Technical Service Bulletin Number
TSB170022

Technical Service Bulletin

Subject

Steel Piston and Aluminum Piston Kit Introduction

Warranty Statement

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

Contents

Product Affected

- ISL G CM2180

Description of Change

- New steel and aluminum piston kits have been released.
- The new steel piston replaces the original aluminum piston for select ISL G CM2180 models.

Reason for Change

Improved piston durability.

Customer Communication

Customers who operate 320 hp engines may experience a reduction in power when cruising at high rpm.

Service Instructions

CAUTION

Use of an aluminum piston engine control module (ECM) calibration code in an engine with steel pistons will create an uncertified engine configuration and can result in inconsistent and undesirable engine behavior, and possible engine damage.

NOTE: Some engines with specific control parts lists (CPL) are not able to be converted to steel pistons at this time and must continue to use aluminum pistons. Reference the Service Parts section below for more information.

Warranty Considerations:

For warrantable piston replacements requiring the upgrade of aluminum pistons to steel pistons, steel piston upgrade kit, Part Number 5406086, **must** be used.

Components replaced as directed in this document are **not** to be inspected for reuse.

Installation of Aluminum Pistons:

- See Table 1 for aluminum piston kit part number and kit contents.
- See Table 4 for a list of CPLs that **must** use aluminum pistons.

Conversion from Aluminum Pistons to Steel Pistons:

- See Table 2 below for steel piston part numbers and steel piston upgrade kit contents.
- See Steel Piston Installation Instruction, Bulletin 5414627, supplied with the steel piston upgrade kit.
- See Table 3 for a list of CPLs that are required to use the steel piston upgrade kit when being converted from aluminum to steel pistons.
- With the exception of the upper and lower gasket kits, all parts in the steel piston upgrade kit **must** be used during the conversion from aluminum pistons. Gaskets that are **not** required for the repair of the engine, such as the rear main seal may be discarded.
- When changing from aluminum to steel pistons, an updated ECM calibration code **must** be installed. Reference Table 5 for ECM calibration code information.
- When changing from aluminum to steel pistons, the CPL number will change.
- Upon completion of the conversion from aluminum to steel pistons, an authorized change label, Part Number 5297400 **must** be completed and installed on the engine. See Figure 1 below.

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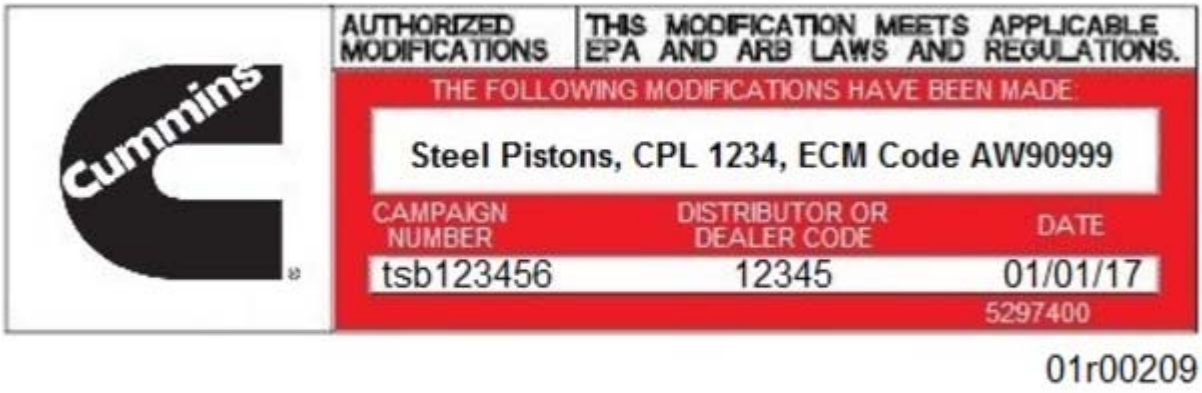

Figure 1, Steel Piston Authorized Change Label.

Service Parts Availability

Table 1, Aluminum Piston Kit, Part Number 5406108, Contents		
Part Description	**Part Number**	**Quantity**
Ring, Retaining	3920692	2
Pin, Piston	3934046	1
Set, Piston Ring	4025290	1
Piston, Engine	5311086	1

Table 2, Steel Piston Upgrade Kit, Part Number 5406086, Contents		
Part Description	**Part Number**	**Quantity**
Kit, Liner	3800328	6
Bearing, Connecting Rod	3950661	12
Kit, Lower Engine Gasket	4089889	1
Kit, Upper Engine Gasket	4352349	1
Kit, Piston Ring	5406026	6

Table 2, Steel Piston Upgrade Kit, Part Number 5406086, Contents		
Part Description	**Part Number**	**Quantity**
Kit, Engine Piston*	5406084	6
Aluminum Oil Cooler	5397914	1
Label, Authorized Change	5297400	1
*Kit Includes Piston Cooling Nozzle, Part Number 5341745.		

Table 3, Aluminum Piston to Steel Piston Conversion by CPL		
Aluminum Piston CPL	**Steel Piston Upgrade Kit Part Number**	**Steel Piston CPL**
887	5406086	5232
897	5406086	
3297	5406086	
3517	5406086	
3518	5406086	
3519	5406086	

Table 4, Aluminum Piston to Aluminum Piston by CPL	
Aluminum Piston CPL	**Aluminum Piston Kit Part Number**
3205	5406108
3235	5406108
4177	5406108
4352	5406108
4365	5406108
4715	5406108
4818	5406108
4819	5406108
4835	5406108
4836	5406108
4926	5406108

Table 5, ECM Calibration Code Cross-Reference	
Original ECM Code	**Steel Piston ECM Code**
AW90001	AW90160
AW90002	AW90154

Table 5, ECM Calibration Code Cross-Reference	
Original ECM Code	**Steel Piston ECM Code**
AW90003	AW90171
AW90004	AW90140
AW90005	AW90146
AW90006	AW90161
AW90007	AW90150
AW90013	AW90162
AW90014	AW90144
AW90015	AW90172
AW90016	AW90145
AW90017	AW90163
AW90023	AW90151
AW90024	AW90141
AW90025	AW90167
AW90026	AW90147
AW90027	AW90142
AW90028	AW90156
AW90029	AW90164
AW90030	AW90152
AW90031	AW90175
AW90032	AW90173
AW90034	AW90155
AW90035	AW90168
AW90036	AW90157
AW90037	AW90158
AW90038	AW90143
AW90043	AW90125
AW90044	AW90127
AW90045	AW90148
AW90046	AW90128
AW90047	AW90130
AW90048	AW90165

Table 5, ECM Calibration Code Cross-Reference	
Original ECM Code	**Steel Piston ECM Code**
AW90049	AW90131
AW90050	AW90133
AW90051	AW90166
AW90052	AW90134
AW90053	AW90153
AW90054	AW90136
AW90055	AW90138
AW90056	AW90170
AW90073	AW90126
AW90074	AW90174
AW90075	AW90129
AW90076	AW90149
AW90077	AW90132
AW90078	AW90139
AW90079	AW90135
AW90080	AW90169
AW90081	AW90137
AW90082	AW90159

Part Compatibility

- Certain engines, based on CPL, are required to upgrade to steel pistons if piston replacement is required. When upgrading to steel pistons, steel piston upgrade kit, Part Number 5406086, **must** be used. All other engine CPLs **must** use aluminum pistons. Reference Table 3 and Table 4.
- Steel piston and aluminum piston part numbers are **not** to be mixed in the same engine.

Publications Affected

Table 6, Publications Affected					
Manual Type	**Engine**	**Bulletin Number**	**Procedure Title**	**Procedure**	**Section**
Service Manual	ISL G CM2180	4021649	Piston Cooling Nozzle	Refer to Procedure 001-046	1
			Piston		1

Table 6, Publications Affected					
Manual Type	Engine	Bulletin Number	Procedure Title	Procedure	Section
				Refer to Procedure 001-043	
			Piston Rings	Refer to Procedure 001-047	1
			Lubricating Oil Cooler	Refer to Procedure 007-003	7

Document History

Date	Details
2017-2-20	Module Created
2017-3-30	Updated part numbers.
2017-4-13	Added Warranty Considerations Section.
2017-4-24	Updated name of kit.
2017-6-27	Added note for part number 5406084.
2017-7-12	Added statement: Components replaced as directed in this document are not to be inspected for reuse.

Last Modified: 18-Jul-2017

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