Installation Instructions: **Stinger Base for High-Pinion Dana 60 Axles**

Kit Part Numbers & Applications	**Nth24250** (fits most aftermarket High Pinion Dana 60 Axles)
Assumptions Equipment that must already be present on your vehicle	The rear axle tube diameter is 3.0-3.125”
	The casting is no more than 18.5” wide.
	The first 1.0” of the axle tubes to each side of the differential casting are unobstructed by other brackets, breathers, etc.
	REQUIRED PRODUCT: Nth2xxxx is needed to relocate the rear stabilizer bar on TJ Wranglers and LJ Unlimited models.
Required Tools and Equipment (in addition to common hand tools)	Drill and drill bits (for installations not using Nth° Tummy Tucker™)
	Welder (all welding should be performed by a qualified person!)
	Sawzall or Plasma Cutter + grinder (for adapting tie plate to your axle)

Please take the time to read these instructions completely before beginning – they are long because we want you to get the installation right the first time with no unnecessary delays.

Step 1: Unpack boxes; Check contents against packing list; Verify parts in good condition. Be especially sure that you have the right parts for your application!

Step 2: Read all of the following instruction steps before beginning! Do not disassemble vehicle unless all parts are present and all tools and facilities required are available. Do not start or attempt this product installation if you are unsure of your abilities or do not have the resources listed above. If applicable, be sure to have all welding done by a certified person, and check/set all specified torques with a torque wrench…too tight is not just right!!

NOTE: Pinion Yoke Stone Shields: Some aftermarket pinion yokes come with a pressed-on metal disc that shields the pinion seal from direct impact by stones, etc. The pinion skid that is part of this universal Stinger base makes this disc unnecessary because the skid will effectively shield the pinion yoke/seal from stones, so you may remove the disc and leave it off if you discover a clearance issue between the skid and the pinion stone shield.

Step 3: Remove Driveshaft. To install the main base bracket, you must first disconnect the rear driveshaft from the pinion yoke. Depending on the u-joint size you are running, you might also need to remove the pinion yoke itself, but most should fit through the opening in the bracket.

NOTE: On TJ Wranglers you must also remove the rear stabilizer bar from the axle when using the Universal Stinger Base. Nth° sells a separate kit (Nth2xxxx) that relocates the bar by mounting it to the frame - allowing you to keep the rear bar for proper handling.

Step 4: Fit Base Bracket to Axle Casting. The main bracket for this Universal Stinger Base is designed to the basic dimensions of the typical Dana 60 high-pinion differential housing. The numerous aftermarket castings on the market vary widely in shape, so some trimming will be necessary to fit the bracket cleanly around the casting at the pinion – **figure 0** shows a small notch (covered with a small plate from the bottom) that was needed in this case (DynaTrac ProRock60 housings should not require any modification to the base). Trim carefully and in small increments until you are able to fully seat both legs of the bracket firmly to the axle tubes as shown in **figure 1**.

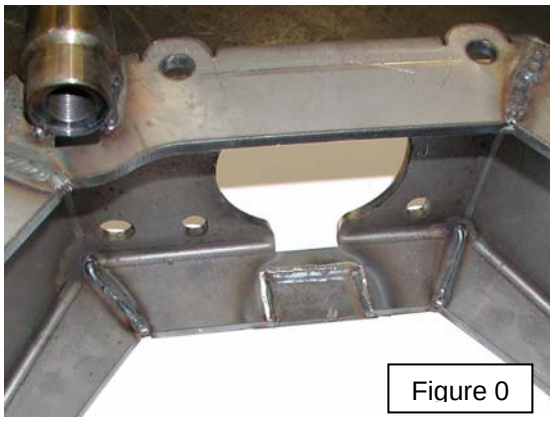

Figure 0

Once fitted, secure the bracket to the axle tubes using the two ½” u-bolts, four of the included washers, and the four *fine*-thread nuts. Snug the nuts just

enough for the bracket to not be loose for now. **Figure 2** shows a bracket installed on a Dynatrac ProRock60 axle.

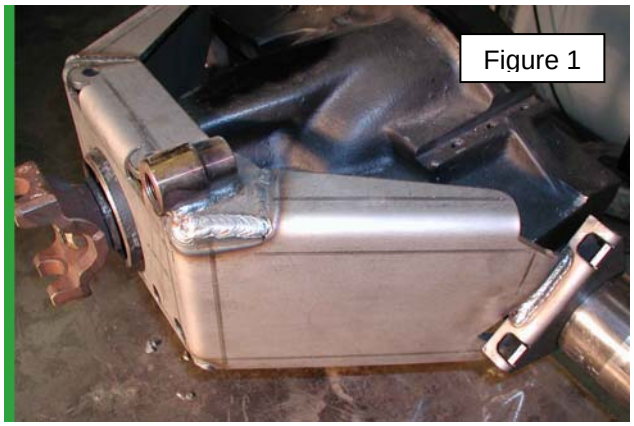
Figure 1

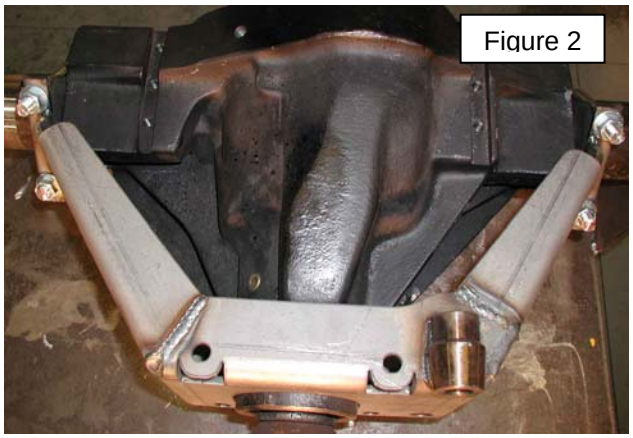
Figure 2

Step 5: Install Pinion Skid. The pinion skid actually serves two purposes: to protect the pinion yoke and u-joint from damage from rocks, and to act as a secondary 'clamp' around the pinion to hold the bracket in position so that the attached Stinger boom can function properly as a torque arm.

Place the skid over the pinion yoke as you did with the base bracket – the skid should of course be below the yoke, and the two tabs at the top should go into the two slots on the base bracket. Secure the skid to the base bracket with the four ½" bolts and remaining washers and nuts. Because the design of the skid is meant to 'trap' the pinion, tighten the four bolts in the following sequence:

1. Lower pair snug only
2. Upper pair drawn up until the bottom of the opening in the skid is touching under the pinion casting at the same time the top edge of the cutout in the base bracket touches the casting. At this point there should be resistance and the tabs will want to bend to close the remaining gap. If the remaining gap is more than about 1/16", you temporarily remove the bolts and add a single washer to each between the top of the tabs and the underside of the base bracket, then replace the bolts and tighten fully. If the gap is less, simply tighten the bolts.
3. Tighten the lower pair of bolts fully.

NOTE: There should be at least 1/16" of pinion casting still showing through the skid when installed. If the casting does not protrude through the 2x1/4" material of the skid and base, you do not have the base fully seated into proper position and should return to step 4 before continuing.

Figures 3 and 4 show a properly installed pinion skid with tightened bolts.

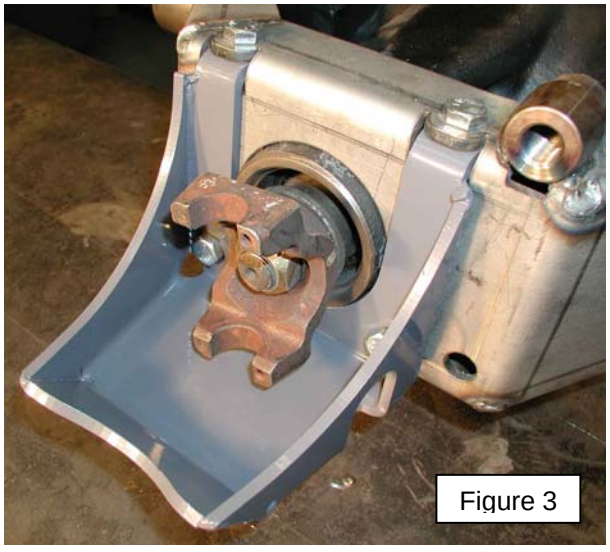
Figure 3


Figure 4

Step 6: Tie Plate Installation. This is the last Figure 4and most important step to perform correctly! Because this Stinger Base is a 'Universal' design, no exact provision is made for how the base bracket is tied to the top of the

casting. For the Univeral Stinger to work properly as a torque arm, the base bracket MUST be tied to the top of the housing by some means. All known aftermarket HP60 castings have some sort of provision on the top of the casting for mounting 4-link arms, etc. – some have cast-in 'pads' with tapped holes, while others use a steel 'bridge' that mounts to points to either side of the top. The 'mission' is to connect the axle's mounting provision to the top of the base bracket just behind the upper bolts for the pinion skid. The needed connection is fairly easy to fabricate using the 6x10" piece of ¼" steel supplied for this purpose – follow the type below that suits your axle design.

Type 1: Tie plate to Cast-in Pad. For this type of axle, you will need to bolt something to the tapped holes in the top of the housing – this can either be an end of the provided plate, or a separate plate that may have come pre-drilled for/with your axle (we recommend directly drilling the provided plate to reduce the number of welds involved in this highly-stressed connection). Also, make sure you use ALL of the provided holes – there should be at least four points (bolts or studs) – follow your axle maker's directions for proper attachment to the cast-in tapped holes.

- If you use just the provided plate, leave enough of it extending forward that it will reach the top-center flange of the base bracket and overlap it by at least ½". You may need to add a shallow bend to the plate to get the front edge down to where it will touch the top of the base.
- If you have an existing mounting you want to use, cut down the provided plate so that it can be welded to the mount and to the top-center of the base bracket with at least ½" overlap at each end.

Type 2: Tie plate to 'Bridge' on Housing. For this type of axle, you will need the (possibly optional) steel bridge made by your axle manufacturer to fit your housing. Mount it per the manufacturer's directions, then trim the provided plate so that it will span the distance between the front of the bridge and the rear edge of the top-center of the base bracket with at least ½" of overlap at each end. **Figure 5** shows a tie-plate welded in place on a Dynatrac ProRock60 housing using Dynatrac's optional bridge.

Once you have your tie-plate and mount arranged properly, weld the plate thoroughly to the base bracket. DO NOT make multiple passes over each weld or you will cause the surrounding metal to fail later! Make one good pass on the top and bottom of the tie-plate at the front (base bracket end) and back (axle mount end). By having the plates overlap as directed, you can make two passes at each end that are not right above/below each other – this will give you plenty of solid connection with a minimal risk of cracking. You will want/need to remove the base bracket/tie-plate/axle mount to make the welds on the underside of the plate after you've done the top-side welds in-situ to assure a perfect fit. Make sure your welds are 'right' (not too hot, not too cold with inadequate penetration).

Step 7: Finish. Once your tie-plate welds cool, paint it and re-install the welded assembly to your axle for the final time. You are now ready to install the appropriate-length 'Universal-type' Stinger boom kit for your application. Figure 6 is an example of a finished Universal Base and Stinger Boom installation – consult your Stinger's installation instructions for details on proper mounting and adjustment of your Universal-type Stinger.