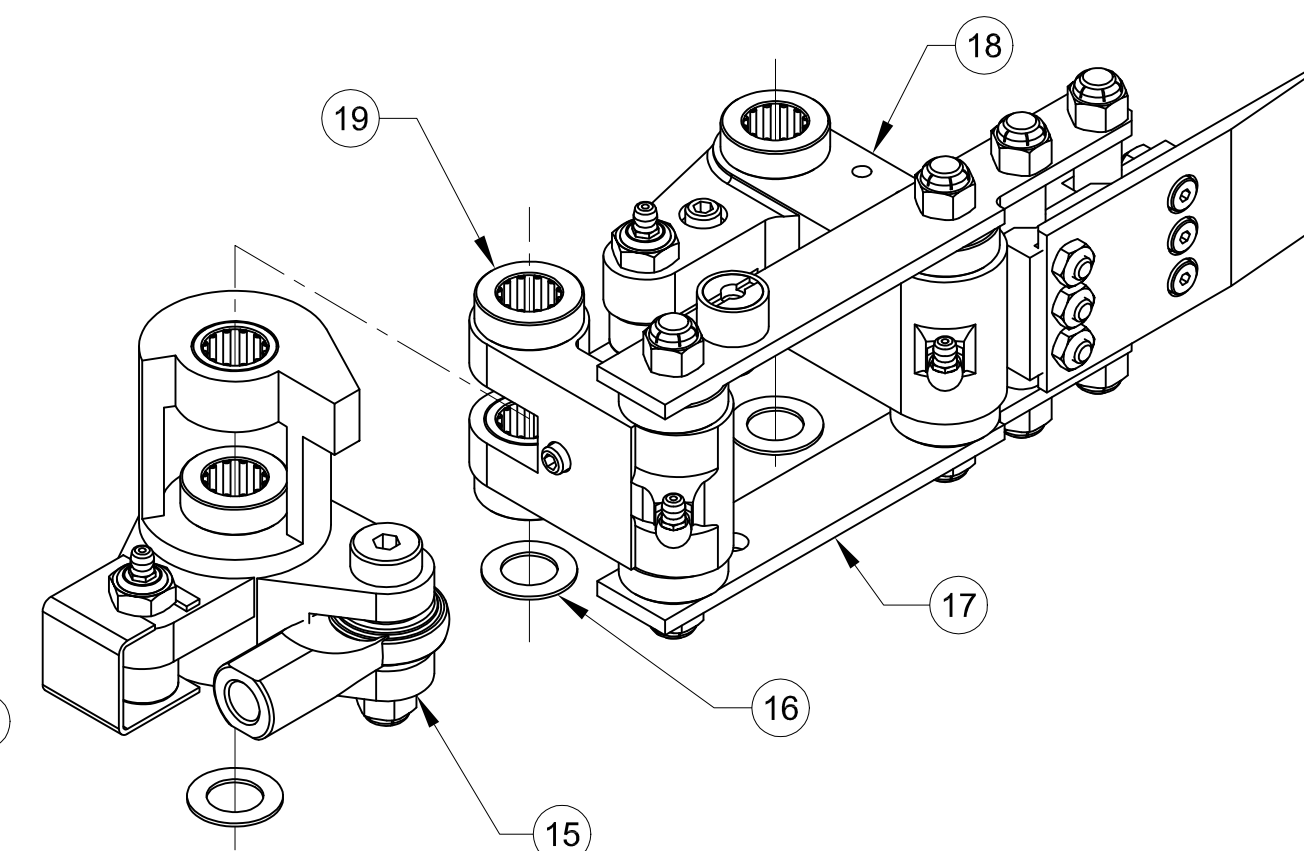


ASSEMBLED VIEW
(FOR REFERENCE ONLY)

ITEM	QTY	DESCRIPTION	LENGTH	UM	PART NUMBER	MATERIAL	TYP
1	2	GUIDE, SPRING		EA	350050210		D
2	2	SPRING		EA	3500-9-P10		D
3	2	RETAINER, SPRING		EA	350050250		D
4	1	SUPPORT, STARTER BASE		EA	350050020		D
5	4	SETSCREW, IND HEX 1/4"-20	.312	EA	*91375A537	STEEL	P
6	2	SLEEVE, PIVOT PIN		EA	350050860		D
7	2	FITTING, GREASE 1/4"-28		EA	*1095K44	STEEL	P
8	REF	SUB-ASSEMBLY, STARTER ACTIVATING		EA	(SEE SHEET 6)		D
9	1	SETSCREW, IND HEX NYLOCK 3/8"-16	.75	EA	*91385A622	STEEL	D
10	1	GUIDE SPRING		EA	350050240		D
11	1	PIN, PIVOT		EA	350050820		D
12	1	PIN, PIVOT		EA	350050830		D
13	1	PAD, STOP		EA	350050180		D
14	1	CAPSCREW, IND HEX 3/8"-16	.875	EA	*91251A623	STEEL	P
15	REF	SUB-ASSEMBLY, CONN. LEVER ROD		EA	(SEE SHEET 6)		D
16	3	SHIM		EA	350050890		D
17	REF	SUB-ASSEMBLY, TRANSFER ARM		EA	(SEE SHEET 3)		D
18	REF	SUB-ASSEMBLY, FRONT LEVER		EA	(SEE SHEET 6)		D
19	REF	SUB-ASSEMBLY, REAR LEVER		EA	(SEE SHEET 6)		D
*PURCHASE FROM MCMaster-CARR							



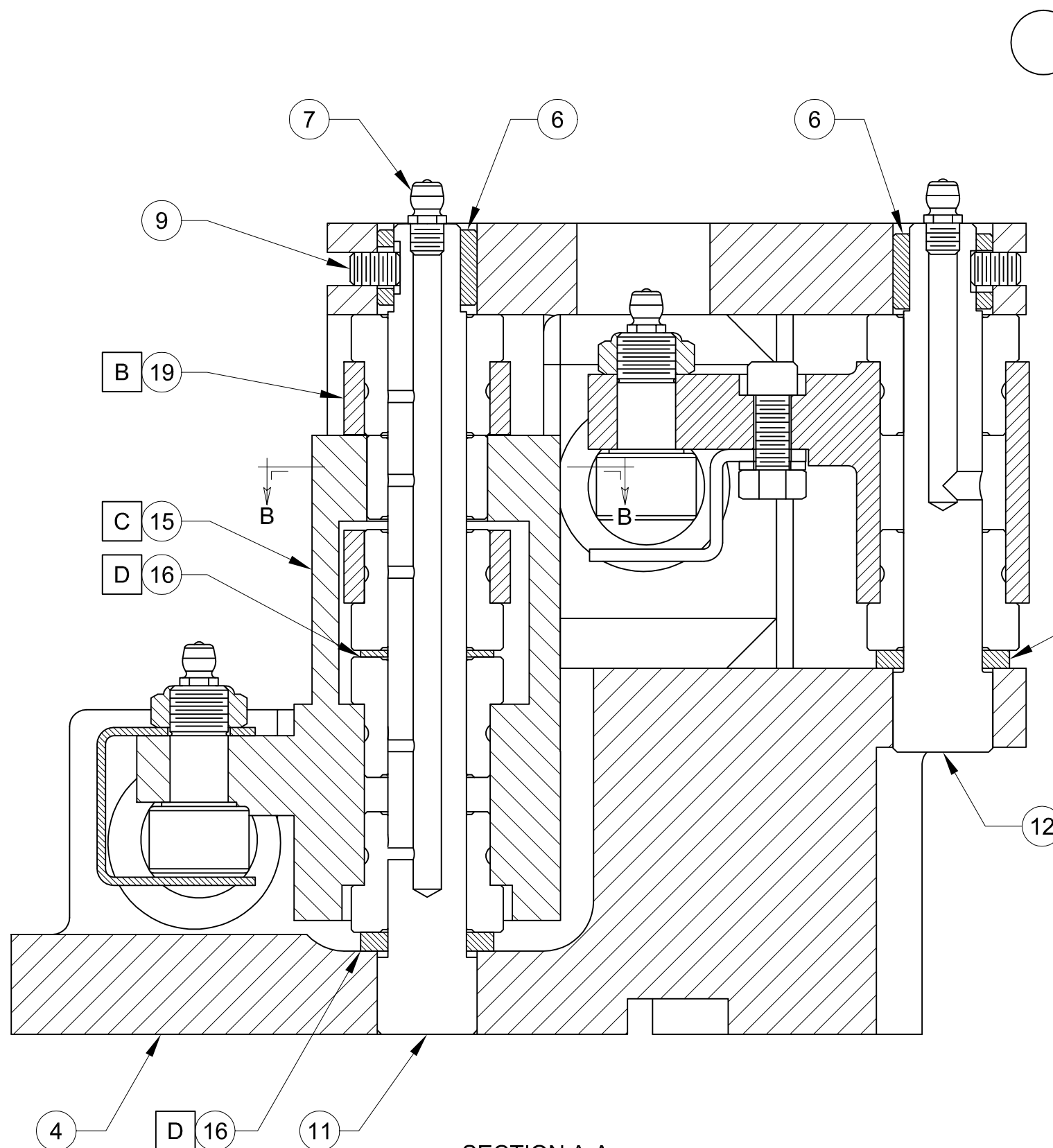
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TOLERANCES	
MACHINING	FABRICATION
X. ±.040	ALL ANGULAR ±.06
X.X ±.020	ANGULAR 2°
X.XX ±.010	ALL FINISHES 125mu
X.XXX ±.005	DEBURR ALL SHARP CORNERS OR EDGES
ANGULAR ± 1/2°	

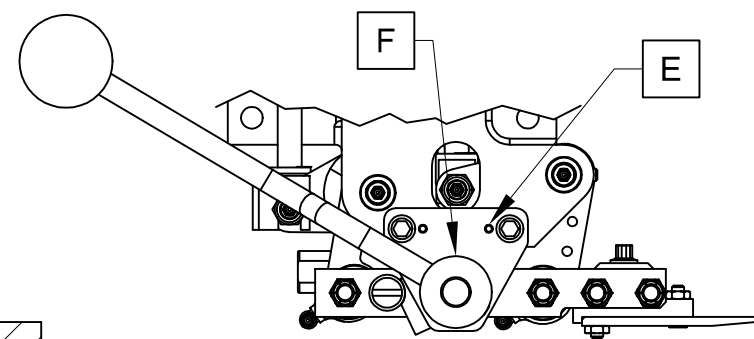
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DRAWN BY: MLGATES
DATE: 10OCT13
CHECKED BY:
DATE:

TITLE: HARTFORD 10-400 THD ASSEMBLY, 4 BAR STARTER
SIZE: B SHEET: 1 OF 6 REV: D
DWG NO: 350050920A

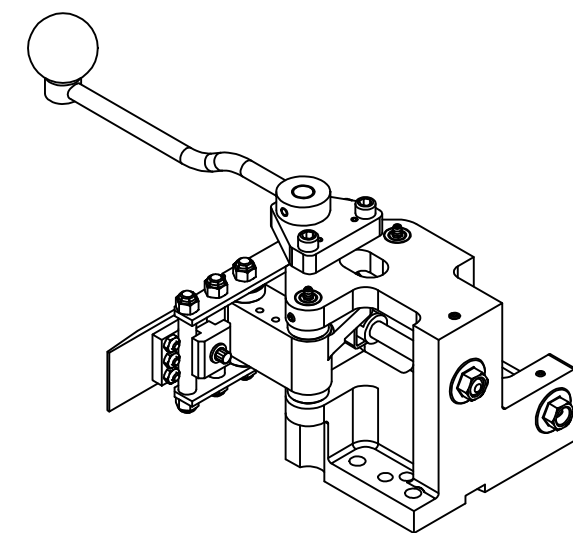
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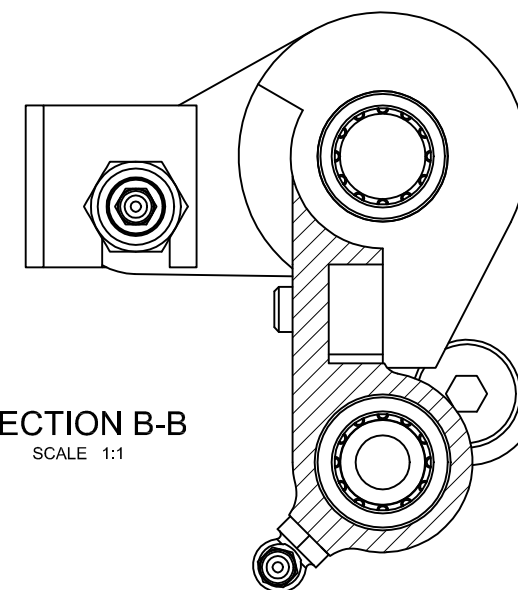
SECTION A-A
SCALE 1:1



RETRACTED POSITION



ASSEMBLED VIEW
(FOR REFERENCE ONLY)



SECTION B-B
SCALE 1:1

- A REFERENCE SHEET 1 FOR PART INFORMATION (BILL OF MATERIALS)
- B SEE SHEET 5 FOR ASSEMBLY INFORMATION FOR THE REAR LEVER.
- C SEE SHEET 6 FOR ASSEMBLY INFORMATION FOR THE CONN. LEVER.
- D GRIND SHIMS, AS NECESSARY, AT ASSEMBLY TO ELIMINATE END PLAY
- E PIN RETRACTION HANDLE ASSEMBLY TO HOUSING AT FINAL ASSEMBLY.
- F PIN RETRACTION HANDLE AS SHOWN WITH THE TRANSFER IN THE RETRACTED POSITION.

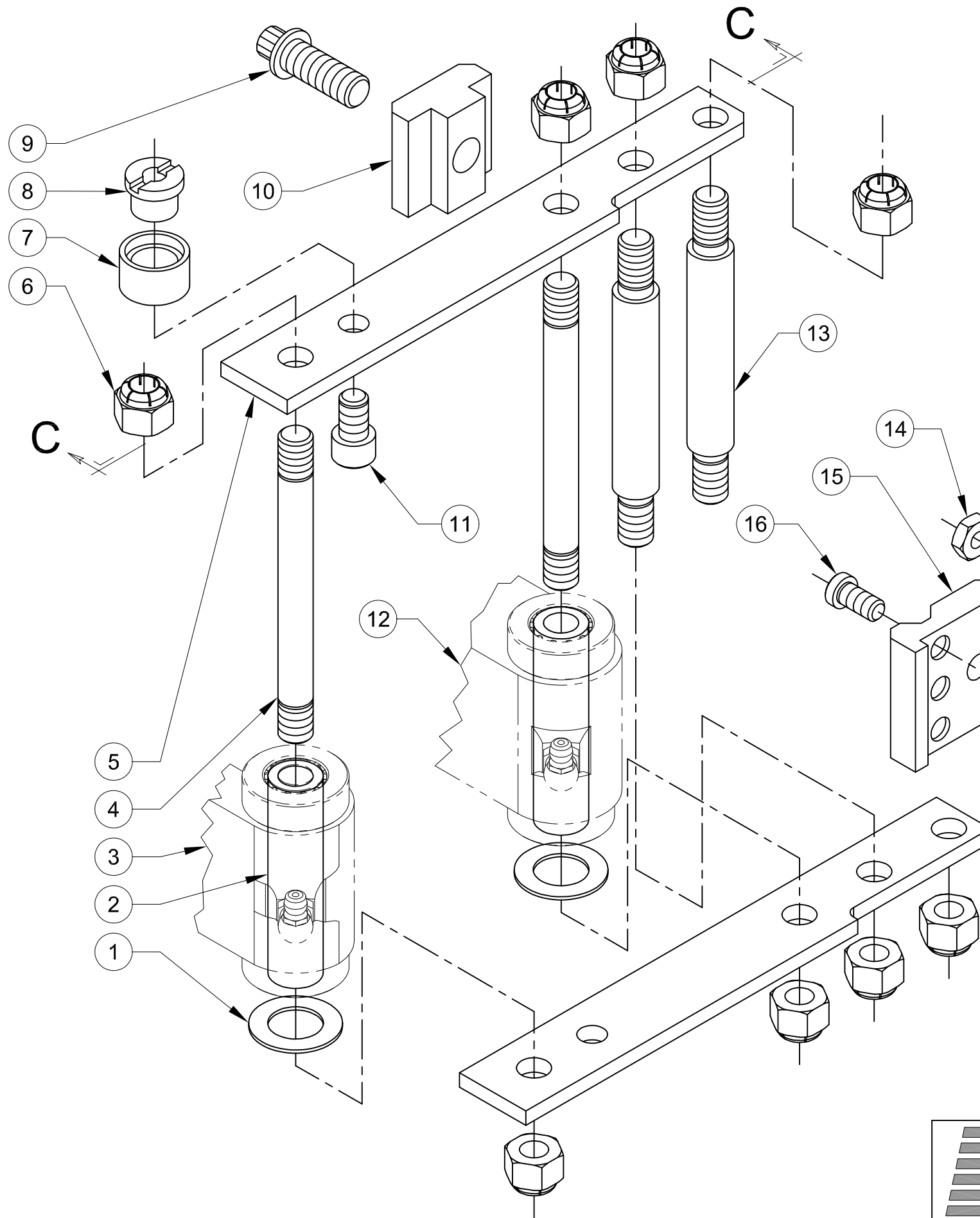


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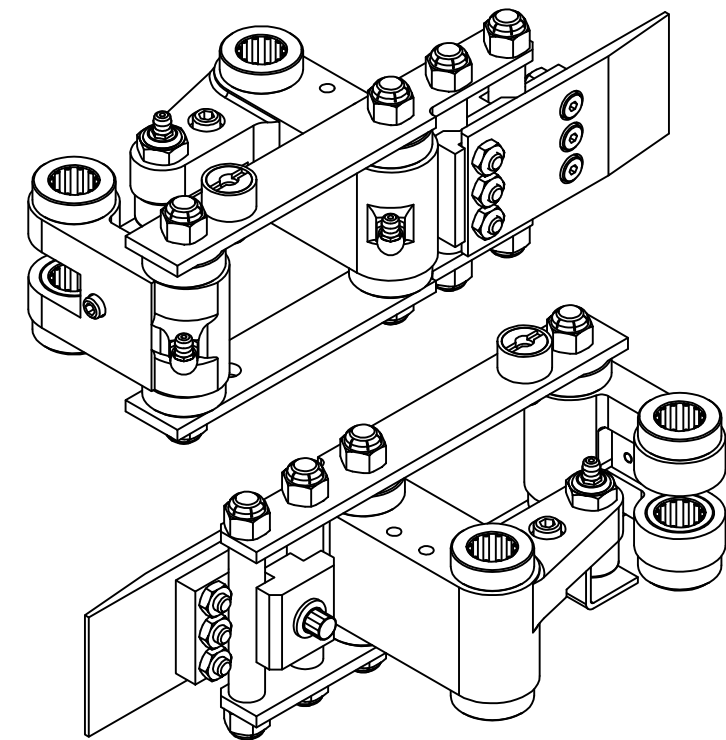
TOLERANCES	
MACHINING	FABRICATION
X. ± .040	ALL ANGULAR ± .06
X.X ± .020	ANGULAR 2°
X.XX ± .010	ALL FINISHES 125mu
X.XXX ± .005	DEBURR ALL SHARP CORNERS OR EDGES
ANGULAR ± 1/2°	

SCALE:	1:1
DRAWN BY:	MLGATES
DATE:	10OCT13
CHECKED BY:	
DATE:	

TITLE:			HARTFORD 10-400 THD ASSEMBLY, 4 BAR STARTER		
SIZE:	B	SHEET:	2 OF 6	REV:	
DWG NO:	350050920A				



ITEM	QTY	DESCRIPTION	LENGTH	UM	PART NUMBER	MATERIAL	TYP
1	2	SHIM		EA	350050910		D
2	2	PIN, TRANSFER ARM		EA	350050870		D
3	REF	ASSEMBLY, REAR LEVER		EA	(SEE SHEET 5)		D
4	2	STUD, TRANSFER ARM		EA	350050730		D
5	2	ARM, TRANSFER		EA	350050080		D
6	8	NUT, SPRING RETAINING 3/8\"-16		EA	*94820A242	STEEL	P
7	1	ROLLER, TRANSFER ARM RETURN		EA	350050160		D
8	1	SLEEVE, ROLLER		EA	350050170		D
9	1	CAPSCREW, 12PT 3/8\"-16	1.0	EA	*91271A624	STEEL	P
10	1	CLAMP, TRANSFER FINGER		EA	350050260		D
11	1	CAPSCREW, INDSOC HD 5/16\"-18	.50	EA	*91251A578	STEEL	P
12	REF	ASSEMBLY, FRONT LEVER		EA	(SEE SHEET 5)		D
13	2	STUD, TRANSFER ARM		EA	350050740		D
14	6	NUT, STD HEX 1/4\"-20		EA	*94846A029	STEEL	P
15	1	BLOCK, FINGER LOCATING		EA	350050270		D
16	3	CAPSCREW, IND HEX LOW 1/4\"-20	.50	EA	*92220A183	STEEL	P
17	3	CAPSCREW, IND HEX LOW 1/4\"-20	.75	EA	*92220A185	STEEL	P
18	REF	FINGER, TRANSFER		EA	35001300XX		D
*PURCHASE FROM McMASTER-CARR							



ASSEMBLED VIEW
(FOR REFERENCE ONLY)

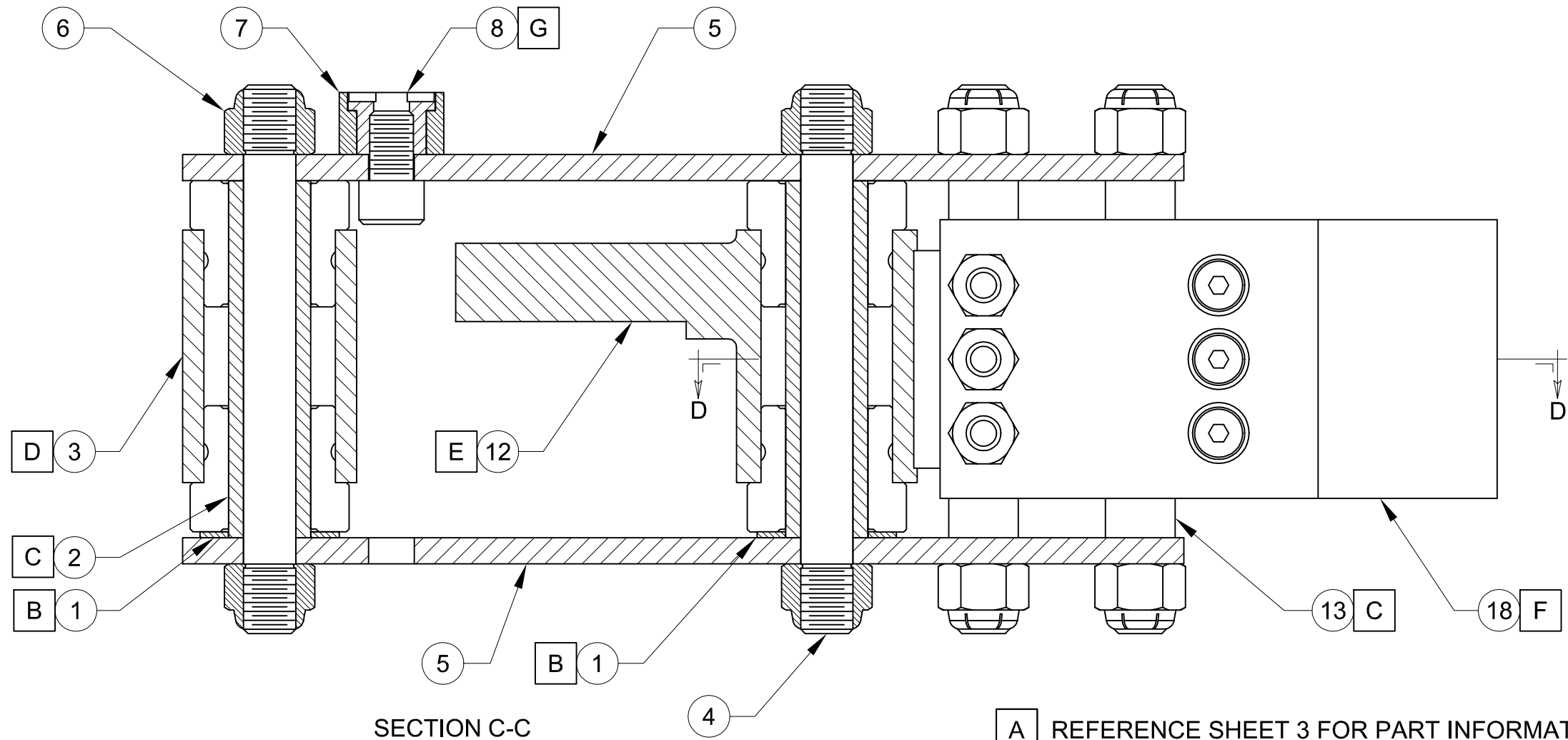


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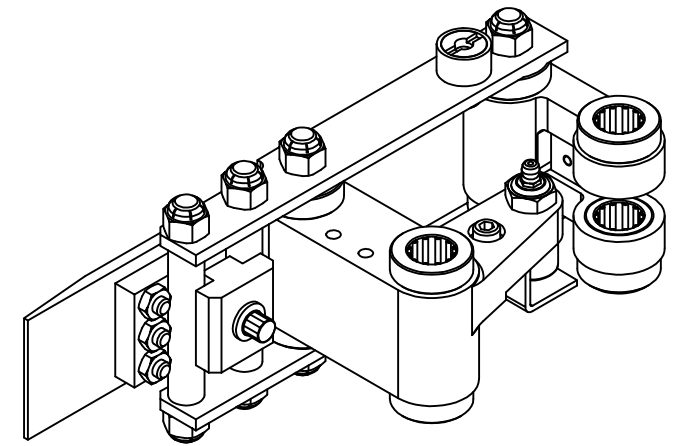
TOLERANCES	
MACHINING	FABRICATION
X. ± .040	ALL ± .06
X.X ± .020	ANGULAR 2°
X.XX ± .010	ALL FINISHES 125mu
X.XXX ± .005	DEBURR ALL SHARP CORNERS OR EDGES
ANGULAR ± 1/2°	

SCALE: 1:1
DRAWN BY: MLGATES
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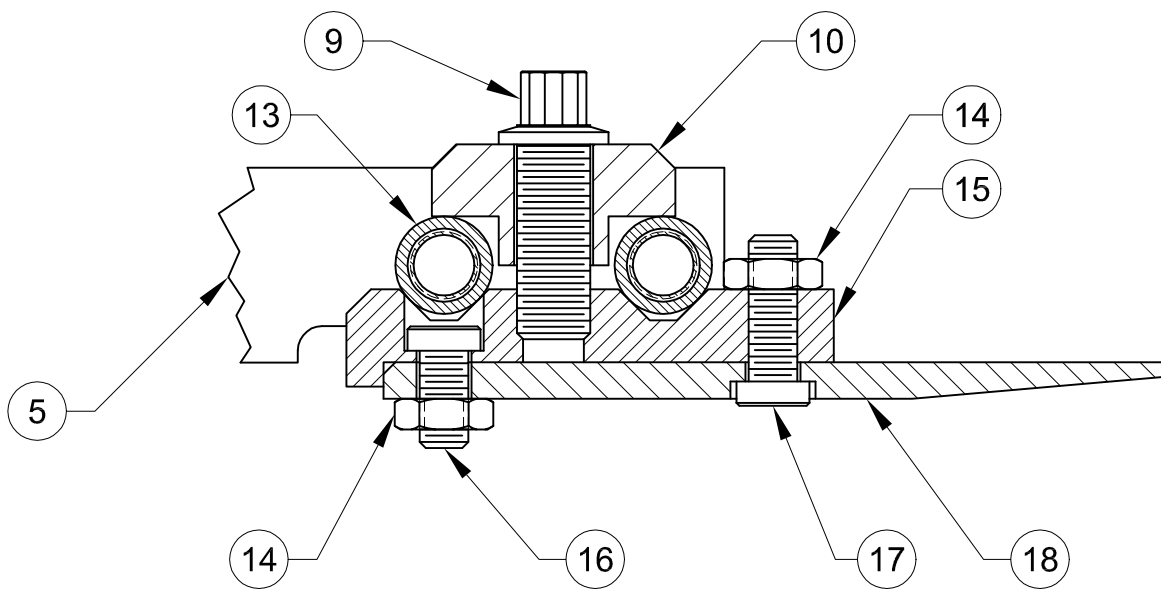
TITLE: HARTFORD 10-400 THD ASSEMBLY, 4 BAR STARTER		
SIZE: B	SHEET: 3 OF 6	REV:
DWG NO: 350050920A		



SECTION C-C
SCALE 1:1



ASSEMBLED VIEW
(FOR REFERENCE ONLY)



SECTION D-D
SCALE 1:1

- A** REFERENCE SHEET 3 FOR PART INFORMATION (BILL OF MATERIALS)
- B** GRIND SHIMS, AS NECESSARY, AT ASSEMBLY TO ELIMINATE END PLAY
- C** THE LENGTH OF ITEM 2 SHOULD BE THE SAME AS THE SHOULDER LENGTH OF ITEM 13 AND ITEMS 12 AND 3 (PLUS SHIMS). TRANSFER ARMS (ITEM 5) SHOULD BE PARALLEL.
- D** SEE SHEET 5 FOR ASSEMBLY INFORMATION FOR THE REAR LEVER.
- E** SEE SHEET 5 FOR ASSEMBLY INFORMATION FOR THE FRONT LEVER.
- F** STARTER FINGER IS NOT NORMALLY SHIPPED WITH TRANSFER ASSEMBLY.
- G** ROLLER SHOULD SPIN FREELY AFTER ASSEMBLY.



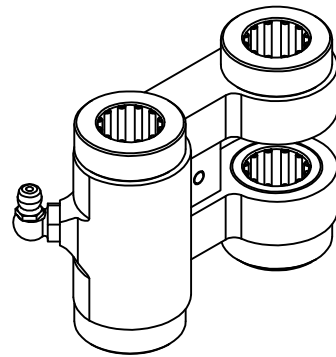
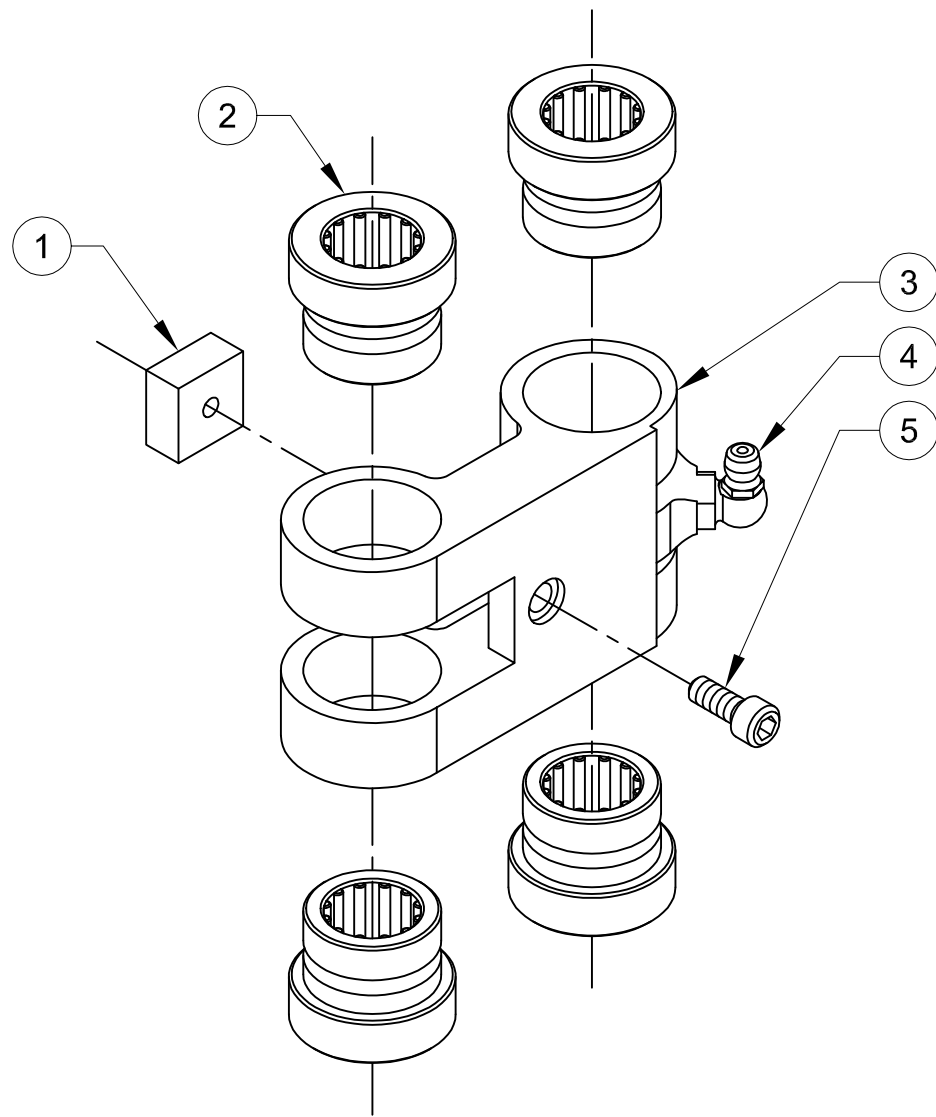
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TOLERANCES	
MACHINING	FABRICATION
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X.X ± .020	ANGULAR ± 2°
X.XX ± .010	ALL FINISHES 125mu
X.XXX ± .005	DEBURR ALL SHARP CORNERS OR EDGES
ANGULAR ± 1/2°	

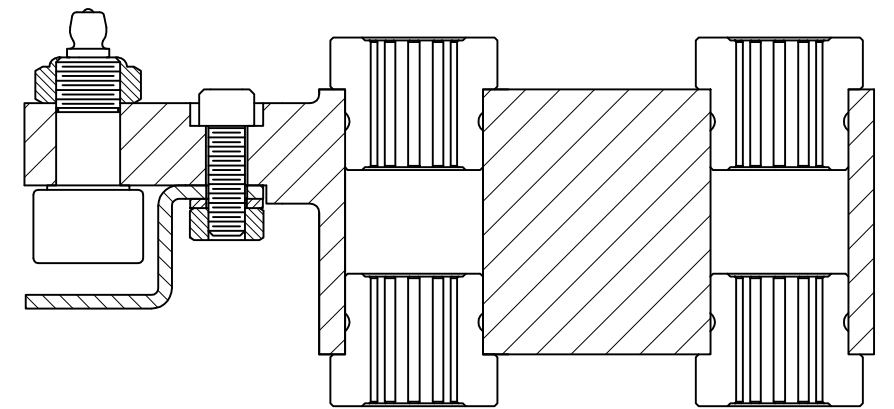
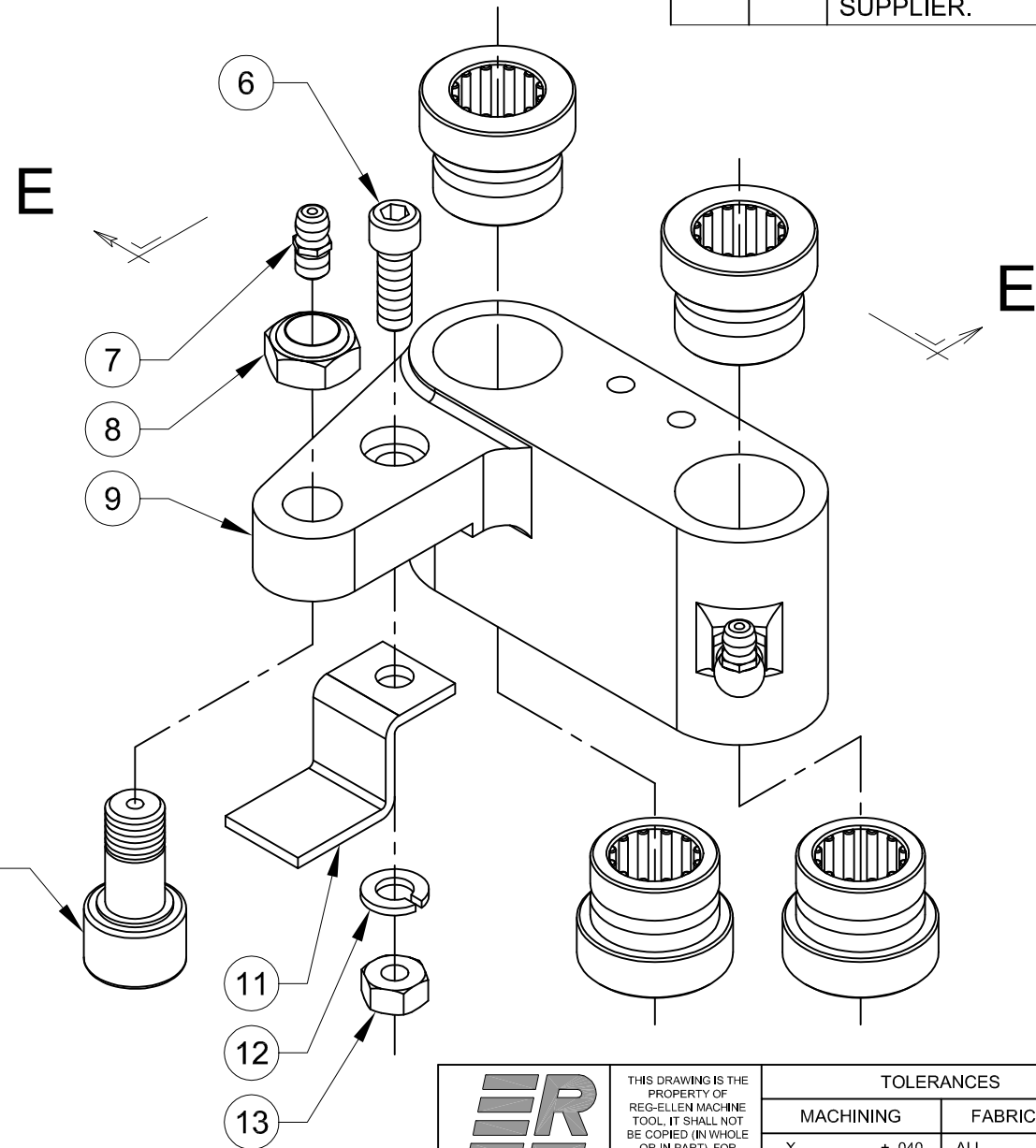
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TITLE: HARTFORD 10-400 THD ASSEMBLY, 4 BAR STARTER		
SIZE: B	SHEET: 4 OF 6	REV:
DWG NO: 350050920A		

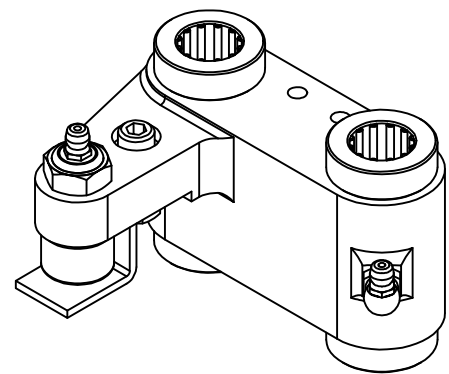
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ASSEMBLED VIEW
(FOR REFERENCE ONLY)



SECTION E-E
SCALE 1:1



ASSEMBLED VIEW
(FOR REFERENCE ONLY)

ITEM	QTY	DESCRIPTION	LENGTH	UM	PART NUMBER	MATERIAL	TYP	
1	1	PAD, LEVER STOP		EA	350050880		D	
2	8	BEARING, COMBO INA BRAND		EA	**INA NKX-15-Z	STEEL	P	
3	1	LEVER, REAR		EA	350050810		D	
4	2	FITTING, GREASE 90° 1/4"-28		EA	*1095K47	STEEL	P	
5	1	CAPSCREW, IND SOC HD 10-24	.5	EA	*91251A242	STEEL	P	
6	1	CAPSCREW, IND SOC HD 1/4"-20	.75	EA	*91251A540	STEEL	P	
7	1	FITTING GREASE 3/16" PRESS		EA	*1102K54	STELL	P	
8	1	NUT, NYLOCK JAM 7/16"-20		EA	*90566A225	STEEL	P	
9	1	LEVER, FRONT		EA	350050800		D	
10	1	CAM FOLLOWER		EA	3500-9-P1	STEEL	D	
11	1	BRACKET, SPRING GUIDE		EA	350050840		D	
12	1	WASHER, SPLIT LOCK 1/4"		EA	*91101A229	STEEL	P	
13	1	NUT, STANDARD 1/4"-20		EA	*95479A111	STEEL	P	
		*PURCHASE FROM McMASTER-CARR						
		**PURCHASE FROM LOCAL BEARING SUPPLIER.						



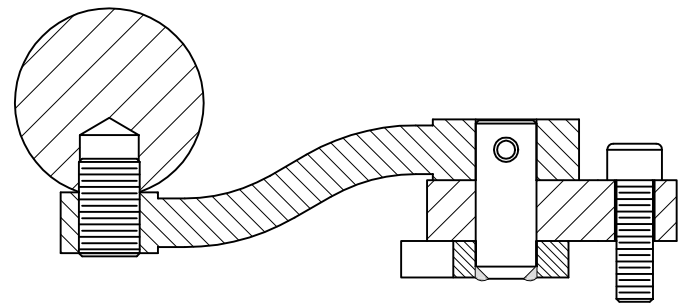
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TOLERANCES	
MACHINING	FABRICATION
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X.X ± .020	ANGULAR 2°
X.XX ± .010	ALL FINISHES 125mu
X.XXX ± .005	DEBURR ALL SHARP CORNERS OR EDGES
ANGULAR ± 1/2°	

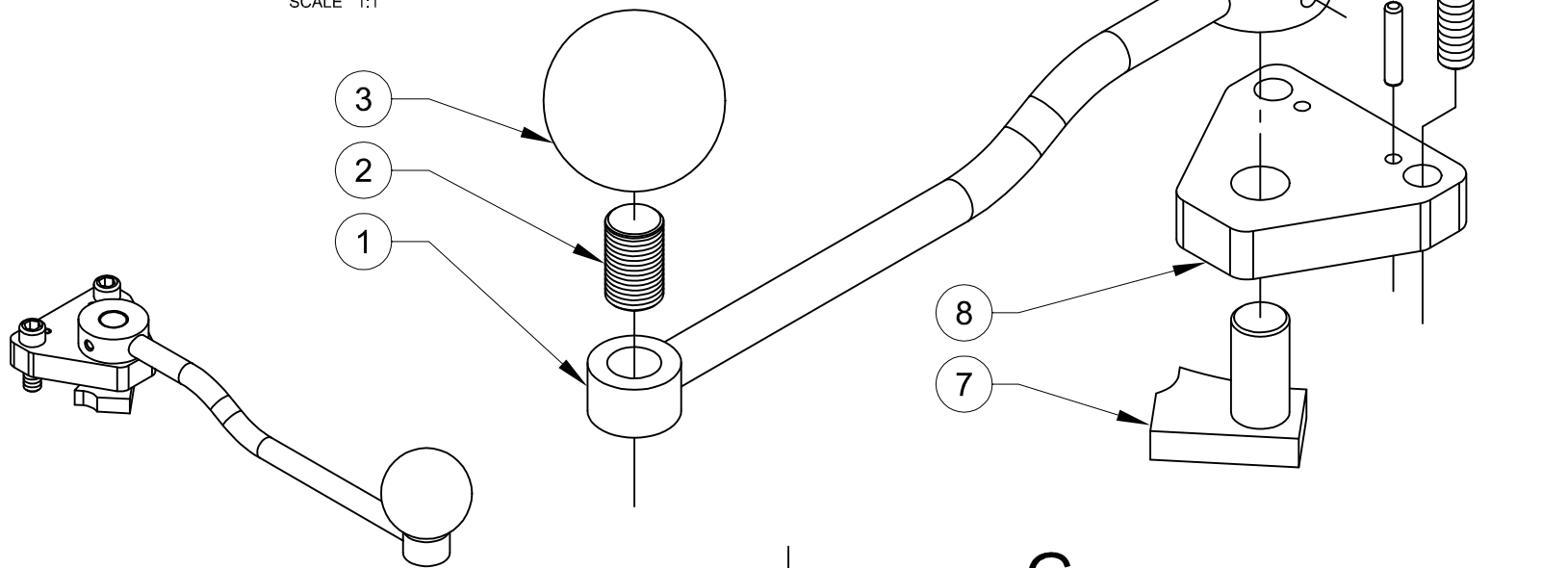
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DATE: 10OCT13
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DATE:

TITLE: HARTFORD 10-400 THD ASSEMBLY, 4 BAR STARTER		
SIZE: B	SHEET: 5 OF 6	REV:
DWG NO: 350050920A		

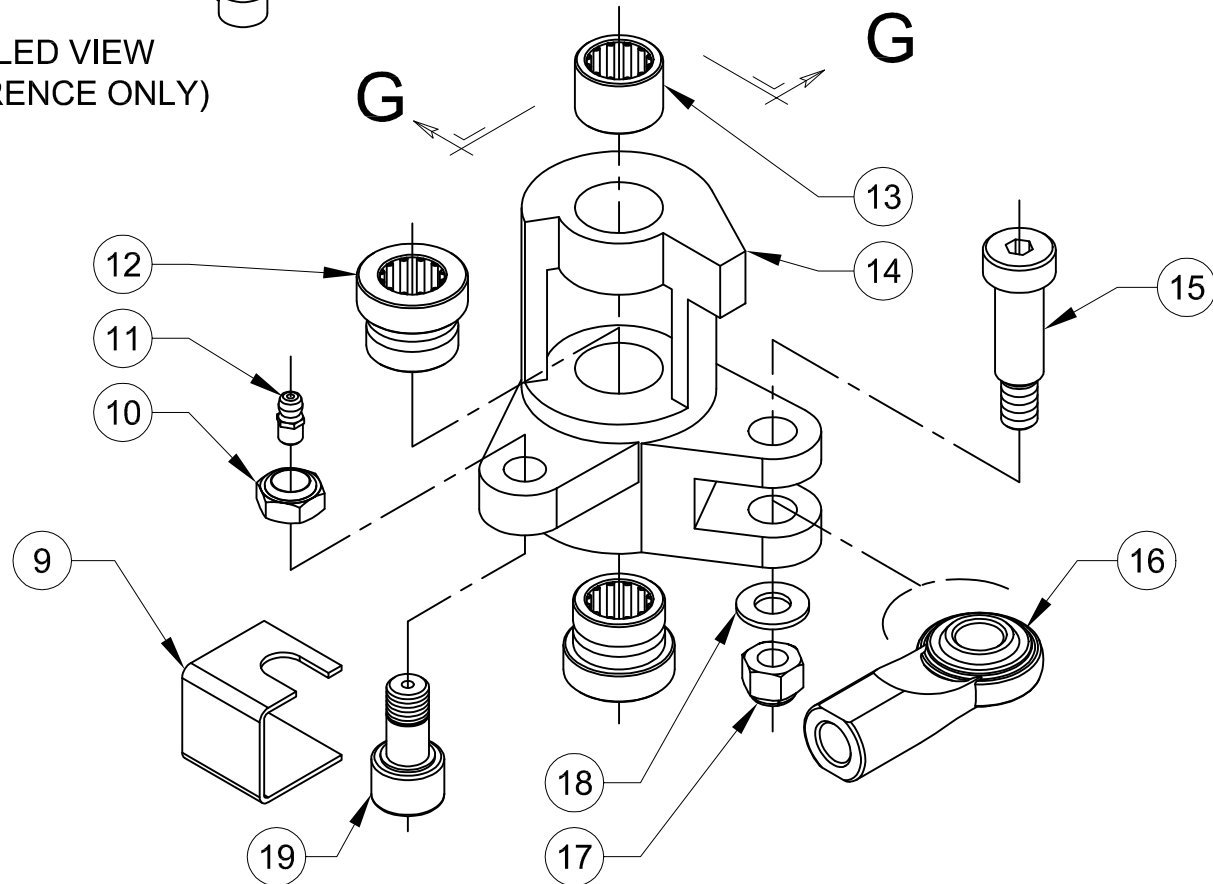
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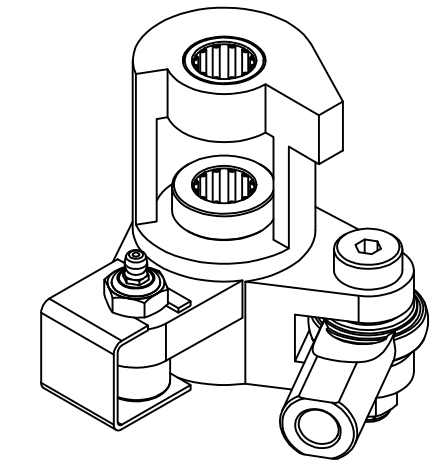
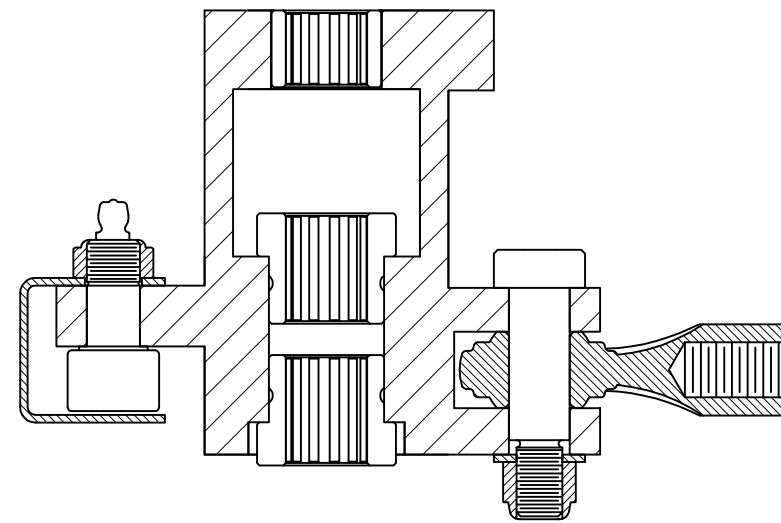
SECTION F-F
SCALE 1:1



ASSEMBLED VIEW
(FOR REFERENCE ONLY)



SECTION G-G
SCALE 1:1



ASSEMBLED VIEW
(FOR REFERENCE ONLY)

ITEM	QTY	DESCRIPTION	LENGTH	UM	PART NUMBER	MATERIAL	TYP	
1	1	LEVER, STARTER ACTIVATING		EA	350050610		D	
2	1	SETSCREW, 5/8"-18 CUP POINT	1.5	EA	*91375A820	STEEL	P	
3	1	KNOB, ROUND RED		EA	3500-9-P33	PLASTIC	D	
4	1	PIN, SPRING ROLL 1/4" DIA	1.50	EA	*98296A930	STEEL	P	
5	2	PIN, DOWEL 3/16" DIA	1.0	EA	*98381A510	STEEL	P	
6	2	CAPSCREW, IND SOCKET 3/8"-16	1.25	EA	*91251A626	STEEL	P	
7	1	CAM, RETRACTION FINGER		EA	350050630		D	
8	1	PLATE, SUPPORT		EA	350050090		D	
9	1	BRACKET, SPRING GUIDE		EA	350050850		D	
10	1	NUT, NYLOCK JAM 7/16"-20		EA	*90566A225	STEEL	P	
11	1	FITTING, GREASE 3/16" PRESS		EA	*1102K54	STEEL	P	
12	2	BEARING, COMBO INA BRAND		EA	**INA NKX-15-Z	STEEL	P	
13	1	BEARING, NEEDLE INA BRAND		EA	**INA NK-15-16	STEEL	P	
14	1	LEVER, CONNECTION ROD		EA	350050790		D	
15	1	BOLT, SHOULDER 1/2" DIA	1.25	EA	*91259A714	STEEL	P	
16	1	ROD END, FEMALE 1/2" RH AURORA		EA	**AURORA CW-8	STEEL	P	
17	1	NUT, NYLOCK 3/8"-16		EA	*94820A242	STEEL	P	
18	1	WASHER, STD FLAT 3/8"		EA	*91083A031	STEEL	P	
19	1	CAM FOLLOWER		EA	3500-9-P1	STEEL	D	
		*PURCHASE FROM McMASTER-CARR						
		**PURCHASE FROM LOCAL BEARING SUPPLIER.						

A PIN HANDLE (ITEM 1) TO RETRACTION FINGER (ITEM 7) AT FINAL ASSEMBLY. (SEE SHEET 2)



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TOLERANCES	
MACHINING	FABRICATION
X. ± .040	ALL ± .06
X.X ± .020	ANGULAR 2°
X.XX ± .010	ALL FINISHES 125mu
X.XXX ± .005	DEBURR ALL SHARP CORNERS OR EDGES
ANGULAR ± 1/2°	

SCALE: 1:1
DRAWN BY: MLGATES
DATE: 10OCT13
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DATE:

TITLE: HARTFORD 10-400 THD ASSEMBLY, 4 BAR STARTER
SIZE: B SHEET: 6 OF 6 REV:
DWG NO: 350050920A

AUTOCAD DRAWING: FORM REVISION 13MAR12