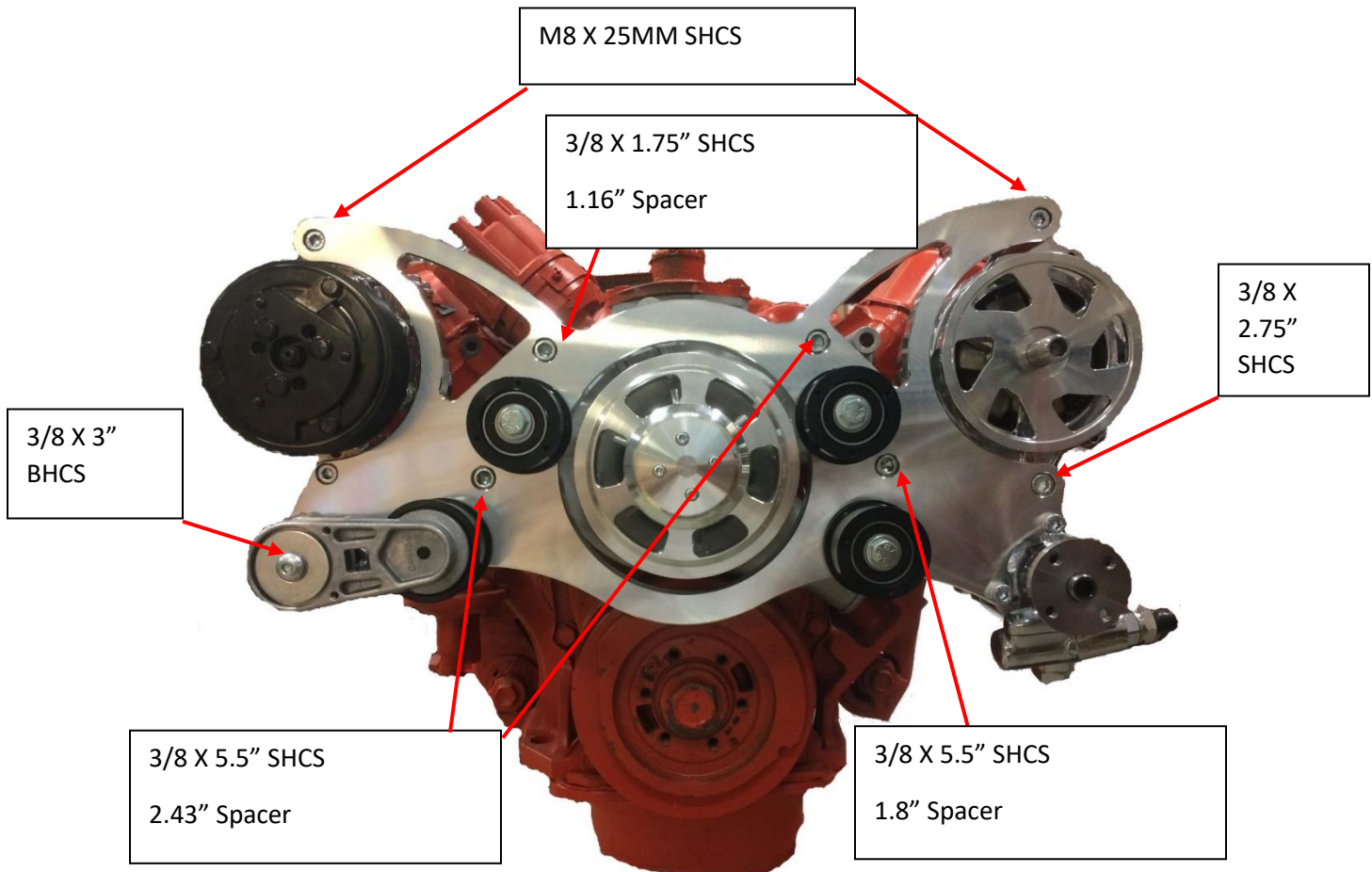




## 440-BRACKET-KIT-WR INSTALL INSTRUCTIONS

| PART                   | QTY | APPLICATION                                |
|------------------------|-----|--|
| 3/8-16 X 2.75" SHCS    | 1   | Bottom alternator bolt                     |
| 3/8-16 X 3.0" BHCS     | 1   | Bolt holding TENSIONER-KIT                 |
| 3/8-16 X 2.5" HHS      | 3   | Bolt holding SERP-IDLER-WR                 |
| 3/8" SAE Washer        | 3   | Washer for idler                           |
| 3/8-16 X .468 Lock Nut | 5   | Bottom alternator bolt, tensioner, & idler |
| M8-1.25 X 25mm SHCS    | 3   | Top ALT Bolt and Top AC Bolt               |
| M8-1.25 X 40mm SHCS    | 2   | Power steering to main bracket             |
| 3/8-16 X 5.5" SHCS     | 3   | Bracket to water pump                      |
| 3/8-16 X 1.75" SHCS    | 1   | Bracket to water pump, Top Left            |
| 7517722-243 Spacer     | 2   | Spacers between WP and Plate               |
| 7517722-180 Spacer     | 1   | Spacer between WP and Plate, bottom right  |
| 7517722-116 Spacer     | 1   | Spacer between WP and Plate, Top Left      |
| Total                  | 26  |  |



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## 440-BRACKET-KIT-WR INSTALL INSTRUCTIONS

Step 1: Remove old brackets, pulleys, water pump, and accessories.

Tech Tip: We recommend thread chasing the water pump mounting holes. Loose debris in the holes can cause slight spacing issues and/or bolts not fully securing.

Step 2: Apply RTV Blue or similar gasket sealer to both sides of the water pump gaskets.

Step 3: Install the water pump and main bracket (440-WR). It is recommended to do this all at once. It may be beneficial to have someone help with this step. Everything from here on out will attach directly to the main bracket. Use (3) 3/8 X 5.5" SHCS, (1) 3/8 X 1.75" and the spacers. When looking at the front of the engine, the bottom right bolt will use a 1.8" spacer, the top left will use the 1.16" spacer and 3/8 X 1.75 SHSC while the rest will use the longer 2.43". Do not fully tighten any bolts until all have been started. Secure in an alternating pattern.

Tech Tip: Step 3 can be done with one person, use a spare bolt to hold one end of the water pump on while you get the assembly started.

Step 4: Install the alternator to the right side of the bracket. The CVF logo should face towards the fender. Use a M8 X 25MM SHCS on top and a 3/8 X 2.75 on the bottom. Secure the bottom bolt with a locknut.

Tech Tip: If side post of alternator is not in a desired location, you can carefully unbolt the back housing of the alternator and rotate to a preferred location. DO NOT REMOVE the back housing completely or you will have to re-install the bushings.

CVF Alternators are 1-Wire and will not use the pin plug. You will need to run a dedicated ground. Alternator pig tails are not included. If you want to avoid a 1-Wire install, look for part #30700 at CVFracing.com to purchase a high amperage wiring kit. Further instructions and tips can be found at support.cvfracing.com



## 440-BRACKET-KIT-WR INSTALL INSTRUCTIONS

Step 5: Install the Peanut Compressor to the left side of the bracket. The CVF logo will face towards the fender and the fittings will face up. Use a M8 X 25 MM for the top hole. Use a M8 X 25MM for the bottom hole. **The compressor does come pre-charged with 4.75 oz pag100 oil.**

Variation: If you are running without AC, you can install the AC Idler at this time (AC-DELETE). It will install similarly to the compressor. Instructions can be found in that box.

Step 6: Install the spring-loaded tensioner (TENSIONER-KIT). Leave the decorative cap off until the belt is installed. Use the 3/8 X 3" BHCS and secure on the back with a locknut.

Step 7: Install the crank pulley and hub spacer with their provided hardware. They will install as one assembly with the bolts going through the crank pulley and hub adapter. Leave the decorative cap off the crank pulley until you are done installing. This cap allows for correcting timing without removing the entire crankshaft pulley.

Step 8: Install the power steering pump. Instructions for each pump are as follows:

GM T2 Pumps: bolt directly onto the bracket with (2) M8 X 40MM SHCS

KRC Hydroboost Pumps: require the use of HYDRO-BRACKET-KIT-WR, see instructions inside that box.

Saginaw Pumps: Require the use of FORD-WRAPTOR-SAGINAW-KIT. Instructions can be found inside that box.

Step 9: Install the power steering pump. Most applications will use S-LS11PS; however, Saginaw applications use S-SBC4PS).

Step 10: Install the water pump pulley using the provided hardware.

Step 11: Install the SERP-IDLER-WR (S) in the bottom right hole of the bracket near the power steering pump. The hole near the three open holes on the main bracket. The boss will go into the hole. Do not put the caps on until the belt has been routed. Secure on the back with a locknut.

Step 12: Use a 1/2" ratchet to apply tensioner to the spring-loaded tensioner and install the belt as shown on the next page.



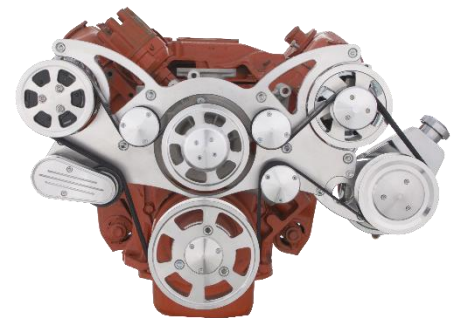
## 440-BRACKET-KIT-WR INSTALL INSTRUCTIONS



With Power Steering



Without Power Steering



Saginaw PS Pump

Step 13: Route the belt based on your configuration above. Recommended belts for proper tension are as follows:

AC & PS: K080760; No PS: K080660

Tech Tip: To ensure lasting performance, we recommend the tensioner be in a similar position to the picture below. Installing the belt may be difficult, we recommend completing this step with 2 people. In most cases when installing the belt, the belt can be too tight to fit over the pulley. If you remove the alternator pulley cap and the nut that holds the pulley onto the alternator, place belt around alternator pulley as shown in the pictures below. Release tension on the tensioner and slide alternator pulley onto the shaft of the alternator using the pulley as additional leverage. A properly installed belt will keep the outside line on the tensioner within the 3 positional lines as seen below.



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## 440-BRACKET-KIT-WR INSTALL INSTRUCTIONS

Step 14: Once the belt is installed, all decorative caps can be installed.

Step 15: If you are going to be running a mechanical fan, you will need to install FAN-SPACER-WR onto your water pump shaft.

Step 16: Install and plumb the remote reservoir. Directions for this can be found in the box REMOTE-PS-RES. The fittings on the bottom of the reservoir are 3/8" NPT.

Tech Tip: After initial start-up, you will need to bleed air from your power steering system. To do this, you want to put the front of the car on jack stands and steer into the left stops and then into the right stops repeatedly. Check fluid level frequently and add as needed.

Further instructions regarding power steering set up can be found at [CVFracing.com](http://CVFracing.com).

### Torques Specs:

All torque specs can be found on the last page of this instruction packet provided by Fastenal. We have highlighted all CVF bolts inside the table. Feel free to keep the page and use it for reference in your garage.

Note: Metric Socket Head Bolts are not listed. Use the recommended torque specs for 5/16 when tightening M8 bolts and 3/8 torque specs when tightening M10.

Thank you for your purchase from CVF Racing! If you have any questions about your install, check out our support center for install guides, videos, and other helpful tips. If you need further help, our tech staff can be reached M-F from 8-5 PM CST via phone, email, or chat.

**Looking to upgrade further?** Contact us to upgrade your system! Most can be added with little to no modification of your installed kit.

- Add AC
- Upgrade to a Hydro boost Brake System
- Upgrade to 300 Amp Alternator from Mechman
- Hood Hinges





## 440-BRACKET-KIT-WR INSTALL INSTRUCTIONS

### METRIC FASTENERS

| Nominal Dia. (mm) | Pitch | 4.6              |                   |             |             | 8.8              |                   |             |             | 10.9             |                   |             |             | 12.9             |                   |             |             |
|-------------------|-------|------------------|-------------------|-------------|-------------|------------------|-------------------|-------------|-------------|------------------|-------------------|-------------|-------------|------------------|-------------------|-------------|-------------|
|                   |       | Class 4.6        |                   |             |             | Class 8.8        |                   |             |             | Class 10.9       |                   |             |             | Class 12.9       |                   |             |             |
|                   |       | Clamp Load (lbs) | Tightening Torque |             |             | Clamp Load (lbs) | Tightening Torque |             |             | Clamp Load (lbs) | Tightening Torque |             |             | Clamp Load (lbs) | Tightening Torque |             |             |
|                   |       |                  | K = 0.15          | K = 0.17    | K = 0.20    |                  | K = 0.15          | K = 0.17    | K = 0.20    |                  | K = 0.15          | K = 0.17    | K = 0.20    |                  | K = 0.15          | K = 0.17    | K = 0.20    |
| 4                 | 0.7   | 333              | 7.9 in-lbs        | 8.9 in-lbs  | 10.5 in-lbs | 858              | 20.3 in-lbs       | 23 in-lbs   | 27 in-lbs   | 1228             | 29 in-lbs         | 32.9 in-lbs | 38.7 in-lbs | 1436             | 33.9 in-lbs       | 38.4 in-lbs | 45.2 in-lbs |
| 5                 | 0.8   | 538              | 15.9              | 18.0        | 21.2        | 1387             | 40.9              | 46.4        | 54.6        | 1985             | 58.6              | 66.4        | 78.1        | 2319             | 68.5              | 77.6        | 91.3        |
| 6                 | 1     | 763              | 27.0              | 30.7        | 36.1        | 1968             | 69.7              | 79.0        | 92.9        | 2816             | 99.8              | 113.1       | 133.0       | 3291             | 116.6             | 132.1       | 155.4       |
| 7                 | 1     | 1095             | 45.3              | 51.3        | 60.3        | 2822             | 116.6             | 132.2       | 155.5       | 4039             | 167               | 189         | 223         | 4720             | 195               | 221         | 260         |
| 8                 | 1.25  | 1389             | 65.6              | 74.4        | 87.5        | 3580             | 169.1             | 191.6       | 225.4       | 5123             | 242               | 274         | 323         | 5987             | 283               | 320         | 377         |
| 10                | 1.5   | 2200             | 10.8 ft-lbs       | 12.3 ft-lbs | 14.4 ft-lbs | 5671             | 27.9 ft-lbs       | 31.6 ft-lbs | 37.2 ft-lbs | 8115             | 39.9 ft-lbs       | 45.2 ft-lbs | 53.2 ft-lbs | 9484             | 46.7 ft-lbs       | 52.9 ft-lbs | 62.2 ft-lbs |
| 12                | 1.75  | 3197             | 18.9              | 21.4        | 25.2        | 8240             | 48.7              | 55.1        | 64.9        | 11792            | 69.6              | 78.9        | 92.8        | 13781            | 81.4              | 92.2        | 108.5       |
| 14                | 2     | 4379             | 30.2              | 34.2        | 40.2        | 11289            | 77.8              | 88.1        | 103.7       | 16154            | 111.3             | 126.1       | 148.4       | 18879            | 130.0             | 147.4       | 173.4       |
| 16                | 2     | 5943             | 47                | 53          | 62          | 15320            | 121               | 137         | 161         | 21924            | 173               | 196         | 230         | 25622            | 202               | 229         | 269         |
| 18                | 2.5   | 7301             | 65                | 73          | 86          | 18822            | 167               | 189         | 222         | 26934            | 239               | 270         | 318         | 31477            | 279               | 316         | 372         |
| 20                | 2.5   | 9286             | 91                | 104         | 122         | 23938            | 236               | 267         | 314         | 34256            | 337               | 382         | 449         | 40034            | 394               | 446         | 525         |
| 22                | 2.5   | 11509            | 125               | 141         | 166         | 29669            | 321               | 364         | 428         | 42457            | 460               | 521         | 613         | 49619            | 537               | 609         | 716         |
| 24                | 3     | 13372            | 158               | 179         | 211         | 34471            | 407               | 461         | 543         | 49329            | 582               | 660         | 777         | 57649            | 681               | 771         | 908         |
| 27                | 3     | 17428            | 232               | 262         | 309         | 44924            | 597               | 676         | 796         | 64288            | 854               | 968         | 1139        | 75132            | 998               | 1131        | 1331        |
| 30                | 3.5   | 21266            | 314               | 356         | 419         | 54819            | 809               | 917         | 1079        | 78448            | 1158              | 1312        | 1544        | 91680            | 1353              | 1534        | 1804        |
| 33                | 3.5   | 26310            | 427               | 484         | 570         | 67821            | 1101              | 1248        | 1468        | 97055            | 1576              | 1786        | 2101        | 113425           | 1842              | 2087        | 2455        |
| 36                | 4     | 30982            | 549               | 622         | 732         | 79866            | 1415              | 1603        | 1886        | 114291           | 2024              | 2294        | 2699        | 133569           | 2366              | 2681        | 3154        |

\* Tightening Torque (in-lbs through M8; M10 & over ft-lbs)

### TORQUE-TENSION RELATIONSHIP FOR A307A, GRADE 5, 8 & 9 BOLTS

| Nominal Dia. (in.)   | Threads per inch | 307A ASTM A307 Grade A |                   |           |           |                   |                   | SAE J429 Grade 5 |           |                   |                   |           |            | SAE J429 Grade 8  |                   |        |            |                   |                   | FNL Grade 9 |            |                   |                   |            |            |
|----------------------|------------------|------------------------|-------------------|-----------|-----------|-------------------|-------------------|------------------|-----------|-------------------|-------------------|-----------|------------|-------------------|-------------------|--------|------------|-------------------|-------------------|-------------|------------|-------------------|-------------------|------------|------------|
|                      |                  | ASTM A307 Grade A      |                   |           |           |                   |                   | SAE J429 Grade 5 |           |                   |                   |           |            | SAE J429 Grade 8  |                   |        |            |                   |                   | FNL Grade 9 |            |                   |                   |            |            |
|                      |                  | Clamp Load (lbs.)      | Tightening Torque |           |           | Clamp Load (lbs.) | Tightening Torque |                  |           | Clamp Load (lbs.) | Tightening Torque |           |            | Clamp Load (lbs.) | Tightening Torque |        |            | Clamp Load (lbs.) | Tightening Torque |             |            | Clamp Load (lbs.) | Tightening Torque |            |            |
|                      |                  |                        | K = 0.15          | K = 0.17  | K = 0.20  |                   | Ecoguard™         | K = 0.15         | K = 0.17  | K = 0.20          |                   | Ecoguard™ | K = 0.15   | K = 0.17          | K = 0.20          |        | Ecoguard™  | K = 0.15          | K = 0.17          | K = 0.20    |            | Ecoguard™         | K = 0.15          | K = 0.17   | K = 0.20   |
| Coarse Thread Series |                  |                        |                   |           |           |                   |                   |                  |           |                   |                   |           |            |                   |                   |        |            |                   |                   |             |            |                   |                   |            |            |
| 1/4                  | 20               | 859                    | 32 in-lbs         | 37 in-lbs | 43 in-lbs | 2029              | 61 in-lbs         | 76 in-lbs        | 86 in-lbs | 101 in-lbs        | 2864              | 86 in-lbs | 107 in-lbs | 122 in-lbs        | 143 in-lbs        | 3357   | 101 in-lbs | 126 in-lbs        | 143 in-lbs        | 168 in-lbs  | 168 in-lbs | 101 in-lbs        | 126 in-lbs        | 143 in-lbs | 168 in-lbs |
| 5/16                 | 18               | 1416                   | 66                | 75        | 88        | 3342              | 125               | 157              | 178       | 209               | 4719              | 177       | 221        | 251               | 295               | 5531   | 207        | 259               | 294               | 346         | 346        | 207               | 259               | 294        | 346        |
| 3/8                  | 16               | 2092                   | 10 ft-lbs         | 11 ft-lbs | 13 ft-lbs | 4940              | 19 ft-lbs         | 23 ft-lbs        | 26 ft-lbs | 31 ft-lbs         | 6974              | 26 ft-lbs | 33 ft-lbs  | 37 ft-lbs         | 44 ft-lbs         | 8174   | 31 ft-lbs  | 38 ft-lbs         | 43 ft-lbs         | 51 ft-lbs   | 51 ft-lbs  | 31 ft-lbs         | 38 ft-lbs         | 43 ft-lbs  | 51 ft-lbs  |
| 7/16                 | 14               | 2870                   | 16                | 18        | 21        | 6777              | 30                | 37               | 42        | 49                | 9568              | 42        | 52         | 59                | 70                | 11214  | 49         | 61                | 70                | 82          | 82         | 49                | 61                | 70         | 82         |
| 1/2                  | 13               | 3831                   | 24                | 27        | 32        | 9046              | 45                | 57               | 64        | 75                | 12771             | 64        | 80         | 90                | 106               | 14969  | 75         | 94                | 106               | 125         | 125        | 75                | 94                | 106        | 125        |
| 9/16                 | 12               | 4912                   | 35                | 39        | 46        | 11599             | 65                | 82               | 92        | 109               | 16375             | 92        | 115        | 130               | 154               | 19193  | 108        | 135               | 153               | 180         | 180        | 108               | 135               | 153        | 180        |
| 5/8                  | 11               | 6102                   | 48                | 54        | 64        | 14408             | 90                | 113              | 128       | 150               | 20340             | 127       | 159        | 180               | 212               | 23840  | 149        | 186               | 211               | 248         | 248        | 149               | 186               | 211        | 248        |
| 3/4                  | 10               | 9030                   | 85                | 96        | 113       | 21322             | 160               | 200              | 227       | 267               | 30101             | 226       | 282        | 320               | 376               | 35281  | 265        | 331               | 375               | 441         | 441        | 265               | 331               | 375        | 441        |
| 7/8                  | 9                | 12467                  | 136               | 155       | 182       | 29436             | 258               | 322              | 365       | 429               | 41556             | 364       | 455        | 515               | 606               | 48707  | 426        | 533               | 604               | 710         | 710        | 426               | 533               | 604        | 710        |
| 1                    | 8                | 16355                  | 204               | 232       | 273       | 38616             | 386               | 483              | 547       | 644               | 54517             | 545       | 681        | 772               | 909               | 63899  | 639        | 799               | 905               | 1065        | 1065       | 639               | 799               | 905        | 1065       |
| 1-1/4                | 7                | 26166                  | 409               | 463       | 545       | 53786             | 672               | 840              | 952       | 1121              | 87220             | 1090      | 1363       | 1545              | 1817              | 102229 | 1278       | 1597              | 1810              | 2130        | 2130       | 1278              | 1597              | 1810       | 2130       |
| 1-3/8                | 6                | 31182                  | 536               | 607       | 715       | 64096             | 881               | 1102             | 1249      | 1469              | 103939            | 1429      | 1768       | 2025              | 2382              | 121826 | 1675       | 2094              | 2373              | 2792        | 2792       | 1675              | 2094              | 2373       | 2792       |
| 1-1/2                | 6                | 37942                  | 711               | 806       | 949       | 77991             | 1170              | 1462             | 1657      | 1950              | 126473            | 1897      | 2371       | 2688              | 3162              | 148237 | 2224       | 2779              | 3150              | 3706        | 3706       | 2224              | 2779              | 3150       | 3706       |
| Fine Thread Series   |                  |                        |                   |           |           |                   |                   |                  |           |                   |                   |           |            |                   |                   |        |            |                   |                   |             |            |                   |                   |            |            |
| 1/4                  | 28               |                        |                   |           |           | 2319              | 70 in-lbs         | 87 in-lbs        | 99 in-lbs | 116 in-lbs        | 3274              | 98 in-lbs | 123 in-lbs | 139 in-lbs        | 164 in-lbs        | 3837   | 115 in-lbs | 144 in-lbs        | 163 in-lbs        | 192 in-lbs  | 192 in-lbs | 115 in-lbs        | 144 in-lbs        | 163 in-lbs | 192 in-lbs |
| 5/16                 | 24               |                        |                   |           |           | 3702              | 139               | 174              | 197       | 231               | 5226              | 196       | 245        | 278               | 327               | 6125   | 230        | 287               | 325               | 383         | 383        | 230               | 287               | 325        | 383        |
| 3/8                  | 24               |                        |                   |           |           | 5599              | 21 ft-lbs         | 26 ft-lbs        | 30 ft-lbs | 35 ft-lbs         | 7905              | 30 ft-lbs | 37 ft-lbs  | 42 ft-lbs         | 49 ft-lbs         | 9265   | 35 ft-lbs  | 43 ft-lbs         | 49 ft-lbs         | 58 ft-lbs   | 58 ft-lbs  | 35 ft-lbs         | 43 ft-lbs         | 49 ft-lbs  | 58 ft-lbs  |
| 7/16                 | 20               |                        |                   |           |           | 7568              | 33                | 41               | 47        | 55                | 10684             | 47        | 58         | 66                | 78                | 12523  | 55         | 68                | 78                | 91          | 91         | 55                | 68                | 78         | 91         |
| 1/2                  | 20               |                        |                   |           |           | 10197             | 51                | 64               | 72        | 85                | 14396             | 72        | 90         | 102               | 120               | 16873  | 84         | 105               | 120               | 141         | 141        | 84                | 105               | 120        | 141        |
| 9/16                 | 18               |                        |                   |           |           | 12940             | 73                | 91               | 103       | 121               | 18268             | 103       | 128        | 146               | 171               | 21412  | 120        | 151               | 171               | 201         | 201        | 120               | 151               | 171        | 201        |
| 5/8                  | 18               |                        |                   |           |           | 16317             | 102               | 127              | 144       | 170               | 23036             | 144       | 180        | 204               | 240               | 27000  | 169        | 211               | 239               | 281         | 281        | 169               | 211               | 239        | 281        |
| 3/4                  | 16               |                        |                   |           |           | 23776             | 178               | 223              | 253       | 297               | 33566             | 252       | 315        | 357               | 420               | 39343  | 295        | 369               | 418               | 492         | 492        | 295               | 369               | 418        | 492        |
| 7/8                  | 14               |                        |                   |           |           | 32479             | 284               | 355              | 403       | 474               | 45853             | 401       | 502        | 568               | 669               | 53743  | 470        | 588               | 666               | 784         | 784        | 470               | 588               | 666        | 784        |
| 1                    | 14               |                        |                   |           |           | 43343             | 433               | 542              | 614       | 722               | 61190             | 612       | 765        | 867               | 1020              | 71720  | 717        | 896               | 1016              | 1195        | 1195       | 717               | 896               | 1016       | 1195       |
| 1-1/4                | 12               |                        |                   |           |           | 59548             | 744               | 930              | 1055      | 1241              | 96565             | 1207      | 1509       | 1710              | 2012              | 113182 | 1415       | 1768              | 2004              | 2358        | 2358       | 1415              | 1768              | 2004       | 2358       |
| 1-3/8                | 12               |                        |                   |           |           | 72967             | 1003              | 1254             | 1421      | 1672              | 118324            | 1627      | 2034       | 2305              | 2712              | 138686 | 1907       | 2384              | 2701              | 3278        | 3278       | 1907              | 2384              | 2701       | 3278       |
| 1-1/2                | 12               |                        |                   |           |           | 87747             | 1316              | 1645             | 1865      | 2194              | 142292            | 2134      | 2668       | 3024              | 3557              | 166778 | 2502       | 3127              | 3544              | 4169        | 4169       | 2502              | 3127              | 3544       | 4169       |

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