



How To Align the Front End of a Motorcycle

By Kyle Freese

How to Align the Front End on a Motorcycle

Disclaimer:

Individual motorcycle owners must assume all risk while conducting this procedure.

Copyright:

No reproduction rights are granted without the express written permission of Kyle Freese.

Motorcycles can be dangerous if the front end is not straight. Any slight jar like a pothole, speed bump, curb, or rock can cause the front wheel to need alignment. This tutorial will demonstrate how to align a motorcycle front end on a 2009 KTM 450 XC-W and 2000-2007 DRZ 400S, and a 2011 KX450F, but the basic steps are the same for most motorcycles.



The following tools will be needed:

2000-2007 DRZ 400S

12mm and 24mm sockets, 19mm hex tool, ratchet(socket wrench), extension, breaker bar, and torque wrench; also 1/2" to 3/8" and/or 3/8" to 1/4" drive adapters (depending on socket set drive size being used).

2009 KTM 450 XC-W

10mm and 27mm sockets, ratchet(socket wrench), extension, breaker bar, and torque wrench; also 1/2" to 3/8" and/or 3/8" to 1/4" drive adapters (depending on socket set drive size being used).

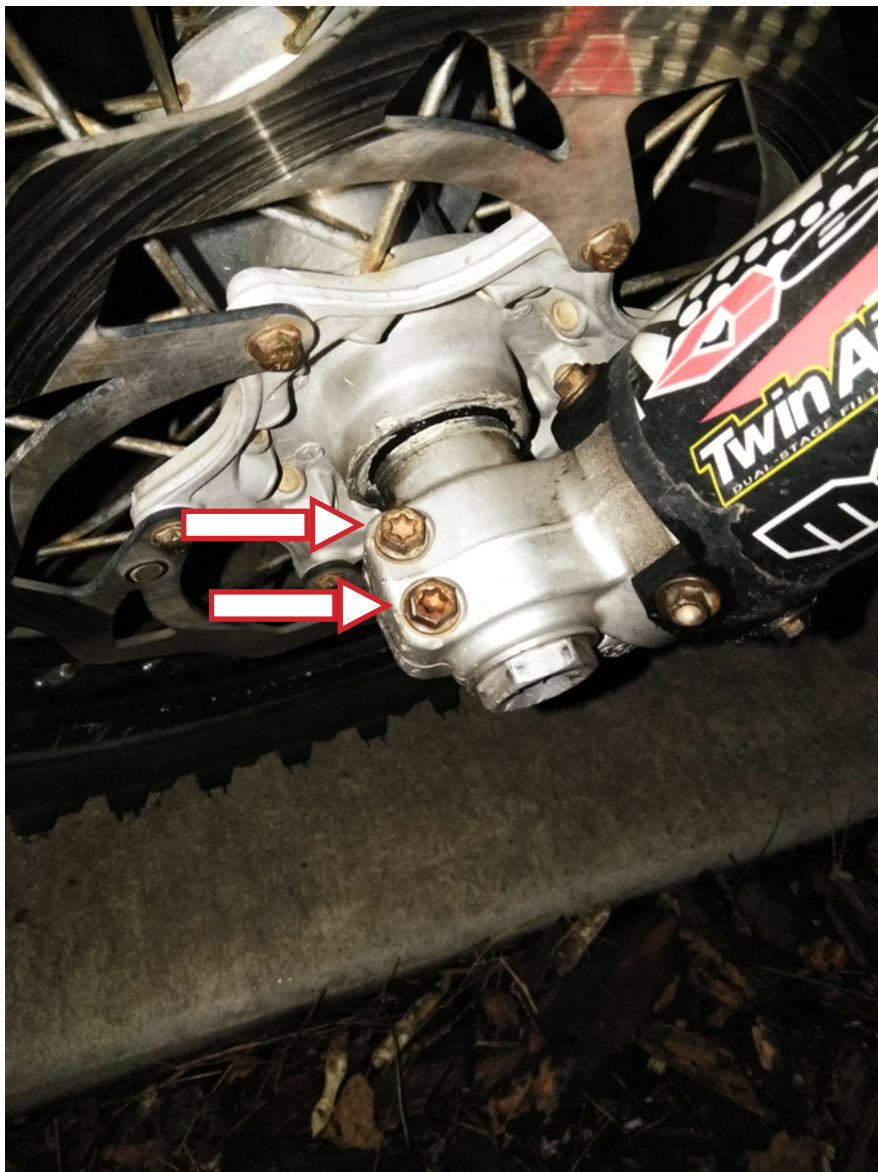
2011 Kawasaki KX450F

12mm and 22mm sockets, 19mm hex tool, ratchet(socket wrench), extension, breaker bar, and torque wrench; also 1/2" to 3/8" and/or 3/8" to 1/4" drive adapters (depending on socket set drive size being used).



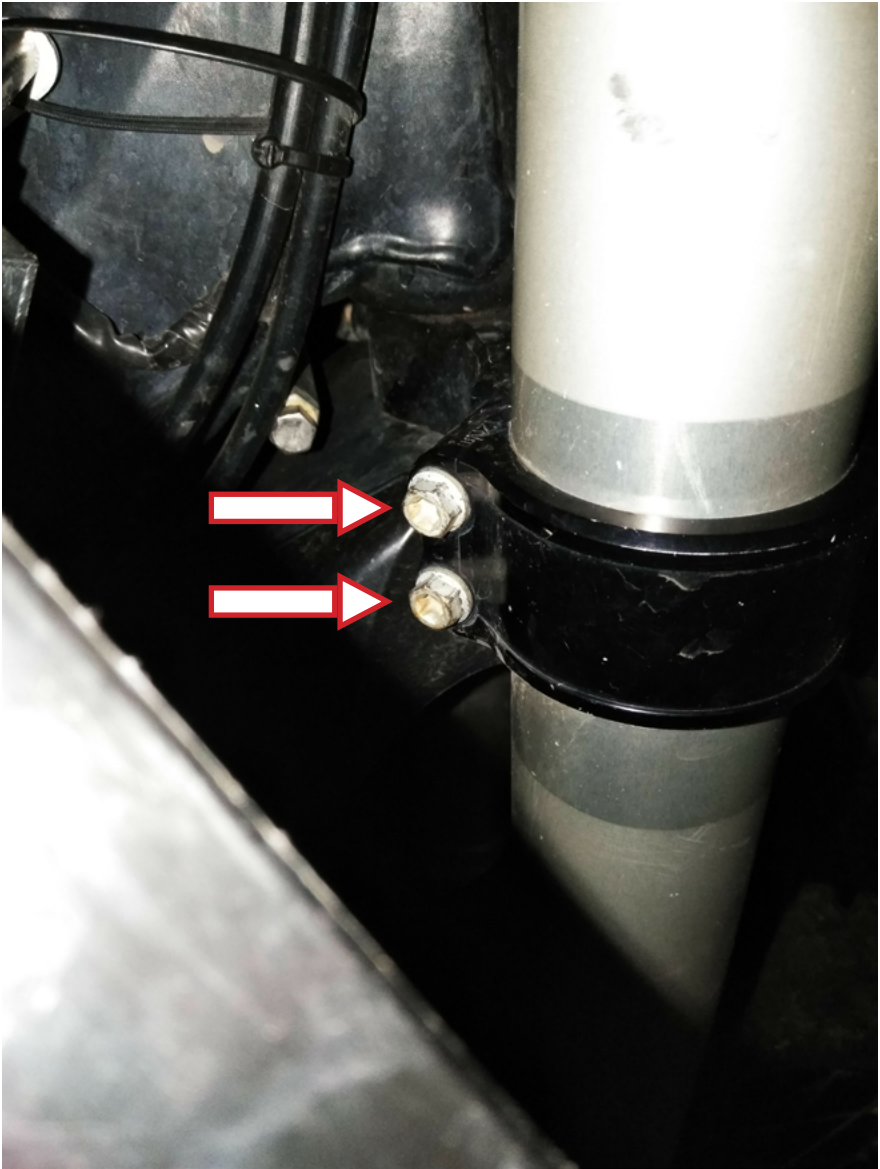


Loosen the front wheel axle nut. 27mm socket for KTM. DRZ uses 24mm socket on one end and 19mm hex tool on the other end. 2011 KX450F uses a 22mm socket and a 19mm hex tool.



Loosen the four bolts clamping the axle to the forks (2 on each fork). 10mm socket for KTM. 12mm socket for DRZ and KX450F.

STEP 2



Loosen the four bolts (2 on each fork) holding the forks in the LOWER triple clamp. (2 bolts on each fork). 10mm socket for KTM. 12mm socket for DRZ and KX450F.



DO NOT loosen the top triple clamp as this would result in the forks completely sliding up through the triple clamp assembly.



Block the front wheel and bounce the front end up and down 4 or 5 times **WITHOUT** holding the brake. This is what allows the front wheel to find its natural centered position.



Tighten the four bolts (2 on each fork) of the lower triple clamp back up. The 2009 KTM 450 XC-W torque value is 8.9 lb.ft and socket size is 10mm. The 2000-2007 DRZ 400s torque value is 23.0 lb.ft. and socket size is 12mm. The 2011 KX450F torque is 15 lb.ft. and socket size is 12mm.

STEP 6



Tighten the front wheel axle to an initial torque value. The 2009 KTM 450 XC-W is 33.2 lb.ft using the 27mm socket. The 2000-2007 DRZ 400s is 14.5 lb.ft. using the 24mm socket on one end while holding the other end with the 19mm hex tool. The KX450F is 58 lb.ft. with a 22mm socket.



Bounce the front end up and down AGAIN. Do this 4 or 5 times by compressing the shocks with the front wheel blocked.



Tighten the four axle clamp bolts (2 on each fork). The 2009 KTM 450 XC-W torque value is 11.1 lb.ft. and socket size is 10mm. The 2000-2007 DRZ 400s torque value is 13.0 lb.ft. and socket size is 12mm. The 2011 KX450f torque is 15 lb.ft. with a 12mm socket.

At this point motorcycles can differ as to the procedure of tightening the front wheel axle.

The KTM and Kawasaki are done!

Suzuki DRZ owners please continue to the next step.



Tighten the front axle nut again to a final torque value. 2000-2007 DRZ 400s torque value is 30.5 lb.ft. using a 24mm socket.

Alignment procedure is now complete.

References

Kawasaki Heavy Industries, Ltd. (2010). Motorcycle Owners Manual KX450F. Kirkland, WA: Kawasaki Heavy Industries USA

KTM-Sportmotorcycle AG (2010). KTM: Repair manual 2009. Mattighofen, Austria: KTM-Sportmotorcycle AG.

Suzuki Motor Corporation (2007). Suzuki DR-Z400: M.Y 2000-2007 Service manual. Minami-ku, Hamamatsu: Suzuki Motor Corporation.

Please consult your owners manual for verification of steps and procedures specific to your model year.

Visit ArmageddonConsulting.com for more tutorials.

Get your information quickly and have it on hand with,

Tutorials by Kyle



ArmageddonConsulting.com