

CAP ELECTRODES

These economical, quick change caps are made of long-lasting, highly-efficient Class 1, 2 and 2.18150 copper alloys, precision manufactured to exacting tolerances in a wide range of standard configurations or to your special requirements for use on CMW shanks.

- See pages 12 for Shanks

CMW FEMALE CAP ELECTRODES

ALL DIMENSIONS MARKED WITH AN (*) ARE COMMON TO EACH CAP IN A HORIZONTAL LINE.



| | POINTED (A) | DOMES (B) | FLAT (C) | OFFSET (D) | TRUNCATED (E) | RADIUS (F) |
|--|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Cap Taper RW #4 Diameter .500* Length .840* | | | | | | |
| Class 1 Class 2 Class 2.18150 | MPA14Z MPA24 MPA24Z | MPB14Z MPB24 MPB24Z | MPC14Z MPC24 MPC24Z | MPD14Z MPD24 MPD24Z | MPE14Z MPE24 MPE24Z | MPF14Z MPF24 MPF24Z |
| Cap Taper RW #5 Diameter .625* Length .880* | | | | | | |
| Class 1 Class 2 Class 2.18150 | MPA15Z MPA25 MPA25Z | MPB15Z MPB25 MPB25Z | MPC15Z MPC25 MPC25Z | MPD15Z MPD25 MPD25Z | MPE15Z MPE25 MPE25Z | MPF15Z MPF25 MPF25Z |
| Cap Taper RW #6 Diameter .750* Length 1.000* | | | | | | |
| Class 1 Class 2 Class 2.18150 | MPA16Z MPA26 MPA26Z | MPB16Z MPB26 MPB26Z | MPC16Z MPC26 MPC26Z | MPD16Z MPD26 MPD26Z | MPE16Z MPE26 MPE26Z | MPF16Z MPF26 MPF26Z |

- See pages 13 for Shanks

CMW MALE CAP ELECTRODES

ALL DIMENSIONS MARKED WITH AN (*) ARE COMMON TO EACH CAP IN A HORIZONTAL LINE.



| | POINTED (A) | DOMES (B) | FLAT (C) | OFFSET (D) | TRUNCATED (E) | RADIUS (F) |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Cap Taper RW #4 Diameter .500* Length 1.125* | | | | | | |
| Class 1 Class 2 Class 2.18150 | MA14Z MA24 MA24Z | MB14Z MB24 MB24Z | MC14Z MC24 MC24Z | MD14Z MD24 MD24Z | ME14Z ME24 ME24Z | MF14Z MF24 MF24Z |
| Cap Taper RW #5 Diameter .625* Length 1.250* | | | | | | |
| Class 1 Class 2 Class 2.18150 | MA15Z MA25 MA25Z | MB15Z MB25 MB25Z | MC15Z MC25 MC25Z | MD15Z MD25 MD25Z | ME15Z ME25 ME25Z | MF15Z MF25 MF25Z |
| Cap Taper RW #6 Diameter .750* Length 1.625* | | | | | | |
| Class 1 Class 2 Class 2.18150 | MA16Z MA26 MA26Z | MB16Z MB26 MB26Z | MC16Z MC26 MC26Z | MD16Z MD26 MD26Z | ME16Z ME26 ME26Z | MF16Z MF26 MF26Z |

GCAP® ELECTRODES

The CMW GCAP® electrode is the answer to welding galvanized steels. The GCAP's® revolutionary design, and precision manufacturing from CMW Engineering provides for no sticking from the very first weld. GCAP® electrode nuggets meet or exceed industry standards for high quality welds from the first weld through the life of the cap. This cap design made from R.W.M.A. class 2 material eliminates brass build-up by literally rolling the brass away. You will use


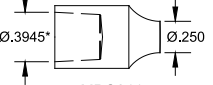



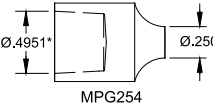
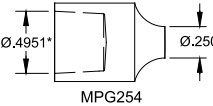
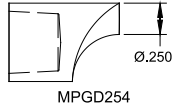







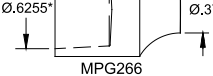
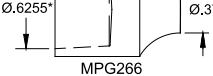



less electric power (up to 25% less) and still achieve superior welds due to GCAP® design. Productivity will increase with up to 10 times more welds without dressing.

For best use of CMW GCAPS®, a stepper program is recommended. Consult CMW application engineering.
U.S. Patent 49,954,687; 5,015,816; 5,126,528.
Other patents pending.

CMW FEMALE GCAP® ELECTRODES

ALL DIMENSIONS MARKED WITH AN (*) ARE COMMON TO EACH CAP IN A HORIZONTAL LINE.


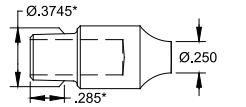



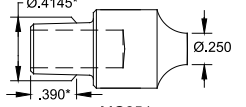
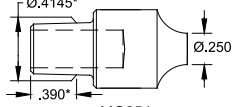
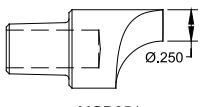
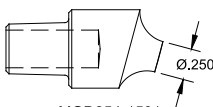
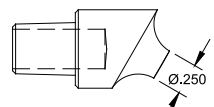
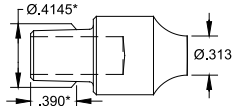
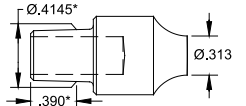
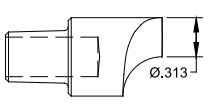
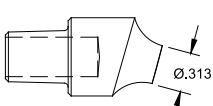
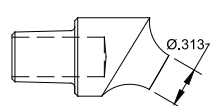
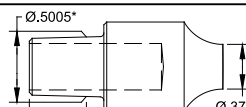
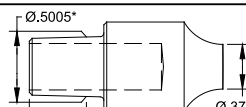
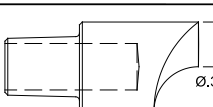
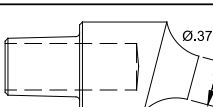
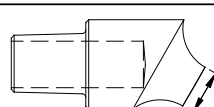
- See pages 12 for Shanks
- See page 70 for suggested weld schedules

| | STRAIGHT | OFFSET | OFFSET 15° | OFFSET 30° |
|--|--|---|---|--|
|  Cap Taper RW #4 Diameter .500* Length .840* RWMA Class 2 |  MPG244 |  MPGD244 |  MPGD244-1501 |  MPGD244-3001 |
|  Cap Taper RW #5 Diameter .625* Length .880* RWMA Class 2 |  MPG254 |  MPGD254 |  MPGD254-1501 |  MPGD254-3001 |
|  Cap Taper RW #5 Diameter .625* Length .880* RWMA Class 2 |  MPG255 |  MPGD255 |  MPGD255-1501 |  MPGD255-3001 |
|  Cap Taper RW #6 Diameter .750* Length 1.000* RWMA Class 2 |  MPG266 |  MPGD266 |  MPGD266-1501 |  MPGD266-3001 |

CMW MALE GCAP® ELECTRODES

ALL DIMENSIONS MARKED WITH AN (*) ARE COMMON TO EACH CAP IN A HORIZONTAL LINE.

- See pages 13 for Shanks
- See page 70 for suggested weld schedules





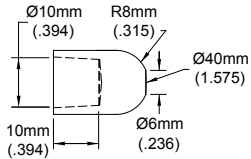
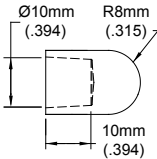
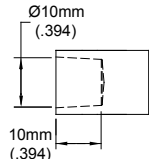
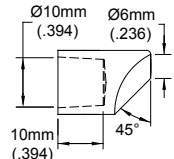
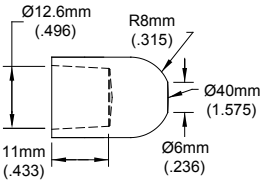
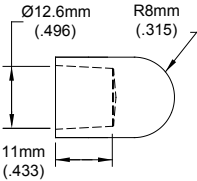
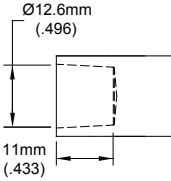
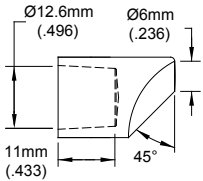
| | STRAIGHT | OFFSET | OFFSET 15° | OFFSET 30° |
|---|--|---|---|--|
|  Cap Taper RW #4 Diameter .500* Length 1.125* RWMA Class 2 |  MG244 |  MGD244 |  MGD244-1501 |  MGD244-3001 |
|  Cap Taper RW #5 Diameter .625* Length 1.250* RWMA Class 2 |  MG254 |  MGD254 |  MGD254-1501 |  MGD254-3001 |
|  Cap Taper RW #5 Diameter .625* Length 1.250* RWMA Class 2 |  MG255 |  MGD255 |  MGD255-1501 |  MGD255-3001 |
|  Cap Taper RW #6 Diameter .750* Length 1.625* RWMA Class 2 |  MG266 |  MGD266 |  MGD266-1501 |  MGD266-3001 |

ASIAN CAP ELECTRODES

These economical, quick change caps are made of long-lasting, highly-efficient Class 1, 2 and 2.18150 copper alloys, precision manufactured to exacting tolerances in a wide range of standard configurations or to your special requirements.

CMW FEMALE ASIAN CAP ELECTRODES

ALL DIMENSIONS MARKED WITH AN (*) ARE COMMON TO EACH CAP IN A HORIZONTAL LINE.





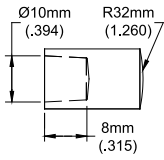
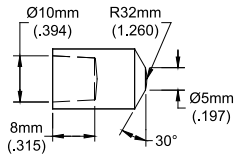
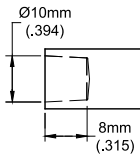
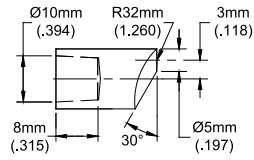
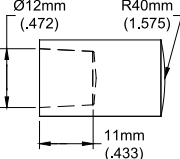
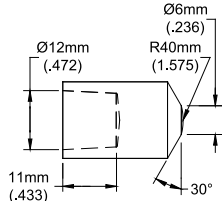
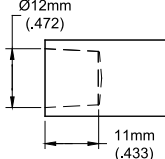
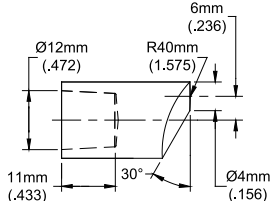
| |  ASIAN TYPE (D) |  ASIAN TYPE (R) |  ASIAN TYPE (F) |  ASIAN TYPE (E) |
|--|--|--|---|--|
| Taper 1:9.6 Dia. 13mm (.512)* Length 20mm (.787)* Class 1 Class 2 Class 2.18150 |  MPB141Z-01 MPB241-01 MPB241Z-04 |  MPB141Z-02 MPB241-02 MPB241Z-07 |  MPC141Z-01 MPC241-01 MPC241Z-02 |  MPD141Z-01 MPD241-02 MPD241Z-02 |
| Taper 1:9.6 Dia. 16mm (.625)* Length 23mm (.906)* Class 1 Class 2 Class 2.18150 |  MPB15Z-11 MPB25-14 MPB25Z-19 |  MPB15Z-12 MPB25-18 MPB25Z-20 |  MPC15Z-01 MPC25-02 MPC25Z-05 |  MPD15Z-03 MPD25-05 MPD25Z-04 |

METRIC-ISO 5821 STANDARD CAP ELECTRODES

These economical, quick change caps are made of long-lasting, highly-efficient Class 2.18150 copper alloy, precision manufactured to exacting tolerances in a wide range of standard configurations or to your special requirements.




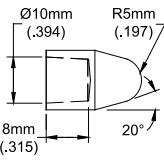
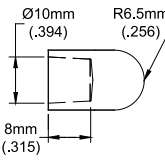
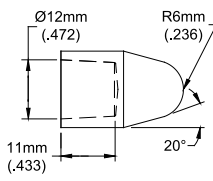
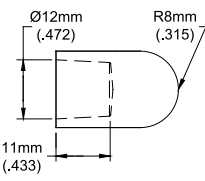
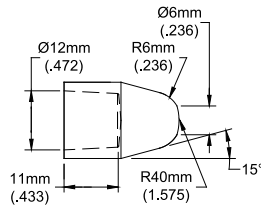
CMW FEMALE METRIC-ISO 5821 CAP ELECTRODES

ALL DIMENSIONS MARKED WITH AN (*) ARE COMMON TO EACH CAP IN A HORIZONTAL LINE.

| |  METRIC TYPE (A) |  METRIC TYPE (B) |  METRIC TYPE (C) |  METRIC TYPE (D) |
|---|--|--|---|---|
| Taper 1:10 Dia. 13mm (.512)* Length 18mm (.709)* Class 2.18150 |  Ø10mm (.394) R32mm (1.260) 8mm (.315) |  Ø10mm (.394) R32mm (1.260) 8mm (.315) Ø5mm (.197) 30° |  Ø10mm (.394) 8mm (.315) |  Ø10mm (.394) R32mm (1.260) 3mm (.118) 8mm (.315) 30° Ø5mm (.197) |
| | MPF241Z-01 | MPE241Z-01 | MPC241Z-01 | MPD241Z-01 |
| Taper 1:10 Dia. 16mm (.625)* Length 20mm (.787)* Class 2.18150 |  Ø12mm (.472) R40mm (1.575) 11mm (.433) |  Ø12mm (.472) R40mm (1.575) Ø6mm (.236) 11mm (.433) 30° |  Ø12mm (.472) 11mm (.433) |  Ø12mm (.472) R40mm (1.575) 6mm (.236) 11mm (.433) 30° Ø4mm (.156) |
| | MPF25Z-01 | MPE25Z-02 | MPC25Z-02 | MPD25Z-02 |

CMW FEMALE METRIC-ISO 5821 CAP ELECTRODES

ALL DIMENSIONS MARKED WITH AN (*) ARE COMMON TO EACH CAP IN A HORIZONTAL LINE.

| |  METRIC TYPE (E) |  METRIC TYPE (F) |  METRIC TYPE (G) |
|---|--|---|--|
| Taper 1:10 Dia. 13mm (.512)* Length 18mm (.709)* Class 2.18150 |  Ø10mm (.394) R5mm (.197) 8mm (.315) 20° |  Ø10mm (.394) R6.5mm (.256) 8mm (.315) | No Standard Available |
| | MPA241Z-01 | MPB241Z-01 | |
| Taper 1:10 Dia. 16mm (.625)* Length 20mm (.787)* Class 2.18150 |  Ø12mm (.472) R6mm (.236) 11mm (.433) 20° |  Ø12mm (.472) R8mm (.315) 11mm (.433) |  Ø12mm (.472) R6mm (.236) Ø6mm (.236) 11mm (.433) R40mm (1.575) 15° |
| | MPA25Z-03 | MPB25Z-03 | MPA25Z-09 |

SHANKS FOR FEMALE CAP ELECTRODES

CMW shanks are precision manufactured from Class 2 material to provide a high quality mount for cap type electrodes. They are designed for high strength and electrical conductivity.

*These shanks are shown with a blind water hole for cap replacement without shutting off water. Shanks with through water holes are available, by adding "TH" to the basic part number. Example: MP30212TH.

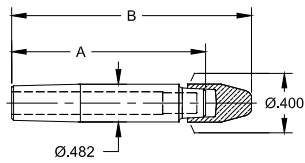
- See pages 8 & 9 for
CMW standard nose
and GCAP® electrode
caps

SHANKS FOR FEMALE CAP ELECTRODES



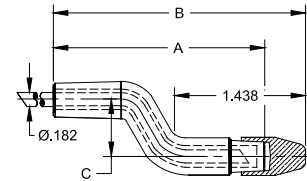
SHANKS FOR FEMALE CAPS WITH #4 RW TAPERS

| Part No. | A | B |
|----------|------|------|
| MP3012 | 1.25 | 1.75 |
| MP3013 | 1.50 | 2.00 |
| MP3014 | 1.75 | 2.25 |
| MP3015 | 2.00 | 2.50 |
| MP3016 | 2.25 | 2.75 |
| MP3017 | 2.50 | 3.00 |
| MP3018 | 2.75 | 3.25 |
| MP3019 | 3.00 | 3.50 |
| MP30112 | 3.25 | 3.75 |
| MP30114 | 3.50 | 4.00 |
| MP30116 | 3.75 | 4.25 |
| MP30118 | 4.00 | 4.50 |



BENT OFFSET SHANKS FOR FEMALE CAPS WITH #4 RW TAPERS

| Part No. | A | B | C |
|------------|------|------|------|
| MP3019-08 | 2.62 | 3.28 | 0.50 |
| MP3019-12 | 2.56 | 3.22 | 0.75 |
| MP30112-12 | 2.81 | 3.47 | 0.75 |
| MP30112-16 | 2.37 | 3.03 | 1.00 |
| MP30116-16 | 2.87 | 3.53 | 1.00 |
| MP30116-20 | 2.60 | 3.28 | 1.25 |

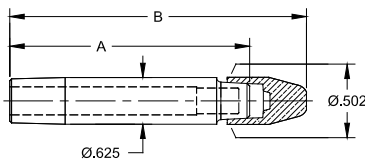


Bent Dimensions for Reference Only



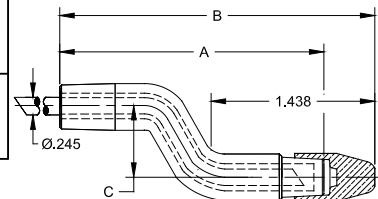
SHANKS FOR FEMALE CAPS WITH #5 RW TAPERS

| Part No. | A | B |
|----------|------|------|
| MP3023 | 1.46 | 2.00 |
| MP3024 | 1.71 | 2.25 |
| MP3025 | 1.96 | 2.50 |
| MP3026 | 2.21 | 2.75 |
| MP3027 | 2.46 | 3.00 |
| MP3028 | 2.71 | 3.25 |
| MP3029 | 2.96 | 3.50 |
| MP30212 | 3.21 | 3.75 |
| MP30214 | 3.46 | 4.00 |
| MP30216 | 3.71 | 4.25 |
| MP30218 | 3.96 | 4.50 |
| MP30220 | 4.21 | 4.75 |
| MP30222 | 4.46 | 5.00 |



BENT OFFSET SHANKS FOR FEMALE CAPS WITH #5 RW TAPERS

| Part No. | A | B | C |
|------------|------|------|------|
| MP3029-08 | 2.58 | 3.20 | 0.50 |
| MP3029-12 | 2.60 | 3.12 | 0.75 |
| MP30212-12 | 2.77 | 3.44 | 0.75 |
| MP30212-16 | 2.33 | 3.00 | 1.00 |
| MP30214-12 | 3.00 | 3.66 | 0.75 |
| MP30214-16 | 2.81 | 3.48 | 1.00 |
| MP30216-16 | 2.83 | 3.49 | 1.00 |
| MP30216-20 | 2.77 | 3.43 | 1.25 |

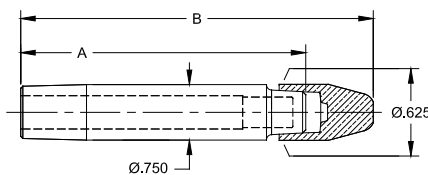


Bent Dimensions for Reference Only



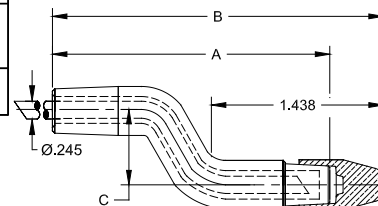
SHANKS FOR FEMALE CAPS WITH #6 RW TAPERS

| Part No. | A | B |
|----------|------|------|
| MP3044 | 1.64 | 2.25 |
| MP3045 | 1.89 | 2.50 |
| MP3046 | 2.14 | 2.75 |
| MP3047 | 2.39 | 3.00 |
| MP3048 | 2.64 | 3.25 |
| MP3049 | 2.89 | 3.50 |
| MP30412 | 3.14 | 3.75 |
| MP30414 | 3.39 | 4.00 |
| MP30416 | 3.64 | 4.25 |
| MP30418 | 3.89 | 4.50 |
| MP30420 | 4.14 | 4.75 |
| MP30422 | 4.39 | 5.00 |



BENT OFFSET SHANKS FOR FEMALE CAPS WITH #6 RW TAPERS

| Part No. | A | B | C |
|------------|------|------|------|
| MP3049-08 | 2.69 | 3.30 | 0.50 |
| MP30412-12 | 2.81 | 3.42 | 0.75 |
| MP30414-12 | 2.94 | 3.55 | 0.75 |
| MP30416-16 | 3.06 | 3.67 | 1.00 |
| MP30420-20 | 3.25 | 3.86 | 1.25 |



Bent Dimensions for Reference Only

SHANKS FOR MALE CAP ELECTRODES

CMW shanks are precision manufactured from Class 2 material to provide a high quality mount for cap type electrodes. They are designed for high strength and electrical conductivity.

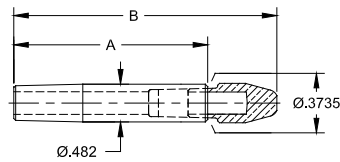
- See pages 8 & 9 for
CMW standard nose
and GCAP® electrode
caps

SHANKS FOR MALE CAP ELECTRODES



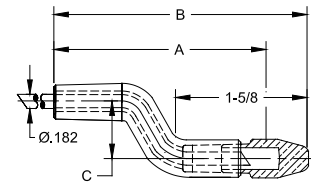
SHANKS FOR MALE CAPS WITH #4 RW TAPERS

| Part No. | A | B |
|----------|------|------|
| 3012 | 1.25 | 1.88 |
| 3013 | 1.50 | 2.12 |
| 3014 | 1.75 | 2.38 |
| 3015 | 2.00 | 2.62 |
| 3016 | 2.25 | 2.88 |
| 3017 | 2.50 | 3.12 |
| 3018 | 2.75 | 3.38 |
| 3019 | 3.00 | 3.62 |
| 30112 | 3.25 | 3.88 |
| 30114 | 3.50 | 4.12 |
| 30116 | 3.75 | 4.38 |
| 30118 | 4.00 | 4.62 |



BENT OFFSET SHANKS FOR MALE CAPS WITH #4 RW TAPERS

| Part No. | A | B | C |
|----------|------|------|------|
| 3019-08 | 2.62 | 3.37 | 0.50 |
| 3019-12 | 2.56 | 3.31 | 0.75 |
| 30112-12 | 2.81 | 3.56 | 0.75 |
| 30112-16 | 2.37 | 3.12 | 1.00 |
| 30116-16 | 2.87 | 3.62 | 1.00 |
| 30116-20 | 2.62 | 3.37 | 1.25 |

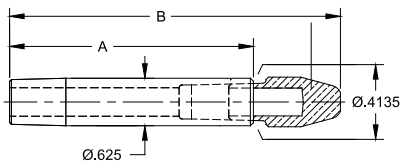


Bent Dimensions for Reference Only



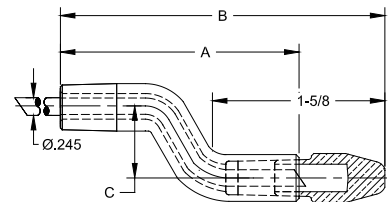
SHANKS FOR MALE CAPS WITH #5 RW TAPERS

| Part No. | A | B |
|----------|------|------|
| 3022 | 1.25 | 2.00 |
| 3023 | 1.50 | 2.25 |
| 3024 | 1.75 | 2.50 |
| 3025 | 2.00 | 2.75 |
| 3026 | 2.25 | 3.00 |
| 3027 | 2.50 | 3.25 |
| 3028 | 2.75 | 3.50 |
| 3029 | 3.00 | 3.75 |
| 30212 | 3.25 | 4.00 |
| 30214 | 3.50 | 4.25 |
| 30216 | 3.75 | 4.50 |
| 30218 | 4.00 | 4.75 |
| 30220 | 4.25 | 5.00 |
| 30222 | 4.50 | 5.25 |



BENT OFFSET SHANKS FOR MALE CAPS WITH #5 RW TAPERS

| Part No. | A | B | C |
|----------|------|------|------|
| 3028-08 | 2.37 | 3.12 | 0.50 |
| 3028-12 | 2.31 | 3.06 | 0.75 |
| 30212-12 | 2.81 | 3.56 | 0.75 |
| 30212-16 | 2.37 | 3.12 | 1.00 |
| 30214-12 | 3.06 | 3.81 | 0.75 |
| 30214-16 | 2.62 | 3.37 | 1.00 |
| 30214-20 | 2.37 | 3.12 | 1.25 |
| 30216-16 | 2.87 | 3.62 | 1.00 |
| 30216-20 | 2.62 | 3.37 | 1.25 |

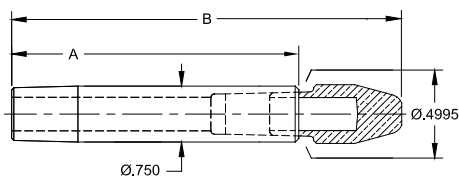


Bent Dimensions for Reference Only



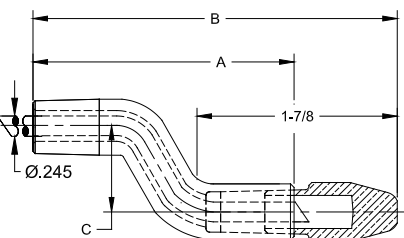
SHANKS FOR MALE CAPS WITH #6 RW TAPERS

| Part No. | A | B |
|----------|------|------|
| 3043 | 1.50 | 2.62 |
| 3044 | 1.75 | 2.88 |
| 3045 | 2.00 | 3.12 |
| 3046 | 2.25 | 3.38 |
| 3047 | 2.50 | 3.62 |
| 3048 | 2.75 | 3.88 |
| 3049 | 3.00 | 4.12 |
| 30412 | 3.25 | 4.38 |
| 30414 | 3.50 | 4.62 |
| 30416 | 3.75 | 4.88 |
| 30418 | 4.00 | 5.12 |
| 30420 | 4.25 | 5.38 |
| 30422 | 4.50 | 5.62 |



BENT OFFSET SHANKS FOR MALE CAPS WITH #6 RW TAPERS

| Part No. | A | B | C |
|----------|------|------|------|
| 30412-08 | 2.62 | 3.75 | 0.50 |
| 30412-12 | 2.56 | 3.69 | 0.75 |
| 30414-12 | 2.75 | 3.88 | 0.75 |
| 30416-16 | 2.87 | 4.00 | 1.00 |
| 30420-20 | 3.12 | 4.25 | 1.25 |



Bent Dimensions for Reference Only