

# NORTON COMMANDO TORQUE SETTINGS

## GEARBOX:

- The inner cover nuts (see tightening order, 7 nuts, 00-0004) 10 - 15 ft. lb.
- Outer cover screws (5 screws, 00-0482) 60 - 80 in lb.
- Clutch to mainshaft nut (1 nut, 04-0373), **SEE IMPORTANT NOTE** 70 ft. lb.
- Mainshaft nut (1 nut, 04-0023) 40 - 50 ft. lb.
- Final drive sprocket nut (LEFT. HAND, 1 nut, 04-0070) 80 ft. lb.
- Top gearbox fixing bolt (06-4697) 55 ft. lb.
- Bottom gearbox fixing bolt/stud (06-0597) 55 ft. lb.
- Kick start pinch bolt (1 bolt, 06-0599) 25 ft. lb.

## ENGINE:

- Mounting bolts (3/8 in., 4 bolts) 25 - 30 ft. lb.
- Mounting bolt (5/16 in., 1 bolt) 15 ft. lb.
- Cylinder head nuts (see tightening order, 3/8 in., 8 nuts) 30 ft. lb.
- Cylinder head nuts (see tightening order, 5/16 in., 2 nuts) 20 ft. lb.
- 750 Cylinder base nuts (see tightening order, 3/8 in., 6 nuts) 25 ft. lb.
- 750 Cylinder base nuts (see tightening order, 5/16 in, 3 nuts) 20 ft. lb.
- 850 Cylinder base nuts (see tightening order, 3/8 in, 1 nut) 25 ft. lb.
- 850 Cylinder base nuts (see tightening order, 5/16 in, 4 nuts) 20 ft. lb.
- 850 Cylinder base nuts (through cylinder, 4 nuts) 30 ft. lb.
- Crankshaft. stud nuts (12 nuts) 30 ft. lb.
- Connecting rod nuts (4 nuts, 06-7827) 22 to 25 ft. lb.
- Rocker spindle cover plate bolts (8 bolts) 8 ft. lb.
- Rotor nut, Crankshaft. (1 nut, 06-0387) 70 ft. lb.
- Alternator mounting stud nuts (3 nuts) 15 ft. lb.
- Oil pressure release valve (2 nuts) 25 ft. lb.
- Spark plug 15 ft. lb.

## TIMING CASE:

- Cam chain tensioner nuts (2 nuts, 06-2692) 15 ft. lb.
- Oil pump stud nuts (no washers, 2 nuts, 06-7592) 10 to 12 ft. lb.
- Oil pump worm gear nut (06-3024) 25 ft. lb.
- Oil pump worm gear/nut (06-7889, LH thread) 15 ft. lb.
- Camshaft. sprocket nut (06-7774) 60 to 80 ft. lb depending on cam metal.
- PW3 Camshaft. sprocket nut (cast iron) 15 ft. lb.
- Timing cover screws (see tightening order, 12 screws) 60 - 80 in lb.

## PRIMARY CASE:

- Chaincase Attachment Nut (one nut) 25 ft. lb.

- Alternator mounting stud nuts (3 nuts) 15 ft. lb.
- Chaincase fixing bolts (3 bolts, 06-2669) 60 - 80 in lb.
- MK3 Chaincase outer screws (10 screws, 06-5533) 60 - 80 in lb.
- MK3 Long starter screw (1 screw, 06-5532) 8 ft. lb.
- MK3 Short starter screws (2 screws, 06-4729) 8 ft. lb.

### **FRONT FORKS \ WHEEL:**

- Fork top bolts (tighten first, 2 bolts, 06-0345) 30 - 40 ft. lb.
- Steering head stem nut (tighten second, 1 nut, 0700101) 25 - 30 ft. lb.
- Yoke pinch bolts (tighten third 2 bolts, 06-1911) 30 ft. lb.
- Front fork pinch bolt (one bolt) 10 - 15 ft. lb.
- Spindle nut (1 nut, 06-0361) 60 ft. lb.
- Slider pinch bolt (1 bolt/nut, 06-2465) 15 ft. lb.
- Fork damper tube anchor bolt (1 bolts) 10 ft. lb.
- Nut mudguard bridge stud (2 each fork) 8 ft. lb.
- Disc to hub nuts (5 nuts) 20 ft. lb.
- NORVIL disc to hub nuts (see tightening info., 6 nuts) 20 -25 ft. lb.
- Front mudguard stay bolt (bottom, 4 bolts) 10 ft. lb.
- Front mudguard stay nut (top, 4 nuts) 4 ft. lb.
- Front fork pinch bolt nut (14-0302) 15 ft. lb.

### **REAR WHEEL:**

- Rear wheel nut (dummy spindle, 1 nut) 80 ft. lb.
- Rear wheel spindle (one nut) 80 ft. lb.
- Brake Drum Sleeve Nut (three nuts, 06-0323) 40 ft. lb.
- Wheel adjuster nuts (2 nuts) 8 ft. lb.
- Speedo cable to speedo Gear Box (06-7904) 15 ft. lb.
- Swing arm pivot pin bolt (one bolt) 10 ft. lb.
- Rear mudguard nut (top, 2 nuts) 8 ft. lb.
- Rear mudguard nut 5/16 (1 nut) 15 ft. lb.
- Rear mudguard nut 1.4 (bottom, 2 nuts) 8 ft. lb.
- Tail lamp pillar nut (2 nuts) 24 in lb.
- Lift. handle-clip nut 1/4 (1 nut) 8 ft. lb.

### **ISOLASTICS/ REAR SUPPORT PLATE:**

- Front bolt nut (1 nut) 30 ft. lb.
- Rear stud nuts (2 nuts) 30 ft. lb.
- Front supporting plate nuts (2 bolts) 25 ft. lb.
- Rear engine plate nut (1 bolt, bottom) 20 ft. lb.
- Rear engine plate nut (2 bolts, upper) 30 ft. lb.
- Engine steady to head screw (3 screws) 12 ft. lb.
- Engine steady stud nut (2 studs) 12 ft. lb.

## **CALIPER:**

- Front calliper to fork bolts (2 bolts\nnuts, 0700291) 25 - 30 ft. lb.
- End plug (original calliper, 1 plug, 06-2185) 25 ft. lb.

## **OIL TANK AND FITTINGS:**

- Oil tank mounting bolt (1 bolt, 06-0652) 4 ft. lb.
- Oil junction block bolt (1 bolt, 03-0448) 8 ft. lb.
- Rubber mounting bolt nuts (2 bolts, 4 nuts, 03-3057) 4 ft. lb.
- Oil filter mounting bolts (2 bolts, 22403) 8 ft. lb.
- Rocker feed banjo bolts (3 bolts, 06-7696) 15 ft. lb.

## **MISCELLANEOUS:**

- Side stand nut (1972 - later, one nut) 50 - 60 ft. lb.
- Centre stand nut (1 nut) 45 ft. lb.
- Coil mounting bracket nuts (2 nuts) 10 in lb.
- Kick start pinch bolt (1 bolt/nut) 25 ft. lb.
- Balance pipe bolt, exhaust (2 bolts/nuts) 7 ft. lb.
- Carburettor stud nut (4 nuts) 8 ft. lb.
- Carburettor fixing screws (4 screws) 8 ft. lb.
- Shock mounting nuts (2 each shock) 25 ft. lb.
- Chain guard nut (2 nuts) 8 ft. lb.
- Front break lever pivot bolt (1 bolt) 25 ft. lb.
- Front hydraulic hose nut (1 nut) 15 ft. lb.
- Muffler clamp pinch bolt (1 bolt) 9 ft. lb.
- Zener diode nut (one nut) 24 in lb.
- Coil clip bolts (2 each coil) 10 in lb.
- Coil mounting bracket bolts (4 bolts) 8 ft. lb.
- Reflector nut 20 in lb.
- Screw, condenser pack (2 screws) 24 in lb.
- Nut, condenser pack (2 nuts) 24 in lb.
- Horn nut (2 nuts) 8 ft. lb.
- Head lamp bolt (2 bolts) 15 ft. lb.

## **FOOTRESTS:**

- Rear side plate mounting nut (2 each plate) 25 ft. lb.
- Footpeg nuts (1 each footpeg) 40 ft. lb.
- Footrest mounting flange nuts (3 on left. 2 on right) 8 ft. lb.
- Footrest mounting bolt (1 on right) 15 ft. lb.
- Pillion footrest bolt\nnut (1 each) 25 ft. lb.
- Pillion pivot bolt (1 each rest) 8 ft. lb.
- Mounting rubber nuts (2 each rubber) 10 ft. lb.

## **GENERAL:**

- 1/4" Bolt 8 ft. lb.
- 5/16" Bolt 15 ft. lb.
- 3/8" Bolt 25 ft. lb.
- 7/16" Bolt 40 ft. lb.
- 1/2" Bolt 60 ft. lb.
- 9/16" Bolt 80 ft. lb.

Note: The above figures are for plated bolts. Lubrication makes bolts easier to turn and therefore lower torque should be used.

Anytime you are threading a stainless steel nut on to a stainless steel bolt, it is good practice put a dab of anti-seize on the threads. Stainless has a tendency to work harden and weld itself together.

## **CLUTCH TO MAINSHAFT. NUT:**

The factory torque setting for this nut is 70 ft. lb., however this torque setting runs the risk of breaking the clutch locating circlip (06-0752). It is recommended that you use locktight on this nut and torque to 35 or 40 ft. lb. If you do want to use 70 ft. lb. you should use a new circlip each time this nut is removed.

## **TIGHTENING ORDER:**

### **INNER COVER:**

Looking at the inner cover with the main shaft. above the lay shaft. (kick start shaft) you have two studs outside the inner cover. If you start lettering the studs from A, the first external stud and proceed clockwise to the other external stud, labelled, B you will proceed to the letter G. The tightening order will be E, G, C, F, B, D then finally A.

### **CYLINDER HEAD:**

Looking at the front (exhaust side) of the head there is a centre stud (3/8 in) and the two front 5/16 in studs. Start lettering with the centre 3/8 in. stud from A and proceed clockwise to the 5/16 in. stud as B, ending with the last 5/16 in. stud as J. The tightening order will be A, F, H, E, G, D, I, C, J then finally B.

### **CYLINDER BASE 750:**

Looking at the front (exhaust side) of the cylinder there is a centre stud. Start lettering with the centre stud (20 ft. lb.) from A and proceed clockwise to stud as B (20 ft. lb.), C

(25 FT. LB), D (25 FT. LB), E (25 FT. LB), F (25 FT. LB), G (25 FT. LB), H (25 FT. LB) and ending with the last stud (20 ft. lb.) as I. The tightening order will be C, G, H, D, E, F, A, B then finally I.

### **CYLINDER BASE 850:**

Looking at the front (exhaust side) of the cylinder there is a centre stud. Start lettering with the centre stud (25 ft. lb.) from A and proceed clockwise to stud as B (20 ft. lb.), C (30 FT. LB), D (30 FT. LB), E (20 FT. LB), F (20 FT. LB), G (30 FT. LB), H (30 FT. LB) and ending with the last stud (20 ft. lb.) as I. The tightening order will be C, G, H, D, E, F, A, B then finally I.

### **TIMING COVER:**

Looking at the cover with the point cover on the right. If you start lettering at the far right screw (in front of the point cover), from A and proceed clockwise to the letter L. Screws A, B, H and L are short screws. Screws C, D, E, G, I, J and K are medium screws. Only screw F is a long screw. The tightening order will be J, E, K, F, I, D, G, C, L, B, H then finally A.

### **NORVIL DISC:**

The NORVIL disc consists of three pieces, the disc, the disc carrier (and four carrier washers) and the backing dish. The disc carrier bolts to the hub and fits inside the disc. The backing dish fits between the carrier and the hub.

To assemble first tighten the four carrier washers to the carrier. The carrier washers are attached by allen screws and should be attached with locktight and never removed. Remove the disc by removing the carrier from the hub.

Place the disc on the carrier and place the dish in its proper place. Draw a line on the disc around the dish to show proper alignment. Now place the assembled disc, carrier and dish on the hub. Insert the six bolts and nuts and tighten finger tight. Move the dish into its proper position using the circle you marked on the disc.

Now torque the six bolts to 15 to 20 ft. lb. (use an alternating pattern). Using the same alternating pattern re-torque the bolts (you will find most bolts were out of torque due to the compression of the backing dish). Check the alignment of the disc and if the alignment is correct, increase the torque by 5 ft. lb. to 25 ft. lb. and re-torque using the same alternating pattern.

If the alignment is incorrect, loosen the bolts and reset the dish placement and re-torque.