

TT24 A Mechanical

October 14, 2008
Rev 2

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Manual Discrepancy Sheet

1. On page 8, balloon 39 is corrected
2. On page 9, quantities for #38 and 39 are 2 and 18 respectively

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DETAIL A
SCALE 1 : 10

DETAIL B
SCALE 1 : 10

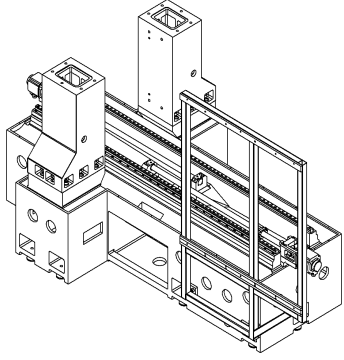
			NAME _____ DATE _____		 1400 MILL LANE 952.442.1410 WACONIA, MN 55387 USA	
DRAWN	SES	23 FEB 06	MATERIAL:			
FINISH:			TITLE:		BASE SUB-ASSEMBLY	
UNLESS OTHERWISE SPECIFIED:			SCALE: 1:20	DWG. NO.	10037001	
DIMENSIONS ARE IN INCHES (MM)			ESTIMATED WEIGHT:		STOCK/ASSY NO.	
TOLERANCES:			8424.34 LBS.		XXX-XXX	
FRACTIONAL: ±			SHEET NO.		1 OF 2	
ANGULAR: MACH ± 1.0 BEND ±						
ONE PLACE DECIMAL ±.030 (.76)						
TWO PLACE DECIMAL ±.010 (.25)						
THREE PLACE DECIMAL ±.005 (.13)						

SIZE
B

4
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ITEM NO.	EXPLODE/QTY.	PART NO.	DESCRIPTION
1	1	MXTT013	MACHINE BASE
2	2	MXTT019	COLUMN
3	2	MPTT013	LEAD SCREW END SUPPORT BLOCK X/Y AXIS
4	2	MXTT018	REAR MOTOR MOUNT Y-AXIS
5	2	MP00439	7305 BALL SCREW LOCK NUT
6	1	MPTT044	TT24 MAG BOX MOUNT
7	2	MP10387	LIMIT SWITCH BRACKET
8	2	SEE TABLE	SERVO MOTOR
9	2	SEE TABLE	COUPLER
10	2	MP00805	X-AXIS BALL SCREW ASSEMBLY
11	2	SW00193	LIMIT SWITCH
12	2	SW00191	CORD WITH COVERED END
13	2	BG00101	DRIVE END BEARING LOCK SPACER
14	2	BG00096	AXES BEARING X-Y-Z BG
15	2	BG00002	BEARING NACHI 6204ZZ
16	2	MP10108	RETAINING RING EXTERNAL
17	4	MP00718	HARD STOP
18	2	SEE TABLE	X-AXIS RAIL
19	66	HD00090	MITEEBITE CLAMP
20	12	MP10029	LEVELING PAD
21	** 64	RAIL PLUG	RAIL PLUG MP-1051
22	8	WASHER FLAT M5	M5 FLAT WASHER
23	8	WASHER LOCK M5	M5 LOCK WASHER
24	24	WASHER LOCK M8	M8 LOCK WASHER
25	8	WASHER LOCK M14	M14 LOCK WASHER
26	16	WASHER LOCK M20	M20 LOCK WASHER
27	4	NUT HEX M5-0.8	M5 - 0.8 HEX NUT
28	8	SHCS M5-0.8 x 16	M5 - 0.8 x 16mm SHCS
29	4	SHCS M5-0.8 x 20	M5-0.8 X 20mm SHCS
30	8	SHCS M6-1.0 x 25	M6-1.0 X 25mm SHCS
31	24	SHCS M8-1.25 x 30	M8-1.25 x 30mm SHCS
32	** 64	SHCS M8-1.25 x 40	M8 - 1.25 x 40mm SHCS
33	8	SHCS M10-1.5 x 80	M10-1.5 X 80mm SHCS
34	8	SHCS M10-1.5 x 140	M10-1.5 X 140mm SHCS
35	4	SHCS M14-2.0 x 45	M14-2.0 x 45mm SHCS
36	16	SHCS M20-2.5 x 60	M20-2.5 X 60mm SHCS

** ROLLER RAILS USE AN ADDITIONAL 62 RAIL PLUGS & M8-1.25 X 30 SHCS

ITEM NO.	MITSUBISHI	FANUC	SIEMENS
8	MO00184	A06B-0227-B200	IFK7063
9	MA00262	MA00239	MA00262

ITEM NO.	BALL RAIL	ROLLER RAIL
18	MPB0050	MPTT001

	NAME	DATE
	DRAWN	SES
MATERIAL:		
FINISH:		
UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± 1.0 BEND ± ONE PLACE DECIMAL ± 0.30 (.76) TWO PLACE DECIMAL ± 0.10 (.26) THREE PLACE DECIMAL ± 0.05 (.13)		

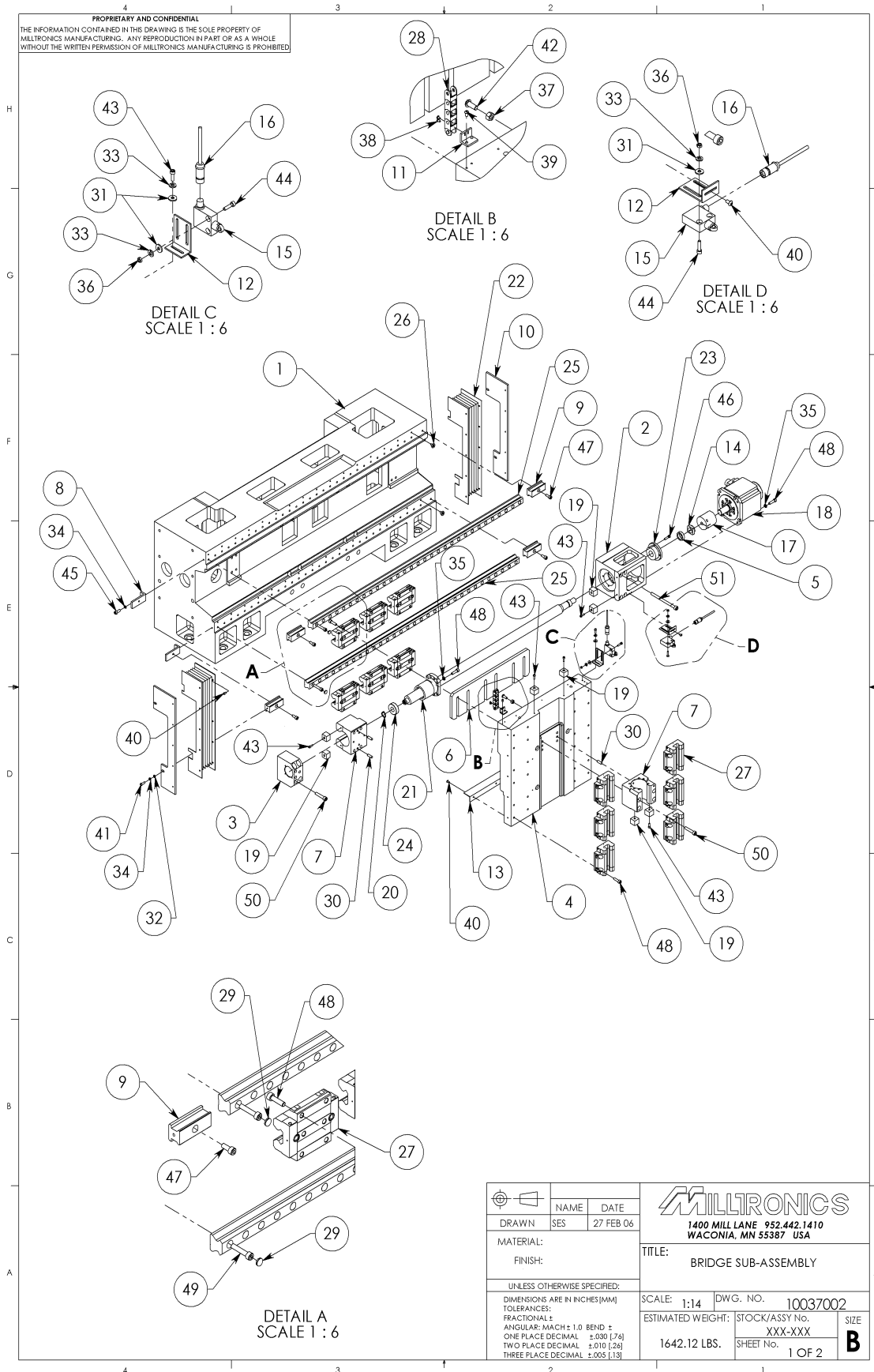


1400 MILL LANE 952.442.1410
WACONIA, MN 55387 USA

TITLE: BASE SUB-ASSEMBLY		
SCALE: 1:32	DWG. NO. 10037001	SIZE B
ESTIMATED WEIGHT: 8424.34 LBS.	STOCK/ASSY No. XXX-XXX SHEET No. 2 OF 2	

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Bridge Assembly



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ITEM No.	MITSUBISHI	FANUC	SIEMENS			
17	MA00262	MA00239	MA00262			
18	MO00184	A06B-0227-B-200	1FK7063			

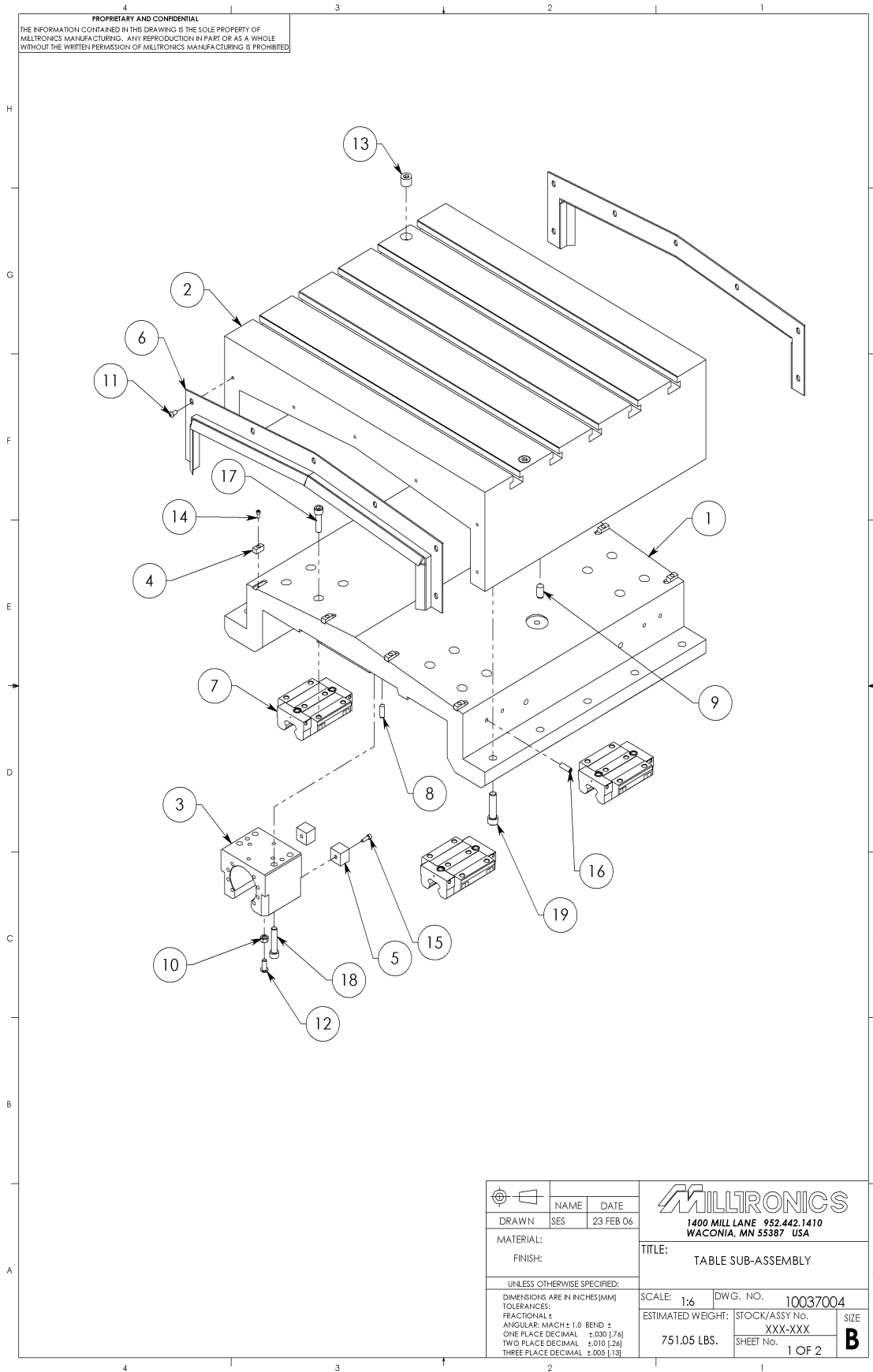
ITEM NO.	EXPLODE/QTY.	PART NO.	DESCRIPTION
1	1	MXTT017	BRIDGE
2	1	MXTT018	REAR MOTOR MOUNT Y-AXIS
3	1	MPTT013	LEAD SCREW END SUPPORT BLOCK X/Y AXIS
4	1	MXTT016	Y-SLIDE
5	1	BG00101	DRIVE END BEARING LOCK SPACER
6	1	MPTT037	Y-SLIDE RAIL BLOCK SPACER
7	2	MXTT010	X,Y & Z AXES NUT HOUSING
8	2	MPTT073	TT24 Y-AXIS COVER BRACKET
9	4	SEE TABLE	Y-AXIS WAY COVER BAR
10	2	MPTT072	TT24 Y-AXIS WAY COVER PLATE
11	1	BR00105	X OIL CARRIER BRACKET
12	2	MP10387	LIMIT SWITCH BRACKET
13	1	MPTT065	TT24 BRIDGE CHIP GUARD
14	1	MP00439	7305 BALL SCREW LOCK NUT
15	2	SW00193	LIMIT SWITCH
16	2	SW00238	CORD WITH COVERED END
17	1	SEE TABLE	COUPLER EKL60
18	1	SEE TABLE	SERVO MOTOR
19	8	MP00718	HARD STOP
20	1	MP10108	RETAINING RING EXTERNAL
21	1	MP00804	Y-AXIS BALL SCREW 40mm
22	2	MPTT041	WAY COVERS
23	1	BG00096	AXES BEARING X-Y-Z BG
24	1	BG00002	BEARING NACHI 6204ZZ
25	2	SEE TABLE	Y-AXIS RAIL
26	34	HD00090	MITEEBITE CLAMP
27	12	SEE TABLE	RAIL BLOCK
28	1	MP00844	OIL TRACK ASSEMBLY
29	** 32	RAIL PLUG	RAIL PLUG
30	4	DOWEL PIN M8 x 26	M8 X 26mm DOWEL PIN
31	6	WASHER FLAT M5	M5 FLAT WASHER
32	4	WASHER FLAT M6	M6 FLAT WASHER
33	6	WASHER LOCK M5	M5 LOCK WASHER
34	6	WASHER LOCK M6	M6 LOCK WASHER
35	12	WASHER LOCK M8	M8 LOCK WASHER
36	4	NUT HEX M5-0.8	M5 - 0.8 HEX NUT
37	1	NUT HEX M8-1.25	M8 - 1.25 HEX NUT
38	2	BHCS M3-0.5 x 5	M3-0.5 x 5 BHCS
39	2	BHCS M4-0.7 x 8	M4-0.7 x 8 BHCS
40	26	BHCS M5-0.8 x 10	M5-0.8 x 10 BHCS
41	4	BHCS M6-1.0 x 20	M6 - 1.0 x 20 BHCS
42	1	BHCS M8-1.25 x 20	M8-1.25 x 20 BHCS
43	10	SHCS M5-0.8 x 16	M5 - 0.8 x 16mm SHCS
44	4	SHCS M5-0.8 x 20	M5-0.8 X 20mm SHCS
45	2	SHCS M6-1.0 x 20	M6-1.0 x 20 SHCS
46	4	SHCS M6-1.0 x 25	M6-1.0 X 25mm SHCS
47	4	SHCS M8-1.25 x 20	M8-1.25 x 20 SHCS
48	60	SHCS M8-1.25 x 30	M8-1.25 x 30mm SHCS
49	** 32	SHCS M8-1.25 x 40	M8 - 1.25 x 40mm SHCS
50	12	SHCS M10-1.5 x 50	M10-1.5 X 50mm SHCS
51	4	SHCS M10-1.5 x 140	M10-1.5 X 140mm SHCS

** ROLLER RAILS USES AN ADDITIONAL 30 RAIL PLUGS & 30 M8-1.25 X 40mm SHCS

RAIL TABLE		
ITEM No.	BALL RAIL	ROLLER RAIL
9	MPTT088	MPTT074
25	MP00642	MP00829
27	MP00641	MP00815

	NAME	DATE	 1400 MILL LANE 952.442.1410 WACONIA, MN 55387 USA
DRAWN	SES	27 FEB 06	
MATERIAL:			TITLE:
FINISH:			
UNLESS OTHERWISE SPECIFIED:			SCALE: 1:16 DWG. NO. 10037002 ESTIMATED WEIGHT: 1642.12 LBS. STOCK/ASSY No. XXX-XXX SHEET No. 2 OF 2
DIMENSIONS ARE IN INCHES (MM)			
TOLERANCES:			
FRACTIONAL ± ANGULAR: MACH ± 1.0 BEND ± ONE PLACE DECIMAL ± 0.30 (.76) TWO PLACE DECIMAL ± 0.10 (.26) THREE PLACE DECIMAL ± 0.05 (.13)			

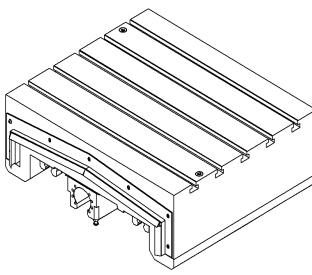
Table Assembly



4321

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ITEM NO.	EXPLODE/QTY.	PART NO.	DESCRIPTION
1	2	MXTT015	X-SLIDE
2	2	MXTT004	X SLIDE TOP
3	2	MXTT010	X,Y & Z AXES NUT HOUSING
4	16	MPTT043	TT24 X-AXIS WAY COVER NYLON RIDER
5	4	MP00718	HARD STOP
6	4	MPTT039	TT24 X-AXIS COVER WIPER PLATE
7	8	SEE TABLE	RAIL BLOCK
8	4	DOWEL PIN M8 x 26	M8 X 26mm DOWEL PIN
9	4	DOWEL PIN M12 x 26	M12 X 26mm DOWEL PIN
10	2	NUT HEX M8-1.25	M8 - 1.25 HEX NUT
11	28	BHCS M6-1.0 x 12	M6 - 1.0 x 12 BHCS
12	2	BHCS M8-1.25 x 20	M8-1.25 x 20 BHCS
13	4	SHPP .50-14 NPT	1/2-14 NPT SHPP
14	16	SHCS M4-0.7 x 10	M4-0.7 x 10 SHCS
15	4	SHCS M5-0.8 x 16	M5 - 0.8 x 16mm SHCS
16	8	SHSS M8-1.25 x 25	M8 - 1.25 x 25 SHSS
17	32	SHCS M10-1.5 x 40	M10-1.5 x 40mm SHCS
18	8	SHCS M10-1.5 x 50	M10-1.5 X 50mm SHCS
19	20	SHCS M12-1.75 x 50	M12-1.75 x 50 SHCS

RAIL BLOCK TABLE		
ITEM No.	BALL RAIL	ROLLER RAIL
7	MP00641	MP00815

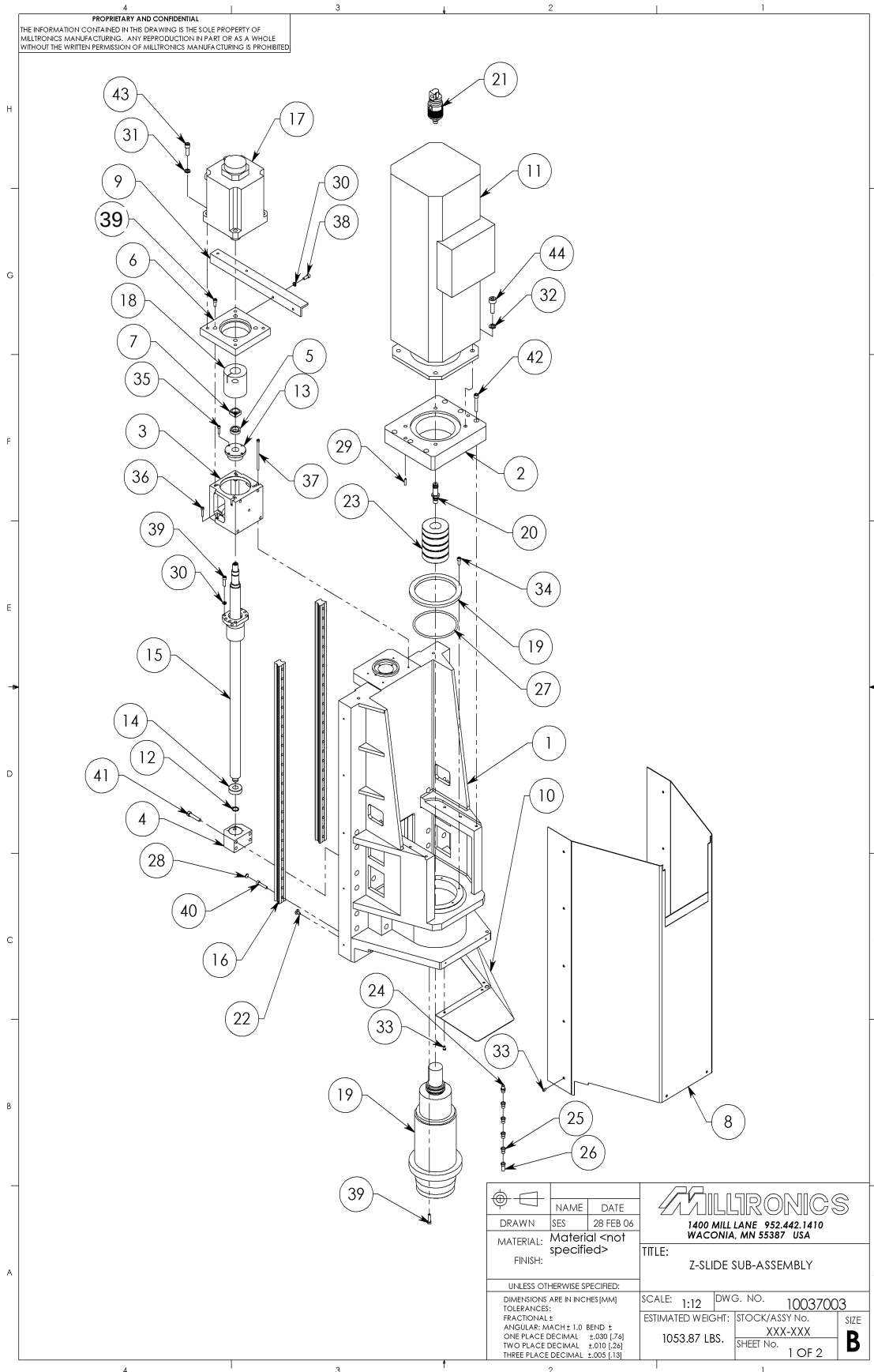
	NAME	DATE
DRAWN	SES	23 FEB 06
MATERIAL:		
FINISH:		
UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± 1.0 BEND ± ONE PLACE DECIMAL ±.030 [.76] TWO PLACE DECIMAL ±.010 [.26] THREE PLACE DECIMAL ±.005 [.13]		



1400 MILL LANE 952.442.1410
WACONIA, MN 55387 USA

TITLE: TABLE SUB-ASSEMBLY		
SCALE: 1:12	DWG. NO. 10037004	SIZE B
ESTIMATED WEIGHT: 751.05 LBS	STOCK/ASSY No. XXX-XXX	
SHEET NO. 2 OF 2		

Head Assembly



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MOTOR & COUPLER TABLE			
ITEM No.	MITSUBISHI	FANUC	SEIMENS
2	MPTT036(7.5kw)	MPTT036(7.5kw)	SMN0061(7.5kw)
	MPTT045(11kw)	MPTT045(11kw)	SMN0062(11kw)
6	MP10453	MP10453	SMN0009
11	MO00166(7.5kw)	A06B-1477-B133#0121(7.5kw)	1PM6105(7.5kw)
	MO00167(11kw)	A06B-1479-B133#0221(11kw)	1PM6133(11kw)
17	MO00186(3.5kw)	A06B-0247-B500(22Nm)	1FK7100(18Nm)
	MO00188(5kw)		1FK7101(27Nm)
18	MA00249	MA00249	MA00288

MOTOR COUPLER TABLE		
ITEM No.	MOTOR END	SPINDLE END
	HUB 1 DIA. (MM)	HUB 2 DIA. (MM)
23	24	50
	28	50
	32	50
	38	50
	40	50
	42	50
	48	50
	50	50
	55	50

#23 coupler for mitsubishi motor is MA00369

ITEM No.	EXPLODE/QTY.	PART NO.	DESCRIPTION
1	1	MXTT014	Z SLIDE
2	1	SEE TABLE	SPINDLE MOTOR MOUNTING PLATE
3	1	MX10059	REAR MOTOR MOUNT Y-AXIS
4	1	MPTT038	LEAD SCREW END SUPPORT BLOCK
5	1	BG00101	DRIVE END BEARING LOCK SPACER
6	1	SEE TABLE	Z AXIS MOTOR PLATE
7	1	MP00439	7305 BALL SCREW LOCK NUT
8	1	MPTT066	TT24 HEAD COVER
9	1	MPTT075	TT24 Y/Z CABLE TRACK BRACKET
10	1	MPTT086	TT24 HEAD SPLASH GUARD-CTS OPTION
11	1	SEE TABLE	SPINDLE MOTOR
12	1	MP10108	RETAINING RING EXTERNAL
13	1	BG00096	AXES BEARING X-Y-Z BG
14	1	BG00002	BEARING NACHI 6204ZZ
15	1	MP00803	BALL SCREW ASSEMBLY
16	2	SEE TABLE	Z-AXIS RAIL
17	1	SEE TABLE	MOTOR
18	1	SEE TABLE	COUPLER
19	1	SEE TABLE	SPINDLE
20	1	MP00958	SPINDLE MOTOR CONNECTING TUBE-CTS OPTION
21	1	NU00226	DEUBLIN COOLANT UNION-CTS OPTION
22	26	HD00090	MITEEBITE CLAMP
23	1	SEE TABLE	COUPLER
24	6	NU00111	LOC-LINE THREADED INSERT 1/4
25	24	MA00022	LOC-LINE LINKS 1/4
26	6	MA00216	LOC-LINE NOZZLE 1/4
27	1	WX00270	70mm REAR CARTRIDGE SEAL O-RING
28	** 26	RAIL PLUG	RAIL PLUG
29	2	DOWEL PIN .25 x 1.0	.25 X 1.0 DOWEL PIN
30	10	WASHER LOCK M8	M8 LOCK WASHER
31	4	WASHER LOCK M12	M12 LOCK WASHER
32	4	WASHER LOCK M14	M14 LOCK WASHER
33	16	BHCS M6-1.0 x 10	M6-1.0 x 10 BHCS
34	6	SHCS M6-1.0 x 20	M6-1.0 x 20 SHCS
35	4	SHCS M6-1.0 x 25	M6-1.0 X 25mm SHCS
36	4	SHCS M6-1.0 x 30	M6-1.0 x 30 SHCS
37	2	SHCS M6-1.0 x 120	M6 - 1.0 x 120 SHCS
38	2	SHCS M8-1.25 x 20	M8-1.25 x 20 SHCS
39	18	SHCS M8-1.25 x 30	M8-1.25 x 30mm SHCS
40	** 26	SHCS M8-1.25 x 40	M8 - 1.25 x 40mm SHCS
41	4	SHCS M10-1.5 x 50	M10-1.5 X 50mm SHCS
42	6	SHCS M10-1.5 x 60	M10 - 1.5 x 60 SHCS
43	4	SHCS M12-1.75 x 35	M12-1.75 x 35 SHCS
44	4	SHCS M14-2.0 x 45	M14-2.0 x 45mm SHCS

NAME

DATE

DRAWN

SES

28 FEB 06

MATERIAL:

FINISH:

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES [MM]

TOOLERANCES:

FRACTIONAL ±

ANGULAR: MACH ± 1.0 BEND ±

ONE PLACE DECIMAL ±.030 [.76]

TWO PLACE DECIMAL ±.010 [.25]

THREE PLACE DECIMAL ±.005 [.13]

1400 MILL LANE 952.442.1410

WACONIA, MN 55387 USA

TITLE:

Z-SLIDE SUB-ASSEMBLY

SCALE: 1:12

DWG. NO. 10037003

ESTIMATED WEIGHT: 1050.65 LBS.

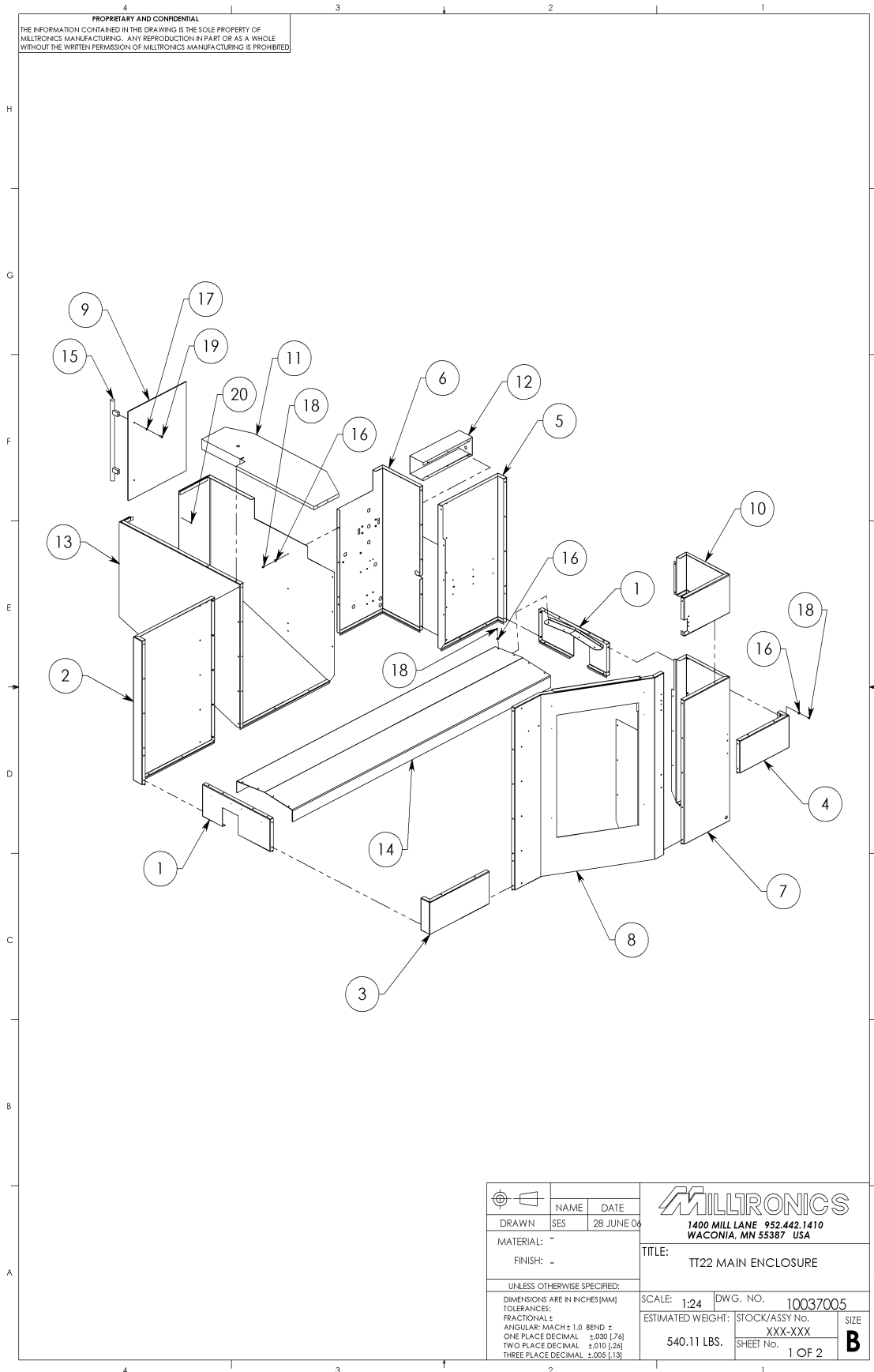
STOCK/ASSY No. XXX-XXX

SHEET No. 2 OF 2

SIZE B

** ROLLER RAILS USE AN ADDITIONAL 24 RAIL PLUGS & 24 M8-1.25 X 40mm SHCS

Main Enclosure Assembly



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B
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ITEM NO.	EXPLODE/QTY.	PART NO.	DESCRIPTION
1	2	MPTT047	BASE WAY COVER MOUNT ASSEMBLY
2	1	MPTT048	REAR SIDE PANEL - LEFT
3	1	MPTT046	BASE SIDE PANNEL - LEFT
4	1	MPTT049	BASE SIDE PANNEL - RIGHT
5	1	MPTT050	REAR SIDE PANEL - RIGHT
6	1	MPTT051	COLUMN PANEL - REAR
7	1	MPTT052	COLUMN PANEL- FRONT
8	1	MPTT053	OPERATOR DOOR ASSEMBLY
9	1	MPTT054	TOOL CHANGER COVER DOOR - LEXAN
10	1	MPTT080	FRONT COLUMN PANEL - TOP
11	1	MPTT090	TT24 CHIP PAN TOP-CTS OPTION
12	1	MPTT078	E-STOP COVER BOX
13	1	MPTT055	TOOL CHANGER COVER ASSEMBLY
14	1	MPTT040	X-AXIS WAY COVER
15	1	WX00297	HANDLE
16	95	HD00012	M6 RUBBERISED WASHER
17	2	WASHER FLAT M8	M8 FLAT WASHER
18	95	BHCS M6-1.0 x 12	M6 - 1.0 x 12 BHCS
19	2	BHCS M8-1.25 x 16	M8 - 1.25 x 16 BHCS
20	2	RHMS 6-32 x .25 NYLON	6-32 X .25 NYLON RHMS

4
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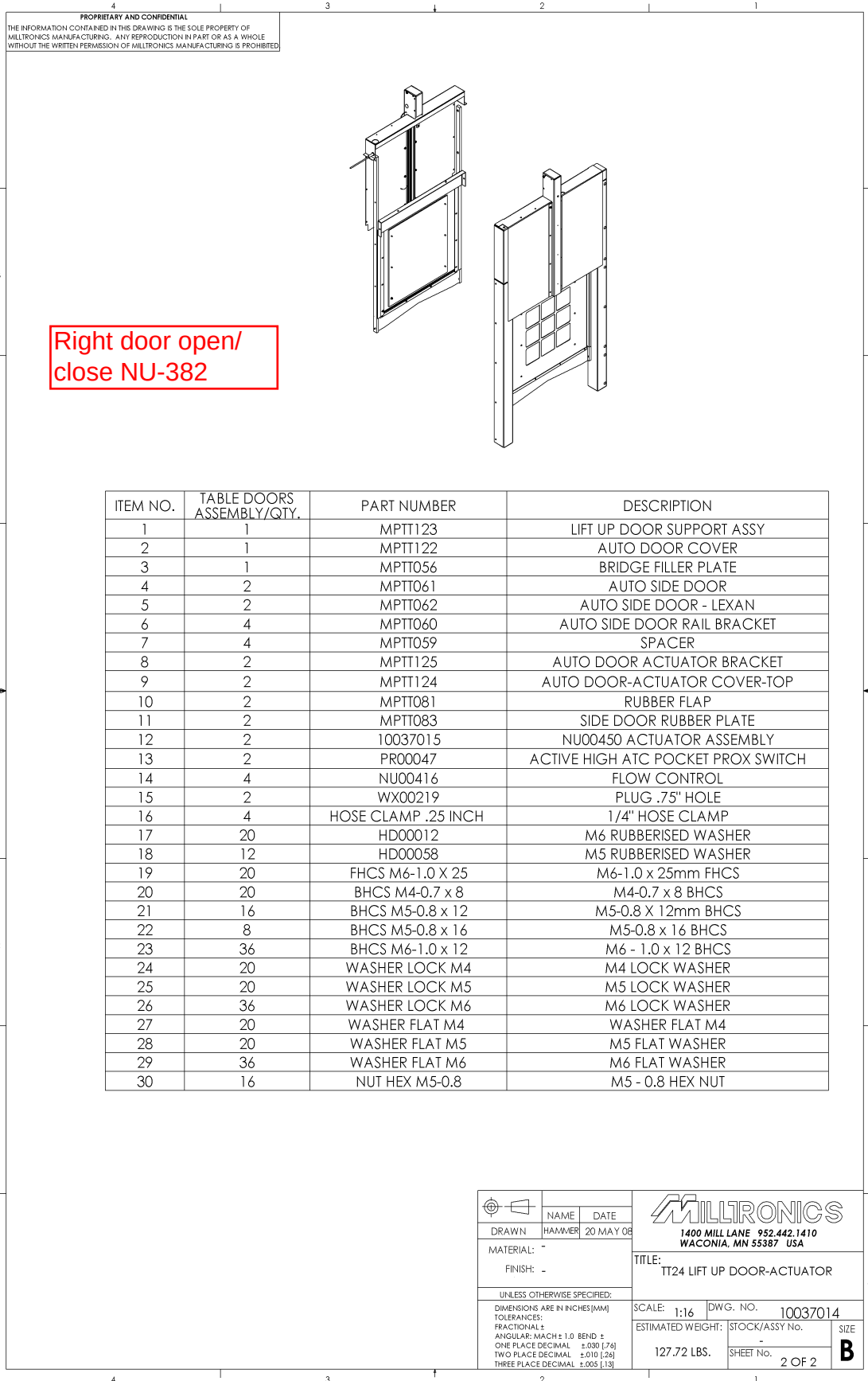
	NAME	DATE
	DRAWN	SES
MATERIAL:		
FINISH:		
UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± 1.0 BEND ± ONE PLACE DECIMAL ±.030 [.76] TWO PLACE DECIMAL ±.010 [.26] THREE PLACE DECIMAL ±.005 [.13]		

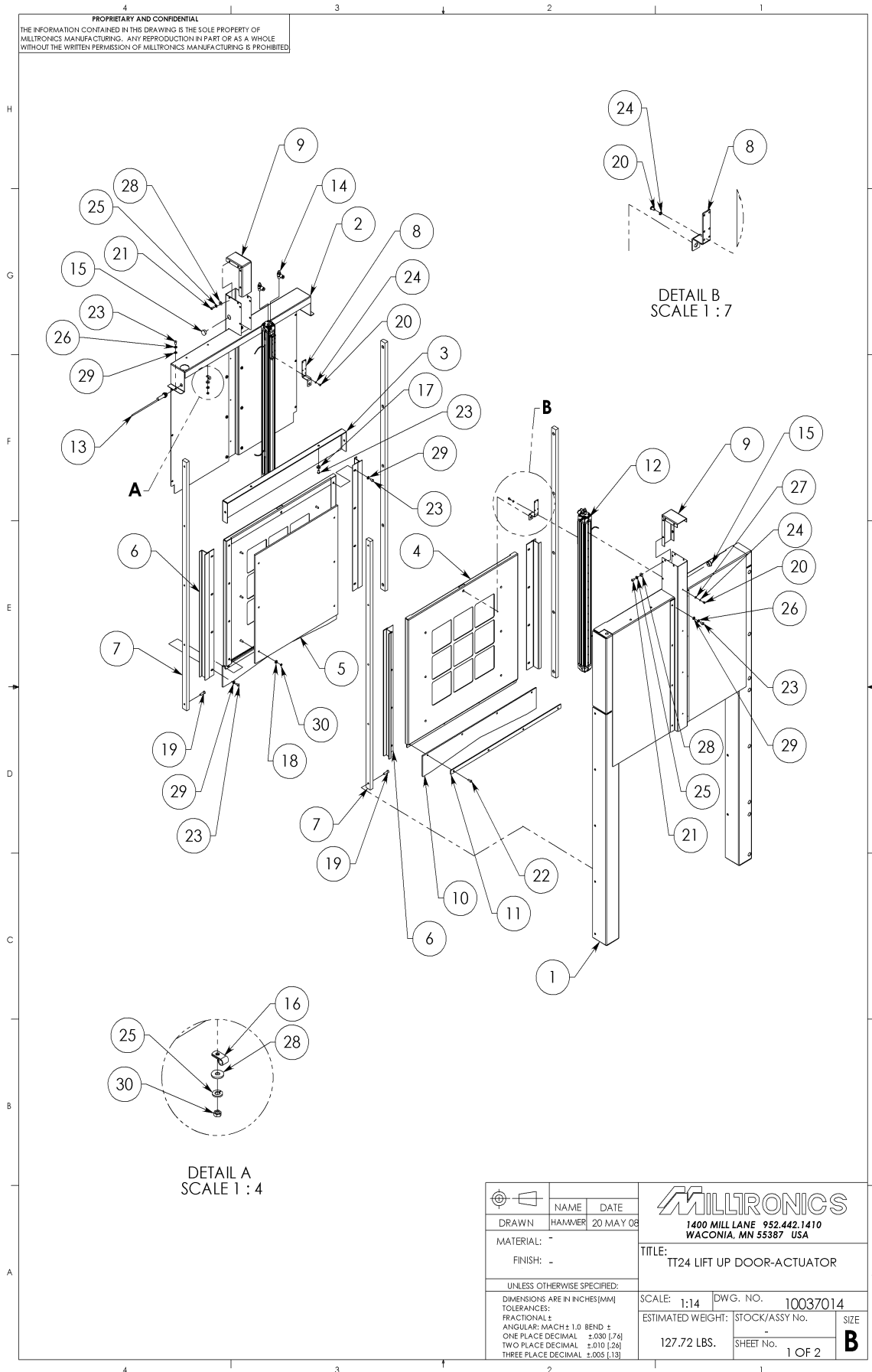
1400 MILL LANE 952.442.1410
WACONIA, MN 55387 USA

TITLE:	
TT22 MAIN ENCLOSURE	
SCALE: 1:24	DWG. NO. 10037005
ESTIMATED WEIGHT: 540.11 LBS.	STOCK/ASSY No. XXX-XXX SHEET NO. 2 OF 2

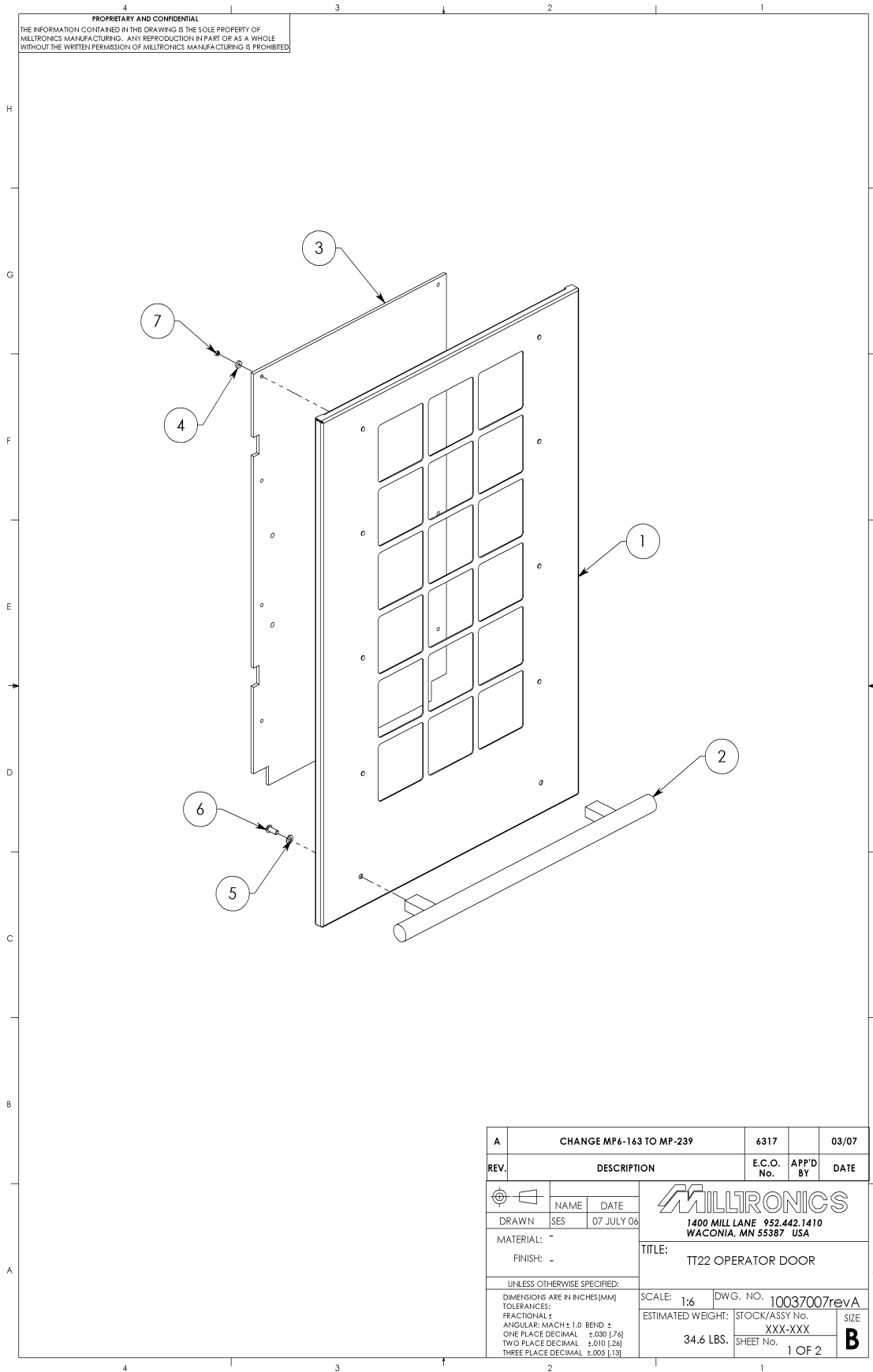
4
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Lift Up Door Assembly





Operator Door Assembly



ITEM NO.	EXPLODE/QTY.	PART NO.	DESCRIPTION
1	1	MPTT063	OPERATOR DOOR
2	1	WX00297	HANDLE
3	1	MP-239	OPERATOR DOOR - LEXAN
4	8	HD00058	M5 RUBBERISED WASHER
5	2	WASHER FLAT M8	M8 FLAT WASHER
6	2	BHCS M8-1.25 x 16	M8-1.25 x 16mm BHCS
7	8	NUT HEX M5-0.8	M5-0.8 HEX NUT

REV	DESCRIPTION	E.C.O. No.	APP'D BY	DATE
A	CHANGE MP6-163 TO MP-239	6317	-	03/07

NAME	DATE
DRAWN SES	07 JULY 06

MATERIAL:	FINISH:
-	-

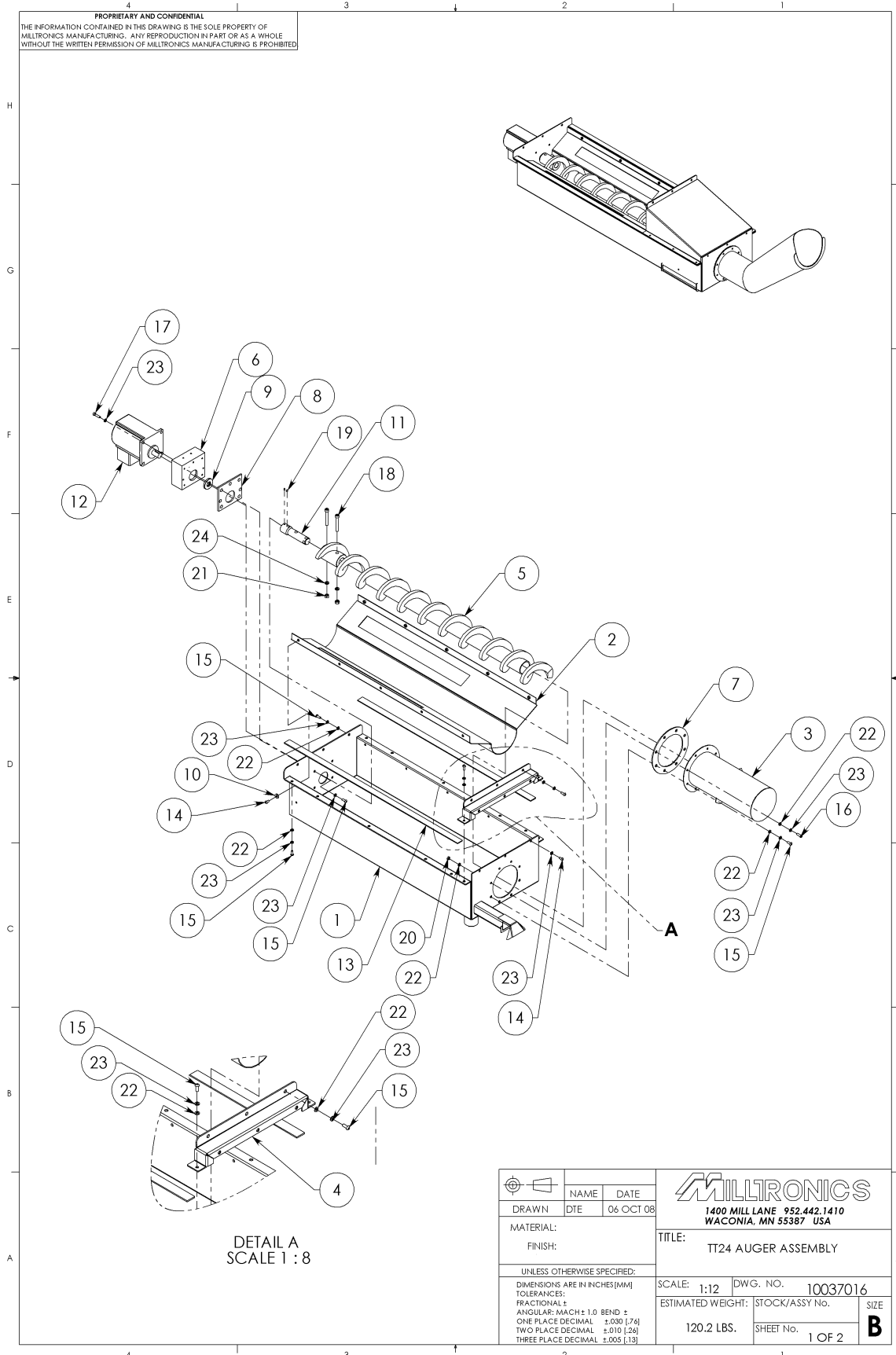
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES (MM)
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± 1.0 BEND ±
ONE PLACE DECIMAL ±.030 [.76]
TWO PLACE DECIMAL ±.010 [.25]
THREE PLACE DECIMAL ±.005 [.13]

SCALE:	DWG. NO.
1:8	10037007revA

ESTIMATED WEIGHT:	STOCK/ASSY No.	SIZE
34.6 LBS.	XXX-XXX	B

SHEET No.	2 OF 2

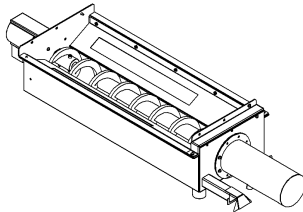
Auger Assembly



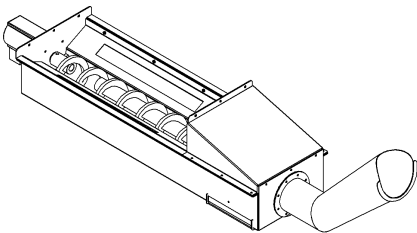
4
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CONVEYOR
AUGER



CHUTE
AUGER

ITEM NO.	CONVEYOR AUGER/QTY.	PART NUMBER	DESCRIPTION
1	1	SEE TABLE	TT24 AUGER CATCH PAN
2	1	SEE TABLE	TT24 AUGER TROUGH
3	1	SEE TABLE	AUGER OUT CHUTE
4	1	SEE TABLE	TT24 CATCH PAN COVER
5	1	SEE TABLE	AUGER ASSEMBLY
6	1	MP00440	BROTHER AUGER MOTOR MOUNTING BRACKET
7	1	WX00355	ROUND AUGER GASKET
8	1	WX00313	AUGER MOTOR PLATE GASKET
9	1	BG00069	BEARING CUP OIL SEAL
10	10	HD00012	M6 RUBBERISED WASHER
11	1	MP00441	BROTHER AUGER DRIVE SHAFT
12	1	MO00120	AUGER MOTOR
13	2	WX00276	GASKET
14	13	BHCS M6-1.0 x 12	M6 - 1.0 x 12 BHCS
15	SEE TABLE	BHCS M6-1.0 x 16	M6 - 1.0 x 16 BHCS
16	8	BHCS M6-1.0 x 20	M6 - 1.0 x 20 BHCS
17	4	SHCS M6-1.0 x 25	M6-1.0 x 25mm SHCS
18	2	SHCS M8-1.25 x 60	M8 - 1.25 x 50 SHCS
19	2	SHSS 10-32 x .25	10-32 x .25 SHSS
20	4	NUT HEX NYLOCK M6-1.0	M6-1.0 NYLOCK HEX NUT
21	2	NUT HEX M8-1.25	M8 - 1.25 HEX NUT
22	26	WASHER FLAT M6	M6 FLAT WASHER
23	SEE TABLE	WASHER LOCK M6	M6 LOCK WASHER
24	2	WASHER LOCK M8	M8 LOCK WASHER

ITEM NO.	CONVEYOR	CHUTE
1	MPTT133	MPTT138
2	MPTT135	MPTT136
3	MPTT131	MPTT132
4	MPTT134	MPTT137
5	MPTT139 (42.5")	MPTT139 (53")
15	QTY - 18	QTY - 22
23	QTY - 31	QTY - 35

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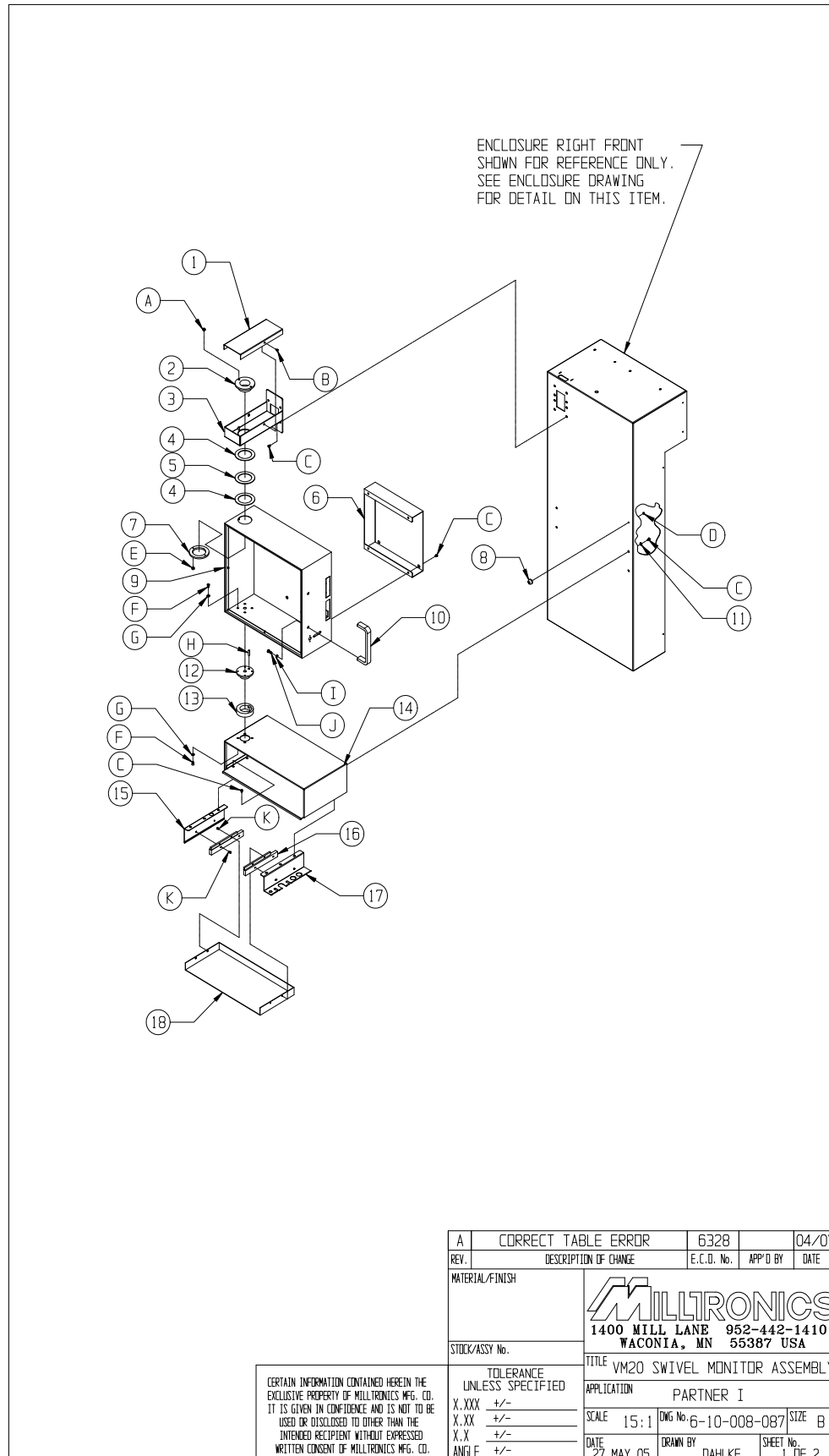
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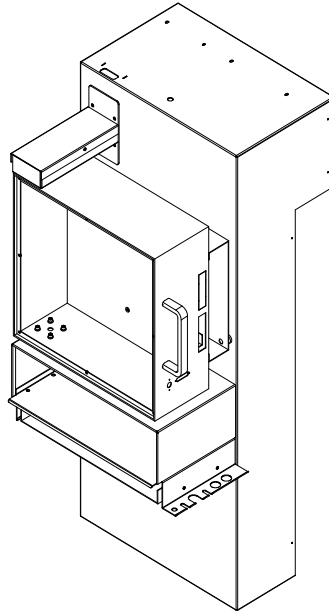
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Swivel Monitor Assembly





PARTS LIST

No.	QTY	STOCK No.	DESCRIPTION
1	1	MP1-494	COVER SWIVEL MONITOR UPPER SUPPORT ARM
2	1	MP-663	FLANGED BUSHING - SWIVEL MONITOR
3	1	MP1-491	UPPER SUPPORT ARM - SWIVEL MONITOR
4	2	WX-295	WASHER - SWIVEL MONITOR
5	1	MP3D-12	WAVE WASHER
6	1	MP-653	3-RING BINDER POCKET - SWIVEL MONITOR
7	1	MP-647	COLLAR - SWIVEL MONITOR
8	1	WX-156	BLACK BUMPER
9	1	SEE TABLE	SWIVEL MONITOR BOX
10	1	WX-230	HANDLE
11	4	HD-12	RUBBERIZED WASHER
12	1	MP-648	SWIVEL PIVOT BUSHING
13	1	MP-649	SWIVEL PIVOT BASE
14	1	MP1-492	SWIVEL MONITOR BASE
15	1	MP1-498	BRACKET - SWIVEL MONITOR DRAWER OPTION
16	1	MP-654	8" FULL EXTENSION ACCURIDE SLIDE
17	1	MP1-497	UTILITY TRAY - SWIVEL MONITOR
18	1	MP-626	TRAY - KEYBOARD PULL-OUT

PARTS LIST

No.	QTY	DESCRIPTION
A	2	M6-1 NYLOCK NUT
B	2	M5-.8 x 10mm BHCS
C	18	M6-1 x 10mm BHCS
D	1	8-32 NYLOCK NUT
E	2	M5-.8 NYLOCK NUT
F	8	M6-1 x 10mm SHCS
G	8	M6 LOCK WASHER
H	1	1/4 x .5 DOWEL PIN
I	2	M8 FLAT WASHER
J	2	M8-1.25 x 20mm BHCS
K	8	M3-.5 x 10mm BHCS

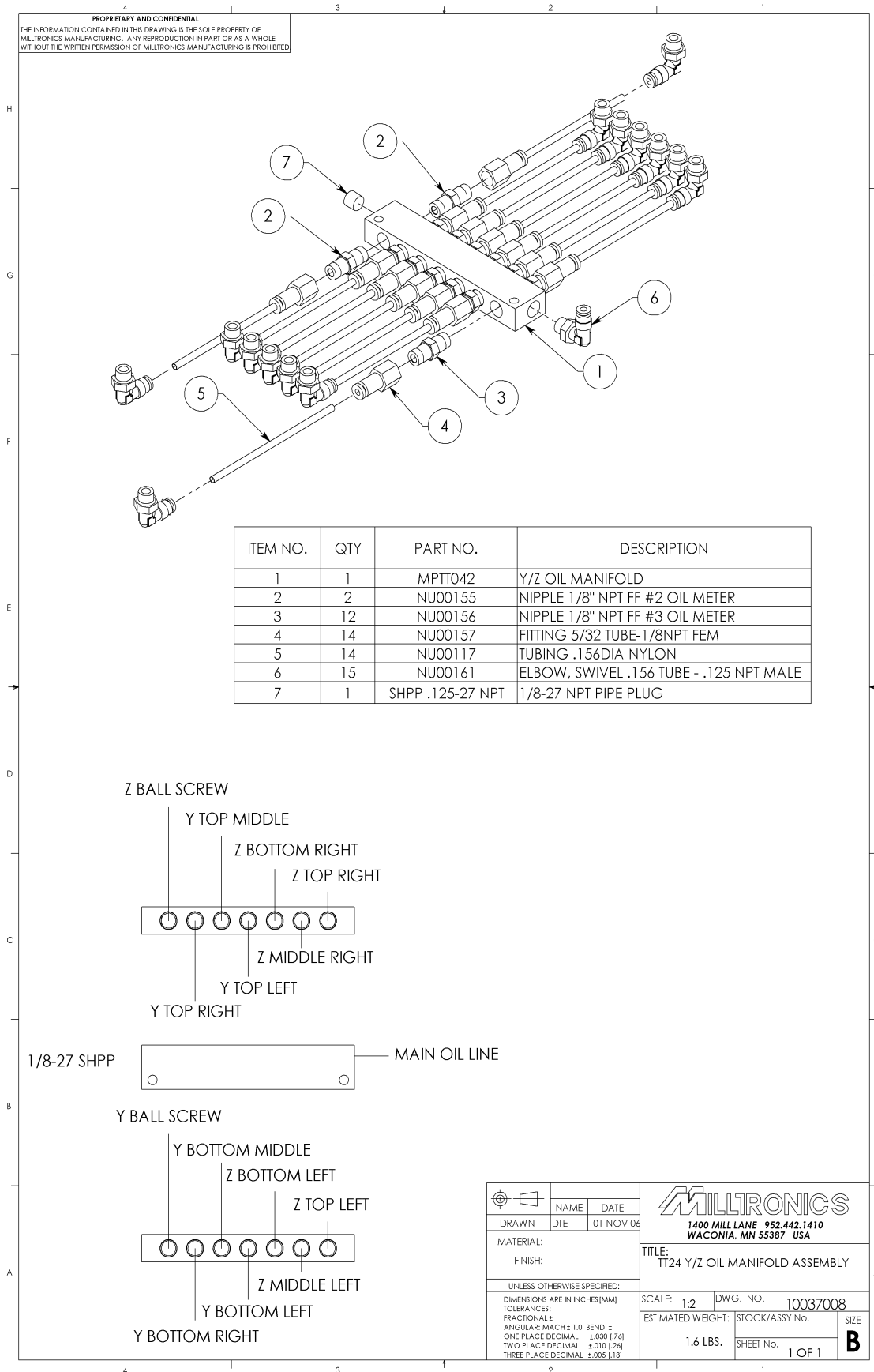
SWIVEL BOX TABLE

No.	CENT. 7	INT. CONTROL
9	MM-80	MPIC-03

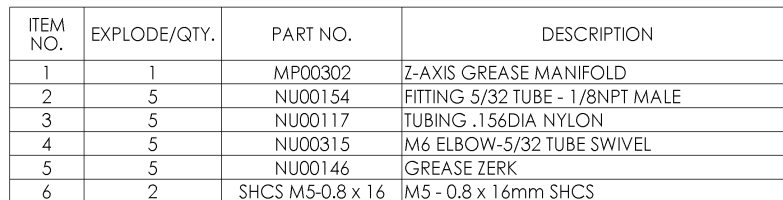
A	CORRECT TABLE ERROR	6328		04/07
REV.	DESCRIPTION OF CHANGE	E.C.D. No.	APP'D BY	DATE
MATERIAL/FINISH		 1400 MILL LANE 952-442-1410 WACONIA, MN 55387 USA		
STOCK/ASSY No.		TITLE VM20 SWIVEL MONITOR ASSEMBLY		
TOLERANCE UNLESS SPECIFIED		APPLICATION PARTNER I		
X.XXX +/-		SCALE 10:1		DWG No. 6-10-008-087
X.XX +/-				SIZE B
X.X +/-		DATE 27 MAY 05		DRAWN BY DAHLKE
ANGLE +/-				SHEET No. 2 OF 2

CERTAIN INFORMATION CONTAINED HEREIN THE EXCLUSIVE PROPERTY OF MILLIRONICS MFG. CO. IT IS GIVEN IN CONFIDENCE AND IS NOT TO BE USED OR DISCLOSED TO OTHER THAN THE INTENDED RECIPIENT WITHOUT EXPRESSED WRITTEN CONSENT OF MILLIRONICS MFG. CO.

Autolube Manifold Assembly for Y and Z Axes



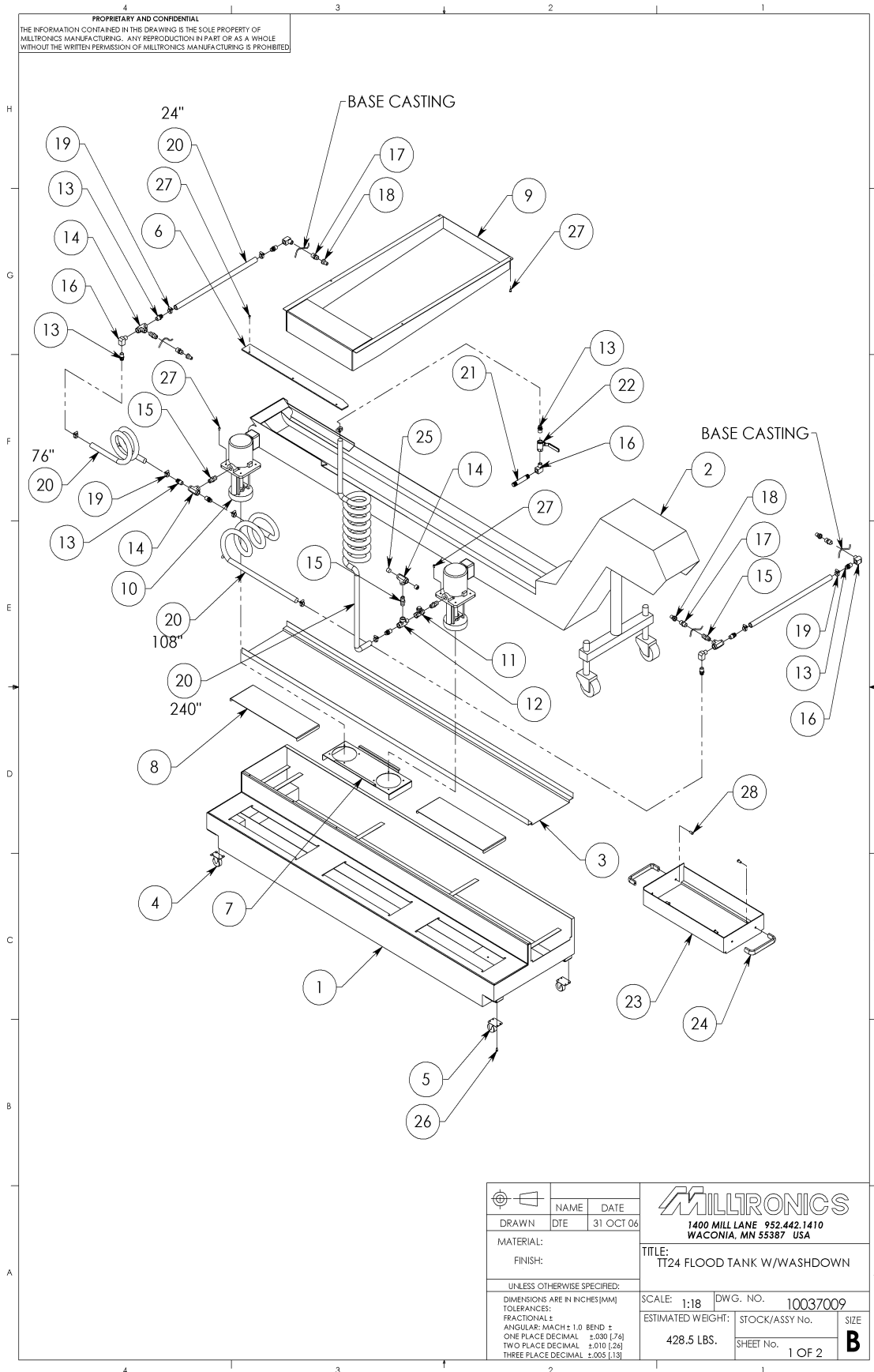
GREASE LINE DESTINATIONS

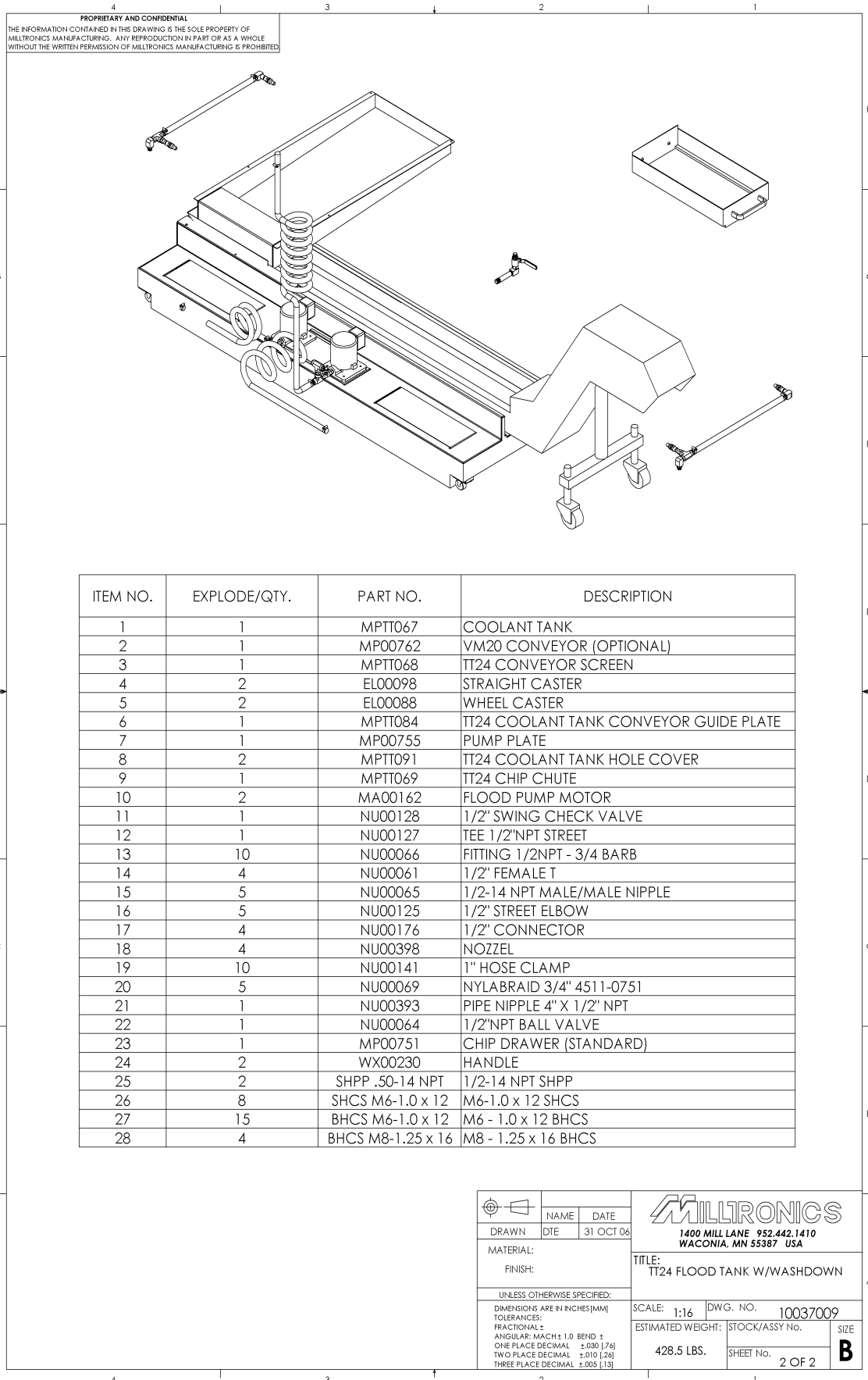


NU00117 TUBING LENGTH	
CONNECTION	TT24
LEFT REAR RAIL BLOCK	12"
LEFT FRONT RAIL BLOCK	36"
X BALL SCREW	8"
RIGHT REAR RAIL BLOCK	6"
RIGHT FRONT RAIL BLOCK	24"

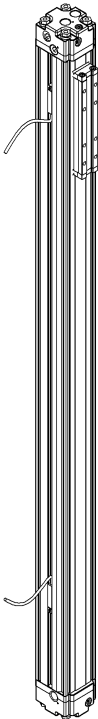
					
DRAWN	NAME	DATE	1400 MILL LANE 952.442.1410 WACONIA, MN 55387 USA		
	DTE	22 JAN 07			
MATERIAL:			TITLE:		
FINISH:			X AXIS GREASE MANIFOLD ASSEMBLY		
UNLESS OTHERWISE SPECIFIED:					
DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL: ANGULAR: MACH ± 0.1 BEND ± ONE PLACE DECIMAL ± 0.030 (76) TWO PLACE DECIMAL ± 0.010 (25) THREE PLACE DECIMAL ± 0.005 (13)			SCALE: 1:1.5 DWG. NO. 10037010 ESTIMATED WEIGHT: 0.6 LBS. STOCK/ASSY NO. XXX-XXX SIZE B SHEET NO. 1 OF 1		

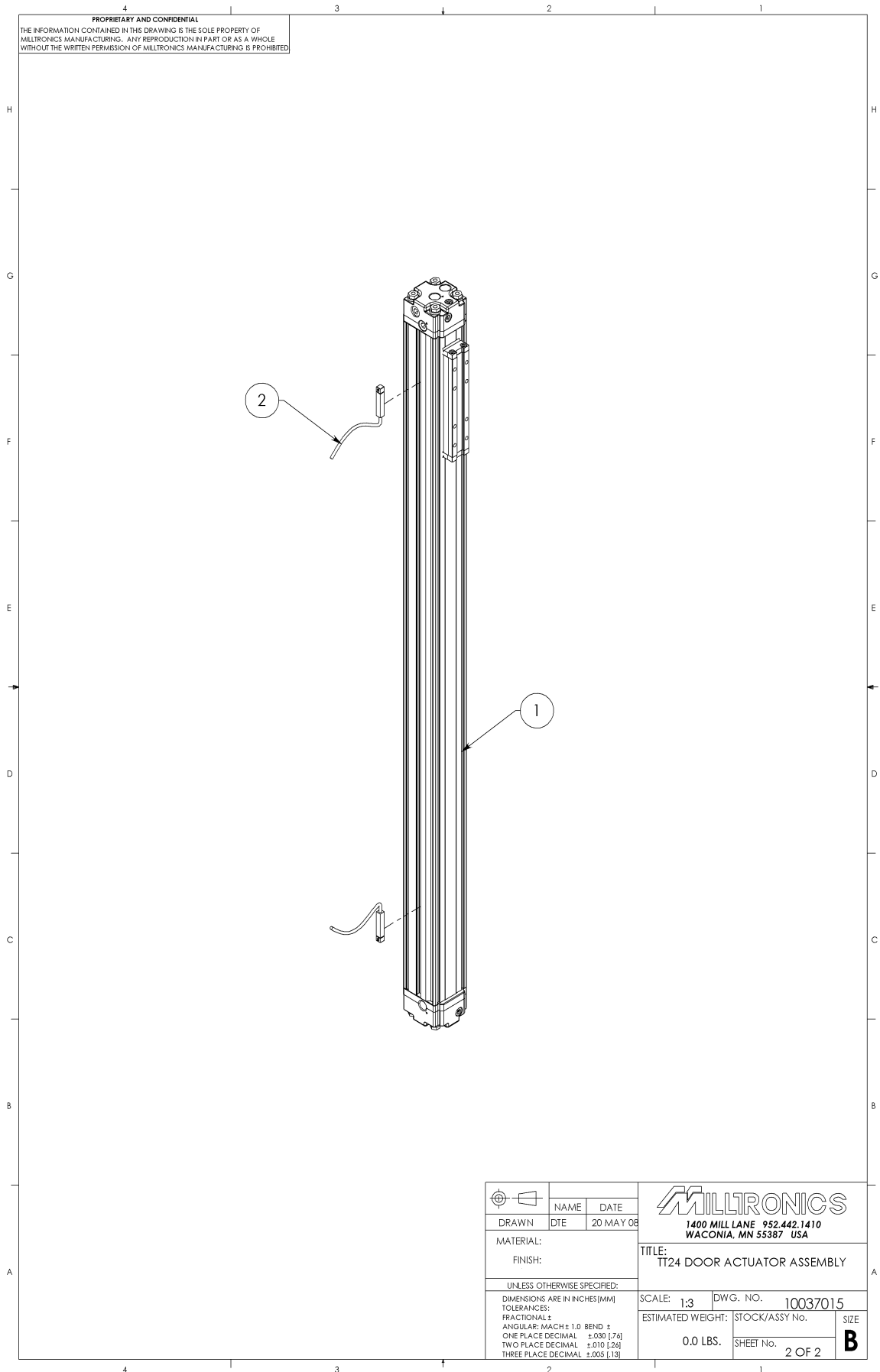
Coolant Trough Assembly



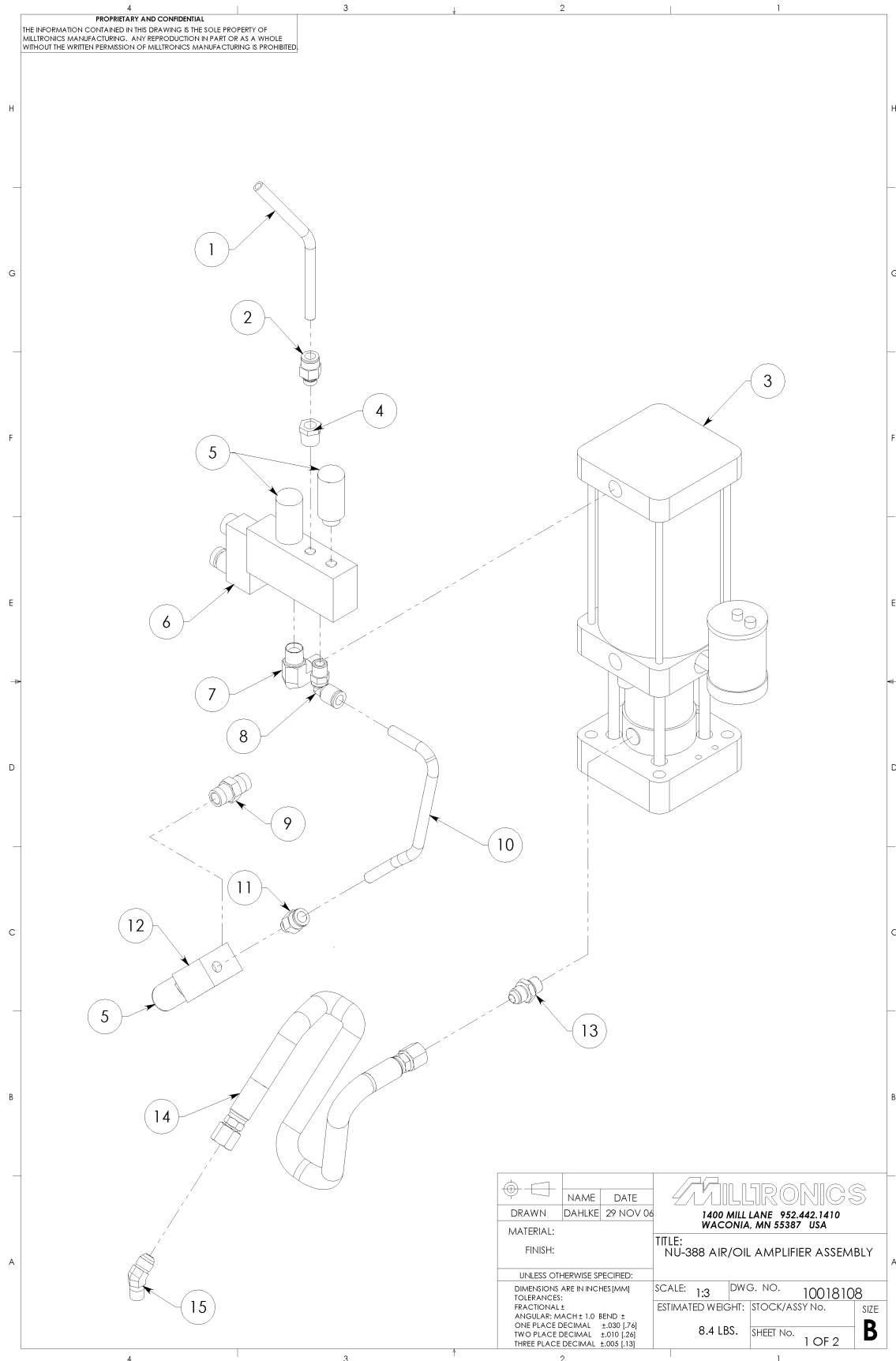


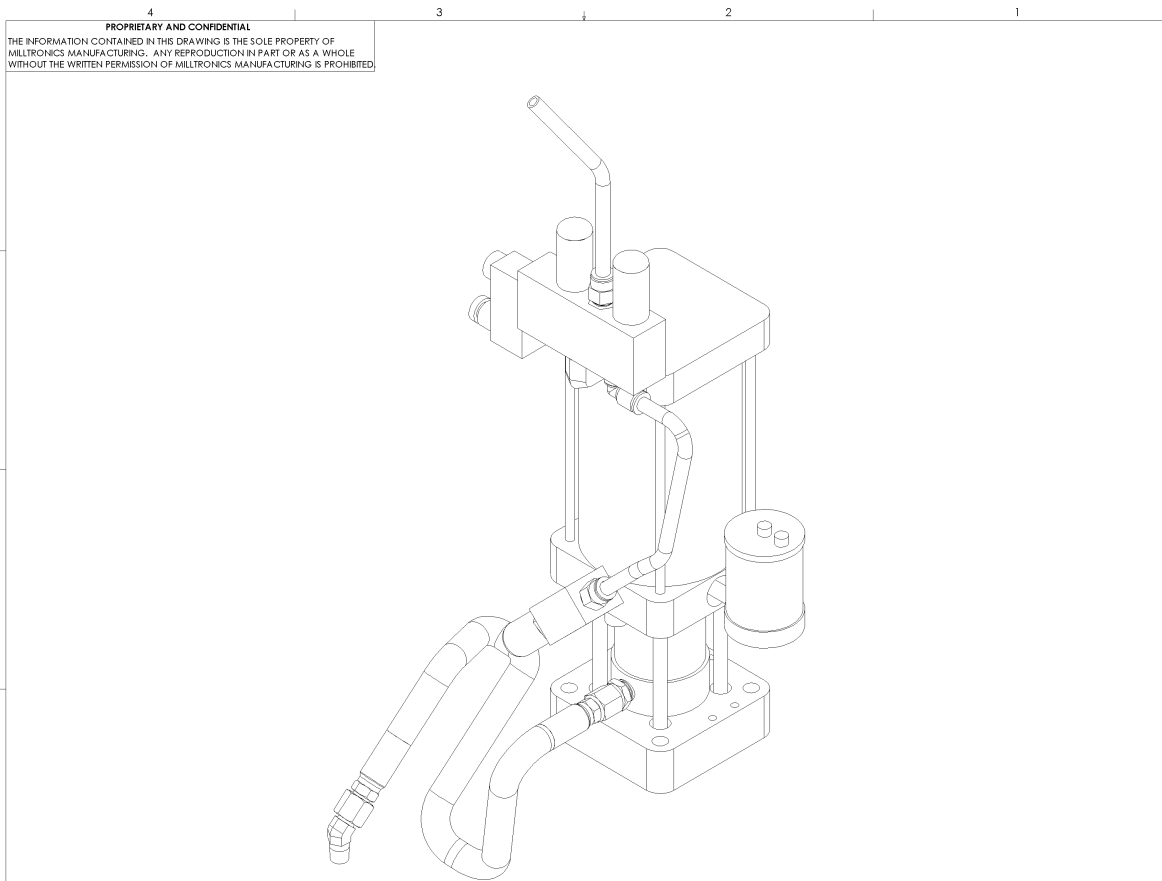
Auto Door Cylinder Assembly

PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MILLIRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MILLIRONICS MANUFACTURING IS PROHIBITED.																													
																													
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;">ITEM NO.</th> <th style="width: 15%;">Default/QTY.</th> <th style="width: 25%;">PART NUMBER</th> <th style="width: 45%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>NU00450</td> <td>TT24 DOOR ACTUATOR</td> </tr> <tr> <td>2</td> <td>2</td> <td>PR00062</td> <td>REED SWITCH</td> </tr> </tbody> </table>				ITEM NO.	Default/QTY.	PART NUMBER	DESCRIPTION	1	1	NU00450	TT24 DOOR ACTUATOR	2	2	PR00062	REED SWITCH														
ITEM NO.	Default/QTY.	PART NUMBER	DESCRIPTION																										
1	1	NU00450	TT24 DOOR ACTUATOR																										
2	2	PR00062	REED SWITCH																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;">  </td> <td style="width: 100px;">NAME</td> <td style="width: 100px;">DATE</td> </tr> <tr> <td>DRAWN</td> <td>DTE</td> <td>20 MAY 08</td> </tr> <tr> <td colspan="3">MATERIAL:</td> </tr> <tr> <td colspan="3">FINISH:</td> </tr> <tr> <td colspan="3">UNLESS OTHERWISE SPECIFIED:</td> </tr> <tr> <td colspan="3" style="font-size: 0.7em;"> DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± 1.0 BEND ± ONE PLACE DECIMAL ±.030 (.76) TWO PLACE DECIMAL ±.010 (.26) THREE PLACE DECIMAL ±.005 (.13) </td> </tr> </table>  1400 MILL LANE 952.442.1410 WACONIA, MN 55387 USA <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">TITLE: TT24 DOOR ACTUATOR ASSEMBLY</td> </tr> <tr> <td style="width: 50%;">SCALE: 1:4</td> <td style="width: 50%;">DWG. NO. 10037015</td> </tr> <tr> <td>ESTIMATED WEIGHT: 0.0 LBS.</td> <td>STOCK/ASSY NO.</td> </tr> <tr> <td>SHEET No. 1 OF 2</td> <td>SIZE B</td> </tr> </table>					NAME	DATE	DRAWN	DTE	20 MAY 08	MATERIAL:			FINISH:			UNLESS OTHERWISE SPECIFIED:			DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± 1.0 BEND ± ONE PLACE DECIMAL ±.030 (.76) TWO PLACE DECIMAL ±.010 (.26) THREE PLACE DECIMAL ±.005 (.13)			TITLE: TT24 DOOR ACTUATOR ASSEMBLY		SCALE: 1:4	DWG. NO. 10037015	ESTIMATED WEIGHT: 0.0 LBS.	STOCK/ASSY NO.	SHEET No. 1 OF 2	SIZE B
	NAME	DATE																											
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ESTIMATED WEIGHT: 0.0 LBS.	STOCK/ASSY NO.																												
SHEET No. 1 OF 2	SIZE B																												



Air/Oil Drawbar Assembly





ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	NU00078	3/8 AIR LINE
2	1	NU00095	TUBE CONNECTOR - M/S 3/8 TUBE 1/4NPT
3	1	NU00408	AIR/OIL AMPLIFIER SYSTEM
4	1	NU00027	REDUCER - 3/8 x 1/4NPT
5	3	NU00375	MUFFLER
6	1	NU00293	SOLENOID VALVE
7	1	NU00292	MALE ELBOW - 3/8NPT
8	1	NU00412	SWIVEL ELBOW - M/S 10mm TUBE 3/8NPT
9	1	NU00235	NIPPLE - 3/8NPT
10	1	NU00306	10mm AIR LINE
11	1	NU00297	TUBE CONNECTOR - M/S 10mm TUBE 3/8NPT
12	1	NU00402	EXHAUST VALVE
13	1	NU00409	FLARE FITTING - 3/8NPT
14	1	NU00403	19" INLINE AMPLIFIER HOSE
15	1	NU00410	ELBOW FLARE FITTING - 1/8NPT x 45°

	NAME	DATE	1400 MILL LANE 952.442.1410 WACONIA, MN 55387 USA
	DAHLKE 29 NOV 06		
MATERIAL:		TITLE: NU-388 AIR/OIL AMPLIFIER ASSEMBLY	
FINISH:		SCALE: 1:3 DWG. NO. 10018108	
UNLESS OTHERWISE SPECIFIED:		ESTIMATED WEIGHT: STOCK/ASSY No.	
DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± 1.0 BEND ± ONE PLACE DECIMAL ±.030 [.76] TWO PLACE DECIMAL ±.010 [.26] THREE PLACE DECIMAL ±.005 [.13]		8.4 LBS.	SHEET No. 2 OF 2 SIZE B

Thermal Compensation Sensor Assembly

PROPRIETARY AND CONFIDENTIAL
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ITEM NO.	EXPLODE/QTY.	PART NO.	DESCRIPTION
1	1	MP00858	THERMAL BALL SCREW CAP
2	1	PR00043	THERMO COMP SENSOR
3	1	MP00848	THERMAL SENSOR RING
4	1	MP00849	THERMAL SENSOR - CLAMP
5	1	MP00886	X AXIS THERMAL COVER
6	1	SHSSBT 10-32 x .188	10/32 x 3/16 BRASS TIPPED SHSS
7	2	BHCS M4-0.7 x 8	M4-0.7 x 8 BHCS
8	4	BHCS M4-0.7 x 12	M4-0.7 X 12mm BHCS
9	2	SHCS M5-0.8 x 16	M5 - 0.8 x 16mm SHCS

NOTES:

1. ITEMS 3 & 4 ARE REVERSED ON SOME AXES
2. ITEMS 5 & 7 ARE NOT USED ON SOME AXES

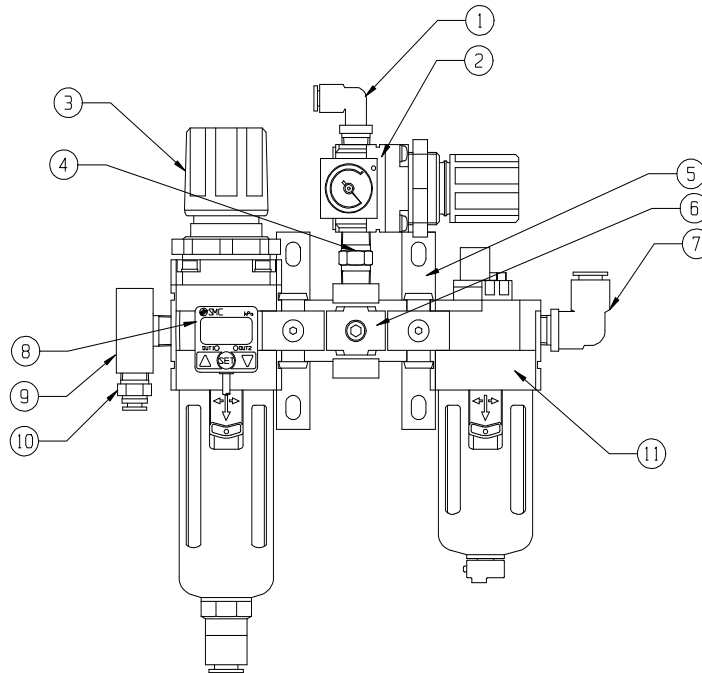
NAME	DATE
DRAWN	DTE 24 JAN 07
MATERIAL:	
FINISH:	
UNLESS OTHERWISE SPECIFIED:	
DIMENSIONS ARE IN INCHES (MM)	
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ONE PLACE DECIMAL ±.030 [.76]	
TWO PLACE DECIMAL ±.010 [.26]	
THREE PLACE DECIMAL ±.005 [.13]	

1400 MILL LANE 952.442.1410
WACONIA, MN 55387 USA

TITLE: THERMAL COMP ASSEMBLY	
SCALE: 1:4	DWG. NO. 10018111
ESTIMATED WEIGHT: 16.9 LBS.	STOCK/ASSY No. XXX-XXX
	SHEET No. 1 OF 1

Air Filter / Regulator / Lubricator Assembly

PARTS LIST			
ITEM	QTY	STOCK No.	DESCRIPTION
1	1	NU-199	1/4 NPT 3/8 TUBE SWIVEL ELBOW
2	1	NU-262	LOW PRESSURE REGULATOR W/GAGE
3	1	NU-212	LARGE FILTER/HIGH PRESSURE REGULATOR
4	1	NU-30	1/4 NPT PIPE NIPPLE
5	2	NU-210	LARGE MOUNTING SPACER
6	1	NU-211	LARGE MANIFOLD SPACER
7	1	NU-199	1/4 NPT 3/8 TUBE SWIVEL ELBOW
8	1	NU-430	DIGITAL AIR GAUGE WITH PRESSURE SWITCH
9	1	NU-219	1/4 NPT BRANCH TEE
10	1	NU-32	1/4 NPT 1/4 TUBE MALE STRAIGHT
11	1	NU-209	LARGE LUBRICATOR



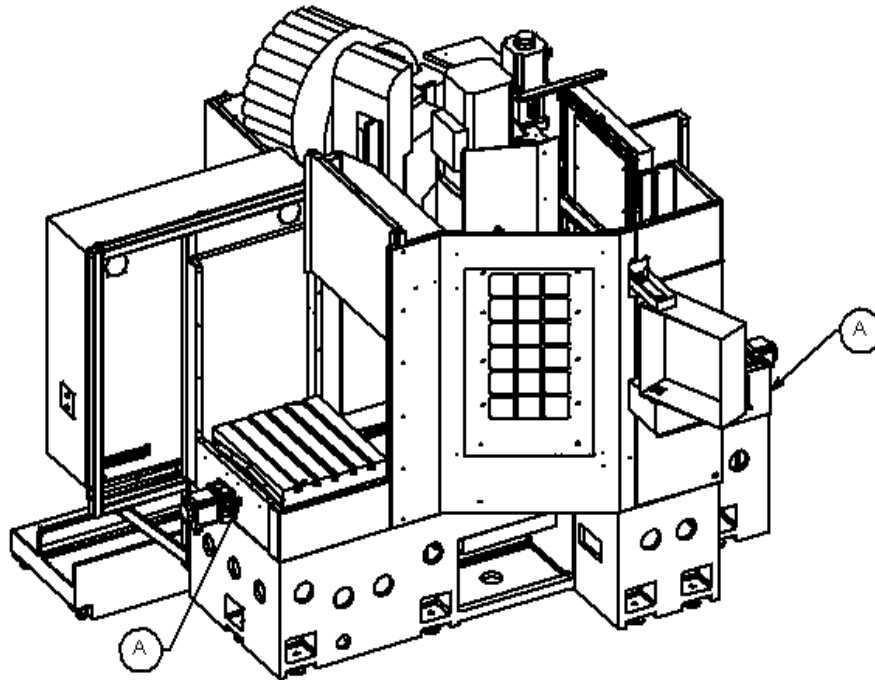
REV.	DESCRIPTION	E.C.O. NO.	APP'D BY	DATE
MATERIAL/FINISH		 1400 MILL LANE 952-442-1410 WACONIA, MN 55387 USA		
STOCK/ASSY No.				
CERTAIN INFORMATION CONTAINED HEREIN IS THE EXCLUSIVE PROPERTY OF MILLIRONICS MFG. CO. IT IS GIVEN IN CONFIDENCE AND IS NOT TO BE USED OR DISCLOSED TO OTHER THAN THE INTENDED RECIPIENT WITHOUT EXPRESSED WRITTEN CONSENT OF MILLIRONICS MFG. CO.		TOLERANCE UNLESS SPECIFIED X.XXX +/- X.XX +/- X.X +/- ANGLE +/-		
TITLE		NU-417 FRL ASSEMBLY		
APPLICATION		GENERAL PRODUCTS		
SCALE	3:1	DWG No.	6-10-018-112	SIZE B
DATE	14 APR 08	DRAWN BY	DAHLKE	SHEET NO. 1:1

Machine Lubrication Instructions

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
MILLIRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE
WITHOUT THE WRITTEN PERMISSION OF MILLIRONICS MANUFACTURING IS PROHIBITED.

NOTES:

1. USE MOBILITH AW SERIES MULTIPURPOSE EP GREASE OR OTHER EQUIVALENT FOR ALL LUBE POINTS. MACHINE SHOULD BE SERVICED ONCE A MONTH FOR PROPER OPERATION AND ACCURACY OF MACHINE. SEE PAGE TWO FOR SPECIFICATIONS.
2. CLEAN AND FILL AIR FILTER / REGULATOR / OILER EVERY WEEK FOR PROPER OPERATION OF ALL PNEUMATIC PARTS. FILL WITH MOBIL VELOCITE No. 10, MARVEL No. 085 OR OTHER EQUIVALENT QUALITY AIR TOOL OIL. SEE PAGE TWO FOR SPECIFICATIONS.
3. MACHINES WITH AUTOLUBE OPTION USE MOBIL OIL VACTRA 2, AMOCO WAYTAC No. 68, SUNOCO SUNWAY LUBE No. 1180, OR EQUIVALENT QUALITY WAY OIL. SEE PAGE TWO FOR SPECIFICATIONS.
4. INSPECT AIR/OIL DRAW BAR AIR CYLINDER WEEKLY. BE SURE THE OIL RESERVOIR IS FILLED WITH MOBIL DTE24 OR EQUIVALENT QUALITY OIL. SEE PAGE TWO FOR SPECIFICATIONS.



A X - AXIS GREASE MANIFOLD ACCESS. REMOVE PLUGS AND ADD A FEW PUMPS OF GREASE PER GREASE ZERK. (SEE NOTE 1. FOR SERVICE FREQUENCY) THEN REPLACE PLUGS

		MILLIRONICS 7400 MILL LANE 952.442.7470 WACONIA, MN 55387 USA	
DRAWN: _____ DIE: 13 JUN 07	NAME: _____ DATE: _____	TITLE: TWIN TABLE LUBRICATION DRAWING	
MATERIAL: FINISH: _____		SCALE: 1:10 DWG. NO. 11037001	
UNITS: OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (MM) TOLERANCES: FRACTIONAL B ANGLES: MAX 510 8740 5 ONE PLACE DECIMAL 0.010 (174) TWO PLACE DECIMAL 0.010 (124) THREE PLACE DECIMAL 0.001 (114)		ESTIMATED WEIGHT: _____ LBS.	STOCK/CLASSY NO. _____ SEE SHEET NO. 1 OF 2 B

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
MILLIRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE
WITHOUT THE WRITTEN PERMISSION OF MILLIRONICS MANUFACTURING IS PROHIBITED.

MOBILITH AW SERIES, MULTI PURPOSE EP GREASE

PRODUCT NUMBER	64352-8
NLGI GRADE	1
COLOR	GREEN
STRUCTURE	SMOOTH/TACKY
SOAP TYPE	LITHIUM COMPLEX
MINERAL OIL VISCOSITY	
cST AT 40 °C	150
cST AT 100 °C	13
SUS AT 100 °F	750
SUS AT 210 °F	70
ISO VISCOSITY GRADE	150
PENETRATION AT 23 °C (77 °F) WORKED	325
DROPPING POINT, ASTM D 2265, °F	475
TIMKEN OK LOAD, ASTM D 2509 lb	40
FOUR-BALL EP TEST, ASTM D 2596,	
WELD LOAD, kg	250
LOAD WEAR INDEX	40
FOUR-BALL WEAR TEST, ASTM D 2266,	
SCAR DIA METER, mm, MAX	0.5
CORROSION PREVENTION, ASTM D 1743	PASS
WHEEL BEARING TEST, ASTM D 4290	
MODIFIED, LEAKAGE, GRAM	5

MOBIL VELOCITE OIL No. 10

PRODUCT NUMBER	60068-4
GRAVITY, API	32.0
POUR, °C (°F), max	-4 (25)
FLASH, °C (°F), min	182 (360)
VISCOSITY	
cST AT 40 °C	22.0
cST AT 100 °C	4.0
SUS AT 100 °F	115
SUS AT 210 °F	40
ISO VG	22
VISCOSITY INDEX	95
COLOR, ASTM D 1500	2.0
RUST PROTECTION, ASTM D 665	PASS
CINCINNATI MILACRON SPECIFICATION	P-45

MOBIL VACTRA OIL No. 2

PRODUCT NUMBER	60049-4
SPECIFIC GRAVITY, 60/60F	0.88
POUR POINT, °C (°F), max	-9 (16)
FLASH POINT, °C (°F), min	244 (472)
VISCOSITY	
cST AT 40 °C	68
cST AT 100 °C	8.6
SUS AT 100 °F	356
SUS AT 210 °F	55
VISCOSITY INDEX	97
ISO VG	68
COLOR, ASTM D 1500	4
FZG, PASS STAGES	11
4 BALL WELD, kg, ASTM D 2783	160
4 BALL WEAR, mm, ASTM D 4172	0.22
COPPER CORROSION, ASTM D 130	1B
RUST, D 665A	PASS
VICKERS V-104C, mg D 2882 (MOD)	-
CMOC, P-SPEC, APPROVAL	P-47
BIJUR PT 37-1 APPROVAL	PASS
OKUMA APPROVAL	PASS

MOBIL DTE 24

PRODUCT NUMBER	60262-3
98 CMCS CODE (DRUM)	98020E
SPECIFIC GRAVITY	0.871
POUR POINT, °C (°F) max	-18 (0)
FLASH POINT, °C (°F), min	200 (392)
VISCOSITY	
cST AT 40 °C	32
cST AT 100 °C	5.3
SUS AT 100 °F	165
SUS AT 210 °F	44
ISO VISCOSITY GRADE	32
VISCOSITY INDEX	95
RUST PROTECTION	
ASTM D 665, A & B	PASS
COLOR, ASTM D 1500, max	3.5
FZG GEAR TEST STAGES	
PASSED DIN 51534	12

	NAME	DATE	
	DRAWN	DIE	
MATERIAL:			TITLE: TWIN TABLE LUBRICATION DRAWING
FINISH:			
UNLESS OTHERWISE SPECIFIED:			SCALE: 1:48
DIMENSIONS ARE IN INCHES (MM)			DWG. NO. 11037001
TOLERANCES:			ESTIMATED WEIGHT: 11037001
FRACTIONAL			SHEET NO. 2 OF 2
ANGULAR: MAX ± 10 MIN. 0			SHEET NO. 2 OF 2
DECIMAL: 0.001 (3X)			
FRACTIONAL: 1/64 (3X)			SHEET NO. 2 OF 2
DECIMAL: 0.001 (3X)			
FRACTIONAL: 1/64 (3X)			SHEET NO. 2 OF 2
DECIMAL: 0.001 (3X)			

Retention Knob Chart

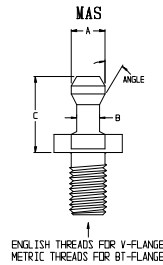
NOTE: STANDARD RETENTION KNOBS FOR 40 TAPER SPINDLES WITHOUT CTS

MAS RETENTION KNOBS STYLE CT-FLANGE 40 TAPER

ASSEMBLY SELECTION	A	B	C	ANGLE	MILL/DRILLS		MACHINE	COMMAND PART NO.	KENNAMETAL PART NO.	VALENTIN PART NO.	LYNDE PART NO.
					60mm SPINDLE	70mm SPINDLE					
4833	59.39	1.27		60°	RH19, RH20, RH30, RH33, RH45, RH50, RH55, RH60, RH65, RH80, RH85, RH100, RH110, RH120, RH125, RH130, RH135, RH140, RH145, RH150, RH155, RH160, RH165, RH170, RH175, RH180, RH185, RH190, RH195, RH200, RH205, RH210, RH215, RH220, RH225, RH230, RH235, RH240, RH245, RH250, RH255, RH260, RH265, RH270, RH275, RH280, RH285, RH290, RH295, RH300, RH305, RH310, RH315, RH320, RH325, RH330, RH335, RH340, RH345, RH350, RH355, RH360, RH365, RH370, RH375, RH380, RH385, RH390, RH395, RH400, RH405, RH410, RH415, RH420, RH425, RH430, RH435, RH440, RH445, RH450, RH455, RH460, RH465, RH470, RH475, RH480, RH485, RH490, RH495, RH500, RH505, RH510, RH515, RH520, RH525, RH530, RH535, RH540, RH545, RH550, RH555, RH560, RH565, RH570, RH575, RH580, RH585, RH590, RH595, RH600, RH605, RH610, RH615, RH620, RH625, RH630, RH635, RH640, RH645, RH650, RH655, RH660, RH665, RH670, RH675, RH680, RH685, RH690, RH695, RH700, RH705, RH710, RH715, RH720, RH725, RH730, RH735, RH740, RH745, RH750, RH755, RH760, RH765, RH770, RH775, RH780, RH785, RH790, RH795, RH800, RH805, RH810, RH815, RH820, RH825, RH830, RH835, RH840, RH845, RH850, RH855, RH860, RH865, RH870, RH875, RH880, RH885, RH890, RH895, RH900, RH905, RH910, RH915, RH920, RH925, RH930, RH935, RH940, RH945, RH950, RH955, RH960, RH965, RH970, RH975, RH980, RH985, RH990, RH995, RH1000, RH1005, RH1010, RH1015, RH1020, RH1025, RH1030, RH1035, RH1040, RH1045, RH1050, RH1055, RH1060, RH1065, RH1070, RH1075, RH1080, RH1085, RH1090, RH1095, RH1100, RH1105, RH1110, RH1115, RH1120, RH1125, RH1130, RH1135, RH1140, RH1145, RH1150, RH1155, RH1160, RH1165, RH1170, RH1175, RH1180, RH1185, RH1190, RH1195, RH1200, RH1205, RH1210, RH1215, RH1220, RH1225, RH1230, RH1235, RH1240, RH1245, RH1250, RH1255, RH1260, RH1265, RH1270, RH1275, RH1280, RH1285, RH1290, RH1295, RH1300, RH1305, RH1310, RH1315, RH1320, RH1325, RH1330, RH1335, RH1340, RH1345, RH1350, RH1355, RH1360, RH1365, RH1370, RH1375, RH1380, RH1385, RH1390, RH1395, RH1400, RH1405, RH1410, 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MAS RETENTION KNOBS STYLE BT-FLANGE 40 TAPER

ASSEMBLY SECTION	DIMENSIONS		ANGLE	MILLITRONICS MACHINE		COMMAND PART NO.	KENNEMETAL PART No.	VALENTE PART No.	LYNDEX PART No.
	B	C		60mm SPINDLE	70mm SPINDLE				
4834	.50	3.9	60°	RH19, RH20, RH30, RH33, RH35, RH15, RWQZC, BR50, BR60, BR80 WH15, VM10, VMC2, VM22, VM25, VM20, VM15, VM16, VM20, VM25, VM30, MM1B	RH20, RH30, RH33, RH35, BR50, BR60, BR80, WH16, VM20, VM22, VM25, VM30, VM16, VM20, VM25, VM30, T124, T140, HM20, HM35	RB4M-0002	RK311134	PT-444-60	B40-600



ENGLISH THREADS FOR V-FLANGE
METRIC THREADS FOR BT-FLANGE

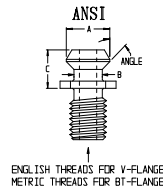
NOTE: STANDARD RETENTION KNOBS FOR 40 TAPER SPINDLES WITH CTS

ANSI RETENTION KNOBS STYLE CT-FLANGE 40 TAPER

ASSEMBLY SELECTION	DIMENSIONS				MILL/TURNICS MACHINE		COMMAND PART No.	KENMETAL PART No.	VALENTE PART No.	LYNDEX PART No.
	A	B	C	ANGLE	60mm SPINDLE	70mm SPINDLE				
4836	74.49	.64	45°	SELECTION NOT AVAILABLE	R120, RH30, RH33, RH45, BR50, BR60, BR80, WM16, VM20, VM22, VM25, VM30, VM16, VM24, VM2, VM25, VM30, T12, T14, T10, VM20, HM35	RC4E-0001	P1-475C	C40-ST		

ANSI RETENTION KNOBS STYLE BT-FLANGE 40 TAPER

ASSEMBLY SELECTION	DIMENSIONS				MILL/TURNICS		MACHINE	COMMAND PART NO.	KINEMATICAL PART NO.	VALENTE PART NO.	L'INDEX PART NO.
	A	B	C	ANGLE	60mm SPINDLE	70mm SPINDLE					
4837	74	49	75	45°	MILLING NOT AVAILABLE		RH20, RH40, RH33, RH35, BR50, BR60, BR80, VM16, VM20, VM22, VM25, VM30, VM36, VM40, VM35, VM30, T124, T140, HM20, HM35	RS4M-0115	RK1126A	N/A	B40-FAD



ENGLISH THREADS FOR V-FLANGE
METRIC THREADS FOR BT-FLANGE

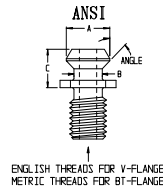
NOTE: STANDARD RETENTION KNOBS FOR 50 TAPER SPINDLES WITH OR WITHOUT CTS

ANSI RETENTION KNOBS STYLE CT-FLANGE 50 TAPER

ASSEMBLY SELECTION	DIMENSIONS				MILLITRONICS MACHINE	COMMAND PART No.	KENNAMETAL PART No.	VALENITE PART No.	LYNDEX PART No.
	A	B	C	ANGLE					
N/A	1.14	.83	1.00	45°	WM25XP, WM30XP, RH35XP, HMC70	RCBE-0001	DWG RK11144	N/A	C50-ST

ANSI RETENTION KNOBS STYLE BT-FLANGE 50 TAPER

ASSEMBLY SELECTION	DIMENSIONS				MILLITRONICS MACHINE	COMMAND PART No.	KENAMETAL PART No.	VALENITE PART No.	LYNDEX PART No.
	A	B	C	ANGLE					
N/A	1.14	.83	1.00	45°	VM25XP, VM30XP, RH35XP, HMC70	RSDM-0105	DMG RK11144A	N/A	N/A



ENGLISH THREADS FOR V-FLANGE
METRIC THREADS FOR BT-FLANGE

NOTE: OPTIONAL RETENTION KNOBS FOR 40 TAPER SPINDLES

NAS RETENTION KNOBS STYLE CT-FLANGE 40 TAPER

ASSEMBLY SECTION	DIMENSIONS			MILLITRONICS MACHINE		COMMAND PART No.	KENNAMETAL PART No.	VALENTE PART No.	LYNNEY PART No.
	B	C	ANGLE	60mm SPINDLE	70mm SPINDLE				
4831	.59	.39	1.27	45°	SELECTION TABLE	R4E-0001	RK31114	Pt-53Z-45	CAO-45C

MAS RETENTION KNOBS STYLE BT-FLANGE 40 TAPER

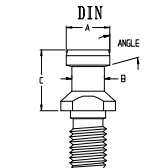
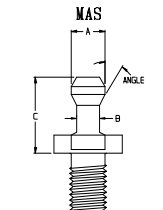
ASSEMBLY SELECTION	DIMENSIONS			MILL/TRONICS MACHINE		COMMAND PART No.	KONUMETAL PART No.	VALENITE PART No.	LYNEX PART No.
	A	B	C	ANGLE					
					60mm SPINDLE	70mm SPINDLE			
4B32	59.39	1.38	45°	SELECTION AVAILABLE	RH20, RH30, RH33, RH55, BR50, BR60, BR80, VM16, VM20, VM22, VM25, VM30, VM16, VM24, VM20, VM25, VM30, TT24, TT40, VM20, VM35	RB4H-0001	RK31113	PT-444-45	B40-450

DIN 69872 RETENTION KNOBS STYLE CT-FLANGE 40 TAPER

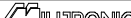
ASSEMBLY SELECTION	DIMENSIONS			MILLITRONICS MACHINE		COMMAND PART No.	KENAMETAL PART No.	VALENITE PART No.	LYNDEE PART No.	
	A	B	C	ANGLE						
					60mm SPINDLE					
					70mm SPINDLE					
4839	.75-.55	1.02	75°	SELECTION NOT AVAILABLE		R-20, RH30, RH33, RH45, BR50, BR60, BR80, WM16, VM20, VM22, VM25, VM30, VC16, VC24, VC25, VKC30, TK24, TT40, HM20, HM35	RS4E-0114-C	DWG RK71125	N/A	C40-150

DIN 69872 RETENTION KNOBS STYLE DIN-FLANGE 40 TAPER

ASSEMBLY SELECTION	DIMENSIONS				MILL/TRONICS MACHINE		COMMAND PART No.	KENAMETAL PART No.	VALENTI PART No.	LYNDE PART No.
	A	B	C	ANGLE	60mm SPINDLE	70mm SPINDLE				
4839	75.55	1.24	75°	SELECTION NOT AVAILABLE	RH20, RH30, RH33, RH55, BR50, BR60, BR80, WM16, VM20, VM22, VM25, VM30, VMC16, VMC20, VMC25, VMC30, T24, TT40, HM20, HM35	RS4M-0114-C	DMG RK71124	N/A	940-150	



1. FOR SPINDLES OF 8000 RPM AND GREATER YOU MUST USE BALANCED TOOLING TO A G2.5 SPEC. OR IT WILL VOID THE SPINDLE WARRANTY.
2. CHART IS GOOD FOR ALL MACHINE VERSIONS LISTED FROM ECO DATE REV. G ON THIS DRAWING

G	ADD MM18 AND MOVE HMC70 FRAMES TO 50 TAPER	6193	N.M.	10/06
F	ADD VMC, TT, AND HMC FRAMES	6175	N.M.	09/06
E	UPDATE CHART	5982	N.M.	08/05
D	ADD RH/RW12 & RH19	5146	N.M.	09/01
C	ADD RETENTION KNOBS TO CHART	4859	N.M.	12/00
B	CHANGE 70mm BT-FLANGE CHART	4730	N.M.	10/00
A	ADD LYNDEX CORP. IN CHART	4351	N.M.	1/00
REV.	DESCRIPTION	E.C.O. NO.	APP'D BY	DATE
		TITLE RETENTION KNOB CHART APPLICATION GENERAL PRODUCTS		
1400 MILL LANE FARMINGDALE, NY 11735 800-442-1410 516-937-1714		SCALE 1.75:1 DATE 30 APR 99 DRAWN BY DAHLE SHEET NO. 1 OF 1		

