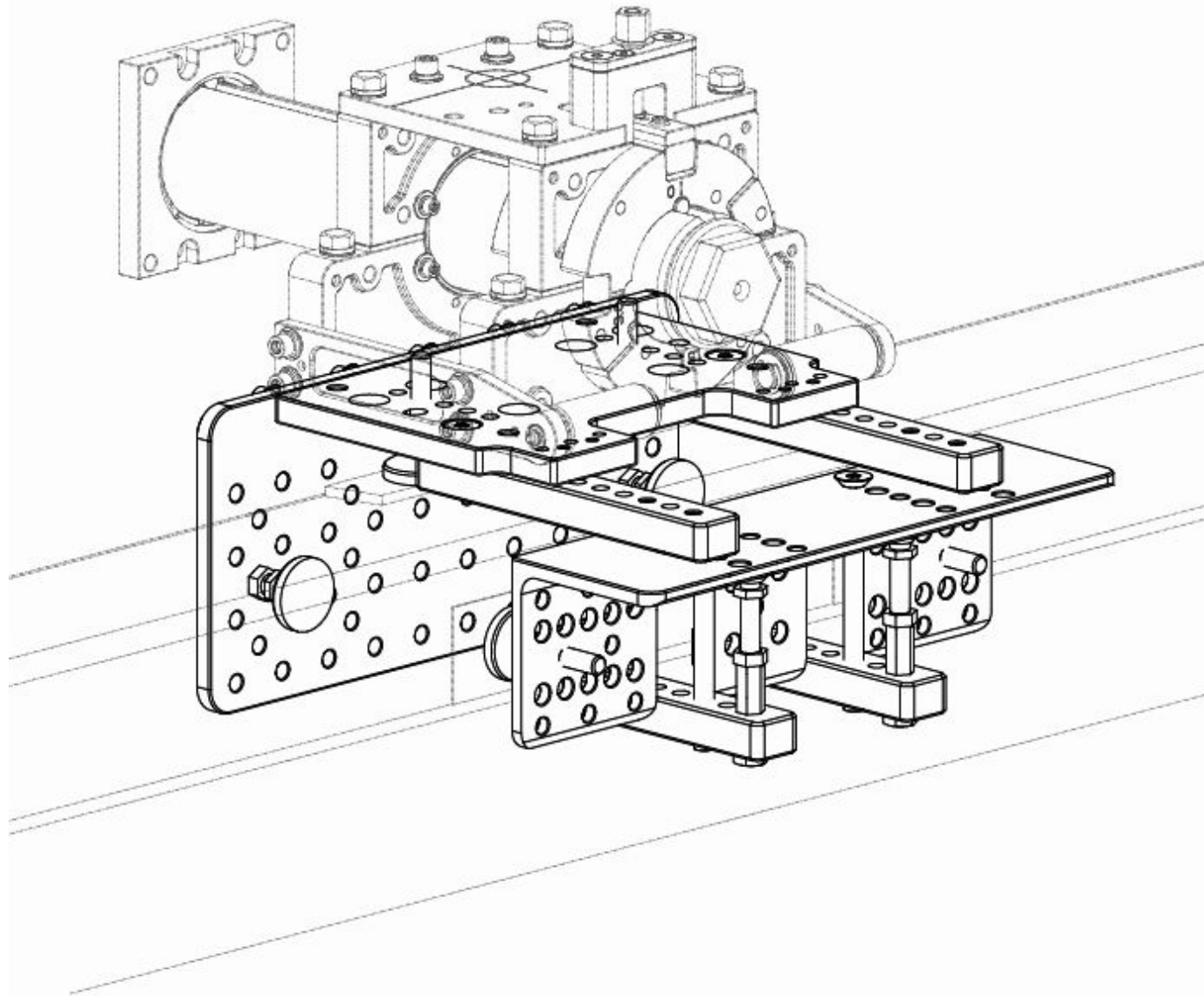
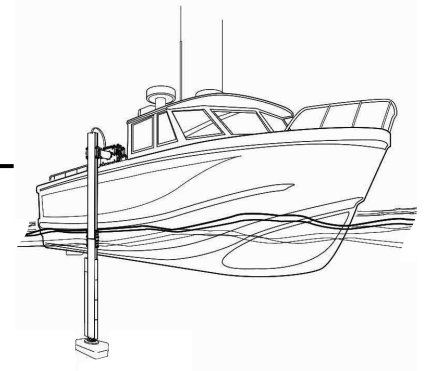




Patent #8094520

COMPACT VOOP KIT

USER MANUAL



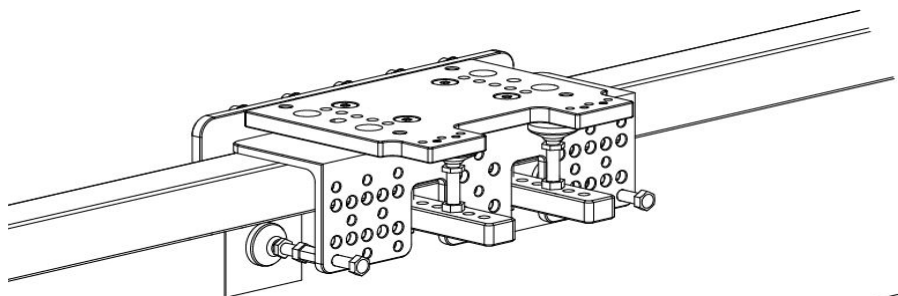
SCAN FOR VIDEO



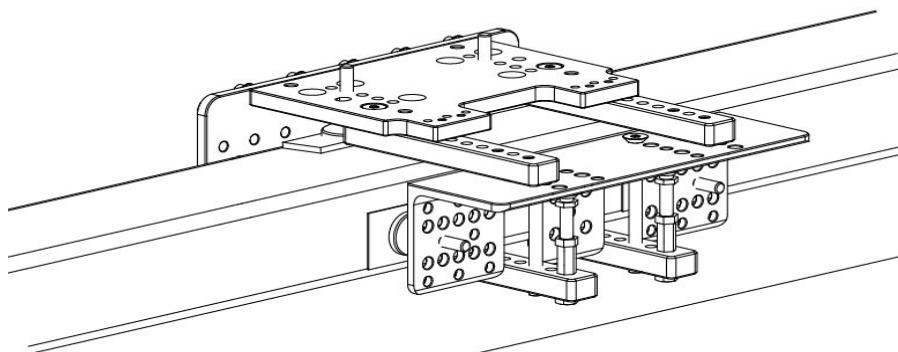
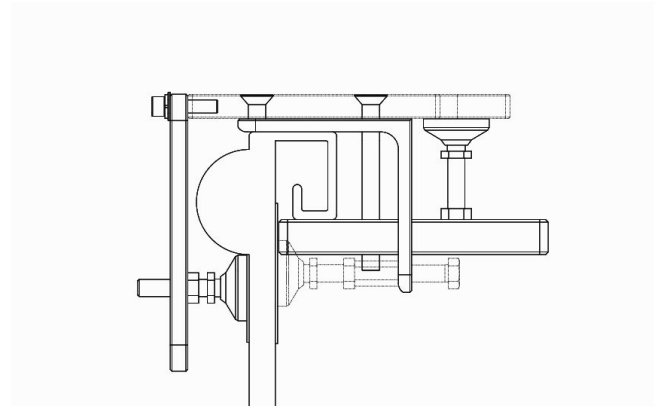
SCAN FOR ALL
USM VIDEOS



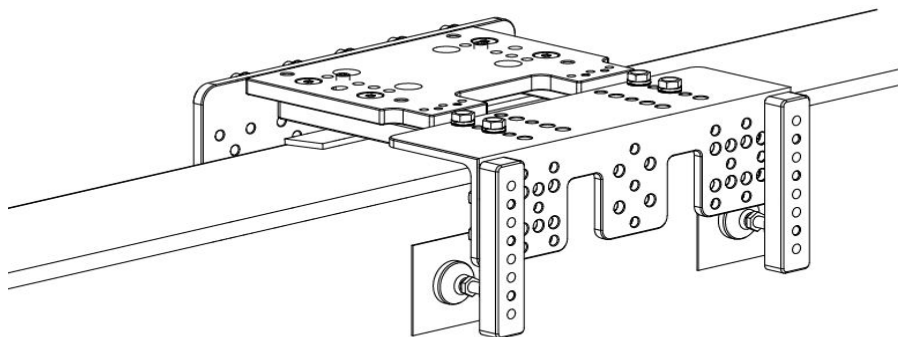
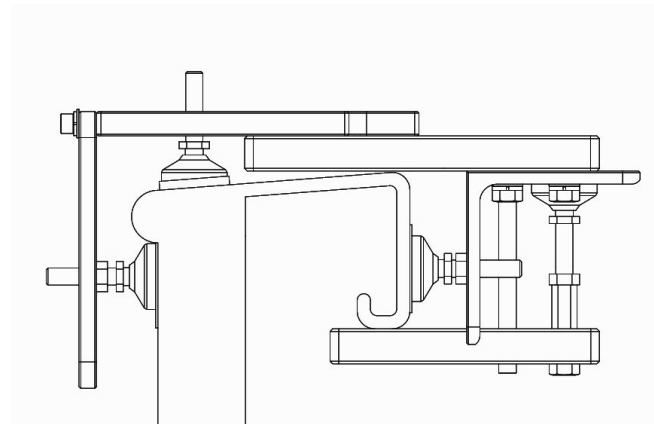
GENERAL OVERVIEW



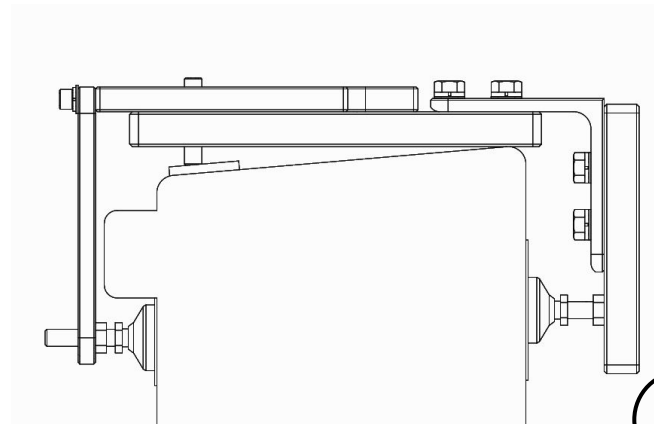
NARROW



WIDE

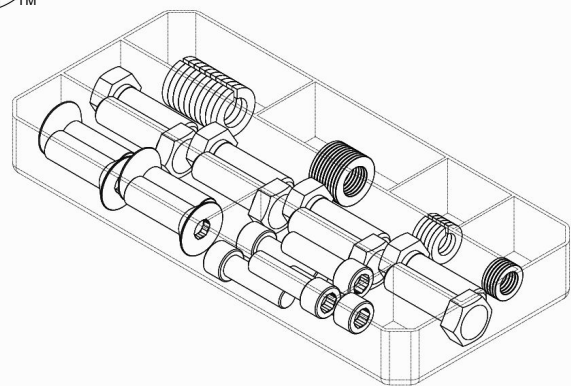


EXTENDED

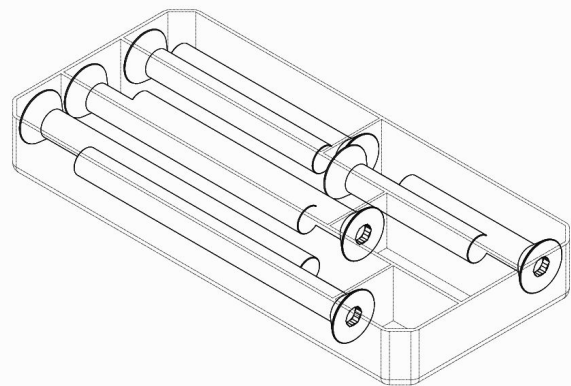




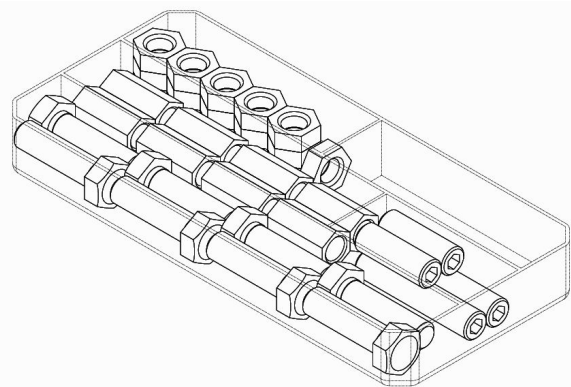
COMPONENTS OVERVIEW



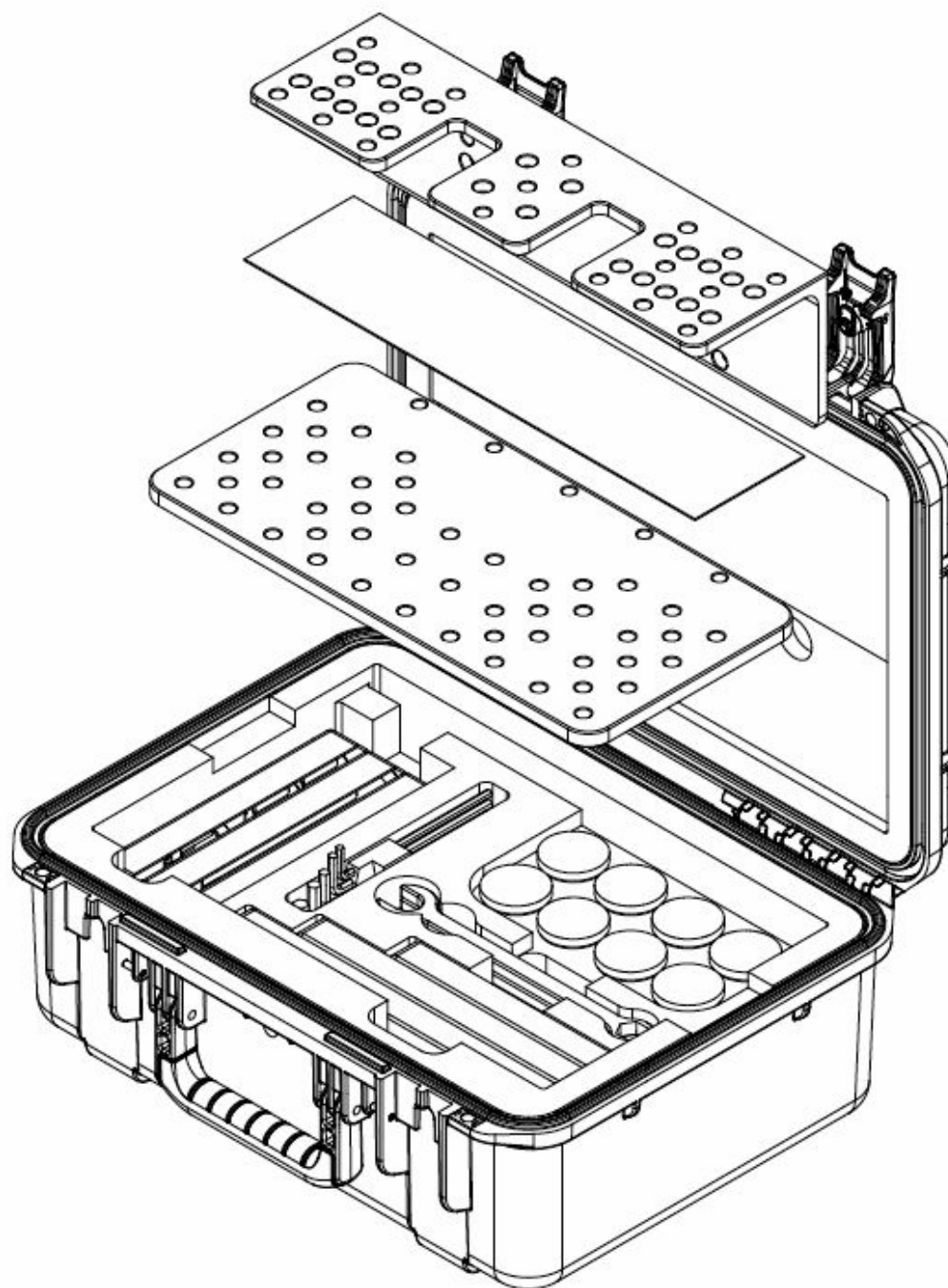
HARDWARE KIT A



HARDWARE KIT B

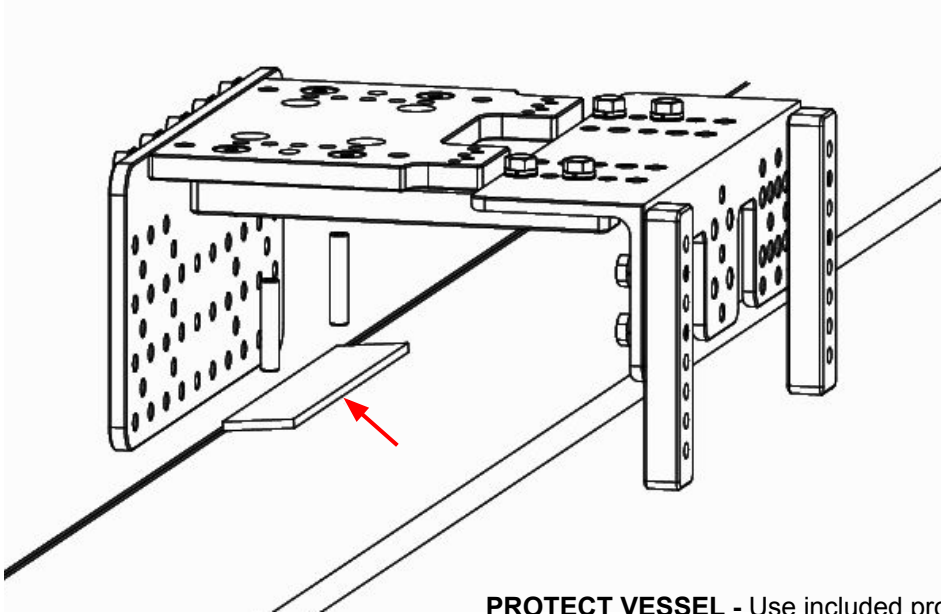


HARDWARE KIT C

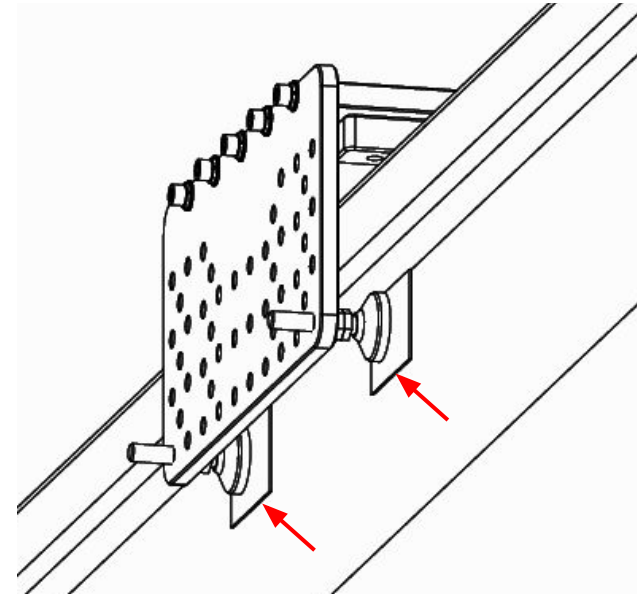




RECOMMENDED PRACTICES

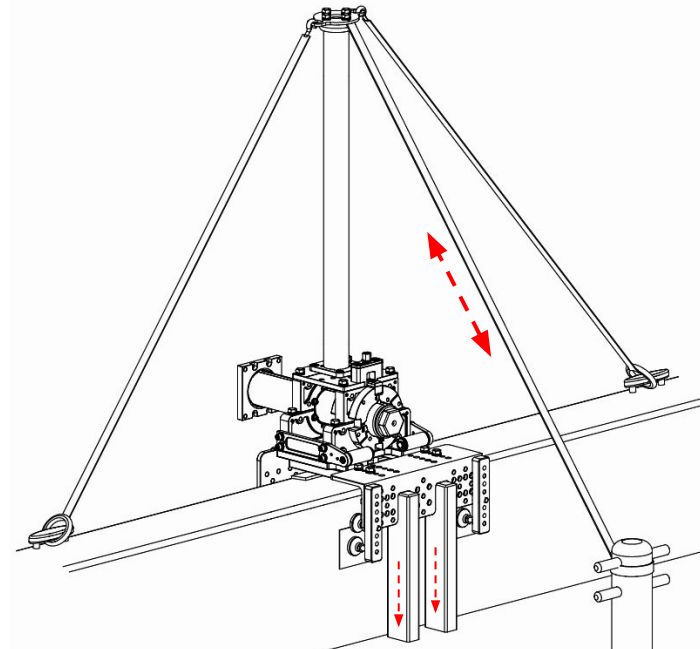
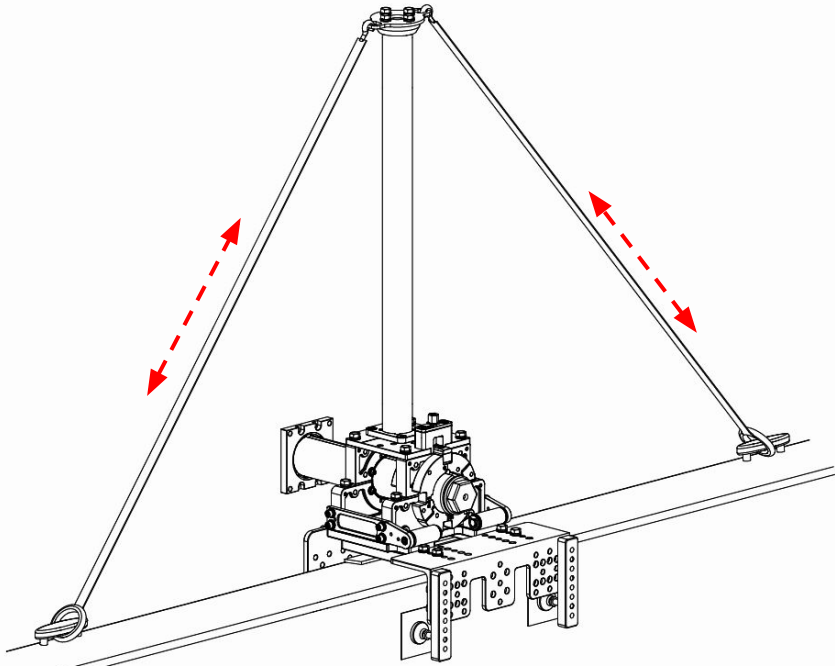


PROTECT VESSEL - Use included protective adhesive tape where appropriate to protect vessel.



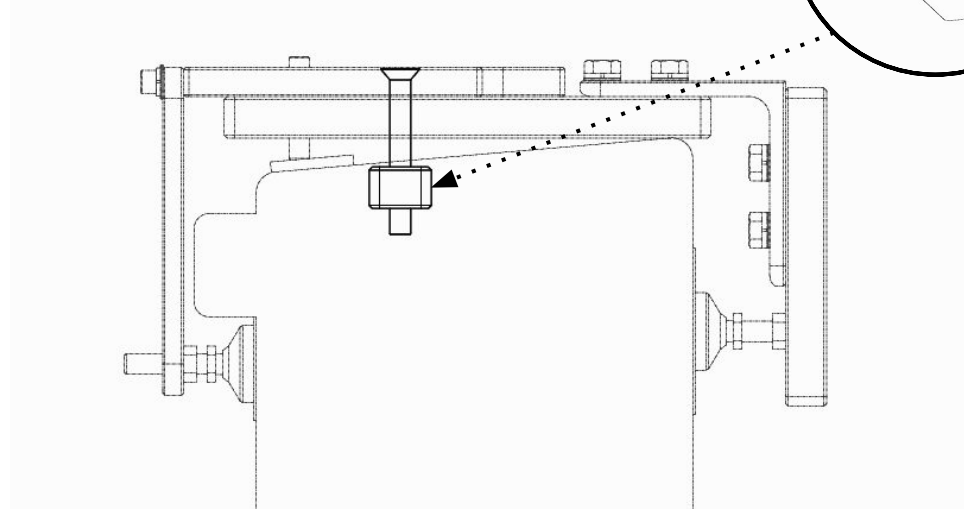
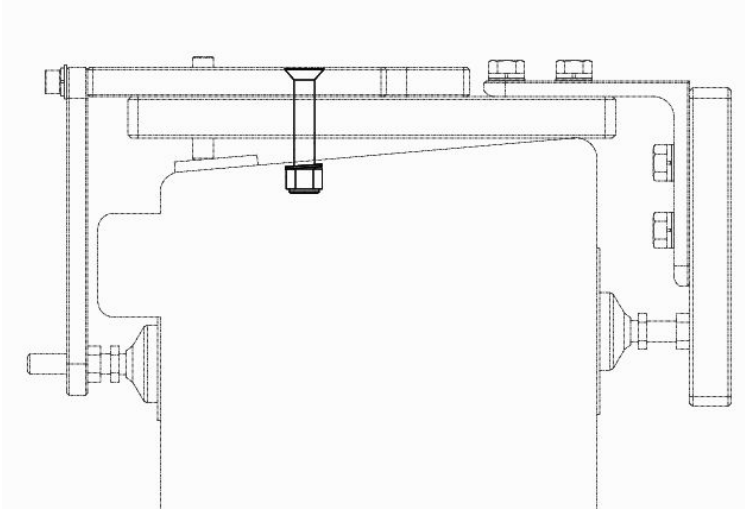
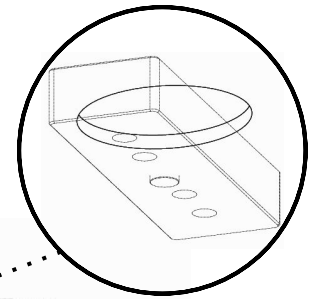
STRONG GUNNEL - Tie mount to vessel using with equal force on either side, fore and aft on vessel.

WEAK GUNNEL - Support Mount/gunnel with wood blocks or similar material and add 3rd strap compressing VOOP onto wooden blocks.



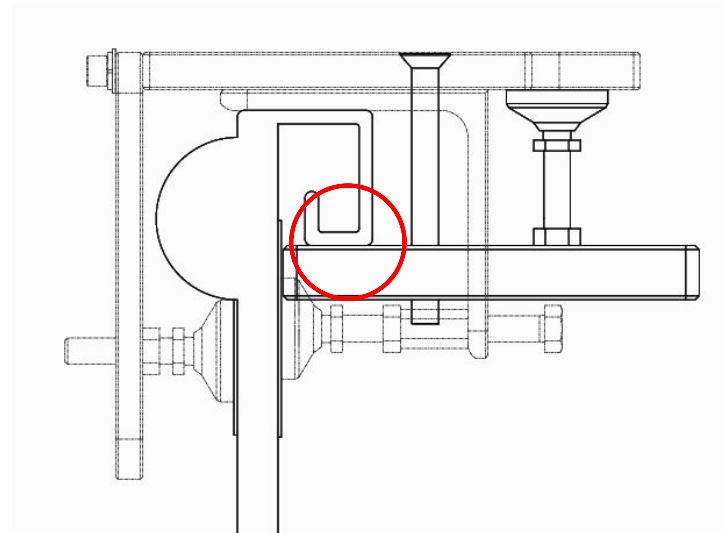
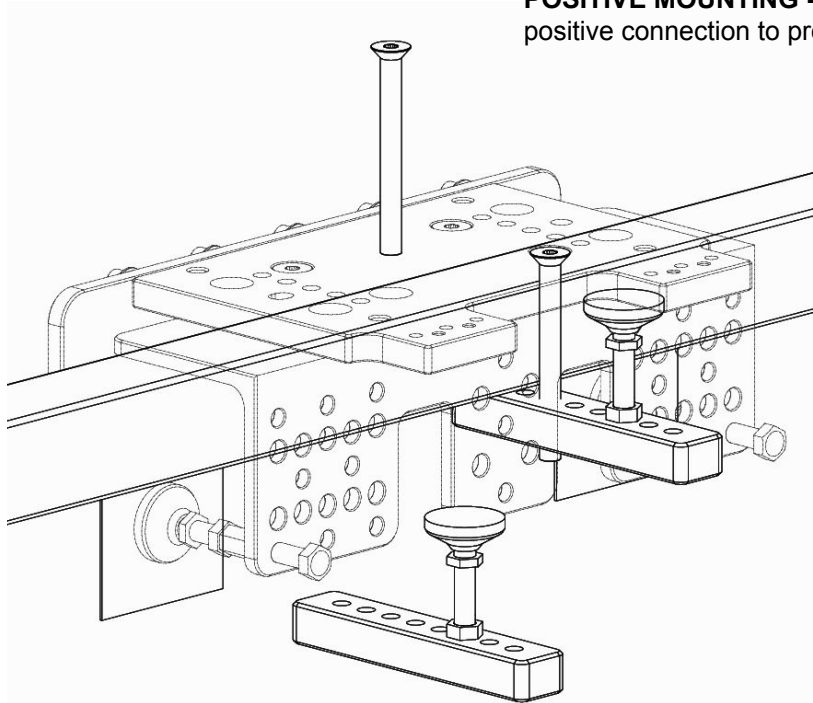


RECOMMENDED PRACTICES



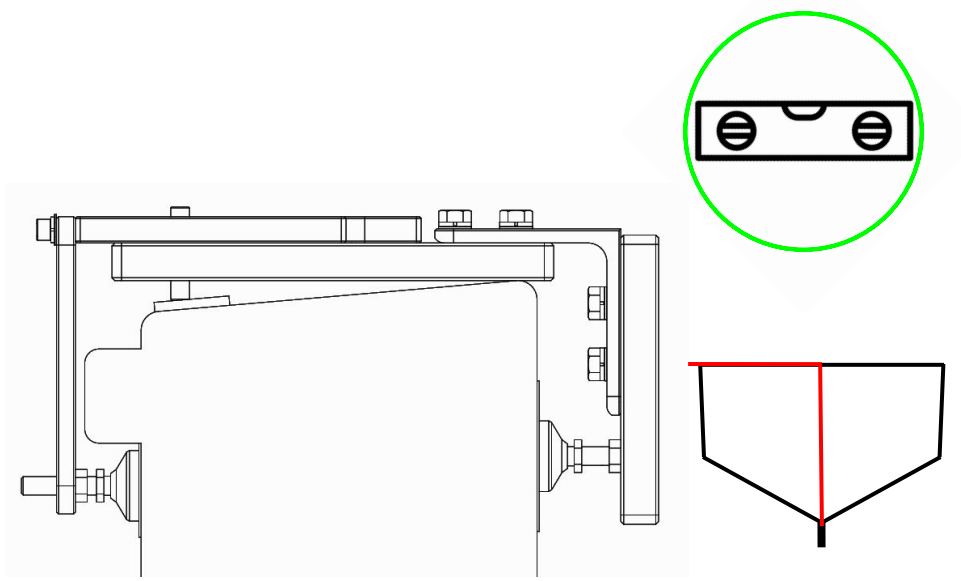
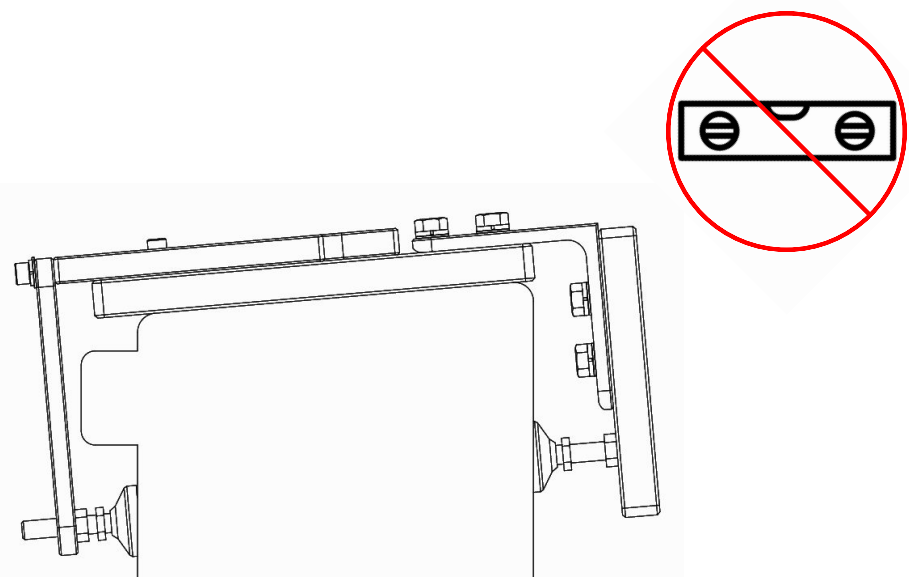
BOLT TO GUNNEL - If possible bolt directly to the gunnel using an existing hole or by drilling new 1/2" hole(s).

POSITIVE MOUNTING - If possible connect to gunnel with a positive connection to protruding features.



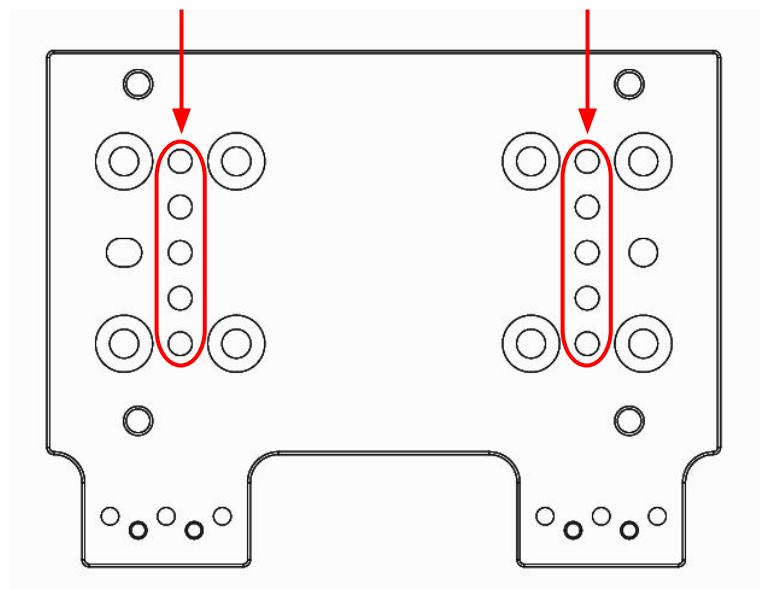
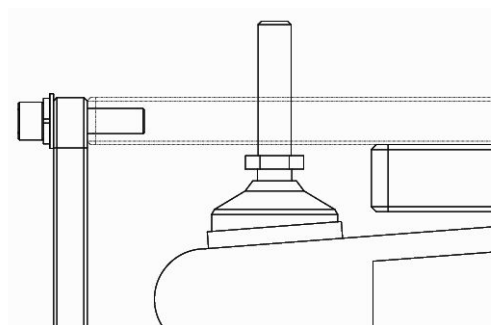
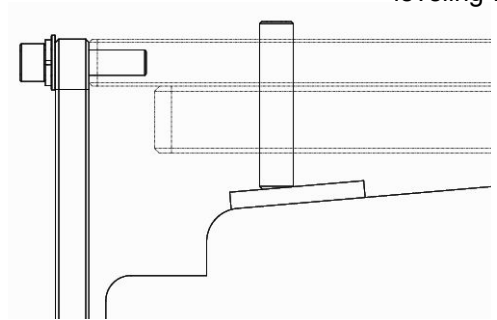


INSTALLATION TIPS: ROLL ANGLE COMPENSATION



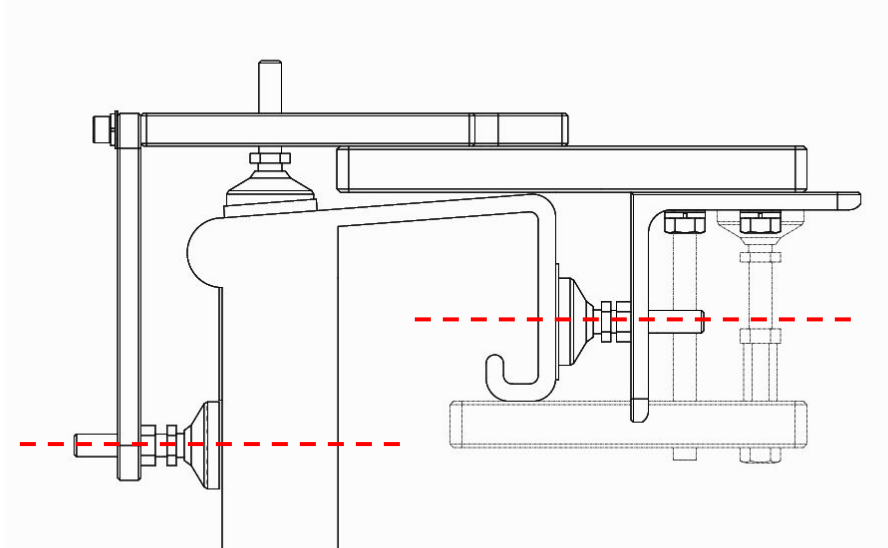
LEVEL BASE PLATE - Orient base plate to be perpendicular with center-line of keel.

LEVEL BASE PLATE - Use the highlighted threaded-holes for leveling-feet or set-screws.

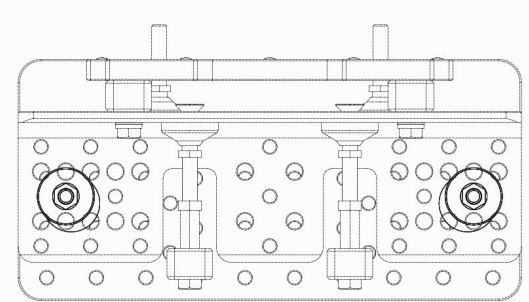
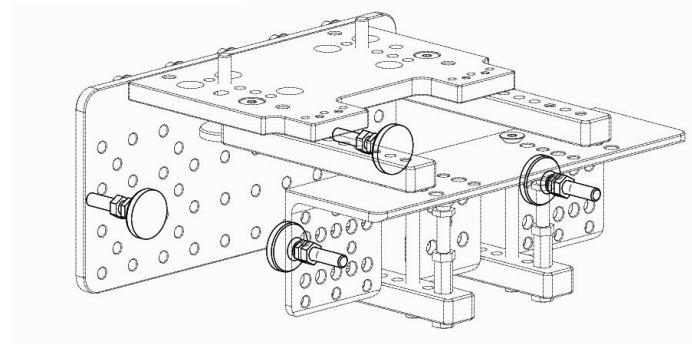
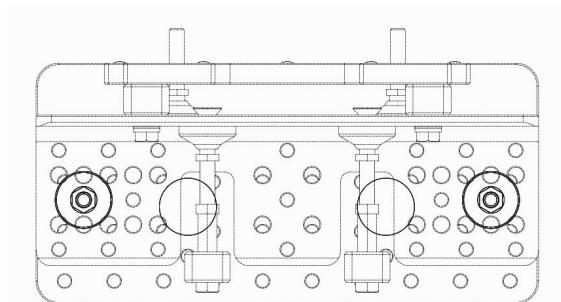
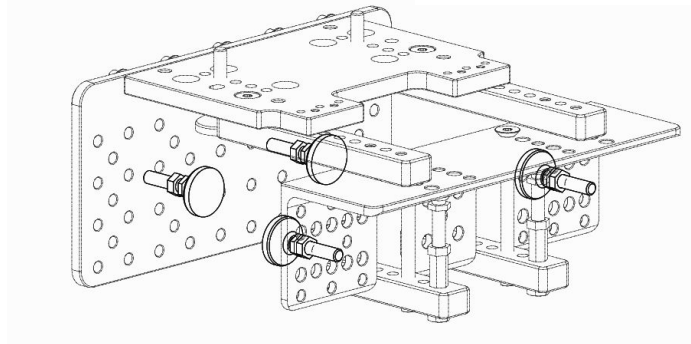
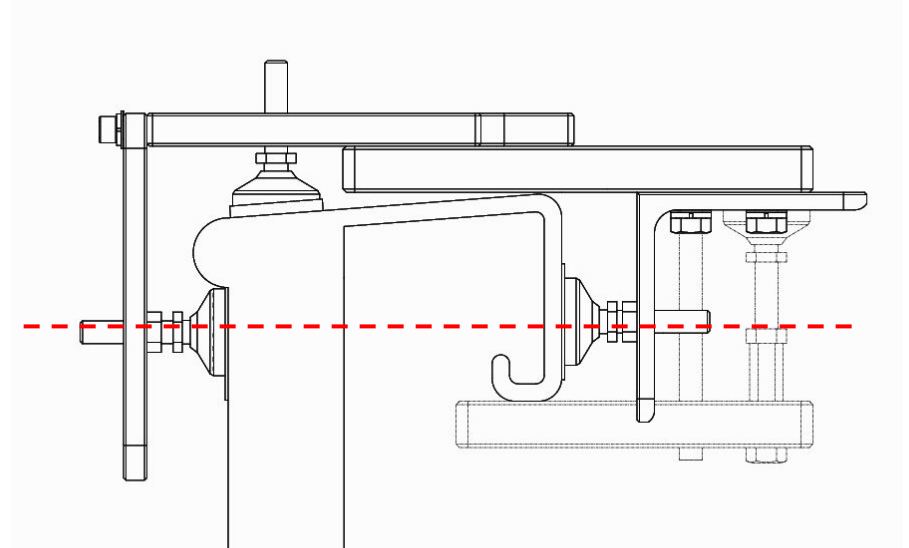




INSTALLATION TIPS: BALANCING CLAMP FORCE

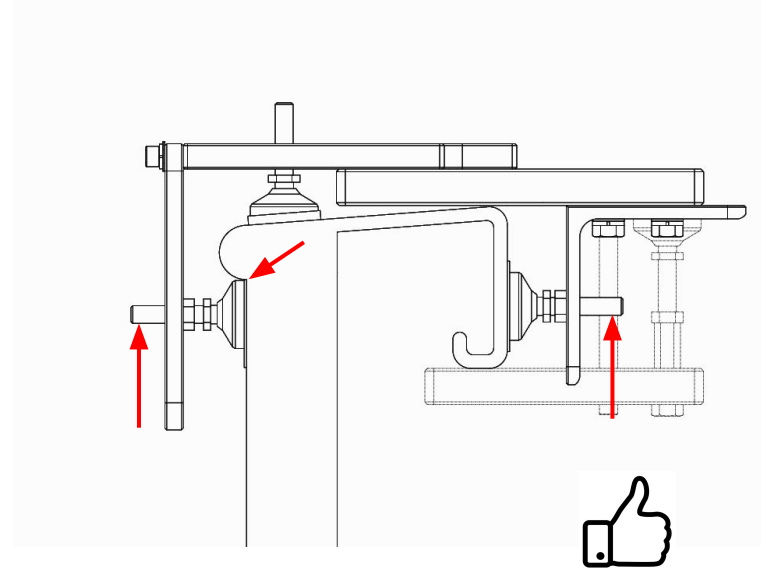
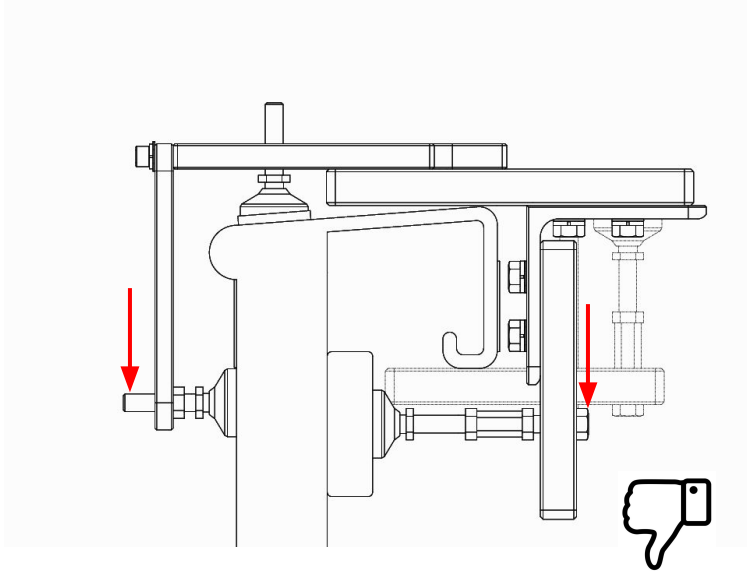


BALANCE FORCES - Whenever possible make sure to orient leveling feet so that they are directly across from each other.



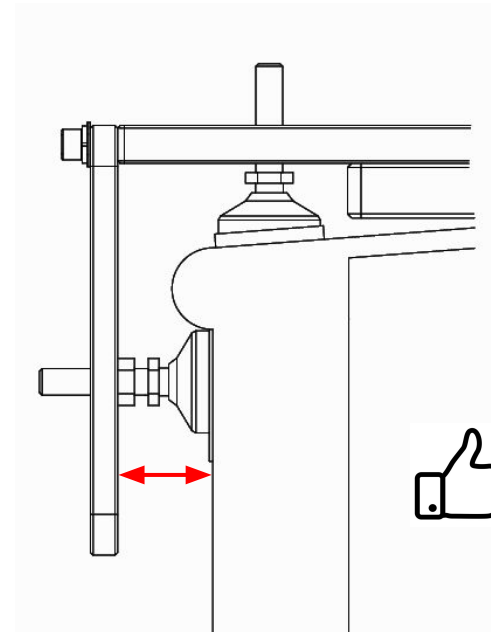
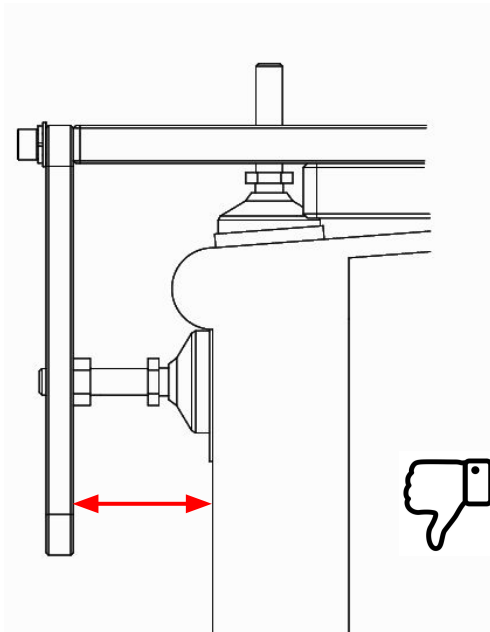


INSTALLATION TIPS: IDEAL POSITIONING



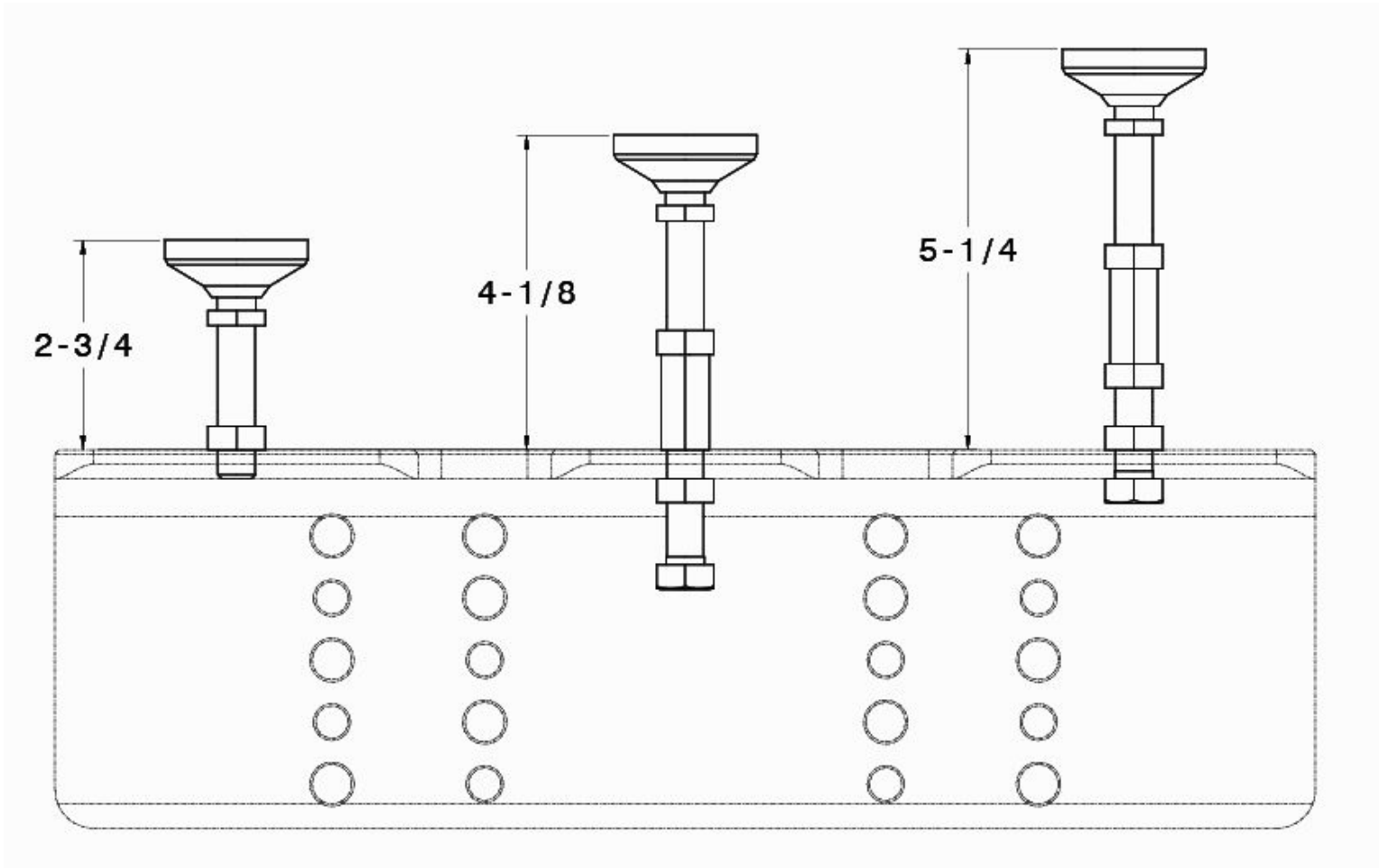
POSITION LEVELING FEET - Always position leveling feet as close to the top of the gunnel as possible.

MINIMAL EXTENSION - Always position plates as close to gunnel as possible.



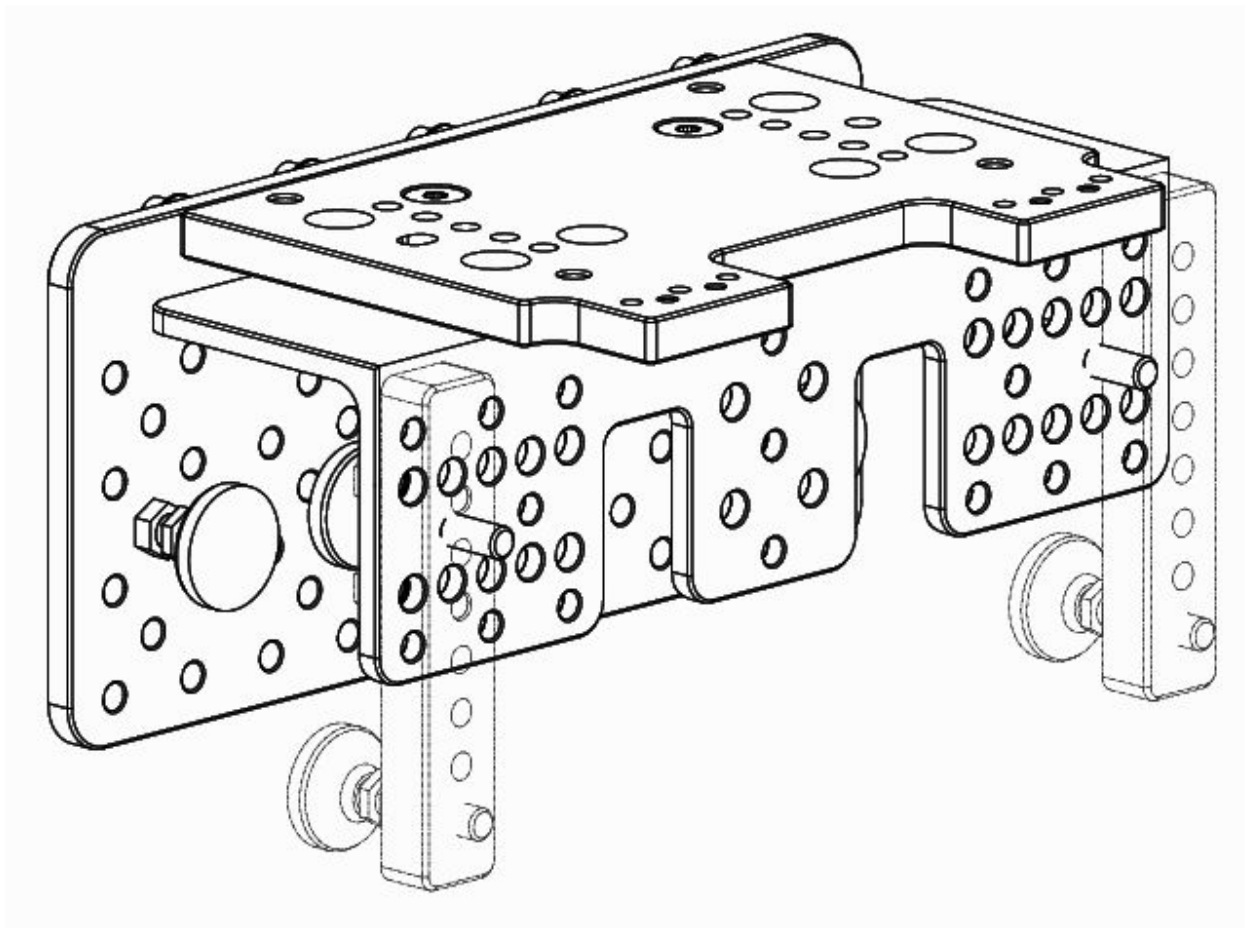


LEVELING FOOT CONFIGURATIONS



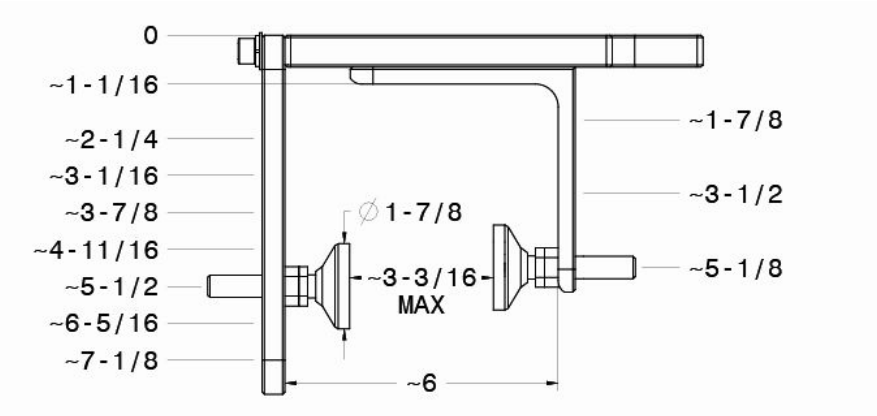


NARROW CONFIGURATION

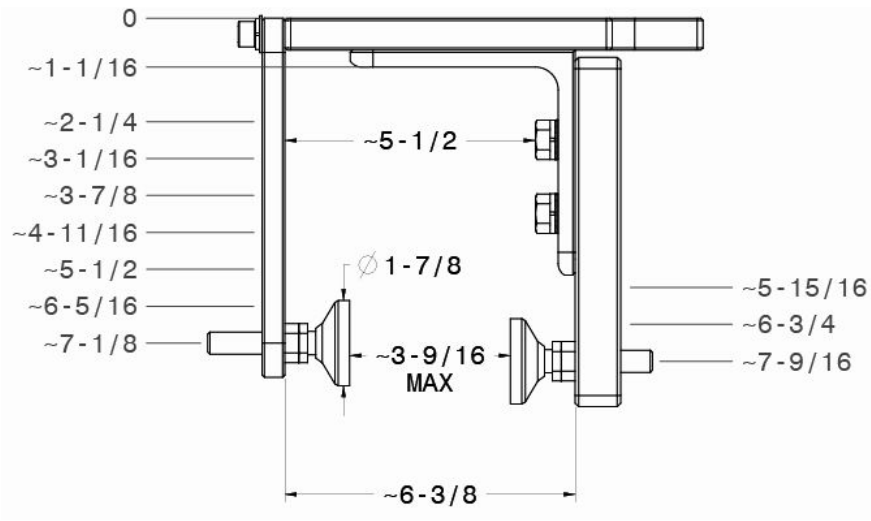




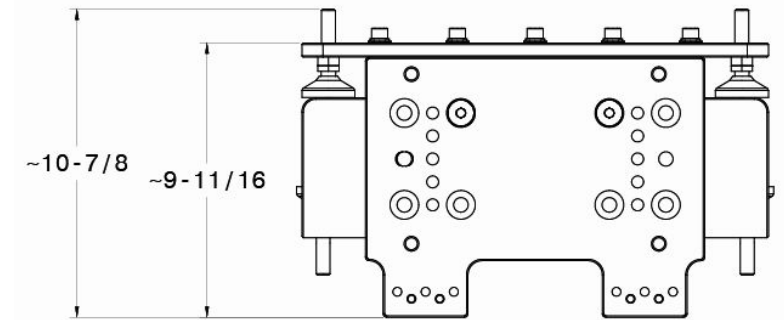
NARROW SETTINGS

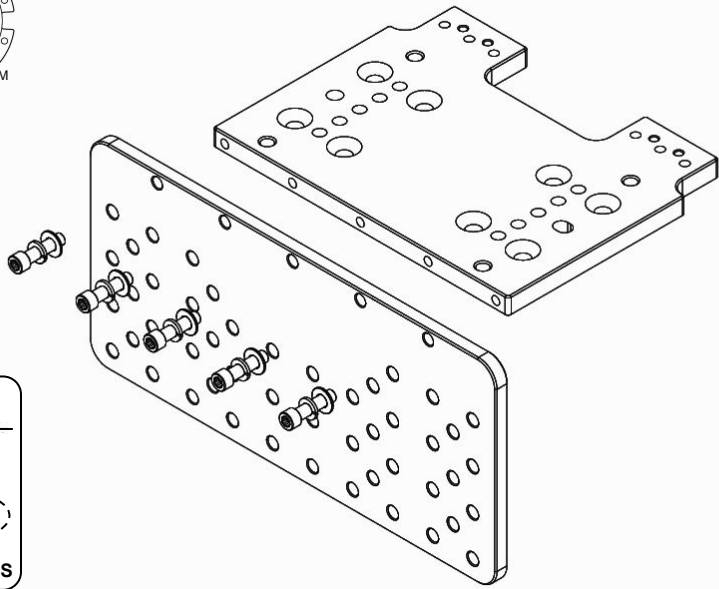
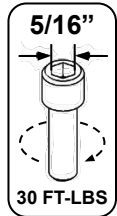


STANDARD



EXTENDED



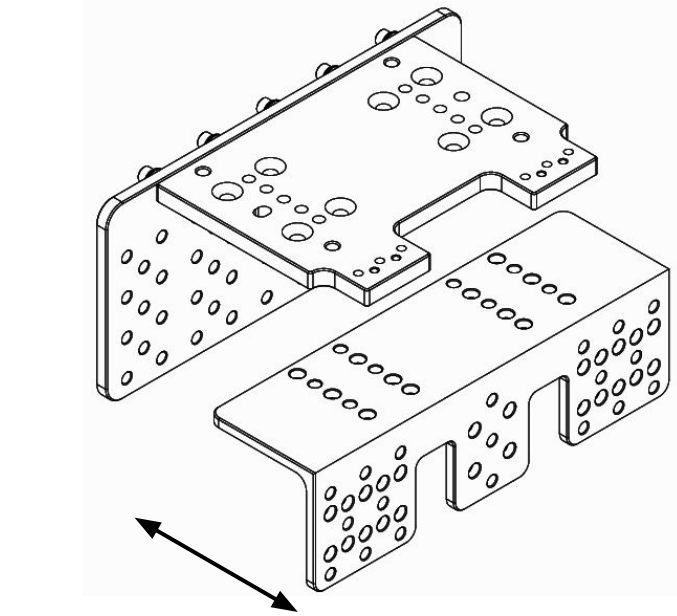
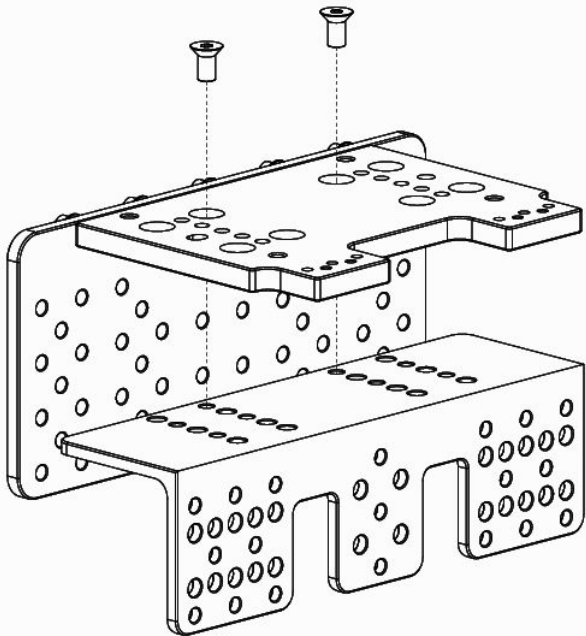
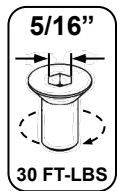


BASE PLATE/OUTBOARD PLATE - Bolt Outboard Plate to Base Plate.

1

BASE PLATE/ANGLE PLATE - Bolt Angle Plate to Base Plate.

3

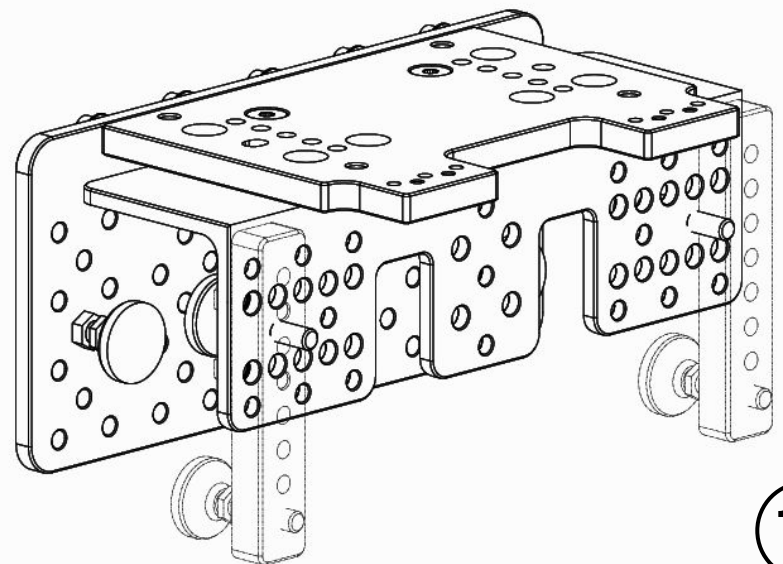


BASE PLATE/ANGLE PLATE - Select position of Angle Plate.

2

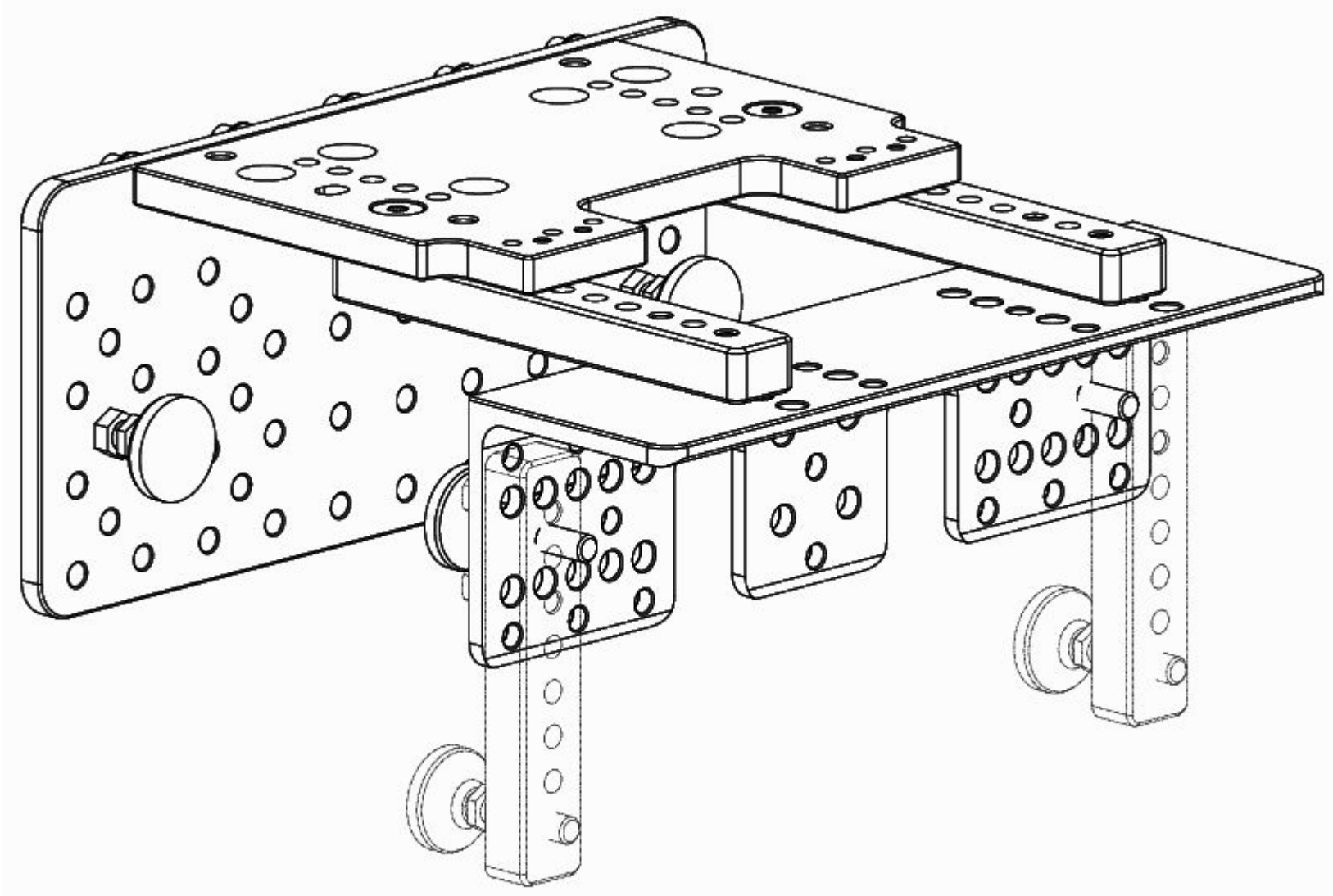
INSTALL LEVELING FEET - Install Leveling feet onto Outboard Plate and Extension Bars.

4



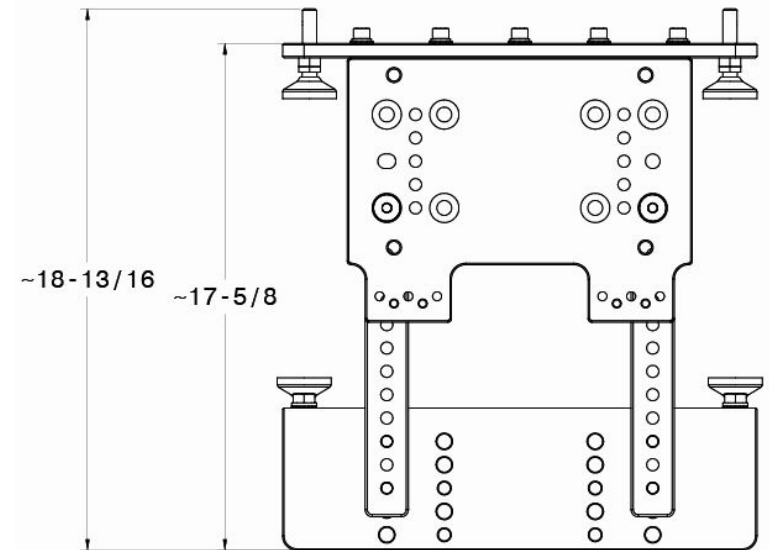
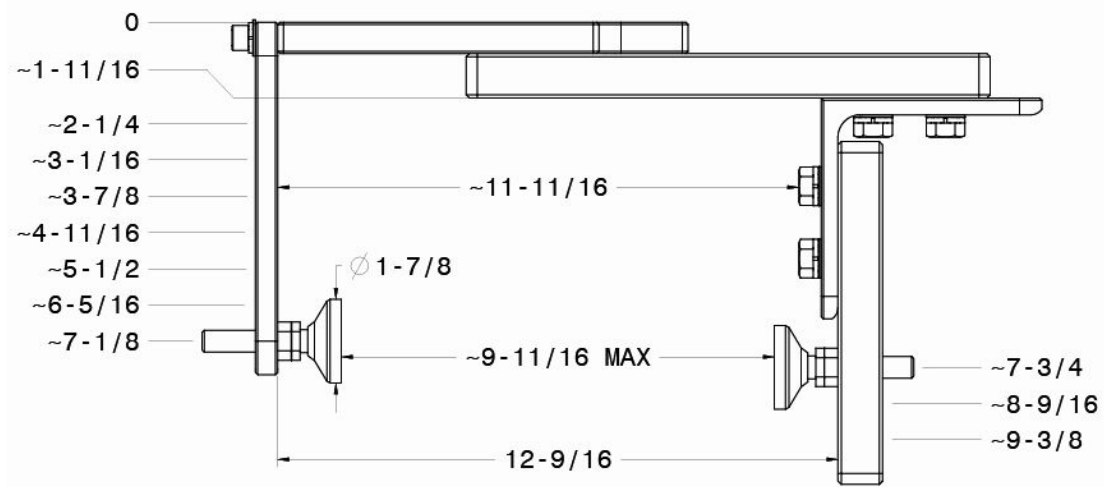


WIDE CONFIGURATION

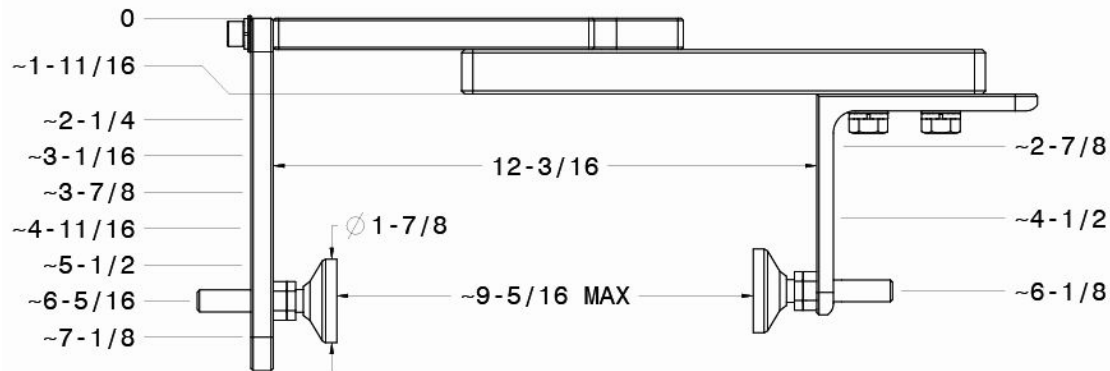




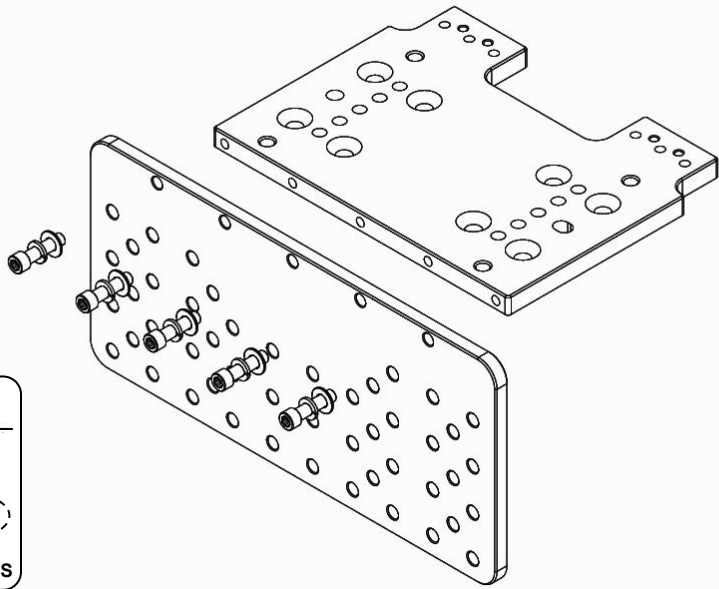
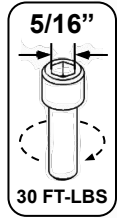
WIDE SETTINGS



STANDARD



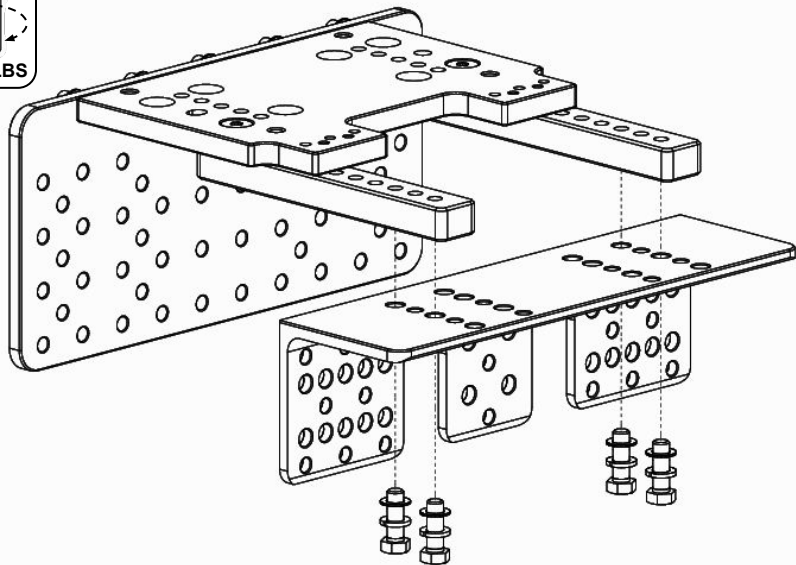
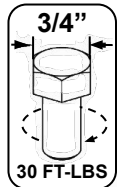
EXTENDED



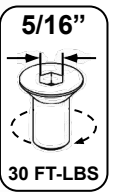
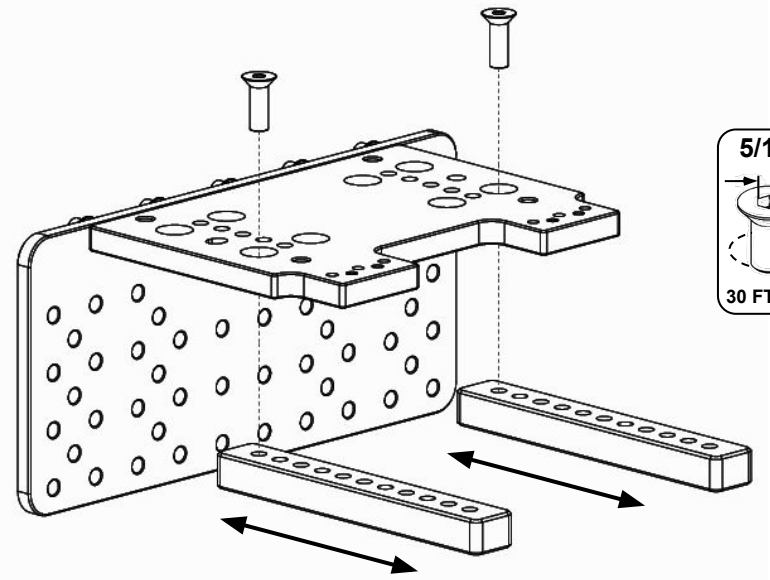
BASE PLATE/OUTBOARD PLATE - Bolt Outboard Plate to Base Plate.

1

ANGLE PLATE/EXTENSION BARS - Bolt Extension Bars to Angle Plate.



3

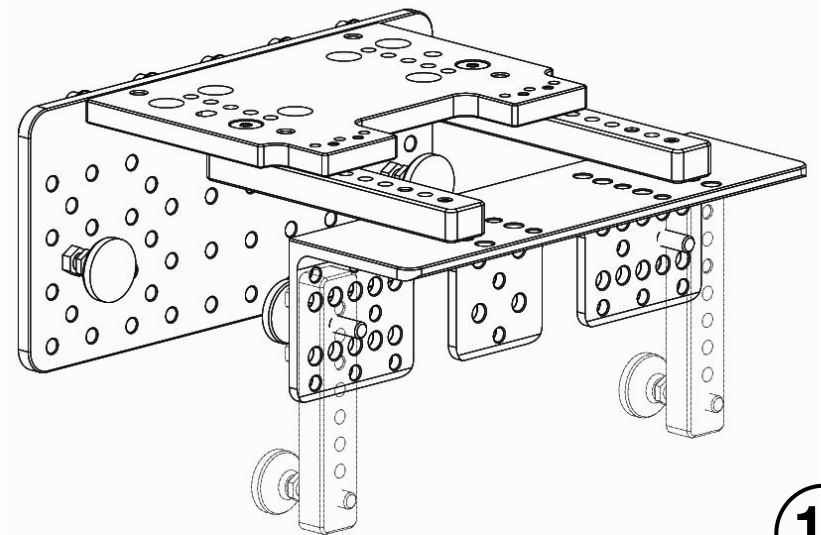


BASE PLATE/ANGLE PLATE - Bolt Angle Plate to Base Plate.

2

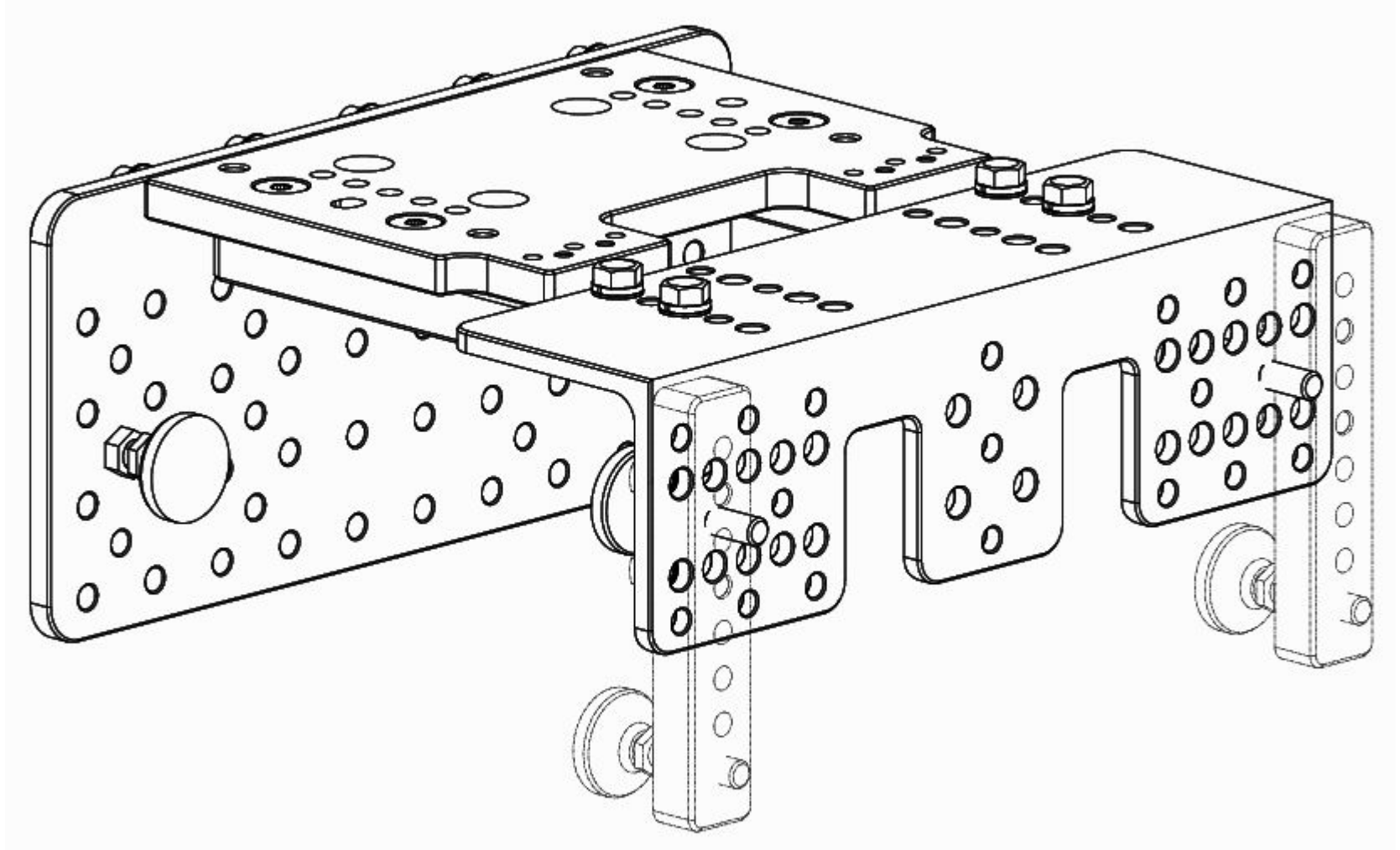
INSTALL LEVELING FEET - Install Leveling feet onto Outboard Plate and Clamp Bars.

4



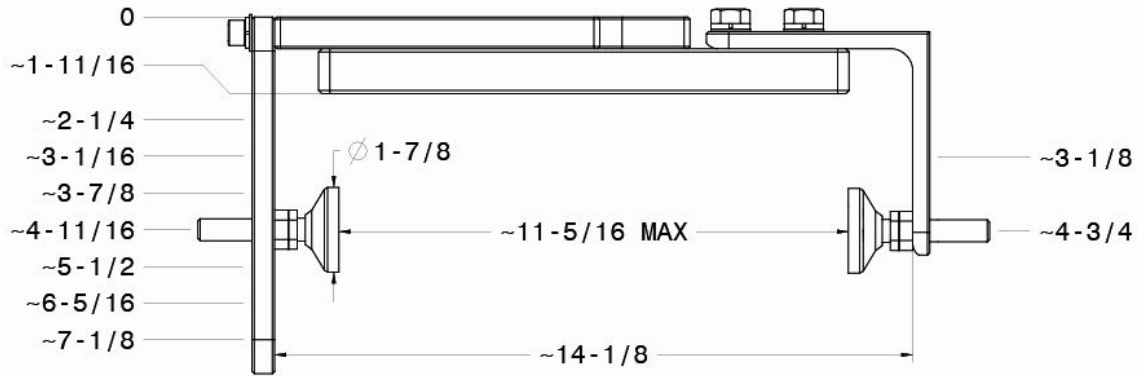


EXTENDED CONFIGURATION

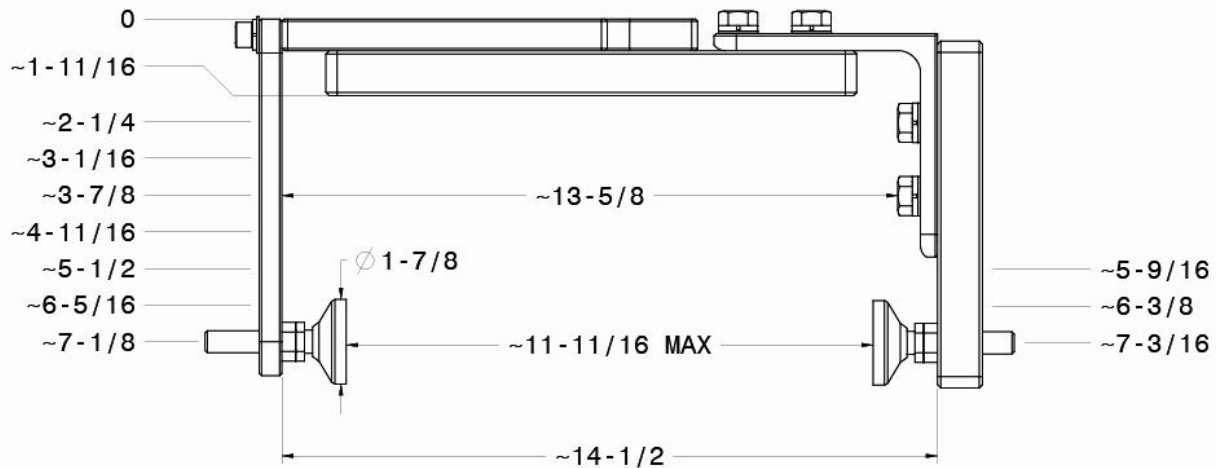




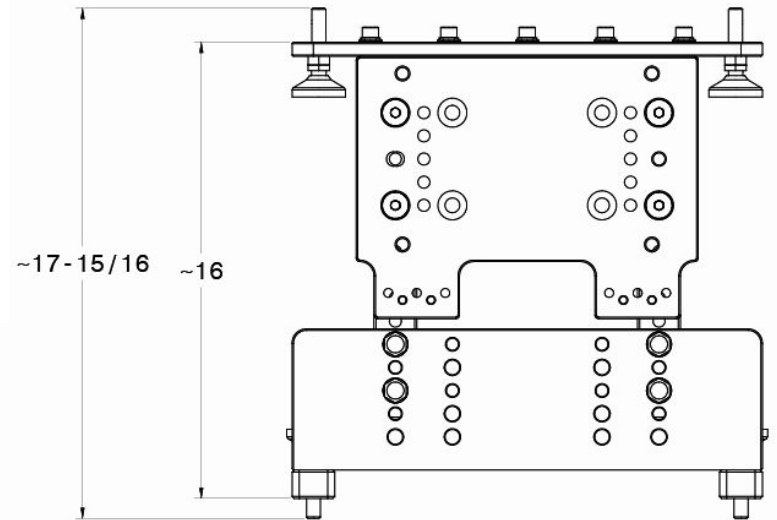
EXTENDED SETTINGS

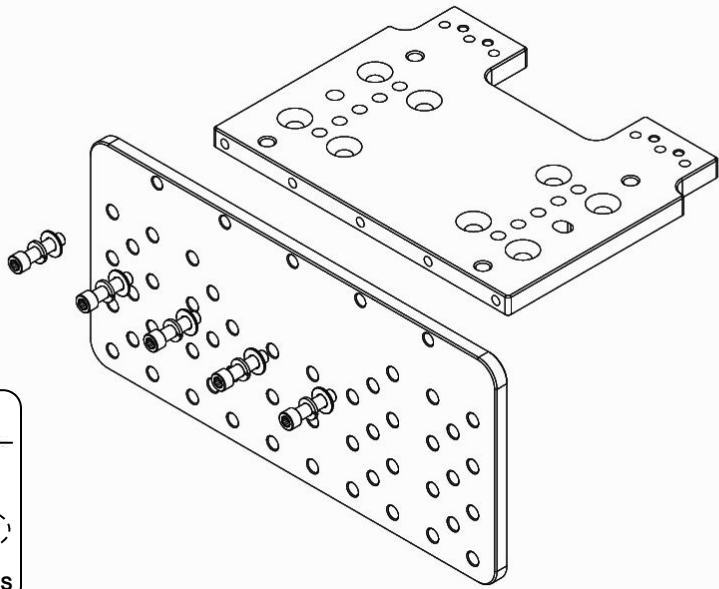
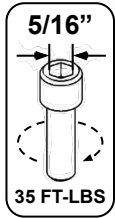


STANDARD



EXTENDED

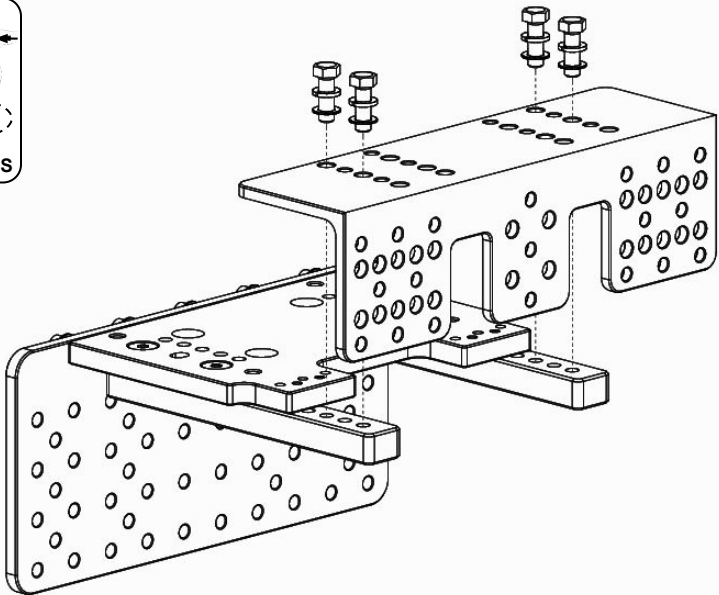
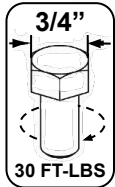




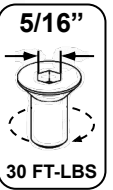
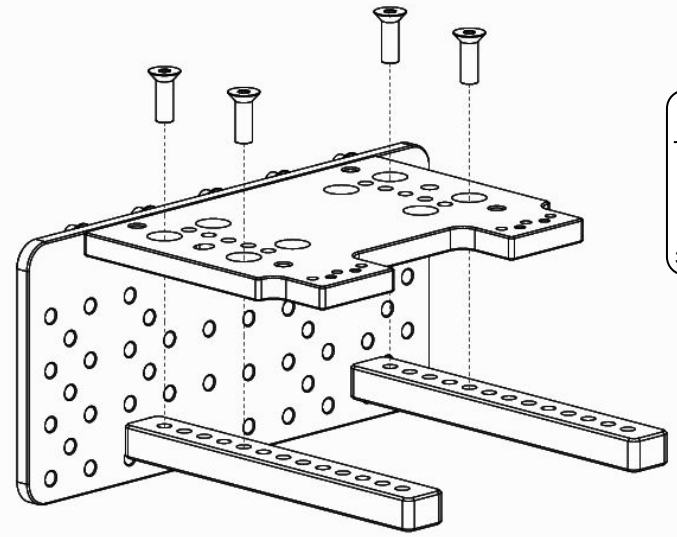
BASE PLATE/OUTBOARD PLATE - Bolt Outboard Plate to Base Plate.

1

ANGLE PLATE/EXTENSION BARS - Bolt Angle Plate to Extension Bars.



3

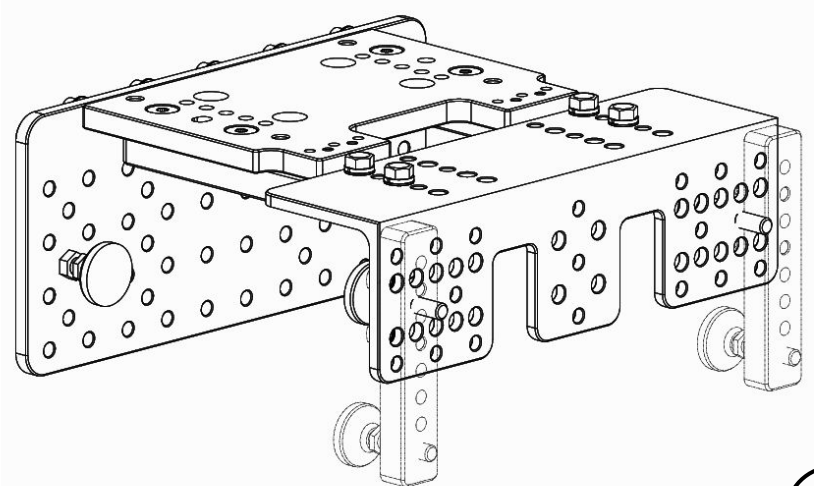


BASE PLATE/EXTENSION BARS - Bolt Extension Bars to Base Plate.

2

INSTALL LEVELING FEET - Install Leveling feet onto Outboard Plate and Clamp Bars.

4



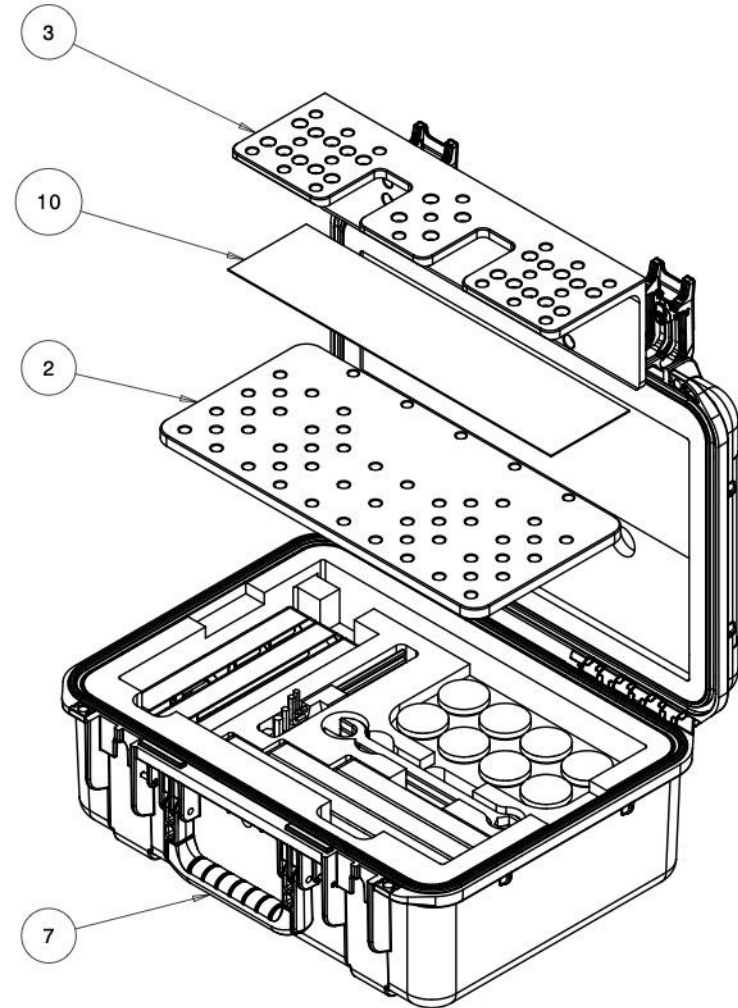
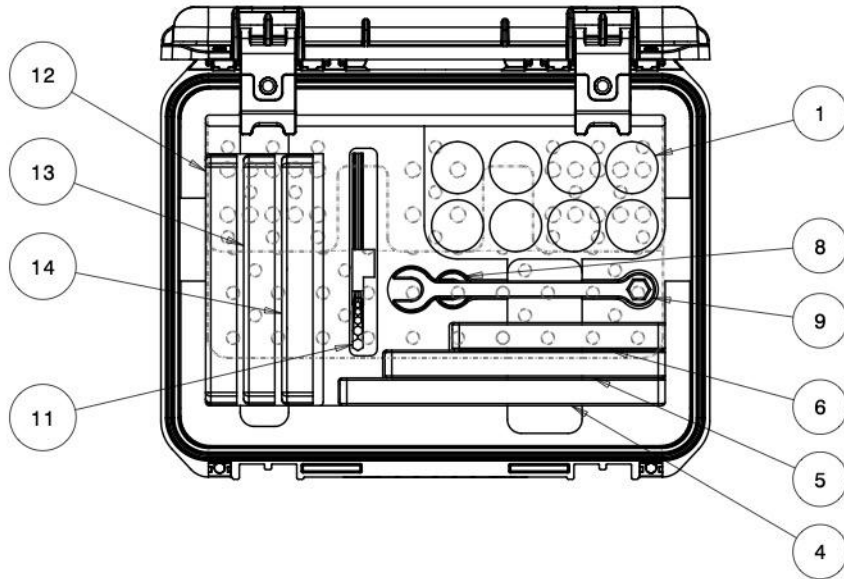
4

3

2

1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
--	1	INITIAL RELEASE	2016-NOV-01	
	2	ADDED RUBBER PAD	2018-JUL-09	
	3	ADDED 1/2-13 X 1.5" CUP POINT SET SCREW, 1/2-13 X 1.25 FHCS	2018-AUG-17	
	4	UPDATED FORMAT, HARDWARE, ANTI-MARRING TAPE, LONGER ALLEN KEYS	2022-JUN-21	MZ



14	1	599-4920-CV-C	ASSEMBLY, HARDWARE KIT C, COMP VOOP	ASSY	---
13	1	599-4920-CV-B	ASSEMBLY, HARDWARE KIT B, COMP VOOP	ASSY	---
12	1	599-4920-CV-A	ASSEMBLY, HARDWARE KIT A, COMP VOOP	ASSY	---
11	1	599-4010	ALLEN KEY SET, ULTRA COATED SILVER	MCMASTER	4891A25
10	1	599-4009-0	TAPE, NONABRASIVE ANTISLIP	MCMASTER	6243T731
9	2	599-4008	COMBINATION WRENCH, 3/4	MCMASTER	5304A51
8	2	599-4007	COMBINATION WRENCH, 5/8	MCMASTER	5304A48
7	1	520-901-9001	CASE, COMPACT VOOP	ASSY	---
6	2	520-101-1003-03	EXTENSION BAR, SHORT, COMPACT VOOP	FAB	---
5	2	520-101-1003-02	EXTENSION BAR, MEDIUM, COMPACT VOOP	FAB	---
4	2	520-101-1003-01	EXTENSION BAR, LONG, COMPACT VOOP	FAB	---
3	1	520-101-1002	ANGLE PLATE, COMPACT VOOP	FAB	---
2	1	520-101-1001	OUTBOARD PLATE, COMPACT VOOP	FAB	---
1	8	94-511-1875-500C-2000-700-20	LEVELING MNT, SWVL, 1/2-13UNC X 2.0, SST	MCMASTER	6111K62
ITEM NO.	QTY REQD.	PART NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.		CRED REPORTED PARAMETERS		DESIGNER		UNIVERSAL SONAR MOUNT	
TOLERANCES ARE:		CRED MATERIAL		G STAPLES		ASSEMBLY, COMPACT VOOP KIT	
.X +/- 0.1		CRED MASS		ENGINEER	G STAPLES	SIZE	CUSTOMER DRAWING/PART NO.
.XX +/- 0.01		140.000		DRAFTER	M ZASSO	C	---
.XXX +/- 0.001		CRED VOLUME		CHECKED	---		
ANGLES +/- 0.5		1611.341		2022-MM-DD		DRAWING/PART NO.	
INTERPRET DIMENSIONS PER ASME Y14.5M 1994 (R2004)		CRED DRAWING FILE NAME:		DO NOT SCALE DRAWING		520-901-9000	
		520-901-9000				SCALE 0.300	
						SHEET 1 OF 4	

CUSTOMER DRAWING/PART NO.

DRAWING/PART NO. 520-901-9000

REV 4

SHEET 1

A

4

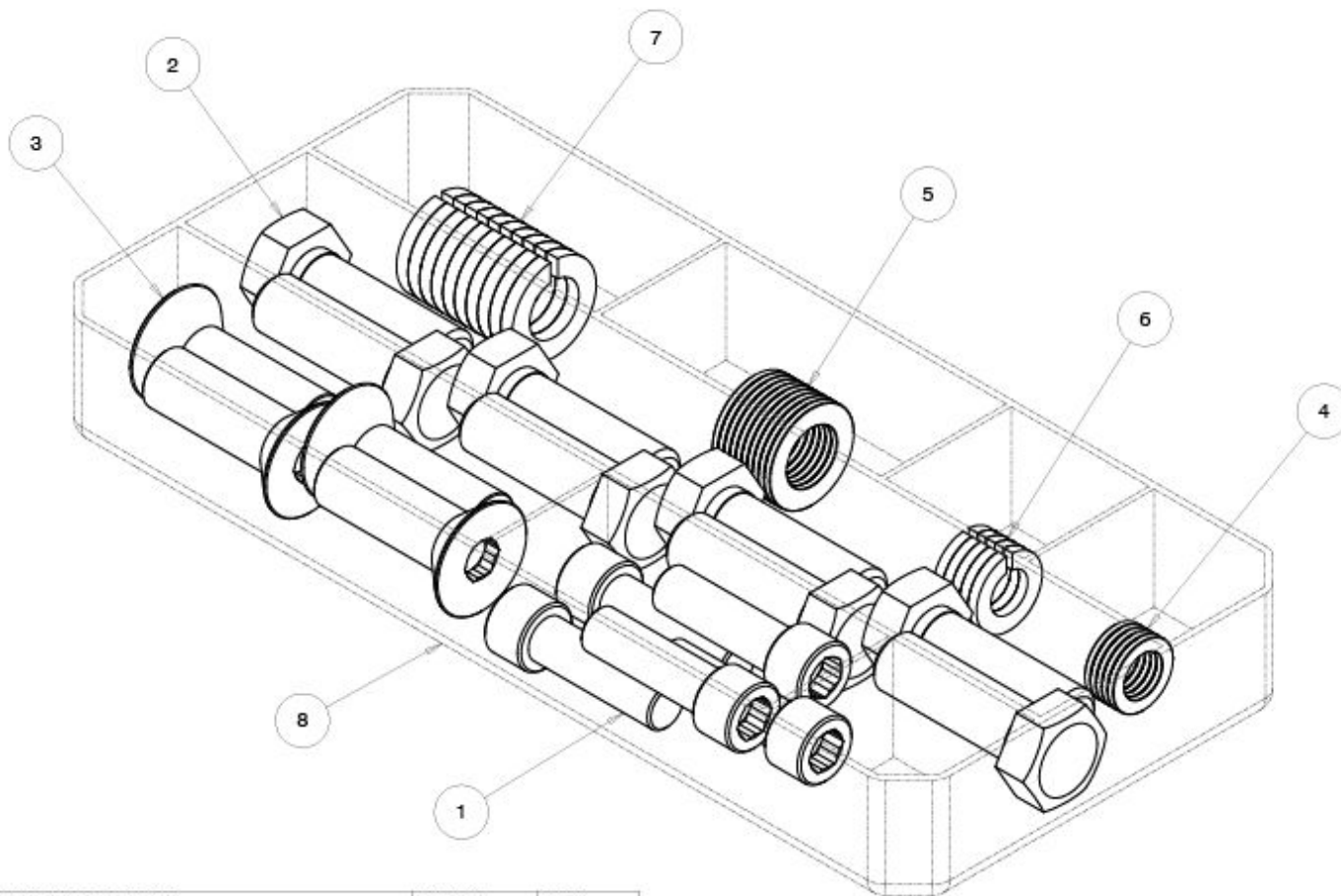
3

2

1

 REVISIONS
 SEE SHEET 1

COMPACT VOOP HARDWARE KIT A



ITEM NO.	QTY. REQD.	PART OR IDENTIFYING NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.
0	1	599-4020-CV-A	HARDWARE BOX A, COMP VOOP	FLAMBEAU	T3003
7	10	90-310-510-070-120-20	WASHER, SPLIT LOCK .510 ID X .07 X .120TK, SST	MCMMASTER	92146A038
6	5	90-310-300-600-090-20	WASHER, SPLIT LOCK .300 ID X .60 OD X .090TK, 15-8 SST	MCMMASTER	92146A031
5	10	90-300-515-075-060-20	WASHER, .515 ID X .075 OD X .060 THK, 15-8	MCMMASTER	90017A210
4	5	90-300-390-625-060-20	WASHER, .390 X .625 OD X .060 THICK, SST	MCMMASTER	90017A200
3	4	90-110-500C-1500-20	SCREW, 1/2-13 UNC X 1.500 PHC 15-8	MCMMASTER	92210A716
2	8	90-104-500C-1500-20	HEX BOLT, 1/2-13 X 1.500 SST 15-8	MCMMASTER	92240A716
1	5	90-100-375C-1250-20	SCREW, 3/8-16 X 1.250 SHC 15-8	MCMMASTER	92196A626

UNIVERSAL SONAR MOUNT

ASSEMBLY, COMPACT VOOP KIT

SIZE	CUSTOMER ORDER/PART NO.	REV
C	520-901-9000	4
SCALE	0.300	SHEET 2 OF 4

ORDER DRAWING NO.

DRAWING NO. 520-901-9000

REV. 4

A

4

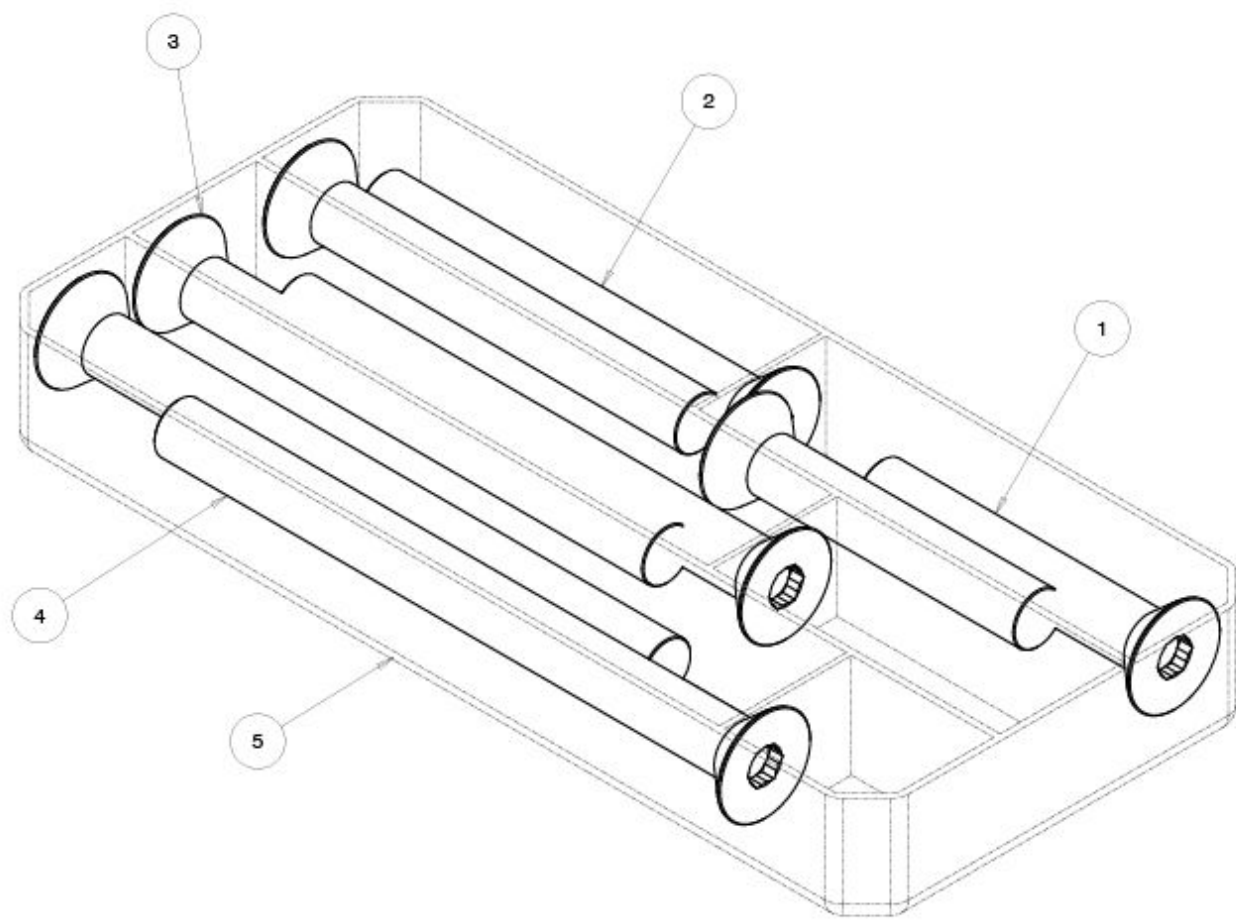
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2

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REVISIONS
SEE SHEET 1

COMPACT VOOP HARDWARE KIT B



ORDER DRAWING NO. ---
DRAWING NO. 520-901-9000
REV. 4
REV. 3

ITEM NO.	QTY.	PART OR IDENTIFYING NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.
5	1	599-4020-CV-B	HARDWARE BOX B, COMP VOOP	FLAMBEAU	T8008
4	2	90-110-500C-6000-20	SCREW, 1/2-18 UNC X 6.0 PHC 18-8	MCMASTER	92210A784
3	2	90-110-500C-5000-20	SCREW, 1/2-18 UNC X 5.0 PHC 18-8	MCMASTER	92210A782
2	2	90-110-500C-4000-20	SCREW, 1/2-18 UNC X 4.0 PHC 18-8	MCMASTER	92210A726
1	2	90-110-500C-3000-20	SCREW, 1/2-18 UNC X 3.0 PHC 18-8	MCMASTER	92210A724

UNIVERSAL SONAR MOUNT

ASSEMBLY, COMPACT VOOP KIT

SIZE	CUSTOMER ORDER/PART NO.	REV
C	---	4
DRAWING/PART NO.		
520-901-9000		
SCALE	0.300	SHEET 3 OF 4

4

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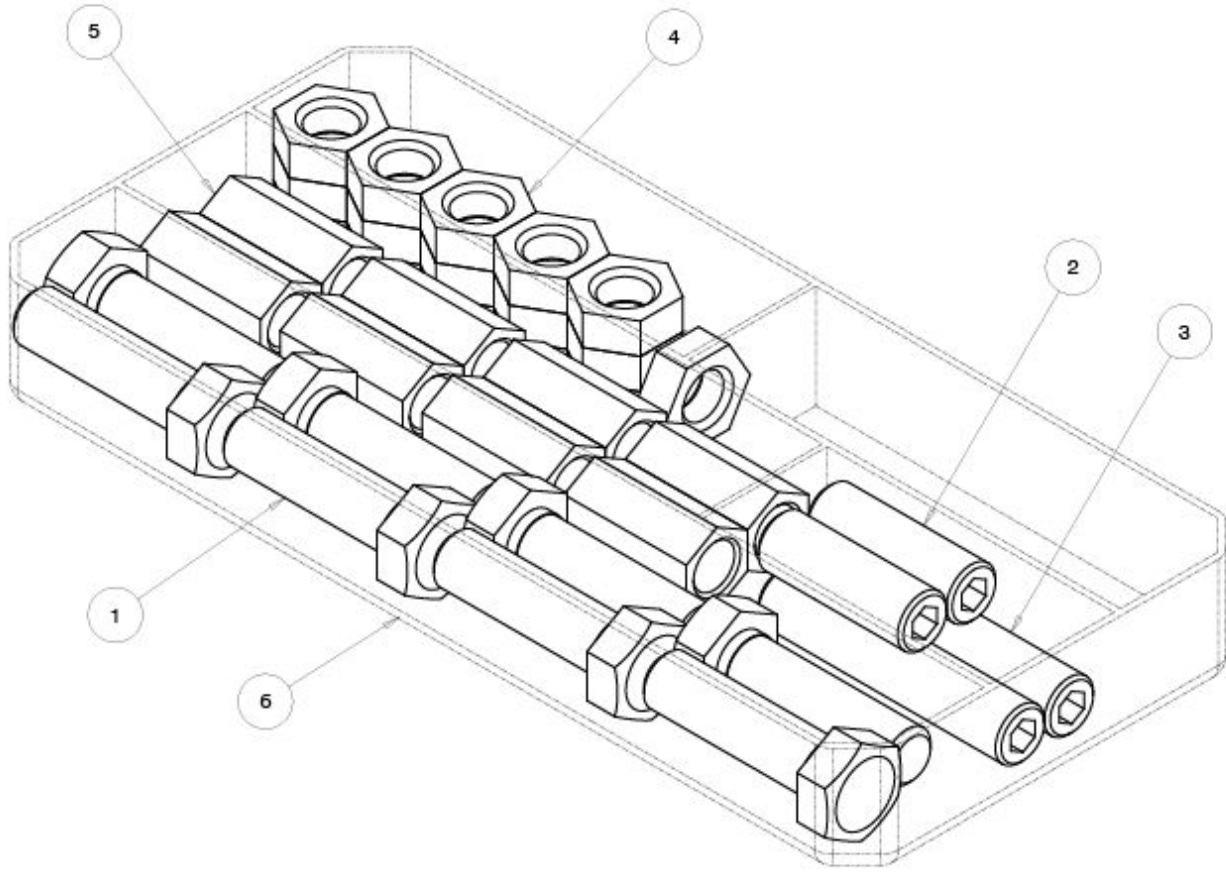
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REVISIONS
SEE SHEET 1

COMPACT VOOP HARDWARE KIT C



ITEM NO.	QTY. REQD.	PART OR IDENTIFYING NO.	DRAWING TITLE OR DESCRIPTION	MANUFACTURER	MFG PART NO.
6	1	699-4020-CV-C	HARDWARE BOX C, COMP VOOP	FLAMBEAU	T3003
5	5	503-4005	COUPLING NUT, 1/2-13 X 1.25L, SST	MCMASTER	90268A083
4	16	90-201-500C	JAM NUT, 3/4"-16	MVC	
3	2	90-151-500C-2500-20	SET SCREW, CUP POINT 1/2-13 UNC X 2.5L, SST	MCMASTER	92311A721
2	2	90-151-500C-1500-20	SET SCREW, CUP POINT 1/2-13 UNC X 1.5L, SST	MCMASTER	92311A716
1	5	90-104-500C-1750-20	HEX BOLT, 1/2-13 X 1.750 SST 16-8	MCMASTER	92240A716

UNIVERSAL SONAR MOUNT

ASSEMBLY, COMPACT VOOP KIT

SIZE	CUSTOMER ORDER/PART NO.	REV
C	---	4
	DRAWING/PART NO.	
	520-901-9000	
SCALE	0.300	SHEET 4 OF 4

ORDER DRAWING/PART NO. ---
 DRAWING/PART NO. 520-901-9000
 REV. 4

4

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