

1978 CAR

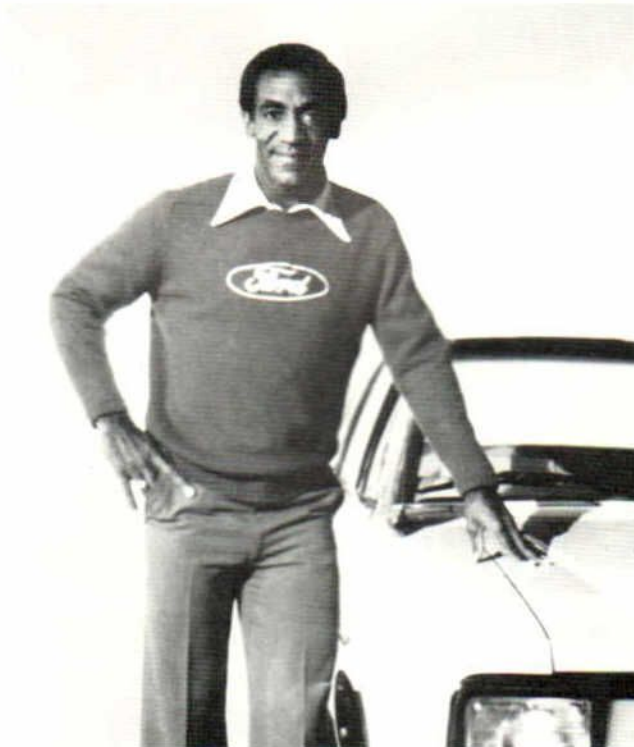


FACTS BULLETIN

The logo for VST (Vehicular Safety Technology), consisting of the letters 'VST' in a stylized, outlined font.

Ford Hates Hassles!

THE FORD QUALITY STORY . . . WHAT'S BEING DONE TO EARN AND KEEP SATISFIED CUSTOMERS



"Hi, I'm Bill Cosby. You've probably seen me on TV, in magazines and in newspapers talking about the tough testing of Ford products. One thing I've learned is that Ford goes to lots and lots of trouble testing its cars and trucks to try to make sure that they work the way buyers want them to . . . in other words, to reduce hassles! Ford tests because they want to sell **more** cars and trucks to **more** people and they feel the best way to do that is to try and build cars and trucks that are fun to own and drive."

The process of building cars and trucks has become highly complex. In a given year, Ford builds upwards of 3,500,000 vehicles . . . each containing approximately 13,500 separate components!



The purpose of this brochure is to provide you with highlights involving only a few of the tests Ford conducts to maintain the quality of its products in all phases of automotive manufacturing — from design right on through to final inspection. The testing procedures described relate to specific areas that are the cause of a majority of customer complaints. These include:

- Squeaks and Rattles
- Engines
- Electrical Systems
- Corrosion Protection
- Interior Appearance

Use the information contained in this retention piece to communicate the Ford Quality Story to your prospects. This material will assist your sales efforts and improve your profit opportunities.

FORD FIGHTS SQUEAK AND RATTLE HASSLES!

Squeaks and rattles can cause significant irritation because locating the source and correcting the problem can be difficult and time consuming. That's why Ford is engaged in a continuous effort to deal with these problems in the assembly plants **before** cars and light trucks are shipped to dealerships.

The Burke-Porter Machine



Testing for Unwanted Noises with the Burke-Porter Machine



In the course of a given year, approximately 50,000 vehicles — representing a large sampling of every Ford car and light truck line — are tested on Burke-Porter machines. This apparatus accurately duplicates various road surfaces — from smooth to very rough. Test vehicles are run over these simulated road surfaces at a wide range of speeds, and highly trained quality control inspectors check for any unwanted noises.



Quality Control Inspectors Closely Monitor Tests

If the randomly selected vehicle doesn't pass the test, it is taken to a repair area where the sources of any squeaks and rattles are located and the problems are corrected. Recurring noise problems are systematically reported and changes are made — in vehicle design or assembly line procedures — to help assure that they don't reoccur.

Innovative Noise Reduction Techniques and Materials Also Utilized . . .



- Ford shock absorbers are designed and engineered to be completely rubber-isolated at body connection points.



- Windshields and rear windows are carefully installed with special butyl sealer.
- Heat curing sealers are applied to body panel seams and joints to help assure a tight fit.

The only way to reduce squeaks and rattles is to engineer them out in the beginning and then to continually test every product line to make sure they stay out. The examples furnished above serve to illustrate Ford's commitment to this objective.

FORD FIGHTS ENGINE HASSLES!

Engine hassles are probably the single greatest factor in producing unhappy owners. That's why Ford goes to great lengths to thoroughly inspect **every** engine **before** it's installed in a vehicle bearing the Ford name.

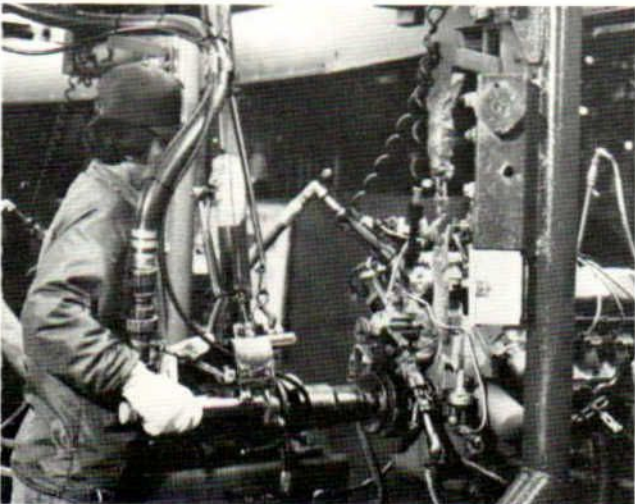


Cleveland Engine Plant

In a given year, over 5 million Ford engines are produced world-wide in manufacturing facilities devoted exclusively to engine manufacture such as the Cleveland Engine Plant pictured above. Every Ford engine has to meet rigid company standards . . . which means that each engine is tested individually.

Vital engine components — like all carburetors, distributors and ignition coils — are individually tested by suppliers to make sure they meet strict Ford specifications. Then, all of the components are assembled and the entire engine is tested.

Engine "Hot Test"



Every Ford engine must pass the "Hot Test" . . . an exacting inspection that covers many crucial operating characteristics. The engine is run at various RPM's so it can be

carefully checked for important operating characteristics like smooth idle, noise level, vibration, oil pressure, and manifold vacuum. When an inspector is satisfied that an engine has passed the "Hot Test," he marks it with his personal stamp of approval.

Engine Teardown Evaluation Program



Selected Engines Test Run up to 150 Hours

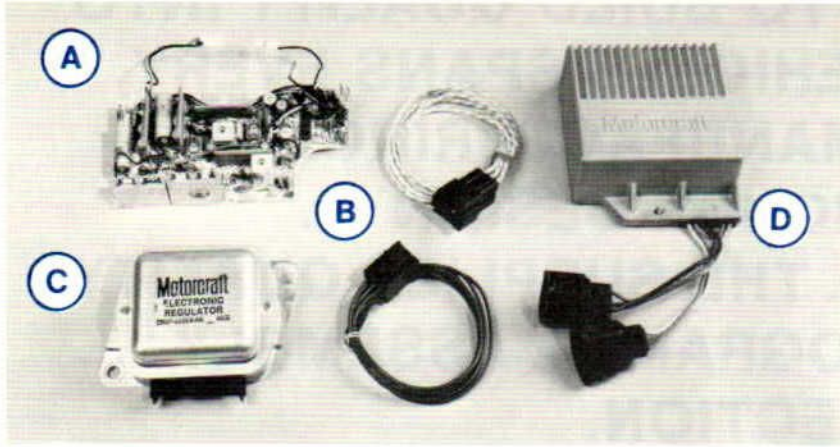
Randomly selected engines are run on dynamometers for up to 150 hours as part of the critical Engine Teardown Evaluation Program. For one hundred of those hours, engines are run at 4,200 RPM. That's the equivalent of driving at speeds of over 100 miles per hour for about 10,000 miles!



Exacting Inspections by Quality Control Technicians

These engines are then disassembled and quality control technicians precisely examine engine components for any excessive wear. Information gained from this exacting test can lead to manufacturing improvements.

FORD FIGHTS ELECTRICAL SYSTEM HASSLES!



- A. Printed Circuit
- B. Go/No-Go Snap Connector
- C. Solid-State Voltage Regulator
- D. Electronic Ignition Module

When a customer presses a button or flicks a switch he expects something to be activated. In order to reduce hassles associated with a vehicle's electrical system, Ford incorporates space-age technology regarding the design of individual components and selected testing procedures.

That's because the electrical systems of Ford vehicles are much more complex than they were a few years ago. For example, a 1978 Ford car or truck can have as many as 320 circuits compared to about 180 in the mid-sixties . . . and as much as 1500 feet of wiring compared to between 600 and 900 feet for a 1968 Ford car.

Ford meets the challenge of increased electrical complexity by using sophisticated devices that are intended to reduce or eliminate the need for many electrical repairs. Devices include printed circuits and "go/no-go" snap connectors to help assure precise assembly . . . and solid state voltage regulators and electronic ignition modules to eliminate many moving parts that used to require periodic service.

UNIMETS



Hand-Carried Microcomputer Tester



Tester Printout

Reducing electrical system hassles also requires thorough inspection procedures. That's why Ford developed UNIMETS — The Universal Microcomputer Electrical Testing System — a computerized means of inspecting many important electrical system components.*

The major component of the UNIMETS system is a hand-carried microcomputer tester. It's an extremely sensitive space-age device that measures the current draw of a vehicle's numerous electrical circuits down to **one-millionth** of an amp.

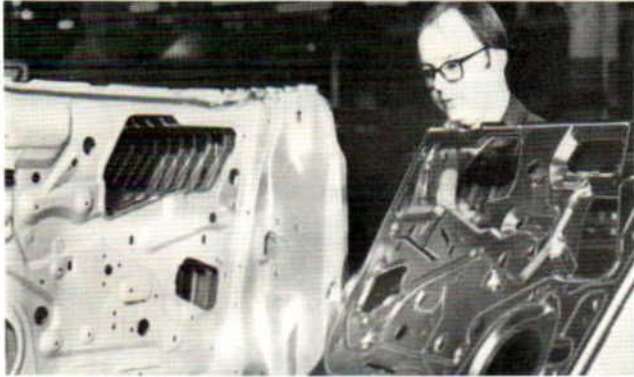
*Selected car lines and assembly plants.

For example, an inspector can not only determine the amount of current being drawn as a power window control is activated, but he can also compare it to acceptance standards that are stored in the microcomputer tester's memory. This same small unit also contains a device used to test the air conditioning cooling. The actual cooling rate is also compared by the microcomputer to acceptance standards.

After the entire electrical testing sequence is completed, the tester furnishes a printout that recaps the results. Any defects detected by the UNIMETS system or by the inspector must be corrected before a vehicle is shipped to the dealership.

FORD FIGHTS CORROSION HASSLES!

Ford is engaged in an intensive, ongoing effort to combat corrosion throughout its entire vehicle lineup. As a part of this program, special materials and processes are utilized throughout the manufacturing and assembly phases of production. These include:



Zincrometal used on areas such as the outer door panels.

Galvanized Sheet Metal used in areas such as rocker panels, fender reinforcements, and hood latch supports.

Phosphate Bath and Cleaning helps prepare the body surface for good primer and paint adhesion.



Electrocoat or Spray Process Priming provides a corrosion resistant coating to the body surface.



Aluminized Wax applied to the inside surface of doors, quarter panels, and other critical areas, after vehicle painting.

Accelerated Vehicle Corrosion Test Helps Ford Engineers Evaluate Corrosion Program Effectiveness



The Accelerated Vehicle Corrosion Test was developed by Ford Engineers as a critical part of the program for evaluation of the application of corrosion-resistant materials used on North American vehicles. The extremely tough test cycle is conducted at Ford's Arizona Proving Ground.

After being cleaned, inspected and photographed, a test vehicle is preconditioned by being driven:

- 100 miles over a gravel road . . .
- Through a trough of brine solution . . .
- Through a salt-mud bath to pack the underbody surfaces.

The next phase is a more intensive driving test cycle involving:

- A salt spray followed by two runs down an eight mile dirt road—a sequence that's repeated two more times . . .
- Two passes on a salted wet road at 50 miles per hour . . .
- A final dousing with salt spray.

The test vehicle is then locked in a humidity chamber at 120 degrees Fahrenheit and 95 to 100 percent relative humidity for 22.5 hours. **One test cycle consists of both the humidity chamber and the driving. Total time for one cycle: 24 hours. A complete test consists of 60 of these cycles!**

After the test is completed, the test vehicle is shipped to Ford Body and Electrical Product Engineering in Dearborn. There, Ford Engineers have it cut apart and

make a thorough inspection for evidence of corrosion. If necessary, new corrosion resistant materials might be developed, or the application of existing materials might be revised.



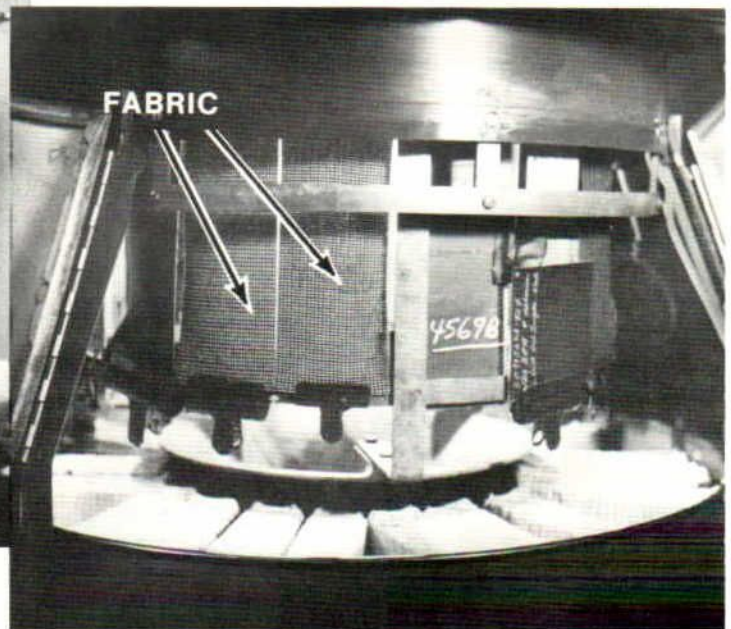
Engineers evaluating vehicle

INTERIOR COMPONENTS ARE ALSO TESTED!

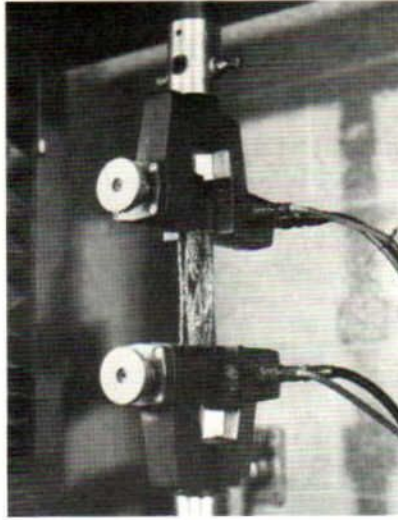


Fade-Ometer Machine

A vehicle's interior can also be a source of customer irritation. When a person buys a new Ford vehicle, he or she expects the interior to hold up under normal use. That's why Ford puts all its interior components through a series of punishing tests . . . to make certain this requirement is met.



The Fade-Ometer exposes all prospective Ford fabrics to strong ultraviolet radiation to simulate the destructive fading effects of direct sunlight. If the amount of fade is unacceptable, the material is rejected.



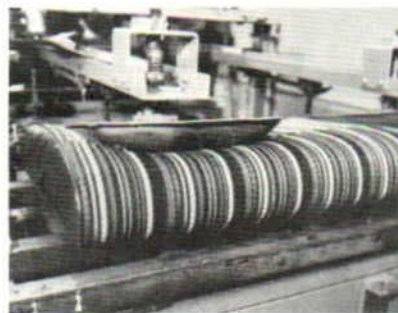
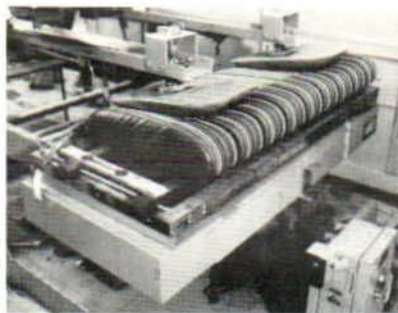
Instron Machine Test

The Instron Machine then stretches these materials to the breaking point to make sure ultraviolet rays haven't weakened them.



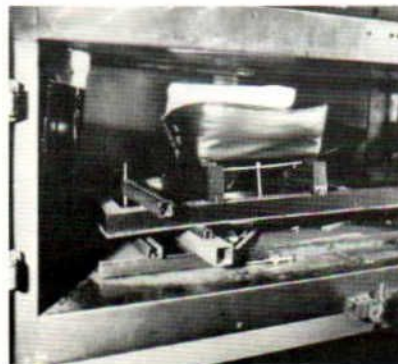
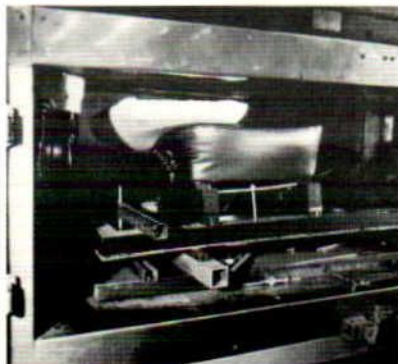
Minking Test

Ford also tests seating fabrics to make sure they won't harm clothing. In the Minking Test, a genuine mink pelt is continuously rubbed against proposed seating fabric for ten minutes. Then sticky tape is pressed against the material to pick up any mink hairs. If the number of hairs exceeds test standards, the material is rejected for use in a Ford vehicle.



Bouncing Betsy Test

Entire seat assemblies — springs, foam, frame and fabrics — are tested on the Bouncing Betsy. Seat designs that don't meet stringent standards are rejected.



Squirming Irma Test

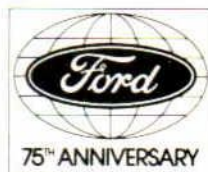
The Squirming Irma test cycle duplicates the action of a person getting in, sitting down, and turning to face front. It tests the seat assembly for 19 hours through 25,000 cycles. If the seat design doesn't hold up, it doesn't go into a Ford vehicle. It's as simple as that!

FORD'S EFFORT TO BUILD QUALITY INTO ALL ITS FORD VEHICLES SPANS EVERY PHASE OF THE MANUFACTURING PROCESS — THROUGH DESIGN . . . ENGINEERING . . . THE SUPPLIER QUALITY ASSURANCE PROGRAM . . . ASSEMBLY . . . AND FINAL INSPECTION. IT'S A TOTAL SYSTEM DEDICATED TO THE ELIMINATION OF HASSLES!



"You've just had a brief look at **some** of the things Ford's doing to avoid hassles. Now Ford can't promise no hassles but it **can** promise it's trying to reduce them. Why? It's simple . . . Ford wants to be everybody's car company!"

At the time of this release, specifications contained herein are believed to be correct. Ford Motor Company reserves the right to discontinue models at any time or change specifications, designs or prices without incurring obligation.



Ford Division

Vol. No. 78GV2L6
2/78