

C O R E A C C E P T A N C E C R I T E R I A

3500/C175 Engines

You will receive:

Full Core Refund

- ◆ Cylinder block not broken or ventilated (e.g. non-failed, running core).
- ◆ Cylinder block must be salvageable from crankshaft bearing failure damage (refer to Inspection Tips – Damaged Cylinder Blocks).
- ◆ Cracked or welded blocks will have an Add Charge applied for the block. Exception allowed for minor cosmetic welding on external areas only for repair of nicks, dings or dents (refer to Add Charge Assessment and Inspection Tips – Welding).
- ◆ Crankshaft cannot be cracked, broken, or welded.
- ◆ No non-operational damage (mishandling, excessive rust, corrosion, or fire damage).
- ◆ Fully reassembled after dealer inspection or failure analysis (refer to Figure 1).
- ◆ Returned on Caterpillar® Remanufactured engine stand (refer to Figure 1 and 2).
- ◆ Must be an acceptable part number – Caterpillar engine and components.

Damaged Core Refund

- ◆ Cylinder block broken or ventilated (e.g. failed core – refer to Figure 3).
- ◆ Crankshaft is cracked, broken, or welded.
- ◆ No non-operational damage (mishandling, excessive rust, corrosion, or fire damage).
- ◆ Not fully assembled and complete (refer to Figure 5).
- ◆ Returned on Caterpillar Remanufactured engine stand.
- ◆ Must be an acceptable part number – Caterpillar engine and components.
- ◆ Cylinder block non-salvageable from crankshaft bearing failure damage (refer to Inspection Tips – Damaged Cylinder Blocks).

No Core Refund

- ◆ Scavenged cores (refer to Inspection Tips on non-operational damage).
- ◆ Non-operational damage (mishandling, excessive rust, corrosion, or fire damage).
- ◆ Completely disassembled.
- ◆ Not an acceptable Cat engine or component part number.
- ◆ Yellowmark™ Parts.

3500/C175 Engines

CORE ACCEPTANCE CRITERIA (continued)

*Add Charge
Assessment*

- ◆ Engine block cracked or previously welded (refer to Figures 4 and 12).
- ◆ Crankshaft shows evidence of a spun bearing failure (refer to Figure 8).
- ◆ Upper end failure (i.e. cylinder head casting not salvageable — refer to Figure 6).
- ◆ Missing or non-genuine parts and components (refer to Figure 7).
- ◆ Fluids not properly drained.
- ◆ Not returned on Caterpillar Remanufactured engine stand (refer to Figure 1, 2, and 9).
- ◆ Missing rear mount (refer to Figure 2).
- ◆ Missing or welded main caps (refer to Figure 11).

Note: Core credit will be based upon findings at disassembly.



Figure 1 **Full Core Refund**
Fully assembled and correctly fastened to metal stand

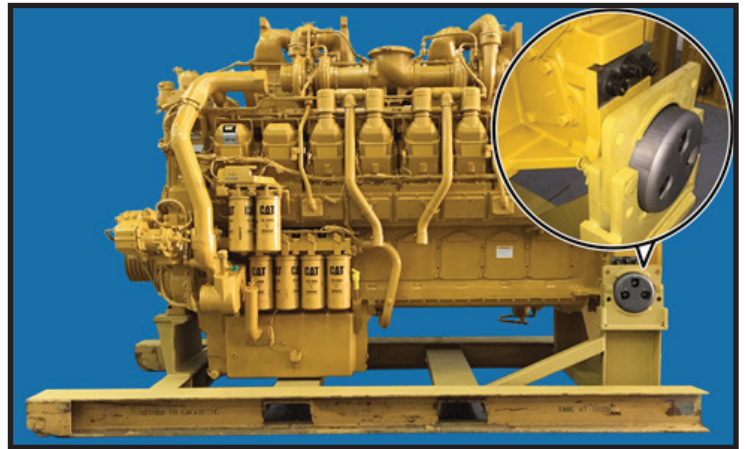


Figure 2 **Full Core Refund**
Engine with rear mounts and modified stand

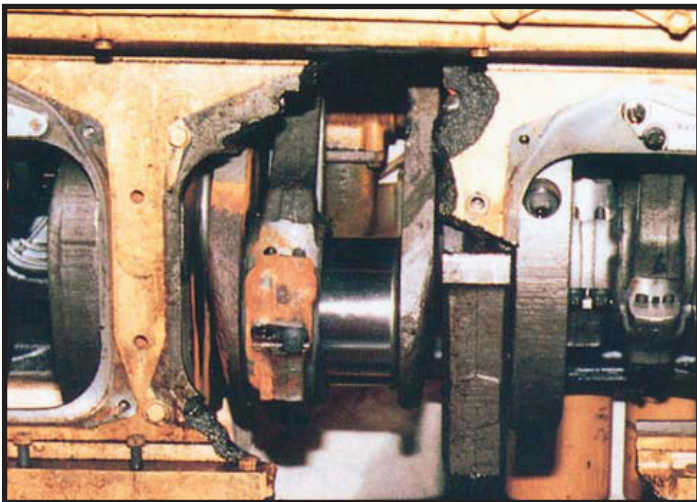


Figure 3 **Damaged Core Refund**
Broken engine block

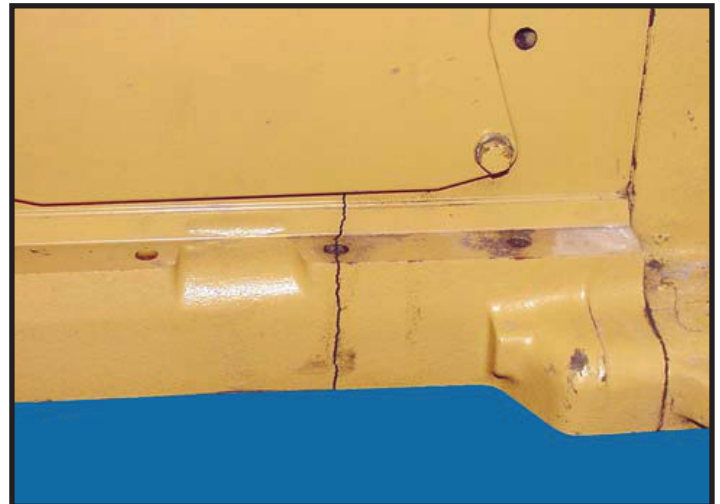


Figure 4 **Add Charge**
Cracked block

3500/C175 Engines

CORE ACCEPTANCE CRITERIA (continued)



Figure 5 **Damaged Core Refund**
Parts not reassembled to core after dealer inspection

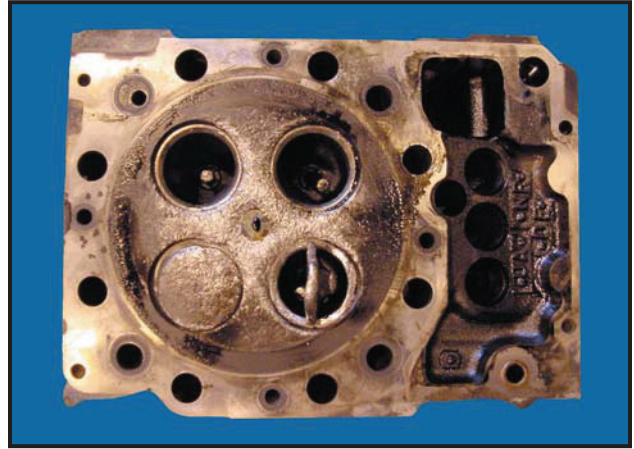


Figure 6 **Add Charge**
Upper end failure – damaged cylinder head



Figure 7 **Add Charge**
Missing part – turbocharger compressor housing missing and improper protection from weather

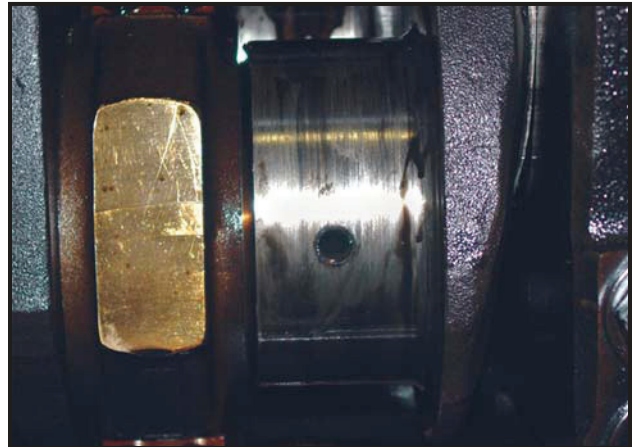


Figure 8 **Add Charge**
Spun bearing damage to crankshaft



Figure 9 **Add Charge**
Core not returned on correct stand



Figure 10 **Add Charge**
Welded main caps

3500/C175 Engines

CORE ACCEPTANCE CRITERIA (continued)

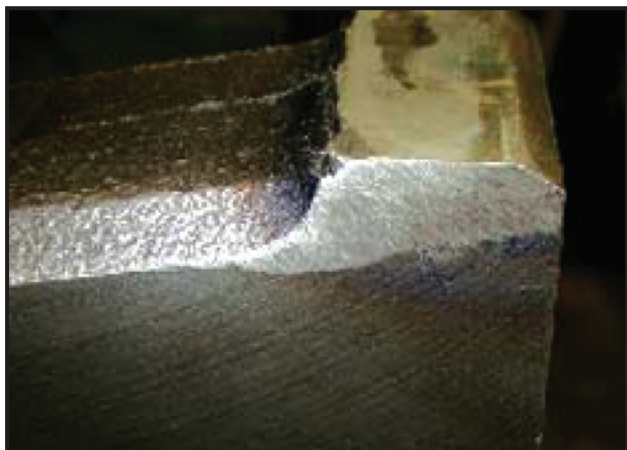


Figure 11 **Full Core Refund**
Flame spray salvaged main cap



Figure 12 **Add Charge**
Cracked/welded



Figure 13 **Full Core Refund**
Cosmetic damage/repair

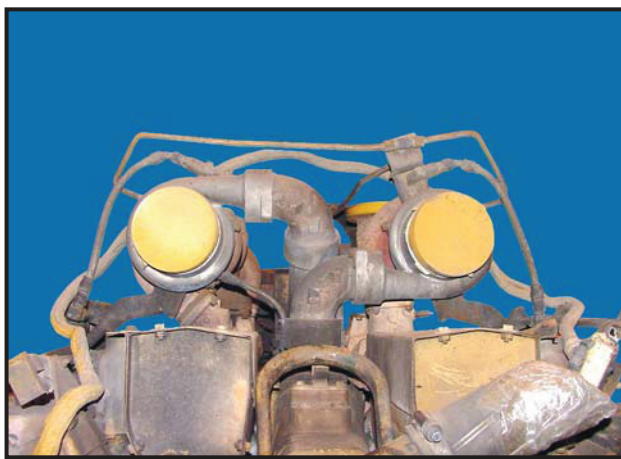


Figure 14 **Packaging**
Proper protection of turbochargers to prevent water entry

Dealers should refer to REMAN Policies and Core Management (SELD0122), Core Management Systems and Operations procedures (SELD0040), and Shipping Instructions (SELD0039) in the "Operations and Core Management Tab"; and to Core Acceptance Guide Introduction (SELD0013) in the "Core Acceptance Guidelines Tab" for additional information applicable to all cores.

Caterpillar Repair Philosophy

This core acceptance criteria is structured to promote a repair-before-failure philosophy. As such, it allows more credit for reusable and salvageable cores and less credit (via Damaged Core and/or Add Charges) where sub-components are not reusable or require more extensive salvage processes. Caterpillar's expectation is that the dealers are working closely with their customers and should know about issues that might necessitate core credit downgrades or Add Charges. Dealers should review machine information systems (i.e. VIMS data), inspect oil filters, review oil sample histories, and interview the customer when they receive the core to understand why it was changed out and the current condition of the core.

If this information is not available or does not reflect the complete service history of the engine, a partial disassembly of the engine to allow a thorough inspection of the block, crankshaft, and cylinder heads should be performed. This partial disassembly should include removal of the cylinder heads and the oil pan so a complete inspection of the block, crankshaft, and cylinder heads can be performed. If the block or crankshaft is found to be cracked, broken or welded, the engine can still qualify for a core refund. Depending on severity of the damage, it will be a refund with Add Charges or a Damaged Core Refund as defined in this criteria.

Note: The engine core must be completely reassembled (not to performance specs) and securely attached to its metal stand prior to shipment. Cores not fully assembled and completed will receive a Damaged Core Refund.

Damaged Cylinder Blocks

Minor "top deck" cracking of the cylinder block, which may be evident by coolant contamination of the lubrication system or cylinder head gasket leaks, is acceptable for Full Core Refund provided the core meets all other criteria. This exception applies whether or not the core has previously been salvaged using liner seat inserts.

Minor operational damage such as a scuffed piston skirt will not prevent Full Core Refund so long as all other criteria are met.

Cylinder block must be salvageable if damaged from failed crankshaft bearing to receive Full Core Refund. Cylinder block is not salvageable if crankshaft-bearing failure caused cracks to main bearing areas or caused high temperature discoloration (i.e. bluing).

Cracked blocks, including cracks to the main bearing areas, will be assessed an Add Charge.

Broken or ventilated blocks signifying an after failure repair will limit the core evaluation to a Damaged Core Refund.

Welding

When a customer has a cracked or broken block, they always have the option of trying to salvage that block using established salvage processes for cast iron blocks. Caterpillar publishes weld repair guidelines for cast iron blocks (ex. SEHS8919 Salvage Procedures for Cast Iron Blocks) to help our dealers provide low cost repair solutions to their customers. Because what is acceptable to one customer may not be to another customer, Reman Engines must meet a higher standard. Cat Reman does not repair any broken or cracked blocks nor do we reuse any blocks returned as core that have been previously weld repaired.

For cracked blocks or for blocks that have been successfully salvaged and used again by the customer, Caterpillar will apply the applicable core refund with an Add Charge for cracked or salvaged block. Blocks that appear to have been weld repaired but not put into operation (unsuccessful attempt to salvage) will only be eligible for a Damaged Core Refund. Blocks that we recover as core that are cracked, broken, or welded are all scrapped and recycled through foundries. Cat Reman will only make weld repairs to fix minor cosmetic damage and thus will only accept the same kind of weld repairs for Full Core Refund (see Figure 13). Salvage repair to the main cap of the cylinder block of the engine that complies with the Caterpillar published guidelines will not affect the core refund. Salvage repair to the main cap that does not comply to the guideline, such as welding, will result in an Add Charge per cap (refer to Figures 10 and 11).

Broken Crankshaft

A broken crankshaft will receive a Damaged Core Refund as damage to other engine components is likely.

Non-Operational Damage

Fire-damaged engine cores will result in No Core Refund.

3500/C175 engine core assembled with scavenged or scrap parts will be rejected and receive No Core Refund.

Engine cores appearing to be scavenged or assembled from scrap parts will be subject to a detailed inspection. Characteristics of scavenged cores are: different colored or freshly painted components, incomplete assembly or missing bolts, or loose or missing fuel lines. Dealers are responsible to determine authenticity of cores. Suspected scavenged cores may require disassembly. Internal inspections revealing missing parts or components not part of original arrangement (crankshaft journals not matching failed connecting rods, old style MUI cylinder heads on EUI engine, severely rusted components) will result in No Core Refund.

Add Charge Assessment

Add Charges apply when returning a core to Caterpillar with missing or damaged parts. CMIS 2 allows dealers to access the Add Charge application to identify all possible Add Charges for the specific core being returned. Add Charge amounts are subject to change without notice. Always refer to CMIS 2 to quickly identify the appropriate Add Charges and add them to the core credit request. Typical Add Charges are for missing components or missing shipping stands. Other specific Add Charge options are noted below:

- **Rear Engine Mounts:** Refer to the Technical Supplement (SELD0179) for complete listing of Reman 3500 engines with rear mounts (see Figure 2).
- **Upper End Failures:** Engines found to have Upper End Failure (i.e., cylinder head not salvageable) will receive full credit but will be assessed an Add Charge per damaged cylinder. An Add Charge for Upper End Failure will be administered to all cylinder(s) even if contingent from initial failing cylinder. No additional charge will be assessed for contingent damage to other components (turbo, lifter, injectors, etc.) from an upper end failure.

- **Block Damage:** Cracked blocks or evidence of a previous block salvage by welding will be assessed an Add Charge equal to the cost of replacing the block.
- **Crankshaft damage:** Evidence of a spun bearing failure to the crankshaft will be assessed an Add Charge. A cracked, broken, or welded crankshaft limits the engine core to a Damaged Core Refund as other internal damage is likely.

Note: If both the crankshaft and block would be Add Charged, the core will be assessed a Damaged Core Refund and the two individual Add Charges would not be applied.

- **Main bearing caps:** Missing or welded main caps will be assessed an Add Charge to cover the cost of replacing the caps and re-lineboring the block.
- **Missing components:** Cores must be returned complete. Refer to the BASIC ENGINE section in the front of the parts manual for complete engine consist list. Missing or non-genuine parts and components are subject to Add Charges equal to new Dealer Net price in effect at time of Caterpillar's inspection. Add Charges will be deducted from Core Deposit Refund.
- **Engine stand:** Engine cores must be returned securely fastened to specially designed 3500/C175 metal stand (see Figures 1 and 2). Core engines must be returned with rear mounts if the engine ordered comes with rear mounts (see Figure 2).
- **Environmental:** Drain all coolant and oil from engine block, oil cooler and water pump. Remove and drain oil filters, then reinstall. Add Charges will be applied if fluids are not properly drained.

Inspection Disassembly

Disassembly of Reman major component cores for inspection or failure analysis is permitted. Cores returned must be fully assembled with all original parts in sequence. All nuts, bolts, and fasteners must be installed in correct location and tightened adequately to prevent shipping and handling damage. After reassembly, transportation, and storage, cores must still meet all core acceptance criteria in order to earn core refunds.

Extra weather-proofing (heavy foil tape, shrink wrap, etc.) must be added to compensate for gaskets or seals damaged during disassembly or reassembly. Rust prevention steps must be taken to ensure internal parts arrive at Caterpillar without rust or corrosion. Engine cores must be packaged and protected to withstand weather exposure during several months of transportation and storage.

Packaging and Shipping Instructions

Shrink-wrap all engines after they have been mounted to the engine stand. Since these cores are often subject to extended periods outdoors, shrink-wrap minimizes the risk of external and internal corrosion.

Seal all openings utilizing plugs and covers from replacement Remanufactured engine. If original plugs and covers are damaged or lost, use puncture resistant tape such as 8 mm aluminum foil tape with adhesive available from 3M (No. 427 or 438). Every effort should be made to use original rubber plug to seal turbochargers (see Figure 9).

Disassembly Inspection Report

A disassembly inspection report on general condition of internal components at core disassembly is not available.

Upgrades

For acceptable upgrades (i.e. MUI to EUI) refer to CMIS2 Parts Information Inquiry.

Direct Purchase Criteria

Please refer to the Core Management Information System (CMIS2) Parts Information Application for all Direct Purchase pricing information. Only the parts that have Direct Purchase prices with a current end date are included in the program. Parts with non-current end dates are not included in the program.

Part numbers that only have a "FULL" Direct Purchase price must meet the "FULL Core Refund" exchange core acceptance criteria to receive Direct Purchase value. Part numbers that have both a "FULL" and "PARTIAL" Direct Purchase price must meet the applicable "FULL Core Refund" or "Damage Core Refund" exchange core acceptance criteria to receive Direct Purchase value.

Add Charges will apply as appropriate based on the normal exchange core acceptance criteria.