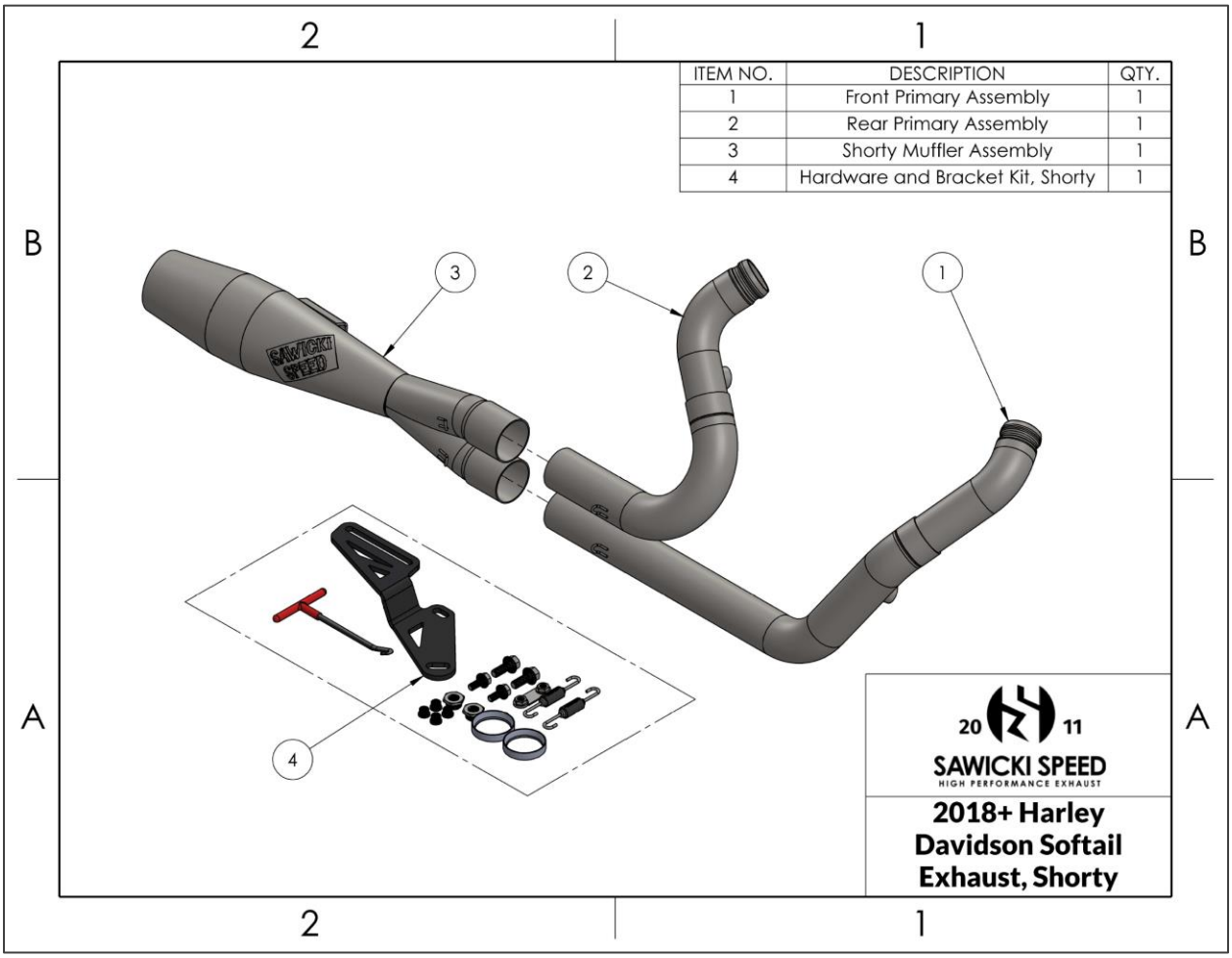
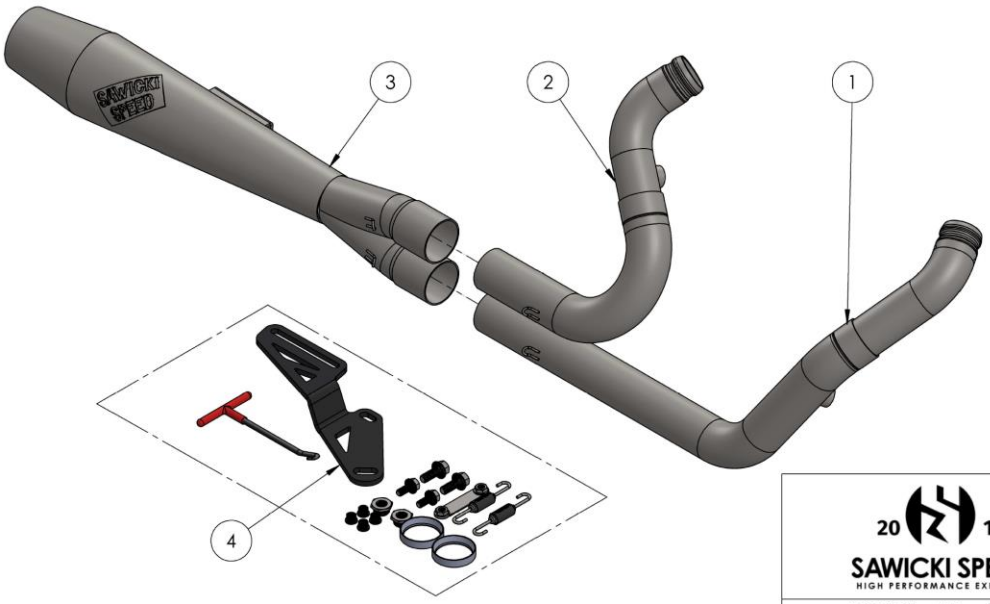
Harley Davidson Softail Exhaust Installation Instructions

Fitment Table		
Make/Model:	**Model Year Range:**	**Engine Option:**
Harley Davidson Softail, All excluding Fat Boy and Breakout	2018-2025+	107, 114, 117



SAWICKI SPEED
HIGH PERFORMANCE EXHAUST

ITEM NO.	DESCRIPTION	QTY.
1	Front Primary Assembly	1
2	Rear Primary Assembly	1
3	Mid-Length Muffler Assembly	1
4	Hardware and Bracket Kit, Mid-Length	1



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2018+ Harley Davidson Softail Exhaust, Mid-Length

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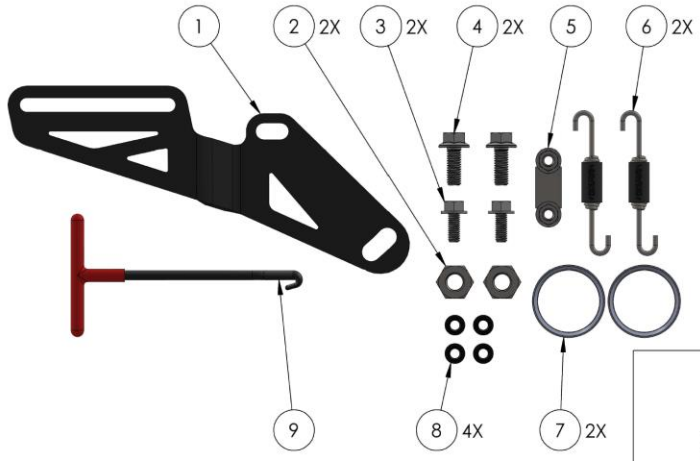
ITEM NO.	DESCRIPTION	QTY.
1	Muffler Bracket, Softail	1
2	M18 to M12 O2 Sensor Adaptor	2
3	5/16"-18 x 3/4" Steel Serrated Flange Bolt	2
4	3/8"-16 x 1" Steel Serrated Flange Bolt	2
5	Sawicki Short Dogbone	1
6	Spring with Silicone Isolator	2
7	Exhaust Gasket	2
8	5/16"-24 12-Point Flange Nut	4
9	Spring Puller Tool	1



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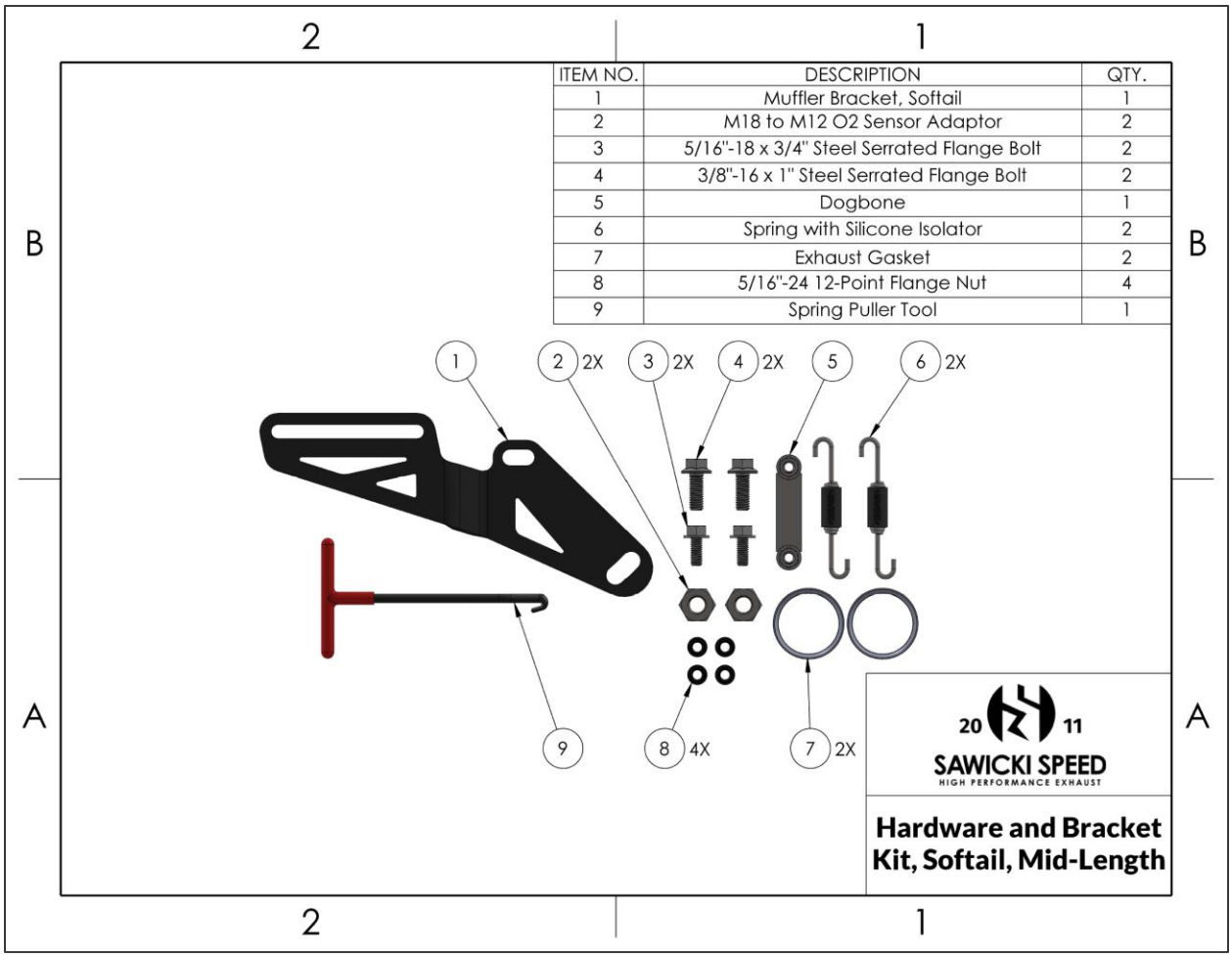
Hardware and Bracket Kit, Softail, Shorty

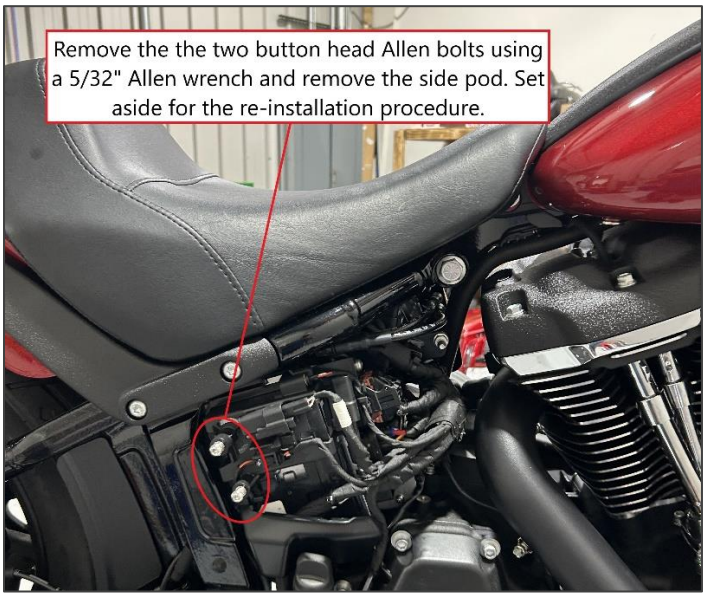


Recommended Tool List:

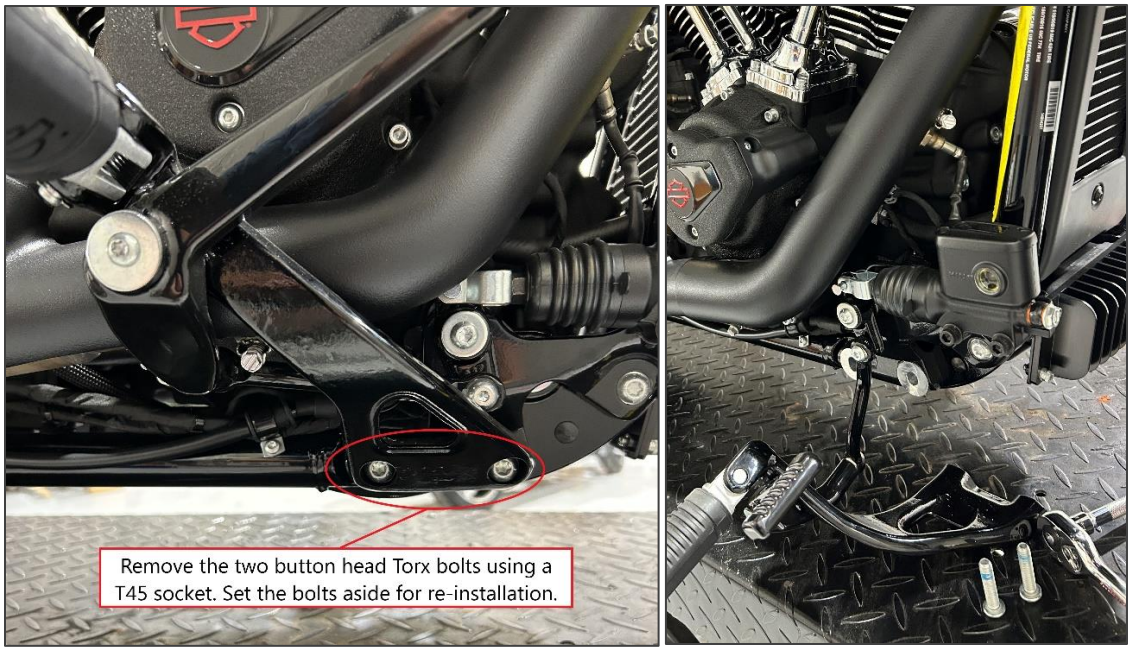
- 1/2” Wrench
- 9/16” Wrench
- 7/8” Wrench
- 14mm Wrench
- 1/4” Drive Ratchet
- Long 1/4” Drive Extension
- 1/4” Drive Swivel
- 3/8” Drive Ratchet
- 3/8” Drive Extension
- Flat Blade Screwdriver
- 5/32” Allen Wrench/Socket
- 3/16” Allen Wrench/Socket
- 5/16” Allen Wrench/Socket
- T45 Socket, 3/8” Drive
- 5/16” Socket, 1/4” Drive
- 3/8” Socket, 1/4” Drive, 12-point
- 1/2” Socket, 1/4” Drive
- 9/16” Socket, 3/8” Drive

Step 1. Remove Stock Exhaust System

1. Start by removing the RH side pod using a 5/32” Allen wrench or socket to remove the two button head Allen bolts. Set the side pod and bolts aside for re-installation. For Lowrider ST models, remove the RH saddlebag from the motorcycle and set aside in a safe location.

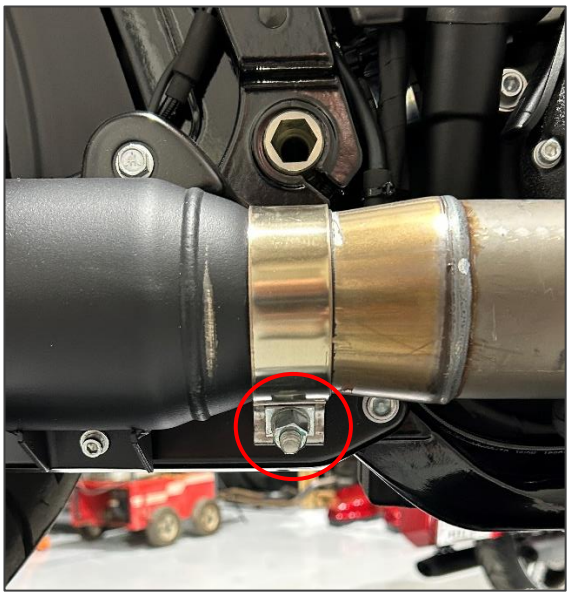


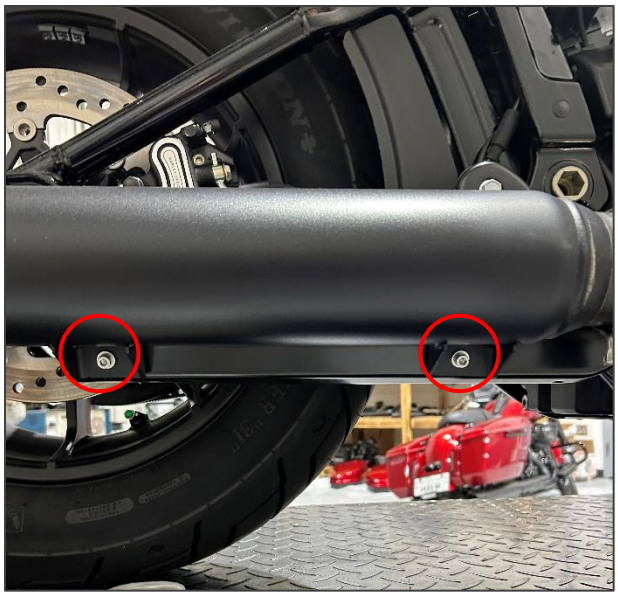
2. Unbolt the RH footpeg and brake lever assembly from the frame of the motorcycle using a T45 Torx socket. After unbolting the assembly from the frame, gently rest the assembly on the ground. The brake linkage can remain attached to the master cylinder if desired.



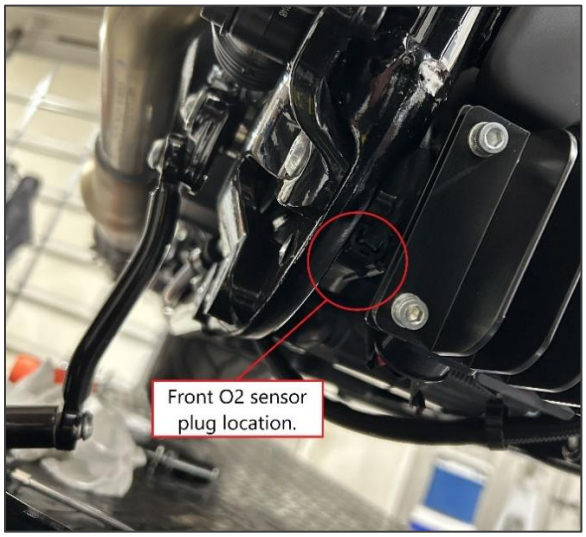
3. Remove the front primary, rear primary, and merge/catalyst heat shields by completely loosening the hose clamps using a flat blade screwdriver or 5/16” socket. The heat shields will not be re-used for installation. Remove the front and rear primary heat shields first, then the merge/catalyst heat shield.
4. Loosen the exhaust clamp securing the muffler to the primary assembly using a 9/16” socket. Remove the two Allen head cap screws securing the muffler to the muffler bracket using a 3/16” Allen wrench or socket and remove the muffler from the primary assembly.

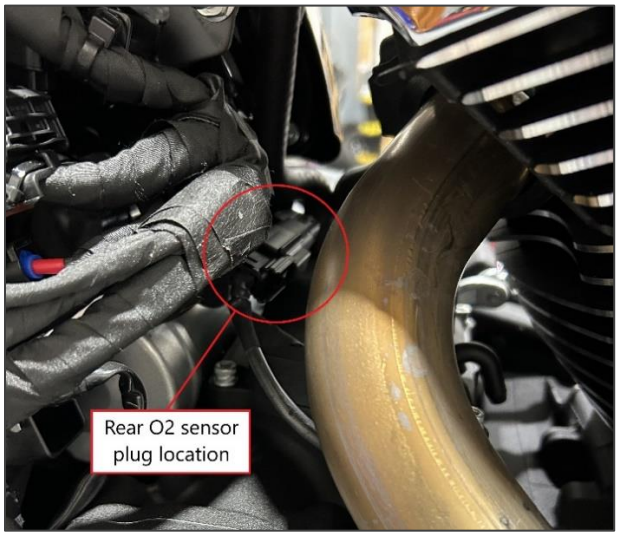
Note: If necessary, loosen the four exhaust flange nuts using a 1/2” socket to gain some wiggle room when removing the muffler. Do not fully remove the nuts yet.





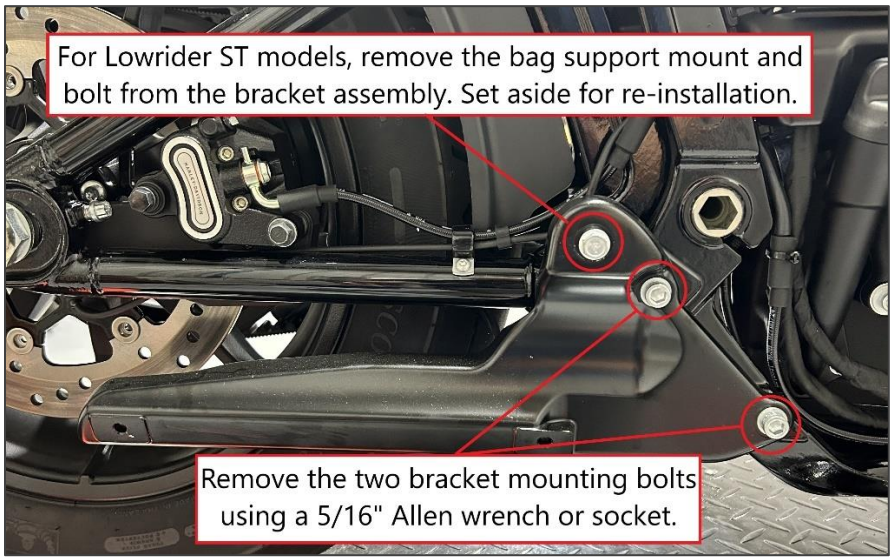
5. Unplug the front and rear O2 sensor electrical connectors from the bike. The front O2 sensor plug is located on the inside of the RH frame rail behind the RH footpeg assembly. The rear O2 sensor plug is located behind the RH side pod near the starter.





6. With the O2 sensors unplugged, remove the primary assembly from the motorcycle by removing all four exhaust flange nuts using a 1/2” socket. Set the assembly aside, the hardware will not be reused for installation.
7. Remove the factory exhaust bracket by removing the two Allen head cap screws using a 5/16” Allen wrench or socket. This hardware will not be used for reassembly.

Note: For Lowrider ST models, remove the RH bag support mount from the muffler bracket assembly and set the mount and associated bolt aside for re-installation.



Step 2. Install Muffler Bracket

1. Install the supplied muffler bracket to the factory location using the provided 3/8”-16 x 1” flange bolts. For Lowrider ST models, install the bag support mount onto the bag support bracket using the factory flange bolt. Then, install the bag support bracket on top of the muffler bracket as shown in the following images. Leave the bolts loose to allow the bracket to adjust for now.

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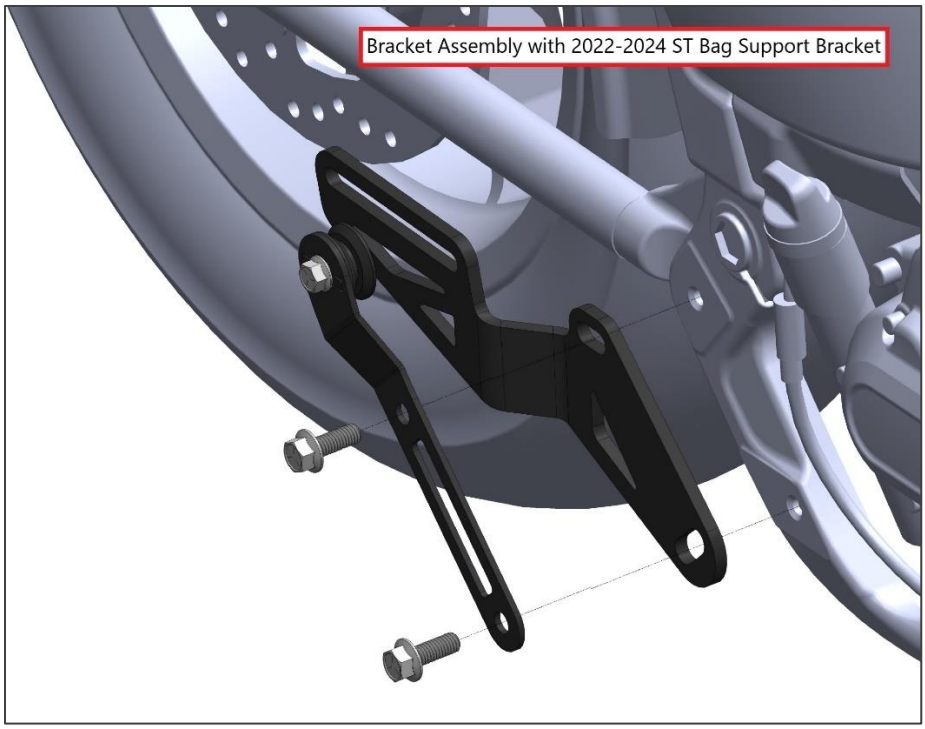
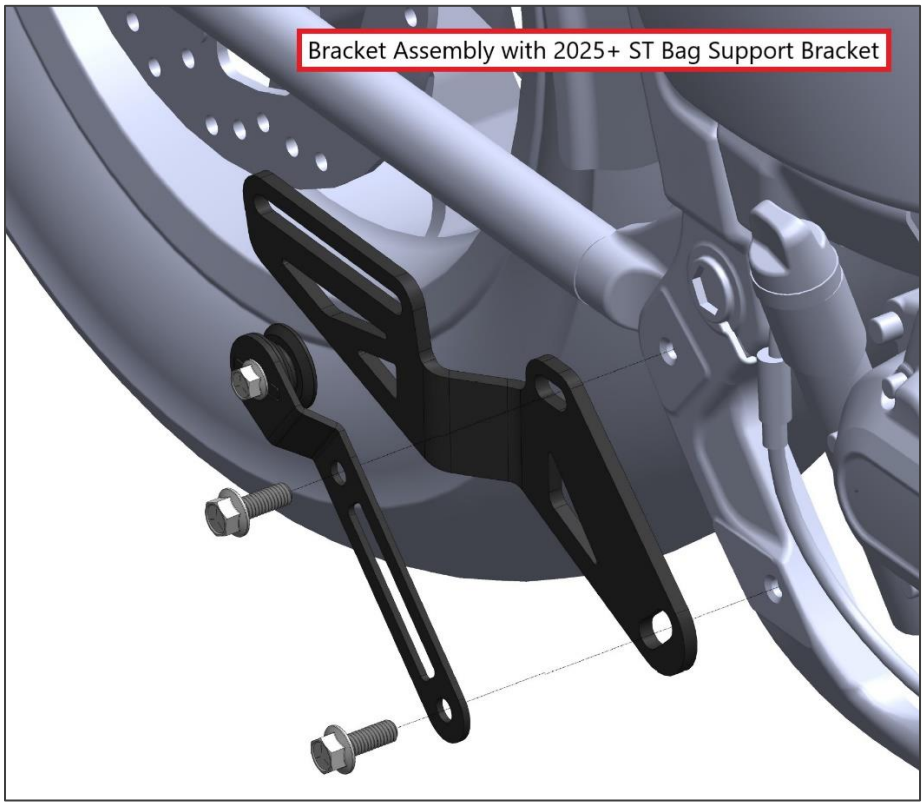




Step 3. Install Primaries

1. Begin by installing the supplied M12 to M18 O2 sensor adaptors into the O2 bungs on the new primaries (If using OE O2 sensors) using a 7/8” wrench or socket. Transfer the O2 sensors, exhaust flanges, and C-clips to the new primaries. If any of the clips, flanges, or exhaust studs are damaged or heavily corroded, replace them now. Be certain the O2 sensors from the front/rear OE primaries are transferred to the correct front/rear Sawicki primaries. Tighten the sensors using a 14mm wrench.

2. Remove the existing exhaust gaskets using a pick, screwdriver, or the supplied spring puller as a tool. Be careful not to scratch or damage the cylinder head bore where the gasket seals. Replace with the provided OE style tapered gaskets.
3. Loosely mount the front primary first by lining up the inlet with the exhaust port. Use a 12-point 3/8” socket to loosely tighten the provided 12-point ARP 5/16”-24 nuts to secure the primary to the cylinder head. It is recommended to use a long 1/4” drive extension and swivel to do this.

Note: The front exhaust stud on the front cylinder head is most easily accessed from the LH side of the bike by reaching underneath the cylinder head to thread on the nut.

4. Loosely install the rear primary in the same manner as the front, leaving the exhaust flange nuts loose to allow the primaries to move freely.
5. With both primaries loosely installed, re-connect both front and rear O2 sensor plugs to their respective locations.

Step 4. Mount Muffler

1. Install the muffler by slipping the merge over the front and rear primaries until both are fully seated. Some wiggling and rotating may be required to get the merge fully seated on the primaries.
2. Align the mounting bracket on the muffler with the long slot on the muffler bracket and insert the Dogbone into the mounting bracket on the muffler, with the serrated side of the nuts facing the bike. Use the two provided 5/16”-18 x 3/4” flange bolts to secure the muffler assembly to the muffler bracket, but do not fully tighten yet.
3. Install the provided springs to secure the muffler assembly to the primaries as shown below. The RH side footpeg assembly, and RH side pod may be reinstalled now.

Note: It helps to have the bike in gear and the front or rear brake depressed to keep the bike from moving when installing the springs.

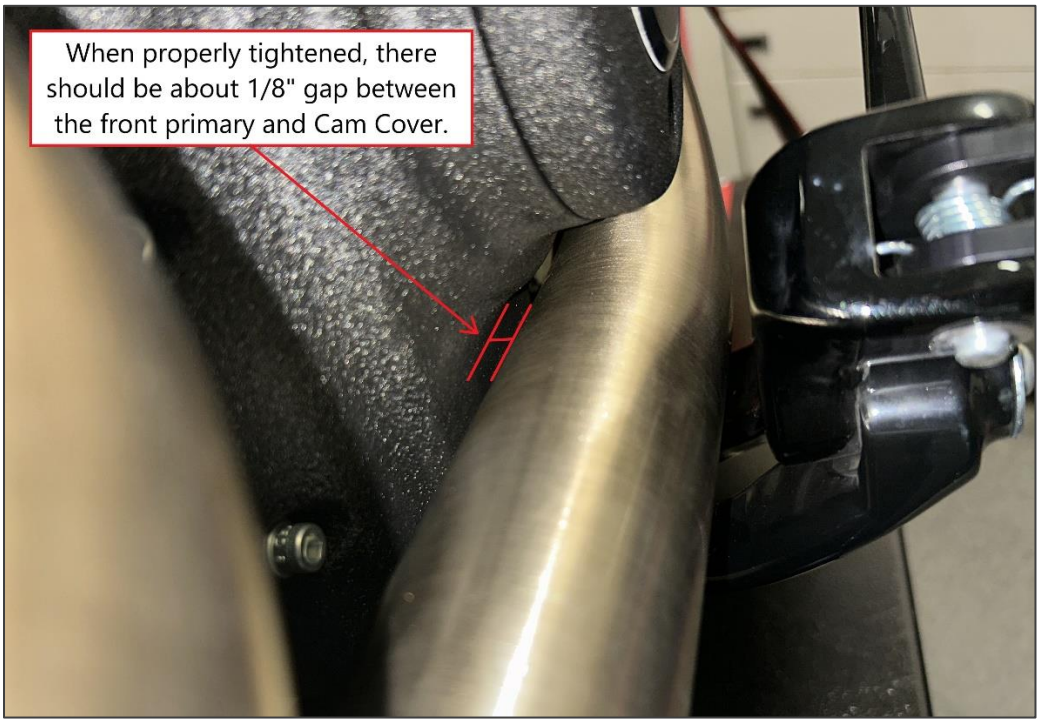
Step 5. Final Tightening and Leakage Checks

With all exhaust components loosely mounted, refer to the recommended tightening procedure below to ensure no binding occurs.

Note that with the tapered billet inlets, the pipes will tend to sag before being fully tightened. The nuts need to be tightened in equal amounts to “steer” the pipes into the correct location once fully tightened, especially the front primary.

1. Hand tighten all four exhaust flange nuts using a 3/8" 12-point socket in equal amounts to approximately 5 ft-lbs.
2. Torque rear cylinder upper nut to 10 ft-lb
3. Torque front cylinder upper nut to 10 ft-lb
4. Torque rear cylinder lower nut to 10 ft-lb
5. Torque front cylinder lower nut to 10 ft-lb
6. Tighten 5/16”-18 flange bolts using a 1/2” wrench from the muffler bracket to muffler, adjusting the muffler bracket to the desired location
7. Tighten the 3/8”-16 flange bolts using a 9/16” wrench from the muffler bracket to the frame

Once fully tightened, check that both primaries are free floating and not contacting the engine, transmission, or foot peg assembly anywhere. The should be approximately 1/8” of clearance between the front primary and cam cover when properly adjusted and tightened. This gap will grow to about 1/4” as soon as the bike is running.



Once everything is fully tightened, wipe the exhaust down with rubbing alcohol or brake cleaner to remove any oils or residue. Then start up the bike and check for leaks at the cylinder head gasket and O2 sensors, be very careful as the exhaust will get hot quickly. Should any leakage occur, snug up the associated hardware and re-check.

Note: For systems with billet endcaps, check that the three 1/4-20 bolts retaining the endcap are tight after a few heat cycles.