

# Piston Assembly Service Kit for Single Cylinder 85mm Dia. Piston 4089209

for Cummins C, ISC, ISL, L, M, ISM, N, K, ISX and Signature Engines

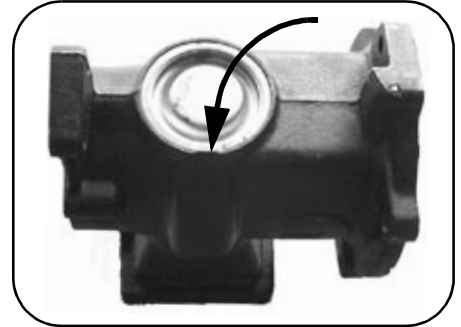
Kit contains a piston with all rings, piston pin, and retainers. Also included, for field service, are sump access plug, head bolts, and head and cover gaskets, since

**the head must be removed and replaced to service the piston.** See page three.

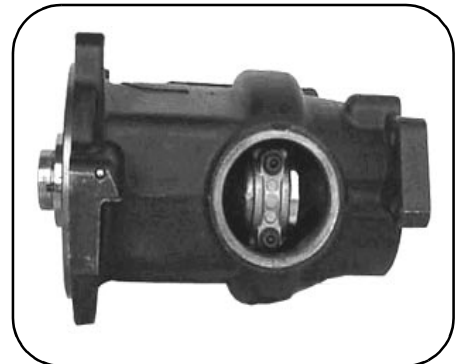
**YOU must provide Loctite 648 or Euro-Lock A 64.80 to seal the sump plug.**

## Disassembly (after Head removal--see page three)

1. Using a large screwdriver or similar device, remove the sump plug using the cast slot in the crankcase.



2. Rotate the crankshaft to position the rod cap in the access hole.



3. Remove the two Torx Socket rod bolts. **Keep** the rod bolts for reuse (unless the connecting rod is also being replaced).



4. Pull the rod cap off of the rod and crankshaft. **Keep** the rod cap for reuse (unless the connecting rod is also being replaced).

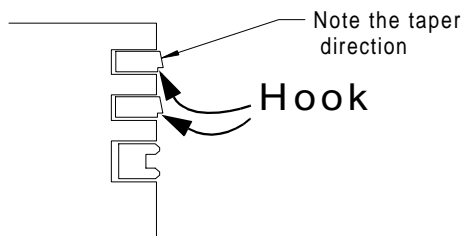
5. Push the piston and rod assembly out of the top of the crankcase with a wooden dowel, or hammer handle; pushing on the bottom of the rod.



6. Remove one pin retaining clip. Push out the pin to separate the connecting rod from the piston assembly. **Keep** the connecting rod for reuse (unless the connecting rod is also being replaced).

## Reassembly

1. Check new piston assembly and, if necessary, stagger ring gaps so that they are about 90° apart. Also check to see that the "hook" of the upper rings is away from the top of the piston as shown.



2. Coat the piston pin, con rod bore and piston pin bores with light oil. Assemble the rod, piston pin and retainers, insuring that the retainers are secure in their grooves. The rod should move freely.



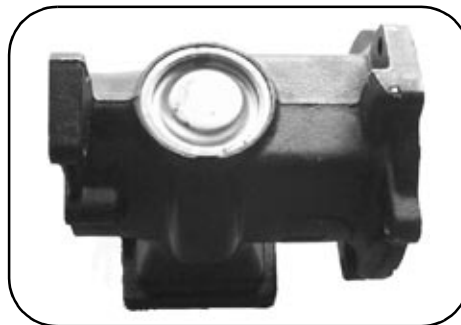
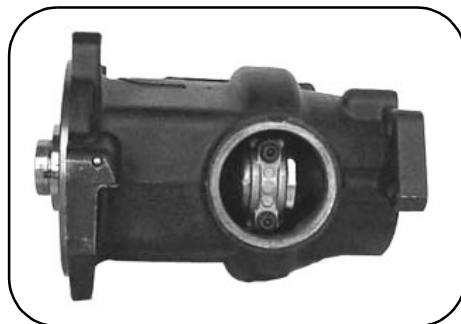
3. Coat the crankcase cylinder bore with light oil. Using a ring compressor, install the piston into the crankcase. Align the rod to permit it to match up to the crankshaft. Note the orientation features of the cap and rod.



4. Apply light oil to the crankshaft rod journal and assemble rod cap. **Bolt A is the one nearer the "W" of cast word "WABCO".**

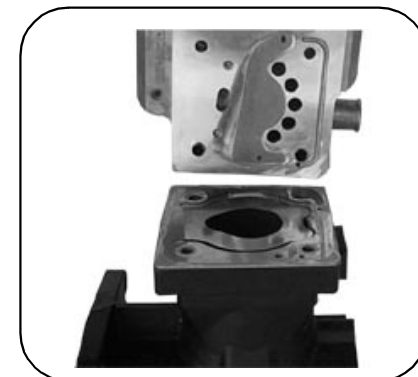
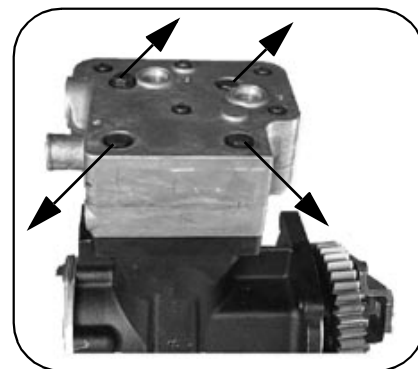
Step	Bolt	Torque Nm	Rotation Degrees
1	A	6 <sup>+0.6</sup> <sub>-0.6</sub>	not yet
2	B	6 <sup>+0.6</sup> <sub>-0.6</sub>	not yet
3	A		70° <sup>+15</sup> <sub>-5</sub>
4	B		70° <sup>+15</sup> <sub>-5</sub>

5. Check that the crankshaft rotates without binding or excessive torque. The maximum torque is 6 Nm.
6. Apply **Loctite 648** or Euro-Lock A 64.80 sealant to the cylindrical surface of the sump plug and press it evenly into the crankcase until the flange seats.
7. Continue with the remainder of the compressor reassembly, referring to the following page.



**For reference: Head Assembly removal and reassembly**  
(with fresh gaskets and head bolts).

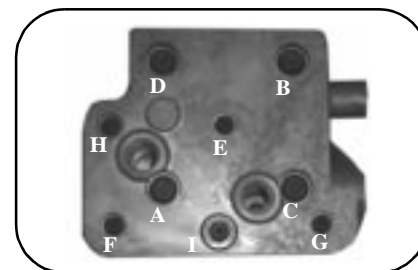
1. Remove the larger headbolts, and then the smaller screws. Save the smaller screws for reuse. Find the new headbolts in the kit and then discard the old ones.
2. Rotate the crankshaft so that the piston is at TDC to avoid getting dirt in the cylinder bore.
3. Carefully remove the head assembly. Notice the position of valves and sliding leaf. Remove the upper and lower gaskets. Replace them with the new ones in the kit.
4. Set aside these items while the piston assembly is replaced according to instructions on pages one and two.
5. **Proceed with the piston replacement and reassembly** of the con rod and piston assembly. Clean off any dirt or gasket residue from the crankcase. Avoid getting dirt into the clearance between the piston and the crankcase bore.
6. Insure that sliding valve is in place and that guide pins are in the correct direction to enter the larger diameters in the valve body and crankcase. Position mounting gasket and Head Assembly. Insert the four head bolts in locations A, B, C, and D in the picture. Replace the five cover screws and start all screws by hand until "finger tight"... then follow the tightening sequence in the below table..



**Bolt Tightening Sequence**

Step	Bolt	Torque Nm	Rotation Degrees
1	A	25 $+0_{-.5}$	
2	B	25 $+0_{-.5}$	
3	C	25 $+0_{-.5}$	
4	D	25 $+0_{-.5}$	
5	A		90° $+15_{-.5}$
6	B		90° $+15_{-.5}$
7	C		90° $+15_{-.5}$
8	D		60° $+15_{-.5}$
9	E	6 $+0.6_{-0.6}$	
10	F	6 $+0.6_{-0.6}$	
11	G	6 $+0.6_{-0.6}$	
12	H	6 $+0.6_{-0.6}$	
13	I	6 $+0.6_{-0.6}$	
14	E		90° $+15_{-.5}$
15	F		90° $+15_{-.5}$
16	G		90° $+15_{-.5}$
17	H		90° $+15_{-.5}$
18	I		90° $+15_{-.5}$

Bolt Identification  
Letters Refer To  
Table and Picture



Use the proper tools to perform this torque-turn bolt tightening sequence **EXACTLY**. Accuracy will be **CRITICAL** to your field service **SUCCESS** !