OPERATOR'S INSTRUCTION BOOK 2650 RANGE



OWNER'S INSTRUCTION BOOK - EDITION 2

FORD 2650 RANGE **V4 AND V6 PETROL ENGINES**

2653E - V4 - 1699 cc
2654E - V6 - 1998 cc
2655E - V6 - 2293 cc
2658E - V6 - 2792 cc
2658EI - V6 - 2792 cc

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FOREWORD .

This book contains service instructions for 2650 Range engines.

The life of your engine unit and the delivery of the high performance built into it will depend on the care it receives throughout its life. It is the operator's responsibility to ensure that the maintenance operations outlined in this book are carried out regularly after the specified hours of operation have been reached. We consider it to be in your interests to enlist the aid of an authorised Ford Dealer not only when repairs are required, but also for regular maintenance. Industrial engines manufactured by FORD-WERKE AG, GERMANY, are available through Ford Industrial Power Products Dealers and Supervising Ford Companies throughout the world. When in need of parts or service, see your local Authorised Dealer. In the event of difficulties, communicate directly with the Supervising Ford Company in your area. A list of Ford Overseas Companies and District Offices is given at the back of this book.

ENGINES FROM THE 2650 RANGE



R.H. Side view of V4 Engine



V6 Engine with Fuel Injection System.

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ENGINE IDENTIFICATION

A code identifying the cubic capacity and the compression level is stamped on a machined lug cast into the left hand bank of the cylinder block just above the fuel lift pump aperture.

MWB	indicates	1,7 litre model	2653E LC
MYE	indicates	1,7 litre model	2653E HC
NYM	indicates	2,0 litre model	2654E.
YYH	indicates	2,3 litre model	2655E.
PYA	indicates	2,8 litre model	2658E.
PRB	indicates	2,8 litre model	2658E I.

Before Operation

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- 1. Before operating a new engine it should be thoroughly inspected to ensure that during transit and installation it has not suffered damage likely to affect its subsequent operation. Controls and instruments should be studied carefully in order that their functions may be thoroughly understood.
- 2. Open the cooling system drain cocks and flush the cooling system with clean water. Close the drain cocks. The system must be vented for filling.

To do this, disconnect the upper carburettor to heater hose at the automatic choke casing. Fill the cooling system, preferably with soft water to minimise corrosion, until water escapes from the automatic choke casing connection. Reconnect the hose. Where freezing is anticipated anti-freeze should be added to the system as detailed on page 21.

- 3. Fill the engine sump to the full mark on the dipstick with the correct grade of lubricant. See page 23.
- 4. Ensure that the battery is topped up and fully charged.

Running-In Procedure

A new or reconditioned engine must not be run at high speeds or on full load for the first 30 hours, but the loads and speed may be increased to a maximum over this period. After the first 50 hours running, a general check-over must be carried out as detailed under REGULAR MAINTENANCE.

Starting the Engine

TO START FROM COLD

- 1. Disconnect the driven equipment.
- 2. Open the fuel tank tap (where fitted).
- 3. On carburettor engines only, completely open and close the throttle twice to engage the automatic choke.
- 4. Switch on the ignition and operate the starter.

The engine will now run at an increased idling speed which will return to normal when the correct operating temperature has been reached.

TO RESTART WHEN WARM

- 1. Open the throttle or governor control slightly.
- 2. Switch on the ignition and operate the starter motor.

If, however, the engine fails to start proceed as for normal cold starting.

NOTE: Do not operate the engine at full speed and/ or power immediately from cold – these should be progressively built up.

TO STOP THE ENGINE

1. Switch off the engine by means of the ignition key.

If the halt is likely to be of some duration the fuel tank tap (where fitted) should be turned off.

LUBRICATION AND MAINTENANCE

The importance of correct lubrication, periodic inspection and adjustment cannot be overemphasised. On it will depend, to a very large extent, the service which the engine will give.

Regular attention to the points mentioned in the next few pages will be amply repaid in long life, and reliability.

Your Authorised Ford Dealer is equipped with specialised equipment and highly trained mechanics and he will be pleased to advise you of the maintenance schemes available.

For convenience, lubrication and maintenance work has been divided into the following periods:-

SUMMARY OF REGULAR MAINTENANCE

Page No.		Daily	After first 50 hrs or 2,500 kms (1,500 mls)	After first 100 hrs or 5,000 kms (3,000 mls)	After every 100 hrs or 5,000 kms (3,000 mls)
9	Check level of engine oil and, if necessary, top-up	Х			
9	Check level of coolant and, if necessary, top-up	Х			
10	Retighten the sump, cylinder head, inlet manifold and				
<u>_</u>	rocker cover bolts.		Х	Х	
10	Change engine oil.		Х	Х	X
11	Change engine oil filter.			Х	Х
11	Check level of battery acid and, if necessary, top-up.			Х	Х
11	Clean and protect the battery terminals.			Х	X
12	Adjust fan belt.			Х	X
12	Clean fuel lift pump			X	X
12	Clean ventilation valve and duct		-	X	X
13	Clean or renew air cleaner paper element.			X	X
14	Clean and adjust or, if necessary, renew sparking plugs.			X	Х
14	Oil distributor lubricating felt.		X	X	Х
14	Adjust or, if necessary, renew contact breakers				
	(4 cylinder engines only)			X	X 1
15	Adjust ignition timing.			X	X
18	Adjust idling speed setting.			X	X
19	Check and, if necessary, adjust valve clearances			X	X
·		1	I	l	

NOTE: The above Service Schedule gives the maximum recommended service periods. Since operating conditions can vary, it may be found advisable to carry out some operations, for example, 8 changing the engine oil, at an interim period. Your operating experience is the best guide for determining this time.

REGULAR MAINTENANCE OPERATIONS

Check level of engine oil and, if necessary, top-up.

Ensure that the equipment is standing level. Withdraw the dipstick and wipe it with a clean rag. Replace it fully and withdraw again. The mark made by the oil on the dipstick scale (Fig. 1) will indicate the engine oil level. If necessary, oil should be added, via the filler in the RH rocker cover.

Check level of coolant and, if necessary, top-up.

Make sure that the water in the radiator has cooled down and then remove the radiator cap SLOWLY. Top-up with coolant to 13 to 25 mm (0,5 to 1 in) below the radiator filler neck. Soft water should preferably be used to limit corrosion. If the system has been previously filled with an anti-freeze solution it should be topped up with a solution of the same concentration. Replace the filler cap and tighten securely.



Fig. 1 Checking engine oil level.



Fig. 2 Cylinder head bolt tightening sequence

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Retighten the sump, cylinder head, inlet manifold and rocker cover bolts

In the case of a new engine, or after new gaskets have been fitted, it will be necessary to retighten the sump, cylinder head, inlet manifold and rocker cover bolts to the correct torque (See Page 29) to compensate for initial gasket settling.

To avoid distortion the cylinder head bolts should be tightened in the order shown in Fig. 2. On initial assembly the bolts specified above are tightened in stages (See Page 29) but when retightening, it will only be necessary to torque to the final figure.

Change engine oil

Make sure that the equipment is standing level with the engine switched off and preferably hot. Remove the drain plug from the oil pan and drain the oil into a suitable container.

Replace the drain plug. If it is desired to change the oil filter this should be done prior to filling the sump with the correct quantity and grade of engine oil.

Change engine oil filter

Unscrew and remove the old oil filter canister with the aid of a suitable strap wrench (See Fig. 3) Remove all traces of dirt from the oil filter mount flange on the cylinder block, taking care not to dislodge any dirt particles into the cylinder block oil passages. Screw on the new unit ensuring that rubber sealing ring is correctly located.

Check level of battery acid and, if necessary, top-u

The electrolyte level should be 6 to 9 mm (0,25 to 0,38 in) above the top of the plates. The level may be raised, if necessary, by the addition of distilled water.

Clean and protect battery terminals

If corroded, clean the battery terminals (See Fig. 4 with an ammonia solution and coat them with petroleum jelly for future protection.



Fig. 3 Removing the oil filter canister



Fig. 4 Typical Battery



Fig. 5 Fan belt adjustment 1. Adjusting strap bolt 2. Pivot bolt

Adjust fan belt

The fah belt should have 13 mm (0,5 in) free movement when measured midway between the fan and alternator pulleys (See Fig. 5).

If adjustment is required slacken the two pivot bolts and the adjusting strap bolt. Move the alternator to give the correct belt tension and retighten the bolts.

Clean fuel lift pump - carburettor engines

Disconnect and plug the fuel inlet hose. Unscrew the filter cover fixing screw and remove the cover, taking note of the condition and position of all sealing rings. The filter screen can now be withdrawn for cleaning. The reassembly is simply a reversal of the dismantling procedure.

Clean ventilation valve and duct

Disconnect, at the valve end, the ventilation hose connecting the ventilation valve to the L.H. rocker cover. Unscrew and remove the ventilation valve and clean it thoroughly in paraffin. Check the operation of the valve and the condition of the threads. Before replacing it, the duct in the carburettor sandwich plate, leading from the valve to the inlet tract, should also be thoroughly cleaned. This can be facilitated by unscrewing the horizontal plug at the end of the duct. Reassembly is a reversal of the dismantling procedure.

Clean or renew air cleaner paper element – carburettor engines

Remove the air cleaner top cover and lift out the paper element. Clean the air cleaner casing being careful to avoid dirt particles entering the carburettor venturi. If the old element is still serviceable it may be cleaned by thorough shaking, checked for perforations, by viewing with a bright light held inside, and replaced in the air cleaner casing. If the old element is found to be in need of replacement a new Ford filter element should be fitted and the cover replaced.

Renew air cleaner element – fuel injection engines.

- 1. Disconnect battery.
- 2. Unclip cleaner (two clips at each end) from housing. Fig. 6 shows front clips.
- 3. Partially remove cleaner, detach intake pipe and remove cleaner and filter assembly, Fig. 7.
- 4. Discard air cleaner element.
- 5. Insert new air cleaner element.
- 6. Place assembly in position and refit intake pipe.
- 7. Ensure filter and cleaner are correctly located onto housing and secure four clips.
- 8. Reconnect battery.



Fig. 7 Air cleaner removal - fuel injection engines

Clean and adjust or, if necessary, renew sparking plugs

Disconnect the high tension leads from the sparking plugs and using a proper sparking plug spanner, to avoid damaging the insulator, remove the plugs. If the plugs are still serviceable, clean the plug porcelain and remove all carbon from the electrodes.

Sparking plug gaps should be checked with feeler gauges and, if necessary, set to give a gap of 0.6 mm (0.025 in).

Refit the plugs and leads.

Oil distributor lubricating felt

Remove the distributor cap and rotor and apply two drops of oil to the felt pad in the distributor shaft.

On distributors fitted with contact breaker points, apply a film of petroleum jelly to the contact breaker cam.

Reassemble the distributor.

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Adjust or, if necessary, renew contact breakers

Contact breaker type distributors are now fitted to the 2653E four cylinder engines only and are of Bosch manufacture.

The 2654E/5E/8E and 8EI six cylinder engines are equipped with 'breakerless' distributors manufactured by either Bosch or Motorcraft. The Bosch distributor has a dark red cap and the Motorcraft distributor has a blue cap; they are not adjustable except for timing purposes.

Bosch distributors – To renew the contact breakers, disconnect the short lead connecting the contact breakers with the low tension terminal by pulling-off the blade connection at the terminal end. Unscrew the screw securing the contact breaker assembly to the distributor base plate and discard the old contact breaker and lead assembly. Simply reverse this dismantling procedure to fit the new set of contact breakers.

To adjust the contact breakers ensure that the moving contact breaker heel is on the highest part of the cam, and, with the adjustment screw loosened, move the fixed contact to give a clearance of 0,4 to 0,5 mm (0,016 to 0,020 in). Tighten the adjusting screw and recheck the gap.

Adjust ignition timing

The timing is indicated by a notch in the crankshaft pulley and a scale marked in 3° divisions on the cylinder front cover (Fig. 8 – 4 cylinder engines. Fig. 9 – 6 cylinder engines).

If the distributor has been removed from the engine, rotate the crankshaft in the running direction so that No. 1 piston (front right hand bank) is at the correct number of degrees BTDC on the firing stroke i.e. both valves closed; see 'General Specifications' on Page 30 for the relevant setting.

Ensure that the distributor is in good condition and that the contact breaker points (where applicable) are correctly gapped.

Set the rotor arm pointing towards the dot at the periphery of the distributor (Fig. 10 - Motor-craft distributor, Fig. II - Bosch distributor).

Fit the distributor so that the vacuum unit is approximately at right angles to the crankshaft axis and pointing towards the right hand cylinder bank (Fig. 13 - 4 cylinder engines, Fig. 14 - 6 cylinder engines). If difficulty is experienced in engaging the distributor gear, the unit should be rotated slowly back and forth until the teeth engage correctly.



Fig. 9 Crankshaft timing marks - 6 cyl.



Fig. 10 Rotor alignment Motorcraft distributor



Fig. 11 Rotor alignment Bosch distributor

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As the unit is pushed home the rotor will rotate in an anti-clockwise direction, due to the helical driving gear. On six cylinder engines fitted with Motorcraft distributors, remove the rotor arm and, if necessary, turn the complete distributor until the No. 1 rotor segment aligns with the marks on the coil trigger housing — see Fig. 12. On six cylinder engines fitted with Bosch distributors, remove the rotor arm and, where necessary turn the complete distributor until all six rotor segments align with all six trigger points. Replace the rotor in either case.



- Fig. 12 No. 1 rotor segment lined up with marks on trigger housing.
 - A Trigger coil housing B – No. 1 rotor segment

On four cylinder engines, turn the complete distributor as necessary to align the rotor arm Fit the dot on the distributor periphery — see Fig. 11 Fit the distributor locking plate and finger tighten the retaining bolt((Fig. 13).

On 4 cylinder engines, the ignition timing can be set as follows: –

Check that the engine timing marks are still aligned with No. 1 piston at the specified No. of degrees BTDC on the firing stroke (See Page 30).

Disconnect the low tension leads from the coil and connect a bulb of the same voltage rating as



Fig. 13 The distributor locking plate and bolt – 4 cylinder engines Fig. 14 Distributor and plug lead positions — 6 cylinder engines.



Fig. 15 Distributor and plug lead positions – 4 cylinder engines.







Fig. 16 Idling speed adjustment – twin venturi carburettor

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Fig. 17 Idling speed adjustment - fuel injection equipment

the coil across them. Switch on the ignition and rotate the distributor body clockwise until the lamp is lit and then anti-clockwise until it is just extinguished. Tighten the distributor locking plate bolt and replace the cap and leads as shown in Fig 15.

On 6 cylinder engines a stroboscopic timing light must be used to set the ignition timing accurately; the correct method is as follows:--

Use a piece of white chalk to 'highlight' the crankshaft pulley timing notch.

Disconnect and plug vacuum pipes. Connect timing light to engine as per manufacturers instructions, start engine and allow to idle at specified idle speed.

Check ignition timing. Refer to General Specifications on Page 30.

To adjust timing, stop engine, loosen distributor clamp bolt using Tool No. 21–079 and rotate complete assembly. Tighten clamp and recheck timing.

Adjust the idling speed setting

In order to conform to ECE R15 01 regulations concerning emission control, all 2650 range engines derived from current production automotive engine assemblies, are fitted with tamper proofed fuel control equipment.

The fuel injection equipment and carburettors are fitted with seals over the mixture control screws which should only be removed by authorised dealers equipped with emission measurement equipment.

The idle speed adjustment screw can, however, be adjusted by the operator and its location can be identified by reference to Figs. 16 and 17.

The idling speed should always be set with the engine at normal operating temperature.

Engines fitted with carburettors should have an idling speed of 800 ± 25 rpm.

Engines fitted with fuel injection equipment should have an idling speed of 900 ± 25 rpm when fitted with manual transmissions and 850 ± 25 rpm when fitted with automatic transmissions.

Check and, if necessary, adjust valve clearances

The valve clearances should be checked when the engine is cold. The specified clearances for all the engines in the 2650 range are 0,35 mm (0,014 in) for the inlet valves and 0,40 mm (0,016 in) for the exhaust valves.



Fig. 18 Adjusting the valve clearances

To adjust the valve clearances remove the rocker cover fixing bolts and both rocker covers. Turn the engine over until the valve to be adjusted is in the correct position and adjust the clearance with the aid of feeler gauges and a suitable ring spanner. See Fig. 18. Turn the self locking adjuster clockwise to decrease and anti-clockwise to increase the clearance.

To obtain the correct adjustment sequence, for four cylinder engines, consider cylinders 1 and 4 to be paired together — likewise cylinders 2 and 3 (See Fig. 15 for cylinder identification).



Fig. 19 V4 Cooling system (Single acting thermostat situated in water outlet)

With the inlet valve of No. 1 cylinder open adjust the inlet valve of No. 4 cylinder and vice versa.

With the exhaust valve of No. 1 cylinder open adjust the exhaust valve of No. 4 cylinder and vice versa. Treat cylinders 2 and 3 in the same way.

To obtain the adjustment sequence for six cylinder engines, consider cylinders 1 and 5, cylinders 4 and 3 and cylinders 2 and 6 to be paired together (See Fig. 14 for cylinder identification) and proceed as for 4 cylinder engines.

When all valves have been adjusted correctly examine the condition of the rocker cover gaskets and, if necessary, renew. Replace the rocker covers and check for leaks. If new rocker cover gaskets have been fitted the fixing bolts will require retorquing after 50 hours running.

GENERAL MAINTENANCE

The following section outlines some features of general maintenance which will be of value to the operator.

Cooling System (Figs 19 & 20)

To obtain the maximum engine service life its operating temperature must be maintained by an efficient cooling system.

Keep the radiator fins clear of obstructions at all times.

Protect the cooling system with anti-freeze when operating conditions warrant. 'Motorcraft Antifreeze — Plus' has long life characteristics and if the concentration is kept above 45% strength, it will provide adequate protection and inhibiting for up to two years.

NOTE: – Never run an engine when the cooling system is empty.

Never top up a very low radiator or re-fill the cooling system with cold water when the engine is hot otherwise damage could be caused.

The radiator is normally equipped with a pressure cap. It is dangerous to remove this when the system is very hot. Even when slightly hot remove with caution, alowing all pressure to be relieved and all steam to escape before completely removing the cap.



Fig. 20 V6 Cooling system (Double acting thermostat situated in water inlet)

LUBRICATION SYSTEM

The lubrication system should be maintained regularly with the correct grade of lubricant as specified in the maintenance summary. The system



Fig. 21 V4 lubrication system

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is of the force feed type, the lubricating oil being circulated to the engine bearings under pressure by an oil pump driven from the camshaft (Fig.21 & 22).



Fig. 22 V6 lubrication system

The dipstick (Fig. 1) provides some guide to the condition of the oil. An additive type of oil keeps soot in suspension, and even a small amount of soot causes the oil to darken rapidly. However, if the dipstick is found to be heavily coated with sludge, then obviously the oil should be changed. The presence of beads of moisture on the valve rockers, as seen through the oil filler cap aperture, indicates adverse running conditions. When this occurs, more frequent draining and renewal of the oil is highly desirable.



LUBRICANTS

The oil used must meet Ford Specification SSM-2C-9001AA and must be of the viscosity shown below to suit the ambient temperature. Lubricating oil cleanliness is vital for the successful operation of your engine. The oil should be stored



Fig. 23 Engine ventilation system

in the cleanest possible conditions. When changing or topping-up the engine oil, use only clean receptacles. Do not allow the oil to come into contact with the rubber hoses on the engine.

VENTILATION SYSTEM

2650 range engines are equipped with a closed ventilation system (Fig. 23).

Fresh air, drawn through the air cleaner inlet spout passes through a flame-proof filter element and

thence into the engine, via a short hose attached to the right hand rocker cover. The air then passes through the engine and is drawn, through a pressure sensitive valve, into the inlet tract, via another short hose attached to the left hand rocker cover.

In this way efficient engine ventilation is guaranteed and crankcase fumes are reconsumed by the engine.

ELECTRICAL SYSTEM

BATTERY

A NEGATIVE EARTH SYSTEM IS USED ON ALL THE ENGINES IN THIS RANGE.

Ensure that the correct battery terminal is connected to a good earth on the framework of the equipment.

Distilled water for battery use should be kept in clean, covered non-corrodible vessels. In cold weather, add water only immediately before running the engine, so that the charging will mix the water and electrolyte: this will prevent freezing.

If the battery is allowed to stand in frosty weather in an unduly discharged condition there is a possibility that it may freeze, causing damage to the container. Take care, therefore, to keep the battery as fully charged as possible — specific gravity 1,275 at 21° C (70° F).

Special precautions should be taken when operating in cold climates to prevent the battery state from falling below the conditions indicated by the following specific gravities:

> 1,200 specific gravity at -18° C (0°F) 1,245 specific gravity at -29° C (-20° F) 1,265 specific gravity at -35° C (-30° F).

The battery should not be allowed to become unduly discharged, or to stand in a run-down condition.

Keep the battery filler plugs and connections tight, and the top of the battery clean. Wiping the battery with a rag moistened with ammonia will counteract the effect of any of the solution which may be on the outside of the battery. A coating of a good grade of petroleum jelly will protect the terminals from corrosion.

ALTERNATOR

This is mounted on a bracket on the right of the cylinder block (viewed from the flywheel) and is driven from the crankshaft by the fan belt.

The charging rate is adjusted automatically by an internal regulator to provide sufficient electric current to keep the battery fully charged under normal operating conditions.

Alternator bearings are lubricated for life at assembly and therefore require no lubrication maintenance.

USE OF 'JUMPER' CABLES

To avoid the possibility of extensive damage to your charging system it is important to observe the following points when using battery 'jumper' cables to start an engine having a discharged battery. The positive (+) terminals of the batteries must be connected through one cable (usually red), and the negative (-) terminals connected through the other cable (see Fig. 24). After starting do not disconnect the 'jumper' leads while the engine is running at over 1000 rpm (or fast idle).

CAUTION: Since explosive hydrogen gas is always present, sparks or flames should not be allowed near the battery. When using battery 'jumper' cables, the cables should always be attached to the booster battery first to reduce the possibility of sparks near a charged battery.



Fig. 24 Correct connection of Booster Battery

STARTER MÖTOR

The starter motor is mounted on the left hand side of the engine (viewed from the flywheel) and it requires no attention beyond seeing that the cable connections are clean and tight, the commutator is kept clean and the brushes are renewed when necessary.

ELECTRICAL CONNECTIONS

Periodically check all electrical connections to ensure that they are clean and secure and that no leads show signs of fraying.

FUEL TANK AND LINES

From time to time the fuel should be drained completely and the system flushed to prevent the accumulation of dirt.

ENGINE FAULT FINDING CHARTS

Battery run down _____ Lead disconnected or corroded __

Egulty starter p

	ENGINE WIL
Starter does not crank engine	
IGNITIC	DN

r durcy star tor inster	<u> </u>	
2 P	IGNITION No spark at plug gaps	
Spark plugs oiled up		No
Spark plug insulators cracked		
	DISTRIBUTOR	Ч
	No spark at plug leads	
Cracked rotor Loose low tension lead Faulty distributor cap Dirty or worn contact breaker points Faulty condenser or connections Carbon brush not making contact		
	COIL	
	No spark at HT lead	
Coil burnt out High tension lead loose or broken Faulty ignition switch Contact breaker points not opening or closing LT circuit		

Note: References to contact breaker points apply to 4 cylinder engines only. Listed carburettor faults are not applicable to the 2658EI engine - suspected faults in the petrol injection equipment should be referred to your Ford Dealer.





Nm	kgf m	lbf ft
88 to 102	9,0 to 10,4	65 to 75
28 to 34	2,9 to 3,4	21 to 25
41 to 49	4,2 to 5,0	30 to 36
41 to 49	4,2 to 5,0	30 to 36
64 to 69	6,5 to 7,1	47 to 51
61	6,0	43
13 to 16	1,3 to 1,7	9,5 to 12
14 to 16	1,4 to 1,7	10 to 12
8,8 to 13	0,9 to 1,3	6,5 to 9,5
41 to 47	4,2 to 4,9	30 to 35
3,9 to 6,8	0,4 to 0,7	2,9 to 5,0
6,8 to 9,5	0,7 to 1,0	5,0 to 7,0
3,9 to 6,8	0,4 to 0,7	2,9 to 5,0
6,8 to 9,5	0,7 to 1,0	5,0 to 7,0
43 to 54	4,0 to 5,5	32 to 40
54 to 68	5,5 to 7,0	40 to 50
87 to 106	9,0 to 11,0	64 to 78
3,9 to 7,1	0,4 to 0,8	2,9 to 5,2
20 to 24	2,1 to 2,5	15 to 18
12 to 16	1,2 to 1,6	9,0 to 12
28 to 38	3,0 to 4,0	21 to 28

GENERAL SPECIFICATION

pe V4 V6 V6 V6 V6 V6 90 84 90 93 <t< th=""><th>in the the</th><th>2653E(LC & HC)</th><th>265E</th><th>2655E</th><th>2658E</th><th>2658EI</th></t<>	in the the	2653E(LC & HC)	265E	2655E	2658E	2658EI
re (mm) 90 84 90 93 oke (mm) 66,8	Туре	V4	V6	V6	V6	V6
oke (mm) 66,8 60.14 68.5 68.5 ept Volume (cc) 1699 1998 2293 2792 mp Ratio 7,75:1 & 8,75:1 9:1 9.2:1	Bore (mm)	90	84	90	93	}
ept Volume (cc) 1699 1998 2293 2792	Stroke (mm)	66,8	60.	14	68.	.5
mp Ratio 7,75:1 & 8,75:1 9:1	Swept Volume (cc)	1699	1998	2293	279)2
ing Order 1342 142536 lve Clearance (Hot) 0,350mm (0,014in) et 0,350mm (0,014in) haust 0,400mm (0,016in) el Octane Rating 90 & 97 rburettor (Downdraft) 97 Pressure (Normal 3,2 to 3,9 bar (3,2 to 4,0 kgf/cm² or 46 to 57 lbf/in²)	Comp Ratio	7,75:1 & 8,75:1	9:1		9.2	:1
Ive Clearance (Hot) 0,350mm (0,014in) et 0,350mm (0,014in) haust 0,400mm (0,016in) el Octane Rating 90 & 97 rburettor (Downdraft) 97 Pressure (Normal 3,2 to 3,9 bar (3,2 to 4,0 kgf/cm² or 46 to 57 lbf/in²)	Firing Order	1342		142536		
et	Valve Clearance (Hot)					
haust 0,400mm (0,016in) el Octane Rating 90 & 97 97 rburettor (Downdraft) Twin Venturi Fuel Injection Pressure (Normal 3,2 to 3,9 bar (3,2 to 4,0 kgf/cm² or 46 to 57 lbf/in²) Fuel Injection unning)	Inlet		C),350mm (0,014in)	and the second	
el Octane Rating 90 & 97 97 97 97 Fuel Injection rburettor (Downdraft) Twin Venturi Fuel Injection Pressure (Normal	Exhaust		(),400mm (0,016in)	1 (1997) 1 (1997) 1 (1997)	
rburettor (Downdraft) Twin Venturi Fuel Injection Pressure (Normal 3,2 to 3,9 bar (3,2 to 4,0 kgf/cm ² or 46 to 57 lbf/in ²) Fuel Injection Junning)	Fuel Octane Rating	90 & 97 —		97		
Pressure (Normal 3,2 to 3,9 bar (3,2 to 4,0 kgf/cm ² or 46 to 57 lbf/in ²)	Carburettor (Downdraft)		Twin Venturi	and a state of the second s		Fuel Injection
lunning)	Oil Pressure (Normal		3,2 to 3,9 bar (3,	2 to 4,0 kgf/cm ² or 46	to 57 lbf/in ²)	CONTRACT REAL PROPERTY.
성장 방법 방법 방법 그는 것 같은 것 같	Running)					
Filter Capacity 0,4 litre (0.7 pint)	Oil Filter Capacity			0,4 litre (0.7 pint)		
mp Capacity (inc 3,75 litre (6,6 pint) 4.25 litre (7.5 pint)	Sump Capacity (inc	3,75 litre (6,6 pint) —	<u>internet i server a se</u> Transformation	4.25 litre (7.5	pint)	an the second of the
ilter)	Filter)					
ntimum Coolant	Optimum Coolant					
verating Temperature 90°C(195°F)	Operating Temperature	A the base of the second	and the second	- 90°C(195°F)		
nition Advance (Static) 6° BTDC	Ignition Advance (Static)	6° BTDC	and <u>Although an an a</u>	9° BTDC	1949 - <u>1979 - 1979 - 1</u> 949 - 1949 -	12° BRDC
ark Plug Type (Motorcraft) AGR32 & AGR22 AGR22	Spark Plug Type (Motorcraft)	AGR32 & AGR22	2010/ 05		AGR22	
ug Gap 0,6mm (0,025 in)	Plug Gap	2. Carburetter filester		0,6mm (0,025 in)		
ntact Breaker Gap 0,4 to 0,5 mm (0,016 to 0,020 in)	Contact Breaker Gap		0,4 to 0	0,5 mm (0,016 to 0,020) in)	
gine Weight (Dry) 128 kg (282 lb)160 kg (352 lb)175 kg (386 lb)	Engine Weight (Dry)	128 kg (282 lb) -	160 k	g (352 lb)	175	, kg (386 lb)
	30					

FORD COMPANIES AND DISTRICT OFFICES

Ford service facilities are available in nearly every country of the world. Service in each country is covered by a network of Authorised Ford Dealers. As these are too numerous to mention here, we have restricted the following list to overseas Ford Companies together with District Offices and the areas they supervise.

	FORD COMPANY ADDRESSES		
	Ford Motor Argentina S.A.	Henry Fordinkatu 6	Ford Motor (
	Casilla Correo 696	P.O. Box 46	P.O. Box 300
	Casilla Central	SF 00101 Helsinki 10	Lower Hutt
	Buenos Aires, Argentina.	Finland.	Wellington, N
	Ford Motor Company of Australia (PTY) Ltd.	Ford (France) S.A.	Ford Motor (
1	Private Mail Bag 6	B.P. No. 90	1410 Kolbotr
	Campbellfield	92 Rueil-Malmaison	Norway
	Victoria 3061, Australia.	France,	,.
			Ford Philippi
	Ford Motor Co. (Austria) AG	Ford-Werke A.G.	P O Box 415
	Rainerstrasse 27	5 Koln Merkenich	Makati Comm
	P.O. Box 2	Industriestrasse, Germany	Makati
	5021 Salzburg, Austria.	14.38 ST 8	Rizal D708
		Ford Italiana S.P.A.	Philippines
	Ford Motor Co. (Belgium) S.A.	Viale Pasteur No. 8/10	, internet
	Postbus 37	P.O. Box 10058	Ford Lusitana
	B2030 Antwerp, Belgium.	00144 Rome EUR	Avenida de Se
		Italy.	Anartado 224
	Ford Willys Do Brazil S.A.	2 - Contact States	Lisboa 2 Port
	Caixa Postal 8610	Ford Motor Company of Japan	213200 2,101
	Sao Paulo, Brazil.	Checker Building	Ford Motor C
		5-29 Akasaka /8 Chome	Bukit Timah I
	Ford Motor Company of Canada Ltd.	Minato-Ku.	8% Milestone
	National Parts Depot	Tokyo 107, Janan	Singapore 21
	8000 Dixie Road	The second second second	angepore in
	Bramalea	Ford Motor Company S.A.	Ford Motor C
	Ontario, Canada.	Paseo de la Reforma 333	P.O. Box 788
		Apartado 39 Bis	Port Elizabeth
	Ford Motor Company A.S.	Mexico I.D.F. Mexico	Fort Engaport
	Sluseholmen 1		Ford Motor C
	2450 Copenhagen S.V.	N.V. Nederlandsche Ford	Fack
	Denmark.	Automobiel Fabriek	\$102-50 Stock
		Postous /95	Sweden.
		Amsterdam, Netherlands.	

otor Co. of New Zealand x 30012

on, New Zealand.

otor (Norge) A.S. lbotn

ilippines Incorporated 415 ommercial Center

sitana S.A.R.L. de Serlin 4C 2248 Portugal.

otor Company Private Ltd. mah P.O. Box 4047 stone Bukit Timah Road

tor Company of South Africa (PTY) Ltd.

abeth, South Africa.

tor Company A/B

Stockholm 27

Ford Motor Company (Switzerland) SA Kurvenstrasse 35 CH 8021 Zurich, Switzerland.

Ford Lio Ho Motor Co. Ltd. (Taiwan) P.O. Box 26-186 Taiwan ROC.

Ford Motor Co. (Thailand) Ltd. G.P.O. Box 2701 Bangkok, Thailand.

Ford Motor Co. Ltd. Industrial Products Sales Dept. Royal Oak Way South Daventry, Northants NN11 5NT, England.

Ford (Uraguay) S.A. Casilla de Correo 296 Montevideo, Uruguay.

Ford Motor Company Industrial Engine Operations Ford Parts and Service Division 300 Renaissance Center P.O. Box 43338, Detroit Michigan 48243, U.S.A.

Ford Motor de Venezuela S.A. Apartado 354 Valencia, Venezuela.

FORD DISTRICT OFFICES	SUPERVISING THE FOLLOWING COUNTR	IES	FORD DISTRICT OFFICES	SUPERVISING THE FOLLOWING COUNTR	IES
Ford Asia-Pacific Inc. 33 Albert Rd Melbourne Victoria 3004 Australia.	Bhutan British W. Pacific Is. Burma Cambodia Fiji French W. Pacific Is. Guam Hong Kong & Macao India India Ocean Is.	Indonesia Korea Laos Maldive Is. Nepal Society Is. Solomon Is. Sri Lanka Tahiti Thailand	Ford of Europe Inc. Mid-East & African Sales Operations 169 Kings Rd. Brentwood Essex CM14 4EN England.	Afghanistan Algeria Andorra Angola Ascension Is. Bahrain Bangladesh Benin Burundi Cameroon	Libya Malagasy Republic Malawi Malta Mauritania Mauritania Mauritius Morocco Mozambique Niger
Ford Motor Co. Caribbean Dist. Office Call Box CD Caparra Heights Station San Juan Puerto Rico 00922	Bahamas Barbados Bermuda British W. Indies Cayman Is. Dominican Republic French Guiana French W. Indies Guyana	Vietnam Haiti Jamaica Netherlands Antilles Puerto Rico St. Pierre & Miquelon Surinam Trinidad U.S. Virgin Is. Virgin Is.		Canary Is. Cape Verde Is. Central African Empire Ceuta/Melilla Chad Congo Cyprus Djibouti Egypt Equatorial Guinea Ethicat	Nigeria Oman Pakistan Qatar Reunion Rhodesia Rwanda Saint Helena Sao Tome & Principe Saudi Arabia Senenal
Central American District Office Apartato Postal F Panama 4 Republic de Panama. South American District Office Ford Motor Co. del Peru S.A. Panamericana Norte, km 8 Casilla No 4407 Lima 1 Peru.	British Honduras Columbia Costa Rica Ecuador El Salvador Bolivia Chile	Guatamala Honduras Nicaragua Panama Paraguay Peru		Ethiopa Gabon Gambia Ghana Gibraltar Greece Guinea-Bissau Guinea Republic Iceland Iran Iran Iraq Israel Ivory Coast Jordan Kenya Kuwait Lebanon Liberia	Seringan Seychelles Sierra Leone Somalia Sudan Syria Tanzania Togo Tunisia Turkey Uganda Upper Volta Upper Volta United Arab Emirates Yemen, Arab Republic Yemen Peoples Dem. Rep. Zambia Zaire

Printed in England by Clifford-Thames Printing Co. Ltd., Shenfield, Essex. CO38010

February 1979



