Henderson
recreation equipment limited

In-Ground Installation Instructions for PlaySteel FIT & MAX

11 Gilbertson Drive P.O. Box 68 Simcoe, Ontario, Canada N3Y 4K8 1-800-265-5462

Please take the time to review this very **IMPORTANT** information concerning the installation of your new Henderson Recreation Equipment Play Structure. To assist you with the installation of your new play structure, we have listed a few important details for you to consider that will help to ensure there are no unnecessary delays and additional costs for the installation of your equipment. If you have any questions or require additional information, please contact your sales representative or the installation coordinator.

Information Included in this Package

Component Installation Instructions
In-ground Method Installation Instructions
Layout Drawings / 3d Drawings
Packing Slip / Customer Count-sheet

Tools Provided for Installation

Tamper Resistant Key Torx #45

Tools Required for Site Layout

Line Level (50' minimum)
Plumb Bob
Stakes (for Locating)
Spray Paint

Tools Required for Installation

Allen Socket, 7/32”
Allen Socket, 3/8”
Tamper Resistant Socket T-45T
Bolt Cutters
Claw Hammer
Drill, 1/2” Heavy Duty and Variable Speed
Drill Bit Set
Levels, 24”, 48”
Pliers
Pry Bar
Ratchets, 3/8”, ½” c/w Extension
Round File
Rubber Mallet
Screwdriver Set
Sockets, Deep ½” to ¾”, 10mm
Square, Small Corner Square
Tape Measures, 20', 25', 100'
Tin Snips
Utility Knife
Vice Grips
Wire Cutters
Wrenches, 3/8” to ¾”, 10mm

Equipment Required for Installation

Auger, 12” Diameter
Chainsaw (for Wood Border)
Cleanup Supplies, Bucket and Clean Rags
Extension Cord, 50’
Generator, 4000 Watt (or Eq. Power Source)
Jack All Jack
Rakes
Shovels
Sledge Hammer
Water / Water Source
Wheelbarrow

Material Required for Post Support

Carriage Bolt, 3/8” x 4” (2 per Ground Hole)
Chain, 4/0 Coil 16” Long (1 per Ground Hole)
Flat Washers, 3/8” (2 per Ground Hole)
Lock Nuts, 3/8” (2 per Ground Hole)
Wood, 2” x 4” x 2’ (3 per Ground Hole)

Utility Locates

If installation of your equipment will require digging or excavation, it is important that the underground locations of utilities such as electric, gas, telephone, cable, water or any other private or underground obstructions are known prior to excavation work commencing. Failure to complete this necessary step may result in damage to the underground services or cause a potentially dangerous situation.

Contact your local providers to have this service performed. The utility representative should leave a document with you to indicate there is no conflict with the area designated for the new play structure.

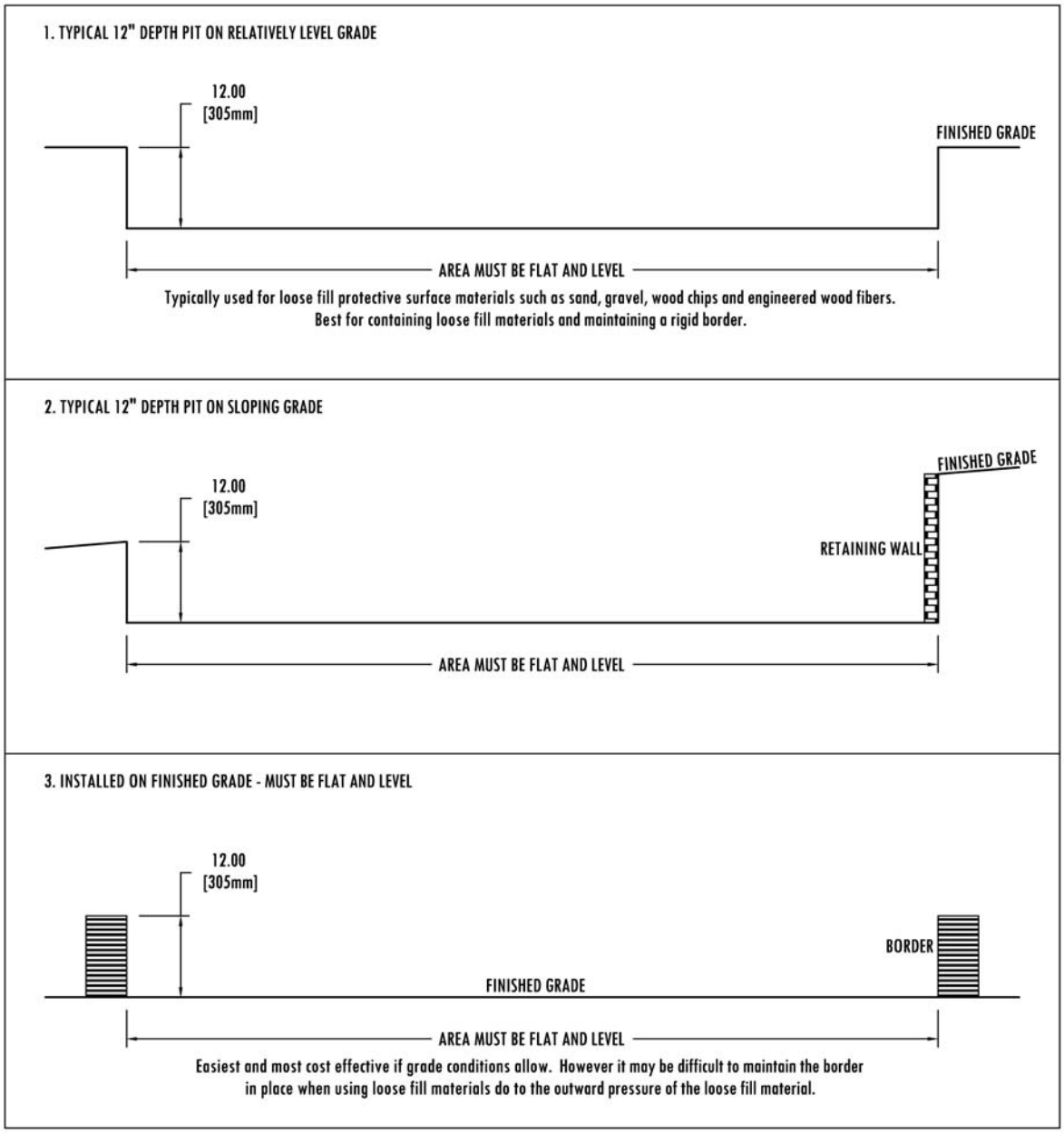
Play Structure Site Excavation Details

All play structures must be installed on a flat and level surface to ensure that the end result is compliant with the CSA (Canada) or ASTM (U.S.) standard. Depending on the physical site, the type of containment border and protective surfacing material chosen, there are several methods of site preparation that will produce acceptable results. Pit Depths or Border Heights will vary depending on surfacing material.

Some examples of the installation types are shown below in sectional views. In all cases, the grade on which the protective surfacing will be installed must be **FLAT** and **LEVEL**. The perimeter dimensions of the protective surface zone required for your equipment are indicated on the drawings that were provided to you.

⚠WARNING
Installation Over A Hard Surface Such As Concrete, Asphalt, Or Packed Earth May Result In Serious Injury Or Death From Falls.

Filter cloth, drainage tiles, borders or protective surfacing material should not be installed prior to the installation of the play structure as any of these can be easily damaged due to the construction activity.



Understanding Your Layout Drawing

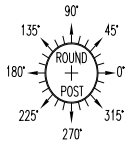
Before beginning the installation of your play structure, study your layout drawing, 3d drawing, and component installation instructions carefully.

IMPORTANT

The required site dimensions are marked on the layout drawing and should be compared to the actual area to ensure that the play structure will fit. This overall bordered area includes the actual play structure plus a minimum protective surface area that extends to cover the zone of use. Note any no-encroachment zones (Canada only) on your layout drawing. This extra space is required for certain play components such as slides, swings and certain rotating equipment and is intended to allow pedestrian traffic near the play equipment in use while minimizing the risk of injury to pedestrians. Depending on the layout arrangement, a no-encroachment zone does not require protective surfacing but must be free of obstructions that would hinder free pedestrian movement.

Your layout drawing is used to identify post locations. The numbers at the post bases coincide with the numbers on the bottoms of the actual structure posts.

PlaySteel Fit & Max compass Locate the hole closest to the bottom end of the post to determine side 0.



You will use these to orient the post in the appropriate direction within the site. A post compass is provided on your layout drawing that identifies your unique post direction. Your layout drawing is also marked with a scale key that can be used to obtain additional measurements not directly provided.

Laying Out Your Play Structure

Always begin by measuring the prepared site to ensure that it is large enough to safely contain your play structure, including all required safety zones. If the site is not large enough, your play structure will not comply with the CSA (Canada) or the ASTM (U.S.) standard.

Unless otherwise specified, face the play structure so that any stainless steel slides face north or east to avoid heating by the sun.
It is generally easier to install a play structure from the lowest to the highest deck. Lower decks are typically supported by shorter posts. Shorter posts are easier to stand and balance than taller posts. Once the lower decks are installed, they can be used to balance the taller posts and decks.

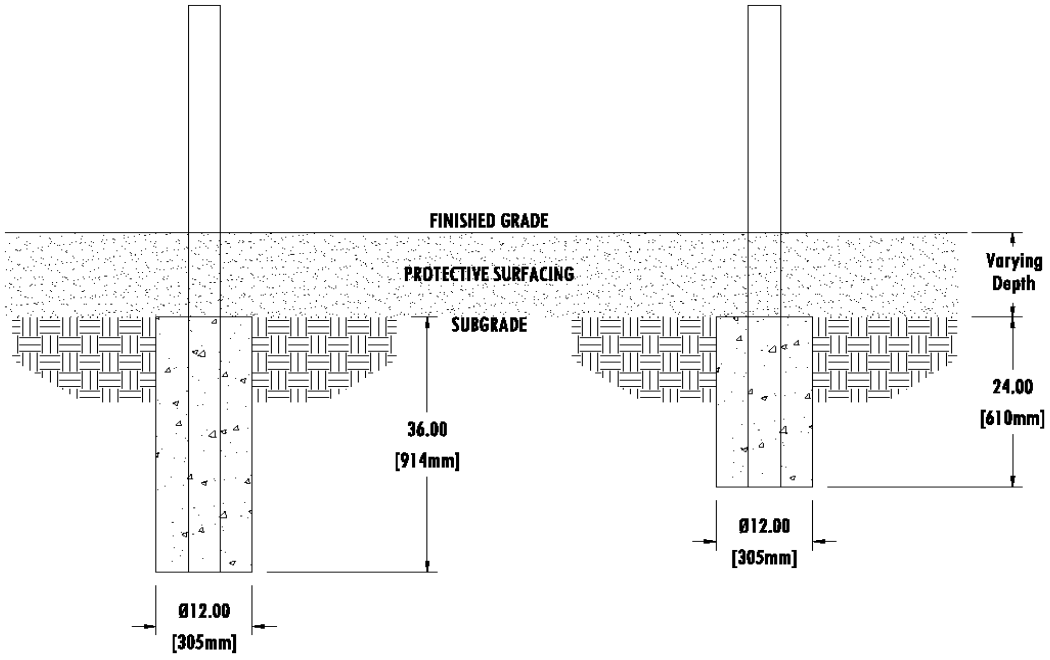
Your layout drawing will contain a starting dimension from the edge of the site to the lowest deck. Other optional starting points will also be dimensioned. Use the scale key for measurements if you wish to start at a location not directly dimensioned. In certain circumstances it may be beneficial to assemble the play structure starting in areas that are dimensionally critical. An example of this may be when you are required to mate a wheelchair ramp or bridge with an existing concrete curb. In this scenario it would be prudent to assemble the play structure starting with that wheelchair ramp or bridge.

Once you have determined a starting point, translate this point into the prepared site by measuring in from the edge of the site. Placement of this point is very important because all other points depend on its accuracy. Once the starting point is located in the prepared site, confirm that there is enough area in the opposite directions to safely contain the play structure.

Now that you have your starting point located, begin to layout the rest of the post locations. You can layout post locations by measuring with a tape measure and marking the location with a stake (or spray paint), or by using the physical component. For example, if installing a deck, set the deck in the appropriate location and mark the locations of the posts with stakes (or spray paint). Remove the deck and use the stakes (or spray paint) to indicate where to auger the holes.

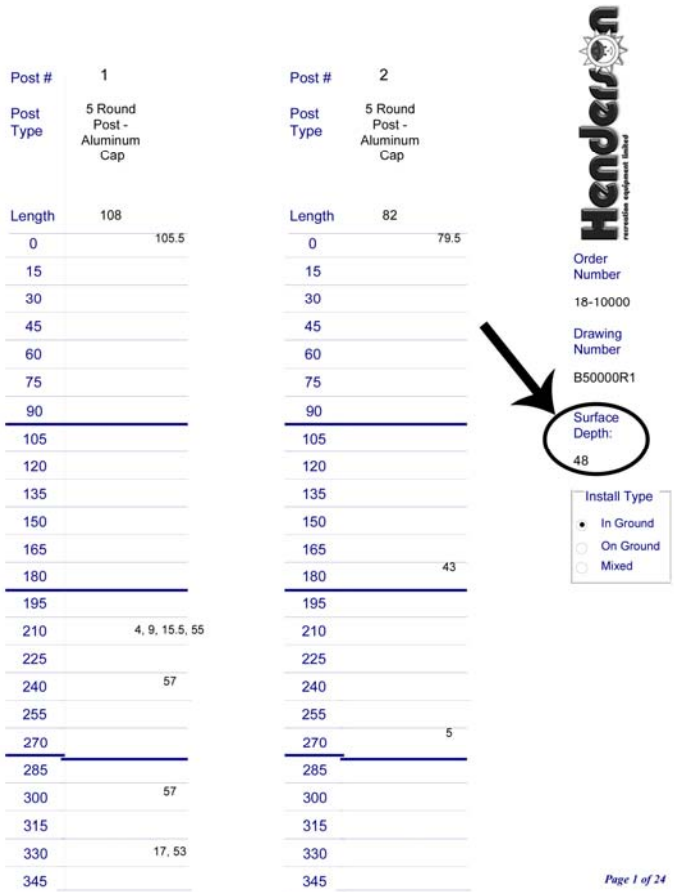
Drilling Ground Holes

Once post locations are marked, auger ground holes for them. Hole depth may need adjustment based on the geographical location of the installation site. High frost areas may require a deeper hole. It may be necessary to dig out the bottom of the hole by shovel after the power auger has been removed to ensure proper depth.



IMPORTANT

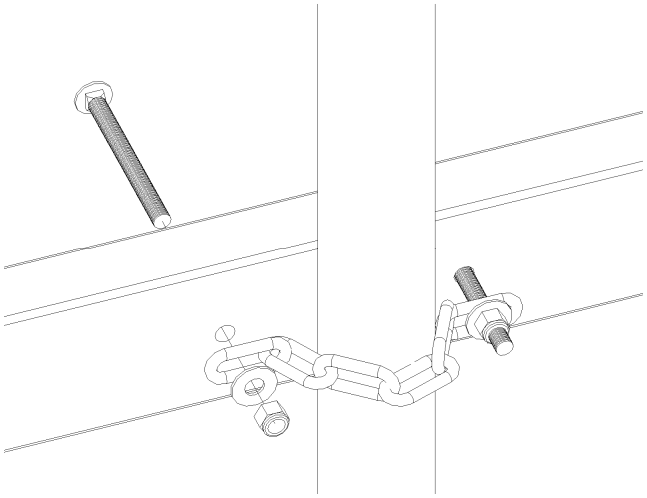
All included installation drawings assume a 48" deep hole. If you have asked for a different ground hole depth, the post length supplied to you will already be adjusted to match your required depth. In this case it is your responsibility to adjust your ground hole depths accordingly. Failure to do so could result in your play structure being too high or too low once the protective surfacing has been added to the site.
Always confirm the depth your posts have been cut for by finding the depth number on the Post Holes page included within this package.



Supporting The Play Structure

Once four post holes have been drilled, locate the appropriate numbered posts according to the layout drawing. Stand the posts upright in the ground holes and ensure that they are positioned in the appropriate direction identified by the post compass. Lift the deck into position and fasten using the hardware identified in the deck installation instruction.

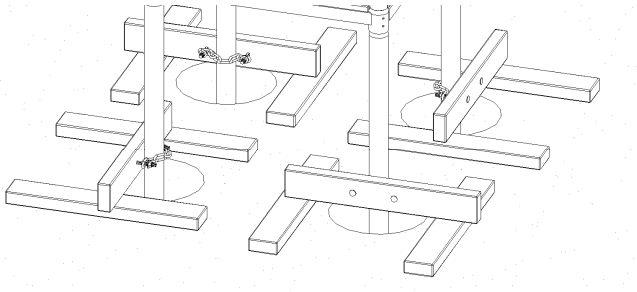
Once the deck has been connected at all four corners, the posts should be raised in order to achieve the proper deck height. To brace the posts in place you will need a way to support them. Start by drilling out two 7/16" holes in one 2' length of 2" x 4". The holes should be 7" apart and centred on the board in both directions. Using a 16" length of chain, two 3/8" x 4" carriage bolts, two 3/8" flat washers, and two 3/8" locknuts, fasten the chain around the post and tighten to the board. Tighten until the brace does not move along the post. A rubber mallet can be used to test the strength of your brace. Support the 2" x 4" brace with two other 2" x 4" boards on either side of the ground hole. To raise or lower your deck, slightly loosen the nut, adjust the height and retighten.



IMPORTANT

The deck heights shown on the layout drawing are measured from finished grade. If the site has been excavated for 12" protective surfacing, a 12" high deck will measure 24" from the sub-grade to the top of the deck.

When arranging braces for a deck it is necessary to alter the directions of the braces under each post. The deck will be unstable if all four braces are facing the same direction.



Whenever you can, install components such as vertical rail panels, turning bars, plastic activity panels, and slide hoods as you go. These will help keep your decks square and rigid as you continue drilling more holes and adding more decks to your play structure.

Continue to assemble the play structure following the procedures that have been outlined thus far. Post locations for attaching decks can be found by measuring out with a tape measure or by using the physical part as a guide.

For connecting components such as bridges or crawl tunnels, refer to the layout drawing or individual instructions for measurements to locate their corresponding post holes.

Continually check your dimensions to make sure you are running true within the site. Each component that is added to the play structure makes it more difficult to readjust the direction of the play structure. If the unit is veering off in any direction that may cause your protective surfacing zone to be smaller than anticipated, correct the problem before continuing to install the remaining components.

Component Installation

Once all decks and connecting components have been attached, it is time to install all the components that connect the play structure and the ground. These components include slides, climbers, and stairs. The attached individual installation instructions will detail ground hole locations and the assembly procedure for these components.

Most multiple deck play structures contain infill panels. These are easy to miss on the layout and 3d drawings, but they must be installed to ensure a safe playground. The customer count-sheet will identify the number of infill panels that have been shipped and should be installed on your play structure.

Checking

Once assembly is complete, do a final check before proceeding. Ensure that all posts are plumb on all sides. All decks should be level and adjusted to the correct height for the amount of protective surfacing required. Ensure all components are attached per their instructions. Finally, ensure that all fasteners are tight and firmly secured.

Concrete Footings

Concrete should be poured only after all posts, decks and components are properly and securely installed. While adding concrete to the ground holes, prevent splashing on the equipment. As the ground hole is being filled, use a shovel to stir the concrete to remove any air pockets. Fill the ground hole completely to sub-grade level.

After the concrete had been poured, ensure that all posts and decks have remained level and plumb. The recommended setting time for concrete is 24 to 48 hours. After the concrete has set, remove all wooden braces and chain. These may pose a hazard if left in the protective surfacing.

Note: 1 cubic yard (27 cubic feet) of ready-mix concrete will fill approximately nine 12" diameter 48” deep ground holes.

Protective Surfacing Installation

Install protective surface material after all concrete footings have been placed and set, as well as all wooden braces have been removed. The protective surfacing should be evenly distributed and raked level. The playground should not be opened until this step is complete.

Installation Safety

While installing any playground equipment, if the site must be left unattended, make sure the area is left safe. Clean up all tools, cover all open ground holes, and erect a snow fence or other barrier to keep children out of the area.

Installation of playground equipment should be carried out strictly in accordance with the manufacturer’s recommendations.

Recycling

Many of our packaging materials can be recycled. Please take the time to separate and deliver them to a recycling centre. Thank you!

Torque Requirements

The following are target torque values for typical fasteners. The actual values should be determined by means of a torque wrench. The torque values given are (unless otherwise noted) typical for all lengths of the given fastener size.

Size	Description	Torque in*lbs
1/4"	Carriage Bolt	66
5/16"	Carriage Bolt	132
3/8"	Carriage Bolt	240
7/16"	Carriage Bolt	600
1/2"	Carriage Bolt	600
3/8"	Eye Bolt	240
3/8"	Machine Bolt	240
7/16" x 2 1/2"	Machine Bolt	600
7/16"	Machine Bolt	384
1/2"	Machine Bolt	600
5/16"	Truss Bolt	132
3/8" x 3/4"	Button head Cap Screw	540
3/8"	Button head Cap Screw	240
3/8"	Flat Head Hex Socket Cap Screw	240
5/16"	Hex Head Lag Screw	132
3/8"	Hex Head Lag Screw	240
3/8" x 1/4"	Set Screw	130
3/8" x 3/8"	Set Screw	240
1/2" x 1/2"	Set Screw	316

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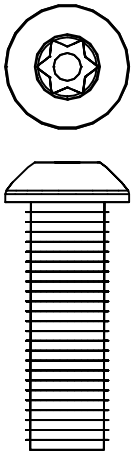
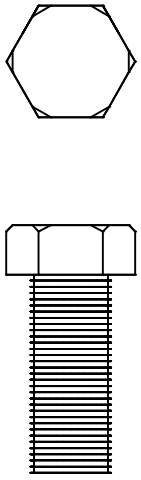
Typical Hardware Key

(For Identification of Parts)

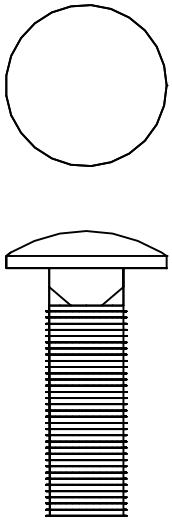
3/8 " Set Screw



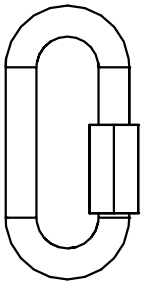
3/8" Button Cap Torx w/Pin



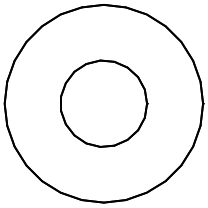
3/8" Machine Bolts



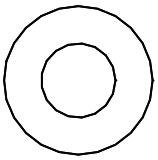
3/8" Carriage Bolt



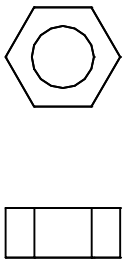
5/16" Quick Link



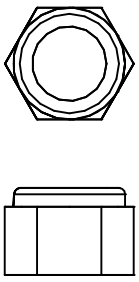
3/8" Flat Washer



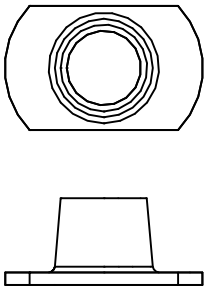
5/16" Flat Washer



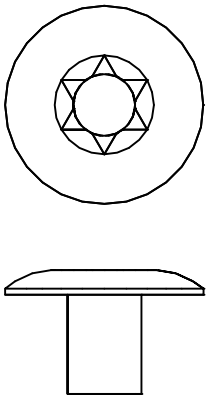
Hex Nut



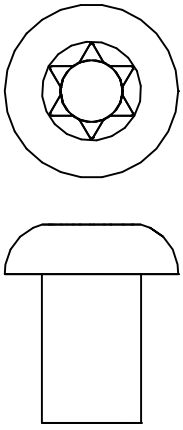
Lock Nut w/ Nylon Locking



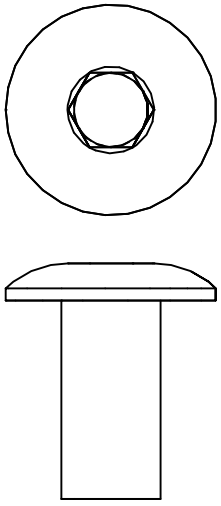
T-Nut



Camtainer Nut



Barrel Nut



Spenco Nut

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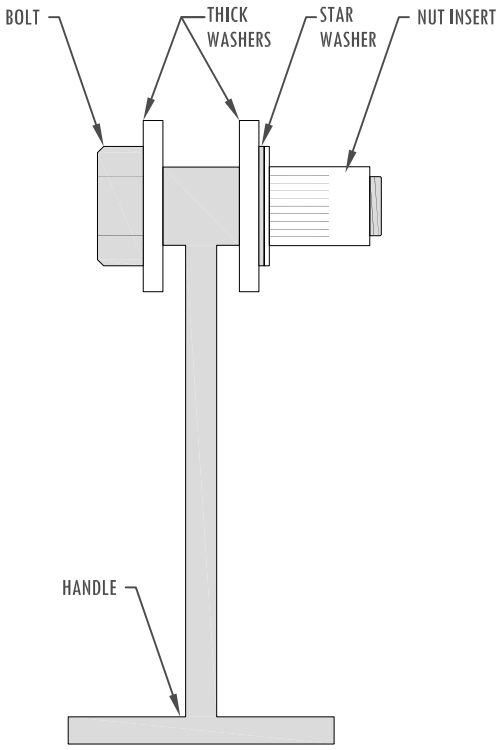
Nut Insert Tool

Tools Required
Impact Gun or Imperial socket set

Parts Included
Nut Insert Tool & extra nut inserts



Step One: Locate Parts
Determine location of either the missing nut insert (go to step 2) or loose nut insert (go to Step 3).

Step Two: Installing A Missing Nut Insert
Ensure that the nut insert tool looks as per the figure shown. Fully insert the nut insert into the 13.6 mm diameter hole. While holding handle, tighten down the bolt with an Impact Gun. Remove the tool by unscrewing it from the secured nut insert.

Step Three: Tightening A Loose Nut Insert
Ensure that the nut insert tool looks as per figure shown but without the nut insert. Fully screw the bolt into the nut insert which is in the 13.6 mm diameter hole. While holding handle, tighten down the bolt with an Impact Gun. Remove the tool by unscrewing it from the secured nut insert.

Final Step: Check
Do a final check to make sure that the Nut Inserts are tightened securely.

Last Updated - 03/04/2015
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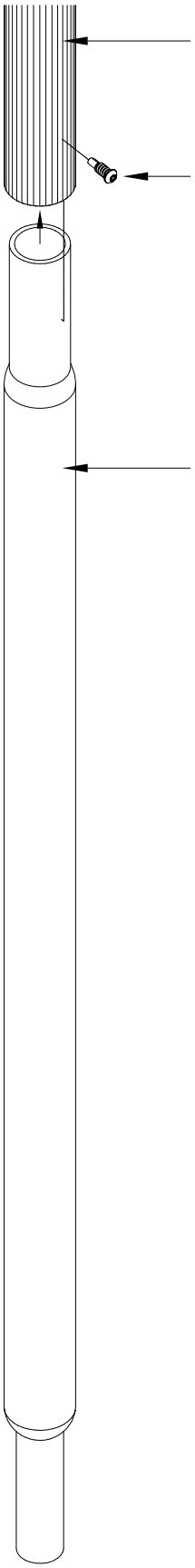
Due to hardware shortages, we have replaced the locking flange nut with a 5/16 flatwasher and lock nut 3/8”-16 UNC.

Wherever you see this locking flange nut in the installation instructions, please substitute with a washer and locknut.

PIPE COMPONENT AND DOUBLE SWEDGED GROUND LEG DETAIL



PIPE COMPONENT

SELF TAPPING SCREW

DOUBLE SWEDGED GROUND LEG
(1M-P1-GND10800-00 PLEASE NOTE EACH END IS SWEDGEDTO FIT VARYING PIPE DIAMETERS) INSERTED INTO THE PIPE COMPONENT AND SECURED WITH A SELF TAPPING SCREW AND MAY NEED TO BE CUT TO FIT YOUR SPECIFIC GROUND HOLE DEPTH.