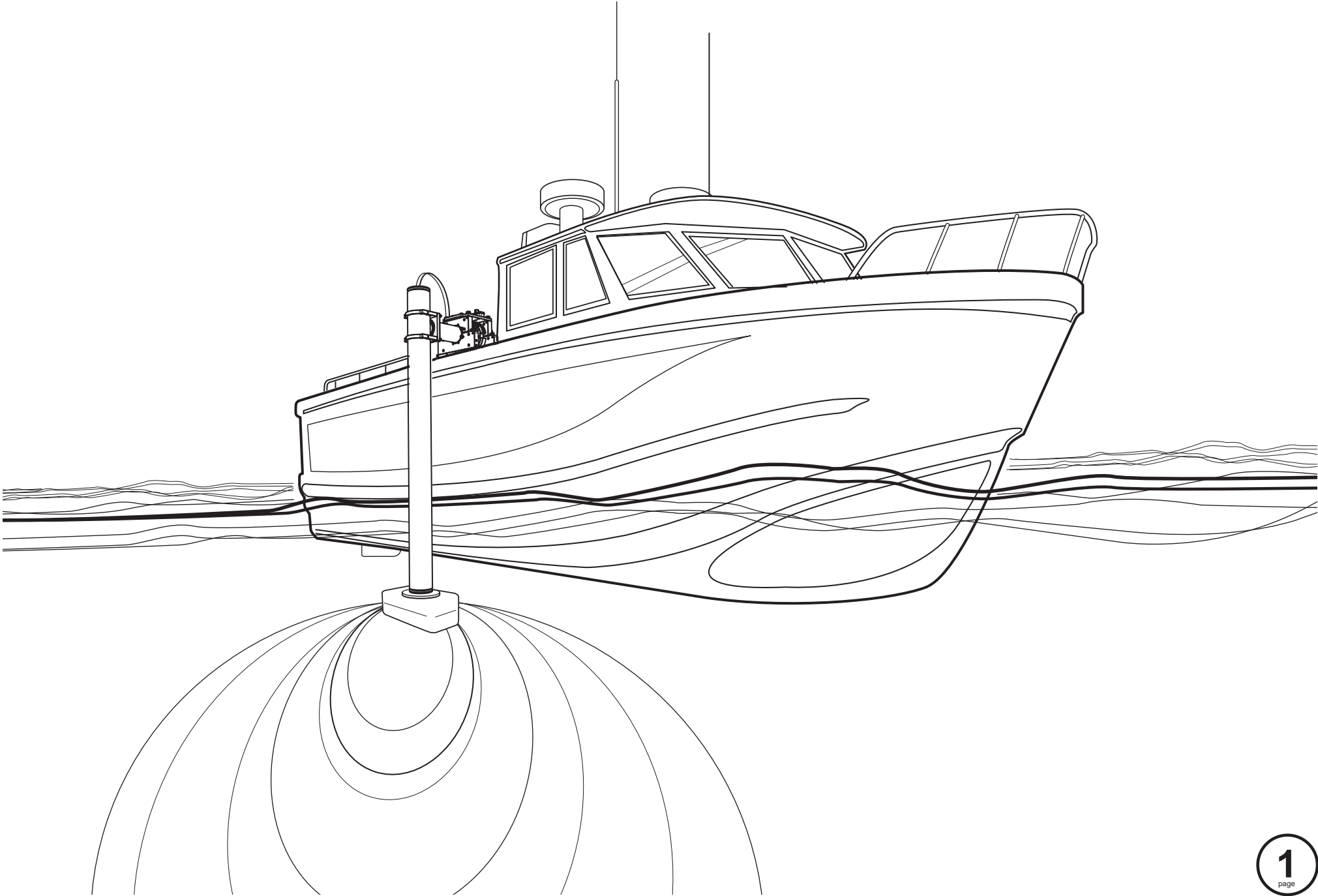




**USM COMPACT**  
**Quick-Start Manual**

Patent #8094520





# USM COMPACT Quick-Start Manual

Patent #8094520

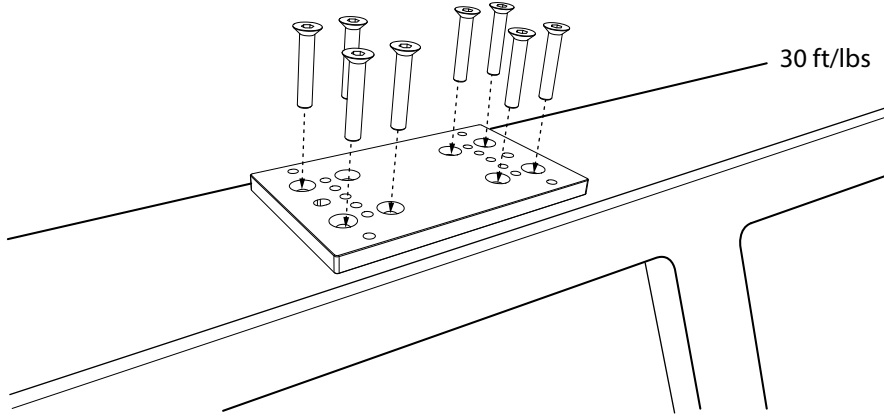
1/2" -13 (x8)



5/16" HEX



30 ft/lbs



**BASE PLATE** - Ensure a Base Plate is properly secured to gunnel using one of three methods: 1) Welded down by professional. 2) Bolted down using the 8 flat head bolts. 3) VOO assembly.

1



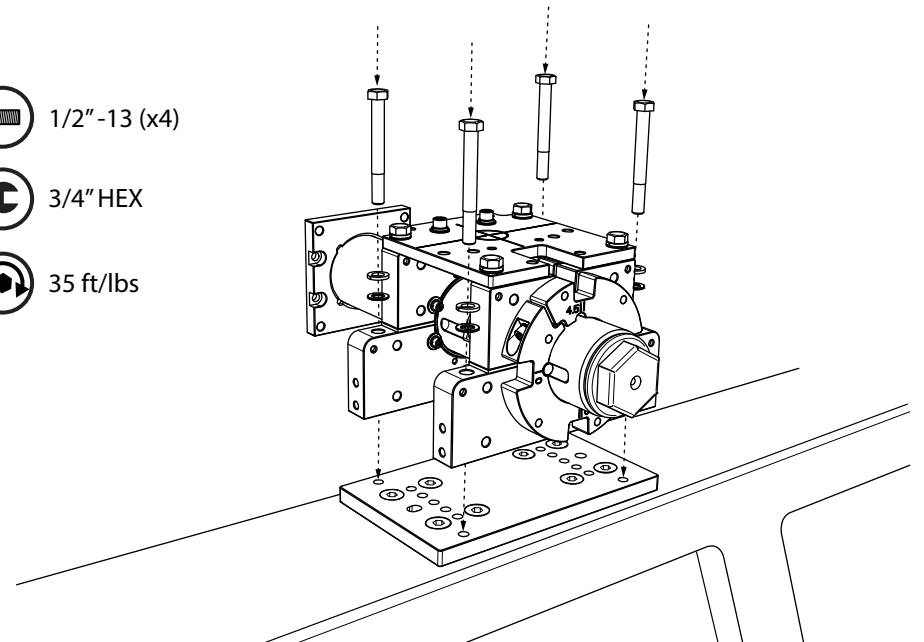
1/2" -13 (x4)



3/4" HEX



35 ft/lbs

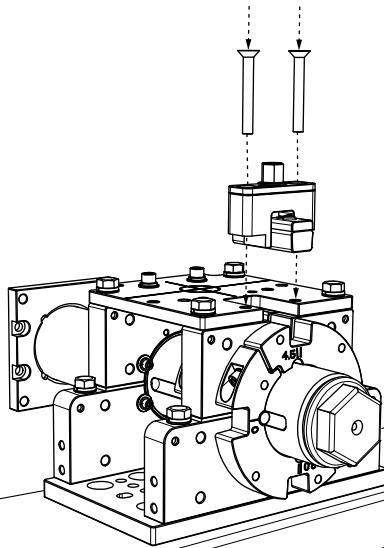


2

**ATTACH USM TO BASE PLATE** - Secure the assembly to base plate using the four long bolts provided.

**ATTACH SHEAR BLOCK** - Secure Shear Block Assembly using two flat head bolts provided.

3



7/32" HEX



20 ft/lbs



4

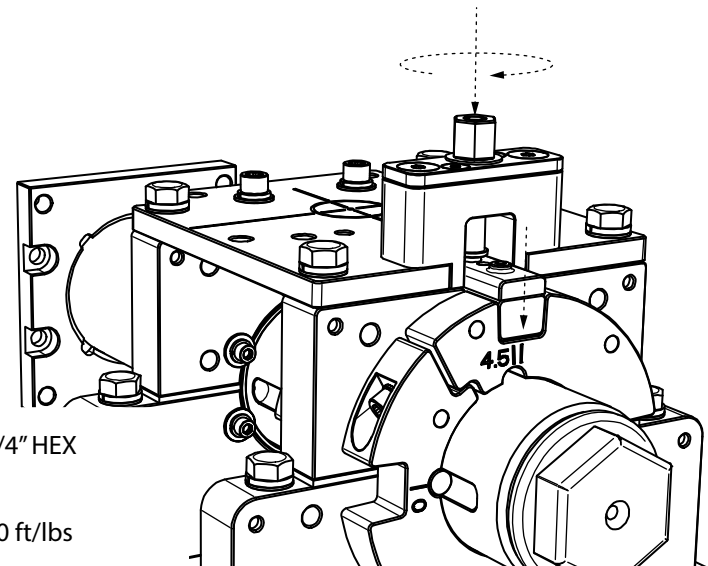
**ENGAGE SHEAR BLOCK** - Using a socket wrench, engage shear block. Tighten until snug.



3/4" HEX



20 ft/lbs



2  
page



# USM COMPACT Quick-Start Manual

Patent #8094520

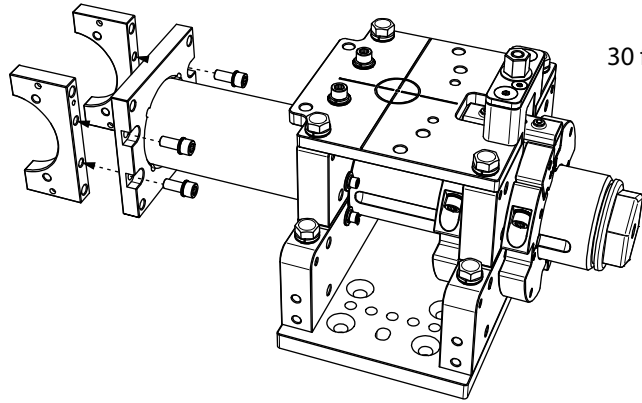
Socket Head Cap  
Screw 3/8" -16 (x4)



5/16" HEX



30 ft/lbs



**ATTACH Z-POLE CLAMPS** - Attach base of Z-pole clamps first, using the four short allen bolts provided.

1

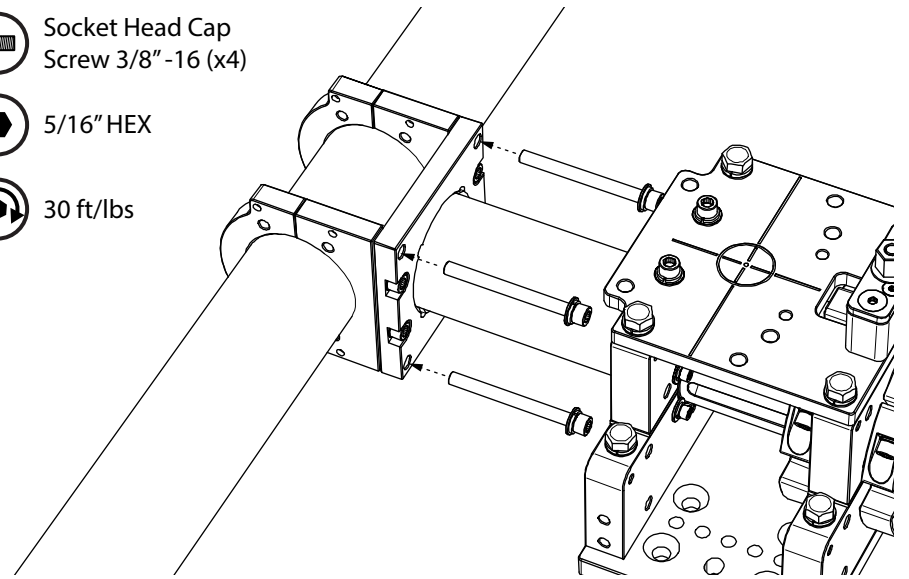
Socket Head Cap  
Screw 3/8" -16 (x4)



5/16" HEX



30 ft/lbs

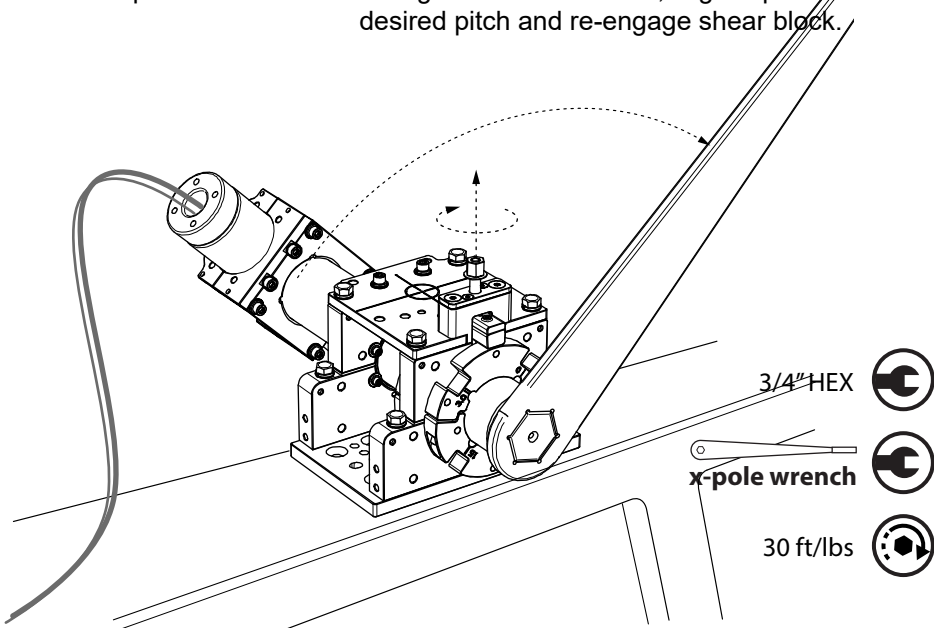


**ATTACH Z-POLE** - Secure the Z-pole clamps using the four long allen bolts provided. Note the horizontal orientation of Z-pole.

2

**DEPLOY SONAR** - After securing your sonar to Z-pole (see installation manual for detail), disengage shear block and lower z-pole into the water. Using the X-Pole wrench, align X-pole to desired pitch and re-engage shear block.

3



3/4" HEX



x-pole wrench



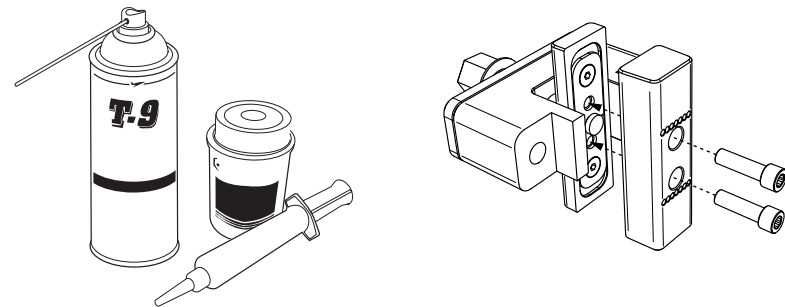
30 ft/lbs



**MAINTENANCE** - Ensure that all stainless hardware is always coated with a marine grade anti-seize product like "Never Seez." Always wash and dry the USM after each use. After the unit is dry, apply a silicone spray or a lubricant that does not make plastic swell, like Boeshield T-9.

4

**REPLACING BROKEN SHEAR BLOCK** - Remove Shear block assembly. Loosen allen bolts until old block releases. Replace shear block.



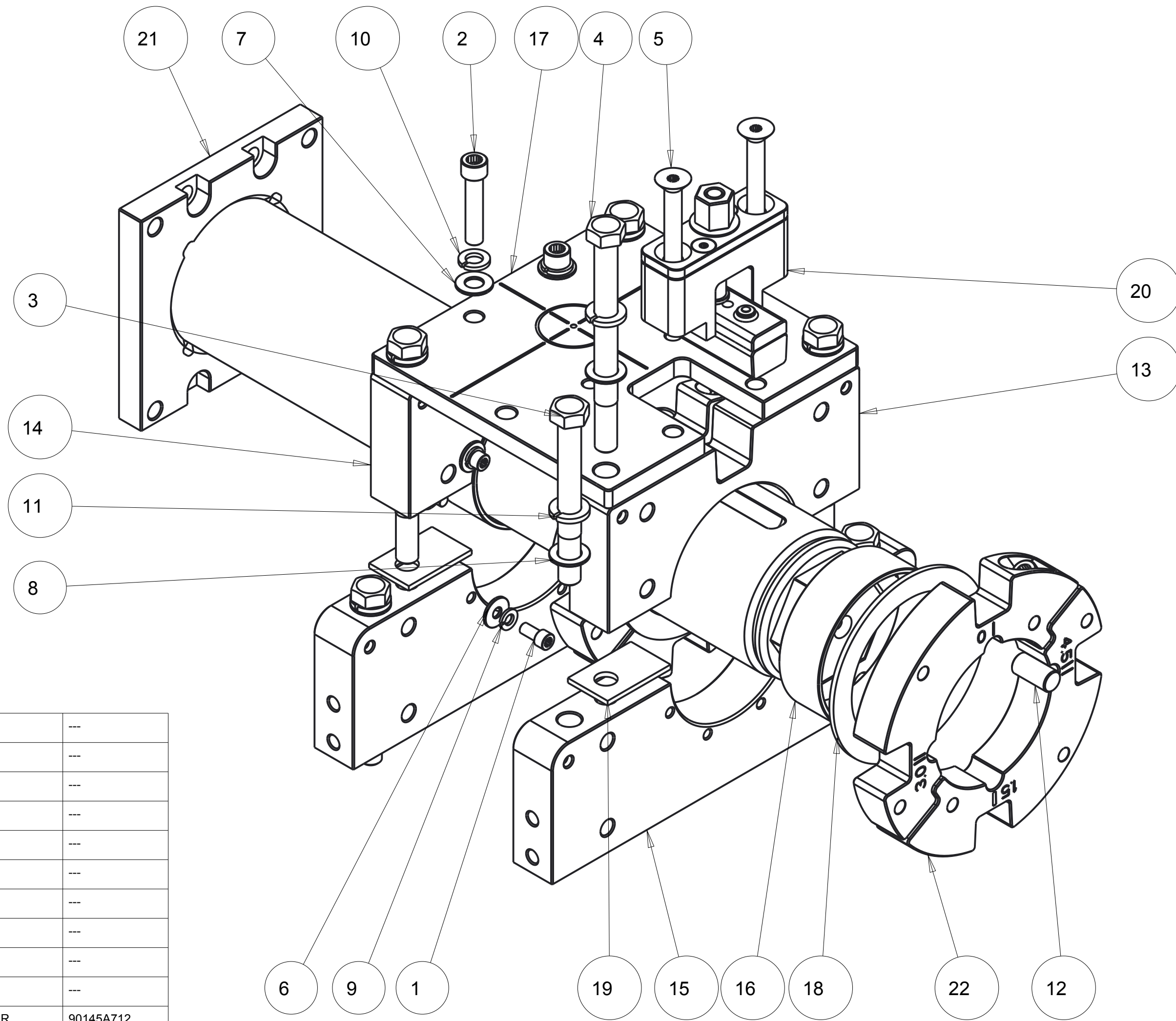
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1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
--	1	INITIAL RELEASE		--
	2	KEEPER WASHER INCREASEAD OD	02016-OCT-14	



22	2	520-100-9035	ASSY, CLAMP RING, INDEXED, 3.5"	ASSY	---
21	1	520-100-9031	ASSY, 3.5" X-POLE-XX	ASSY	---
20	1	520-100-9010	ASSY, SHEAR BLOCK TOWER	ASSY	---
19	4	520-100-1027	SHIM, CLAMP BLOCK	FAB	---
18	2	520-100-1026	X POLE THRUST BUSHING, 3.5	FAB	---
17	1	520-100-1025	BRIDGE PLATE, COMPACT MOUNT	FAB	---
16	2	520-100-1004	BUSHING, X-POLE, 3.5"	FAB	---
15	2	520-100-1002	BOTTOM BLOCK, COMPACT MOUNT	FAB	---
14	1	520-100-1001-02	TOP BLOCK, W/ KEEPER	FAB	---
13	1	520-100-1001-01	TOP BLOCK, W/ NOTCH	FAB	---
12	1	90-400-500-1000-20	DOWEL PIN, .500 ID X 1.0 L 18-8	MCMASTER	90145A712
11	8	90-310-510-870-120-20	WASHER, SPLIT LOCK .510 ID X .87 OD X .120TK, 18-8 SST	MCMASTER	92146A033
10	2	90-310-380-680-090-20	WASHER, SPLIT LOCK .380 ID X .68 OD X .090TK, 18-8 SST	MCMASTER	92146A031
9	8	90-310-260-487-062-20	WASHER, SPLIT LOCK .260 ID X .487 OD X .062 TK, 18-8 SST	MCMASTER	92146A029
8	8	90-300-515-875-060-20	WASHER, .515 ID X .875 OD X .060 18-8	MCMASTER	98017A210
7	2	90-300-406-813-060-20	WASHER, .406" ID X .813" OD X .060" TH, 18-8 SST	MCMASTER	96659A108
6	8	90-300-252-709-065-20	WASHER, .252 X .709X .065 THICK SST	MCMASTER	91116A150
5	2	90-110-375C-3000-20	SCREW, 3/8-16 UNC X 3.0 FHC 18-8	MCMASTER	92210A636
4	4	90-104-500C-5500-20	HEX BOLT, 1/2-13 X 5.5 SST 18-8	MCMASTER	92198A734
3	4	90-104-500C-4250-20	HEX BOLT, 1/2-13 X 4.250 SST 18-8	MCMASTER	92198A729
2	2	90-100-375C-1750-20	SCREW, 3/8-16 X 1.75 SHC 18-8	MCMASTER	92196A630
1	8	90-100-250C-500-20	SCREW, 1/4-20 X .50 SHC 18-8	MCMASTER	92196A537
ITEM NO.	QTY REQD.	PART OR IDENTIFYING NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.	PRO/E REPORTED PARAMETERS		DESIGNER	
	TOLERANCES ARE:	PRO/E MATERIAL	G STAPLES	
.X +/- 0.1	N/A	ENGINEER	G STAPLES	02016-OCT-07
.XX +/- 0.01	PRO/E MASS	DRAFTER	G STAPLES	02016-OCT-07
.XXX +/- 0.001	39.70	CHECKED	---	02016-MMM-DD
ANGLES +/- 0.5	PRO/E VOLUME	DO NOT SCALE DRAWING		
INTERPRET DIMENSIONS PER ASME Y14.5M 1994 (R2004)	PRO/E DRAWING FILE NAME: 520-100-9001			

UNIVERSAL SONAR MOUNT		
ASSY, BASE UNIT, COMPACT MOUNT		
SIZE	CUSTOMER DRAWING/PART NO.	REV
C	---	2
	DRAWING/PART NO.	
520-100-9001		
SCALE	0.500	SHEET 3 OF

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CUSTOMER DRAWING/PART NO. ---  
DRAWING/PART NO. 520-100-9001  
REV 2  
SHT 1

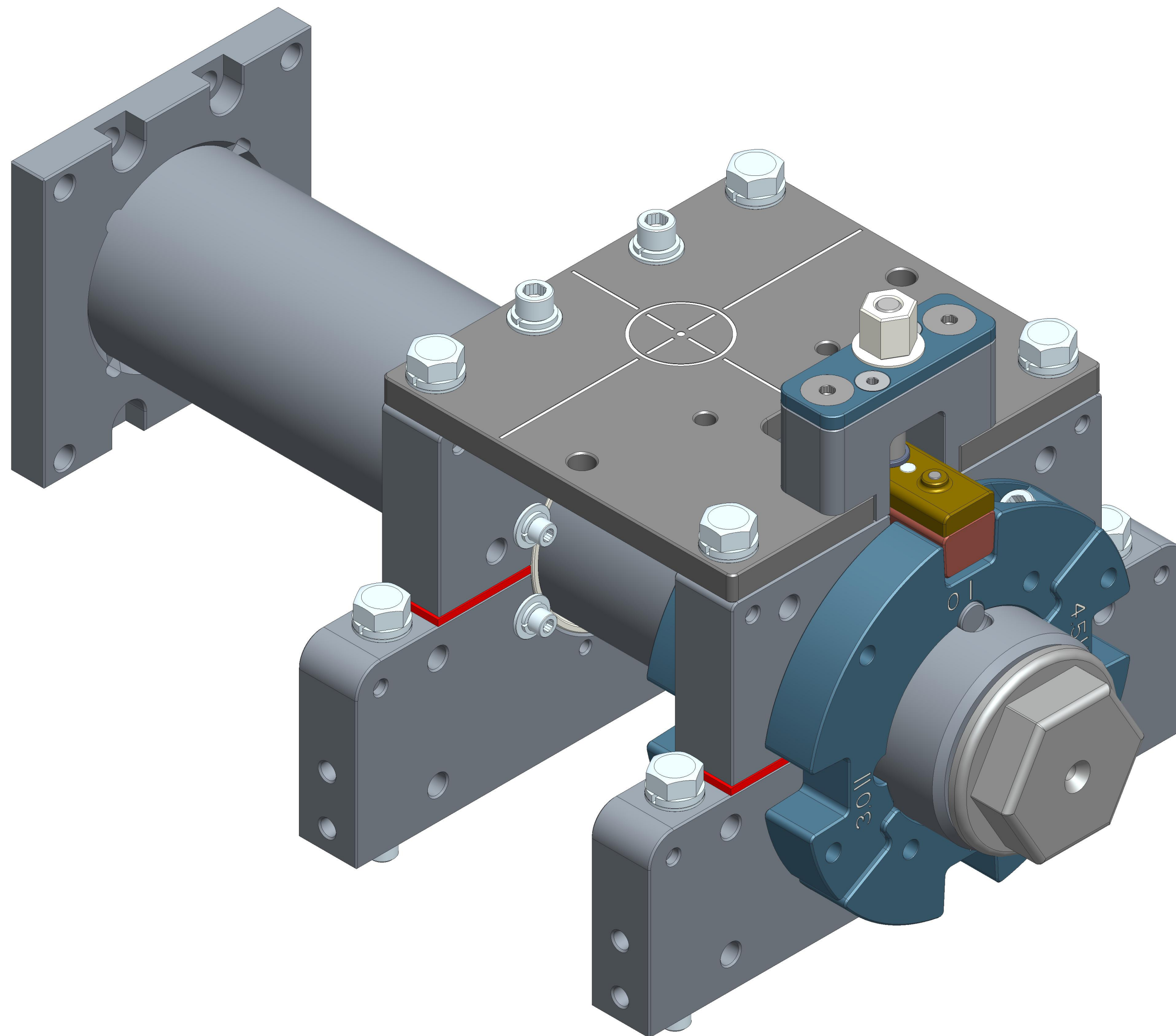
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REVISIONS  
SEE SHEET 1



UNIVERSAL SONAR MOUNT

ASSY, BASE UNIT, COMPACT MOUNT

SIZE	CUSTOMER DRAWING/PART NO.	REV
<b>C</b>	---	2
	DRAWING/PART NO. 520-100-9001	
SCALE	0.750	SHEET 3 OF

CUSTOMER DRAWING/PART NO.

DRAWING/PART NO.

520-100-9001

REV

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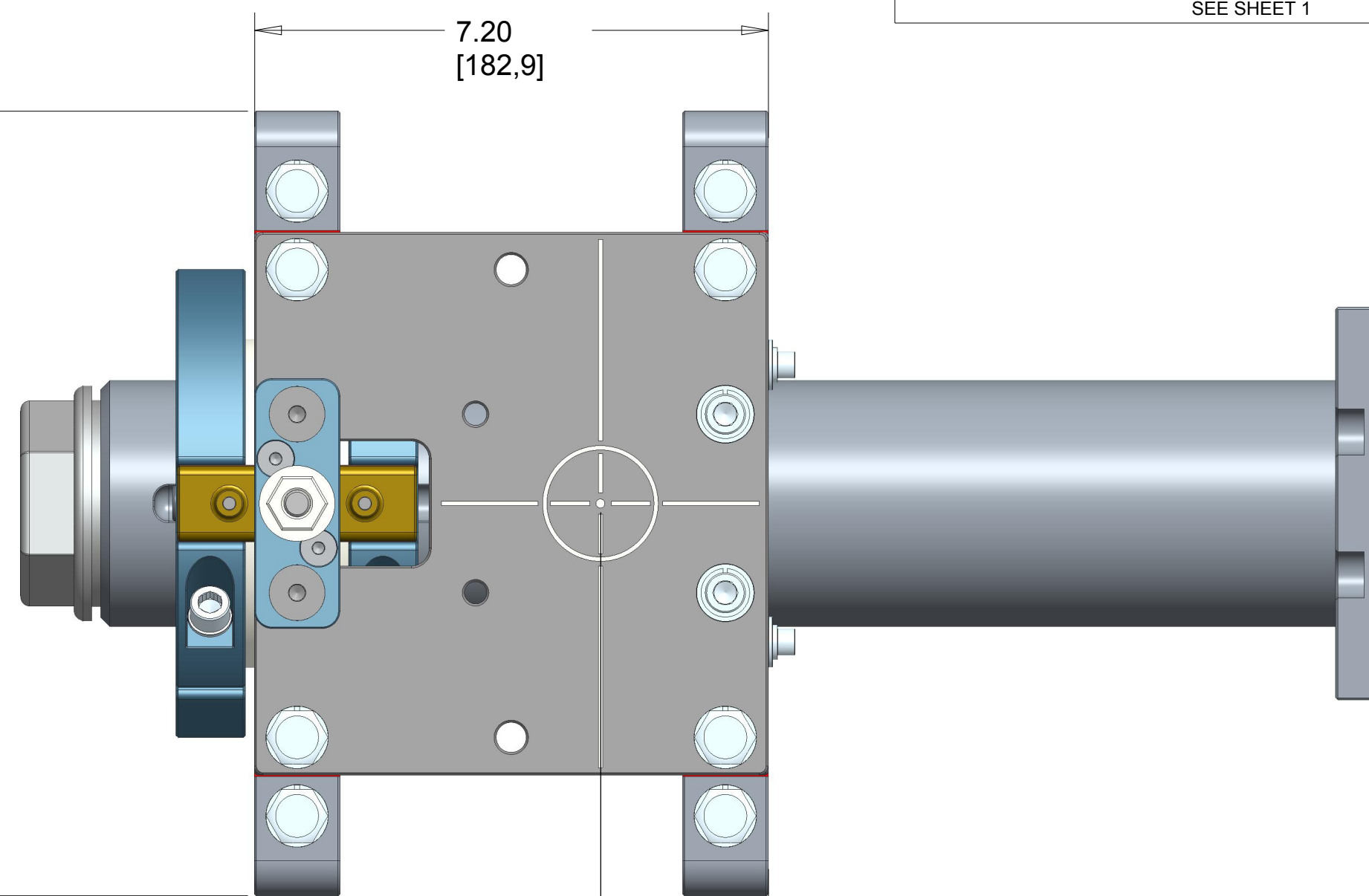
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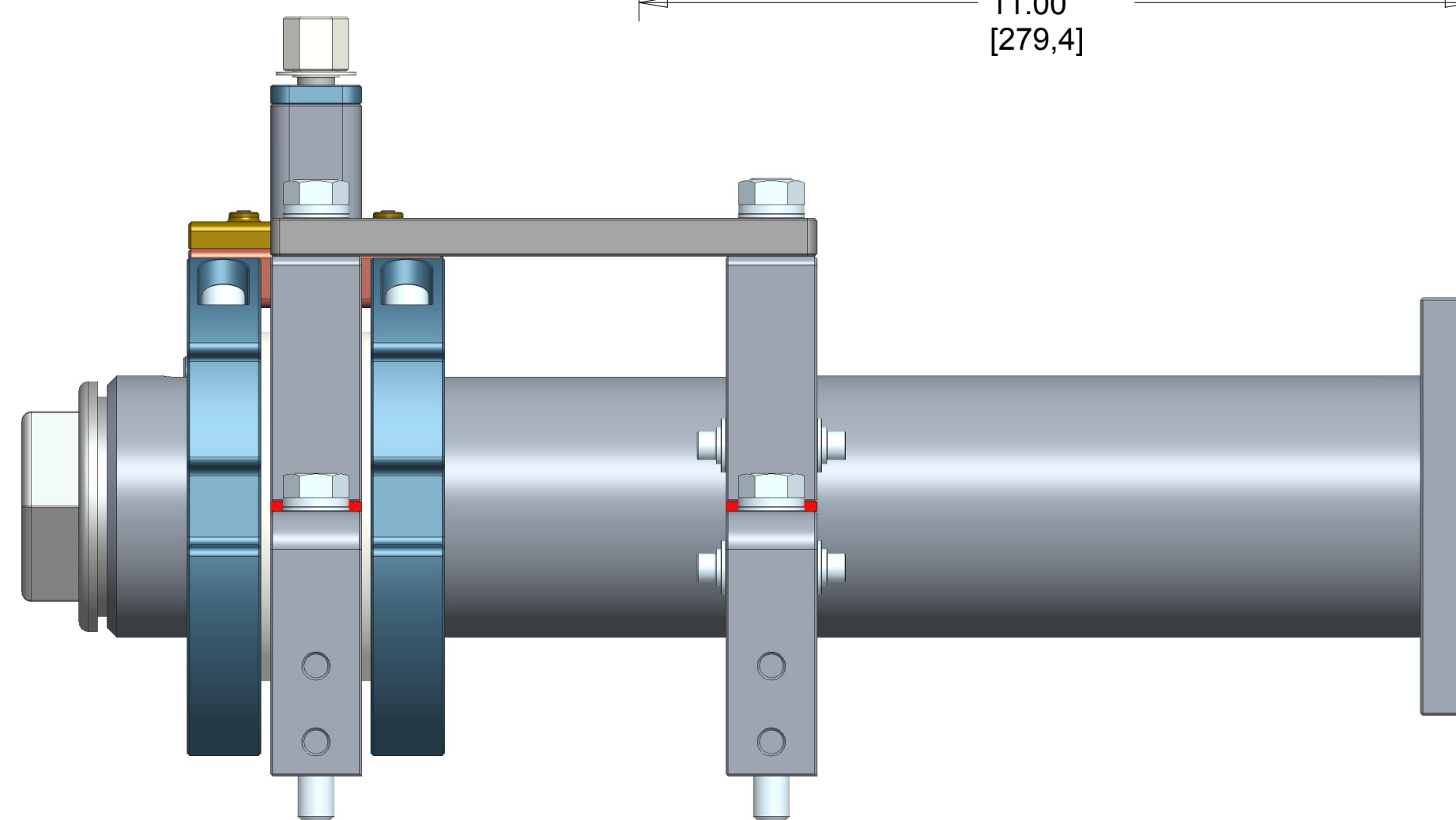
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REVISIONS  
SEE SHEET 1

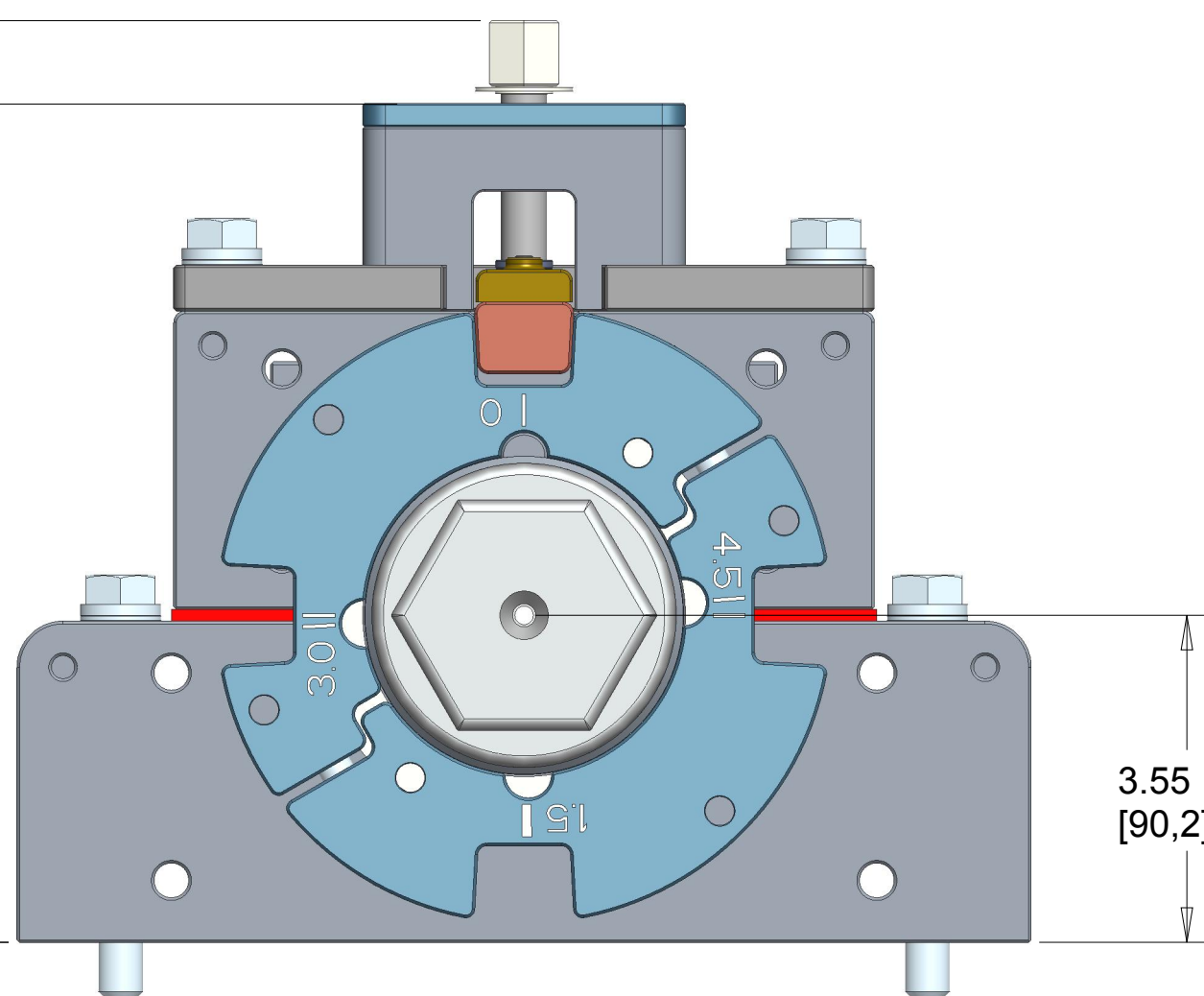


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3.55  
[90,2]



UNIVERSAL SONAR MOUNT

ASSY, BASE UNIT, COMPACT MOUNT

SIZE	CUSTOMER DRAWING/PART NO.	REV
<b>C</b>	---	2
	DRAWING/PART NO.	
	520-100-9001	

SCALE 0.500

SHEET 3 OF

CUSTOMER DRAWING/PART NO.

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DRAWING/PART NO.

520-100-9001

REV

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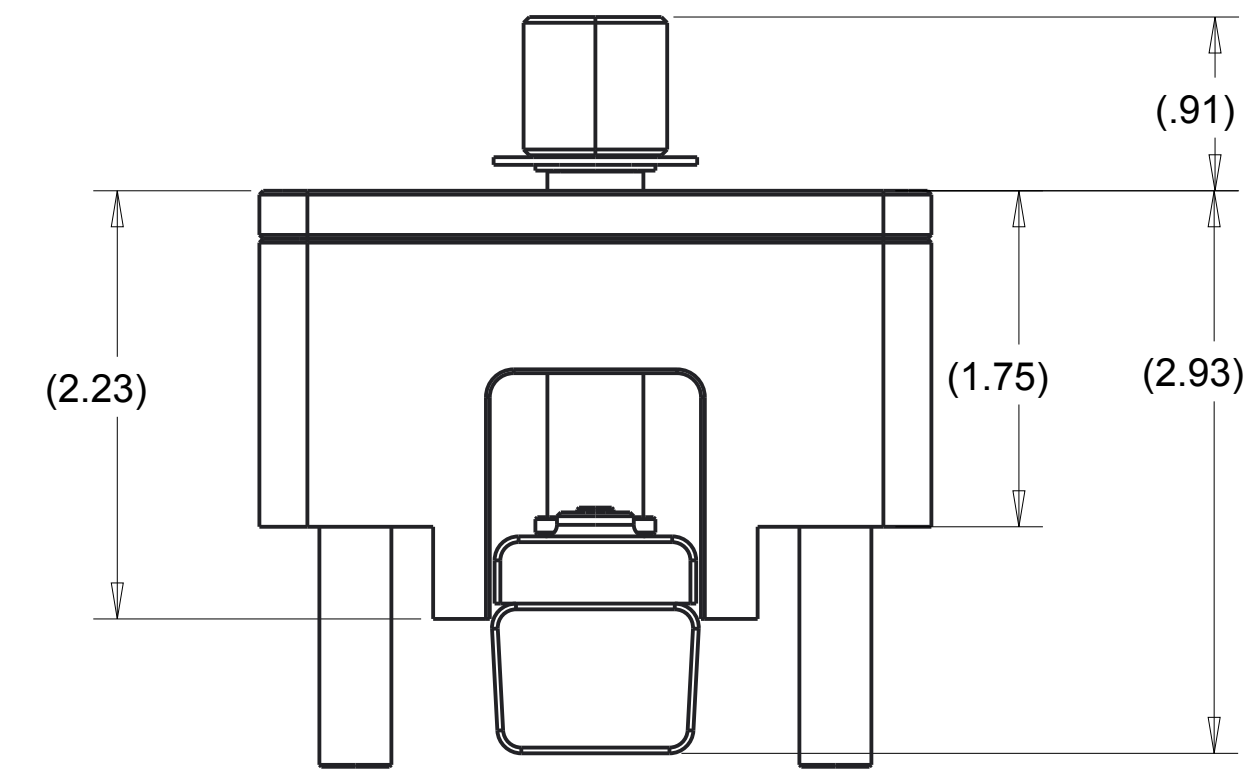
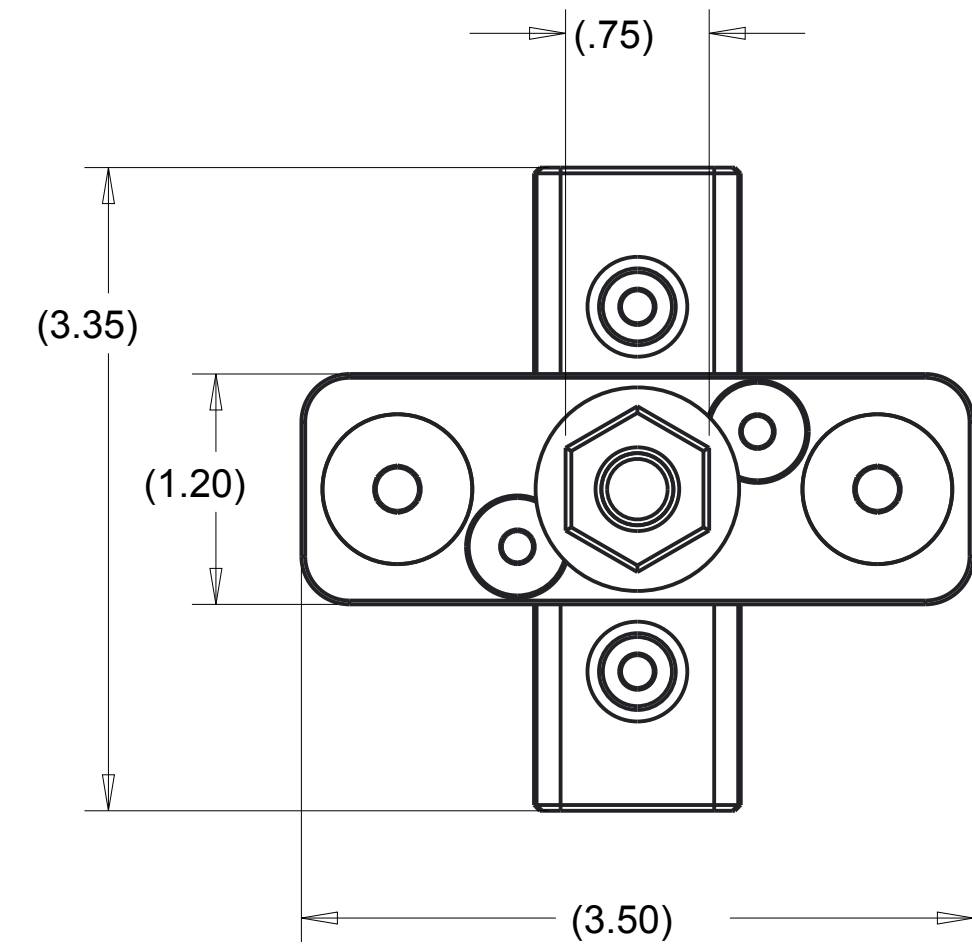
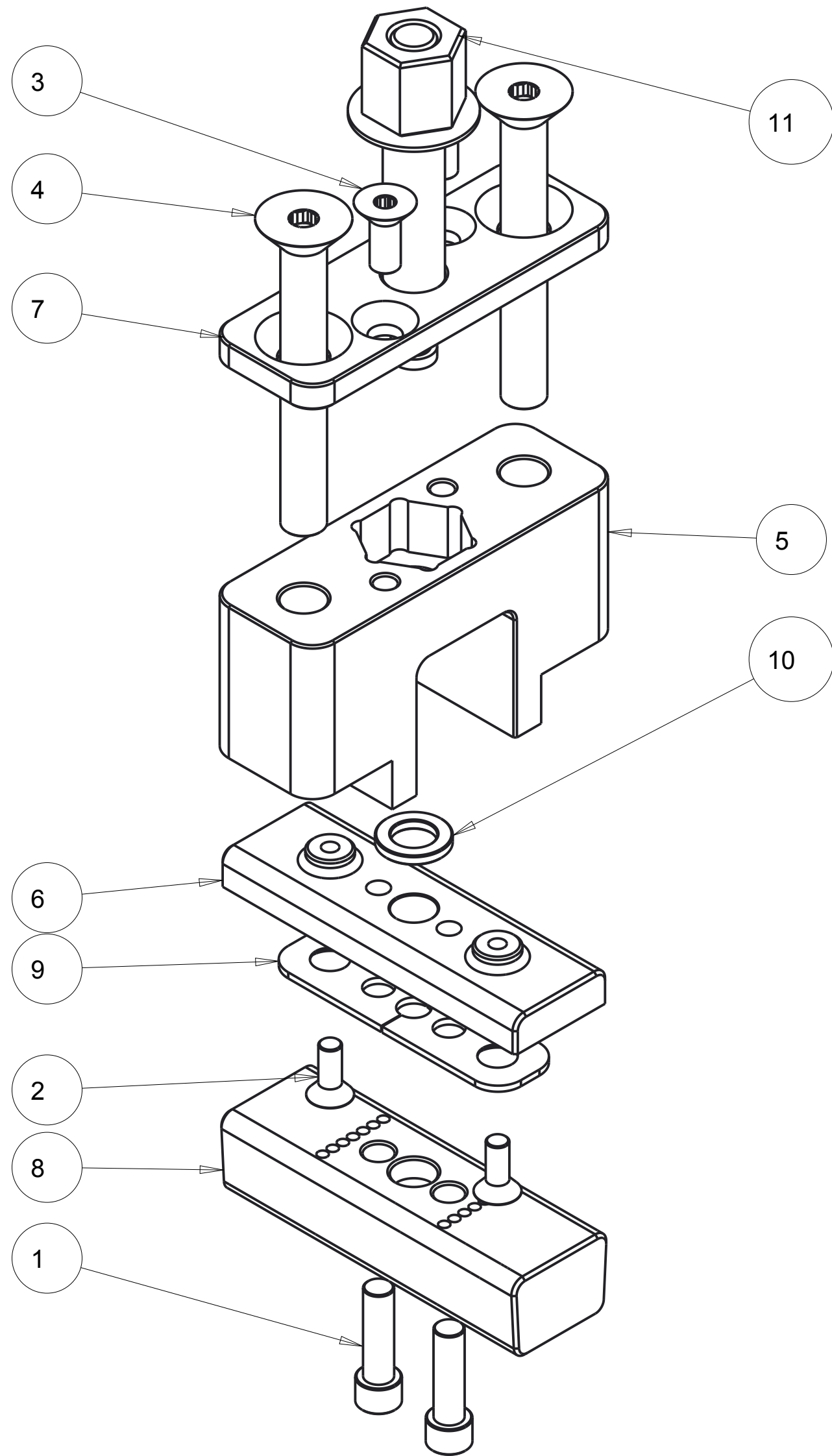
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
--	1	INITIAL RELEASE	02016-OCT-06	--



ITEM NO.	QTY REQD.	PART NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.
11	1	520-100-9011	LEAD SCREW WITH DRIVE NUT	ASSY	---
10	1	520-100-1017	THRUST WASHER, TOWER	MCMASTER	98126A785
9	2	520-100-1016	RETAINER, SHEAR BLOCK	FAB	---
8	1	520-100-1014	SHEAR BLOCK, COMPACT MOUNT	FAB	---
7	1	520-100-1013	CAP, SHEAR BLOCK TOWER	FAB	---
6	1	520-100-1012	BACKING PLATE, SHEAR BLOCK	FAB	---
5	1	520-100-1010	RISER, SHEAR BLOCK	FAB	---
4	2	90-110-375C-3000-20	SCREW, 3/8-16 UNC X 3.0 FHC 18-8	MCMASTER	92210A636
3	2	90-110-250C-625-20	SCREW, 1/4-20 X .625 FHC 18-8	MCMASTER	92210A539
2	2	90-110-1024-500	SCREW, #10-24 X .50 FHC 18-8	MCMASTER	92210A242
1	2	90-100-250C-875-20	SCREW, 1/4-20 X .875 SHC 18-8	MCMASTER	92196A541

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.	PRO/E REPORTED PARAMETERS		DESIGNER	
	TOLERANCES ARE:	PRO/E MATERIAL	G STAPLES	
.X +/- 0.1	N/A	ENGINEER	G STAPLES	02016-OCT-06
.XX +/- 0.01	PRO/E MASS	DRAFTER	G STAPLES	02016-OCT-06
.XXX +/- 0.001	3.828	CHECKED	---	02016-OCT-06
ANGLES +/- 0.5	PRO/E VOLUME	N/A		
INTERPRET DIMENSIONS PER ASME Y14.5M 1994 (R2004)	PRO/E DRAWING FILE NAME:	520-100-9010		
	DO NOT SCALE DRAWING			

UNIVERSAL SONAR MOUNT		
ASSY, SHEAR BLOCK TOWER		
SIZE	CUSTOMER DRAWING/PART NO.	REV
C	---	1
DRAWING/PART NO.		
520-100-9010		
SCALE	1.000	SHEET 2 OF

CUSTOMER DRAWING/PART NO.

DRAWING/PART NO.

520-100-9010

REV 1 SHT 1

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REVISIONS  
SEE SHEET 1

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CUSTOMER DRAWING/PART NO.  
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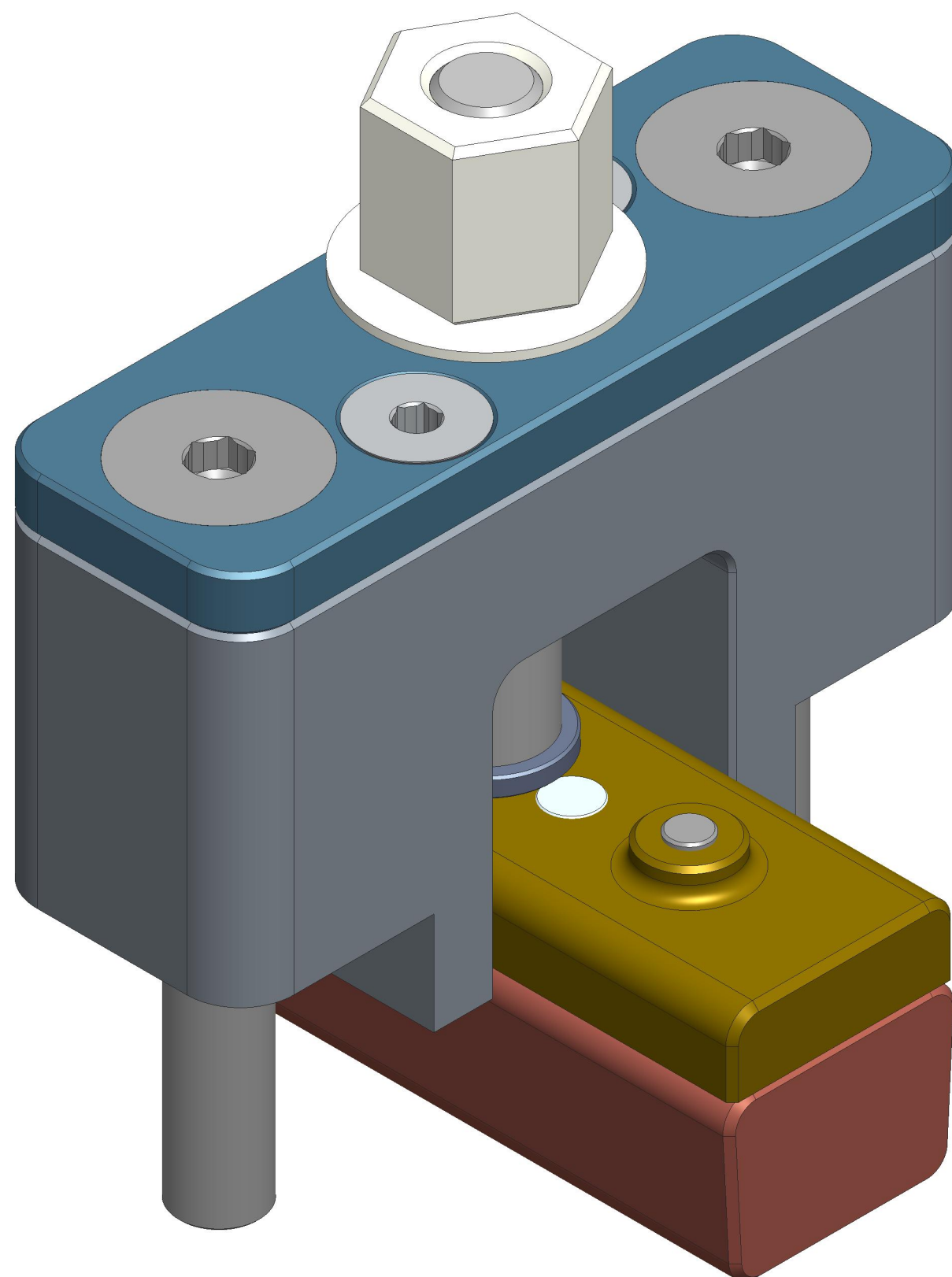
DRAWING/PART NO.

520-100-9010

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SHT  
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UNIVERSAL SONAR MOUNT

ASSY, SHEAR BLOCK TOWER

SIZE	CUSTOMER DRAWING/PART NO.	REV
<b>C</b>	---	1
	DRAWING/PART NO. 520-100-9010	

SCALE 2.000 SHEET 2 OF

4

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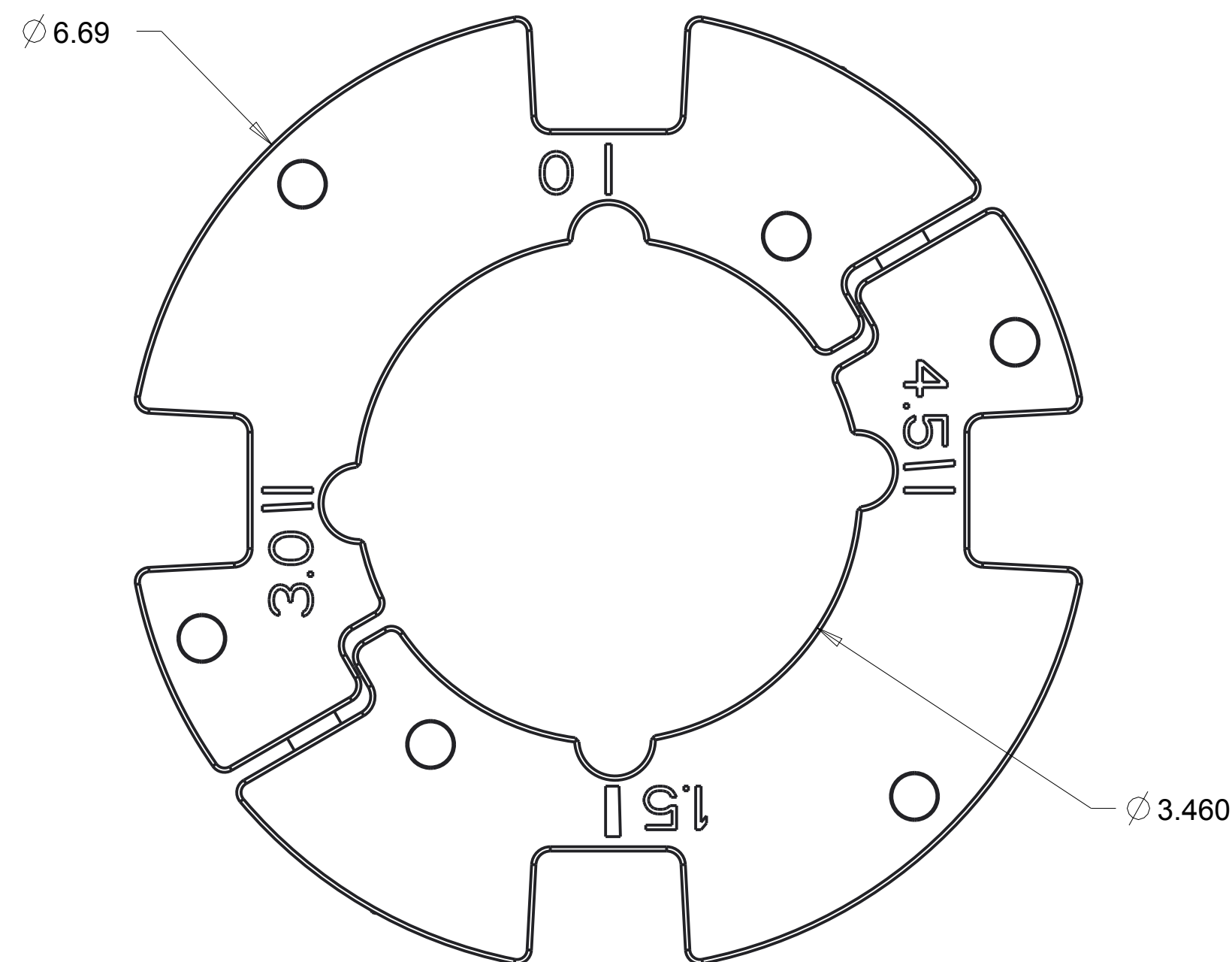
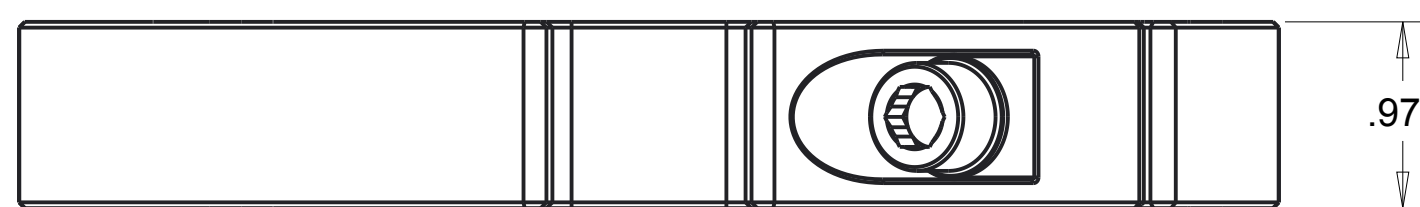
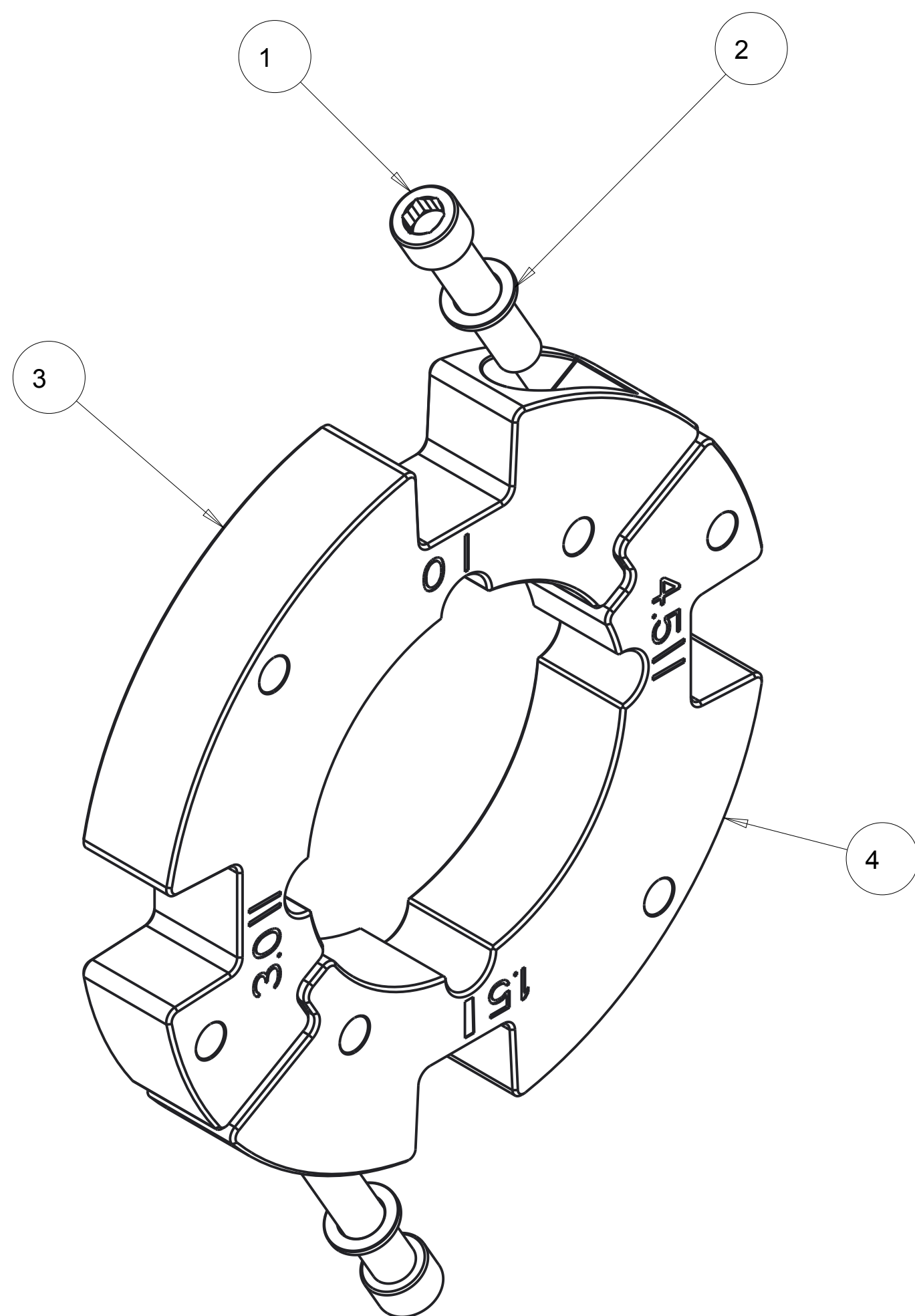
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
--	1	INITIAL RELEASE	02016-OCT-07	--



ITEM NO.	QTY REQD.	PART NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.
4	1	520-100-1035-02	CLAMP RING, 3.5" 1.5 AND 4.5 DEGREE	FAB	---
3	1	520-100-1035-01	CLAMP RING, 3.5" 0 AND 3 DEGREE	FAB	---
2	2	90-300-390-625-060-20	WASHER, .390 X .625 OD X .060 THICK, SST	MCMASTER	98017A200
1	2	90-100-375C-1750-20	SCREW, 3/8-16 X 1.75 SHC 18-8	MCMASTER	92196A630

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.	PRO/E REPORTED PARAMETERS	DESIGNER	
		G STAPLES	
TOLERANCES ARE:	PRO/E MATERIAL	ENGINEER	G STAPLES
.X +/- 0.1	N/A	G STAPLES	02016-OCT-07
.XX +/- 0.01	PRO/E MASS	DRAFTER	G STAPLES
.XXX +/- 0.001	3.455	G STAPLES	02016-OCT-07
ANGLES +/- 0.5	PRO/E VOLUME	CHECKED	---
	N/A	---	02016-OCT-07
INTERPRET DIMENSIONS PER ASME Y14.5M 1994 (R2004)	PRO/E DRAWING FILE NAME:	DO NOT SCALE DRAWING	
	520-100-9035		

UNIVERSAL SONAR MOUNT		
ASSY, CLAMP RING, INDEXED, 3.5"		
SIZE	CUSTOMER DRAWING/PART NO.	REV
C	---	1
DRAWING/PART NO.		
520-100-9035		
SCALE	1.000	SHEET 2 OF

4

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CUSTOMER DRAWING/PART NO. ---  
DRAWING/PART NO. 520-100-9035  
REV 1  
SHT 1

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REVISIONS  
SEE SHEET 1

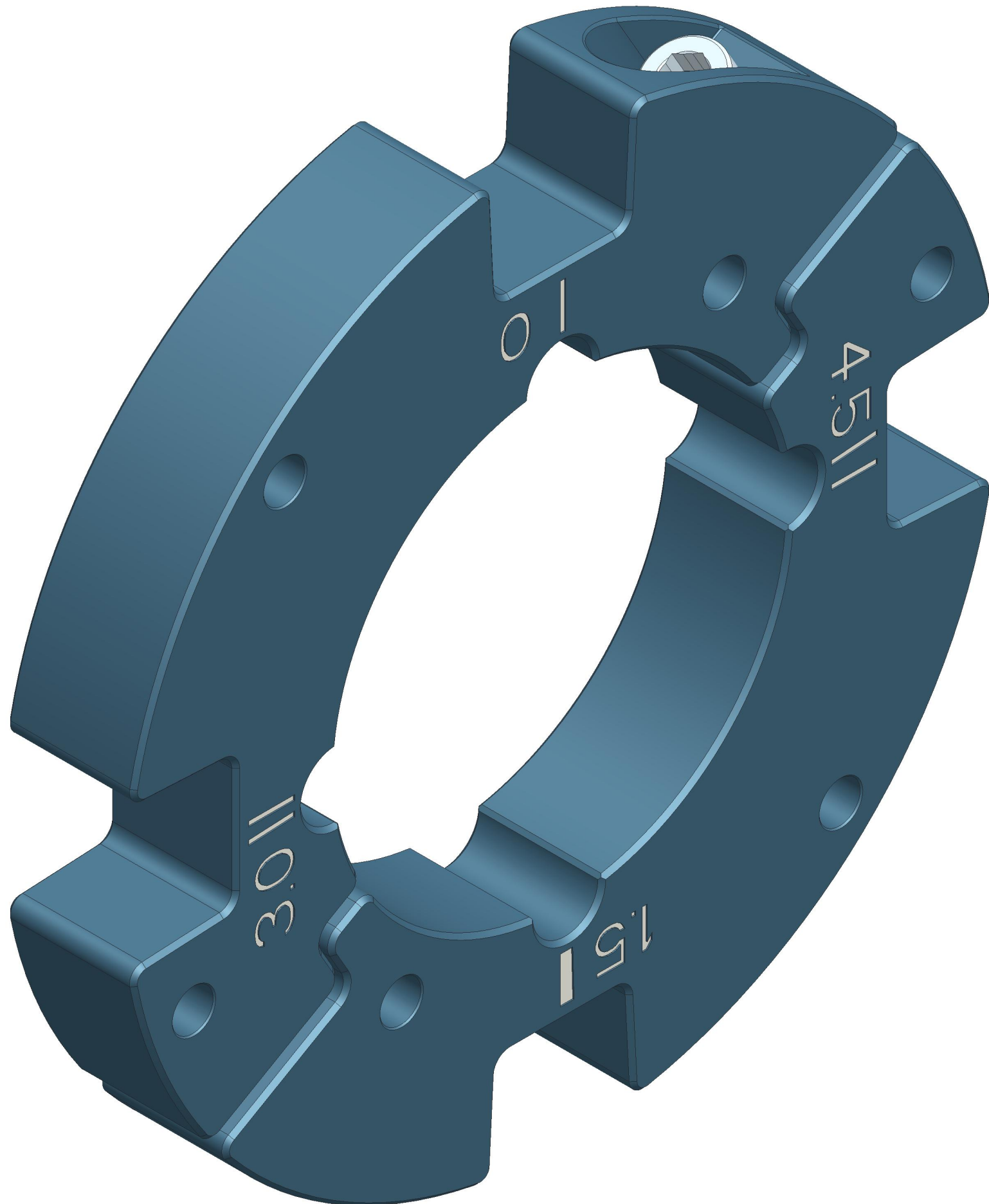
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CUSTOMER DRAWING/PART NO. ---

DRAWING/PART NO. 520-100-9035

REV 1

SHT 2

UNIVERSAL SONAR MOUNT		
ASSY, CLAMP RING, INDEXED, 3.5"		
SIZE	CUSTOMER DRAWING/PART NO. ---	REV 1
<b>C</b>	DRAWING/PART NO. 520-100-9035	
SCALE 1.500	SHEET 2 OF 2	

4

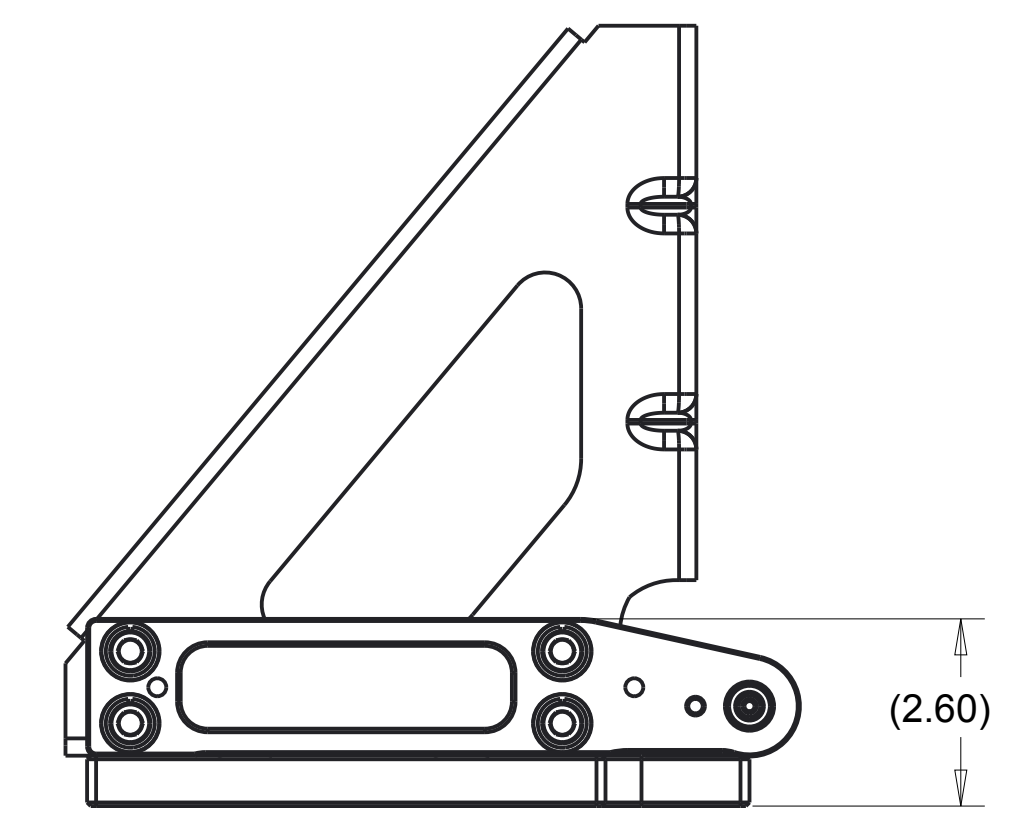
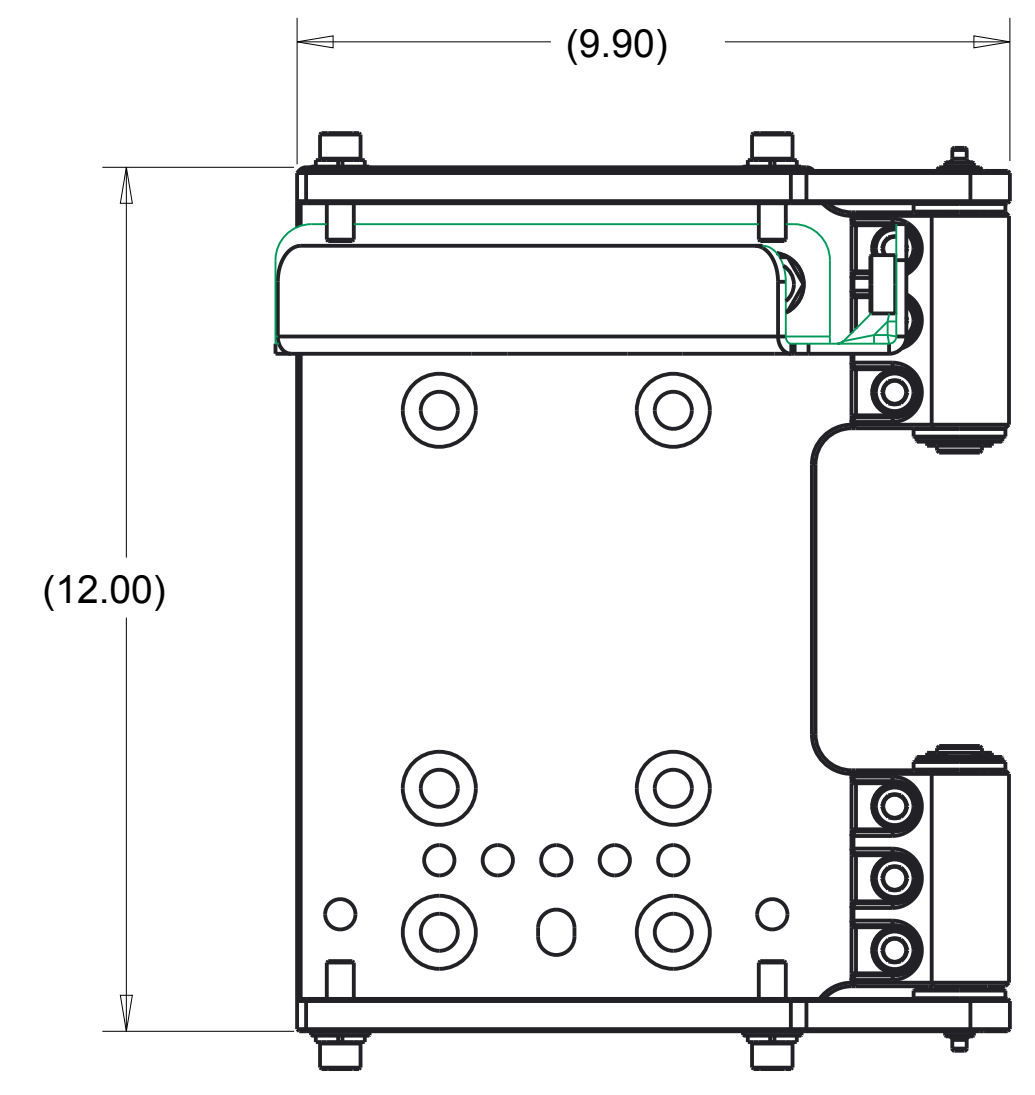
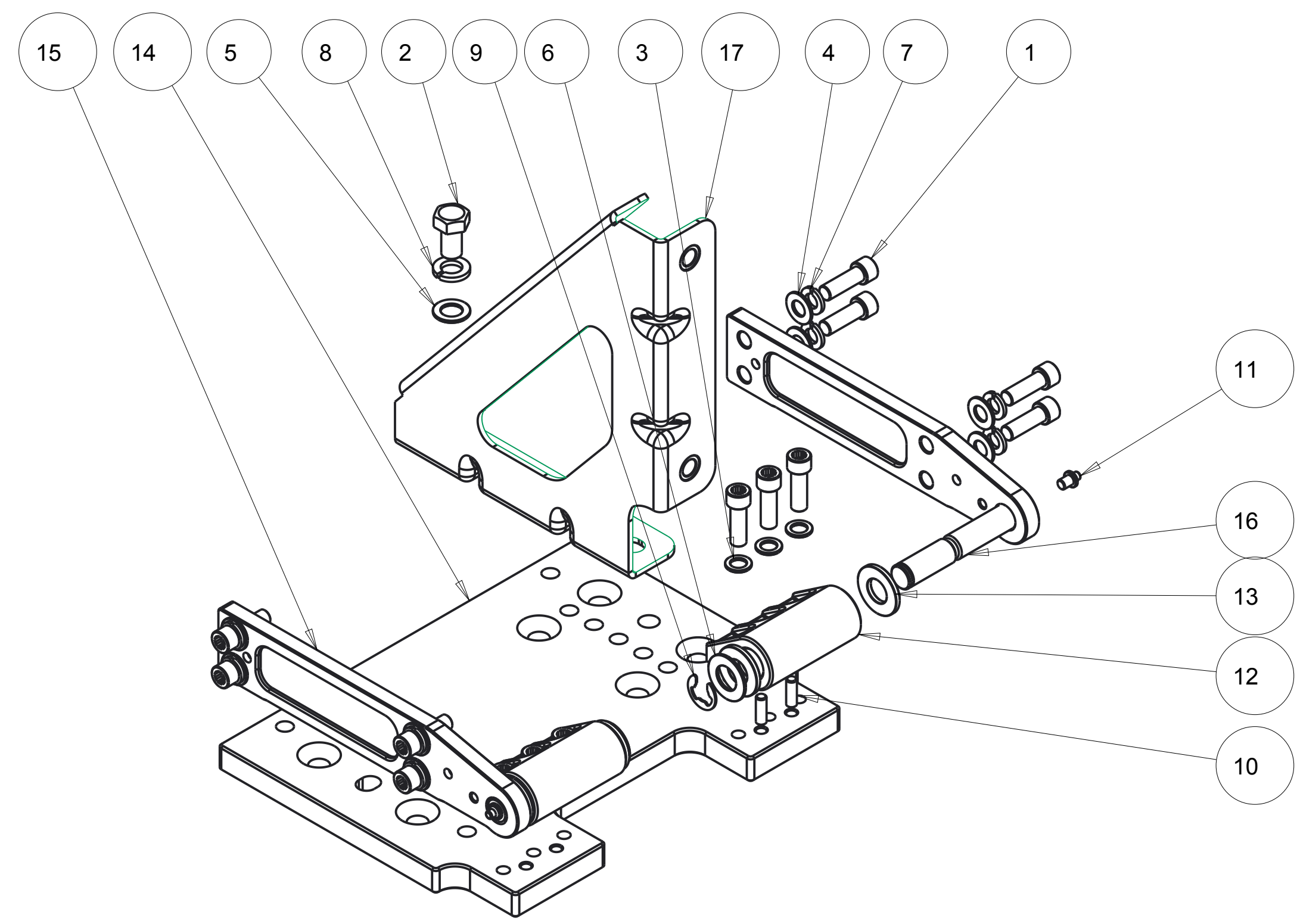
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
--	1	INITIAL RELEASE	02016-OCT-06	--
	2	REPOSITIONED BRACKET	02016-OCT-14	



ITEM NO.	QTY REQD.	PART NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.
17	1	520-100-1050	BRACKET 90 DEGREE HINGE, ASSY	ASSY	---
16	2	520-100-1023	FIXED HINGE SHAFT	FAB	---
15	2	520-100-1022	STRAP HINGE	FAB	---
14	1	520-100-1020-02	BASE PLATE, CM W/ HINGE	FAB	---
13	4	500-1038	USM, HINGE WASHER, 1.275 OD X .630 ID X .125 TH	FAB	---
12	2	500-1036-01	USM, HINGE, CLEAR HOLE	FAB	---
11	2	94-350-250P-01-23	GREASE FITTING, STRAIGHT, 1/4 IN PRESS FIT, SST	MCMMASTER	2304K22
10	4	90-400-250-750-20	DOWEL PIN, .250 DIA X .750 L18-8	MCMMASTER	90145A540
9	2	90-355-485-042-20	E-CLIP, .625 SHAFT, .485 GROOVE, .042 W, SST	MCMMASTER	98408A140
8	2	90-310-510-870-120-20	WASHER, SPLIT LOCK .510 ID X .87 OD X .120TK, 18-8 SST	MCMMASTER	92146A033
7	8	90-310-380-680-090-20	WASHER, SPLIT LOCK .380 ID X 68 OD X .090TK, 18-8 SST	MCMMASTER	92146A031
6	2	90-300-640-1190-060-20	WASHER, .640" ID X 1.19" OD X .060" TH, 300 SST	MCMMASTER	98017A215
5	2	90-300-515-875-060-20	WASHER, .515 ID X .875 OD X .060 18-8	MCMMASTER	98017A210
4	8	90-300-406-813-060-20	WASHER, .406" ID X .813" OD X .060" TH, 18-8 SST	MCMMASTER	96659A108
3	6	90-300-390-625-060-20	WASHER, .390 X .625 OD X .060 THICK, SST	MCMMASTER	98017A200
2	2	90-104-500C-875-20	HEX BOLT, 1/2-13 X .875 SST 18-8	MCMMASTER	92240A711
1	14	90-100-375C-1125-20	SCREW, 3/8-16 X 1.125 SHC 18-8	MCMMASTER	92196A625

TOLERANCES ARE:	PRO/E REPORTED PARAMETERS		DESIGNER	
	.X +/- 0.1	PRO/E MATERIAL	G STAPLES	
.XX +/- 0.01	N/A	ENGINEER	G STAPLES	02016-OCT-06
.XXX +/- 0.001	PRO/E MASS	DRAFTER	G STAPLES	02016-OCT-06
ANGLES +/- 0.5	20.891	CHECKED	---	02016-OCT-06
	PRO/E VOLUME	DO NOT SCALE DRAWING		
	N/A	SCALE 0.375		
INTERPRET DIMENSIONS PER ASME Y14.5M 1994 (R2004)	PRO/E DRAWING FILE NAME:	SHEET 2 OF		
	520-100-9002			

UNIVERSAL SONAR MOUNT		
ASSY, COMPACT HINGE		
SIZE	CUSTOMER DRAWING/PART NO.	REV
C	---	2
DRAWING/PART NO.		
520-100-9002		

CUSTOMER DRAWING/PART NO. ---  
DRAWING/PART NO. 520-100-9002  
REV 2 SHT 1

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REVISIONS  
SEE SHEET 1

CUSTOMER DRAWING/PART NO.

DRAWING/PART NO.

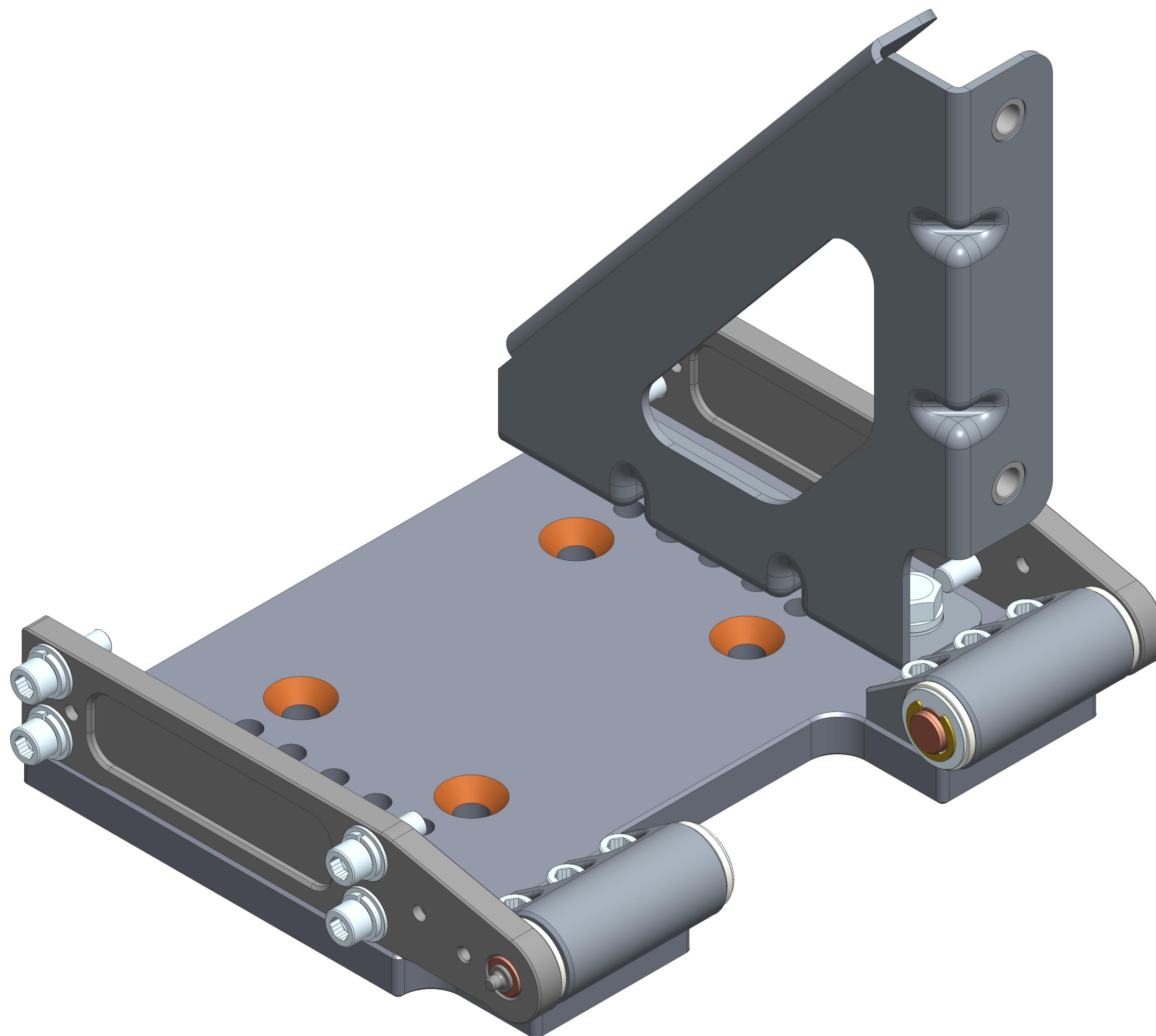
520-100-9002

REV

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UNIVERSAL SONAR MOUNT

ASSY, COMPACT HINGE

SIZE	CUSTOMER DRAWING/PART NO.	REV
<b>C</b>	---	2
	DRAWING/PART NO.	
	520-100-9002	

SCALE 0.750 SHEET 2 OF

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