N017E

# PRODUCT NEWS 2015.01

TURNING TOOLS | MILLING TOOLS | DRILLING TOOLS

MITSUBISHI
MITSUBISHI MATERIALS

# MVX ø 17,0 – 63,0 mm

## High rigidity drill body for increased performance and improved hole quality up to 6 x D.

**Indexable Drill**

## Indexable Drill

# MVX

### 4 cutting edges

Economical 4-corner insert.


### Unique wavy design

A unique wavy design is used for the chipbreaker. This gives excellent chip control when machining steels, stainless steels and cast iron.

### US Breaker for stainless steel

### Wiper cutting edge

The wiper geometry for the peripheral cutting edge achieves excellent wall accuracy.

### Ideal combination of outer CVD insert and inner PVD insert

A highly wear resistant CVD coated insert is used for the peripheral edge and a PVD coated insert is used for the inner position for extra stability.

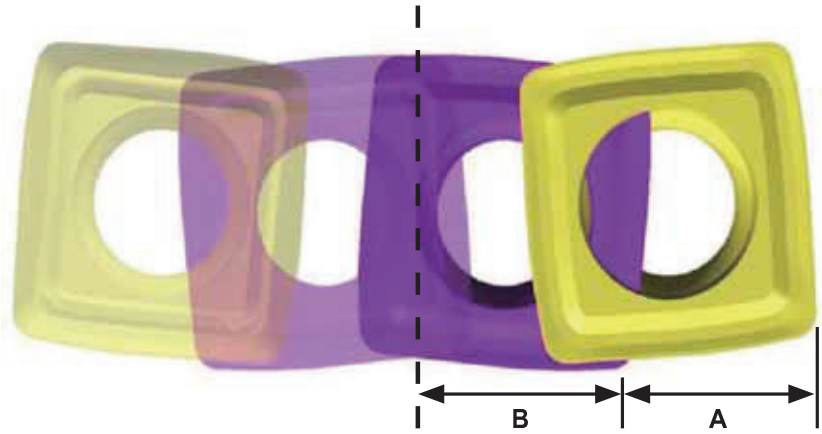
### High rigidity body

Increased surface hardness prevents abrasive damage caused by chip flow.
Optimum insert position controls deformation and vibration of the holder. This enabled a maximum drilling depth of L/D=6.

## Key technology that enabled L/D=6 drilling

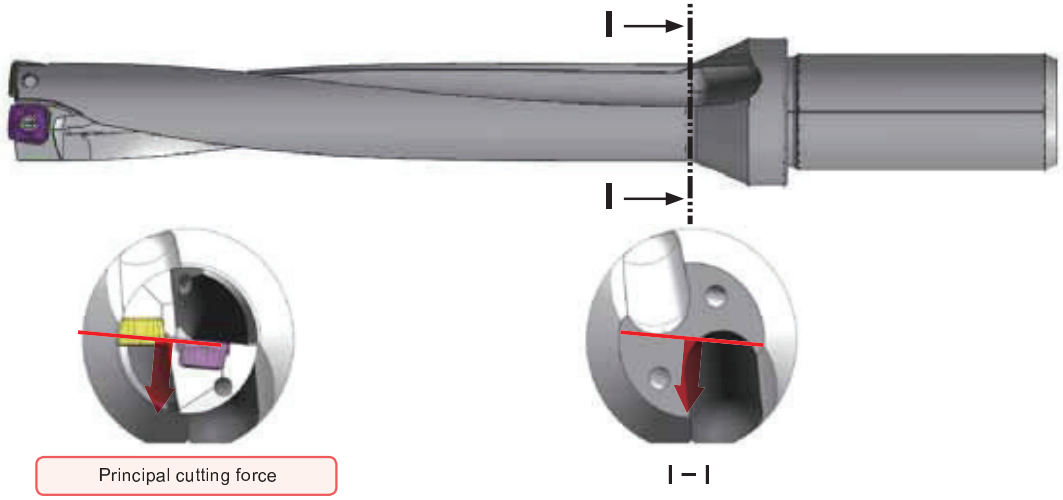
### Optimum positioning of the outer insert and inner insert

By optimising the cutting ratio A & B for the outer and inner inserts, deformation of the tool body can be controlled. Additionally, the uniformity of the cutting ratio A and B; across all diameters, reduces variations in performance.




### Optimum flute positioning

Extra body thickness positioned behind the inner edge helps to resist the principal force and therefore prevents twisting and deformation during the initial cutting.




### Inclined through coolant holes

Chip evacuation when drilling deep holes is improved with specially designed through coolant holes that maintain coolant pressure.

**The chip evacuation capacity is increased by 20%!**

## Range of holders

The high rigidity holders are available for L/D = 2, 3, 4, 5 and also up to a maximum of L/D = 6.

## Inserts

**UM** **Chipbreaker for general use, medium and high feed rates.**

**US** **Chipbreaker for stainless steel**


UM breaker US breaker

## Insert selection

**1st recommendation is a CVD coated outer insert with an inner PVD coated insert.**
A CVD coated grade for the outer insert is better for the higher cutting speed at the edge where higher wear resistance is important. A PVD grade is more suitable for the inner insert due to the lower cutting speeds. If the outer insert suffers from fracturing, use a PVD grade (VP15TF).

| | | 1st Recommendation | | When outer insert fractures | |
|---|---|---|---|---|---|
| | | Outer Insert | Inner Insert | Outer Insert | Inner Insert |
| P | Mild Steel (SS400,SCM415) | MC1020 (UM) | VP15TF (UM) | VP15TF (UM) | VP15TF (UM) |
| P | Carbon Steel, Alloy Steel (Cf53,41CrMo4) | MC1020 (UM) | VP15TF (UM) | VP15TF (UM) | VP15TF (UM) |
| M | Stainless Steel (X5CrNi189) | MC1020 (UM) | VP15TF (US) NEW | VP15TF (UM) | VP15TF (US) NEW |
| K | Cast Iron (GG25, GG30) | MC5020 (UM) | VP15TF (UM) | VP15TF (UM) | VP15TF (UM) |

## Features of grade

### MC1020

MC1020 is a CVD coated grade for higher cutting speeds. The main properties are high wear and high plastic deformation resistance for reliability.

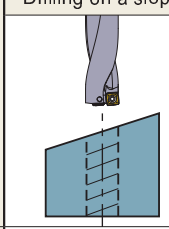
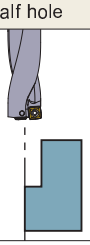
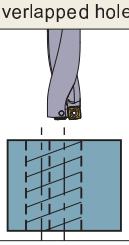
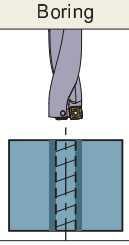
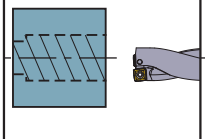
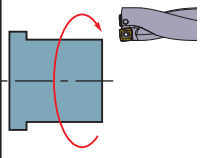
### MC5020

MC5020 is a CVD coated grade suitable for drilling cast iron. It has excellent abrasion resistance and gives long tool life by controlling chipping and thermal cracking that can occur when drilling nodular cast iron.

### VP15TF

VP15TF is a PVD coated grade suitable for a wide range of applications. The micro-grain substrate and Miracle coating provide excellent welding resistance.

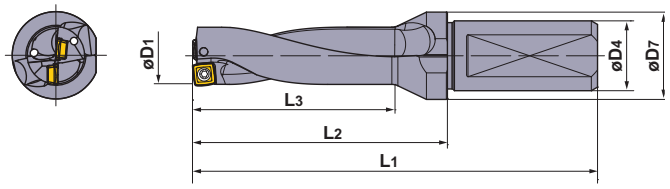
## Special application examples

| Cutting method | Drilling on a slope | Half hole | Overlapped holes | Boring | Internal turning | External turning |
|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| Vc (m/min) | 160 | 160 | 80 | 160 | 160 | 160 |
| fr (mm/rev) | 0.11 | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 |
| ap (mm) | | 4 | 4 | 4 | 2 | 2 |

# MVX

| Carbon Steel Alloy Steel | Hardened Steel | Stainless Steel | Cast Iron | Light Alloy | Heat Resistant Alloy |
|---|---|---|---|---|---|
| ◎ | | ○ | ◎ | | |

| | Machining tolerance (mm) | | |
|---|---|---|---|
| L/D | ø17—ø33 | ø33.5—ø47 | ø48—ø63 |
| 2D, 3D | 0 + 0.25 | 0 + 0.3 | 0 + 0.3 |
| 4D, 5D | 0 + 0.35 | 0 + 0.4 | 0 + 0.45 |
| 6D | 0 + 0.45 | 0 + 0.6 | |




| Clamp Screw | Torque (N•m) |
|---|---|
| TPS25 | 1.0 |
| 3 | 1.0 |
| 351 | 2.5 |
| 4 | 3.5 |

| Dia. $D_1$ (mm) | Hole Depth (l/d) | Order Number | Stock | Teeth | $L_3$ | $L_2$ | $L_1$ | $D_4$ | $D_7$ | Maximum radial adjustment (mm) | Insert | Clamp Screw | Wrench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17.0 | 2 | MVX1700X2F20 | ● | 2 | 41 | 56 | 99 | 20 | 25 | 0.5 | SOMX063005-UM | TPS25 | TIP07F |
| | 3 | MVX1700X3F20 | ● | 2 | 58 | 73 | 116 | 20 | 25 | 0.5 | 063005-UM | TPS25 | TIP07F |
| | 4 | MVX1700X4F20 | ● | 2 | 75 | 90 | 133 | 20 | 25 | 0.5 | 063005-UM | TPS25 | TIP07F |
| | 5 | MVX1700X5F20 | ● | 2 | 92 | 107 | 150 | 20 | 25 | 0.5 | 063005-UM | TPS25 | TIP07F |
| | 6 | MVX1700X6F20 | ● | 2 | 109 | 124 | 167 | 20 | 25 | 0.5 | 063005-UM | TPS25 | TIP07F |
| 17.5 | 2 | MVX1750X2F25 | ● | 2 | 42 | 62 | 112 | 25 | 32 | 0.45 | 063005-UM | TPS25 | TIP07F |
| | 3 | MVX1750X3F25 | ● | 2 | 59.5 | 79.5 | 129.5 | 25 | 32 | 0.45 | 063005-UM | TPS25 | TIP07F |
| | 4 | MVX1750X4F25 | ● | 2 | 77 | 97 | 147 | 25 | 32 | 0.45 | 063005-UM | TPS25 | TIP07F |
| | 5 | MVX1750X5F25 | ● | 2 | 94.5 | 114.5 | 164.5 | 25 | 32 | 0.45 | 063005-UM | TPS25 | TIP07F |
| | 6 | MVX1750X6F25 | ● | 2 | 112 | 132 | 182 | 25 | 32 | 0.45 | 063005-UM | TPS25 | TIP07F |
| 18.0 | 2 | MVX1800X2F25 | ● | 2 | 43 | 63 | 113 | 25 | 32 | 0.4 | 063005-UM | TPS25 | TIP07F |
| | 3 | MVX1800X3F25 | ● | 2 | 61 | 81 | 131 | 25 | 32 | 0.4 | 063005-UM | TPS25 | TIP07F |
| | 4 | MVX1800X4F25 | ● | 2 | 79 | 99 | 149 | 25 | 32 | 0.4 | 063005-UM | TPS25 | TIP07F |
| | 5 | MVX1800X5F25 | ● | 2 | 97 | 117 | 167 | 25 | 32 | 0.4 | 063005-UM | TPS25 | TIP07F |
| | 6 | MVX1800X6F25 | ● | 2 | 115 | 135 | 185 | 25 | 32 | 0.4 | 063005-UM | TPS25 | TIP07F |
| 18.5 | 2 | MVX1850X2F25 | ● | 2 | 44 | 64 | 114 | 25 | 32 | 0.35 | 063005-UM | TPS25 | TIP07F |
| | 3 | MVX1850X3F25 | ● | 2 | 62.5 | 82.5 | 132.5 | 25 | 32 | 0.35 | 063005-UM | TPS25 | TIP07F |
| | 4 | MVX1850X4F25 | ● | 2 | 81 | 101 | 151 | 25 | 32 | 0.35 | 063005-UM | TPS25 | TIP07F |
| | 5 | MVX1850X5F25 | ● | 2 | 99.5 | 119.5 | 169.5 | 25 | 32 | 0.35 | 063005-UM | TPS25 | TIP07F |
| | 6 | MVX1850X6F25 | ● | 2 | 118 | 138 | 188 | 25 | 32 | 0.35 | 063005-UM | TPS25 | TIP07F |
| 19.0 | 2 | MVX1900X2F25 | ● | 2 | 45 | 65 | 115 | 25 | 32 | 0.3 | 063005-UM | TPS25 | TIP07F |
| | 3 | MVX1900X3F25 | ● | 2 | 64 | 84 | 134 | 25 | 32 | 0.3 | 063005-UM | TPS25 | TIP07F |
| | 4 | MVX1900X4F25 | ● | 2 | 83 | 103 | 153 | 25 | 32 | 0.3 | 063005-UM | TPS25 | TIP07F |
| | 5 | MVX1900X5F25 | ● | 2 | 102 | 122 | 172 | 25 | 32 | 0.3 | 063005-UM | TPS25 | TIP07F |
| | 6 | MVX1900X6F25 | ● | 2 | 121 | 141 | 191 | 25 | 32 | 0.3 | 063005-UM | TPS25 | TIP07F |
| 19.5 | 2 | MVX1950X2F25 | ● | 2 | 46 | 66 | 116 | 25 | 32 | 0.25 | 063005-UM | TPS25 | TIP07F |
| | 3 | MVX1950X3F25 | ● | 2 | 65.5 | 85.5 | 135.5 | 25 | 32 | 0.25 | 063005-UM | TPS25 | TIP07F |
| | 4 | MVX1950X4F25 | ● | 2 | 85 | 105 | 155 | 25 | 32 | 0.25 | 063005-UM | TPS25 | TIP07F |
| | 5 | MVX1950X5F25 | ● | 2 | 104.5 | 124.5 | 174.5 | 25 | 32 | 0.25 | 063005-UM | TPS25 | TIP07F |
| | 6 | MVX1950X6F25 | ● | 2 | 124 | 144 | 194 | 25 | 32 | 0.25 | 063005-UM | TPS25 | TIP07F |
| 20.0 | 2 | MVX2000X2F25 | ● | 2 | 47 | 67 | 117 | 25 | 32 | 0.6 | 073505-UM | TPS3 | TIP10F |
| | 3 | MVX2000X3F25 | ● | 2 | 67 | 87 | 137 | 25 | 32 | 0.6 | 073505-UM | TPS3 | TIP10F |
| | 4 | MVX2000X4F25 | ● | 2 | 87 | 107 | 157 | 25 | 32 | 0.6 | 073505-UM | TPS3 | TIP10F |
| | 5 | MVX2000X5F25 | ● | 2 | 107 | 127 | 177 | 25 | 32 | 0.6 | 073505-UM | TPS3 | TIP10F |
| | 6 | MVX2000X6F25 | ● | 2 | 127 | 147 | 197 | 25 | 32 | 0.6 | 073505-UM | TPS3 | TIP10F |
| 20.5 | 2 | MVX2050X2F25 | ● | 2 | 48 | 68 | 118 | 25 | 32 | 0.55 | 073505-UM | TPS3 | TIP10F |
| | 3 | MVX2050X3F25 | ● | 2 | 68.5 | 88.5 | 138.5 | 25 | 32 | 0.55 | 073505-UM | TPS3 | TIP10F |

| Dia. $D_1$ (mm) | Hole Depth (l/d) | Order Number | Stock | Teeth | $L_3$ | $L_2$ | $L_1$ | $D_4$ | $D_7$ | Maximum radial adjustment (mm) | Insert | Clamp Screw | Wrench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21.0 | 2 | MVX2100X2F25 | ● | 2 | 49 | 69 | 119 | 25 | 32 | 0.5 | SOMX073505-UM | TPS3 | TIP10F |
| | 3 | MVX2100X3F25 | ● | 2 | 70 | 90 | 140 | 25 | 32 | 0.5 | 073505-UM | TPS3 | TIP10F |
| | 4 | MVX2100X4F25 | ● | 2 | 91 | 111 | 161 | 25 | 32 | 0.5 | 073505-UM | TPS3 | TIP10F |
| | 5 | MVX2100X5F25 | ● | 2 | 112 | 132 | 182 | 25 | 32 | 0.5 | 073505-UM | TPS3 | TIP10F |
| | 6 | MVX2100X6F25 | ● | 2 | 133 | 153 | 203 | 25 | 32 | 0.5 | 073505-UM | TPS3 | TIP10F |
| 21.5 | 2 | MVX2150X2F25 | ● | 2 | 50 | 70 | 120 | 25 | 32 | 0.45 | 073505-UM | TPS3 | TIP10F |
| | 3 | MVX2150X3F25 | ● | 2 | 71.5 | 91.5 | 141.5 | 25 | 32 | 0.45 | 073505-UM | TPS3 | TIP10F |
| 22.0 | 2 | MVX2200X2F25 | ● | 2 | 51 | 71 | 121 | 25 | 32 | 0.4 | 073505-UM | TPS3 | TIP10F |
| | 3 | MVX2200X3F25 | ● | 2 | 73 | 93 | 143 | 25 | 32 | 0.4 | 073505-UM | TPS3 | TIP10F |
| | 4 | MVX2200X4F25 | ● | 2 | 95 | 115 | 165 | 25 | 32 | 0.4 | 073505-UM | TPS3 | TIP10F |
| | 5 | MVX2200X5F25 | ● | 2 | 117 | 137 | 187 | 25 | 32 | 0.4 | 073505-UM | TPS3 | TIP10F |
| | 6 | MVX2200X6F25 | ● | 2 | 139 | 159 | 209 | 25 | 32 | 0.4 | 073505-UM | TPS3 | TIP10F |
| 22.5 | 2 | MVX2250X2F25 | ● | 2 | 52 | 72 | 122 | 25 | 32 | 0.35 | 073505-UM | TPS3 | TIP10F |
| | 3 | MVX2250X3F25 | ● | 2 | 74.5 | 94.5 | 144.5 | 25 | 32 | 0.35 | 073505-UM | TPS3 | TIP10F |
| 23.0 | 2 | MVX2300X2F25 | ● | 2 | 53 | 73 | 123 | 25 | 32 | 0.8 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2300X3F25 | ● | 2 | 76 | 96 | 146 | 25 | 32 | 0.8 | 084005-UM | TPS351 | TIP10F |
| | 4 | MVX2300X4F25 | ● | 2 | 99 | 119 | 169 | 25 | 32 | 0.8 | 084005-UM | TPS351 | TIP10F |
| | 5 | MVX2300X5F25 | ● | 2 | 122 | 142 | 192 | 25 | 32 | 0.8 | 084005-UM | TPS351 | TIP10F |
| | 6 | MVX2300X6F25 | ● | 2 | 145 | 165 | 215 | 25 | 32 | 0.8 | 084005-UM | TPS351 | TIP10F |
| 23.5 | 2 | MVX2350X2F25 | ● | 2 | 54 | 74 | 124 | 25 | 32 | 0.75 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2350X3F25 | ● | 2 | 77.5 | 97.5 | 147.5 | 25 | 32 | 0.75 | 084005-UM | TPS351 | TIP10F |
| 24.0 | 2 | MVX2400X2F25 | ● | 2 | 55 | 75 | 125 | 25 | 32 | 0.7 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2400X3F25 | ● | 2 | 79 | 99 | 149 | 25 | 32 | 0.7 | 084005-UM | TPS351 | TIP10F |
| | 4 | MVX2400X4F25 | ● | 2 | 103 | 123 | 173 | 25 | 32 | 0.7 | 084005-UM | TPS351 | TIP10F |
| | 5 | MVX2400X5F25 | ● | 2 | 127 | 147 | 197 | 25 | 32 | 0.7 | 084005-UM | TPS351 | TIP10F |
| | 6 | MVX2400X6F25 | ● | 2 | 151 | 171 | 221 | 25 | 32 | 0.7 | 084005-UM | TPS351 | TIP10F |
| 24.5 | 2 | MVX2450X2F25 | ● | 2 | 56 | 76 | 126 | 25 | 32 | 0.65 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2450X3F25 | ● | 2 | 80.5 | 100.5 | 150.5 | 25 | 32 | 0.65 | 084005-UM | TPS351 | TIP10F |
| 25.0 | 2 | MVX2500X2F25 | ● | 2 | 57 | 77 | 127 | 25 | 32 | 0.6 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2500X3F25 | ● | 2 | 82 | 102 | 152 | 25 | 32 | 0.6 | 084005-UM | TPS351 | TIP10F |
| | 4 | MVX2500X4F25 | ● | 2 | 107 | 127 | 177 | 25 | 32 | 0.6 | 084005-UM | TPS351 | TIP10F |
| | 5 | MVX2500X5F25 | ● | 2 | 132 | 152 | 202 | 25 | 32 | 0.6 | 084005-UM | TPS351 | TIP10F |
| | 6 | MVX2500X6F25 | ● | 2 | 157 | 177 | 227 | 25 | 32 | 0.6 | 084005-UM | TPS351 | TIP10F |
| 25.5 | 2 | MVX2550X2F25 | ● | 2 | 58 | 78 | 128 | 25 | 32 | 0.6 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2550X3F25 | ● | 2 | 83.5 | 103.5 | 153.5 | 25 | 32 | 0.6 | 084005-UM | TPS351 | TIP10F |
| 26.0 | 2 | MVX2600X2F32 | ● | 2 | 59 | 79 | 134 | 32 | 42 | 0.5 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2600X3F32 | ● | 2 | 85 | 105 | 160 | 32 | 42 | 0.5 | 084005-UM | TPS351 | TIP10F |
| | 4 | MVX2600X4F32 | ● | 2 | 111 | 131 | 186 | 32 | 42 | 0.5 | 084005-UM | TPS351 | TIP10F |
| | 5 | MVX2600X5F32 | ● | 2 | 137 | 157 | 212 | 32 | 42 | 0.5 | 084005-UM | TPS351 | TIP10F |
| | 6 | MVX2600X6F32 | ● | 2 | 163 | 183 | 238 | 32 | 42 | 0.5 | 084005-UM | TPS351 | TIP10F |
| 26.5 | 2 | MVX2650X2F32 | ● | 2 | 60 | 80 | 135 | 32 | 42 | 0.5 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2650X3F32 | ● | 2 | 86.5 | 106.5 | 161.5 | 32 | 42 | 0.5 | 084005-UM | TPS351 | TIP10F |
| 27.0 | 2 | MVX2700X2F32 | ● | 2 | 61 | 81 | 136 | 32 | 42 | 0.45 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2700X3F32 | ● | 2 | 88 | 108 | 163 | 32 | 42 | 0.45 | 084005-UM | TPS351 | TIP10F |
| | 4 | MVX2700X4F32 | ● | 2 | 115 | 135 | 190 | 32 | 42 | 0.45 | 084005-UM | TPS351 | TIP10F |
| | 5 | MVX2700X5F32 | ● | 2 | 142 | 162 | 217 | 32 | 42 | 0.45 | 084005-UM | TPS351 | TIP10F |
| | 6 | MVX2700X6F32 | ● | 2 | 169 | 189 | 244 | 32 | 42 | 0.45 | 084005-UM | TPS351 | TIP10F |
| 27.5 | 2 | MVX2750X2F32 | ● | 2 | 62 | 82 | 137 | 32 | 42 | 0.4 | 084005-UM | TPS351 | TIP10F |
| | 3 | MVX2750X3F32 | ● | 2 | 89.5 | 109.5 | 164.5 | 32 | 42 | 0.4 | 084005-UM | TPS351 | TIP10F |
| 28.0 | 2 | MVX2800X2F32 | ● | 2 | 63 | 83 | 138 | 32 | 42 | 0.85 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX2800X3F32 | ● | 2 | 91 | 111 | 166 | 32 | 42 | 0.85 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX2800X4F32 | ● | 2 | 119 | 139 | 194 | 32 | 42 | 0.85 | 094506-UM | TPS4 | TIP15W |
| | 5 | MVX2800X5F32 | ● | 2 | 147 | 167 | 222 | 32 | 42 | 0.85 | 094506-UM | TPS4 | TIP15W |
| | 6 | MVX2800X6F32 | ● | 2 | 175 | 195 | 250 | 32 | 42 | 0.85 | 094506-UM | TPS4 | TIP15W |

| Dia. $D_1$ (mm) | Hole Depth (l/d) | Order Number | Stock | Teeth | $L_3$ | $L_2$ | $L_1$ | $D_4$ | $D_7$ | Maximum radial adjustment (mm) | Insert | Clamp Screw | Wrench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28.5 | 2 | MVX2850X2F32 | ● | 2 | 64 | 84 | 139 | 32 | 42 | 0.8 | SOMX094506-UM | TPS4 | TIP15W |
| | 3 | MVX2850X3F32 | ● | 2 | 92.5 | 112.5 | 167.5 | 32 | 42 | 0.8 | 094506-UM | TPS4 | TIP15W |
| 29.0 | 2 | MVX2900X2F32 | ● | 2 | 65 | 85 | 140 | 32 | 42 | 0.75 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX2900X3F32 | ● | 2 | 94 | 114 | 169 | 32 | 42 | 0.75 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX2900X4F32 | ● | 2 | 123 | 143 | 198 | 32 | 42 | 0.75 | 094506-UM | TPS4 | TIP15W |
| | 5 | MVX2900X5F32 | ● | 2 | 152 | 172 | 227 | 32 | 42 | 0.75 | 094506-UM | TPS4 | TIP15W |
| | 6 | MVX2900X6F32 | ● | 2 | 181 | 201 | 256 | 32 | 42 | 0.75 | 094506-UM | TPS4 | TIP15W |
| 29.5 | 2 | MVX2950X2F32 | ● | 2 | 66 | 86 | 141 | 32 | 42 | 0.7 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX2950X3F32 | ● | 2 | 95.5 | 115.5 | 170.5 | 32 | 42 | 0.7 | 094506-UM | TPS4 | TIP15W |
| 30.0 | 2 | MVX3000X2F32 | ● | 2 | 67 | 87 | 142 | 32 | 42 | 0.65 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX3000X3F32 | ● | 2 | 97 | 117 | 172 | 32 | 42 | 0.65 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX3000X4F32 | ● | 2 | 127 | 147 | 202 | 32 | 42 | 0.65 | 094506-UM | TPS4 | TIP15W |
| | 5 | MVX3000X5F32 | ● | 2 | 157 | 177 | 232 | 32 | 42 | 0.65 | 094506-UM | TPS4 | TIP15W |
| | 6 | MVX3000X6F32 | ● | 2 | 187 | 207 | 262 | 32 | 42 | 0.65 | 094506-UM | TPS4 | TIP15W |
| 30.5 | 3 | MVX3050X3F32 | ● | 2 | 98.5 | 118.5 | 173.5 | 32 | 42 | 0.6 | 094506-UM | TPS4 | TIP15W |
| 31.0 | 2 | MVX3100X2F32 | ● | 2 | 69 | 89 | 144 | 32 | 42 | 0.55 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX3100X3F32 | ● | 2 | 100 | 120 | 175 | 32 | 42 | 0.55 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX3100X4F32 | ● | 2 | 131 | 151 | 206 | 32 | 42 | 0.55 | 094506-UM | TPS4 | TIP15W |
| | 2 | MVX3100X2F40 | ● | 2 | 69 | 89 | 154 | 40 | 50 | 0.55 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX3100X3F40 | ● | 2 | 100 | 120 | 185 | 40 | 50 | 0.55 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX3100X4F40 | ● | 2 | 131 | 151 | 216 | 40 | 50 | 0.55 | 094506-UM | TPS4 | TIP15W |
| | 5 | MVX3100X5F40 | ● | 2 | 162 | 182 | 247 | 40 | 50 | 0.55 | 094506-UM | TPS4 | TIP15W |
| | 6 | MVX3100X6F40 | ● | 2 | 193 | 213 | 278 | 40 | 50 | 0.55 | 094506-UM | TPS4 | TIP15W |
| 31.5 | 3 | MVX3150X3F40 | ● | 2 | 101.5 | 121.5 | 186.5 | 40 | 50 | 0.55 | 094506-UM | TPS4 | TIP15W |
| 32.0 | 2 | MVX3200X2F32 | ● | 2 | 71 | 91 | 146 | 32 | 42 | 0.45 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX3200X3F32 | ● | 2 | 103 | 123 | 178 | 32 | 42 | 0.45 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX3200X4F32 | ● | 2 | 135 | 155 | 210 | 32 | 42 | 0.45 | 094506-UM | TPS4 | TIP15W |
| | 2 | MVX3200X2F40 | ● | 2 | 71 | 91 | 156 | 40 | 50 | 0.45 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX3200X3F40 | ● | 2 | 103 | 123 | 188 | 40 | 50 | 0.45 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX3200X4F40 | ● | 2 | 135 | 155 | 220 | 40 | 50 | 0.45 | 094506-UM | TPS4 | TIP15W |
| | 5 | MVX3200X5F40 | ● | 2 | 167 | 187 | 252 | 40 | 50 | 0.45 | 094506-UM | TPS4 | TIP15W |
| | 6 | MVX3200X6F40 | ● | 2 | 199 | 219 | 284 | 40 | 50 | 0.45 | 094506-UM | TPS4 | TIP15W |
| 32.5 | 3 | MVX3250X3F40 | ● | 2 | 104.5 | 124.5 | 189.5 | 40 | 50 | 0.45 | 094506-UM | TPS4 | TIP15W |
| 33.0 | 2 | MVX3300X2F32 | ● | 2 | 73 | 93 | 148 | 32 | 42 | 0.4 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX3300X3F32 | ● | 2 | 106 | 126 | 181 | 32 | 42 | 0.4 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX3300X4F32 | ● | 2 | 139 | 159 | 214 | 32 | 42 | 0.4 | 094506-UM | TPS4 | TIP15W |
| | 2 | MVX3300X2F40 | ● | 2 | 73 | 93 | 158 | 40 | 50 | 0.4 | 094506-UM | TPS4 | TIP15W |
| | 3 | MVX3300X3F40 | ● | 2 | 106 | 126 | 191 | 40 | 50 | 0.4 | 094506-UM | TPS4 | TIP15W |
| | 4 | MVX3300X4F40 | ● | 2 | 139 | 159 | 224 | 40 | 50 | 0.4 | 094506-UM | TPS4 | TIP15W |
| | 5 | MVX3300X5F40 | ● | 2 | 172 | 192 | 257 | 40 | 50 | 0.4 | 094506-UM | TPS4 | TIP15W |
| | 6 | MVX3300X6F40 | ● | 2 | 205 | 225 | 290 | 40 | 50 | 0.4 | 094506-UM | TPS4 | TIP15W |

NEW

| $D_1$ (mm) | Hole Depth (l/d) | Order Number | Stock | Number of Teeth | $L_3$ | $L_2$ | $L_1$ | $D_4$ | $D_7$ | A (mm) | Insert Number | Clamp Screw | Wrench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33.5 | 3 | MVX3350X3F40 | ● | 2 | 107.5 | 127.5 | 192.5 | 40 | 50 | 1.2 | SOMX115506-○○ | TPS43 | TIP15W |
| 34.0 | 2 | MVX3400X2F40 | ● | 2 | 75 | 105 | 170 | 40 | 50 | 1.1 | SOMX115506-○○ | TPS43 | TIP15W |
| | 3 | MVX3400X3F40 | ● | 2 | 109 | 139 | 204 | 40 | 50 | 1.1 | SOMX115506-○○ | TPS43 | TIP15W |
| | 4 | MVX3400X4F40 | ● | 2 | 143 | 173 | 238 | 40 | 50 | 1.1 | SOMX115506-○○ | TPS43 | TIP15W |
| | 5 | MVX3400X5F40 | ● | 2 | 177 | 207 | 272 | 40 | 50 | 1.1 | SOMX115506-○○ | TPS43 | TIP15W |
| | 6 | MVX3400X6F40 | ● | 2 | 211 | 241 | 306 | 40 | 50 | 1.1 | SOMX115506-○○ | TPS43 | TIP15W |
| 34.5 | 3 | MVX3450X3F40 | ● | 2 | 110.5 | 140.5 | 205.5 | 40 | 50 | 1.1 | SOMX115506-○○ | TPS43 | TIP15W |
| 35.0 | 2 | MVX3500X2F40 | ● | 2 | 77 | 107 | 172 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 3 | MVX3500X3F40 | ● | 2 | 112 | 142 | 207 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 4 | MVX3500X4F40 | ● | 2 | 147 | 177 | 242 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 5 | MVX3500X5F40 | ● | 2 | 182 | 212 | 277 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 6 | MVX3500X6F40 | ● | 2 | 217 | 247 | 312 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| 35.5 | 3 | MVX3550X3F40 | ● | 2 | 113.5 | 143.5 | 208.5 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| 36.0 | 2 | MVX3600X2F40 | ● | 2 | 79 | 109 | 174 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 3 | MVX3600X3F40 | ● | 2 | 115 | 145 | 210 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 4 | MVX3600X4F40 | ● | 2 | 151 | 181 | 246 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 5 | MVX3600X5F40 | ● | 2 | 187 | 217 | 282 | 40 | 50 | 1.0 | SOMX115506-○○ | TPS43 | TIP15W |
| | 6 | MVX3600X6F40 | ● | 2 | 223 | 253 | 318 | 40 | 50 | 0.9 | SOMX115506-○○ | TPS43 | TIP15W |
| 37.0 | 2 | MVX3700X2F40 | ● | 2 | 81 | 111 | 176 | 40 | 50 | 0.9 | SOMX115506-○○ | TPS43 | TIP15W |
| | 3 | MVX3700X3F40 | ● | 2 | 118 | 148 | 213 | 40 | 50 | 0.9 | SOMX115506-○○ | TPS43 | TIP15W |
| | 4 | MVX3700X4F40 | ● | 2 | 155 | 185 | 250 | 40 | 50 | 0.9 | SOMX115506-○○ | TPS43 | TIP15W |
| | 5 | MVX3700X5F40 | ● | 2 | 192 | 222 | 287 | 40 | 50 | 0.9 | SOMX115506-○○ | TPS43 | TIP15W |
| | 6 | MVX3700X6F40 | ● | 2 | 229 | 259 | 324 | 40 | 50 | 0.9 | SOMX115506-○○ | TPS43 | TIP15W |
| 38.0 | 2 | MVX3800X2F40 | ● | 2 | 83 | 113 | 178 | 40 | 50 | 0.8 | SOMX115506-○○ | TPS43 | TIP15W |
| | 3 | MVX3800X3F40 | ● | 2 | 121 | 151 | 216 | 40 | 50 | 0.8 | SOMX115506-○○ | TPS43 | TIP15W |
| | 4 | MVX3800X4F40 | ● | 2 | 159 | 189 | 254 | 40 | 50 | 0.8 | SOMX115506-○○ | TPS43 | TIP15W |
| | 5 | MVX3800X5F40 | ● | 2 | 197 | 227 | 292 | 40 | 50 | 0.8 | SOMX115506-○○ | TPS43 | TIP15W |
| | 6 | MVX3800X6F40 | ● | 2 | 235 | 265 | 330 | 40 | 50 | 0.8 | SOMX115506-○○ | TPS43 | TIP15W |
| 39.0 | 2 | MVX3900X2F40 | ● | 2 | 85 | 115 | 180 | 40 | 50 | 0.7 | SOMX115506-○○ | TPS43 | TIP15W |
| | 3 | MVX3900X3F40 | ● | 2 | 124 | 154 | 219 | 40 | 50 | 0.7 | SOMX115506-○○ | TPS43 | TIP15W |
| | 4 | MVX3900X4F40 | ● | 2 | 163 | 193 | 258 | 40 | 50 | 0.7 | SOMX115506-○○ | TPS43 | TIP15W |
| | 5 | MVX3900X5F40 | ● | 2 | 202 | 232 | 297 | 40 | 50 | 0.7 | SOMX115506-○○ | TPS43 | TIP15W |
| | 6 | MVX3900X6F40 | ● | 2 | 241 | 271 | 336 | 40 | 50 | 0.7 | SOMX115506-○○ | TPS43 | TIP15W |
| 40.0 | 2 | MVX4000X2F40 | ● | 2 | 87 | 117 | 182 | 40 | 50 | 1.5 | SOMX136008-○○ | TPS43 | TIP15W |
| | 3 | MVX4000X3F40 | ● | 2 | 127 | 157 | 222 | 40 | 50 | 1.5 | SOMX136008-○○ | TPS43 | TIP15W |
| | 4 | MVX4000X4F40 | ● | 2 | 167 | 197 | 262 | 40 | 50 | 1.5 | SOMX136008-○○ | TPS43 | TIP15W |
| | 5 | MVX4000X5F40 | ● | 2 | 207 | 237 | 302 | 40 | 50 | 1.5 | SOMX136008-○○ | TPS43 | TIP15W |
| | 6 | MVX4000X6F40 | ● | 2 | 247 | 277 | 342 | 40 | 50 | 1.4 | SOMX136008-○○ | TPS43 | TIP15W |
| 41.0 | 2 | MVX4100X2F40 | ● | 2 | 89 | 119 | 184 | 40 | 50 | 1.4 | SOMX136008-○○ | TPS43 | TIP15W |
| | 3 | MVX4100X3F40 | ● | 2 | 130 | 160 | 225 | 40 | 50 | 1.4 | SOMX136008-○○ | TPS43 | TIP15W |
| | 4 | MVX4100X4F40 | ● | 2 | 171 | 201 | 266 | 40 | 50 | 1.4 | SOMX136008-○○ | TPS43 | TIP15W |
| | 5 | MVX4100X5F40 | ● | 2 | 212 | 242 | 307 | 40 | 50 | 1.4 | SOMX136008-○○ | TPS43 | TIP15W |
| | 6 | MVX4100X6F40 | ● | 2 | 253 | 283 | 348 | 40 | 50 | 1.4 | SOMX136008-○○ | TPS43 | TIP15W |
| 42.0 | 2 | MVX4200X2F40 | ● | 2 | 91 | 121 | 186 | 40 | 50 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |
| | 3 | MVX4200X3F40 | ● | 2 | 133 | 163 | 228 | 40 | 50 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |
| | 4 | MVX4200X4F40 | ● | 2 | 175 | 205 | 270 | 40 | 63 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |
| | 5 | MVX4200X5F40 | ● | 2 | 217 | 247 | 312 | 40 | 63 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |
| | 6 | MVX4200X6F40 | ● | 2 | 259 | 289 | 354 | 40 | 63 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |
| | 4 | MVX4200X4F50 | ★ | 2 | 175 | 205 | 280 | 50 | 63 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |
| | 5 | MVX4200X5F50 | ★ | 2 | 217 | 247 | 322 | 50 | 63 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |
| | 6 | MVX4200X6F50 | ★ | 2 | 259 | 289 | 364 | 50 | 63 | 1.3 | SOMX136008-○○ | TPS43 | TIP15W |

NEW

| $D_1$ (mm) | Hole Depth (l/d) | Order Number | Stock | Number of Teeth | $L_3$ | $L_2$ | $L_1$ | $D_4$ | $D_7$ | A (mm) | Insert Number | Clamp Screw | Wrench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 43.0 | 2 | **MVX4300X2F40** | ● | 2 | 93 | 123 | 188 | 40 | 50 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 3 | **MVX4300X3F40** | ● | 2 | 136 | 166 | 231 | 40 | 50 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4300X4F40** | ● | 2 | 179 | 209 | 274 | 40 | 63 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4300X5F40** | ● | 2 | 222 | 252 | 317 | 40 | 63 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 6 | **MVX4300X6F40** | ● | 2 | 265 | 295 | 360 | 40 | 63 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4300X4F50** | ★ | 2 | 179 | 209 | 284 | 50 | 63 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4300X5F50** | ★ | 2 | 222 | 252 | 327 | 50 | 63 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 6 | **MVX4300X6F50** | ★ | 2 | 265 | 295 | 370 | 50 | 63 | 1.2 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| 44.0 | 2 | **MVX4400X2F40** | ● | 2 | 95 | 125 | 190 | 40 | 50 | 1.1 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 3 | **MVX4400X3F40** | ● | 2 | 139 | 169 | 234 | 40 | 50 | 1.1 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4400X4F40** | ● | 2 | 183 | 213 | 278 | 40 | 63 | 1.1 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4400X5F40** | ● | 2 | 227 | 257 | 322 | 40 | 63 | 1.1 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4400X4F50** | ★ | 2 | 183 | 213 | 288 | 50 | 63 | 1.1 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4400X5F50** | ★ | 2 | 227 | 257 | 332 | 50 | 63 | 1.1 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| 45.0 | 2 | **MVX4500X2F40** | ● | 2 | 97 | 127 | 192 | 40 | 50 | 1.0 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 3 | **MVX4500X3F40** | ● | 2 | 142 | 172 | 237 | 40 | 50 | 1.0 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4500X4F40** | ● | 2 | 187 | 217 | 282 | 40 | 63 | 1.0 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4500X5F40** | ● | 2 | 232 | 262 | 327 | 40 | 63 | 1.0 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4500X4F50** | ★ | 2 | 187 | 217 | 292 | 50 | 63 | 1.0 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4500X5F50** | ★ | 2 | 232 | 262 | 337 | 50 | 63 | 1.0 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| 46.0 | 2 | **MVX4600X2F40** | ● | 2 | 99 | 129 | 194 | 40 | 50 | 0.9 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 3 | **MVX4600X3F40** | ● | 2 | 145 | 175 | 240 | 40 | 50 | 0.9 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4600X4F40** | ● | 2 | 191 | 221 | 286 | 40 | 63 | 0.9 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4600X5F40** | ● | 2 | 237 | 267 | 332 | 40 | 63 | 0.9 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 4 | **MVX4600X4F50** | ★ | 2 | 191 | 221 | 296 | 50 | 63 | 0.9 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| | 5 | **MVX4600X5F50** | ★ | 2 | 237 | 267 | 342 | 50 | 63 | 0.9 | **SOMX136008-○○** | TPS43 | Z TIP15W |
| 47.0 | 2 | **MVX4700X2F40** | ● | 2 | 101 | 141 | 206 | 40 | 63 | 1.9 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 3 | **MVX4700X3F40** | ● | 2 | 148 | 188 | 253 | 40 | 63 | 1.9 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 4 | **MVX4700X4F40** | ● | 2 | 195 | 235 | 300 | 40 | 63 | 1.9 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 5 | **MVX4700X5F40** | ● | 2 | 242 | 282 | 347 | 40 | 63 | 1.9 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 4 | **MVX4700X4F50** | ★ | 2 | 195 | 235 | 310 | 50 | 63 | 1.9 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 5 | **MVX4700X5F50** | ★ | 2 | 242 | 282 | 357 | 50 | 63 | 1.9 | **SOMX166508-○○** | TPS54 | X TIP25D |
| 48.0 | 2 | **MVX4800X2F40** | ● | 2 | 103 | 143 | 208 | 40 | 63 | 1.8 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 3 | **MVX4800X3F40** | ● | 2 | 151 | 191 | 256 | 40 | 63 | 1.8 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 4 | **MVX4800X4F40** | ● | 2 | 199 | 239 | 304 | 40 | 63 | 1.8 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 5 | **MVX4800X5F40** | ● | 2 | 247 | 287 | 352 | 40 | 63 | 1.8 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 4 | **MVX4800X4F50** | ★ | 2 | 199 | 239 | 314 | 50 | 63 | 1.8 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 5 | **MVX4800X5F50** | ★ | 2 | 247 | 287 | 362 | 50 | 63 | 1.8 | **SOMX166508-○○** | TPS54 | X TIP25D |
| 49.0 | 2 | **MVX4900X2F40** | ● | 2 | 105 | 145 | 210 | 40 | 63 | 1.7 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 3 | **MVX4900X3F40** | ● | 2 | 154 | 194 | 259 | 40 | 63 | 1.7 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 4 | **MVX4900X4F40** | ● | 2 | 203 | 243 | 308 | 40 | 63 | 1.7 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 5 | **MVX4900X5F40** | ● | 2 | 252 | 292 | 357 | 40 | 63 | 1.7 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 4 | **MVX4900X4F50** | ★ | 2 | 203 | 243 | 318 | 50 | 63 | 1.7 | **SOMX166508-○○** | TPS54 | X TIP25D |
| | 5 | **MVX4900X5F50** | ★ | 2 | 252 | 292 | 367 | 50 | 63 | 1.7 | **SOMX166508-○○** | TPS54 | X TIP25D |

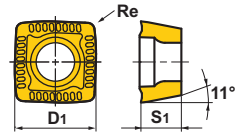
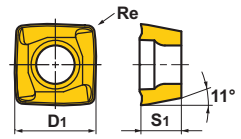
NEW

| $D_1$ (mm) | Hole Depth (l/d) | Order Number | Stock | Number of Teeth | $L_3$ | $L_2$ | $L_1$ | $D_4$ | $D_7$ | A (mm) | Insert Number | Clamp Screw | Wrench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50.0 | 2 | MVX5000X2F40 | ● | 2 | 107 | 147 | 212 | 40 | 63 | 1.6 | SOMX166508-○○ | TPS54 | TIP25D |
| | 3 | MVX5000X3F40 | ● | 2 | 157 | 197 | 262 | 40 | 63 | 1.6 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5000X4F40 | ● | 2 | 207 | 247 | 312 | 40 | 63 | 1.6 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5000X5F40 | ● | 2 | 257 | 297 | 362 | 40 | 63 | 1.6 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5000X4F50 | ★ | 2 | 207 | 247 | 322 | 50 | 63 | 1.6 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5000X5F50 | ★ | 2 | 257 | 297 | 372 | 50 | 63 | 1.6 | SOMX166508-○○ | TPS54 | TIP25D |
| 51.0 | 2 | MVX5100X2F40 | ● | 2 | 109 | 149 | 214 | 40 | 63 | 1.5 | SOMX166508-○○ | TPS54 | TIP25D |
| | 3 | MVX5100X3F40 | ● | 2 | 160 | 200 | 265 | 40 | 63 | 1.5 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5100X4F40 | ● | 2 | 211 | 251 | 316 | 40 | 63 | 1.5 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5100X5F40 | ● | 2 | 262 | 302 | 367 | 40 | 63 | 1.5 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5100X4F50 | ★ | 2 | 211 | 251 | 326 | 50 | 63 | 1.5 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5100X5F50 | ★ | 2 | 262 | 302 | 377 | 50 | 63 | 1.5 | SOMX166508-○○ | TPS54 | TIP25D |
| 52.0 | 2 | MVX5200X2F40 | ● | 2 | 111 | 151 | 216 | 40 | 63 | 1.4 | SOMX166508-○○ | TPS54 | TIP25D |
| | 3 | MVX5200X3F40 | ● | 2 | 163 | 203 | 268 | 40 | 63 | 1.4 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5200X4F40 | ● | 2 | 215 | 255 | 320 | 40 | 63 | 1.4 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5200X5F40 | ● | 2 | 267 | 307 | 372 | 40 | 63 | 1.4 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5200X4F50 | ★ | 2 | 215 | 255 | 330 | 50 | 63 | 1.4 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5200X5F50 | ★ | 2 | 267 | 307 | 382 | 50 | 63 | 1.4 | SOMX166508-○○ | TPS54 | TIP25D |
| 53.0 | 2 | MVX5300X2F40 | ● | 2 | 113 | 153 | 218 | 40 | 63 | 1.3 | SOMX166508-○○ | TPS54 | TIP25D |
| | 3 | MVX5300X3F40 | ● | 2 | 166 | 206 | 271 | 40 | 63 | 1.3 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5300X4F40 | ● | 2 | 219 | 259 | 324 | 40 | 63 | 1.3 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5300X5F40 | ● | 2 | 272 | 312 | 377 | 40 | 63 | 1.3 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5300X4F50 | ★ | 2 | 219 | 259 | 334 | 50 | 63 | 1.3 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5300X5F50 | ★ | 2 | 272 | 312 | 387 | 50 | 63 | 1.3 | SOMX166508-○○ | TPS54 | TIP25D |
| 54.0 | 2 | MVX5400X2F40 | ● | 2 | 115 | 155 | 220 | 40 | 63 | 1.2 | SOMX166508-○○ | TPS54 | TIP25D |
| | 3 | MVX5400X3F40 | ● | 2 | 169 | 209 | 274 | 40 | 63 | 1.2 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5400X4F40 | ● | 2 | 223 | 263 | 328 | 40 | 63 | 1.2 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5400X5F40 | ● | 2 | 277 | 317 | 382 | 40 | 63 | 1.2 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5400X4F50 | ★ | 2 | 223 | 263 | 338 | 50 | 63 | 1.2 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5400X5F50 | ★ | 2 | 277 | 317 | 392 | 50 | 63 | 1.2 | SOMX166508-○○ | TPS54 | TIP25D |
| 55.0 | 2 | MVX5500X2F40 | ● | 2 | 117 | 157 | 222 | 40 | 63 | 1.1 | SOMX166508-○○ | TPS54 | TIP25D |
| | 3 | MVX5500X3F40 | ● | 2 | 172 | 212 | 277 | 40 | 63 | 1.1 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5500X4F40 | ● | 2 | 227 | 267 | 332 | 40 | 63 | 1.1 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5500X5F40 | ● | 2 | 282 | 322 | 387 | 40 | 63 | 1.1 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5500X4F50 | ★ | 2 | 227 | 267 | 342 | 50 | 63 | 1.1 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5500X5F50 | ★ | 2 | 282 | 322 | 397 | 50 | 63 | 1.1 | SOMX166508-○○ | TPS54 | TIP25D |
| 56.0 | 2 | MVX5600X2F40 | ● | 2 | 119 | 159 | 224 | 40 | 63 | 1.0 | SOMX166508-○○ | TPS54 | TIP25D |
| | 3 | MVX5600X3F40 | ● | 2 | 175 | 215 | 280 | 40 | 63 | 1.0 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5600X4F40 | ● | 2 | 231 | 271 | 336 | 40 | 63 | 1.0 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5600X5F40 | ● | 2 | 287 | 327 | 392 | 40 | 63 | 1.0 | SOMX166508-○○ | TPS54 | TIP25D |
| | 4 | MVX5600X4F50 | ★ | 2 | 231 | 271 | 346 | 50 | 63 | 1.0 | SOMX166508-○○ | TPS54 | TIP25D |
| | 5 | MVX5600X5F50 | ★ | 2 | 287 | 327 | 402 | 50 | 63 | 1.0 | SOMX166508-○○ | TPS54 | TIP25D |

NEW

| $D_1$ (mm) | Hole Depth (l/d) | Order Number | Stock | Number of Teeth | $L_3$ | $L_2$ | $L_1$ | $D_4$ | $D_7$ | A (mm) | Insert Number | Clamp Screw | Wrench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57.0 | 2 | MVX5700X2F40 | ● | 2 | 121 | 161 | 226 | 40 | 68 | 1.5 | SOMX187008-○○ | TPS54 | TIP25D |
| | 3 | MVX5700X3F40 | ● | 2 | 178 | 218 | 283 | 40 | 68 | 1.5 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX5700X4F40 | ● | 2 | 235 | 275 | 340 | 40 | 68 | 1.5 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX5700X5F40 | ● | 2 | 292 | 332 | 397 | 40 | 68 | 1.5 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX5700X4F50 | ★ | 2 | 235 | 275 | 350 | 50 | 68 | 1.5 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX5700X5F50 | ★ | 2 | 292 | 332 | 407 | 50 | 68 | 1.5 | SOMX187008-○○ | TPS54 | TIP25D |
| 58.0 | 2 | MVX5800X2F40 | ● | 2 | 123 | 163 | 228 | 40 | 68 | 1.4 | SOMX187008-○○ | TPS54 | TIP25D |
| | 3 | MVX5800X3F40 | ● | 2 | 181 | 221 | 286 | 40 | 68 | 1.4 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX5800X4F40 | ● | 2 | 239 | 279 | 344 | 40 | 68 | 1.4 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX5800X5F40 | ● | 2 | 297 | 337 | 402 | 40 | 68 | 1.4 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX5800X4F50 | ★ | 2 | 239 | 279 | 354 | 50 | 68 | 1.4 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX5800X5F50 | ★ | 2 | 297 | 337 | 412 | 50 | 68 | 1.4 | SOMX187008-○○ | TPS54 | TIP25D |
| 59.0 | 2 | MVX5900X2F40 | ● | 2 | 125 | 165 | 230 | 40 | 68 | 1.3 | SOMX187008-○○ | TPS54 | TIP25D |
| | 3 | MVX5900X3F40 | ● | 2 | 184 | 224 | 289 | 40 | 68 | 1.3 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX5900X4F40 | ● | 2 | 243 | 283 | 348 | 40 | 68 | 1.3 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX5900X5F40 | ● | 2 | 302 | 342 | 407 | 40 | 68 | 1.3 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX5900X4F50 | ★ | 2 | 243 | 283 | 358 | 50 | 68 | 1.3 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX5900X5F50 | ★ | 2 | 302 | 342 | 417 | 50 | 68 | 1.3 | SOMX187008-○○ | TPS54 | TIP25D |
| 60.0 | 2 | MVX6000X2F40 | ● | 2 | 127 | 167 | 232 | 40 | 68 | 1.2 | SOMX187008-○○ | TPS54 | TIP25D |
| | 3 | MVX6000X3F40 | ● | 2 | 187 | 227 | 292 | 40 | 68 | 1.2 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6000X4F40 | ● | 2 | 247 | 287 | 352 | 40 | 68 | 1.2 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6000X5F40 | ● | 2 | 307 | 347 | 412 | 40 | 68 | 1.2 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6000X4F50 | ★ | 2 | 247 | 287 | 362 | 50 | 68 | 1.2 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6000X5F50 | ★ | 2 | 307 | 347 | 422 | 50 | 68 | 1.2 | SOMX187008-○○ | TPS54 | TIP25D |
| 61.0 | 2 | MVX6100X2F40 | ● | 2 | 129 | 169 | 234 | 40 | 68 | 1.1 | SOMX187008-○○ | TPS54 | TIP25D |
| | 3 | MVX6100X3F40 | ● | 2 | 190 | 230 | 295 | 40 | 68 | 1.1 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6100X4F40 | ● | 2 | 251 | 291 | 356 | 40 | 68 | 1.1 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6100X5F40 | ● | 2 | 312 | 352 | 417 | 40 | 68 | 1.1 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6100X4F50 | ★ | 2 | 251 | 291 | 366 | 50 | 68 | 1.1 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6100X5F50 | ★ | 2 | 312 | 352 | 427 | 50 | 68 | 1.1 | SOMX187008-○○ | TPS54 | TIP25D |
| 62.0 | 2 | MVX6200X2F40 | ● | 2 | 131 | 171 | 236 | 40 | 68 | 1.0 | SOMX187008-○○ | TPS54 | TIP25D |
| | 3 | MVX6200X3F40 | ● | 2 | 193 | 233 | 298 | 40 | 68 | 1.0 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6200X4F40 | ● | 2 | 255 | 295 | 360 | 40 | 68 | 1.0 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6200X5F40 | ● | 2 | 317 | 357 | 422 | 40 | 68 | 1.0 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6200X4F50 | ★ | 2 | 255 | 295 | 370 | 50 | 68 | 1.0 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6200X5F50 | ★ | 2 | 317 | 357 | 432 | 50 | 68 | 1.0 | SOMX187008-○○ | TPS54 | TIP25D |
| 63.0 | 2 | MVX6300X2F40 | ● | 2 | 133 | 173 | 238 | 40 | 68 | 0.8 | SOMX187008-○○ | TPS54 | TIP25D |
| | 3 | MVX6300X3F40 | ● | 2 | 196 | 236 | 301 | 40 | 68 | 0.8 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6300X4F40 | ● | 2 | 259 | 299 | 364 | 40 | 68 | 0.8 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6300X5F40 | ● | 2 | 322 | 362 | 427 | 40 | 68 | 0.8 | SOMX187008-○○ | TPS54 | TIP25D |
| | 4 | MVX6300X4F50 | ★ | 2 | 259 | 299 | 374 | 50 | 68 | 0.8 | SOMX187008-○○ | TPS54 | TIP25D |
| | 5 | MVX6300X5F50 | ★ | 2 | 322 | 362 | 437 | 50 | 68 | 0.8 | SOMX187008-○○ | TPS54 | TIP25D |

## Inserts

| Shape | Drill Dia. | Insert Number | $D_1$ | $S_1$ | Re | Stock | | | Geometry |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | VP15TF | MC1020 | MC5020 | |
| **UM** | ø17—ø19.5 | **SOMX063005-UM** | 6 | 3 | 0.5 | ● | ● | ● |  |
| | ø20—ø22.5 | **SOMX073505-UM** | 7 | 3.5 | 0.5 | ● | ● | ● | |
| | ø23—ø27.5 | **SOMX084005-UM** | 8.3 | 4 | 0.5 | ● | ● | ● | |
| | ø28—ø33 | **SOMX094506-UM** | 9.7 | 4.5 | 0.6 | ● | ● | ● | |
| NEW | ø33.5—ø39 | **SOMX115506-UM** | 11.6 | 5.5 | 0.6 | ● | ● | ● | |
| NEW | ø40—ø46 | **SOMX136008-UM** | 13.8 | 6 | 0.8 | ● | ● | ● | |
| NEW | ø47—ø56 | **SOMX166508-UM** | 16.5 | 6.5 | 0.8 | ● | ● | ● | |
|  General purpose | NEW ø57—ø63 | **SOMX187008-UM** | 18.2 | 7 | 0.8 | ● | ● | ● | |
| NEW **US** | ø17—ø19.5 | **SOMX063005-US** | 6 | 3 | 0.5 | ● | | |  |
|  For stainless steel and inner edge | ø20—ø22.5 | **SOMX073505-US** | 7 | 3.5 | 0.5 | ● | | | |
| | ø23—ø27.5 | **SOMX084005-US** | 8.3 | 4 | 0.5 | ● | | | |
| | ø28—ø33 | **SOMX094506-US** | 9.7 | 4.5 | 0.6 | ● | | | |

*MC1020 and MC5020 are made exclusively for use as an outer insert.

## Recommended Cutting Conditions

| | Work material | Hardness | Grade | | &17—&19.5 | | | | &20—&23.5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Vc(m/min) | f (mm/rev) | | | Vc(m/min) | f (mm/rev) | | |
| | | | Outer | Inner | l/d=2—6 | l/d=2, 3 | l/d=4, 5 | l/d=6 | l/d=2—6 | l/d=2, 3 | l/d=4, 5 | l/d=6 |
| P | Mild Steel (C15, Ck15) | ≤180HB | **MC1020** | **VP15TF** | 200 (180—235) | 0.05 (0.04—0.06) | 0.05 (0.04—0.06) | 0.04 (0.04—0.05) | 200 (180—235) | 0.06 (0.04—0.08) | 0.06 (0.04—0.07) | 0.04 (0.04—0.05) |
| | Carbon Steel,Alloy Steel (Ck45, 41CrMo4) | 180—280HB | **MC1020** | **VP15TF** | 140 (115—180) | 0.08 (0.06—0.14) | 0.08 (0.06—0.09) | 0.05 (0.04—0.06) | 140 (115—180) | 0.10 (0.06—0.18) | 0.09 (0.06—0.12) | 0.07 (0.06—0.08) |
| | Carbon Steel,Alloy Steel (100Cr6) | 280—350HB | **MC1020** | **VP15TF** | 100 (75—140) | 0.08 (0.06—0.14) | 0.08 (0.06—0.09) | 0.05 (0.04—0.06) | 100 (75—140) | 0.10 (0.06—0.18) | 0.09 (0.06—0.12) | 0.07 (0.06—0.08) |
| | Alloy Tool Steel (X210Cr12) | ≤350HB | **MC1020** | **VP15TF** | 135 (100—170) | 0.08 (0.06—0.14) | 0.08 (0.06—0.09) | 0.05 (0.04—0.06) | 135 (100—170) | 0.10 (0.06—0.18) | 0.09 (0.06—0.12) | 0.07 (0.06—0.08) |
| M | Austenitic Stainless Steel (X5CrNi189, X5CrNiMo1810) | ≤200HB | **MC1020** | **VP15TF** | 140 (115—180) | 0.06 (0.04—0.08) | 0.05 (0.04—0.06) | 0.04 (0.04—0.05) | 140 (115—180) | 0.08 (0.06—0.12) | 0.07 (0.06—0.08) | 0.06 (0.06—0.07) |
| | Austenitic Stainless Steel (X2CrNiN1810, X5CrNiMoN1813) | >200HB | **MC1020** | **VP15TF** | 140 (115—180) | 0.06 (0.04—0.08) | 0.05 (0.04—0.06) | 0.04 (0.04—0.05) | 140 (115—180) | 0.08 (0.06—0.12) | 0.07 (0.06—0.08) | 0.06 (0.06—0.07) |
| | Ferritic and Martensitic Stainless Steel (X10Cr13, X10CrA118) | ≤200HB | **MC1020** | **VP15TF** | 140 (115—165) | 0.06 (0.04—0.08) | 0.05 (0.04—0.06) | 0.04 (0.04—0.05) | 140 (115—165) | 0.09 (0.06—0.14) | 0.07 (0.06—0.09) | 0.06 (0.06—0.07) |
| | Ferritic and Martensitic Stainless Steel (X22CrNi17, X46Cr13) | >200HB | **MC1020** | **VP15TF** | 140 (115—165) | 0.06 (0.04—0.08) | 0.05 (0.04—0.06) | 0.04 (0.04—0.05) | 140 (115—165) | 0.09 (0.06—0.14) | 0.07 (0.06—0.09) | 0.06 (0.06—0.07) |
| K | Gray Cast Iron (GG25, GG30) | ≤350MPa | **MC5020** | **VP15TF** | 160 (130—195) | 0.11 (0.08—0.14) | 0.09 (0.08—0.10) | 0.05 (0.04—0.06) | 160 (130—195) | 0.14 (0.10—0.18) | 0.10 (0.10—0.12) | 0.07 (0.06—0.08) |
| | Ductile Cast Iron (GG40) | ≤450MPa | **MC5020** | **VP15TF** | 100 (80—135) | 0.11 (0.08—0.14) | 0.09 (0.08—0.10) | 0.05 (0.04—0.06) | 100 (80—135) | 0.13 (0.10—0.16) | 0.10 (0.10—0.11) | 0.07 (0.06—0.08) |
| | Ductile Cast Iron (GGG70) | ≤800MPa | **MC5020** | **VP15TF** | 100 (70—125) | 0.11 (0.08—0.14) | 0.09 (0.08—0.10) | 0.05 (0.04—0.06) | 100 (70—125) | 0.13 (0.10—0.16) | 0.10 (0.10—0.11) | 0.07 (0.06—0.08) |

| | Work material | Hardness | Grade | | &24—&29.5 | | | | &30—&33 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Vc(m/min) | f (mm/rev) | | | Vc(m/min) | f (mm/rev) | | |
| | | | Outer | Inner | l/d=2—6 | l/d=2, 3 | l/d=4, 5 | l/d=6 | l/d=2—6 | l/d=2, 3 | l/d=4, 5 | l/d=6 |
| P | Mild Steel (C15, Ck15) | ≤180HB | **MC1020** | **VP15TF** | 200 (180—235) | 0.07 (0.04—0.08) | 0.06 (0.04—0.07) | 0.05 (0.04—0.06) | 200 (180—235) | 0.08 (0.06—0.10) | 0.07 (0.06—0.08) | 0.06 (0.06—0.07) |
| | Carbon Steel,Alloy Steel (Ck45, 41CrMo4) | 180—280HB | **MC1020** | **VP15TF** | 140 (115—180) | 0.12 (0.08—0.18) | 0.10 (0.08—0.12) | 0.09 (0.08—0.10) | 140 (115—180) | 0.14 (0.08—0.24) | 0.12 (0.08—0.16) | 0.11 (0.10—0.12) |
| | Carbon Steel,Alloy Steel (100Cr6) | 280—350HB | **MC1020** | **VP15TF** | 100 (75—140) | 0.12 (0.08—0.18) | 0.10 (0.08—0.12) | 0.09 (0.08—0.10) | 100 (75—140) | 0.14 (0.08—0.24) | 0.12 (0.08—0.16) | 0.11 (0.10—0.12) |
| | Alloy Tool Steel (X210Cr12) | ≤350HB | **MC1020** | **VP15TF** | 135 (100—170) | 0.12 (0.08—0.18) | 0.10 (0.08—0.12) | 0.09 (0.08—0.10) | 135 (100—170) | 0.14 (0.08—0.24) | 0.12 (0.08—0.16) | 0.10 (0.08—0.12) |
| M | Austenitic Stainless Steel (X5CrNi189, X5CrNiMo1810) | ≤200HB | **MC1020** | **VP15TF** | 140 (115—180) | 0.09 (0.06—0.12) | 0.08 (0.06—0.09) | 0.07 (0.06—0.08) | 140 (115—180) | 0.11 (0.06—0.16) | 0.08 (0.06—0.11) | 0.07 (0.06—0.10) |
| | Austenitic Stainless Steel (X2CrNiN1810, X5CrNiMoN1813) | >200HB | **MC1020** | **VP15TF** | 140 (115—180) | 0.09 (0.06—0.12) | 0.08 (0.06—0.09) | 0.07 (0.06—0.08) | 140 (115—180) | 0.11 (0.06—0.16) | 0.08 (0.06—0.11) | 0.07 (0.06—0.10) |
| | Ferritic and Martensitic Stainless Steel (X10Cr13, X10CrA118) | ≤200HB | **MC1020** | **VP15TF** | 140 (115—165) | 0.10 (0.06—0.14) | 0.08 (0.06—0.09) | 0.07 (0.06—0.08) | 140 (115—165) | 0.11 (0.06—0.16) | 0.09 (0.06—0.11) | 0.08 (0.06—0.10) |
| | Ferritic and Martensitic Stainless Steel (X22CrNi17, X46Cr13) | >200HB | **MC1020** | **VP15TF** | 140 (115—165) | 0.10 (0.06—0.14) | 0.08 (0.06—0.09) | 0.07 (0.06—0.08) | 140 (115—165) | 0.11 (0.06—0.16) | 0.09 (0.06—0.11) | 0.08 (0.06—0.10) |
| K | Gray Cast Iron (GG25, GG30) | ≤350MPa | **MC5020** | **VP15TF** | 160 (130—195) | 0.15 (0.10—0.20) | 0.11 (0.10—0.13) | 0.09 (0.08—0.10) | 160 (130—195) | 0.15 (0.10—0.20) | 0.12 (0.10—0.13) | 0.11 (0.10—0.12) |
| | Ductile Cast Iron (GG40) | ≤450MPa | **MC5020** | **VP15TF** | 100 (80—135) | 0.14 (0.10—0.18) | 0.11 (0.10—0.12) | 0.09 (0.08—0.10) | 100 (80—135) | 0.15 (0.10—0.20) | 0.12 (0.10—0.13) | 0.11 (0.10—0.12) |
| | Ductile Cast Iron (GGG70) | ≤800MPa | **MC5020** | **VP15TF** | 100 (70—125) | 0.14 (0.10—0.18) | 0.11 (0.10—0.12) | 0.09 (0.08—0.10) | 100 (70—125) | 0.15 (0.10—0.20) | 0.12 (0.10—0.13) | 0.11 (0.10—0.12) |

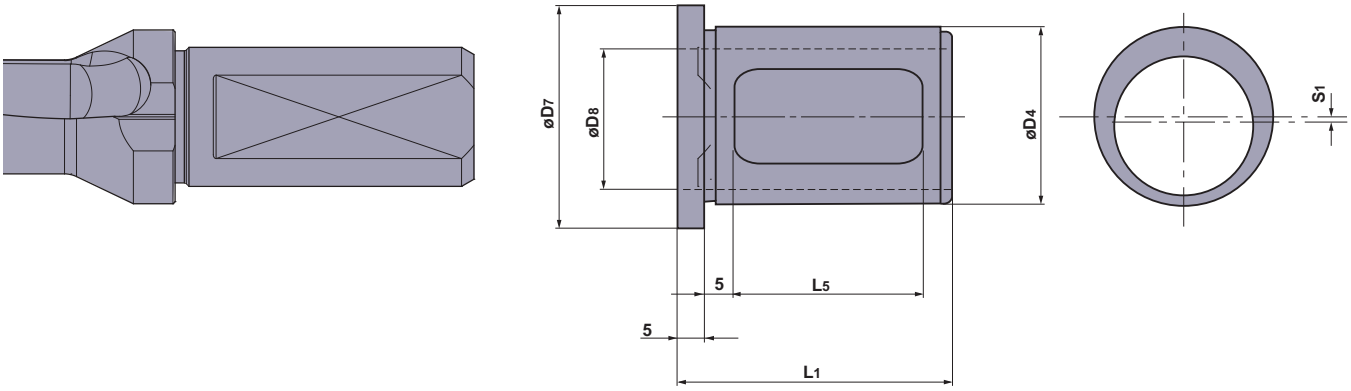
1) Reduce the cutting speed by 30% when VP15TF is used as an outer insert. 2) L/D=3 is the recommended maximum depth when only external coolant is used. 3) Internal through coolant is highly necessary when drilling stainless steel.

| | Work material | Hardness | Grade | | &33.5—&63 | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | **vc** (m/min) | **vf** (mm/rev) | | |
| | | | Outer | Inner | l/d=2—6 | l/d=2, 3 | l/d=4, 5 | l/d=6 |
| P | Mild Steel (C15, Ck15) | ≤180HB | **MC1020** | **VP15TF** | 200 (180—235) | 0.08 (0.06—0.10) | 0.07 (0.06—0.08) | 0.06 (0.06—0.07) |
| | Carbon Steel,Alloy Steel (Ck45, 41CrMo4) | 180—280HB | **MC1020** | **VP15TF** | 140 (115—180) | 0.14 (0.08—0.24) | 0.12 (0.08—0.16) | 0.11 (0.10—0.12) |
| | Carbon Steel,Alloy Steel (100Cr6) | 280—350HB | **MC1020** | **VP15TF** | 100 (75—140) | 0.14 (0.08—0.24) | 0.12 (0.08—0.16) | 0.11 (0.10—0.12) |
| | Alloy Tool Steel (X210Cr12) | ≤350HB | **MC1020** | **VP15TF** | 135 (100—170) | 0.14 (0.08—0.24) | 0.12 (0.08—0.16) | 0.10 (0.08—0.12) |
| M | Austenitic Stainless Steel (X5CrNi18-10, X5CrNiMo17-12-2) | ≤200HB | **MC1020** | **VP15TF** | 130 (80—180) | 0.09 (0.06—0.12) | 0.08 (0.06—0.10) | 0.07 (0.06—0.08) |
| | Austenitic Stainless Steel (X2CrNiN18-9, X5CrNiMoN17-11-2) | >200HB | **MC1020** | **VP15TF** | 130 (80—180) | 0.09 (0.06—0.12) | 0.08 (0.06—0.10) | 0.07 (0.06—0.08) |
| | Ferritic and Martensitic Stainless Steel (X12Cr13, X6Cr17) | ≤200HB | **MC1020** | **VP15TF** | 120 (80—165) | 0.09 (0.06—0.12) | 0.08 (0.06—0.10) | 0.07 (0.06—0.08) |
| | Ferritic and Martensitic Stainless Steel (X17CrNi16-2, X30Cr13) | >200HB | **MC1020** | **VP15TF** | 120 (80—165) | 0.09 (0.06—0.12) | 0.08 (0.06—0.10) | 0.07 (0.06—0.08) |
| K | Gray Cast Iron (GG25, GG30) | Tensile Strength ≤350MPa | **MC5020** | **VP15TF** | 160 (130—195) | 0.15 (0.10—0.20) | 0.12 (0.10—0.13) | 0.11 (0.10—0.12) |
| | Ductile Cast Iron (GG40) | Tensile Strength ≤450MPa | **MC5020** | **VP15TF** | 100 (80—135) | 0.15 (0.10—0.20) | 0.12 (0.10—0.13) | 0.11 (0.10—0.12) |
| | Ductile Cast Iron (GGG70) | Tensile Strength ≤800MPa | **MC5020** | **VP15TF** | 100 (70—125) | 0.15 (0.10—0.20) | 0.12 (0.10—0.13) | 0.11 (0.10—0.12) |

1) L/D=3 is the recommended maximum depth when only external coolant is used.
2) Internal through coolant is highly necessary when drilling stainless steel.

## Just Fit Sleeve [JFS]

A sleeve for the shank of the drill to allow the cutting diameter to be increased.




*Increase : Size of the increase in the cutting diameter.

| Set Order Number | Individual Order Number | Stock | Dimensions (mm) | | | | | *Increase (S1×2) | Suitable MVX Type Drill |
|---|---|---|---|---|---|---|---|---|---|
| | | | $D_7$ | $D_4$ | $D_8$ | $L_1$ | $L_5$ | | |
| JFS-1 | JFS2520-10 | ● | 33 | 25 | 20 | 43 | 30 | 0.10 | MVX1700 X ◌F20 |
| | JFS2520-20 | ● | 33 | 25 | 20 | 43 | 30 | 0.20 | |
| | JFS2520-30 | ● | 33 | 25 | 20 | 43 | 30 | 0.30 | |
| | JFS2520-40 | ● | 33 | 25 | 20 | 43 | 30 | 0.40 | |
| | JFS2520-50 | ● | 33 | 25 | 20 | 43 | 30 | 0.50 | |
| JFS-2 | JFS3225-10 | ● | 40 | 32 | 25 | 50 | 34 | 0.10 | MVX1750 X ◌F25 \| MVX2550 X ◌F25 |
| | JFS3225-20 | ● | 40 | 32 | 25 | 50 | 34 | 0.20 | |
| | JFS3225-30 | ● | 40 | 32 | 25 | 50 | 34 | 0.30 | |
| | JFS3225-40 | ● | 40 | 32 | 25 | 50 | 34 | 0.40 | |
| | JFS3225-50 | ● | 40 | 32 | 25 | 50 | 34 | 0.50 | |
| JFS-3 | JFS4032-10 | ● | 48 | 40 | 32 | 55 | 40 | 0.10 | MVX2600 X ◌F32 \| MVX3000 X ◌F32 |
| | JFS4032-20 | ● | 48 | 40 | 32 | 55 | 40 | 0.20 | |
| | JFS4032-30 | ● | 48 | 40 | 32 | 55 | 40 | 0.30 | |
| | JFS4032-40 | ● | 48 | 40 | 32 | 55 | 40 | 0.40 | |
| | JFS4032-50 | ● | 48 | 40 | 32 | 55 | 40 | 0.50 | |

*It does not correspond to the shank diameter ø40.

## Guidline For Selecting A Just Fit Sleeve

Desired = (Drillø+ Increase of JFS) + 0.1mm

(Eg.) Desired diameter is 20.3mm (oversize is taken as 0.1mm).

**ø20.3=(MVX2000 X ◌F25+JFS3225-20)+0.1**

- MVX2000 X ◌F25 → 20mm Drill
- JFS3225-20 → Using JFS an Increase of 0.2mm.
- 0.1 → Oversize

<Tool Selected>
MVX : **MVX2000 X ◌F25**
JUST FIT SLEEVE [JFS]
: **JFS3225-20**

(Note) Oversize can vary due to the cutting conditions used, please use the above as a guideline.

## Ordering The Just Fit Sleeve

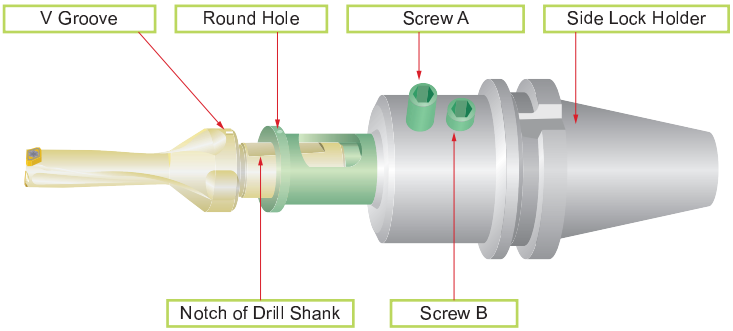
● **Purchasing Method 1**
Oversize can vary due to the cutting conditions used. Therefore it is recommended to purchase as a set. When placing an order, please use the set order number. (5 sleeves/set)

● **Purchasing Method 2**
It is possible to order individually. When placing an order, please use the individual order number.

## Application Of Just Fit Sleeve

1 When inserting the drill into the side lock holder, aligin the V groove on the outer peripheral edge of the drill flange, as well as the round holes of the outer peripheral edge of the sleeve flange and the screws of the side lock holder for fixing the drill. (If the drill does not have a V groove, align the notch of the drill shank with the round holes of the sleeve.)

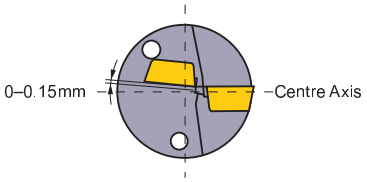
2 Insert screws A of the side lock holder directly to the open window of the sleeve and fix the drill. Tighten screw B to a degree so as not to damage the sleeve.



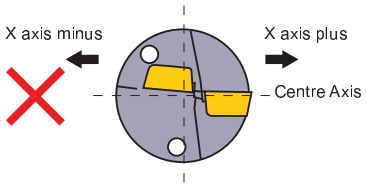

## Application Of MVX Type Drill

● **Use on a Lathe**

(1) The outer insert and machine X axis must be set parallel. The drill is designed that the center of the inner insert is 0-0.15mm lower when matching the drill center and the machine spindle center.
*The inner insert may fracture if the center height of inner insert is higher than the machine X axis.




(2) To adjust the hole diameter by off-setting the drill, please adjust to X axis plus direction (expanding direction of the hole diameter). Please refer to the holder dimension list for the maximum adjustment rate of each holder.
*It is not recommended to adjust to X axis minus direction (reducing direction of the hole diameter) as the holder may interfere with the hole.




(3) When through hole drilling on a lathe the disc produced by the drill exiting the workpiece may be expelled at high velocity. To reduce the damager of injury or damage a cover guard is highly recommended.