockwise
b Extension Counter-Clockwise

Figure 19 Crank Rotation

3.con't

Starting in **September of 2000**, new UCL Safety Systems Lifeline assemblies will incorporate a double-locking swivel snap with a built in overload indicator. These snaps are designed to visually identify lifeline assemblies that have been subjected to loading in excess of double the winch's rated working load limit of 310 lbs.

Any winch on which the overload indicator has been activated must be removed from service immediately and inspection, repair, and re-certification.

All warranties and liabilities shall be void for winches on which the overload indicator has been activated.

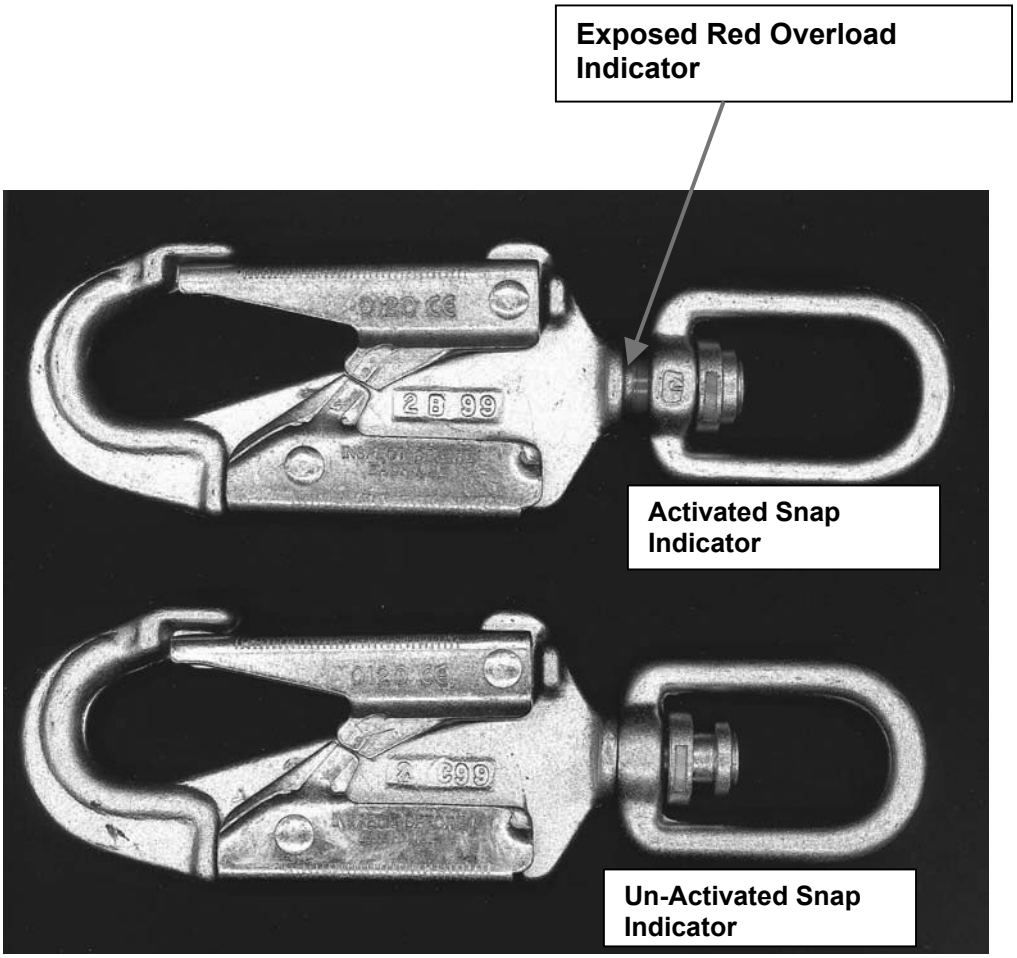


Figure 20 Load Indicator Double Locking Snap

4.2.3 Detailed Inspection

A detailed inspection should be done at the manufacturers winch factory on the winch every year. The inspection must include the following, results logged on the sample inspection form and retained in your files should anyone ask to see them. Refer to Section 4.2.6 for a sample inspection form.

The detailed inspection should include:

1. Visual Inspection
Refer to Section 4.2.1 for a listing of all times that should be checked visually. Log the results on the inspection form.

2. Functional Inspection
Refer to Section 4.2.2 for listing of all items that should be functionally checked. Log the results on the inspection form.

Figure 21 Cable Fittings/Snap Hook

3. Detailed Inspection

a. Cable Fittings/Snap Hook
Check the cable fittings on the end of the lifeline. Be sure that it is not cracked, distorted, bent, corroded, worn, loose or cutting into the cable. Be sure that the cable clamp is tight without signs of wear of corrosion. Be sure the cable and strands are not frayed or broken.

Check the snap hook. Be sure it is not bent, distorted, cracked or worn. Be sure the swivel turns freely and the gate locks and the gate opens and closes easily.

Note results on inspection log.

b. Cable Inspection
The cable must be inspected over its full length and the results recorded in the inspection log. Always wear heavy gloves to prevent cuts and slivers while handling the cable. If any strands are broken, remove from service.

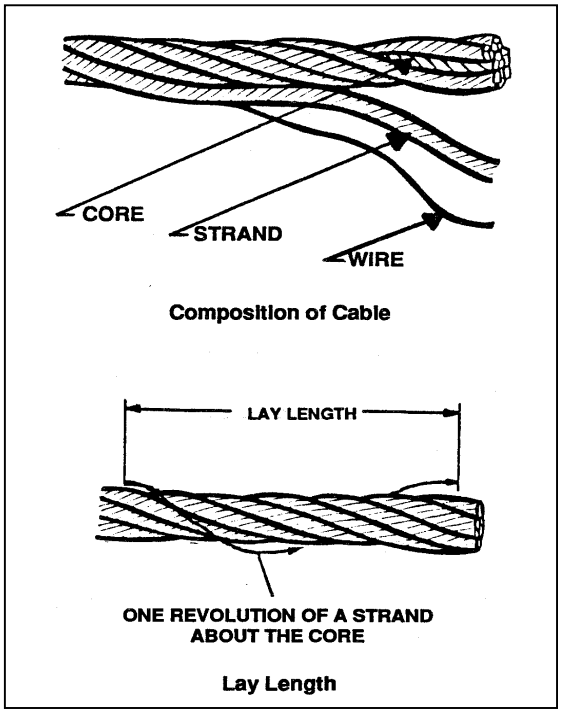


Figure 22 Cable Definitions

i. **Check for broken wires**
Pull the cable out in small segments and flex to check for broken wires.

NOTE

The inspection of the cable is all based on the definition of a lay, core, strand and wire. A lay is where a strand makes one complete revolution around the core. The core is the center of the cable itself. A strand is the bundle of wires that move around the core. A wire is a single filament that makes up a strand.

Start the inspection at the cable clamp to check for broken wires or strands. Pull out a short segment of cable and turn it while flexing to check for broken wires.

IMPORTMANT

Review the cable inspection log to determine the location of previously found broken wires or other defects. These previously found defects combined with those found during this inspection may require that the winch be removed from service.

Inspect the entire length of the cable logging the results on the inspection form.

When a broken wire is found, remove the protruding end by flexing it back and forth along the length of the cable. The wire will normally break off inside the cable so there are no exposed ends to damage adjacent strands. Do not pull on an end or wire with pliers. It can pull the broken end out to expose it.

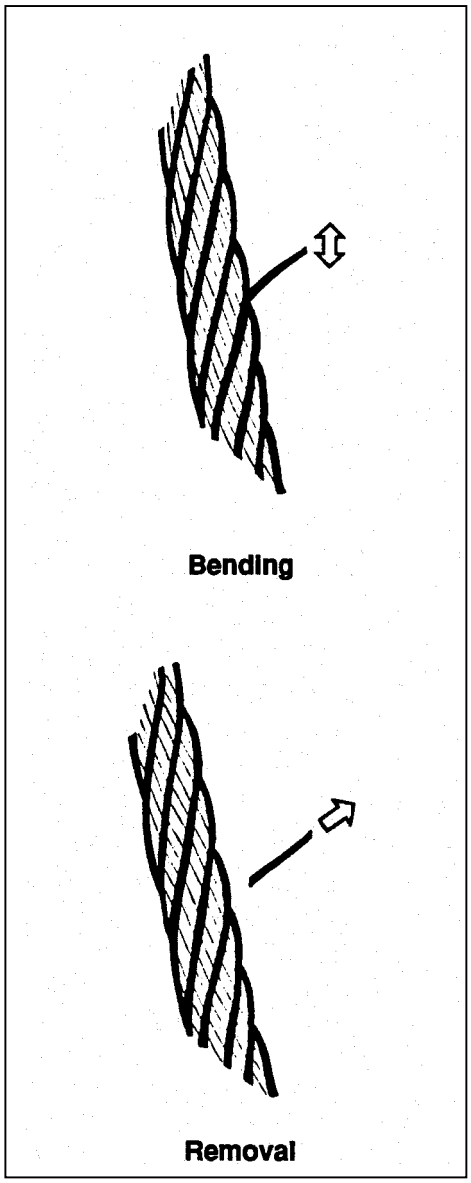


Figure 23 Broken Wire

Use the previous inspection logs to determine the total number of broken wires in a lay. Remove the cable and winch from service when:

- There are three or more randomly distributed broken wires in one cable lay.
- There are two or more broken wires in one strand in one lay.
- There are any broken wires within 1.0 inches (25 mm) of the cable clamps next to the thimble.

Return the winch to the factory for cable replacement if any of these conditions are met or exceeded.

ii. **Worn or Abraded Wires**

Check for worn or abraded wires. Worn or abraded wires are caused by friction and rubbing against adjacent components and are usually brighter in appearance. Remove from service if any surface wires in one area are worn by 1/3 or more of their diameter.

iii. **Bulges or Reduction in Diameter**

Check for bulges or a reduction of the cable diameter. When these conditions occur, it indicates serious internal cable damage. Remove the unit from service when the cable diameter increases or decreases by 0.05 inches (1.3 mm).

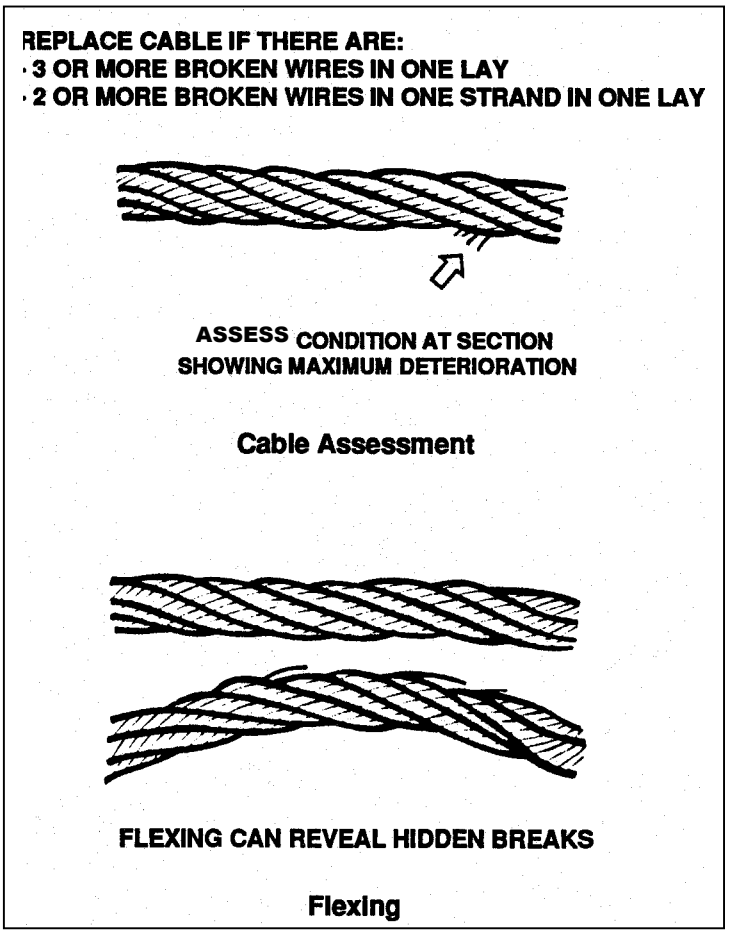


Figure 24 Cable Inspection

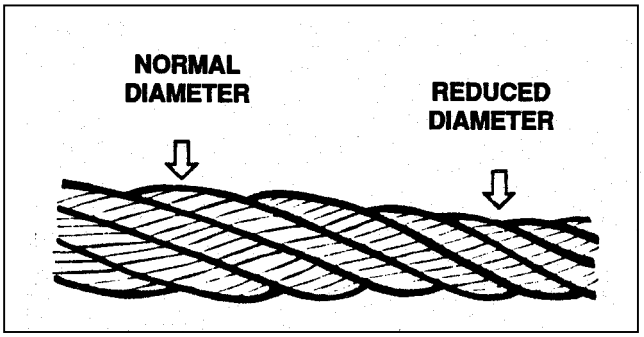


Figure 25 Cable Diameter

iv. **Corrosion:**

Check for corrosion. Corrosion can be seen as a discoloration of the wires in most cases. Although there is no simple sure way to tell when corrosion has excessively weakened the cable, the inspection personnel must keep in mind that corrosion normally develops on the inside of the cable before it becomes visible on the outside. Have a qualified person assess the damage and determine whether the unit should be removed from service. Pitting is a particularly serious sign of advanced corrosion. Rust along with broken wires in a given area is sufficient reason to remove the unit from service.

v. **Insufficient Lubrication**

Check for insufficient lubrication of the cable. Generally this is caused by a build-up of contamination between the strands of cable. Packed grease, dirt, paint or other contaminants prevents the lubricant from getting inside the cable to prevent internal friction and corrosion. If contaminants have filled the grooves, remove from service.

vi. **Snagged Wires and Crushed or Flattened Strands**

Check for snagged wires and crushed or flattened strands. These conditions appear when the cable has been pulled around corners or caught between two heavy objects. Remove from service and return to the factory for rework.

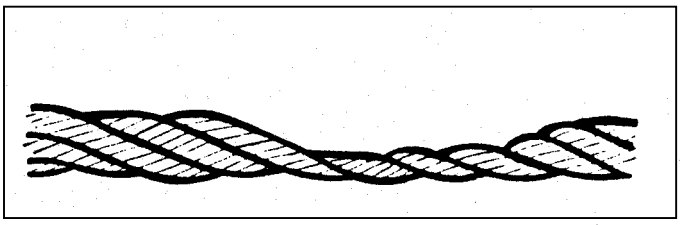


Figure 26 Crushed Cable

vii. **Unlaying and Bird-Caging**
Check for unlaying and bird-caging of strands. This condition appears as the formation of gaps, loops and excessive clearance between strands. If this appears, remove the unit from service and return to the factory for rework.

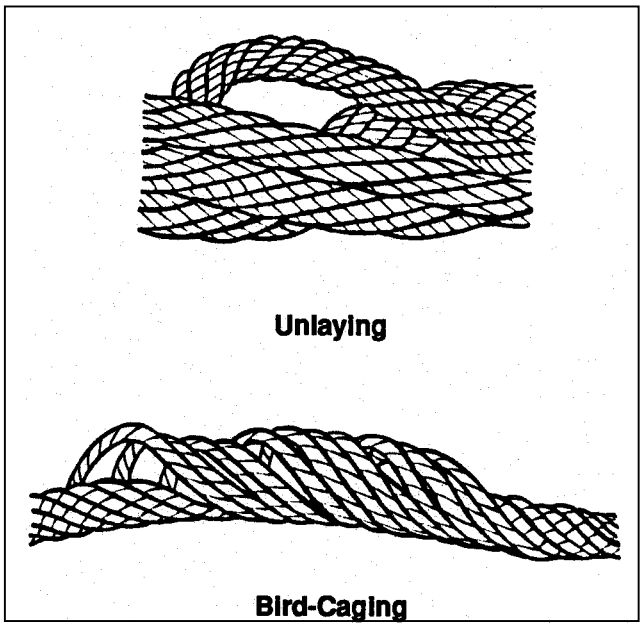


Figure 27 Cable Separation

viii. **Kinks and Bends**
Check for kinks and bends in the cable. Kinks and bends are created when a loop forms in a slack cable and then it is pulled tight without the loop uncoiling. Remove from service if kinks or bends are formed in the cable.

ix. **Heat Damage, Torch Burns or Electric Arcs**
Check for examples of heat damage, torch burns or electric arc strikes. Localized discoloration, fusing or melting indicate this type of damage. If this is found, remove the unit from service and return to the factory for service.

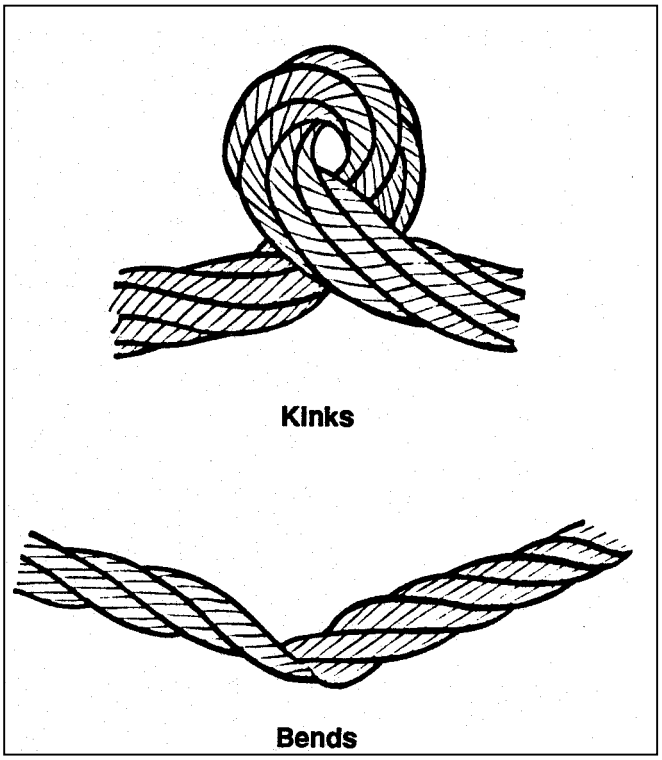


Figure 28 Cable Damage

4.2.5 Inspection Log

4.2.5.1 Winch Inspection Log

Sample form. Copy page to start inspection log record book. Fill out using ball point pen.

Model No.: Serial No.: Annual Re-Certification Date:

Date of Inspection							
Counter Number							
Inspector							
FUNCTION	Extension (CCW)						
	Retraction (CW)						
	Brakes						
WINCH BODY	Fasteners						
	Labels						
	Brake Pointer						
	Damage						
	Corrosion						
	Cable Collars						
	Handle(s)						
SNAP HOOK	Damage/Wear						
	Corrosion						
	Swivel						
	Gate Lock						
	Gate						
	Cable Clamp						

Note: If the brake indicator points into the red or the winch is in service for 1 year, (which ever comes first), return to manufacturer for inspection and service.

4.2.5 INSPECTION LOG (con't)

4.2.5.2 WINCH CABLE INSPECTION LOG

Sample Form. Copy page to start inspection log record book. Fill out using ball point pen.

Model No.			Serial No.			Mfg. Date:		
		Broken Wires				At Fittings		
Cable Location*	Measured Diameter	In 1 Lay	In 1 Strand of 1 Lay	Corrosion	Excess Wear	Broken Wires	Corrosion	Lubrication

*** Note: Measure location from snap hook.**

5 LABELS

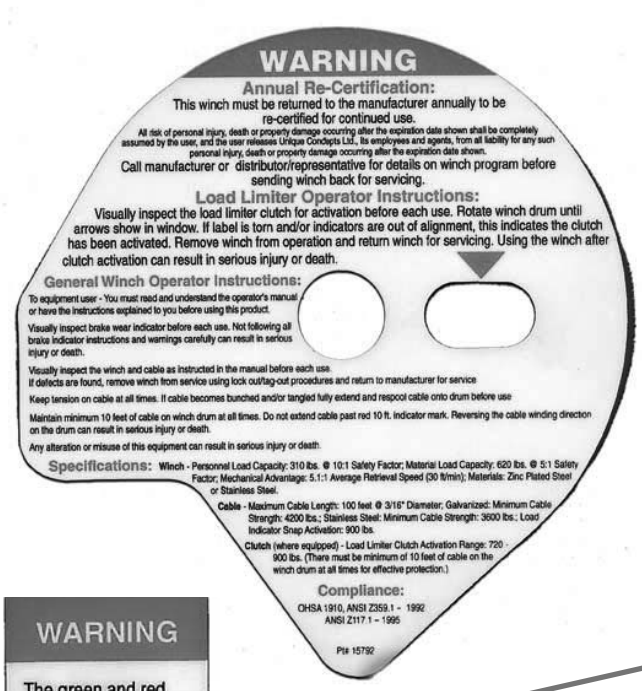
5.1 Warning Labels

The types of labels and locations on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with the various LABELS, the type of warning and the area, or particular function related to that area, that requires you SAFETY AWARENESS.

Think SAFETY! Work SAFELY!

Instruction Plate Side

Crank / Cover Side



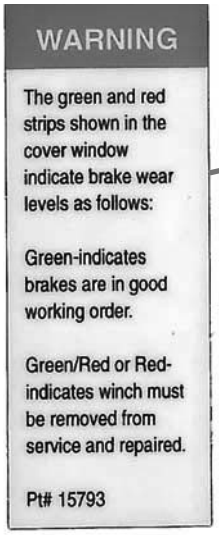


Figure 29 Labels

A Capital Safety Company

CSG USA & Latin America
3833 SALA Way
Red Wing, MN 55066-5005
Toll Free: 800.328.6146
Phone: 651.388.8282
Fax: 651.388.5065
solutions@capitalsafety.com

CSG Canada
260 Export Boulevard
Mississauga, ON L5S 1Y9
Phone: 905.795.9333
Toll-Free: 800.387.7484
Fax: 888.387.7484
info.ca@capitalsafety.com

CSG Northern Europe
Unit 7 Christleton Court
Manor Park
Runcorn
Cheshire, WA7 1ST
Phone: + 44 (0)1928 571324
Fax: + 44 (0)1928 571325
csgne@capitalsafety.com

CSG EMEA
(Europe, Middle East, Africa)
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Carros
Le Broc Cedex
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Fax: + 33 4 93 08 79 70
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Fax: +86 21 62539060

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