



ARTHUR CHEVROLET

Chevrolet Bros. Mfg. Co.

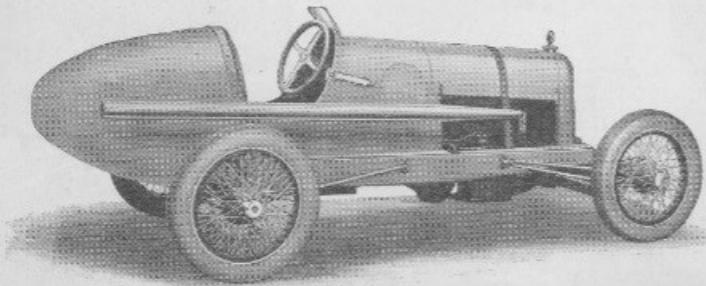
INCORPORATED

INDIANAPOLIS, IND.



LOUIS CHEVROLET

Louis and Arthur Chevrolet, world famous racing drivers and engineers of a score of years, are the designers, patentees and makers of Frontenac Cylinder Heads for Fords, which are now available to all Ford owners.



To the Frontenac Cylinder Head goes the honor of these remarkable light-car achievements. It is the power, speed and flexibility of the Fronty Head that carries Fronty-Ford drivers to victory. Every racing driver who has driven a Fronty-equipped motor is warm in his praise for Frontenac cylinder heads.

DESIGNERS AND BUILDERS OF

Frontenac Cylinder Heads and Fronty Racing Cars Speed Specialties and Racing Units

410 WEST TENTH STREET
INDIANAPOLIS, IND., U. S. A.

APRIL 1, 1925
NOTE: This Voids All Former Price Lists

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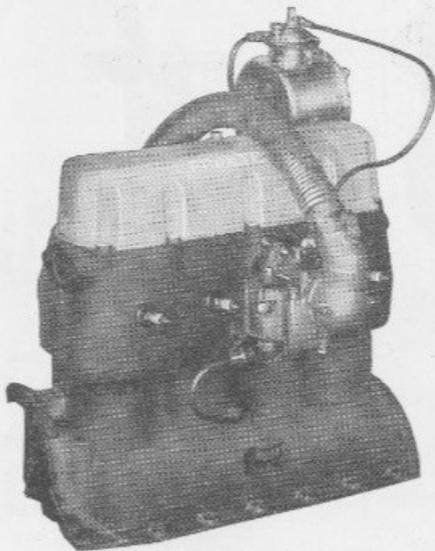
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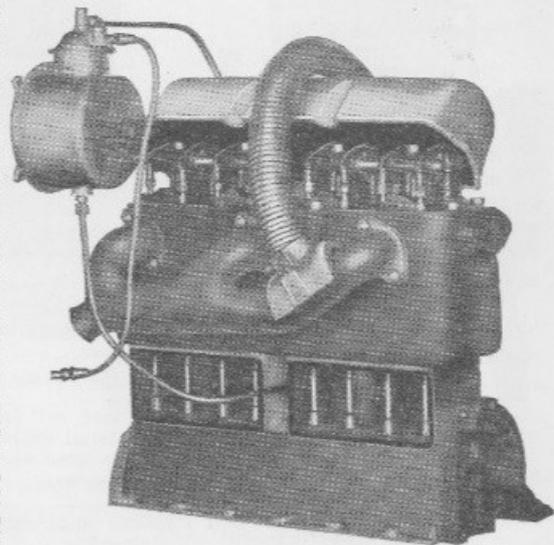
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The Frontenac Cylinder Head, Model T, for Commercial and Pleasure Cars



INTAKE SIDE



EXHAUST SIDE

The Frontenac cylinder head, now in its fourth year of manufacture, has proved to its thousands of owners that it will do all that we claim and more in the way of improved performance of the Ford car, such as smooth running, wonderful acceleration, 5 to 40 miles per hour in 16 seconds, unsurpassed hill climbing ability (we have yet to find a hill on a main highway which the Fronty-equipped car could not take on high gear). Wonderful gasoline mileage (25 to 30 miles per gallon). All the speed that can safely be used (60 miles per hour and over). Power to carry any load on a truck.

By actual test at the Purdue University laboratory the regular Ford motor gave 17 horse-power. By installing the Frontenac head same motor gave 33 horse-power, cooler running and freedom from destructive vibration.

The saving in gasoline bills alone will pay for the head in less than a year's time, besides the joy and comfort of driving a car that will respond to anything you may call on it to do. The salesman who covers his territory in a Ford car, the business man who uses a Ford for business purposes, the truck owner whose profits depend on his car mostly for touring the country on ability to carry certain loads at a given price, the Ford owner who uses his Sundays and holidays, they all need the Frontenac head for what it will do for them. We have hundreds of letters from enthusiastic Fronty owners, telling us all the good things about the head, some of which we did not know ourselves.

U. S. Pat. No. 1474511; Canada Pat. No. 236614

SPECIFICATIONS OF FRONTENAC MODEL T, SUITABLE FOR TOURING CARS, COUPES, SEDANS AND TRUCKS

Head Casting—Semi-steel, close grain.

Valves—Eight, semi-steel head, steel stem, $1\frac{1}{8}$ in. diameter.

Valve Springs—Extra long coiled spring of highest quality.

Valve Spring Caps—Pressed steel.

Valve Opening— $\frac{3}{8}$ in.

Rocker Arm—Drop forged steel, case hardened, with removable bushing, offset center, $1\frac{1}{2}$ -1 ratio.

Valve Guide—Cast iron, removable, extra long to insure long life.

Rocker Shaft—Steel, case hardened and ground.

Push Rod—Steel, $\frac{3}{8}$ in. diameter, lower end hardened, upper end provided with adjustment.

Compression—60 lbs.

Intake—Single intake port, providing hot spot inside of head, which makes for quick starting and warming up. On left side of car, $1\frac{1}{8}$ in. diameter.

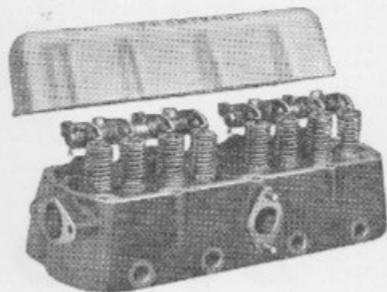
Exhaust—Three exhaust ports on right side of motor, all exhaust passage and valve seats completely surrounded by water, insuring against overheating and warping of valves, $1\frac{1}{8}$ in. diameter.

Water Capacity—One gallon, regular Ford water outlet elbow fits front end of head.

Equipment— $1\frac{1}{4}$ in. horizontal carburetor, vacuum tank, four spark plugs, all wires and tubing necessary for installation, shield for dash board, dash control, cover, bolts and gaskets, exhaust manifold to connect with Ford exhaust pipe.

No. 210—Model T. Price \$98.75

No. 211—Model S. Specifications and equipment same as Model T but compression is 75 lbs., specially designed for speedsters 98.75



The Fronty Racing Cylinder Head, Model R, for Racing Cars Only

When this cylinder head was first brought out in 1921 it absolutely astonished the racing world by its performance. It started out by making new history in the dirt track racing world, establishing new records everywhere it appeared, winning practically every race it entered, from one mile to hundred-mile races, thereby proving its reliability as well as its speed. One of the outstanding performances of this model is the fact that it alone enabled the two Fronties entered in the 500-mile race in May, 1922, at Indianapolis, to make the qualifying speed of 80 miles per hour, and then to run the entire race without any motor trouble, at an average speed of better than 80 miles per hour. This, by the way, was the first time a Ford car qualified for the biggest race event in the world.

SPECIFICATIONS OF MODEL R HEAD

Head Casting—Same as Model T

Valves—Eight, high tungsten steel, $1\frac{1}{8}$ in. diameter.

Valve Spring Caps—Nickel steel, liberty type lock.

Valve Spring—Same as Model T.

Valve Opening—Same as Model T.

Rocker Arm—Same as Model T.

Valve Guide—Same as Model T.

Rocker Shaft—Same as Model T.

Push Rod—Same as Model T.

Compression—85 lbs.

Water Capacity—Same as Model T.

Equipment—Aluminum cover, bolts and gaskets.

Note—Intake and exhaust manifolds, spark plugs, etc., are not included in price.

No. 212—Model R head, for racing cars only \$100.00

A FEW RECORDS ESTABLISHED AND RACES WON BY FRONTY EQUIPPED WITH MODEL R HEAD

Warren, Ind., September 3, 1921—Ralph D. Ormsby, driving Fronty-Ford, makes time trial of 30 seconds on half-mile track. World's record.

Greenville, Ohio, October 13, 1921—Four Fronty-Fords, driven by Ralph D. Ormsby, Homer Ormsby, W. Schloeman and H. Rife, take first four places in each of the 5, 20 and 30-mile races against a field of fifteen cars. Clean sweep.

Columbus, Ohio, October 16, 1921—100-mile race won by Ralph D. Ormsby; Homer Ormsby, second; W. Schloeman, third. All driving Fronties.

Cushing, Okla., November 25, 1921—Dick Calhoun, driving Fronty, sets new state record for one mile on half-mile track. Time: 1:01.

Indianapolis, Ind., May 30, 1922—C. Glenn Howard and Jack Curtner, driving Fronty-Fords, qualify for the 500-mile race, being the first Ford cars to ever accomplish this, and were still running when the race was called, averaging 80 miles per hour for the entire 500 miles.

Uniontown, Pa., June 19, 1922—Jack Curtner, driving Fronty-Ford, turns one lap of 1½-mile speedway in 44 2/5 seconds, fastest time ever made officially (A. A. A. meet) by any Ford car. Ninety-two miles per hour.

Cleveland, Okla., May 29, 1922—Dick Calhoun, driving Fronty-Ford, lowers his own state record for mile. Time: 1:00 2/5.

Toledo, Ohio, June 4, 1922—100-mile race. First, Ralph D. Ormsby, driving Fronty-Ford; second, C. W. Belt, in Fronty-Ford.

Bedford, Ind., September 8, 1923—A. Moore, driving Fronty-Ford, wins all races and gold cup trophy.

Hiawatha, Kas., September 3, 1923—Al Koepke, driving Fronty-Ford, wins time trials and 5 and 10-mile races. E. Breisch, in Fronty, second.

Detroit, Mich., June 10, 1923—100-mile race won by Ralph D. Ormsby in Fronty-Ford; McCabe, in Fronty, second; C. G. Howard, in Fronty, third. All three cars ran whole race without a stop.

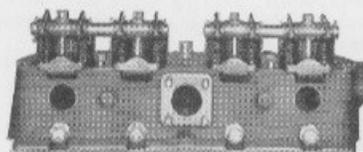
San Luis Obispo, Cal., May 30, 1923—Fred H. Luelling, driving Fronty-Ford, wins 60-mile race. Time: 50:34.

Salina, Kas., July 4, 1923—L. E. Kerbs, driving Fronty-Ford, lowers track record and wins 10 and 50-mile races.

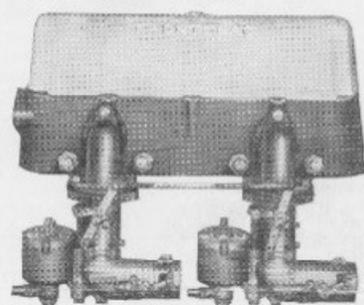
Grand Rapids, Mich., June 17, 1923—100-mile race won by Ralph D. Ormsby in Fronty-Ford.

Milwaukee, Wis., July 4, 1924—Arthur Brach, driving Fronty, wins time trials, 2, 3 and 25 mile races, winning state championship.

The Fronty 2-Spark 2-Carburetor Racing Head, Model S-R, for Racing Cars Only



This new model was brought out to meet a demand of the fastest drivers for something faster than the regular Model R. After numerous tests to satisfy ourselves that it was all that could be expected, we gave it the crucial test in the 500-mile race at Indianapolis on May 30, 1923, when we installed it on the Barber-Warnock Special No. 23, which was driven by L. L. Corum. As everyone interested in



racing knows, this car covered itself with glory. First qualifying at the remarkable speed of 86.92 miles per hour, and then winning fifth place in the race itself, defeating all the foreign entries such as Mercedes, Bugatti, etc., and many well-known American entries, and thereby giving the best demonstration of what a Ford car can really do when equipped with the Fronty head. There were only two stops made by this car during the race, both for fuel, and car ran the entire race without any mechanical trouble or adjustment whatever. There certainly could not be any better demonstration of the power and reliability of the Model S-R head. The main difference between this model and the Model R is in the fact that this head is equipped with two spark plugs per cylinder and can be equipped with two carburetors instead of one. The compression also is higher.

SPECIFICATIONS OF MODEL S-R HEAD

Head Casting—Semi-Steel, close grain.

Valves—Eight, high tungsten steel, 1½ in. diameter.

Valve Springs—Same as Model R.

Valve Spring Caps—Same as Model R.

Valve Opening—¾ in.

Rocker Arm—Same as Model T.

Valve Guide—Same as Model T.

Rocker Shaft—Same as Model T.

Push Rod—Same as Model T.

Compression—100 lbs.

Intake—Two intake ports, 1¼ in. diameter on left-hand side.

Exhaust—Three exhaust ports on right side.

Spark Plugs—Drilled and tapped for metric plugs, two per cylinder, one on each side.

Equipment—Aluminum cover, bolts, gaskets, etc.

No. 114—Model S-R, for racing cars only.....\$130.00

No. 115—Model S-R, with two Zenith carburetors and intake pipe 185.00

No. 116—Model S-R, with two Zenith carburetors, intake and exhaust manifold 215.00

A FEW RACES AND RECORDS WON AND MADE BY THE MODEL S-R HEAD

Indianapolis, Ind., May 30, 1923—A. A. A. sanctioned meet—Barber-Warnock Special, equipped with Frontenac cylinder head, wins fifth place in 500-mile sweepstakes, averaging 82:58 miles per hour, defeating all foreign entries and many of the costliest American cars.

Ft. Wayne, Ind., June 17, 1923—Homer Ormsby, driving Fronty, wins time trials, 32 seconds, on poor track. Also wins 10, 20 and 30-mile races.

Indianapolis, Ind., July 1, 1923—Chance Kingsley, driving Fronty, breaks track record on Hoosier Speedway. Time: 31 1/5 seconds. W. Schloeman, driving Fronty, wins 75-mile race; Chance Kingsley, driving Fronty, second; C. Chaney, driving Fronty, third.

South Bend, Ind., July 8, 1923—Chance Kingsley, driving Fronty, wins 100-mile race, defeating Clancy, driving Golden Egg.

Indianapolis, Ind., September 3, 1923—A. Davidson, driving Fronty, wins 100-mile race, Hoosier Speedway; Joe Huff, driving Fronty, second.

Paris, Ill., September 8, 1923—A. Davidson, driving Fronty, won time trials, 20 and 30-mile race; Johnson, driving Fronty, second.

Chicago, Ill., October 21, 1923—A. Davidson, driving Fronty, wins National Ford Championship Race at Hawthorn track against all star drivers of middle west, earning the title of National Ford Champion.

Chicago, N. S. Polo Grounds, Ill., July 6, 1924—George Beck, driving Fronty, wins 10-mile light car race; 15-mile free-for-all; Louis Schneider, driving Fronty, second.

Ventura, Cal., July 28, 1924—Frank Lockhart, driving Fronty, wins 5-mile race. Time: 4:56. Fastest time in the west on one-half mile flat track.

Hoosier Speedway, Indianapolis, Ind., September 1, 1924—A. Davidson, driving Fronty, wins annual 100-mile sweepstakes; Lawwell and Broderick, second and third in Fronties.

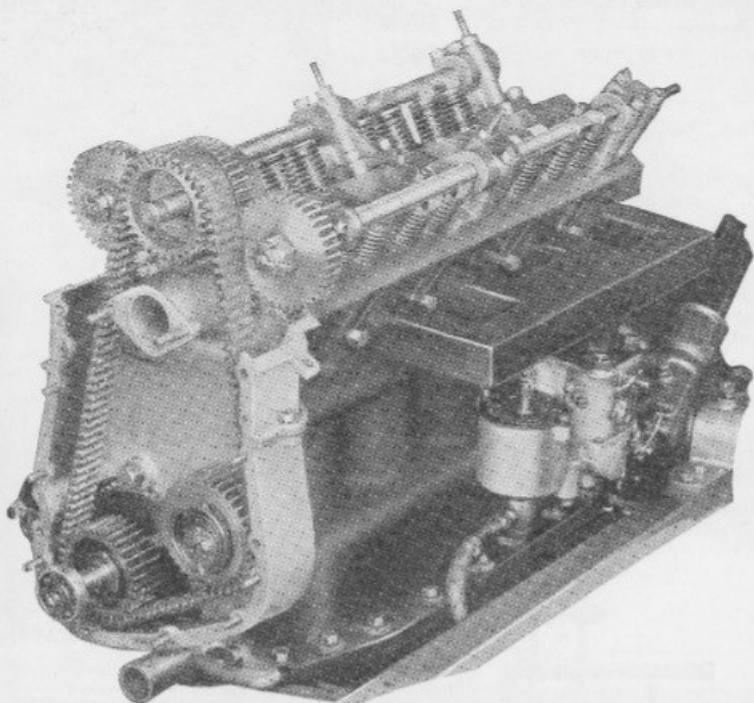
Graham, Texas, October 9, 1924—Dick Calhoun, driving Fronty, establishes world's record, turning two laps on one-half-mile track in 55 seconds.

Springfield, Ill., November 15, 1924—Wilber Shaw, driving Fronty, wins 25-mile race. Time: 21:6. Marion Stevens, second in Fronty.

Regina, Sask., Canada, 1924—Cleo Sarles, driving Fronty, won Midnight Sun Sweepstakes Race, only race in world held at midnight, defeating seven other cars.

The 16-Valve Fronty Head, Model D-O

- 16 Valves
- 2 Carburetors
- 2 Overhead Camshafts



FRONTENAC 16-VALVE HEAD COVERS REMOVED

The last word in speed and power equipment for the Ford car. In order to satisfy the insistent demand for something still faster, we brought out this new head, which has more than justified itself by breaking old records and establishing new ones in many races. Again we subjected it to the most gruelling test known to the whole racing world, the 500-mile race at Indianapolis, May 30, 1924. The car equipped with this head went through the entire race and for the last 300 miles was running at an average speed of 88 miles per hour. Since then it has demonstrated its speed and power in numerous races as listed below. Please keep in mind the fact that every Ford car equipped with the Fronty head entered in the 500-mile classic has qualified and finished in the greatest race of the world. The Fronties are the only Fords to have accomplished this.

SPECIFICATIONS

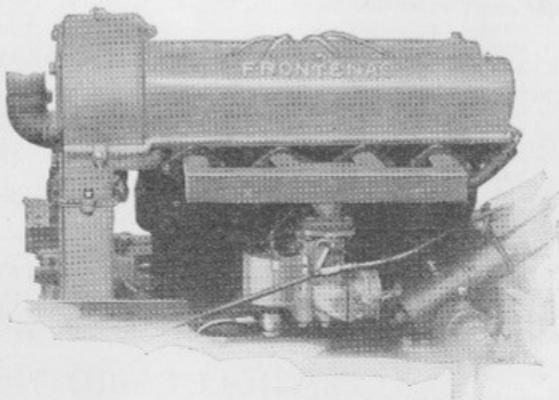
The cylinder head casting is made of fine gray iron, and when finished is machined practically all over. The water jacketing of this head has been given special attention, so as to evenly distribute water to every point in the casting, eliminating any chance of overheating, preignition, or any other kindred trouble. Water surrounds the entire combustion chamber, valves, and spark plugs.

The valves, 16 in number, 2 intake and 2 exhaust for each cylinder, are located overhead, and seated in the casting at an angle of 30 degrees from the vertical. They are $1\frac{1}{2}$ inches in diameter, with a stem $\frac{3}{8}$ inch in diameter. Both intake and exhaust valves are rich tungsten steel of the highest quality. Special valve springs are used and each is held in place by a special seat and keeper, which also acts as the valve tappet, upon which the cam strikes, operating the valve. These tappets are held in place by lock nuts. Adjustment between the tappet and camshaft is simple and positive. Each tappet is hardened and ground. Each valve operates in a removable valve stem guide, which may be easily replaced when they become worn. These stems are $3\frac{1}{4}$ inches long, insuring perfect valve operation and cooling. The length of the valve guides insures long life.

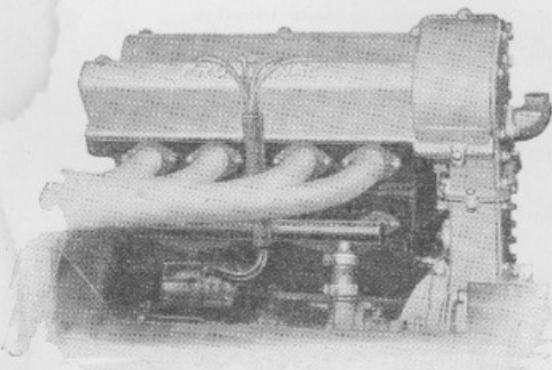
The camshafts, 2 in number, are mounted overhead on 3 bronze bearings. These cams are our special design, and each shaft is made with the cams integral, and is hollow drilled through the center, with an oil lead to each cam. The entire valve operating mechanism is lubricated by force feed system, oil being fed through the rear camshaft bearings into the shaft and out of each cam onto the tappets and each cam bearing.

The camshafts are driven by a special silent high-speed chain, $1\frac{1}{4}$ inches wide. This chain runs from a sprocket on a stub

shaft, mounted on ball bearings, which takes the position of the old camshaft, to the upper sprocket, which in turn drives the 2 camshaft gears. The upper shaft with sprocket is also mounted on three ball bearings. Special attention was given to the mounting of the camshaft upper drive sprocket, which drives the 2 camshafts. The sprocket and



INTAKE SIDE



EXHAUST SIDE

drive gear are placed on one shaft, which is mounted in a bronze casting, on 2 ball bearings, a third ball bearing being mounted in the drive chain housing, acting as an additional aligning support. The mounting for the sprocket shaft is cast integral with the 2 front camshaft bearings, insuring perfect mesh of the cam gears and alignment of the camshafts at all times. This front sprocket mounting and camshaft bearing casting is bolted solid to the front of the head casting.

The chain is kept in proper adjustment and at the proper running tension by a patented automatic adjusting idler. The entire chain drive mechanism is housed in an aluminum housing, and runs in a bath of oil, supplied by surplus oil from the camshaft feed. Each camshaft is housed in an oil-tight housing, of aluminum, keeping out dust and dirt from all working parts.

The spark plugs are located in the top of the head, firing the charge in the top and center of the combustion chamber, which is the most efficient position. Preignition and fouling of plugs are absolutely eliminated.

There are 4 intake and 4 exhaust ports, each of which is 1½ inches in diameter. These ports are smooth and straight, and give easy passage for incoming and outgoing gases.

The head is designed to give a compression of 120 pounds.

The entire combustion chamber is machined to prevent carbon deposits and preignition from hot spots.

The water outlet is 2 inches inside diameter and runs through the cam drive chain housing at the top of the head, in the usual place. The cylinder head uses the regular Fronty gasket, and all flanges (intake and exhaust) take S. A. E. standard gaskets.

Special care was taken in the design of the Frontenac 16-valve head to make all operating parts easily and quickly accessible, and to making this equipment so that it may be installed on any standard Ford block, replacing the stock head, or any of the present overhead valve attachments, now on the market, without any mechanical changes or machine work on the block. The heads can be removed from the block, and reassembled as quickly and as easily as any head ever designed.

This equipment will instantly appeal to those who have tried other types and makes of heads now on the market, and who desire to equip their car with the best attachment that brains and money can produce.

TRY THE 16-VALVE FRONTENAC, and you have gone the limit.

We are prepared to furnish special intake manifolds for this head for using either single, two or four carburetors.

The Frontenac 16-valve head is built to order only, and each order will receive the personal attention of Mr. A. Chevrolet, both during course of construction and testing.

Each head is guaranteed against imperfections in material and workmanship.

No. 201—Without intake or exhaust manifolds or carburetors, price -----\$500.00

No. 202—Complete 16-valve head with exhaust manifold, special double intake manifold and double Zenith carburetor, price ----- 600.00

Positively no orders accepted unless accompanied by a deposit of 25 per cent of the purchase price.

A Few Records Established and Races Won by Fronties Equipped With 16-Valve Overhead Cam Head

Winchester, Ind., July 4, 1924—Ralph Ormsby, driving Fronty-Ford, new 16-valve head, wins 40-mile free-for-all, defeating world's fastest dirt track cars. Time—One-half mile, 28 seconds.

On July 4, 1924—Fronty-equipped cars won at Indianapolis, Milwaukee, Urbana, Bloomington, Denver, San Luis Obispo.

Roby, Ind., July 13, 1924—Ralph Ormsby, driving 16-valve Fronty-Ford, wins both races, establishes new track record for 5 miles. Time: 4 minutes 16 seconds.

Winchester, Ind., September 1, 1924—Ralph Ormsby, driving 16-valve Fronty-Ford, defeats Cantlon, driving Roof Special, in match race. Ormsby wins 10, 20 and 30 mile races. Time: 10-mile, 9 minutes 40 seconds; 20-mile, 19 minutes 8 seconds; 30-mile, 29 minutes 35 seconds. George Beck, driving 16-valve Fronty, second in each event. Fronty-Fords win all three places in all events of the day.

Danville, Ill., September 21, 1924—Ralph D. Ormsby, driving 16-valve Fronty-Ford, wins time trials. Time: 32 seconds, establishing new record; also wins 5 and 20-mile race in record time.

Chicago, Ill., Roby Track, October 19, 1924—Ralph D. Ormsby, driving 16-valve Fronty-Ford, wins 100-mile Midwest Championship Race. Chance Kingsley, driving Frontenac, second; Wilbur Shaw, driving Fronty-Ford, third. Time: 1 hour 28 minutes. Dutch Bauman, driving Fronty-Ford, wins 5 mile consolation race.

Ascot Speedway, Los Angeles, Cal., November 2, 1924—Ralph D. Ormsby, driving 16-valve Fronty, wins feature race, establishing new record for 10 laps of ¾-mile track. Time: 5 minutes 30 2/5 seconds.

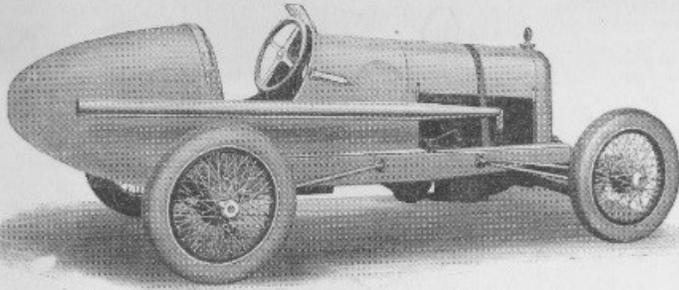
San Jose, Cal., March 15, 1925—Jack Petticord, driving 16-valve Fronty, wins 10 and 20-lap race on ¾-mile track. Time: 10 laps, 5 minutes 3 seconds; 20 laps, 10 minutes 11 seconds. Keanealy, driving Fronty, wins second place in both events.

San Francisco, Cal., March 22, 1925—Jack Petticord, driving 16-valve Fronty, wins 10-mile race on Tanforan mile dirt track. Time: 9 minutes 3 4/5 seconds.

Because they themselves have driven racing cars for a score of years, Arthur and Louis Chevrolet realize the necessity of quality, uniformity and strength in every part of a racing machine. Rigid tests are given every Fronty product before it is placed on the market, and close inspection is given every piece before it leaves the factory.

A handling charge of 10 per cent will be made on all merchandise returned for credit. Do not return any material without our consent

The Fronty-Ford Racing Car and Motor Will Win for You



You MUST win. Your skill, plus Fronty-Ford performance, will get you in on the big money every time! The Fronty-Ford will stand up under the most severe driving. Lightning get-away and great speed are characteristic of the Fronty-Ford. It is the most consistent and sensational performer on half-mile dirt tracks ever built. The best proof of the Fronty-Ford speed and reliability is found in its performance in the 500-mile race May 30, 1923, in which it placed fifth, defeating all foreign entries and many of the best American entries.

SPECIFICATIONS

Frame—Standard Ford frame shortened for 88-inch wheel base. (Longer wheel base for road racing optional.) Front Axle—Standard Ford I-beam shortened for 5-inch offset to the left. (Standard width optional.) Steering Knuckles—Our special steering knuckles and spindles made of chrome nickel steel. Front Wheel Bearings—Timken roller. Front Radius Rods—Our special side radius rods. Front Underslinging—Our special front brackets. Rear Axle—Standard Ford rear axle assembly, shortened for 5-inch offset to the left. (Standard width optional.) Rear Wheel Bearings—New Departure ball bearings No. 1211, mounted in our special mounting. Wheels—Special racing 28x4, straight side, drop center rim; no rim-ring used, equipped with winged hub caps for quick change. Axle Shafts—Special oversize, 1 $\frac{1}{8}$ -inch axles made of chrome vanadium steel. Springs—Special weight Ford style springs made of high-grade alloy steel. Shock Absorbers—Hartford. Rear Underslinging—Our own method. Steering Gear—Special steering. Steering Wheel—Our special spring steel spoke wheel.

Radiator—Fronty-Ford model, made with Fedders' high-efficiency core. Motor—Fronty-Ford racing motor. (See motor specifications.) Body—One-man steel frame body. Scientifically designed to reduce wind resistance and to give car proper balance. Seat trimmed with high-grade upholstery. Tanks—Double tank in rear of body. Gasoline capacity, 12 gallons. Oil capacity, 3 $\frac{1}{2}$ gallons. Tanks equipped with bar caps and piped for air pressure. Feed (gasoline)—Pressure. Feed (oil)—Pressure.

Transmission—Standard Ford, the fastest for quick getaway. Gear Ratio—Optional, 3—1 for straightaway racing, 3.63—1 for mile tracks, or 4—1 for one-half-mile tracks. Tread—Optional 51 inches throughout, offset 5 inches to the left or standard. Wheel Base—88 inches (longer if desired). Weight—1,200 lbs. Speed—30 seconds on one-half-mile track; 48 seconds on mile track; 100 miles per hour on straightaway. Color—Optional.

No. 214—Equipped with Model R head	\$1,850.00
No. 214A—Equipped with Model S-R head	2,000.00
No. 214B—Equipped with 16-valve head	2,300.00

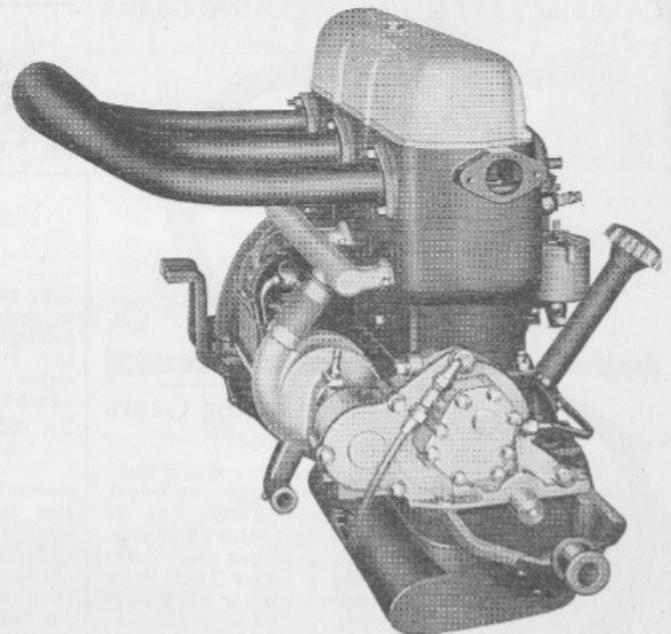
Fronty-Ford Racing Motor

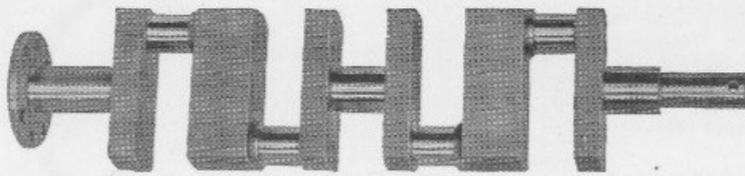
This is the motor included in specifications for the Fronty-Ford racing car. It embodies the experience of many years in designing motors that will "produce the goods" in racing competition. All parts are thoroughly tested before the motor leaves the factory.

SPECIFICATIONS

Frontenac cylinder head, Model R; special racing exhaust manifold; special Zenith carburetor (Model L-6); Ford cylinder block (starter type); special racing pistons, special racing piston rings, special piston pins. Ford connecting rods, machined and balanced accurately; special heavy oversize crankshaft; special water pump and magneto bracket, Scintilla magneto and coupling; special oil pump and oiling system (pressure feed); Ford crankcase; special sub-base oil reservoir. Ford camshaft with extension for driving oil pump; Ford camshaft bearings; special nickel steel camshaft gear; Ford transmission and bands; flywheel cut to 10-inch diameter and balanced; special ball bearing ball cap. Motor complete, ready to set in frame

No. 215—Equipped with Model R head	\$700.00
No. 215A—Equipped with Model S-R head	850.00
No. 215B—Equipped with 16-Valve head	1,150.00





Oversize Crankshaft for Racing Motor

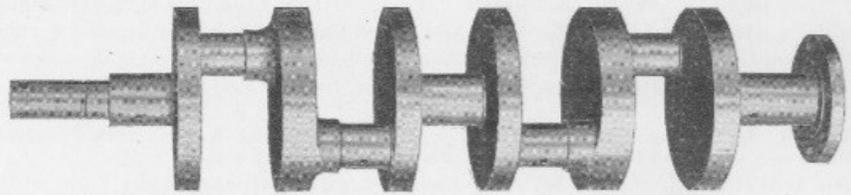
This heavy crankshaft was especially designed to overcome the breakage of the regular size shaft. The main bearings are 1 1/2" diameter, instead of 1 1/4", and the connecting rod bearings are 1 3/4", instead of 1 1/2". It is drilled for oil pressure system and is perfectly balanced, machined all over, made out of a solid billet of Chrome Vanadium steel, heat-treated and ground to accurate dimensions. The greatest help to a racing motor we have ever designed.

No. 216—Price\$175.00

Oversize Circular Cheek Crankshaft

The most perfectly balanced crankshaft that can be produced. Dimensions same as No. 216. Drilled for pressure oil feed.

No. 216A—Price\$225.00



Special Ford Size Counter-balanced Crankshaft



DESIGN PATENTED

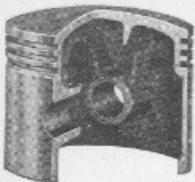
With counterweights forged integral with shaft, made of high-grade alloy steel. Will fit in Ford block without any alterations. Drilled for oil pressure feed.

No. 216B—Price\$35.00

Same as above, not drilled. Suitable for commercial cars.

No. 216C—Price\$19.00

Special Racing Piston



Very Light

This is the only piston that will stand up under the strain of the Fronty-Ford racing car. Made of extra strong aluminum and nickel alloy, accurately machined and grooved for three 1/8-inch piston rings.

High dome suitable for Model R head.

No. 223—Price, per set of four.....\$32.00

Low dome for Model S-R head or 16-v. hd.

No. 223A—Price\$32.00

Bu-Nite Steel Band Piston



Especially designed for replacement on Ford motors. Will eliminate most of the vibration and save gasoline and oil. Will not slap or pump oil, because it conforms to cylinder walls. Especially good for use on cars equipped with special cylinder

heads or speedster bodies.

No. 223C—Price per set of four.....\$25.00

Special Piston Pins

Made of electric chrome-vanadium steel. Lighter than standard pins.

No. 224—Price, each.....\$2.00

High-Compression Racing Piston Rings

1/8-inch wide, perfectly machined from the best gray iron castings.

No. 225—Price, each.....\$0.75

Main Bearing Cap—Faced and drilled, but not bored. (When using special heavy crankshaft it is necessary to use these caps, boring them out with cylinder block.)

No. 217—Price per set (3 to a set) with bolts.....\$9.00

Connecting Rod—Bored for special heavy crankshaft, babbitted and reamed to fit shaft. Accurately balanced. Four to set.

No. 218—Price\$30.00

Cylinder Block—Fitted with special heavy crankshaft, bearing caps and connecting rods. All bearings fitted, rods balanced, pistons, rings and pins, water pump and bracket, complete oiling system installed.

No. 219—Price\$425.00

No. 219A—Same as No. 219, fitted with circular cheek crankshaft. Price 475.00

Cylinder Block—Fitted with special heavy crankshaft, bearing caps, connecting rods balanced, bored out and babbitted, bearings fitted and adjusted.

No. 220—Price\$270.00

No. 220A—Same as No. 220, fitted with circular cheek crankshaft. Price 320.00

Ford Cylinder Block (starter type)—With main bearings bored out to receive oversized crankshaft with caps and bolts, bearings babbitted.

No. 220B—New block. Price\$60.00

No. 220C—.031 oversized block. Price55.00

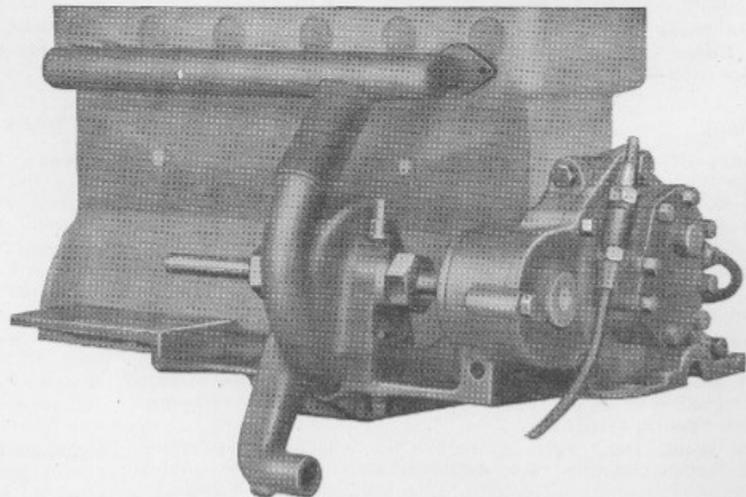
Cylinder Block—Fitted with standard size counter-balanced crankshaft, all main and connecting rod bearings fitted. Connecting rods machined and balanced.

No. 221—Price\$120.00

Cylinder Block—Fitted with standard size counter-balanced crankshaft, all main and connecting rod bearings fitted. Rods machined and balanced. Special racing pistons, pins and rings, complete oiling system installed, water pump and magneto bracket installed and fitted, breather pipe installed.

No. 222—Price\$275.00

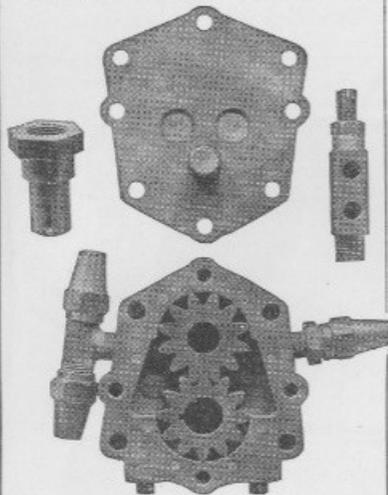
Water Pump and Magneto Bracket



This water pump and magneto bracket was specially designed by us for the Ford racing motor. It is made entirely of aluminum, and is absolutely the best outfit of this kind on the market today. The shaft, which is mounted on ball bearings, is made of chrome nickel steel, front gear cover equipped with pad to receive oil pump.

No. 226—Price\$65.00

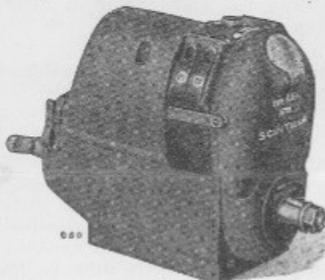
Complete Oiling System



High-pressure system, consisting of oil pump, camshaft extension, by-pass regulator, oil gauge for dash, all fittings, tubing and connections, and set of blue-prints for installation.

No. 227—Price, complete...\$36.00

High-Tension Magnetos



After exhaustive tests, these were found to be the only magnetos to stand upon a Fronty-Ford motor. These magnetos are fully guaranteed.

Scintilla single spark magneto. No. 233—Price\$75.00

Scintilla 2-spark magneto. No. 233A—Price\$105.00

Rob. Bosch single spark magneto.

No. 233B—Price\$75.00

Rob. Bosch 2-spark magneto. No. 233C—Price\$105.00

Bosch Battery Ignition



A very valuable accessory to the Ford car; gives perfect timing and smoother running. Easily installed.

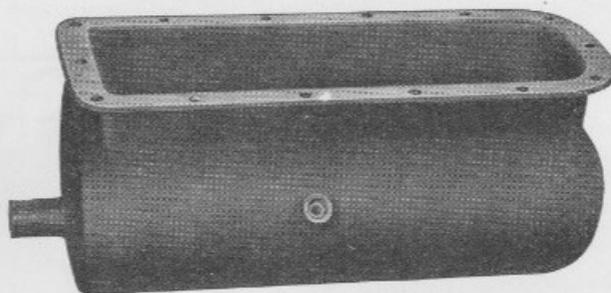
To operate with Ford coil.

No. 241—Price\$12.75

With Bosch coil

No. 241A—Price\$17.50

Sub-Base Oil Reservoir



Keeps oil at constant, lower temperature, thus effecting better lubrication of motor at all times. Made of sheet steel, capacity, 3 gallons. If 1925 crankcase is used specify on order.

No. 230—Price\$25.00

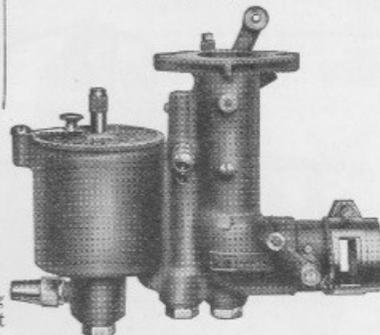
Sub-base oil reservoir made to fit motor with regular Ford front radius rod. Capacity, 2 gallons. If 1925 crankcase is used specify on order.

No. 231—Price\$20.00

Intake manifold for use with Model S-R head when using one carburetor only. Made of copper tubing.

No. 229A—Price\$15.00

Special Zenith Carburetor



We recommend this carburetor for quick get-away and pick-up. Fitted with proper jets for Frontenac racing head.

No. 228—Price\$35.00

Elbow adapter or intake pipe, to fit Frontenac racing head.

No. 229—Price\$3.00

Racing Exhaust Manifold

Gives the Famous "Speedway Roar." Made of seamless steel tubing. Complete with long 4-inch pipe to the rear of car.

No. 232—Price\$32.50

No. 232A—For S-R head. Price \$32.50

No. 232B—For 16-Valve head. Price\$40.00



3-in-1 Front Plate

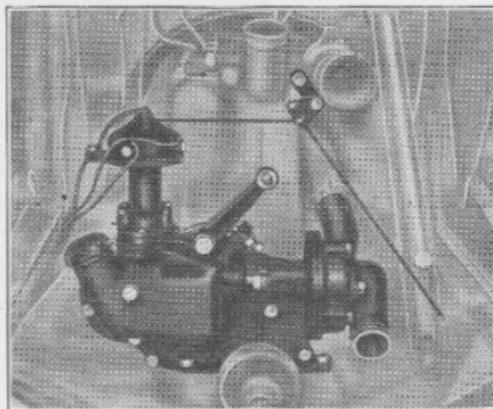
Especially designed and adapted for fast roadsters. Carries oil pump, water pump and Bosch battery ignition. A very compact and high-grade outfit.

Non-starter type with raised contact timer. No. 237—Price\$25.00

Starter type, with raised contact timer. No. 238—Price\$25.00

With Bosch manual battery ignition. No. 239—Price\$49.00

With Bosch compensating battery ignition. No. 240—Price\$51.50



Delco Battery Ignition for Fords

Delco Ignition for FORDS

A real high-grade ignition system for the Ford car. Will operate on battery or magneto. Every Ford should have one. Without coil.

No. 243—Price...\$13.00

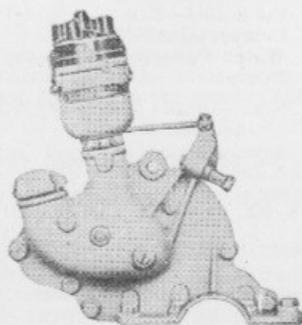
With coil. No. 243A—

Price...\$18.50

Bosch De Luxe Battery Ignition

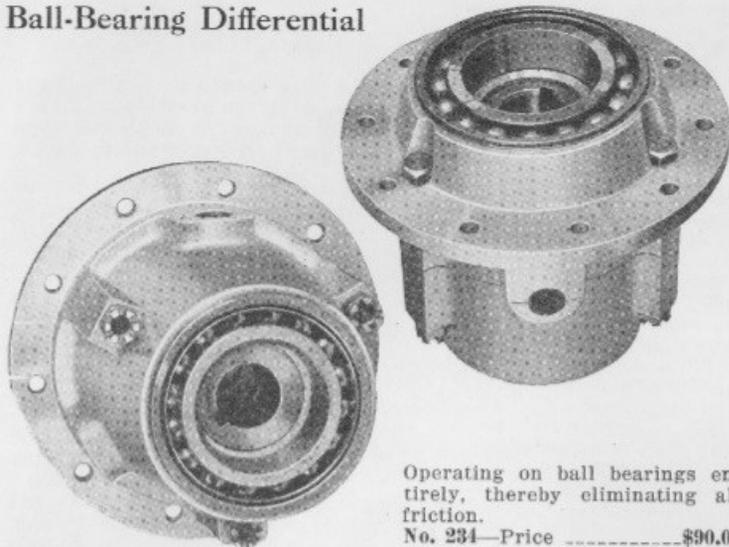
Gives perfect timing and ignition, adds to the speed and gives easier starting.

No. 242—Price...\$22.50



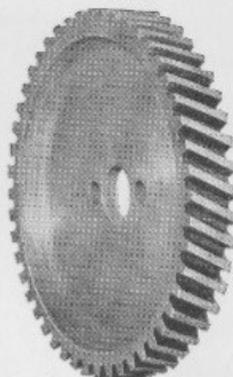
Delco Ignition is quickly installed in place of your present timer—\$13—with Delco Ford coil,\$5.50 extra. Prices include tax.

Ball-Bearing Differential



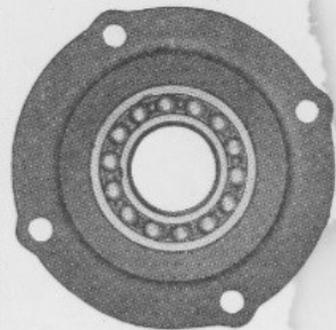
Operating on ball bearings entirely, thereby eliminating all friction.
No. 234—Price -----\$90.00

Special Camshaft Gear



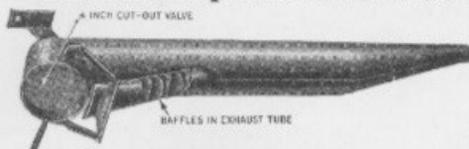
Made of nickel steel.
No. 235—Price...\$10.00

Special Ball-Bearing Cap



Our special ball-bearing ball cap does away with all trouble with this very troublesome bearing; for all Ford cars.
No. 236—Price -----\$20.00

The Loud Speaker 2-in-1 Cutout and Muffler



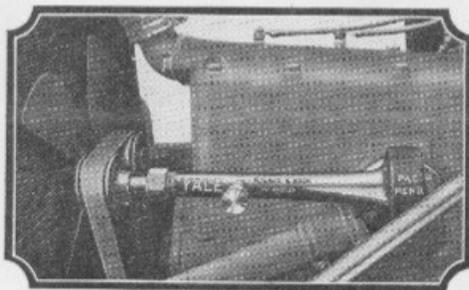
This muffler and cutout relieves motor of all back pressure and when open gives a roar as you hear from speedway cars.

No. 245—Price ...\$12.00

Yale Water Pump

A very useful accessory for the Ford car; will keep motor cool at all times. Does not interfere with thermo syphon circulation. A good safeguard against frozen radiators in cold weather.

No. 246—Price...\$6.50



Visible Auxiliary Oiling System for Ford Cars

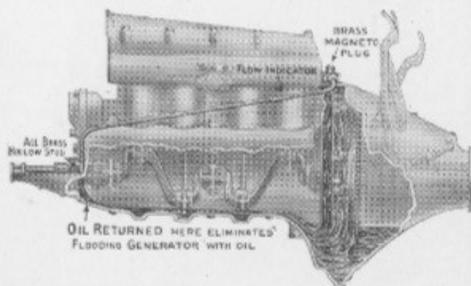
This insures thorough lubrication of all parts and should be on every Ford car which is subjected to hard usage.

No. 247—Complete...\$3.50

Visible Auxiliary Oil- ing System for Ford cars

This insures thorough lubrication of all parts and should be on every Ford car which is subjected to hard usage.

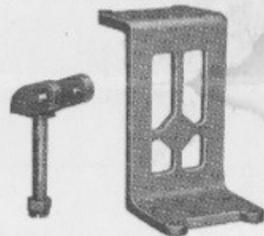
No. 248—Price --\$3.50



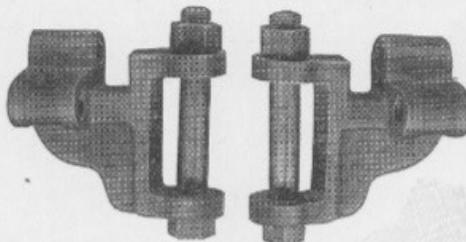
Fronty Underslung Parts (Front)

The latest and best method of underslugging the front end of racing cars. Takes out all side sway and keeps spring over the axle. Made of high-grade steel castings.

No. 250—Price per set...\$16.00



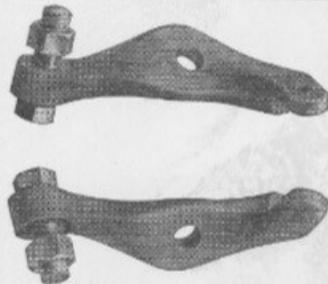
Bronze Front Brackets



Manganese bronze front underslung brackets. Very strong. Recommended for racing cars or speedsters.
No. 251—Price per pr. \$12.00

Bronze Rear Brackets

Manganese bronze rear underslung brackets. Very easy to attach.
No. 252—Price per pair\$8.00



Free Wheel

Towing wheel. Does away with necessity of removing pinion from Ford racing car. Just take off regular racing wheel and slip on free wheel clamp in place with regular hub cap and sleeves furnished. Rolls on large ball bearings. If car has no differential use two of these wheels.

No. 284—Price for wheel using 28x4 tire.....\$35.00
No. 284A—Price for wheel using 30x3 1/2 tire.....\$30.00



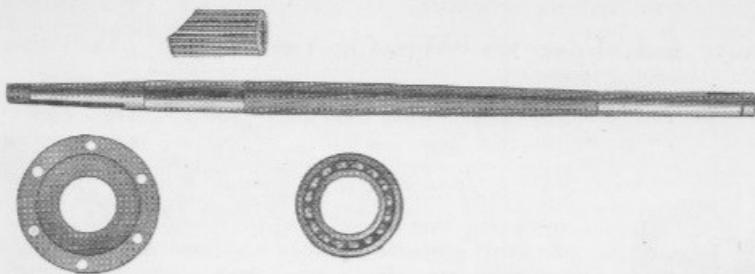
Impeller Water Pump

Same as No. 246.

No. 249—Price -----\$6.50

Self-Steering Tow Bar

To tow racing car, all you have to do is disconnect regular drag-link, then attach tow bar to front axle and connect to tie rod. No necessity of having a man sitting in racing car.
No. 287—Price complete.....\$25.00



Oversize Axle Shaft

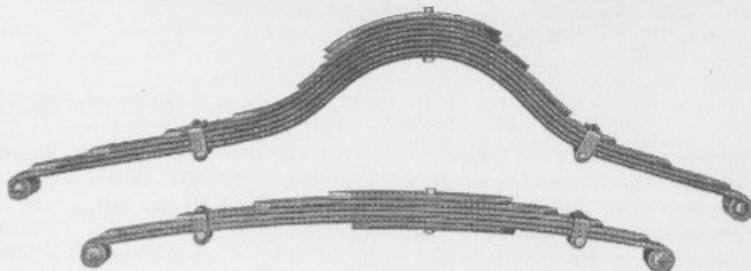
A necessity for racing cars. Protects the driver's life. Should be used with commercial cars carrying heavy loads. Shaft is 1 3/8 in. diameter, made of electric chrome vanadium steel. (When ordering state width of thread.)

- No. 253—Price, each\$12.00
 Special roller bearings to be used with oversize shaft.
 No. 254—Price, each\$5.00
 Special ball bearings and housings to replace roller bearings.
 No. 255—Price, per set, including sleeves for axle tubes\$60.00

Special Offset Springs

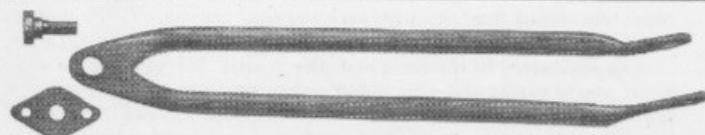
Special offset rear spring. Adapted especially for half-mile and mile dirt track racing.

- No. 256—Price\$14.00
 Special offset front spring.
 No. 257—Price\$6.50



Filler Cap

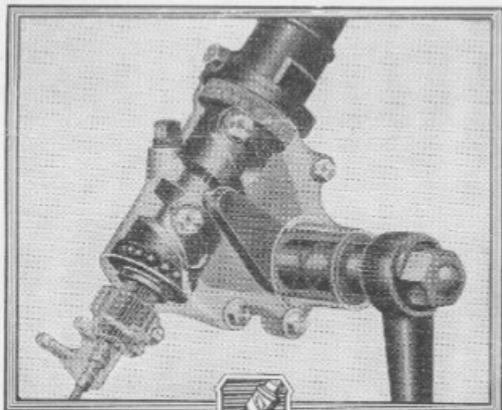
For gasoline and oil tanks. Adds snap to the appearance of any car.
 No. 270—Brass finish.
 Price\$5.00
 No. 271—Nickel finish.
 Price6.00



Radius Rods for Racing

Special radius rods for racing. Made of seamless steel tubing. Very light and strong, the best front construction on the market. (When ordering, state whether or not car is offset.)

- No. 258—Price per pair, complete with pads and bolts.....\$24.00

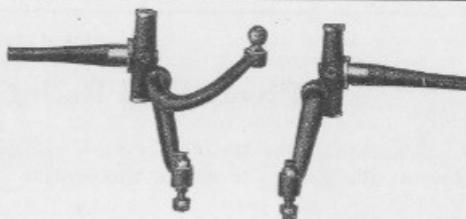


CAM and LEVER STEERING GEARS

Steering Gear for Racing

This gear of the cam and lever type is meeting with great success everywhere. It is very strong, simple and durable. Easily installed. Complete with drag link dash bracket and frame bracket.

- No. 260—Price\$40.00
 Same gear for center control, with long drag link, dash bracket and two frame brackets.
 No. 260A—Price\$60.00



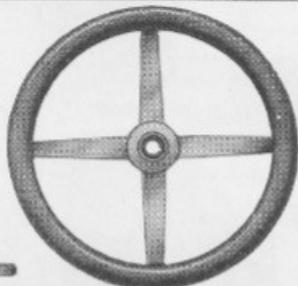
Racing Steering Knuckles

Special racing steering knuckles to fit Ford I-beam. Made of chrome nickel steel. The best life insurance for the driver. Complete with tie rod and bolts. (When ordering, state width of tread of car.)
 No. 261—Price per pair \$30.00

Spring Steel Steering Wheel

This steering wheel is the same as used on all speedway cars. The flexible spider protects the driver in any mishap. Used commercially, it completely eliminates fatigue caused by vibration of wheels and absorbs shocks and jars. Nickel plated.

- No. 259—Price\$24.00



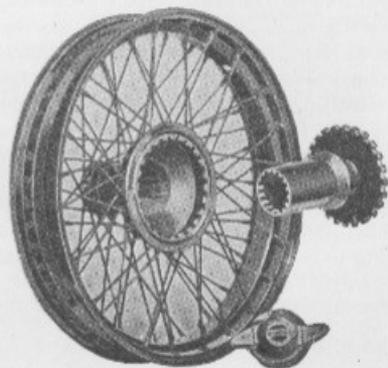
Racing Wire Wheels

Special racing wheels for Ford hubs. Sixty spokes, winged hub caps for quick change, clincher rim made for 26x3, 27x3 1/2, 28x3, 29x3 1/2, 30x3 1/2 and 31x4 tires. When ordering, state what color is desired, either white, cream, red or black can be furnished.

- No. 262—Price per set of 5 wheels and 4 hubs.....\$75.00

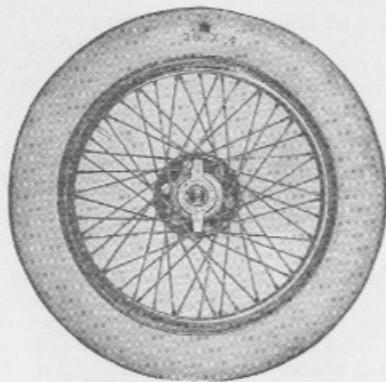
Special 28x4 drop center, straight side racing wheels, equipped with winged hub caps, dental drive, the lightest and fastest wheel to change. Tires can not be thrown or rolled off this wheel under any conditions.

- No. 263—Price per set of 5 wheels and 4 hubs for Ford.....\$125.00
 (Price for other makes on application.)



Flywheel Ring Gears (Steel)

For replacement when teeth are stripped off the fly wheel. Don't throw away your fly wheel when this happens. Install one of our steel gears and get a better job. Price on application for all makes of cars.
 Gears carried in stock.



Balloon Tires and Wire Wheels for Pleasure Cars

Special 28x4 straight side, flat base wire wheels, non-skid, 28x4 cord tires. These wheels installed on a touring car, coupe or sedan will greatly improve the riding qualities and the acceleration of the car as well as improve its looks.

No. 263A—Price per set of 5 wheels, 5 cord tires and tubes, spare wheel carrier

(Winged hub caps if desired).....\$175.00

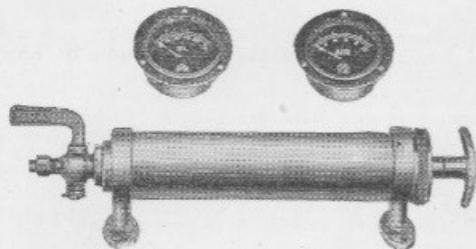
When ordering, state what color is desired, either white, cream, black or red.

Special racing tires, straight side, Century or Dayton, made to fit special drop center racing wheel. One set of these tires went through the 500-mile race at Indianapolis without a change.

No. 264—28x4 racing cords, price on application.

No. 265—28x4 inner tubes, price on application.

Hand-Pressure Pump



Hand pump for pressure on gasoline and oil tanks, fitted with 3-way valve.

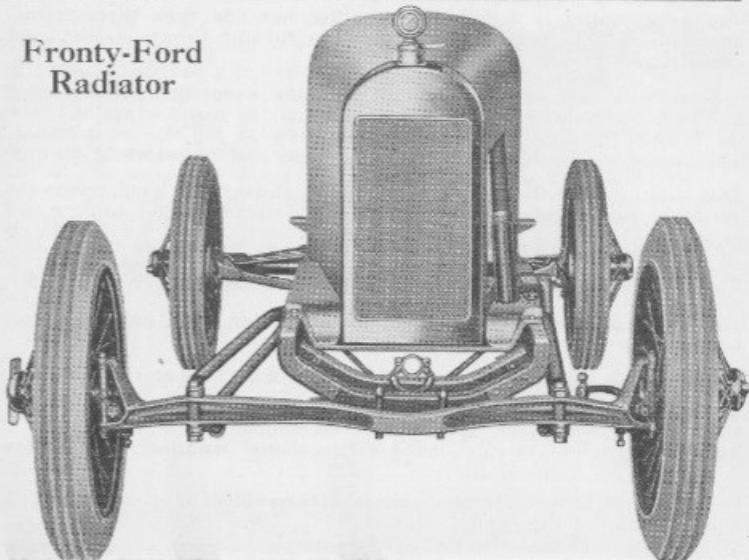
No. 266—Brass finish. Price.....\$6.00

No. 267—Nickel finish. Price.....7.00

No. 268—Air gauge, 10 lbs. Price.....3.00

No. 269—Oil gauge, 75 lbs. Price.....3.00

Fronty-Ford Radiator

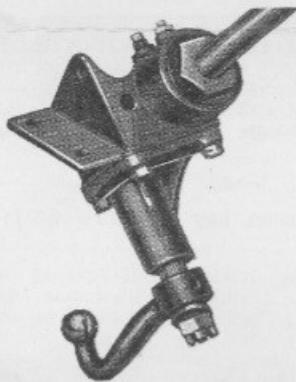


Of special design, with Fedders' new high-efficiency core. Very effective and beautiful. Unusually well made.

No. 272—Price.....\$75.00

No. 273—With nickel-plated shell, price.....85.00

No. 273A—With screen built-in shell, price.....80.00

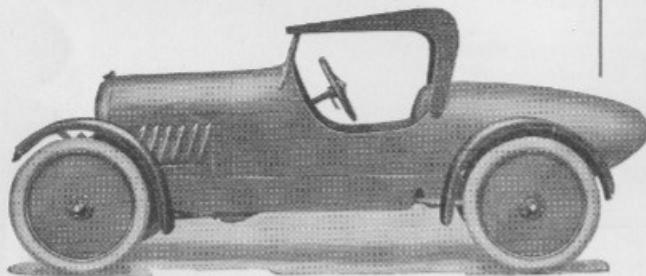


Ross Cam and Lever Steering Gear Ford Replacement

Designed specially for Fords equipped with balloon tires. Does away with all shimmying of front wheels. Makes steering easier and safer. Easy to install.

No. 282—
Price.....\$15.00

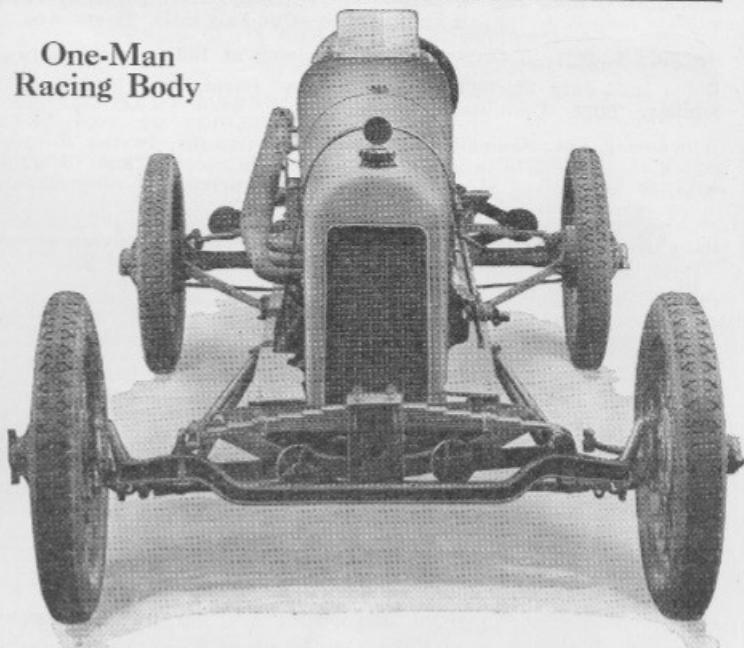
Speedster Body



This is our regular speedster body, designed for fast road cars. It is the product of eight years of experience in making special speed bodies for Ford cars. The body has seating accommodations for two full grown persons, is scientifically balanced to insure ease of control at high speeds, and is made to fit the standard Ford frame. Full set of underslinging parts is provided.

No. 275—Price.....\$100.00

One-Man Racing Body



One-man type, constructed especially for high-speed dirt track racing. Scientifically designed to give car proper balance and to reduce wind resistance to a minimum. All framework made of angle steel and strongly braced. Very light and strong. All tires can be seen from driver's seat.

(When ordering, give wheelbase of car; state if motor is set back, and if so, how much. Be sure to mention what method of underslinging is used.)

No. 274—Price.....\$125.00

No. 288—Windshield as shown on body, unbreakable glass.....\$20.00

Extra Equipment

Windshield, polished aluminum frame, polished manganese bronze top fittings. Plate glass ground on top edge.

No. 276—Price\$15.00

Top, tailored of double texture waterproof material. Easily demounted.

No. 277—Price\$22.50

Side curtains, perfect fitting, equipped with nickel-plated fasteners.

No. 278—Price\$10.00

Fenders, made of sheet steel, baked black enamel finish.

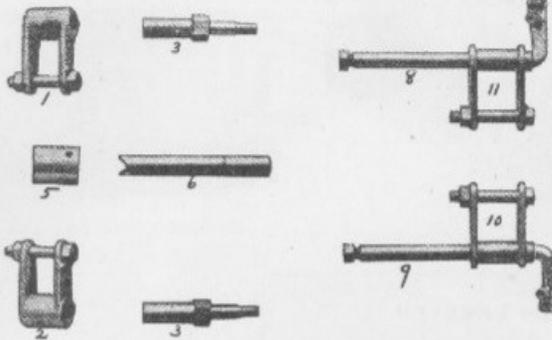
No. 279—Price, per set.....\$24.50

Wheel discs, latest model, add greatly to appearance of car.

No. 280—Price, per set.....\$6.00

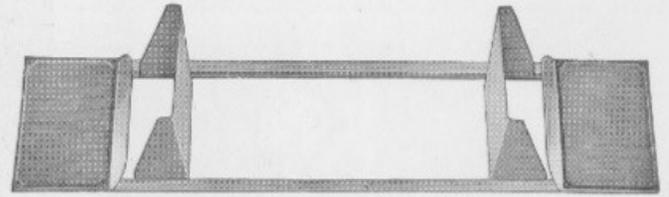
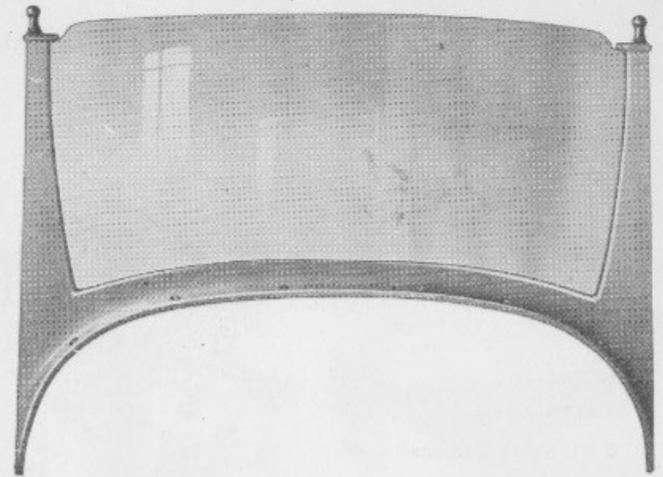
Aluminum step plates, polished aluminum, complete with all necessary fittings. Plates are practically indestructible, and add to strength of step. Installation simple.

No. 281—Price, per set.....\$7.00



UNDER-SLUNG PARTS

For speedster or road car. Correctly designed and easy to install.
No. 283—Price, per set.....\$10.00



3/8-IN RACING PLUGS

No. 285—Price, each.....\$1.50

SPECIAL METRIC RACING PLUGS

No. 286—Price, each.....\$2.00

Water Pump and Magneto Bracket Parts List

Name	Number Req'd	Price	Name	Number Req'd	Price
Front gear cover	1	\$ 8.50	Water pump shaft bearing	1	\$ 6.50
Main bracket	1	12.00	Water pump shaft bearing retainer	1	2.00
Water pump body	1	8.00	Water pump shaft bearing retainer bolts, each	3	.10
Water pump cover	1	8.00	Water pump cover screws (short)	6	.10
Water pump bushing, each	2	.50	Water pump cover screws (long)	1	.15
Water pump impeller	1	2.00	Water pump anchor bolts, each	2	.15
Water pump packing nut, R. H.	1	1.00	Water manifold	1	7.50
Water pump packing nut, L. H.	1	1.00	Water manifold studs, each	6	.10
Water pump alemite connection, each	2	.30	Water manifold stud nuts, each	6	.05
Water pump Woodruff key	1	.10	Bracket bolt (long)	1	.20
Water pump, taper pin	1	.10	Bracket bolt (short)	1	.15
Water pump shaft	1	5.00			
Water pump shaft driving gear	1	3.00			

Oiling System Parts List

Name	Number Req'd	Price	Name	Number Req'd	Price
Oil pump, complete	1	\$12.00	3/8 elbow overflow return	1	\$.40
Oil pump body	1	5.00	3/8 copper tubing intake line	1	.80
Oil pump cover	1	3.50	3/8 rubber tubing intake line	1	.40
Oil pump driving gear (steel)	1	3.00	3/8 copper tubing from pump to first tee	1	.50
Oil pump driving gear (bronze)	1	2.00	3/8 tubing from tee to by-pass	1	.40
Camshaft extension	1	5.00	3/8 rubber hose to by-pass	1	.40
By-pass	1	4.00	1/4 copper tubing, leads to main bearings, each	3	.20
3/8 elbow on base	1	.50	1/4 tubing from by-pass to gauge	1	.60
3/8 union on pump, each	2	.50	1/4 tubing from gauge line to rear transmission bearing	1	.80
3/8 front outside tee	1	1.00	3/8 tubing overflow line	1	.50
1/4 front inside tee	1	.80	1/4 rubber hose gauge line	1	.30
1/4 rear inside elbow, also used on bearing caps, each	4	.30	1/4 rubber hose rear transportation line	1	.30
1/4 union to gauge line	1	.25	3/8 rubber hose overflow line	1	.35
3/8 union to overflow line	1	.40	Oil pump cap screws, each	8	.10
1/4 tee to rear transmission bearing	1	.80			
1/4 elbow to rear transmission bearing	1	.50			

WHEN ORDERING, to avoid error, state both the number and name of the parts desired. Be sure to specify method of shipment. Send 25 per cent of the price with the order; the balance to be paid C. O. D. Our book, "How to Build a Fronty-Ford," gives complete detailed instructions on how to construct a Fronty-Ford racing car. It will be sent on receipt of \$2.00, or free of charge with orders amounting to \$50.00 or more.

CHEVROLET BROTHERS MANUFACTURING COMPANY

410 W. Tenth Street, Indianapolis, Ind.