

Ford Motor Company

**PRICE LIST
OF PARTS AND
INSTRUCTION
BOOK**

MODEL T

Telegraph Code

TO save expense, to expedite ordering and for the convenience of those ordering parts, we have arranged a code word for each part of the Model "T" car. In addition to the parts code we list below a brief general code covering miscellaneous instruction, questions and answers relative to the entering and shipping of parts ordered.

¶ In telegraphing an order for parts start with the code telling us how to ship, then use the word for the next part, stating the number required and then give the number of your car.

¶ The following will illustrate how to send in an express order for 8 push rods No. 3058, 1 fan No. 496, and 3 transmission band springs No. 3425:

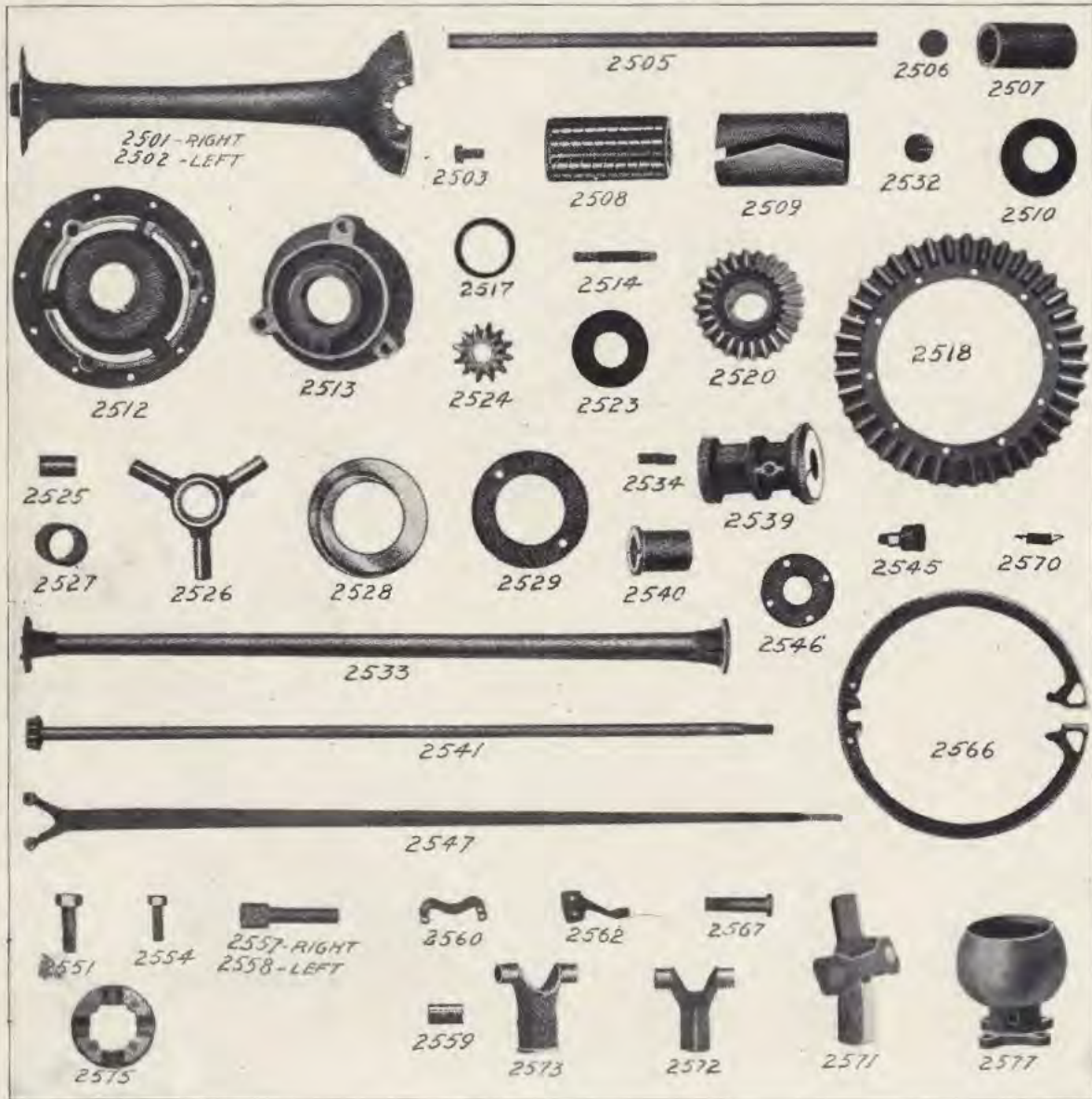
FORD MOTOR COMPANY,
Detroit, Mich.

Toperig, eight Tubgener, one Tuburbain, three Tubmergin for car No. 2841.

Signed _____

Toperig	Ship to me (us) by express.	Topflutch	When and how will you ship parts called for in my (our) telegram of—
Toperkleur	Ship by express to	Topfwasser	When and how will you ship parts called for in my (our) letter of—
Topermolen	Ship to me (us) by Canadian Express	Topfgeld	Cancel order for parts our (my) telegram of—
Toperoker	Ship to me (us) by U. S. Express	Topfgicht	Cancel order for parts my (our) letter of—
Toperpool	Ship to me (us) by Dominion Express	Topfkiemer	Add to our (my) telegraph order of—
Toperslak	Ship to me (us) by American Express	Topfartig	Will send duplicate shipment by— express at once.
Topersteen	Ship to me (us) by freight	Topfhaar	Will send duplicate order—freight at once.
Toper	Ship to me (us) by mail		
Topfton	When and how did you ship parts called for in my (our) telegram of—		

When writing messages in code, print the code words in capital letters.



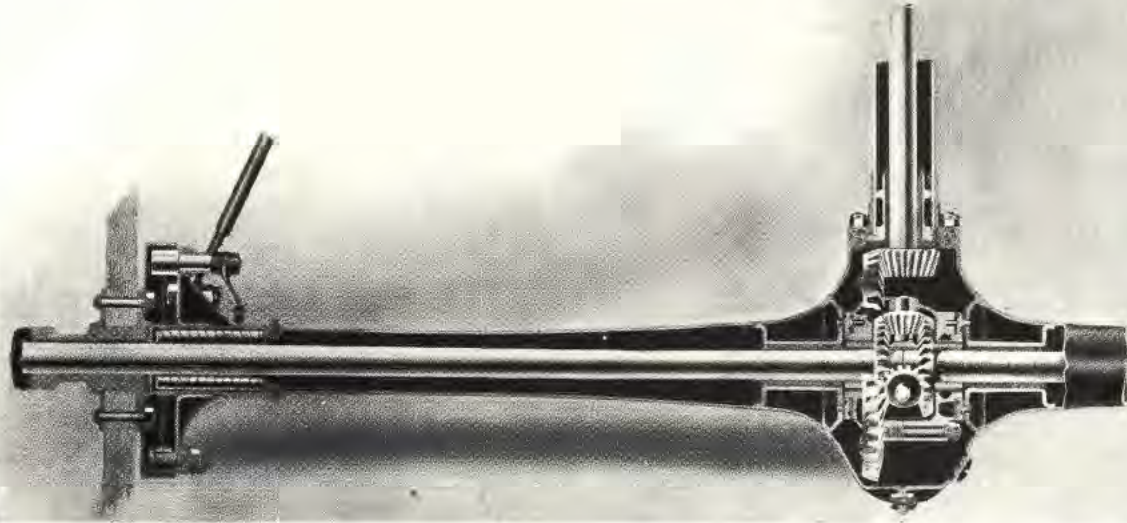
Order by these Nos.	Description.	Price.	Code Word.	Factory No.
2504	Rear axle housing bolt nut	02	Tuadials	44
2505	Rear axle shaft	2 50	Tuadibale	40
2506	Rear axle shaft thrust washer (fibre)	05	Tuadibas	39
2507	Rear axle shaft babbitt bearing	80	Tuadibil	51
2508	Rear axle shaft roller bearing	1 00	Tuadibox	97
2509	Rear axle shaft roller bearing sleeve	40	Tuadiega	170
2510	Rear axle housing cap	10	Tuadieot	56
2511	Differential assembly	30 00	Tuadiera	
*2512	Differential case—left half	5 00	Tuadierect	10B
2513	Differential case—right half	4 00	Tuadieron	11
2514	Differential case stud	10	Tuadistes	52
2515	Differential case stud nut	05	Tuadora	53
2516	Differential case stud cotter pin	01	Tuadoura	88
2517	Differential case bushing (bronze)	60	Tuaire	19
*2518	Differential drive gear—40 teeth .. (This gear is fastened with screws and cannot be substituted for riveted type.)	8 00	Tuandobil	12B
2519	Differential drive gear screw	02	Tuadones	103
2520	Differential gear—24 teeth	2 50	Tuarismo	13
2521	Differential gear key (Woodruff)	10	Tuarista	21
2522	Differential gear pin, each	05	Tuasible	36
2523	Differential gear thrust washer (fibre)	15	Tuasion	32
2524	Differential pinion—12 teeth	1 25	Tuasive	14
2525	Differential pinion bushing	25	Tuasively	93
2526	Differential spider with bushing	2 00	Tuasoribls	15
2527	Differential spider bushing (bronze)	40	Tuasso	18
2528	Differential thrust plate washer (babbitt)	50	Tuastene	30
2529	Differential thrust plate (steel)	20	Tuavely	31
2530	Differential thrust plate pin (13/32" long)	05	Tuavement	17
2531	Differential thrust plate pin (7/32" long)	05	Tuaveolen	37
2532	Differential housing oil plug	05	Tuaveofus	817
2533	Drive shaft tubing complete (include thrust washer)	9 00	Tuavidade	153
2534	Drive shaft and rear axle housing stud	05	Tuavident	23
2535	Drive shaft and rear axle housing stud nut	05	Tuavidico	8
2536	Drive shaft and rear axle housing stud cotter pin	01	Tuadivorm	34
2537	Drive shaft and rear axle housing pin (3/16x3/8")	02	Tuavifla	35
2538	Drive shaft housing rivets, per doz.	05	Tuaviflet	33
*2539	Drive shaft housing rear bushing. (This long bushing used after machines numbering above 7500.)	1 00	Tuavignor	24C
2540	Drive shaft housing front bushing	60	Tuavioux	69
2541	Drive shaft with pinion	7 00	Tuavitate	154
2542	Drive shaft only	2 50	Tuaviza	87
2543	Drive shaft pinion—11 teeth	4 50	Tuavizde	16
2544	Drive shaft pinion key (Woodruff)	10	Tuavizamo	57
2545	Drive shaft grease cup	15	Tuavizape	76
*2546	Drive shaft thrust washer (steel) .. each	15	Tuavizent	22B
2547	Rear radius rod (right or left)	3 50	Tuavizora	152
2548	Rear radius rod nut	05	Tuavizon	77
2549	Rear radius rod lock nut	05	Tuavizque	78
2550	Rear radius rod nut cotter pin	01	Tubasurd	82
2551	Rear radius rod bolt	05	Tubaccusa	83
2552	Rear radius rod bolt nut	05	Tubaceta	84
2553	Rear radius rod bolt cotter pin	01	Tubacidos	85
2554	Rear radius rod ball joint support bolt	05	Tubacques	79
2555	Rear radius rod ball joint support bolt nut	05	Tubacribu	80
2556	Rear radius rod cotter pin	01	Tubacrib	81
2557	Hub brake cam shaft—right (oval cam)	30	Tubact	92B

Plate 1—Rear Axle Parts

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
2500	Rear axle assembly (specify color) \$	80 00	Tuabia	95B
2501	Rear axle housing—right half	16 00	Tuability	1B
2502	Rear axle housing—left half	16 00	Tuadebant	2B
2503	Rear axle housing bolt	05	Tuadelan	42

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.

*Order from list on page 3 for machines numbered below 2500.



Sectional View—
Rear Axle,
Differential, etc.

Rear Axle—Continued

Order by these Nos.	Description.	Price.	Code Word	Factory No.
2574	Universal joint knuckle pin	05	Tubalbula	6
*2575	Universal joint ring complete (drop forging)	75	Tubalcaid	49
2576	Universal joint ring rivets, each ..	05	Tubalkins	50
2577	Universal joint housing	1 00	Tubaltenu	70
2578	Universal joint housing plug	05	Tubambige	75
2579	Universal ball cap oil hole plug (brass)	10	Tubambros	156
2580	Universal ball cap felt gasket	10	Tubamigue	1518

*Order following parts for machines numbered below 2500.

10	Differential gear case—left half...\$	5 00	Tuadieres	
12	Differential driving gear—40 teeth.	3 00	Tuanetes	
38	Differential driving gear rivet	02	Tuardones	
24	Drive shaft housing bushing—rear.	1 00	Tuaviogy	
45	Universal joint knuckle (male) ...	1 00	Tuabalbido	
46	Universal joint knuckle (female) ..	1 00	Tubalborn	
49	Universal joint brass ring complete	1 25	Tubalcaid	
22	Drive shaft thrust washer	15	Tuavizar	
55	Hub brake shoe (brass)	2 00	Tubaiding	

Rear Axle 60" Tread

2599	Rear axle assembly	80 00	Tubamis	
2600	Rear axle housing—right	16 00	Tubamit	1701C
2601	Rear axle housing—left	16 00	Tubamore	1702B
2602	Rear axle shafts, each	2 50	Tubamoty	1703
2603	Rear spring	14 00	Tubanton	1704
2604	Rear radius rod (right or left) ..	3 50	Tubantully	1726
2605	Hub brake pull rod—right	45	Tubapantor	1710B
2606	Hub brake pull rod—left	45	Tubapegth	1721

Front Axle

2700	Front axle assembly (specify color)	30 00	Tubapenin	261
2701	Front axle only	12 00	Tubapent	202
2702	Spindle assembly—right	4 00	Tubaperes	203
2703	Spindle assembly—left	4 00	Tubaperio	204
2704	Spindle stationary cone (inside) ..	40	Tubapkalt	205
2705	Spindle adjusting cone—right thread	30	Tubaquat	206
2706	Spindle adjusting cone—left thread ..	30	Tubaqueos	207
2707	Spindle nut—right thread	05	Tubaquilo	208
2708	Spindle nut—left thread	05	Tubaquulos	209
2709	Spindle washer	05	Tubarabut	210
2710	Spindle bolt	50	Tubarando	211B
2711	Spindle bolt nut	05	Tubarator	212
2713	Spindle body bushing (both upper and lower) each	50	Tubardust	223
2714	Spindle arm bushing	20	Tubaresa	225
2715	Spindle oiler	15	Tubaresco	218
2716	Steering spindle connecting rod with yoke	2 60	Tubarmale	264
2717	Steering spindle connecting rod with ball pin only	2 00	Tubasper	268
2718	Steering spindle connecting rod bolt (2-7/16")	05	Tubassam	216
2719	Steering spindle connecting rod bolt nut	05	Tubassese	231
2721	Steering spindle connecting rod yoke	60	Tubastam	248
2722	Steering yoke clamping bolt (1-5/32" long)	05	Tubastane	250
2723	Steering yoke clamping bolt nut ...	02	Tubastape	251

Rear Axle—Continued

Order by these Nos.	Description.	Price	Code Word.	Factory No.
2558	Hub brake cam shaft—left (oval cam)	30	Tubactaro	61B
2559	Hub brake cam shaft bushing	20	Tubaction	173
2560	Hub brake spring	05	Tubactrem	63
2561	Hub brake spring rivet, per doz. ...	05	Tubadjuva	64
2562	Hub brake cam shaft lever	30	Tubadjuz	62
2563	Hub brake cam shaft lever pin	02	Tubadmovo	7
2564	Hub brake cam shaft lever clevis pin	02	Tubagrege	65
2565	Hub brake lever clevis pin cotter .. (Above parts, comprise rear axle assembly)	01	Tubagrest	66
2566	Hub brake shoe (cast iron)	75	Tubading	55
2567	Hub brake shoe support bolt	05	Tuballe	59
2568	Hub brake shoe support bolt nut ..	05	Tubalar	60
2570	Hub brake shoe coil spring	05	Tubalbans	67
*2571	Universal joint assembly	2 75	Tubalbib	151
*2572	Universal joint knuckle (male half)	1 00	Tubalboat	45B
*2573	Universal joint knuckle (female half)	1 00	Tubalbay	46B



Plate 2—
Front Axle
Parts

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
2725	Steering gear connecting rod only	30	Tubastasi	258
2726	Steering ball socket assembly	1 00	Tubastato	266
2727	Steering ball socket only	50	Tubastava	253
2728	Steering ball socket cap	30	Tubasto	254B

Front Axle—Continued

Front Axle—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
2729	Steering ball socket bolt	05	Tubastral	255
2730	Steering ball socket bolt nut	03	Tubaud	256
2732	Steering ball socket lock nut	03	Tubaurabs	259
2733	Front radius rod	5 00	Tubaurad	263
2734	Front radius rod nut	05	Tubaurtos	245
2736	Front radius rod ball cap	20	Tubauster	217
2738	Front radius rod ball cap screw	05	Tubbajlas	810

Front Axle 60" Tread

1760	Front axle only	12 00	Tubazlt	1720
1761	Steering spindle connecting rod	2 60	Tubhajnon	1725
1762	Steering gear connecting rod only	30	Tubhajtoz	1719

Wheels

2800	Front wheel—red	\$ 12 00	Tubbace	291
2801	Front wheel—green	12 00	Tubbaddon	291
2802	Front wheel—gray	12 00	Tubbagrot	291
2803	Front hub assembly	6 00	Tubbaldas	200
2804	Front hub outer race (small)	50	Tubbalbe	234
2805	Front hub inner race (large)	60	Tubbame	235
2806	Front hub outer ball retainer	10	Tubbanous	236
2807	Front hub inner ball retainer	10	Tubbabanted	237
2808	Front hub dust ring (steel)	25	Tubbaste	238
2809	Front hub felt washer	05	Tubbalano	239
2810	Front hub large balls (3/8")	05	Tubbiase	241
2811	Front hub small balls (1/8")	04	Tubbiavan	249
2812	Rear wheel—red	12 00	Tubbibets	99
2813	Rear wheel—green	12 00	Tubbicor	99
2814	Rear wheel—gray	12 00	Tubbidado	99
2815	Rear hub	6 00	Tubbibims	102
2816	Rear hub key	02	Tubbibo	26
2817	Rear hub pin	02	Tubbibent	27
2818	Rear hub brake drum	1 50	Tubbiello	3
2819	Hub cap	75	Tubbisato	240
2820	Hub bolt	05	Tubbracha	28
2821	Hub bolt nut	02	Tubbrade	29
2822	Hub flange (front)	60	Tubbrevia	233
2823	Hub flange (rear)	60	Tubbreuoti	233
2824	Rear hub felt washer	05	Tubbrevum	54

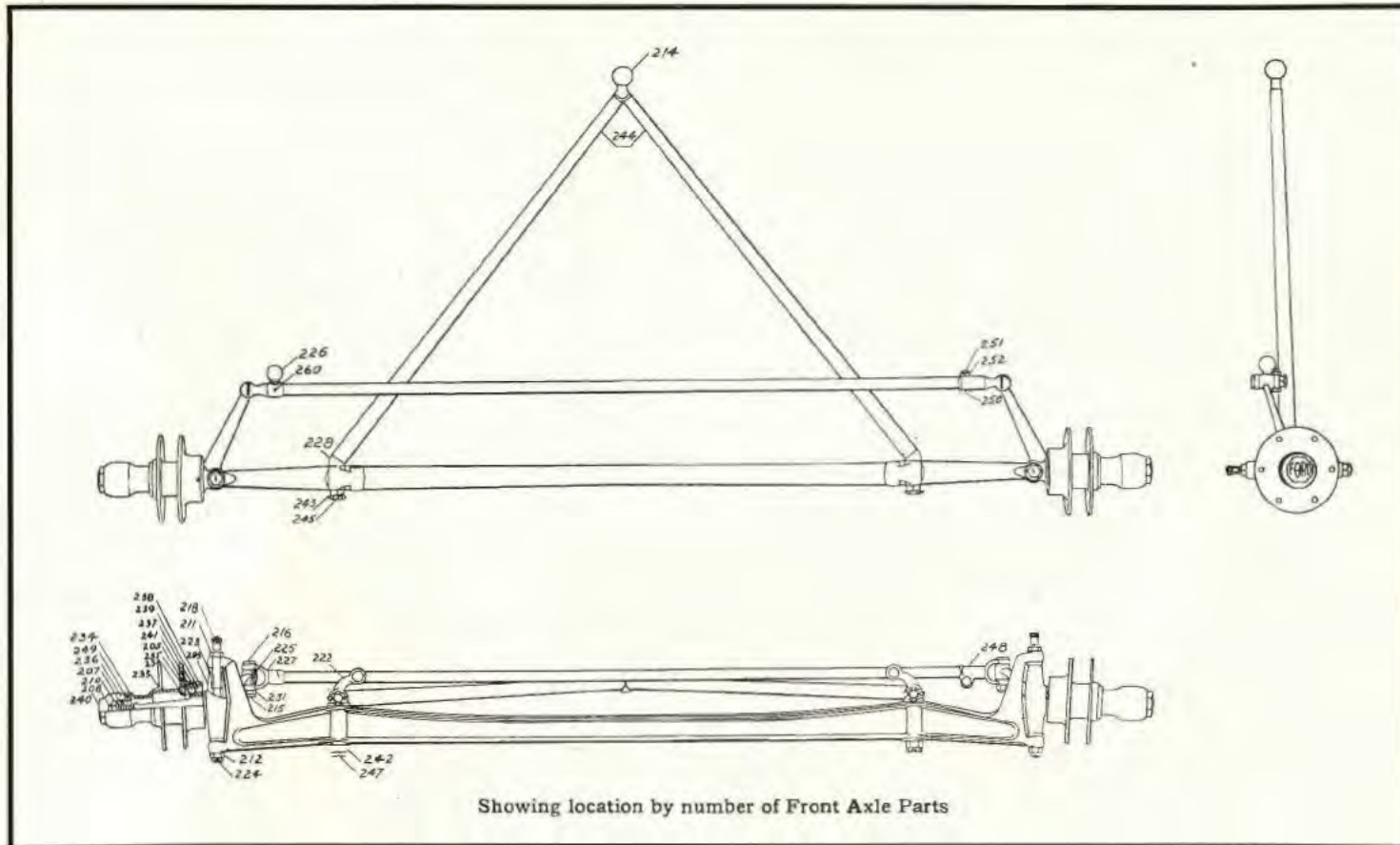
Frame

2850	Frame assembly	25 00	Tubcandid	300
2851	Frame side member—right	7 00	Tubacarre	301
2852	Frame side member—left	7 00	Tubeaudal	302
2853	Frame front cross member	3 00	Tubcaute	303
2854	Frame rear cross member	3 00	Tubcaurn	304
2855	Frame front corner bracket—right	50	Tubcava	305
2856	Frame front corner bracket—left	50	Tubcavabo	306
2857	Frame rear corner bracket—right	50	Tubcaves	307
2858	Frame rear corner bracket—left	50	Tubcaveux	308
2863	Frame body bracket (on frame)	15	Tubcentda	344

Gasoline Tank

2900	Gasoline tank	5 00	Tubcerna	1303
2901	Gasoline tank filling plug	30	Tubcernoe	1317
2902	Gasoline tank sediment bulb	35	Tubcernut	1319
2903	Gasoline tank bolt (25/32" long)	05	Tubclavio	1320
2904	Gasoline tank bolt (29/32" long)	05	Tubcommun	1323
2905	Gasoline tank bolt nut	03	Tubconque	1321
2907	Gasoline tank stop cock	35	Tubconsay	1343
2908	Gasoline tank pet cock	25	Tubcontin	1342
2909	Gasoline tank feed pipe	40	Tubcoques	1364
2910	Gasoline tank feed pipe pack nut	05	Tubcoquo	1374

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.



Showing location by number of Front Axle Parts

Fenders

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
*2925	Front fender—left (specify color).	4 00	Tubcortad	1413
*2926	Front fender—right (specify color)	4 00	Tubcortex	1414
*2927	Rear fender—left (specify color).	3 50	Tubeosyn	1415B
*2928	Rear fender—right (specify color)	3 50	Tubcoyter	1416B
2929	Front fender iron (right or left)..	1 00	Tubcrania	343
*2930	Rear fender iron—right	1 50	Tubcrowd	342B
*2931	Rear fender iron—left	1 50	Tuberoyler	349B
2932	Fender iron bolt—short	05	Tubcruned	345
2933	Fender iron bolt—long	05	Tubernot	347
2934	Fender iron bolt nut	03	Tubcunald	346
2935	Fender eye bolt	15	Tubcunoazr	1942
2936	Fender eye bolt washer	03	Tubcunnaab	1943
2937	Fender eye bolt nut	03	Tubcunuth	1944

*(Specify if front fenders have extension cap or square at end.)

Running Boards

*2941	Running board (pressed steel) ...	1 50	Tubcunutt	1410B
2942	Running board metal shield—left .	2 50	Tubcurvos	1408
2943	Running board metal shield—right.	2 50	Tubcustos	1409

Running Boards—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
2944	Running board fender bolt	05	Tubcullie	1344B
2945	Running board fender bolt nut	02	Tubdebusa	1347
2946	Running board bracket	75	Tubdeacana	336
2947	Running board truss rod	40	Tubdecupe	338
2948	Running board truss rod nut	02	Tubdefend	339
2949	Running board bolt	05	Tubdegnoy	340B
2950	Running board bolt nut	02	Tubdelero	341
2951	Running board fender bolt washer .	03	Tubdeloth	1959

Fenders and Running Boards—60" Tread

3875	Front fender—right	4 00	Tubdelta	1715
3876	Front fender—left	4 00	Tubdelsog	1716
3877	Front fender iron (right and left) ..	1 00	Tubdeming	1713
3878	Rear fender iron—left	1 50	Tubdentick	1711
3879	Rear fender iron—right	1 50	Tubdentory	1712
3880	Running board metal shield—right.	2 50	Tubdeptic	1717

*Order from list on page 8 for machines numbered below 2500.

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.

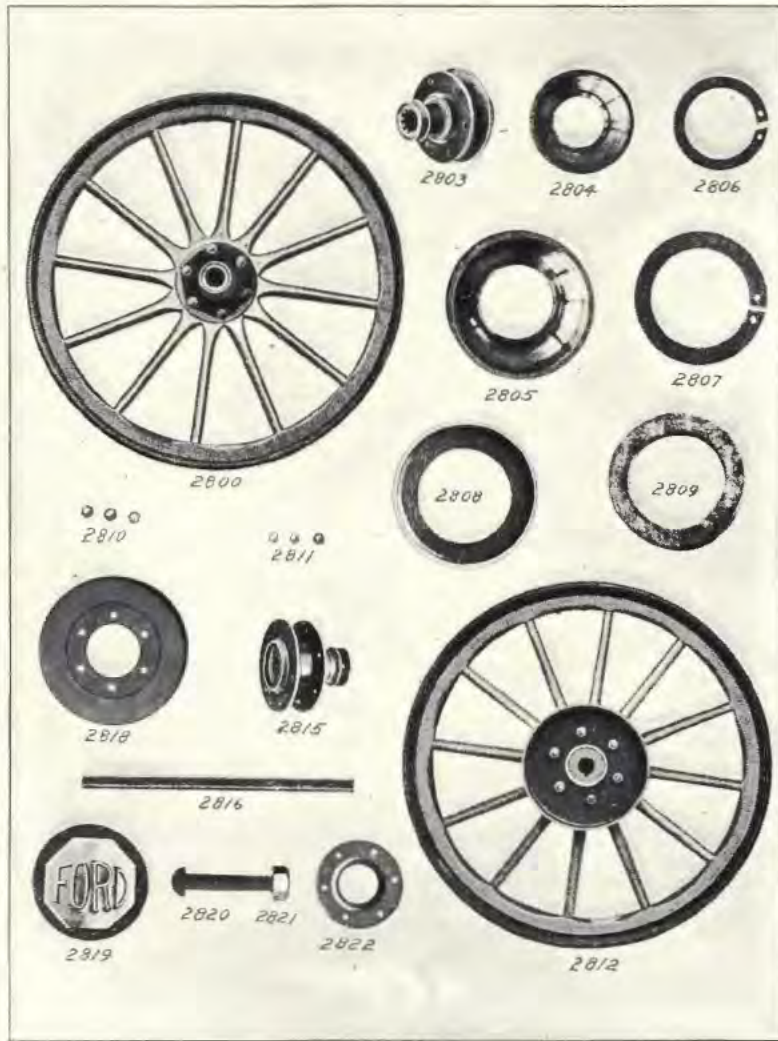


Plate 3—Wheels and Parts

Fenders and Running Boards 60" Tread—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3881	Running board metal shield—left	2 50	Tubdegrin	1718
3882	Running board brackets each	75	Tubdercip	1714
3883	Running board truss rods, each	40	Tubdestirn	1708

(Order following parts for machines below 2500.)

Fenders and Running Boards

1415	Rear fender—left	3 50	Tubcortom
1416	Rear fender—right	3 50	Tubcostal

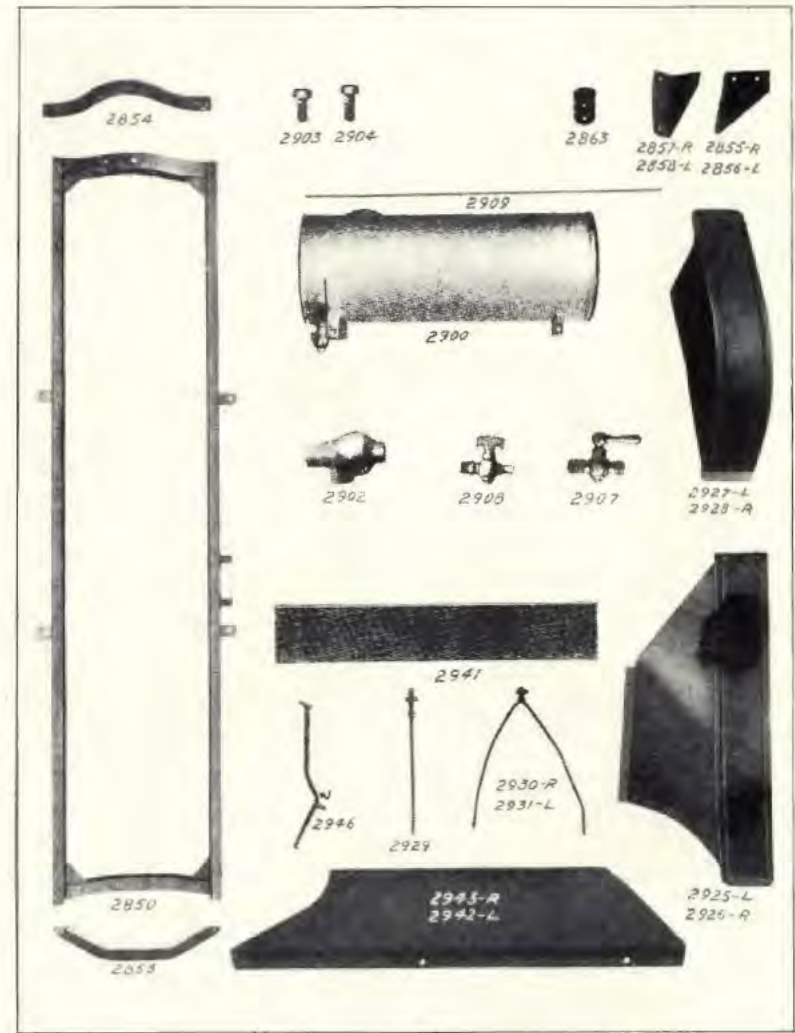


Plate 4—Frame, Fenders and Tank with Parts

Fenders and Running Boards—Continued

Order by these Nos.	Description.	Price.	Code Word
342	Rear fender iron—right	1 50	Tubcrudum
349	Rear fender iron—left	1 50	Tubcruna
1410	Running board complete—right	4 00	Tubcurate
1411	Running board complete—left	4 00	Tubcurrall
1412	Running board rubber matting	1 00	Tubcurrod
1421	Running board brass (rear end)	30	Tubcutano
1422	Running board brass (left outside)	75	Tubdamus
1423	Running board brass (front end)	30	Tubdeacon
1424	Running board brass screw (3/8")	01	Tubdealas

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.

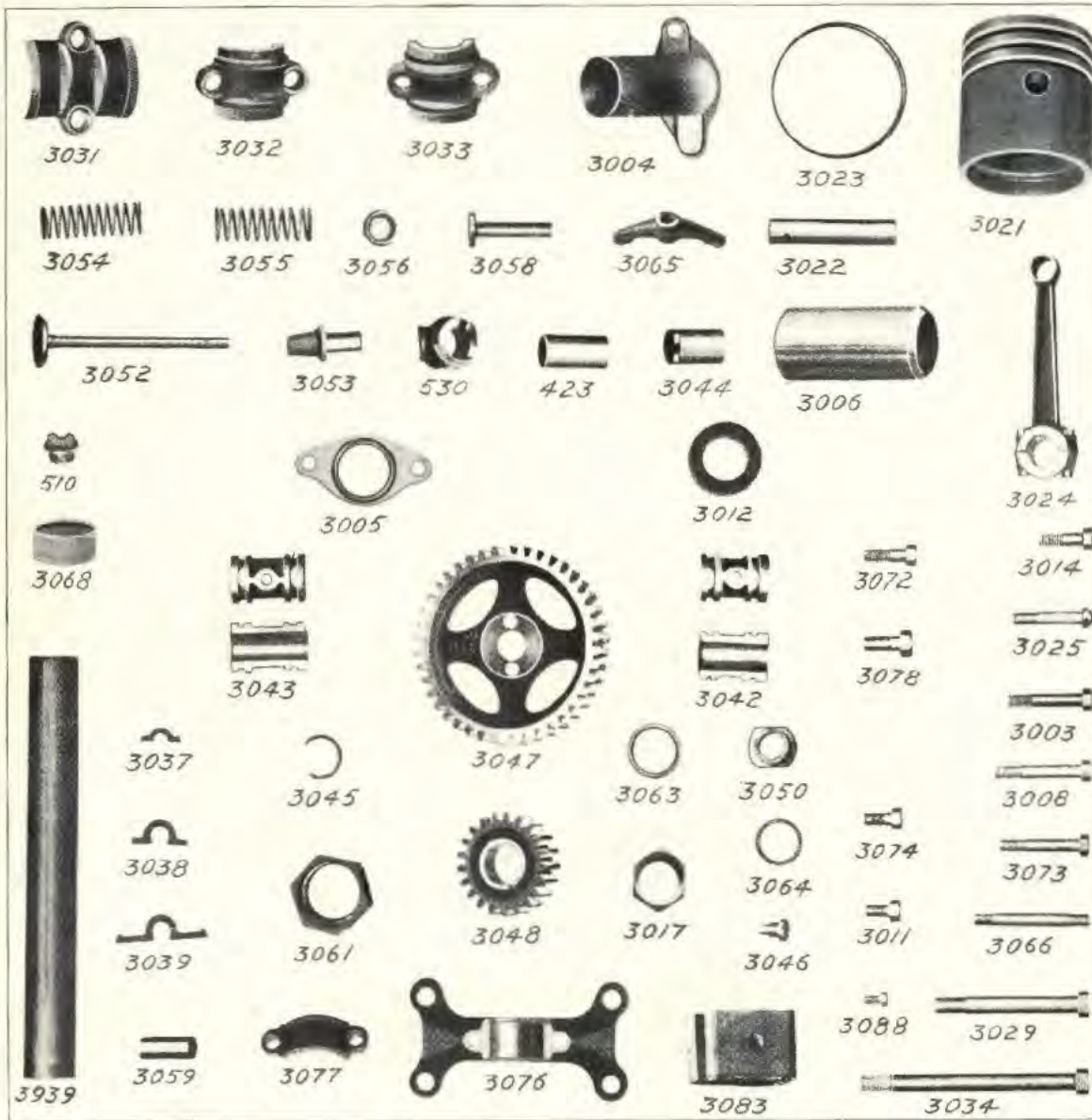


Plate 6 -
Motor Parts

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3052	Exhaust and inlet valve	40	Tubfolius	424
3053	Exhaust and inlet valve bushing ..	15	Tubfolom	428
3054	Intake valve spring	10	Tubfumes	430
3055	Exhaust valve spring	10	Tubfuseus	431

Motor (Thermo-Syphon)—Continued

Order by these Nos.	Description	Price.	Code Word.	Factory No.
3056	Valve spring seat	05	Tubfosk	425
3057	Valve spring seat pin	01	Tubgemie	429
3058	Push rod	30	Tubgener	426
3059	Push rod bushing	20	Tubgenus	427
3060	Exhaust pipe	1 50	Tubglbeux	511
3061	Exhaust pipe pack nut—brass	40	Tubglabre	518
3062	Inlet pipe	2 00	Tubglacal	512
3063	Inlet and Exhaust pipe gasket	05	Tubgronde	513
3064	Inlet and Exhaust pipe gland	05	Tubhashtab	514
3065	Inlet and Exhaust pipe clamp	15	Tubhaste	515
3066	Inlet and Exhaust clamp stud (3-5/16" long)	05	Tubhircos	516
3067	Inlet and Exhaust pipe clamp nut ..	03	Tubhircum	517
*3068	Breather pipe (brass—1-1/4" long) ..	20	Tubicurry	585
*3069	Crank and transmission case assembly	25 00	Tubidreso	1526B
3070	Crank case and cylinder gasket—left	10	Tubiendo	886
3071	Crank case and cylinder gasket—right	10	Tubieron	887
3072	Crank case and cylinder front cover cap screw	05	Tubrfott	433
3073	Crank case arm bolt—side (2 1/4" long)	05	Tubigites	479
3074	Crank case arm bolt—top (2 5/32" long)	05	Tubilla	480
3075	Crank case arm bolt nut	03	Tubilmer	481
*3076	Crank case front end frame bearing ..	60	Tubilnasty	320B
3077	Crank case front end bearing cap ..	40	Tubilnees	321
3078	Crank case front end bearing screw ..	05	Tubilmima	322
3079	Crank case overflow petcock	25	Tubimock	1515
3080	Transmission drain cup—plug	05	Tubimos	817
3081	Crank case oil tube	50	Tubimudy	543B
3082	Crank case oil tube clamp (on magneto coil support)	10	Tubimughot	548B
3083	Transmission case arm block—wood	05	Tubinana	890
3084	Engine pan—right	60	Tubinania	1330
3085	Engine pan—left	60	Tubinda	1331
3086	Transmission pan—left	30	Tubindate	1332
3087	Transmission pan—right	30	Tubindebat	1333
3088	Engine and transmission pan bolt ..	05	Tubindece	1335
3089	Engine and transmission pan nut ..	02	Tubundes0	1336

(Order following parts for machines below 3000.)

Motor—Pump Circulation

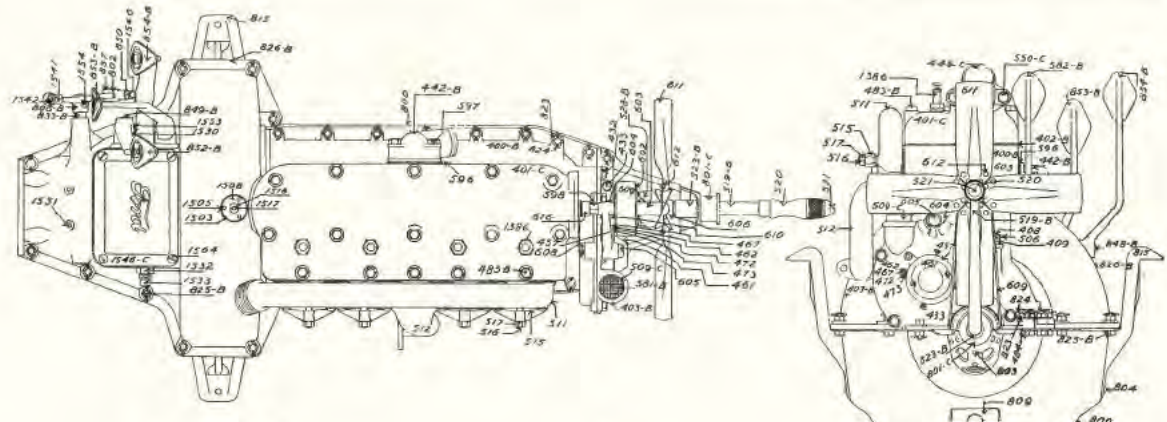
(See Plate on Page Twenty-three)

400	Cylinder with head assembled	35 00	Tubdelega
400A	Cylinder only (7/16" holes for cap screws)	30 00	Tuonelock
401	Cylinder head (3/8" holes for cap screws)	5 00	Tubdelury
*401B	Cylinder head (7/16" holes for cap screws)	5 00	Tubdement
402	Cylinder head gasket	1 00	Tubdentod
483	Cylinder head cap screws (3/8")	05	Tubdepost
446	Cylinder head outlet brass connection (3/8" screw holes)	60	Tubdiacox
446B	Cylinder head outlet brass connection (7/16" screw holes)	60	Tubdbbel
550	Cylinder head outlet brass connection screw (3/8")	05	Tubdiglte
550B	Cylinder head outlet connection screw (7/16")	05	Tubdihot
445	Cylinder head outlet brass connection gasket	15	Tubdiala
448	Cylinder head outlet hose	40	Tubdlaet
403	Cylinder cover (front end)	1 75	Tubdigoug
505	Cylinder cover paper liner	10	Tubditas

*401B Cylinder head stamped "Ford Motor Co."

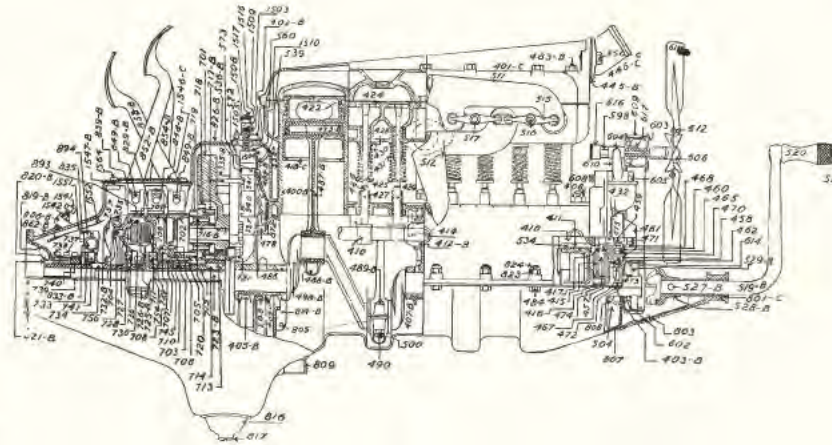
Motor—Pump Circulation—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
442	Cylinder water inlet brass connection	30	Tubditid	
444	Cylinder water inlet pack nut	15	Tubdituro	
568B	Piston assembly (3 ring type—used with connecting rod having piston pin bushing)	4 00	Tubdivine	
418	Piston only	3 00	Tubdivisti	
419	Piston pin	35	Tubdoceas	
420	Piston pin screw	05	Tubdocebas	
587	Connecting rod assembly (bushing in head end)	3 00	Tubdolor	
423	Connecting rod piston pin bushing	25	Tubducton	
498	Crank shaft	16 00	Tubdument	
530	Crank shaft ratchet	40	Tubepinex	
529	Crank shaft ratchet pin	02	Tubequal	
543	Crank case oil tube	50	Tubepost	
520	Crank case front end frame bearing	60	Tubilnem	
582	Breather pipe (1" tube)	90	Tubhorido	
800	Crank and transmission lower case.	25 00	Tubidres	



Commutator

3200	Commutator assembly	3 50	Tubindud	404
3201	Commutator body	1 25	Tubinental	457
3202	Commutator cover	15	Tubinfer	461
3203	Commutator cover screw—brass	02	Tubinfos	495
3204	Commutator body screw	02	Tubunfoud	463
3205	Commutator brush assembly	75	Tubinfule	574
3206	Commutator brush cap (steel)	05	Tubunsule	468
3207	Commutator brush cap pin	02	Tubintrat	466
3208	Commutator fibre assembly	1 00	Tubuntroe	575
3209	Commutator contact point	10	Tubinvine	464
3210	Commutator contact point nut	05	Tubinvito	472
3211	Commutator contact point fibre insulator	05	Tubirate	473
3212	Commutator thumb nut—brass	05	Tubiranno	467
3213	Commutator felt ring	10	Tubirateco	474
3214	Commutator roller (5/8" outside diameter)	10	Tubiratos	470B
3215	Commutator roller pin	02	Tubirebbe	465
3216	Commutator roller arm (for 5/8" roller)	30	Tubireld	460B
3217	Commutator roller arm pin	02	Tubiremo	476
3218	Commutator roller spring	05	Tubiriamas	469
3219	Commutator roller and arm	40	Tubireno	471
3220	Commutator lock nut	10		471
3221	Commutator roller (1/2" outside diameter)	10	Tubiruner	470
3222	Commutator roller arm (for 1/2" roller)	30	Tubiryler	460



Showing location by number of Motor Parts

Magneto

3250	Magneto coil assembly	20 00	Tubissais	591B
3251	Magneto coil support	2 00	Tubissant	485B
3252	Magneto coil support screw to crank case	05	Tubisse	486
3253	Magnet (specify thickness at face)	1 00	Tubissimo	536B
3254	Magnet bolt	05	Tubista	537
3255	Magnet washer	05	Tubistels	540
3256	Magnet washer screw	05	Tubitaped	541
3257	Magnet brass supports (16" each)	15	Tubitaro	535B
3258	Magnet clamp screw wire (44" long)	05	Tubitates	568
3259	Magnet clamp screw wire (30" long)	05	Tubitave	569
3260	Magneto contact assembly (on trans cover)	50	Tubjaemus	1545

Magneto—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3261	Magneto contact thumb nut	10	Tubjeccente	1508
3262	Magneto contact spring	05	Tubjected	1509
3263	Magnet contact washer (brass)	05	Tubjection	1510
3264	Magneto contact tube (brass)	20	Tubjectif	1516
3265	Magnet insulating fibre washer	15	Tubjectue	1503
3266	Magneto insulating fibre washer screw	03	Tubjewel	1505
3267	Magneto insulating fibre block	10	Tubjoined	1504
3268	Magneto insulating fibre block screw	03	Tubjoinem	1512
3269	Fly wheel	7 00	Tubjubago	701
3270	Fly wheel cap screw	10	Tubjugdor	721
3271	Fly wheel dowel pin	10	Tubjugate	722
3272	Magneto coil support shim	10	Tubjurtig	584
*3273	Magnet support (bronze)	3 00	Tubitaron	535

*Used on machines numbering below 3500.

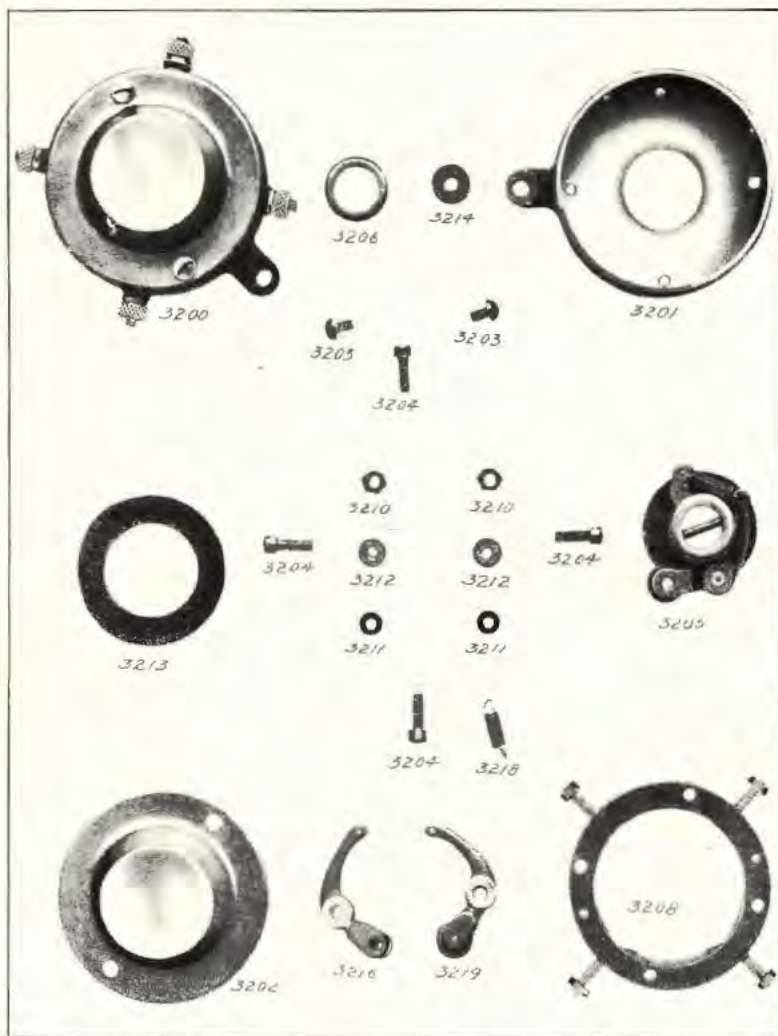


Plate 7—Commutator Parts

Transmission

Order by these Nos.	Description:	Price.	Code Word.	Factory No.
3300	Transmission assembly	70 00	Tubjugmos	744B
3301	Transmission reverse plate assembly	6 50	Tubjugorm	747
3302	Transmission reverse plate	2 50	Tubjuncto	702
3303	Transmission reverse gear (30 teeth)	2 75	Tubjunk	703
3304	Transmission reverse gear bushing.	1 00	Tubjurm	705
3305	Transmission reverse plate rivet	03	Tublaba	708
3306	Transmission slow speed plate assembly	6 75	Tublavana	748

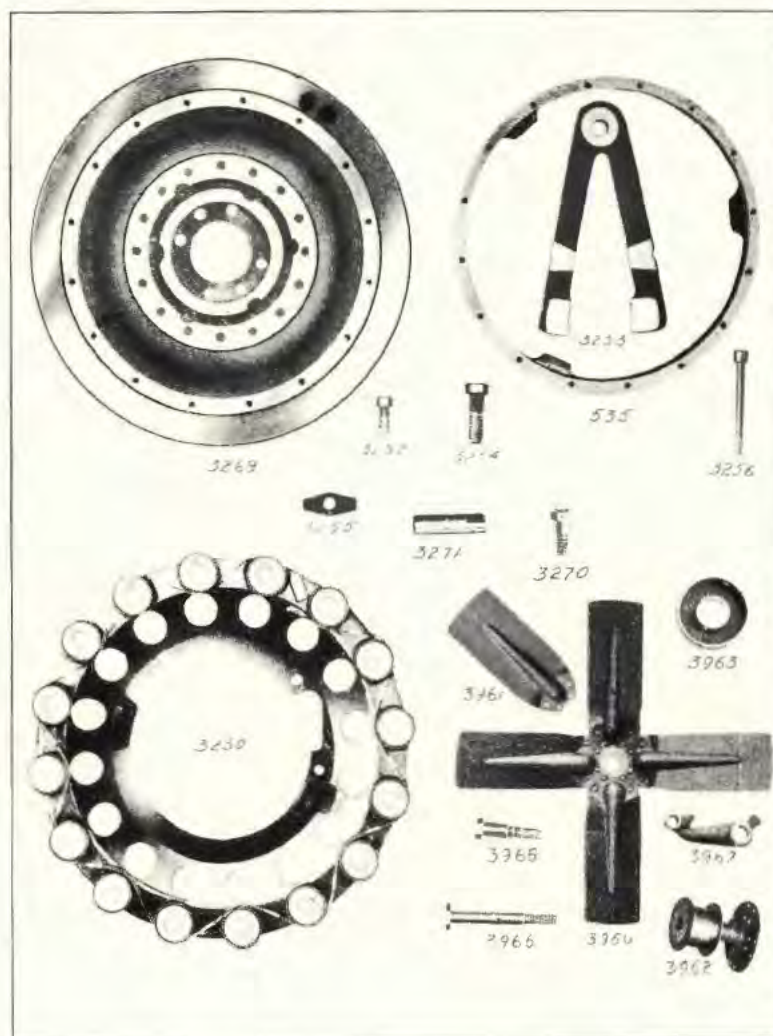


Plate 8 Fly Wheel, Magneto and Fan Parts

Transmission—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3307	Transmission slow speed plate	2 50	Tublabend	706
3308	Transmission slow speed gear (21 teeth)	3 00	Tublaba	707
3309	Transmission slow speed gear bushing	1 00	Tublabo	745
3310	Transmission slow speed plate rivet	03	Tublabout	708
3311	Transmission brake drum assembly	10 00	Tublabout	750
3312	Transmission brake drum only	5 00	Tublabout	709
3313	Transmission triple gear assembly.	6 00	Tublabout	751B
*3314	Transmission triple gear bushing	50	Tublabout	716B

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.

Transmission—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3315	Transmission triple gear shaft	50	Tublabriv	715
3316	Transmission triple gear riveting pin	05	Tublacens	720
3317	Transmission driven gear (27 teeth)	2 00	Tublacrim	713
3318	Transmission driven gear key	10	Tublapsar	714
3319	Transmission driven gear sleeve (on brake drum)	4 00	Tublapsi	710
*3320	Transmission driven gear sleeve bushing	60	Tublapdodo	754
3321	Transmission driving plate assembly (including clutch fingers)	8 00	Tublaquad	749
3322	Transmission driving plate only	3 00	Tublared	730
3323	Transmission driving plate screw	10	Tublarm	731
3324	Transmission driving plate key	10	Tublartart	734
3325	Transmission driving plate rivet	03	Tublartine	736
3326	Transmission driving plate hub	3 00	Tublartion	743
3327	Transmission driving plate bushing	50	Tublarturo	724
3328	Transmission thrust plate (13 small) each	30	Tublartuss	727
3329	Transmission thrust plate (13 large) each	30	Tublartavams	728
3330	Transmission distance plate	40	Tublartavets	729
*3331	Transmission gear shaft	4 40	Tublartebten	723B
*3332	Transmission clutch disc drum	3 00	Tublartectory	725B
*3333	Transmission clutch disc drum key	10	Tublartedder	726B
3334	Transmission clutch disc drum set screw	05	Tublartefty	752
3336	Transmission clutch push ring	2 00	Tublartegero	704
3337	Transmission clutch finger	50	Tublartlet	732B
3338	Transmission clutch finger pin	10	Tublartevaba	735
3340	Transmission clutch spring	50	Tublartevad	737
3341	Transmission clutch spring support	50	Tublartevaen	738
3342	Transmission clutch spring thrust ring pin	10	Tublarteveto	739
3343	Transmission clutch spring thrust ring	1 20	Tublartevo	740
3344	Transmission clutch shift	2 00	Tublarteam	733

Transmission Cover

3360	Transmission cover complete (includes three pedal assembly)	18 00	Tublarteory	1563
3361	Transmission cover only	9 00	Tublartcutt	825B
3362	Transmission cover bolts (1 1/4" long) each	05	Tublarticury	825B
3363	Transmission cover felt	10	Tublarticyrx	872
3364	Transmission cover gasket	15	Tublartiderty	835
3365	Transmission cover door	75	Tublartidunx	1546A
3366	Transmission cover door gasket	10	Tublartiefon	1547B
3367	Transmission cover door screws (4) each	05	Tublartiegort	1564
3368	Universal ball cap (rear)	75	Tublartifort	818
*3369	Universal ball cap with bushing (front)	2 50	Tublartifuler	819B
*3370	Universal ball cap bushing	1 25	Tublartigans	821B
3371	Universal ball cap bolt (13/16" long)	05	Tublartigolly	822B
3372	Universal joint ball cap bolt (1" long)	05	Tublartihogit	1538
3373	Universal ball cap bolt nut	03	Tublartiburty	828
(Order following parts for machines below 2500.)				
723	Transmission shaft	4 40	Tublartease	
725	Transmission disc drum	3 00	Tublartiebe	
726	Transmission disc drum key	10	Tublartlectar	
716	Triple gear bushing	50	Tublartibrat	
713	Driven gear sleeve bushing (2) ea.	50	Tublartaposis	



Transmission Cover—Continued

Order by these Nos.	Description.	Price.	Code Word.
819	Universal ball cap (front end) with bushing	2 50	Tublartimave
821	Universal ball cap bushing (flanged)	1 00	Tublartlime

Plate 9—Transmission Parts



Plate 10—
Control Parts

Transmission Control—Three Pedal Type—Cont'd

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3403	Clutch lever screw	10	Tublotery	1541
3404	Clutch lever screw nut	05	Tubloyal	1542
3405	Clutch lever pin	03	Tublozerno	1554
3406	Clutch release fork—right	50	Tublucana	834
3407	Clutch release fork—left	50	Tublucid	894
3408	Clutch release fork key	05	Tublucius	836
3409	Clutch release fork clamp screw	05	Tubluebat	835
3410	Clutch release fork clamp screw wire	02	Tublueero	837
3411	Clutch and reverse lever clevis pin.	02	Tublumis	857
3413	Transmission bands (3) each	1 50	Tublunase	838B
3414	Transmission band ear	20	Tubluteos	839
3415	Transmission band washer	02	Tubluxias	840
3416	Transmission band raybestos lining	50	Tublyre	1555
3419	Transmission band adjusting screw	15	Tubmacon	1533
3420	Transmission band adjusting screw nut (3/4" hole)	05	Tubmagical	1532
3421	Transmission band rivet (3/16" x 7/16" per doz.	05	Tubmarnas	842
3422	Transmission band rivet (3/16" x 5/16" per doz.	05	Tubmedial	843
3423	Transmission band rivet (3/32" x 1/2" per doz.	05	Tubmedios	844
3424	Transmission band rivets (3/32" x 7/32" per doz.	05	Tubmerge	845
3425	Transmission band spring	05	Tubmergin	841B
3426	Transmission band adjusting nut (7/16 x 20 th'd)	05	Tubmergus	851
3427	Slow speed shaft	30	Tubmerhuf	848B
3428	Slow speed notch	50	Tubmicky	829B
3429	Slow speed notch pin	03	Tubmidway	1560
3430	Slow speed shaft washer	05		1559
3432	Speed lever	40	Tubmiggot	853B
3433	Speed lever clevis pin	05	Tubmiss	898
3434	Reverse pedal	1 25	Tubmitoy	853B
3435	Brake and Reverse pedal shafts (2) each	20	Tubmixa	849B
3436	Brake and Reverse pedal support (2) each	30	Tubmiyave	1530
3437	Brake and Reverse support bolts (2) each	10	Tubmotixn	1534
3438	Brake and Reverse Support bolt nuts (2) each	05	Tubmoyben	1535
3439	Brake pedal	1 25	Tubmuddy	852B
3440	High and Slow speed pedal	1 25	Tubmufatt	854B
3441	Pedal pins (3) each	05	Tubmugern	1553
3442	High and Slow speed pedal support.	30	Tubmumavy	1531
3443	High and Slow speed pedal support bolt	05	Tubmuney	1536
3444	High and Slow speed pedal support bolt nut	05	Tubmvolit	1537
3445	Slow speed connection	15	Tubmurton	1540
3446	Slow speed connection lock nut	02	Tubmyrgus	850
3447	Slow speed connection clevis	25	Tubload	802
3448	Controller quadrant	60	Tuboraxl	309B
3449	Controller shaft with speed lever assembled	1 00	Tubozalt	867B
3450	Controller shaft bracket	25	Tubmurmer	311
3451	Controller shaft bracket felt	10	Tubused	314
3452	Controller shaft bolt	05	Tubmutedo	315
3453	Controller shaft bracket bolt nut	03	Tubmutque	316
3455	Hand brake lever assembly	2 50	Tubnascel	1550
3456	Hand brake lever pin	02	Tubnatabo	866
3457	Hand brake lever key	05	Tubnatads	874
3458	Hand brake lever pawl	20	Tubnaviga	875
3459	Hand brake lever pawl pin	05	Tubnavimo	876
3460	Hand brake lever pawl rod	15	Tubnectes	877
3462	Hand brake lever pawl lift (includes spring)	40	Tubnectum	879
3465	Hub brake lever (on controller shaft)	40	Tubnegart	864

Order by these Nos.

Description.	Price.	Code Word.	Factory No.
3400 Transmission clutch release ring (bronze)	1 50	Tublmito	741
3401 Clutch lever	30	Tublmixer	806B
3402 Clutch lever shaft (9 7/8" long)	25	Tublmitoz	833B

Transmission Control—Three Pedal Type—Cont'd

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3466	Hub brake lever pin	02	Tubnerons	865
3467	Hub brake lever clevis	25	Tubnerra	47
3468	Hub brake pull rod—right	45	Tubnervas	891B
3469	Hub brake pull rod—left	45	Tubnervo	1513
3470	Hub brake pull rod support—right ..	15	Tubnerzor	1367B
3471	Hub brake pull rod support—left ..	15	Tubnethin	1398B
3472	Hub brake pull rod support bolt (1" long)	05	Tubnexis	1399B
3473	Hub brake pull rod support bolt nut ..	02	Tubneyzal	1900

Steering Gear

3500	Steering gear assembly	\$ 25 00	Tubneuter	900
3501	Steering gear rim	2 00	Tubneutro	901
3502	Steering gear rim screw	05	Tubnexed	919
3503	Steering gear spider	2 00	Tuborno	902
3504	Steering gear cover	1 25	Tubostend	903
3505	Steering gear cover screw	05	Tuboval	919
3506	Steering gear cover bushing	25	Tubavtrae	914
3507	Steering gear internal gear case ..	2 00	Tuboxice	904
3508	Steering gear case bushing	1 25	Tubpectin	905
3509	Steering gear quadrant	1 20	Tubpenne	906
3510	Steering gear quadrant pin	05	Tubperfor	907
3511	Steering gear wheel nut	20	Tubjetrol	913
3512	Steering gear tubing assembly (includes gear case, also lead and throttle rods)	10 00	Tubpluat	949
3513	Steering gear tubing flange screw ..	10	Tubplinth	927
3514	Steering gear tubing flange screw nut	10	Tubplinos	926
3515	Steering gear tubing flange screw washer	05	Tublisse	925
3516	Steering gear post	3 00	Tubpolar	915
3517	Steering gear pinions (2) each	50	Tubporan	916
3518	Steering gear pinion pin (3/8" x 1 1/16")	05	Tubprefer	917
3519	Steering gear driving pinion	1 20	Tubprior	911
3520	Steering gear driving pinion key ..	05	Tubquarto	909
3521	Steering gear pinion shaft bushing ..	30	Tubradend	912
3523	Steering gear post castle nut	05	Tubradie	951
3524	Throttle rod	50	Tubrados	933
3525	Lead rod	50	Tubralem	934
3526	Lead and throttle handle (rubber) ..	25	Tubrameal	934
3527	Lead and throttle rod spring	10	Tubramoso	935
3528	Lead and throttle rod collar	10	Tubrasos	936
3529	Lead and throttle rod collar pin ..	05	Tubrasuro	937
3530	Lead rod lever	30	Tubraucid	946
3531	Throttle rod lever	30	Tubraucos	947
3532	Throttle rod guide	40	Tubraudad	938
3533	Throttle and lead lever pin	02	Tubray	948
3534	Commutator pull rod (14" long) ..	25	Tubrayater	1325B
3535	Carburetor pull rod (13 13/16" long)	20	Tubrayn	1329
3536	Lead lever ball and socket joint ..	30	Tubrayo	1326
3537	Lead lever ball and socket joint nut	03	Tubrayors	1327
3538	Carburetor pull rod adjustment ..	15		1904
3539	Steering post bracket with bushing ..	2 50	Tubregano	932
3540	Steering post bracket bolt (2 1/4" long)	20	Tubregion	939
3541	Steering post bracket bolt (3/4" long)	10	Tubridebe	940
3542	Steering post bracket bolt nut	05	Tubrident	941
3544	Steering post bracket felt washer ..	10	Tubrigor	943
3545	Steering post bracket bushing (bronze)	1 00	Tubrigous	944
3546	Steering post bracket block	10	Tubrigum	945
3547	Steering gear ball arm	1 20	Tubrihort	929B
3548	Steering gear ball arm key	10	Tubruston	930

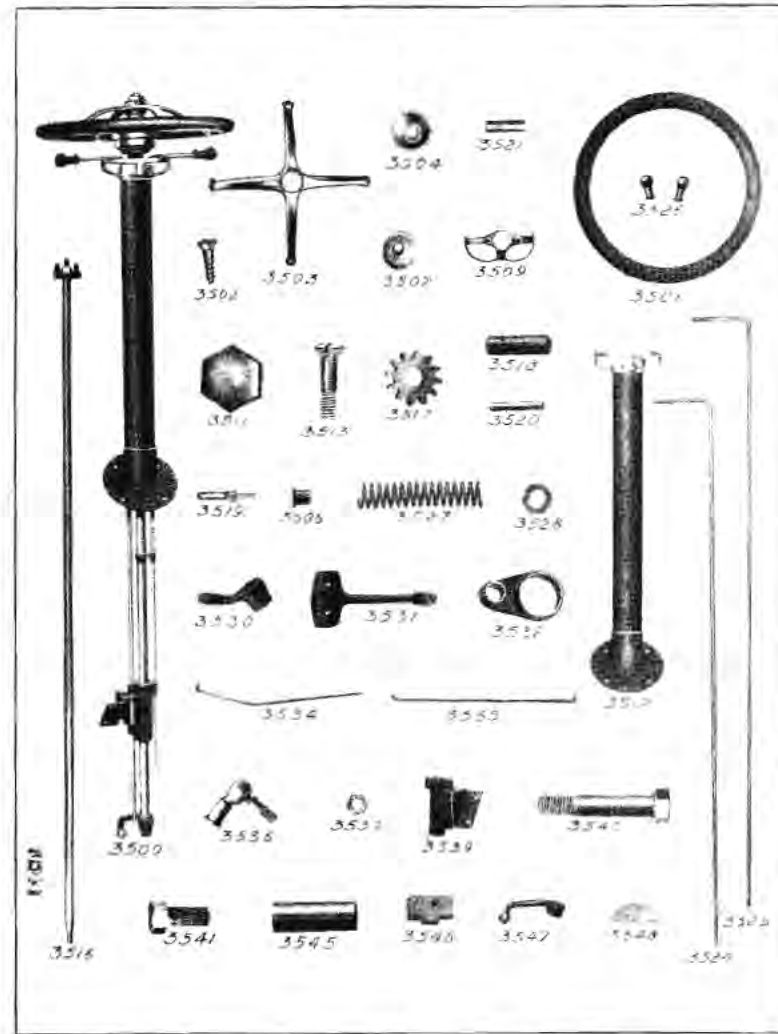


Plate 11—Steering Gear Parts

Body Parts (Touring Car)

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3501	Body bracket on body	10	Tubrogaor	1002
3502	Body bracket connecting bolt (1 1/2" long)	05	Tubroanus	1304
3503	Body bracket conn bolt (25/32" long)	05	Tubrobnus	1305
3505	Body bracket conn bolt	05	Tubroine	1307
3506	Body bracket bolt nut	03	Tubrole	1001
3507	Tonneau carpet	2 50	Tubrond	1606
3508	Tonneau carpet fastener screw	05	Tubrole	1602

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.

Body Parts (Touring Car)—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3630	Floor board forward plate for pedal (3) each	20	Tubsayert	1400B
3631	Floor board plate screw	05	Tubscrim	1407
3632	Floor board rear plate for pedal (3) each	25	Tubscutld	1095B
3633	Floor board plate for side lever	35	Tubsduty	1094B
3634	Dash	6 00	Tubsdaylen	1091B
3635	Dash brass moulding	1 50	Tubsecutos	1063
3636	Dash brass moulding screw	02	Tubsequor	1064
3637	Dash moulding center screw (3/4" long)	05		1623
3638	Dash shield	20	Tubseqvox	1097B
3639	Dash shield screw	02	Tubserat	1405
3640	Dash bracket (left)	75	Tubserite	1017
3641	Dash bracket (right)	75	Tubsserved	1018
3642	Dash bracket bolt (on frame)	05	Tubservin	1028
3643	Dash bracket bolt nut	05	Tubsesssa	1029
3645	Dash bracket top bolt	05	Tubsessle	1039
3646	Dash bracket lower bolt	05	Tubsessix	1032
3647	Dash bracket top bolt washer	02	Tubseessor	1033
3648	Dash bracket lower bolt washer	02	Tubsetace	1034
3649	Dash bracket top bolt nut	03	Tubsessue	1035
3650	Dash bracket lower bolt nut	03	Tubseccas	1036
3651	Dash to body bracket	15	Tubsidor	1499
3652	Dash to body bracket bolt (on body)	05	Tubsidunt	1490
3653	Dash to body bracket bolt (on dash)	05	Tubsifan	1491
3654	Dash to body bracket bolt nut	03	Tubsifer	1492
3655	Oil lamp bracket—right	40	Tubsiform	1497
3656	Oil lamp bracket—left	40	Tubsign	1498
3657	Oil lamp bracket brass screw	05	Tubsignal	1503
3658	Oil lamp bracket screw nut	05	Tubsigned	1608
3659	Oil lamp bracket screw washer	03	Tubsimile	1607
3660	Tail lamp bracket	25	Tubsimone	1613
3661	Tail lamp bracket bolt	05	Tubsimor	1614
3662	Tail lamp bracket bolt nut	05	Tubsiplmo	1615
3663	Gas lamp bracket—right	1 00	Tubspio	1301
3664	Gas lamp bracket—left	1 00	Tubspunt	1348
3665	Gas lamp bracket nut	05	Tubslst	1302
3667	Front seat cushion	15 00	Tubslstis	1626
3670	Rear seat cushion	15 00	Tubslstor	1627

Springs

3800	Front spring (specify color)	6 00	Tubsisturn	332
3801	First leaf (main leaf)	1 25	Tubsold	354
3802	Second leaf	1 10	Tubsoll	355
3803	Third leaf	1 00	Tubsolled	356
3804	Fourth leaf	90	Tubsolad	357
3805	Fifth leaf	75	Tubsolano	358
3806	Sixth leaf	60	Tubsolary	359
3807	Seventh leaf	40	Tubsoluts	360
3808	Front spring clip	25	Tubsolve	325B
3809	Front spring clip nut	05	Tubsolvin	327
3811	Front spring tie bolt	05	Tubsonaba	1362
3812	Front spring tie bolt nut	02	Tubsortit	1363
3813	Front spring hanger (wide flange)	50	Tubsparg	246
3814	Front spring hanger (narrow flange)	50	Tubstrunt	229
3815	Front and rear spring hanger nut	02	Tubsume	220
3817	Front and rear spring hanger oiler	15	Tubtender	267
3818	Front spring perch—right	1 00	Tubtenses	222
3819	Front spring perch—left	1 00	Tubterago	222½
3820	Front spring perch bushing (also used on spring)	20	Tubteraba	230
3821	Front spring perch nut	05	Tubterfue	243
3823	Front spring leather	10	Tubtevac	262
3824	Rear spring	14 00	Tubterit	333
3825	First leaf (main leaf)	2 60	Tubtera	361
3826	Second leaf	2 25	Tubtlendo	362
3827	Third leaf	2 00	Tubtllely	363
3828	Fourth leaf	1 75	Tubtlleza	364
3829	Fifth leaf	1 60	Tubtlflba	365
3830	Sixth leaf	1 50	Tubtlflse	366

Springs—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3831	Seventh leaf	1 30	Tubtlflty	367
3832	Eighth leaf	1 10	Tubtlfltear	368
3833	Rear spring clip	25	Tubtlflnes	326
3834	Rear spring clip nut	05	Tubtlfltuba	328
3835	Rear spring clip bar	10	Tubtlflve	329
3837	Rear spring tie bolt	05	Tubtlfl	1352
3838	Rear spring tie bolt nut	02	Tubtlflonic	1353
3840	Rear spring hanger (narrow flange)	50	Tubtorse	91
3841	Rear spring hanger (wide flange)	50	Tubtraca	91½
3842	Rear spring leather pad	15	Tubtrack	94
3843	Rear spring perch	60	Tubtracto	41
3844	Rear spring perch bushing (also used on spring)	05	Tubtraho	174
3845	Rear spring perch nut	10	Tubtrahr	172

Pump

551	Pump assembly	9 00	Tubtrifid	
434	Pump body	4 00	Tubtrilo	
435	Pump cover	2 00	Tubtrilem	
443	Pump cover gasket	10	Tubtriste	
432	Pump cover screw	05	Tubtripos	
436	Pump fan	1 00	Tubtrude	
437	Pump shaft	1 00	Tubturbin	
454	Pump cotter pin	01	Tubtuto	
451	Pump packing nut (right hand)	25	Tubtutorm	
451½	Pump packing nut (left thread)	25	Tubuculam	
450	Pump thrust washer (steel)	10	Tubuculo	
(Above parts comprise pump assembly.)				
576	Pump drive gear and shaft	2 50	Tubularia	
438	Pump drive gear only	1 50	Tubule	
439	Pump drive gear shaft only	1 00	Tubulines	
440	Pump drive gear shaft bushing (rear)	25	Tubulipap	
453	Pump drive gear shaft bushing (front)	25	Tubuliped	
577	Pump inlet connection assembly	1 00	Tubumdon	
556	Pump inlet connection pet cock	30	Tubunctis	
455	Pump inlet nut	30	Tubungor	
507	Pump inlet hose	30	Tubungual	
555	Pump inlet hose clip	10	Tubungunt	
456	Pump support screw	05	Tuburb	
496	Radiator fan and shaft	2 00	Tuburbain	
496½	Radiator fan only	1 00	Tuburpago	
497	Radiator fan rivet	02	Tuburbana	

Starting Crank

3900	Starting crank only	1 00	Tuburbiqit	519B
3901	Starting crank handle (rubber)	40	Tuburbio	520
3902	Starting crank handle bolt	20	Tuburend	521
3903	Starting crank sleeve (steel tubing)	30	Tubutten	523B
3905	Starting crank ratchet pin (1½" long)	05	Tubvonder	527B
3906	Starting crank ratchet	35	Tubvutigo	528B
3907	Starting crank strap	30	Tubvzelt	1963
3908	Starting crank spring (brass)	05	Tubvoit	
(Order following parts for machines below 2500.)				
519	Starting crank only	1 00	Tuburbial	
522	Starting crank handle bolt nut	05	Tuburimus	
523	Starting crank sleeve	50	Tuburran	
524	Starting crank collar pin	02	Tubvadem	
525	Starting crank collar	25	Tubvectab	
526	Starting crank spring	10	Tubvelout	
527	Starting crank ratchet pin	02	Tubven	
528	Starting crank ratchet	35	Tubvencas	

Radiator (Thermo-Syphon)

*3925	Radiator—Thermo—Syphon	35 00	Tubvectll	1100B
*3926	Radiator cap	50	Tubvedon	1103B
3927	Radiator cap gasket (fibre)	05	Tubvenga	1117

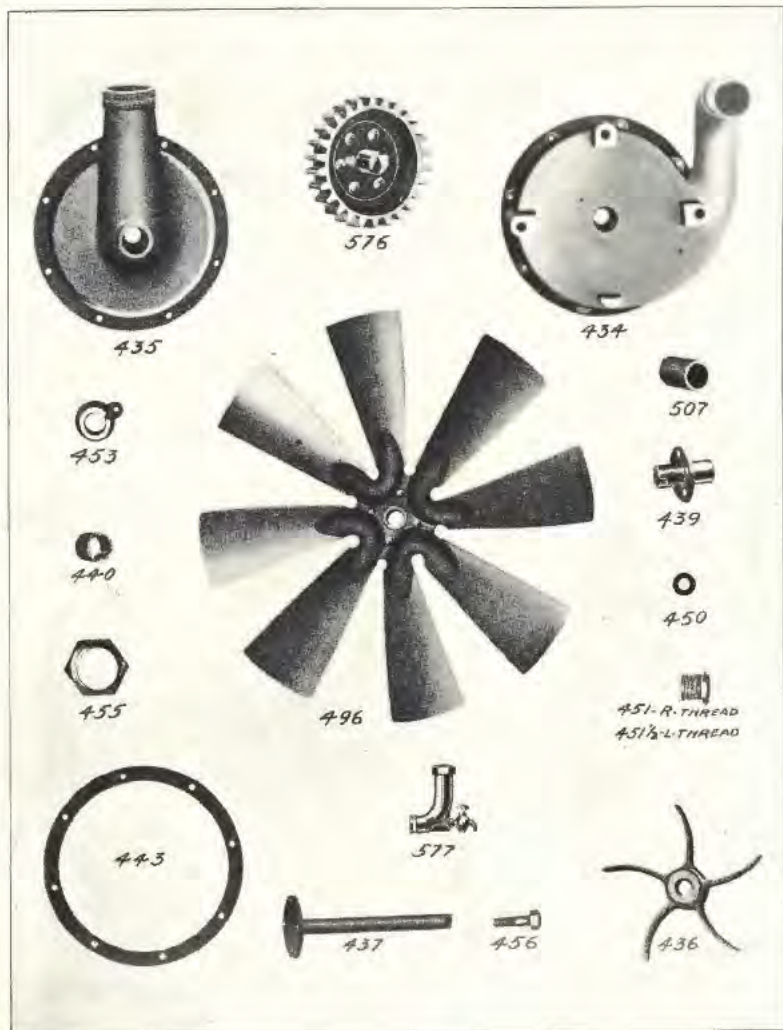


Plate 14—Parts for Pump Circulation Motor

Radiator (Thermo-Syphon)—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3928	Radiator pad (leather)	05	Tubvendia	1105
3929	Radiator bolt (3/8 x 3 3/8)	15	Tubvenoct	1106B
3930	Radiator bolt nut	05	Tubvenons	1122
3931	Radiator bolt washer	05	Tubvensao	1108
*3932	Radiator rod	25	Tubvensoct	1111B
3933	Radiator rod washer	05	Tubversod	1112
3934	Radiator rod nut	05	Tubverse	1113
3935	Name plate	40	Tubvert	1114
3936	Name plate bolt	05	Tubverter	1115
3937	Name plate bolt nut	02	Tubvertid	1116
3938	Name plate bolt washer	02	Tubvertra	1118

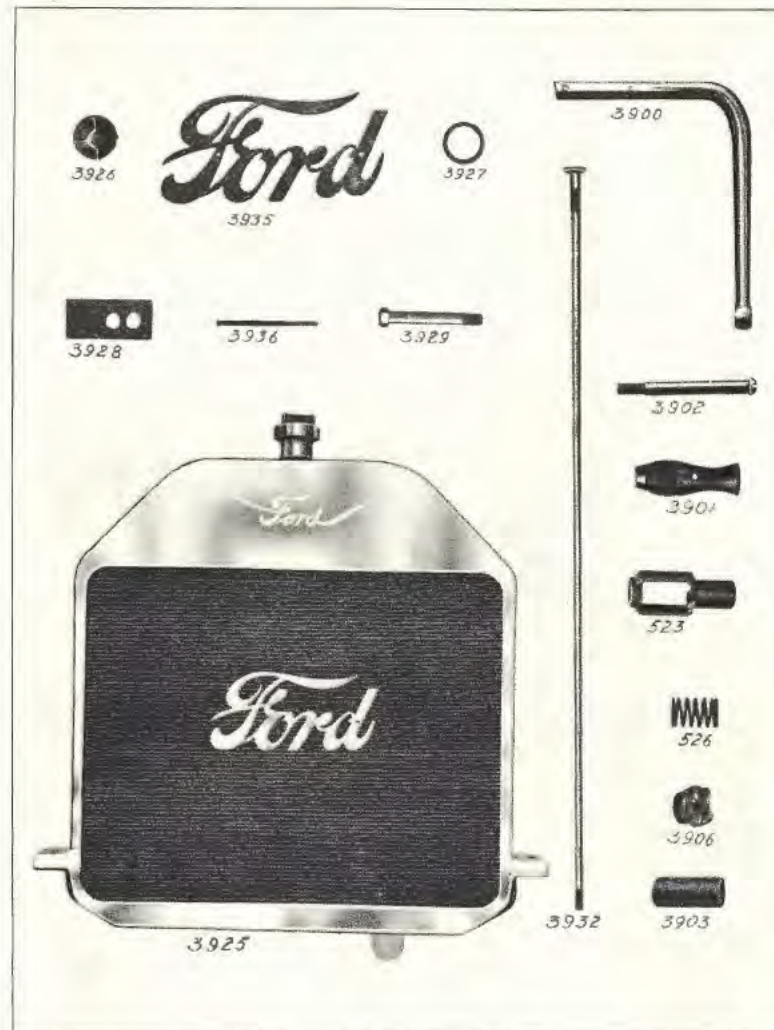


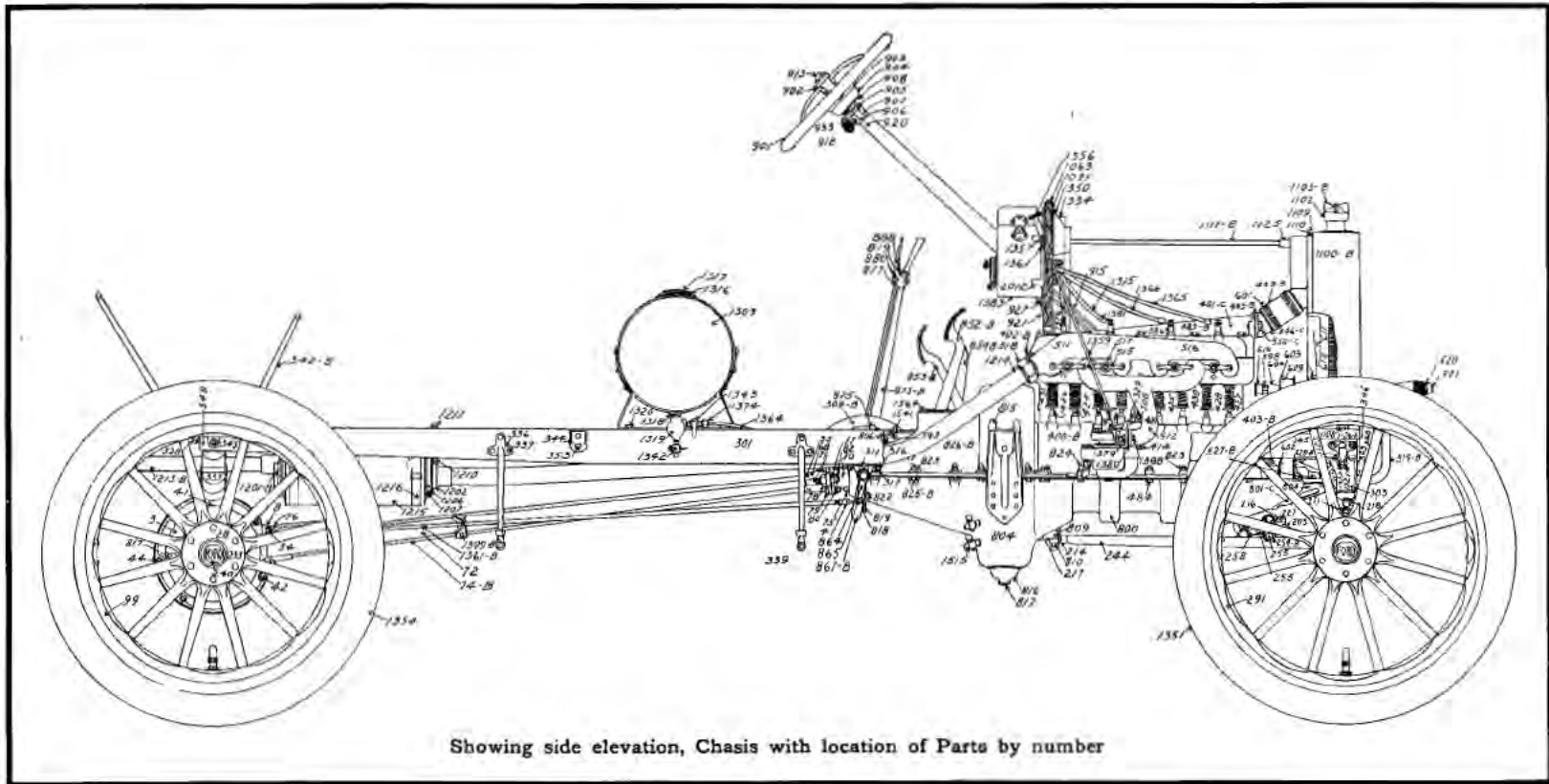
Plate 15—Radiator and Parts

Radiator (Thermo-Syphon)—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
3939	Radiator outlet connection pipe (See motor plate)	50	Tubveruly	1121
3940	Radiator outlet connection cock	25	Tubvester	594
3941	Radiator support bolt (1/2" long)	05	Tubveteran	1128
3942	Radiator support bolt nut	03	Tubvetoyer	1129
3943	Radiator strainer	20	Tubvexity	1119
3944	Radiator outlet connection hose	30	Tubvexis	554
3945	Radiator outlet connection hose clip	10	Tubveyix	507B

(*Order following parts for machines numbered below 2500.)

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.



Showing side elevation, Chassis with location of Parts by number

Radiator (Pump Circulation)

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
1100	Radiator (pump circulation)	35 00	Tubvendra	
1103	Radiator cap	50	Tubvendt	
1111B	Radiator stay rod (State length)..	25	Tubverif	

Radiator Fan (Thermo-Syphon Motor)

3960	Fan and pulley assembly	2 50	Tubviah	619
3961	Fan blades, each	30	Tubviabot	611
3962	Driven fan pulley (brass)	1 25	Tubviacod	618
3963	Drive fan pulley	40	Tubviacogi	602
3964	Fan belt	60	Tubviacux	609
3965	Fan tension spring	05	Tubviadox	610
3966	Fan shaft	25	Tubviadunt	606
3967	Fan bracket	40	Tubviafule	604
3968	Fan bracket bolt	15	Tubviafyt	605
3970	Fan shaft oiler assembly	30	Tubviagin	601
3971	Fan shaft oiler body	10	Tubviagore	598
3972	Fan shaft oiler body cap	10	Tubviahay	616

Special Tools (See Plate Page 21)

4000	Piston pin socket wrench	40	Tubvialuv	1926
4001	Crank shaft bearing nut socket ..			

Special Tools—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
	wrench	30	Tubvialyn	1928
4002	Fly wheel cap screw wrench	30	Tubviamax	1929
4003	Socket wrench for 3/8" cap screw ...	50	Tubviamol	1924
4004	Socket wrench for cylinder head 3/8" cap screw	50	Tubviapat	1925
4005	Commutator screw driver	05	Tubviapog	1927
4006	Cam gear puller	1 50	Tubviebo	1939
4007	Rear wheel puller	2 00	Tubviecar	1940
4008	Transmission clutch drum puller ..	1 50	Tubviedux	1954
4009	Valve grinder	1 00	Tubviefra	1957
4010	Valve spring lifter	50	Tubvieigno	1930
4011	Valve seat reamer	3 00	Tubviekno	

Muffler

4025	Muffler assembly	3 50	Tubvesper	1200B
4026	Muffler head—intake	60	Tubvienes	1202B
4027	Muffler shell (outer)	30	Tubvinler	1203
4028	Muffler shell (middle)	25	Tubvinmes	1204
4029	Muffler shell (inner)	60	Tubvoade	1205
4030	Muffler rod only	10	Tubvocalt	1206
4031	Muffler rod nut	05	Tubvolaba	1207



Plate 16—Hood Muffler and Parts

Muffler— Continued

Order by these Nos.	Description	Price	Code Word.	Factory No.
4032	Muffler bracket—exhaust	30	Tubvolem	1217
4033	Muffler bracket—intake	30	Tubway	1218
4034	Muffler bracket bolt	05	Tubworker	1210
4035	Muffler bracket bolt nut	03	Tubyaga	1211
4036	Muffler bracket bolt cotter	01	Tubyugaso	1212
4037	Long exhaust pipe	1 50	Tubygare	1214
4038	Muffler asbestos	15	Tubyhoti	1215
4039	Muffler asbestos bands (tin)	10	Tubyhauz	1216
4040	Rear muffler head with outlet pipe	75	Tubvienta	1221



Plate 17—Kingston Carburetor and Parts

Hood

Order by these Nos.	Description	Price	Code Word.	Factory No.
4050	Hood (specify color)	7 50	Tubyugot	1300
4051	Hood handle	25	Tubyugur	1314
4052	Hood clip	10	Tubzuar	1310
4053	Hood clip spring	05	Tubzuril	1311
4054	Hood clip washer	02	Tubcaro	1312
4056	Hood-board—left	40	Tuccantab	1399
4057	Hood board—right	40	Tuccendan	1340
4058	Hood board bolt	05	Tuccedase	1308
4059	Hood board bolt nut	02	Tuccedbt	1309

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.



Plate 18—Kingston's Coil and Parts

Hood—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
4060	Hood support on dash	1 00	Tuccedemo	1334
4061	Hood support screw	01	Tucceden	1350

Carburetor (Kingston)

4100	Carburetor complete	9 00	Tuccedia	553
4101	Float	80	Tuccedlem	2101
4102	Float chamber	2 00	Tuccedige	2102
4103	Gasoline valve	50	Tuccedip	2103

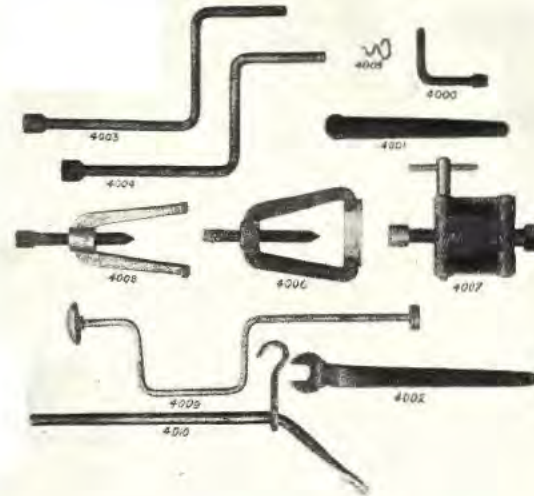


Plate 19—Special Tools for Model T

Carburetor (Kingston)—Continued

Order by these Nos.	Description.	Price.	Code Word.	Factory No.
4104	Gasoline valve operating lever	30	Tuccedoel	2104
4105	Gasoline valve operating lever shaft	10	Tuccedoms	2105
4106	Gasoline valve cap	30	Tuccedoxe	2106
4107	Mixing chamber	2 00	Tuccembet	2107
4108	Spray nozzle	30	Tuccende	2108
4109	Center member	1 00	Tuccendra	2109
4110	Gasket for center member	20	Tuccesora	2110
4111	Gasoline needle valve	50	Tuccesao	2111
4112	Gasoline needle valve set screw	05	Tucceser	2112
4113	Throttle gate	30	Tucceslv	2113
4114	Throttle gate screw	05	Tuccesue	2114
4115	Throttle gate lever	30	Tuccchland	2115
4116	Throttle gate adjusting screw	05	Tuccchias	2116
4117	Throttle gate set screw	05	Tuccchiers	2117
4118	Gasoline intake packing nut	15	Tuccchione	2118
4119	Gasoline intake elbow	25	Tuccchioso	2119
4120	Primer assembly	40	Tuccclamel	2120
4121	Primer lever only	20	Tucccida	2121
4122	Bronze ball (for air regulation)	10	Tucccidart	2122
4123	Retainer cap for balls	40	Tucccidave	2123
4124	Constant air supply connection	1 00	Tucccideal	2124
4125	Constant air supply connection lock nut	20	Tucccided	2125
4126	Carburetor adjusting rod head	15	Tucccidege	1356
4127	Carburetor adjusting rod bracket	30	Tucccigate	1357
4128	Carburetor adjusting rod head pin	05	Tucccllar	1358
4129	Carburetor adjusting rod	25	Tucccllet	1359
4130	Carburetor adjusting rod fork center	01	Tuccclliam	1360
4131	Carburetor adjusting bracket screw	05	Tucccllote	1361
4132	Carburetor flange bolt	05	Tuccclinate	1388
4133	Carburetor flange bolt nut	03	Tuccclnet	1379
4134	Carburetor flange gasket	10	Tuccclinda	1380

ALWAYS GIVE MACHINE NUMBER WHEN ORDERING REPAIRS.

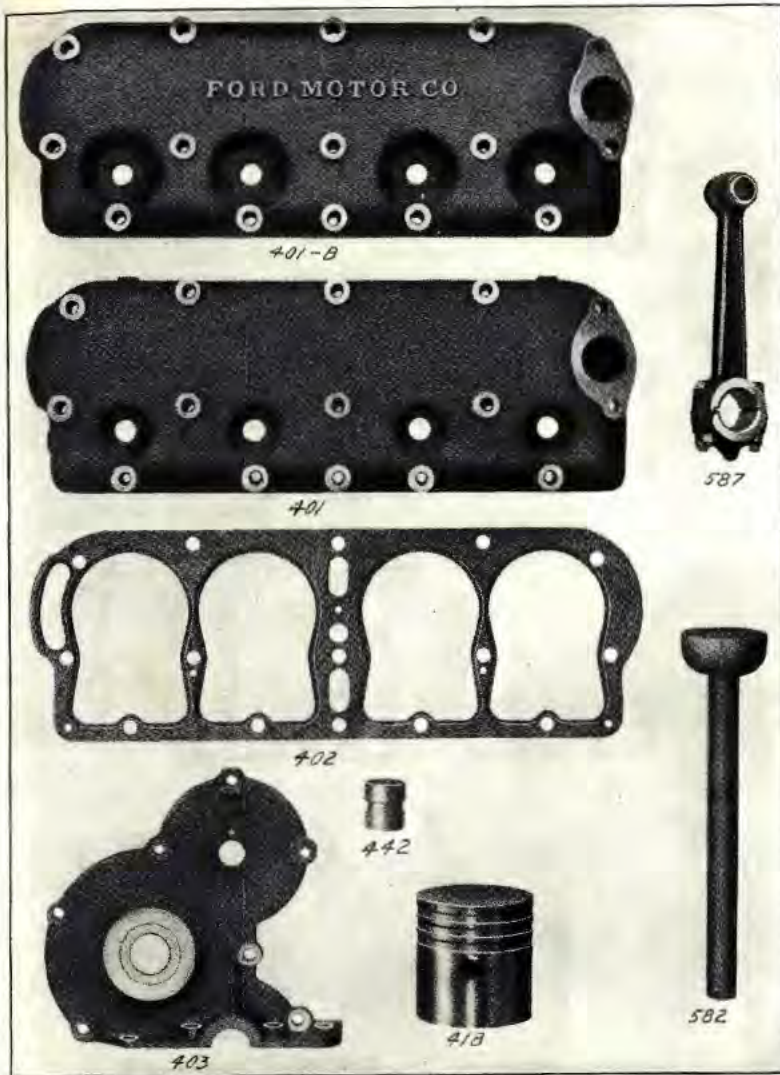
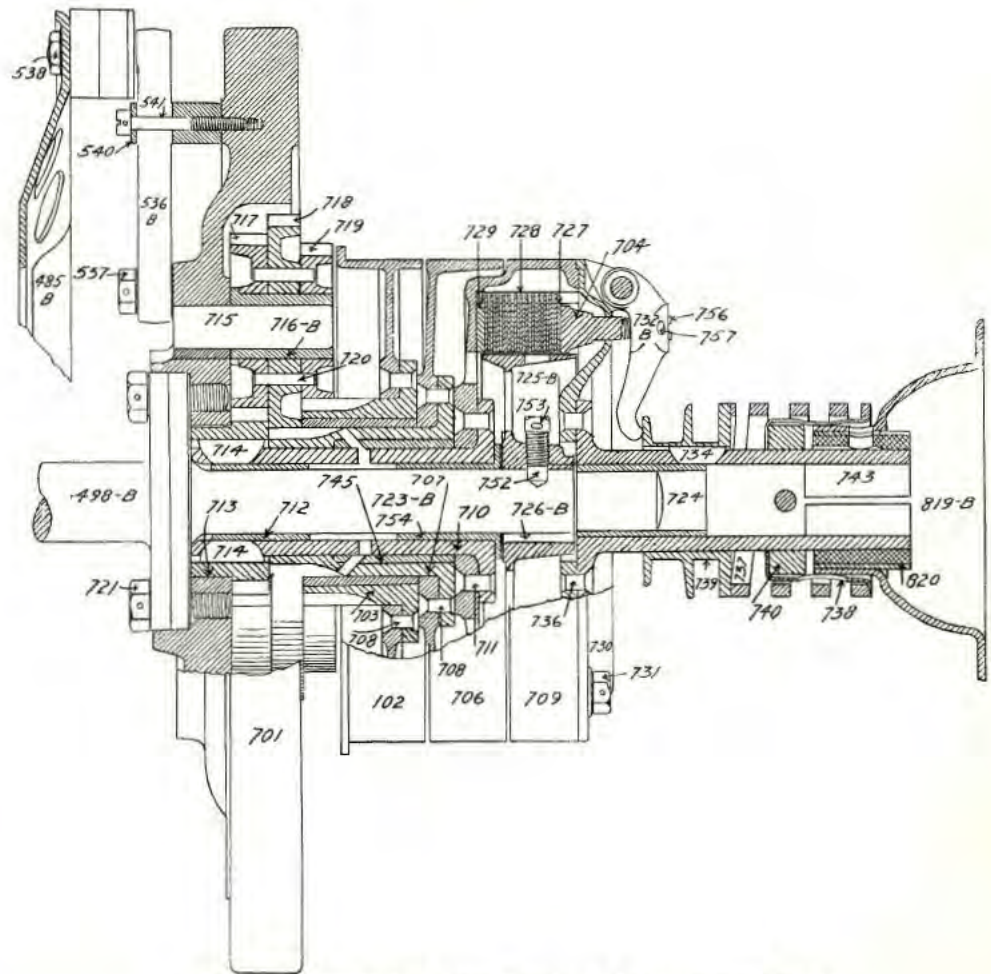


Plate 20 - Motor Parts. (See list on page 10)

Roadster Body

Order by these Nos.	Description.	Price.
4403	Front seat cushion (2)	15 00
4404	Rumble seat with cushion	10 00
4405	Rumble seat cushion	4 00
4406	Rumble seat lock	80
4408	Front floor rubber matting	4 00
4409	Rear floor rubber matting	3 50



Showing location by factory numbers of Transmission Parts

Cotter Pins

3/32 x 1" Cotter pins	1/8 x 3/4" Cotter pins
3/32 x 3/4" Cotter pins	1/16 x 3/4" Cotter pins
3/32 x 1/2" Cotter pins	1/16 x 1/2" Cotter pins
1/8 x 1" Cotter pins	
Price, each	.01
Price, per doz.	.05
Price, per gross	.25

How to Run the Model "T" Ford

When Your Car is Shipped, the tires are inflated; the emergency brake is set; the gasoline tank and the radiator drained, and the valve in pipe leading from gasoline tank to carburetor is closed; the switch on the coil box open, and all magneto and ignition connections made. A little oil is left in the engine base. The wheels are carefully blocked to prevent the car getting away and thereby sustaining injury in transit.

Remove the blocks carefully and draw out, or drive down, all nails, so as to avoid injury to the tires. Release the emergency brake and take the automobile out of the freight car, being careful not to mar or scratch the body.

WATER

On Receiving Your Car, and before starting the motor, Fill the Water Tank, which is incorporated in the radiator, with clean, fresh water, preferably straining it through muslin or other similar material to prevent foreign matter getting into the small tubes.

It is important that the car should not even be run out of the freight car under its own power unless the water tank is full. The tank may appear to be full before all parts of the circulation system have been supplied. It will, therefore, be necessary to turn the motor over a few times by hand so as to force water into the cylinder jackets. This will lower it in the radiator. Pour in the water until you are sure both radiator and jacket have been filled and the water runs out of the overflow pipe. During the first few hours that the engine is running, it is a good plan to examine the radiator frequently and see that it is full and the water circulating properly. Soft rain water, when it is to be had in a clean state, is superior to water which may contain alkalis and other salts which are injurious, or which tend to deposit sediment and clog up the radiator.

VIGILANCE AND—OIL

The first rule in motoring is to see that every part has, at all times, plenty of oil—then more oil. The second is to see that every adjustment is made immediately the necessity of such adjustment is discovered; and the third rule is exercise "common sense"—that's what they drive horses with.

The liability of trouble with the consequent mar-
ring of pleasure trips through neglect to make ad-
justments promptly, increases by the square of the
times they are neglected.

Permitting any part to run for even a brief period
without proper lubrication will certainly result in
serious injury to the machine and expense to the

owner; and the result of reckless driving, while they
may not show up immediately, will none the less
certainly appear later, for all that.

DO NOT USE GRAPHITE AS A LUBRICANT, AS IT WILL INTERFERE WITH THE PROPER OPERATION OF THE MAGNETO

If the history of all the joyously anticipated pleas-
ure trips that have ended disastrously could be writ-
ten, it would be shown that in 90 per cent of the
cases the humiliation and disappointment might have
been avoided by making a certain repair and adjust-
ment, the necessity of which was known before
starting, instead of trusting to luck and a crippled
part.

Use a High-Grade Light Gas Engine Oil—Poor oil
or oil too heavy will smoke, clog up valves, leave a
deposit on pistons.

GO IT EASY

In the flush of enthusiasm, just after receiving your
car, remember a new machine should have better care
until she "finds herself" than she will need later,
when the parts have become better adjusted to each
other, limbered up and more thoroughly lubricated
by long running.

You have more speed at your command than you
can safely use on the average roads, or even on the
best roads save under exceptional conditions, and
a great deal more than you ought to attempt to use
until you have become thoroughly familiar with
your machine, and the manipulation of brakes and
levers has become practically automatic.

Your Ford car will climb any climbable grade. Do
not, in your anxiety to prove it to every one, climb
everything in sight. A good rule is, if you crave the
fame, climb the steepest grade in your neighborhood
once, and let others take your word for it, or the word
of those who witnessed the performance, for the deed
thereafter.

Extraordinary conditions must be met when they
present themselves—they should not be made a part
of the everyday routine.

GASOLINE

The Gasoline Tank is Under the Seat.—See that
it is supplied with gasoline. Always strain through
chamois skin to prevent water and other foreign
matter getting into the carburetor. When filling the
gasoline tank, extinguish all lamps; throw away your
cigar, and be sure that there are no naked flames
within several feet, as the vapor is extremely volatile

and travels rapidly. Always be careful about light-
ing matches near where gasoline has been spilled,
as the atmosphere within a radius of several feet
is permeated with highly explosive vapor.

Unless it has been tampered with, the carburetor
adjustment is right, having been set by the head
tester, so do not meddle with it until you are cer-
tain it needs adjusting. To make adjustment, man-
ipulate button on dash—when leaving factory, ad-
justment is O. K., and arrow points up. To give
more air, turn to left; for less air, turn to right.

OIL

No mechanical device will operate very long with-
out ample lubrication, neither will the Model "T"
cars. Before your car is shipped the oil is drained
out of the engine crank case and the oil reservoir.
Before starting, the transmission cover should be
removed and two quarts of high-grade engine oil
should be poured into the transmission and a half
gallon emptied into the engine crank case through
the breather pipe.

Thereafter all oil replenishments are made through
breather pipe.

There are two drain cocks in the flywheel casing
which acts as the oil reservoir. The oil level should
be between these two cocks. If it runs out of the
upper, there is too much oil, and it should be allowed
to drain out to that level. If on opening the lower
drain cock the oil does not run out, being at a lower
level, a new supply is needed.

Do not use graphite for lubricating engine; its use
prohibits the proper operation of the magneto, tend-
ing to short circuit same.

Use only a high-grade light gas engine oil—cheap
oils are too costly in the end.

The axles, drive shaft and universal joint are well
supplied with lubrication when the car leaves the
factory, but it is well to examine frequently. For
these parts use any high-grade semi-fluid lubricant.
It is false economy to use a poor or cheap lubricant
at any time.

LUBRICATION

Unless you properly and sufficiently oil every
working part of the Model "T" car it is going to
operate less satisfactorily than it should, and the
trouble is up to you. We are willing to admit that
the oiling system demands less attention than the
oiling system of any other car, but what is needed
must be looked after. The following provisions for
oiling the Model "T" have been made.

The oil in the crank case automatically oils cylin-

ders, cam shaft, crank shaft, connecting rods, time gears, magneto, transmission and in part the universal joint, drive shaft and rear axle system. Use a light high grade gas engine oil and pour it in through the breather pipe in front. Do not use a heavy or even a medium weight oil if you want the maximum service and above all, do not experiment with cheap oils. In the end they cost too much. Keep the level between the two pet cocks in case under fly wheel.

The diagram on this page points out all the points of lubrication. It's a good plan to frequently supply all oil cups with the same oil used in the engine, though any lubricating oil will answer, and all the dope cups with grease. When filling dope cups it is advisable to fill the cover, screw it down several turns and repeat two or three times. Always open oil cups by turning to right as this keeps tightening rather than loosening them.

Note provision made at "C" and "C'" for supplying dope or grease to universal joint. "D" is for supplying oil to drive shaft and bearings.

"E" oil hole for rear axle. Dope or grease for the differential is supplied through "E." Adding a little lubricating oil increases the lubrication.

While not absolutely necessary no harm is done if lubrication is renewed at points A, C, D, and E every day, especially if considerable driving is being

done. The result will be longer life and better service.

Letters "F," "G" and "P" show grease cups. "H" to "R" except "P" oil cups which should be refilled whenever parts A to E are oiled.

When filling oil cups drop some oil into all nearby joints or bearings. Z is oil hole in commutator—a few drops of oil every day or so through this hole will lengthen commutator life.

Occasionally remove wheels and supply dope to wearing surfaces. A drop of oil now and then in crank handle bearing is necessary also on fan belt pulleys and shaft. Occasionally the control rod and reciprocating parts should be given a particle of oil.

In short keep all friction surfaces well oiled—otherwise the Model "T" and every other car on earth will give trouble.

WIRING

See that all wires leading from the magneto and the commutator to coils, plugs and "grounds" are intact.

CONTROL

Carefully study out all details in regard to control and familiarize yourself thoroughly with the functions of all foot pedals and the hand lever.

The foot pedal at the right marked "B" operates the brake on the transmission; the foot pedal on the left marked "C" is the control lever acting on the clutch. The pedal in the center operates the reverse.

SLOW SPEED

The hand lever when thrown forward, engages high speed; when pulled back; operates the emergency brake.

Hand lever is in neutral when almost vertical and clutch is in a released condition. Throwing control lever forward engages the clutch in high speed; a light pressure on foot pedal "C" throws in neutral; a full pressure on this pedal throws into a slow; a partial, gradual release of the pedal again engages high speed. A pressure on pedal "B" operates the transmission brake.

ADJUST LOW, REVERSE AND BRAKE BANDS

Adjustments to low, reverse and brake bands are made from top after removing transmission casing cover. No. 1 nearest the seat is brake; No. 2 is slow speed; No. 3 is reverse. Turn adjustment nut; turning to the right tightens, to the left loosens the band. The fiber segments can be replaced by ordering No. 3416 and riveting in place.

Care should be taken to see that the bands are a true circle, so that they do not drag when disengaged, and that they take hold all around the drum when applied; high points cause noise when starting.

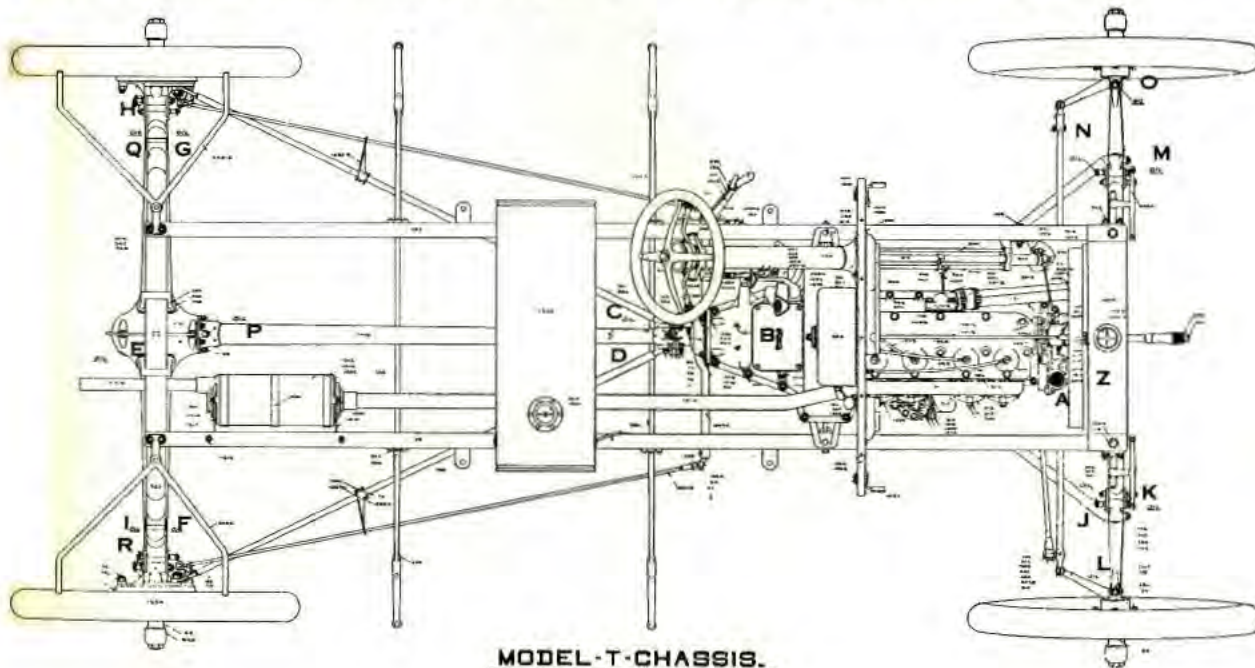
THE TWO PEDAL TYPE OF CONTROL

The first Model "T" cars were equipped with a two pedal two lever control while all cars are now equipped with three pedals and one lever. The adjustment of this later type is somewhat simpler than that of the two pedal control. Cars now equipped with the two pedal control can be changed over to the three pedal by ordering and installing new parts.

In ordering these parts it is only necessary to call for "Necessary parts to change control on car No. from two pedal to three pedal type." For such orders we will charge cost price i.e. \$15.00 and the return of the old parts transportation prepaid.

HIGH SPEED ADJUSTMENT

There are two adjustments to the high speed clutch.—If the clutch slips under load the reason may be that threaded Pedal connection is too short and by lengthening same one or two turns the difficulty is obviated. The clutch can also be tightened by tightening adjusting nut on pedal connection. A 3rd adjustment is provided by means of adjusting screws in the clutch fingers—tightening each of these 3 screws an equal amount tightens the clutch. Also be careful when making adjustments that you do



MODEL-T-CHASSIS.

PLAN-VIEW.

WHERE TO OIL THE MODEL "T"

not so set the control arm as to render it impossible to throw lever full forward it being held back by the quadrant. If you have accomplished this the simplest way out is to file away the quadrant making the hole perhaps $\frac{1}{4}$ " longer. After lever is thrown forward there should be a "streak of light" between lever and quadrant.

To install new clutch spring or make any repairs or adjustments that can not be made with transmission in natural position. Transmission can be raised in this manner.

Pull back rear axle as explained under heading, Remove Rear Axle, Page 27. Then remove bolts holding engine and transmission to crank case, raise engine and insert 1" wood blocks between rear end of cylinder and top of crank case to remove transmission band.

If the entire transmission is to be removed the

With the motor out and resting on its head, remove six cotter-pinned bearing nuts; remove eight cotter-pinned connecting rod bolts; take out four lower halves of connecting rods, and three halves of bearings; remove four bolts connecting crank shaft flange to flywheel; lift off flywheel, now pull out shaft.

Caution. The flywheel contains a part of the magneto; always set down the flywheel on the side, never on the face, otherwise you may injure the magneto.

Place a wire nail over each magnet to act as a keeper.

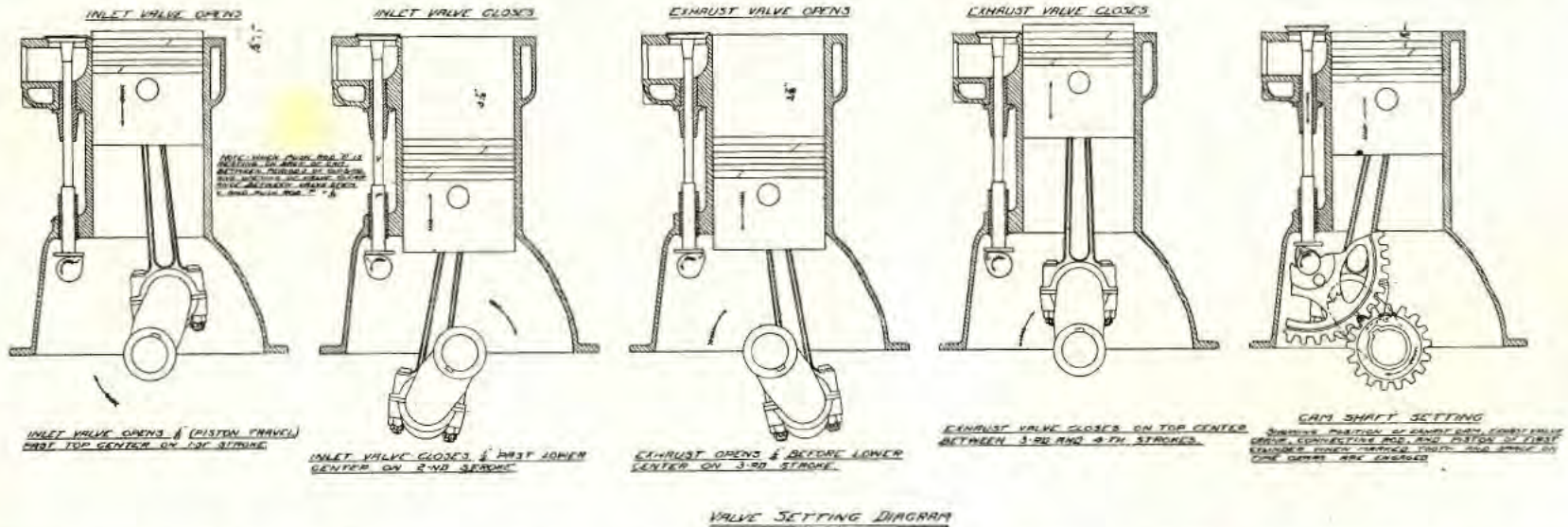
TO ADJUST CONNECTING ROD AND CRANK SHAFT BEARINGS

If at the time of the general overhauling it is desired to adjust connecting rod and crank shaft bear-

to inspect them, and if they show defect in work or material, will be replaced.

If the crank has been cut by letting the bearings run dry and hot, you can, provided they are not cut deeply, create a new bearing surface by carefully filing the bearings straight and round. A very fine file must be used, as the slightest scratch will serve to cut the babbitt and it will soon run hot again. If possible, get a piece of crocus cloth (never use emery), attach a piece of heavy twine or belt lacing to each end of the crocus cloth, and carefully lap the bearing.

If the connecting rod bearing is found too large for the shaft, in cases such as the above, file sufficient off the cap to make it fit the crank shaft. Connecting rod bearings should be tight fit and yet not have the slightest play—it should be sufficient to almost



bands of course come with it but when it is desired to remove bands only, remove pedals, then slip bands forward sliding the one nearest the flywheel over the first of the triple gears. To do this requires the spreading of the band by pulling apart at the ears and is more easily accomplished if the three sets of triple gears are so placed that one set is about 10 degrees to the right of center at top. Then turn the band so that ears are down and pull out. To replace, reverse this action.

TO REMOVE CRANK SHAFT

The only time the crank shaft should require any attention under ordinary circumstances is at the time of the annual overhauling, and then only so as to make the "clean-up" complete.

ings, proceed as follows: With motor resting on head, remove cotter bolts, so separating two halves of bearing. If connecting rod bearing is loose, file off inside of cap, otherwise, simply tighten. If crank shaft bearing is loose, remove one or two paper liners; if not then tight enough, file off inside of cap.

Sprung Crank Shaft. Owners occasionally send in crank shafts that have been damaged in collisions with trees, lamp posts, hydrants, or other objects, expecting us to replace or make some allowance on them. We wish to impress upon all such that a crank shaft, if sprung even the slightest, is utterly useless except as scrap metal. No method has ever been devised for straightening one to the degree of accuracy necessary. Barring collisions, Ford shafts should never break. However, we always like

hold its own weight, just turning slowly on the shaft when released.

VALVES

Valves should be ground at regular intervals—about every three months—whether they leak or not; the grinding of the seats will cause them to seat accurately and prevent uneven wear of the guides and consequent leaks past the valve stems—a condition which results in the most puzzling symptoms in the carburetor and unevenness in the running of the motor.

To Grind a Valve Seat. This operation requires care and skill. Place on the valve a small quantity of very fine ground glass, or if this is not obtainable,

very fine emery powder. Use sufficient oil to make a very thin paste, being careful not to allow the paste to run into the cylinder. The valve is then rotated back and forth, being firmly pressed down against its seat at the same time.

Occasionally lift the valve, change its position a part of a turn and drop down; then rotate as before. This prevents carrying a particle of emery or grit round and cutting a groove in the seat.

Noisy half-time gears are due either to worn teeth, or, more likely, to worn cam shaft and crank shaft bearings, which permit the gears to get out of true mesh. Examine gears, and if excessive wear is not apparent, try shafts for looseness and play. If the latter, replace bushings.

Inspection of Cams. If the Motor seems to produce less power than formerly, and you have ascertained that it is not due to carburetor adjustments, spark coils, leaking or sticking valves, or carbon deposit in cylinders, it would be well to inspect the

cams or pushers and see that they are not worn so as to reduce the lift of the valves. By raising the valves, it will be possible to remove the cam shaft without disconnecting the cylinder or removing crank shaft.

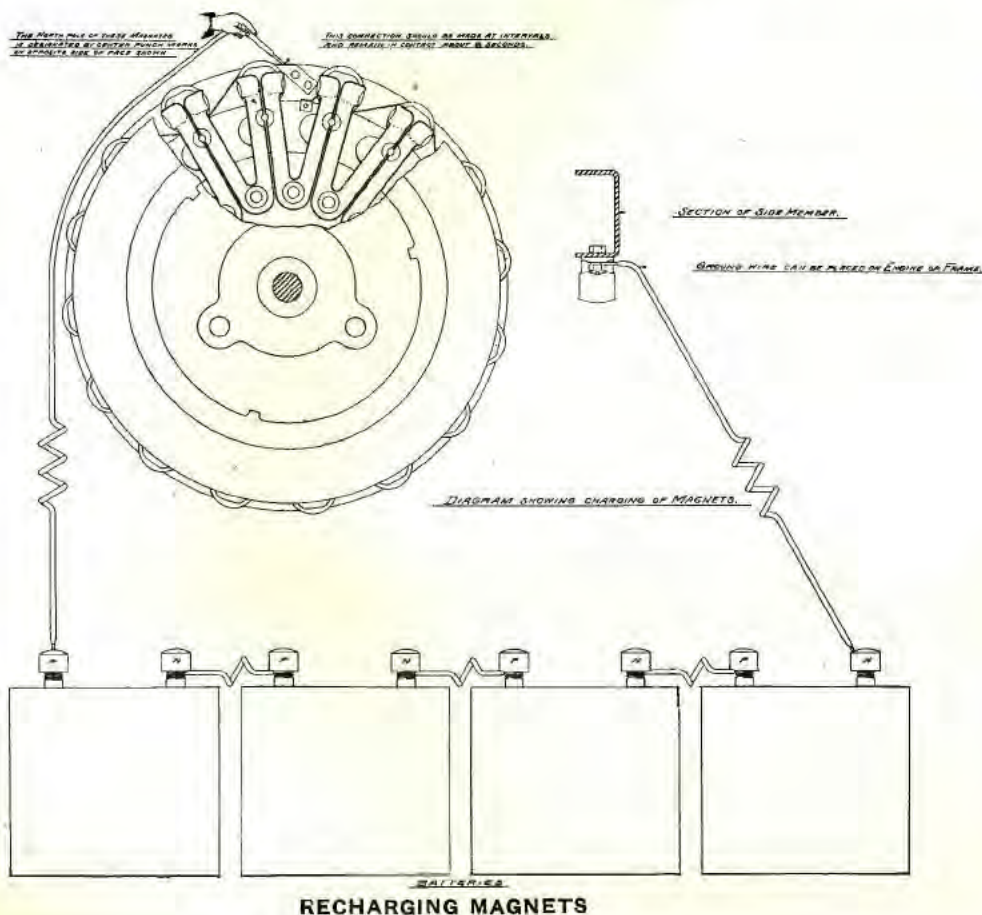
Carbon Deposit. This is one of the most fruitful sources of trouble in a gas engine. If the cylinders get too much oil, or you use an inferior or a heavy oil, a portion of it will work up past the pistons; the intense heat will consume or evaporate the oil, leaving a deposit of carbon. This may be augmented by too rich a mixture, which serves to deposit lamp black or carbon in a film on the inside and top of the compression chamber and on the heads of the pistons. The films thus formed will in time commence to scale and, the projections becoming fused by the heat of explosions, will serve to prematurely ignite the charge.

The symptoms are back firing and knocking in the cylinders—as if the spark were too far advanced. An almost infallible symptom of excessive carbon deposit in the cylinders is the motor showing plenty of power at high car speeds, but deficient in hill climbing on high gear. At slow engine speeds, the incandescent carbon projections serve to pre-ignite the charge, thereby reducing the power of the motor. The cure is to take off the cylinder head and scrape off the carbon deposit from the top of piston and inside of cylinder head.

Carbon will also form on the porcelain portion of the spark plugs, thereby furnishing a circuit which the high tension current may travel over, rather than jump between the sparking points of the plug. Usually, only a part of the current will pass by way of the carbon film, still leaving a weak spark at the points, which in open air, when testing plugs may seem strong enough. This causes intermittent firing. The symptoms are similar to a poor contact commutator.

This condition is difficult to detect, for the reason that when the plug is subjected to the usual test of removing from the cylinder and closing the electrical circuit, the spark is seen to jump free and "fat" between the points. This, because of the electrical energy which is sufficient to jump between two points 1/2 inch apart in the open air, will jump less than 1-16 of an inch in the chamber under 60 pounds compression.

Overheating. The cause of overheating in motors may be summed up as follows: Poor oil, insufficient oil, bad mixture, slow spark, obstructed muffler, broken pump, flat or obstructed water pipe, low water, and valves out of time.



REMOVE FRONT AXLE

Jack up front end of car so wheels are suspended, disconnect steering gear, disconnect radius rods at ball joint and remove two cotter-pinned bolts from shackle on each side, so detaching front spring. To replace, reverse.

Remove front wheels same as rear. (See paragraph "Remove rear axle.")

To disconnect radius rods from axle, remove cotter-pinned nuts. To remove entirely, take out two bolts and ball joint and remove lower half of cap.

Once every thirty days, the axles should be carefully gone over to see that every moving part, such as the bushings in spring connections, shackles, steering knuckles and hub bearings and every other moving part, however small or apparently unimportant, are thoroughly lubricated and that all nuts and connections are secure with cotter pins in place.

If this is done, replacement of bearings should be unnecessary during the first year or two of the car's service. Wherever balls are used, there is a liability of one splitting, so it is well to watch carefully the balls and races in the front wheels, and the slightest

wear or defect in either, should be followed by immediate replacement.

Ball bearings in front wheels should be adjusted so there is not the slightest play, and yet, so that the wheel will turn freely. After tightening the lock nut, turn the wheel as the last operation may have tightened the cones too much.

The spring clips, which attach the front spring to the frame, should be inspected frequently to see that the nuts are not working loose, as this will permit the axle to slip sidewise, interfering with the steering and may result in an accident when turning suddenly.

Bent Steering Knuckle. Should a steering knuckle become bent, it is necessary to have a large gauge or jig to straighten it accurately. The eye is not sufficient to determine whether it is correct; and excessive wear of the front tire will be the result of inaccuracy in this place. In all cases, it would be better to send to us for correction.

Angle of the Front Wheels. The front wheels should be set up at an angle of about 3 degrees, that is to say, the distance, center to center, between the tops of the front wheels should be about 1- $\frac{1}{4}$ " greater than that between the bottoms. This is to give perfect steering qualities and to save wear on tires when turning the corners. The wheels should not, however, "toe in" at the front, lines drawn along the outsides of the wheels when the latter are in a straight-forward position, should be parallel.

REMOVE REAR AXLE

Jack up car with heavy bar on two horses so that wheels hang free. Take out four cotter-pinned castle nutted bolts connecting two halves of universal ball collar. Disconnect brake rods. Remove rear wheels by unscrewing hub cap using special hub wrench furnished with car. Drive out pin, pull out key with pliers, pull off wheel.

To dis-assemble rear axle and differential, disconnect drive shaft tube by removing nuts on front ends of radius rods; draw away the tube; remove bolts which hold two halves of differential housing together, and draw the housing apart.

If necessary, and it is not under ordinary circumstances, to dis-assemble differential gear, a very slight mechanical knowledge will permit one to immediately discern how to do it once it is exposed to view. Care must be exercised to get every pin, bolt and key back in its exact position when re-assembling.

To Remove Bevel Driving Pinion. In order to make a "fool proof" and absolutely reliable job, the drive pinion is keyed onto the shaft and the end of the shaft riveted over. Inasmuch as the average machine shop will not have facilities for accurately replacing pinion and making sure that it is in perfect alignment, it is advisable to replace the entire shaft and pinion when the latter becomes too much worn for safe usage. This is best also, because the shaft

will likely have become worn at its bearings. If however, it is desired to replace the pinion only, it may be removed from the shaft by cutting away the edges where riveted over and driving out the shaft.

In replacing, rivet over the end of the shaft as well as possible and be sure that the gear is on perfectly straight, as otherwise, it is sure to cause trouble and perhaps incur a larger bill for new gears than would pay for the complete shaft and gear in the first place.

Noise in the axle driving gears usually indicates wear either in the gears; in the thrust washers, or the bearings. Inspection should be carefully made to ascertain the cause as soon as an unusual sound is heard.

To Remove Master Bevel Driving Gear. Cut off rivets holding gear to flange on differential case with cold chisel, being careful not to rupture the flange.

The master gear will wear longer than the pinion, ordinarily, although there are exceptions to this rule. When the gear teeth begin to "pit," it is a good plan to renew the gear, as the pitting shows that the case hardened shell has worn through, exposing the soft metal.

To Remove Babbitt Bushing from drive shaft tube. If properly lubricated at all times, these bearings should not require replacement more than once in two years. However, should the bearings run dry and cut sufficiently to allow of play, it would be economy to replace them. Take $\frac{3}{4}$ inch or $\frac{7}{8}$ inch round steel bar, about 4 feet long—or a few inches longer than tube—insert from opposite end of tube and drive bushing out. A wooden mallet is better than a hammer for this purpose.

To Insert New Bushing. Rest one end of the tube on a solid wood block and drive the bushing in, using a wooden block; also to cushion the blow so as not to mar the bushing. Of course, if a press is available, the bushing can be more easily forced into place.

The shaft will be a tight fit in the new bushing and it is proper that it should fit as tightly as it can be pushed in by hand.

When in place, it may be found that the shaft (unless also a new one), will have worn slightly at the bearing section, and so it will be a loose fit even though the larger part of the shaft goes in tight. If excessively tight when in place, it will be liable to run hot. This tightness may have caused bushing when forced in, to slightly compress. If necessary to relieve bearing, scrape the babbitt bushing carefully, or better still, use a one-inch hand reamer, being very careful not to make the hole so large as to allow the slightest play.

To Disconnect Universal Joint From Drive Shaft. Remove two plugs from top and bottom of ball cast-

ing. Revolve shaft until pin comes opposite hole; drive out pin and drive universal point away.

Wear in the universal joint may be taken up by disconnecting the two halves, cutting off the rivets with a cold chisel and carefully filing or turning down the faces so as to allow them to come together. The hole will not then be perfectly round and should be carefully scraped or reamed to fit. Excessive wear in the steel parts calls for replacement of these parts.

If rear axle or wheel is sprung by skidding against a curb or other accident, it is false economy to drive it. Tires, gears, and all other parts will suffer and the bill for repairs will grow daily. If axle shaft is bent, it is better to get a new one than try to straighten the old one.

Every Ford owner, as well as every repair man, should have a wheel puller, similar to No. 4007. A tire can be removed easily and more carefully repaired and replaced by removing the wheel, and there are many occasions when it is necessary to remove the wheel. A good puller is cheap to buy, or can be easily made. Some make a threaded cap to screw over hub cap threads. As the threads on Model "T" are very fine, this is not the best method, as it sometimes strips the threads, spoiling the hub. A puller like No. 4007, grasps the enlarged end of the hub and will sustain more force without danger of injury to hub or thread.

Coil Adjustment. Screw vibrator adjustment tight until it stops buzzing; then unscrew just far enough to get a good spark. Do this while engine is running—you can then easily "feel" the explosion.

To ascertain, which, if any, of the four plugs are fouled with oil, short circuited with carbon, or inoperative from some other cause, open the throttle two or three notches to speed up the motor; now hold your two fingers on two outside vibrators, so that they cannot buzz. The evenness of the exhaust will show that the other two are working correctly and that the trouble is not there; or, procontra, an uneven exhaust will indicate that it is between the two that are free. If the two cylinders fire evenly, change the fingers to the two inside vibrators, and again listen to the exhaust. Having ascertained in which pair the trouble is, hold down three fingers at a time until you find the one in which the motor does not fire. This will indicate in which and they number in rotation 1-2-3-4. No. 4 coil unit is the one next steering post and they number 2-3-4 to the left.

Before deciding that your coil is the cause of the trouble, inspect every other possible source of trouble. In ninety-nine cases out of a hundred, you will locate it elsewhere. The first symptom of a broken coil is the buzzing of the vibrator with no spark at the plug. A short circuit in a secondary wire will produce the same effect, so be sure it is

not a short circuit before blaming it on to the coil. A good way to test is to remove the wire from the coil, and ground the spark plug end on engine. Hold other end of wire near terminal and look for spark. If sparks, it's in the plug. If not then located, try changing position of units in coil box. If No. 1 for instance, works O. K. in No. 3 position, then winding is O. K. but connections are at fault. Once certain that the trouble is in the coil and that it cannot be remedied by a simple adjustment of the vibrator, a better plan is to send coil to the maker.

Never meddle with the coil or its parts, except to make an inspection every week or so to see that all nuts are tight and everything in place, so that no mysterious short circuits will occur from this cause. In looking for a short circuit, it should be remembered that the secondary current is a state, or alternating, current and will "creep" on any liquid,—water, or oil mixed with dirt. The current creeping on the oil will form carbon on the outside of the insulation of the wires and will finally form a short circuit that will cause a lot of trouble and be difficult to locate.

Platinum Points will burn away if adjusted too

tight. After adjusting vibrators, they will arc for a short time until both points fit each other.

One symptom of a "leak" in the condenser is a very "fat" bluish spark at the vibrator points. To make sure that this is the cause of the trouble, put a spark gap of about one thirty-second of an inch between the secondary wire and the plug. If the condenser leaks the spark will be irregular at the gap.

Plugs. Sparking plugs are so well made nowadays that they give very little trouble. Every motorist should carry half a dozen extra porcelains to fit his plugs and these can be readily replaced in case of the porcelain cracking from overheating. Some drivers have a great deal of plug trouble, while others using the same cars and the same plugs, claim they "never see a plug." It is unnecessary to tighten the thumb screw on top of the plug with pliers,—in fact this should never be done as you are liable to turn the core and thereby open or close the spark gap more than is desirable. Tighten the nut

with the fingers just sufficiently so it will not come off and get lost.

In case of a foul plug on the road, when you do not want to spend the time to clean or change it, a good expedient is to create a spark gap by disconnecting the wire and, with a string or shred of waste, tie it to the plug so the brass terminal will be about 1-16 or 1-32 inch from the plug core or nuts will generally suffice to remedy the trouble, temporarily at least.

A "miss" in a motor just after starting cold, will usually disappear after a minute or two as the motor warms up. Sometimes, only after a high speed clutch has been engaged, usually a "miss" can be remedied by "slowing" the spark—putting lever as far forward as it will go. This gives a long hot spark at the points and serves to burn away oil or other foreign matter lodged there. A drop of water—precipitated by quickly cooling a hot motor—between plug points; a drop of oil or particle of carbon can frequently be dislodged by disengaging the clutch and racing the engine a few seconds.

IN EFFECT AUGUST 1, 1909

Ford Motor Company

**PRICE LIST
OF PARTS AND
INSTRUCTION
BOOK**

MODEL T