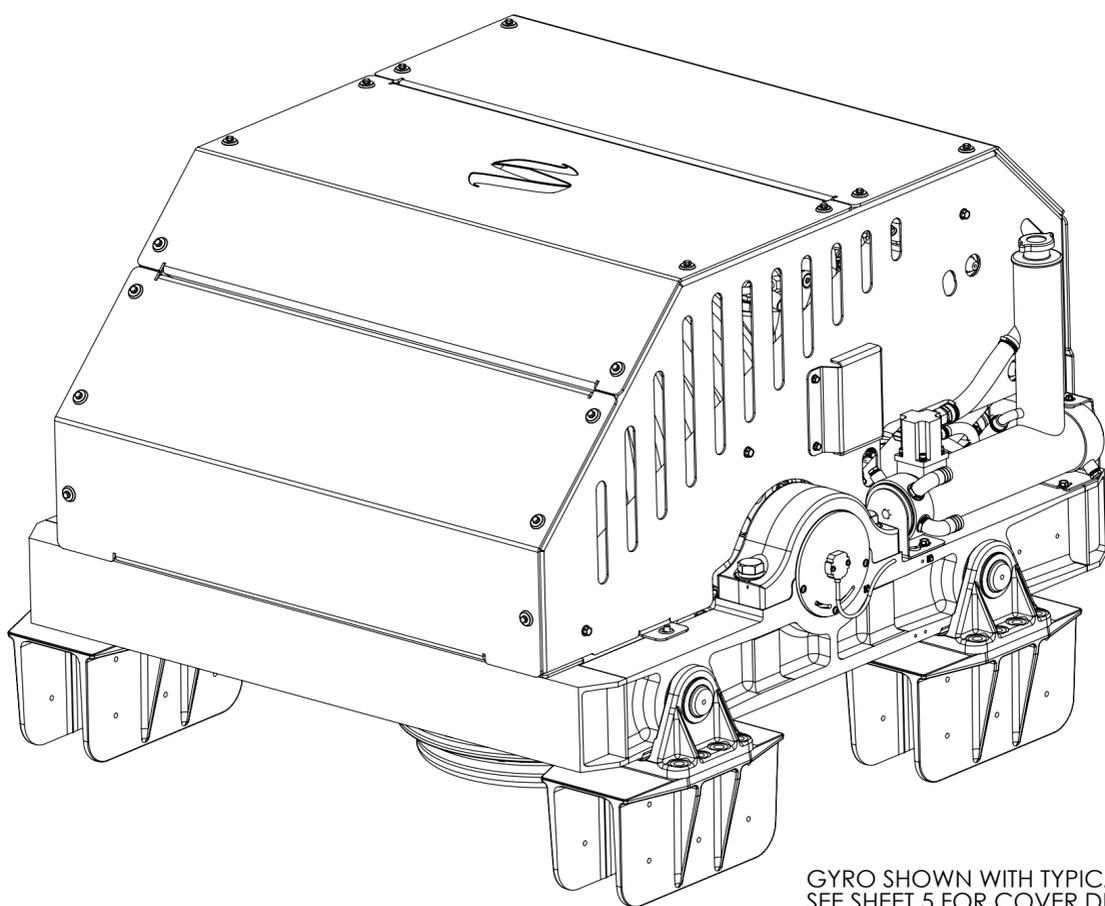


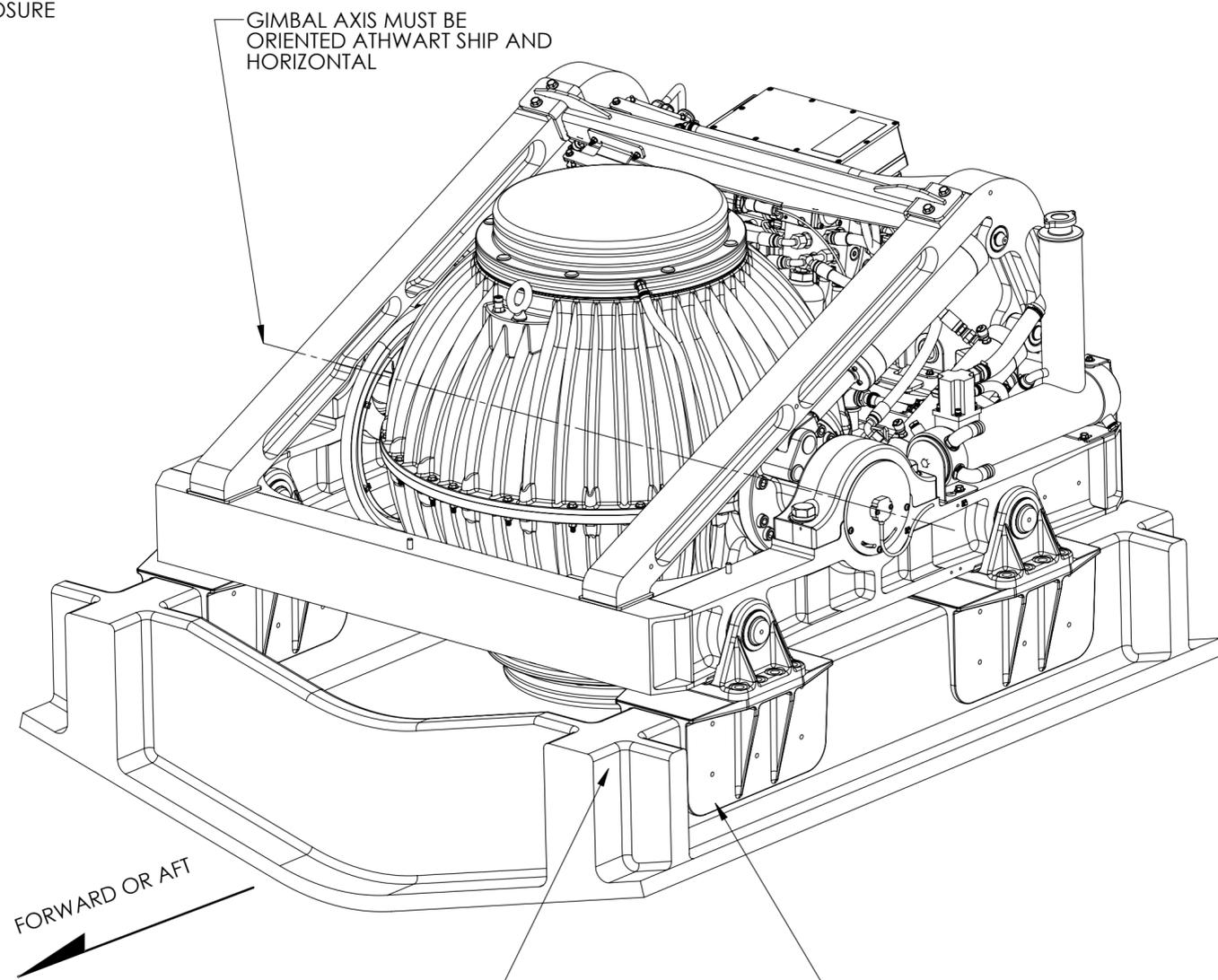
NOTES:

- 1) GYRO ASSEMBLY WEIGHT = 3920 LBS. (1778 kg)
- 2) RAW WATER COOLING REQUIREMENT IS 10-14 GPM (38-53 LPM). PROVIDED CONNECTIONS ARE 1 INCH  $\phi$  (25MM) HOSE BARB. USE OF RAW WATER STRAINER IS REQUIRED.
- 3) TWO LIFTING EYES ARE PROVIDED ON THE TOP OF THE GYRO FOR USE WITH A CHAIN/SPREADER BAR (SEE SHEET4).
- 4) IF A SOUND ENCLOSURE IS BUILT AROUND THE GYRO ASSEMBLY, A CIRCULATION/EXCHANGE FAN IS RECOMMENDED TO MAINTAIN AIR INSIDE THE SOUND ENCLOSURE AT THE SAME TEMPERATURE AS COMPARTMENT IN WHICH GYRO IS INSTALLED.  
  
NOTE THAT 20MM (3/4 INCH) OF CLEARANCE SHOULD BE PROVIDED IN ALL DIRECTIONS BETWEEN ANY ENCLOSURE AND THE GYRO'S SUPPORTING FRAME AND BRAKE MOUNTS AS THE GYRO WILL MOVE SLIGHTLY DURING OPERATION ON IT'S FOUR ISOLATION MOUNTS.
- 5) MUST USE SEAKEEPER ASSY NO.90088, BOND-IN INSTALLATION FIXTURE KIT , PROVIDED WITH GYRO, TO PROPERLY SPACE AND ALIGN SADDLES FOR BONDING PROCESS.
- 6) SEE SHEET 2 FOR HULL STRUCTURE INTERFACE DIMENSIONS AND REQUIRED CLEARANCE UNDER UNIT FOR MOVEMENT OF CABLES AND HOSES.
- 7) SEE REFERENCES 1 THROUGH 6 FOR INSTALLATION INFORMATION.

REV NO.	ECN NO.	ZONE	DESCRIPTION	DATE	APPRVD.
1	177		INITIAL RELEASE	08/08/2014	BRD
2	332		CHANGE DWG REF #3 TO 90337, WAS 90231	29SEP2016	BRD
3	469		ADDED 30HD TO TITLE BLOCK.	19OCT2016	BRD



GYRO SHOWN WITH TYPICAL COVERS. SEE SHEET 5 FOR COVER DETAILS.



STRUCTURAL SUPPORT SHALL BE PARALLEL TO VESSEL WATERLINE

ALUMINUM SADDLE FITTINGS TO BE BONDED TO BUILDER PROVIDED GRP LONGITUDINAL BEAMS / HULL STRUCTURE SEE NOTE 5

SEE SHEET 2 FOR GYRO FOUNDATION DIMENSIONS

SEE SHEET 6 FOR GYRO LOADS FOR HULL FOUNDATION DESIGN

SEE NOTE 4 FOR SAFETY/SOUND ENCLOSURE

FORWARD OR AFT

REF.	PART NO.	DESCRIPTION
1	90290	SEAKEEPER 35 GYRO COOLING WATER SCHEMATIC
2	90288	SEAKEEPER 35 GYRO CABLE BLOCK DIAGRAM
3	90337	OPERATOR DISPLAY ENVELOPE & MOUNTING INSTRUCTIONS
4	90088	SEAKEEPER 35 GYRO BOND-IN INSTALLATION FIXTURE KIT
5	90268	SEAKEEPER 35 GYRO INSTALLATION MANUAL
6	90287	SEAKEEPER 35 GYRO BOND-IN INSTALLATION KIT

**PROPRIETARY AND CONFIDENTIAL**

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**SEAKEEPER**  
Seakeeper Inc. 44425 Pecan Court, Suite 151 California, MD 20619

NAME: SEAKEEPER 35 / 30HD GYRO, BOND-IN INSTALLATION DETAILS

DWG NUMBER: **90255**

REV. NO. SHEET NO.: **3** 1 OF 6

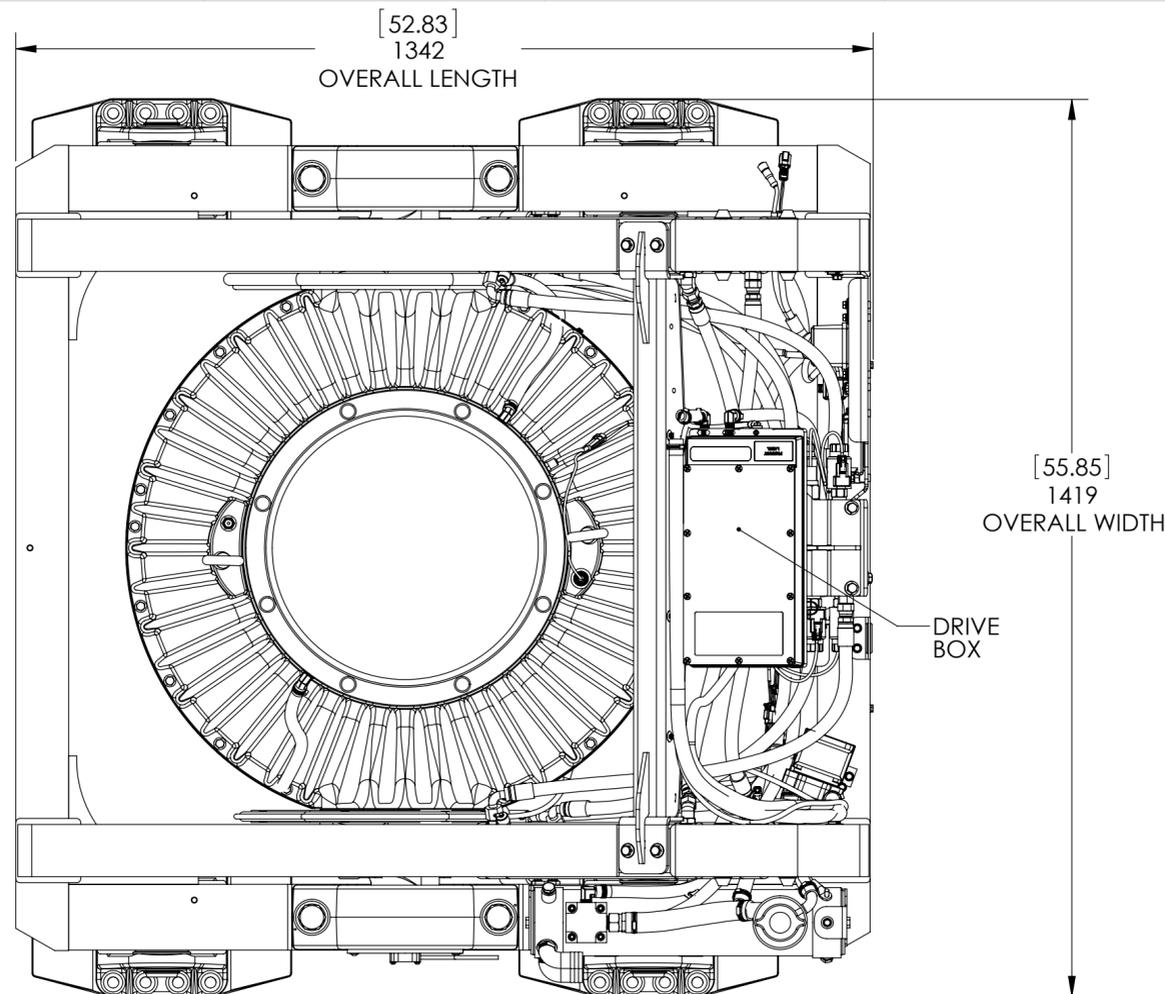
WEIGHT - LBS: ---

MATERIAL: ---

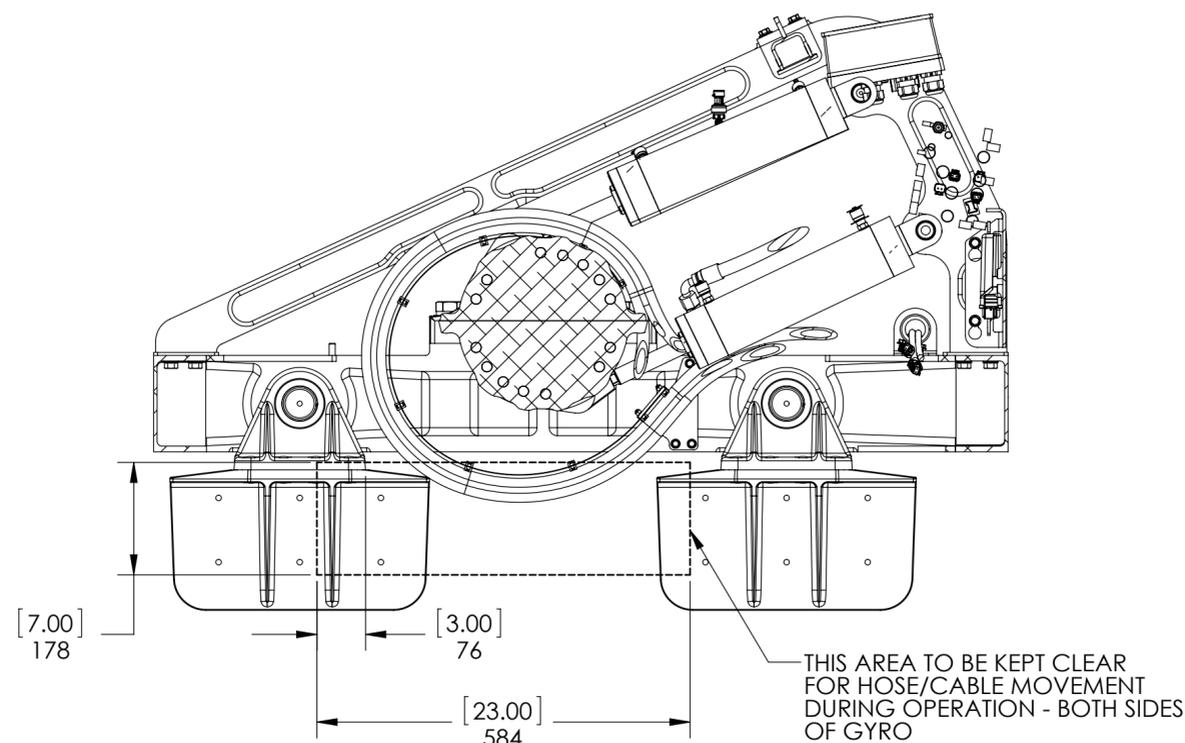
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ENG APPR: BRD DATE: 29 JUL 2014

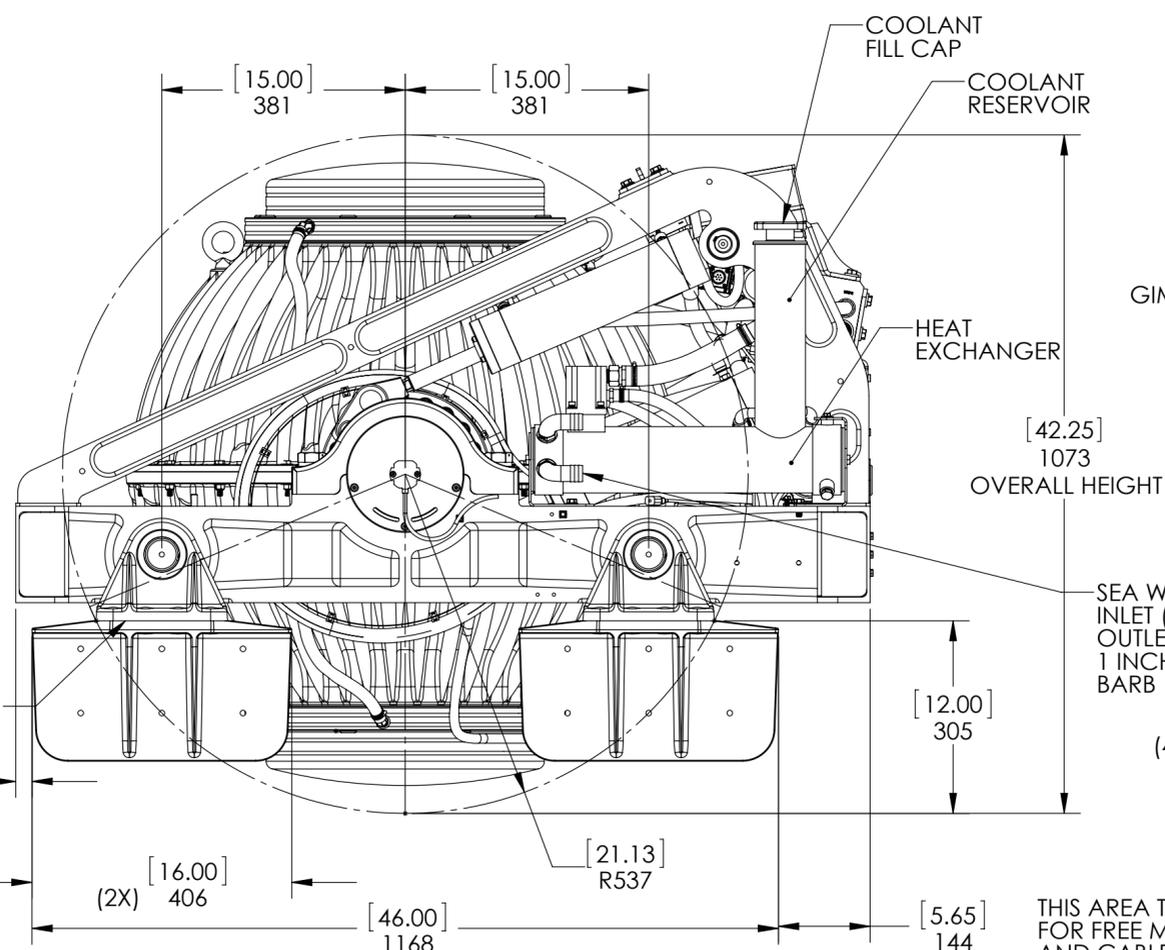
PROD APPR: --- DATE: ---



**TOP VIEW**

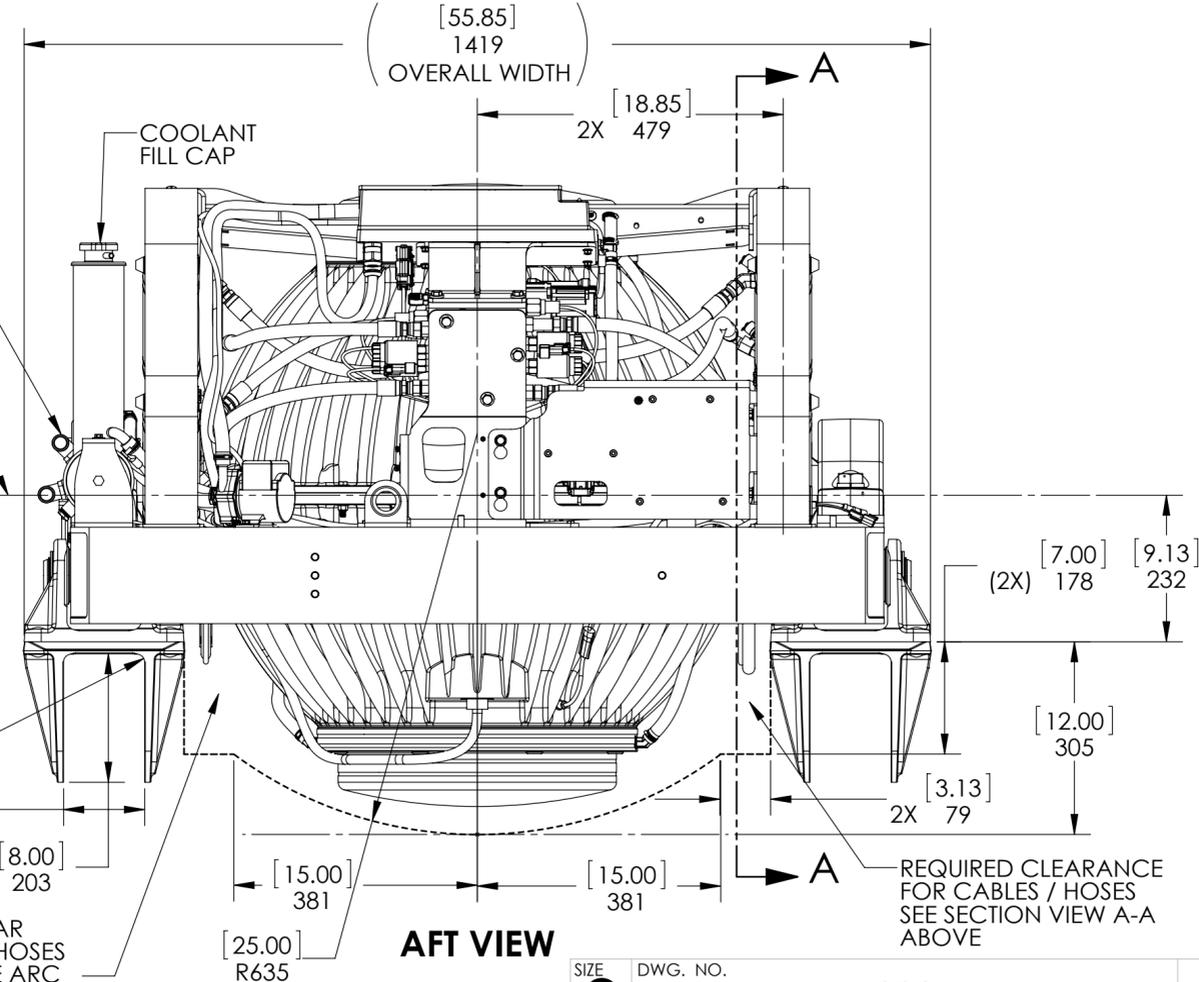


SECTION A-A  
SCALE 1 : 8



**PORT SIDE VIEW**

THIS AREA TO BE KEPT CLEAR FOR FREE MOVEMENT OF HOSES AND CABLES. CLEARANCE ARC SHOULD BE SWEEPED +/- 70 ° ABOUT THE GIMBAL AXIS



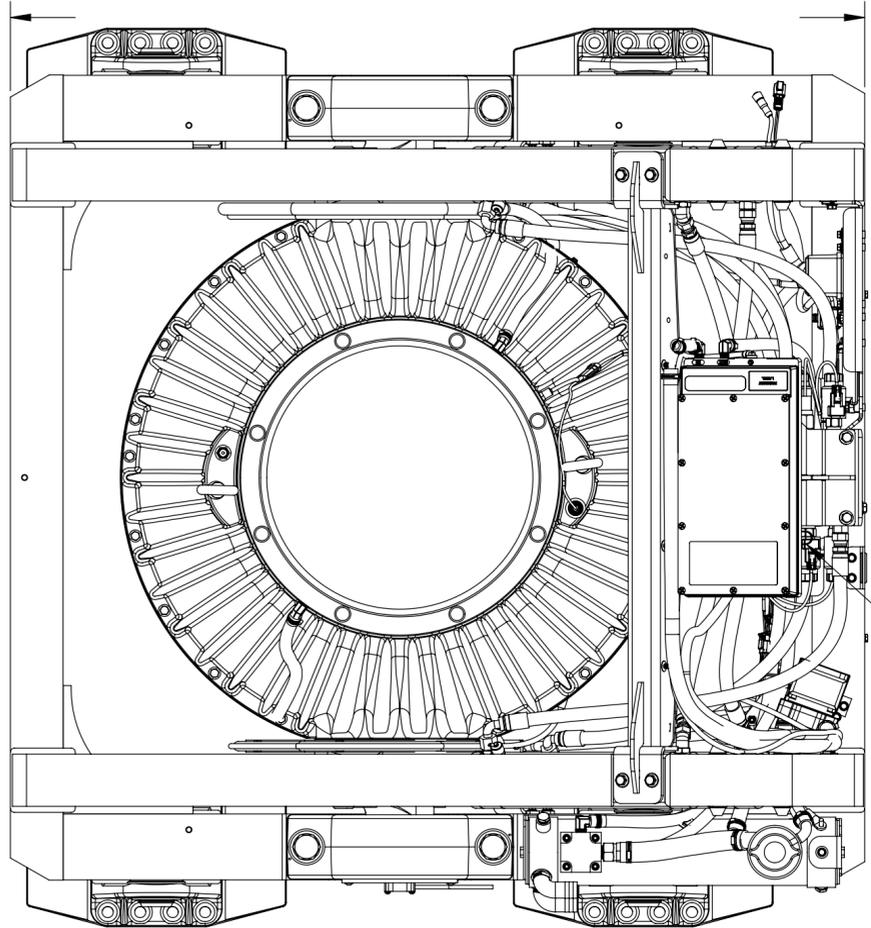
**AFT VIEW**

SIZE	DWG. NO.	REV
<b>C</b>	<b>90255</b>	<b>3</b>
		SHEET 2

8 7 6 5 4 3 2 1

[4.00]  
102  
SERVICE  
ACCESS

[4.00]  
102  
SERVICE  
ACCESS



— BRAKE HYDRAULIC  
OIL FILL / PRESSURIZE

70°  
NEGATIVE  
PRECESSION

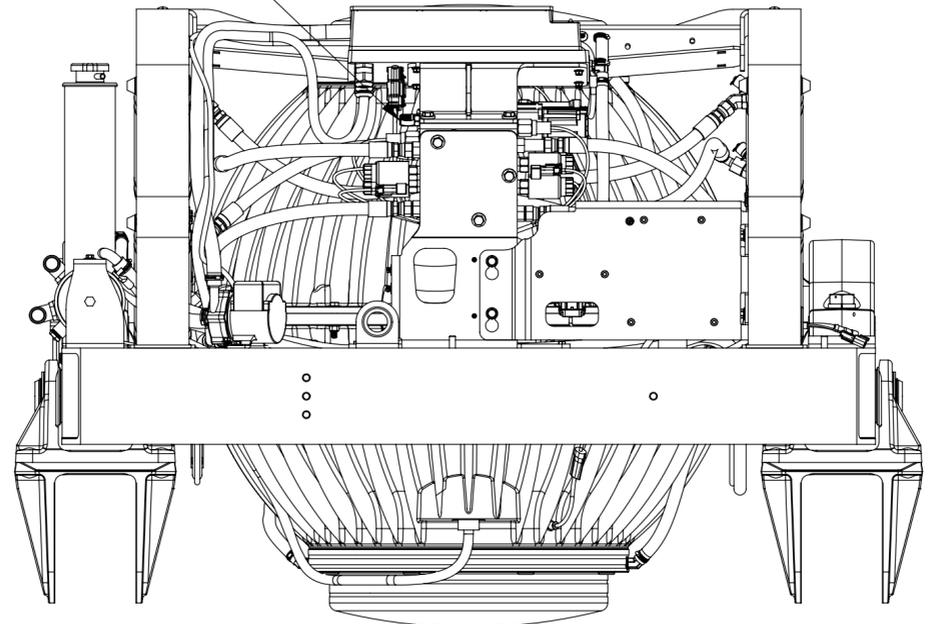
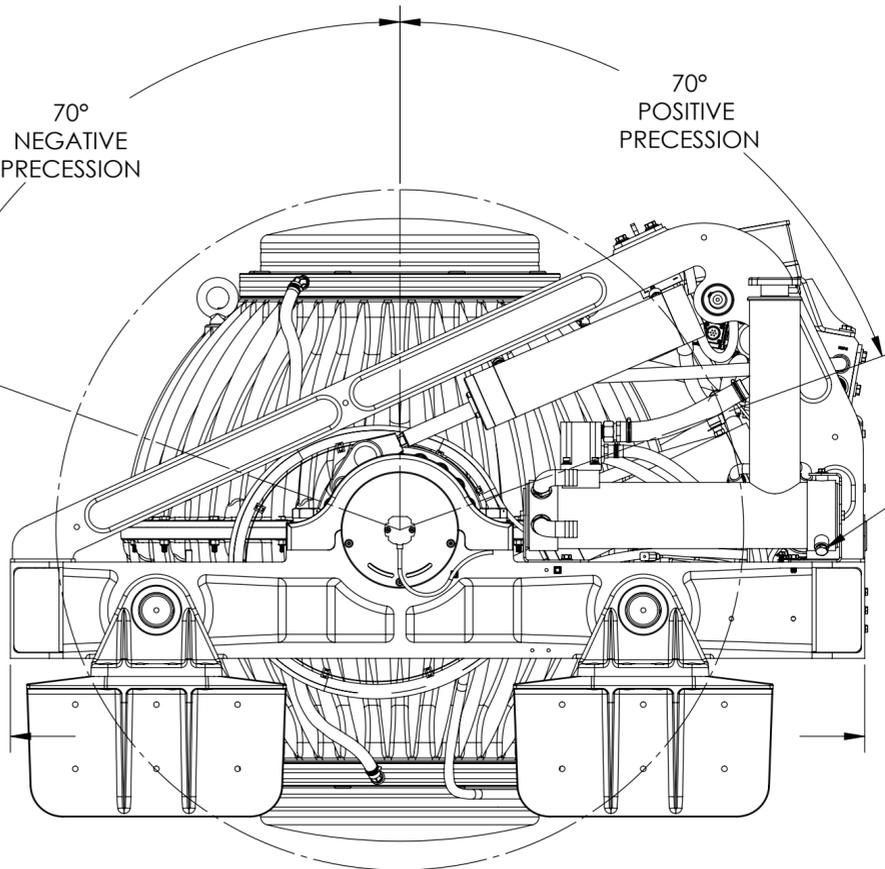
70°  
POSITIVE  
PRECESSION

— BRAKE HYDRAULIC  
OIL FILL / PRESSURIZE

— SACRIFICIAL  
ANODE

[4.00]  
102  
SERVICE  
ACCESS

[4.00]  
102  
SERVICE  
ACCESS



**VIEWS SHOWING RECOMMENDED TOOL CLEARANCES  
FOR EASE OF MAINTENANCE**

SIZE	DWG. NO.	REV
<b>C</b>	<b>90255</b>	<b>3</b>
		SHEET 3

8 7 6 5 4 3 2 1

8

7

6

5

4

3

2

1

F

E

D

C

B

A

F

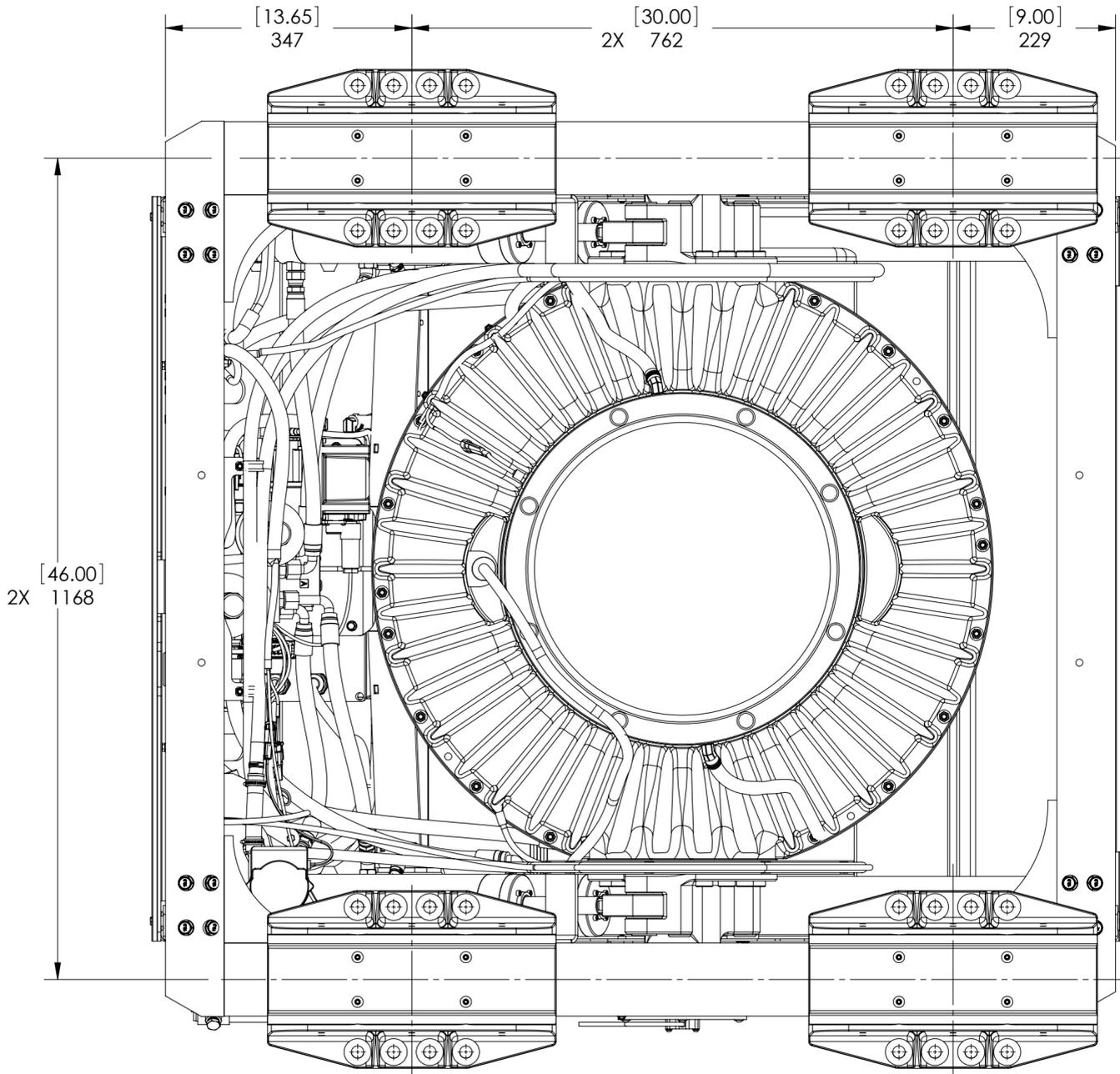
E

D

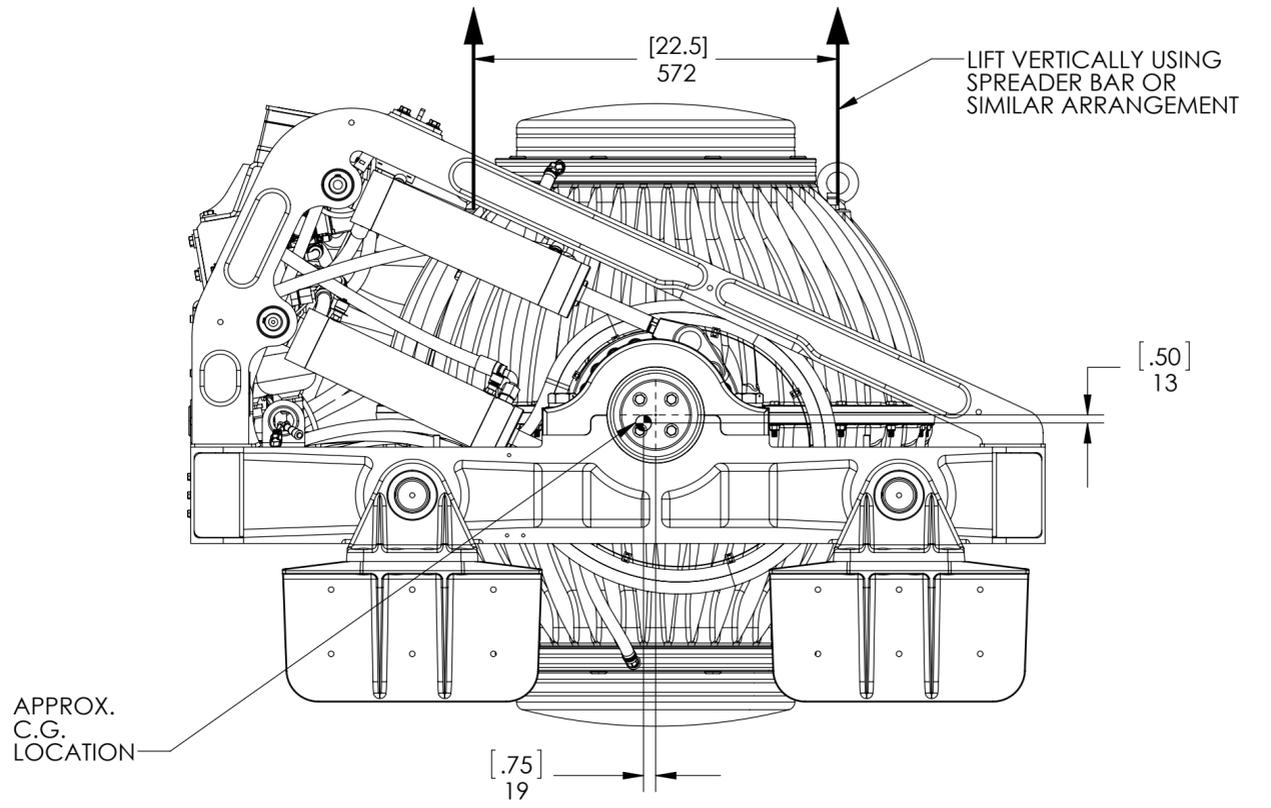
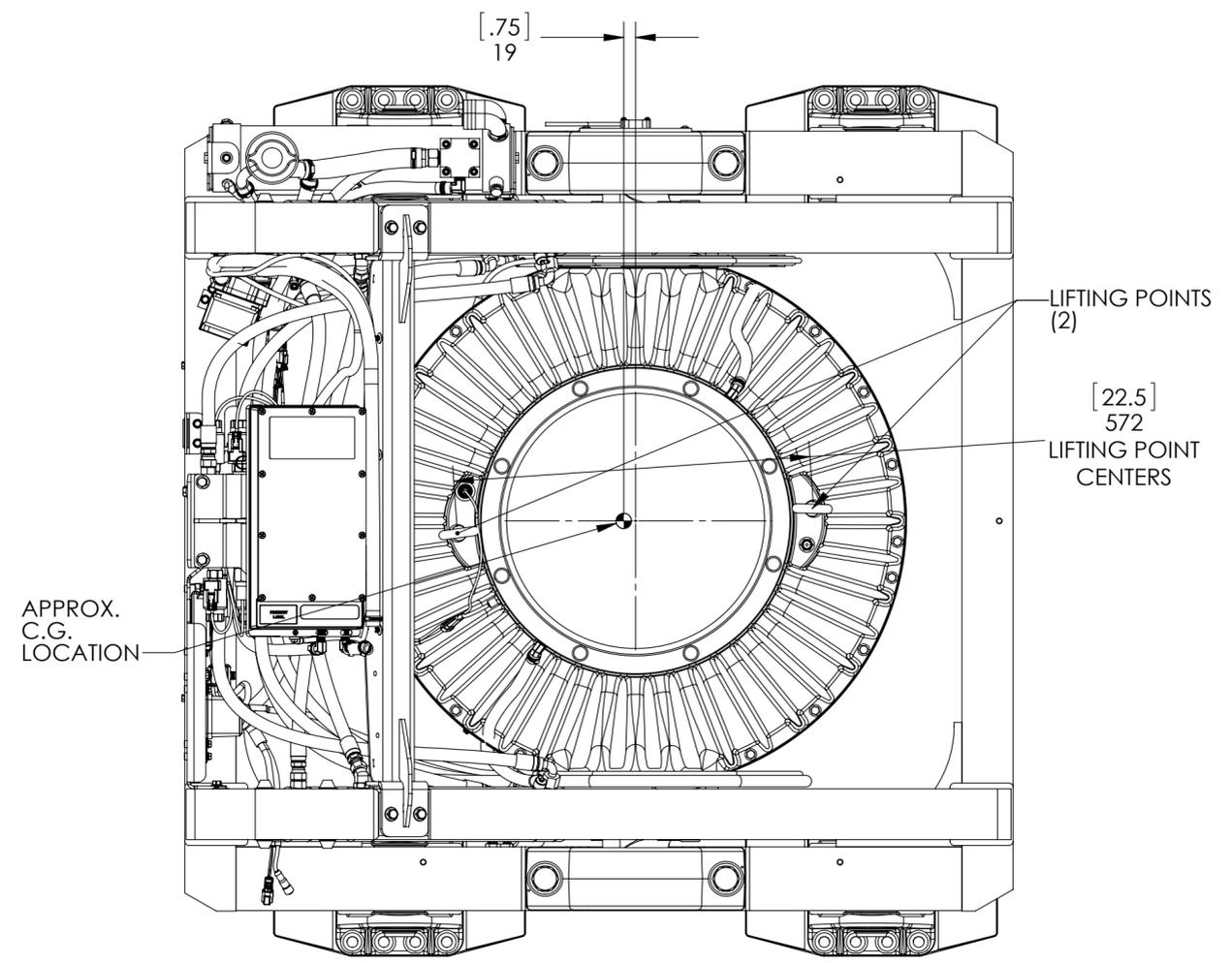
C

B

A



**BOTTOM VIEW  
SHOWING SADDLES**



SIZE <b>C</b>	DWG. NO. <b>90255</b>	REV <b>3</b>
		SHEET 4

8

7

6

5

4

3

2

1

8

7

6

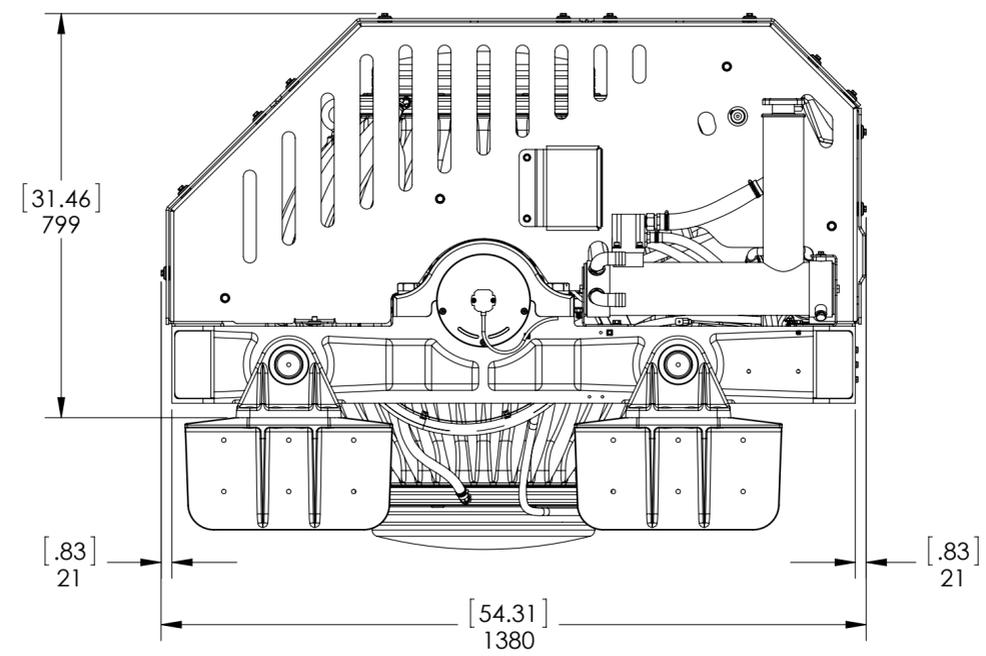
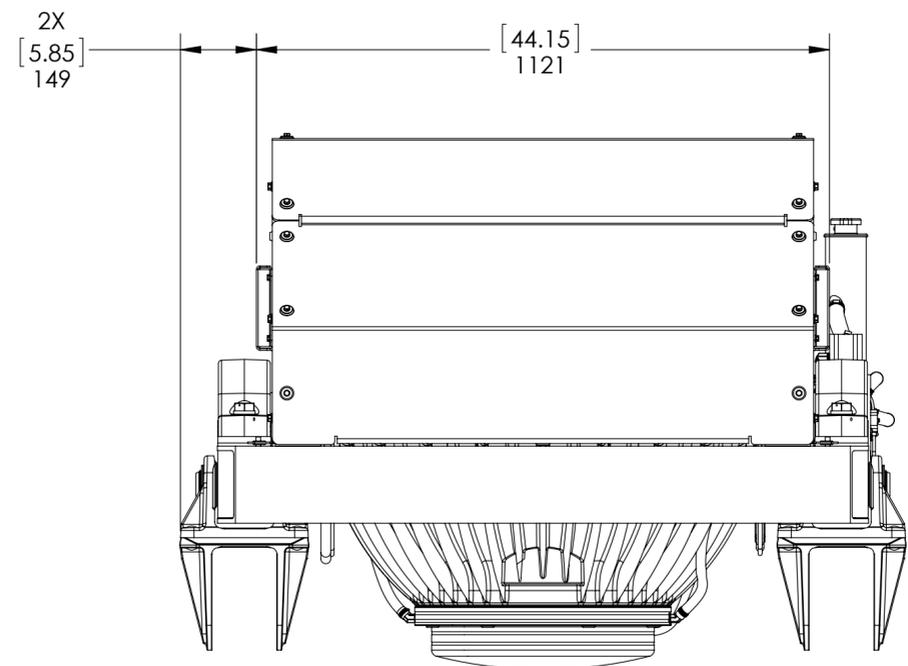
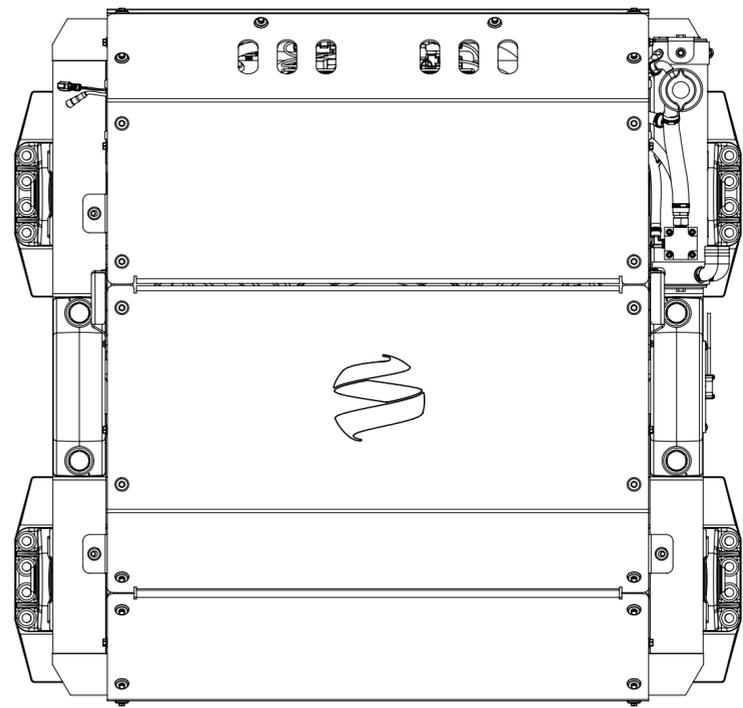
5

4

3

2

1



SIZE	DWG. NO.	REV
<b>C</b>	<b>90255</b>	<b>3</b>
		SHEET 5

**GYRO LOADS FOR STRUCTURAL DESIGN:**

The Gyro is mounted in a foundation frame which is bolted to four aluminum saddle fittings made of A356-T6 cast aluminum. The gyro frame incorporates semi-elastic anti-vibration mounts whose intent is to damp vibrations from being transmitted into the hull structure. The saddles are designed to be permanently attached to longitudinal GRP hull beams with a structural adhesive. This mounting arrangement distributes the cyclic, fully reversing forces and moments generated by the Gyro over a large surface area. The bonded-in saddles are **not** designed to be bolted to the hull structure and this method of attachment should never be attempted without consultation with Seakeeper.

The Gyro generates pitch moments, roll moments, yaw moments and vertical and horizontal forces - the magnitude of which is controlled by the Gyro's active brake system. These Gyro generated forces and moments result in loads being applied at the four points, 105mm (4.13 in.) above the saddle fittings as shown in the figure to the right.

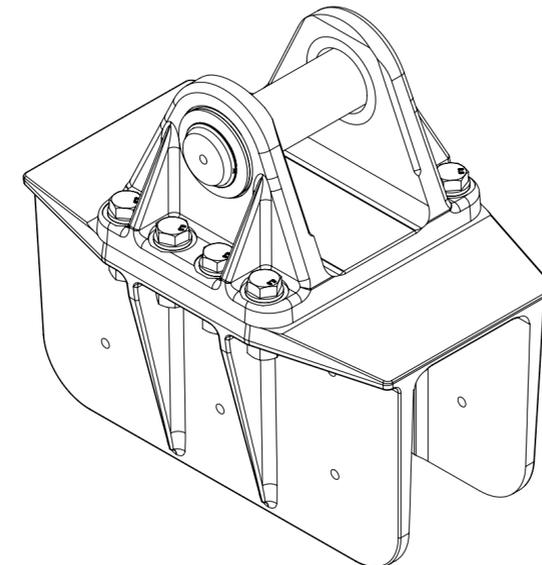
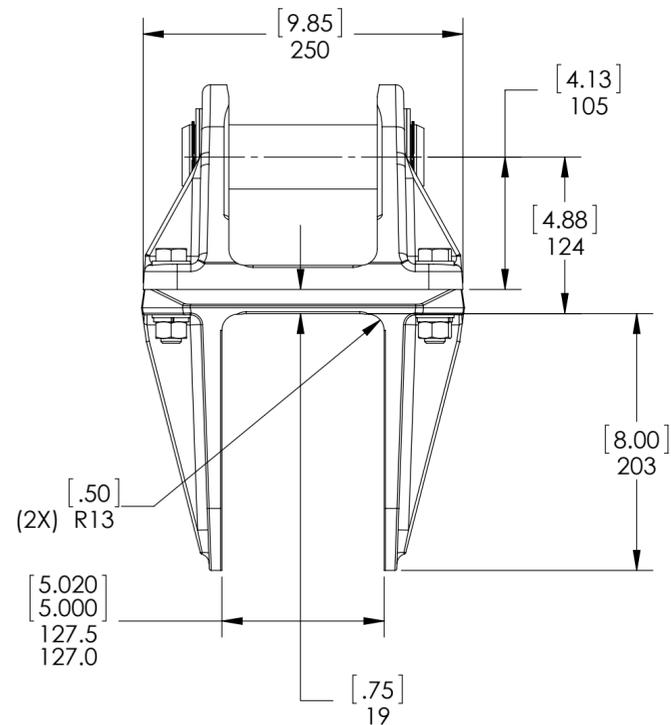
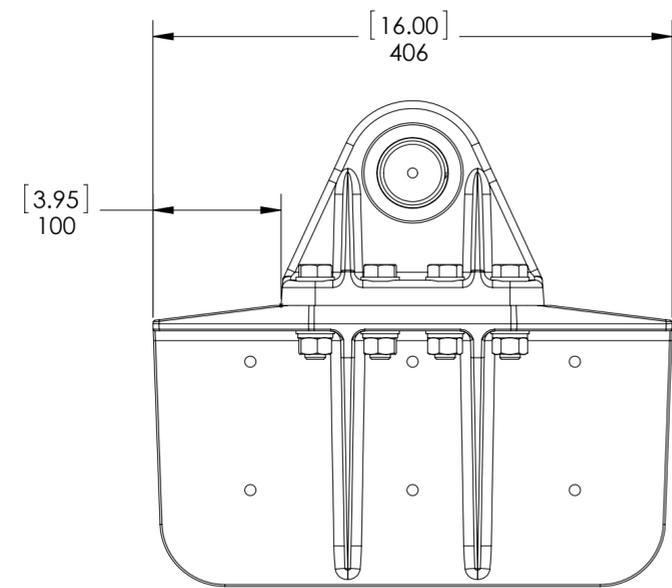
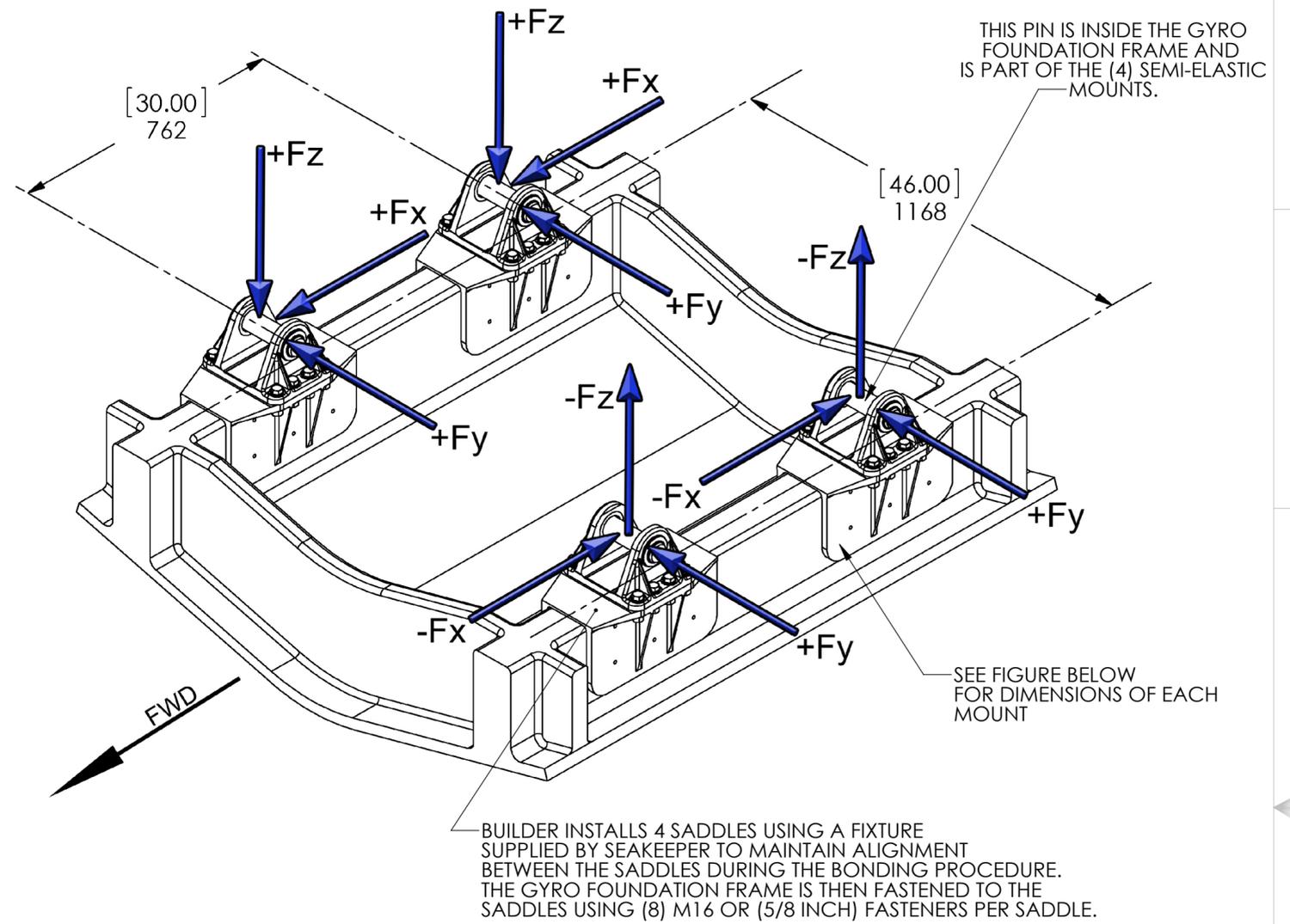
The reference point is the center of the pin in each of the anti-vibration mounts. The resultant forces at these points are illustrated on the adjacent figure and values to be used for foundation design are summarized below:

- Fz vertical = 41.25kN (9274 lb)
- Fx Longitudinal = 13.46 kN (3026 lb)
- Fy Lateral = 8.67 kN (1950 lb)

These forces should be considered to be:

- Acting simultaneously
- Fully reversing (i.e., acting in either direction)
- Repeated an infinite number of times

The boat builder or the gyro installer is responsible for designing the hull foundation to which the gyro is attached to accommodate the above forces and moments plus a reasonable Factor of Safety. A Factor of Safety of 3.0 (Margin of Safety of 2) is suggested.



SIZE	DWG. NO.	REV
<b>C</b>	<b>90255</b>	<b>3</b>
		SHEET 6