

SUB-SECTION **MB** MACHINES AND
HAND STARTERS

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MACHINES

PATTERN NO. OF MACHINE	TYPE OF MACHINE	SUPPLY VOLTS.	OUTPUT				USED IN SERVICE TYPE
			RATING KW	VOLTS	AMPS	FREQUENCY (CYCLES PER SECOND)	
1336	Motor alternator	100	0.16	230	0.695	50	A.C.Heated Rec. Valves
"	"	220	0.16	230	0.695	50	A.C.Heated Rec. Valves
8547	"	220	0.8	230	3.5	50	403
3158	"	100/140	1.2	60/70	18.5	100	10
3159	"	160/200	1.2	60/70	18.5	100	10
3187	"	180/220	1.0	60/70	18.5	100	10
3171/A/B	"	220	1.25	100	12.5	250	9, 35, 37
3177/A/B	"	100	1.25	100	12.5	250	9, 35, 37, 38
7525	"	100	1.25	100	12.5	500	37, 38, 49X
7526	"	220	1.25	100	12.5	500	37
6854/A	"	100	3.0	150	20	500	36, 37, 38, 106
6854B/C/D/E*	"	100	3.0	150/200	20/15	500	36, 37, 38, 106
6597/A	"	220	3.0	150	20	500	36, 37, 39X, 47, 71A
6597B/C/D/E*	"	220	3.0	150/200	20/15	500	36, 37, 39X, 47, 71A
7227/A	"	220	3.0	76	38	700/1400	151
4102	"	100/140	5.0	100/200	25	500/580	102
4151	"	180/220	5.0	100/200	25	500/580	71, 102
1332/3	"	95/115	8.0	180	44.5	500	46Z
7212	"	220	8.0	350(100/450)	23	500	35
7212M	"	220	8.0	350/450	23/17.7	500	35
7214	"	100	8.0	350(100/450)	23	500	35
7214M	"	100	8.0	350/450	23/17.7	500	35
7518/A/B/M	"	180/220	8.0	180/210	44.5	545	105, 48X
6596	"	220	8.0	200	40	500	
7522	"	180/220	8.0	180/210	44.5/38	1000	195A
1334/5	"	220	11.0	180	61	500	48, 48Y
431A	"	220	14.0	186/520	70	350	Old Types 35 and 36
7100/N	"	220	20.0	300	67	500	36, 39X, 47, 48X, 48Y
7104/N	"	100	20.0	300	67	500	36
4719	Rotary Converter	100	0.25	82/88	3	150	12, Marconi's 1/2 KW
232	"	100	1.0	60	16.7	100	4
2316	"	100	1.5	60	25	60/100	2
1118	"	220	1.5	132	11.4	60/100	2

* Pattern 6854E and Pattern 6597E are Inductor type.

REFERENCES IN ADMIRALTY HANDBOOK OF W/T (1931).

Motor Alternator	Paragraph 249	Hand Starter	Paragraph 246
Inductor Type Alternator	" 208	Auto Starters	" 247
Motor Generator	" 243	Motor Field Regulator	" 249
Motor Booster	" 250	Alternator Field Regulator	" 249
Reversing Booster	" 251	Brushes	" 212
Rotary Converter	" 254		

Detailed instructions for Care and Maintenance of Machines and their component parts will be found in Section 7, and description of Automatic Starters in Sub-Section MA.

MACHINES

MB3

PATTERN NO. OF MACHINE	PATTERN NO. OF HAND STARTER	PATTERN NO. OF AUTO-STARTER	PATTERN NO. OF RESISTANCE FOR ADJ. STARTER	PATTERN NO. OF MOTOR OF FIELD REGULATOR.	PATTERN NO. OF ALTERNATOR FIELD REGULATOR.	MOTOR	ALTERNATOR	PATTERN NO. OF BALL BEARING
						PATTERN NO. OF BRUSHES	PATTERN NO. OF BRUSHES	
4336	5065/A/B 5065/A/B			Special Con- tactor 5400	6993/A	8541 8541	8541 8541	1702 1702
8547			7511 (with resistance)			8541	8541	6137
3158			316 (Combined starter and regulator)		3168	1328	1328	} {3170 3717
3159			316A (Combined starter and regulator)		3169	1328	1328	
3187			3188 (Combined starter and regulator)		4252	1328	1328	
3171/A/B	3172/A	7284 <i>f</i>	6955	3176/A	3186/A	6800	Inductor	{3717 6141
3177/A/B	3178/A	7235 <i>b</i>	7236	3182/A	3183/A	{6800 1328 (A)}	6804	{3717 5800 (A)}
7525	3173/A	7235 <i>b</i>	7236		{3183/A 7372 for Types 37 and 38.	8541	8541	6137
7526	3172/A	7284 <i>f</i>	6955		{3186/A 7373 for Type 37	8541	8541	6137
6854/A	4103/A	7235 <i>b</i>	6953	4104/A	} {4105/A 7373 for Types 37 and 38.	} 1771(A,B,C) 6796(C) 8541(D,E.)	} 4761(A,B,C) 6802(C) 8541(D)	} 5800 4542
6854B/C/D/E	4103/A	7235 <i>b</i>	6953	4104/A				
6897/A	4152/A	7284 <i>f</i>	6954	6771 or 4153A	} {4154/A 7373 for Type 37	} 7515 7515(A,B,C) 4761	} 7515 7515(A,B,C) 8541(D)	} 5800 4542
6897B/C/D/E	4152/A	7284 <i>f</i>	6954	6771 or 4153A				
7227/A	7228	7284 <i>f</i>	6954	7229/A	7230	7515	Inductor	3906
4102	4103/A	6943A	6951	4104/A	4105/A	6795	6795	4116
4151	4152/A	6946A	6952	4153/A	4154/A	6795	6795	4116
1332/3	4103	6944A	6951		6275/A	8542	Inductor	3906
7212	4152/A	6943A	6950	4153/A	7390/A	4761	2485	3906
7212M	4152/A	6943A	6950	4153/A	7390/A	6800	6800	{ 6231 6141
7214	4103/A	6941A	6948		434/A	1771	2485	3906
7214M	4103/A	6941A	6948		434/A	6800	6800	{6231 6141
7518A/B/M	4103/A	6946A	6952	7519/A, 7520/A	7521/A	{7515 4761	{2485 8542	3906
6596	4152/A	6946A	6952		6775	7515	2485	3906
7529	4152/A	6946A	6952	7519/A, 7520/A	7521/A	8542	8542	3906
1334/5	4152/A	6946A	6954		7521/A	8542	Inductor	3906
431A	432	6942A	6949	433	434/A	6795	2484	Bush 681
7100/N	432	6942A	6949	433	434/A	6792	6792	6233
7104/N	428	6941A	6947	430	430	6792	6792	6233
4719	4720				4721	4762	4762	4724
232	233 (Combined starter and regulator)					} {1328 1329 where gauze is fitted.	} 1328	} Bush Bearing
2316	2318				2317			
1118	969				970			

f or Pattern 7511 Auto Starter complete with resistance.

b or Pattern 7510 Auto Starter complete with resistance.

PATTERN NUMBERS

It will be noted that there is usually a letter at the end of the pattern number of a W/T machine. The original machine of any type had only a number, but as the design was improved in details, so letters A, B, C etc., were in turn added to the number to indicate some difference and improvement in the design of the machine.

In a few instances the same pattern of machine was made by different manufacturers and a letter was added to the pattern number to indicate the maker of the machine (e.g., Pattern 7100N was made by Newton Bros. and Pattern 7212M by MacKie).

PATTERN NO. OF MACHINE	TYPE OF MACHINE	SUPPLY VOLTS	MAIN OUTPUT			AUXILIARY OUTPUT			SETS WITH WHICH USED.
			RATING kW.	VOLTS	AMPS	RATING kW.	VOLTS	AMPS	
7135	Motor Generator	100	0.05	250	0.2	--	--	--	81
4833	" "	100	0.085	17	5	--	--	--	31
4835	" "	220	0.085	17	5	--	--	--	31
7512	Reversing Booster (Voltage Control)	95/115	0.1	50	0.2	--	--	--	46Z
8503	Motor Generator	220	0.12	8	15	0.063	21	3	402
4892/A	" "	100	0.15	500/750	0.2	--	--	--	31
4850/A	" "	220	0.15	500/750	0.2	--	--	--	31
8500	" "	220	0.18	9	20	--	--	--	402
7504	" "	100	0.25	21	12	--	--	--	50
7505	" "	220	0.25	21	12	--	--	--	50
5798/B	" "	100	0.3	10	30	--	--	--	All sets
5799/B	" "	220	0.3	10	30	--	--	--	All sets
7109/M	" "	100	0.3	400	0.75	0.22	17	13	43
7109A/B	" "	100	0.3	400	0.75	0.22	22	10	43
7114/M	" "	220	0.3	400	0.75	0.22	17	13	43
7114A/B	" "	220	0.3	400	0.75	0.22	22	10	43
5798B	" "	100	0.6	12	50	--	--	--	All sets
5799B	" "	220	0.6	12	50	--	--	--	All sets
7508	" "	110	0.8	800	1.0	0.6	21	30	44, 45
7509	" "	220	0.8	800	1.0	0.6	21	30	45
6992/A/B/C	" "	100	1.0	2000	0.5	0.275	23	12	83
7507	" "	220	1.0	2000	0.5	0.275	23	12	83
7500	" "	100	1.5	790/850	1.9	1.25	20/22	60	44, 45
7501/A	" "	220	1.5	790/850	1.9	1.25	20/22	60	45
7502	Reversing Booster (Voltage Control)	180/240	0.2	100	2	--	--	--	47
7506	Motor Gen, 25 V. (Constant)	180/240	1.5	25	60	--	--	--	47
4429	Motor Booster	220	3.0	20/200	15	--	--	--	14, 16
3996	Motor Generator	100	4.8	250/400	12	--	--	--	15, 16
4536	" "	110/140	4.8	250/400	12	--	--	--	14
4954	" "	100	25.0	250/550	55	--	--	--	18
4061	" "	220	25.0	250/550	55	--	--	--	18

NAMEPLATES

A nickel-silver nameplate is attached to all recently introduced motor-alternators and motor-generators and gives the following information:-

Admiralty Pattern Number.	Weight.
Name (i.e. motor-alternator or motor-generator.)	Kilowatt output.
Maker's name.	Voltage output.
Maker's serial number.	Voltage of supply.
Diagram of connections.	Frequency (Alternators).
Pattern number of bearings.	

A label is fitted to the top of the motor terminal box giving:-

Voltage of supply.
Approximate current taken at full load output.
Approximate speed of generator in revolutions per minute.
Admiralty pattern number of brushes to be used on the motor commutator.

A label is fitted on the top of the generator (or alternator) terminal box giving:-

Voltage and current outputs.	Frequency (Alternators).
Brushes to be used on commutator (Generators).	Number of phases (Alternators)
Brushes to be used on slip rings (Alternators).	

MACHINES

MBS

PATTERN NO. OF MACHINE	PATTERN NO. OF HAND STARTER.	PATTERN NO. OF		PATTERN NO. OF VOLTAGE REGULATOR.	MOTOR	H. T. OUTPUT	L. T. OUTPUT	PATTERN NO. OF BALL BEARINGS
		AUTO-STARTER	AUTO-STARTER RESISTANCE.		PATTERN NO. OF BRUSHES	PATTERN NO. OF BRUSHES	PATTERN NO. OF BRUSHES	
7136	-	-	-	-	8541	8541	-	6139
4883	4884	-	-	-	791	791	-	4891
4885	4886	-	-	-	791	791	-	4891
7512	-	-	-	{ 7503A Contactor	8541	8541	-	1702
8503	-	-	-	-	8541	8541	1326B	1035
4892/A	4893	-	-	4894	4901	4901	-	1702
4850/A	4851	-	-	4852	4901	4901	-	1702
8500	-	-	-	-	8541	1328B	-	1635
7504	5065/A/B	-	-	-	8541	8541	-	5800
7505	5066/A/B	-	-	-	8541	8541	-	5800
5798/B	5065/A/B	-	-	507/A	6802	1328B	-	5800
5799/B	5066/A/B	-	-	5808/A	6802	1328B	-	5800
7109/M	5065/A/B	-	-	-	6801	6803	6802	5800
7109A/B	5065/A/B	-	-	-	8541	8541	8541	5800
7114/M	5066/A/B	-	-	-	6802	6803	6802	5800
7114A/B	5066/A/B	-	-	-	8541	8541	8541	5800
5798B	5065/A/B	-	-	5807/A	6802	1328B	-	5800
5799B	5066/A/B	-	-	5808/A	6802	1328B	-	5800
7508	6274	7235 ρ	6953	6275/A	8541	8541	6801	5800
7509	6823	7284 †	6954	6824/A	8541	8541	6801	5800
6992/A/B/C	6274	7235 ρ	7236	6993/A	{ 8541 (C) 6802 (A.B.)	{ 6801 (C) 6803 (A.B.)	{ 8541 (C) 6802 (A.B.)	5800
7507	6823	7284 †	6955	6824/A	8541	6801	8541	5800
7500	6274	7235 ρ	6953	6275/A	6802	6803	6800	6137
7501/A	6823	7284 †	6954	6824/A	6802	6803	6800	6137
7502	-	-	-	{ 7503A Contactor	8541	8541	-	1702
7506	6823	7284 †	6955	{ 7516/A 5808/A	8541	8541	-	5800
4429	4430	-	-	4431	1328	1328	-	{ 4542 5800
3996	3997	-	-	3998	1771	1772	-	{ 4542 6137
4536	4537	-	-	4538	2484	1328	-	4542
4054	4055	-	-	4056	1943A	6795	-	4072
4061	4062	-	-	4063	1943A	6795	-	4069

† or Pattern 7511 Auto Starter complete with resistance.
ρ or Pattern 7510 Auto Starter complete with resistance.

NAMING PLATES.

The motor terminals are arranged in line in the motor terminal box and a metal strip is usually fitted on the top of this box under the lid and engraved:-

- | | | | | |
|--------------|---|-----|-------|-------|
| COM - | R. C.
S W | ARM | A. F. | M. F. |
| COM - | Common negative. | | | |
| R. C.
S W | Remote control switch. | | | |
| ARM | Armature | | | |
| A. F. | Alternator Field (In motor-generators G. F. Generator field.) | | | |
| M. F. | Motor Field. | | | |

The direction of rotation of all machines has been standardised, so that, when looking at the motor commutator end the rotation is anticlockwise.

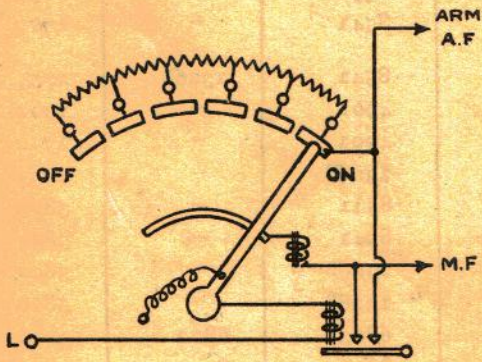
An arrow is engraved or embossed in some convenient position at the motor end to indicate this direction.

Some machines are fitted with another label which explains from which end the armature should be removed should this become necessary.

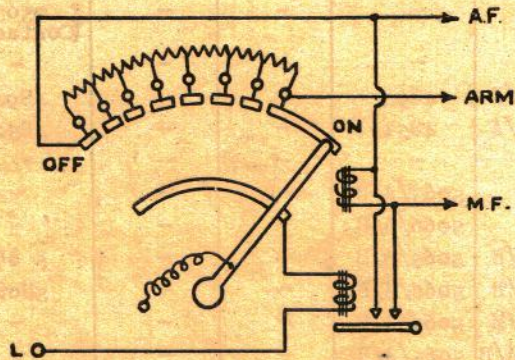
On high-tension machines the word "Danger" is embossed on the H. T. generator terminal boxes. These boxes should always be locked before the machine is started up.

HAND STARTERS

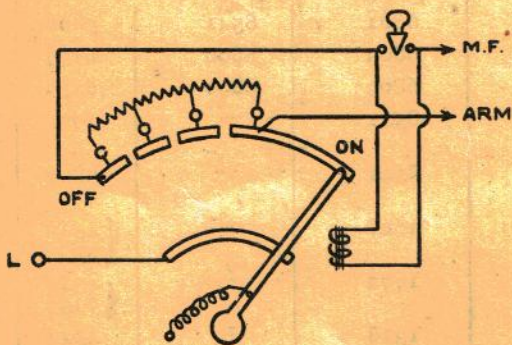
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AND 969



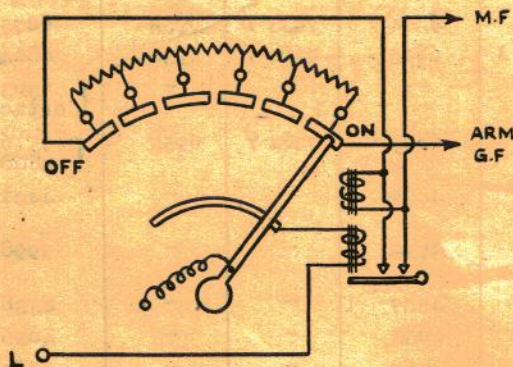
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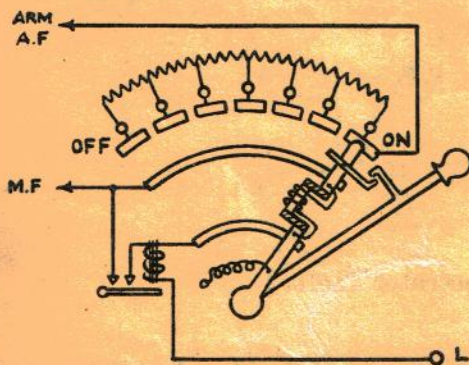
PATT. 5065A AND 5066A



PATT. 6274 AND 6823



PATT. 7100 AND 7104



PATT. 233

(COMBINED STARTER AND REGULATOR)

