

Yamaha XS650 Oil Filter Adapter – Pressure

I continued discussions with Michael “Mercury” Morse or MMM regarding designing and building a spin-on oil filter adapter for the XS650 for the pressure side, which we both agreed was more desirable than a spin-on filter on the suction side.

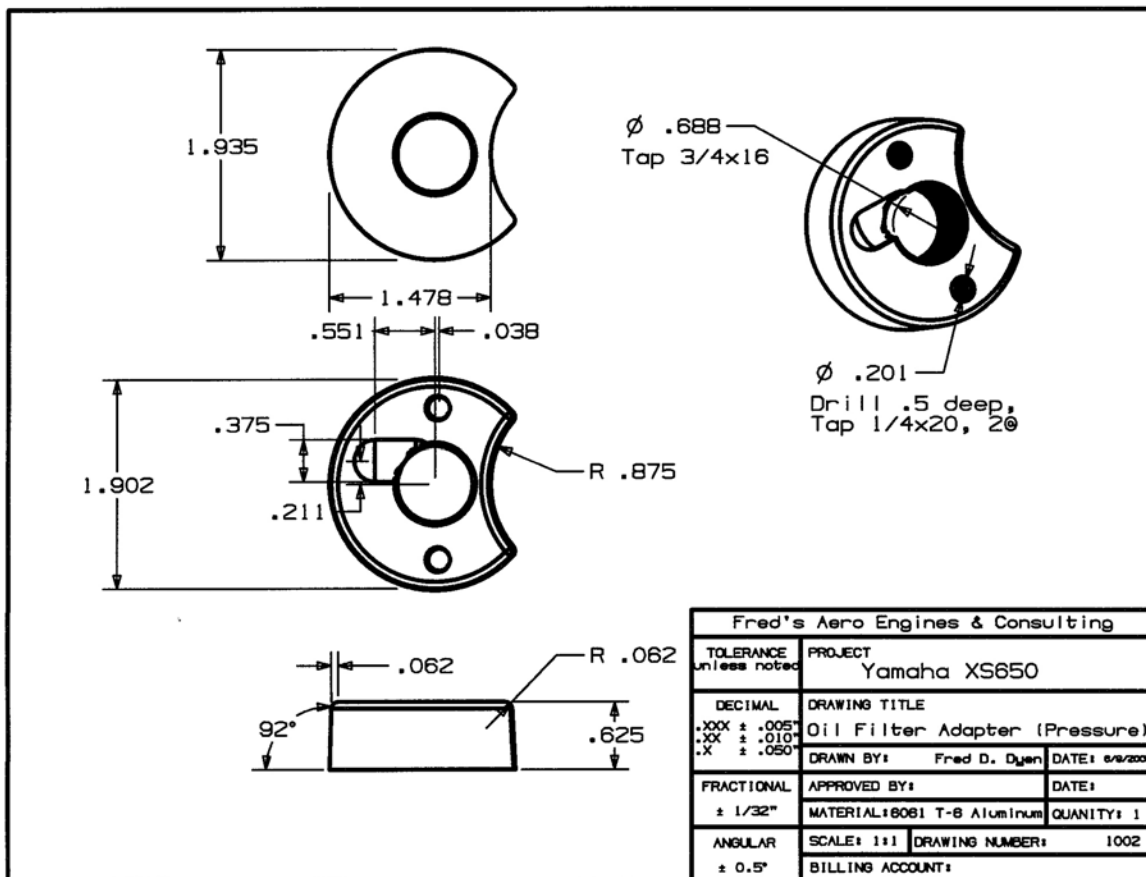
MMM came up with the initial concept that I modeled, fabricated, and modified.

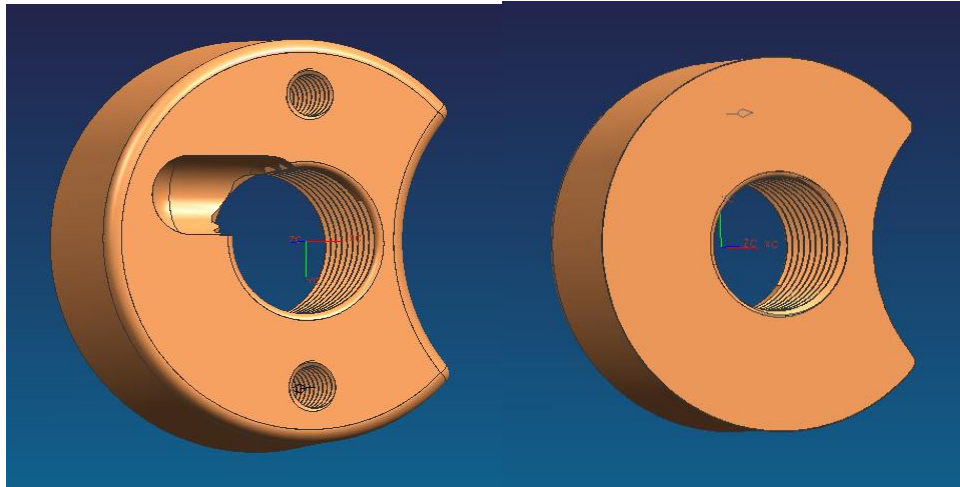
I began modeling the adapter in Unigraphics and made the following modifications from Michael’s original idea:

- I decided on a WIX P/N 57360 filter because of its cost, availability, and minimal height. (MMM was more concerned about safetying the filter and looks. MMM envisions using a K&N 303 or K&N 303C or possibly an EMGO 10-8220 filter (both of which use a 20x1.5mm thread. I was unable to find either of these for sale and neither company’s tech reps would return my queries for oil seal dimensions.)
- I did design both a 20mm x1.5mm (for those concerned with either looks, or safetying, or both) and 3/4 x 16 adapter (for those concerned with distance.
- Rather than use 6mm bolts to secure the adapter, I deferred to Michael and used 1/4x20.

The adapter assembly (adapter, stud, and gasket) replaces the cover, cover gasket oil filter, oil filter gasket, and bolt, with an adapter assembly that utilizes a spin-on oil filter.

Notice: the prototype adapter does not have the 1/4”x20 holes drill all the way thru. Also the dimensions are slightly larger, requiring more sanding to fit.





Oil Filter Adapter Views

Part Detail - Netscape



[zoom](#)

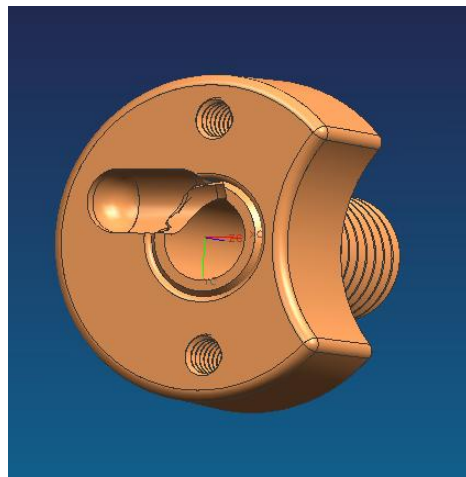
Part Number: 51360
UPC Number: 765809513600
Principal Application: Massey Ferguson Tractors
[All Applications](#)
Style: Spin-On Lube Filter
Service: Lube
Type: Full Flow
Media: Paper
Height: 2.577
Outer Diameter Top: 2.685
Outer Diameter Bottom: Closed
Thread Size: 3/4-16
By-Pass Valve Setting-PSI: 8-11
Anti-Drain Back Valve: Yes

Gasket Diameters			
Number	O.D.	I.D.	Thk.
Attached	2.460	2.200	0.230

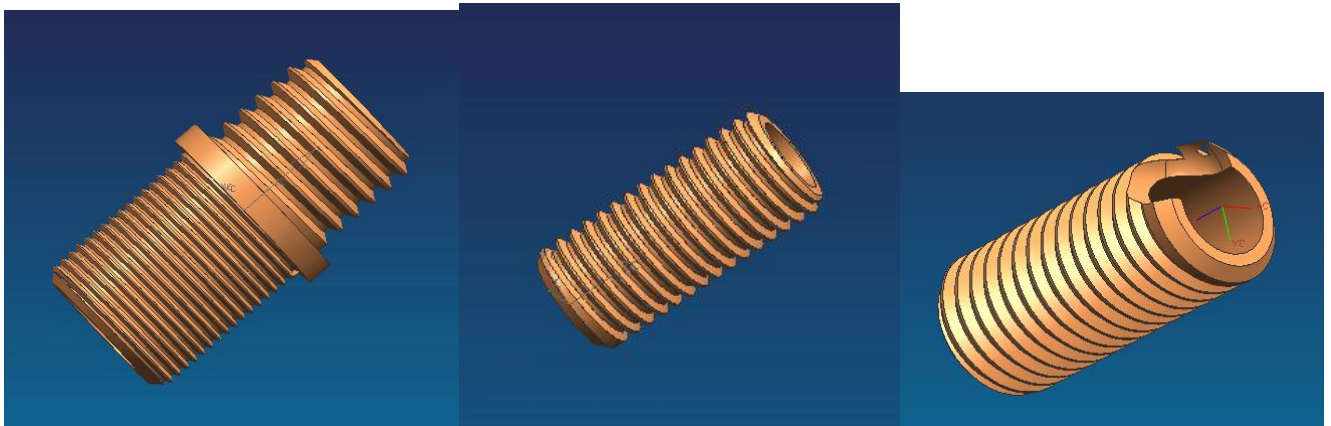
[Close Window](#)

Construction remarks:

- It does require removal of the clutch cover and drilling two small holes in the cover assembly.
- Due to the nature of the casting, I found that centering off the oil filter recess placed the centerline of the oil filter adapter approximate .0125" off center.
- Prussian Blue was essential in obtaining a final fit, along with some minimal sanding.
- Make sure you drill the holes to mount the adapter from the inside of the cover into the adapter, at .201" first. Then enlarge the holes in the cover to 1/4" and tap the holes in the adapter to 1/4x20. Follow with a bottoming tap.
- I filled the original mounting holes with J-B weld, although alumiweld or TIG should work as well.
- I mounted the 3/4x16 stud into the adapter with locktite before milling the .375" ball slot as shown below. An alternate method would be to shorten the 3/4x16 threaded end of the stud.



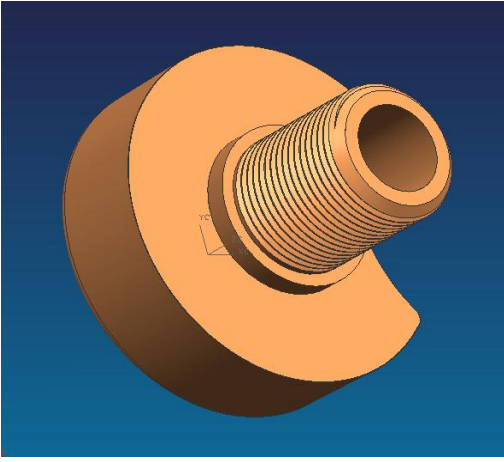
Optional Stud Assemblies



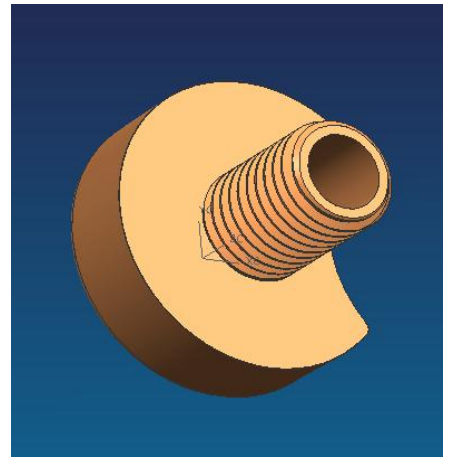
20mm x 1.5mm Stud

Milled 3/4x16 Stud

Milled 3/4x16 Stud



MMM's Adapter
Uses K&N 303C or EMGO 10-82210 Filter
Available in Chrome with provisions for safetying



Fred's Adapter
Uses WIX 57360 Filter