

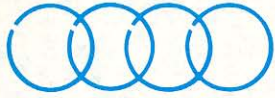


PARTS PRO CLASSIC

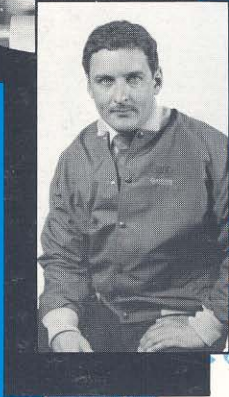
CLASSIC EDITION #4

Parts Pro Classic is provided as a historical reference. Special offers, prizes and awards no longer apply to this edition. Current Parts Pro issues along with all Parts Pro Classics may be found at [click\) qsol.cummins.com](http://qsol.cummins.com).

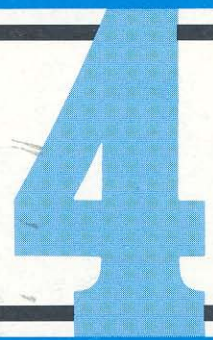
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Cummins
Parts Professional



**parts
professional**



INVEST IN THE BEST

Letter From the Editor

I would like to thank the contributing editors who made this book possible. Carol Spruiell, Fleetguard, Cummins ReCon Staff, and to Rick Eberts, Michigan Technical Communications, Detroit, MI.

This is a time for change with the challenge to generate plus business.

Our markets and territories are changing as have our products. Cummins is introducing and adding more product lines to your shelves than ever before thereby challenging you to be informed. It is the goal of the Cummins Parts Professional Series to help you meet the challenge.

Regards,

Joan E. Mobley
Joan E. Mobley

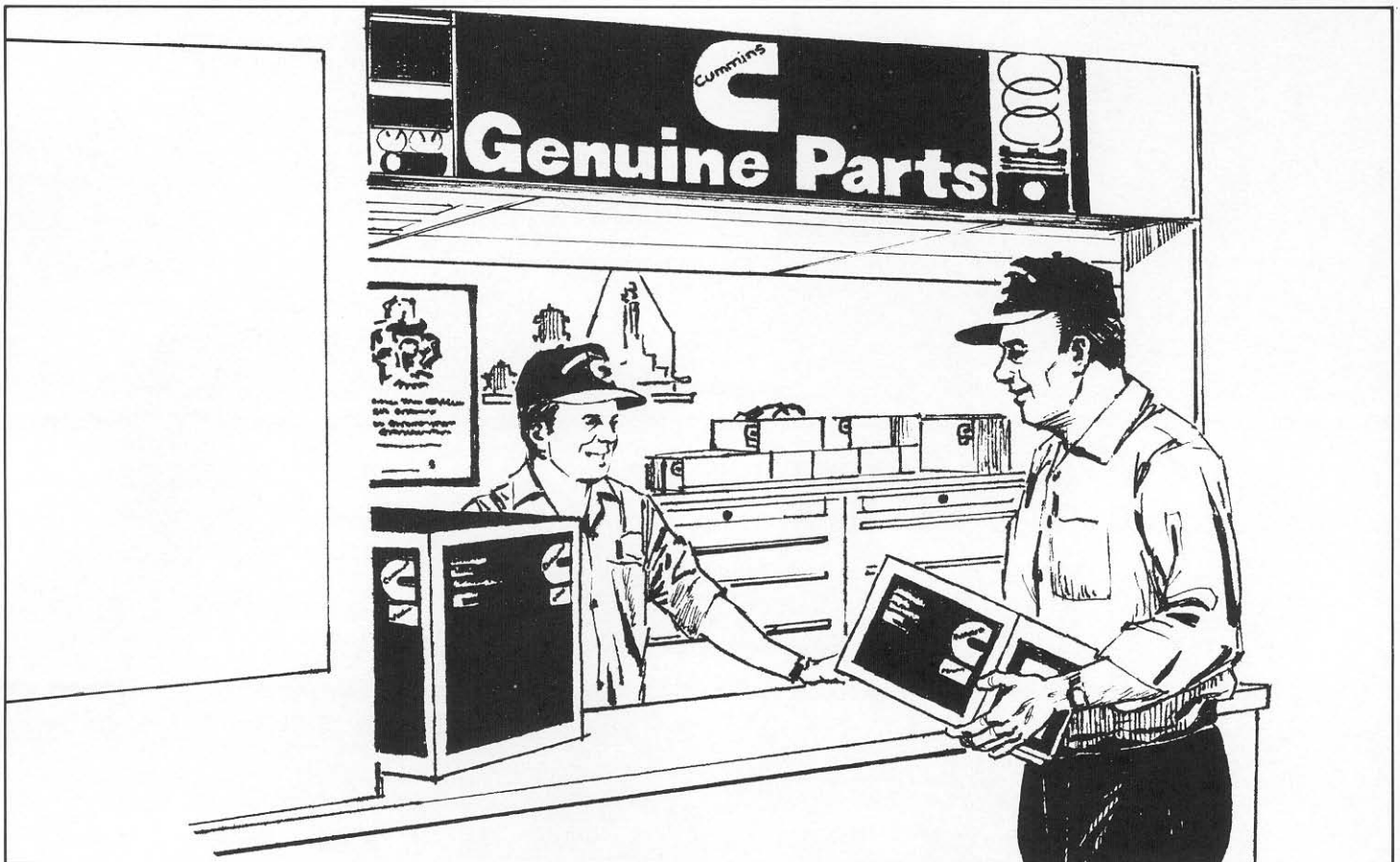
Dear Parts Professionals, Your Ideas

Remember to mark your correct jacket size. This is the issue which qualifies you to earn your Cummins Parts Professional jacket. Please return all quizzes 1-4 by Friday, November 14, 1986. You'll earn your jacket if your scores averaged 90% or better.

Parts Professional No. 5 is due out in November and will cover Overhaul Products. I invite you to send in your Parts Counter and Marketing Ideas. These booklets are for you, come on, share some of your Parts Professional ideas.

Be A Parts Professional

I would like to thank Clem Peddle, Cummins Newfoundland for his letter and continued interest in the Parts Professional programs. Clem sent in a listing of Service Parts Topics and Current information that he feels would be helpful to all mechanics and Parts Counter people. I am researching Clem's suggestions and considering them as topics for future publication. If there are any other readers out there who have suggestions for future Parts Professional topics, please send them in.



Cummins Parts Professional Tests — Familiarity is the Key to Selling Success



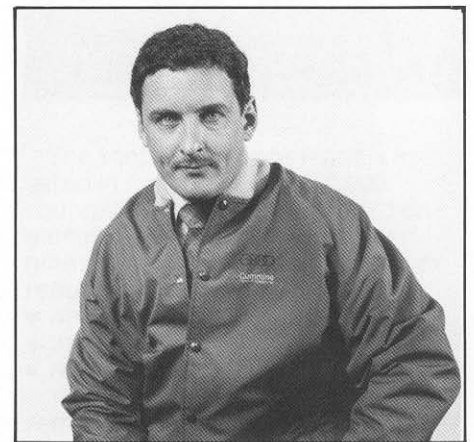
The key to being a Cummins Parts Professional is being able to answer your customer's questions on the spot. Questions like these:

- Can I turn this core in for a Cummins ReCon even if it's cracked?
- Does ReCon provide me a guaranteed warranty?
- Does this core qualify for Full Core Acceptance?
- Can I trade in this turbo for another style?

This is just a sampling of questions that Cummins Parts Professionals are hit with every day. It's rough to keep up with all the latest information, plus give advice on how things go together and provide accurate up-to-date information on Genuine Cummins Parts. That's where the Cummins Parts Professional Series can help you out.

In this issue we'll be looking at Cummins ReCon components for NH/NT engines. We'll take an in-depth look at ReCon's product line, core acceptance standards and the new warranty. We'll also run our usual features on New Products, Product Consolidations, and the Parts News Update.

This is the fourth booklet in the Cummins Parts Professional Series. If you've been taking the exams all along and your exam scores average 90% or better, you've earned your Jacket. Please mail in your fourth quiz before November 14, 1986.



If this is your first experience with the Cummins Parts Professional Series we would like to remind you that you can still qualify to earn your official Cummins Parts Professional jacket. To earn the jacket, return all four exams by November 14, 1986. To qualify, please carefully follow the instructions in the boxed area below.

Instructions

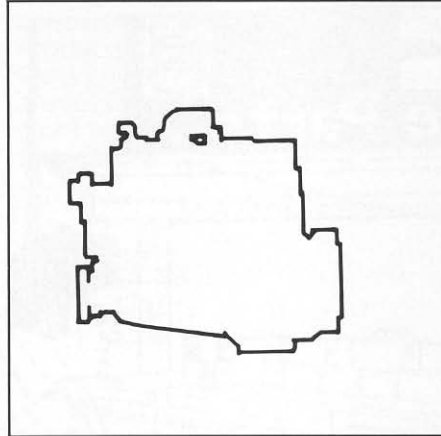
To be recognized as a Cummins Parts Professional and to continue receiving the training booklets, complete the enrollment form on page 31, fold and staple the exam and enrollment page. The address and postage are pre-printed on the fold-over envelope. Scoring an average of 90% or better on the first four exams will entitle you to an official "Cummins Parts Professional jacket." Plus, you'll be keeping up with all the latest New Cummins and ReCon designs and with the most current Product Improvements, Standardizations and Service Products.

Participating in the Parts Professional program will help you learn more about Cummins products. You'll gain the competitive edge which, in turn will enhance your earning capabilities.

Engine Groups

In Parts Professional booklet #1, we divided the NH/NT engine into four basic groups:

- Head Group
- Block Group
- Ends Group
- Accessory Group



The first booklet concentrated on the Head Group and its associated components and gaskets. If you missed the first issue, it can be ordered, at no charge, from your Cummins Distributor, Bulletin No. 3387320-1R. Fill in the enrollment information and the quiz and mail them in the return envelope. This will get your name added to the mailing list.

Booklet #2 covered the NH/NT Block Group. If you missed it, order it from your Cummins Distributor, Bulletin No. 3387320-2R.

The third booklet in the series covered the NH/NT Accessories associated with Engine Operation and Uprate. If you missed this issue, order it from your Cummins Distributor, Bulletin No. 3387320-3R.

This is the fourth Parts Professional booklet. It concentrates on Components and Programs offered by Cummins ReCon.

Cummins ReCon



The ReCon products covered in this issue include:

- Cylinder Heads
- Turbochargers
- Water Pumps
- Fuel Pumps
- Injectors
- Air Compressors
- Electrics
- NT ReCon Engines
- L10 ReCon Engines

We'll be looking at each component separately, going into basic remanufacturing techniques, testing, core acceptance and exchange policies and warranty.

Diesel ReCon began some 20 years ago as a cooperative venture between Cummins Engine Co. and its distributors.

Its charter then, and its charter now, is the same — to offer users of Cummins product the lowest total cost of ownership in the diesel engine industry.

Though it has gone through many changes, in product, in facilities, in scope and in ownership — (it is now a division of Cummins Engine, not a joint venture with distributors) — the business focus on value through exchange and quality remanufacturing has remained.

Today lowest total cost is expressed in another word — Value.

This takes a number of forms:

AVAILABILITY

- Off the shelf at 3800 locations worldwide staffed by Parts Professionals like you helping to minimize user downtime.
- Through exchange — no need to wait while a part is rebuilt.

QUALITY

- Performance to specification, durability, reliability, and sophisticated manufacturing techniques — a payoff in operating savings and reduced downtime.

COST

- A commitment to pass through cost reductions generated by breakthroughs in salvage technology or in product design.
- The ability to upgrade older generation cores.
- Inexpensive upgrades.

WARRANTY

- Simply the best in the industry, at the most locations.

TECHNOLOGY

- Pioneers in manufacturing salvage technology.
- The latest in Cummins technology incorporated into the product.
- A dedicated engineering force to offer aftermarket product improvements.
- Continuous access to Cummins R&E.

EASY TO DO BUSINESS WITH

- Quick, simple and visual core inspection.
- Often there are full core or bad core options.
- The broadest product line for easy one-stop shopping.

These are the elements that ReCon in conjunction with its distribution system offer the customer. They equate to the best value. Now that we have talked about our commitments to you and the value that we can add to your overhaul or repair, let's move on and take an in-depth look at our facilities and discuss our commitment to remanufacturing quality products.

ReCon Facilities

ReCon is a full-time remanufacturing organization with 7 remanufacturing facilities and 2 distribution centers. We'll take some time here and introduce you to our manufacturing and distribution facilities.

The Memphis Plant



The Memphis, Tennessee remanufacturing facility has 150,000 square feet and employs 500 people. The Memphis plant is a busy location. The Memphis plant builds heads, water pumps, turbos and other components such as, vibration dampers, water pump idlers, cam followers and upper rocker levers. All products at the Memphis plant are thoroughly inspected, disassembled and are chemically cleaned before they begin their trip down their respective assembly lines.

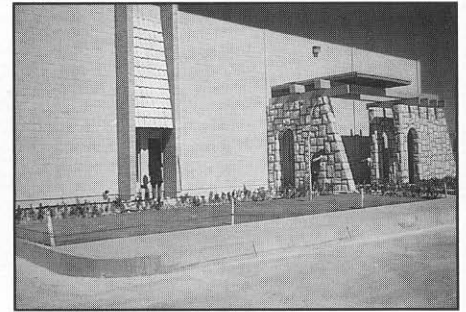
Memphis Distribution Center



The Distribution Center is also located in Memphis. It has 150,000 square feet of storage space under one roof, employs 65 people and ships over one million pounds of product per week. The Cummins ReCon Fleet delivers finished product to the Distributors door and picks up used core for return.

All finished products are delivered to Distributor locations on a regular scheduled pick-up and core is returned to Memphis, with the exception of West Coast engines. These engines are delivered to the Santa Fe Springs location for inspection, disassembly and remanufacture.

El Paso/Juarez



Opened in 1985 to produce fuel systems related components, these plants are fully operational and remanufacture injectors, fuel pumps, gear pumps, tappets, fuel pump housings, barrels and plungers, weight carriers and fuel pump shafts.

Santa Fe Springs



The Santa Fe Springs Plant is located in California. It is 100,000 square feet and is dedicated to engine remanufacturing. ReCon engines offer you many benefits over rebuilding:

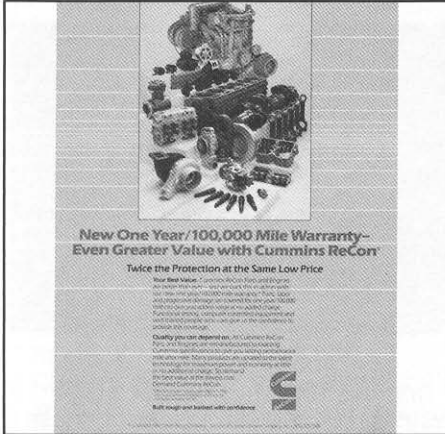
- An Up-rated product
- Increased uptime
- New Warranty

The Santa Fe Springs facility also remanufactures air compressors, rods, intercoolers and reconditions blocks.

ReCon Inventory

Our engine inventory is critical to on-the-shelf availability to serve your immediate needs. We pride ourselves on this commitment. We have about 500 engines in stock at any given time.

Warranty



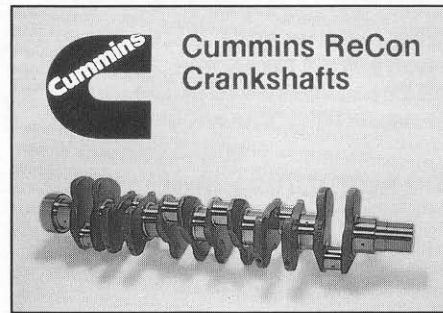
ReCon recently revised the warranty on Components, Crankshafts, Electrics and Engines. Our extended warranties are more liberal than ever before. This section provides an overview of the Cummins ReCon Warranty. Further details may be obtained from your local Cummins Distributor.

Components



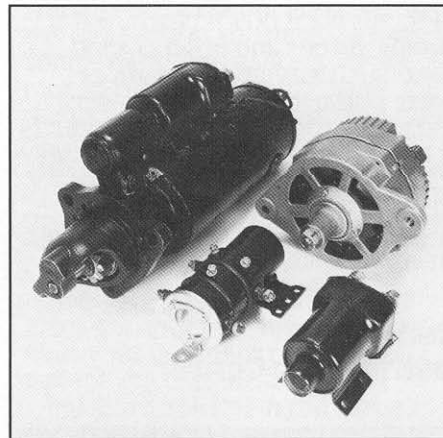
ReCon parts are backed by a one year/100,000 mile/3,600 hour warranty. This warranty covers parts, labor and progressive damage. Different coverage is provided for Crankshafts and Electrics.

Crankshafts



ReCon crankshafts are protected by a one year/100,000 mile/3,600 hour warranty covering parts, labor and progressive damage up to specified limits. Additional extended coverage is provided for 3 years/300,000 mile/10,800 hours, this is further explained in the Extended Coverage Clause.

Electrics

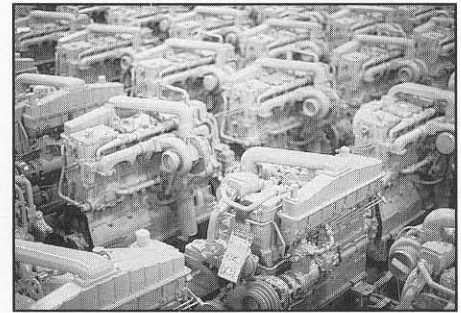


ReCon Electrics are covered for one year/100,000 miles/3,600 hours. We will pay for parts and labor to replace ReCon Electrics.

Extended Parts Coverage

An extended replacement warranty covers the Block, Crankshaft and Connecting Rods for 3 years/300,000 mile/10,800 hours.

Engine Warranty



ReCon Engines are backed by a one year/100,000 mile/3,600 hour warranty. Parts, labor and progressive damage are covered.

Extended Engine Coverage

An extended replacement warranty covers the Block, Crankshaft and Connecting Rods for 3 years/300,000/10,800 hours.

Custom Registry

Cummins Custom Registry is now available on ReCon Engines. This is the same 500,000 mile major component protection available on brand new Cummins Engines. This is a new program we are proud to offer.

Core Acceptance

Cores are the lifeblood of our business. We depend on core exchange to replenish our stocks, and provide the raw materials for our remanufacturing plants. Without Core Acceptance policies it would be very difficult to obtain enough good cores to service our customers. Core Acceptance is key in controlling costs and quality.

Core Acceptance varies by product line. Acceptance depends on the condition of a part. ReCon offers Full Core Acceptance and a ReCon CX (bad core option) Program.

Full Core Acceptance

The following ReCon products have Full Core Acceptance:

- Turbochargers
- Water Pumps
- Water Pump Idlers
- Upper Rockers and Levers
- Cam Followers
- Vibration Dampers
- Intercoolers
- Fuel Pump Tappets
- Fuel Pump Shafts

To qualify components, visually inspect the core for the following:

- Core is complete and not disassembled.
- Core is a part number offered for exchange by Cummins ReCon.
- Core is not damaged by non-operational causes such as rust, rough handling or fire.

On many components ReCon will accept a nonrebuildable core under the CX "bad core" Option Program at additional charge.

Keep in mind that these are general Core Acceptance guidelines. Each ReCon Component has its own set of core exchange options.

Core Exchange Options

There are 4 basic exchange options designed for our customers convenience. They are:

- **Style-for-Style** . . . this means different part numbers may be exchanged for parts of the same design. The parts do not need to be the same Part Number, just the same style.
- **Non-Style-for-Style** . . . Certain families of parts are interchangeable within a family without an extra charge. Turbos like the T-50, VT-50, ST-50 and the T-46 can be replaced with any of the styles listed for no extra core charge.
- **Like-for-Like** . . . Exchange rule here is Part Number for Part Number. For example, when exchanging a Vibration Damper; in order to receive Full Core credit you must purchase the same part number damper to replace the core traded in.

- **Upgrade and Conversion** . . . Trading in Non-Style-for-Style for a slight upgrade charge. This applies to Upgrade components. For example, if you trade in a T-46 Turbo for an HT3B, you will be charged an upgrade charge.

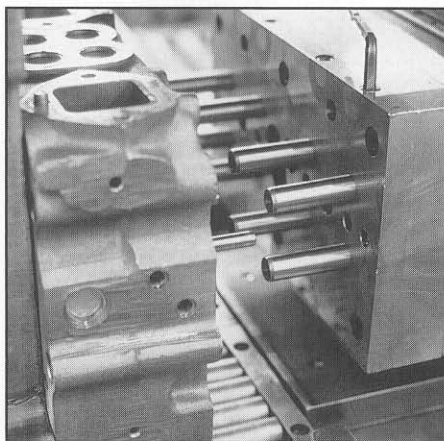
Cummins ReCon Core Acceptance Handbooks are designed to assist you with the acceptance policies, inspection guidelines and packaging requirements. Check the reference section of this book for their Bulletin Numbers. As we discuss Cummins ReCon products we'll provide you with its exchange options, remanufacturing practices and warranty benefits.

Cylinder Heads

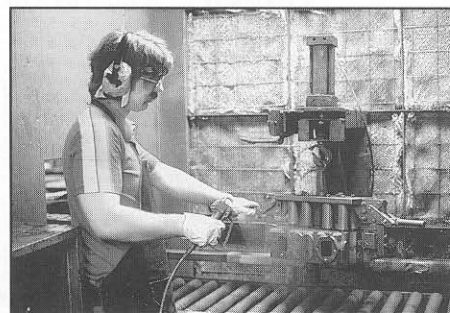


Where can your customers get a non-welded, completely remanufactured and totally dependable cylinder head, with a 1 year unlimited mileage warranty? From Cummins ReCon that's where! Let your customers know that there is a genuine alternative to rebuilding. The ReCon Cracked Head (Cx) program provides exchange options for a cracked casting, dropped valve, broken bolt holes or fuel passages. Sell your customers a ReCon head to increase durability and prevent downtime.

ReCon cylinder heads have the advantage of being rebuilt with all the latest engineering and equipment technology available today — not back of a garage welding equipment and valve grinders. Every ReCon head core is closely inspected, torn down, meticulously cleaned and then inspected again. Every ReCon head is closely inspected for casting flaws, irregular threads and cracked bolt holes. Each head is remanufactured with 100% new valve guides, injector sleeves, spring guides, spring retainers and collets. Upgrades from Small Cam to Big Cam and from naturally aspirated to turbocharged are performed at no extra cost to you.



We don't cut corners on quality during our rebuilding procedure. Cummins ReCon has invested millions of dollars in equipment to assure top quality remanufactured cylinder heads. Our machining processes are highly mechanized, and we remanufacture or replace with new Cummins parts.



Also, all cylinder heads are thoroughly tested to assure that components are accurately machined and matched and that there is no leakage. We don't scrimp anywhere. That's why we can offer a warranty that covers one full year of operation and unlimited mileage — and we guarantee all parts, labor and any cost for progressive damage.

Core Acceptance Standards

ReCon will accept cores if a visual inspection indicates the following:

1. Core must be complete assembly as removed from engine.
2. Casting is not visibly cracked or broken (exception may be cracks up to 1/2 inch in the outer bolt holes — we'll look more closely at this).
3. Part number is offered for exchange by Cummins ReCon.
4. Assembly is not damaged by non-operational causes.

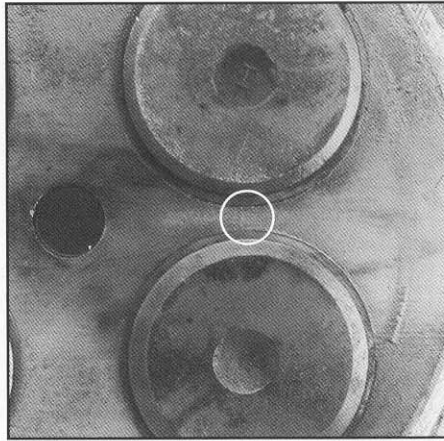
If you find that a head is severely damaged by cracks, dropped valve, water damage, etc., it can be exchanged under the ReCon Cracked Head CX Program. This program carries an additional charge, but the customer still gets credit on a non-rebuildable head. Cores taken in under this program are scrapped.

Core Inspection Instructions:

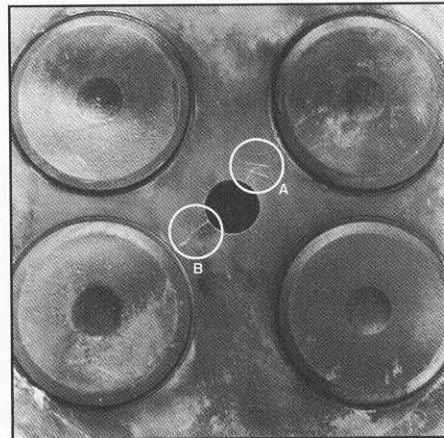
When you're checking a cylinder head, perform the following procedures and look for the items mentioned:

1. Check to assure assembly is complete with no evidence of disassembly. Check for injector sleeves, valve seats, springs, spring retainers, valve guides and valves in correct position.

2. Lightly wire brush the combustion face area — especially between the seats and around the injector bore. You may find cracks such as those shown here.

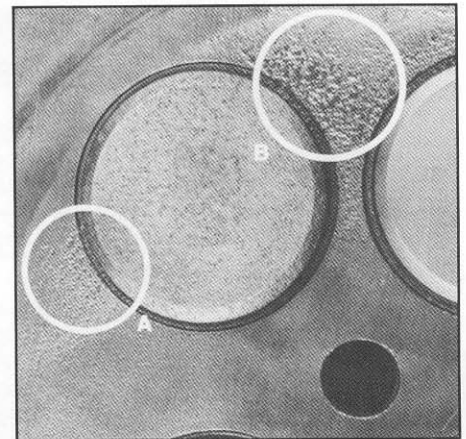


3. Cracks between the seats are not acceptable under the normal RX ReCon Exchange Program. A head with this type of crack may be applied under the CX Cracked Head program.



Cracks radiating from the injector bore may not be acceptable under the normal ReCon exchange program. If cracks are shorter than 1/4 inch (as shown in A) it is acceptable. If the crack is 1/4 inch or longer (as shown in B) it's acceptable only under the Cracked Head program.

There are other types of cracks which you should be aware of, especially those that appear around bolt holes, in the casting or that result from a dropped valve. Refer to your Cummins ReCon Cylinder Head Core Acceptance Handbook for more information.



4. Light water pitting or gouging of the combustion surface area may be acceptable in some cases for ReCon exchange. Heads with minor water pitting or gouging (as shown in A) are acceptable under the normal program. Heads with excessive water pitting or gouging (as shown in B) must be applied under the ReCon Cracked Head program.

Use the following tables to help you identify the different cores and to apply the proper ReCon assembly to the different Cummins engines.

Core Identification

NTC 5-1/2" Cylinder Heads

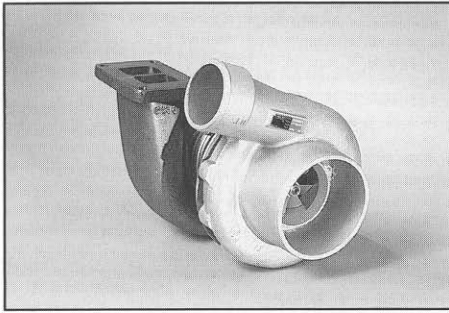
Assembly Number	Description	Acceptable Core	Head Model	NT Head	NTA Head
3008100RX	Big Cam – std. intake valves equivalent to Small Cam BM65356 and BM73334/3007834 Naturally aspirated	3008100 or equivalent	Head Model	NT Head 3008100	NTA Head 3008101
3041993RX	1984MVT – 1-1/4" diameter push tube clearance	3008100 or equivalent	Intake Valve	Magnetic	Non-Magnetic or magnetic with "X" marked on valve face
3037989RX	Big Cam IV – NTC400	3008100 or equivalent			
3008095RX	Premium head – 8 new exhaust valves	3008100 or equivalent	Exhaust Valve	Non-Magnetic	Non-magnetic
3008101RX	Big Cam – premium intake valves or exhaust valves in intake position equivalent to Small Cam BM65359	3008101 or equivalent			

Note: 3008100 or equivalent core are acceptable for 3008101 with additional conversion charge.

Note: The BM65356RX (Small Cam cyl. head) and the BM73334RX/3007834RX (Naturally aspirated cyl. head) are automatically converted to the 3008100; therefore, the cores are accepted interchangeably. The BM65159RX is automatically converted to the 3008101; therefore, the cores are accepted interchangeably. The 3008100RX (Std.) cores must be differentiated from the 3008101 (Premium) core according to the table shown on this page. The standard and premium cores cannot be accepted interchangeably. However, the standard 3008100 cores are acceptable for the premium 3008101 with additional billing.

Engine Model	Assembly Part Number	Description	Acceptable Core Numbers
NH 5-1/8	BM60941RX	Thick intake valves (same thickness as exhaust)	BM60941
NA 5-1/8	BM60971RX	Thick intake valves – all stellite inserts	BM60971
V-555	AR61110RX	Old style casting – No. 553637	AR61110/AR61787
V-555	3275452RX	New Style casting – No. 3275442	3275452/3275453
VT-225	AR61787RX	Old style casting – No. 553637	AR61110/AR61787
VT-225	3275453RX	New Style casting – No. 3275442	3275452/3275453
V-352, V-378	AR60776RX	Old style casting – No. 152143	AR60776
V-352, V-378	3278177RX	New Style casting – No. 3275444	3275450/3278177
V-470, V-504	AR60769RX	Old style casting – No. 157782	AR60769
V-470, V-504	3278189RX	New Style casting – No. 3275441	3275451/3278189
V/VT1710	AR11742RX	All stellite inserts – hard faces valves – wet	AR11742
V/VT1710	AR11745RX	All stellite inserts – hard faces valves – dry	AR11745
V/VT903	AR11171RX	Casting Nos. 180100, 180192	AR11171
KT/KTA19	3604153RX	Casting Nos. 3009088, 3007207, 205015	3604153/3021692
KT/KTA38/KTA50	3021692RX	Casting Nos. 3009088, 3007207, 205015	3604153/3021692
L10	3034790RX	Casting No. 3032107	3034790
4B3.9L	3910275RX	Casting No. 3909973	3905864/3910275
6B5.9L	3910276RX	Casting No. 3909974	3906455/3910276

Turbochargers



Cummins ReCon Turbochargers provide your customers with a durable, dependable turbocharger, plus lot's of options in the exchange program. The ReCon exchange program offers an Uprate Program that the competition can't match. ReCon allows customers to exchange their T-50, VT-50, ST-50, T-46, T-46B, HT3B and HT4B turbos non-style for style. This means that customers can update their inventories with the newest in ReCon Turbocharger technology for a slight cost. Also, your customers can be assured that when they choose a ReCon turbo it will be precisely matched to their Cummins engine! This is important because even a slight mismatch can result in poor performance and hundreds of dollars lost in wasted fuel each year.

There have been a few changes in the ReCon Turbocharger Core Exchange Program which you should be aware of. Initially any turbocharger core was acceptable for a Holset style turbocharger with an additional charge. The new exchange program for ReCon Holset turbochargers is:

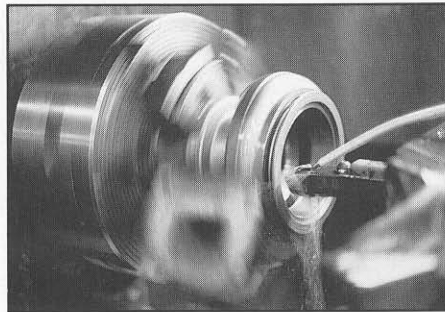
T/VT/ST-50 and T-46 style cores are acceptable interchangeably with no additional charge. Any of these style cores may also be returned in exchange for a T-46B, HT3B or an HT4B style for an additional charge.

T-18A cores may be returned for the HC5A with an additional charge.

H1C, H2C, and H3C styles are acceptable on a style for style basis only. No other core may be returned in exchange for these three styles.

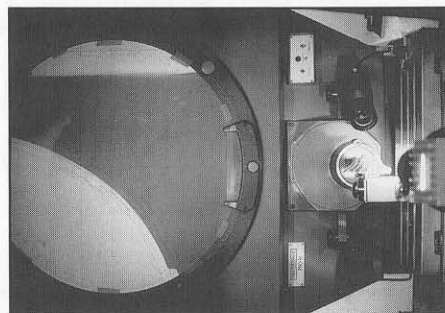
If you have any questions, refer to the Cummins ReCon Core Acceptance Handbook (second edition).

Turbocharger Remanufacturing



When customers come to you with questions about the quality of ReCon turbochargers, hit them with the facts:

- ReCon is a division of Cummins and understands the importance of the turbocharging system in providing peak performance and optimum fuel economy in Cummins engines.
- The ReCon remanufacturing process ensures that every ReCon turbocharger meets critical factory specifications, so that the ReCon replacement operates as efficiently and reliably as the original. Let's look at the steps and checks that a turbocharger must go through in the ReCon remanufacturing process before it goes to a customer.

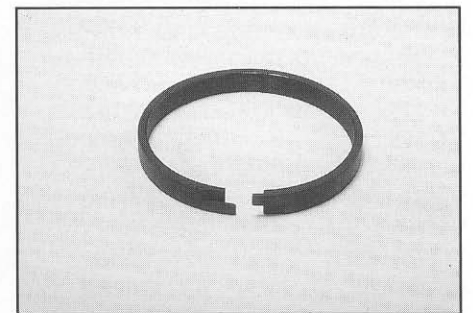


Compressor Wheel Inspection All the compressor wheels are inspected on a sophisticated "optical comparator", which checks for wheel contour damage and determines the correct part number of the compressor wheel. The importance of the optical comparator is this: Cummins uses over 15 different compressor wheels; many are impossible to tell apart with the naked eye. Cummins ReCon uses an optical comparator for this purpose. If the competition isn't using an optical comparator, how can they possibly be sure they're matching the correct compressor wheel with the proper turbo application. They can't! Using the wrong compressor wheel might still allow the turbo to work but can rob the engine of its performance and fuel economy. Saving a few bucks by buying a Brand X remanufactured turbo can result in a much higher cost over the long haul.

Some of the other advantages of ReCon turbochargers include:

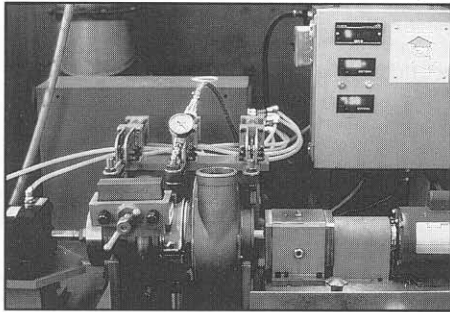
Turbine Wheel and Shaft Inspection assure that both the turbine wheel and shaft meet factory specifications. If they don't they're scrapped.

100% Wheel Balancing for the turbine wheel and shaft, and the compressor wheel. This inspection reduces the chance for shaft vibration that could cause early bearing failure and/or casing damage.



- **ReCon Duo-Lap Seal Ring** is used to reduce the possibility of turbine seal leaks. The crowned design ensures better contact with the bearing housing. Likewise, the duo-lap joint eliminates a potential leak path through the seal ring. The result is to make ReCon turbos more reliable and less susceptible to the danger of seal leakage.

- **CNC (Computer Numerically Controlled) Machining** is used to restore all casing dimensions to factory specifications. All the turbine and compressor casings are inspected for signs of damage from wheel rub or warping from excessive heat and the CNC machines are programmed to restore critical factory dimensions. All the operator has to do is select the proper program for the casing being machined and let the CNC machine take over. These sophisticated machines takes the guess work out of the machining process.



All of the ReCon turbochargers are 100% functionally tested. Functional testing of the turbocharger under simulated operating conditions assures optimum performance and reliability. Turbos are checked for any possibility of seal leakage, blow-by, exhaust leaks, or parts interference that could reduce turbo efficiency or service life. This final inspection is the last step in the ReCon remanufacturing process, and ensures that ReCon Turbos meet every Cummins factory standard for durable, dependable performance.

In addition to getting a high quality turbo, your customers get the **Great ReCon Warranty**. Every ReCon turbocharger is backed by a one year unlimited mileage/hour warranty that covers 100% parts, labor, and progressive damage. This warranty is honored at over 3800 Cummins locations world wide.

Core Acceptance Standards

Turbocharger cores will be considered acceptable for core exchange under the Full Core Acceptance Program if visual inspection indicates the following:

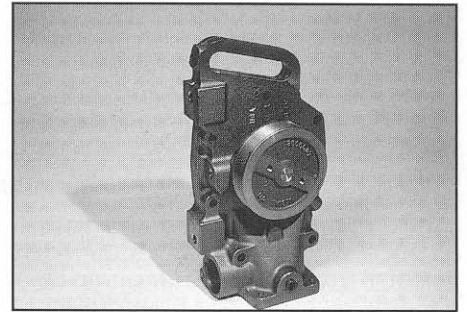
1. Core is complete and not disassembled.
2. Core is a part number offered for exchange by Cummins ReCon.
3. Core is not damaged by non-operational causes such as rust, rough handling or fire.

Important . . . Core receiving guidelines

1. Inspect core to verify part number acceptance and completeness of core.
2. All turbochargers with style T/VT/ST-50 and T-46 are acceptable interchangeably for any other part number within these styles. Cummins T-590 and T-35 style turbochargers are acceptable for any other part number with the T/VT/ST-50 and T-46 styles offered by ReCon with an additional upgrade charge.
3. T-46B style cores are acceptable only on a style-for-style basis. T/VT/ST-50 and T-46 core styles may be returned for a T-46B for a slight upgrade charge.
4. HT3B and HT4B style cores are acceptable on a style-for-style basis. T/VT/ST-50, T-46 and the T-46B core styles may be returned for a HT3B or HT4B with an additional upgrade charge. HT3B style cores may be returned for an HT4B with an additional upgrade charge.
5. T-18A (AiResearch style) cores are acceptable only on a style-for-style basis. T-18A cores are acceptable for exchange for the HC5A style with an additional upgrade charge.
6. HC5A style cores are acceptable on a style-for-style basis only. T-18A style cores may be returned for an HC5A with an additional upgrade charge.
7. H1C (B Series), H2C (L10) and HC3 (NTC-475) style cores are acceptable for exchange on a style-for-style basis only (H1C for H1C, H2C for H2C, etc.).
8. Competitive turbocharger cores are acceptable for any Cummins ReCon part number within the same model application without additional charge as long as the competitive core is complete and is a Cummins applied part number.

Whenever receiving a core, refer to the Cummins ReCon Core Acceptance Handbook for information on turbocharger core identification acceptance policy, ReCon turbocharger part numbers and any special information which may regard specific models or applications. Also, the handbook includes special instructions pertaining to the packaging of the cores. It is very important for the cores to be properly packaged to prevent damage and also as a safety precaution.

Water Pumps



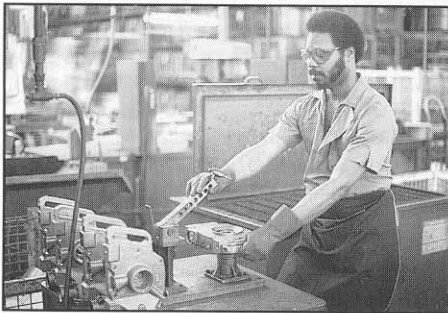
Just like original equipment Cummins ReCon water pumps go the extra mile. Most off-brand water pumps don't last nearly as long as Cummins ReCon because of inferior/low-cost parts and short cuts in their rebuilding processes.

Most water pump problems stem from seal failure. This is especially true of the off-brand pumps because the manufacturers of these pumps often rely on increased seal friction to assure sealing. The increased friction causes rapid seal wear. Cummins ReCon does the opposite, they reduce seal friction as compared to the off-brands and rely on high quality seal materials and precise machining to **assure a good seal**. The reduced seal friction results in much longer water pump seal life and lower costs over the long haul.

Another problem area of remanufactured water pumps is bearing failure. Water pump bearings are especially susceptible to failure if the water pump housing doesn't conform to factory specifications. If the bearing bore area is oversize or out of round, the bearings can wobble inside the housing, causing the shaft to vibrate. The vibration, which is often aggravated by the reuse of a worn shaft, will accelerate bearing and seal wear and can result in premature failure. Likewise, if the bearing bore and the seal bore are not concentric, i.e. share the same center line, the shaft will ride more heavily on one side of the seal and the bearings. This uneven "side-loading" condition can result in premature seal and/or bearing failure.

Even if a water pump is functioning properly, a certain amount of wear still occurs over time. That's why you should make sure your customers know that Cummins Engine Company recommends scheduled maintenance. What better way is there to perform preventive water pump replacement than with a high-quality, low cost Cummins ReCon water pump?

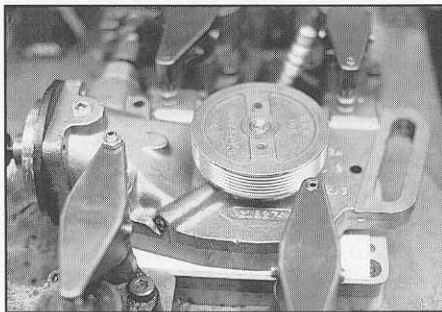
Cummins ReCon Water Pumps — Remanufacturing Highlights



Cummins ReCon doesn't take any chances with a customer's equipment! That's why you'll find a high quality unitized carbon on ceramic design seal used in all ReCon water pumps. This seal is specially designed with a top hardness grade of carbon to resist wear and maximize seal durability. Spring tension between the seal and seat face are kept to a minimum to reduce friction and wear. Also, unlike much of the competition, ReCon water pump seals are made for heavy duty applications. They aren't the type of seal that would be more at home in an automobile or light duty application.

Old, loose fitting components mean short water pump life. That's why Cummins ReCon replaces **all internal components**. Everything from the water pump shaft, bearings, and seal to the o-rings are replaced with 100% new Cummins parts. Also, the water pump housings are closely inspected to ensure that they conform to factory specifications. The bearing bore, seal bore, and impeller surface areas are precisely measured for size and concentricity and restored to their original specifications or scrapped and replaced with new parts.

In addition to remanufacturing the water pump, ReCon inspects and regrooves all water pump pulleys as necessary to remove nicks and wear. This seemingly small operation is just another example of the care that ReCon builds into its products. A small nick or groove in the pulley can cause a customer unnecessary downtime, because it can significantly reduce water pump belt life.



Like most other ReCon components, water pumps are 100% functionally tested to assure performance and reliability **before** it goes on a customer's engine. All of the ReCon water pumps are equipped with the necessary gaskets and o-rings needed to perform the installation. Customers have a choice of specifying cast iron or phenolic impellers on most water pump models (cast iron models are designated by a -1 suffix).

In addition to quality, your customers get the great ReCon Warranty. ReCon water pumps are backed by a one year unlimited mileage/hour warranty that covers 100% parts, labor, and progressive damage.

Core Acceptance Standards

Core acceptance of water pumps couldn't be simpler with ReCon's **Full Core Acceptance Policy**. ReCon will take damaged or "off-brand" pumps at no extra charge. ReCon also offers no-cost upgrades from Small Cam FFC (suitcase) style pumps to Big Cam models. As in all core acceptance, follow the general guidelines given in the Core Acceptance Handbooks. And, these core receiving instructions:

1. Inspect water pump core to verify part number acceptance for exchange.
2. Competitive water pump cores are acceptable for any exchange for any Cummins ReCon Water Pump part number without additional billing as long as the competitive core is complete and is a Cummins applied part number.
3. All suitcase style cores are acceptable interchangeably.
4. Non-FFC style cores are acceptable on a like-for-like basis (for example: NH 5 1/8" long shaft for NH 5 1/8" long shaft).
5. When receiving water pump idler pulleys, keep in mind that their cores are exchanged on a like-for-like basis.
6. ReCon plans to add a Small Cam to Big Cam Upgrade for minimal cost.

ReCon NT Big Cam Water Pumps

ReCon recently consolidated its NT Big Cam water pump product line from 8 part numbers to 4. The corresponding chart provides the current part numbers for water pumps currently offered by ReCon.

NH/NT WATER PUMPS		
<u>Pump Assembly</u>	<u>Engine Application</u>	<u>Description</u>
AR 45184RX	Big Cam I/II/III	Vented body; phenolic impeller
AR 45184-1RX	Big Cam I/II/III	Vented body; cast iron impeller
3022474RX	Big Cam I/II/III	Vented body; phenolic impeller; silicon carbide seal
3045943RX	Big Cam IV, NTC-475	Vented Big Cam IV body; phenolic impeller

This means the AR 45184-RX and AR 45184-1RX can now be used on all Big Cam I, II, and III applications except the NTC-475 which uses the 3045943-RX. All ReCon Water Pumps are date stamped on the box. All Pumps date stamped after April 11, 1986 are the internally vented design. This is also true of all 3022474 pumps. See ReCon Marketing Bulletin Number CR1038 for further details.

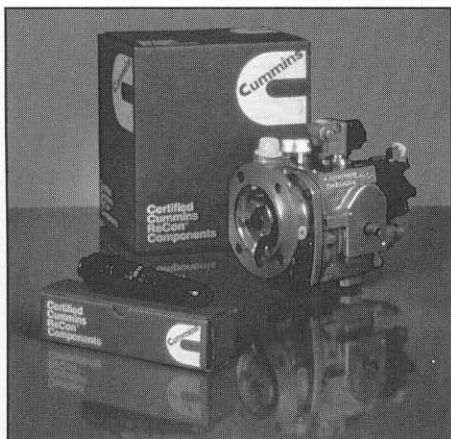
NOTE: Use the ReCon 3022474RX water pump only if additional venting is required (i.e. "tilt application). Otherwise, either AR45184RX or AR45184-1RX may be used on most Big Cam I/II/III engines.

ReCon also offers Part No. 3045943RX for Big Cam IV and NTC-475 applications. Part No. 3045943RX features a redesigned body and a smaller diameter pulley to achieve the increased coolant flow necessary for Big Cam IV and NTC-475 engines. This table provides a list of the key parts that are used in ReCon NT Big Cam water pump assemblies.

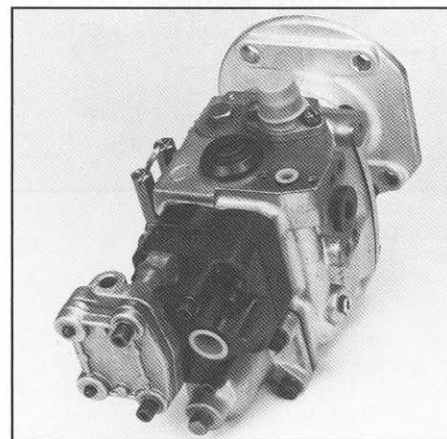
Water Pump Assemblies

<u>Assembly</u>	<u>Body</u>	<u>Pulley</u>	<u>Impeller</u>	<u>Seal</u>
AR45184RX	218724 or 3045163	3005507 4 11/16" dia.	3000888 4 1/2" dia. phenolic	3029099 carbon on ceramic
AR45184-1RX	218724 or 3045163	3005507 4 11/16" dia.	3602788 4 1/2" cast iron	3029909 carbon on ceramic
3022474RX	218274 with internal vent hole drilled or 3045163	3005507 4 11/16" dia.	3000888 4 1/2" dia. phenolic	3033677 silicon carbide
3045943RX	3045163 Only	3025861 4 5/16" dia.	3000888 4 1/2" dia. phenolic	3029099 carbon on ceramic

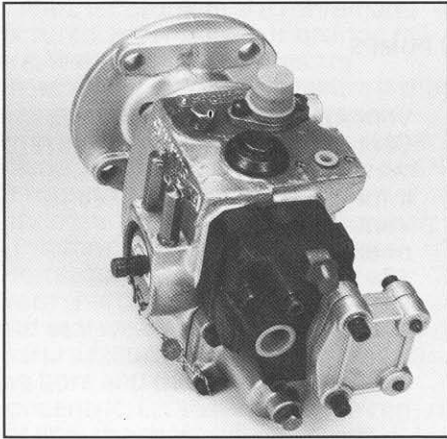
Fuel Pumps



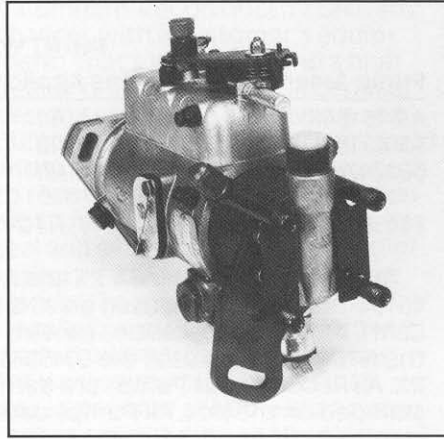
Cummins ReCon offers a full line of remanufactured fuel pumps for Cummins engines. The fuel pumps offered by ReCon are top quality components which feature the great ReCon warranty. The fuel pumps offered by ReCon are divided into 10 groups as follows:



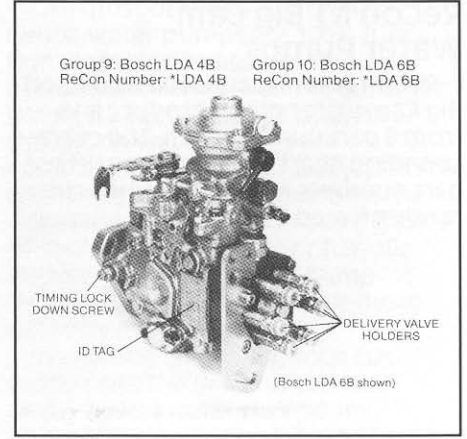
Group 1 PTG LH



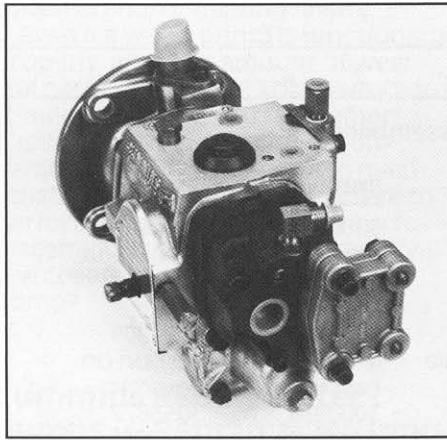
Group 2 PTG RH



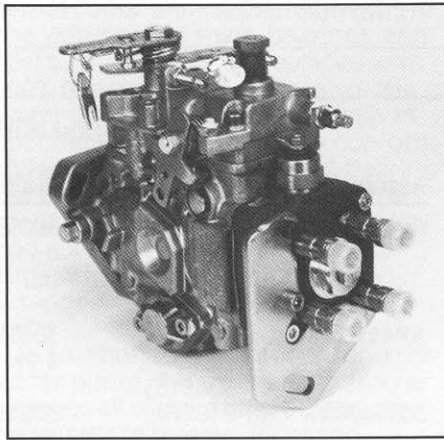
Group 5 Lucas 4B, 6B



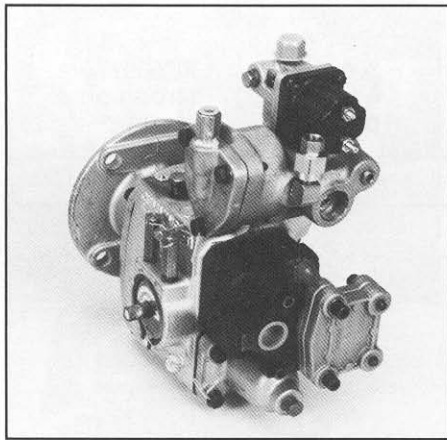
Group 10 Bosch LDA6B, LDA4B



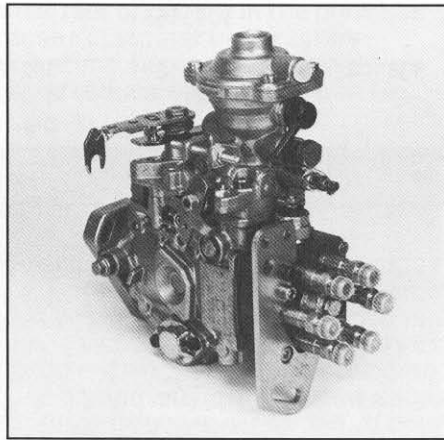
Group 3 AFC LH



Group 7 Bosch 4B



Group 4 AFC RH



Group 8 Bosch 6B

Core Acceptance Standards

Cores must meet the general acceptance standards found in the Core Acceptance Handbooks, and must also meet these additional acceptance standards.

1. Assembly is complete (less lever) and not otherwise disassembled.
2. Assembly is standard automotive type.
3. Castings are not visibly cracked or broken.
4. Core is not damaged by non-operational causes such as rust, rough handling or fire.
5. Fuel pump core rotation is the same as the pump ordered.
6. Bosch and Lucas cores must have a core identification tag (information may be stamped on casting), solenoid, discharge fittings and throttle levers.
7. Exchange is style-for-style within their own groups.

Fuel Injectors



Your customers know that a properly operating injector is extremely important to the performance and economy of their Cummins engine. Cummins ReCon injectors provide long life and excellent fuel economy at an economical price — and beat the off-brand competition in the most important area, **quality!**

You might ask, "Why is it necessary to use high quality injectors?" Well, on average, the up and down strokes made by an injector plunger total 15.5 million during Cummins' recommended interval between servicing. Also, Injection pressure under full load is 14,000 to 16,000 psi when fuel is sprayed into the cylinder. Injector cup spray holes, the cup seat or plunger cone angle and the barrel to plunger clearance are the critical friction and wear parts. Because of all the movement and high pressure, parts are bound to wear. The following are wear-related injector problems:

- Cup spray hole erosion.
- Deterioration of plunger and cup interface.
- Barrel and plunger wear causing deterioration of this critical clearance specification.
Problems which could cause injector failure are:
- Barrel and plunger seizure — mostly caused by dirt getting to the injector.
- Plunger coupling failure.

● Cup cracking resulting in no injection pressure.
The off-brand remanufacturers just can't beat the Cummins connection that ReCon has. By buying off-brand remanufactured injectors you may be getting:

1. **Incorrect Parts Specifications** — Remanufacturers often are not concerned with the parts specifications for different style injectors. Not using the specified parts can lead to expensive failures or increased operating costs.
2. **High Calibration/Improper Cup** — Overfueling (higher than specified flow values) or cup spray holes sizes that are too small can cause excessive camshaft loading and reduce camshaft life.
3. **Improper Remanufacturing Techniques** — Can lead to a variety of problems that can over the long haul cause a lot of problems. These include:
 - Incorrect spray pattern
 - Excessive clearance between barrel and plunger
 - Poor barrel surface
 - Interior contamination from unclean work areas
 - Use of substandard parts

Every ReCon injector is precisely remanufactured to Cummins specifications, because only ReCon receives its engineering and product information direct from the factory. With Cummins ReCon there is no guesswork in remanufacturing to specifications, tolerances or product performance characteristics. Plus ReCon uses only Cummins approved material that can be remanufactured to meet rigid specifications. Look at the advantages of using Cummins ReCon injectors:

1. **Tight Calibration Specifications** — ReCon injectors improve cylinder balance and provide smoother engine operation because they are closely calibrated to service specification.
2. **Top Quality Parts** — ReCon replaces all worn components with Genuine Cummins Parts. All injectors receive 100% new Viton o-rings designed for durability in high temperature conditions, and 100% new injector screens and screen retainers.
3. **Sophisticated Remanufacturing Equipment** — The equipment used to remanufacture ReCon injectors is of the same design and manufacture as the original equipment used in the manufacturing process — not service or other tools applied to a high production environment. For example, the equipment used to set a ReCon Top Stop Injector uses a precise digital read-out with accuracies measured in tenths of thousandths. These hydraulic-actuated machines cost about \$50,000 each. Compare ReCon's technology to that of other rebuilders who use hand actuated service tools which cost about \$200. When it's time to replace . . . suggest ReCon Injectors.

All injectors must go through a sophisticated remanufacturing process to assure they meet Cummins performance specifications. Here are some of the important steps in the remanufacturing process:

- **Barrel and Plunger Clearance** — Is closely checked with ultra-sensitive electronic and air-gaging equipment so that clearances are maintained to the millionths of an inch.
- **Barrel Flatness** — Receives special attention to assure the flatness of the barrel end surface for proper sealing against the injector cup to avoid leakage.
- **Cups Are Matched to the Injector and Spray Angle Is Checked** — Matching the right injector cup is critical as it will avoid excessive camshaft loading. Proper spray angle avoids excessive smoke or low power and possible catastrophic failures involving pistons and liners.
- **Ultrasonic cleaning and a Sophisticated Cleanliness Audit** — Assure components are free from dirt and foreign material. In addition, some parts — for example cups and barrels — go through a back flushing process. Millipore equipment, a filtration system designed to measure absolute cleanliness, is used at final audit to assure cleanliness standards are met on all components.
- **ReCon Injectors Have All The Latest Product and Performance Improvements** — Through design improvements Cummins Engine Company strives to better its existing generations of parts. As improvements are made, ReCon is informed, and whenever possible older parts are updated to the most current specification. That's why with ReCon, your customers aren't getting just a remanufactured part, they're getting a part that reflects Cummins up-to-date engineering and design improvements.

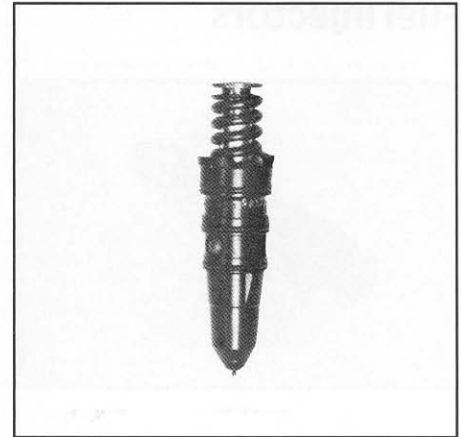
When you consider all of the technical and quality advantages that come with ReCon injectors it's hard to understand why a customer would choose anything else. But sometimes they do, so it's up to you as a Parts Professional to make sure the customer knows all the facts about ReCon. Make sure they're aware too of the warranty. It covers all parts, labor, and progressive damage for one year.

Core Acceptance Standards

Core acceptance for injectors is quite similar to the general acceptance standards, except for a few additions. Your visual inspection of the core should indicate the following:

1. Assembly is complete.
2. Plungers are not broken.
3. Core must be a style offered for exchange by Cummins ReCon.
4. Core is not damaged by non-operational causes such as rust, rough handling or fire.

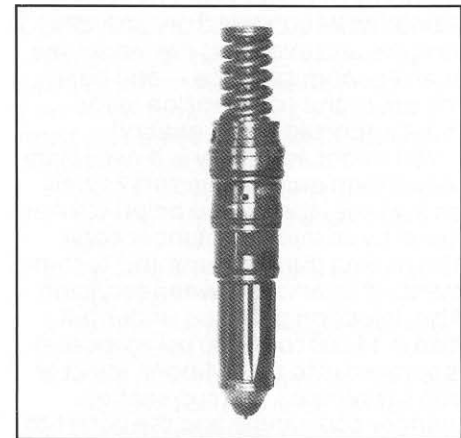
Injector assemblies are acceptable for exchange within the groups listed below:



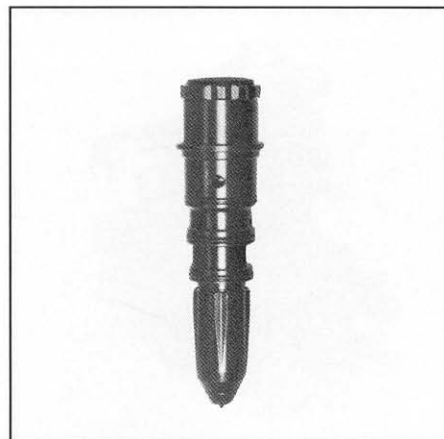
Group 3 PT Type D Val Vale



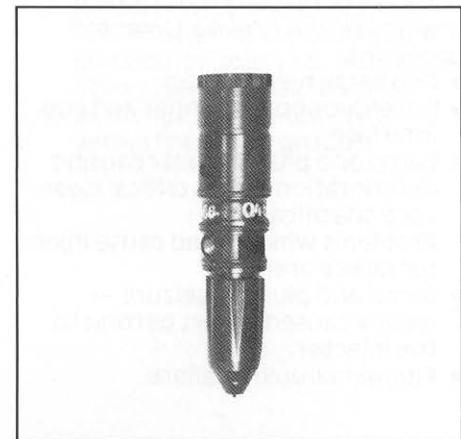
Group 1 PT Type D



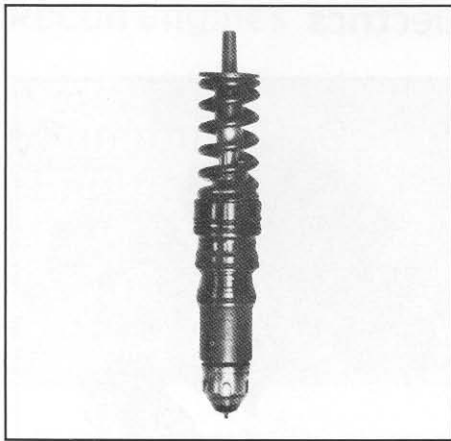
Group 4 PT Type D K



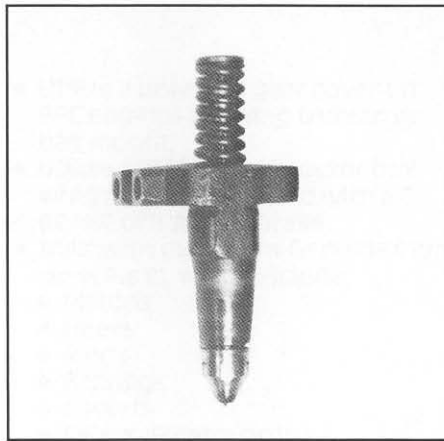
Group 2 PT Type D Top Stop



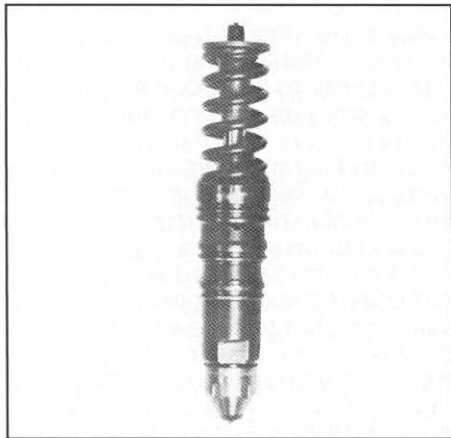
Group 5 PT Type D L10



Group 6 PT Type C



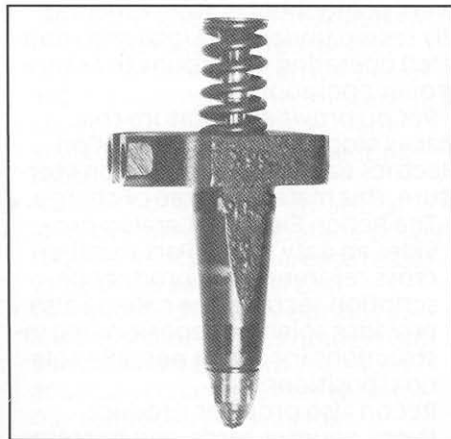
Group 9 PT Type C-J Flange



Group 7 PT Type B



Group 10 Small Engine



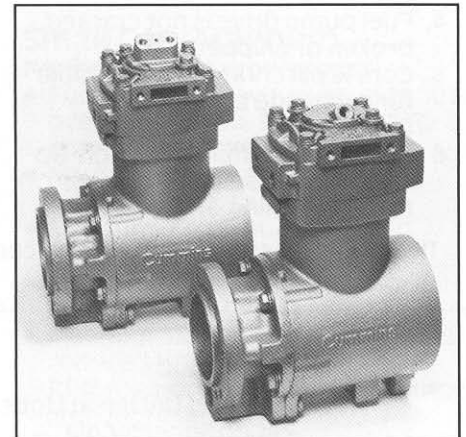
Group 8 PT Type H-NH Flange

Core exchange for ReCon injectors must be style-for-style. For example any Top-Stop for any Top-Stop.



improper handling and packing of core shipments. To minimize core loss, use ReCon injector cartons for returns.

Air Compressors



Cummins ReCon supplies the ReCon Universal Air Compressor (Part No. 3024365RX). This one part number replaces over 40 standard models found on Cummins engines. This keeps your inventory low and ensures superior availability for your customers.

In addition, ReCon now offers the Cummins Super Single. With its reliable and proven design and 52% fewer parts, the Super Single (Part No. 3049186RX) is a masterpiece of simplicity.

While many competitive air compressors operate with two cylinders, the Super Single masters the job with one. For your customers, the advantage is half the trouble with double the benefits:

- Longer Life
- Proven Reliability
- Easy Servicing
- Reduced Maintenance

ReCon has made it easy for you to upgrade your customers to the Super Single with a reasonable charge and a non-super single air compressor core. The Super Single can retrofit to most popular engine models.

ReCon also offers air compressors to support the 4B and 6B engines.

When you pack the cores for shipment back to ReCon, keep in mind that most core damage results from

Core Acceptance Standards

When you receive an air compressor core, always visually inspect it for the following:

1. Core is complete and not disassembled.
2. Castings are not visibly cracked, broken or welded.
3. Gasket surfaces are not damaged.
4. Fuel pump drive is not cracked, broken or chipped.
5. Core is part number acceptable for exchange by Cummins ReCon.
6. Core is not damaged by non-operational causes such as rust, rough handling or fire.

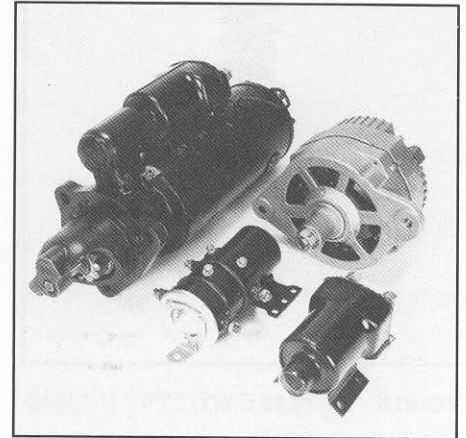
The following summarizes the air compressor product line:

<u>Description</u>	<u>Part No.</u>
Standard Universal Model	3024365RX
ReCon Super Single	3049186RX
SEP 4B3.9L Bendix Universal	3905686RX
SEP 4B3.9L Bendix Non-Universal	3905747RX
SEP 6B5.9L	3904994RX

Air Compressor Core Acceptance

As with all ReCon products, core acceptance is easy — only a visual inspection is required. The Cummins ReCon Core Acceptance Handbook (second edition) has details and part number references that may be useful to you.

Electrics



When you think of heavy-duty electrics — think Cummins ReCon!! It makes sense to go ReCon because your customers not only get high quality starters, alternators, solenoids, and parallel switches, they get warranty protection that is the best we know of in the industry.

Every ReCon electrical component is backed with a written warranty that covers the component and installation labor for one year without mileage or hour restrictions. Plus, the ReCon warranty has the Cummins service network behind it. Warranty Certificate Bulletin No. 3385337 provides the details.

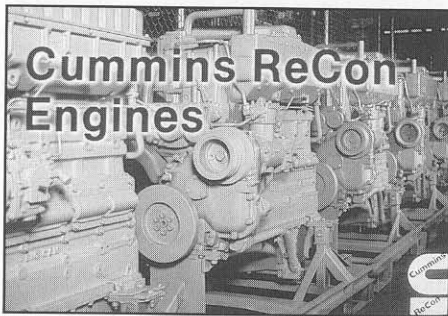
Like all ReCon components, every core is completely remanufactured. Every component is 100% functionally tested under a full load and simulated operating conditions to assure proper operation.

ReCon provides literature that makes stocking and selling ReCon Electrics easy. As with all ReCon literature, this material is free of charge.

- The ReCon Electrics Catalog provides an easy to use Part Number cross reference and product description section. The catalog also provides solenoid repositioning instructions for the 24 possible solenoid positions.
- ReCon also provides product flyers, counter cards, and posters to help you communicate and sell your customers ReCon electrics.
- The ReCon Core Acceptance Handbook is helpful and provides product photographs for ease in becoming familiar with the various product models.

ReCon Electrics Core Acceptance is simple, and you know the value of your customer's core on the front end — no surprise billbacks!

ReCon Engines



ReCon offers NH/NT, L10, 4B and 6B series engines in its product line-up. We'll cover only the NH/NT and L10 in this publication. The biggest advantage of a ReCon engine is price. A ReCon engine can be purchased for up to 50% below the cost of a new engine. For that price your customer gets all the latest product features and benefits.

- A factory remanufactured engine built to the latest Cummins technology which provides more power, better fuel economy and higher resale value.
 - Fast turnaround time, which reduces customer downtime and saves money.
 - Easy core exchanges, with no additional charge for damaged crankshafts or connecting rods.
 - A 1 year/100,000 mile nationwide warranty covering 100% parts, labor and progressive damage. The warranty is honored at all authorized Cummins Distributor and Dealer Service locations. A 3 year/300,000 mile replacement warranty covers the engine block, crankshaft, camshaft and connecting rods.
 - No cost horsepower Uprates allows customers to upgrade power requirements and increase resale value at no additional cost.
 - Low cost technology Uprates allows customers to upgrade from Small Cam to Big Cam at a slight additional charge. Other technology upgrades are available.
- ReCon Engines offer these great benefits:
- Built to current factory CPL's
 - Use only standard or .010" under-size crankshafts in all Big Cam, Small Cam Magnum & NTC 350 FFC engines.

- Utilize a universal gear cover on FFC engines allowing trunion or pad mount.
- Utilize AR3307 upper rocker box which can be equipped with a C BRAKE or a Jacobs brake.
- Built with many new Genuine Cummins Parts, which include:
 - Pistons
 - Liners
 - Rings
 - Bearings
 - Gaskets
 - Filters (Fleetguard)
- Contains 100% Genuine Cummins ReCon Parts which include:
 - Block
 - Crankshaft
 - Cylinder heads
 - Turbocharger
 - Water pump
 - Connecting rods
 - Super Single Air compressor
 - Fuel pump
 - Injectors
 - Solenoid
 - Cam followers
 - Camshaft
 - Aftercooler
 - Upper rockers
 - Vibration damper
 - Exhaust manifold
 - Idler
- Every ReCon engine is 100% tested in a computerized production test cell, just like every new Cummins engine. Every ReCon engine must meet all the specifications of a new Cummins engine.

Both the ReCon Big Cam III and Small Cam Magnum engines are built using the latest Cummins Technology and Uprate components which include the pulse exhaust manifold, DFC lube system, high efficiency aftercooler, HT3B turbocharger, and Premium Plus Cylinder Kits. All ReCon Big Cam III engines include the stamped steel oil pan and spin on bypass filter arrangement. Improvements resulting from these changes include better driveability, improved performance, and increased fuel economy.

Big Cam III vs Big Cam II Performance Improvements

- NTC 400 torque increased to 1250 ft.-lb. from 1150 ft.-lb.
- NTC 350 torque increased to 1175 ft.-lb. from 1120 ft.-lb.

- Torque peak speed reduced from 1500 RPM from to 1300 RPM on NTC-400 for increased operating range and improved driveability.
- Engine throttle response improved up to 95% compared to other Big Cam models.

Small Cam Magnum Performance Improvements

- Fuel economy savings of up to 10% over comparable Small Cam FFC engine.
- Magnum 300 torque increased from 930 ft.-lb. to 975 ft.-lb.
- Magnum 350 torque increased from 1005 ft.-lb. to 1065 ft.-lb.
- Magnum 400 torque is 1200 ft.-lb. at 1500 RPM.
- Magnum 350 torque peak speed is reduced from 1500 RPM to 1300 RPM for increased operating range and improved driveability.

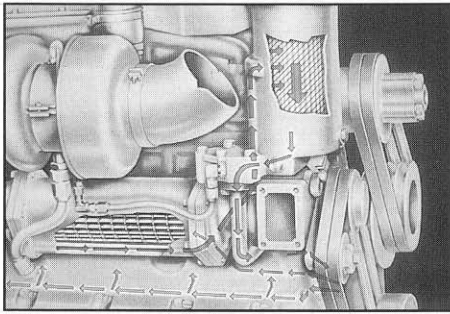
Core Acceptance Standards

Core acceptance is now based only on an external inspection. It's no longer necessary to drop the pan and check out the crank. Cores are acceptable without additional billing if the core inspection indicates the following:

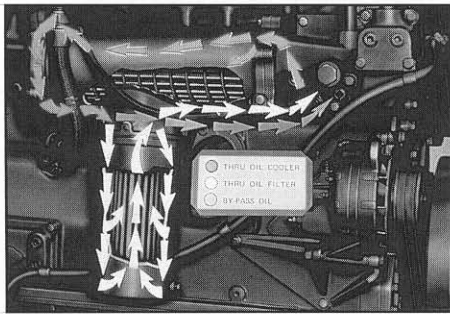
1. Core is complete with applicable component parts to OEPL configuration or any acceptable Uprate.
2. Component castings are not visibly cracked, broken or damaged, unless allowable under ReCon component core inspection. Specific criteria is outlined in the Core Acceptance Handbook.
3. Core has not been disassembled except for inspection purposes. If it has been disassembled, it is subject to additional billing.
4. Core is acceptable for exchange in accordance to the core acceptance matrix contained in the core handbook.
5. Core is not damaged by non-operational causes such as rust, rough handling or fire.

NOTE: Additional billing is established at the time of inspection based on: missing parts, damaged parts, and current engine pricing policy.

To identify an engine core, you must be able to identify the different Cummins engines. Now let's go through a brief rundown of engine identification here.

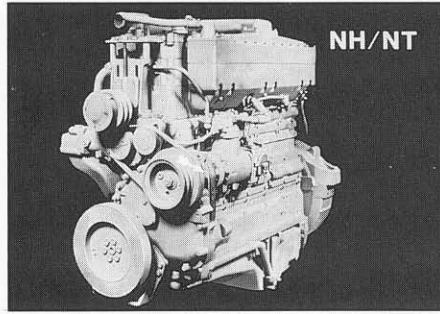


NON-FFC (NFFC) — Pre 1974 engine. Best identified by the round water pump and the tapered nose crankshaft. A single large bolt is used to secure the crank flange.



FFC (Full Flow Cooling) — Best identified by the suitcase-type water pump with idler and the straight nose crankshaft. Six bolts are used to secure the crank pulley and damper.

SMALL CAM — Any NH/NT engine that uses a 2" diameter camshaft. Cam boxes are 3 1/2" tall.

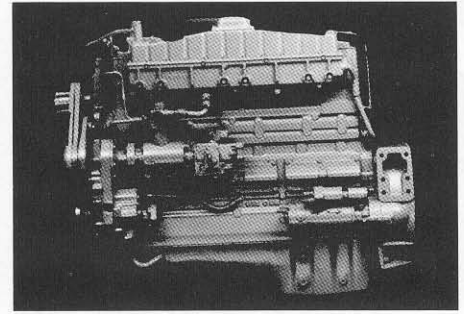


BIG CAM — Any NH/NT engine that uses 2 1/2" diameter camshaft. Cam boxes are 5 1/2" tall. The words **Big Cam** are stamped on the block.

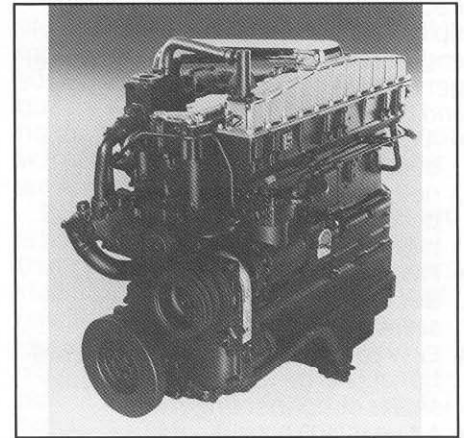
NTA — A Small Cam engine that uses a turbocharger and aftercooler. Engine best identified by the large outboard mounted water pump and idler driven by belts from the crank pulley.

BIG CAM I (BCI) — The original Big Cam engine. Uses a log manifold and flat topped aftercooler.

BIG CAM II (BCII) — A Big Cam engine that uses a pulse manifold, DFC lube system, and a flanged aftercooler.



Full Feature BIG CAM III — A Big Cam engine that uses a pulse manifold, DFC lube system, T-46B or HT3B turbocharger, triple pass aftercooler, stamped steel oil pan and spin-on by pass filter.



SMALL CAM MAGNUM — A Small Cam engine featuring Big Cam technology. Uses AFC fuel pump, HT3B turbocharger, pulse manifold, DFC lube system and triple bypass filter.

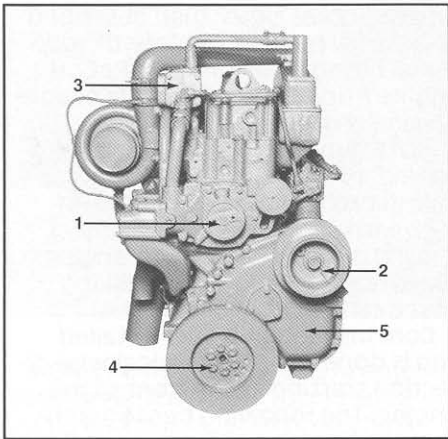
NOTE: Use Bulletin No. 3387300 covering Engine Identification to assist you. It may prove to be a big help.

NOTE: Cores other than described above may be acceptable with additional billing. See Cummins ReCon Engine Price List for schedule of conversion charges.

NOTE: Any Small Cam FFC piston cooled, turbocharged core is acceptable in exchange for a Big Cam engine with additional billing. Any natural gas engine or 80 tilt engine is acceptable with additional billing based on model.

Core inspection is very detailed and is done in a counterclockwise direction starting at the front of the engine. The following photographs show each of the components that are to be checked on a core, but it is essential that you refer to the Core Acceptance Handbook for full details.

Core Acceptance Matrix		
Engine Model	Primary Description	Minimum Core Required
NHC250	Small Cam, NFFC, non piston cooled	Any Small Cam 5 1/2" bore NFFC, non piston cooled core is acceptable.
PT240 FFC	Small Cam, FFC, non piston cooled, turbocharged	Any Small Cam 5 1/2" bore, FFC, non piston cooled and turbocharged core is acceptable.
NTC335 NFFC	Small Cam, NFFC, piston cooled, turbocharged	Any Small Cam 5 1/2" bore, NFFC, piston cooled and turbocharged core is acceptable.
NTC290 SC FFC FD290 FFC NTC335 FFC NTC350 SC FFC MAGNUM 300 MAGNUM 350 MAGNUM 400	Small Cam, FFC, piston cooled and turbocharged	Any Small Cam 5 1/2" bore, FFC, piston cooled and turbocharged core is acceptable
FD290 BCI NTC290 BCI NTC350 BCI NTC400 BCI FD300 BCIII NTC300 BCIII NTC350 BCIII NTC400 BCIII	Big Cam, piston cooled turbocharged	Any Big Cam piston cooled, turbocharged core is acceptable. Non piston cooled blocks billed at bad core price. NOTE: If Big Cam II or III core is received, core credit will be issued in accordance with current guidelines.



Front End Inspection

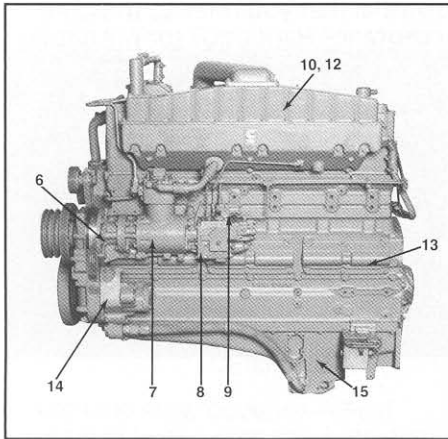
Item Described

1. Water pump
2. Accessory drive pulley
3. Thermostat housing
4. Vibration damper
Core must be complete and compatible with model.
5. Gear cover

Required Condition

Core must be complete with idler. Not cracked, broken, damaged; must match water pump pulley. Compatible with cooler, not cracked, broken or damaged.

Not cracked, broken or damaged.



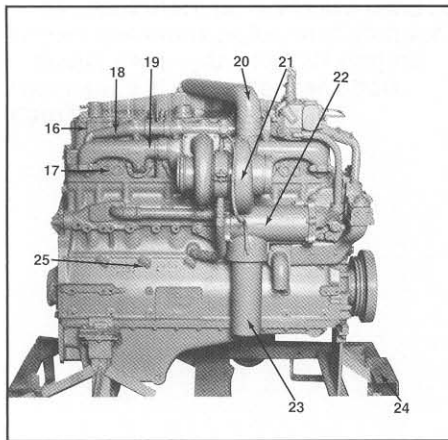
Right Side Inspection

Item Described

6. Accessory drive
7. Air compressor
8. Fuel pump
9. Shutdown valve
10. Intake manifold
11. Aneroid (turbo only)
12. Intercooler
13. Cam followers
14. Lube pump
15. Oil pan and lines

Required Condition

Not cracked, broken, damaged. Not cracked, broken, damaged. Not cracked, broken, damaged. Not cracked, broken, damaged. Compatible with model, not cracked, broken damaged. If required by OEPL. If required by OEPL, not cracked, broken, damaged. Open core acceptance. Not cracked, broken, damaged. Not broken or damaged beyond repair.



Left Side Inspection

Item Described

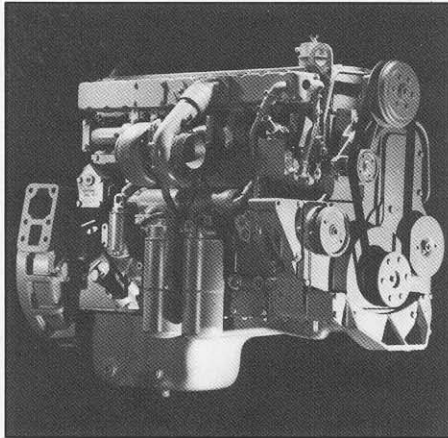
16. Upper rocker and cover
17. Cylinder head
18. Water manifold
19. Exhaust manifold (with turbo only)
20. Intake crossover (with turbo only)
21. Turbocharger
22. Oil cooler housing
23. Lube filter
24. Metal skid
25. Cylinder block

Required Condition

Open core acceptance. Not cracked, broken, damaged. Not cracked, broken, damaged. Not cracked, broken, damaged. Not cracked, broken, damaged. Core must be complete. Not cracked, broken, damaged. Not cracked, broken, damaged. Must be a Cummins metal complete with shipping bar. Not cracked, broken, damaged.

When packing a core for shipment, make sure it is shipped on Cummins metal skids with a shipping bar. Additional charges are required when wooden shipping skids are used or when shipping bar is missing.

L10 ReCon Engines

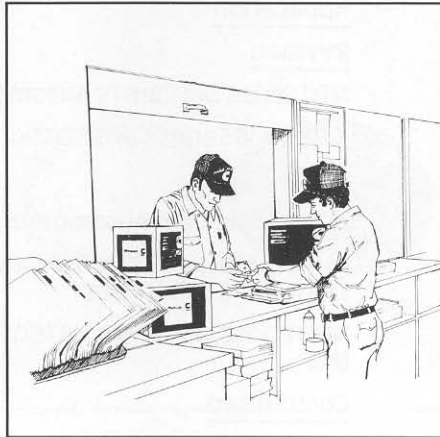


Cummins ReCon introduced non-LFC (low-flow-cooling) L10 Series engines to its product offering in April of 1986. These engines have all the same highlights, warranty and positive features of the Big Cam III and Magnum engines offered by ReCon. Currently L10 engines are available in the following models:

Availability

Model	Horsepower
LTA270RX	270 @ 2100 RPM
LTA270FRX	270 @ 1900 RPM
LTA240RX	240 @ 2100 RPM
LTA240FRX	240 @ 1900 RPM
LT210RX	210 @ 2100 RPM
LTA280RX	280 @ 2100 RPM

Cummins ReCon Your Best Value



Our business is remanufacturing. Our commitment is to quality. We feel that quality gives you the freedom to concentrate on your business — not ours. This commitment is reflected in every phase of the remanufacturing process from simple disassembly to sophisticated remanufacturing techniques.

Keep these points in mind when you think of Cummins ReCon:

- ReCon's continuous breakthroughs in salvage technology improve product quality and reduce your cost.
- Computerized manufacturing systems provide you a new level of consistent quality impossible to achieve using conventional methods.
- ReCon tests its products before they are shipped so you don't test them on the job.
- ReCon is easy to do business with. Core inspection is simple, quick and visual.

Customer Benefits

Cummins ReCon is dedicated to these goals:

- Full product line
- Latest technology
- Premium quality
- Flexibility
- Availability

Our Commitment to these goals provides you with the best available remanufactured products in the aftermarket today. Through dedication to these goals we are able to offer you competitively priced products with a full one year unlimited mileage warranty.

Parts News Updates

What's New For Parts Publications



NT Turbo Familiarization, Bulletin No. 3387343-R,S,T, is designed to familiarize you with turbochargers and nomenclature common to the "NT" (855 cubic inch) engine series. It describes turbo design improvements and brings you up-to-date on the latest advancements made in Cummins and Cummins Holset turbo technologies. This program will also provide you with a basic understanding of turbo-matching . . . a science required for production and Uprating an engine to obtain optimum durability and performance.

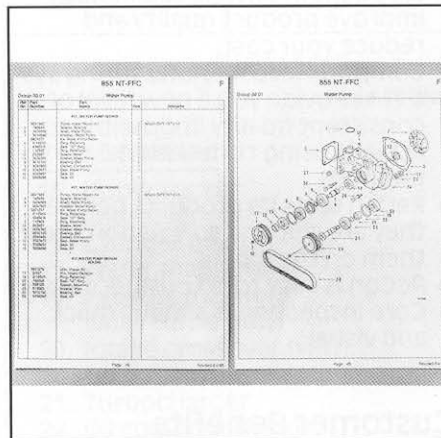


Ten new Parts Catalogs have been released for distribution. The Parts Publications staff is utilizing a new electronic publishing system to release parts information.

The newly released catalogs contain several improvements, including increased content and art for the fuel pump and fuel tubing, a complete part number index and a new generic cover design depicting major market applications and components. The page format has been redesigned and graphics are repeated where multiple text pages are required. This chart lists the newly created Parts Catalogs, please order by bulletin number.

Parts Catalogs

<u>Application</u>	<u>Bulletin No.</u>
<u>Revision</u>	
NTC Series Big Cam IV Automotive	3822017-01
KT/KTA 38 Series Construction	3822102-00
<u>New</u>	
NTC 444 Big Cam Automotive	3822103-00
NHHTC-300, NHHTC-350 with MVT, Big Cam Transit and School Bus	3822029-00
NHHTC-290, 350 and NHHTCC350 Big Cam Bus	3822030-00
<u>Customized</u>	
VT-28-C635 Model 570A Dresser Construction	3822031-00
VTA-28-C635 Model 570A Dresser Construction	3822032-00
KT-1150 TD-25G Crawler Dozer Dresser Construction	3822033-00
KT-1150 TD40 Crawler Dozer Dresser Construction	3822034-00
KT-1150 560B Loader Dresser Construction	3822035-00

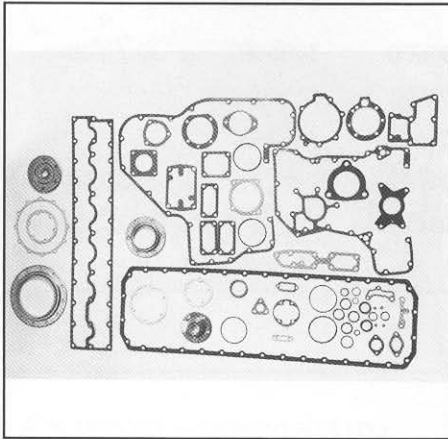


The revised parts catalog page format is being incorporated into the Master Parts Microfiche System. The common format and repeated graphics technique allows one creation process to be used for both publications. Data such as hardware dimensions are noted in the remarks section. A revision to the belt section was published in the first quarter (1986), updates for the water pump and gasket sets were published in the June (1986) Update.

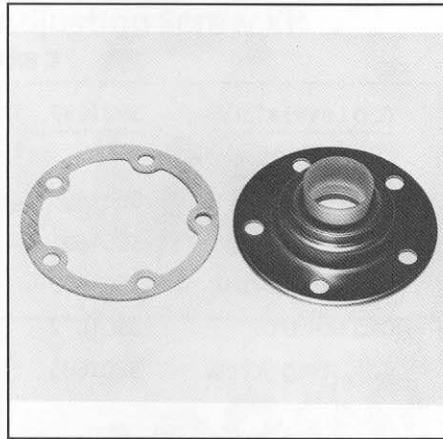
New Products

L10 Lower Engine

Gasket Sets



A new design Lower Engine Gasket Set has been released to service L10 engines. The new Part No. is 3801676. This new gasket set contains the new "dimpled design" oil seals to service the new style accessory drive shaft Part No. 3041043.



The dimpled design or chamfered seals do not require a clamping ring. The dimple design is installed so that the raised metal surface faces the carrier gasket. During capscrew tightening this design causes the oil seal to seat into the carrier gasket. See Service Part Topic 86T1-6 for torque and clamping specifications. A revision to the topic, the seals are now available for service, please use old stock before placing an order for the new Part No. as the old number will not be exchangeable on the E&O program.

Three types of accessory drive arrangements are encountered on L10 models. They are the low mount and high mount gear driven and the belt driven arrangements. Due to the low usage of the gear driven applications the Part No. 3801256 and 3801257 Gasket Sets will no longer be offered for service. If the accessory drive shaft is a **First Design** (reference SPT 85T9-1) it will require the use of Oil Seal Part No. 3801136 or Lower Engine Gasket Set Part No. 3801142. If your application is high or low mount gear driven or is belt driven and is equipped with a **Second Design** accessory drive shaft it will require the use of Oil Seal Part No. 3821625 or Lower Engine Gasket Set Part No. 3801676. The Service Parts Equivalent table will help you choose the correct replacement parts to service your L10 engine.

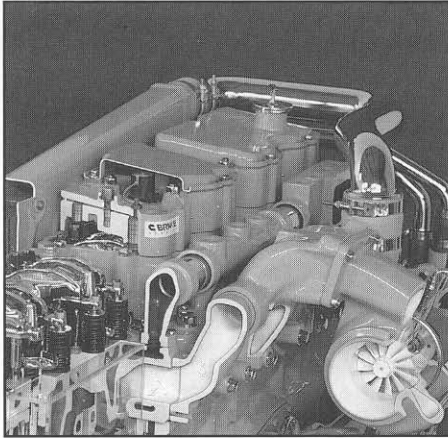
The chart provides a Part No. cross-reference for the original, first design and the replacement, second design accessory drive shafts. There is absolutely no difference between the production seal and the service oil seal. The service seal however, includes an installation tool and a carrier gasket to make up the service seal kit.

L10 Service Part Equivalents for Accessory Drives

Application	Production Seal	Original		Production Seal	Replacement	
		Sleeve, Seal Assy.	Service Seal Kit		Sleeve, Seal Assy.	Service Seal Kit
Alt Drive Shaft Seal	3032008	3031445	3801135	3821384	3049464	3801624
1st Design Shaft Seal	3032009	3031446	3031446			
2nd Design Shaft Seal	3041049	3041804	3801519	3821385	3049465	3801625
Drive Seal W/60 Fan Clutch	3032010	3031447	3801137	3821386	3049464	3801626
Belt Driven Front Crank Seal	3032011	3031448	3801138	3821387	3049467	3801627
Single Lip Rear Crank Seal	3032012	3031449	3801139	3821388	3049468	3801628
Double Lip Rear Crank Seal	3032013	3031450	3801140	3821389	3049469	3801629

New Products

C BRAKE KITS



Since the last issue of the Parts Professional Cummins has released two new top level C BRAKE kit Part Numbers, applicable to Big Cam I, II, III and IV CPL's equipped with ST-50, T-46, T-46B, HT3B and HT4B Turbochargers.

This chart includes the higher level kit Part Numbers and breaks them down for your ordering convenience.

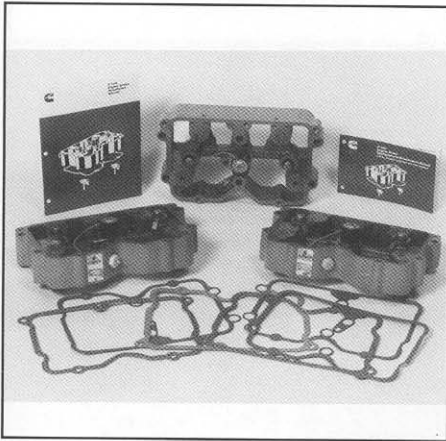
The chart highlights the 4 top level C BRAKE Kits currently available for service.

C BRAKE Kits				
Top Level Kits	<u>3801687</u>	<u>3801736</u>	<u>3801737</u>	<u>3801810</u>
Kit Contents				
Mounting	3801600	3801600	3801600	3801600
Brake Housings	3801601	3801601	3801601	3801601
Engine Control	3801602	3801602	3801602	3801602
Cab Control	3801612	3801612	3801612	3801612
Adjusting Screw	3801603	3801677	3801678	3801809

C BRAKE kits are matched to an engine's **CPL and Turbocharger**. The only difference between the 4 top level kits is the Adjusting Screw Kit. All Adjusting Screw Kits contain a complete engine set, six screws and six nuts.

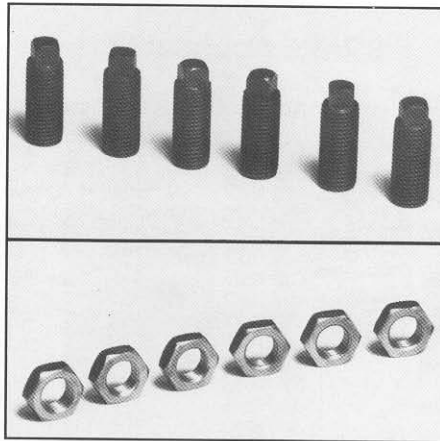
Remember, installing the wrong Adjusting Screw Kit on an engine will result in severe damage to the engine. Cummins continually tests C BRAKES to offer kits for more CPL's. The chart on page 26 provides a complete CPL listing matched to Turbochargers and Engine Model.

Engine Brake Kit



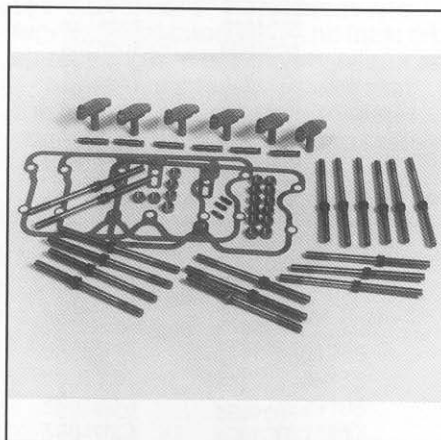
- P/N 3801601 — used in all 4 top level C BRAKE Kits.
 These kits contain three complete housing assemblies, except the adjusting screws. Kits include: solenoid valve, control valve, slave and master piston assemblies and gaskets.

Adjusting Screw Kit



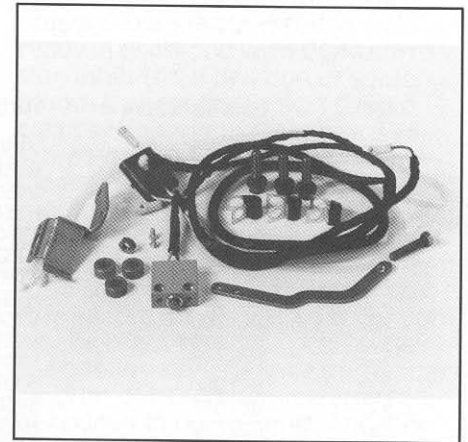
- Adjusting Screws are identified by specific colors, see application chart on the following page.
 These kits are applied by specific turbo model and CPL. The adjusting screw is the only unique part which differs per engine model. It is very important that the correct adjusting screw kit be applied for use on a particular engine model. Remember, adjusting screws vary per Turbo, CPL and Engine Model. An Adjusting Screw Kit contains a complete engine set, (6 screws and 6 nuts).

Brake Mounting Kit



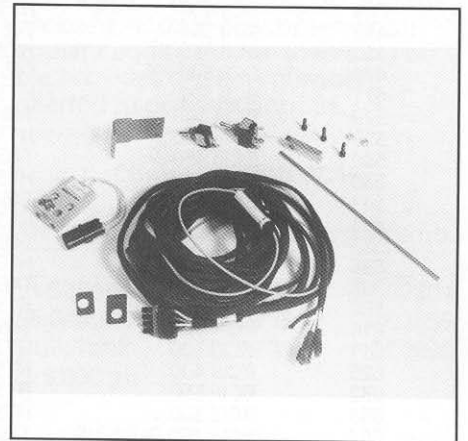
- P/N 3801600 — used in all 4 top level C BRAKE Kits
 This kit is used in all 4 higher level kits. The kit contains the required studs, crossheads and injector screws needed to install the C BRAKE.

Engine Control Kit



- P/N 3801602 — used in all 4 top level C BRAKE Kits
 This kit contains the throttle switch, wiring harness and brackets needed to install the C BRAKE.

Cab Control Kit



- P/N 3801612 — used in all 4 top level C BRAKE Kits
 This kit contains panel switches, wiring harnesses adaptable to any truck, clutch switch and required mounting hardware.
 Again, when ordering a complete C BRAKE Kit, all 5 kits may be ordered with a single top level Part Number, please refer to the tables listed in this article to obtain the correct adjusting screws and top level kit part numbers.

This table provides the adjusting screw
Part Numbers specific to an engines CPL.

C BRAKE Applications

CPL	Engine Model	Turbo	Adj. Screw Kit	Adj. Screw	Adj. Screw Color
222	BCI 250	VT50/T46B	3801677	3045117	Blue
222	BCI 250	HT3B	3801678	3045174	none
223	BCI 290	VT50/T46B	3801677	3045117	Blue
233	BCI 290	HT3B	3801678	3045174	None
266	BCI 350	ST50/T46B	3801603	3047195	Green
266	BCI 350	HT3B	3801677	3045117	Blue
306	BCI 290	ST50/T46B	3801603	3047195	Green
306	BCI 290	HT3B	3801677	3045117	Blue
322	BCI 290	VT50/T46B	3801677	3045117	Blue
322	BCI 290	HT3B	3801678	3045174	None
323	BCI 250	VT50/T46B	3801677	3045117	Blue
323	BCI 250	HT3B	3801678	3045174	None
327	BCI 350	ST50/T46B	3801603	3047195	Green
327	BCI 350	HT3B	3801677	3045117	Blue
332	BCI 290	ST50/T46B	3801603	3047195	Green
332	BCI 290	HT3B	3801677	3045117	Blue
353	BCI 290	T46	3801677	3045117	Blue
353	BCI 290	HT3B	3801678	3045174	None
354	BCI 250	VT50/T46/T46B	3801677	3045117	Blue (CPL-354 WITH VT50/T46/T46B)
354	BCI 250	HT3B	3801678	3045174	None
369	BCI 350	T46	3801603	3047195	Green
369	BCI 350	HT3B	3801677	3045117	Blue
393	BCI 400	ST50	3801809	3046355	Yellow
393	BCI 400	HT3B	3801677	3045117	Blue
433	BCII 300	T46	3801677	3045117	Blue
433	BCII 300	HT3B	3801678	3045174	None
449	BCII 400	ST50	3801809	3046355	Yellow
449	BCII 400	HT3B	3801677	3045117	Blue
450	BCII 350	T46	3801603	3047195	Green
450	BCII 350	HT3B	3801677	3045117	Blue
471	BCII 300	T46	3801677	3045117	Blue
471	BCII 300	HT3B	3801678	3045174	None
529	BCIII 300	T46	3801677	3045117	Blue (CPL-529) @ T46
529	BCIII 300	HT3B	3801678	3045174	None
530	BCIII 350	T46B	3801603	3047195	Green
530	BCIII 350	HT3B	3801677	3045117	Blue
531	BCIII 400	T46B	3801809	3046355	Yellow
531	BCIII 400	HT3B	3801677	3045117	Blue
585	BCIII 300	T46B	3801677	3045117	Blue
585	BCIII 300	HT3B	3801678	3045174	None
588	BCIII 400	T46B	3801809	3046355	Yellow
588	BCIII 400	HT3B	3801677	3045117	Blue
611	BCIII 300	T46B	3801603	3047195	Green
611	BCIII 300	HT3B	3801677	3045117	Blue
625	BCIII 400	HT3B	3801677	3045117	Blue
632	BCIII 350	HT3B	3801677	3045117	Blue
633	BCIII 300	HT3B	3801678	3045174	None
642	BCIV 400 PULL-UP	T46B/HT4B	3801603	3047195	Green
674	BCIV 300	HT3B	3801603	3047195	Green
675	BCIV 350	HT3B	3801603	3047195	Green
676	BCIV 400	HT4B	3801603	3047195	Green
718	BCIV 300 FLEET	HT3B	3801603	3047195	Green
743	BCIII 300	HT3B	3801678	3045174	None
744	BCIII 350	HT3B	3801677	3045117	Blue
745	BCIII 400	HT3B	3801677	3045117	Blue
749	BCIV 315	HT3B	3801603	3047195	Green
769	BCIII 350	HT3B	3801677	3045117	Blue
811	BCIV 300	HT3B	3801603	3047195	Green
812	BCIV 315	HT3B	3801603	3047195	Green
813	BCIV 350	HT3B	3801603	3047195	Green
814	BCIV 400	HT4B	3801603	3047195	Green

Product Consolidation

K/KV12 & 16 Upper and Lower Engine Gasket Sets

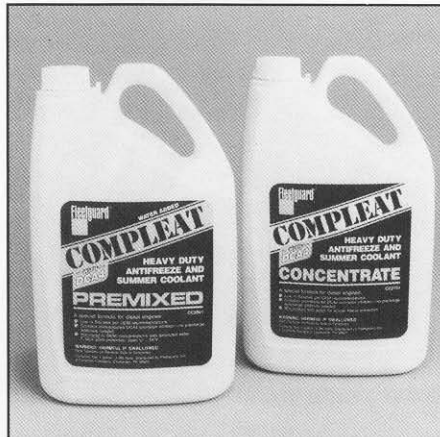


The upper and lower engine gasket sets have been completely restructured to improve the content, quality and packaging. As you can see from the photograph the package is labeled using the new "Bar Coding" system, listing each item separately.

The consolidation is to the customer's advantage. This consolidation ensures that you get the right number of parts to properly service your engine. It was a customer who alerted us to the fact that too many or not enough gaskets were being offered in these sets.

To consolidate KV12 and 16 Upper and Lower Gasket Sets all part numbers required were examined by Parts Engineering. All gaskets, seals and o-rings were examined. From the examination a conclusion was made to restructure the kit contents.

Fleetguard



New to Fleetguard's total system approach for coolant treatment is **Compleat with DCA4**, an antifreeze and summer coolant low silicate formula.

Compleat is an ideal product for Cummins and other heavy duty engines because it contains an ideal level of DCA 4 corrosion inhibitor, the inhibitor recommended by Cummins and other OEM's.

The product is available in a concentrated formulation so that the end user can utilize the local water supply. A premixed formula is also available it contains 50% deionized water. The pre-mix is ideal for customers in "hard" water areas with high mineral content in the local tap water supply. It is also very useful as a "top off" product to assure that the balance of antifreeze to water stays constant in the cooling system.

Fleetguard recommends that customers drain existing anti-freeze before using Compleat with DCA4, unless a low silicate formula is already in use along with DCA4 corrosion inhibitor. If gelation or solder bloom is suspected, users should clean systems with Fleetguard Restore Heavy Duty Cooling System Cleaner before using Compleat.

Compleat is different from existing commercial antifreezes since it contains an ideal amount of DCA4 chemical, a corrosion inhibitor especially formulated for diesels. Users of Compleat will not need to "precharge" the cooling system since the proper amount of DCA4 chemical is already contained in the formula. Another advantage is that, by continuing to use Compleat as a fill-up throughout the year, the DCA4-to-coolant ratio of new coolant will remain constant. Only a service water filter, such as the WF2071, or liquid additive in the proper ratio (one DCA unit to 4 gallons of coolant capacity) needs to be added at oil change intervals.

Compleat is priced competitively with low silicate antifreezes and the proper amounts of supplemental coolant additives. The following table provides the part numbers needed to order quantities.

Compleat With DCA4

<u>Quantity</u>	<u>Concentrate</u>	<u>Premix</u>
1 Gallon	CC2701	CC2801
55 Gallons	CC2755	CC2855
Bulk Tank (3-5,000 gl)	CC2799	CC2899

For a Compleat DCA4 brochure or order Bulletin No. 3300301 from Fleetguard Literature Services at P.O. Box 162409, Irving, TX 75016.

Upper and Lower Gasket Sets

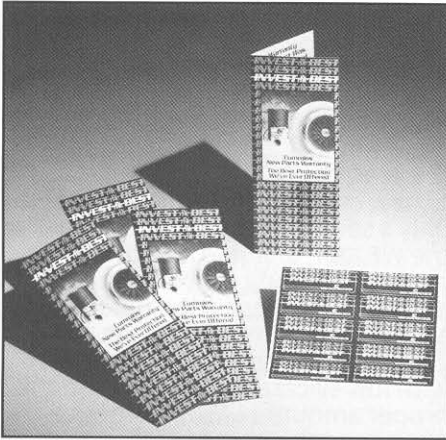
<u>Model</u>	<u>Description</u>	<u>New P/N</u>	<u>Prior P/N</u>
K/KV 12 (38L)	Lower Set	3801719	3801265
K/KV 12 (38L)	Upper Set	3801720	3006132
K/KV 16 (50L)	Lower Set	3801717	3029188
K/KV 16 (50L)	Upper Set	3801718	3015447

The new packaging and labeling techniques are designed to provide 100% accuracy of your shipment. The new packaging design also ensures that the Crankshaft Oil Seals are present in the lower sets to meet the product offering guidelines.

Parts Marketing

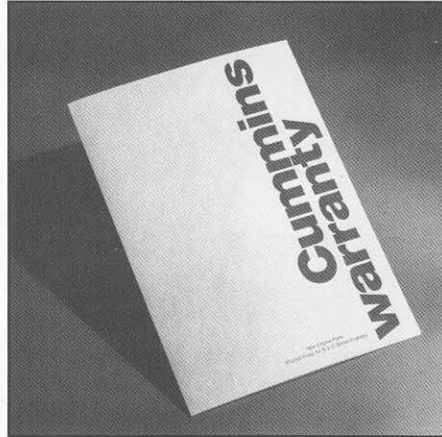
Invest In The Best

Cummins has developed a comprehensive parts theme, "Invest In The Best." We plan to use this slogan to qualify our commitment to our customers. To support the new theme we've developed two brochures to explain the new Cummins parts warranty and Premium Plus cylinder kits. The brochures are accompanied by a poster and a new style literature rack to help you share the message throughout your display areas.



Extra copies may be obtained through your local Cummins Distributor.

- Warranty Brochure — 3385399
- Warranty Poster — 3385407
- Premium Plus Brochure — 3385326-A
- Premium Plus Poster — 3385326-B
- Literature Rack — 3385407



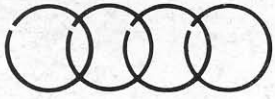
The new Cummins Parts Warranty Certificates are now available, for extra copies order;

- New Parts Warranty Certificate — 3381213

The Cummins Parts Warranty features an on-the-spot clause. This means, Cummins has authorized its Full Service Dealers and Distributors to make on-the-spot decisions regarding failures. On-site analysis means qualifying repairs will be made under warranty, eliminating the need for the customer to pay up front.

The new Cummins Parts Warranty offers complete coverage. Heavy duty engine parts are covered for 1 yr/100,000 miles/160,935KM/3,600 Hr Base Coverage. All major components are covered for 3 yr/300,000 miles/482,805KM/10,800 hours. Cummins heavy duty engines are built with rugged, long-wearing parts to provide years of reliable service.

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