

	Doc or ECO #:	ECO-70654-002	Date:	12/3/2019	Author:	JMV
	Rev. #:	A				
Engineering Change Order (ECO)	Engineering Approval:	aeg	Date:	12/16/2019	Quality Approval	DO

P/N #:	70654	Effective Date:	December 17, 2019
Title:	Tilt arm revisions		

1.0 Purpose / Summary

A few modifications were done to the tilt arm to keep them from becoming locked in place. A clearance modification was done to keep the locking collar of the tilt arm from getting damaged.

2.0 Parts Affected

Part Number	Notes	Removed	Added	Modified	REV
70654	MSS tilt arm kit updated; contains ARM-ASSM & ARM-004	☐	☐	☒	C
Arm-Kit	Pro 4 Arm kit updated; contains ARM-ASSM	☐	☐	☒	B
Arm-Assm	Updated; contains ARM-001	☐	☐	☒	C
Arm-001	Relief hole added	☐	☐	☒	B
Arm-012	Collet slits added to avoid tilt arm lock	☐	☐	☒	B
Arm-004	Countersinks added to holes	☐	☐	☒	B
Arm-002	Drawing added to RTM; rev A	☐	☐	☐	A
Arm-005	Drawing added to RTM; rev A	☐	☐	☐	A
Arm-006	Drawing added to RTM; rev A	☐	☐	☐	A
Arm-011	Drawing added to RTM; rev A	☐	☐	☐	A

3.0 Detail

Tilt arms have been known to get locked from over tightening. The modifications to ARM-001 and ARM-012 solve the locking issue. Relief slits were added to the clamping surface of ARM-012 to keep the pinch from occurring. This modification can be seen below in a cross section view of the tilt arm.

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Prior to modification

no-pinch modification



A very small relief hole has been added to ARM-001 to keep from vacuum locks and relief unwanted pressurized air. This can be seen below.

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Changes to ARM-001 and ARM-012 affect their parent assembly ARM-ASSM. We purchase this assembly as one unit of ARM-ASSM. ARM-ASSM is used in both the Pro4 tilt arm kit (ARM-KIT) and the MSS tilt arm kit (70654).

For all waived monitors, 70654 should have a small shim glued onto the back of ARM-004. See JV for more details. This is controlled in QC, The shim is seen below. Until the monitor is officially replaced, this shim must be present on every 70654.



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The other change that occurred was to ARM-004. This change affects 70654 directly. When the locking collar is unscrewed all the way and the case is shut, the pan head screw contacts the locking collar and damages the annodizing. Currently we are reworking on ARM-004 to have the one chamfer where it is critical, shown with an arrow below. However, both holes on ARM-004 will come chamfered for future orders and the mounting screws will both be replaced with a #6 x 3/4 black oxide flat head.



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No revisions were currently in Epicor for the pieces of ARM-ASSM. Revs are being noted in Epicor.

Hardware was revisited for 70654 as well, the rubber washer was removed from the bom. (6) red fiber washers are to be used from here out. See 70654.pdf

4.0 Disposition of Material

All on hand material is being reworked to meet these revisions. Past stock should be entirely used up before starting new stock.

MSS Tilt arms(70654) were modified are currently being issued with each waived monitor until a new monitor supplier has been secured. They will be controlled in the QC lab until the new monitor is in.

All Arm-kit has been taken from inventory, modified, and checked back in to inventory. Use these first before moving to new stock.

ARM-004 was taken from inventory and modified. They will be controlled by QC until the new monitor is in and approved.

ARM-004 may be built into 70654 for use with the waived monitors. But as long as its going on a waived monitor, it should have a shim glued to the back of it.

5.0 Action Items

Action	Department	Acknowledgement Initials
Epicor update	Purchasing	RN
Rework in house stock	ENGR	JV
Purchase stock of ARM-004 and ARM-ASSM from latest drawings	Purchasing	NS
Manage distribution of waiver parts	Quality	DO

6.0 Modified / Referenced Documents:

Document	Current Revision
70654 drawing created; to be used as production assembly reference	C
Arm-Assm outline drawing updated	C

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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
12-05-2019		Initial submission	JV
12/12/2019	Arm-012	Initial no pinch mod was internal chamfer; proper fix is collet slits;all information updated to suit	JV