Creo Products Inc.

Engineering Change Order

ECO#: C353
Originator: IanG **Page:** 1
Department: ENG **Date: 7/6/98**

Engineering Changes

Part #	Rev/Status From	To	Description	Product	ECRs	Back Comp?	Reason for chg.	Serv. Class	Prod. Class
50-1448A	K	M	Assy, Mech, picker, TS-Auto	TS-auto		Y	7	See Note	See Note
57-4805B	PRE	A	Fab, Cable Track Mounting Bracket	TS-auto		Y	7	See Note	See Note
57-4805A	F	INA	Fab, Cable Track Mounting Bracket	TS-auto		N	7	S	1
18-3260			Cab, Carrier				7	S	1
55-0706			Suction cup w/o valve				1	See Note	4
55-0707			Suction cup with valve				1	See Note	4
57-4856A	H	J	Fab, cable track guide, load tabel	TS-auto			7	See note	4
05-0056	P	A	Kit, Upgrade, ECO 353, cable track	TS-auto				See note	
05-0057	P	A	Kit, Upgrade, ECO 353, suction cup	TS-auto				See note	

Copies To:	Title:	Signature:	Date:	Code Descriptions			
	Design Eng.	Ian Garben	98/Feb/27	Status	Service	Production	Reason
	Production Eng.			AC - ACTIVE IN - INACTIVE OB - OBSOLETE PR - PREREL.	R-RETROFIT S-NEXT CALL F-NEXT FAIL T-THEIR COST N-NOT UP-GRADABLE NA-NOT APPL.	1-RETROFIT ALL UNITS 2-FINISHED GOODS 3-WIP 4-FUTURE 5-DOCUMENT ONLY	1-DESIGN 2-MANUFACT 3-ASSEMBLY 4-DOCUMENT 5-COST 6-MAINT. 7-RELAIBIL. 8-SOFTWARE 9-OTHER
	Field Service Eng.						
	Project Eng.						
	Project Manager						
	Product Manager						

57-5077A	A	B	Brkt,Interlock Switch, TS-A	TS-auto			7	N/A	4

Details of Problem and the Changes

50-1448A-M

This revision of the assembly includes a new cable track and cable track mounting bracket needed to improve reliability. All installed machines should be upgraded with these new parts whenever there is a service call required for this or other reasons.

This revision of the picker also changes the suction cups to red silicone (from black nitrile). If a customer is using (or is planing to use) Horsel plates these new silicone cups must be used. There is no need to upgrade installed machines unless the customer is having a problem with suction cup marks on the plates.

57-4805B-A

The cable track bracket is revised to accommodate the mounting holes of the new 18-3260 cable track and also to add a guide projection that minimizes track distortion. It should be noted that the new 18-3260 cable track does not use end links.

57-4856A-J

The cable track mounting holes on the load table's cable track guide are revised to accommodate the new cable track.

55-0706, 55-0707

The new silicone suction cups are introduced to eliminate the problem of nitrile cups leaving marks on Horsel plates. There is no need to change cups on installed machines that are not being used with Horsel plates. Paramount should bring in the new cups so we can produce machines for Horsel plates as soon as possible. The existing nitrile cups can be used up on "non-Horsel" machines.

05-0056

A kit to upgrade suction cups on TS-Autoloader pickers is created to upgrade machines already installed in the field to use Horsel plates. This upgrade kit does not need to be installed on machines that do not use Horsel plates. I have already issued a P.O. (#07483) for enough cups to build 6 of these upgrade kits and am expecting delivery at the end of July.

05-0057

A kit to upgrade the cable track that lead to the TS-Autoloader picker is created. This "fix" should be applied to all machines in the field as part of their next service or maintenance call. There is no need to make a special visit to the site to do this upgrade unless the customer has been experiencing a problem with the cable track.

Documentation Changes

Part #	Rev/Status		Documents							
	From	To	Type	Status/Resp.	Type	Status/Resp	Type	Status/Resp	Type	Status/Resp
50-1448A	K	M	AD	IanG and PavelH						
57-4805B	PRE	A	DD	IanG						
57-4856A	H	J	DD	IanG						

Status Codes: AT- Udated document is attached RL- Redlined document is attached UP- No document attached, update will follow NC- No changes required to document
Resp.: NAME-four letter Creo employee who is/was responsible for updating the document

Field Upgrade Instructions:

Cable track upgrade

1. Remove right side load table upright cover and move picker to the up position to expose work area.
2. Disconnect the right picker in/out cylinder clevis and swing the cylinder down and out of the way.
3. Disconnect the 5 tubes and 1 cable that run to the picker (junction point is under the right load table mounting bracket).
4. Remove the cable-track mounting bracket from the picker and the cable track end link from the right load table bracket.
5. Pull the hoses and cable out of the cable track (cutting the old cable track open may be necessary/helpful)
6. Remove the reed switch magnet from the old bracket and reinstall on the new bracket.
7. Run hoses and cable through the new cable track and attach the track to the mounting bracket with four M4 button head screws.
8. Attach the new cable track bracket to the picker reusing the existing screws.
9. Remove the cable track guide from the load table upright and replace with the new version.
10. Transfer the vacuum generator from the old cable track guide to the new one.
11. Attach the “outboard” end of the new cable track to the new cable track guide using the two M4 socket head screws, M4 washers, and M4 nylock nuts. Do not fully tighten the nuts as it is necessary for this end of the cable track to twist as the picker goes down past the bend in the u-track. About 0.5 mm less than touching is about right for this nut.
12. Re-connect all hosed and the cable.
13. Cable tie hoses and cable to the cable track bracket and cable track guide as required. There are many extra holes provided for this purpose.
14. Re-install the load table upright cover.
15. Test.

Suction cup upgrade

1. Remove both load table upright covers and the front-top pan.
2. Disconnect the cable track from the right load table bracket and pull through the extra hose (to permit the picker to tilt forward into the service position.
3. Remove the top two u-track mounting screws and tilt the picker forward to the service position (discard the screws!)
4. Remove the shoulder screws that attach the top of picker suction head to the picker arms. This permits suction bar to swing away from the picker cross bar and provides easier access to the suction cup mounting hardware.
5. Remove the tubing from the suction cups.
6. Replace the cups ensuring that the non-valved cups are used in the middle four holes and the valved cups are used in all other holes. New plastic fittings are included in the kit in case any of the old ones are damaged in removal. It is not necessary to replace the plastic fittings unless they are damaged (it is easier to reinstall the old fittings).
7. Reinstall the interconnecting hoses between the cups. New hose is provided but it is not necessary to use new hose if the old hose is undamaged.
8. Re-attach the picker arms to the suction bar. (use loctite 242)
9. Check the projection of the suction cups as per the procedure in 73-3207A. (summary: cup projection must be adjusted to 2-3mm beyond foam pad)
10. Re-attach the picker u-tracks to the engine side plates using new screws (no loctite).
11. Re-attach the cable track to the load table bracket.
12. Test.