

1

1

1

1

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4347 STARTING MOTOR PARTS LIST

ML-4347
(Issued 2-5-54)

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
ML-2143A	1	Frame & Field Assy.
GK-38	4	Screw, Pole Shoe
MAW-37	2	Bushing, Ins. , Term. Stud
MAX-44	2	Washer, Plain, Term. Stud, Outer
MBD-119	2	Washer, Ins. , Term. Stud, Outer
ML-144	1	Insulation, Term. Stud, Inner
ML-145	1	Stud, Terminal
ML-146	1	Stud, Terminal
ML-147	1	Connector, Terminal
ML-148	1	Connector, Term. Stud
ML-152	1	Insulation, Field Connection
ML-153	1	Insulation, Field Connection, 6 3/4" Long
ML-157	1	Insulation, Field Connection, D. E.
ML-1007C	1	COIL, FIELD, U. L.
ML-1008C	1	COIL, FIELD, L. R.
ML-1009K	1	COIL, FIELD, L. L.
ML-1010C	1	COIL, FIELD, U. R.
ML-1012E†	2	Brush
MN-21	1	Pin, Dowel
8X-179	4	Nut, Term. Stud, Hex. 3/8-16
12X-196	2	Lockwasher, Brush Lead Sc. , #10
12X-201	4	Lockwasher, Term. Stud, 3/8
8X-309	1	Screw, Brush Lead, Rd. Hd. #10-32x1/2
8X-311	1	Screw, Brush Lead, Rd. Hd. #10-32x3/8
SB-42	2	Bolt, Thru
12X-1014	2	Lockwasher, Thru Bolt, 5/16

Comm. End Head Assembly & Parts Used With

GAL-40C	1	Cover, Bearing, C. E.
ML-2156	1	Head Assy. , Comm. End
ML-155	1	Wick, Felt
ML-1154	1	Plate Assy. , Brush
MZ-19	4	Spring, Brush
ML-1156	1	Head Assy. , Partial, Comm. End
MAL-40A	1	BEARING, ABS. BRONZE
12X-196	4	Lockwasher, Brush Plate Sc. , #10

Comm. End Head Assy. (Cont.)

Part No.	No. Used	Name of Part
8X-898	4	Screw, Brush Plate, Fill. Hd. #10-32x1
X-3172	1	Oiler
12X-196	6	Lockwasher, C. E. Head Sc. , #10
8X-2994	6	Screw, C. E. Head, Fill. Hd. #10-32x9/16

Armature Assembly & Parts Used With

GK-174A	1	Washer, Arm. Shaft, C. E.
ML-128	1	Washer, Thrust, C. E. , 1/32" Thick
ML-2133	1	ARMATURE

Miscellaneous Parts

GCE-1024P	1	Band, Cover
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band, Square #10-32

† BRUSH SET, SERVICE ML-2012ES.

UNIT	APPLICATION
ML-4347	Moto-Truc

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4349 MOTOR PARTS LIST

ML-4349
(Issued 11-11-55)

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
MH-20	2	Bolt, Thru
ML-2117	1	Frame & Field Assy.
GK-38	4	Screw, Pole Shoe
MAW-37	1	Bushing, Ins., Term. Stud
MAX-35	2	Washer, Ins., Term. Stud
MAX-44	1	Washer, Plain, Term. Stud, Outer
MG-22	1	Washer, Plain, Term. Stud, Inner
MH-28	1	Connector
ML-1012 †	1	Brush
ML-3005S	1	FIELD COIL PACKAGE
ML-1007	1	Coil, Field, U. L.
ML-1008	1	Coil, Field, L. R.
ML-1009	1	Coil, Field, L. L.
ML-1010	1	Coil, Field, U. R.
MLA-28	1	Stud, Terminal
MN-21	1	Pin, Dowel
MR-32	1	Insulation, Field Connection
8X-179	2	Nut, Term. Stud, Hex. 3/8-16
12X-201	2	Lockwasher, Term. Stud, 3/8
12X-1014	2	Lockwasher, Thru Bolt, 5/16

Comm. End Head Assembly & Parts Used With

ML-2002CS	1	Head Assy., Comm. End
MAL-40A	1	BEARING, ABS. BRONZE
ML-122	1	Felt
ML-1034S †	2	Brush, Grounded
MR-1062A	1	Cover, Bearing, Comm. End
MZ-19	4	Spring, Brush
12X-196	6	Lockwasher, C. E. Head Screw, #10
8X-709	6	Screw, C. E. Head, Fill. Hd. #10-32x7/16

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part
GK-174A	1	Washer, Thrust, C. E.
ML-128	*	Washer, Thrust, C. E., 1/32" Thick
ML-128A	*	Washer, Thrust, C. E., .015" Thick
ML-128B	*	Washer, Thrust, C. E., .045" Thick
ML-2133	1	ARMATURE
<u>Miscellaneous Parts</u>		
GCE-1024J	1	Band, Cover
ML-149	1	Head, Drive End
X-367	1	BEARING, BALL, SEALED, S. A. E. #202
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band, Square #10-32

† BRUSH SET, SERVICE ML-2012S.

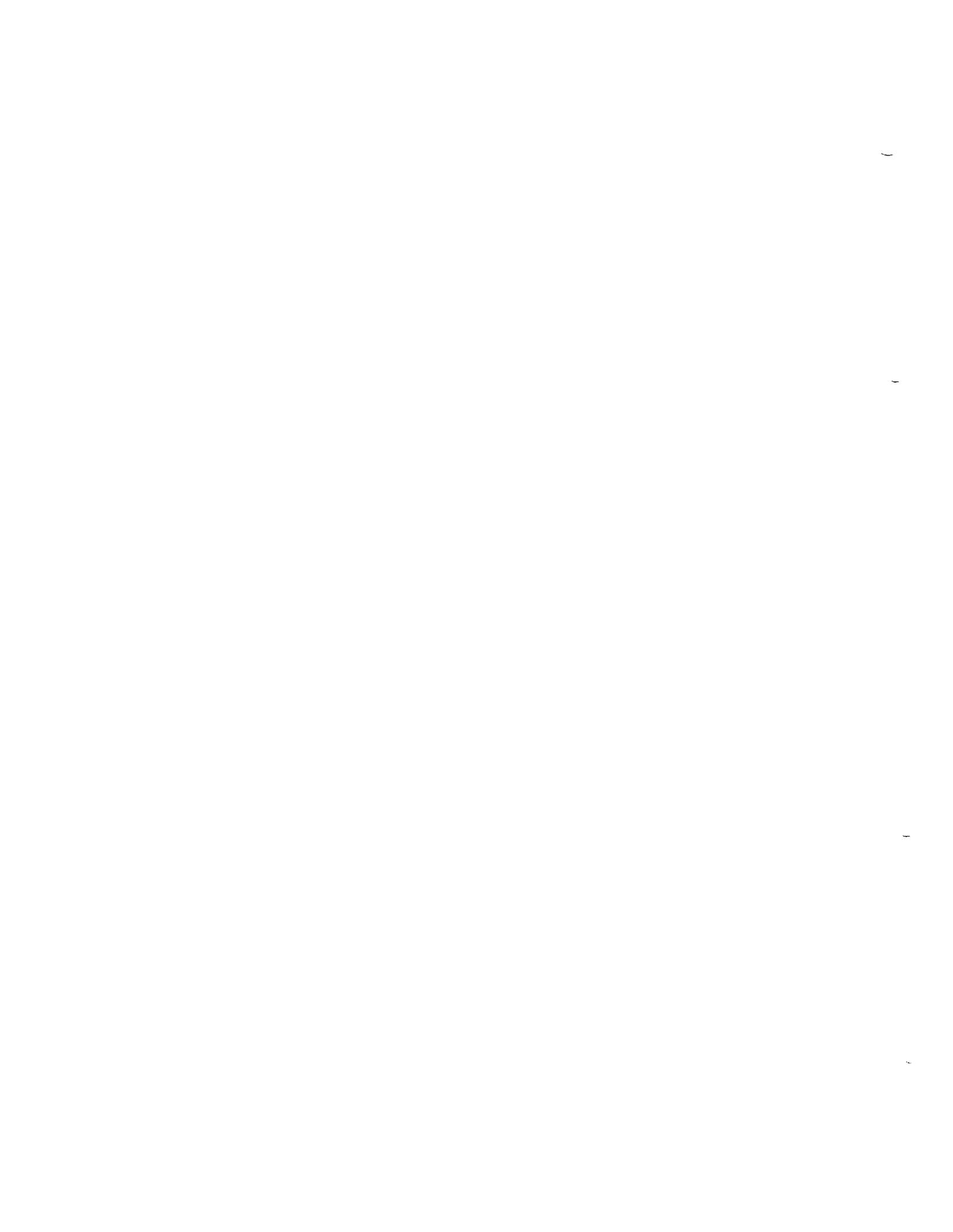
* Use as required.

UNIT	APPLICATION
ML-4349	J. S. Barnes

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking such parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4350 STARTING MOTOR PARTS LIST

ML-4350
(Issued 3-27-56)

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
MH-20	2	Bolt, Thru
ML-2117	1	Frame & Field Assy.
GK-38	4	Screw, Pole Shoe
MAW-37	1	Bushing, Ins. Term. Stud
MAX-35	2	Washer, Ins., Term. Stud
MAX-44	1	Washer, Plain, Term. Stud
		Stud, Outer
MG-22	1	Washer, Plain, Term. Stud, Inner.
MH-28	1	Connector
ML-1012†	1	Brush
ML-3005S	1	FIELD COIL PACKAGE
ML-1007	1	Coil, Field, U. L.
ML-1008	1	Coil, Field, L. R.
ML-1009	1	Coil, Field, L. L.
ML-1010	1	Coil, Field, U. R.
MLA-28	1	Stud, Terminal
MN-21	1	Pin, Dowel
MR-32	1	Insulation, Field Connection
8X-179	2	Nut, Term. Stud, Hex. 3/8-16
12X-201	2	Lockwasher, Term. Stud, 3/8
12X-1014	2	Lockwasher, Thru Bolt, 5/16

Comm. End Head Assembly & Parts Used With

ML-2002CS	1	Head Assy., Comm. End
MAL-40A	1	BEARING, ABS. BRONZE
ML-122	1	Felt
ML-1034S†	2	Brush, Grounded
MR-1062A	1	Cover, Bearing, Comm. End
MZ-19	4	Spring, Brush
12X-196	6	Lockwasher, Head Screw, #10
8X-709	6	Screw, C. E. Head, Fill. Hd. #10-32x7/16

Armature Assembly & Parts Used With

GK-174A	1	Washer, Thrust, C. E.
MG-61	1	Washer, Thrust, Intermediate
ML-2115	1	ARMATURE
X-261	2	Key, Woodruff, D. E., #6

Miscellaneous Parts

Part No.	No. Used	Name of Part
EBB-10A	1	BENDIX DRIVE ASSY.
EBA-4833	1	Ring, Retaining
EBA-7225	1	Spring, Meshing
EBA-9913A	1	Spring, Anti-Drift
EBA-9932A	1	Pinion
EBB-1006A	1	Screw, Shaft
EBB-1031A	1	Shaft & Drive Spring
GCE-24	1	Band, Cover
ML-2027A	1	Bearing Assy., Intermediate
ML-21A	1	BEARING, ABS. BRONZE
PS-1231B	1	Housing Assy., Pinion
MAB-88	1	Pin, Dowel
MZ-46A	1	BEARING, ABS. BRONZE
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band, Square #10-32

† BRUSH SET, SERVICE ML-2012S.

UNIT	APPLICATION
ML-4350	Tractomotive Corp.

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4351 STARTING MOTOR PARTS LIST

ML-4351
(Issued 1-17-56)

Frame & Field Assembly & Parts Used With			Armature Assembly & Parts Used With		
Part No.	No. Used	Name of Part	Part No.	No. Used	Name of Part
MH-20	2	Bolt, Thru	GK-174A	1	Washer, Thrust, C. E.
ML-2117	1	Frame & Field Assy.	MG-61	1	Washer, Thrust, Int.
GK-38	4	Screw, Pole Shoe	ML-128	*	Washer, Thrust, C. E. & Int., 1/32" Thick
MAW-37	1	Bushing, Ins., Term. Stud	ML-128A	*	Washer, Thrust, C. E. & Int., .015" Thick
MAX-35	2	Washer, Ins., Term. Stud	ML-128B	*	Washer, Thrust, C. E. & Int., .045" Thick
MAX-44	1	Washer, Plain, Term. Stud Outer	ML-129	*	Washer, Thrust, C. E. & Int., 1/32" Thick
MG-22	1	Washer, Plain, Term. Stud, Inner	ML-129A	*	Washer, Thrust, C. E. & Int., .015" Thick
MH-28	1	Connector	ML-129B	*	Washer, Thrust, C. E. & Int., .045" Thick
ML-1012 †	1	Brush	ML-2115	1	ARMATURE
ML-3005S	1	FIELD COIL PACKAGE	X-261	2	Key, Woodruff, D. E., #6
ML-1007	1	Coil, Field, U. L.	<u>Miscellaneous Parts</u>		
ML-1008	1	Coil, Field, L. R.	EBB-42	1	BENDIX DRIVE
ML-1009	1	Coil, Field, L. L.	GCE-1024J	1	Band, Cover
ML-1010	1	Coil, Field, U. R.	ML-2027A	1	BEARING ASSY., INTERMEDIATE
MLA-28	1	Stud, Terminal	ML-21A	1	Bearing, Absorbent Bronze
MN-21	1	Pin, Dowel	PS-1243C	1	Housing Assy., Pinion
MR-32	1	Insulation, Field Connection	MAB-88	1	Pin, Dowel
8X-179	2	Nut, Term. Stud, Hex. 3/8-16	MZ-46A	1	BEARING, ABSORBENT BRONZE
12X-201	2	Lockwasher, Term. Stud, 3/8	8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
12X-1014	2	Lockwasher, Thru Bolt, 5/16	8X-794	1	Nut, Cover Band, Square #10-32
<u>Comm. End Head Assembly & Parts Used With</u>					
ML-2002CS	1	Head Assy., Comm. End			
MAL-40A	1	BEARING, ABS. BRONZE			
ML-122	1	Felt			
ML-1034S †	2	Brush, Grounded			
MR-1062A	1	Cover, Bearing, Comm. End			
MZ-19	4	Spring, Brush			
12X-196	6	Lockwasher, C. E. Head Screw, #10			
8X-709	6	Screw, C. E. Head, Fill. Hd. #10-32x7/16			

† BRUSH SET, SERVICE ML-2012S.

* Use as required.

UNIT	APPLICATION
ML-4351	Massey-Harris

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4352 STARTING MOTOR PARTS LIST

ML-4352
(Issued 1-18-56)

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
MH-20	2	Bolt, Thru
ML-2125	1	Frame & Field Assy.
GK-38	4	Screw, Pole Shoe
MAW-37	1	Bushing, Ins., Term. Stud
MAX-35	2	Washer, Ins., Term. Stud
MAX-44	1	Washer, Plain, Term. Stud, Outer
MG-22	1	Washer, Plain, Term. Stud, Inner
MH-28	1	Connector
ML-1012 †	1	Brush
ML-3005S	1	FIELD COIL PACKAGE
ML-1007	1	Coil, Field, U. L.
ML-1008	1	Coil, Field, L. R.
ML-1009	1	Coil, Field, L. L.
ML-1010	1	Coil, Field, U. R.
MLA-28	1	Stud, Terminal
MN-21	1	Pin, Dowel
MR-32	1	Insulation, Field Connection
8X-179	2	Nut, Terminal Stud, Hex. 3/8-16
12X-201	2	Lockwasher, Term. Stud, 3/8
12X-1014	2	Lockwasher, Thru Bolt, 5/16

Comm. End Head Assembly & Parts Used With

ML-2002CS	1	Head Assy., Comm. End
MAL-40A	1	BEARING, ABS. BRONZE
ML-122	1	Felt
ML-1034S †	2	Brush, Grounded
MR-1062A	1	Cover, Bearing, C. E.
MZ-19	4	Spring, Brush
12X-196	6	Lockwasher, Hd. Sc., #10
8X-709	6	Screw, C. E. Head, Fill. Hd. #10-32x7/16

Armature Assembly & Parts Used With

MG-61	2	Washer, Thrust, Int.
ML-2126	1	ARMATURE
X-261	2	Key, Woodruff, D. E., #6

Switch Assembly & Parts Used With

Part No.	No. Used	Name of Part
MBR-40L	1	Connector
SSW-4001	1	SOLENOID STARTING SWITCH
8X-164	2	Nut, Hex. 5/16-18
8X-173	1	Nut, Hex. #10-32
12X-196	1	Lockwasher, #10
12X-1014	2	Lockwasher, 5/16
8X-321	2	Screw, Switch Mtg., Rd. Hd. #10-32x5/16
X-1270	2	Washer, Switch Mtg., Sc., Skpf. #10

Miscellaneous Parts

EBA-95	1	BENDIX DRIVE ASSY.
EB-108	2	Lockwasher
EB-4503	1	Head, Drive
EB-4506	1	Screw, Spring, Head
EB-4507	1	Screw, Spring, Shaft
EB-4515	1	Stop, Pinion
EB-4516	1	Screw, Pinion Stop
EB-5219S	1	Sleeve, Compression
EBA-5005	1	SPRING, DRIVE
EBA-5411	1	Shaft & Pinion
GCE-1024J	1	Band, Cover
ML-95	1	Ring, Lock, Intermediate Brg.
ML-1094	1	BEARING ASSY., INTERMEDIATE
ML-21A	1	Bearing, Absorbent Bronze
PS-1272	1	Housing Assy., Pinion
ML-18A	1	BEARING, ABS. BRONZE
MN-21	1	Pin, Dowel
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band, Square #10-32

† BRUSH SET, SERVICE ML-2012S.

UNIT	APPLICATION
ML-4352	J. I. Case

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis the are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4354 STARTING MOTOR PARTS LIST

ML-4354
(Issued 4-10-57)

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
MH-20	2	Bolt, Thru
ML-2117	1	Frame & Field Assy.
GK-38	4	Screw, Pole Shoe
MAW-37	1	Bushing, Ins., Term. Stud
MAX-35	2	Washer, Ins., Term. Stud
MAX-44	1	Washer, Plain, Term. Stud, Outer
MG-22	1	Washer, Plain, Term. Stud Inner
MH-28	1	Connector
ML-1012†	1	Brush
ML-3005S	1	FIELD COIL PACKAGE
ML-1007	1	Coil, Field, U. L.
ML-1008	1	Coil, Field, L. R.
ML-1009	1	Coil, Field, L. L.
ML-1010	1	Coil, Field, U. R.
MLA-28	1	Stud, Terminal
MN-21	1	Pin, Dowel
MR-32	1	Insulation, Field Connect.
8X-179	2	Nut, Term. Stud, Hex. 3/8-16
12X-201	2	Lockwasher, Term. Stud, 3/8
12X-1014	2	Lockwasher, Thru Bolt, 5/16

Comm. End Head Assembly & Parts Used With

ML-2002CS	1	Head Assy., Comm. End
MAL-40A	1	BEARING, ABS. BRONZE
ML-122	1	Felt
ML-1034S†	2	Brush, Grounded
MR-1062A	1	Cover, Bearing, Comm. End
MZ-19	4	Spring, Brush
12X-196	6	Lockwasher, C. E. Head Screw, #10
8X-709	6	Screw, C. E. Head, Fill. Hd. #10-32x7/16

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part
GK-174A	1	Washer, Thrust, C. E.
MG-61	1	Washer, Thrust, Int.
ML-128	*	Washer, Thrust, C. E. & Int., 1/32" Thick
ML-128A	*	Washer, Thrust, C. E. & Int., .015" Thick
ML-128B	*	Washer, Thrust, C. E. & Int., .045" Thick
ML-129	*	Washer, Thrust, C. E. & Int., 1/32" Thick
ML-129A	*	Washer, Thrust, C. E. & Int., .015" Thick
ML-129B	*	Washer, Thrust, C. E. & Int., .045" Thick
ML-2115	1	ARMATURE
X-261	2	Key, Woodruff, D. E., #6

Miscellaneous Parts

EBB-10	1	BENDIX DRIVE ASSY.
EBA-1233	2	Ring, Retaining
EBA-1225	1	Spring, Meshing
EBA-4713	3	Spring, Anti-Drift
EBB-1032	5	Pinion
EBB-906	4	Screw Shaft
EBB-1231	6	Shaft & Drive Spring
GCE-1024J	1	Band Cover
ML-2027	1	Bearing, Assy., Intermediate
ML-2027A	1	BEARING, ABS. BRONZE
PS-1243D	1	Housing Assy., Pinion
MAB-88	1	Pin, Dowel
MZ-46A	1	BEARING, ABS. BRONZE
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band, Square #10-32

† BRUSH SET, SERVICE ML-2012S.

* Use as required

UNIT	APPLICATION
ML-4354	J. I. Case

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4355 MOTOR PARTS LIST

ML-4355
(Issued 4-10-57)

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
DK-23C	2	Bolt Thru
ML-2161	1	Frame & Field Assy.
GK-38	4	Screw, Pole Shoe
MBD-119	2	Washer, Ins., Term Stud, Outer
MDR-37	2	Bushing, Ins., Term. Stud
ML-144	1	Insulation, Term. Stud, Inner
ML-145	1	Stud, Terminal, C. E.
ML-146	1	Stud, Terminal, D. F.
ML-147	1	Connector, Terminal
ML-148	1	Connector, Term. Stud
ML-152A	1	Insulation, Field Connect.
ML-153A	1	Insulation, Field Connect. 6 3/4" Long
ML-107D	1	COIL, FIELD, L. R.
ML-008C	1	COIL, FIELD, L. R.
ML-009K	1	COIL, FIELD, L. L.
ML-1010D	1	COIL, FIELD, U. R.
ML-1012DS	1	BRUSH SET
MN-21	1	Pin, Dowel
MN-47C	2	Washer, Plain, Term. Stu Outer
12X-196	2	Lockwasher, Brush Lead Sc., #10
8X-309	1	Screw, Brush Lead, Rd. Hd. #10-32x1/2
8X-311	1	Screw, Brush Lead, Rd. Hd. #10-32x3/8
X-1064	2	Nut, Term. Stud, Hex 3/8-16
X-3338	2	Lockwasher, Term. Stud, 3/8
12X-1014	2	Lockwasher, Thru Bolt, 5/16

Comm. End Head Assembly & Parts Used With

GAL-40C	1	Cover, Bearing, C. E.
ML-2156	1	Head Assy., Comm. End
ML-155	1	Wick, Felt
ML-1154	1	Plate Assy., Brush
MZ-19	4	Spring, Brush
ML-1156	1	Head Assy., Partial, Comm. End
MAL-40A	1	BEARING, ABS. BRONZE
12X-196	4	Lockwasher, Brush Plate Sc., #10
8X-898	4	Screw, Brush Plate, Fill. Hd. #10-32x1

Comm. End Head Assembly (Continued)

Part No.	No. Used	Name of Part
X-3172	1	Oiler
12X-196	6	Lockwasher, C. E. Head Sc., #10
8X-2994	6	Screw, C. E. Head, Fill. Hd. #10-32x9/16

Armature Assembly & Parts Used With

GK-174A	1	Washer, Thrust, C. E.
ML-128	*	Washer, Thrust, C. E., 1/32" Thick
ML-128A	*	Washer, Thrust, C. E., .015" Thick
ML-128B	1	Washer, Thrust, C. E., .045" Thick
ML-2133A	1	ARMATURE

Miscellaneous Parts

GCE-1024Q	1	Band, Cover
ML-160	1	Head, Drive End
X-367	1	BEARING, BALL, SEALED S. A. E. #202
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band Square 10-32

* Use as required.

Unit	Application
ML-4355	J. S. Barnes

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

ML-4356 STARTING MOTOR PARTS LIST

ML-4356
(Issued 4-10-57)

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
MH-20	2	Bolt Thru
ML-2125	1	Frame & Field Assy.
GK-38	4	Screw, Pole Shoe
MAW-37	1	Bushing, Ins., Term. Stud
MAX-35	2	Washer, Ins., Term. Stud
MAX-44	1	Washer, Plain, Term. Stud, Outer
MG-22	1	Washer, Plain, Term. Stud, Inner
MH-28	1	Connector
ML-1012†	1	Brush
ML-3005S	1	FIELD COIL PACKAGE
ML-1007	1	Coil, Field, U. L.
ML-1008	1	Coil, Field, L. R.
ML-1009	1	Coil, Field, L. L.
ML-1010	1	Coil, Field, U. R.
MLA-28	1	Stud, Terminal
MN-21	1	Pin, Dowel
MR-32	1	Insulation, Field Connect.
8X-179	2	Nut, Term. Stud, Hex 3/8-16
12X-201	2	Lockwasher, Term. Stud, 3/8
12X-1014	2	Lockwasher, Thru Bolt, 5/16

Comm. End Head Assembly & Parts Used With

ML-2002CS	1	Head Assy., Comm. End
MAL-40A	1	BEARING, ABS. BRONZE
ML-122	1	Felt
ML-1034S†	2	Brush, Grounded
MR-1062A	1	Cover, Bearing, Comm. End
MZ-19	4	Spring, Brush
12X-196	6	Lockwasher, Head Sc., #10
8X-709	6	Screw, C. E. Head, Fill. Hd. #10-32x7/16

Armature Assembly & Parts Used With

GK-174A	1	Washer, Thrust, C. E.
ML-134	1	Washer, Thrust, Int.
ML-2115	1	ARMATURE
X-261	2	Key, Woodruff, D. E. #6

Switch Assembly & Parts Used With

Part No.	No. Used	Name of Part
MBR-40	1	Connector
SSW-4001	1	Solenoid Starting Switch
8X-164	2	Nut, Hex. 5/16-18
8X-173	1	Nut, Hex. #10-32
12X-196	1	Lockwasher, #10
12X-1014	2	Lockwasher, 5/16
8X-321	2	Screw, Switch Mtg., Rd. Hd. #10-32x5/16
X-1270	2	Washer, Switch Mtg. Sc., Skpf. #10

Miscellaneous Parts

EBB-9	1	BENDIX DRIVE ASSY.
EBA-1213	1	Spring, Anti-Drift
EBA-1225	1	Spring, Meshing
EBA-1233	1	Ring, Retaining
EBA-7632	1	Pinion
EBB-906	1	Screw, Shaft
EBB-931	1	Shaft & Drive Spring
GCE-1024J	1	Band, Cover
ML-82	1	Gasket, Int. Bearing
ML-2135	1	Bearing Assy., Intermediate
GEG-49	1	Retainer, Felt Washer
GT-78A	1	Washer, Felt
ML-92A	1	BEARING, ABS. BRONZE
PS-1231D	1	Housing Assy., Pinion
MZ-46A	1	BEARING, ABS. BRONZE
12X-195	4	Lockwasher, Int. Bearing Sc., #8
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band, Square #10-32
8X-878	4	Screw, Int. Bearing, Fill. Hd. #8-32x7/16

† BRUSH SET, SERVICE ML-2012S

UNIT	APPLICATION
ML-4356	Tractomotive Corp.

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking su -parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4104 STARTING MOTOR PARTS LIST

MR-4104

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part					
			1	2	3	4	5
(MR-2001)	1	Frame & Field Assy.					
GK-38	8	Pole Piece Screw					
MO-17	1	Field Coil Lead Assy.					
X-983	2	Terminal					
MR-20	2	Comm. Head Bolt					
MR-29	4	Pole Piece					
MR-32	1	Field Connection Ins.					
MR-1007	1	Field Coil - U.L.					
MR-1008	1	Field Coil - L.R.					
MR-1009	1	Field Coil - L.L.					
MR-1C10	1	Field Coil - U.R.					

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assy.					
MG-22	1	Plain Steel Washer					
MG-68	2	Insulating Washer					
MG-70	1	Term. Post Frame Ins.					
MR-22	1	Term. Post Washer					
MR-27	1	Terminal Post					
MR-28	1	Term. Post Connector					
MR-31	1	Term. Post Cover Ins.					
SA-34	2	3/8-16 Hex. Nut					
X-201	2	3/8 Lock Washer					

Comm. End Head Assembly & Parts Used With

MG-1004S	1	Bearing Cover With Oiler					
(MR-2005)	1	Comm. End Head Assy.					
GK-162	2	Brush Holder Spacing Ins.					
GT-14	4	Brush Holder					
GT-32	2	Spring Insulator					
GT-35	2	Insulating Bushing					
GT-37	2	Insulating Washer					
CT-41	2	Brush Holder Post Clip					
MG-74	4	Brush Spring					
MH-53	2	Ground Connector					
MH-54	4	Brush					
MR-37	2	5/16 Lock Washer - Spe					
MR-1005B	1	Comm. End Head Part Assy.					
MG-1036	1	Comm. End Cap & Erg. Assembly					
MR-3	1	Absorbent Bronze Bearing					
8X-245	4	1/8x3/8 Oval Head Rivet					
8X-122	4	#8-32x1/2 Fill. Hd. Screw					
X-195	4	#8 Lock Washer					
X-196	2	#10 Lock Washer					
8X-311	2	#10-32x3/8 Rd. Hd. Screw					
8X-794	2	#10-32 Square Nut					
8X-147	2	5/16-18 Hex. Nut					
		1 2 3 4 5					

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part					
			1	2	3	4	5
GK-174A	1	1/2 Plain Washer					
MG-61	1	7/8 Plain Washer					
MR-34	1	Lead Slug					
MR-2006	1	Armature Assembly					
X-261	1	#6 Woodruff Key					
<u>Miscellaneous Parts</u>							
EB-33	1	Bendix Drive Assy.					
GX-1024	1	Head Band Assembly					
HS-1086	1	Pinion Housing Assy.					
MR-18A	1	Absorbent Bronze Brg.					
MR-19A	1	Absorbent Bronze Brg.					
MR-16	8	#10-40x3/4 Fill. Hd. Sc.					
MR-33	1	Plug					
X-195	8	#10 Lock Washer					
X-489	1	1/4 Oiler - Press in Type					
8X-1010A	1	#8-32x1 1/4 Rd. Hd. Screw - Hardened					
8X-1410	1	#8-32 Square Nut					
		1 2 3 4 5					

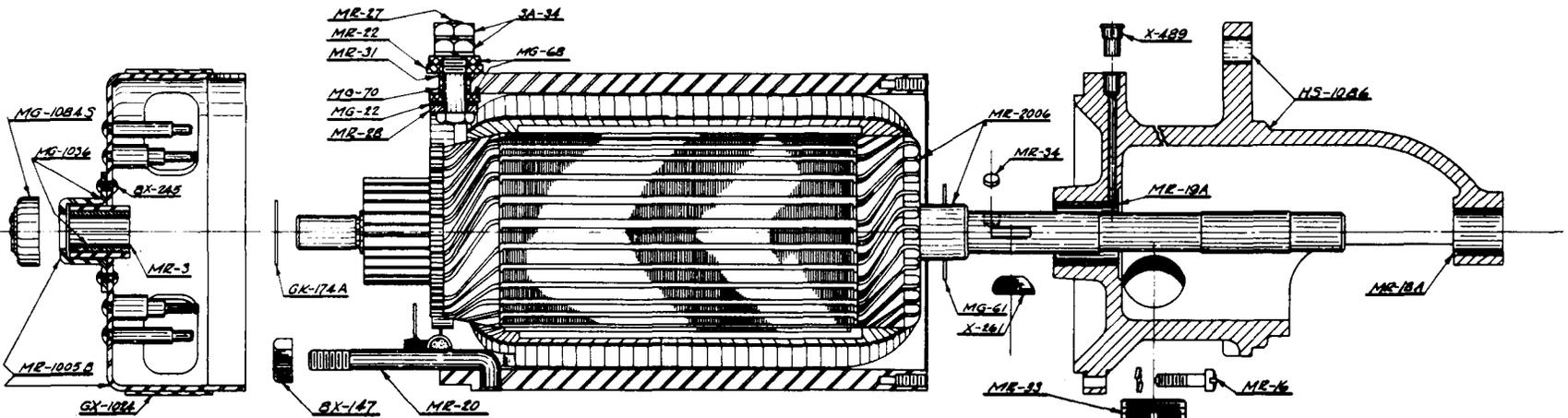
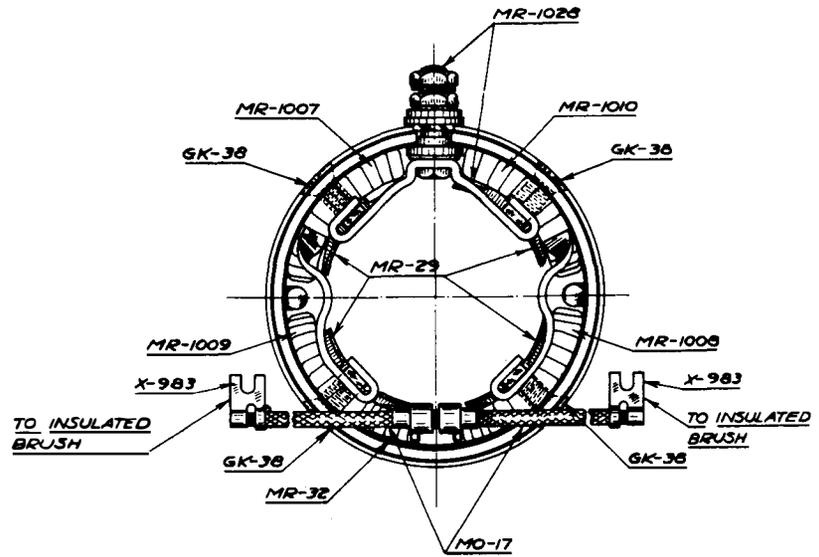
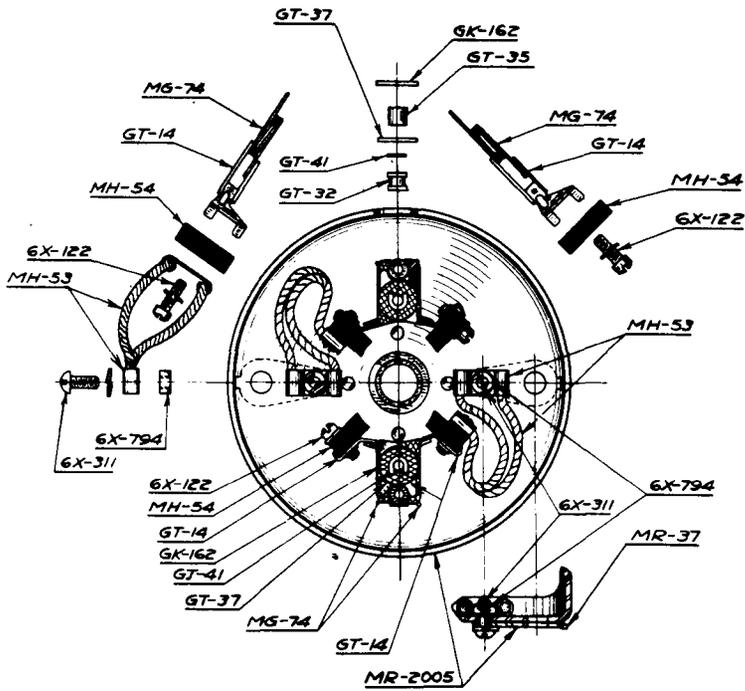
(Issued 7-19-37)

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

MR-4104 STARTING MOTOR ILLUSTRATION



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4108 STARTING MOTOR PARTS LIST

MR-4108

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-2001)	1	Frame & Field Assembly				
GK-38	8	Pole Piece Screw				
MO-17	1	Field Coil Lead Assy.				
X-983	2	Terminal				
MR-20	2	Comm. Head Bolt				
MR-29	4	Pole Piece				
MR-32	1	Field Connection Ins.				
MR-10C7	1	Field Coil - U.L.				
MR-10C8	1	Field Coil - L.R.				
MR-1009	1	Field Coil - L.L.				
MR-1010	1	Field Coil - U.R.				

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly				
MG-22	1	Plain Steel Washer				
MG-68	2	Insulating Washer				
MG-70	1	Term. Post Frame Ins.				
MR-22	1	Term. Post Washer				
MR-27	1	Terminal Post				
MR-28	1	Term. Post Connector				
MR-31	1	Term. Post Cover Ins.				
SA-34	2	3/8-16 Hex. Nut				
X-201	2	3/8 Lock Washer				

Comm. End Head Assembly & Parts Used With

MG-61	1	7/8 Plain Washer				
MG-1084S	1	Bearing Cover with Oiler				
(MR-2005)	1	Comm. End Head Assembly				
GK-162	2	Brush Holder Spacing Ins.				
GT-14	4	Brush Holder				
GT-32	2	Spring Insulator				
GT-35	2	Insulating Bushing				
GT-37	2	Insulating Washer				
GT-41	2	Brush Holder Post Clip				
MG-74	4	Brush Spring				
MH-53	2	Ground Connector				
MH-54	4	Brush				
MR-37	2	5/16 Lock Washer - Spe.				
MR-1005B	1	Comm. End Hd. Part Assy.				
MG-1036	1	Comm. End Cap & Brg. Assembly				
MAL-40A	1	Absorbent Bronze Bearing				
8X-245	4	1/8x3/8 Oval Hd. Rivet				
8X-122	4	#8-32x1/2 Fill. Hd. Sc.				
X-195	4	#8 Lock Washer				
X-196	2	#10 Lock Washer				
8X-311	2	#10-32x3/8 Rd. Hd. Sc.				
8X-794	2	#10-32 Square Nut				
8X-147	2	5/16-18 Hex. Nut				
		1	2	3	4	5

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
GK-174A	1	1/2 Plain Washer				
MR-2047	1	Armature Assembly				
X-261	2	#6 Woodruff Key				

Miscellaneous Parts

EB-45A	1	Bendix Drive Assembly				
GX-1024F	1	Head Band Assembly				
HS-1089A	1	Pinion Housing Assy.				
MAB-88	1	Dowel Pin				
ML-18A	1	Absorbent Bronze Brg.				
ML-2027A	1	Intermediate Brg. Assy.				
ML-21A	1	Absorbent Bronze Brg.				
MR-48	8	#10-40x7/8 Hex. Hd. Screw				
X-196	8	#10 Lock Washer				
X-489	1	1/4 Oiler - Press in Type				
8X-715	1	#10-32x1 1/4 Rd. Hd. Sc.				
8X-794	1	#10-32 Square Nut				
		1	2	3	4	5

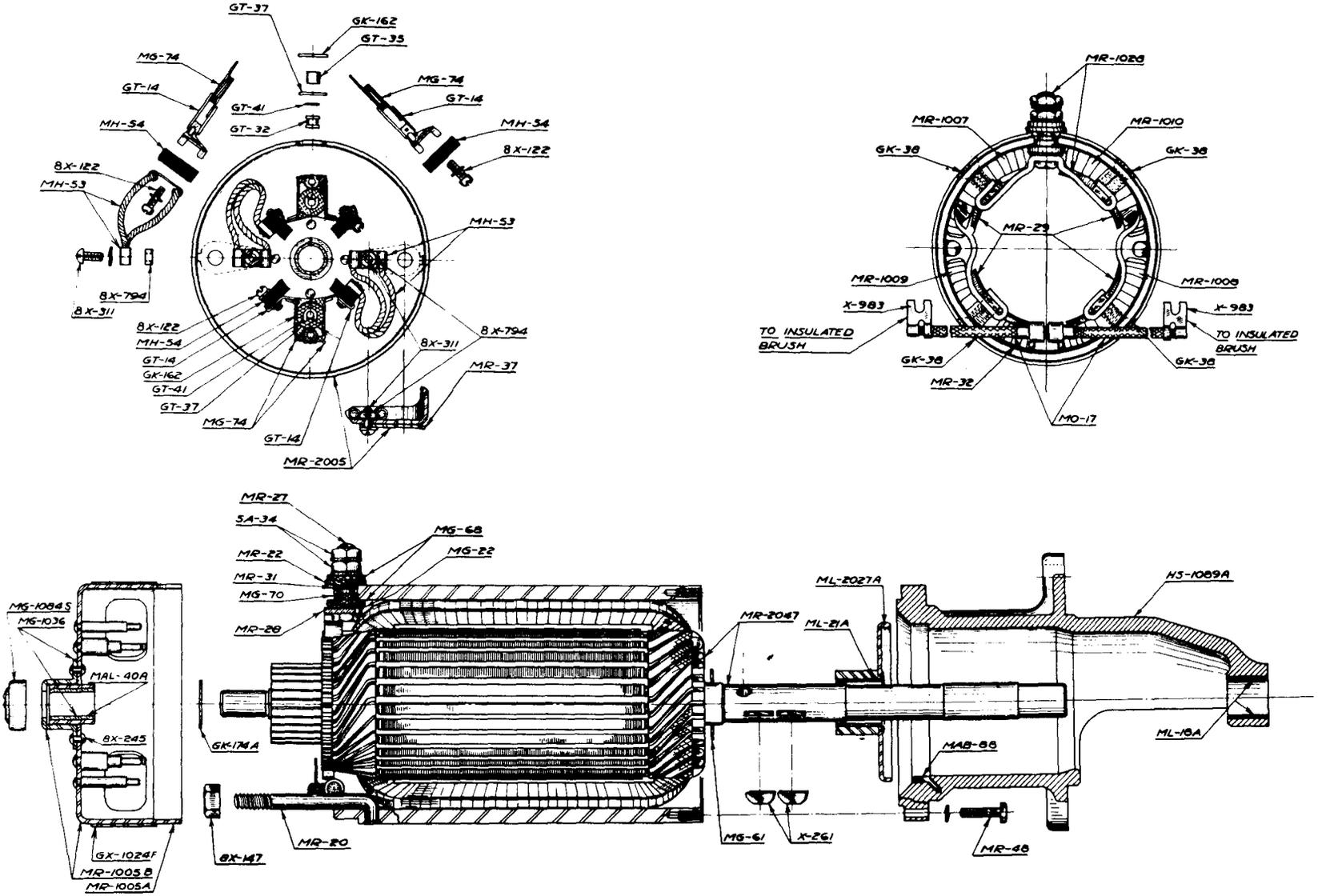
(Issued 11-1-37)

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

MR-4108 STARTING MOTOR ILLUSTRATION



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4109 STARTING MOTOR PARTS LIST

MR-4109

PRELIMINARY

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-3001)	1	Frame & Field Assembly				
GK-38	8	Pole Piece Screw				
MO-17	1	Field Coil Lead Assy.				
X-983	2	Terminal				
MR-30	2	Comm. End Head Bolt				
MR-29	4	Pole Piece				
MR-32	1	Field Connection Ins.				
MR-1007	1	Field Coil - U.L.				
MR-1008	1	Field Coil - L.R.				
MR-1009	1	Field Coil - L.L.				
MR-1010	1	Field Coil - U.R.				

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly				
MG-22	1	Plain Steel Washer				
MG-68	2	Insulating Washer				
MG-70	1	Term. Post Frame Ins.				
MR-22	1	Terminal Post Washer				
MR-27	1	Terminal Post				
MR-28	1	Term. Post Connector				
MR-31	1	Term. Post Cover Ins.				
SA-34	2	3/8-16 Hex. Nut				
X-201	2	3/8 Lock Washer				

Comm. End Head Assembly & Parts Used With

MG-1084S	1	Bearing Cover with Oiler				
(MR-3005)	1	Comm. End Head Assembly				
GK-162	2	Brush Holder Spacing Ins.				
GT-17	4	Brush Holder				
GT-32	2	Spring Insulation				
GT-35	2	Insulating Bushing				
GT-37	2	Insulating Washer				
GT-41	2	Brush Holder Post Clip				
MG-73	4	Brush Spring				
MH-53	2	Ground Connector				
MH-54	4	BRUSH				
MR-37	2	5/16 Lock Washer-Special				
MR-1005	1	C. E. Head Part Assy.				
MG-1036	1	C. E. Cap & Bearing Assembly				
MAL-40A	1	Absorbent Bronze Bearing				
8X-245	4	1/8x3/8 Oval Hd. Rivet				
X-122	4	#8-32x1/2 Fill. Hd. Screw				
X-195	4	#8 Lock Washer				
X-196	2	#10 Lock Washer				
8X-311	2	#10-32x3/8 Rd. Hd. Screw				
8X-794	2	#10-32 Square Nut				
8X-147	2	5/16-18 Hex. Nut				
		1	2	3	4	5

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
GK-174A	1	1/2 Plain Washer				
MR-52	1	Thrust Washer				
MR-2049	1	ARMATURE ASSEMBLY				
SB-18	1	Thrust Washer				
X-261	2	#6 Woodruff Key				
X-405	1	3/32x1 1/8 Cotter Pin				
X-1056	1	5/8-18 Castellated Nut				

Miscellaneous Parts

GX-1024G	1	Head Band Assembly				
MR-16	8	#10-40x3/4 Fill. Hd. Screw				
MR-1050	1	Drive End Head Assembly				
MR-51	1	ABSORBENT BRONZE BRG.				
X-196	8	#10 Lock Washer				
8X-1010A	1	#8-32x1 1/4 Rd. Hd. Screw-Hardened				
8X-1410	1	#8-32 Square Nut				
		1	2	3	4	5

(Issued 1-20-42)

UNIT	APPLICATION
MR-4109	Minneapolis-Moline

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4110 STARTING MOTOR PARTS LIST

MR-4110

PRELIMINARY

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-2001)	1	Frame & Field Assembly				
GK-38	8	Pole Piece Screw				
MO-17	1	Field Coil Lead Assy.				
X-983	2	Side Open Terminal				
MR-20	2	Comm. Head Bolt				
MR-29	4	Pole Piece				
MR-32	1	Field Connection Ins.				
MR-1007	1	Field Coil - U.L.				
MR-1008	1	Field Coil - L.R.				
MR-1009	1	Field Coil - L.L.				
MR-1010	1	Field Coil - U.R.				

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly				
MG-22	1	Plain Steel Washer				
MG-68	2	Insulating Washer				
MG-70	1	Terminal Post Frame Ins.				
MR-22	1	Terminal Post Washer				
MR-27	1	Terminal Post				
MR-28	1	Terminal Post Connector				
MR-31	1	Terminal Post Cover Ins.				
SA-34	2	3/8-16 Hex. Nut				
X-201	2	3/8 Lock Washer				

Comm. End Plate Assembly & Parts Used With

MG-1084S	1	Bearing Cover With Oiler				
(MR-2005)	1	Comm. End Head Assembly				
GK-162	2	Brush Holder Spacing Ins.				
GT-14	4	Brush Holder				
GT-32	2	Spring Insulator				
GT-35	2	Insulating Bushing				
GT-37	2	Insulating Washer				
GT-41	2	Brush Holder Post Clip				
MG-74	4	Brush Spring				
MH-53	2	Ground Connector				
ME-54	4	BRUSH				
MR-37	2	5/16 Lock Washer - Spe.				
MR-1005	1	Comm. End Head Part Assy.				
MG-1036	1	Comm. End Cap & Brg. Assy.				
MAL-40A	1	Absorbent Bronze Brg.				
EX-245	4	1/8x3/8 Oval Hd. Rivet				
EX-122	4	#8-32x1/2 Fill. Hd. Screw				
X-195	4	#8 Lock Washer				
X-196	2	#10 Lock Washer				
EX-311	2	#10-32x3/8 Rd. Hd. Screw				
EX-794	2	#10-32 Square Nut				
EX-147	2	5/16-18 Hex. Nut				
		1	2	3	4	5

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
GK-174A	1	1/2 Plain Washer				
MR-52	1	Thrust Washer				
MR-2049	1	ARMATURE ASSEMBLY				
SB-18	1	Thrust Washer				
X-261	2	#6 Woodruff Key				
X-405	1	3/32x1 1/8 Cotter Pin				
X-1056	1	5/8-18 Castellated Nut				

Miscellaneous Parts

GX-1024G	1	Head Band Assembly				
MR-16	8	#10-40x3/4 Fill. Hd. Screw				
MR-1050	1	Drive End Head Assembly				
MR-51	1	ABSORBENT BRONZE BRG.				
X-196	8	#10 Lock Washer				
EX-1010A	1	#8-32x1 1/4 Rd. Hd. Screw - Hardened				
EX-1410	1	#8-32 Square Nut				
		1	2	3	4	5

(Issued 5-21-41)

UNIT	APPLICATION
MR-4110	Minneapolis Moline

Printed in U. S. A.

File in
Equipment & Parts List Binder

“NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed.”



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4111 STARTING MOTOR PARTS LIST

MR-4111

PRELIMINARY

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-2053)	1					Frame & Field Assembly
GK-38	8					Pole Piece Screw
MO-17	1					Field Coil Lead Assy.
X-983	2					Side Open Terminal
MR-20	2					Comm. Head Bolt
MR-29	4					Pole Piece
MR-32	1					Field Connection Ins.
MR-1007	1					Field Coil - U.L.
MR-1008	1					Field Coil - L.R.
MR-1009	1					Field Coil - L.L.
MR-1010	1					Field Coil - U.R.

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly
MG-22	1	Plain Steel Washer
MG-68	2	Insulating Washer
MG-70	1	Terminal Post Frame Assy.
MR-22	1	Terminal Post Washer
MR-27	1	Terminal Post
MR-28	1	Terminal Post Connector
MR-31	1	Terminal Post Cover Ins.
SA-34	2	3/8-16 Hex. Nut
X-201	2	3/8 Lock Washer

Comm. End Plate Assembly & Parts Used With

MG-1084S	1	Bearing Cover With Oiler
(MR-2005)	1	Comm. End Head Assy.
GK-162	2	Brush Holder Spacing Ins.
GT-14	4	Brush Holder
GT-32	2	Spring Insulator
GT-35	2	Insulating Bushing
GT-37	2	Insulating Washer
GT-41	2	Brush Holder Post Clip
MG-74	4	Brush Spring
MH-53	2	Ground Connector
MH-54	4	BRUSH
MR-37	2	5/16 Lock Washer - Spe.
MR-1005	1	Comm. End Hd. Part Assy.
MG-1036	1	Comm. End Cap & Brg. Assembly
MAL-40A	1	Absorbent Bronze Bearing
EX-245	4	1/8x3/8 Oval Hd. Rivet
EX-122	4	#8-32x1/2 Fill. Hd. Sc.
X-195	4	#8 Lock Washer
X-196	2	#10 Lock Washer
EX-311	2	#10-32x3/8 Rd. Hd. Screw
EX-794	2	#10-32 Square Nut
EX-147	2	5/16-18 Hex. Nut
		1 2 3 4 5

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
GK-174A	1					1/2 Plain Washer
MR-54	1					Felt Retainer
MR-55	1					Felt Washer
MR-58	1					Thrust Washer
MR-59	1					Thrust Bearing
MR-2047	1					ARMATURE ASSEMBLY
X-261	2					#6 Woodruff Key

Switch Assembly & Parts Used With

SS-111R	1	Connector
SS-4301	1	SOLENOID STARTING SWITCH
X-196	1	#10 Lock Washer
EX-832	2	5/16-24 Hex. Nut
X-1014	2	5/16 Lock Washer
EX-1372	1	#10-32 Hex. Nut
EX-321	2	#10-32x5/16 Rd. Hd. Screw
X-1270	2	#10 Skpf. Washer

Miscellaneous Parts

EB-45A	1	BENDIX DRIVE ASSEMBLY
EB-108	2	Lock Washer
EB-4503	1	Driving Head
EB-4505	1	DRIVE SPRING
EB-4506	1	Head Spring Screw
EB-4507	1	Shaft Spring Screw
EB-4511A	1	S - A Assembly
EB-4515	1	Pinion Back Stop
EB-4516	1	Pinion Back Stop Screw
EB-4519S	1	Compression Sleeve
GK-1024F	1	Head Band Assembly
HS-1090	1	Pinion Housing Assembly
MAB-88	1	Dowel Pin
ML-18A	1	Absorbent Bronze Brg.
ML-2027C	1	INTERMEDIATE BRG. ASSY.
ML-21A	1	Absorbent Bronze Brg.
MR-48	8	#10-40x7/8 Hex. Hd. Screw
X-196	9	#10 Lock Washer
X-489	1	1/4 Oiler - Press in Type
EX-715	1	#10-32x1 1/4 Rd. Hd. Screw
EX-794	1	#10-32 Square Nut
		1 2 3 4 5

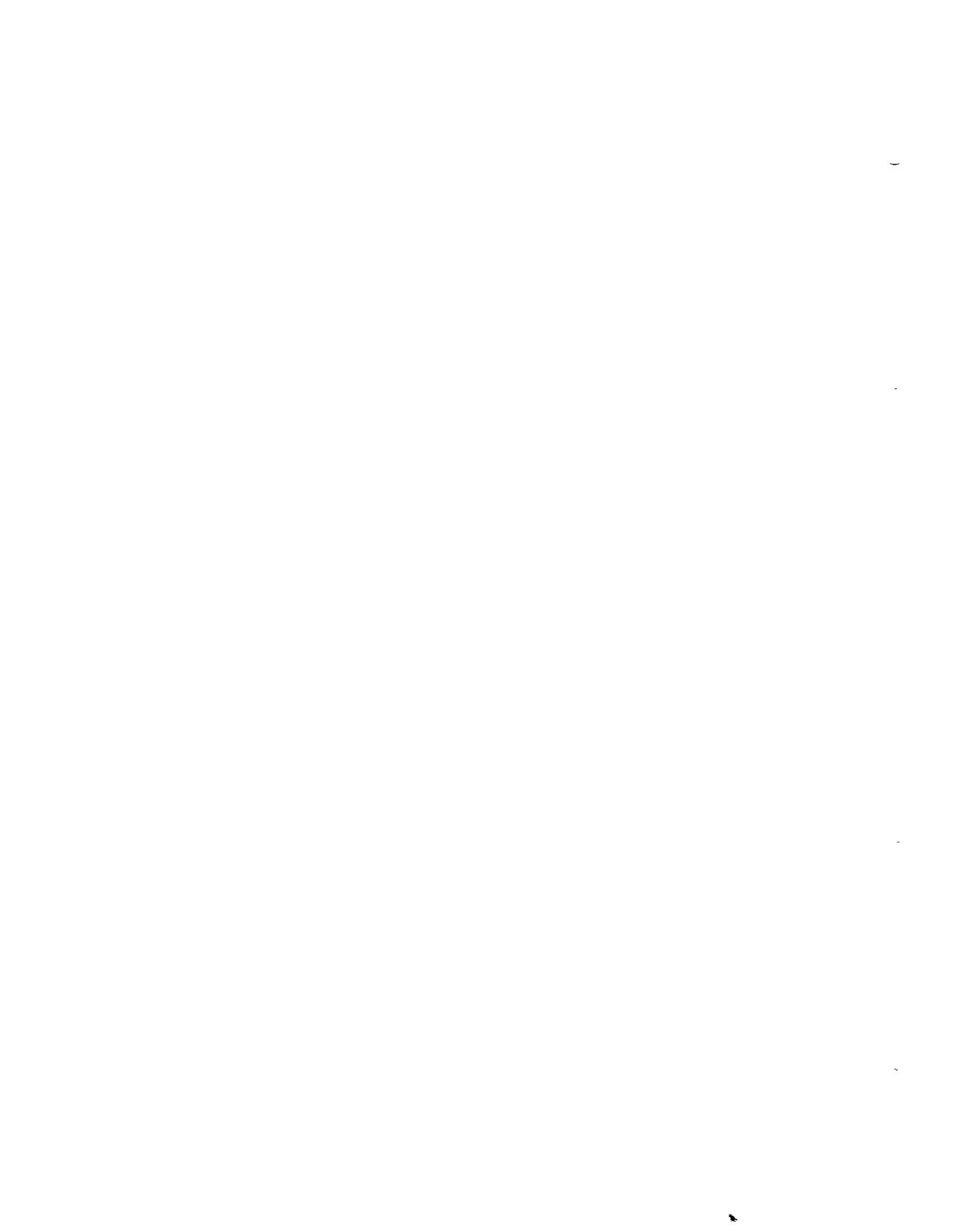
(Issued 5-22-41)

UNIT	APPLICATION
MR-4111	Rich Mfg., Witte Engine

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4113,A STARTING MOTOR PARTS LIST

MR-4113,A

Frame & Field Assembly & Parts Used With						Armature Assembly & Parts Used With							
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part				
		1	2	3	4	5			1	2	3	4	5
(MR-2001)	1	Frame & Field Assy.					GK-174A	1	Washer, Plain, 1/2				
GK-38	8	Screw, Pole Piece					MG-61	1	Washer, Thrust, Arm. Shaft, Int.				
MO-17	1	Lead Assy., Field Coil					MR-34	1	Slug, Lead				
X-983	2	Terminal					MR-2006	1	Armature				
MR-20	2	Bolt, C.E. Attaching					X-261	1	Key, Woodruff, #6				
MR-29	4	Pole Piece					<u>Miscellaneous Parts</u>						
MR-32	1	Insulation, Field Conn.					EB-33	1	Bendix Drive Assy.				
MR-1007	1	Coil, Field, U.L.					EB-508	2	Washer, Lock				
MR-1008	1	Coil, Field, L.R.					EB-2303	1	Head, Drive				
MR-1009	1	Coil, Field, L.L.					EB-2319S	1	Sleeve, Compression				
MR-1010	1	Coil, Field, U.R.					EB-2322	2	Clip, Spring Support				
<u>Terminal Post Assembly & Parts Used With</u>						EB-2406	1	Screw, Spring, Head					
MR-1028	1	Post Assy., Terminal					EB-2407	1	Screw, Spring, Shaft				
MG-22	1	Washer, Plain					EB-3105	1	Spring, Drive				
MG-68	2	Washer, Insulating					EB-3311	1	Shaft & Pinion				
MG-70	1	Insulation, Frame					GX-1024	1	Band, Head				
MR-22	1	Washer, Cork					HS-1092	1	Housing Assy., Pinion				
MR-27	1	Post, Terminal, 3/8-16					MR-18A	1	Bearing Abs. Bronze, D.E.				
MR-28	1	Connector					MR-19A	1	Bearing Abs. Bronze, Int.				
MR-31	1	Insulation, Cover					MR-16	8	Screw, Pinion Housing, Fil. Hd., #10-40x3/4				
SA-34	2	Nut, Hex., 3/8-16					MR-33	1	Plug, Pinion Housing				
X-201	2	Washer, Lock, 3/8					X-196	8	Washer, Lock, Attaching, Housing #10				
<u>Comm. End Head Assembly & Parts Used With</u>						X-715	1	Screw, Head Band, Rd. Hd., #10-32x1 1/4					
MG-1084S	1	Cover, Bearing					8X-794	1	Nut, Head Band, Square, #10-32 1 2 3 4 5				
(MR-2005)	1	Head Assy., Comm. End					(Issued 6-17-43)						
GK-162	2	Insulation, Spacing, B.H.					NOTE:- The MR-4113A starting motor uses EBA-11 Bendix Drive with sub parts as noted below.						
GT-14	4	Holder, Brush					EBA-11	1	Bendix Drive Assy.				
GT-32	2	Insulator, Brush Spring					EB-108	2	Washer, Lock				
GT-35	2	Bushing, Insulating, Brush Holder					EB-7806	1	Screw, Spring, Head				
GT-37	2	Washer, Insulating, Brush Holder,					EB-7807	1	Screw, Spring, Shaft				
GT-41	2	Clip, Brush Post					EB-7819S	1	Sleeve, Compression				
MG-74	4	Spring, Brush					EB-8503	1	Head, Driving				
MH-53	2	Connector, Ground					EB-8705	1	Spring, Drive				
MH-54	4	Brush					EB-8734	1	Ring, Take-Up				
MR-37	2	Washer, Lock, C.E. Bolt					EBA-1111	1	Shaft & Pinion				
MR-1005	1	Head Assy., Partial, Comm. End					NOTE:- Part numbers shown in parenthesis are not recommended for service.						
MG-1036	1	Cap & Bearing Assy., Comm. End											
MAL-40A	1	Bearing, Abs. Bronze											
8X-245	4	Rivet, Oval Hd., 1/8x3/8											
8X-122	4	Screw, Brush, Fil. Hd., #8-32x1/2											
X-195	4	Washer, Lock, Brush Sc., #8											
X-196	2	Washer, Lock, Ground Sc., #10											
8X-311	2	Screw, Ground, Rd. Hd., #10-32x3/8											
8X-794	2	Nut, Ground Screw, Square, #10-32											
8X-147	2	Nut, Comm. End Bolt, 5/16-18 1 2 3 4 5											

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4114 STARTING MOTOR PARTS LIST

MR-4114

PRELIMINARY

Frame & Field Assembly & Parts Used With					Armature Assembly & Parts Used With								
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part				
		1	2	3	4	5			1	2	3	4	5
(MR-2001)	1	Frame & Field Assembly					GK-174A	1	1/2 Plain Washer				
GK-38	8	Pole Piece Screw					MR-54	1	Felt Retainer				
MO-17	1	Field Coil Lead Assy.					MR-55	1	Felt Washer				
X-983	2	Terminal					MR-58	1	Thrust Washer				
MR-20	2	Comm. Head Bolt					MR-59	1	Thrust Bearing				
MR-29	4	Pole Piece					MR-2047	1	ARMATURE ASSEMBLY				
MR-32	1	Field Connection Ins.					X-261	2	#6 Woodruff Key				
MR-1007	1	Field Coil - U.L.					<u>Miscellaneous Parts</u>						
MR-1008	1	Field Coil - L.R.					EB-45A	1	BENDIX DRIVE ASSEMBLY				
MR-1009	1	Field Coil - L.L.					EB-108	2	Lock Washer				
MR-1010	1	Field Coil - U.R.					EB-4503	1	Driving Head				
<u>Terminal Post Assembly & Parts Used With</u>						EB-4505	1	DRIVE SPRING					
MR-1028	1	Terminal Post Assembly					EB-4506	1	Head Spring Screw				
MG-22	1	Plain Steel Washer					EB-4507	1	Shaft Spring Screw				
MG-68	2	Insulating Washer					EB-4511A	1	S-A Assembly				
MG-70	1	Term. Post Frame Ins.					EB-4515	1	Pinion Back Stop				
MR-22	1	Term. Post Washer					EB-4516	1	Pinion Back Stop Screw				
MR-27	1	Terminal Post					EB-4519S	1	Compression Sleeve				
MR-28	1	Term. Post Connector					GX-1024F	1	Head Band Assembly				
MR-31	1	Term. Post Cover Ins.					HS-1089	1	Pinion Housing Assembly				
SA-34	2	3/8-16 Hex. Nut					MAB-88	1	Dowel Pin				
X-201	2	3/8 Lock Washer					ML-18A	1	Absorbent Bronze Brg.				
<u>Comm. End Head Assembly & Parts Used With</u>						ML-2027C	1	INTERMEDIATE BEARING ASSY.					
MG-1084S	1	Bearing Cover with Oiler					ML-21A	1	Absorbent Bronze Brg.				
(MR-2005)	1	Comm. End Head Assembly					MR-48	8	#10-40x7/8 Hex. Hd. Screw				
GK-162	2	Brush Holder Spacing Ins.					8X-147	2	5/16-18 Hex. Nut				
GT-14	4	Brush Holder					X-196	8	#10 Lock Washer				
GT-32	2	Spring Insulator					X-489	1	1/4 Oiler - Press in Type				
GT-35	2	Insulating Bushing					8X-715	1	#10-32x1 1/4 Rd. Hd. Screw				
GT-37	2	Insulating Washer					8X-794	1	#10-32 Square Nut				
GT-41	2	Brush Holder Post Clip							1	2	3	4	5
MG-74	4	Brush Spring					(Issued 1-20-42)						
MH-53	2	Ground Connector											
MH-54	4	BRUSH											
MR-37	2	5/16 Lock Washer - Spec.											
MR-1005	1	C. E. Head Part Assy.											
MG-1036	1	C. E. Cap & Bearing Assembly											
MAL-40A	1	Absorbent Bronze Bearing											
8X-245	4	1/8x3/8 Oval Hd. Rivet											
8X-122	4	#8-32x1/2 Fill. Hd. Screw											
X-195	4	#8 Lock Washer											
X-196	2	#10 Lock Washer											
8X-311	2	#10-32x3/8 Rd. Hd. Screw											
8X-794	2	#10-32 Square Nut											
		1	2	3	4	5							

UNIT	APPLICATION
MR-4114	Your Engine

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4115 STARTING MOTOR PARTS LIST

MR-4115

PRELIMINARY

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-2053)	1	Frame & Field Assembly				
GK-38	8	Pole Piece Screw				
MO-17	1	Field Coil Lead Assembly				
X-983	2	Terminal				
MR-20	2	Comm. Head Bolt				
MR-29	4	Pole Piece				
MR-32	1	Field Connection Ins.				
MR-1007	1	Field Coil - U.L.				
MR-1008	1	Field Coil - L.R.				
MR-1009	1	Field Coil - L.L.				
MR-1010	1	Field Coil - U.R.				

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly				
MG-22	1	Plain Steel Washer				
MG-68	2	Insulating Washer				
MG-70	1	Term. Post Frame Ins.				
MR-22	1	Terminal Post Washer				
MR-27	1	Terminal Post				
MR-28	1	Terminal Post Connector				
MR-31	1	Term. Post Cover Ins.				
SA-34	2	3/8-16 Hex. Nut				
X-201	2	3/8 Lock Washer				

Comm. End Head Assembly & Parts Used With

MG-1084S	1	Bearing Cover with Oiler				
(MR-2005)	1	Comm. End Head Assembly				
GK-162	2	Br. Holder Spacing Ins.				
GT-14	4	Brush Holder				
GT-32	2	Spring Insulator				
GT-35	2	Insulating Bushing				
GT-37	2	Insulating Washer				
GT-41	2	Brush Holder Post Clip				
MG-74	4	Brush Spring				
MH-53	2	Ground Connector				
MH-54	4	BRUSH				
MR-37	2	5/16 Lock Washer - Spe.				
MR-1005	1	C. E. Head Part Assy.				
MG-1036	1	C.E. Cap & Brg. Assy.				
MAL-40A	1	Absorbent Bronze Bearing				
8X-245	4	1/8x3/8 Oval Hd. Rivet				
8X-122	4	#8-32x1/2 Fill. Hd. Sc.				
X-195	4	#8 Lock Washer				
X-196	2	#10 Lock Washer				
8X-311	2	#10-32x3/8 Rd. Hd. Sc.				
8X-794	2	#10-32 Square Nut				
8X-147	2	5/16-18 Hex. Nut				

Armature Assembly & Parts Used With

GK-174A	1	1/2 Plain Washer				
MG-61	1	7/8 Plain Washer				
MR-34	1	Lead Slug				
MR-2006	1	ARMATURE ASSEMBLY				
X-261	1	#6 Woodruff Key				
		1	2	3	4	5

Switch Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
SS-61A	1	Connector				
SS-4001	1	SOLENOID STARTING SWITCH				
12X-196	1	#10 Lock Washer				
8X-832	2	5/16-24 Hex. Nut				
12X-1014	2	5/16 Lock Washer				
8X-1372	1	#10-32 Hex. Nut				
8X-321	2	#10-32x5/16 Rd. Hd. Screw				
X-1270	2	#10 Skpf. Washer				

Miscellaneous Parts

EB-33	1	BENDIX DRIVE ASSEMBLY				
EB-508	2	5/16 Spe. Lock Washer				
EB-2303	1	Driving Head				
EB-2319S	1	Compression Sleeve				
EB-2322	2	Spring Support Clip				
EB-2406	1	Hd. Spr. Bolt or Screw				
EB-2407	1	Shaft Spring Screw				
EB-3105	1	DRIVE SPRING				
EB-3311	1	S-A Assembly				
GX-1024	1	Head Band Assembly				
HS-1086	1	Pinion Housing Assembly				
MR-18A	1	ABSORBENT BRONZE BEARING				
MR-19A	1	ABSORBENT BRONZE BEARING				
MR-16	8	#10-40x3/4 Fill. Hd. Screw				
MR-33	1	Plug				
X-196	9	#10 Lock Washer				
X-489	1	1/4 Oiler - Press in Type				
8X-1010A	1	#8-32x1 1/4 Rd. Hd. Screw - Hardened				
8X-1410	1	#8-32 Square Nut				
		1	2	3	4	5

(Issued 10-9-41)

UNIT	APPLICATION
MR-4115	Diamond T, Worthington

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4116 STARTING MOTOR PARTS LIST

MR-4116

PRELIMINARY

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-2001)	1	Frame & Field Assembly				
GK-38	8	Pole Piece Screw				
MO-17	1	Field Coil Lead Assy.				
X-983	2	Terminal				
MR-20	2	Comm. Head Bolt				
MR-29	4	Pole Piece				
MR-32	1	Field Connection Ins.				
MR-1007	1	Field Coil - U.L.				
MR-1008	1	Field Coil - L.R.				
MR-1009	1	Field Coil - L.L.				
MR-1010	1	Field Coil - U.R.				

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly				
MG-22	1	Plain Steel Washer				
MG-68	2	Insulating Washer				
MG-70	1	Terminal Post Frame Ins.				
MR-22	1	Terminal Post Washer				
MR-27	1	Terminal Post				
MR-28	1	Terminal Post Connector				
MR-31	1	Terminal Post Cover Ins.				
SA-34	2	3/8-16 Hex. Nut				
X-201	2	3/8 Lock Washer				

Comm. End Plate Assembly & Parts Used With

(MR-2005)	1	Comm. End Head Assembly				
GK-162	2	Brush Holder Spacing Ins.				
GT-14	4	Brush Holder				
GT-32	2	Spring Insulator				
GT-35	2	Insulating Bushing				
GT-37	2	Insulating Washer				
GT-41	2	Brush Holder Post Clip				
MG-74	4	Brush Spring				
MH-53	2	Ground Connector				
MH-54	4	BRUSH				
MR-37	2	5/16 Lock Washer - Spe.				
MR-1005	1	Comm. End Hd. Part Assy.				
MG-1036	1	Comm. End Cap & Brg. Assembly				
MAL-40A	1	Absorbent Bronze Bearing				
EX-245	4	1/8x3/8 Oval Hd. Rivet				
EX-122	4	#8-32x1/2 Fill. Hd. Screw				
X-195	4	#8 Lock Washer				
X-196	2	#10 Lock Washer				
EX-311	2	#10-32x3/8 Rd. Hd. Screw				
EX-794	2	#10-32 Square Nut				
EX-147	2	5/16-18 Hex. Nut				
		1	2	3	4	5

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
GK-174A	1	1/2 Plain Washer				
MR-54	1	Felt Retainer				
MR-55	1	Felt Washer				
MR-58	1	Thrust Washer				
MR-59	1	Thrust Bearing				
MR-2060	1	ARMATURE ASSEMBLY				
X-261	2	#6 Woodruff Key				

Miscellaneous Parts

EB-45A	1	BENDIX DRIVE ASSEMBLY				
EB-108	2	Lock Washer				
EB-4503	1	Driving Head				
EB-4505	1	DRIVE SPRING				
EB-4506	1	Head Spring Screw				
EB-4507	1	Shaft Spring Screw				
EB-4511A	1	S - A Assembly				
EB-4515	1	Pinion Back Stop				
EB-4516	1	Pinion Back Stop Screw				
EB-4519S	1	Compression Sleeve				
GX-1024F	1	Head Band Assembly				
ES-1093	1	Pinion Housing Assembly				
MAB-88	1	Dowel Pin				
ML-18A	1	Absorbent Bronze Brg.				
ML-2027C	1	INTERMEDIATE BRG. ASSY.				
ML-21A	1	Absorbent Bronze Brg.				
MR-48	8	#10-40x7/8 Hex. Hd. Screw				
EX-141	1	#8-32 Hex. Nut				
X-196	8	#10 Lock Washer				
X-489	1	1/4 Oiler - Press in Type				
EX-1010A	1	#8-32x1 1/4 Rd. Hd. Screw - Hardened				
		1	2	3	4	5

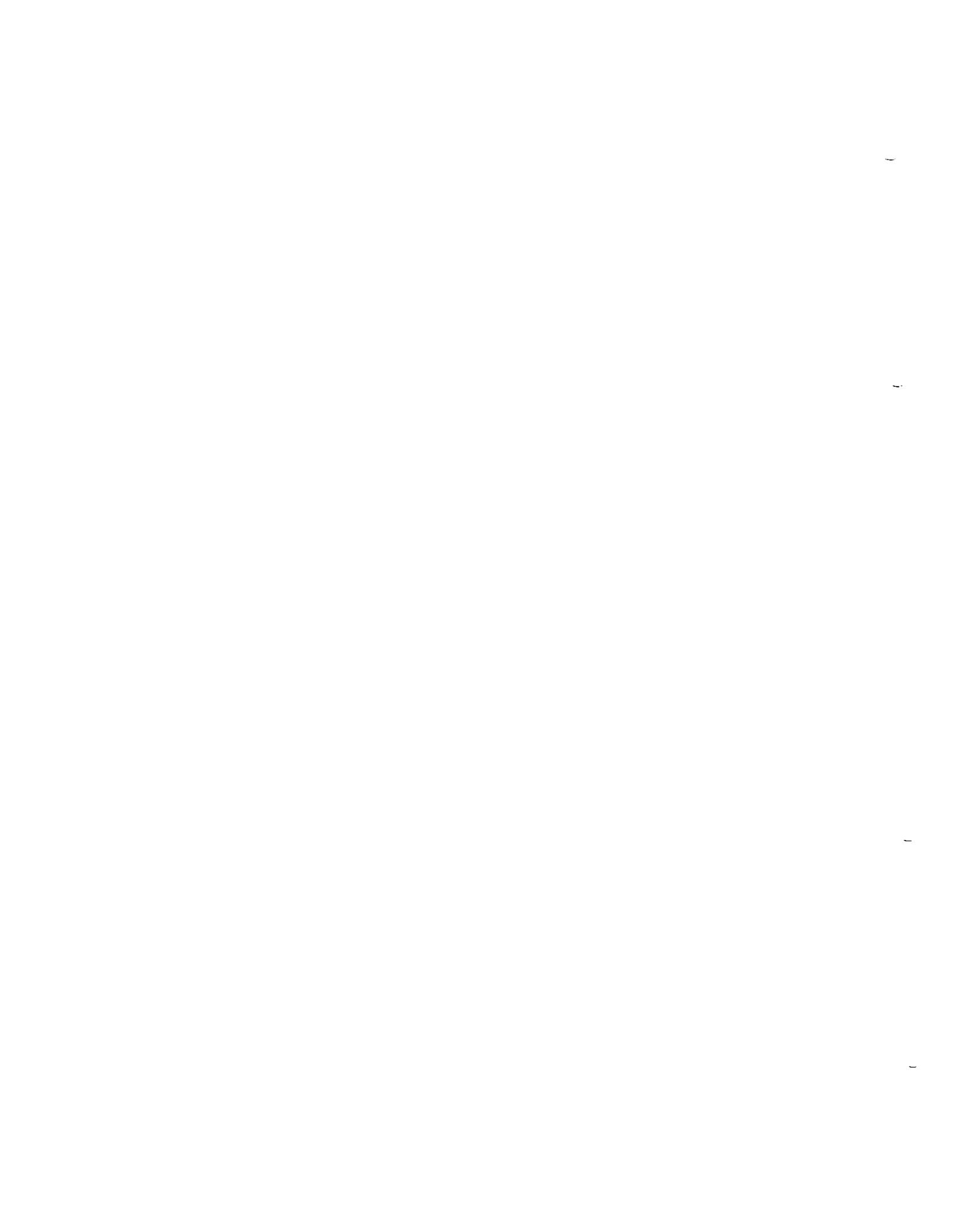
(Issued 5-23-41)

UNIT	APPLICATION
MR-4116	Climax

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4117 STARTING MOTOR PARTS LIST

MR-4117

PRELIMINARY

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-3001)	1	Frame & Field Assembly				
GK-38	8	Pole Piece Screw				
MO-17	1	Field Coil Lead Assy.				
X-983	2	Terminal				
MR-20	2	Comm. Head Bolt				
MR-29	4	Pole Piece				
MR-32	1	Field Connection Ins.				
MR-1007	1	Field Coil - U.L.				
MR-1008	1	Field Coil - L.R.				
MR-1009	1	Field Coil - L.L.				
MR-1010	1	Field Coil - U.R.				

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly				
MG-22	1	Plain Steel Washer				
MG-68	2	Insulating Washer				
MG-70	1	Terminal Post Frame Ins.				
MR-22	1	Terminal Post Washer				
MR-27	1	Terminal Post				
MR-28	1	Terminal Post Connector				
MR-31	1	Terminal Post Cover Ins.				
SA-34	2	3/8-16 Hex. Nut				
X-201	2	3/8 Lock Washer				

Comm. End Plate Assembly & Parts Used With

MG-1084S	1	Bearing Cover With Oiler				
(MR-3005)	1	Comm. End Head Assembly				
GK-162	2	Brush Holder Spacing Ins.				
GT-17	4	Brush Holder				
GT-32	2	Spring Ins.				
GT-35	2	Insulating Bushing				
GT-37	2	Insulating Washer				
GT-41	2	Brush Holder Post Clip				
MG-73	4	Brush Spring				
MH-53	2	Ground Connector				
MH-54	4	BRUSH				
MR-37	2	5/16 Lock Washer-Spiral				
MR-1005	1	Comm. End Hd. Part Assy.				
MG-1036	1	Comm. End Cap & Brg. Assembly				
MAL-40A	1	Absorbent Bronze Brg.				
EX-245	4	1/8x3/8 Oval Hd. Rivet				
EX-122	4	#8-32x1/2 Fill. Hd. Screw				
X-195	4	#8 Lock Washer				
X-196	2	#10 Lock Washer				
EX-311	2	#10-32x3/8 Rd. Hd. Screw				
EX-794	2	#10-32 Square Nut				
EX-147	2	5/16-18 Hex. Nut				
		1	2	3	4	5

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
GK-174A	1	1/2 Plain Washer				
MR-54	1	Felt Retainer				
MR-55	1	Felt Washer				
MR-58	1	Thrust Washer				
MR-59	1	Thrust Bearing				
MR-2047	1	ARMATURE ASSEMBLY				
X-261	2	#6 Woodruff Key				

Miscellaneous Parts

EB-47A	1	BENDIX DRIVE ASSEMBLY				
EB-108	2	Lock Washer				
EB-4503	1	Driving Head				
EB-4506	1	Hd. Spring Screw				
EB-4507	1	Shaft Spring Screw				
EB-4515	1	Pinion Back Stop				
EB-4516	1	Pinion Back Stop Screw				
EB-4519S	1	Compression Sleeve				
EB-4705	1	DRIVE SPRING				
EB-4711A	1	S - A Assembly				
GX-1024F	1	Head Band Assembly				
HS-1087	1	Pinion Housing Assembly				
MAB-88	1	Dowel Pin				
ML-18A	1	Absorbent Bronze Brg.				
ML-2027C	1	INTERMEDIATE BRG. ASSY.				
ML-21A	1	Absorbent Bronze Brg.				
MR-48	8	#10-40x7/8 Hex. Hd. Screw				
X-196	8	#10 Lock Washer				
X-489	1	1/4 Oiler - Press in Type				
X-715	1	#10-32x1 1/4 Rd. Hd. Screw				
EX-794	1	#10-32 Square Nut				
		1	2	3	4	5

(Issued 5-23-41)

UNIT	APPLICATION
MR-4117	Northwest

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4118 STARTING MOTOR PARTS LIST

MR-4118

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part					
			1	2	3	4	5
(MR-2001)	1	Frame & Field Assy.					
GK-38	8	Screw, Pole Shoe					
MG-22	1	Washer, Plain, Term. Stud					
MG-68	2	Washer, Ins., Term. Stud					
MG-70	1	Insulation, Term. Stud					
MO-17	1	Lead Assy., Field Coil					
X-983	2	Terminal					
MR-20	2	Bolt, Comm. End					
MR-22	1	Washer, Term. Stud					
MR-27	1	Stud, Terminal					
MR-28	1	Connector, Term. Stud					
MR-31	1	Insulation, Term. Stud					
MR-32	1	Insulation, Field Connection					
MR-1007	1	Coil, Field, U.L.					
MR-1008	1	Coil, Field, L.R.					
MR-1009	1	Coil, Field, L.L.					
MR-1010	1	Coil, Field, U.R.					
SA-34	2	Nut, Term. Stud, Hex. 3/8-16					
X-201	2	Lockwasher, Term. Stud, 3/8					

Comm. End Head Assembly & Parts Used With

MR-1062A	1	Cover, Bearing, Comm. End					
MR-2005	1	Head Assy., Comm. End					
GK-162	2	Insulation, Spring, B.H.					
GT-14	4	Holder, Brush					
GT-32	2	Insulation, Brush Spring					
GT-35	2	Bushing, Insulation, Brush Holder					
GT-37	2	Washer, Insulating, Brush Holder					
GT-41	2	Clip, Brush Post					
MG-74	4	Spring, Brush					
MH-53	2	Connector, Ground					
MH-54	4	BRUSH					
MR-37	2	Lockwasher, C.E. Bolt					
MR-1005	1	Head Assy., Partial, Comm. End					
MAL-40A	1	BEARING, ABSORBENT BRONZE					
8X-122	4	Screw, Brush, Fil. Hd., #8-32x1/2					
X-195	4	Lockwasher, Brush Sc., #8					
X-196	2	Lockwasher, Ground Sc., #10					
8X-311	2	Screw, Ground, Rd. Hd., #10-32x3/8					
8X-794	2	Nut, Ground Sc., Square, #10-32					
8X-147	2	Nut, Comm. End Bolt, Hex. 5/16-18					
		1 2 3 4 5					

Armature Assembly & Parts Used With

Part No.	No. Used	Name of Part					
			1	2	3	4	5
GK-174A	1	Washer, Armature Thrust, C.E.					
MR-54	1	Retainer, Felt Washer					
MR-55	1	Washer, Felt					
MR-58	1	Washer, Arm. Thrust, Intermediate					
MR-59	1	Washer, Arm. Thrust, Intermediate					
MR-2047	1	ARMATURE					
X-261	2	Key, Woodruff, #6					
<u>Miscellaneous Parts</u>							
EB-45A	1	BENDIX DRIVE ASSEMBLY					
EB-108	2	Lockwasher					
EB-4503	1	Head, Driving					
EB-4505	1	SPRING, DRIVE					
EB-4506	1	Screw, Spring, Head					
EB-4507	1	Screw, Spring, Shaft					
EB-4511A	1	Shaft & Pinion					
EB-4515	1	Stop, Pinion					
EB-4516	1	Screw, Pinion Stop					
EB-4519S	1	Sleeve, Compression					
GX-1024F	1	Band, Cover					
HS-1089A	1	Housing Assy., Pinion					
MAB-88	1	Pin, Dowel					
ML-18A	1	Bearing, Absorbent Bronze					
ML-2027A	1	BEARING ASSY., INTERMEDIATE					
ML-21A	1	Bearing, Absorbent Bronze					
MR-48	8	Screw, Pinion Housing, Hex. Hd, #10-40x7/8					
X-196	8	Lockwasher, Housing Screw, #10					
X-489	1	Oiler, Hinge Top, Press in, 1/4					
8X-714	1	Screw, Cover, Band, Rd. Hd., #10-32x1 1/2					
8X-794	1	Nut, Cover Band, Square #10-32					
		1 2 3 4 5					

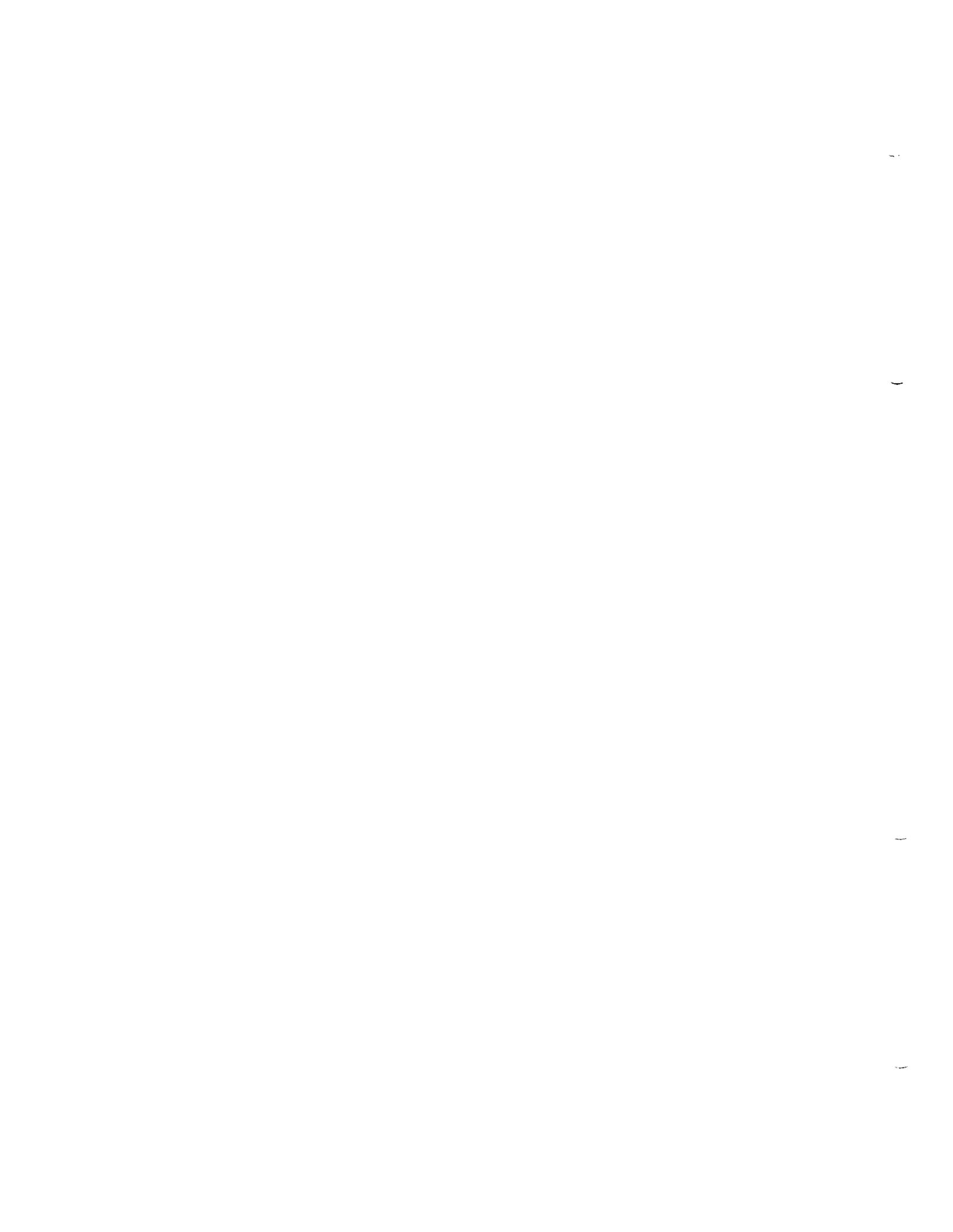
UNIT	APPLICATION
MR-4118	Hercules

(Issued 11-26-47)

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4119 STARTING MOTOR PARTS LIST

MR-4119

PRELIMINARY

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
(MR-2053)	1	Frame & Field Assembly				
GK-38	8	Pole Piece Screw				
MO-17	1	Field Coil Lead Assy.				
X-983	2	Terminal				
MR-20	2	Comm. Head Bolt				
MR-29	4	Pole Piece				
MR-32	1	Field Connection Ins.				
MR-1007	1	Field Coil - U.L.				
MR-1008	1	Field Coil - L.R.				
MR-1009	1	Field Coil - L.L.				
MR-1010	1	Field Coil - U.R.				

Terminal Post Assembly & Parts Used With

MR-1028	1	Terminal Post Assembly				
MG-22	1	Plain Steel Washer				
MG-68	2	Insulating Washer				
MG-70	1	Term. Post Frame Ins.				
MR-22	1	Term. Post Washer				
MR-27	1	Terminal Post				
MR-28	1	Term. Post Connector				
MR-31	1	Term. Post Cover Ins.				
SA-34	2	3/8-16 Hex. Nut				
X-201	2	3/8 Lock Washer				

Comm. End Head Assembly & Parts Used With

MG-1084S	1	Bearing Cover with Oiler				
(MR-2005)	1	Comm. End Head Assembly				
GK-162	2	Brush Holder Spacing Ins.				
GT-14	4	Brush Holder				
GT-32	2	Spring Insulator				
GT-35	2	Insulating Bushing				
GT-37	2	Insulating Washer				
GT-41	2	Brush Holder Post Clip				
MG-74	4	Brush Spring				
MH-53	2	Ground Connector				
MH-54	4	BRUSH				
MR-37	2	5/16 Lock Washer - Spec.				
MR-1005	1	C. E. Head Part Assy.				
MG-1036	1	C. E. Cap & Bearing Assembly				
MAL-40A	1	Absorbent Bronze Bearing				
8X-245	4	1/8x3/8 Oval Hd. Rivet				
8X-122	4	#8-32x1/2 Fill. Hd. Screw				
X-195	4	#8 Lock Washer				
X-196	2	#10 Lock Washer				
8X-311	2	#10-32x3/8 Rd. Hd. Screw				
8X-794	2	#10-32 Square Nut				
8X-147	2	5/16-18 Hex. Nut				

Armature Assembly & Parts Used With

GK-174A	1	1/2 Plain Washer				
MR-54	1	Felt Retainer				
MR-55	1	Felt Washer				
MR-58	1	Thrust Washer				
MR-59	1	Thrust Bearing				
MR-2047	1	ARMATURE ASSEMBLY				
X-261	2	#6 Woodruff Key				
		1	2	3	4	5

Switch Assembly & Parts Used With

Part No.	No. Used	Name of Part				
		1	2	3	4	5
SS-61A	1	Connector				
SS-4301	1	SOLENOID STARTING SWITCH				
X-196	1	#10 Lock Washer				
8X-832	2	5/16-24 Hex. Nut				
X-1014	2	5/16 Lock Washer				
8X-1372	1	#10-32 Hex. Nut				
8X-321	2	#10-32x5/16 Rd. Hd. Screw				
X-1270	2	#10 Skpf. Washer				

Miscellaneous Parts

EB-45A	1	BENDIX DRIVE ASSEMBLY				
EB-108	2	Lock Washer				
EB-4503	1	Driving Head				
EB-4505	1	DRIVE SPRING				
EB-4506	1	Head Spring Screw				
EB-4507	1	Shaft Spring Screw				
EB-4511A	1	S-A Assembly				
EB-4515	1	Pinion Back Stop				
EB-4516	1	Pinion Back Stop Screw				
EB-4519S	1	Compression Sleeve				
GX-1024F	1	Head Band Assembly				
HS-1094	1	Pinion Housing Assembly				
MAB-88	1	Dowel Pin				
ML-18A	1	Absorbent Bronze Brg.				
ML-2027C	1	INTERMEDIATE BEARING ASSY.				
ML-21A	1	Absorbent Bronze Brg.				
MR-48	8	#10-40x7/8 Hex. Hd. Screw				
X-196	9	#10 Lock Washer				
X-489	1	1/4 Oiler - Press in Type				
8X-715	1	#10-32x1 1/4 Rd. Hd. Screw				
8X-794	1	#10-32 Square Nut				
		1	2	3	4	5

(Issued 1-20-42)

UNIT	APPLICATION
MR-4119	Biederman

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MR-4122 STARTING MOTOR PARTS LIST

MR-4122

Frame & Field Assembly & Parts Used With

Part No.	No. Used	Name of Part
(MR-2001)	1	Frame & Field Assy.
GK-38	8	Screw, Pole Shoe
MG-22	1	Washer, Plain, Term. Stud
MG-68	2	Washer, Ins., Term. Stud
MG-70	1	Bushing, Ins. Term. Stud
MO-17	1	Lead Assy., Field Coil
X-983	2	Terminal
MR-20	2	Bolt, Comm. End
MR-22	1	Washer, Ins., Term. Stud
MR-27	1	Stud, Terminal
MR-28	1	Connector, Term. Stud
MR-31	1	Insulation, Term. Stud
MR-32	1	Insulation, Field Connection
MR-3005S	1	FIELD COIL PACKAGE
MR-1007	1	Coil, Field, U.L.
MR-1008	1	Coil, Field, L.R.
MR-1009	1	Coil, Field, L.L.
MR-1010	1	Coil, Field, U.R.
SA-34	2	Nut, Term. Stud, Hex. 3/8-16
X-201	2	Lockwasher, Term. Stud, 3/8

Comm. End Head Assembly & Parts Used With

MR-1062A	1	Cover, Bearing, Comm. End
MR-2005	1	Head Assy., Comm. End
GK-162	2	Insulation, Brush Holder
GT-14	4	Holder, Brush
GT-32	2	Insulator, Brush Spring
GT-35	2	Bushing, Ins., Brush Holder
GT-37	2	Washer, Ins., Brush Holder
GT-41	2	Clip, Brush Post
MG-74	4	Spring, Brush
MH-53	2	Connector, Ground
MH-54†	4	Brush
MR-37	2	Lockwasher, C.E. Bolt
MR-1005	1	Head Assy., Partial, C.E.
MAL-40A	1	Bearing, Abs. Bronze
8X-122	4	Lockwasher, Brush #8-32x1/2
X-195	4	Lockwasher, Brush Sc., #8
X-196	2	Lockwasher, Ground Sc., #10
6X-311	2	Screw, Ground, Rd. Hd. #10-32x3/8
8X-794	2	Nut, Ground Sc., Square #10-32
8X-147	2	Nut, Comm. End Bolt, Hex. 5/16-18

Armature Assy., & Parts Used With

Part No.	No. Used	Name of Part
GK-174A	1	Washer, Arm. Shaft, C.E.
MR-54	1	Retainer, Felt Washer
MR-55	1	Washer, Felt
MR-58	1	Washer, Thrust, Intermediate
MR-59	1	Washer, Thrust, Intermediate
MR-2047	1	Armature
X-261	2	Key, Woodruff, #6

Miscellaneous Parts

EB-45A	1	BENDIX DRIVE ASSEMBLY
EB-108	2	Lockwasher
EB-4503	1	Head, Driving
EB-4505	1	SPRING, DRIVE
EB-4506	1	Screw, Spring, Head
EB-4507	1	Screw, Spring, Shaft
EB-4511A	1	Shaft & Pinion
EB-4515	1	Stop, Pinion
EB-4516	1	Screw, Pinion Stop
EB-4519S	1	Sleeve, Compression
GX-1024F	1	Band, Cover
HS-1087A	1	Housing Assy., Pinion
MAB-88	1	Pin, Dowel
ML-18A	1	BEARING, ABS. BRONZE
ML-2027A	1	BEARING ASSY., INTERMEDIATE
ML-21A	1	Bearing, Abs. Bronze
MR-48	8	Screw, Pinion Housing, Hex. Hd. #10-40x7/8
X-196	8	Lockwasher, Housing Screw, #10
8X-714	1	Screw, Cover Band, Rd. Hd. #10-32x1 1/2
8X-794	1	Nut, Cover Band, Square #10-32

† BRUSH SET, SERVICE MH-1054S.

UNIT	APPLICATION
MR-4122	Palmer Bros.
	Duplex Tr.

(Issued 4-24-50)

Printed in U. S. A.

File in
Equipment & Parts List Binder

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 1

Name of Part	MZ-4008	MZ-4019	MZ-4020	MZ-4022	MZ-4023
Illustration	Fig. 1				
ARMATURE ASSEMBLY	MZ-2049	MZ-2049	MZ-2049	MZ-2049	MZ-2049
Bearing Thrust Spacer	MZ-51	MZ-51	MZ-51	MZ-51	MZ-51
BENDIX DRIVE ASSEMBLY *	EB-27	EB-27	EB-31	EB-28	EB-28
DRIVING SPRING	EB-2305	EB-2305	EB-3105	EB-2805	EB-2805
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B
Frame & Field Assembly †	(MZ-2001)	(MZ-2001)	(MZ-2001)	(MZ-2001)	(MZ-2001)
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-1024
INTERMEDIATE BEARING ASSY.	MAB-2040	MAB-2040	MAB-2040	MAB-2040	MAB-2040
Absorbent Bronze Brg.	MG-77A	MG-77A	MG-77A	MG-77A	MG-77A
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Pinion Housing		X-196	X-196	X-196	
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Oiler - 1/4 Press in Type	X-489	X-489	X-489	X-489	X-489
Pinion Housing Assembly	PS-1006	PS-1008	PS-1038	PS-1008	PS-1006
Absorbent Bronze Brg.	MG-77A	MG-77A	MG-77A	MG-77A	MG-77A
Dowel Pin	MAB-88	MAB-88	MAB-88	MAB-88	MAB-88
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Head Band	X-308	X-308	X-308	X-308	X-308
Screw - Pinion Housing	X-342	MZ-52	MZ-52	MZ-52	X-342
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Woodruff Key	X-261	X-261	X-261	X-261	X-261

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4008	Palmer Bros.
MZ-4019	Universal, Waukesha
MZ-4020	LaFrance Republic, LeRoi
MZ-4022	Niagara, Universal
MZ-4023	Palmer Bros.

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 2

Name of Part	MZ-4023A	MZ-4024	MZ-4025	MZ-4027	MZ-4028
Illustration	Fig. 1	Fig. 2	Fig. 3	Fig. 4	Fig. 3
ARMATURE ASSEMBLY	MZ-2049	MZ-2082	MZ-2085	MZ-2049	MZ-2085
Bearing Thrust Spacer	MZ-51			MZ-51	
BENDIX DRIVE ASSEMBLY *		EB-22	EB-65	EB-27	EB-79
DRIVING SPRING		EB-2805	EB-6505	EB-2305	EB-6505
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B
Drive End Head Assembly		MZ-1079A	MZ-1079B		MZ-1079B
ABSORBENT BRONZE BRG.		MG-46A	MAK-39		MAK-39
Frame & Field Assembly †	(MZ-2001)	(MZ-2084)	(MZ-2001)	(MZ-2001)	(MZ-2001)
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-1024
INTERMEDIATE BEARING ASSY.	MAB-2040			MAB-2040	
Absorbent Bronze Brg.				MG-77A	
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Pinion Housing				X-196	
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Oiler - 1/4 Press in Type	X-489	X-489			
Pinion Housing Assembly	PS-1006			PS-1064	
Absorbent Bronze Brg.	MG-77A			MG-77A	
Dowel Pin	MAB-88			MAB-88	
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Drive End Head		X-62	X-62		X-62
Screw - Head Band	X-308	X-308	X-308	X-308	X-308
Screw - Pinion Housing	X-342			MZ-52	
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MU-54	MU-54	MAK-54	MU-54	MAK-54
Woodruff Key	X-261	X-258		X-261	

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4023A	Palmer Bros.
MZ-4024	Willys Overland, International
MZ-4025	Lycoming, Kermath, Lathrop
MZ-4027	Novo, LeRoi
MZ-4028	Gray Marine, Chris Craft

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 3

Name of Part	MZ-4031	MZ-4031A	MZ-4033	MZ-4035	MZ-4036
Illustration	Fig. 3	Fig. 3	Fig. 5	Fig. 6	Fig. 7
ARMATURE ASSEMBLY	MZ-2085	MZ-2085	MZ-2089	MZ-2053	MZ-2085
Bearing Thrust Spacer			MZ-51	MZ-35	
BENDIX DRIVE ASSEMBLY *	EB-65	EBA-6	EB-85	EBA-4	EB-79
DRIVING SPRING	EB-6505	EB-6505	EB-8505	EBA-405	EB-6505
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2088	MZ-2002B	MZ-2002B
Connector					SS-6L
Drive End Head Assembly	MZ-1079C	MZ-1079C		MZ-1090	MZ-1079B
ABSORBENT BRONZE BRG.	MAK-39	MAK-39		MZ-44A	MAK-39
Frame & Field Assembly †	(MZ-2001)	(MZ-2001)	(MZ-2001)	(MZ-2001)	(MZ-2093)
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-1024
INTERMEDIATE BEARING ASSY.			MAB-2040		
Absorbent Bronze Brg.			MG-77A		
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head				X-196	
Lock Washer - Pinion Housing			X-196		
Lock Washer - Switch Mtg.					X-1270
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Pinion Housing Assembly			PS-1079		
Dowel Pin			MAB-88		
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Drive End Head	X-62	X-62		8X-119	X-62
Screw - Head Band	X-308	X-308	X-714	X-308	X-308
Screw - Pinion Housing			MZ-52		
Screw - Switch Mtg.					8X-321
STARTING SWITCH					SS-4001
Lock Washer - #10					X-196
Lock Washer - 5/16					X-1014
Nut - #10-32					8X-1372
Nut - 5/16					8X-832
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MAK-54	MAK-54	MU-54	MU-54	MAK-54
Woodruff Key			X-261	X-261	

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4031	Hercules
MZ-4031A	Hercules, Climax
MZ-4033	Willys Overland
MZ-4035	Continental
MZ-4036	Gray Marine, Chris Craft

(Issued 12-15-41)

“NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed.”

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 4

Name of Part	MZ-4037	MZ-4038	MZ-4039	MZ-4040	MZ-4042
Illustration	Fig. 3	Fig. 6	Fig. 3	Fig. 7	Fig. 1
ARMATURE ASSEMBLY	MZ-2085	MZ-2095	MZ-2085	MZ-2085	MZ-2049
Bearing Thrust Spacer		MZ-35			MZ-51
BENDIX DRIVE ASSEMBLY *	EB-79		EBA-10	EB-65	EBA-4
DRIVING SPRING	EB-6505		EB-6505	EB-6505	EBA-405
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2097	MZ-2002B	MZ-2002B	MZ-2002B
Connector			SS-6R	SS-6R	SS-6R
Drive End Head Assembly	MZ-1079B	MZ-1096	MZ-1079B	MZ-1079B	
ABSORBENT BRONZE BRG.	MAK-39	MZ-44A	MAK-39	MAK-39	
Frame & Field Assembly †	(MZ-2093)	(MZ-2094)	(MZ-2093)	(MZ-2093)	(MZ-2093)
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-1024
INTERMEDIATE BEARING ASSY.					MAB-2040
Absorbent Bronze Brg.					MG-77A
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head		X-196			
Lock Washer - Slwtch Mtg.	X-196		X-1270	X-1270	X-1274
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Oiler - 1/4 Press in Type					X-489
Pinion Housing Assembly					PS-1150
Absorbent Bronze Brg.					MG-77A
Dowel Pin					MAB-88
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Drive End Head	X-62	8X-119	X-62	X-62	
Screw - Head Band	X-308	X-308	X-308	X-308	X-308
Screw - Pinion Housing					X-342
Screw - Switch Mtg.	8X-321		8X-321	8X-321	8X-321
STARTING SWITCH			SS-4001	SS-4001	SS-4001
Lock Washer - #10			X-196	X-196	X-196
Lock Washer - 5/16			X-1014	X-1014	X-1014
Nut - #10-32			8X-1372	8X-1372	8X-1372
Nut - 5/16			8X-832	8X-832	8X-832
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MAK-54	MU-54	MAK-54	MAK-54	MU-54
Woodruff Key					X-261

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4037	Chris Craft
MZ-4038	Gifford Wood
MZ-4039	Gray Marine
MZ-4040	Kermath, Scripps
MZ-4042	Centaur

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 5

Name of Part	MZ-4044	MZ-4045	MZ-4046	MZ-4047	MZ-4048
Illustration	Fig. 1	Fig. 7	Fig. 4	Fig. 8	Fig. 9
ARMATURE ASSEMBLY	MZ-2049	MZ-2085	MZ-2089	MZ-2049	MZ-2085
Bearing Thrust Spacer	MZ-51		MZ-51	MZ-51	
BENDIX DRIVE ASSEMBLY *	EB-82	EB-79	EBA-19	EB-27	EB-79
DRIVING SPRING	EB-7805	EB-6505	EBA-1405	EB-2305	EB-6505
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B
Connector		SS-6L			SS-6R
Drive End Head Assembly		PS-1120			PS-1120
ABSORBENT BRONZE BRG.		MAK-39			MAK-39
Frame & Field Assembly †	(MZ-2001)	(MZ-2093)	(MZ-2001)	(MZ-2054)	(MZ-2093A)
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-1024A
INTERMEDIATE BEARING ASSY.	MAB-2040		MAB-2040	MAB-2040	
Absorbent Bronze Brg.	MG-77A		MG-77A	MG-77A	
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head		X-196			X-196
Lock Washer - Pinion Housing			X-196	X-196	
Lock Washer - Switch Mtg.		X-1270		X-196	X-1270
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Oiler - 1/4 Press in Type	X-489				
Pinion Housing Assembly	PS-1006		PS-1121	PS-1064	
Absorbent Bronze Brg.	MG-77A		MP-41A	MG-77A	
Dowel Pin	MAB-88		MAB-88	MAB-88	
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Drive End Head		MZ-101			MZ-101
Screw - Head Band	X-308	X-308	X-308	X-308	X-308
Screw - Pinion Housing	X-342		MZ-52	MZ-52	
Screw - Switch Mtg.		8X-321		8X-321	8X-321
STARTING SWITCH		SS-4001		SW-3737S	SS-4003
Lock Washer - #10		X-196			12X-196
Lock Washer - 5/16		X-1014			12X-1014
Nut - #10-32		8X-1372			8X-1372
Nut - 5/16		8X-832			8X-832
Starting Switch Bracket Assy.				SW-1735	
Bracket - L.H.				SW-736	
Bracket - R.H.				SW-735	
Lock Washer - #10				X-196	
Nut - #10-32				8X-794	
Screw - #10-32x1/2				8X-119	
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MU-54	MAK-54	MU-54	MU-54	MAK-54
Woodruff Key	X-261		X-261	X-261	

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4044	Palmer Bros.
MZ-4045	Gray Marine
MZ-4046	Towmotor
MZ-4047	Duplex
MZ-4048	Gray Marine

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Name of Part	MZ-4049	MZ-4050	MZ-4051	MZ-4055	MZ-4056
Illustration	Fig. 5	Fig. 7	Fig. 4	Fig. 7	Fig. 10
ARMATURE ASSEMBLY	MZ-2089	MZ-2085	MZ-2089	MZ-2085	MZ-2108
Bearing Thrust Spacer	MZ-51		MZ-51		MAW-31
BENDIX DRIVE ASSEMBLY *	EB-85	EB-65A	EBA-19	EBA-10	
DRIVING SPRING	EB-8505		EBA-1405	EB-6505	
Bracket					MAX-45A
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2088	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2105
Connector	SS-6L	SS-6L	SS-6R	SS-6L	
Drive End Head Assembly		MZ-1079B		PS-1120	
ABSORBENT BRONZE BRG.		MAK-39		MAK-39	
Frame & Field Assembly †	(MZ-2093)	(MZ-2093)	(MZ-2093)	(MZ-2093)	(MZ-2103)
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-24A
INTERMEDIATE BEARING ASSY.	MAB-2040		MAB-2040		
Absorbent Bronze Brg.	MG-77A		MG-77A		
Lock Washer - Bracket Mtg.					X-1272
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	12X-544
Lock Washer - Drive End Head				X-196	
Lock Washer - Pivot Screw					12X-201
Lock Washer - Pinion Housing	X-196		X-196		12X-544
Lock Washer - Switch Mtg.	X-1274	X-1270	X-1274	X-1270	X-1270
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Pivot Screw					8X-179
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	
Pinion Housing Assembly	PS-1079		PS-1121		PS-1140
Absorbent Bronze Brg.			MP-41A		MP-41A
Dowel Pin	MAB-88		MAB-88		
Screw - Bracket Mrg.					8X-467
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	8X-902
Screw - Drive End Head		X-62			
Screw - Head Band	X-714	X-308	X-308	X-308	8X-715
Screw - Pinion Housing	MZ-52		MZ-52	MZ-101	8X-118
Screw - Pivot					MAW-33
Screw - Switch Mtg.	8X-321	8X-321	8X-321	8X-321	8X-321
STARTER CLUTCH ASSEMBLY					MAW-3132
STARTING SWITCH	SS-4001	SS-4001	SS-4001	SS-4001	SW-2677A
Lock Washer - #10	X-196	X-196	X-196	X-196	
Lock Washer	X-1014	X-1014	X-1014	X-1014	12X-201
Nut - #10-32	8X-1372	8X-1372	8X-1372	8X-1372	
Nut	8X-832	8X-832	8X-832	8X-832	8X-830
Thrust Washer - C.E.					MAD-96
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - C.E.					MU-54A
Thrust Washer - C.E.					MU-54B
Thrust Washer - D.E.	MU-54	MA -54	MU-54	MAK-54	MN-18
Woodruff Key	X-261		X-261		
Yoke Assembly					MZ-2104

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4049	Willys Overland
MZ-4050	Lycoming
MZ-4051	Continental
MZ-4055	Gray Marine
MZ-4056	Plymouth

(Issued 12-15-41

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 7

Name of Part	MZ-4057	MZ-4059	MZ-4059A	MZ-4060	MZ-4062
Illustration	Fig. 2	Fig. 10	Fig. 10	Fig. 9	Fig. 11
ARMATURE ASSEMBLY	MZ-2066	MZ-2108	MZ-2108	MZ-2113	MZ-2108
Bearing Thrust Spacer	MZ-35	MAW-31	MAW-31		MAW-31
BENDIX DRIVE ASSEMBLY *	EB-28			EBA-30	
DRIVING SPRING	EB-2805			EBA-3005	
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2105	MZ-2105	MZ-2002B	MZ-2105
Drive End Head Assembly	MZ-2067			MZ-1114	
ABSORBENT BRONZE BRG.	MZ-44A			MAK-39	
Frame & Field Assembly †	(MZ-2110)	(MZ-2112)	(MZ-2112)	(MZ-2001A)	(MZ-2112A)
Head Band Assembly	MZ-1024	MZ-24A	MZ-24A	MZ-1024A	MZ-24A
Lock Washer - Comm. End Plate	X-544	12X-544	12X-544	X-544	12X-544
Lock Washer - Drive End Head	X-544			X-196	
Lock Washer - Pivot Screw		12X-201	12X-201		12X-201
Lock Washer - Pinion Housing		12X-544	12X-544		12X-544
Lock Washer - Switch Mtg.		X-1270	X-1270		X-1270
Lock Washer - Switch Terminal					12X-196
Lock Washer - Terminal Post	X-1014			X-1014	
Lock Washer - Yoke Pin					12X-199
Nut - Head Band Screw	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Pivot Screw		8X-179	8X-179		8X-179
Nut - Terminal Post	5X-1376			5X-1376	
Nut - Yoke Pin					8X-146
Pinion Housing Assembly		PS-1140	PS-1140		PS-1154
Absorbent Bronze Brg.		MP-41A	MP-41A		MP-41A
Retainer - Yoke Spring					MAD-95
Screw - Comm. End Plate	X-902	8X-902	8X-902	8X-902	8X-902
Screw - Drive End Head	X-902			8X-119	
Screw - Head Band	X-308	8X-715	8X-715	X-308	8X-715
Screw - Pinion Housing					8X-118
Screw - Pinion Housing		8X-900	8X-900		8X-900
Screw - Pivot		MAW-33	MAW-33		MAX-52
Screw - Switch Mtg.		8X-321	8X-321		8X-321
Screw - Switch Terminal					8X-1368
Spring - Yoke					MAD-93
STARTER CLUTCH ASSEMBLY		MAD-3099	MAW-3132		MAW-3132
STARTING SWITCH		SW-2677A	SW-2677A		SW-2813
Lock Washer - 3/8		12X-201	12X-201		12X-201
Nut - 3/8-16		8X-830	8X-830		8X-830
Thrust Washer - C.E.		MAD-96	MAD-96		MAD-96
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - C.E.		MU-54A	MU-54A		MU-54A
Thrust Washer - C.E.		MU-54B	MU-54B		MU-54B
Thrust Washer - D.E.	MU-54	MN-18	MN-18	MAK-54	MN-18
Woodruff Key	X-261				
Yoke Assembly		MZ-2111	MZ-2111		MZ-2015
Yoke Pin					MZ-116

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4057	Kermath
MZ-4059	Dodge Truck
MZ-4059A	Dodge Truck
MZ-4060	Hercules
MZ-4062	Plymouth, Dodge

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 8

Name of Part	MZ-4062A	MZ-4063	MZ-4064	MZ-4065	MZ-4066
Illustration	Fig. 11	Fig. 12	Fig. 13	Fig. 4	Fig. 14
ARMATURE ASSEMBLY	MZ-2108	MZ-2113	MZ-2089	MZ-2089	MZ-2120
Bearing Thrust Spacer	MAW-31		MZ-51	MZ-51	
BENDIX DRIVE ASSEMBLY *		EBA-6	EB-85	EBA-19	EBA-35
DRIVING SPRING		EB-6505	EB-8505	EBA-1405	EBA-3505
Bendix Drive Pin					MZ-124
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2105	MZ-2002B	MZ-2088	MZ-2002B	MZ-2002A
Drive End Head Assembly		MZ-1114			**
ABSORBENT BRONZE BRG.		MAK-39			MAB-124
Frame & Field Assembly †	(MZ-2112A)	(MZ-2001)	(MZ-2117)	(MZ-2001)	(MZ-2119)
Head Band Assembly	MZ-24A	MZ-1024	MZ-1024	MZ-1024	MZ-1024
INTERMEDIATE BEARING ASSY.			MAB-2040	MAB-2040	
Absorbent Bronze Brg.			MG-77A	MG-77A	
Lock Washer - Comm. End Plate	12X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head		X-196			
Lock Washer - Pivot Screw	12X-201				
Lock Washer - Pinion Housing	12X-544		X-196	X-196	
Lock Washer - Switch Mtg.	X-1270		X-196		
Lock Washer - Switch Term.	12X-196				
Lock Washer - Terminal Post		X-1014	X-1014	X-1014	X-1014
Lock Washer - Yoke Pin	12X-199				
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Pivot Screw	8X-179				
Nut - Terminal Post		5X-1376	5X-1376	5X-1376	5X-1376
Nut - Yoke Pin	8X-146				
Pinion Housing Assembly	PS-1154		PS-1079	PS-1158	
Absorbent Bronze Brg.	MP-41A			MP-41A	
Dowel Pin			MAB-88	MAB-88	
Retainer - Yoke Spring	MAD-95				
Screw - Comm. End Plate	8X-902	8X-902	X-902	X-902	X-902
Screw - Drive End Head		8X-119			
Screw - Head Band	8X-715	X-308	X-714	X-308	X-308
Screw - Pinion Housing	8X-118				
Screw - Pinion Housing	8X-900		MZ-52	MZ-52	
Screw - Pivot	MAX-52				
Screw - Switch Mtg.	8X-321		8X-321		
Screw - Switch Terminal	8X-1368				
Spring - Yoke	MZ-142				
STARTER CLUTCH ASSEMBLY	MAD-3099				
STARTING SWITCH	SW-2813		SW-3737S		
Lock Washer - 3/8	12X-201				
Nut - 3/8-16	8X-830				
Thrust Washer - C.E.	MAD-96				
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - C.E.	MU-54A				
Thrust Washer - C.E.	MU-54B				
Thrust Washer - D.E.	MN-18	MAK-54	MU-54	MU-54	MU-54
Woodruff Key			X-261	X-261	
Yoke Assembly	MZ-2015				
Yoke Pin	MZ-116				

** Drive End Head welded to frame.

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4062A	Plymouth, Dodge
MZ-4063	Hercules, Hobart, John Bean
MZ-4064	Willys Overland
MZ-4065	Auburn Auto Co.
MZ-4066	Studebaker

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Name of Part	MZ-4067	MZ-4068	MZ-4069	MZ-4071	MZ-4072
Illustration	Fig. 12	Fig. 1	Fig. 1	Fig. 15	Fig. 6
ARMATURE ASSEMBLY	MZ-2085	MZ-2049	MZ-2089	MZ-2049	MZ-2053
Bearing Thrust Spacer		MZ-51	MZ-51	MZ-51	MZ-35
BENDIX DRIVE ASSEMBLY *	EB-79	EBA-14	EBA-36	EBA-2	EBA-4
DRIVING SPRING	EB-6505	EBA-1405	EBA-405	EB-8705	EBA-405
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B	MZ-2002B
Drive End Head Assembly	PS-1120				MZ-1129
ABSORBENT BRONZE BRG.	MAK-39				MZ-44A
Felt Washer - Int. Plate				MZ-127	
Frame & Field Assembly †	(MZ-2123)	(MZ-2001)	(MZ-2001)	(MZ-2001)	(MZ-2001)
Gasket - Int. Plate				MZ-128	
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024G	MZ-1024J	MZ-1024G
INTERMEDIATE BEARING ASSY.		MAB-2040	MAB-2040	MZ-1125	
Absorbent Bronze Brg.		MG-77A	MG-77A	MZ-44A	
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head	X-196				X-196
Lock Washer - Int. Brg. Plate				X-195	
Lock Washer - Pinion Housing		X-196	X-196		
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Oiler - 1/4 Press in Type		X-489	X-489		
Pinion Housing Assembly		PS-1008	PS-1096A	PS-1163	
Absorbent Bronze Brg.		MG-77A	MP-41A	MG-77A	
Dowel Pin		MAB-88	MAB-88		
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Drive End Head	MZ-101				8X-119
Screw - Head Band	X-308	X-308	X-308	X-308	X-308
Screw - Int. Brg. Plate				8X-878	
Screw - Pinion Housing		MZ-52	MZ-52	X-342	
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MAK-54	MU-54	MU-54	MU-54	MU-54
Washer - Felt Protector				MZ-126	
Woodruff Key		X-261	X-261	X-261	X-261

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4067	Novo
MZ-4068	Universal
MZ-4069	White
MZ-4071	J. I. Case
MZ-4072	Massey Harris, J. I. Case, Continental

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Name of Part	MZ-4073	MZ-4074	MZ-4076	MZ-4077	MZ-4078
Illustration	Fig. 12	Fig. 6	Fig. 8	Fig. 3	Fig. 16
ARMATURE ASSEMBLY	MZ-2113	MZ-2130	MZ-2134	MZ-2085	MZ-2134
BENDIX DRIVE ASSEMBLY *	EBA-6	EBA-35	EBA-33	EB-81	EBA-83
DRIVING SPRING	EB-6505	EBA-3505	EBA-2105	EB-6505	EBA-2105
Bendix Drive Pin		MZ-124			
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002A	MZ-2002B	MZ-2002B	MZ-2002B
Connector					SS-6R
Drive End Head Assembly	MZ-1114	MZ-1131		MZ-1136	
ABSORBENT BRONZE BRG.	MAK-39	MAB-124		MAK-39	
Frame & Field Assembly †	(MZ-2001)	(MZ-2119B)	(MZ-2054)	(MZ-2135)	(MZ-2093B)
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-1024D
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	12X-544
Lock Washer - Drive End Head	X-196	X-196		X-544	
Lock Washer - Pinion Housing			X-196		12X-544
Lock Washer - Switch Mtg.			X-196		X-1270
Lock Washer - Terminal Post	X-1014	X-1014		X-1014	12X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376		5X-1376	8X-1376
Pinion Housing Assembly			PS-1164		PS-1166
Absorbent Bronze Brg.			MP-41A		MP-41A
Screw - Comm. End Plate	8X-902	X-902	X-902	X-902	
Screw - Drive End Head	8X-119	8X-119		X-902	8X-902
Screw - Head Band	X-308	X-308	X-308	X-308	8X-308
Screw - Pinion Housing			8X-118		8X-118
Screw - Switch Mtg.			8X-321		8X-321
STARTING SWITCH			SW-3737S		SS-4001
Lock Washer - #10					X-196
Lock Washer - 5/16					X-1014
Nut - #10-32					8X-1372
Nut - 5/16					8X-832
Starting Switch Bracket Assy.			SW-1735		
Bracket - L.H.			SW-736		
Bracket - R.H.			SW-735		
Lock Washer - #10			X-196		
Nut - #10-32			8X-794		
Screw - #10-32x1/2			8X-119		
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MAK-54	MU-54	MN-18	MAK-54	MN-18
Woodruff Key			X-261		X-261

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4073	Fate-Root-Heath
MZ-4074	Studebaker
MZ-4076	Hupp Motor
MZ-4077	Crosley
MZ-4078	Packard

(Issued 12-15-41)

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 11

Name of Part	MZ-4079	MZ-4079A	MZ-4082	MZ-4084	MZ-4085
Illustration	Fig. 6	Fig. 17	Fig. 13	Fig. 12	Fig. 4
ARMATURE ASSEMBLY	MZ-2138	MZ-2138	MZ-2089	MZ-2085	MZ-2049
Bearing Thrust Spacer	MZ-35	MZ-35	MZ-51		MZ-51
BENDIX DRIVE ASSEMBLY *	EBA-29	EBA-29	EBA-41		EBA-49
DRIVING SPRING	EBA-2905	EBA-2905	EB-8505		EBA-1405
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2088	MZ-2002B	MZ-2002B
Connector		XA-555			SS-6L
Drive End Head Assembly	MZ-1139	MZ-1139		PS-1120	
ABSORBENT BRONZE BRG.	MAB-124	MAB-124		MAK-39	
Oiler - 1/4 Press in Type	X-489	X-489			
Frame & Field Assembly	(MZ-2140)	(MZ-2140)	(MZ-2117)	(MZ-2001)	(MZ-2093)
Head Band Assembly	MZ-1024F	MZ-1024F	MZ-1024	MZ-1024	MZ-1024
INTERMEDIATE BEARING ASSY.			MAB-2040		MAB-2040
Absorbent Bronze Brg.			MG-77A		MG-77A
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head	X-196	X-196		X-196	
Lock Washer - Pinion Housing			X-196		X-196
Lock Washer - Switch Mtg.		X-1274	X-196		X-1274
Lock Washer - Switch Term. #10		12X-196			
Lock Washer-Switch Term. 5/16		12X-1014			
Lock Washer - Terminal Post	X-1014	12X-1014		X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Switch Term. #10-32		8X-1372			
Nut - Switch Term. - 5/16-24		8X-832			
Nut - Terminal Post	5X-1376	5X-1376		5X-1376	5X-1376
Pinion Housing Assembly			PS-1079		PS-1172
Absorbent Bronze Brg.					MG-77A
Dowel Pin			MAB-88		MAB-88
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Drive End Head	8X-119	8X-119		MZ-101	
Screw - Head Band	X-308	X-308	X-714	X-308	X-308
Screw - Pinion Housing			MZ-52		MZ-52
Screw - Switch Mtg.		8X-1555	8X-321		8X-321
STARTING SWITCH		XA-554	SW-3737S		SS-4001
Lock Washer - #10					X-196
Lock Washer - 5/16					X-1014
Nut - #10-32					8X-1372
Nut - 5/16					8X-832
Terminal		X-949			
Terminal		X-999			
Terminal		X-1461			
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MU-54	MU-54	MU-54	MAK-54	MU-54
Washer - Switch Terminal		MU-37			
Woodruff Key	X-261	X-261	X-261		X-261

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4079	Hudson
MZ-4079A	Hudson
MZ-4082	Willys Overland
MZ-4084	Gorman Rupp
MZ-4085	Kermath

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 12

Name of Part	MZ-4086	MZ-4087	MZ-4089	MZ-4089A	MZ-4090
Illustration	Fig. 4	Fig. 18	Fig. 11	Fig. 11	Fig. 6
ARMATURE ASSEMBLY	MZ-2049	MZ-2180	MZ-2108	MZ-2108	MZ-2130
Bearing Thrust Spacer	MZ-51	MAB-35	MAW-31	MAW-31	
BENDIX DRIVE ASSEMBLY *	EBA-4	EBA-48			EBA-35
DRIVING SPRING	EBA-405	EBA-4805			EBA-3505
Bendix Drive Pin		MZ-124			MZ-124
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2105	MZ-2105	MZ-2002A
Connector		MZ-144			
Drive End Head Assembly		MZ-1147			MZ-1131
ABSORBENT BRONZE BRG.		MAB-124			MAB-124
Oil Seal		XA-560			
Frame & Field Assembly †	(MZ-2001)	(MZ-2148)	(MZ-2112A)	(MZ-2112A)	(MZ-2152)
Head Band Assembly	MZ-1024	MZ-1024	MZ-24A	MZ-24A	MZ-1024
INTERMEDIATE BEARING ASSY.	MAB-2040				
Absorbent Bronze Brg.	MG-77A				
Lock Washer - Comm. End Plate	X-544	X-196	12X-544	12X-544	X-544
Lock Washer - Drive End Head		X-1274			X-196
Lock Washer - Pivot Screw			12X-201	12X-201	
Lock Washer - Pinion Housing	X-196		12X-544	12X-544	
Lock Washer - Switch Mtg.		X-1274	X-1270	X-1270	
Lock Washer - Switch Term.			12X-196	12X-196	
Lock Washer - Terminal Post	X-1014	X-1014			X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Pivot Screw			8X-179	8X-179	
Nut - Terminal Post	5X-1376	5X-1376			5X-1376
Pinion Housing Assembly	PS-1064		PS-1173	PS-1173	
Absorbent Bronze Brg.	MG-77A		MP-41A	MP-41A	
Dowel Pin	MAB-88				
Retainer - Yoke Spring			MAD-95	MAD-95	
Screw - Comm. End Plate	X-902	X-902	8X-902	8X-902	X-902
Screw - Drive End Head		8X-119			8X-119
Screw - Head Band	X-308	X-308	8X-715	8X-715	X-308
Screw - Pinion Housing	MZ-52		8X-900	8X-900	
Screw - Pinion Housing			8X-118	8X-118	
Screw - Pivot			MAX-52	MAX-52	
Screw - Switch Mtg.		8X-321	8X-321	8X-321	
Screw - Switch Terminal			8X-1368	8X-1368	
Spring - Yoke			MZ-142	MZ-142	
STARTER CLUTCH ASSEMBLY			MAD-3099	MAW-3132	
STARTING SWITCH		SS-4001	SW-2813	SW-2813	
Lock Washer - #10		X-196			
Lock Washer		X-1014	12X-201	12X-201	
Nut - #10-32		8X-1372			
Nut		8X-832	8X-830	8X-830	
Thrust Washer - C.E.			MAD-96	MAD-96	
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - C.E.			MU-54A	MU-54A	
Thrust Washer - C.E.			MU-54B	MU-54B	
Thrust Washer - D.E.	MU-54	MU-54	MN-18	MN-18	MU-54
Thrust Washer - D.E.		MZ-148			
Woodruff Key	X-261				
Yoke Assembly			MZ-2500	MZ-2500	

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4086	LeRoi
MZ-4087	Aircooled Motors
MZ-4089	Dodge, Plymouth
MZ-4089A	Dodge, Plymouth
MZ-4090	Studebaker

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Name of Part	MZ-4092	MZ-4092A	MZ-4093	MZ-4094	MZ-4095
Illustration	Fig. 17	Fig. 17	Fig. 13	Fig. 18	Fig. 15
ARMATURE ASSEMBLY	MZ-2138	MZ-2138	MZ-2089	MZ-2113	MZ-2049
Bearing Thrust Spacer	MZ-35	MZ-35	MZ-51		MZ-51
BENDIX DRIVE ASSEMBLY *	EBA-29		EB-85	EBA-6	EBA-2
DRIVING SPRING	EBA-2905		EB-8505	EB-6505	EB-8705
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2156	MZ-2002B	MZ-2002B
Connector	SS-6R	SS-6R		SS-182	
Drive End Head Assembly	MZ-1139	MZ-1139		MZ-1114	
ABSORBENT BRONZE BRG.	MAB-124	MAB-124		MAK-39	
Oiler - 1/4 Press in Type	X-489	X-489			
Felt Washer - Int. Plate					MZ-127
Frame & Field Assembly †	(MZ-2093)	(MZ-2093)	(MZ-2117)	(MZ-2155)	(MZ-2001)
Gasket - Int. Plate					MZ-128
Gasket - Starting Switch			MAB-136		
Gasket - Starting Switch			MAB-137		
Head Band Assembly	MZ-1024F	MZ-1024	MZ-1024	MZ-1024	MZ-1024J
INTERMEDIATE BEARING ASSY.			MAB-2040		MZ-1125
Absorbent Bronze Brg.			MG-77A		MZ-44A
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head	X-196	X-196		X-196	
Lock Washer - Int. Brg. Plate					X-195
Lock Washer - Pinion Housing			X-196		X-1621
Lock Washer - Switch Mtg.	X-1274	X-1274	X-196	X-1274	
Lock Washer - Terminal Post	12X-1014	12X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Pinion Housing Assembly			PS-1079		PS-1163A
Absorbent Bronze Brg.					MG-77A
Dowel Pin			MAB-88		
Screw - Comm. End Plate	X-902	X-902	X-902	X-902	X-902
Screw - Drive End Head	8X-119	8X-119		8X-119	
Screw - Head Band	X-308	X-308	X-714	X-308	X-308
Screw - Int. Brg. Plate					8X-878
Screw - Pinion Housing			MZ-52		X-342
Screw - Switch Mtg.	8X-1555	8X-1555	8X-321	8X-321	
STARTING SWITCH	SS-4001	SS-4001	SS-4001	SS-4001	
Lock Washer - #10	X-196	X-196		X-196	
Lock Washer - 5/16	X-1014	X-1014		X-1014	
Nut - #10-32	8X-1372	8X-1372		8X-1372	
Nut - 5/16	8X-832	8X-832		8X-832	
Terminal	X-949	X-949			
Terminal	X-999	X-999			
Terminal	X-1461	X-1461			
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MU-54	MU-54	MU-54	MAK-54	MU-54
Thrust Washer-Int. Plate Felt.					MZ-126
Washer - Switch Terminal	MU-37	MU-37			
Woodruff Key	X-261	X-261	X-261		X-261

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4092	Hudson
MZ-4092A	Wise Foundry
MZ-4093	Willys Overland
MZ-4094	Hobart Bros.
MZ-4095	J. I. Case

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 14

Name of Part	MZ-4096	MZ-4098	MZ-4099	MZ-4100	MZ-4101
Illustration	Fig. 18	Fig. 12	Fig. 13	Fig. 5	Fig. 19
ARMATURE ASSEMBLY	MZ-2113	MZ-2113	MZ-2089	MZ-2089	MZ-2165
Bearing Thrust Spacer			MZ-51	MZ-51	MZ-35
BENDIX DRIVE ASSEMBLY *	EBA-6	EBA-6	EBA-46	EBA-46	
DRIVING SPRING	EB-6505	EB-6505	EB-8505	EB-8505	
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Bushing - Term. Ins.					SW-915
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2156	MZ-2156	MZ-2002B
Connector	SS-187			SS-6L	MZ-167
Cotter Pin - Switch Lever					X-1531
Drive End Head Assembly	MZ-1114	MZ-1114			
ABSORBENT BRONZE BRG.	MAK-39	MAK-39			
Frame & Field Assembly †	(MZ-2157)	(MZ-2001)	(MZ-2117)	(MZ-2093)	(MZ-2135A)
Gasket - Starting Switch			MAB-136		
Gasket - Starting Switch			MAB-137		
Head Band Assembly	MZ-1024	MZ-1024J	MZ-1024	MZ-1024	MZ-1024D
Insulating Washer					MAK-80
Insulation Block					MAW-39A
INTERMEDIATE BEARING ASSY.			MAB-2040	MAB-2040	
Absorbent Bronze Brg.			MG-77A	MG-77A	
Lever - Switch					MZ-164
Link Pin - Large					MZ-168
Link Pin - Small					MZ-170
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head	X-196	X-196			
Lock Washer - Pivot Sc.					X-201
Lock Washer - Pinion Housing			X-196	X-196	X-544
Lock Washer - Switch Mtg.	X-1274		X-196	X-1274	X-1270
Lock Washer - Switch Term.					X-201
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Pivot Screw					8X-179
Nut - Switch Terminal					8X-830
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Pinion Housing Assembly			PS-1079	PS-1079	PS-1183
Absorbent Bronze Brg.					MAK-40
Absorbent Bronze Brg.					MG-77A
Dowel Pin			MAB-88	MAB-88	
Retainer - Yoke Spring					MAD-95
Screw - Comm. End Plate	8X-902	8X-902	X-902	X-902	8X-902
Screw - Drive End Head	8X-119	8X-119			
Screw - Head Band	X-308	X-308	X-714	X-714	8X-308
Screw - Pinion Housing			MZ-52	MZ-52	8X-119
Screw - Pivot					MAX-52
Screw - Switch Contact					8X-113
Screw - Switch Mtg.					8X-311
Screw - Switch Mtg.	8X-321		8X-321	8X-321	8X-309
Spring - Yoke					MZ-169
STARTER CLUTCH ASSEMBLY					MZ-3158
STARTING SWITCH	SS-4021		SW-3737S	SS-4001	SW-3911
Lock Washer - #10	12X-196			X-196	
Lock Washer - 5/16	12X-1014			X-1014	
Nut - #10-32	8X-1372			8X-1372	
Nut - 5/16	8X-832			8X-832	
Switch Contact - Lower					SW-913
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MAK-54	MAK-54	MU-54	MU-54	MU-54
Washer - Leather - D.E.					MZ-161
Washer - Plain Large					8X-354
Washer - Plain Small					EW-200
Woodruff Key			X-261	X-261	
Yoke Assembly					MZ-2162

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4096	American Bantam
MZ-4098	Cleveland Tractor
MZ-4099	Willys Overland
MZ-4100	Willys Overland
MZ-4101	Crosley

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

(Issued 12-15-41)

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Name of Part	MZ-4102	MZ-4104	MZ-4105	MZ-4106	MZ-4107
Illustration	Fig. 18	Fig. 1	Fig. 11	Fig. 16	Fig. 16
ARMATURE ASSEMBLY	MZ-2113	MZ-2089	MZ-2108	MZ-2134	MZ-2134
Bearing Thrust Spacer		MZ-51	MAW-31		
BENDIX DRIVE ASSEMBLY *	EBA-6	EBA-36		EBA-53	EBA-47
DRIVING SPRING	EB-6505	EBA-405		EBA-4505	EBA-4505
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2002B	MZ-2002B	MZ-2105	MZ-2002B	MZ-2002B
Connector	SS-191			SS-6L	
Drive End Head Assembly	MZ-1114				
ABSORBENT BRONZE BRG.	MAK-39				
Frame & Field Assembly †	(MZ-2171)	(MZ-2001)	(MZ-2176)	(MZ-2093)	(MZ-2001)
Head Band Assembly	MZ-1024	MZ-1024G	MZ-24A	MZ-1024	MZ-1024
INTERMEDIATE BEARING ASSY.		MAB-2040			
Absorbent Bronze Brg.		MG-77A			
Lock Washer - Comm. End Plate	X-544	X-544	12X-544	X-544	X-544
Lock Washer - Drive End Head	X-196				
Lock Washer - Pivot Screw			12X-201		
Lock Washer - Pinion Housing		X-196	12X-544	X-196	X-196
Lock Washer - Switch Mtg.	X-1274		X-1270	X-1274	
Lock Washer - Terminal Post	X-1014	X-1014		X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Pivot Screw			8X-179		
Nut - Terminal Post	5X-1376	5X-1376		5X-1376	5X-1376
Oiler - 1/4 Press in Type		X-489			
Pinion Housing Assembly		PS-1184	PS-1185	PS-1189	PS-1192
Absorbent Bronze Brg.		MP-41A	MP-41A	MP-41A	MP-41A
Dowel Pin		MAB-88			
Screw - Comm. End Plate	8X-902	X-902	8X-902	X-902	X-902
Screw - Drive End Head	8X-119				
Screw - Head Band	X-308	X-308	8X-715	X-308	X-308
Screw - Pinion Housing		MZ-52	8X-900	MZ-177	8X-118
Screw - Pivot			MZ-175		
Screw - Switch Mtg.	8X-321		8X-321	8X-321	
STARTER CLUTCH ASSEMBLY			MAW-3132		
STARTING SWITCH	SS-4021		SW-2813	SS-4001	
Lock Washer - #10	12X-196			X-196	
Lock Washer	12X-1014		12X-201	X-1014	
Nut - #10-32	8X-1372			8X-1372	
Nut	8X-832		8X-830	8X-832	
Thrust Washer - C.E.			MAD-96		
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - C.E.			MU-54A		
Thrust Washer - C.E.			MU-54B		
Thrust Washer - D.E.	MAK-54	MU-54	MN-18	MN-18	MN-18
Woodruff Key		X-261		X-261	X-261
Yoke Assembly			MZ-2174		

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4102	American Bantam
MZ-4104	White Motor
MZ-4105	Dodge, Plymouth
MZ-4106	Chris Craft
MZ-4107	Ready Power

(Issued 12-15-41)

NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 16

Name of Part	MZ-4108	MZ-4109	MZ-4112	MZ-4113	MZ-4114
Illustration	Fig. 5	Fig. 13	Fig. 12	Fig. 5	Fig. 6
ARMATURE ASSEMBLY	MZ-2089	MZ-2089	MZ-2113	MZ-2089	MZ-2053
Bearing Thrust Spacer	MZ-51	MZ-51		MZ-51	MZ-35
BENDIX DRIVE ASSEMBLY *	EBA-46	EBA-46	EBA-6	EBA-46	EBA-4
DRIVING SPRING	EB-8505	EB-8505	EB-6505	EB-8505	EBA-405
BRUSH SET	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S	MZ-2012S
Comm. End Plate Assembly †	MZ-2156	MZ-2156	MZ-2002B	MZ-2156	MZ-2002B
Connector	SS-6L				
Drive End Head Assembly			MZ-1186		MZ-1129
ABSORBENT BRONZE BRG.			MAK-39		MZ-44A
Frame & Field Assembly †	(MZ-2093)	(MZ-2117)	(MZ-2185)	(MZ-2001)	(MZ-2001)
Gasket - Starting Switch		MAB-136			
Gasket - Starting Switch		MAB-137			
Head Band Assembly	MZ-1024	MZ-1024	MZ-1024	MZ-1024	MZ-1024G
INTERMEDIATE BEARING ASSY.	MAB-2040	MAB-2040		MAB-2040	
Absorbent Bronze Brg.	MG-77A	MG-77A		MG-77A	
Lock Washer - Comm. End Plate	X-544	X-544	X-544	X-544	X-544
Lock Washer - Drive End Head			X-196		X-196
Lock Washer - Pinion Housing	X-196	X-196		X-196	
Lock Washer - Switch Mtg.	X-1274	X-196			
Lock Washer - Terminal Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - Head Band	8X-794	8X-794	8X-794	8X-794	8X-794
Nut - Terminal Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Pinion Housing Assembly	PS-1079A	PS-1079A		PS-1079A	
Dowel Pin	MAB-88	MAB-88		MAB-88	
Screw - Comm. End Plate	X-902	X-902	8X-902	X-902	X-902
Screw - Drive End Head			8X-119		8X-119
Screw - Head Band	X-714	X-714	X-308	X-714	X-308
Screw - Pinion Housing	MZ-52	MZ-52		MZ-52	
Screw - Switch Mtg.	8X-321	8X-321			
STARTING SWITCH	SS-4001	SW-3737S			
Lock Washer - #10	X-196				
Lock Washer - 5/16	X-1014				
Nut - #10-32	8X-1372				
Nut - 5/16	8X-832				
Thrust Washer - C.E.	MU-54	MU-54	MU-54	MU-54	MU-54
Thrust Washer - D.E.	MU-54	MU-54	MAK-54	MU-54	MU-54
Woodruff Key	X-261	X-261		X-261	X-261

* See separate list for sub parts.

† See page 17 of this section for complete list of Comm. End Head sub parts.

‡ See pages 18 to 20 of this section for complete list of Frame & Field sub parts.

UNIT	USED ON
MZ-4108	Willys Overland
MZ-4109	Willys Overland
MZ-4112	Hercules
MZ-4113	Willys (U.S. Gov't.)
MZ-4114	J. I. Case

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 17

Comm. End Head Assys.

Name of Part	MZ-2002A	MZ-2002B	MZ-2088	MZ-2097	MZ-2105
Brush Assembly - Grounded	MZ-1034	MZ-1034	MZ-1034	MZ-1034	MZ-1034
Brush Holder	MZ-16	MZ-16	MZ-16	MZ-16	MZ-16
Brush Spring	MZ-19	MZ-19	MZ-19	MZ-19	MZ-19
Rivet - Brush Holder	X-532	X-532	X-532	X-532	X-532
Felt Pad					MAD-110
Oiler - Press in Type					X-390

Name of Part	MZ-2156
Brush Assembly - Grounded	MZ-1034
Brush Holder	MZ-16
Brush Spring	MZ-19
Rivet - Brush Holder	X-532

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 18

FRAME & FIELD ASSEMBLY

Name of Part	MZ-2001	MZ-2001A	MZ-2054	MZ-2084	MZ-2093
Connector & Brush Assy.		MZ-1102			
Brush		MZ-12			
Connector - Field Coil	MZ-32	MZ-32	MZ-32	MZ-32	MZ-32
Bushing Ins.- Terminal Post	MU-31	MU-31	MU-31	MU-31	MU-31
Field Coil - U.L.	MZ-1007	MZ-1007	MZ-1007	MZ-1007	MZ-1007
Field Coil - U.R.	MZ-1010	MZ-1010B	MZ-1010	MZ-1010	MZ-1010
Field Coil Assy.- L.L.	MZ-1009B	MZ-1009C	MZ-1009B	MZ-1009B	MZ-1009B
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Field Coil Assy.- L.R.	MZ-1008A	MZ-1008B	MZ-1008A	MZ-1008A	MZ-1008A
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Insulation Field Connection	MZ-30A	MAB-30	MZ-30A	MZ-30A	MZ-30A
Lock Washer-5/16 Term. Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - 5/16-24 Term. Post	5X-1376	5X-1376	X-180	5X-1376	5X-1376
Pole Piece	MZ-29	MZ-29	MZ-29	MZ-29	MZ-29
Pole Piece Screw	MZ-38A	MZ-38A	MZ-38A	MZ-38A	MZ-38A
Terminal - Terminal Post	MU-14	MAU-14	MU-14	MU-14	MU-14
Terminal Post	MU-28	MU-28	MZ-28	MU-28	MU-28
Washer - 5/16 Plain	MU-37	MU-37	MU-37	MU-37	MU-37
Washer Ins. - Inner	MU-39	MU-39	MU-39	MU-39	MU-39
Washer Ins.- Term. Post Outer	MAB-31	MAB-31	MU-32	MAB-31	MAB-31

Name of Part	MZ-2093A	MZ-2093B	MZ-2094	MZ-2103	MZ-2110
Connector & Brush Assy.	MZ-1102				
Brush	MZ-12				
Connector - Field Coil	MZ-32	MZ-32	MZ-32	MZ-32	MZ-32
Bushing Ins.- Terminal Post	MU-31	MU-31	MU-31	MU-31	MU-31
Field Coil - U.L.	MZ-1007	MZ-1007	MZ-1007	MZ-1007D	MZ-1007
Field Coil - U.R.	MZ-1010B	MZ-1010	MZ-1010	MZ-1010D	MZ-1010
Field Coil Assy.- L.L.	MZ-1009C	MZ-1009B	MZ-1009B	MZ-1009B	MZ-1009B
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Field Coil Assy.- L.R.	MZ-1008B	MZ-1008A	MZ-1008A	MZ-1008A	MZ-1008A
Brush		MZ-12	MZ-12	MZ-12	MZ-12
Insulating Block				MAW-39A	
Insulation Field Connection	MAB-30	MZ-30A	MZ-30A	MZ-30A	MZ-30A
Lock Washer - 5/16 Term. Post	X-1014	12X-1014	X-1014		X-1014
Nut - 5/16-24 Term. Post	5X-1376	8X-1376	5X-1376	8X-1376	5X-1376
Pole Piece	MZ-29	MZ-29	MX-29	MZ-29	MZ-29
Pole Piece Screw	MZ-38A	MZ-38A	MZ-38A	MZ-38A	MZ-38A
Switch Contact - Lower				SW-763A	
Terminal - Terminal Post	MAU-14	MU-14	MU-14		MU-14
Terminal Post	MU-28	MU-28	MU-28	MZ-109	MU-28
Washer - 5/16 Plain	MU-37	MU-37	MU-37		MU-37
Washer Ins. - Inner	MU-39	MU-39	MU-39	MAK-80	MU-39
Washer Ins.-Term. Post Outer	MAB-31	MAB-31	MAB-31		MAB-31

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 19

FRAME & FIELD ASSEMBLY

Name of Part	MZ-2112	MZ-2112A	MZ-2117	MZ-2119	MZ-2119B
Connector - Field Coil	MZ-32	MZ-32	MZ-32	MZ-32	MZ-32
Bushing Ins.- Terminal Post	MU-31	MU-31	MU-31	MU-31	MU-31
Dowel Pin					MN-21
Field Coil - U.L.	MZ-1007D	MZ-1007D	MZ-1007D	MZ-1007	MZ-1007
Field Coil - U.R.	MZ-1010D	MZ-1010D	MZ-1010D	MZ-1010	MZ-1010
Field Coil Assy.- L.L.	MZ-1009B	MZ-1009B	MZ-1009B	MZ-1009B	MZ-1009B
Brush	MZ-12	MZ-12	MZ-12	MZ-12	M -12
Field Coil Assy.- L.R.	MZ-1008A	MZ-1008A	MZ-1008A	MZ-1008A	MZ-1008A
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Insulating Block	MAW-39A	MAW-39A			
Insulation Field Connection	MZ-30A	MZ-30A	MZ-30A	MZ-30A	MZ-30A
Lock Washer- 5/16 Term. Post			X-1014	X-1014	X-1014
Nut - 5/16-24 Term. Post	8X-1376	8X-1376	X-180	5X-1376	5X-1376
Pole Piece	M -29	MZ-29	MZ-29	MZ-29	MZ-29
Pole Piece Screw	MZ-38A	MZ-38A	MZ-38A	MZ-38A	MZ-38A
Switch Contact - Lower	SW-763A	SW-764A			
Terminal - Terminal Post				MU-14	MU-14
Terminal Post	MZ-109	MZ-109	MZ-118	MU-28	MU-28
Washer - 5/16 Plain			MU-37	MU-37	MU-37
Washer Ins. - Inner	MAK-80	MAK-80	MAK-80	MU-39	MU-39
Washer Ins.-Term. Post Outer			MU-32	MAB-31	MAB-31

Name of Part	MZ-2123	MZ-2135	MZ-2135A	MZ-2140	MZ-2146
Connector - Field Coil	MZ-32	MZ-32	MZ-32	MZ-32	MZ-32
Bushing Ins.- Term. Post	MU-31	MU-31	MU-31	MU-31	MU-31
Field Coil - U.L.	MZ-1007	MZ-1007	MZ-1007	MZ-1007	MZ-1007
Field Coil - U.R.	MZ-1010	MZ-1010	MZ-1010	MZ-1010	MZ-1010
Field Coil Assy.- L.L.	MZ-1009B	MZ-1009B	MZ-1009B	MZ-1009B	MZ-1009B
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Field Coil Assy.- L.R.	MZ-1008A	MZ-1008A	MZ-1008A	MZ-1008A	MZ-1008A
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Insulation Field Connection	MZ-30A	MZ-30A	MZ-30A	MZ-30A	MZ-30A
Lock Washer - 5/16 Term. Post	X-1014	X-1014	X-1014	X-1014	X-1014
Nut - 5/16-24 Term. Post	5X-1376	5X-1376	5X-1376	5X-1376	5X-1376
Pole Piece	MZ-29	MZ-29	MZ-29	MZ-29	MZ-29
Pole Piece Screw	MZ-38A	MZ-38A	MZ-38A	MZ-38A	MZ-38A
Terminal - Terminal Post	MU-14	MU-14	MU-14	MU-14	MU-14
Terminal Post	MU-28	MU-28	MU-28	MU-28	MU-28
Washer - 5/16 Plain	MU-37	MU-37	MU-37	MU-37	MU-37
Washer Ins. - Inner	MU-39	MU-39	MU-39	MU-39	MU-39
Washer Ins.-Term. Post Outer	MAB-31	MAB-31	MAB-31	MAB-31	MAB-31

(Issued 12-15-41)

“NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed.”

Printed in U. S. A.

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

Page 20

FRAME & FIELD ASSEMBLY

Name of Part	MZ-2152	MZ-2155	MZ-2157	MZ-2171	MZ-2176
Connector - Field Coil	MZ-32	MZ-32	MZ-32	MZ-32	MZ-32
Bushing Ins.- Terminal Post	MU-31	MU-31	MU-31	MU-31	MU-31
Dowel Pin	MN-21				
Field Coil - U.L.	MZ-1007	MZ-1007	MZ-1007	MZ-1007	MZ-1007D
Field Coil - U.R.	MZ-1010	MZ-1010	MZ-1010	MZ-1010	MZ-1010D
Field Coil Assy.- L.L.	MZ-1009B	MZ-1009B	MZ-1009B	MZ-1009B	MZ-1009B
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Field Coil Assy.- L.R.	MZ-1008A	MZ-1008A	MZ-1008A	MZ-1008A	MZ-1008A
Brush	MZ-12	MZ-12	MZ-12	MZ-12	MZ-12
Insulating Block					MAW-39A
Insulation Field Connection	MZ-30A	MZ-30A	MZ-30A	MZ-30A	MZ-30A
Lock Washer - 5/16 Term. Post	X-1014	X-1014	X-1014	X-1014	
Nut - 5/16-24 Term. Post	5X-1376	5X-1376	5X-1376	5X-1376	8X-1376
Pole Piece	MZ-29	MZ-29	MZ-29	MZ-29	MZ-29
Pole Piece Screw	MZ-38A	MZ-38A	MZ-38A	MZ-38A	MZ-38A
Switch Contact - Lower					SW-764A
Terminal - Terminal Post	MU-14	MU-14	MU-14	MU-14	
Terminal Post	MU-28	MU-28	MU-28	MU-28	MZ-109
Washer - 5/16 Plain	MU-37	MU-37	MU-37	MU-37	
Washer Ins. - Inner	MU-39	MU-39	MU-39	MU-39	MAK-80
Washer Ins.-Term. Post Outer	MAB-31	MAB-31	MAB-31	MAB-31	

Name of Part	MZ-2185
Connector	MZ-32
Bushing Ins.- Term. Post	MU-31
Field Coil - U.L.	MZ-1007D
Field Coil - U.R.	MZ-1010D
Field Coil Assy.- L.L.	MZ-1009B
Brush	MZ-12
Field Coil Assy.- L.R.	MZ-1008A
Brush	MZ-12
Insulation Field Connection	MZ-30A
Lock Washer - 5/16 Term. Post	X-1014
Nut - 5/16-24 Term. Post	5X-1376
Pole Piece	MZ-29
Pole Piece Screw	MZ-38A
Terminal Post	MZ-60
Washer - 5/16 Plain	MU-37
Washer Ins.- Inner	MAK-80
Washer Ins.-Term. Post Outer	MAB-31

(Issued 12-15-41)

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

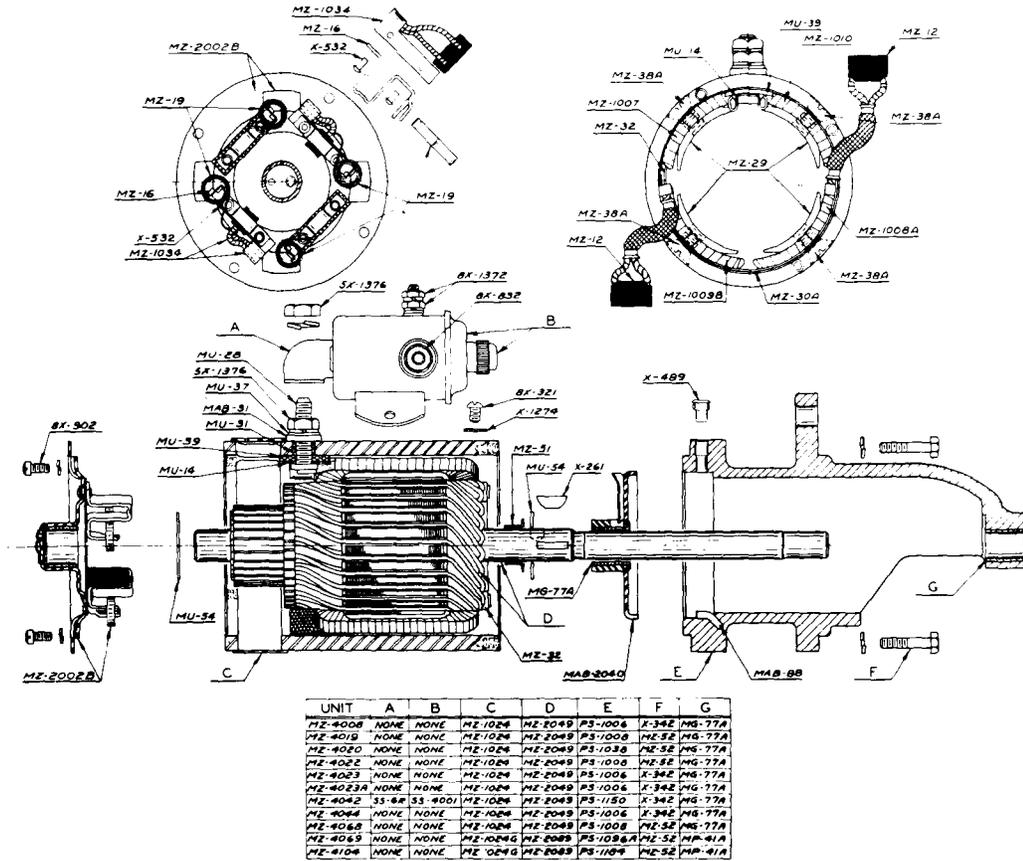
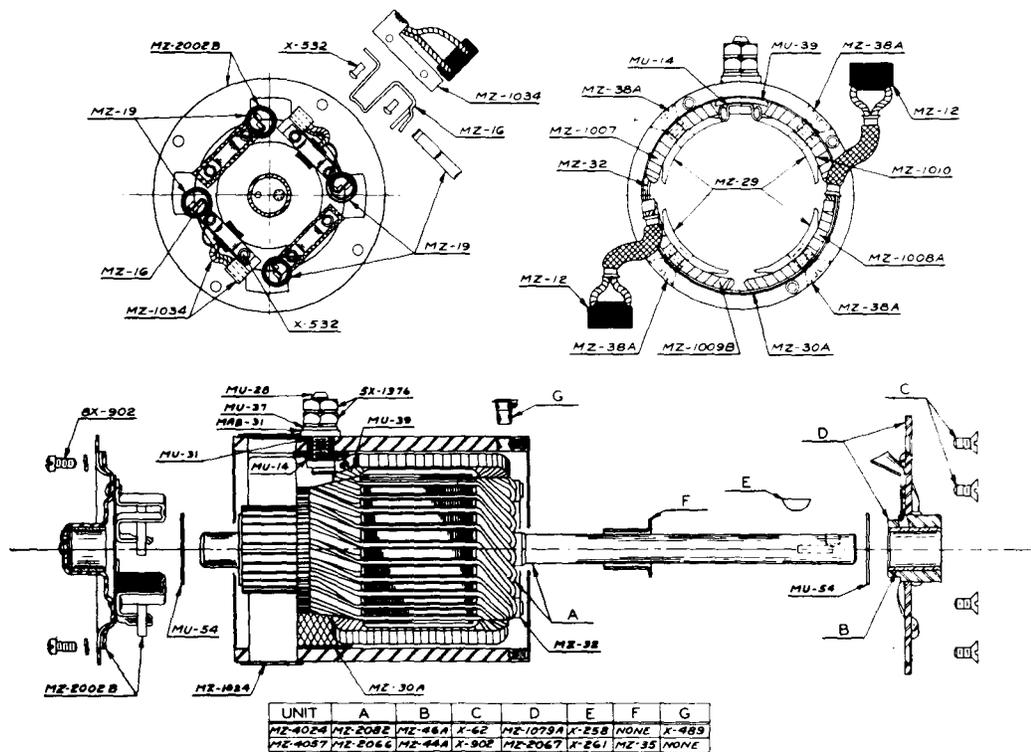


Figure 1



MC-2

Figure 2

(Issued 12-15-41)

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

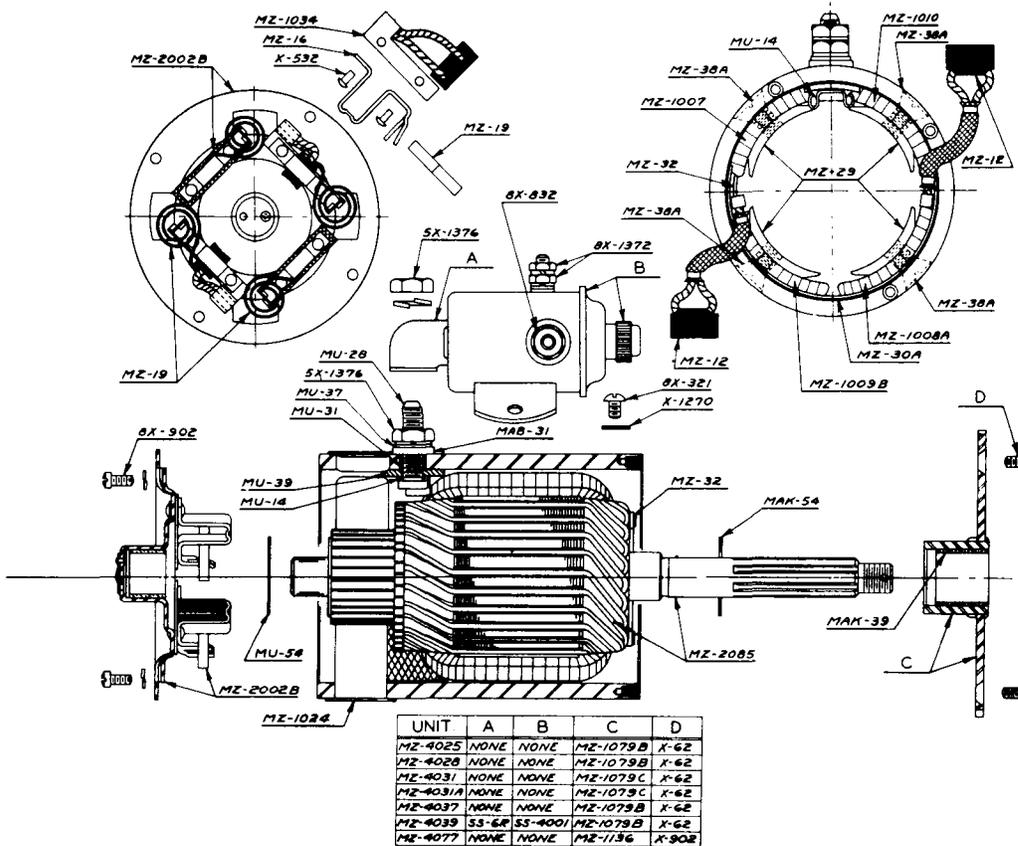


Figure 3

MZ-3

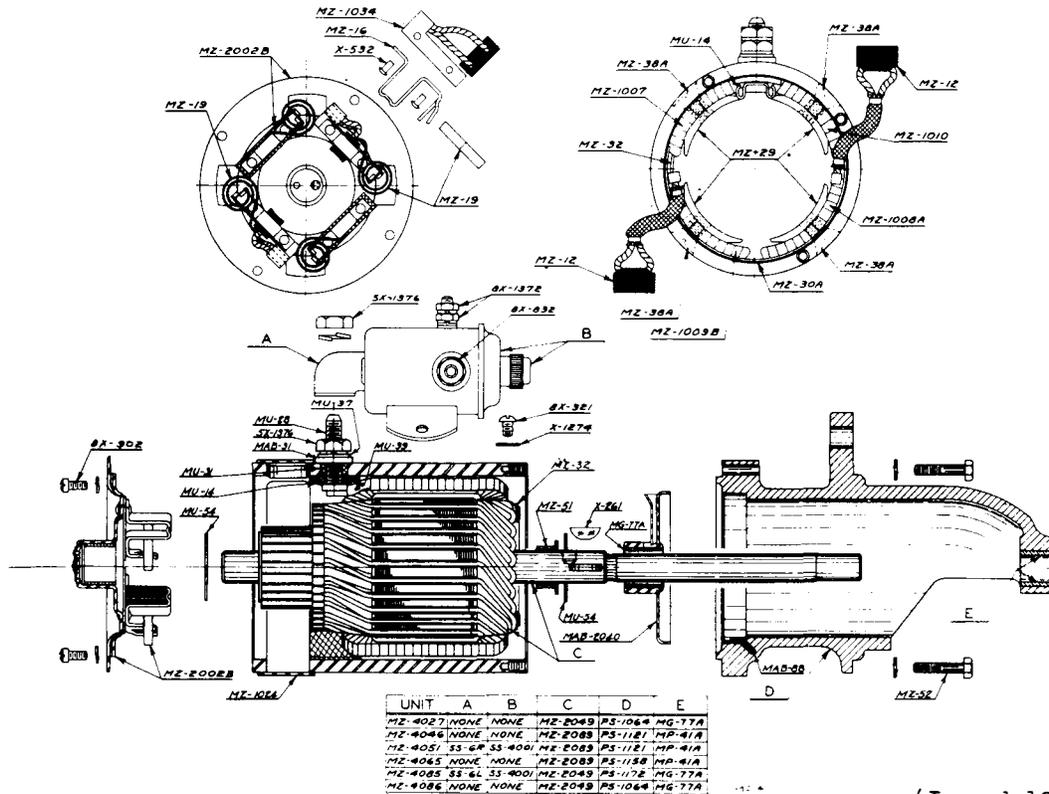


Figure 4

Printed in U. S. A.

(Issued 12-15-41)

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

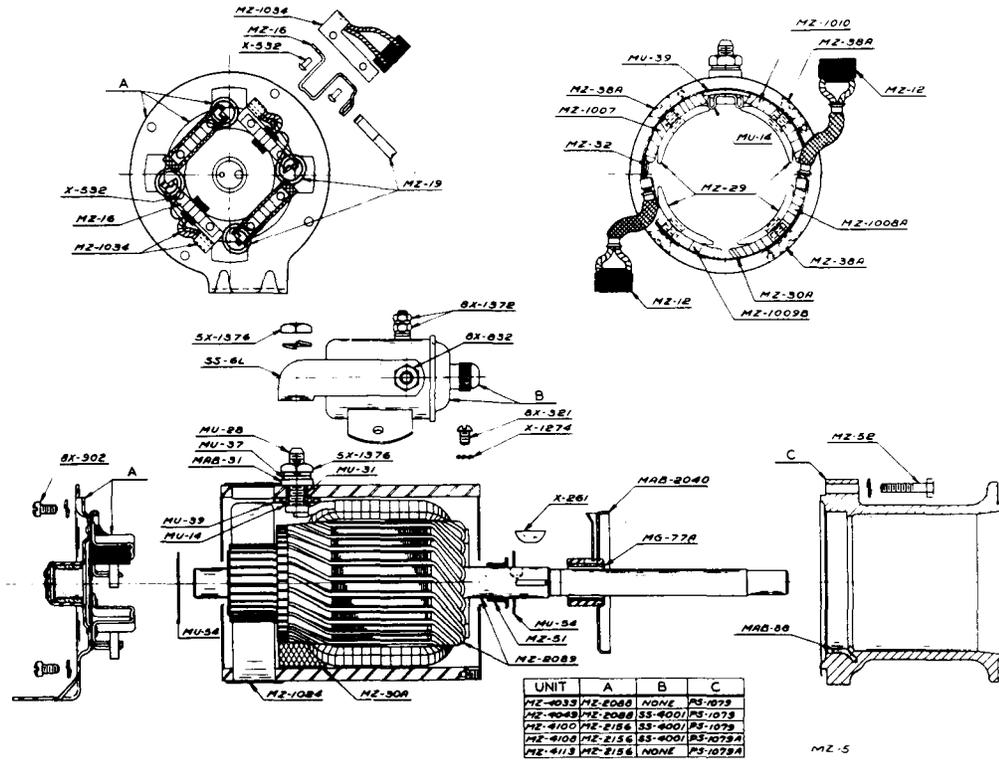


Figure 5

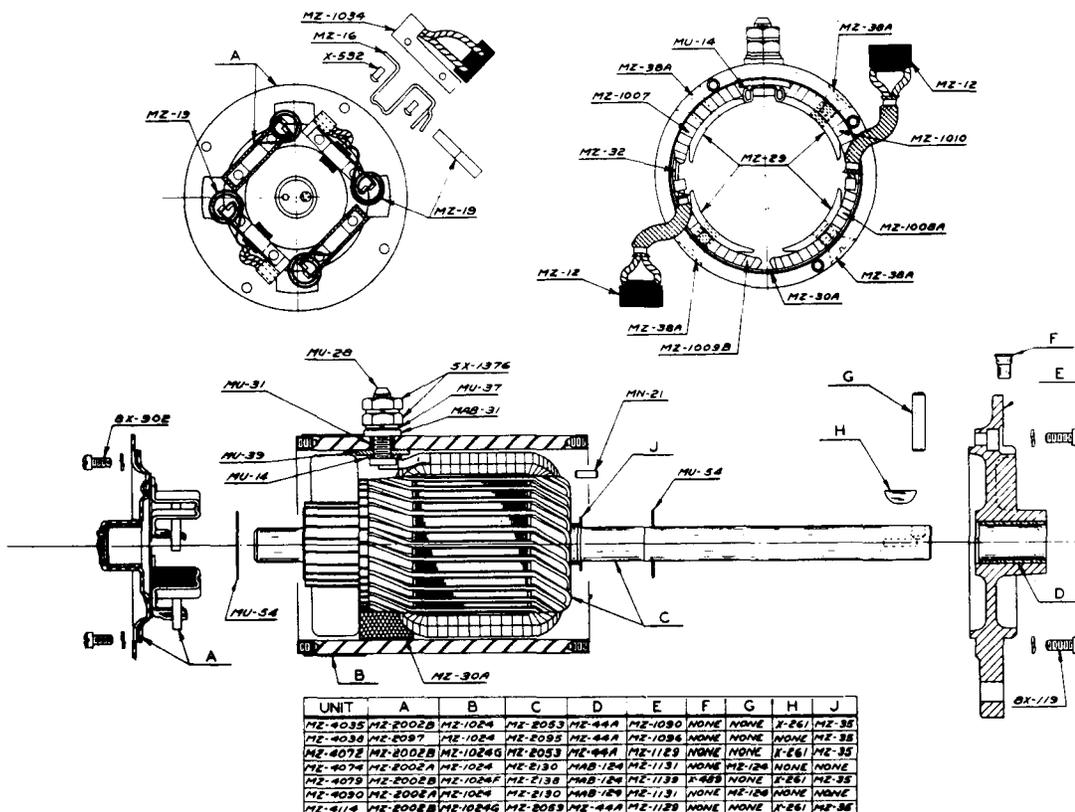
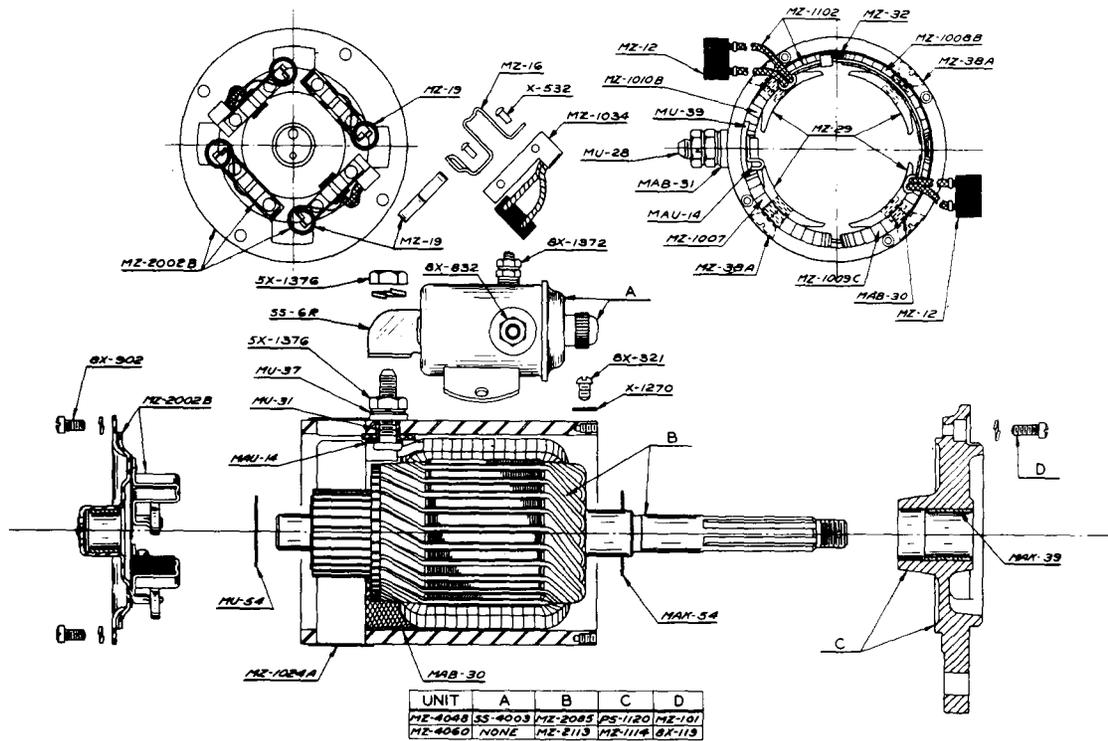


Figure 6

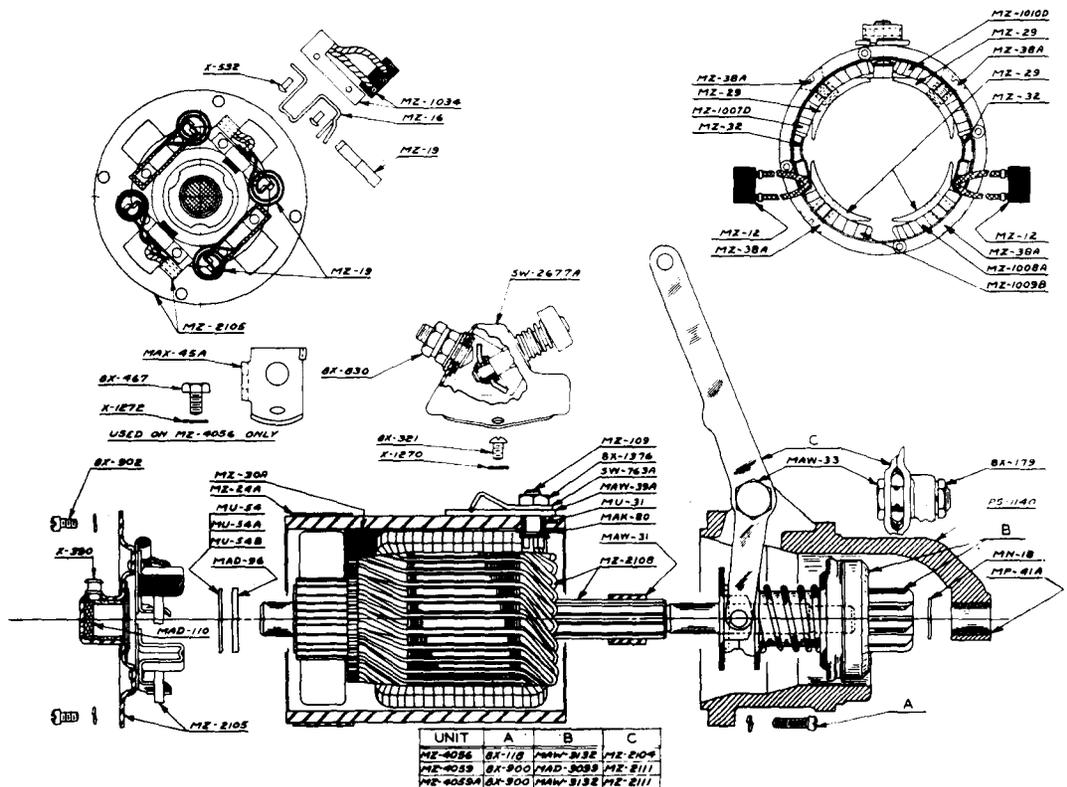
(Issued 12-15-41)

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS



MZ-9
Figure 9



MZ-10
Figure 10

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

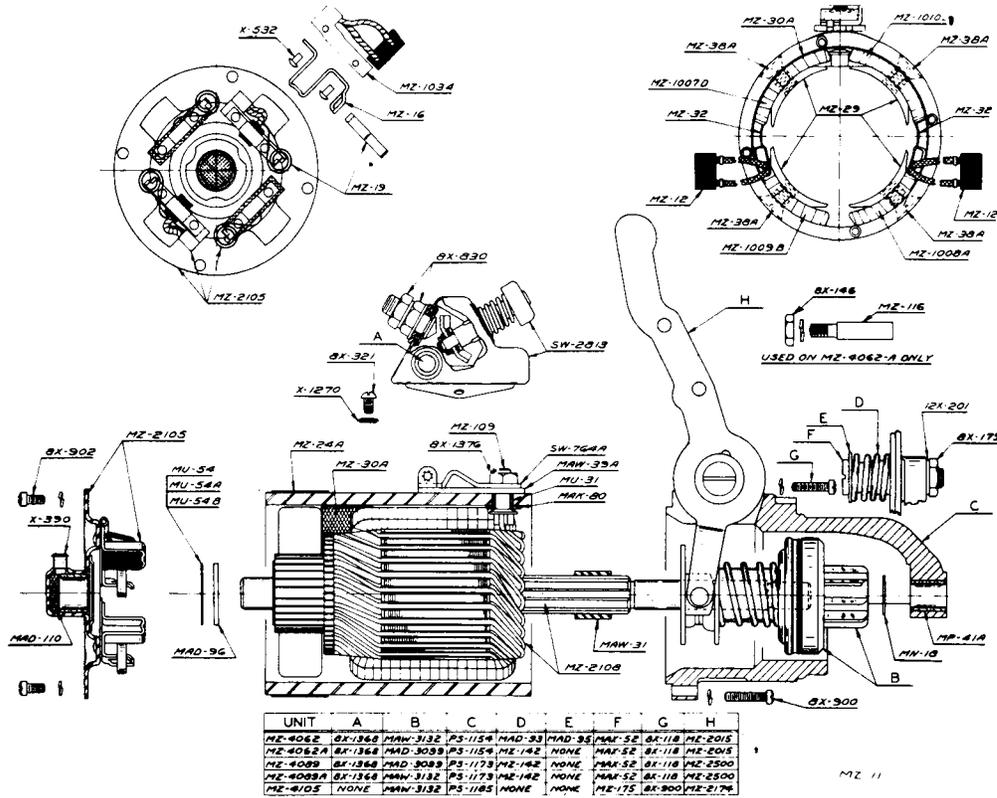


Figure 11

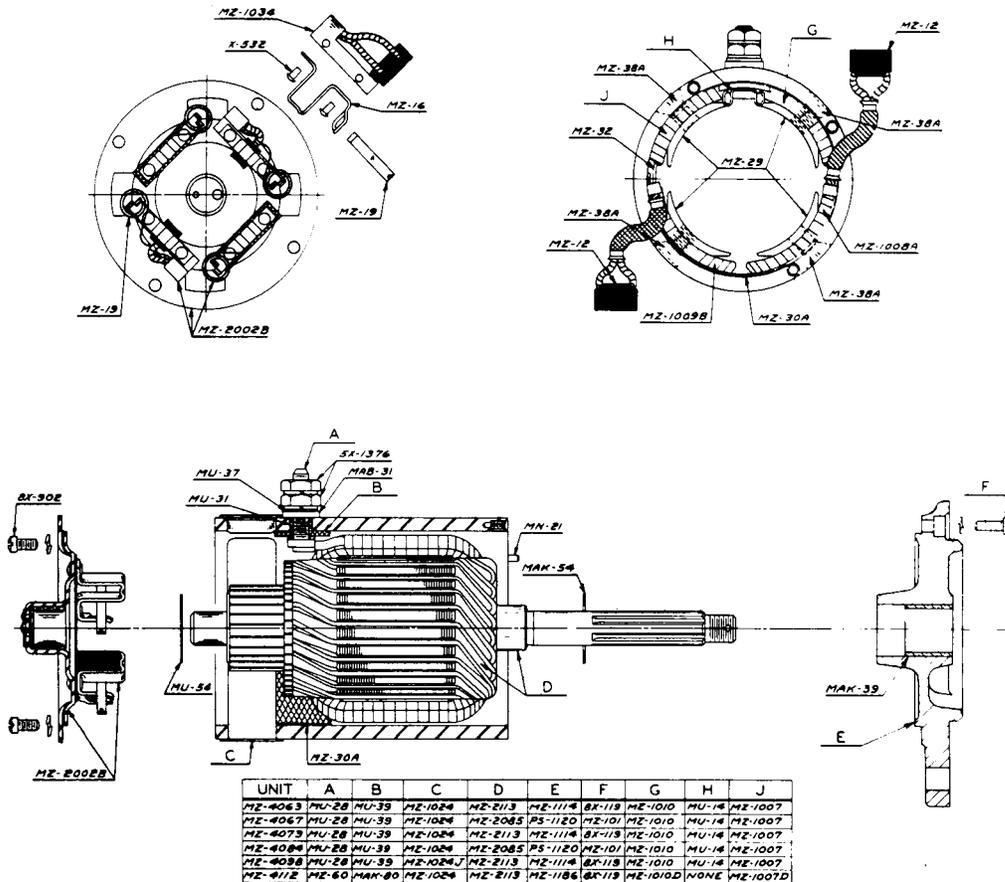


Figure 12

(Issued 12-15-41)

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

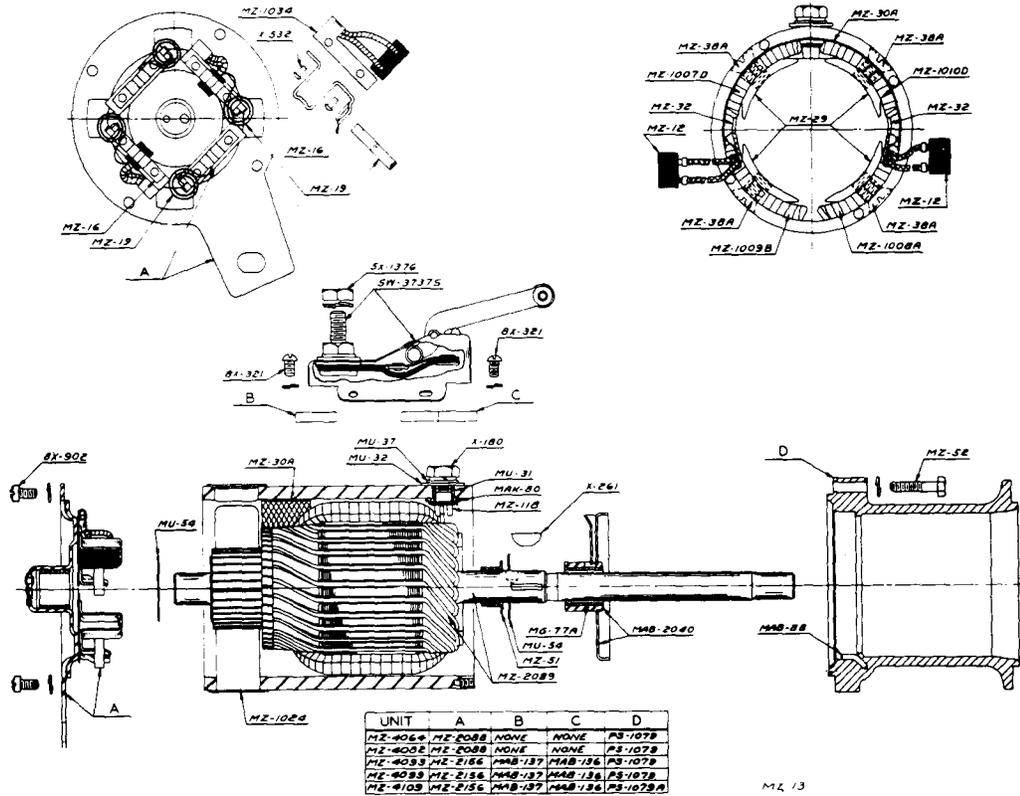


Figure 13

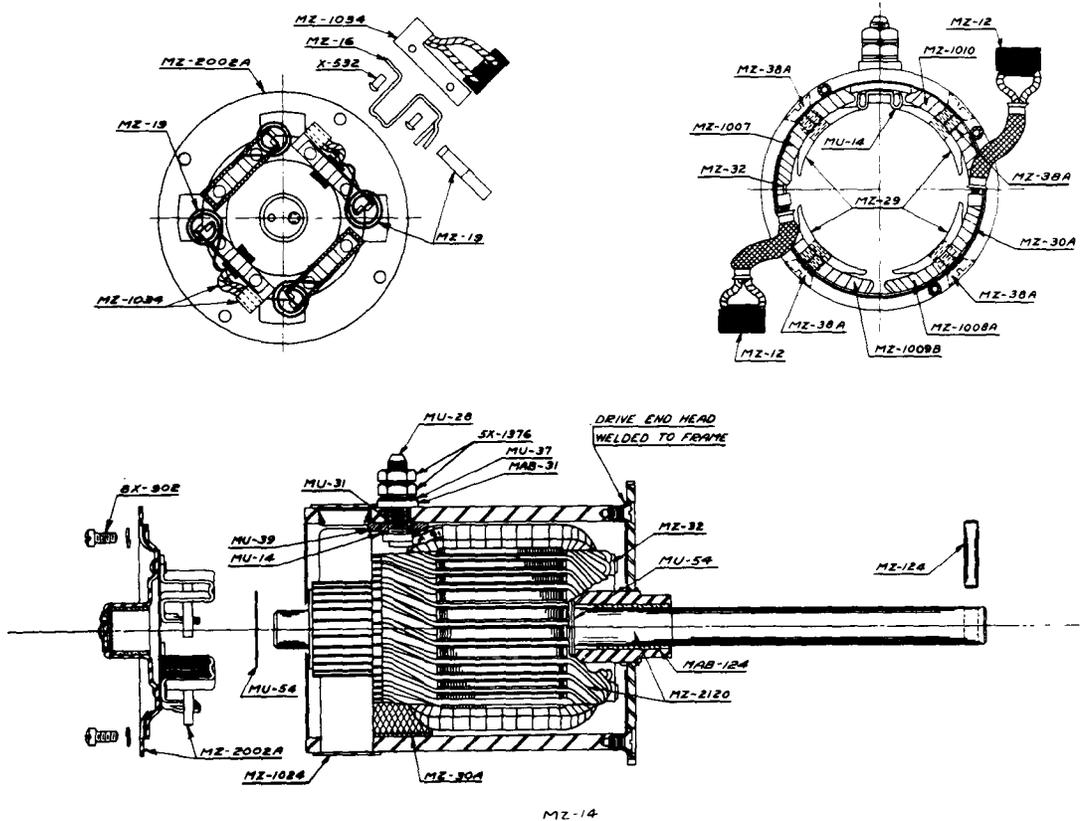


Figure 14

(Issued 12-15-41)

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

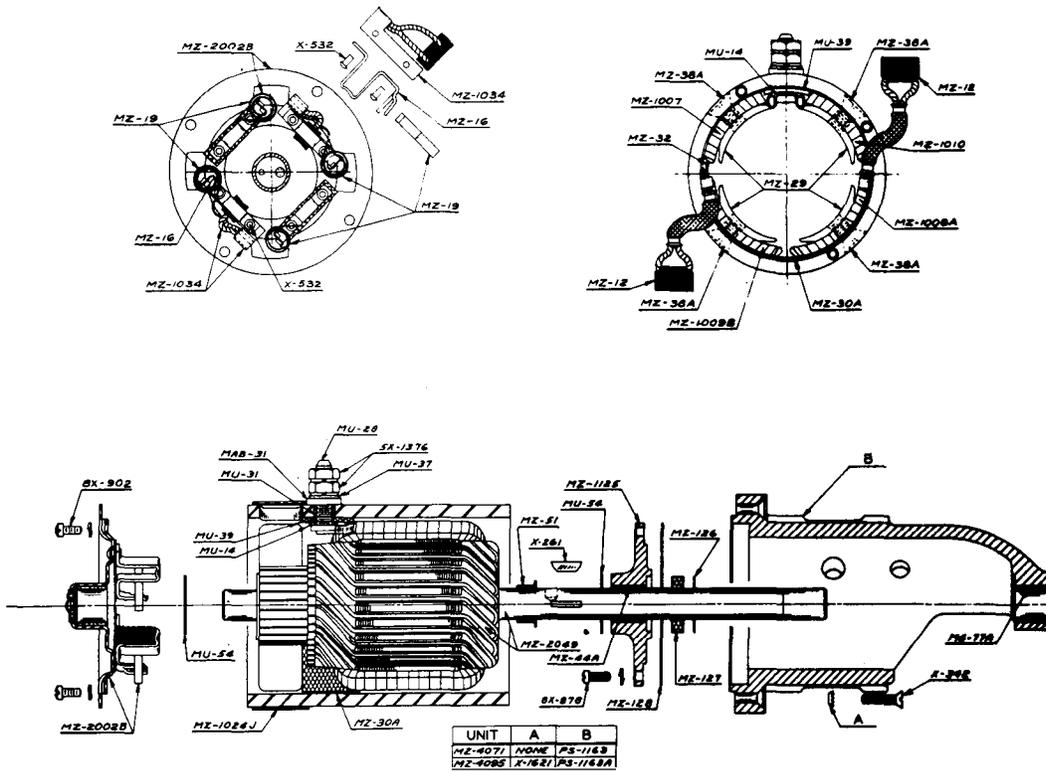


Figure 15

MZ-15

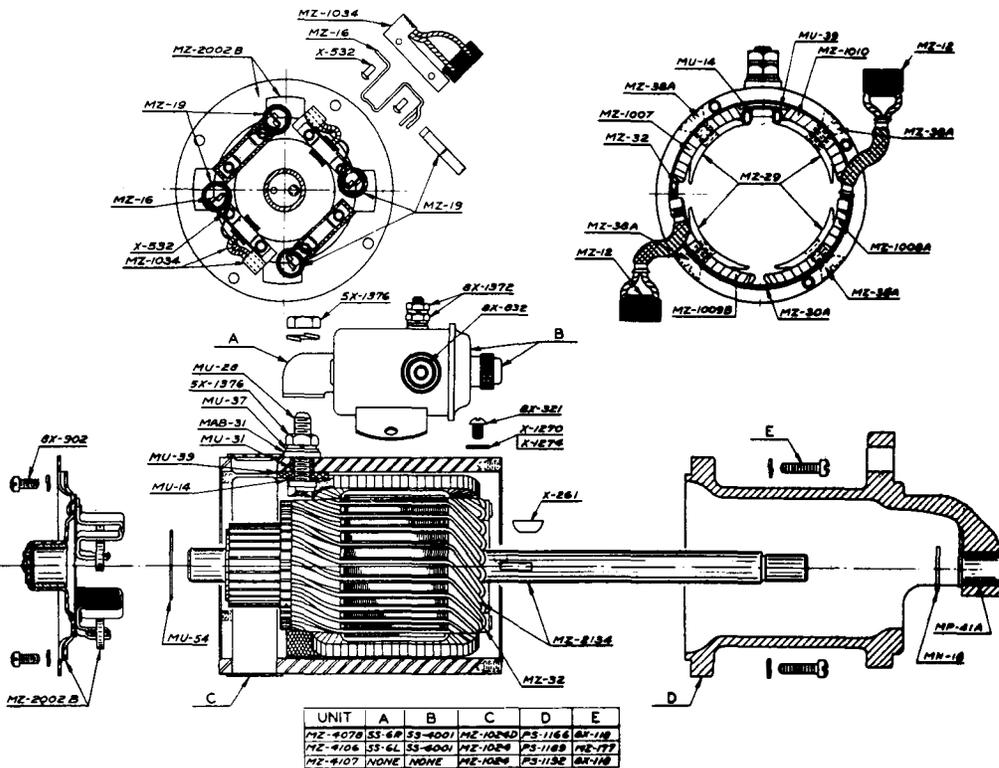


Figure 16

MZ-16

(Issued 12-15-41)

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS

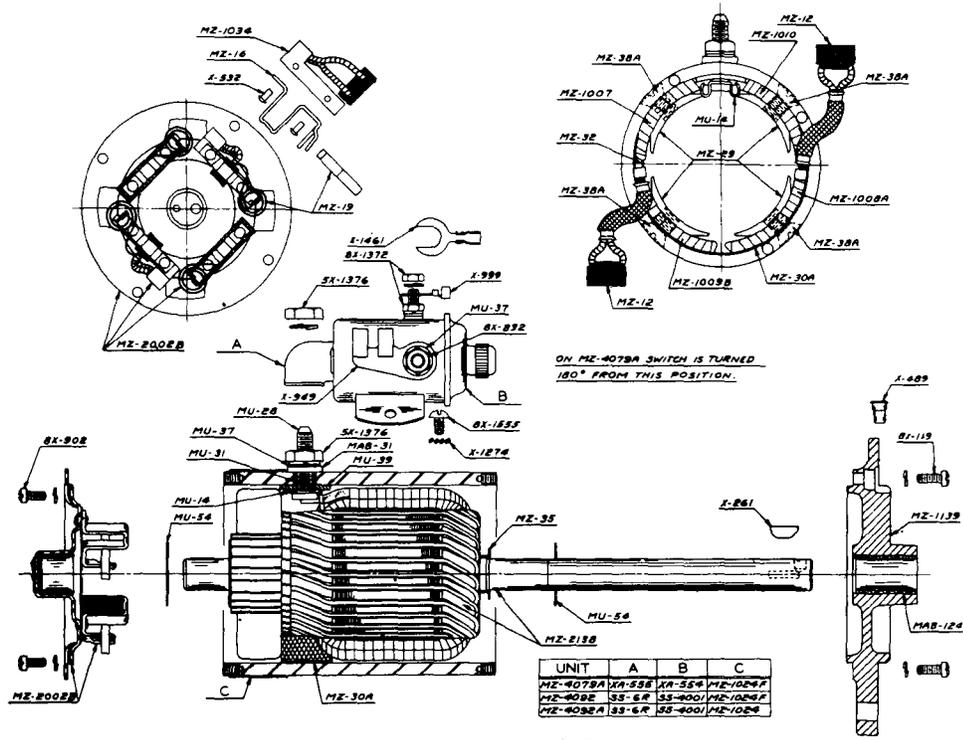


Figure 17

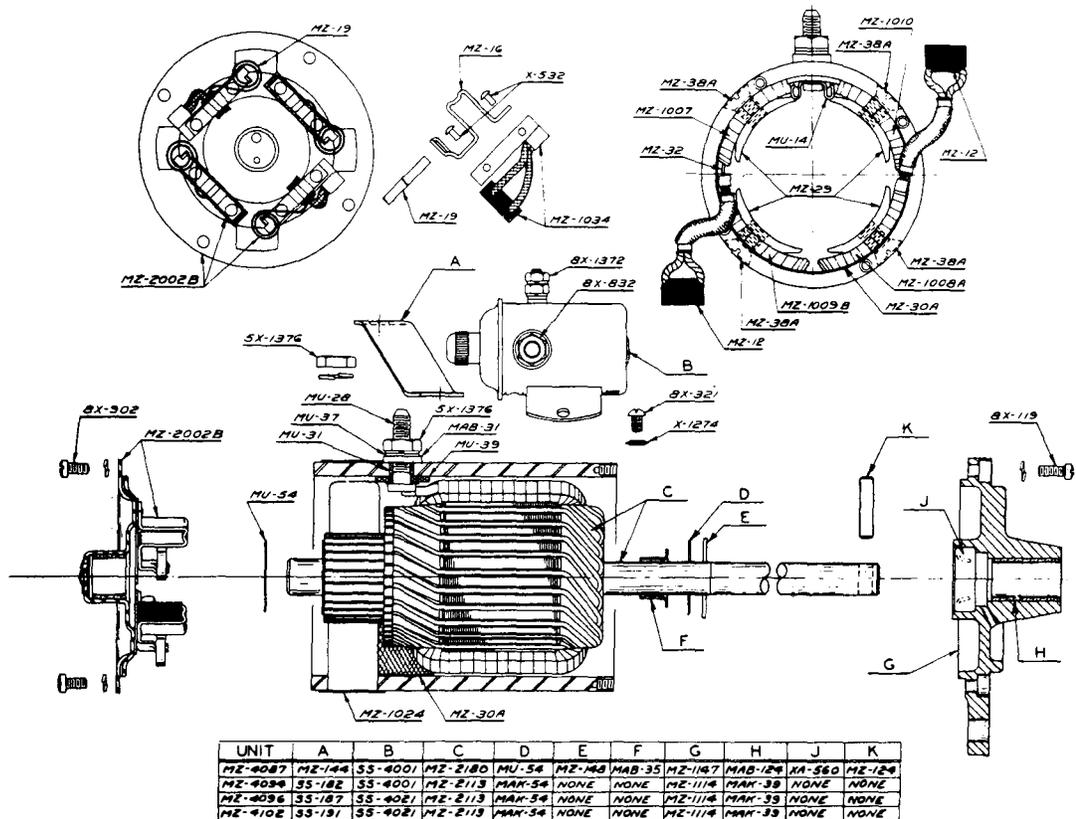


Figure 18

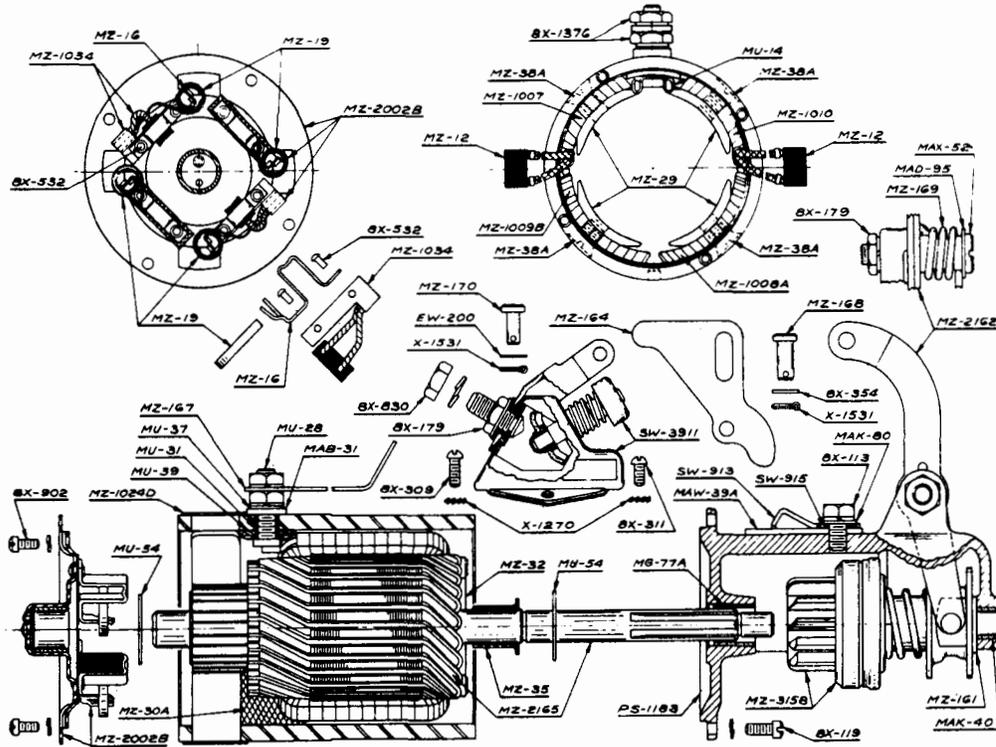
(Issued 12-15-41)

Printed in U. S. A.

File in
Equipment & Parts Lists Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ TYPE STARTING MOTORS



MZ 19
Figure 19

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

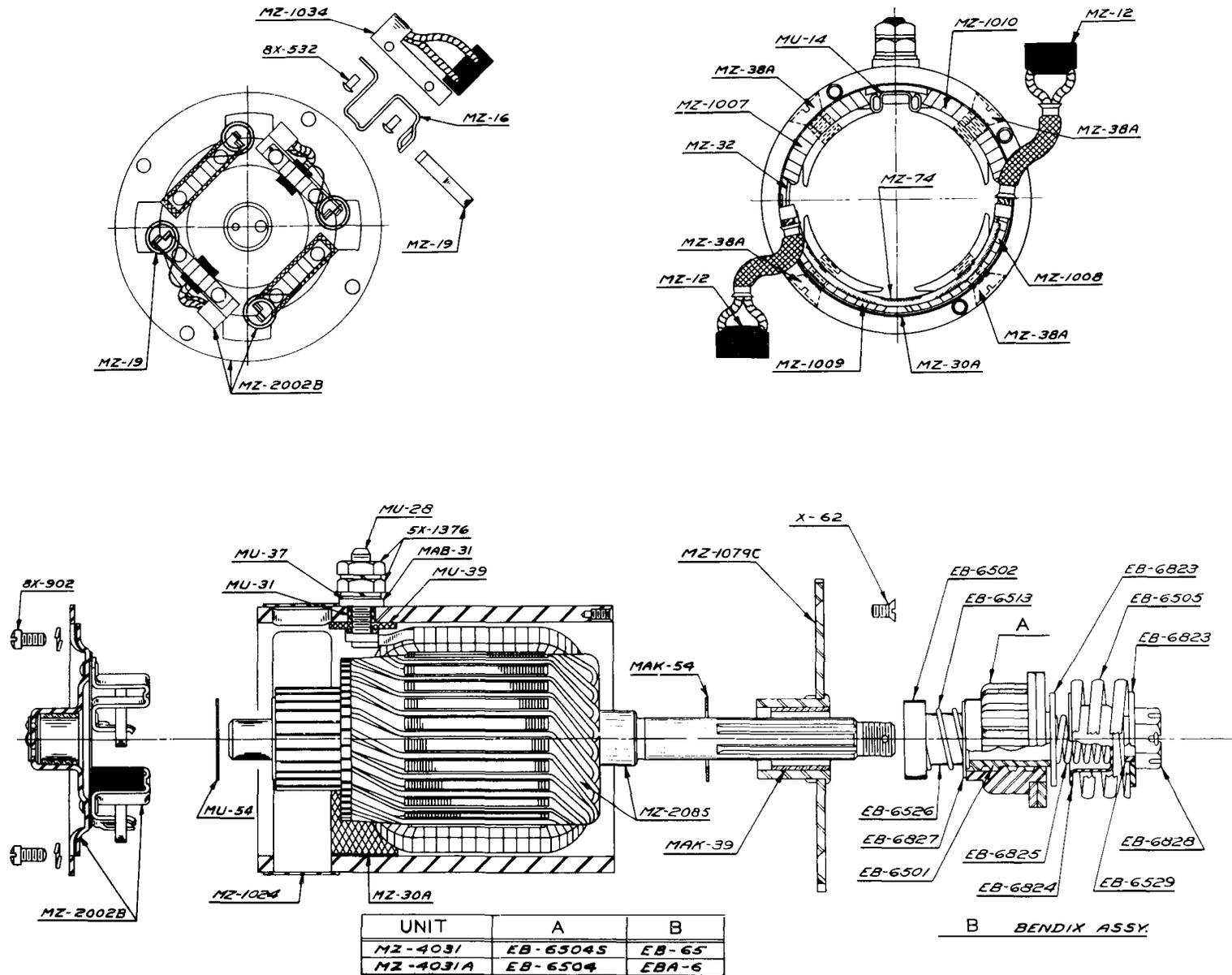
MZ-4031,A STARTING MOTOR PARTS LIST

MZ-4031,A

Frame & Field Assembly With Terminal Stud & Parts Used With					Miscellaneous Parts																																																																																																				
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part																																																																																																
		1	2	3	4	5			1	2	3	4	5																																																																																												
(MZ-2001)	1	Frame & Field Assy.					EB-65	1	Bendix Drive Assy.																																																																																																
MAB-31	1	Washer, Ins., Term. Stud, Outer					EB-6501	1	Shaft																																																																																																
MU-14	1	Terminal					EB-6502	1	Stop																																																																																																
MU-28	1	Stud, Terminal, 5/16-24					EB-6504S	1	Pinion																																																																																																
MU-31	1	Bushing, Ins., Term. Stud					EB-6505	1	Spring, Drive																																																																																																
MU-37	1	Washer, Plain, Term. Stud, 5/16					EB-6513	1	Spring, Anti-Drift																																																																																																
MU-39	1	Washer, Ins., Term. Stud, Inner					EB-6526	1	Sleeve, Anti-Drift Spring																																																																																																
MZ-12*	2	Brush, Insulated					EB-6529	1	Collar, Spacing																																																																																																
MZ-30A	1	Insulation, Field Connection					EB-6823	2	Washer, Thrust																																																																																																
MZ-32	2	Connector, Field Coil					EB-6824	1	Support, Drive Spring																																																																																																
MZ-38A	4	Screw, Pole Shoe					EB-6825	1	Spring, Meshing																																																																																																
MZ-74	1	Equalizer					EB-6827	1	Washer, Pinion																																																																																																
MZ-1007	1	Coil, Field, U.L.					EB-6828	1	Nut, Hex., Castellated																																																																																																
MZ-1008	1	Coil, Field, L.R.					MZ-1024	1	Band, Cover																																																																																																
MZ-1009	1	Coil, Field, L.L.					MZ-1079C	1	Head Assy., Drive End																																																																																																
MZ-1010	1	Coil, Field, U.R.					MAK-39	1	Bearing, Absorbent Bronze																																																																																																
X-1014	1	Washer, Lock, Term. Stud, 5/16					X-62	4	Screw, Attaching, Drive End Head, Flat hd., #10-32x3/8																																																																																																
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					X-308	1	Screw, Cover Band, Rd. hd., #10-32x1 3/8																																																																																																
X-1014	1	Washer, Lock, Terminal Stud, 5/16					8X-794	1	Nut, Cover Band, Square, #10-32																																																																																																
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24							1 2 3 4 5																																																																																																
										(Issued 4-26-44)																																																																																															
<u>Comm. End Head Assembly & Parts Used With</u>										<p>NOTE:- The MZ-4031A starting motor uses EBA-6 Bendix Drive with sub parts as noted below.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td>EBA-6</td> <td>1</td> <td colspan="5">Bendix Drive Assy.</td> </tr> <tr> <td>EB-6501</td> <td>1</td> <td colspan="5">Shaft</td> </tr> <tr> <td>EB-6502</td> <td>1</td> <td colspan="5">Stop</td> </tr> <tr> <td>EB-6504</td> <td>1</td> <td colspan="5">Pinion</td> </tr> <tr> <td>EB-6505</td> <td>1</td> <td colspan="5">Spring, Drive</td> </tr> <tr> <td>EB-6513</td> <td>1</td> <td colspan="5">Spring, Anti-Drift</td> </tr> <tr> <td>EB-6526</td> <td>1</td> <td colspan="5">Sleeve, Anti-Drift Spring</td> </tr> <tr> <td>EB-6529</td> <td>1</td> <td colspan="5">Collar, Spacing</td> </tr> <tr> <td>EB-6823</td> <td>2</td> <td colspan="5">Washer, Thrust</td> </tr> <tr> <td>EB-6824</td> <td>1</td> <td colspan="5">Support, Drive Spring</td> </tr> <tr> <td>EB-6825</td> <td>1</td> <td colspan="5">Spring, Meshing</td> </tr> <tr> <td>EB-6827</td> <td>1</td> <td colspan="5">Washer, Pinion</td> </tr> <tr> <td>EB-6828</td> <td>1</td> <td colspan="5">Nut, Hex., Castellated</td> </tr> </table>					EBA-6	1	Bendix Drive Assy.					EB-6501	1	Shaft					EB-6502	1	Stop					EB-6504	1	Pinion					EB-6505	1	Spring, Drive					EB-6513	1	Spring, Anti-Drift					EB-6526	1	Sleeve, Anti-Drift Spring					EB-6529	1	Collar, Spacing					EB-6823	2	Washer, Thrust					EB-6824	1	Support, Drive Spring					EB-6825	1	Spring, Meshing					EB-6827	1	Washer, Pinion					EB-6828	1	Nut, Hex., Castellated				
EBA-6	1	Bendix Drive Assy.																																																																																																							
EB-6501	1	Shaft																																																																																																							
EB-6502	1	Stop																																																																																																							
EB-6504	1	Pinion																																																																																																							
EB-6505	1	Spring, Drive																																																																																																							
EB-6513	1	Spring, Anti-Drift																																																																																																							
EB-6526	1	Sleeve, Anti-Drift Spring																																																																																																							
EB-6529	1	Collar, Spacing																																																																																																							
EB-6823	2	Washer, Thrust																																																																																																							
EB-6824	1	Support, Drive Spring																																																																																																							
EB-6825	1	Spring, Meshing																																																																																																							
EB-6827	1	Washer, Pinion																																																																																																							
EB-6828	1	Nut, Hex., Castellated																																																																																																							
MZ-2002B	1	Head Assy., Comm. End																																																																																																							
MZ-16	2	Holder, Brush																																																																																																							
MZ-19	4	Spring, Brush																																																																																																							
MZ-1034*	2	Brush, Grounded																																																																																																							
8X-532	4	Rivet, Brush Holder																																																																																																							
X-544	4	Washer, Lock, Attaching, C.E. Head, #10																																																																																																							
X-902	4	Screw, Attaching, C.E. Head, Fil. hd., #10-32x3/8																																																																																																							
<u>Armature Assembly & Parts Used With</u>																																																																																																									
MAK-54	1	Washer, Thrust																																																																																																							
MU-54	1	Washer, Thrust																																																																																																							
MZ-2085	1	Armature																																																																																																							
		1	2	3	4	5																																																																																																			

* Brush Set, Service, MZ-2012S.

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ-4042 STARTING MOTOR PARTS LIST

MZ-4042

Frame & Field Assembly With Terminal Stud & Parts Used With					Switch Assembly & Parts Used With								
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part				
		1	2	3	4	5			1	2	3	4	5
(MZ-2093)	1	Frame & Field Assy.					SS-6R	1	Connector				
MAB-31	1	Washer, Ins., Term. Stud, Outer					SS-4001	1	Solenoid Starting Switch				
MU-14	1	Terminal					12X-196	1	Washer, Lock, #10				
MU-28	1	Stud, Terminal, 5/16-24					8X-832	2	Nut, Hex., 5/16-24				
MU-31	1	Bushing, Ins., Term. Stud					12X-1014	2	Washer, Lock, 5/16				
MU-37	1	Washer, Plain, Term. Stud, 5/16					8X-1372	1	Nut, Hex., #10-32				
MU-39	1	Washer, Ins., Term. Stud, Inner					8X-321	2	Screw, Mtg. Switch, Rd. hd., #10-32x5/16				
MZ-12†	2	Brush, Insulated					X-1274	2	Washer, Skpf. Switch Mtg., #10				
MZ-30A	1	Insulation, Field Connection					<u>Miscellaneous Parts</u>						
MZ-32	2	Connector, Field Coil					EBA-4	1	Bendix Drive Assy.				
MZ-38A	4	Screw, Pole Shoe					EB-108	2	Washer, Lock				
MZ-74	1	Equalizer					EB-7819S	1	Sleeve, Compression				
MZ-1007	1	Coil, Field, U.L.					EB-8503	1	Head, Drive				
MZ-1008	1	Coil, Field, L.R.					EB-8506	1	Screw, Spring, Head				
MZ-1009	1	Coil, Field, L.L.					EB-8507	1	Screw, Spring, Shaft				
MZ-1010	1	Coil, Field, U.R.					EB-8734	1	Ring, Take up				
X-1014	1	Washer, Lock, Term. Stud, 5/16					EB-9911	1	Shaft & Pinion				
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					EBA-405	1	Spring, Drive				
X-1014	1	Washer, Lock, Terminal Stud, 5/16					MAB-2040	1	Bearing Assy., Intermediate				
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					MG-77A	1	Bearing, Absorbent Bronze				
<u>Comm. End Head Assembly & Parts Used With</u>					MZ-1024	1	Band, Cover						
MZ-2002B	1	Head Assy., Comm. End					PS-1150	1	Housing Assy., Pinion				
MZ-16	2	Holder, Brush					MAB-88	1	Pin, Dowel				
MZ-19	4	Spring, Brush					MG-77A	1	Bearing, Absorbent Bronze				
MZ-1034†	2	Brush, Grounded					X-308	1	Screw, Cover Band, Rd. hd., #10-32x1 3/8				
8X-532	4	Rivet, Brush Holder, Oval hd., Tub., 1/8x1/4					X-342	4	Screw, Attaching, Housing, Flat hd., #10-32x7/8				
X-544	4	Washer, Lock, Attaching, C.E. Head, #10					X-489	1	Oiler, Hinge Top, Press in, 1/4				
X-902	4	Screw, Attaching, C.E. Head, Fil. hd., #10-32x3/8					8X-794	1	Nut, Cover Band, Square, #10-32 1 2 3 4 5				
<u>Armature Assembly & Parts Used With</u>					(Issued 3-7-44)								
MU-54	2	Washer, Arm. Thrust, Comm. End & Intermediate											
MZ-2049	1	Armature Assy.											
MZ-51	1	Spacer, Bearing Thrust											
X-261	1	Key, Woodruff, #6 1 2 3 4 5											

† Brush Set, Service, MZ-2012S.

Printed in U. S. A.

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

File in
Equipment & Parts List Binder

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ-4063 STARTING MOTOR PARTS LIST

MZ-4063

Frame & Field Assembly With Terminal Stud & Parts Used With					Miscellaneous Parts									
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part					
		1	2	3	4	5			1	2	3	4	5	
(MZ-2001)	1	Frame & Field Assy.					EBA-6	1	Bendix Drive Assy.					
MAB-31	1	Washer, Ins., Term. Stud, Outer					EB-6501	1	Shaft					
MU-14	1	Terminal					EB-6502	1	Stop					
MU-28	1	Stud, Terminal, 5/16-24					EB-6504	1	Pinion					
MU-31	1	Bushing, Ins., Term. Stud					EB-6505	1	Spring, Drive					
MU-37	1	Washer, Plain, Term. Stud, 5/16					EB-6513	1	Spring, Anti-Drift					
MU-39	1	Washer, Ins., Term. Stud, Inner					EB-6526	1	Sleeve, Anti-Drift Spring					
MZ-12*	2	Brush, Insulated					EB-6529	1	Collar, Spacing					
MZ-30A	1	Insulation, Field Connection					EB-6823	2	Washer, Thrust					
MZ-32	2	Connector, Field Coil					EB-6824	1	Support, Drive Spring					
MZ-38A	4	Screw, Pole Shoe					EB-6825	1	Spring, Meshing					
MZ-74	1	Equalizer					EB-6827	1	Washer, Pinion					
MZ-1007	1	Coil, Field, U.L.					EB-6828	1	Nut, Hex., Castellated					
MZ-1008	1	Coil, Field, L.R.					MZ-1024	1	Band, Cover					
MZ-1009	1	Coil, Field, L.L.					MZ-1114	1	Head Assy., Drive End					
MZ-1010	1	Coil, Field, U.R.					MAK-39	1	Bearing, Absorbent Bronze					
X-1014	1	Washer, Lock, Term. Stud, 5/16					8X-119	4	Screw, Attaching, Drive End Head, Fil. hd., #10-32x1/2					
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					X-196	4	Washer, Lock, D.E. Head Sc., #10-32x1 3/8					
X-1014	1	Washer, Lock, Terminal Stud, 5/16					X-308	1	Screw, Cover Band, Rd. hd., #10-32x1 3/8					
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					8X-794	1	Nut, Cover Band, Square, #10-32 1 2 3 4 5					
										(Issued 4-26-44)				
										(Issued 4-26-44)				
Comm. End Head Assembly & Parts Used With														
MZ-2002B	1	Head Assy., Comm. End												
MZ-16	2	Holder, Brush												
MZ-19	4	Spring, Brush												
MZ-1034*	2	Brush, Grounded												
8X-532	4	Rivet, Brush Holder												
X-544	4	Washer, Lock, Attaching, C.E. Head, #10												
8X-902	4	Screw, Attaching, C.E. Head, Fil. hd., #10-32x3/8												
Armature Assembly & Parts Used With														
MAK-54	1	Washer, Thrust												
MU-54	1	Washer, Thrust												
MZ-2113	1	Armature												
		1	2	3	4	5								

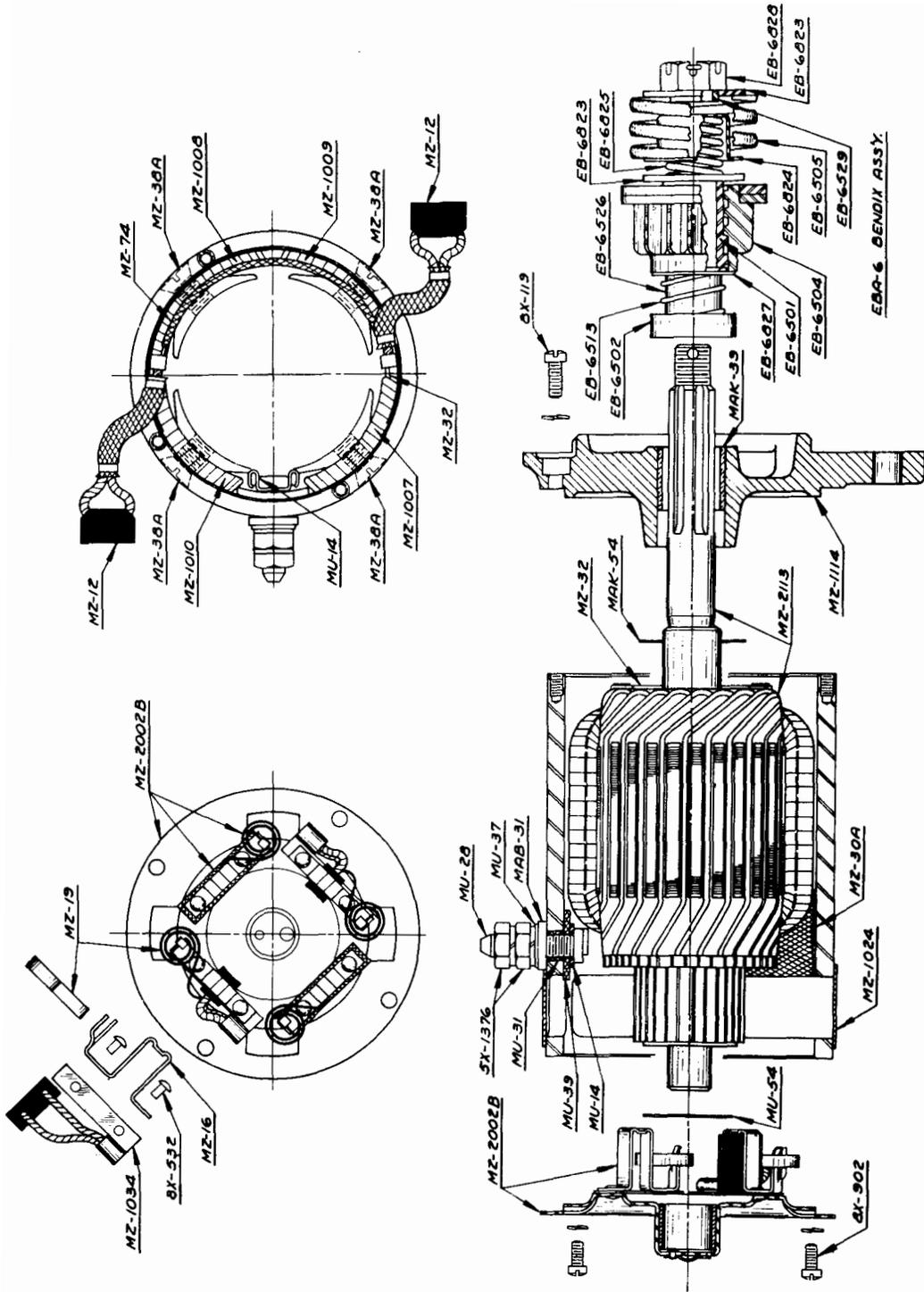
* Brush Set, Service, MZ-2012S.

Printed in U. S. A.

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

File in
Equipment & Parts List Binder

MZ-4063 STARTING MOTOR ILLUSTRATION



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ-4071 STARTING MOTOR PARTS LIST

MZ-4071

Frame & Field Assembly With Terminal Stud & Parts Used With					Miscellaneous Parts								
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part				
		1	2	3	4	5			1	2	3	4	5
(MZ-2001)	1	Frame & Field Assy.					EBA-2	1	Bendix Drive Assy.				
MAB-31	1	Washer, Ins., Term. Stud, Outer					EB-108	2	Washer, Lock				
MU-14	1	Terminal					EB-7806	1	Screw, Spring, Head				
MU-28	1	Stud, Terminal, 5/16-24					EB-7807	1	Screw, Spring, Shaft				
MU-31	1	Bushing, Ins., Term. Stud					EB-7819S	1	Sleeve, Compression				
MU-37	1	Washer, Plain, Term. Stud. 5/16					EB-8503	1	Head, Drive				
MU-39	1	Washer, Ins., Term. Stud, Inner					EB-8705	1	Spring, Drive				
MZ-12†	2	Brush, Insulated					EB-8734	1	Ring, Take up				
MZ-30A	1	Insulation, Field Connection					EBA-211	1	Shaft & Pinion				
MZ-32	2	Connector, Field Coil					MZ-126	1	Washer, Thrust				
MZ-38A	4	Screw, Pole Shoe					MZ-127	1	Washer, Felt				
MZ-74	1	Equalizer					MZ-128	1	Gasket, Int. Bearing				
MZ-1007	1	Coil, Field, U.L.					MZ-1024J	-	Band, Cover				
MZ-1008	1	Coil, Field, L.R.					MZ-1125	1	Bearing Assy., Intermediate				
MZ-1009	1	Coil, Field, L.L.					MZ-44A	1	Bearing, Absorbent Bronze				
MZ-1010	1	Coil, Field, U.R.					PS-1163	1	Housing Assy., Pinion				
X-1014	1	Washer, Lock, Term. Stud, 5/16					MG-77A	1	Bearing, Absorbent Bronze				
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					X-195	4	Washer, Lock, Int. Bearing Sc., #8				
X-1014	1	Washer, Lock, Term. Stud, 5/16					X-308	1	Screw, Cover Band, Rd. hd., #10-32x1 3/8				
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					X-342	4	Screw, Attaching, Housing, Flat hd., #10-32x7/8				
Comm. End Head Assembly & Parts Used With						8X-794	1	Nut, Cover Band, Square, #10-32					
MZ-2002B	1	Head Assy., Comm. End					8X-878	4	Screw, Attaching, Int. Bearing, Fil. hd., #8-32x7/16				
MZ-16	2	Holder, Brush					1 2 3 4 5						
MZ-19	4	Spring, Brush					(Issued 3-8-44)						
MZ-1034†	2	Brush, Grounded											
8X-532	4	Rivet, Brush Holder, Oval hd., Tub., 1/8x1/4											
X-544	4	Washer, Lock, Attaching, C.E. Head, #10											
X-902	4	Screw, Attaching, C.E. Head, Fil. hd., #10-32x3/8											
Armature Assembly & Parts Used With													
MU-54	2	Washer, Arm. Thrust, Comm. End & Intermediate											
MZ-2049	1	Armature Assy.											
MZ-51	1	Spacer, Bearing Thrust											
X-261	1	Key, Woodruff, #6											
		1	2	3	4	5							

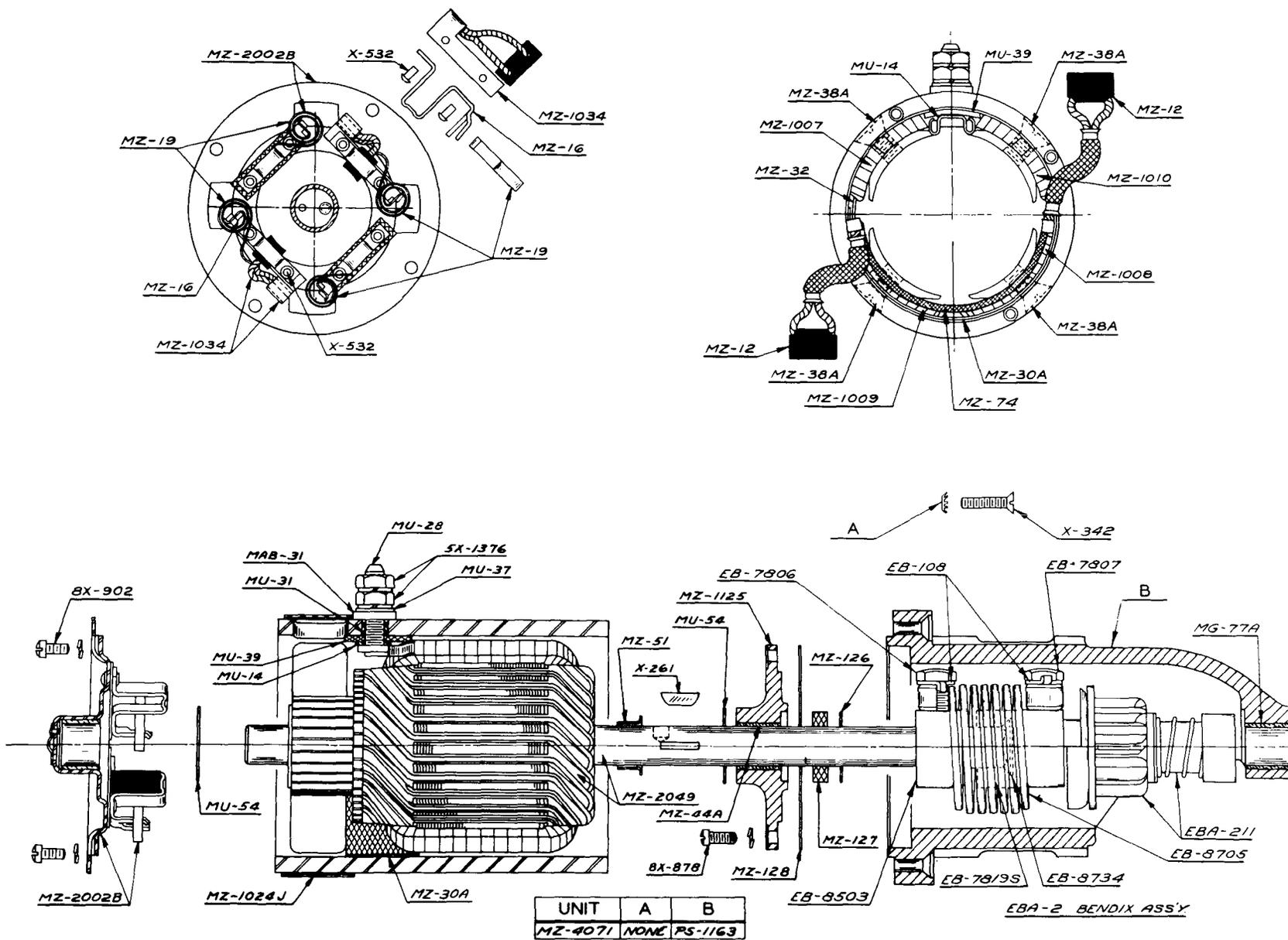
† Brush Set, Service, MZ-2012S.

Printed in U. S. A.

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking sub-parts the complete part can be assembled as needed."

File in
Equipment & Parts List Binder

MZ-4071 STARTING MOTOR ILLUSTRATION



UNIT	A	B
MZ-4071	NONE	PS-1163

EBA-2 BENDIX ASS'Y

ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ-4072 STARTING MOTOR PARTS LIST

MZ-4072

Frame & Field Assembly With Terminal Stud & Parts Used With				Miscellaneous Parts									
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part				
		1	2	3	4	5			1	2	3	4	5
(MZ-2001)	1	Frame & Field Assy.					EBA-4	1	Bendix Drive Assy.				
MAB-31	1	Washer, Ins., Term. Stud, Outer					EB-108	2	Washer, Lock				
MU-14	1	Terminal					EB-7819S	1	Sleeve, Compression				
MU-28	1	Stud, Terminal, 5/16-24					EB-8503	1	Head, Drive				
MU-31	1	Bushing, Ins., Term. Stud					EB-8506	1	Screw, Spring, Head				
MU-37	1	Washer, Plain, Term. Stud, 5/16					EB-8507	1	Screw, Spring, Shaft				
MU-39	1	Washer, Ins., Term. Stud, Inner					EB-8734	1	Ring, Take up				
MZ-12†	2	Brush, Insulated					EB-9911	1	Shaft & Pinion				
MZ-30A	1	Insulation, Field Connection					EBA-405	1	Spring, Drive				
MZ-32	2	Connector, Field Coil					MZ-1024G	1	Band, Cover				
MZ-38A	4	Screw, Pole Shoe					MZ-1129	1	Head Assy., Drive End				
MZ-74	1	Equalizer					MZ-44A	1	Bearing, Absorbent Bronze				
MZ-1007	1	Coil, Field, U.L.					8X-119	4	Screw, Attaching, Drive End Head, Fil. hd., #10-32x1/2				
MZ-1008	1	Coil, Field, L.R.					X-196	4	Washer, Lock, D.E. Head Sc., #10				
MZ-1009	1	Coil, Field, L.L.					X-308	1	Screw, Cover Band, Rd. hd., #10-32x1 3/8				
MZ-1010	1	Coil, Field, U.R.					8X-794	1	Nut, Cover Band, Square, #10-32				
X-1014	1	Washer, Lock, Term. Stud, 5/16							1 2 3 4 5				
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24							(Issued 3-8-44)				
X-1014	1	Washer, Lock, Term. Stud, 5/16											
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24											
Comm. End Head Assembly & Parts Used With													
MZ-2002B	1	Head Assy., Comm. End											
MZ-16	2	Holder, Brush											
MZ-19	4	Spring, Brush											
MZ-1034†	2	Brush, Grounded											
8X-532	4	Rivet, Brush Holder, Oval hd., Tub., 1/8x1/4											
X-544	4	Washer, Lock, Attaching, C.E. Head, #10											
X-902	4	Screw, Attaching, C.E. Head, Fil. hd., #10-32x3/8											
Armature Assembly & Parts Used With													
MU-54	2	Washer, Arm. Thrust, Comm. End & Intermediate											
MZ-2053	1	Armature Assy.											
MZ-35	1	Spacer, Bearing Thrust											
X-261	1	Key, Woodruff, #6											
		1	2	3	4	5							

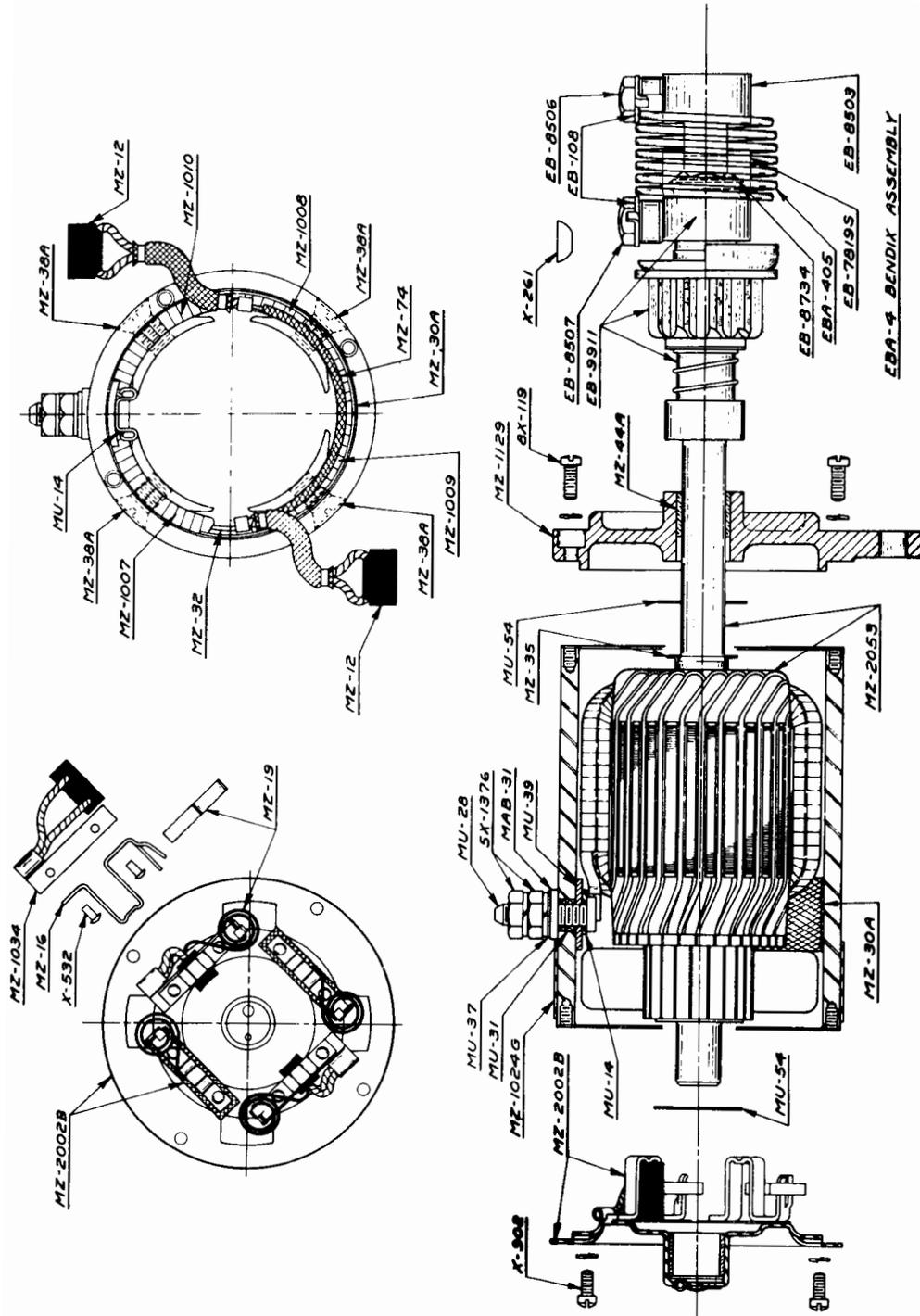
† Brush Set, Service, MZ-2012S.

Printed in U. S. A.

"NOTE: Where part numbers are shown in parenthesis they are for reference only. By stocking such parts the complete part can be assembled as needed."

File in
Equipment & Parts List Binder

MZ-4072 STARTING MOTOR ILLUSTRATION



ELECTRIC AUTO-LITE EQUIPMENT & PARTS LISTS

MZ-4073 STARTING MOTOR PARTS LIST

MZ-4073

Frame & Field Assembly With Terminal Stud & Parts Used With						Miscellaneous Parts							
Part No.	No. Used	Name of Part					Part No.	No. Used	Name of Part				
		1	2	3	4	5			1	2	3	4	5
(MZ-2001)	1	Frame & Field Assy.					EBA-6	1	Bendix Drive Assy.				
MAB-31	1	Washer, Ins., Term. Stud, Outer					EB-6501	1	Shaft				
MU-14	1	Terminal					EB-6502	1	Stop				
MU-28	1	Stud, Terminal, 5/16-24					EB-6504	1	Pinion				
MU-31	1	Bushing, Ins., Term. Stud					EB-6505	1	Spring, Drive				
MU-37	1	Washer, Plain, Term. Stud, 5/16					EB-6513	1	Spring, Anti-Drift				
MU-39	1	Washer, Ins., Term. Stud, Inner					EB-6526	1	Sleeve, Anti-Drift Spring				
MZ-12*	2	Brush, Insulated					EB-6529	1	Collar, Spacing				
MZ-30A	1	Insulation, Field Connection					EB-6823	2	Washer, Thrust				
MZ-32	2	Connector, Field Coil					EB-6824	1	Support, Drive Spring				
MZ-38A	4	Screw, Pole Shoe					EB-6825	1	Spring, Meshing				
MZ-74	1	Equalizer					EB-6827	1	Washer, Pinion				
MZ-1007	1	Coil, Field, U.L.					EB-6828	1	Nut, Hex., Castellated				
MZ-1008	1	Coil, Field, L.R.					MZ-1024	1	Band, Cover				
MZ-1009	1	Coil, Field, L.L.					MZ-1114	1	Head Assy., Drive End				
MZ-1010	1	Coil, Field, U.R.					MAK-39	1	Bearing, Absorbent Bronze				
X-1014	1	Washer, Lock, Term. Stud, 5/16					X-119	4	Screw, Attaching, Drive End Head, Fil. hd., #10-32x1/2				
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					X-196	4	Washer, Lock, D.E. Head Sc., #10-32x1 3/8				
X-1014	1	Washer, Lock, Terminal Stud, 5/16					X-308	1	Screw, Cover Band, Rd. hd., #10-32x1 3/8				
5X-1376	1	Nut, Term. Stud, Hex., 5/16-24					8X-794	1	Nut, Cover Band, Square, #10-32				
<u>Comm. End Head Assembly & Parts Used With</u>						(Issued 4-26-44)							
MZ-2002B	1	Head Assy., Comm. End											
MZ-16	2	Holder, Brush											
MZ-19	4	Spring, Brush											
MZ-1034*	2	Brush, Grounded											
8X-532	4	Rivet, Brush Holder											
X-544	4	Washer, Lock, Attaching, C.E. Head, #10											
8X-902	4	Screw, Attaching, C.E. Head, Fil. hd., #10-32x3/8											
<u>Armature Assembly & Parts Used With</u>													
MAK-54	1	Washer, Thrust											
MU-54	1	Washer, Thrust											
MZ-2113	1	Armature											
		1	2	3	4	5							

* Brush Set, Service, MZ-2012S.

Printed in U. S. A.

"NOTE: Where part numbers are shown in parenthesis they are for reference only. In stocking sub-parts the complete part can be assembled as needed."

File in
Equipment & Parts List Binder

