



AMERICAN GRINDING & MACHINE CO.

2000 N. MANGO AVE. CHICAGO, IL 60639
773-889-4343 toll free: 877-988-4343
FAX 773-889-3781

CERTIFICATE OF COMPLIANCE

Customer: Hi-Tech Mfg PHONE: (847) 678-1616
4637 N. 25th Ave. FAX: (847) 678-1716
Schiller Park, IL
60176

RE: PURCHASE ORDER 17028/17213

PRINT NUMBER(S) (if applicable)

L1430802-200021 - 4 Pcs.

4 Pcs / 4 Pcs.

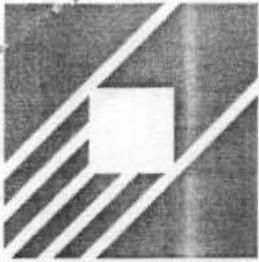
L1430802-200011 - 4 Pcs.

This is to certify that the services and /or material furnished by American Grinding & Machine Company on this order meets the requirements of listed purchase order and any prints furnished to us for that purchase order.

Signature of American Grinding Representative

09/10/07

Date



**HI-TECH
Manufacturing, Inc.**

CNC Milling & Turning
 Prototypes & Special Machinery
 4637 N. 25th Ave.
 Schiller Park, IL 60176

Hi-Tech Manufacturing, Inc.
 4637 N. 25th Ave.
 Schiller Park, IL 60176
 USA

Ph: (847) 678-1616
 Fax: (847) 678-1617

Purchase Order

Number: 17213

Date: 09-Aug-07

To

American Grinding & Machine Co
 2000 N. Mango Ave.
 Chicago, IL 60639-2899
 USA

Ship To

Hi-Tech Manufacturing, Inc.
 4637 N. 25th Ave.
 Schiller Park, IL 60176
 USA

Ph: (773) 889-4343

Fax: (773) 889-3781

Ph: (847) 678-1616

Fax: (847) 678-1617

Terms		Ship Via	FOB	Issued By
		Deliver	Destination	JOE
Quantity	Description		Unit Price	Amount
1. Please enter this order in accordance with prices, delivery and specifications shown below. 2. Please notify us immediately if you are unable to ship as specified. 3. Overshipment of product will not be accepted without prior approval from Hi-Tech. 4. UPS Ground shipments must be shipped COLLECT. Use account # 6E1-000. 5. No declared value charges will be accepted without prior approval by Hi-Tech.				
18 ea Line: 001	L1430802-200011 INTERFACE PLATE (DOUBLE CAM) Vibratory Stress Relieve Certifiate required	Rev: 03 Due: 09-Aug-07 Job: 55420B011	\$0.00 ea	\$0.00
2 ea Line: 002	L1430802-200021 INTERFACE PLATE (SINGLE CAM) Vibratory Stress Relieve Certifiate required	Rev: 03 Due: 16-Aug-07 Job: 55420B021	\$0.00 ea	\$0.00
			Total:	\$0.00



**HI-TECH
Manufacturing, Inc.**

CNC Milling & Turning
 Prototypes & Special Machinery
 4637 N. 25th Ave.
 Schiller Park, IL 60176

Hi-Tech Manufacturing, Inc.
 4637 N. 25th Ave.
 Schiller Park, IL 60176
 USA

Ph: (847) 678-1616
 Fax: (847) 678-1617

Purchase Order

Number: 17028

Date: 26-Jul-07

To

American Grinding & Machine Co
 2000 N. Mango Ave.
 Chicago, IL 60639-2899
 USA

Ship To

Hi-Tech Manufacturing, Inc.
 4637 N. 25th Ave.
 Schiller Park, IL 60176
 USA

Ph: (773) 889-4343

Fax: (773) 889-3781

Ph: (847) 678-1616

Fax: (847) 678-1617

Terms		Ship Via	FOB	Issued By
		Deliver	Destination	JOE
Quantity	Description		Unit Price	Amount
	1. Please enter this order in accordance with prices, delivery and specifications shown below. 2. Please notify us immediately if you are unable to ship as specified. 3. Overshipment of product will not be accepted without prior approval from Hi-Tech. 4. UPS Ground shipments must be shipped COLLECT. Use account # 6E1-000. 5. No declared value charges will be accepted without prior approval by Hi-Tech.			
8 ea Line: 001	L1430802-200021 INTERFACE PLATE (SINGLE CAM) Vibratory Stress Relieve Certifiante required,DID NOT REC CERTS R.M	Rev: 03 Due: 01-Aug-07 Job: 55420B021	\$0.00 ea	\$0.00
			Total:	\$0.00



AMERICAN GRINDING & MACHINE CO.

2000 N. MANGO AVE. CHICAGO, IL 60639
773-889-4343 toll free: 877-988-4343
FAX 773-889-3781

CERTIFICATE OF COMPLIANCE

Customer: Hi-Tech Mfg PHONE: (847) 678-1616
4637 N. 25th Ave. FAX: (847) 678-1716
Schiller Park, IL
60176

RE: PURCHASE ORDER 17155/17338

PRINT NUMBER(S) (if applicable) L1430802-200030
8 pgs.

This is to certify that the services and /or material furnished by American Grinding & Machine Company on this order meets the requirements of listed purchase order and any prints furnished to us for that purchase order.

Signature of American Grinding Representative

09, 10, 07
Date



**HI-TECH
Manufacturing, Inc.**
CNC Milling & Turning
Prototypes & Special Machinery
4637 N. 25th Ave.
Schiller Park, IL 60176

Hi-Tech Manufacturing, Inc.
4637 N. 25th Ave.
Schiller Park, IL 60176
USA

Ph: (847) 678-1616
Fax: (847) 678-1617

Purchase Order

Number: 17155

Date: 06-Aug-07

To

American Grinding & Machine Co
2000 N. Mango Ave.
Chicago, IL 60639-2899
USA

Ship To

Aamro Corp.
3110 S. 26th Ave.
Broadview, IL 60155
USA

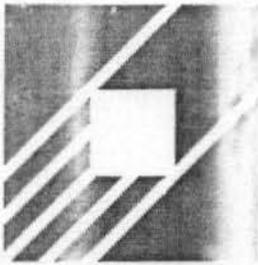
Ph: (773) 889-4343

Fax: (773) 889-3781

Ph: (708) 343-5543

Fax: (708) 343-5547

Terms		Ship Via	FOB	Issued By
		Deliver	Destination	JOE
Quantity	Description		Unit Price	Amount
	1. Please enter this order in accordance with prices, delivery and specifications shown below. 2. Please notify us immediately if you are unable to ship as specified. 3. Overshipment of product will not be accepted without prior approval from Hi-Tech. 4. UPS Ground shipments must be shipped COLLECT. Use account # 6E1-000. 5. No declared value charges will be accepted without prior approval by Hi-Tech.			
7 ea Line: 001	L1430802-200030 PEDESTAL WELDMENT Vibratory Stress Relieve Certificate required	Rev: 01 Due: 10-Aug-07 Job: 55420B030	\$0.00 ea	\$0.00
			Total:	\$0.00



**HI-TECH
Manufacturing, Inc.**

CNC Milling & Turning
 Prototypes & Special Machinery
 4637 N. 25th Ave.
 Schiller Park, IL 60176

Hi-Tech Manufacturing, Inc.
 4637 N. 25th Ave.
 Schiller Park, IL 60176
 USA

Ph: (847) 678-1616
 Fax: (847) 678-1617

Purchase Order

Number: 17338

Date: 20-Aug-07

To

American Grinding & Machine Co
 2000 N. Madison Ave.
 Chicago, IL 60639-2899
 USA

Ship To

Aamro Corp.
 3110 S. 26th Ave.
 Broadview, IL 60155
 USA

Ph: (773) 889-4343

Fax: (773) 889-3781

Ph: (708) 343-5543

Fax: (708) 343-5547

Terms		Ship Via	FOB	Issued By
		Deliver	Destination	JOE
Quantity	Description		Unit Price	Amount
	1. Please enter this order in accordance with prices, delivery and specifications shown below. 2. Please notify us immediately if you are unable to ship as specified. 3. Reshipment of product will not be accepted without prior approval from Hi-Tech. 4. All Ground shipments must be shipped COLLECT. Use account # 6E1-000. 5. Declared value charges will be accepted without prior approval by Hi-Tech.			
12 - / // Line: 001	L1: 802-200030 PE: STAL WELDMENT Vibratory Stress Relieve Certificate required	Rev: 01 Due: 24-Aug-07 Job: 55420B030	\$0.00 ea	\$0.00
			Total:	\$0.00

INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: HI-TECH MANUFACTURING, INC.

PART NAME: INTERFACE PLATE (DOUBLE CAM)

DRAWING #: L1430802-200011 (03)

SERIAL #: 07

P.O. #: 7A-08189

DATE: 08-15-07

ACCEPTANCE CRITERIA

1. Visually inspect for damage.	<u>Accept</u> /Reject
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CRITICAL DIMENSIONS (mm)

FEATURE	TARGET	TOLERANCE	MEASURED VALUE	
Flatness of Datum A	$\leq .02$	$\leq .02$	$\leq .02$	<u>Accept</u> /Reject
Perpendicularity of Datum B to A	$\leq .02$	$\leq .02$	$\leq .02$	<u>Accept</u> /Reject
Parallelism of inner edge on Cam Block A to B	$\leq .02$	$\leq .02$	$\leq .02$	<u>Accept</u> /Reject
Parallelism of inner edge on Cam Block B to B	$\leq .02$	$\leq .02$	$\leq .02$	<u>Accept</u> /Reject
Parallelism of outer edge on Cam Block B to B	$\leq .02$	$\leq .02$	$\leq .02$	<u>Accept</u> /Reject
Width of mounting surface on Cam Block B	142.01	+0.02/-0	142.02	<u>Accept</u> /Reject
Width of mounting surface on Cam Block A	254.00	+0.02/-0	254.01	<u>Accept</u> /Reject
Separation of outer edges of Cam Blocks	685.42	+0.08/-0.08	685.44	<u>Accept</u> /Reject

INSPECTOR: Simob

QA Supervisor: Muelze

TEST EQUIPMENT USED: CMM, gage blocks, dial indicator.

COMMENTS:

INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: METALEX, INC.

PART NAME: UNDULATOR GIRDER ASSY

DRAWING #: L1430401-100400 (05)

SERIAL #: 07

P.O. #: 7A-08189

DATE: 09-24-07

ACCEPTANCE CRITERIA

1. Visually inspect for damage. Accept/Reject

CRITICAL DIMENSIONS (mm)

FEATURE	TARGET	TOLERANCE	MEASURED VALUE	
Perpendicularity of Datum B to C	$\leq .025$	$\leq .025$	$\leq .025$	<u>Accept</u> /Reject
Perpendicularity of Datum A to C	$\leq .025$	$\leq .025$	$\leq .025$	<u>Accept</u> /Reject
True position of 2 D2 hole to 2 D3 holes	$\leq .03$	$\leq .03$	$\leq .02$	<u>Accept</u> /Reject
Parallelism of support pad surface to Datum C	$\leq .07$	$\leq .07$	#1 $\leq .03$	<u>Accept</u> /Reject
			#2 $\leq .03$	
			#3 $\leq .04$	
			#4 $\leq .07$	
Distance from Datum C to support pad surface	109.50	+.2/-.2	#1 109.52	<u>Accept</u> /Reject
			#2 109.52	
			#3 109.55	
			#4 109.42	

INSPECTOR: Simon

QA Supervisor: Mullaz

TEST EQUIPMENT USED: feeler gage, dial indicator, micrometer, precision square.

COMMENTS:

INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: HI-TECH MANUFACTURING, INC.

PART NAME: INTERFACE PLATE (SINGLE CAM)

DRAWING #: L1430802-200021 (03)

SERIAL #: 07

P.O. #: 7A-08189

DATE: 08-15-07

ACCEPTANCE CRITERIA

1. Visually inspect for damage.	<u>Accept</u> /Reject
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CRITICAL DIMENSIONS (mm)

FEATURE	TARGET	TOLERANCE	MEASURED VALUE	
Flatness of Datum A	≤ 0.02	≤ 0.02	0.01	<u>Accept</u> /Reject
Perpendicularity of Datum B to A	≤ 0.02	≤ 0.02	0.01	<u>Accept</u> /Reject
Parallelism of upper edge on lower Cam Block C to B	≤ 0.02	≤ 0.02	0.01	<u>Accept</u> /Reject
Parallelism of lower edge on upper Cam Block C to B	≤ 0.02	≤ 0.02	0.01	<u>Accept</u> /Reject
Parallelism of upper edge on upper Cam Block C to B	≤ 0.02	≤ 0.02	0.01	<u>Accept</u> /Reject
Width of mounting surface on lower Cam Block	142.01	+0.02/-0	142.02	Accept/Reject
Width of mounting surface on upper Cam Block	142.01	+0.02/-0	142.02	Accept/Reject
Separation of inner edges of Cam Blocks	457.43	+0.08/-0.08	457.40	<u>Accept</u> /Reject

INSPECTOR: *Simon*

QA Supervisor: *Muelaga*

TEST EQUIPMENT USED: CMM, gage blocks, dial indicator.

COMMENTS:

Metalex PO# 171829-BL-7558

Certificate of Conformance

Customer: Metalex Mfg. Inc.
Address: 5750 Cornell Rd.
Cincinnati, Oh: 45242
Attention: Quality Engineering Dept.

METALEX
Q. A. DEPT
ACCEPTED
DATE 7/16/07
BY TC

Item	Qty.	Part Number	Rev. Part Name	Job #
1	5	B62WZ111	BATCH# 0E 1637L TILE CIAD H.S. SW4026 Shelf life 36 months	7558

Sherwin Williams
Supplier Name

certifies that all materials, processes, etc. furnished to

Metalex, for the purchase order number stated above, comply with all conditions stated in the P.O. for the items shown.

Signed/Dated:  7.16-0
Supplier Quality Rep.



SHERWIN-WILLIAMS.

SHERWIN-WILLIAMS
3143 E KIMBER RD
SHARONVILLE OH 45241

Visit www.sherwin-williams.com
Store 1246 KEVIN
(513) 771-8572
Fax - (513) 771-8590

PACKING
SLIP
No. 7233-5

ACCOUNT: 6538-0111-8 JOB 01 METALEX MFG

METALEX MFG
5750 CORNELL RD
CINCINNATI OH 45242 2010

PO: 71829-BL-7553

ORDER: CE0025607Q1246

DATE: 07/16/07

TIME: 8:08 AM

METALEX
Q. A. DEPT
ACCEPTED
DATE 7/16/07
BY TC

E16/13651 11

SALES NUMBER	SIZE	PRODUCT	DESCRIPTION	QUANTITY
6405-18999	GALLON	B62WZ111	TC HS EX WHT A	5
Color: SW4026 SLATE GRAY				
<u>BAC Blend-a-Color</u> OZ 32 64 128				
B1	Black	2	16 1 1	
G2	New Green	-	3 - -	
Y3	Deep Gold	-	2 - -	
Sher-Color Formula				
TOTAL LINES				1
				5

O E 1637L

^{MWT}
RECEIVED
JUL 16 2007
METALEX MFG.
BY CD

MERCHANDISE RECEIVED IN GOOD ORDER BY:

BILLY BLANTON

DATE (CENTRALIZED INVOICE)

LINTECH

1845 Enterprise Way
Monrovia, CA 91016-4272
Phone: 626.358.0110 – Fax: 626.303.2035

CERTIFICATION

Date: 08/15/2007
Sales Order No.: 42873
Pick List No.: 52559

Sold To:
IMAC
1301-A Bowes Road
Elgin, IL 30123

Ship To:
Hi-Tech Manufacturing
4637 No. 25th Ave.
Schiller Park, IL 60176

Order No.: 7396

Order No.: None

Seller hereby certifies as follows - that all materials, parts and processes furnished against the above referenced purchase order were produced in conformance with all applicable specifications as referenced therein, and are on file subject to examination.

<u>Quantity Shipped</u>	<u>Part Number/Description</u>	<u>Serial Number</u>
(10)	206821 Rev."F" Single Axis Table	AA00733003 AA00733004 AA00733005 AA00733006 AA00733007 AA00733008 AA00733009 AA00733010 AA00733011 AA00733012

By: 
Q.C. Manager

LINTECH

1845 Enterprise Way
Monrovia, CA 91016-4272
Phone: 626.358.0110 – Fax: 626.303.2035

CERTIFICATION

Date: 08/22/2007
Sales Order No.: 42873
Pick List No.: 52621

Sold To:
IMAC
1301-A Bowes Road
Elgin, IL 30123

Ship To:
Hi-Tech Manufacturing
4637 No. 25th Ave.
Schiller Park, IL 60176

Order No.: 7396

Order No.: None

Seller hereby certifies as follows - that all materials, parts and processes furnished against the above referenced purchase order were produced in conformance with all applicable specifications as referenced therein, and are on file subject to examination.

<u>Quantity Shipped</u>	<u>Part Number/Description</u>	<u>Serial Number</u>
(10)	206821 Rev."F" Single Axis Table	AA00734009 AA00734010 AA00734011 AA00734012 AA00734013 AA00734014 AA00734015 AA00734016 AA00734017 AA00734018

By: 
Q.C. Manager



GAM Inspection Form

Record No. QRO-005-02
Revised: 09/29/05

Order #: 206059

Customer: IMAC Motion Cont

Serial #'s G45319-G45373

Part Number: 700402

Type Code: UPL-N23-010G

Qty: 55

Verify mounting dimensions

Motor Mfg: NEMA Standard Model:

- Check Pilot Diameter =
** Check for EVERY adapter **
- Check pilot height >
- Check bolt circle =
- Check hole size fits for:
- Check hole depth for flange thickness:
- Check shaft diameter =
** Check for EVERY gearbox **
- Check shaft engagement >
- Verify ratio and "smoothness" of gearbox by spinning input
- verify mounting bolts are correct qty and type of for all applicable adapters.
- Verify access hole plug is present and clamping ring bolt is accessible.
- Place bolts, plugs, and loose gears in a bag and wire to each individual gearbox.
- Verify key and keyways, if applicable
- Verify output coupling bore size, if applicable
- Verify shrink disc is present, if applicable
- Verify order is complete.

Assemble gearbox / verify appearance and label

- Clean gearbox and paint if necessary
- Mount input coupling to gearbox if applicable.
- Mount input adapter / lantern to gearbox if applicable
- Verify label is correct to order
- Apply label to gearbox on a flat surface on gearbox.
- Apply clear plastic overlay label to top of original label.

Customer Specific Notes (Inspection)

None

Verify special options

Notes:

Gearbox should include a 1/4" ID bushing. Check fit and place in bag with bolts.

Shipping Special Instruction

Packaged By: _____

Date: _____

Inspected By: *Biel*

Date: *08-13-07*

08-14-07



GAM Inspection Form

Record No. QRO-005-02
Revised: 09/29/05

Order #: 206059 Customer: IMAC Motion Cont Serial #'s G46012-G46026
Part Number: 701058 Type Code: EPL-N34-490G-[N23-B01] Qty: 15

Verify mounting dimensions

- Motor Mfg: NEMA Standard Model: N23 - 3/8"
- Check Pilot Diameter = 1.5
** Check for EVERY adapter **
 - Check pilot height > 0.06
 - Check bolt circle = 2.625
 - Check hole size fits for: .205
 - Check hole depth for flange thickness: 0.25
 - Check shaft diameter = 0.375
** Check for EVERY gearbox **
 - Check shaft engagement > 0.82
 - Verify ratio and "smoothness" of gearbox by spinning input
 - Verify mounting bolts are correct qty and type of for all applicable adapters.
 - Verify access hole plug is present and clamping ring bolt is accessible.
 - Place bolts, plugs, and loose gears in a bag and wire to each individual gearbox.
 - Verify key and keyways, if applicable
 - Verify output coupling bore size, if applicable
 - Verify shrink disc is present, if applicable
 - Verify order is complete.

Shipping Special Instruction

Assemble gearbox / verify appearance and label

- Clean gearbox and paint if necessary
- Mount input coupling to gearbox if applicable.
- Mount input adapter / lantern to gearbox if applicable.
- Verify label is correct to order
- Apply label to gearbox on a flat surface on gearbox.
- Apply clear plastic overlay label to top of original label.

Customer Specific Notes (Inspection)

None

Verify special options

Notes:

If order is for IMAC, make a copy of the inspection sheet and send in box for customer.

Packaged By: _____ Date: _____

Inspected By: PJK Date: 9.24.07

Certificate of Inspection



HT-TECH

Manufacturing, Inc.

ISO 9001:2000

certified

This certificate is presented to

Argonne National Laboratory

Per PO # 7A-08189, part # #
L1430401-100101 (PF-381-000-13) quantity of 114 pcs
L1430401-100201 (PF-381-000-23) quantity of 38 pcs
Have been inspected and met all drawing requirements.

Q.C. Supervisor

Mudaz

09-07-07
Date

Certificate of Inspection



HTI-TECH

Manufacturing, Inc.

ISO 9001:2000
certified

This certificate is presented to

Argonne National Laboratory

Per PO # 7A-08189, part #
L1430401-100103 (PF-381-000-15) quantity of 136 pcs
L1430401-100303 (PF-381-002-15) quantity of 34 pcs
Have been inspected and met all drawing requirements.

Q.C. Supervisor

Muel...

09-07-07
Date

LCLS UNDULATOR SUPPORT CAM TEST DATA
ADVANCED PHOTON SOURCE
ARGONNE NATIONAL LAB

07-1

TIME OF TEST: 9/15/2007 11:43:00 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 2196.82
ROTARY POT GAIN = 346.05
POT OFFSET (DEG) = 59.39
DEVIATION RMS (MICRONS) = 7.72
DEVIATION MAX (MICRONS) = 21.86
DEVIATION MIN (MICRONS) = -19.26

POS#1 BWD

CAM ECCEN R (MICRONS) = 2197.96
ROTARY POT GAIN = 346.05
POT OFFSET (DEG) = 59.39
DEVIATION RMS (MICRONS) = 7.43
DEVIATION MAX (MICRONS) = 17.14
DEVIATION MIN (MICRONS) = -22.63

POS#2 FWD

CAM ECCEN R (MICRONS) = 2193.88
ROTARY POT GAIN = 346.05
POT OFFSET (DEG) = 59.39
DEVIATION RMS (MICRONS) = 7.07
DEVIATION MAX (MICRONS) = 17.44
DEVIATION MIN (MICRONS) = -16.99

POS#2 BWD

CAM ECCEN R (MICRONS) = 2197.31
ROTARY POT GAIN = 346.05
POT OFFSET (DEG) = 59.39
DEVIATION RMS (MICRONS) = 6.65
DEVIATION MAX (MICRONS) = 16.39
DEVIATION MIN (MICRONS) = -16.05

POS#3 FWD

CAM ECCEN R (MICRONS) = 2194.57
ROTARY POT GAIN = 346.05
POT OFFSET (DEG) = 59.39
DEVIATION RMS (MICRONS) = 7.03
DEVIATION MAX (MICRONS) = 18.28
DEVIATION MIN (MICRONS) = -21.23

POS#3 BWD

CAM ECCEN R (MICRONS) = 2198.23
ROTARY POT GAIN = 346.05
POT OFFSET (DEG) = 59.39
DEVIATION RMS (MICRONS) = 7.11
DEVIATION MAX (MICRONS) = 15.63
DEVIATION MIN (MICRONS) = -17.73

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA
ADVANCED PHOTON SOURCE
ARGONNE NATIONAL LAB

07-2

TIME OF TEST: 9/15/2007 10:52:53 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1562.99
ROTARY POT GAIN = 345.42
POT OFFSET (DEG) = 60.88
DEVIATION RMS (MICRONS) = 5.34
DEVIATION MAX (MICRONS) = 20.36
DEVIATION MIN (MICRONS) = -18.84

POS#1 BWD

CAM ECCEN R (MICRONS) = 1563.95
ROTARY POT GAIN = 345.42
POT OFFSET (DEG) = 60.89
DEVIATION RMS (MICRONS) = 5.73
DEVIATION MAX (MICRONS) = 18.61
DEVIATION MIN (MICRONS) = -14.23

POS#2 FWD

CAM ECCEN R (MICRONS) = 1562.79
ROTARY POT GAIN = 345.42
POT OFFSET (DEG) = 60.88
DEVIATION RMS (MICRONS) = 5.68
DEVIATION MAX (MICRONS) = 19.74
DEVIATION MIN (MICRONS) = -16.71

POS#2 BWD

CAM ECCEN R (MICRONS) = 1562.96
ROTARY POT GAIN = 345.42
POT OFFSET (DEG) = 60.89
DEVIATION RMS (MICRONS) = 5.63
DEVIATION MAX (MICRONS) = 15.44
DEVIATION MIN (MICRONS) = -15.13

POS#3 FWD

CAM ECCEN R (MICRONS) = 1561.84
ROTARY POT GAIN = 345.42
POT OFFSET (DEG) = 60.88
DEVIATION RMS (MICRONS) = 5.83
DEVIATION MAX (MICRONS) = 21.64
DEVIATION MIN (MICRONS) = -16.52

POS#3 BWD

CAM ECCEN R (MICRONS) = 1564.35
ROTARY POT GAIN = 345.42
POT OFFSET (DEG) = 60.89
DEVIATION RMS (MICRONS) = 5.85
DEVIATION MAX (MICRONS) = 16.38
DEVIATION MIN (MICRONS) = -13.43

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA
ADVANCED PHOTON SOURCE
ARGONNE NATIONAL LAB

07-3

TIME OF TEST: 9/15/2007 10:21:22 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1568.94
ROTARY POT GAIN = 343.80
POT OFFSET (DEG) = 60.33
DEVIATION RMS (MICRONS) = 12.32
DEVIATION MAX (MICRONS) = 29.15
DEVIATION MIN (MICRONS) = -31.56

POS#1 BWD

CAM ECCEN R (MICRONS) = 1568.42
ROTARY POT GAIN = 343.80
POT OFFSET (DEG) = 60.34
DEVIATION RMS (MICRONS) = 11.23
DEVIATION MAX (MICRONS) = 21.72
DEVIATION MIN (MICRONS) = -31.99

POS#2 FWD

CAM ECCEN R (MICRONS) = 1569.54
ROTARY POT GAIN = 343.80
POT OFFSET (DEG) = 60.33
DEVIATION RMS (MICRONS) = 13.58
DEVIATION MAX (MICRONS) = 25.33
DEVIATION MIN (MICRONS) = -34.68

POS#2 BWD

CAM ECCEN R (MICRONS) = 1570.21
ROTARY POT GAIN = 343.80
POT OFFSET (DEG) = 60.34
DEVIATION RMS (MICRONS) = 11.18
DEVIATION MAX (MICRONS) = 21.73
DEVIATION MIN (MICRONS) = -33.56

POS#3 FWD

CAM ECCEN R (MICRONS) = 1569.20
ROTARY POT GAIN = 343.80
POT OFFSET (DEG) = 60.33
DEVIATION RMS (MICRONS) = 13.58
DEVIATION MAX (MICRONS) = 25.74
DEVIATION MIN (MICRONS) = -34.26

POS#3 BWD

CAM ECCEN R (MICRONS) = 1569.02
ROTARY POT GAIN = 343.80
POT OFFSET (DEG) = 60.34
DEVIATION RMS (MICRONS) = 11.68
DEVIATION MAX (MICRONS) = 22.18
DEVIATION MIN (MICRONS) = -33.48

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA
ADVANCED PHOTON SOURCE
ARGONNE NATIONAL LAB

07-4

TIME OF TEST: 9/15/2007 11:09:35 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1553.98
ROTARY POT GAIN = 342.79
POT OFFSET (DEG) = 64.61
DEVIATION RMS (MICRONS) = 12.02
DEVIATION MAX (MICRONS) = 31.33
DEVIATION MIN (MICRONS) = -28.31

POS#1 BWD

CAM ECCEN R (MICRONS) = 1558.77
ROTARY POT GAIN = 342.79
POT OFFSET (DEG) = 64.61
DEVIATION RMS (MICRONS) = 11.61
DEVIATION MAX (MICRONS) = 30.99
DEVIATION MIN (MICRONS) = -22.37

POS#2 FWD

CAM ECCEN R (MICRONS) = 1553.98
ROTARY POT GAIN = 342.79
POT OFFSET (DEG) = 64.61
DEVIATION RMS (MICRONS) = 12.74
DEVIATION MAX (MICRONS) = 34.97
DEVIATION MIN (MICRONS) = -27.54

POS#2 BWD

CAM ECCEN R (MICRONS) = 1557.30
ROTARY POT GAIN = 342.79
POT OFFSET (DEG) = 64.60
DEVIATION RMS (MICRONS) = 9.64
DEVIATION MAX (MICRONS) = 26.16
DEVIATION MIN (MICRONS) = -19.31

POS#3 FWD

CAM ECCEN R (MICRONS) = 1554.17
ROTARY POT GAIN = 342.79
POT OFFSET (DEG) = 64.60
DEVIATION RMS (MICRONS) = 10.97
DEVIATION MAX (MICRONS) = 27.01
DEVIATION MIN (MICRONS) = -27.03

POS#3 BWD

CAM ECCEN R (MICRONS) = 1556.76
ROTARY POT GAIN = 342.79
POT OFFSET (DEG) = 64.60
DEVIATION RMS (MICRONS) = 9.21
DEVIATION MAX (MICRONS) = 23.06
DEVIATION MIN (MICRONS) = -23.12

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA
ADVANCED PHOTON SOURCE
ARGONNE NATIONAL LAB

07-5

TIME OF TEST: 9/17/2007 7:26:39 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1557.99
ROTARY POT GAIN = 345.14
POT OFFSET (DEG) = 59.54
DEVIATION RMS (MICRONS) = 9.05
DEVIATION MAX (MICRONS) = 20.80
DEVIATION MIN (MICRONS) = -23.10

POS#1 BWD

CAM ECCEN R (MICRONS) = 1561.14
ROTARY POT GAIN = 345.14
POT OFFSET (DEG) = 59.54
DEVIATION RMS (MICRONS) = 10.43
DEVIATION MAX (MICRONS) = 24.38
DEVIATION MIN (MICRONS) = -23.52

POS#2 FWD

CAM ECCEN R (MICRONS) = 1560.11
ROTARY POT GAIN = 345.14
POT OFFSET (DEG) = 59.54
DEVIATION RMS (MICRONS) = 9.46
DEVIATION MAX (MICRONS) = 23.44
DEVIATION MIN (MICRONS) = -20.68

POS#2 BWD

CAM ECCEN R (MICRONS) = 1562.56
ROTARY POT GAIN = 345.14
POT OFFSET (DEG) = 59.54
DEVIATION RMS (MICRONS) = 10.57
DEVIATION MAX (MICRONS) = 23.20
DEVIATION MIN (MICRONS) = -24.92

POS#3 FWD

CAM ECCEN R (MICRONS) = 1558.76
ROTARY POT GAIN = 345.14
POT OFFSET (DEG) = 59.54
DEVIATION RMS (MICRONS) = 10.50
DEVIATION MAX (MICRONS) = 24.43
DEVIATION MIN (MICRONS) = -21.31

POS#3 BWD

CAM ECCEN R (MICRONS) = 1563.71
ROTARY POT GAIN = 345.14
POT OFFSET (DEG) = 59.54
DEVIATION RMS (MICRONS) = 10.28
DEVIATION MAX (MICRONS) = 25.05
DEVIATION MIN (MICRONS) = -21.72

=== TEST PASS! ===

--- END OF TEST ---

Metalex Manufacturing
L1430401-100400 Girder Support
Hi-Tech Purchase Order No. 16185

Visual Weld Inspection Report

Metalex Job: 2007-7558 Serial Number: 7A-08198- (07)

Welding and Visual Welding Inspection Requirements:

Per SOW L143-00093 Section 4.1.4.2: For all welded parts, the welding practice shall conform to the Structural Welding Code, ANSI/AWS D1.1-D1.1M:2004..

Per SOW L143-00093 Section 4.1.4.2.2: All structural welds shall be visually inspected as defined in section 6.9 of the Structural Welding Code. The contractor shall certify that the welds were inspected and were acceptable.

Part Print L1430401-100400 sheet 1 of 3.

Fabrication Stage#1

Features: W1 and W2

Acceptable (Y/N) YES Initial: B.H. Date: 6/27/07

Fabrication Stage#2

Features: W3, W4 and W5

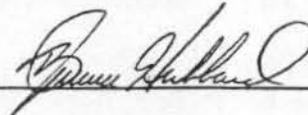
Acceptable (Y/N) YES Initial: B.H. Date: 7/2/07

Fabrication Stage#3

Features: W6, W7, W8, W9, W10, W11 and W12

Acceptable (Y/N) YES Initial: B.H. Date: 7/3/07

Verification of completion of weld visual inspection:

Completed By:   Date: 7/3/07

CERTIFICATE OF CONFORMANCE

Date: 09/12/2007 Metalex Job# 2007-7558
 Customer: Hi-Tech Manufacturing, Inc. Purchase Order # 16185
4637 N. 25th Ave. MX Packing List # 40943 & 41061
Schiller Park, IL 60176
 Attention: Simon Sorsher

Metalex certifies that all material, processes, procedures, and dimensions are as called for on the purchase order, drawings, and/or amendments supplied by you.
 All information concerning this part or parts, units and/or assemblies are on file at Metalex Manufacturing, Inc.

<u>ITEM</u>	<u>QTY</u>	<u>PART NUMBER</u>	<u>REV</u>	<u>PART NAME</u>	<u>ID # *</u>
001	7	L1430401-100400	6	Support Girder	See Below

*IDENTIFICATION NUMBER INCLUDES SERIAL #, HEAT #, AND/OR LOT #.

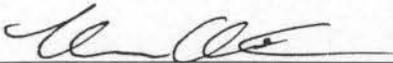
COMMENTS: "FIRST ARTICLE" submitted on Metalex Shipper # 408586, dated 08/13/07 (S/N: 7A-08198-01).

Applicable serial numbers of this shipment are 7A-08198-05 thru 7A-08198-09, 7A-08198-011, and 7A-08198-012.

Some internal documents in this quality package may contain documents certifying to revision level "5" or "5V". Metalex certifies these documents and processes conform to the rev 6 revision level and the parts conform to revision level "6".

Metalex is in compliance with Statement of Worksopce Document No. L143-00093, Revision New, dated 12/12/06.

Manufactured from Metalex purchased material. Reference heat numbers: T7257, T7232, T7130, T7141, U9728, 0129862, X25899, J62810, JF6843, J70358, and 478765.


 Metalex Representative Signature

Thomas Clark
 Print Name

9/12/07
 Date

The Cincinnati Steel Treating Co
5701 Mariemont Ave.
Cincinnati, Ohio 45227 (513) 271-3173

Certification ID
36335

Order ID
96401

CERTIFICATION OF COMPLIANCE

CUSTOMER

Metalex Mfg., Inc.
5750 Cornell Road

Cincinnati OH
Bkt Ord # 45242

Purchase Order 71627 Customer Cust

Qty	Part No / Description	Material
4	L1430401-100400 SUPPORT GIRDER	A36

REV#5, S/N 7A-08198-05, 7A-08198-06, 7A-08198-07,
7A-08198-08

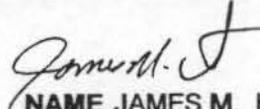
STRESS RELIEVE PER AWS D1.1 REV. 2004.
NOTE: SUPPORT TO PREVENT DISTORTION.
HEAT TREAT CHARTS REQUIRED.
CERTIFICATIONS REQUIRED.

RESULTS

THE ABOVE PARTS HAVE BEEN HEAT TREATED TO THE FOLLOWING:

HEAT TREATMENT STRESS RELIEVED PER AWS D1.1 REV 2004

WE HEREBY CERTIFY THAT THE ABOVE PARTS WERE PROCESSED IN ACCORDANCE WITH THE SPECIFICATIONS AND INSTRUCTIONS SPECIFIED ON THE ABOVE PURCHASE ORDER AND THAT THE RESULTS AND REPORT THEREOF ARE AS STATED. ALL TESTING AND INSPECTION PROCEDURES EMPLOYED WERE IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS AND THE RESULTS THEREOF ARE ON FILE.


NAME JAMES M. HUNT
TITLE QA MANAGER
DATE 7/6/2007

METALEX
Q. A. DEPT
ACCEPTED
DATE 7/11/07
BY TC

MTX
QC 28

Hi-Tech 755B

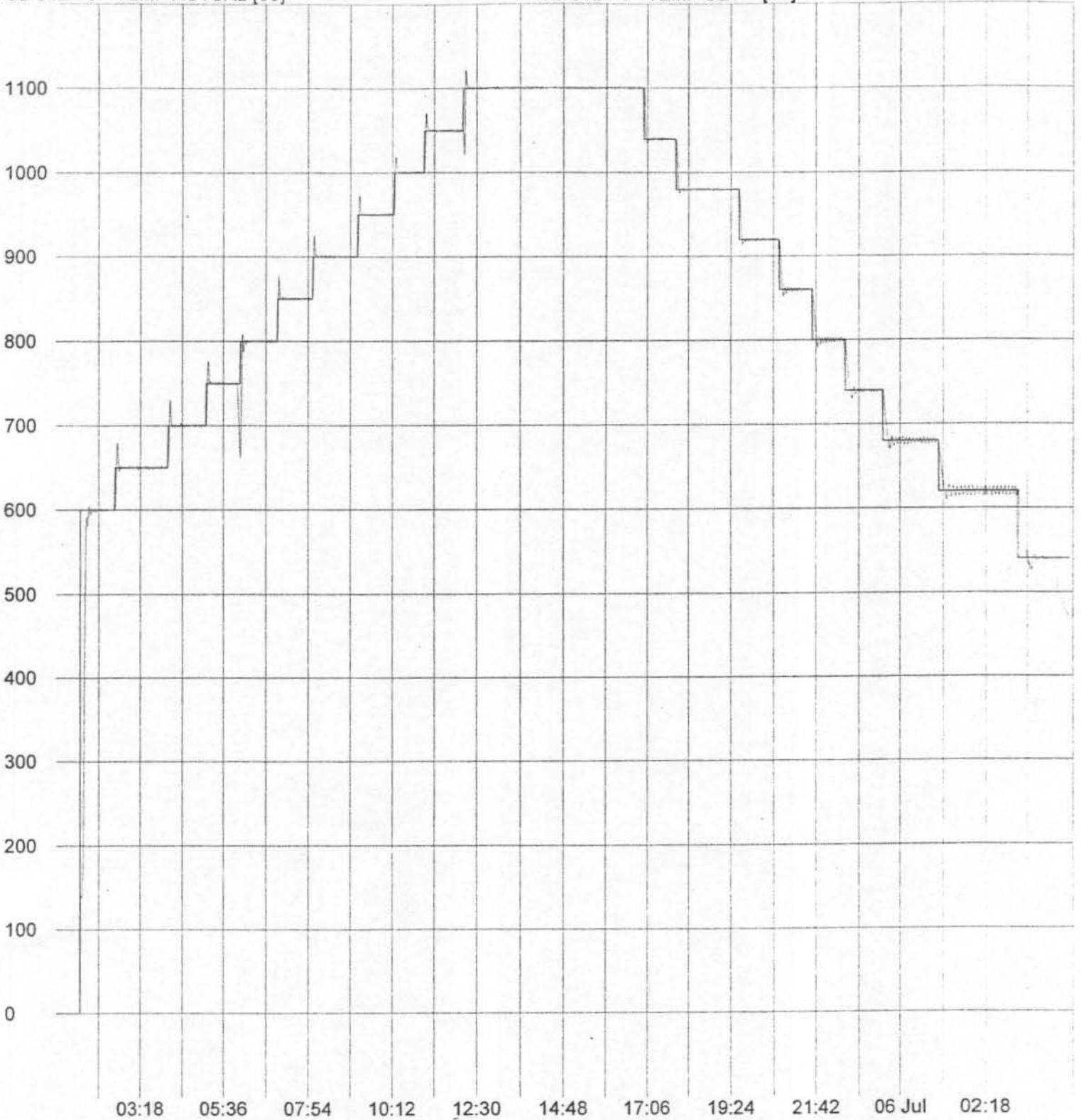
Datalog Report

Start: 7/5/2007 1:00:00 AM
End: 7/6/2007 4:30:00 AM
Sample every 1 minute(s)
Printed 7/6/2007 10:41:01 AM

Customer: METALEX MFG.
Part#: L1430401-100400
PO#: 71627
CST Order #: 96401

CB 512 - 0 - TEMP ACTUAL [00]

CB 512 - 1 - TEMP SET [01]



Inspection Origin		Vendor (Sub-Tier Source) Identification		Customer Identification		
<input type="checkbox"/> Receiving	Vendor Name N/A	Part No.		REV	P.O. Number	
<input type="checkbox"/> In-Process		L1430401-100400		5V	16185	
<input checked="" type="checkbox"/> Final	Date Rec'd N/A	P.O. No. N/A		Part Name Undulator Support Girder		
<input type="checkbox"/> Rework/Repair	Serial Numbers: 07		Customer Name Hi-Tech Manufacturing			
<input type="checkbox"/> First Article						
At Oper. 170						
SPECIFICATION	B/P ZONE	INSPECTION METHOD / GAGE NO.	ACTUAL DIMENSION / GAGE VERIFICATION (Range of Readings or Accept Status)	QTY ACC	QTY REJ	

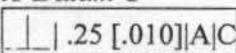
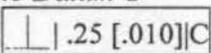
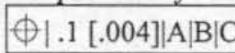
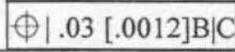
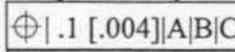
**** ALL DIMENSIONS TO BE RECORDED IN MILLIMETERS ****
**** ALL TEMPERATURES TO BE RECORDED IN CELSIUS ****

ALL DIMENSIONS APPLY AT A TEMPERATURE OF 20 DEGREES CELSIUS. PART MUST BE IN THERMAL EQUILIBRIUM DURING MEASUREMENTS AND AT THE SAME TEMPERATURE AT THE BEGINNING AND CONCLUSION OF THE MEASUREMENTS WITHIN +/- 2 DEG. CELSIUS.

PART TEMPERATURE BEFORE INSPECTION (Record in Celsius)	SOW 4.5.4	CONTACT THERMOMETER MX1794	20.40° C	MTX QC 8
PART TEMPERATURE DURING INSPECTION (Record in Celsius)	SOW 4.5.4	CONTACT THERMOMETER MX1794	20.43° C	MTX QC 8
PART TEMPERATURE AFTER INSPECTION (Record in Celsius)	SOW 4.5.4	CONTACT THERMOMETER MX1794	20.42° C	MTX QC 8

CRITICAL DIMENSIONS PER SECTION 4.5.2.2 OF DOC. # L143-00093

SHEET 2 - TOP VIEW

A) Flatness of Datum B of .030 [.001]	N/A	CMM MX1269	.022	MTX QC 8
B) Perpendicularity of Datum B to Datum C 	E8	CMM MX1269	.022	MTX QC 8
C) Flatness of datum A of .030 [.001]	N/A	CMM MX1269	.028	MTX QC 8
D) Perpendicularity of Datum A to Datum C 	D8	CMM MX1269	.055	MTX QC 8
E) 9X Ø 6.338 - 6.350 marked "D1", "D2" & "D3"	E7 E6 E3	CMM MX1269	6.338 - 6.345 Ø	MTX QC 8
F) True position of "D3" holes 2X  	E3	CMM MX1269	.093 .100 <hr/> .003	MTX QC 8
F) True position of "D2" holes 2X  	E6	CMM MX1269	.071 .093 <hr/> .011	MTX QC 8
F) Locations of "D1" holes 444.50 [17.500]	E7	CMM MX1269	444.573	MTX QC 8

STAMP MTX QC 8	INSPECTED BY THOMAS G COOK	DATE 8/1/07	PAGE 1 OF 2	QTY ACC 1	QTY REJ 0
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Metalex
 Customized Machinery and Parts
 CERTIFIED ISO 9001 QUALITY MANAGEMENT

INSPECTION PLANNING & REPORT FORM
 Metalex Mfg.
 5750 Cornell Rd | Cincinnati, OH 45242 | (513) 489-0507

Job No.
2007-7558

Qty
1

Inspection Origin		Vendor (Sub-Tier Source) Identification		Customer Identification		
<input type="checkbox"/> Receiving	Serial Numbers: 07	Vendor Name	Part No.	REV	P.O. Number	
<input type="checkbox"/> In-Process		N/A	L1430401-100400	5V	16185	
<input checked="" type="checkbox"/> Final		Date Rec'd	P.O. No.	Part Name		
<input type="checkbox"/> Rework/Repair		N/A	N/A	Undulator Support Girder		
<input type="checkbox"/> First Article			Customer Name			
At Oper. 170			Hi-Tech Manufacturing			
SPECIFICATION	B/P ZONE	INSPECTION METHOD / GAGE NO.	ACTUAL DIMENSION / GAGE VERIFICATION (Range of Readings or Accept Status)		QTY ACC	QTY REJ

1968.50 [77.500]	E4	CMM MX1269	1968.509	MTX QC B
3492.50 [137.500]	E2	CMM MX1269	3492.457	MTX QC B
2X 523.6 [20.61]	E1	CMM MX1269	523.572 523.571 523.575	MTX QC B
3185.26 [125.404]	D2	CMM MX1269	3185.202	MTX QC B
845.29 [33.179]	D6	CMM MX1269	845.308	MTX QC B
2X 95.10 [3.744]	D8	CMM MX1269	95.094 95.083	MTX QC B

SHEET 2 - SIDE VIEW

A) <input type="checkbox"/> C <input type="checkbox"/> .030 [.0012] 2X Surface "J"	C8	CMM MX1269	.016	MTX QC B
B) <input type="checkbox"/> C <input type="checkbox"/> .05 [.002]	C8	CMM MX1269	.016	MTX QC B

SHEET 2 - BOTTOM VIEW

A) 2X 749.78 ± .15	C7	CMM MX1269	749.806 749.814	MTX QC B
B) 2X 2340.00 ± .15	C5	CMM MX1269	2340.010 2340.005	MTX QC B
C) 4X <input type="checkbox"/> .05 [.002] B	B2	CMM MX1269	.005 .010 .011 .006	MTX QC B
D) 4X <input type="checkbox"/> .030 [.0012] A	B7	CMM MX1269	.000 .006 .007 .001	MTX QC B

SHEET 3 - SECTION B-B

E) <input type="checkbox"/> .07 [.003] C	C2	CMM MX1269	.031	MTX QC B
F) 4X 109.47 ± .08	C2	CMM MX1269	109.514 - 109.545	MTX QC B

ALL OTHER FEATURES ARE ACCEPTED PER METALEX OPERATOR ACCEPTANCE PROGRAM (OAP) MXW117001 & OPERATOR SIGNOFF OF ROUTER OPERATIONS FOR COMPLIANCE TO ALL DRAWING FEATURES GENERATED WITHIN THAT DEFINED OPERATION.	ROUTER SIGNOFF MX5009	CONFORMS ↓	MTX QC B
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STAMP MTX QC B	INSPECTED BY THOMAS G COOK	DATE 8/1/07	PAGE 2 OF 2	QTY ACC 1	QTY REJ 0
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