



KLEIN TOOLS, INC.
The choice of professionals... since 1857

Instructions for Klein® Pro-Guard™ 2-Way and 3-Way Recovery Systems

2-Way Recovery System

(Cat. No. 87600) including:

- 2-Way Recovery Unit (Cat. No. 87605)
- Material Winch (Cat. No. 87611)
- Adjustable Tripod (Cat. No. 87610)

3-Way Recovery System

(Cat. No. 87601) including:

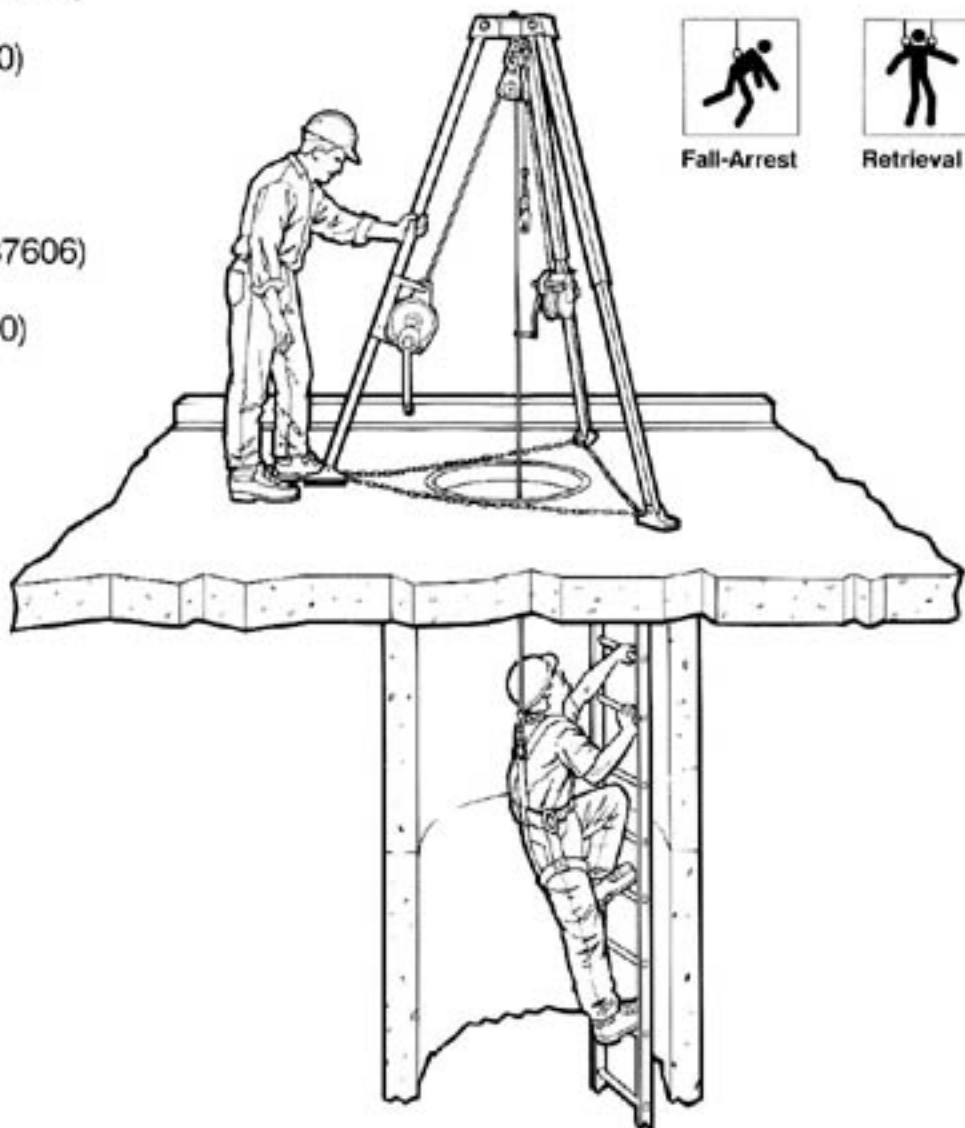
- 3-Way Recovery Unit (Cat. No. 87606)
- Material Winch (Cat. No. 87611)
- Adjustable Tripod (Cat. No. 87610)

This instruction manual covers the operation and maintenance procedures for the products listed above.

▲WARNING Equipment must NOT be installed, operated or inspected by anyone who has not read, understood and followed all the instructions contained in this manual. Failure to observe these instructions could lead to serious injury or death. Training and instruction review should be repeated at regular intervals by the user and his or her employer.

▲WARNING Never attempt to adjust, repair or modify any part or component of this recovery system. For prompt repair or recertification, return the component(s) to Klein Tools, Inc., Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphian Service Center for these products only.)

▲WARNING Failure to comply with the following instructions could result in serious injury or death.



Fall-Arrest



Retrieval

General



The Two-Way Recovery System (Cat. No. 87600) and the

Three-Way Recovery System (Cat. No. 87601) are designed for use in confined spaces, such as manholes, tanks, and other confined areas, where fall-arrest and retrieval/rescue are important. Both systems operate as a retractable lifeline. The Two-Way Recovery System can also be used to raise a worker. In addition to retractable lifeline operation, the Three-Way Recovery System can be used to both raise and lower a worker.

The Two-Way and Three-Way Recovery Systems have different Recovery Units. The Two-Way Recovery Unit provides two functions: 1) a braking action if a worker falls (fall-arrest), and 2) a means for a topside worker to raise another worker (retrieval). The Three-Way Recovery Unit has an additional third function: a means for the topside worker to reverse direction, if for any reason the worker becomes wedged while retrieval is in progress. The topside worker can reverse direction allowing the worker to be lowered and repositioned before continuing with the retrieval. In these instructions, the procedures for the Two-Way and Three-Way Recovery Systems are individually described.

All individuals who may use the Two-Way or Three-Way Recovery System or who may be required to rescue or retrieve another person with these devices must be instructed on how to use that system correctly. In addition, they must read, understand and follow all instructions and warnings contained in these instructions and any warnings or instructions attached to the product before each use.



▲WARNING

A fall could result in serious injury or death. Do not use unless properly trained. Read, understand and follow all instructions.

▲ WARNINGS

• **Read, understand and follow** all instructions and warnings, attached to and/or packed with this unit... before each use.

• **Inspect before each use.** All occupational protective equipment **must** be inspected and thoroughly tested before each use. If any part or component shows damage, excessive wear or does not function properly, the entire system should be removed from service.

• **Never** use any occupational protective equipment for anything other than its intended use.

• Do **NOT** use the 2-Way or 3-Way Recovery System or any component if the total workload exceeds 350 lbs (158kg).

• For use by **properly trained personnel only**.

• Do **NOT** use equipment near live electrical lines and other energized sources.

• **Avoid** prolonged use in caustic or corrosive environments.

• Do **NOT** use recovery unit if the brake does not function upon testing.

• Do **NOT** use recovery unit if the cable does not retract.

• When using the tripod, **always** insure that the leg chains securing the tripod legs are attached.

• Before each use, **make sure** all locking pins are inserted completely through tripod legs.

• **Be sure** tripod is positioned on a hard, stable surface before each use.

• **Always** work directly under the tripod. Worker must be vertically in line with tripod to avoid swing-fall injuries (pendulum effect).

• **Make sure** the anchorage and connecting device are compatible before each use.

• Use **only** locking carabineers, pulleys and locking snap hooks supplied with this system.

• Attach the locking snap hook on the fall-arrest unit **only** onto the rear fall-arrest D-ring of a full-body harness meeting government standards for the intended use.

• **Always visually check that:** 1) Locking snap hook freely engages D-ring. 2) Keeper is completely closed with each use. **Never** rely on the sound or feel of a snap hook engaging.

• **Always** use a harness meeting government standards with this system.

• All cables **must** be kept clean and free of foreign matter.

• **Never** allow cable to retract uncontrollably. Always use a tag line to allow slow return of the cable to housing.

• **Never** allow cable to pass under or get wrapped around the legs, arms, neck or torso of the user or other workers.

• **Never** clamp off or stand on the cable nor allow the cable to become slack when in use.

• **Never** extend cable length by attaching extension lanyard. Use correct length for job.

• **Never** alter or add additional cable to recovery units or winches.

• To insure compatibility, use only Klein components on this system.

• Recovery units and winches **must** be attached to a fall-arrest anchorage capable of supporting 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.

• **Always** use locking type connectors for attachment to anchorage.

• For use with one person only. **Never** use device to support multiple workers.

• Rig to allow a minimum of 3 ft. (.9m) clearance to objects below should a fall occur.

• The buddy system (two workers) **must** always be used when operating a recovery tripod system.

• Recovery unit is for **personal use only**. **NOT** for towing or lifting.

• Recovery unit is **NOT** to be used as a material handling device or for routine lowering and raising of personnel.

• Do **NOT** use personnel and material winch at the same time. Use only one device per pulley assembly. Use only one pulley assembly per eye bolt.

• **Never** use the 2-Way or 3-Way Recovery Unit for positioning.

• **Never** use the 2-Way or 3-Way Recovery Unit for suspension.

• Do **NOT** disconnect 2-Way or 3-Way system locking snap hook from D-ring any time while working in an enclosed or confined space.

• **Never** join two hooks together. They are **NOT** intended for that use and may twist apart.

• The braking action of the fall-arrest device requires a minimum speed to engage. Fall-arrest function **will not** operate if footing is on loose or sliding material such as sand or grain.

• **Never** attempt to lubricate, adjust, repair or modify any recovery system part or component. All repairs must be made at the Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)

• Components **must** be inspected by competent person. Components must be returned immediately to the Klein Tools Service Center for inspection and recertification annually, or more frequently, depending on the system's use and operating conditions, or whenever subjected to a severe free fall.

• Do **NOT** use this system if any instruction or warning is not fully understood. Telephone Klein Tools Sales Department at 1-800-323-3664 for clarification.

• **Employer**— instruct employee as to proper use and warnings before use of equipment.

Specifications

Two-Way Recovery Unit (Cat. No. 87605)

Principles of Design	Combination retractable lifeline and retrieval winch in one "Double" mechanism. First brake is automatically activated by an inertia system when a fall is sensed. The second brake holds a load in place when raising is stopped.
Body Construction	Aluminum alloy casting, weather sealed
Cable Length (Max)	50 feet (15m)
Cable Material	Galvanized steel 7x19
Cable Diameter	3/16" (4.8mm)
Cable Breaking Strength	4,200 lbs. (1,890kg)
Max. Working Load	350 lbs. (158kg)
Raise & Lower Ability	Raise (Yes) Lower (No)
Suitable for Material	No
Speed	20 ft. per minute in rescue mode (approx.)
Gear Ratio	5.5:1
Cable Locking Speed	4-5 feet/second
Stopping Distance	2 feet (.6m) or less
Mechanical Advantage	20:1
Weight	44 lbs. (19.8kg)
Repair & Recertification	Yes (Yearly or more frequently if needed)
Product Service	Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)

Specifications of products are subject to change without notice.

Tripod (Cat. 87610)

Max. Vertical Load (with chain attached)	5,400 lbs. (24.2kN)
Max. Working Load	350 lbs. (158kg)
Height:	
Max.	84" (2.1m)
Min.	48" (1.2m)
Min. Adjustment	2-3/4" (70mm) increments
Distance between feet:	
Max.	56" (1.4m)
Min.	36" (.9m)
Weight	40 lbs. (18kg)
Storage Size:	
Length	55" (1.4m)
Outside Dia.	16" (.4m)
Construction	Aluminum alloy cast head. Aluminum extruded legs and cast feet with rubber pads.
Product Service	Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)

Specifications of products are subject to change without notice.

Three-Way Recovery Unit (Cat. No. 87606)

Principles of Design	Combination retractable lifeline and retrieval/lower winch in one "Triple Brake" mechanism. First brake is automatically activated by an inertia system when a fall is sensed. The second brake holds a load in place when raising is stopped. Third brake holds load when lowering crank is released.
Body Construction	Aluminum alloy casting, weather sealed
Cable Length (Max)	50 feet (15m)
Cable Material	Galvanized steel 7x19
Cable Diameter	3/16" (4.8mm)
Cable Breaking Strength	4,200 lbs. (1,890kg)
Max. Working Load	350 lbs. (158kg)
Raise & Lower Ability	Raise (Yes) Lower (Yes)
Suitable for Material	No
Speed	20 ft. per minute in rescue mode (approx.)
Gear Ratio	5.5:1
Cable Locking Speed	4-5 feet/second
Stopping Distance	2 feet (.6m) or less
Mechanical Advantage	20:1
Weight	47 lbs. (21.1kg)
Repair & Recertification	Yes (Yearly or more frequently if needed)
Product Service	Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)

Specifications of products are subject to change without notice.

WARRANTY

The Klein products listed in this instruction booklet, manufactured and sold for commercial or industrial uses, are warranted to be free from defects in materials and workmanship for one year. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS. At its option, Klein will repair or replace, or refund the purchase price of, any product which fails to conform with this warranty under normal use and service. In no event shall Klein be liable for incidental or consequential damage.

Specifications

Two-Way Recovery Unit (Cat. No. 87605)

Principles of Design	Combination retractable lifeline and retrieval winch in one "Double" mechanism. First brake is automatically activated by an inertia system when a fall is sensed. The second brake holds a load in place when raising is stopped.
Body Construction	Aluminum alloy casting, weather sealed
Cable Length (Max)	50 feet (15m)
Cable Material	Galvanized steel 7x19
Cable Diameter	3/16" (4.8mm)
Cable Breaking Strength	4,200 lbs. (1,890kg)
Max. Working Load	350 lbs. (158kg)
Raise & Lower Ability	Raise (Yes) Lower (No)
Suitable for Material	No
Speed	20 ft. per minute in rescue mode (approx.)
Gear Ratio	5.5:1
Cable Locking Speed	4-5 feet/second
Stopping Distance	2 feet (.6m) or less
Mechanical Advantage	20:1
Weight	44 lbs. (19.8kg)
Repair & Recertification	Yes (Yearly or more frequently if needed)
Product Service	Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)

Specifications of products are subject to change without notice.

Tripod (Cat. 87610)

Max. Vertical Load (with chain attached)	5,400 lbs. (24.2kN)
Max. Working Load	350 lbs. (158kg)
Height:	
Max.	84" (2.1m)
Min.	48" (1.2m)
Min. Adjustment	2-3/4" (70mm) increments
Distance between feet:	
Max.	56" (1.4m)
Min.	36" (.9m)
Weight	40 lbs. (18kg)
Storage Size:	
Length	55" (1.4m)
Outside Dia	16" (.4m)
Construction	Aluminum alloy cast head. Aluminum extruded legs and cast feet with rubber pads.
Product Service	Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)

Specifications of products are subject to change without notice.

Three-Way Recovery Unit (Cat. No. 87606)

Principles of Design	Combination retractable lifeline and retrieval lower winch in one "Triple Brake" mechanism. First brake is automatically activated by an inertia system when a fall is sensed. The second brake holds a load in place when raising is stopped. Third brake holds load when lowering crank is released
Body Construction	Aluminum alloy casting, weather sealed
Cable Length (Max)	50 feet (15m)
Cable Material	Galvanized steel 7x19
Cable Diameter	3/16" (4.8mm)
Cable Breaking Strength	4,200 lbs. (1,890kg)
Max. Working Load	350 lbs. (158kg)
Raise & Lower Ability	Raise (Yes) Lower (Yes)
Suitable for Material	No
Speed	20 ft per minute in rescue mode (approx.)
Gear Ratio	5.5:1
Cable Locking Speed	4-5 feet/second
Stopping Distance	2 feet (.6m) or less
Mechanical Advantage	20:1
Weight	47 lbs. (21.1kg)
Repair & Recertification	Yes (Yearly or more frequently if needed)
Product Service	Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)

Specifications of products are subject to change without notice.

WARRANTY

The Klein products listed in this instruction booklet, manufactured and sold for commercial or industrial uses, are warranted to be free from defects in materials and workmanship for one year. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS. At its option, Klein will repair or replace, or refund the purchase price of, any product which fails to conform with this warranty under normal use and service. In no event shall Klein be liable for incidental or consequential damage.

Detailed Inspection and Maintenance Log

SERIAL NO.:

MODEL NO.:

DATE PURCHASED:

Inspection Date	Inspection Items Noted	Corrective Action Taken	Maintenance Performed
Approved by: _____			
Approved by: _____			
Approved by: _____			
Approved by: _____			
Approved by: _____			
Approved by: _____			
Approved by: _____			
Approved by: _____			
Approved by: _____			

Please feel free to photocopy this page for continued use as an Inspection and Maintenance Log.



KLEIN TOOLS, INC.
The choice of professionals... since 1857

Klein Tools, Inc., 7200 McCormick Blvd., P.O. Box 599033, Chicago, IL 60659-9033

Installation Procedures

Two-Way and Three-Way Recovery Systems

1. Make certain all components are accounted for before assembling the system.

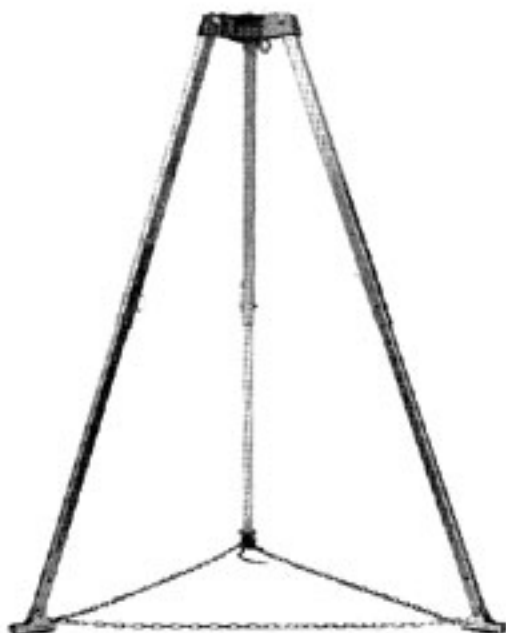
A complete Two-Way or Three-Way Recovery System includes the following equipment:

- Two-Way or Three-Way Recovery Unit (depending on system) each containing 50 feet (15m) of 3/16" (4.8mm) diameter galvanized steel cable.
- Seven-foot tripod.
- Material Winch with 50 feet (15m) of 3/16" (4.8mm) diameter galvanized steel cable.
- Two (2) carabiners.
- Two (2) pulleys.
- Two (2) locking, swivel snap hooks (two different types).

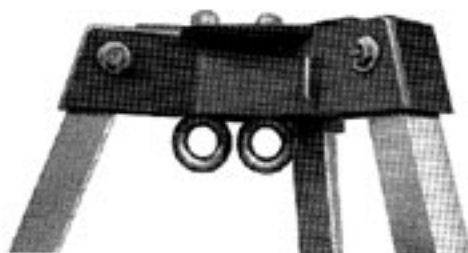
2. Inspect vicinity around work area for debris and other material that could cause injuries or interfere with the operation of the system. Be sure that tripod is positioned on a hard, stable surface before use. Also, caution should be taken to insure that all equipment will be clear of any electrical hazard and that proper ventilation has been provided in the work area before the worker descends into the space.

3. Assemble the tripod as follows:

- A. Lay tripod on ground.
- B. Pull legs out until they lock in outward position. (To unlock legs, pull down lever outside of housing).
- C. Adjust legs so that tripod is at maximum height, if possible, then insert locking pins.
- D. Erect tripod over opening and level legs.
- F. Check that locking pins are inserted completely through all three legs.
- G. Attach base leg chain onto hooks at bottom of each leg. Securely fasten chain without slack.
- H. Use center eye bolt to mount fall-arrest recovery-unit pulley with carabiner.
- I. Use side eye-bolt to mount material or personnel winch pulley with carabiner.
- J. Attach all components to the mounting holes on the legs.
- K. Inspect before each use. If any part shows excessive wear or deterioration, remove from service and return to Klein Tools Service Center, 2070 Bennett Road, Philadelphia, PA 19116. (Philadelphia Service Center for these products only.)



The Tripod (Cat. No. 87610) is adjustable up to a height of 7 feet (2.1m) to meet virtually all application requirements. A safety chain is provided for secondary backup to prevent legs from spreading and collapsing the tripod.



Head of the Tripod is made of rugged, yet lightweight cast aluminum. It has two 5/8" (15.8mm) diameter drop-forged steel anchor bolts, permanently attached. Lever is used to unlock legs from outward position.



The cast aluminum feet on the Tripod can swivel and adjust to slightly uneven ground, and they have rubber skid pads.

The telescoping legs on the Tripod are secured with locking pins to prevent collapse. The pins are permanently attached with a wire-rope cable to prevent loss.



4. Attach the Two-Way or Three-Way Recovery Unit to inside of one tripod leg, making sure the unit's bracket is aligned so that both locking pins can be fully pushed-in through the leg to secure the unit. Unit may be easily attached by lifting with winch handle and resting unit on one knee while inserting two locking pins. Attach a carabiner (narrow end up) to the center eye bolt of tripod head.

For Two-Way Unit, release cable by pushing in the selection button located at axis of unit's handle. While pushing button in, pull the complete handle assembly away from the recovery unit until it snaps into its outward position.

For Three-Way Unit, release cable by using the palm of your hand to push in selection knob located on handle side of the unit. While pushing knob in, turn it counterclockwise 1/4 turn until it "pops" outward.

Next, (applies to both units), pull out enough cable to extend past carabiner. Place cable through a pulley (pulley halves will slide apart to accommodate cable) and attach pulley to carabiner. Make sure both halves of the pulley are attached to the carabiner and that the cable extends and retracts freely through the pulley.

A gold-colored, locking, swivel snap-hook assembly is attached to each Two-Way and Three-Way Recovery Unit. This snap hook differs from the winch hooks in color and construction for easy identification.



Steel Pulley (Cat. No. 87614) separates for easy cable replacement. Locking, drop-forged steel Carabiner (Cat. No. 87613) secures pulley to tripod head.



5. Attach the Material Winch to the inside of the tripod leg closest to the remaining unused eye bolt in tripod head making certain both locking pins are fully pushed-in. Attach a carabiner (narrow end up) to the unused eye bolt in tripod head. Pull cable from unit by cranking handle counterclockwise, and extend cable past carabiner. Place cable through a pulley (pulley halves will slide apart to accommodate cable), and attach pulley to carabiner. Make sure both halves of the pulley are attached to the carabiner and that the cable extends and retracts freely through the pulley.

A silver-colored, integral, locking swivel snap-hook is attached to each Material Winch and optional Personnel Winch. This snap hook differs from the recovery unit hook in color and construction for easy identification.



Steel Pulley (Cat. No. 87614) separates for easy cable replacement. Locking, drop-forged steel Carabiner (Cat. No. 87613) secures pulley to tripod head.



6. If you have purchased the optional Personnel Winch (Cat. No. 87612), attach it using the same procedure as the Material Winch. Replace material winch cable running through pulley with that of personnel-winch cable.

▲WARNING Do NOT use personnel and material winch at the same time. Use only one device per pulley assembly. Use only one pulley per eye bolt.

7. Inspect system using procedures explained in the following section.

Inspection Procedures

▲WARNING NEVER use either system or any component of the systems without a thorough inspection before each use.

1. Inspect the work area for debris and other material that could cause injuries or interfere with the operation of the system. Be sure that the tripod is positioned on stable, hard ground before setting it up. The leg chain and all locking pins should again be checked to see they are correctly securing equipment. (See Fig. 1)

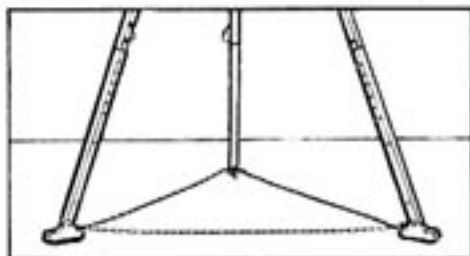


Figure 1

2. Check all the cables to insure they move freely and retract correctly. If a cable does not pull out smoothly or sticks when retracting, pull all of the cable out of the housing, and allow it to retract slowly under light tension. While the cable is retracting, check for cuts, kinks, broken strands, excessive wear, foreign substances or other damage. All cables should be checked regularly for signs of wear. A competent person, for example, a safety director, must schedule regular safety inspections based on amount of use and working conditions. (See Fig. 2)

▲CAUTION Gloves should be worn when inspecting or handling cable.



Figure 2

3. While in the fall-arrest mode, test the cable retraction of the Recovery Unit by pulling out at least 4 feet (1.2m) of the cable and allowing it to retract slowly back into the unit housing, keeping tension on the cable. (See Fig. 3)

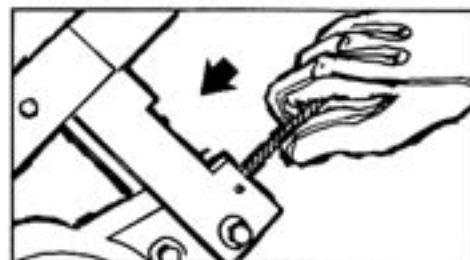


Figure 3

4. While in the fall-arrest mode, test the locking action (fall arrest) capability of the Recovery Unit by pulling out approximately 2 feet (.6m) of cable from housing, then give the cable a quick, hard, downward tug. The cable should stop and lock. (See Fig. 4)

▲CAUTION Gloves should be worn when inspecting or handling cable.

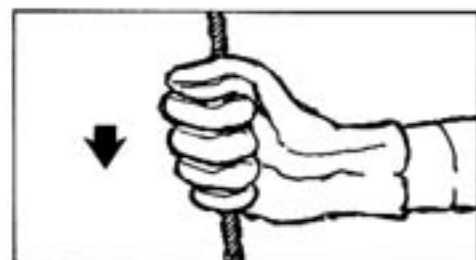


Figure 4

5. While maintaining downward pressure on the cable, activate recovery operation (see Operation Procedures for your system on the following pages) and crank about one foot of cable back into the housing. (See Fig. 5)

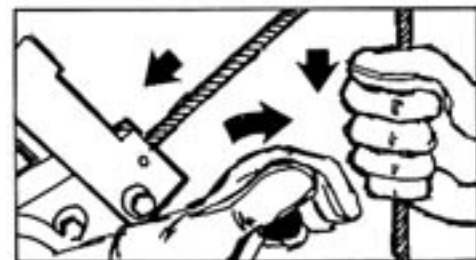


Figure 5

6. Inspect the snap hooks and connecting hardware to be sure they are not distorted or cracked. Be certain the snap-hook keepers are free of burrs, function properly, and are clean and not bent. (See Fig. 6)



Figure 6

7. Remove from service immediately if any system function, component or part does not pass this inspection, or whenever subjected to a severe free fall, and return entire device to Klein Tools, Inc., Service Center, 2070 Bennett Road, Philadelphia, PA 19116 for inspection, repair and recertification. (Philadelphia Service Center for these products only.)

8. Repairs and recertification MUST BE performed by the Klein Tools Service Center annually, or more frequently, depending on the system's use and operating conditions, or whenever subjected to a severe free fall.

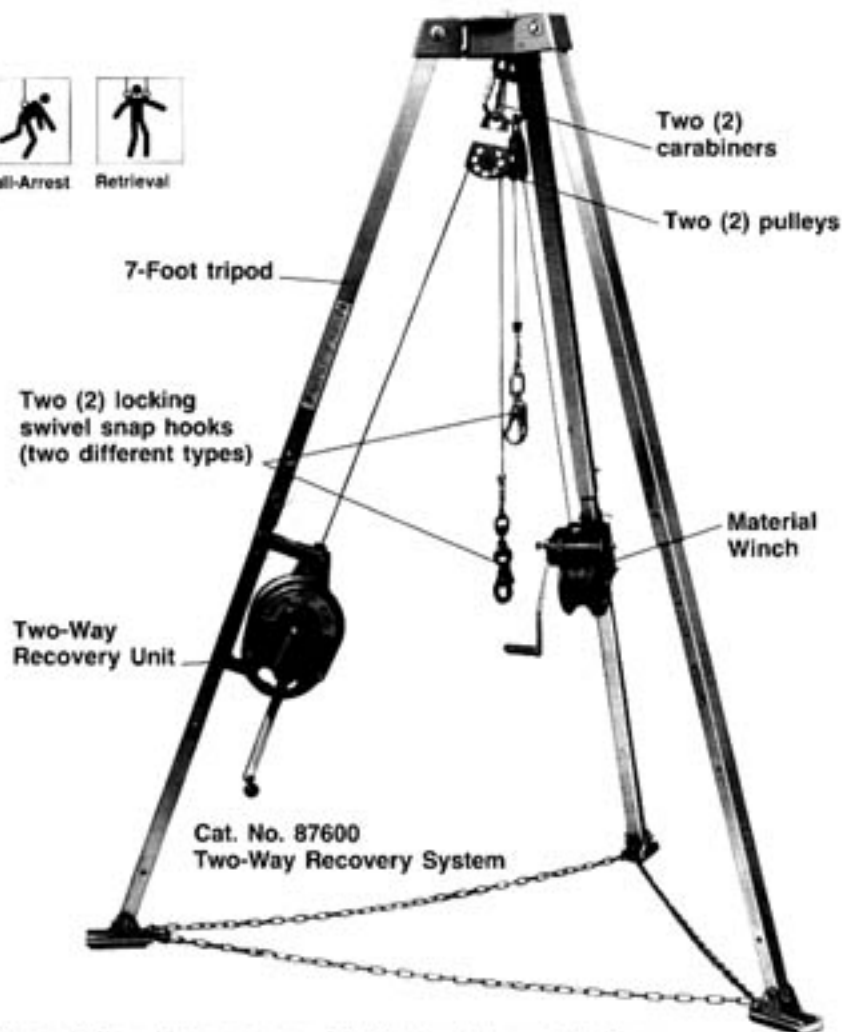
Two-Way Recovery Unit Operation Procedures

Two-Way and Three-Way Recovery Units operate differently; therefore, each unit has separate operation procedures. Be

sure to correctly identify your unit and read the corresponding operating procedures.



Fall-Arrest Retrieval



Cat. No. 87600
Two-Way Recovery System

Two-Way Recovery Unit Braking Action (Fall Arrest) Operation



Close-up view of
Cat. No. 87605
Two-Way Recovery Unit
with handle in
closed position

1. Read all the instructions listed in the "Inspection Procedures" section.
2. Unscrew the handle from the mounting bracket ① and slide it outward.
3. Locate selection button ② at the axis of the recovery unit handle. While pushing the selection button in, pull the complete handle assembly away from the recovery unit until it snaps into its outward position.

4. The braking mechanism can now be checked by pulling out approximately 2 feet (.6m) of cable and giving it a quick, hard, downward tug. The brake should engage and hold until the tension on the cable is released.

CAUTION Gloves should be worn when performing the above test.

5. After successful testing of the braking mechanism, a worker can now be attached to the unit (using the gold-colored, swivel snap-hook assembly at the end of the cable) and begin a descent. Attach snap hook ONLY to center D-ring on rear of full-body harness that meets government standards. **Always visually check that:** 1) Locking snap hook freely engages D-ring; 2) Keeper is completely closed with each use. Never rely solely on the feel or sound of a snap hook engaging. Under normal working conditions, the cable is drawn in and out of the unit housing as required. The centrifugal brake will not engage as long as the unit is not under load. In this mode, the worker experiences little restraint while working. In the event of a fall; however, the braking system brings the worker to a decelerated stop, and holds him in place. While this action helps prevent injury (due to the fall), it may be necessary to use the unit's rescue (retrieval) capability to raise a worker safely to the surface.

Two-Way Recovery Unit Rescue (Retrieval) Operation



Close-up view of
Cat. No. 87605
Two-Way Recovery Unit
with handle in
operational position

1. Unscrew the handle from the mounting bracket ① and slide it outward.
2. Push the selection button ② in and push the complete handle assembly towards the unit, snapping it to its inward position. The rescue capability (retrieval) is now engaged.
3. Rotate the handle clockwise to crank the cable back into the housing to raise the worker to the surface.

CAUTION Do NOT force the cable back into the housing or through the tripod pulley. This will cause injury or damage to the stopper, the cable and other equipment.

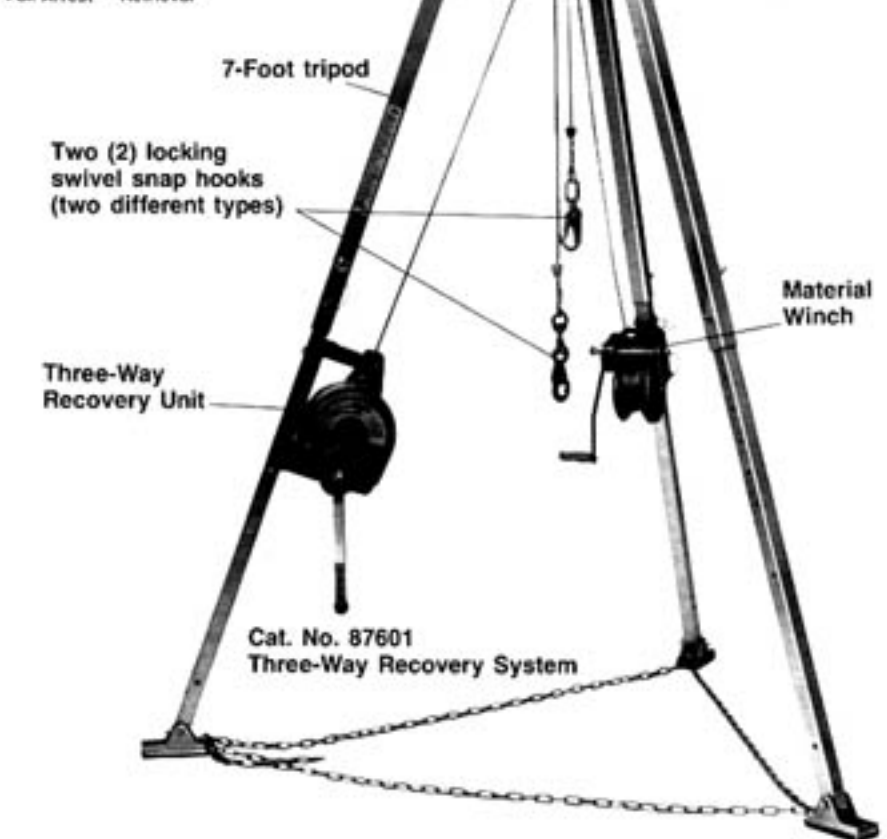
4. To change to fall-arrest mode, the load must be removed from the cable. Then follow instructions under "Two-Way Recovery Unit Braking Action (Fall Arrest) Operation".

WARNING This unit is NOT meant to hold or suspend a worker. The capability to raise a worker (retrieval) should only be used for rescue operations; NOT for routine lifting. If suspension or non-rescue retrieval capabilities are required, use the optional Personnel Winch (Cat. No. 87612).

Three-Way Recovery Unit Operation Procedures

Two-Way and Three-Way Recovery Units operate differently; therefore, each unit has separate operation procedures. Be

sure to correctly identify your unit and read the corresponding operating procedures.



Cat. No. 87601
Three-Way Recovery System

Three-Way Recovery Unit Braking Action (Fall Arrest) Operation



Close-up view of
Cat. No. 87606
Three-Way Recovery Unit
with handle in
closed position

1. Read all instructions listed in the "Inspection Procedures" section.
2. Unscrew the handle from the mounting bracket ① and slide it outward.
3. Locate selection knob ② on the handle side of Recovery Unit. Using the palm of your hand, push the knob in, and turn counterclockwise 1/4 turn. The knob will "pop" outward.

4. The braking mechanism can now be checked by pulling out approximately 2 feet (.6m) of cable and giving it a quick, hard, downward tug. The brake should engage and hold until tension on the cable is released.

CAUTION Gloves should be worn when performing the above test.

5. After successful testing of the braking mechanism, a worker can now be attached to the unit (using the gold-colored, swivel snap-hook at the end of the cable) and begin a descent. Attach snap hook ONLY to center D-ring on rear of full-body harness that meets government standards. **Always visually check that:** 1) Locking snap hook freely engages D-ring. 2) Keeper is completely closed with each use. Never rely solely on the feel or sound of a snap hook engaging.

Under normal working conditions the cable is drawn in and out of the unit housing as required. The centrifugal brake will engage only when the unit is under load. In this mode the worker experiences little restraint while working. In the event of a fall; however, the braking system brings the worker to a decelerated stop and holds him in place. While this action helps prevent injury (due to the fall), it may be necessary to use the unit's rescue (retrieval) capability to raise a worker safely to the surface.

Three-Way Recovery Unit Rescue (Retrieval) Operation



Close-up view of
Cat. No. 87606
Three-Way Recovery Unit
with handle in
operational position

1. Unscrew the handle from the mounting bracket ①, and slide it outward.
2. Push the selection knob ② in, and turn clockwise 1/4 of a turn to lock the unit into the rescue (retrieval) mode. The rescue capability is now engaged.
3. Rotate the handle clockwise to crank the cable back into the housing to raise the worker.

WARNING Do NOT force the cable back into the housing or through the tripod pulley. This will cause injury or damage to the stopper, the cable and other equipment.

4. If for any reason the worker becomes wedged while the retrieval is in progress, the topside worker can reverse direction by cranking counterclockwise. This allows the worker to be lowered and repositioned before continuing with the retrieval.

5. To change to fall-arrest mode, the load must be removed from the cable. Then follow instructions under "Three-Way Recovery Unit Braking Action (Fall Arrest) Operation".

Three-Way Recovery Unit Lowering Function

In addition to a fall arrest function and emergency retrieval, the Three-Way Recovery Unit can also be used to reverse direction when it is necessary to reposition the worker during retrieval. If lowering a worker is required, use the optional Personnel Winch (Cat. No. 87612).

Rotate the handle counter-clockwise to crank the cable out of the housing. Always maintain a minimum of 35 lbs. (15.8kg) load on the cable when lowering.

WARNING This unit is NOT meant to hold or suspend a worker. If suspension or lowering of a worker is required, use the optional Personnel Winch (Cat. No. 87612).

Material Winch Operation (NOT for personnel)

Cat. No. 87611



The Material Winch (Cat. No. 87611) permits raising or lowering of equipment and work supplies only into a confined space. It is a standard component in both the Two-Way and Three-Way Recovery Systems.

Follow the installation procedure for the Material Winch described for the Two-Way or Three-Way Recovery System.

NOTE: Minimum operating load for material winch is 35 lbs. (15.8kg).

1. Read all instructions listed in the "Inspection Procedures" section.
2. To raise load, attach silver-colored, integral snap hook to the attachment point of the load. Then turn handle clockwise, and ratchet will click as object is raised.
3. To lower load, attach silver-colored, integral snap hook to the attachment point of the load. Then turn handle counterclockwise. After object is lowered, turn the handle clockwise two clicks to lock the winch into position. Always maintain a minimum of 35 lbs (15.8kg) load on the cable when lowering.
4. Maintain a minimum of 3 wraps of cable on the drum of the winch.

⚠WARNING Do NOT use personnel and material winch at the same time. Use only one device per pulley assembly. Use only one pulley per eye bolt.

⚠WARNING Do NOT use this unit if the total workload exceeds 350 lbs (158kg).

⚠WARNING This winch is NOT for human support. Use for raising and lowering material only.

⚠CAUTION Keep fingers and clothing clear of moving gears.

Personnel Winch (Optional Component)

Cat. No. 87612



The optional Personnel Winch (Cat. No. 87612) can be used as a primary work line for raising (retrieval) or lowering personnel as well as holding a worker in place (suspension). This unit **MUST BE** used in conjunction with a separate fall-arrest device meeting government standards for confined spaces. This optional component is available for both the Two-Way and Three-Way Recovery Systems.

Operating procedures for the Personnel Winch are included with that component.

⚠WARNING An independent fall-arrest system must be used with this unit.

⚠WARNING Do NOT use personnel and material winch at the same time. Use only one device per pulley assembly. Use only one pulley assembly per eye bolt.

Storage and Maintenance for Two-Way and Three-Way Recovery System

A written log of all servicing and inspection dates for this device should be maintained by the company safety officer.

1. Always dismount the devices from the tripod, disassemble the tripod and store or transport to an area free of corrosive elements and excessive heat. Handles with end screw provided should be secured to their mounting bracket. Material Winch handle should be secured to avoid undue stress on the handle. Exposed gears on Material Winch should be protected from corrosion and accidental damage.
2. Do NOT leave this unit for extended periods of time in an environment where corrosion may take place (such as sewage and fertilizer plants). Additionally, avoid use in areas that contain high concentrations of ammonia. When used near sea water or other similar environments, more frequent inspection may be necessary to monitor potential corrosive damage. Avoid use with acids, alkalooids or other caustic chemicals, especially at elevated temperatures.

3. Clean exterior of case and retractable cable with water and mild soap detergent, rinse, and thoroughly air dry. Do NOT use harsh chemicals. Clean labels as required.

4. Never attempt to lubricate, adjust, repair or modify any recovery system part or component.

5. Repairs and recertification **MUST BE** performed by the Klein Tools Service Center annually, or more frequently, depending on the system's use and operating conditions, or whenever subjected to a severe free fall. Check label on equipment for next inspection date.

Return the component(s) to Klein Tools, Inc., Service Center, 2070 Bennett Road, Philadelphia, PA 19116 for inspection, repair and recertification. (Philadelphia Service Center for these products only.)

**Cat. No. 87605
2-Way Recovery Unit
Warning Labels**

**KLEIN®
Pro-Guard™
2-Way Recovery Unit**
Cat. No. 87605 50 Foot (15m) Length

Personal Fall Arrest Device with Self Retracting Lifeline and Retrieval Capability
3/16" Diameter Galvanized Steel Cable, Max. Working Load 350 lbs (158kg).

WARNINGS:

- Read, understand and follow all instructions and warnings provided with this unit... before each use.
- Improper use of this equipment could result in serious injury or death.
- All occupational protective equipment must be inspected and thoroughly tested before each use.
- Use by properly trained personnel only.
- Never use any occupational protective equipment other than for its intended use.
- Do NOT use this device near live electrical lines and other energized sources.
- This device must be attached to a fall arrest anchorage capable of supporting 5,000 lbs (22.2kN) per attached worker and be independent of worker support. Always use locking type connectors for attachment to anchorage.
- Never extend cable length.
- Do NOT lubricate, adjust, repair or modify this device. All repairs must be performed by Klein Tools, Inc.
- Always visually check that: 1) Locking snap hook freely engages D-ring. 2) Keeper is completely closed with each use. Never rely on the feel or sound of a snap hook engaging.
- Always work directly underneath the anchorage to avoid swing fall injuries (pendulum effect).
- Do NOT use if the total workload exceeds 350 lbs (158kg).
- One worker only. Never use this device to support multiple workers.
- Avoid use in caustic or corrosive environments.
- Always use a harness meeting government standards with this system. This system is NOT intended to be used as a suspension system.
- For personal use only. NOT towing or lifting material.
- Never clamp off or stand on the cable, nor allow the cable to become slack when in use.
- Never allow cable to pass under or get wrapped around the legs, arms, neck or torso of the user or other workers.
- Recovery unit is NOT to be used as a material handling device or for routine lowering and raising of personnel.
- Rig to allow a minimum of 3 ft. (.9m) clearance to objects below should a fall occur.
- Employer: Instruct employee as to proper use and warnings before use of the equipment.

INSPECT BEFORE EACH USE

If unit does not pass inspection, remove this device from service immediately.

1. Inspect and clear the work area of material that could cause injuries or interfere with operation.
2. Check cable for cuts, kinks, abrasions, broken strands, excessive wear, or foreign substances.
3. Check cable retraction by pulling out at least 4 feet (1.2m) of the cable and allowing it to retract slowly back into the housing, keeping tension on the cable. CAUTION: Gloves should be worn when inspecting or handling cable.
4. Test braking (fall arrest) action by pulling out approximately 2 feet (.6m) of the cable from housing then giving it a quick, hard, downward tug. The cable should stop and lock.
5. Check rescue winch. Pull about 2 feet (.6m) of cable out of the housing and give it a quick tug to lock it. Then maintain downward pressure on the cable, use the winch to crank about one foot (.3m) of cable back into the housing.
6. Check to be sure snap hooks and connecting hardware are not distorted or cracked, that hook keepers are free of burrs, functioning properly, clean and not bent, and connecting hardware is properly fastened and secured.
7. Attach swivel snap hook only to rear fall arrest D-ring of harness meeting government standards. Do NOT remove until exiting confined space area.

Front Warning Label

■ This unit must be returned to Klein Tools Service Center for inspection and recertification annually at a minimum or whenever subjected to a severe free fall. **K2-1 395**

KLEIN TOOLS, INC.

Service Center
2070 Bennett Road
Philadelphia, PA 19116

© 1992 Klein Tools, Inc. Printed in U.S.A.

MADE IN U.S.A.

Manufacture Date																			
<input type="checkbox"/> Jan	<input type="checkbox"/> May	<input type="checkbox"/> Sep	<input type="checkbox"/> 92	<input type="checkbox"/> 96	<input type="checkbox"/> Feb	<input type="checkbox"/> Jun	<input type="checkbox"/> Oct	<input type="checkbox"/> 93	<input type="checkbox"/> 97	<input type="checkbox"/> Mar	<input type="checkbox"/> Jul	<input type="checkbox"/> Nov	<input type="checkbox"/> 94	<input type="checkbox"/> 98	<input type="checkbox"/> Apr	<input type="checkbox"/> Aug	<input type="checkbox"/> Dec	<input type="checkbox"/> 95	<input type="checkbox"/> 99
Next Inspection Date																			
<input type="checkbox"/> Jan	<input type="checkbox"/> May	<input type="checkbox"/> Sep	<input type="checkbox"/> 94	<input type="checkbox"/> 98	<input type="checkbox"/> Feb	<input type="checkbox"/> Jun	<input type="checkbox"/> Oct	<input type="checkbox"/> 95	<input type="checkbox"/> 99	<input type="checkbox"/> Mar	<input type="checkbox"/> Jul	<input type="checkbox"/> Nov	<input type="checkbox"/> 96	<input type="checkbox"/> 00	<input type="checkbox"/> Apr	<input type="checkbox"/> Aug	<input type="checkbox"/> Dec	<input type="checkbox"/> 97	<input type="checkbox"/> 01

OPERATING INSTRUCTIONS

Cat. No. 87605

FALL ARREST (Handle Out) TO ENGAGE LIFELINE:

1. Pull crank handle outward while pressing button in center of handle.
 2. Check cable retraction and braking action.
- Do NOT allow cable to retract uncontrollably. Keep tension on cable while retracting.
- When storing, secure crank handle to mounting bracket using end screw.

RETRIEVAL (Handle In) TO ENGAGE WINCH:

1. Unscrew crank handle from mounting bracket and slide it outward.
2. Depress button in center of handle while pushing handle towards unit, snapping it to its inward position. The rescue capability (retrieval) is now engaged.
3. Rotate the handle clockwise to raise the worker to surface.

Back Warning Label

© 1992 Klein Tools, Inc. Printed in U.S.A.

K2-2 395

Cat. No. 87606
3-Way Recovery Unit
Warning Labels

KLEIN®
Pro-Guard™
3-Way Recovery Unit

Cat. No. 87606 50 Foot (15m) Length

Personal Fall Arrest Device with Self Retracting Lifeline and Retrieval/Lowering Capability
 3/16" Diameter Galvanized Steel Cable, Max. Working Load 350 lbs (158kg).

WARNINGS:

- Read, understand and follow all instructions and warnings provided with this unit... before each use.
- Improper use of this equipment could result in serious injury or death.
- All occupational protective equipment must be inspected and thoroughly tested before each use.
- Use by properly trained personnel only.
- Never use any occupational protective equipment other than for its' intended use.
- Do NOT use this device near live electrical lines and other energized sources.
- This device must be attached to a fall arrest anchorage capable of supporting 5,000 lbs (22.2kN) per attached worker and be independent of worker support. Always use locking type connectors for attachment to anchorage.
- Never extend cable length.
- Do NOT lubricate, adjust, repair or modify this device. All repairs must be performed by Klein Tools, Inc.
- Always visually check that: 1) Locking snap hook freely engages D-ring. 2) Keeper is completely closed with each use. Never rely on the feel or sound of a snap hook engaging.
- Always work directly underneath the anchorage to avoid swing fall injuries (pendulum effect).
- Do NOT use if the total workload exceeds 350 lbs (158kg).
- One worker only. Never use this device to support multiple workers.
- Avoid use in caustic or corrosive environments.
- Always use a harness meeting government standards with this system. This system is NOT intended to be used as a suspension system.
- For personal use only. NOT towing or lifting material.
- Never clamp off or stand on the cable, nor allow the cable to become slack when in use.
- Never allow cable to pass under or get wrapped around the legs, arms, neck or torso of the user or other workers.
- Recovery unit is NOT to be used as a material handling device or for routine lowering and raising of personnel.
- Rig to allow a minimum of 3 ft. (.9m) clearance to objects below should a fall occur.
- Employer: Instruct employee as to proper use and warnings before use of the equipment.

INSPECT BEFORE EACH USE

If unit does not pass inspection, remove this device from service immediately.

1. Inspect and clear the work area of material that could cause injuries or interfere with operation.
 2. Check cable for cuts, kinks, abrasions, broken strands, excessive wear, or foreign substances.
 3. Check cable retraction by pulling out at least 4 feet (1.2m) of the cable and allowing it to retract slowly back into the housing, keeping tension on the cable. CAUTION: Gloves should be worn when inspecting or handling cable.
 4. Test braking (fall arrest) action by pulling out approximately 2 feet (.6m) of the cable from housing then giving it a quick, hard, downward tug. The cable should stop and lock.
 5. Check rescue winch. Pull about 2 feet (.6m) of cable out of the housing and give it a quick tug to lock it. Then maintain downward pressure on the cable, use the winch to crank about one foot (.3m) of cable back into the housing.
 6. Check to be sure snap hooks and connecting hardware are not distorted or cracked, that hook keepers are free of burrs, functioning properly, clean and not bent, and connecting hardware is properly fastened and secured.
 7. Attach swivel snap hook only to rear fall arrest D-ring of harness meeting government standards. Do NOT remove until exiting confined space area.
 8. When lowering, always maintain a minimum of 35 lbs (15.8kg) load on the cable.
- This unit must be returned to Klein Tools Service Center for inspection and recertification annually at a minimum or whenever subjected to a severe free fall. K3-1 395

Front Warning Label

KLEIN TOOLS, INC.

Service Center
 2070 Bennett Road
 Philadelphia, PA 19116

© 1993 Klein Tools, Inc. Printed in U.S.A.

MADE IN U.S.A.

Manufacture Date

<input type="checkbox"/> Jan	<input type="checkbox"/> May	<input type="checkbox"/> Sep	<input type="checkbox"/> 92	<input type="checkbox"/> 96
<input type="checkbox"/> Feb	<input type="checkbox"/> Jun	<input type="checkbox"/> Oct	<input type="checkbox"/> 93	<input type="checkbox"/> 97
<input type="checkbox"/> Mar	<input type="checkbox"/> Jul	<input type="checkbox"/> Nov	<input type="checkbox"/> 94	<input type="checkbox"/> 98
<input type="checkbox"/> Apr	<input type="checkbox"/> Aug	<input type="checkbox"/> Dec	<input type="checkbox"/> 95	<input type="checkbox"/> 99

Next Inspection Date

<input type="checkbox"/> Jan	<input type="checkbox"/> May	<input type="checkbox"/> Sep	<input type="checkbox"/> 94	<input type="checkbox"/> 98
<input type="checkbox"/> Feb	<input type="checkbox"/> Jun	<input type="checkbox"/> Oct	<input type="checkbox"/> 95	<input type="checkbox"/> 99
<input type="checkbox"/> Mar	<input type="checkbox"/> Jul	<input type="checkbox"/> Nov	<input type="checkbox"/> 96	<input type="checkbox"/> 00
<input type="checkbox"/> Apr	<input type="checkbox"/> Aug	<input type="checkbox"/> Dec	<input type="checkbox"/> 97	<input type="checkbox"/> 01

OPERATING INSTRUCTIONS

Cat. No. 87606

FALL ARREST

TO ENGAGE LIFELINE:

1. Turn knob counterclockwise 1/4 turn. Selection knob must be in outward position.
2. Check cable retraction and braking action.

Do NOT allow cable to retract uncontrollably. Keep tension on cable while retracting.

When storing, screw crank handle to mounting bracket using end screw.

© 1993 Klein Tools, Inc. Printed in U.S.A.

RETRIEVAL

TO ENGAGE WINCH:

1. Unscrew crank handle from mounting bracket and slide outward.
2. Push knob in and turn clockwise 1/4 turn to lock unit into the rescue (retrieval) mode.
3. Rotate the handle clockwise to raise worker to surface.

NOTE: Reversing cranking direction will lower a wedged worker and allow repositioning.

K3-2 395

Back Warning Label

Cat. No. 87610 Adjustable Tripod Warning Label

KLEIN® Pro-Guard™ Tripod

Cat. No. 87610

Maximum Vertical Load is
5,400 lbs (24.2kN) with
base leg chains attached.

Maximum Extension is
84' (2.1m)

WARNINGS:

■ Read, understand and follow all instructions and warnings provided... before each use.

■ For use by properly trained personnel only

■ Always use buddy system (two workers) while operating.

■ When using the tripod always insure that the leg chains securing the tripod legs are attached.

■ Insure that the tripod is positioned on hard, stable surface before use.

■ To insure compatibility, only use Klein components.

■ Do NOT use personnel and material winch at the same time. Use only one device per pulley assembly. Use only one pulley assembly per eye bolt.

■ EMPLOYER: Instruct employee as to proper use and warnings before use of this equipment.

ASSEMBLY INSTRUCTIONS:

1. Lay tripod on ground.
2. Pull legs out until they lock in outward position. (To unlock legs, pull down lever outside of housing.)
3. Adjust legs so that tripod is at maximum height, if possible, then insert locking pins.
4. Erect tripod over opening and level legs.
5. Check that locking pins are inserted completely through all 3 legs.
6. Attach base leg chain onto hooks at bottom of each leg. Securely fasten chain without slack.
7. Use center eye bolt to mount fall-arrest recovery unit pulley with carabiner.
8. Use side eye bolt to mount material or personnel winch pulley with carabiner.
9. Attach all accessories to the auxiliary mounting holes on legs (see accessory instruction).
10. Inspect before each use. If any part shows excessive wear or deterioration, remove from service and return to:

**KLEIN
TOOLS, INC.**
Service Center
2070 Bennett Road
Philadelphia, PA 19116

Made in U.S.A. K1-1-395
© 1993 Klein Tools, Inc. Printed in U.S.A.

Cat. No. 87611 Material Winch Warning Labels

WARNING FAILURE TO READ AND APPLY THE INSTRUCTIONS CONTAINED IN THIS WARNING CAN RESULT IN SUDDEN FAILURE OF EQUIPMENT, PROPERTY DAMAGE AND SERIOUS INJURY.

- (1) TO RAISE load, turn handle clockwise. Ratchet will click. If clicking stops, keep firm grip on handle, lower load to ground.
(2) TO LOWER load, turn handle counter-clockwise (no clicking). After lowering, turn handle clockwise two clicks. Be sure winch is locked into position before releasing handle.
(3) Maintain minimum of three wraps of cable on drum. (4) Never exceed maximum rated line pull. (See side of winch) KB-2 395



WARNING

DO NOT OPERATE THIS UNIT
UNTIL YOU FULLY
UNDERSTAND INSTRUCTIONS.
FAILURE TO DO SO COULD
RESULT IN INJURY.
IMPORTANT !!!

LOWER RAISE
KB-3 395

KLEIN® Pro-Guard™ Material Winch

Cat. No. 87611 50 Ft. 3/16" Diameter Cable
Working Load: Max. 350 lbs (158kg), Min. 35 lbs. (15.8kg)

WARNINGS:

- Do NOT use personnel and material winch at the same time. Use only one device per pulley assembly. Use only one pulley per eye bolt.
- NOT for human support. To be used for raising and lowering material only.
- Inspect before use for signs of damage, wear or malfunction.
- Do NOT use this unit if the total workload exceeds 350 lbs (158kg).
- Do NOT use this device near electrical lines or energized sources.
- For use by properly trained personnel only.
- Do NOT use if cable does not extend or retract easily.
- Do NOT use if cable has cuts, kinks, abrasions, broken strands or excessive wear.
- Keep hands, fingers and clothing clear of moving gear teeth.
- This device must be securely attached to anchorage capable of supporting 4,000 lbs (1800kg).
- Always visually check that locking snap-hook keeper is completely closed before each use.

Made in U.S.A. © 1993 Klein Tools, Inc. Printed in U.S.A. KB-1 395