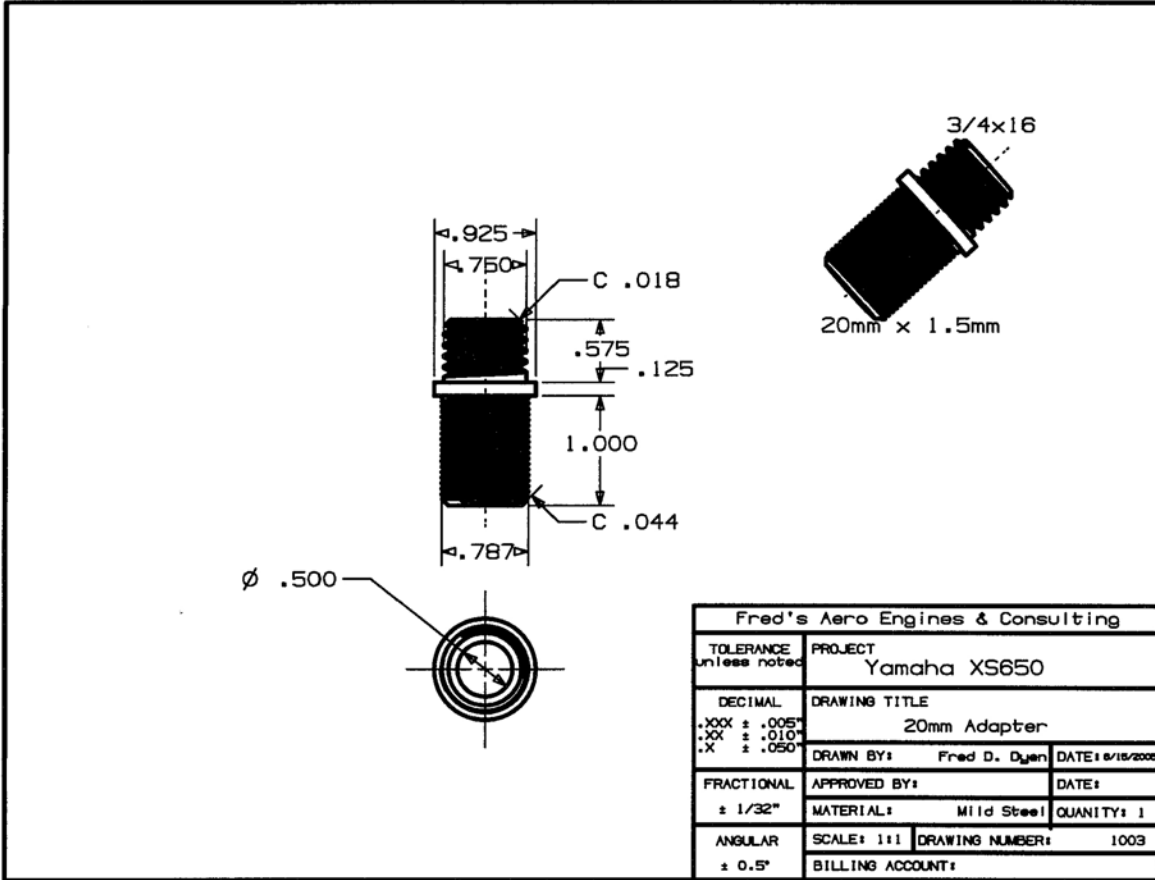


**Fred's Aero Engines & Consulting  
Yamaha XS650 Oil Filter Adapter**

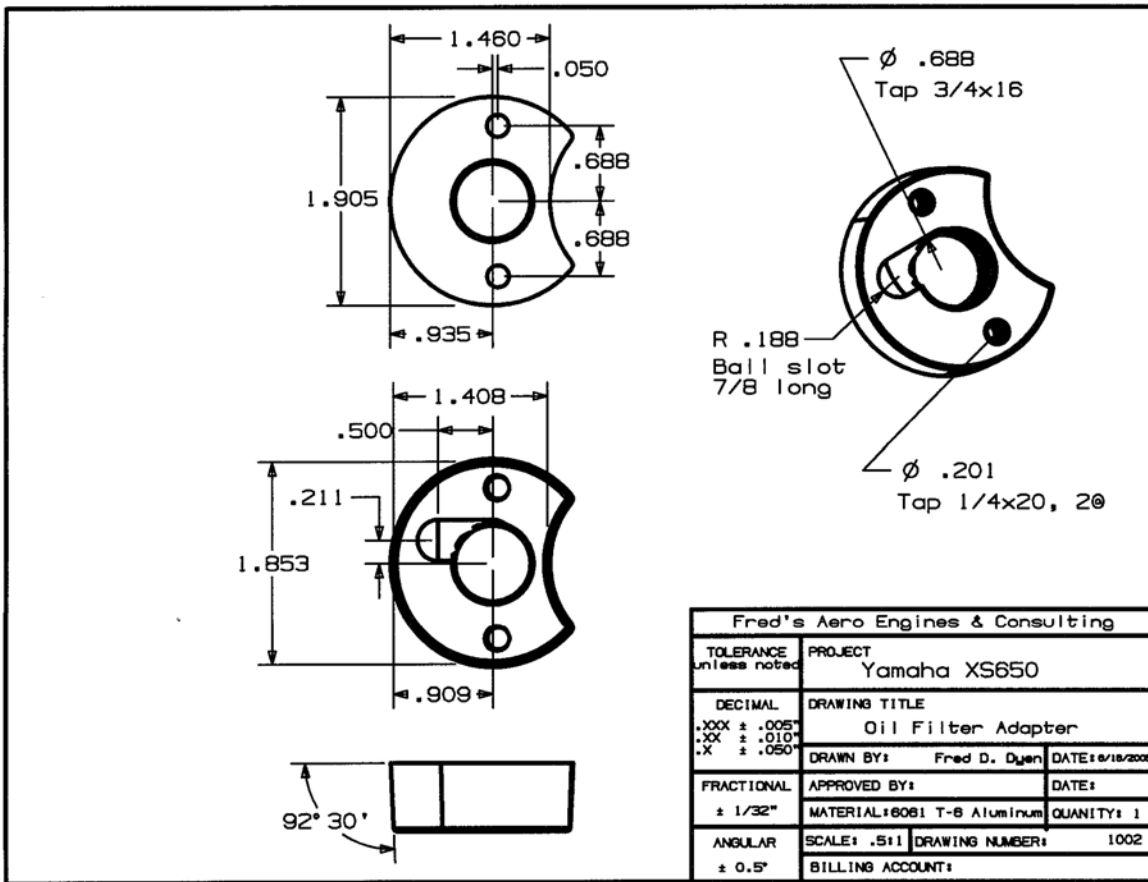
**Stud Construction**

1. Start out with 1" mild steel round stock. Place in lathe and turn to dimensions.
2. Drill 1/2" center.
3. Tap the short end to 3/4"x16 and the long end to 20mm x 1.5 mm.

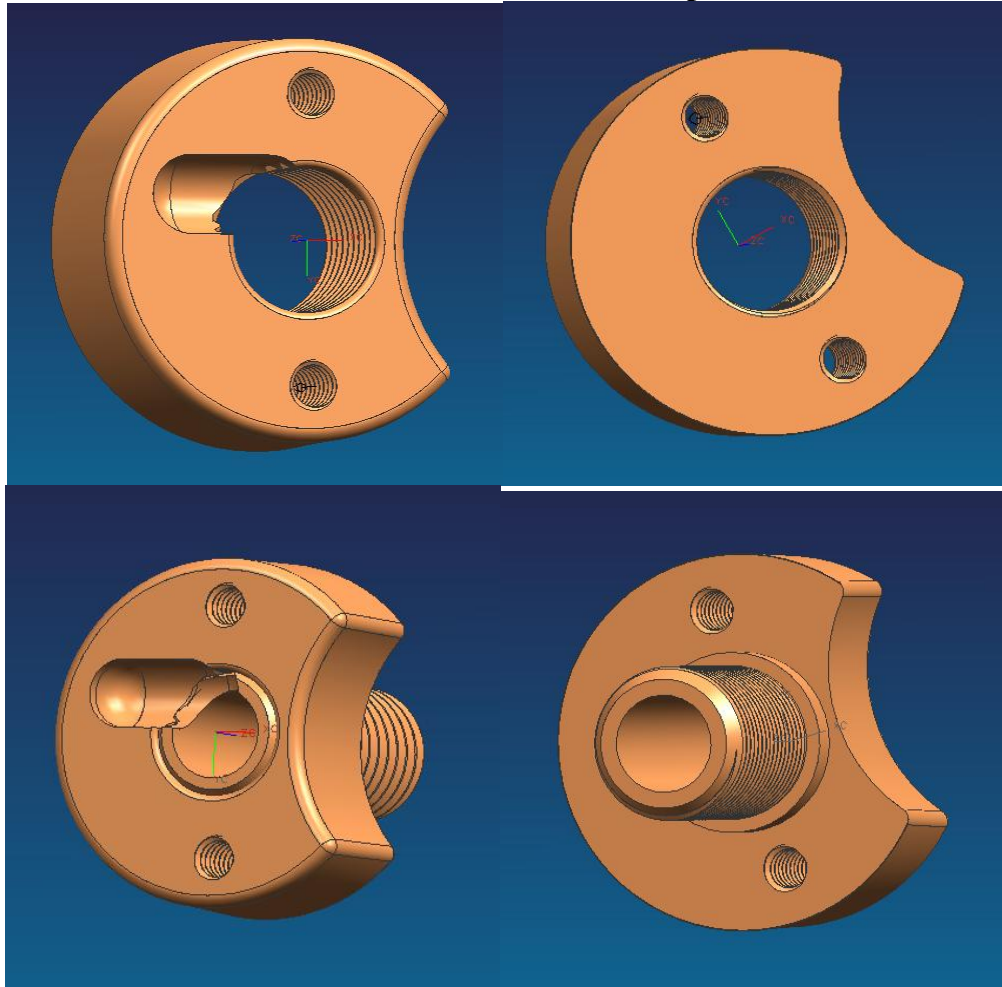


**Fred's Aero Engines & Consulting  
Yamaha XS650 Oil Filter Adapter  
Adapter Construction**

1. Start with 2" 6061-T6 round stock. Place in lathe and turn to dimensions using a 2½° offset on the compound rest, the taper should be approximately correct (adjust as necessary).
2. Drill an 11/16" hole in the center and tap this to ¾" x 16.
3. Part off at ~¾".
4. Mount on ¾" x 16 unf bolt secured with a lock nut and face off to .625" or install stud (with locktite) and face off.
5. Mount assembly on mill vise and center.
6. Set head to 2½° and bore out .875" radius.
7. Install stud (with locktite) if not done previously and using a 3/8" ball mill prepare oil supply hole.
8. Drill mounting holes .201" (#7 drill) and tap ¼" x 20.




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Yamaha XS650 Oil Filter Adapter**



**Oil Filter Adapter Views**

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*K&N Product Information for KN-303*  
Oil Filters > Oil Filter

**K&N powersports oil filters** are 'TUV' product endorsed and 'TUV' factory production monitored. This means every K&N oil filter is equal to or will exceed all OEM specifications. Our filters contain a modern synthetic filter media, designed for ultimate flow with less pressure drop, yet engineered for outstanding filtration to meet or exceed all OEM specifications. All K&N powersports 'spin-on' oil filters feature a heavy-duty metal can with a 17mm nut affixed onto the end that allows for easy installation and removal. The 17mm nut is crossed-drilled so racers can safety wire the filter to their bike. [\[MORE\]](#)

**KN-303 Product Specifications**  
 Product Style: Oil Filters  
 Height: 3.346 in (85 mm)  
 Outside Diameter: 2.673 in (68 mm)  
 Anti Drain Back Valve: Yes  
 Weight: 0.6 lb (0.3 kg)  
 Product Box Length: 2.75 in (70 mm)  
 Product Box Width: 2.75 in (70 mm)  
 Product Box Height: 3.5 in (89 mm)

**Available Information**  
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[Medium Picture](#)  
[Small Picture](#)  
[KN-303 Vehicle Applications](#)  
[KN-303 Cross Reference](#)



# Fred's Aero Engines & Consulting Yamaha XS650 Oil Filter Adapter

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K&N Product Information for KN-303C  
Oil Filters > Oil Filter

K&N powersports oil filters are 'TUV' product endorsed and 'TUV' factory production monitored. This means every K&N oil filter is equal to or will exceed all OEM specifications. Our filters contain a modern synthetic filter media, designed for ultimate flow with less pressure drop, yet engineered for outstanding filtration to meet or exceed all OEM specifications. All K&N powersports 'spin-on' oil filters feature a heavy-duty metal can with a 17mm nut affixed onto the end that allows for easy installation and removal. The 17mm nut is cross-drilled so racers can safety wire the filter to their bike. [\[MORE\]](#)

### KN-303C Product Specifications

Product Style: Oil Filters  
Height: 3.346 in (85 mm)  
Outside Diameter: 2.673 in (68 mm)  
Anti Drain Back Valve: Yes  
Finish: Chrome  
Weight: 0.6 lb (0.3 kg)  
Product Box Length: 2.75 in (70 mm)  
Product Box Width: 2.75 in (70 mm)  
Product Box Height: 3.5 in (89 mm)



### Available Information

- [Large Picture](#)
- [Medium Picture](#)
- [Small Picture](#)
- [KN-303C Vehicle Applications](#)
- [KN-303C Cross Reference](#)

Part Detail - Netscape



[zoom](#)

**Part Number:** 51 359  
**UPC Number:** 76580951 3594  
**Principal Application:** Suzuki Eng. (Motorcycles, Snowmobiles)  
[All Applications](#)

**Style:** Spin-On Lube Filter  
**Service:** Lube  
**Type:** Full Flow  
**Media:** Paper  
**Height:** 2.782  
**Outer Diameter Top:** 2.685  
**Outer Diameter Bottom:** Closed  
**Thread Size:** 20X1.0 MM  
**By-Pass Valve Setting-PSI:** 8-11  
**Anti-Drain Back Valve:** Yes

Gasket Diameters			
Number	O.D.	I.D.	Thk.
Attached	2.475	2.173	0.233

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**Fred's Aero Engines & Consulting**  
**Yamaha XS650 Oil Filter Adapter**  
**Installation Remarks**

1. Drain oil.
2. Remove oil filter cover, gasket, oil screen, and oil screen gasket.
3. Remove kick starter lever.
4. Remove clutch cover.
5. Carefully clean all gasket surfaces, taking care not to damage the aluminum mating surface.
6. Test fit the adapter in the in oil (screen) filter recess using Prussian blue. Remove material as necessary to obtain a perfect fit. A round sanding disk on a dremel tool works great.
7. Using the two tapped  $\frac{1}{4}$ "x20 tapped holes, make sure the two brass inserts are in place to protect the threads, and drill two holes with a  $\frac{3}{16}$ " drill.
8. Drill the holes out to  $\frac{1}{4}$ " using the pilot holes you have just drilled.
9. Clean out any chips paying particular attention to the oil galleys.
10. Place the gasket in the oil filter recess, remove the brass inserts, and bolt the adapter in place with the two  $\frac{1}{4}$ "x20x $\frac{3}{4}$ " allen-head bolts and copper washers.
11. Clean the cover securing recess holes with acetone and a q-tip. Let dry completely.
12. Fill the recess with J\_B weld leaving just above the mating surface.
13. Before the J-B weld hardens, (wait approximately 45 minutes) sand the surface smooth and blend in with the gasket mating surface.
14. Reinstall clutch cover, with a new gasket and make sure to replace the four copper washers on the bottom screws.
15. Install oil filter (and safety, if applicable).
16. Reinstall kick start lever.
17. Fill with oil.
18. Start and idle engine and check for leaks.
19. Enjoy.