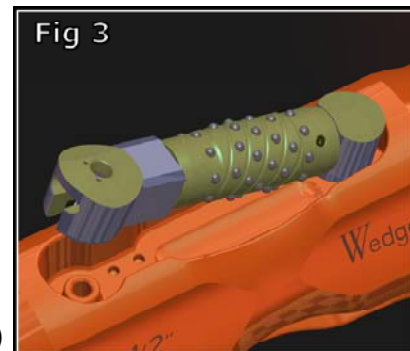
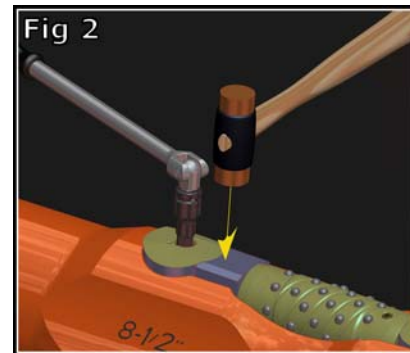
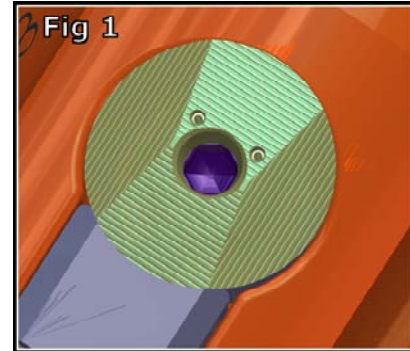


# Cartridge Removal/Installation Procedure

To view the video for Removal/Installation click on Products-WedgeTail at [www.extrememachining.com.au](http://www.extrememachining.com.au)

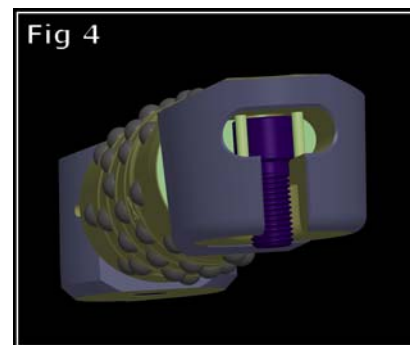
## Removal

- Use correct safety equipment...
- Clean cavity of drilling mud and debris, pay careful attention to the bolt hole recess in the cartridge upper cusp, making sure that the bolt internal drive hex is 100% clean for the entire depth.
- It is important that API modified dope is pushed into the bolt hole cavity to prevent galling between bolt head and upper cusp.
- Work the bolt in a back and forth motion in half rotations. (Fig 1)
- Apply an anti-clockwise motion with a suitable breaker bar.
- Ensure pin head has released from the upper cusp by applying a sharp downward blow with a copper mallet.
- Repeat process if necessary until pin head is free from cusp. (Fig 2)
- Lever the cartridge from the cavity using a pry bar in the now exposed slot in the upper cusp. (Fig 3)
- Repeat this process for the remaining cartridges.
- Thoroughly clean, inspect and maintain body for future use.



## Installation

- Use correct safety equipment...
- Apply a thin film of clean API modified dope to cartridge cavity walls, floor & thread of bolt hole.
- Remove new cartridge assembly from box, check correct part number for the intended reamer gauge diameter.
- Visually check goods for any transport damage.
- Apply a thin film of API modified dope to all mating surfaces, underneath bolt head and thread. Ensure coating is uniform and thinly applied. (Fig 4)
- Insert cartridge as image displays. (Fig 3)
- Lower and seat cartridge being aware of potential pinch points.
- Using the supplied internal hex drive, engage bolt, rotate bolt clockwise drawing the cusp down into the body until hand tight.
- Using a currently calibrated torque wrench, set torque figure to minimum torque recommended as engraved on upper cusp.
- Rotate clockwise until desired torque figure is reached.
- Physically check upper cusp is flush with pin head. If not, increase torque by 20lb/ft and repeat process until cusp is flush. Do not exceed maximum recommended torque. (Fig 5)
- Repeat process for remaining two cartridges.
- Recheck all torque values on bolts.



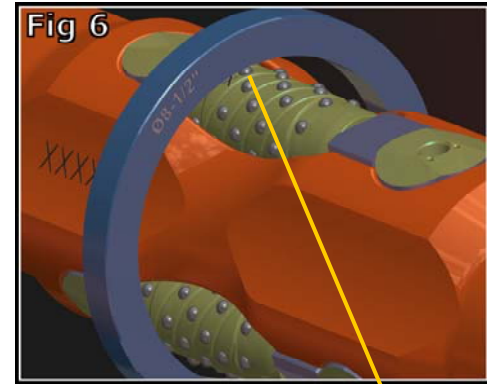
## Torque settings

5 7/8" to 6 3/4"	85 ft/lbs
7 7/8" to 10 5/8"	150-200ft/lbs
12" to 14 3/4"	200-280ft/lbs
16" to 28"	200-280ft/lbs



## Ring Gauging




- Rotate each cutter so that the carbide button marked “X” is at top dead centre.
- Place PDC ring gauge over cutters and locate at top dead centre carbide already positioned and press gauge against two cutters. Measure gap to the third cutter and divide the result by 1.5 to establish actual gauge size. (fig 6)



## Replacing Damaged Recoil

- Use correct safety equipment...
- Insert recoil extractor 90° from coil start.
- Strike extractor on top.
- Maintain downward force and rotate anti-clockwise until recoil is removed.
- Discard damaged recoil and visually check thread for damage.
- Engage correct recoil with installer ensuring tang is aligned correctly.
- While applying downward pressure and maintaining alignment, rotate clockwise until top of recoil is flush with top of island, then rotate an additional 180° clockwise.
- Tang at base of recoil must now be removed. Insert punch and apply a sharp downwards blow. Lift out broken tang and discard.

## JOB SAFETY ANALYSIS

  	<p align="center"><b>QUALITY ASSURANCE</b></p> <p align="center"><b>SAFETY RELATED PROCESS</b></p> <p align="center"><b>WEDGETAIL REAMERS</b></p>	<p>FORM – JSA-1 Rev. - 0 - Copy No. _____</p> <p align="right">Page 1 of 1</p>
PROCESS	RISK	PREVENTATIVE ACTION
Handling of WedgeTail and equipment prior to redressing	Manual Handling – Lifting equipment can cause injury  Reamers rolling off racks	Personnel performing task is sufficiently trained and appropriate load rated lifting equipment used. Support rack properly fitted with safety pins and stops
Inspecting and cleaning the WedgeTail upon return	Potential eye injury from fragments	Safety glasses worn
Disengage socket head cap screw from WedgeTail	Risk of injury due to strain	Appropriate hand tools used by sufficiently trained personnel
WedgeTail Reamer Redress Kit removal and insertion	Risk of injury due to strain. Redress kit fall out causing injury	Suitably trained personnel performing task. – Trained and assessed in manual handling techniques with particular attention paid to large and awkward objects
WedgeTail Reamer Redress Kit removal and insertion	Potential pinch point- lifting/inserting redress kit with fingers inserted in T-slot of upper cusp	When removing redress kit use pry bar in T-slot.
Torque up socket head cap screw in redress kit	Rotation of tool if not sufficiently secured could cause personnel to fall or be injured  Risk of injury due to strain.	Ensure WedgeTail body is secure prior to torque. Appropriate hand tools used by sufficiently trained personnel Torque up to recommendations
Inspecting and cleaning pocket in WedgeTail body	Potential eye injury from fragments	Safety glasses worn