HUDSON Service Merchandiser

Dedicated to the interest of field service, parts and accessory merchandising.

VOL. 4 NO. 4 APRIL, 1952

MAY IS THE ANNUAL NATIONAL *CAR SAFETY-CHECK MONTH!*

URGE YOUR customers to have their cars serviced for safety in May.

Dealers will profit by joining their efforts with the National Safety Council and the Inter-Industry Highway Safety Committee in the annual drive to improve the mechanical condition of the cars on our highways.

These two National Safety Organizations and other groups interested in highway safety, will conduct vigorous campaigns to impress upon every motorist the need to maintain his car in **SAFE OPERATING CONDITION** at all times.

Because of the constantly increasing number of cars and the mounting toll of traffic deaths and injuries, the objective of this Safety Drive is to have every car **SAFETY CHECKED.**

HUDSON MOTOR CAR COMPANY.. DETROIT 14, MICHIGAN

GET READY FOR THE NATIONAL SAFETY CHECK MONTH—MAY

Hudson Dealerships and their entire Service personnel are a vital link in the annual National Safety Drive during the entire Month of May. It is proper and fitting that the Month of May be designated as the time for an all-out drive to have all automotive vehicles checked.

Few drivers are fully aware of the deterioration and damage to those cars subjected to five or six months of severe winter operation. Only a thorough removal of the accumulated coating of dirt and a careful inspection can reveal wear or damage that, if left uncorrected, could cause a serious accident.

It is a fact that those Dealers who have in past years prepared their organizations and become actively engaged in the May Safety Drive—have not only increased their Service business, but have also greatly broadened their customer contact, in other words—developed new customer business.

Every Motorist, regardless of whether he lives in the Metropolitan section or in the most remote and sparsely settled area, is interested in having his car in a safe operating condition. The reason is because the car owner participates in a value over and above the money he spends. This important May Safety Drive and Preventive Service go hand in hand.

The May Safety Check Program is Nation-wide, featured by Radio-Television, Billboards, Newspapers and Magazines. There is also available a very important selling aid in the form of a 4-Color Kit for Dealer's showroom and Service Department. This selling aid is a constant reminder to Hudson owners. The literature, banners and posters may be ordered from the Modern Displays, 16141 Harper Avenue, Detroit 24, Michigan, which is the National Headquarters.

Establish your Dealership as a Safety Check Headquarters . . . and have every one of the Service organization fully informed and instructed on handling. This can be your banner Month for Hudson Service Business.

AN OWNER PAYS FOR GUESSWORK

Here is an instance that illustrates how an owner may be the victim of the inability of the Dealer's mechanics to properly diagnose the condition in his car.

Complete information covering this particular condition which had been baffling the mechanics was outlined in General Technical Policies and Information Bulletin Number 5, dated January 14, 1949, and again on Page 11 of the August, 1949, Service Merchandiser.

Owner complained of an engine noise, which was very apparent and could have been corrected by simply replacing the Distributor Breaker Plate having an 8.5 Degree Advance with one having a 4 Degree Advance.

Over a period of approximately 20,000 miles of operation, and during which the owner was seeking relief from the engine noise, there was replaced first the Main Bearings—later the Pistons and Rings and finally the Connecting Rod Bearings—all of no avail.

Needless to say the owner was very unhappy, particularly so, account of having paid all the bills and not having obtained any results. Ordinarily, an independent repair shop would not be expected to properly diagnose a condition of this kind; however, the Dealer had the advantage of obtaining direct Factory information.

Finally the owner took his 491 Hudson to the right place. In a few minutes, Messrs. "G" Supt. and "K" Tester were driving the car out and within a half mile test, they were agreed that the cause of the engine noise was due to the spark advancing too far. Time required to replace Distributor Plate—0.8 of an hour.

Many mechanical conditions can be analyzed or diagnosed by an instrument or machine, others cannot and require the judgment of one who knows STANDARD OF PERFORMANCE. Of equal importance is to review and keep fresh in mind the information received from the Factory.

NEW CAMSHAFT—SIX CYLINDER CARS

Beginning at Car Number 147662, all Six Cylinder Engines will have a new Camshaft that requires a Tappet Clearance of .010 on intake and .012 on Exhaust Valves, as is indicated by the Decal on valve cover plate.

The use of this newest Camshaft, Part Number 306344, does not necessitate any change in oil pump gear, Camshaft bearings or engine timing.

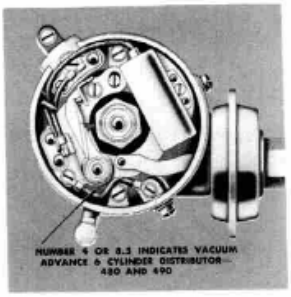
Independent Garage repair volume is increasing proportionately over that of the Car Dealers. They contact their customers four times as often as does the average Car Dealer.

NOTE: By request from the field, we reprint the following pertaining to Vacuum Advance of the 490 Series Six and Eight Cylinder Cars—as it appeared in the August, 1949 Service Merchandiser.

VACUUM AND MECHANICAL SPARK ADVANCE 6 CYL.—491 AND 492 ENGINE

General Technical Policies and Information Bulletin Number 5 of January 14, 1949 outlined in detail a change in vacuum spark advance from 8.5 degrees to 4 degrees maximum. Although this change became effective in production at car 49133913, some distributor breaker plates may have been changed in the field on cars prior to this number.

When testing a distributor for vacuum advance always check the small number stamped on the breaker plate as shown. This number indicates the vacuum advance. Following are the tables covering the 8.5 degree and 4 degree advance rate.



8.5 DEGREE DISTRIBUTOR		4 DEGREE DISTRIBUTOR	
Inches of Mercury	*Degrees Advance at Distributor*	*Inches of Mercury*	*Degrees Advance at Distributor*
9.5	0	12.5	0
10	1	13.5	1
11.5	4	14.	2
13.25	7	14.75	3
14	8.5	15.75	4

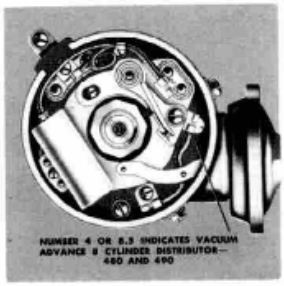
Later, and beginning with car 49176984 the mechanical advance range was modified. These Distributor assemblies may be identified by the number on the name plate as—I.G.S. 4213-1 has 12 degree advance and I.G.S. 4213-A1 has a 9 degree advance. This change in mechanical advance must also be taken into consideration when testing the unit.

DISTRIBUTOR I.G.S. 4213-1		DISTRIBUTOR I.G.S. 4213 A-1	
Distributor RPM	*Degrees Advance at Distributor*	*Distributor RPM*	*Degrees Advance at Distributor*
400	0	450	0
535	1	660	1
1200	6	1200	4
1870	11	1850	8
2000	12	2000	9

REDUCED DISTRIBUTOR VACUUM ADVANCE EIGHT CYLINDER ENGINE

The eight cylinder distributor vacuum advance has recently been changed from a maximum of 8.5 degrees to 4 degrees at the distributor. The vacuum advance of the new distributor does not become effective as early but reaches its maximum later than that of the former distributor.

The change became effective beginning with car number 494114018. The new distributor bears symbol number I.G.T.-4204-B1 and has the figure 4 stamped on the braker plate. The first type distributor symbol number is I.G.T.— 4204-A1 and has a figure 8.5 stamped on the breaker plate. These figures are just opposite the vacuum control diaphragm as shown in the illust.



This change in vacuum advance should be kept in mind when testing the new distributors, and reference made to the correct advance table as shown below.

DISTRIBUTOR I.G.T.—4204-A-1		DISTRIBUTOR I.G.T.—4204-B-1	
Inches of Mercury	*Degrees Advance*	*Inches of Mercury*	*Degrees Advance*
9½	0	12½	0
10	1	13¼	1
11⅝	4	14	2
13⅛	7	14¾	3
14	8.5	15¾	4

No change has been made in the mechanical advance and the following table applies to all 480 and 490 series 8 cylinder engines.

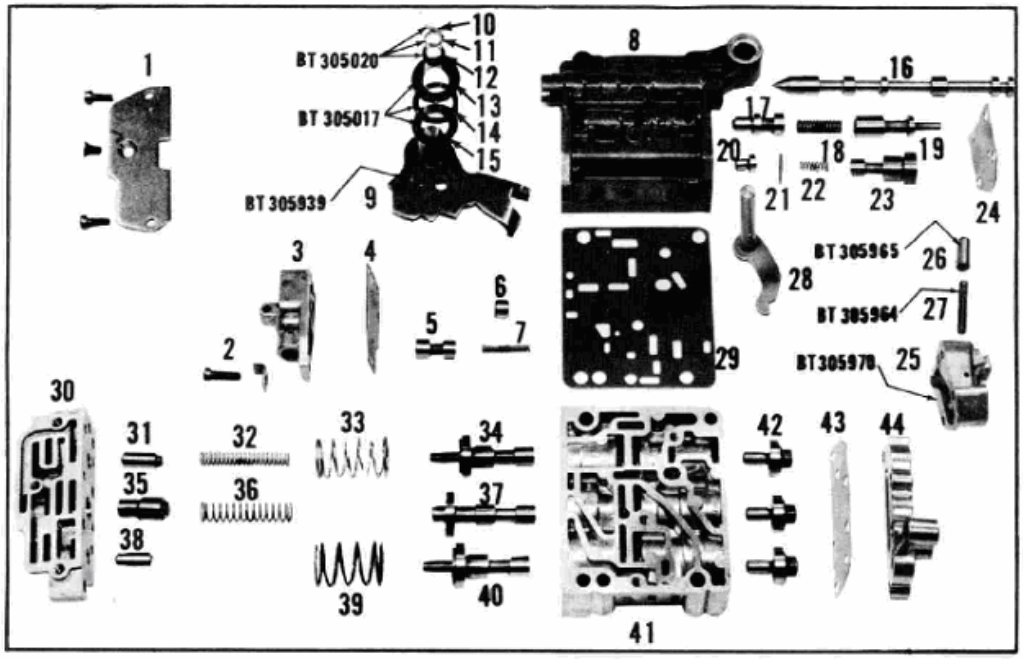
DISTRIBUTOR R.P.M.	DEGREES ADVANCE
300	0
335	1
400	3
1025	10
1700	17.5

CONTROL VALVE ASSEMBLY

Part Number BT 305940

Illustrated below is an exploded view of the Control Valve Assembly of the H-51 Hydra-Matic Transmission. This Control Valve Assembly is furnished as a complete unit.

There is furnished for service replacement the following parts and kits: (25) BT 305970—(26) BT 305965 (27) BT 305964—(9) BT 305939—(10-11-12) BT 305020. Inner Control Lever Pin Seal and Washer Package and (13-14-15) BT 305017. Manual Control Shift Seal and Washer Package.



1. Front Valve Body Plate and Screws.
2. Servo Release Plug Lock and Screw
3. Front Servo Exhaust Valve Body
4. Front Servo Exhaust Valve Body Spacer
5. Compensator Valve
6. Detent Plug
7. Compensator Valve Spring
8. Outer Valve Body
9. Manual Shaft
10. Inner Control Lever Pin
11. Inner Control Lever Washer
12. Inner Control Lever Seal
13. Manual Shaft Seal
14. Manual Shaft Seal Outer Washer
15. Manual Shaft Seal Inner Washer
16. Manual Control Valve
17. Throttle Valve
18. Throttle Valve Spring
19. "T" Valve
20. Compensator Auxiliary Plug
21. Compensator Auxiliary Plug Pin
22. Transition Valve Spring
23. Double Transition Valve
24. Detent Plunger Spacer
25. Detent Plunger Retainer
26. Detent Plunger
27. Manual Valve Detent Spring
28. Inner Throttle Lever
29. Valve Body Spacer Plate
30. Front Valve Body
31. 2-3 Regulator Plug
32. 2-3 Regulator Plug Spring
33. 2-3 Shifter Valve Spring
34. 2-3 Shifter Valve
35. 1-2 Regulator Plug
36. 1-2 Regulator Plug Spring
37. 1-2 Shifter Valve
38. 3-4 Regulator Plug
39. 3-4 Shifter Valve Spring
40. 3-4 Shifter Valve
41. Inner Valve Body
42. Governor Plugs
43. Inner Valve Body Plate
44. Valve Body Rear Cover

THE MOST COSTLY REPAIR WORK is that which is not quite right. From an angle of shop cost, that repair work which is not done properly and brings the customer back with a complaint requires just about as much time, space and overhead as a similar job that was turned out right.

The shop cannot be too particular to see that every job finished, is up to standard and right. Repair work that is properly done brings the customer back too—but a satisfied one at some future time for more service.

Aside from mechanical skill and know-how, is the misinterpretation of what the owner has in mind. On this very important point there is no substitute for an accurate diagnosis and if this cannot be arrived at with the shop equipment, a ride out in the car with the owner is the only way open to pinpoint the thing he has in mind and is expected to pay for correcting.

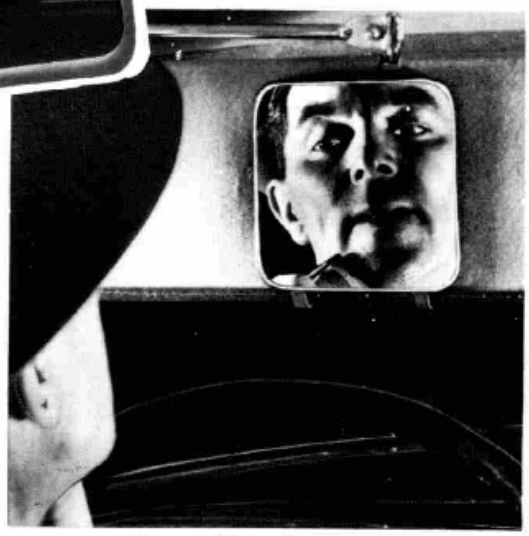
Don't fail to check work in progress and above all where it is possible, have the same person test the car when finished that rode it out and wrote the repair order. MAKE EVERY JOB A COMEBACK WITH A SATISFIED CUSTOMER.

HUDSON *Vanity Mirror*

Feminine Appeal

Here is an accessory that will interest the ladies. The Hudson square-designed mirror gives a full view of the face without wasted background. Every square-inch is reflection surface. The handy, metal spring clips on the back, hold the mirror snugly to the visor. No boring of holes or slipping off. Just right for that last minute touch of lipstick and adjustment of the hat.

HA-207299 Fits all models and makes of cars.



Masculine Appeal

The Hudson Vanity Mirror is useful for the busy executive or the salesman. Sell one or a pair with a Hudson Electric Shaver. A big help for that last minute straightening of the tie. Be sure that all service salesmen are familiar with this item. Every car needs one.

A HUDSON *Approved* ACCESSORY

MEET YOUR ASSISTANT INSTRUCTOR

Delmar Carl Borgsdorf, known as "Del" to his many friends, has assumed the duties of Assistant Instructor in the Factory Permanent School, replacing Lee Swisher who resigned late in 1951.

"Del" has a splendid background of training and experience in the Automotive Industry that should fit him ideally as an instructor. Dating from 1936—5 years in G. M. Institute, where he majored in Service Engineering, following which he was assigned to the G. M. Field Service Organization. Entered U. S. Army 1941 as a Private, discharged as Major of Ordnance, 1946. Has since served in responsible Automotive positions.

We are glad to have Mr. Borgsdorf in our Organization and believe that you, too, will like him when you meet him.

ANSWERS TO THE FOLLOWING QUESTIONS WILL APPEAR IN THE MAY ISSUE OF SERVICE MERCHANDISER:

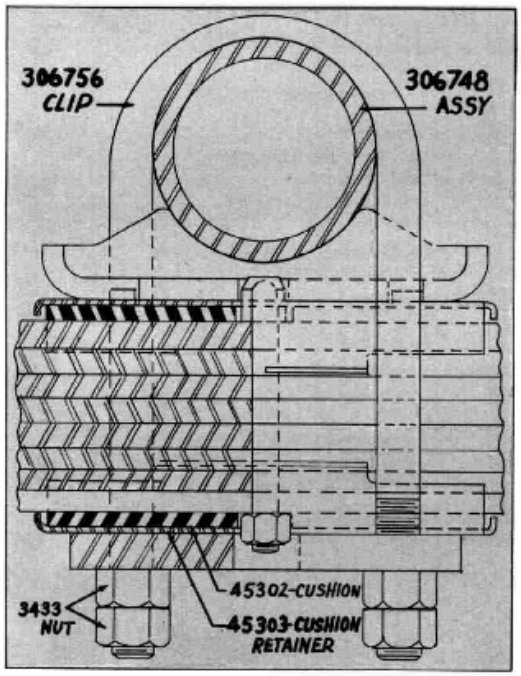
1. Name the five major front wheel alignment factors:
2. How is the toe-in of the front wheels adjusted?
3. Define front wheel toe-in.
4. Camber is corrected first and caster is corrected next. True or false?
5. Front wheel camber is the setting of the front wheels closer together at the top and farther apart at the bottom. True or false?
6. Front wheel caster is built into the front suspension system to provide easier steering control. True or false?
7. King pin inclination is built into the front suspension system by inclining the king pin outward at the top. True or false?
8. Turning angle is the toeing out of the outer front wheel on a turn. True or false?
9. Turning angle is controlled by the way the steering arms are designed. True or false?
10. Turning angle error is corrected by applying heat and straightening the steering arms. True or false?

FOLLOWING ARE THE ANSWERS TO QUESTIONS IN THE MARCH SERVICE MERCHANDISER:

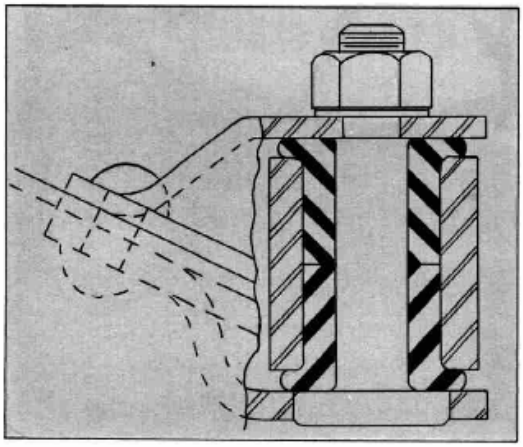
1. The Hudson rear axle is a semi-floating type.
2. The rear axle drive gear and pinion are Hypoid—since the 480 Series.
3. True. Noisy rear wheel bearings are sometimes mistaken for rear axle gear, differential or pinion bearing noise.
4. The use of a KNOCKOUT rear wheel puller is very apt to damage the differential gears or thrust block. It should never be used under any circumstances.
5. False. Preloading of drive pinion bearings is increased by removing shims.
6. Pre-load on drive pinion bearings should be such that 17 to 32 inch pounds are required to turn the pinion shaft.
7. The drive pinion pre-load should be checked without the oil seal in place. The oil seal puts a slight drag on the pinion shaft.
8. There should be NO end play in pinion shaft—pre-load indicates this has been taken up.
9. When fully assembled, the final tightening of the pinion shaft nut should be 275 to 325 foot pounds torque.
10. Differential Case flange must not run out to exceed .002.

REAR SPRING CLIPS, BOLTS AND SHACKLES
This applies to all cars—1936 to 1952

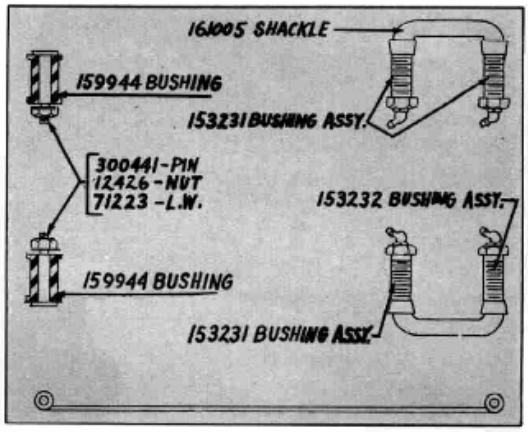
Correct assembly and proper tightening are important for continued satisfactory functioning and wear of spring bolts, bushings and shackles.



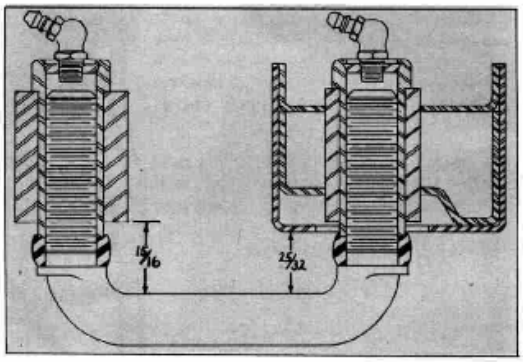
When installing new rear springs, the cushions at top and bottom at the U clips should be renewed and all surfaces must be free from grease or dirt. The clip nuts should be drawn up gradually to 70 to 80 ft. pounds. After a few hundred miles, the clip nuts should be checked and if necessary, tightened to 40 to 50 ft. pounds. This because the rubber cushions have become set and any tighter than this would neutralize the effects of the rubber cushions.



The front end of each rear spring is secured by two rubber bushings and a hardened and ground pin. When installing a new spring assemble the rubber bushings in the spring eye with the pin in position and the nut started, then before tightening, compress the spring so that the top leaf will have a camber of 1 inch, plus or minus ½ inch. This will prevent rubber squeak and allow the bushing stress to be equalized.



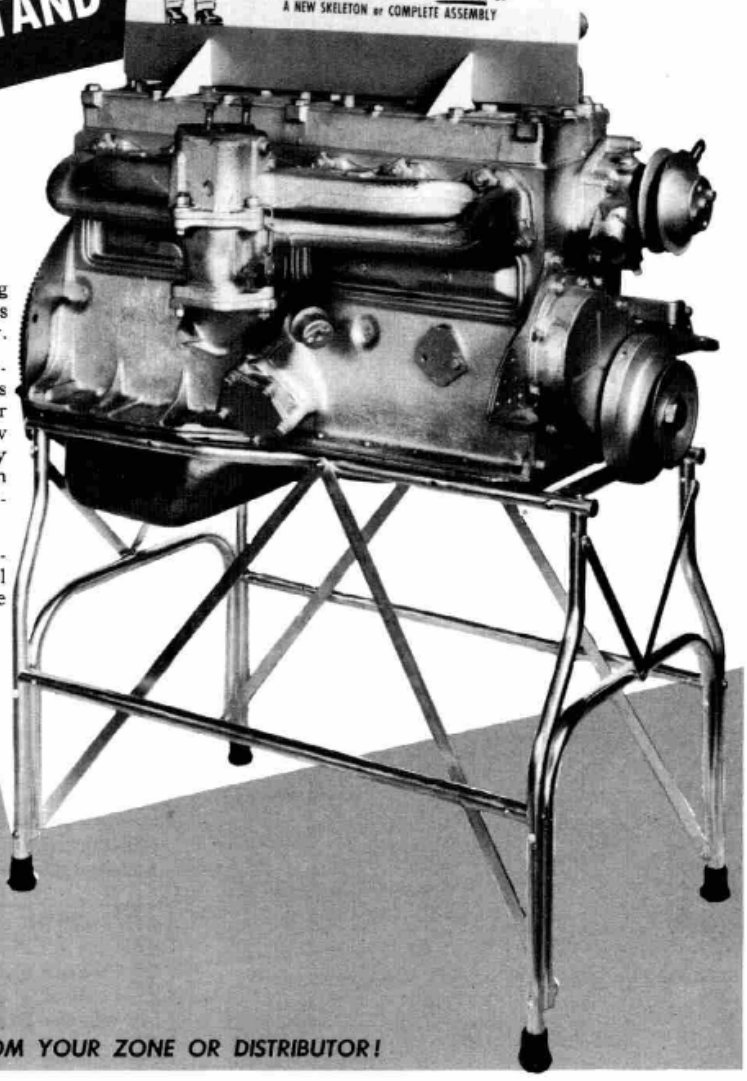
Note carefully the sketch of the shackle arrangement —three bushings have a right hand thread, while the one in the left rear spring has a left hand thread. The object of this is to prevent the bushing in the left spring from having a tendency to work out due to the action of the shackle.



Shown in the sketch above are dimensions from the shackle to the frame bracket and also to the side of spring eye. When installing a new spring this is important in order that the spring be in alignment with the shackle.

OIL SIGNAL LIGHT, flashing when engine oil and level are o.k., has been found to be caused by the Oil Pressure Switch wire insulation having been cut. This causes a ground as a result of being caught beneath the Exhaust Manifold Damper stop and its Seat.

NOW AVAILABLE THE *New Attractive* ENGINE DISPLAY STAND



More engines are replaced during the spring and summer months than any other time of the year.

ENGINE SALES ARE PROFITABLE . . . let your customers know that you can renew their transportation by installing a new Factory-Built Engine. Attractively display a Complete or Skeleton Engine Assembly in your showroom and Service Shop.

This Engine Display Stand is polished to a high lustre and will prominently display a Complete Engine, Skeleton Engine or Cylinder and Piston Assembly.

ORDER NOW . . . FROM YOUR ZONE OR DISTRIBUTOR!