

	Doc or ECO #:	ECO-70044-004	Date:	10/14/21	Author:	JKN
	Rev. #:	A				
Engineering Change Order (ECO)	Engineering Approval:	aeg	Date:		Quality Approval	

P/N #:	70044	Effective Date:	October 11, 2021
Title:	Servo Assembly Improvements for Ulanzi Lens		

1.0 Purpose / Summary

The increased mass of the replacement Ulanzi lens has caused increased stress and sometimes failure at the servo lens mount bracket interface. Servo mount isolation, cut splines, and a counterweight were added to improve the reliability of this interface. A press fit bearing tolerance was updated to aid in assembly as well.

2.0 Parts Affected

Part Number	Notes	Removed	Added	Modified	REV
70044	Overall housed camera assembly	☐	☐	☒	D
70606	Camera guts assembly	☐	☐	☒	F
70608	Lens / camera sensor assembly	☐	☐	☒	D
70609	Lens Bracket	☐	☐	☒	D

3.0 Detail

The Ulanzi lens weights approximately three times more than the ipro lens it replaces. In addition, the lens is longer moving the center of mass further from the point of rotation increasing the reaction torque further. The MKS DS75K Analog Servo Motor [71816] was attached to the MK2 wide angle lens mount bracket [70609] with a cone point setscrew. After the update to the Ulanzi lens the cone point setscrew would deform the splined output shaft of the MKS servo causing the lens assembly to slip. To fix this problem B25T splines were added to the lens mount bracket to act as the primary coupling. To reinforce this a M2.5 screw was added, and the setscrew as updated to a cup point setscrew to further increase retention. Also, the mass of Camera Heatsink Plate [70611] was increased to act as a counterbalance for the increased mass of the lens. Foam was added to the servo mounting procedure to add compliance to the assembly during high force events. Finally, a tolerance update was made to the Internal Assembly Front Plate – Bearing [70619]. The fit of the bearing was too tight, the tolerance was updated to decrease this interference.

4.0 Disposition of Material

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5.0 Action Items

Action	Department	Acknowledgement Initials
Place order of latest revision parts & ask for FA pieces	Purchasing	RM
Epicor Update	ENGR	JKN

6.0 Modified / Referenced Documents:

Document	Current Revision
70044 outline drawing	F
70044 assembly drawing	F
70606 assembly drawing	H
70608 assembly drawing	F
70044 Brady Serial number Template	F
WI-70044-MSS camera assembly instructions	D
QC-70044 - in process checksheet	D
QC-70044 - completed assembly checklist	F
QC-WI-70044 – QC checklist instructions	B
WI-70389 - Dome replacement instructions	D

7.0 Revision History

Date Revised (mm-dd-yyyy)	Location of Change (section, paragraph no., step no., etc.)	Description of Change Made	Name of Person making the Change
12/22/2020	ALL	Initial creation	JV

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