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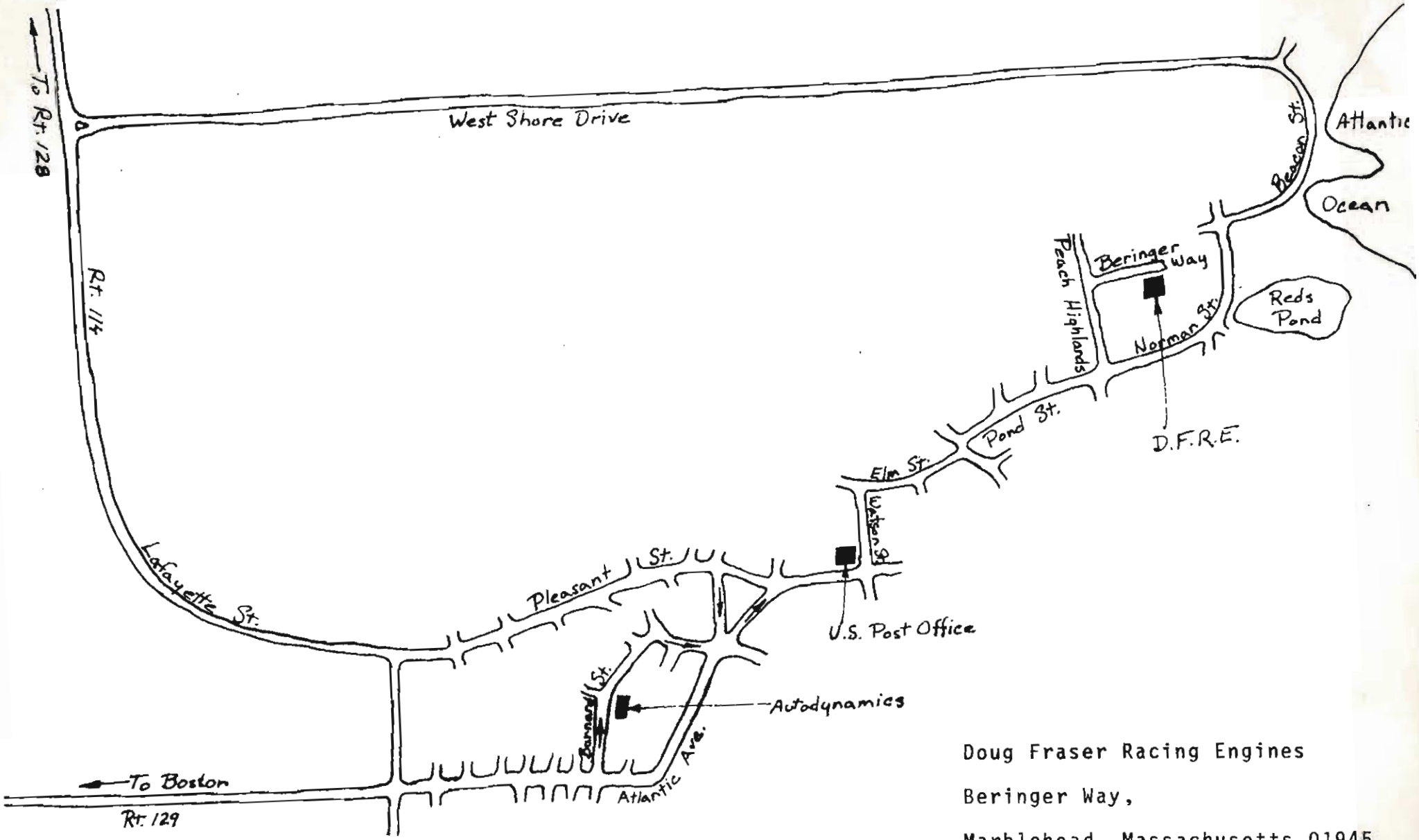
Doug Fraser Racing Engines



Doug Fraser Racing Engines

Beringer Way,

Marblehead, Massachusetts 01945

Phone: A/C 617 631-2500

Since the beginning of F/F racing in this country, Fraser Engines have been setting the standard for reliability and consistant performance. Right from the first SCCA F/F tear-down and the first ARRC F/F Championship, these engines have been the ones to beat. Our record is untouchable; in every ARRC F/F event Fraser engines have won the pole, won the race, set the fastest race lap, or all three.

At the first U.S. F/F National Championship, held at M.A.R. in St. Louis, Fraser engines finished 1st, 2nd, 3rd, and 5th. In 1970 Fraser engines won every major American and Canadian championship except the ARRC in which we won the pole and set the fastest race lap.

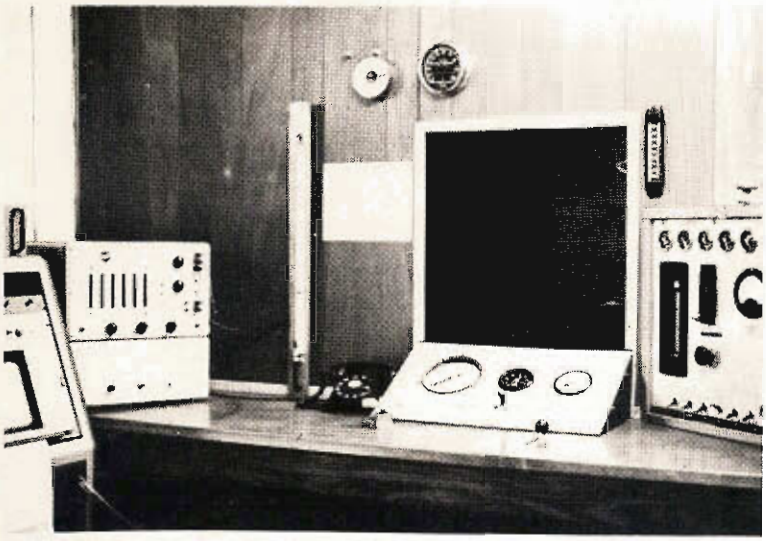
How we do it is no secret. By combining old world craft-manship with one of the most complete and up-to-date small racing engine development facilities in the country, we have been able to stay comfortably ahead of the competition, most of whom have had to rely on "seat-of-the-pants" development methods.

ENGINE SPECIFICATIONS:

- .Fully dry sumped
- .10:1 compression*
- .Line honed
- .Bored .030"o.s.*
- .Steel center main cap*
- .Crank Tufftrided & micropolished
- .All moving parts balanced
- .Head & manifold ported & polished
- .Rockers blueprinted (when permitted)
- .Cams selected on our electronic fixture
- .Rods glass shot peened
- .Gilmer water pump drive
- .All critical parts magnafluxed
- .Reworked distributor
- .Mechanical tach drive
- .Dyno tuned & checked
- .Complete with dyno & tuning specs
- .Complete with clutch & pressure plate

* except Uprated

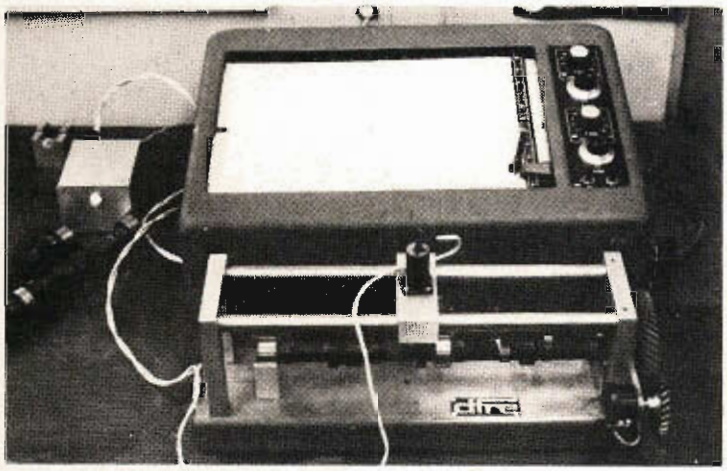
Price $1600.00 F.O.B. Marblehead



Our modern plant is devoted entirely to racing and classic engine work, and embodies the following facilities:

Stuska/Fraser electronically instrumented dynamometer with total engine/operator isolation. All readings are taken on an X,Y recorder which can record Hp. vs. RPM or Torque vs. RPM.

Other parameters are fed to a 4 channel strip chart recorder, and include such things as water temperature, oil temperature, oil pressure, piston ring blow-by, fuel flow, load temperature, and intake air temperature. This type of instrumentation eliminates operator error and allows instant evaluation of any change made during a development program.



Our in-plant facilities also include the newest model Stewart-Warner electronic balancer, Astroflux magnetic particle crack checking, Empire heavy duty glass shot cleaning and peening, full porting and polishing facilities, a filtered air clean room for engine assembly, our own unique electronic camshaft profile plotting system, a master tachometer with a basic accuracy of .0001%, line honing equipment, and..... countless other tools and machines collected especially for the development and construction of small, high performance engines. We also specialize in the restoration of antique and classic engines and are fully equipped to handle all of the unusual problems which may be encountered.

It is a commonly known fact that the "Uprated" engine produces more horsepower than the "original" or "Cortina" version. Why, then, do many drivers still prefer the Cortina?

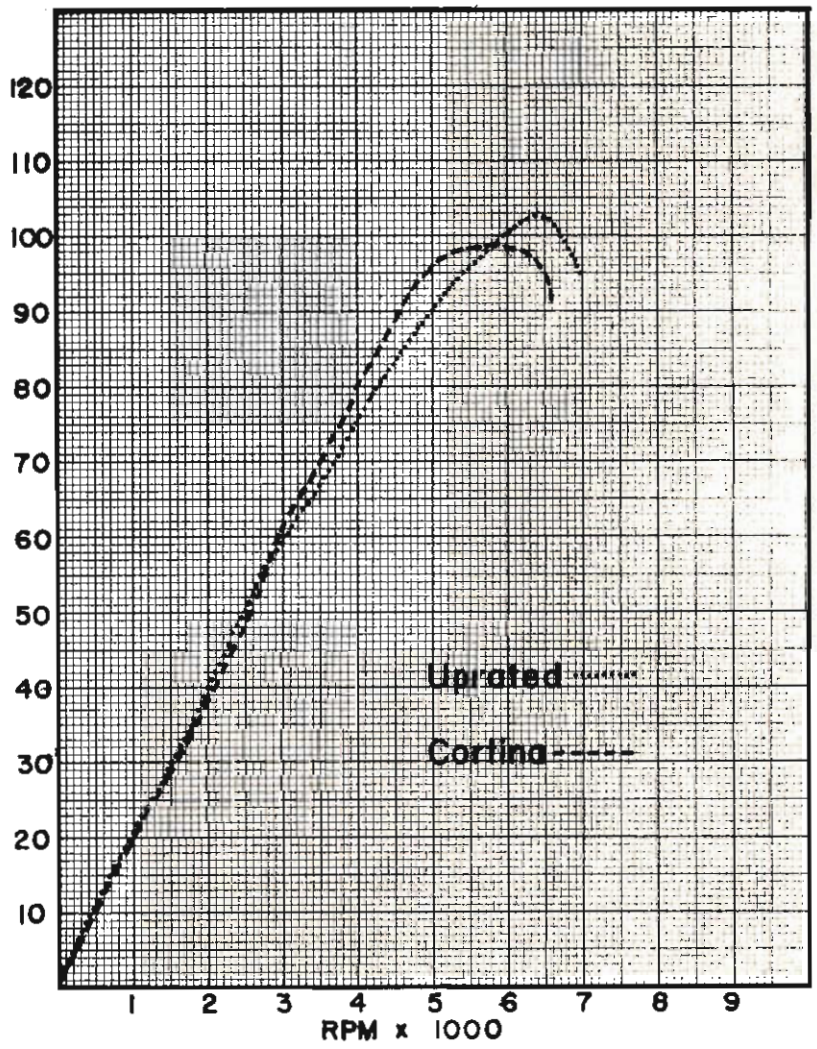
To try and answer that question we must remember that the straight line performance of a race car is governed primarily by weight vs. horsepower at lower speeds, and aerodynamics vs. horsepower at high speeds. The uprated engine has been handicapped by increasing the weight of the car by 5½% to offset it's 2-3% more usable power. So, generally, a car will perform better on a tight course with a Cortina, while an uprated may have an advantage on a longer, high speed course.

It has been our experience that the horsepower curve has been broader with the Cortina than it has been with the uprated, so in spite of the much higher horsepower claims for that version over the Cortina, the actual usable power difference is much less.

While on the subject of horsepower, we would like to try to put an end to the myth that there are legal F/F engines in existence with as much as 116 Hp. This is simply not true.

The most important and prestigous F/F race in 1972 was the first annual U.S. National F/F Championship held at M.A.R. in November. Our engines finished 1st, 2nd, 3rd, and 5th and not one of those engines had any more than 98.5 Hp. By that we mean Brake Horse Power, as established by the Society of Automotive Engineers. Any dyno can be easily calibrated to S.A.E. standards, and any engine builder who claims to have great gobs of horsepower is simply trying to make his engines seem stronger than anyone else's.

Our record has relieved us of the necessity of competing with other's unrealistic Hp. claims, so we feel we should set the record straight.



F/F LABOR RATES & SHOP SERVICES

COMPLETE UPDATE: 480.00

Includes disassembly and thorough inspection of all engine parts plus replacement and/or modification as required to bring the engine up to our own specifications. Includes Dyno testing but not parts or additional machine work.

REBUILD: 270.00

Straight rebuild includes replacement of any worn or broken parts as required to return the engine to its original condition. Does not include parts, machine work, or Dyno testing.

DYNO TEST: 85.00

Straight forward horsepower testing including reasonable time spent checking jetting, timing, and general engine condition. Additional time will be charged at our standard Dyno rate of 15.00/hr.

TEAR DOWN & EVALUATE: 50.00

Includes checking and/or magnafluxing all parts as required plus full written report.

SPECIALLY PREPARED F/F PARTS

NOTE: All prices are indicated as (outright/exchange).

CYLINDER HEAD:

Ported and polished - comes complete with valves and racing springs. These heads are prepared from seasoned cores when possible. Unless otherwise specified, however, a new head will be supplied when no used cores are available.

240.00/190.00

INTAKE MANIFOLD:

Ported and polished, with the carburettor face machined level.

60.00/45.00

ENGINE BLOCK:

From seasoned cores when possible. These are line honed, the bores are clearanced and honed, tappet bores reamed, decked as close as possible to the maximum compression ratio, all edges chamfered, drilled and tapped for oil inlet, and fitted with new cam bearings.

.030 original engine w/steel cap 375.00/250.00

uprated 325.00/200.00

CRANKSHAFT:

A new uprated crankshaft for use in either engine. Magnafluxed, Tufftrided, micropolished, and balanced. Very early Cortinas may require some light grinding on one boss to make these fit.

140.00/------

Indexed & Blueprinted 190.00/------

PISTONS:

A set of four. Glass Beaded, pin slip fitted, and balanced.

85.00/------

CONNECTING RODS:

A set of four. Magnafluxed, checked for straightness, glass shot peened, pin fitted, and balanced. With new rod bolts.

70.00/50.00

FLYWHEEL:

Lightened to minimum and balanced. 60.00/35.00

Lightened and balanced with pressure plate. 86.00/40.00

Lightened and balanced with new FIII clutch. 280.00/240.00

WATER PUMP:

Modified for minimum drag without sacrificing adequate cooling flow.

30.00/10.00

DISTRIBUTOR:

Vacuum advance removed and mechanical advance modified for optimum performance. Shipped with all advance specifications and static timing recommendations. Includes new points, condensor, rotor, and cap.

65.00/15.00

CARBURETTOR:

New. Choke and linkage removed, vacuum advance pipe removed and plugged, jetted, and fitted with our own low drag throttle butterfly screws.

135.00/------

ROCKER SHAFT:

Magnafluxed, blueprinted for increased lift, parkerized, and assembled on a micropolished shaft. One of the simplest ways to bolt on a little extra horsepower.

65.00/50.00

F/F PARTS

DRY SUMP PUMP: 150.00

Made especially for us by a reputable British manufacturer. A truly top quality oil pump. 5 port configuration. Side mount.

DRY SUMP PAN: 85.00

This is a very high quality cast aluminum oil pan, fully baffled.

GILMER WATER PUMP DRIVE: 40.00

Not only will this kit make your F/F engine look faster, it adds a lot to the dependability of the unit as well.

VALVE SPRINGS: 18.00

Super strong racing valve springs. These springs should last the life of your engine.

RINGS: 26.00

New super-trick "Barrel faced" top moly with a fast seating cast iron No.2 (for uprated, specify 1/16" or 5/64" top ring).

STEEL CAP: 16.00

Cosworth type steel center main cap.

VELOCITY STACK: *

A velocity stack cannot be developed on a dyno nor in an advertising department. Ours has been developed on a high speed oval track and has been proven to show a definite RPM increase over all others tested.

* Availability to be announced

EXHAUST SYSTEM:

Painstakingly developed on our dyno and at Charlotte Motor Speedway, this advanced F/F exhaust system incorporates every technological advancement made so far in this field. Four into one equal length, small diameter primaries, non-restrictive collector, and gradual taper megaphone.

150.00

Mounting bracket, megaphone to hewland 12.50

MECHANICAL TACH DRIVE KIT:

Consists of a machined front cover, cam drive adapter, and right angle gear box. (Please specify whether for 2:1 or 4:1 tachometer).

45.00

Shutoff type tachometer 9,000 RPM for use with shutoff kit below. *

Tell tale tachometer 9,000 RPM *

Cable for above. Specify length if other than 72" *

ENGINE SAFETY SHUTOFF/WARNING KIT:

This kit will either warn the driver or shut off the engine if there is a loss of oil pressure or if the engine temperature reaches a dangerous level. It consists of all the senders, wire, relay, connectors, audible warning alarm, and a dash mountable bypass switch.

45.00

SILICON IGNITION WIRE SET:

High tension ignition wire set. Silicon insulation with stainless steel conductor and molded plug connectors.

23.00

HEAD BOLT SOCKET:

Special ½" drive socket for torquing those hard-to-reach head bolts without removing the rocker shaft.

6.50

* Availability to be announced

SUPER-TRICK PARTS AND TOOLS

CYLINDER HONE:

Ideal for F/F use, this hone gives the perfect finish for use with our Moly rings. It is also ideal for F/V use or on any engine with a bore size between 3 and 3 1/2 inches. Shipped with special honing instructions.

16.00

HONING OIL:

Recommended for use with the above hone for a superior wall finish. 1/2 pint.

1.85

VALVE LAPPING PASTE:

Our own super-fine lapping paste. Specially developed by us for racing engine use. This paste insures a perfect gas-tight seal without damaging your high performance seat configuration.

3.25

OIL GALLERY BRUSHES:

A set of 9 top quality gallery cleaning brushes. Indespensable for overhauling any engine.

7.25

JET REAMER KIT:

An inexpensive way to stock an infinite variety of jets and really good in a pinch. A set of six (60 to 200) in a metal tube.

4.50

LEAKAGE TESTER:

An aircraft type of cylinder leakage tester for a very sensitive and accurate indication of ring and valve condition.

45.00

MACHINE SHOP PRICES

Line hone block	35.00
additional to fit steel cap	15.00
Bore & hone cylinders	10.00/hole
Deck blocks or heads	20.00
Magnafluxing	
Crankshafts	10.00
Connecting rods	2.00
Basic rate	20.00/hr.
Balancing	
4 cylinder assembly	45.00
6 cylinder assembly	55.00
8 cylinder assembly under 360 cu. in.	65.00
8 cylinder assembly over 360 cu. in.	75.00
Connecting rods	2.50
Pistons	2.00
Flywheel & clutch assembly	12.00
Basic rate	25.00/hr.
Glass shot peening	
Pistons	2.50
Connecting rods	2.50
Crankshafts	8.00
Basic rate	15.00/hr.
Micropolishing	5.00
Tufftriding	30.00
Blueprint crankshaft	55.00
Slip fit pistons or rods	1.50
Lightening F/F flywheel	25.00
Calibrate tachometer	15.00

FORMULA FORD ENGINE PARTS PRICELIST

Part No.	Description	Price
DIFZ 6008 A	Engine gasket set	10.67
DORY 6051 A	Cylinder head gasket-Cortina	3.74
711M 6051 CA	Cylinder head gasket-Uprated	6.00
DORY 6781 A	Oil pan gasket set	2.75
DFRE 9448	Exhaust gasket set	.85
DORY 6507 A	Inlet valve-Cortina	2.20
711F 6507 DIA	Inlet valve-Uprated	3.65
DORY 6505 A	Exhaust valve-Cortina	3.74
711F 6505 DIA	Exhaust valve-Uprated	5.17
DORY 6564 A	Rocker arm, left	1.70
DORY 6564 B	Rocker arm, right	1.70
DORY 6563 A	Rocker arm shaft	5.22
DORY 6565 A	Push rod	.52
DORY 6500 A	Cam follower, .436 dia.	2.03
DIFZ 6500 A	Cam follower, .565 dia.	2.00
DORY 6250 B	Camshaft-Cortina	31.00
701M 6250 BA	Camshaft-Uprated	33.83
DORY 6256 A	Camshaft sprocket	4.84
DORY 6268 A	Timing chain	4.45
DORY 6269 A	Camshaft thrust plate	1.06
DORY 6255 A	Thrust plate lock tab	.15
DORY 6258 A	Camshaft sprocket lock tab	.15
DIFZ 6284 A	Timing chain tensioner assembly	3.55
DIFZ 6285 A	Fiber tensioner block	1.35

DORY 6261 A	Cam bearing, front	1.10
DORY 6262 A	Cam bearing, center	1.10
DORY 6263 A	Cam bearing, rear	1.10
DIFZ 7600 A	Pilot bearing	3.95
DORY 6108 G	Piston assembly, .030-Cortina	15.80
711M 6102 MA	Piston assembly, std.-Uprated	17.05
DORY 6200 A	Connecting rod	9.90
DORY 6214 A	Connecting rod bolt (set)	3.60
DIFZ 6303	Crankshaft	98.50
DORY 6306 A	Crankshaft sprocket	4.89
DORY 6310 A	Crankshaft oil slinger	.15
DORY 6700 B	Seal, front	1.70
DORY 6701 A	Seal, rear	2.97
711F 6085 CA	Cylinder head, bare-Uprated	113.30
2737E 6085C	Cylinder head, bare-Cortina	121.49
DORY 6010 A	Cylinder block	128.20
DIFZ 6019 C	Timing chain cover	5.83
DORY 6335 A	Rear seal plate	4.62
105E 8501 A	Water pump assembly	20.90
105E 8530 A	Water pump bearing and shaft	10.78
DORY 7563 A	Clutch pressure plate	28.65
DORY 7550 A	Clutch disc	24.80
DORY 6375 B	Flywheel-Cortina	39.00
DORY 6375 BA	Flywheel-Uprated	39.00
711F 9424 HB	Intake manifold-Uprated	38.50
2737E 9425 B	Intake manifold-Cortina	34.54

711F 9510 FA	Carburettor-Uprated	121.66
2737E 9510F	Carburettor-Cortina	118.52
C5AZ 12171 A	Points	4.45
DORY 12300 A	Condensor	2.10
DORY 12106 A	Distributor cap	3.63
C8BH 12100 E	Distributor	48.85
DFRE M82742 P	Main bearings-Clevite 77	14.40
DFRE CB603 P	Rod bearings-Clevite 77	9.88
DFRE TW113 S	Thrust bearings-Clevite 77	1.45
92-1080-05	Carburettor tune up kit	5.45
92-0062-05	Carburettor gasket set	.65
41120.001	Main jets	1.25
41360.001	Air corrector jets	1.25
64240.011	Needle & seat	1.75
DFRE 8674	Rotor	.90

All prices listed in this catalogue are subject to change without notice. We will, however, notify you before shipping of any item which may have recently increased in price.

Massachusetts residents add 3% sales tax.

United Parcel Service will be used in preference to Parcel Post whenever possible.

DFRE will pay surface freight charges on all prepaid, domestic, parts orders. If customer specifies air freight or special handling, credit for lowest surface shipping rates will be allowed against freight charges.

DFRE will pay air freight charges on all prepaid, domestic complete engine orders to the airport nearest the customer's home.

When requesting shipments to be sent C.O.D. a deposit of 25% must accompany the order. Shipping charges will be included in the C.O.D. amount.

Cores will be accepted toward all exchange parts, assuming, of course, that these parts arrive at our factory prepaid and in good usable condition. If requested, we will machine and/or modify the customer's own cores.

There is a crating charge of $30.00 on complete engines which includes a sturdy, reusable, wood shipping crate.

Minimum order-$10.00.

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