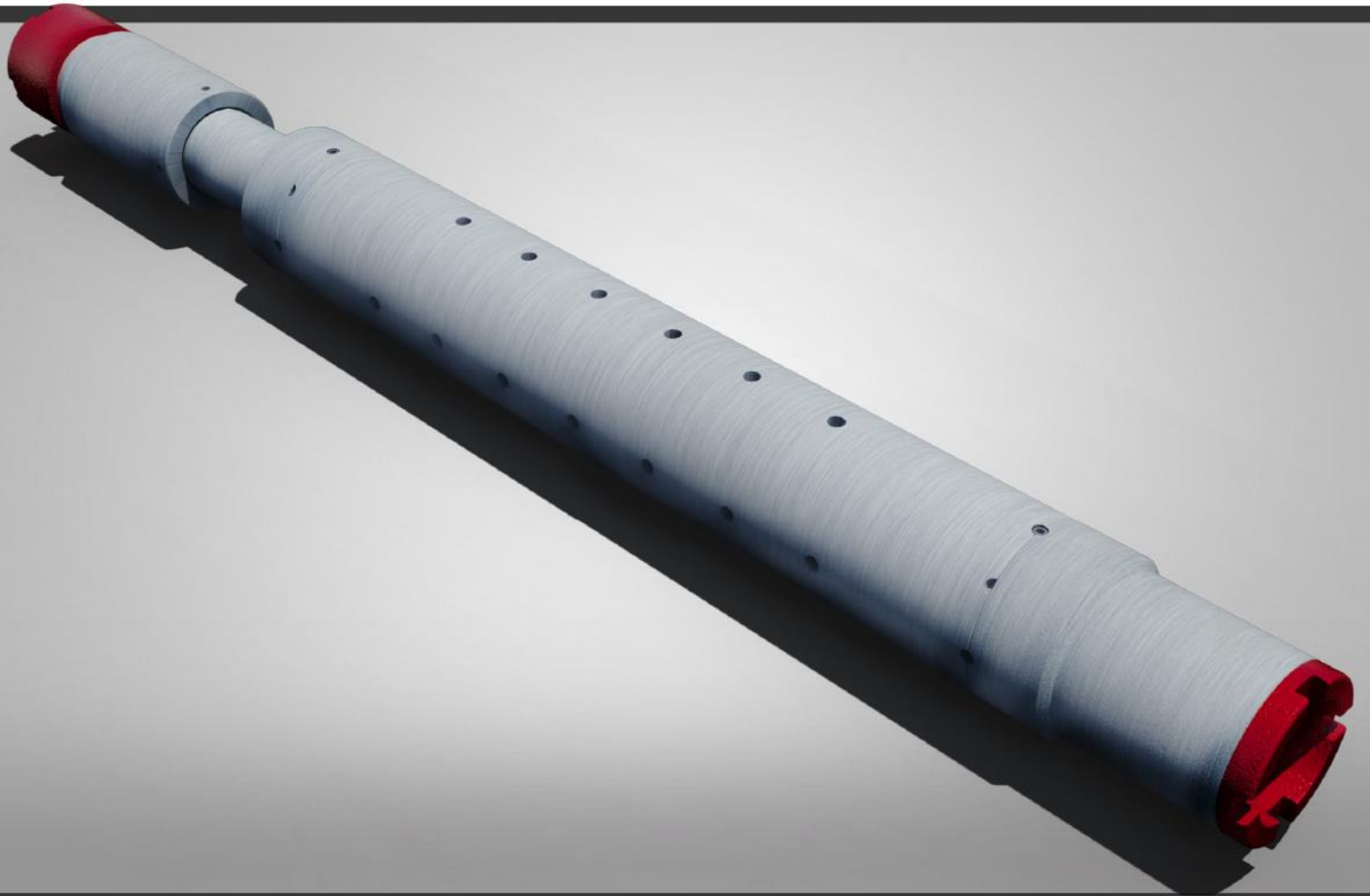


Arch Oil Tools



A050002

SHOCK ABSORBER

5.00" OD 2.88" 6.5# EUE BOX X PIN

A050002 Shock Absorber

5.00", 2.88" 6.5# EUE Box x Pin



Health and Safety

Always consider your personal safety and that of those around you before operating or servicing this equipment.

TRAPPED PRESSURE – This equipment may have gas or liquid pressure trapped after being retrieved from the well. Please do not force any connections if they seem to be difficult to undo as there may be pressure trapped behind them.

SPRINGS – Each shock absorber contains several sets of Spring Washers that act as springs. These springs are activated when perforating guns are used below them in the tool string dampening the shock wave. Mechanical failure of a spring may build pressure in the mandrel due to the spring force.

Operation

Shock Absorbers are generally placed just above the TCP gun string to absorb and dampen vertical shock from travelling upwards through the test or completion string.

The design consists of:

- An inner mandrel that moves within the housing
- Sets of Spring washers that constrain the movement of the inner mandrel by being compressed when the shock wave travels upwards
- A second shorter set of Spring Washers that absorb the recoil effect in the downward direction
- Upper and lower connections with the 3.50" 9.3# EUE connections (these are the weakest point in the assembly and determine the tensile strength of the entire unit).

Specifications

Outside Diameter	5.00"
Through Bore	2.25"
Overall Length	51.59" (131.03 cms)
Service	Standard
Working Pressure	10,000 psi
Tensile Strength	199,320 lbs



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Tools Required

Bench Vise
Baker Vise
Chain Wrench – Memac or similar
Allen Key Set, Imperial
"O" Ring removal tool

Disassembly

- Grip the unit in a Baker Vise, do not apply excessive clamping force to the Housing as it may distort.
- Remove the 4 x Locking Screws that secure the Lower Adapter to the Mandrel.
- Unscrew the Lower Adapter and remove.
- Remove the 8 x Locking Screws (4 on each end) which secure the threads on the Outer Housing.
- Unscrew the Bottom Sub from the Outer Housing.
- Carefully slide out the Mandrel together with all the Spring Washers.
- Unscrew the Top Sub from the Mandrel.

Inspection

- Before assembly, all parts need to be inspected visually for signs of distortion and damage.
- All **"O" Rings** must be removed and replaced before and after every run.
- It is recommended to replace the **Lock Screws** after every two runs at a minimum.
- The **EUE** threads (Box and Pin) should be checked with a gauge after every run.
- The **Spring Washers** should be checked carefully for damage or distortion. They can be damaged by excessive force or the effect of corrosive well fluids.
- The unit is pressure tested to 10,000 psi at the factory and should be re-tested to at least 1.2 times the expected well pressure before each run to ensure reliability.

Assembly

- This is a complete reversal of the disassembly procedure.
- Ensure all components are clean and free of corrosion and dirt before assembly.
- Extra care should be taken to ensure sealing areas are not pitted.
- During assembly, care should be taken to ensure that the **Spring Washers** are "back to back" to ensure that the correct amount of compression is available in the tool.

Recommended Spares

PART NO.	QTY	DESCRIPTION
CO09338	2	"O" Ring, Mandrel to Top Sub
CO09232	2	"O" Ring, Mandrel to Bottom Adapter
B050003	10	Spring Washer
CG06003	4	Socket Head Set Screw
CC04004	8	Socket Head Cap Screw