

FORD THUNDERBIRD

1963-66

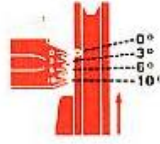


TUNE-UP AND WHEEL ALIGNMENT

FDC-11 CYLINDER NUMBERING SEQUENCE

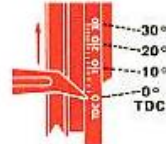


FIRING ORDER: 1 5 4 2 6 3 7 8



1963-64

TIMING MARK



1965



1966

ENGINE IDENTIFICATION

Code Location: 5th digit from left in vehicle warranty number on Vehicle Identification Plate, which is located on lock face of left front door or on left front body pillar.

1963	1964	1965	1966	Engine	Horsepower
Z	Z	Z	Z	V-8 390 4V	300*
M				V-8 390 6V	340
			Q	V-8 428 4V	345

* 1966, 315

BATTERY

Negative ground

1963-64	ATLAS Group No.	Ampere Hours
Optional	24	55, 65
1965-66 390 eng.	26F	75
W/Air cond., Optional	23F	53
1965-66 428 eng.	26F	75
	26F	75

COMPRESSION PRESSURE

(at cranking speed, engine warm, throttle open)

1963	1964	1965	1966	psi	Maximum Variation
Early models				180	20
Late models				190	20
				170-210	20

IGNITION SYSTEM

SPARK PLUGS

ATLAS Champion: 4-bbl. UF-11Y or F-11Y; triple 2-bbl. F-9Y

Gap: .032"-.036"

Torque: 15-20 ft. lb.

ATLAS P1-606	Cap. † (inches)	Dwell (degrees)	Variation (degrees @ rpm @ vac.)	Spring Tension (ounces)
Single points	.017	26-31 (set to 28)	6 @ 1000 @ 0"-25"	17-21
Transistor	.019-.021	22-24	6 @ 1000 @ 0"-25"	17-21

† New points set by gap or dwell. Used points must be set by dwell.

CONDENSER

ATLAS P2-605 Capacity: .21-.25 mfd

COIL

Autolite

	Conventional	Transistor
Engine stopped, points closed	4.5	Engine cranking 4.0
Engine idling	2.5	Engine idling 5.0

TIMING SETTING

(Before Top Dead Center unless otherwise specified)

Engine	390 4V	390 6V	428 4V
1963 Auto. Trans.	6° ± 1		
1964 Auto. Trans.	6° ± 1	6° ± 1	
1965 Auto. Trans.	6° ± 1		
1966 Auto. Trans.	10° ± 1		10° ± 1

* For high altitudes or optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting.

† If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC.

WHEEL ALIGNMENT

	Caster † (degrees)	Camber † (degrees)	Toe-In (inches)	Toe-Out on Turns (degrees)		Steering Axis Inclination (degrees @ degree camber)
				Outside Wheel	Inside Wheel	
1963 Low	-2 1/4	0	1/8			
1963 High	-3/4	+ 3/4	1/8	20	20 1/2	
1964 Low	-2 1/4	0	1/8			
1964 High	-1 1/2	+ 3/4	1/8	18 1/4-19	20	7 1/2 @ + 3/8
1965 Low	-3 1/4	+ 1/2	1/8			
1965 High	-1 1/2	+ 1/2	1/8	19 1/2	20	7 @ + 1/2
1966 Low	-2 1/2	0	1/8			
1966 High	-1 1/2	+ 1	1/8	19 1/2	20	7 @ + 1/2

† Maximum variation between wheels, 1/2°. 1965-66 caster and camber measurements must be made with alignment blocks installed.

FUEL SYSTEM

FUEL PUMP

AC mechanical

Pressure: 1963 4-6 lb., 1964-66 4 1/2-6 1/2 lb. All @ 500 rpm

Volume: 1 pint in 24 seconds @ 500 rpm

CARBURETOR ADJUSTMENT

Autolite, Holley	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
1963 390 4V	1-1 1/2	2 lean
1964 390 4V	1 1/2	1 lean
1965-66 390 4V	1-1 1/2	index
1963 390 6V (primary)	1-1 1/2	index
(secondary)	3/4-1 1/2	
1966 428 4V	1-1 1/2	1 rich

ENGINE IDLE SPEED

1963-65	1966	Auto. Trans. †
390 4V	390 4V	475-500 D
	390 6V	475-500 D
	428 4V	575-600 D
		475-500 D

† 1965-66 headlights and air cond. (if so equipped) turned ON.

CHARGING SYSTEM

BELT TENSION

A belt in operation for 10 minutes is considered a used belt. Use a strand tension gauge. Measurements are in pounds.

	Alternator	Power Steering	Air Cond.
Used	70-110	70-110	70-110
New	110-140	110-140	110-140

ALTERNATOR

Autolite *	Output † (amperes @ 2000 rpm)				Field Current Draw (amperes @ 12.0 V)			
	1963	1964	1965	1966	1963	1964	1965	1966
30	40, 42	42, 45	45	52	2.3-2.5	2.9-3.1	2.8-3.3	2.9

† If rated output cannot be obtained, engine speed may be increased to a maximum of 2900 rpm.

* Identification stamp color: 42 ampere, orange; 45 ampere, black; 55 ampere, red.

REGULATOR

Autolite	Voltage Limiter Setting (volts)			
Ambient Air Temperature °F.	50	75	100	125
Voltage	14.1-15.1	13.9-14.9	13.7-14.7	13.6-14.6
Field Relay Closing (volts)				
1963	4.0-5.0			
1964		3.0-4.0		
1965			2.5	
1966				2.5-4.0

VALVE CLEARANCES

Hydraulic lifters

TIRE PRESSURE

	LIGHT LOAD (to 750 lbs.)		FULL LOAD	
	Front	Rear	Front	Rear
8.00-14, 8.15-15	24	24	26	26
Sustained high speeds	26	24	28	28



1965



1964



1963

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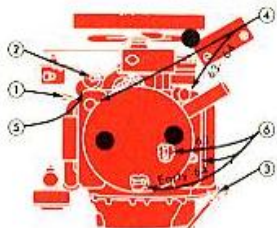
1963-66

SERVICE AT TIME OR MILEAGE - WHICHEVER COMES FIRST

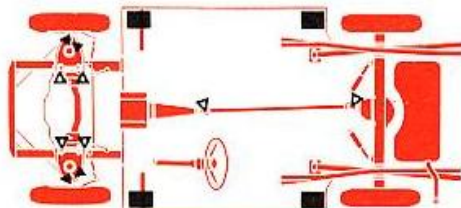
FDC-11A

HOOD RELEASE: Outside

FDC-11A



- ① Crankcase dipstick
- ② Fuel filter
- ③ Manifold heat valve
- ④ Oil fill cap
- ⑤ Oil filter
- ⑥ PCV valve



4-10 PLUGS
Use low pressure or hand gun

Check Chart

- Lift adapter position
- ▲ Plug
- △ Plug, some models
- Cooling system drain

MONTHLY

Battery check level

* EVERY 6 MONTHS OR 6,000 MILES

- Crankcase change oil
- Differential check level
- Oil filter replace
- Air cleaner paper element clean
- Brake master cylinder check level HB
- Manifold heat valve 1966 check MH
- Lubricate if shaft is not free
- Oil fill cap clean
- PCV valve, ex. jiggle-pin type clean
- Power steering reservoir check level FA
Without dipstick, fill to bottom of filler tube
- Transmission, automatic check level
Fluid warm, engine idling, in PARK

* EVERY 12 MONTHS OR 12,000 MILES

PCV valve, jiggle-pin type replace
Also clean all parts
ATLAS: 1963-64 PA-41, 1965-66 PA-55

* EVERY 24,000 MILES

Front wheel bearings, clean & repack WB
1963 models
Torque, 17-25 ft. lb.; back off nut 1/2 turn;
retighten to 10-15 in. lb. (finger-tight)

* EVERY 24 MONTHS

Cooling system change coolant
CAPACITY, quarts with heater 1963-65 16 3/4;
1966 17 1/4
Pressure, 12-15 pounds

* REPEAT SERVICES SCHEDULED AT SHORTER TIME OR MILEAGE

EVERY 30,000 MILES

Front wheel bearings, clean & repack WB
1964-66 models
Torque, 17-25 ft. lb.; back off nut 1/2 turn;
retighten to 10-15 in. lb. (finger-tight)

* EVERY 24 MONTHS OR 30,000 MILES

Air cleaner paper element replace
1963

* EVERY 36 MONTHS OR 36,000 MILES

Fuel filter replace
Air cleaner paper element replace
1964-66 with open PCV system
Power steering filter 1963-64 replace

* EVERY 36 MONTHS OR 100,000 MILES

Front suspension 4-8 plugs UN
Universal joints 1963-64 2 plugs UN
1965 repack UN
1966, no lubrication

SERVICE AS REQUIRED

- Tires rotate
Then balance wheels
- Distributor
Lubricate at time of tune-up
Shaft oil cup 10W MO
1965-66, no oil cup
Wick under rotor 10W MO
- Engine tune-up



KEY TO LUBRICANTS

- FA Esso Glide
- GX Esso Gear Oil GX
- HB Atlas Brake Fluid Heavy Duty 400
- MH Atlas Lock Ease
- MO Uniflo, Esso Extra, Mobiloil Super, Mobiloil Special
- UN Esso Unitol Grease
- WB Drum brakes: Esso Unitol Grease*
Disc brakes: Esso Wheel Bearing Grease*

* Caution—Remove old grease before repacking bearings.
* For Limited-Slip Differential: Use Specification No. ESW-M2C104-A for complete fills. Esso Gear Oil GX may be used alone for top-up.

CRANKCASE 4 quarts MO

except 1966 3 1/4 quarts
Change in Winter every 30 days*
in Summer every 60 days*

* But never exceed car manufacturer's recommendations

Add extra quart when replacing oil filter

MULTI-VISCOSITY

Below -10° to +32° 5W-30*
-10° to +90° 10W-30
Above 0° 10W-40
Above +32° 20W-40

SINGLE VISCOSITY

-10° to +10° 10W
+10° to +32° 20-20W
+32° to +90° 30
Above +90° 40

* Below -10° for sustained high speeds above 60 mph, use next heavier grade

TRANSMISSION, Automatic FA

CAPACITY, quarts	Initial Refill	Total Refill
Cruise-O-Matic	4	8 1/2
Automatic Dual Range	5	11*
(C6, 1966)		

* Dry capacity shown, fill only to FULL mark
To drain, remove 2 converter plugs; Automatic Dual Range, remove oil pan; all others, disconnect fill pipe

DIFFERENTIAL 90 GX*

CAPACITY, pints 1963-65 4 1/2, 1966 (axle identification tag attached to differential)—Conventional: WCD-M 4 1/2; WEF-D, -H 4 1/2; Limited-Slip: WCA-J 3 1/2; WEF-E, -I 4 1/2

LIMITED-SLIP IDENTIFICATION:
Axle model indicated by a letter on warranty plate at driver's door

TIRE ROTATION



BRAKES

Brakes are self-adjusting. Adjustment not normally required
Disc brakes, replace pad when shoe and lining has worn to .230"

Bleeding sequence: RR, LR, RF, LF

