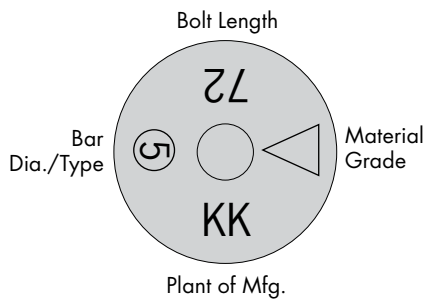
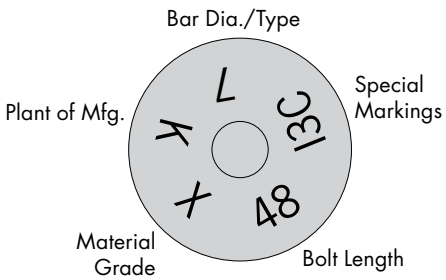
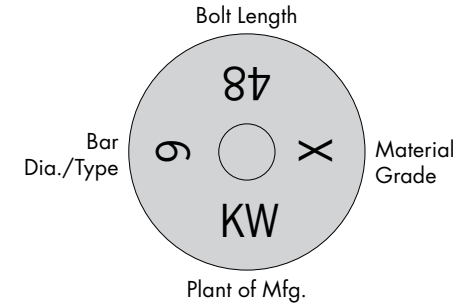


Bolt Head Markings and Recommended Torque



BAR DIAMETER/TYPE

| CODE | BAR DIAMETER, in. (mm) | BAR TYPE |
|------|------------------------|-------------|
| 5 | 5/8 (16) | Smooth |
| ⑤ | 5/8 (16) | Rebar |
| 6 | 3/4 (19) | Smooth |
| ⑥ | 3/4 (19) | Rebar/J-BAR |
| 7 | 7/8 (22) | Smooth |
| ⑦ | 7/8 (22) | Rebar/J-BAR |
| 8 | 1 (25) | Smooth |
| ⑧ | 1 (25) | Rebar/J-BAR |
| 9 | 1-1/8 (29) | Smooth |
| ⑨ | 1-1/8 (29) | Rebar/J-BAR |

MATERIAL GRADE

| CODE | GRADE |
|------|--------|
| | GR 40 |
| * | GR 55 |
| △ | GR 60 |
| X | GR 75 |
| XS | GR 90 |
| □ | GR 100 |
| ② | GR 120 |
| ④ | GR 140 |

SPECIAL MARKINGS

| CODE | DESCRIPTION |
|------|-----------------|
| A | w/ Paddle Wedge |
| C | Compression |
| I | INSTÁL® |
| P | Combination |
| I2 | INSTÁL® II |
| I3 | INSTÁL® III |
| IB | INSTÁL® B |

MANUFACTURING PLANT

| CODE | DESCRIPTION |
|------|---------------|
| KA | Australia |
| KK | Kentucky |
| KE | West Kentucky |
| K | Cresson, PA |
| KU | Utah |
| KV | Virginia |
| KC | East Virginia |
| KW | West Virginia |

RECOMMENDED TORQUE

| BOLT TYPE | BOLT DIAMETER, in. (mm) | | | | |
|---------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------------|
| | 5/8 (16) | 3/4 (19) | 7/8 (22) | 0.914 (23) | Others |
| RECOMMENDED TORQUE, ft-lb (N-m) | | | | | |
| TORQUE/TENSION | 150 – 300 (203 – 407) | 175 – 325 (237 – 441) | 200 – 350 (271 – 475) | ---- | ---- |
| INSTÁL 1A C | ---- | 200 – 350 (271 – 475) | 250 – 400 (339 – 542) | ---- | ---- |
| INSTÁL II & INSTÁL II C | ---- | 200 – 350 (271 – 475) | 250 – 400 (339 – 542) | ---- | ---- |
| INSTÁL II & INSTÁL III | ---- | ---- | ---- | 250 – 400 (339 – 542) | ---- |
| INSTÁL III & INSTÁL III C | ---- | 200 – 350 (271 – 475) | 250 – 400 (339 – 542) | ---- | ---- |
| INSTÁL B | ---- | ---- | ---- | ---- | #5, 150 – 250 (203 – 339) |
| COMBINATION | ---- | 200 – 350 (271 – 475) | 250 – 400 (339 – 542) | ---- | ---- |
| MECHANICAL BOLT | 125 – 225 (170 – 305) | 200 – 350 (271 – 475) | 250 – 400 (339 – 542) | ---- | ---- |