Creo Products Inc.	**Engineering Change Order**		**ECO#: D021**
	Originator: Richard Luther		**Page**: 1
	Department: Production Engineering	**Date**: Oct. 27, 1999	
	Products Affected:	**TSV**	

How should costs be assigned? (Creo/JV or customer)	Service Contract	Time & Materials	VAR Creo

	Yes	No		Yes	No
Does this affect Customer Support?	yes		Does this affect Joint Venture Partners?		no
Will this require a 100 Label change?		N/A	Does this affect VAR Partners?	yes	
Should End User Customers be notified?		no			

Signoffs (as required):	Date:
Core Team Leader	
Design Engineer	
Manufacturing Engineer	
Product Support Manager	
Other	

Service priority	Production Priority	Reason for change	Add the following people to this ECO's distribution list:
1 ASAP 2 Next Visit 3 Next Failure 4 Next PM N/A Not Applicable	1 Retrofit all units 2 Finished goods 3 WIP 4 Future 5 Documentation	A Safety B Design C Reliability D Manufacturing E Cost F Documentation	ELam KPoulin JSwanson RMerletti ISkinner
(enter below line)	(enter below line)	(enter below line)	
N/A	4	A	

Description of Problem and Solution

Problem:

We require the GS Mark from VDE for the new VLF Trendsetter AL project, and the first stage is getting the base VLF Trendsetter approved.

Solution:

Make the required mechanical safety modifications to the base VLF Trendsetter. **This ECO will be implemented starting from serial number B280.**

Details:

The changes required to get VLF Trendsetter approved for the GS Mark are:

i) implementation of the 25A impedance test on all VLF Trendsetters.

ii) modification of the hi-pot test procedure to energize all relay coils with contacts switching AC.

iii) modification of the 10-4006 RTS pcb assembly to meet VDE requirements for reinforced insulation.

iv) addition of safety switches for table up/down positions – table up/down solenoid power is now routed through these switches.

v) addition of a relay to cut power to all backbone solenoids when a panel is removed.

vi) addition of component labels for all power supplies, relays, solenoids, and cylinders.

vii) removal of the IEC320 power cable from VLF Trendsetter – a permanently mounted cord with strain relief is now used.

viii) addition of heatshrink to 240VAC fan wiring in operator access areas as well as the 80VDC carriage motor wiring.

(Keep typing to get more space within the box..."problem and solution" will move onto page 2 if needed)

Engineering Changes

Part # (incl version)	Rev/Status From	To	Description	Prod line(s)	Related ECR's	Backwards compatible?	FRU?
10-3531B	A	Inac	CAB,ASSY,EAVM-ESE,TSV	TSV			YES
10-3536B	B	Inac	CAB,ASSY,PDS,TS-ESE,TSV	TSV			YES
10-1443B	B	Inac	CAB,ASSY,TABLE DOWN SW EXT,TSV	TSV			YES
17-4006A	Pre	Inac	BRD,PCB,REGISTRATION/TABLE SAFETY,TSV	TSV	C288		NO
10-4006A	A	Inac	BRD,ASSY,REGISTRATION/TABLE SAFETY,TSV	TSV	C280		YES
11-0520B	Z	Inac	ASSY,EM,WIRED FRAME,TSV	TSV			NO
05-0097	Pre	A	KIT,RETROFIT,ELC REG,TSV,ECO C637	TSV			NO
11-0520C	Pre	A	ASSY,EM,WIRED FRAME,TSV	TSV		YES	NO
10-4006B	Pre	A	BRD,ASSY,REGISTRATION/TABLE SAFETY,TSV	TSV			YES
17-4006B	Pre	A	BRD,PCB,REGISTRATION/TABLE SAFETY,TSV	TSV			NO
10-4010A	Pre	A	CAB,ASSY,ESE-RTS,TABLE SAFETY,TSV	TSV			YES
10-4016A	Pre	A	CAB,ASSY,RTS-TBL SW,TSV	TSV			YES
10-4319A	Pre	A	CAB,ASSY,EAVM-ESE,MECH SAFETY,TSV	TSV			YES
10-4320A	Pre	A	CAB,ASSY,ESE-PDS/TBL SW,TSV	TSV			YES
10-4321A	Pre	A	CAB,ASSY,RDC-SIO RELAYS,TSV	TSV			YES
10-4322A	Pre	A	CAB,ASSY,SIO-ESE,MECH SAFETY,TSV	TSV			YES
10-4336A	Pre	A	KIT,ELEC,EXP HEAD WIRING,40W,TSV	TSV			NO
11-0804A	Pre	A	ASSY,ELEC,SIO KEYSWITCH,TSV	TSV			YES
16-4190A	Pre	B	CAB,PWR CORD,IEC309,16A,250V,4.5M,TSV-EU	TSV			YES
57-6492A	Pre	A	FAB,BRKT,TABLE UP SWITCH,TSV	TSV			YES
57-6493A	Pre	A	FAB,BRKT,TABLE DOWN SWITCH,TSV	TSV			YES
57-6768A	Pre	A	FAB,BRKT, STRAIN RELIEF ADAPTOR,TSV	TSV			NO
73-3308A	Pre	A	DOC,PROC,STARTUP TEST PROCEDURE,TSV	TSV		N/A	N/A

02-4155A	H	J	KM-FG,TRENDSETTER VLF	TSV		YES	NO
05-0048	A	B	KIT,UPGRADE,KEYSWITCH SIO RETROFIT,TSV	TSV		YES	NO
10-1436A	C	D	ASSY,ELEC,FAN,TSV	ZZZ		YES	YES
11-0448A	T	U	ASSY,EM,POWERBOX,THERMAL,TSV	TSV		YES	NO
11-0453A	A	B	ASSY,EM,FAN,3.15",ENGINE,TSV	TSV		YES	YES
11-0483A	V	W	KIT,EM,TS RECORDER,VLF	TSV		YES	NO
11-0506B	C	D	ASSY,EM,CRG STEPPER MTR,34FRAME,3STK,VLF	ZZZ	C281	YES	YES
11-0611A	G	H	KIT,EM,EXP HEAD MTG,40W,TSV	TSV		YES	NO
16-4030A	B	C	CAB,PWR CORD,L6-20P,20A,250V,4.5M,TS3	ZZZ		YES	YES
50-1400B	A	B	ASSY,MECH,ENGINE,5080,TSV	TSV		YES	NO
50-1401B	A	B	ASSY,MECH,ENGINE,5880,TSV	TSV		YES	NO
73-3316A	B	C	DOC,SCHEM,POWER/SAFETY WIRING,TSV	TSV		N/A	N/A

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Documentation Changes

Part #	Rev/Status From	Rev/Status To	Documents Type	Status/Resp	Type	Status/Resp	Type	Status/Resp	Type	Status/Resp
10-1436A	C	D	AD	UP/CHRT						
10-4006B	Pre	A	AD	AT/RLUT	SD	AT/RLUT				
10-4010A	Pre	A	AD	AT/RLUT						
10-4016A	Pre	A	AD	AT/RLUT						
10-4319A	Pre	A	AD	AT/RLUT						
10-4320A	Pre	A	AD	AT/RLUT						
10-4321A	Pre	A	AD	AT/RLUT						
10-4322A	Pre	A	AD	AT/RLUT						
11-0453A	A	B	AD	AT/RLUT						
11-0506B	C	D	AD	AT/RLUT	TP	AT/RLUT				
11-0804A	Pre	A	AD	UP/CHRT						
57-6492A	Pre	A	DD	AT/RLUT						
57-6493A	Pre	A	DD	AT/RLUT						
57-6768A	Pre	A	DD	AT/RLUT						
73-3308A	Pre	A	TP	UP/RLUT	FO	UP/RLUT				
11-0448A	U	T	AD	UP/RLUT	WD	UP/RLUT	TP	UP/RLUT	FO	UP/RLUT
50-1400B	A	B	AD	UP/RLUT	TP	UP/RLUT				
50-1401B	A	B	AD	UP/RLUT	TP	UP/RLUT				
73-3316A	B	C	SD	AT/RLUT						

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Document Status Codes
AT – Updated document is attached
RL – Redlined document is attached
UP – No document attached, update will follow
NC – No changes required to document

Responsibility
Name of Creo employee who is responsible for updating the document

100 Label # N/A

100 Label Document # N/A

For production use only

Production Implementation

Part #	Recommended Action from Engineering	Qty in Stock	Action	Qty in Process	Job # / PO #	Action
10-3531B	rework most of stock to 10-4319A, remainder to be transferred to service	64	set up rework jobs for 60 pieces, transfer 4 pieces to service stock	35	45026847	Rework 35 pieces into 10-4319A
10-3536B	transfer lifetime reqirements to service stock, scrap remainder	34				
10-1443B	transfer lifetime reqirements to service stock, scrap remainder	9				
17-4006A	scrap	14	scrap			
10-4006A	part can still be used in 05-0097 electronic registration upgrade kits – transfer all 29 pieces to service stock?	29				
11-0453A	rework to latest rev (add heatshrink) before using	9	rework to 11-0453A-B, can also be done in startup if necessary	10	45028177	try to change order to 11-0453A-B
10-1436A	rework to latest rev (add heatshrink) before using	31	rework to 10-1436A-D, can also be done in startup if necessary	30	45028085	try to change order to 10-1436A-D
11-0506B	rework to latest rev (replace expando with heatshrink) before using	14	rework to 11-0506B-D			

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Machine Shipments with ECO Implemented: (For historical purposes, should be completed once shipments have been made with ECO implemented (Eg B141, B143, B147 and all after)

For Service Logistics use only

Service Logistics Implementation

Part #	Recommended Action	Ongoing Support Requirements (Y/N)	Qty in Stock	Action	Qty on Order	Action
10-3531B	transfer some production stock to service – lifetime qty for existing install base	yes				
10-3536B	transfer some production stock to service – lifetime qty for existing install base	yes				
10-1443B	transfer some production stock to service – lifetime qty for existing install base	yes				
10-4006A	part can still be used in 05-0097 electronic registration upgrade kits, transfer all 16 pieces to service stock?	no, 10-4006B can be used to replace 10-4006A				

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Actions

Owner	Action
RHori	update bills in MRP close ECR's C280 and C288. ECR C281 is not closed by this ECO.
KLavergne	archive hard and soft copies of documentation when available
RLuther	complete and submit 11-0448A-U(AD,WD,TP,FO), 10-4006B-A-AD, 50-1400B-B(AD,TP,FO), 50-1401B-B(AD,TP,FO), 73-3308A-A(TP,FO).
ALee	edit wired frame kit to add new power box components until new power boxes arrive from Arrow – see RLuther for list
JNattrass	10-4319A should be used instead of 10-3531B for all TSV engines starting with engine for B280
SKlassen	determine lifetime service requirements for 10-3531B, 10-3536B, and 10-1443B – transfer from production stock, excess will be scrapped determine if remaining 10-4006A pcb's can be used up in 05-0097 kits and transfer from production stock, excess will be scrapped
MMoravec	scrap remaining qty of 10-3531B, 10-3536B, 10-1443B, and 10-4006A after service has transferred stock for their requirements.
WCoetzee	note all TSV units from B280 are 'AL-friendly' with new RTS pcb, table switches, and associated wiring.
ARadman	note new requirements for 57-5525B, 57-6492A, 57-6493A, 57-6768A, and 57-5816A.
SYuen	send copy of ECO to Arrow with new 11-0448A-U assembly drawing, wiring diagram, test procedure, test checklist, BOM, and QVL. note 10-3531B now replaced by 10-4319A note 10-3536B and 10-1443B now replaced by 10-4320A note 10-4006A now replaced by 10-4006B – 10-4006B can be sent out for quote send 10-4010A, 10-4016A, 10-4322A, and 57-5525B to Arrow for quote – these are new components in the 11-0448A power box. send 10-4319A to Expoglobe (and Logan?) for quote – this cable replaces 10-3531B. send 10-4320A and 10-4321A out for quote – can be competitive quote as cables are installed at Creo. send copy of ECO to Logan with new 10-1436A-D and 11-0453A-B assembly drawings, BOMs, and QVL.
THorrock	starting with engine for B280, use new 10-4319A EAVM-ESE cable for TSV engines
KLiang	starting from B280, rework all power boxes and wired frames to new revisions. use new 73-3308A startup test procedure, note new sections for impedance testing, hi-pot testing, and component labels.
GBouchard	update EL files with new drawings for 10-4010A, 10-4016A, 10-4319A, 10-4320A, 10-4321A, 10-4322A, 11-0506B, and 11-0804A.
JBrind	update EL files with new drawing for 10-4006B.
CTownsend	update assembly drawing for 10-1436A – convert to SolidWorks so production can maintain document in the future? create 11-0804A assembly drawing (copy from 11-0571A, dwgs are identical) – this drawing should be in SolidWorks if possible.

(tab to get more lines for more owners / actions)