

# Model A Ford Windshield Wipers

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# What Will You Learn?

- A little bit of history
- Which wipers for which cars
  - What do they look like
  - What are the specifics
  - A quick quiz on wipers
- How do you judge them

## History of the Windshield Wiper

Early Vehicles did not have windshield wipers!

Eventually, drivers needed something to remove water and dirt.

In 1903, J.H. Apjohn (UK) patented a method of moving two brushes top to bottom.

About the same time Mary Anderson (US) invented a swing arm fitted with a rubber blade that the driver could operate via an inside lever. By 1916 her invention was available on all U.S. made vehicles.

In 1917, John Jepsen invented a hand-operated squeegee known as "Rain Rubber." In 1920 Tri-Continental Corp. (Trico) was incorporated to manufacture it.

In 1921, William Folberth patented a vacuum-powered, single blade wiper run by suction. In 1925, Trico purchased the invention for \$1 million.

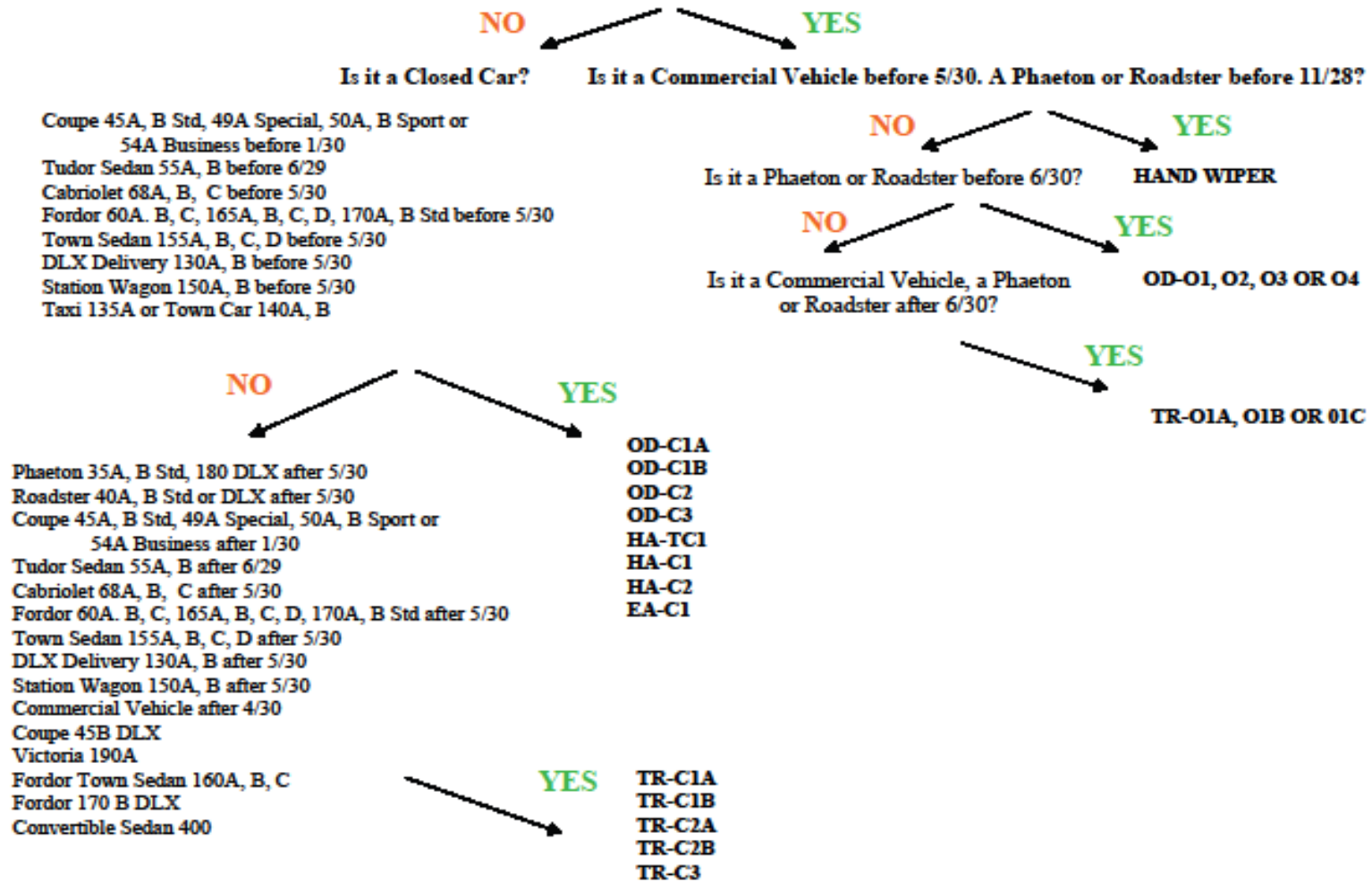
In 1926, electric wipers were introduced but they were reserved for more expensive cars.

Henry Ford was sold on windshield wipers after a salesman installed a hand wiper on Ford's own car.

Model A Fords used hand wipers, electric wipers and eventually, vacuum wipers. The switch to vacuum driven wipers was probably driven by financial gain.

# WIPER MOTORS DECISION TREE

**Is it a Commercial Vehicle, a Phaeton (35A,B or 180 DLX) or Roadster (40A, B or DLX)?**



## WINDSHIELD WIPER MASTER CHART 1928 - 1931

BODY TYPE	1927			1928					1929					1930					1931																			
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
PHAETON (35-A, B STD, 180-A DLX) ROADSTER (40-A, B STD, DLX)																																						
COUPE (45-A, B STD, 49-A SPL) SPORT COUPE (50-A, B) BUSINESS COUPE (54-A)																																						
TUDOR SEDAN (55-A, B)																																						
CABRIOLET (68-A, B, C); FORDORS (60-A, B, C; 165-A, B, C, D; 170-A, B STD) TOWN SEDAN (155-A, B, C, D); DLX DELIVERY (130-A, B); STATION WAGON (150-A, B)																																						
COUPE (45-B DLX); VICTORIA (190-A) FORDOR, TOWN SEDAN (160-A, B, C) FORDOR (170-B DLX); CONV. SEDAN (400)																																						
TAXI CAB (135-A) TOWN CAR (140-A, B)																																						
COMMERCIAL (ALL OTHER)																																						

**NOTES:**

= HAND OPERATED WIPERS   
 = ELECTRIC   
 = VACUUM

- OVERLAP OF HATCH PATTERN INDICATES TRANSITION PERIOD
- VARIOUS BODY TYPES IN THE GROUPS ABOVE HAD DIFFERENT INTRODUCTION AND TERMINATION DATES

## WIPER APPLICATIONS CHART 1928 - 1931

WIPERS	1927			1928					1929					1930					1931																			
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
<b>ELECTRIC WIPERS</b> CLOSED VEHICLES OD-C1A OD-C1B OD-C2 OD-C3 HA-TC1 HA-C1 HA-C2 EA-C1	=====			=====					=====					=====					=====																			
<b>OPEN VEHICLES</b> OD-01 OD-02 OD-03 OD-04				=====					=====					=====					=====																			
<b>VACUUM WIPERS</b> CLOSED VEHICLES TR-C1A TR-C1B TR-C2A TR-C2B TR-C3									=====					=====					=====																			
<b>OPEN VEHICLES</b> TR-01A TR-01B TR-01C														=====					=====																			

**WIPER IDENTIFICATION CODES**

**MANUFACTURERS:**  
 OD = OWEN-DYNETO CORP., SYRACUSE, NEW YORK  
 HA = HEINZE ELECTRIC CO., LOWELL, MASS.  
 EA = E.A. LABORATORIES, BROOKLYN, NEW YORK  
 TR = TRICO

XX-YNV

**VEHICLE TYPE:**  
 C = CLOSED VEHICLES (Inc. Cabriolets, Conv. Sedans for wiper application purposes)  
 O = OPEN VEHICLES TC = TOWN CARS  
**DESIGN:** - 1st, 2nd, 3rd, 4th  
**VARIATION:** A, B

Note: These codes are not found on the wipers.

# Hand Wiper

Manufactured by Trico and Williams

Used on Open Vehicles through October 1928

Used on Commercial Vehicles through April 1930

Finished in Gloss Black enamel

Nickel-plated knob

Blade has two layers of 1/32' rubber (Red or Black)

Trico Blade had Manufacturer's Name and Patent Numbers

Blade is 8 inches in length and attached with a nickel-plated tubular rivet.



Hand Wiper



# Electric Wiper Motors

Three Manufacturers

Owen-Dyneto Corporation

Heinze Electric Company

E. A. Laboratories

Electric Wipers used through May 1930

Used on both Open Cars and Closed Cars

Brass contact is not visible beyond bracket

# Closed Car Wipers

Owen-Dyneto Corporation

**OD-C1A**                    **[October 1927 to February 1928]**

Base, cover and levers made of pot metal  
Non-symmetrical wiper shaft  
Ford Script and Made in USA inside  
Indented Cover  
Screws on back  
Dull black finish  
Wire swing arm and spring tensioning

**OD-C1B**                    **[February 1928 to February 1929]**

Ford Script removed  
Screws on sides  
Steel swing arm

**OD-C2**                    **[February 1929 to July 1929]**

New Design  
Base, cover and levers made of zinc  
Symmetrical wiper shaft (became the standard)

**OD-C3**                    **[July 1929 to March 1930]**

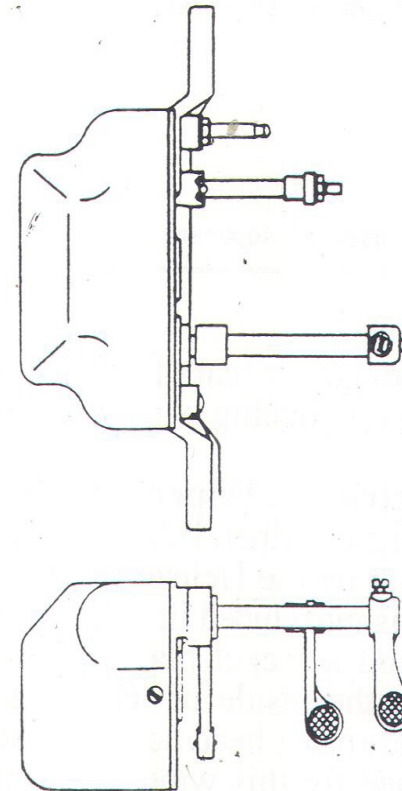
Redesigned with zinc casting for armature  
Cover modified to straight sided

	OD-C1A	OD-C1B
WIPER		
SWITCH LEVER	*S1, S2A(opt)	*S2A
HAND OPERATING LEVER	01A	01A
SWING ARM SUPPORT LEVER	--	A1
SWING ARM	L1	L2
MOUNTING BRACKETS	none	none
BOOTS		B1 (Fordor) (60-A,B)
	B2	B2
BUSHINGS	G1	G1
BOOT PLATES	P1	P1

Principal Features:

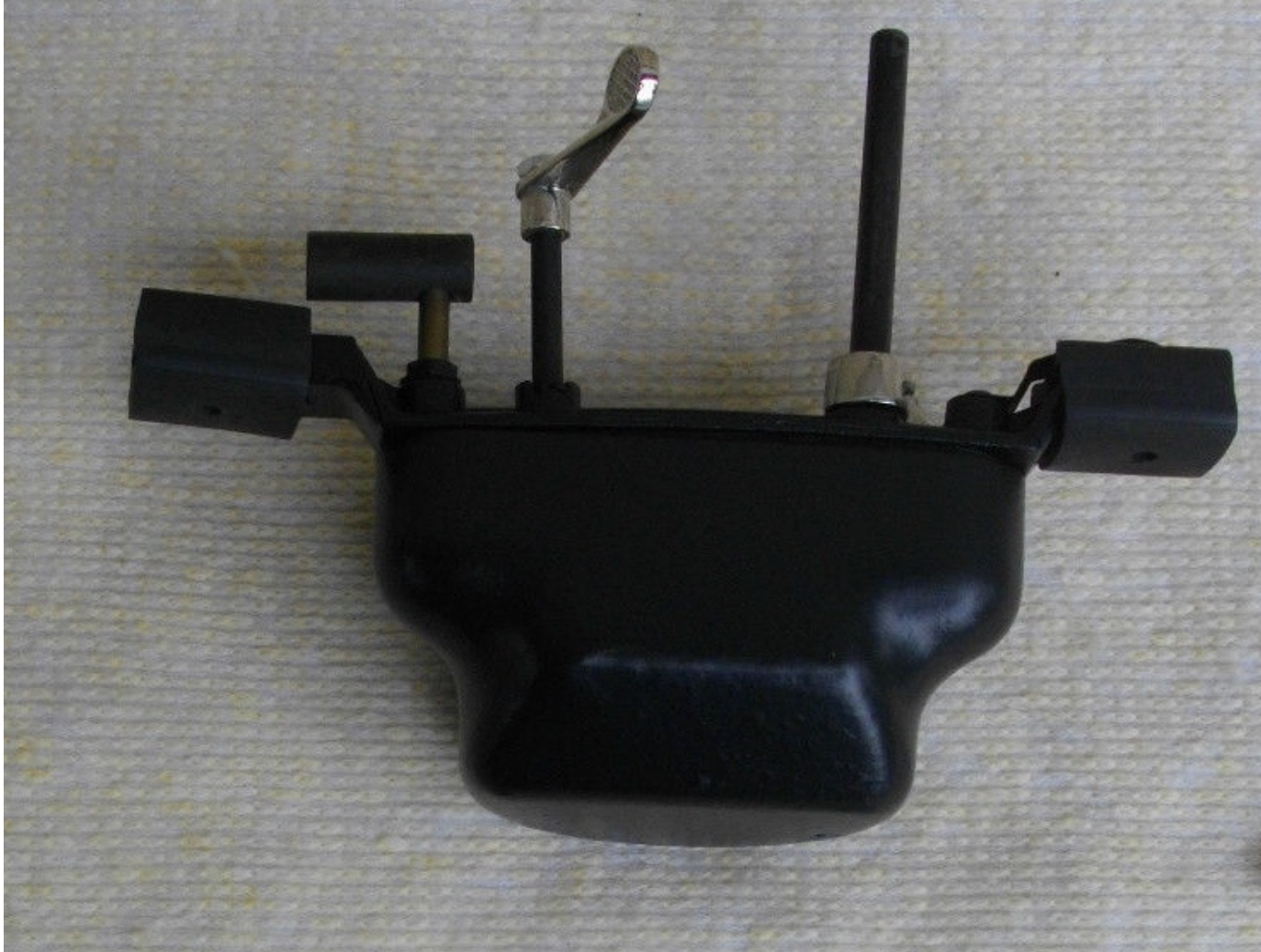
- OD-C1A has non-adjustable blade tensioning, large Ford script (early), then small script in an oblong line (later), two cover screws on back.
- OD-C1B has adjustable blade tension, small script or none, cover screws on sides.
- Wiper shaft is off center relative to mounting ears

SEE TEXT FOR OTHER DETAILS



\* codes used on separate component charts in this area

**OD-C1A or OD-C1B**



**OD-C1A and OD-C1B**

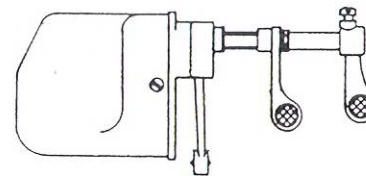
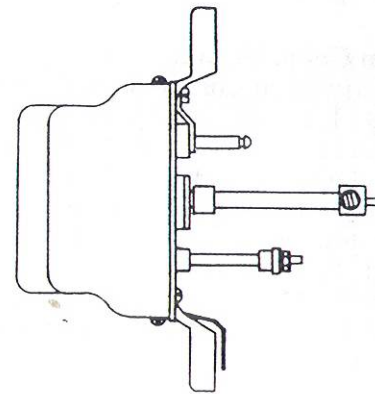
WIPER	OD-C2
SWITCH LEVER	*S2A
HAND OPERATING LEVER	01A
SWING ARM SUPPORT LEVER	A2A
SWING ARM	L3
MOUNTING BRACKETS	none
BOOTS	B3 (Fordor 60-B)
	B4
BUSHINGS	G2
BOOT PLATES	P2

Principal Features:

- Base and cover are zinc die castings, painted black.
- Cover is indented on the sides
- No trademark visible
- Wiper shaft is centered relative to mounting ears

SEE TEXT FOR OTHER DETAILS

\* codes used on separate component charts in this area



**OD-C2**



**OD-C2**

WIPER

OD-C3

SWITCH LEVER

\*S2A

HAND OPERATING LEVER

01A, 02A (after 11-29)

SWING ARM SUPPORT LEVER

A2A

SWING ARM

L3

MOUNTING BRACKETS

none

BOOTS

B3, B4 (Fordor)

BUSHINGS

G2

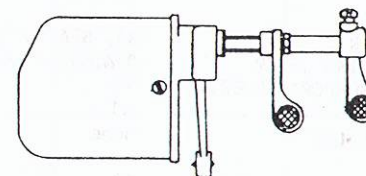
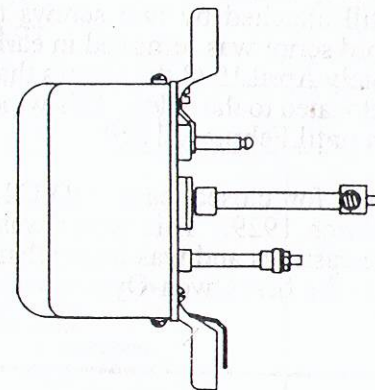
BOOT PLATES

P2

Principal Features:

- Base and cover are zinc die castings, painted black.
- Cover is straight sided

SEE TEXT FOR OTHER DETAILS



\* codes used on separate component charts in this area

**OD-C3**



**OD-C3**



# Closed Car Wipers

Heinze Electric Company

## **HA-TC1**                      **[December 1928 to January 1930]**

Specifically designed for the Town Car  
Steel base and nickel plated brass cover  
Chrome plating in April 1929  
Mounted Inside  
Trademark "Ames"  
Screws on back  
Symmetrical wiper shaft  
All levers bronze casting, nickel plated

## **HA-C1**                      **[February 1929 to January 1930]**

Similar to TC-1  
Steel base and brass cover painted black  
Mounted Outside  
Swing arm embossed with "Ames"

## **HA-C2**                      **[December 1929 to May 1930]**

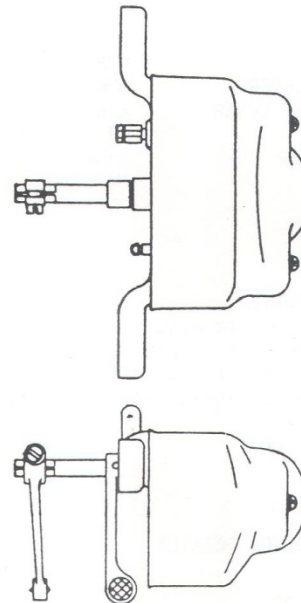
Redesigned to more compact shape  
Stamped steel cover with "Ames" Diamond  
Brass ground strap under mounting ear  
Heinze Data Plate on top of cover after April 1930

WIPER	HA-TC1
SWITCH LEVER	*S3
HAND OPERATING LEVER	O3
SWING ARM SUPPORT LEVER	A3
SWING ARM	L3
MOUNTING BRACKETS	none
BOOTS	(Special design contoured to fit windshield frame)
BUSHINGS	G2
BOOT PLATES	P2

Principal Features:

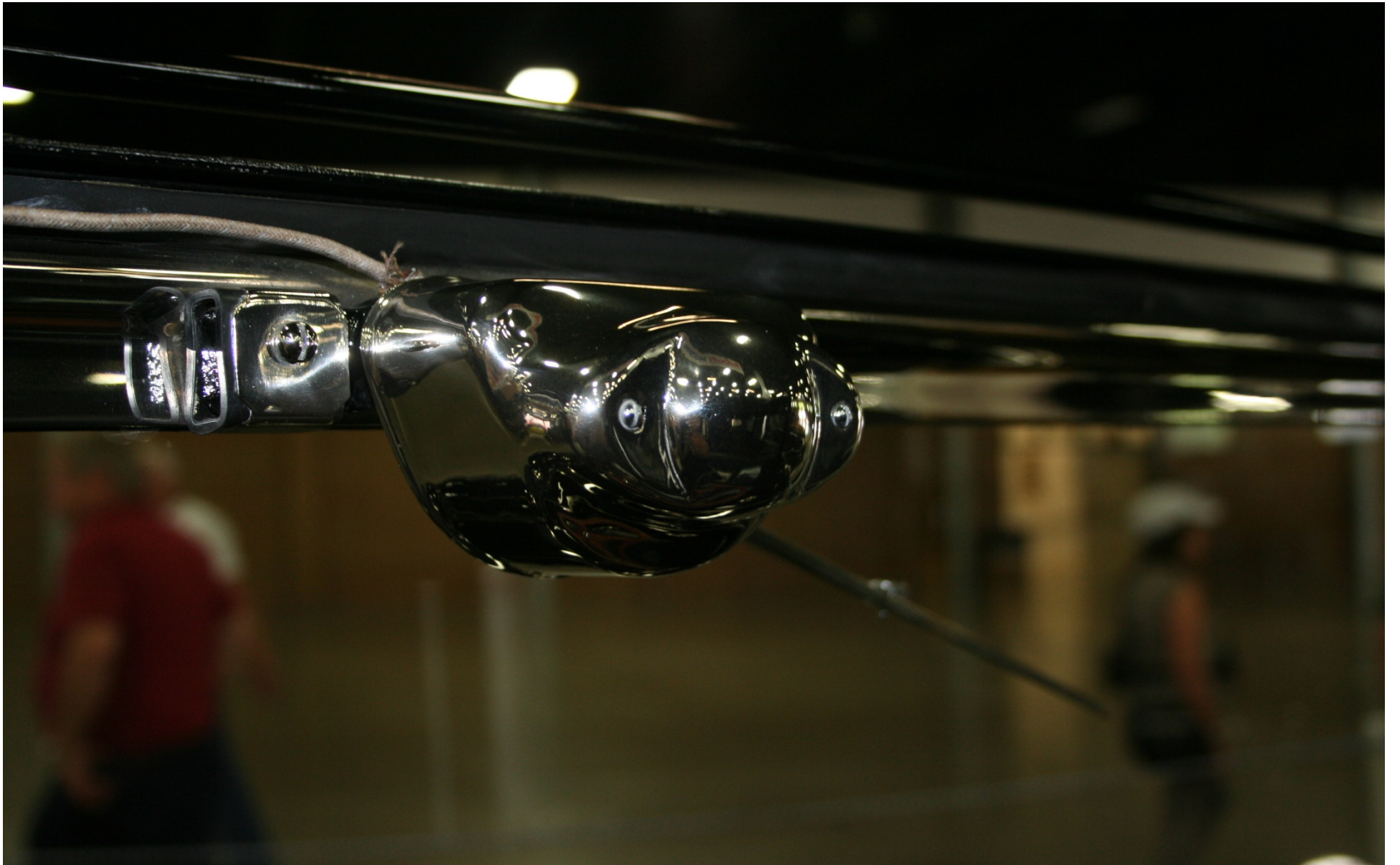
- Base of stamped steel, painted black
- Cover of nickel plated brass (until April 1929)  
chrome plated thereafter
- Cover is oval shaped at outer end
- Shaft is square near the end
- No visible trademark

SEE TEXT FOR OTHER DETAILS



\* codes used on separate component charts in this area

**HA-TC1**



HA-TC1

WIPER

HA-C1

SWITCH LEVER

\*S2B

HAND OPERATING LEVER

01B

SWING ARM SUPPORT LEVER

A2B

SWING ARM

L3

MOUNTING BRACKETS

none

BOOTS

B3 (Fordor)

B4

BUSHINGS

G2

BOOT PLATES

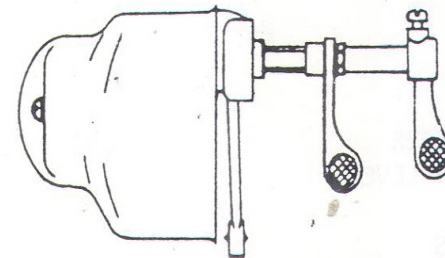
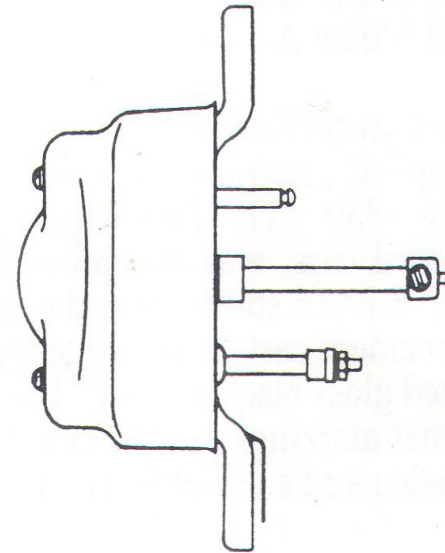
P2

Principal Features:

- Base is stamped steel, painted black.
- Cover is brass, oval shaped on end, painted black
- No trademark visible

SEE TEXT FOR OTHER DETAILS

\* codes used on separate component charts in this area



**HA-C1**



**HA-C1**

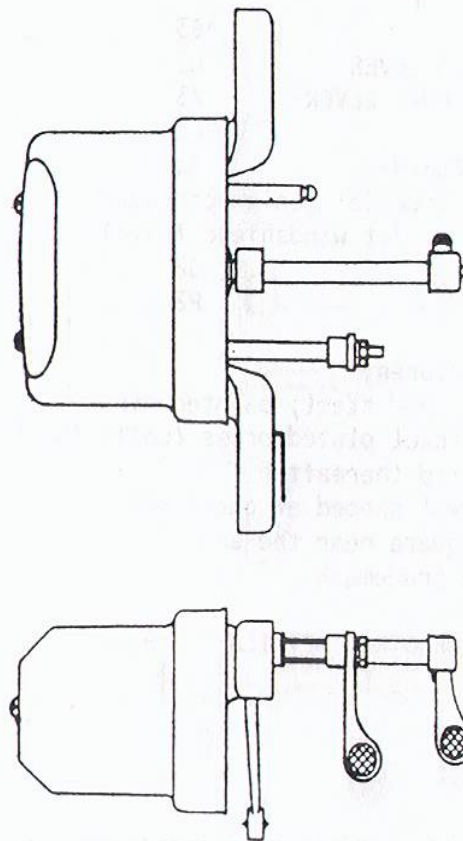
WIPER	HA-C2
SWITCH LEVER	*S2B
HAND OPERATING LEVER	02B
SWING ARM SUPPORT LEVER	A2B
SWING ARM	L3
MOUNTING BRACKETS	none
BOOTS	B4
BUSHINGS	G2
BOOT PLATES	P2

Principal Features:

- Base and cover are stamped steel, painted black.
- Cover is oblong with angled flat at top and bottom.
- "AMES" in a diamond lightly stamped on back of cover
- Name plate may be riveted to cover (after April 1930)

SEE TEXT FOR OTHER DETAILS

\* codes used on separate component charts in this area



**HA-C2**



**HA-C2**



**HA-C2-AMES**





**HA-C2-HEINZE**

# Closed Car Wipers

E. A Laboratories, Inc.

**EA-C1**

**[March 1929 to May 1930]**

Zinc die cast base and steel cover painted gloss black

Small raised button on cover, slightly off-center

Mounted outside

No markings

Screws on side

Symmetrical wiper shaft

All levers polished aluminum

Diamond on swing arm support lever



EA-C1



**EA-C1**

# Open Car Wipers

Owen-Dyneto Corporation

- OD-O1**                    **[April 1928 to February 1929]**  
Base, cover and levers made of pot metal  
Non-symmetrical wiper shaft  
Mounted on the inside  
Patent plate riveted on back of cover  
Indented Cover with ON-OFF switch  
Screws on side  
Gloss black finish  
Wire swing arm and spring tensioning
- OD-O2**                    **[March 1929 to September 1929]**  
Same design as OD-C2  
Base, cover and levers made of zinc  
Symmetrical wiper shaft  
Switch lever adjacent to glass  
Cover indented on all sides
- OD-O3**                    **[July 1929 to April 1930]**  
Same as OD-C3  
Straight cover with mounting screws on the side
- OD-O4**                    **[April 1930 to June 1930]**  
Same as OD-C3  
Switch shaft extended through cover with lever on the outside

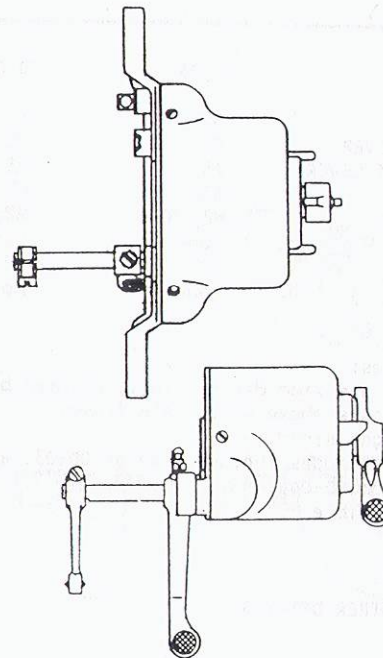
WIPER	OD-01
SWITCH LEVER	*S4
HAND OPERATING LEVER	O4
SWING ARM SUPPORT LEVER	A4
SWING ARM	L2
MOUNTING BRACKETS	M1, M2
BOOTS	none
BUSHINGS	G1
BOOT PLATES	none

Principal Features:

- Base and cover are zinc die castings, painted black
- Wiper shaft is off center and passes thru the windshield frame
- Switch shaft protrudes thru cover
- Patent plate with ON/OFF markings riveted to rear of cover
- Electric terminal bends up 90 degrees

SEE TEXT FOR OTHER DETAILS

\* codes used on separate component charts in this area



**OD-01**

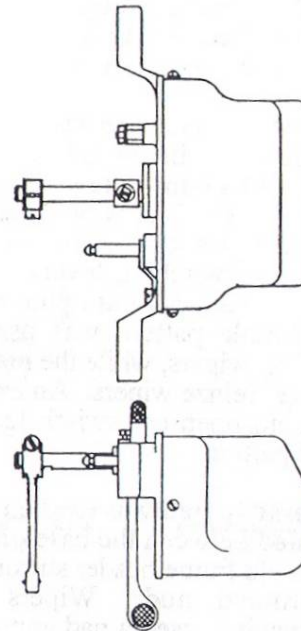
WIPER OD-02

SWITCH LEVER	*S5
HAND OPERATING LEVER	O5
SWING ARM SUPPORT LEVER	A5
SWING ARM	L3
MOUNTING BRACKETS	M2, M3
BOOTS	none
BUSHINGS	G2
BOOT PLATES	none

Principal Features:

- Base and cover are zinc die castings, painted black.
- Wiper shaft passes above the windshield frame.
- Cover is indented on the sides.
- No trademark is visible

SEE TEXT FOR OTHER DETAILS



\* codes used on separate component charts in this area

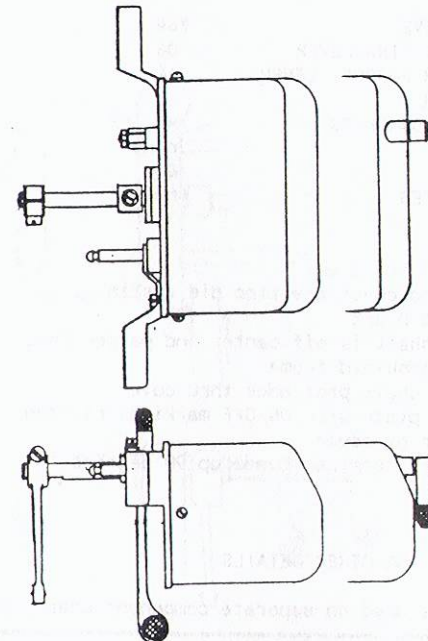
**OD-02**

WIPER	OD-03	OD-04
SWITCH LEVER	*S5	*S5
HAND OPERATING LEVER	O5	O5
SWING ARM SUPPORT LEVER	A5	A5
SWING ARM	L3	L3
MOUNTING BRACKETS	M2, M3	M2, M3
BOOTS	none	none
BUSHINGS	G2	G2
BOOT PLATES	none	none

Principal Features:

- Base and cover are zinc die castings, painted black.
- Wiper shaft passes above windshield frame.
- Cover is straight sided.
- Switch shaft protrudes through base on OD-03, and thru back of cover on OD-04.
- No trademark visible

SEE TEXT FOR OTHER DETAILS



\* codes used on separate component charts in this area

**OD-03 or OD-04**



# Vacuum Wiper Motors

Single Manufacturer

Trico

All Wipers used through end-of-production

All wipers have a ½ inch deep cover secured with 2 screws

The top and bottom halves are held together with special screws.

Seamed metal tubing.

Cloth-like tubing

# Closed Car Wipers

Trico

## **TR-C1A or C1B [March 1930 to EOP]**

Mounted flat side up

Mounted outside

Short wiper shaft

Standard cars used wipers painted with black enamel and nickel knob (C1A)

Several Deluxe cars used chrome plated wipers and chrome knob (C1B)

With and without waffle pattern on the top.

## **TR-C2A or C2B [October 1930 to EOP]**

Mounted curved side up

No mounting ears

Elongated wiper shaft

Standard cars – black enamel – Town Sedans (C2A)

Deluxe cars – chrome – Cabriolet, A-400 and Victoria (C2B)

Waffle pattern on flat section

## **TR-C3 [August 1931 to EOP]**

Mounted curved side up

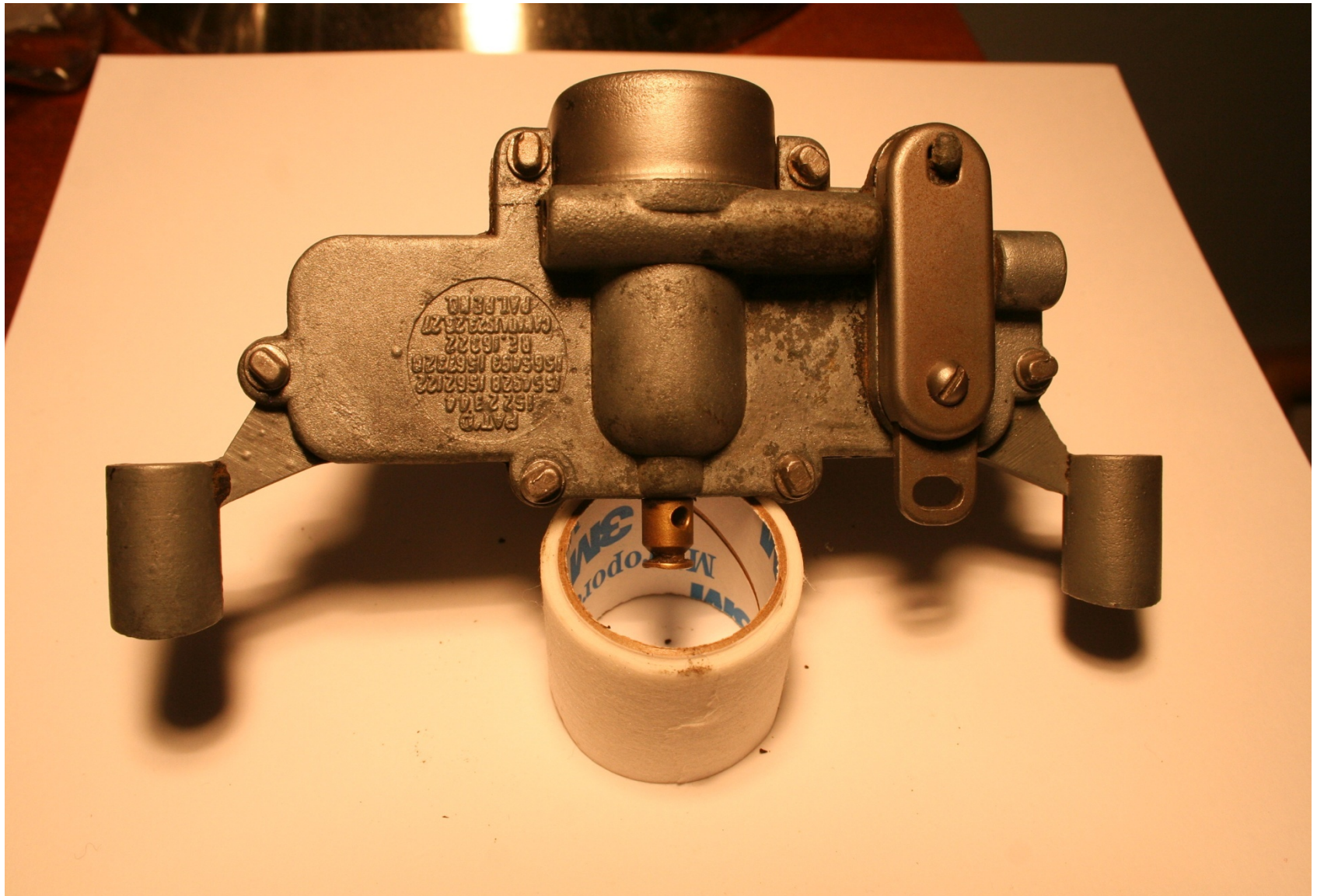
Mounting ears

Elongated wiper shaft

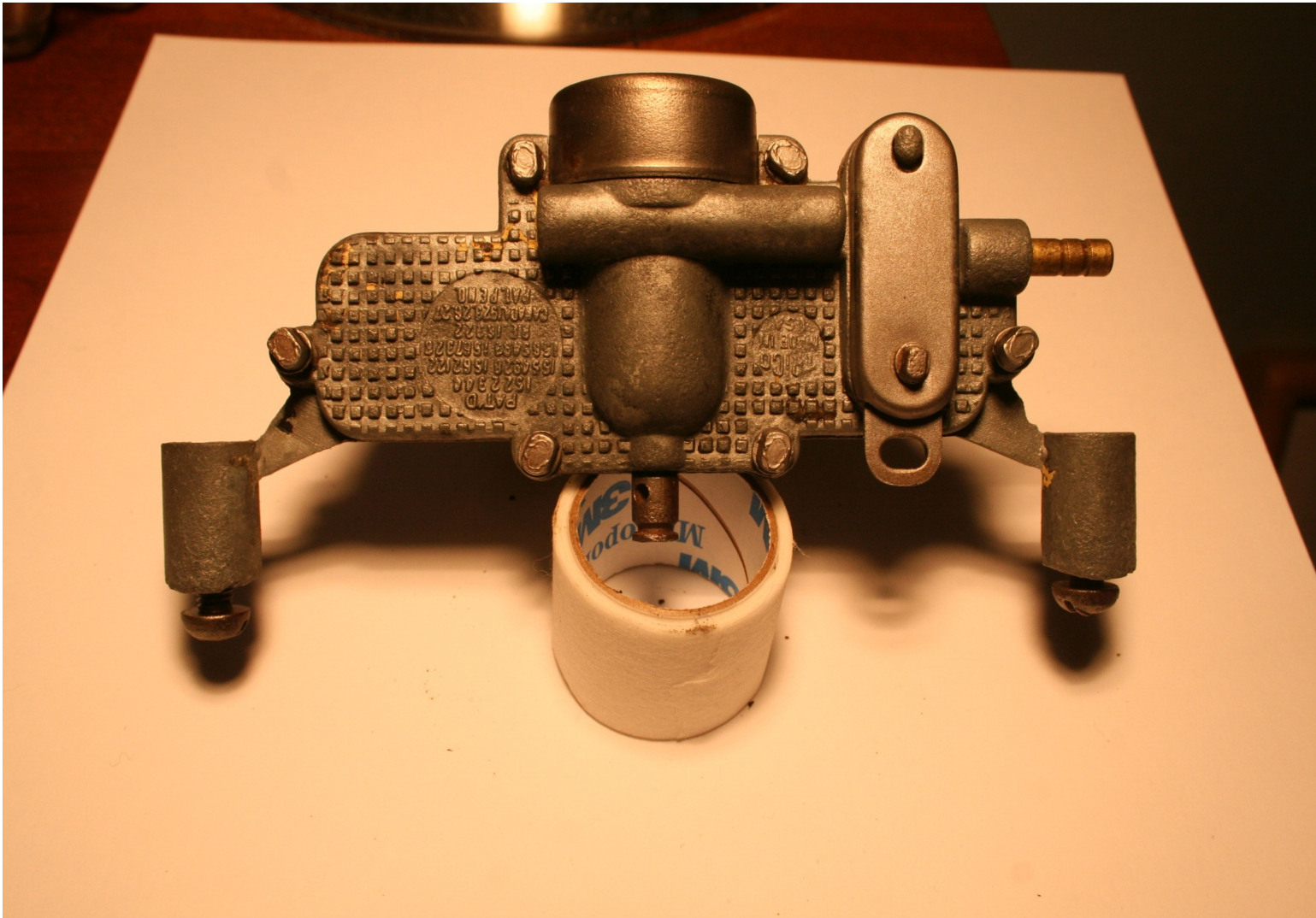
Larger cover affixed with small screws

Standard cars – semi-black enamel and nickel knob – Models 315-A and 330-A

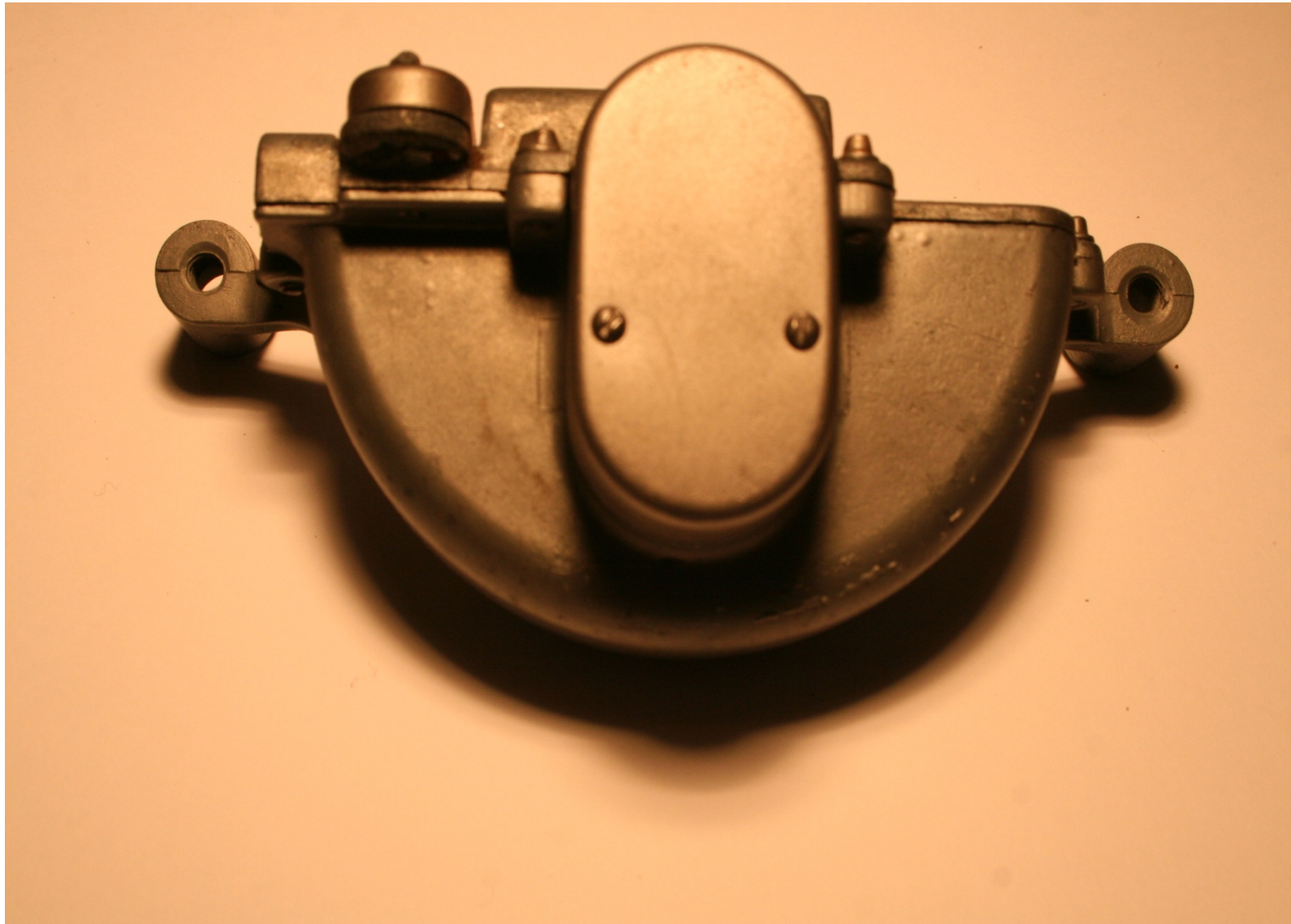
No Waffle pattern



**TR-C1A or TR-C1B**



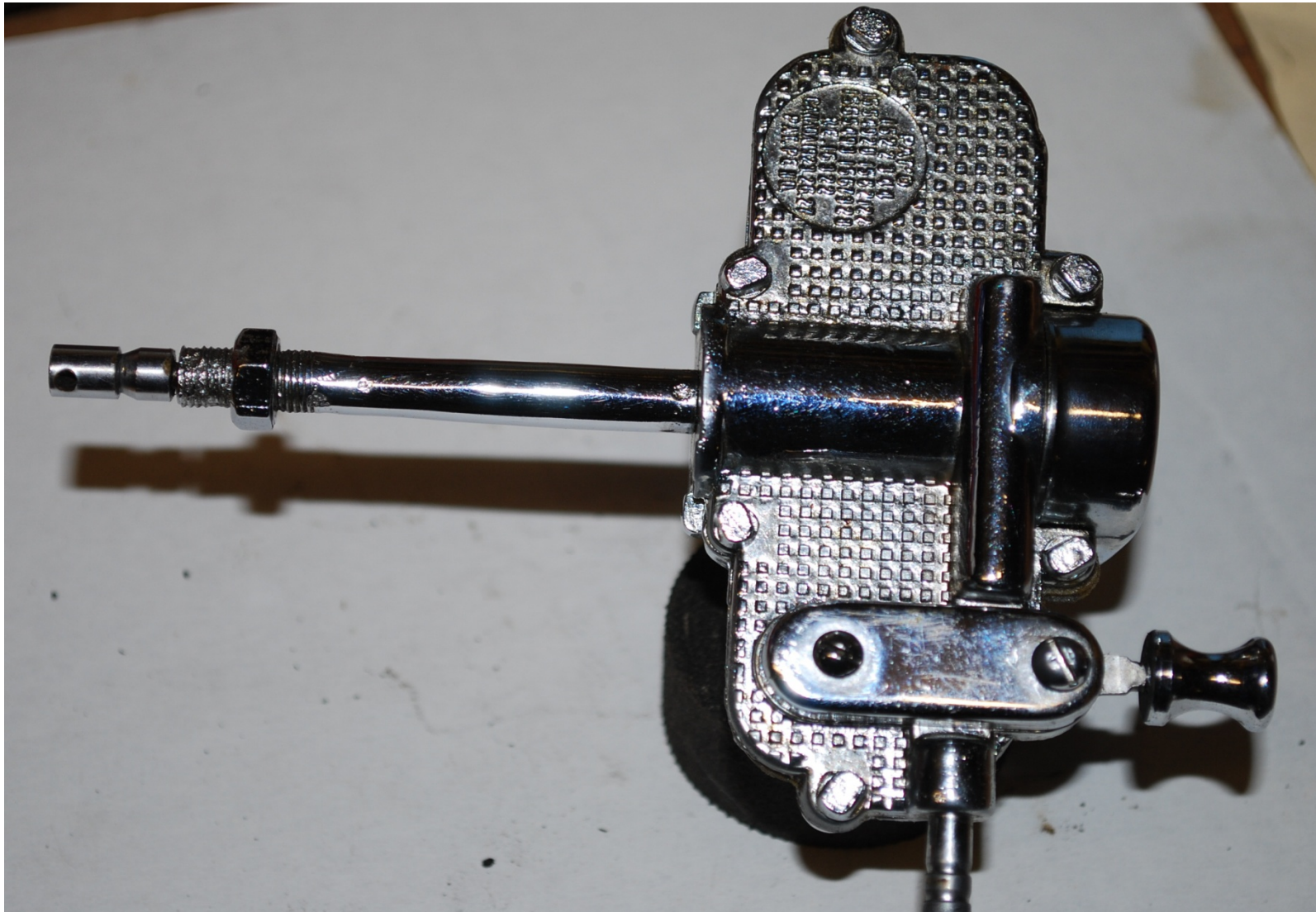
**TR-C1A or TR-C1B**



**TR-C1A or TR-C1B**



**TR-C2A or TR-C2B**



**TR-C2A or TR-C2B**

WIPER

TR-C3

BODY FINISH

BLACK

KNOB FINISH

NICKEL

KNOB TRADEMARK

No

COVER MOUNTING

2 screws

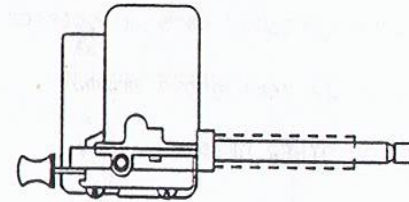
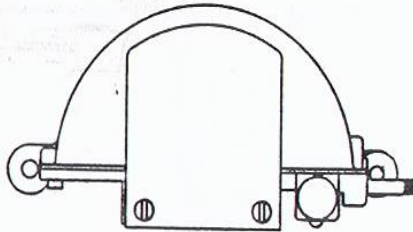
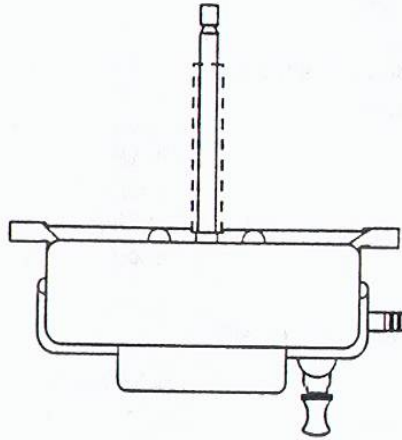
SHAFT LENGTH

2-15/16"

Principal Features:

- TR-C3 used on all 315-A and 330-A after September 1931
- Mounted with unthreaded ears and (some) with threaded sleeve on inside of windshield, inverted position
- No waffle pattern on top of body
- This wiper produced only with black semi-gloss enamel finish

SEE TEXT FOR OTHER DETAILS



**TR-C3**





**TR-C3 – Replacement Model 1937**

# Open Car Wipers

Trico

## **TR-O1A or O1B [April 1930 to EOP]**

Mounted flat side up

Mounted inside

Flat Mounting ears

Short wiper shaft

Standard cars used wipers painted with black semi-gloss enamel and nickel knob  
Std. Roadsters, Phaetons and Open Cabs(O1B)

Several Deluxe cars used chrome plated wipers and chrome knob  
Deluxe Roadsters and Deluxe Phaetons(O1A)

With and without waffle pattern on the top.

## **TR-O1C [April 1930 to EOP]**

Mounted curved side up

Mounted inside

Flat Mounting ears

Elongated wiper shaft

Standard cars – black semi-gloss enamel – Open Cab Pickups

With and without Waffle pattern on flat section

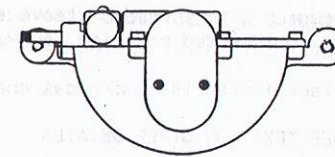
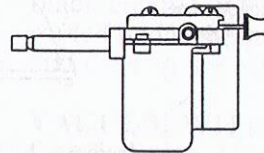
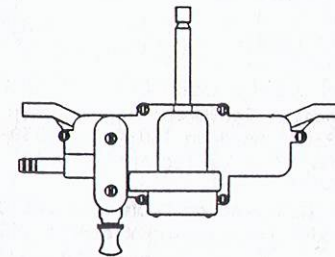
Knob located on the left and not on the right

WIPER	TR-01A	TR-01B
BODY FINISH	CHROME	BLACK*
KNOB FINISH	CHROME	NICKEL
KNOB TRADEMARK	Yes (most)	Yes (most)
COVER MOUNTING	2 screws	2 screws
SHAFT LENGTH	1-9/16"	1-9/16"

**Principal Features:**

- TR-01A used on 1930-31 Dlx. Roadsters (40-B Dlx) and Deluxe Phaetons (180-A)
- TR-01B used on 1930-31 Std Roadsters (40-B), Phaetons (35-B) and Open Cabs (76-B)
- Both with or without waffle pattern on top of body.
- Mounted with threaded ears on inside of windshield
- \* Black finish is semi-gloss enamel

SEE TEXT FOR OTHER DETAILS



## TR-01A or TR-01B



**TR-01B Replacement**

WIPER

TR-01C

BODY FINISH

BLACK\*

KNOB FINISH

NICKEL

KNOB TRADEMARK

No

COVER MOUNTING

2 screws

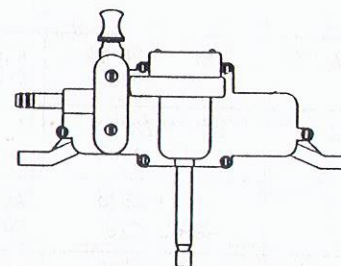
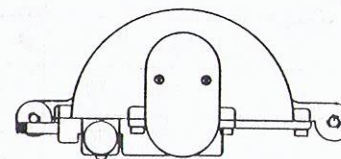
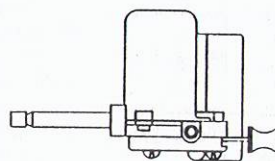
SHAFT LENGTH

1-9/16"

Principal Features:

- TR-01C used on Open Cab Pickups only
- Control valve assembly on opposite side from TR-01A,B
- With or without waffle pattern on top of body.
- Mounted inverted (curved side up) with threaded ears on inside of windshield
- \* Black finish is semi-gloss enamel

SEE TEXT FOR OTHER DETAILS



**TR-01C**

# Mounting Hardware

## Electric Wipers

### Rubber Boots and Boot Plates

#### Open Cars

Mounting Brackets held the mounting ears in place on the frame (M1 and M2) and modified with the introduction of OD-O2 (M3 and M2)

#### Closed Cars

Early boots were closed at one end (B1 and B2), used rubber bushings and gloss black boot plates (P1)

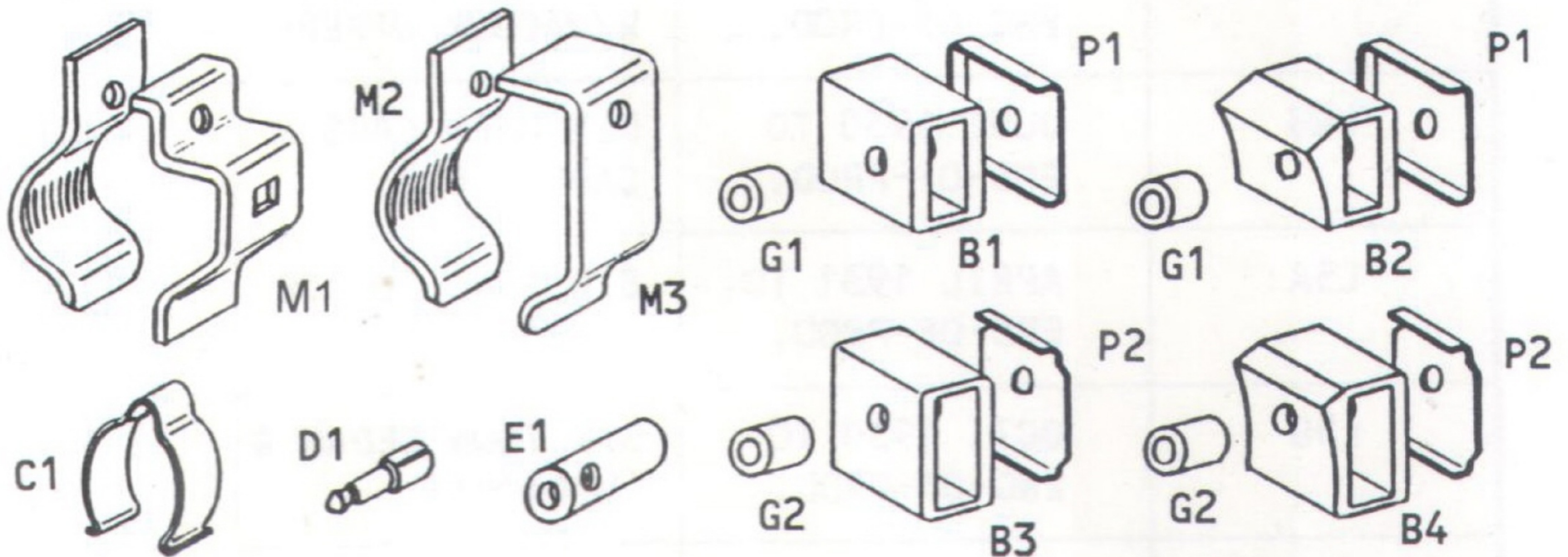
Later, larger boots were open on both ends (B3 and B4), used rubber bushings and larger, gloss black boot plates (P2)

A black felt weatherstrip pad was mounted between the body and the frame

## Vacuum Wipers

No mounting hardware necessary

# MOUNTING BRACKETS, BOOTS, BUSHINGS, BOOT PLATES



Mounting Hardware

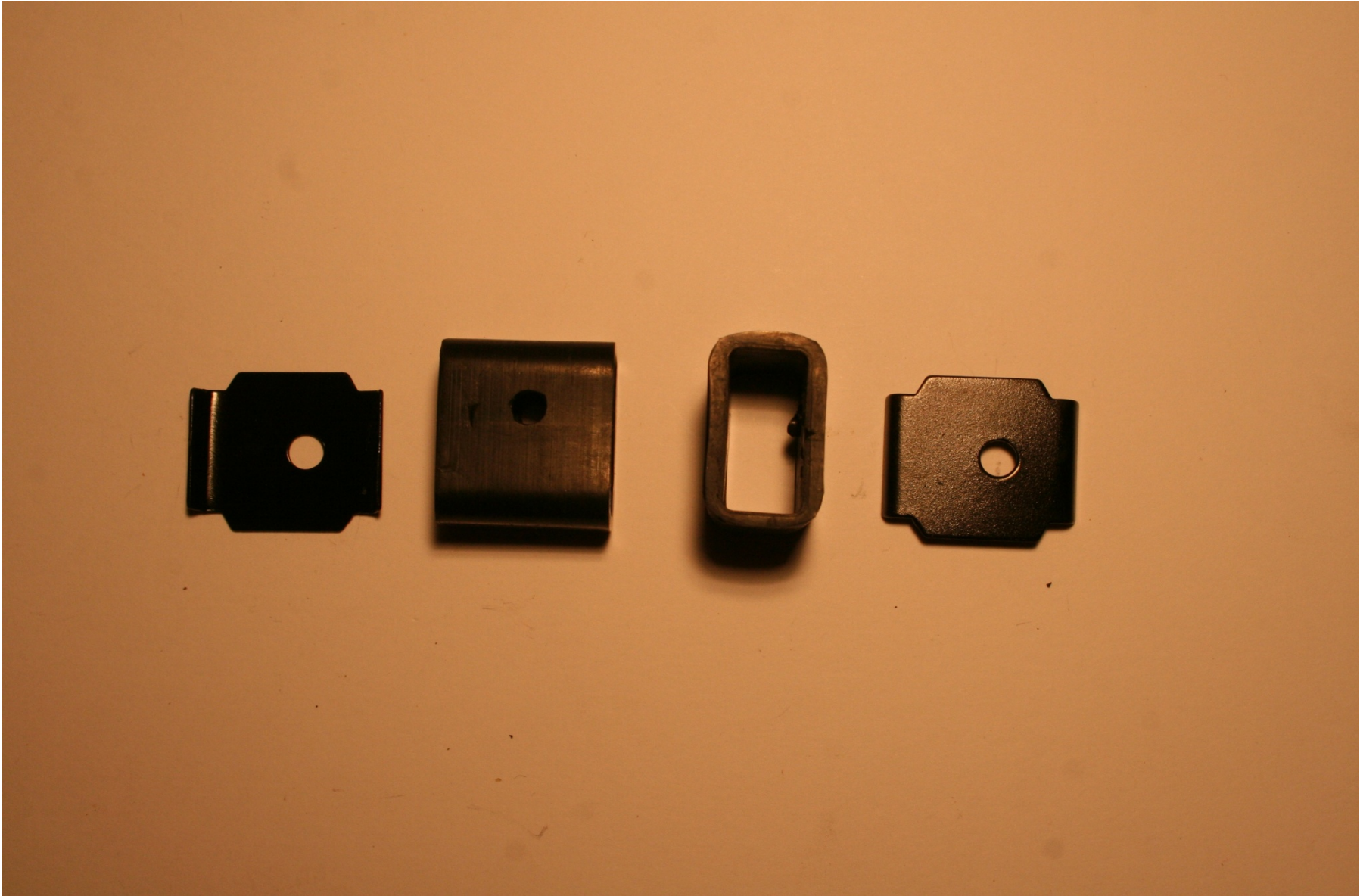


**M2 and M3**





**B2 and P1**



**B3 and P2**

# Switch Levers and Operating Levers

## Electric Wipers

### Switch Levers and Operating Levers

#### **Closed Cars**

S-Levers S1 and S2A – for OD - were nickel plated zinc

S-Lever S2B – for HA – was nickel plated zinc

S-Lever S2C – for EA – was polished aluminum

S-Lever S3 - Town Car only – was nickel or chrome plated bronze

O-Lever O1A – for OD – was nickel plated zinc

O-Lever O1B – for HA-C1 – was nickel plated zinc

O-Lever O1C – for EA-C1 – was polished aluminum

O-Lever O2A – for OD-C3 – was nickel plated zinc

O-Lever O2B – for HA-C2 – was nickel plated zinc

O-Lever O2C – for EA-C1 – was polished aluminum

O-Lever O3 – Town Car only – was nickel or chrome plated bronze

#### **Open Cars**

S-Lever S4 – for OD-O1 – was zinc finished with black enamel

S-Lever S5 – for OD – O2, O3, O4 – was nickel plated or black enameled zinc

O-Lever O4 – for OD-O1 – was zinc finished with black enamel

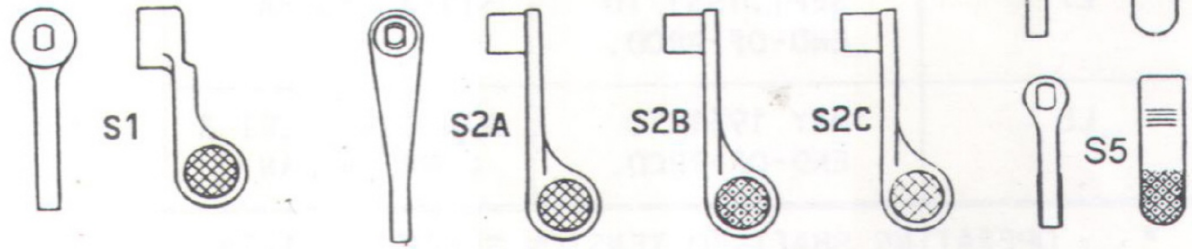
O-Lever O5 – for OD-O2, O3, O4 – was nickel plated or black enameled zinc



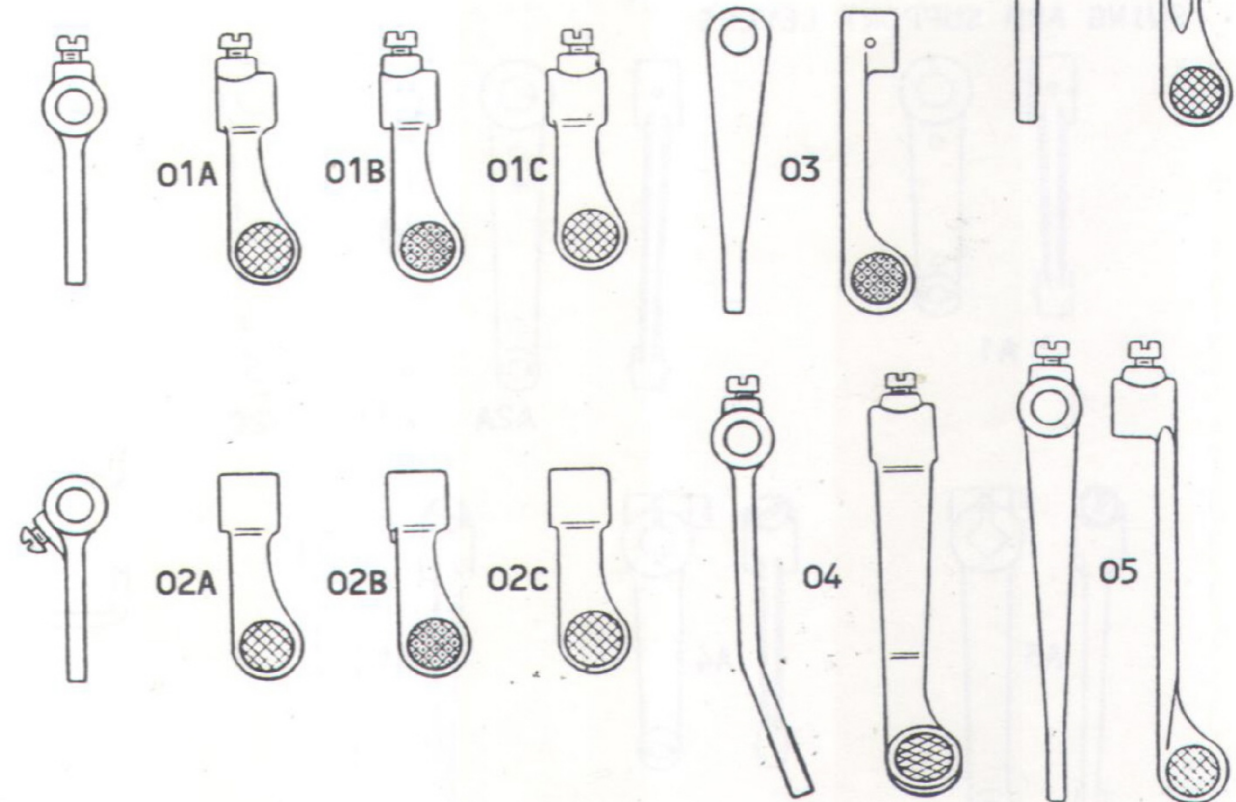
**Assortment of Swing Arm Supports and Levers**

# Switch Levers and Operating Levers

## SWITCH LEVERS



## HAND OPERATING LEVERS





**Types of Levers**

# Swing Arm Support Levers

Electric Wipers

Swing Arm Support Levers

## **Closed Cars**

A-Levers A1, A2A, and A2B were nickel plated zinc

A-Lever A2C was polished aluminum

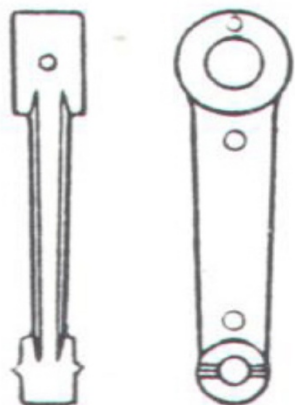
A-Lever A3 (Town Car only) was nickel or chrome plated bronze

## **Open Cars**

A-Lever A4 was zinc finished with black enamel

A-Lever A5 was nickel plated or black enameled zinc

# SWING ARM SUPPORT LEVERS



A1



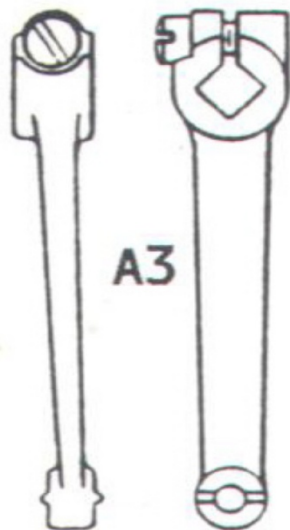
A2A



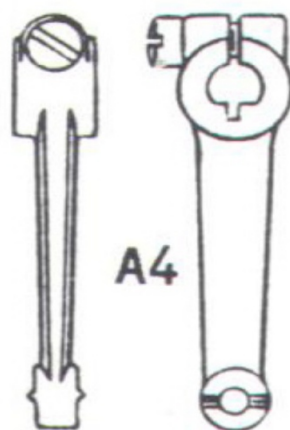
A2B



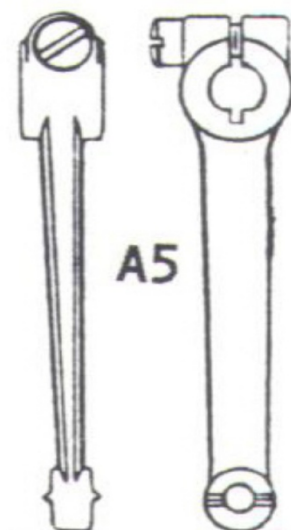
A2C



A3



A4



A5

Swing Arm Supports





**Swing Arm Supports**

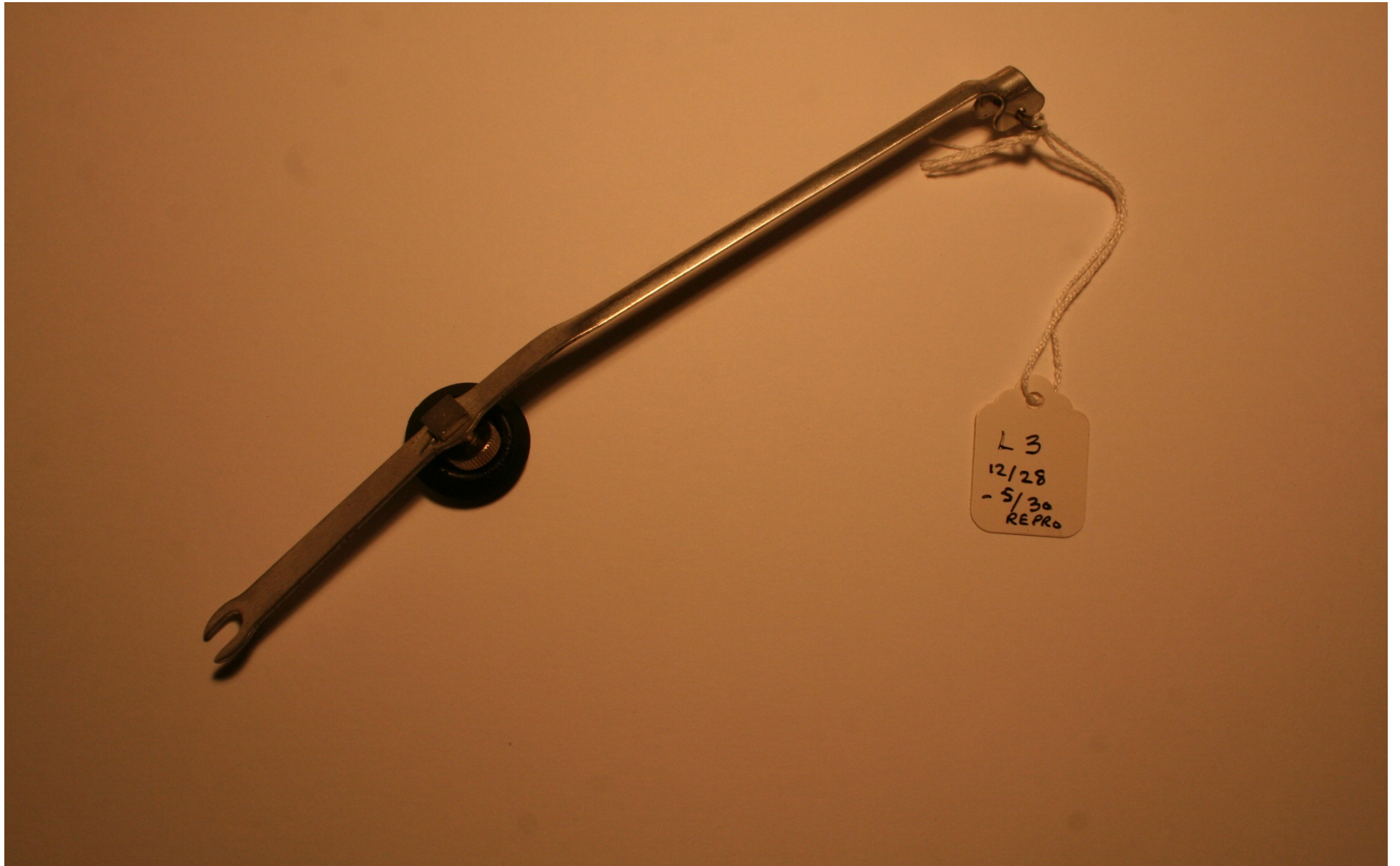


**SWING ARM SUPPORT LEVER A3**

# Swing Arm

## Electric Wipers and Vacuum Wipers

- Manual wipers on Open cars through October 1928 – black enamel – 6 ½ inches
- Manual wipers on Commercial cars through June 1930 – black enamel – 6 ½ inches
- Manual wipers on Closed Commercial cars through June 1930
  - black enamel – 7 ¾ inches
- L1 - all Closed cars through February 1928 – wire arm – black enamel – 6 ¼ inches
- L2A - all electrics - to May 1928 – spring steel, bright nickel – 6 ½ inches
- L2B - all electrics – to October 1928 – spring steel, chrome plated – 6 ½ inches
- L2C – OD-C1 and O1 – to April 1929 – spring steel, cadmium – 6 ½ inches
- L3 - All others – December 1928 to May 1930 – spring steel, cadmium – 6 ½ inches
- L4A - All closed cars w/ vacuum – June 1929 to EOP – wire arm, black enamel
  - 6 ¾ inches
- L4A - All Open cars and AA w/ vacuum – June 1930 to EOP – wire arm, black enamel
  - 6 ¾ inches
- L4B - Deluxe Open cars and Cabriolet – June 1930 to EOP – wire arm, chrome
  - 6 ¾ inches
- L5A - SW Std and Fordor – April 1931 to EOP – wire arm, black enamel – 8 ¼ inches
- L5B - SW Town Sedan and Vicky – October 1930 to EOP - wire arm, chrome
  - 8 ¼ inches
- L6 – Standrive and Bus – to September 1931 – wire arm, black enamel – 9 ¾ inches
- L7 – Standrive and Bus – to EOP – wire arm, black enamel – 9 ½ inches
- L8 – SW Cabriolet and A400 – May 1931 to EOP – wire arm, chrome – 7 ¼ inches



L3



L3



L4A



L4B  
1930-31  
DELUX OPEN  
CAB  
RETRO

L4B



**L5A**





L5B



L8

# Wiper Blades

## Electric Wipers and Vacuum Wipers

Manual wipers on Open cars through October 1928 – 2 layers - black enamel  
– 8 inches

Manual wipers on Commercial cars through June 1930 – 2 layers – black enamel  
– 8 inches

Manual wipers on Closed Commercial cars through June 1930 – 2 layers  
- black enamel – 8 inches (Upcoming change in Standards)

E1- all Closed cars through February 1928 – single layer– polished aluminum  
– 7  $\frac{3}{4}$  inches

E2A - all Closed cars - to March 1928 – single layer – nickel / steel – 8  $\frac{3}{4}$  inches

E2B - all Closed cars - April 1928 to August 1928 – single layer – nickel / brass  
– 8  $\frac{3}{4}$  inches

E3 – all Closed cars – Sept 1928 to April 1929 – single layer – nickel / brass  
– 8  $\frac{1}{2}$  inches

E3 – all Open Cars – April 1929 to March 1929 – single layer – nickel / brass  
– 8 inches

E4 – Open cars, Town Car, Closed cars w/ electric wipers – April 1929 to June 1930  
– five layers – nickel with contoured top – 8  $\frac{1}{4}$  inches

E5A – Closed cars with vacuum wipers – July 1929 to June 1930  
– five layers – black enamel – Trico (2) – 8  $\frac{1}{4}$  inches

E5B – Std Open cars and closed cars and commercial – June 1930 to EOP  
– five layers – black enamel – Trico (2) – 8  $\frac{1}{4}$  inches

E5C – Deluxe Open cars and 190 A – June 1930 to EOP

– five layers – chrome plated– Trico (2) – 8  $\frac{1}{4}$  inches



**E3 - Closed**



**E3 - Open**



E4-  
4/29-10/30  
8 1/4"  
REPR

**E4**



**E5A or E5B**



**E5C**



# Electric Wiper Connections

## Open Cars

Single stranded wire with insulation surrounded by a spiral metal armor

## Closed Cars

Conventional wire, black with blue tracer  
Lacquered loom after 6/29

Routing depends on presence or absence of Dome Light

## Vacuum Wiper Lines and Tubing

Look for 3/16 inch diameter seamed steel tubing or brass tubing

Located under the gas tank or windshield edge

Depending upon the model, tubing on Passenger's Side (Closed Cars) or Driver's Side (Open Car) ending just beyond the post

Check for black lacquered fabric tubing

Reproduction tubing has a circle of fabric embedded in the rubber or a molded fabric appearance on the outside



**Replacement Tubing**

## Quiz Time

Is it the right part?

Or

Is it the wrong part?

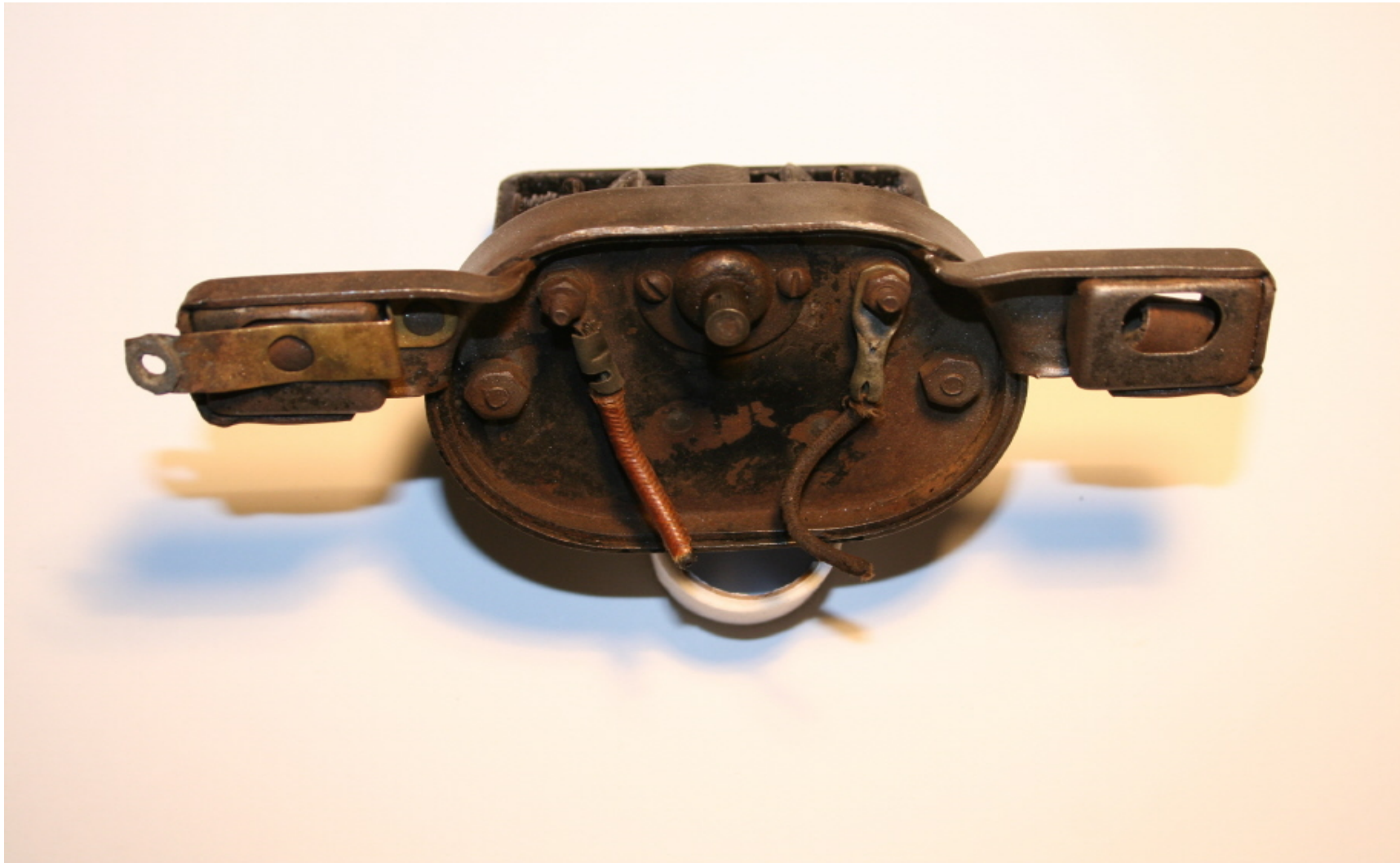


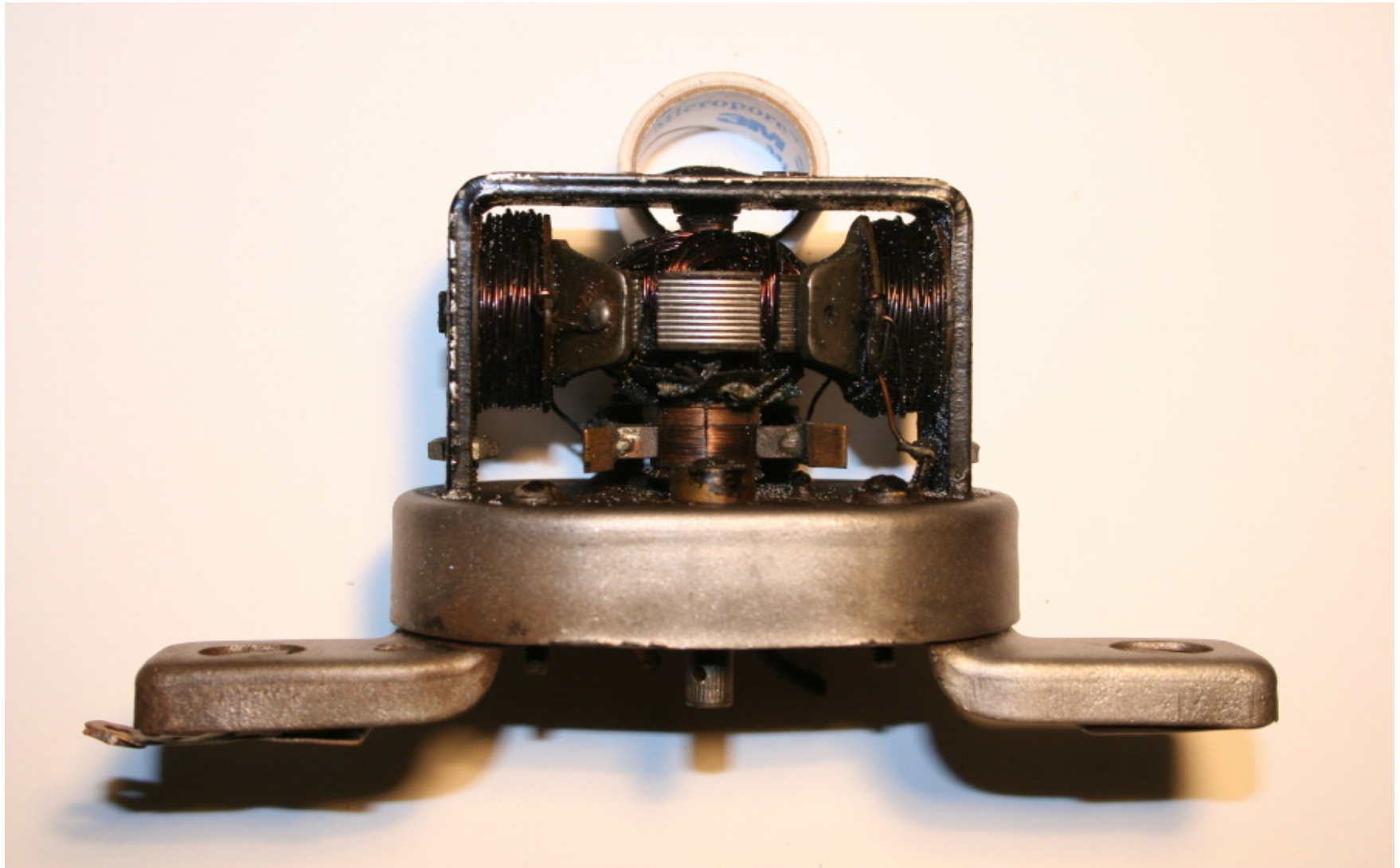




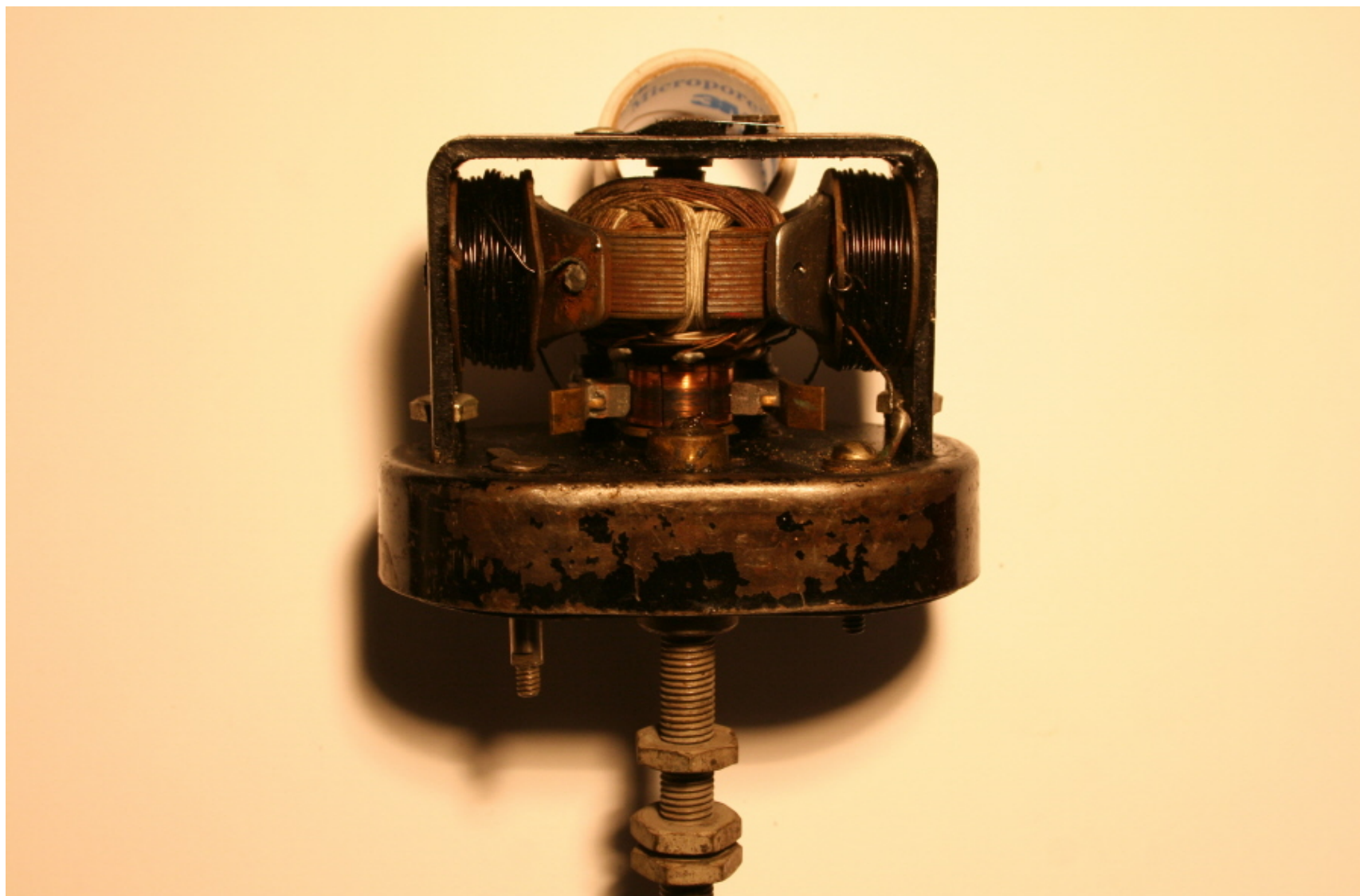






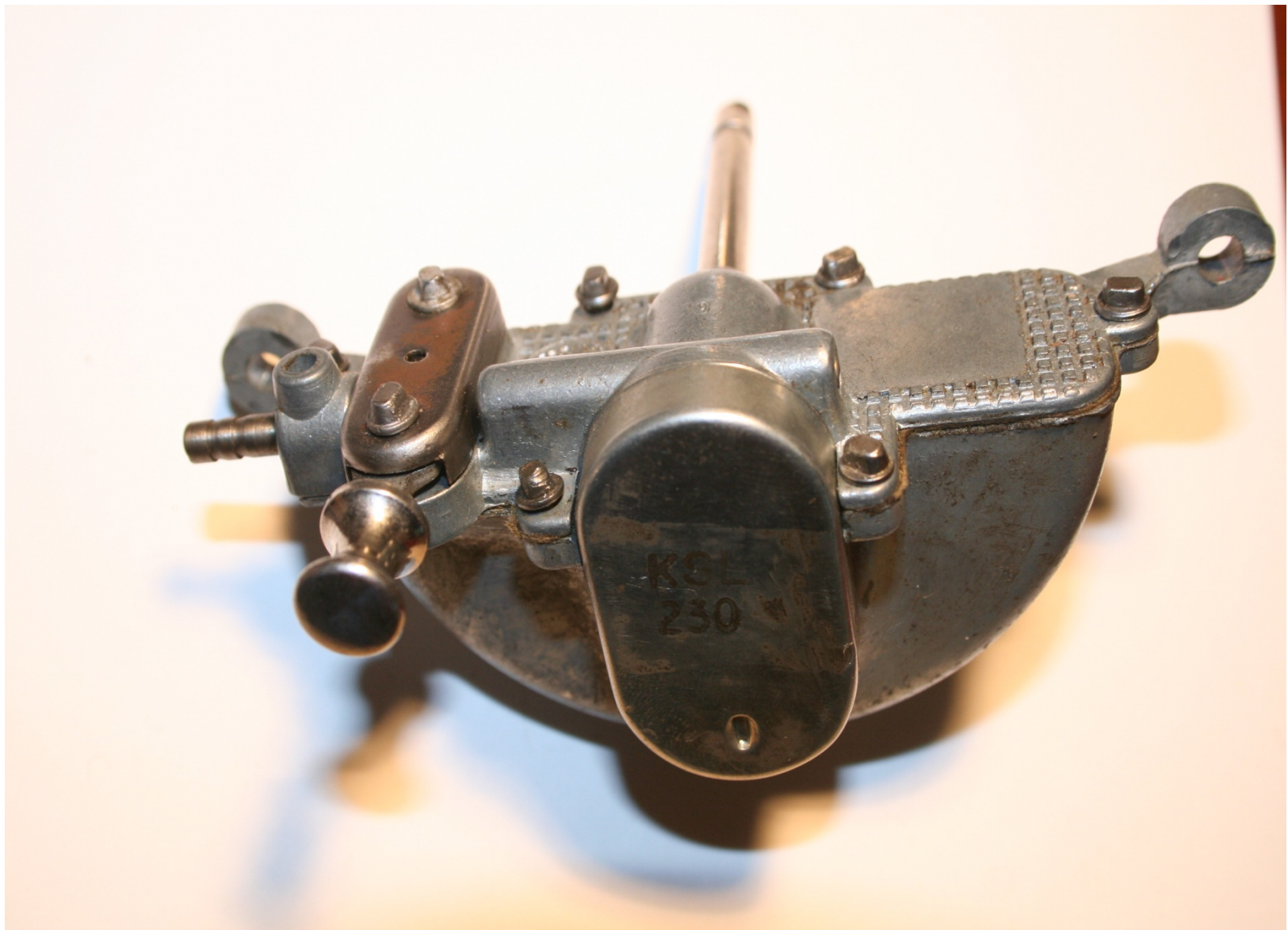










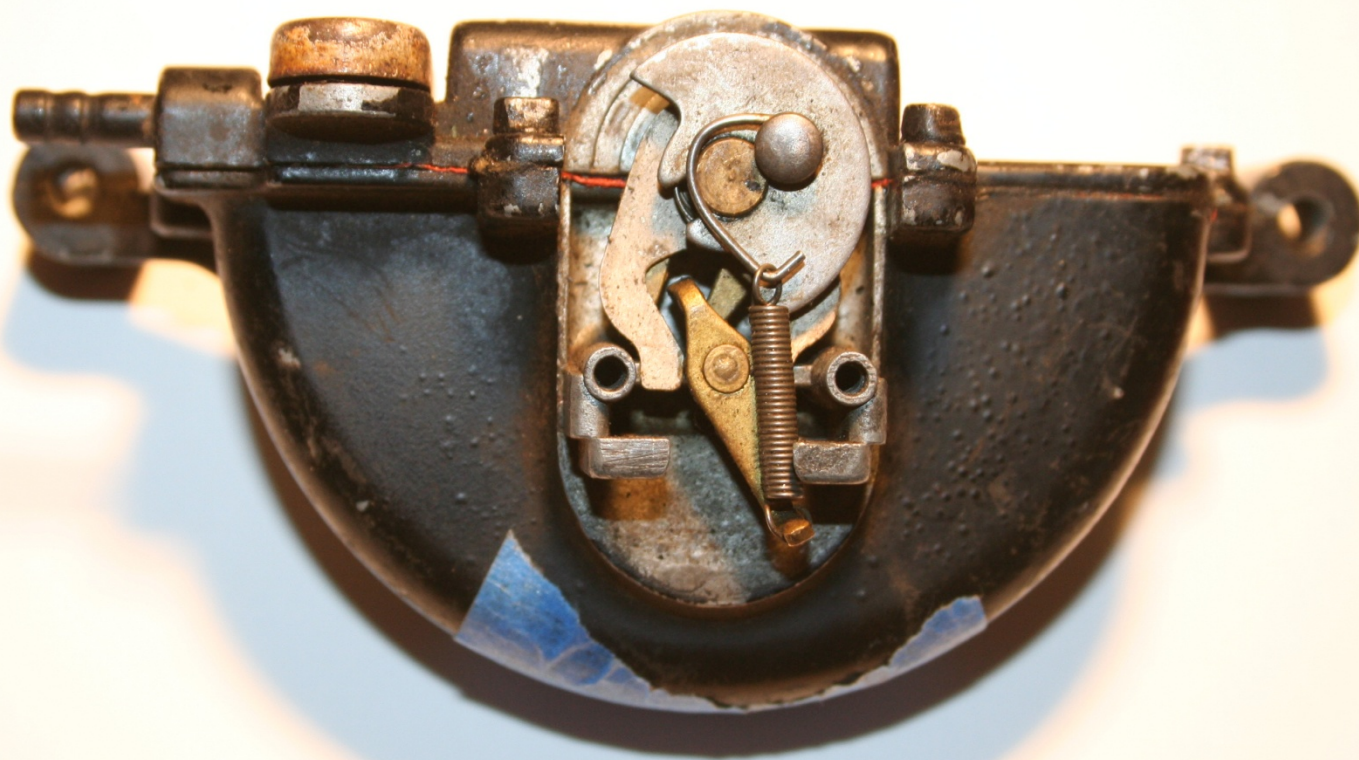
















# Judging the Model A Wiper

## 10 Points Total for Area 20

### Weighing the Point Distribution

Operation – 4.0 points

Decreased points for poorer operation (4-3-2-1)

Correct Wiper Motor – 3.5 points

Correct Mounting Hardware – 0.5 point

Correct Arm, Switch Lever and Knob – 0.5 point

Correct Swing Arm and Support – 0.5 point

Correct Wiper Blade – 0.5 point

Correct Wiring or Vacuum Line, including hose – 0.5 point

# Some Last Thoughts

Be Prepared to Judge

Operation is the most important thing!

Review beforehand what is supposed to be there

Electric or Vacuum Body?

Is it a reproduction part?

Does it have the correct mounting hardware?

Does it have the right arms, switches and knobs?

Does it have the right swing arm?

Does it have the right blade?

Does it have the right hose and line?

Are you ready?

Remember to just have fun!