



TECHNICAL MANUAL

FOR

**SAFETY CLIMBING
EQUIPMENT**

INSTALLATION

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REV. A 17 December 2012

SAFETY CLIMBING EQUIPMENT INSTRUCTIONS



CAUTION

THIS EQUIPMENT SHOULD BE INSTALLED BY CONSTRUCTION PERSONNEL WITH EXPERIENCE AND BACKGROUND IN PERFORMING THESE SERVICES.

Safety climbing equipment provides fall protection on all types of ladders, wood, metal poles or tank structures. It is adaptable to a variety of other applications where fall protection is a factor. The equipment may be ordered by individual component parts or a complete system for a customer specified structure.

CAUTION

THE INDIVIDUAL COMPONENT PARTS MUST ONLY BE USED WITH OTHER COMPONENT PARTS MANUFACTURED BY ANTENNA PRODUCTS CORPORATION.

Installation of this equipment is readily accomplished without the use of special tools or equipment.

Since this equipment is adaptable to various types of installations, it is anticipated that additional information may be required. Antenna Products Corporation, Mineral Wells Texas, will furnish additional information upon request.

Do not deviate from the installation methods and procedures described in this manual.

The safety climbing sleeve is investment cast from stainless steel. The sleeve is positioned on the safety rail by six precision stainless steel rollers. There are no threaded fasteners in the sleeve and all pins used are stainless steel for maximum dependability. The locking pawl is a precision investment casting of 17-4 aircraft grade stainless steel to provide maximum reliability and corrosion resistance.

The sleeve is fitted with an ANSI Z359.1-07 compliant carabiner to fasten the mechanism to the safety harness.

WARNING

USE OF AN INVERTED SAFETY SLEEVE DOES NOT ALLOW ACTUATION OF THE SLEEVE FALL ARRESTING MECHANISM SHOULD A CLIMBER SLIP. ALWAYS INSTALL THE SLEEVE ON THE RAIL WITH THE ARROW POINTING UP.

The safety harness is designed and manufactured for use with the safety climbing equipment. The harness is fabricated using a tongue buckle belt, which has four D-rings, one on each side, one in the front for attaching the safety sleeve and one on the back. The harness is constructed of yellow and black polyester webbing 1 3/4" wide. D-rings are made of cadmium plated forged alloy steel, buckles and adjuster are made of zinc plated stamped alloy steel.

Safety climbing rail is available in 6061-T6 aluminum, hot galvanized carbon steel, or stainless steel for compatibility with the existing structure or environmental conditions. The rail is notched every six inches to provide a positive stop in which the climbing sleeve-locking pawl engages. Safety rail may be mounted on various types of structures using any one of the mounting brackets or clamps listed on the parts list. Peculiar installation may require special clamps, which can be quoted upon request.

WARRANTY

Antenna Products Corp. guarantees each item against defects in material and workmanship. This guarantee extends for a period of one year from the date of installation or use unless otherwise specified, provided that this period shall not exceed two years from the date of delivery. Upon written notice Antenna Products will promptly repair or replace all defective or damaged items. Antenna Products may elect to have any replaced item returned to its plant at its expense. This guarantee shall exclude expendable items and material normally consumed in operation unless expected items fail as a result of improper installation or application by Antenna Products, in which case the guarantee shall be equally applicable to these items. Under any circumstance, Antenna Products is not liable for any incidental or consequential damage to any customer or representative thereof resulting from interconnects, installation and erection work or use, whether proper or improper. Freight damage is not covered under equipment guarantee. The customer must present such claims to the transportation carrier regardless of whether the shipment is freight prepaid or freight collect. Under no circumstances is material to be returned to Antenna Products without Antenna Products written approval and issuance of a RMA number. The RMA number must be placed on the returned goods shipping container. If not, shipment will be refused.

CAUTION

THE INDIVIDUAL COMPONENT PARTS MUST ONLY BE USED WITH OTHER COMPONENT PARTS MANUFACTURED BY ANTENNA PRODUCTS CORPORATION.

INSTALLATION. Detailed procedures for carrier rail installations are outlined in the following paragraphs. Refer to paragraphs m through q for installation instructions relating to the applicable type of mounting clamp or bracket.

a. UNPACK AND LAY OUT the equipment adjacent to the installation site in a careful, systematic manner to prevent damage or prevent loss of small parts, and to allow for rapid identification, inspection, and inventory of all materials.

b. THE TOTAL LENGTH OF CARRIER RAIL must be predetermined prior to installation. A standard rail section is 20 feet long. The top section of rail should extend 4.5 feet above platforms or landings to allow the climber to disengage or engage the climbing sleeve while on solid footing and protected by hand railing. If a platform does not exist, the rail should be extended to the height, which allows the climber to perform this procedure without disconnecting from the rail.

c. ASSEMBLE THE CLAMP OR BRACKETS to all rails as described in the applicable paragraphs, m through q. An additional clamp or bracket is required on the top section. See paragraph k.

CAUTION

IT IS EXTREMELY IMPORTANT THAT THE EQUIPMENT BE HANDLED, ASSEMBLED, AND INSTALLED WITH CARE AND ACCURACY SINCE THIS IS LIFE PROTECTION EQUIPMENT.

d. CHECK ALL REMAINING BOLTS on all carrier rails for tightness.

CAUTION

VERIFY THAT THE AS INSTALLED ORIENTATION OF THE CARRIER RAILS IS SUCH THAT THE ARROW MARKED "UP" ON THE BOTTOM AND MIDDLE OF EACH RAIL IS POINTING UPWARD, SEE FIGURE 1.

e. Raise the first section of carrier rail, using a block and tackle, into position 2 to 3 feet above ground level. Attach the rail to the existing structure. An additional clamp or bracket may be required at the bottom of the rail for stability.

CAUTION

ALL SAFETY RAIL JOINT CONNECTIONS MUST BE SECURED PRIOR TO INSTALLATION OF LADDER CLAMPS.

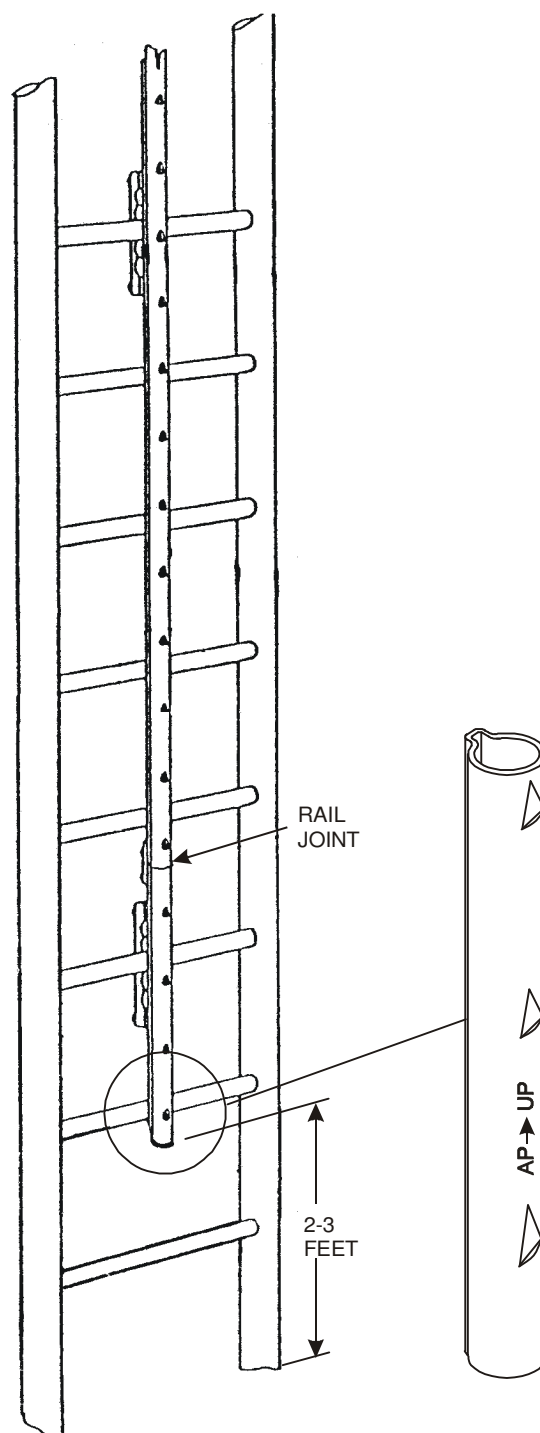


FIGURE 1
TYPICAL CARRIER RAIL
ASSEMBLY, USING LADDER
RUNG CLAMPS

f. AN INTERNAL ALIGNMENT GUIDE AND CONNECTING STRAP is bolted to the top of each section. Loosen the bolts, place-connecting strap in proper position for attachment of next section. See figure 2.

g. RAISE THE SECOND SECTION to be installed and with the bottom bolts removed, slip it over the internal alignment guide, See figure 3A.

h. SECURE THE RAIL JOINT by inserting the bolts through the connecting strap, figure 3B, ensuring it extends through the upper hole of the alignment guide. Check to see if the guide channel and connecting strap is in perfect alignment so that the climbing sleeve will pass over the joint without binding. Tighten the two connecting strap bolts.

CAUTION

ALL SAFETY RAIL JOINT CONNECTIONS MUST BE SECURED PRIOR TO INSTALLATION OF LADDER CLAMPS.

i. ATTACH THE RAIL to the existing structure. Refer to paragraphs m through q.

j. CONTINUE INSTALLING the remaining carrier rails in the manner described above.

k. IF THE TOP RAIL EXTENDS 2 feet or more above the last clamp or bracket, an additional clamp or bracket is required for stability of the unsecured section of rail. The additional attachment should be located immediately below and adjacent to the top clamp or bracket. See figure 4.

l. IF A LANDING EXISTS, cut off the guide channel approximately 2.5 feet from the top to allow the climbing sleeve to rotate about the rail. See figure 4. (SST rail only). An optional removable extension must be used for aluminum or galvanized rail.

m. LADDER RUNG CLAMPS are designed to secure the carrier rail to a ladder face. See figure 5. The spacing for these clamps is 7 feet maximum with one clamp attached at the top of each section. The top clamp should be attached at the second and third bolt positions from the top. Determine the position of the ladder rung clamps and remove the bolt located at each position where a clamp will be attached. Place a nut on each of the ladder rung clamp bolts, place the bolts through the ladder rung clamp bolts, and then place another nut (jam nut) about the center of each bolt. Raise the carrier rail into position and screw the ladder rung clamp bolts into the rail into position and tighten the jam nut to lock the bolts.

Note

A LADDER RUNG CLAMP SHOULD ALWAYS BE CLOSE TO A RAIL SPLICE.

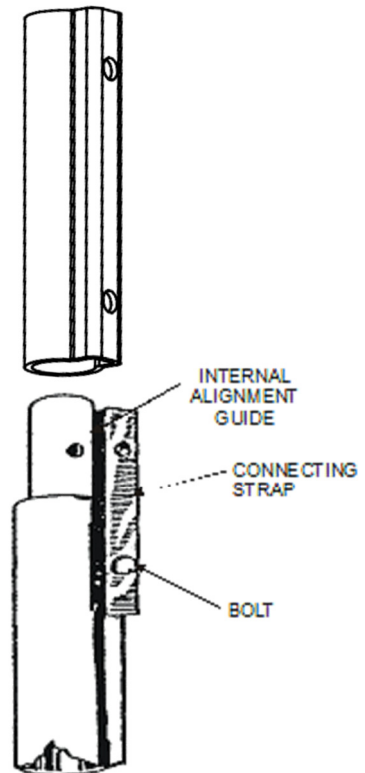


FIGURE 2
RAIL SECTION TOP DETAIL

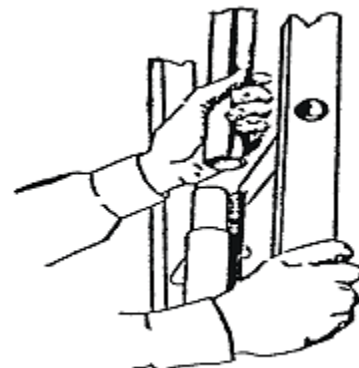


FIGURE 3A
CARRIER RAIL JOINTS



FIGURE 3B
CARRIER RAIL JOINTS

n. "Y" BRACKETS are designed for installation on angle iron structures with peg steps. See figure 6. They are furnished in two sizes for 2 1/2" to 4" and 4 1/2" to 8" angle iron legs. The recommended spacing of these brackets is 50" (4 feet 2 inches) or at every fifth bolt position with one bracket at the top of each section. The top bracket should be attached at the second bolt position from the top. With the "J" bolts loosened, raise the rail section into position, hook the "J" bolts on the angle and tighten the hex nuts and lock nuts.

o. WOOD POLE BRACKETS are furnished with 3/8 X 4" lag screws to install the carrier rails on wood poles. See figure 7. It is recommended that a bracket be installed at 50" (4 feet 2 inches) intervals or every fifth bolt position with one bracket at the top of each section. The top bracket should be attached at the second bolt position from the top. Install the brackets on the rail, then raise and attach to wood poles using lag bolts.

p. WRAP-AROUND POLE BRACKETS are furnished to attach the carrier rail to any type of pole. See figure 8. It is adaptable to various pole sizes from 6 to 15 inches in diameter. The recommended spacing between brackets is 50" (4 feet 2 inches) or at every fifth bolt position with one bracket at the top of each section. The top bracket should be attached at the second bolt position from the top. After raising the rail, the chain is wrapped tightly around the pole and held by a slot in the bracket. Finish attaching each assembly by tightening the hex nut and lock nut on the "J" bolts.

q. WELD BRACKETS are designed to adapt the safety climbing equipment to any type of metal structure. See figure 9. The spacing between brackets is recommended to be 50" (4 feet 2 inches) or every fifth bolts position with one bracket at the top of each section of the carrier rail. Attach the weld bracket using the 3/8" hardware supplied.

r. REMOVABLE EXTENSION ASSEMBLY is designed for use where it is not feasible to leave the safety rail permanently extended above the ladder. The 4.5 foot length provides the same safety features of permanently installed extensions. It is installed or removed as easily as the other standard sections.

Note

THE EXTENSION DOES NOT HAVE TO BE REMOVED IF THE CLIMBING APPLICATION DOES NOT REQUIRE IT TO BE REMOVED AFTER USE. SEE FIGURE 4.

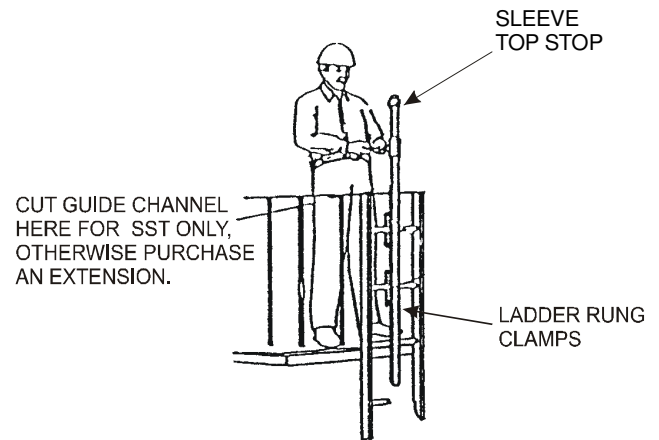


FIGURE 4
TOP SECTION INSTALLATION

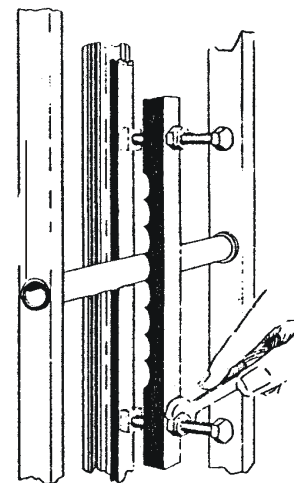


FIGURE 5
LADDER RUNG CLAMP

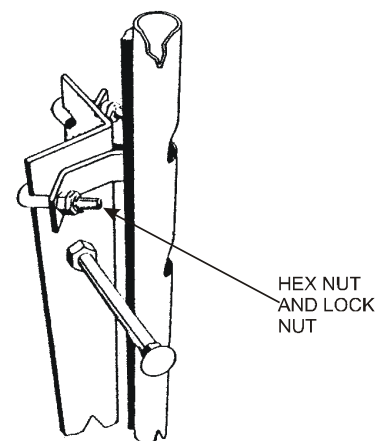


FIGURE 6
"Y" BRACKET

s. TOP SECTION STOP is designed to be attached with the top screw of the top rail to prevent the climbing sleeve from slipping off the carrier rail and thus disengaging the climber from the rail. Remove the top bolt, reinsert the screw through the top stop and tighten with a hand wrench. See figure 4.

t. **ACCESSORY LANYARDS AND POSITIONING CABLES**

These items are available for use where it is necessary for the climber to disengage from the safety climbing rail to work on the structure. The non slip adjustment feature on the adjustable lanyard keeps the lanyard at the right length so the worker will not trip on excess rope.

CAUTION

MAKE SURE TO ALWAYS TIE OFF TO THE NEXT POSITION BEFORE UNHOOKING FROM SAFETY CLIMB RAIL OR PRESENT ATTACHMENT POINT.

CLIMBING

a. When not in use, the climbing sleeve and harness should be stored in a safe, dry place. Visually inspect the sleeve and hardware prior to each use. Inspect per the criteria in the following instruction and maintenance paragraph. The safety harness must be tightened securely around the waist to prevent slipout during emergencies. Mount the safety climb sleeve by sliding it onto the bottom of the rail. Make sure the arrow on the sleeve points upward. Test the sleeve by pushing it up and down the rail a few feet pulling sharply downward on the safety snap hook. A sharp downward pull should lock the sleeve onto the rail. Lifting the hook should release the sleeve. While wearing a safety climbing harness attach the sleeve's safety snap hook to the D-ring on the harness to ascend/descend the tower. Lean back into the harness while ascending or descending. Leaning back will keep the locking mechanism from dragging on the rail, thus eliminating unnecessary wear.

WARNING

USE OF AN INVERTED SAFETY SLEEVE DOES NOT ALLOW ACTUATION OF THE SLEEVE FALL ARRESTING MECHANISM SHOULD A CLIMBER SLIP. ALWAYS INSTALL THE SLEEVE ON THE RAIL WITH THE ARROW POINTING UP.

b. Extreme caution should be taken by the climber to ensure the climbing sleeve does not travel above the end of the carrier rail. It is strongly recommended that to prevent this possibility, the top section stop be installed as shown in figure 4.

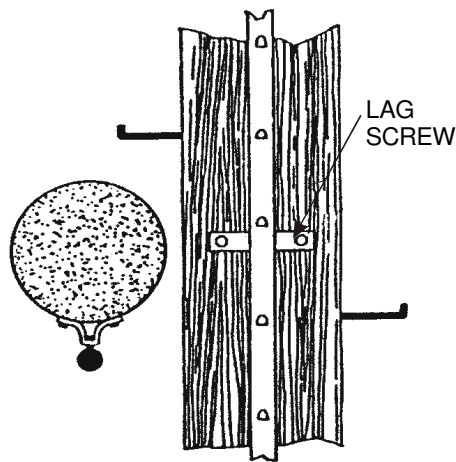


FIGURE 7
WOOD POLE BRACKET

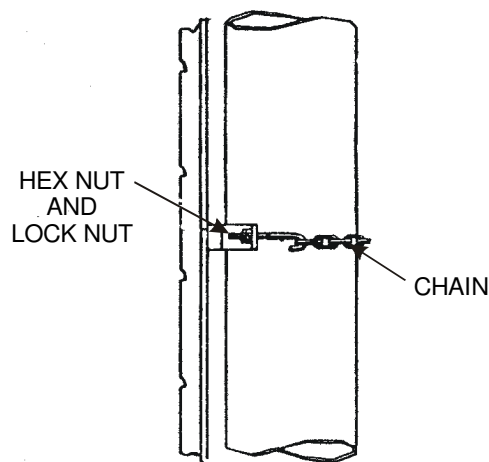


FIGURE 8
WRAP-AROUND POLE BRACKET

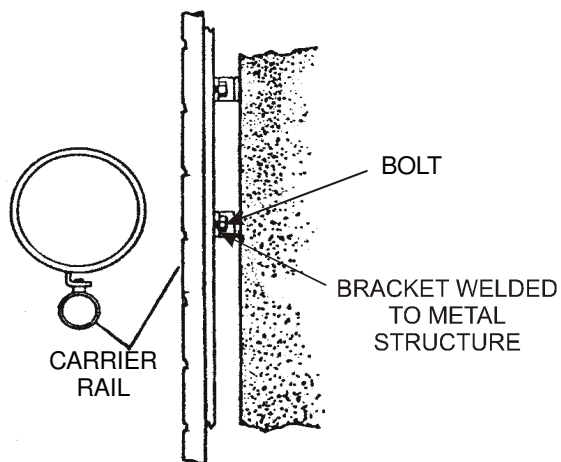


FIGURE 9
WELD BRACKET

INSPECTION AND MAINTENANCE. Prior to use, thoroughly inspect the safety equipment in storage for deterioration or damage as follows:

a. CLIMBING HARNESS AND LANYARDS must be thoroughly inspected for cuts, fraying, or cracking. Any evidence of this will warrant replacement. In accordance with general industry standard, the harness and nylon lanyards should be replaced after three years use (including field storage).

b. The climbing sleeve should be checked prior to use for the following items:

1. No missing rollers
2. All rollers turn freely
3. The locking pawl is clean and the radius of the locking tip is no more than .060 inches.
4. The locking pawl spring provides positive tension to keep the pawl fully engaged in the locking position.

CAUTION

IF THE EQUIPMENT DOES NOT MEET THE INSPECTION CRITERIA DESCRIBED ABOVE, DO NOT USE THE EQUIPMENT.

CAUTION

THE INDIVIDUAL COMPONENT PARTS MUST ONLY BE USED WITH OTHER COMPONENT PARTS MANUFACTURED BY ANTENNA PRODUCTS CORPORATION.

DEICING

An excess of ice forming on the safety climb rail will not allow the safety sleeve to roll over the rail and will prevent the locking pawl from catching in the rail notches. It is mandatory that all ice be removed by use of a torch or blunt hammer. Care should be taken when tapping the ice to not damage the surface of galvanized rails. In areas where ice conditions exist over an extended period of time, a heating cable within the carrier rail is acceptable. The minimum wattage required for deicing is 0.2 watts/foot. If a heating cable having a higher wattage/foot is used, it should be thermostatically controlled.

SPECIFICATIONS

a. The safety climbing equipment described in this publication meets Federal Specification RR-S-001301 dated June 22, 1967. The various component parts of the equipment meet the criteria of the following specifications and standards as they apply.

MILITARY SPECIFICATIONS

MIL-P-116 Methods of Preservation
MIL-W-4088 Webbing, Textile, Woven, Nylon

MILITARY STANDARDS

MIL-STD-129 Marking for Shipment and Storage
MIL-STD-130 Identification Marking of U.S. Military Property

OSHA 1910.27
OSHA 1926.502

AMERICAN SOCIETY FOR TESTING AND MATERIALS STANDARDS

A36 Structural Steel
A13 Standard Specifications for zinc (hot galv) coating on products fabricated from rolled, pressed and forged steel shapes, plates, bars and strip.
A153 Zinc coating (hot dip) on iron and steel hardware
A385 Recommended practice for providing high quality zinc coating (hot dip) on assembled products.
A475 Zinc coated steel wire strand.
b. The equipment has been performance tested to meet the following requirements:
1. Absorb the impact load of 500 pounds in a 12 inch free fall.
2. Absorb the impact load of 250 pounds in a 6 foot free fall, when using a lanyard.
3. Support a minimum static load of 1000 pounds.

ANSI A14.3 & ANSI Z359.1-07 Compliant Carabiner

This parts list consists of the part numbers listed with a brief description of the various components of the safety climbing equipment. Refer to the items in the text for a more detailed description and application if required.

LANYARDS W/SNAPS

2450-0079-002, Rope 72"
2450-0079-001, Nylon Adjustable, 3' to 6'

"Y" BRACKET ASSY, 4"

0001-9693-301, Alum
0001-9693-302, Galv Steel
0001-9693-303, SST

CARRIER RAIL ASSY, (20' Sections)

0001-9677-404, Alum
0001-9677-402, Galv Steel
0001-9677-403, SST
0002-5770-220, T-Rail

REMOVABLE EXTENSION ASSY

0001-9665-401, 4.5 ft Length Galv (Bolt on)
0002-7211-202, Galv (Quick)
0002-7211-203, SST (Quick)
0002-7211-204, Alum (Quick)

FULL BODY HARNESS

0002-3285-301

POSITION CABLE W/SNAPS

2450-0078-004, 72" Lg 1/4" DIA
2450-0078-003, 72" Lg 3/16" dia w/vinyl sleeve

TOP SECTION STOP

0001-9480-301, Alum
0001-9480-302, Galv Steel
0001-9480-303, SST

"Y" BRACKET ASSY, 8"

0001-9694-301, Alum
0001-9694-302, Galv Steel
0001-9694-303, SST

LADDER RUNG CLAMP KIT

0002-7297-201, T-Rail, Alum, 3/4" Rnd Rung
0002-7297-210, Alum Rnd Rail, 3/4" Rung
0001-9488-202, Galv Steel, 3/4" Rnd Rung
0001-9488-203, SST, 3/4" Rnd Rung

WELD BRACKET

0001-9687-301, Alum
0001-9687-302, Steel

WOOD POLE BRACKET KIT

0001-9427-201, Alum w/3/8 x 4" lag bolts
0001-9427-202, Galv Steel w/3/8 x 4" lag bolts
0001-9427-303, SST w/3/8 x 4" lag bolts

WRAP AROUND POLE BRACKET

0001-9670-301, 6" to 8" dia pole
0001-9670-302, 8" to 12" dia pole
0001-9670-303 12" to 15" dia pole

SAFETY CLIMBING SLEEVE ASSY

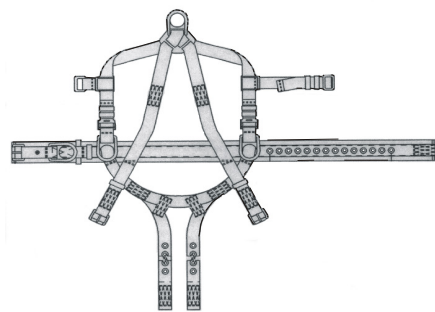
1000-1672-401, Tubular Round Rail Sleeve
1000-0829-401, T-Rail Sleeve

SPECIAL ORDERING DATA

For structures that have a concave or convex climbing surface, curved rail's are available, when submitted by the customer or by customer furnished drawings of the structure. Bending cost is quoted as required. The minimum bend radius for Galv and SST curved rail is 4 ft. The minimum bend radius for Alum curved rail is 12ft. Carrier rail may be ordered in special lengths, cutting fees will apply.



ROUND RAIL SAFETY CLIMBING SLEEVE ASSY



FULL BODY HARNESS

**ATTACHMENT A
ADDITIONAL
INSTALLATION INSTRUCTIONS FOR ALUMINUM ROUND SAFETY RAIL
CAUTION: DO NOT ATTEMPT INSTALLATION IN RAINY, ICY, OR WINDY CONDITIONS**

STEP 1. Insert the head of the 3/8" galvanized bolts used for ladder/rail attachments into each of the rail section's back cavity, as shown in Detail A. Use tape to hold the ladder/rail attachments to the rails in the approximate location to prevent sliding during hoisting. Spacing should be 5' maximum as shown in Detail B.

STEP 2. Assemble the splice guide assemblies shown in Detail B. Screw the lock nuts on only far enough to engage the full nut thread length. The barb on the lock nuts should be on the outside.

STEP 3. Prepare the rail sections for erection by inserting the 3/8" galvanized bolts of one end of the splice guide assembly into the back cavity of one end of each rail section. Tighten the lock nut on the inserted end of each splice guide assembly as required.

STEP 4. Install a top stop on preassembled top rail section as shown in Detail D. Tighten lock nuts on the top stop as required.

CAUTION

DO NOT STAND OR WORK WITHIN 30' OF THE TOWER BASE WHILE A CLIMBER IS ALOFT. DROPPED TOOLS OR PARTS WHILE ALOFT CAN FATALLY INJURE GROUND PERSONNEL CLOSE TO THE TOWER BASE.

STEP 5. Using a safety harness and lanyard, ascend the tower and attach a snatch block suitable for 3/8" rope onto the left side of the uppermost horizontal brace on tower or ladder.

A. While aloft, thread one end of a 3/8" rope through the snatch block and return same end to the ground.

B. Prepare preassembled top rail section for erection by tying one end of the 3/8" line around the splice guide assembly using a double clove hitch or equivalent nonslipping knot. In order to keep the rail upright during hoisting, tie a single clove hitch around the section about 2' from the opposite end. Slowly hoist the rail up to the ladder surface.

NOTE

VERIFY THAT THE AS INSTALLED ORIENTATION OF THE CARRIER RAILS IS SUCH THAT THE ARROW MARKED "UP" ON THE BOTTOM AND MIDDLE OF EACH RAIL IS POINTING UPWARD.

C. Untape the ladder/rail attachment. Remove the top lock nut and clamp the attachments around the nearest horizontal brace. The taped locations should allow easy adjustment for clamping to the proper horizontal brace.

Tighten all fasteners as required. Use alternating wrench turns to equalize incremental take up between the two bolts on each side of ladder/rail attachment.

D. Prepare the next preassembled rail section for hoisting in a similar manner as detailed above. This procedure should be used until all rail sections are mounted on the tower or ladder.

CAUTION

IF A SPLICE GUIDE ASSEMBLY IS POSITIONED OVER A RUNG, MOVE THE ENTIRE RAIL, EITHER UP OR DOWN A FEW INCHES TO ACCOMMODATE THE SPACING NEEDED.

WARNING

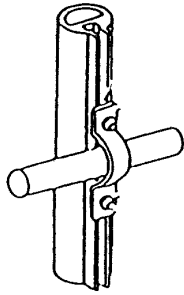
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STEP 6. After installing the rail, mount the safety climb sleeve by sliding it onto the bottom of the rail. Make sure the arrow on the sleeve points upward. Test the sleeve by pushing it up and down the rail a few feet and pulling sharply downward on the safety snap hook. A sharp downward pull should lock the sleeve onto the rail. Lifting the hook should release the sleeve.

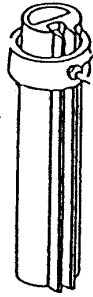
STEP 7. While wearing a safety climbing harness attach the sleeve's safety snap hook to the D-ring on the harness to ascend/descend the tower. While at the top of the tower, remove the snatch block and return it and the 3/8" line to the ground.

NOTE

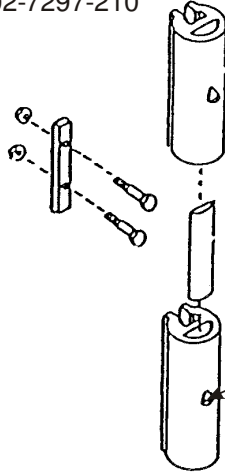
USERS SHOULD STORE THE SLEEVE ASSEMBLY IN A SECURE, SAFE AND DRY LOCATION.



DETAIL A.
ROUND RUNG, 3/4"
CLAMP KIT
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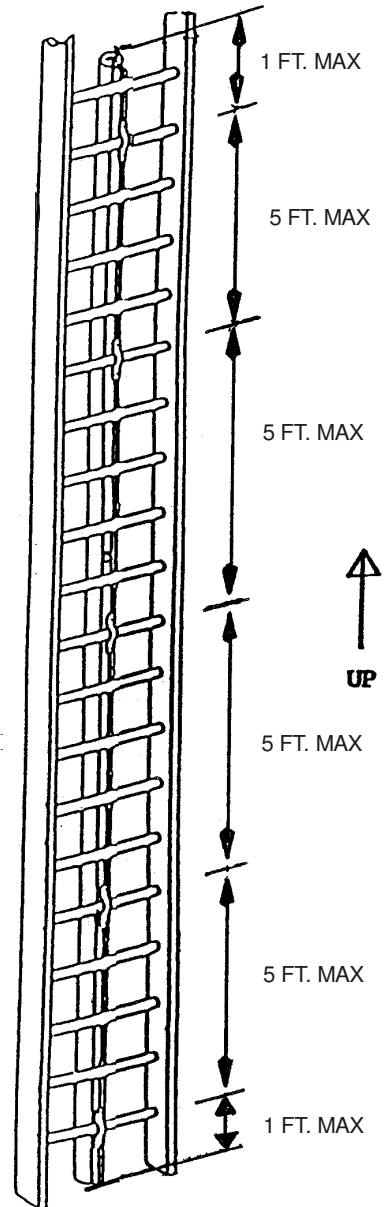


DETAIL D.
TOP STOP
0001-9480-301



DETAIL C.
SPLICE
ASSEMBLY
0003-2787-201

CAUTION
RAIL MUST BE
INSTALLED WITH NOTCHES
IN DIRECTION SHOWN
AND WITH "UP"
ARROW POINTING UPWARD



DETAIL B
TYPICAL ATTACHMENT POINTS

ALUMINUM SAFETY RAIL INSTALLATION

ATTACHMENT B
INSTALLATION INSTRUCTIONS FOR ALUMINUM T-RAIL
CAUTION: DO NOT ATTEMPT INSTALLATION IN RAINY, ICY, OR WINDY CONDITIONS

STEP 1. Insert the head of the 3/8" galvanized bolts used for the ladder/rail attachments into each of the rail section's back cavity, as shown in Detail A and Detail D. Use tape to hold the ladder/rail attachments to the rails in the approximate location to prevent sliding during hoisting. Spacing should be 5' maximum as shown in Detail E.

STEP 2. Assemble the splice guide assemblies shown in Detail B. Screw the lock nuts on only far enough to engage the full nut thread length. The barb on the lock nuts should be on the outside.

STEP 3. Prepare the rail sections for erection by inserting the 3/8" galvanized bolts of one end of the splice guide assembly into the back cavity of one end of each rail section. Tighten the lock nut on the inserted end of each splice guide assembly as required.

STEP 4. Install a top stop on preassembled top rail section as shown in Detail C. Tighten the lock nuts on the top stop as required.

CAUTION

DO NOT STAND OR WORK WITHIN 30' OF THE TOWER BASE WHILE A CLIMBER IS ALOFT. DROPPED TOOLS OR PARTS WHILE ALOFT CAN FATALLY INJURE GROUND PERSONNEL CLOSE TO THE TOWER BASE.

STEP 5. Using a safety harness and lanyard, ascend the tower and attach a snatch block suitable for 3/8" rope onto the left side of the upper most horizontal brace on tower or ladder.

A. While aloft, thread one end of a 3/8" rope through the snatch block and return same end to the ground.

B. Prepare preassembled top rail section for erection by tying one end of the 3/8" line around the splice guide assembly using a double clove hitch or equivalent nonslipping knot. In order to keep the rail upright during hoisting, tie a single clove hitch around the rail section about 2' from the opposite end. Slowly hoist the rail up to the ladder surface.

NOTE

VERIFY THAT THE AS INSTALLED ORIENTATION OF THE CARRIER RAILS IS SUCH THAT THE ARROW MARKED "UP" ON THE BOTTOM AND MIDDLE OF EACH RAIL IS POINTING UPWARD.

C. Untape the ladder/rail attachments. Remove the top lock nut and clamp the attachments around the nearest horizontal brace. The taped locations should allow easy adjustment for clamping to the proper horizontal brace.

Tighten all fasteners as required. Use alternating wrench turns to equalize incremental takeup between the two bolts on each side of ladder/rail attachment.

D. Prepare the next preassembled rail section for hoisting in a similar manner as detailed above. This procedure should be used until all rail sections are mounted on the tower or ladder.

CAUTION

IF A SPLICE GUIDE ASSEMBLY IS POSITIONED OVER A RUNG, MOVE THE ENTIRE RAIL, EITHER UP OR DOWN A FEW INCHES, TO ACCOMMODATE THE SPACING NEEDED

WARNING

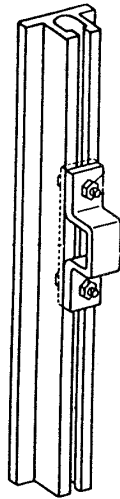
USE OF AN INVERTED SAFETY SLEEVE DOES NOT ALLOW ACTUATION OF THE SLEEVE FALL ARRESTING MECHANISM, SHOULD A CLIMBER SLIP. ALWAYS INSTALL THE SLEEVE ON THE RAIL WITH THE ARROW POINTING UP.

STEP 6. After installing the rail, mount the safety climb sleeve by sliding it onto the bottom of the rail. Make sure the arrow on the sleeve points upward. Test the sleeve by pushing it up and down the rail a few feet and pulling sharply downward on the safety snap hook. A sharp downward pull should lock the sleeve onto the rail. Lifting the hook should release the sleeve.

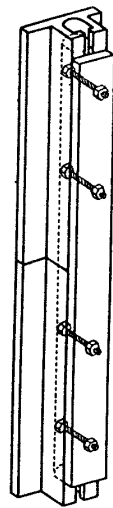
STEP 7. While wearing a safety climbing harness attach the sleeve's safety snap hook to the D-ring on the harness to ascend/descend the tower. While at the top of the tower, remove the snatch block and return it and the 3/8" line to the ground.

Note

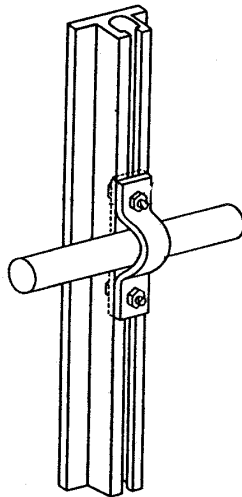
USERS SHOULD STORE THE SLEEVE ASSEMBLY IN A SECURE, SAFE AND DRY LOCATION.



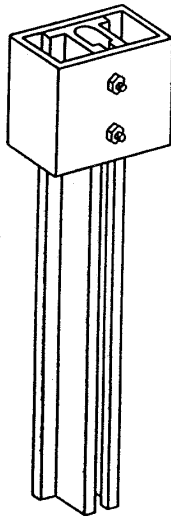
DETAIL C.
3/4-1" SQUARE LADDER
RUNG ATTACHMENT
0002-7298-201



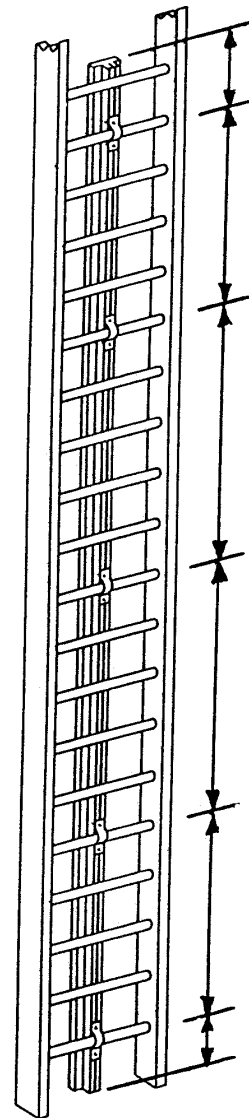
DETAIL B.
SPLICE ASSEMBLY
0002-7295-201



DETAIL C.
3/4" ROUND LADDER RUNG
ATTACHMENT
0002-7297-201

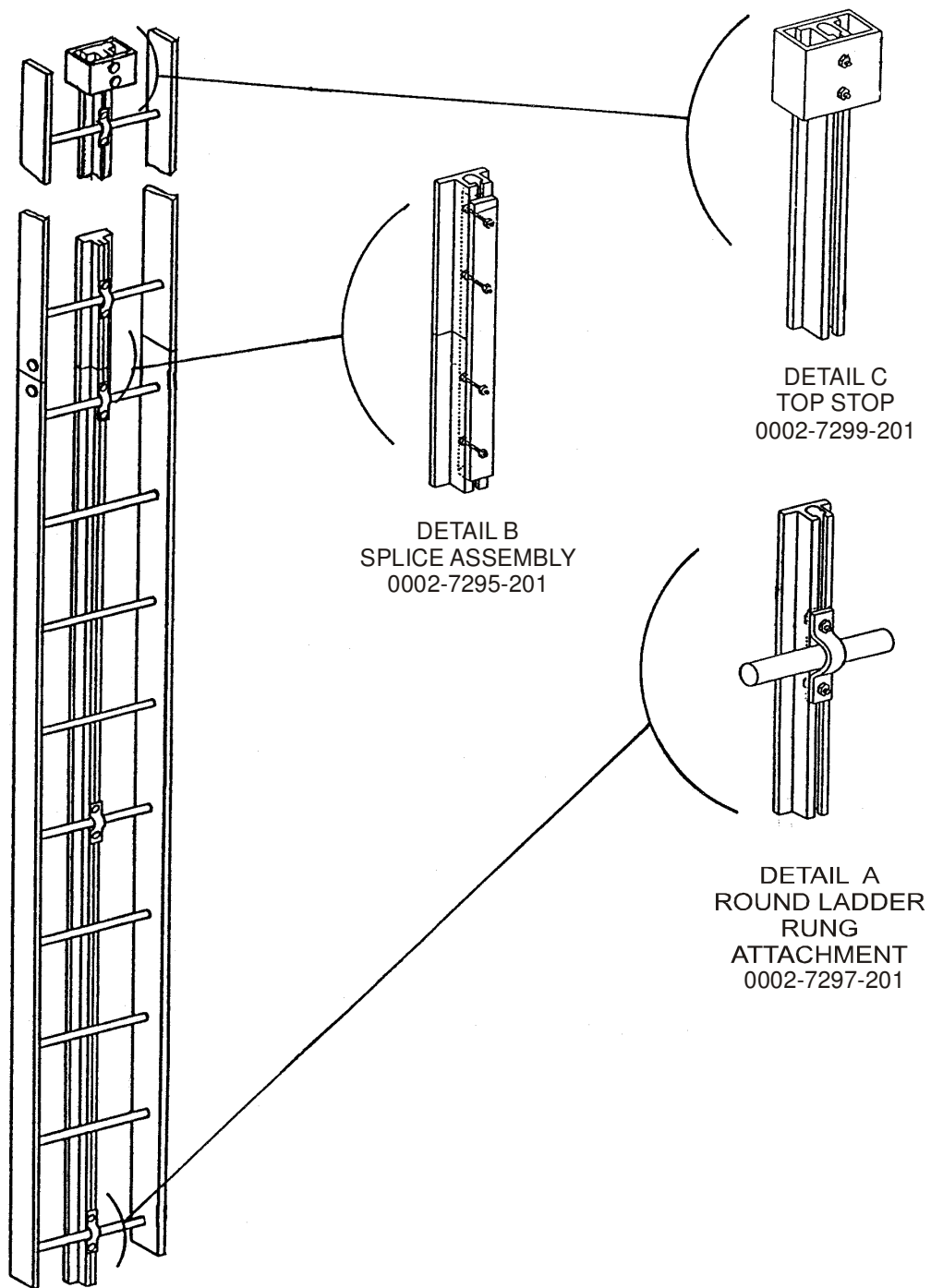


DETAIL D.
TOP STOP
ATTACHMENT
0002-7299-201



DETAIL E.
TYPICAL ATTACHMENT POINTS
FOR 20' T-RAIL SECTION
0002-5770-220

T-RAIL INSTALLATION



T-RAIL INSTALLATION