

## Table of Contents

|                                          |   |
|------------------------------------------|---|
| <b>EVO: Engine Mechanicals - Sub-09C</b> | 3 |
| <b>Evo Motor Mount Specs</b>             | 3 |



[Go To Technical Menu](#)

# EVO: Engine Mechanicals - Sub-09C

## Evo Motor Mount Specs

The 1986-1991 FSMs list no torque specs for the rear mounts or lower front mounts.

There is only one spec in the 79-85 FSM (rear motor mounting bolt-nut: 16 to 24 ft lbs) and the 86-90 rear mount is the same part from 84-90.

For the rest, there are general "Torque Value" charts in the front of the service manual. <sup>1)</sup>

It lists general torque values for bolt types but not specific mounting bolts.

It also says to torque to these values given in the tables unless specified otherwise. There are two charts (English and Metric).

Below is a list of torque values from the different year model FSMs.

| 1986-2003 Motor Mount Torque Specs in HD Service Manuals |                              |                      |                        |                                  |              |          |            |
|----------------------------------------------------------|------------------------------|----------------------|------------------------|----------------------------------|--------------|----------|------------|
| Point of Torque                                          | SAE                          | Metric               | Year Model             | Point of Torque                  | SAE          | Metric   | Year Model |
| Rear Mount Fasteners                                     | 16-24 ft-lbs<br>25-30 ft-lbs | 21-33 Nm<br>34-41 Nm | 1985→1990<br>1994-2003 | Neg Cable Nut to Rear Mount Stud | 68-80 in-lbs | 7-10 Nm  | 1994-2003  |
| Lower Front Mount to Engine                              | 25-30 ft-lbs                 | 34-41 Nm             | 1994-2003              | Lower Front Mount to Frame       | 25-30 ft-lbs | 34-41 Nm | 1994-2003  |
| Upper Front Mount to Head                                | 21-27 ft-lbs<br>25-30 ft-lbs | 28-36 Nm<br>34-41 Nm | 1986-1989<br>1990-2003 | Upper Front Mount to Frame       | 30-35 ft-lbs | 40-47 Nm | 1986-2003  |
| Top Center Mount to Heads                                | 21-27 ft-lbs<br>25-30 ft-lbs | 28-36 Nm<br>34-41 Nm | 1986-1989<br>1990-2003 | Top Center Mount to Frame        | 30-35 ft-lbs | 41-47 Nm | 1986-2003  |

The charts below are from the torque value charts in the 86-90 FSM.

**Low strength****No marks (Grade 1 or 2)**

tensile strength 60,000-74,000 psi  
yield strength 36,000-57,000 psi

|                                         |
|-----------------------------------------|
| <b>SAE Bolt Head<br/>Grade Markings</b> |
|-----------------------------------------|

**Medium strength****3 marks (Grade 5)**

tensile strength 120,000 psi  
yield strength 80,000-90,000 psi

**High strength****6 marks (Grade 8)**

tensile strength 150,000 psi  
yield strength 130,000 psi



2)

**SAE Torque Value Chart per Bolt Type**

| Bolt size | SAE 2<br>74,000 psi<br>Low<br>carbon | SAE 5<br>120,000 psi<br>Medium<br>carbon<br>heat treat | SAE 7<br>133,000 psi<br>Medium<br>carbon<br>alloy | SAE 8<br>150,000 psi<br>Medium<br>carbon<br>alloy | Socket head<br>cap screw<br>160,000 psi<br>High carbon<br>quenched<br>tempered | Socket head<br>set screw<br>212,000 psi<br>High carbon<br>quenched<br>tempered | Studs                                                                                                       |
|-----------|--------------------------------------|--------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| #6        | -                                    | -                                                      | -                                                 | -                                                 | -                                                                              | 9 in/lb                                                                        | Use<br>SAE<br>2,5 and 8<br>values<br>when<br>grade<br>is known<br>with nut<br>and<br>sufficient<br>strength |
| #8        | -                                    | 14 in/lb                                               | -                                                 | -                                                 | -                                                                              | 16 in/lb                                                                       |                                                                                                             |
| #10       | -                                    | 22 in/lb                                               | -                                                 | -                                                 | -                                                                              | 30 in/lb                                                                       |                                                                                                             |
| 1/4"      | 6 ft/lb                              | 10 ft/lb                                               | 13 ft/lb                                          | 14 ft/lb                                          | 16 ft/lb                                                                       | 70 in/lb                                                                       |                                                                                                             |
| 5/16"     | 12 ft/lb                             | 19 ft/lb                                               | 25 ft/lb                                          | 29 ft/lb                                          | 33 ft/lb                                                                       | 140 in/lb                                                                      |                                                                                                             |
| 3/8"      | 20 ft/lb                             | 33 ft/lb                                               | 44 ft/lb                                          | 47 ft/lb                                          | 54 ft/lb                                                                       | 18 ft/lb                                                                       |                                                                                                             |
| 7/16"     | 32 ft/lb                             | 54 ft/lb                                               | 71 ft/lb                                          | 78 ft/lb                                          | 84 ft/lb                                                                       | 29 ft/lb                                                                       |                                                                                                             |
| 1/2"      | 47 ft/lb                             | 78 ft/lb                                               | 110 ft/lb                                         | 119 ft/lb                                         | 125 ft/lb                                                                      | 43 ft/lb                                                                       |                                                                                                             |
| 9/16"     | 69 ft/lb                             | 114 ft/lb                                              | 154 ft/lb                                         | 169 ft/lb                                         | 180 ft/lb                                                                      | 63 ft/lb                                                                       |                                                                                                             |
| 5/8"      | 96 ft/lb                             | 154 ft/lb                                              | 215 ft/lb                                         | 230 ft/lb                                         | 250 ft/lb                                                                      | 100 ft/lb                                                                      |                                                                                                             |
| 3/4"      | 155 ft/lb                            | 257 ft/lb                                              | 360 ft/lb                                         | 380 ft/lb                                         | 400 ft/lb                                                                      | 146 ft/lb                                                                      |                                                                                                             |
| 7/8"      | 206 ft/lb                            | 382 ft/lb                                              | 570 ft/lb                                         | 600 ft/lb                                         | 640 ft/lb                                                                      | -                                                                              |                                                                                                             |
| 1"        | 310 ft/lb                            | 587 ft/lb                                              | 840 ft/lb                                         | 700 ft/lb                                         | 970 ft/lb                                                                      | -                                                                              |                                                                                                             |

**Metric Torque Value Chart per Bolt Type**

| Bolt size | SAE 2<br>5,202<br>kg/cm <sup>2</sup><br>Low<br>carbon | SAE 5<br>8,436<br>kg/cm <sup>2</sup><br>Medium<br>carbon<br>heat treat | SAE 7<br>9,350<br>kg/cm <sup>2</sup><br>Medium<br>carbon<br>alloy | SAE 8<br>10,545<br>kg/cm <sup>2</sup><br>Medium<br>carbon<br>alloy | Socket head<br>cap screw<br>11,248 kg/cm <sup>2</sup><br>High carbon<br>quenched<br>tempered | Socket head<br>set screw<br>14,902 kg/cm <sup>2</sup><br>High carbon<br>quenched<br>tempered | Studs |
|-----------|-------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------|
|-----------|-------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------|

|      |       |       |        |       |        |       |                                                                                                             |
|------|-------|-------|--------|-------|--------|-------|-------------------------------------------------------------------------------------------------------------|
| 2    | -     | -     | -      | -     | -      | -     | Use<br>SAE<br>2,5 and 8<br>values<br>when<br>grade<br>is known<br>with nut<br>and<br>sufficient<br>strength |
| 3    | -     | -     | -      | -     | -      | -     |                                                                                                             |
| 4    | -     | -     | -      | -     | -      | -     |                                                                                                             |
| 5    | -     | -     | -      | -     | -      | -     |                                                                                                             |
| 6    | -     | -     | -      | -     | -      | 1.0   |                                                                                                             |
| 8    | -     | 1.6   | -      | -     | -      | 1.8   |                                                                                                             |
| 10   | -     | 2.5   | -      | -     | -      | 3.4   |                                                                                                             |
| 6.4  | 8.3   | 13.8  | 18.0   | 19.4  | 22.1   | 8.1   |                                                                                                             |
| 7.9  | 16.6  | 26.3  | 34.6   | 40.1  | 45.6   | 16.1  |                                                                                                             |
| 9.5  | 27.7  | 45.6  | 60.8   | 65.0  | 74.7   | 24.9  |                                                                                                             |
| 11.1 | 44.3  | 74.7  | 98.2   | 107.9 | 116.2  | 40.1  |                                                                                                             |
| 12.7 | 65.0  | 107.9 | 152.1  | 164.6 | 172.9  | 59.5  |                                                                                                             |
| 14.3 | 95.4  | 157.7 | 213.0  | 233.7 | 248.9  | 87.1  |                                                                                                             |
| 15.9 | 132.8 | 213.0 | 297.3  | 318.1 | 345.7  | 138.3 |                                                                                                             |
| 19.1 | 214.4 | 355.4 | 497.9  | 525.5 | 553.2  | 201.9 |                                                                                                             |
| 22.2 | 283.5 | 528.3 | 788.3  | 829.8 | 885.1  | -     |                                                                                                             |
| 25.4 | 428.7 | 811.8 | 1161.7 | 968.1 | 1341.5 | -     |                                                                                                             |

### Go To Technical Menu

1)

1986-1990 HD Sportster FSM pg 1-8

2)

drawing by Hippysmack

From:

<https://sportsterpedia.com/> - **Sportsterpedia**

Permanent link:

<https://sportsterpedia.com/doku.php/techtalk:evo:engmech09c>

Last update: **2024/05/31 00:49**

