



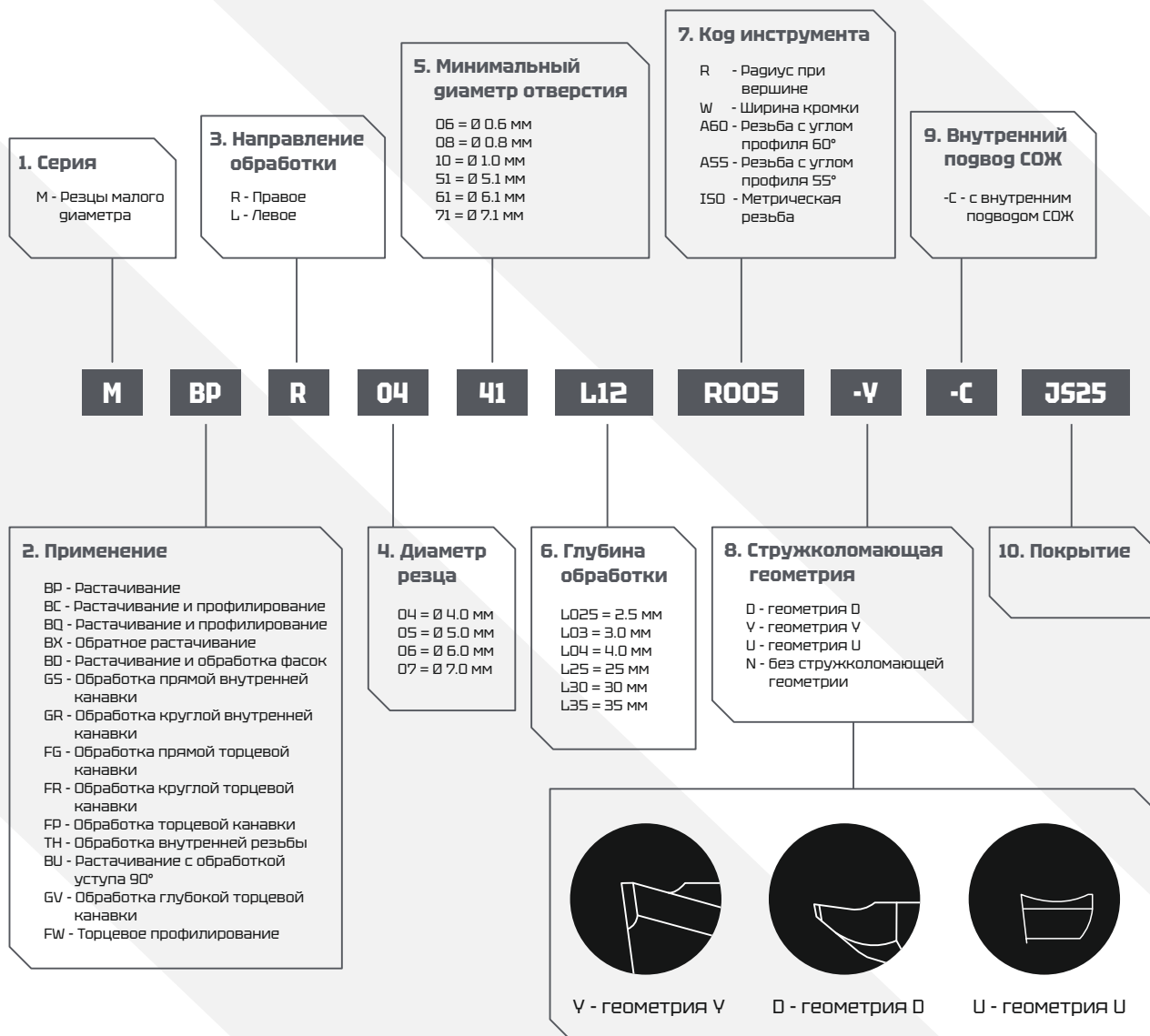
**РЕЗЦЫ МАЛОГО ДИАМЕТРА**

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**ОБОЗНАЧЕНИЕ РЕЗЦОВ МАЛОГО ДИАМЕТРА**



## ЗАКРЕПЛЕНИЕ РЕЗЦА С ВЫСОКОЙ ТОЧНОСТЬЮ



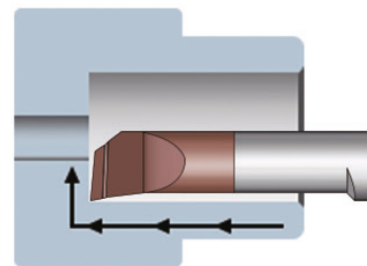
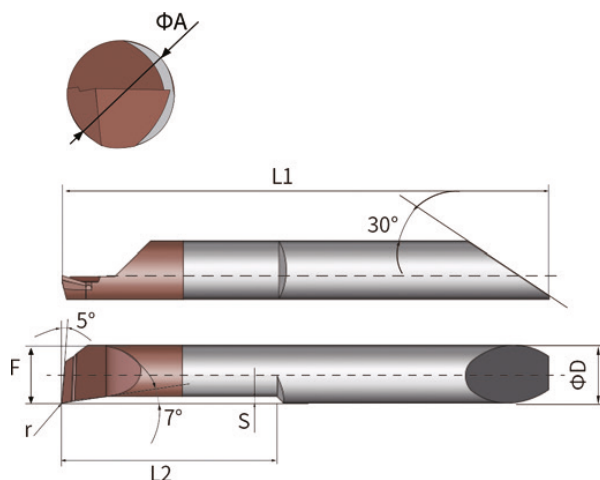
- Твердосплавные расточные резцы закрепляются в державке по установочному штифту и наклонной торцевой поверхности хвостовика. Такая система закрепления обеспечивает высокую жесткость, стабильность и точность без применения дополнительного оборудования.

## ВНУТРЕННИЙ ПОДВОД СОЖ



- Внутренний подвод СОЖ осуществляется через боковые канавки хвостовой части расточного резца. Поддача СОЖ всегда направлена в зону резания.

**MBPR  
РАСТАЧИВАНИЕ**

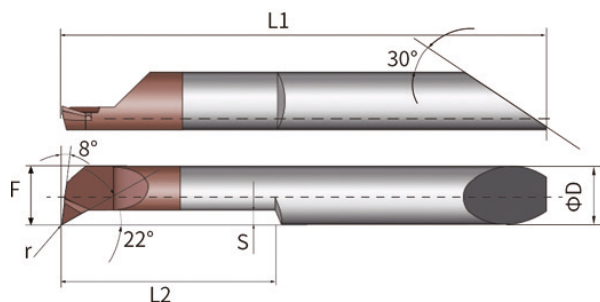
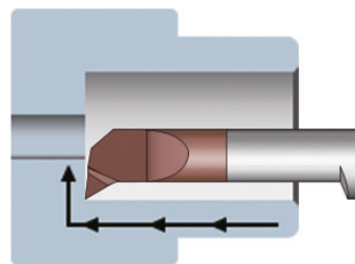
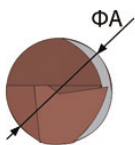


| Обозначение           | Мин. диаметр, (мм) ØA | r | r    | L1 | L2 | F    | S    | JS25 | AI25 |
|-----------------------|-----------------------|---|------|----|----|------|------|------|------|
| MBPR0421L06R005-Y-(C) | 2.1                   | 4 | 0.05 | 31 | 6  | 1.85 | 0.2  | ●    | ●    |
| MBPR0421L06R010-Y-(C) | 2.1                   | 4 | 0.10 | 31 | 6  | 1.85 | 0.2  | ●    | ●    |
| MBPR0421L10R005-Y-(C) | 2.1                   | 4 | 0.05 | 35 | 10 | 1.85 | 0.2  | ●    | ●    |
| MBPR0421L10R010-Y-(C) | 2.1                   | 4 | 0.10 | 35 | 10 | 1.85 | 0.2  | ●    | ●    |
| MBPR0426L08R005-Y-(C) | 2.6                   | 4 | 0.05 | 33 | 8  | 2.35 | 0.25 | ●    | ●    |
| MBPR0426L08R010-Y-(C) | 2.6                   | 4 | 0.10 | 33 | 8  | 2.35 | 0.25 | ●    | ●    |
| MBPR0426L08R015-Y-(C) | 2.6                   | 4 | 0.15 | 33 | 8  | 2.35 | 0.25 | ●    | ●    |
| MBPR0426L12R005-Y-(C) | 2.6                   | 4 | 0.05 | 37 | 12 | 2.35 | 0.25 | ●    | ●    |
| MBPR0426L12R010-Y-(C) | 2.6                   | 4 | 0.10 | 37 | 12 | 2.35 | 0.25 | ●    | ●    |
| MBPR0426L12R015-Y-(C) | 2.6                   | 4 | 0.15 | 37 | 12 | 2.35 | 0.25 | ●    | ●    |
| MBPR0431L10R005-Y-(C) | 3.1                   | 4 | 0.05 | 35 | 10 | 2.8  | 0.30 | ●    | ●    |
| MBPR0431L10R010-Y-(C) | 3.1                   | 4 | 0.10 | 35 | 10 | 2.8  | 0.30 | ●    | ●    |
| MBPR0431L10R015-Y-(C) | 3.1                   | 4 | 0.15 | 35 | 10 | 2.8  | 0.30 | ●    | ●    |
| MBPR0431L15R005-Y-(C) | 3.1                   | 4 | 0.05 | 40 | 15 | 2.8  | 0.30 | ●    | ●    |
| MBPR0431L15R010-Y-(C) | 3.1                   | 4 | 0.10 | 40 | 15 | 2.8  | 0.30 | ●    | ●    |
| MBPR0431L15R015-Y-(C) | 3.1                   | 4 | 0.15 | 40 | 15 | 2.8  | 0.30 | ●    | ●    |
| MBPR0441L12R005-Y-(C) | 4.1                   | 4 | 0.05 | 37 | 12 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L12R010-Y-(C) | 4.1                   | 4 | 0.10 | 37 | 12 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L12R020-Y-(C) | 4.1                   | 4 | 0.20 | 37 | 12 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L16R005-Y-(C) | 4.1                   | 4 | 0.05 | 41 | 16 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L16R010-Y-(C) | 4.1                   | 4 | 0.10 | 41 | 16 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L16R020-Y-(C) | 4.1                   | 4 | 0.20 | 41 | 16 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L20R005-Y-(C) | 4.1                   | 4 | 0.05 | 45 | 20 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L20R010-Y-(C) | 4.1                   | 4 | 0.10 | 45 | 20 | 3.8  | 0.40 | ●    | ●    |
| MBPR0441L20R020-Y-(C) | 4.1                   | 4 | 0.20 | 45 | 20 | 3.8  | 0.40 | ●    | ●    |
| MBPR0551L15R010-Y-(C) | 5.1                   | 5 | 0.10 | 40 | 15 | 4.8  | 0.50 | ●    | ●    |
| MBPR0551L15R020-Y-(C) | 5.1                   | 5 | 0.20 | 40 | 15 | 4.8  | 0.50 | ●    | ●    |
| MBPR0551L20R010-Y-(C) | 5.1                   | 5 | 0.10 | 45 | 20 | 4.8  | 0.50 | ●    | ●    |
| MBPR0551L20R020-Y-(C) | 5.1                   | 5 | 0.20 | 45 | 20 | 4.8  | 0.50 | ●    | ●    |
| MBPR0551L25R010-Y-(C) | 5.1                   | 5 | 0.10 | 50 | 25 | 4.8  | 0.50 | ●    | ●    |
| MBPR0551L25R020-Y-(C) | 5.1                   | 5 | 0.20 | 50 | 25 | 4.8  | 0.50 | ●    | ●    |
| MBPR0661L15R010-Y-(C) | 6.1                   | 6 | 0.10 | 40 | 15 | 5.8  | 0.60 | ●    | ●    |
| MBPR0661L15R020-Y-(C) | 6.1                   | 6 | 0.20 | 40 | 15 | 5.8  | 0.60 | ●    | ●    |
| MBPR0661L20R010-Y-(C) | 6.1                   | 6 | 0.10 | 45 | 20 | 5.8  | 0.60 | ●    | ●    |
| MBPR0661L20R020-Y-(C) | 6.1                   | 6 | 0.20 | 45 | 20 | 5.8  | 0.60 | ●    | ●    |
| MBPR0661L25R010-Y-(C) | 6.1                   | 6 | 0.10 | 50 | 25 | 5.8  | 0.60 | ●    | ●    |
| MBPR0661L25R020-Y-(C) | 6.1                   | 6 | 0.20 | 50 | 25 | 5.8  | 0.60 | ●    | ●    |
| MBPR0661L30R010-Y-(C) | 6.1                   | 6 | 0.10 | 55 | 30 | 5.8  | 0.60 | ●    | ●    |
| MBPR0661L30R020-Y-(C) | 6.1                   | 6 | 0.20 | 55 | 30 | 5.8  | 0.60 | ●    | ●    |
| MBPR0771L25R010-Y-(C) | 7.1                   | 7 | 0.10 | 54 | 25 | 6.8  | 0.70 | ●    | ●    |
| MBPR0771L25R020-Y-(C) | 7.1                   | 7 | 0.20 | 54 | 25 | 6.8  | 0.70 | ●    | ●    |
| MBPR0771L35R010-Y-(C) | 7.1                   | 7 | 0.10 | 64 | 35 | 6.8  | 0.70 | ●    | ●    |
| MBPR0771L35R020-Y-(C) | 7.1                   | 7 | 0.20 | 64 | 35 | 6.8  | 0.70 | ●    | ●    |

● в наличии

(C) выбор резца с подводом или без подвода СОЖ

## MBQR РАСТАЧИВАНИЕ И ПРОФИЛИРОВАНИЕ



| Обозначение            | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2  | F    | S    | JS25 | AL25 |
|------------------------|-----------------------|-----|------|----|-----|------|------|------|------|
| MBQR0406L02R003-D-(C)  | 0.6                   | 4   | 0.03 | 28 | 2   | 0.55 | 0.06 | ●    | ●    |
| MBQR0408L025R003-D-(C) | 0.8                   | 4   | 0.03 | 28 | 2.5 | 0.75 | 0.08 | ●    | ●    |
| MBQR0410L04R005-D-(C)  | 1.0                   | 4   | 0.05 | 29 | 4   | 0.9  | 0.15 | ●    | ●    |
| MBQR0410L06R005-D-(C)  | 1.0                   | 4   | 0.05 | 31 | 6   | 0.9  | 0.15 | ●    | ●    |
| MBQR0412L04R005-D-(C)  | 1.2                   | 4   | 0.05 | 29 | 4   | 1.1  | 0.15 | ●    | ●    |
| MBQR0412L06R005-D-(C)  | 1.2                   | 4   | 0.05 | 31 | 6   | 1.1  | 0.15 | ●    | ●    |
| MBQR0415L05R005-D-(C)  | 1.5                   | 4   | 0.05 | 30 | 5   | 1.4  | 0.20 | ●    | ●    |
| MBQR0415L05R010-D-(C)  | 1.5                   | 4   | 0.10 | 30 | 5   | 1.4  | 0.20 | ●    | ●    |
| MBQR0415L08R005-D-(C)  | 1.5                   | 4   | 0.05 | 33 | 8   | 1.4  | 0.20 | ●    | ●    |
| MBQR0415L08R010-D-(C)  | 1.5                   | 4   | 0.10 | 33 | 8   | 1.4  | 0.20 | ●    | ●    |
| MBQR0418L05R005-D-(C)  | 1.8                   | 4   | 0.05 | 30 | 5   | 1.7  | 0.20 | ●    | ●    |
| MBQR0418L05R010-D-(C)  | 1.8                   | 4   | 0.10 | 30 | 5   | 1.7  | 0.20 | ●    | ●    |
| MBQR0418L09R005-D-(C)  | 1.8                   | 4   | 0.05 | 34 | 9   | 1.7  | 0.20 | ●    | ●    |
| MBQR0418L09R010-D-(C)  | 1.8                   | 4   | 0.10 | 34 | 9   | 1.7  | 0.20 | ●    | ●    |
| MBQR0421L06R005-D-(C)  | 2.1                   | 4   | 0.05 | 31 | 6   | 1.85 | 0.25 | ●    | ●    |
| MBQR0421L06R010-D-(C)  | 2.1                   | 4   | 0.10 | 31 | 6   | 1.85 | 0.25 | ●    | ●    |
| MBQR0421L10R005-D-(C)  | 2.1                   | 4   | 0.05 | 35 | 10  | 1.85 | 0.25 | ●    | ●    |
| MBQR0421L10R010-D-(C)  | 2.1                   | 4   | 0.10 | 35 | 10  | 1.85 | 0.25 | ●    | ●    |
| MBQR0426L08R005-D-(C)  | 2.6                   | 4   | 0.05 | 33 | 8   | 2.35 | 0.30 | ●    | ●    |
| MBQR0426L08R010-D-(C)  | 2.6                   | 4   | 0.10 | 33 | 8   | 2.35 | 0.30 | ●    | ●    |
| MBQR0426L08R015-D-(C)  | 2.6                   | 4   | 0.15 | 33 | 8   | 2.35 | 0.30 | ●    | ●    |
| MBQR0426L12R005-D-(C)  | 2.6                   | 4   | 0.05 | 37 | 12  | 2.35 | 0.30 | ●    | ●    |
| MBQR0426L12R010-D-(C)  | 2.6                   | 4   | 0.10 | 37 | 12  | 2.35 | 0.30 | ●    | ●    |
| MBQR0426L12R015-D-(C)  | 2.6                   | 4   | 0.15 | 37 | 12  | 2.35 | 0.30 | ●    | ●    |
| MBQR0431L10R005-D-(C)  | 3.1                   | 4   | 0.05 | 35 | 10  | 2.8  | 0.50 | ●    | ●    |
| MBQR0431L10R010-D-(C)  | 3.1                   | 4   | 0.10 | 35 | 10  | 2.8  | 0.50 | ●    | ●    |
| MBQR0431L10R015-D-(C)  | 3.1                   | 4   | 0.15 | 35 | 10  | 2.8  | 0.50 | ●    | ●    |
| MBQR0431L15R005-D-(C)  | 3.1                   | 4   | 0.05 | 40 | 15  | 2.8  | 0.50 | ●    | ●    |
| MBQR0431L15R010-D-(C)  | 3.1                   | 4   | 0.10 | 40 | 15  | 2.8  | 0.50 | ●    | ●    |
| MBQR0431L15R015-D-(C)  | 3.1                   | 4   | 0.15 | 40 | 15  | 2.8  | 0.50 | ●    | ●    |
| MBQR0441L12R005-D-(C)  | 4.1                   | 4   | 0.05 | 37 | 12  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L12R010-D-(C)  | 4.1                   | 4   | 0.10 | 37 | 12  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L12R020-D-(C)  | 4.1                   | 4   | 0.20 | 37 | 12  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L16R005-D-(C)  | 4.1                   | 4   | 0.05 | 41 | 16  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L16R010-D-(C)  | 4.1                   | 4   | 0.10 | 41 | 16  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L16R020-D-(C)  | 4.1                   | 4   | 0.20 | 41 | 16  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L20R005-D-(C)  | 4.1                   | 4   | 0.05 | 45 | 20  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L20R010-D-(C)  | 4.1                   | 4   | 0.10 | 45 | 20  | 3.8  | 0.60 | ●    | ●    |
| MBQR0441L20R020-D-(C)  | 4.1                   | 4   | 0.20 | 45 | 20  | 3.8  | 0.60 | ●    | ●    |

● в наличии

(C) выбор реза с подводом или без подвода СОЖ

### РЕЗЦЫ МАЛОГО ДИАМЕТРА

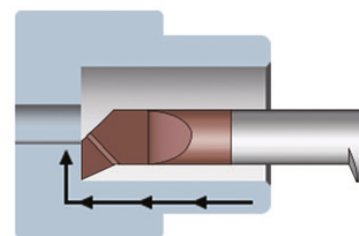
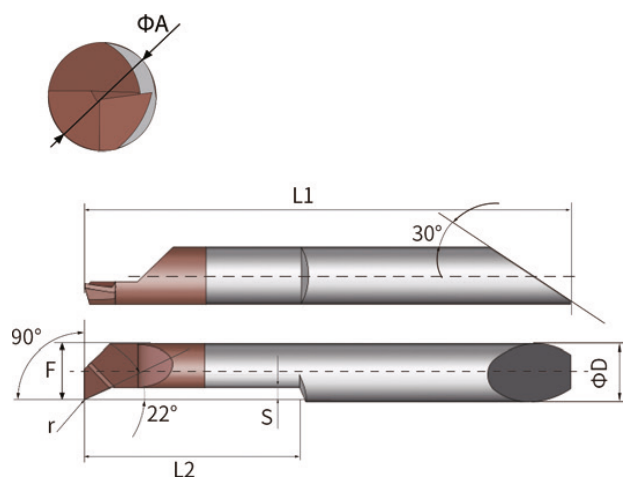
**FRENZMILL®**  
МЕТАЛЛОРЕЖУЩИЕ  
ИНСТРУМЕНТЫ

**MBQR**
**РАСТАЧИВАНИЕ И ПРОФИЛИРОВАНИЕ**

| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2 | F   | S    | JS25 | AL25 |
|-----------------------|-----------------------|-----|------|----|----|-----|------|------|------|
| MBQR0551L15R005-D-(C) | 5.1                   | 5   | 0.05 | 40 | 15 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L15R010-D-(C) | 5.1                   | 5   | 0.10 | 40 | 15 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L15R020-D-(C) | 5.1                   | 5   | 0.20 | 40 | 15 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L20R005-D-(C) | 5.1                   | 5   | 0.05 | 45 | 20 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L20R010-D-(C) | 5.1                   | 5   | 0.10 | 45 | 20 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L20R020-D-(C) | 5.1                   | 5   | 0.20 | 45 | 20 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L25R005-D-(C) | 5.1                   | 5   | 0.05 | 50 | 25 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L25R010-D-(C) | 5.1                   | 5   | 0.10 | 50 | 25 | 4.8 | 0.80 | ●    | ●    |
| MBQR0551L25R020-D-(C) | 5.1                   | 5   | 0.20 | 50 | 25 | 4.8 | 0.80 | ●    | ●    |
| MBQR0661L15R005-D-(C) | 6.1                   | 6   | 0.05 | 40 | 15 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L15R010-D-(C) | 6.1                   | 6   | 0.10 | 40 | 15 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L15R020-D-(C) | 6.1                   | 6   | 0.20 | 40 | 15 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L20R005-D-(C) | 6.1                   | 6   | 0.05 | 45 | 20 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L20R010-D-(C) | 6.1                   | 6   | 0.10 | 45 | 20 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L20R020-D-(C) | 6.1                   | 6   | 0.20 | 45 | 20 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L25R005-D-(C) | 6.1                   | 6   | 0.05 | 50 | 25 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L25R010-D-(C) | 6.1                   | 6   | 0.10 | 50 | 25 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L25R020-D-(C) | 6.1                   | 6   | 0.20 | 50 | 25 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L30R005-D-(C) | 6.1                   | 6   | 0.05 | 55 | 30 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L30R010-D-(C) | 6.1                   | 6   | 0.10 | 55 | 30 | 5.8 | 1.00 | ●    | ●    |
| MBQR0661L30R020-D-(C) | 6.1                   | 6   | 0.20 | 55 | 30 | 5.8 | 1.00 | ●    | ●    |
| MBQR0771L25R010-D-(C) | 7.1                   | 7   | 0.10 | 54 | 25 | 6.8 | 1.20 | ●    | ●    |
| MBQR0771L25R020-D-(C) | 7.1                   | 7   | 0.20 | 54 | 25 | 6.8 | 1.20 | ●    | ●    |
| MBQR0771L35R010-D-(C) | 7.1                   | 7   | 0.10 | 64 | 35 | 6.8 | 1.20 | ●    | ●    |
| MBQR0771L35R020-D-(C) | 7.1                   | 7   | 0.20 | 64 | 35 | 6.8 | 1.20 | ●    | ●    |

● в наличии

(C) выбор резца с подводом или без подвода СОЖ

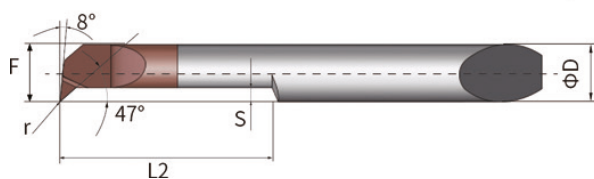
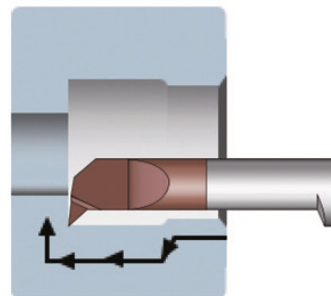
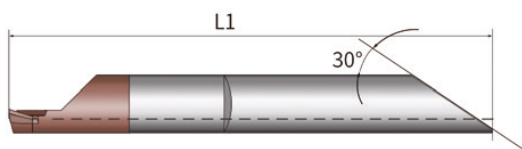
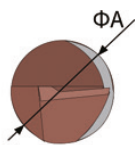
**MBUR**
**РАСТАЧИВАНИЕ С ОБРАБОТКОЙ УСТУПА 90°**


| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2 | F   | S    | JS25 | AL25 |
|-----------------------|-----------------------|-----|------|----|----|-----|------|------|------|
| MBUR0431L10R010-D-(C) | 3.1                   | 4   | 0.10 | 35 | 10 | 2.8 | 0.40 | ●    | ●    |
| MBUR0441L12R010-D-(C) | 4.1                   | 4   | 0.10 | 37 | 12 | 3.8 | 0.50 | ●    | ●    |
| MBUR0551L15R015-D-(C) | 5.1                   | 5   | 0.15 | 40 | 15 | 4.8 | 0.70 | ●    | ●    |
| MBUR0661L20R015-D-(C) | 6.1                   | 6   | 0.15 | 45 | 20 | 5.8 | 0.90 | ●    | ●    |

● в наличии

(C) выбор резца с подводом или без подвода СОЖ

## MBCR РАСТАЧИВАНИЕ И ПРОФИЛИРОВАНИЕ



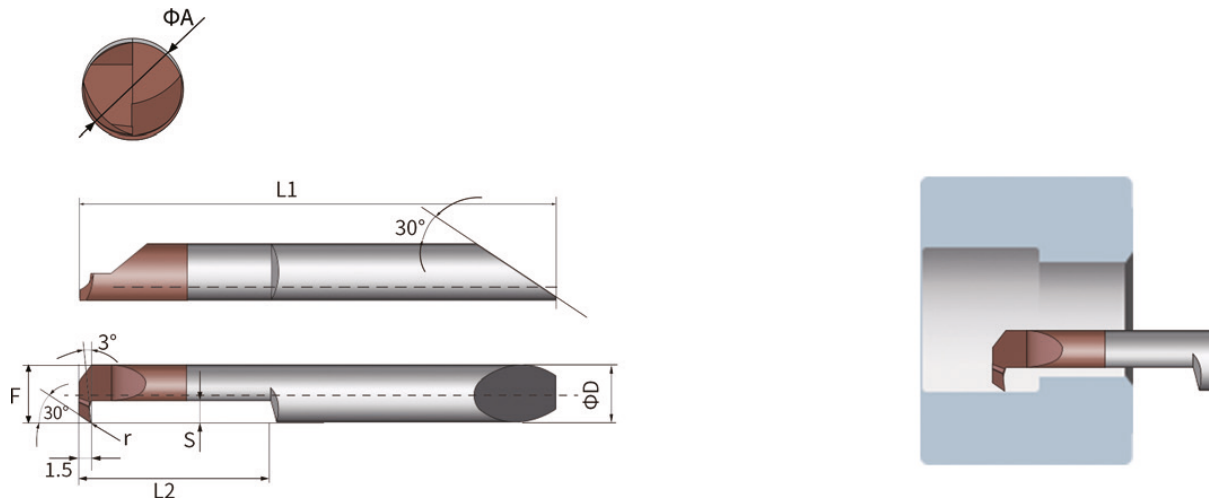
| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2 | F   | S    | JS25 | AL25 |
|-----------------------|-----------------------|-----|------|----|----|-----|------|------|------|
| MBCR0431L10R005-D-(C) | 3.1                   | 4   | 0.05 | 35 | 10 | 2.8 | 0.60 | ●    | ●    |
| MBCR0431L10R010-D-(C) | 3.1                   | 4   | 0.10 | 35 | 10 | 2.8 | 0.60 | ●    | ●    |
| MBCR0431L15R005-D-(C) | 3.1                   | 4   | 0.05 | 37 | 12 | 2.8 | 0.60 | ●    | ●    |
| MBCR0431L15R010-D-(C) | 3.1                   | 4   | 0.10 | 37 | 12 | 2.8 | 0.60 | ●    | ●    |
| MBCR0441L12R005-D-(C) | 4.1                   | 4   | 0.05 | 37 | 12 | 3.8 | 0.80 | ●    | ●    |
| MBCR0441L12R010-D-(C) | 4.1                   | 4   | 0.10 | 37 | 12 | 3.8 | 0.80 | ●    | ●    |
| MBCR0441L16R005-D-(C) | 4.1                   | 4   | 0.05 | 41 | 16 | 3.8 | 0.80 | ●    | ●    |
| MBCR0441L16R010-D-(C) | 4.1                   | 4   | 0.10 | 41 | 16 | 3.8 | 0.80 | ●    | ●    |
| MBCR0441L20R005-D-(C) | 4.1                   | 4   | 0.05 | 45 | 20 | 3.8 | 0.80 | ●    | ●    |
| MBCR0441L20R010-D-(C) | 4.1                   | 4   | 0.10 | 45 | 20 | 3.8 | 0.80 | ●    | ●    |
| MBCR0551L20R005-D-(C) | 5.1                   | 5   | 0.05 | 45 | 20 | 4.8 | 1.00 | ●    | ●    |
| MBCR0551L20R015-D-(C) | 5.1                   | 5   | 0.15 | 45 | 20 | 4.8 | 1.00 | ●    | ●    |
| MBCR0551L25R005-D-(C) | 5.1                   | 5   | 0.05 | 50 | 25 | 4.8 | 1.00 | ●    | ●    |
| MBCR0551L25R015-D-(C) | 5.1                   | 5   | 0.15 | 50 | 25 | 4.8 | 1.00 | ●    | ●    |
| MBCR0661L20R005-D-(C) | 6.1                   | 6   | 0.05 | 45 | 20 | 5.8 | 1.20 | ●    | ●    |
| MBCR0661L20R015-D-(C) | 6.1                   | 6   | 0.15 | 45 | 20 | 5.8 | 1.20 | ●    | ●    |
| MBCR0661L25R005-D-(C) | 6.1                   | 6   | 0.05 | 50 | 25 | 5.8 | 1.20 | ●    | ●    |
| MBCR0661L25R015-D-(C) | 6.1                   | 6   | 0.15 | 50 | 25 | 5.8 | 1.20 | ●    | ●    |
| MBCR0661L30R005-D-(C) | 6.1                   | 6   | 0.05 | 55 | 30 | 5.8 | 1.20 | ●    | ●    |
| MBCR0661L30R015-D-(C) | 6.1                   | 6   | 0.15 | 55 | 30 | 5.8 | 1.20 | ●    | ●    |

● в наличии

(C) выбор резца с подводом или без подвода СОЖ



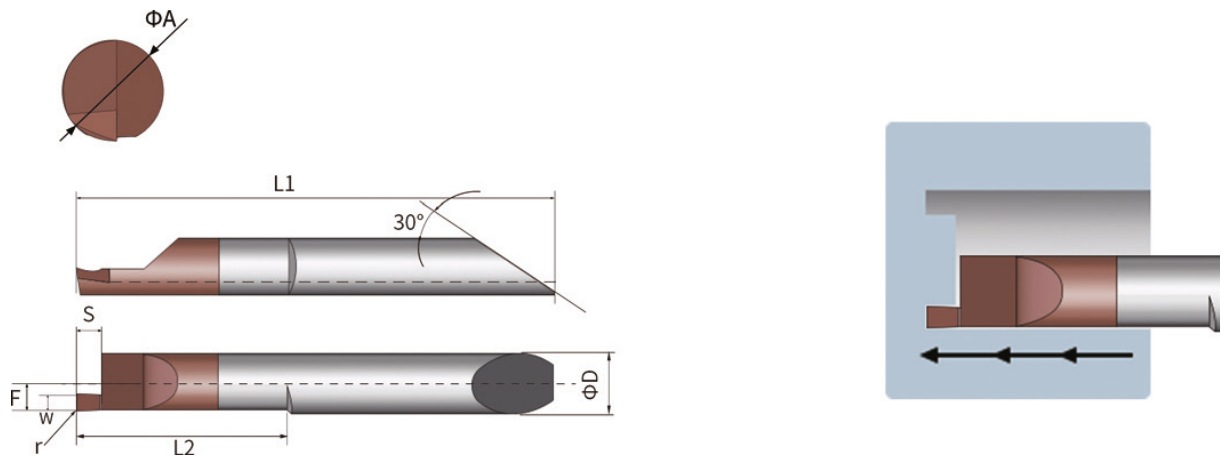
**MBXR  
ОБРАТНОЕ РАСТАЧИВАНИЕ**



| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2 | F   | S    | JS25 | AL25 |
|-----------------------|-----------------------|-----|------|----|----|-----|------|------|------|
| MBXR0441L16R010-D-(C) | 4.1                   | 4   | 0.10 | 41 | 16 | 3.8 | 1.00 | ●    | ●    |
| MBXR0551L20R010-D-(C) | 5.1                   | 5   | 0.10 | 45 | 20 | 4.8 | 1.30 | ●    | ●    |
| MBXR0661L25R010-D-(C) | 6.1                   | 6   | 0.10 | 50 | 25 | 5.8 | 1.60 | ●    | ●    |

- в наличии
- (C) выбор резца с подводом или без подвода СОЖ

**MFGR  
ОБРАБОТКА ТОРЦЕВОЙ КАНАВКИ**

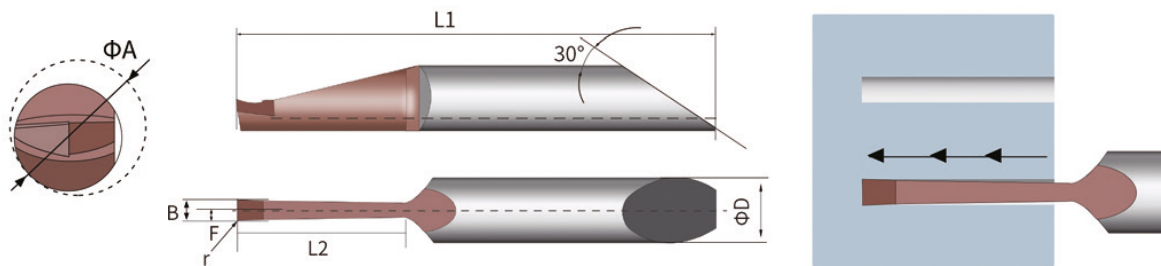


| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2 | F   | S    | W    | JS25 | AL25 |
|-----------------------|-----------------------|-----|------|----|----|-----|------|------|------|------|
| MFGR0450L12W050-U-(C) | 5.0                   | 4   | 0.05 | 37 | 12 | 1.9 | 1.00 | 0.50 | ●    | ●    |
| MFGR0450L12W100-U-(C) | 5.0                   | 4   | 0.05 | 37 | 12 | 1.9 | 1.50 | 1.00 | ●    | ●    |
| MFGR0450L12W150-U-(C) | 5.0                   | 4   | 0.05 | 37 | 12 | 1.9 | 2.00 | 1.50 | ●    | ●    |
| MFGR0560L15W100-U-(C) | 6.0                   | 5   | 0.10 | 40 | 15 | 2.4 | 1.50 | 1.00 | ●    | ●    |
| MFGR0560L15W150-U-(C) | 6.0                   | 5   | 0.10 | 40 | 15 | 2.4 | 2.50 | 1.50 | ●    | ●    |
| MFGR0560L15W200-U-(C) | 6.0                   | 5   | 0.10 | 40 | 15 | 2.4 | 3.00 | 2.00 | ●    | ●    |
| MFGR0680L20W100-U-(C) | 8.0                   | 6   | 0.10 | 45 | 20 | 2.9 | 2.00 | 1.00 | ●    | ●    |
| MFGR0680L20W150-U-(C) | 8.0                   | 6   | 0.10 | 45 | 20 | 2.9 | 2.50 | 1.50 | ●    | ●    |
| MFGR0680L20W200-U-(C) | 8.0                   | 6   | 0.10 | 45 | 20 | 2.9 | 3.00 | 2.00 | ●    | ●    |
| MFGR0680L20W300-U-(C) | 8.0                   | 6   | 0.10 | 45 | 20 | 2.9 | 4.50 | 3.00 | ●    | ●    |

- в наличии
- (C) выбор резца с подводом или без подвода СОЖ

## MGVR

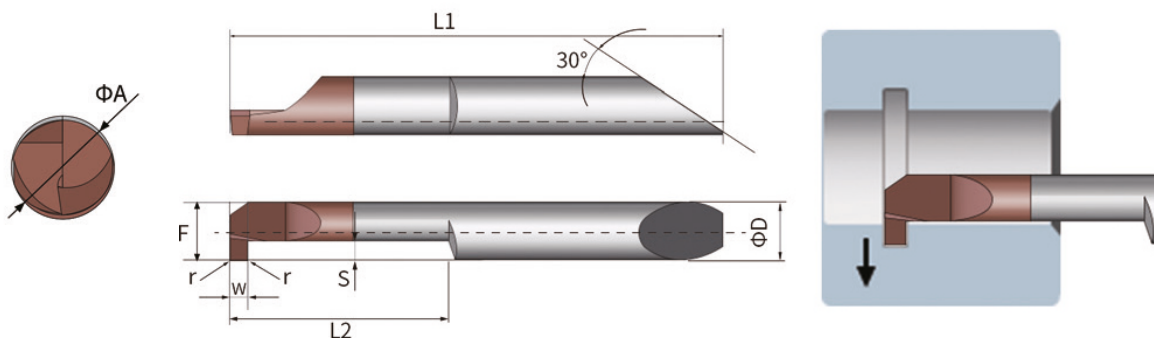
## ОБРАБОТКА ГЛУБОКОЙ ТОРЦЕВОЙ КАНАВКИ



| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r   | L1 | L2 | B   | F   | JS25 | AL25 |
|-----------------------|-----------------------|-----|-----|----|----|-----|-----|------|------|
| MGVR0712L15W200-U-(C) | 12                    | 7   | 0.2 | 47 | 15 | 2.0 | 1.1 | ●    | ●    |
| MGVR0712L15W150-U-(C) | 12                    | 7   | 0.2 | 47 | 15 | 2.5 | 1.4 | ●    | ●    |
| MGVR0712L15W300-U-(C) | 12                    | 7   | 0.2 | 47 | 15 | 3.0 | 1.6 | ●    | ●    |

## MGSR

## ОБРАБОТКА ВНУТРЕННЕЙ КАНАВКИ



| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r±0.01 | L1 | L2 | F    | S    | W    | JS25 | AL25 |
|-----------------------|-----------------------|-----|--------|----|----|------|------|------|------|------|
| MGSR0426L05W050-D-(C) | 2.6                   | 4   | 0.05   | 30 | 5  | 2.35 | 0.65 | 0.50 | ●    | ●    |
| MGSR0426L05W075-D-(C) | 2.6                   | 4   | 0.05   | 30 | 5  | 2.35 | 0.65 | 0.75 | ●    | ●    |
| MGSR0431L05W050-D-(C) | 3.1                   | 4   | 0.05   | 30 | 5  | 2.8  | 0.80 | 0.50 | ●    | ●    |
| MGSR0431L05W075-D-(C) | 3.1                   | 4   | 0.05   | 30 | 5  | 2.8  | 0.80 | 0.75 | ●    | ●    |
| MGSR0431L05W100-D-(C) | 3.1                   | 4   | 0.05   | 30 | 5  | 2.8  | 0.80 | 1.00 | ●    | ●    |
| MGSR0431L10W050-D-(C) | 3.1                   | 4   | 0.05   | 35 | 10 | 2.8  | 0.80 | 0.50 | ●    | ●    |
| MGSR0431L10W075-D-(C) | 3.1                   | 4   | 0.05   | 35 | 10 | 2.8  | 0.80 | 0.75 | ●    | ●    |
| MGSR0431L10W100-D-(C) | 3.1                   | 4   | 0.05   | 35 | 10 | 2.8  | 0.80 | 1.00 | ●    | ●    |
| MGSR0441L06W050-D-(C) | 4.1                   | 4   | 0.05   | 31 | 6  | 3.8  | 1.00 | 0.50 | ●    | ●    |
| MGSR0441L06W075-D-(C) | 4.1                   | 4   | 0.05   | 31 | 6  | 3.8  | 1.00 | 0.75 | ●    | ●    |
| MGSR0441L06W100-D-(C) | 4.1                   | 4   | 0.05   | 31 | 6  | 3.8  | 1.00 | 1.00 | ●    | ●    |
| MGSR0441L06W150-D-(C) | 4.1                   | 4   | 0.05   | 31 | 6  | 3.8  | 1.00 | 1.50 | ●    | ●    |
| MGSR0441L12W050-D-(C) | 4.1                   | 4   | 0.05   | 37 | 12 | 3.8  | 1.00 | 0.50 | ●    | ●    |
| MGSR0441L12W075-D-(C) | 4.1                   | 4   | 0.05   | 37 | 12 | 3.8  | 1.00 | 0.75 | ●    | ●    |
| MGSR0441L12W100-D-(C) | 4.1                   | 4   | 0.05   | 37 | 12 | 3.8  | 1.00 | 1.00 | ●    | ●    |
| MGSR0441L12W150-D-(C) | 4.1                   | 4   | 0.05   | 37 | 12 | 3.8  | 1.00 | 1.50 | ●    | ●    |
| MGSR0551L08W100-D-(C) | 5.1                   | 5   | 0.10   | 33 | 8  | 4.8  | 1.50 | 1.00 | ●    | ●    |
| MGSR0551L08W150-D-(C) | 5.1                   | 5   | 0.10   | 33 | 8  | 4.8  | 1.50 | 1.50 | ●    | ●    |
| MGSR0551L08W200-D-(C) | 5.1                   | 5   | 0.10   | 33 | 8  | 4.8  | 1.50 | 2.00 | ●    | ●    |
| MGSR0551L15W100-D-(C) | 5.1                   | 5   | 0.10   | 40 | 15 | 4.8  | 1.50 | 1.00 | ●    | ●    |
| MGSR0551L15W150-D-(C) | 5.1                   | 5   | 0.10   | 40 | 15 | 4.8  | 1.50 | 1.50 | ●    | ●    |
| MGSR0551L15W200-D-(C) | 5.1                   | 5   | 0.10   | 40 | 15 | 4.8  | 1.50 | 2.00 | ●    | ●    |
| MGSR0661L10W100-D-(C) | 6.1                   | 6   | 0.10   | 35 | 10 | 5.8  | 2.00 | 1.00 | ●    | ●    |
| MGSR0661L10W150-D-(C) | 6.1                   | 6   | 0.10   | 35 | 10 | 5.8  | 2.00 | 1.50 | ●    | ●    |
| MGSR0661L10W200-D-(C) | 6.1                   | 6   | 0.10   | 35 | 10 | 5.8  | 2.00 | 2.00 | ●    | ●    |
| MGSR0661L20W100-D-(C) | 6.1                   | 6   | 0.10   | 45 | 20 | 5.8  | 2.00 | 1.00 | ●    | ●    |
| MGSR0661L20W150-D-(C) | 6.1                   | 6   | 0.10   | 45 | 20 | 5.8  | 2.00 | 1.50 | ●    | ●    |
| MGSR0661L20W200-D-(C) | 6.1                   | 6   | 0.10   | 45 | 20 | 5.8  | 2.00 | 2.00 | ●    | ●    |
| MGSR0771L25W100-D-(C) | 7.1                   | 7   | 0.10   | 54 | 25 | 6.8  | 2.00 | 1.00 | ●    | ●    |
| MGSR0771L25W150-D-(C) | 7.1                   | 7   | 0.10   | 54 | 25 | 6.8  | 2.00 | 1.50 | ●    | ●    |
| MGSR0771L25W200-D-(C) | 7.1                   | 7   | 0.10   | 54 | 25 | 6.8  | 2.00 | 2.00 | ●    | ●    |

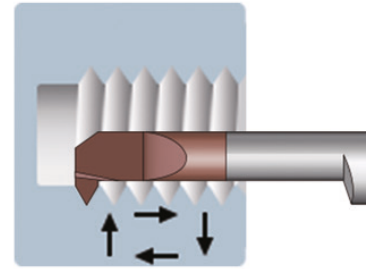
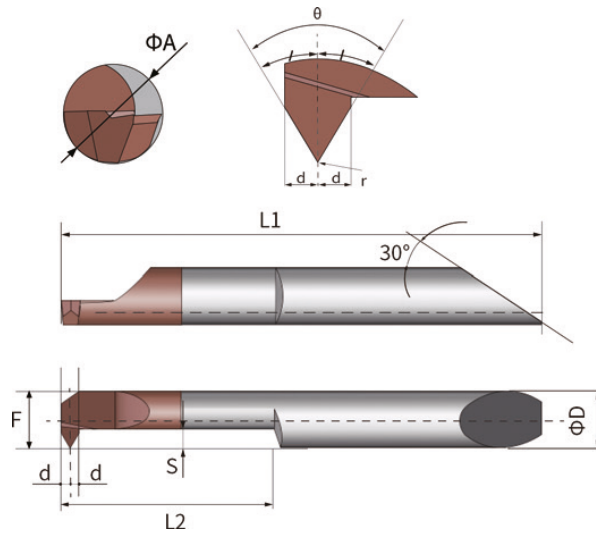
● в наличии

(C) выбор реза с подводом или без подвода СОЖ

## РЕЗЦЫ МАЛОГО ДИАМЕТРА

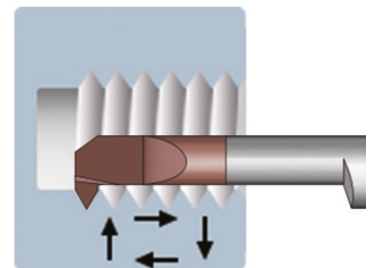
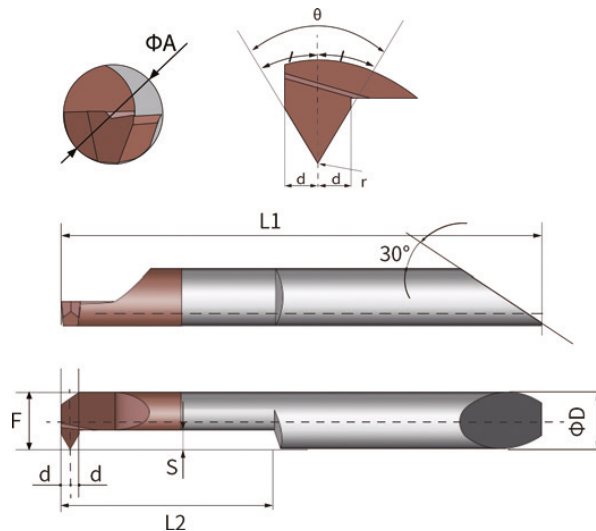
**FRENZMILL®**  
МЕТАЛЛОРЕЖУЩИЕ  
ИНСТРУМЕНТЫ

**MTHR**  
**ОБРАБОТКА ВНУТРЕННЕЙ РЕЗЬБЫ**



**60°**

| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2 | F   | S   | Угол ° | Диапазон шага | JS25 | AL25 |
|-----------------------|-----------------------|-----|------|----|----|-----|-----|--------|---------------|------|------|
| MTHR0415L04A60-D-(C)  | 1.5                   | 4   | 0.03 | 29 | 4  | 1.4 | 0.4 | 60°    | P0.25-P0.4    | ●    | ●    |
| MTHR0420L06A60-D-(C)  | 2.0                   | 4   | 0.03 | 31 | 6  | 1.9 | 0.5 | 60°    | P0.25-P0.5    | ●    | ●    |
| MTHR0425L08A60-D-(C)  | 2.5                   | 4   | 0.03 | 33 | 8  | 2.4 | 0.6 | 60°    | P0.25-P0.6    | ●    | ●    |
| MTHR0430L10A60-D-(C)  | 3.0                   | 4   | 0.05 | 35 | 10 | 2.9 | 1.0 | 60°    | P0.4-P0.8     | ●    | ●    |
| MTHR0441L12A60X-D-(C) | 4.0                   | 4   | 0.05 | 37 | 12 | 3.9 | 1.2 | 60°    | P0.4-P1.0     | ●    | ●    |
| MTHR0441L12A60-D-(C)  | 4.0                   | 4   | 0.10 | 37 | 12 | 3.9 | 1.2 | 60°    | P0.8-P1.0     | ●    | ●    |
| MTHR0551L15A60X-D-(C) | 5.0                   | 5   | 0.05 | 40 | 15 | 4.9 | 1.5 | 60°    | P0.4-P1.5     | ●    | ●    |
| MTHR0551L15A60-D-(C)  | 5.0                   | 5   | 0.10 | 40 | 15 | 4.9 | 1.5 | 60°    | P0.8-P1.5     | ●    | ●    |
| MTHR0661L20A60X-D-(C) | 6.0                   | 6   | 0.05 | 45 | 20 | 5.9 | 1.8 | 60°    | P0.4-P1.75    | ●    | ●    |
| MTHR0661L20A60-D-(C)  | 6.0                   | 6   | 0.10 | 45 | 20 | 5.9 | 1.8 | 60°    | P0.8-P1.75    | ●    | ●    |

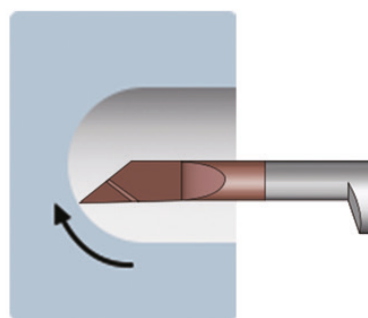
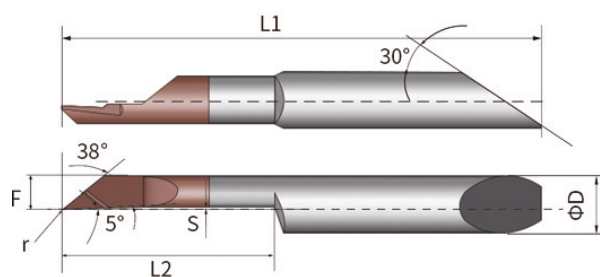
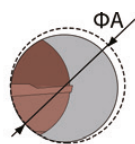


**55°**

| Обозначение          | Мин. диаметр, (мм) ØA | r | L1   | L2 | F  | S   | Угол ° | Диапазон шага | JS25  | AL25 |   |
|----------------------|-----------------------|---|------|----|----|-----|--------|---------------|-------|------|---|
| MTHR0431L10A55-D-(C) | 3.1                   | 4 | 0.05 | 35 | 10 | 2.9 | 1.0    | 55°           | 48-24 | ●    | ● |
| MTHR0441L12A55-D-(C) | 4.1                   | 4 | 0.05 | 37 | 12 | 3.9 | 1.2    | 55°           | 48-24 | ●    | ● |
| MTHR0551L15A55-D-(C) | 5.1                   | 5 | 0.08 | 40 | 15 | 4.9 | 1.6    | 55°           | 48-16 | ●    | ● |
| MTHR0661L20A55-D-(C) | 6.1                   | 6 | 0.08 | 45 | 20 | 5.9 | 1.9    | 55°           | 48-12 | ●    | ● |
| MTHR0771L25A55-D-(C) | 7.1                   | 7 | 0.15 | 54 | 25 | 7.9 | 2.5    | 55°           | 26-11 | ●    | ● |

- в наличии (C) выбор резца с подводом или без подвода СОЖ

## MFWR ТОРЦЕВОЕ ПРОФИЛИРОВАНИЕ

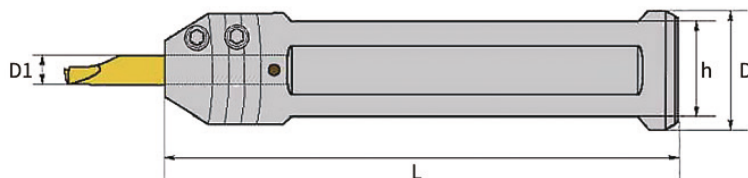


| Обозначение           | Мин. диаметр, (мм) ØA | Ø D | r    | L1 | L2 | F    | S    | JS25 | AL25 |
|-----------------------|-----------------------|-----|------|----|----|------|------|------|------|
| MFWR0435L08R010-D-(C) | 3.5                   | 4   | 0.10 | 33 | 8  | 1.55 | 0.15 | ●    | ●    |
| MFWR0445L10R010-D-(C) | 4.5                   | 4   | 0.10 | 35 | 10 | 1.95 | 0.25 | ●    | ●    |
| MFWR0555L12R010-D-(C) | 5.5                   | 5   | 0.10 | 38 | 12 | 2.45 | 0.30 | ●    | ●    |
| MFWR0665L15R010-D-(C) | 6.5                   | 6   | 0.10 | 40 | 15 | 2.95 | 0.35 | ●    | ●    |

● в наличии

(C) выбор реза с подводом или без подвода СОЖ

**ДЕРЖАВКИ ДЛЯ РАСТОЧНЫХ РЕЗЦОВ МАЛОГО ДИАМЕТРА**

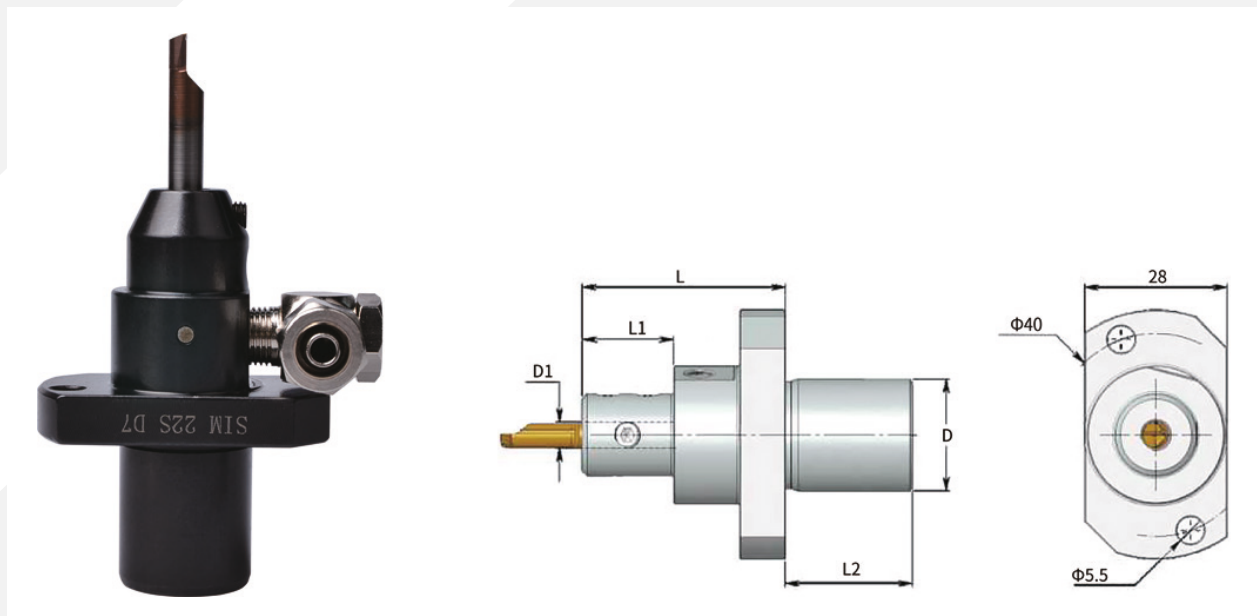


| Обозначение     | D     | D1 | L   | h    | Зажимной<br>винт |
|-----------------|-------|----|-----|------|------------------|
| SIM0012-D4      | 12    | 4  | 75  | 10.6 | T0507            |
| SIM0012-D5      | 12    | 5  | 75  | 10.6 | T0507            |
| SIM0012-D6      | 12    | 6  | 75  | 10.6 | T0507            |
| SIM0016-D4      | 16    | 4  | 90  | 14.6 | T0507            |
| SIM0016-D5      | 16    | 5  | 90  | 14.6 | T0507            |
| SIM0016-D6      | 16    | 6  | 90  | 14.6 | T0507            |
| SIM0016-D7      | 16    | 7  | 90  | 14.6 | T0507            |
| SIM0750-D4      | 19.05 | 4  | 90  | 17.8 | T0507            |
| SIM0750-D5      | 19.05 | 5  | 90  | 17.8 | T0507            |
| SIM0750-D6      | 19.05 | 6  | 90  | 17.8 | T0507            |
| SIM0750-D7      | 19.05 | 7  | 90  | 17.8 | T0507            |
| SIM0020-D4      | 20    | 4  | 90  | 18   | T0507            |
| SIM0020-D5      | 20    | 5  | 90  | 18   | T0507            |
| SIM0020-D6      | 20    | 6  | 90  | 18   | T0507            |
| SIM0020-D7      | 20    | 7  | 90  | 18   | T0507            |
| SIM0022-D4(130) | 22    | 4  | 130 | 20.6 | T0507            |
| SIM0022-D5(130) | 22    | 5  | 130 | 20.6 | T0507            |
| SIM0022-D6(130) | 22    | 6  | 130 | 20.6 | T0507            |
| SIM0022-D7      | 22    | 7  | 90  | 20.6 | T0507            |
| SIM0025-D4      | 25    | 4  | 90  | 23   | T0507            |
| SIM0025-D5      | 25    | 5  | 90  | 23   | T0507            |
| SIM0025-D6      | 25    | 6  | 90  | 23   | T0507            |
| SIM0025-D7      | 25    | 7  | 90  | 23   | T0507            |
| SIM1000-D4      | 25.4  | 4  | 90  | 23   | T0507            |
| SIM1000-D5      | 25.4  | 5  | 90  | 23   | T0507            |
| SIM1000-D6      | 25.4  | 6  | 90  | 23   | T0507            |
| SIM1000-D7      | 25.4  | 7  | 90  | 23   | T0507            |

● в наличии

(C) выбор резца с подводом или без подвода СОЖ

## ОПРАВКИ ДЛЯ СТАНКОВ



| Обозначение | Ø D | D1  | L  | L1 | L2 | dp  | Зажимной<br>ВИНТ |
|-------------|-----|-----|----|----|----|-----|------------------|
| SIM22S-D4   | 22  | 4.0 | 52 | 30 | 25 | 6.0 | T0507            |
| SIM22S-D5   | 22  | 5.0 | 52 | 30 | 25 | 6.0 | T0507            |
| SIM22S-D6   | 22  | 6.0 | 52 | 30 | 25 | 6.0 | T0507            |
| SIM22S-D7   | 22  | 7.0 | 52 | 30 | 25 | 6.0 | T0507            |

**ПОКРЫТИЕ**

| Покрытие | Цвет   | Применение   | Особенности  |
|----------|--|--|--|
| AT12     | <p><b>Золотистый</b></p>                    | <ul style="list-style-type: none"> <li>• Универсальное применение для материалов с твердостью ≤HRC45;</li> <li>• Нержавеющие стали (аустенитные и мартенситные: 303, 304, 316F, ...);</li> <li>• Стали (подшипниковые закаленные с содержанием Cr-Mo, Mn, ...);</li> <li>• Жаропрочные сплавы;</li> <li>• Медные сплавы;</li> <li>• Чугун;</li> <li>• Полимеры.</li> </ul>                   | <p><b>Многослойное покрытие:</b></p> <ul style="list-style-type: none"> <li>• высокая стойкость и низкий коэффициент трения.</li> </ul>                  |
| JS25     | <p><b>Бронзовый</b></p>                     | <ul style="list-style-type: none"> <li>• Универсальное применение для материалов с твердостью ≤HRC60;</li> <li>• Нержавеющие стали (аустенитные и мартенситные: 316L, 303, 304, 321, 316F, с высоким содержанием Ni, ...);</li> <li>• Стали (подшипниковые, закаленные, с содержанием Cr-Mo, Mn, ...);</li> <li>• Жаропрочные сплавы;</li> <li>• Медные сплавы;</li> <li>• Чугун.</li> </ul> | <ul style="list-style-type: none"> <li>• Высокая стойкость;</li> <li>• Высокая красностойкость ≤1100° C;</li> <li>• Высокая твердость 3300 HV</li> </ul> |
| AL25     | <p><b>Сине-черный</b></p>                 | <ul style="list-style-type: none"> <li>• Специальное покрытие для пластичных материалов;</li> <li>• Чистое железо, мягкие конструкционные и нержавеющие стали.</li> </ul>  | <ul style="list-style-type: none"> <li>• Низкий коэффициент трения.</li> </ul>   |
| LC25     | <p><b>Черный</b></p>                      | <ul style="list-style-type: none"> <li>• Специальное покрытие для цветных сплавов и полимерных материалов.</li> </ul>  | <ul style="list-style-type: none"> <li>• Минимальный коэффициент трения 0.1...0.2.</li> </ul>  |
| AT25     | <p><b>Светло-золотистый</b></p>           | <ul style="list-style-type: none"> <li>• Специальное покрытие для титановых сплавов.</li> </ul>  | <ul style="list-style-type: none"> <li>• Применяется для обработки титановых сплавов.</li> </ul>   |
| NC25     | <p><b>Серебристый (без покрытия)</b></p>  | <ul style="list-style-type: none"> <li>• Для цветных сплавов.</li> </ul>   |  |