

Measuring Engine Performance

Chapter #7



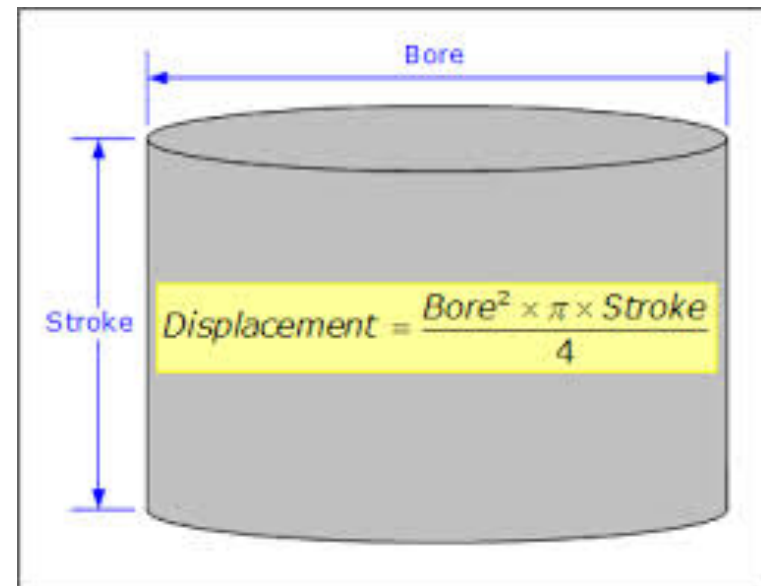
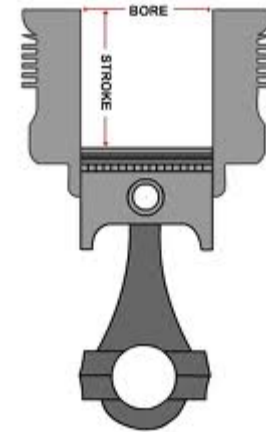
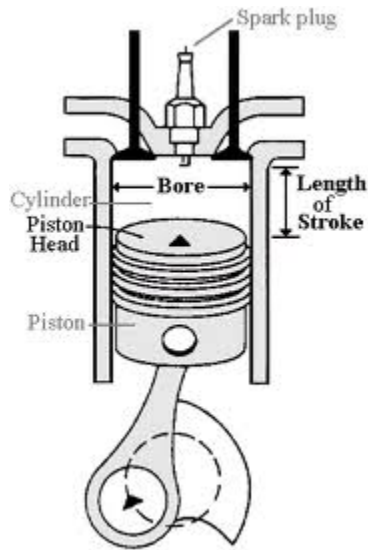
The Engine

Bore and Stroke

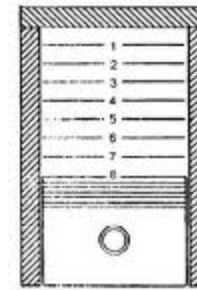


Engine Displacement

- Volume of a cylinder

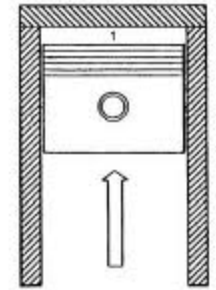


Compression Ratio



BOTTOM DEAD CENTER

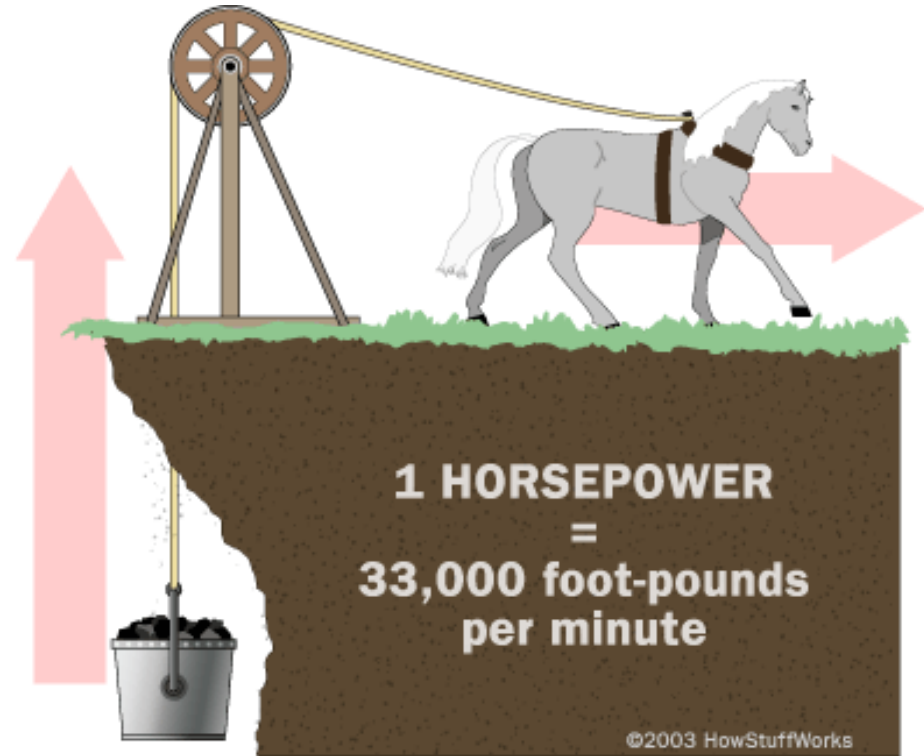
COMPRESSION RATIO 8:1



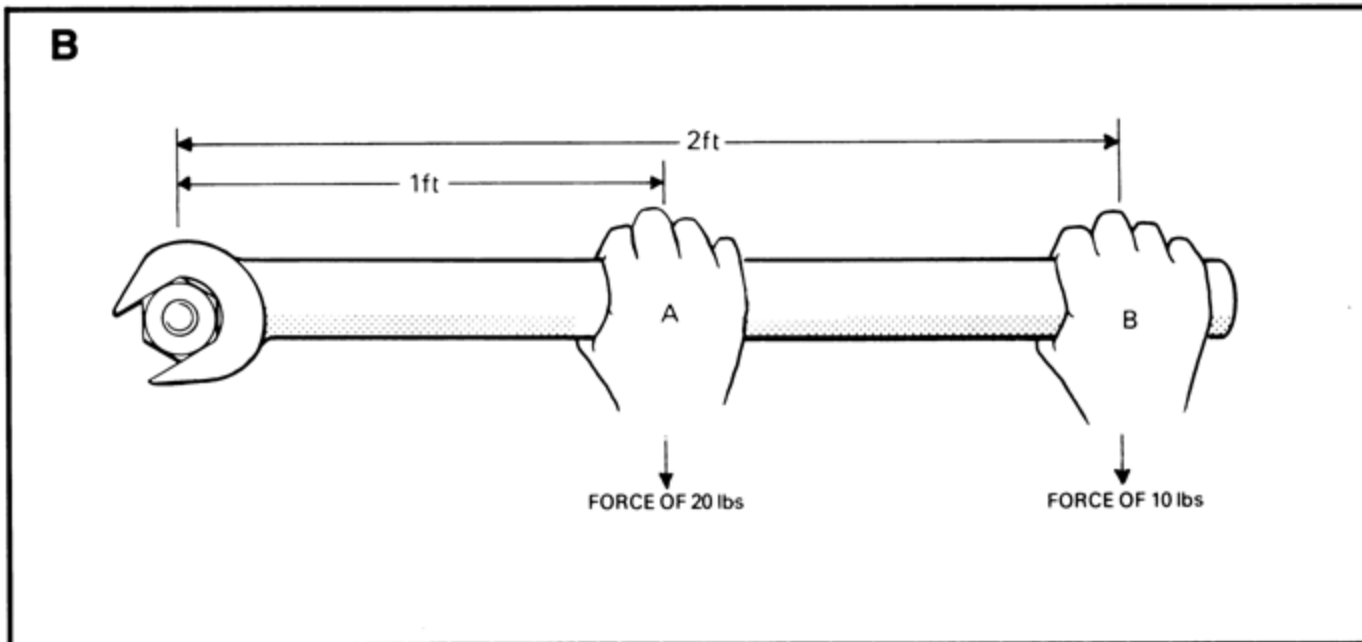
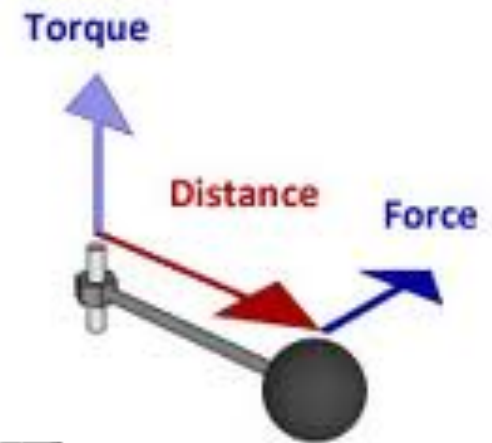
TOP DEAD CENTER

CMR10045

Horsepower



Torque



Cylinder, Crankshaft, and Piston Service

Chapter #17



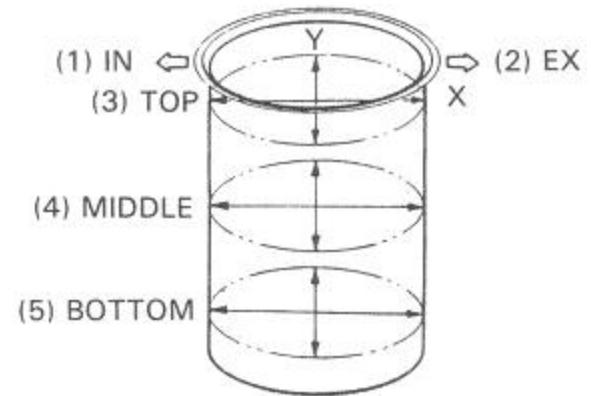
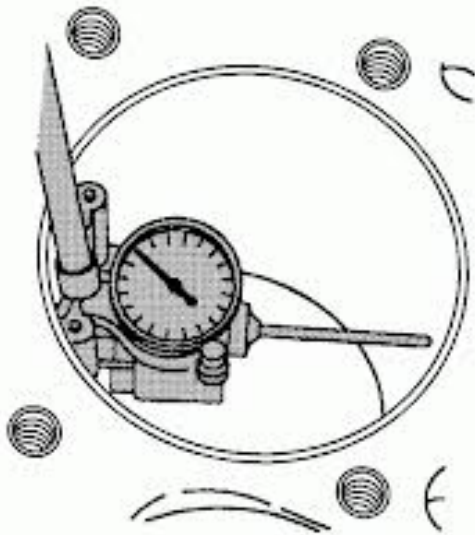
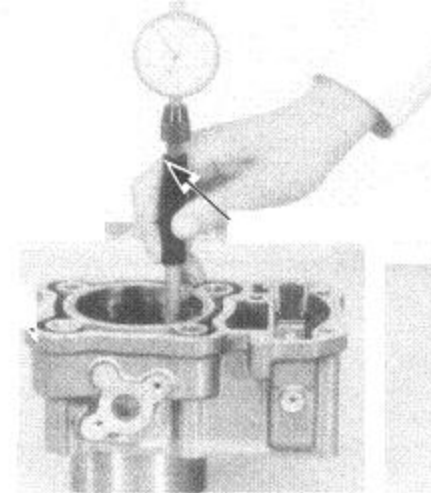
Cylinder Reconditioning

- Cylinder Inspection





- Cylinder Measurement







- Reboring the Cylinder – machine shop



- E&G, Wallingford, CT - ask for Chris

- Honing the Cylinder – [hand drill](#)

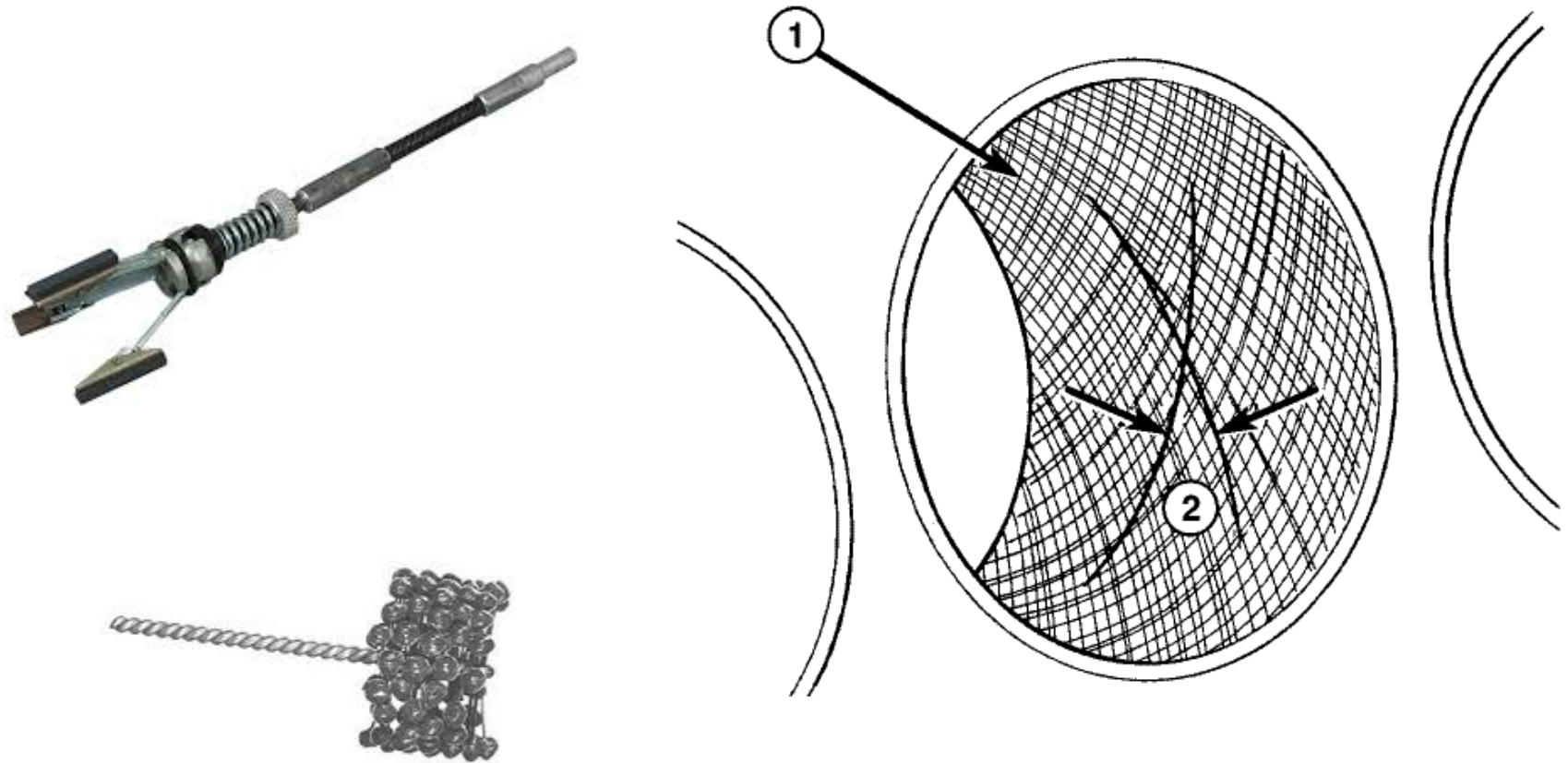
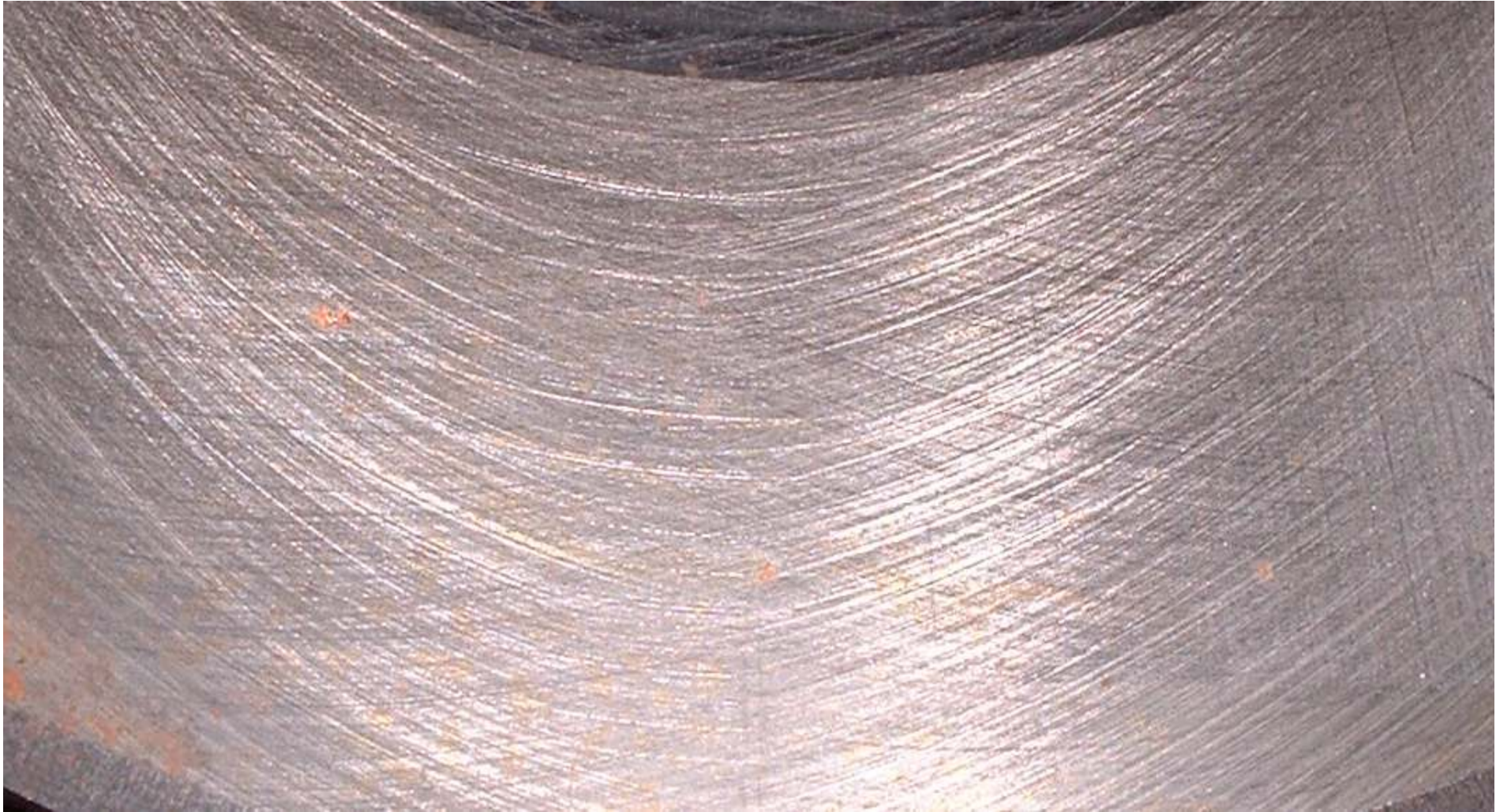
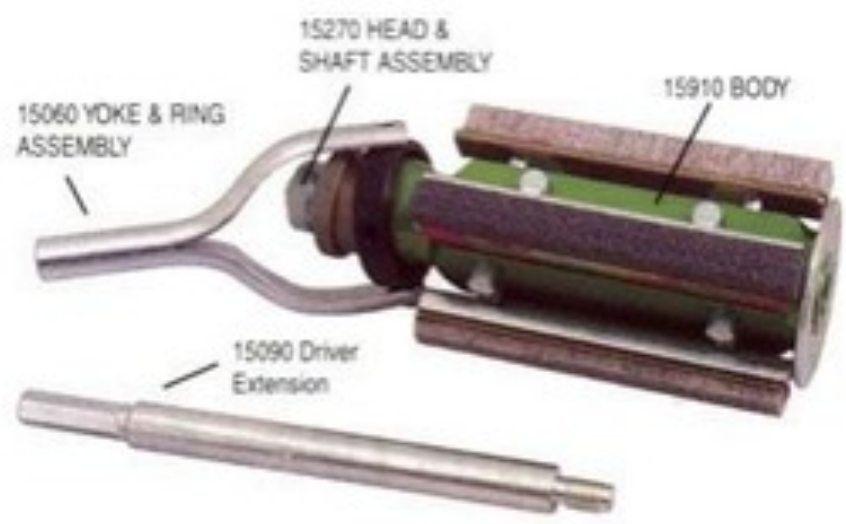


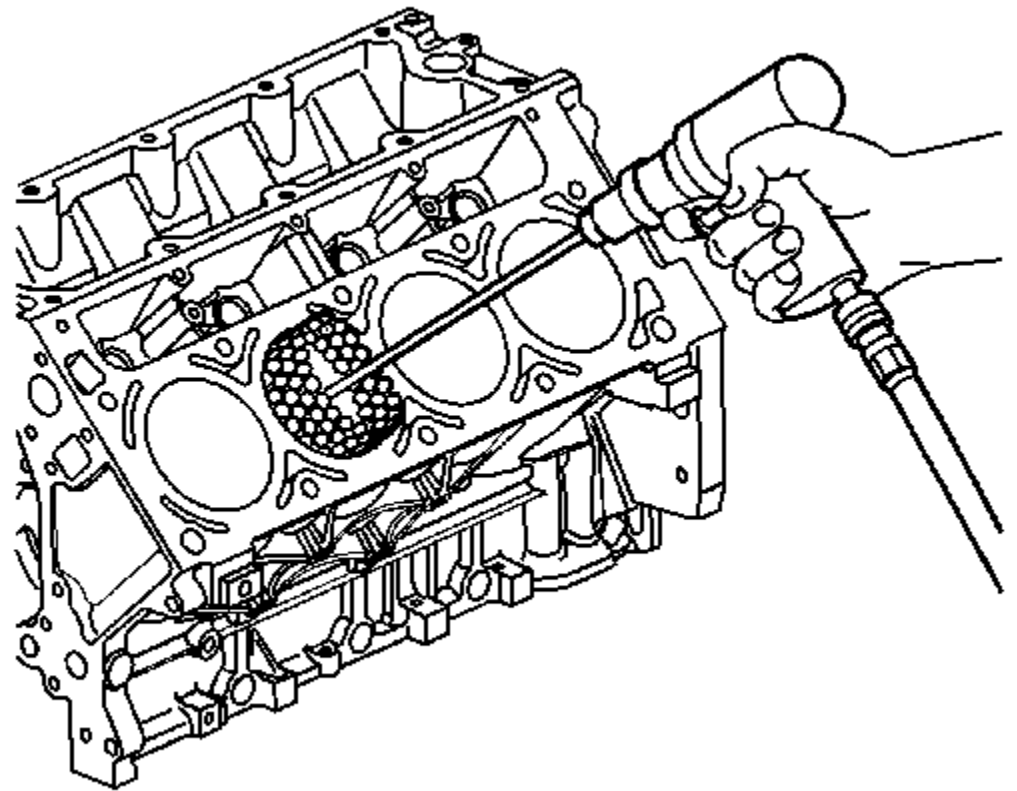
Fig. 1 Cylinder Bore Cross-Hatch Pattern

1 - CROSS-HATCH PATTERN
2 - 40°-60°





- Use plenty of transmission fluid or honing fluid...



Crankshaft and Main Bearing Service

- Inspecting the Crankshaft
 - Measuring Crankshaft Journals



Fig-6 BASIC

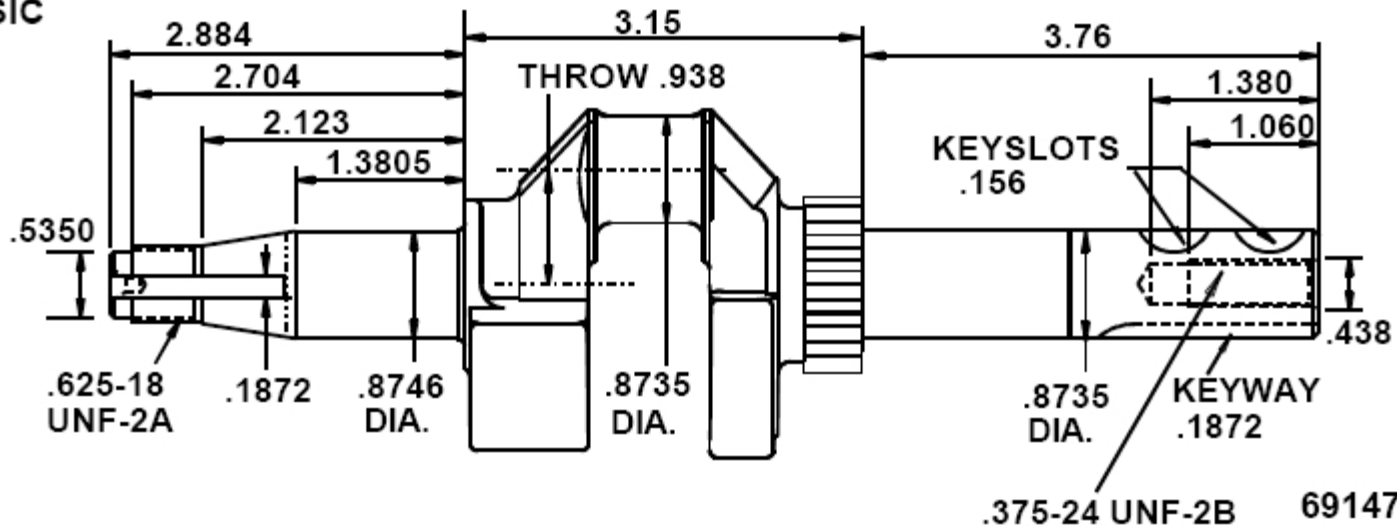
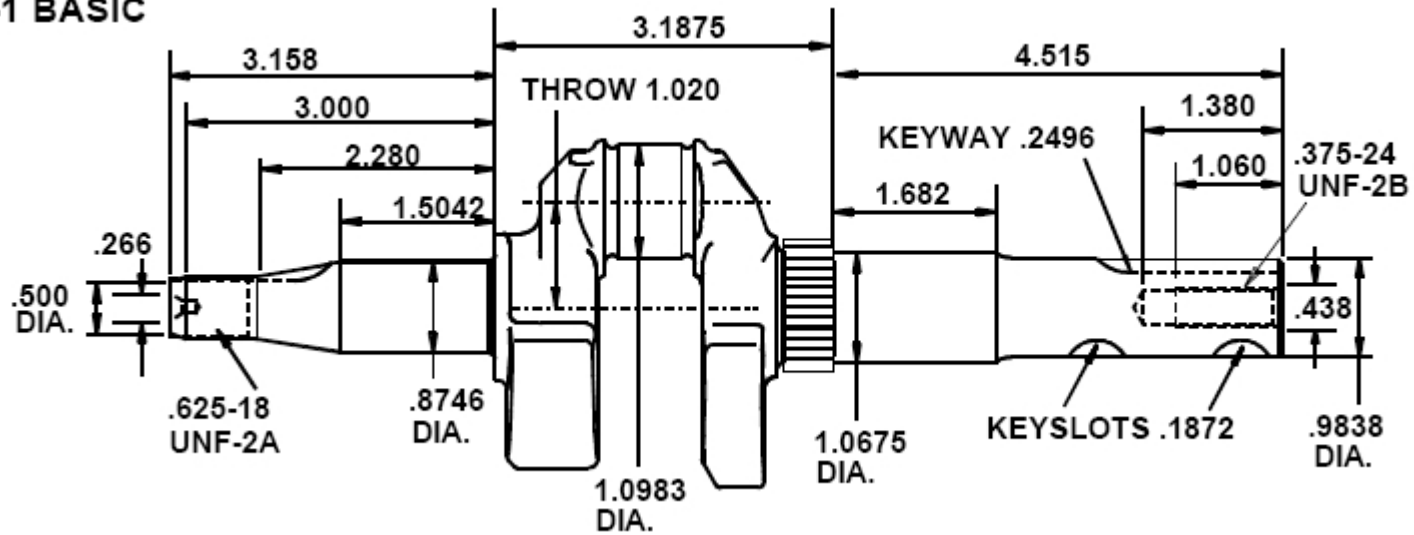
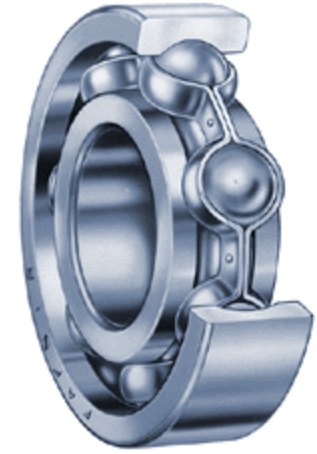


Fig-1 BASIC



- Inspecting the Main Bearing
 - Caged Needle Bearings
 - Tapered Roller Bearings
 - Roller Bearings
 - Plain and Bearing-Type Bearings





Connecting Rod-->

Needle Bearing-->

Crank Pin-->

<--Needle Bearing

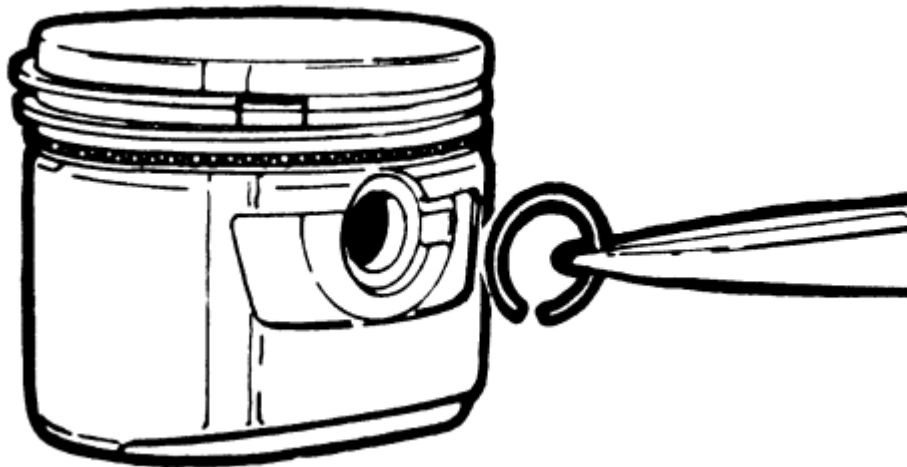
Thrust Washers-->

Piston Assembly Service

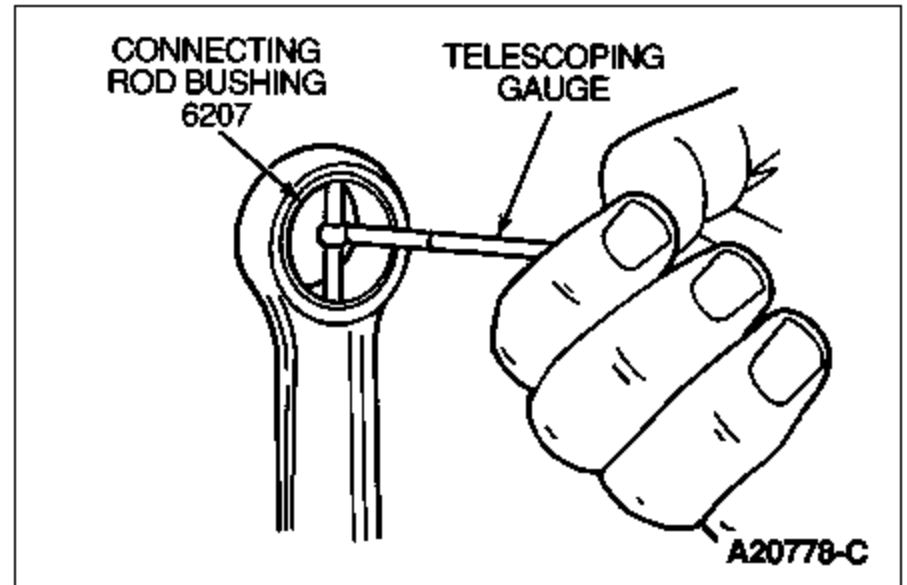
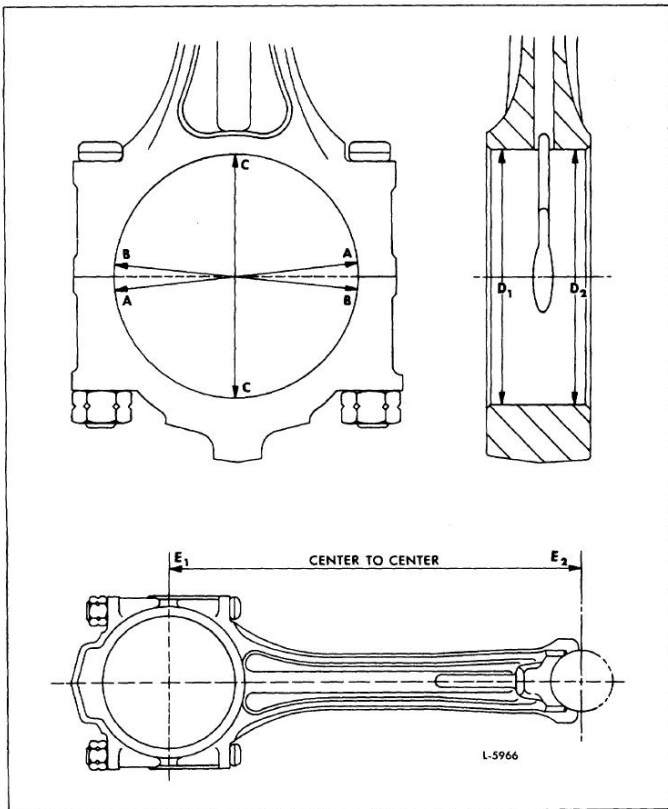
- Checking Piston Clearance – Feeler gauge
- Ring Side Clearance – several slides to come...
- Removing Piston Pin



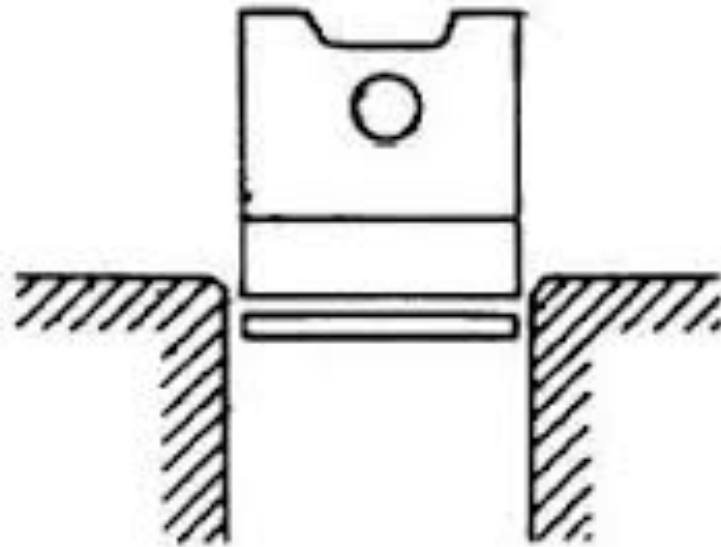
- Measuring Piston Pins and Bosses



- Inspecting Connecting Rods



- Squaring up the ring(s) to measure end gap...
 - Using a piston...
 - Feeler gauge





Don't

Red

Handy

Damage and Ductility
Handbook (Success) must
be used with the
manual (Form 1000)

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Gateway Community College, 2014

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