

The British
Westinghouse

Electric & Manufacturing Co. Ltd.

PART CATALOGUE No. 6554 (Superseding No. 6007).

May, 1913.

PARTS

of

Westinghouse

Nos. 90 and 90M Tramway

Controllers.

The Prices herein supersede previous quotations, and are subject to change without notice.

Prices are F.O.R. Manchester.

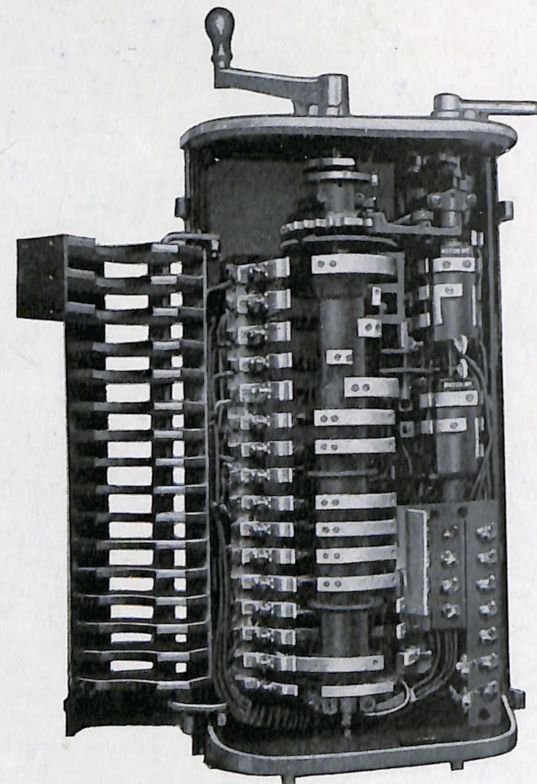
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No. 90M Controller.

(INTERNAL VIEW)



3294
Fig. 1.

NOTE.—The 90 and 90M Controllers, although alike in general design, differ from each other in that the 90M is fitted with 8 operating and 7 braking notches, and the 90 with 7 operating and 5 braking notches. These differences prevent the interchangeability of certain parts, which in this Catalogue are identified by having the controller type printed before the style number. All style numbers that are not so indicated are suitable for use with either 90 or 90M Controllers.

Parts of Nos. 90 and 90M Controllers.

STYLE NUMBER INDEX.

Style No.	Illustrated on page	List Price on page	Style No.	Illustrated on page	List Price on page
31	11	15	3126	5	11
258	11	5	3127	5	11
363	5	7	3128	9	12
364	5	8	3129	9	12
365	5	8	3130	9	12
711	9	6	3131	5	12
724	9	10	3132	5	12
725 (As No. 3163 in Fig.)	9	10	3133	9	11
1190	5	8	3134	5	11
1316	—	8	3135	9	15
1317	9	8	3136	9	15
1318	9	8	3137	9	12
1319	9	8	3138	9	11
1320	9	8	3141	9	15
1321	9	8	3142	9	14
1322	9	8	3143	9	14
1323	9	8	3144	9	15
1324	—	8	3146	9	14
1325	—	8	3147	9	13
1326	—	8	3148	9	14
1327	—	8	3149	9	15
1328	9	8	5151	9	14
1329	9	8	3153	9	10
1330	9	8	3154	9	10
1573	13	14	3155	9	10
1958 (As No. 1963 in Fig.)	11	6	3156	9	10
1959 (As No. 1963 in Fig.)	11	6	3157	9	10
1960 (As No. 1964 in Fig.)	11	6	3158	9	10
1961 (As No. 1964 in Fig.)	11	6	3159	9	10
1962 (As No. 1965 in Fig.)	11	6	3160	9	10
1963	11	6	3161	9	10
1964	11	6	3164	9	10
1965	11	6	3165	9	10
1966	11	6	3166	9	10
1980 (As No. 3162 in Fig.)	9	10	3167	9	10
2034	9	8	3168	9	10
2035	9	8	3169	9	10
2036	9	8	3170	9	10
2037	9	8	3171	9	10
2038	9	8	3172	9	10
2039	9	8	3173	9	10
2269	—	12	3174	9	10
2270	—	12	3175	9	10
2271	11	12	3176	9	11
2272	11	12	3177	9	12
2273	11	12	3178	9	9
2274	11	12	3179	9	12
2520A (As No. 2520 in Fig.)	7	5	3180	9	12
2873 (As No. 3139 in Fig.)	9	14	3181	9	12
2875	12	14	3182	9	10
2956 (As No. 3140 in Fig.)	9	14	3183	9	10
2995	—	15	3184	9	9
3111	5	7	3185	9	9
3112	5	10	3186	9	9
3113	5	7	3187	9	9
3114	5	8	3188	9	5
3115	9	8	3189	5	10
3116	5	8	3190	5	9
3117	9	9	3191	9	15
3118	5	8	3192	9	10
3119	5	8	3193	9	5
3120	5	8	3194	9	5
3121	5	8	3195	11	12
3122	5	8	3196	11	12
3123	5	8	3197	11	12
3124	9	14	3198	11	15
3125	9	12	3199	11	15

PARTS OF Nos. 90 and 90M CONTROLLERS.

STYLE NUMBER INDEX—continued.

Style No.	Illustrated on page	List Price on page	Style No.	Illustrated on page	List Price on page
3200	11	15	3306	—	6
3201	11	6	3320	9	11
3202	11	13	3328	9	5
3203	11	15	3339	7	6
3204	11	14	3453	11	6
3205	5	6	3454	11	6
3206	9	15	3455	11	6
3207	5	6	3456	11	6
3209	5	5	3457	—	6
3210	7	6	3458	11	6
3211	9	14	3459	11	13
3212	9	14	3460	—	13
3213	9	14	3461	11	13
3214	9	13	3462	11	13
3215	9	15	3463	11	13
3216	9	15	3464	11	14, 15
3217	9	15	3465	11	14
3218	9	15	3466	11	15
3219	13	14	3467	11	14, 15
3220	13	14	3468	11	15
3221	13	14	3469	11	15
3222	13	14	3470	11	14
3224	13	14	3471	9	12
3225	9	10	3472	9	15
3226	—	11	3473	9	15
3227	5	8	3474	11	6
3228	9	10	3475	11	10
3229	9	10	3476	11	9
3230	9	12	3477	11	9, 11
3231	9	10	3478	—	15
3232	9	12	3479	11	6
3233	11	15	3480	—	6
3234	11	14	3586	13	14
3235	11	12	3587	13	14
3236	11	15	3588	13	14
3237	11	15	3589	13	14
3238	11	13	3590	13	14
3239	—	10	3591	13	14
3240	9	10	3594	13	15
3241	9	10	3593	13	15
3242	—	10	3595	13	12
3243	9	10	3596	13	12
3244	—	11	3597	13	11
3245	9	11	3598	13	8
3247	9	11	3599	13	8
3248	9	11	3600	13	8
3249	9	11	3614	13	14
3250	9	11	3615	13	14
3251	11	11	3618	13	14
3252	—	11	3915	—	8
3253	11	11	8735	—	7
3254	11	11, 15	8736	—	7
3255	9	11	8737	—	15
3256	7	5	8738	—	15
3257	7	5	8739	—	7
3258	7	6	8827	—	6
3259	7	6	8828	—	7
3260	9	6	8829	—	8
3261	—	6	8831	—	9
3262	9	14, 15	8832	—	11
3263	11	8	8833	—	6
3264	11	6	8852	—	11
3265	11	6	8853	—	11
3266	11	6	8860	—	8
3267	11	6	8860	—	8
3268	11	6	8871	—	10
3269	11	6	8872	—	6
3270	11	6	8872	—	6
3302	11	14	13255	9	8
			13267	5	6

Parts of Nos. 90 and 90M Controllers.

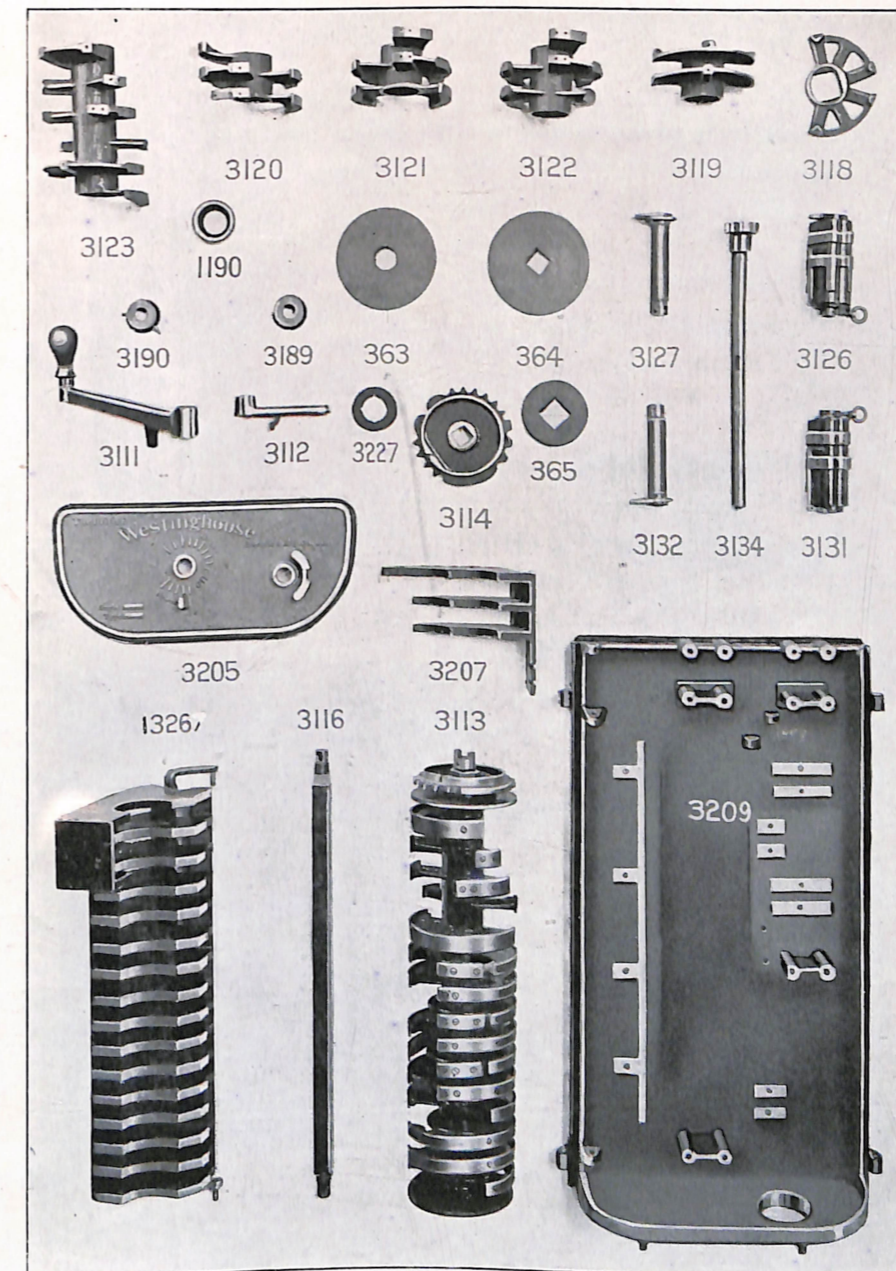


Fig. 2.

Style No.	Parts per Controller.	Description.	Price.
			£ s. d.
3209	1.	C. I. Base	each 3 4 3
3256	1.	Pressed asbestos insulation on back	0 6 0
3257	1.	" " " bottom	0 6 0
3193	1.	Hose ring	0 1 0
3194	1.	Wooden bush	0 1 2
3188	1.	C. I. pin for base	0 0 8
2520A	1.	W. I. brace	0 2 3
3328	2.	Top bolt for No. 2520A, 1/2" x 1 1/2"	per doz. 0 2 3
258	1.	Washer for No. 3328, 1 1/8" x 3/32"	0 0 3

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

Style No.	Parts per Controller.	Description.	Price.		
			£	s.	d.
90M 3205	I.	C. B. Top	2	14	0
90 8827	I.	" "	2	14	0
3210	I.	Sheet iron cover complete with insulation, hinge pins, &c. ..	1	7	0
3260	2.	Hinge lug, R. H.	0	1	6
3261	2.	" " L. H.	0	1	6
711	4.	" pin	0	1	0
3258	I.	Pressed asbestos lining	0	6	0
3259	2.	Steel strip for No. 3258	0	0	6
3339	10.	Rivet for No. 3259, $\frac{3}{16}$ " x $\frac{1}{2}$ " per doz.	0	0	2
3306	8.	" " Nos. for 3260 and 3261, $\frac{3}{16}$ " x $\frac{3}{4}$ "	0	0	3
13267	I.	Swinging arc shield complete each	2	15	6
3267	I.	Steel bracket with pins and cotters	0	3	6
3268	2.	Pin for No. 3267, $\frac{3}{8}$ " x $1\frac{3}{8}$ " per doz.	0	2	0
3474	I.	Cotter for No. 3268, $\frac{3}{32}$ " x $\frac{3}{8}$ "	0	0	3
3453	I.	Fibre strip, $\frac{1}{4}$ " x $2\frac{1}{16}$ " x 24" each	0	2	6
3454	I.	" " $\frac{1}{4}$ " x $1\frac{3}{8}$ " x 24"	0	1	3
3455	I.	" " $\frac{1}{4}$ " x $3\frac{7}{8}$ " x 4"	0	0	8
3456	I.	" " $\frac{1}{4}$ " x $3\frac{3}{16}$ " x 4"	0	0	8
3270	I.	" " $\frac{1}{4}$ " x 3" x 24"	0	2	6
1958	I.	Pressed asbestos division plate "B," 7 screws (short)	0	3	0
1959	I.	" " " " "C," 7 screws (6 long, 1 short) ..	0	3	0
1960	6.	" " " " "E," 3 screws	0	2	3
1961	I.	Pressed asbestos division plate "F," 4 screws	0	2	3
1963	I.	" " " " "A," 9 "	0	3	0
1964	6.	" " " " "D," 3 "	0	2	3
3264	55.	Wood screws for division plates, No 10 x $\frac{3}{4}$ " per doz.	0	0	3
3265	8.	" " for No. 3267, No. 10 x $1\frac{3}{4}$ ", rd. hd... ..	0	0	3
3269	8.	Bush for No. 3265	0	1	6
90M 3207	I.	Stationary arc shield complete each	0	9	0
90 8833	I.	" " " "	0	9	0
1962	I.	Pressed asbestos division plate, 2 screws	0	2	3
1965	I.	" " " " "H," 3 screws	0	2	3
1966	I.	" " " " "G"	0	2	3
90M 3458	I.	Pressed asbestos back	0	1	0
90 8872	I.	" " " "	0	1	0
3266	I.	Wood screw for No. 3207, No. 10 x $1\frac{1}{4}$ " per doz.	0	0	3
3479	2.	Fullerboard $1\frac{7}{8}$ " x 4" each	0	0	2
3480	2.	" " $1\frac{3}{16}$ " x $1\frac{1}{16}$ "	0	0	2
3457	I.	Wood screw, No. 6 x $\frac{1}{2}$ " per doz.	0	0	3
3264	6.	" " for back, No. 10 x $\frac{3}{4}$ "	0	0	3
3201	I.	Fullerboard under arc shield, No. 3207, 5" x 7" each	0	0	3

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

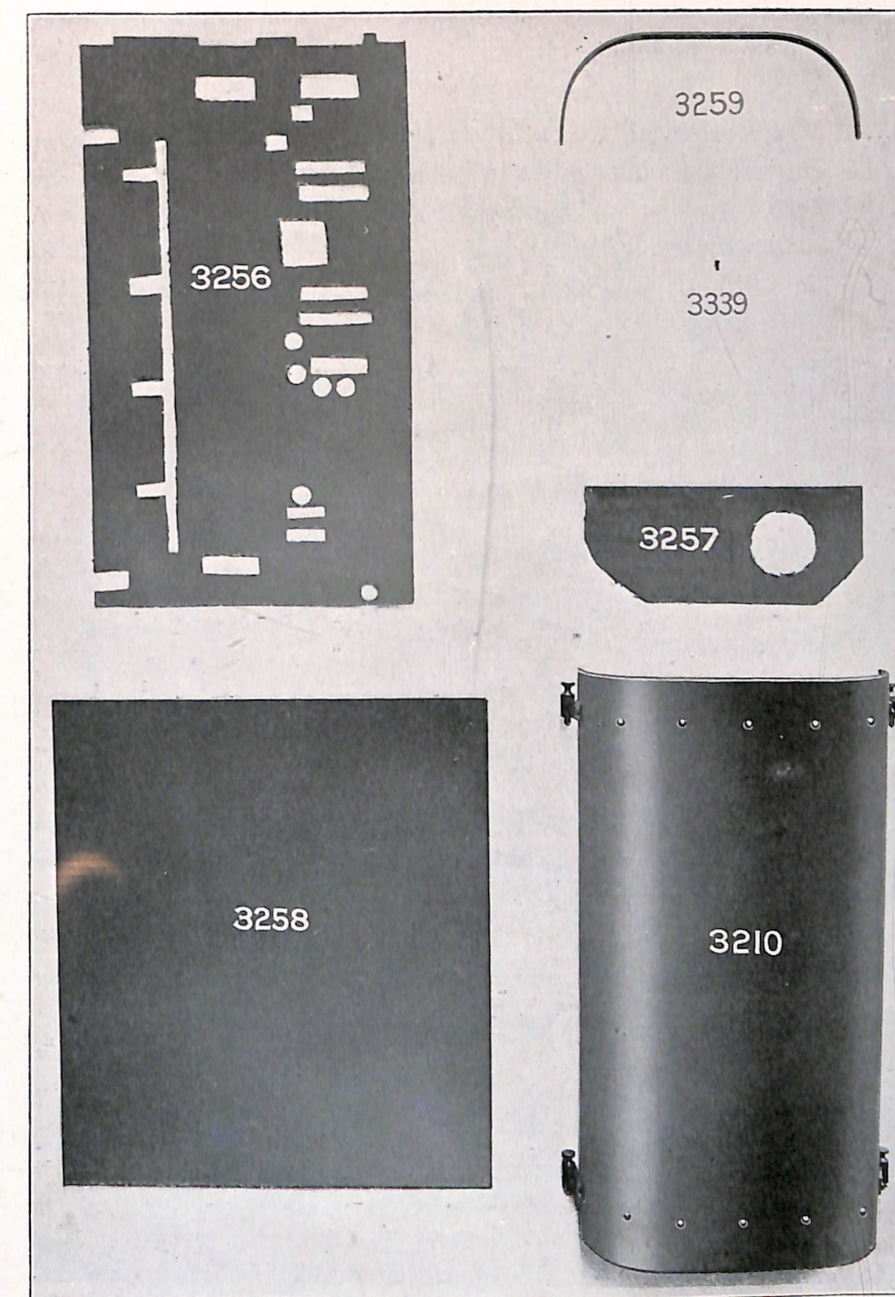


Fig. 3.

Style No.	Parts per Controller.	Description.	Price.		
			£	s.	d.
3111	I.	Operating handle complete each	1	2	6
8739	I.	Wooden handle with brass ferrule... ..	0	1	3
8735	I.	Pin complete with brass washer, 3 $\frac{1}{16}$ " x $\frac{9}{16}$ "	0	0	9
8736	I.	C.B. Lever	1	0	0
90M 3113	I.	Main drum complete	9	10	0
90 8828	I.	" " " "	9	10	0
363	I.	Vulcabeston washer	0	6	0

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

Style No.	Parts per Controller.	Description	each	Price.		
				£	s.	d.
364	I.	Vulcabeston washer	each	0	7	0
365	5.	" " " " " " " " " " " "	"	0	2	3
3227	10.	Mica washer, 3 7/8" dia. x 1 1/4" sq. hole x 3/32"	"	0	0	2
1190	2.	Hard rubber collar on end of shaft, 5/8" x 2 3/4"	"	0	1	6
90M 13255	I.	Shaft extension for handle	"	0	2	6
3116	I.	Shaft with insulation	"	0	17	3
90M 3123	I.	Main drum ring I, 2, 3, 4, 5, 6, C. I.	"	0	7	6
90 8829	I.	" " " " " " " " " " " "	"	1	7	0
3120	I.	" " " " " " " " " " " "	"	0	6	0
3121	I.	" " " " " " " " " " " "	"	0	6	0
3122	I.	" " " " " " " " " " " "	"	0	6	3
3119	I.	" " " " " " " " " " " "	"	0	3	6
3118	I.	" " " " " " " " " " " "	"	0	2	0
1317	I.	Contact strip for ring No. 1—1" x 10 1/4"	"	0	2	3
2034	I.	" " " " " " " " " " " "	"	0	0	3
3915	I.	" " " " " " " " " " " "	"	0	0	9
90M 2035	I.	" " " " " " " " " " " "	"	0	0	7
90M 2037	I.	" " " " " " " " " " " "	"	0	0	9
90M 2036	I.	" " " " " " " " " " " "	"	0	0	6
90M 2038	I.	" " " " " " " " " " " "	"	0	0	6
90M 2039	I.	" " " " " " " " " " " "	"	0	2	3
90 1327	I.	" " " " " " " " " " " "	"	0	0	4
90 1330	I.	" " " " " " " " " " " "	"	0	0	7
90 1325	I.	" " " " " " " " " " " "	"	0	0	8
90 1326	I.	" " " " " " " " " " " "	"	0	0	9
90 1322	I.	" " " " " " " " " " " "	"	0	1	2
90 1324	I.	" " " " " " " " " " " "	"	0	0	5
90 1316	I.	" " " " " " " " " " " "	"	0	2	6
1323	3.	" " " " " " " " " " " "	"	0	0	5
1321	4.	" " " " " " " " " " " "	"	0	1	3
1319	3.	" " " " " " " " " " " "	"	0	2	0
1322	6.	" " " " " " " " " " " "	"	0	1	3
1318	2.	" " " " " " " " " " " "	"	0	2	3
1320	2.	" " " " " " " " " " " "	"	0	0	10
3598	I.	Contact on washer, No. 363, for one motor, cut out	"	0	2	3
3599	I.	Copper shunt for contact No. 3598	"	0	0	3
3600	4.	Screw for contact No. 3598, No. 10—32 x 1/2"	per doz.	0	0	6
1328	5.	Contact tips, 1" ...	each	0	0	4
1329	23.	" " " " " " " " " " " "	"	0	0	3
3263	90.	Screw for strips and tips, No. 10—32 x 1/2"	per doz.	0	0	6
90M 3114	I.	Ratchet wheel	each	0	4	6
90 8860	I.	" " " " " " " " " " " "	"	0	4	6
3115	I.	C. I. nut at bottom	"	0	0	9

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

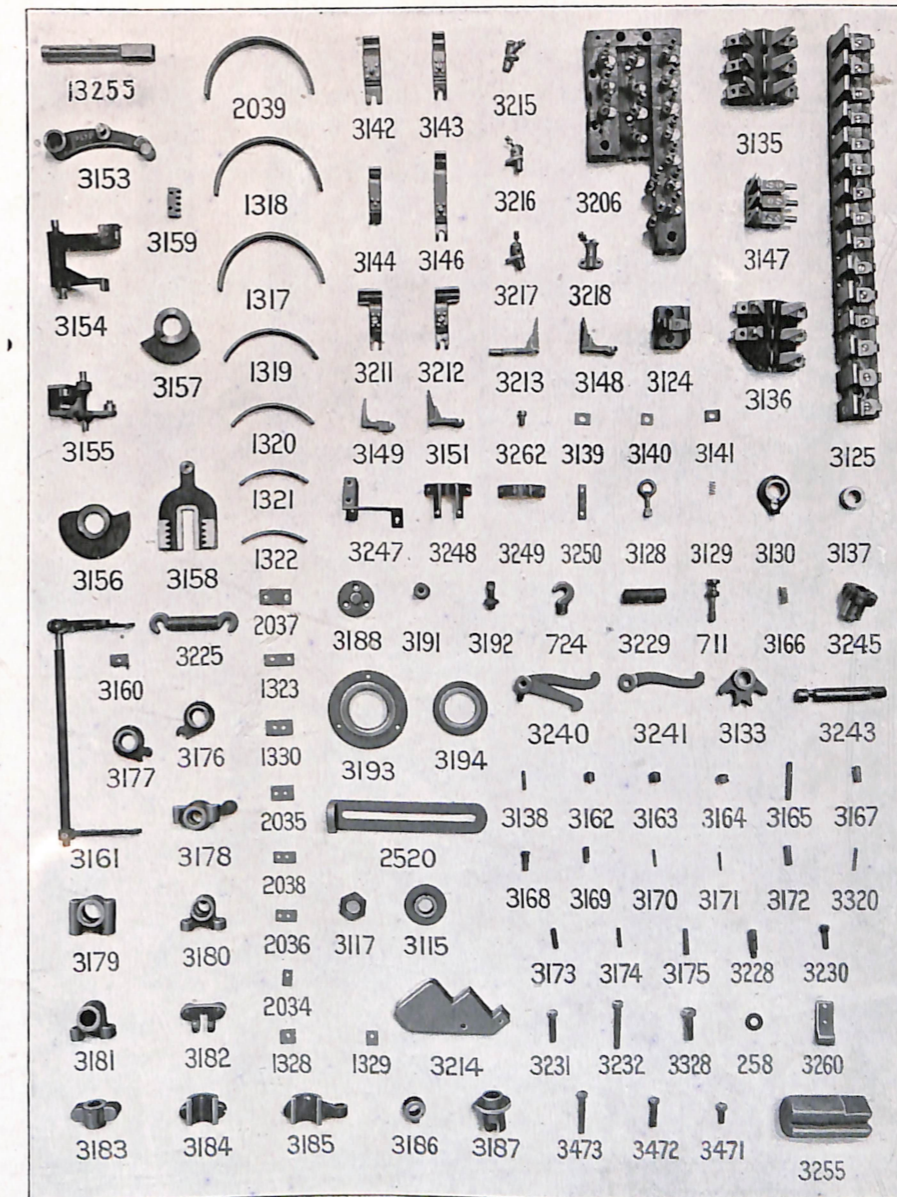


Fig. 4.

Style No.	Parts per Controller.	Description.	each	Price.		
				£	s.	d.
3117	I.	C. I. nut at top	each	0	0	9
3476	I.	Screw for No. 3117, No. 12—24 x 5/8"	per doz.	0	0	6
90M 3190	I.	C. B. Water cap	each	0	3	9
90 8831	I.	" " " " " " " " " " " "	"	0	3	9
3477	I.	Set screw for water cap, No. 14—24 x 7/8"	per doz.	0	0	6
3186	I.	Coupling on upper end of shaft	each	0	1	3
3187	I.	Coupling on lower end of shaft extension, No. 13255	"	0	4	3
3178	I.	Upper shaft bearing...	"	0	2	0
3185	I.	Intermediate bearing	"	0	1	9
3184	I.	" " " " cap	"	0	1	9

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

Style No.	Parts per Controller.	Description.		Price		
				£	s.	d.
3183	1.	Lower bearing	each	0	1	6
3192	1.	Set screw for No. 3183, $\frac{1}{2}$ "—13 x $1\frac{1}{4}$ " with nut	"	0	0	8
3231	2.	Tap bolt for No. 3183, $\frac{3}{8}$ "—16 x $1\frac{3}{4}$ "	per doz.	0	1	9
3165	2.	Stud for Nos. 3184 and 3185, $\frac{3}{8}$ "—16 x $2\frac{1}{2}$ "	"	0	3	0
3156	1.	Upper cam. C. I.	each	0	2	0
3157	1.	Lower " "	"	0	2	0
3174	1.	Round key for Nos. 3156 and 3157, No. 2 x $1\frac{1}{4}$ "	"	0	0	3
3153	1.	Main drum ratchet pawl complete	"	0	4	3
1980	1.	Roller for No. 3153, $\frac{5}{8}$ " x $\frac{9}{16}$ "	"	0	0	3
3173	2.	Pin for No 3153 and 3154, $\frac{5}{16}$ " x $1\frac{5}{16}$ "	"	0	0	3
3225	1.	Spring with hooks for main and rev. pawls	"	0	2	3
3229	1.	Spring without hooks for No. 3225	"	0	0	3
724	2.	Hooks for No. 3225	"	0	1	2
3154	1.	Rev. drum ratchet pawl complete	"	0	4	0
3167	1.	Pivot stud for No. 3154, $\frac{1}{2}$ " x 1"	"	0	0	4
3228	1.	Lower pivot stud for No. 3154, $\frac{1}{2}$ " x 2"	"	0	0	5
3168	1.	Spring stud for No. 3154, $\frac{9}{16}$ " x $1\frac{1}{4}$ "	"	0	0	3
725	1.	Roller for No. 3154, $\frac{11}{16}$ " x $\frac{9}{16}$ "	"	0	0	3
3155	1.	Rocker arm	"	0	5	6
3172	2.	Pivot stud for No. 3155, $\frac{7}{16}$ " x $1\frac{1}{4}$ "	"	0	0	4
3169	1.	Roller stud for No. 3155, $\frac{3}{8}$ " x $1\frac{1}{16}$ "	"	0	0	4
3164	2.	Roller for No. 3155, $\frac{3}{4}$ " x $\frac{7}{16}$ "	"	0	0	3
3175	1.	Pin for Nos. 3155 and 3158, $\frac{5}{16}$ " x $1\frac{11}{16}$ "	"	0	0	3
3475	2.	Cotter for No. 3169, $\frac{3}{32}$ " x 1"	per doz.	0	0	3
8871	2.	Cotter for No. 3175, $\frac{3}{32}$ " x $\frac{3}{4}$ "	"	0	0	3
3158	1.	Rack carrier with racks	each	0	5	6
3159	2.	Rack...	"	0	0	10
3170	4.	Rivet for Nos. 3150 and 3159	per doz.	0	0	5
3160	1.	Split eccentric block	each	0	0	4
3161	1.	Interlocking shaft and pawls complete	"	0	4	0
3239	1.	Interlocking shaft for No. 3161	"	0	1	0
3242	1.	Fullerboard and mica tube for No. 3161	"	0	2	3
3240	1.	Cut out interlocking lever and pawl	"	0	1	0
3241	1.	" " " pawl	"	0	0	8
3166	1.	Spring for No. 3161	"	0	0	5
3171	2.	Taper pin for No. 3161, No. 1 x $1\frac{1}{4}$ "	per doz.	0	0	6
3182	1.	Bearing for No. 3161	each	0	1	2
3112	1.	Reversing handle	"	0	7	0
3243	1.	Reversing shaft extension.	"	0	1	7
90M 3189	1.	Water cap for No. 3243	"	0	3	9

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

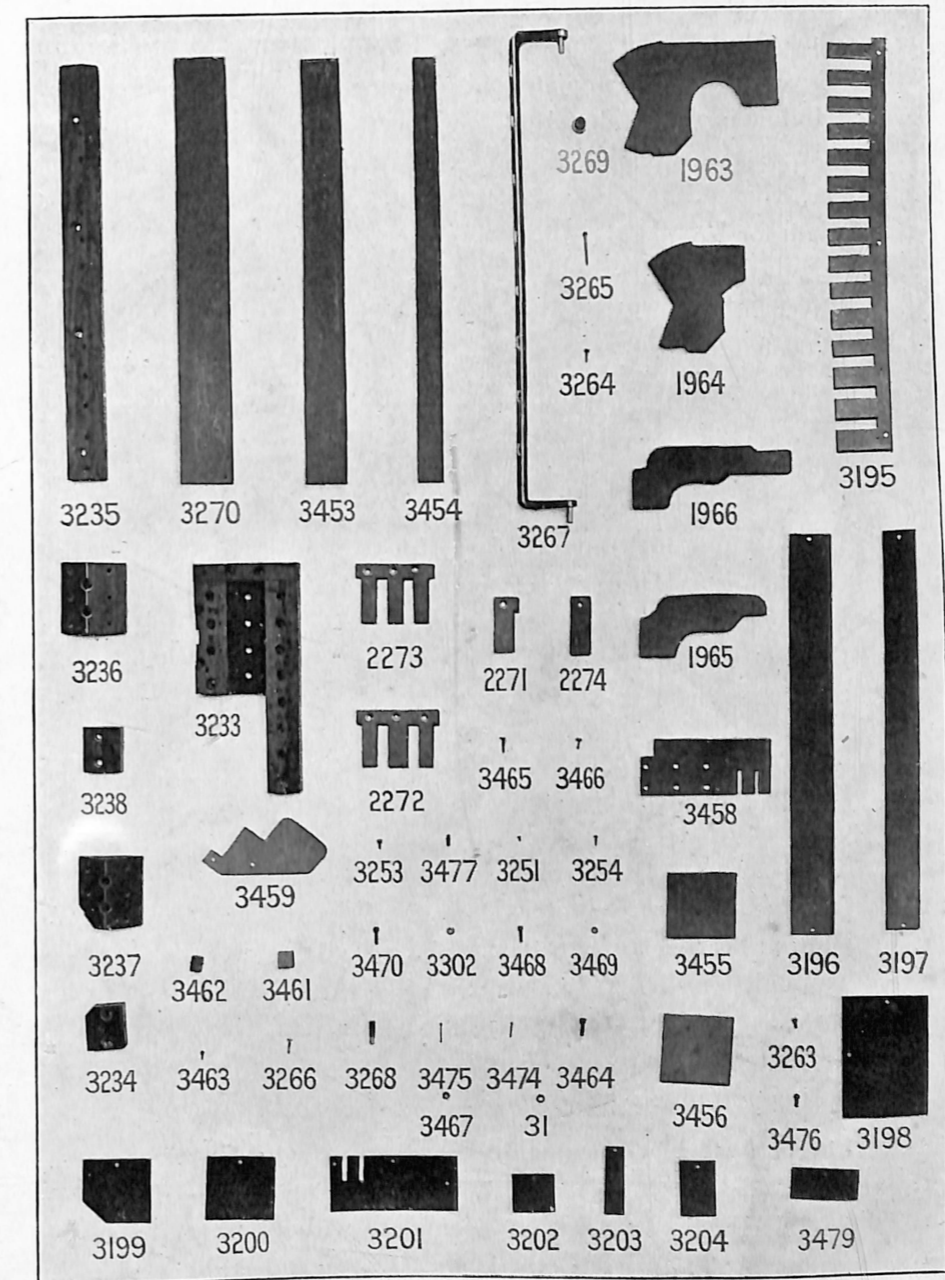


Fig. 5.

Style No.	Parts per Controller.	Description.		Price.		
				£	s.	d.
90 8832	1.	Water cap for No. 3243	each	0	3	9
3477	1.	Set screw for No. 3189, No. 14—24 x $\frac{7}{8}$ "	per doz.	0	0	8
3133	1.	Reversing drum ratchet	each	0	4	0
3320	1.	Pin for No. 3133, No. 4 x $1\frac{1}{2}$ " taper	per doz.	0	0	9
3134	1.	Shaft and pinion for reversing drums	each	0	8	6
3244	1.	Shaft for No. 3134	"	0	2	0
3245	1.	Pinion	"	0	4	9
3138	1.	Pin for No. 3245, No. 4 x $1\frac{1}{4}$ "	per doz.	0	0	8

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

Style No.	Parts per Controller	Description.	Price.		
			£	s.	d.
90M 8852	1.	Reversing Drum complete, No. 1 Motor...	1	3	6
90 3126	1.	Reversing drum complete, No. 1 motor	1	3	6
90M 8853	1.	Hollow insulated shaft and cam for No. 8852	0	5	6
90 3127	1.	" " " for No. 3126	0	5	6
3226	2.	" " " for Nos. 8853, 3127, and 3132	0	2	6
90M 3597	1.	Cam for No. 8853	0	2	3
90 3176	2.	" " 3127	0	2	3
3251	4.	Rivet for Nos. 3597, 3176, and 3177, $\frac{1}{8}'' \times \frac{5}{16}''$	0	0	2
3255	2.	Wooden drum for Nos. 8852, 3126, and 3131	0	3	0
3247	2.	Contact strip Nos. 1 and 3 for Nos. 8852 and 3126 and 3131	0	1	0
3248	1.	" " No. 2 for Nos. 8852 and 3126	0	0	9
3249	1.	" " No. 2 for 3131	0	0	6
3250	5.	" " Nos. 2 and 3 for Nos. 8852, 3126, and 3131	0	0	3
3253	24.	Wood screws for contact strips, No. 10 x $\frac{3}{8}''$	0	0	6
3254	6.	" " for cams, Nos. 3597, 3177, and 3176, No. 6 x $\frac{3}{8}''$	0	0	4
3130	2.	Locking flange for Nos. 3126 and 3131	0	2	0
3252	4.	Rivet for No. 3130— $\frac{1}{8}'' \times \frac{1}{4}''$	0	0	2
3137	1.	Spacing collar	0	1	0
3131	1.	Reversing Drum complete, No. 2 Motor...	1	1	0
3132	1.	Hollow insulated shaft and cam for No. 3131	0	4	6
3177	1.	Cam for No. 3132	0	2	3
3180	1.	Top bearing for R.D. shaft extension	0	1	6
3179	1.	Intermediate bearing for R.D. shaft	0	1	8
3181	1.	Bottom bearing for R.D. shaft	0	1	6
3230	2.	Tap bolt for Nos. 3180 and 3181, $\frac{3}{8}''-16 \times 1\frac{1}{4}''$	0	2	0
3232	2.	" " for No. 3179, $\frac{3}{8}''-16 \times 2\frac{3}{4}''$	0	2	6
3128	2.	Cut-out plug for reverse drums	0	1	9
3129	2.	Spring for plug Nos. 3128, No. 22	0	0	3
90M 3595	1.	Finger base block (main drum) complete with finger bases	1	17	6
90 3125	1.	" " " " " " " " " "	1	17	6
90M 3596	1.	" " " " complete without finger bases	0	3	0
90 3235	1.	" " " " " " " " " "	0	3	0
3471	4.	Screws for fastening base block	0	1	3
3196	1.	Fullerboard under base block, $2\frac{1}{2}'' \times 23\frac{1}{4}''$	0	0	5
3197	1.	" " under finger bases, $2'' \times 23\frac{1}{4}''$	0	0	5
2269	1.	Pressed asbestos finger shield, $2\frac{1}{2}''$ wide	0	1	0
2270	1.	" " " " $1\frac{3}{16}''$ wide	0	0	6
2272	1.	" " " " $4\frac{3}{4}''$ wide	0	1	5
2271	1.	" " " " $1\frac{7}{16}''$ wide	0	0	5
2273	3.	" " " " $4\frac{1}{2}''$ wide	0	1	5
2274	1.	" " " " $1\frac{1}{8}''$ wide	0	0	4
3195	1.	Fullerboard on finger shields	0	0	5

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

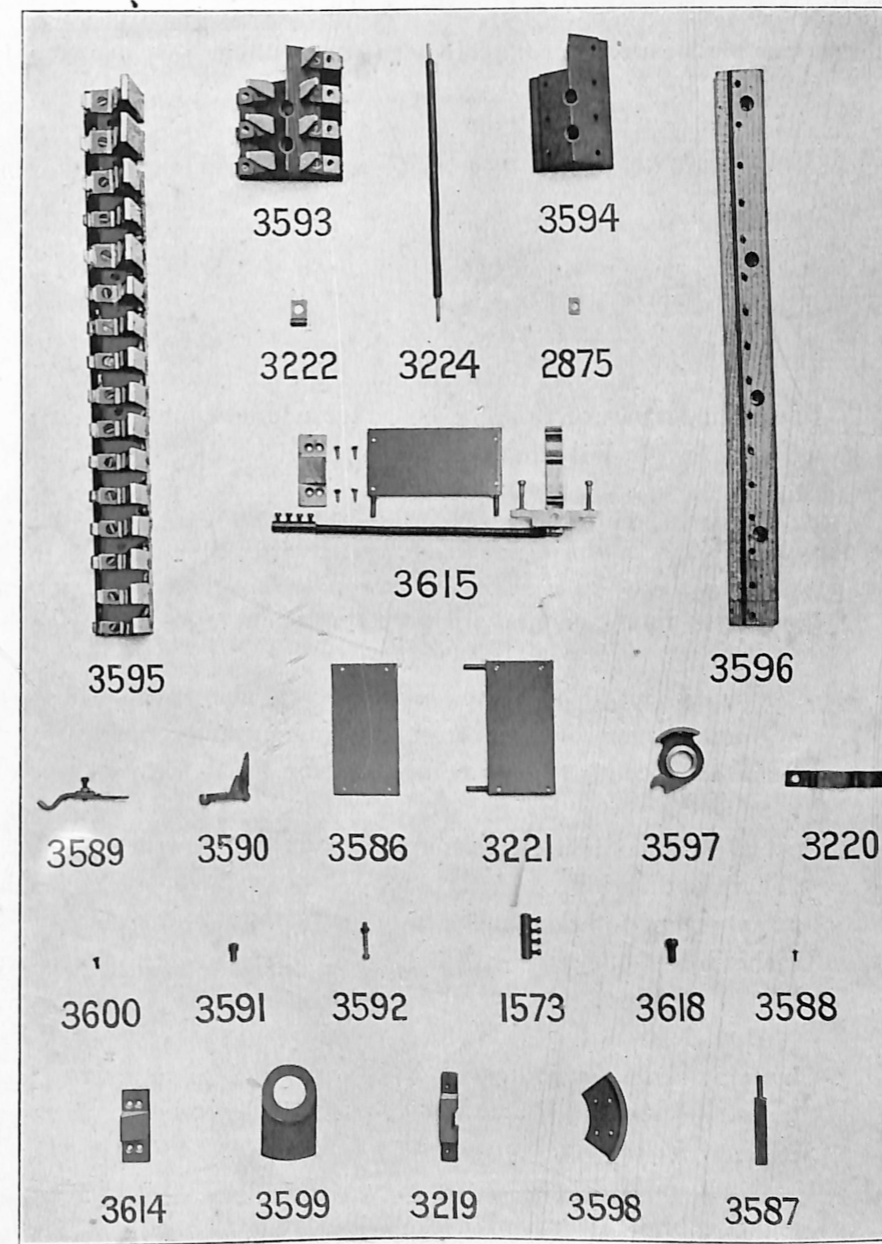


Fig. 6.

Style No.	Parts per Controller.	Description.	Price.		
			£	s.	d.
90M 3147	1.	Base block (special), complete with three bases	0	3	9
3238	1.	Base block (special), without bases	0	1	0
3214	1.	Fibre finger shield for No. 3147	0	2	9
90M 3459	2.	Fibre piece for No. 3214	0	0	9
3461	1.	Wood spacing block for No. 3214	0	0	2
3462	1.	" " " " $\frac{3}{4}''$ dia. for No. 3214	0	0	1
3463	4.	Wood screw for No. 3214—No. 6 x $\frac{1}{2}''$	0	0	3
90M 3460	2.	" " for fastening No. 3214—No. 6 x $1\frac{1}{2}''$	0	0	3
90M 3202	1.	Fullerboard under No. 3147— $2\frac{1}{2}'' \times 2\frac{1}{2}''$	0	0	3

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

Style No.	Parts per Controller.	Description.	Price.		
			£	s.	d.
3124	I.	Base block (special), complete with one $\frac{3}{4}$" finger base (No. 3148) each	0	2	3
3234	I.	" " " without base... ..	0	1	0
3204	I.	Fullerboard under No. 3124— $2\frac{7}{32}$ " x $2\frac{1}{2}$ "	0	0	3
90M 3590	I.	$\frac{1}{2}$ " Finger base opposite ring No. 16	0	1	0
3148	I2.	$\frac{3}{4}$ " " " " rings 4, 6, 7, 8, 9, 10, 11, 12, 13, 14 15 (2) ..	0	1	2
3151	4.	1" " " " " I, 2, 3, 5	0	1	6
90M 3213	I.	$\frac{3}{4}$ " " " special, on R.H. side, opposite rings 3, 4, 5 ..	0	1	5
3219	I.	Special finger base on terminal board for magnetic brake finger ..	0	2	0
3465	6.	Wood screw for fastening bases to special base block, No. 3238, per doz.	0	0	3
3464	I7.	Screws for fastening bases, No. 14— $2\frac{1}{4}$ " x 1"	0	0	6
3467	I7.	Nut for No. 3464	0	0	4
90M 3589	I.	$\frac{1}{2}$ " Contact finger comp. with set screw, shunt and spring each	0	0	11
3143	I1.	$\frac{3}{4}$ " " " " " " " " " " " " ..	0	1	1
3146	I.	$\frac{3}{4}$ " Long contact finger comp. with set screw, shunt and spring ..	0	1	5
3142	4.	1" Contact finger comp. with set screw, shunt and spring ..	0	1	3
90M 3211	I.	Special L.H. contact finger comp. for ring No. 5, with set screw, shunt and spring... .. each	0	1	6
90M 3212	I.	Special R.H. contact finger comp. for ring No. 3, with set screw, shunt and spring... .. each	0	1	6
3220	I.	Special magnetic brake finger comp. with shunt and spring ..	0	1	5
2875	I.	Washer for $\frac{1}{2}$ " fingers, $\frac{1}{2}$ " x $\frac{3}{4}$ " per doz.	0	0	9
2956	I3.	" " $\frac{3}{4}$ " " $\frac{3}{4}$ " x $\frac{3}{4}$ "	0	0	9
2873	4.	" " 1" " $\frac{3}{4}$ " x 1"	0	0	9
3591	I.	Clamping screw for $\frac{1}{2}$ " fingers, No. 20—18 x $\frac{1}{2}$ "	0	0	8
3262	I9.	Clamping screw for $\frac{3}{4}$ " and 1" fingers, No. 24—16 x $\frac{5}{8}$ " ..	0	0	9
3470	I9.	Set screw for fingers, No. 14—24 x $\frac{7}{8}$ "	0	0	8
3302	I9.	Brass nut for No. 3470	0	0	9
3615	I.	Magnetic brake finger and base complete, including Nos. 3219, 3220, 3221, 3614, 3222, 3224, 1573, and screws ... each	0	8	6
3221	I.	Fibre shield for No. 3615	0	2	3
3586	I.	Fibre for No. 3221—3" x 6"	0	0	7
3587	2.	" " No. 3221— $\frac{1}{2}$ " x 4"	0	0	3
3588	4.	Copper rivet for No. 3221, $\frac{1}{8}$ " x $\frac{7}{16}$ " per doz.	0	0	3
3614	I.	Fibre shield for No. 3615 each	0	1	3
3222	I.	Wire clip for No. 3615	0	0	2
3224	I.	Wire for No. 3615, No. 5—1' 0"	0	1	8
1573	I.	Connector for No. 3615	0	0	10
3618	I.	Clamping screw for mag. brake finger, No. 3220, No. 24—16— $\frac{3}{4}$ " per doz.	0	0	9

Order by Style Number.

PARTS OF Nos. 90 and 90M CONTROLLERS—continued.

Style No.	Parts per Controller.	Description.	Price.		
			£	s.	d.
2995	2.	Screw for fastening base to terminal board No. 14—24 x $1\frac{1}{2}$ " per doz.	0	0	9
31	2.	Washer for 2995	0	0	2
3446	4.	Wood screw for No. 3614, No. 10 x $\frac{3}{8}$ "	0	0	3
90M 3593	I.	Finger base block (reversing drum No. 1) complete with bases each	0	7	6
90* 3135	I.	" " " " " " " " " " " " ..	0	6	6
90M 3594	I.	" " " without bases	0	2	0
90* 3236	I.	" " " " " " " " " " " " ..	0	2	0
90M 8737	I.	Fullerboard under No. 3593— $3\frac{3}{4}$ " x $5\frac{1}{2}$ "	0	0	2
3200	I.	" " No. 3135	0	0	2
3203	I.	" " bases (3) $1\frac{1}{8}$ " x 4"	0	0	2
90M 8738	I.	" " " (4) $1\frac{1}{8}$ " x $5\frac{1}{2}$ "	0	0	2
3472	4.	Screw for fastening No. 3593 and 3236, No. 24—16 x $1\frac{1}{2}$ ", per doz.	0	1	6
3149	I2.	$\frac{3}{4}$ " Finger base for base blocks Nos. 1 and 2 each	0	0	11
3464	I2.	Screw for fastening bases No. 14—24 x 1" ... per doz.	0	0	6
3467	I2.	Nut for No. 3464	0	0	4
3144	I2.	$\frac{3}{4}$ " Contact finger for drums Nos. 1 and 2, complete with shunt and spring, each	0	0	11
3262	I2.	Clamping screw for 5" finger No. 24—16 x $\frac{5}{8}$ " ... per doz.	0	0	9
3141	I2.	Washer for No. 3262 $\frac{3}{4}$ " x $1\frac{1}{8}$ "	0	0	8
3136	I.	Finger base block (reversing drum No. 2) complete with bases each	0	6	0
3237	I.	" " " " " " " " " " " " without bases ..	0	1	5
3199	I.	Fullerboard under No. 3136— $3\frac{3}{4}$ " x 4"	0	0	3
3203	2.	" " " bases $1\frac{1}{8}$ " x 4"	0	0	2
90M 3206	I.	Terminal board complete with terminals	1	8	6
90 3206	I.	" " " " " " " " " " " " ..	1	8	6
3233	I.	" " without terminals	0	4	0
3198	I.	Fullerboard under No. 3233— $3\frac{5}{16}$ " x $7\frac{1}{2}$ "... ..	0	0	3
3191	4.	Wooden bushings under No. 3233—1" dia.	0	0	6
3473	4.	Screw for fastening No. 3233 No. 24—16 x $2\frac{1}{2}$ "... per doz.	0	3	3
3215	3.	Terminal complete with binding screw and nut, G, F ₂ —, T, each	0	1	1
3216	9.	" " " " " " " " " " " " F ₁ +, F ₁ —, A ₁ +, A ₁ —, A ₂ —, A ₂ +, R ₁ , R ₂ , R ₅ , ..	0	1	0
3217	2.	Terminal complete with binding screw and nut R ₃ , R ₄	0	1	0
90M 3218	2.	" " " " " " " " " " " " R ₆ , R ₇	0	1	1
3468	I6.	Binding screw for terminals, No. 12—24 x $\frac{3}{4}$ " ... per doz.	0	0	6
3469	I6.	Nut for No. 3468	0	0	9
3466	I6.	Screw for fastening terminals to board, No. 10 x $\frac{5}{8}$ " ..	0	0	3
3254	4.	Binding screws for terminals R ₆ and R ₇ , wood screw, No. 6 x $\frac{5}{8}$ " ..	0	0	4
3478	1.	Fullerboard between cables and terminal board, $2\frac{3}{4}$ " x $3\frac{1}{4}$ " each	0	0	3

* Style Nos. 3135 and 3236 are used with 90M Controllers not fitted for magnetic braking with one Motor cut out.

Order by Style Number.

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