





## ◆ Insert For Square Shoulder Milling

| The basic shape of inserts | IMAGE OF INSERT | Type              | Dimension (mm) |       |      |      |     | GRADE |
|----------------------------|-----------------|-------------------|----------------|-------|------|------|-----|-------|
|                            |                 |                   | I.W            | L     | S    | Φd   | R   |       |
|                            |                 | R390 11T308 PM    | 6.9            | 11.72 | 3.58 | 2.8  | 0.8 | •     |
|                            |                 | R390 170408 PM    | 9.6            | 17.82 | 4.76 | 4.12 | 0.8 | •     |
| The basic shape of inserts | IMAGE OF INSERT | Type              | Dimension (mm) |       |      |      |     | GRADE |
|                            |                 |                   | I.W            | L     | S    | Φd   | R   |       |
|                            |                 | APGT 160404 LH    | 9.28           | 17.15 | 4.76 | 4.4  | 0.4 | •     |
|                            |                 | APGT 160408 LH    | 9.28           | 17.15 | 4.76 | 4.4  | 0.8 | •     |
|                            |                 | APKT 160402 FR LH | 9.8            | 16.88 | 4.76 | 4.4  | 0.2 | •     |
|                            |                 | APKT 160404 FR LH | 9.8            | 16.88 | 4.76 | 4.4  | 0.4 | •     |
|                            |                 | APKT 160408 FR LH | 9.8            | 16.88 | 4.76 | 4.4  | 0.8 | •     |
| The basic shape of inserts | IMAGE OF INSERT | Type              | Dimension (mm) |       |      |      |     | GRADE |
|                            |                 |                   | I.W            | L     | S    | Φd   | R   |       |
|                            |                 | APMT 1135 PDER H2 | 6.2            | 11.21 | 3.5  | 2.8  | 0.8 | •     |
|                            |                 | APMT 1604 PDER H2 | 9.28           | 17.15 | 4.76 | 4.4  | 0.8 | •     |
|                            |                 | APMT 1135 PDER M2 | 6.2            | 11.21 | 3.5  | 2.8  | 0.8 | •     |
|                            |                 | APMT 1604 PDER M2 | 9.28           | 17.15 | 4.76 | 4.4  | 0.8 | •     |
|                            |                 | APMT 1135 PDER M2 | 6.2            | 11.21 | 3.5  | 2.8  | 0.8 | CO30H |
|                            |                 | APMT 1604 PDER M2 | 9.28           | 17.15 | 4.76 | 4.4  | 0.8 | CO30H |
|                            |                 | APKT 1604 PDER ZM | 9.28           | 17.15 | 4.76 | 4.4  | 0.8 | CO20H |
| The basic shape of inserts | IMAGE OF INSERT | Type              | Dimension (mm) |       |      |      |     | GRADE |
|                            |                 |                   | LE             | IC    | S    | Φd   | RE  |       |
|                            |                 | JDMT 070204R      | 6.4            | 4.3   | 2.45 | 4.4  | 0.4 | •     |
|                            |                 | JDMT 070208R      | 6.4            | 4.3   | 2.45 | 4.4  | 0.8 | •     |

## ◆ Insert For PROFILE Milling

| The basic shape of inserts | IMAGE OF INSERT | Type          | Dimension (mm) |      |     |     | GRADE |       |
|----------------------------|-----------------|---------------|----------------|------|-----|-----|-------|-------|
|                            |                 |               | ΦI.C           | S    | Φd  | α   | CO25G | CO30H |
|                            |                 | RPMW 0803 MOT | 8              | 3.18 | 3.4 | 11° | •     |       |
|                            |                 | RPMW 1003 MOT | 10             | 3.18 | 4.4 | 11° | •     |       |
|                            |                 | RPMW 10T3 MOT | 10             | 3.97 | 4.4 | 11° | •     |       |
|                            |                 | RPMW 1204 MOT | 12             | 4.76 | 4.4 | 11° | •     |       |
|                            |                 | RPMW 1604 MOE | 16             | 4.76 | 5.2 | 11° | •     |       |
|                            |                 | RDMX 1204 MO  | 12             | 4.76 | 4.4 | 11° | •     |       |
|                            |                 | RDMX 1204 MO  | 12             | 4.76 | 4.4 | 11° | •     | •     |



## INSERT FOR HOLE DRILLING INSERT

| The basic shape of inserts | IMAGE OF INSERT | Type           | Dimension (mm) |            |      |     |           | GRADE |
|----------------------------|-----------------|----------------|----------------|------------|------|-----|-----------|-------|
|                            |                 |                | $\Phi$ I.C     | S          | d    | r   | $a^\circ$ | CO20H |
|                            |                 | SPMG 050204 ZV | 5.56           | 2.38       | 2.5  | 0.4 | 11°       | •     |
|                            |                 | SPMG 060204 ZV | 6.35           | 2.38       | 2.8  | 0.4 | 11°       | •     |
|                            |                 | SPMG 07T308 ZV | 7.94           | 3.97       | 2.8  | 0.8 | 11°       | •     |
|                            |                 | SPMG 090408 ZV | 9.8            | 4.3        | 4.1  | 0.8 | 11°       | •     |
|                            |                 | SPMG 110408 ZV | 11.5           | 4.76       | 4.4  | 0.8 | 11°       | •     |
|                            |                 | SPMG 140512 ZV | 14.3           | 5.56       | 5.5  | 1.2 | 11°       | •     |
|                            |                 | SPGT 050204 ZV | 5.56           | 2.38       | 2.5  | 0.4 | 11°       | •     |
|                            |                 | SPGT 060204 ZV | 6.35           | 2.38       | 2.8  | 0.4 | 11°       | •     |
|                            |                 | SPGT 07T308 ZV | 7.94           | 3.97       | 2.8  | 0.8 | 11°       | •     |
|                            |                 | SPGT 090408 ZV | 9.8            | 4.3        | 4.1  | 0.8 | 11°       | •     |
|                            |                 | SPGT 110408 ZV | 11.5           | 4.76       | 4.4  | 0.8 | 11°       | •     |
|                            |                 | SPGT 140512 ZV | 14.3           | 5.56       | 5.5  | 1.2 | 11°       | •     |
|                            |                 | Type           | L              | $\Phi$ I.C | S    | d   | r         | GRADE |
|                            |                 |                |                |            |      |     |           | CO20H |
|                            |                 | WCMX 030208    | 3.8            | 5.56       | 2.38 | 2.8 | 0.8       | •     |
|                            |                 | WCMX 040208    | 4.3            | 6.35       | 2.38 | 3.1 | 0.8       | •     |
|                            |                 | WCMX 050308    | 5.4            | 7.94       | 3.18 | 3.2 | 0.8       | •     |
| WCMX 06T308                | 6.5             | 9.525          | 3.97           | 3.7        | 0.8  | •   |           |       |
| WCMX 080412                | 8.7             | 12.7           | 4.76           | 4.3        | 1.2  | •   |           |       |
|                            |                 | Type           | L              | $\Phi$ I.C | S    | d   | r         | GRADE |
|                            |                 |                |                |            |      |     |           | CO20H |
|                            |                 | WCGT 030208    | 3.8            | 5.56       | 2.38 | 2.8 | 0.8       | •     |
|                            |                 | WCGT 040208    | 4.3            | 6.35       | 2.38 | 3.1 | 0.8       | •     |
|                            |                 | WCGT 050308    | 5.4            | 7.94       | 3.18 | 3.2 | 0.8       | •     |
| WCGT 06T308                | 6.5             | 9.525          | 3.97           | 3.7        | 0.8  | •   |           |       |
| WCGT 080412                | 8.7             | 12.7           | 4.76           | 4.3        | 1.2  | •   |           |       |



## INSERT FOR HIGE FEED MILLING

| The basic shape of inserts | IMAGE OF INSERT | Type           | Dimension (mm) |      |     |     |     | GRADE |
|----------------------------|-----------------|----------------|----------------|------|-----|-----|-----|-------|
|                            |                 |                | $\Phi$ I.C     | S    | d   | r   | a°  | CO20H |
|                            |                 | SDMT 09T312 PM | 9.525          | 3.97 | 4   | 1.2 | 15° | •     |
|                            |                 | SDMT 120412 PM | 12.7           | 4.76 | 4.4 | 1.2 | 15° | •     |

| The basic shape of inserts | IMAGE OF INSERT | Type          | Dimension (mm) |      |      |      |      | GRADE |
|----------------------------|-----------------|---------------|----------------|------|------|------|------|-------|
|                            |                 |               | $\Phi$ I.C     | RE   | APMX | LE   | S    | CO25H |
|                            |                 | LNMU 0303 ZER | 6.00           | 1.20 | 1.00 | 3.20 | 4.29 | •     |

| The basic shape of inserts | IMAGE OF INSERT | Type           | Dimension (mm) |      |  |       |      | GRADE |
|----------------------------|-----------------|----------------|----------------|------|--|-------|------|-------|
|                            |                 |                | $\Phi$ I.C     | RE   |  | LE    | S    | CO25H |
|                            |                 | LOGU 030310-GM | 6.20           | 1.00 |  | 11.90 | 3.96 | •     |

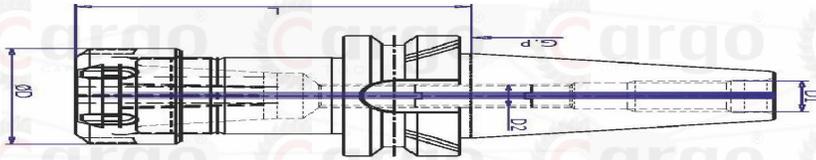
| The basic shape of inserts | IMAGE OF INSERT | TYPE           | Dimension (mm) |      |          |      |     | GRADE |       |
|----------------------------|-----------------|----------------|----------------|------|----------|------|-----|-------|-------|
|                            |                 |                | A              | T    | $\Phi$ d | Z    | Re  | CO25H | CO20H |
|                            |                 | WNMU 080608 GM | 12.70          | 4.76 | 4.40     | 1.20 | 15° | •     | •     |

| The basic shape of inserts | IMAGE OF INSERT | TYPE        | Dimension (mm) |        |      |     |     | GRADE |       |
|----------------------------|-----------------|-------------|----------------|--------|------|-----|-----|-------|-------|
|                            |                 |             | LE             | IC     | s    | r   | d1  | CO25H | CO20H |
|                            |                 | ONHU 060408 | 6.58           | 15.875 | 4.75 | 0.8 | 4.4 | •     | •     |
|                            |                 | ONMX 080608 | 8.37           | 20.2   | 5.79 | 0.8 | 5.3 |       |       |

| The basic shape of inserts | IMAGE OF INSERT | TYPE           | Dimension (mm) |    |      |   |      | GRADE |       |
|----------------------------|-----------------|----------------|----------------|----|------|---|------|-------|-------|
|                            |                 |                | LE             | IC | s    | r | d1   | CO25H | CO20H |
|                            |                 | HNGX 0906 ANSN | 16.50          |    | 6.35 |   | 4.90 | •     | •     |

| The basic shape of inserts | IMAGE OF INSERT | TYPE          | Dimension (mm) |       |      |      |      | GRADE |       |
|----------------------------|-----------------|---------------|----------------|-------|------|------|------|-------|-------|
|                            |                 |               | d              | I     | s    | r    | d1   | CO25H | CO20H |
|                            |                 | SNMU 1206 ANN | 12.70          | 12.70 | 6.35 | 0.80 | 4.50 | •     | •     |

## BT TAPER ER COLLET CHUCK

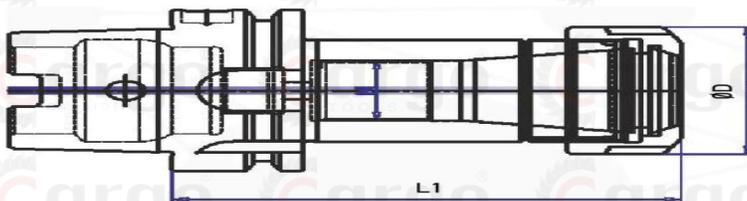


| BT30            | NUT DIA D | LONG (L)   | COLLET TYPE | CLAMPING RANGE | D1  |
|-----------------|-----------|------------|-------------|----------------|-----|
| ER16-70/100/150 | 28        | 70/100/150 | ER16        | 0.5-10         | M12 |
| ER20-70/100/150 | 35        | 70/100/150 | ER20        | 1.0-12         | M12 |
| ER25-70/100/150 | 42        | 70/100/150 | ER25        | 1.0-16         | M12 |
| ER32-70/100/150 | 50        | 70/100/150 | ER32        | 2.0-20         | M12 |
| ER40-80/100/150 | 63        | 70/100/150 | ER40        | 2.0-26         | M12 |

| BT40            | NUT DIA D | LONG (L)   | COLLET TYPE | CLAMPING RANGE | D1  |
|-----------------|-----------|------------|-------------|----------------|-----|
| ER16-70/100/150 | 32        | 70/100/150 | ER16        | 0.5-10         | M16 |
| ER20-70/100/150 | 35        | 70/100/150 | ER20        | 1.0-12         | M16 |
| ER25-70/100/150 | 42        | 70/100/150 | ER25        | 1.0-16         | M16 |
| ER32-70/100/150 | 50        | 70/100/150 | ER32        | 2.0-20         | M16 |
| ER40-80/100/150 | 63        | 70/100/150 | ER40        | 2.0-26         | M16 |

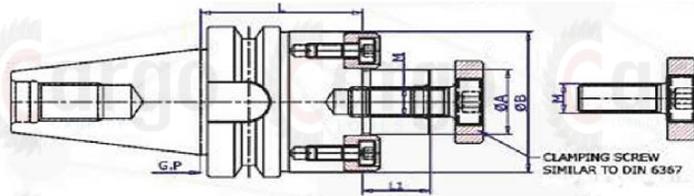
| BT50            | NUT DIA D | LONG (L)   | COLLET TYPE | CLAMPING RANGE | D1  |
|-----------------|-----------|------------|-------------|----------------|-----|
| ER16-70/100/150 | 32        | 70/100/150 | ER16        | 0.5-10         | M24 |
| ER20-70/100/150 | 35        | 70/100/150 | ER20        | 1.0-12         | M24 |
| ER25-70/100/150 | 42        | 70/100/150 | ER25        | 1.0-16         | M24 |
| ER32-70/100/150 | 50        | 70/100/150 | ER32        | 2.0-20         | M24 |
| ER40-80/100/150 | 63        | 70/100/150 | ER40        | 2.0-26         | M24 |

## HSK TAPER ER COLLET CHUCK



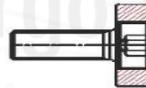
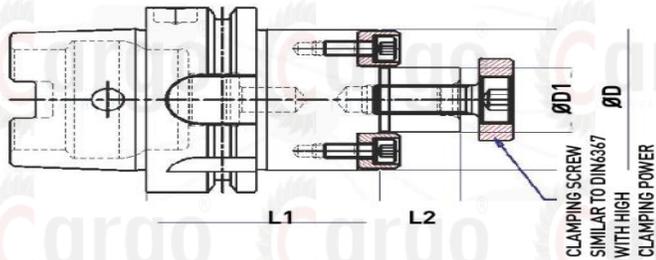
| MODEL NO.         | NUT DIA D | LONG (L1) | COLLET TYPE | CLAMPING RANGE | M        |
|-------------------|-----------|-----------|-------------|----------------|----------|
| A50-ER16-60/100   | 28        | 60/100    | ER16        | 0.5-1.0        | M10XIP   |
| A50-ER20-70/100   | 35        | 70/100    | ER20        | 1.0-12         | M10XIP   |
| A50-ER25-70/100   | 42        | 70/100    | ER25        | 1.0-16         | M18XIP   |
| A50-ER32-70/100   | 50        | 70/100    | ER32        | 2.0-20         | M22X1.5P |
| A50-ER40-80/100   | 63        | 80/100    | ER40        | 3.0-26         | M30X1.5P |
| A63-ER16-100/160  | 28        | 100/160   | ER16        | 0.5-1.0        | M10XIP   |
| A63-ER20-100/160  | 35        | 100/160   | ER20        | 1.0-12         | M10XIP   |
| A63-ER25-100/160  | 42        | 100/160   | ER25        | 1.0-16         | M18XIP   |
| A63-ER32-100/160  | 50        | 100/160   | ER32        | 2.0-20         | M22X1.5P |
| A63-ER40-120/160  | 63        | 120/160   | ER40        | 3.0-26         | M30X1.5P |
| A100-ER25-100/160 | 42        | 100/160   | ER25        | 1.0-16         | M18XIP   |
| A100-ER32-100/160 | 50        | 100/160   | ER32        | 2.0-20         | M22X1.5P |
| A100-ER40-120/160 | 63        | 120/160   | ER40        | 3.0-26         | M30X1.5P |

## BT TAPER FACEMILL HOLDER



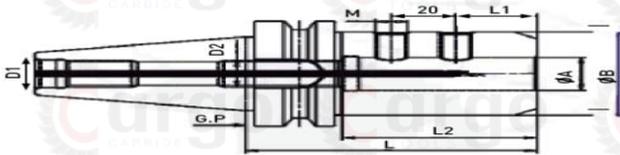
| BT30/40/50                | A  | L                  | L1 | B  | M   |
|---------------------------|----|--------------------|----|----|-----|
| FMH-16-40/100/150         | 16 | 40/100/150         | 17 | 38 | M8  |
| FMH-22-45/100/150/200/250 | 22 | 45/100/150/200/250 | 19 | 48 | M10 |
| FMH-27-45/100/150         | 27 | 45/100/150         | 21 | 58 | M12 |
| FMH-32-60/100/150         | 32 | 60/100/150         | 24 | 78 | M16 |
| FMH-40-45/100/150         | 40 | 45/100/150         | 27 | 82 | M20 |

## HSK TAPER FACEMILL HOLDER



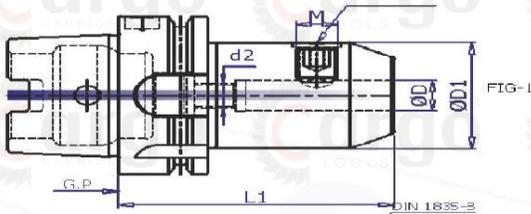
| A50/63/100       | D1 | L1         | D  | L2 |
|------------------|----|------------|----|----|
| FMH16-45/100/160 | 16 | 45/100/160 | 38 | 17 |
| FMH22-50/100/160 | 22 | 50/100/160 | 48 | 19 |
| FMH27-55/100/160 | 27 | 55/100/160 | 58 | 21 |
| FMH32-60/100/160 | 32 | 60/100/160 | 78 | 24 |
| FMH40-65/100/160 | 40 | 65/100/160 | 88 | 27 |

## BT TAPER SIDELOCK HOLDER

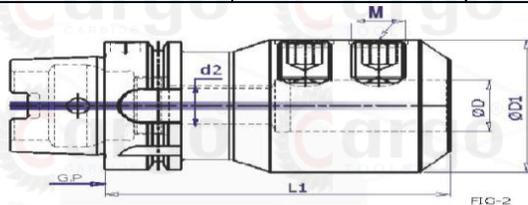


| BT30/40/50       | A  | L          | B  | L1 | L2 | D2  | M   |
|------------------|----|------------|----|----|----|-----|-----|
| SLA06-65L        | 6  | 65         | 20 | 15 | 35 | M5  | M6  |
| SLA08-65L        | 8  | 65         | 24 | 15 | 40 | M6  | M8  |
| SLA10-65L        | 10 | 65         | 30 | 16 | 44 | M8  | M10 |
| SLA12-65L        | 12 | 65         | 35 | 20 | 44 | M8  | M10 |
| SLA16-65/75L     | 16 | 65/75      | 40 | 23 | 52 | M12 | M10 |
| SLA20-90/100L    | 20 | 90/100     | 50 | 25 | 70 | M12 | M10 |
| SLA25-90/100/150 | 25 | 90/100/150 | 50 | 25 | 70 | M12 | M10 |
| SLA32-90/100/150 | 32 | 90/100/150 | 60 | 30 | 70 | M12 | M10 |
| SLA40-90/100/150 | 40 | 90/100/150 | 60 | 30 | 70 | M12 | M10 |
| SLA50-75/100/150 | 50 | 75/100/150 | 90 | 40 | 70 | M12 | M12 |

## HSK TAPER SIDELOCK HOLDER

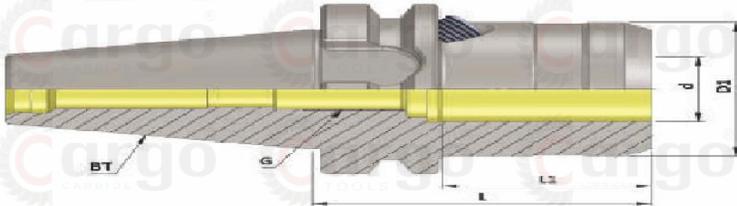


| A50/63/100      | D  | L1         | D1 | M   | D2  |
|-----------------|----|------------|----|-----|-----|
| WN06-65/100/160 | 6  | 65/100/160 | 25 | M6  | M5  |
| WN08-65/100/160 | 8  | 65/100/160 | 28 | M8  | M6  |
| WN10-65/100/160 | 10 | 65/100/160 | 35 | M10 | M5  |
| WN12-80/100/160 | 12 | 80/100/160 | 42 | M12 | M10 |
| WN14-80/100/160 | 14 | 80/100/160 | 44 | M12 | M10 |
| WN16-80/100/160 | 16 | 80/100/160 | 48 | M14 | M12 |
| WN18-80/100/160 | 18 | 80/100/160 | 50 | M14 | M12 |
| WN20-80/100/160 | 20 | 80/100/160 | 52 | M16 | M16 |



| A50/63/100       | D  | L1          | D1  | M      | D2  |
|------------------|----|-------------|-----|--------|-----|
| WN25-100/160     | 25 | 100/160     | 65  | M18X2P | M20 |
| WN32-100/120/160 | 32 | 100/120/160 | 72  | M20X2P | M20 |
| WN40-100/120/160 | 40 | 100/120/160 | 80  | M20X2P | M20 |
| WN50-130         | 50 | 130         | 100 | M24X2P | M20 |

## BT TAPER HYDRAULIC CHUCK



| MODULE NO.      | d  | DI | G   | L    | LI |
|-----------------|----|----|-----|------|----|
| BT30 HYD12-69   | 12 | 42 | M10 | 69   | 40 |
| BT30 HYD20-90   | 20 | 50 | M16 | 90   | 42 |
| BT40 HYD12-58   | 12 | 42 | M10 | 58   | 40 |
| BT40 HYD20-72.5 | 20 | 50 | M16 | 72.5 | 42 |
| BT40 HYD32-90   | 32 | 72 | M16 | 90   | 55 |
| BT50 HYD12-69   | 12 | 42 | M10 | 69   | 40 |
| BT50 HYD20-83   | 20 | 50 | M16 | 83   | 42 |
| BT50 HYD32-90   | 32 | 72 | M16 | 90   | 55 |
| MODULE NO.      | d  | DI | G   | L    | LI |
| BT40 HYD6-90    | 6  | 42 | M16 | 90   | 55 |
| BT40 HYD8-90    | 8  | 42 | M16 | 90   | 55 |
| BT40 HYD10-90   | 10 | 42 | M16 | 90   | 55 |
| BT40 HYD14-90   | 14 | 42 | M16 | 90   | 55 |
| BT40 HYD16-90   | 16 | 42 | M16 | 90   | 55 |
| BT40 HYD18-90   | 18 | 50 | M16 | 90   | 55 |
| BT40 HYD25-90   | 25 | 65 | M16 | 90   | 55 |

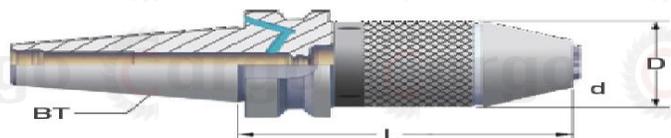
## HYDRAULIC CHUCK SLEEVE

| SLEEVE SIZE | RANGE                          |
|-------------|--------------------------------|
| HC12        | 3,4,5,6,8                      |
| HC20        | 3,4,5,6,8,10,12,14,16          |
| HC32        | 3,4,5,6,8,10,12,14,16,18,20,25 |

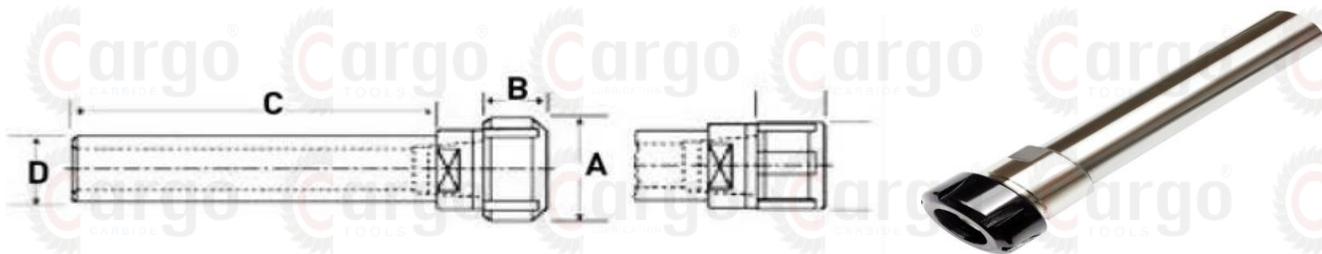


## BT TAPER APU DRILL CHUCK

| MODULE NO.     | d    | D  | L   |
|----------------|------|----|-----|
| BT30-APU08-80  | 1-8  | 37 | 80  |
| BT30-APU13-100 | 1-13 | 50 | 100 |
| BT30-APU16-100 | 3-16 | 57 | 100 |
| BT40-APU08-80  | 1-8  | 37 | 80  |
| BT40-APU13-100 | 1-13 | 50 | 100 |
| BT40-APU16-100 | 3-16 | 57 | 100 |
| BT50-APU08-80  | 1-8  | 37 | 80  |
| BT50-APU13-100 | 1-13 | 50 | 100 |
| BT50-APU16-100 | 3-16 | 57 | 100 |

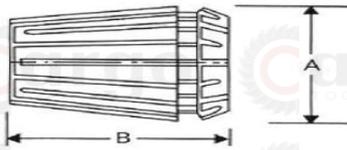


## ER STRAIGHT SHANK HOLDER (BABY COLLET CHUCK)



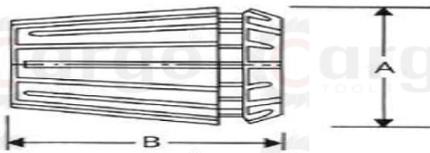
| MODULE NO.   | COLLET SIZE | SHANK DIA (D) | LENGTH C | NUT DIA (A) | NUT TYPE     |
|--------------|-------------|---------------|----------|-------------|--------------|
| C10-ER08-100 | ER08        | 10            | 100      | 12          | MINI         |
| C12-ER11-100 | ER11        | 12            | 100      | 16          | MINI         |
| C12-ER11-100 | ER11        | 12            | 100      | 19          | HEX          |
| C16-ER11-100 | ER11        | 16            | 100      | 16          | MINI         |
| C16-ER16-50  | ER16        | 16            | 50       | 22          | MINI         |
| C16-ER16-100 | ER16        | 16            | 100      | 22          | MINI         |
| C16-ER16-150 | ER16        | 16            | 150      | 22          | MINI         |
| C16-ER11-100 | ER11        | 16            | 100      | 19          | HEX          |
| C16-ER16-50  | ER16        | 16            | 50       | 28          | HEX          |
| C16-ER16-100 | ER16        | 16            | 100      | 28          | HEX          |
| C16-ER16-150 | ER16        | 16            | 150      | 28          | HEX          |
| C20-ER16-50  | ER16        | 20            | 50       | 28          | HEX          |
| C20-ER16-100 | ER16        | 20            | 100      | 28          | HEX          |
| C20-ER16-150 | ER16        | 20            | 150      | 28          | HEX          |
| C25-ER16-100 | ER16        | 25            | 100      | 28          | HEX          |
| C25-ER16-150 | ER16        | 25            | 150      | 28          | HEX          |
| C20-ER20-50  | ER20        | 20            | 50       | 34          | HEX          |
| C20-ER20-100 | ER20        | 20            | 100      | 34          | HEX          |
| C20-ER20-150 | ER20        | 20            | 150      | 34          | HEX          |
| C25-ER25-100 | ER25        | 25            | 100      | 42          | UM (SPANNER) |
| C25-ER25-150 | ER25        | 25            | 150      | 42          | UM (SPANNER) |
| C25-ER25-100 | ER25        | 25            | 100      | 42          | UM (SPANNER) |
| C25-ER25-150 | ER25        | 25            | 150      | 42          | UM (SPANNER) |
| C32-ER25-100 | ER25        | 32            | 100      | 42          | UM (SPANNER) |
| C32-ER25-150 | ER25        | 32            | 150      | 42          | UM (SPANNER) |
| C32-ER32-100 | ER32        | 32            | 100      | 50          | UM (SPANNER) |
| C32-ER32-150 | ER32        | 32            | 150      | 50          | UM (SPANNER) |
| C40-ER32-100 | ER32        | 40            | 100      | 50          | UM (SPANNER) |
| C40-ER32-150 | ER32        | 40            | 150      | 50          | UM (SPANNER) |
| C40-ER40-100 | ER40        | 40            | 100      | 63          | UM (SPANNER) |
| C40-ER40-150 | ER40        | 40            | 150      | 63          | UM (SPANNER) |

## ER COLLET



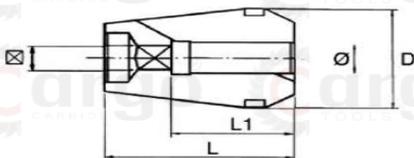
| COLET SIZE | A      | B      | RANGE |
|------------|--------|--------|-------|
| ER08       | 8.5MM  | 13.5MM | 1-5   |
| ER11       | 11.5MM | 18MM   | 1-7   |
| ER16       | 17MM   | 27.5MM | 1-10  |
| ER20       | 21MM   | 31.5MM | 2-13  |
| ER25       | 26MM   | 34MM   | 2-16  |
| ER32       | 33MM   | 40MM   | 2-20  |
| ER40       | 41MM   | 46MM   | 2-26  |
| ER50       | 52MM   | 60MM   | 12-34 |

## ER SEALED COLLETS



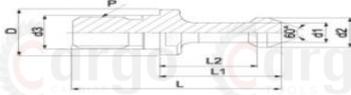
| COLET SIZE | A       | B      | RANGE |
|------------|---------|--------|-------|
| ERS11      | 11.3MM  | 18MM   | 3-7   |
| ERS16      | 16.74MM | 27.5MM | 3-10  |
| ERS20      | 20.74MM | 31.5MM | 3-13  |
| ERS25      | 25.74MM | 34MM   | 3-16  |
| ERS32      | 32.74MM | 40MM   | 3-20  |
| ERS40      | 40.74MM | 46MM   | 3-26  |
| ERS50      | 51.50MM | 60MM   | 12-34 |

## ER TAP COLLETS



| COLET SIZE | D       | L      | TAP SIZE |
|------------|---------|--------|----------|
| ERT16      | 16.74MM | 27.5MM | M3-M8    |
| ERT20      | 20.74MM | 31.5MM | M3-M12   |
| ERT25      | 25.74MM | 34MM   | M3-M14   |
| ERT32      | 32.74MM | 40MM   | M3-M18   |
| ERT40      | 40.74MM | 46MM   | M3-M27   |
| ERT50      | 51.50MM | 60MM   | M6-M36   |

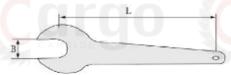
## BT PULLSTUD



| Model No. | Dimension(mm) |  | d1 (mm) | d2 (mm) | d3 (mm) | L (mm) | L1 (mm) | L2 (mm) | SW (mm) | Weight (Kgs) |
|-----------|---------------|--|---------|---------|---------|--------|---------|---------|---------|--------------|
|           | D (mm)        |  |         |         |         |        |         |         |         |              |
| BT30-45°  | 16.5          |  | 7       | 11      | 12.5    | 43     | 23      | 18      | 13      | 0.04         |
| BT30-60°  | 16.5          |  | 7       | 11      | 12.5    | 43     | 23      | 18      | 13      | 0.04         |
| BT30-90°  | 16.5          |  | 7       | 11      | 12.5    | 43     | 23      | 18      | 13      | 0.04         |
| BT40-45°  | 23            |  | 10      | 15      | 17      | 60     | 35      | 28      | 19      | 0.11         |
| BT40-60°  | 23            |  | 10      | 15      | 17      | 60     | 35      | 28      | 19      | 0.1          |
| BT40-90°  | 23            |  | 10      | 15      | 17      | 60     | 35      | 28      | 19      | 0.1          |
| BT50-45°  | 38            |  | 17      | 23      | 25      | 85     | 45      | 35      | 30      | 0.3          |
| BT50-60°  | 38            |  | 17      | 23      | 25      | 85     | 45      | 35      | 30      | 0.3          |
| BT50-90°  | 38            |  | 17      | 23      | 25      | 85     | 45      | 35      | 30      | 0.3          |

## SPANNER

### HEX SPANNER



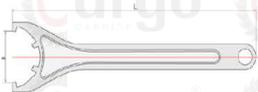
| NUT SIZE | B  | L   |
|----------|----|-----|
| ER11-A   | 17 | 110 |
| ER16-A   | 25 | 120 |
| ER20-A   | 30 | 130 |

### MINI SPANNER



| NUT SIZE | B    | L   |
|----------|------|-----|
| ER08-M   | 7.5  | 70  |
| ER11-M   | 11   | 90  |
| ER16-M   | 15   | 110 |
| ER20-M   | 19.5 | 120 |

### UM SPANNER

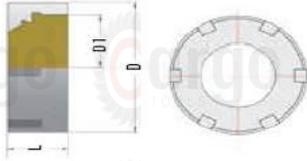


| NUT SIZE | B    | L   |
|----------|------|-----|
| ER16-UM  | 26   | 180 |
| ER20-UM  | 30   | 190 |
| ER25-UM  | 37   | 210 |
| ER32-UM  | 46.6 | 250 |
| ER40-UM  | 58   | 290 |
| ER50-UM  | 74   | 350 |



## COLLET NUT

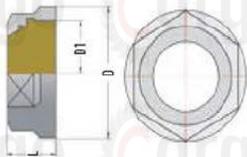
### ER MINI NUT



| NUT SIZE | D  | D1   | L  | T        |
|----------|----|------|----|----------|
| ER08-M   | 12 | 10   | 10 | M10X0.75 |
| ER11-M   | 16 | 12   | 12 | M13X0.75 |
| ER16-M   | 22 | 17.2 | 18 | M19X1    |
| ER20-M   | 28 | 22.5 | 19 | M24X1    |



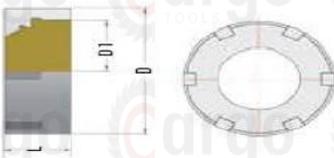
### ER HEX NUT



| NUT SIZE | D  | D1 | L    | T        |
|----------|----|----|------|----------|
| ER11-A   | 19 | 17 | 11.3 | M14X0.75 |
| ER16-A   | 28 | 25 | 17.5 | M22X1.5  |
| ER20-A   | 34 | 30 | 19   | M25X1.5  |



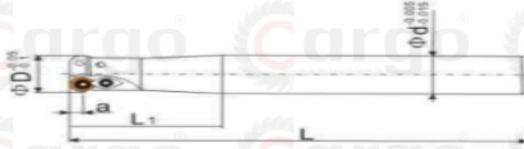
### ER HEX NUT



| NUT SIZE | D  | D1 | L    | T       |
|----------|----|----|------|---------|
| ER16-UM  | 32 | 26 | 17   | M22X1.5 |
| ER20-UM  | 35 | 29 | 19   | M25X1.5 |
| ER25-UM  | 42 | 36 | 20   | M32X1.5 |
| ER32-UM  | 50 | 44 | 22.5 | M40X1.5 |
| ER40-UM  | 63 | 57 | 25.5 | M50X1.5 |
| ER50-UM  | 78 | 71 | 35.5 | M64X2   |

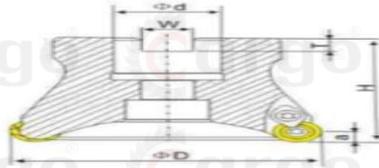


## ROUND INSERT CUTTER EMR (SIDE MILL CUTTER)



| PRODUCT SIZE         | DIAMENSIONS   |               |    |     | NO. OF EDGES | SUITABLE INSERT | SCREW        | SCREW DRIVER |
|----------------------|---------------|---------------|----|-----|--------------|-----------------|--------------|--------------|
|                      | BLADE DIA (D) | SHANK DIA (d) | L1 | L   |              |                 |              |              |
| EMR C10-4R10-120-1T  | 10            | 10            | 30 | 120 | 1            | RPMT 0802 MO    | M3×7         | T10          |
| EMR C12-4R12-130-1T  | 12            | 12            | 40 | 130 | 1            |                 | M3×7         | T10          |
| EMR C16-4R16-150-2T  | 16            | 16            | 50 | 150 | 2            |                 | M3×7         | T10          |
| EMR C16-4R16-200-2T  | 16            | 16            | 60 | 200 | 2            |                 | M3×7         | T10          |
| EMR C20-4R20-150-2T  | 20            | 20            | 50 | 150 | 2            |                 | M3×7         | T10          |
| EMR C20-4R20-200-2T  | 20            | 20            | 60 | 200 | 2            |                 | M3×7         | T10          |
| EMR C20-5R20-150-2T  | 20            | 19            | 40 | 150 | 2            | RPMT 10T3 MO    | M4×9         | T15          |
| EMR C20-5R20-200-2T  | 20            | 20            | 50 | 200 | 2            |                 | M4×9         | T15          |
| EMR C25-5R25-150-2T  | 25            | 25            | 50 | 150 | 2            |                 | M4×9         | T15          |
| EMR C25-5R25-200-2T  | 25            | 25            | 60 | 200 | 2            |                 | M4×9         | T15          |
| EMR C25-5R25-250-2T  | 25            | 25            | 70 | 250 | 2            |                 | M4×9         | T15          |
| EMRW C25-6R25-150-2T | 25            | 25            | 50 | 150 | 2            |                 | RPMT 1204 MO | M4×9         |
| EMRW C32-6R32-150-2T | 32            | 32            | 50 | 150 | 2            | M4×9            |              | T15          |
| EMRW C32-6R32-200-2T | 32            | 32            | 50 | 200 | 2            | M4×9            |              | T15          |
| EMRW C32-6R32-250-2T | 32            | 32            | 60 | 250 | 2            | M4×9            |              | T15          |
| EMRW C32-6R32-300-2T | 32            | 32            | 60 | 300 | 2            | M4×9            |              | T15          |

## EMRW (FACE MILL)



| PRODUCT NAME     | DIA | HOLE DIA | HIGHT | W    | T   | SUITABLE INSERT | SCREW |
|------------------|-----|----------|-------|------|-----|-----------------|-------|
| EMRW 6R50-22-4T  | 50  | 22       | 47    | 10.4 | 6.3 | RPMT 1204       | M4X10 |
| EMRW 6R63-22-4T  | 63  | 22       | 47    | 10.4 | 6.3 |                 |       |
| EMRW 6R80-27-6T  | 80  | 27       | 50    | 12.4 | 7   |                 |       |
| EMRW 6R100-32-6T | 100 | 32       | 50    | 14.4 | 8   |                 |       |
| EMRW 6R125-40-7T | 125 | 40       | 60    | 16.4 | 9   |                 |       |
| EMRW 6R160-40-8T | 160 | 40       | 60    | 16.4 | 9   |                 |       |
| EMR 6R200-40-10T | 200 | 40       | 60    | 25.7 | 14  |                 |       |

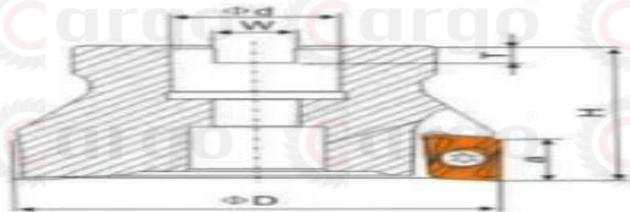
## APMT INSERT CUTTER

### BAP300R/400R (SIDE MILL CUTTER)



| PRODUCT SIZE           | DIMENSIONS    |               |    |     | NO.OF EDGES | SUITABLE INSERT | SCREW        | SCREW DRIVER |
|------------------------|---------------|---------------|----|-----|-------------|-----------------|--------------|--------------|
|                        | BLADE DIA (D) | SHANK DIA (d) | L1 | L   |             |                 |              |              |
| BAP 300R C10-10-120-1T | 10            | 10            | 30 | 120 | 1           | APMT<br>1135    | M2.5×6       | T8           |
| BAP 300R C12-12-130-1T | 12            | 12            | 30 | 120 | 1           |                 | M2.5×6       | T8           |
| BAP 300R C14-14-130-2T | 14            | 14            | 30 | 130 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C14-14-150-2T | 14            | 14            | 30 | 150 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C16-16-120-2T | 16            | 16            | 40 | 120 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C16-16-150-2T | 16            | 16            | 50 | 150 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C16-16-200-2T | 16            | 16            | 60 | 200 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C20-20-120-2T | 20            | 20            | 35 | 120 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C20-20-150-2T | 20            | 20            | 50 | 150 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C20-20-200-2T | 20            | 20            | 60 | 200 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C20-20-250-2T | 20            | 20            | 60 | 250 | 2           |                 | M2.5×6       | T8           |
| BAP 300R C25-25-150-3T | 25            | 25            | 50 | 150 | 3           |                 | M2.5×6       | T8           |
| BAP 300R C25-25-200-3T | 25            | 25            | 60 | 200 | 3           |                 | M2.5×6       | T8           |
| BAP 300R C25-25-250-3T | 25            | 25            | 60 | 250 | 3           |                 | M2.5×6       | T8           |
| BAP 400R C25-25-150-2T | 25            | 25            | 50 | 150 | 2           |                 | APMT<br>1604 | M4×9         |
| BAP 400R C25-25-200-2T | 25            | 25            | 60 | 200 | 2           | M4×9            |              | T15          |
| BAP 400R C25-25-250-2T | 25            | 25            | 70 | 250 | 2           | M4×9            |              | T15          |
| BAP 400R C32-32-150-3T | 32            | 32            | 50 | 150 | 3           | M4×9            |              | T15          |
| BAP 400R C32-32-200-3T | 32            | 32            | 60 | 200 | 3           | M4×9            |              | T15          |
| BAP 400R C32-32-250-3T | 32            | 32            | 60 | 250 | 3           | M4×9            |              | T15          |
| BAP 400R C32-32-300-3T | 32            | 32            | 60 | 300 | 3           | M4×9            |              | T15          |
| BAP 400R C32-32-350-3T | 32            | 32            | 60 | 350 | 3           | M4×9            |              | T15          |

### BAP400R (FACE MILL)



| PRODUCT NAME       | DIA | HOLE DIA | HIGHT | W    | T   | SUITABLE INSERT | SCREW |
|--------------------|-----|----------|-------|------|-----|-----------------|-------|
| BAP400R 50-22-4T   | 50  | 22       | 47    | 10.4 | 6.3 | APMT 1604       | M4X10 |
| BAP400R 63-22-4T   | 63  | 22       | 47    | 10.4 | 6.3 |                 |       |
| BAP400R 80-27-6T   | 80  | 27       | 50    | 12.4 | 7   |                 |       |
| BAP400R 100-32-6T  | 100 | 32       | 50    | 14.4 | 8   |                 |       |
| BAP400R 125-40-7T  | 125 | 40       | 60    | 16.4 | 9   |                 |       |
| BAP400R 160-40-8T  | 160 | 40       | 60    | 16.4 | 9   |                 |       |
| BAP400R 200-40-10T | 200 | 40       | 60    | 25.7 | 14  |                 |       |



## JDMW INSERT CUTTER



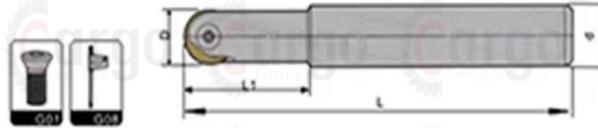
| PRODUCT SIZE        | DIAMENSIONS |           |    |     | NO.OF EDGES | SUITABLE INSERT | SCREW  | SCREW DRIVER |
|---------------------|-------------|-----------|----|-----|-------------|-----------------|--------|--------------|
|                     | BLADE DIA   | SHANK DIA | L1 | L   |             |                 |        |              |
| AJX08 C20-20-150-2T | 20          | 20        | 40 | 150 | 2           | JDMW 08         | M3.5X8 | T15          |
| AJX08 C20-20-200-2T | 20          | 20        | 40 | 200 | 2           |                 | M3.5X8 | T15          |
| AJX08 C20-21-150-2T | 21          | 20        | 50 | 150 | 2           |                 | M3.5X8 | T15          |
| AJX08 C20-21-200-2T | 21          | 20        | 50 | 200 | 2           |                 | M3.5X8 | T15          |
| AJX09 C25-25-150-2T | 25          | 25        | 40 | 150 | 2           | JDMW 0903       | M3.5X8 | T15          |
| AJX09 C25-25-200-2T | 25          | 25        | 50 | 200 | 2           |                 | M3.5X8 | T15          |
| AJX09 C25-26-150-2T | 25          | 26        | 40 | 150 | 2           |                 | M3.5X8 | T15          |
| AJX09 C25-26-200-2T | 26          | 26        | 50 | 200 | 2           |                 | M3.5X8 | T15          |
| AJX12 C32-32-150-3T | 32          | 32        | 50 | 150 | 3           | JDMW 1204       | M4X9   | T15          |
| AJX12 C32-32-200-3T | 32          | 32        | 60 | 200 | 3           |                 | M4X9   | T15          |
| AJX12 C32-32-250-3T | 32          | 32        | 60 | 250 | 3           |                 | M4X9   | T15          |

## AJX12 (FACE MILL)



| PRODUCT SIZE    | DIAMENSIONS |          |        | NO.OF EDGES | SUITABLE INSERT | SCREW | SCREW DRIVER |
|-----------------|-------------|----------|--------|-------------|-----------------|-------|--------------|
|                 | DIA         | HOLE DIA | HIGH T |             |                 |       |              |
| AJX12 50-22-3T  | 50          | 22       | 47     | 3           | JDMW1204        | M4x10 | T15          |
| AJX12 63-22-4T  | 63          | 22       | 47     | 4           |                 |       |              |
| AJX12 80-27-5T  | 80          | 27       | 60     | 5           |                 |       |              |
| AJX14 50-22-3T  | 50          | 22       | 47     | 3           | JDMW1405        | M4x10 | T15          |
| AJX14 63-22-4T  | 80          | 27       | 50     | 6           |                 |       |              |
| AJX14 80-22-4T  | 100         | 32       | 50     | 6           |                 |       |              |
| AJX14 100-32-5T | 125         | 40       | 60     | 7           |                 |       |              |

## T2139 BALL TYPE CUTTER



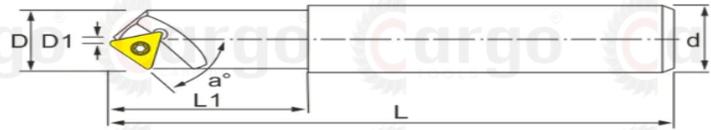
| PRODUCT SIZE           | DIMENSIONS    |               |    |     | NO. OF EDGES | SUITABLE INSERT | SCREW    | SCREW DRIVER |
|------------------------|---------------|---------------|----|-----|--------------|-----------------|----------|--------------|
|                        | BLADE DIA (D) | SHANK DIA (d) | L1 | L   |              |                 |          |              |
| T2139-4R-C08-120-IT    | 8             | 10            | 25 | 120 | 1            | P3200-D08       | 3.0 X 8  | T8           |
| T2139-5R-C10-120-IT    | 10            | 10            | 30 | 120 | 1            | P3200-D10       | 4.0 X 8  | T10          |
| T2139-6R-C12-150-IT    | 12            | 12            | 40 | 150 | 1            | P3200-D12       | 5.0 X 10 | T20          |
| T2139-8R-C16-150-IT    | 16            | 16            | 50 | 150 | 1            | P3200-D16       | 5.0 X 10 | T20          |
| T2139-8R-C16-200-IT    | 16            | 16            | 60 | 200 | 1            | P3200-D16       | 5.0 X 10 | T20          |
| T2139-10R-C20-150-IT   | 20            | 20            | 50 | 150 | 1            | P3200-D20       | 5.0 X 10 | T20          |
| T2139-10R-C20-200-IT   | 20            | 20            | 50 | 200 | 1            | P3200-D20       | 5.0 X 10 | T20          |
| T2139-12.5R-C25-200-IT | 25            | 25            | 55 | 200 | 1            | P3200-D25       | 5.0 X 10 | T20          |
| T2139-16R-C32-200-IT   | 32            | 32            | 55 | 200 | 1            | P3200-D32       | 5.0 X 10 | T20          |

## T-SLOT CUTTER



| PRODUCT SIZE          | DIMENSIONS |               |     |    | NO. OF EDGES | SUITABLE INSERT | SCREW   | SCREW DRIVER |
|-----------------------|------------|---------------|-----|----|--------------|-----------------|---------|--------------|
|                       | DIA (D)    | SHANK DIA (C) | L   | H  |              |                 |         |              |
| HTC-C14-20-H10-150-2T | 14         | 20            | 150 | 10 | 2            | CCMT 06         | 2.5 X 6 | T8           |
| HTC-C16-25-H10-150-2T | 16         | 20            | 150 | 10 | 2            | CCMT 06         | 2.5 X 6 | T8           |
| HTC-C16-30-H10-150-4T | 16         | 30            | 150 | 10 | 4            | CCMT 06         | 2.5 X 6 | T8           |
| HTC-C20-40-H10-150-4T | 20         | 40            | 150 | 10 | 4            | CCMT 06         | 2.5 X 6 | T8           |
| HTC-C20-50-H10-150-4T | 20         | 50            | 150 | 10 | 4            | CCMT 06         | 2.5 X 6 | T8           |
| HTC-C25-60-H10-150-6T | 25         | 60            | 150 | 10 | 6            | CCMT 06         | 2.5 X 6 | T8           |
| HTC-C32-70-H10-150-8T | 32         | 70            | 150 | 10 | 8            | CCMT 06         | 2.5 X 6 | T8           |

## CHAMFER TOOL 45°



| PRODUCT SIZE       | DIAMENSIONS |               |     |   | RANGE  | SUITABLE INSERT | SCREW    | SCREW DRIVER |
|--------------------|-------------|---------------|-----|---|--------|-----------------|----------|--------------|
|                    | DIA (D)     | SHANK DIA (d) | L   | T |        |                 |          |              |
| TCM45-12-12-100-1T | 12          | 12            | 100 | 1 | 2-15.  | TCMT 11         | 2.5 X 6  | T8           |
| TCM45-16-16-100-1T | 16          | 16            | 100 | 1 | 3-16.  | TCMT 11         | 2.5 X 6  | T8           |
| TCM45-20-20-100-1T | 20          | 20            | 100 | 1 | 3-21.  | TCMT 16         | 4.0 X 10 | T15          |
| TCM45-25-25-100-1T | 25          | 25            | 100 | 1 | 5-25.  | TCMT 16         | 4.0 X 10 | T15          |
| TCM45-12-20-110-1T | 20          | 12            | 110 | 1 | 5-20.  | TCMT 16         | 4.0 X 10 | T15          |
| TCM45-16-20-110-1T | 20          | 16            | 110 | 1 | 5-20.  | TCMT 16         | 4.0 X 10 | T15          |
| TCM45-12-20-110-1T | 20          | 12            | 110 | 1 | 5-20.  | TCMT 16         | 4.0 X 10 | T15          |
| TCM45-16-20-110-1T | 20          | 16            | 110 | 1 | 5-20.  | TCMT 16         | 4.0 X 10 | T15          |
| TCM45-25-40-120-2T | 40          | 25            | 120 | 2 | 19-39. | TCMT 16         | 4.0 X 10 | T15          |
| TCM45-25-50-120-2T | 50          | 25            | 120 | 2 | 30-50. | TCMT 16         | 4.0 X 10 | T15          |

## CHAMFER TOOL 15°/20°/30°/40°/50°/60°



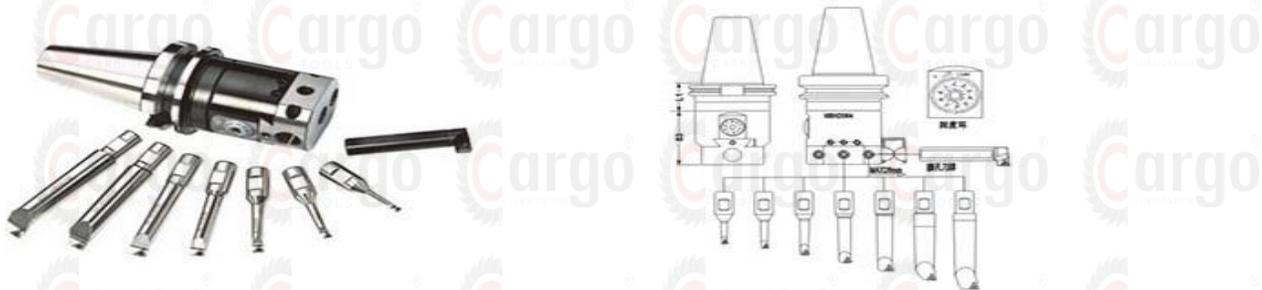
| PRODUCT SIZE         | DIAMENSIONS |               |     |   | ANGEL | RANGE  | SUITABLE INSERT | SCREW    | SCREW DRIVER |
|----------------------|-------------|---------------|-----|---|-------|--------|-----------------|----------|--------------|
|                      | DIA (D)     | SHANK DIA (d) | L   | T |       |        |                 |          |              |
| SS015-C20-20-130L-1T | 20          | 20            | 130 | 1 | 15°   | 12-20. | TCMT 16         | 4.0 X 10 | T15          |
| SS015-C20-25-130L-1T | 25          | 20            | 130 | 1 | 15°   | 18-30. | TCMT 16         | 4.0 X 10 | T15          |
| TC20-C20-30-120-1T   | 30          | 20            | 120 | 1 | 20°   | 20-30. | TCMT 16         | 4.0 X 10 | T15          |
| SSY30-C12-12-110-1T  | 12          | 12            | 110 | 1 | 30°   | 3-12.  | TCMT 09         | 2.5 X 6  | T8           |
| SSY30-C20-20-130-1T  | 20          | 20            | 130 | 1 | 30°   | 5-20.  | TCMT 16         | 4.0 X 10 | T15          |
| SSY30-C25-40-130-1T  | 40          | 25            | 130 | 1 | 30°   | 25-40. | TCMT 16         | 4.0 X 10 | T15          |
| TC40-C20-30-110-1T   | 30          | 20            | 110 | 1 | 40°   | 12-30. | TCMT 16         | 4.0 X 10 | T15          |
| TC50-C20-30-110-1T   | 30          | 20            | 110 | 1 | 50°   | 8-30.  | TCMT 16         | 4.0 X 10 | T15          |
| SSH60-C16-18-110-1T  | 18          | 16            | 110 | 1 | 60°   | 4-18.  | TCMT 16         | 4.0 X 10 | T15          |
| SSH60-C25-40-120-2T  | 40          | 25            | 110 | 2 | 60°   | 25-40. | TCMT 16         | 4.0 X 10 | T15          |

## BACK CHAMFER TOOL 45°

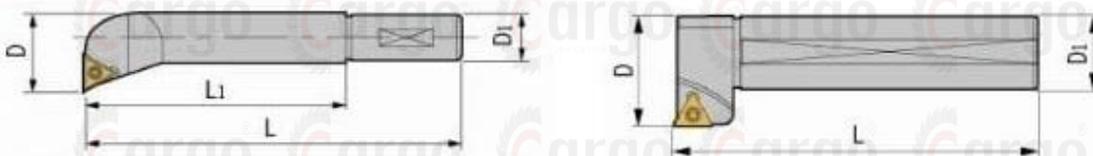


| PRODUCT SIZE        | DIAMENSIONS |               |     |   | RANGE  | SUITABLE INSERT | SCREW   | SCREW DRIVER |
|---------------------|-------------|---------------|-----|---|--------|-----------------|---------|--------------|
|                     | DIA (D)     | SHANK DIA (d) | L   | T |        |                 |         |              |
| SDX45-C12-16-120-1T | 16          | 12            | 120 | 1 | 8-16.  | SPMG 06         | 2.2 X 5 | T7           |
| SDX45-C16-20-120-1T | 20          | 16            | 120 | 1 | 14-20. | SPMG 09         | 3.5 X 8 | T15          |
| SDX45-C20-25-160-2T | 25          | 20            | 160 | 2 | 17-25. | SPMG 07         | 2.5 X 6 | T8           |

# NBH2084 Micro Finishing Boring Kit

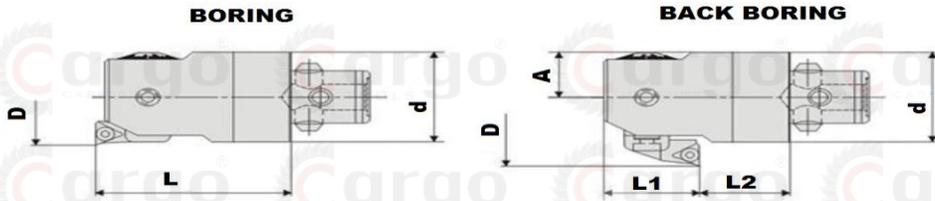


| MODEL   | BORING RANGE | TURNING PRECISION | MAX OFFSET | WEIGHT (KG) |
|---------|--------------|-------------------|------------|-------------|
| NBH2084 | 8-280MM      | 0.01MM            | 28.0MM     | 3           |



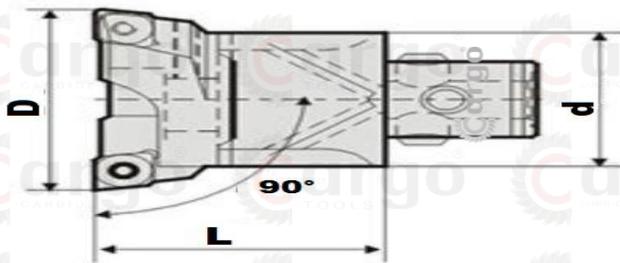
| MODEL       | SIZE(MM) |    |     |     | BORING RANGE | INSERT      | SCREW  | SCREW DRIVER |
|-------------|----------|----|-----|-----|--------------|-------------|--------|--------------|
|             | D        | DI | LI  | L   |              |             |        |              |
| SBJ2008-32  | 8        | 20 | 32  | 80  | 8.0-11.0     | TPGH 0601** | M2.0X5 | T6           |
| SBJ2010-40  | 10       | 20 | 40  | 97  | 10.0-13.0    |             |        |              |
| SBJ2012-53  | 12       | 20 | 53  | 98  | 12.0-17.0    | TPGX 0902** | M2.5X6 | T8           |
| SBJ2016-68  | 16       | 20 | 68  | 110 | 16.0-21.0    |             |        |              |
| SBJ2020-83  | 20       | 20 | 83  | 123 | 20.0-25.0    | TPGX 1103** | M3.0X8 | T10          |
| SBJ2025-96  | 25       | 20 | 96  | 137 | 25.0-135     |             |        |              |
| SBJ2030-115 | 30       | 20 | 115 | 152 | 30.0-140     |             |        |              |
| SBJ20-20-97 | 30       | 20 | 100 | 97  | 120-180      |             |        |              |

## FINISH BORING HEAD



| SPECIFICATION     | BORING           |    |      | BACK BORING      |    |    |      | INSERT HOLDER | INSERT SIZE | SCREW     |             |
|-------------------|------------------|----|------|------------------|----|----|------|---------------|-------------|-----------|-------------|
|                   | BORING RANGE (D) | d  | L    | BORING RANGE (D) | L1 | L2 | A    |               |             |           |             |
| CKB1-EWN2036-32.5 | 20-26            | 19 | 32.5 |                  | 20 | 10 | 10   | ENH1-1        | TPBX 0800** | M2.2X5 T7 |             |
|                   | 25-31            |    |      | 30-31            |    |    |      | ENH1-2        |             |           |             |
|                   | 30-36            |    |      | 30-36            |    |    |      | ENH1-3        |             |           |             |
| CKB2-EWN2547-35.5 | 25-33            | 24 | 35.5 |                  | 22 | 10 | 12.5 | ENH2-1        |             |           |             |
|                   | 32-40            |    |      | 36-40            |    |    |      | ENH2-2        |             |           |             |
|                   | 39-47            |    |      | 39-47            |    |    |      | ENH2-3        |             |           |             |
| CKB3-EWN3260-40   | 32-42            | 31 | 40   |                  | 25 | 9  | 16   | ENH3-1        |             |           |             |
|                   | 41-51            |    |      | 46-51            |    |    |      | ENH3-2        |             |           |             |
|                   | 50-60            |    |      | 50-60            |    |    |      | ENH3-3        |             |           |             |
| CKB4-EWN4174-47   | 41-54            | 39 | 47   |                  | 30 | 13 | 20   | ENH4-1        |             |           | TPMT 1035** |
|                   | 53-66            |    |      | 58-66            |    |    |      | ENH4-2        |             |           |             |
|                   | 61-74            |    |      | 61-74            |    |    |      | ENH4-3        |             |           |             |
| CKB5-EWN5395-57   | 53-70            | 49 | 57   |                  | 34 | 19 | 25.5 | ENH5-1        |             |           |             |
|                   | 68-85            |    |      | 69-85            |    |    |      | ENH5-2        |             |           |             |
|                   | 78-95            |    |      | 78-95            |    |    |      | ENH5-3        |             |           |             |
| CKB6-EWN68150-71  | 68-100           | 63 | 71   |                  | 45 | 23 | 32.5 | ENH6-1        | TPBX 1027** |           |             |
|                   | 93-125           |    |      | 93-125           |    |    |      | ENH6-2        |             |           |             |
|                   | 125-150          |    |      | 125-150          |    |    |      | ENH6-3        |             |           |             |
| CKB6-EWN100203-71 | 100-153          | 63 | 71   |                  | 45 | 23 | 45.5 | ENH6-1        |             |           |             |
|                   | 125-178          |    |      | 125-178          |    |    |      | ENH6-2        |             |           |             |
|                   | 150-203          |    |      | 150-203          |    |    |      | ENH6-3        |             |           |             |

## ROUGH BORING HEAD



| SPECIFICATION     | BORING           |    |    | INSERT SIZE | SCREW  | WRENCH | INSERT HOLDER |
|-------------------|------------------|----|----|-------------|--------|--------|---------------|
|                   | BORING RANGE (D) | d  | L  |             |        |        |               |
| CKB1-TWN2026-35   | 20-26            | 19 | 35 | CCMT 0602** | M2.5X7 | T8     | TW20-26M      |
| CKB2-TWN2533-38   | 25-33            | 24 | 38 |             |        |        | TW25-33M      |
| CKB3-TWN3242-43   | 32-42            | 31 | 43 |             |        |        | TW32-42M      |
| CKB4-TWN4154-50   | 41-54            | 39 | 50 | CCMT 09T3** | M4X10  | T15    | TW41-54M      |
| CKB5-TWN5372-60   | 53-70            | 49 | 60 |             |        |        | TW53-72M      |
| CKB6-TWN6890-75   | 68-90            | 63 | 75 | CCMT 1204** | M5X13  | T20    | TW68-90M      |
| CKB6-TWN89120-75  | 89-120           | 63 | 75 |             |        |        | TW89-120M     |
| CKB6-TWN115150-75 | 115-150          | 63 | 75 |             |        |        | TW115-150M    |

## CLAMPING KIT



### M10 CLAMPING KIT

| T-SLOT SIZE  | T-NUT<br>(6 nos.)    | STUD<br>(4 nos. Each size)  | FLANGED NUT<br>(6 nos.) | EXTENSION NUT<br>(4 nos.) | STRAP CLAMPS<br>(2 nos. Each size) | STEP BLOCKS<br>(4 nos. Each size) | NO. OF PIECES | W BIGHT (kg.) |
|--------------|----------------------|---|-------------------------|---------------------------|------------------------------------|-----------------------------------|---------------|---------------|
| 12MM<br>14MM | TN 12-10<br>TN 14-10 | CS10-75<br>CS10-100<br>CS10-125<br>CS10-150<br>CS10-175<br>CS10-200 | FN-10                   | EN-10                     | SC10-60<br>SC10-80<br>SC10-120     | SB-1L<br>SB-2L<br>SB-3L           | 58            | 9.5           |

### M12 CLAMPING KIT

| T-SLOT SIZE          | T-NUT<br>(6 nos.)                | STUD<br>(4 nos. Each size)  | FLANGED NUT<br>(6 nos.) | EXTENSION NUT<br>(4 nos.) | STRAP CLAMPS<br>(2 nos. Each size) | STEP BLOCKS<br>(4 nos. Each size) | NO. OF PIECES | W BIGHT (kg.) |
|----------------------|----------------------------------|---|-------------------------|---------------------------|------------------------------------|-----------------------------------|---------------|---------------|
| 14MM<br>16MM<br>18MM | TN 14-12<br>TN 16-12<br>TN 18-12 | CS12-75<br>CS12-100<br>CS12-125<br>CS12-150<br>CS12-175<br>CS12-200 | FN-12                   | EN-12                     | SC12-65<br>SC12-100<br>SC12-125    | SB-1<br>SB-2<br>SB-3              | 58            | 13            |

### M16 CLAMPING KIT

| T-SLOT SIZE          | T-NUT<br>(6 nos.)                | STUD<br>(4 nos. Each size)  | FLANGED NUT<br>(6 nos.) | EXTENSION NUT<br>(4 nos.) | STRAP CLAMPS<br>(2 nos. Each size) | STEP BLOCKS<br>(4 nos. Each size) | NO. OF PIECES | W BIGHT (kg.) |
|----------------------|----------------------------------|---|-------------------------|---------------------------|------------------------------------|-----------------------------------|---------------|---------------|
| 18MM<br>20MM<br>22MM | TN 18-16<br>TN 20-16<br>TN 22-16 | CS16-75<br>CS16-100<br>CS16-125<br>CS16-150<br>CS16-175<br>CS16-200 | FN-16                   | EN-16                     | SC16-65<br>SC16-100<br>SC16-125    | SB-1<br>SB-2<br>SB-3              | 58            | 19            |



# CARBIDE FLAT ENDMILL



| FLAT ENDMILL       | D1  | FLUTE LENGTH (L1) | LENGTH (L) | SHANK DIA (D2) | NUMBR OF FLUTES |
|--------------------|-----|-------------------|------------|----------------|-----------------|
| D1 X 5 X 50 -4F    | 1   | 5                 | 50         | 4              | 4F              |
| D1.5 X 5 X 50 -4F  | 1.5 | 5                 | 50         | 4              | 4F              |
| D2 X 6 X 50 -4F    | 2   | 6                 | 50         | 4              | 4F              |
| D2.5 X 8 X 50 -4F  | 2.5 | 8                 | 50         | 4              | 4F              |
| D3 X 12 X 50 -4F   | 3   | 8                 | 50         | 3              | 4F              |
| D3 X 20 X 75 -4F   | 3   | 20                | 75         | 3              | 4F              |
| D3 X 25 X 100 -4F  | 3   | 25                | 100        | 3              | 4F              |
| D4 X 15 X 50 -4F   | 4   | 15                | 50         | 4              | 4F              |
| D4 X 20 X 75 -4F   | 4   | 20                | 75         | 4              | 4F              |
| D4 X 25 X 100 -4F  | 4   | 25                | 100        | 4              | 4F              |
| D5 X 15 X 50 -4F   | 5   | 15                | 50         | 5              | 4F              |
| D5 X 20 X 75 -4F   | 5   | 20                | 75         | 5              | 4F              |
| D5 X 30 X 100 -4F  | 5   | 30                | 100        | 5              | 4F              |
| D6 X 20 X 50 -4F   | 5   | 20                | 50         | 6              | 4F              |
| D6 X 20 X 75 -4F   | 6   | 20                | 75         | 6              | 4F              |
| D6 X 30 X 100 -4F  | 6   | 30                | 100        | 6              | 4F              |
| D6 X 35 X 150 -4F  | 6   | 35                | 150        | 6              | 4F              |
| D8 X 20 X 60 -4F   | 8   | 20                | 60         | 8              | 4F              |
| D8 X 30 X 75 -4F   | 8   | 30                | 75         | 8              | 4F              |
| D8 X 35 X 100 -4F  | 8   | 35                | 100        | 8              | 4F              |
| D8 X 50 X 150 -4F  | 8   | 50                | 150        | 8              | 4F              |
| D10 X 30 X 75 -4F  | 10  | 30                | 75         | 10             | 4F              |
| D10 X 40 X 100 -4F | 10  | 40                | 100        | 10             | 4F              |
| D10 X 50 X 150 -4F | 10  | 50                | 150        | 10             | 4F              |
| D12 X 30 X 75 -4F  | 12  | 30                | 75         | 12             | 4F              |
| D12 X 45 X 100 -4F | 12  | 45                | 100        | 12             | 4F              |
| D12 X 50 X 150 -4F | 12  | 50                | 150        | 12             | 4F              |
| D12 X 60 X 200 -4F | 12  | 60                | 200        | 12             | 4F              |
| D16 X 50 X 100 -4F | 16  | 50                | 100        | 16             | 4F              |
| D16 X 55 X 150 -4F | 16  | 55                | 150        | 16             | 4F              |
| D20 X 50 X 100 -4F | 20  | 50                | 100        | 20             | 4F              |
| D20 X 55 X 150 -4F | 20  | 55                | 150        | 20             | 4F              |



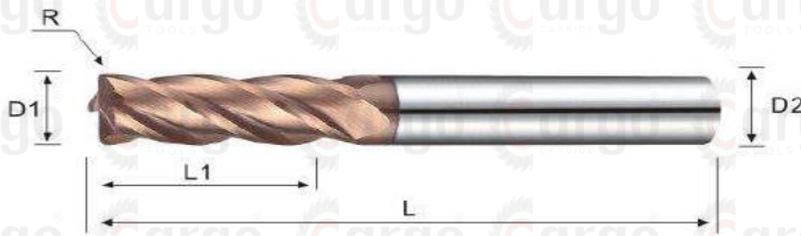
## CARBIDE BALLNOSE ENDMILL



| FLAT ENDMILL       | D1  | FLUTE LENGTH (L1) | LENNGTH (L) | SHANK DIA (D2) | NUMBR OF FLUTES |
|--------------------|-----|-------------------|-------------|----------------|-----------------|
| D1 X 5 X 50 -4F    | 1   | 5                 | 50          | 4              | 4F              |
| D1.5 X 5 X 50 -4F  | 1.5 | 5                 | 50          | 4              | 4F              |
| D2 X 6 X 50 -4F    | 2   | 6                 | 50          | 4              | 4F              |
| D2.5 X 8 X 50 -4F  | 2.5 | 8                 | 50          | 4              | 4F              |
| D3 X 12 X 50 -4F   | 3   | 8                 | 50          | 3              | 4F              |
| D3 X 20 X 75 -4F   | 3   | 20                | 75          | 3              | 4F              |
| D3 X 25 X 100 -4F  | 3   | 25                | 100         | 3              | 4F              |
| D4 X 15 X 50 -4F   | 4   | 15                | 50          | 4              | 4F              |
| D4 X 20 X 75 -4F   | 4   | 20                | 75          | 4              | 4F              |
| D4 X 25 X 100 -4F  | 4   | 25                | 100         | 4              | 4F              |
| D5 X 15 X 50 -4F   | 5   | 15                | 50          | 5              | 4F              |
| D5 X 20 X 75 -4F   | 5   | 20                | 75          | 5              | 4F              |
| D5 X 30 X 100 -4F  | 5   | 30                | 100         | 5              | 4F              |
| D6 X 20 X 50 -4F   | 5   | 20                | 50          | 6              | 4F              |
| D6 X 20 X 75 -4F   | 6   | 20                | 75          | 6              | 4F              |
| D6 X 30 X 100 -4F  | 6   | 30                | 100         | 6              | 4F              |
| D6 X 35 X 150 -4F  | 6   | 35                | 150         | 6              | 4F              |
| D8 X 20 X 60 -4F   | 8   | 20                | 60          | 8              | 4F              |
| D8 X 30 X 75 -4F   | 8   | 30                | 75          | 8              | 4F              |
| D8 X 35 X 100 -4F  | 8   | 35                | 100         | 8              | 4F              |
| D8 X 50 X 150 -4F  | 8   | 50                | 150         | 8              | 4F              |
| D10 X 30 X 75 -4F  | 10  | 30                | 75          | 10             | 4F              |
| D10 X 40 X 100 -4F | 10  | 40                | 100         | 10             | 4F              |
| D10 X 50 X 150 -4F | 10  | 50                | 150         | 10             | 4F              |
| D12 X 30 X 75 -4F  | 12  | 30                | 75          | 12             | 4F              |
| D12 X 45 X 100 -4F | 12  | 45                | 100         | 12             | 4F              |
| D12 X 50 X 150 -4F | 12  | 50                | 150         | 12             | 4F              |
| D12 X 60 X 200 -4F | 12  | 60                | 200         | 12             | 4F              |
| D16 X 50 X 100 -4F | 16  | 50                | 100         | 16             | 4F              |
| D16 X 55 X 150 -4F | 16  | 55                | 150         | 16             | 4F              |
| D20 X 50 X 100 -4F | 20  | 50                | 100         | 20             | 4F              |
| D20 X 55 X 150 -4F | 20  | 55                | 150         | 20             | 4F              |



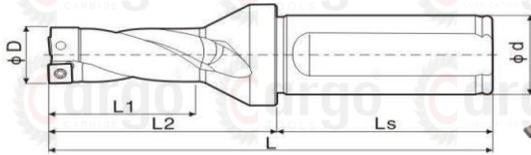
## CARBIDE CORNER -RADIUS ENDMILL



| FLAT ENDMILL             | D1 | FLUTE LENGTH (L1) | LENNGTH (L) | SHANK DIA (D2) | NUMBR OF FLUTES |
|--------------------------|----|-------------------|-------------|----------------|-----------------|
| <b>CORNER RADIUS 1.0</b> |    |                   |             |                |                 |
| D3 X 12 X 50 -4F         | 3  | 8                 | 50          | 3              | 4F              |
| D4 X 15 X 50 -4F         | 4  | 15                | 50          | 4              | 4F              |
| D4 X 20 X 75 -4F         | 4  | 20                | 75          | 4              | 4F              |
| D5 X 15 X 50 -4F         | 5  | 15                | 50          | 5              | 4F              |
| D5 X 20 X 75 -4F         | 5  | 20                | 75          | 5              | 4F              |
| D5 X 30 X 100 -4F        | 5  | 30                | 100         | 5              | 4F              |
| D6 X 20 X 50 -4F         | 5  | 20                | 50          | 6              | 4F              |
| D6 X 20 X 75 -4F         | 6  | 20                | 75          | 6              | 4F              |
| D6 X 30 X 100 -4F        | 6  | 30                | 100         | 6              | 4F              |
| D8 X 35 X 100 -4F        | 8  | 35                | 100         | 8              | 4F              |
| D10 X 30 X 75 -4F        | 10 | 30                | 75          | 10             | 4F              |
| D10 X 40 X 100 -4F       | 10 | 40                | 100         | 10             | 4F              |
| D12 X 30 X 75 -4F        | 12 | 30                | 75          | 12             | 4F              |
| D12 X 45 X 100 -4F       | 12 | 45                | 100         | 12             | 4F              |
| <b>CORNER RADIUS 0.5</b> |    |                   |             |                |                 |
| D3 X 12 X 50 -4F         | 3  | 8                 | 50          | 3              | 4F              |
| D4 X 15 X 50 -4F         | 4  | 15                | 50          | 4              | 4F              |
| D4 X 20 X 75 -4F         | 4  | 20                | 75          | 4              | 4F              |
| D5 X 15 X 50 -4F         | 5  | 15                | 50          | 5              | 4F              |
| D5 X 20 X 75 -4F         | 5  | 20                | 75          | 5              | 4F              |
| D5 X 30 X 100 -4F        | 5  | 30                | 100         | 5              | 4F              |
| D6 X 20 X 50 -4F         | 5  | 20                | 50          | 6              | 4F              |
| D6 X 20 X 75 -4F         | 6  | 20                | 75          | 6              | 4F              |
| D6 X 30 X 100 -4F        | 6  | 30                | 100         | 6              | 4F              |
| D8 X 35 X 100 -4F        | 8  | 35                | 100         | 8              | 4F              |
| D10 X 30 X 75 -4F        | 10 | 30                | 75          | 10             | 4F              |
| D10 X 40 X 100 -4F       | 10 | 40                | 100         | 10             | 4F              |
| D12 X 30 X 75 -4F        | 12 | 30                | 75          | 12             | 4F              |
| D12 X 45 X 100 -4F       | 12 | 45                | 100         | 12             | 4F              |



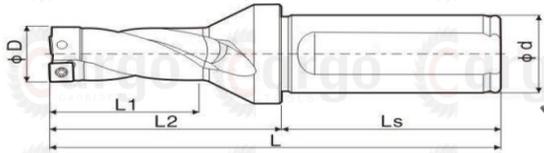
## 2D-UDRILL



| DESCRIPTION      | D    | L   | L1 | L2 | Ls | d   | INSERT -SCREW -W RENCH                         |
|------------------|------|-----|----|----|----|---|--|
| Ø 12-C20-S0 04   | 12   | 99  | 24 | 46 | 48 | 20  | INERT -S0MT 04<br>SCREW -1.8 X 4<br>W RENCH-T6 |
| Ø 12.5-C20-S0 04 | 12.5 | 100 | 25 | 47 |    |   |  |
| Ø 13-C20-S0 04   | 13   | 101 | 26 | 48 |    |   |  |
| Ø 13.5-C20-S0 04 | 13.5 | 102 | 27 | 49 |    |   |  |
| Ø 14-C25-SP 05   | 14   | 106 | 28 | 51 | 25 | INERT -SPM6 05<br>SCREW -2.0 X 4<br>W RENCH-T6  |  |
| Ø 14.5-C25-SP 05 | 14.5 | 107 | 29 | 52 |    |   |  |
| Ø 15-C25-SP 05   | 15   | 106 | 30 | 52 |    |   |  |
| Ø 15.5-C25-SP 05 | 15.5 | 107 | 31 | 53 |    |   |  |
| Ø 16-C25-SP 05   | 16   | 108 | 32 | 53 |    |   |  |
| Ø 16.5-C25-SP 05 | 16.5 | 111 | 33 | 54 |    |   |  |
| Ø 17-C25-SP 06   | 17   | 115 | 34 | 58 |    |   |  |
| Ø 17.5-C25-SP 06 | 17.5 | 115 | 35 | 58 |    |   |  |
| Ø 18-C25-SP 06   | 18   | 116 | 36 | 59 |    |   |  |
| Ø 18.5-C25-SP 06 | 18.5 | 116 | 37 | 59 |    |   |  |
| Ø 19-C25-SP 06   | 19   | 117 | 38 | 60 |    |   |  |
| Ø 19.5-C25-SP 06 | 19.5 | 118 | 39 | 61 |    |   |  |
| Ø 20-C25-SP 06   | 20   | 119 | 40 | 62 |    |   |  |
| Ø 20.5-C25-SP 06 | 20.5 | 120 | 41 | 63 |    |   |  |
| Ø 21-C25-SP 06   | 21   | 118 | 42 | 64 |    |   |  |
| Ø 21.5-C25-SP 06 | 21.5 | 120 | 43 | 64 |    |   |  |
| Ø 22-C25-SP 07   | 22   | 121 | 44 | 66 |    |   |  |
| Ø 22.5-C25-SP 07 | 22.5 | 122 | 45 | 67 |    |   |  |
| Ø 23-C25-SP 07   | 23   | 123 | 46 | 68 |    |   |  |
| Ø 23.5-C25-SP 07 | 23.5 | 124 | 47 | 69 |    |   |  |
| Ø 24-C25-SP 07   | 24   | 125 | 48 | 70 |    |   |  |
| Ø 24.5-C25-SP 07 | 24.5 | 125 | 49 | 71 |    |   |  |
| Ø 25-C25-SP 07   | 25   | 126 | 50 | 72 |    |   |  |
| Ø 25.5-C25-SP 07 | 25.5 | 127 | 51 | 73 |    |   |  |
| Ø 26-C32-SP 09   | 26   | 130 | 52 | 74 | 55 | INERT -SPM6 07<br>SCREW -2.5 X 6<br>W RENCH-T8  |  |
| Ø 26.5-C32-SP 09 | 26.5 | 131 | 53 | 75 |    |   |  |
| Ø 27-C32-SP 09   | 27   | 132 | 54 | 76 |    |   |  |
| Ø 27.5-C32-SP 09 | 27.5 | 133 | 55 | 77 |    |   |  |
| Ø 28-C32-SP 09   | 28   | 134 | 56 | 78 |    |   |  |
| Ø 28.5-C32-SP 09 | 28.5 | 135 | 57 | 79 |    |   |  |
| Ø 29-C32-SP 09   | 29   | 136 | 58 | 80 |    |   |  |
| Ø 29.5-C32-SP 09 | 29.5 | 137 | 59 | 81 |    |   |  |
| Ø 30-C32-SP 09   | 30   | 138 | 60 | 82 |    |   |  |
| Ø 30.5-C32-SP 09 | 30.5 | 139 | 61 | 83 |    |   |  |
| Ø 31-C32-SP 09   | 31   | 140 | 62 | 84 |    |   |  |
| Ø 31.5-C32-SP 09 | 31.5 | 141 | 63 | 85 |    |   |  |
| Ø 32-C32-SP 11   | 32   | 142 | 64 | 86 |    |   |  |
| Ø 32.5-C32-SP 11 | 32.5 | 143 | 65 | 87 |    |   |  |
| Ø 33-C32-SP 11   | 33   | 144 | 66 | 88 |    |   |  |
| Ø 33.5-C32-SP 11 | 33.5 | 145 | 67 | 89 |    |   |  |
| Ø 34-C32-SP 11   | 34   | 146 | 68 | 90 |    |   |  |
| Ø 34.5-C32-SP 11 | 34.5 | 147 | 69 | 91 |    |   |  |
| Ø 35-C32-SP 11   | 35   | 148 | 70 | 92 |    |   |  |
| Ø 35.5-C32-SP 11 | 35.5 | 149 | 71 | 93 |    |   |  |
| Ø 36-C32-SP 11   | 36   | 150 | 72 | 94 |    |   |  |
| Ø 37-C32-SP 11   | 37   | 151 | 74 | 95 |    |   |  |
| Ø 38-C32-SP 11   | 38   | 152 | 76 | 96 |    |   |  |
| Ø 39-C40-SP 11   | 39   | 153 | 78 | 97 | 40 | INERT -SPM6 09<br>SCREW -3.5 X 9<br>W RENCH-T15 |  |
| Ø 40-C40-SP 11   | 40   | 154 | 80 | 98 |    |   |  |



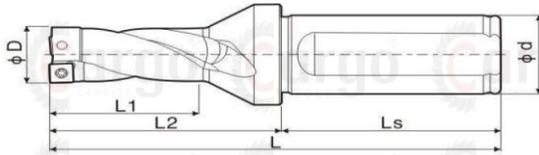
### 3D-UDRILL



| DESCRIPTION      | D    | L   | L1  | L2  | Ls | d  | INSERT -SCREW -W RENCH                        |   |
|------------------|------|-----|-----|-----|----|--|---|---|
| Ø 12-C20-SD 04   | 12   | 107 | 36  | 59  | 48 | 20   | INERT-SDMT 04<br>SCREW -1.8 X 4<br>W RENCH-T6 |   |
| Ø 12.5-C20-SD 04 | 12.5 | 108 | 38  | 60  |    |  |   |   |
| Ø 13-C20-SD 04   | 13   | 109 | 39  | 61  |    |  |   |   |
| Ø 13.5-C20-SD 04 | 13.5 | 110 | 41  | 62  |    |  |   |   |
| Ø 14-C25-SP 05   | 14   | 120 | 42  | 65  |    |  |   |   |
| Ø 14.5-C25-SP 05 | 14.5 | 121 | 44  | 66  |    |  |   |   |
| Ø 15-C25-SP 05   | 15   | 122 | 45  | 67  | 25 | INERT-SPMG 05<br>SCREW -2.0 X 4<br>W RENCH-T6  |   |   |
| Ø 15.5-C25-SP 05 | 15.5 | 123 | 47  | 68  |    |  |   |   |
| Ø 16-C25-SP 05   | 16   | 124 | 48  | 69  |    |  |   |   |
| Ø 16.5-C25-SP 05 | 16.5 | 125 | 50  | 70  |    |  |   |   |
| Ø 17-C25-SP 06   | 17   | 126 | 51  | 71  |    |  |   |   |
| Ø 17.5-C25-SP 06 | 17.5 | 127 | 53  | 72  |    |  |   |   |
| Ø 18-C25-SP 06   | 18   | 128 | 54  | 73  |    |  |   |   |
| Ø 18.5-C25-SP 06 | 18.5 | 129 | 56  | 74  |    |  |   |   |
| Ø 19-C25-SP 06   | 19   | 130 | 57  | 75  |    |  |   |   |
| Ø 19.5-C25-SP 06 | 19.5 | 131 | 59  | 76  |    |  |   |   |
| Ø 20-C25-SP 06   | 20   | 132 | 60  | 78  |    |  |   |   |
| Ø 20.5-C25-SP 06 | 20.5 | 133 | 62  | 79  |    |  |   |   |
| Ø 21-C25-SP 06   | 21   | 134 | 63  | 80  | 55 | INERT-SPMG 06<br>SCREW -2.2 X 5<br>W RENCH-T7  |   |   |
| Ø 21.5-C25-SP 06 | 21.5 | 135 | 65  | 81  |    |  |   |   |
| Ø 22-C25-SP 07   | 22   | 136 | 66  | 82  |    |  |   |   |
| Ø 22.5-C25-SP 07 | 22.5 | 137 | 68  | 83  |    |  |   |   |
| Ø 23-C25-SP 07   | 23   | 138 | 69  | 84  |    |  |   |   |
| Ø 23.5-C25-SP 07 | 23.5 | 139 | 71  | 85  |    |  |   |   |
| Ø 24-C25-SP 07   | 24   | 140 | 72  | 86  |    |  |   |   |
| Ø 24.5-C25-SP 07 | 24.5 | 141 | 74  | 87  |    |  |   |   |
| Ø 25-C25-SP 07   | 25   | 142 | 75  | 88  |    |  |   |   |
| Ø 25.5-C25-SP 07 | 25.5 | 143 | 77  | 89  |    |  |   |   |
| Ø 26-C32-SP 09   | 26   | 144 | 78  | 90  |    |  | 32  | INERT-SPMG 07<br>SCREW -2.5 X 6<br>W RENCH-T8 |
| Ø 26.5-C32-SP 09 | 26.5 | 145 | 80  | 91  |    |  |   |   |
| Ø 27-C32-SP 09   | 27   | 146 | 81  | 92  |    |  |   |   |
| Ø 27.5-C32-SP 09 | 27.5 | 147 | 83  | 93  |    |  |   |   |
| Ø 28-C32-SP 09   | 28   | 148 | 84  | 94  |    |  |   |   |
| Ø 28.5-C32-SP 09 | 28.5 | 149 | 86  | 95  |    |  |   |   |
| Ø 29-C32-SP 09   | 29   | 150 | 87  | 96  |    |  |   |   |
| Ø 29.5-C32-SP 09 | 29.5 | 151 | 89  | 97  |    |  |   |   |
| Ø 30-C32-SP 09   | 30   | 152 | 90  | 98  |    |  |   |   |
| Ø 30.5-C32-SP 09 | 30.5 | 153 | 92  | 99  |    |  |   |   |
| Ø 31-C32-SP 09   | 31   | 154 | 93  | 100 |    |  |   |   |
| Ø 31.5-C32-SP 09 | 31.5 | 156 | 95  | 101 | 40 | INERT-SPMG 09<br>SCREW -3.5 X 9<br>W RENCH-T15 |   |   |
| Ø 32-C32-SP II   | 32   | 157 | 96  | 102 |    |  |   |   |
| Ø 32.5-C32-SP II | 32.5 | 158 | 98  | 103 |    |  |   |   |
| Ø 33-C32-SP II   | 33   | 159 | 99  | 104 |    |  |   |   |
| Ø 33.5-C32-SP II | 33.5 | 160 | 101 | 105 |    |  |   |   |
| Ø 34-C32-SP II   | 34   | 161 | 102 | 106 |    |  |   |   |
| Ø 34.5-C32-SP II | 34.5 | 162 | 104 | 107 |    |  |   |   |
| Ø 35-C32-SP II   | 35   | 163 | 105 | 108 |    |  |   |   |
| Ø 35.5-C32-SP II | 35.5 | 164 | 107 | 109 |    |  |   |   |
| Ø 36-C32-SP II   | 36   | 165 | 108 | 110 |    |  |   |   |
| Ø 37-C32-SP II   | 37   | 166 | 111 | 111 |    |  |   |   |
| Ø 38-C32-SP II   | 38   | 167 | 114 | 112 |    |  |   |   |
| Ø 39-C40-SP II   | 39   | 168 | 117 | 113 |    |  |   |   |
| Ø 40-C40-SP II   | 40   | 169 | 120 | 114 |    |  |   |   |



## 4D-UDRILL



| DESCRIPTION      | D    | L   | L1  | L2  | Ls | d  | INSERT-SCREW - W RENCH                        |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|------------------|------|-----|-----|-----|----|----|---|---|----|---|----|--|----|---|----|--|--|--|--|--|--|--|
| Ø 12-C20-SD 04   | 12   | 124 | 48  | 51  | 48 | 20 | INERT-SOMT 04<br>SCREW -1.8 X 4<br>W RENCH-T6 |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 12.5-C20-SD 04 | 12.5 | 125 | 50  | 52  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 13-C20-SD 04   | 13   | 126 | 52  | 53  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 13.5-C20-SD 04 | 13.5 | 127 | 54  | 54  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 14-C25-SP 05   | 14   | 139 | 56  | 58  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 14.5-C25-SP 05 | 14.5 | 140 | 58  | 59  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 15-C25-SP 05   | 15   | 141 | 60  | 60  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 15.5-C25-SP 05 | 15.5 | 142 | 62  | 61  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 16-C25-SP 05   | 16   | 145 | 64  | 62  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 16.5-C25-SP 05 | 16.5 | 147 | 66  | 63  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 17-C25-SP 06   | 17   | 152 | 68  | 64  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 17.5-C25-SP 06 | 17.5 | 153 | 70  | 65  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 18-C25-SP 06   | 18   | 155 | 72  | 67  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 18.5-C25-SP 06 | 18.5 | 157 | 74  | 68  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 19-C25-SP 06   | 19   | 159 | 76  | 69  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 19.5-C25-SP 06 | 19.5 | 160 | 78  | 70  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 20-C25-SP 06   | 20   | 162 | 80  | 71  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 20.5-C25-SP 06 | 20.5 | 164 | 82  | 72  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 21-C25-SP 06   | 21   | 166 | 84  | 73  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 21.5-C25-SP 06 | 21.5 | 168 | 86  | 74  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 22-C25-SP 07   | 22   | 170 | 88  | 75  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 22.5-C25-SP 07 | 22.5 | 172 | 90  | 76  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 23-C25-SP 07   | 23   | 174 | 92  | 78  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 23.5-C25-SP 07 | 23.5 | 176 | 94  | 79  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 24-C25-SP 07   | 24   | 178 | 96  | 80  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 24.5-C25-SP 07 | 24.5 | 180 | 98  | 81  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 25-C25-SP 07   | 25   | 182 | 100 | 82  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 25.5-C25-SP 07 | 25.5 | 184 | 102 | 83  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 26-C32-SP 09   | 26   | 185 | 104 | 84  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 26.5-C32-SP 09 | 26.5 | 187 | 106 | 85  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 27-C32-SP 09   | 27   | 189 | 108 | 86  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 27.5-C32-SP 09 | 27.5 | 191 | 110 | 87  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 28-C32-SP 09   | 28   | 193 | 112 | 88  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 28.5-C32-SP 09 | 28.5 | 195 | 114 | 89  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 29-C32-SP 09   | 29   | 197 | 116 | 90  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 29.5-C32-SP 09 | 29.5 | 199 | 118 | 91  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 30-C32-SP 09   | 30   | 202 | 120 | 92  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 30.5-C32-SP 09 | 30.5 | 204 | 122 | 93  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 31-C32-SP 09   | 31   | 206 | 124 | 94  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 31.5-C32-SP 09 | 31.5 | 208 | 126 | 95  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 32-C32-SP 11   | 32   | 210 | 128 | 96  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 32.5-C32-SP 11 | 32.5 | 212 | 130 | 97  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 33-C32-SP 11   | 33   | 213 | 132 | 98  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 33.5-C32-SP 11 | 33.5 | 215 | 134 | 99  |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 34-C32-SP 11   | 34   | 218 | 136 | 100 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 34.5-C32-SP 11 | 34.5 | 220 | 138 | 101 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 35-C32-SP 11   | 35   | 222 | 140 | 102 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 35.5-C32-SP 11 | 35.5 | 223 | 142 | 103 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 36-C32-SP 11   | 36   | 225 | 144 | 104 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 37-C32-SP 11   | 37   | 230 | 148 | 105 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 38-C32-SP 11   | 38   | 232 | 152 | 106 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 39-C40-SP 11   | 39   | 240 | 156 | 107 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
| Ø 40-C40-SP 11   | 40   | 242 | 160 | 108 |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     | 55 | 25 | INERT-SPMG 05<br>SCREW -2.0 X 4<br>W RENCH-T6 |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     | 32 |    |   | INERT-SPMG 06<br>SCREW -2.2 X 5<br>W RENCH-T7 |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   | 40 | INERT-SPMG 07<br>SCREW -2.5 X 6<br>W RENCH-T8 |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   | 32 | INERT-SPMG 09<br>SCREW -3.5 X 9<br>W RENCH-T15 |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  | 40 | INERT-SPMG 11<br>SCREW -4.0 X 10<br>W RENCH-T15 |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  |    |   | 40 |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |
|                  |      |     |     |     |    |    |   |   |    |   |    |  |    |   |    |  |  |  |  |  |  |  |