



TECHNICAL PUBLICATIONS

Parts Manual

PP4500 Tier 4

Issue 1.0

960-1002



PP4500 Tier 4

For replacement copy order **P/N 926-1002**

Updated: 4/12/2018

Descriptions and specifications were current at the time of publication. However, Earth Tool Company LLC (HammerHead Trenchless) reserves the right to make changes in engineering, design and specifications; add improvements; or discontinue manufacturing at any time without notice or obligation. This manual may not reflect the most current version of your machine. Please visit www.hammerheadtrenchless.com for the most recent and up to date version.



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INTRODUCTION

HOW TO USE THIS MANUAL

This manual contains illustrations and parts list of components and assemblies which make up various HammerHead® models. Each page consists of the name of the assembly or component, a figure number, reference numbers, part numbers, part names, and the quantities of the parts used.

Assembly or component names help identify the illustration and parts for each figure. This name also helps locate the general area of the machine where the assembly or component can be located.

Reference numbers shown in a column refers to the numbered parts in the illustration. This ties the part in the illustration to the part number and description in the parts list. Part numbers are used to identify individual parts or part assemblies.

Part descriptions provide the name of the part, plus additional information such as dimensional specifications and what parts are grouped together to form part assemblies, which helps you identify the part(s).

Quantities listed for each figure are only for that assembly or component and not the total used per machine unless stated so in the "Remarks" column.

This parts manual is not intended to be a complete guide for machine service or repairs. Contact your HammerHead dealer for any of your service or technical requirements.

ORDERING PARTS

Parts for repair or replacement are available through the worldwide network of authorized HammerHead dealers. The use of aftermarket replacement parts in your HammerHead equipment reduces performance and overall equipment life and may also void or interfere with the factory warranty. Use only genuine HammerHead parts from your authorized dealer for repair or replacement. Always give the serial number and model number of the machine for which parts are being ordered. When ordering parts for component(s), which are not manufactured by HammerHead Trenchless Equipment, also give the serial number of that component(s). Order all parts by part number, part name, and quantity needed. Do not order parts by illustration reference numbers.

INTRODUCTION

UPDATING AND REORDERING MANUALS

The parts lists, illustrations, and specifications in this manual are based on the latest information available at the time of publication. Your machine may have product improvements and options not yet contained in this manual. Please check the web site www.hammerheadtrenchless.com for any updates.

Earth Tool Company LLC reserves the right to make changes at any time without notice or obligation to you. Your dealer will receive notice of these changes and can assist you with accurate parts identification when ordering.

A copy of this manual is supplied with each machine. Additional copies are available through your dealer. When ordering additional manuals, use the reorder number listed on the front cover and the quantity needed. Electronic copies of this manual are also available on the web at

www.hammerheadtrenchless.com.

OPERATIONS INSTRUCTIONS

Instructions on recommended equipment use and maintenance can be found in the Operator's Manual shipped with your equipment. Operator's Manuals are also available on the web at www.hammerheadtrenchless.com.

Thank you for buying and using Genuine HammerHead® Trenchless Equipment, parts and accessories.

WARRANTY

Limited Warranty Policy

Earth Tool Company, LLC, hereinafter sometimes referred to as ETC warrants each new industrial product of its own manufacture to be free from defects in material and workmanship, under normal use and service for one full year after delivery to the owner or 1000 operating hours, whichever occurs first. During the warranty period, the authorized selling HammerHead Dealer shall furnish parts without charge for any HammerHead product that fails because of defects in material and workmanship. Warranty is void unless warranty registration card is returned within ten days from the date of purchase. This warranty and any possible liability of Earth Tool Company LLC here under is in lieu of all other warranties, express, implied, or statutory, including, but not limited to any warranties of merchantability or fitness for a particular purpose.

The parties agree that the Buyer's SOLE AND EXCLUSIVE REMEDY against ETC, whether in contract or arising out of warranties, representations, or defects shall be for the replacement or repair of defective parts as provided herein. In no event shall ETC's liability exceed the purchase price of the product. The Buyer agrees that no other remedy (including, but not limited to, incidental or consequential loss) shall be available to him. If, during the warranty period, any product becomes defective by reason of material or workmanship and Buyer immediately notifies ETC of such defect, ETC shall, at its option, supply a replacement part or request the return of the product to its plant in Lake Mills, Wisconsin. No part shall be returned without prior written authorization from ETC, and this warranty does not obligate ETC to bear any transportation charges in connection with the repair or replacement of defective parts. Earth Tool Company LLC will not accept any charges for labor and/or parts incidental to the removal or remounting of parts repaired or replaced under this Warranty.

This Warranty shall not apply to any part or product which shall have been installed or operated in a manner not recommended by ETC nor to any part or product which shall have been neglected, or used in any way which, in ETC's opinion, adversely affects its performance; nor negligence of proper maintenance or other negligence, fire or other accident; nor with respect to wear items; nor if the unit has been repaired or altered outside of an ETC authorized dealership in a manner of which, in the sole judgment of ETC affects its performance, stability or reliability; nor with respect to batteries which are covered under a separate adjustment warranty; nor to any product in which parts not manufactured or approved by ETC have been used; nor to normal maintenance services or replacement of normal service items. Equipment and accessories not of our manufacture are warranted only to the extent of the original Manufacturer's Warranty and subject to their allowance to us, if found defective by them. ETC reserves the right to modify, alter, and improve any product or parts without incurring any obligation to replace any product or parts previously sold with such modified, altered, or improved product or part. No person is authorized to give any other Warranty, or to assume any additional obligation on ETC's behalf unless made in writing, and signed by an officer of ETC.

EARTH TOOL COMPANY LLC

LAKE MILLS, WISCONSIN

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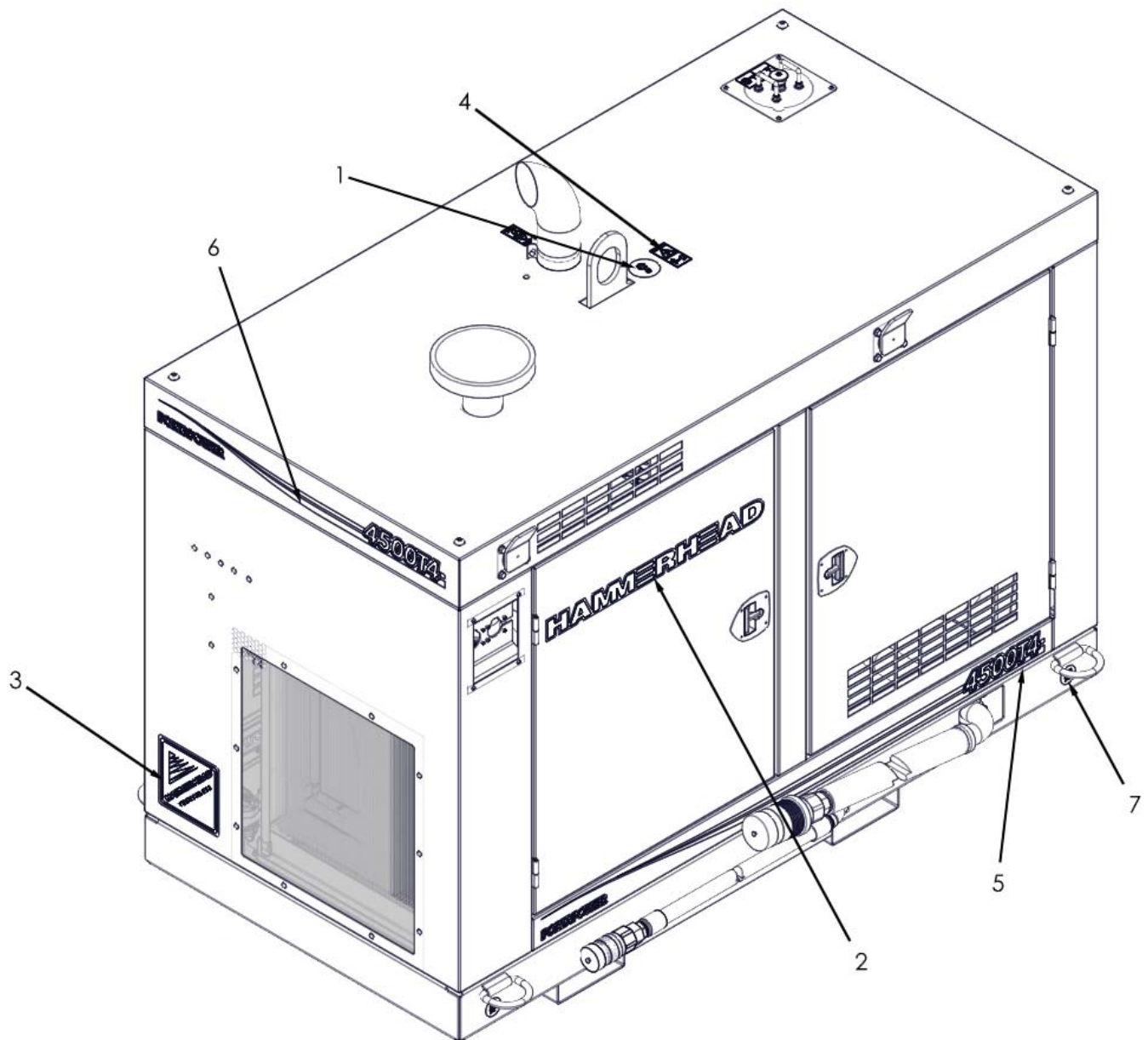
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DECALS

Decals - Domestic

PP4500 Tier 4



Decals - Domestic

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	912-1130	DECAL, LIFT POINT	1	
2	912-4971	DECAL, HAMMERHEAD - 29"	1	
3	912-4975	DECAL, HH MOUNTAIN SQ - 8X8	1	
4	923-2204	DECAL, FALLING LOAD	1	
5	933-6014	DECAL, PP4500T4, FRONT & BACK	1	
6	933-6015	DECAL, PP4500T4, SIDES	1	
7	909-8195	DECAL, TIE DOWN	2	

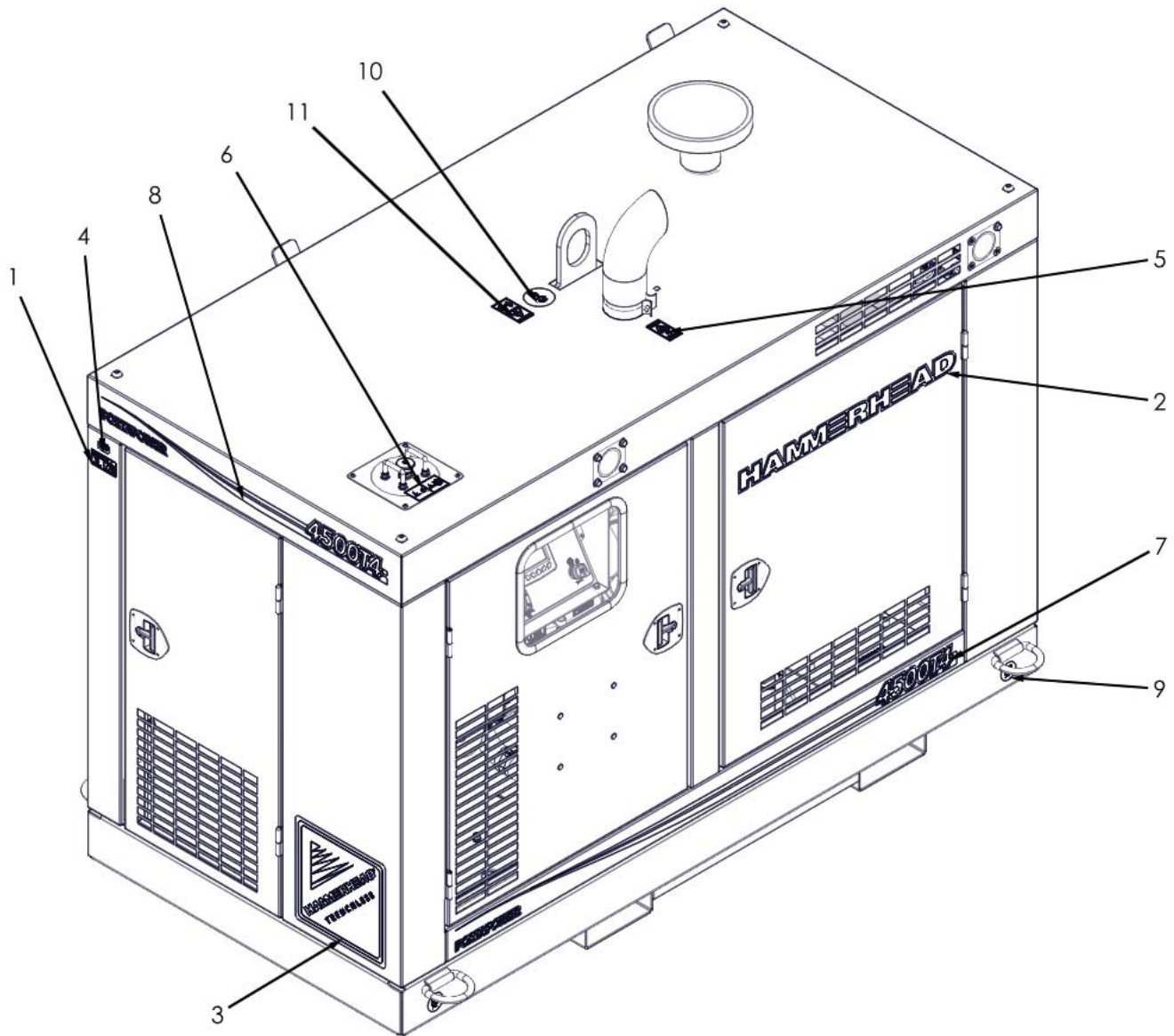
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Notes:

Decals - Domestic

PP4500 Tier 4



Decals - Domestic

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	912-1029	DECAL, REFUEL WARNING	1	
2	912-4971	DECAL, HAMMERHEAD - 29"	1	
3	912-4976	DECAL, HH MOUNTAIN SQ - 12X12	1	
4	913-0197	DECAL, DIESEL FUEL	1	
5	923-2203	DECAL, HOT	1	
6	933-6000	DECAL, REMOTE STOP	1	
7	933-6014	DECAL, PP4500T4, FRONT & BACK	1	
8	933-6015	DECAL, PP4500T4, SIDES	1	
9	909-8195	DECAL, TIE DOWN	2	
10	912-1130	DECAL, LIFT POINT	1	
11	923-2204	DECAL, FALLING LOAD	1	

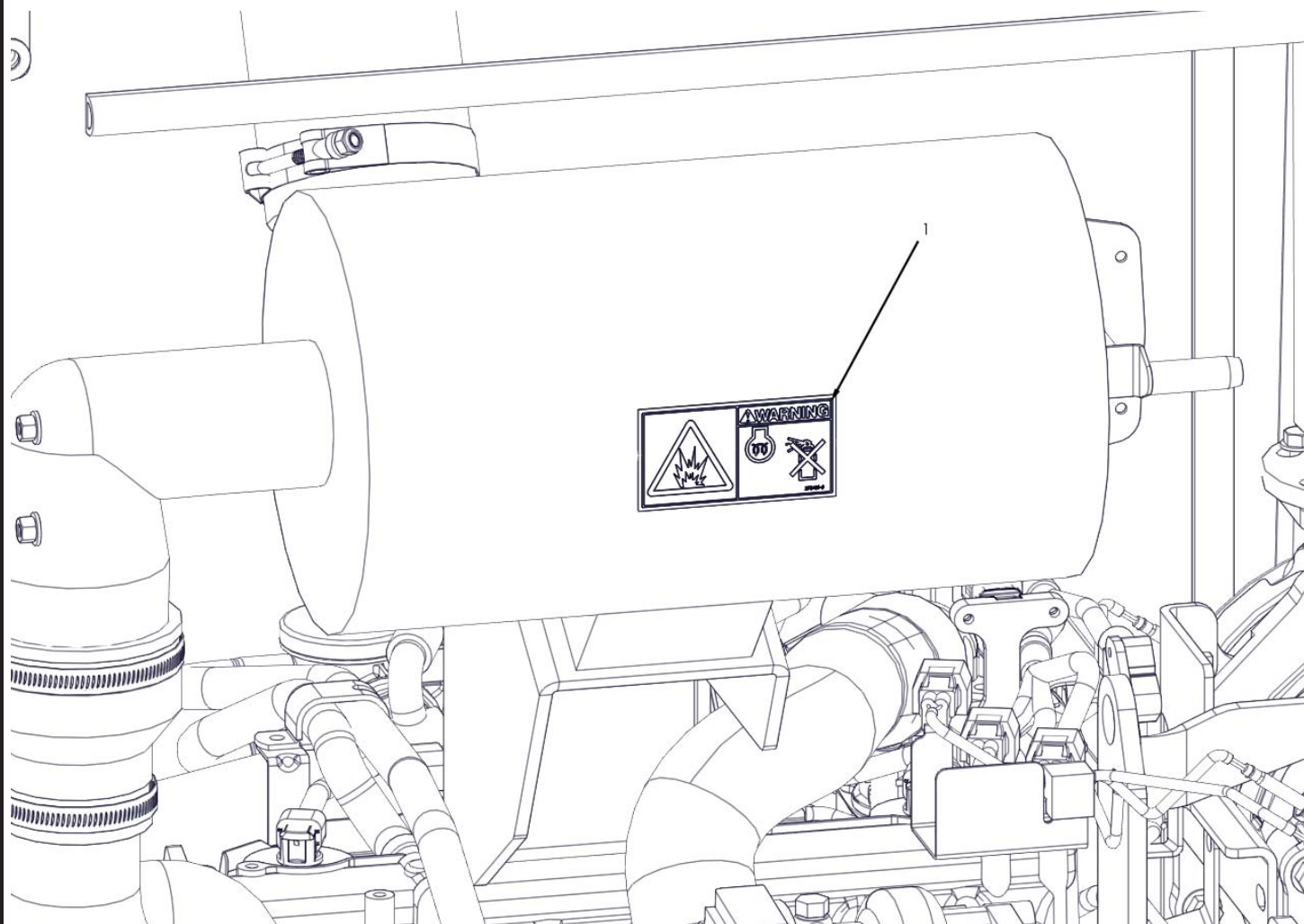
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Notes:

Decals - Domestic

PP4500 Tier 4



Decals - Domestic

PP4500 Tier 4

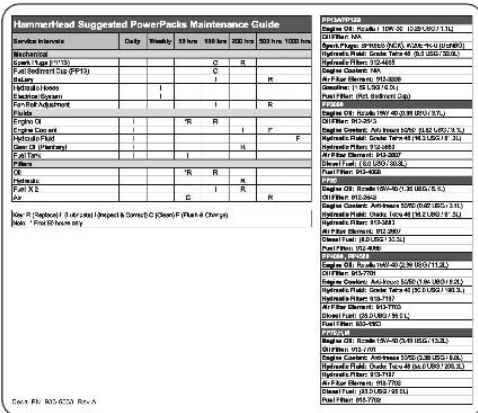
Bom ID	Part No	Description	Qty	Remarks
1	923-2235	DECAL, NO ETHER (DOM)	1	

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Footnotes:

Notes:

PP4500 Tier 4



Decals - Domestic

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	923-2224	DECAL, READ OPS MAN (DOM)	1	
2	923-2230	DECAL, ONE CALL (DOM)	1	
3	941-7593	DECAL, ICES	1	
4	933-6053	DECAL, PP SERVICE INTERVALS	1	

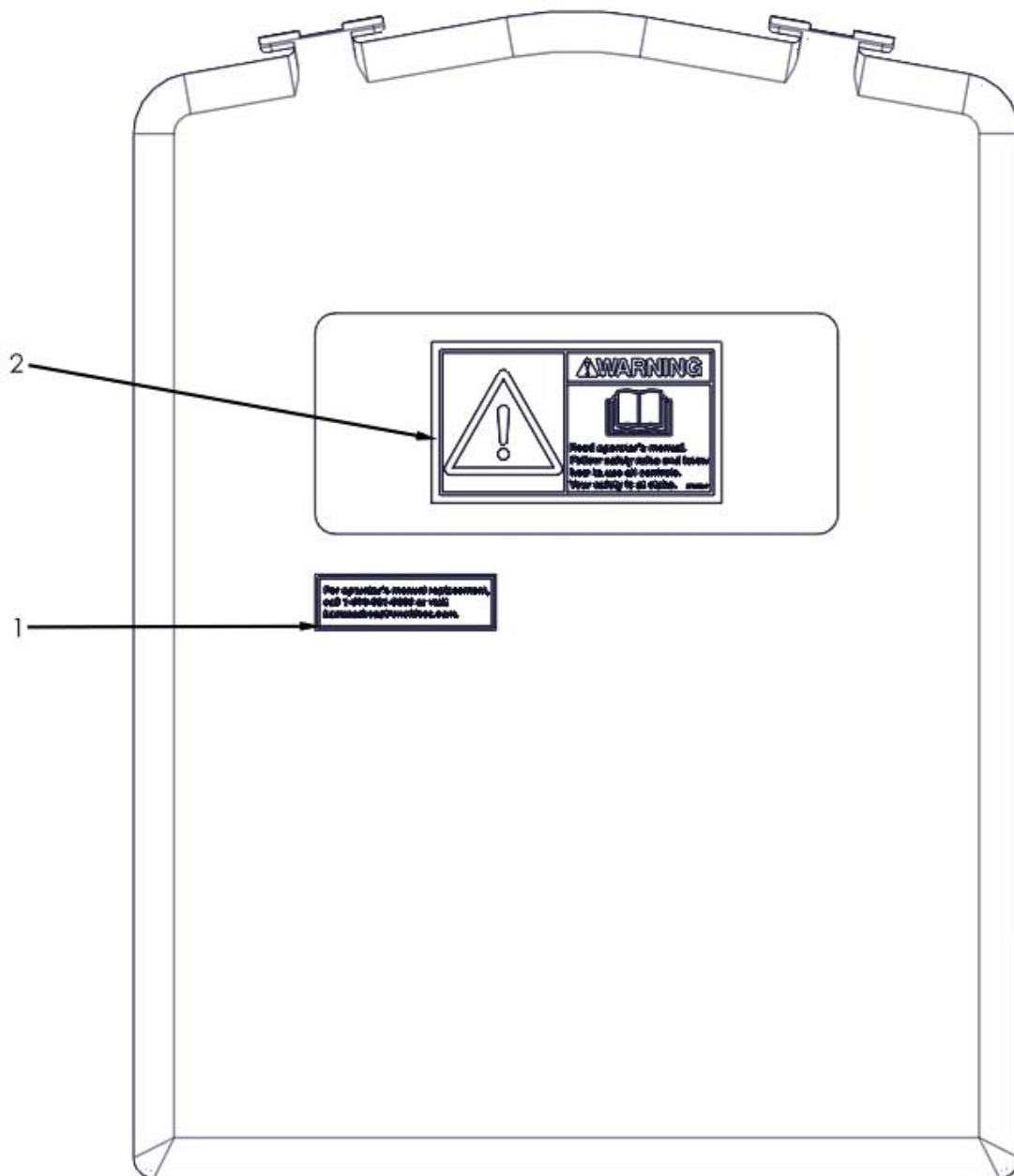
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Notes:

Decals - Domestic

PP4500 Tier 4



Decals - Domestic

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	923-2223	DECAL, OPS MANUAL REPLACEMENT	1	
2	923-2224	DECAL, READ OPS MAN (DOM)	1	

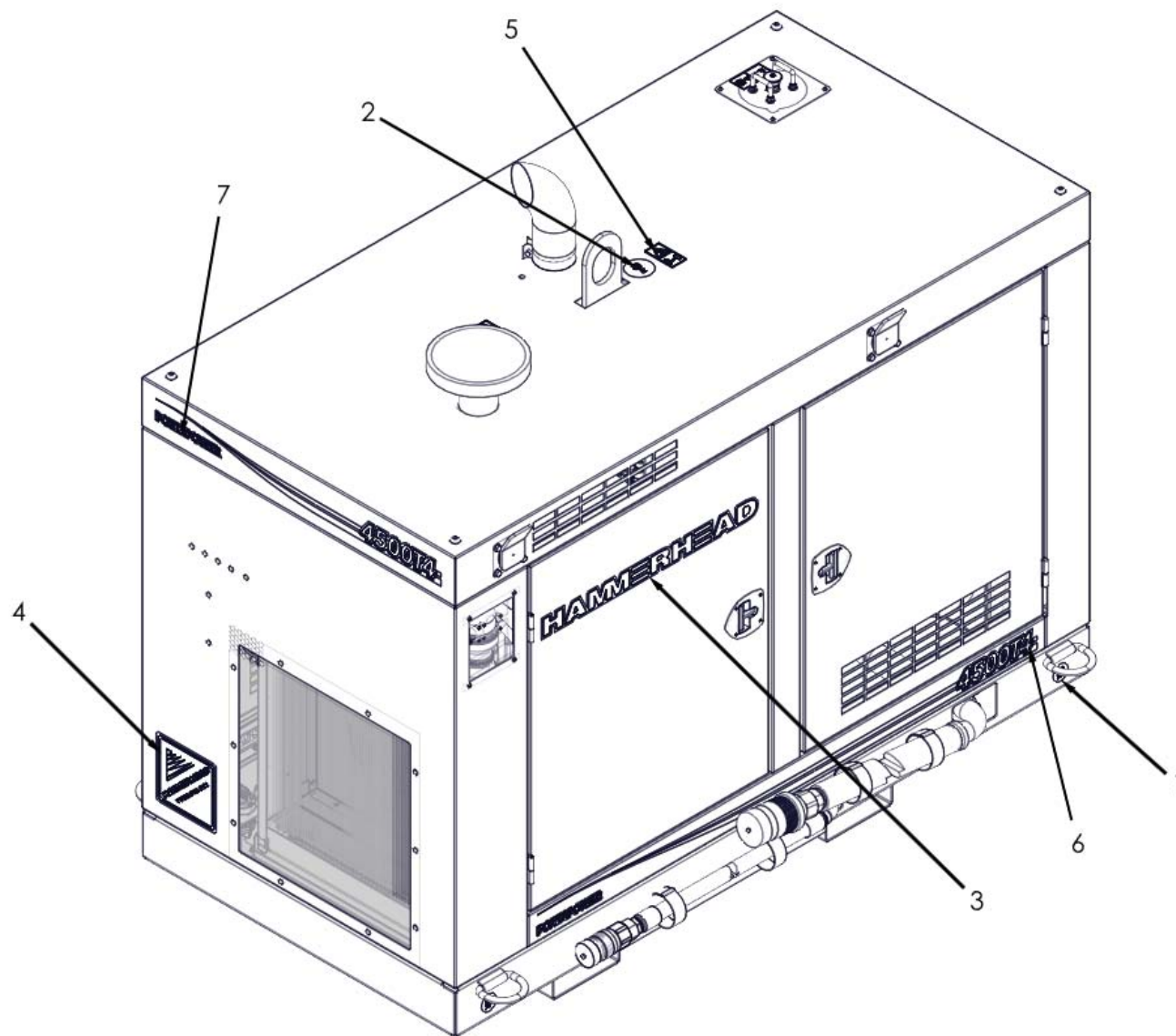
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Notes:

Decals - International

PP4500 Tier 4



Decals - International

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	909-8195	DECAL, TIE DOWN	2	
2	912-1130	DECAL, LIFT POINT	1	
3	912-4971	DECAL, HAMMERHEAD - 29"	1	
4	912-4975	DECAL, HH MOUNTAIN SQ - 8X8	1	
5	923-2209	DECAL, FALLING LOAD (INT)	1	
6	933-6014	DECAL, PP4500T4, FRONT & BACK	1	
7	933-6015	DECAL, PP4500T4, SIDES	1	

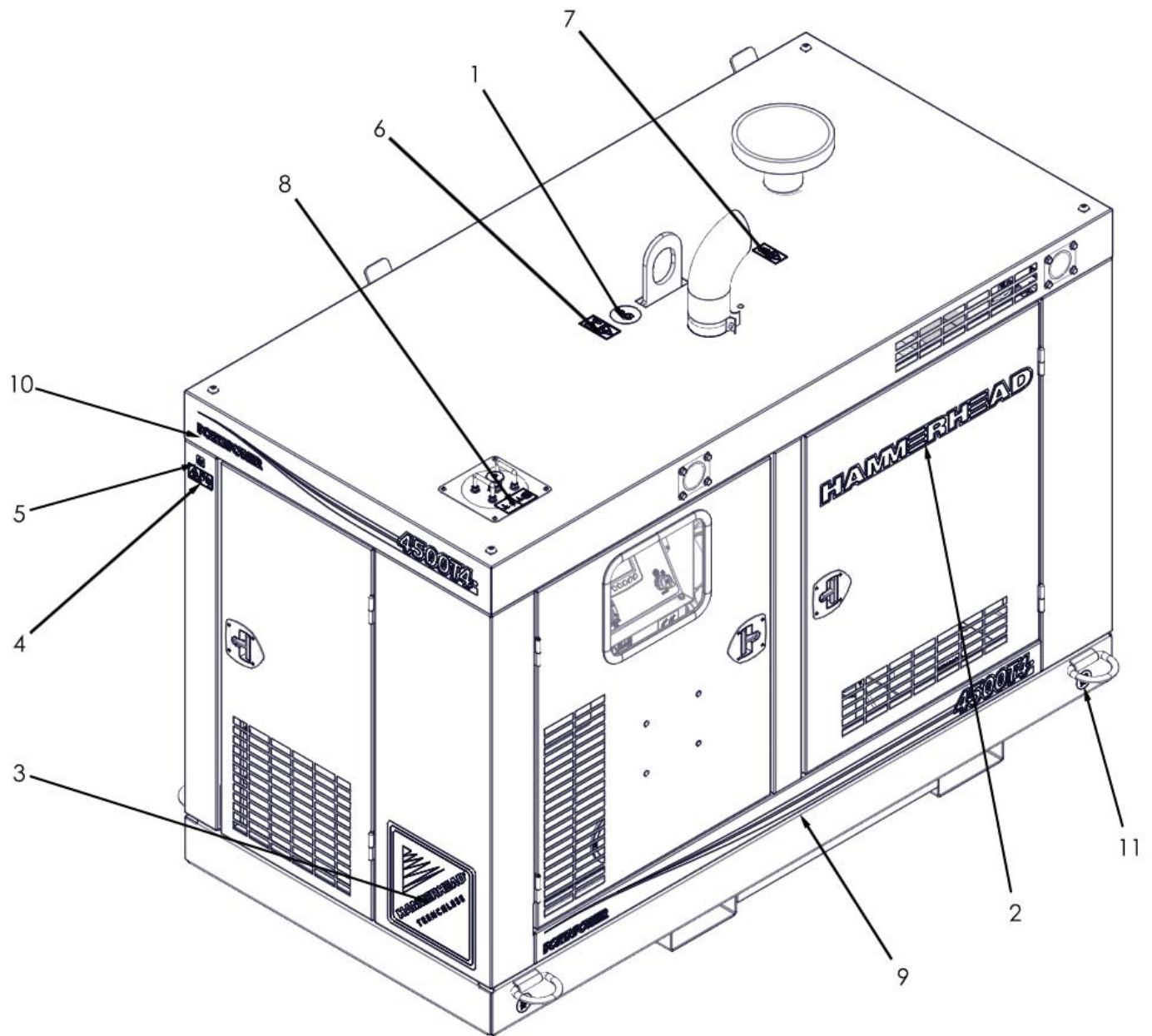
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Notes:

Decals - International

PP4500 Tier 4



Decals - International

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	912-1130	DECAL, LIFT POINT	1	
2	912-4971	DECAL, HAMMERHEAD - 29"	1	
3	912-4976	DECAL, HH MOUNTAIN SQ - 12X12	1	
4	913-0195	DECAL, REFUELING WARNING	1	
5	913-0198	DECAL, DIESEL FUEL	1	
6	923-2209	DECAL, FALLING LOAD (INT)	1	
7	923-2216	DECAL, HOT (INT)	1	
8	933-6000	DECAL, REMOTE STOP	1	
9	933-6014	DECAL, PP4500T4, FRONT & BACK	1	
10	933-6015	DECAL, PP4500T4, SIDES	1	
11	909-8195	DECAL, TIE DOWN	2	

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Footnotes:

Notes:

PP4500 Tier 4



Decals - International

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	923-2225	DECAL, READ OPS MAN (INT)	1	
2	923-2232	DECAL, ONE CALL (INT)	1	
3	933-6053	DECAL, PP SERVICE INTERVALS	1	
4	941-7592	DECAL, CE	1	

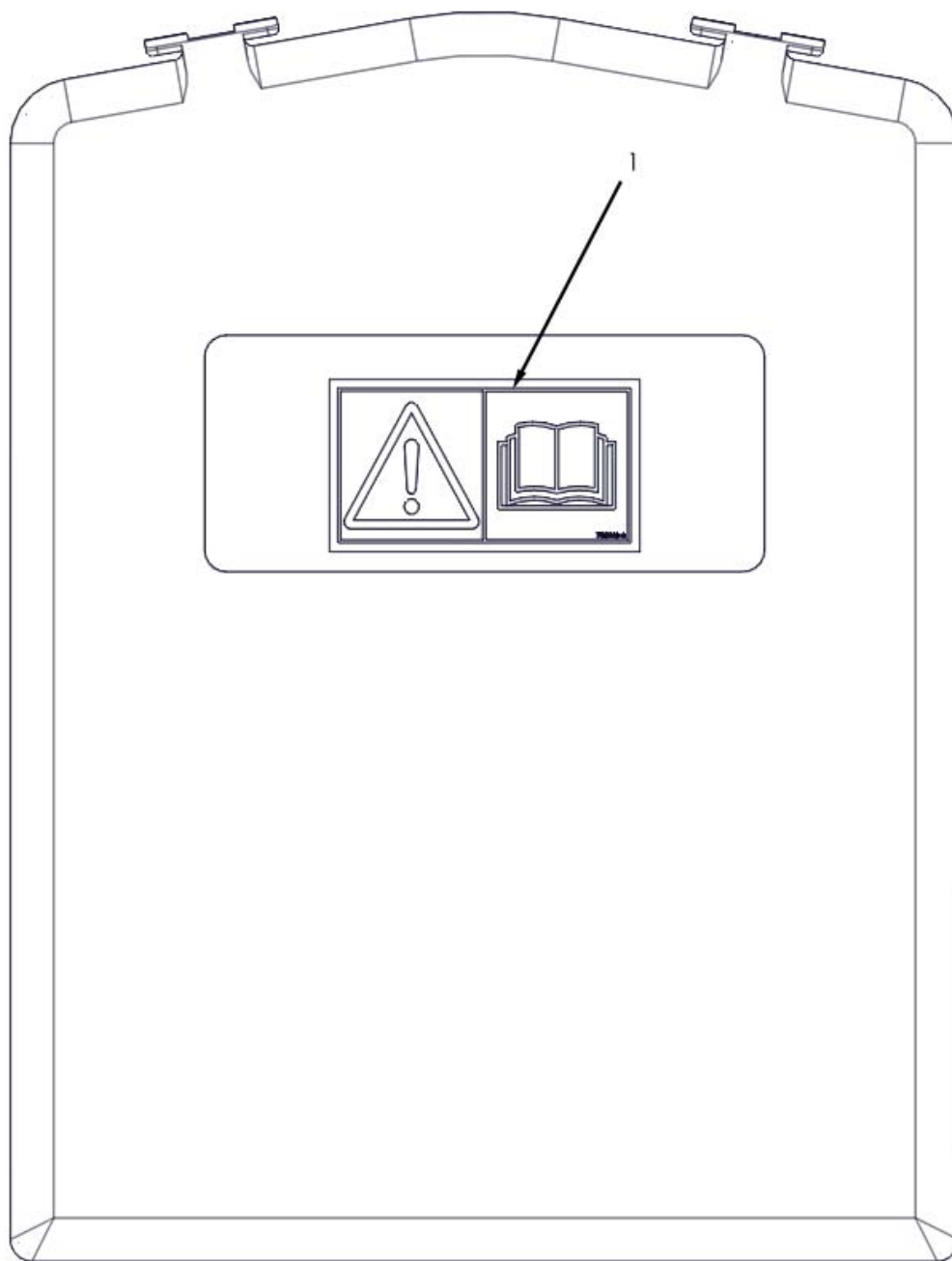
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Notes:

Decals - International

PP4500 Tier 4



Decals - International

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	923-2225	DECAL, READ OPS MAN (INT)	1	

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Footnotes:

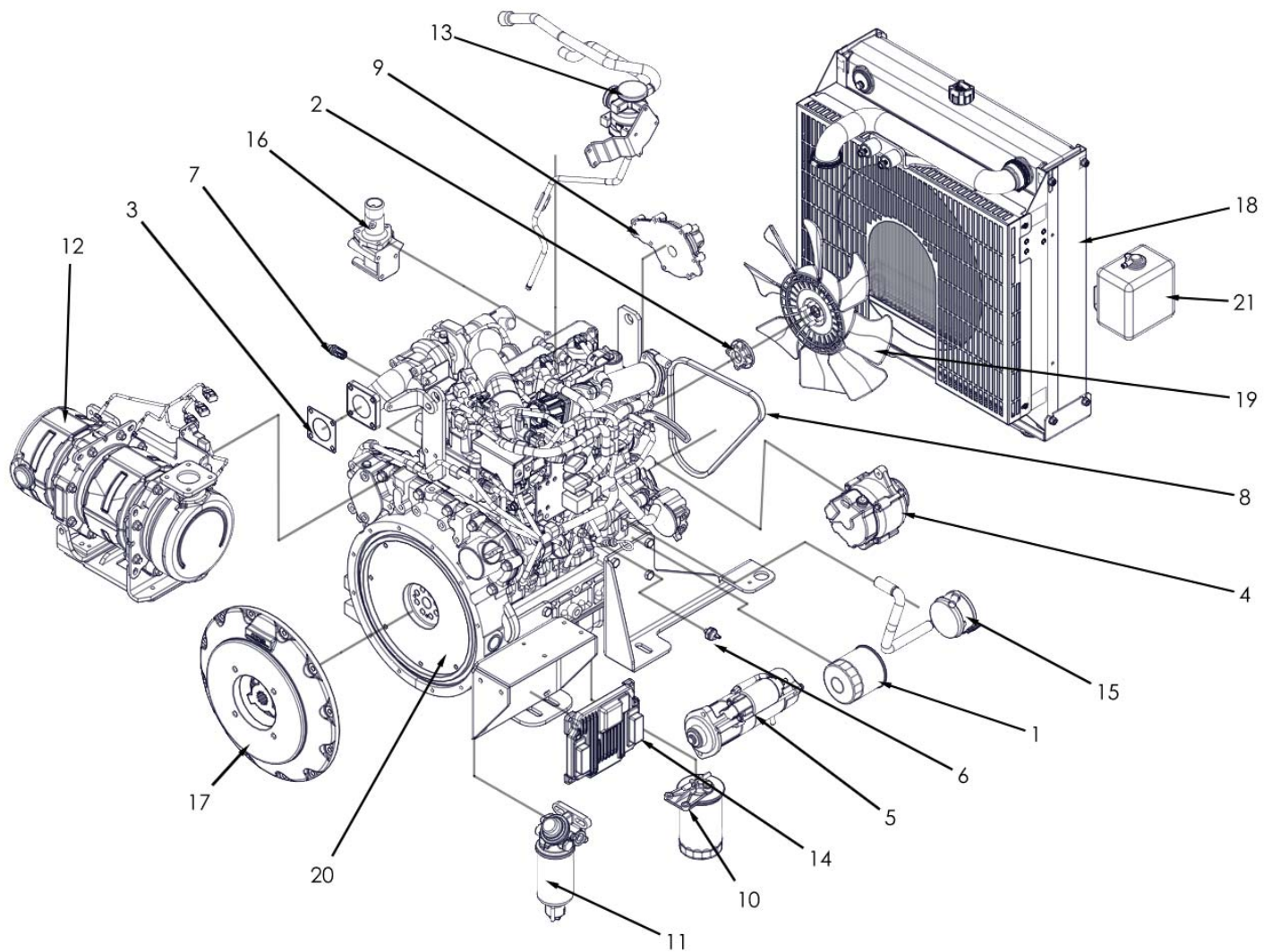
Notes:

Notes

ENGINE COMPONENTS

Tier 4 Engine

PP4500 Tier 4



Tier 4 Engine

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	913-7701	FILTER, OIL	1	
2	933-0304	FAN SPACER	1	
3	933-0305	MUFFLER GASKET	1	
4	933-0306	ALTERNATOR	1	
5	933-0307	STARTER	1	
6	933-0308	OIL SWITCH	1	
7	933-0309	WATER TEMPERATURE SENSOR	1	
8	933-0310	BELT, FAN	1	
9	933-0313	WATER PUMP	1	
10	933-0350	FUEL FILTER	1	
11	933-0352	FUEL/WATER SEPARATOR FILTER	1	
12	933-0353	DPF MUFFLER FILTER	1	
13	933-0354	OIL SEPARATOR FILTER	1	
14	933-0355	ECU	1	
15	933-0361	OIL COOLER	1	
16	933-4539	THERM OSTAT	1	
17	933-4572	HOUSING, SAE 'C' 4 BOLT	1	
18	933-0303	RADIATOR	1	
19	933-4567	FAN, PUSHER - V3307T	1	
20	933-0311	ENGINE, KUBOTA V3307T T4	1	
21	933-4543	TANK OVER FLOW	1	

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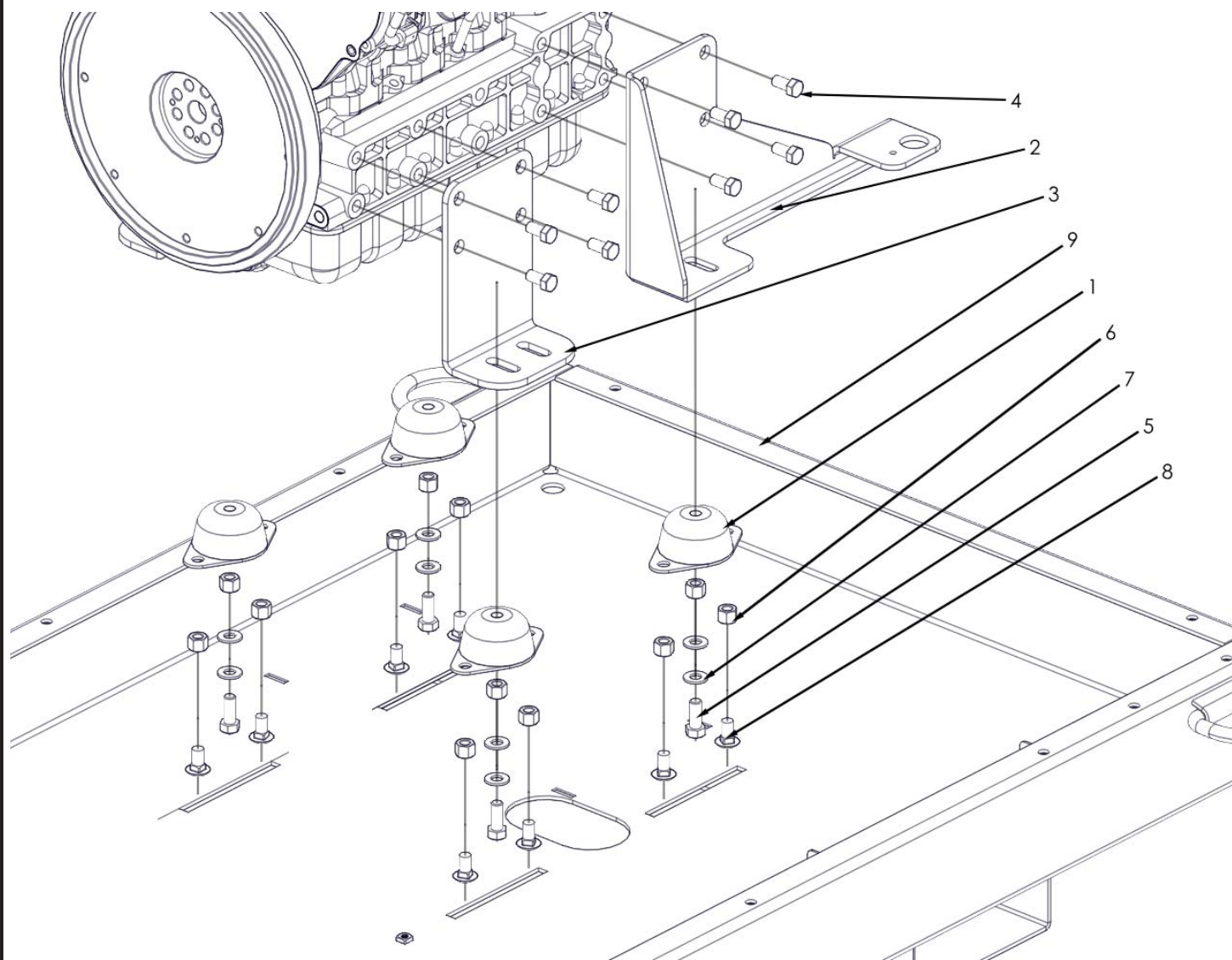
Footnotes:

Notes:

COMPLETE ENGINE P/N 933-0302

Engine Mounting

PP4500 Tier 4



Engine Mounting

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	913-7301	MOUNT, ENGINE	4	
2	933-5582	BRACKET, RIGHT ENGINE	1	
3	933-5610	ENGINE MOUNT, REAR	1	
4	M12HH25F	SCREW, M12-1.25 x 25mm HHC	8	
5	08HH20	SCREW, 1/2-13 x 1.25 HHC - GR8	4	
6	08TLN	NUT, 1/2-13 TOP LOCK	12	
7	08FW-SAE	WASHER, 1/2"	8	
8	08CB16	BOLT, 1/2-13 x 1 CARRIAGE	8	
9	933-0314	BASE FRAME WELDMENT	1	

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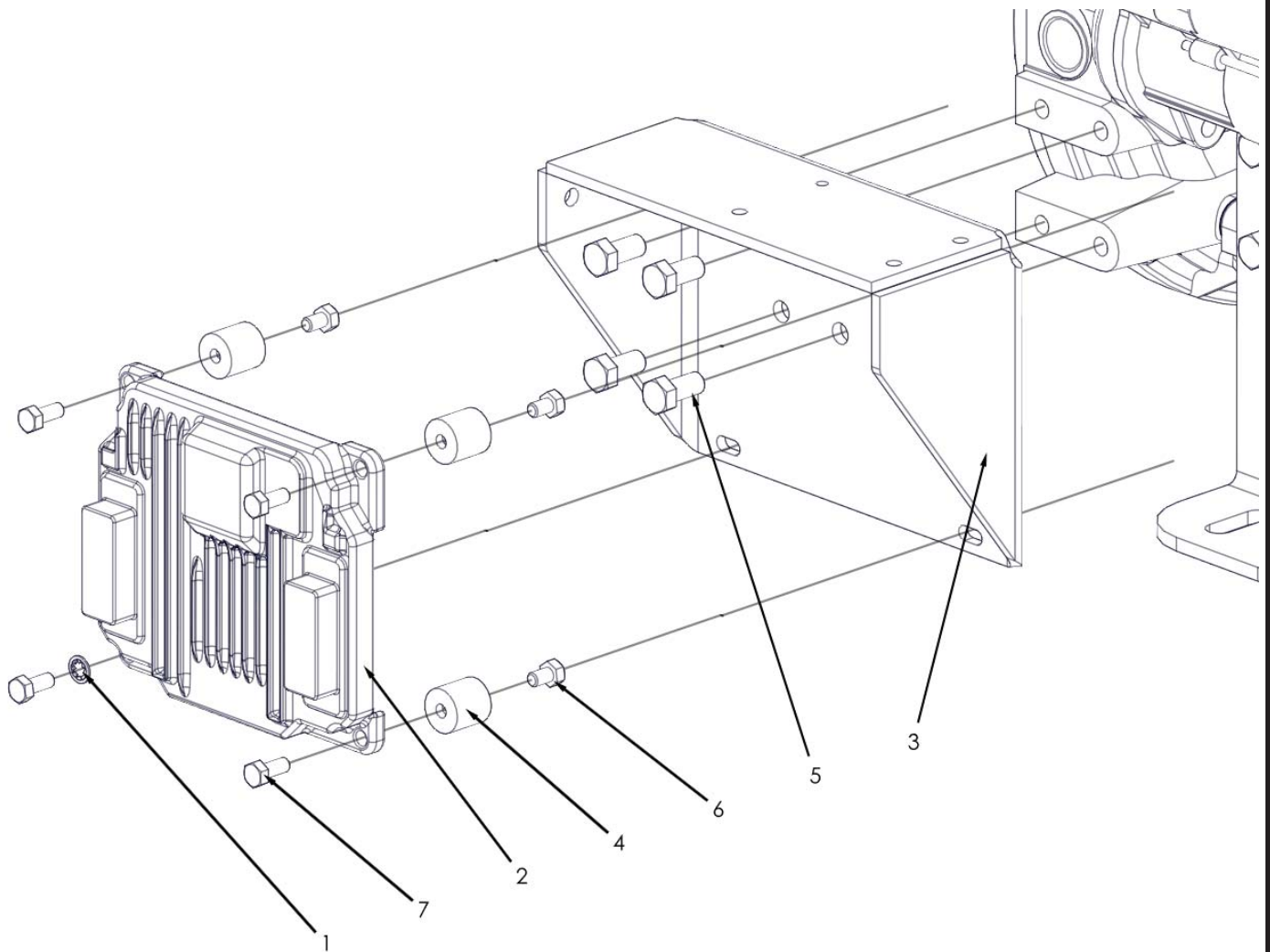
933-5581	BRACKET, LEFT ENGINE	1
933-5610	ENGINE MOUNT, REAR	1

Footnotes:

Notes:

ECU Mounting

PP4500 Tier 4



ECU Mounting

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	05ITLW	WASHER, 5/16" ITLW	1	
2	933-0355	ECU	1	
3	933-0362	BRACKET, ECU /FILTER	1	
4	933-0383	RUBBER MOUNT, ECU	4	
5	M12HH25F	SCREW, M12-1.25 x 25mm HHC	4	TORQUE TO 92.8 FT-LB
6	05HH08	SCREW, 5/16-18 x .50 HHC - GR8	4	TORQUE TO 12 FT-LB
7	05HH12	SCREW, 5/16-18 x .75 HHC - GR8	4	TORQUE TO 12 FT-LB

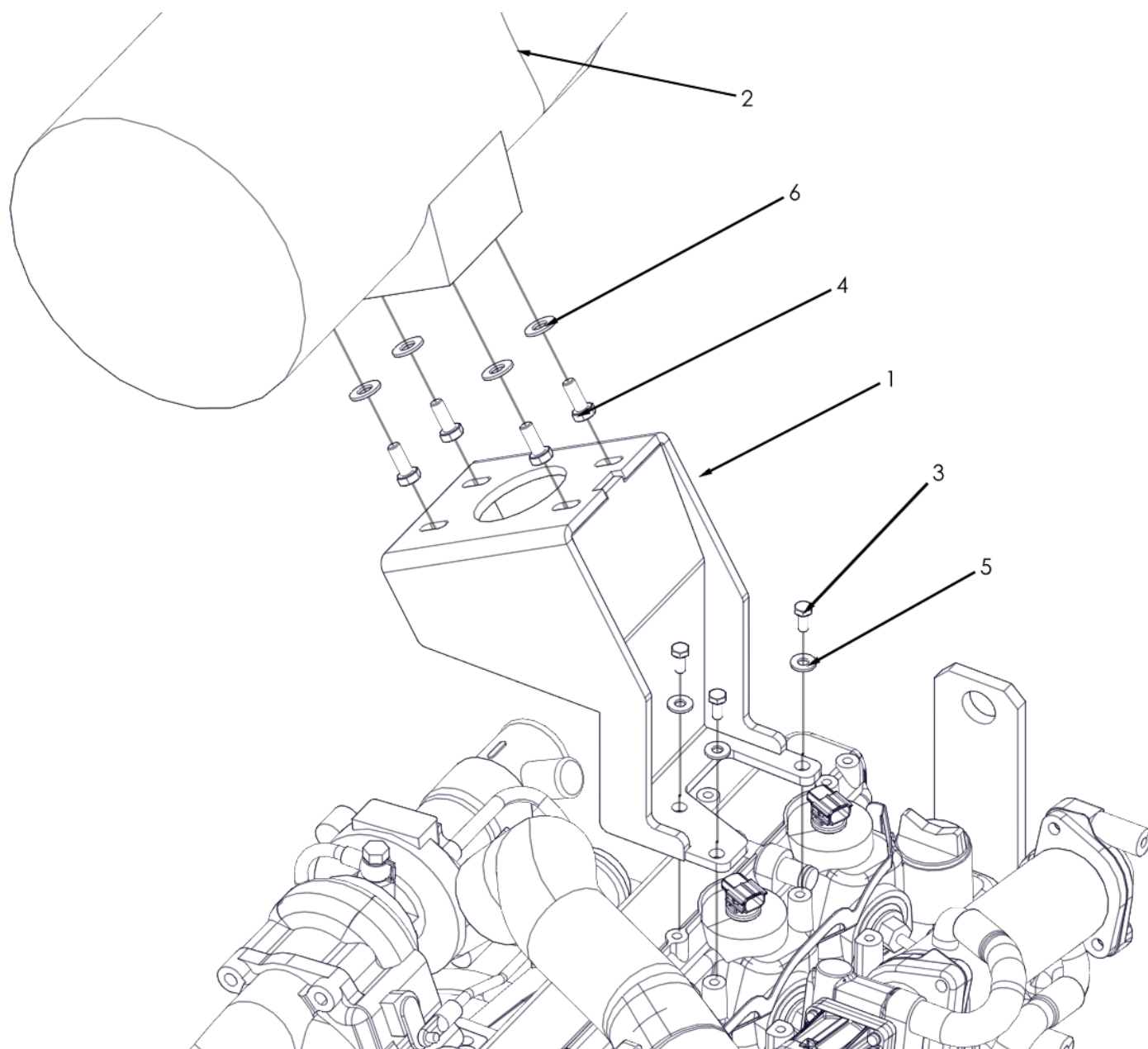
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Footnotes:

Notes:

Air Filter to Engine

PP4500 Tier 4



Air Filter to Engine

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0382	BRACKET, AIR CLEANER	1	
2	933-0359	AIR CLEANER	1	
3	M06HH14	SCREW, M6-1.00mm x 14mm HHC	3	TORQUE TO 11.1 FT-LB
4	M08HH20	SCREW, M8-1.25mm x 20mm HHC	4	
5	04FW-SAE	WASHER, 1/4"	3	
6	06FW-SAE	WASHER, 3/8"	4	

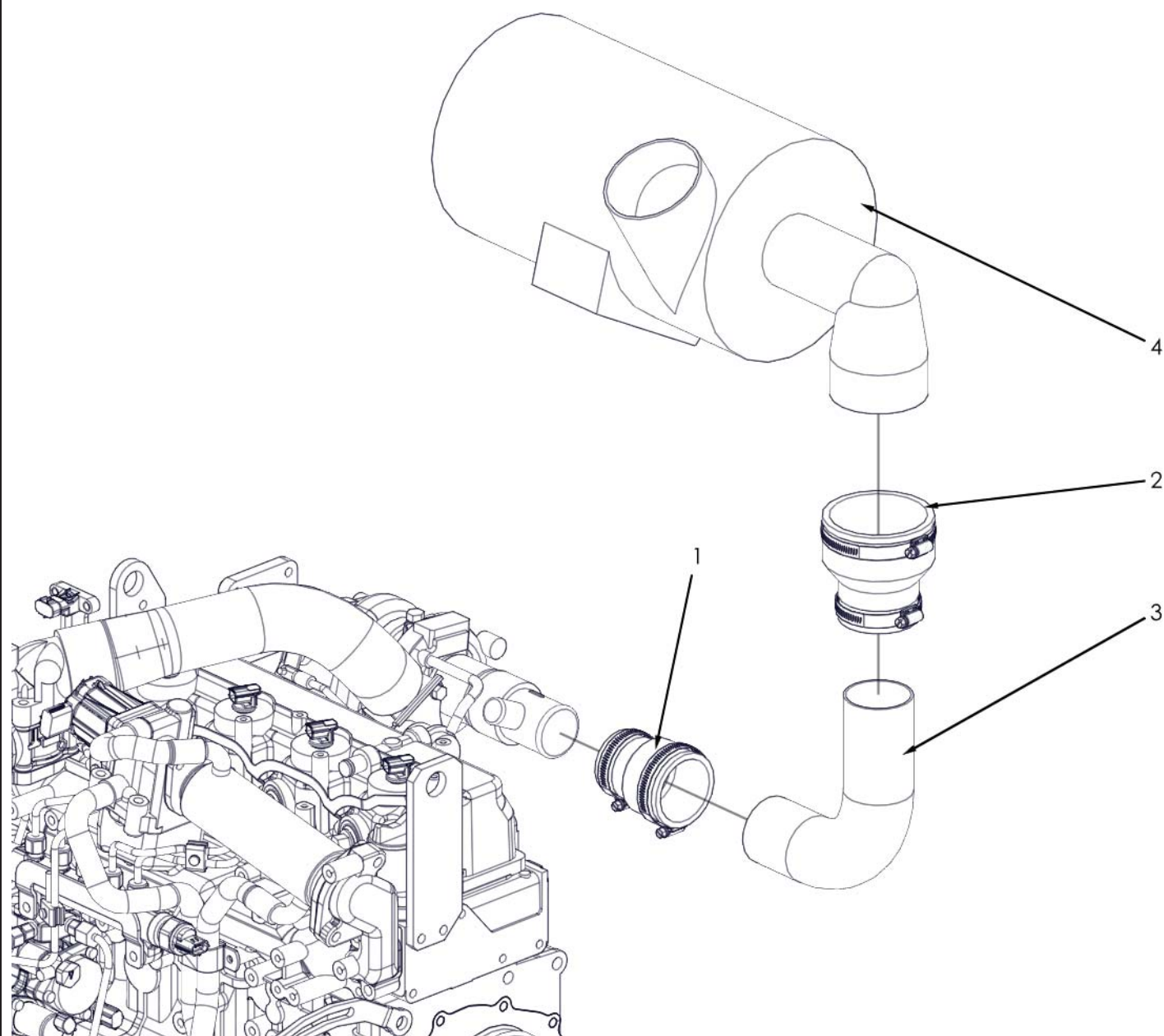
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Notes:

Air Filter Assembly

PP4500 Tier 4



Air Filter Assembly

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0357	ADAPTER, INTAKE 1.5" x 2"	1	
2	933-0358	ADAPTER, INTAKE 2" x 3"	1	
3	933-0356	INTAKE ELBOW	1	
4	933-0359	AIR CLEANER	1	

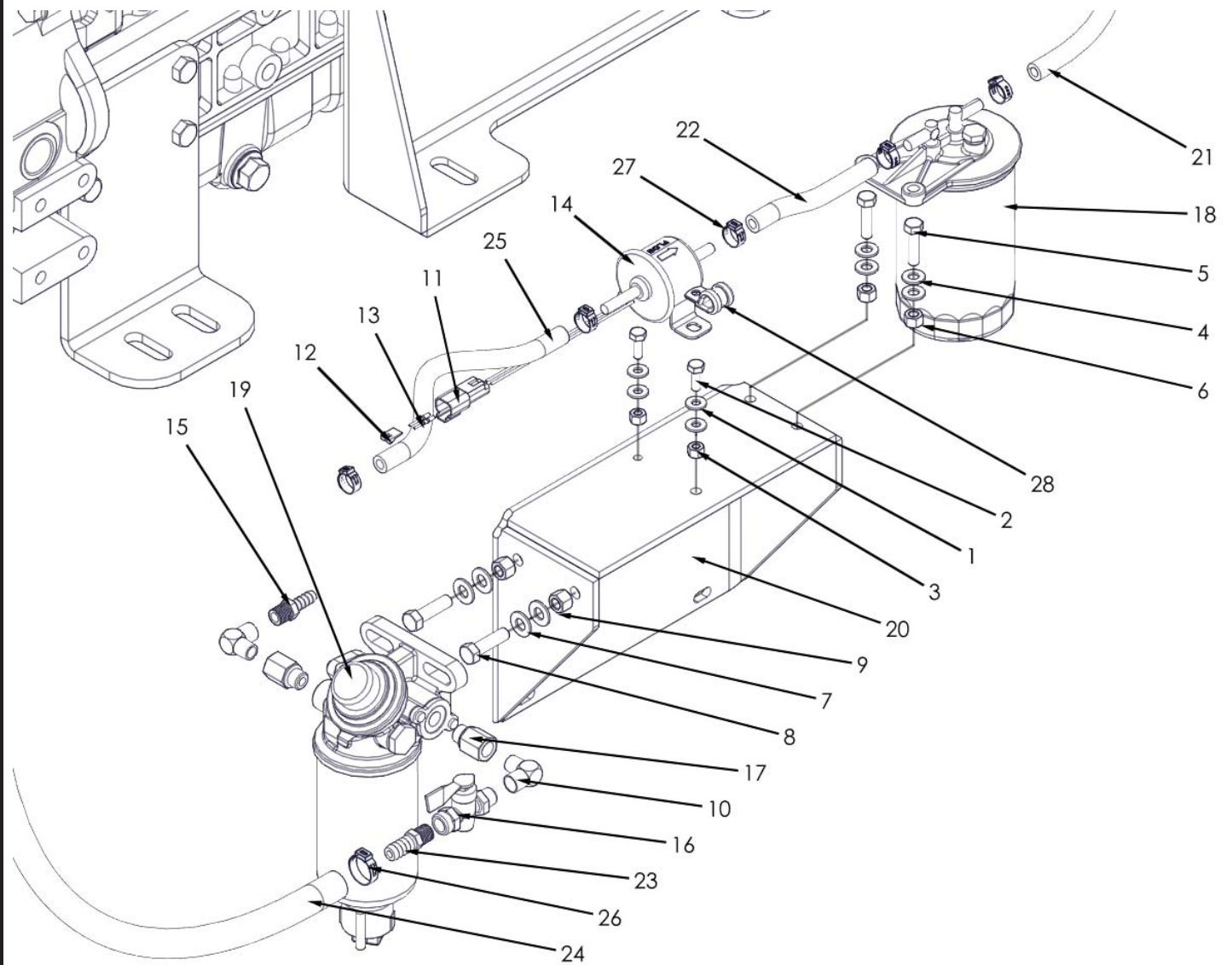
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Footnotes:

Notes:

Fuel System

PP4500 Tier 4



Fuel System

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	04FW-SAE	WASHER, 1/4"	4	
2	04HH12	SCREW, 1/4-20 x .75 HHC - GR8	2	
3	04TLN	NUT, 1/4-20 TOP LOCK	2	
4	05FW-SAE	WASHER, 5/16"	4	
5	05HH20	SCREW, 5/16-18 x 1.25 HHC - GR8	2	
6	05TLN	NUT, 5/16-18 TOP LOCK	2	
7	06FW-SAE	WASHER, 3/8"	4	
8	06HH22	SCREW, 3/8-16 x 1.375 HHC - GR8	2	
9	06TLN	NUT, 3/8-16 TOP LOCK	2	
10	909-8163	ELBOW 4MP-4FP	2	
11	912-4225	RECEPTACLE, 2-WAY	1	
12	912-4226	LOCK, 2-WAY	1	
13	912-4227	PIN CONTACT	2	
14	912-6159	PUMP, FUEL - ELECTRIC	1	
15	913-7083	FITTING, BARB 5/16 x 1/4NPT	1	
16	913-7130	FUEL SHUT-OFF PLUG VALVE	1	
17	926-7252	ADAPTER, METRIC-ORR/NPTF	2	
18	933-0350	FUEL FILTER	1	
19	933-0352	FUEL/WATER SEPARATOR FILTER	1	
20	933-0362	BRACKET, ECU/FILTER	1	
21	933-0441	HOSE 5/16" X 12"	1	
22	933-0442	HOSE 5/16" X 5"	1	
23	933-0443	FITTING, BARB 1/2 x 1/4NPT	1	
24	933-0444	HOSE 1/2" X 60"	1	
25	933-0445	HOSE 5/16" X 9"	1	
26	933-0450	CLAMP, HOSE 49/64" TO 57/64"	1	
27	941-6951	CLAMP, HOSE 33/64" TO 5/8" ID	5	
28	909-8396	CLAMP, CUSHION 1/2"	1	USED TO ROUTE 933-0446 HOSE 3/8" X 60"

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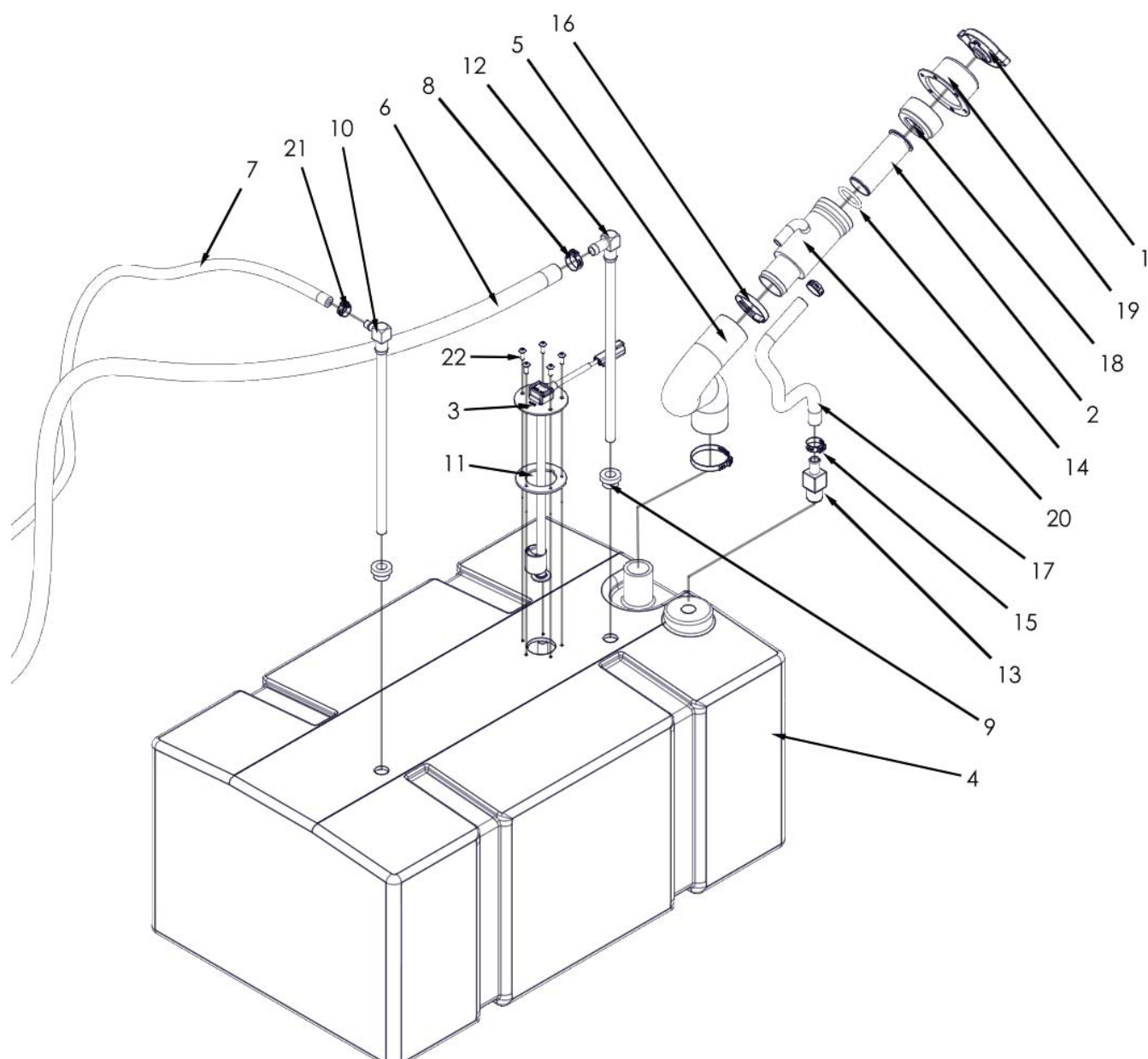
Footnotes:

ITEMS 11, 12, 13, &14 ARE INCLUDED IN 912-6289 FUEL PUMP ASSEMBLY

Notes:

Fuel System Assembly

PP4500 Tier 4



Fuel System Assembly

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0430	FUEL CAP (11-1/2")	1	
2	933-0469	FILLER NECK SCREEN	1	
3	933-0470	REED SWITCH FUEL SENDER	1	
4	933-0349	FUEL TANK, 25 GALLON	1	
5	933-0366	FORMED FUEL HOSE	1	
6	933-0444	HOSE 1/2" X 60"	1	
7	933-0446	HOSE, 3/8 X 60"	1	
8	933-0450	CLAMP, HOSE 49/64" TO 57/64"	1	
9	933-0460	GROM MET (.620 X .750)	2	
10	933-0461	FUEL TANK PICKUP - (06H-08H90)	1	
11	933-0462	GASKET	1	
12	933-0463	FUEL TANK PICKUP (08H-08H90)	1	
13	933-0464	S/O COUPLER (08N-08H)	1	
14	933-0471	O-RING	1	
15	933-0472	WORM CLAMP (7/16" TO 1")	2	
16	933-0473	WORM CLAMP (1.25" TO 2.25")	2	
17	933-0474	HOSE, FUEL 1/2" X 13"	1	
18	933-0476	FILLER NECK WASHER	1	
19	933-0477	FLANGED FILLER NECK	1	
20	933-0478	FILLER NECK	1	
21	941-6951	CLAMP, HOSE 33/64" TO 5/8" ID	1	
22	#10BH08	SCREW, #10-24x0.5 BHSC	5	

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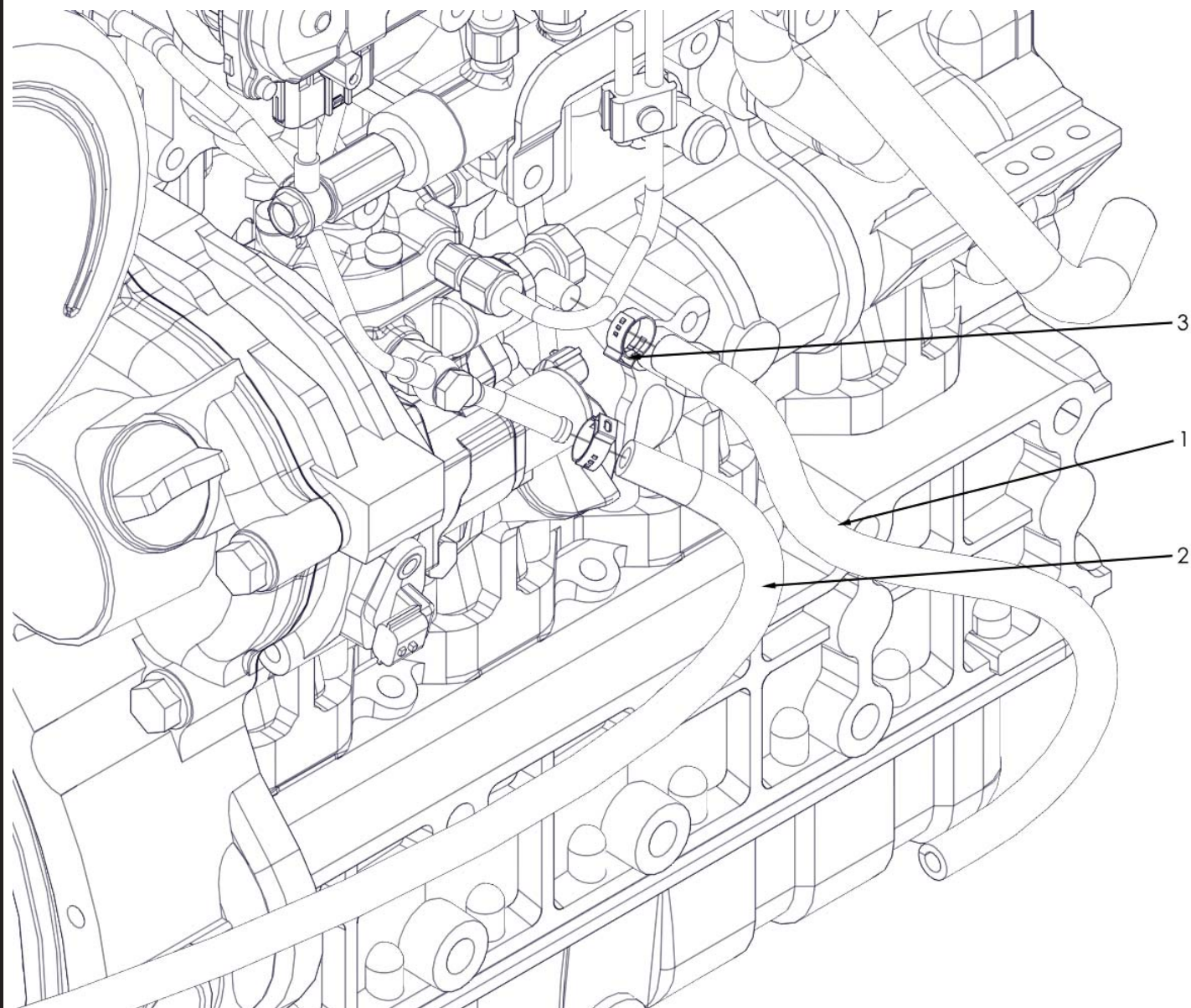
Footnotes:

ALIGN BREATHER TUBE ON 933-0478 WITH A MOUNTING HOLE ON 933-0477

Notes:

Fuel Hoses to Engine

PP4500 Tier 4



Fuel Hoses to Engine

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0441	HOSE, 5/16" X 12"	1	
2	933-0446	HOSE, 3/8" X 60"	1	
3	941-6951	CLAMP, HOSE 33/64" TO 5/8" ID	2	

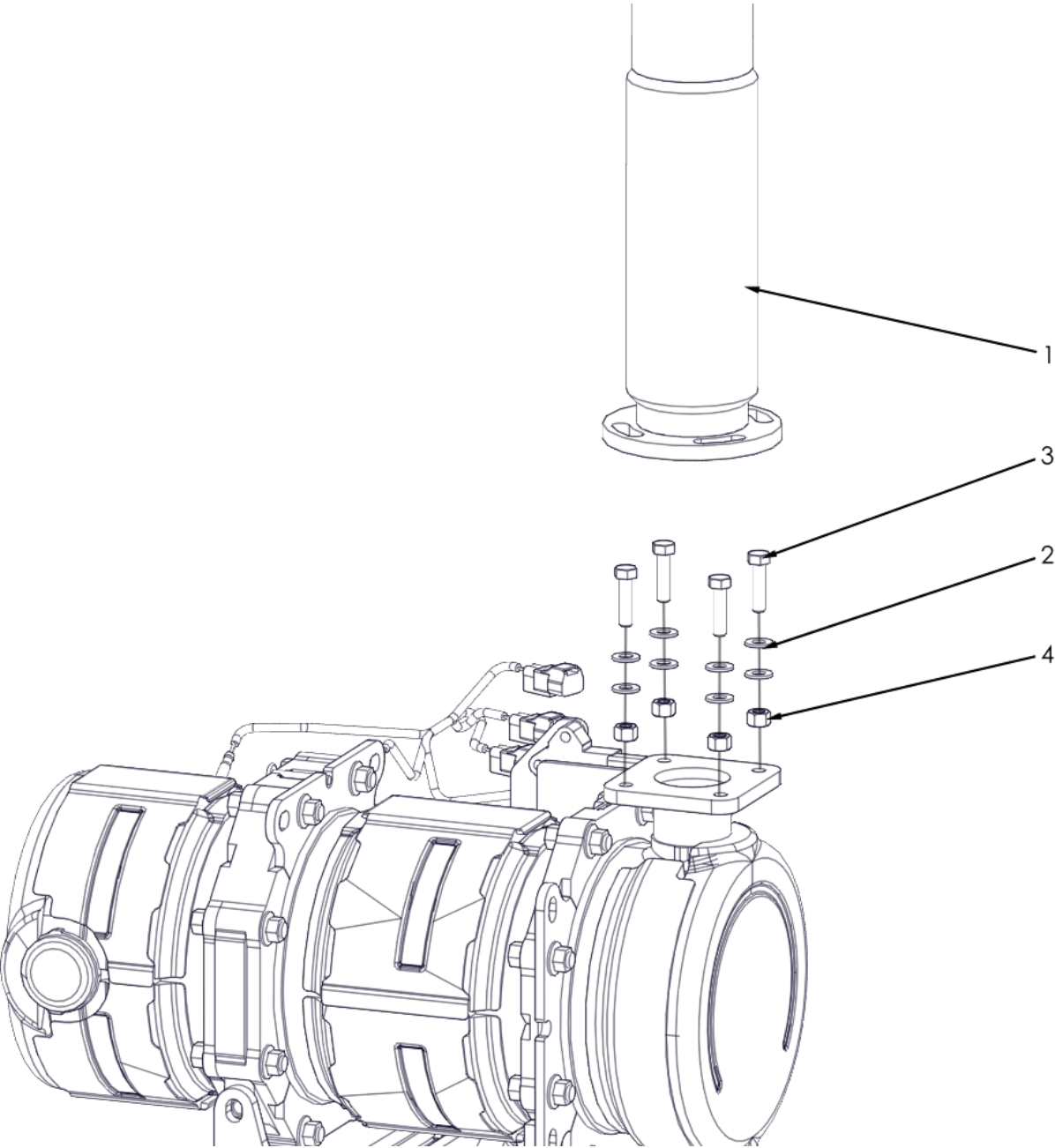
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Footnotes:

Notes:

Exhaust Mounting

PP4500 Tier 4



Exhaust Mounting

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0373	EXHAUST WELDEMENT	1	
2	05FW-SAE	WASHER, 5/16"	8	
3	05HH20	SCREW, 5/16-18 x 1.25 HHC - GR8	4	
4	05TLN	NUT, 5/16-18 TOP LOCK	4	

Not Shown:

Footnotes:

Notes:

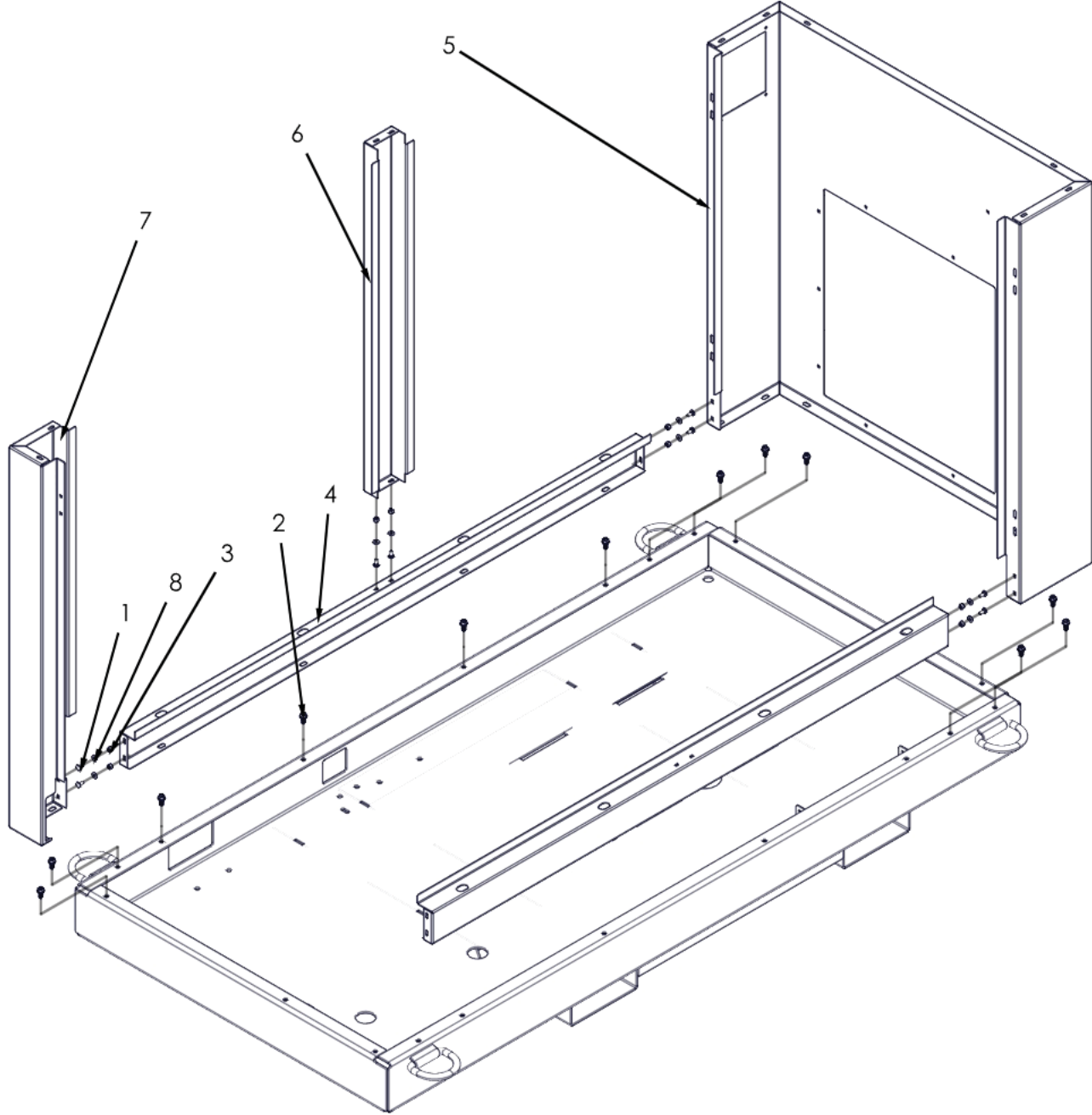
Notes

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FRAME COMPONENTS

Sheet Metal to Tub

PP4500 Tier 4



Sheet Metal to Tub

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	04CB10	BOLT, 1/4-20 x .625 CARRIAGE	8	
2	05FLH12	HEX SCREW, 5/16 X 3/4, FLANGED	12	
3	04TLN	NUT, 1/4-20 TOP LOCK	8	
4	933-0324	PANEL, BOTTOM	2	
5	933-0381	PANEL, FRONT RIGHT	1	
6	933-0325	PANEL, POST	1	
7	933-0322	PANEL, REAR LEFT	1	
8	04FW-SAE	WASHER, 1/4"	8	

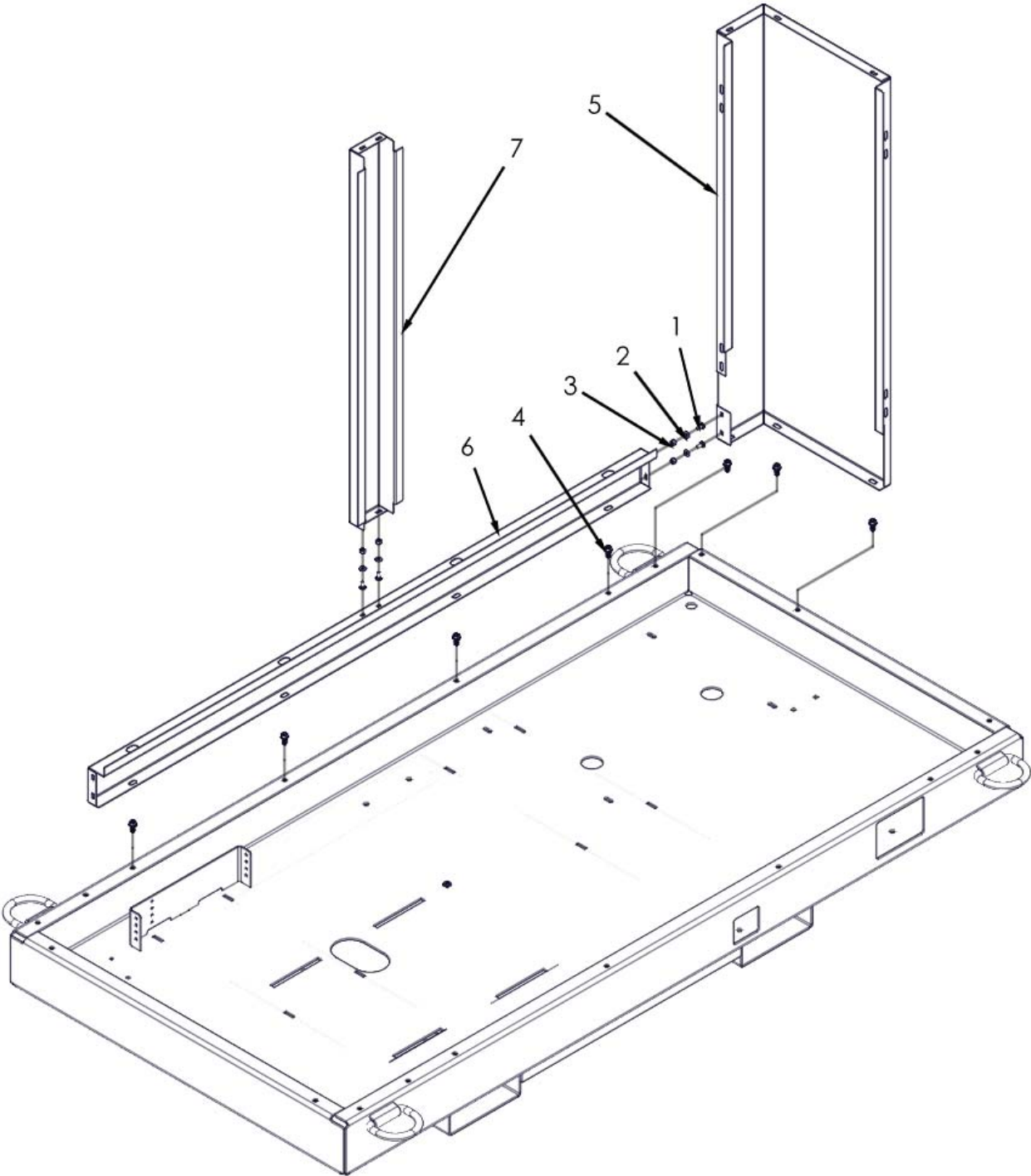
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Footnotes:

Notes:

Sheet Metal to Tub

PP4500 Tier 4



Sheet Metal to Tub

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	04CB10	BOLT, 1/4-20 x .625 CARRIAGE	4	
2	04FW-SAE	WASHER, 1/4"	4	
3	04TLN	NUT, 1/4-20 TOP LOCK	4	
4	05FLH12	HEX SCREW, 5/16 X 3/4, FLANGED	7	
5	933-0323	PANEL, REAR RIGHT	1	
6	933-0324	PANEL, BOTTOM	1	
7	933-0325	PANEL, POST	1	

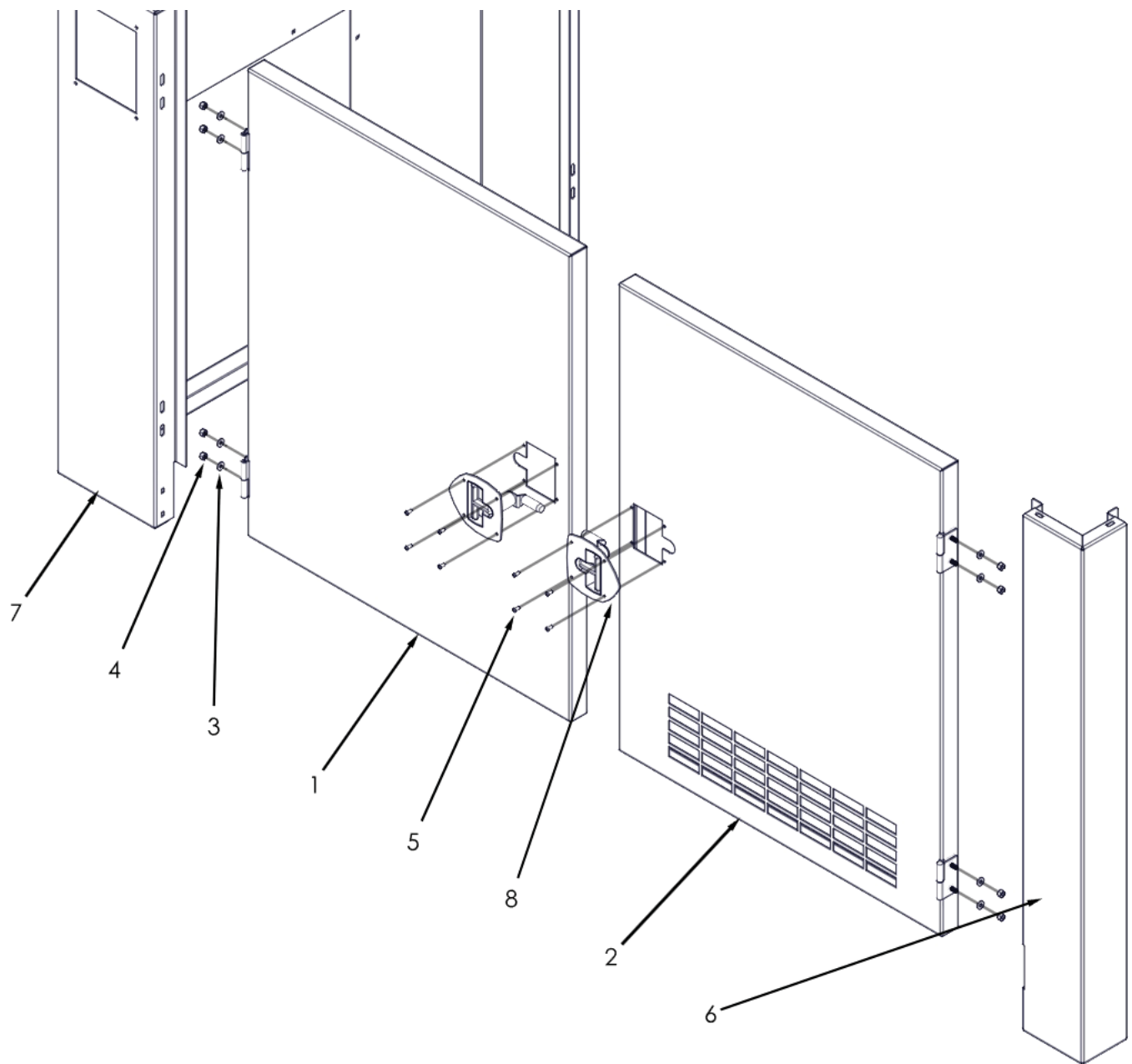
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Notes:

Engine Assembly Doors

PP4500 Tier 4



Engine Assembly Doors

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0390	DOOR, LEFT ENGINE ASSY	1	
2	933-0391	DOOR, ENGINE ASSY	1	
3	04FW-SAE	WASHER, 1/4"	8	
4	04TLN	NUT, 1/4-20 TOP LOCK	8	
5	912-6302	BLIND RIVET, ALUMINUM, 6-4	8	
6	933-0322	PANEL, REAR LEFT	1	
7	933-0381	PANEL, FRONT RIGHT	1	
8	933-5530	LATCH, QUARTER TURN	2	

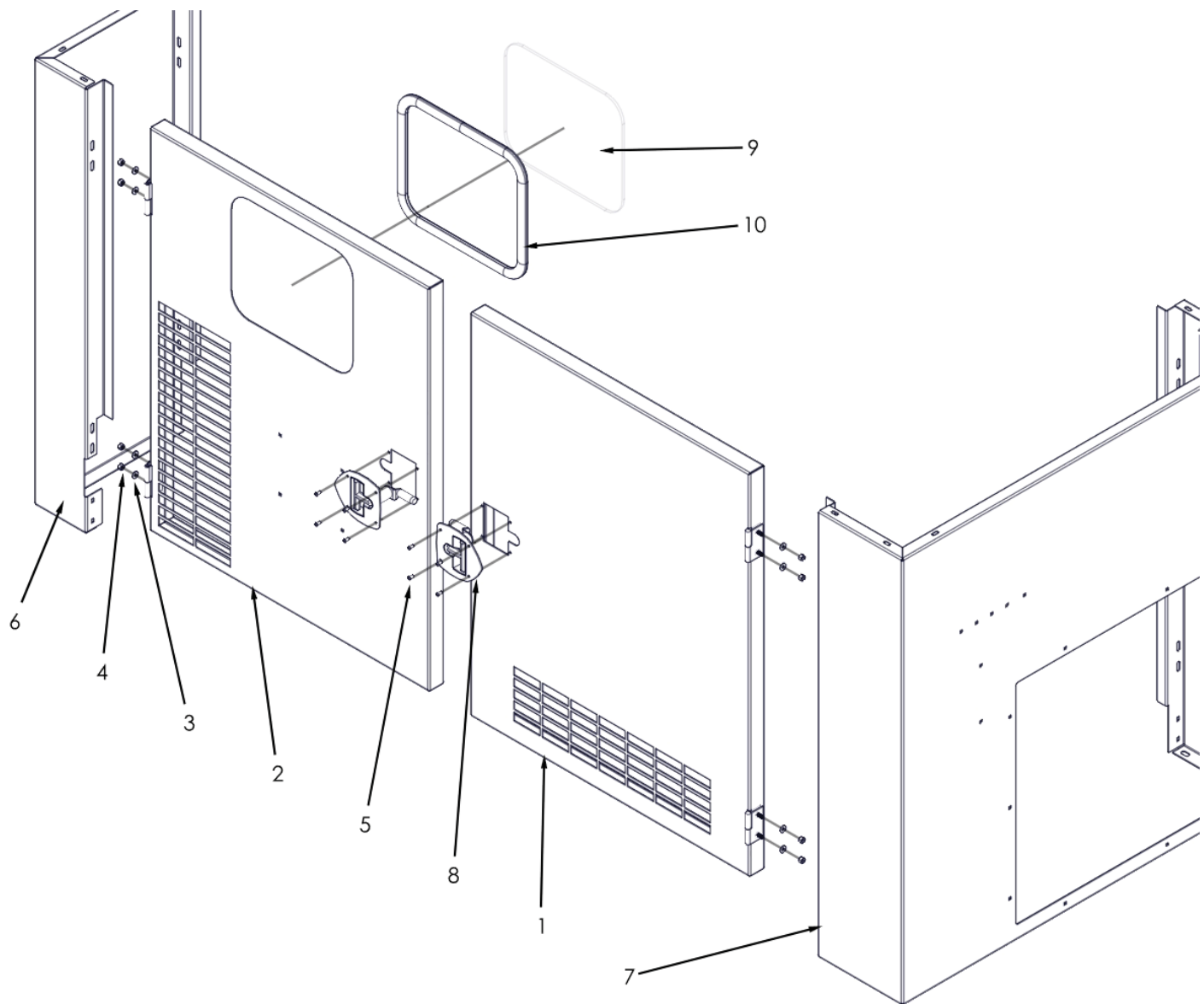
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Notes:

Control Panel Doors

PP4500 Tier 4



Control Panel Doors

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0391	DOOR, ENGINE ASSY	1	
2	933-0393	DOOR, OPERATOR CONTROLS ASSY	1	
3	04FW-SAE	WASHER, 1/4"	8	
4	04TLN	NUT, 1/4-20 TOP LOCK	8	
5	912-6302	BLIND RIVET, ALUMINUM, 6-4	8	
6	933-0323	PANEL, REAR RIGHT	1	
7	933-0381	PANEL, FRONT RIGHT	1	
8	933-5530	LATCH, QUARTER TURN	2	
9	933-6102	WINDOW, CONTROL PANEL	1	
10	933-6103	WINDOW SEAL, OPERATOR PANEL	1	

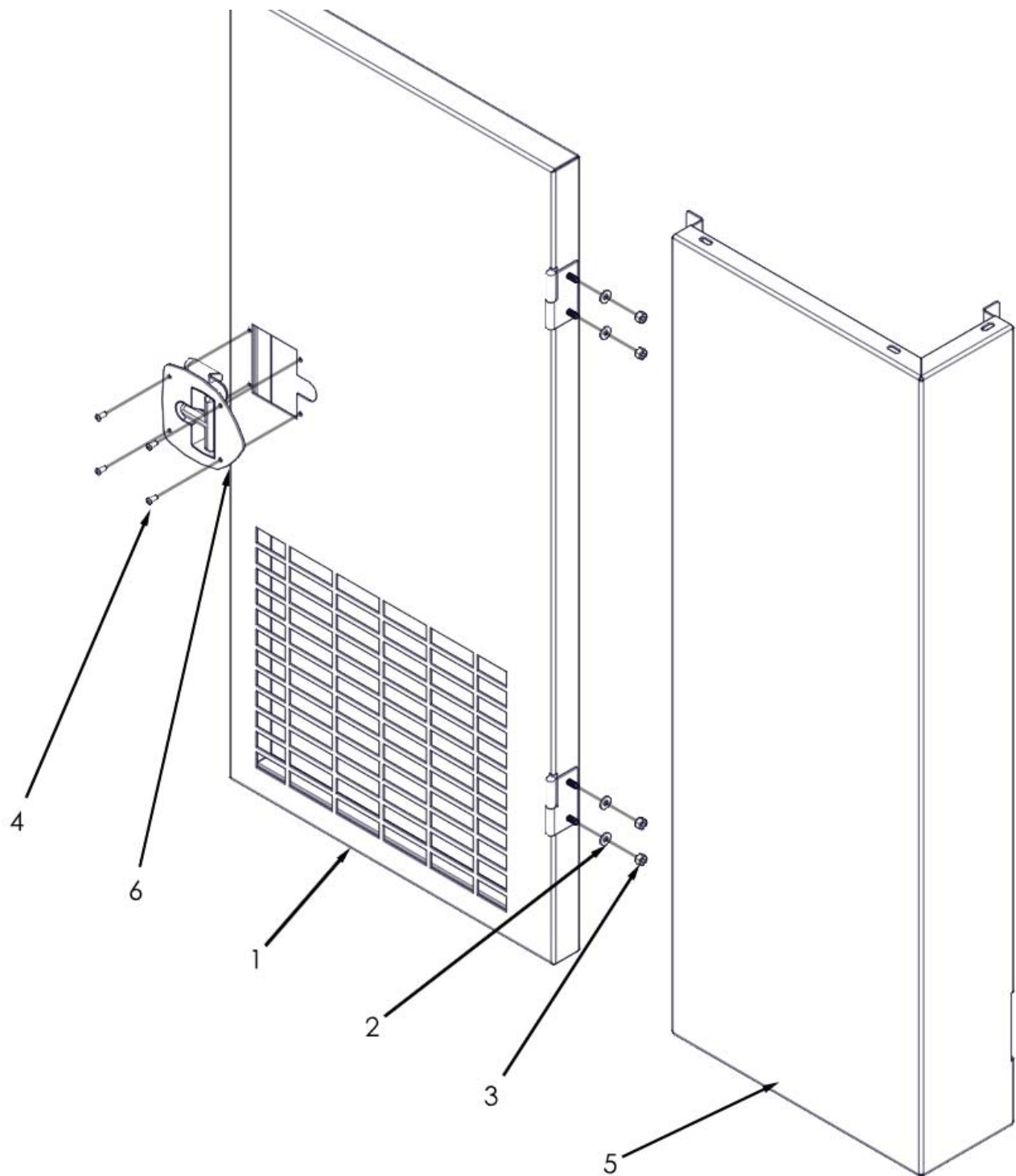
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Footnotes:

Notes:

Oil Cooler Door

PP4500 Tier 4



Oil Cooler Door

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0392	DOOR, COOLER INLET ASSY	1	
2	04FW-SAE	WASHER, 1/4"	4	
3	04TLN	NUT, 1/4-20 TOP LOCK	4	
4	912-6302	BLIND RIVET, ALUMINUM, 6-4	4	
5	933-0323	PANEL, REAR RIGHT	1	
6	933-5530	LATCH, QUARTER TURN	1	

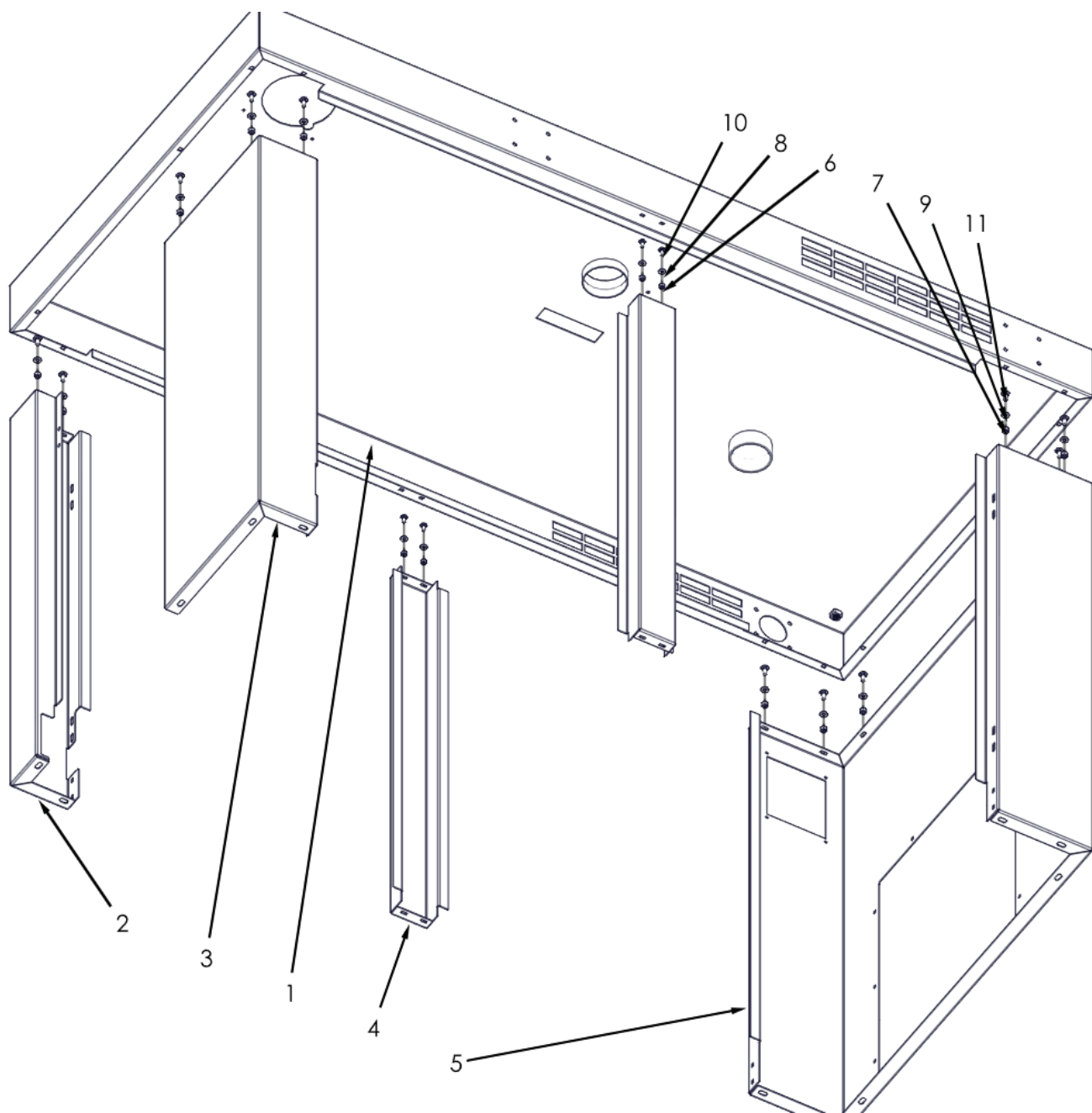
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Footnotes:

Notes:

Top to Sides

PP4500 Tier 4



Top to Sides

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0317	PANEL, ROOF WELDMENT	1	
2	933-0322	PANEL, REAR LEFT	1	
3	933-0323	PANEL, REAR RIGHT	1	
4	933-0325	PANEL, POST	2	
5	933-0381	PANEL, FRONT RIGHT	1	
6	04TLN	NUT, 1/4-20 TOP LOCK	4	
7	05TLN	NUT, 5/16-18 TOP LOCK	11	
8	04FW-SAE	WASHER, 1/4"	4	
9	05FW-SAE	WASHER, 5/16"	11	
10	04CB10	BOLT, 1/4-20 x .625 CARRIAGE	4	
11	05CB12	BOLT, 5/16-18 x .75 CARRIAGE	11	

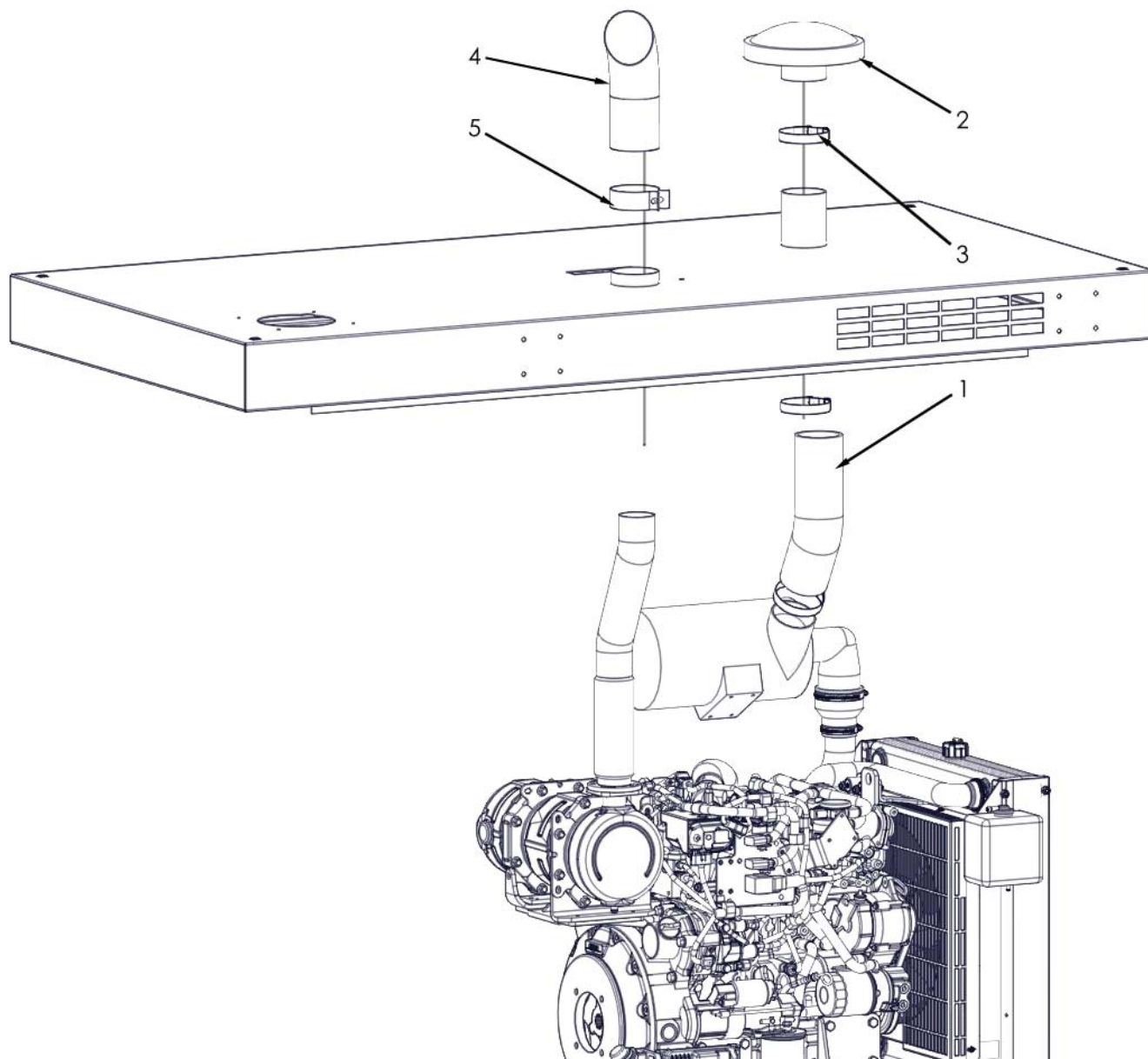
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Footnotes:

Notes:

Top Exhausts

PP4500 Tier 4



Top Exhausts

PP4500 Tier 4

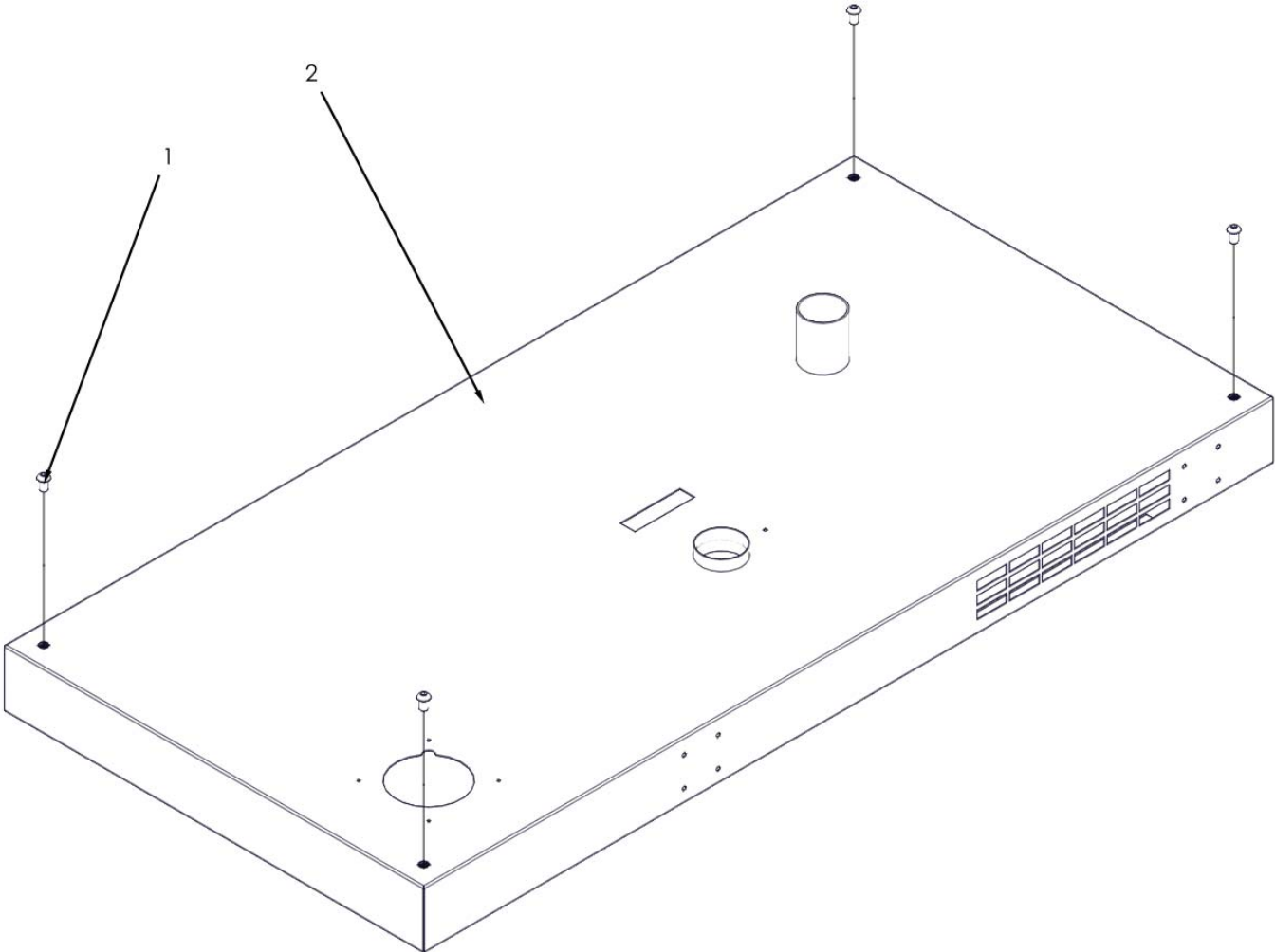
Bom ID	Part No	Description	Qty	Remarks
1	933-0371	HOSE, AIR INTAKE	1	
2	933-0377	RAIN CAP, PP4500	1	
3	933-0481	HOSE CLAMP, 3.75"	3	TORQUE TO 23 IN-LB
4	933-4022	PIPE, MUFFLER OUTLET	1	
5	933-4023	4" MOUNTING CLAMP, EXHAUST	1	

Not Shown:

Footnotes:

Notes:

Plug Bolts
PP4500 Tier 4



Plug Bolts

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	10BH16	SCREW, 5/8-11x1 BHSC	4	
2	933-0317	PANEL, ROOF WELDMENT	1	

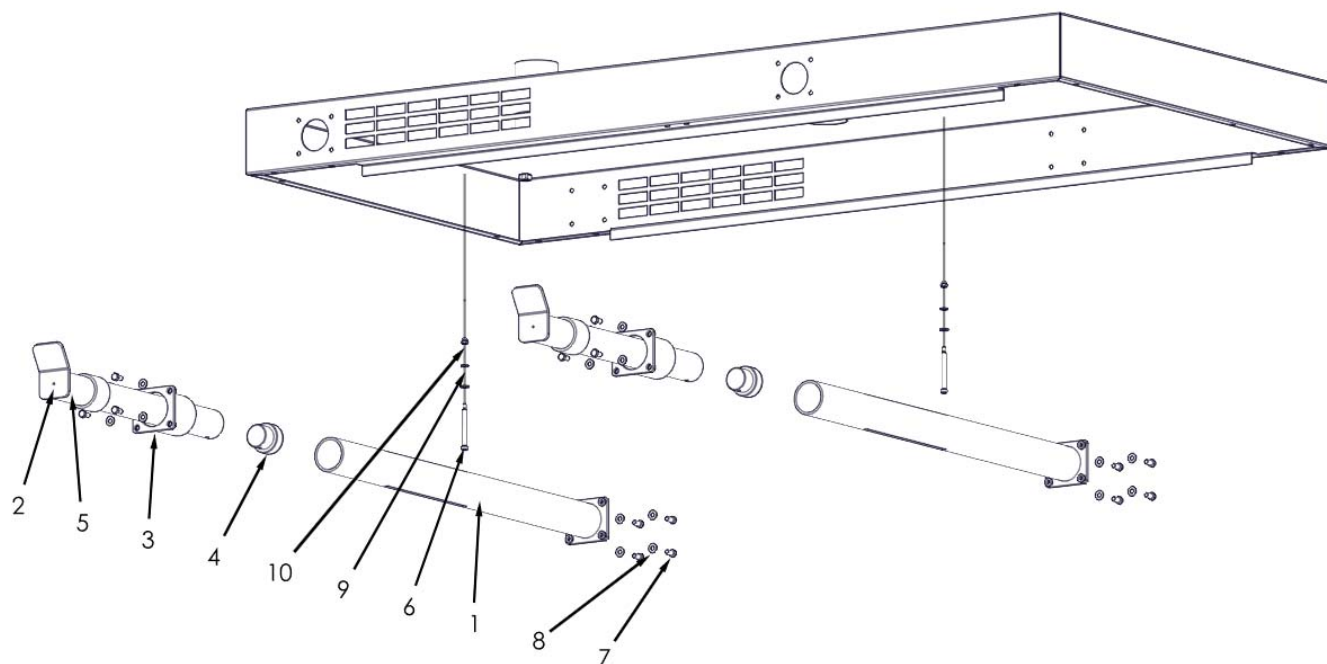
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Footnotes:

Notes:

Hose Holder

PP4500 Tier 4



Hose Holder

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-5501	HOLDER, OUTSIDE HOSE	2	
2	933-5517	HOLDER, INSIDE HOSE	2	
3	933-5519	SOCKET, HOSE HOLDER	2	
4	933-0434	GUIDE, INNER TUBE	2	
5	933-0435	GUIDE, OUTER TUBE	2	
6	06SS52	SCREW, 3/8 x 3.25 SHOULDER	2	
7	06HH12	SCREW, 3/8-16 x .75 HHC - GR8	16	
8	06FW-SAE	WASHER, 3/8"	18	
9	05FW-SAE	WASHER, 5/16"	2	
10	933-0517	NUT, 5/16-18 ACORN LOCK	2	

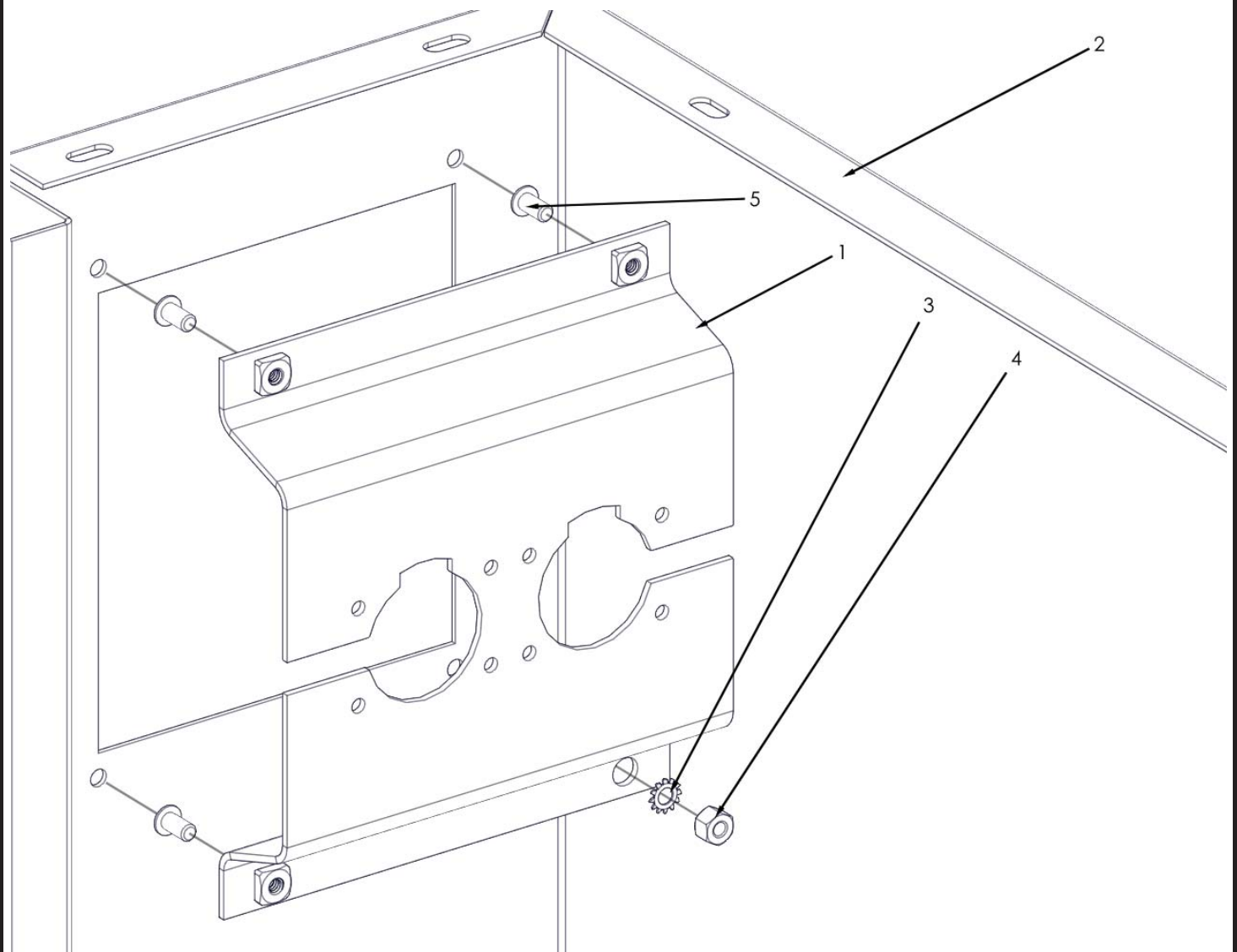
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Footnotes:

Notes:

RV Connection Panel

PP4500 Tier 4



RV Connection Panel

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0479	WELDMENT, ELECTRICAL BRACKET	1	
2	933-0381	PANEL, FRONT RIGHT	1	
3	04ETLW	WASHER, 1/4" ETL	1	
4	04TLN	NUT, 1/4-20 TOP LOCK	1	
5	04BH08	SCREW, 1/4-20x0.5 BHSC	4	

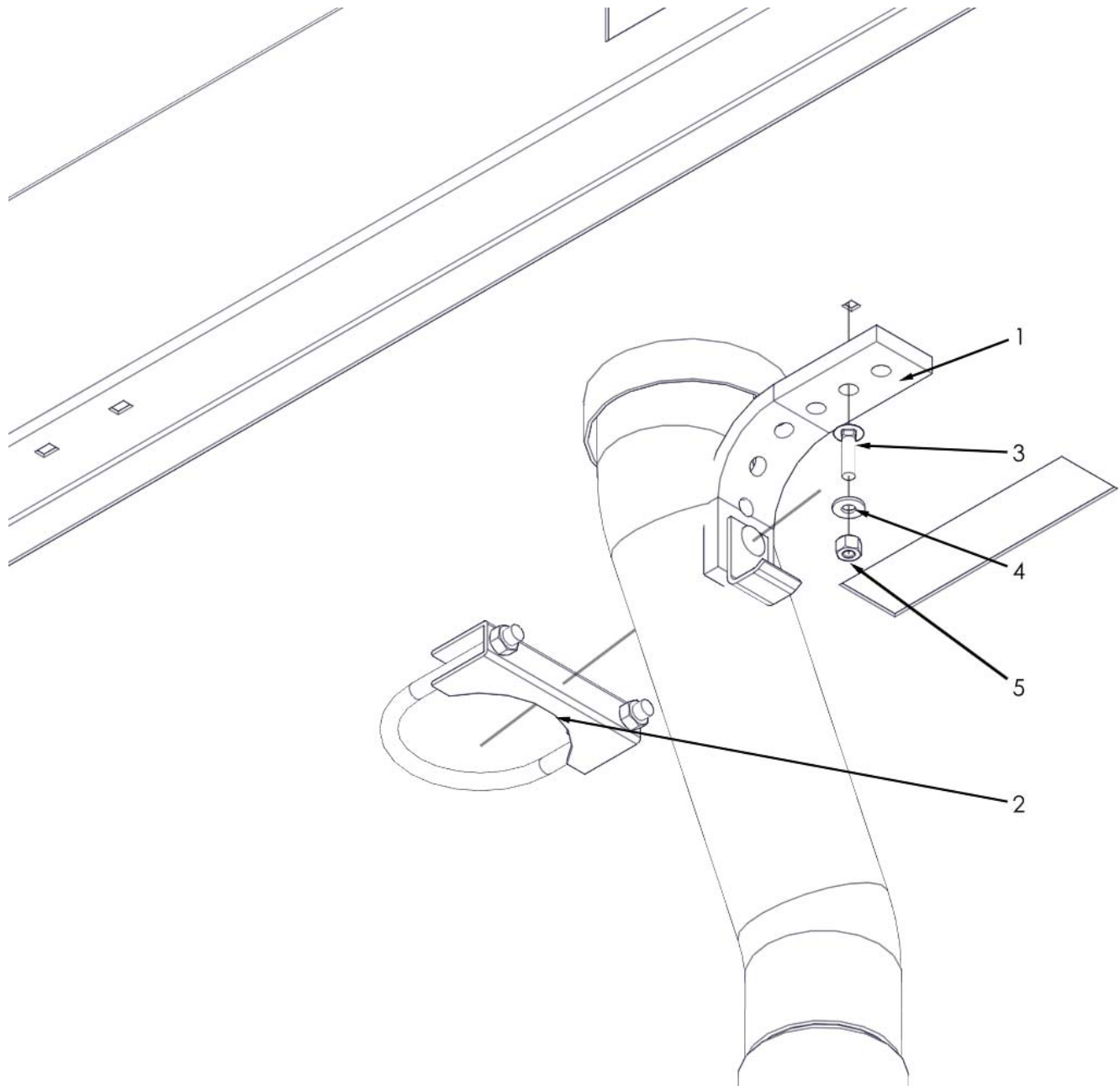
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Footnotes:

Notes:

Exhaust Clamp

PP4500 Tier 4



Exhaust Clamp

PP4500 Tier 4

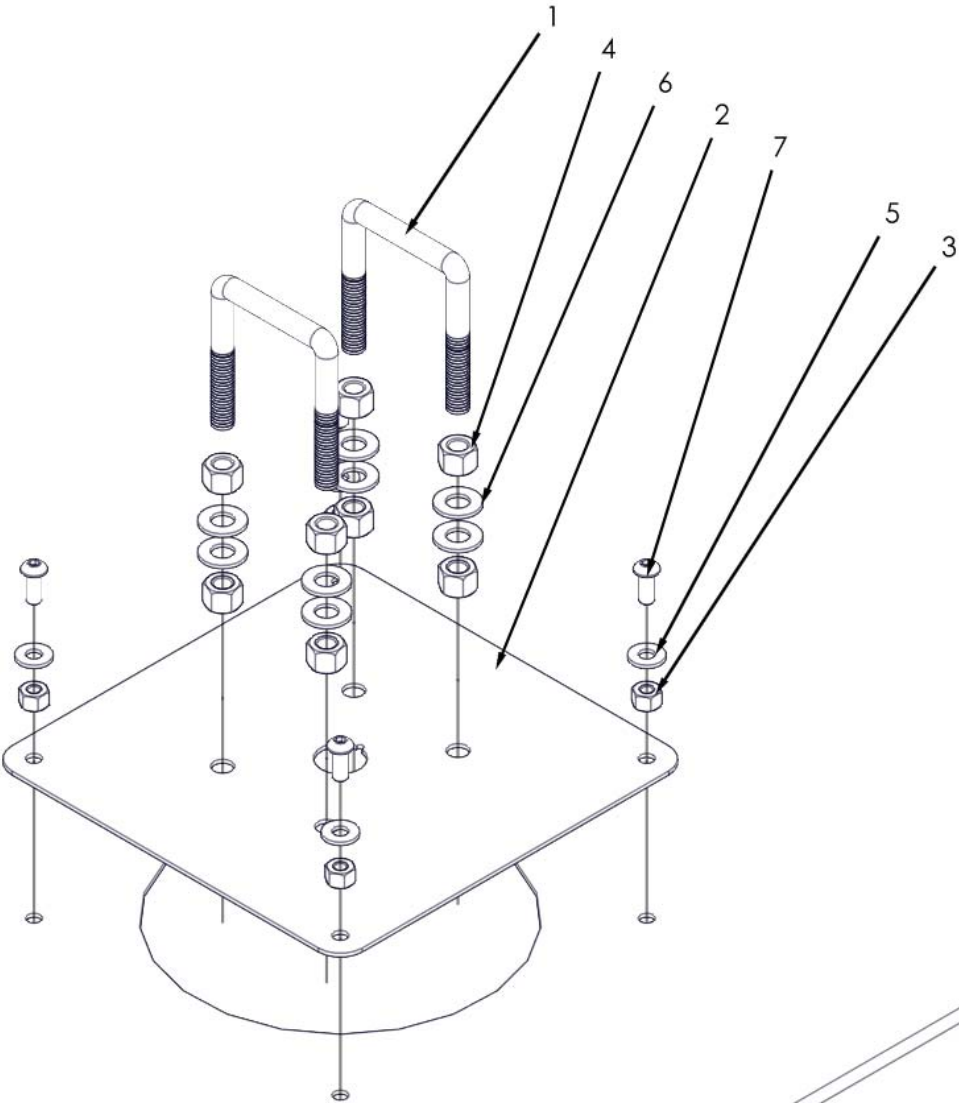
Bom ID	Part No	Description	Qty	Remarks
1	912-6156	HANGER, MUFFLER	1	
2	933-0408	CLAMP, EXHAUST Ø3.0	1	
3	04CB16	BOLT, 1/4-20 x 1 CARRIAGE	1	
4	04FW-SAE	WASHER, 1/4"	1	
5	04TLN	NUT, 1/4-20 TOP LOCK	1	

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Footnotes:

Notes:

E-Stop Guard
PP4500 Tier 4



E-Stop Guard

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	914-0255	U-BOLT, 3/8-16 x 2"W x 3"TSQ.	2	
2	933-5629	PANEL, FILTER ACCESS	1	
3	04TLN	NUT, 1/4-20 TOP LOCK	4	
4	06TLN	NUT, 3/8-16 TOP LOCK	8	
5	04FW-SAE	WASHER, 1/4"	4	
6	06FW-SAE	WASHER, 3/8"	8	
7	04BH10	SCREW, 1/4-20x0.625 BHSC	4	

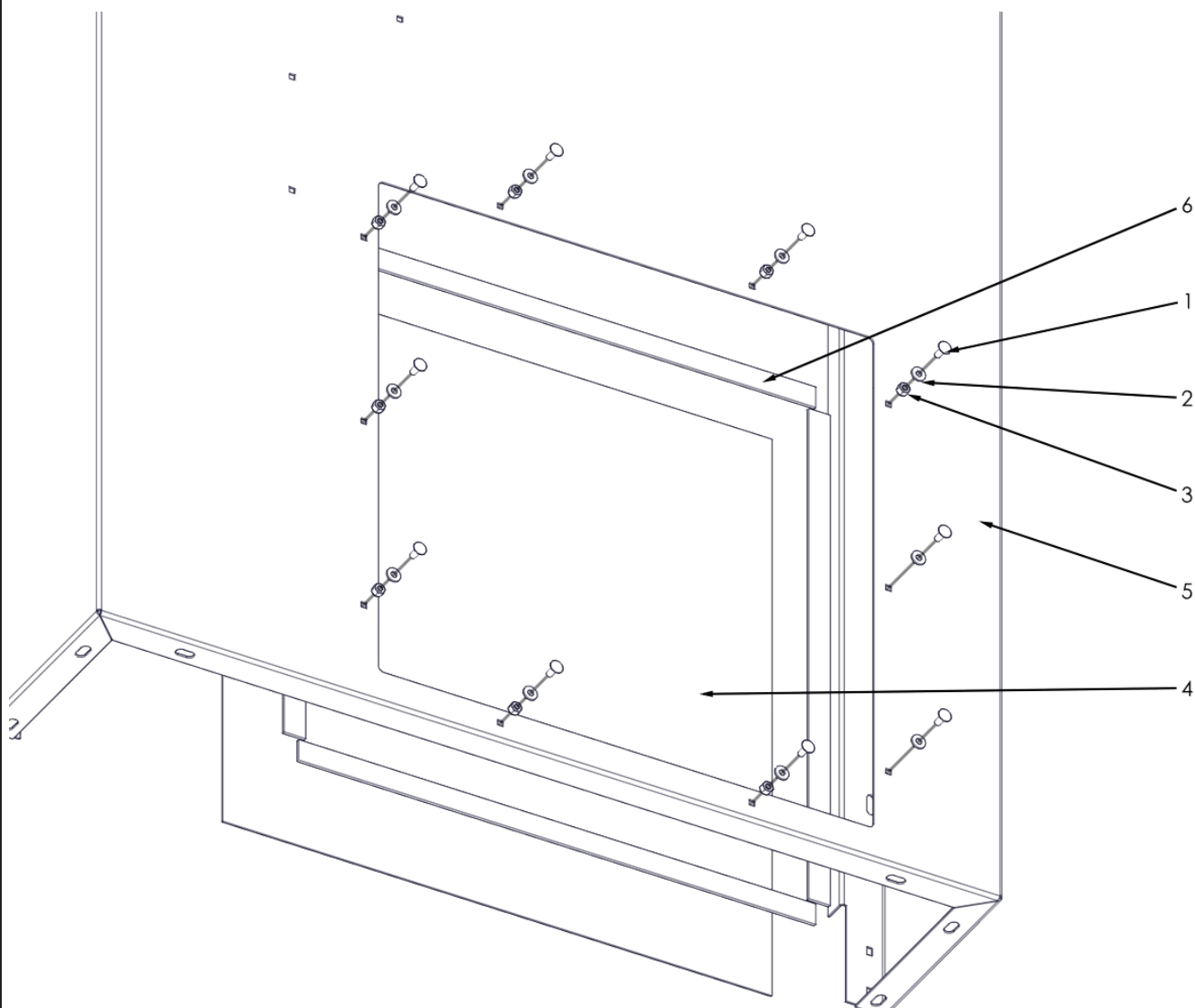
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Footnotes:

Notes:

Grill

PP4500 Tier 4



Grill

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	04CB10	BOLT, 1/4-20 x .625 CARRIAGE	10	
2	04FW-SAE	WASHER, 1/4"	10	
3	04TLN	NUT, 1/4-20 TOP LOCK	10	
4	933-0380	GRILL PAINTED, PP4500	1	
5	933-0381	PANEL, FRONT RIGHT	1	
6	933-0515	CUSION STRAP, 24"	4	

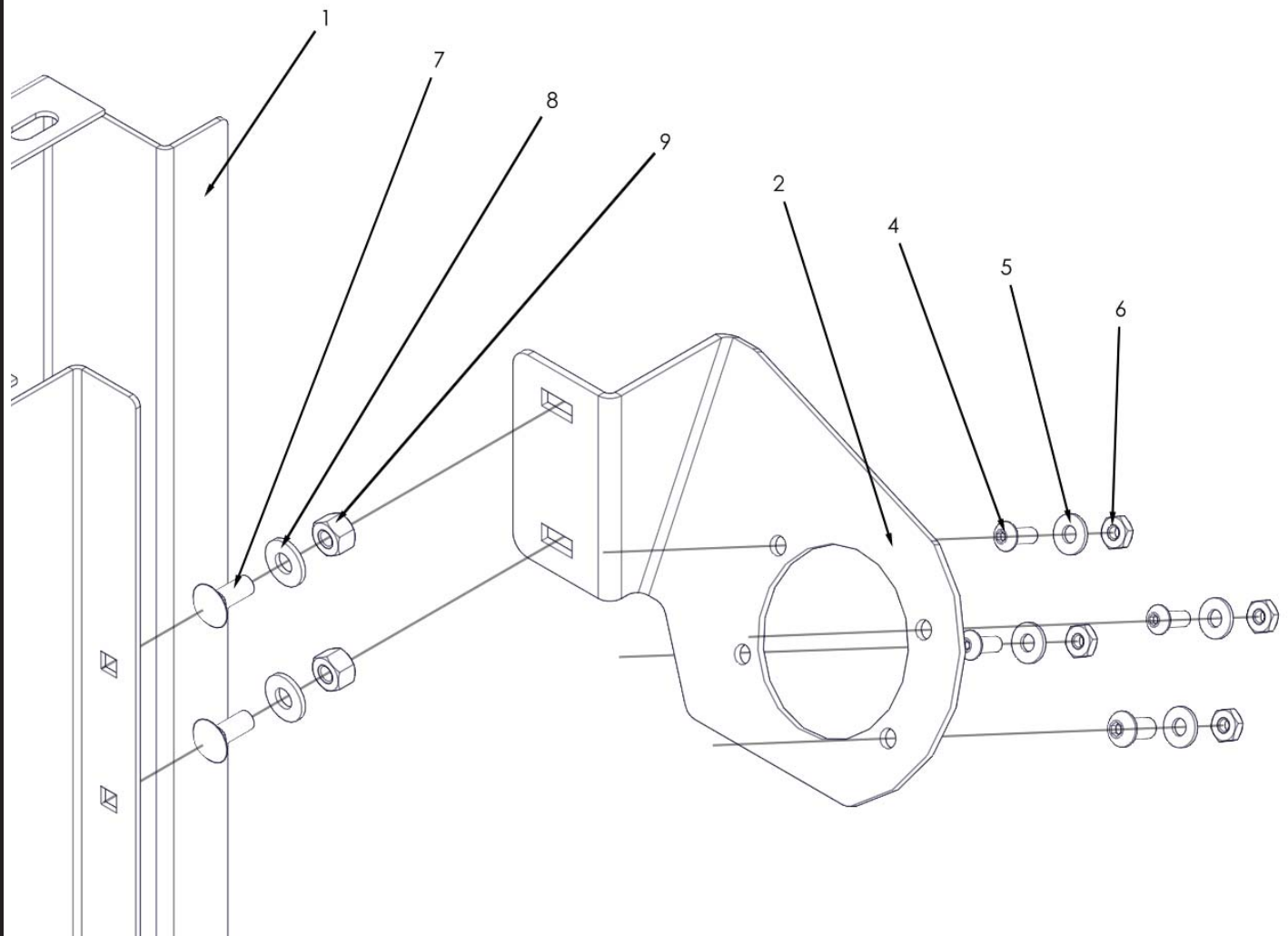
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Footnotes:

Notes:

Fuel Fill Bracket

PP4500 Tier 4



Fuel Fill Bracket

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0322	PANEL, REAR LEFT	1	
2	933-0365	BRACKET, FUEL FILL	1	
3	933-0477	FLANGED FILLER NECK	1	
4	#10BH08	SCREW, #10-24x0.5 BHSC	4	
5	#10FW-SAE	WASHER, #10 - GR5	4	
6	#10TLN	NUT, #10-24 TOP LOCK	4	
7	04CB10	BOLT, 1/4-20 x .625 CARRIAGE	2	
8	04FW-SAE	WASHER, 1/4"	2	
9	04TLN	NUT, 1/4-20 TOP LOCK	2	

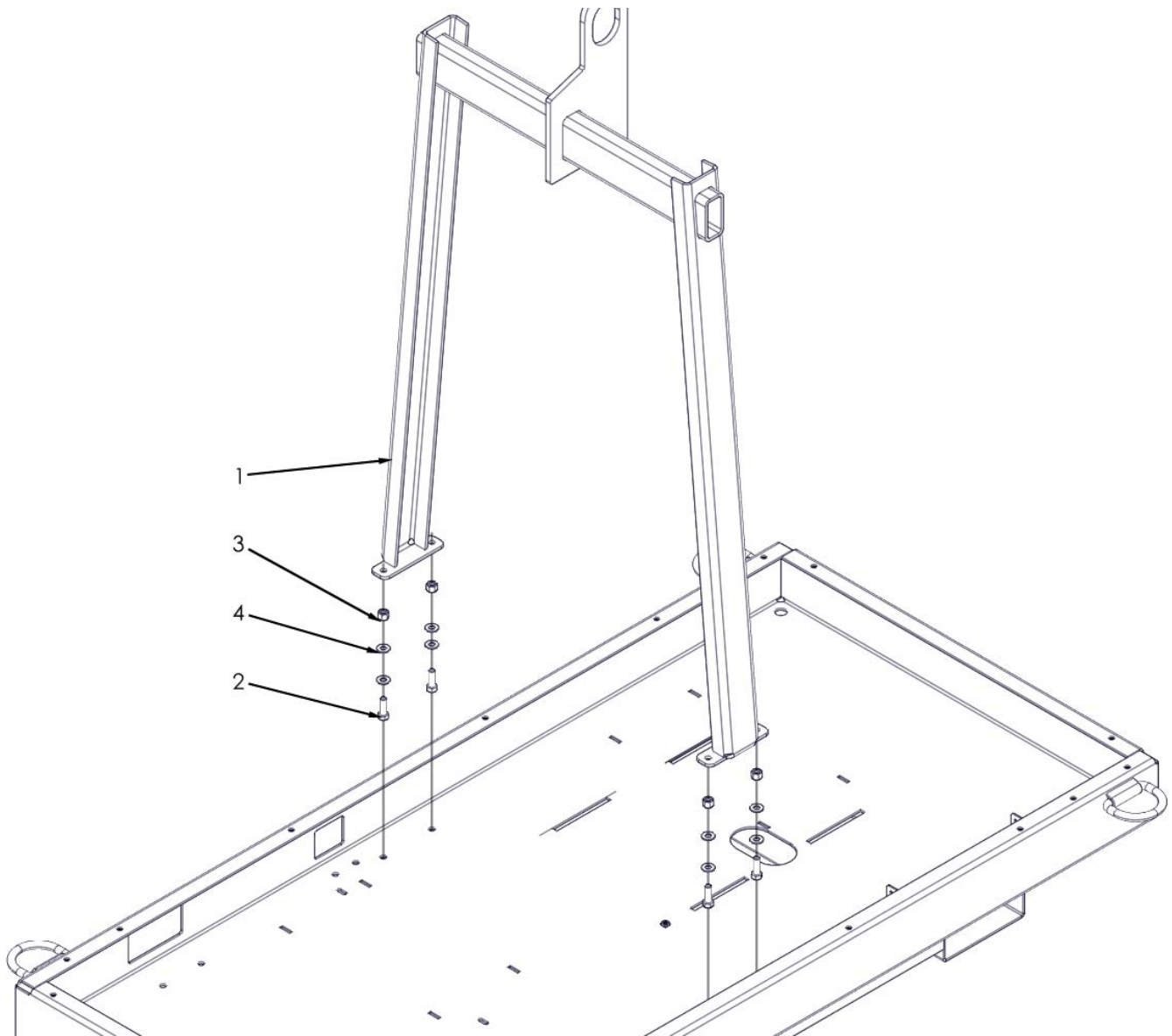
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Footnotes:

Notes:

Lift Eye

PP4500 Tier 4



Lift Eye

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0344	LIFT EYE ASSEMBLY	1	
2	08HH24	SCREW, 1/2-13 x 1.5 HHC - GR8	4	
3	08TLN	NUT, 1/2-13 TOP LOCK	4	
4	08FW-SAE	WASHER, 1/2"	8	

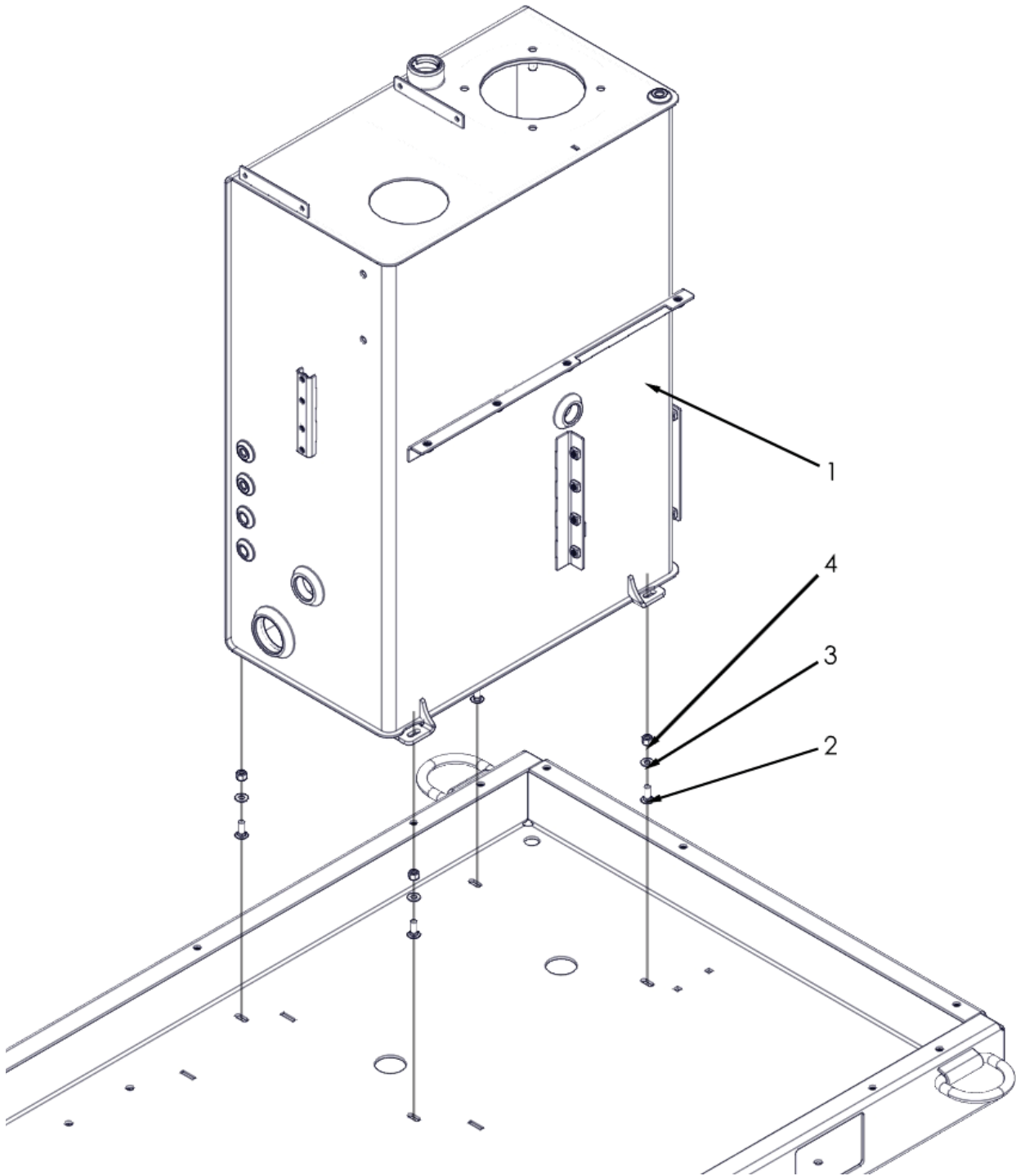
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Footnotes:

Notes:

Hydraulic Tank to Tub

PP4500 Tier 4



Hydraulic Tank to Tub

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-2066	TANK WELDMENT ASSY	1	
2	06CB16	BOLT, 3/8-16 x 1 CARRIAGE	4	
3	06FW-SAE	WASHER, 3/8"	4	
4	06TLN	NUT, 3/8-16 TOP LOCK	4	

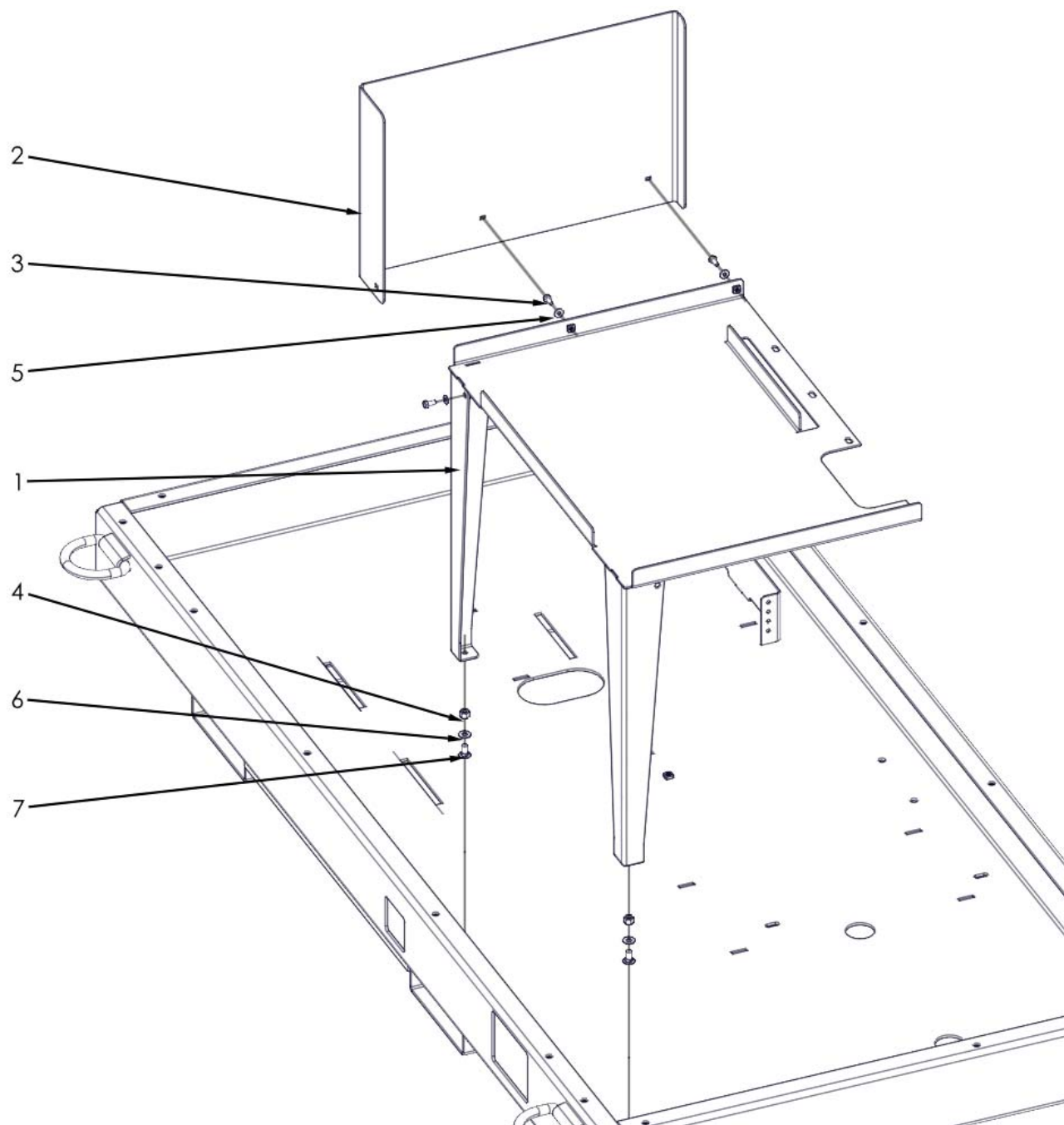
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Footnotes:

Notes:

Fuel Tank Stand

PP4500 Tier 4



Fuel Tank Stand

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-6101	STAND, FUEL TANK	1	
2	933-0384	HEAT SHIELD, DIESEL	1	
3	04HH10	SCREW, 1/4-20 x .625 HHC - GR8	3	
4	06TLN	NUT, 3/8-16 TOP LOCK	2	
5	04FW-SAE	WASHER, 1/4"	3	
6	06FW-SAE	WASHER, 3/8"	2	
7	06CB12	BOLT, 3/8-16 x .75 CARRIAGE	2	

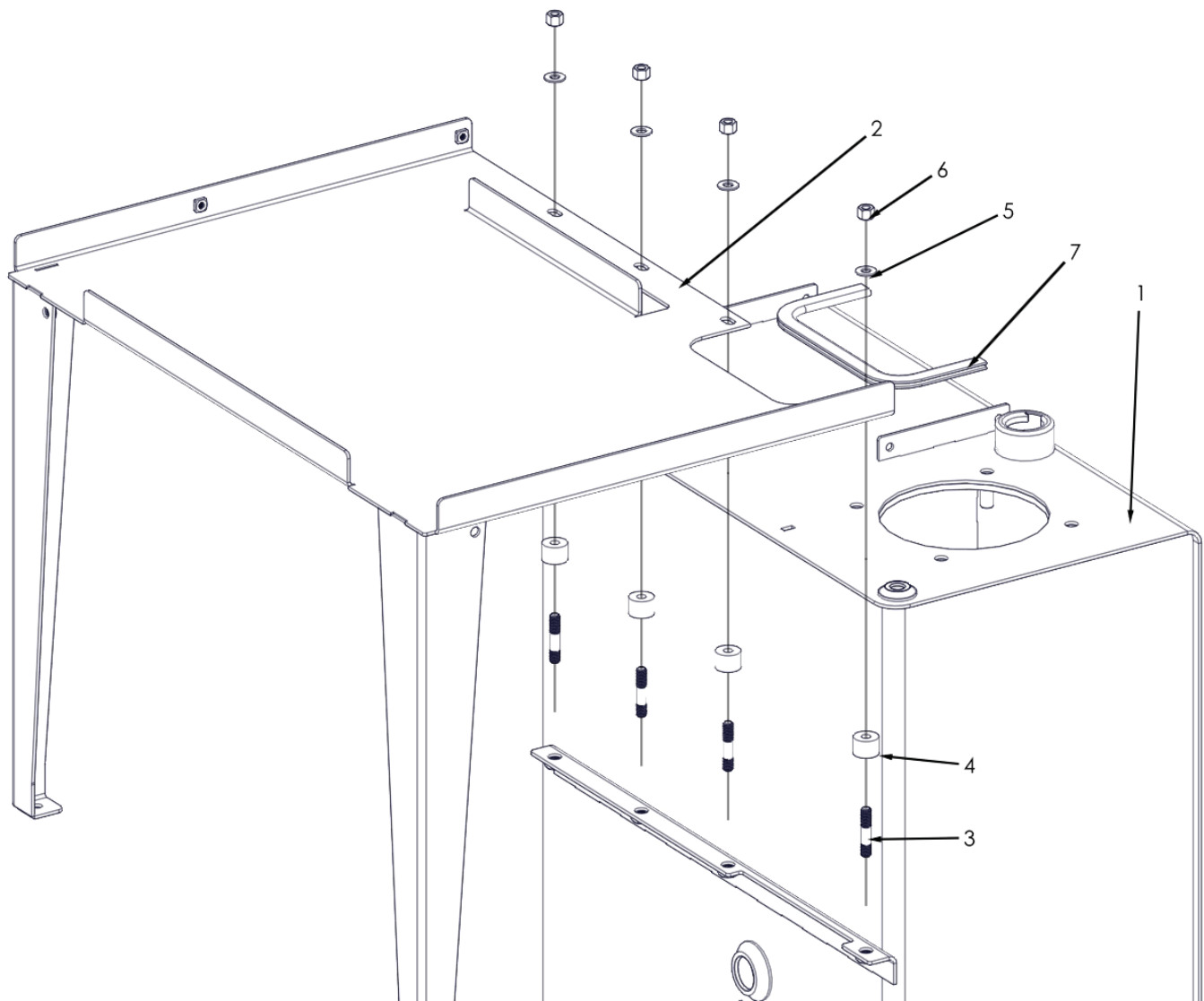
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Footnotes:

Notes:

Fuel Tank Stand to Hydraulic Tank

PP4500 Tier 4



Fuel Tank Stand to Hydraulic Tank

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-2066	TANK WELDMENT ASSY	1	
2	933-6101	STAND, FUEL TANK	1	
3	933-0482	LOCKING STUD, 3/8-16 X 2	4	
4	933-0483	ISOLATOR, FUEL TANK	4	
5	06FW-SAE	WASHER, 3/8"	4	
6	06TLN	NUT, 3/8-16 TOP LOCK	4	TORQUE TO 20IN-LB
7	933-5549	EDGE GUARD, 20.25"	1	

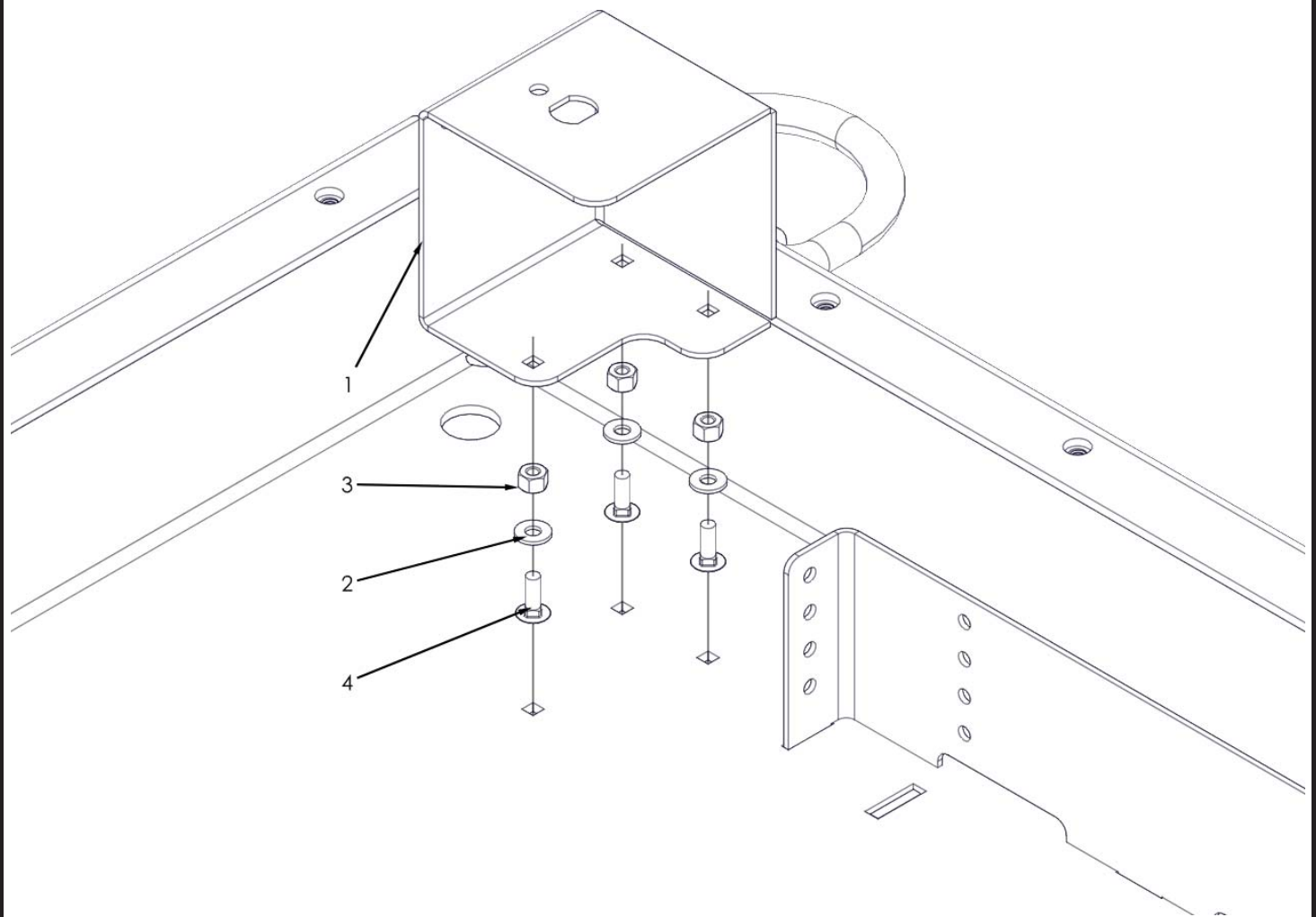
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Footnotes:

Notes:

Battery Disconnect to Tub

PP4500 Tier 4



Battery Disconnect to Tub

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	941-7496	BATTERY DISCONNECT HOUSING	1	
2	04FW-SAE	WASHER, 1/4"	3	
3	04TLN	NUT, 1/4-20 TOP LOCK	3	
4	04CB12	BOLT, 1/4-20 x .75 CARRIAGE	3	

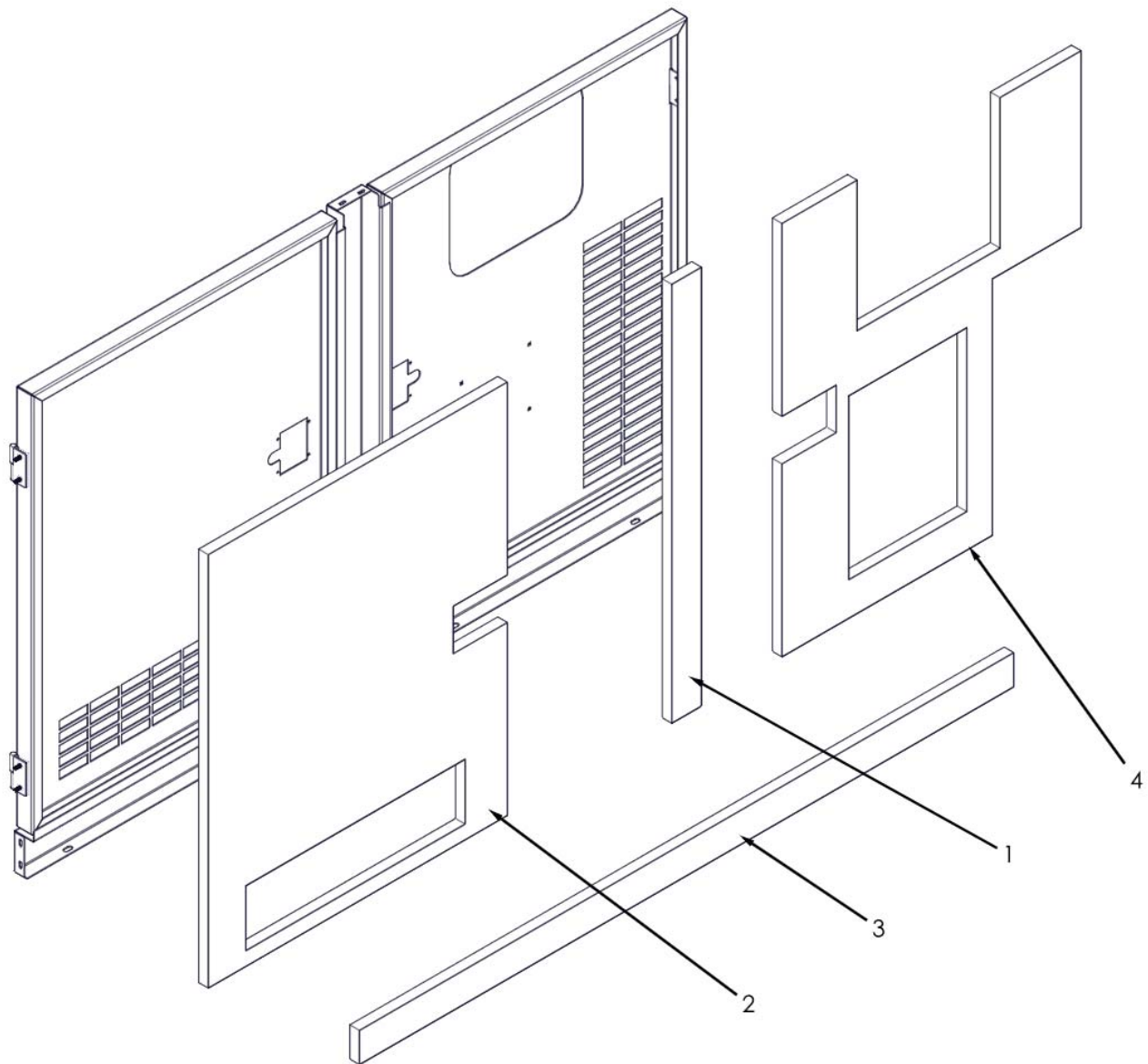
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Footnotes:

Notes:

OP Side Foam

PP4500 Tier 4



OP Side Foam

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0505	FOAM, DOOR CENTER	1	
2	933-0507	FOAM, R DOOR	1	
3	933-0508	FOAM, DOOR LOWER	1	
4	933-0509	FOAM, OP DOOR	1	

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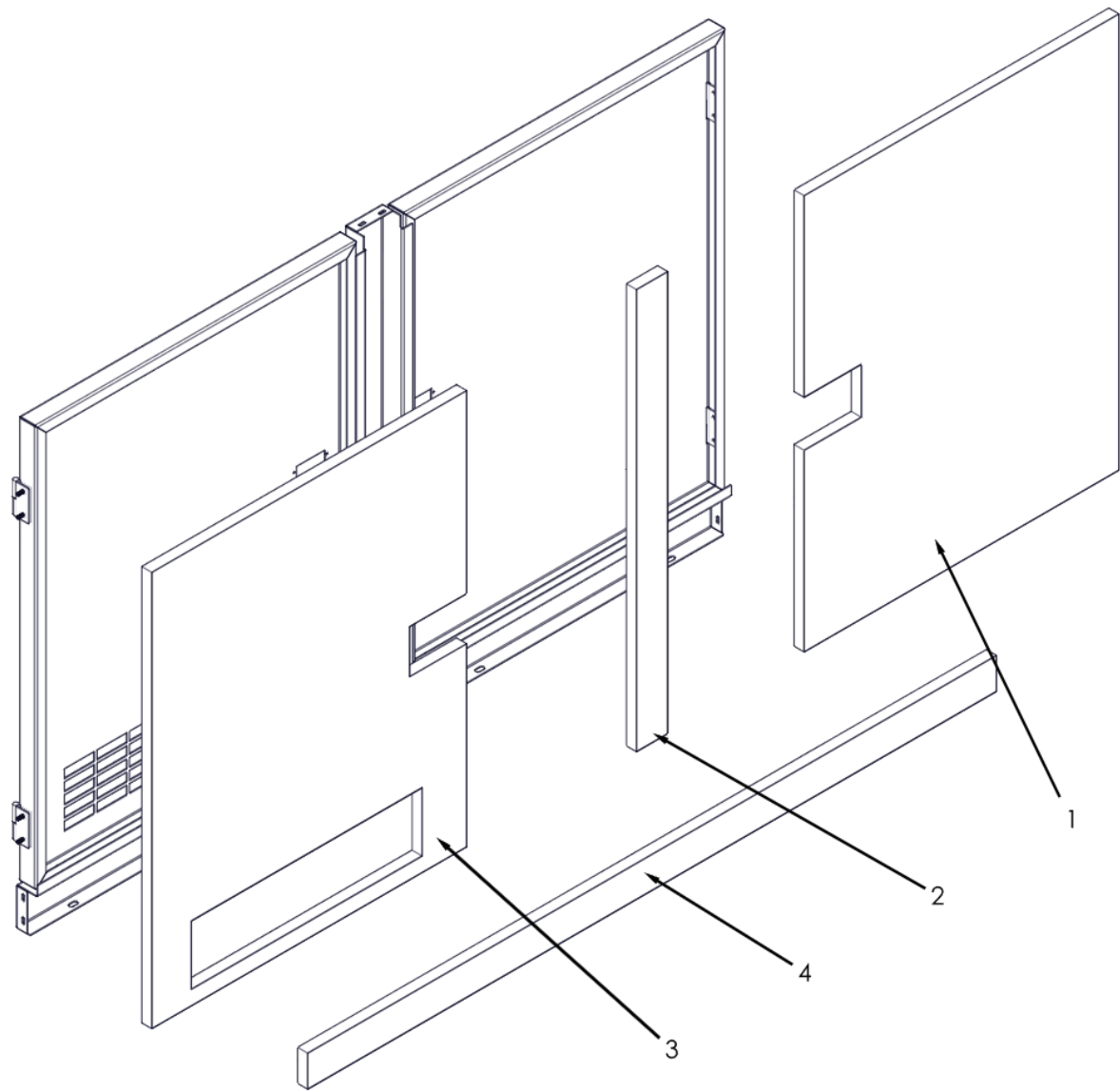
Footnotes:

Notes:

SPRAY ADHESIVE WITH WINDEX TO EASE INSTALLATION. PLACE, LET DRY FOR 30 MINUTES, THEN PRESS TO ADHERE FOAM

Non OP Side Foam

PP4500 Tier 4



Non OP Side Foam

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0502	FOAM, R/L DOOR	1	
2	933-0505	FOAM, DOOR CENTER	1	
3	933-0507	FOAM, R DOOR	1	
4	933-0508	FOAM, DOOR LOWER	1	

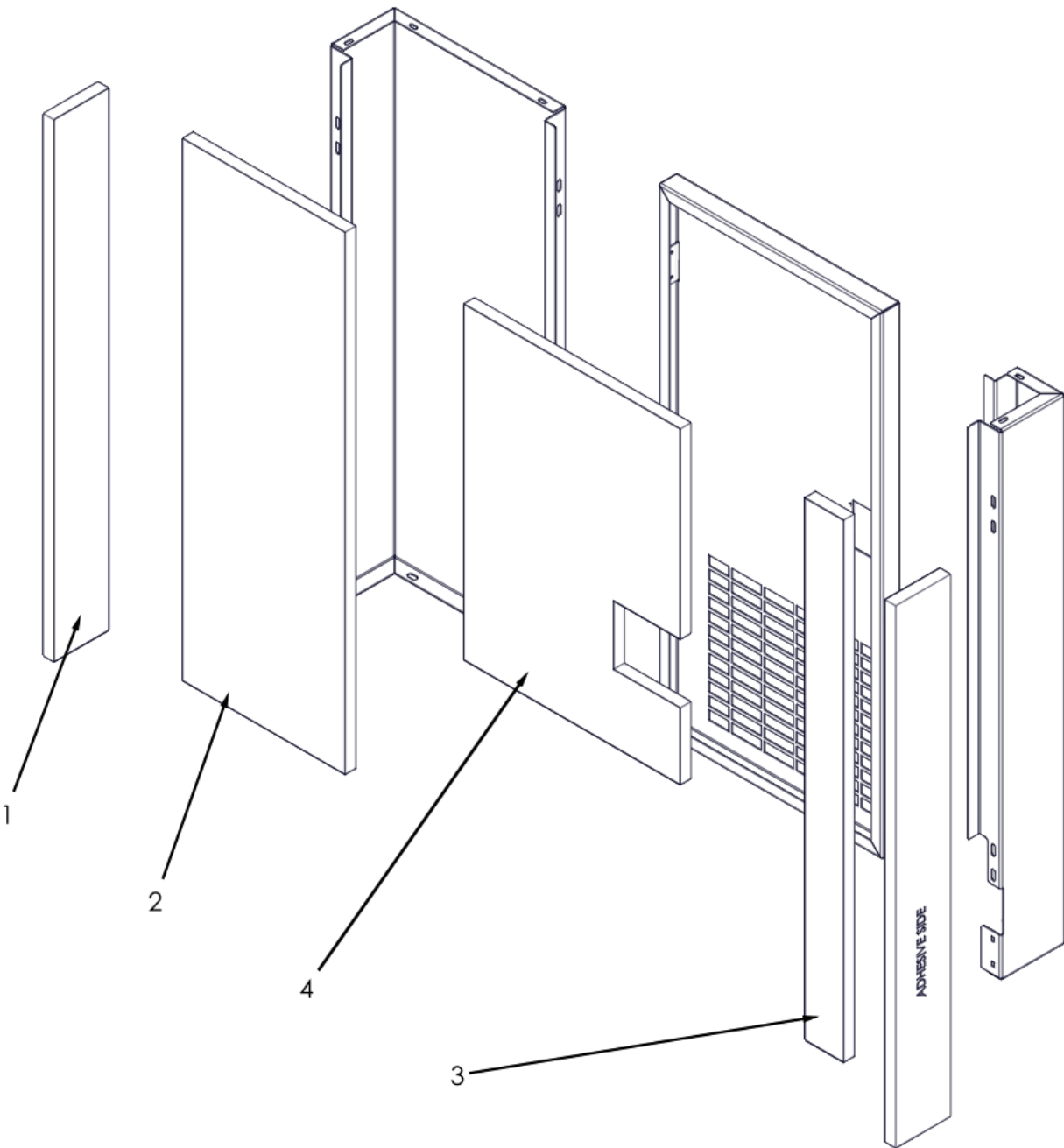
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Footnotes:

Notes:

SPRAY ADHESIVE WITH WINDEX TO EASE INSTALLATION. PLACE, LET DRY FOR 30 MINUTES, THEN PRESS TO ADHERE FOAM.

Front Foam
PP4500 Tier 4



Front Foam

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0510	FOAM, DOOR SIDE	2	
2	933-0511	FOAM, FUEL SIDE	1	
3	933-0513	FOAM, FUEL SIDE	1	
4	933-0514	FOAM, FUEL DOOR	1	

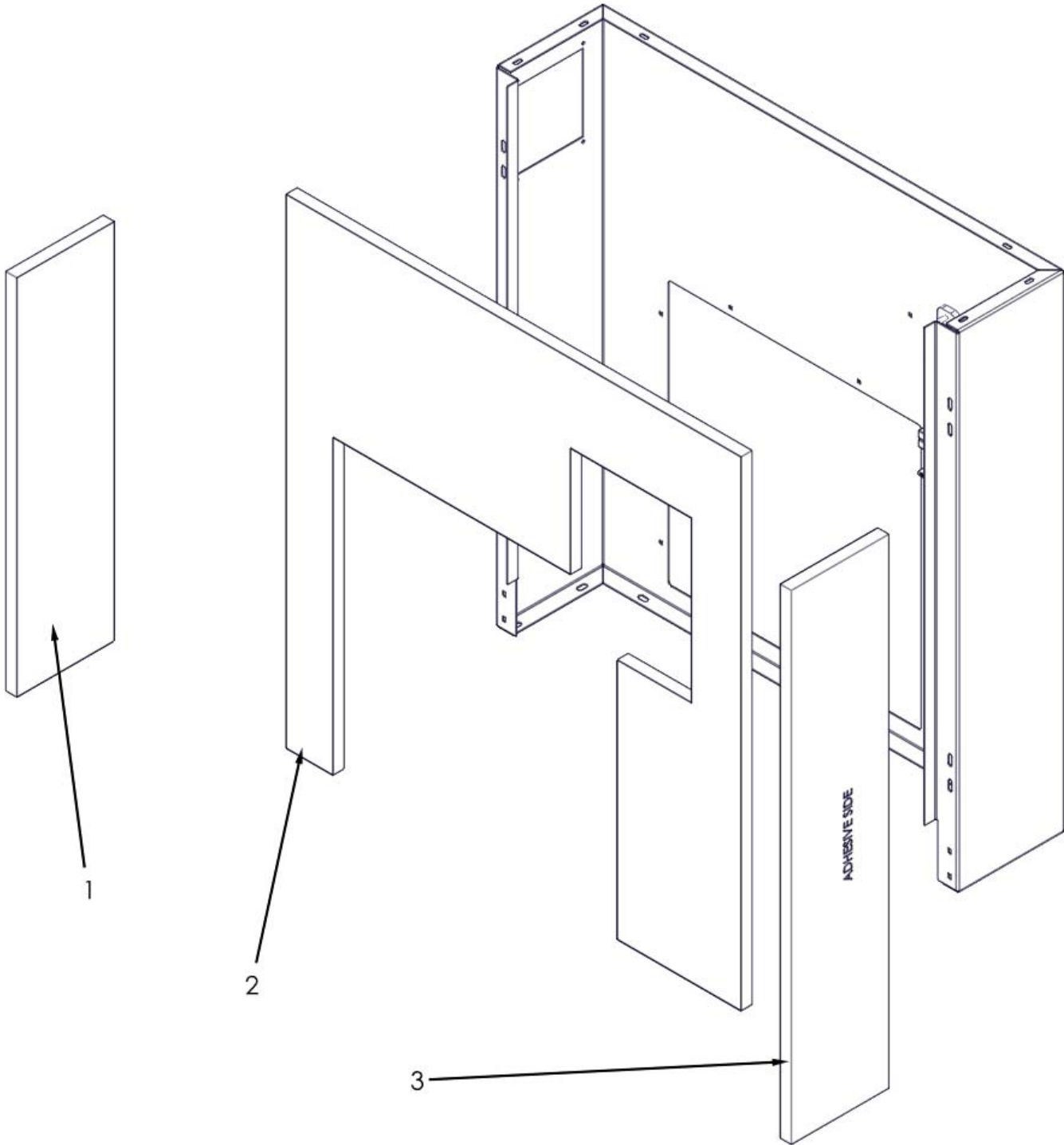
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Footnotes:

Notes:

SPRAY ADHESIVE WITH WINDEX TO EASE INSTALLATION. PLACE, LET DRY FOR 30 MINUTES, THEN PRESS TO ADHERE FOAM.

Back Foam
PP4500 Tier 4



Back Foam

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0503	FOAM, R/L SIDE	1	
2	933-0504	FOAM, RADIATOR	1	
3	933-0506	FOAM, F/R SIDE	1	

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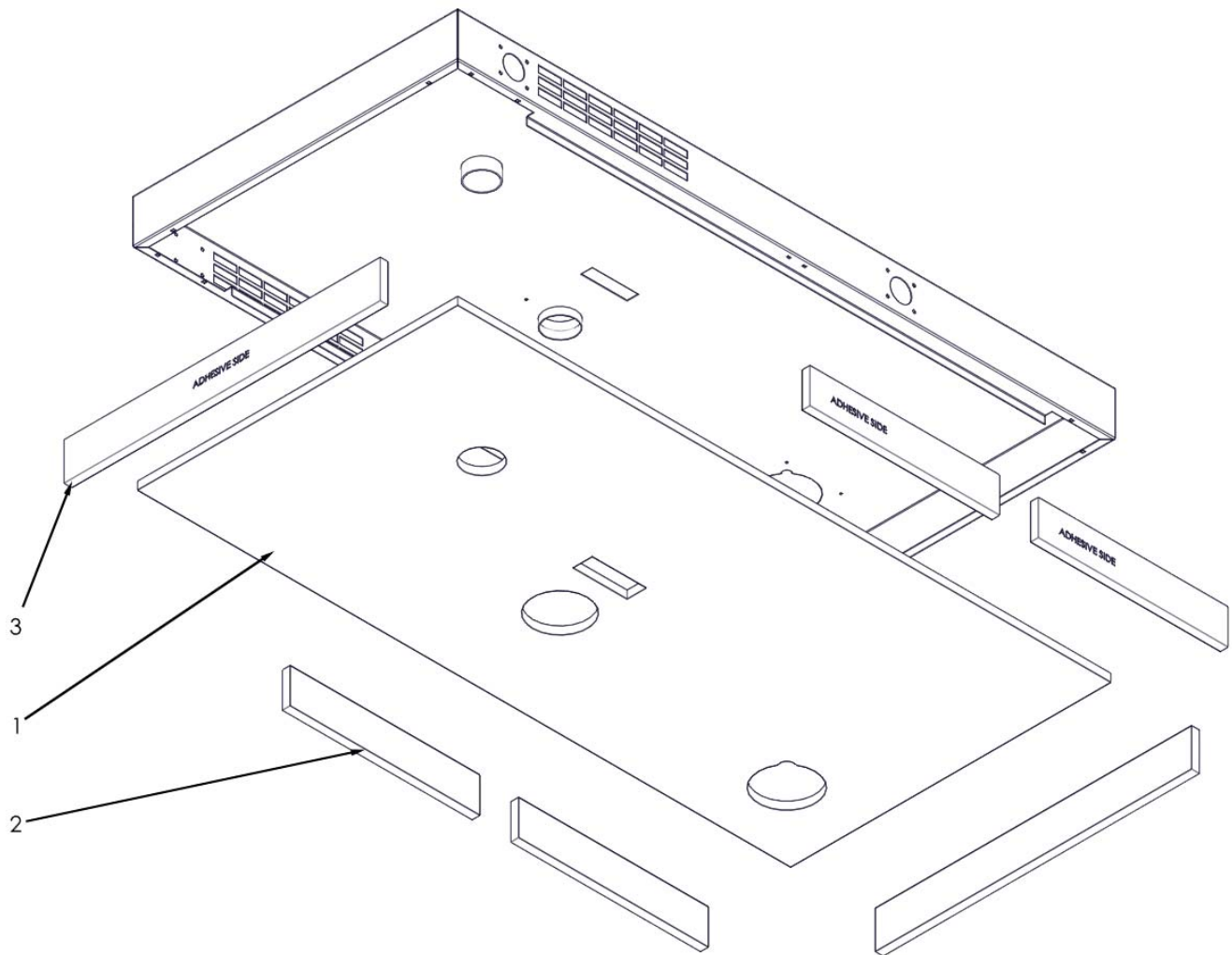
Footnotes:

Notes:

SPRAY ADHESIVE WITH WINDEX TO EASE INSTALLATION. PLACE, LET DRY FOR 30 MINUTES, THEN PRESS TO ADHERE FOAM.

Top Foam

PP4500 Tier 4



Top Foam

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0500	FOAM, ROOF	1	
2	933-0501	FOAM, OVER DOOR	4	
3	933-0512	FOAM, UPPER SIDE	2	

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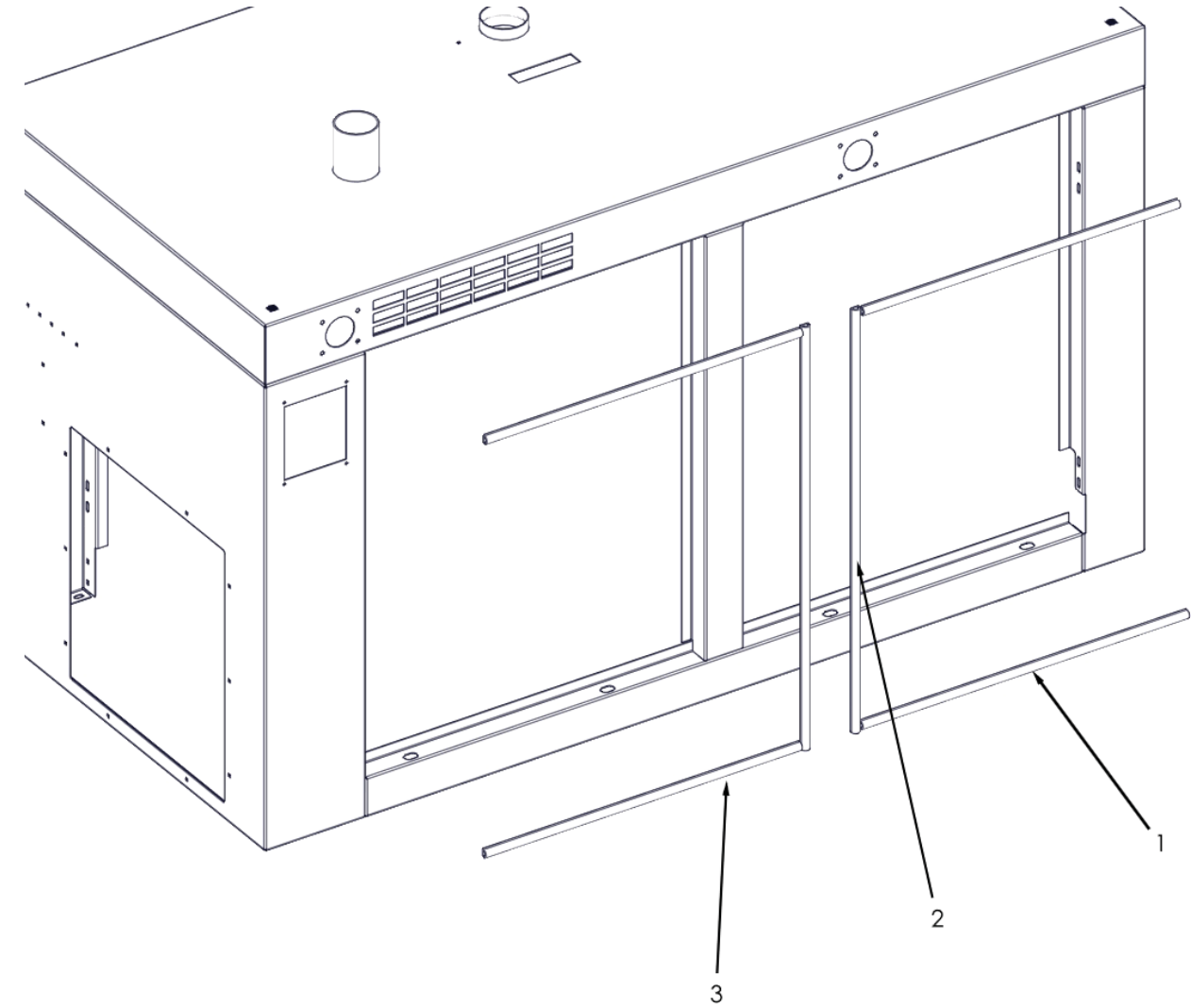
Footnotes:

Notes:

SPRAY ADHESIVE WITH WINDEX TO EASE INSTALLATION. PLACE, LET DRY FOR 30 MINUTES, THEN PRESS TO ADHERE FOAM.

Door Insulation

PP4500 Tier 4



Door Insulation

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0402	BULB SEAL, 3/4 X 31.5	1	
2	933-0403	BULB SEAL, 3/4 X 40.25	2	
3	933-0405	BULB SEAL, 3/4 X 30.5	3	

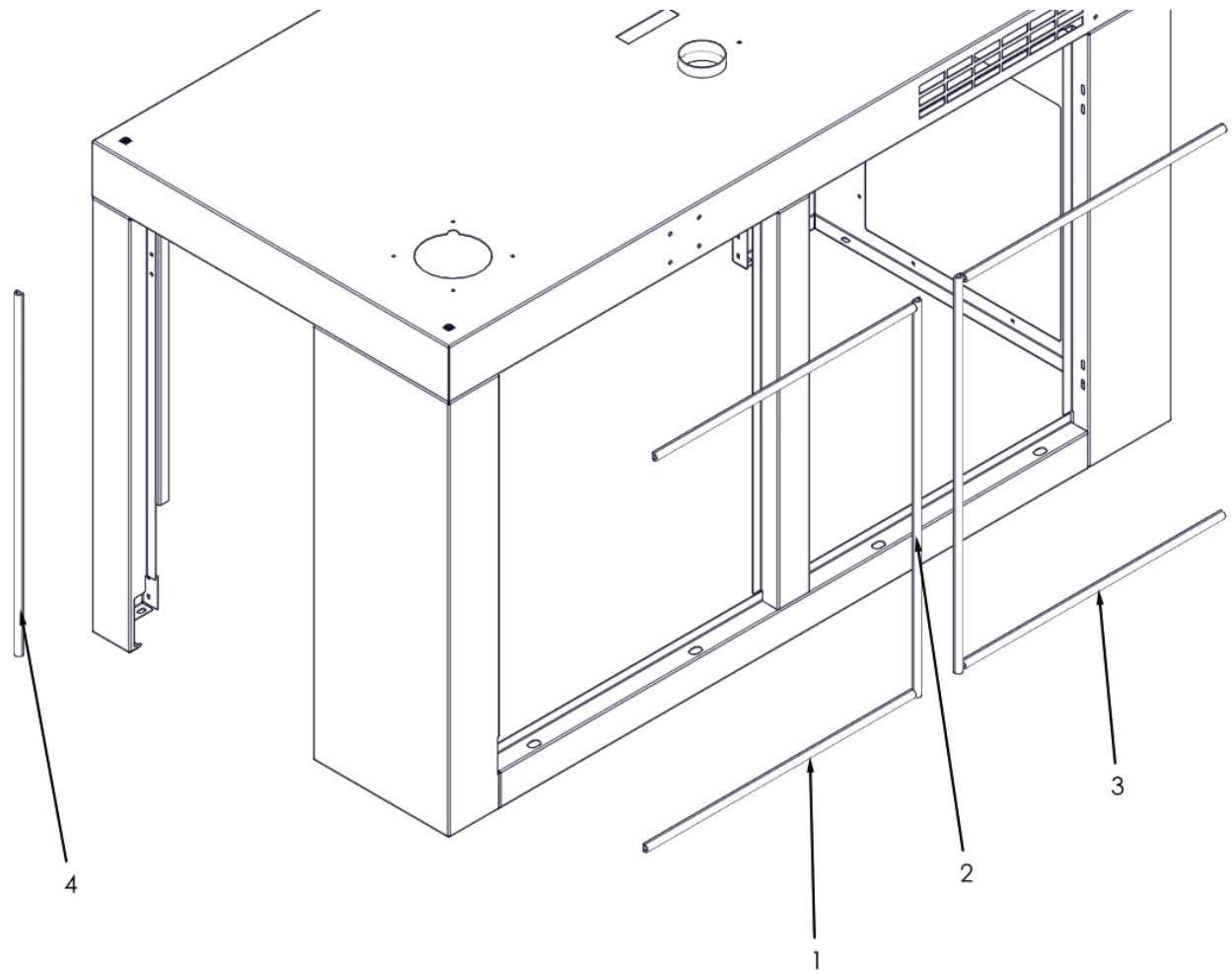
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Footnotes:

Notes:

Door Insulation

PP4500 Tier 4



Door Insulation

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0402	BULB SEAL, 3/4 X 31.5	1	
2	933-0403	BULB SEAL, 3/4 X 40.25	2	
3	933-0405	BULB SEAL, 3/4 X 30.5	3	
4	933-0406	BULB SEAL, 3/4 X 36.75	1	

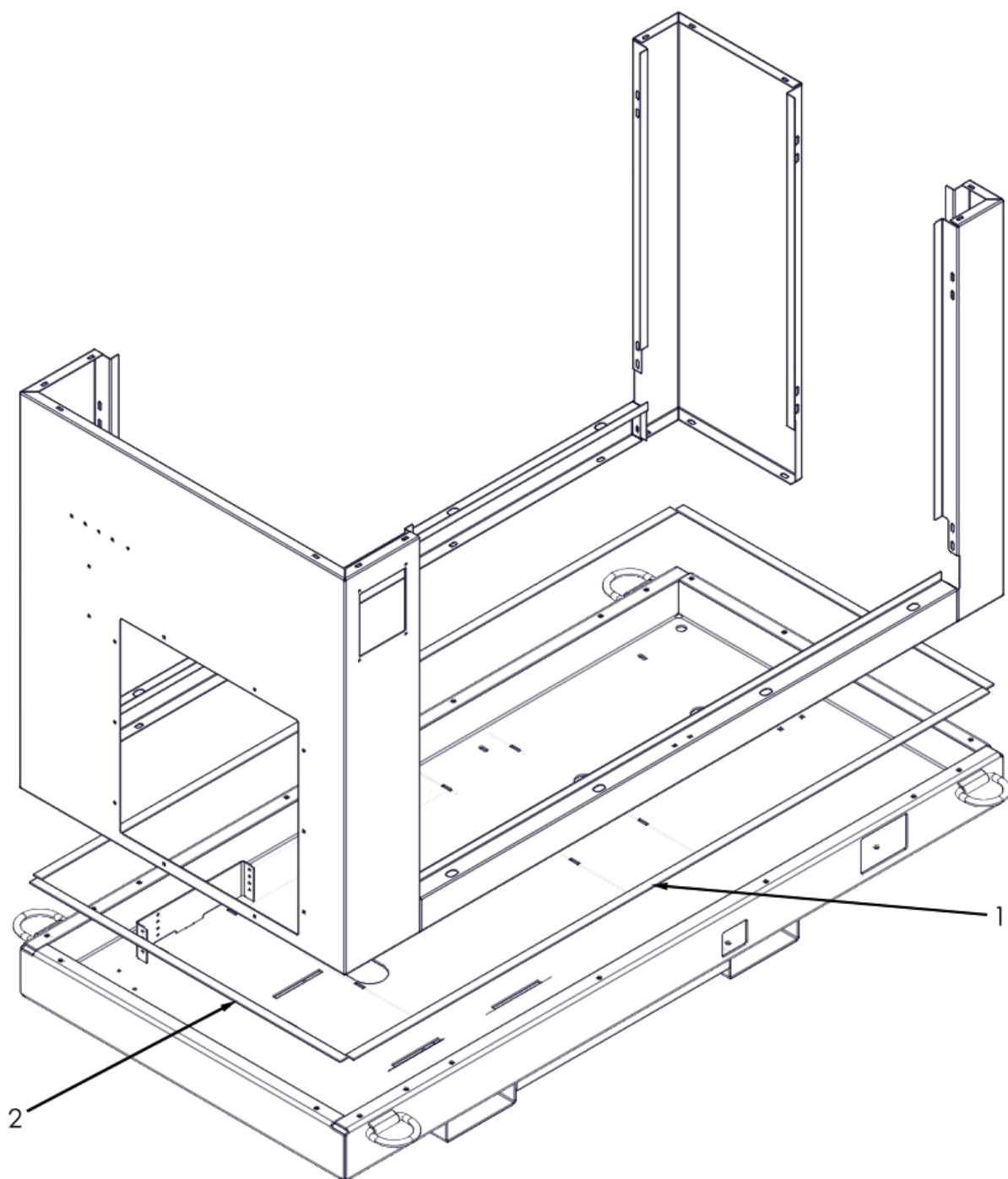
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Footnotes:

Notes:

Tub Insulation

PP4500 Tier 4



Tub Insulation

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-5568	CUSHION, 82"	2	
2	933-5569	CUSHION, 40"	2	

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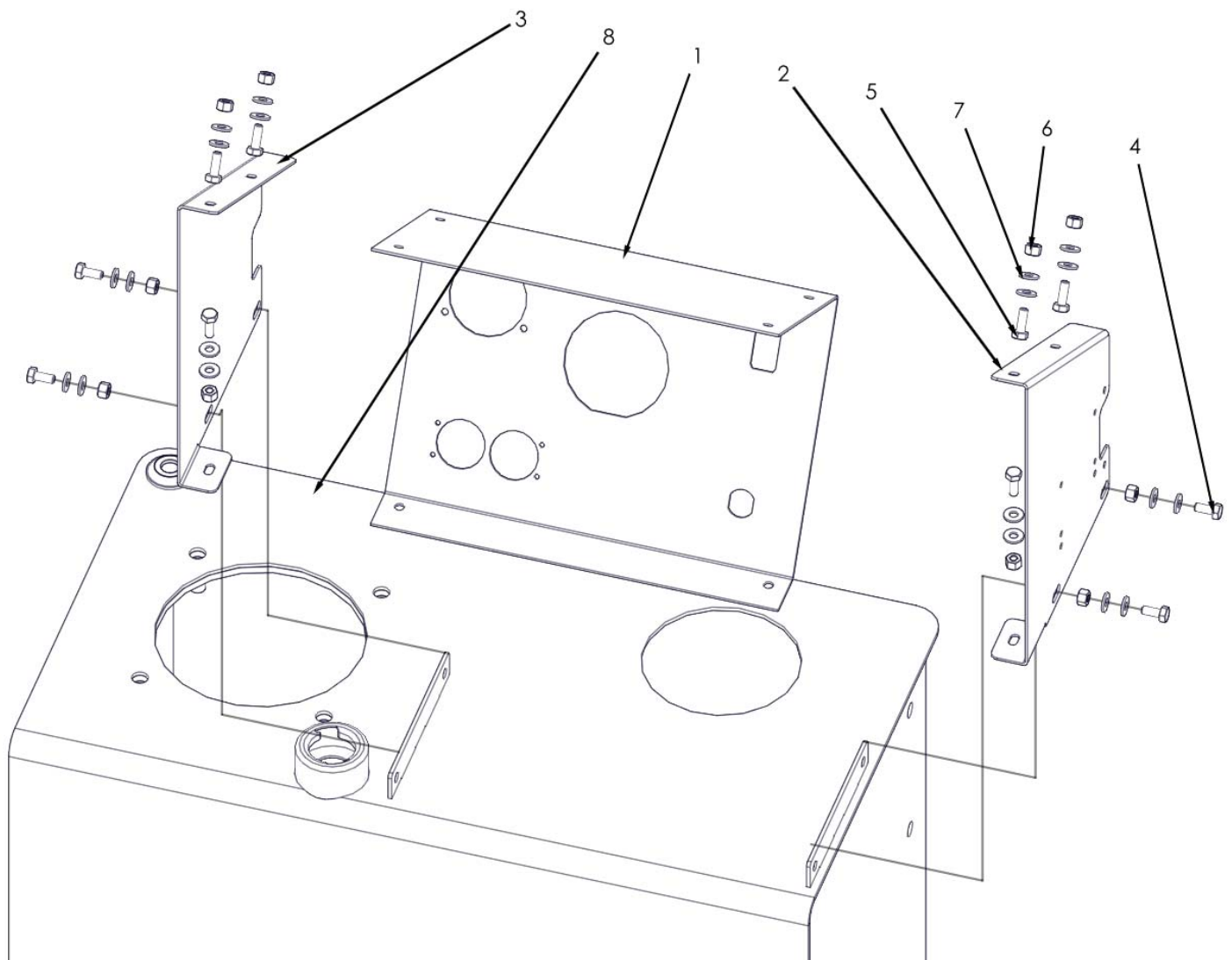
Footnotes:

Notes:

CONTROL COMPONENTS

Control Panel Mounting

PP4500 Tier 4



Control Panel Mounting

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0334	PANEL, CONTROL	1	
2	933-0385	PANEL SIDE, RIGHT	1	
3	933-5539	PANEL SIDE, LEFT	1	
4	04HH10	SCREW, 1/4-20 x .625 HHC - GR8	4	
5	04HH12	SCREW, 1/4-20 x .75 HHC - GR8	6	
6	04TLN	NUT, 1/4-20 TOP LOCK	10	
7	04FW-SAE	WASHER, 1/4"	20	
8	933-2066	TANK WELDMENT ASSY	1	

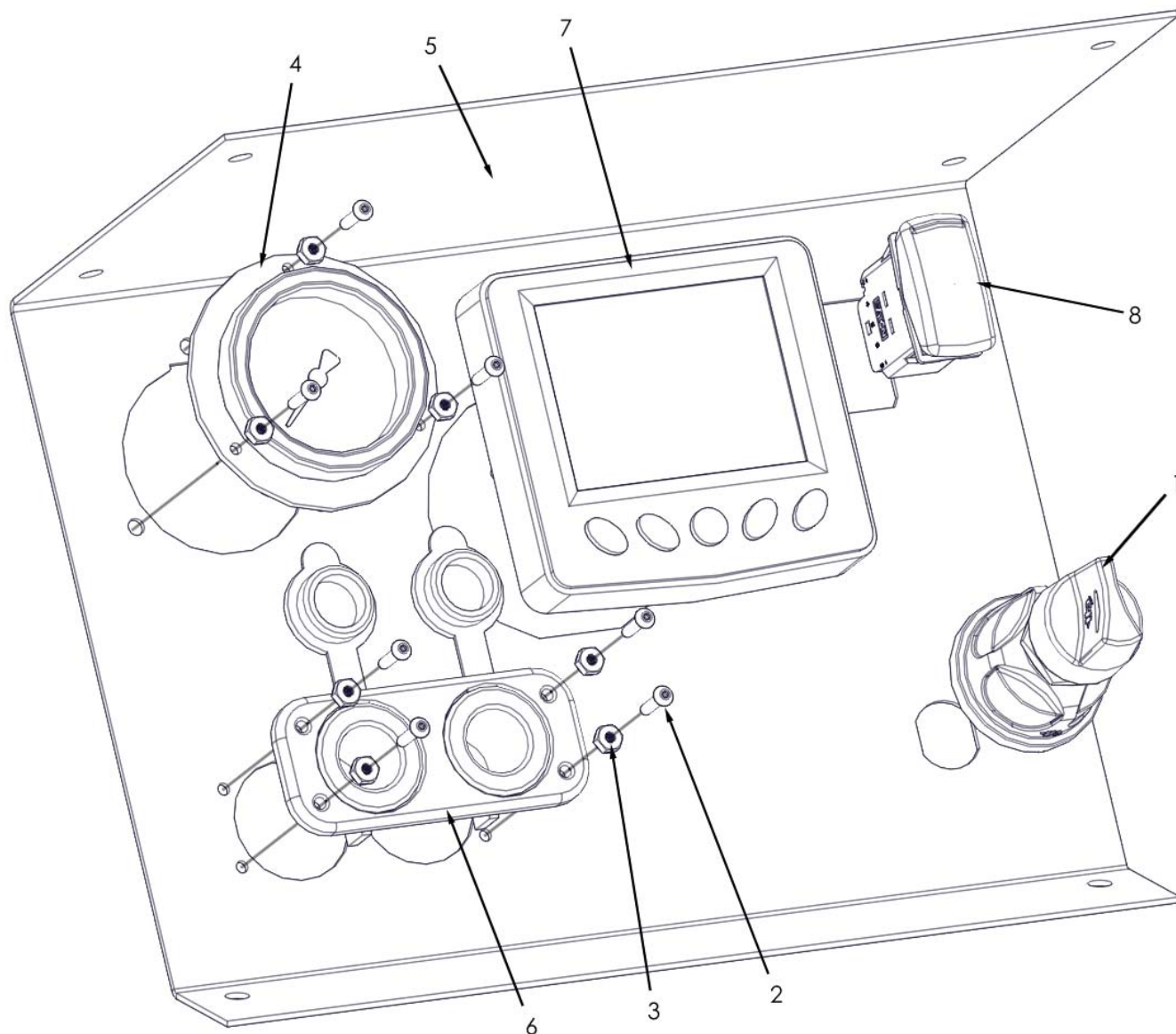
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Footnotes:

Notes:

Control Panel

PP4500 Tier 4



Control Panel

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	941-7380	SWITCH, IGNITION, DEUTSCH	1	
2	#6BH10	SCREW, #6-32 X .625 BHSC	7	
3	#6NLN	NUT, #6-32 NYLON INSERT LOCK	7	
4	930-2059	PRESSURE GAUGE, 5000 PSI	1	
5	933-0334	PANEL, CONTROL	1	
6	933-0407	OUTLET, DUAL USB/20A POWER	1	
7	933-5033	ENGINE CONTROLLER, PP4500	1	HAND TIGHTEN REAR NUT
8	941-7370	SWITCH, ON-NONE-ON SVR	1	

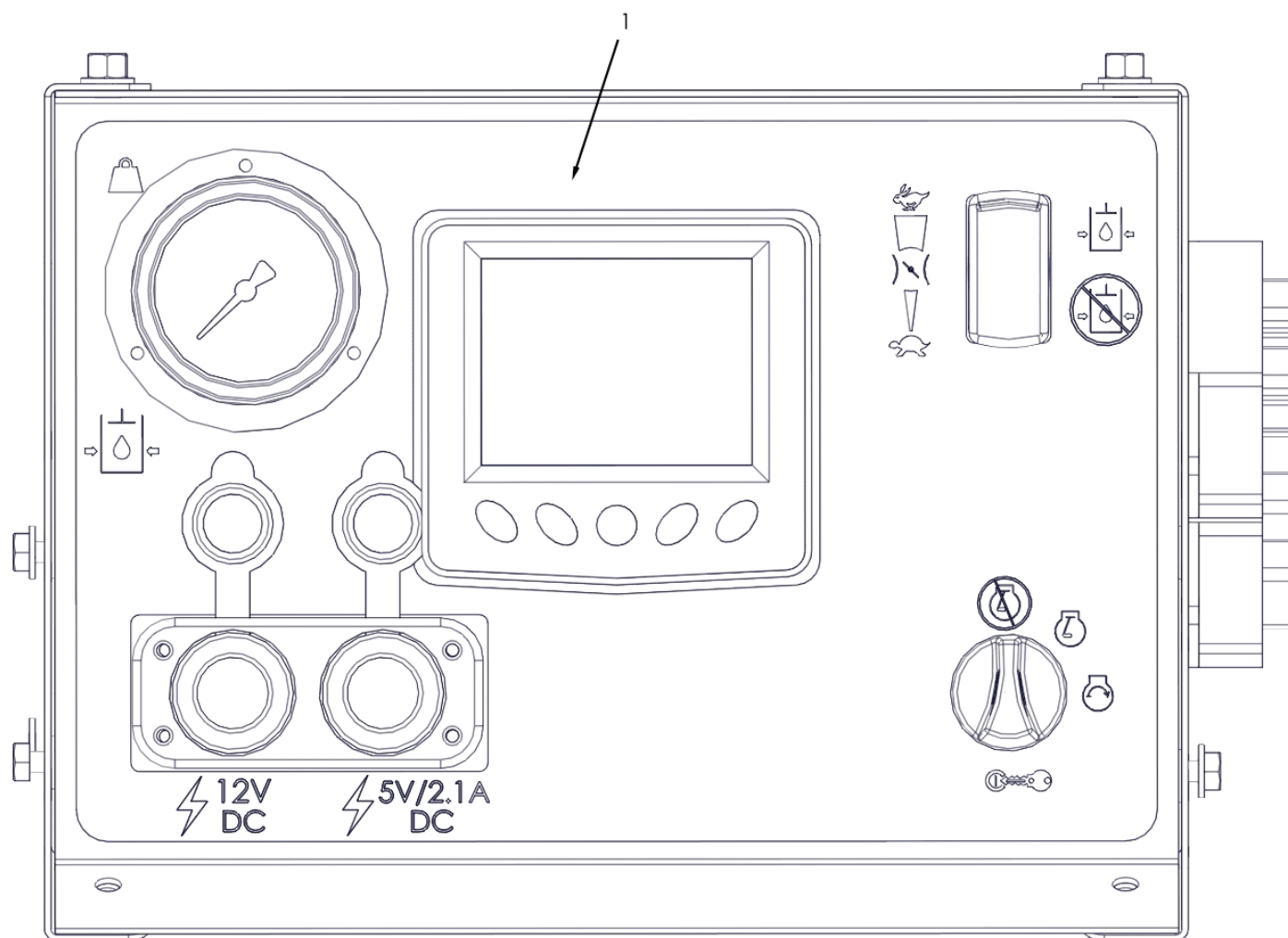
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Footnotes:

Notes:

Control Panel Decal

PP4500 Tier 4



Control Panel Decal

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0432	DECAL, PP4500 T4 CONTROL PANEL	1	

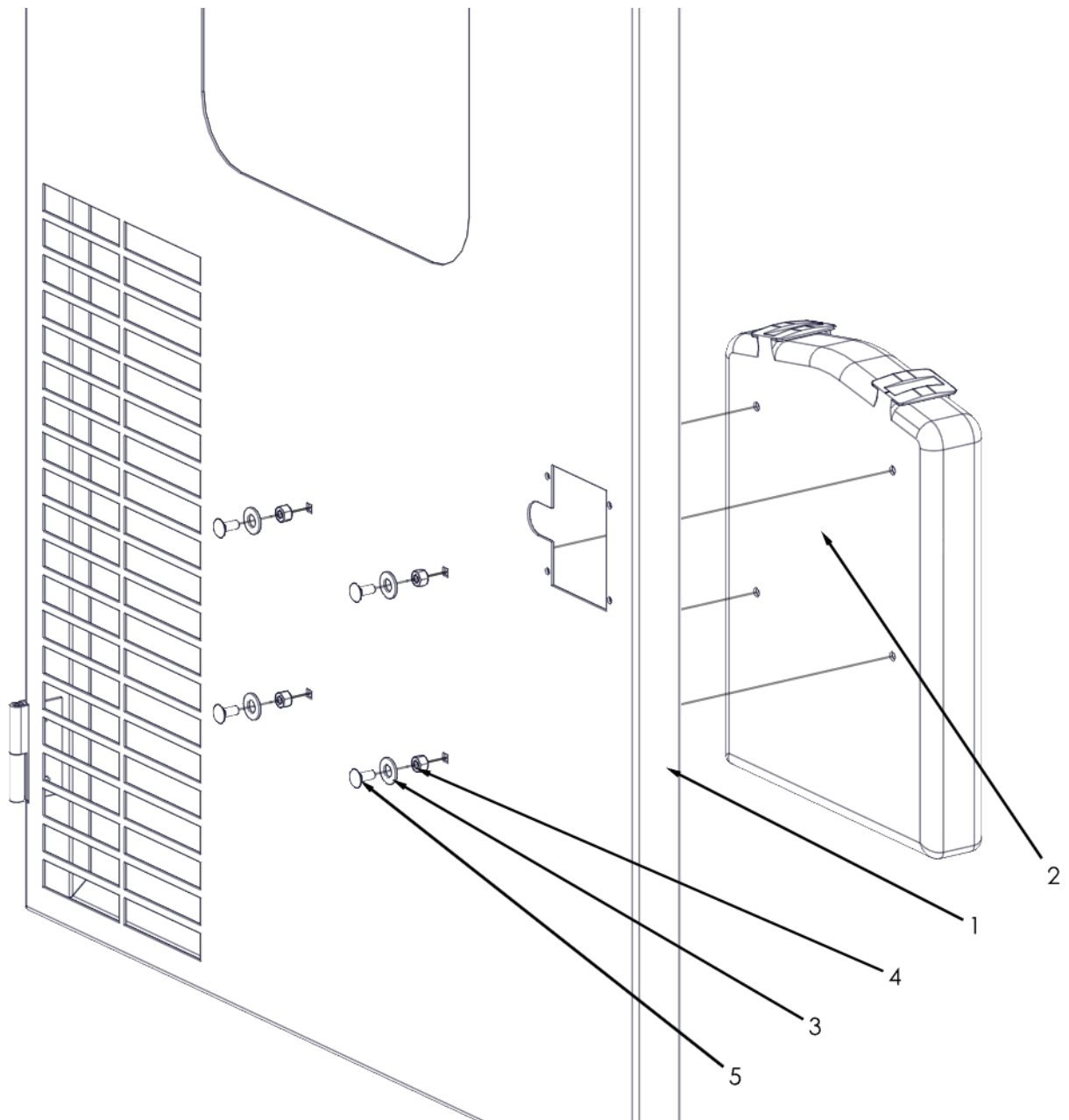
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Footnotes:

Notes:

Operator's Manual Box

PP4500 Tier 4



Operator's Manual Box

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0393	DOOR, OPERATOR CONTROLS ASSY	1	
2	941-7433	BOX, MANUAL	1	
3	06FW-SAE	WASHER, 3/8"	4	
4	04TLN	NUT, 1/4-20 TOP LOCK	4	
5	04CB10	BOLT, 1/4-20 x .625 CARRIAGE	4	

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Footnotes:

Notes:

Notes

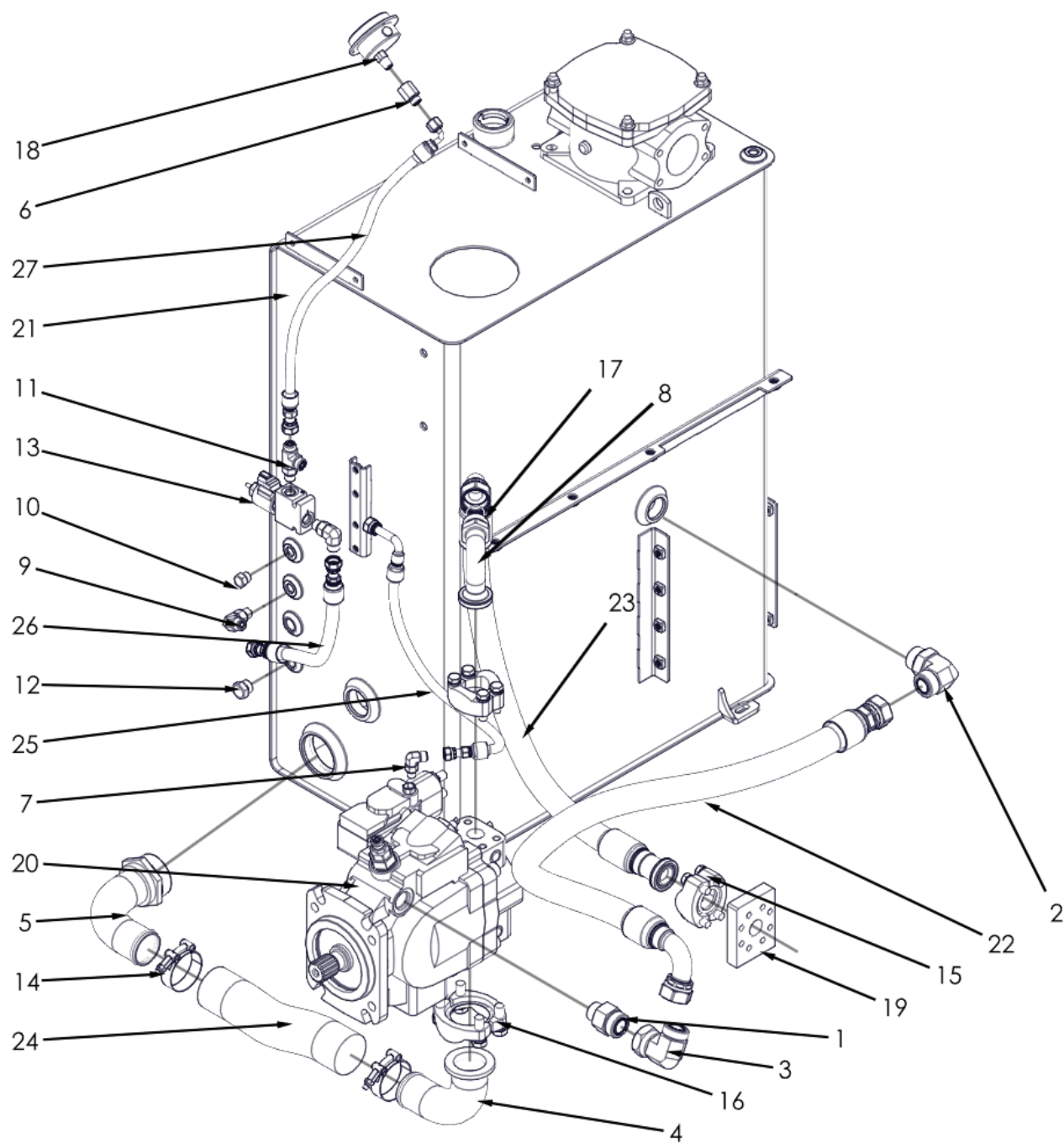
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HYDRAULICS

PULL OUT HYDRAULIC SCHEMATIC GOES HERE

Hydraulic Hoses

PP4500 Tier 4



Hydraulic Hoses

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	926-2218	ADAPTER, 16M O X 12MB	1	
2	926-2315	ELBOW, 16M O X 16MB 90°	1	
3	926-5705	ELBOW, 16M O X 16FO 90°	1	
4	926-6547	ELBOW, HS X FL 90°	1	
5	926-6512	ELBOW, MB X HS 90°	1	
6	926-6300	ADAPTER, 4M O X 4FP	1	
7	926-2300	ELBOW, 4M O X 4MB 90°	1	
8	926-7123	ELBOW, 16 CODE 62 X 16M O	1	
9	926-2304	ELBOW, 6M O X 6MB 90°	2	
10	926-4101	PLUG, 06MB	1	
11	926-3902	TEE, 6M O X 6MB X 6M O RUN	1	
12	926-4102	PLUG, 8MB HEX HEAD	1	
13	913-7037	VALVE POPPET	1	
14	913-7280	CLAMP, T-BOLT 2.5" OD	2	
15	913-7286	FLANGE KIT, SPLIT 1" CODE 62	2	
16	913-7287	FLANGE KIT, 2" CODE 61	1	
17	926-6105	O-RING, 16 ORFS	1	
18	930-2059	PRESSURE GAUGE, 5000 PSI	1	
19	933-0439	ADAPTER, 1" CODE 62	1	
20	933-2501	PUMP, HYDRAULIC P2-075	1	
21	933-3002	HYDRAULIC TANK - PP4000/4500	1	
22	H-02124	HOSE, 16FO-16FO90S X 41	1	
23	H-02125	HOSE, 16FL-16FO90S X 31	1	
24	H-02126	HOSE, -32 SUCTION X 11.5	1	
25	H-02127	HOSE, 4FO-6FO90L X 18"	1	
26	H-02128	HOSE, 6FO-6FO X 13	1	
27	H-02129	HOSE, 6FO-4FO90S X 25"	1	

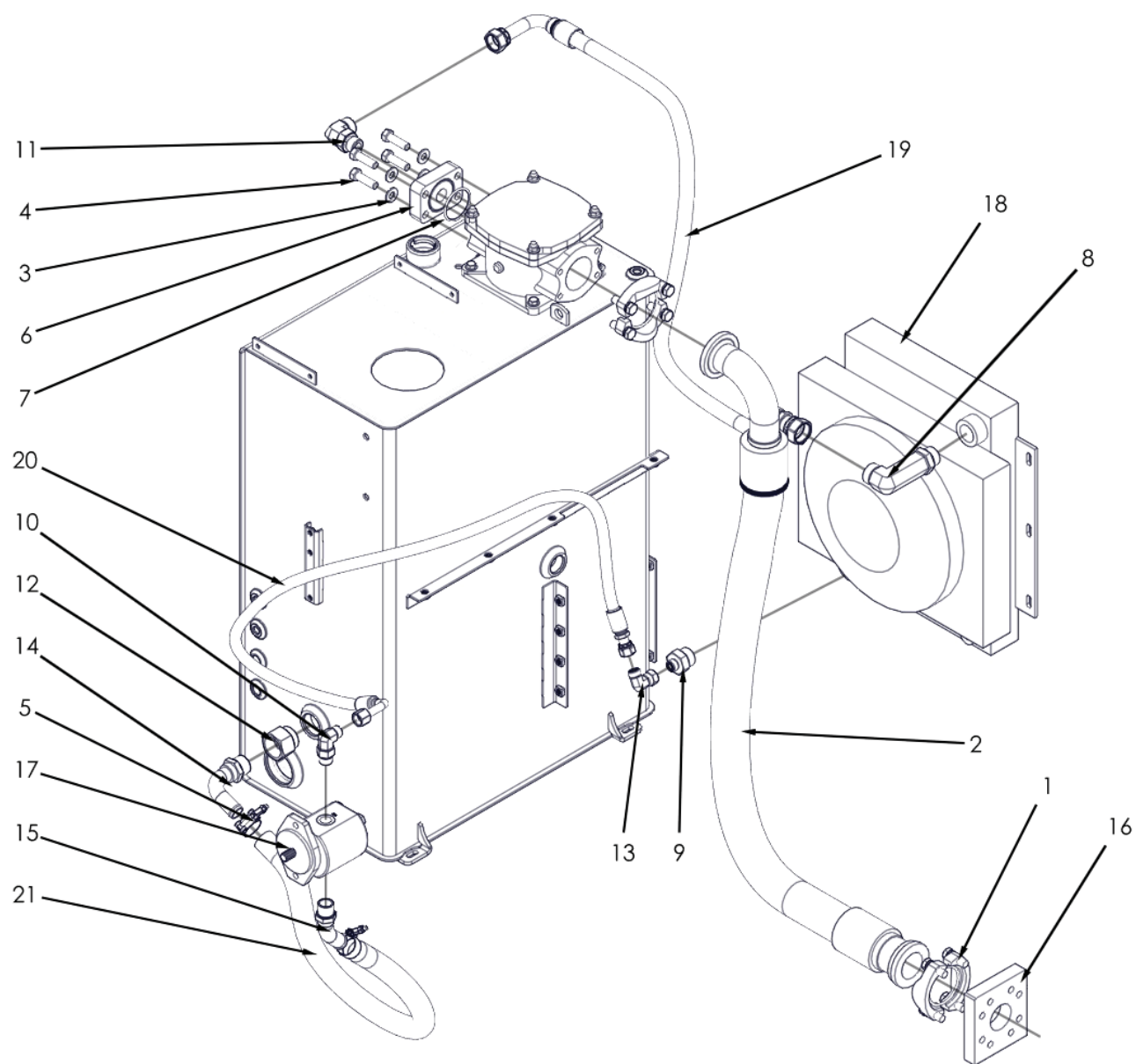
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Footnotes:

Notes:

Hydraulic Hoses

PP4500 Tier 4



Hydraulic Hoses

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	913-7288	FLANGE KIT, 2.5" CODE 61	2	TORQUE TO 38 FT-LB
2	H-01011	HOSE, 40FL-40FL 90° X 50"	1	
3	08FW-SAE	WASHER, 1/2"	4	
4	08HH28	SCREW, 1/2-13 x 1.75 HHC - GR8	4	
5	913-7279	CLAMP, T-BOLT 1.38" OD	2	
6	913-7347	AUX. FILTER FLANGE	1	
7	913-7348	O-RING -228	1	
8	926-2165	ELBOW, 16MO X 16MB 90° LONG	1	
9	926-2228	ADAPTER, 8MO X 16MB	1	
10	926-2308	ELBOW, 8MO X 10MB 90°	1	
11	926-2313	ELBOW, 12MO X 12MB 90°	1	
12	926-3822	ADAPTER, 20MB X 16FB	1	
13	926-5702	ELBOW, 8MO X 8FO 90°	1	
14	926-6506	ELBOW, MB X HS 90°	1	
15	926-6522	ELBOW, MB X HS 45°	1	
16	933-0372	BRACKET, FLANGE	1	
17	933-3043	GEAR PUMP, CASAPPA	1	
18	933-3049	OIL COOLER, ELD 4	1	
19	H-02120	HOSE, 16FO-12FO90L X 46	1	
20	H-02121	HOSE, 8FO-8FO90L X 64	1	
21	H-02122	HOSE, -16 SUCTION X 34.5	1	

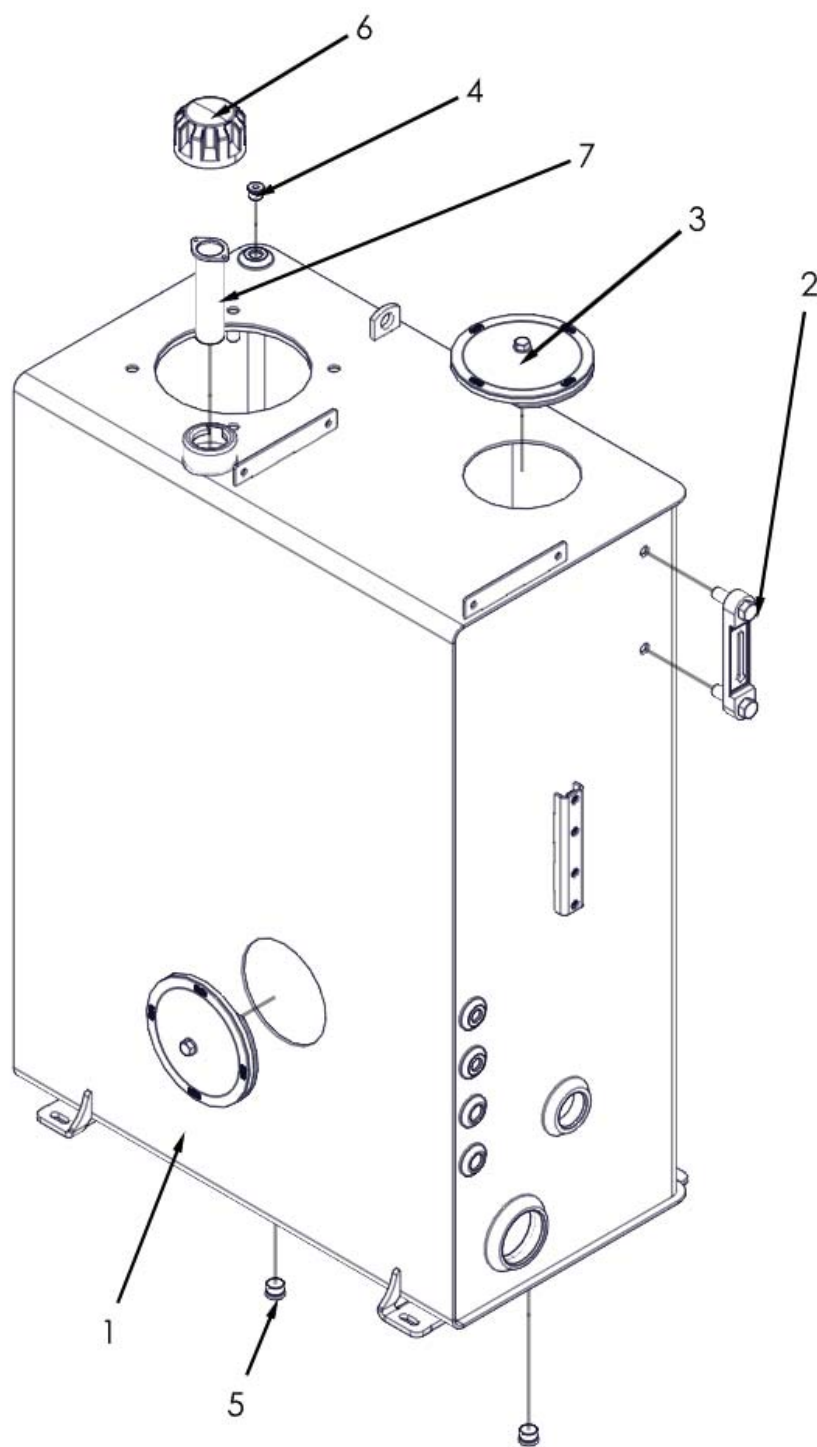
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Footnotes:

Notes:

Hydraulic Tank Assembly

PP4500 Tier 4



Hydraulic Tank Assembly

PP4500 Tier 4

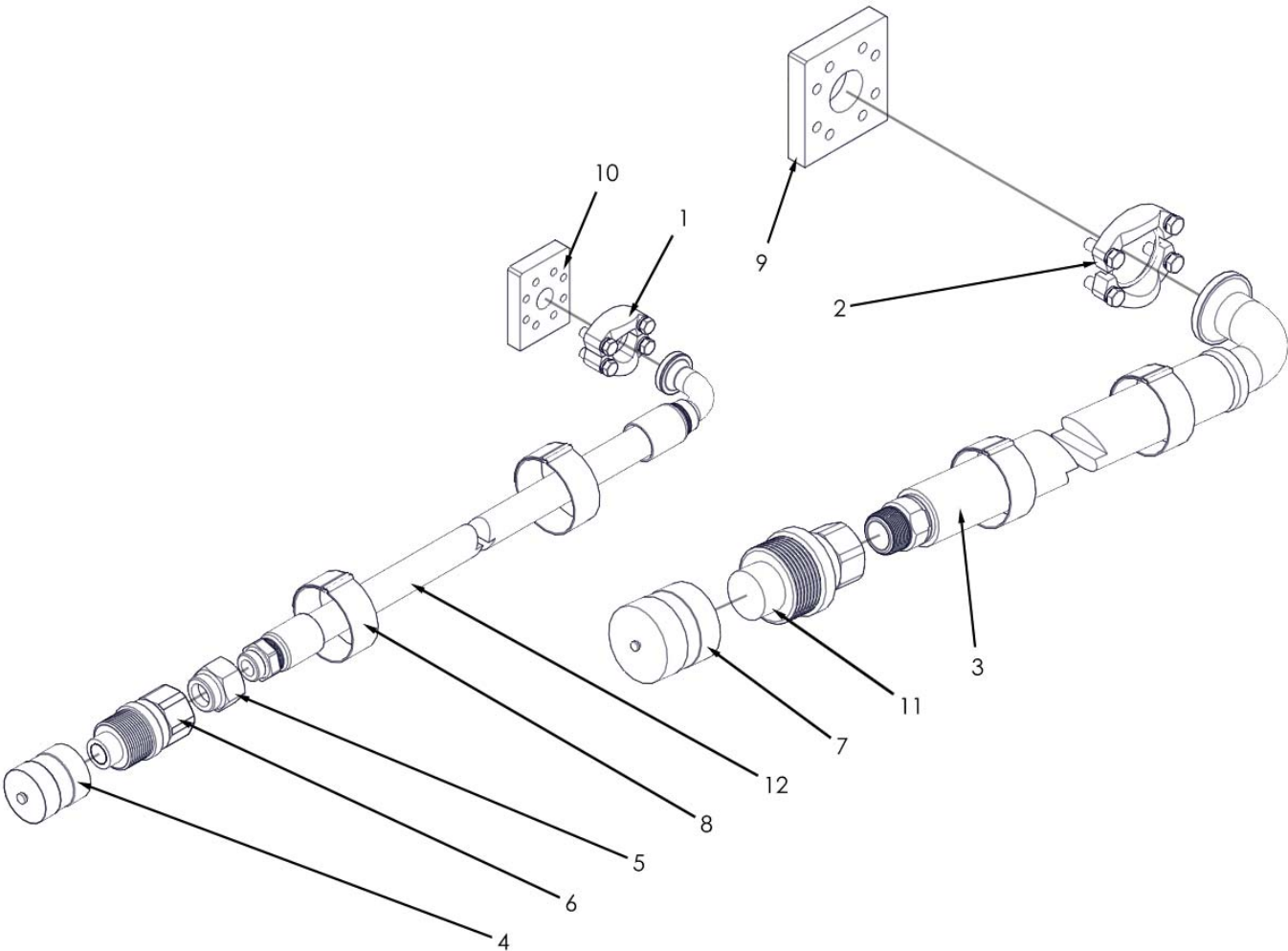
Bom ID	Part No	Description	Qty	Remarks
1	933-2066	TANK WELDMENT ASSY	1	
2	933-2079	GAUGE, OIL LEVEL W/ TEMP	1	
3	933-2080	COVER, HYDRAULIC CLEAN OUT	2	
4	912-4536	PLUG, ORB -6 HX SC	1	
5	933-2064	PLUG, ORB -8 HX SC MAGNETIC	2	
6	933-2098	FILL CAP, MOBIL-GATE	1	
7	933-2099	STRAINER, OIL FILL	1	

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Footnotes:

Notes:

External Hoses
PP4500 Tier 4



External Hoses

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	913-7286	FLANGE KIT, SPLIT 1" CODE 62	1	
2	913-7288	FLANGE KIT, 2.5" CODE 61	1	TORQUE TO 38 FT-LB
3	913-7335	HOSE, FILTER RETURN	1	
4	913-8645	CAP, MALE	1	
5	926-3822	ADAPTER, 20MB X 16FB	1	
6	930-2006	COUPLER, MALE 1-1/4" ORB	1	
7	932-2010	CAP, MALE	1	
8	933-0340	STRAP	4	
9	933-0372	BRACKET, FLANGE	1	
10	933-0439	ADAPTER, 1" CODE 62	1	
11	933-3046	NIPPLE, MALE 1-1/2" NPT	1	
12	H-02123	HOSE, 16MB-16FL90 X 480	1	

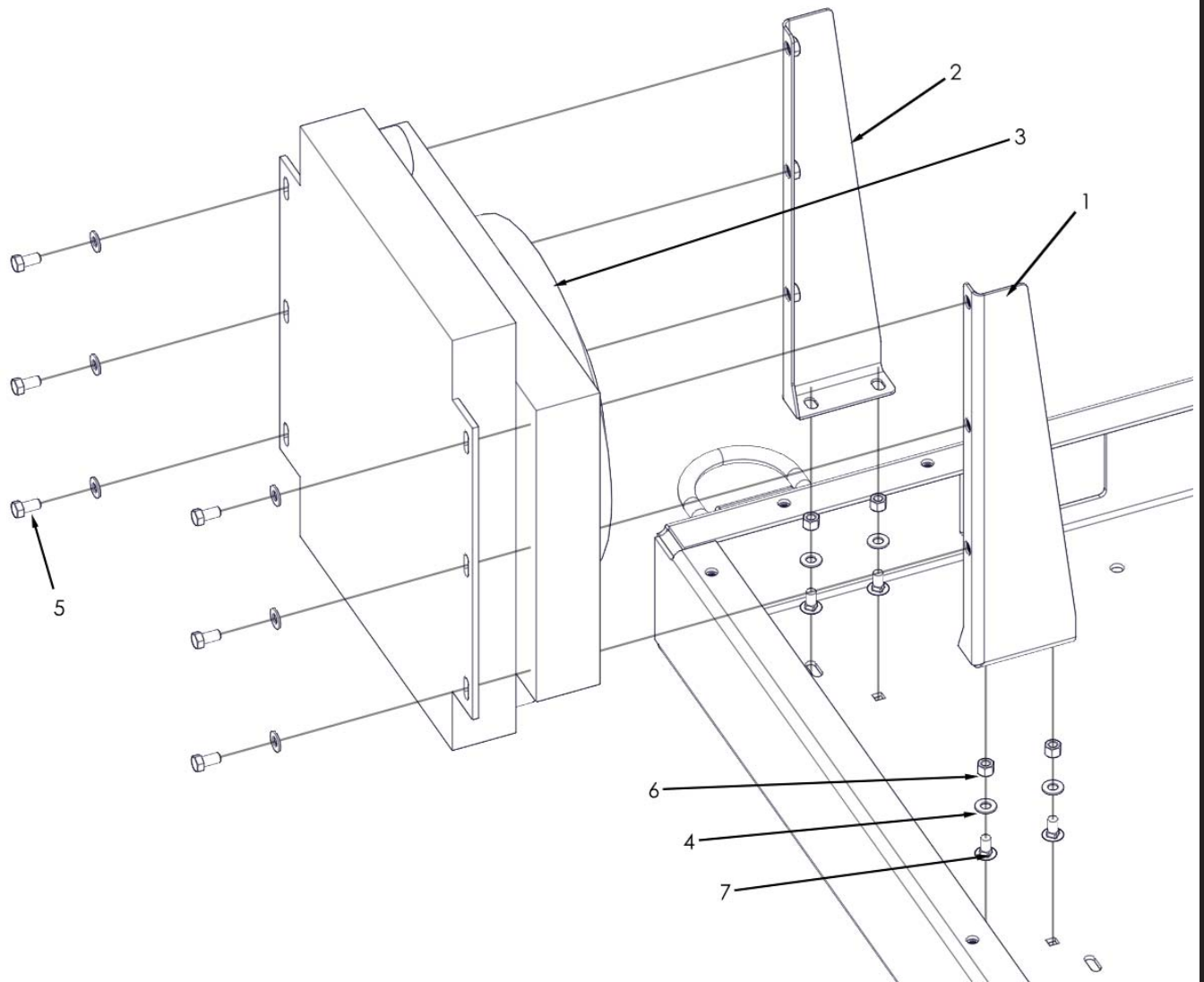
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Footnotes:

Notes:

Oil Cooler to Tub

PP4500 Tier 4



Oil Cooler to Tub

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-2508	BRACKET WELDMENT, OP SIDE	1	
2	933-2509	BRACKET WELDMENT, RH SIDE	1	
3	933-3049	OIL COOLER, ELD 4	1	
4	06FW-SAE	WASHER, 3/8"	10	
5	06HH12	SCREW, 3/8-16 x .75 HHC - GR8	6	
6	06TLN	NUT, 3/8-16 TOP LOCK	4	
7	06CB12	BOLT, 3/8-16 x .75 CARRIAGE	4	

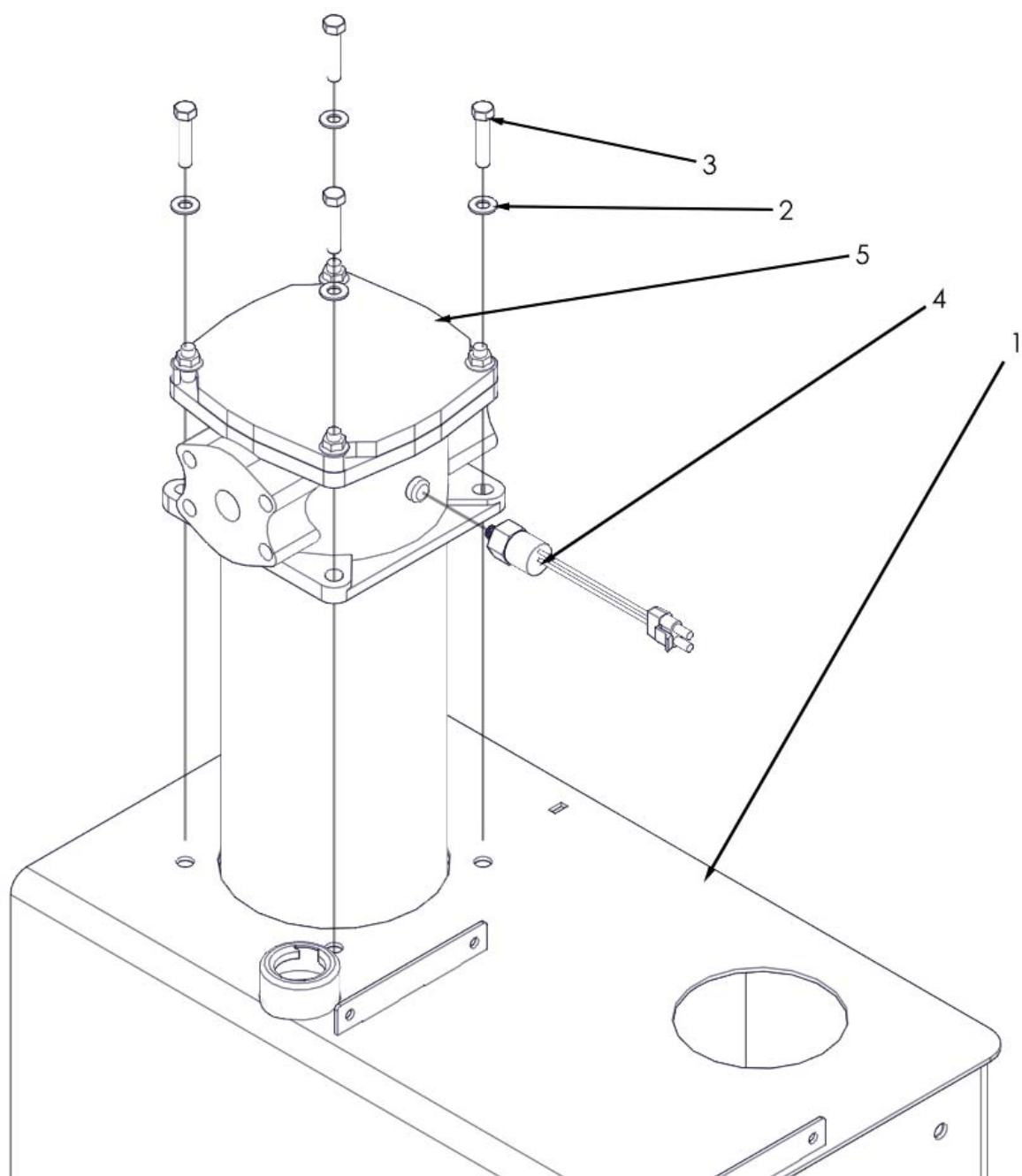
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Footnotes:

Notes:

Oil Filter

PP4500 Tier 4



Oil Filter

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-2066	TANK WELDMENT ASSY	1	
2	06FW-SAE	WASHER, 3/8"	4	
3	06HH28	SCREW, 3/8-16 x 1.75 HHC - GR8	4	
4	912-3604	SWITCH, PRESSURE	1	
5	913-7349	FILTER HOUSING ASSY	1	

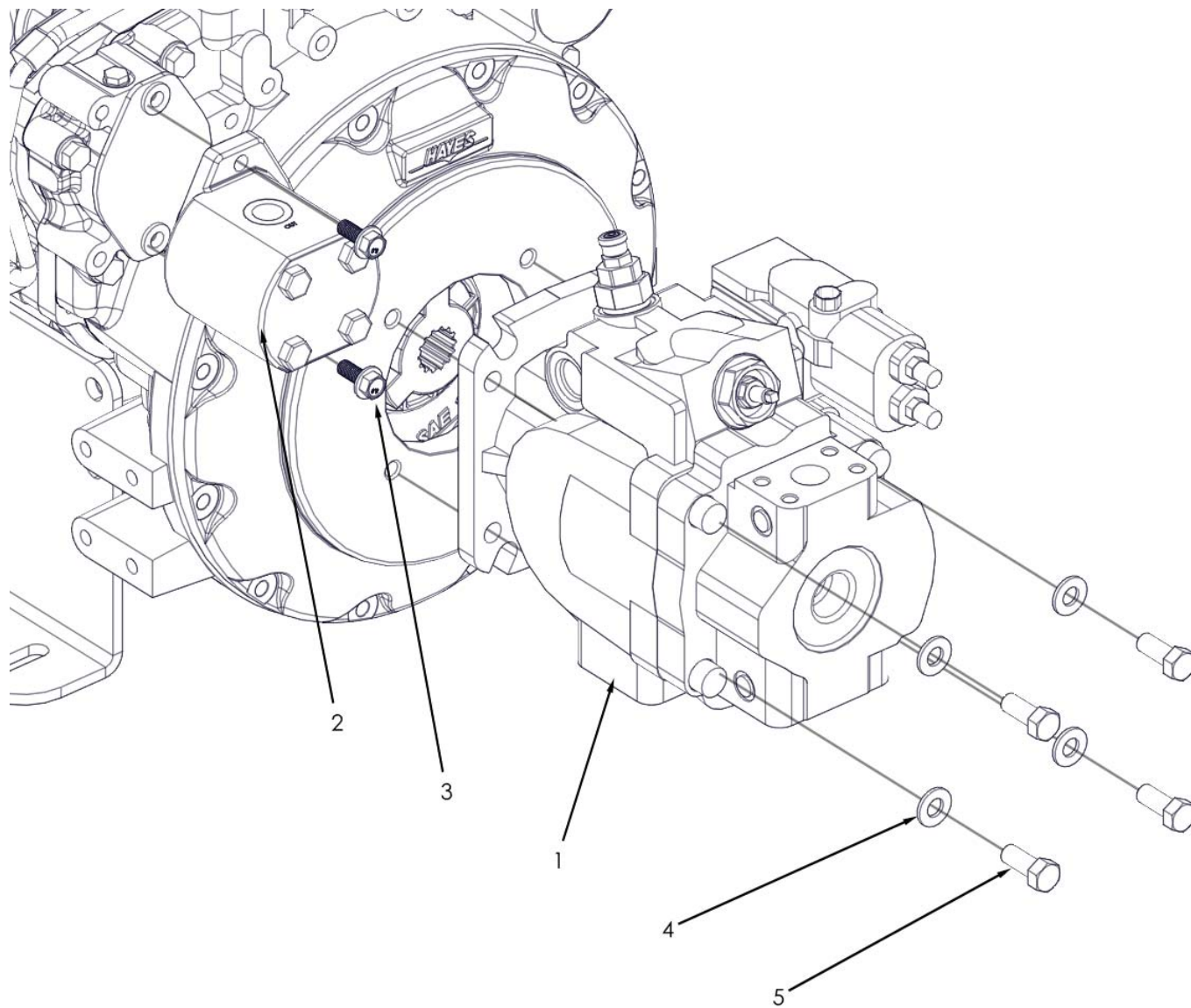
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Footnotes:

Notes:

Pumps to Engine

PP4500 Tier 4



Pumps to Engine

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-2501	PUMP, HYDRAULIC P2-075	1	
2	933-3043	GEAR PUMP, CASAPPA	1	
3	M10FLH25	SCREW, M10-1.5 X 25MM FLANGE	2	TORQUE TO 51 FT-LB
4	08FW-SAE	WASHER, 1/2"	4	
5	08HH20	SCREW, 1/2-13 x 1.25 HHC - GR8	4	TORQUE TO 68 FT-LB

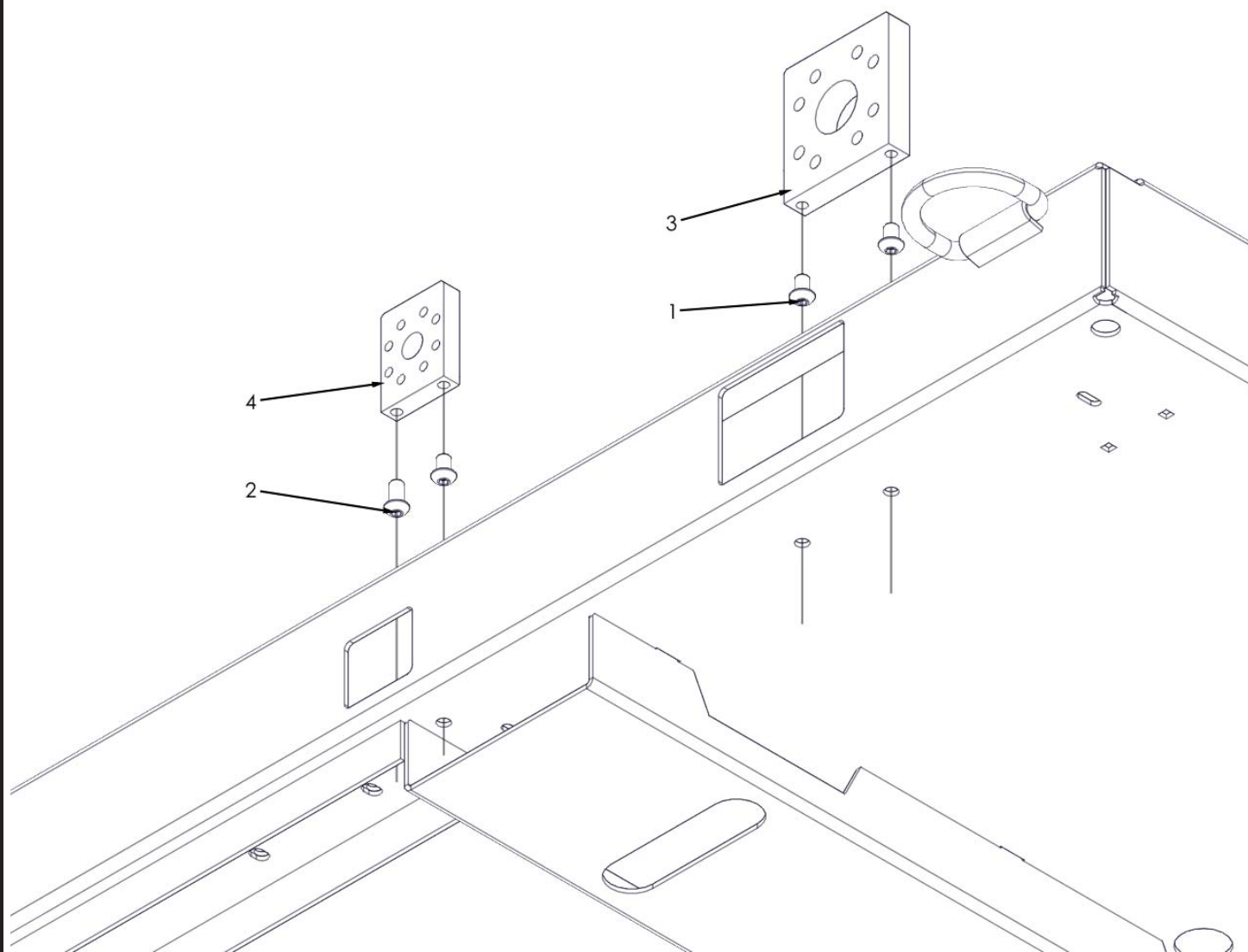
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Footnotes:

Notes:

Hose Flange Brackets

PP4500 Tier 4



Hose Flange Brackets

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	08BH12	SCREW, 1/2-13x0.75 BHSC	3	TORQUE TO 52.6 FT-LB
2	08BH16	SCREW, 1/2-13x1 BHSC	1	
3	933-0372	BRACKET, FLANGE	1	
4	933-0439	ADAPTER, 1" CODE 62	1	

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Footnotes:

Notes:

Notes

[illegible]

ELECTRICAL

PULL OUT ELECTRICAL SCHEMATIC GOES HERE

Electrical Schematic

PP4500 Tier 4

Circuit	Wire Color	Function
1	red	Battery Disconnect Terminal to Starter Post
1A	red	Starter Post to Alternator Post
1B	red	Starter Post to Starter Relay Post
1C	red	Starter Relay Post to Downhole Relay Post
1D	red	Battery Positive Terminal to Battery Disconnect Terminal
2	red	Battery Positive Terminal to Glow Plug Relay Input
3	red	Battery Positive Terminal to Main Relay Post
10	orange	Downhole Relay Output - Pin A to Main Fuse Block - Pin AA-7
11	orange	Main Relay Output - Pin A to Main Fuse Block - Pin AA-2
11A	orange	Splice to Wire 11 to Main Relay Trigger - Pin B
11B	orange	Splice to Wire 11 to Dual Relay D - Pin D-1
11C	orange	Splice to Wire 11 to Main Fuse Block - Pin C-10
12	orange	Starter Relay Output - Pin A to Main Fuse Block - Pin AA-5
14	white	Glow Plug Relay Output - Pin C to Glow Plug Stud
15	white	Main Relay Output - Pin C to Engine ECU Power - Pin 1
15A	white	Splice to Wire 15 to Main Fuse Block - Pin AA-10
16	white	Starter Relay Output - Pin C to Starter Solenoid
17	white	Downhole Relay Output - Pin C to 9-Pin RV Connector - Blue
17A	white	9-Pin RV Connector - Blue to 9-Pin RV Connector - Green
17B	white	9-Pin RV Connector - Green to 9-Pin RV Connector - Red
17C	white	9-Pin RV Connector - Red to 7-Pin RV Connector - Red
17D	white	Splice to Wire 17 to Main Fuse Block - Pin AA-8
20	orange	Main Fuse Block - Pin A-7 to Key Switch - Pin 1
21	white	Key Switch - Pin 2 to E-Stop - Pin D
23	white	Key Switch - Pin 4 to E-Stop - Pin A
23A	white	E-Stop - Pin A to Downhole Relay Trigger - Pin B
24	white	Key Switch - Pin 5 to Murphy Controller - Pin 1-1
24A	white	Splice to Wire 24 to Soft Start Switch - Pin 2
25	white	Soft Start Switch - Pin 3 to Murphy Controller - Pin 2-6
25A	white	Splice to Wire 25 to Dual Relay B - Pin B-6
25B	white	Splice to Wire 25A to Dual Relay C - Pin C-1
30	yellow	Murphy Controller - Pin 1-2 to Engine ECU Signal - Pin 3
31	green	Murphy Controller - Pin 1-3 to Engine ECU Signal - Pin 2
32	white	Murphy Controller - Pin 1-4 to Dual Relay D - Pin D-3
33	white	Murphy Controller - Pin 1-5 to Fuel Sender - Pin 1

Electrical Schematic

PP4500 Tier 4

Circuit	Wire Color	Function
34	white	Murphy Controller - Pin 2-4 to 9-Pin RV Connector - Brown
34A	white	9-Pin RV Connector - Brown to 7-Pin RV Connector - White
34B	white	Splice to Wire 34 to 10K Ohm Load Resistor
35	white	Murphy Controller - Pin 2-5 to 9-Pin RV Connector - Yellow
35A	white	Splice to Wire 35 to Dual Relay B - Pin B-1
35B	white	9-Pin RV Connector - Yellow to 7-Pin RV Connector - Yellow
35C	white	Splice to Wire 35 to 10K Ohm Load Resistor
36	white	Murphy Controller - Pin 2-7 to Tank Temp Switch - Pin A
37	white	Murphy Controller - Pin 2-9 to Filter Pressure Switch - Pin 1
40	white	Engine ECU Signal - Pin 1 to Main Relay Trigger - Pin A
40A	white	Splice to Wire 40 to Main Fuse Block - Pin B-10
41	white	Engine ECU Signal - Pin 4 to Main Fuse Block - Pin A-4
42	white	Engine ECU Signal - Pin 5 to Main Fuse Block - Pin D-2
42A	white	Splice to Wire 42 to Main Fuse Block - Pin AA-9
43	white	Engine ECU Signal - Pin 6 to Glow Plug Relay Trigger - Pin A
44	white	Engine ECU Signal - Pin 7 to Starter Relay Trigger - Pin A
50	white	Dual Relay A - Pin 1-5 to Dual Relay A - Pin 1-6
51	white	Dual Relay B - Pin B-4 to Soft Start Valve - Pin 1
52	white	Dual Relay C - Pin C-4 to Main Fuse Block - Pin AA-4
52A	white	Splice to Wire 52 to Main Fuse Block - Pin AA-3
53	white	Dual Relay C - Pin C-6 to E-Stop - Pin C
54	white	Dual Relay - D-4 to E-Stop - Pin B
55	white	Dual Relay - Pin D-6 to Main Fuse Block - Pin AA-6
55A	white	Splice to Wire 55 to Main Fuse Block - Pin AA-1
60	white	Main Fuse Block - Pin A-1 to Main Fuse Block - Pin D-1
61	white	Main Fuse Block - Pin A-2 to Main Fuse Block - Pin B-1
62	white	Main Fuse Block - Pin A-3 to Starter Relay Trigger - Pin B
63	white	Main Fuse Block - Pin A-5 to Main Fuse Block - Pin B-3
64	white	Main Fuse Block - Pin A-6 to Main Fuse Block - Pin D-3
65	white	Main Fuse Block - Pin A-8 to Aux Power Positive Terminal
65A	white	Splice to Wire 65 to 9-Pin RV Connector - Black
65B	white	9-Pin RV Connector - Black to 7-Pin Connector - Green
65C	white	Splice to Wire 65 to USB Power Positive Terminal
66	white	Main Fuse Block - Pin A-9 to Alternator Ignition - Pin 2
67	white	Main Fuse Block - Pin A-10 to Fuel Pump - Pin 1

Electrical Schematic

PP4500 Tier 4

[illegible]

Electrical Schematic

PP4500 Tier 4

Ref #	P/N	Component	Notes
A3	N/A	Glow Plugs	
B7	933-0355	Engine ECU	
B8	N/A	120 Ohm	
B8	933-5033	Murphy Controller	
B9	941-7370	Soft Start Switch	
B9	933-0470	Fuel Sender	
B11	912-3606	Tank Temperature Switch	
B11	913-7037	Soft Switch	
C7	933-5049	10K Ohm Resistor	
C11	912-3604	Filter Pressure Switch	
D1	N/A	Aux Quick Connect	
D4	933-0449	Glow Plug Relay	
D7	933-5040	Switched Relay	5A Fuse
D10	912-3610	Dual Relay A	
D12	912-3610	Dual Relay C	
E1	913-7303	Battery	
E1	941-7497	Battery Disconnect	
E2	N/A	Ground Quick Connect	
E7	933-5044	Switched 12V Positive	10A Fuse
E8	941-7664	Switched Power	35A Micro Relay
E10	912-3610	Dual Relay B	
E12	912-3610	Dual Relay D	
E14	912-5085	Oil Temperature	
F1	933-0307	Starter	
F3	941-7587	Relay	Main - 20A JCASE/20A JCASE
F7	933-5040	Starter	5A Fuse
F8	941-7664	Hydraulic Oil Fan	35A Micro Relay
G2	933-0306	Alternator	
G7	933-5040	Engine ECU	5A Fuse
H3	941-7587	Relay	Starter - 60A JACASE/30A JCASE
H7	933-5043	Oil Cooler	30A Fuse
H10	933-5027	9 Pin RV Connector	
H13	941-7380	Key Switch	
H14	933-3049	Oil Cooler Fan	
I7	933-5040	Oil Temperature Sensor	5A Fuse

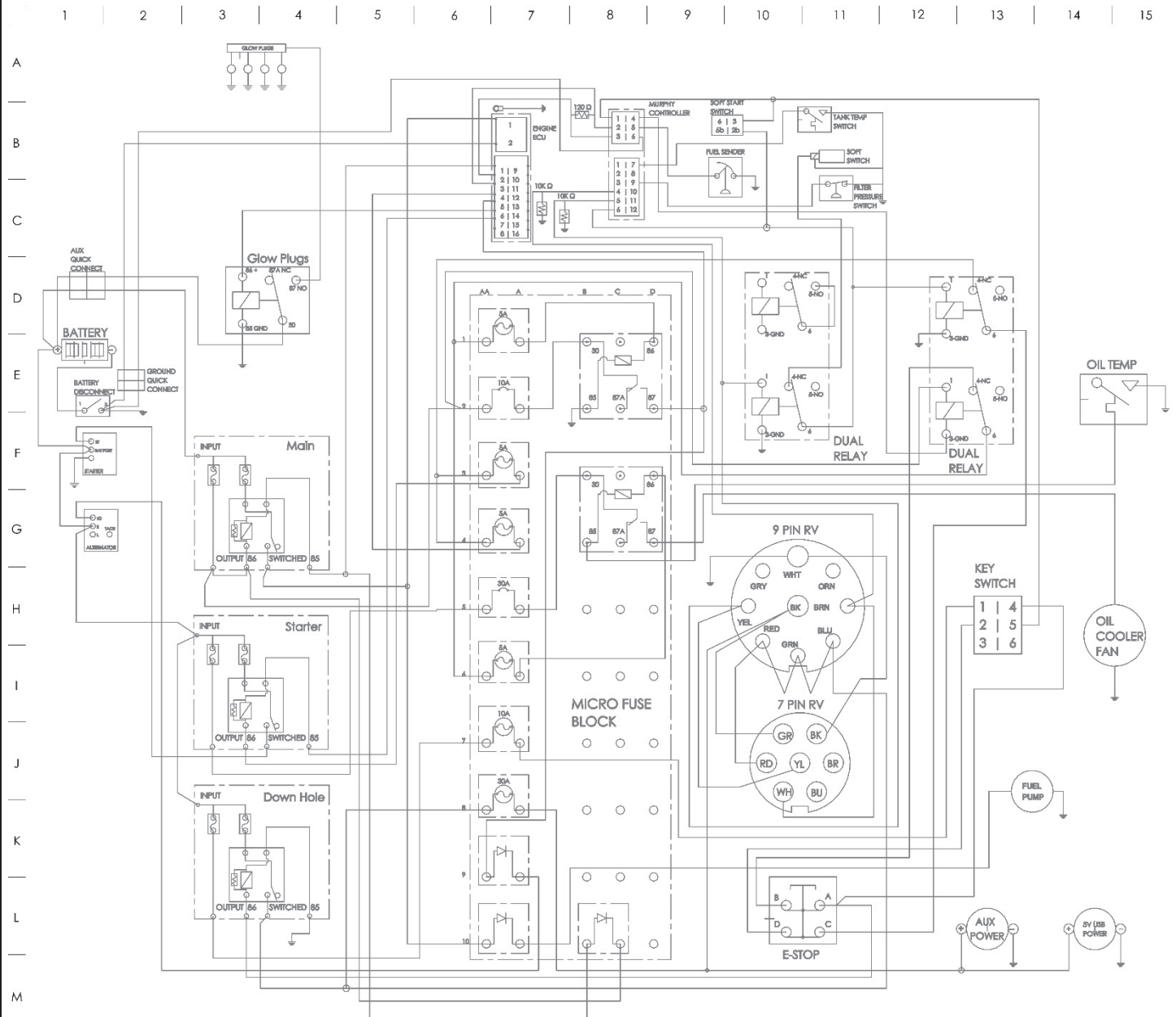
Electrical Schematic

PP4500 Tier 4

[illegible]

Electrical Schematic

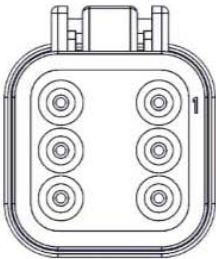
PP4500 Tier 4



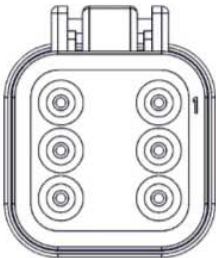
Wire Harness

PP4500 Tier 4

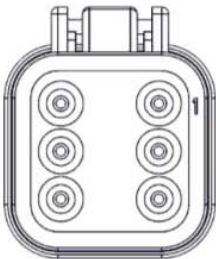
DUAL RELAY A		
PIN	WIRE	COLOR
A-1	N/A	PLUG
A-2	N/A	PLUG
A-3	N/A	PLUG
A-4	N/A	PLUG
A-5	50	WHITE
A-6	50	WHITE



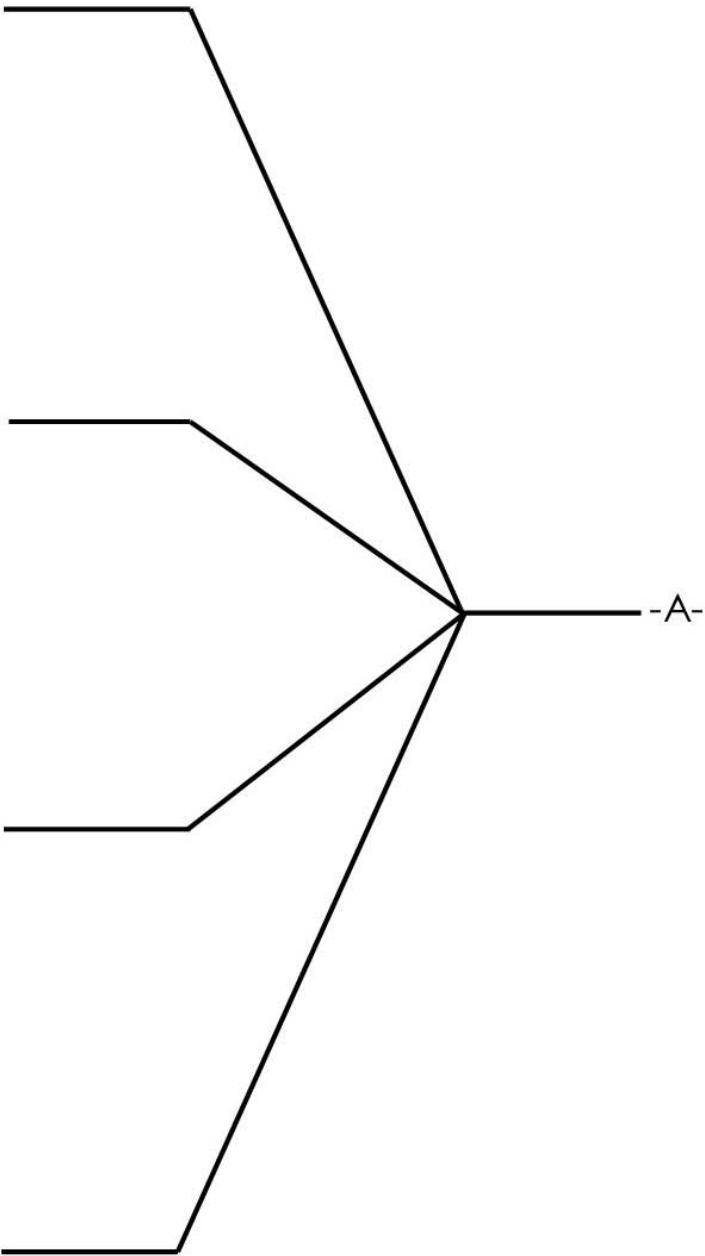
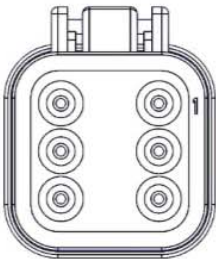
DUAL RELAY B		
PIN	WIRE	COLOR
B-1	35A	WHITE
B-2	N/A	PLUG
B-3	85	BLACK
B-4	51	WHITE
B-5	N/A	PLUG
B-6	25A	WHITE



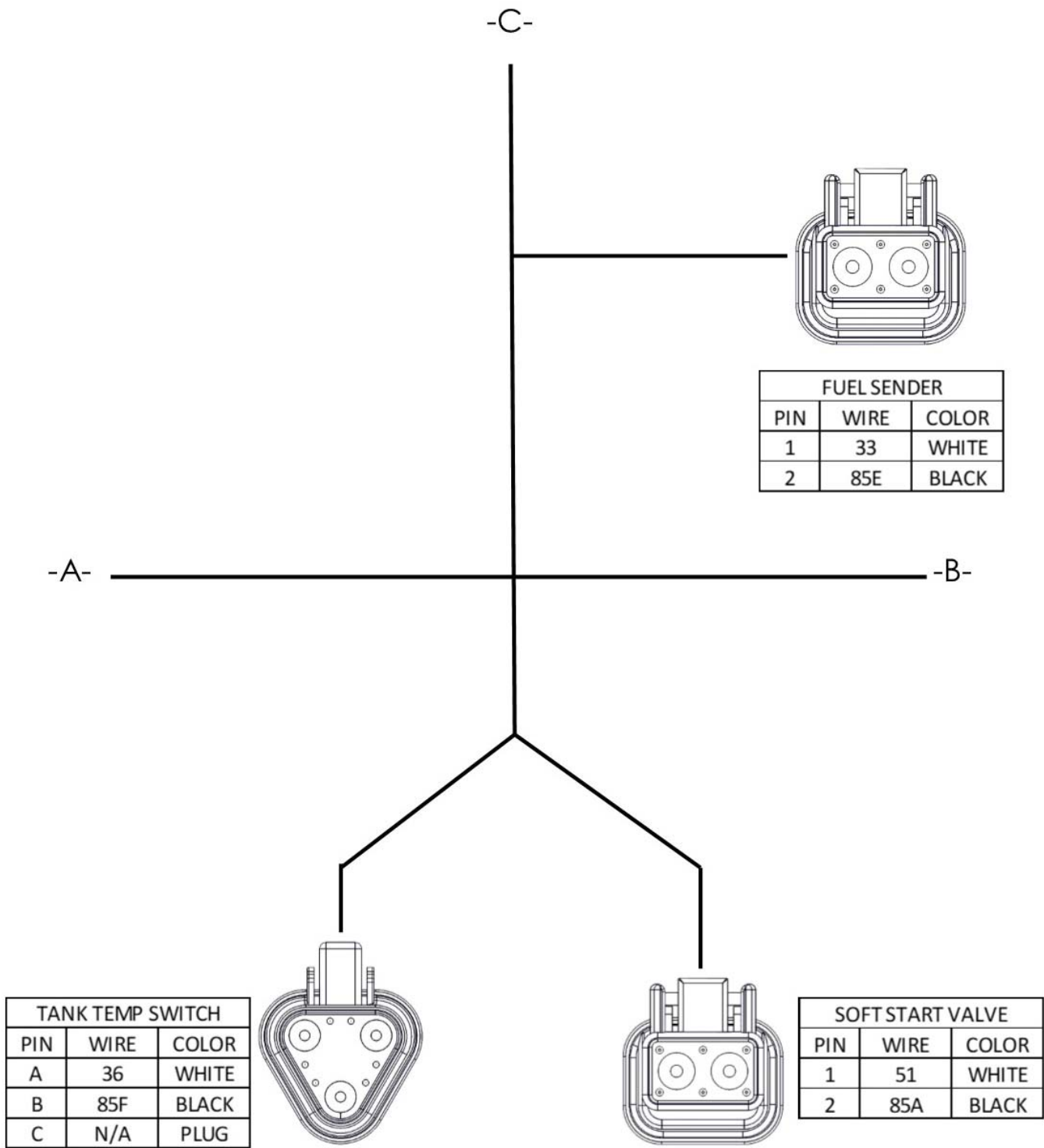
DUAL RELAY C		
PIN	WIRE	COLOR
C-1	25B	WHITE
C-2	N/A	PLUG
C-3	85B	BLACK
C-4	52	WHITE
C-5	N/A	PLUG
C-6	53	WHITE



DUAL RELAY D		
PIN	WIRE	COLOR
D-1	11B	ORANGE
D-2	N/A	PLUG
D-3	32	WHITE
D-4	54	WHITE
D-5	N/A	PLUG
D-6	55	WHITE

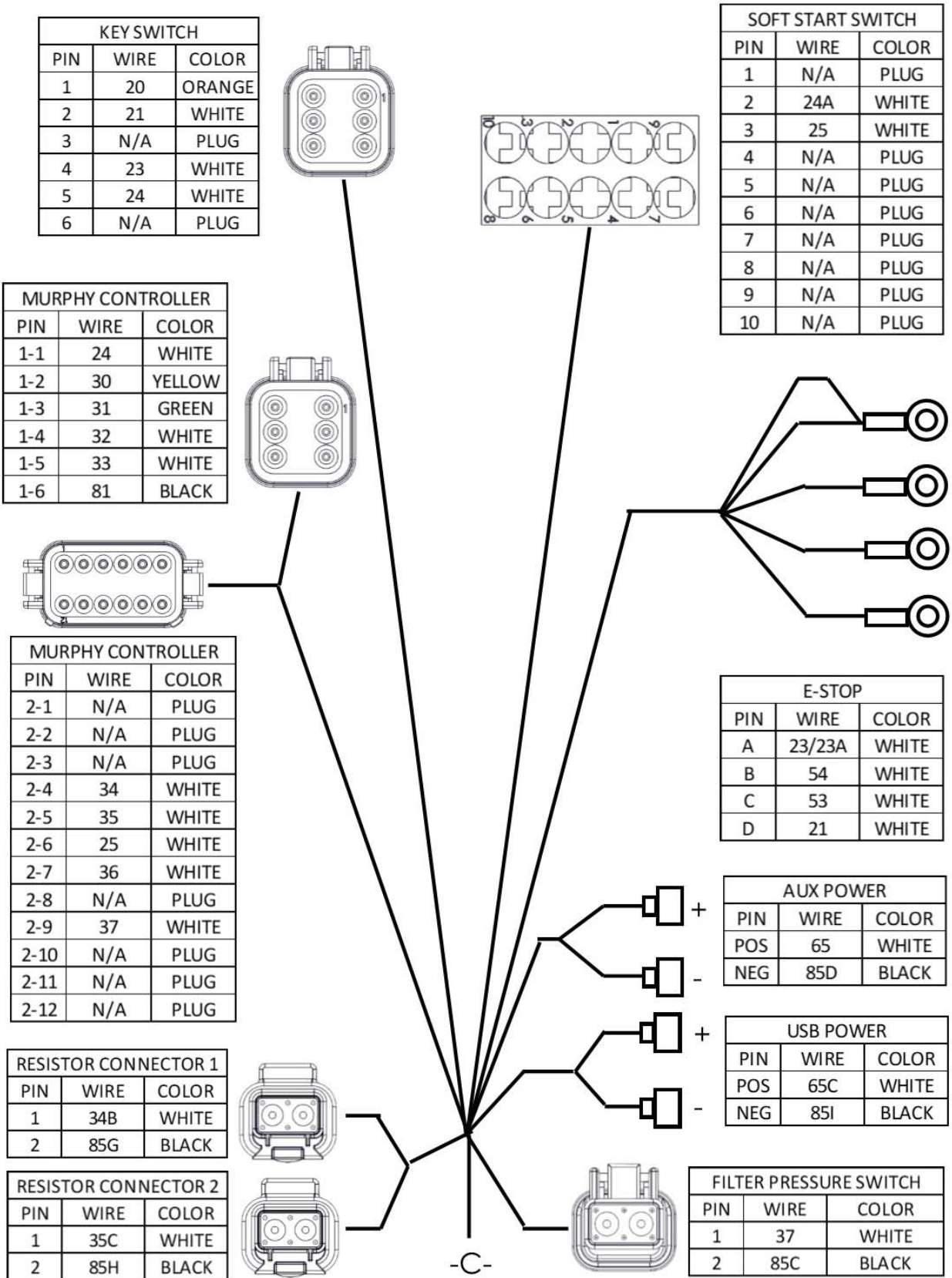


Wire Harness
PP4500 Tier 4

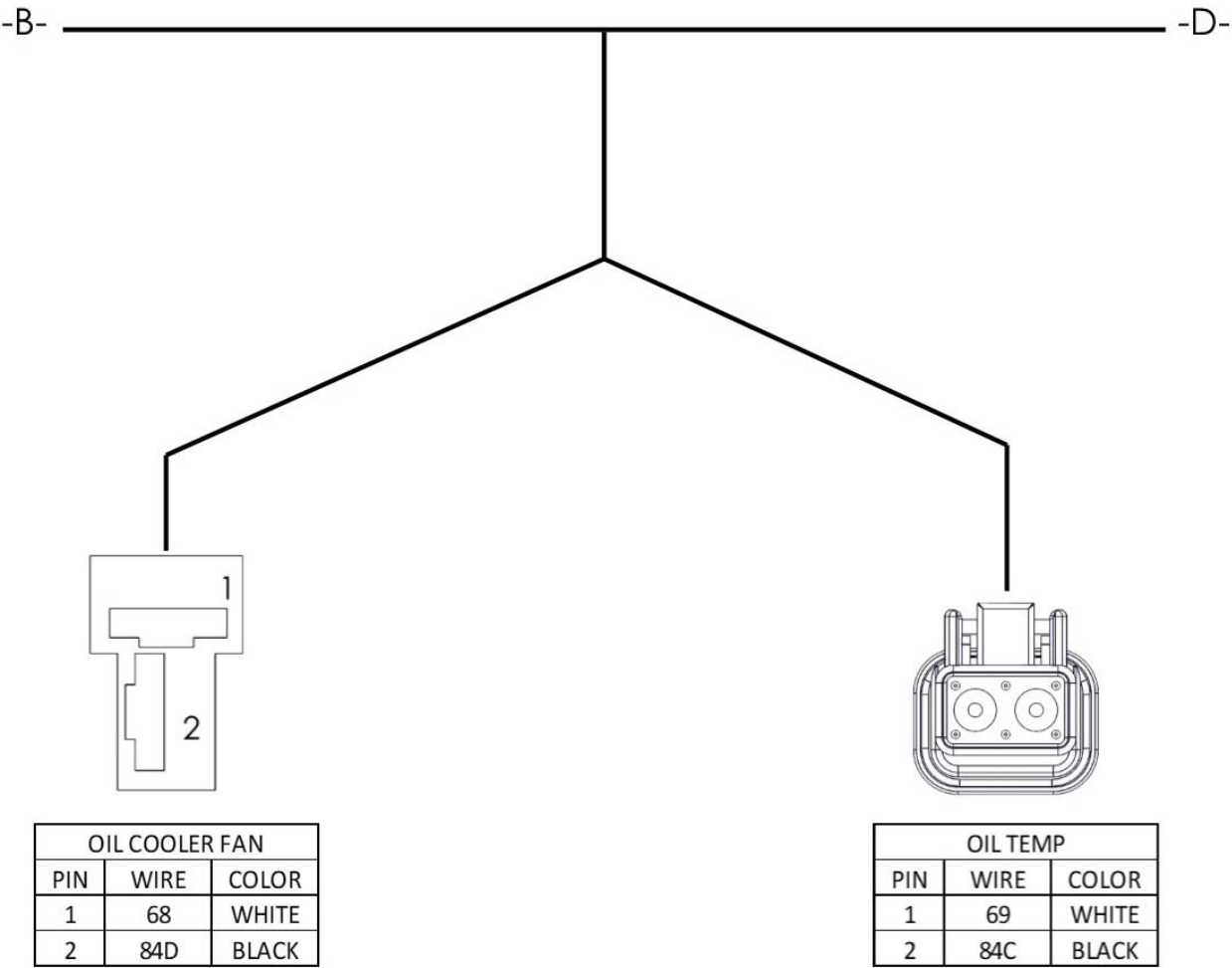


Wire Harness

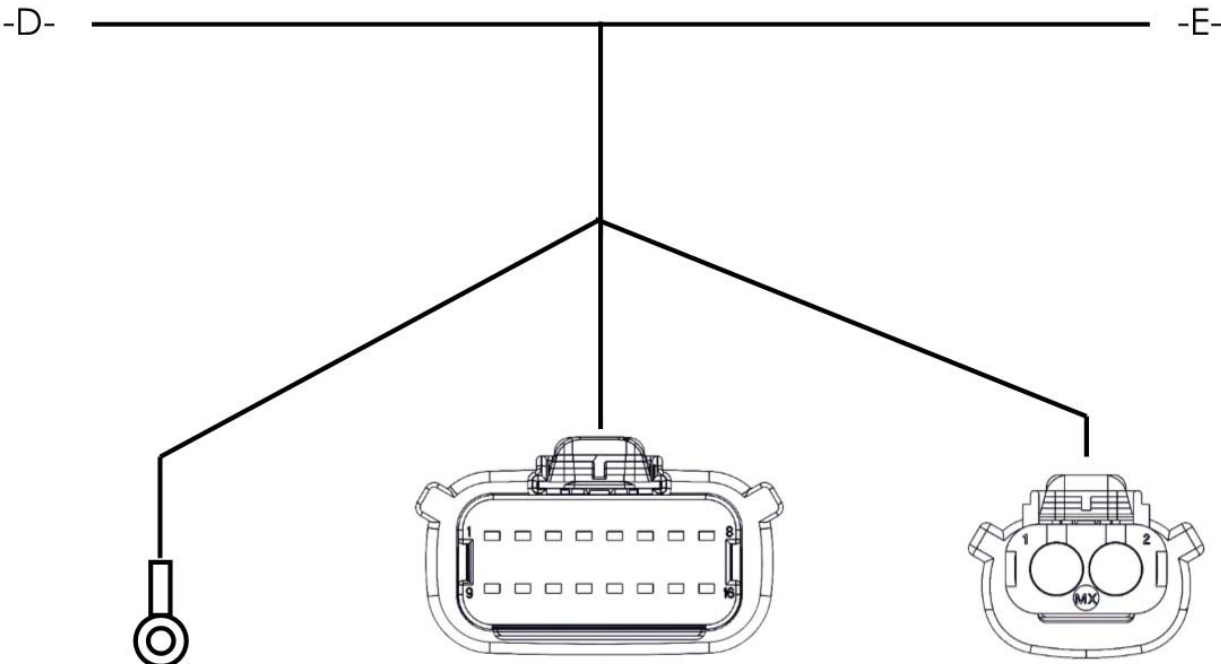
PP4500 Tier 4



Wire Harness
PP4500 Tier 4



Wire Harness
PP4500 Tier 4

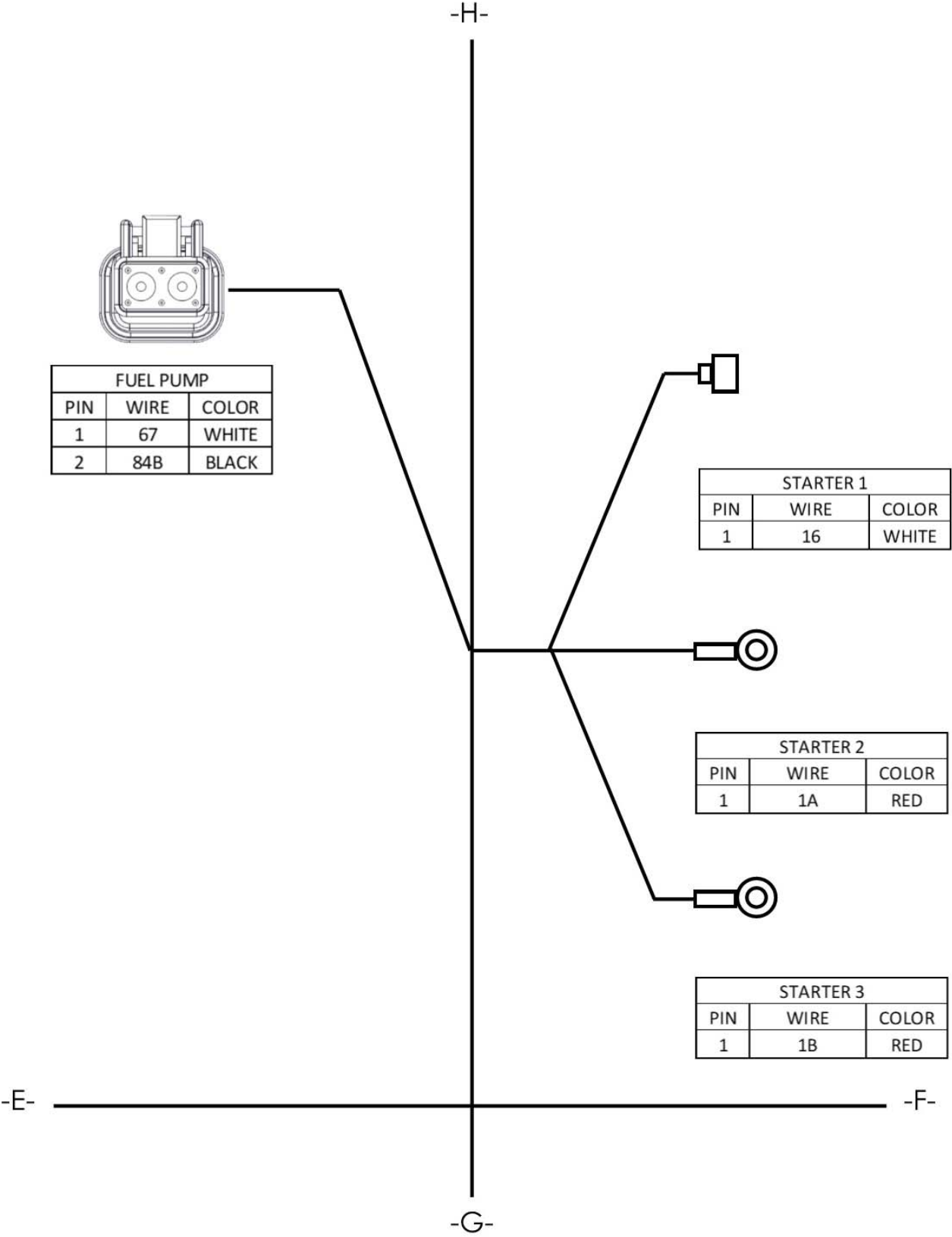


ECU FRAME GROUND		
PIN	WIRE	COLOR
1	83	BLACK

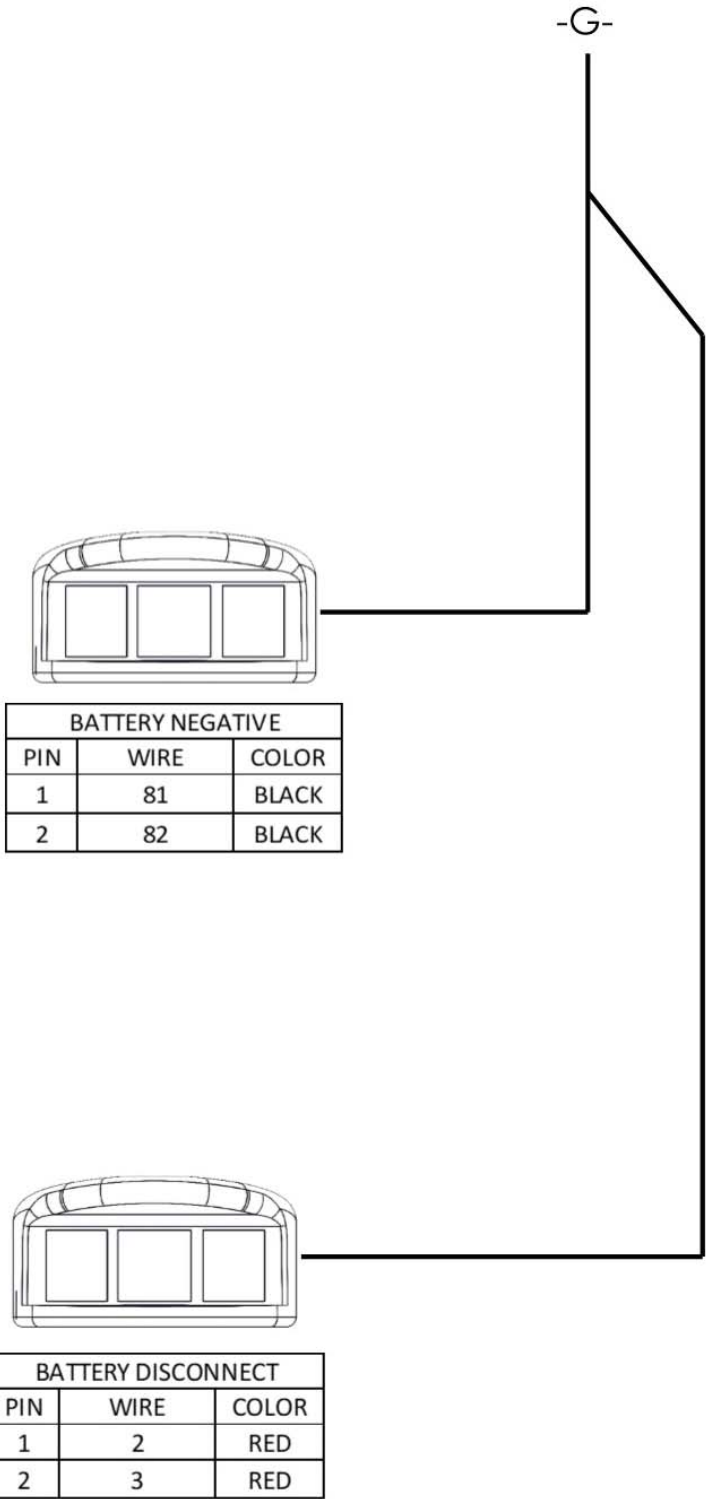
ENGINE ECU SIGNAL		
PIN	WIRE	COLOR
1	40	WHITE
2	31	GREEN
3	30	YELLOW
4	41	WHITE
5	42	WHITE
6	43	WHITE
7	44	WHITE
8	N/A	PLUG
9	N/A	PLUG
10	N/A	PLUG
11	N/A	PLUG
12	N/A	PLUG
13	N/A	PLUG
14	N/A	PLUG
15	N/A	PLUG
16	N/A	PLUG

ENGINE ECU POWER		
PIN	WIRE	COLOR
1	15	WHITE
2	82	BLACK

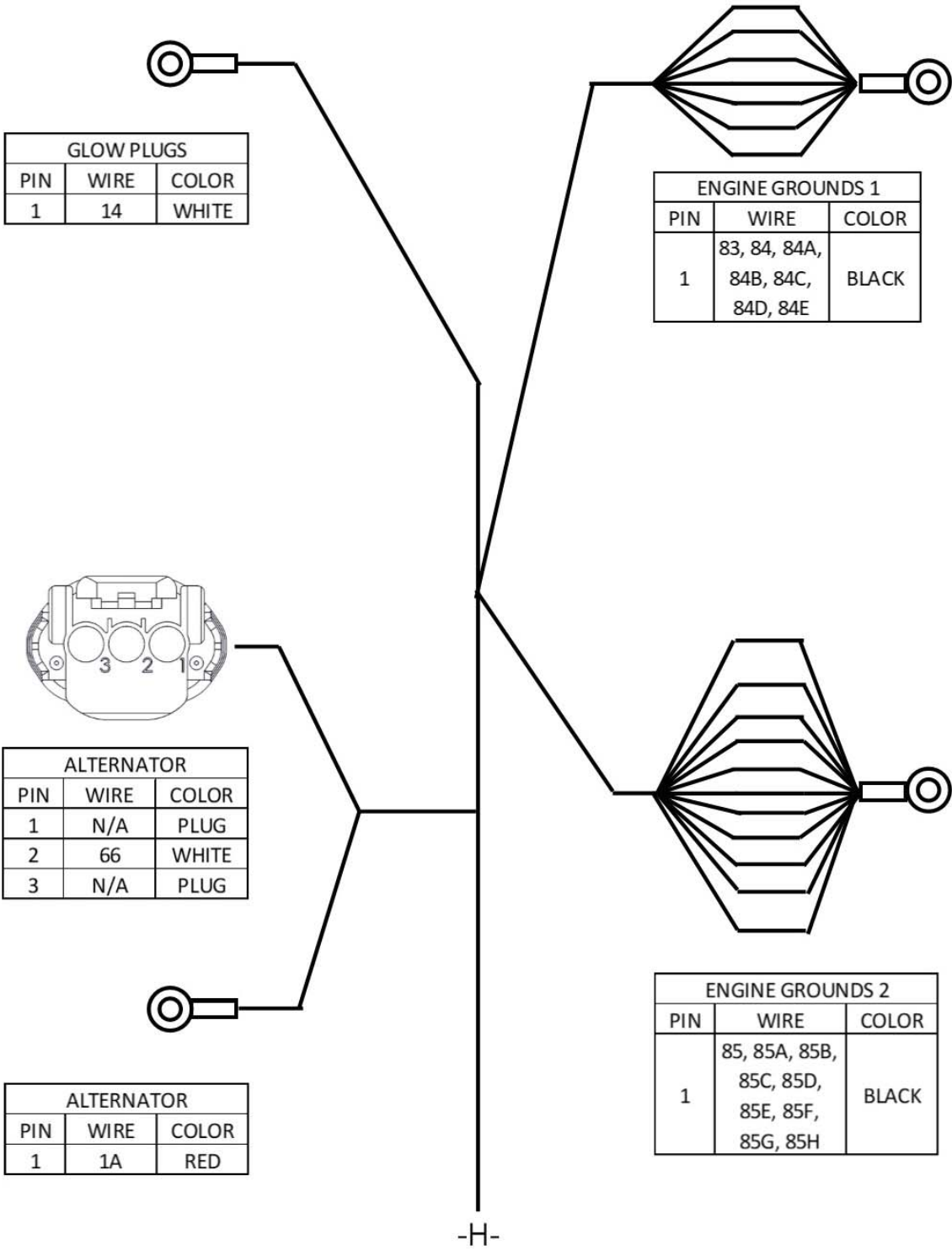
Wire Harness
PP4500 Tier 4



Wire Harness
PP4500 Tier 4

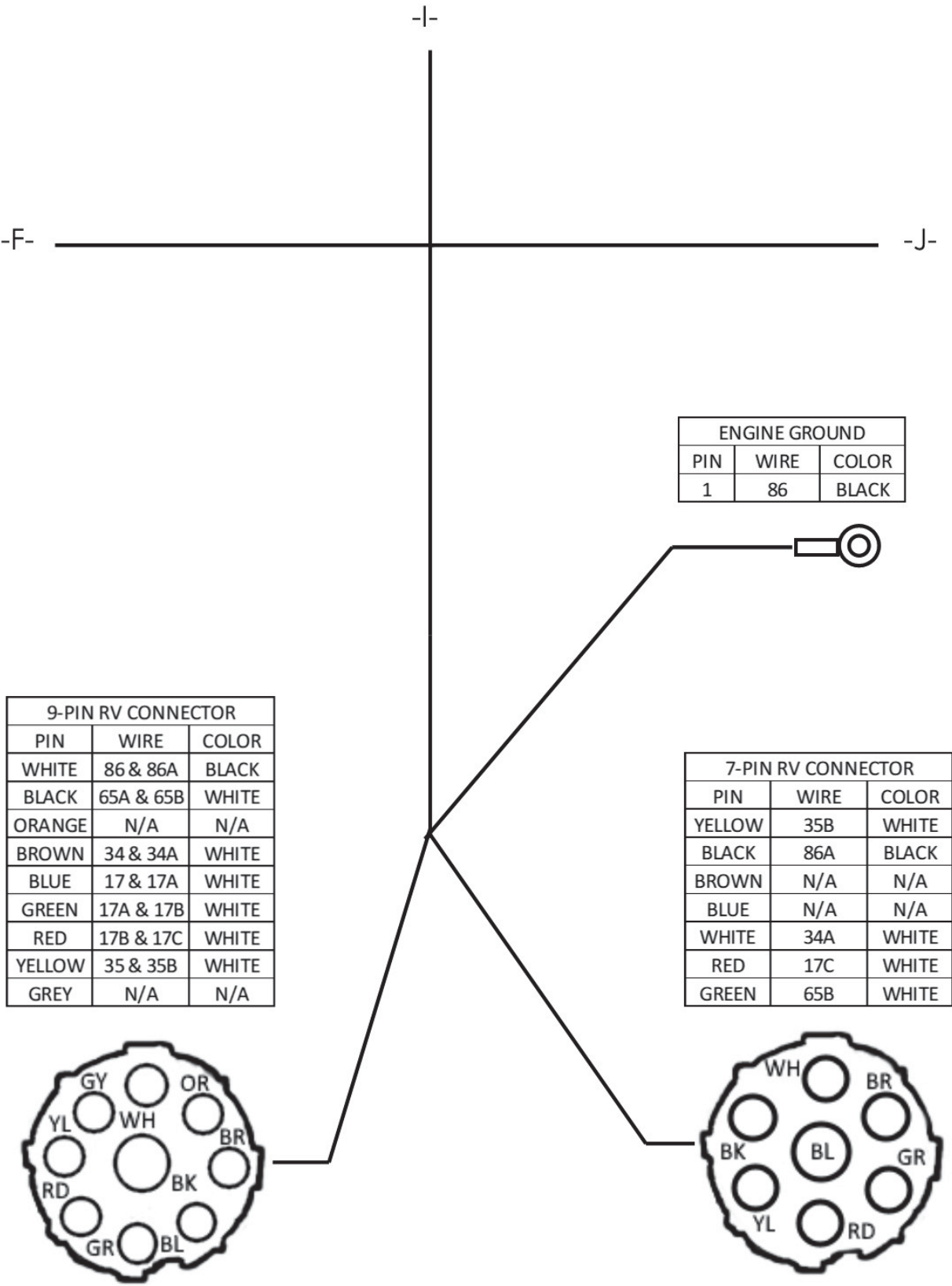


Wire Harness
PP4500 Tier 4



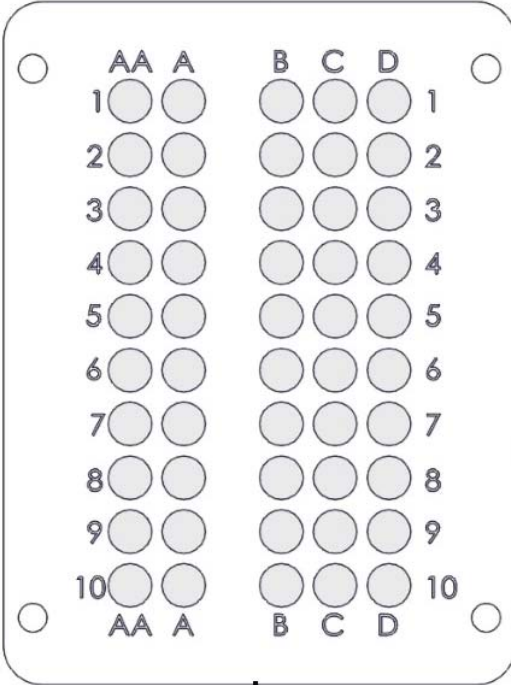
Wire Harness

PP4500 Tier 4

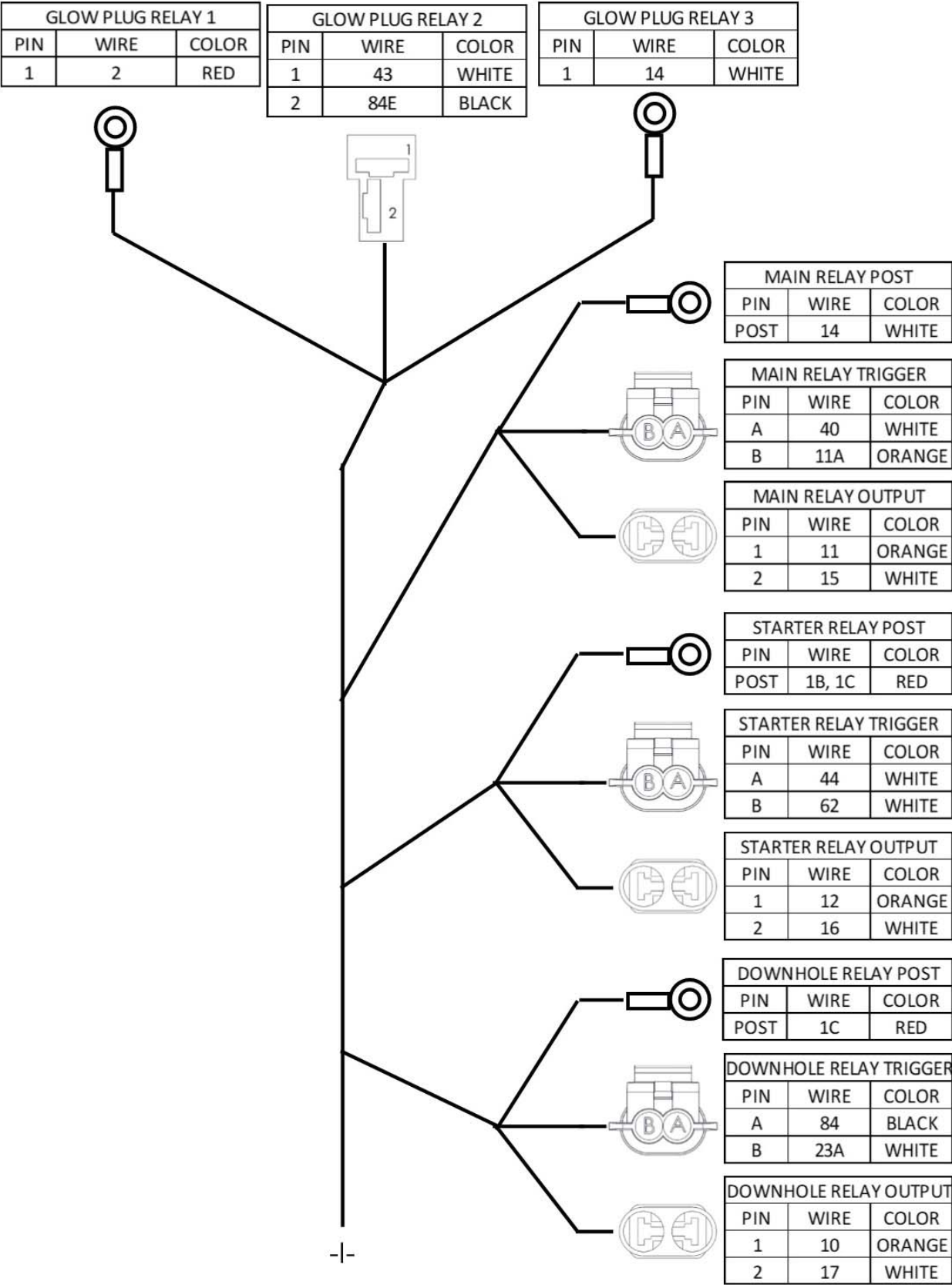


Wire Harness
PP4500 Tier 4

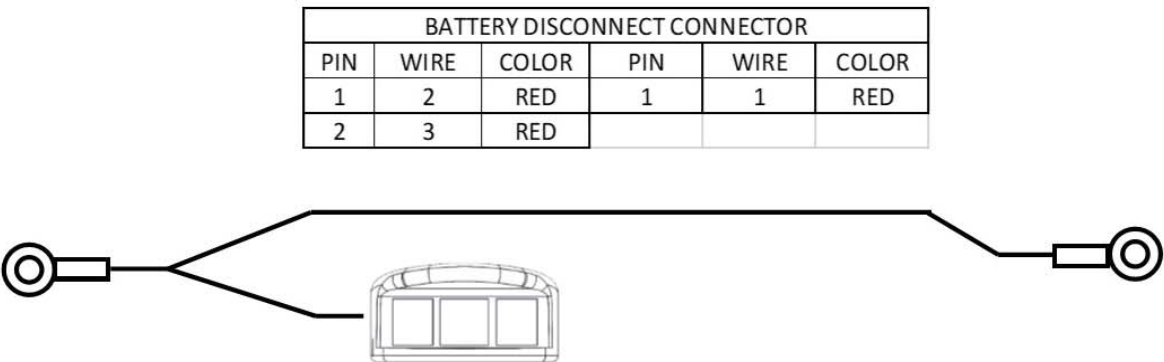
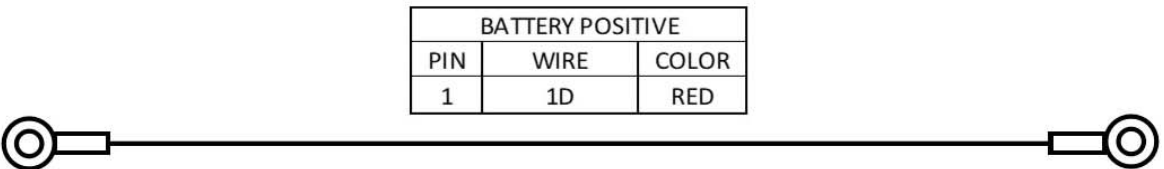
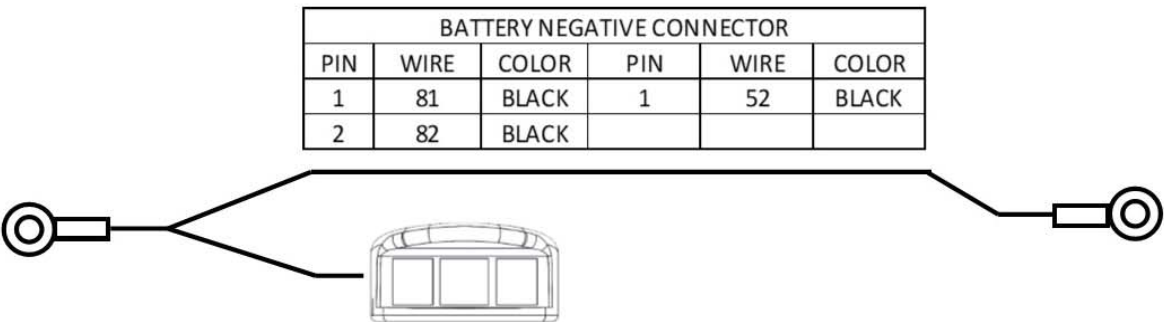
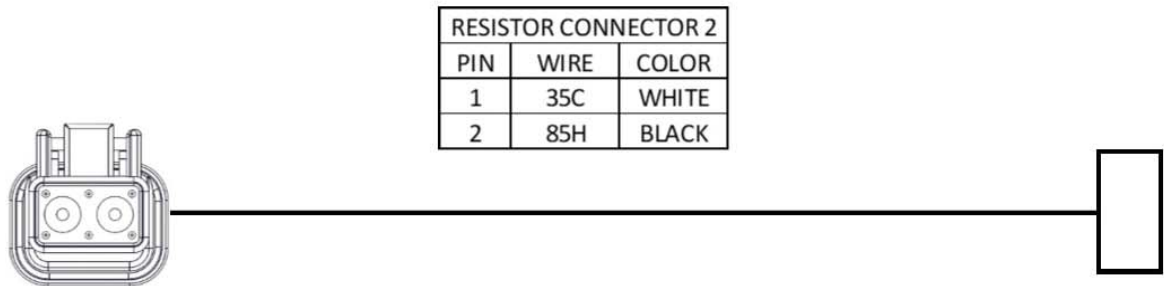
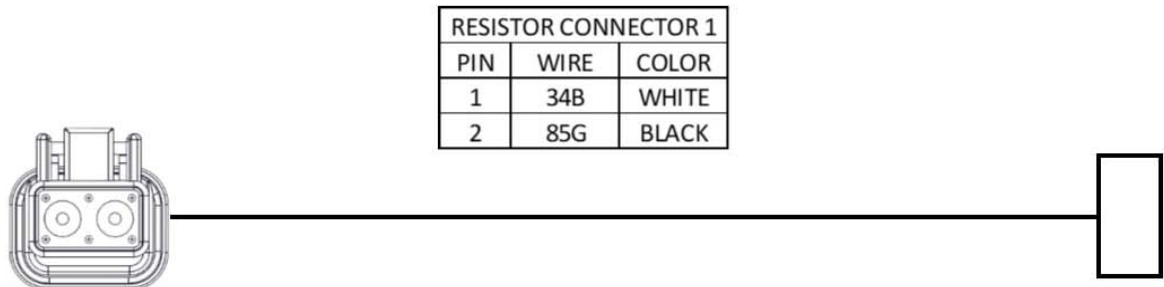
MAIN FUSE BLOCK														
PIN	WIRE	COLOR	PIN	WIRE	COLOR	PIN	WIRE	COLOR	PIN	WIRE	COLOR	PIN	WIRE	COLOR
AA-1	55A	WHITE	A-1	60	WHITE	B-1	61	WHITE	C-1	N/A	PLUG	D-1	60	WHITE
AA-2	11	ORANGE	A-2	61	WHITE	B-2	84A	BLACK	C-2	N/A	PLUG	D-2	42	WHITE
AA-3	52A	WHITE	A-3	62	WHITE	B-3	63	WHITE	C-3	N/A	PLUG	D-3	64	WHITE
AA-4	52	WHITE	A-4	41	WHITE	B-4	69	WHITE	C-4	N/A	PLUG	D-4	68	WHITE
AA-5	12	ORANGE	A-5	63	WHITE	B-5	N/A	PLUG	C-5	N/A	PLUG	D-5	N/A	PLUG
AA-6	55	WHITE	A-6	64	WHITE	B-6	N/A	PLUG	C-6	N/A	PLUG	D-6	N/A	PLUG
AA-7	10	ORANGE	A-7	20	ORANGE	B-7	N/A	PLUG	C-7	N/A	PLUG	D-7	N/A	PLUG



Wire Harness
PP4500 Tier 4

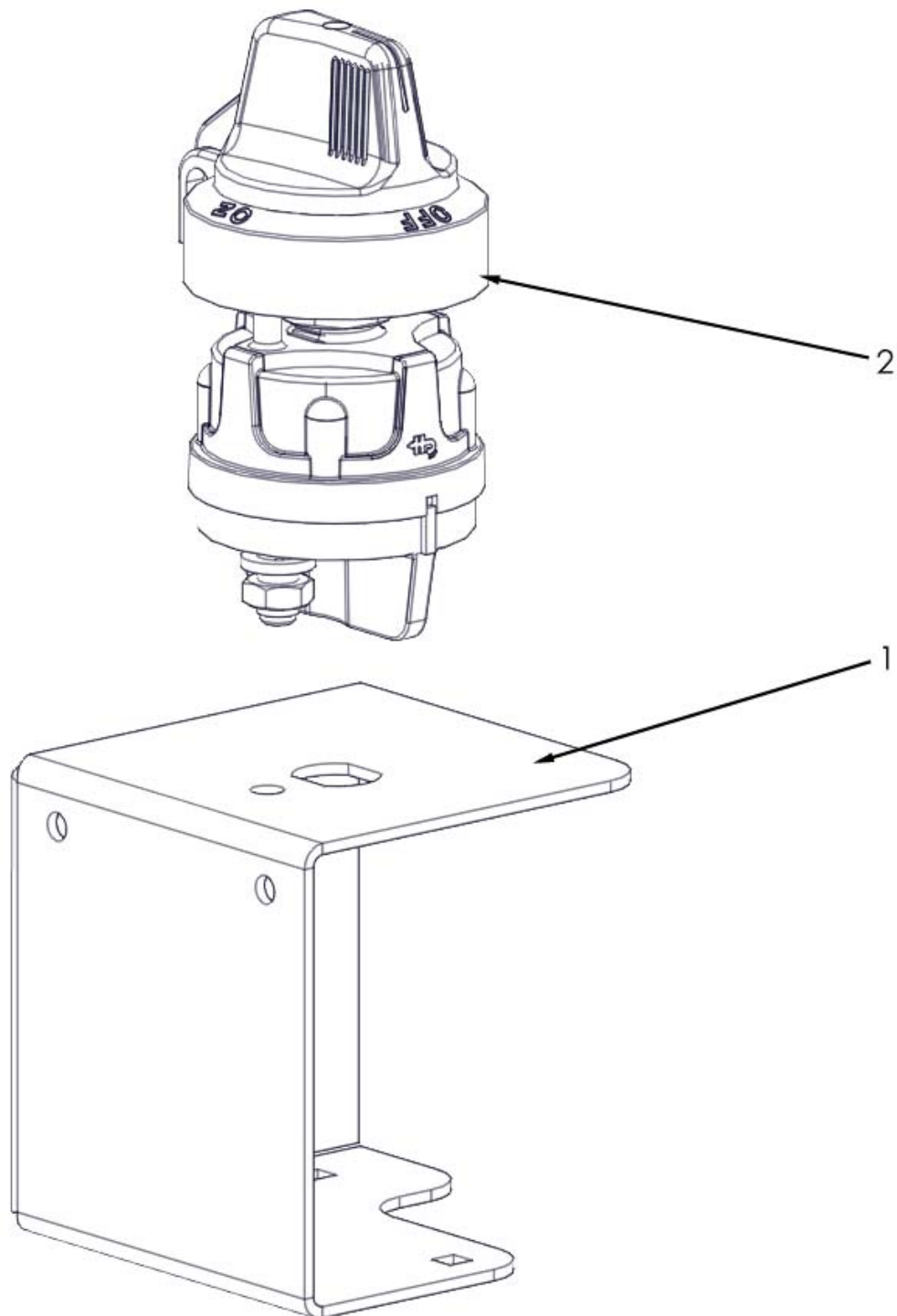


Wire Harness
PP4500 Tier 4



Battery Disconnect

PP4500 Tier 4



Battery Disconnect

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	941-7496	BATTERY DISCONNECT HOUSING	1	
2	941-7497	SWITCH, BATTERY DISCONNECT	1	

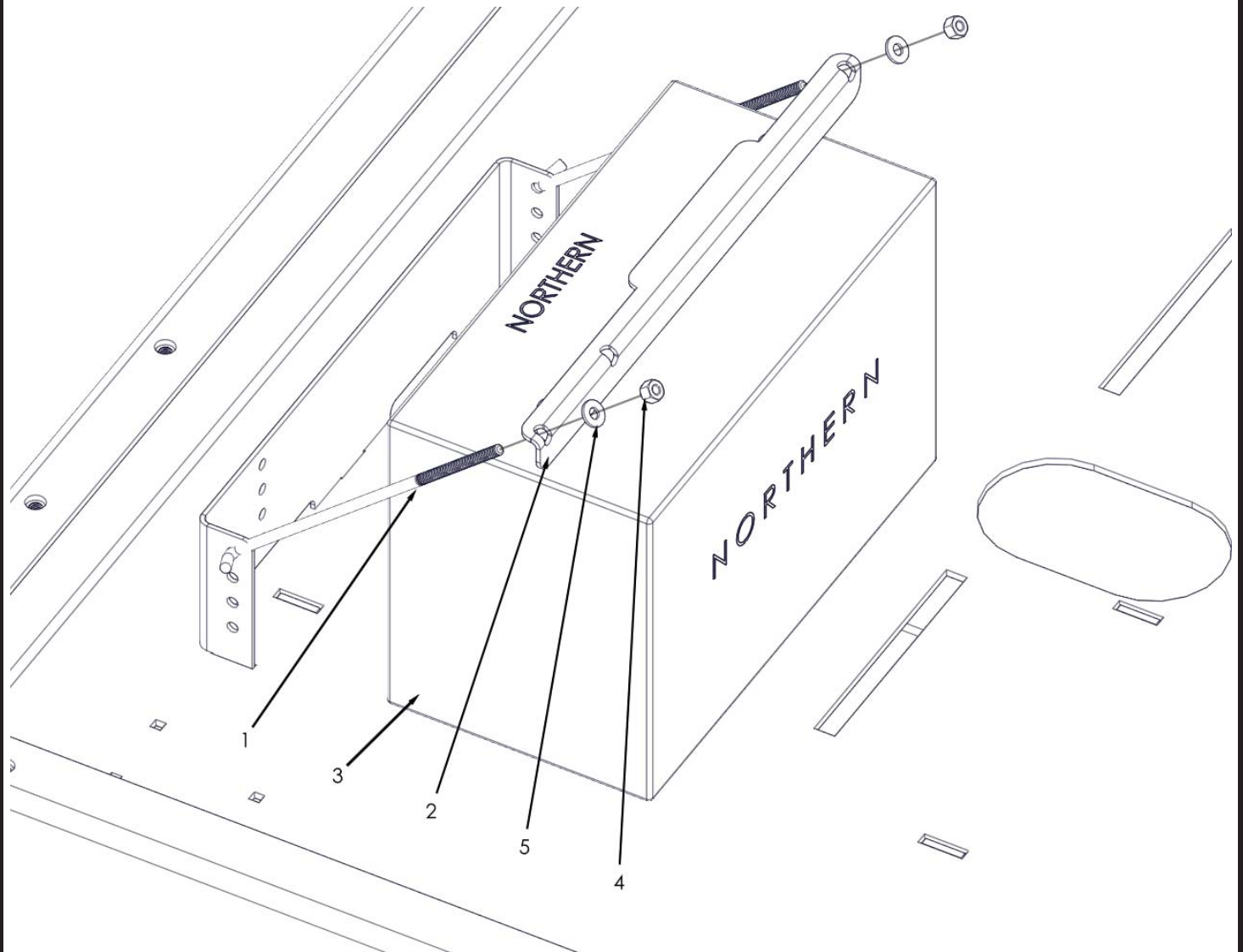
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Footnotes:

Notes:

Battery

PP4500 Tier 4



Battery

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	913-0045	J-BOLT, 1/4-20 x 9.0	2	
2	913-7057	BRACKET, BATTERY	1	
3	913-7303	BATTERY	1	
4	04TLN	NUT, 1/4-20 TOP LOCK	2	
5	04FW-SAE	WASHER, 1/4"	2	

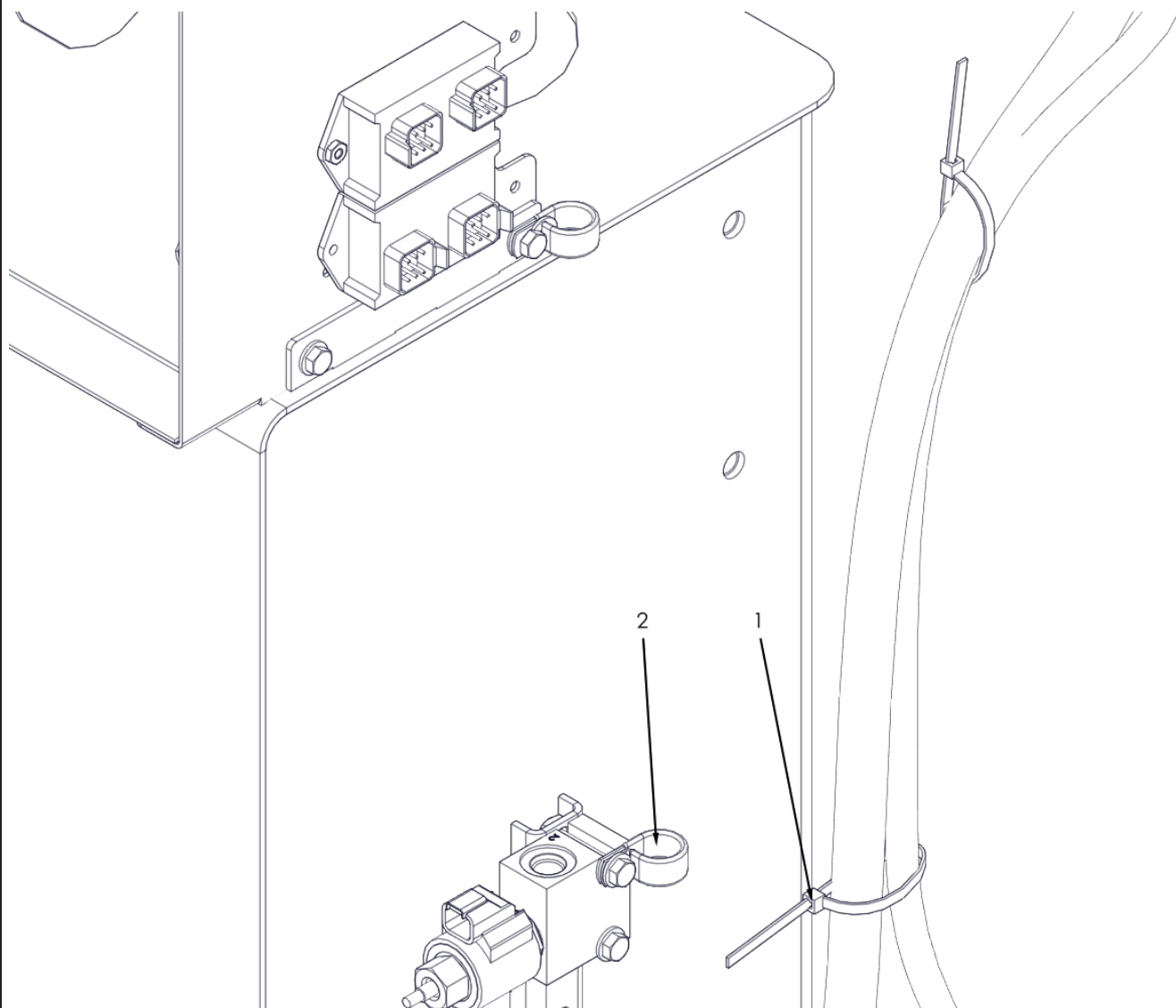
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Footnotes:

Notes:

Clamps/Zip Ties

PP4500 Tier 4



Clamps/Zip Ties

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	912-1039	TIE STRAP, NYLON	2	
2	933-4005	CLAMP, 3/4" VINYL	2	

Not Shown:

912-3621 CLAMP, 2"

1 ATTACHED TO 933-0303

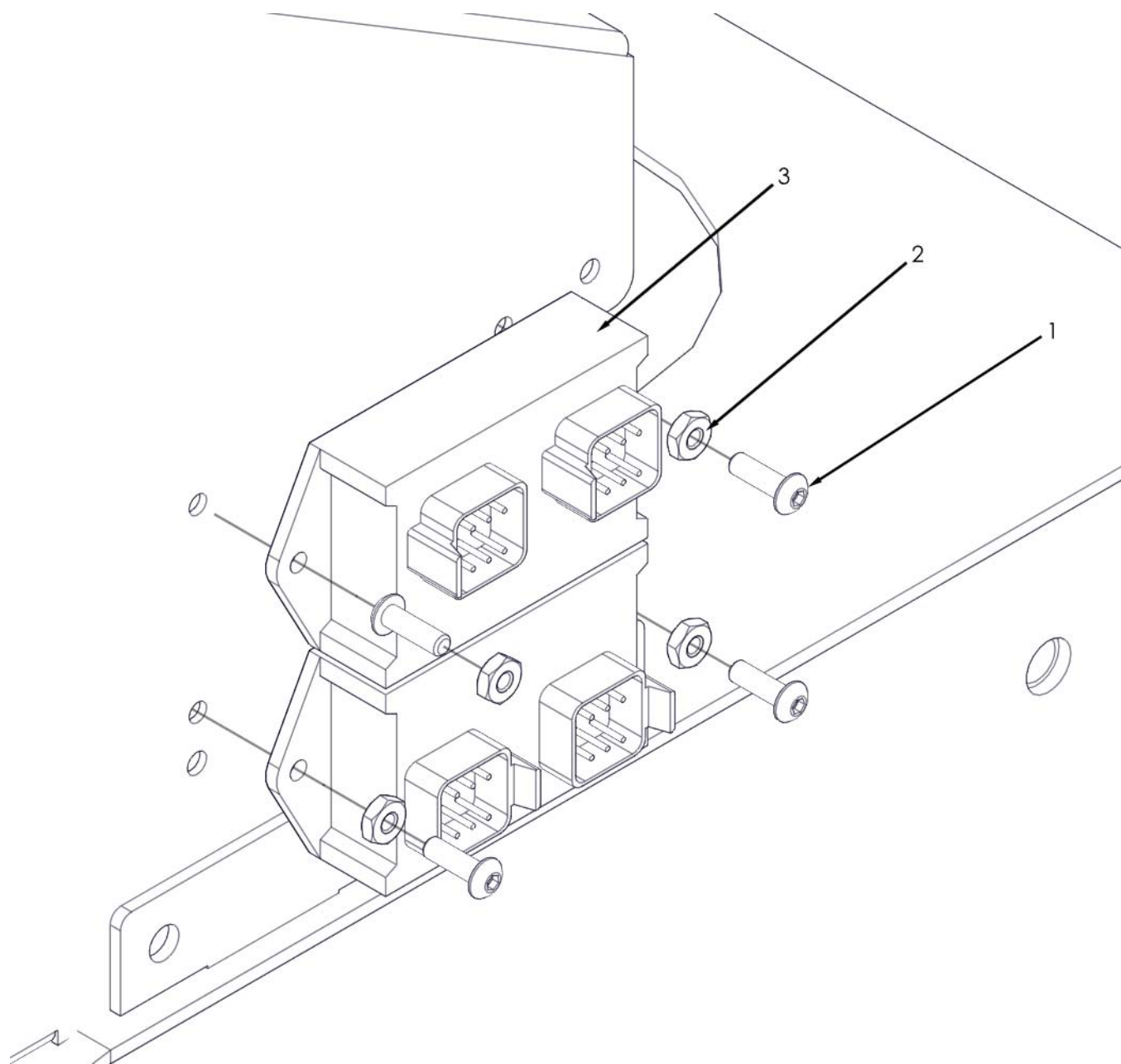
Footnotes:

Notes:

933-4005 & 912-3621 USED TO ROUTE WIRE HARNESS.

Dual Relay Mount

PP4500 Tier 4



Dual Relay Mount

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	#10BH10	SCREW, #10-24x0.625 BHSC	4	
2	#10TLN	NUT, #10-24 TOP LOCK	4	
3	912-3610	MODULE, DUAL RELAY	2	

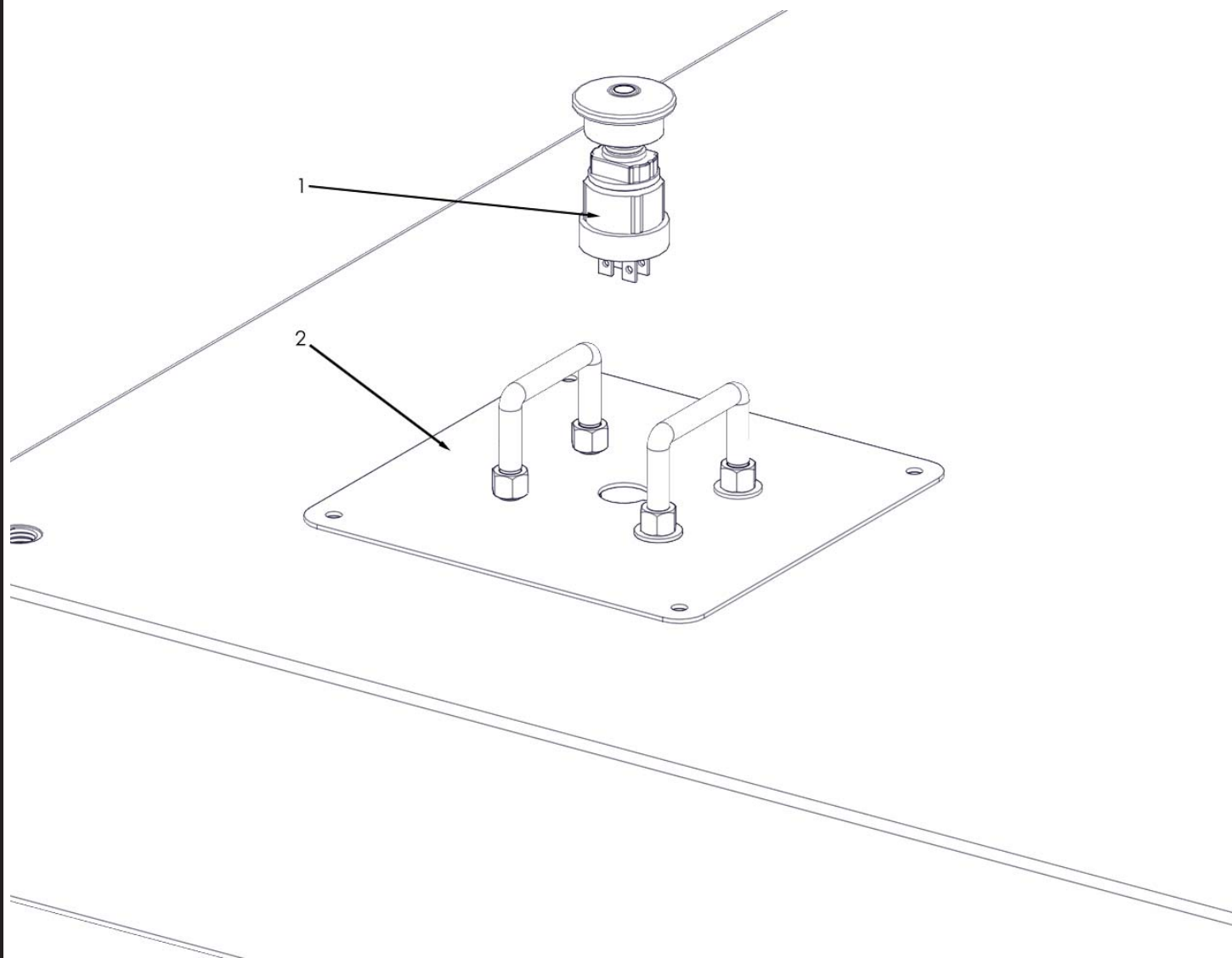
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Footnotes:

Notes:

Emergency Stop

PP4500 Tier 4



Emergency Stop

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	912-3608	SWITCH, EMERGENCY STOP	1	
2	933-5629	PANEL, FILTER ACCESS	1	

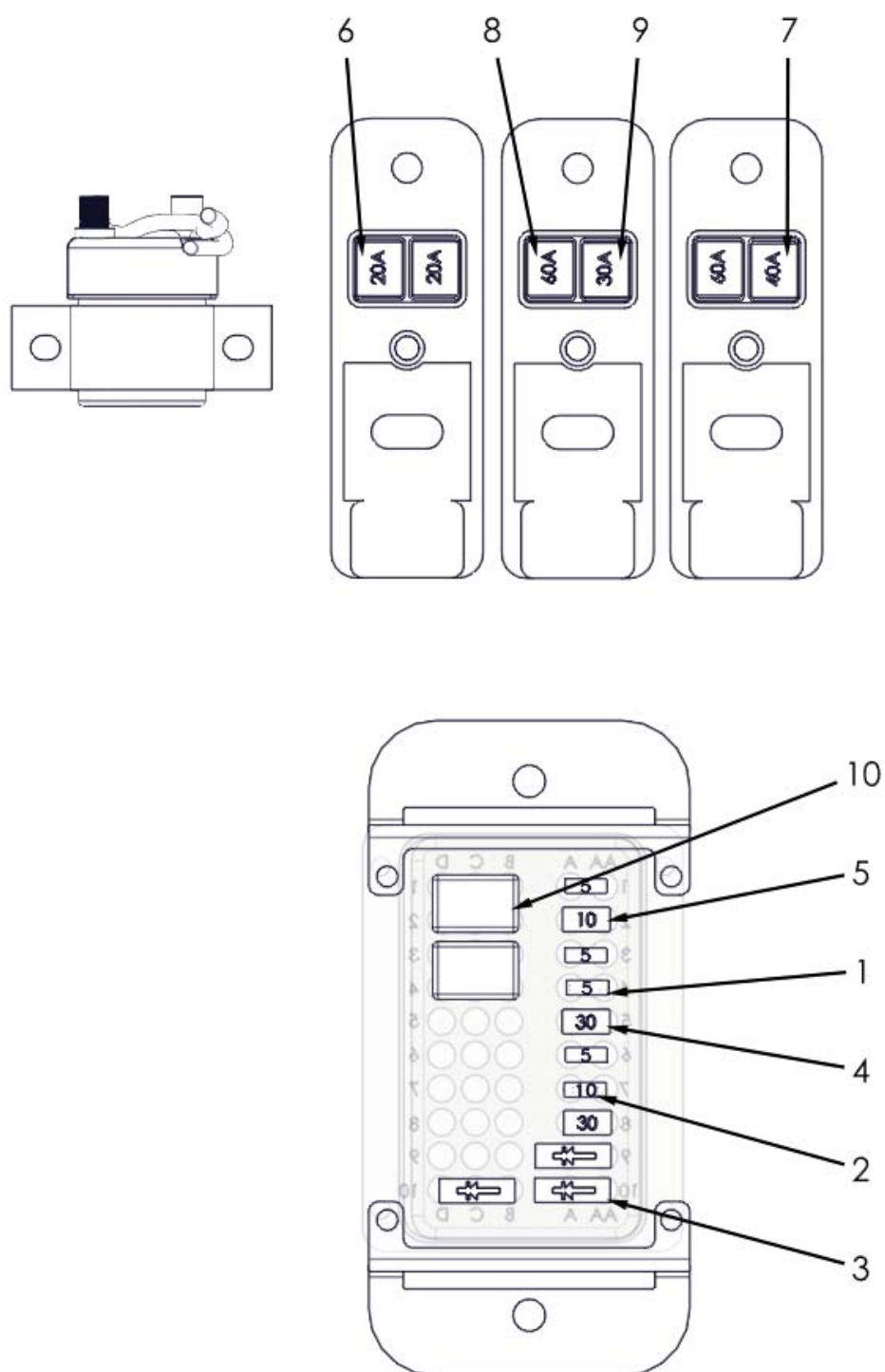
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Footnotes:

Notes:

PP4500 Tier 4

PP4500 Tier 4



Fuses

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-5040	FUSE 5 AMP, LED	4	
2	933-5041	FUSE 10 AMP, LED	1	
3	933-5042	FUSE, DIODE, 3AMP	3	
4	933-5043	CIRCUIT BREAKER, TYPE III, 30A	2	
5	933-5044	CIRCUIT BREAKER, TYPE III, 10A	1	
6	933-5045	FUSE, JCASE, 20A	2	
7	933-5046	FUSE, JCASE, 40A	1	
8	933-5047	FUSE, JCASE, 60A	2	
9	933-5048	FUSE, JCASE, 30A	1	
10	941-7664	RELAY, 12V, 35A	2	

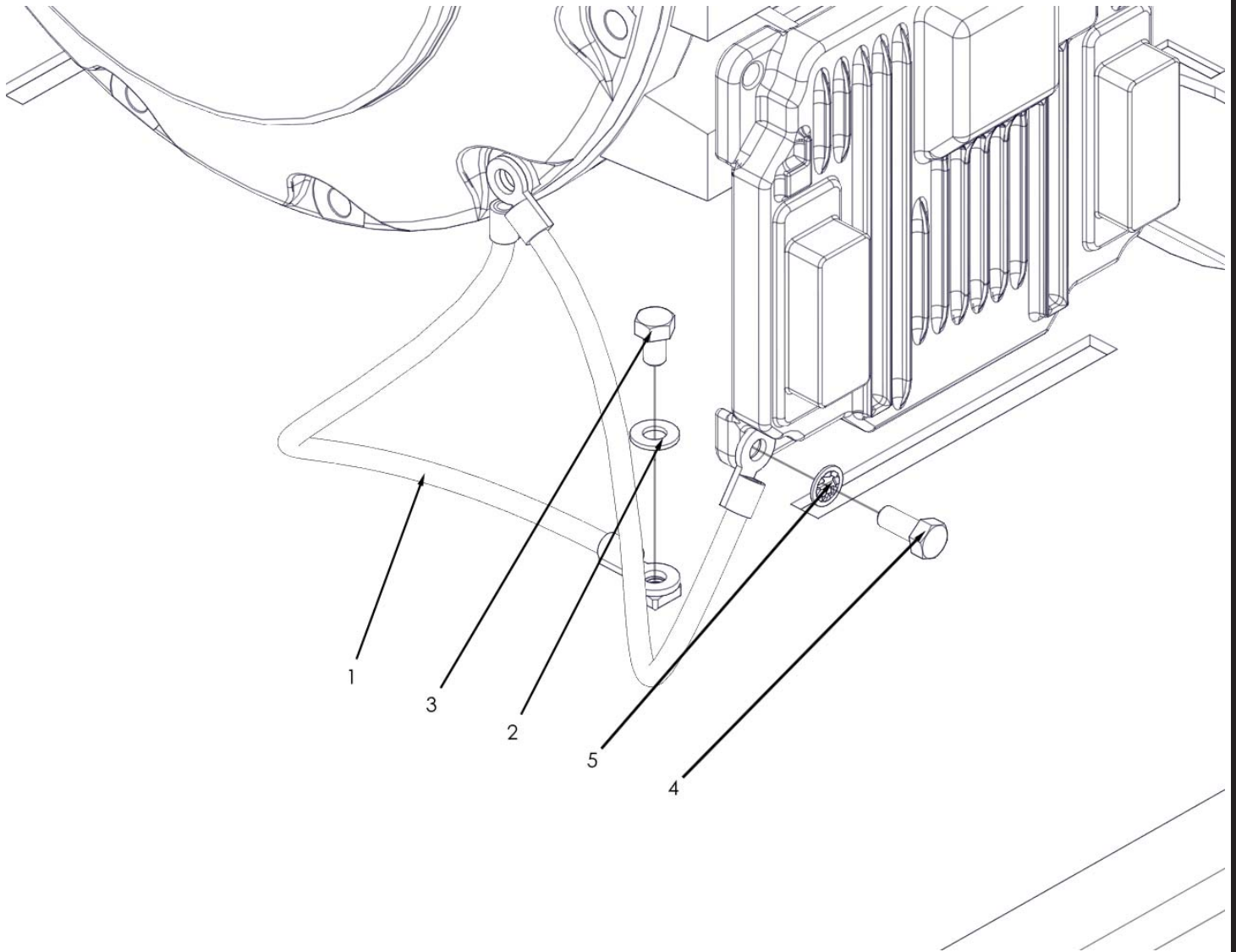
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Footnotes:

Notes:

Ground Straps

PP4500 Tier 4



Ground Straps

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	933-0341	GROUND STRAP, 12"	2	
2	05FW-SAE	WASHER, 5/16"	1	
3	05HH08	SCREW, 5/16-18 x .50 HHC - GR8	1	
4	05HH12	SCREW, 5/16-18 x .75 HHC - GR8	1	
5	05ITLW	WASHER, 5/16" ITLW	1	

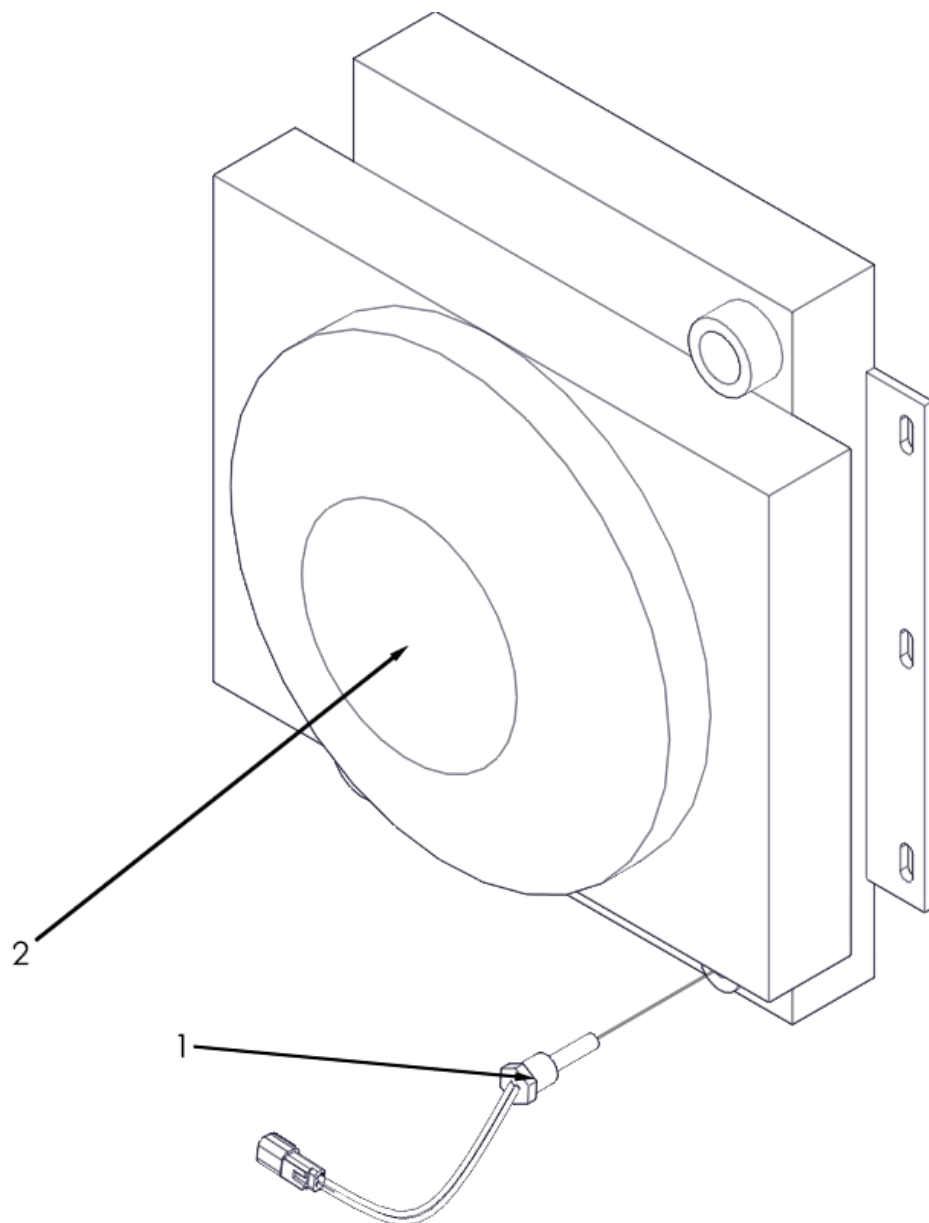
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Footnotes:

Notes:

Oil Cooler Temperature Switch

PP4500 Tier 4



Oil Cooler Temperature Switch

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	912-5085	SWITCH, TEMPERATURE 140°	1	
2	933-3049	OIL COOLER, ELD 4	1	

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Footnotes:

Notes:

PP4500 Tier 4



Relay & Glow Plugs

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	04CB10	BOLT, 1/4-20 x .625 CARRIAGE	2	
2	04CB12	BOLT, 1/4-20 x .75 CARRIAGE	2	
3	04CB32	BOLT, 1/4-20 x 2 CARRIAGE	3	
4	933-0433	BRACKET, FUSE PANEL	2	
5	933-0485	CAP NUT, M8-1.25, NYLON	3	
6	933-6107	DECAL, FUSE PP4500T4	1	
7	933-6115	DECAL, RELAY BLOCK	1	
8	933-0449	GLOW PLUG RELAY	1	
9	941-7584	MINI FUSE PANEL	1	
10	04TLN	NUT, 1/4-20 TOP LOCK	7	
11	941-7587	POWER RELAY MODULE, 70A	3	
12	#10BH04F	SCREW, #10-32x0.25 BHSC	4	
13	04FW-SAE	WASHER, 1/4"	7	

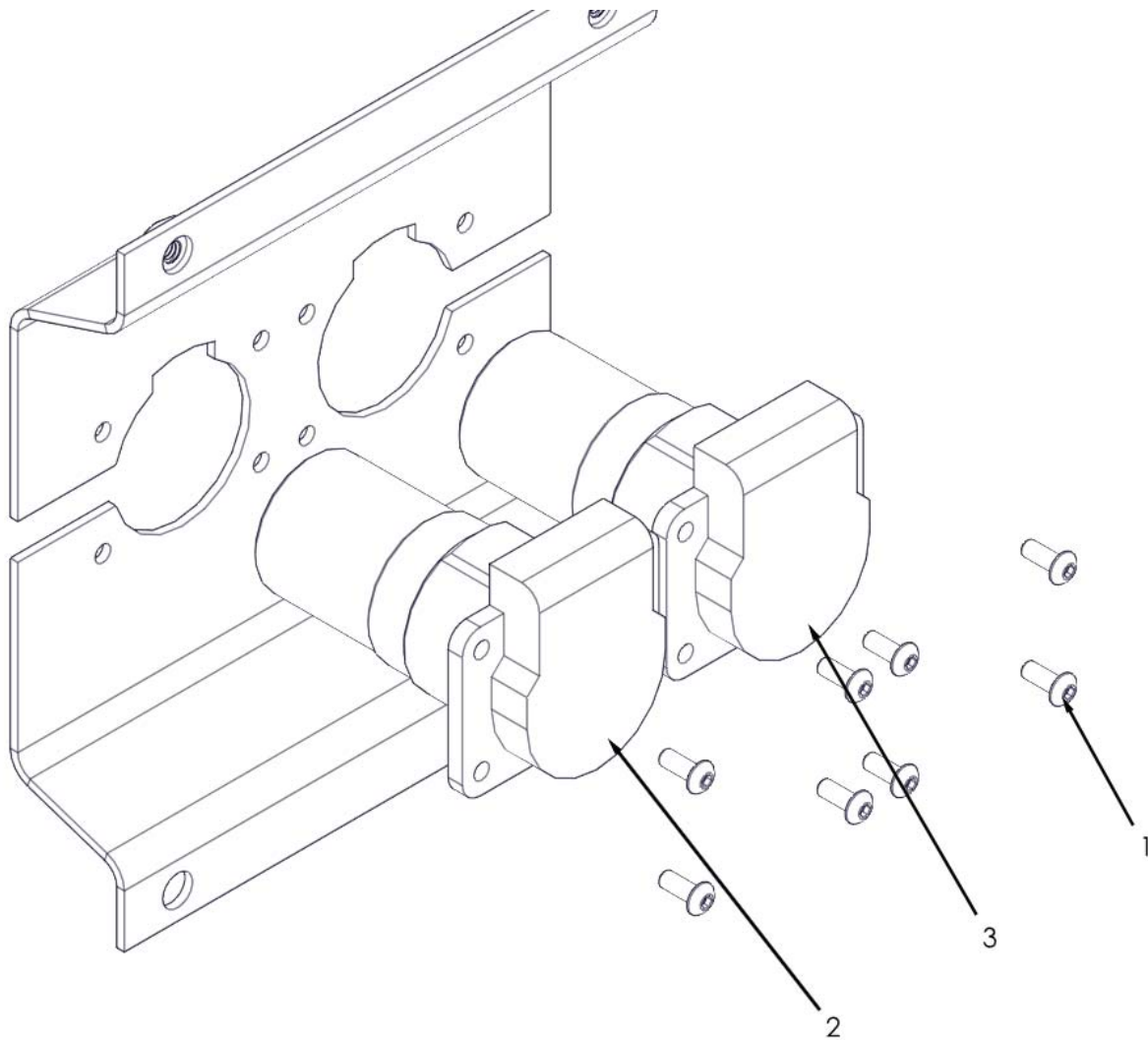
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Footnotes:

Notes:

RV Panel

PP4500 Tier 4



RV Panel

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	#10BH08	SCREW, #10-24x0.5 BHSC	8	
2	933-5005	SOCKET, RV 7-WAY	1	
3	933-5027	SOCKET, RV 9-WAY	1	

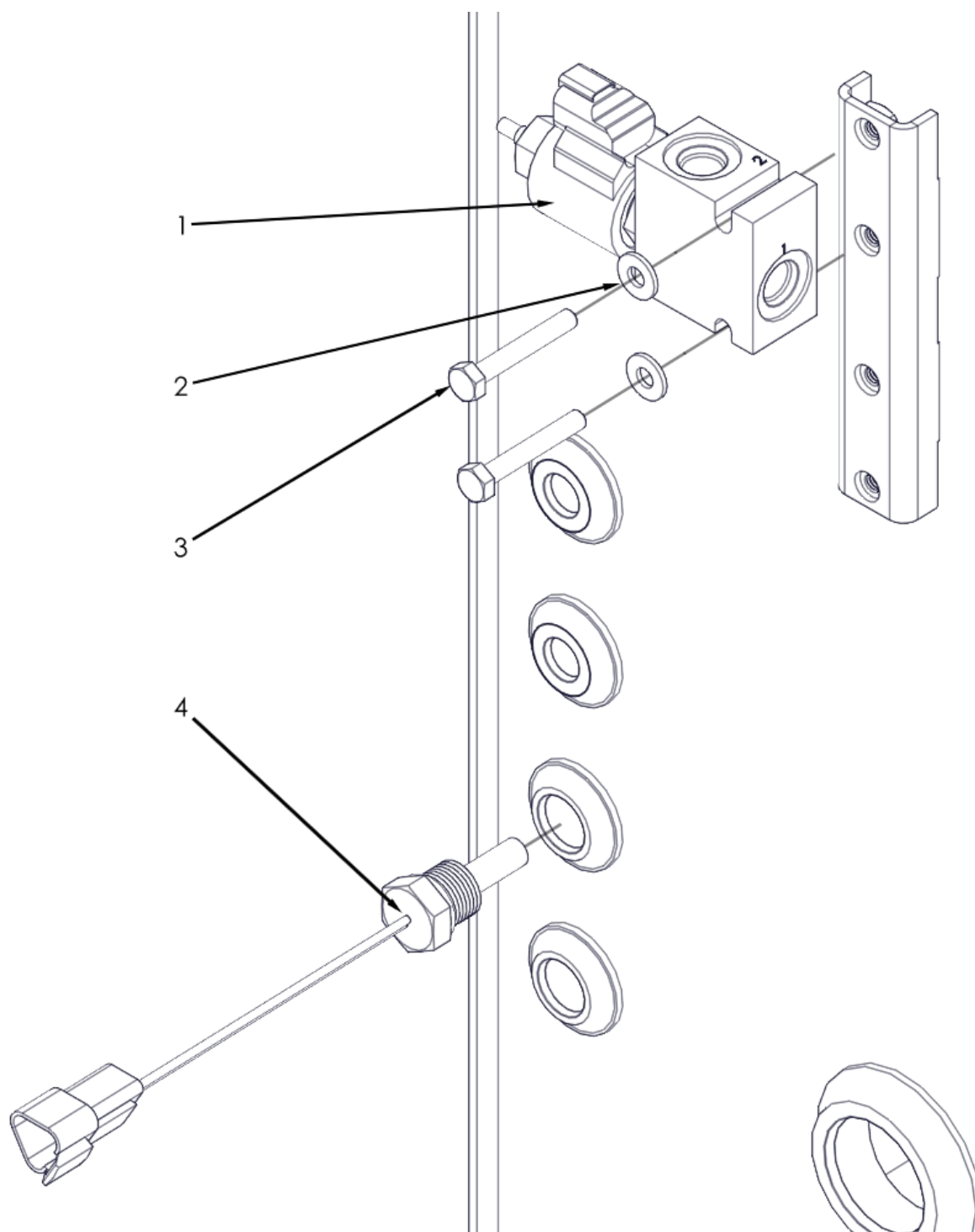
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Footnotes:

Notes:

Soft Start/Temperature Switch

PP4500 Tier 4



Soft Start/Temperature Switch

PP4500 Tier 4

Bom ID	Part No	Description	Qty	Remarks
1	913-7037	VALVE POPPET	1	
2	04FW-SAE	WASHER, 1/4"	2	
3	04HH28	SCREW, 1/4-20 x 1.75 HHC - GR8	2	
4	912-3606	TEMP SWITCH	1	

Not Shown:

Footnotes:

Notes:

Notes

[illegible]

MISCELLANEOUS

SAE Bolt and Nut Torque Value Chart

Grade 5: UNC or UNF Thread

Size	Hex nut, or bolt tapped into hex nut, or d&t hole		Hex top deformed locknut		Flange nut, locknut, or bolt tapped into flange nut or d&t hole	
	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m
1/4	12	16	8	11	20	27
5/16	25	34	15	20	45	60
3/8	40	54	25	34	75	100
7/16	65	90	40	55	125	170
1/2	100	135	60	80	190	260
9/16	150	200	90	125	270	370
5/8	200	270	120	165	370	500
3/4	350	475	210	285	650	880
7/8	560	760	340	460	1250	1425
1	840	1140	500	680	1580	2145
1-1/8	1030	1400	620	840	1950	3645
1-1/4	1460	1980	880	1195	2760	3475

Grade 8: UNC or UNF Thread

Size	Hex nut, or bolt tapped into hex nut, or d&t hole		Hex top deformed locknut		Flange nut, locknut, or bolt tapped into flange nut or d&t hole	
	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m
1/4	14	19	10	14	24	33
5/16	30	40	18	25	50	70
3/8	55	73	35	50	90	125
7/16	85	115	50	70	140	190
1/2	130	175	80	110	220	300
9/16	190	260	110	150	310	420
5/8	260	355	160	245	430	585
3/4	450	610	270	365	750	1015
7/8	730	990	440	600	1210	1640
1	1090	1480	650	880	1320	2465
1-1/8	1550	2100	930	1260	2580	3500
1-1/4	2180	2955	1310	1780	3640	4935

Metric Bolt and Cap Screw Torque Values

Size	Class 4.8				Class 8.8 and 9.8				Class 10.9				Class 12.9			
	Lubricated		Dry		Lubricated		Dry		Lubricated		Dry		Lubricated		Dry	
	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	225	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1600	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

Do not use these values if a different torque value or tightening procedure is given for specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class fasteners.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to strength of original.

Make sure fastener threads are clean and that the threads are properly started. This will prevent them from cross threading or galling when tightened.

Tighten plastic insert or crimped type steel locknuts to approximately 50% of dry torque indicated on chart. Apply torque to the nut – not the bolt head. Tighten toothed or serrated type locknuts to full torque value.

LUBRICATED means coated with lubricant. DRY means plain or zinc plated without any type of lubricant.

Torque Standards Hydraulic Fittings

O-Ring Boss Fittings

						ASSEMBLY TORQUE (+10% -0)							
DASH SIZE	NOMINAL SIZE (IN)	SAE SIZE	FEMALE THREAD	MALE THREAD	O-RING	O-RING BOSS		O-RING BOSS		HOLLOW HEX		HEX HEAD	
						NON-ADJUSTABLE		ADJUSTABLE		PLUGS			
			I.D. (IN)	O.D. (IN)	I.D. (IN)	ft-lbs (in-lbs)	N-m	ft-lbs (in-lbs)	N-m	ft-lbs (in-lbs)	N-m	ft-lbs (in-lbs)	N-m
-2	1/8	5/16-24	17/64	5/16	17/64	-	-	-	-	(30)	4	(85)	10
-3	3/16	3/8-24	21/64	3/8	21/64	-	-	-	-	(55)	6	(155)	18
-4	1/4	7/16-20	25/64	7/16	25/64	26	35	(180)	20	(120)	14	22	29
-5	5/16	1/2-20	29/64	1/2	29/64	30	40	30	40	(170)	19	23	32
-6	3/8	9/16-18	1/2	9/16	1/2	35	46	35	46	34	46	29	40
-8	1/2	3/4-16	11/16	3/4	11/16	60	80	60	80	60	80	52	70
-10	5/8	7/8-14	13/16	7/8	13/16	100	135	100	135	100	135	85	115
-12	3/4	1-1/16-12	31/32	1-1/16	31/32	135	185	135	185	135	185	135	183
-14	7/8	1-3/16-12	1-7/64	1-3/16	1-7/64	175	235	175	235	175	235	175	237
-16	1	1-5/16-12	1-15/64	1-5/16	1-15/64	200	270	200	270	200	270	200	271
-20	1-1/4	1-5/8-12	1-35/64	1-5/8	1-35/64	250	340	250	340	250	340	250	339
-24	1-1/2	1-7/8-12	1-51/64	1-7/8	1-51/64	305	415	305	415	305	415	305	414
-32	2	2-1/2-12	2-27/64	2-1/2	2-27/64	375	510	375	510	375	510	375	509

O-Ring Face Seal Fittings

DASH SIZE	NOMINAL SIZE (IN)	THREAD SIZE	FEMALE THREAD	MALE THREAD	ASSEMBLY TORQUE (+10% -0) (PRIMARY METHOD)		FLATS FROM WRENCH RESISTANCE (FFWR) (SECONDARY METHOD)		O-RING
					ft-lb	N-m	TUBE NUTS	SWIVEL & HOSE	
			I.D. (IN)	O.D. (IN)					I.D. (IN)
-4	1/4	9/16-18	1/2	9/16	18	25	1/2	3/4	5/16
-6	3/8	11/16-16	11/16	11/16	30	40	1/2	3/4	3/8
-8	1/2	13/16-16	3/4	13/16	40	55	1/2	3/4	1/2
-10	5/8	1-14	13/16	1	60	80	1/2	3/4	5/8
-12	3/4	1-3/16-12	1-7/64	1-3/16	85	115	1/2	1/2	3/4
-16	1	1-7/16-12	1-23/64	1-7/16	110	150	1/2	1/2	15/16
-20	1-1/4	1-11/16-12	1-19/32	1-11/16	150	205	1/2	1/2	1-3/16
-24	1-1/2	2-12	1-59/64	2	230	315	1/2	1/2	1-1/2

Ensure the threads and sealing surfaces are free from nicks, burrs, scratches or any foreign material. Lubricate the o-ring with a light coat of oil. To tighten adjustable o-ring fittings, hold the fitting and tighten the nut. To tighten non-adjustable o-ring fittings, tighten the fitting. When tightening together fittings with dissimilar coatings, torque to 115% of maximum recommended torque value for a given size.



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