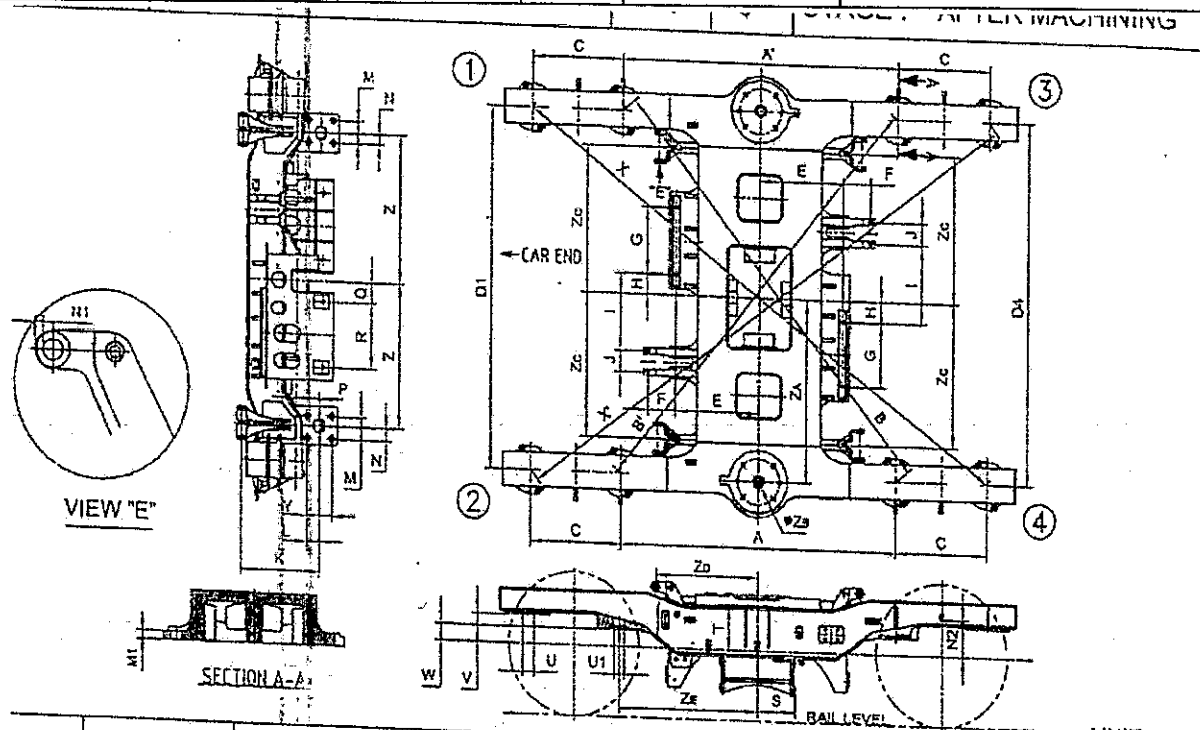




# INSPECTION RECORD (DIMENSIONS)

DOC.NO GR/TD/3077  
PROJECT: DMRC RS13

NAME: **BOGIE FRAME MACHINING** MODEL: **M** FRAME SI.No: **RS13 MBF H 010**  
Drg No: **909-83001** ALT: **6** STAGE: **AFTER MACHINING**

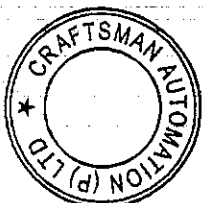


UNIT: mm

ITEM	DIMENSION	RESULT				ITEM	DIMENSION	RESULT			
		1	2	3	4			1	2	3	4
IA-A'	Max 0.5	0.006				N	60 ±0.50	59.633	60.106	60.075	60.099
IB-B'	Max 1.0	0.013				P	150 ±0.50	149.878	150.044	150.128	150.224
IX-X'	Max 1.0	0.010				Q	125 ±0.50	124.906	124.868		
C	600 ±0.20	600.021	600.056	600.049	600.072	R	400 ±0.50	400.008	400.031		
D	2200 ±0.5 *	2200.114	2200.114	2200.086	2200.065	S	245 ±0.50	245.006	244.708	245.190	244.617
E	546 ±0.50	546.052		546.066		T	265 ±0.50	264.994		264.997	
F	179 ±0.50	178.952		179.021		U	Ø70 +0.03	70.025	70.026	70.030	70.028
G	400 ±0.50	399.977		400.292		U1	Ø70 +0.03	70.026	70.028	70.026	70.030
H	125 ±0.25	124.870		124.850		V	170 ±0.50	170.111	170.023	170.202	170.003
G	473 ±0.50	472.986		472.919		W	100 ±0.50	99.945	100.054	99.946	100.055
J	130 ±0.50	130.008		130.006		Y	160 ±0.50	159.969	159.997	160.061	160.330
K	508 ±0.50	507.894	508.024	508.165	508.131	Z	882.5 -0.5/-1.5	881.437	881.381	881.720	881.332
L	80 ±0.50	80.402	79.994	79.958	79.700	ZA	1125 ±0.50	1125.015		1125.000	
M	135 ±0.50	135.039	134.949	135.017	135.050	ZB	Ø55 ±0.19	55.160		55.155	
M1	13 ±0.50	13.400	13.350	13.380	13.500	ZC	882.5 -0.5/-1.5	881.500	881.389	881.523	881.167
N1	Wall thick Min12	18.800	20.100	19.800	20.200	ZD	662 ±0.5	661.769	662.315	662.303	662.337
N2	224 ±0.50	224.019	223.855	223.984	223.915	ZE	900 ±0.5	900.000	900.010	900.115	900.121

\* Note: THE MAX PERMISSIBLE DEVIATION BETWEEN D1,D2,D3 & D4 SHALL NOT EXCEED 0.5mm

SIGNATURE	DATE	RESULT	DOC.no	REV	SHEET
INSPECTED BY : A.Jeyaram	28/02/2017	OK	R690 MB MM 01	0	1 of 2
APPROVED BY : K. Angappan	28/02/2017	OK			



Handwritten signature and date: 28/02/17



# INSPECTION RECORD (DIMENSIONS)

DOC.NO GR/TD/3077

PROJECT : DMRC RS13

NAME : BOGIE FRAME MACHINING

MODEL

M

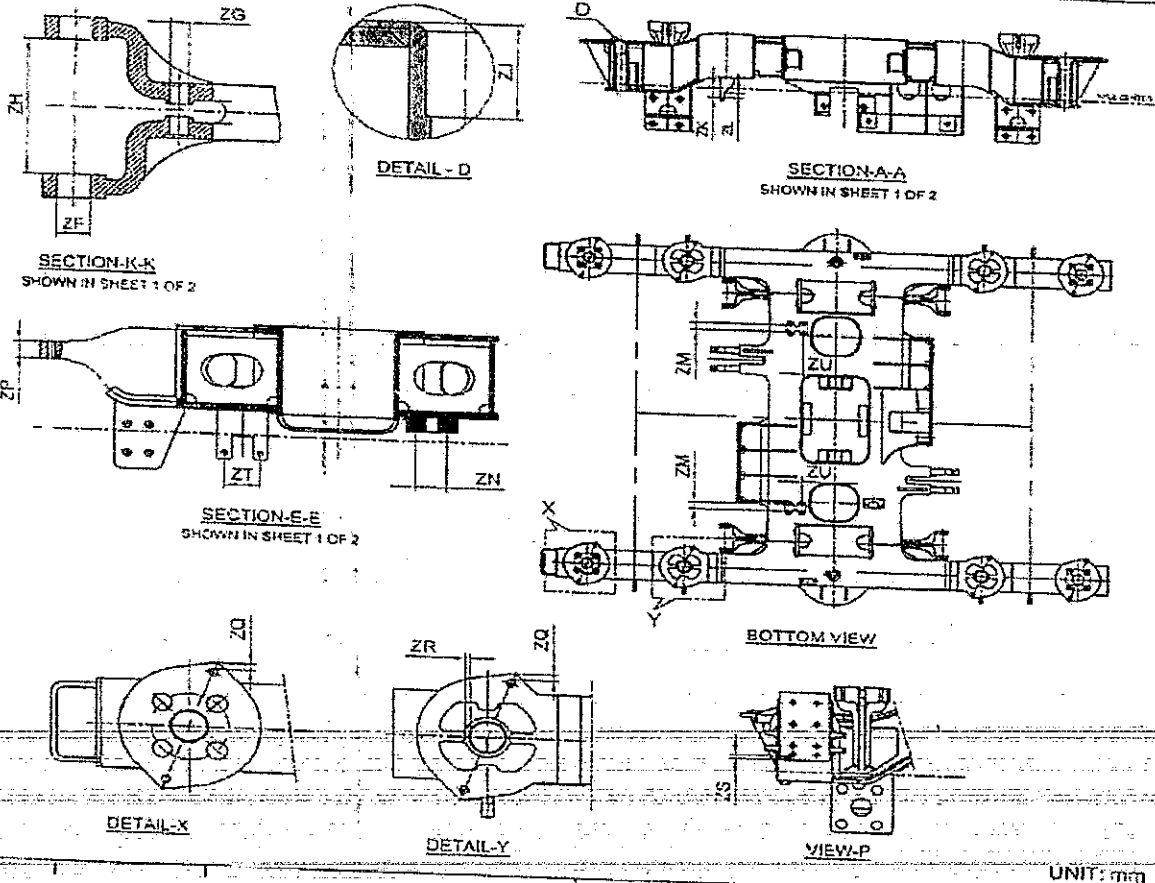
FRAME SI.No : RS13 MBF H 010

Drg No : 909-83001



ALT

6

STAGE : AFTER MACHINING



UNIT: mm

ITEM	DIMENSION	RESULT				ITEM	DIMENSION	RESULT			
		1	2	3	4			1	2	3	4
ZF	Ø33 +0.039	33.025	33.024	33.02	33.02	ZN	80 ±0.25	79.882		80.162	
		33.028	33.02	33.022	33.024			79.873		80.018	
ZG	Ø18 +0.039	18.014	18.013	18.014	18.012	ZP	50 ±0.5	50.12		50.1	
		18.016	18.014	18.018	18.015						
ZH	150.5 +0.20	150.568	150.573	150.540	150.646	ZQ	12 +3	13.5	13.4	13	14.5
								13.2	13.8	14.2	13.8
ZJ	80 ±0.50	80.28	80.30	80.32	80.30	ZR	8 MIN	9.2	9	10.2	10.5
ZK	55 ±0.30	54.955				ZS	12 MIN	12.8	13.2	13.5	12.88
ZL	25 +1	25.011				ZT	90 ±0.50	89.956			
ZM	50 ±0.25	50.091	49.928	50.057	50.008	ZU	197 ±0.25	197.121		197.155	
REMARKS		Coolant entry cork opened									
SIGNATURE				DATE		RESULT		DOC.no		REV	SHEET
INSPECTED BY : A.Jeyaram				28/02/2017		OK		R690 MB MM 01		0	2 of 2
APPROVED BY : K. Angappan				28/02/2017		OK					



0-67  
28/02/17

<b>Craftsman</b> AUTOMATION CAPL/IMS/QA/F327	PART NAME : 909-83001 FRAME STRUCTURE-I SET UP		February 28, 2017	3:44 PM
	REV NUMBER :	SER NUMBER :	STATS COUNT : 1	
<b>ALPHA CMM-RESULT</b>				
ACCEPTED	DEVIATION	REWORK	REJECTION	HOLD
✓				
CMM OPERATOR SIGN : <i>A. Cohen</i>				
LINE INSPECTOR SIGN :				
PRODUCTION SUP. SIGN :				

Current Temperatures: X=None Y=None Z=None P=23.388

Temperature Compensation is ON

CUSTOMER NAME : BEML

PART NAME : FRAME STRUCTURE

DRG CODE/NO : 28892B / 909-83001

OPN NO : FINAL 1ST SET UP-CTQ

\*PART SL NO : RS13 MBF H010

CUSTOMER INSPECTION FORMAT

\*\*\*\*\*

1) |A-A'|---2,4

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	1800.121	1800.000	0.500	0.500	0.121	0.000	-----#---

1) |A-A'|---3,1

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	1800.115	1800.000	0.500	0.500	0.115	0.000	-----#---

2) |B-B'|---3,2

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	2842.680	2842.558	0.500	0.500	0.122	0.000	-----#---

2) |B-B'|---1,4

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	2842.693	2842.558	0.500	0.500	0.135	0.000	-----#---

3) |X-X'|---2,3

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	3720.438	3720.218	0.500	0.500	0.220	0.000	-----#---

3) |X-X'|---4,1

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	3720.448	3720.218	0.500	0.500	0.230	0.000	-----#---

4) C

\*\*\*\*

C-1

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	600.021	600.000	0.200	0.200	0.021	0.000	-----#---

C-2

\*\*\*\*\*

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL	UNITS=MM
M	600.056	600.000	0.200	0.200	0.056	0.000	-----#---

C-3  
\*\*\*\*\*  
DIM B.L .NO 87-20= 2D DISTANCE FROM CIRCLE CIR26 TO CIRCLE CIR23 PAR TO YAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 600.049 600.000 0.200 0.200 0.049 0.000 -----#---

C-4  
\*\*\*\*\*  
DIM B.L .NO 87-18= 2D DISTANCE FROM CIRCLE CIR16 TO CIRCLE CIR20 PAR TO YAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 600.072 600.000 0.200 0.200 0.072 0.000 -----#---

5) D  
\*\*\*\*\*

D-1  
\*\*\*\*\*  
DIM B.L .NO 87-52= 2D DISTANCE FROM CIRCLE CIR9 TO CIRCLE CIR6 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 2200.114 2200.000 0.500 0.500 0.114 0.000 -----#---

D2  
\*\*\*\*\*  
DIM B.L .NO 87-53= 2D DISTANCE FROM CIRCLE CIR13 TO CIRCLE CIR3 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 2200.114 2200.000 0.500 0.500 0.114 0.000 -----#---

D3  
\*\*\*\*\*  
DIM B.L .NO 87-61= 2D DISTANCE FROM CIRCLE CIR16 TO CIRCLE CIR26 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 2200.086 2200.000 0.500 0.500 0.086 0.000 -----#---

D4  
\*\*\*\*\*  
DIM B.L .NO 87-62= 2D DISTANCE FROM CIRCLE CIR20 TO CIRCLE CIR23 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 2200.065 2200.000 0.500 0.500 0.065 0.000 -----#---

11) J  
\*\*\*\*\*  
J-1  
\*\*\*\*\*  
DIM B.L .NO 87-1= 2D DISTANCE FROM CIRCLE CIR78 TO CIRCLE CIR79 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 130.008 130.000 0.500 0.500 0.008 0.000 -----#----

J-2  
\*\*\*\*\*  
DIM B.L .NO 87-2= 2D DISTANCE FROM CIRCLE CIR75 TO CIRCLE CIR76 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 130.006 130.000 0.500 0.500 0.006 0.000 -----#----

12) K  
\*\*\*\*\*  
K-1  
\*\*\*\*\*  
DIM B.L .NO 87-57= 2D DISTANCE FROM CIRCLE CIR67 TO CIRCLE CIR48 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 507.894 508.000 0.500 0.500 -0.106 0.000 ---#-----

K-2  
\*\*\*\*\*  
DIM B.L .NO 87-57= 2D DISTANCE FROM CIRCLE CIR43 TO CIRCLE CIR70 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 508.024 508.000 0.500 0.500 0.024 0.000 -----#----

K-3  
\*\*\*\*\*  
DIM B.L .NO 87-57= 2D DISTANCE FROM CIRCLE CIR38 TO CIRCLE CIR69 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL

M 508.165 508.000 0.500 0.500 0.165 0.000 -----#---

K-4  
\*\*\*\*\*

DIM B.L .NO 87-57= 2D DISTANCE FROM CIRCLE CIR68 TO CIRCLE CIR57 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 508.131 508.000 0.500 0.500 0.131 0.000 -----#---

13) L  
\*\*\*\*\*  
L-1  
\*\*\*\*\*

DIM B.L .NO 87-63= 2D DISTANCE FROM CIRCLE CIR48 TO CIRCLE CIR45 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 80.402 80.000 0.500 0.500 0.402 0.000 -----#

L-2  
\*\*\*\*\*  
DIM B.L .NO 87-67= 2D DISTANCE FROM CIRCLE CIR57 TO CIRCLE CIR53 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 79.994 80.000 0.500 0.500 -0.006 0.000 -----#----

L-3  
\*\*\*\*\*  
DIM B.L .NO 87-68= 2D DISTANCE FROM CIRCLE CIR54 TO CIRCLE CIR57 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 79.958 80.000 0.500 0.500 -0.042 0.000 -----#----

L-4  
\*\*\*\*\*  
DIM B.L .NO 87-72= 2D DISTANCE FROM CIRCLE CIR35 TO CIRCLE CIR38 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 79.700 80.000 0.500 0.500 -0.300 0.000 -#-----

14) M  
\*\*\*\*\*  
M-1  
\*\*\*\*\*  
DIM B.L .NO 87-88= 2D DISTANCE FROM CIRCLE CIR56 TO CIRCLE CIR55 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 135.039 135.000 0.500 0.500 0.039 0.000 -----#----

M-2  
\*\*\*\*\*  
DIM B.L .NO 8791= 2D DISTANCE FROM CIRCLE CIR35 TO CIRCLE CIR34 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 134.949 135.000 0.500 0.500 -0.051 0.000 -----#----

M-3  
\*\*\*\*\*  
DIM B.L .NO 87-93= 2D DISTANCE FROM CIRCLE CIR40 TO CIRCLE CIR41 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 135.017 135.000 0.500 0.500 0.017 0.000 -----#----

M-4  
\*\*\*\*\*  
DIM B.L .NO 87-95= 2D DISTANCE FROM CIRCLE CIR46 TO CIRCLE CIR47 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 135.050 135.000 0.500 0.500 0.050 0.000 -----#----

17) N2  
\*\*\*\*\*  
N2-1  
\*\*\*\*\*  
DIM LOC-46= LOCATION OF POINT PNT20 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Z -224.019 -224.000 0.300 0.300 -0.019 0.000 -----#----

N2-2  
\*\*\*\*\*

DIM LOC-47= LOCATION OF POINT PNT31 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -223.855 -224.000 0.300 0.300 0.145 0.000 -----#--

N2-3  
 \*\*\*\*

DIM LOC-48= LOCATION OF POINT PNT41 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -223.984 -224.000 0.300 0.300 0.016 0.000 ----#----

N2-4  
 \*\*\*\*

DIM LOC-49= LOCATION OF POINT PNT10 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -223.915 -224.000 0.300 0.300 0.085 0.000 -----#---

18)N  
 \*\*\*\*\*

N-1  
 \*\*\*\*

DIM B.L .NO 87-80= 2D DISTANCE FROM CIRCLE CIR48 TO CIRCLE CIR45 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 59.633 60.000 0.500 0.500 -0.367 0.000 -#-----

N-2  
 \*\*\*\*

DIM B.L .NO 87-82= 2D DISTANCE FROM CIRCLE CIR43 TO CIRCLE CIR39 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 60.106 60.000 0.500 0.500 0.106 0.000 ----#---

N-3  
 \*\*\*\*

DIM B.L .NO 87-84= 2D DISTANCE FROM CIRCLE CIR37 TO CIRCLE CIR38 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 60.075 60.000 0.500 0.500 0.075 0.000 -----#---

N-4  
 \*\*\*\*

DIM B.L .NO 87-86= 2D DISTANCE FROM CIRCLE CIR53 TO CIRCLE CIR57 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 60.099 60.000 0.500 0.500 0.099 0.000 -----#---

LOCATION OF Ø80 HOLES APLACES :-

19) P  
 \*\*\*\*\*

P-1  
 \*\*\*\*

DIM LOC-105= LOCATION OF CIRCLE CIR48 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z 149.878 150.000 0.300 0.300 -0.122 0.000 --#-----

P-2  
 \*\*\*\*

DIM LOC-106= LOCATION OF CIRCLE CIR43 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z 150.044 150.000 0.300 0.300 0.044 0.000 ----#---

P-3  
 \*\*\*\*

DIM LOC-107= LOCATION OF CIRCLE CIR38 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z 150.128 150.000 0.300 0.300 0.128 0.000 -----#---

P-4  
 \*\*\*\*

DIM LOC-108= LOCATION OF CIRCLE CIR57 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z 150.224 150.000 0.300 0.300 0.224 0.000 -----#---

20)Q

\*\*\*\*\*

Q-1

\*\*\*\*\*

DIM LOC-119= LOCATION OF CIRCLE CIR73 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
X	124.906	125.000	0.250	0.250	-0.094	0.000 --#-----

Q-2

\*\*\*\*\*

DIM LOC-117= LOCATION OF CIRCLE CIR32 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
X	-124.868	-125.000	0.250	0.250	0.132	0.000 -----#--

21)R

\*\*\*\*\*

R-1

\*\*\*\*\*

DIM B.L .NO 87-49= 2D DISTANCE FROM CIRCLE CIR73 TO CIRCLE CIR74 PAR TO XAXIS.NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	400.008	400.000	0.500	0.500	0.008	0.000 ----#----

R-2

\*\*\*\*\*

DIM B.L .NO 87-50= 2D DISTANCE FROM CIRCLE CIR33 TO CIRCLE CIR32 PAR TO XAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	400.031	400.000	0.500	0.500	0.031	0.000 ----#----

LOCATION Ø80HOLES FACE DIST :

22)S

\*\*\*\*\*

S-1

\*\*\*

DIM LOC-15= LOCATION OF PLANE PLN9 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	245.006	245.000	0.500	0.500	0.006	0.000 ----#----

S-2

\*\*\*\*\*

DIM LOC-16= LOCATION OF PLANE PLN10 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	-244.708	-245.000	0.500	0.500	0.292	0.000 -----#--

S-3

\*\*\*\*\*

DIM LOC-17= LOCATION OF PLANE PLN8 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	245.190	245.000	0.500	0.500	0.190	0.000 -----#--

S-4

\*\*\*\*\*

DIM LOC-18= LOCATION OF PLANE PLN7 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	-244.617	-245.000	0.500	0.500	0.383	0.000 -----#--

26)V

\*\*\*\*\*

V-1

\*\*\*

DIM LOC-14= LOCATION OF PLANE PLN6 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Z	-170.111	-170.000	0.500	0.500	-0.111	0.000 ----#-----

V-2

\*\*\*\*\*

DIM LOC-13= LOCATION OF PLANE PLN12 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Z	-170.023	-170.000	0.500	0.500	-0.023	0.000 ----#-----

V-3

\*\*\*\*\*

DIM LOC-99= LOCATION OF PLANE PLN13 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -170.202 -170.000 0.500 0.500 -0.202 0.000 --#-----

V-4  
 \*\*\*\*\*

DIM LOC-104= LOCATION OF PLANE PLN11 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -170.003 -170.000 0.500 0.500 -0.003 0.000 ----#-----

27)W  
 \*\*\*\*\*

W-1  
 \*\*\*\*\*

DIM LOC-100= LOCATION OF PLANE PLN15 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -99.945 -100.000 0.500 0.500 0.055 0.000 ----#-----

W-2  
 \*\*\*\*\*

DIM LOC-101= LOCATION OF PLANE PLN16 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -100.054 -100.000 0.500 0.500 -0.054 0.000 ----#-----

W-3  
 \*\*\*\*\*

DIM LOC-102= LOCATION OF PLANE PLN17 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -99.946 -100.000 0.500 0.500 0.054 0.000 ----#-----

W-4  
 \*\*\*\*\*

DIM LOC-103= LOCATION OF PLANE PLN18 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 Z -100.055 -100.000 0.500 0.500 -0.055 0.000 ----#-----

28)Y  
 \*\*\*\*\*

Y-1  
 \*\*\*\*\*

DIM B.L .NO 87-99= 2D DISTANCE FROM CIRCLE CIR56 TO CIRCLE CIR53 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 159.969 160.000 0.500 0.500 -0.031 0.000 ----#-----

Y-2  
 \*\*\*\*\*

DIM B.L .NO 87-101= 2D DISTANCE FROM CIRCLE CIR37 TO CIRCLE CIR34 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 159.997 160.000 0.500 0.500 -0.003 0.000 ----#-----

Y-3  
 \*\*\*\*\*

DIM B.L .NO 87-103= 2D DISTANCE FROM CIRCLE CIR39 TO CIRCLE CIR40 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 160.061 160.000 0.500 0.500 0.061 0.000 ----#-----

Y-4  
 \*\*\*\*\*

DIM B.L .NO 87-105= 2D DISTANCE FROM POINT PNT59 TO CIRCLE CIR44 PAR TO ZAXIS,NO\_RADIUS UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 M 160.330 160.000 0.500 0.500 0.330 0.000 ----#-----

29)Z  
 \*\*\*\*\*

Z-1  
 \*\*\*\*\*

DIM LOC-9= LOCATION OF CIRCLE CIR48 UNITS=MM  
 AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
 X -881.437 -882.500 0.500 -1.500 1.063 0.000 ----#-----



Z-2  
\*\*\*\*\*  
DIM LOC-10= LOCATION OF CIRCLE CIR43 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X -881.381 -882.500 0.500 -1.500 1.119 0.000 ----#----

Z-3  
\*\*\*\*\*  
DIM LOC-11= LOCATION OF CIRCLE CIR38 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X 881.720 882.500 -0.500 1.500 -0.780 0.000 ----#----

Z-4  
\*\*\*\*\*  
DIM LOC-12= LOCATION OF CIRCLE CIR57 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X 881.332 882.500 -0.500 1.500 -1.168 0.000 ----#----

34)ZE  
\*\*\*\*\*  
ZE-1  
\*\*\*\*\*  
DIM LOC-1= LOCATION OF CIRCLE CIR16 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Y -900.000 -900.000 0.500 0.500 0.000 0.000 ----#----

ZE-2  
\*\*\*\*\*  
DIM LOC-2= LOCATION OF CIRCLE CIR1 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Y -900.010 -900.000 0.500 0.500 -0.010 0.000 ----#----

ZE-3  
\*\*\*\*\*  
DIM LOC-3= LOCATION OF CIRCLE CIR3 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Y 900.115 900.000 0.500 0.500 0.115 0.000 ----#----

ZE-4  
\*\*\*\*\*  
DIM LOC-4= LOCATION OF CIRCLE CIR13 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Y 900.121 900.000 0.500 0.500 0.121 0.000 ----#----

39)ZK  
\*\*\*\*\*  
DIM B.L .NO 87-145= 2D DISTANCE FROM CIRCLE CIR81 TO CIRCLE CIR82 PAR TO YAXIS,NO RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 54.955 55.000 0.500 0.500 -0.045 0.000 ----#----

40)ZL  
\*\*\*\*\*  
DIM B.L .NO 87-136= 2D DISTANCE FROM CIRCLE CIR85 TO POINT PNT76 PAR TO ZAXIS,NO RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 25.011 25.000 1.000 0.000 0.011 0.000 #-----

41)ZM  
\*\*\*\*\*  
ZM-1  
\*\*\*\*\*  
DIM B.L .NO 87-125= 2D DISTANCE FROM CIRCLE CIR65 TO CIRCLE CIR66 PAR TO XAXIS,NO RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 50.091 50.000 0.250 0.250 0.091 0.000 ----#----

ZM-2  
\*\*\*\*\*  
DIM B.L .NO 87-126= 2D DISTANCE FROM CIRCLE CIR64 TO CIRCLE CIR63 PAR TO XAXIS,NO RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 49.928 50.000 0.250 0.250 -0.072 0.000 ----#----

ZM-3  
\*\*\*\*\*

DIM B.L .NO 87-127= 2D DISTANCE FROM CIRCLE CIR61 TO CIRCLE CIR60 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 50.057 50.000 0.250 0.250 0.057 0.000 ----#---

ZM-4  
\*\*\*\*\*

DIM B.L .NO 87-128= 2D DISTANCE FROM CIRCLE CIR58 TO CIRCLE CIR59 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 50.008 50.000 0.250 0.250 0.008 0.000 ----#----

42)ZN  
\*\*\*\*\*

ZN-1  
\*\*\*\*\*

DIM B.L .NO 87-3= 2D DISTANCE FROM CIRCLE CIR64 TO CIRCLE CIR65 PAR TO YAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 79.882 80.000 0.250 0.250 -0.118 0.000 --#-----

ZN-2  
\*\*\*\*\*

DIM B.L .NO 87-4= 2D DISTANCE FROM CIRCLE CIR63 TO CIRCLE CIR66 PAR TO YAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 80.162 80.000 0.250 0.250 0.162 0.000 -----#-

ZN-3  
\*\*\*\*\*

DIM B.L .NO 87-5= 2D DISTANCE FROM CIRCLE CIR61 TO CIRCLE CIR58 PAR TO YAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 79.873 80.000 0.250 0.250 -0.127 0.000 --#-----

47)ZT  
\*\*\*\*\*

DIM B.L .NO 87-137= 2D DISTANCE FROM CIRCLE CIR86 TO CIRCLE CIR85 PAR TO YAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 89.956 90.000 0.500 0.500 -0.044 0.000 ----#----

ZN-4  
\*\*\*\*\*

DIM B.L .NO 87-6= 2D DISTANCE FROM CIRCLE CIR59 TO CIRCLE CIR60 PAR TO YAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 80.018 80.000 0.250 0.250 0.018 0.000 ----#----

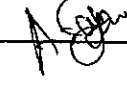
48)ZU  
\*\*\*\*\*

ZU-1  
\*\*\*\*\*

DIM LOC-118= LOCATION OF CIRCLE CIR64 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Y 197.121 197.000 0.250 0.250 0.121 0.000 ----#---

ZU-2  
\*\*\*\*\*

DIM LOC-120= LOCATION OF CIRCLE CIR58 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Y 197.155 197.000 0.250 0.250 0.155 0.000 ----#---

<b>Craftsman</b> AUTOMATION CAPL/IMS/QA/F327		PART NAME : 909-83001 FRAME STRUCTURE-2 SET UP-CTQ	February 28, 2017	5:16 PM
		REV NUMBER :	SER NUMBER :	STATS COUNT : 1
<b>ALPHA CMM-RESULT</b>		CMM OPERATOR SIGN : 		
ACCEPTED	DEVIATION	REWORK	REJECTION	HOLD
✓				
		LINE INSPECTOR SIGN : _____		
		PRODUCTION SUP. SIGN : _____		

Current Temperatures: X=24.865 Y=24.595 Z=25.475 P=23.364

Temperature Compensation is ON

CUSTOMER NAME : BEML

PART NAME : FRAME STRUCTURE

DRG CODE/NO : 28892B / 909-83001

OPN NO : FINAL 2ND SET UP-CTQ

'PART SL NO : ' : RS 13 MBF H010

CUSTOMER INSPECTION FORMET

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6)E

\*\*\*\*\*

E-1

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DIM LOC-77= LOCATION OF LINE LIN17 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	546.052	546.000	0.500	0.500	0.052	0.000 ----#----

E-2

\*\*\*\*

DIM LOC-78= LOCATION OF LINE LIN18 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	-546.066	-546.000	0.500	0.500	-0.066	0.000 ---#-----

7)F

\*\*\*\*\*

F-1

\*\*\*\*

DIM BL NO 172-70= 2D DISTANCE FROM LINE LIN17 TO CIRCLE CIR63 PAR TO YAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	178.952	179.000	0.500	0.500	-0.048	0.000 ----#----

F-2

\*\*\*\*\*

DIM BL NO 172-70= 2D DISTANCE FROM LINE LIN18 TO CIRCLE CIR59 PAR TO YAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	179.021	179.000	0.500	0.500	0.021	0.000 ----#----

8)G

\*\*\*\*\*

G-1

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DIM BL NO 172-56= 2D DISTANCE FROM CIRCLE CIR66 TO CIRCLE CIR65 PAR TO XAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	399.977	400.000	0.500	0.500	-0.023	0.000 ----#----

G-2

\*\*\*\*\*

DIM BL NO 172-57= 2D DISTANCE FROM CIRCLE CIR61 TO CIRCLE CIR62 PAR TO XAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	400.292	400.000	0.500	0.500	0.292	0.000 -----#--

9)H

\*\*\*\*\*

H-1

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DIM LOC-82= LOCATION OF CIRCLE CIR62 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
X	-124.870	-125.000	0.250	0.250	0.130	0.000 -----#--

H-2  
\*\*\*\*

DIM LOC-83= LOCATION OF CIRCLE CIR66 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X 124.850 125.000 0.250 0.250 -0.150 0.000 -#-----

10)I  
\*\*\*\*\*  
I-1  
\*\*\*\*

DIM BL NO 172-58= 2D DISTANCE FROM CIRCLE CIR64 TO CIRCLE CIR66 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 472.986 473.000 0.500 0.500 -0.014 0.000 ----#----

I-2  
\*\*\*\*

DIM BL NO 172-59= 2D DISTANCE FROM CIRCLE CIR62 TO CIRCLE CIR59 PAR TO XAXIS,NO\_RADIUS UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
M 472.919 473.000 0.500 0.500 -0.081 0.000 ---#-----

23)T  
\*\*\*\*\*  
T-1  
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DIM LOC-3= LOCATION OF PLANE PLN4 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Z 264.994 265.000 0.500 0.500 -0.006 0.000 ----#----

T-2  
\*\*\*\*

DIM LOC-10= LOCATION OF PLANE PLN3 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
Z 264.997 265.000 0.500 0.500 -0.003 0.000 ----#----

30)ZA  
\*\*\*\*\*  
ZA-1  
\*\*\*\*

DIM LOC-87= LOCATION OF CIRCLE CIR4 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X 1125.015 1125.000 0.500 0.500 0.015 0.000 ----#----

ZA-2  
\*\*\*\*

DIM LOC-88= LOCATION OF CIRCLE CIR13 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X -1125.000 -1125.000 0.500 0.500 0.000 0.000 ----#----

32)ZC  
\*\*\*\*\*

ZC-1  
\*\*\*\*

DIM LOC-6= LOCATION OF POINT PNT101 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X -881.500 -882.500 0.500 -1.500 1.000 0.000 ----#----

ZC-2  
\*\*\*\*

DIM LOC-7= LOCATION OF POINT PNT102 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X -881.389 -882.500 0.500 -1.500 1.111 0.000 ----#----

ZC-3  
\*\*\*\*

DIM LOC-8= LOCATION OF POINT PNT103 UNITS=MM  
AX MEAS NOMINAL +TOL -TOL DEV OUTTOL  
X 881.523 882.500 -0.500 1.500 -0.977 0.000 ----#----

ZC-4

\*\*\*\*\*

DIM LOC-9= LOCATION OF POINT PNT104 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
X	881.167	882.500	-0.500	1.500	-1.333	0.000 -#-----

33)ZD

\*\*\*\*\*

ZD-1

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DIM LOC-89= LOCATION OF LINE LIN19 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	-661.769	-662.000	0.500	0.500	0.231	0.000 -----#--

ZD-2

\*\*\*\*\*

DIM LOC-90= LOCATION OF LINE LIN20 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	-662.315	-662.000	0.500	0.500	-0.315	0.000 -#-----

ZD-3

\*\*\*\*\*

DIM LOC-91= LOCATION OF LINE LIN21 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	662.303	662.000	0.500	0.500	0.303	0.000 -----#-

ZD-4

\*\*\*\*\*

DIM LOC-97= LOCATION OF LINE LIN22 UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
Y	662.337	662.000	0.500	0.500	0.337	0.000 -----#-

37)ZH

\*\*\*\*\*

ZH-1

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DIM BL NO 172-1= 2D DISTANCE FROM POINT PNT26 TO POINT PNT27 PAR TO XAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	150.568	150.500	0.200	0.000	0.068	0.000 ---#-----

ZH-2

\*\*\*\*\*

DIM BL NO 172-2= 2D DISTANCE FROM POINT PNT37 TO POINT PNT36 PAR TO XAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	150.573	150.500	0.200	0.000	0.073	0.000 ---#-----

ZH-3

\*\*\*\*\*

DIM BL NO 172-3= 2D DISTANCE FROM POINT PNT53 TO POINT PNT52 PAR TO XAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	150.540	150.500	0.200	0.000	0.040	0.000 -#-----

ZH-4

\*\*\*\*\*

DIM BL NO 172-4= 2D DISTANCE FROM POINT PNT13 TO POINT PNT12 PAR TO XAXIS,NO\_RADIUS UNITS=MM

AX	MEAS	NOMINAL	+TOL	-TOL	DEV	OUTTOL
M	150.646	150.500	0.200	0.000	0.146	0.000 -----#--

