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Author

Topic: Yamaha RD350/400 aftermarket cylinder head info. (Read 5506

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Surewin

2-Stroke Tuner

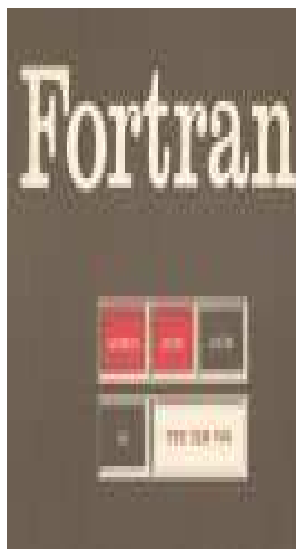


**Yamaha RD350/400
aftermarket cylinder head
info.**

« on: September 18, 2009, 10:53:37 PM »

Aftermarket cylinder heads for the Yamaha RD350/400 listed by brand/manufacture.

1. DG
2. Webco



Posts: 763

Karma: 9

write(*,*)'Hello World'

3. Revco
4. Other

Following are some pictures and short descriptions and info.

0. Stock heads.

The RD400 and RD350 heads have 3 major differences (excluding RD400 Daytona heads)

1. The 400 heads have a bigger combustion chamber volume
2. The 400 heads are slightly wider
3. The 400 head gaskets are different

The RD400 Daytona used a 1 piece 'ram air' head. Note that the Daytona head had different combustion chamber volumes depending on the market (US, Canadian, etc). This can be identified by the lettering cast into the head e.g. 2V0 = US market.

1. DG heads

DG heads were sold for both the RD400 and the RD350. They were a radial fin design made from extruded aluminum and anodized gold. The heads were advertised as high compression heads. The 400 heads have a larger combustion chamber volume (23cc chamber volume not flat plate) vs. the 350 heads, but both raise the corrected compression ratio. Both the 350 and 400 heads use the longer reach 400 spark plugs and are the wider 400 width (DG heads on a 350 cylinder 'stick-out' past the cylinder fins slightly). They also require small spacers under the stock head bolts (sized OD: 21 mm ID: 8 mm thickness: 7.5 mm) ([reference thread link](#)), generally not included when sold. The DG heads have a radial fin design unlike the stock heads. In theory the radial fin design is more effective use of material for cooling fins, as it doesn't involve a fin on a fin, i.e. all fins are attached to the base. There are some reviews of the DG heads in *Cycle World Magazine* 3/78 and *Cycle Magazine* 2/78.

The heads can be identified by a stamping; RD350 heads are stamped "DG perf 3" and RD400 heads are stamped "DG perf 4." However the heads can be 'recut' to different chamber volumes, so buyer beware. If the head has been faced/decked on the gasket surface (indicating the head has been recut) it may be apparent because the small chamfers on the underside of the head bolt holes may be gone. So you can use this feature, if the seller is ignorant. The DG heads are made from extruded aluminum 6061-T6 (ref: *Cycle* 2/78) and were noted to have poor quality even when new (some of the head bolt access reliefs break through the fins, also note comments in *Cycle* magazine).

Some RD enthusiasts 'bad mouth' the DG heads as the performance/cost ratio is low. They seem to get between \$300-600+ on ebay depending on condition. I have yet to read *any conclusive data* as to any performance advantage/disadvantage of the radial fin design. Please read the sentence carefully as the radial fin design is only a "more efficient use of material." The higher compression is a moot point, as the stock heads can be skimmed for a much lower cost.



Marking showing that heads are for RD400. Also look closely and you will see the chamfer for the head bolt is almost non-existent, indicating the heads have been skimmed and recut.



Marking for RD350 heads (note gold anodizing had been removed)



(photos by owner: Surewin)

Picture showing spacers



(Picture by owner: 2pistonpower, [reference thread](#))

Original magazine ad:

RD swing arms are one inch longer than stock and eliminate flex for improved handling and stability.
RD400 Daytona . . . 266-504-01-0
RD400 . . . 261-504-01-0
RD350/250 . . . 260-504-01-0

Mototek CDI is solid state, breakerless, electronic capacitance discharge ignition, get the racer's edge.
Mototek CDI . . . 260-245-00-0

DG high-compression pistons brighten the performance of Yamaha's RD. in the racing area which allows the engine to run harder, faster.
RD400
RD350

RD400F	DAYTONA	BLACK . . . 266-119-00-0	RD400
RD400F	CHROME . . . 261-119-01-0		
RD400F	DAYTONA	RD350/250	
RD400	CHROME . . 266-119-01-0	BLACK . . . 260-119-00-0	
RD400	RD350/250		
RD400	BLACK . . . 261-119-00-0	CHROME . . 260-119-01-0	

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(photo credit: unknown)

Magazine article: *Cycle* Feb 1978 (Sorry it's a scan of a bad photocopy. PDF copy available as well)

Click on image, which will link to new window at imageshack. Then click full size on the bottom right of image to download and read full size version.

Note how the picture shows the aforementioned spacers, but it also shows the head bolts(?).



2. Webco heads.

I don't really know much about these other than they are cast alloy and the fins are designed to direct cooling air into the center (the hottest part). Please post any information or comments.

[Reference thread link](#)





(Pictures by owner: snorkelfork)



(note the rough cast finish, unknown picture credit)



(unknown picture credit)

3. Revco heads

I don't know if they were made for the 350, but I had a pair that were for a 400 combustion chamber. Revco heads are pretty unique in that they are liquid cooled. They however don't use a water pump and rely on natural convection (buoyancy driven bulk flow) to circulate the water. I have some opinions about this design and can note some fundamental calculations but won't remain objective. They originally included a radiator (heat exchanger) but it isn't shown in the pictures below. Note the small piece is a manifold for the water flow. See more comments on these heads in *Cycle Guide Magazine* 6/79.





(above pictures by owner Surewin)



(Unknown picture credit)

4. Other

I once saw on ebay.co.uk a set of aftermarket liquid cooled cylinders and heads for the RD400. I don't remember the brand but it wasn't just a set

of RD350LC cylinders. I believe the pair of cylinders was actually 1-pc, if anyone has more information please post.

General notes about air cooled RD cylinder heads.

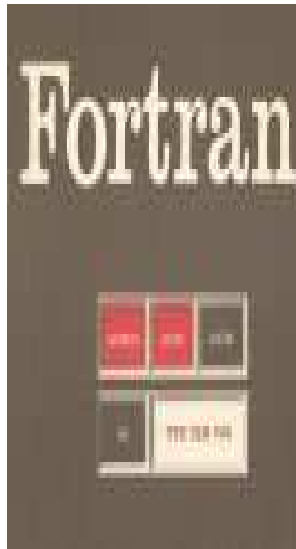
Greater thermal mass doesn't always mean better cooling, it just means longer transient periods. Greater fin surface area doesn't necessary mean better cooling, as the thermal efficiency (or NTU) depends on where the area is located not the the total amount. Thermal conductivity does vary among different aluminum alloys, I dont know the alloy composition of the stock or other aftermarket heads. 6061-T6: Thermal conductivity: 167 W/m-K @ 25deg C.

« Last Edit: January 21, 2011, 12:53:50 PM by Surewin »

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☐ **Surewin**

2-Stroke Tuner



Posts: 763

Karma: 9

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Re: Yamaha RD aftermarket cylinder head info.

« **Reply #1 on:** September 20, 2009, 02:16:18 PM »

Updated pictures and added one magazine article. If you can add any information (cylinder head volumes, flat plate or combustion chamber, original articles or comments) please post.

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Exploding beef tip
Global Moderator
Dr. 2-Stroke, M.D.



Re: Yamaha RD350/400 aftermarket cylinder head info.

« **Reply #2 on:** August 11, 2012, 03:54:43 PM »

Relevant information regarding Revco cylinder heads:

<http://www.2strokeworld.com/forum/index.php?topic=16126.0>

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RD400F
SVX550

RD350B

RD350/H1

Posts: 2487

Karma: 63

FUUUUUUUUUU!!!!11!1

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