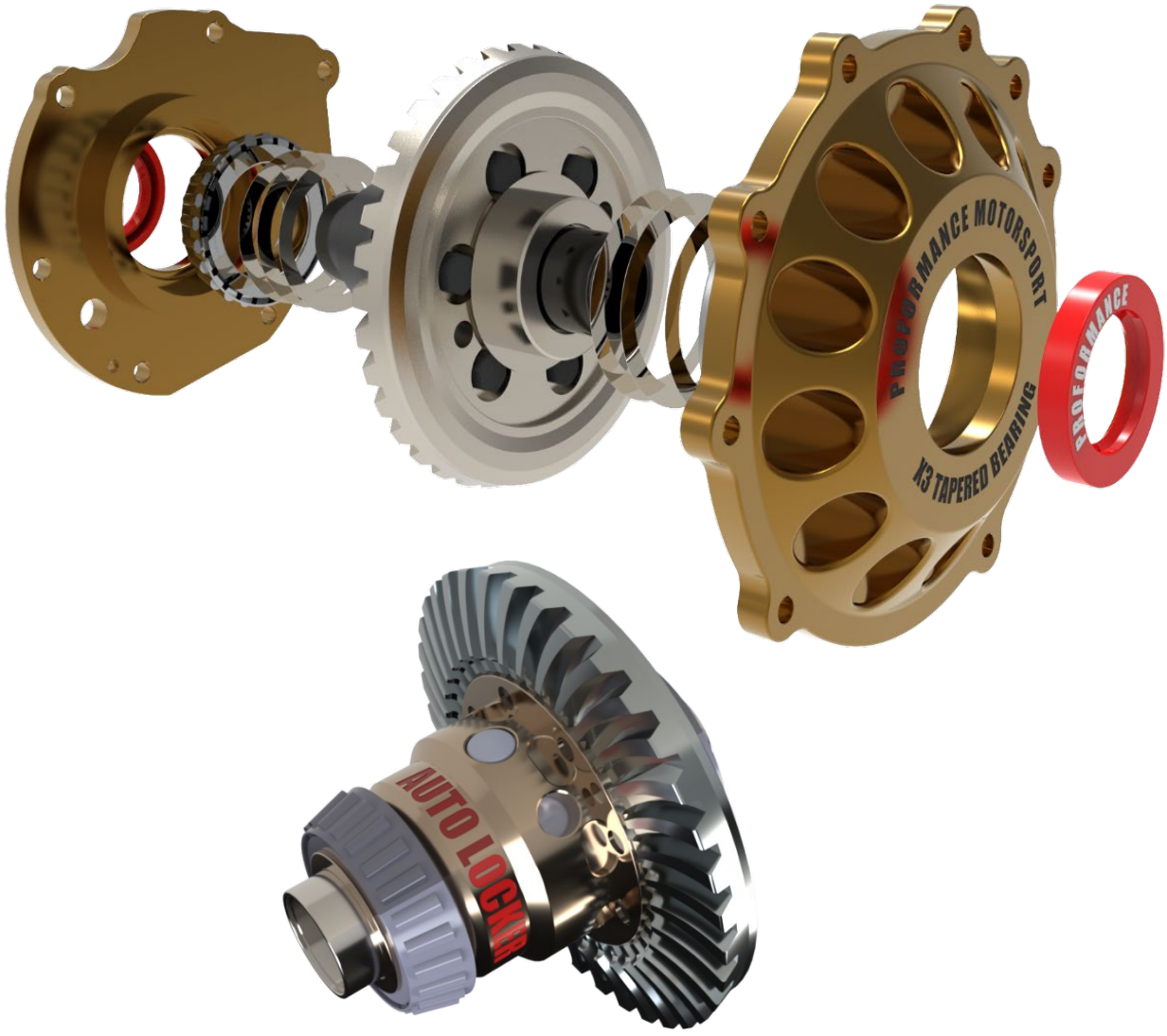
CAN AM X3 STAGE 2/3/3A INSTALLATION GUIDELINES



Proformance Motorsport
1405 Stoneville Road Mundaring
Western Australia 6073
www.proformance.com.au
info@proformance.com.au
+61 431 624 783

PROFORMANCE MOTORSPORT

PREPARE OEM SMART-LOCK DIFF

- Drian Diff Oil
- Remove the Smartlock Actuator from the Diff Case
- Remove LH OEM Side Cover (Follow OEM Guidelines Below)
    - Remove OEM Carrier/Ring Gear, shims
    - Use 2 Screwdrivers to remove speed “tone” ring
    - Use 2 Screwdrivers to remove the Large Bearing
    - Remove the Ring Bolts
    - Remove Ring Gear from Carrier

1. Left hand section
2. Middle section
3. Right hand section

Drive System
Smart-Lok Differential

9. Use 2 screwdrivers to pry off the bearing. Discard it.

12. Remove the ring gear.

- Remove any OEM Dowel Pins (Not all models have dowel pins)
    - Use a Press or Soft Punch
- Remove Thin Series Internal Bearing (Remove Small Circlip) from OEM Case
- Clean Ring gear, Ring Gear Bolts (and any Dowel Pins) using solvent based cleaner (Brake or Carby Cleaner)

EXTREME SPOOL

- ***NOTE: If you have purchased the 2025 Heavy Duty “EXTREME” spool, you will need to have the OEM ring gear “bore” machined on a lathe to accommodate the larger diameter spool as per attached drawing. (Machining drawing also available on our website).***

INSTALL RING GEAR

- Install OEM Dowel Pins using red Loctite (if fitted in OEM diff) into the Spool/Auto Locker
    - Use a Press or Soft Punch
- Remove Auto Locker Shipping Plate (Auto Locker Only)
- Install OEM Ring Gear and bolts onto the new spool/locker using red Loctite tighten to spec

Ring Gear Bolt Torque
58 Nm (43 lb-ft)

PROFORMANCE MOTORSPORT

SHIMS INCLUDED

Installation Kit comes with shims to allow the customer to adjust:

- Backlash/Gear Contact Pattern
- Bearing Preload (Torque to Rotate)

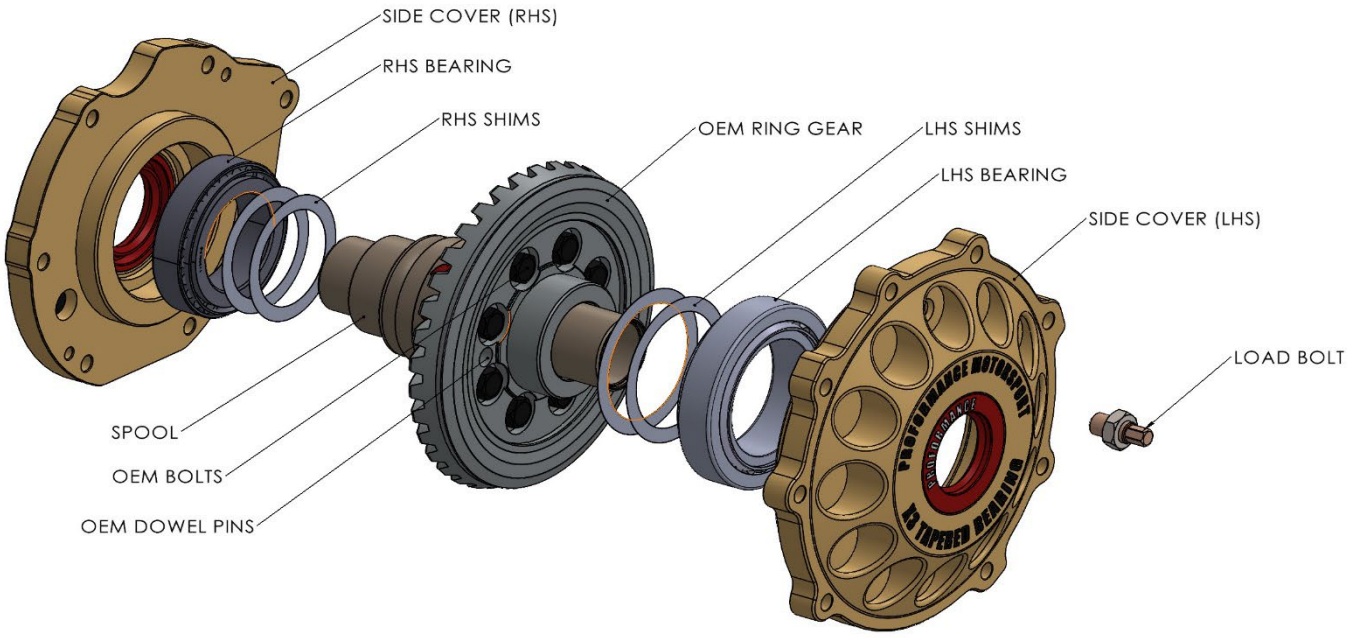
Stage 2/3 Kits include:

- LHS Shims
  - 3 x 0.10mm
  - 2 x 0.08mm
  - 1 x 0.05mm
- RHS Shims
  - 4 x 0.10mm
  - 2 x 0.08mm
  - 1 x 0.05mm

INITIAL BEARING PRELOAD SETUP

Install the Stage 2/3 Kit as per the image below, using the “Initial Shim Setup

- 3 x 0.10mm LHS Shims
- 4 x 0.10mm RHS Shims



Measure Bearing Preload TTR (Torque to Rotate) using a TTR Torque Wrench

- Add shims to BOTH LHS and RHS sides of the diff assembly until the TTR is achieved

Required Carrier TTR
2.25 – 4.50 Nm (20-40 lb-in)

Vent Installation

Install #4 ORB AN or #4 ORB BARB Hose Fitting in the vent port (12 O’clock)

PROFORMANCE MOTORSPORT

BACKLASH ADJUSTMENT

- Using OEM Backlash Measurement Tool, measure the backlash using the OEM measurement tool

Backlash measurement tool (P/N 529036387)	

- Position a dial indicator at a 90° angle and in the centre of the dimple
  - Gently move the tab back and forth (do not rotate the ring gear)
  - Rotate the ring gear and measure the backlash in evenly spaced 4 locations
  - Note the average backlash

Required Backlash
0.127mm – 0.305mm (0.005” – 0.012”)

- To Decrease Backlash
  - Remove RHS shim and add LHS Shim
- To Increase Backlash
  - Remove LHS shim and add RHS Shim

Race Applications should set the minimum possible backlash (Customer choice)

FINAL BEARING PRELOAD TEST

- When required backlash is achieved Measure Bearing Preload TTR (Torque to Rotate) using a TTR Torque Wrench
- Adjust bearing TTR ff necessary (Check backlash after any preload adjustments)

SET LOAD BOLT

- Apply Blue Thread Locker to the load bolt
- Install the load bolt and tighten the inner bolt until a slight “contact/drag” on the ring gear is achieved
- Tighten the Load Bolt Nut to secure the load bolt (adjust to achieve the correct ”contact”.
- Load bolt “contact” should be adjusted after every race or extreme event