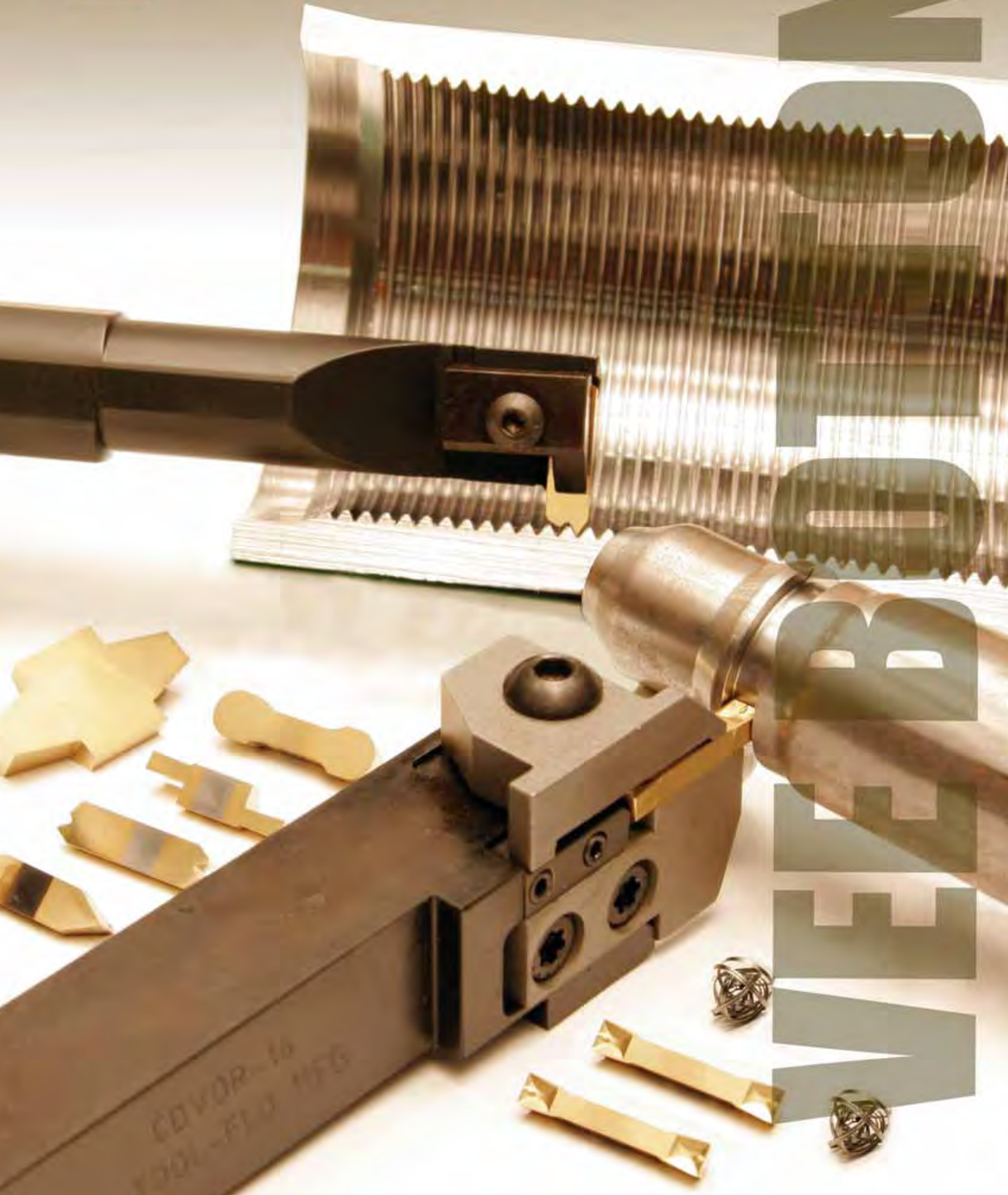




**TOOL-FLO**



TOOL-FLO

COVER-16  
TOOL-FLO MFG

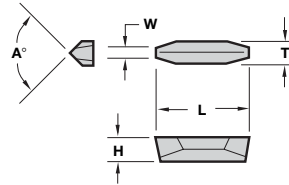
# 220

# VEE-BOTTOM Inserts



## ACME THREADING

V84/V85/V120

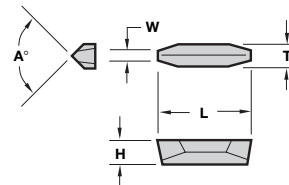


### Insert Description

| Insert Description | TPI | W     | T    | L     | H    | A°   | Coating  |     |            |      |     |              |
|--------------------|-----|-------|------|-------|------|------|----------|-----|------------|------|-----|--------------|
|                    |     |       |      |       |      |      | Uncoated |     | TIN Coated |      |     | AITIN Coated |
|                    |     |       |      |       |      |      | C3       | GP3 | GP5        | GP50 | AT3 | AT50         |
| V84 NT 3P          | 3   | .1184 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 4P          | 4   | .0875 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 5P          | 5   | .0689 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 6P          | 6   | .0566 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 8P          | 8   | .0411 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 10P         | 10  | .0319 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 12P         | 12  | .0283 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V85 NT 2P          | 2   | .1802 | .312 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V85 NT 3P          | 3   | .1184 | .312 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V120 NT 1P         | 1   | .3655 | .750 | 1.500 | .375 | 120° |          | ●   |            |      |     |              |
| V120 NT 1.5P       | 1.5 | .2419 | .750 | 1.500 | .375 | 120° |          | ●   |            |      |     |              |

## ACME STUB THREADING

V84/V85/V120

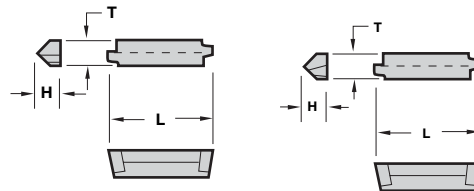


### Insert Description

| Insert Description | TPI | W     | T    | L     | H    | A°   | Coating  |     |            |      |     |              |
|--------------------|-----|-------|------|-------|------|------|----------|-----|------------|------|-----|--------------|
|                    |     |       |      |       |      |      | Uncoated |     | TIN Coated |      |     | AITIN Coated |
|                    |     |       |      |       |      |      | C3       | GP3 | GP5        | GP50 | AT3 | AT50         |
| V84 NT 3P STUB     | 3   | .1356 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 4P STUB     | 4   | .1004 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 5P STUB     | 5   | .0793 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 6P STUB     | 6   | .0652 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 8P STUB     | 8   | .0476 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 10P STUB    | 10  | .0370 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V84 NT 12P STUB    | 12  | .0326 | .250 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V85 NT 2P STUB     | 2   | .2060 | .312 | 1.000 | .250 | 90°  | ●        | ●   | ●          | ●    |     |              |
| V120 NT 1P STUB    | 1   | .4172 | .750 | 1.500 | .375 | 120° |          | ●   |            |      |     |              |

## API BUTTRESS THREADING

V84



### Insert Description

| Insert Description | TPI | TPF | T    | L     | H    | Conn No orSize       | Coating  |     |            |      |     |              |
|--------------------|-----|-----|------|-------|------|----------------------|----------|-----|------------|------|-----|--------------|
|                    |     |     |      |       |      |                      | Uncoated |     | TIN Coated |      |     | AITIN Coated |
|                    |     |     |      |       |      |                      | C3       | GP3 | GP5        | GP50 | AT3 | AT50         |
| V84 5B75 EXT       | 5   | 3/4 | .250 | 1.000 | .250 | 4-1/2 - 13-3/8       |          |     |            | ●    |     |              |
| V84 5B75 EXT-FC    | 5   | 3/4 | .250 | 1.000 | .250 | 4-1/2 - 13-3/8       |          |     |            | ●    |     |              |
| V84 5B1 EXT        | 5   | 1   | .250 | 1.000 | .250 | 16 and larger        |          |     |            | ●    |     |              |
| V84 5B1 EXT-FC     | 5   | 1   | .250 | 1.000 | .250 | 16 and larger        |          |     |            | ●    |     |              |
| V84 8B75 EXT       | 8   | 3/4 | .250 | 1.000 | .250 | US Improved Buttress |          |     |            | ●    |     |              |
| V84 5B75 INT       | 5   | 3/4 | .250 | 1.000 | .250 | 4-1/2 - 13-3/8       |          |     |            | ●    |     |              |
| V84 5B75 INT-FC    | 5   | 3/4 | .250 | 1.000 | .250 | 4-1/2 - 13-3/8       |          |     |            | ●    |     |              |
| V84 5B1 INT        | 5   | 1   | .250 | 1.000 | .250 | 16 and larger        |          |     |            | ●    |     |              |
| V84 5B1 INT-FC     | 5   | 1   | .250 | 1.000 | .250 | 16 and larger        |          |     |            | ●    |     |              |
| V84 8B75 INT       | 8   | 3/4 | .250 | 1.000 | .250 | US Improved Buttress |          |     |            | ●    |     |              |

FC indicates 5° flank clearance

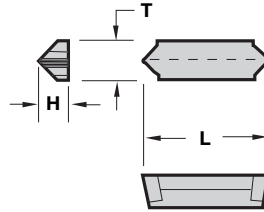
In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up to date grade offering.

- High performance choice in optimal conditions.
- ▲ Recommended grade under general conditions.

| Material            | GP3 | GP5 | GP50 | AT3 | AT50 |
|---------------------|-----|-----|------|-----|------|
| Cast Iron           | ●   |     |      |     |      |
| Non-Ferrous         | ●   |     |      |     |      |
| Stainless/High Temp | ●   |     |      |     |      |
| Steel               |     | ●   | ●    |     |      |



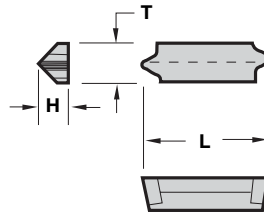
## API HUGHES THREADING V85/V96



Insert Description      TPI    TPF    T      L      H      Conn No orSize

| Insert Description | TPI   | TPF   | T    | L     | H    | Conn No orSize         | Coating |     |     |      |     |      |
|--------------------|-------|-------|------|-------|------|------------------------|---------|-----|-----|------|-----|------|
|                    |       |       |      |       |      |                        | C3      | GP3 | GP5 | GP50 | AT3 | AT50 |
| V85 H902 EXT       | 3-1/2 | 2     | .250 | 1.000 | .250 | 3-1/2 - 6-5/8 H90      |         |     |     | ●    |     |      |
| V85 H902 INT       | 3-1/2 | 2     | .250 | 1.000 | .250 | 3-1/2 - 6-5/8 H90      |         |     |     | ●    |     |      |
| V85 H903 EXT       | 3-1/2 | 3     | .250 | 1.000 | .250 | 7 - 8-5/8              |         |     |     | ●    |     |      |
| V85 H903 INT       | 3-1/2 | 3     | .250 | 1.000 | .250 | 7 - 8-5/8              |         |     |     | ●    |     |      |
| V96 H90S EXT       | 3     | 1-1/4 | .375 | 1.125 | .375 | 2-3/8 - 3-1/2 Slimline |         |     |     | ●    |     |      |
| V96 H90S INT       | 3     | 1-1/4 | .375 | 1.125 | .375 | 2-3/8 - 3-1/2 Slimline |         |     |     | ●    |     |      |

## API ROTARY SHOULDER V85



Insert Description      TPI    TPF    T      L      H      Conn No orSize

| Insert Description | TPI | TPF   | T    | L     | H    | Conn No orSize                  | Coating |     |     |      |     |      |
|--------------------|-----|-------|------|-------|------|---------------------------------|---------|-----|-----|------|-----|------|
|                    |     |       |      |       |      |                                 | C3      | GP3 | GP5 | GP50 | AT3 | AT50 |
| V85 425 EXT        | 4   | 2     | .312 | 1.000 | .250 | 5-1/2 - 6-5/8 FH, 6-5/8 REG     |         |     |     | ●    | ●   | ●    |
| V85 428 EXT        | 4   | 2     | .312 | 1.000 | .250 | NC23 - 50, 2-3/8 - 5-1/2 IF     |         |     |     | ●    | ●   | ●    |
| V85 42F EXT*       | 4   | 2     | .312 | 1.000 | .250 | VO.065*                         |         |     |     | ●    |     |      |
| V85 435 EXT        | 4   | 3     | .312 | 1.000 | .250 | 5-1/2 REG, 7-5/8 REG, 8-5/8 REG |         |     |     | ●    |     | ●    |
| V85 438 EXT        | 4   | 3     | .312 | 1.000 | .250 | NC56 - NC71                     |         |     |     | ●    |     | ●    |
| V85 530 EXT        | 5   | 3     | .312 | 1.000 | .250 | 3-1/2FH, 2-3/8 - 4-1/2 REG      |         |     |     | ●    |     | ●    |
| V85 4PAC EXT       | 4   | 1-1/2 | .312 | 1.000 | .250 |                                 |         |     |     | ●    |     |      |
| V85 425 INT        | 4   | 2     | .312 | 1.000 | .250 | 5-1/2 - 6-5/8 FH, 6-5/8 REG     |         |     |     | ●    | ●   | ●    |
| V85 428 INT        | 4   | 2     | .312 | 1.000 | .250 | NC23 - 50, 2-3/8 - 5-1/2 IF     |         |     |     | ●    | ●   | ●    |
| V85 42F INT*       | 4   | 2     | .312 | 1.000 | .250 | VO.065*                         |         |     |     | ●    |     |      |
| V85 435 INT        | 4   | 3     | .312 | 1.000 | .250 | 5-1/2 REG, 7-5/8 REG, 8-5/8 REG |         |     |     | ●    |     | ●    |
| V85 438 INT        | 4   | 3     | .312 | 1.000 | .250 | NC56 - NC71                     |         |     |     | ●    |     | ●    |
| V85 530 INT        | 5   | 3     | .312 | 1.000 | .250 | 3-1/2FH, 2-3/8 - 4-1/2 REG      |         |     |     | ●    |     | ●    |
| V85 4PAC INT       | 4   | 1-1/2 | .312 | 1.000 | .250 |                                 |         |     |     | ●    |     |      |

\* Obsolete thread form, See A.P.I. Spec 7, 35th Edition, May 1, 1995, Section 9.4

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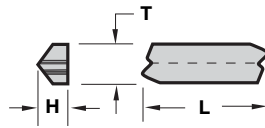
● High performance choice in optimal conditions.  
▲ Recommended grade under general conditions.

|                     |  |  |  |  |  |  |  |  |  |  |   |   |
|---------------------|--|--|--|--|--|--|--|--|--|--|---|---|
| Cast Iron           |  |  |  |  |  |  |  |  |  |  |   | ● |
| Non-Ferrous         |  |  |  |  |  |  |  |  |  |  |   | ● |
| Stainless/High Temp |  |  |  |  |  |  |  |  |  |  |   | ● |
| Steel               |  |  |  |  |  |  |  |  |  |  | ▲ | ● |



## API ROUND THREADING

V84

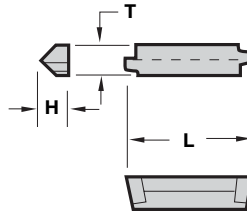


Insert Description

| Insert Description | TPI | TPF | T    | L     | H    | Coating |     |     |      |     |      |   |
|--------------------|-----|-----|------|-------|------|---------|-----|-----|------|-----|------|---|
|                    |     |     |      |       |      | C3      | GP3 | GP5 | GP50 | AT3 | AT50 |   |
| V84 10RD EXT       | 10  | 3/4 | .250 | 1.000 | .250 |         |     |     |      |     |      |   |
| V84 10RD INT       | 10  | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    | ●   | ●    | ● |
| V84 8RD EXT        | 8   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    | ●   | ●    | ● |
| V84 8RD INT        | 8   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    | ●   | ●    | ● |

## API VAM THREADING

V84

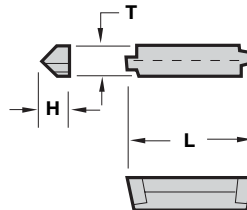


Insert Description

| Insert Description | TPI | TPF | T    | L     | H    | Coating |     |     |      |     |      |  |
|--------------------|-----|-----|------|-------|------|---------|-----|-----|------|-----|------|--|
|                    |     |     |      |       |      | C3      | GP3 | GP5 | GP50 | AT3 | AT50 |  |
| V84 5 VAM EXT      | 5   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    |     |      |  |
| V84 5 VAM INT      | 5   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    |     |      |  |
| V84 6 VAM EXT      | 6   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    |     |      |  |
| V84 6 VAM INT      | 6   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    |     |      |  |
| V84 8 VAM EXT      | 8   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    |     |      |  |
| V84 8 VAM INT      | 8   | 3/4 | .250 | 1.000 | .250 |         |     |     | ●    |     |      |  |

## API X-LINE THREADING

V84



Insert Description

| Insert Description | TPI | TPF   | T    | L     | H    | Conn No or Size | Coating |     |     |      |     |      |
|--------------------|-----|-------|------|-------|------|-----------------|---------|-----|-----|------|-----|------|
|                    |     |       |      |       |      |                 | C3      | GP3 | GP5 | GP50 | AT3 | AT50 |
| V84 5XL12 EXT      | 5   | 1-1/4 | .250 | 1.000 | .250 | 8-5/8 - 10-3/4  |         |     |     | ●    |     |      |
| V84 5XL12 INT      | 5   | 1-1/4 | .250 | 1.000 | .250 | 8-5/8 - 10-3/4  |         |     |     | ●    |     |      |
| V84 6XL15 EXT      | 6   | 1-1/2 | .250 | 1.000 | .250 | 5 - 7-5/8       |         |     |     | ●    |     |      |
| V84 6XL15 INT      | 6   | 1-1/2 | .250 | 1.000 | .250 | 5 - 7-5/8       |         |     |     | ●    |     |      |
| V84 6XL75 EXT      | 6   | 3/4   | .250 | 1.000 | .250 |                 |         |     |     | ●    |     |      |
| V84 6XL75 INT      | 6   | 3/4   | .250 | 1.000 | .250 |                 |         |     |     | ●    |     |      |

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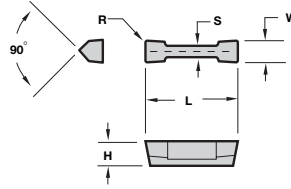
● High performance choice in optimal conditions.  
▲ Recommended grade under general conditions.

Cast Iron  
Non-Ferrous  
Stainless/High Temp  
Steel



DEEP GROOVING

DBP



Insert Description

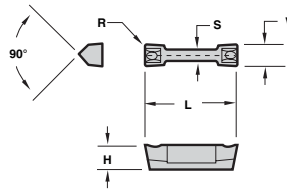
| Insert Description | W    | R    | L     | H    | S    | Coating  |     |            |      |              |      |
|--------------------|------|------|-------|------|------|----------|-----|------------|------|--------------|------|
|                    |      |      |       |      |      | Uncoated |     | TIN Coated |      | AITIN Coated |      |
|                    |      |      |       |      |      | C3       | GP3 | GP5        | GP50 | AT3          | AT50 |
| DBP 24 R15         | .125 | .015 | 1.125 | .250 | .106 |          | ●   |            | ●    | ●            | ●    |
| DBP 24 R30         | .125 | .030 | 1.125 | .250 | .106 |          |     |            | ●    |              |      |
| DBP 34 R15         | .188 | .015 | 1.125 | .250 | .144 |          | ●   |            | ●    | ●            | ●    |
| DBP 34 R30         | .188 | .030 | 1.125 | .250 | .144 |          |     |            | ●    |              |      |
| DBP 45 R15         | .250 | .015 | 1.125 | .337 | .144 |          | ●   |            | ●    | ●            | ●    |
| DBP 45 R30         | .250 | .030 | 1.125 | .337 | .144 |          |     |            | ●    |              |      |
| DBP 55 R15         | .312 | .015 | 1.125 | .337 | .202 |          | ●   |            | ●    | ●            | ●    |
| DBP 55 R30         | .312 | .030 | 1.125 | .337 | .202 |          |     |            | ●    |              |      |
| DBP 65 R15         | .375 | .015 | 1.125 | .337 | .276 |          | ●   |            | ●    | ●            | ●    |
| DBP 65 R30         | .375 | .030 | 1.125 | .337 | .276 |          |     |            | ●    |              |      |

DEEP GROOVING

DBP-CB

Exclusive patented design!

Features:

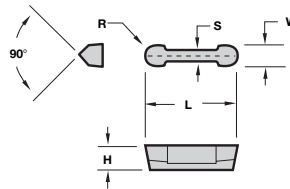


Insert Description

| Insert Description | W    | R    | L     | H    | S    | Coating  |     |            |      |              |      |
|--------------------|------|------|-------|------|------|----------|-----|------------|------|--------------|------|
|                    |      |      |       |      |      | Uncoated |     | TIN Coated |      | AITIN Coated |      |
|                    |      |      |       |      |      | C3       | GP3 | GP5        | GP50 | AT3          | AT50 |
| DBP 24 R15-CB      | .125 | .015 | 1.125 | .250 | .106 |          | ●   |            | ●    | ●            | ●    |
| DBP-34-R15-CB      | .188 | .015 | 1.125 | .250 | .106 |          | ●   |            | ●    | ●            | ●    |
| DBP 45 R15-CB      | .250 | .015 | 1.125 | .337 | .144 |          | ●   |            | ●    | ●            | ●    |
| DBP 45 R30-CB      | .250 | .030 | 1.125 | .337 | .144 |          |     |            | ●    |              |      |
| DBP 55 R15-CB      | .312 | .015 | 1.125 | .337 | .202 |          | ●   |            | ●    | ●            | ●    |
| DBP 55 R30-CB      | .312 | .030 | 1.125 | .337 | .202 |          |     |            | ●    |              |      |

DEEP GROOVING

DBP-FNR



Insert Description

| Insert Description | W    | R     | L     | H    | S    | Coating  |     |            |      |              |      |
|--------------------|------|-------|-------|------|------|----------|-----|------------|------|--------------|------|
|                    |      |       |       |      |      | Uncoated |     | TIN Coated |      | AITIN Coated |      |
|                    |      |       |       |      |      | C3       | GP3 | GP5        | GP50 | AT3          | AT50 |
| DBP 24 FNR         | .125 | .0625 | 1.125 | .250 | .106 |          | ●   |            | ●    | ●            | ●    |
| DBP 34 FNR         | .188 | .094  | 1.125 | .250 | .144 |          | ●   |            | ●    | ●            | ●    |
| DBP 45 FNR         | .250 | .125  | 1.125 | .337 | .144 |          | ●   |            | ●    | ●            | ●    |
| DBP 55 FNR         | .312 | .156  | 1.125 | .337 | .202 |          | ●   |            | ●    | ●            | ●    |
| DBP 65 FNR         | .375 | .1875 | 1.125 | .337 | .276 |          | ●   |            | ●    | ●            | ●    |

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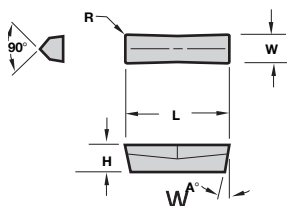
- High performance choice in optimal conditions.
- ▲ Recommended grade under general conditions.

| Material            | C3 | GP3 | GP5 | GP50 | AT3 | AT50 |
|---------------------|----|-----|-----|------|-----|------|
| Cast Iron           |    | ▲   |     |      |     | ●    |
| Non-Ferrous         |    | ▲   |     |      |     | ●    |
| Stainless/High Temp |    | ▲   |     |      |     | ●    |
| Steel               |    |     | ▲   |      |     | ●    |



## DEEP GROOVING

GC

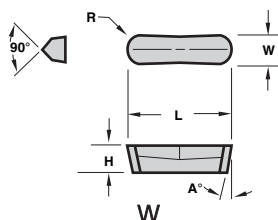


### Insert Description

| Insert Description | Inch | mm   | R         | L     | H    | A  | C3 | Uncoated |     | TIN Coated |     | ATTIN Coated |   |
|--------------------|------|------|-----------|-------|------|----|----|----------|-----|------------|-----|--------------|---|
|                    |      |      |           |       |      |    |    | GP3      | GP5 | GP50       | AT3 | AT50         |   |
| GC-4125            | .125 | 3,18 | .010/.015 | 1.000 | .188 | 4° |    | ●        |     | ●          | ●   | ●            | ● |
| GC-4187            | .187 | 4,75 | .010/.015 | 1.000 | .328 | 5° |    | ●        |     | ●          | ●   | ●            | ● |
| GC-4250            | .250 | 6,35 | .010/.015 | 1.000 | .328 | 5° |    | ●        |     | ●          | ●   | ●            | ● |
| GC-4312            | .312 | 7,92 | .010/.015 | 1.000 | .328 | 5° |    | ●        |     | ●          | ●   | ●            | ● |
| GC-4375            | .375 | 9,52 | .010/.015 | 1.000 | .328 | 5° |    | ●        |     | ●          | ●   | ●            | ● |
| GC-6187            | .187 | 4,75 | .010/.015 | 1.500 | .328 | 5° |    | ●        |     | ●          | ●   | ●            | ● |
| GC-6250            | .250 | 6,35 | .010/.015 | 1.500 | .328 | 5° |    | ●        |     | ●          | ●   | ●            | ● |
| GC-6312            | .312 | 7,92 | .010/.015 | 1.500 | .328 | 5° |    | ●        |     | ●          | ●   | ●            | ● |

## DEEP GROOVING

GR - Full Nose Radius

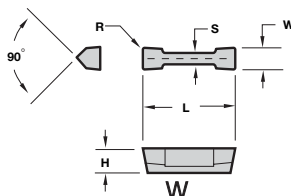


### Insert Description

| Insert Description | Inch | mm   | R    | L     | H    | A  | C3 | Uncoated |     | TIN Coated |     | ATTIN Coated |  |
|--------------------|------|------|------|-------|------|----|----|----------|-----|------------|-----|--------------|--|
|                    |      |      |      |       |      |    |    | GP3      | GP5 | GP50       | AT3 | AT50         |  |
| GR-4125            | .125 | 3,18 | .062 | 1.000 | .188 | 4° |    |          |     | ●          | ●   |              |  |
| GR-4187            | .187 | 4,75 | .094 | 1.000 | .328 | 5° |    |          |     | ●          | ●   |              |  |
| GR-4250            | .250 | 6,35 | .125 | 1.000 | .328 | 5° |    |          |     | ●          | ●   |              |  |

## DEEP GROOVING

VDB



### Insert Description

| Insert Description | Inch | mm   | R    | L     | H    | S    | C3 | Uncoated |     | TIN Coated |     | ATTIN Coated |  |
|--------------------|------|------|------|-------|------|------|----|----------|-----|------------|-----|--------------|--|
|                    |      |      |      |       |      |      |    | GP3      | GP5 | GP50       | AT3 | AT50         |  |
| VDB 125 A008       | .125 | 3,18 | .008 | 1.125 | .250 | .106 |    |          |     |            |     |              |  |
| VDB 125 A015       | .125 | 3,18 | .015 | 1.125 | .250 | .106 |    | ●        |     | ●          | ●   | ●            |  |
| VDB 156 A008       | .156 | 3,96 | .008 | 1.125 | .250 | .106 |    |          |     |            |     |              |  |
| VDB 156 A015       | .156 | 3,96 | .015 | 1.125 | .250 | .106 |    | ●        |     | ●          | ●   | ●            |  |
| VDB 188 A008       | .188 | 4,78 | .008 | 1.125 | .250 | .106 |    |          |     |            |     |              |  |
| VDB 188 A015       | .188 | 4,78 | .015 | 1.125 | .250 | .106 |    | ●        |     | ●          | ●   | ●            |  |
| VDB 188 A031       | .188 | 4,78 | .031 | 1.125 | .250 | .106 |    |          |     |            |     | ●            |  |
| VDB 218-A015       | .218 | 5,54 | .015 | 1.125 | .250 | .144 |    | ●        |     | ●          | ●   | ●            |  |
| VDB 250 A015       | .250 | 6,35 | .015 | 1.125 | .250 | .144 |    | ●        |     | ●          | ●   | ●            |  |
| VDB 250 B015       | .250 | 6,35 | .015 | 1.125 | .337 | .144 |    | ●        |     |            |     |              |  |
| VDB 250 B031       | .250 | 6,35 | .031 | 1.125 | .337 | .144 |    |          |     |            |     | ●            |  |
| VDB 281 B015       | .281 | 7,14 | .015 | 1.125 | .337 | .202 |    |          |     | ●          | ●   |              |  |
| VDB 312 B015       | .312 | 7,92 | .015 | 1.125 | .337 | .202 |    | ●        |     | ●          | ●   | ●            |  |
| VDB 312 B031       | .312 | 7,92 | .031 | 1.125 | .337 | .202 |    |          |     |            |     | ●            |  |
| VDB 344 B015       | .344 | 8,74 | .015 | 1.125 | .337 | .276 |    |          |     |            |     |              |  |
| VDB 344 B031       | .344 | 8,74 | .031 | 1.125 | .337 | .276 |    |          |     |            |     |              |  |
| VDB 375 B015       | .375 | 9,53 | .015 | 1.125 | .337 | .276 |    | ●        |     | ●          | ●   | ●            |  |
| VDB 375 B031       | .375 | 9,53 | .031 | 1.125 | .337 | .276 |    |          |     |            |     | ●            |  |

In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up to date grade offering.

- High performance choice in optimal conditions.
- ▲ Recommended grade under general conditions.

|                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Cast Iron           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-Ferrous         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Stainless/High Temp |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Steel               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



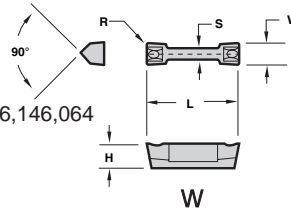
DEEP GROOVING

VDB-CB

Exclusive patented design!

Features:

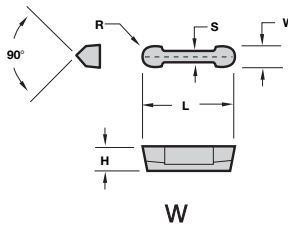
- Patented chipbreaker - Patent No. 6,146,064
- Maximum chip control
- Industry standard widths



| Insert Description | W    |      | R    | L     | H    | S    | Coating  |            |     |      |              |      |
|--------------------|------|------|------|-------|------|------|----------|------------|-----|------|--------------|------|
|                    | Inch | mm   |      |       |      |      | Uncoated | TIN Coated |     |      | AlTiN Coated |      |
|                    |      |      |      |       |      |      | C3       | GP3        | GP5 | GP50 | AT3          | AT50 |
| VDB 125 A008-CB    | .125 | 3,18 | .008 | 1.125 | .250 | .106 |          |            |     |      |              |      |
| VDB 125 A015-CB    | .125 | 3,18 | .015 | 1.125 | .250 | .106 |          | ●          |     |      |              |      |
| VDB 156 A008-CB    | .156 | 3,96 | .008 | 1.125 | .250 | .106 |          |            |     |      |              |      |
| VDB 156 A015-CB    | .156 | 3,96 | .015 | 1.125 | .250 | .106 |          | ●          |     |      |              |      |
| VDB 188 A008-CB    | .188 | 4,78 | .008 | 1.125 | .250 | .106 |          |            |     |      |              |      |
| VDB 188 A015-CB    | .188 | 4,78 | .015 | 1.125 | .250 | .106 |          | ●          |     |      |              |      |
| VDB 188 A031-CB    | .188 | 4,78 | .031 | 1.125 | .250 | .106 |          |            |     |      | ●            |      |
| VDB 218 A015-CB    | .218 | 5,54 | .015 | 1.125 | .250 | .144 |          | ●          |     |      |              |      |
| VDB 250 B015-CB    | .250 | 6,35 | .015 | 1.125 | .337 | .144 |          | ●          |     |      |              |      |
| VDB 250 B031-CB    | .250 | 6,35 | .031 | 1.125 | .337 | .144 |          |            |     |      | ●            |      |
| VDB 312 B015-CB    | .312 | 7,92 | .015 | 1.125 | .337 | .202 |          | ●          |     |      |              |      |
| VDB 312 B031-CB    | .312 | 7,92 | .031 | 1.125 | .337 | .202 |          |            |     |      | ●            |      |
| VDB 375 B015-CB    | .375 | 9,53 | .015 | 1.125 | .337 | .276 |          | ●          |     |      |              |      |
| VDB 375 B031-CB    | .375 | 9,53 | .031 | 1.125 | .337 | .276 |          |            |     |      | ●            |      |

DEEP GROOVING

VDB-FNR



| Insert Description | W    |      | R    | L     | H    | S    | Coating  |            |     |      |              |      |
|--------------------|------|------|------|-------|------|------|----------|------------|-----|------|--------------|------|
|                    | Inch | mm   |      |       |      |      | Uncoated | TIN Coated |     |      | AlTiN Coated |      |
|                    |      |      |      |       |      |      | C3       | GP3        | GP5 | GP50 | AT3          | AT50 |
| VDB 125 RA         | .125 | 3,18 | .062 | 1.125 | .250 | .106 |          | ●          |     |      |              |      |
| VDB 156 RA         | .156 | 3,96 | .078 | 1.125 | .250 | .106 |          | ●          |     |      |              |      |
| VDB 188 RA         | .188 | 4,78 | .094 | 1.125 | .250 | .106 |          | ●          |     |      |              |      |
| VDB 218 RA         | .218 | 5,54 | .109 | 1.125 | .250 | .144 |          | ●          |     |      |              |      |
| VDB 250 RA         | .250 | 6,35 | .125 | 1.125 | .250 | .144 |          | ●          |     |      |              |      |
| VDB 250 RB         | .250 | 6,35 | .125 | 1.125 | .337 | .144 |          | ●          |     |      |              |      |
| VDB 281 RB         | .281 | 7,14 | .140 | 1.125 | .337 | .202 |          | ●          |     |      |              |      |
| VDB 312 RB         | .312 | 7,92 | .156 | 1.125 | .337 | .202 |          | ●          |     |      |              |      |
| VDB 344 RB         | .344 | 8,74 | .172 | 1.125 | .337 | .276 |          | ●          |     |      |              |      |
| VDB 375 RB         | .375 | 9,53 | .187 | 1.125 | .337 | .276 |          | ●          |     |      |              |      |

In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up to date grade offering.

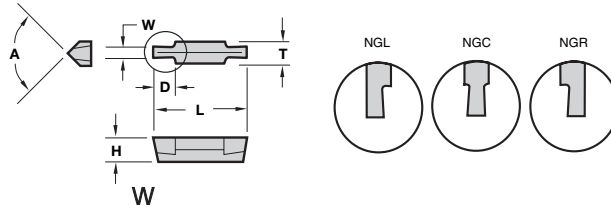
- High performance choice in optimal conditions.
- ▲ Recommended grade under general conditions.

|                     |  |   |  |   |   |
|---------------------|--|---|--|---|---|
| Cast Iron           |  | ▲ |  |   | ● |
| Non-Ferrous         |  |   |  |   |   |
| Stainless/High Temp |  | ▲ |  |   | ● |
| Steel               |  |   |  | ▲ | ● |



## GROOVING

V84/V85/V96/V98/V120

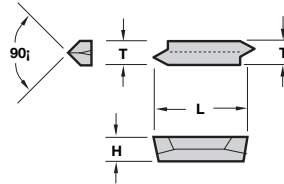


### Insert Description

| Insert Description | Inch |       | mm   |      | D     | T    | L    | H | A° | Coating |      |          |            |  |              |  |  |
|--------------------|------|-------|------|------|-------|------|------|---|----|---------|------|----------|------------|--|--------------|--|--|
|                    | C3   | GP3   | GP5  | GP50 |       |      |      |   |    | AT3     | AT50 | Uncoated | TIN Coated |  | AITIN Coated |  |  |
| V84 NGC W.062      | .062 | 1,57  | .156 | .250 | 1.000 | .250 | 90°  |   |    |         |      |          |            |  |              |  |  |
| V84 NGC W.094      | .094 | 2,39  | .250 | .250 | 1.000 | .250 | 90°  |   |    |         |      |          |            |  |              |  |  |
| V84 NGC W.125      | .125 | 3,18  | .250 | .250 | 1.000 | .250 | 90°  |   |    | ●       |      | ●        |            |  |              |  |  |
| V84 NGC W.187      | .187 | 4,75  | .250 | .250 | 1.000 | .250 | 90°  |   |    | ●       |      | ●        |            |  |              |  |  |
| V84 NGC W.250      | .250 | 6,35  | .250 | .250 | 1.000 | .250 | 90°  |   |    | ●       |      | ●        |            |  |              |  |  |
| V84 NGL W.125      | .125 | 3,18  | .250 | .250 | 1.000 | .250 | 90°  |   |    |         |      | ●        |            |  |              |  |  |
| V84 NGL W.187      | .187 | 4,75  | .250 | .250 | 1.000 | .250 | 90°  |   |    |         |      | ●        |            |  |              |  |  |
| V84 NGR W.125      | .125 | 3,18  | .250 | .250 | 1.000 | .250 | 90°  |   |    | ●       |      | ●        |            |  |              |  |  |
| V84 NGR W.187      | .187 | 4,75  | .250 | .250 | 1.000 | .250 | 90°  |   |    | ●       |      | ●        |            |  |              |  |  |
| V85 NGC W.312      | .312 | 7,92  | .325 | .312 | 1.000 | .250 | 90°  |   |    |         |      | ●        |            |  |              |  |  |
| V96 NGC W.375      | .375 | 9,53  | .450 | .375 | 1.125 | .375 | 90°  |   |    |         |      |          |            |  |              |  |  |
| V98 NGC W.500      | .500 | 12,70 | .450 | .500 | 1.125 | .375 | 90°  |   |    |         |      | ●        |            |  |              |  |  |
| V120 NGC W.625     | .625 | 15,88 | .625 | .750 | 1.500 | .375 | 120° |   |    |         |      |          |            |  |              |  |  |
| V120 NGC W.750     | .750 | 19,05 | .625 | .750 | 1.500 | .375 | 120° |   |    |         |      | ●        |            |  |              |  |  |

## NPT THREADING

V84

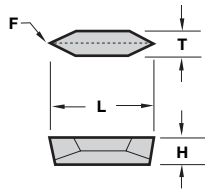


### Insert Description

| Insert Description | Pipe Size   | TPI  | TPF | T    | L     | H    | Coating |     |     |      |     |      |          |            |  |              |  |
|--------------------|-------------|------|-----|------|-------|------|---------|-----|-----|------|-----|------|----------|------------|--|--------------|--|
|                    |             |      |     |      |       |      | C3      | GP3 | GP5 | GP50 | AT3 | AT50 | Uncoated | TIN Coated |  | AITIN Coated |  |
| V84 8NPT EXT       | 2-1/2" - up | 8    | 3/4 | .250 | 1.000 | .250 |         |     |     |      |     |      |          |            |  |              |  |
| V84 8NPT INT       | 2-1/2" - up | 8    | 3/4 | .250 | 1.000 | .250 |         |     |     |      |     | ●    |          |            |  |              |  |
| V84 11.5NPT EXT    | 1" - 2"     | 11.5 | 3/4 | .250 | 1.000 | .250 |         |     |     |      |     |      |          | ●          |  |              |  |
| V84 11.5NPT INT    | 1" - 2"     | 11.5 | 3/4 | .250 | 1.000 | .250 |         |     |     |      |     |      |          | ●          |  |              |  |
| V84 14NPT EXT      | 1/2" - 3/4" | 14   | 3/4 | .250 | 1.000 | .250 |         |     |     |      |     |      |          | ●          |  |              |  |
| V84 14NPT INT      | 1/2" - 3/4" | 14   | 3/4 | .250 | 1.000 | .250 |         |     |     |      |     |      |          | ●          |  |              |  |

## 60° V-THREADING

V84/V85



### Insert Description

| Insert Description | TPI  | F         | T    | L     | H    | Coating |     |     |      |     |      |          |            |  |              |  |  |
|--------------------|------|-----------|------|-------|------|---------|-----|-----|------|-----|------|----------|------------|--|--------------|--|--|
|                    |      |           |      |       |      | C3      | GP3 | GP5 | GP50 | AT3 | AT50 | Uncoated | TIN Coated |  | AITIN Coated |  |  |
| V84 NV             | 5-20 | .006/.008 | .250 | 1.000 | .250 |         | ●   |     | ●    |     |      |          |            |  |              |  |  |
| V84 NV .010R       | 4-20 | .010R     | .250 | 1.000 | .250 |         | ●   |     | ●    |     |      |          |            |  |              |  |  |
| V84 NV .020R       | 4-12 | .020R     | .250 | 1.000 | .250 |         |     |     | ●    |     |      |          |            |  |              |  |  |
| V84 NV .025R       | 4-8  | .025R     | .250 | 1.000 | .250 |         |     |     | ●    |     |      |          |            |  |              |  |  |
| V84 NV .038R       | 4-6  | .038R     | .250 | 1.000 | .250 |         |     |     | ●    |     |      |          |            |  |              |  |  |
| V85 NV             | 5-20 | .006/.008 | .312 | 1.000 | .250 |         | ●   |     | ●    |     |      |          |            |  |              |  |  |

In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up to date grade offering.

- High performance choice in optimal conditions.
- ▲ Recommended grade under general conditions.

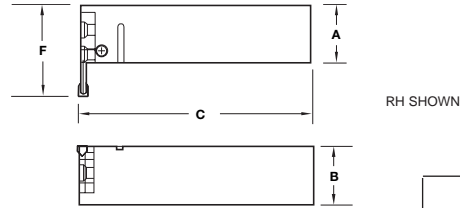
|                     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Cast Iron           | ● |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-Ferrous         |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Stainless/High Temp |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Steel               |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |





### EXTERNAL 90° HOLDER

CDHOR/L (RH HOLDERS USE LH COMPONENTS-SEE PG. 229-234)



F\*

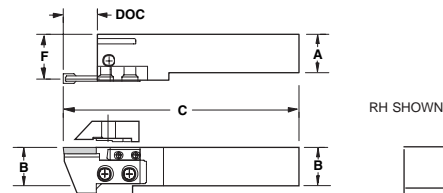
Holder Description

| Holder Description | A     | B     | C | .312(1) | .812(1) | Clamp Screw | Stop Screw | Anvil Screw |
|--------------------|-------|-------|---|---------|---------|-------------|------------|-------------|
| CDHOR-16           | 1     | 1     | 6 | 1.312   | 1.812   | SB90        | SS20       | SF95        |
| CDHOL-16           | 1     | 1     | 6 | 1.312   | 1.812   | SB90        | SS20       | SF95        |
| CDHOR-20           | 1-1/4 | 1-1/4 | 6 | 1.562   | 2.062   | SB90        | SS20       | SF95        |
| CDHOR-24           | 1-1/2 | 1-1/2 | 6 | 1.812   | 2.312   | SB90        | SS20       | SF95        |
| CDHOL-24           | 1-1/2 | 1-1/2 | 6 | 1.812   | 2.312   | SB90        | SS20       | SF95        |

\*The "F" dimension is determined by the D.O.C. of the anvil. (1) Anvil D.O.C.

### EXTERNAL STRAIGHT HOLDER

CDVOR/L (RH HOLDERS USE RH COMPONENTS-See page 229-234)



F\*

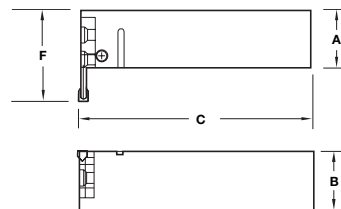
Holder Description

| Holder Description | A     | B     | C | F     | Clamp Screw | Stop Screw | Anvil Screw |
|--------------------|-------|-------|---|-------|-------------|------------|-------------|
| CDVOR-16           | 1     | 1     | * | 1.150 | SB90        | SS20       | SF95        |
| CDVOL-16           | 1     | 1     | * | 1.150 | SB90        | SS20       | SF95        |
| CDVOR-20           | 1-1/4 | 1-1/4 | * | 1.400 | SB90        | SS20       | SF95        |
| CDVOR-24           | 1-1/2 | 1-1/2 | * | 1.650 | SB90        | SS20       | SF95        |

\*The "C" dimension is determined by the D.O.C. of the anvil. If the D.O.C. is .312, C=5.500. If the D.O.C. is .812, C=6.000.

### EXTERNAL 90° HOLDER

CDHOR-METRIC (RH HOLDERS USE LH COMPONENTS-See page 229-234)



F\*

Holder Description

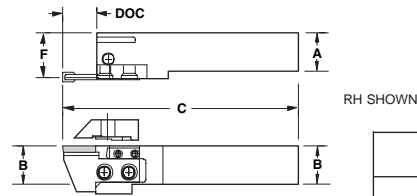
| Holder Description | A    | B    | C     | 7,9(1) | 20,6(1) | Clamp Screw | Stop Screw | Anvil Screw |
|--------------------|------|------|-------|--------|---------|-------------|------------|-------------|
| CDHOR-25MM         | 25,0 | 25,0 | 150,0 | 33,3   | 46,0    | SB90        | SS20       | SF95        |
| CDHOR-32MM         | 32,0 | 32,0 | 150,0 | 39,7   | 52,4    | SB90        | SS20       | SF95        |
| CDHOR-40MM         | 40,0 | 40,0 | 150,0 | 46,0   | 58,7    | SB90        | SS20       | SF95        |

\*The "F" dimension is determined by the D.O.C. of the anvil. (1) Anvil D.O.C.



# EXTERNAL STRAIGHT HOLDER

CDVOR/L-METRIC (RH HOLDERS USE RH COMPONENTS-SEE BELOW)



| PARTS       |            |             |
|-------------|------------|-------------|
| Clamp Screw | Stop Screw | Anvil Screw |
| SB90        | SS20       | SF95        |
| SB90        | SS20       | SF95        |
| SB90        | SS20       | SF95        |
| SB90        | SS20       | SF95        |

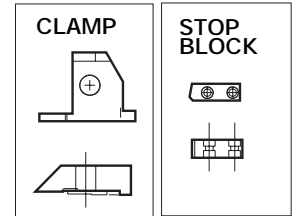
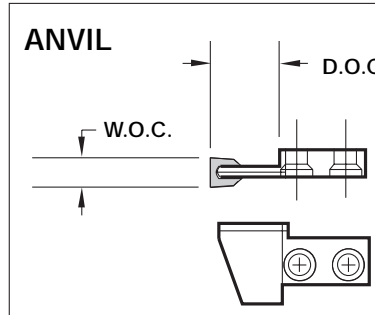
| Holder Description | A    | B    | C | F    | Clamp Screw | Stop Screw | Anvil Screw |
|--------------------|------|------|---|------|-------------|------------|-------------|
| CDVOR-25MM         | 25,0 | 25,0 | * | 28,8 | SB90        | SS20       | SF95        |
| CDVOL-25MM         | 25,0 | 25,0 | * | 28,8 | SB90        | SS20       | SF95        |
| CDVOR-32MM         | 32,0 | 32,0 | * | 35,8 | SB90        | SS20       | SF95        |
| CDVOR-40MM         | 40,0 | 40,0 | * | 43,8 | SB90        | SS20       | SF95        |

\*The "C" dimension is determined by the D.O.C. of the anvil. If the D.O.C. is .312 (7.9mm), C=5.500 (139,7mm). If the D.O.C. is .812 (20.6mm), C=6.000

## COMPONENTS

FOR CDHOR/L AND CDVOR/L

For face grooving anvils see pg. 89

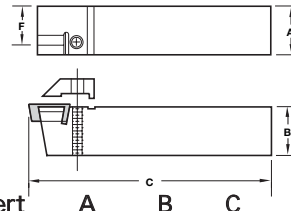


| Description | Insert        | DOC  | WOC       | Clamp   | Stop Block |
|-------------|---------------|------|-----------|---------|------------|
| AHR-133     | V84           | .312 | .220-.250 | CHR-431 | SBH-1      |
| AHL-133     | V84           | .312 | .220-.250 | CHL-431 | SBH-1      |
| AHR-143     | V84/V85       | .312 | .295-.312 | CHR-431 | SBH-1      |
| AHL-143     | V84/V85       | .312 | .295-.312 | CHL-431 | SBH-1      |
| AHR-173     | V84/V85       | .312 | V-THREAD  | CHR-431 | SBH-1      |
| AHL-173     | V84/V85       | .312 | V-THREAD  | CHL-431 | SBH-1      |
| AHR-113     | DBP24/VDB125  | .312 | .105-.125 | CHR-132 | SBH-4      |
| AHL-113     | DBP24/VDB125  | .312 | .105-.125 | CHL-132 | SBH-4      |
| AHR-138     | DBP34/VDB188  | .812 | .170-.188 | CHR-382 | SBH-2      |
| AHL-138     | DBP34/VDB188  | .812 | .170-.188 | CHL-382 | SBH-2      |
| AHR-148     | VDB250A       | .812 | .220-.250 | CHR-482 | SBH-2      |
| AHL-148     | VDB250A       | .812 | .220-.250 | CHL-482 | SBH-2      |
| AHR-248     | DBP45/VDB250B | .812 | .250-.312 | CHR-482 | SBH-2      |
| AHL-248     | DBP45/VDB250B | .812 | .250-.312 | CHL-482 | SBH-2      |
| AHR-268     | DBP65/VDB375  | .812 | .350-.375 | CHR-582 | SBH-2      |
| AHL-268     | DBP65/VDB375  | .812 | .350-.375 | CHL-582 | SBH-2      |



## EXTERNAL STRAIGHT HOLDER

CDVOR/L/C (ONE PIECE DESIGN)



RH Shown

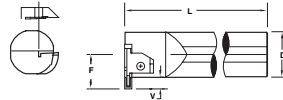
### PARTS

#### Holder Description

| Right Hand | Left Hand | Insert  | A     | B     | C | F     |  | Clamp   | Clamp Screw |
|------------|-----------|---------|-------|-------|---|-------|--|---------|-------------|
| CDVOR-168  | CDVOL-168 | V84/V85 | 1     | 1     | 6 | .875  |  | CHR-431 | SB90        |
| CDVOR-208  | CDVOL-208 | V84/V85 | 1-1/4 | 1-1/4 | 6 | 1.125 |  | CHR-431 | SB90        |
| CDVOR-209  |           | V98     | 1-1/4 | 1-1/4 | 7 | 1.000 |  | CHR-98  | SS100       |
| CDVOC-2012 |           | V120    | 1-1/4 | 1-1/4 | 7 | .875  |  | CHR-120 | SS90        |

## INTERNAL BAR

SI-CDHOR (RH BARS USE LH COMPONENTS)



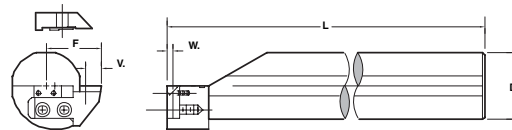
RH Shown

### PARTS

| Bar Description | D     | L  | Insert        | W         | V    | F     | Bore  | Min. | D.O.C at Min Bore | Anvil     | Clamp     |
|-----------------|-------|----|---------------|-----------|------|-------|-------|------|-------------------|-----------|-----------|
| SI-CDHOR-24     | 1-1/2 | 14 | V84           | .188-.250 | .180 | 1.062 | 1.880 | .080 |                   | ABL/R-131 | CBL/R-411 |
| SI-CDHOL-24     |       |    | V84           | 60°V      | .180 | 1.062 | 1.880 | .080 |                   | ABL/R-171 | CBL/R-411 |
|                 |       |    | V85           | .295-.312 | .312 | 1.062 | 1.880 | .080 |                   | ABL/R-143 | CBL/R-531 |
|                 |       |    | DBP24/VDB125  | .105-.125 | .312 | 1.062 | 1.880 | .240 |                   | ABL/R-113 | CBL/R-132 |
|                 |       |    | DBP34/VDB188  | .170-.188 | .530 | 1.280 | 2.098 | .240 |                   | ABL/R-135 | CBL/R-352 |
|                 |       |    | VDB250A       | .220-.250 | .530 | 1.280 | 2.098 | .240 |                   | ABL/R-145 | CBL/R-452 |
|                 |       |    | DBP45/VDB250B | .220-.250 | .530 | 1.280 | 2.098 | .240 |                   | ABL/R-245 | CBL/R-452 |

## INTERNAL BAR

SI-CDHOR (RH BARS USE LH COMPONENTS)



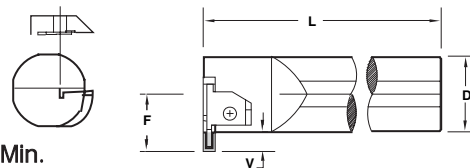
RH Shown

### PARTS

| Bar Description | D | L  | Insert        | W         | V    | F     | Bore  | Min. | D.O.C at Min Bore | Anvil     | Clamp     | Stop Block |
|-----------------|---|----|---------------|-----------|------|-------|-------|------|-------------------|-----------|-----------|------------|
| SI-CDHOR-32H    | 2 | 16 | V84           | .220-.250 | .312 | 1.584 | 3.000 | .150 |                   | AHL/R-133 | CBL/R-431 | SBH-1      |
| SI-CDHOL-32H    |   |    | V85           | .295-.312 | .312 | 1.584 | 3.000 | .150 |                   | AHL/R-143 | CBL/R-431 | SBH-1      |
|                 |   |    | V84/V85       | 60°V      | .312 | 1.584 | 3.000 | .150 |                   | AHL/R-173 | CBL/R-431 | SBH-1      |
|                 |   |    | DBP34/VDB188  | .170-.188 | .625 | 1.592 | 3.000 | .270 |                   | AHL/R-138 | CBL/R-382 | SBH-2      |
|                 |   |    | VDB250A       | .220-.250 | .625 | 1.592 | 3.000 | .270 |                   | AHL/R-148 | CBL/R-482 | SBH-2      |
|                 |   |    | DBP45/VDB250B | .220-.250 | .625 | 1.592 | 3.000 | .270 |                   | AHL/R-248 | CBL/R-482 | SBH-2      |

## INTERNAL BAR

SI-CDHOR/L (ONE PIECE DESIGN)



RH Shown

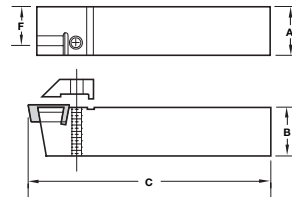
### PARTS

| Bar Description | Insert  | Bore  | D     | L  | F     | V    | Min. | D.O.C at Min Bore | Clamp Screw | Clamp   |
|-----------------|---------|-------|-------|----|-------|------|------|-------------------|-------------|---------|
| SI-CDHOR-168    | V84/V85 | 1.187 | 1     | 10 | .687  | .250 | .190 |                   | SS100       | CBL-84  |
| SI-CDHOL-168    | V84/V85 | 1.187 | 1     | 10 | .687  | .250 | .190 |                   | SS100       | CBR-84  |
| SI-CDHOR-208    | V84/V85 | 1.500 | 1-1/4 | 12 | .875  | .250 | .190 |                   | SS100       | CBL-84  |
| SI-CDHOL-208    | V84/V85 | 1.500 | 1-1/4 | 12 | .875  | .250 | .190 |                   | SS100       | CBR-84  |
| SI-CDHOR-329    | V98     | 2.500 | 2     | 16 | 1.530 | .365 | .312 |                   | SS100       | CBL-98  |
| SI-CDHOL-329    | V98     | 2.500 | 2     | 16 | 1.530 | .365 | .312 |                   | SS100       | CBR-98  |
| SI-CDHOR-409    | V98     | 3.000 | 2-1/2 | 16 | 1.575 | .365 | .375 |                   | SS100       | CBL-98  |
| SI-CDHOR-4012   | V120    | 3.000 | 2-1/2 | 16 | 1.575 | .550 | .500 |                   | SS150       | CBL-120 |



## EXTERNAL STRAIGHT HOLDER

CDVOR/L/C (ONE PIECE DESIGN)-METRIC

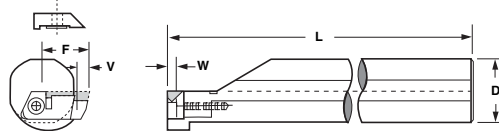


### Holder Description

| Right Hand  | Left Hand  | Insert  | A    | B    | C     | F    | PARTS   |             |
|-------------|------------|---------|------|------|-------|------|---------|-------------|
|             |            |         |      |      |       |      | Clamp   | Clamp Screw |
| CDVOR-25M8  | CDVOL-25M8 | V84/V85 | 25,0 | 25,0 | 150,0 | 21,8 | CHR-431 | SB90        |
| CDVOR-32M8  | CDVOL-32M8 | V84/V85 | 32,0 | 32,0 | 150,0 | 28,8 | CHR-431 | SB90        |
| CDVOR-32M9  |            | V98     | 32,0 | 32,0 | 180,0 | 25,5 | CHR-98  | SS100       |
| CDVOC-32M12 |            | V120    | 32,0 | 32,0 | 180,0 | 22,5 | CHR-120 | SS90        |

## INTERNAL BAR

SI-CDHOR-METRIC

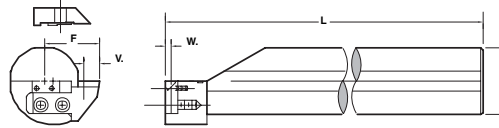


### Holder Description

| Right Hand    | D    | L     | Insert        | W       | V    | F    | Bore | Min. | D.O.C at Min Bore | Anvil LH | Clamp LH |
|---------------|------|-------|---------------|---------|------|------|------|------|-------------------|----------|----------|
| SI-CDHOR-40MM | 40,0 | 360,0 | V84           | 5,5-6,5 | 4,5  | 28,9 | 48,0 | 2,0  | ABL-131           | CBL-411  |          |
|               |      |       | V84           | 60°V    | 4,5  | 28,9 | 48,0 | 2,0  | ABL-171           | CBL-411  |          |
|               |      |       | V85           | 7,5-8,0 | 7,9  | 28,9 | 48,0 | 2,0  | ABL-143           | CBL-531  |          |
|               |      |       | DBP24/VDB125  | 2,6-3,2 | 7,9  | 28,9 | 53,5 | 6,0  | ABL-113           | CBL-132  |          |
|               |      |       | DBP34/VDB188  | 4,3-4,8 | 13,6 | 34,3 | 53,5 | 6,0  | ABL-135           | CBL-352  |          |
|               |      |       | VDB250A       | 5,5-6,5 | 13,6 | 34,3 | 53,5 | 6,0  | ABL-145           | CBL-452  |          |
|               |      |       | DBP45/VDB250B | 5,5-6,5 | 13,6 | 34,3 | 53,5 | 6,0  | ABL-245           | CBL-452  |          |

## INTERNAL BAR

SI-CDHOR-METRIC

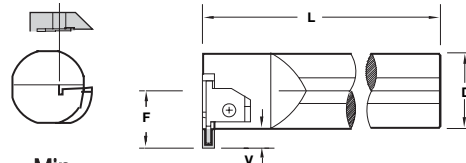


### Holder Description

| Right Hand    | D    | L     | Insert        | W       | V    | F    | Bore | Min. | D.O.C at Min Bore | Anvil LH | Clamp LH | Stop Block |
|---------------|------|-------|---------------|---------|------|------|------|------|-------------------|----------|----------|------------|
| SI-CDHOR-50MM | 50,0 | 400,0 | V84           | 5,5-6,5 | 7,9  | 39,5 | 76,2 | 2,0  | AHL-133           | CBL-431  | SBH-1    |            |
|               |      |       | V85           | 7,5-8,0 | 7,9  | 39,5 | 76,2 | 2,0  | AHL-143           | CBL-431  | SBH-1    |            |
|               |      |       | V84/V85       | 60°V    | 7,9  | 39,5 | 76,2 | 2,0  | AHL-173           | CBL-431  | SBH-1    |            |
|               |      |       | DBP34/VDB188  | 4,3-4,8 | 20,6 | 40,0 | 76,2 | 6,0  | AHL-138           | CBL-382  | SBH-2    |            |
|               |      |       | VDB250A       | 5,5-6,5 | 20,6 | 40,0 | 76,2 | 6,0  | AHL-148           | CBL-482  | SBH-2    |            |
|               |      |       | DBP45/VDB250B | 5,5-6,5 | 20,6 | 40,0 | 76,2 | 6,0  | AHL-248           | CBL-482  | SBH-2    |            |

## INTERNAL BAR

SI-CDHOR/L-METRIC (ONE PIECE DESIGN)

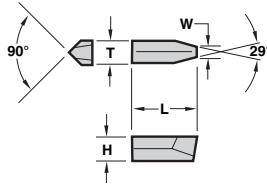


### Holder Description

| Right Hand     | Left Hand | Insert  | Bore  | Min. | D     | L    | F    | V    | D.O.C at Min Bore | Clamp Screw | Clamp |
|----------------|-----------|---------|-------|------|-------|------|------|------|-------------------|-------------|-------|
| SI-CDHOR-25M8  |           | V84/V85 | 30,15 | 25,0 | 250,0 | 17,4 | 6,4  | 4,8  | SS100             | CBL-84      |       |
| SI-CDHOL-25M8  |           | V84/V85 | 30,15 | 25,0 | 250,0 | 17,4 | 6,4  | 4,8  | SS100             | CBR-84      |       |
| SI-CDHOR-32M8  |           | V84/V85 | 38,1  | 32,0 | 300,0 | 18,5 | 6,4  | 4,8  | SS100             | CBL-84      |       |
| SI-CDHOL-32M8  |           | V84/V85 | 38,1  | 32,0 | 300,0 | 18,5 | 6,4  | 4,8  | SS100             | CBR-84      |       |
| SI-CDHOR-50M9  |           | V98     | 63,5  | 50,0 | 400,0 | 38,8 | 9,2  | 7,9  | SS100             | CBL-98      |       |
| SI-CDHOL-50M9  |           | V98     | 63,5  | 50,0 | 400,0 | 38,8 | 9,2  | 7,9  | SS100             | CBR-98      |       |
| SI-CDHOR-65M9  |           | V98     | 76,2  | 65,0 | 400,0 | 40,0 | 9,2  | 9,5  | SS100             | CBL-98      |       |
| SI-CDHOR-65M12 |           | V120    | 76,2  | 65,0 | 400,0 | 40,0 | 14,0 | 12,7 | SS150             | CBL-120     |       |

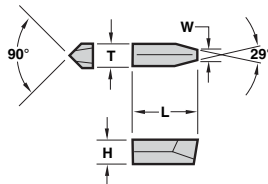


## ACME THREADING MLPE



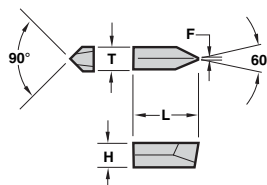
| Insert Description | TPI | W     | T    | L    | H    | TIN Coated |     |
|--------------------|-----|-------|------|------|------|------------|-----|
|                    |     |       |      |      |      | GP22       | GP4 |
| MLPE 2532 NT 4P    | 4   | .0875 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 4P    | 4   | .0875 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 5P    | 5   | .0689 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 5P    | 5   | .0689 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 6P    | 6   | .0566 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 6P    | 6   | .0566 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 8P    | 8   | .0411 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 8P    | 8   | .0411 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 10P   | 10  | .0319 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 10P   | 10  | .0319 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 12P   | 12  | .0283 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 12P   | 12  | .0283 | .250 | .625 | .188 | ●          | ●   |

## ACME STUB THREADING MLPE



| Insert Description    | TPI | W     | T    | L    | H    | TIN Coated |     |
|-----------------------|-----|-------|------|------|------|------------|-----|
|                       |     |       |      |      |      | GP22       | GP4 |
| MLPE 2532 NT 4P STUB  | 4   | .1004 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 4P STUB  | 4   | .1004 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 5P STUB  | 5   | .0793 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 5P STUB  | 5   | .0793 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 6P STUB  | 6   | .0652 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 6P STUB  | 6   | .0652 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 8P STUB  | 8   | .0476 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 8P STUB  | 8   | .0476 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 10P STUB | 10  | .0370 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 10P STUB | 10  | .0370 | .250 | .625 | .188 | ●          | ●   |
| MLPE 2532 NT 12P STUB | 12  | .0326 | .188 | .500 | .150 | ●          | ●   |
| MLPE 3425 NT 12P STUB | 12  | .0326 | .250 | .625 | .188 | ●          | ●   |

## V-THREADING 60° MLPE



| Insert Description | TPI   | W         | T    | L    | H    | TIN Coated |     |
|--------------------|-------|-----------|------|------|------|------------|-----|
|                    |       |           |      |      |      | GP22       | GP4 |
| MLPE 1251 NV       | 10-20 | .002-.004 | .188 | .500 | .150 | ●          | ●   |
| MLPE 2532 NV       | 6-20  | .002-.004 | .250 | .625 | .188 | ●          | ●   |
| MLPE 3425 NV       | 5-20  | .002-.004 | .188 | .500 | .150 | ●          | ●   |

In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up to date grade offering.

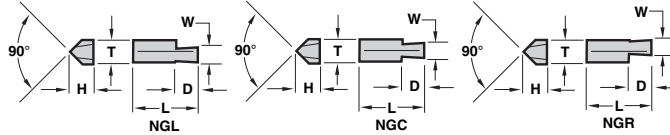
● High performance choice in optimal conditions.  
▲ Recommended grade under general conditions.

|                     |   |   |
|---------------------|---|---|
| Cast Iron           | ● | ▲ |
| Non-Ferrous         | ● | ▲ |
| Stainless/High Temp | ● | ▲ |
| Steel               | ● | ▲ |



## GROOVING

MLPE



### Insert Description

| Insert Description  | W    | D    | T    | L    | H    | Uncoated |     | TIN Coated |     | AlTiN Coated |     |
|---------------------|------|------|------|------|------|----------|-----|------------|-----|--------------|-----|
|                     |      |      |      |      |      | C3       | C6H | GP22       | GP6 | AT22         | AT6 |
| MLPE 1251 NGC W.062 | .062 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 1251 NGC W.094 | .094 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 1251 NGC W.125 | .125 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 1251 NGC W.156 | .156 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 2532 NGC W.062 | .062 | .120 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 2532 NGC W.094 | .094 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 2532 NGC W.125 | .125 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 2532 NGC W.156 | .156 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 2532 NGC W.188 | .188 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 3425 NGC W.062 | .062 | .120 | .250 | .625 | .188 |          |     | ●          |     |              |     |
| MLPE 3425 NGC W.094 | .094 | .150 | .250 | .625 | .188 |          |     | ●          |     |              |     |
| MLPE 3425 NGC W.125 | .125 | .150 | .250 | .625 | .188 |          |     | ●          |     |              |     |
| MLPE 3425 NGC W.156 | .156 | .150 | .250 | .625 | .188 |          |     | ●          |     |              |     |
| MLPE 3425 NGC W.188 | .188 | .150 | .250 | .625 | .188 |          |     | ●          |     |              |     |
| MLPE 3425 NGC W.250 | .250 | .150 | .250 | .625 | .188 |          |     | ●          |     |              |     |
| MLPE 1251 NGL W.125 | .125 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 1251 NGL W.156 | .156 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 2532 NGL W.125 | .125 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 2532 NGL W.156 | .156 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 3425 NGL W.188 | .188 | .150 | .250 | .625 | .188 |          |     | ●          |     |              |     |
| MLPE 1251 NGR W.125 | .125 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 1251 NGR W.156 | .156 | .085 | .160 | .340 | .115 |          |     | ●          |     |              |     |
| MLPE 2532 NGR W.125 | .125 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 2532 NGR W.156 | .156 | .150 | .188 | .500 | .150 |          |     | ●          |     |              |     |
| MLPE 3425 NGR W.188 | .188 | .150 | .250 | .625 | .188 |          |     | ●          |     |              |     |

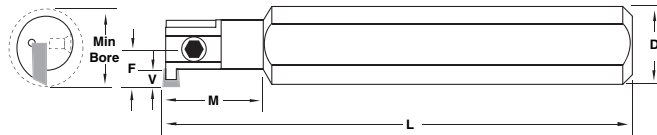
In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up to date grade offering.

● High performance choice in optimal conditions.  
▲ Recommended grade under general conditions.

|                     |   |   |   |   |  |  |  |  |  |   |  |
|---------------------|---|---|---|---|--|--|--|--|--|---|--|
| Cast Iron           | ● |   |   |   |  |  |  |  |  |   |  |
| Non-Ferrous         |   | ● |   |   |  |  |  |  |  |   |  |
| Stainless/High Temp |   | ● |   |   |  |  |  |  |  |   |  |
| Steel               |   |   | ▲ | ▲ |  |  |  |  |  | ● |  |

## INTERNAL BAR

MS-CLHOR/L (ONE PIECE DESIGN)



| Bar Description | Insert    | Min. Bore | D     | M     | L     | F    | V    | Clamp Screw | Clamp  |
|-----------------|-----------|-----------|-------|-------|-------|------|------|-------------|--------|
| MS-CLHOR-46254  | MLPE 1251 | .500      | .500  | .930  | 6.000 | .265 | .079 | SF20        | MCL-30 |
| MS-CLHOL-46254  | MLPE 1251 | .500      | .500  | .930  | 6.000 | .265 | .079 | SF20        | MCR-30 |
| MS-CLHOR-6845   | MLPE 2532 | .700      | .750  | 1.250 | 8.000 | .400 | .150 | SF47        | MCL-40 |
| MS-CLHOL-6845   | MLPE 2532 | .700      | .750  | 1.250 | 8.000 | .400 | .150 | SF47        | MCR-40 |
| MS-CLHOR-6856   | MLPE 3425 | .830      | .750  | 1.500 | 8.000 | .462 | .150 | SA4         | MCL-50 |
| MS-CLHOL-6856   | MLPE 3425 | .830      | .750  | 1.500 | 8.000 | .462 | .150 | SA4         | MCR-50 |
| MS-CLHOR-8856   | MLPE 3425 | .830      | 1.000 | 1.500 | 8.000 | .462 | .150 | SA4         | MCL-50 |
| MS-CLHOL-8856   | MLPE 3425 | .830      | 1.000 | 1.500 | 8.000 | .462 | .150 | SA4         | MCR-50 |