

Core Catcher Assembly

Core Catcher Procedure

Removing the core catcher material is generally done by a designated technician. Every core recovered has a core catcher at the bottom of the core barrel. The core catcher is removed on the rig floor and passed to the designated technician. The technician must extrude all core material from the core catcher and placed in a core liner (guidelines and rules listed below). That 'Section' of core is called the CC (core catcher). Below are a series of steps to help guide you through the Core Catcher (CC) procedure.

1. Ensure the core catcher bench is clean before processing the next core catcher.
2. Receive the core catcher from the rig floor.
3. Extrude the inserts and core material from the core catcher shoe (*Figure 1*). Different tools and procedures are used for the APC, XCB and RCB core catchers. Learn these techniques from an experienced technician. The Core Technician on the rig floor can also provide insight into how the core catcher is put together and proper ways to extrude core so not to damage the core catcher shoe. Removing the core from the core catcher can become more difficult as depth of hole increases. When the core material becomes too difficult to remove manually, utilize the Arbor Press (instruction below).
4. **Maintain orientation and order of all material extruded from the catcher.** Draw an up arrow on the trays you use to help remember your up direction. For hard rock mark the bottom of each piece with red or blue wax pencil.
5. Place the core catcher hardware in a bucket for the drill crew to retrieve (after all material is removed).
6. Once all material is extruded and in order, remove the bottom 5 cm of the material and give to the paleontologist. This is the PAL sample. A PAL sample is taken routinely from every core catcher. The typical length of a PAL sample is 5cm, however, the length of the sample may change if more or less material is required. Check with the Curator to make sure changes are allowed. (*Figure 2*). Note that for hard rock expeditions (RCB shoes) no PAL sample is taken.
7. If the length of the core catcher material is less than 8 cm, check with the Curator if all material can be given to the PAL sample; this is called "All to PAL" and should be labeled as such on the D-tube label. By convention, the CC "All to PAL" label is attached to the D-tube containing the last sample.
8. Select an empty piece of core liner that is longer than the material you have. Ensure that the liner is clean inside. Stuff the material into the liner with as little disturbance as possible. Push all material up to the top of the liner.
9. Using the ruler, measure the length of the PAL sample from the bottom of the material you have then make a mark on the liner. This will be the total length of the core catcher representing the material taken for the PAL and the material left over. Place the liner in the chain vice and cut off the excess liner. (*Figure 3*). Any excess space should only be as long as the PAL sample.

Exception: In some circumstances, the PAL sample will need to be taken somewhere other than the bottom of the CC. This may happen with XCB cores where the material in the shoe is too disturbed to be useable. In this case you will need to make note of where the sample is located and give the offsets to the Curator/ALO. In red pen, mark the outside of the liner with the PAL location and offsets. When the CC is split in the lab a styrofoam spacer will be added to the correct interval.

1. Affix the endcaps on the liner with acetone. To avoid potential organic contamination of samples, it is important to ensure all sampling on the catwalk has been completed before doing so.
2. After you have finished processing the CC, measure the length of the final core catcher on the ruler. Give the total length of the core catcher and length of the PAL sample to the Curator or ALO. **It is important that this be an accurate measurement!**

Example: For a CC that is 15 cm total length with a 5 cm PAL sample say, "Fifteen with five to PAL" or "Fifteen and five to PAL."

1. Clean the CC section before handing it off to the core lab. Clean the core catcher bench and tools. Be sure to keep the bench stocked with usable core liner. If running low cut new pieces and stock on shelf below CC bench.

Personal Protective Equipment

Required

Personal protective equipment (PPE) shall include: hardhat, safety glasses, gloves (work gloves should be worn because there may be sharp bits on the outer shoe and many pinch points, chemical gloves can be worn underneath), hearing protection.

Optional

PPE may include: apron or rain coat.

Arbor Press

If the Core Catcher material is difficult to manually push out from the core catcher, use the Arbor Press (see *Figure 4* and *Figure 5*). There is a jig that can be used to assist with the pushing either APC and one for XCB (*Figure 6*). Lubricate the moving parts of the arbor press with Lubriplate, or a mixture of Lubriplate and Marvel Mystery Oil.

NOTE: Do not let the square rod penetrate to far into the shoes. The teeth of the shaft get stuck inside the shoe. If it gets stuck, try the wider spatulas. If all else fails you can remove the gear box cover.

There are two sides to the toothed, square rod that moves through the press. One has a longer end portion without teeth. **Does your bit not fit?** The end with the longer portion without teeth, must be on top. This sometimes gets flipped when opening the press for servicing. You should be able to retract the rod all the way into the press' gearbox.

See Figure 7 below.

Maintenance

Lube the press and chain vice.

Remove rust from tools.

Grind the hammer end of the tools when they begin to mushroom.

Figures



Figure 1: Extruding core catcher material at the core catcher bench; notice the Paleontologist waiting with white bowl – give PAL sample to paleontologist.

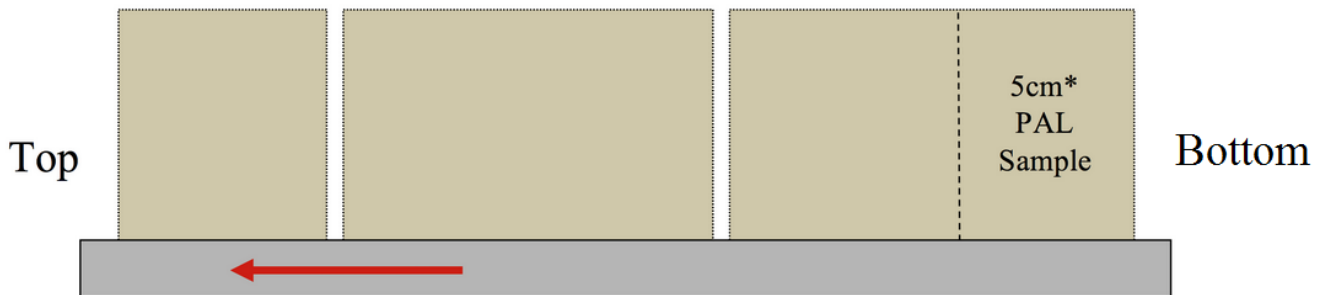


Figure 2: Core Catcher Assembly

*Or whatever the length of the PAL sample is.

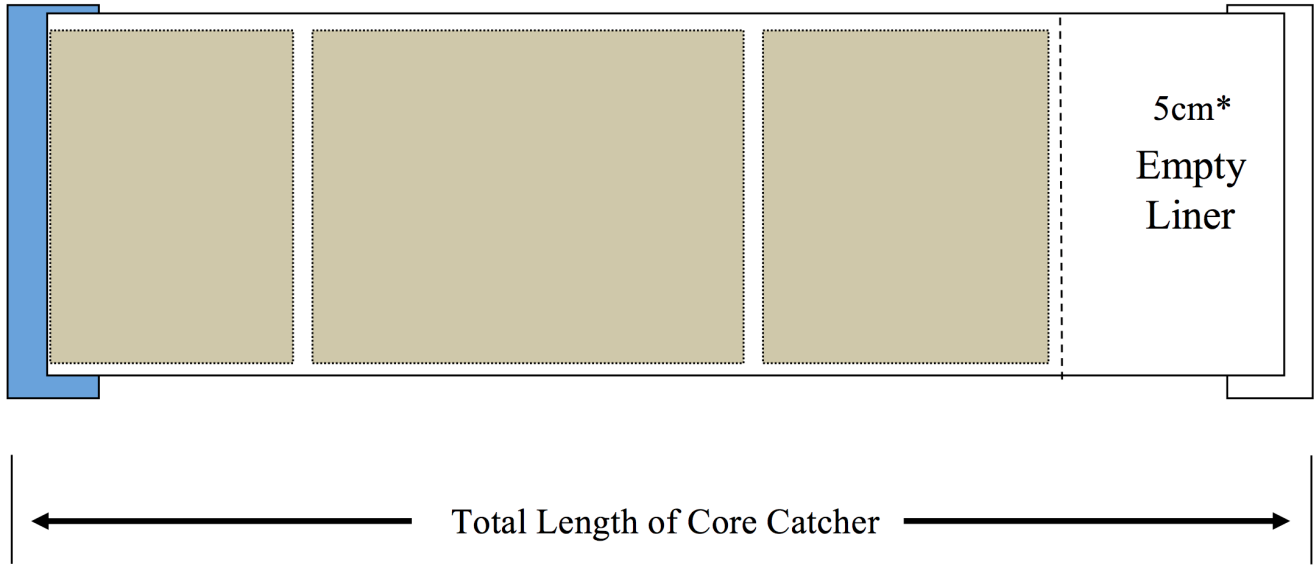
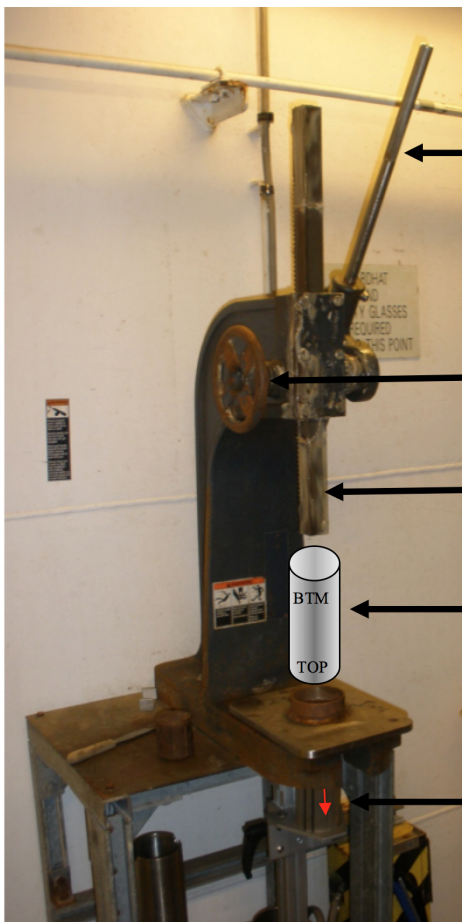


Figure 3: Core catcher material in Core Liner



Hand crank, pull down to lower the ram into the CC shoe.

Turn handle to bring ram to top of CC shoe.

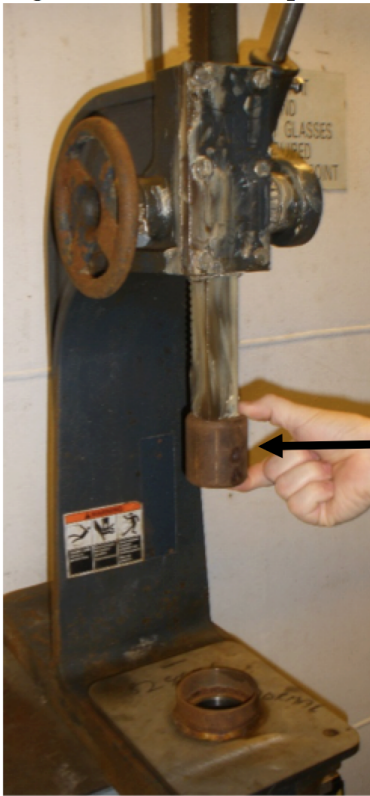
Ram/pusher

CC shoe – place so that bottom is up and the ram pushes from bottom to top.

Place Core Liner here – mark core liner with 'way up' arrow to insure orientation. In this case the arrow would be down.



Figure 4: Arbor Press



Use this between ram and CC material.



Figure 5: Metal disc for pushing on core material





Figure 6: APC Jig

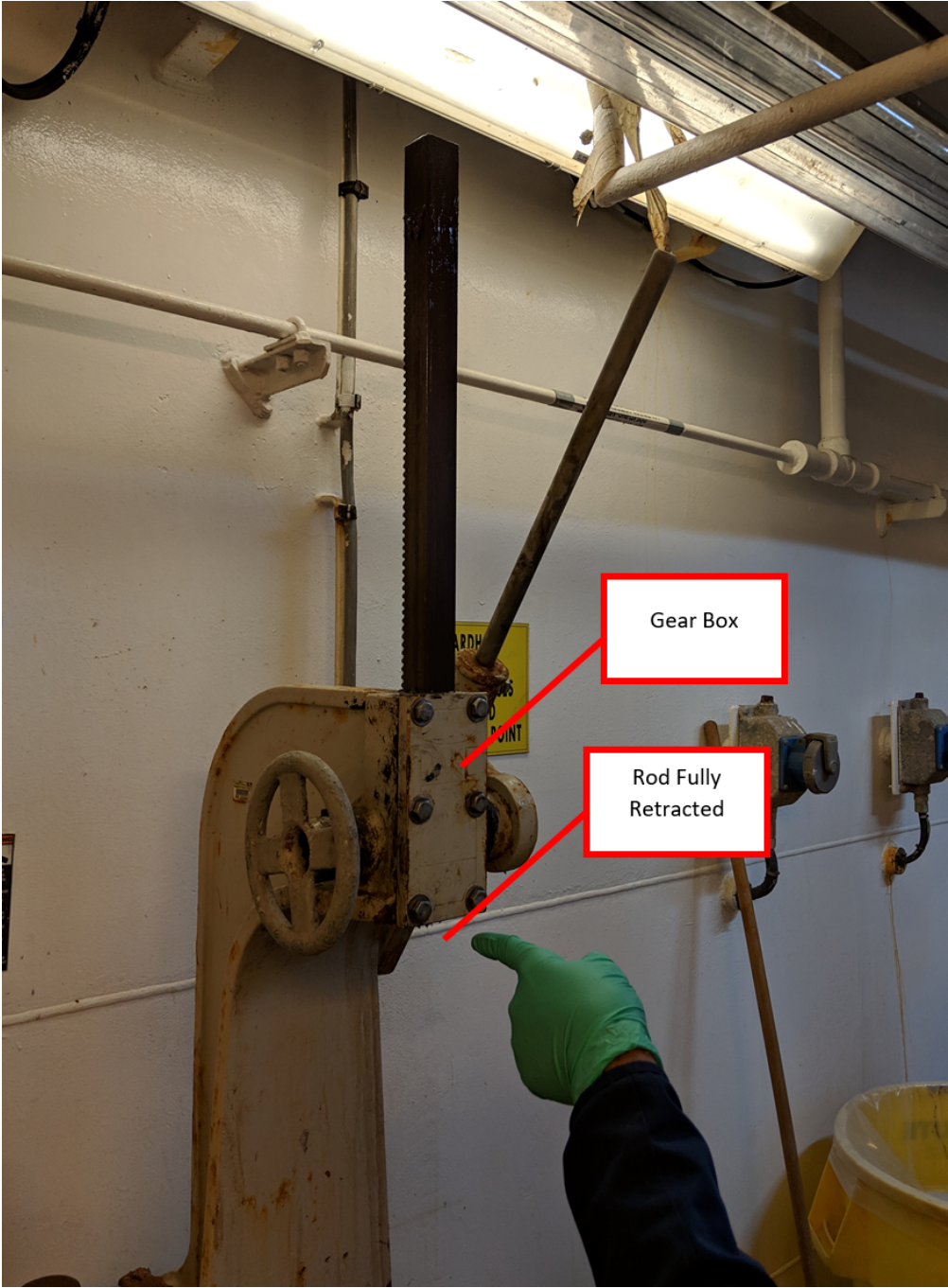




Figure 7: Toothed Square Rod, Proper Configuration

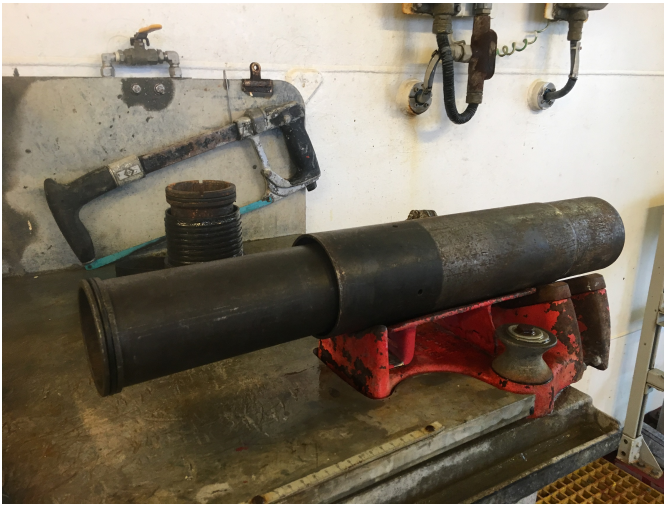
XCB Core Catcher



Use a strap wrench to remove the XCB cutting shoe. Take the cutting shoe to the press and place it top side down in the APC jig on the press. Press out the material (this may be hard, it gets baked in sometimes).



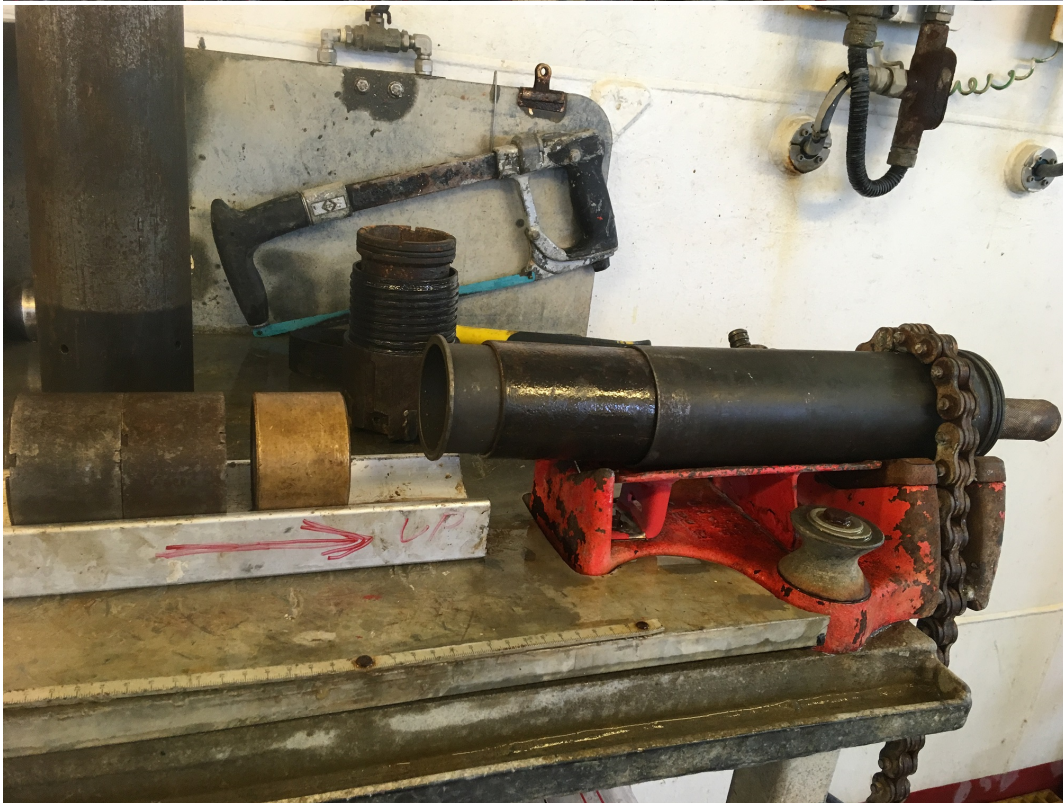
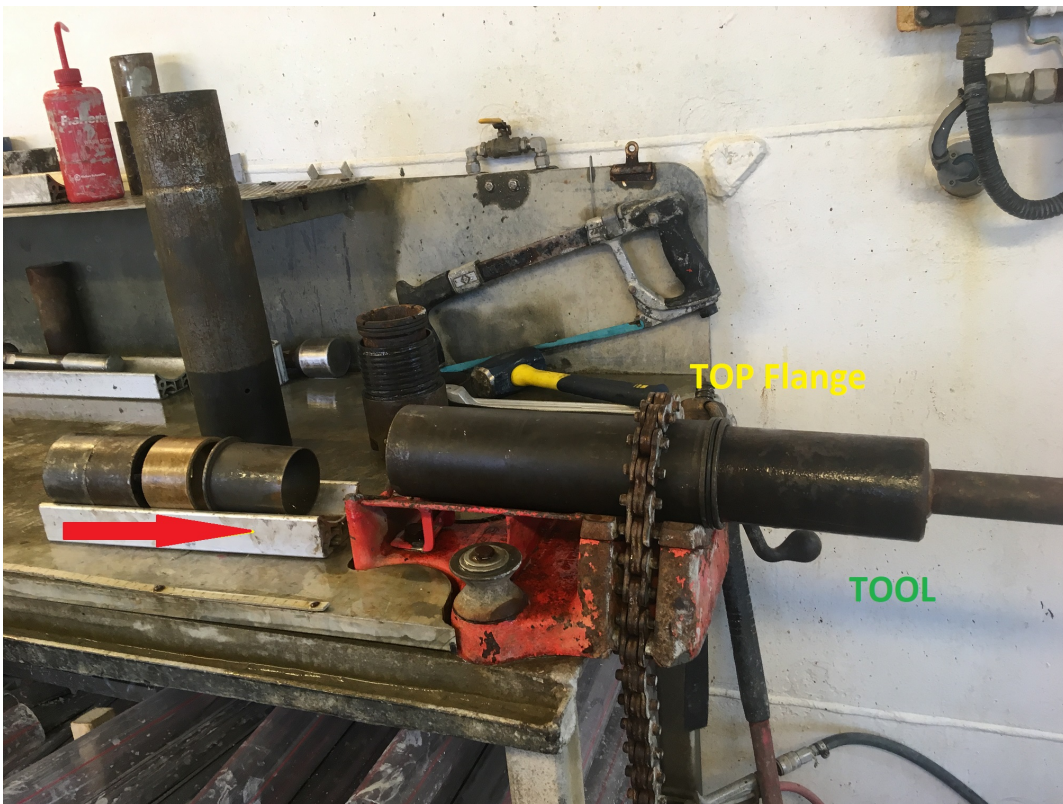
Try to remove the sleeve from inside of the sub by banging the the sub on the table (notice the dents in the table). A piece of thick wood can also be used to bang the sub. The sleeve should move down the sub and sometimes will come out. If the sleeve will not come out then strap the sub in the vice and hammer it the rest of the way out. Note that the flange on the sleeve is the top of core.



Place the top flange of the sleeve in the APC jig and press the core material out.



If the press is unavailable the old XCB sleeve tool needs to be used to get the inner rings out of the sleeve. Note that the sleeve must be turned around on the chain vice to get the lip of the flange to catch the vice and be stable. Wet the tool.



The core can now be pushed or pressed out of the inner rings. Maintain orientation at all times, always push or press from the bottom. Assemble the core catcher in the liner as described above.

RCB Core Catcher



Credits

The original document was created by the shipboard technical party.

Archived Versions

- [Core Catcher Assembly 378S 2020-02-23](#)
- Core Catcher Assembly_374.docx was the last pre-wiki version.