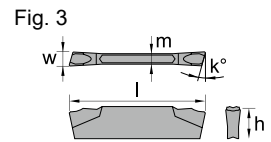
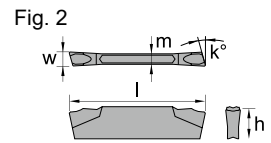
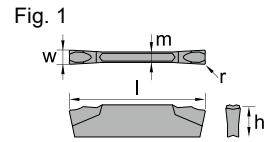


KGM Grooving Tools (Depth < 20mm)

Insert Specifications

| Insert | Dimensions (mm) | | | | | | Fig. |
|------------|-----------------|------|----|-----|-----|-----|------|
| | w | r | l | h | m | k° | |
| GMM2020 | 2.0 | 0.20 | 20 | 4.3 | 1.5 | - | 1 |
| GMM2020R06 | 2.0 | - | 20 | 4.3 | 1.5 | 6° | 2 |
| GMM2020R15 | 2.0 | - | 20 | 4.3 | 1.5 | 15° | 2 |
| GMM2020L15 | 2.0 | - | 20 | 4.3 | 1.5 | 15° | 3 |
| GMM2520 | 2.5 | 0.20 | 20 | 4.3 | 1.9 | - | 1 |
| GMM2520R06 | 2.5 | - | 20 | 4.3 | 1.9 | 6° | 2 |
| GMM2520R15 | 2.5 | - | 20 | 4.3 | 1.9 | 15° | 2 |
| GMM2520L15 | 2.5 | - | 20 | 4.3 | 1.9 | 15° | 3 |
| GMM3020 | 3.0 | 0.25 | 20 | 4.3 | 2.3 | - | 1 |
| GMM3020R06 | 3.0 | - | 20 | 4.3 | 2.3 | 6° | 2 |
| GMM3020R15 | 3.0 | - | 20 | 4.3 | 2.3 | 15° | 2 |
| GMM3020L15 | 3.0 | - | 20 | 4.3 | 2.3 | 15° | 3 |

| Chipbreaker | |
|-------------|-----------------------|
| MR | For high feed cutting |



Insert Order Code

| InserTX | Order No. | Designation | Working Material | | | | | |
|----------------------------------|-------------------------------------|-------------------------------------|------------------|---|---|---|---|---|
| | | | P | M | K | N | S | H |
| | IGMM2020MR32HX | GMM2020-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM2020MR33TX | GMM2020-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM2020MR43TX | GMM2020-MR-CX43TX | ● | ● | ● | | ● | |
| | IGMM2520MR32HX | GMM2520-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM2520MR33TX | GMM2520-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM3020MR32HX | GMM3020-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM3020MR33TX | GMM3020-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM2020R06MR32HX | GMM2020R06-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM2020R06MR33TX | GMM2020R06-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM2020R06MR43TX | GMM2020R06-MR-CX43TX | ● | ● | ● | | ● | |
| | IGMM2520R06MR32HX | GMM2520R06-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM2520R06MR33TX | GMM2520R06-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM3020R06MR32HX | GMM3020R06-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM3020R06MR33TX | GMM3020R06-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM2020 ^{R/L} 15MR32HX | GMM2020 ^{R/L} 15-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM2020 ^{R/L} 15MR33TX | GMM2020 ^{R/L} 15-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM2020 ^{R/L} 15MR43TX | GMM2020 ^{R/L} 15-MR-CX43TX | ● | ● | ● | | ● | |
| | IGMM2520 ^{R/L} 15MR32HX | GMM2520 ^{R/L} 15-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| | IGMM2520 ^{R/L} 15MR33TX | GMM2520 ^{R/L} 15-MR-CX33TX | ● | ● | ● | | ● | ● |
| | IGMM3020 ^{R/L} 15MR32HX | GMM3020 ^{R/L} 15-MR-CX32HX | ● | ● | ● | | ○ | ○ |
| IGMM3020 ^{R/L} 15MR33TX | GMM3020 ^{R/L} 15-MR-CX33TX | ● | ● | ● | | ● | ● | |

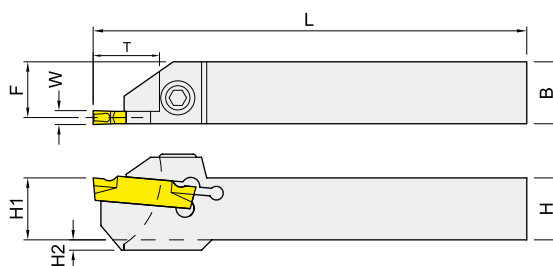
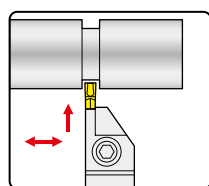
* CX32HX, CX33TX grade for General cutting.
CX43TX grade for Interrupted cutting.

KGM Grooving Tools (Depth < 20mm)

Recommended Cutting Conditions

| Working Material | Vc (m/min) | Parting off, fr (mm/rev) | | Grooving, fr (mm/rev) | |
|----------------------------|------------|--------------------------|-------------|-----------------------|-------------|
| | | Cutting Width (w) | | | |
| | | 2 | 3 | 2 | 3 |
| Carbon Steel / Alloy Steel | 80 ~ 200 | 0.02 ~ 0.14 | 0.03 ~ 0.21 | 0.04 ~ 0.08 | 0.06 ~ 0.12 |
| Stainless Steel | 60 ~ 140 | 0.02 ~ 0.10 | 0.03 ~ 0.15 | 0.04 ~ 0.06 | 0.06 ~ 0.09 |
| Cast Iron | 80 ~ 200 | 0.04 ~ 0.14 | 0.06 ~ 0.21 | 0.04 ~ 0.08 | 0.06 ~ 0.12 |
| High Temperature Alloy | 50 ~ 100 | 0.02 ~ 0.06 | 0.03 ~ 0.09 | 0.02 ~ 0.04 | 0.03 ~ 0.06 |

External Tool Holder Specifications



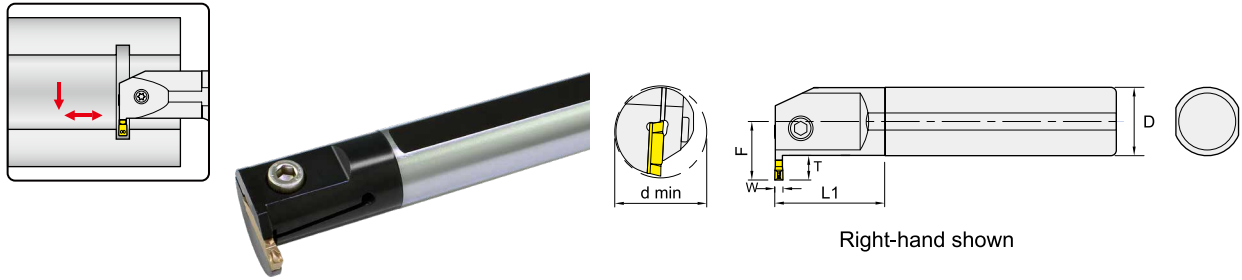
Right-hand shown

Insert Brand: Winstar, Kyocera, ...

| Order No. | Dimensions (mm) | | | | | | W (mm) | | Inserts | Screw | Wrench | |
|--|-----------------|----|-----|------|----|----|--------|-----|-------------------------------------|-----------|----------|--------|
| | H (H1) | B | L | F | T | H2 | min | max | | | | |
| IKGM ^R / _L 1212K1.5L10 | 12 | 12 | 125 | 11.4 | 10 | 2 | 1.5 | 2.0 | GMM2020.. | IHTM416 | IPL30 | |
| IKGM ^R / _L 1616K1.5L10 | 16 | 16 | 125 | 15.4 | 10 | - | 1.5 | 2.0 | | IHTMT520 | IETL25 | |
| IKGM ^R / _L 2020K1.5L10 | 20 | 20 | 125 | 19.4 | 10 | - | 1.5 | 2.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 2525M1.5L10 | 25 | 25 | 150 | 24.4 | 10 | - | 1.5 | 2.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 1212K2TL10 | 12 | 12 | 125 | 11.1 | 10 | 2 | 2.0 | 3.0 | GMM2020.. GMM2520.. GMM3020.. | IHTM416 | IPL30 | |
| IKGM ^R / _L 1616K2TL10 | 16 | 16 | 125 | 15.1 | 10 | - | 2.0 | 3.0 | | IHTMT520 | IETL25 | |
| IKGM ^R / _L 2020K2TL10 | 20 | 20 | 125 | 19.1 | 10 | - | 2.0 | 3.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 2525M2TL10 | 25 | 25 | 150 | 24.1 | 10 | - | 2.0 | 3.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 1212K2TL13 | 12 | 12 | 125 | 11.1 | 13 | 3 | 2.0 | 3.0 | | IHTM420 | IPL30 | |
| IKGM ^R / _L 1616K2TL13 | 16 | 16 | 125 | 15.1 | 13 | - | 2.0 | 3.0 | | IHTMT520 | IETL25 | |
| IKGM ^R / _L 2020K2TL13 | 20 | 20 | 125 | 19.1 | 13 | - | 2.0 | 3.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 2525M2TL13 | 25 | 25 | 150 | 24.1 | 13 | - | 2.0 | 3.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 1212K2TL17 | 12 | 12 | 125 | 11.1 | 17 | 4 | 2.0 | 3.0 | | IHTM420 | IPL30 | |
| IKGM ^R / _L 1616K2TL17 | 16 | 16 | 125 | 15.1 | 17 | - | 2.0 | 3.0 | | IHTMT520 | IETL25 | |
| IKGM ^R / _L 2020K2TL17 | 20 | 20 | 125 | 19.1 | 17 | - | 2.0 | 3.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 2525M2TL17 | 25 | 25 | 150 | 24.1 | 17 | - | 2.0 | 3.0 | | IHTMT525 | IETL25 | |
| IKGM ^R / _L 1616K3TL16 | 16 | 16 | 125 | 14.8 | 16 | - | 3.0 | 4.0 | | GMM3020.. | IHTMT520 | IETL25 |
| IKGM ^R / _L 2020K3TL16 | 20 | 20 | 125 | 18.8 | 16 | - | 3.0 | 4.0 | | | IHTMT525 | IETL25 |
| IKGM ^R / _L 2525M3TL16 | 25 | 25 | 150 | 23.8 | 16 | - | 3.0 | 4.0 | | | IHTMT525 | IETL25 |
| IKGM ^R / _L 1616K3TL20 | 16 | 16 | 125 | 14.8 | 20 | 4 | 3.0 | 4.0 | | | IHTMT525 | IETL25 |
| IKGM ^R / _L 2020K3TL20 | 20 | 20 | 125 | 18.8 | 20 | - | 3.0 | 4.0 | IHTMT525 | | IETL25 | |
| IKGM ^R / _L 2525M3TL20 | 25 | 25 | 150 | 23.8 | 20 | - | 3.0 | 4.0 | IHTMT525 | | IETL25 | |
| IKGMR3232P3TL20 | 32 | 32 | 170 | 30.8 | 20 | - | 3.0 | 4.0 | IHTMT525 | | IETL25 | |

KIGM Grooving Tools (Depth < 9mm)

Internal Tool Holder Specifications



Insert Brand: Winstar, Kyocera, ...

| Order No. | Dimensions (mm) | | | | | | | Inserts | Screw | Wrench |
|----------------|-----------------|-----|----|------|---|---|-------|-----------|----------|--------|
| | D | L | L1 | F | T | W | d min | | | |
| IKIGMRS20Q3T07 | 20 | 180 | 35 | 17 | 7 | 3 | 28 | GMM3020.. | IHTM516 | IPL40 |
| IKIGMRS25R3T09 | 25 | 200 | 40 | 21.5 | 9 | 3 | 35 | | IHTMT520 | IETL25 |