



Factory Five Racing, Inc.

Hot Rod

Assembly manual revision 2H update

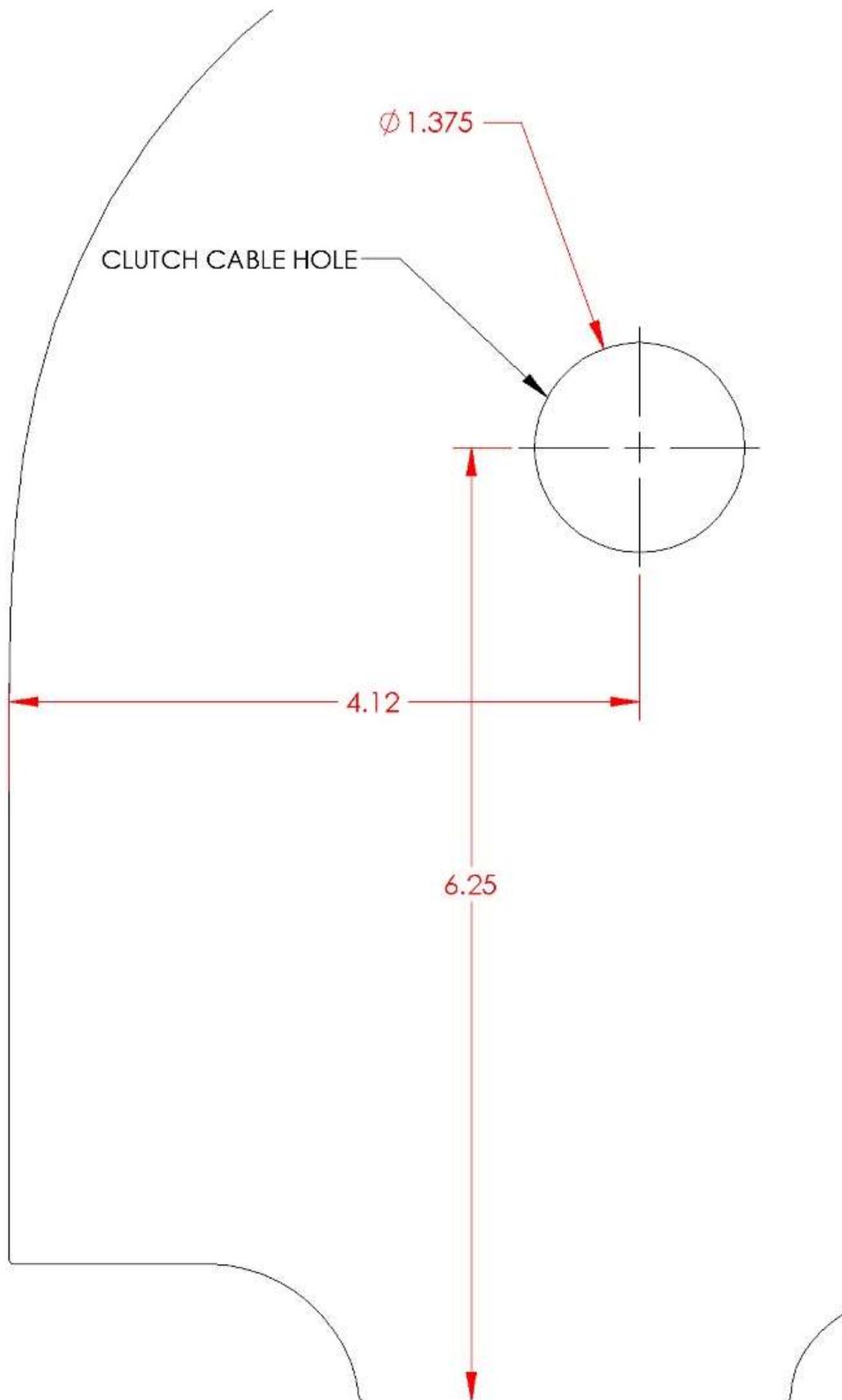
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Optional Clutch cable hole

- ✂ 1.375” hole saw, drill, ³/₁₆” drill bit, silicone
- 🚗 Manual Transmission components
- 👤 For use with optional manual transmission components.

If you are building a manual transmission car, lay the following template face down on the front surface of the firewall.



Drill the center mark with a $\frac{3}{16}$ " drill bit
Drill the firewall for the clutch cable.

Exhaust

- ✎ The exhaust has been designed and built with ball flanges to allow for the most adjustment. Some of the pictures show the older non ball flange pieces.



- ✎ The stock exhaust is designed to exit through the body in front of the rear wheels using the aluminum with the cutout. The end of the pipe can be cut to the angle desired.



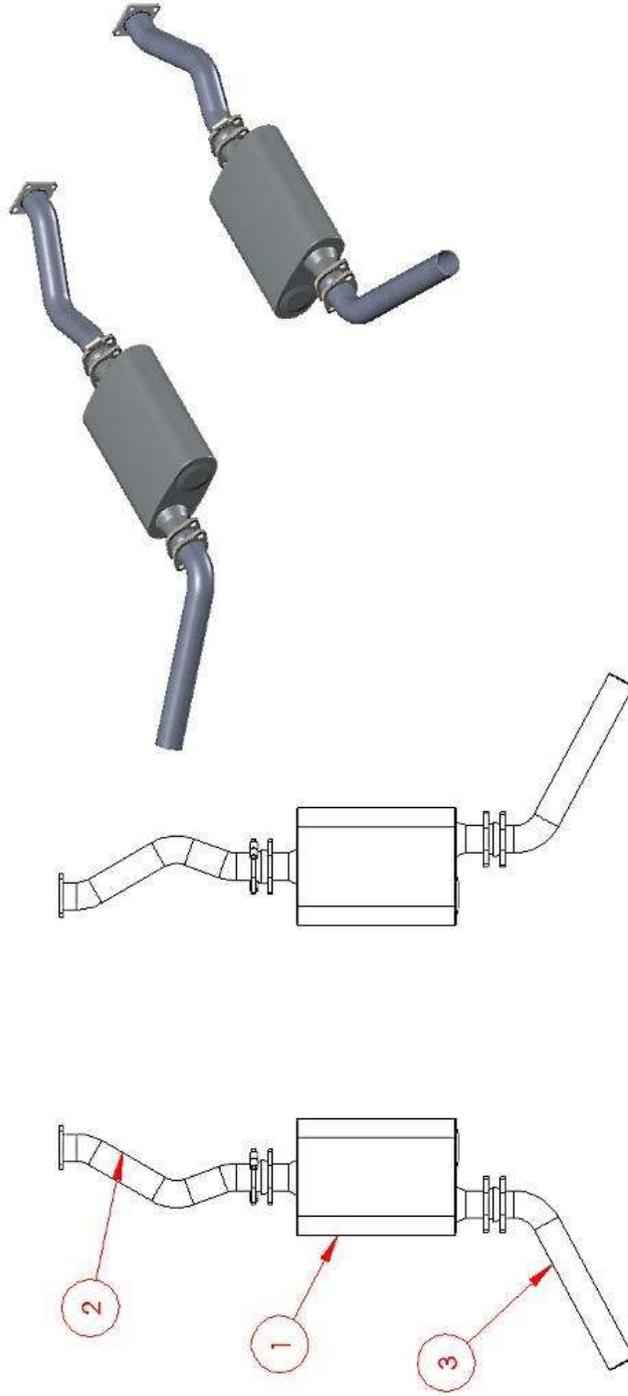
👉 The optional rear exit exhaust runs the exhaust back under the tail lights.

SHORTY PIPES AND MUFFLERS

👉 If doing the rear exit exhaust use this section for the muffler and forward exhaust pipes only.

ITEM NO.	PART NUMBER	DESCRIPTION	With side exhaust/Qty.
1	33971	CHAMBERED MUFFLER	2
2	34063	FRONT EXHAUST PIPE	2
3	34065	EXHAUST EXIT BEND	2

REV.	REVISION DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	7/23/15	
B	TUBE DIA./BALL CHG FRM 2.5" SPLIT FLG, ADD 12/7/15		

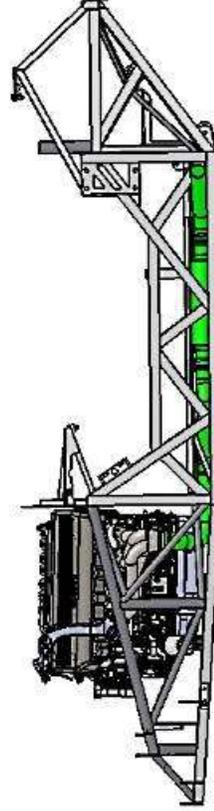
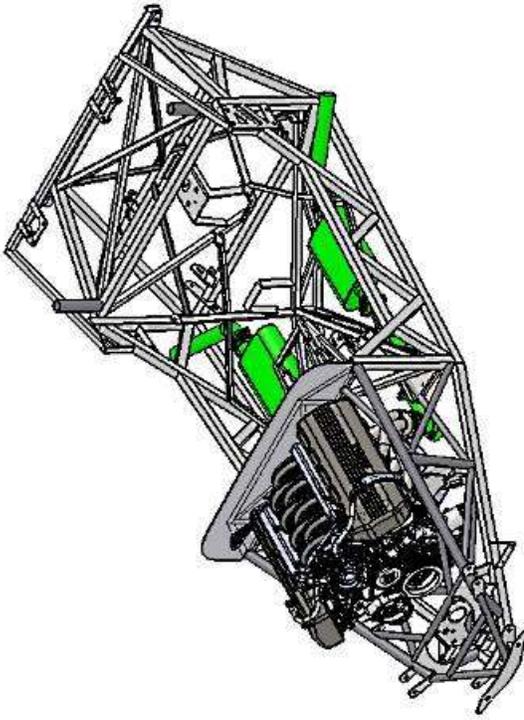
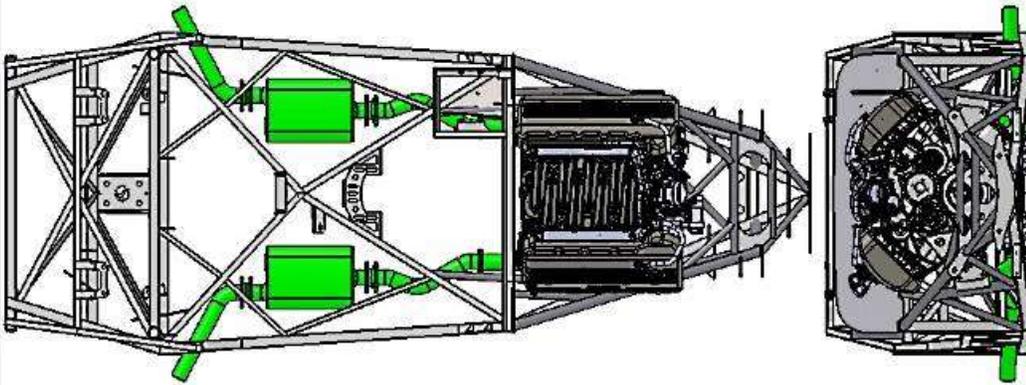


UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		J1	7/22/15
TOLERANCES:			
TWO PLACE DECIMAL ±.001			
THREE PLACE DECIMAL ±.0005			
FOUR PLACE DECIMAL ±.0001			
MATERIAL			
304 STAINLESS STEEL			
FINISH			
POLISHED			
USED ON			
APPLICATION		PRINTED	2/29/2016
HOT ROD			

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<p>Factory Five Racing, Inc.</p>	
<p>TITLE: SIDE EXIT EXHAUST COMPONENTS</p>	
SIZE	DWG. NO.
A	34066
REV	
B	
SCALE: 1:12	WEIGHT:
	SHEET 1 OF 2

REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	7/23/15	
B	TUBE DIA./BALL CHG. FRM 2.5". SPLIT FLG. ADD12/7/15.		



UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES			12/19/04
TOLERANCES		DRAWN	COMMENTS
TWO PLACE DECIMAL ±0.01			
THREE PLACE DECIMAL ±0.005			
FOUR PLACE DECIMAL ±0.001			
MATERIAL		TITLE:	
STEEL		'33 HOT ROD kit	
FINISH		SIZE	DWG. NO.
USED ON		A	34066
APPLICATION		SCALE: 1:26	WEIGHT:
		PRINTED	2/29/2016
		SHEET 2 OF 2	



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Attach the shorty pipe to the shorty header coming off of the engine. Do not fully tighten this ball and socket joint yet.

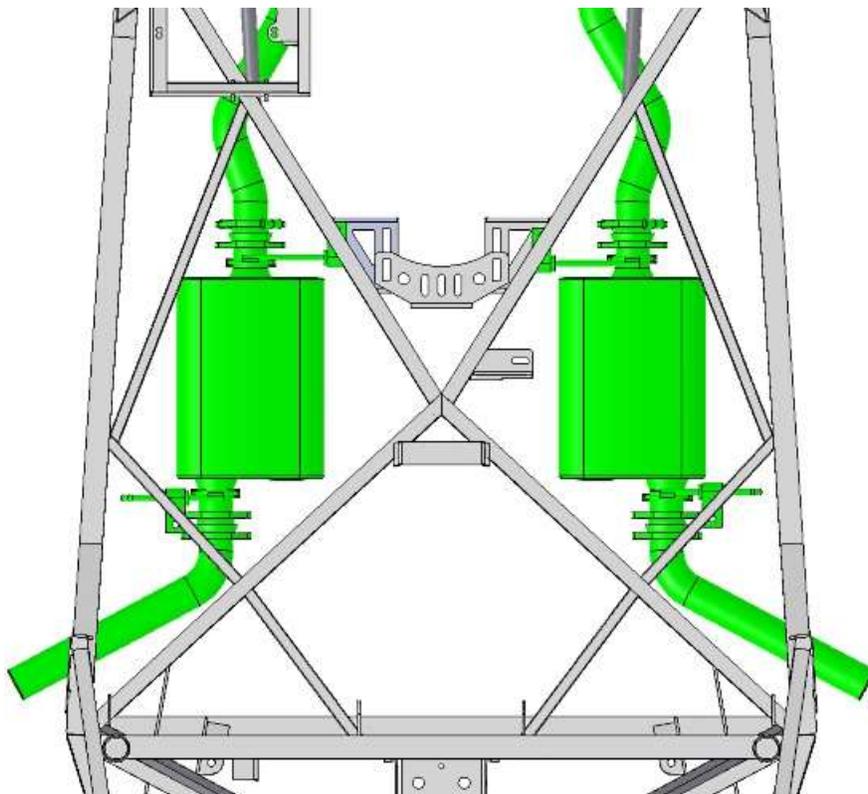


Pass the front exhaust assembly through the frame from the front so that the flange is at the front and will match up with the shorty pipe

Bolt one of the ball flanges together around the front pipe ball.



Attach the front exhaust pipe assembly to the shorty pipe with the supplied $\frac{3}{8}$ " hardware. Make sure to install the supplied gasket (FFR# 33369) between the two square flanges.



Loosely install the exhaust clamp and mount onto the muffler. The inlet to the muffler is in the center and outlet is offset to the outside of the car. The nuts on the exhaust clamps are oriented downwards with the u-bolt at the top. Place the front exhaust mount towards the center of the car and the rear one towards the outside of the car so that the mounts can attach to the small tubes.

Clamp the exhaust mounts to the frame to hold the assembly in place.

Attach the tip section of the tail pipe to the muffler.



The mount tabs for the exhaust mounts have the ability to slide on the rubber bushing. Position the mount tabs so that they overhang the frame rails. Mark the location of the frame on the mount tab so that you can bend it up at a 90° angle to mount to the frame so that the bolt holding it to the frame is in shear if possible.



Remove the exhaust mounts and clamp them into a vise. Using a hammer, bend the tab over to a 90° angle.

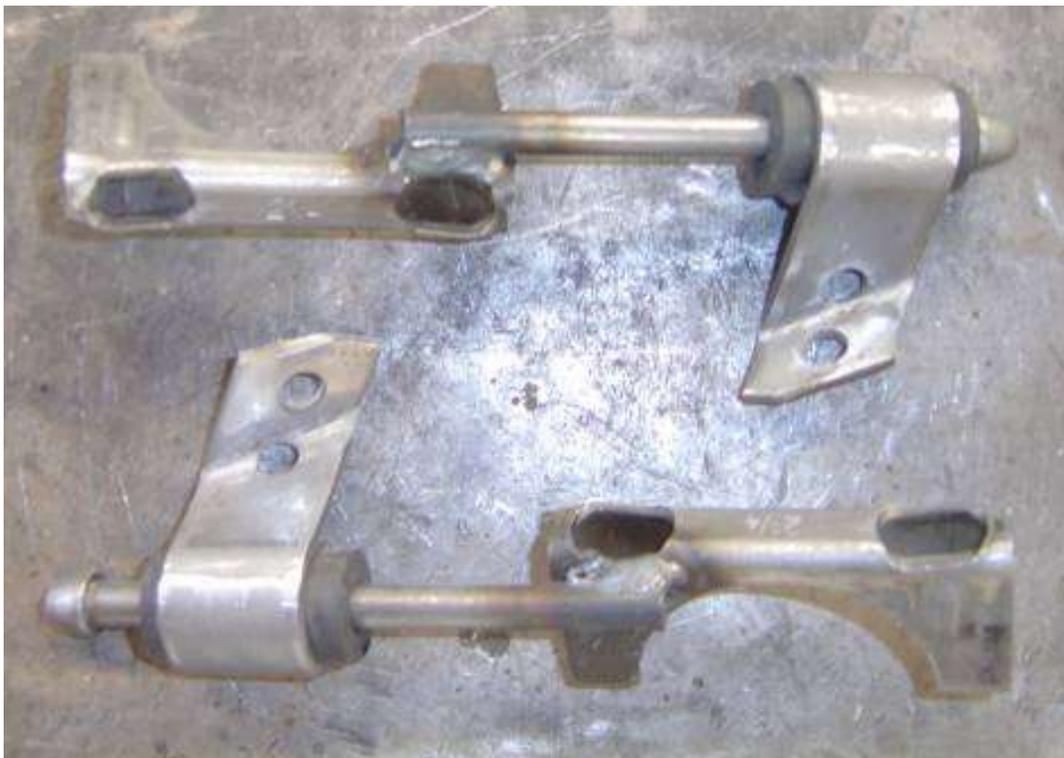


Re-install the exhaust brackets on the frame and mark the locations for the mount holes on the frame.



Also mark the location of the brackets that protrude past the surface of the frame where the aluminum floor sits.

👉 Old exhaust clamp mounts shown



Grind the corners of the brackets which protrude past the surface of the floor.



Remove the exhaust mounts and drill the frame where you just marked with a $\frac{3}{8}$ " drill bit.

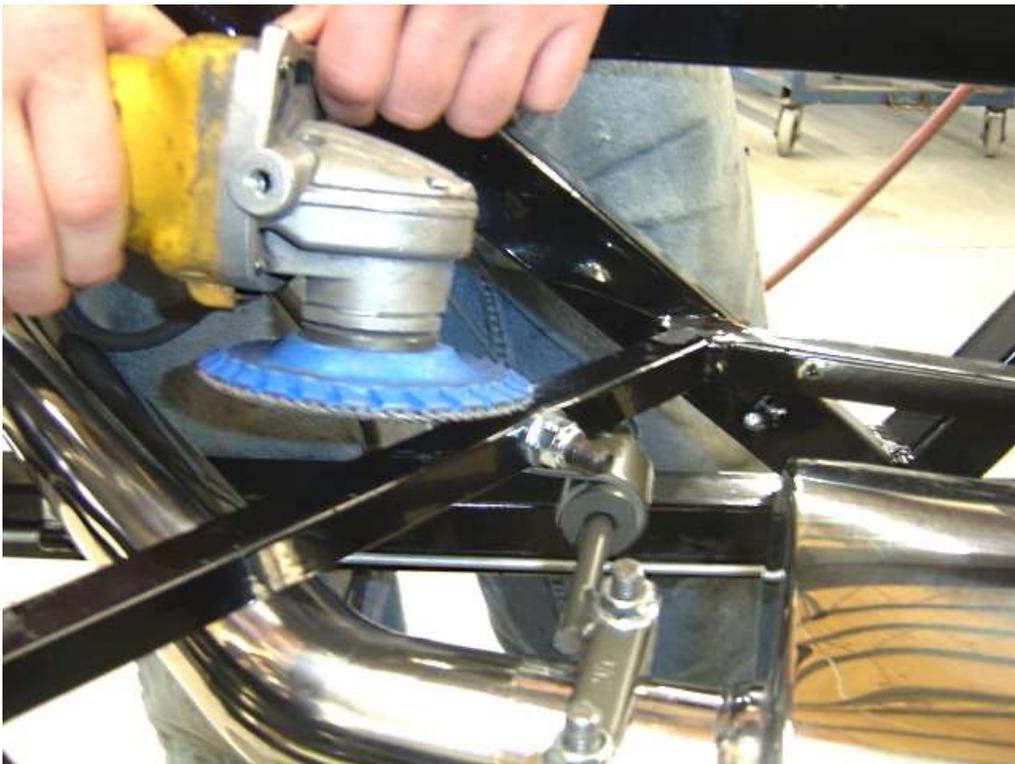


Re-install the brackets and attach them to the frame with the $\frac{3}{8}$ " hardware provided.

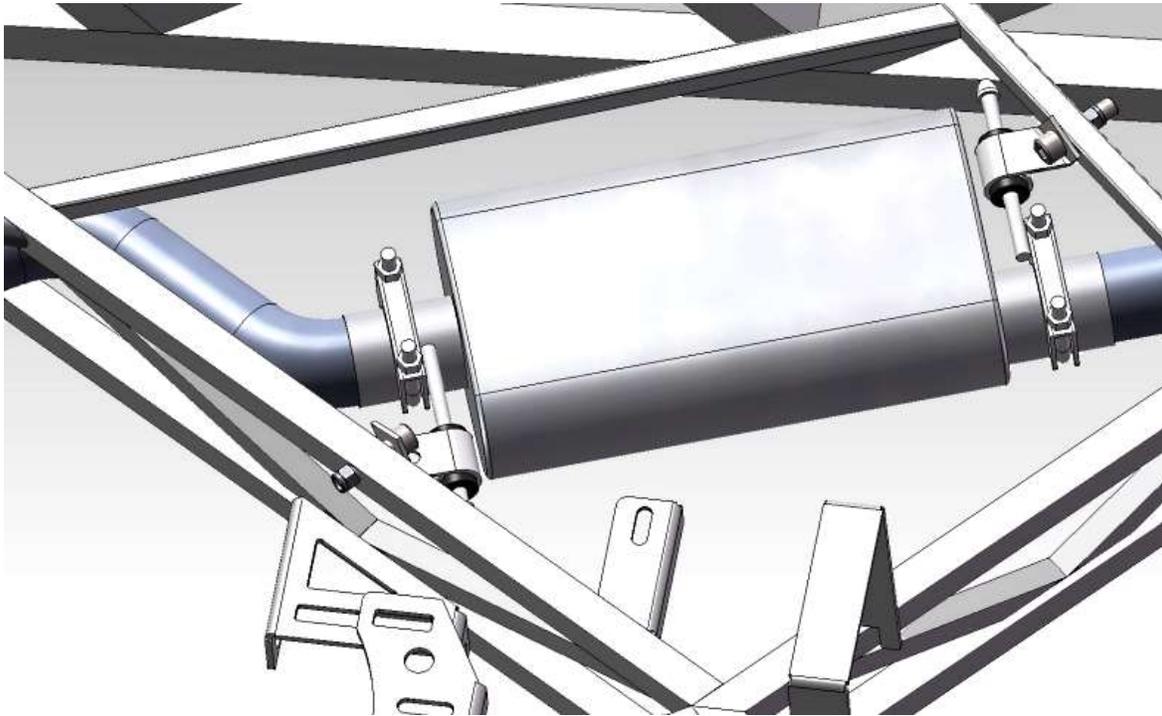


Once you are happy with the placement of all the exhaust components, tighten all of the fasteners holding the exhaust in place.

Check all of the connections including the ball and socket joint for sealing and clearance. If the shorty pipe is angled so that the socket joint hits the header flange, remove material from the edge of the pressed socket.



Check to make sure none of the bracket or hardware is above the top surface of the frame rails. If need be, grind anything that is sticking past this leading edge where the aluminum floor must sit.

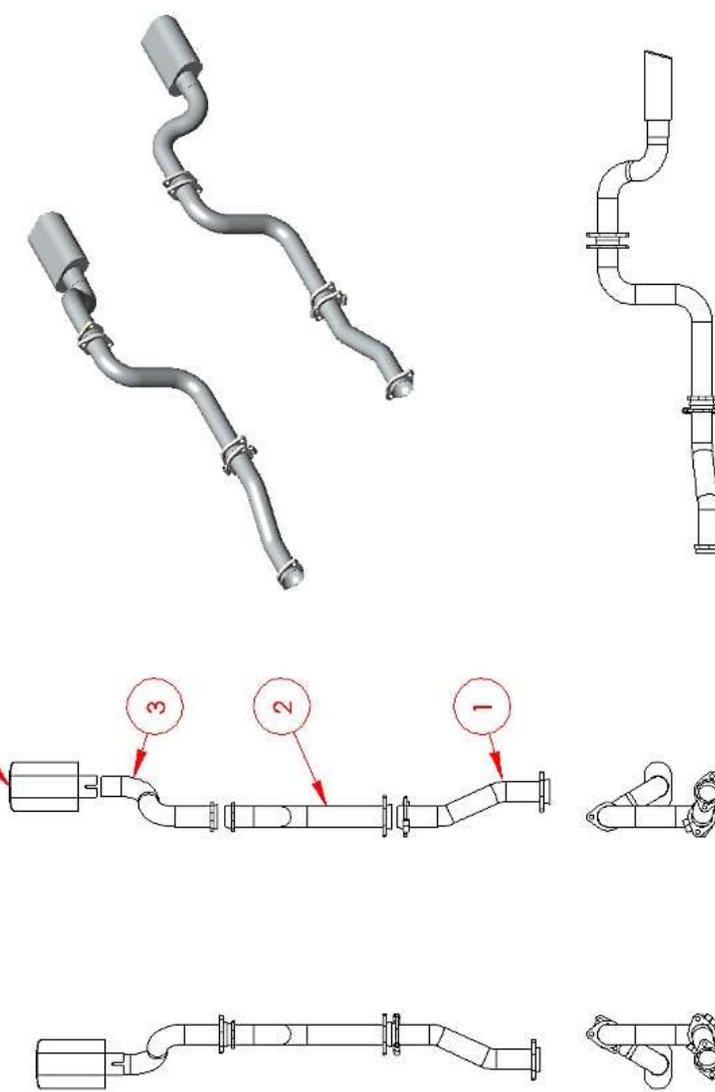


REAR EXIT EXHAUST

- ✂ $\frac{1}{2}$ " $\frac{9}{16}$ " socket, Ratchet, Drill, $\frac{5}{16}$ " drill bit, $\frac{3}{16}$ " hex key, (2) clamps, Marker, hack saw or razor knife
- ✎ This exhaust is designed to mount the exhaust tips below the tail lights so the top of the tips are 1.50" below the aluminum trunk floor.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	3-4068	FRONT REAR EXIT EXHAUST TUBE	2
2	3-4069	MIDDLE REAR EXIT EXHAUST TUBE	2
3	3-4070	BACK REAR EXIT EXHAUST TUBE	2
4	3-4071	EXHAUST TIP	2

REV.	REVISION DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	7/23/15	
B	TUBE DIA. / BALL CHG. FRM 2.5" SPLIT FLG. ADD 12/7/15		



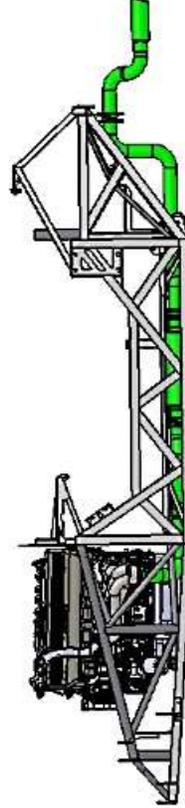
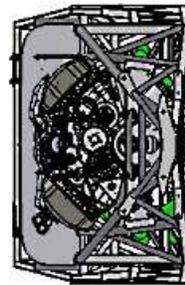
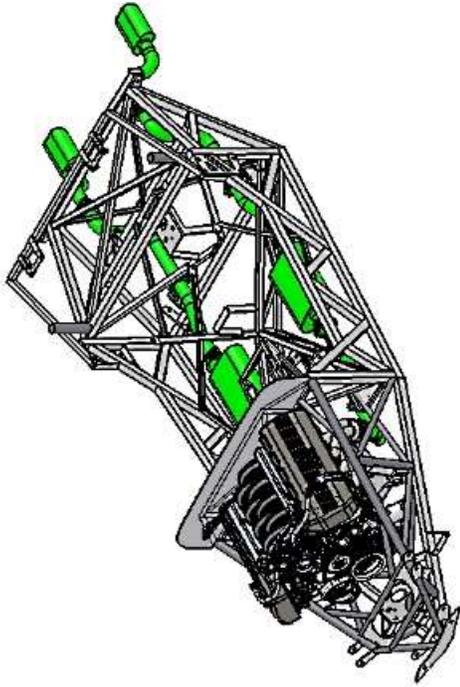
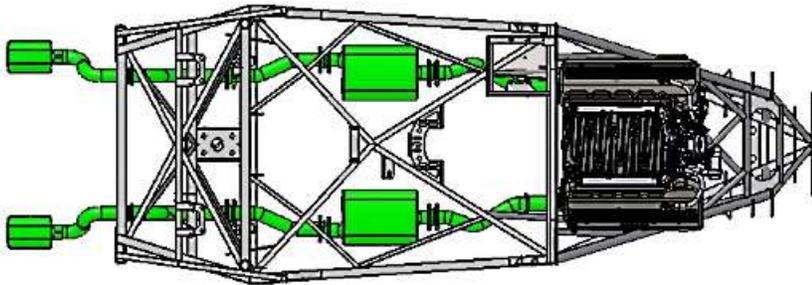
UNLESS OTHERWISE SPECIFIED:		DRAWN	NAME	DATE
DIMENSIONS ARE IN INCHES		JJ		7/23/15
TOLERANCES:		COMMENTS:		
TWO PLACE DECIMAL ±0.01				
THREE PLACE DECIMAL ±0.005				
FOUR PLACE DECIMAL ±0.001				
MATERIAL:		TITLE:		
304 STAINLESS STEEL		REAR EXIT EXHAUST PIPES		
FINISH:		SIZE	DWG. NO.	REV
POLISHED		A	34072	B
USED ON:		SCALE: 1:16 WEIGHT:		
APPLICATION:		PRINTED		
REAR EXIT EXHAUST		2/29/2016		
		SHEET 1 OF 2		

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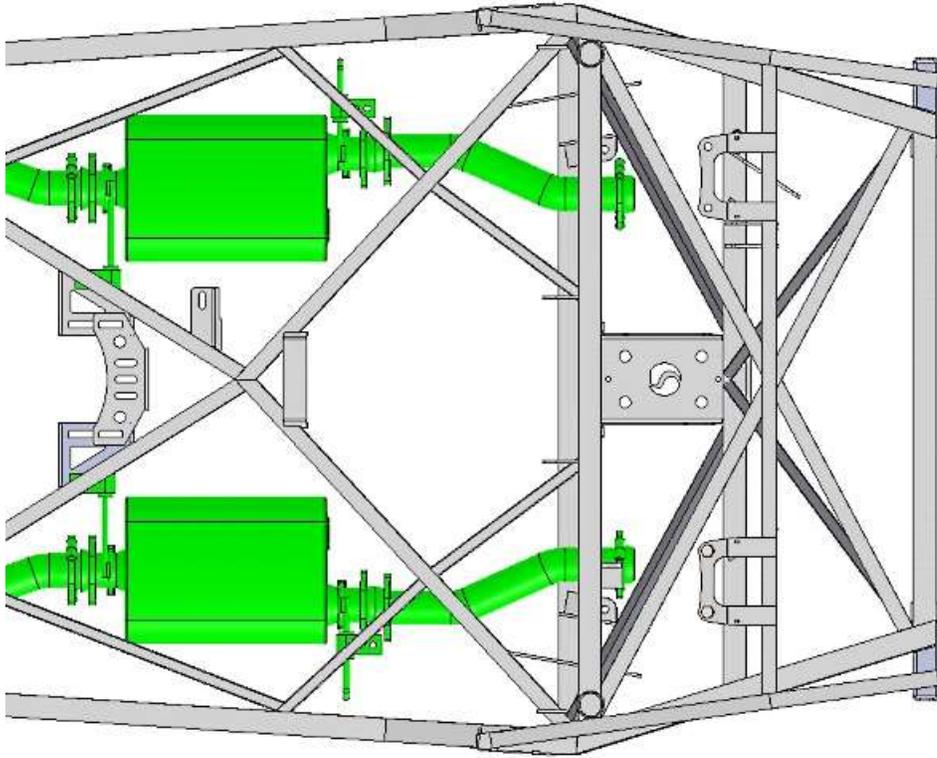
REV.	REVISIONS DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	7/23/15	
B	TUBE DIA./BALL CHG FRM 2.5", SPLIT FLG ADD	12/17/15	



HOT ROD		UNLESS OTHERWISE SPECIFIED:	DATE	12/19/06	 Factory Five Racing, Inc.
		DIMENSIONS ARE IN INCHES	NAME		
		TOLERANCES	DRAWN		TITLE:
		TWO PLACE DECIMAL ±0.01	COMMENTS		'33 HOT ROD kit
		THREE PLACE DECIMAL ±0.005			SIZE DWG. NO.
		FOUR PLACE DECIMAL ±0.001			A 34072
		MATERIAL			REV
		STEEL			B
		FINISH			SCALE: 1:30 WEIGHT:
		USED ON APPLICATION	PRINTED	2/29/2016	SHEET 2 OF 2

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Attach the engine shorty pipes and mufflers as directed in the manual.



Insert the front tube ball end through the frame from the muffler side.

Bolt one of the ball flanges together around the front pipe ball.

Attach the front tubes of the rear exit exhaust to the mufflers but do not tighten the clamp on the tube.



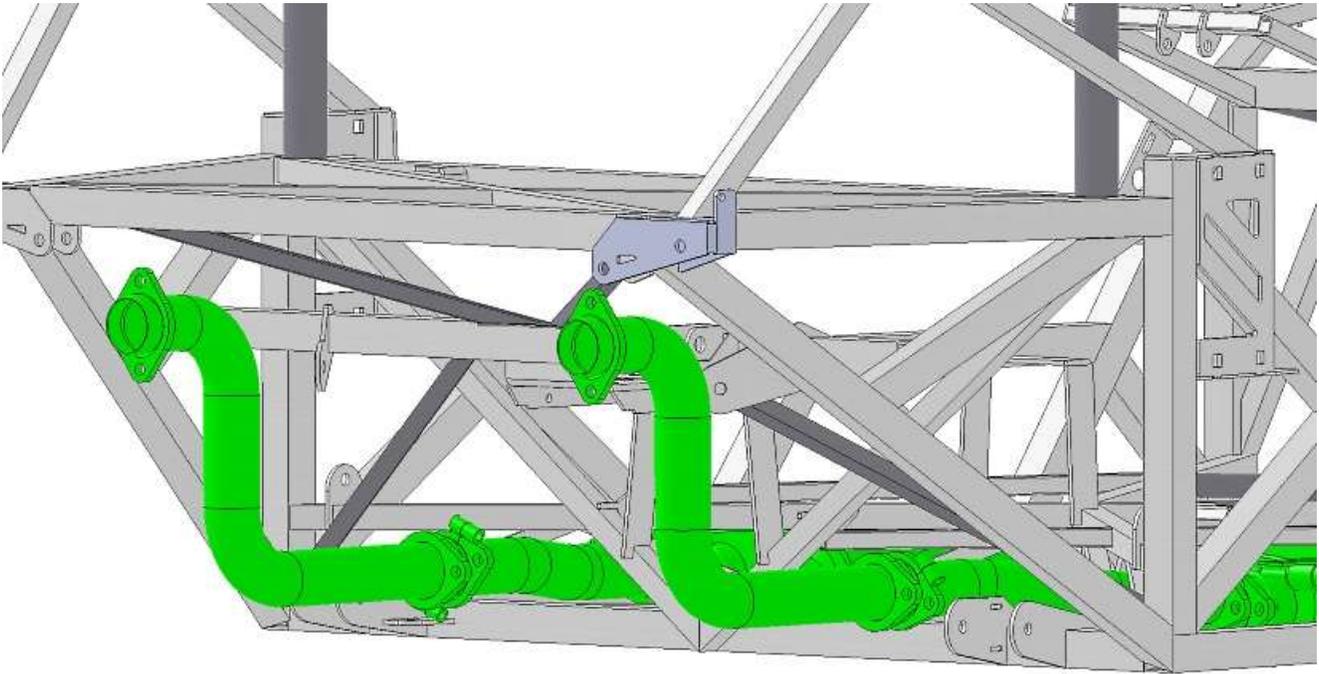
Slide one of the clamps onto the rear tube up near the top of the bend.



Cut the rubber hanger just below the second hole otherwise it will hit the trunk floor using either a razor or hack saw.



Slip one of the hangers under the clamp and hand tighten the clamp so that it can be easily adjusted later



Attach the rear tubes to the front tubes. If running an IRS, have the rear top part of tube on the inside of the upper control arm mount next to the center section.

- 👉 The remainder of the installation must be done after the body is mounted if not already on.
- 👉 The following pictures are shown on a chassis for better pictures and understanding of location.



Clamp the hangers so that the lowest hole is on the back side of the tube shown in the pictures above.



The tips are sent with a rolled lip on the end. If you want, you can cut this lip off for a different look.



Stock



Cut tip



Attach the exhaust tips and locate them so that they are below the tail lights. Move the rubber hanger if necessary.

Adjust the exhaust so that it does not hit/sit any frame member or the back of the body.

-  Use the tube bend over the axle as a lever to rotate the front tube to level the tips out.
-  Raise or lower the rubber hanger as needed or push the rear tube onto the front tube more or less to get the correct height.

👉 Rotate the rear tube to change the angle of the tip slightly or straighten the tip when looked down on from above.

Tighten the front tube to muffler clamp nuts using a $\frac{9}{16}$ " wrench.



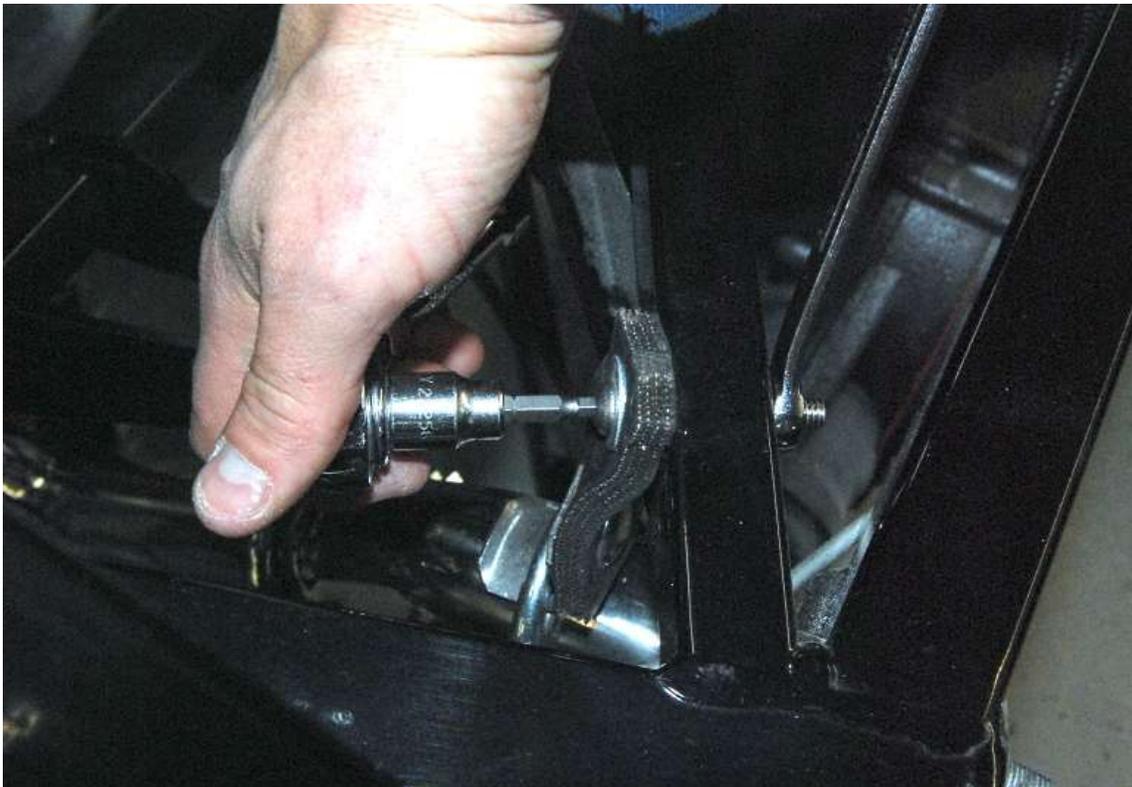
On the front side of the tube, mark the side locations of the rubber.

Remove the clamp and rubber hanger.



Drill the 1" tube in the middle of the tube in the middle between the rubber side marks made with a $\frac{3}{16}$ " drill bit.

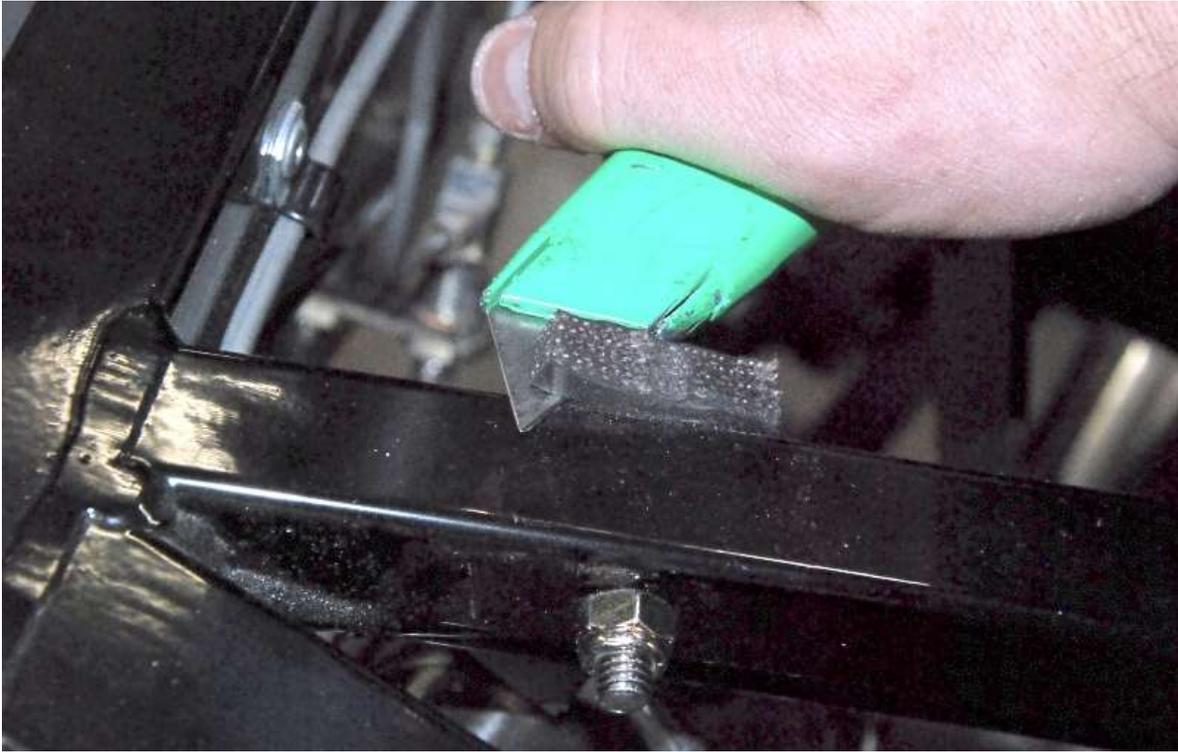
Open the $\frac{3}{16}$ " hole up with a $\frac{5}{16}$ " bit.



Rotate the rubber hanger and attach it to the tube using the included $\frac{5}{16}$ " bolt and washers.

Double check the tips.

Tighten the rubber hanger clamp nuts using a $\frac{9}{16}$ " wrench.



Cut any rubber that sticks up past the top of the frame tubes.