



R-101A

Sept. 30, 1983

## XR-1000 HIGH PERFORMANCE DATA FOR CLOSED CIRCUIT RACING

### General

This bulletin provides specification information and other data for improved performance of the XR-1000 motorcycle for closed circuit racing.

#### NOTE

**Use of any of the Harley-Davidson part numbers listed in this bulletin voids all warranty.**

### Fuel

Use of racing gasoline is recommended. However, premium leaded or unleaded gasoline with minimum octane rating of 92 is satisfactory.

### Carburetion

The main jet has to be experimented with to obtain the best performance. Jet size will range from a #152 (std) to a #158.

#### NOTE

*For road racing, the accelerator pump should be disconnected by removing the plastic lever (cam follower) from the carburetor cover.*

### Spark Plugs

Use Champion Copper Core plugs, either N6YC or N4YC. The N4YC is a colder plug than the N6YC plug.

### Ignition Timing

Full advance ignition timing is 30° BTDC above 1600 rpm.

### Piston Rings

Top Compression — End Gap ..... .014-.015 in.  
Second Compression — End Gap ..... .010-.012 in.

### Pistons

Piston to wall clearance must be .0035 in., measured at the bottom of the skirt at right angles to the piston pin.

#### HIGH COMPRESSION PISTONS

Part No.	Bore	Displace (cc)	per cyl.
22600—83R	Std.	499	
22603—83R	+ .030	508	
22605—83R	+ .060	518	
22606—83R	+ .070	521	

#### CAUTION

**Do not use high compression pistons with stock production cams.**

### COMPRESSION RATIO

The compression ratio is 10.5:1 maximum. The formula for calculating compression ratio is:

$$CR = \frac{\text{Vol. cyl.} + \text{vol. combustion chamber}}{\text{Volume Combustion Chamber}}$$

When measuring combustion chamber volume, the oil used must be two threads into the spark plug hole.

#### CAUTION

**If using the oversized pistons, the piston dome may have to be lowered.**

### Cylinder Studs

Be sure the cylinder studs are torqued to 30 ft-lbs.

### Cam Shafts

For best performance use Harley-Davidson "E" cams. Order Part No. 25480-83R for a complete set of "E" cams.

Be sure to check clearance between the cam lobes and the crankcase (front intake and rear exhaust cams only).

## CAUTION

**Valve to valve clearance (valves on seat) should measure .180 in. minimum.**

"E" CAM TIMING @ .060 TAPPET LIFT

Intake opens at 33° BTDC  
Intake closes at 54° ABDC  
Exhaust opens at 65° BBDC  
Exhaust closes at 24° ATDC

Full tappet lift is .300 in., with rocker arm ratio of 1.48.

### Valve Lash (Intake and Exhaust)

For "E" cams with mufflers . . . . .	.012 in.
For "E" cams with open megaphones . . . . .	.006 in.

## Exhaust Pipes

The exhaust pipe kit Part No. is 80078-83. The exhaust pipe length and racing megaphones must be the same length as the stock XR-1000 exhaust pipes and mufflers.

## Suspension

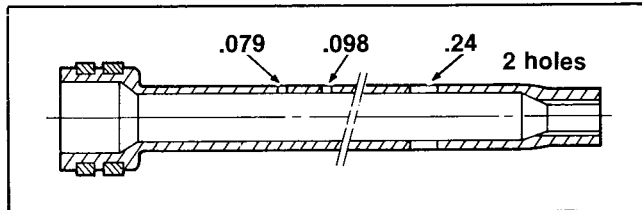
Use 20W front fork oil. To check oil level in fork legs, remove springs and bottom out the suspension. The distance from the top of the fork to the oil level should be 5.82 in. with the suspension bottomed out. Be sure spring is free of oil at the time of installation.

To increase compression damping, one of the two .24 in. diameter holes in the fork damper tube has to be plugged. See Figure 1.

## Rear Shocks

The following shocks and springs are recommended.

Shock — Koni #7610F-1283 (13-1/2 in. long)  
Spring — Koni #250-15-21-28



### Figure 1. Fork Damper Tube