

## Starting Motor Parts, Mounting Groups And Assemblies By Engine Model

MODEL	DESCRIPTION	PART NO.
ABN, ACN, BKN, ADH, AKN	Starting motor (Obsolete) .....	YA5B
ACN, BKN	12 volt starting motor (Obsolete) .....	YA27
ACN, BKN	6 volt starting motor (Obsolete) .....	YA29
ACN, BKN	12 volt starting motor .....	YA50
ACN, BKN	Starting motor assembly .....	YA63
AEH, AEHS, AFH, AGH, AHH	Starting motor (Obsolete) .....	YA5B
AEN	Starting motor (Obsolete) .....	YA16
AENL	Starting motor (Obsolete) .....	YA5B
AENL	12 volt starting motor (Obsolete) .....	YA27
AENL	6 volt starting motor (Obsolete) .....	YA29
AENL	12 volt starting motor .....	YA50
AENL	Starter motor assembly (Obsolete) .....	YA58
AENL	Starter motor assembly .....	YA63
AGND	12 volt starting motor (Obsolete) .....	YA27A
AGND	12 volt starting motor (Obsolete) .....	YA27B
AGND	12 volt starting motor with solenoid switch (Obsolete) .....	YA35
AGND	12 volt starting motor with solenoid switch .....	YA39
S10D, S12D, S14D	12 volt starting motor with solenoid switch .....	YA50
S10D, S12D, S14D	Starter motor assembly (Obsolete) .....	YA58
S10D, S12D, S14D	Starting motor assembly .....	YA63
TE, TF	Starting motor assembly (Obsolete) .....	YA10
TE, TF	Starting motor assembly (Obsolete) .....	YA19
TE, TF	6 volt starting motor (Obsolete) .....	YA19-2
TE, TF	12 volt starting motor (Repl. by YA54) .....	YA18-2
TH, THD, TJD	Starting motor (Obsolete) .....	YA19
TH, THD, TJD	6 volt starting motor (Obsolete) .....	YA19-2
TH, THD, TJD	12 volt starting motor (Repl. by YA54) .....	YA18-2
TH, THD, TJD	12 volt starting motor (Repl. by YA32A) .....	YA32
TH, THD, TJD	12 volt starting motor (Repl. by YA32B) .....	YA32A
TH, THD, TJD	12 volt starting motor with solenoid switch .....	YA32B

## Starting Motor Parts, Mounting Groups And Assemblies By Engine Model (Cont.)

MODEL	DESCRIPTION	PART NO.
THD, TJD	Starter motor assembly (Obsolete) .....	YA54
THD, TJD	Starter motor assembly .....	YA55
THD, TJD	Starter motor assembly .....	YA54A
THD, TJD	Starter motor assembly .....	YA55A
TJD	Starter motor assembly .....	YA61
VE4, VF4, VE4D, VF4D	Starting motor (Obsolete) .....	YA10
VE4, VF4, VE4D, VF4D	6 volt starting motor (Obsolete) .....	YA19-3S1
VE4, VF4, VE4D, VF4D	12 volt starting motor (Obsolete) .....	YA18-3S1
VE4, VF4, VE4D, VF4D	Starter motor assembly .....	YA54A
VE4, VF4, VE4D, VF4D	Starter motor assembly .....	YA55A
VG4D, VH4D	6 volt starting motor (Obsolete) .....	YA19-3S1
VG4D, VH4D	12 volt starting motor (Obsolete) .....	YA18-3S1
VG4D, VH4D	Starter motor with overrunning clutch and solenoid switch .....	YA53A
VG4D, VH4D	Starter motor with overrunning clutch and solenoid switch .....	YA53B
VG4D, VH4D	Starter motor with overrunning clutch and solenoid switch .....	YA53B1
VG4D, VH4D	Starter motor assembly .....	YA54A
VG4D, VH4D	Starter motor assembly .....	YA55A
VG4D, VH4D	Starter motor assembly .....	YA61
VH, VH4D	12 volt starting motor (Obsolete) .....	YA45
V465D	12 volt starting motor (Obsolete) .....	YA41
V465D	12 volt starting motor .....	YA41A
V465D	Starter motor assembly .....	YA60
W2-1230, W2-1235, W2-1250	Starter motor .....	YA53A1
W2-1230, W2-1235, W2-1250	Starter motor .....	YA53B
W2-1230, W2-1235, W2-1250	Starter motor .....	YA53B1
W2-1230, W2-1235, W2-1250	Starter motor assembly .....	YA59
W2-880	12 volt starting motor with solenoid switch .....	YA32B

---

## Starting Motor Mounting Groups And Assemblies By Engine Model

MODEL	DESCRIPTION	PART NO.
ACN, BKN	Starting motor group .....	EEA111
AENL	Starting motor group .....	EEA105
AGND	Starting motor mounting .....	YA35, YA39
S10D, S12D, S14D	Starting motor mounting .....	EEA106
THD, TJD	Starting motor group .....	EEA100
THD, TJD	Starting motor with solenoid switch .....	YA32B
VE4D, VF4D, VH4D	Starting motor group .....	EEA101
VE4D, VF4D, VH4D	Solenoid starting .....	ETA101
VG4D	Starting motor mounting .....	EEA102
VG4D	Solenoid starting .....	ETA102
W2-1250	Starting motor with solenoid switch .....	EEA122
W2-1250	Starting motor .....	EEA120
W2-880	Starting motor group .....	EEA100
W2-880	Solenoid starting .....	ETA101
W4-1770	Starting motor group .....	EEA101
W4-1770	Starting motor group .....	EEA109

---

**Starting Motor Parts, Mounting Groups And Assemblies  
By Engine Model (Cont.)**

<b>MODEL</b>	<b>DESCRIPTION</b>	<b>PART NO.</b>
W2-880	Starting motor assembly .....	YA61
W4-1770	Starter motor .....	YA53A
W4-1770	Starter motor .....	YA53B
W4-1770	Starter motor .....	YA53B1
W4-1770	Starter motor assembly .....	YA54A
W4-1770	Starter motor assembly .....	YA55A
W4-1770	Starter motor assembly .....	YA61

---

**Starting Motor Parts, Mounting Groups And Assemblies  
By Part Number (Cont.)**

<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>MODEL</b>
YA55	Starter motor assembly .....	TH, TJD
YA54A	Starter motor assembly .....	TH, TJD, VH4D, VG4D, VE-VF, W4-1770, W2-880
YA55A	Starter motor assembly .....	TH, TJD, VH4D, VG4D, VE-VF, W4-1770, W2-880
YA58	Starter motor assembly .....	AENL, S10D, S12D, S14D
YA59	Starter motor assembly .....	W2-1230, W2-1235, W2-1250
YA60	Starter motor assembly with overrunning clutch and solenoid switch .....	V465D
YA61	Starter motor assembly .....	VG4D, TJD, W2-880, VH4D, W4-1770
YA63	Starter motor assembly .....	ACN, BKN, AENL, S10D, S12D, S14D

---

## Starting Motor Parts, Mounting Groups And Assemblies By Part Number

PART NO.	DESCRIPTION	MODEL
YA5B	Starting motor .....	ABN, AKN, ACN, BKN, AENL, ADH, AEH, AEHS, AFH, AGH, AHH
YA10	Starting motor .....	TE, TF, VE4D, VF4D
YA16	Starting motor .....	AEN
YA19	Starting motor .....	TE, TF, TH, TJD
YA19-2	6 volt starting motor .....	TE, TF, TH, TJD
YA18-2	12 volt starting motor .....	TE, TF, TH, TJD
YA19-3S1	6 volt starting motor .....	VE4, VF4, VG4D, VH4D
YA18-3S1	12 volt starting motor .....	VE4, VF4, VG4D, VH4D
YA27	12 volt starting motor .....	AENL, ACN, BKN
YA29	6 volt starting motor .....	AENL, ACN, BKN
YA27A	12 volt starting motor .....	AGND
YA27B	12 volt starting motor .....	AGND
YA32	12 volt starting motor .....	THD, TJD
YA32A	12 volt starting motor .....	THD, TJD
YA32B	12 volt starting motor .....	THD, TJD, W2-880
YA35	12 volt starting motor .....	AGND
YA39	12 volt starting motor .....	AGND
YA41	12 volt starting motor .....	V465D
YA41A	12 volt starting motor .....	V465D
YA45	12 volt starting motor .....	VH4, VH4D
YA50	12 volt starting motor .....	ACN, BKN, AENL, S10D, S12D, S14D
YA53A	Starter motor with overrunning clutch and solenoid switch .....	W4-1770, VG4D, VH4D
YA53A1	Starter motor with overrunning clutch and solenoid switch .....	W2-1230, W2-1235, W2-1250
YA53B	Starter motor with overrunning clutch and solenoid switch .....	W2-1230, W2-1235, W2-1250, W4-1770, VG4D, VH4D
YA53B1	Starter motor with overrunning clutch and solenoid switch .....	W2-1230, W2-1235, W2-1250, W4-1770, VG4D, VH4D
YA54	Starter motor assembly .....	TH, TJD

---

## Control Panel Assembly Groups By Engine Model

MODEL	DESCRIPTION	PART NO.
ACN, BKN	Control panel group .....	EPC100
AENL	Control panel group .....	EPC114
AGND	Control panel mounting .....	VE262-2
S10D, S12D, S14D	Control panel group .....	EPC119
THD, TJD	Control panel mounting .....	VE566D1
VE4D, VF4D, VH4D	Control panel group .....	EPC125
VG4D	Control panel group .....	EPC157
W2-1230, W2-1235, W2-1250	Control panel group .....	EPC244, 245, 251
W2-880	Control panel group .....	EPC237, 238
W4-1770	Control panel group .....	EPC231

---

## Starting Motor Mounting Groups And Assemblies By Part Number

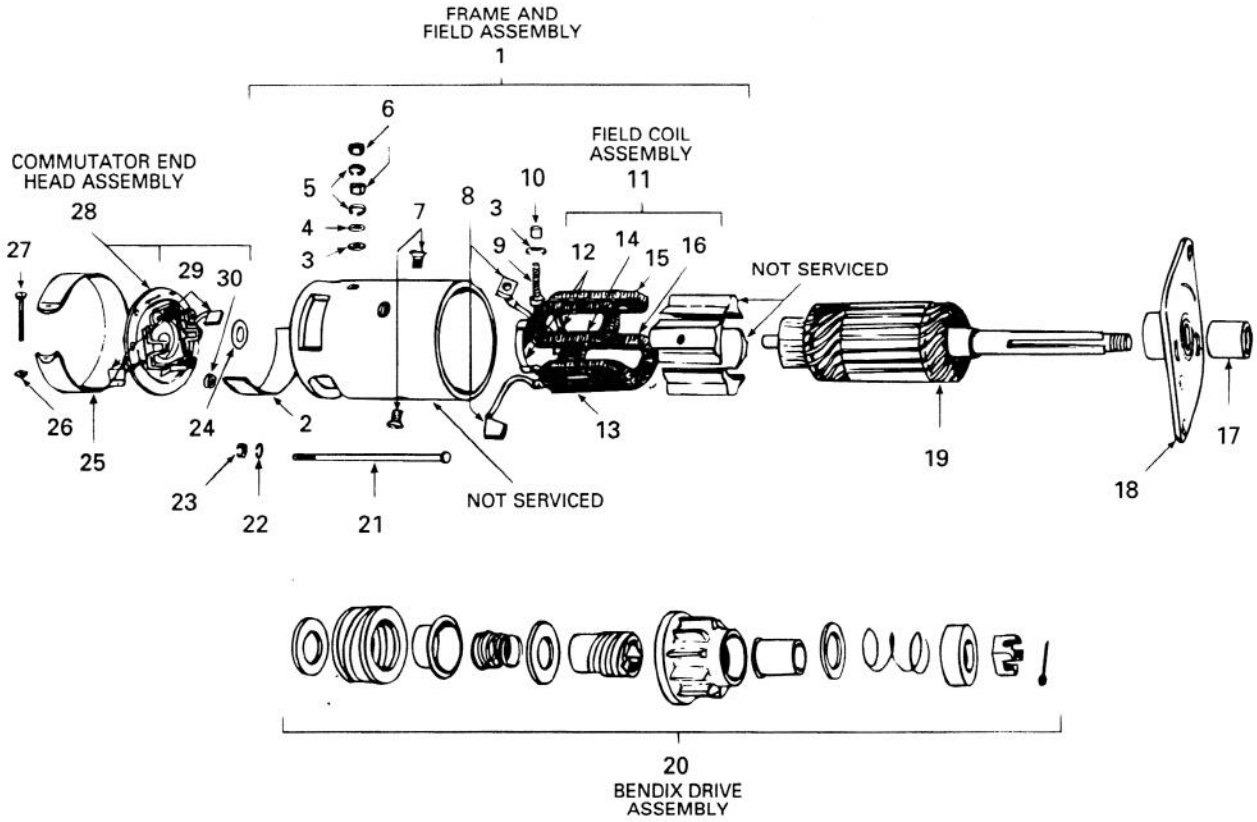
<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>MODEL</b>
EEA100	Starting motor group .....	THD, TJD, W2-880
EEA101	Starting motor group .....	VE4D, VF4D, VH4D, W4-1770
EEA102	Starting motor group .....	VG4D
EEA105	Starting motor group .....	AENL
EEA106	Starting motor group .....	S10D, S12D, S14D
EEA109	Starting motor group .....	W4-1770
EEA111	Starting motor group .....	ACN, BKN
EEA120	Starting motor group .....	W2-1250
EEA122	Starting motor with solenoid switch .....	W2-1250
YA32B	Starting motor with solenoid switch .....	W2-880, THD, TJD
YA39, YA35	Starting motor mounting group .....	AGND
ETA101	Solenoid starting .....	VE4D, VF4D, VH4D, W2-880
ETA102	Solenoid starting .....	VG4D



## Control Panel Assembly Groups By Part Number

PART NO.	DESCRIPTION	MODEL
EPC100	Control panel group .....	ACN, BKN
EPC114	Control panel group .....	AENL
EPC119	Control panel group .....	S10D, S12D, S14D
EPC125	Control panel group .....	VE4D, VF4D, VH4D
EPC157	Control panel group .....	VG4D
EPC231	Control panel group .....	W4-1770
EPC237, 238	Control panel group .....	W2-880
EPC244, 245, 251	Control panel group .....	W2-1230, W2-1235, W2-1250
VE262-2	Control panel mounting .....	AGND
VE556D1	Control panel mounting .....	THD, TJD

**YA5B (6 Volt) Starting Motor, 3-5/8" Diameter,  
Prestolite No. MAK4008**

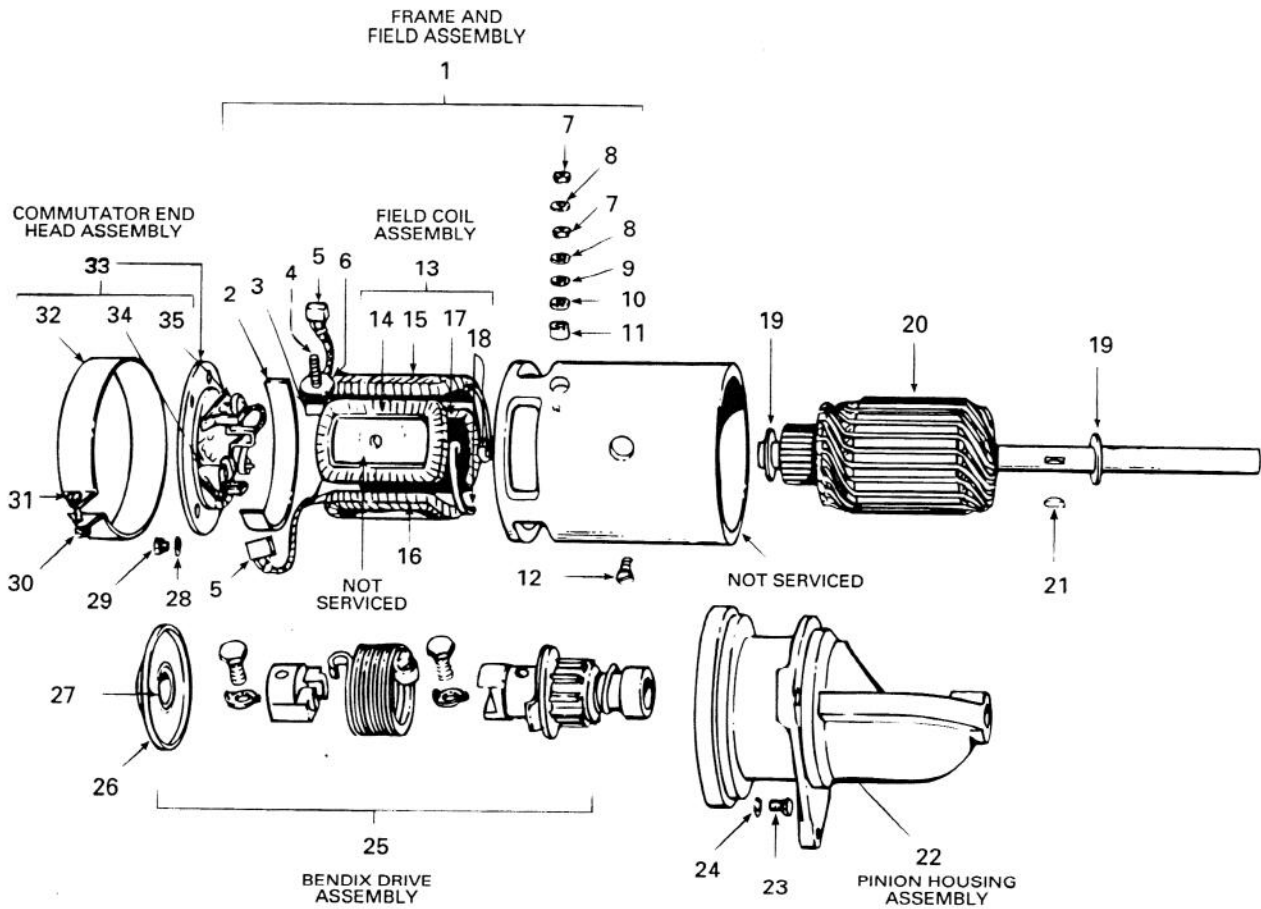


## YA5B Starting Motor

USE WITH MODELS AENL, ACN, BKN, ABN, AKN, ADH, AEH, AEHS, AFH, AGH, AHH (see pg. 1)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	* — — —	Frame and field assembly (includes 2-16) .....	1	21	28MAK20S	Thru bolt package (includes 22, 23) .....	2
2	†††	Insulation .....	1	22	* — — —	Lock washer, no. 10 .....	2
3	†††	Insulating washer .....	2	23	* — — —	Nut, no. 10-32 thread .....	2
4	†††	Plain washer .....	2	24	††	Thrust washer .....	1
5	* — — —	Lock washer, 1/4" .....	2	25	28GAS1024F	Cover band .....	1
6	* — — —	Nut, 1/4"-20 thread .....	2	26	* — — —	Nut, no. 10-32 thread .....	1
7	* — — —	Screw .....	4	27	* — — —	Screw, no. 10-32 thread x 1-1/2" long .....	1
8	†	Brush .....	2	28	28MAK3002	Commutator end head assembly (include 29, 30) .....	1
9	†††	Terminal stud .....	1	29	†	Grounded brush .....	2
10	†††	Insulating bushing .....	1	—	††	Thrust washer (not illustrated) .....	1
11	28MAK3005S	Field coil package (includes 12-16) (NLA) .....	1	30	28MAK19S	Brush spring set (NLA) .....	1
12	* — — —	Connector .....	2	—	* — — —	Felt (not illustrated) .....	1
13	* — — —	Field coil, L.R. ....	1	* Not serviced separately.  † MAK2012AS brush set. †† P90-294 thrust washer package. ††† P90-459 terminal stud package.			
14	* — — —	Field coil, U.R. ....	1				
15	* — — —	Field coil, U.L. ....	1				
16	* — — —	Field coil, L.L. ....	1				
17	28MAK39	Bronze bearing .....	1				
—	28X386	Oiler (not illustrated) .....	1				
18	28MAK1048	Drive end head assembly (includes item 17) (NLA) ...	1				
19	28MAK2006	Armature .....	1				
20	28EBA10	Bendix drive, Eclipse no. A1535 .....	1				

# YA10 Starting Motor, Prestolite No. MZ-4175



## YA10 Starting Motor

USE WITH MODELS TE, TF, VE4D, VF4D (see pg. 3)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	* ———	Frame and field assembly (includes 2-18) .....	1	—	* ———	Bronze bearing (not illustrated) .....	1
2	28MZ2012AS	Insulation .....	1	23	* ———	Screw, no. 10-32 thread x 31/32" long .....	4
3	††	Terminal .....	1	24	* ———	Lock washer, no. 10 .....	4
4	††	Terminal stud .....	1	25	93-480396	Bendix drive assembly (replaces EBA-36A and EBB-36A) .....	1
5	28MZ12	Insulated brush .....	2	26	28MAB2040	Bearing and plate assembly (includes item 27) .....	1
6	††	Insulating washer .....	1	27	* ———	Bronze bearing .....	1
7	* ———	Nut, 5/16"-24 thread .....	2	28	* ———	Lockwasher, no. 10 .....	4
8	* ———	Lockwasher, 5/16" .....	2	29	* ———	Screw, no. 10-32 thread x 3/8" long .....	4
9	††	Plain washer, 5/16" .....	1	30	* ———	Nut, no. 10-32 .....	1
10	††	Insulating washer .....	1	31	* ———	Screw, no. 10-32 thread x 1-1/2" long, .....	1
11	††	Insulating bushing .....	1	32	28MZ24A	Cover band .....	1
12	* ———	Screw .....	4	33	28MZ2002F	Commutator end head assembly (includes felt; replaces MZ2002B) .....	1
—	* ———	Equalizer (not illustrated) .....	1	—	* ———	Felt (not illustrated) .....	1
13	28MZ3005AS	Field coil assembly (includes 14-18) .....	1	34	†	Grounded brush .....	2
14	* ———	Field coil, U.R. .....	1	35	28MZ19S	Brush spring .....	4
15	* ———	Field coil, U.L. .....	1				
16	* ———	Field coil, L.R. .....	1				
17	* ———	Field coil, L.L. .....	1				
18	* ———	Connector .....	2				
19	†††	Thrust washer .....	2				
20	28MZ2089	Armature assembly (includes thrust spacer) .....	1				
—	* ———	Thrust spacer (not illustrated) .....	1				
21	* ———	No. 6 Woodruff key .....	1				
22	28PS1214	Pinion housing assembly (includes dowel pin and bronze bearing) (NLA) .....	1				
—	* ———	Dowel pin (not illustrated) .....	1				

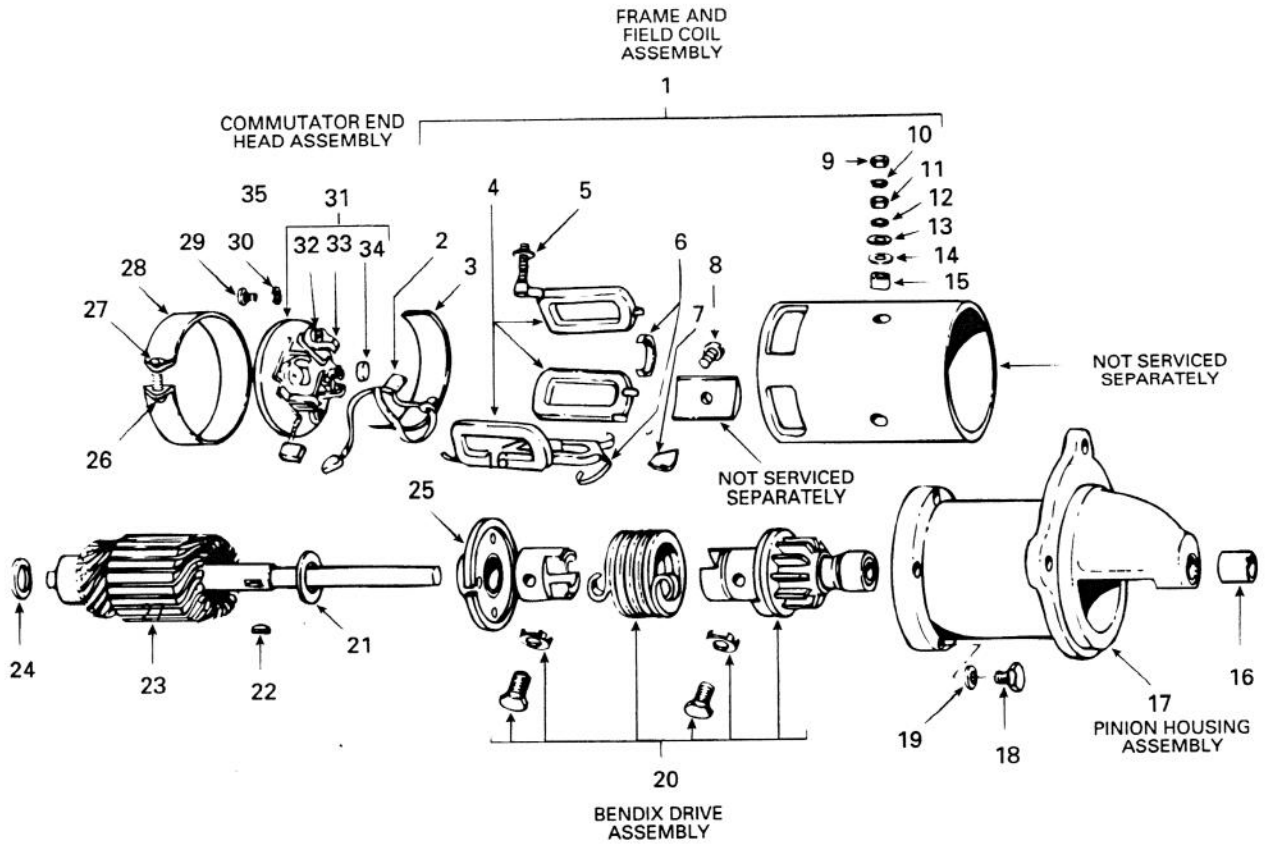
\* Not serviced separately.

† 28MZ2012AS brush set.

†† 28P90-368 terminal stud package.

††† 28P90-263 armature thrust washer package.

# YA16 (24 Volt) Starting Motor, Prestolite No. MBP-4016T



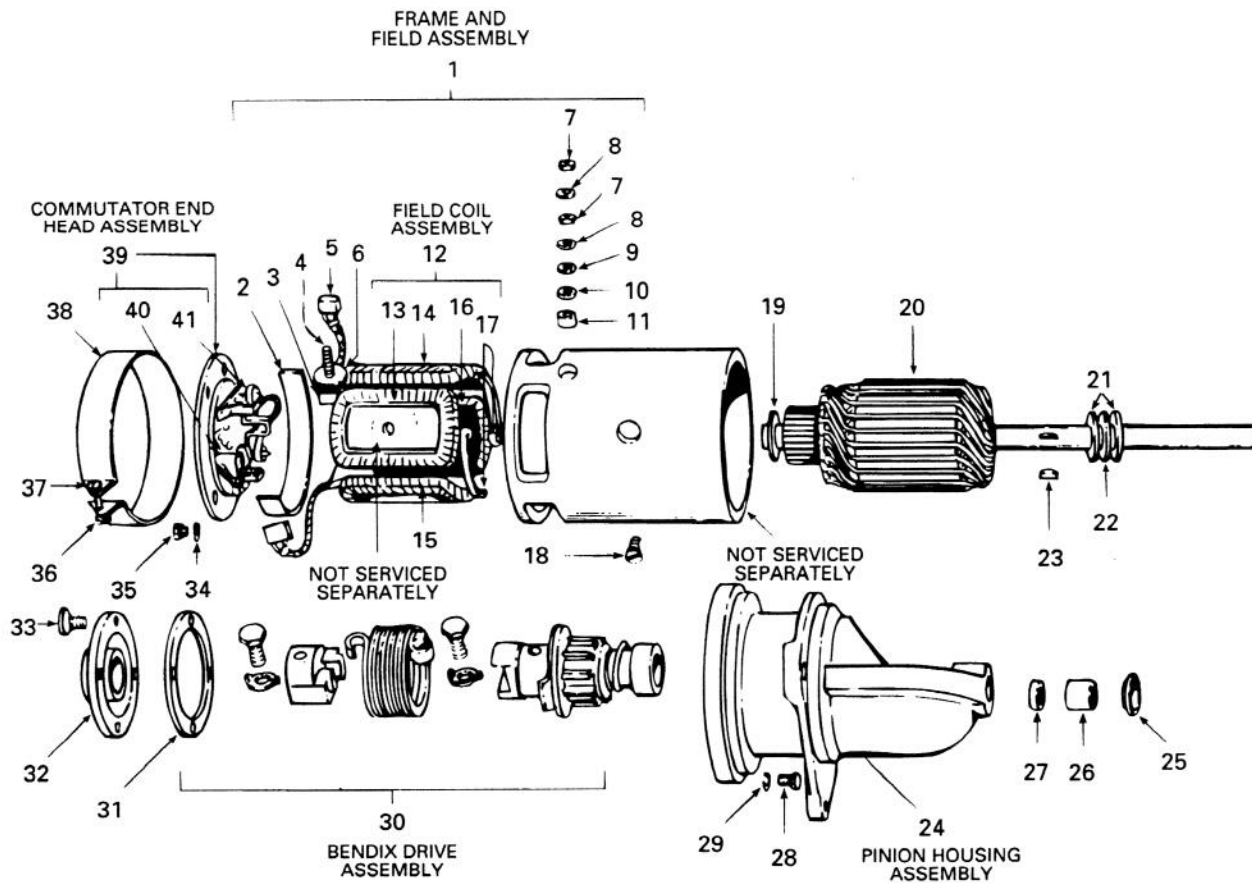
## YA16 Starting Motor

USE WITH MODEL AEN (see pg. 5)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	MBP2001BS	Frame and field assembly (includes 2-15) .....	1	20	EBB34A	Bendix drive assembly, Eclipse no. A3447 .....	1
2	MBW2012CS	Brush set (includes item 33) .....	1	21	P90-540	Thrust washer package (includes item 24) .....	1
3	* — — —	Insulation .....	1	22	* — — —	No. 6 Woodruff key .....	1
4	* — — —	Field coil assembly .....	1	23	MBP-3049FT	Armature assembly .....	1
5	* — — —	Terminal stud .....	1	24	* — — —	Thrust washer .....	1
6	* — — —	Connector .....	2	25	MAB2040D	Bearing assembly (includes item 16) .....	1
7	* — — —	Insulation .....	1	26	* — — —	Nut, no. 10-32 thread .....	1
8	* — — —	Screw .....	4	27	* — — —	Screw, no. 10-32 thread x 1-1/2" long .....	1
9	* — — —	Nut, 5/16"-24 thread .....	1	28	MZ24U	Cover band .....	1
10	* — — —	Lock washer, 5/16" .....	1	29	* — — —	Screw, no. 10-32 thread x 3/8" long .....	4
11	* — — —	Nut .....	1	30	* — — —	Lock washer, no. 10 .....	4
12	* — — —	Lock washer .....	1	31	MBP2002B	Commutator end head assembly (includes 33, 34) .....	1
13	* — — —	Plain washer .....	1	32	MZ19CS	Brush spring .....	4
14	* — — —	Insulating washer .....	1	33	* — — —	Grounded brush .....	2
15	* — — —	Insulating bushing .....	1	34	* — — —	Felt .....	1
16	MG77A	Bronze bearing .....	1				
17	PS1214C	Pinion housing assembly (includes dowel pin) .....	1				
—	* — — —	Dowel pin (not illustrated) .....	1				
18	* — — —	Screw, no. 10-32 thread x 31/32" long .....	4				
19	* — — —	Lock washer, no. 10 .....	4				

\* Not serviced separately.

**YA19 Starting Motor, Autolite No. MZ-4184**





## YA19 Starting Motor

USE WITH MODELS TE, TF, TH, TJD (see pg. 7)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	* — — —	Frame and field assembly (includes 2-18) .....	1	26	28MZ364	Bronze bearing .....	1
2	* — — —	Insulation .....	1	27	28XA1481	Oil seal .....	1
3	††	Terminal .....	1	28	* — — —	Screw, no. 10-32 thread x 31/32" long .....	4
4	††	Terminal stud .....	1	29	* — — —	Lock washer, no. 10 .....	4
5	†	Insulated brush .....	2	30	93-480396	Bendix drive assembly .....	1
6	††	Insulating washer .....	1	31	28MZ359	Gasket (NLA) .....	1
7	* — — —	Nut, 5/16"-24 thread .....	2	32	28MZ1360A	Bearing plate assembly .....	1
8	* — — —	Lock washer, 5/16" .....	2	33	* — — —	Screw, no. 8-32 thread x 3/8" long (NLA) .....	4
9	††	Plain washer, 5/16" .....	1	34	* — — —	Lock washer, no. 10 .....	4
10	††	Insulating washer .....	1	35	* — — —	Screw, no. 10-32 thread x 3/8" long .....	4
11	††	Insulating bushing .....	1	36	* — — —	Nut, no. 10-32 thread .....	1
12	28MZ1005AS	Field coil assembly (includes 13-17) .....	1	37	* — — —	Screw, no. 10-32 thread x 1-1/2" long .....	1
13	* — — —	Field coil, U.R. ....	1	38	28MZ24A	Cover band .....	1
14	* — — —	Field coil, U.L. ....	1	39	28MZ2002F	Commutator end head (includes 40, 41; includes felt) .....	1
15	* — — —	Field coil, L.R. ....	1	40	†	Grounded brush .....	2
16	* — — —	Field coil, L.L. ....	1	41	28MZ19S	Brush spring set .....	1
17	* — — —	Connector .....	2	—	* — — —	Felt (not illustrated) .....	1
18	* — — —	Screw .....	4				
19	†††	Thrust washer .....	2				
20	28MBE2366	Armature assembly (replaces MZ2366) .....	1				
21	†††	Thrust washer .....	2				
22	†††	Spring washer .....	1				
23	* — — —	No. 6 Woodruff key .....	1				
24	28PS2330BS	Pinion housing assembly (includes 25-27; replaces PS1330C) .....	1				
25	* — — —	Bearing cap .....	1				

\* Not serviced separately.

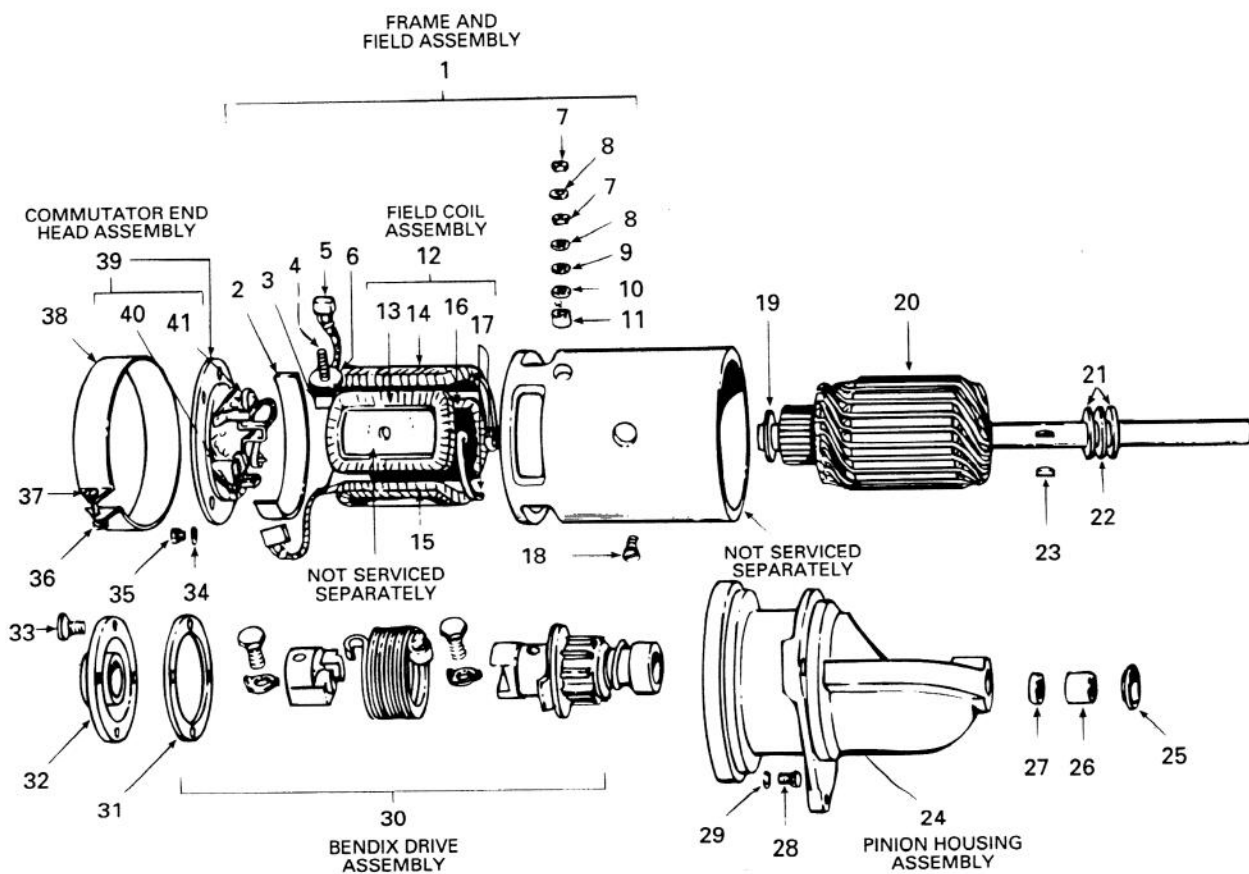
† 28MZ2012AS brush set for YA19.

28MBG2012DS brush set for YA18-2.

†† 28P90-716 terminal stud package for YA19.

††† 28P90-448 armature thrust washer package.

**YA19-2 (6 Volt), YA18-2 (12 Volt) Starting Motors,  
Prestolite No. MZ-4194 And MBG4118**

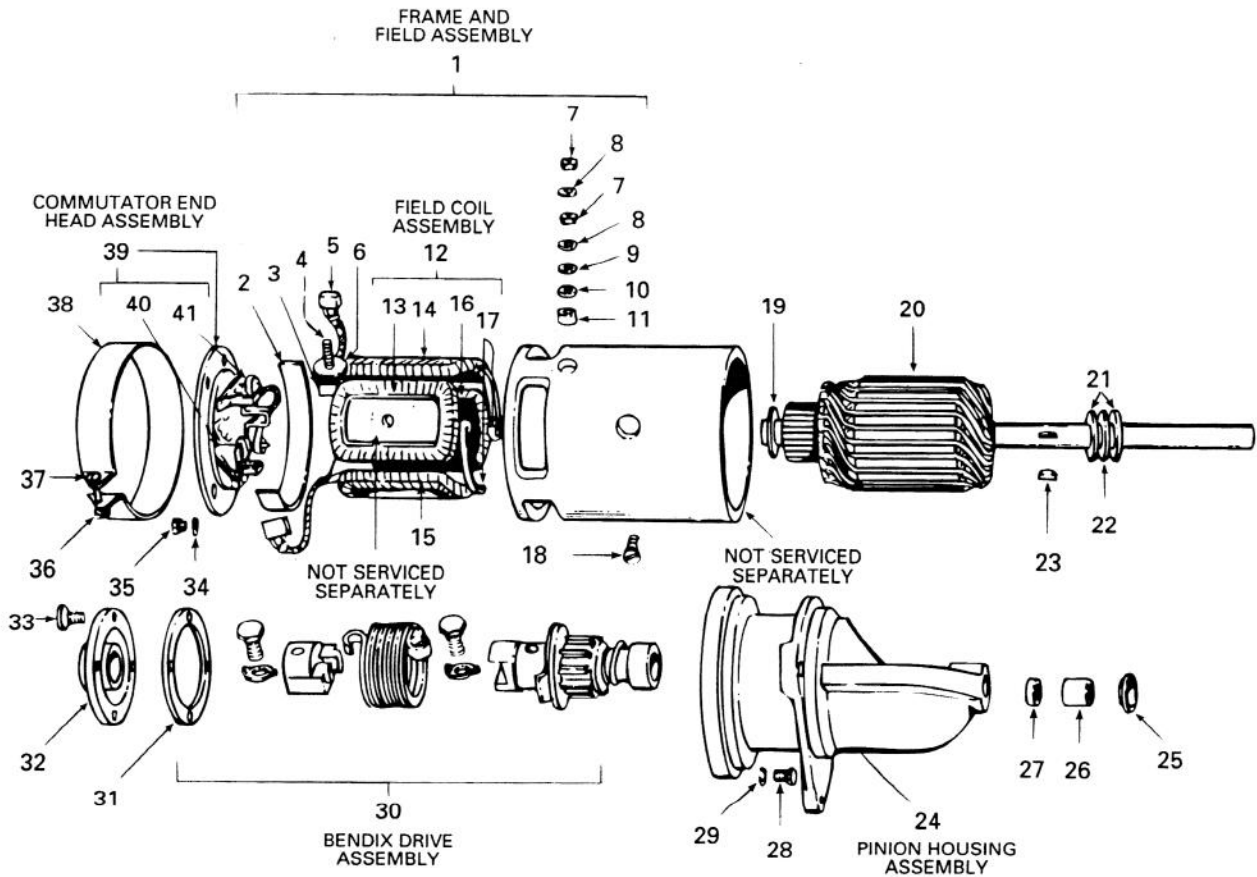


## YA19-2, YA18-2 Starting Motors

USE WITH MODELS TH, TJD, TE, TF (see pg. 9)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	* ———	Frame and field assembly (includes 2-18) .....	1	25	* ———	Bearing cap .....	1
2	* ———	Insulation .....	1	26	28MZ364	Bronze bearing .....	1
3	††	Terminal .....	1	27	28XA1481	Oil seal .....	1
4	††	Terminal stud .....	1	28	* ———	Screw, no. 10-32 thread x 31/32" long .....	4
5	†	Insulated brush .....	2	29	* ———	Lock washer, no. 10 .....	4
6	††	Insulating washer .....	1	30	93-480396	Bendix drive assembly .....	1
7	* ———	Nut, 5/16"-24 thread .....	2	31	28MZ359	Gasket (NLA) .....	1
8	* ———	Lock washer, 5/16" .....	2	32	28MZ1360A	Bearing plate assembly .....	1
9	††	Insulating washer .....	1	33	* ———	Screw, no. 8-32 thread x 3/8" long .....	4
10	††	Insulating washer .....	1	34	* ———	Lock washer, no. 10 .....	4
11	††	Insulating bushing .....	1	35	* ———	Screw, no. 10-32 thread x 3/8" long .....	4
12	28MZ3005ES	Field coil assembly (YA19-2) (includes 13-17) .....	1	36	* ———	Nut, no. 10-32 thread .....	1
—	28MBG3005BS	Field coil assembly (YA18-2) .....	1	37	* ———	Screw, no. 10-32 thread x 1-1/2" long .....	1
13	* ———	Field coil, U.R. .....	1	38	28MZ24A	Cover band .....	1
14	* ———	Field coil, U.L. .....	1	39	28MZ2002F	Commutator end head (YA19-2) (includes 40, 41; includes felt) .....	1
15	* ———	Field coil, L.R. .....	1	—	28MZ2002Q	Commutator end head (YA18-2) .....	1
16	* ———	Field coil, L.L. .....	1	40	†	Grounded brush .....	2
17	* ———	Connector .....	2	41	28MZ19S	Brush spring set .....	1
18	* ———	Screw .....	4	—	* ———	Felt (not illustrated) .....	1
19	†††	Thrust washer .....	2	* Not serviced separately.			
20	28MBG2366	Armature assembly (replaces MZ2366 for YA19-2) .....	1				
21	†††	Thrust washer .....	2	†	28MZ2012AS brush set for YA19-2. 28MBG2012DS brush set for YA18-2.		
22	†††	Spring washer .....	1	††	28P90-716 terminal stud package for YA19-2. 28P90-333 terminal stud package for YA18-2.		
23	* ———	No. 6 Woodruff key .....	1	†††	28P90-448 armature thrust washer package.		
24	28PS2330BS	Pinion housing assembly (includes 25-27; replaces PS1330C) (NLA) .....	1				

**YA19-3S1 (6 Volt), YA18-3S1 (12 Volt) Starting Motors,  
Prestolite No. MZ-4192 And MBG-4109**



## YA19-3S1, YA18-3S1 Starting Motors

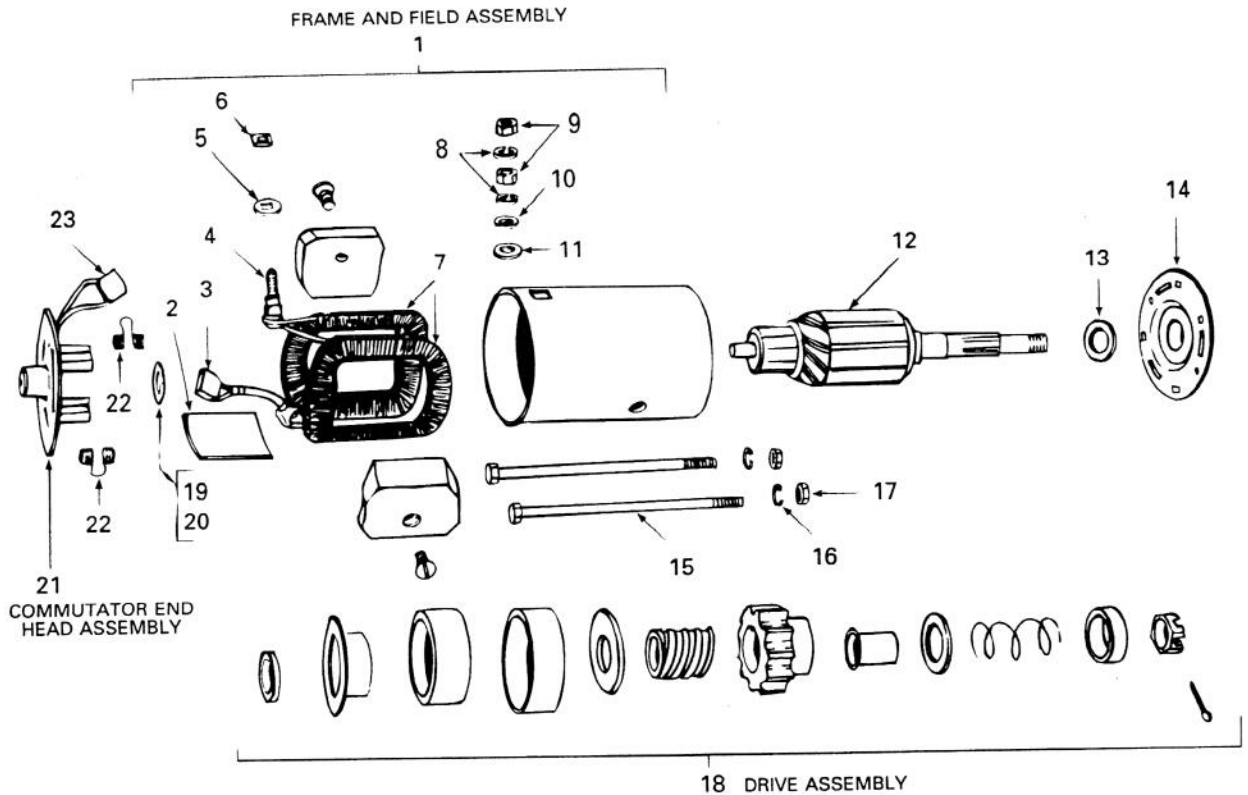
USE WITH MODELS VE4, VF4, VG4D, VH4D (see pg. 11)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	* — — —	Frame and field assembly (includes 2-18) .....	1	27	28XA1481	Oil seal .....	1
2	* — — —	Insulation .....	1	28	* — — —	Screw, no. 10-32 thread x 3 1/32" long .....	4
3	††	Terminal .....	1	29	* — — —	Lock washer, no. 10 .....	4
4	††	Terminal stud .....	1	30	93-480396	Bendix drive assembly .....	1
5	†	Insulated brush .....	2	31	28MZ359	Gasket (NLA) .....	1
6	††	Insulating washer .....	1	32	28MZ1360A	Bearing plate assembly .....	1
7	* — — —	Nut, 5/16"-24 thread .....	2	33	* — — —	Screw, no. 8-32 thread x 3/8" long .....	4
8	* — — —	Lock washer, 5/16" .....	2	34	* — — —	Lock washer, no. 10 .....	4
9	††	Plain washer, 5/16" .....	1	35	* — — —	Screw, no. 10-32 thread x 3/8" long .....	4
10	††	Insulating washer .....	1	36	* — — —	Nut, no. 10-32 thread .....	1
11	††	Insulating bushing .....	1	37	* — — —	Screw, no. 10-32 thread x 1-1/2" long .....	1
12	28MZ3005ES	Field coil assembly (YA19-3S1) (includes 13-17) .....	1	38	28MZ24A	Cover band .....	1
—	28MBG3005BS	Field coil assembly (YA18-3S1) .....	1	39	28MZ2002F	Commutator end head (YA19-3S1) (includes 47, 48; includes felt) .....	1
13	* — — —	Field coil, U.R. ....	1	—	28MZ2002Q	Commutator end head (YA18-3S1) .....	1
14	* — — —	Field coil, U.L. ....	1	—	* — — —	Felt (not illustrated) .....	1
15	* — — —	Field coil, L.R. ....	1	40	†	Grounded brush .....	2
16	* — — —	Field coil, L.L. ....	1	41	28MZ19S	Brush spring set .....	1
17	* — — —	Connector .....	2	* Not serviced separately.			
18	* — — —	Screw .....	4	† 28MZ2012AS brush set for YA19-3S1. 28MBG2012DS brush set for YA18-3S1.			
19	†††	Thrust washer .....	2	†† 28P90-368 terminal stud package for YA19-3S1. 28P90-333 terminal stud package for YA18-3S1.			
20	28MBG236	Armature assembly .....	1	††† 28P90-448 armature thrust washer package.			
21	†††	Thrust washer .....	2				
22	†††	Spring washer .....	1				
23	* — — —	No. 6 Woodruff key .....	1				
24	28PS2330BS	Pinion housing assembly (includes 25-27) (NLA) .....	1				
25	* — — —	Bearing cap .....	1				
26	28MZ364	Bronze bearing .....	1				



# YA29 (6 Volt) Starting Motor, Prestolite No. MDH-4001M

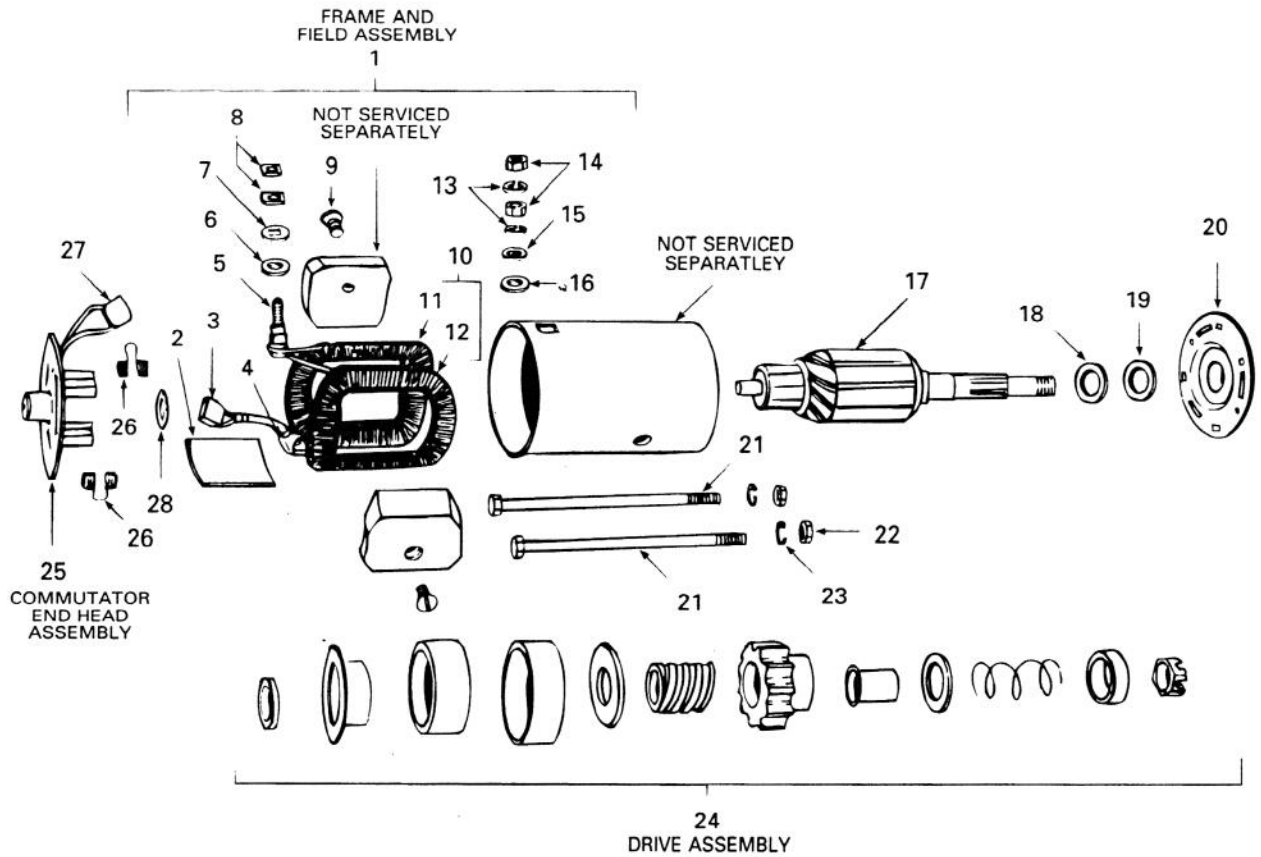
USE WITH MODELS ACN, BKN, AENL



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MDH3001	Frame and field assembly (includes 2-11) (NLA) .....	1	19	††	Thrust washer, .045" .....	1
2	* — — —	Insulation .....	1	20	††	Thrust washer, 1/32" .....	1
3	28MDH2012S	Brush set .....	1	21	28MDH3002	Commutator end head assembly (includes 22, 23; includes felt) .....	1
4	†††	Terminal stud .....	1	22	28MDH18S	Brush spring set .....	2
5	†††	Washer .....	1	—	* — — —	Felt (not illustrated) .....	1
6	†††	Bushing .....	2	23	* — — —	Grounded brush .....	2
7	* — — —	Field coil assembly .....	1	—	28MDH1024	Cover band (not illustrated) .....	1
8	* — — —	Lock washer, 1/4" .....	2	—	* — — —	Screw, no. 10-32 thread x 1" long (not illustrated) .....	1
9	* — — —	Nut, 1/4"-20 thread .....	2	—	* — — —	Nut, no. 10-32 long (not illustrated) .....	1
10	†††	Washer .....	1				
11	†††	Washer .....	1				
12	28MDH2006	Armature assembly .....	1				
13	††	Thrust washer, 1/32" .....	1				
14	28MDH1003	Drive end assembly .....	1				
15	28MDH20S	Thru bolt package (includes 16, 17) .....	1				
16	* — — —	Washer, 1/4" .....	2				
17	* — — —	Nut, 1/4"-20 thread .....	2				
18	28A3656	Bendix drive assembly .....	1				

\* Not serviced separately.  
 †† 28P90-259 thrust washer package  
 ††† 28P90-460 terminal stud package.

**YA27A (12 Volt), YA27B (12 Volt) Starting Motors,  
Prestolite No. MDW-4003M And MDW-4304M**





## YA27A, YA27B Starting Motors

USE WITH MODEL AGND (see pg. 15)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MDW3001	Frame and field assembly (includes 2-16) .....	1	21	††	Thru bolt, 6-1/4" long .....	1
2	* — — —	Insulation .....	1	22	††	Nut, 1/4"-20 thread .....	2
3	†	Brush .....	1	23	††	Lock washer, 1/4" .....	2
4	* — — —	Connector .....	1	24	28-478917	Bendix drive assembly (YA27B) (NLA) .....	1
5	* — — —	Terminal stud .....	1	—	93-480019	Bendix drive assembly (YA27A) (replaces 28-480175) .....	1
6	* — — —	Plain washer .....	1	25	28MDW1002	Commutator end head assembly (includes 26, 27) (replaces MDO3002) .....	1
7	* — — —	Insulating washer .....	1	26	28MDH18S	Brush spring .....	2
8	* — — —	Insulating bushing .....	2	—	* — — —	Felt (not illustrated) .....	1
9	* — — —	Screw .....	2	27	†	Grounded brush .....	1
10	* — — —	Field coil assembly (includes 11, 12) .....	1	28	†††	Thrust washer, 1/32" thick .....	1
11	* — — —	Left field coil .....	1				
12	* — — —	Right field coil .....	1				
13	* — — —	Lock washer, 1/4" .....	2				
14	* — — —	Nut, 1/4"-20 thread .....	2				
15	* — — —	Plain washer .....	1				
16	* — — —	Insulating washer .....	1				
17	28MDW23061	Armature assembly (replaces MDW2006) .....	1				
18	†††	Thrust washer, .042" thick .....	1				
19	†††	Thrust washer, 1/32" thick .....	1				
20	28MDO1003	Drive end head assembly .....	1				

\* Not serviced separately.

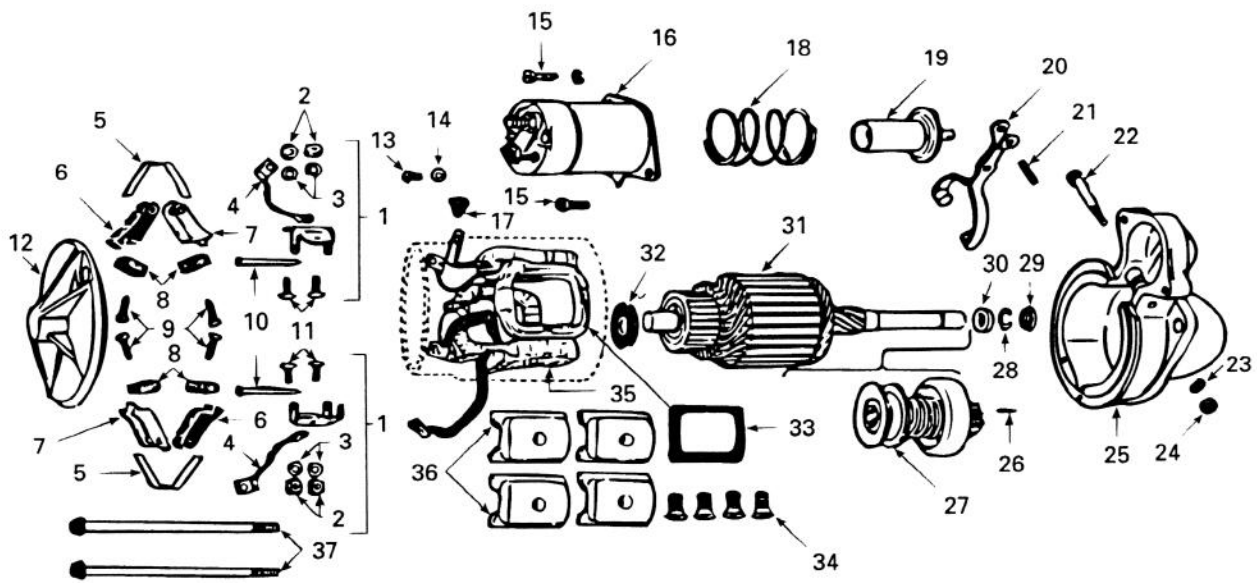
† 28MDO2012AS brush set.

†† 28P90-289 thru bolt package.

††† 28P90-259 armature thrust washer package.

---

**YA32 (12 Volt), YA32A (12 Volt) Starting Motors,  
Delco Remy No. 1109426 And 1107782**



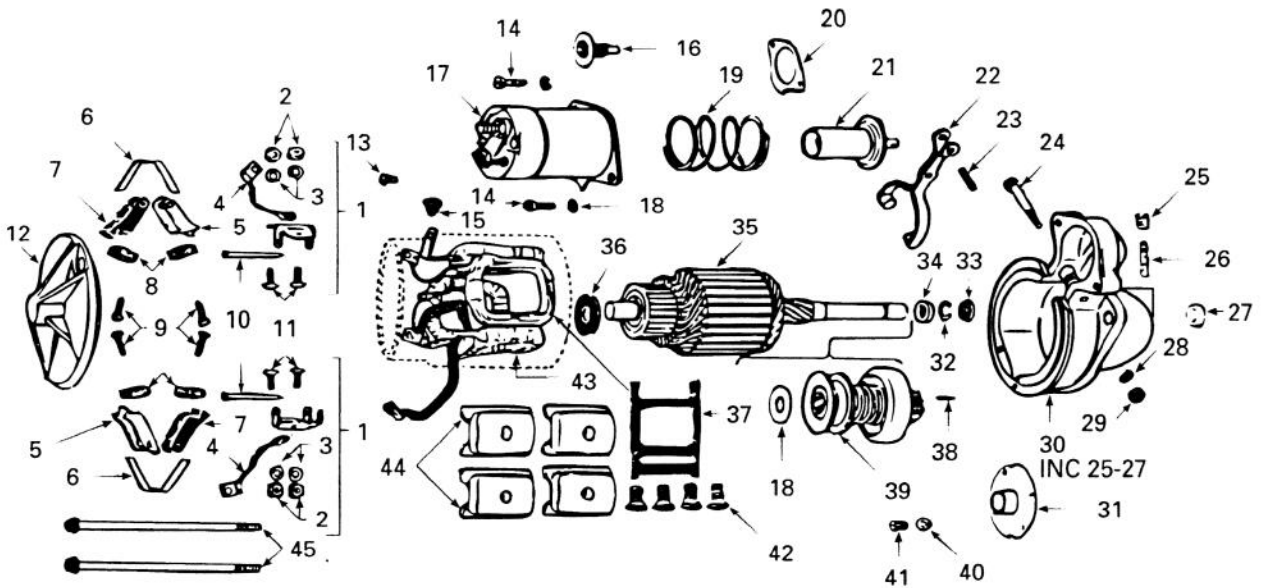
## YA32, YA32A Starting Motors

USE WITH MODELS THD, TJD (see pg. 17)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11).....	2	—	18-1839345	Bushing (not illustrated) ...	1
2	* ———	Nut .....	4	26	18-809593	Dowel pin .....	1
3	* ———	Lock washer .....	4	27	18-1877348	Drive assembly .....	1
4	* ———	Lead .....	2	28	18-1928022	Ring .....	1
5	18-1926622	Spring .....	2	29	18-1928023	Collar .....	1
6	* ———	Brush holder .....	2	30	18-1928021	Collar .....	1
7	* ———	Brush holder .....	2	31	18-1947353	Armature .....	1
8	18-1906945	Brush .....	4	32	18-1914842	Washer .....	1
9	* ———	Screw .....	2	33	18-1927853	Insulator .....	4
—	* ———	Screw .....	2	34	* ———	Screw .....	4
10	* ———	Pin .....	2	35	18-1974375	Field coil assembly (YA32A) .....	1
11	* ———	Screw .....	4	—	18-1943504	Field coil assembly (YA32) .....	1
12	18-1974157	Frame (YA32A) .....	1	36	* ———	Pole shoe .....	4
—	18-1928966	Frame (YA32) .....	1	37	18-1939970	Thru bolt .....	2
13	* ———	Screw .....	1	—	18-1956226	Contact assembly (not illustrated) .....	1
14	* ———	Lock washer .....	1	—	* ———	Washer (not illustrated) ...	1
15	* ———	Screw, .....	2	—	* ———	Screw (not illustrated) .....	2
16	18-1114458	Solenoid switch .....	1	—	* ———	Lock washer (not illustrated) .....	2
17	18-1893370	Grommet (YA32A) .....	1	—	18-820149	Center bearing plate (includes bushing) (not illustrated) .....	1
—	18-1966391	Grommet (YA32) .....	1	—	18-1894023	Bushing (not illustrated) ...	1
18	18-1958679	Spring .....	1	* Not serviced separately.			
19	18-1941113	Plunger .....	1				
20	18-1951567	Shift lever .....	1				
21	18-1894321	Pin .....	1				
22	18-1932197	Stud .....	1				
23	* ———	Lock washer .....	1				
24	* ———	Nut .....	1				
25	18-1949984	Drive housing (includes bushing) .....	1				

**YA32B (12 Volt) Starting Motor Assembly, Delco Remy No. 1998301**

USE WITH MODELS THD, TJD, W2-880, STARTING WITH TJD SERIAL NO. 6050289



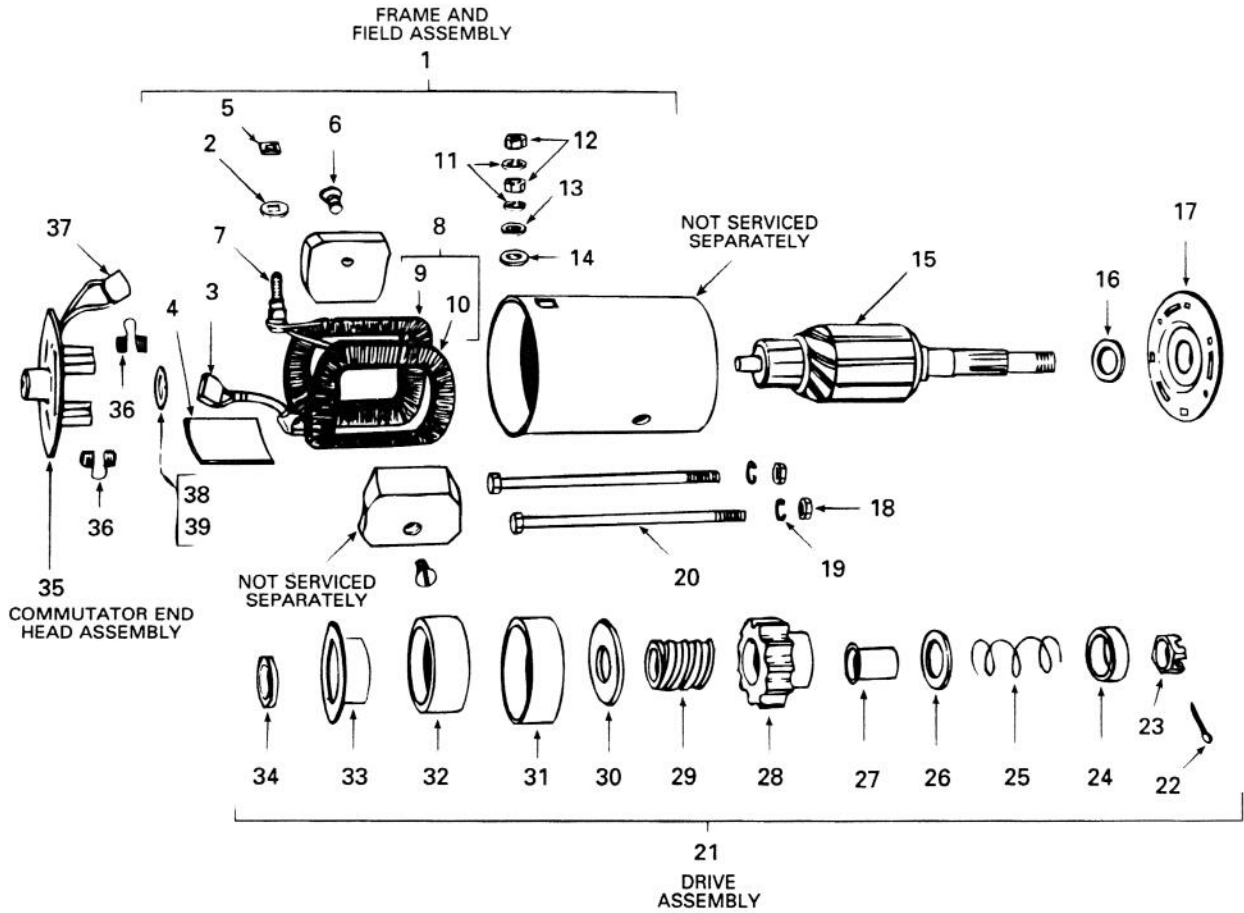
## YA32B Starting Motor Assembly

USE WITH MODELS THD, TJD, W2-880 (see pg.19)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11) .....	2	26	18-1916439	Wick (NLA) .....	1
2	* — — —	Nut .....	4	27	18-1862383	Bushing .....	1
3	* — — —	Lock washer .....	4	28	* — — —	Lock washer .....	1
4	* — — —	Lead .....	2	29	* — — —	Nut .....	4
5	* — — —	Brush holder .....	2	30	18-1949984	Drive housing .....	1
6	18-1926622	Spring .....	2	31	18-820149	Center bearing plate (includes 18-1894023) (NLA) .....	1
7	* — — —	Brush holder .....	2	32	18-1928022	Ring .....	1
8	18-1906945	Brush .....	4	33	18-1928023	Collar .....	1
9	* — — —	Screw .....	2	34	18-1928021	Collar .....	1
—	* — — —	Screw .....	2	35	18-1947353	Armature .....	1
10	* — — —	Pin .....	2	36	18-1914842	Washer .....	1
11	* — — —	Screw .....	4	37	18-1976832	Insulator .....	1
12	18-1974157	Frame .....	1	38	18-809593	Dowel pin .....	1
13	* — — —	Screw .....	1	39	18-1877348	Drive .....	—
14	* — — —	Screw .....	2	40	* — — —	Lock washer .....	4
15	18-1893370	Grommet .....	1	41	* — — —	Screw .....	4
16	18-1978337	Contact .....	1	42	* — — —	Screw .....	4
17	18-1114524	Solenoid switch .....	1	43	18-1974375	Field coil .....	1
18	* — — —	Washer .....	1	44	* — — —	Pole shoe .....	4
19	18-1978281	Spring .....	1	45	18-1939970	Thru bolt .....	2
20	18-1952427	Gasket .....	1	—	18-1978333	Nut (not illustrated) .....	2
21	18-1978297	Plunger .....	1	—	18-1978336	Nut (not illustrated) .....	2
22	18-1951567	Shift lever .....	1				
23	18-1894321	Pin .....	1				
24	18-1932197	Stud .....	1				
25	* — — —	Plug .....	1				

\* Not serviced separately.

# YA35 (12 Volt) Starting Motor, 3" Diameter



## YA35 Starting Motor

USE WITH MODEL AGND (see pg. 21)

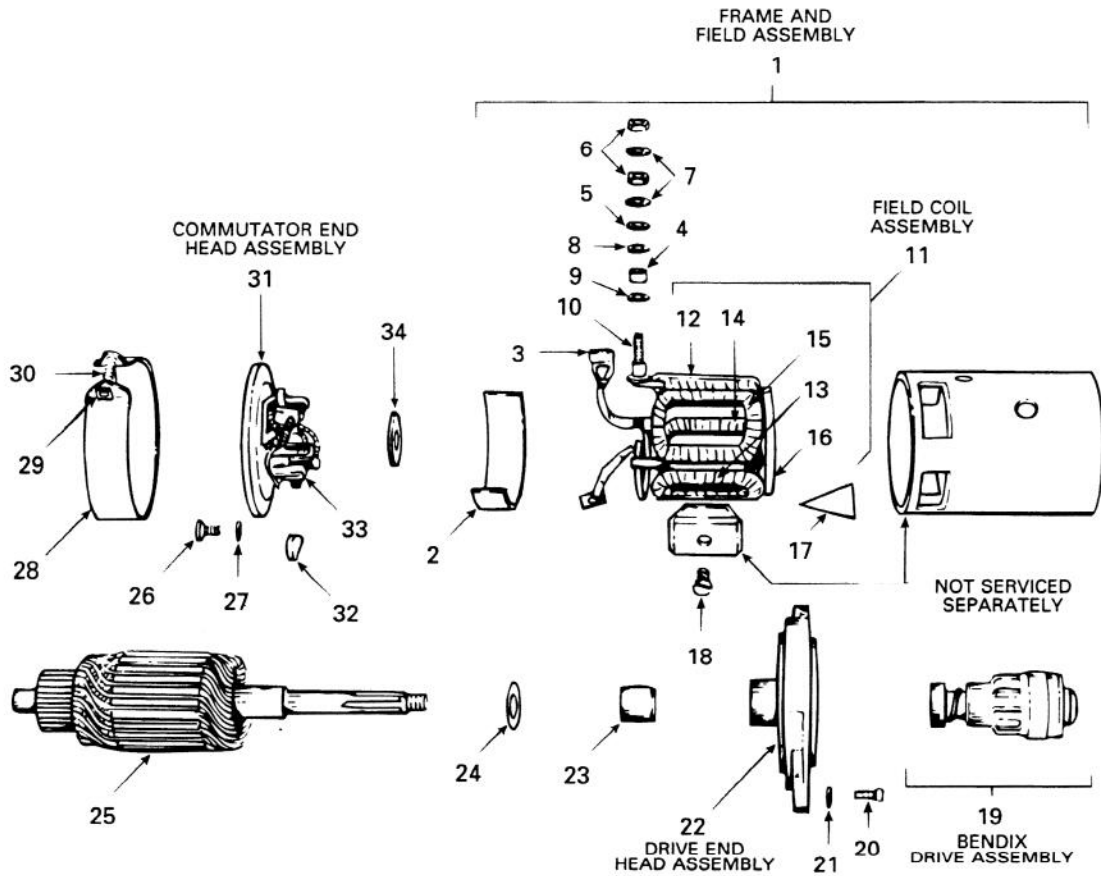
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MDH3001	Frame and field assembly (includes 2-14) .....	1	23	28F4755	Castellated nut .....	1
2	* — — —	Insulating washer .....	1	24	28-478831	Pinion stop .....	1
3	†	Brush .....	1	25	28-478268	Anti-drift spring .....	1
4	* — — —	Insulation .....	1	26	28-478832	Pinion washer .....	1
5	* — — —	Insulating bushing .....	2	27	28-478274	Anti-drift sleeve .....	1
6	* — — —	Screw .....	4	28	28-478918	Pinion .....	1
7	* — — —	Terminal stud .....	1	29	28-478919	Screw shaft .....	1
8	* — — —	Field coil assembly (includes 9, 10) .....	1	30	28-478046	Thrust washer .....	1
9	* — — —	Left field coil .....	1	31	28-478041	Cushion cup .....	1
10	* — — —	Right field coil .....	1	32	28-478042	Cushion .....	1
11	* — — —	Lock washer, 1/4" .....	2	33	28-478039	Thrust cup washer .....	1
12	* — — —	Nut, 1/4"-20 thread .....	2	34	28-478047	Spacer .....	1
13	* — — —	Plain washer .....	1	35	28MDH3002	Commutator end head assembly (includes 36, 37; includes felt) .....	1
14	* — — —	Insulating washer .....	1	36	28MDH18S	Brush spring .....	4
15	28MDH2006	Armature assembly .....	1	—	* — — —	Felt (not illustrated) .....	1
16	††	Thrust washer, 1/32" thick .....	1	37	†	Grounded brush .....	2
17	28MDH1003	Drive end head assembly .....	1	38	††	Thrust washer, 045" thick .....	1
18	* — — —	Nut, 1/4"-20 thread .....	2	39	††	Thrust washer, 1/32" thick .....	1
19	* — — —	Lock washer, 1/4" .....	2				
20	28MDH20S	Thru bolt package .....	2				
21	* — — —	Bendix drive assembly (includes 22-34) .....	1				
22	28F5982	Cotter pin .....	1				

\* Not serviced separately.

† 28MDH2012S brush set.

†† 28P90-259 armature thrust washer package.

# YA39 (12 Volt) Starting Motor, Prestolite No. MBG-4124





## YA39 Starting Motor

USE WITH MODEL AGND BEGINNING WITH SERIAL NO. 3252140 (see pg. 23)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	* — — —	Frame and field assembly (includes 2-18) .....	1	25	28MZ2375	Armature assembly .....	1
2	* — — —	Insulation .....	1	26	* — — —	Screw, no. 10-32 thread x 3/8" long .....	3
3	†	Brush .....	2	27	* — — —	Lock washer .....	3
4	††	Insulating bushing .....	1	28	28MZ24A	Cover band .....	1
5	††	Plain washer, 5/16" .....	1	29	* — — —	Nut, no. 10-32 .....	1
6	* — — —	Nut, 5/16"-24 thread .....	2	30	* — — —	Screw, no. 10-32 thread x 1-1/2" long .....	1
7	* — — —	Lock washer, 5/16" .....	2	31	28MZ2002Q	Commutator end head assembly (includes 32 33; includes felt) .....	1
8	††	Ins. washer .....	1	—	* — — —	Felt (not illustrated) .....	1
9	††	Ins. washer .....	1	32	28MZ19S	Brush spring set .....	4
10	††	Terminal stud .....	1	33	†	Grounded brush .....	2
11	28MBG3005BS	Field coil assembly (includes 12-16) .....	1	34	†††	Thrust washer, 1/32" thick .....	1
12	* — — —	Field coil, U.L. .....	1	—	†††	Thrust washer, 3/64" thick (use as required)	1
13	* — — —	Field coil, L.R. .....	1	—	†††	Thrust washer, .080" thick (use as required)	1
14	* — — —	Field coil, L.L. .....	1				
15	* — — —	Field coil, U.R. .....	1				
16	* — — —	Connector .....	2				
17	* — — —	Insulation .....	1				
18	* — — —	Screw .....	4				
19	93-480018	Bendix drive assembly .....	1				
20	* — — —	Screw, no. 10-32 thread x 1/2" long .....	4				
21	* — — —	Lock washer, no. 10 .....	4				
22	28MZ1376	Drive end head assembly (includes 23) .....	1				
23	28MAK39	Bronze bearing .....	1				
24	†††	Thrust washer, 1/32" thick .....	1				

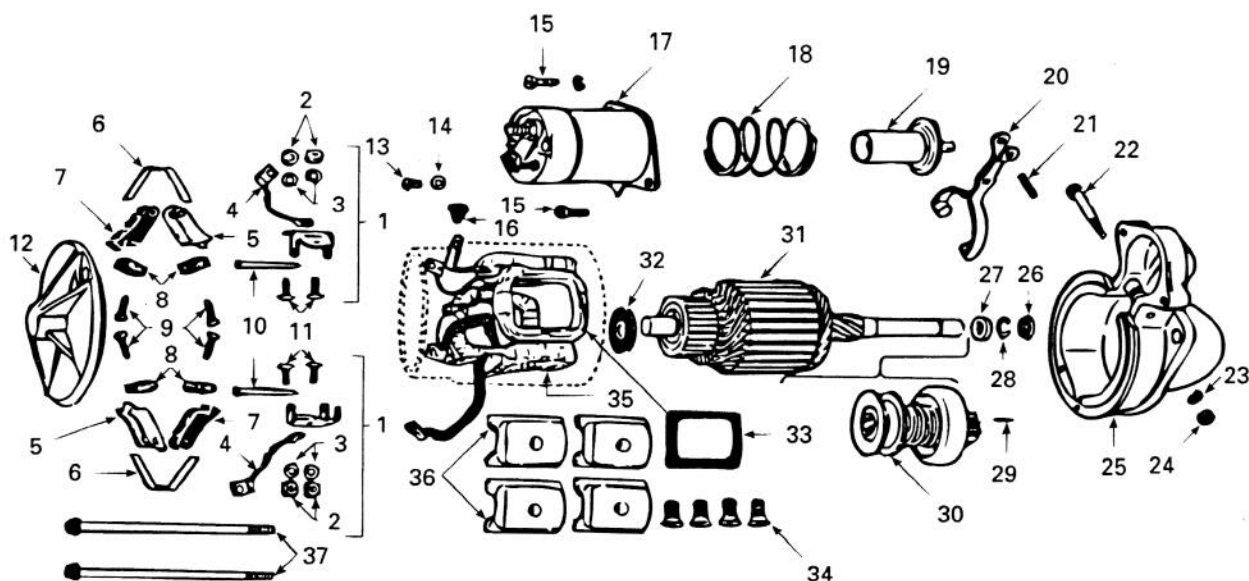
\* Not serviced separately.

† 28MBG2012DS brush set.

†† 28P90-333 terminal stud package.

††† 28P90-2271 armature thrust washer package.

**YA41 (12 Volt), YA41A (12 Volt) Starting Motors,  
Delco Remy No. 1109425 And 1107390**



## YA41, YA41A Starting Motors

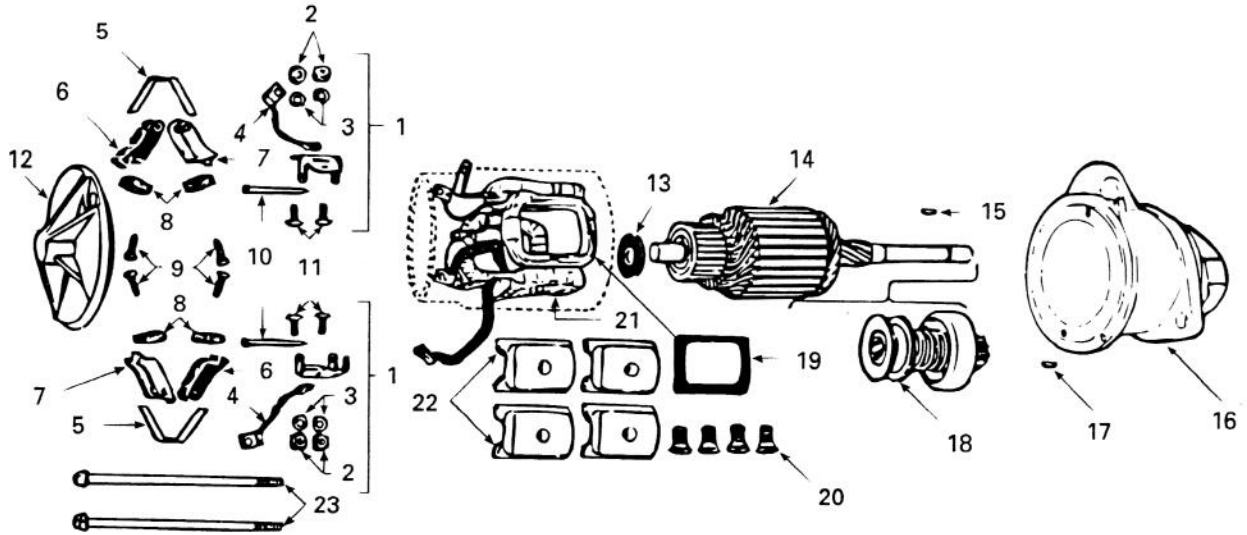
USE WITH MODEL V465D (see pg. 25)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11) .....	2	—	18-1862383	Bushing (not illustrated) ...	1
2	* — — —	Nut .....	4	26	18-1928023	Collar .....	1
3	* — — —	Lock washer .....	4	27	18-1928021	Collar .....	1
4	* — — —	Lead .....	2	28	18-1928022	Ring .....	1
5	* — — —	Brush holder .....	2	29	18-809593	Dowel pin .....	1
6	18-1926622	Spring .....	2	30	18-1933838	Drive assembly .....	1
7	* — — —	Brush holder .....	2	31	18-1947353	Armature .....	1
8	18-1906945	Brush .....	4	32	18-1914842	Washer .....	1
9	* — — —	Screw .....	2	33	18-1927853	Insulator .....	4
—	* — — —	Screw .....	2	34	* — — —	Screw .....	4
10	* — — —	Pin .....	2	35	18-1974375	Field coil assembly (YA41A) .....	1
11	* — — —	Screw .....	4	—	18-1974920	Field coil assembly (YA41) .....	1
12	18-1974157	Frame (YA41A, YA41) .....	1	36	* — — —	Pole shoe .....	4
13	* — — —	Screw .....	1	37	18-1939970	Thru bolt .....	2
14	* — — —	Lock washer .....	1	—	18-1956226	Contact assembly .....	1
15	* — — —	Screw .....	2	—	18-1951156	Boot .....	1
16	18-1893370	Grommet (YA41A) .....	1	—	* — — —	Washer .....	1
—	18-1966391	Grommet (YA41) .....	1	—	* — — —	Screw .....	4
17	18-1114458	Solenoid switch .....	1	—	* — — —	Lock washer .....	4
18	18-1958679	Spring .....	1	—	18-1949556	Center bearing plate (includes bushing, gasket and oil seal) .....	1
19	18-1941113	Plunger .....	1	—	* — — —	Bushing .....	1
20	18-1951567	Shift lever .....	1	—	* — — —	Gasket .....	1
21	18-1987049	Pin .....	1	—	* — — —	Oil seal .....	1
22	18-1932197	Stud .....	1				
23	* — — —	Lock washer .....	1				
24	* — — —	Nut .....	4				
25	18-1967208	Drive housing (includes bushing) .....	1				

\* Not serviced separately.

## YA45 (12 Volt) Starting Motor, Delco Remy No. 1107263

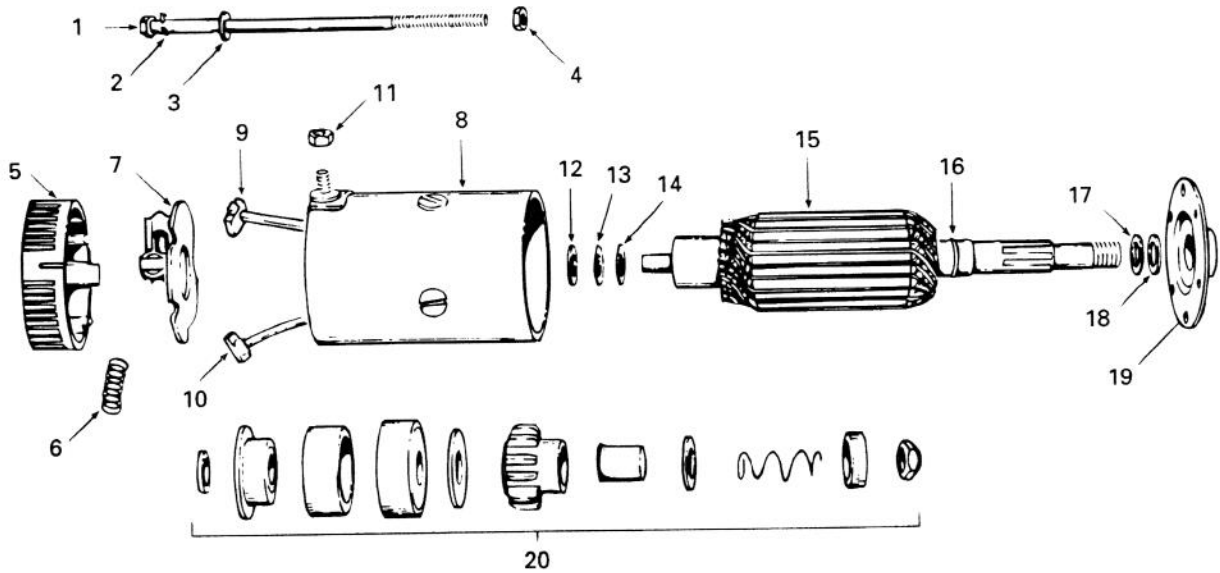
USE WITH MODELS VH4, VH4D



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11) .....	2	19	18-1927853	Insulator .....	4
2	18-120361	Nut .....	4	20	18-1913960	Screw .....	4
3	18-453296	Lock washer .....	4	21	18-1937548	Field coil assembly .....	1
4	18-1926605	Lead .....	2	22	18-1931129	Pole shoe .....	4
5	18-1926622	Spring .....	2	23	18-1926625	Thru bolt .....	2
6	18-1938587	Brush holder .....	2	—	18-1939446	Stud .....	1
7	18-1926617	Brush holder .....	2	—	18-120214	Lock washer .....	2
8	18-1906945	Brush .....	4	—	18-1903092	Washer .....	2
9	18-1926648	Screw .....	4	—	18-134556	Nut .....	2
10	18-1926600	Pin .....	2	—	18-805613	Washer, 11/16" O.D. x 1/16" thick .....	2
11	18-274738	Screw .....	4	—	18-1881866	Washer, 1/2 O.D. ....	2
12	18-1928966	Frame .....	1	—	18-1939447	Insulator .....	1
13	18-833602	Washer .....	1	—	18-1838667	Center bearing plate (includes bushing, screw, lock washer, gasket) .....	1
14	18-1959428	Armature .....	1	—	18-1838670	Bushing .....	1
15	18-124546	Woodruff key .....	1	—	18-132900	Screw .....	4
16	18-1959426	Drive housing (includes bushing) .....	1	—	18-1914123	Lock washer .....	4
—	18-1839345	Bushing (not illustrated) ...	1	—	18-1925479	Gasket .....	1
17	18-809593	Dowel pin .....	1				
18	18-1959408	Drive assembly .....	1				

**YA50 (12 Volt) Starting Motor, 3-1/16" Diameter,  
Prestolite No. MGD-4102A (Replaced By YA63 Beginning With  
Serial No. 6074587 (ACN-BKN), 6073826 (S10, 12, 14D), 6073082 (AENL)**

USE WITH MODELS ACN, BKN, AENL, S10D, S12D, S14D



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MGD120S	Thru bolt package (obsolete) .....	1	14	††	Thrust washer, .045" thick .....	1
2	* ———	Lock washer, 1/4" .....	2	15	28MGD2106	Armature .....	1
3	* ———	Washer, 1/4" .....	2	16	28XA1221	"O" ring seal, 11/16" O.D. (replaces 28HI226) .....	1
4	* ———	Nut, 1/4"-20 thread .....	2	17	††	Thrust washer, .045" thick .....	1
5	28MGD1002	Head assembly .....	1	18	††	Thrust washer, 1/32" thick .....	1
6	28MGD18S	Spring set .....	1	19	28MGD1103	Head assembly .....	1
7	28MGD1033B	Brush plate and holder assembly (replaces 28MGD1033) .....	1	20	93-480119	Bendix drive assembly (replaces MGD1161 and DRF3002S) .....	1
8	28MGD2101S2	Frame and field assembly (includes 9-11) (replaces 28MGD2101) .....	1				
9	†	Brush and terminal assembly .....	1				
10	†	Brush .....	1				
11	†	Nut, 1/4"-20 thread .....	1				
12	††	Thrust washer, 1/32" thick .....	1				
13	††	Thrust washer, .023" thick .....	1				

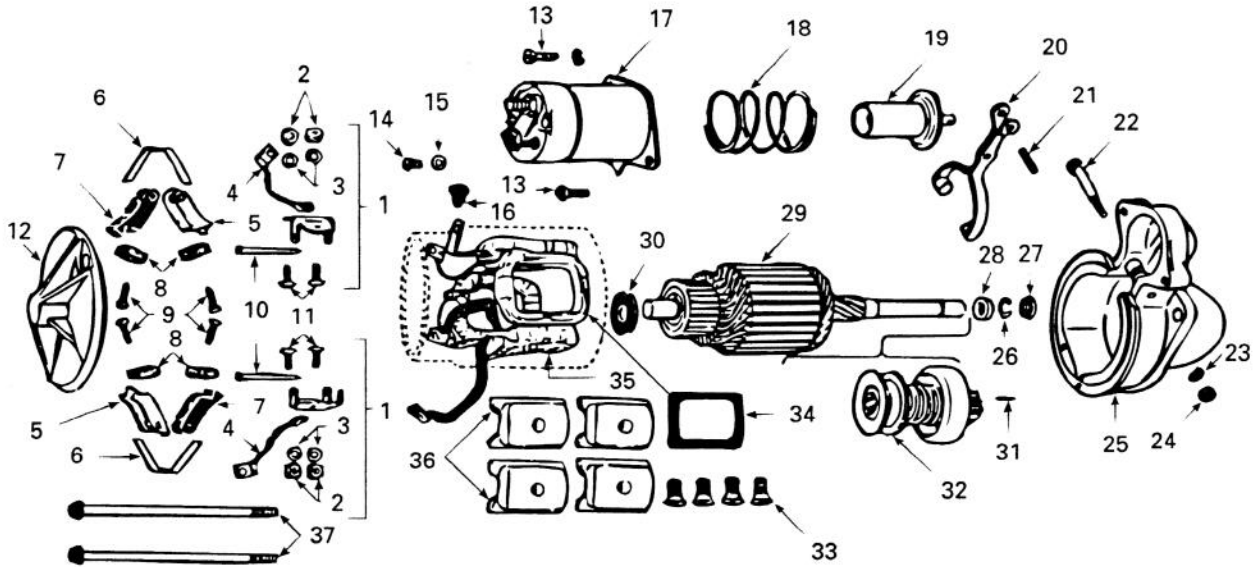
\* Not serviced separately.

† 28MGD2032S brush set for service.

†† P90-259 armature thrust washer package.

# YA53A (12 Volt) Starting Motor, Delco Remy No. 1109424

USE WITH MODELS VG4D, VH4D

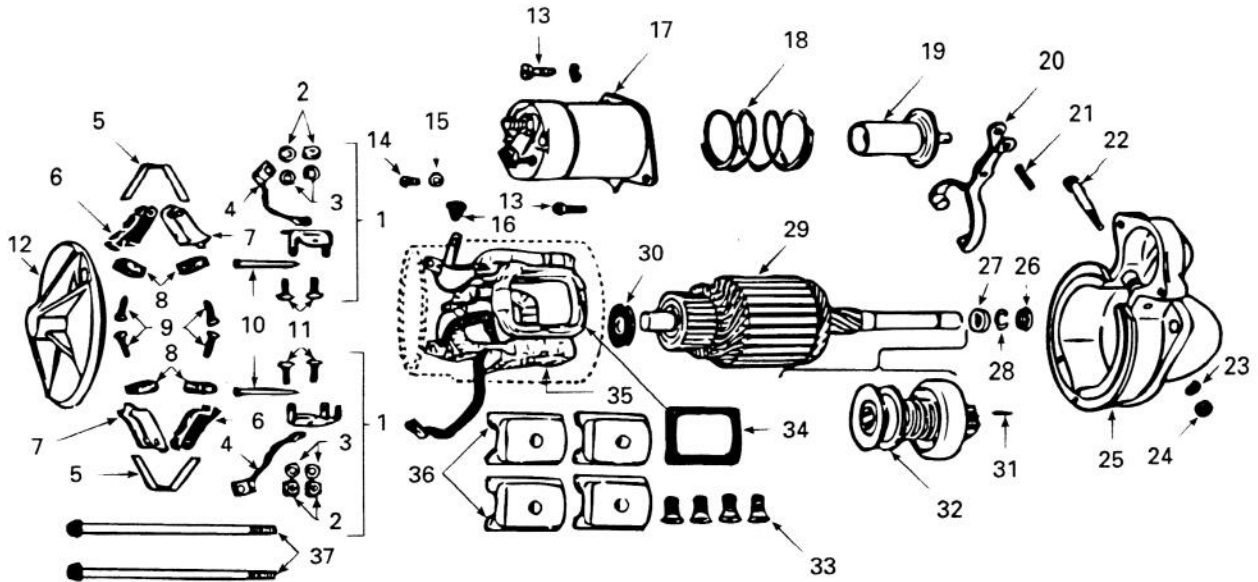


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11) .....	2	—	18-1862383	Bushing (not illustrated) ...	1
2	* ———	Nut .....	4	26	18-1928022	Ring .....	1
3	* ———	Lock washer .....	4	27	18-1928023	Collar .....	1
4	* ———	Lead .....	2	28	18-1928021	Collar .....	1
5	* ———	Brush holder .....	2	29	18-1947353	Armature .....	1
6	18-1926622	Spring .....	2	30	18-1914842	Washer .....	1
7	* ———	Brush holder .....	2	31	18-809593	Dowel pin .....	1
8	18-1906945	Brush .....	4	32	18-1877348	Drive .....	1
9	* ———	Screw .....	2	33	* ———	Screw .....	4
—	* ———	Screw .....	2	34	18-1927853	Insulator .....	4
10	* ———	Pin .....	2	35	18-1974375	Field coil .....	1
11	* ———	Screw .....	4	36	* ———	Pole shoe .....	4
12	18-1974157	Frame .....	1	37	18-1939970	Thru bolt .....	1
13	* ———	Screw .....	2	—	18-1941111	Thru bolt .....	1
14	* ———	Screw .....	1	—	18-1956226	Contact (not illustrated) ...	1
15	* ———	Lock washer .....	1	—	18-1970263	Boot (not illustrated) .....	1
16	18-1893370	Grommet .....	1	—	* ———	Washer (not illustrated) ...	1
17	18-1114458	Solenoid switch .....	1	—	* ———	Screw (not illustrated) .....	2
18	18-1958679	Spring .....	1	—	* ———	Lock washer (not illustrated) .....	2
19	18-1941113	Plunger .....	1	—	18-820149	Center bearing plate (includes bushing) (not illustrated) .....	1
20	18-1951567	Shift lever .....	1	—	18-1894023	Bushing (not illustrated) ...	1
21	18-1987049	Pin .....	1				
22	18-1932197	Stud .....	1				
23	* ———	Lock washer .....	1				
24	* ———	Nut .....	4				
25	18-1965225	Drive housing (includes bushing) .....	1				

\* Not serviced separately.

# YA53A1 Starting Motor (Replaced By YA53B1), Delco Remy No. 1109424

USE WITH MODELS W2-1230, W2-1235, W2-1250

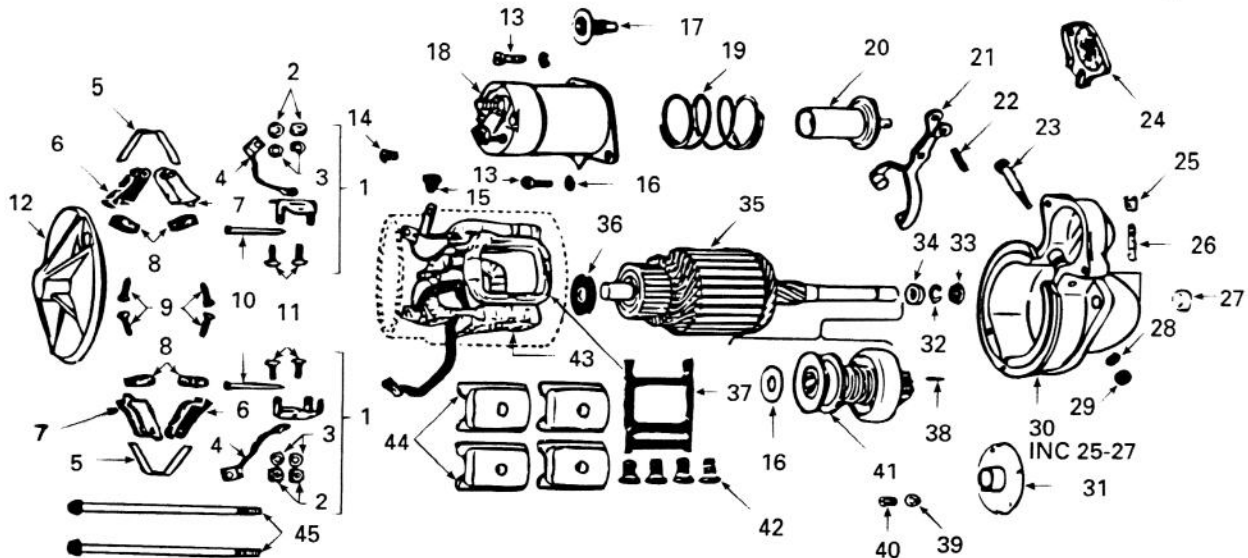


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11).....	2	26	18-1862383	Bushing (not illustrated) ...	1
2	* ———	Nut .....	4	27	18-1928023	Collar .....	1
3	* ———	Lock washer .....	4	28	18-1928021	Collar .....	1
4	* ———	Lead .....	2	28	18-1928022	Ring .....	1
5	18-1926622	Spring .....	2	29	18-1947353	Armature .....	1
6	* ———	Brush holder .....	2	30	18-1914842	Washer .....	1
7	* ———	Brush holder .....	2	31	18-809593	Dowel pin .....	1
8	18-1906945	Brush .....	4	32	18-1877348	Drive assembly .....	1
9	* ———	Screw .....	2	33	* ———	Screw .....	4
10	* ———	Screw .....	2	34	18-1927853	Insulator .....	4
11	* ———	Pin .....	2	35	18-1974375	Field coil assembly .....	1
12	18-1974157	Frame .....	1	36	* ———	Pole shoe .....	4
13	* ———	Screw .....	2	37	18-1939970	Thru bolt .....	1
14	* ———	Screw .....	1	—	18-1941111	Thru bolt .....	1
15	* ———	Lock washer .....	1	—	18-1956226	Contact .....	1
16	18-1893370	Grommet .....	1	—	18-1970263	Boot .....	1
17	18-1114458	Solenoid switch .....	1	—	* ———	Washer .....	1
18	18-1958679	Spring .....	1	—	* ———	Screw .....	2
19	18-1941113	Plunger .....	1	—	* ———	Lock washer .....	2
20	18-1951567	Shift lever .....	1	—	18-820149	Center bearing plate (includes bushing)	1
21	18-1987049	Pin .....	1	—	18-1894023	(not illustrated) .....	1
22	18-1932197	Stud .....	1	—		Bushing .....	1
23	* ———	Lock washer .....	1				
24	* ———	Nut .....	4				
25	18-1965225	Drive housing (includes bushing) .....	1				

\* Not serviced separately.

## YA53B, YA53B1\*\* Starting Motor Assemblies, Delco Remy No. 1998299

USE WITH MODELS W2-1230, W2-1235, W2-1250, W4-1770 (BEGINNING WITH SERIAL NO. 6047578),  
VG4D, (BEGINNING WITH SERIAL NO. 6053300), VH4D (BEGINNING WITH SERIAL NO. 6047578)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11).....	2	28	* ———	Lock washer .....	1
2	* ———	Nut .....	4	29	* ———	Nut .....	4
3	* ———	Lock washer .....	4	30	18-1965225	Drive housing (includes item 27) .....	1
4	* ———	Lead .....	2	31	18-820149	Center bearing plate (includes bushing) .....	1
5	18-1926622	Spring .....	2	—	18-1894023	Bushing .....	1
6	* ———	Brush holder .....	2	32	18-1928022	Ring .....	1
7	* ———	Brush holder .....	2	33	18-1928023	Collar .....	1
8	18-1906945	Brush .....	4	34	18-1928021	Collar .....	1
9	* ———	Screw .....	2	35	18-1947353	Armature .....	1
—	* ———	Screw .....	2	36	18-1914842	Washer .....	1
10	* ———	Pin .....	2	37	18-1976832	Insulator .....	1
11	* ———	Screw .....	4	38	18-809593	Dowel pin .....	1
12	18-1974157	Frame .....	1	39	* ———	Lock washer .....	4
13	* ———	Screw .....	2	40	* ———	Screw .....	4
14	* ———	Screw .....	1	41	18-1877348	Drive assembly .....	1
15	18-1893370	Grommet .....	1	42	* ———	Screw .....	4
16	* ———	Washer .....	1	43	18-1974375	Field coil assembly .....	1
17	18-1978337	Contact assembly .....	1	44	* ———	Pole shoe .....	4
18	18-1114524	Solenoid switch .....	1	45	18-1939970	Thru bolt .....	1
19	18-1978281	Spring .....	1	—	18-1941111	Thru bolt .....	1
20	18-1987391	Plunger .....	1	—	18-1978333	Nut, M10 x 1.5 .....	2
21	18-1951567	Shift lever .....	1	—	18-1978336	Nut, M5 x 0.8 .....	2
22	18-1987049	Pin .....	1				
23	18-1932197	Stud .....	1				
24	18-1970263	Boot .....	1				
25	* ———	Plug .....	1				
26	18-1916439	Wick .....	1				
27	18-1862383	Bushing .....	1				

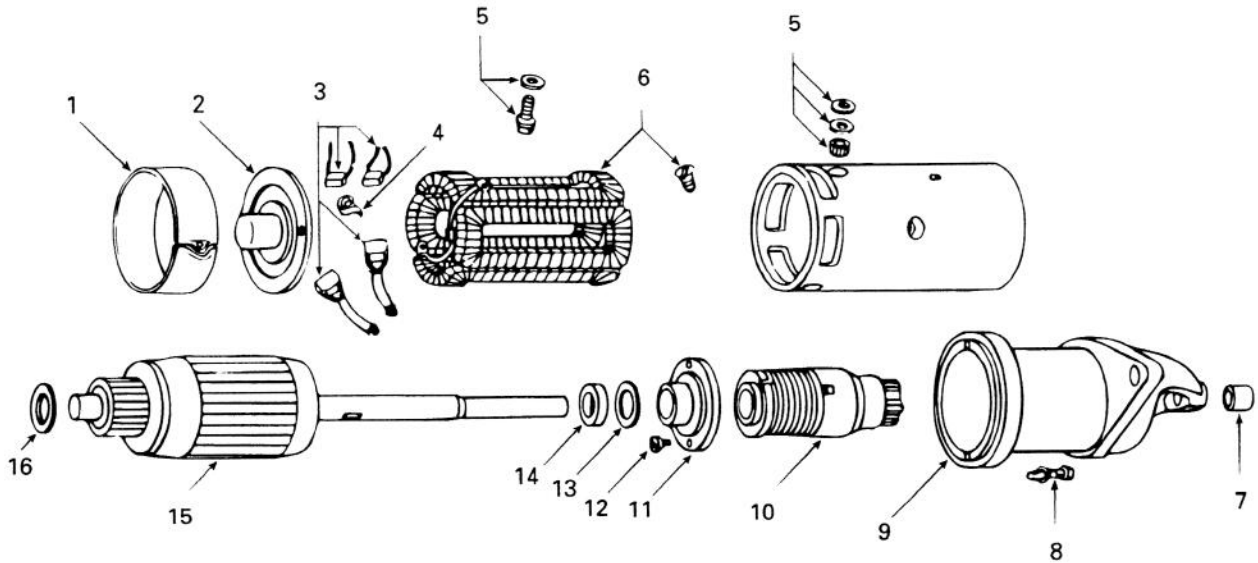
\* Not serviced separately.

\*\* YA53B1 - same as YA53B except location of Thru bolt (Ref. 45) reversed.



**YA54 (12 Volt) Starting Motor Assembly, Prestolite No. MBG-4140  
(Replaced By YA61 Beginning With Serial No. 6080422)**

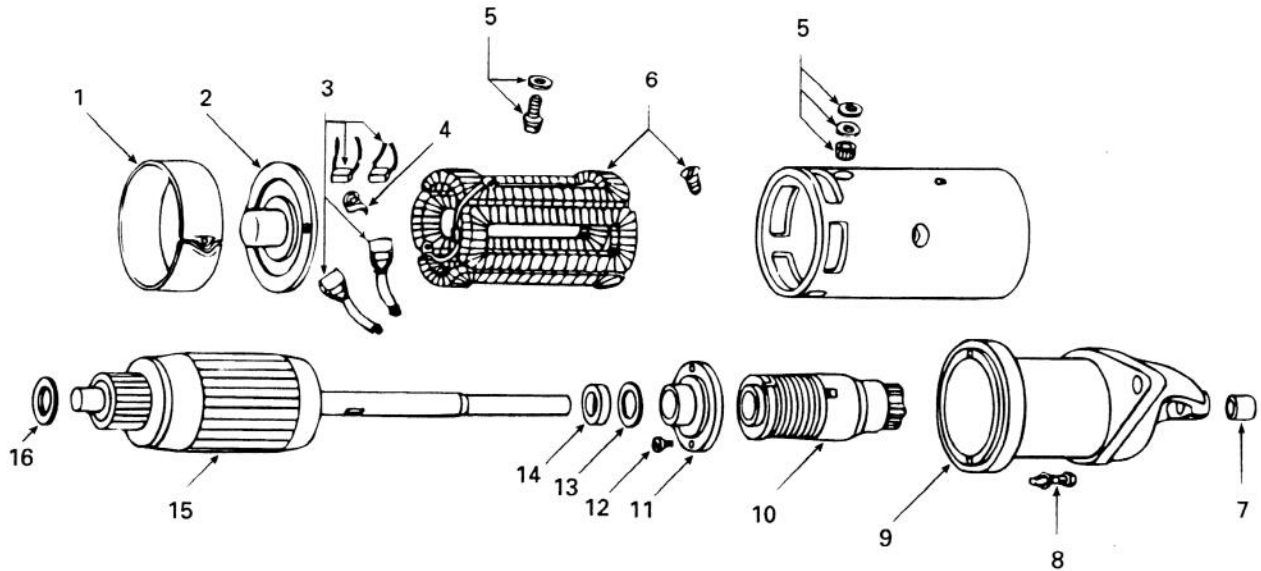
USE WITH MODELS TH, TJD



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MZ24A	Cover band .....	1	9	28PS2330CS	Pinion housing assembly (includes MZ364, MZ358, XA832; replaces 28PS1330C) .....	1
2	28MZ2002Q	Commutator end head assembly (includes MBG1021S, MAD110, MZ19S) .....	1	10	28-480369	Bendix drive (replaces 28EBB137A) .....	1
3	28MBG2012DS	Brush set .....	1	11	28MZ1360A	Bearing plate assembly .....	1
4	28MZ19S	Brush spring set .....	1	12	28P90-822	Mounting screw package (includes 8X3649) .....	1
5	28P90-2568	Terminal stud package (includes terminal, insulating bushing, terminal stud, inside insulating washer, outside insulating washer, plain washer) .....	1	13	28MZ359	Gasket (obsolete) .....	1
6	28MBG300585	Field coil package (includes MZ38C) .....	1	14	28XA1481	Oil seal .....	1
7	28MZ364	Bronze bearing .....	1	15	28MBG2411	Armature .....	1
8	28MZ52	Screw, no. 10-32 thread x 31/32" long .....	4	16	28P90-448	Thrust washer package (contains additional parts to service other applications) .....	1

## YA55 (6 Volt) Starting Motor Assembly, Prestolite No. MZ-4213

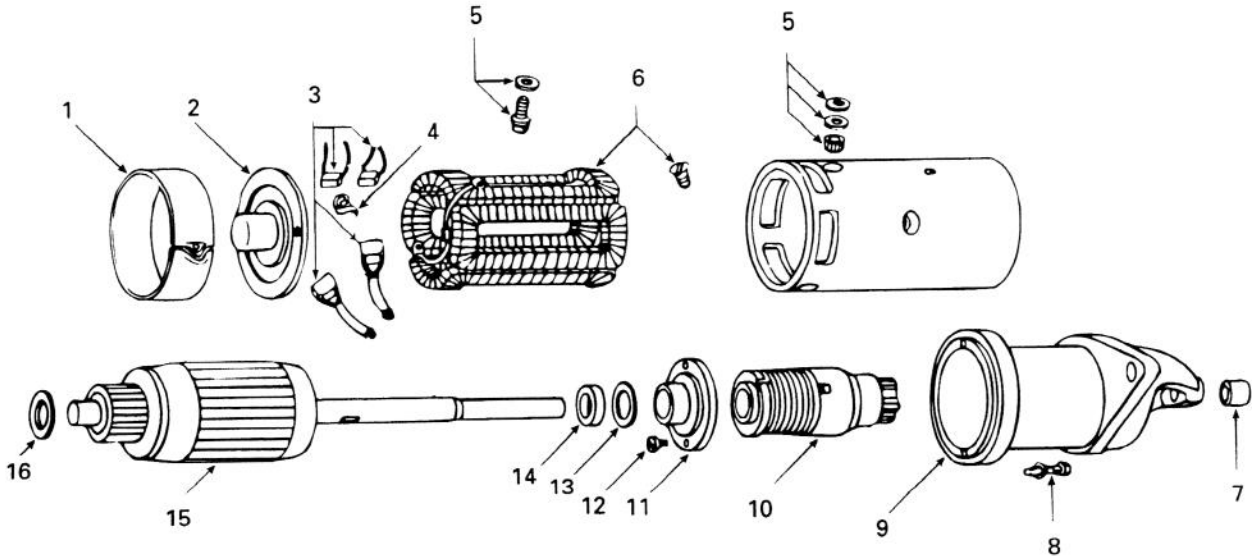
USE WITH MODELS TH, TJD



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MZ24A	Cover band .....	1	9	28PS2330CS	Pinion housing assembly (includes MZ364, MZ358, XA832; replaces 28PS1330C) .....	1
2	28MZ2002F	Commutator end head assembly (includes MBG1021S, MAD110, MZ19S) .....	1	10	28-480369	Bendix drive (replaces 28EBB137A) .....	1
3	28MZ2012AS	Brush set .....	1	11	28MZ1360A	Bearing plate assembly .....	1
4	28MZ19S	Brush spring set .....	1	12	28P90-822	Mounting screw package (includes 8X3649) .....	1
5	28P90-716	Terminal stud package (includes terminal, insulating bushing, terminal stud, inside insulating washer, outside insulating washer, plain washer) .....	1	13	28MZ359	Gasket (obsolete) .....	1
6	28MZ1005AS	Field coil package (includes MZ38C) .....	1	14	28XA1481	Oil seal .....	1
7	28MZ364	Bronze bearing .....	1	15	28MZ2411	Armature .....	1
8	28MZ52	Screw, no. 10-32 thread x 31/32" long .....	4	16	28P90-448	Thrust washer package (contains additional parts to service other applications) .....	1

## YA54A (12 Volt) Starting Motor Assembly, Prestolite No. MBG-4141

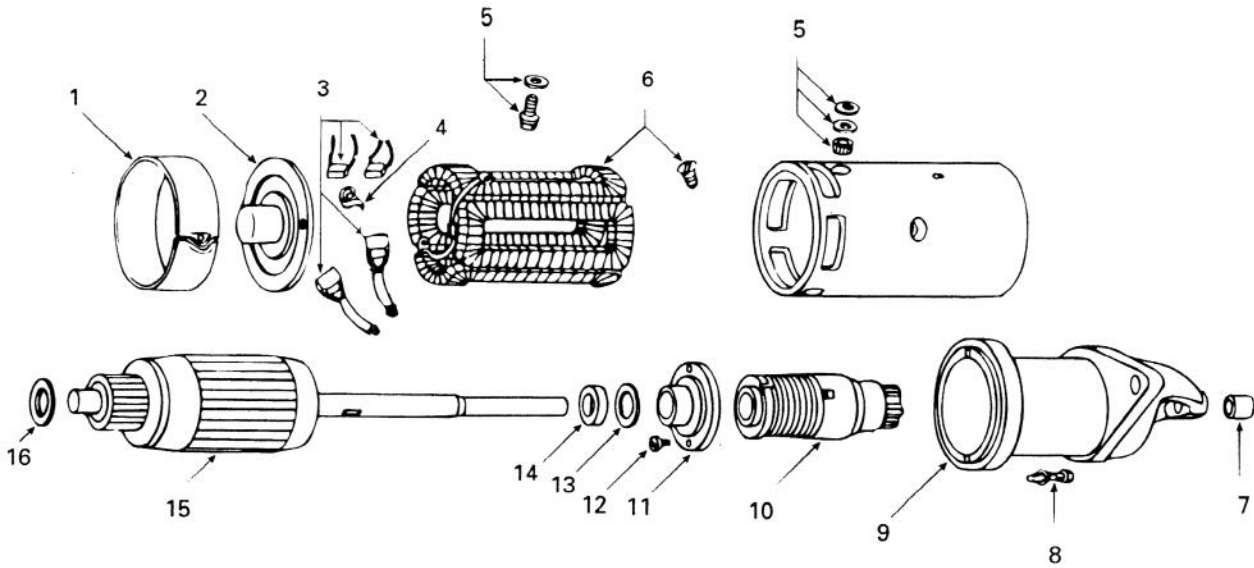
USE WITH MODELS TH, TJD (BEGINNING WITH SERIAL NO. 608422), VE4D, VF4D, VG4D (BEGINNING WITH SERIAL NO. 6080048), VH4D (BEGINNING WITH SERIAL NO. 6079363), W2-880 (BEGINNING WITH SERIAL NO. 608422), W4-1770 (BEGINNING WITH SERIAL NO. 6079363)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MZ24A	Cover band .....	1	8	28MZ52	Screw, no. 10-32 thread x 31/32" long .....	4
2	28MZ2002Q	Commutator end head assembly (includes MBG1021S, MAD110, MZ19S) .....	1	9	28PS2330BS	Pinion housing assembly (includes MZ364, MZ358, XA832; replaces 28PS1330C) .....	1
3	28MBG2012DS	Brush set .....	1	10	28-480369	Bendix drive (replaces 28EBB137A) .....	1
4	28MZ19S	Brush spring set .....	1	11	28MZ1360A	Bearing plate assembly .....	1
5	28P90-2568	Terminal stud package (includes terminal, insulating bushing, terminal stud, inside insulating washer, outside insulating washer, plain washer) (replaces 28P90-743) .....	1	12	28P90-822	Mounting screw package (includes 8X3649) .....	1
6	28MBG3005BS	Field coil package (includes MZ38C) .....	1	13	28MZ359	Gasket (obsolete) .....	1
7	28MZ364	Bronze bearing .....	1	14	28XA1481	Oil seal .....	1
				15	28MBG2411	Armature .....	1
				16	28P90-448	Thrust washer package (contains additional parts to service other applications) .....	1

## YA55A (6 Volt) Starting Motor Assembly, Prestolite No. MZ-4212

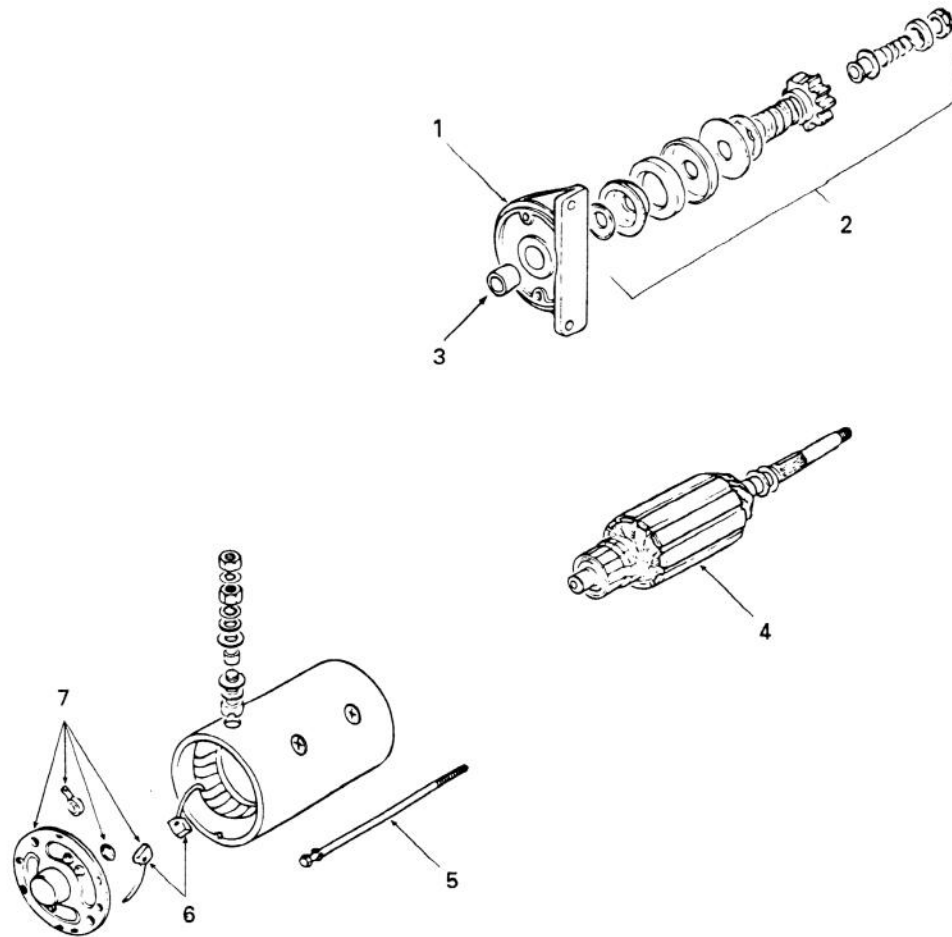
USE WITH MODELS TH, TJD (BEGINNING WITH SERIAL NO. 608422), VE4D, VF4D,  
 VG4D (BEGINNING WITH SERIAL NO. 6080048), VH4D (BEGINNING WITH SERIAL NO. 6079363),  
 W2-880 (BEGINNING WITH SERIAL NO. 608422), W4-1770 (BEGINNING WITH SERIAL NO. 6079363)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MZ24A	Cover band .....	1	8	28MZ52	Screw, no. 10-32 thread x 31/32" long .....	4
2	28MZ2002F	Commutator end head assembly (includes MBG1021S, MAD110, MZ19S) .....	1	9	28PS2330BS	Pinion housing assembly (includes MZ364, MZ358, XA832) .....	1
3	28MZ2012AS	Brush set .....	1	10	28-480369	Bendix drive (replaces 28DBB137A) .....	1
4	28MZ19S	Brush spring set .....	1	11	28MZ1360A	Bearing plate assembly .....	1
5	28P90-716	Terminal stud package (includes terminal, insulating bushing, terminal stud, inside insulating washer, outside insulating washer, plain washer) .....	1	12	28P90-822	Mounting screw package (includes 8X3649) .....	1
6	28MZ1005AS	Field coil package (includes MZ38C) .....	1	13	28MZ359	Gasket (obsolete) .....	1
7	28MZ364	Bronze bearing .....	1	14	28XA1481	Oil seal .....	1
				15	28MZ2411	Armature .....	1
				16	28P90-448	Thrust washer package (contains additional parts to service other applications) .....	1

# YA58 (12 Volt) Starting Motor Assembly (Obsolete; Replaced By YA63A)

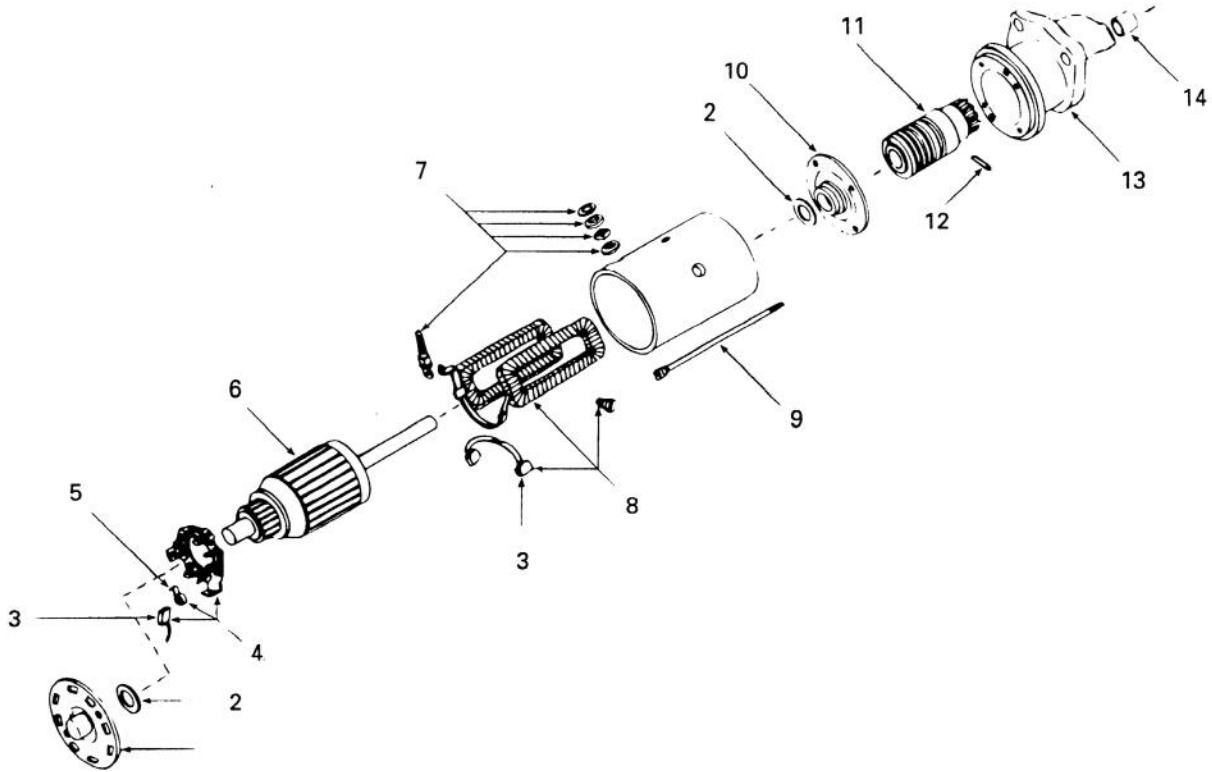
USE WITH MODELS AENL, S10D, S12D, S14D



ITEM	PART NO.	DESCRIPTION	QTY
1	YS102	Bracket and cap assembly (includes item 3) (NLA) .....	1
2	YS103	Drive assembly (NLA) .....	1
3	YS101	Bushing .....	1
4	YS106	Armature assembly (includes spacing washers) .....	1
5	YS105	Thru bolt assembly (NLA) .....	2
6	YS100	Brush set (NLA) .....	1
7	YS104	End cap assembly (includes bearing, brush, brush spring, spacing ring (NLA) .....	1

## YA59 (12 Volt) Starting Motor Assembly, Prestolite No. MHA-7019

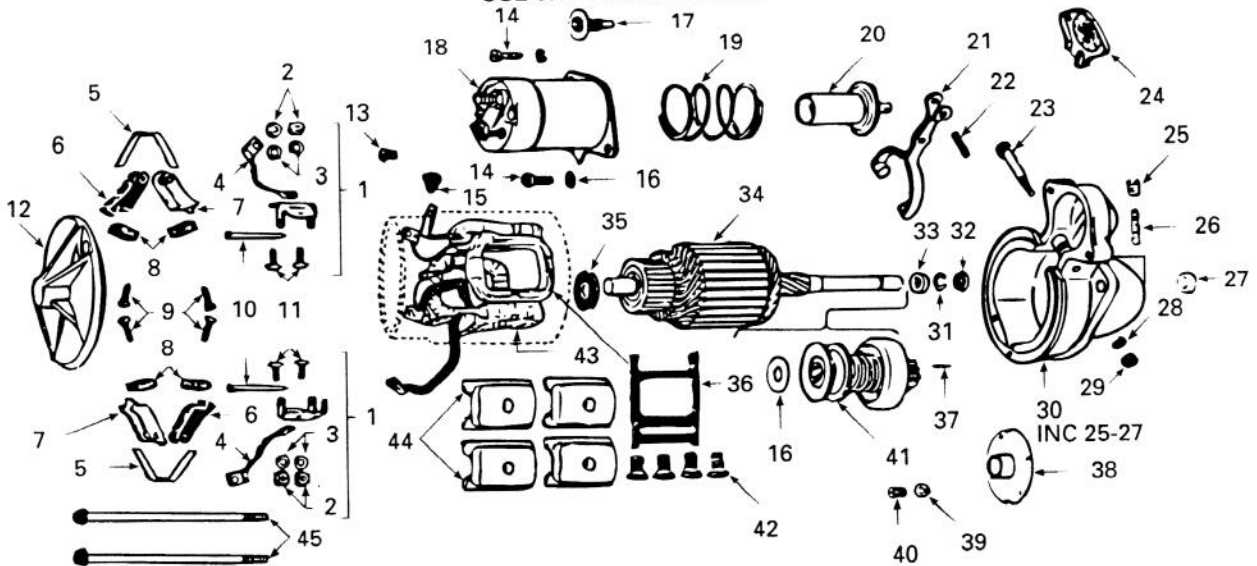
USE WITH MODELS W2-1230, W2-1235, W2-1250



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MDT1002	Head assembly (includes bronze bearing, lube felt) .....	1	8	28MDU2005AS1	Field coil package (includes brush set, screw) .....	1
2	28P90-263	Thrust washer package .....	1	9	28MHA30SS	Thru bolt package .....	1
3	28MDL2012CS	Brush set .....	1	10	28MCH1051	Bearing plate assembly .....	1
4	28MDL1064	Brush plate assembly (includes item 5; includes brush) .....	1	11	93EBB170A	Bendix drive assembly .....	1
5	28MZ19S	Spring set .....	1	12	28-90-2139	Pin package .....	1
6	28MDL2226	Armature assembly .....	1	13	28PS1469S	Pinion housing assembly (includes item 14) .....	1
7	28-90-711	Terminal stud package .....	1	14	28MG77A	Bronze bearing .....	1

**YA60 (12 Volt) Starting Motor Assembly, Delco Remy No. 1998424**  
**(Beginning With Engine Serial No. 6038618)**

USE WITH MODEL V465D

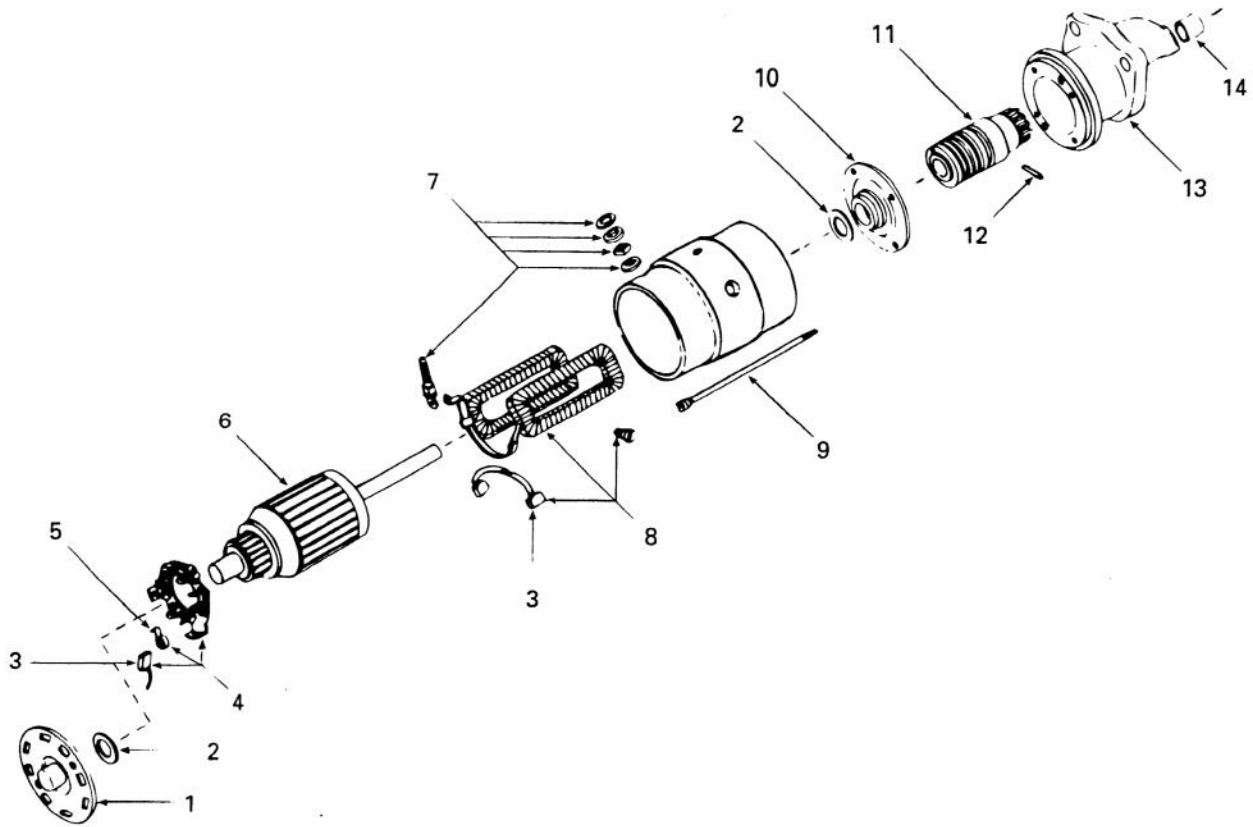


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11) .....	2	26	18-1916439	Wick .....	1
2	* -----	Nut .....	4	27	18-1862383	Bushing .....	1
3	* -----	Lock washer .....	4	28	* -----	Lock washer .....	1
4	* -----	Lead .....	2	29	* -----	Nut .....	4
5	18-1926622	Spring .....	2	30	18-1965225	Drive housing (includes item 27) .....	1
6	* -----	Brush holder .....	2	31	18-1928022	Ring .....	1
7	* -----	Brush holder .....	2	32	18-1928023	Collar .....	1
8	18-1906945	Brush .....	4	33	18-1928021	Collar .....	1
9	* -----	Screw .....	2	34	18-1947353	Armature .....	1
10	* -----	Screw .....	2	35	18-1914842	Washer .....	1
11	* -----	Pin .....	2	36	18-1976832	Insulator .....	1
12	18-1974157	Frame .....	1	37	18-809593	Dowel pin .....	1
13	* -----	Screw .....	1	38	18-820149	Center bearing plate (includes 18-1894023) .....	1
14	* -----	Screw .....	2	39	* -----	Lock washer .....	4
15	18-1893370	Grommet .....	1	40	* -----	Screw .....	4
16	* -----	Washer .....	1	41	18-1877350	Drive assembly .....	1
17	18-1978337	Contact assembly .....	1	42	* -----	Screw .....	4
18	18-1114524	Solenoid switch assembly .....	1	43	18-1974375	Field coil assembly .....	1
19	18-1978281	Spring .....	1	44	* -----	Pole shoe .....	4
20	18-1978891	Plunger .....	1	45	18-1939970	Thru bolt .....	1
21	18-1951567	Shift lever .....	1	---	18-1978333	Nut, M10 x 1.5 (not illustrated) .....	2
22	18-1987049	Pin .....	1	---	18-1978336	Nut, M5 x 0.8 (not illustrated) .....	2
23	18-1932197	Stud .....	1				
24	18-1970263	Boot .....	1				
25	* -----	Plug .....	1				

\* Not serviced separately.

## YA61 (12 Volt) Starting Motor Assembly, Prestolite No. MHA-7021

USE WITH MODELS TJD, VG4D, VH4D, W2-880, W4-1770

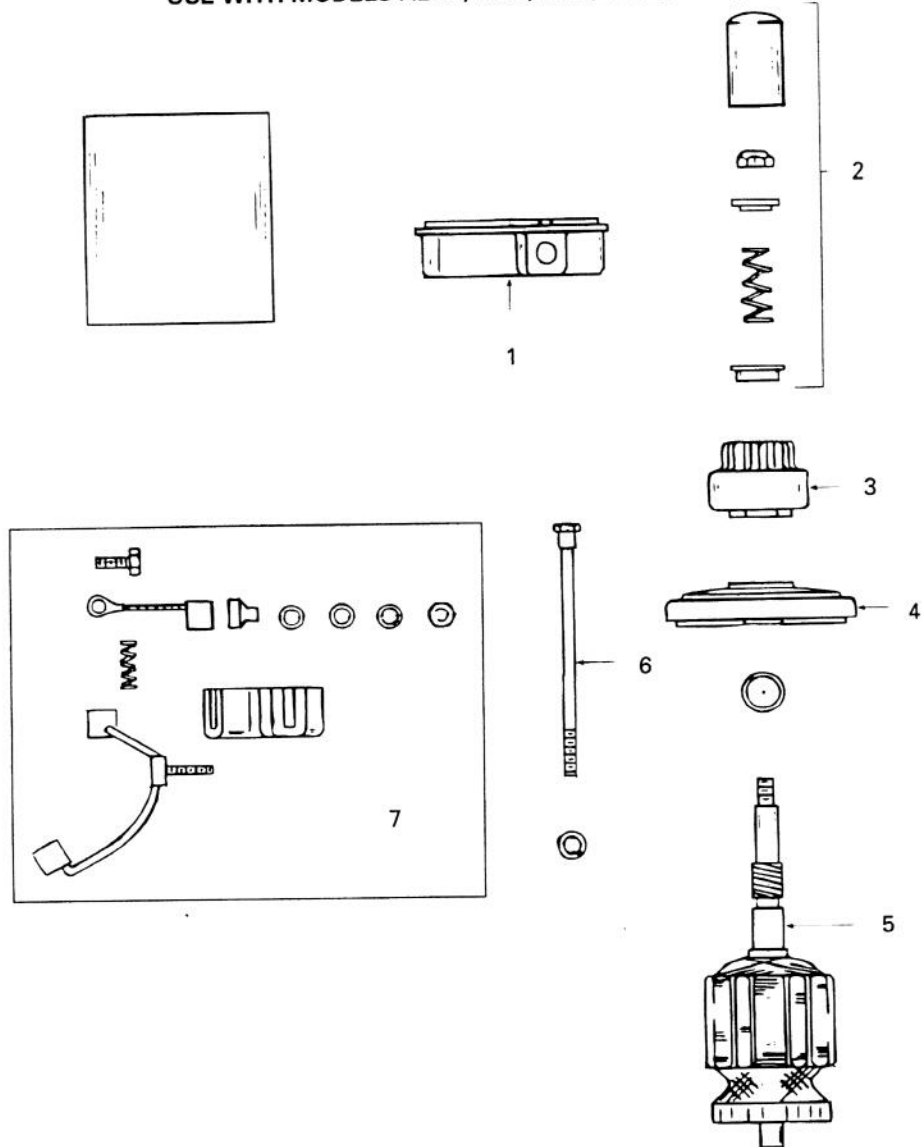


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MDT1002	Head assembly (includes bronze bearing, lube felt) .....	1	8	28MDU2005AS1	Field coil package (includes brush set, screw) .....	1
2	28P90-263	Thrust washer package .....	1	9	28GJ20S	Thru bolt package .....	1
3	28MDL2012CS	Brush set .....	1	10	28MCH1051	Bearing plate assembly .....	1
4	28MDL1064	Brush plate assembly (includes item 5; includes brush) .....	1	11	93EBC1	Bendix drive assembly .....	1
5	28MZ19S	Spring set .....	1	12	28-90-2140	Pin package .....	1
6	28MDL2246	Armature assembly .....	1	13	28PS1473S	Pinion housing assembly (includes item 14) .....	1
7	28-90-711	Terminal stud package .....	1	14	28MG77A	Bronze bearing .....	1



**YA63 Starting Motor (Replaces YA50 Prestolite Starting Motor  
Beginning With Serial Number 6073082)**

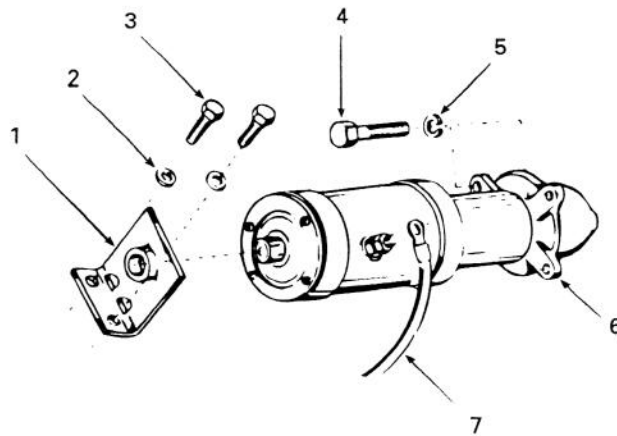
USE WITH MODELS AENL, ACN, BKN, S10D, S12D, S14D



ITEM	PART NO.	DESCRIPTION	QTY
1	9CP20250	Cap, commutator end .....	1
2	9KT18944	Drive kit .....	1
3	9DV16375	Drive pinion assembly .....	1
4	9CP01447	Cap, drive end .....	1
5	9AT13890	Armature assembly .....	1
6	9SC02620	Thru bolt .....	2
7	9KT10900	Brush and spring kit .....	1

## EEA100 Starting Motor

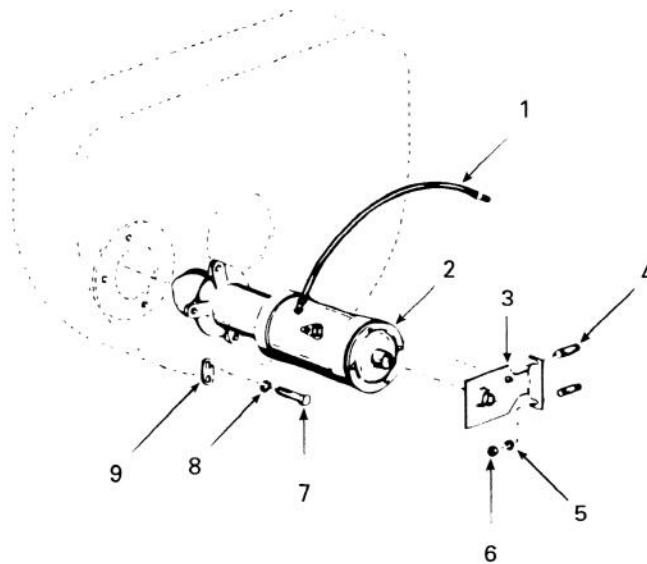
USE WITH MODELS THD, TJD, W2-880



ITEM	PART NO.	DESCRIPTION	QTY
1	PG516C	Bracket (replaces PG516A) .....	1
2	PH30	Washer, 1/4" .....	2
3	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
4	PB187	Screw, 3/8"-24 thread x 1" long .....	3
5	PE5	Lock washer, 3/8" .....	3
6	YA61	Starting motor (replaces YA54A) .....	1
7	YL356-22	Starter cable assembly .....	1

## EEA101 (12 Volt) Starting Motor Assembly

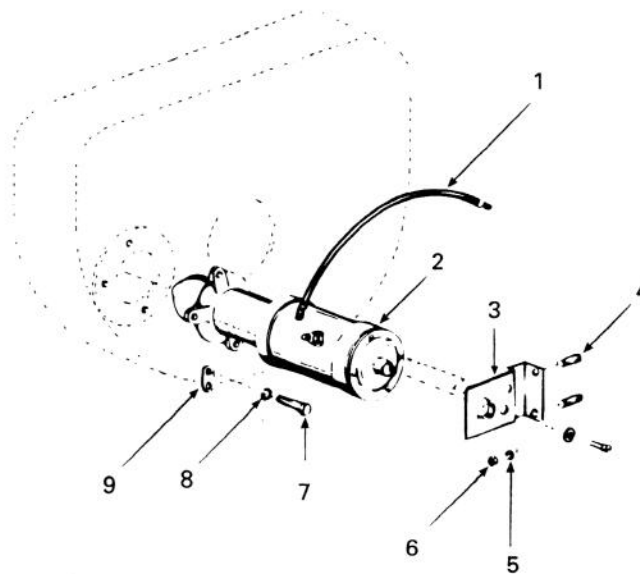
USE WITH MODELS VE4D, VF4D, VH4D, W4-1770



ITEM	PART NO.	DESCRIPTION	QTY
1	YL356-20	Starter cable assembly, 20" long .....	1
—	YL356-26	Cable assembly, 26" long .....	1
2	YA61	Starting motor, 12 volt, Prestolite MHA7021 (replaces 54A) .....	1
—	YA55A	Starting motor, 6 volt, Prestolite MZ4212 (replaces YA19-3) .....	1
3	PG514C	Bracket .....	1
4	PC396	Stud .....	2
5	PE4	Lock washer, 5/16" .....	2
6	PD10	Nut, 5/16"-24 thread .....	2
7	PB187	Screw, 3/8"-24 thread x 1" long .....	3
8	PE5	Lock washer, 3/8" .....	3
9	YD29C	Terminal connector .....	1

## EEA102 (12 Volt) Starting Motor Assembly

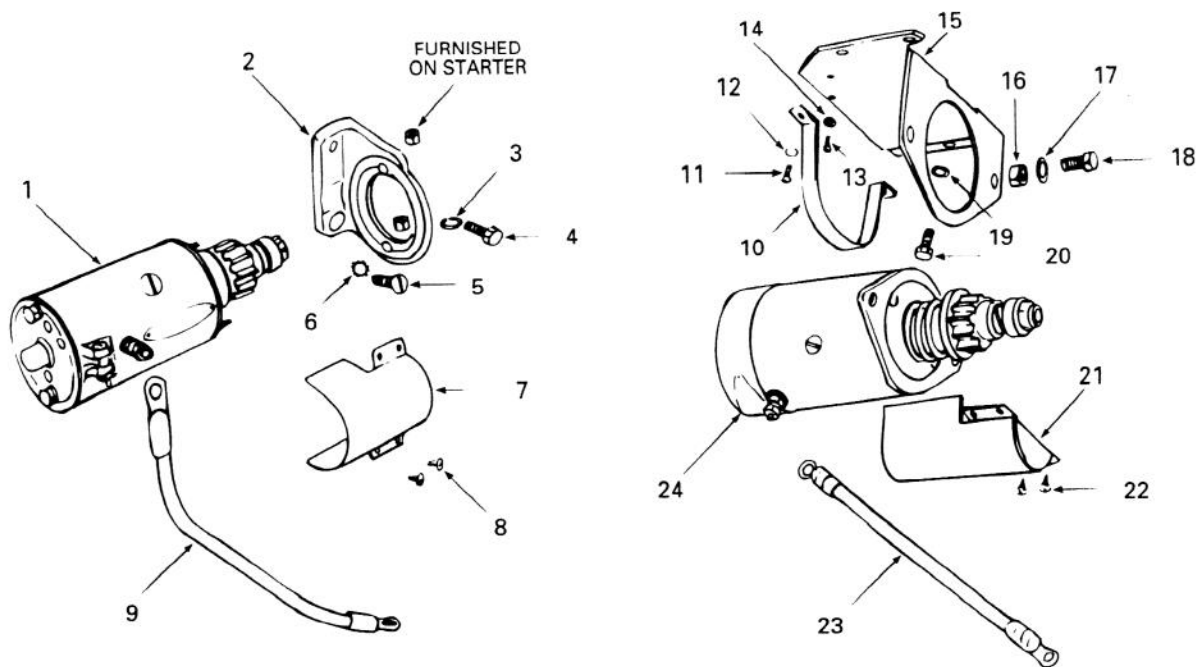
USE WITH MODEL VG4D



ITEM	PART NO.	DESCRIPTION	QTY
1	YL356-26	Starter cable assembly, 26" long .....	1
—	YL356-28	Cable, 28" long .....	1
2	YA61	Starting motor, 12 volt, Prestolite MHA7021 (replaces YA54A) .....	1
—	YA55A	Starting motor, 6 volt, Prestolite MZ4212 (replaces YA19-3, YA10) ....	1
3	PG515D	Support bracket (replaces PG515A) .....	1
4	PC396	Stud .....	2
5	PE4	Lock washer, 5/16" .....	2
6	PD10	Nut, 5/16"-24 thread .....	2
7	PB187	Screw, 3/8"-24 thread x 1" long ....	3
8	PE5	Lock washer, 3/8" .....	3
9	YD296	Terminal connector .....	1

## EEA105 Electric Starting Motor

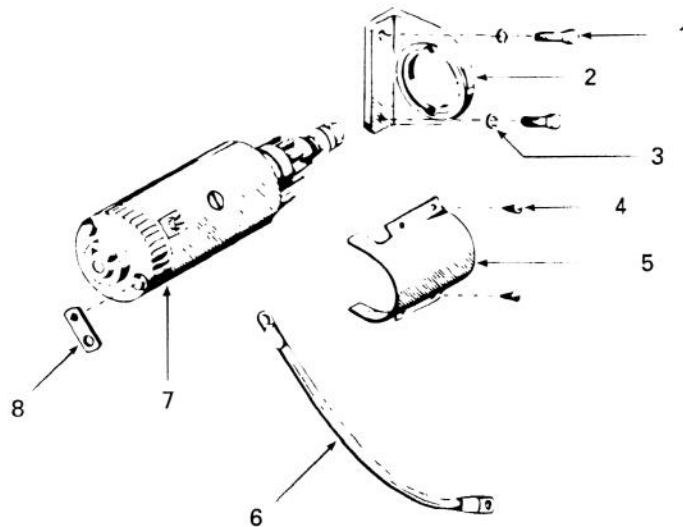
USE WITH MODEL AENL



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	YA63	Starting motor, 12 volt (MGD4102A) (replaces YA50) (YA58 and YA29 obsolete) .....	1	8	XA73	Screw, no. 7 x 3/8" long ....	4
2	BI370	Starter bracket, 12 volt (YA50) (beginning with serial no. 5,000,100) .....	1	9	YL356-11	Starter cable .....	1
—	BI347-2	Starter bracket, 12 volt (YA50) (previous to serial no. 5,000,100) .....	1	10	PG657	Starter support strap (obsolete) .....	1
—	BI347	Starter bracket, 6 volt (YA29) .....	1	11	XA33	Screw, 1/4"-20 thread x 3/8" long .....	2
—	BI370-2	Starter bracket (YA63) .....	1	12	PE3	Lock washer, 1/4" .....	2
3	PE4	Lock washer, 5/16" .....	1	13	XE36	Set screw, 1/4"-20 thread x 1/2" long (obsolete) .....	1
—	PE5	Lock washer, 3/8" (YA58) .....	1	14	PD77-1	Nut, 1/4"-20 .....	1
4	XD16	Screw, 5/16"-18 thread x 7/8" long .....	1	15	BI294-2	Bracket .....	1
—	XD27A	Screw, 3/8"-16 thread x 1" long .....	2	16	PD79	Nut, 3/8"-16 thread .....	2
5	XC64	Screw, 5/16"-18 thread x 1" long .....	1	17	PE5	Lock washer, 3/8" .....	2
6	PE49	Lock washer, 5/16" .....	1	18	XD25	Screw, 3/8"-16 thread x 3/4" long .....	2
7	SE165A	Cover .....	1	19	PH14	Plain washer, 5/16" .....	2
				20	XD13	Screw, 5/16"-18 thread x 1/2" long .....	2
				21	SE165	Cover .....	1
				22	XA73	Screw, no. 7 x 3/8" long ....	4
				23	YL356-11	Starter cable .....	1
				24	YA5B	Starting motor, 6 volt (MAK4008) .....	1

## EEA106 Starter Motor Mounting

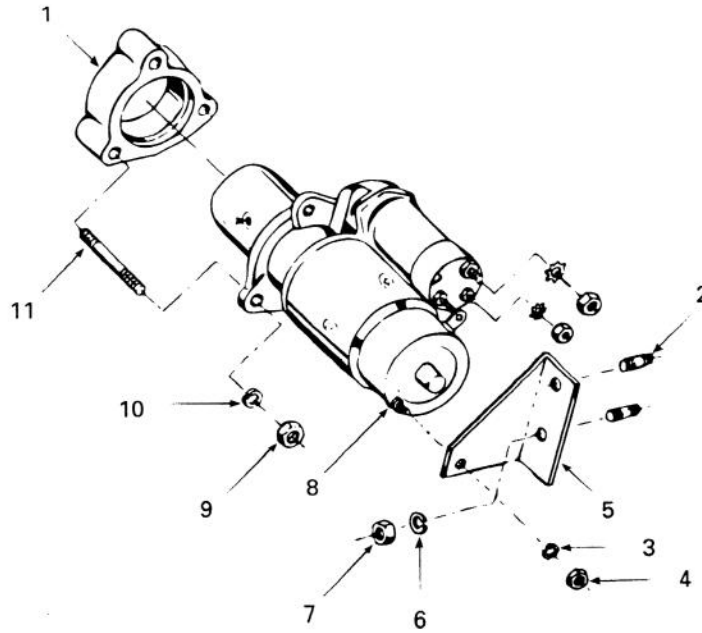
USE WITH MODELS S10D, S12D, S14D



ITEM	PART NO.	DESCRIPTION	QTY
1	XD27	Screw, 5/16"-18 thread x 1" long .....	2
2	BI370-2	Mounting bracket (YA63) .....	1
—	BI370	Mounting bracket (YA50) .....	1
3	PE5	Lock washer, 3/8" .....	2
4	XA73	Screw, no. 7 x 3/8" long ....	4
5	SE229A	Cover .....	1
6	YL356-20	Starter cable .....	1
7	YA63	Starting motor, 12 volt, Prestolite no. MGD4102A (replaces YA50) .....	1
—	YA63A	Starting motor, 12 volt (replaces YA58) .....	1
8	YD296	Ground connector .....	1

## EEA109 Starting Motor Assembly

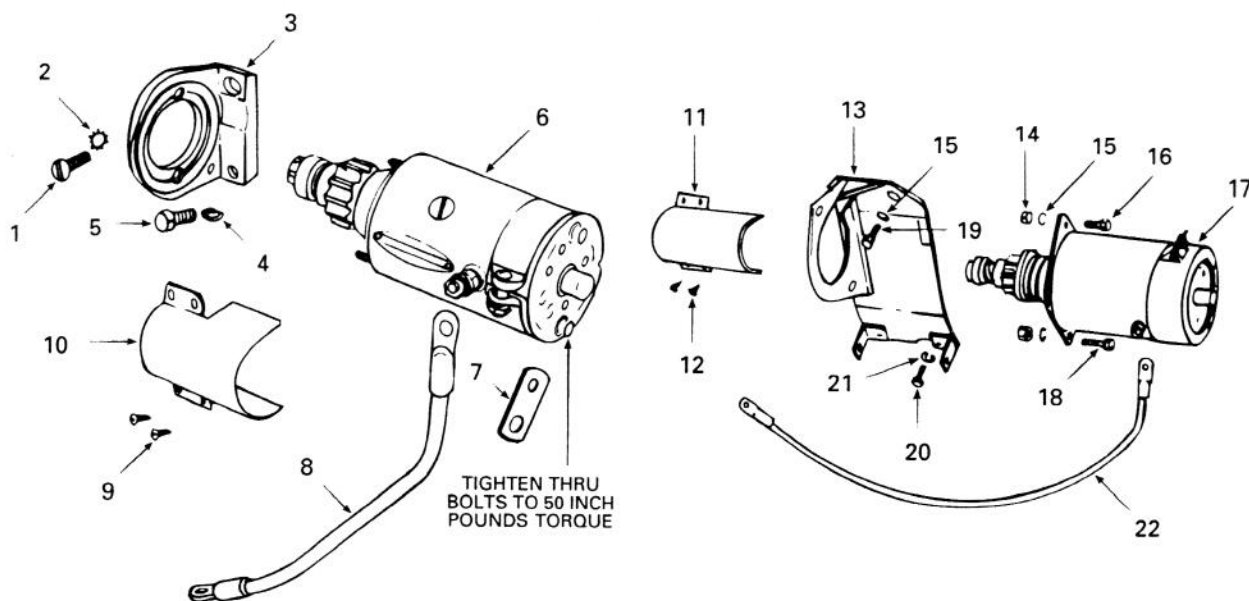
USE WITH MODEL W4-1770



ITEM	PART NO.	DESCRIPTION	QTY
1	BG328	Adapter .....	1
2	PC396	Stud .....	2
3	PE3	Lock washer, 1/4" .....	1
4	PD77	Nut, 1/4"-20 thread .....	1
5	PG1301	Bracket .....	1
6	PE4	Lock washer, 5/16" .....	2
7	PD10	Nut, 5/16"-24 thread .....	2
8	YA53B	Starting motor, 12 volt, Delco Remy No. 1998299 (replaces YA53A) .....	1
9	PD79	Nut, 3/8"-16 thread .....	3
10	PE5	Lock washer, 3/8" .....	3
11	PC542	Stud .....	3

## EEA111 Electric Starting Motor

USE WITH MODELS ACN, BKN

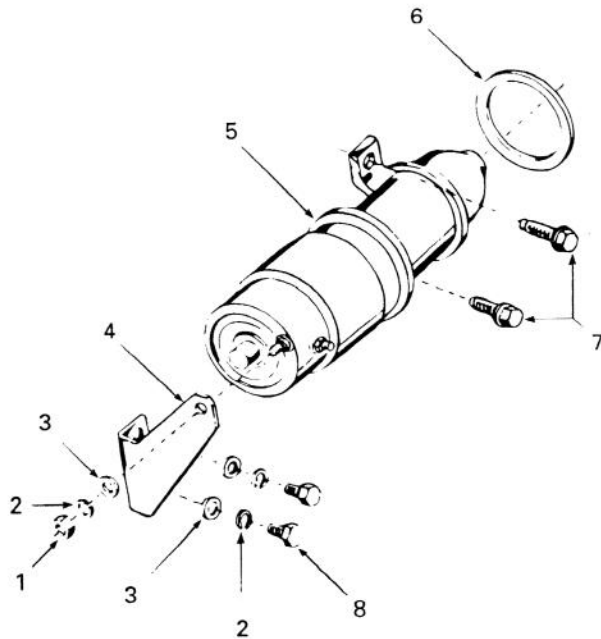


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XC64	Screw, 5/16"-18 thread x 1" long .....	1	11	SE177	Cover (obsolete) .....	1
2	PE49	Lock washer, 5/16" .....	1	12	XA73	Screw, no. 7 x 3/8" long ....	4
3	BI347-8	Mounting bracket, 12 volt (replaces B1347-3) .....	1	13	BI299	Bracket (obsolete) .....	1
4	PE4	Lock washer, 5/16" .....	1	14	PD79	Nut, 3/8"-16 thread .....	2
5	XD17	Screw, 5/16"-18 thread x 1" long .....	1	15	PE5	Lock washer, 3/8" .....	4
6	YA63	Bosch starting motor, 12 volt, Prestolite no. MGD4102A (replaces YA50) .....	1	16	XD26	Screw, 3/8"-16 thread x 7/8" long .....	1
—	YA29	Starting motor, 6 volt, Prestolite no. MDH4001M (obsolete) .....	1	17	YA5B	Starting motor, 6 volt, Prestolite no. MAK4008 (obsolete) .....	1
7	YD296	Terminal .....	1	18	XD30	Screw, 3/8"-16 thread x 1-1/2" long .....	1
8	YL356-20	Starter cable (replaces YL87A) .....	1	19	XD27	Screw, 3/8"-16 thread x 1" long .....	2
9	XA73	Screw, no. 7 x 3/8" long ....	4	20	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
10	SE177-1	Cover .....	1	21	PE3	Lock washer, 1/4" .....	2
				22	YL356-20	Starter cable (replaces YL87A) .....	1



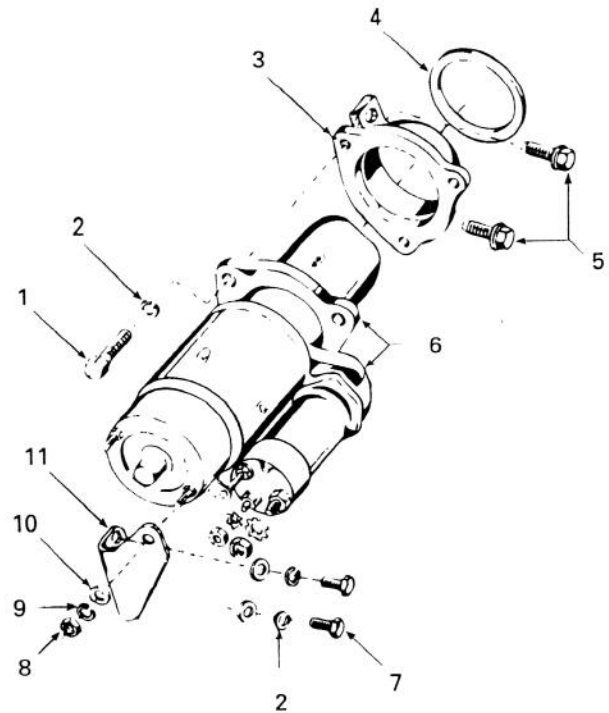
## EEA120 Starting Motor Assembly

USE WITH MODEL W2-1250



## EEA122 Starting Motor With Solenoid Switch

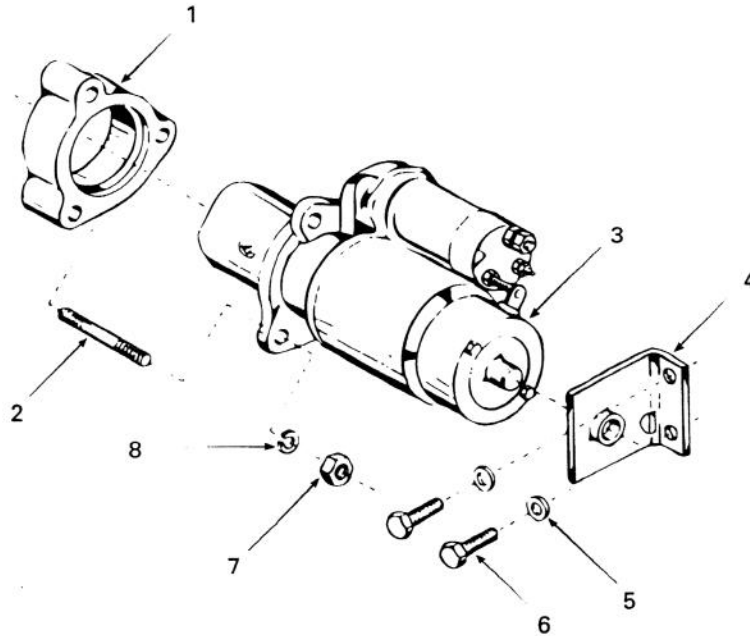
USE WITH MODEL W2-1250



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PD77	Nut, 1/4"-20 thread .....	1	1	XD28	Screw, 3/8"-16 thread x 1-1/8" long .....	3
2	PE3	Lock washer, 1/4" .....	3	2	PE5	Lock washer, 3/8" .....	5
3	PH196	Washer, 1/4" .....	3	3	BG360	Adaptor .....	1
4	PG1308	Bracket .....	1	4	QD865	Gasket .....	1
5	YA59	Starting motor, 12 volt, Prestolite MHA7019 .....	1	5	XD185	Screw, 3/8"-16 thread x 1-1/4" long .....	2
6	QD865	Gasket .....	1	6	YA53B1	Starting motor, 12 volt (replaces YA53A1) .....	1
7	XD185	Screw, 3/8"-16 thread x 1-1/4" long .....	2	7	XD29	Screw, 3/8"-16 thread x 1-1/4" long .....	2
8	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2	8	PD77	Nut, 1/4"-20 thread .....	1
				9	PE3	Lock washer, 1/4" .....	1
				10	PH196	Washer, 1/4" .....	3
				11	PG1313	Bracket .....	1

## YA32B Solenoid Operated Starting Motor Assembly

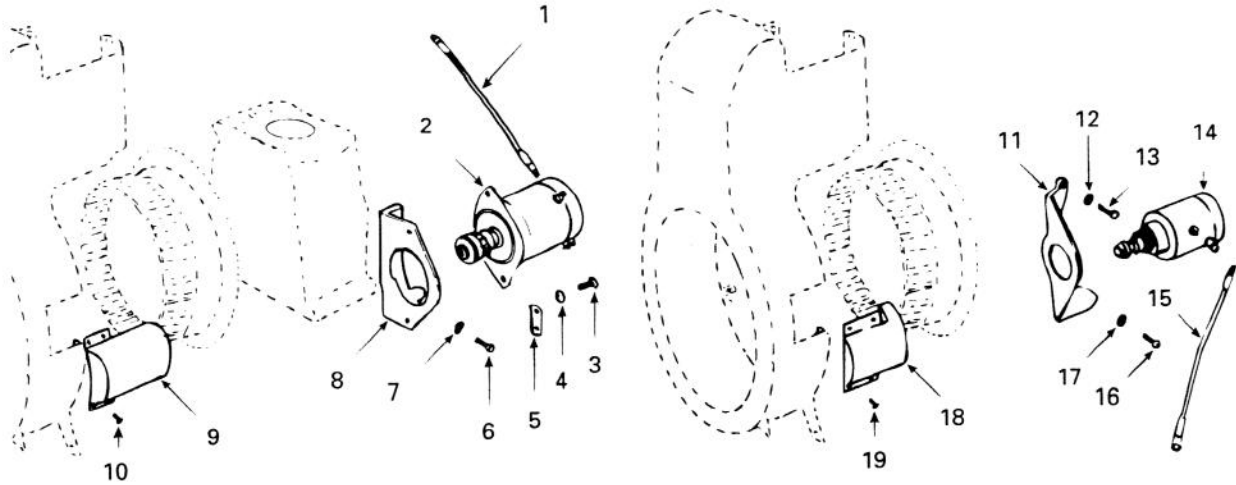
USE WITH MODELS THD, TJD, W2-880



ITEM	PART NO.	DESCRIPTION	QTY
1	BG328	Adapter .....	1
2	PC542	Stud .....	3
3	YA32B	Starting motor, 12 volt, Delco Remy no. 1998301 .....	1
4	PG516B	Bracket .....	1
5	PH30	Washer, 1/4" .....	2
6	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
7	PD79	Nut, 3/8"-16 thread .....	3
8	PE5	Lock washer, 3/8" .....	3

**YA39 (12 Volt, Engines Beginning With Serial No. 3252140)  
YA35 (12 Volt, Engines Up To And Including Serial No. 3252139)  
Electric Starting Motors**

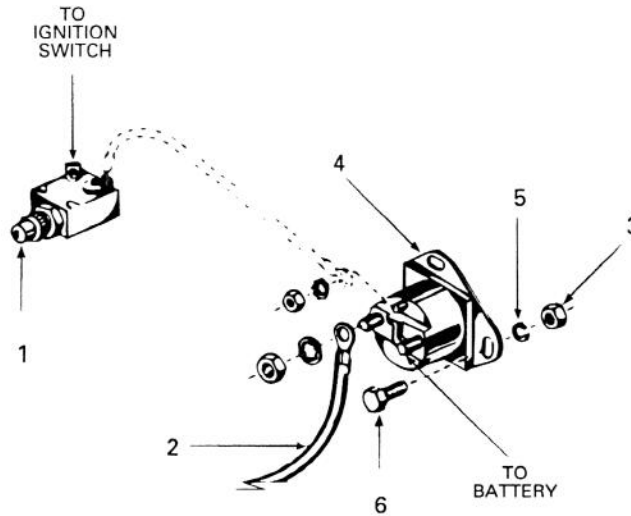
USE WITH MODEL AGND



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	YL356-11	Starter cable, 10" long .....	1	—	BI343-2	Bracket, YA27B	
2	YA39	12 volt starting motor (for engines beginning with serial no. 3,252,140) (replaces YA35) .....	1	12	PE5	Lock washer, 3/8" .....	1
3	XD27	Screw, 3/8"-16 thread x 1" long .....	1	13	XD30	Screw, 3/8"-16 thread x 1-1/2" long .....	1
—	XD29	Screw, 3/8"-16 thread x 1-1/4" long .....	1	14	YA35	Wisconsin starting motor, 12 volt (serial no. 3,147,658 to and including 3,252,139); YA27, YA27A and YA27B used on engines previous to serial no. 3,147,658) (obsolete) ...	1
4	PE5	Lock washer, 3/8" .....	2	15	YL356-11	Starter cable, no. 4 A.W.G., 11" long .....	1
5	YD296	Terminal .....	1	16	XD16	Screw, 5/16"-18 thread x 7/8" long .....	2
6	XD17	Screw, 5/16"-18 thread x 1" long .....	3	17	PE4	Lock washer, 5/16" .....	2
7	PE4	Lock washer, 5/16" .....	3	18	SE229A	Cover .....	1
8	BI360	Bracket .....	1	19	XA73	Screw, no. 7 x 3/8" long ....	4
9	SE177-1	Cover .....	1				
10	XA73	Screw, no. 7 x 3/8" long ....	4				
11	BI343-3	Starter bracket (YA35) (serial no. 3,147,658 to and including 3,252,139) ...	1				
—	BI343	Bracket (YA27, YA27A) (to and including engine serial no. 2,981,587) .....	1				

## ETA101 Solenoid Starting

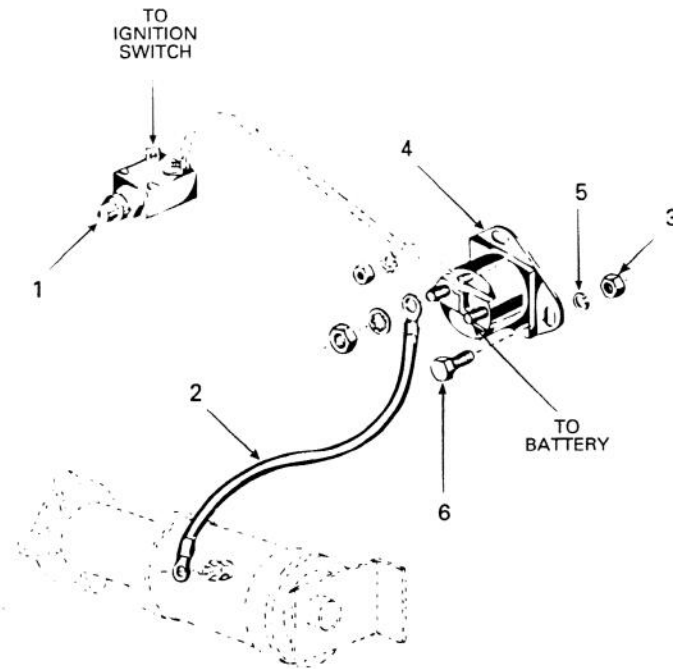
USE WITH MODELS VE4D, VF4D, VH4D, W4-1770



ITEM	PART NO.	DESCRIPTION	QTY
1	YC19	Remote starting switch	1
2	YL356-7	Starter cable assembly	1
3	PD77	Nut, 1/4"-20 thread	2
4	YC96S1	Solenoid starting switch assembly, 12 volt (includes PD78, PD115-2, PE45, PE52)	1
5	PE3	Lock washer, 1/4"	2
6	KA34	Screw, 1/4"-20 thread x 1/2" long	2

## ETA102 Solenoid Starting

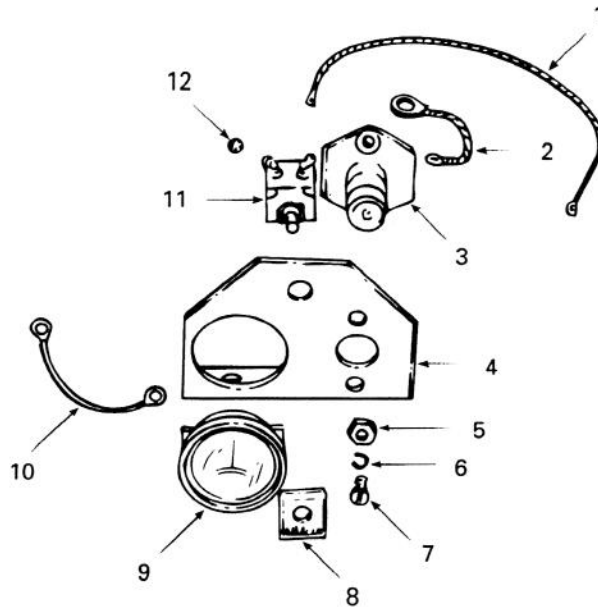
USE WITH MODEL VG4D



ITEM	PART NO.	DESCRIPTION	QTY
1	YC19	Remote starting switch .....	1
2	YL356-7	Starter cable assembly .....	1
3	PD77	Nut, 1/4"-20 thread .....	2
4	YC96S1	Solenoid starting switch assembly (includes PD78, PD115-2, PE45, PE52) .....	1
5	PE3	Lock washer, 1/4" .....	2
6	XA34	Screw, 1/4"-20 thread x 1/2" long .....	2

## EPC100 Control Panel Group

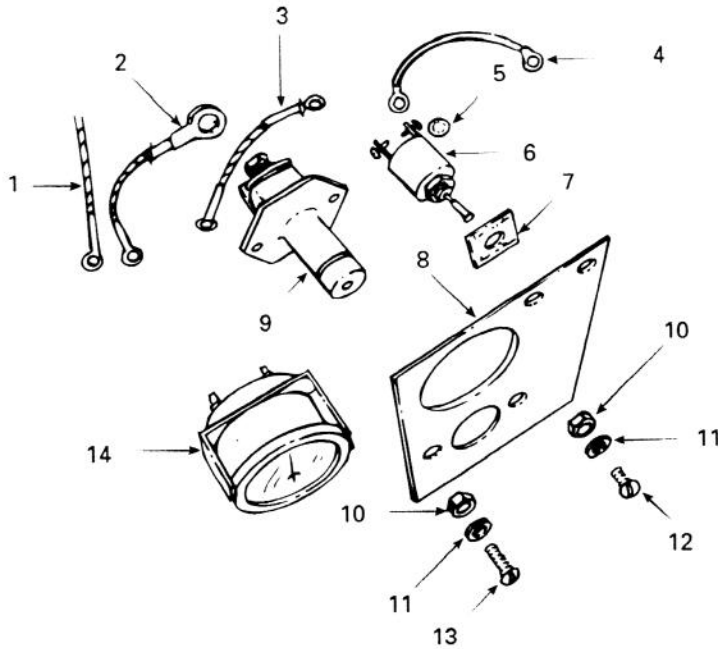
USE WITH MODELS ACN, BKN



ITEM	PART NO.	DESCRIPTION	QTY
1	YL352-14	Ignition wire assembly, no. 14 GA., 14" long .....	1
2	YL353-4	Ignition wire assembly, no. 14 GA., 4" long .....	1
3	YC10C	Starting switch (replaces YC10) .....	1
4	VE799B	Control panel (replaces VE601B) .....	1
5	PD77	Nut, 1/4"-20 thread .....	2
6	PE3	Lock washer, 1/4" .....	2
7	XA36	Screw, 1/4"-20 thread x 3/4" long .....	2
8	SD109	Tag .....	1
9	YE2	Ammeter .....	1
10	YL352-4	Ignition wire assembly, no. 14 GA., 4" long .....	1
11	YC9BS1	Ignition switch assembly .....	1
12	PE72	Lock washer .....	2

## EPC114 Control Panel Group

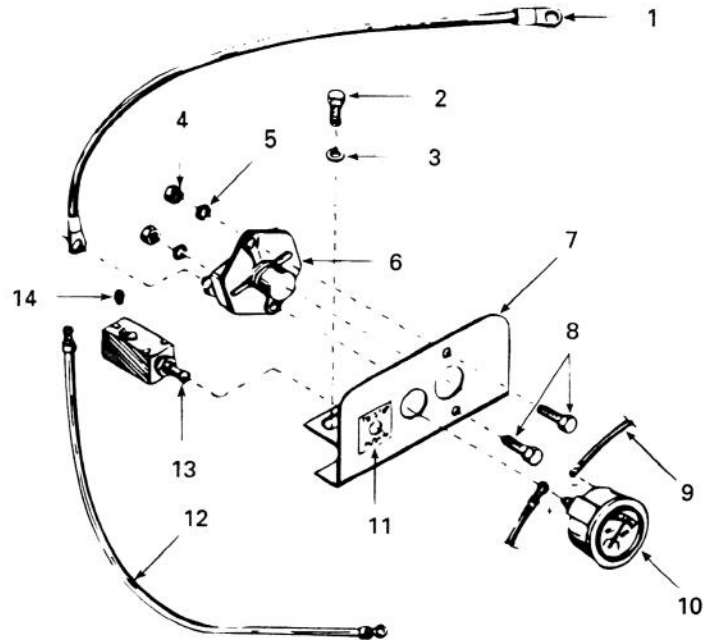
USE WITH MODEL AENL



ITEM	PART NO.	DESCRIPTION	QTY
1	YL380-6	Ignition wire assembly .....	1
2	YL374-5	Ignition wire assembly .....	1
3	YL352-4	Ignition wire assembly .....	1
4	YL352-11	Ignition wire assembly .....	1
5	PE72	Lock washer .....	2
6	YC9BS1	Ignition switch assembly .....	1
7	SD109	Tag .....	1
8	VE262-2	Control panel .....	1
9	YC10C	Starting switch (replaces YC10) .....	1
10	PD77	Nut, 1/4"-20 thread .....	4
11	PE3	Lock washer, 1/4" .....	4
12	XA34	Screw, 1/4"-20 thread x 1/2" long .....	2
13	XA36	Screw, 1/4"-20 thread x 3/4" long .....	2
14	YE2	Ammeter .....	1

## EPC119 Control Panel Mounting (Solid State Ignition)

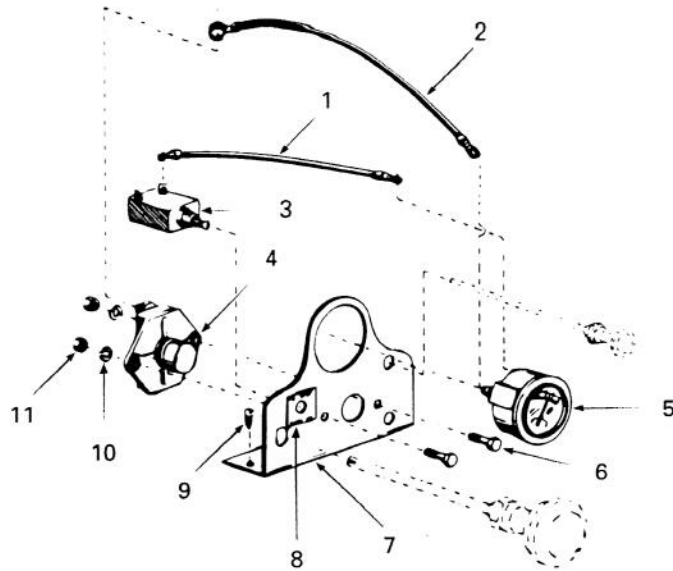
USE WITH MODELS S10D, S12D, S14D



ITEM	PART NO.	DESCRIPTION	QTY
1	YL356-11	Starter cable assembly .....	1
2	XD5	Screw, 1/4"-20 thread x 5/8" long .....	2
3	PH84	Washer, 1/4" I.D. x 1/2" O.D. x 1/16" thick .....	2
4	PD77	Nut, 1/4"-20 thread .....	2
5	PE3	Lock washer, 1/4" .....	2
6	YC10C	Starter switch .....	1
7	VE799B	Control panel .....	1
8	XA36	Screw, 1/4"-20 thread x 3/4" long .....	2
9	YL352-8	Ignition wire assembly .....	1
10	YE2	Ammeter, 0-30 amps .....	1
—	YE6	Ammeter, 0-15 amps .....	1
11	SD109	Tag .....	1
12	YL353-4	Ignition wire assembly .....	1
13	YC9FS1	Ground switch assembly (includes SD109, PE72) .....	1
14	PE72	Lock washer .....	1



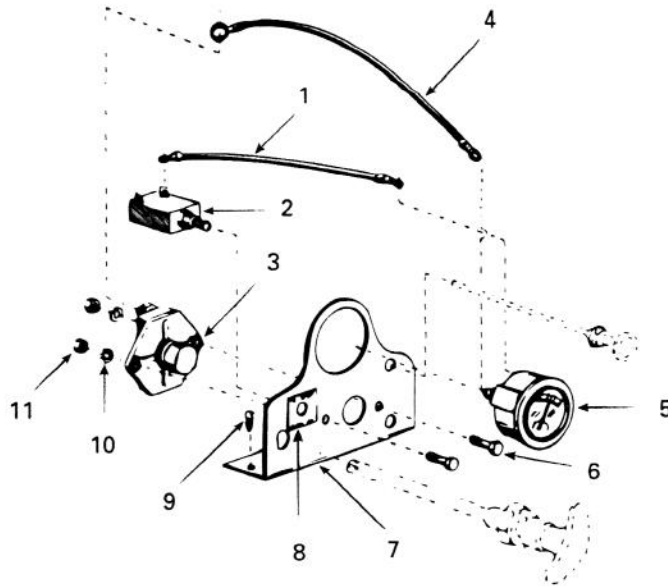
**EPC125 Control Panel Group**  
 USE WITH MODELS VE4D, VF4D, VH4D



ITEM	PART NO.	DESCRIPTION	QTY
1	YL374-5	Ignition wire assembly .....	1
—	YL352-8	Wire assembly, 8" long .....	1
2	YL353-5	Ignition wire assembly .....	1
3	YC9BS1	Ignition switch assembly .....	1
4	YC10C	Starting switch .....	1
5	YE2	Ammeter .....	1
6	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
7	VE439D	Control panel (replaces VE439) .....	1
8	SD109	Tag .....	1
9	XA65	Screw, no. 8 x 1/2" long ....	4
10	PE3	Lock washer, 1/4" .....	2
11	PD77	Nut, 1/4"-20 thread .....	2

## EPC157 Control Panel Group

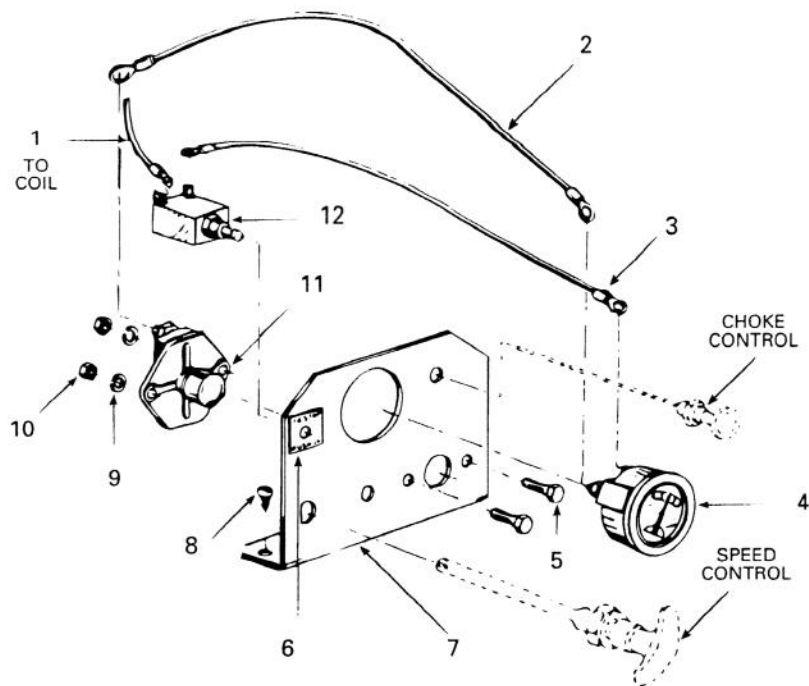
USE WITH MODEL VG4D



ITEM	PART NO.	DESCRIPTION	QTY
1	YL352-4	Ignition wire assembly, 4" long .....	1
—	YL352-8	Wire assembly, 8" long .....	1
2	YC9BS1	Ignition switch assembly .....	1
3	YC10C	Starting switch (replaces YC10) .....	1
4	YL374-5	Ignition wire assembly, 5" long .....	1
5	YE2	Ammeter .....	1
6	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
7	VE439D	Control panel (replaces VE559) .....	1
8	SD109	Instruction tag .....	1
9	XA65	Screw, no. 8 x 1/2" long .....	4
10	PE3	Lock washer, 1/4" .....	2
11	PD77	Nut, 1/4"-20 thread .....	2

## EPC231 Control Panel Group

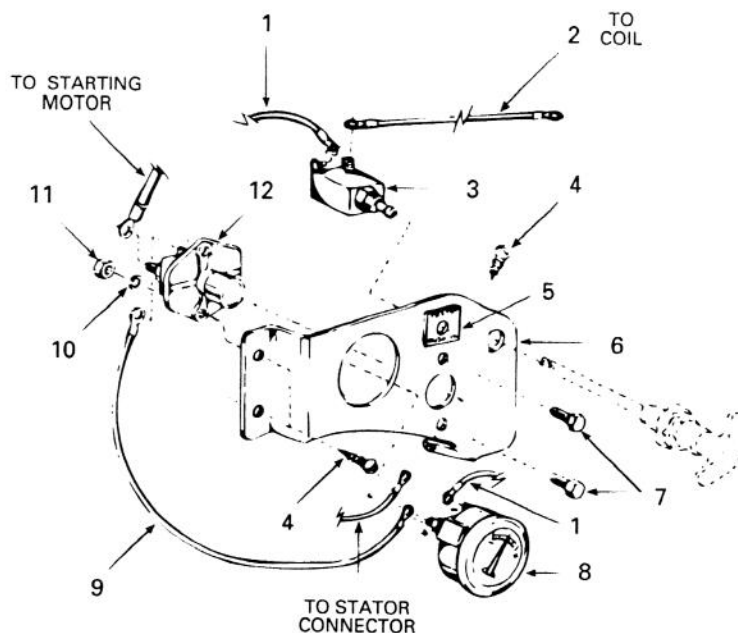
USE WITH MODEL W4-1770



ITEM	PART NO.	DESCRIPTION	QTY
1	YL352-23	Ignition wire assembly, 23" long .....	1
2	YL374-5	Ignition wire assembly 5" long .....	1
3	YL352-4	Ignition wire assembly 4" long .....	1
4	YE2	Ammeter .....	1
5	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
6	SD109	Tag .....	1
7	VE439-3	Control panel .....	1
8	XA65	Screw, no. 8 x 1/2" long ....	4
9	PE3	Lock washer, 1/4" .....	2
10	PD77	Nut, 1/4"-20 thread .....	2
11	YC10C	Starting switch .....	1
12	YC9BS1	Ignition switch assembly (includes SD109, PE72) .....	1

## EPC237, EPC238 Control Panel Group

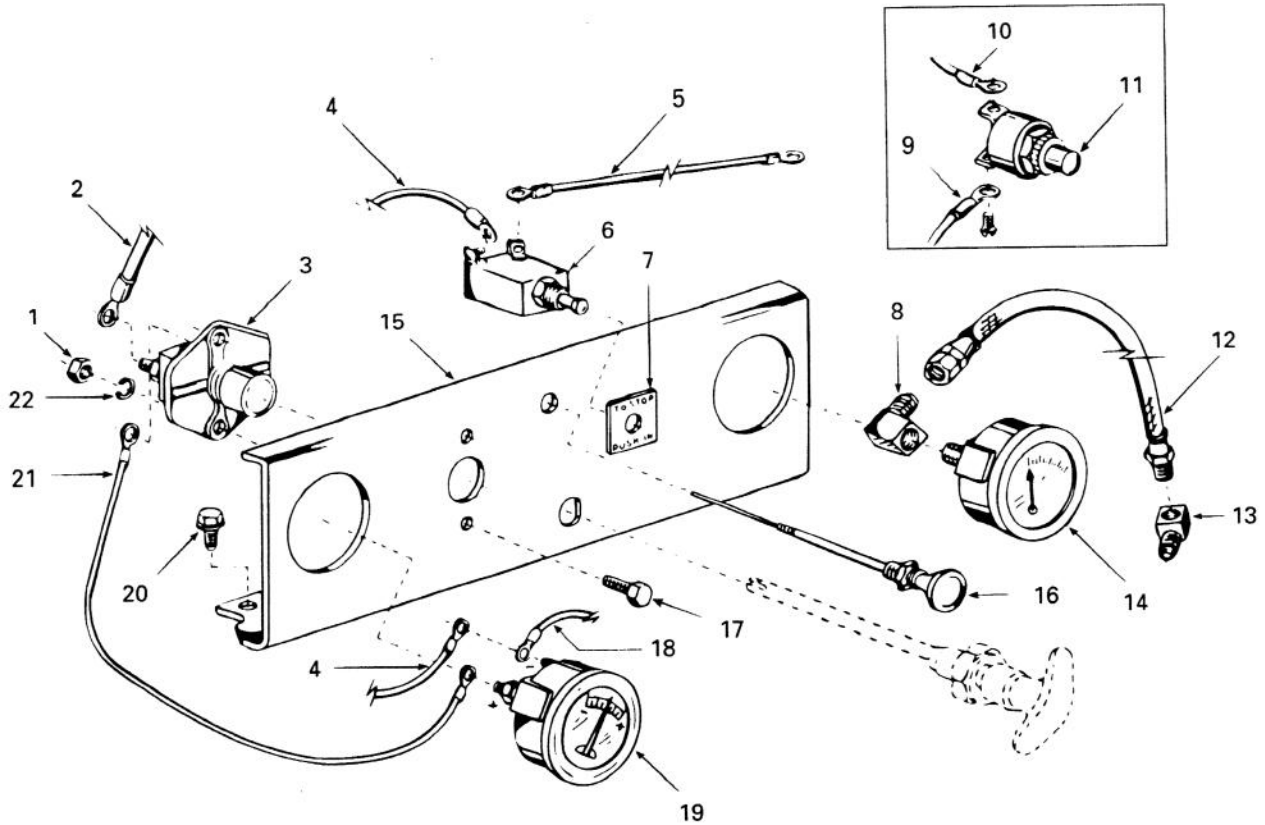
USE WITH MODEL W2-880



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	YL352-4	Ignition wire assembly, 4" long .....	1	8	YE2	Ammeter (EPC238), 0-30 amps .....	1
2	YL352-14	Ignition wire assembly, 14" long .....	1	—	YE6	Ammeter (EPC237), 0-15 amps .....	1
3	YC9BS1	Ignition switch assembly (includes item 5; includes PE72) .....	1	9	YL374-5	Ignition wire assembly (EPC238), 5" long .....	1
4	XA79	Screw, no. 14 x 1/2" long .....	3	—	YL353-5	Ignition wire (EPC237) .....	1
5	SD109	Tag .....	1	10	PE3	Lock washer, 1/4" .....	2
6	VE862-1	Control panel .....	1	11	PD77	Nut, 1/4"-20 thread .....	2
7	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2	12	YC10C	Starting switch (EPC238) ...	1
				—	YC10B	Starting switch (EPC237) ...	1

## EPC244, EPC245, EPC251 Control Panel Groups

USE WITH MODELS W2-1230, W2-1235, W2-1250

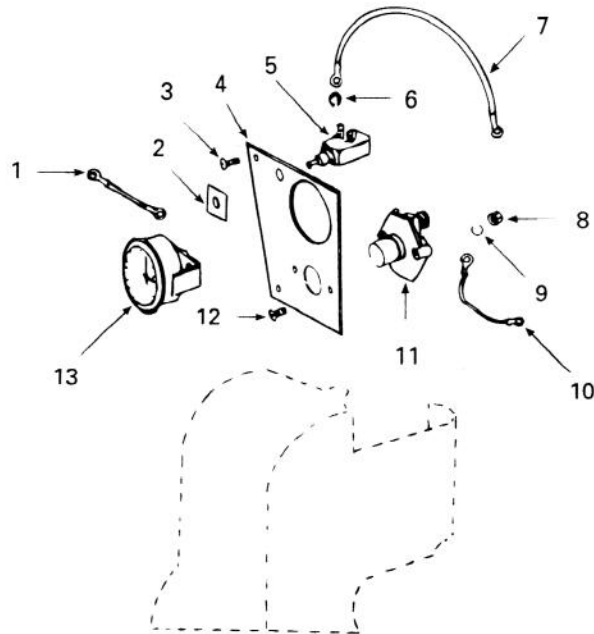


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PD77	Nut, 1/4"-20 thread.....	2	13	RF996	Elbow, 1/8" x 90° .....	1
2	YL356-28	Cable assembly, no. 4 a.w.g. ....	1	14	RS56	Gauge .....	1
3	YC10C	Starting switch .....	1	15	VE855A	Control panel .....	1
4	YL352-8	Wire assembly .....	1	16	VE575T	Choke control .....	1
5	YL352-26	Wire assembly .....	1	17	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
6	YC9BS1	Ignition switch assembly (includes item 7; includes PE72).....	1	18	* — — —	Wire assembly .....	1
7	SD109	Tag .....	1	19	YE6	Ammeter, 0-15 amps .....	1
8	RF1421	Elbow, 1/8" P.T., 7/16"-20 fitting thread .....	1	—	YE2	Ammeter, 0-30 amps .....	1
9	YL352-26	Wire assembly .....	1	20	XD181	Screw, 5/16"-18 thread x 3/4" long .....	2
10	YL352-4	Wire assembly .....	1	21	YL353-6	Wire assembly .....	1
11	YC19	Switch .....	1	22	PE3	Lock washer, 1/4" .....	2
12	RM1049M	Hose .....	1				

\* Not serviced separately.

## VE262-2 Control Panel Mounting

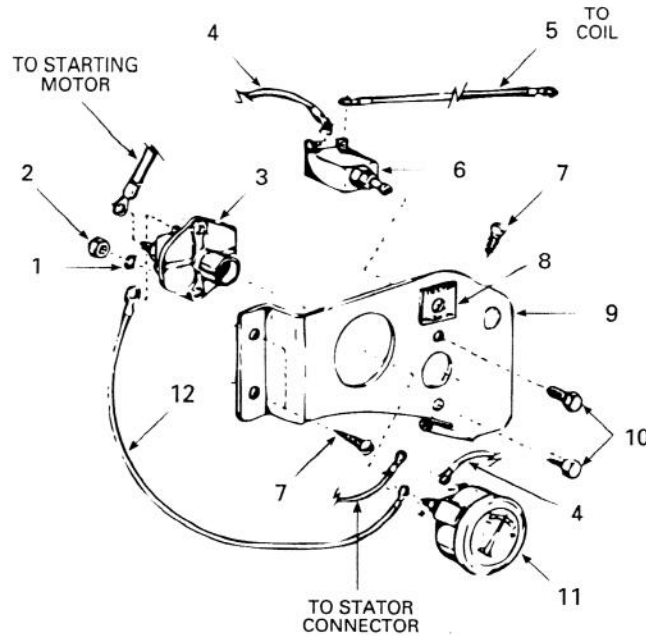
USE WITH MODEL AGND



ITEM	PART NO.	DESCRIPTION	QTY
1	YL352-19	Ignition wire assembly, 3-1/2" long .....	1
2	SD109	Tag .....	1
3	XA79	Screw, no. 14 x 1/2" long ..	2
4	VE262-2	Control panel .....	1
5	YC9BS1	Ignition switch (includes item 2; includes PE72) .....	1
6	PE72	Lock washer .....	2
7	YL352-11	Ignition wire assembly .....	1
8	PD77	Nut, 1/4"-20 thread .....	2
9	PE3	Lock washer, 1/4" .....	2
10	YL353-4	Ignition wire assembly, 4" long .....	1
11	YC10C	Starting switch (replaces YC10) .....	1
12	XA36	Screw, 1/4"-20 thread x 3/4" long .....	2
13	YE2	Ammeter .....	1

## VE566D1 Control Panel Mounting

USE WITH MODELS THD, TJD



ITEM	PART NO.	DESCRIPTION	QTY
1	PE3	Lock washer, 1/4" .....	2
2	PD77	Nut, 1/4"-20 thread .....	2
3	YC10C	Starting switch .....	1
4	YL352-4	Ignition wire assembly, 4" long .....	1
5	YL352-14	Ignition wire assembly, 14" long .....	1
6	YC9BS1	Ignition switch assembly (includes item 8; includes PE72) .....	1
7	XA79	Screw, no. 14 x 1/2" long ..	3
8	SD109	Tag .....	1
9	VE566D1	Control panel .....	1
10	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
11	YE2	Ammeter, 0-30 amps, EPC238 .....	1
—	YE6	Ammeter, 0-15 amps, EPC237 .....	1
12	YL374-5	Ignition wire assembly, 5" long .....	1