Service Bulletin Number	Date
4383753	17-DEC-2014

Service Bulletin

Cylinder Liner Counterbore Ledge Reuse Guidelines

This document provides reuse guidelines for cylinder liner counterbore ledge surfaces, supplementing the information provided in the Service Manuals listed in Table 1 below. These guidelines should be consulted when determining if cylinder liner counterbore ledge surfaces are acceptable for reuse or machining.

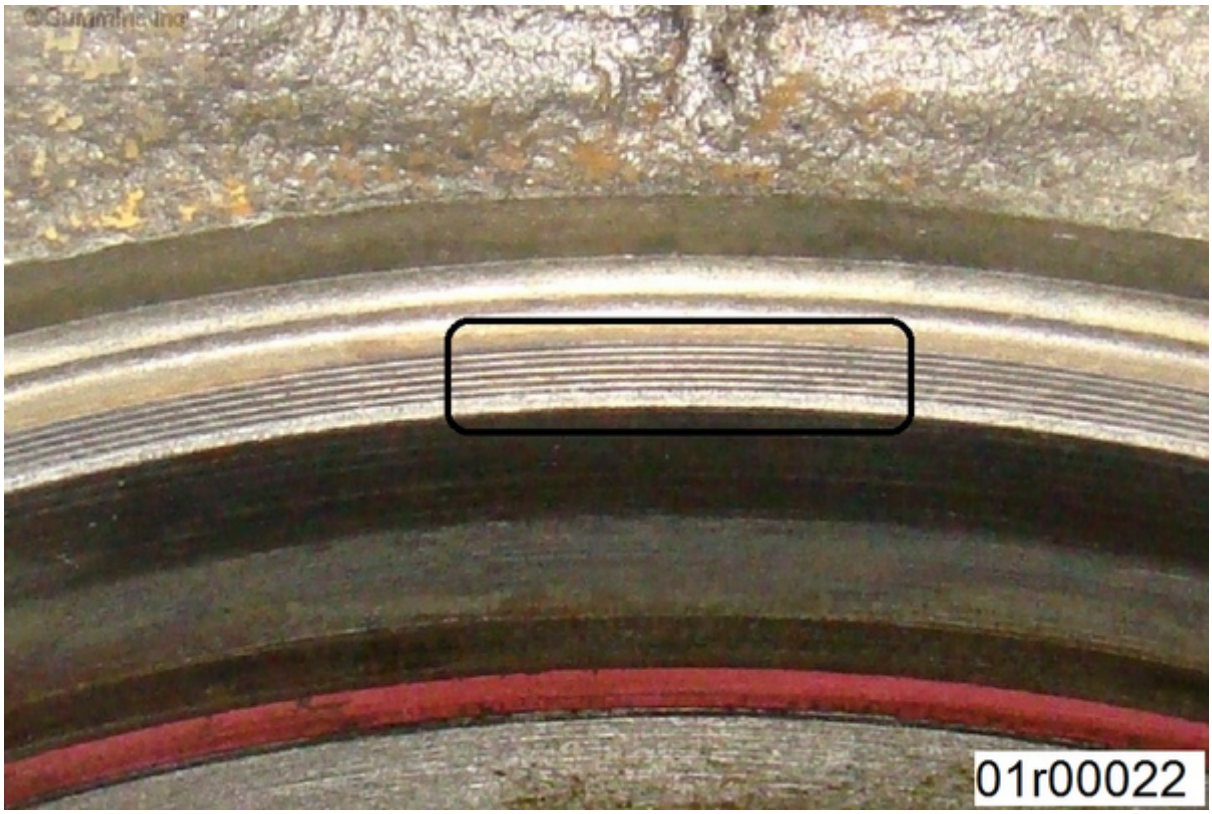
See Table 1 for product affected and the corresponding Service Manual bulletin number.

Table 1, Product Affected	
Service Model Name	**Service Manual Bulletin Number**
ISX12/ISX11.9 CM2250	2883445
ISX12 CM2350 X102	4310646
ISX12 G CM2180 EJ	4310682
Signature™, ISX, and QSX15	3666239
ISX15 CM2250	4022250
ISX15 CM2250 SN	4310736
ISX15 CM2350 X101	4310641
QSX11.9 CM2250 ECF	2883561
QSX15 CM2250 ECF	2883557
QSX15 CM2350 X105	4332667
QSX15 CM2350 X106	4332712

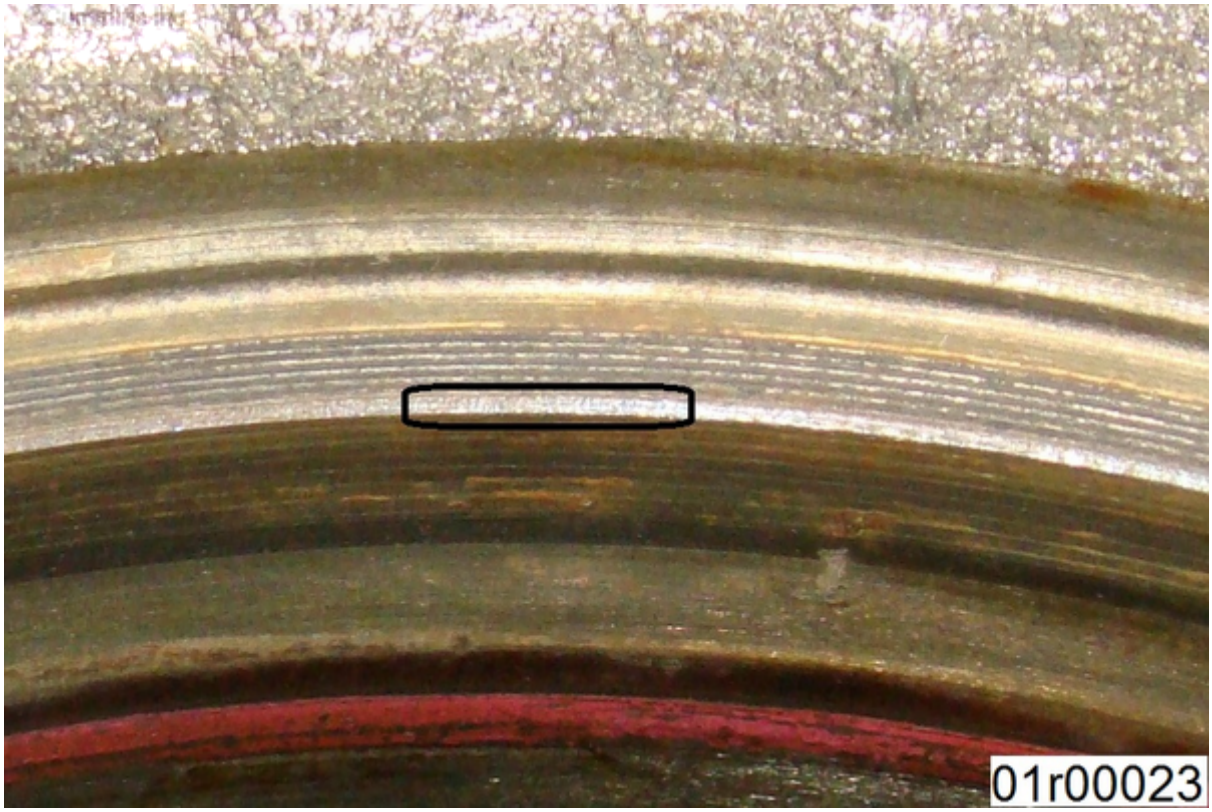
Table 2, Related Service Manual Procedures	
Procedure Title	**Procedure Number**
Cylinder Block	001-026

Table 2, Related Service Manual Procedures	
Procedure Title	**Procedure Number**
Cylinder Block and Liner Seats	001-027
Cylinder Liner	001-028
Cylinder Block Counterbore	001-058

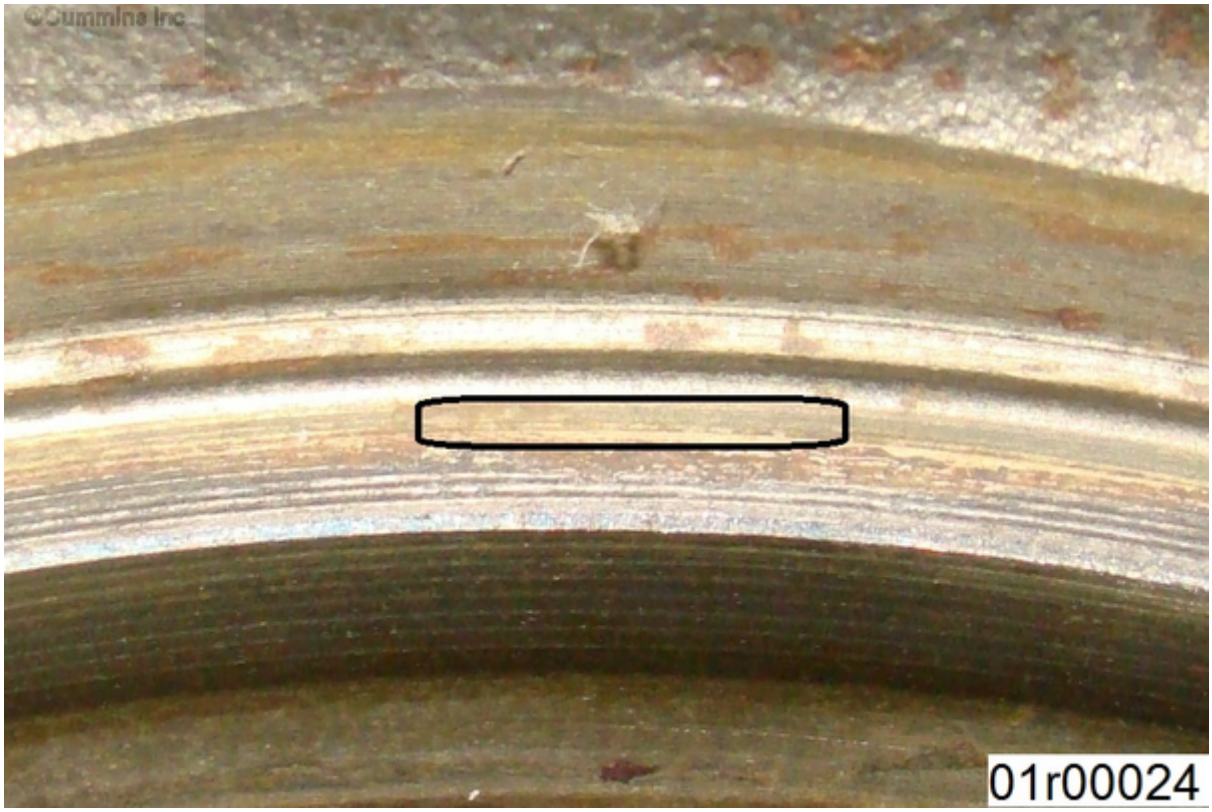
See illustrations below for cylinder liner counterbore ledge wear conditions, cause, and the corresponding action.



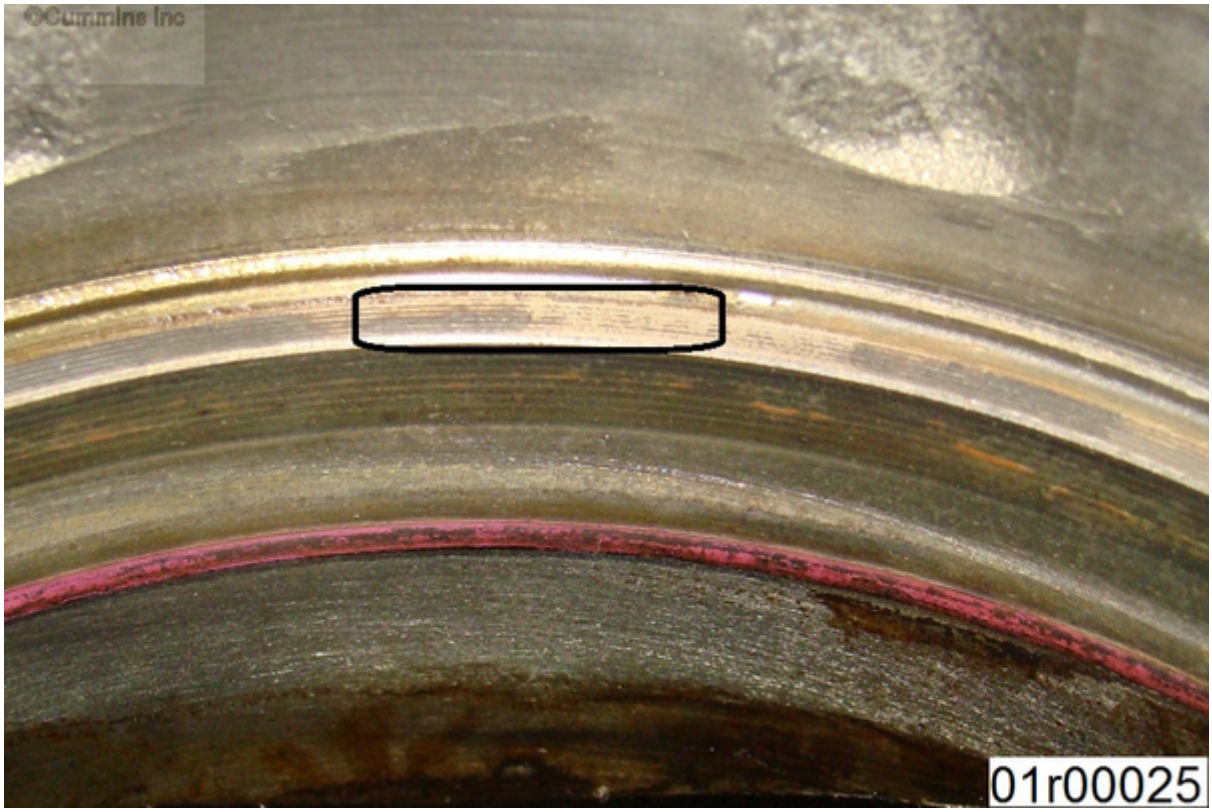
Cylinder Liner Counterbore Ledge Surface – No Surface Wear Present	
Appearance:	Grooved machining marks clearly visible. No wear present on any part of the machined surface.
Cause:	N/A
Action:	No action required – reuse.



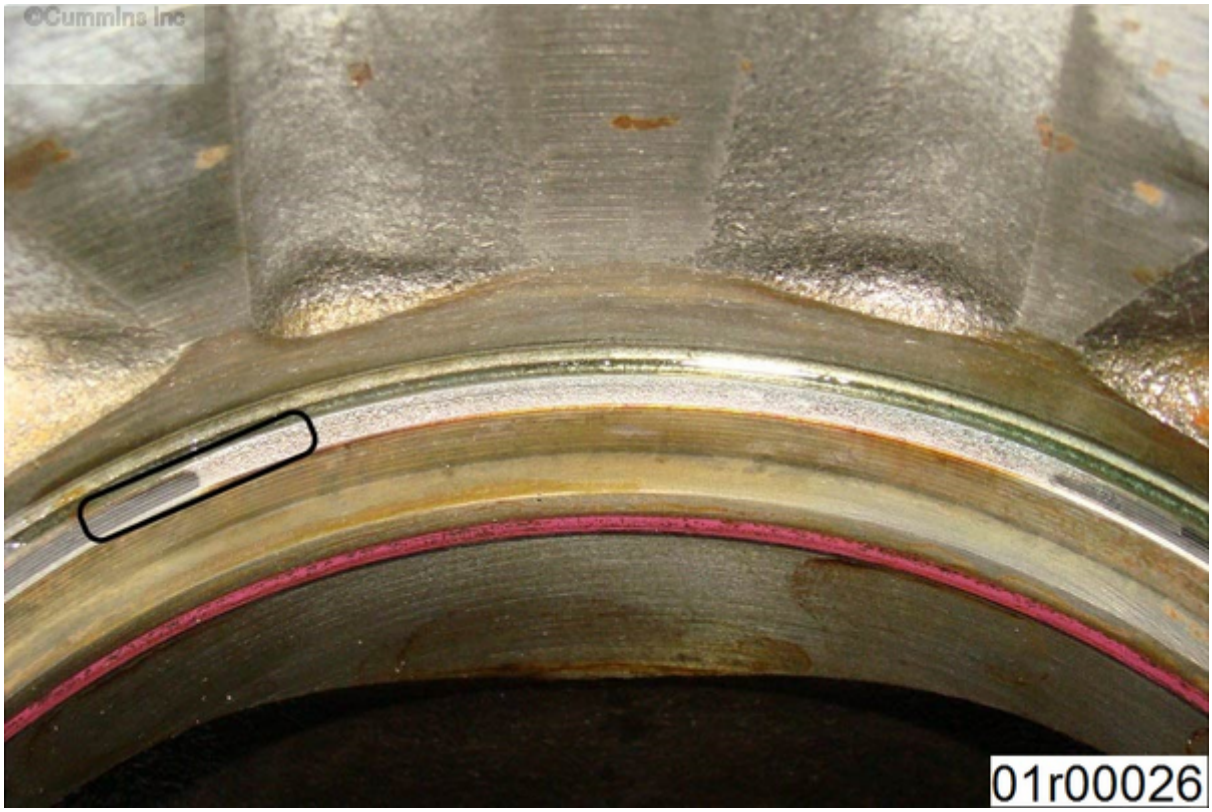
Cylinder Liner Counterbore Ledge Surface – Partial Surface Wear Present	
Appearance:	Grooved machining marks clearly visible. The counterbore ledge shows signs of partial wear along the inner diameter edge.
Cause:	Wear and/or fretting caused by cylinder liner movement.
Action:	Machine the cylinder liner counterbore ledge. Use the following procedure in the corresponding Service manual from the table above. See Procedure 001-058 in Section 1.



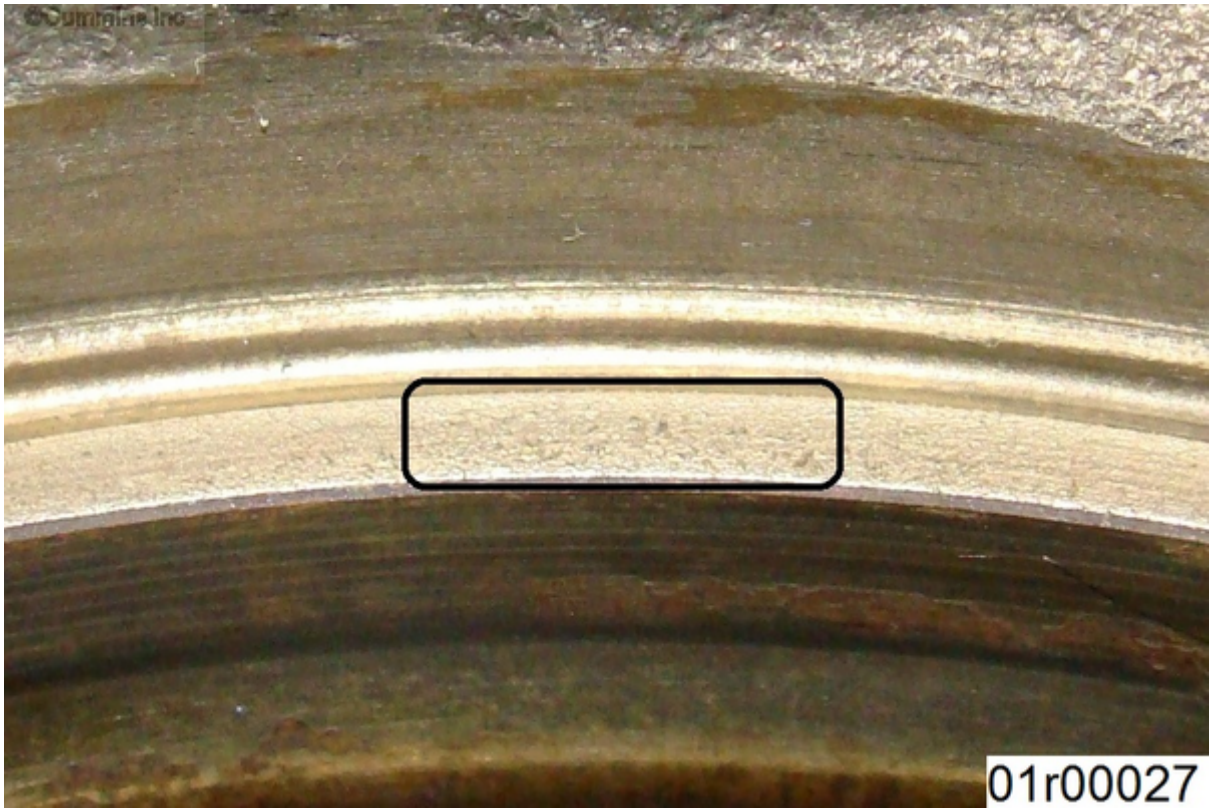
Cylinder Liner Counterbore Ledge Surface – Partial Surface Wear Present	
Appearance:	Grooved machining marks clearly visible. The counterbore ledge shows signs of partial wear along the outer diameter edge.
Cause:	Wear and/or fretting caused by cylinder liner movement.
Action:	Machine the cylinder liner counterbore ledge. Use the following procedure in the corresponding Service manual from the table above. See Procedure 001-058 in Section 1.



Cylinder Liner Counterbore Ledge Surface – Partial Surface Wear Present	
Appearance:	Some grooved machining marks are visible. The counterbore ledge shows signs of intermittent wear across the machined surface area. This is visible as varying depths of the grooved machining marks.
Cause:	Wear and/or fretting caused by cylinder liner movement.
Action:	Machine the cylinder liner counterbore ledge. Use the following procedure in the corresponding Service manual from the table above. See Procedure 001-058 in Section 1.



Cylinder Liner Counterbore Ledge Surface – Partial Surface Wear Present	
Appearance:	Grooved machining marks are visible in areas. The counterbore ledge shows signs of intermittent wear across areas of the machined surface. This is visible as varying depths of the grooved machining marks. The surface on the right shows signs of pitting or fretting.
Cause:	Wear and/or fretting caused by cylinder liner movement.
Action:	Machine the cylinder liner counterbore ledge. Use the following procedure in the corresponding Service manual from the table above. See Procedure 001-058 in Section 1.



Cylinder Liner Counterbore Ledge Surface – Complete Surface Wear Present	
Appearance:	No grooved machining marks are visible. The counterbore ledge shows signs of wear across the entire machined surface area. This is visible as removal of the all grooved machining marks from the cylinder liner counterbore ledge surface. The surface shows signs of pitting or fretting.
Cause:	Wear and/or fretting caused by cylinder liner movement.
Action:	Machine the cylinder liner counterbore ledge. Use the following procedure in the corresponding Service manual from the table above. See Procedure 001-058 in Section 1.

Document History

Date	Details
2014-12-17	Module Created
2015-1-12	Correct Links
2016-4-13	Added ISX12 G CM2180 EJ to Table 1.

Last Modified: 14-Apr-2016