

Instruction Guide

L31232 Rev. 6/15

Haldex

GM15284284 (KN7700CX) Air Compressor
Cylinder Head Replacement Procedure Kit
P/N: KNT17500X

KNT17500X Kit Contents

Qty	Description
1	Cylinder Head Assembly
1	Cylinder Head Gasket
4	Head Bolts
1	Control PTC Fitting O-ring
2	Coolant STC Fitting O-ring
2	Air Supply & Discharge STF Fitting O-ring

Tools Required

24mm Open End Wrench
32mm Open End Wrench
17mm Open End Wrench
M13 Socket, 3/8" Drive
M10 Socket, 3/8" Drive
3/8" Drive Ratchet
Eaton/Aeroquip Disconnect Tools (see below)
15/16" Socket, 3/8" Drive
7/8" Open End Wrench
Screwdriver
Gasket Scraper
5 – 50 lb-ft Torque Wrench, 3/8" Drive
Bench Vise
15W40 Oil
Silicone Grease

Warning

When working on air system components the following precautions should be observed.

1. Turn engine off when working on a vehicle. Always block the vehicle wheels to prevent a fore or aft roll. Bleeding off system pressure may cause the vehicle to roll. Keep hands away from brake chamber push rods and brake adjusters; they may apply as system pressure drops.
2. Never connect or disconnect a hose or line containing air pressure. It may whip as air escapes. Never remove a component or a pipe plug unless you are certain all system air pressure has been exhausted.
3. Never exceed recommended working air pressure and always wear safety glasses when working with air pressure. Never look directly into component ports or direct a pressurized air flow at anyone.
4. Never attempt to disassemble a component until you have read and understood all recommended procedures. Some components contain powerful springs and injury can result if not properly disassembled. Use only proper tools and observe all precautions pertaining to the use of those tools.

On Vehicle Procedure

Cylinder Head Removal

1. Bleed the air system to 0 psig.
2. Drain the coolant to a level below the bottom of the air compressor cylinder head.
3. Disconnect the air and coolant "S-T-C" lines from the mating fittings on the compressor. (see figure 1)

NOTE: Eaton/Aeroquip Disconnect tools required:

- a. Air Discharge Line (-10) P/N: FF90213-10
- b. Air Supply Line (-12) P/N: FF90213-12
- c. Coolant Lines (-8) P/N: FF90213-08

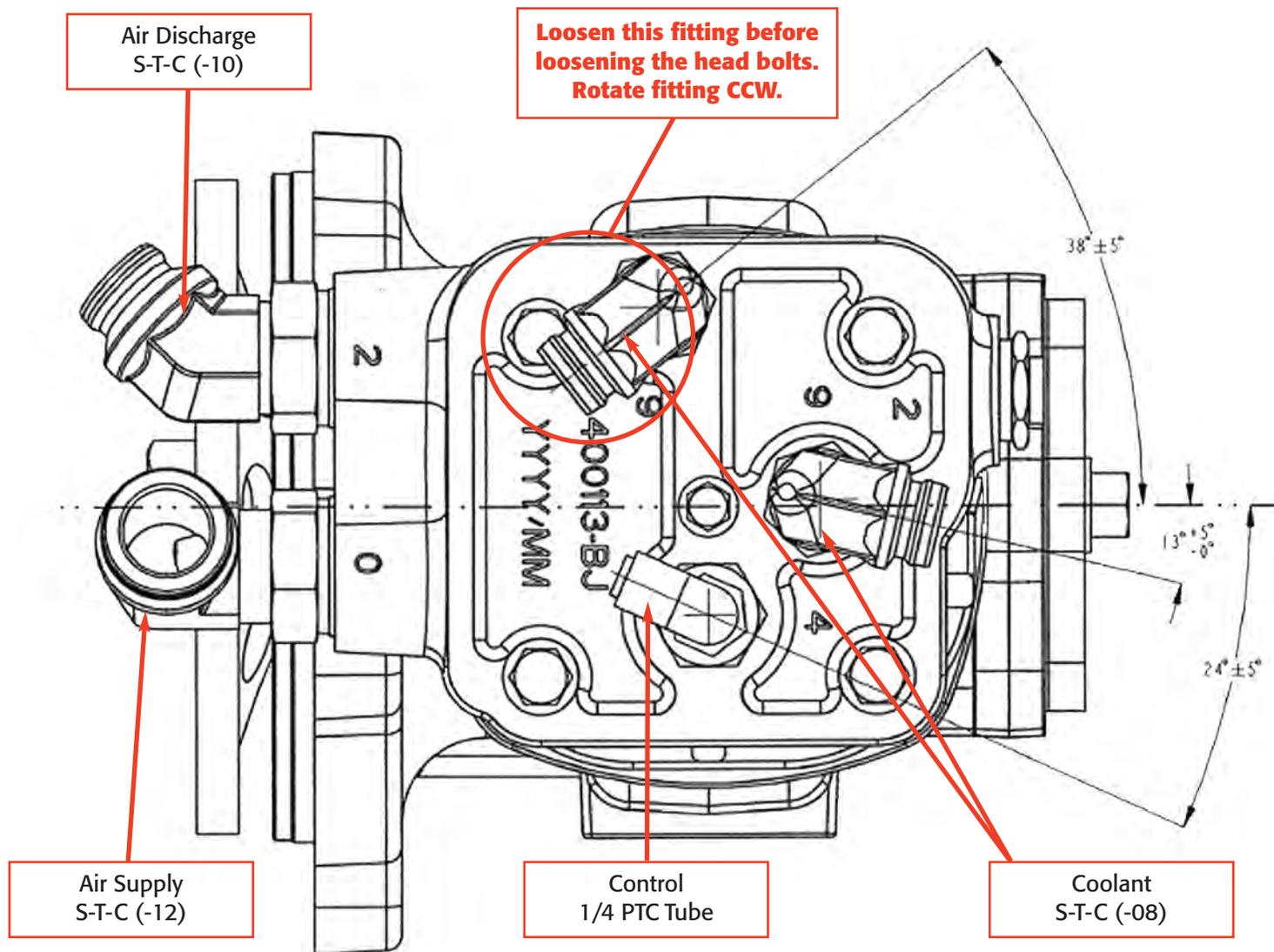


- STC -06 - FF90213-06
- STC -08 - FF90213-08
- STC -10 - FF90213-10
- STC -12 - FF90213-12

On Vehicle Procedure

Cylinder Head Removal (continued)

Figure 1



4. Disconnect the 1/4" Control tubing from the 90° P-T-C fitting. (see figure 1)
5. Loosen the locking nut of the coolant fitting closest to the engine and rotate fitting counter clock wise to access the top left head bolt (24mm wrench). (see figure 1)
6. Loosen and remove the four head bolts (M13 socket, 3/8 inch drive ratchet).
7. Note the orientation of the cylinder head ports to the engine. Remove the cylinder head/reed plate assembly from the cylinder block. If necessary, insert a lever arm between the reed plate and cylinder block.
8. Remove the gasket on top of the cylinder block and discard. If necessary, scrape the gasket from the cylinder block. Use special care to not damage the top of the cylinder block.

Cylinder Block Inspection

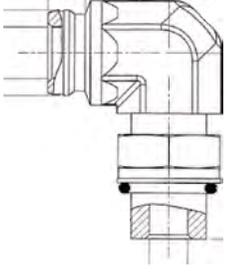
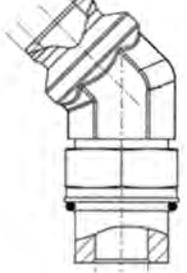
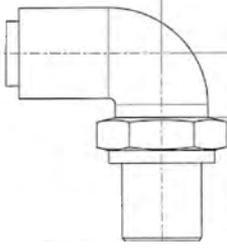
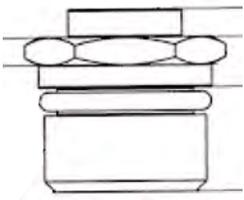
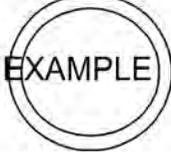
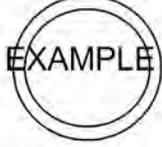
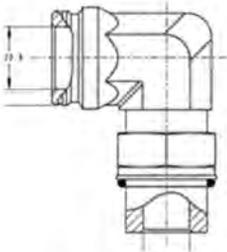
Visually inspect the cylinder bore & piston for damage or debris.

Remove and replace entire compressor if bore and/or piston appear damaged.

Cylinder Head Fitting Exchange

1. Install removed cylinder head assembly in bench vise.
2. Note location and orientation of fittings (see figure 1).
3. Loosen and remove Coolant Port fittings (24mm wrench).
4. Loosen and remove Air Discharge fitting (32mm wrench).
5. Loosen and remove Air Supply fitting (32mm wrench).
6. Hold the Control Cap with a 24mm wrench, Loosen the 90° P-T-C Control (17mm wrench).
7. Remove the o-rings from the fittings. Retrieve the new o-rings from the kit. Match the new o-rings to the appropriate fitting and o-ring chart shown below.

NOTE: Fittings are not included.

Coolant Fitting (2 ea)	Air Discharge Fitting	Control Fitting	Safety Valve
			
			
15.0 ID x 2.0 c.s.	23.5 ID x 2.95 c.s.	9.0 ID x 2.0 c.s.	Ø17.12 ID x 2.62 c.s.
			
	Air Supply Fitting		

NOTE: All O-rings must be lubricated with silicone grease by the installer.

9. Lubricate O-rings with silicone grease and install the new O-rings on each fitting.
10. Retrieve the new cylinder head assembly and install in bench vise.
11. Install the fittings to their original location and orientation. (Figure 2)
 - a. Fitting Torques:
 - i. Coolant:50-60 Nm (37-44 lb-ft)
 - ii. Air Discharge & Air Supply:130-151 Nm (96-111 lb-ft)
 - iii. Control:20-26 Nm (15-19 lb-ft)

Cylinder Head Installation

1. Insure cylinder bore, piston and top of the cylinder block are clean and dry.
2. Retrieve a new cylinder head gasket and head bolts.
3. Oil the threads of the head bolts with 15W40 Oil.
4. Install two head bolts into the new cylinder head assembly.
5. Install the cylinder head gasket onto the two head bolts until it is flush with the reed plate.
6. While holding the gasket against the cylinder head assembly and the two bolts against the cylinder head, orient the cylinder head/head gasket assembly onto the cylinder block as the original. Align the two head bolts in the thread holes of the cylinder block.

Cylinder Head Installation (Continued)

7. Hand tighten the two head bolts.
8. Install the two remaining head bolts and hand tighten.
9. Torque the 4 head bolts (M13 socket) to 34-40 Nm (25-30 lb-ft) in a cross pattern. (see figure 3)
10. Torque the center head bolt to 13-16 Nm (10-12 lb-ft). (see figure 3)
11. Rotate the coolant fitting closest to the engine to the proper location, $38^\circ \pm 5^\circ$ (see figure 2).
12. Tighten the coolant fitting nut to 50-60 Nm (37-44 lb-ft).
13. Reconnect the air and coolant S-T-C lines to the appropriate cylinder head fittings.
14. Reconnect the $\frac{1}{4}$ " tubing to the 90° P-T-C fitting.
15. Refill the vehicle coolant system.

Figure 2

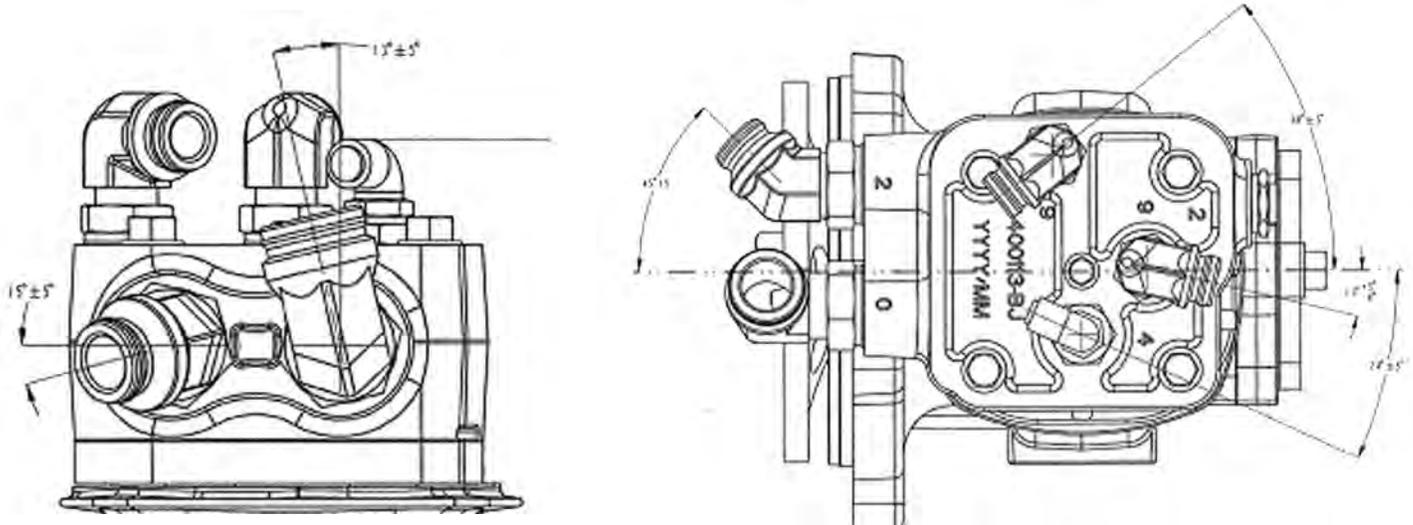
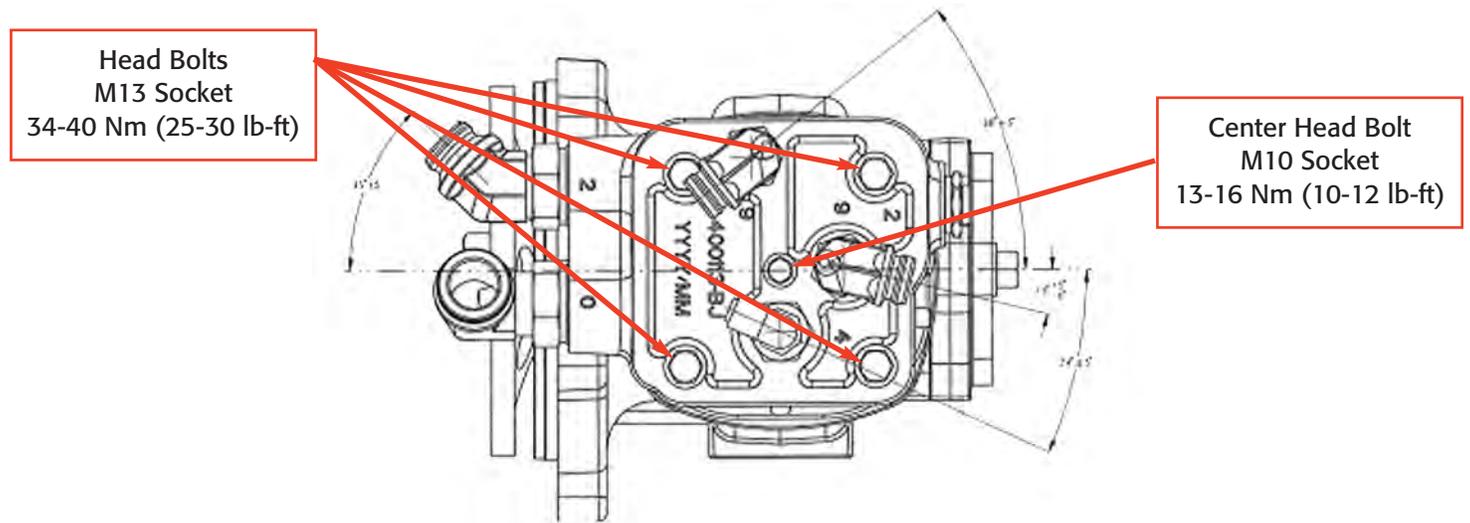


Figure 3



Operational Checks

After repairs are completed and all of the air and coolant lines are properly connected, start the engine. Shut the engine off after the system pressure has reached its cut-out pressure. (This is typically noted by an audible purge at the air dryer.) Check for air leaks at the Control and Air Discharge of the air compressor. Check for coolant leaks at the cylinder head assembly and fittings. Correct any leakage problems.

Check for possible problems with the air dryer purge (check for flow at air dryer purge after starting the engine and while building system pressure). If there is air flow at the air dryer purge, the air dryer needs to be repaired or replaced.