

SOCKET HEAD CAP SCREW  
CLASS 12.9 METRIC



BLACK

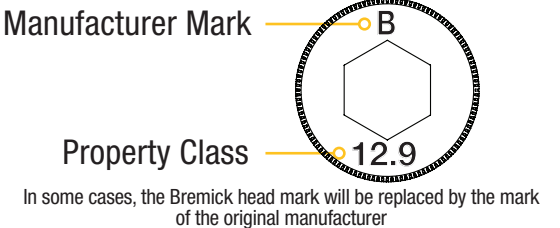
APPLICATION

Bremick® Socket head cap screws are used in a variety of applications. They provide strong clamping force and can be used in applications with limited space

PRODUCT ATTRIBUTES

|                        |                            |
|------------------------|----------------------------|
| Material Class:        | Alloy Steel Class 12.9     |
| Thread Form:           | Metric 6g                  |
| Finish:                | Plain/Black/Natural        |
| Standard:              | Complies to DIN 912:1983   |
| Mechanical Properties: | Complies to ISO 898.1 2013 |
| Chemical Composition:  | Complies to ISO 898.1 2013 |

HEAD MARKING



MECHANICAL PROPERTIES

| PROPERTIES | TENSILE STRENGTH (MPa) | STRESS UNDER PROOF LOAD (MPa) | HARDNESS     |     |               |     |                |    |
|------------|------------------------|-------------------------------|--------------|-----|---------------|-----|----------------|----|
|            | MIN                    | NOM.                          | VICKERS (HV) |     | BRINELL (HBW) |     | ROCKWELL (HRC) |    |
| CLASS 12.9 | 1220                   | 970                           | 385          | 435 | 380           | 429 | 39             | 44 |

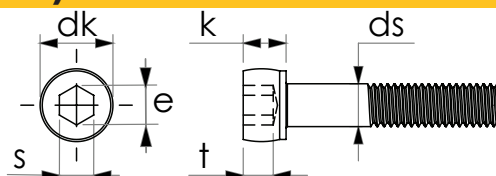
CHEMICAL COMPOSITION (%)

| MATERIAL    | C    |      | P     | S     | B     | TEMPERING TEMPERATURE °C |
|-------------|------|------|-------|-------|-------|--------------------------|
|             | MIN  | MAX  | MAX   | MAX   | MAX   | MIN                      |
| ALLOY STEEL | 0.30 | 0.50 | 0.025 | 0.025 | 0.003 | 425                      |

FINISH INFORMATION

| PLAIN / BLACK / NATURAL                                                                                                         |                                                                                                                                                                           |                      |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| DESCRIPTION                                                                                                                     | OVERVIEW                                                                                                                                                                  | CORROSION RESISTANCE |
| Plain, Black & Natural are all terms referring to the fastener not having a coating applied. The product has a light oil added. | Plain or uncoated fasteners offer no corrosion protection they are supplied lightly oiled to inhibit the rust process prior to installation and help during installation. | —                    |

## DIMENSIONAL DATA (mm)



| DIAMETER | PITCH<br>(mm) | SHAFT<br>DIAMETER<br>(ds) |       | HEAD DIAMETER<br>(dk) |       | HEAD HEIGHT<br>(k) |       | HEXAGON SOCKET<br>SIZE ACROSS FLATS<br>(s) |        | HEXAGON SOCKET<br>SIZE ACROSS<br>CORNERS (e) | KEY<br>ENGAGEMENT<br>(t) |
|----------|---------------|---------------------------|-------|-----------------------|-------|--------------------|-------|--------------------------------------------|--------|----------------------------------------------|--------------------------|
|          |               | MIN                       | MAX   | MIN                   | MAX   | MIN                | MAX   | MIN                                        | MAX    | MIN                                          | MIN                      |
| M2       | 0.40          | 1.86                      | 2.00  | 3.62                  | 3.98  | 1.86               | 2.00  | 1.520                                      | 1.560  | 1.73                                         | 1.00                     |
| M2.5     | 0.45          | 2.36                      | 2.50  | 4.32                  | 4.68  | 2.36               | 2.50  | 2.020                                      | 2.060  | 2.30                                         | 1.10                     |
| M3       | 0.50          | 2.86                      | 3.00  | 5.32                  | 5.68  | 2.86               | 3.00  | 2.520                                      | 2.580  | 2.87                                         | 1.30                     |
| M4       | 0.70          | 3.82                      | 4.00  | 6.78                  | 7.22  | 3.82               | 4.00  | 3.020                                      | 3.080  | 3.44                                         | 2.00                     |
| M5       | 0.80          | 4.82                      | 5.00  | 8.28                  | 8.72  | 4.82               | 5.00  | 4.020                                      | 4.095  | 4.58                                         | 2.50                     |
| M6       | 1.00          | 5.82                      | 6.00  | 9.78                  | 10.22 | 5.70               | 6.00  | 5.020                                      | 5.140  | 5.72                                         | 3.00                     |
| M8       | 1.25          | 7.78                      | 8.00  | 12.73                 | 13.27 | 7.64               | 8.00  | 6.020                                      | 6.140  | 6.86                                         | 4.00                     |
| M10      | 1.50          | 9.78                      | 10.00 | 15.73                 | 16.27 | 9.64               | 10.00 | 8.025                                      | 8.175  | 9.15                                         | 5.00                     |
| M12      | 1.75          | 11.73                     | 12.00 | 17.73                 | 18.27 | 11.57              | 12.00 | 10.025                                     | 10.175 | 11.43                                        | 6.00                     |
| M14      | 2.00          | 13.73                     | 14.00 | 20.67                 | 21.33 | 13.57              | 14.00 | 12.032                                     | 12.212 | 13.72                                        | 7.00                     |
| M16      | 2.00          | 15.73                     | 16.00 | 23.67                 | 24.33 | 15.57              | 16.00 | 14.032                                     | 14.212 | 16.00                                        | 8.00                     |
| M18      | 2.50          | 17.73                     | 18.00 | 26.67                 | 27.33 | 17.57              | 18.00 | 14.032                                     | 14.212 | 16.00                                        | 9.00                     |
| M20      | 2.50          | 19.67                     | 20.00 | 29.67                 | 30.33 | 19.48              | 20.00 | 17.050                                     | 17.230 | 19.44                                        | 10.00                    |
| M22      | 2.50          | 21.67                     | 22.00 | 32.61                 | 33.39 | 21.48              | 22.00 | 17.050                                     | 17.230 | 19.44                                        | 11.00                    |
| M24      | 3.00          | 23.67                     | 24.00 | 35.61                 | 36.39 | 23.48              | 24.00 | 19.065                                     | 19.275 | 21.73                                        | 12.00                    |
| M27      | 3.00          | 26.67                     | 27.00 | 39.61                 | 40.39 | 26.48              | 27.00 | 19.065                                     | 19.275 | 21.73                                        | 13.50                    |
| M30      | 3.50          | 29.67                     | 30.00 | 44.61                 | 45.39 | 29.48              | 30.00 | 22.065                                     | 22.275 | 25.15                                        | 15.50                    |
| M33      | 3.50          | 32.61                     | 33.00 | 49.61                 | 50.39 | 32.38              | 33.00 | 24.065                                     | 24.275 | 27.43                                        | 18.00                    |
| M36      | 4.00          | 35.61                     | 36.00 | 53.54                 | 54.46 | 35.38              | 36.00 | 27.065                                     | 27.275 | 30.85                                        | 19.00                    |
| M42      | 4.50          | 41.61                     | 42.00 | 62.54                 | 63.46 | 41.38              | 42.00 | 32.080                                     | 32.330 | 36.57                                        | 24.00                    |
| M48      | 5.00          | 47.61                     | 48.00 | 71.54                 | 72.46 | 47.38              | 48.00 | 36.080                                     | 36.330 | 41.13                                        | 28.00                    |

## SOCKET OR SPANNER SIZE (mm)

| SCREW DIAMETER | M2  | M2.5 | M3  | M4 | M5 | M6 | M8 | M10 | M12 | M14 | M16 | M18 | M20 | M22 | M24 | M27 | M30 | M33 | M36 | M42 | M48 |
|----------------|-----|------|-----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SOCKET SIZE    | 1.5 | 2    | 2.5 | 3  | 4  | 5  | 6  | 8   | 10  | 12  | 14  | 14  | 17  | 17  | 19  | 19  | 22  | 24  | 27  | 32  | 36  |

## THREAD LENGTH (mm)

| NOMINAL LENGTH | M2 | M2.5 | M3 | M4 | M5 | M6 | M8 | M10 | M12 | M14 | M16 | M18 | M20 | M22 | M24 | M27 | M30 | M33 | M36 | M42 | M48 |
|----------------|----|------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 10             |    |      |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 12             |    |      |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 16             |    |      |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20             |    |      |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 25             |    |      | 18 |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 30             | -  | -    | 18 | 20 | 22 |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 35             | -  | -    | 18 | 20 | 22 | 24 |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 40             | -  | -    | 18 | 20 | 22 | 24 | 28 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 45             | -  | -    | 18 | 20 | 22 | 24 | 28 | 32  |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 50             | -  | -    | 18 | 20 | 22 | 24 | 28 | 32  |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 55             | -  | -    | -  | 20 | 22 | 24 | 28 | 32  | 36  |     |     |     |     |     |     |     |     |     |     |     |     |
| 60             | -  | -    | -  | 20 | 22 | 24 | 28 | 32  | 36  | 40  |     |     |     |     |     |     |     |     |     |     |     |
| 65             | -  | -    | -  | 20 | 22 | 24 | 28 | 32  | 36  | 40  | 44  |     |     |     |     |     |     |     |     |     |     |
| 70             | -  | -    | -  | 20 | 22 | 24 | 28 | 32  | 36  | 40  | 44  | 48  |     |     |     |     |     |     |     |     |     |
| 80             | -  | -    | -  | 20 | 22 | 24 | 28 | 32  | 36  | 40  | 44  | 48  | 52  | 56  |     |     |     |     |     |     |     |
| 90             | -  | -    | -  | -  | 22 | 24 | 28 | 32  | 36  | 40  | 44  | 48  | 52  | 56  | 60  |     |     |     |     |     |     |
| 100            | -  | -    | -  | -  | 22 | 24 | 28 | 32  | 36  | 40  | 44  | 48  | 52  | 56  | 60  | 66  |     |     |     |     |     |
| 120            | -  | -    | -  | -  | 22 | 24 | 28 | 32  | 36  | 40  | 44  | 48  | 52  | 56  | 60  | 66  | 72  | 78  |     |     |     |
| 130            | -  | -    | -  | -  | 22 | -  | 28 | 32  | 36  | 40  | 44  | 48  | 52  | 56  | 60  | 66  | 72  | 78  | 84  |     |     |
| 140            | -  | -    | -  | -  | -  | -  | 28 | 32  | 36  | 40  | 44  | 48  | 52  | 56  | 60  | 66  | 72  | 78  | 84  | 96  |     |
| 150            | -  | -    | -  | -  | -  | -  | 28 | 32  | 36  | 40  | 44  | 48  | 52  | 56  | 60  | 66  | 72  | 78  | 84  | 96  |     |
| 160            | -  | -    | -  | -  | -  | -  | -  | 32  | 36  | -   | 44  | 48  | 52  | 56  | 60  | 66  | 72  | 78  | 84  | 96  | 108 |
| 180            | -  | -    | -  | -  | -  | -  | -  | 32  | 36  | -   | 44  | 48  | 52  | 56  | 60  | 66  | 72  | 78  | 84  | 96  | 108 |
| 200            | -  | -    | -  | -  | -  | -  | -  | 32  | 36  | -   | 44  | 48  | 52  | 56  | 60  | 66  | 72  | 78  | 84  | 96  | 108 |
| 220            | -  | -    | -  | -  | -  | -  | -  | -   | -   | -   | -   | 48  | -   | -   | 60  | -   | 72  | 78  | 84  | 96  | 108 |
| 240            | -  | -    | -  | -  | -  | -  | -  | -   | -   | -   | -   | -   | -   | -   | 60  | -   | 72  | 78  | 84  | 96  | 108 |
| 260            | -  | -    | -  | -  | -  | -  | -  | -   | -   | -   | -   | -   | -   | -   | 60  | -   | 72  | 78  | 84  | 96  | 108 |
| 280            | -  | -    | -  | -  | -  | -  | -  | -   | -   | -   | -   | -   | -   | -   | 60  | -   | 72  | 78  | 84  | 96  | 108 |
| 300            | -  | -    | -  | -  | -  | -  | -  | -   | -   | -   | -   | -   | -   | -   | -   | -   | 72  | 78  | 84  | 96  | 108 |

ALL SIZES ABOVE THE STEPPED LINE ARE FULLY THREADED

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