

	Doc or ECO #:	ECO-70044-005	Date:	12/18/21	Author:	JRK
	Rev. #:	A				
Engineering Change Order (ECO)	Engineering Approval:	aeg	Date:	12/18/21	Quality Approval	aeg

P/N #:	70044	Effective Date:	December 21, 2021
Title:	EOL Lens replacement With New Wide Angle		

1.0 Purpose / Summary

The previous camera lens (Ulanzi) has gone EOL, so a replacement lens was chosen. All mating parts are the same as the current m17x1 thread mating system used for the Ulanzi, so no other changes are needed to mate the Lens. The New lens is much smaller, lighter, and has a better supply chain.

Because of smaller, the counterweight heat sink is not necessary, and the original flat sink can be used.

2.0 Parts Affected

Part Number	Notes	Removed	Added	Modified	REV
70044	Overall housed camera assembly	☐	☐	☒	G
70608	Lens / camera sensor assembly	☐	☐	☒	F
73163	DEATH LENS Wide Angle 180 – (same PN used as previous Ulanzi lens for ordering ease)	☐	☐	☒	B

3.0 Detail

The Ulanzi fisheye lens went EOL from all suppliers. Several other lenses we purchased, tested, and compared against our EOL lens. The lens from Death Lens was chosen as the best option. The angle of view is slightly more than the Ulanzi lens, which will require a 2 to 3x zoom in to remove a slight vignetting on the very corners of the screen. This also allow the user to zoom out for a wider field of view, but with some vignetting in the corners.

Due to the smaller size of the lens, the vertical tilt can also be adjusted to add another few degrees up and down tilt to add to the up and down viewing angle, increasing our current view with the new lens both horizontally and vertically.

The servo mechanism also received minor revisions for robustness and ease of manufacture.

4.0 Disposition of Material

New 70044 assemblies should be built to rev G

All stock of 70608 can remain as is.

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The last batch of 70044 assemblies built with rev F use the original 70608 assembly.

The first 70044 assembly to built as rev G will use the new current 70608 assembly

Old assemblies of 70044 that return for rework, do not need to be reworked to the new lens if their components are in useable condition. If any of the lens components are damaged, update the assembly to the newest revision.

Some remaining 70044 Rev D,E,F parts will remain in engineering storage.

5.0 Action Items

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

6.0 Modified / Referenced Documents:

Document	Current Revision
WI-70044-MSS camera assembly instructions	H (in progress)

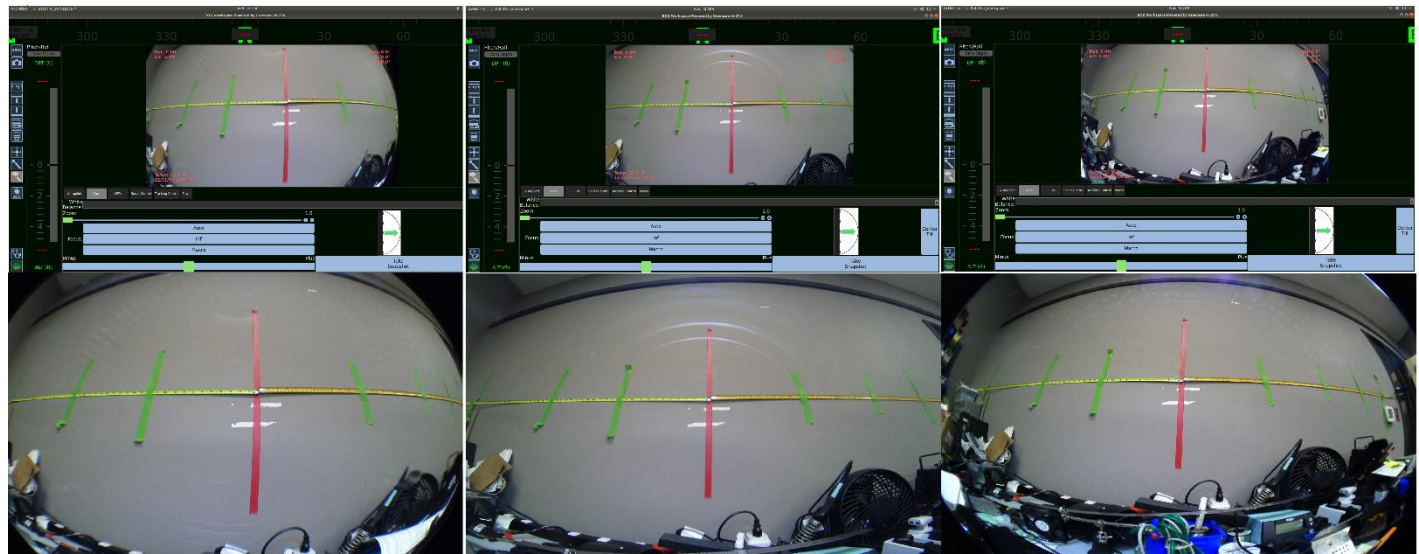
7.0 Revision History

Date Revised (mm-dd-yyyy)	Location of Change (section, paragraph no., step no., etc.)	Description of Change Made	Name of Person making the Change
12/18/2021	ALL	Initial creation	JRK

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The Pictures below represent the current, previous and original FOV. In case it is not easy to see, the current lens is actually about 15deg more FOV than the previous lens, although slightly more fisheye. The advantage of the current lens is that it allows for not only more horizontal view than previous, but also allows for the ability to substantially increase the vertical FOV by allowing more motion. A 1 or 2x zoom on the current lens will eliminate any vignetting that may or may not occur, and still give a similar or greater FOV than the previous view.



DEATH WIDE
Current Lens

ULANZI
Previous

CENTURY
Original Lens
From 2020