

	Doc or ECO #:	ECO-MNP-ASSM-P4-002	Date:	05/24/2021	Author:	SL
	Rev. #:	A				
Engineering Change Order (ECO)	Engineering Approval:	aeg	Date:	7/1/2021	Quality Approval:	aeg

P/N #:	MNP-ASSM-P4	Effective Date:	March 24, 2021
Title:	Single Axis Manipulator Motor and Cable Changes		

1.0 Purpose / Summary

- The purpose of this ECO is to upgrade the motor for increased power, and to make the Single Axis Manipulator easier to connect to Mission Specialist Systems by change the cable connections.

2.0 Parts Affected

Part Number	Notes	Removed	Added	Modified	REV
MNP-ASSM-P4	Top Level Assembly	☐	☐	☒	C
MNP-017	Updated Motor & Gearbox	☐	☐	☒	A
CW9-001M-ASSM-P4	Top Level Whip Assembly	☐	☐	☒	A
CW9-001M	Removed Male Only Cable	☒	☐	☐	B
CW9-001MF	Added Male/Female Cable	☐	☒	☐	B

3.0 Detail

- To better accommodate new systems, the manipulator 9 Pin whip (**CW9-001M-ASSM-P4**) has been updated from a Male Only Cable (**CW9-001M**) to a Male/Female Cable (**CW9-001MF**). This change will allow the Single Axis Manipulator to work on all Pro4 and MSS systems without modification to the cable.
- The Motor and Gearbox assembly (**MNP017**) has been updated from a Maxon (**108824**) Motor with (**118186**) Gearbox to a Maxon (**M12009**) Motor with (**118186**) Gearbox

4.0 Disposition of Material

- Finish using old motor stock of **MNP-017** before switching to the new motor.
- Finish using current stock of **CW9-001M-ASSM-P4** with cable **CW9-001M** before switching to the updated Assembly using **CW9-001MF**.

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5.0 Action Items

Action	Department	Acknowledgement Initials
Update BOMs	Engineering	SL
Update Epicor	Purchasing	SL
Update General Assemblies	Engineering	JK
Update Work Instructions	Engineering	SL

6.0 Modified / Referenced Documents:

Document	Current Revision
BOM-MNP-ASSM-P4	Click here to enter text.
BOM-CW9-001M-ASSM	
ME-MNP-ASSM-P4	
WI-MNP-ASSM-P4-001	

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