Air Compressor Slow Air Build – Cummins ISB6.7 2150 & 2250

Tech Tip #17-0604

Cleaning Carbon Build-Up from Air Compressor & System

Cummins QuickServe has information regarding “Air Compressor Carbon Buildup.” It shows how to check to see if it is excessive, as well as a cleaning method. Referring to Section 12 of your Cummins Service Manual, you will find procedure #012-003 (below) for checking excessive build-up. It also displays how to clean the system using Cummins Tool #2892280, which we also attached information on.

THANK YOU TO KEN McKNIGHT FROM MONROE WOODBURY FOR POINTING THIS OUT!

ALL of our Service Updates can be found on the New York Bus Sales website
Or at the New York Head Mechanic website

CONTACT OUR SERVICE OR PARTS DEPARTMENT WITH ANY QUESTIONS

SERVICE

Chittenango: 800-962-5768
Daryl Wallace or Brian Lamaitis

Rochester: 800-463-3232
Dave Schaub
Albany: 866-867-1100
Ben Reiling
Warranty: 800-962-5768
Morgan Jenkins
Customer Service Representatives

Eastern Region:
Gary Bigness
845-500-3707

Central Region:
JJ Richmond
315-559-3999

Western Region:
Mike Panzica
716-908-3186

PARTS

Director of Parts
Jim Hogan
jhogan@newyorkbussales.com
607-227-5794

Chittenango: 800-962-5768
Gari McQuade
gmcquade@newyorkbussales.com
Bill Cox
bcox@newyorkbussales.com
John Lewin
jlewin@newyorkbussales.com
Dave Grant
dgrant@newyorkbussales.com

Albany: 866-867-1100
Sean Conway
sconway@newyorkbussales.com
Pat Murphy
pmurphy@newyorkbussales.com

Rochester: 800-463-3232
Dave Cook
dcook@newyorkbussales.com
Steve Hibbard
shibbard@newyorkbussales.com

ALL of our Service Updates can be found on the New York Bus Sales website
Or at the New York Head Mechanic website

012-003 Air Compressor Carbon Buildup

Select Service Tools

Recommended Cummins® Service Tools

- Air compressor cleaning kit, Part Number 2892280.

Additional Service Items

- No additional service items required.

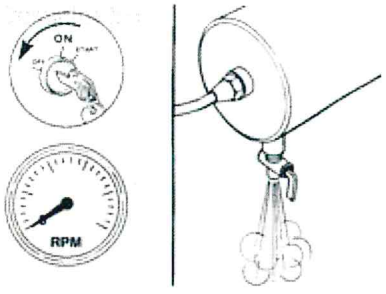
Initial Check

WARNING

Wear appropriate eye and face protection when using compressed air. Flying debris and dirt can cause bodily injury.

Shut the engine OFF.

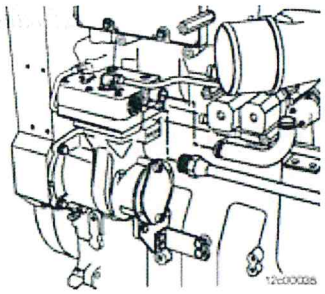
Open the drain cock on the wet tank to release the compressed air from the system.



WARNING

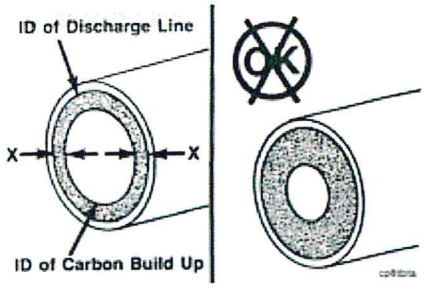
Air discharge lines can be very hot. Be sure the lines are cool before handling to reduce the possibility of personal injury.

Remove the air inlet and outlet connections from the air compressor.



Measure the total carbon buildup thickness inside the air discharge line as shown.

NOTE: The carbon buildup thickness must not exceed 1.6 mm [0.06 in].

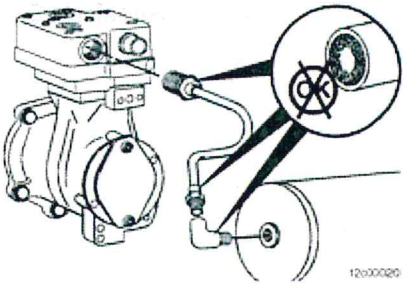


WARNING

The air discharge line must be capable of withstanding extreme heat and pressure to prevent the possibility of personal injury and property damage. See equipment manufacturer service information for specifications.

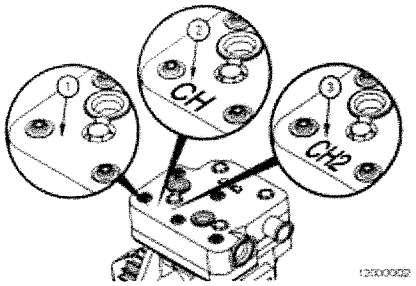
NOTE: If the total carbon deposit thickness exceeds specification, remove and clean, or replace, the air discharge line. See equipment manufacturer service information for the manufacturer's specifications.

Continue to check for carbon buildup in the air discharge line connections up to the first connection or wet tank.



Clean or replace any lines and fittings with carbon buildup thicker than 1.6 mm [0.06 in]. See equipment manufacturer service information for cleaning or replacement instructions.		

Preparatory Steps

Check the marking on the air compressor head before cleaning or replacing the cylinder head. Repair Direction: 1. No marking: Perform On-Engine Repair. 2. CH marking: Perform Off-Engine Repair. 3. CH2 marking: Replace the air compressor cylinder head. Refer to Procedure 012-007 in Section 12.		

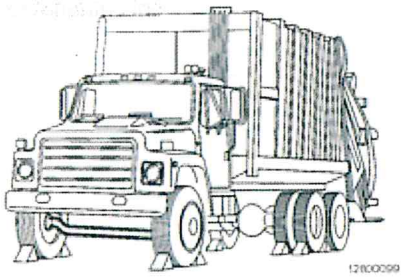
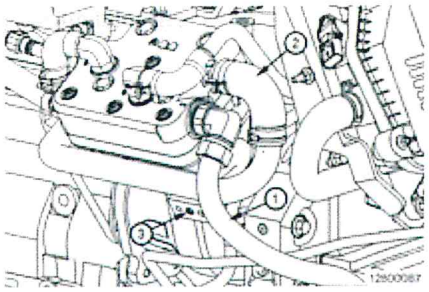
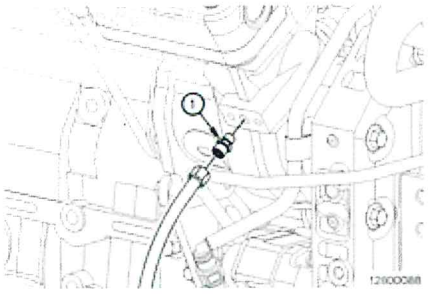
Clean

On-Engine Repair

Use the Air Compressor Cleaning Kit, Part Number 2892280, to clean and remove internal carbon deposits and other foreign material from the air compressor cylinder head.

The items below are **not** included in the air compressor cleaning kit, Part Number 2892280, but are required to perform the repair.

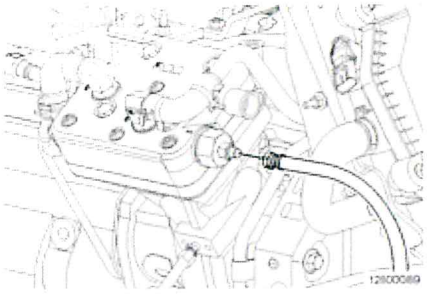
- Regulated shop air 621 kPa [90 psi]
- Automatic transmission fliud (ATF)
- Shop rags, and a 19 liter [5 gal] bucket
- INSITE™ electronic service tool.

Park vehicle on a level surface and in an area where it is safe to idle for an extended period of time. Chock the vehicle wheels, and completely drain the vehicle air system.		
Remove the air compressor discharge line (1), air compressor intake line (2), and air governor signal line (3) at the air compressor.		
Install and tighten the M10 connector (1) into the unloader port of the air compressor housing. Install and tighten the unloader control valve hose to the M10 connector installed into the air compressor housing. **NOTE: Some air compressors have two unloader ports in the air compressor housing. Make sure that one of the ports is plugged with an appropriate pipe plug.**		

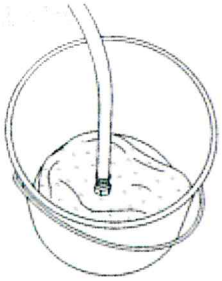
CAUTION

While cleaning the air compressor cylinder head, do not install the original intake or discharge plumbing. Only use the intake and discharge lines and fitting supplied with the air compressor cleaning kit during this procedure.

Install the discharge line and clamp from kit Part Number 2892280 onto the discharge port fitting on the air compressor cylinder head.



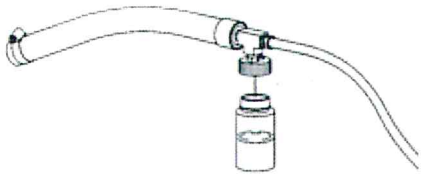
Place the discharge line into a 19 liter [5 gal] bucket and cover with several oil absorption pads.



Pour 89 ml [3 fluid ounces] of automatic transmission fluid into the dispensing bottle.

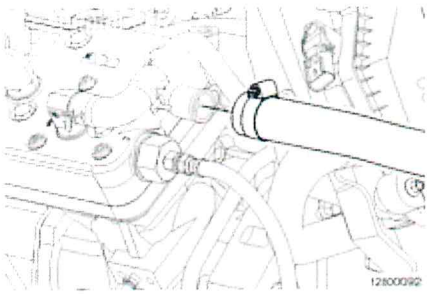
Install the dispensing bottle onto the dispensing hose assembly.

NOTE: For best results, use Dexron III automatic transmission fluid or equivalent.



Install and tighten the dispensing hose assembly and clamp to the intake port of the air compressor cylinder head.

Connect regulated shop air at 621 kPa [90 psi] to the air compressor cleaner.

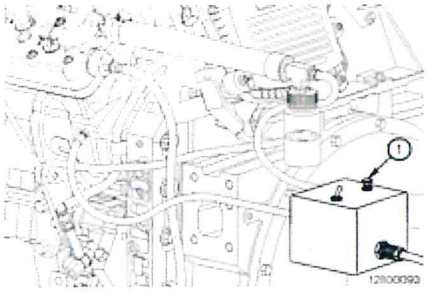


NOTE: The next three steps will happen quickly. For best results, read the remaining instructions prior to continuing with the cleaning procedure. Do not cycle the unloader until all 89 ml [3 fl oz] of automatic transmission fluid have been applied.

Start the engine, and let it idle for 1 minute.

The air compressor may draw in the automatic transmission fluid naturally (no forced air applied). If the fluid is **not** pulled from the dispensing bottle, press and hold the 'Clean' button (1) on the air compressor cleaner until all 89 ml [3 fluid ounces] of automatic transmission fluid have been dispensed.

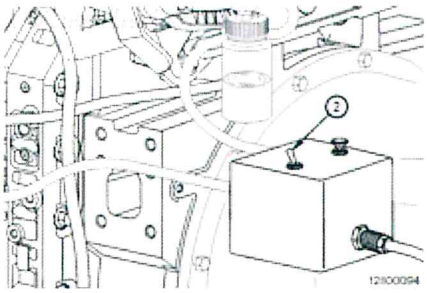
Shut the engine OFF.



Pour 89 ml [3 fl oz] of automatic transmission fluid into the dispensing bottle, and install back onto the dispensing hose assembly.

Toggle the 'Unloader' switch (2) on to apply air pressure to the unloader signal port.

Do **not** relieve pressure at the unloader valve at this time.

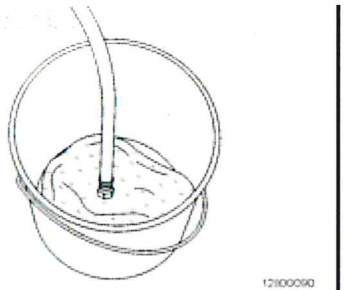


Start the engine.

Immediately depress and hold the 'Clean' button on the air compressor cleaner until all 89 ml [3 fl oz] of automatic transmission fluid have been dispensed.

Continue to hold the 'Clean' button down for an additional 10 to 20 seconds.

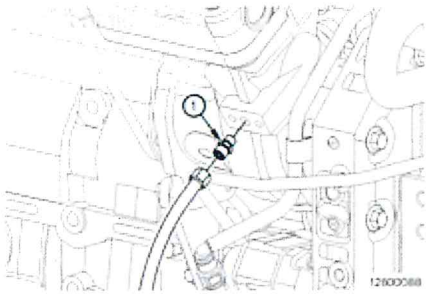
NOTE: A heavy mist of automatic transmission fluid will be coming from the discharge hose.



Shut the engine OFF.

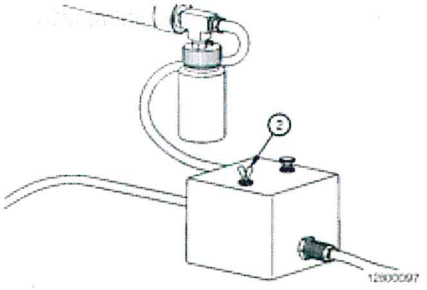
Remove the discharge hose assembly from the air compressor cylinder head intake port.

Start the engine.



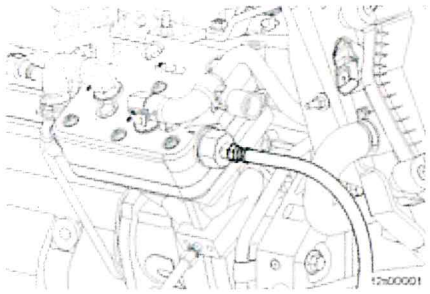
Continuously cycle the 'Unloader' switch on the air compressor cleaner for up to 25 cycles.

NOTE: When the air compressor cylinder head has been adequately cleaned, there should be an audible difference between loaded and unloaded states of the air compressor. Installation of a 1.5 meter [5 ft] length of rubber hose over the intake port may help to audibly identify when the unloader is functioning properly.



Verify constant suction at the air compressor cylinder head intake port when the air compressor is loaded (Unloader switch OFF), and fluctuating

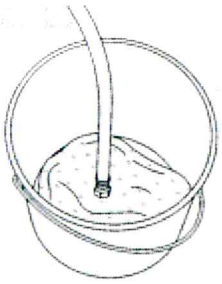
air flow when unloaded (Unloader switch ON). If constant suction is **not** present in a loaded state, repeat the cleaning process one additional time.



CAUTION

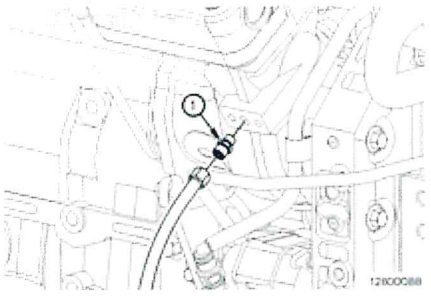
Operating the air compressor with no filter in place at the intake port may allow dust or debris to enter the air compressor. A rubber hose should be placed over the intake port and routed to an area free of airborne dust and debris.

With the discharge hose still installed, relieve the pressure at the unloader port (switch OFF), and operate the engine at high idle for 3 to 5 minutes to remove any excess automatic transmission fluid.



Allow engine to return to low idle. Shut the engine OFF.

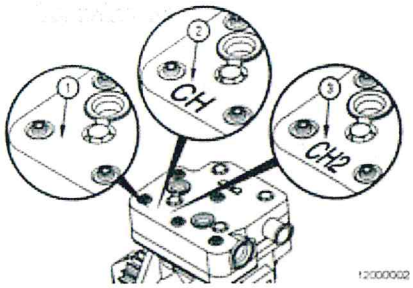
Remove the unloader control valve hose and M10 connector (1).



Use an engraving pen and mark the letters CH below the head bolt as shown.

Perform the Air Compressor Diagnostic Test to verify the air compressor is functioning properly. Refer to Procedure 012-014 in Section 12.

If the air compressor does **not** function properly, perform the Off-Engine Repair.



Off-Engine Repair

WARNING

Use skin and eye protection when handling caustic solutions to reduce the possibility of personal injury.

WARNING

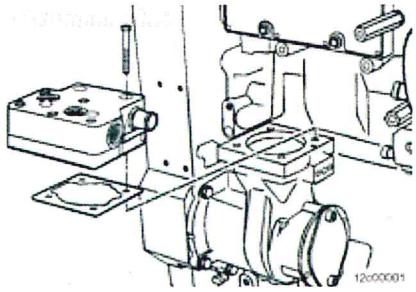
Wear appropriate eye and face protection when using compressed air. Flying debris and dirt can cause personal injury.

CAUTION

Do not use a sharp object to remove carbon. The sealing surfaces can be damaged.

CAUTION

Avoid getting debris and solvents into the clearance between the piston and bore.



CAUTION

Avoid the use of abrasive products similar to Scotch Brite™ because any abrasive grit left after cleaning will shorten the life of the air compressor.

Remove the compressor head and valve assembly. Refer to Procedure 012-007 in Section 12.

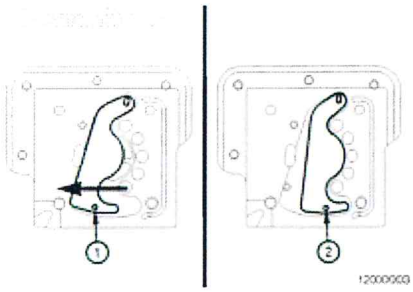
Remove carbon from the compressor head and valve assembly components with a non-abrasive solvent and a non-metallic brush.

NOTE: Using an abrasive solvent like carburetor cleaner can lead to further lubrication loss in the air compressor head.

Blow out passages with compressed air.

Verify the unloader slider plate is fully closed when at rest.

Remove the unloader slider plate and verify proper unloader piston travel. Use a stiff wood handle or equivalent non-abrasive device to move the unloader piston by pushing back on the unloader slider plate guide pin in the direction of arrow as indicated. Be careful **not** to damage the aluminum surface of the head or drop debris into the open slot in which the guide pin travels.



NOTE: When released, the unloader piston should return to the loaded position (closed) with a quick, smooth motion and audible snap.

If the unloader piston does **not** return completely to the loaded position with an

audible snap; fill the open slot between the unloader slider plate guide pin and the closed position of the unloader position with automatic transmission fluid.

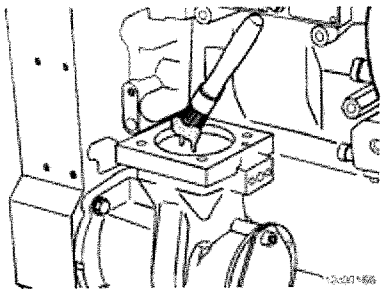
Actuate the unloader back and forth for three periods of 10 seconds. If the unloader is not free after 10 seconds, fill the open slot again with automatic transmission fluid each time until the piston is free and returns to the loaded position (closed) with a quick, smooth motion and audible snap.

If the unloader piston does **not** return to the loaded position with a quick smooth motion and an audible snap when released after performing the steps above, replace the cylinder head.

Clean the compressor cylinder.

Rotate the crankshaft until the piston is at the top of the cylinder bore.

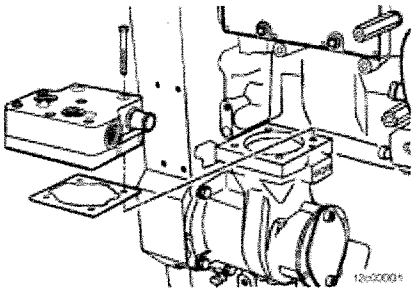
Remove any accumulated carbon and varnish by careful scraping and light application of solvents.

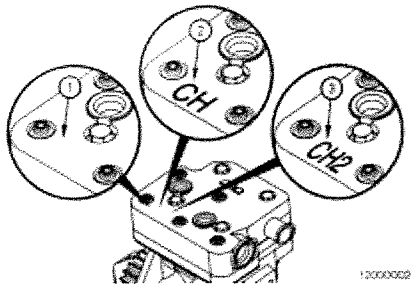


Using an engraving pen, mark the number 2 next to the CH marking already engraved on the cylinder head.

Install the compressor head and valve assembly.

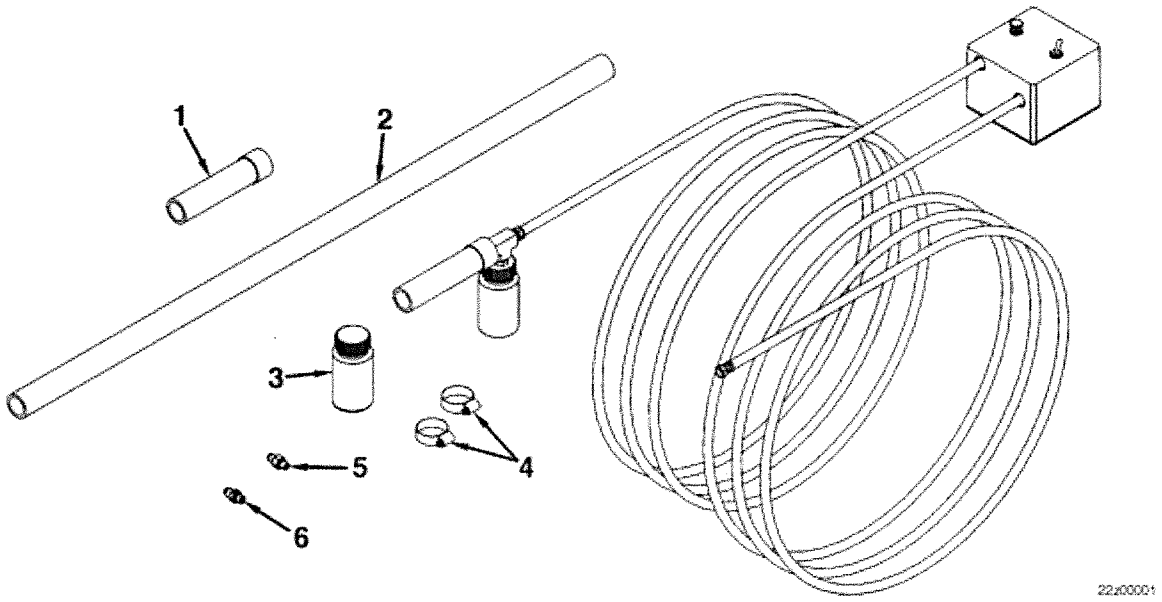
Install the compressor head and valve assembly. Refer to Procedure 012-007 in Section 12.



Perform the Air Compressor Diagnostic Test to verify the air compressor is functioning properly. Refer to Procedure 012-014 in Section 12. If the air compressor does **not** function properly, replace the air compressor cylinder head. Refer to Procedure 012-007 in Section 12.		

Last Modified: 04-Nov-2016

Tool 2892280
Air Compressor Cleaning Kit
Engine Family: WABCO Air Compressor Cylinder Heads



The kit is used to clean and remove internal carbon deposists and other foreign material from WABCO™ air compressor cylinder heads.

Table 1, Air Compressor Cleaning Kit, Part Number 2892280

Item Number	Part Number	Description	Quantity
2	2892284	Discharge Hose, 1.5 meter [5 ft]	1
4	3895734	Clamp	2
5	2892251	Connector, M10	1
6	2892412	Connector, 1/8 inch NPT	1

Table 2, Air Compressor Cleaning Kit, Part Number 2892280 (Available Separately)		
Item Number	**Part Number**	**Description**
1	2892283	Dispensing Hose Assembly
2	2892282	Replacement Dispensing Bottle

Last Modified: 30-Jan-2013