

## *Undocumented DC Armature (XA-DCPulMor)*

The purpose of this update is to provide the specs for a previously undocumented closed-pole DC armature. It does not appear in any of the A.C.Gilbert exploded-view parts lists, and it does not match any of the surviving factory Bills Of Materials. The highlights of this update are as follows:

- Testing of this armature with a DC transformer, using a DC permanent magnet showed that it runs very cool and very strong. At 9.85 VDC, it turns in a very powerful performance.
- This armature turns in a miserable performance in an AC environment (at any voltage). When run on AC, performance is very poor and very hot, with lots of brush material smeared over the face of the commutator.
- And finally, it is physically identical to its AC PulMor brother (XA11077 for steamers), and its not-so-distant cousin (XA13C375 for the #785/#23785 Coaler), and can easily be mistaken for them. The specs for these two armatures are in the manual.





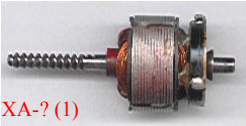
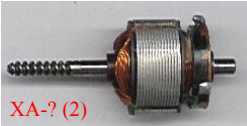
Tom Jarcho (author of The Roundhouse column in S-Gaugian magazine) contributed the first sample armature. The source of the red paint (generally used to indicate a defective armature) is not known. This was/is a good DC armature.

The second sample armature was found in a steamer configured with an AC field. This armature appears to answer the question: “What did the factory do if it ran out of the required wire”. The answer appears to have been: “Take the next largest size and stretch it during the winding process until it approximates the required spec.”

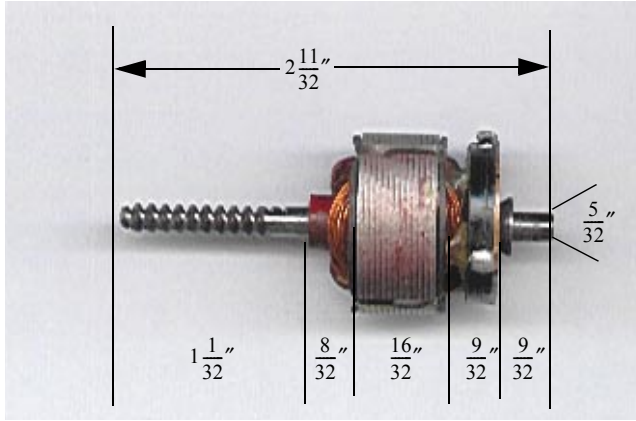
Both armatures ran exceptionally well using a DC transformer and the Gilbert DC field (permanent) magnet. Both were original factory pieces. However, sample #2 should be used for information/identification only if you’re contemplating building one yourself.

You can be sure that there are others out there. Some may be running well in locos configured for DC operation. Others may be sitting in that “dog” that never ran very well, even at maximum AC power. And still others may be sitting in your parts bin, waiting to wreak havoc on your next repair job. Between the documentation provided in this update and in the manual, you should now be able to sort these out, and maybe even retrieve a few armatures that were put in the “defective” pile.

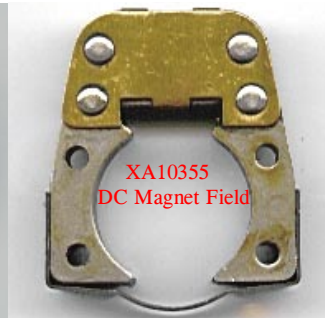
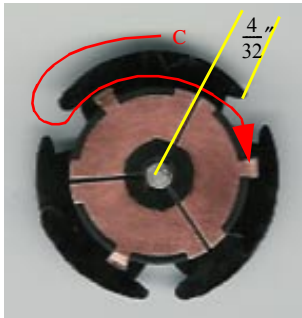
## *Overview of AC/DC Armatures*

 <p style="text-align: center;">XA10476</p>	<p>This is the earliest S-Gauge DC Armature (XA10476) . It is described on Page 2-10 of the manual. Physically, it is identical to the open-pole AC armature (XA9569), but the windings are different.</p>
<p>This is the second S-Gauge DC Armature (XA11001). It is described on Page 2-11 of the manual. This is the last documented open-pole DC armature. Without the green dab of paint, it can also be confused with the XA9569 (with oil slinger).</p>	 <p style="text-align: center;">XA11001</p>
 <p style="text-align: center;">XA11077</p>	<p>This is the common steamer PulMor armature (XA11077). It is described on page 2-8 of the manual. It was designed for AC operation. The closed-pole laminations (PA11077) eventually became standard for all steamer and accessory armature production.</p>
<p>This is the #785/#23785 coaler armature (XA13C375) . It is described on page 6-11 of the manual. It was designed for AC operation.</p>	 <p style="text-align: center;">XA13C375</p>
<p>To this list we can now add the following. These are two variations of the same armature and were designed for DC operation. Note the physical similarities between these armatures and the XA11077 (with or without the red paint). The resistance measurements given here (and in the manual) should allow you to distinguish one type (AC) from the other type (DC), as well as allow you to determine which of these two variations you have.</p>	
 <p style="text-align: center;">XA-(?) (1)</p>	 <p style="text-align: center;">XA-(?) (2)</p>

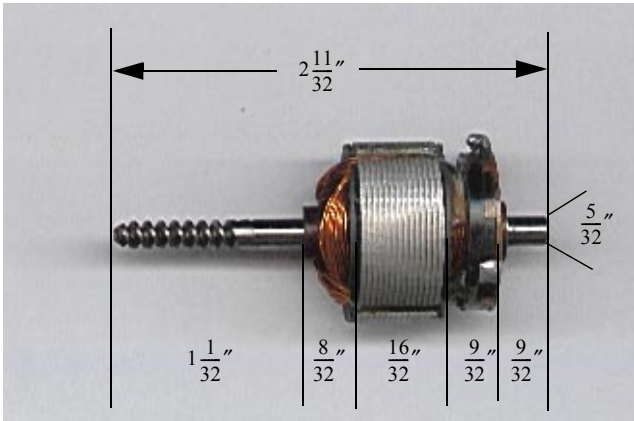
*The DC PulMor Armature #1 (UA-DCPulMor1)*



<i>Specifications</i>	
<i>Wire Size:</i>	28 (0.0116)
<i># of Turns:</i>	90
<i>Style:</i>	Random
<i># of Layers:</i>	Indeterminate
<i>Resistance:</i>	2.4 - 2.5 Ω
<i>Laminations:</i>	14 Metal - 2 Fiber
<i>Wire Length:</i>	13'10" - 14'0"



*The DC PulMor Armature #2 (UA-DCPulMor2)*



*\*#27 Gauge wire over-tensioned/stretched during winding to approximate #28.*

<i>Specifications</i>	
<i>Wire Size:</i>	(#27*) (0.0132)
<i># of Turns:</i>	90
<i>Style:</i>	Random
<i># of Layers:</i>	Indeterminate
<i>Resistance:</i>	1.8 -1.9 Ω
<i>Laminations:</i>	14 Metal - 2 Fiber
<i>Wire Length:</i>	13'10" - 14'0"

