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Reabe Aircraft Improvement

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AIR TRACTOR ROD INSTALL

402: install per drawing 6-0-5-000 entering hopper 5 ½ inches left of center, crossing hopper and attaching to right gate box baffle. Straight line, no bending required. Note: not compatible with in-tank augers (wing man).

502: install per drawing 6-5-5-000, enter hopper 8 ½ inches right of center, going straight down, attach to right Gate Box baffle. A slight bow may be needed 6 inches down from top to correct for the curve of the bank top. Note: is compatible with tank auger (wing man)

602: pre-bend rod 22 degrees aft over a 21 inch length. Start bend 26 inches from top of rod and finish bend 26 inches from bottom of rod. Enter hopper per drawing 6-0-5-000 9 ½ inches right of center, curving aft under the spar to the right gate box baffle. Note: is compatible with tank auger (wing man)

802: Pre-bend rod 29 degrees aft over an 18-inch distance. Start bend 30 inches from top and 32 inches from bottom of rod. Enter hopper per drawing 6-0-5-000, 9 ½ inches right of center, curving aft under spar to right gate box support. Note: is compatible with tank auger (wing man)

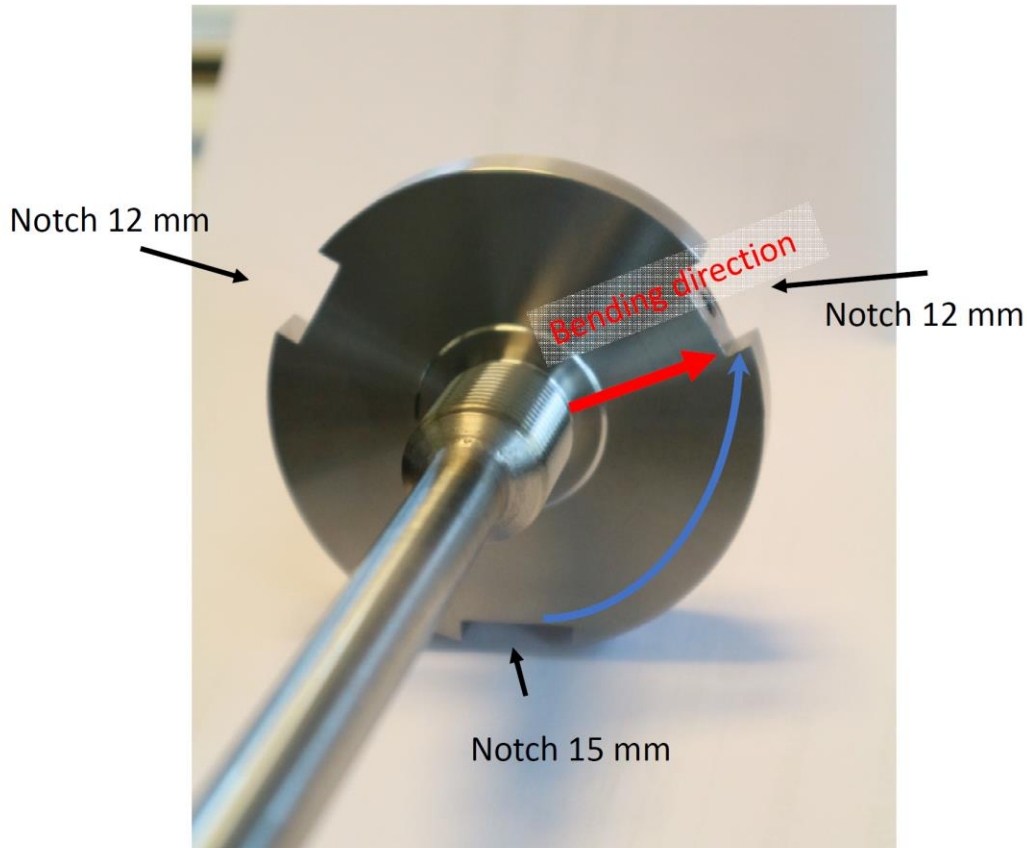
NOTE:

No rod may be bent within the top ½ foot

ALL BENDS 18" MINIMUM RADIUS (18 INCHES OR LARGER)

INSTALL CLAMP 1 ½" FROM BOTTOM

Bending guidelines for Qty Probe



Reference Orientation:

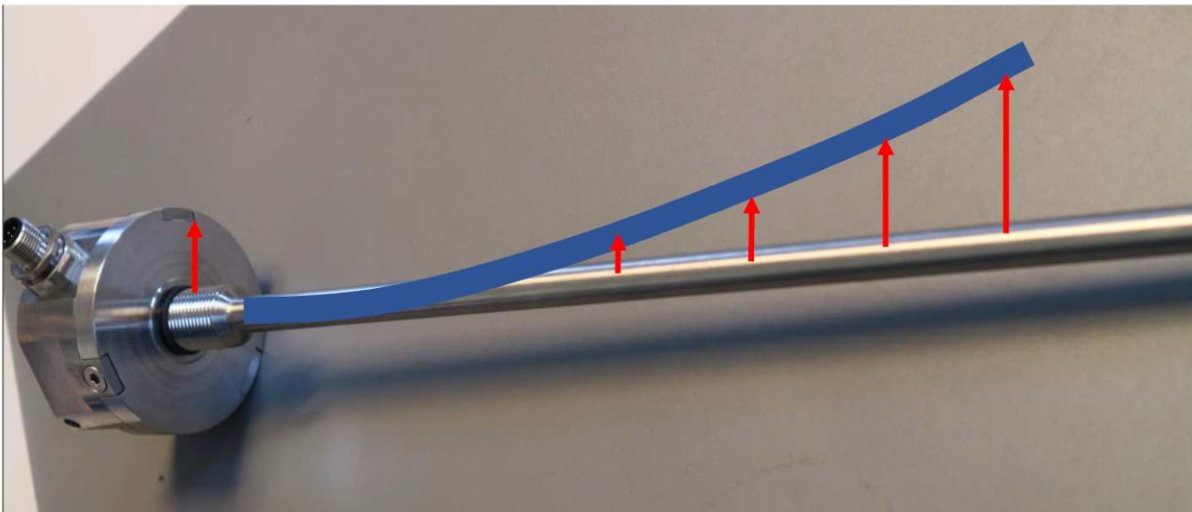
15 mm notch in 6 o'clock position

Acceptable Bending Direction:

Towards the right (or bottom) edge of the 12 mm notch at the 2 o'clock position

Minimum bend radius: 15.75"

Start Bend at least 6" away from probe head.



"TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE

DRAWING LIST FOR TRUE QUANTITY GAUGE INSTALLATION				Document Number 6DL	REVISION LEVEL Rev AH
ORIGINATOR JRR, TRR			ISSUE DATE 30 August 2011	APPROVED BY TRR	
REVISION HISTORY	REVISION DATE	REVISED BY	APPROVED BY	DESCRIPTION OF REVISION	
A	8/30/2011	JRR	TRR	DOCUMENT CREATED	
B	10/10/11	TRR	TRR	DOCUMENT FORMAT CHANGED	
C	11/21/11	TRR	TRR	INSTALL TOLANCES ADDED	
D	12/5/11	TRR	TRR	ADDED REABE DESIGN DRAWINGS	
E	1/16/12	TRR	TRR	PRESS PROBE MODEL CHANGE, CABLES LENGTHENED, REABE DESIGN DRAWINGS UPDATED	
F	2/10/12	TRR	TRR	ADDED AT-802 DATA	
G	3/14/12	TRR	TRR	ADDED AT-802 TO ICA	
H	4/18/12	TRR	TRR	ADDED GROUND TEST TO ICA	
I	9/15/12	TRR	TRR	SERIAL #C BOXES ADDED	
J	10/07/12	TRR	TRR	SET AIRCRAFT SUPPLY VOLTAGE TO +24D DC	
K	10/08/12	TRR	TRR	ADDED LOW PROFILE PROBE	
L	11/15/12	TRR	TRR	ADDED AT- MODELS 400A, 402A, 402B, 502A,502B,802A	
M	12/17/12	TRR	TRR	ADDED TRANSLAND GATE AND SUPPLIER UPDATE	
N	1/29/13	TRR	TRR	UPDATE INSTALL INSTRUCTIONS	
O	2/28/13	TRR	TRR	UPDATE PROBE AND PROBE CLAMP DRAWINGS	
P	4/10/13	TRR	TRR	ADDED 1-PIECE MCMASTER CLAMP TO DRAWING	
Q	6/17/13	TRR	TRR	ADDED SELECTING METRIC INDICATIONS	
R	7/31/13	TRR	TRR	ADDED METRIC FRONT COVER	
S	11/25/13	TRR	TRR	UPDATED -D BOXES, US CABLES,QTY. PROBE -TAB	
T	9/23/14	TRR	TRR	ADDED AT-504, ADDED INSERT TO PRESS FITTING	
U	8/31/15	TRR	TRR	UPDATED TO ADD NEW AIRCRAFT IN AML	
V	11/12/15	JRR	JRR	UPDATED TO ADD NEW AIRCRAFT	
W	12/4/15	JRR	JRR	REWRITE ICA-1	
X	3/10/17	JRR	JRR	THRUSH INSTALLATION CLARIFY	
Y	3/28/18	JRR	JRR	LOADER POWER BUTTON	
Z	9/8/18	JRR	JRR	MOVE LOADER QUANTITY POWER SWITCH	
AA	10/27/18	TRR	TRR	REV DISPLAYS, CLAMP DRAWINGS	
AB	1/20/19	TRR	JRR	Loader power mounting, pressure probe, Display boxes	
AC	6/28/19	JRR	JRR	Installation Instructions Rev S	
AD	10/28/20	TRR	TRR	Remote cable and Remote Gauge mount update	
AE	6/28/21	JRR	JRR	ADDED 802 FIRE GATE VARIANT	
AF	12/21/21	JRR	JRR	ADDED AT-401	
AG	6/15/22	JRR	JRR	ADDED THRUSH S2R-510	
AH	1/13/23	TRR	TRR	UPDATED CABLE DRAWINGS	

Drawing list on second page

DRAWING LIST

<u>Document Number</u>	<u>Title</u>	<u>Rev.</u>	<u>Date</u>
Installation Data			
6-II	Installation Instructions	V	15 JUN 2022
6-0-0-TAB	True Quantity Gauge Installation	J	28 MAR 2018
6-0-1-000	Unit Wiring Overview	C	28 MAR 2018
6-0-2-000	Main Display Mounting	F	21 DEC 2021
6-0-3-000	Remote Display Mounting (optional)	F	1 MAY 2020
6-0-4-000	Pressure Probe Mounting	C	23 SEP 2014
6-0-5-000	Quantity Probe Mounting	N	21 DEC 2021
6-9-0-000	Loader Power Kit (optional)	A	28 MAR 2018
6-0-6-000	Loader Power Mounting	C	18 JAN 2019
Manufacturing Data			
6-1-0-000	Main Display Unit	E	1 JAN 2018
6-1-4-00E	Front Cover, English	A	4 JUL 2013
6-1-4-00M	Front Cover, Metric	A	4 JUL 2013
6001-0001	Main Display Box	6	1 JAN 2019
6-2-0-000	Remote Display Unit (optional)	C	1 JAN 2018
6001-0002	Remote Display Box	6	1 JAN 2019
6-3-0-TAB	Quantity Probe Assembly	J	13 JAN 2023
6-3-1-TAB	Quantity Probe	M	14 MAR 2018
6-3-2-000	Probe Float	A	15 JUL 2011
6-3-3-000	Quantity Probe Clamp	G	13 JAN 2023
6-4-0-000	Pressure Probe	D	20 JAN 2019
6-5-0-000	Quantity Probe Cable	F	13 JAN 2023
6-6-0-000	Pressure Cable	E	13 JAN 2023
6-7-0-000	Power Cable	G	13 JAN 2023
6-8-0-000	Remote Cable (optional)	H	13 JAN 2023
6-9-1-000	Loader Power Unit (optional)	A	5 JAN 2018
6001-0003	Loader Power Unit	1	5 JAN 2018
6-9-2-000	Switch (optional)	A	28 MAR 2018
6001-0004	Button Wire Assembly	1	10 JAN 2018
6-9-3-000	Loader Power Cable (optional)	D	13 JAN 2023
Engineering Analysis			
WEIGHT-1	Weight & Balance Analysis	E	10 JAN 2018
ELECTRICAL-1	Electrical Load Analysis	D	12 NOV 2015
Continued Airworthiness			
ICA-1	Instruction for Continued Airworthiness	L	28 MAR 2018
Test Plan			
GROUND TEST-1	Ground Test Plan	K	8 SEP 2018

INSTALLATION INSTRUCTIONS				Document Number	REVISION LEVEL
ORIGINATOR				6-II	Rev V
JRR, TRR				ISSUE DATE	APPROVED BY
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REVISION HISTORY	REVISION DATE	REVISED BY	APPROVED BY	DESCRIPTION OF REVISION	
A	05/03/11	JRR	TRR	DOCUMENT CREATED	
B	10/09/11	TRR	TRR	DOCUMENT FORMAT CHANGED	
C	11/21/11	TRR	TRR	HOPPER DRILL TOLARANCE ADDED, GROMMET P/N WAS -A, ON PAGE 4 ADDED NOTE	
D	2/10/12	TRR	TRR	ADDED AT-802 DATA	
E	10/07/12	TRR	TRR	SET AIRCRAFT SUPPLY VOLTAGE TO 24V	
F	10/08/12	TRR	TRR	ADDED LOW PROFLIE PROBE	
G	11/15/12	TRR	TRR	ADDED SERIES TO AT- MODELS	
H	1/29/13	TRR	TRR	ADDED SERIES NOTE, ADD GREASE NOTE	
I	6/17/13	TRR	TRR	ADDED, SELECTING METRIC INDICATIONS	
J	7/31/13	TRR	TRR	ADDED METRIC FRONT COVER	
K	11/25/13	TRR	TRR	QUANTITY PROBE PART NUMBERS UPDATED	
L	9/23/14	TRR	TRR	ADDED AT-504, ADDED INSERT TO PRESS FITTING	
M	6/26/15	JRR	JRR	CORRECTED TO INCLUDE AIRCRAFT ON AML	
N	11/12/15	JRR	JRR	ADDED MODELS TO NOTES	
O	3/10/17	JRR	JRR	THRUSH INSTALLATION CLARIFY	
P	1/15/18	JRR	JRR	LOADER POWER SWITCH	
Q	3/28/18	JRR	JRR	LOADER POWER CIRCUIT BREAKER	
R	9/8/18	JRR	JRR	MOVE LOADER QUANTITY POWER SWITCH	
S	6/28/19	JRR	JRR	CABLE ROUTING OPTION	
T	6/28/21	JRR	JRR	ADDED FIRE GATE VARIANT	
U	12/10/21	JRR	JRR	ADDED AT-401	
V	6/15/22	JRR	JRR	ADDED THRUSH S2R-510	

INSTALLATION INSTRUCTIONS

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Note:

In installation instructions and drawings aircraft model number is used to reference all models in the series.

Examples:

400 Represents AT-400, AT-400A

401 Represents AT-401, AT-401A, AT-401B

402 Represents AT-402, AT-402A, AT-402B

502 Represents AT-502, AT-502A, AT-502B

504 Represents AT-504

602 Represents AT-602

802 Represents AT-802, AT-802A

510 Thrush represents Thrush models: S2R, S2R-G1, S2R-G5, S2R-G6, S2R-G10, S2R-H80, S2R-T15, S2R-T11, S2R-T34, S2R-T45, S2R-T65, S2R-510

550 Thrush represents Thrush models: S2RHG-T34, S2RHG-T65

710 Thrush represents Thrush models: S2R-T660

PARTS LIST

QTY	DESCRIPTION	PART NUMBER	
1	Main Display Unit	PN 6-1-0-000	
1	Pressure Probe	PN 6-4-0-000	
1	Quantity Probe	AT-400 Series AT-401 Series AT-402 Series AT-502 Series AT-504 Series	PN 6-3-1-570 was 6-3-1-001*
		AT-602 Series	PN 6-3-1-690 was 6-3-1-002*
		AT-802 Series	PN 6-3-1-770 was 6-3-1-003*
		510 Thrush	PN 6-3-1-630
		550 Thrush	PN 6-3-1-715
		710 Thrush	PN 6-3-1-770
1	Quantity Probe Clamp	PN 6-3-3-000	
1	Probe Float	PN 6-3-2-000	
1	Quantity Probe Cable	PN 6-5-0-000	
1	Pressure Probe Cable	PN 6-6-0-000	
2	Grommets	MS 35 489-XX	
1	Washer	NAS 1149C1290R	
1	Power Cable	PN 6-7-0-000	
<i>OPTIONAL EQUIPMENT</i>			
1	Remote Display Unit	PN 6-2-0-000	
1	Remote Cable	PN 6-8-0-000	
<i>OPTIONAL EQUIPMENT</i>			
1	Loader Power Unit	PN 6-9-1-000	
1	Switch	PN 6-9-2-000	
1	Loader Power Cable	PN 6-9-3-000	

NOTE:

"TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE

*The Drawing 6-3-1-TAB was updated to have the last three digits of the part number be the stroke length of the quantity probe.

INSTALLATION: Airplane**PRESSURE PROBE INSTALLATION**

Cut existing boom pressure line 1 foot above belly skin. Connect transducer to line using 1/4 npt x 1/8 npt reducer (PN 3300 X 4X2 WEATHERHEAD), 1/8 inch npt x 1/4 inch compression adaptor (ON 68X4 WEATHERHEAD), and 1/4 inch tube support insert (2030X44 WEATHERHEAD). Tie wrap (PN 6-4-0-000) transducer to airframe tubing within 45° of vertical. Pressure line should be on a continuous downward route to boom. Remove inoperative pressure gauge. See Pressure Probe Mounting drawing. (6-0-4-000)

COCKPIT DISPLAY INSTALLATION

Main display (PN 6-1-0-000) may be mounted in same location as original hopper display or atop of dash, or to glare shield on Thrush. If in-dash installation is elected, enlarge dash cutout per Main Display Mounting Drawing (6-0-2-000). Attach display behind dash using the (4) face plate screws. If on-dash mount is elected, locate display to left of center atop dash; or to glare shield on Thrush. Produce mounting angles per Main Display Mounting Drawing (6-0-2-000). Attach to dash top using AN526-832 screws and AN365-832 self-locking nuts. Attach display to angles using bottom (2) faceplate screws. Install 3M mounting tape under cable end of display to add stability. Cover or blacken cable connectors to reduce reflection in windshield. The mechanical Hopper Quantity gauge (if equipped) may be removed or left operational.

QUANTITY PROBE INSTALLATION

- 1) Drill hole
 - a) AT-400/401/402 Series - Drill 3/4 inch hole in top of hopper.
See Drawing (6-0-5-000)
NOTE: 401 and 402 hopper tanks are identical and data is interchangeable.
 - b) AT-502/504/602/802 Series - Drill 3/4 inch hole in top of hopper.
See Drawing (6-0-5-000)
 - c) 510/400 Thrush- Drill 3/4 inch hole in top of hopper.
See Drawing (6-0-5-000)
 - d) 550 Thrush- Drill 3/4 inch hole in top of hopper.
See Drawing (6-0-5-000)
 - e) 710 Thrush- Drill 3/4 inch hole in top of hopper.
See Drawing (6-0-5-000)
- 2) Install probe (PN 6-3-1-xxx) with sealant applied to outside of hopper and secure with self-locking nut (Lubricate self-locking nut and probe threads with grease for use on stainless steel, Moly grease is recommended). Orientate probe so connector is pointed aft.
See Quantity Probe Mounting Drawing (6-0-5-000)
- 3) Install float (PN 6-3-2-000) "NO" side up.
- 4) Install float clamp (PN 6-3-3-000) such that top of stop is 1 1/2 inches from bottom of probe.
See Quantity Probe Mounting Drawing (6-0-5-000).
- 5) Sub Tank mounting
 - a) AT-400/401/402/502/504/602/802 Series, 710 Thrush -
Drill 1/4 inch hole in right gate box baffle and float clamp tab such that float sets outboard of notch in baffle when float clamp is attached to baffle and float clamp is 1 1/2 inch from end of probe, with AN4C4 bolt and MS21044C4 self-locking nut.
See Quantity Probe Mounting Drawing (6-0-5-000)
NOTE: 401 and 402 hopper tanks are identical and data is interchangeable.
 - b) 510/400/550 Thrush- drill 1/4 inch hole in right gatebox baffle and float clamp tab such that float sets outboard of notch in baffle when float clamp is attached to baffle and float clamp is 1 1/2 inch from end of probe, with AN4C4 bolt and MS21044C4 set-locking nut.

“TRUE QUANTITY” HOPPER QUANTITY & BOOM PRESSURE GAUGE

See Drawing 6-0-5-000

c)AT-802 with Gen2 or Gen3 Fire Gate – See Drawing (6-0-5-000)

REMOTE DISPLAY INSTALLATION (optional)

Cut hole per Remote Display Mounting Drawing (6-0-3-000) in fuselage main upper skin, 24 inches aft of left door and ½ inch above side skin. Attach Remote Display (PN 6-2-0-000) to inboard side of skin using (4) face plate screws. Re-seal screws with RVT silicone sealant.

LOADER QUANTITY POWER SWITCH (optional)

Drill ¾” hole in fuselage main upper skin (turtle deck) 20 inches aft of left door and ½ inch above side skin. See Remote Display Mounting Drawing (6-0-3-000). Install switch (PN 6-9-2-000) through hole and secure with supplied nut. Label “Loader Quantity Power”

LOADER POWER UNIT (optional)

Position Loader Power Unit (PN 6-9-1-000) behind upper dash. Secure to dash support structure using AN526-632 screws and AN365-632 self-locking nuts through mounting tabs of power unit.

CABLE INSTALLATION: AIRPLANE**Running the Cables:**

Run the cables away from high power lines such as: Air conditioner, Blower, motor, pump, or main buss lines. If a cable must pass one of these lines try and pass at a right angle. See Drawing 6-0-0-TAB

Quantity Probe Cable:

To connect the Quantity Probe to the main box, use the Quantity Probe Cable (PN 6-5-0-000). You can identify this cable because it is the only one with a 90° connection. The end with the 90° connection connects to the top of the quantity probe. The other end of the cable connects to the back of the main box to the port labeled “QTY GAUGE”.

Silicone seal the 90° connector after installation.

Air Tractor and Thrush 710: Attach cable to top of hopper using silicone and/or adel clamps. Enter fuselage aft of firewall through hopper flange or flange on side of hopper. Use a ¾ inch hole (or slot wide enough to pass the cable) and close with grommet or silicone. Tie wrap along top left or right longeron to cockpit. Enter cockpit through 1 inch hole and close with grommet. Locate 1 inch hole with routing of remote cable in mind. Connect to “QTY GAUGE”. Excess length may be coiled.

NOTE: Existing wire feed through holes may be used if cable length allows.

Thrush 400/510/550: Attach cable to top of hopper using silicone or adel clamps, as cable leads aft toward cockpit. Enter cockpit aft of hopper and forward of right corner windshield through ¾ inch hole. Close hole with a grommet or silicone. Connect to “QTY Gauge.” Excess length may be coiled.

Power Cable:

To connect the power to the main box, use the Power Cable (PN 6-7-0-000). You can identify this cable because it has a connector only on one end.

Connections to aircraft using AMP terminal ends or other methods acceptable by AC 43.13:

Black: connects to aircraft Ground

Blue: connects to +24V through a 1 amp breaker (Klixon 7277-2-1 or equivalent) label breaker (Hopper Display) Breaker to be installed into breaker panel.

Brown: connects to the Torque sense side of the Hobbs meter

The other end of the cable connects to the back of the main box to the port labeled “POWER”.

“TRUE QUANTITY” HOPPER QUANTITY & BOOM PRESSURE GAUGE**Pressure Probe Cable:**

To connect the Pressure probe to the main box, use the Pressure Probe Cable (PN 6-6-0-000). You can identify this cable it will be the *larger diameter cable with 4 pins* in the male end. The female end of the cable connects to the Pressure Probe. The other end of the cable connects to the back of the main box to the port labeled “PRES GAUGE”.

Tie wrap cable to airframe and route up to cockpit and enter through 1 inch. Excess length may be coiled.

Remote Box Cable:

To connect the Remote Box (if installed) to the main box, use the Remote Cable (PN 6-8-0-000). You can identify this cable it will be the *smaller diameter cable with 4 pins* in the male end. The female end of the cable connects to the Remote Box. The other end of the cable connects to the back of the main box to the port labeled “REMOTE”.

Tie wrap cable to Airframe and route forward to cockpit and enter through 1 inch hole used by pressure probe wire.

Loader Power Cable:

To connect Loader Power Unit (PN 6-9-1-000) (if installed), to Main Display (PN 6-1-0-000), disconnect Power Cable (PN 6-7-0-000) from Main Display port labeled ‘power’. Reconnect Power Cable to Loader Power Unit port labeled ‘In’. Connect female end of Loader Power Cable (PN 6-9-3-000) to Loader Power Unit port labeled ‘Out’. Connect male end of Loader Power Cable to Main Display port labeled ‘Power’. Excess cable length may be coiled.

Loader Switch Cable:

To connect Loader Quantity Switch (PN 6-9-2-000) (if installed), to Loader Power Unit (PN 6-9-1-000), route cable end of Loader Quantity Switch to Loader Power Unit. Excess cable length may be cut off. Strip cable end to expose both conductors. Install one conductor in terminal 2 and other conductor in terminal 3 of the Loader Power Unit.

Loader Power Battery Wire:

To connect battery to Loader Power Unit (if installed), attach 1 amp breaker (Klixon 7277-2-1 or equivalent) to battery relay mount bracket (older aircraft) or battery relay upper shield (newer aircraft). Label breaker “Loader Quantity Switch”. See drawing 6-0-6-000. Connect 20 AWG aircraft wire (M-22759/16-20-9 or equivalent) to terminal 1 of Loader Power Unit. Route wire to Loader Power breaker. Connect wire to breaker using appropriate size AMP terminal end (or other method acceptable by AC 43.13). Using 4 inch length of 18 AWG aircraft wire (M-22759/16-18-9 or equivalent) and appropriate size AMP terminal ends (or other method acceptable by AC 43.13), connect breaker to (+) side of battery relay coil. To identify the (+) side of the battery relay coil, follow the large cable from the battery (+) to the relay, continue to follow the small wire from the large terminal to the small terminal. Caution: this terminal can be confirmed because it is live at all times regardless of cockpit battery switch position.

DIP SWITCH SETTINGS

To check dip switch setting without opening the box refer to the “Display Settings Info” section. The Main Box is the same for all aircraft. The way the box is set for a particular aircraft is thru the dip switch settings.

To change the dip switch setting unscrew the dim button cover and take the four screws out of the back of the main box. You will now be able to slide the main board and back out of the box. On the

“TRUE QUANTITY” HOPPER QUANTITY & BOOM PRESSURE GAUGE

top of the main board you will see a series of dip switches. The switches are labeled and switch 1 should be closest to the display board. For a serial number C or later the dip switches are on the back of the display board with switch 1 at the top.

Setting the Switches: Switch 1 is used to select English or Metric units, when switch 1 is turned on then Metric is selected.

If Metric is selected the Main Display should be relabeled to indicate “LITER” and “BAR”. The remote display should be relabeled to indicate “LITERS X 10”.

Relabeling can be done with self-adhesive labels or by changing from the English to Metric Front Cover both shown below.



6-1-4-00 E Front Cover, English
Units are labeled “PSI” and “GAL”



6-1-4-00M Front Cover, Metric
Units are Labeled “BAR” and “LITER”

Switch 8 is used to invert ground mode indication; normal setting is switch 8 off.

The other switches are used to select the aircraft you have. Refer to the table for the settings for your aircraft.

Plane	Software Ver Intro	Display	Switch 2	Switch 3	Switch 4	Switch 5	Switch 6	Switch 7
502 Series	104	502	OFF	OFF	OFF	OFF	OFF	OFF
400 Series 401 Series 402 Series	104	400	ON	OFF	OFF	OFF	OFF	OFF
602 Series	104	602	OFF	ON	OFF	OFF	OFF	OFF
802 Series	104	802	ON	ON	ON	OFF	OFF	OFF
504 Series	108	504	ON	OFF	ON	OFF	ON	OFF
510 Thrush	107	Thru 510	OFF	OFF	ON	OFF	ON	OFF
550 Thrush	126	THRU 550	OFF	OFF	OFF	OFF	OFF	ON
710 Thrush	123	Thru 710	OFF	OFF	ON	ON	ON	OFF
802 Gen 2	170	802 Gen 2	ON	OFF	OFF	ON	OFF	OFF
802 Gen 3	170	802 Gen 3	ON	ON	OFF	OFF	OFF	OFF

Software Ver Intro, is the software version that that model airplane was added to the software. All later software has preceding aircrafts data. To check software version, hold dim button when powering the unit on.

TROUBLE SHOOTING

If the unit is not powering on, check the power supply for the box.

- Check circuit breaker
- Make sure you have the black to ground and the blue to power
- Check cable connection to back of main display box, remove and reinstall power cable from main box

If you get an Error on either line of the display it is saying that the sensor is out of range.

- If the Error is on the pressure line the error is with the pressure probe, or connection.
- If the Error is on the quantity line the error is with the quantity probe, or connection.

An error is normally caused by a bad connection or sometimes the cable. Check your connections and make sure you did not kink the cable when running it. You can check the continuity of the cable with a multi meter to verify if it is the cable.

If you have erratic or incorrect readings on the quantity gauge.

- Check the cable connections from the main box to the quantity gauge, remove and reinstall connections
- Check that the float is free on the rod and functioning properly.
- Check that quantity rod is not overly coated with residue, clean rod with power washer
- Check that no magnetic hardware or strong magnetic fields are around the Quantity gauge.

If the pressure displays numbers that are obviously incorrect; cycle power off then on holding the dim button with spray pump off. Doing this will set a new zero pressure setting.

TESTING

See Ground test document #Ground test – 1.

Any Further Questions Please Email:

ReabeDesign@gmail.com

Or Call

**TIP-PLAN-FIX
(847) 752-6349**

OPERATION INSTRUCTIONS

Normal Operation/Screen Dimming:

During operation the display will show the boom pressure reading on the upper line and the hopper quantity on the lower line. There are two green LED's in the display. The LED labeled “GROUND” is located in the lower right hand side of the display and this is used to show when the quantity is set to ground mode. The LED labeled “SUCK BACK” is located in the upper left hand side of the display and this is used to show a negative pressure in the boom. Dim button may be repeatedly pressed to change cockpit display brightness.

Display Setting Info:

To see what the Dip Switch settings are, hold down the DIM button when the box is powered on, release button when “Cal” is displayed. The box will then display the Firmware Version, Units and Aircraft settings.

This will also set a new zero point for the pressure gauge.

Gyro Attitude Initialization:

With aircraft parked on a level surface, press and hold the DIM button then turn power on. Continue to hold the DIM button through boot sequence until display shows “Press Butt.” At this point press DIM 3 times and wait for “Good Cal” to be displayed.

6-0-0-570 BOM FOR AT-400, AT-402, AT-502 AT-504 WAS 6-0-0-001

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	6-1-0-000	MAIN DISPLAY UNIT	1
2	6-2-0-000	REMOTE DISPLAY UNIT	1
3	6-3-0-570	QUANTITY PROBE ASSEMBLY	1
4	6-4-0-000	PRESSURE PROBE	1
5	6-5-0-000	QUANTITY PROBE CABLE	1
6	6-6-0-000	PRESSURE CABLE	1
7	6-7-0-000	POWER CABLE	1
8	6-8-0-000	REMOTE CABLE	1
9	6-9-0-000	LOADER POWER KIT	1

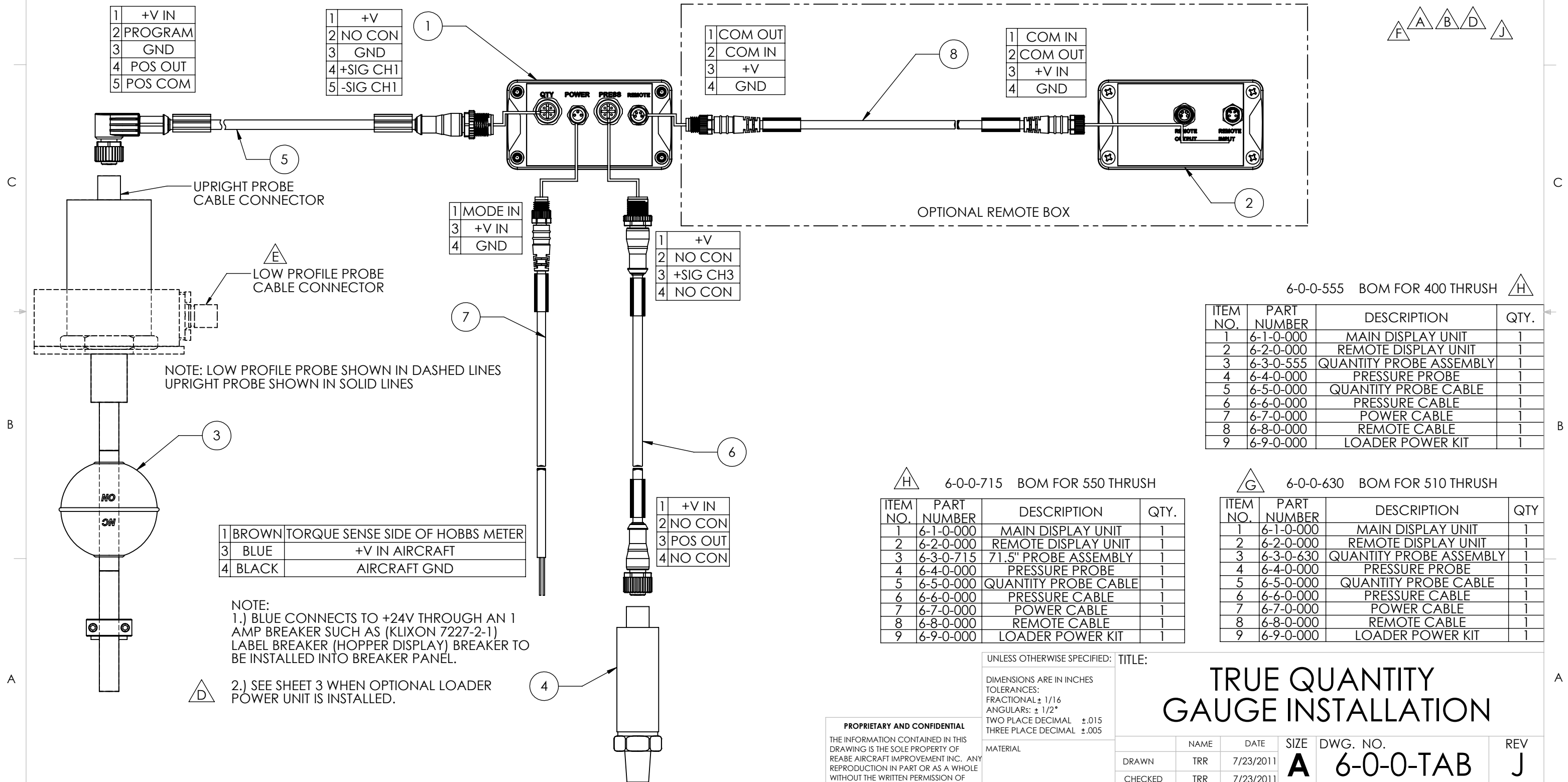
6-0-0-690 BOM FOR AT-602 WAS 6-0-0-002

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	6-1-0-000	MAIN DISPLAY UNIT	1
2	6-2-0-000	REMOTE DISPLAY UNIT	1
3	6-3-0-690	QUANTITY PROBE ASSEMBLY	1
4	6-4-0-000	PRESSURE PROBE	1
5	6-5-0-000	QUANTITY PROBE CABLE	1
6	6-6-0-000	PRESSURE CABLE	1
7	6-7-0-000	POWER CABLE	1
8	6-8-0-000	REMOTE CABLE	1
9	6-9-0-000	LOADER POWER KIT	1

6-0-0-770 BOM FOR AT-802, 710 THRU TH WAS 6-0-0-003

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	6-1-0-000	MAIN DISPLAY UNIT	1
2	6-2-0-000	REMOTE DISPLAY UNIT	1
3	6-3-0-770	QUANTITY PROBE ASSEMBLY	1
4	6-4-0-000	PRESSURE PROBE	1
5	6-5-0-000	QUANTITY PROBE CABLE	1
6	6-6-0-000	PRESSURE CABLE	1
7	6-7-0-000	POWER CABLE	1
8	6-8-0-000	REMOTE CABLE	1
9	6-9-0-000	LOADER POWER KIT	1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	ORIGINAL RELEASE	7/23/2011	TRR
B	DWG. NO. WAS 6-0-0-000 SPLIT BOM FOR DIFFERENT CONFIGURATIONS	9/16/2011	TRR
C	ADDED AT-802 DATA	2/10/2012	TRR
D	AIRCRAFT POWER SUPPLY SET AT +24V	10/07/2012	TRR
E	ADDED LOW PROFILE PROBE	10/8/2012	TRR
F	ADDED AT-504, FIXED DUPLICATE PART IN BOM	9/23/2014	TRR
G	ADDED 510 THRU TH	8/30/2015	TRR
H	ADDED 400, 550, 710 THRU TH	8/12/2016	TRR
J	ADDED 6-9-0-000 OPTION SHEET 3	3/28/2018	TRR



NOTE: LOW PROFILE PROBE SHOWN IN DASHED LINES
UPRIGHT PROBE SHOWN IN SOLID LINES

1	BROWN	TORQUE SENSE SIDE OF HOBBS METER
3	BLUE	+V IN AIRCRAFT
4	BLACK	AIRCRAFT GND

NOTE:
1.) BLUE CONNECTS TO +24V THROUGH AN 1 AMP BREAKER SUCH AS (KLIXON 7227-2-1) LABEL BREAKER (HOPPER DISPLAY) BREAKER TO BE INSTALLED INTO BREAKER PANEL.

2.) SEE SHEET 3 WHEN OPTIONAL LOADER POWER UNIT IS INSTALLED.

6-0-0-555 BOM FOR 400 THRU TH

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	6-1-0-000	MAIN DISPLAY UNIT	1
2	6-2-0-000	REMOTE DISPLAY UNIT	1
3	6-3-0-555	QUANTITY PROBE ASSEMBLY	1
4	6-4-0-000	PRESSURE PROBE	1
5	6-5-0-000	QUANTITY PROBE CABLE	1
6	6-6-0-000	PRESSURE CABLE	1
7	6-7-0-000	POWER CABLE	1
8	6-8-0-000	REMOTE CABLE	1
9	6-9-0-000	LOADER POWER KIT	1

6-0-0-715 BOM FOR 550 THRU TH

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	6-1-0-000	MAIN DISPLAY UNIT	1
2	6-2-0-000	REMOTE DISPLAY UNIT	1
3	6-3-0-715	71.5" PROBE ASSEMBLY	1
4	6-4-0-000	PRESSURE PROBE	1
5	6-5-0-000	QUANTITY PROBE CABLE	1
6	6-6-0-000	PRESSURE CABLE	1
7	6-7-0-000	POWER CABLE	1
8	6-8-0-000	REMOTE CABLE	1
9	6-9-0-000	LOADER POWER KIT	1

6-0-0-630 BOM FOR 510 THRU TH

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	6-1-0-000	MAIN DISPLAY UNIT	1
2	6-2-0-000	REMOTE DISPLAY UNIT	1
3	6-3-0-630	QUANTITY PROBE ASSEMBLY	1
4	6-4-0-000	PRESSURE PROBE	1
5	6-5-0-000	QUANTITY PROBE CABLE	1
6	6-6-0-000	PRESSURE CABLE	1
7	6-7-0-000	POWER CABLE	1
8	6-8-0-000	REMOTE CABLE	1
9	6-9-0-000	LOADER POWER KIT	1

UNLESS OTHERWISE SPECIFIED: TITLE:

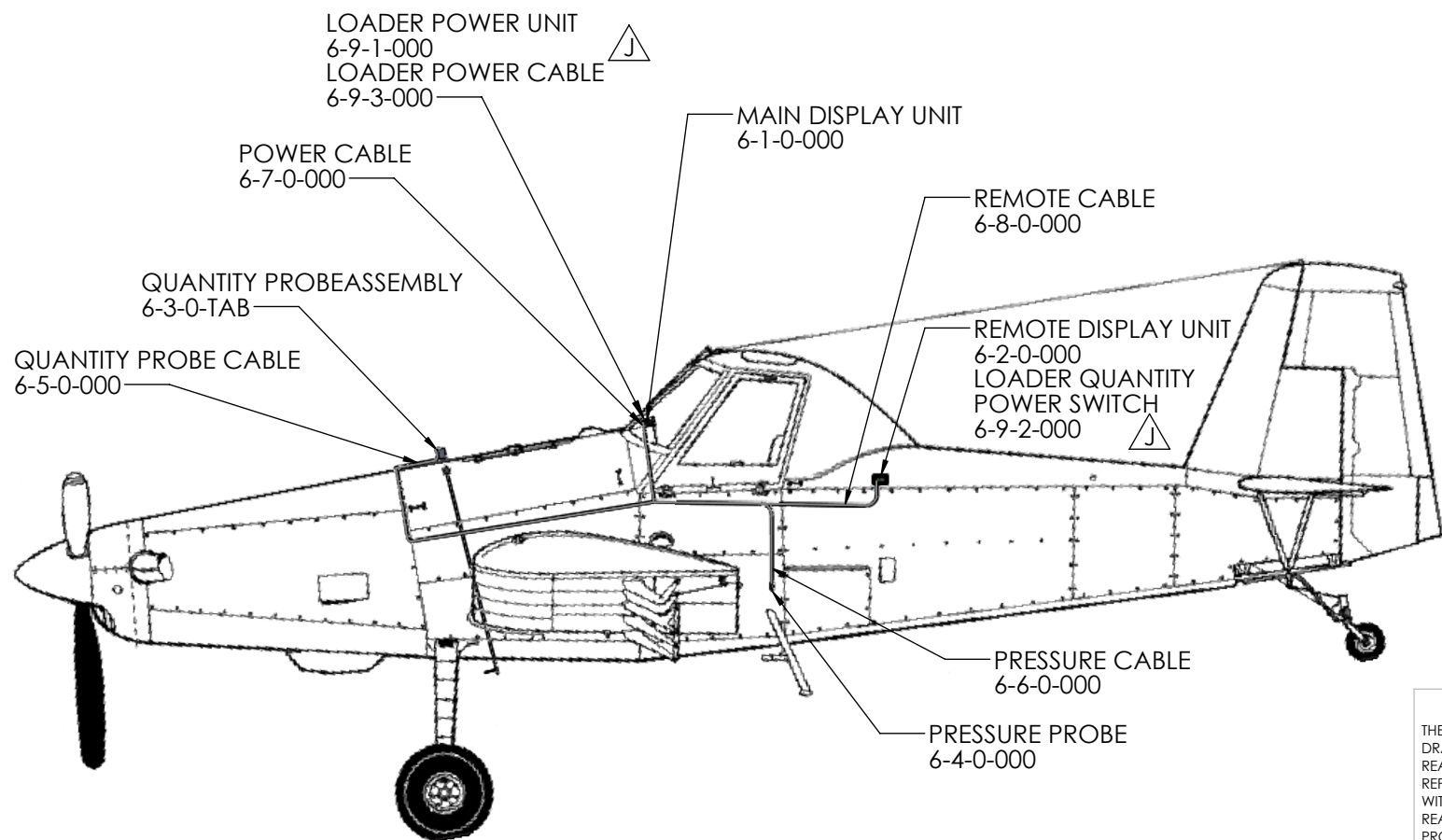
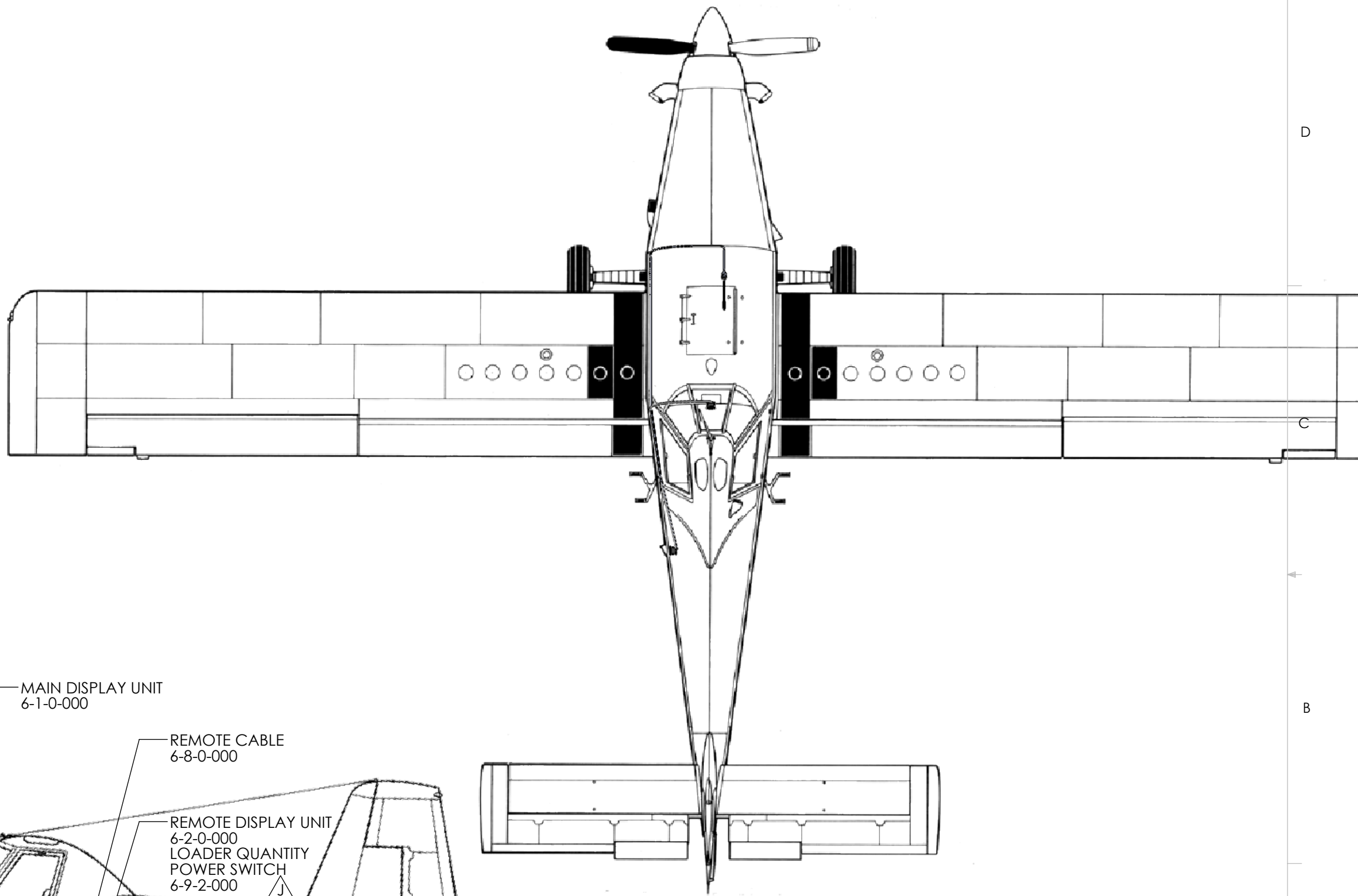
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ± 1/16
ANGULARS: ± 1/2°
TWO PLACE DECIMAL ±.015
THREE PLACE DECIMAL ±.005

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MATERIAL
DO NOT SCALE DRAWING

TRUE QUANTITY GAUGE INSTALLATION

NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/23/2011	A 6-0-0-TAB	J
CHECKED	TRR	7/23/2011		
SCALE: 1:2		WEIGHT:		SHEET 1 OF 3



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/16$
 ANGULARS: $\pm 1/2^\circ$
 TWO PLACE DECIMAL $\pm .015$
 THREE PLACE DECIMAL $\pm .005$

TRUE QUANTITY GAUGE INSTALLATION

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MATERIAL	NAME	DATE	SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING	DRAWN	TRR	7/23/2011	A 6-0-0-TAB	J
	CHECKED	TRR	7/23/2011		
SCALE: 1:2			WEIGHT:		SHEET 2 OF 3

NOTES:
VIEW SHOWING HOOKUP OF OPTIONAL LOADER POWER UNIT PART NUMBER 6-9-0-000



CONNECT THE POWER CABLE HERE
PART NUMBER 6-7-0-000

CONNECT TO THE POWER PORT
OF THE MAIN DISPLAY UNIT
PART NUMBER 6-1-0-000

MAIN DISPLAY UNIT
PART NUMBER 6-1-0-000

NOTE:
1.) BLUE CONNECTS TO +24V THROUGH AN 1 AMP BREAKER SUCH AS (KLIXON 7227-2-1) LABEL BREAKER (HOPPER DISPLAY) BREAKER TO BE INSTALLED INTO BREAKER PANEL.

1	BROWN	TORQUE SENSE SIDE OF HOBBS METER
3	BLUE	+V IN AIRCRAFT
4	BLACK	AIRCRAFT GND

1	MODE IN
3	+V IN
4	GND

1	MODE OUT
3	+V OUT
4	GND

1	MODE IN
3	+V IN
4	GND

1	BATTERY
2	SWITCH A
3	SWITCH B

POWER CABLE
PART NUMBER 6-7-0-000

7

MOUNT ON TURTLE DECK OF AIRCRAFT
NEAR REMOTE DISPLAY

CONNECTS TO BATTERY THROUGH AN 1 AMP BREAKER SUCH AS (KLIXON 7227-2-1) LABEL BREAKER (LOADER QUANTITY SWITCH) BREAKER MOUNTED BY MASTER RELAY USE 20-16 AWG AIRCRAFT GRADE WIRE PER AC43.13

UNLESS OTHERWISE SPECIFIED: TITLE:

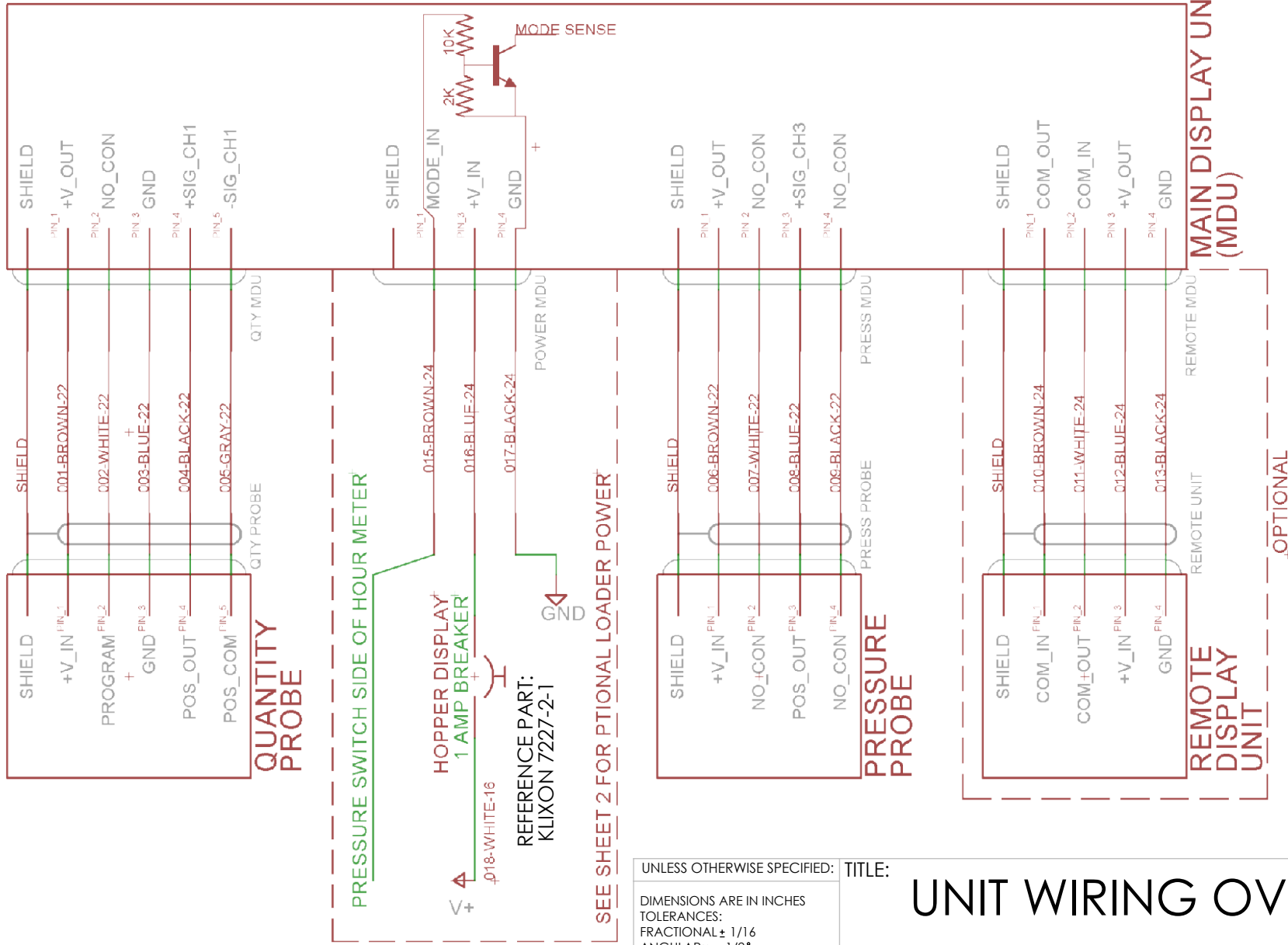
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ± 1/16
ANGULARS: ± 1/2°
TWO PLACE DECIMAL: ±.015
THREE PLACE DECIMAL: ±.005

TRUE QUANTITY GAUGE INSTALLATION

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MATERIAL	NAME	DATE	SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING	TRR	7/23/2011	A	6-0-0-TAB	J
	CHECKED	TRR	7/23/2011	SCALE: 1:1.5	WEIGHT: SHEET 3 OF 3

REV.	DESCRIPTION	REVISIONS	DATE	APPROVED
A	ORIGINAL RELEASE		8/3/2011	TRR
B	DWG. NO. WAS 6-0-001		10/3/2011	TRR
C	ADDED SHEET 2 LOADER POWER UNIT		3/28/2018	TRR



NOTES:
1.) INSTALL WIRING IN ACCORDANCE WITH AC 43.13-1B



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SEE SHEET 2 FOR OPTIONAL LOADER POWER

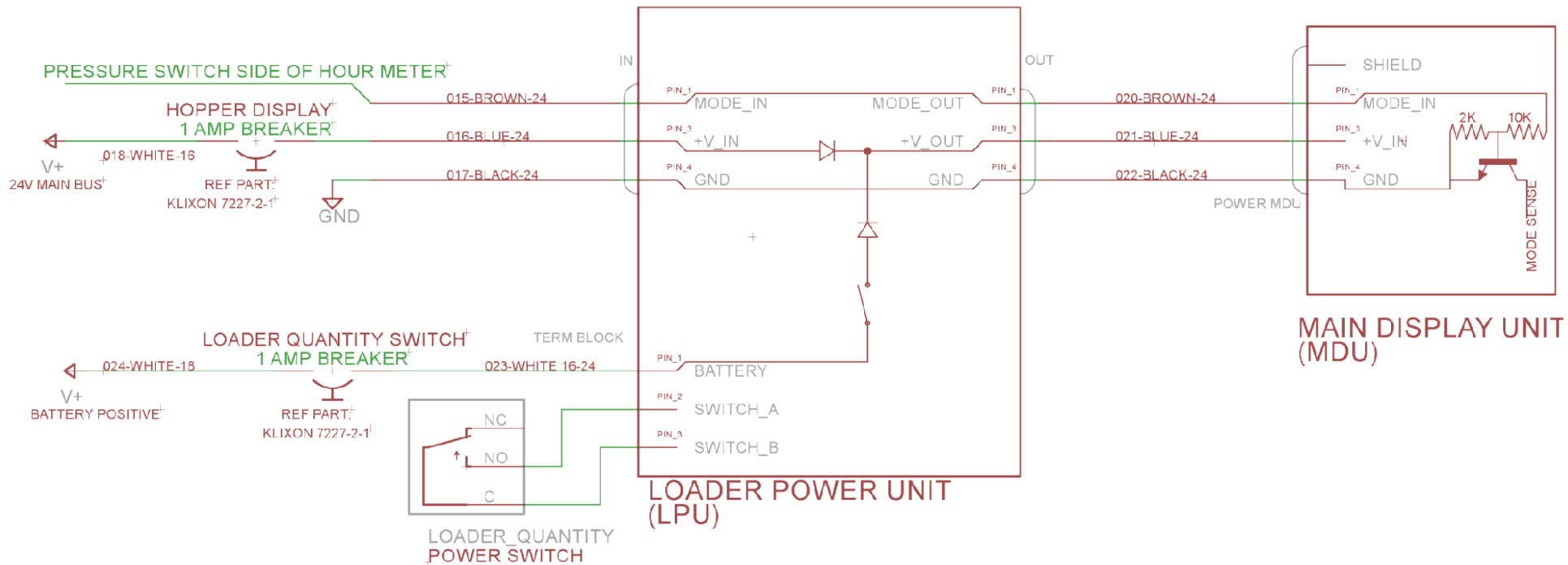
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ± 1/16
ANGULARS: ± 1/2°
TWO PLACE DECIMAL ± .015
THREE PLACE DECIMAL ± .005

MATERIAL	NAME	DATE
	TRR	8/3/2011
	TRR	8/3/2011

DO NOT SCALE DRAWING

TITLE: **UNIT WIRING OVERVIEW**

SIZE	DWG. NO.	REV
A	6-0-1-000	C
SCALE: 1:1	WEIGHT:	SHEET 1 OF 2



OPTIONAL LOADER POWER UNIT 

NOTES:
1.) INSTALL WIRING IN ACCORDANCE WITH AC 43.13-1B

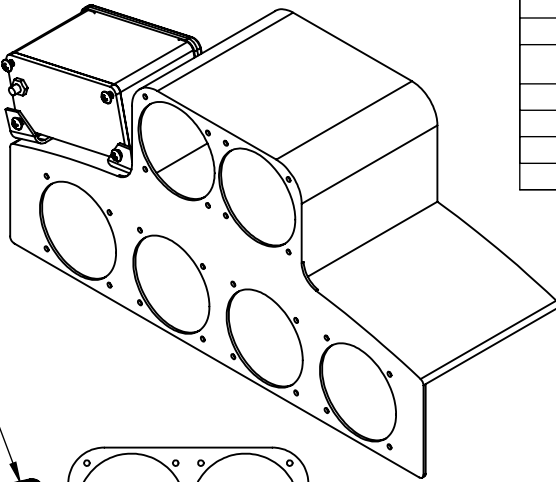
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DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULARS: $\pm 1/2^\circ$
TWO PLACE DECIMAL $\pm .015$
THREE PLACE DECIMAL $\pm .005$

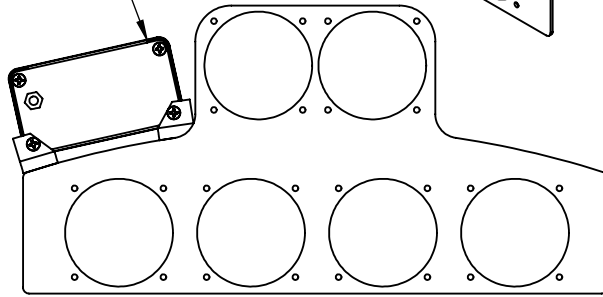
TITLE: **UNIT WIRING OVERVIEW**

MATERIAL	NAME	DATE	SIZE	DWG. NO.	REV
	TRR	8/3/2011	A	6-0-1-000	C
CHECKED	TRR	8/3/2011	SCALE: 1:1		WEIGHT:
DO NOT SCALE DRAWING					SHEET 2 OF 2

A B C F

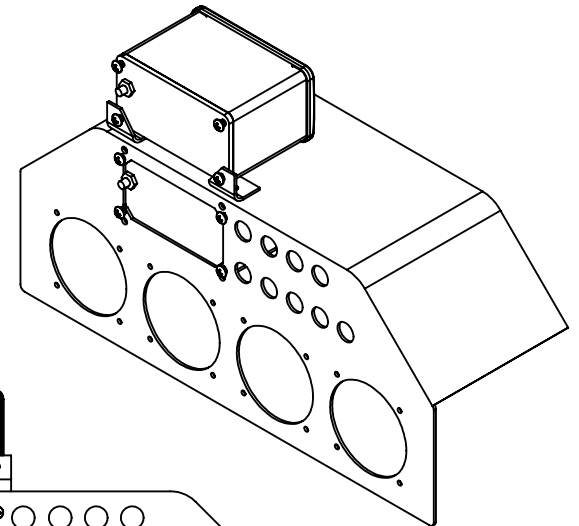
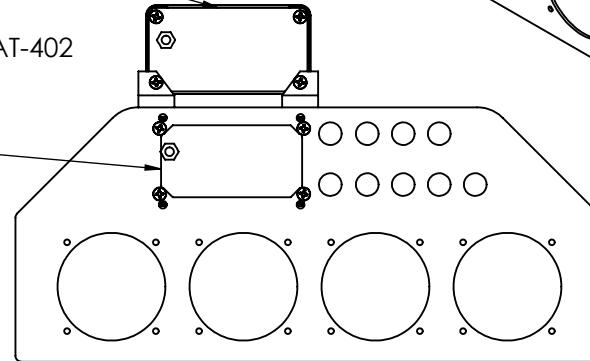


AT-400, AT-402
ON DASH MOUNT



C D E F

AT-401, AT-502, AT-504, AT-602, AT-802
ON DASH MOUNT
THRU 510, THRU 710
ON GLARE SHIELD
OR
IN DASH MOUNT
AT-400, AT-401, AT-402
AT-502, AT-504,
AT-602, AT-802
THRU 510
THRU 710



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	ORIGINAL RELEASE	7/25/2011	TRR
B	DWG. NO. WAS 6-0-0-002 ADDED BRACKET MATERIAL AND HARDWARE NOTE	9/16/2011	TRR
C	ADDED AT-504	9/23/2014	TRR
D	ADDED AT-802, THRU 510	08/31/2015	TRR
E	ADDED 710 THRU 510	3/4/2018	TRR
F	ADDED AT-401	12/21/2021	TRR

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PER ASME Y14.5
TOLERANCES:
FRACTIONAL: ± 1/16
ANGULAR: ± 1/2°
TWO PLACE DECIMAL ±.015
THREE PLACE DECIMAL ±.005

MATERIAL

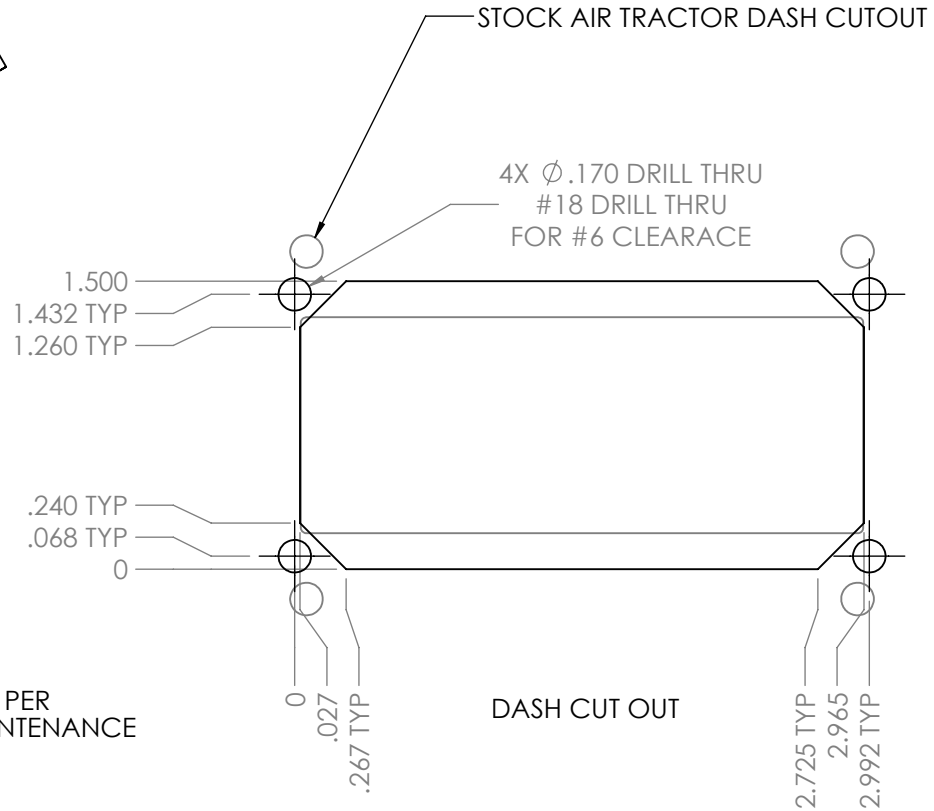
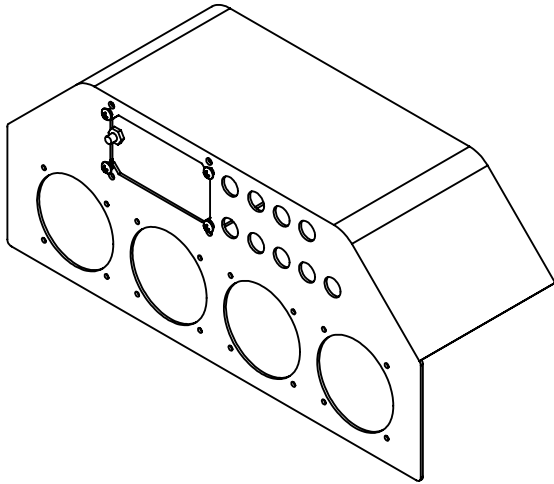
SPEC

TITLE:

MAIN DISPLAY MOUNTING

		NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR		7/25/2011	A	6-0-2-000	F
CHECKED	TRR		7/25/2011			
DO NOT SCALE DRAWING				SCALE: 1:4	WEIGHT:	SHEET 1 OF 3

IN DASH MOUNT



NOTE:
PAINT CUTOUT PER
AIRCRAFT MAINTENANCE
MANUAL

UNLESS OTHERWISE SPECIFIED:

TITLE:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULARS: $\pm 1/2^\circ$
TWO PLACE DECIMAL $\pm .015$
THREE PLACE DECIMAL $\pm .005$

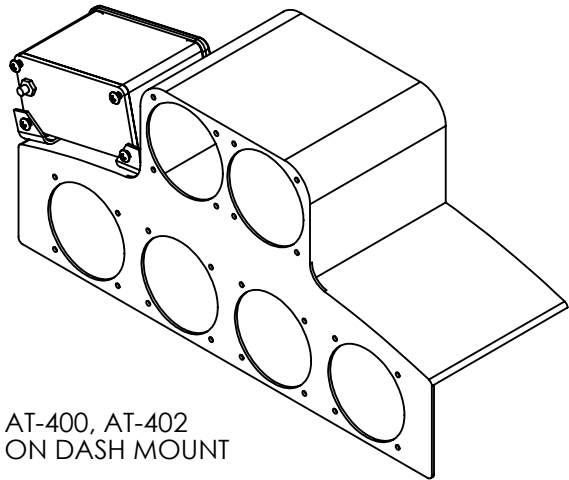
MAIN DISPLAY MOUNTING

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MATERIAL

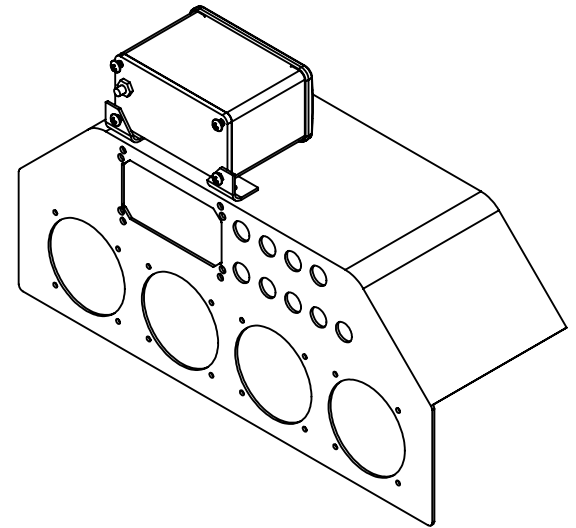
DO NOT SCALE DRAWING

	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/25/2011	A	6-0-2-000	F
CHECKED	TRR	7/25/2011			
			SCALE: 1:1	WEIGHT:	SHEET 2 OF 3



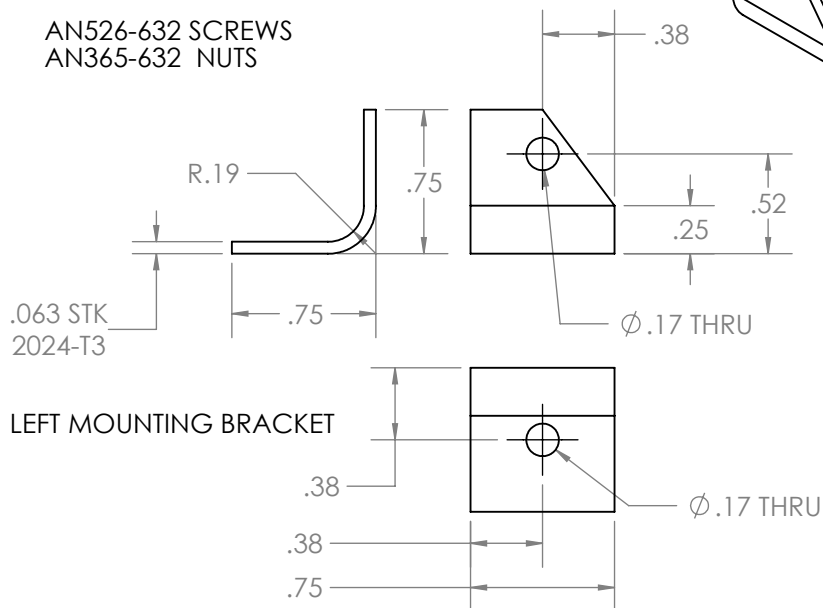
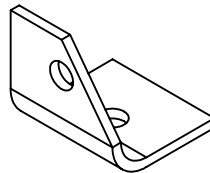
AT-400, AT-402
ON DASH MOUNT

AT-401, AT-502, AT-504,
AT-602, AT-802
ON DASH MOUNT
THRU 510, THRU 710
ON GLARE SHIELD

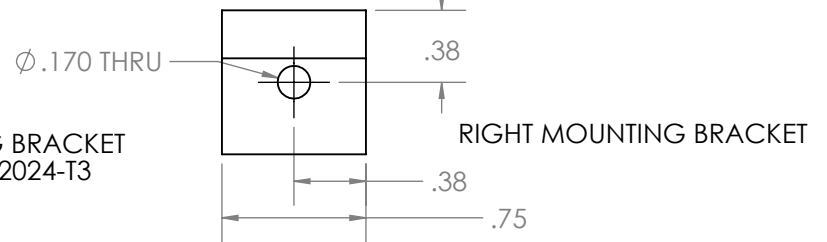
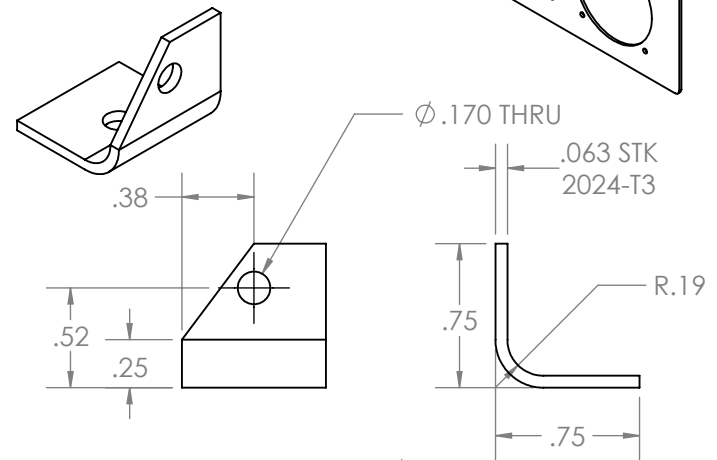


MOUNTING BRACKETS
BOLTED TO DASH USING:

AN526-632 SCREWS
AN365-632 NUTS



LEFT MOUNTING BRACKET



MOUNTING BRACKET
MATERIAL: 2024-T3

RIGHT MOUNTING BRACKET

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DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULARS: $\pm 1/2^\circ$
TWO PLACE DECIMAL $\pm .015$
THREE PLACE DECIMAL $\pm .005$

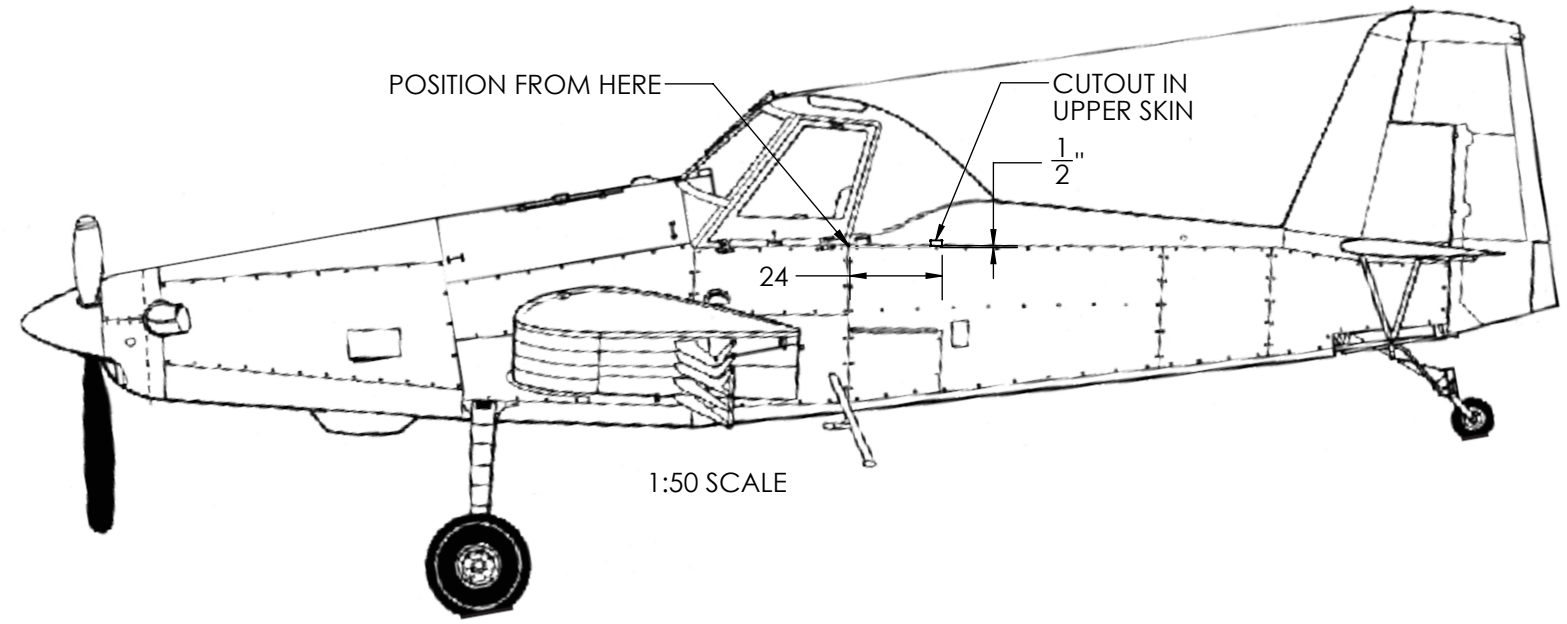
TITLE:
MAIN DISPLAY MOUNTING

MATERIAL		NAME	DATE	SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING		DRAWN	TRR	7/25/2011	A 6-0-2-000	F
		CHECKED	TRR	7/25/2011	SCALE: 1:1	WEIGHT:
				SHEET 3 OF 3		

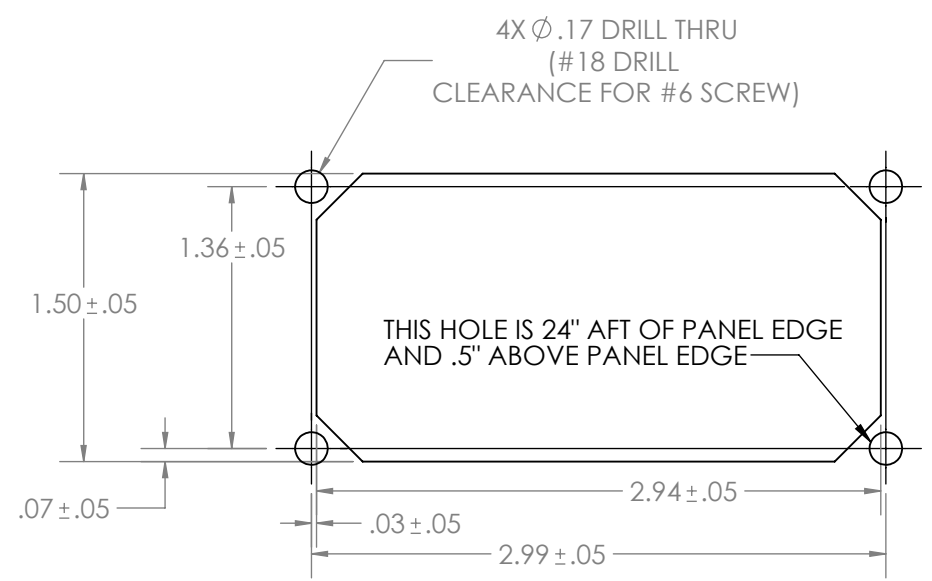
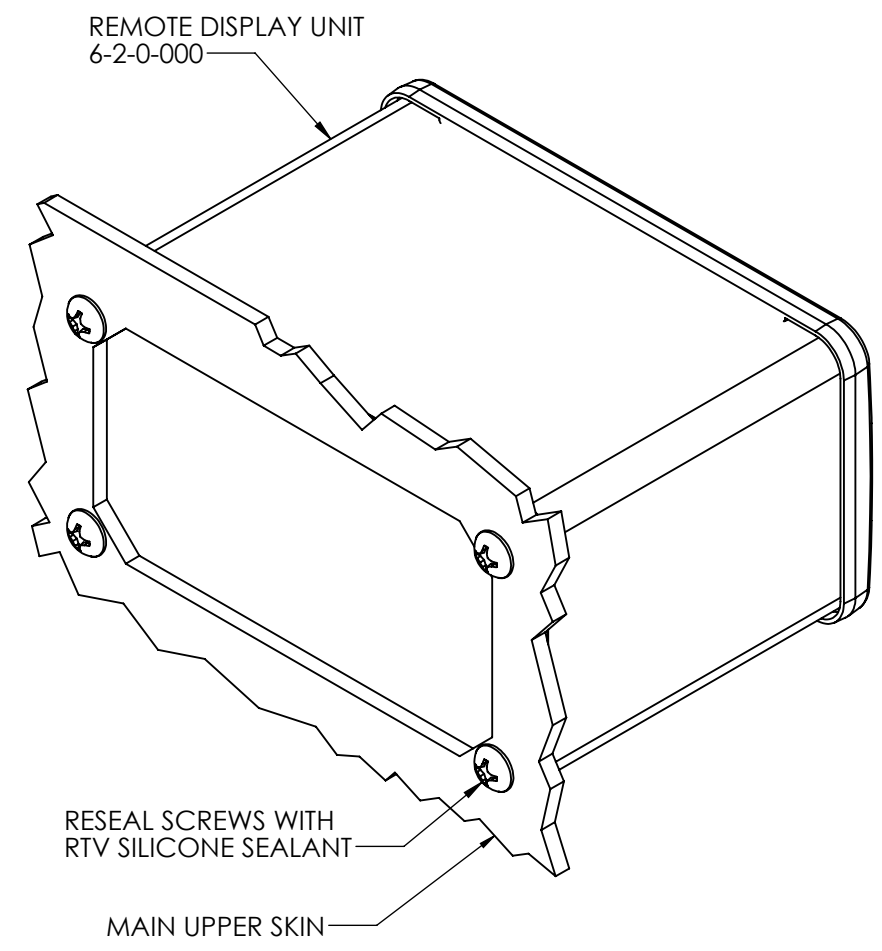
8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	APPROVED	DATE
A	ORIGINAL RELEASE	TRR	7/25/2011
B	DWG. NO. WAS 6-0-0-003 ADDED CUTOUT TO SIDE VIEW	TRR	9/14/2011
C	POSITIONING HOLE NOW AFT HOLE	TRR	11/21/2011
D	ADDED STOCK AIR TRACTOR MOUNT	TRR	12/17/2012
E	NOTE CHANGED FROM AIRTRACTOR TO AIRCRAFT	TRR	8/31/2015
F	ADDED NUMBERS TO NOTES, & ADDED NOTE 2 AND 3 TO CLARIFY REMOTE MOUNTING OPTIONS	TRR	5/1/2020

- NOTE:
1. STOCK AIRCRAFT REMOTE GAUGE LOCATION CAN BE USED IF AVAILABLE
 2. REMOTE DISPLAY CAN BE MOUNTED ON RIGHT OR LEFT SIDE OR BOTH
 3. IF TWO REMOTE DISPLAYS ARE MOUNTED THE SECOND DISPLAY IS DAISY CHAINED OFF THE FIRST



NOTE:
PAINT CUTOUT PER
AIRCRAFT MAINTENANCE
MANUAL



UNLESS OTHERWISE SPECIFIED: TITLE: **REMOTE DISPLAY MOUNTING**

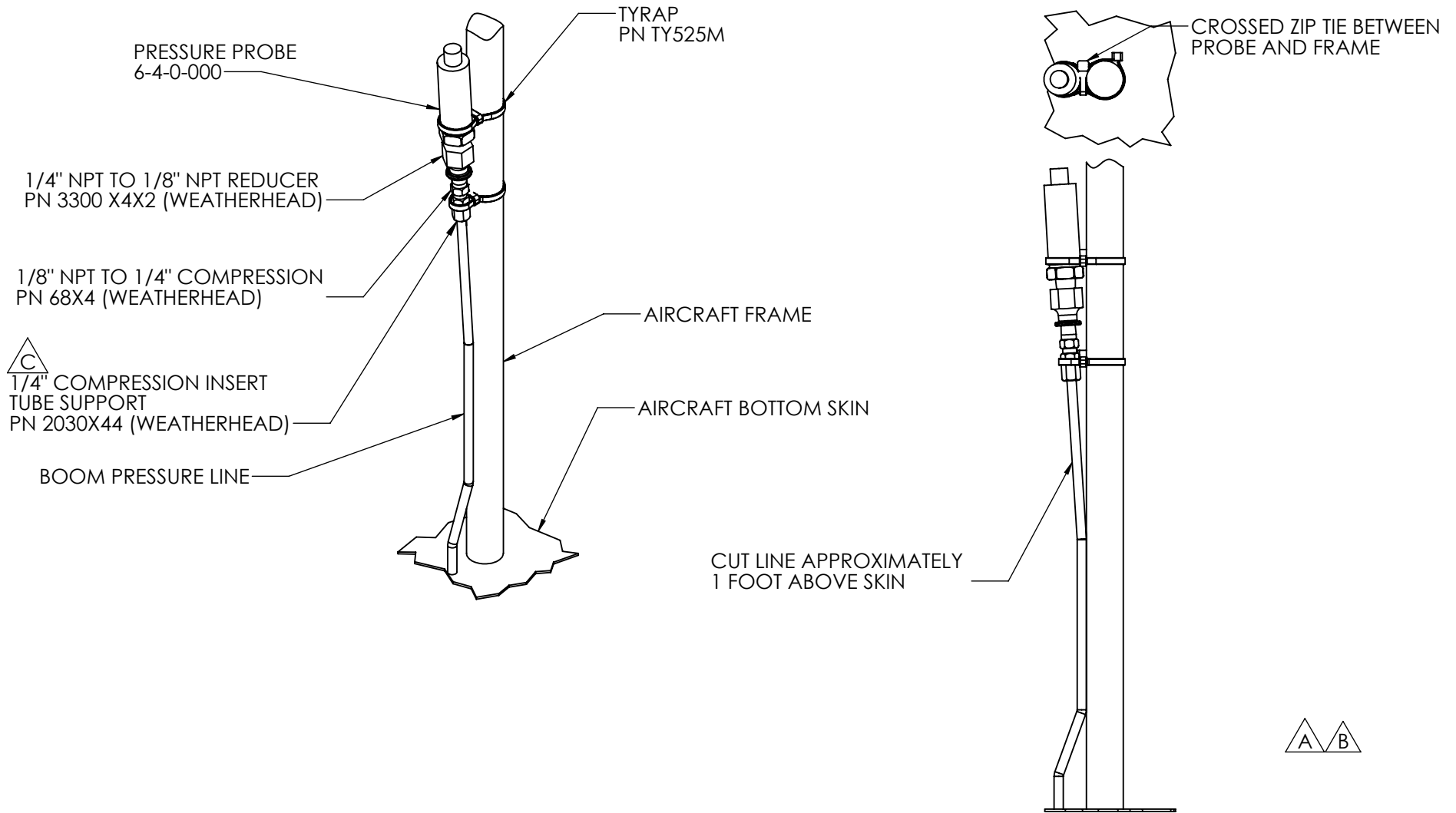
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ± 1/16
ANGULARS: ± 1/2°
TWO PLACE DECIMAL: ± .015
THREE PLACE DECIMAL: ± .005

MATERIAL	NAME	DATE	SIZE	DWG. NO.	REV
	DRAWN	TRR	7/25/2011	A 6-0-3-000	F
DO NOT SCALE DRAWING	CHECKED	TRR	7/25/2011	SCALE: 1:1	WEIGHT:
				SHEET 1 OF 1	

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8 7 6 5 4 3 2 1

		REVISIONS		
REV.	DESCRIPTION	DATE	APPROVED	
A	ORIGINAL RELEASE	8/04/2011	TRR	
B	DWG. NO. WAS 6-0-0-004 ADDED PART NUMBERS	9/13/2011	TRR	
C	ADDED INSERT TUBE SUPPORT	9/23/2014	TRR	



UNLESS OTHERWISE SPECIFIED: TITLE:

PRESSURE PROBE MOUNTING

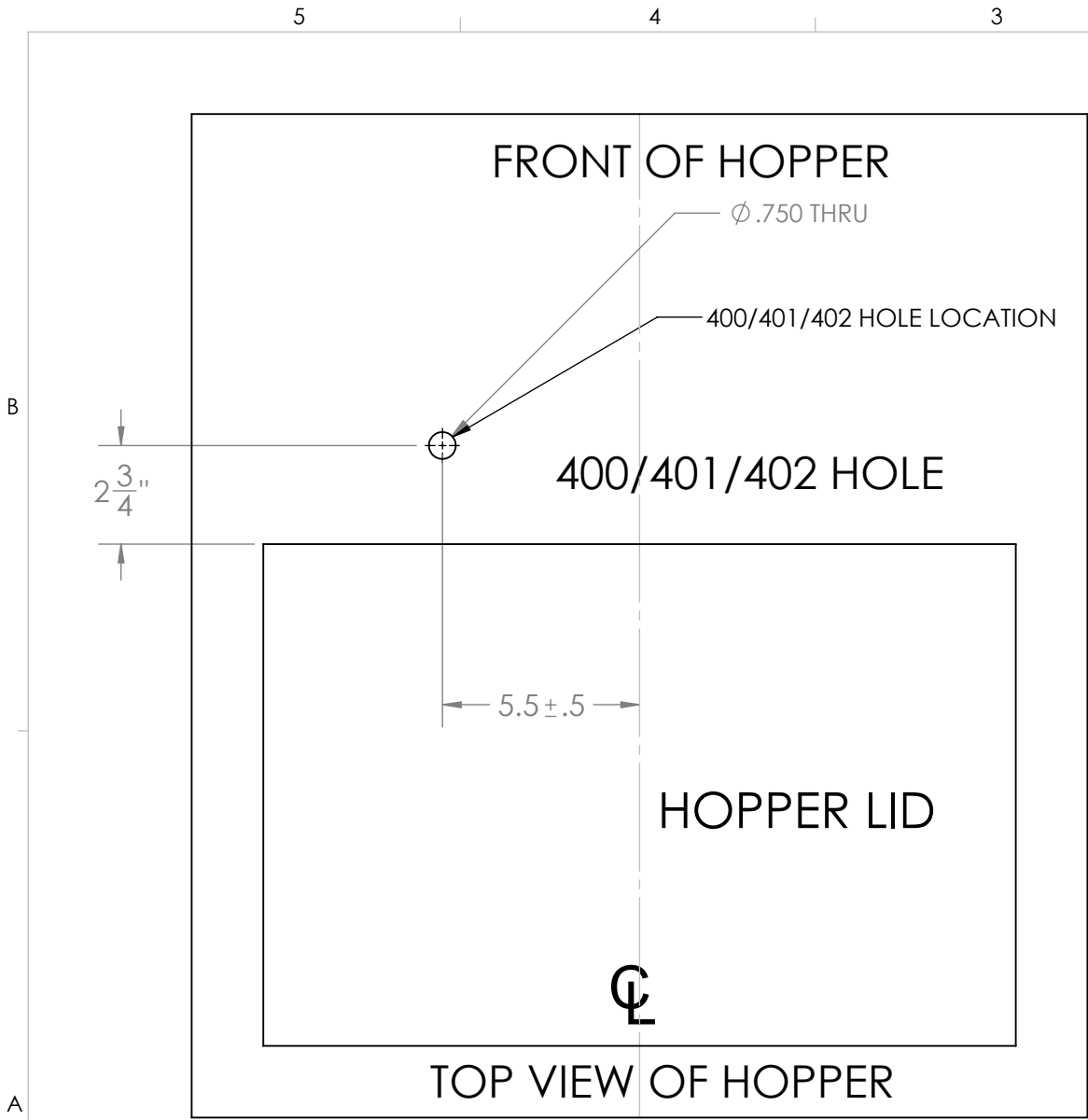
DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/16$
 ANGULARS: $\pm 1/2^\circ$
 TWO PLACE DECIMAL $\pm .015$
 THREE PLACE DECIMAL $\pm .005$

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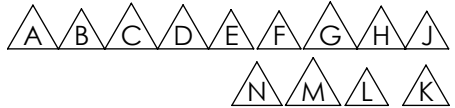
MATERIAL

 DO NOT SCALE DRAWING

	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	8/4/2011	A	6-0-4-000	C
CHECKED	TRR	8/4/2011			
			SCALE: 1:4	WEIGHT:	SHEET 1 OF 1



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	ORIGINAL RELEASE	7/25/2011	TRR
B	DWG. NO. WAS 6-0-0-005 HOLE LOCATIONS SPLIT PER SHEET	9/13/2011	TRR
C	HOLE DISTANCE FROM CL WAS 6	11/21/2011	TRR
D	ADDED AT-802 DATA	2/10/2012	TRR
E	ADDED LOW PROFILE PROBE	10/08/2012	TRR
F	ADDED TRANSLAND FIRE GATE, MOVED 502/802 TOP HOLE FROM 5.5 TO 9.5	12/17/2012	TRR
G	602 MOUNT NOW COMMON WITH 502	1/29/2013	TRR
H	ADDED AT-504	9/23/2014	TRR
J	ADDED THRUSH	8/24/2015	TRR
K	ADDED 550 710 THRUSH	8/12/2016	TRR
L	MOVED WASHER TO INSIDE TANK	3/2/2018	TRR
M	ADDED 802 FIRE INSTALL DATA	6/24/2021	TRR
N	ADDED 401 MOUNT DATA	12/21/2021	TRR



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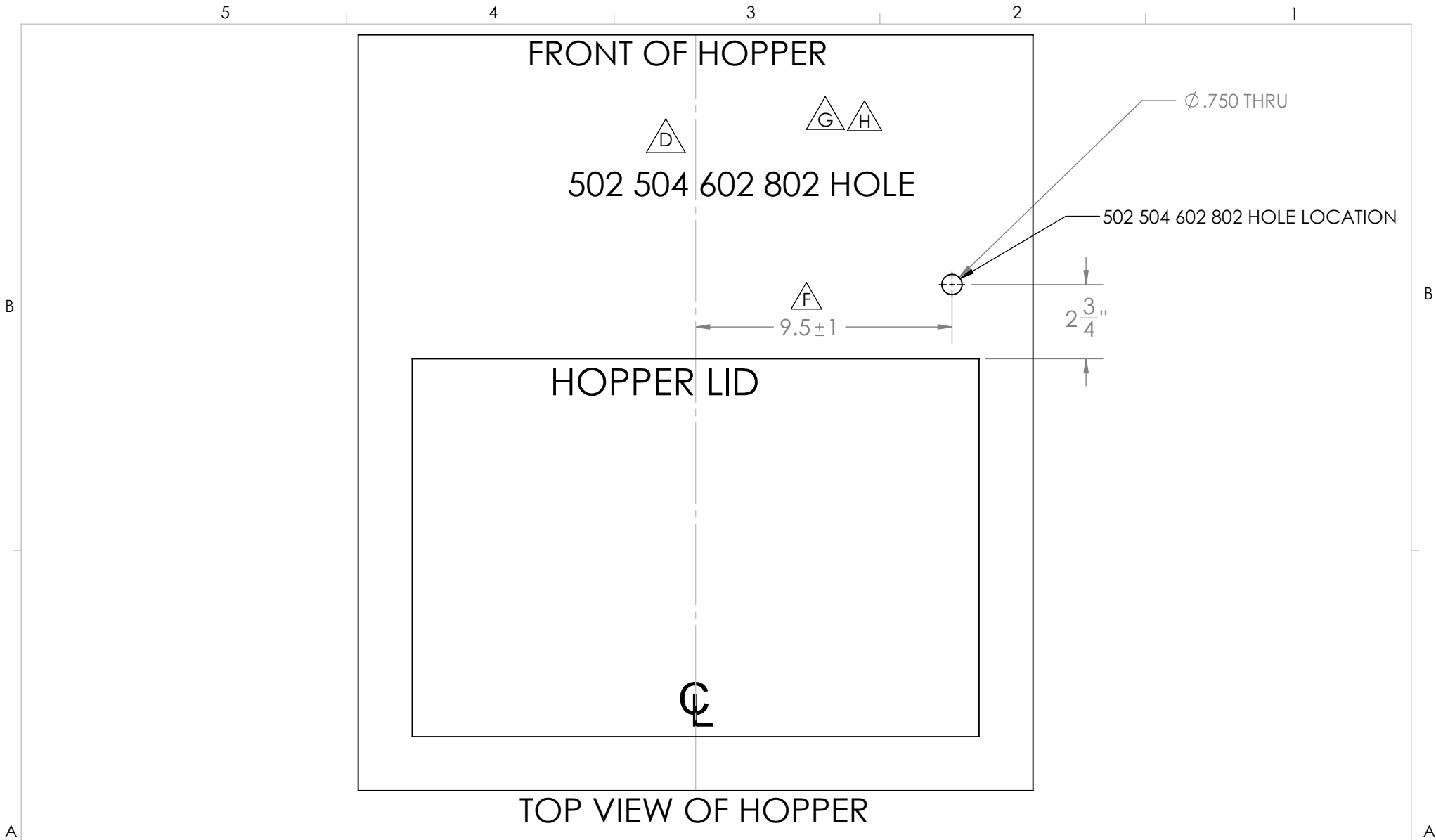
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PER ASME Y14.5
TOLERANCES:
FRACTIONAL: ± 1/16
ANGULARS: ± 1/2°
TWO PLACE DECIMAL ±.015
THREE PLACE DECIMAL ±.005

MATERIAL

SPEC

TITLE: **QUANTITY PROBE MOUNTING**

DRAWN	TRR	DATE	7/25/2011	SIZE	A	DWG. NO.	6-0-5-000	REV	N
CHECKED	TRR	DATE	7/25/2011	DO NOT SCALE DRAWING		SCALE: 1:5	WEIGHT:	SHEET 1 OF 11	



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 ANGULARs: ± 1/2°
 TWO PLACE DECIMAL ±.015
 THREE PLACE DECIMAL ±.005

MATERIAL
 SPEC

TITLE:

QUANTITY PROBE MOUNTING

DRAWN	NAME	DATE	SIZE	DWG. NO.	REV
CHECKED	TRR	7/25/2011	A	6-0-5-000	N
DO NOT SCALE DRAWING			SCALE: 1:5	WEIGHT:	SHEET 2 OF 11

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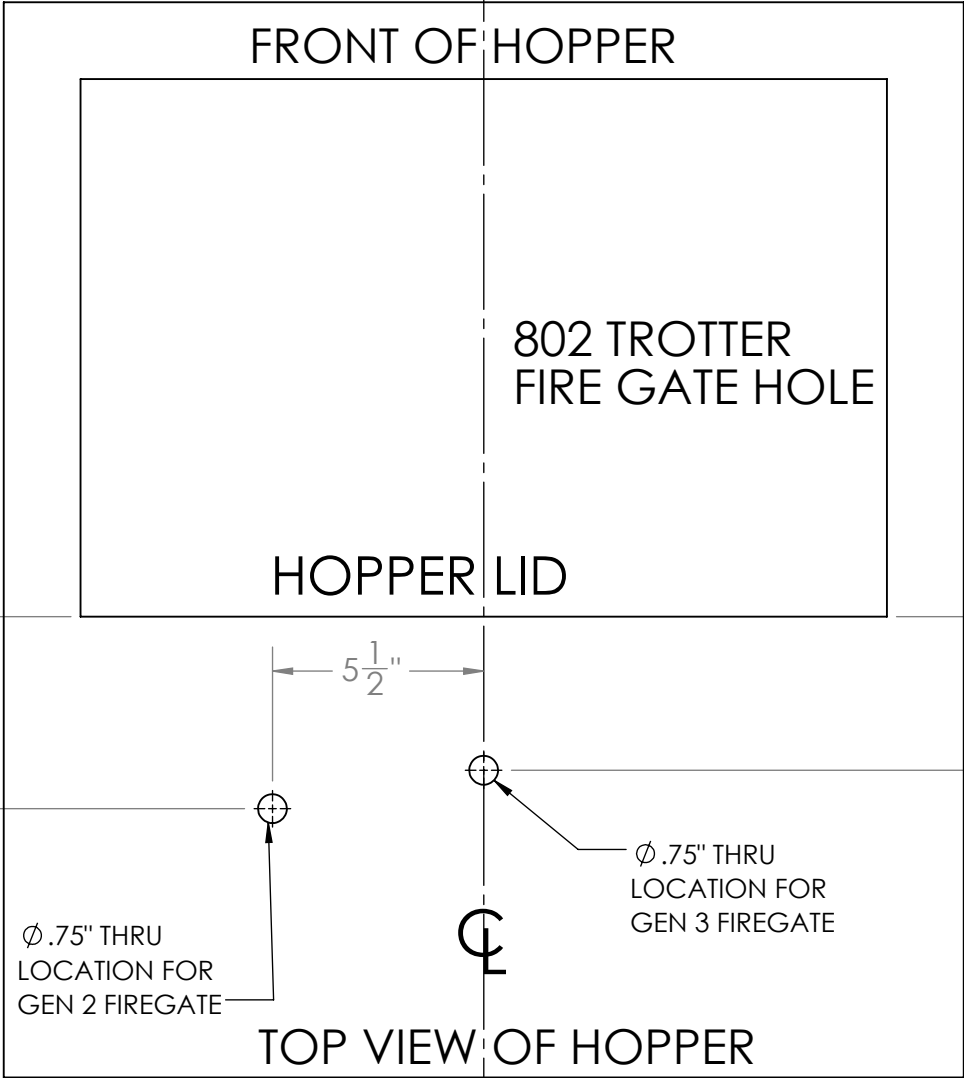
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NOTE:
 BOTH GEN 2 AND GEN3
 HOLE LOCATIONS ARE SHOWN
 ONLY DRILL THE ONE HOLE NEEDED
 FOR GATE INSTALLED ON 802

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 THREE PLACE DECIMAL ±.005

MATERIAL

SPEC

TITLE:

**QUANTITY PROBE
 MOUNTING**

	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/25/2011	A	6-0-5-000	N
CHECKED	TRR	7/25/2011			

DO NOT SCALE DRAWING

SCALE: 1:5

WEIGHT:

SHEET 3 OF 11

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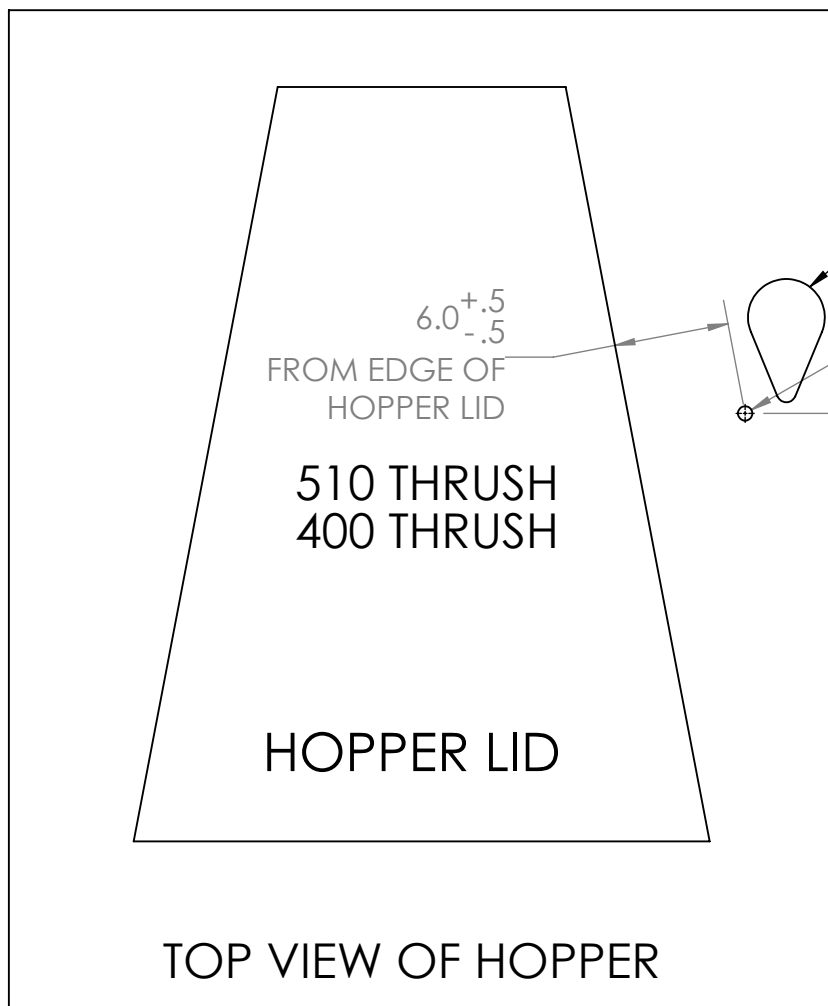
4

3

2

1

FRONT OF HOPPER



6.0^{+0.5}
-0.5
FROM EDGE OF
HOPPER LID

510 THRU
400 THRU

HOPPER LID

VENT HUMP

Ø .75 THRU

31.0±.5
FORWARD OF
AFT HOPPER WALL

TOP VIEW OF HOPPER

B

B

A

A

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ANGULARs: ± 1/2°
TWO PLACE DECIMAL ±.015
THREE PLACE DECIMAL ±.005

MATERIAL
SPEC

TITLE:

QUANTITY PROBE MOUNTING

	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/25/2011	A	6-0-5-000	N
CHECKED	TRR	7/25/2011			
DO NOT SCALE DRAWING			SCALE: 1:10	WEIGHT:	SHEET 4 OF 11

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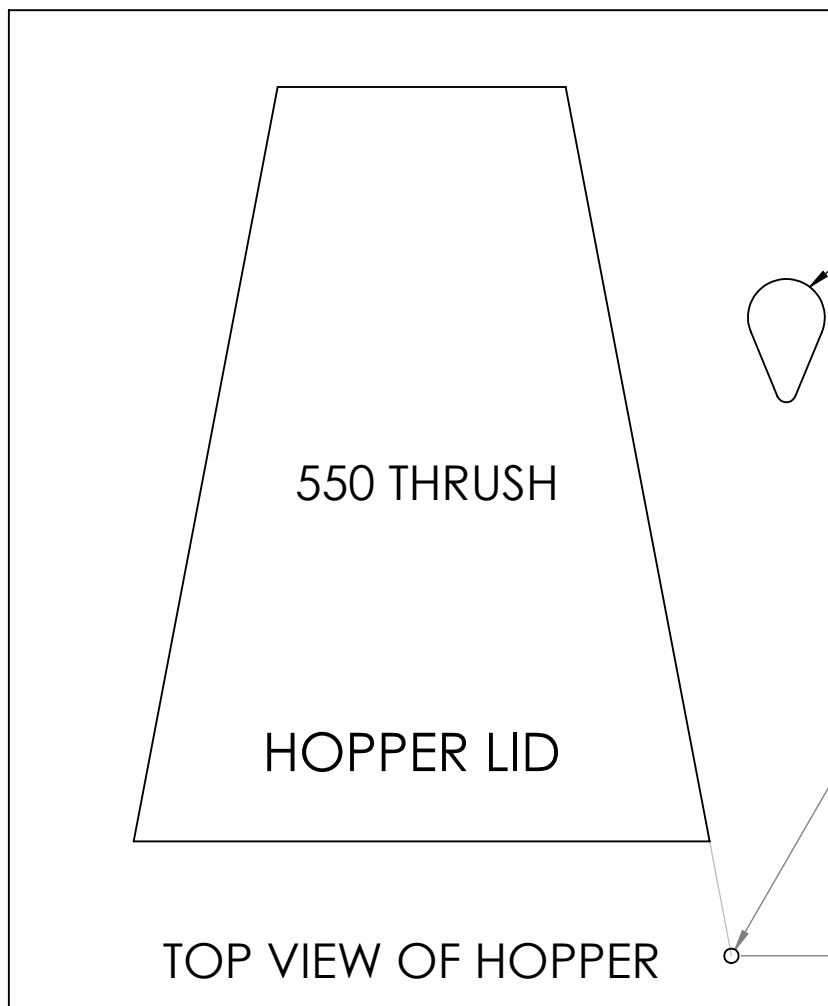
4

3

2

1

FRONT OF HOPPER



VENT HUMP

550 THRU

HOPPER LID

TOP VIEW OF HOPPER

Ø .75 THRU
INLINE WITH HOOPER OPENING
LOOK FOR THIN SPOT IN TANK

2.75±.50
FORWARD OF
WINDSHIELD



B

B

A

A

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ANGULAR: ± 1/2°
TWO PLACE DECIMAL ± .015
THREE PLACE DECIMAL ± .005

MATERIAL

SPEC

TITLE:

QUANTITY PROBE MOUNTING

	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/25/2011	A	6-0-5-000	N
CHECKED	TRR	7/25/2011			

DO NOT SCALE DRAWING

SCALE: 1:10

WEIGHT:

SHEET 5 OF 11

5

4

3

2

1

5

4

3

2

1

FRONT OF HOPPER 710 THRU

Ø .750 THRU

6.0 ± .5
AFT OF FRONT WALL

8.0 ± .5

VENT HUMP

HOPPER LID



TOP VIEW OF HOPPER



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ANGULARS: ± 1/2°
TWO PLACE DECIMAL ± .015
THREE PLACE DECIMAL ± .005

MATERIAL

SPEC

TITLE:

QUANTITY PROBE MOUNTING

	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/25/2011	A	6-0-5-000	N
CHECKED	TRR	7/25/2011			

DO NOT SCALE DRAWING

SCALE: 1:10

WEIGHT:

SHEET 6 OF 11

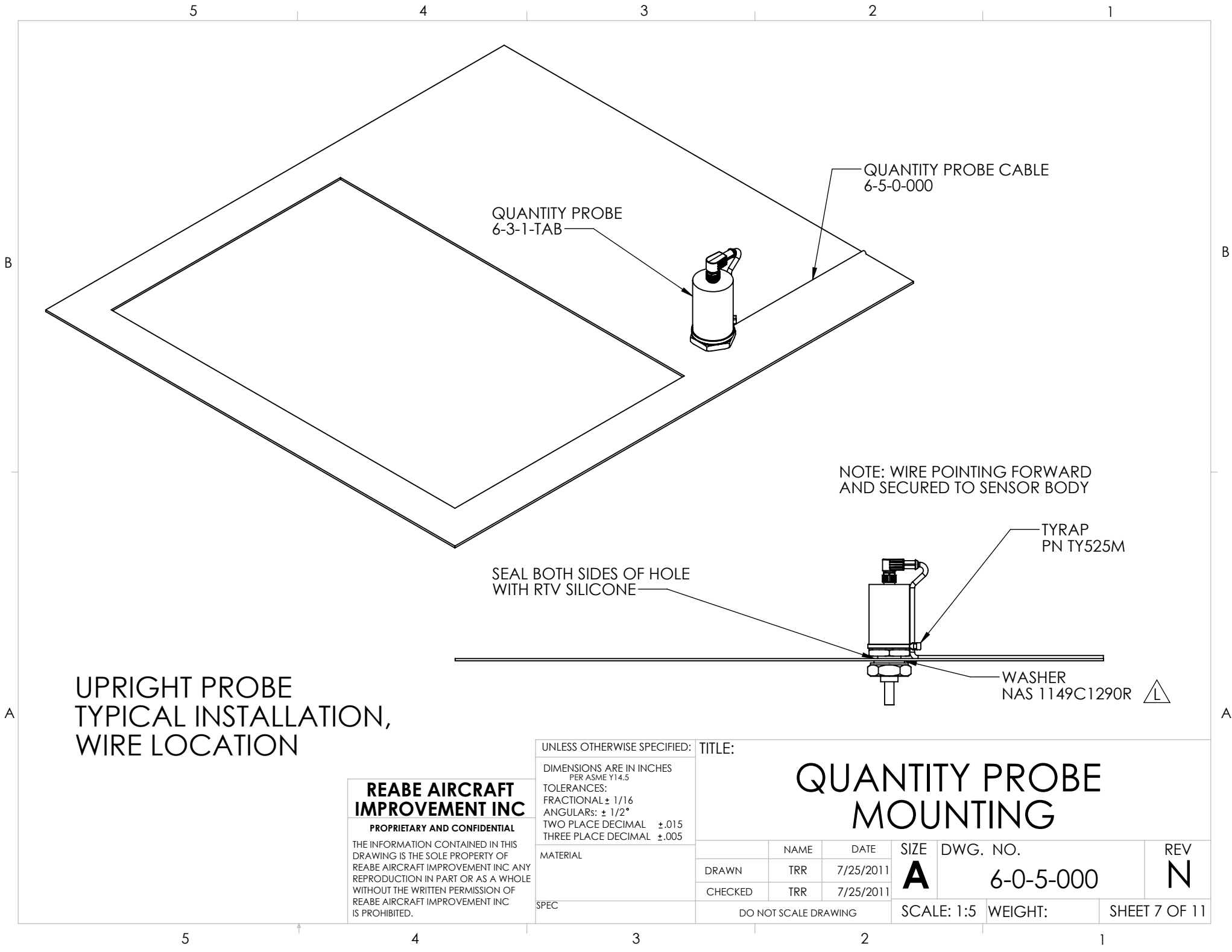
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2

1



UPRIGHT PROBE
TYPICAL INSTALLATION,
WIRE LOCATION

NOTE: WIRE POINTING FORWARD
AND SECURED TO SENSOR BODY

SEAL BOTH SIDES OF HOLE
WITH RTV SILICONE

TYRAP
PN TY525M

WASHER
NAS 1149C1290R

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TOLERANCES:			
FRACTIONAL: ± 1/16			
ANGULARS: ± 1/2°			
TWO PLACE DECIMAL ±.015		MATERIAL	
THREE PLACE DECIMAL ±.005		SPEC	

NAME		DATE		SIZE		DWG. NO.		REV	
DRAWN		TRR		7/25/2011		A		6-0-5-000	
CHECKED		TRR		7/25/2011				N	
DO NOT SCALE DRAWING				SCALE: 1:5		WEIGHT:		SHEET 7 OF 11	

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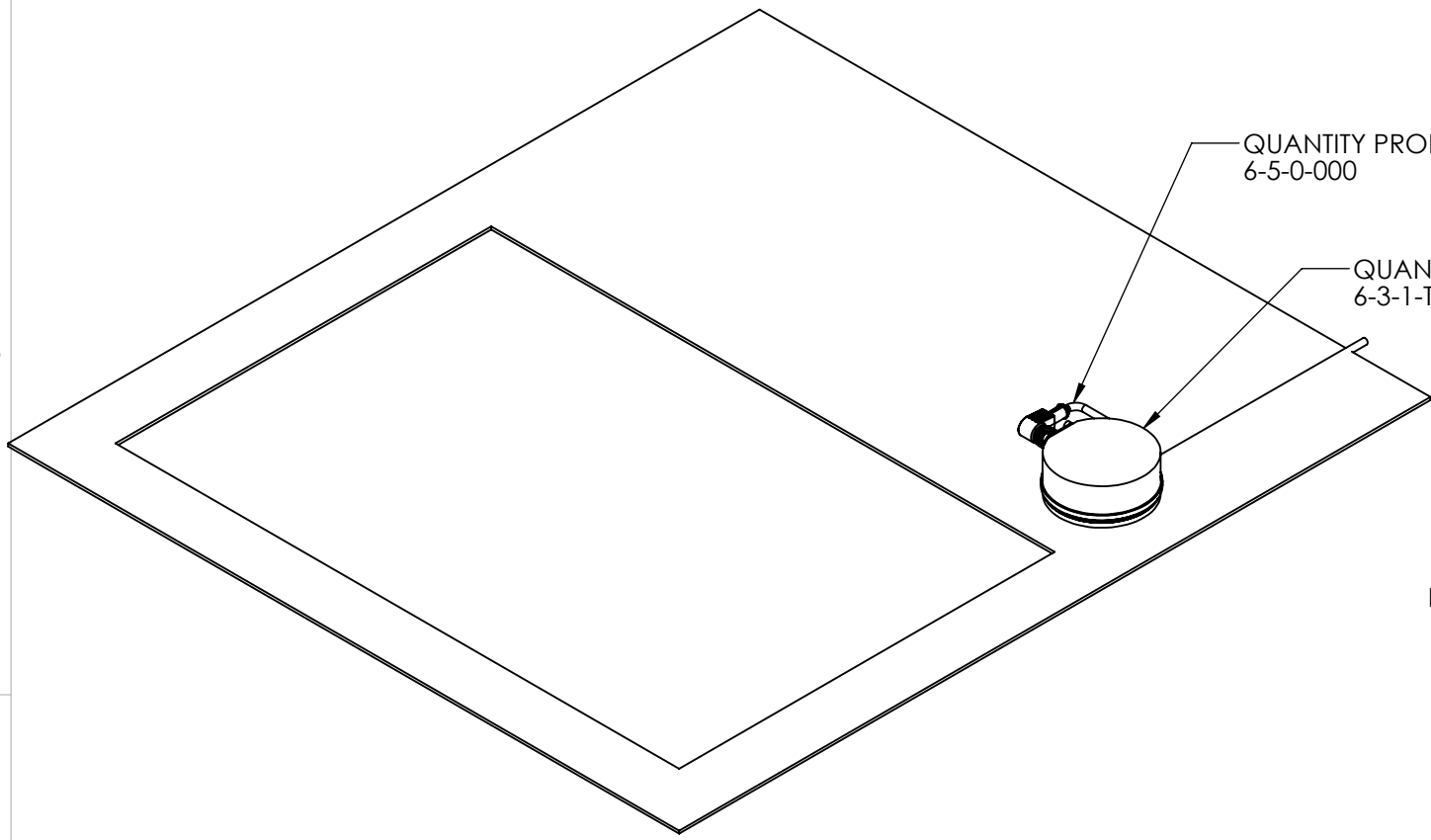
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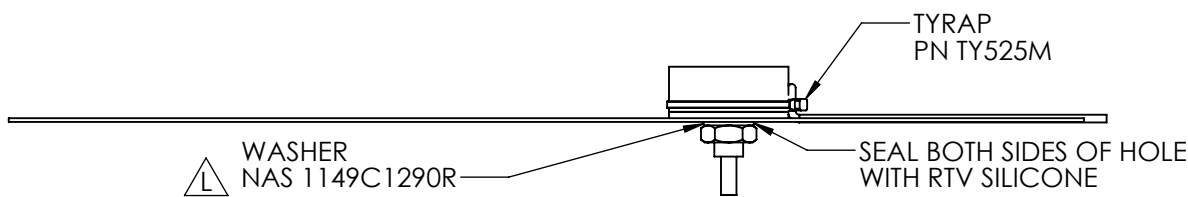
1

B

B



NOTE: WIRE POINTING FORWARD



**△ LOW PROFILE PROBE
TYPICAL INSTALLATION,
WIRE LOCATION**

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ANGULAR: ± 1/2°	
TWO PLACE DECIMAL ±.015	
THREE PLACE DECIMAL ±.005	
MATERIAL	
SPEC	

TITLE:		QUANTITY PROBE MOUNTING		
NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/25/2011	A	6-0-5-000
CHECKED	TRR	7/25/2011		N
DO NOT SCALE DRAWING		SCALE: 1:5	WEIGHT:	SHEET 8 OF 11

5

4

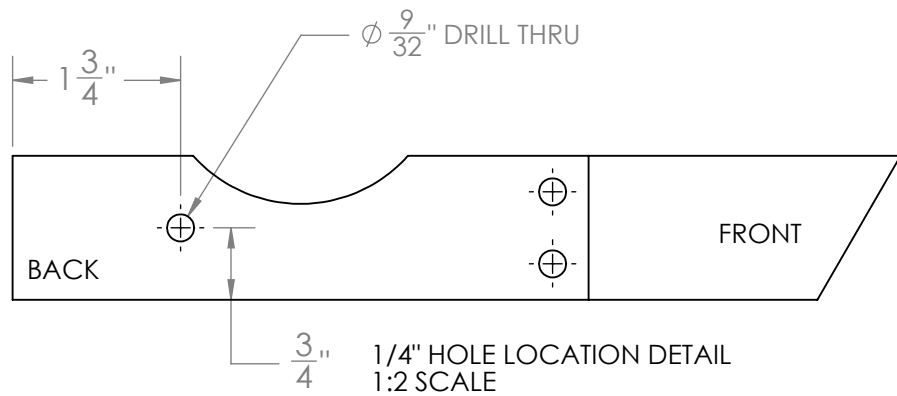
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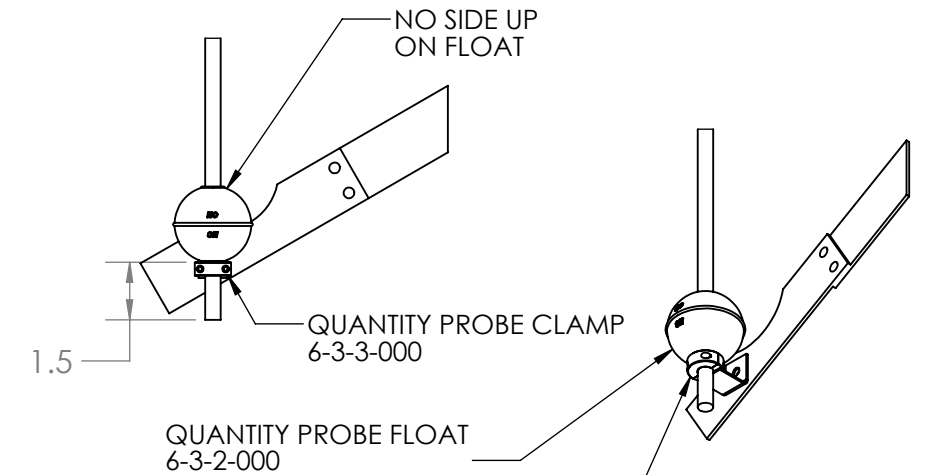
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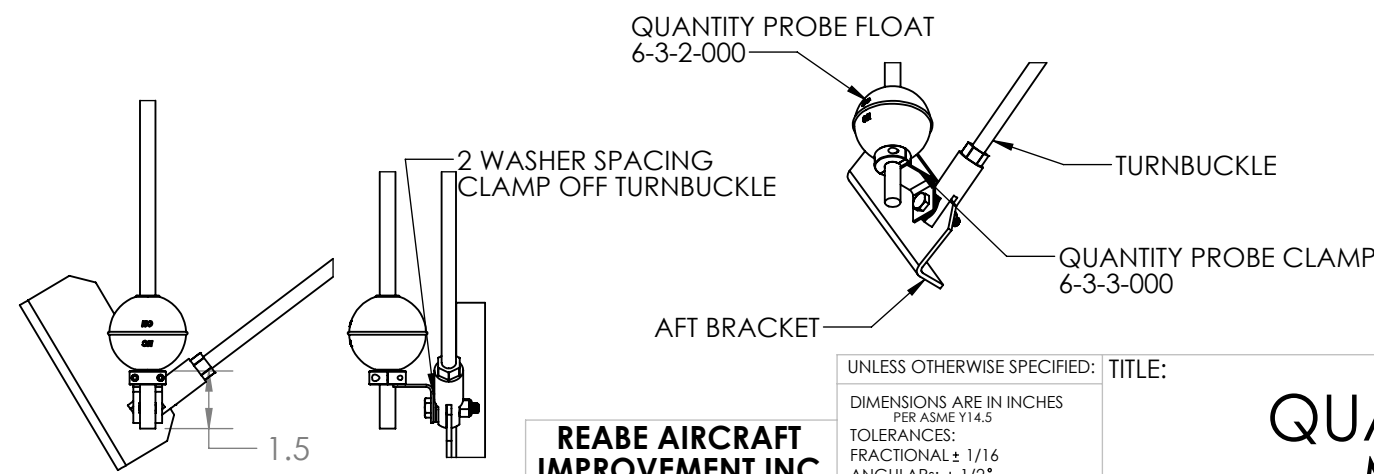
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TYPICAL PROBE CLAMP INSTALLATION



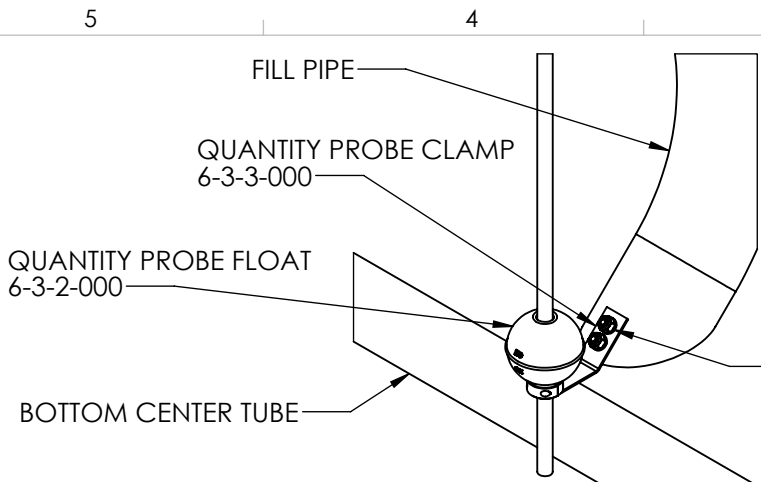
CLAMP TAB IS ON BOTTOM SIDE OF CLAMP
 TOP OF CLAMP IS 1.5" FROM BOTTOM OF PROBE
 CLAMP TAB IS BENT AND DRILLED FOR PROBE AND FLOAT CLEARANCE



TRANSLAND FIRE GATE PROBE CLAMP INSTALLATION

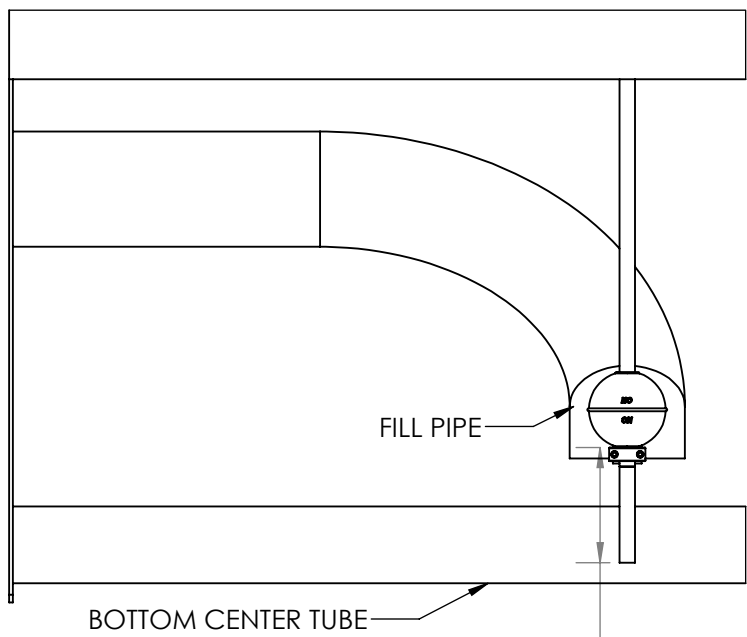
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TOLERANCES: FRACTIONAL: $\pm 1/16$ ANGULARS: $\pm 1/2^\circ$ TWO PLACE DECIMAL $\pm .015$ THREE PLACE DECIMAL $\pm .005$						
MATERIAL	NAME	DATE	SIZE	DWG. NO.	REV	
	TRR	7/25/2011	A	6-0-5-000	N	
SPEC	CHECKED	TRR	7/25/2011	SCALE: 1:5	WEIGHT:	
DO NOT SCALE DRAWING			SHEET 9 OF 11			

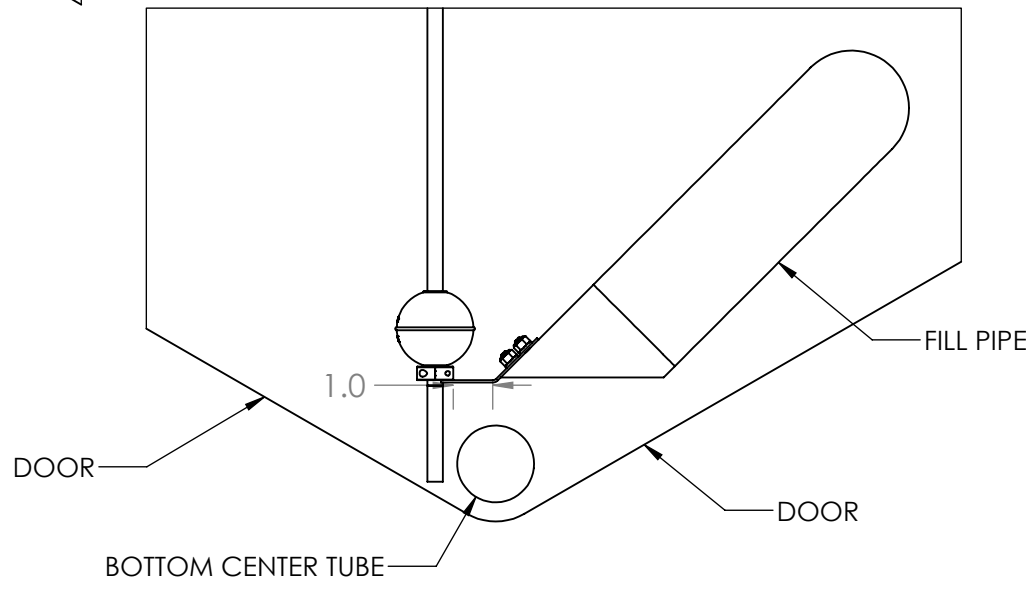


802 WITH GEN 2 TROTTER FIRE GATE PROBE CLAMP INSTALLATION

CLAMP SECURED WITH
(2) 3/16" SCREWS WITH LOCK NUTS
NOTE: HEAD DOWN ON SCREW
CLAMP TAB IS ON BOTTOM SIDE OF CLAMP
TOP OF CLAMP IS 3.0" FROM BOTTOM OF PROBE
CLAMP TAB IS BENT AND DRILLED FOR PROBE AND FLOAT CLEARANCE



3"
CLAMP FROM
END OF ROD



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ANGULARS: ± 1/2°
TWO PLACE DECIMAL ±.015
THREE PLACE DECIMAL ±.005

MATERIAL	
SPEC	

TITLE:		QUANTITY PROBE MOUNTING			
NAME	DATE	SIZE	DWG. NO.	REV	
DRAWN TRR	7/25/2011	A	6-0-5-000	N	
CHECKED TRR	7/25/2011				
DO NOT SCALE DRAWING		SCALE: 1:5	WEIGHT:	SHEET 10 OF 11	

5

4

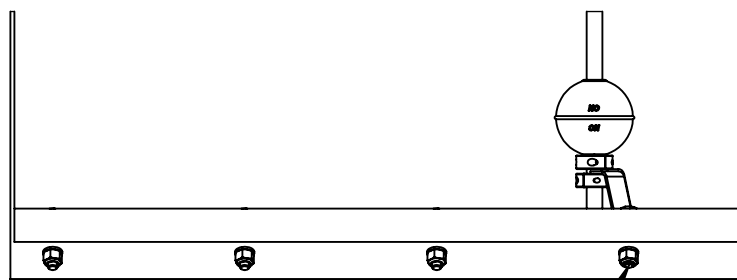
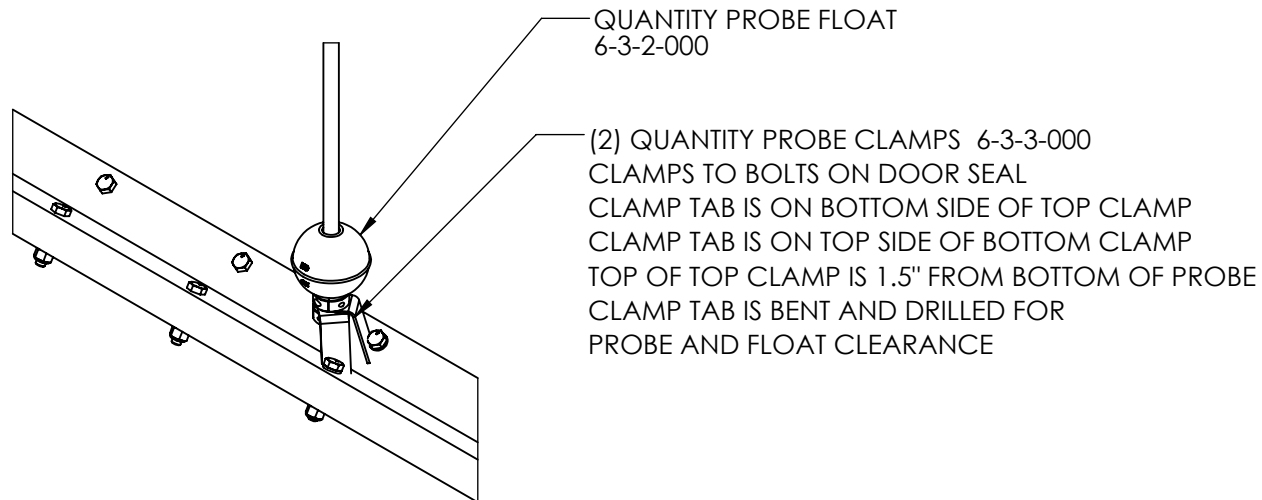
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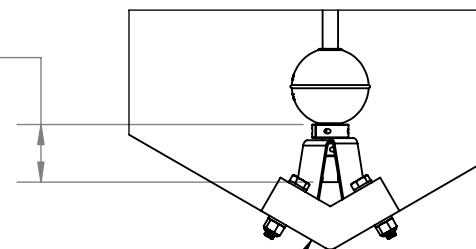


802 WITH GEN 3 TROTTER FIRE GATE PROBE CLAMP INSTALLATION



4TH BOLT FROM REAR,
APROX 16" FROM AFT EDGE OF DOOR

1 1/2" END OF ROD
TO TOP OF CLAMP



CENTER DOOR SEAL BEAM

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ANGULARS: ± 1/2°
TWO PLACE DECIMAL ±.015
THREE PLACE DECIMAL ±.005

MATERIAL

SPEC

TITLE:

QUANTITY PROBE MOUNTING

	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN	TRR	7/25/2011	A	6-0-5-000	N
CHECKED	TRR	7/25/2011			

DO NOT SCALE DRAWING

SCALE: 1:5

WEIGHT:

SHEET 11 OF 11

5

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3

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1

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	APPROVED	DATE
A	ORIGINAL RELEASE	TRR	3/28/2018
B	20" WAS 22" AFT OF LEFT DOOR	TRR	9/8/2018
C	ADDED ADDITIONAL SWITCH MOUNTS & IN-LINE FUSE	TRR	1/18/2019

NOTE:
SWITCH MONTED THROUGH .75" HOLE
PAINT HOLE PER AIRCRAFT MAINTENANCE MANUAL

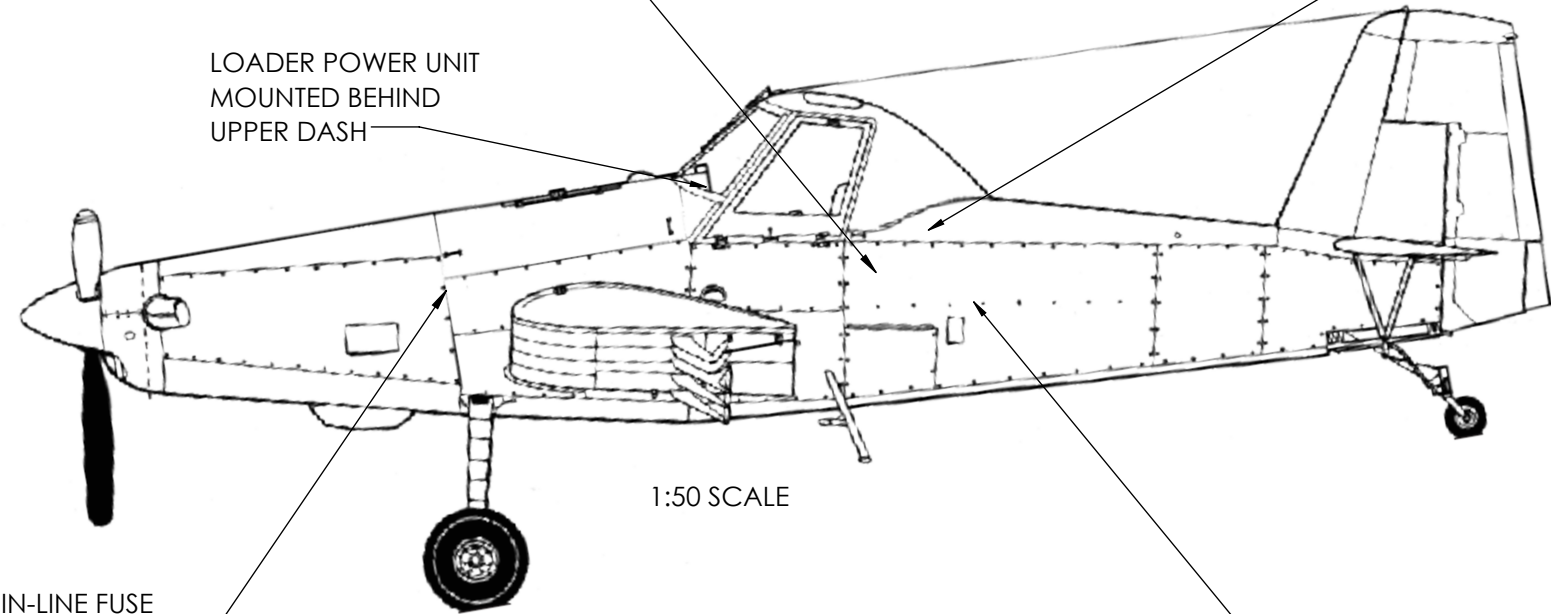
1 AMP IN-LINE FUSE ASSEMBLY ALLOWED IN PLACE OF BREAKER $\triangle C$

CHECK THAT THE BREAKER OR INLINE FUSE HOLDER LOCATION
CAN BE REACHED WITH 4" 18 AWG WIRE FROM HOT SIDE
OF RELAY COIL

EXAMPLE IN-LINE FUSE ASSEMBLY:
DELPHI P/N 1206681 FUSE HOLDER $\triangle C$
DELPHI P/N 12033731 FUSE COVER $\triangle C$

LOADER QUANTITY POWER SWITCH
MOUNT OPTION C IN EXISTING AIR TRACTOR
REMOTE DISPLAY MOUNTING BRACKET IF SO EQUIPPED
3/4" HOLE IN BRACKET
1.0" HOLE IN SKIN $\triangle C$

LOADER QUANTITY POWER SWITCH
MOUNT OPTION A NEXT TO REMOTE DISPLAY
3/4" HOLE IN TURTLE DECK
20" AFT OF LEFT DOOR
1/2" ABOVE SIDE SKIN $\triangle B$



1:50 SCALE

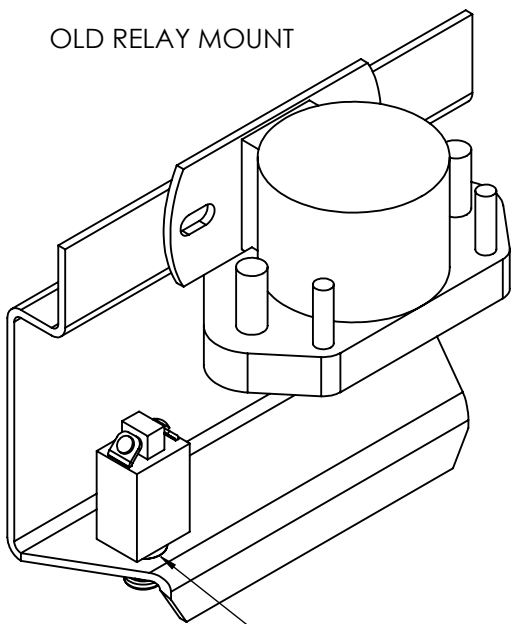
CIRCUIT BREAKER OR IN-LINE FUSE
MOUNTED NEXT TO MASTER RELAY

LOADER QUANTITY POWER SWITCH
MOUNT OPTION B IN HORIZONTAL STRINGER
3/4" HOLE CENTERED IN STRINGER
1" MINIMUM DISTANCE FROM OTHER HOLES
1.0" HOLE IN SKIN $\triangle C$

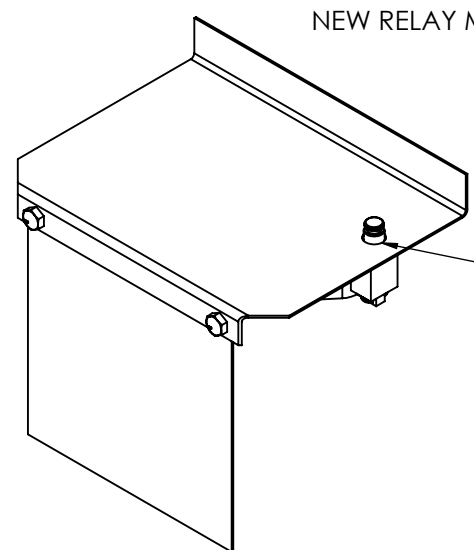
HORIZONTAL
STRINGER

REMOVABLE
SKIN PANNEL

OLD RELAY MOUNT



NEW RELAY MOUNT SHIELD



BREAKER MOUNT, 1/2" HOLE
2" FORWARD OF FIREWALL
3/4" IN FROM INBOARD EDGE

BREAKER MOUNT, 1/2" HOLE
1-1/2" FORWARD OF FIREWALL
1" IN FROM OUTBOARD EDGE

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ANGULARS: $\pm 1/2^\circ$
TWO PLACE DECIMAL $\pm .015$
THREE PLACE DECIMAL $\pm .005$

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LOADER POWER MOUNTING

MATERIAL		NAME	DATE	SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING		DRAWN	TRR	3/7/2018	A 6-0-6-000	C
		CHECKED	TRR	3/7/2018		
				SCALE: 1:2	WEIGHT:	SHEET 1 OF 1

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

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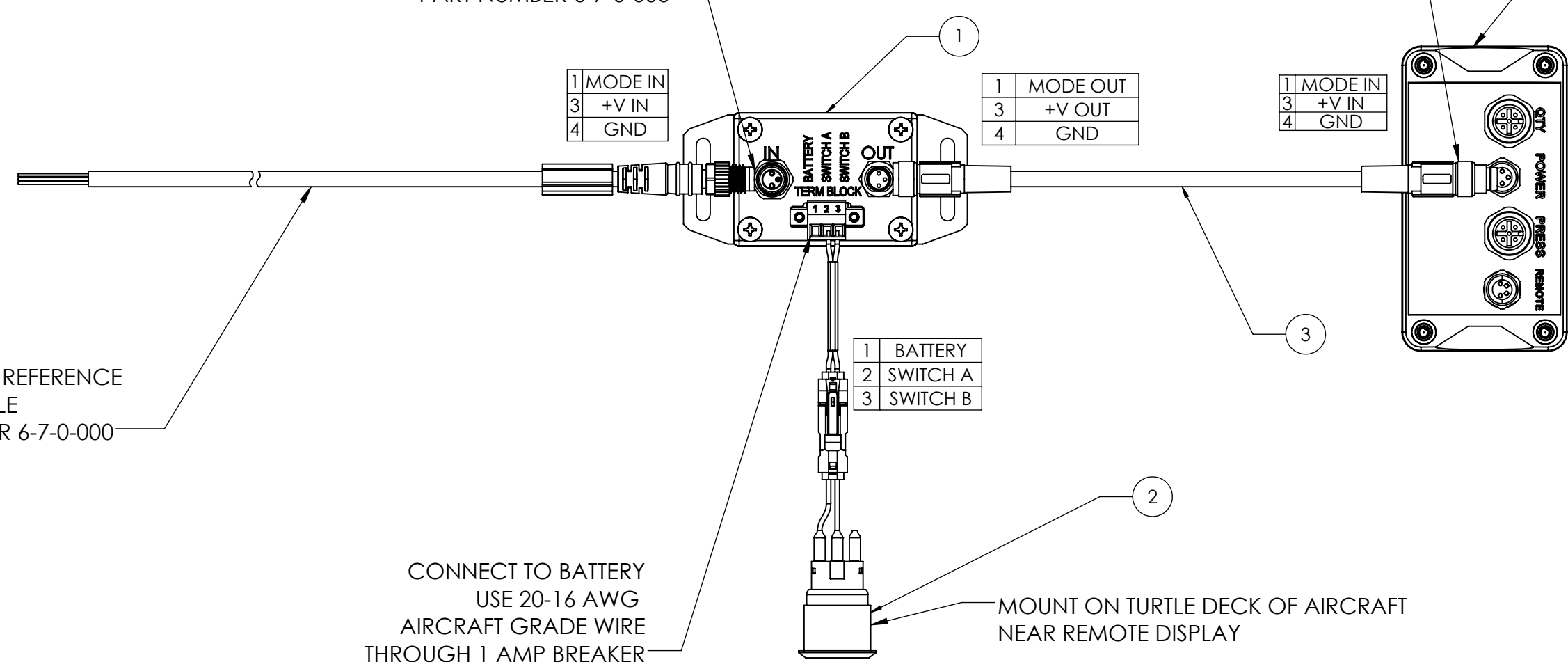
A

SHOWN FOR REFERENCE
POWER CABLE
PART NUMBER 6-7-0-000

CONNECT THE POWER CABLE HERE
PART NUMBER 6-7-0-000

CONNECT TO THE POWER PORT
OF THE MAIN DISPLAY UNIT
PART NUMBER 6-1-0-000

SHOWN FOR REFERENCE
MAIN DISPLAY UNIT
PART NUMBER 6-1-0-000



CONNECT TO BATTERY
USE 20-16 AWG
AIRCRAFT GRADE WIRE
THROUGH 1 AMP BREAKER

MOUNT ON TURTLE DECK OF AIRCRAFT
NEAR REMOTE DISPLAY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	6-9-1-000	LOADER POWER UNIT	1
2	6-9-2-000	LOADER QUANTITY POWER SWITCH	1
3	6-9-3-000	LOADER POWER CABLE	1

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ANGULARS: ± 1/2°
TWO PLACE DECIMAL ± .015
THREE PLACE DECIMAL ± .005

MATERIAL

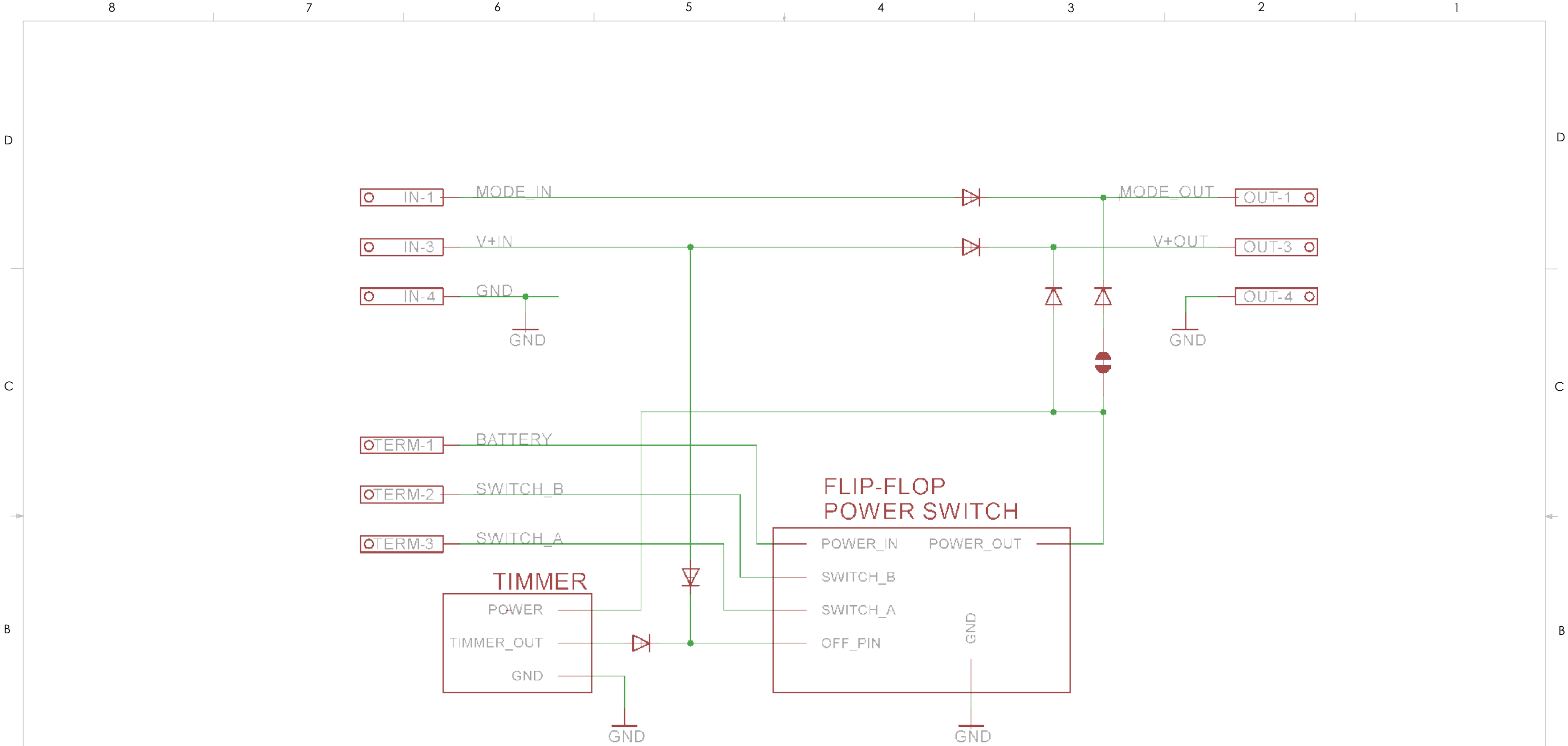
DO NOT SCALE DRAWING

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	ORIGINAL RELEASE	3/28/2018	TRR

LOADER POWER KIT

DRAWN	TRR	DATE	1/10/2018	SIZE	A	DWG. NO.	6-9-0-000	REV	A
CHECKED	TRR	DATE	1/10/2018	SCALE:	1:1.5	WEIGHT:		SHEET 1 OF 2	

8 7 6 5 4 3 2 1



UNLESS OTHERWISE SPECIFIED:		TITLE:			
DIMENSIONS ARE IN INCHES		<h1>LOADER POWER KIT</h1>			
TOLERANCES:					
FRACTIONAL: ± 1/16					
ANGULARS: ± 1/2°					
TWO PLACE DECIMAL ±.015		SIZE	DWG. NO.	REV	
THREE PLACE DECIMAL ±.005		A	6-9-0-000	A	
MATERIAL		DRAWN	TRR	1/10/2018	CHECKED
DO NOT SCALE DRAWING		TRR	1/10/2018	SCALE: 1:1	WEIGHT:
				SHEET 2 OF 2	

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8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A

8 7 6 5 4 3 2 1

WEIGHT & BALANCE ANALYSIS				Document Number WEIGHT-1	REVISION LEVEL Rev E
ORIGINATOR JRR, TRR			ISSUE DATE 30 August 2011	APPROVED BY TRR	
REVISION HISTORY	REVISION DATE	REVISED BY	APPROVED BY	DESCRIPTION OF REVISION	
A	8/30/11	JRR	TRR	DOCUMENT CREATED	
B	10/03/11	TRR	TRR	DOCUMENT FORMAT CHANGED	
C	3/02/15	TRR	TRR	ADDED CHART FOR W&B CALCULATION	
D	11/12/15	JRR	JRR	REWRITE	
E	1/10/18	TRR	TRR	ADDED LOADER POWER BUTTON	

WEIGHT & BALANCE ANALYSIS

Weight and balance computation is required after installation. Follow the guidelines as established in AC 43.13-1B, Chapter 10, Section 2. Make appropriate entries in the equipment list indicating items added, removed, or relocated along with the date accomplished. Include your name and certificate number in the aircraft records. The table below identifies the weight of the items included in this system.

Item	Weight Lbs.
Main Display	0.5
Remote Display	0.5
Pressure Transducer	0.1
Quantity Probe	2.5
Cables	1
Loader Power Kit	0.6
Total System	5.2

ELECTRICAL LOAD ANALYSIS				Document Number ELECTRICAL-1	REVISION LEVEL Rev D
ORIGINATOR JRR, TRR			ISSUE DATE 30 August 2011	APPROVED BY JRR	
REVISION HISTORY	REVISION DATE	REVISED BY	APPROVED BY	DESCRIPTION OF REVISION	
A	8/30/11	JRR	TRR	DOCUMENT CREATED	
B	10/03/11	TRR	TRR	DOCUMENT FORMAT CHANGED	
C	6/30/15	JRR	JRR	UPDATED FOR NEW AIRCRAFT ON AML	
D	11/12/15	JRR	JRR	REWRITE	

ELECTRICAL LOAD ANALYSIS

An electrical load analysis should be completed on each aircraft prior to installation in accordance with AC 43.13-1B, Chapter 11. Use the following values for computation.

24VDC

True Quantity System Usage ¼ Amp

REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
“TRUE QUANTITY” HOPPER QUANTITY & BOOM PRESSURE GAUGE

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS				Document Number ICA-1	REVISION LEVEL Rev L
ORIGINATOR JRR, TRR			ISSUE DATE 03 June 2011	APPROVED BY TRR	
REVISION HISTORY	REVISION DATE	REVISED BY	APPROVED BY	DESCRIPTION OF REVISION	
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D	3/14/12	TRR	TRR	ADDED AT-802	
E	4/16/12	JRR	JRR	INCORPORATED GROUND TEST	
F	11/15/12	TRR	TRR	ADDED AT- MODELS 400A, 402A, 402B, 502A, 502B, 802A	
G	9/23/14	TRR	TRR	ADDED AT-504	
H	3/02/15	TRR	TRR	Updated for new aircraft on AML	
I	6/29/15	JRR	JRR	Updated for new aircraft on AML	
J	11/12/15	JRR	JRR	REWRITE	
K	12/4/15	JRR	JRR	REWRITE	
L	3/28/18	JRR	JRR	ADD 710 THRUSH AND LOADER POWER SWITCH	

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

For aircraft with the Reabe Aircraft Improvement, Digital Payload Hopper Quantity and Spray Boom Pressure Indicating system installed under (AML)STC SA03040CH.

1) Introduction

Modification of an aircraft by this Supplemental Type Certificate obligates the aircraft operator to include the maintenance information provided by this document in the Operator’s Aircraft Maintenance Manual and the Operator’s aircraft scheduled maintenance program. This is applicable to all aircraft on the AML.

2) Description

The Air Tractor and Thrush Aircraft are designed for agricultural spraying applications. Previously they were equipped from the manufacturer with a hopper quantity indication system that had a high rate of failure or had poor accuracy. The Reabe Aircraft Improvement Digital Payload Hopper Quantity Indication system and Spray Boom Pressure Indication system (“True Hopper” system) is both highly reliable and highly accurate.

The Digital Payload Hopper Quantity Indication system and Spray Boom Pressure Indication system (“True Hopper” system) consists of a magnetostrictive sensor, pressure sensor and a digital cockpit display, with an optional external display. Both sensors are industrial components that are qualified for the application used in this aircraft alteration. The displays are custom designed components that indicate the quantity of the hopper (gallons or liters) and pressure of the of the spray boom (PSI).

The magnetostrictive probe and floating magnet measures payload fluid level to the nearest 0.001 inch of travel on the probe. The cockpit display uses look up tables to convert the probe output to the quantity of fluid in the tank. There are 2 look up tables, one for ground attitude and one for flight attitude, and is selected using an input from the aircraft hour meter torque pressure switch. The display also performs data averaging to reduce sloshing effects, thus increasing the accuracy of the system. If a remote display indicator is installed, an RS232 signal is sent from the cockpit display to the remote display, both displays will indicate the same quantity. A pressure sensor is installed in the left boom pressure line, and is wired to the display. The display indicates the pressure in the boom line, and also alerts the pilot if negative pressure is present by illuminating a light on the display indication “suck back”. This indicates when the aircraft recirculating ball valve feature is working. The cockpit display can be dimmed using the dim button.

There are differences in the installation design data for each of the Aircraft. The primary difference is due to the size of the hopper, which will require different part number probes, changing the probe

*REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
"TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE*

length. There are dip switches on the indicator that then account for the probe/hopper changes in each model. If installed, a "Loader Quantity Power" Switch mounted outside the aircraft will power up the displays for 15±3 minutes when pressed or power down if pressed again.

3) Control, Operation Information/Special Procedures

The cockpit display can be dimmed using the "dim" push button on the display.

The power to the Digital Payload Hopper Quantity Indication system is controlled by the Klixon PN 7277-2-1 or equivalent circuit breaker (1 amp), located in the breaker panel labeled Hopper Display. The power to the "Loader Quantity Power" Switch is provided through a firewall mounted breaker labeled "Loader Quantity Switch".

4) Servicing

The Digital Payload Hopper Quantity Indication system service is based on condition only. There are no additional maintenance servicing requirements.

5) Maintenance Instructions

It is the Operators/Owners responsibility to ensure that the maintenance performed on the system does not adversely affect its intended function.

The system parts inside the hopper may be pressure washed. Do not pressure-wash any cable or cable connections.

Displays may be cleaned with a soft cloth. Avoid any abrasive cleaners to prevent scratching the plexiglass face of the displays.

At Annual Inspection check; quantity probe and clamp for security of mounting, float for unrestricted travel, pressure transducer for mounting and leakage, and conduct Test per 9)Test.

6) Troubleshooting

If the unit is not powering on, check the power supply for the box.

- Check circuit breaker
- Make sure you have the black to ground and the blue to power
- Check cable connection to back of main display box, remove and reinstall power cable from main box

If you get an Error on either line of the display it is saying that the sensor is out of range.

- If the Error is on the pressure line the error is with the pressure probe, or connection.
- If the Error is on the quantity line the error is with the quantity probe, or connection.

An error is normally caused by a bad connection or sometimes the cable. Check your connections and make sure you did not kink the cable when running it. You can check the continuity of the cable with a multi meter to verify if it is the cable.

If you have erratic or incorrect readings on the quantity gauge.

- Check the cable connections from the main box to the quantity gauge, remove and reinstall connections
- Check that the float is free on the rod and functioning properly.
- Check that quantity rod is not overly coated with residue, clean rod with power washer
- Check that no magnetic hardware or strong magnetic fields are around the Quantity gauge.

If the pressure displays numbers that are obviously incorrect; cycle power off then on holding the dim button with spray pump off. Doing this will set a new zero pressure setting.

7) Removal and Replacement Information (Weight & Balance changes recorded in Aircraft Flight Manual using R.A.I. Weight & Balance Analysis Doc# Weight-1)

REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
“TRUE QUANTITY” HOPPER QUANTITY & BOOM PRESSURE GAUGE

1. Main Display PN 6-1-0-000 Removal
 - a. Pull Breaker labeled Hopper Display
 - b. Disconnect cables from back of display
 - c. Remove mounting screws from face of display
2. Main Display Replacement See Main Display Mounting Drawing 6-0-2-000
 - a. Mount display using faceplate screws
 - b. Connect cables to back of display
 - c. Energize Hopper Display breaker
 - d. Test per 9) Test.
3. Remote Display PN 6-0-2-0-000 Removal
 - a. Pull Breaker labeled Hopper Display
 - b. Disconnect cables from back of display
 - c. Remove mounting screws from face of display
4. Remote Display Replacement See Remote Display Mounting Drawing 6-0-3-000
 - a. Mount display using faceplate screws
 - b. Connect cables to back of display
 - c. Energize Hopper Display breaker
 - d. Test per 9) Test.
5. Pressure Probe PN 6-4-0-000 Removal
 - a. Pull Breaker labeled Hopper Display
 - b. Disconnect cable from top of probe
 - c. Disconnect probe from pressure line
6. Pressure Probe Replacement See Pressure Probe Mounting Drawing 6-0-4-000
 - a. Connect probe to pressure line
 - b. Connect cables to top of probe
 - c. Attach probe to airframe using zip ties
 - d. Energize Hopper display breaker
 - e. Test per 9) Test.
7. Quantity Probe PN 6-3-1-xxx Removal
 - a. Pull Breaker labeled Hopper Display
 - b. Disconnect cable from top of probe
 - c. Remove Quantity Probe clamp from bottom of probe
 - d. Remove float from Probe
 - e. Remove retaining nut from Quantity Probe inside hopper
 - f. Withdraw probe from hopper
8. Quantity Probe Replacement See Quantity Probe Mounting Drawing 6-0-5-000 Sheets 6/7/8
 - a. Insert Probe into Hopper

*REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
"TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE*

- b. Install retaining nut inside hopper
 - c. Install float NO side up
 - d. Attach Probe clamp to bottom of probe
 - e. Connect cable to top of probe
 - f. Apply silicone to top of connection
 - g. Energize Hopper Display Breaker
 - h. Test per 9)Test.
9. Loader Power Unit PN 6-9-1-000 Removal
- a. Pull breaker labeled "Hopper Display"
 - b. Pull firewall mounted breaker labeled "Loader Switch"
 - c. Disconnect: "Power Cable" PN 6-7-0-000, "Loader Power Cable" PN 6-9-3-000, "Switch" PN 6-9-2-000 from Loader Power Unit
 - d. Disconnect and insulate"Battery" wire from Loader Power Unit
 - e. Unscrew Loader Power Unit from structure
10. Loader Power Unit Replacement-See Loader Power Kit Drawing 6-9-0-000
- a. Secure Loader Power Unit to dash support structure
 - b. Connect: "Power Cable", "Loader Power Cable", "Switch" wire, "Battery" wire
 - c. Energize: "Hopper Display" breaker
 - d. Energize firewall mounted breaker labeled "Loader Switch"
 - e. Test per 9)Test
11. Loader Power Switch PN 6-9-2-000 Removal
- a. Pull breaker labeled "Hopper Display"
 - b. Pull firewall mounted breaker labeled "Loader Switch"
 - c. Disconnect "Switch" wire from Loader Power Unit
 - d. Remove switch from outside of aircraft
12. Loader Power Switch Replacement-See Loader Power Kit Drawing 6-9-0-000
- a. Mount "Switch" in side skin of aircraft
 - b. Connect "Switch" wires to Loader Power Unit "terminal 2 & 3"
 - c. Energize "Hopper Display" breaker
 - d. Energize breaker labeled "Loader Switch"
 - e. Test per 9)Test
- 8) Diagram
- See Gauge Installation Drawing 6-0-0 TAB Sheet 1
- 9) Test/ Special Inspection

*REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
"TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE*

1. Introduction

The purpose of this Test is to provide a method for demonstrating the proper installation and operations of the Digital Payload Hopper Quantity Indication system and Spray Boom Pressure Indication system ("True Hopper" system).

2. Installation and Configuration

- a. Ensure the HOPPER DISPLAY circuit breaker is pushed in. While holding the "DIM" button on the Main Display Unit, turn on aircraft master power. Verify that the unit starts the self-test: all characters on the Main Display Unit and the Remote Display Unit are illuminated; verify the selected unit of measure (gallons or liters); verify aircraft model displayed matches the model being tested.

3. Functional Test

- a. Repeatedly cycle the "DIM" button on the Main Display Unit, ensure that the brightness level of the Main Display Unit changes.
- b. Pull the HOPPER DISPLAY circuit breaker. Ensure that all system has power is removed, and the Main Display and Remote Display are extinguished.
- c. Push in the HOPPER DISPLAY circuit breaker. Ensure that the Main Display and Remote Display Unit (if installed) indicates Pressure 0, Quantity Model; 400/402 =1, 502=3, 504=3, 602=0, 802=1, 510 Thrush=1, 550 Thrush=0, 710 Thrush=0. Ensure the Ground Light is illuminated.
- d. Raise Quantity Float (by hand or by filling with water) to top of float travel. Verify that the Main Display Unit and Remote Display (if installed) quantity indication with tank full, for model: 400/402 = 400 Gal; 502 = 500 Gal; 504 = 485 Gal; 602 = 620 Gal; 802 = 800 Gal; Thrush 510 = 505 Gal; Thrush 550 = 525 Gal; Thrush 710 = 680 Gal. (tolerance of +/- 10%).

Note: If Main Display indicates FULL, lower the float 0.1"

- e. Start engine and bring the torque to 1000 lbs. Verify the Ground Light is extinguished and the Remote Display (if installed) indicates FLT. With the float in the same position as in step 3d, verify that the Main Display quantity indication is for model: 400/402=375; 502= 475; 504= 460; 602= 580; 802= 750; Thrush 510= 494; Thrush 550= 525; Thrush 710= 640 (Tolerance of +/- 3%)

Note: If Main Display indicates FULL, lower the float 0.1"

- f. Turn spray pump ON with boom valve OFF. Verify negative pressure indication and "SUCK BACK" light illuminated.
- g. Turn boom valve ON. Verify positive indication and "SUCK BACK" light is extinguished.
- h. Shut down the engine.
- i. Ensure no leaks are present in the system.
- j. With aircraft master power off, push "Loader Quantity Power" switch on outside of aircraft. Displays should power up for 15±3 minutes.

10) Protective Treatment

Electrical connection at top of probe is covered using RTV silicon seal.

11) DATA

*REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
"TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE*

Power up unit while holding dimmer button. Firmware version and model calibration will be displayed.

12) SPECIAL TOOLS: None

13) N/A

14) TBO: None

15) Airworthiness Limitation The airworthiness limitations section is FAA approved and specifies maintenance required under §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

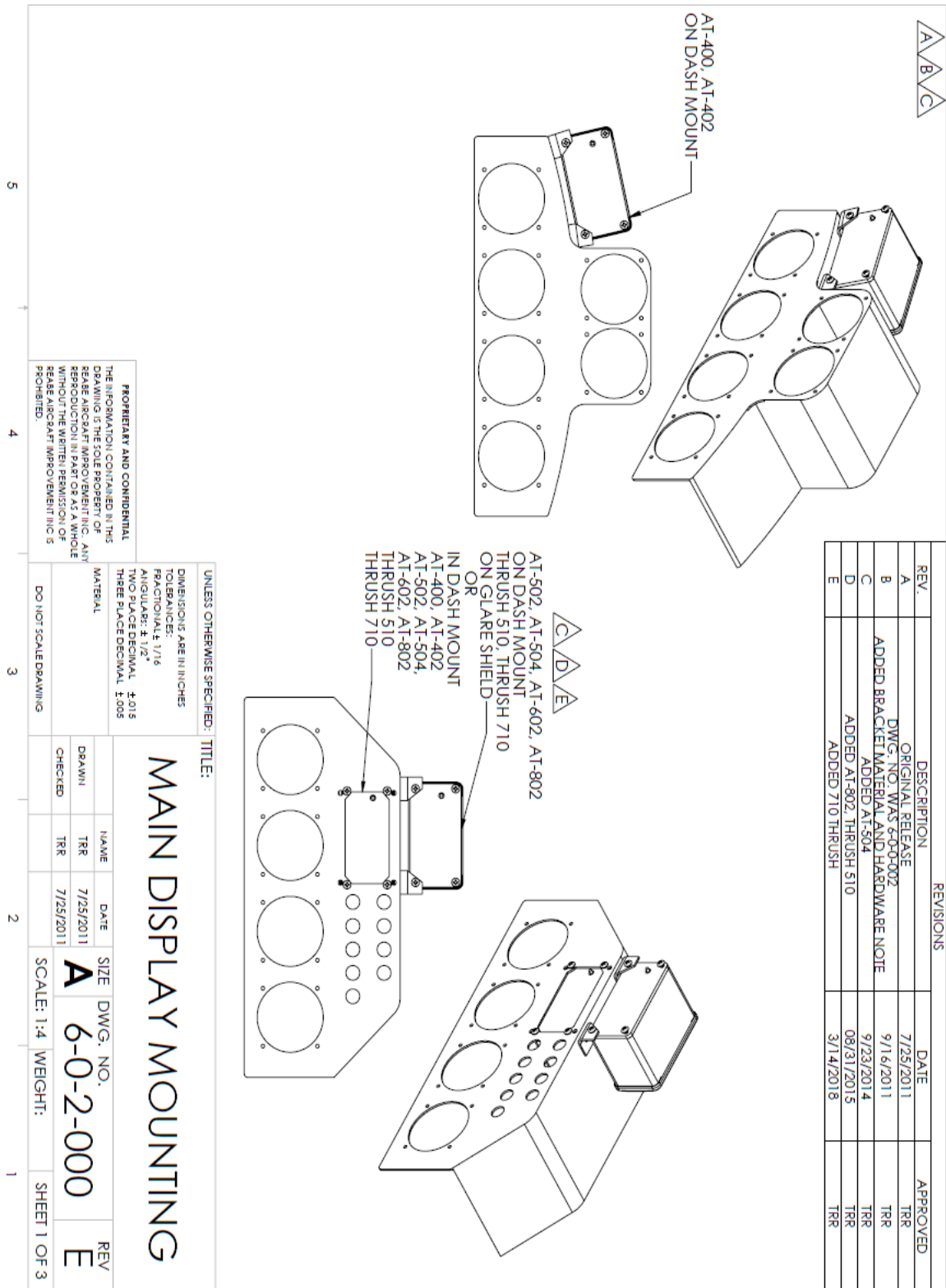
There are no additional airworthiness limitations applicable to the Air Tractor or Thrush aircraft as a result of this installation.

16) Revisions: To be submitted by STC holder, for FAA approval.

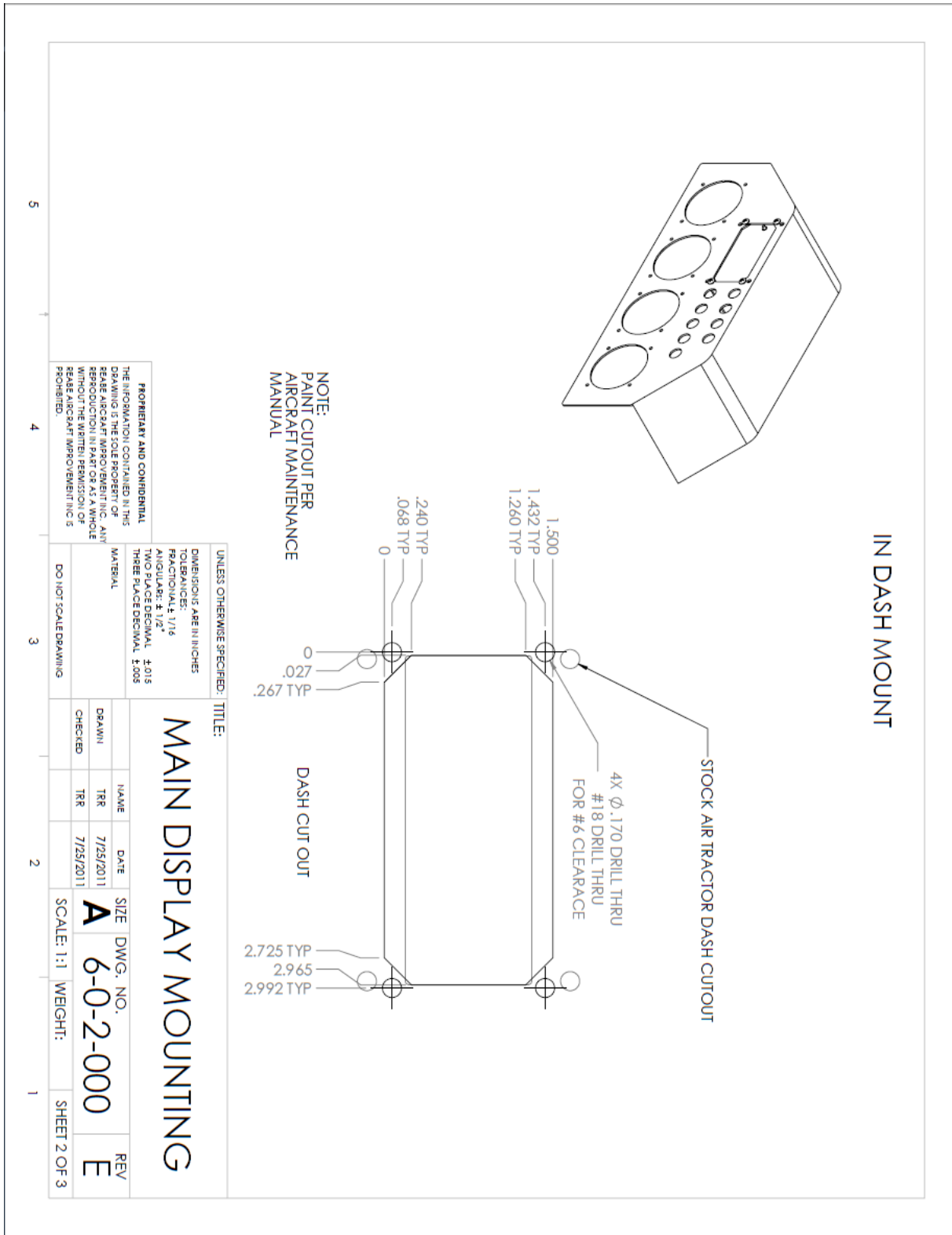
Contact Reabe Aircraft Improvement
2929 Bayshore Dr N
LaCrosse, WI 54603
Phone: (608)-519-5821

For latest revision

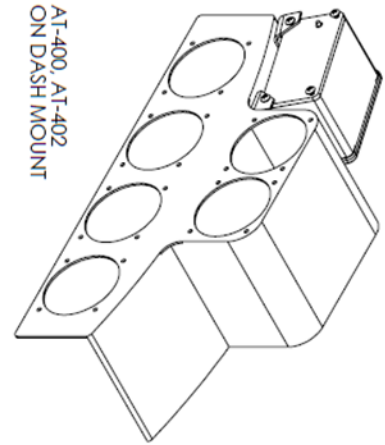
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 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



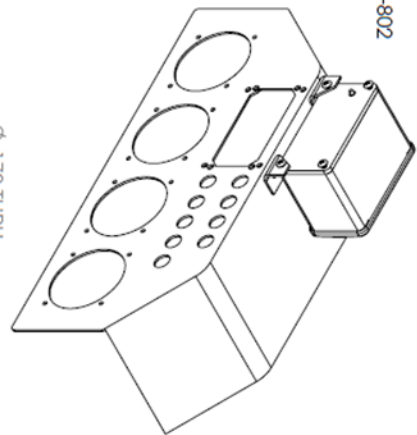
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 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



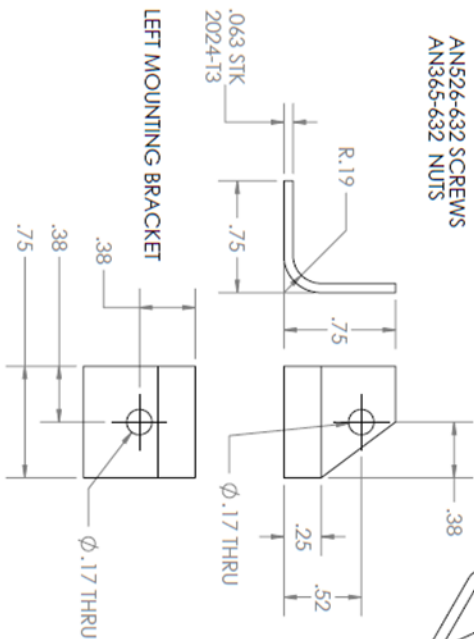
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 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



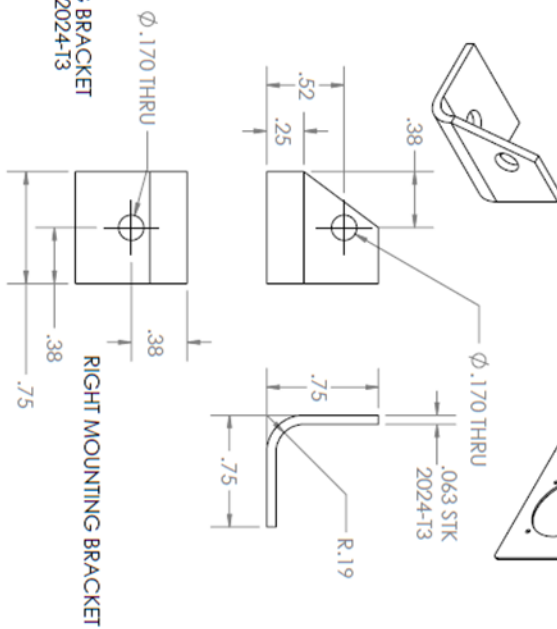
AT-502, AT-504, AT-602, AT-802
 ON DASH MOUNT
 THRU SH 510, THRU SH 710
 ON GLARE SHIELD



MOUNTING BRACKETS
 BOLTED TO DASH USING:
 AN526-632 SCREWS
 AN365-632 NUTS



MOUNTING BRACKET
 MATERIAL: 2024-13



UNLESS OTHERWISE SPECIFIED: TITLE:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL: $\pm 1/16$
 ANGULAR: $\pm 1/2^\circ$
 TWO PLACE DECIMAL: ± 0.015
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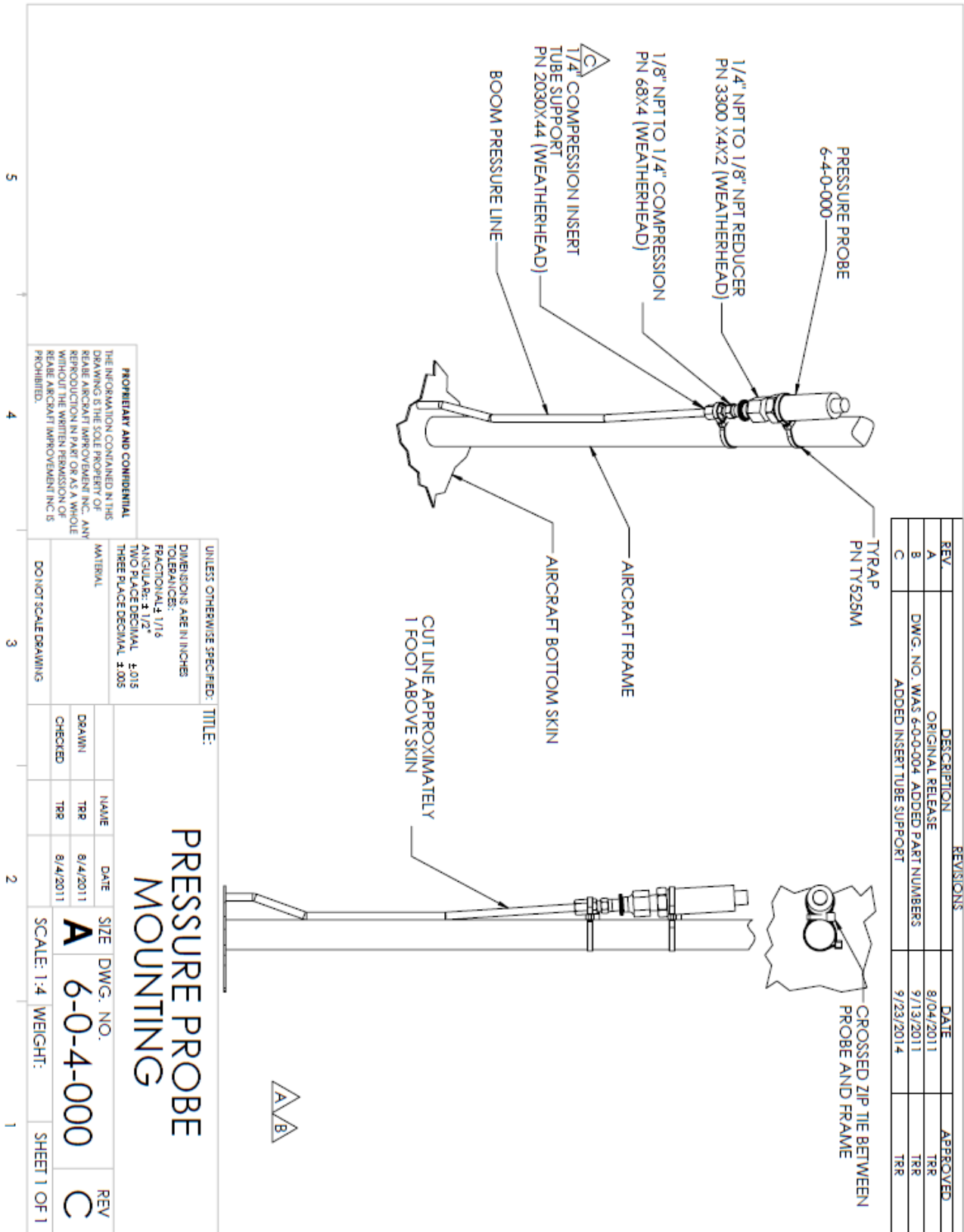
MAIN DISPLAY MOUNTING

DO NOT SCALE DRAWING

REV	DATE	NAME	SIZE	DWG. NO.	WEIGHT	SHEET
E	7/25/2011	TRR	A	6-0-2-000		3 OF 3
	7/25/2011	TRR				



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 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



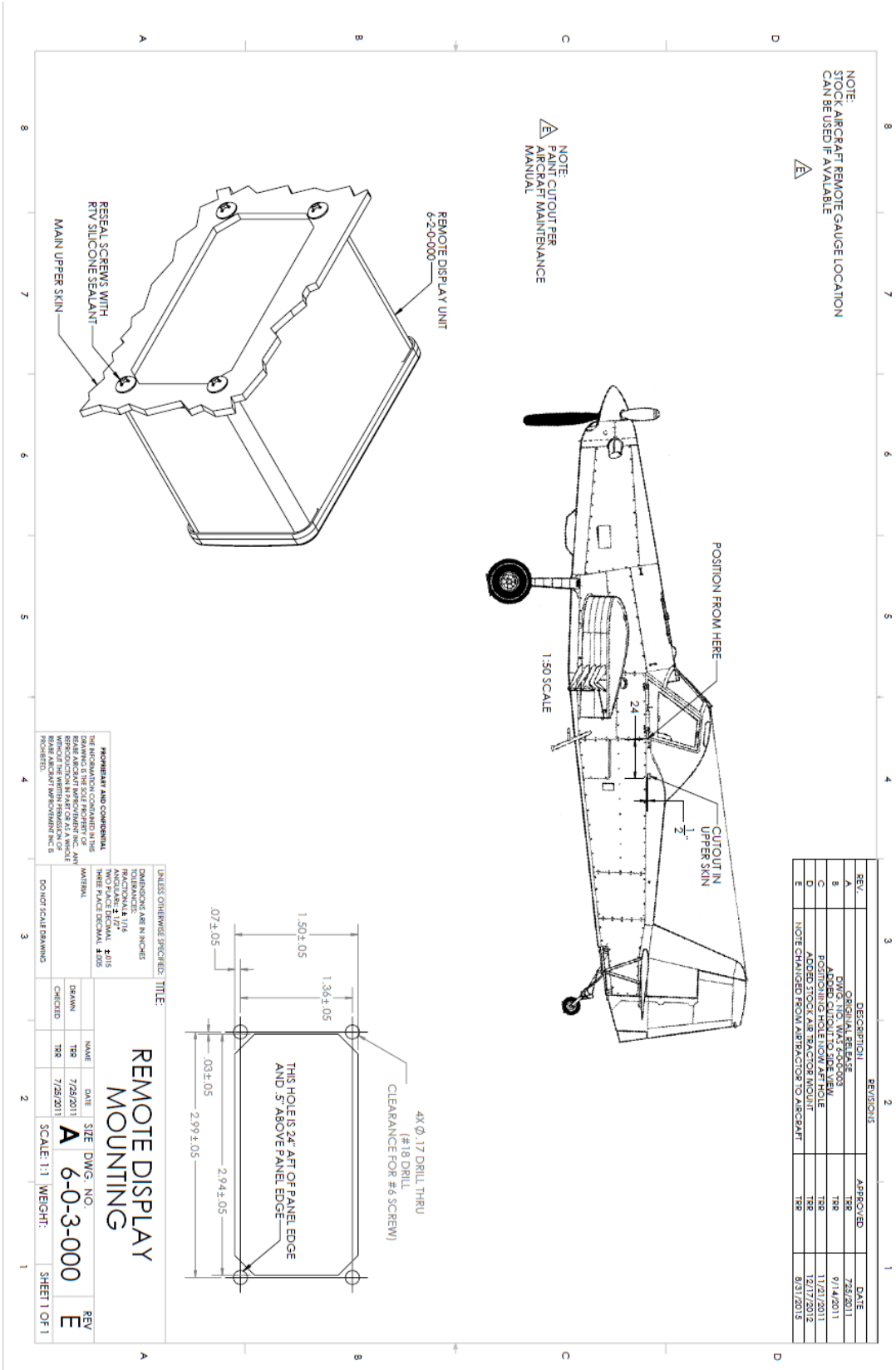
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A	ORIGINAL RELEASE	8/04/2011	TRR
B	DWG. NO. WAS 6-0-0-004 ADDED PART NUMBERS	9/13/2011	TRR
C	ADDED INSERT TUBE SUPPORT	9/23/2014	TRR

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CHECKED		TRR	8/4/2011	A	6-0-4-000	C
DO NOT SCALE DRAWINGS				SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



NOTE:
 STOCK AIRCRAFT REMOTE GAUGE LOCATION
 CAN BE USED IF AVAILABLE

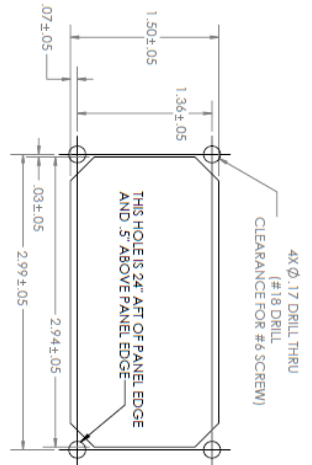
NOTE:
 PAINT CUTOUT PER
 AIRCRAFT MAINTENANCE
 MANUAL

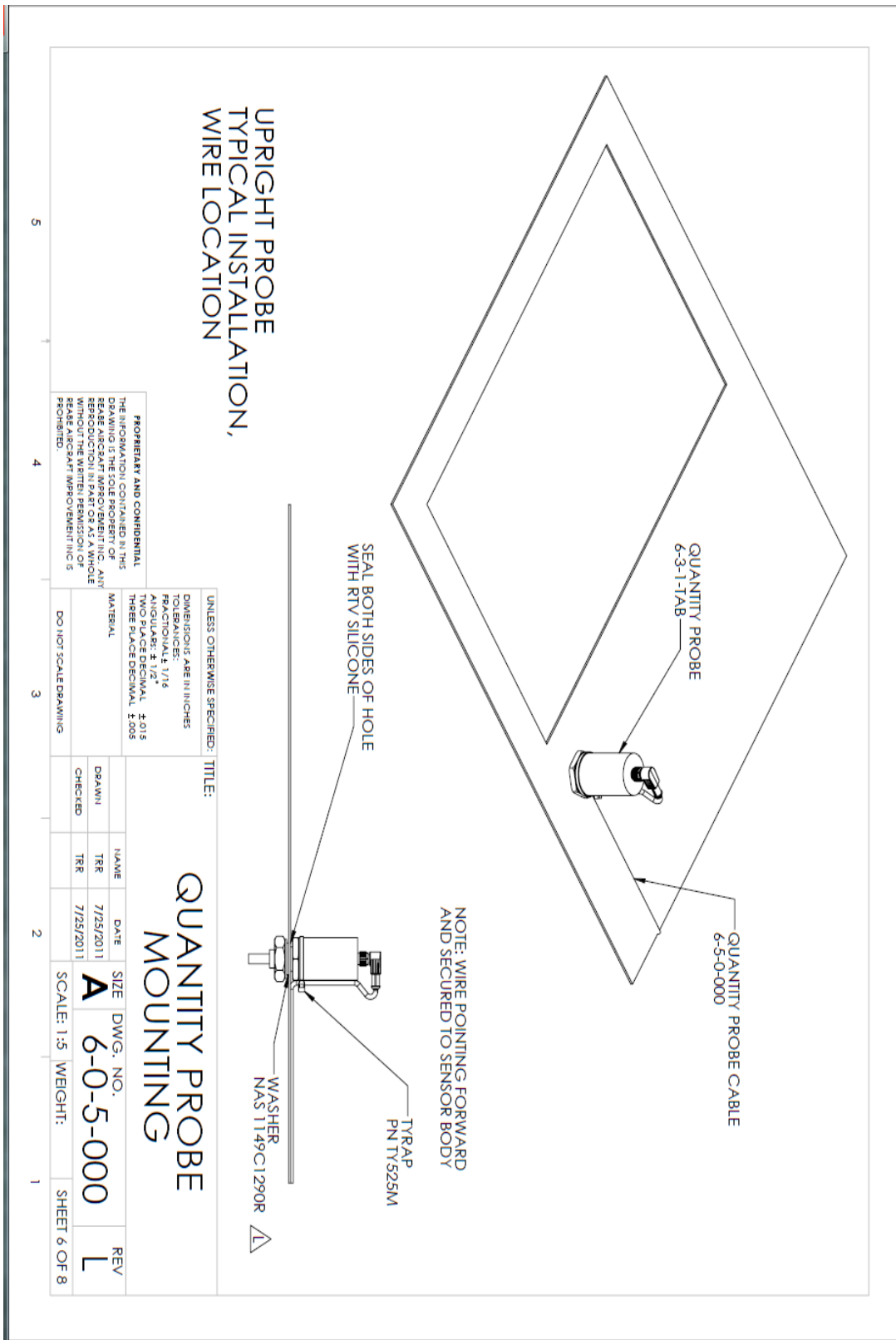
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1	ORIGINAL RELEASE		TBR	2/25/2011
2	ADD DRUG NO. VAS 600-003		TBR	9/14/2011
3	ADD CUTOUT TO UPPER SKIN		TBR	11/21/2011
4	ADD STOCK AIR TRAFFIC MOUNT		TBR	12/17/2012
5	NOTE CHANGED FROM AIRTRAFIC TO AIRCRAFT		TBR	9/31/2015

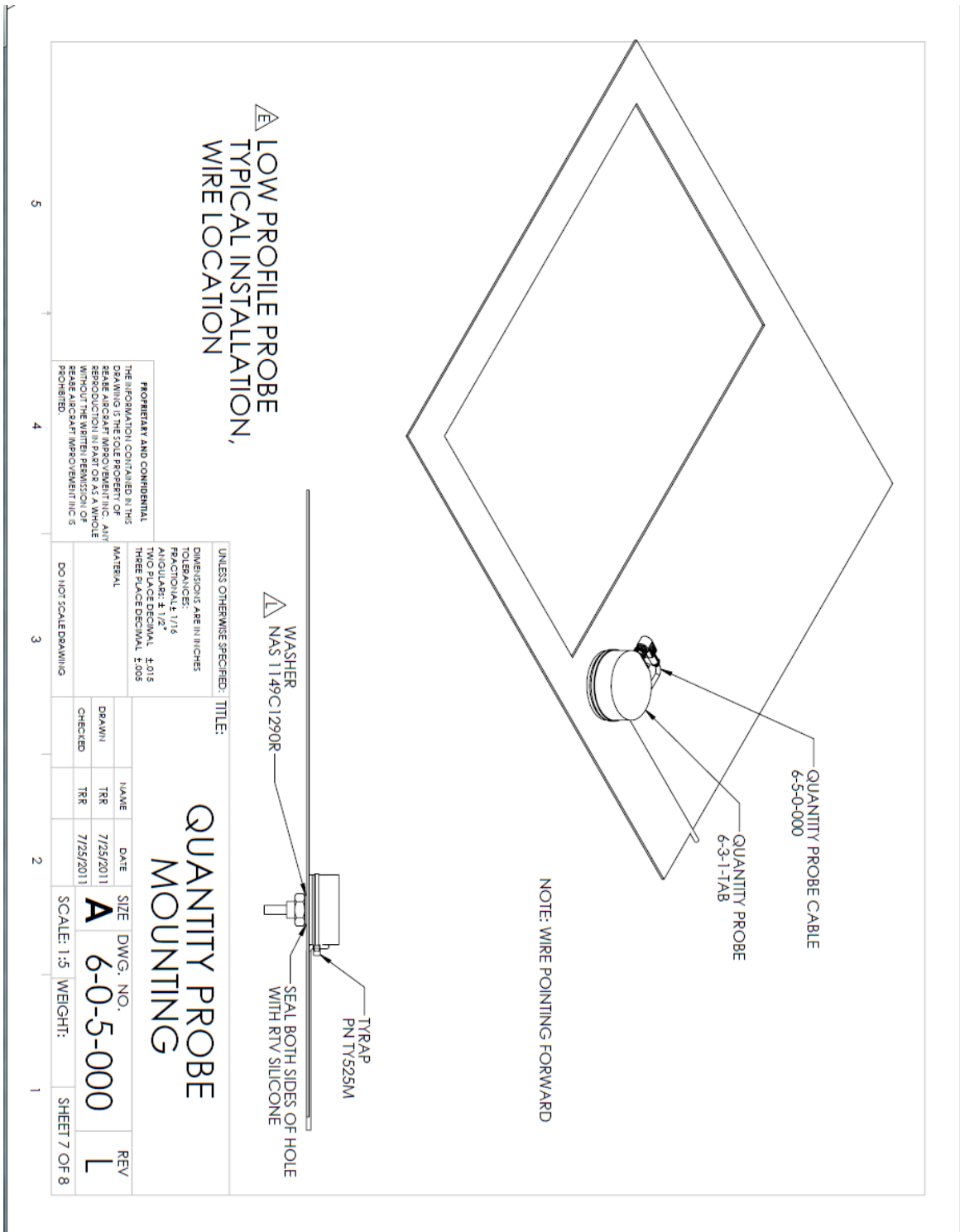
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 HOLE POSITION ±.015
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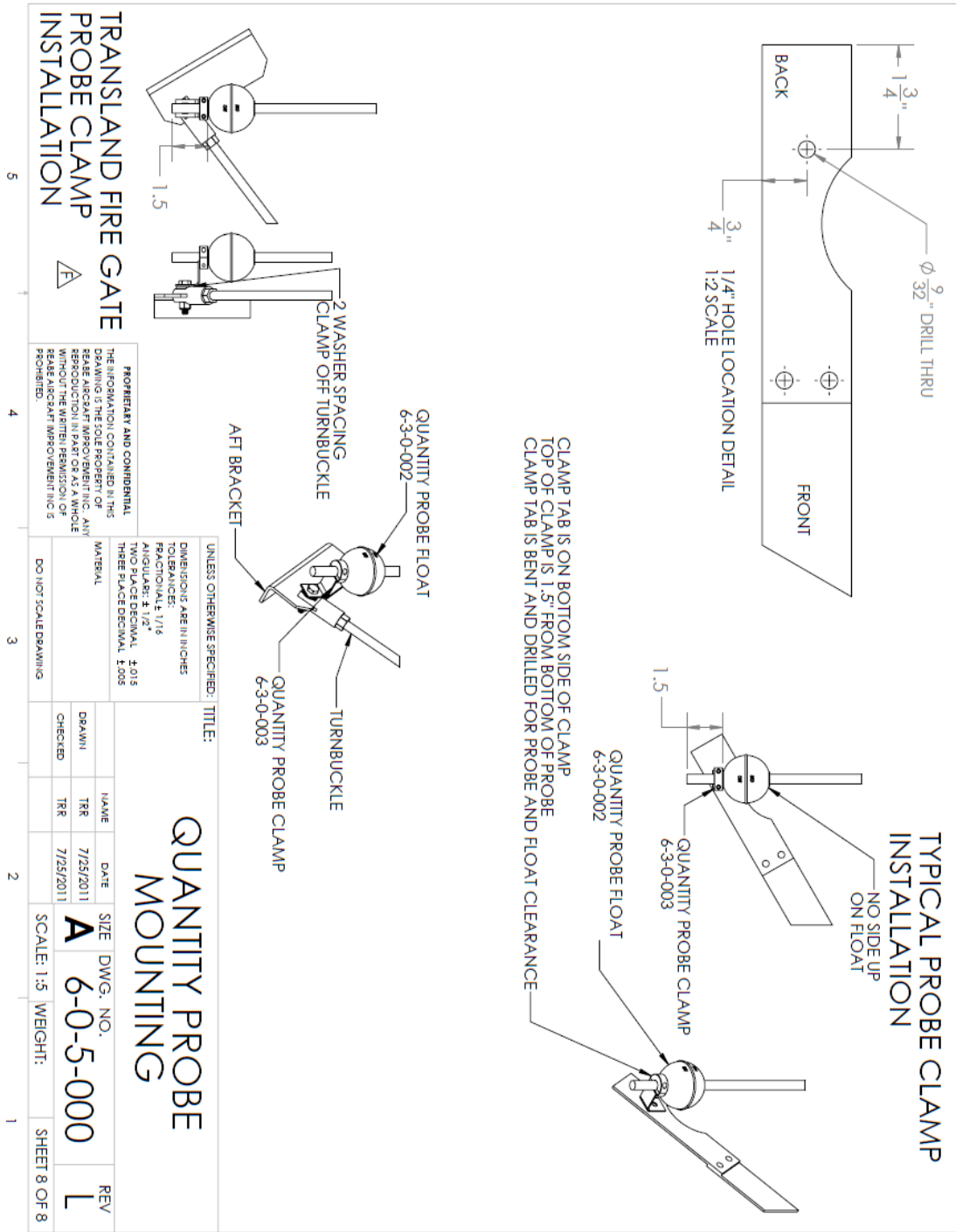
NAME	DATE	SIZE	DWG. NO.	REV.
TBR	7/25/2011	A	6-0-3-000	E
TBR	7/25/2011			

SCALE: 1:1 WEIGHT: SHEET 1 OF 1

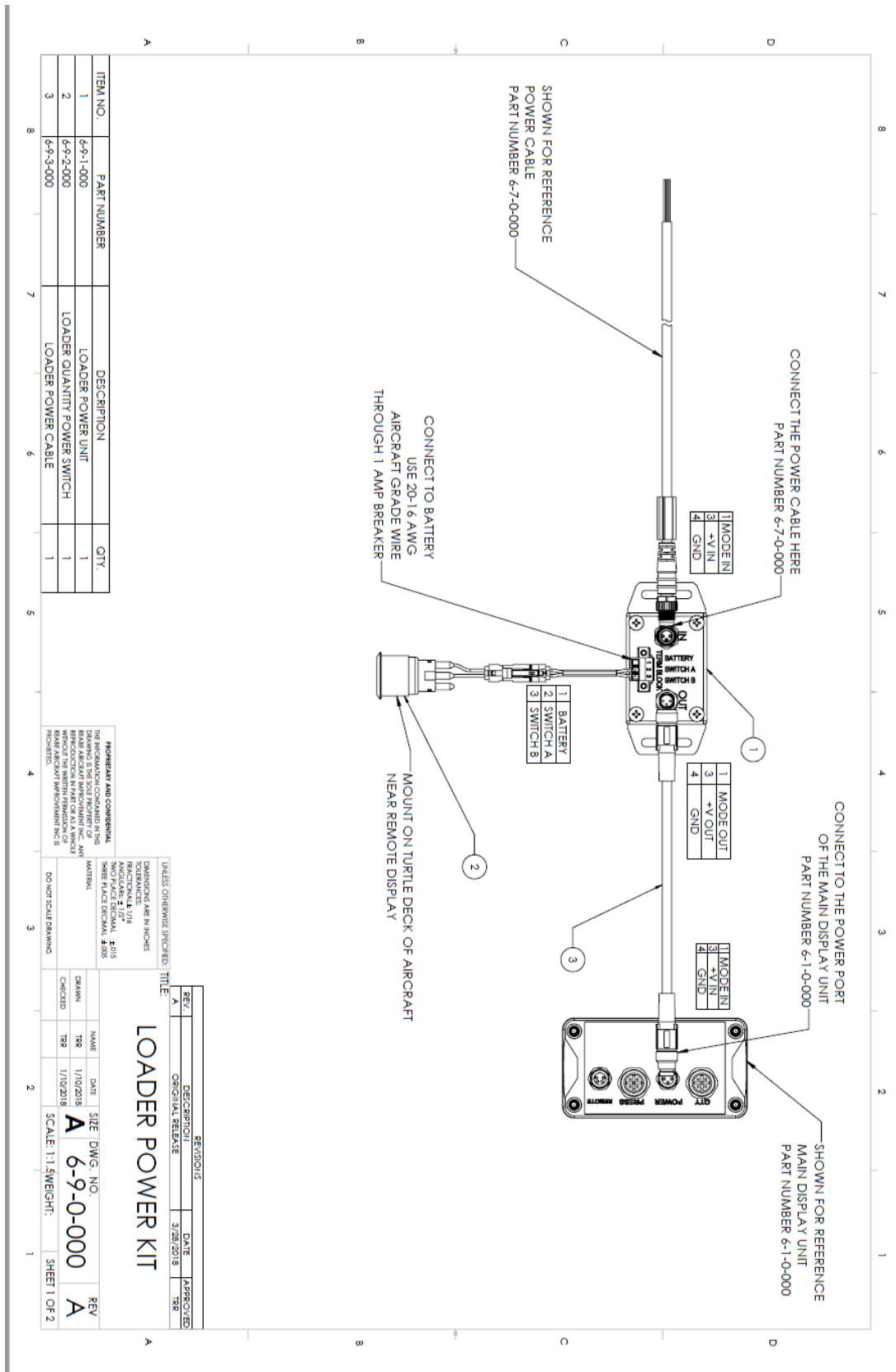








REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	6-9-1-000	LOADER POWER UNIT	1
2	6-9-2-000	LOADER QUANTITY POWER SWITCH	1
3	6-9-3-000	LOADER POWER CABLE	1

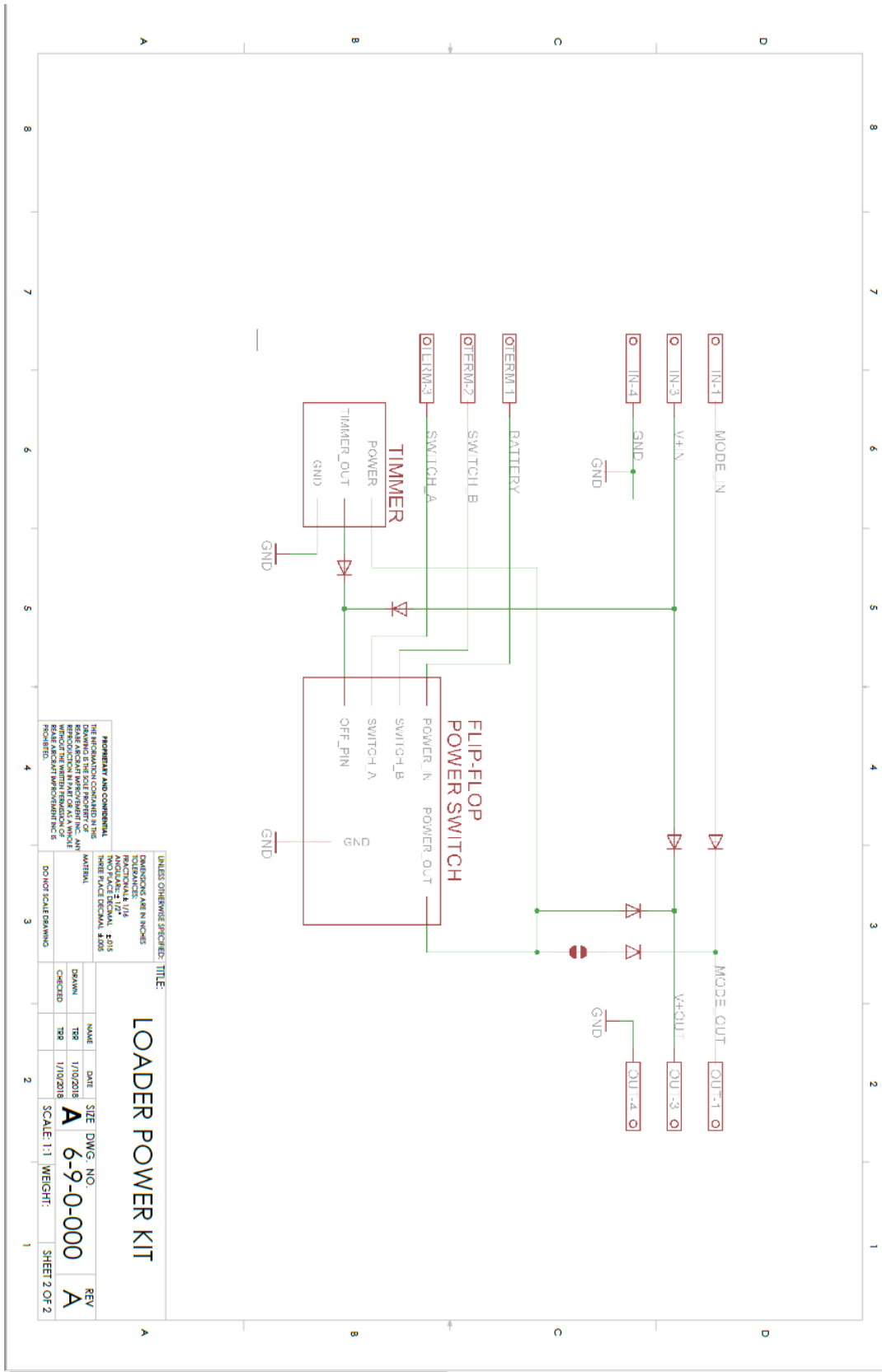
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DO NOT SCALE DRAWING		DRAWN		DATE		SIZE		DWG. NO.		REV		REV	
		TSR		1/10/2018		A		6-9-0-000		A		A	
		CHECKED		1/10/2018		SCALE: 1:1		SHEET 1 OF 2					

LOADER POWER KIT

REV.	DESCRIPTION	DATE	APPROVED
1	ORIGINAL RELEASE	3/29/2018	TSR

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 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



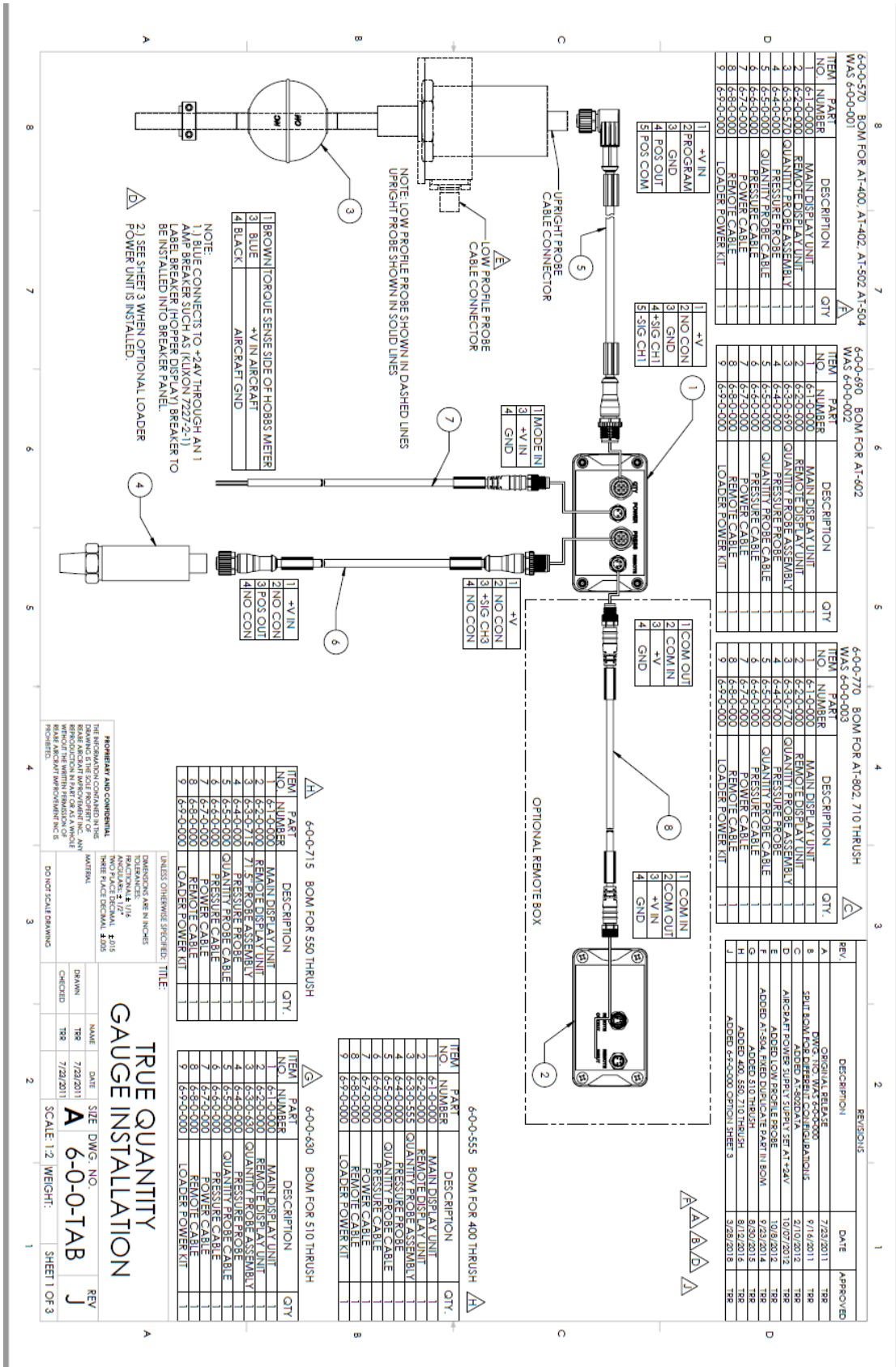
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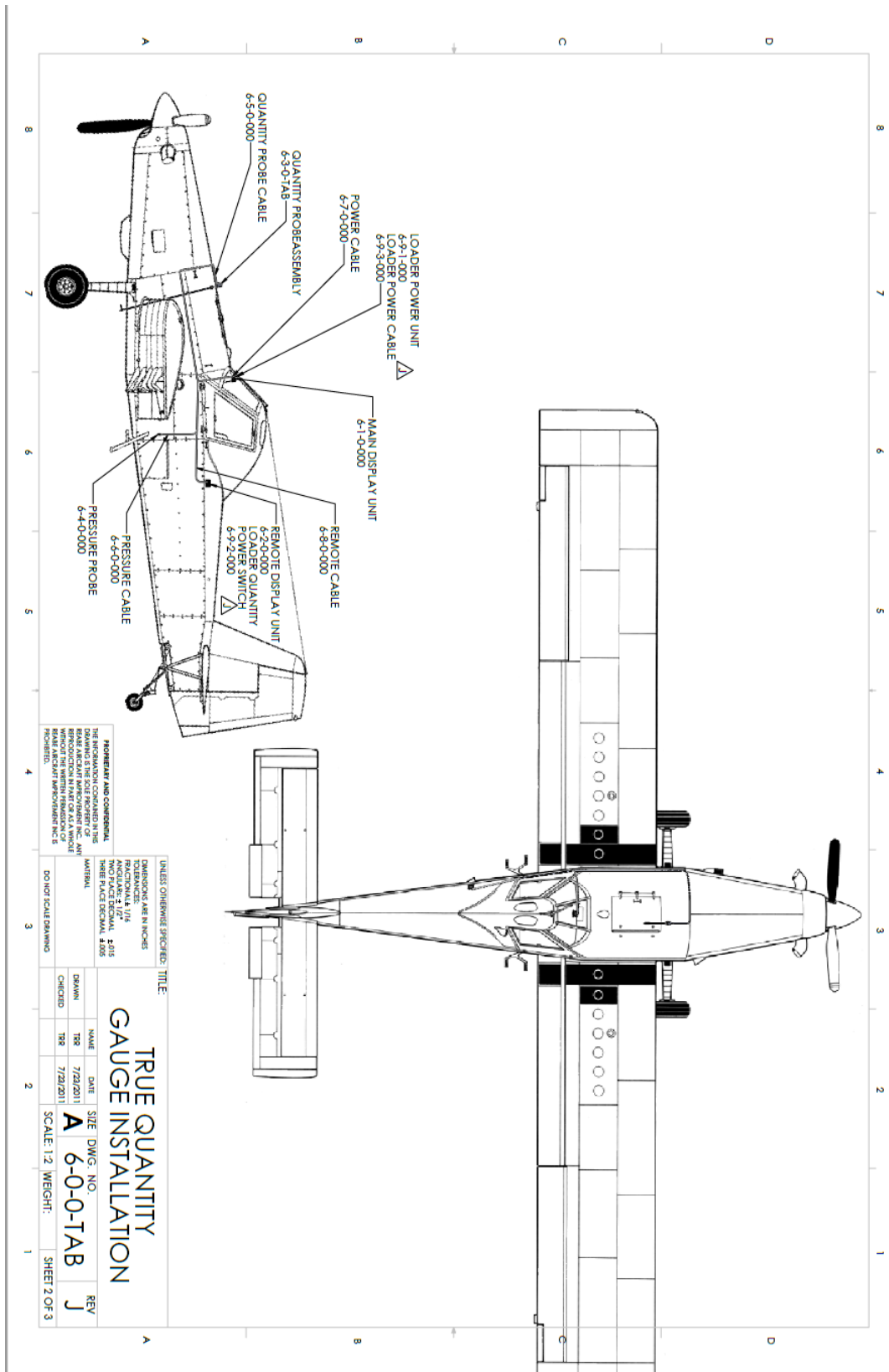
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NAME	TRC	DWG. NO.	6-9-0-000
DRAWN	TRC	CHECKED	TRC
SCALE	1:1	WEIGHT	
SHEET 2 OF 2			

REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE

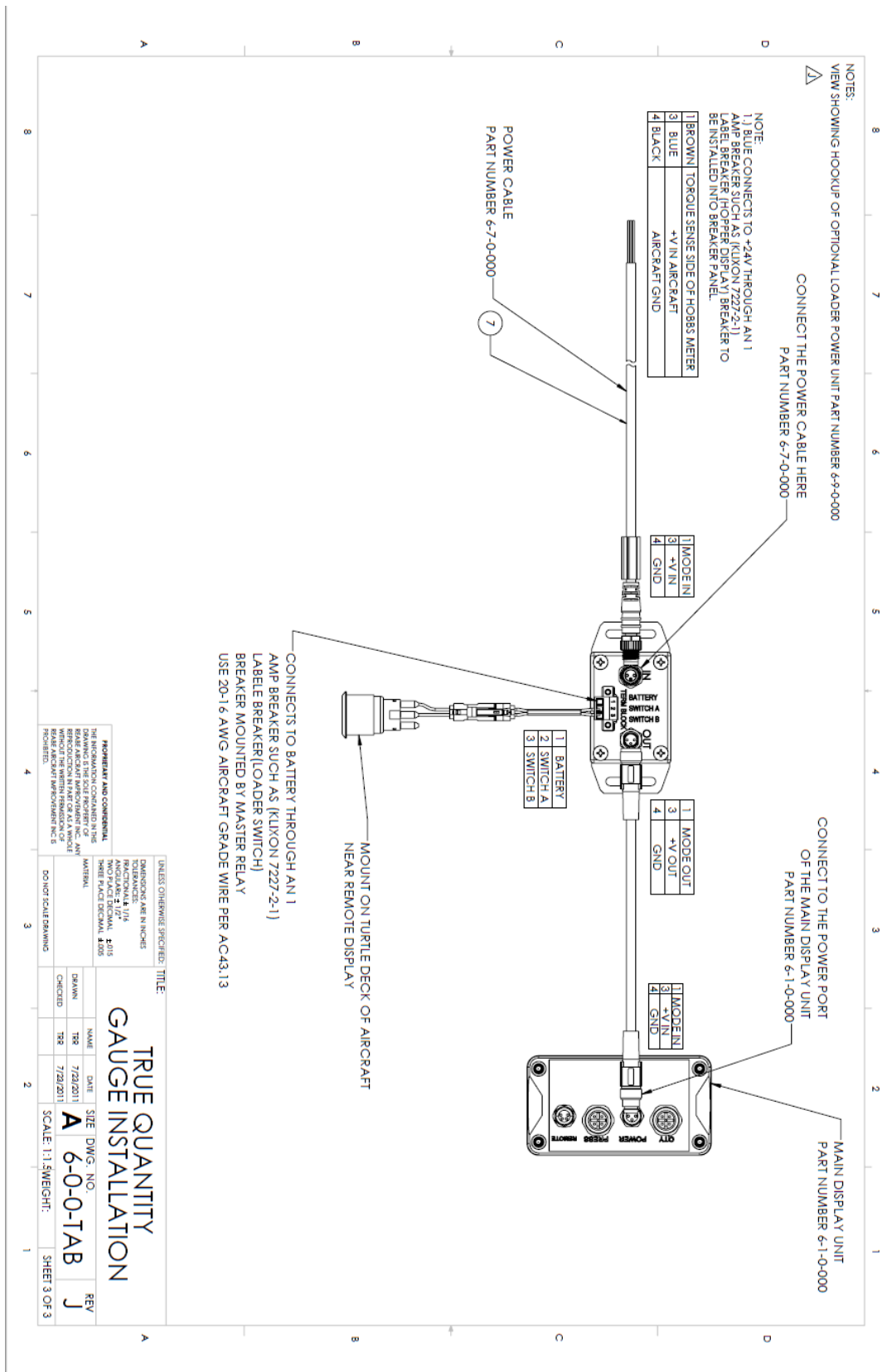


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 DECIMALS .0005
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TRUE QUANTITY GAUGE INSTALLATION		DATE	7/22/2011	SIZE	DWG. NO.	REV
DRAWN	TBR	7/22/2011	A	6-0-0-TAB	J	
CHECKED	TBR	7/22/2011	SCALE: 1:2	WEIGHT:	SHEET 2 OF 3	

REABE AIRCRAFT IMPROVEMENT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
 "TRUE QUANTITY" HOPPER QUANTITY & BOOM PRESSURE GAUGE



GROUND TEST PLAN				Document Number GROUND TEST-1	REVISION LEVEL Rev K
ORIGINATOR JRR, TRR			ISSUE DATE 30 August 2011	APPROVED BY TRR	
REVISION HISTORY	REVISION DATE	REVISED BY	APPROVED BY	DESCRIPTION OF REVISION	
A	8/30/11	JRR	TRR	DOCUMENT CREATED	
B	10/03/11	TRR	TRR	DOCUMENT FORMAT CHANGED	
C	0/06/11	JRR	JRR	#1 add drawing#, #4 & #5 add Remote Display	
D	10/9/11	JRR	JRR	REWRITE	
E	11/21/11	JRR	JRR	Step 3C changed from "0 or 1"	
F	9/23/14	TRR	TRR	Added AT-504	
G	3/02/15	TRR	TRR	Updated for new aircraft on AML	
H	6/29/15	JRR	JRR	Updated for new aircraft on AML	
I	10/12/15	JRR	JRR	Add 710 Thrush	
J	3/22/18	JRR	JRR	Add Loader Power Switch	
K	9/8/18	JRR	JRR	Rewrite 3.I.	

GROUND TEST PLAN

1. Introduction

The purpose of this Ground Test is to provide a method for demonstrating the proper installation and operations of the Digital Payload Hopper Quantity Indication system and Spray Boom Pressure Indication system ("True Hopper" system).

NOTE: For the initial certification testing and for initial installation testing, all the test steps must be completed. This procedure is also referenced in the ICA to be used after maintenance is accomplished; for testing to support maintenance activities, the steps with the "*" may be omitted.

2. Installation and Configuration

a. Verify continuity checks have been completed.

PASS _____ FAIL _____

b. Ensure the HOPPER DISPLAY circuit breaker is pushed in. While holding the "DIM" button on the Main Display Unit, turn on aircraft master power. Verify that the unit starts the self-test: all characters on the Main Display Unit (drawing 6-1-0-000 sheet 3) and the Remote Display Unit (drawing 6-2-0-000 sheet 3) are illuminated; verify the selected unit of measure (gallons or liters); verify aircraft model displayed matches the model being tested.

PASS _____ FAIL _____

3. Functional Ground Test

a. Repeatedly cycle the "DIM" button on the Main Display Unit, ensure that the brightness level of the Main Display Unit changes.

PASS _____ FAIL _____

b. Pull the HOPPER DISPLAY circuit breaker. Ensure that all system power is removed, and the Main Display and Remote Display are extinguished.

PASS _____ FAIL _____

- c. Push in the HOPPER DISPLAY circuit breaker. Ensure that the Main Display and Remote Display Unit (if installed) indicates Pressure 0, Quantity Model; 400/402 =1, 502=3, 504=3, 602=0, 802=1, 510 Thrush=1, 550 Thrush=0, 710 Thrush=0. Ensure the Ground Light is illuminated.

PASS _____ FAIL _____

- d. Raise Quantity Float (by hand or by filling with water) to top of float travel. Verify that the Main Display Unit and Remote Display (if installed) quantity indication with tank full, for model: 400/402 = 400 Gal; 502 = 500 Gal; 504 = 485 Gal; 602 = 620 Gal; 802 = 800 Gal; Thrush 510= 505 Gal.; Thrush 550=525 Gal; Thrush 710=680 Gal (tolerance of +/- 10%).

Note: If Main Display indicates FULL, lower the float 0.1”

PASS _____ FAIL _____

- e. For a plane start engine and bring the torque to 1000 lbs. Verify the Ground Light is extinguished and the Remote Display (if installed) indicates FLT. With the float in the same position as in step 3d, verify that the Main Display quantity indication is for model: 400/402=375; 502= 475; 504= 460; 602= 580; 802= 750; Thrush 510= 494; Thrush 550=525; Thrush 710=640 (Tolerance of +/- 3%)

Note: If Main Display indicates FULL, lower the float 0.1”

PASS _____ FAIL _____

- f. Turn spray pump ON with boom valve OFF. Verify negative pressure indication and “SUCK BACK” light illuminated.

PASS _____ FAIL _____

- g. Turn boom valve ON. Verify positive indication and “SUCK BACK” light is extinguished.

PASS _____ FAIL _____

- h. Shut down the engine.

- i. Ensure no leaks are present in the system.

PASS _____ FAIL _____

- j. If the Loader Power Unit is installed, turn Aircraft Master Power off and perform steps K. through O.

- k. Open the Loader Quantity Power Switch circuit breaker. Press the Loader Quantity Power Switch. Ensure the Main Display Unit is not on.

PASS _____ FAIL _____

l. Close the Loader Quantity Power Switch circuit breaker. The display system may or not power up when circuit breaker is cycled on/off. Cycle the Loader Quantity Power Switch to ensure the Main Display Unit is off.

PASS _____ FAIL _____

m. Press the Loader Quantity Power Switch. Ensure the Main Display Unit turns on. Ensure the Main Display Unit turns off after 15±3 minutes.

PASS _____ FAIL _____

n. With the Main Display Unit off, press the Loader Quantity Power Switch. Ensure the Main Display Unit turns on. Prior to the Main Display Unit turning off by itself, press the Loader Quantity Power Switch. Ensure the Main Display Unit turns off.

PASS _____ FAIL _____

o. With the Main Display Unit off, press the Loader Quantity Power Switch. Ensure the Main Display Unit is on. Prior to the Main Display Unit turning off by itself, turn on, then off aircraft master power. Ensure Main Display Unit goes off.

PASS _____ FAIL _____

p.* With power on the aircraft and all systems operating normally: operate each aircraft system and equipment through a representative range of its functional envelope while qualitatively assessing EMI/RFI. Note any effects below.

- VHF Comm _____
- VOR/ILS _____
- DME _____
- GPS _____
- _____ _____
- _____ _____

PASS _____ FAIL _____

Ground Test Date: _____

Performed By: _____