AA TRUCK TALK – AA MUFFLER INSTALLATIONS

By Neil Wilson of Boulder, Colorado - April 2014

Muffler Installations Overview

This article covers the eight different AA muffler installations. A muffler installation includes inlet pipe clamps, muffler with integrated or separate outlet pipe, and support brackets/adapters.

The AA muffler installations described below are broken down by the three AA wheel base chassis (AA131, AA157, and the late 1931 AA112). Each of these AA chassis used different muffler installations.

While all AA muffler installations used unique bracket supports and/or adapters, the standard A-5230 passenger vehicle muffler was used on the majority of AA131's. Only the AA131 closed body types, starting in April 1931, were fit with an AA muffler and separate outlet pipe. All of the AA157 installations used muffler AA-5230 which was the same as the A muffler but had no outlet pipe. The AA112 Standrive chassis used muffler AA-5231 which had a unique integrated inlet pipe and no outlet pipe. The two A-5251 muffler inlet pipe clamps were unchanged throughout production. These clamped the inlet pipe to the exhaust manifold and were used on both the A and AA. The mounting hardware was as follows:

Through mid 1929: (2) A-20924 - 3/8-24 1-15/16 chamfered hex. head bolt (2) A-21752 - 3/8-24 single chamfered brass hex. nut Starting mid 1929: (2) A-20955 - 3/8-16 1-15/16 chamfered hex. head bolt

(2) A-21752 - 3/8-16 single chamfered brass hex. nut

AA131 Muffler Installations (3)

Figure 1 shows details of AA131 muffler installation 1. This installation included the A-5230 muffler with its integrated inlet and outlet pipes. The one outlet pipe bracket had two different designs as shown in figure 1. The bracket was bolted to the inside face of the frame (castle nuts to the outside of the frame).

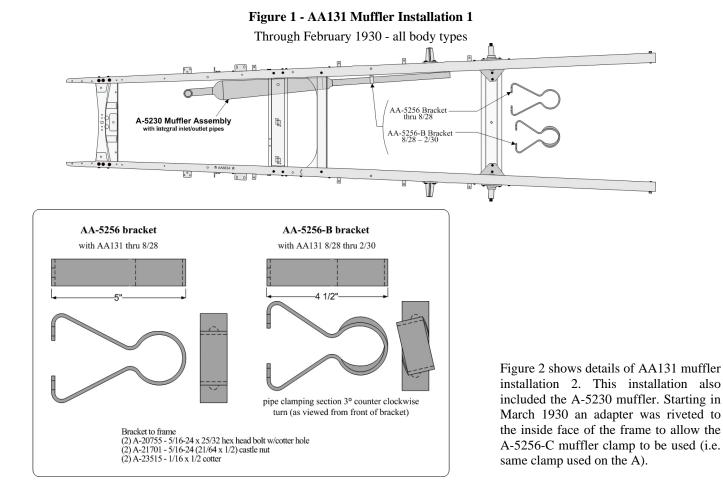


Figure 2 - AA131 Muffler Installation #2

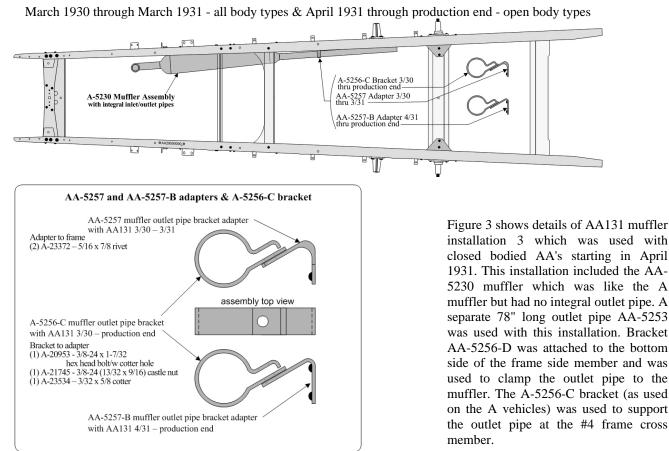
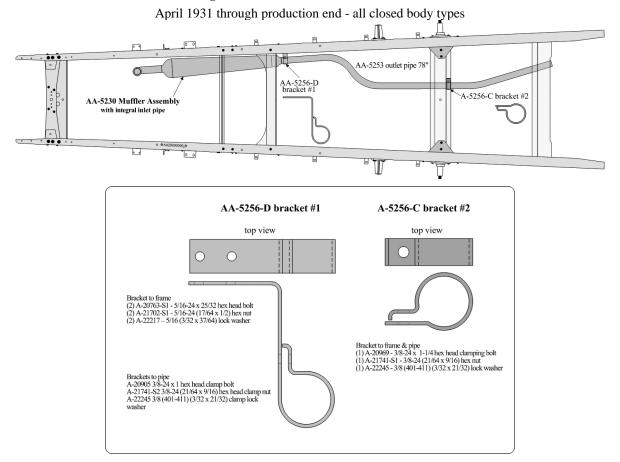


Figure 3 - AA131 Muffler Installation 3



AA157 Muffler Installations (4)

Figure 4 shows details of AA157 muffler installation 1. This installation was for the 1930 tapered AA157 frame. It was used for all cargo body types in mid 1930 and continued to be used for closed body types through December of 1930. Starting January 1931 (with the introduction of the AA157 parallel frame) closed body types used AA157 installation 3. This was the same as the #1 installation except for the #4 support bracket.

AA157 installation 1 included muffler AA-5230. A separate 133" long outlet pipe AA-5255-A was used with four support brackets.

The first bracket (AA-5226-C) clamped the outlet pipe to the muffler as well as supporting the rear of the muffler. This bracket was used for all of the other AA157 muffler installations.

The second bracket (AA-5258) supported the outlet pipe at the third frame cross member. Note the 22° angle of the bracket mounting flange which conformed to the bottom of the cross member. This same bracket was used for the AA157 3 and 4 installations.

The third bracket was A-5256-C (as used on the A vehicles) and it supported the outlet pipe at the fourth frame cross member.

The fourth bracket (AA-5259-A) supported the outlet pipe at the rear to the frame side member. The bracket mounting flange was angled 5° to conform to the slope of the bottom of the side member.

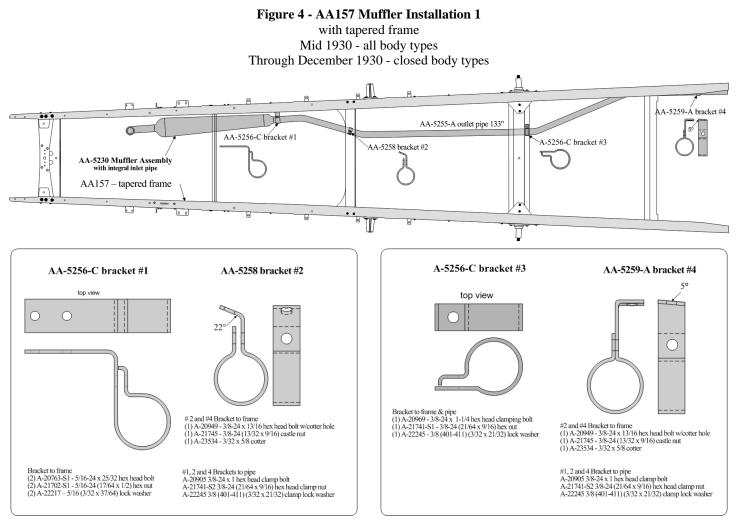


Figure 5 shows details of AA157 muffler installation 2. Also see figures 9 and 10 (end of article) for some examples. This installation was for open cargo bodied AA157 trucks. It was used for both the tapered and parallel AA157 frames from mid 1930 through production end.

AA157 installation 2 included muffler AA-5230. A separate 50" long outlet pipe AA-5255-B was used with two support brackets.

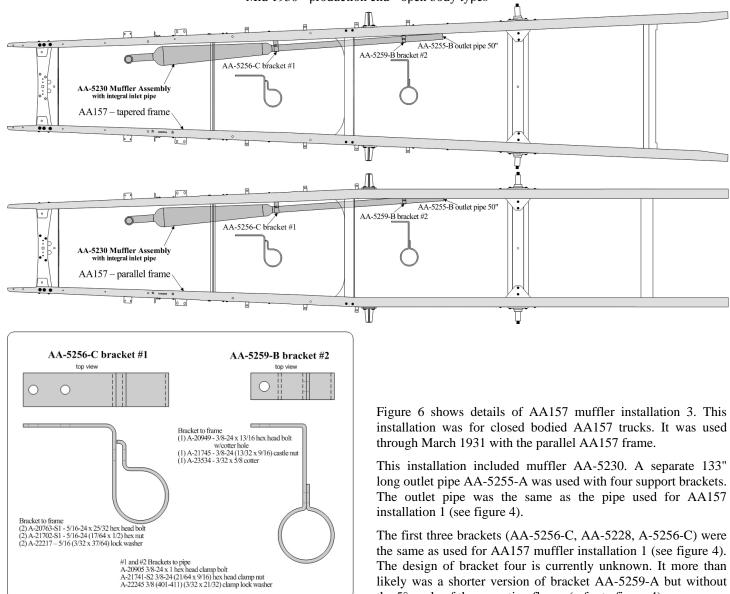
The first bracket (AA-5226-C) clamped the outlet pipe to the muffler as well as supporting the rear of the muffler. It was the same bracket used in all AA157 muffler installations.

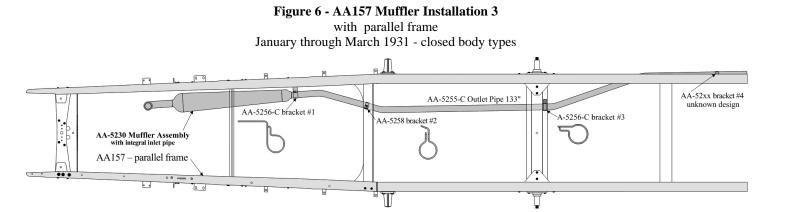
The second bracket (AA-5259-B) supported the outlet pipe on the frame side member.

Figure 5 - AA157 Muffler Installation #2

with tapered and parallel frames

Mid 1930 - production end - open body types





the 5° angle of the mounting flange (refer to figure 4).

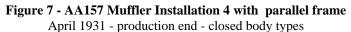
Figure 7 shows details of AA157 muffler installation 4. This installation was for closed bodied AA157 trucks. It was used from April 1931 through production end with the parallel AA157 frame.

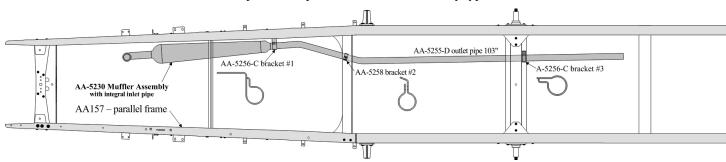
This installation included muffler AA-5230. A separate 103" long outlet pipe AA-5255-D was used with three support brackets.

The support brackets were the same as used for AA157 muffler installation 1 (see figure 4).

Note that bracket AA-5228 to frame hardware changed to:

A-20970-S1 3/8-24 x 3/4 hex head bolt A-21741-S1 3/8-24 (21/64 x 9/16) hex nut A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer





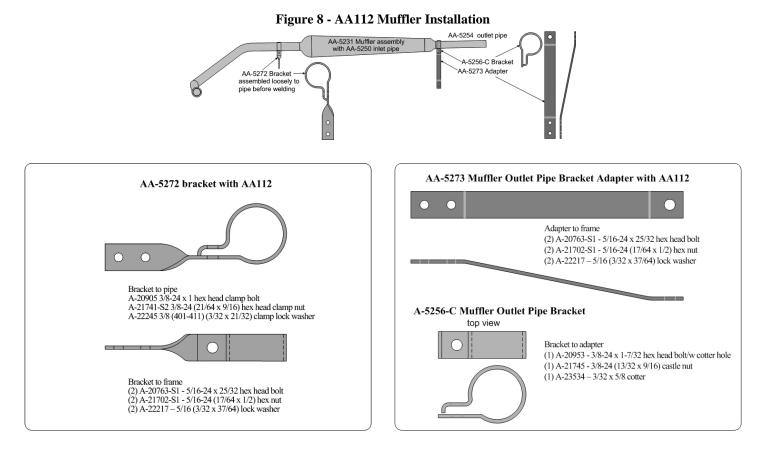
AA112 Muffler Installation (1)

Figure 8 shows details of AA112 Standrive chassis muffler installation. It was used for all AA112 production through July 1932. Also see figure 11 (end of article) for an AA112 example.

This installation included muffler AA-5231. It had an integral inlet pipe which placed the muffler outside of the frame to clear

the drop down section of the chassis. The separate outlet pipe AA-5254 was approximately 24" long.

Two support brackets and a bracket adapter was used for this installation. The AA-5272 inlet pipe bracket was part of the muffler assembly. The engineering drawing specified that this bracket was to be loosely installed on the inlet pipe before welding. Once the muffler was installed in the frame, the clamping bolt could be tightened.



Parts Listing

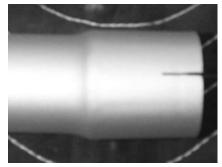
	8
	AA131 Muffler Installation #1
	tion Start - February 1930 - All cargo bodies (open and closed)
1 A-5230	Muffler assembly with integral 34-1/4" outlet pipe
1 AA-5256	Muffler outlet pipe to frame bracket - production start - 8/28
1 AA-5256-B	Muffler outlet pipe to frame bracket - 8/28 - 2/30
	bracket to frame – attachment
2 A-20755	5/16-24 x 25/32 hex head bolt w/cotter hole
2 A-21701	5/16-24 (21/64 x 1/2) castle nut
2 A-23515	1/16 x 1/2 cotter
	AA131 Muffler Installation #2
1 A-5230	March 1930 - Production End - Open cargo bodies
1 A-5250 1 AA-5257	Muffler assembly with integral 34-1/4" outlet pipe Muffler outlet pipe bracket adapter - 1/30 - 3/30
	Muffler outlet pipe bracket adapter - 4/30 - 5/50
1 AA-3237-D	Adapter to frame – attachment
2 A-23372	$5/16 \times 7/8$ round head rivet
	Muffler outlet pipe to frame bracket
1 11 5250 C	bracket to adapter – attachment
1 A-20935-S1	*
1 A-21745-S1	1 0
1 A-23534	3/32 x 5/8 cotter
	AA131 Muffler Installation #3
	April 1931 - Production End - Closed cargo bodies
1 AA-5230	Muffler assembly (without outlet pipe)
1 AA-5253	Muffler outlet pipe 78" long
1 AA-5256-D	Muffler outlet pipe to frame bracket - #1 (front)
	#1 (front) bracket to frame – attachment
2 A-20763-S1	
2 A-21702-S1	
2 A-22217	5/16 (3/32 x 37/64) lock washer
	#1 (front) bracket to outlet pipe/muffler – attachment
1 A-20905-S1	3/8-24 x 1 hex head clamping bolt
1 A-21741-S2	
1 A-22245-S2	
1 A-5256-C	Muffler outlet pipe bracket – #2 (rear) #2 (rear) bracket to frame #4 cross member – attachment
1 A-20969	$3/8-24 \times 1-1/4$ hex head clamping bolt
1 A-21741-S1	3/8-24 (21/64 x 9/16) hex nut
1 A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer
	AA157 Muffler Installation #1 (with tapered frame)
	Production Start - November 1930 Closed cargo bodies
1 AA-5230	Muffler assembly – AA-157
	Muffler outlet pipe 133" long – AA-157
1 AA-5256-C	Muffler outlet pipe to frame bracket $-\#1$ (front) $-AA-157$
0 1 007/0 51	#1 (front) bracket to frame – attachment
2 A-20763-S1	$5/16-24 \times 25/32$ hex head bolt
2 A-21702-S1	
2 A-22217 1 AA-5258	$5/16 (3/32 \times 37/64)$ lock washer
1 AA-5258	Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment
1 A-20949	$3/8-24 \times 13/16$ hex head bolt w/cotter hole
1 A-21745	3/8-24 (13/32 x 9/16) castle nut
1 A-23534	3/32 x 5/8 cotter
1 A-5256-C	
	#3 bracket to #4 cross member – attachment
1 A-20969	$3/8-24 \times 1-1/4$ hex head clamping bolt
1 A-21741-S1	3/8-24 (21/64 x 9/16) hex nut
1 A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer
-	Muffler outlet pipe to frame bracket #4 (rear) – AA-157
	#4 (rear) bracket to frame – attachment
1 A-20949	3/8-24 x 13/16 hex head bolt w/cotter hole
1 A-21745	3/8-24 (13/32 x 9/16) castle nut
1 A-23534	3/32 x 5/8 cotter
	#1, 2 and 4 brackets to outlet pipe – attachment
4 A-20905	3/8-24 x 1 hex head clamp bolt
4 A-21741-S2	3/8-24 (21/64 x 9/16) hex head clamp nut
<u>.</u>	

4 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer

AA157 Muffler Installation #2 (with tapered and parallel frame) Mid 1930 - production end - Open body types1AA-5230Muffler cutter type 50' fong - AA-1571AA-5255-BMuffler cutter type to frame backet -#1 (front) - AA-157 #1 (front) bracket to frame - attachment2A-20703-S1516-24 (1764 x 1/2) hex head nut2A-22717516 (3/23 x 37/64) lock washer1AA-5259-BMuffler cutter type to frame bracket -#2 (rear) - AA-157 #2 (rear) bracket to frame - attachment1A-2094938-24 x 13/16 hex head bolt wicotter hole1A-2094938-24 x 13/26 hex head clamp potot2A-2074423/8-24 (1/32 x 9/16) castle nut1A-2053433/2 x 5/8 cotter Front and Rear bracket to cutter type - attachment2A-2074423/8-24 (1/34 x 9/16) hex head clamp potot2A-2074423/8-24 (1/34 x 9/16) hex head clamp potot2A-2074423/8-24 (1/34 x 9/16) hex head clamp potot1A-45250Muffler cutter type 1-33' long - AA-1571A-45255Muffler cutter type 1-33' long - AA-1571A-45258Muffler cutter type to #3 cross member bracket #1 (front) - AA-157 #1 (front) bracket to frame - attachment2A-207453516-24 (1/64 x 1/2) hex head nut2A-20745453/2 (1/64 x 1/2) hex head nut2A-20745453/2 (3/2 x 3/16) caste nut1A-25256Muffler cutter type to #3 cross member bracket #2 - AA-157 #2 bracket to #4 cross member bracket #3 - AA-157 #2 bracket to #4 cross member bracket #3 - AA-157 #3 bra		
$AA:5230$ Muffler assembly – $AA:157$ $AA:5255-B$ Muffler outlet pipe to frame bracket $=$ #1 (front) – $AA:157$ #1 (front) bracket to frame – attachment 2 $A:20763-S$ $516-24 (7164 x 1/2)$ hex head nut 2 $A:22172-S$ $516-24 (7164 x 1/2)$ hex head nut 2 $A:22217$ $516 (3/2) x 37/(4)$ lock washer $AA:5259-B$ Muffler outlet pipe to frame bracket $=$ #2 (rear) – $AA:157$ #2 (rear) bracket to frame – attachment 1 $A:23534$ $3/32 x 518$ could represent to outlet pipe – 4 ttachment 1 $A:23534$ $3/32 x 518$ could represent to outlet pipe – 4 ttachment 1 $A:23534$ $3/32 x 518$ could represent to outlet pipe – 4 ttachment 2 $A:2217$ $3/8-24 (132 x 91/6)$ castle nut 1 $A:23534$ $3/32 x 518$ could represent to outlet pipe – 4 ttachment 2 $A:2215$ $3/8-24 (1264 x 91/6)$ hex head clamp pot 2 $A:21741-52$ $3/8-24 (12/32 x 21/22)$ clamp lock weaker AA:577 Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies 1 $AA:5256 C$ Muffler outlet pipe 137 long – $AA:157$ #1 (front) bracket to frame – attachment 2 $A:20763-S1$ $516-24 (1764 x 1/2)$ hex head tomp to 2 $A:21742-S1$ $516-24 (1764 x 1/2)$ hex head tomt 2 $A:21742-S1$ $516-24 (1764 x 1/2)$ hex head tomt 2 $A:21742-S1$ $516-24 (1764 x 1/2)$ hex head tont 2 $A:21742-S1$ $516-24 (1764 x 1/2)$ hex head tont 2 $A:21742-S1$ $516-24 (1764 x 1/2)$ hex head tont 2 $A:2174-S1$ $3/8-24 (13/22 x 9/16)$ castle nut 1 $A:2234$ $3/32 x 58$ cotter 1 $A:5256 C$ Muffler outlet pipe to #1 cross member bracket #2 – AA-157 #3 bracket to #3 cross member – attachment 1 $A:2234$ $3/32 x 58$ cotter 1 $A:5256 C$ Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to frame – attachment 1 $A:2234$ $3/32 x 58$ cotter 1 $A:5234$ (Muffler outlet pipe to #4 cross member – attachment 1 $A:2234$ $3/32 x 58$ cotter 1 $A:2234$ $3/32 x $	AA1	
1A.A.5255-BMuffler outlet pipe to Tiong – AA-157 #1 (front) bracket to frame – attachment2A.20703-S15/16-24/t 25/22 hex head bolt2A.20703-S15/16-24/t 25/22 hex head bolt2A.20703-S15/16-24/t 25/22 hex head bolt2A.221725/16-24/t (7/64 x 1/2) hex head nut2A.2217453.82-24 (13/32 x 9/16) castle nut1A.223743.82-24 (13/32 x 9/16) castle nut1A.2217453.82-24 (13/32 x 9/16) castle nut2A.2217453.82-24 (13/32 x 9/16) castle nut2A.2217453.82-24 (13/32 x 9/16) castle nut2A.2217453.82-24 (13/42 x 9/16) hex head clamp nut2A.2217453.82-44 (14/4 x 9/16) hex head clamp nut2A.2217453.82-44 (14/4 x 9/16) hex head clamp nut2A.2217453.82-44 (14/4 x 9/16) hex head clamp nut1A.A52250Muffler costle pipe 157 more bracket - 41 (front) - AA-157 #1 (front) bracket to farme – attachment1A.A5255Muffler costle pipe to 37 cross member bracket #2 - AA-157 #2 bracket to farme – attachment1A.45258Muffler costle pipe to 37 cross member bracket #2 - AA-157 #2 bracket to #37 cross member bracket #3 - AA-157 #2 bracket to #37 cross member bracket #3 - AA-157 #2 bracket to #4 cross member - attachment1A.232543.82-44 (13/32 x 9/16) castle nut1A-232543.82-44 (13/32 x 9/16) castle nut1A-232543.82-44 (13/32 x 9/16) castle nut1A-232543.82-44 (13/32 x 9/16) castle nut1 <t< th=""><th>1 44-5230</th><th></th></t<>	1 44-5230	
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#1 (front) bracket to frame – attachment 2 A-20703-S1 5/16-24/17/36 ks head hot 2 A-21702 S/16 (3/32 x 37/64) lock washer 1 A-5259-B Multifler outlet pipe to frame bracket $= 22$ (rear) – AA-157 #2 (rear) bracket to frame – attachment 1 A-2049 38-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 38-24 (13/32 x 9/16) (castle nut 1 A-2383 3/32 x 5/8 cotter Front and Rear bracket to outlet pipe – attachment 2 A-2005 38-24 x 1 ks head to any holt 2 A-21744-S2 38-24 (21/64 x 9/16) hex head clamp put 2 A-22045 3/8 (401-411) (3/32 x 21/32) clamp lock washer A A-5520 Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies 1 AA-5256 Muffler outlet pipe 133" long – AA-157 1 AA-5256 Muffler outlet pipe 133" long – AA-157 1 AA-5256 Muffler outlet pipe to frame bracket = 41 (front) – AA-157 #1 (front) bracket to frame - attachment 2 A-20703 S1 5/16-24 (27/64 x 1/2) hex head louf 2 A-21702 S1 5/16-24 (17/64 x 1/2) hex head louf 2 A-21702 S1 5/16 (3/32 x 37/64) lock washer 1 A-5256 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment 1 A-2039 3/8-24 x 13/16 hex head bot 1 A-2174 3/8-24 (13/32 x 9/16) castle nut 1 A-2255 Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment 1 A-2354 3/22 x 5/8 cotter 1 A-5256 Muffler outlet pipe to frame bracket #4 (rear) – AA-157 #3 bracket to #4 cross member – attachment 1 A-2354 3/22 x 5/8 cotter 1 A-2354 3/24 (21/64 x 9/16) hex nut 1 A-2354 3/24 (21/64 x 9/16) hex nut 1 A-2354 3/24 (21/64 x 9/16) hex nut 1 A-2354 3/32 x 5/8 cotter #1 (A-2374 Muffler outlet pipe to frame bracket #4 (rear) – AA-157 #4 (rear) bracket to frame – attachment 1 A-2354 3/32 x 5/8 cotter #1 (A-2374 S1 3/8-24 (13/32 x 9/16) castle nut 1 A-2354 3/32 x 5/8 cotter #1 (A-2374 S1 3/8-24 (21/64 x 9/16) hex head clamp nut 3 A-2474 S1 3/8-24 (21/64 x 9/16) hex head clamp nut 3 A-2375 Muffler lostlation #4 (with parallef frame) Ap		
2 A-21702-S1 5/16-24 (1764 x 1/2) hex head nut 2 A-22171 5/16 (3/32 x 37/64) lock washer 1 AA-5259-B Muffler outlet pipe to firm bracket $+#2$ (rear) – AA-157 #2 (rear) bracket to frame – attachment 1 A-20349 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-2174 3/8-24 (13/22 x 9/16) castle nut 1 A-25334 3/32 x 5/8 cotter Front and Rear bracket to outlet pipe – attachment 2 A-2020 3/8-24 x 11 hex head clamp plot 2 A-2020 3/8-24 x 11 hex head clamp plot 2 A-2020 3/8-24 x 11 hex head clamp plot 2 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer AA-5255-C Muffler outlet pipe 133" long – AA-157 1 AA-5256-C Muffler outlet pipe 133" long – AA-157 #1 (front) hexket to frame – attachment 2 A-2073-S1 5/16-24 x 25/32 hex head bolt 2 A-20703-S1 5/16-24 x 12/3 hex head nut 2 A-20203 3/8-24 x 11/3 (hex head bolt w/cotter hole 1 A-52558 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment 1 A-20349 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3/8-24 (13/32 x 9/16) castle nut 1 A-22543 3/32 x 5/8 cotter 1 A-5256C Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member bracket #4 (near) – AA-157 #4 (reap) bracket to frame - attachment 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-5234 Muffler outlet pipe to #4 cross member bracket #4 (near) – AA-157 #4 (reap) bracket to frame - attachment 1 A-22345 3/8 24 x 1.1/4 hex head clamp plot 2 A-22745 3/8 -24 x 1.1/4 hex head clamp plot 3 A-21745 3/8 -24 x 1.1/4 hex head clamp plot 4 A-221745 3/8 -24 x 1.1/4 hex head clamp plot 3 A-21745 3/8 -24 x 1.1/4 hex head clamp plot 4 A-22174 5/16 3/8 -24 x 1.1/4 hex head clamp plot 2 A-2275 Muffler outlet pipe to frame bracket #1 (front) - AA-157 #1 (front) hracket to outlet pip		
2 A-2217 5/16 (3/32 x 37/64) lock washer 1 A-25259-B Muffler outlet pipe to frame bracket = $2/(rear)$ - AA-157 #2 (rear) bracket to frame - attachment 1 A-2354 3/8-24 (13/32 x 9/16) castle nut 1 A-2353 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-2353 3/8-24 (13/32 x 9/16) castle nut 2 A-2205 3/8-24 x 1 hex head clamp bolt 2 A-2174 52 3/8-24 (21/64 x 9/16) hex head clamp nut 2 A-225 3/8-24 (21/64 x 9/16) hex head clamp nut 2 A-225 3/8-24 (21/64 x 9/16) hex head clamp nut 2 A-225 3/8 (401-411) (3/2 x 21/22) clamp lock washer AA157 Muffler Installation 43 (with parallel frame) January through March 1931 - production end - Closed cargo bodies 1 AA-5230 Muffler outlet pipe 137" long - AA-157 1 AA-5255C Muffler outlet pipe 137" long - AA-157 #1 (front) bracket to frame - attachment 2 A2070381 5/16-24 x 25/32 hex head bolt 2 A-2170481 5/16-24 x 25/32 hex head bolt 2 A-2170481 5/16-24 x 25/32 hex head bolt 2 A-21705 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-2556 Muffler outlet pipe to #3 cross member bracket #2 - AA-157 #2 bracket to #3 cross member - attachment 1 A-2526C Muffler outlet pipe to #3 cross member bracket #3 - AA-157 #3 bracket to #4 cross member - attachment 1 A-2245 3/8 (401-411) (3/32 x 2)/16) (castle nut 1 A-2256C Muffler outlet pipe to #4 cross member bracket #3 - AA-157 #3 bracket to #4 cross member - attachment 1 A-2327 Muffler outlet pipe to #4 cross member bracket #3 - AA-157 #4 (rear) bracket to frame - attachment 1 A-2328 3/8 2/4 (13/2 x 9/16) hex nut 1 A-2327 Muffler outlet pipe to #4 cross member bracket #3 - AA-157 #4 (rear) bracket to frame - attachment 1 A-2334 3/32 x 5/8 cotter #1 A-3238 3/32 x 5/8 cotter #1 A-3239 3/8 -24 x 1/316 hex head bolt w/cotter hole 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-2334 3/32 x 5/8 cotter #1 a A-2334 3/32 x 5/8 cotter #1 a A-2307 Muffler outlet pipe to frame bracket #1 (inno) - AA-157 #4 (rear) bracket to frame - attachment 4 A-20245 3/8 4(01-411) (3/32 x 2/32) clamp lock washer 1 A-5256 Muffler out	2 A-20763-S1	5/16-24 x 25/32 hex head bolt
1AA-5259-BMuffler outlet pipe to frame bracket $-\#2$ (rear) $-AA-157$ # 2 (rear) bracket to frame - attachment1 $A-2094$ 338-24 (1322, 9/16) castle nut1 $A-23534$ 33322 x 5% cotterFront and Rear bracket to outlet pipe - attachment2 $A-2005$ 2 $A-22045$ 38 (401-411) (332 x 21/32) clamp lock washer AA157 Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies1AA-5256-CMuffler actembly - AA-1571AA-5256-CMuffler actembly - AA-1571AA-5256-CMuffler actembly - AA-1571AA-5256-CMuffler outlet pipe 133" long - AA-1571AA-5256-CMuffler outlet pipe to #3 cross member hacket #22 $A-20763-81$ 5/16-241/7.064 x 1/2) hex head nut2 $A-22772.85$ 5/16 (322 x 37/64) lock washer1 $A-2556-C$ Muffler outlet pipe to #3 cross member bracket #21 $A-2556-C$ Muffler outlet pipe to #4 cross member bracket #3 - AA-157#2 bracket to #3 cross member - attachment1 $A-2096$ 3&24 x 1-1/4 hex head clamping bolt1 $A-22741.81$ 3&24 (21/64 x 9/16) hex nut1 $A-22741.81$ 3&24 (21/64 x 9/16) hex nut1 $A-22741.81$ 3&24 (21/64 x 9/16) hex nut1 $A-22741.82$ 3&24 (13/22 x 9/16) caste nut <td>2 A-21702-S1</td> <td>5/16-24 (17/64 x 1/2) hex head nut</td>	2 A-21702-S1	5/16-24 (17/64 x 1/2) hex head nut
#2 (rear) bracket to frame – attachment1 $A \cdot 2074$ 1 $A \cdot 2174$ 2 $A \cdot 2174$ 2 $A \cdot 2274$ 3 $332 \times 5\%$ cotterFront and Rear bracket to outlet pipe – attachment2 $A \cdot 2274$ 3 $38 \cdot 24 \times 11\%$ hex head clamp polit2 $A \cdot 22245$ 38 (401-411) (3/32 x 21/32) clamp lock washer A A - 523J A - 5230 Muffler assembly – AA - 1571AA - 52301AA - 5230Muffler outlet pipe 133" long – AA - 1571AA - 52561AA - 5256Muffler outlet pipe 133" long – AA - 1571AA - 52561AA - 52561AA - 52562 $A \cdot 2170 \cdot 51$ 2 $A \cdot 2170 \cdot 51$ 2 $A \cdot 2170 \cdot 51$ 3 $516 \cdot 24 \cdot x375$ (be head bolt2 $A \cdot 22753$ 4Muffler outlet pipe 133" long – AA - 157#1(front) bracket to frame – attachment1 $A \cdot 2028$ 2 $A \cdot 2170 \cdot 51$ 3 $A \cdot 2128 \cdot 2173 \cdot 2160 \cdot 2170 \cdot 2170 \cdot 2160 \cdot 2170 \cdot 21$		
1 A-20949 $38-24 \times 13/16$ hex head bolt w/cotter hole 1 A-21745 $38-24 \times 13/26 \times 58$ cotter Front and Rear bracket to outlet pipe – attachment 2 A-2005 $38-24 \times 1$ hex head clamp holt 2 A-2014 S2 $38-24 \times 1$ hex head clamp polt 2 A-2014 S2 $38-24 \times 1$ hex head clamp polt 2 A-22245 $38-24 (21/64 \times 9/16)$ hex head clamp put 2 A-2235 $38-24 (21/64 \times 9/16)$ hex head clamp put 3 A-2520 Muffler outlet pipe 1373 'long – AA-157 1 A-5255-C Muffler outlet pipe to frame bracket =#1 (front) – AA-157 #1 (front) bracket to frame – attachment 1 A-2175 2 A-20763-81 5/16-24 (23/23, 23/64) lock washer 1 A-2555 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 Pactorial Size 37/64) lock washer 1 1 A-23543 332 x 5/8 cotter 1 A-23544 3/8-24 (13/23 x 9/16) castle nut 1 A-23543 3/8-24 (21/64 x 9/16) hex nut 1 A-23543 3/8-24 (21/64 x 9/16) hex nut 1 <	1 AA-5259-B	
1 A-21745 3/8-24 (1/3/32 x 9/16) castle nut 1 A-2354 3/32 x 5/8 cotter Front and Rear bracket to outlet pipe – attachment 2 A-2005 3/8-24 x 1 hex head clamp bolt 2 A-21741-52 3/8-24 (21/64 x 9/16) hex head clamp nut 2 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer AAL57 Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies 1 AA-5256C Muffler outlet pipe to frame bracket - #1 (front) - AA-157 #1 (front) bracket to frame - attachment #1 (front) bracket to frame - attachment 2 A-2076381 5/16-24 (17/64 x 1/2) hex head nut 2 A-22170281 5/16-24 x 25/32 hex head bolt 2 A-22170281 5/16-24 x 1/2) hex head nut 2 A-22170281 5/16-24 (17/64 x 1/2) hex head nut 1 A-2047 5/16-24 (1/764 x 1/2) hex head lost 1 A-2047 5/16-24 (1/764 x 1/2) hex head lost 1 A-2047 3/8-24 (1/32 x 9/16) castle nut 1 A-2047 3/8-24 (1/32 x 9/16) castle nut 1 A-2049 3/8-24 (1/	1 1 20040	
1A-23543/32 x 58 cotter Front and Rear bracket to outlet pipe – attachment2A-20053/8-24 x 1 hex head clamp bolt2A-21741-523/8-24 (21/64 x 91/6) hex head clamp nut2A-222453/8 (401-411) (3/32 x 21/32) clamp lock washerAAL57 Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies1AA-5230Muffler outlet pipe 10 frame bracket - #1 (front) - AA-1571AA-5256-CMuffler outlet pipe to frame bracket - #1 (front) - AA-157 #1 (front) bracket to frame - attachment2A-20763-S15/16-24 x 25/32 hex head bolt2A-21702-S15/16-24 x 25/32 hex head bolt2A-21702-S15/16-24 x 25/32 hex head bolt2A-21702-S15/16-24 x 25/32 hex head bolt2A-221702-S15/16-24 x 25/32 hex head bolt2A-221743/8-24 (17/64 x 1/2) hex head nut2A-221743/8-24 (17/64 x 1/2) hex head nut1A-203493/8-24 x 13/16 hex head bolt w/cotter hole1A-217453/8-24 (21/64 x 9/16) hex nut1A-22453/8 (401-411) (3/32 x 21/32) clamp lock washer1A-22453/8 (401-4		
Front and Rear bracket to outlet pipe – attachment 2 A-2245 38-24 (21/64 x 9/16) hex head clamp nut 2 A-2245 38/24 (21/64 x 9/16) hex head clamp nut 3 A-2245 38/24 (21/64 x 9/16) hex head clamp nut 3 A-2245 38/24 (21/64 x 9/16) hex head clamp nut AA-5256-C Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies 1 AA-5255-C Muffler outlet pipe 133" long – AA-157 1 AA-5256-C Muffler outlet pipe 133" long – AA-157 #1 (front) bracket to frame – attachment 2 A-2076381 5/16-24 (17/64 x 1/2) hex head nut 2 A-22170 5/16 (2/32 x 37/64) lock washer 1 A-5258 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment 1 A-5258 Muffler outlet pipe to #3 cross member bracket #3 – AA-157 #2 bracket to #3 cross member – attachment 1 A-2274 38/24 (1/32 x 9/16) castle nut 1 A-2275 38/24 (1/32 x 21/32) clamp lock washer 1 A-2276 38/24 (1/32 x 21/32) clamp lock washer 1 A-2277 38/24 (1/34 x 9/16) hex nut 1 A-2278 38/24 (1/34 x 9/16) hex nut 1 A-2278 38/24 (1/34 x 9/16) castle nut 1 A-2278 38/24 (1/34 x 9/16) castle nut 1 A-2278 38/24 (1/34 x 9/16) castle nut 1 A-2278 38/24 (1/64 x 9/16) hex nut 1 A-2278 38/24 (1/64 x 9/16) castle nut 1 A-2374 33/22 x 5/8 cotter #1 (car) bracket to frame – attachment 4 A-2049 38/24 x 13/16 hex head bolt w/cotter hole 1 A-2174 58/24 (1/64 x 9/16) hex head clamp plot 4 A-2174 58/24 (1/64 x 9/16) hex head clamp nut 4 A-2245 38/24 (1/64 x 9/16) hex head clamp nut 4 A-2245 38/24 (1/64 x 9/16) hex head clamp nut 4 A-2245 38/24 (1/64 x 9/16) hex head clamp nut 4 A-2245 38/24 (1/64 x 9/16) hex head clamp nut 1 A-2365 57/14 Muffler sustallation #4 (with parallel frame) AA-5230 Muffler outlet pipe 107 mong – AA-157 #1 (front) bracket to outlet pipe nuffler – attachment 1 A-207081 5/16-24 (7/64 x 1/1) (3/32 x 21/32) clamp lock washer #1 (front) bracke	-	
$ \begin{array}{cccc} 2 & A 20905 & 38-24 x 1 hex head clamp bol A 2 A21741-82 & 38-24 (21/64 x 91/16) hex head clamp nut 3 & 401-411) (332 x 21/32) clamp lock washer $	-	
2 A-2245 $38(401-411)(3/32 \times 21/32)(amp lock washer$ AA157 Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies 1 AA-5230 Muffler assembly – AA-157 1 AA-5255-A Muffler outlet pipe to frame bracket –#11 (front) – AA-157 #1 (front) bracket to frame – attachment 2 A-2076381 5/16-24 (17/64 × 1/2) hex head nut 2 A-20217 5/16 (3/32 × 37/64) lock washer 1 AA-5258 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment 1 A-2034 3/8-24 × 13/16 hex head bolt w/cotter hole 1 A-21745 3/8-24 (13/32 × 9/16) castle nut 1 A-2334 3/32 × 5/8 cotter 1 A-5256-C Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment 1 A-20349 3/8-24 × 1-1/4 hex head clamping bolt 1 A-21745 3/8 (401-411) (3/32 × 21/32) clamp lock washer 1 A-22049 3/8-24 × 1-1/4 hex head clamping bolt 1 A-21745 3/8-24 (13/32 × 9/16) castle nut 1 A-22245 3/8 (401-411) (3/32 × 21/32) clamp lock washer 1 A-2234 3/32 × 5/8 cotter 1 A-22354 3/32 × 5/8 cotter 4 A-2245 3/8 (401-411) (3/32 × 21/32) clamp lock washer 1 A-2245 3/8 (401-411) (3/32 × 21/32) clamp lock washer 1 A-2245 3/8 (401-411) (3/32 × 21/32) clamp lock washer 1 A-2245 3/8 (401-411) (3/32 × 21/32) clamp lock washer 2 AA755 Muffler Installation #4 (with parallel frame) April 1931 - production end - Closed body types 1 AA-5256 Muffler outlet pipe to frame bracket -#1 (front) – AA-157 #1 (front) bracket to frame – attachment 2 A-22045 5/16 C/4 (17/64 × 1/2) hex head clamp hot 1 A-22170 S/16 (3/32 × 37/64) hex washer #1 (front) bracket to frame – attachment 1 A-22245 3/8 (401-411) (3/32 × 21/32) clamp lock washer #1 (front) bracket to interne - attachment 1 A-2245 3/8 (401-411) (3/32 × 21/32) clamp loc	2 A-20905	
AA 157 Muffler Installation #3 (with parallel frame) January through March 1931 - production end - Closed cargo bodies1AA-5235Muffler assembly – AA-1571AA-5256CMuffler outlet pipe to frame bracket – #1 (front) – AA-157 #1 (front) bracket to frame – attachment2A-2076351 $5/16/24 \times 25/32$ hex head bolt2A-2170281 $5/16/24 \times 25/32$ hex head bolt2A-2217 $5/16/24 \times 25/32$ hex head bolt weather1AA-5258Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment1A-20949 $3/8/24 \times 13/16$ hex head bolt weather1A-20949 $3/8/24 \times 13/16$ hex head bolt weather1A-20949 $3/8/24 \times 13/16$ hex head bolt weather1A-20949 $3/8/24 \times 13/16$ hex nember – attachment1A-20969 $3/8/24 \times 1-1/4$ hex head clamping bol1A-21745 $3/8/24 \times 1-1/4$ hex head clamping bol1A-22245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-22245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-22245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-2245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-2245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer4A-2005 $3/8 - 24 \times 1$ hex head clamp pot4A-2005	-	3/8-24 (21/64 x 9/16) hex head clamp nut
January Hrough March 1931 - production end - Closed cargo bodies1AA-5230Muffler assembly $-AA-157$ 1AA-5255-KMuffler outlet pipe 133" long $-AA-157$ 1AA-5256-CMuffler outlet pipe to frame bracket $+#1$ (front) $-AA-157$ 2 $A-20763-81$ $5/16-24 x 25/32$ hex head bolt2 $A-20763-81$ $5/16-24 x 25/32$ hex head bolt2 $A-21702-81$ $5/16-24 x 25/32$ hex head bolt2 $A-221702-81$ $5/16-24 x 25/32$ hex head bolt2 $A-221702-81$ $5/16-24 x 1/3/64$ hock washer1 $A-20493$ $38-24 x 13/16$ hex head bolt w/cotter hole1 $A-21743$ $38-24 x 13/16$ hex head bolt w/cotter hole1 $A-2174-51$ $38-24 x 13/16$ hex head clamping bolt1 $A-2049$ $38-24 x 13/16$ hex head clamping bolt1 $A-2049$ $38-24 x 12/16/6 hex nut1A-204938-24 x 13/16 hex head bolt w/cotter hole1A-2174+5138-24 (1/3/32 x 2/1/32) clamp lock washer1A-224538/24 (1/3/32 x 9/16) castle nut1A-224538-24 x 13/16 hex head bolt w/cotter hole1A-2174+5138-24 x 13/16 hex head bolt w/cotter hole1A-2174+5338-24 x 13/16 hex head bolt w/cotter hole1A-224538-24 x 13/16 hex head clamp put1A-224538-24 x 1 hex head clamp put1A-224538-24 x 1 hex head clamp holt4A-2174+5238-24 x 1 hex head clamp holt4A-2174+52$	2 A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer
January Hrough March 1931 - production end - Closed cargo bodies1AA-5230Muffler assembly $-AA-157$ 1AA-5255-KMuffler outlet pipe 133" long $-AA-157$ 1AA-5256-CMuffler outlet pipe to frame bracket $+#1$ (front) $-AA-157$ 2 $A-20763-81$ $5/16-24 x 25/32$ hex head bolt2 $A-20763-81$ $5/16-24 x 25/32$ hex head bolt2 $A-21702-81$ $5/16-24 x 25/32$ hex head bolt2 $A-221702-81$ $5/16-24 x 25/32$ hex head bolt2 $A-221702-81$ $5/16-24 x 1/3/64$ hock washer1 $A-20493$ $38-24 x 13/16$ hex head bolt w/cotter hole1 $A-21743$ $38-24 x 13/16$ hex head bolt w/cotter hole1 $A-2174-51$ $38-24 x 13/16$ hex head clamping bolt1 $A-2049$ $38-24 x 13/16$ hex head clamping bolt1 $A-2049$ $38-24 x 12/16/6 hex nut1A-204938-24 x 13/16 hex head bolt w/cotter hole1A-2174+5138-24 (1/3/32 x 2/1/32) clamp lock washer1A-224538/24 (1/3/32 x 9/16) castle nut1A-224538-24 x 13/16 hex head bolt w/cotter hole1A-2174+5138-24 x 13/16 hex head bolt w/cotter hole1A-2174+5338-24 x 13/16 hex head bolt w/cotter hole1A-224538-24 x 13/16 hex head clamp put1A-224538-24 x 1 hex head clamp put1A-224538-24 x 1 hex head clamp holt4A-2174+5238-24 x 1 hex head clamp holt4A-2174+52$		
1 AA-5230 Muffler assembly – AA-157 1 AA-5255-C Muffler outlet pipe 133" long – AA-157 1 AA-5256-C Muffler outlet pipe to frame bracket – #1 (front) – AA-157 #1 (front) bracket to frame – attachment 2 A-20763-S1 5/16-24 (17/64 x 1/2) hex head nut 2 A-22170 5/16 (3/32 x 37/64) lock washer 1 AA-5258 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment 1 A-20949 38-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 38-24 (13/32 x 9/16) castle nut 1 A-2353 Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment 1 A-2369 38-24 x 1-1/4 hex head clamping bolt 1 A-21741-S1 38-24 (13/23 x 9/16) castle nut 1 A-23741-S1 38-24 (13/23 x 9/16) pex nut 1 A-23741-S1 38-24 (21/64 x 9/16) hex nut 1 A-22145 38-24 (21/64 x 9/16) hex nut 1 A-22145 38-24 (21/64 x 9/16) hex nut 1 A-22145 38-24 (13/32 x 9/16) castle nut 1 A-22145 38-24 (13/32 x 9/16) castle nut 1 A-23534 3/32 x 5/8 cotter #1, 2 and 4 brackets to outlet pipe - attachment 4 A-20905 38-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 38-24 (21/64 x 9/16) hex head clamp put 4 A-22245 38 (401-411) (3/32 x 21/32) clamp lock washer 1 A-23534 3/32 x 5/8 cotter #1, 2 and 4 brackets to outlet pipe - attachment 4 A-22049 38-24 x 1 hex head clamp bolt 4 A-21741-S2 38-24 (21/64 x 9/16) hex head clamp nut 4 A-22245 38 (401-411) (3/32 x 21/32) clamp lock washer 2 A-23763-S1 5/16-24 x (25/32 hex head bolt 2 A-21702-S1 5/16-24 x (17/64 x 1/2) hex head nut 2 A-22763-S1 5/16-24 x (17/64 x 1/2) hex head nut 2 A-22763-S1 5/16-24 x (17/64 x 1/2) hex head nut 2 A-22763-S1 5/16-24 x (17/64 x 1/2) hex head nut 2 A-22763-S1 5/16-24 x (17/64 x 1/2) hex head nut 2 A-22763-S1 5/16-24 x (17/64 x 1/2) hex head nut 3 A-2217 5/16 (3/32 x 37/64) hock washer #1 (front) bracket to rame - attachment 1 A-220763-S1 5/16-24 x (17/64 x 1/2) hex head nut 3 A-2217 5/16 (3/32 x 37/64) hock washer #1 (front) bracket to rame #3 cross member - attachment 1 A-220763-S1 3/8-24 x 1 h	Januar	
1 AA-5255-A Muffler outlet pipe 133" long – AA-157 1 AA-5256-C Muffler outlet pipe to frame bracket =#1 (front) – AA-157 #1 (front) bracket to frame – attachment 2 A-20703-S1 5/16-24 (17/64 x 12) hex head bolt 2 A-21702-S1 5/16-24 (17/64 x 12) hex head bolt 2 A-21702-S1 5/16 (3/32 x 37/64) lock washer 1 A-5258 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member - attachment 1 1 A-2333 3/32 x 5/8 cotter 1 A-2309 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-2245 3/8 (401-411) (3/32 x 21/32) (amp lock washer 1 A-22096 3/8-24 x 1-1/4 hex head clamping bolt 1 A-22045 3/8 (401-411) (3/32 x 21/32) (amp lock washer 1 A-22049 3/8-24 x 1-1/4 hex head clamping bolt 1 A-22049 3/8-24 x 1-1/4 hex head bolt w/cotter hole 1 A-22049 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-22049 3/8-24 x 1/3/16 hex head bolt w/cotter hole 1 A-22049 3/8-24 x 1/3/16 hex head clamp put	-	· · ·
1AA-5256-CMuffler outlet pipe to frame bracket $-\#1$ (front) $-AA-157$ $\#1$ (front) bracket to frame $-$ attachment2A-20763-S15/16-24 x 25/32 hex head bolt2A-221725/16 (3/32 x 37/64) lock washer1AA-5258Muffler outlet pipe to #3 cross member bracket #2 $- AA-157$ $\#2$ bracket to #3 cross member $-$ attachment1A-204938-24 x 13/16 hex head bolt w/cotter hole1A-2174538-24 x 13/16 hex head bolt w/cotter hole1A-2174538-24 x 13/16 hex head bolt w/cotter hole1A-2258Muffler outlet pipe to #4 cross member bracket #3 $- AA-157$ #3 bracket to #4 cross member $-$ attachment1A-2224538-24 x 1-1/4 hex head clamping bolt1A-2224538 (401-411) (3/32 x 21/32) clamp lock washer1A-227438-24 x 13/16 hex head bolt w/cotter hole1A-2274538-24 x 13/16 hex head clamp bolt1A-2274538-24 x 13/16 hex head clamp bolt4A-209038-24 x 13/16 hex head clamp bolt4A-2204938-24 x 1 hex head clamp bolt4A-22174538-24 x 11/4 hex head clamp bolt4A-22174538-24 x 1 hex head clamp bolt4A-22174538-24 x 1 hex head clamp bolt4A-2224538 (401-411) (3		•
2 A 20763-S1 5/16-24 x 25/32 hex head bolt 2 A-21702-S1 5/16-24 (17/64 x 1/2) hex head nut 2 A-22217 5/16 (3/32 x 37/64) lock washer 1 AA-5258 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment 1 A-20949 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3/8-24 (13/32 x 9/16) castle nut 1 A-22534 3/32 x 5/8 cotter 1 A-22534 3/32 x 5/8 cotter 1 A-22554 Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment 1 A-20969 3/8-24 x 1-1/4 hex head clamping bolt 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer 1 AA-5227 Muffler outlet pipe to frame bracket #4 (rear) – AA-157 #4 (rear) bracket to frame – attachment 1 A-20949 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3/8-24 (13/32 x 9/16) castle nut 1 A-21745 3/8-24 (13/32 x 9/16) castle nut 1 A-21745 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3/8-24 (13/32 x 9/16) castle nut 1 A-22353 3/32 x 5/8 cotter #1, 2 and 4 brackets to outlet pipe – attachment 4 A-22045 3/8-24 (21/64 x 9/16) hex head clamp polt 4 A-21741-S2 3/8-24 (21/64 x 9/16) hex head clamp nut 4 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer 2 A-2174-S2 3/8-24 (21/64 x 9/16) hex head clamp nut 4 A-5255-D Muffler outlet pipe to frame bracket -#1 (front) – AA-157 #1 (front) bracket to frame - attachment 2 A-220763-S1 5/16-24 x 25/32 hex head bolt 2 A-21702-S1 5/16-24 x 1/32 hex head bolt 2 A-22175 5/16 (3/32 x 37/64) lock washer #1 (front) bracket to outlet pipe/muffler – attachment 1 A-20905 3/8-24 x 1 hex head clamp bolt 1 A-21741-S2 3/8-24 (21/64 x 9/16) hex head clamp nut 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer #1 (front) bracket to outlet pipe/muffler – attachment 1 A-21741-S2 3/8-24 (21/64 x 9/16) hex head clamp nut 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer #1 (A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-21741-S1 3		
2 A-2170281 5/16-24 (17/64 x 1/2) hex head nut 2 A-22217 5/16 (3/32 x 37/64) lock washer 1 AA-5258 Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member - attachment 1 A-2094 38-24 (13/32 x 9/16) castle nut 1 A-21745 38-24 (13/32 x 9/16) castle nut 1 A-22554 Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member - attachment 1 A-2096 38-24 x 1-1/4 hex head clamping bolt 1 A-21741-81 38-24 (21/64 x 9/16) hex nut 1 A-22245 38 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22245 38 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22949 38-24 (21/64 x 9/16) hex nut 1 A-22949 38-24 (13/32 x 9/16) castle nut 1 A-22945 38-24 (13/32 x 9/16) castle nut 1 A-22945 38-24 (21/64 x 9/16) hex head clamp polt 4 A-21741-82 38-24 (21/64 x 9/16) hex head clamp nut 4 A-221741-82 38-24 (21/64 x 9/16) hex head clamp nut 4 A-22245 38 (401-411) (3/32 x 21/32) clamp lock washer AA157 Muffler Installation #4 (with parallel frame) April 1931 - production end - Closed body types Muffler outlet pipe 103° long – AA-157 1 AA-5230 Muffler outlet pipe 103° long – AA-157 1 AA-5255-D Muffler outlet pipe 103° long – AA-157 1 AA-5256-C Muffler outlet pipe 103° long – AA-157 1 AA-5256-C Muffler outlet pipe 103° long – AA-157 1 AA-5256-C Muffler outlet pipe to frame bracket –#1 (front) – AA-157 #1 (front) bracket to frame – attachment 2 A-22172 5/16 (3/32 x 37/64) lock washer #1 (front) bracket to outlet pipe/muffler – attachment 1 A-22905 38-24 x 1 hex head clamp bolt 1 A-21741-82 38 (401-411) (3/32 x 21/32) clamp lock washer #1 (front) bracket to outlet pipe/muffler – attachment 1 A-22976 38-24 x 1 hex head clamp bolt 1 A-21741-81 38-24 (21/64 x 9/16) hex nut 1 A-22975 33 3/2 4 x 3/4 hex head bolt 1 A-21741-81 38-24 (21/64 x 9/16) hex nut 1 A-22975 38 (401-411) (3/32 x 21/3		#1 (front) bracket to frame-attachment
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1AA-5258Muffler outlet pipe to #3 cross member bracket #2 – AA-157 #2 bracket to #3 cross member – attachment1A-204938-24 x 13/16 hex head bolt w/cotter hole1A-2174538-24 (13/32 x 9/16) castle nut1A-225343/32 x 5/8 cotter1A-5256-CMuffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment1A-209693/8-24 x 1-1/4 hex head clamping bolt1A-21741-S13/8-24 (21/64 x 9/16) hex nut1A-222453/8 (401-411) (3/32 x 21/32) clamp lock washer1A-223343/32 x 5/8 cotter1A-223343/32 x 5/8 cotter1A-223343/32 x 5/8 cotter1A-22343/8-24 x 13/16 hex head bolt w/cotter hole1A-223343/32 x 5/8 cotter#1, 2 and 4 brackets to outlet pipe – attachment4A-20053/8-24 x 1 hex head clamp bolt4A-222453/8 (401-411) (3/32 x 21/32) clamp lock washer2A-21741-S23/8-24 x 1 hex head clamp nut4A-222453/8 (401-411) (3/32 x 21/32) clamp lock washer2A-21741-S23/8-24 x 1 hex head clamp nut4A-222453/8 (401-411) (3/32 x 21/32) clamp lock washer1A-5256-CMuffler outlet pipe 103" long – AA-1571AA-5256-CMuffler outlet pipe to frame bracket –#1 (front) –AA-157 #1 (front) bracket to frame – attachment2A-21702-S15/16-24 (17/64 x 1/2) hex head nut2A-21702-S15/16-24 (17/64 x 1/2) hex head nu		
#2 bracket to $\frac{13}{7}$ cross member – attachment 1 A-21745 3.8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3.8-24 (13/32 x 9/16) castle nut 1 A-23534 3/32 x 5/8 cotter 1 A-2556-C Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment 1 1 A-20969 3.8-24 x 1-1/4 hex head clamping bolt 1 A-22245 3.8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22245 3.8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22245 3.8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22354 3/82 4 x 13/16 hex head bolt w/cotter hole 1 A-21741-53 3.8-24 x 13/16 hex head clamp nut 1 A-21745 3.8-24 x 13/16 hex head clamp holt 1 A-21745 3.8-24 x 13/16 hex head clamp nut 1 A-221745 3.8-24 x 11/1 (3/32 x 21/32) clamp lock washer 4 A-21741-52 3.8-24 x 11/1 (5/32 x 21/32) clamp lock washer 4 A-22170-51 Muffler outlet pipe nof name bracket - 411 (front) - AA-157 4 A-22170-51 Muffler outlet pipe nof "long – AA-157<		
1 A-20949 38-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3/8-24 (13/32 x 9/16) castle nut 1 A-22534 3/32 x 5/8 cotter 1 A-22554 3/8-24 x 1-1/4 hex head clamping bolt 1 A-20969 3/8-24 x 1-1/4 hex head clamping bolt 1 A-20969 3/8-24 x 1-1/4 hex head clamping bolt 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22049 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-22745 3/8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22745 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-22745 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-22745 3/8-24 x 11/25 a /8-24 (13/32 x 9/16) castle nut 1 A-22745 3/8-24 x 11 hex head clamp bolt 4 A-20905 3/8-24 x 1 hex head clamp nut 4 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-5230 Muffler outlet pipe to frame bracket -#1 (front) - AA-157 1 A-4-5255-D Muffler outlet pipe 1	I AA-5258	* *
1 A-21745 3.8-24 (13/32 x 9/16) castle nut 1 A-23534 3/32 x 5/8 cotter 1 A-5256-C Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment 1 A-20069 3.8-24 x 1-1/4 hex head clamping bolt 1 A-21741-51 3.8-24 x 1-1/4 hex head clamping bolt 1 A-22049 3.8-24 x (21/64 x 9/16) hex nut 1 A-22245 3.8 (401-411) (3/32 x 21/32) clamp lock washer 1 A-22049 3.8-24 x 13/16 hex head bolt w/cotter hole 1 A-22054 3.8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3.8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3.8-24 x 13/16 hex head clamp nut 1 A-22334 3/32 x 5/8 cotter #1 1. 2 and 4 brackets to outlet pipe – attachment 4 A-2005 3.8-24 x 1 hex head clamp bolt 4 A-22045 3.8 (401-411) (3/32 x 21/32) clamp lock washer AA157 Muffler Installation #4 (with parallel frame) April 1931 - production end - Closed body types 1 A-5220 Muffler outlet pipe to frame bracket -#1 (front) - AA-157 # Are170281 5/16	1 A-20949	
1 A-23534 3/32 x 5/8 cotter 1 A-5256-C Muffler outlet pipe to #4 cross member bracket #3 – AA-157 #3 bracket to #4 cross member – attachment 1 A-20969 3/8-24 x 1-1/4 hex head clamping bolt 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer 1 AA-52? Muffler outlet pipe to frame bracket #4 (rear) – AA-157 #4 (rear) bracket to frame – attachment 1 A-20949 3/8-24 x 13/16 hex head bolt w/cotter hole 1 A-21745 3/8-24 (13/32 x 9/16) castle nut 1 A-23534 3/32 x 5/8 cotter #1, 2 and 4 brackets to outlet pipe – attachment 4 A-20905 3/8-24 x 1 hex head clamp bolt 4 A-21741-S2 3/8-24 (21/64 x 9/16) hex head clamp nut 4 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer AA157 Muffler Installation #4 (with parallel frame) April 1931 - production end - Closed body types 1 AA-5230 Muffler assembly – AA-157 1 AA-5255-D Muffler outlet pipe to frame bracket –#1 (front) – AA-157 #1 (front) bracket to frame – attachment 2 A-20763-S1 5/16-24 (17/64 x 1/2) hex head nut 2 A-22170 5/16 (3/3 x 37/64) lock washer #1 (front) bracket to outlet pipe/muffler – attachment 1 A-20905 3/8-24 x 1 hex head clamp bolt 1 A-21741-S2 3/8-24 (21/64 x 9/16) hex head nut 2 A-22170 5/16 (3/3 x 37/64) lock washer #1 (front) bracket to outlet pipe/muffler – attachment 1 A-20905 3/8-24 x 1 hex head clamp bolt 1 A-21741-S2 3/8 (401-411) (3/3 x 21/32) clamp lock washer #1 (front) bracket to frame #3 cross member – attachment 1 A-20970-S1 3/8-24 x 3/4 hex head clamp bolt 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer #2 (center) bracket to frame #3 cross member – attachment 1 A-22970-S1 3/8-24 x 3/4 hex head bolt 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer #2 (center) bracket to frame #3 cross member – attachment 1 A-22970-S1 3/8-24 x 3/4 hex head bolt 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-22945 3/8 (401-411) (3/32 x 21/32) clamp lock washer #2 (cent	-	
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$1 A-23534 3/32 \times 5/8 \text{ cotter} \\ \#1, 2 \text{ and } 4 \text{ brackets to outlet pipe – attachment} \\ 4 A-20905 3/8-24 \times 1 \text{ hex head clamp bolt} \\ 4 A-21741-52 3/8-24 (21/64 \times 9/16) \text{ hex head clamp nut} \\ 4 A-22245 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ \hline \\ AA157 \text{ Muffler Installation #4 (with parallel frame)} \\ April 1931 - production end - Closed body types \\ 1 AA-5230 Muffler outlet pipe 103" \log - AA-157 \\ 1 AA-5255-D Muffler outlet pipe to frame bracket - #1 (front) - AA-157 \\ \#1 (front) bracket to frame - attachment \\ 2 A-20763-S1 5/16-24 \times 25/32 \text{ hex head bolt} \\ 2 A-21702-S1 5/16-24 (17/64 \times 1/2) \text{ hex head nut} \\ 2 A-22217 5/16 (3/32 \times 37/64) \text{ lock washer} \\ \#1 (front) bracket to outlet pipe/muffler - attachment \\ 1 A-20905 3/8-24 \times 1 \text{ hex head clamp bolt} \\ 1 A-21741-S2 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ 1 AA-5258 Muffler outlet pipe bracket - #2 (center) - AA-157 \\ \#2 (center) bracket to frame #3 cross member - attachment \\ 1 A-20970-S1 3/8-24 \times 3/4 \text{ hex head bolt} \\ 1 A-21741-S1 3/8-24 (21/64 \times 9/16) \text{ hex nut} \\ 1 A-2245 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ \#1 (A-20970-S1 3/8-24 \times 3/4 \text{ hex head bolt} \\ 1 A-21741-S1 3/8-24 (21/64 \times 9/16) \text{ hex nut} \\ 1 A-2245 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ \#1 A-2245 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ 1 A-20970-S1 3/8-24 \times 3/4 \text{ hex head bolt} \\ 1 A-21741-S1 3/8-24 (21/64 \times 9/16) \text{ hex nut} \\ 1 A-2245 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ \#1 A-2245 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ 1 A-2245 3/8 (401-411) (3/32 \times 21/32) \text{ clamp lock washer} \\ \#2 (center) bracket to outlet pipe - attachment \\ 1 A-20935-S1 3/8-24 \times 7/8 \text{ hex head clamp bolt} \\ 3/8-24 \times 7/8 \text{ hex head clamp bolt} \\ 3/8-24 \times 7/8 \text{ hex head clamp bolt} \\ 3/8-24 \times 7/8 \text{ hex head clamp bolt} \\ 3/8-24 \times 7/8 \text{ hex head clamp bolt} \\ 3/8-24 \times 7/8 \text{ hex head clamp bolt} \\ 3/8-$	-	
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$ \begin{array}{cccc} 4 & A-20905 & 3/8-24 \ x \ 1 \ hex \ head \ clamp \ bolt \\ 4 & A-21741-S2 & 3/8-24 \ (21/64 \ x \ 9/16) \ hex \ head \ clamp \ nut \\ 4 & A-22245 & 3/8 \ (401-411) \ (3/32 \ x \ 21/32) \ clamp \ lock \ washer \\ \end{array}$	• • • •	
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AA157 Muffler Installation #4 (with parallel frame) April 1931 - production end - Closed body types1AA-5230Muffler assembly – AA-1571AA-5255-DMuffler outlet pipe 103" long – AA-1571AA-5256-CMuffler outlet pipe to frame bracket – #1 (front) – AA-157 #1 (front) bracket to frame – attachment2A-20763-S1 $5/16-24 \times 25/32$ hex head bolt2A-221702-S1 $5/16-24 (17/64 \times 1/2)$ hex head nut2A-22217 $5/16 (3/32 \times 37/64)$ lock washer #1 (front) bracket to outlet pipe/muffler – attachment1A-20905 $3/8-24 \times 1$ hex head clamp bolt1A-22245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-20970-S1 $3/8-24 \times 3/4$ hex head bolt1A-20970-S1 $3/8-24 \times 3/4$ hex head bolt1A-22245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-20970-S1 $3/8-24 \times 3/4$ hex head bolt1A-22245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-2245 $3/8 (401-411) (3/32 \times 21/32)$ clamp lock washer1A-2235-S1 $3/8-24 \times 7/8$ hex head clamp bolt	4 A-21741-S2	3/8-24 (21/64 x 9/16) hex head clamp nut
April 1931 - production end - Closed body types1AA-5230Muffler assembly – AA-1571AA-5255-DMuffler outlet pipe 103" long – AA-1571AA-5256-CMuffler outlet pipe to frame bracket – #1 (front) – AA-157 #1 (front) bracket to frame – attachment2A-20763-S15/16-24 x 25/32 hex head bolt2A-21702-S15/16-24 (17/64 x 1/2) hex head nut2A-222175/16 (3/32 x 37/64) lock washer #1 (front) bracket to outlet pipe/muffler – attachment1A-209053/8-24 x 1 hex head clamp bolt1A-21741-S23/8-24 (21/64 x 9/16) hex head clamp nut1A-5258Muffler outlet pipe bracket – #2 (center) – AA-157 #2 (center) bracket to frame #3 cross member – attachment1A-20970-S13/8-24 x 3/4 hex head bolt1A-22453/8 (401-411) (3/32 x 21/32) clamp lock washer1A-22453/8 (401-411) (3/32 x 21/32) clamp lock washer1A-2235-S13/8-24 x 7/8 hex head clamp polt	4 A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer
April 1931 - production end - Closed body types1AA-5230Muffler assembly – AA-1571AA-5255-DMuffler outlet pipe 103" long – AA-1571AA-5256-CMuffler outlet pipe to frame bracket – #1 (front) – AA-157 #1 (front) bracket to frame – attachment2A-20763-S15/16-24 x 25/32 hex head bolt2A-21702-S15/16-24 (17/64 x 1/2) hex head nut2A-222175/16 (3/32 x 37/64) lock washer #1 (front) bracket to outlet pipe/muffler – attachment1A-209053/8-24 x 1 hex head clamp bolt1A-21741-S23/8-24 (21/64 x 9/16) hex head clamp nut1A-5258Muffler outlet pipe bracket – #2 (center) – AA-157 #2 (center) bracket to frame #3 cross member – attachment1A-20970-S13/8-24 x 3/4 hex head bolt1A-22453/8 (401-411) (3/32 x 21/32) clamp lock washer1A-22453/8 (401-411) (3/32 x 21/32) clamp lock washer1A-2235-S13/8-24 x 7/8 hex head clamp polt		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		AA157 Muffler Installation #4 (with parallel frame) April 1931 - production end - Closed body types
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1 AA-5230	
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$\begin{array}{ccccc} 2 & A-21702-S1 & 5/16-24 & (17/64 x 1/2) hex head nut\\ 2 & A-22217 & 5/16 & (3/32 x 37/64) lock washer\\ & & \#1 & (front) bracket to outlet pipe/muffler - attachment\\ 1 & A-20905 & 3/8-24 x 1 hex head clamp bolt\\ 1 & A-21741-S2 & 3/8-24 & (21/64 x 9/16) hex head clamp nut\\ 1 & A-22245 & 3/8 & (401-411) & (3/32 x 21/32) & clamp lock washer\\ 1 & AA-5258 & Muffler outlet pipe bracket - \#2 & (center) - AA-157 \\ & & \#2 & (center) bracket to frame \#3 & cross member - attachment\\ 1 & A-20970-S1 & 3/8-24 & x 3/4 hex head bolt\\ 1 & A-21741-S1 & 3/8-24 & (21/64 x 9/16) hex nut\\ 1 & A-2245 & 3/8 & (401-411) & (3/32 x 21/32) & clamp lock washer\\ & & \#2 & (center) bracket to outlet pipe - attachment\\ 1 & A-20935-S1 & 3/8-24 x 7/8 hex head clamp bolt\\ \end{array}$		
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$ \begin{array}{lll} & A-20905 & 3/8-24 \ x \ 1 \ \text{hex head clamp bolt} \\ 1 & A-21741-S2 & 3/8-24 \ (21/64 \ x \ 9/16) \ \text{hex head clamp nut} \\ 1 & A-22245 & 3/8 \ (401-411) \ (3/32 \ x \ 21/32) \ \text{clamp lock washer} \\ 1 & AA-5258 & \ \text{Muffler outlet pipe bracket} - \#2 \ (\text{center}) - AA-157 \\ & \ \#2 \ (\text{center}) \ \text{bracket to frame } \#3 \ \text{cross member} - \ \text{attachment} \\ 1 & A-20970-S1 & 3/8-24 \ x \ 3/4 \ \text{hex head bolt} \\ 1 & A-21741-S1 & 3/8-24 \ (21/64 \ x \ 9/16) \ \text{hex nut} \\ 1 & A-22245 & 3/8 \ (401-411) \ (3/32 \ x \ 21/32) \ \text{clamp lock washer} \\ & \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	2 A-22217	
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1 AA-5258 Muffler outlet pipe bracket - #2 (center) - AA-157 #2 (center) bracket to frame #3 cross member - attachment 1 A-20970-S1 3/8-24 x 3/4 hex head bolt 1 A-21741-S1 3/8-24 (21/64 x 9/16) hex nut 1 A-22245 3/8 (401-411) (3/32 x 21/32) clamp lock washer #2 (center) bracket to outlet pipe - attachment 1 A-20935-S1 3/8-24 x 7/8 hex head clamp bolt		· · · · ·
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1 A-20935-S1 3/8-24 x 7/8 hex head clamp bolt	1 A-22245	
	1 1 00007 61	
1 $5-21/41-52$ $3/6-24$ (21/04 X 9/10) nex nut	-	*
	1 A-21/41-82	5/6-24 (21/04 X 9/10) nex nut

ſ	1	A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer
I	1	A-5256-C	Muffler outlet pipe bracket – #3 (rear) – AA-157
			#3 (rear) bracket to frame #4 cross member – attachment
	1	A-20969	3/8-24 x 1-1/4 hex head bolt
	1	A-21741-S1	3/8-24 (21/64 x 9/16) hex nut
	1	A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer
l			
			AA112 Muffler Installation
			All production through July 1932
	1	AA-5231	Muffler assembly with integral inlet pipe
	1	AA-5254	Muffler outlet pipe approximately 24" long - AA-112
	1	A-5272	Muffler inlet pipe to frame bracket
			bracket to frame – attachment
	2	A-20763-S1	5/16-24 x 25/32 hex head bolt
	2	A-21702-S1	5/16-24 (17/64 x 1/2) hex head nut
	2	A-22217	5/16 (3/32 x 37/64) lock washer
			bracket to inlet pipe - attachment
	2	A-20905	3/8-24 x 1 hex head clamp bolt
	2	A-21741-S2	3/8-24 (21/64 x 9/16) hex head clamp nut
	2	A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer
	1	AA-5273	Muffler outlet pipe bracket adapter
			Adapter to frame – attachment
	2	A-20763-S1	5/16-24 x 25/32 hex head bolt
	2	A-21702-S1	5/16-24 (17/64 x 1/2) hex head nut
	2	A-22217	5/16 (3/32 x 37/64) lock washer
	1	A-5256-C	Muffler outlet pipe to adapter bracket
			bracket to adapter - attachment
	1	A-20969	3/8-24 x 1-1/4 hex head bolt
	1	A-21741-S1	3/8-24 (21/64 x 9/16) hex nut
	1	A-22245	3/8 (401-411) (3/32 x 21/32) clamp lock washer

Figure 9 - Example - Outlet Pipe (flange to fit AA muffler)



Ford Service Bulletin Error

Note that page 558 (April 1931 Service Bulletin) shows muffler installations as of that date. It contains some errors!

Figure 1157 has an incorrect picture for the AA-5258 bracket.

Figure 1158 has an incorrect picture of the support brackets. Each bracket is different from the one pictured.

Figure 1160 has an incorrect picture of the AA-5256-D bracket.

Figure 10 - Example - A157 Muffler Installation #2

with tapered and parallel frames Mid 1930 - production end - open body types



Figure 11 Example - AA112 Muffler Installation

