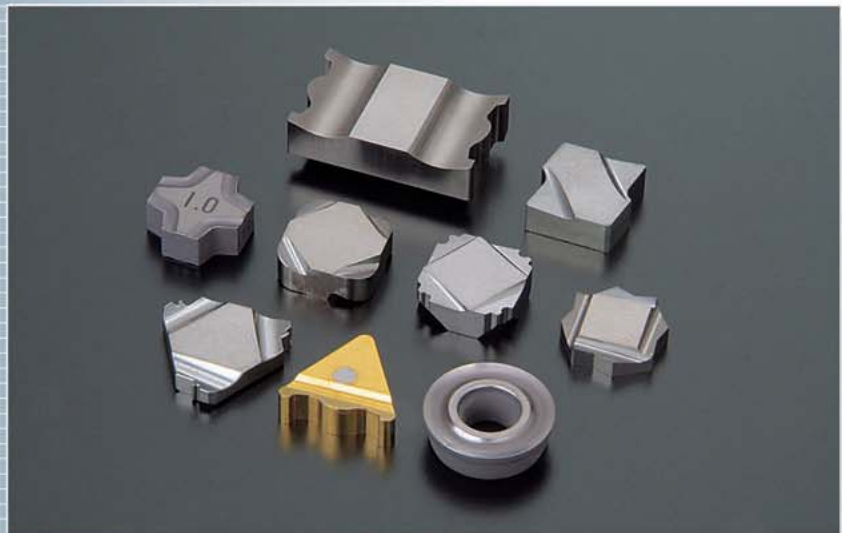


Bearing Tool



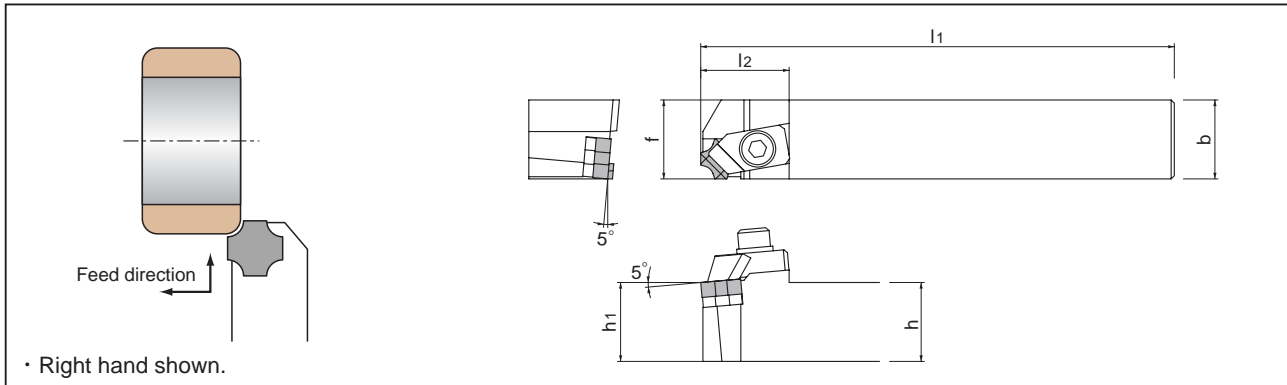
R-Chamfering P.176



Outside Machining P.182

Internal Machining P.186

R-Chamfering Holders (for outside machining)

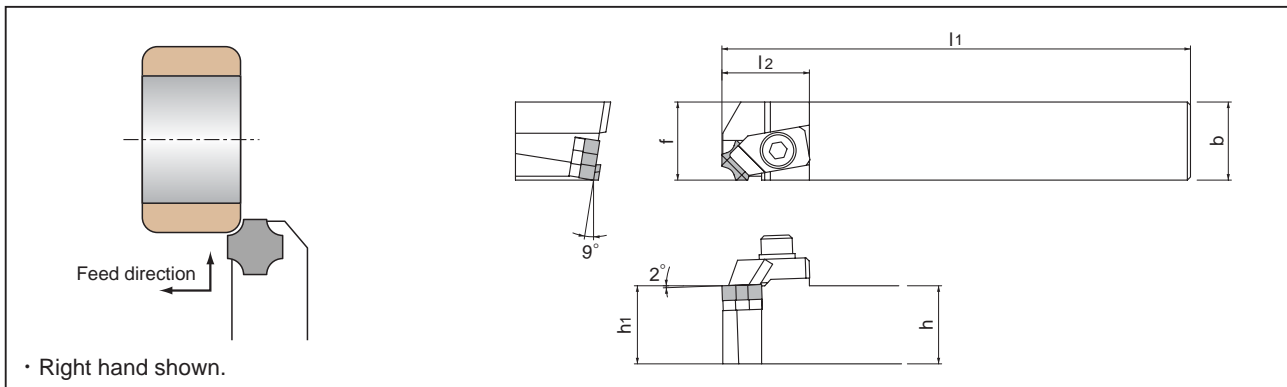
CBS...type F





| Toolholder | Stock | | Dimensions (mm) | | | | | Insert | |
|---|-------|---|------------------|----|----------------|----|----------------|--|---|
| | R | L | h/h ₁ | b | l ₁ | f | l ₂ |  |  |
| CBS ^{R/L} 16K32F 20K43F 25M43F 25M53F | ● | ● | 16 | 16 | 125 | 16 | 23 | BSMF32 | BSMF43 |
| | ● | ○ | 20 | 20 | 125 | 20 | 28 | BSMF43 | |
| | ● | | 25 | 25 | 150 | 25 | 28 | | |
| | ○ | ○ | 25 | 25 | 150 | 25 | 35 | BSGF53 | |

For details of insert, please see next page.

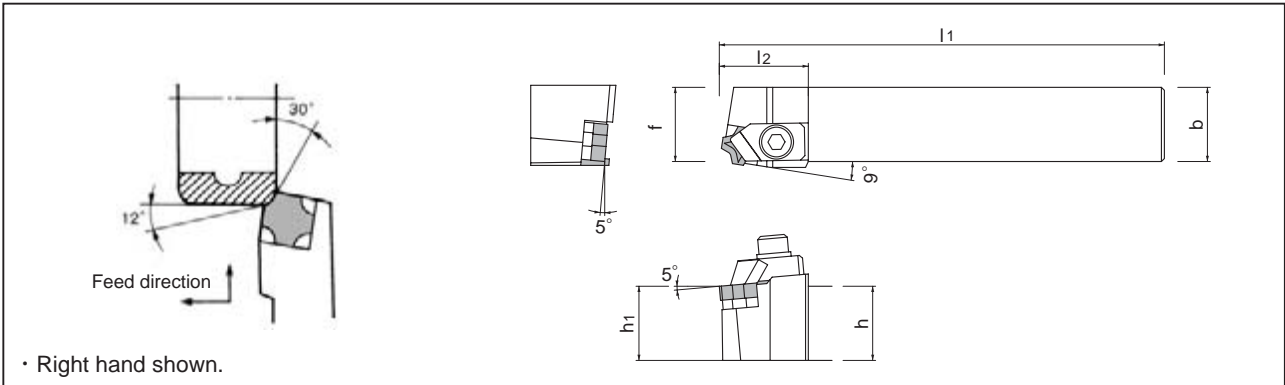
CBS...type B




| Toolholder | Stock | | Dimensions (mm) | | | | | Insert | |
|---|-------|---|------------------|----|----------------|----|----------------|--|---|
| | R | L | h/h ₁ | b | l ₁ | f | l ₂ |  |  |
| CBS ^{R/L} 16K32B 20K43B 25M43B 25M53B | ● | ● | 16 | 16 | 125 | 16 | 23 | BSMF32 | BSMF43 |
| | ○ | ○ | 20 | 20 | 125 | 20 | 28 | BSMF43 | |
| | ● | ● | 25 | 25 | 150 | 25 | 28 | | |
| | | | 25 | 25 | 150 | 25 | 35 | BSGF53 | |

For details of insert, please see next page.


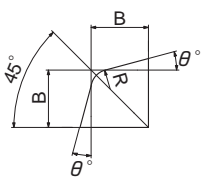

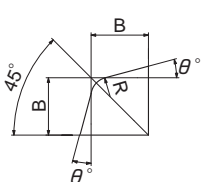
CBG...type F



• Right hand shown.

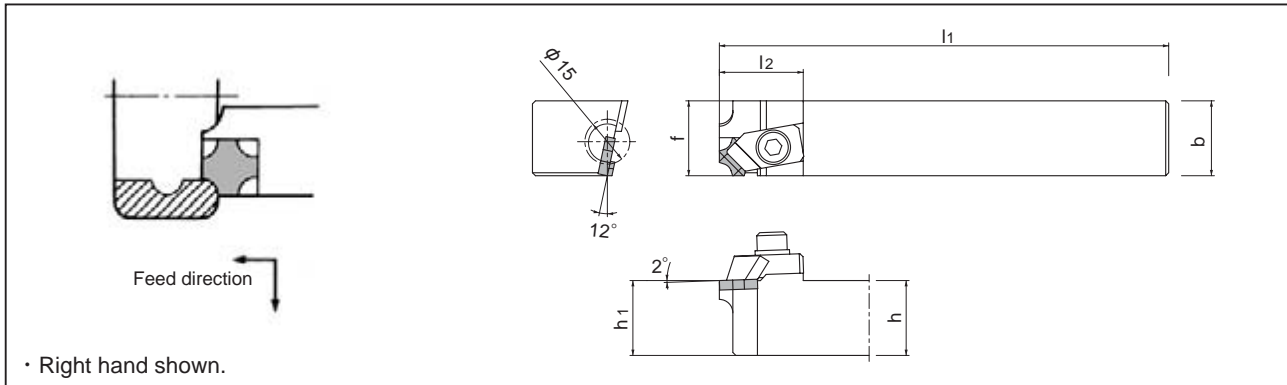
| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|-------------------------------------|-------|---|-----------------|----|-----|----|----|---|
| | R | L | h/h1 | b | l1 | f | l2 |  |
| CBG ^{R/L} 20K43F 25M43F | ○ | | 20 | 20 | 125 | 20 | 30 | BSMF43 |
| | ● | | 25 | 25 | 150 | 25 | 30 | |


● Insert

| Shape | Insert Number | Dimensions (mm) | | | | | Grade | |
|---|-----------------------|-----------------|----------|-----|------------------|-----------|-------|-----|
| | | R | θ | B | Inscribed circle | Thickness | T15 | N40 |
|   | BSMF 3206H20EM | 0.6 | 15° | 2.0 | 9.525 | 3.18 | | |
| | 3206D20EM | 0.6 | 18° | 2.0 | | | | ● |
| | BSMF 4315H29EM | 1.5 | 18° | 2.9 | 12.70 | 4.76 | ○ | |
| | 4320H26EM | 2.0 | 18° | 2.6 | | | | ● |
| 4330H33EM | 3.0 | 18° | 3.3 | ○ | | | | |
|   | BSMF 4306H20EN | 0.6 | 18° | 2.0 | 12.70 | 4.76 | | |
| | 4306T20EN | 0.6 | 21° | 2.0 | | | | ○ |
| | 4308D34EN | 0.8 | 15° | 3.4 | | | | ○ |
| | 4310H30EN | 1.0 | 18° | 3.0 | | | | ● |
| | 4310T30EN | 1.0 | 21° | 3.0 | | | | ○ |
| | 4312D29EN | 1.2 | 15° | 2.9 | | | | ● |
| | 4312H29EN | 1.2 | 18° | 2.9 | | | | |
| | 4315H29EN | 1.5 | 18° | 2.9 | | | | |
| | 4316T35EN | 1.6 | 21° | 3.5 | | | | ● |
| | 4317D29EN | 1.7 | 15° | 2.9 | | | | ● |
| | 4317H29EN | 1.7 | 18° | 2.9 | | | | |
| | 4320H26EN | 2.0 | 18° | 2.6 | | | | ● |
| | 4321T35EN | 2.1 | 21° | 3.5 | | | | ● |
| | 4325H37EN | 2.5 | 18° | 3.7 | | | | |
| | 4330H37EN | 3.0 | 18° | 3.7 | | | | ● |
| | 4335H39EN | 3.5 | 18° | 3.9 | | | | ● |
| 4340E35EN | 4.0 | 20° | 3.5 | | | | | |

R-Chamfering Holders (for internal machining)

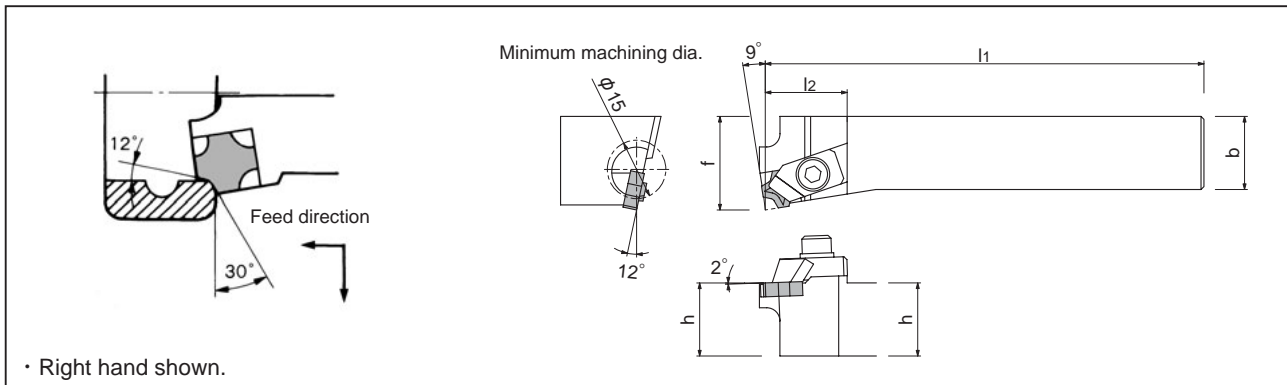
CBU···type B Minimum machining diameter $\phi 15$




| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|---------------------------|-------|---|------------------|----|----------------|----|----------------|---|
| | R | L | h/h ₁ | b | l ₁ | f | l ₂ |  |
| CBU ^{R/L} 20K42B | ○ | | 20 | 20 | 125 | 20 | 28 | BSMF42 |
| 25M42B | ● | ● | 25 | 25 | 150 | 25 | 28 | |

For details of insert, please see next page.

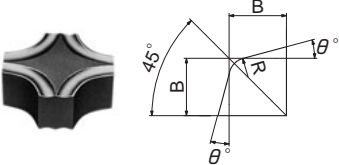
CBN···type B Minimum machining diameter $\phi 15$



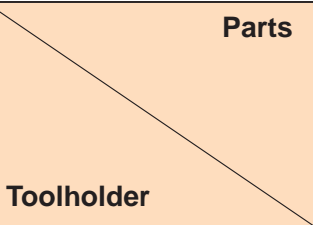






| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|---------------------------|-------|---|------------------|----|----------------|----|----------------|---|
| | R | L | h/h ₁ | b | l ₁ | f | l ₂ |  |
| CBN ^{R/L} 20K42B | ● | | 20 | 20 | 125 | 25 | 28 | BSMF42 |
| 25M42B | | | 25 | 25 | 150 | 32 | 28 | |

For details of insert, please see next page.

● Inserts

| Shape | Insert Number | Dimensions (mm) | | | | | Grade | |
|---|-----------------------|-----------------|----------|-----|------------------|-----------|-------|-----|
| | | R | θ | B | Inscribed circle | Thickness | T15 | N40 |
|  | BSMF 4206T20EN | 0.6 | 21° | 2.0 | 12.70 | 3.18 | | |
| | 4210T30EN | 1.0 | 21° | 3.0 | | | | |
| | 4216T35EN | 1.6 | 21° | 3.5 | | | | |
| | 4221T35EN | 2.1 | 21° | 3.5 | | | | ● |

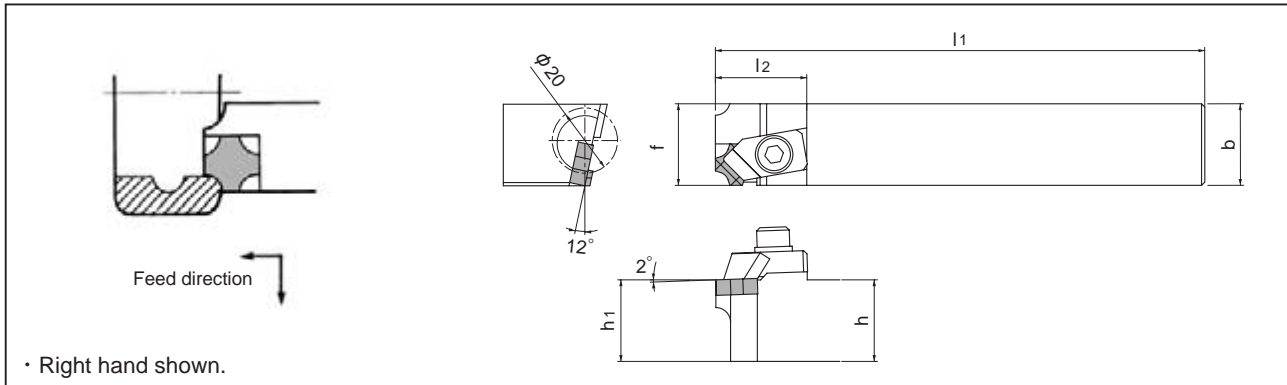
● Parts



| Parts | Clamp | Shim sheet | Clamping screw | Retaining screw | Washer | Wrench |
|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |
| CBS^{R/L} 16K32 | CB ^{R/L} 3 | ABS32 | CS0520 | M2 X 6 | WS-5 | LW-4 |
| 20K43 | CB ^{R/L} 4 | ABS42 | CS0625 | M3 X 8 | WS-6 | LW-5 |
| 25M43 | | ABS52 | CS0625 | M4 X 10 | WS-6 | LW-5 |
| 25M53 | CB ^{R/L} 5 | ABS52 | CS0625 | M4 X 10 | WS-6 | LW-5 |
| CBG^{R/L} 20K43F | CB ^{R/L} 4 | ABS42 | CS0625 | M3 X 8 | WS-6 | LW-5 |
| 25M43F | | | | | | |
| CBU^{R/L} 20K42B | CB ^{R/L} 4 | | CS0625 | | WS-6 | LW-5 |
| 25M42B | | | | | | |
| CBN^{R/L} 20K42B | CB ^{R/L} 4 | | CS0625 | | WS-6 | LW-5 |
| 25M42B | | | | | | |

R-Chamfering Holders (for internal machining)

CBU···type B

Minimum machining diameter $\phi 20$

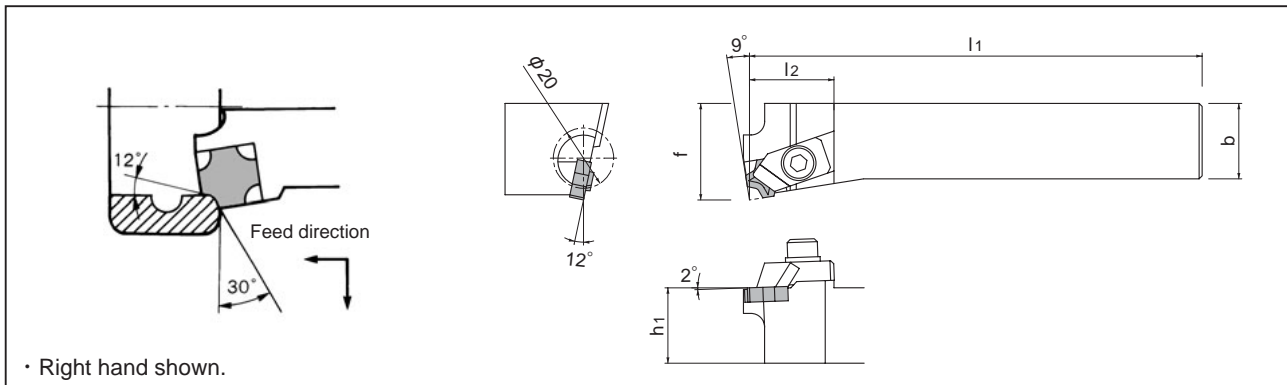



| Toolholder | Stock | | Dimensions (mm) | | | | | Insert | |
|---------------------------|-------|---|------------------|----|----------------|----|----------------|--|---|
| | R | L | h/h ₁ | b | l ₁ | f | l ₂ |  |  |
| CBU ^{R/L} 20K43B | ● | ● | 20 | 20 | 125 | 20 | 20 | BSMF43 | BSMF43 |
| 25M43B | ● | ● | 25 | 25 | 150 | 25 | 25 | | |

For details of insert, please see next page.

CBN···type B

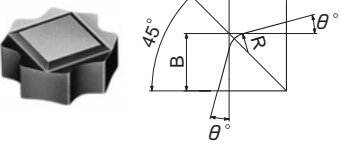
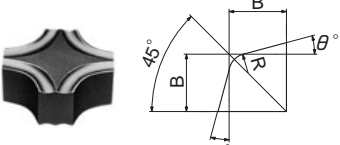
Minimum machining diameter $\phi 20$









| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|---------------------------|-------|---|------------------|----|----------------|----|----------------|---|
| | R | L | h/h ₁ | b | l ₁ | f | l ₂ |  |
| CBN ^{R/L} 20K43B | ● | | 20 | 20 | 125 | 25 | 28 | BSMF43 |
| 25M43B | ○ | | 25 | 25 | 150 | 32 | 28 | |

For details of insert, please see next page.

● Insert

| Shape | Insert Number | Dimensions (mm) | | | | | Grade | |
|--|-----------------------|-----------------|----------|-----|------------------|-----------|-------|-----|
| | | R | θ | B | Inscribed circle | Thickness | T15 | N40 |
|  | BSMF 3206H20EM | 0.6 | 15° | 2.0 | 9.525 | 3.18 | ○ | |
| | 3206D20EM | 0.6 | 18° | 2.0 | | | ● | |
| | BSMF 4315H29EM | 1.5 | 18° | 2.9 | 12.70 | 4.76 | ○ | |
| | 4320H26EM | 2.0 | 18° | 2.6 | | | ● | |
| 4330H33EM | 3.0 | 18° | 3.3 | ○ | | | | |
|  | BSMF 4306H20EN | 0.6 | 18° | 2.0 | 12.70 | 4.76 | | |
| | 4306T20EN | 0.6 | 21° | 2.0 | | | ○ | |
| | 4308D34EN | 0.8 | 15° | 3.4 | | | ○ | |
| | 4310H30EN | 1.0 | 18° | 3.0 | | | ● | |
| | 4310T30EN | 1.0 | 21° | 3.0 | | | ○ | |
| | 4312D29EN | 1.2 | 15° | 2.9 | | | ● | |
| | 4312H29EN | 1.2 | 18° | 2.9 | | | | |
| | 4315H29EN | 1.5 | 18° | 2.9 | | | | |
| | 4316T35EN | 1.6 | 21° | 3.5 | | | ● | |
| | 4317D29EN | 1.7 | 15° | 2.9 | | | ● | |
| | 4317H29EN | 1.7 | 18° | 2.9 | | | | |
| | 4320H26EN | 2.0 | 18° | 2.6 | | | ● | |
| | 4321T35EN | 2.1 | 21° | 3.5 | | | ● | |
| | 4325H37EN | 2.5 | 18° | 3.7 | | | | |
| | 4330H37EN | 3.0 | 18° | 3.7 | | | ● | |
| | 4335H39EN | 3.5 | 18° | 3.9 | | | ● | |
| 4340E35EN | 4.0 | 20° | 3.5 | | | | | |

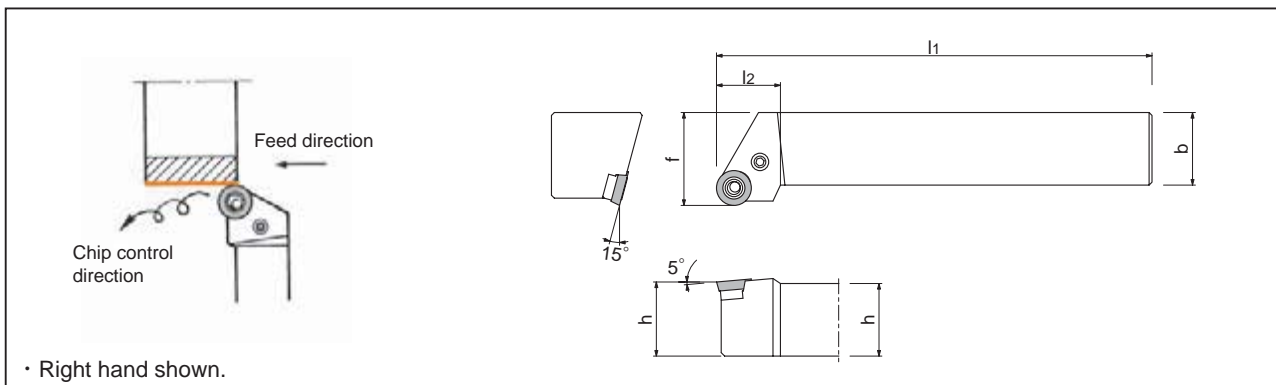
● Parts


| Parts | Clamp | Shim | Clamping screw | Shim screw | Washer | Wrench |
|--|---|---|---|---|---|---|
| Toolholder |  |  |  |  |  |  |
| CBU^{R/L} 20K43B 25M43B | CB ^{R/L} 4 | | CS0625 | | WS-6 | LW-5 |
| CBN^{R/L} 20K43B 25M43B | | | | | | |

Outside Machining Holders (lever-lock-type)

PRGP...type F

• It is designed so that the chips are thrown in the **SAME** direction as the tool's feed.

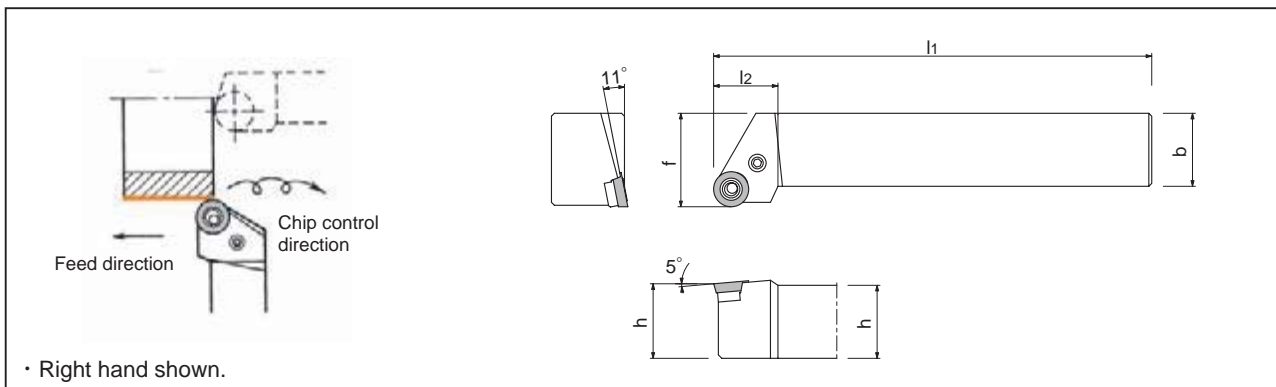



| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|--|-------|---|-----------------|----|-----|----|----|---|
| | R | L | h/h1 | b | l1 | f | l2 |  |
| PRGP ^{R/L} 20K1203F 25M1203F | | | 20 | 20 | 125 | 25 | 22 | RPMT1604M0GB |
| | | | 25 | 25 | 150 | 32 | 22 | RPMT2004M0GB |

For details of insert, please see P187.

PRGP...type B

• It is designed so that the chips are thrown in the **OPPOSITE** direction as the tool's feed.



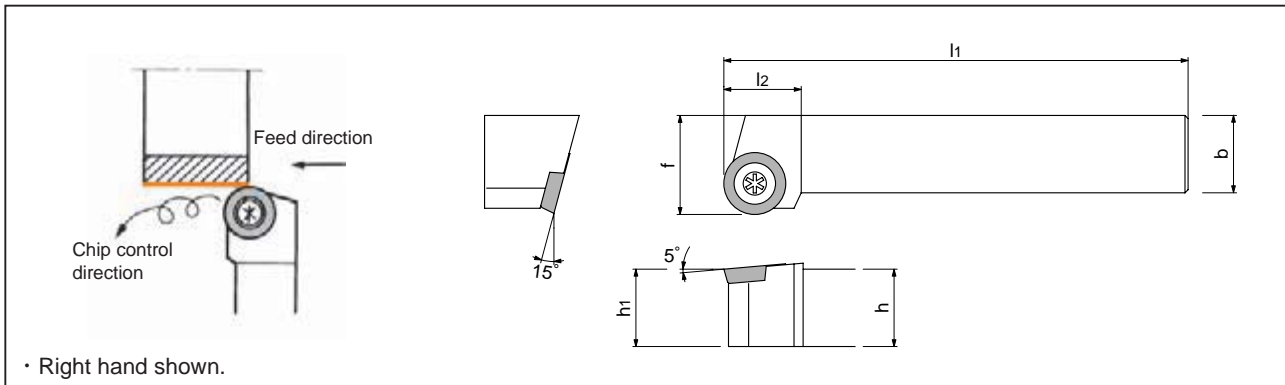
| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|--|-------|---|-----------------|----|-----|----|----|---|
| | R | L | h/h1 | b | l1 | f | l2 |  |
| PRGP ^{R/L} 20K1203B 25M1203B | | | 20 | 20 | 125 | 25 | 22 | RPMX1203MGB |
| | | | 25 | 25 | 150 | 32 | 22 | |


For details of insert, please see P187.

Outside Machining Holders (screw-on-type)

SRG...type F

• It is designed so that the chips are thrown in the **SAME** direction as the tool's feed.

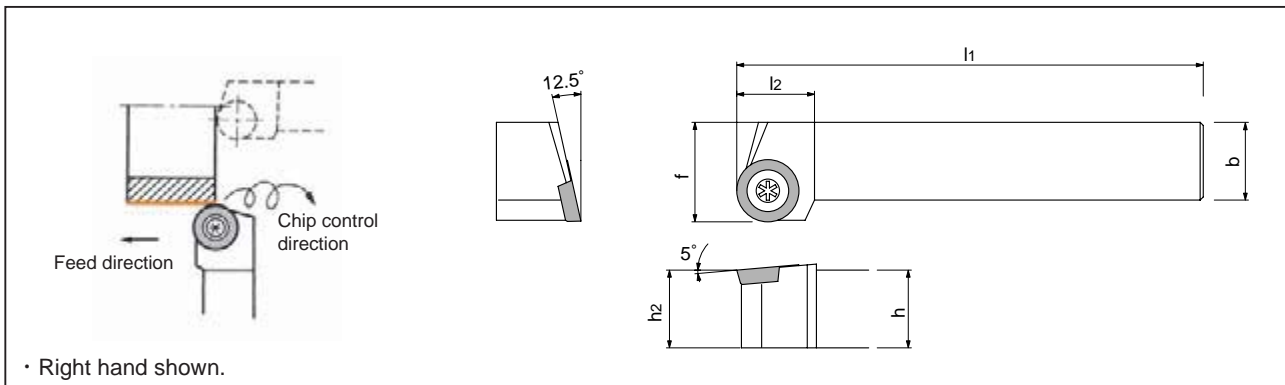



| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|-------------------------------------|-------|---|-----------------|----|-----|----|----|---|
| | R | L | h/h1 | b | l1 | f | l2 | |
| SRG ^{R/L} 20K16F 25M20F | ○ | ○ | 20 | 20 | 125 | 20 | 20 |  RPMT1604M0GB RPMT2004M0GB |
| | ● | | 25 | 25 | 150 | 25 | 25 | |

For details of insert, please see P187.

SRG...type B

• It is designed so that the chips are thrown in the **OPPOSITE** direction as the tool's feed.



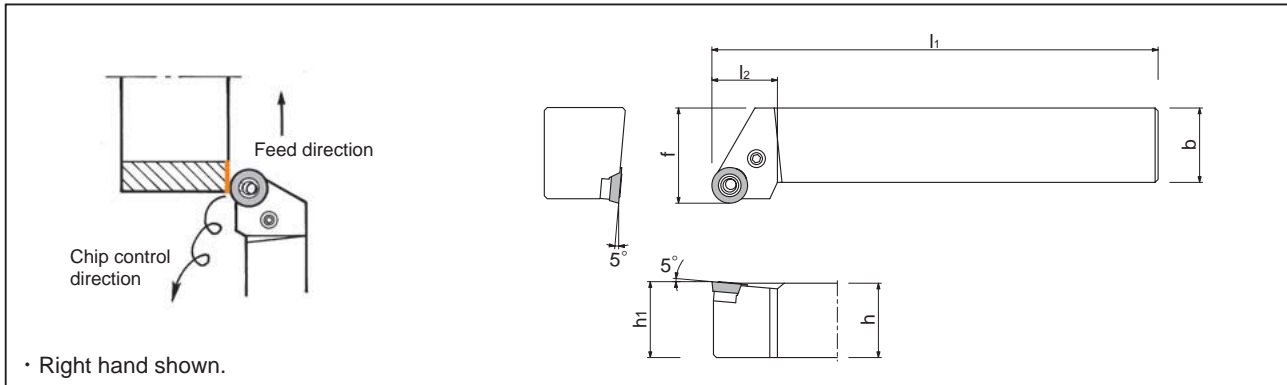
| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|-------------------------------------|-------|---|-----------------|----|-----|----|----|---|
| | R | L | h/h1 | b | l1 | f | l2 | |
| SRG ^{R/L} 20K16B 25M20B | ● | | 20 | 20 | 125 | 25 | 20 |  RPMT1604M0GB RPMT2004M0GB |
| | ● | | 25 | 25 | 150 | 32 | 25 | |

For details of insert, please see P187.


Facing Holders (lever-lock-type)

PRFP...type B

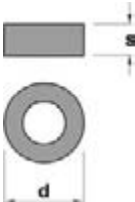

• It is designed so that the chips are thrown in the **OPPOSITE** direction as the tool's feed.



• Right hand shown.






| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|------------------------------|-------|---|-----------------|----|-----|----|----|---|
| | R | L | h/h1 | b | l1 | f | l2 |  |
| PRFP ^{R/L} 20K1203B | ● | | 20 | 20 | 125 | 25 | 22 | RPMX1203MGB |
| 25M1203B | ● | | 25 | 25 | 150 | 32 | 22 | |

● Insert

|  | Shape | Insert Number | Dimension (mm) | | Grade |
|---|-------|---------------|----------------|------|-------|
| | | | d | S | N40 |
|  | | RPMX1203M0GB | 12.0 | 3.18 | ● |

Note) The taper of the countersink differs in shape between the RPMX and the RPMT. Use the RPMX for the lever-lock type.

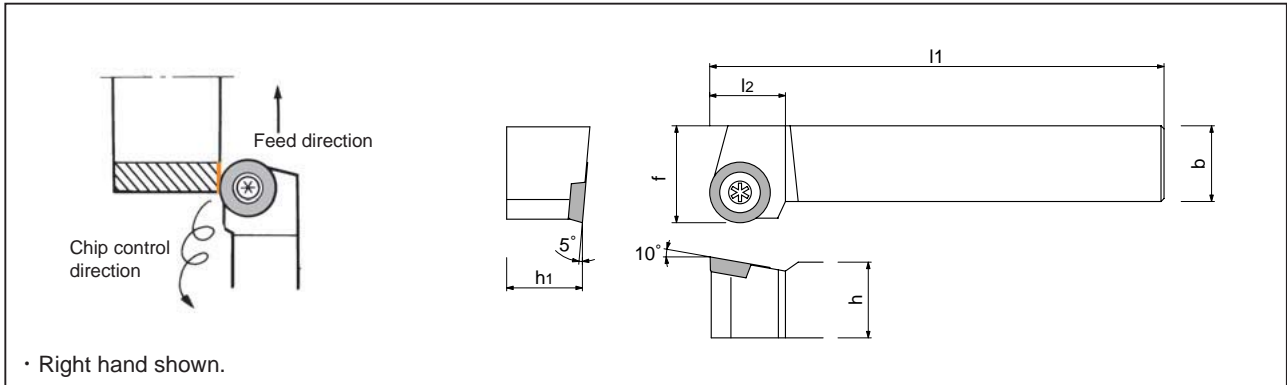
● Parts

| Parts | Shim | Lever | Clamping screw | Spring | Wrench |
|---|---------|-------|----------------|--------|--------|
|      | | | | | |
| PRGP ^{R/L} 20K1203F 25M1203F | ELSR42C | LCL4C | LCS3 | LSP3 | LW-2.5 |
| PRGP ^{R/L} 20K1203B 25M1203B | | | | | |
| PRFP ^{R/L} 20K1203B 25M1203B | | | | | |


Facing Holders (screw-on-type)

SRF...type B

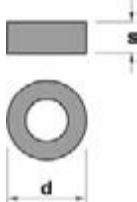

• It is designed so that the chips are thrown in the **OPPOSITE** direction as the tool's feed.



• Right hand shown.

| Toolholder | Stock | | Dimensions (mm) | | | | | Insert |
|-------------------------------------|-------|---|-----------------|----|-----|----|----|---|
| | R | L | h/h1 | b | l1 | f | l2 |  |
| SRF ^{R/L} 20K16B 25M20B | | | 20 | 20 | 125 | 25 | 20 | RPMT1604M0GB |
| | ● | | 25 | 25 | 150 | 32 | 25 | RPMT2004M0GB |

● Insert

|  | Shape | Insert Number | Dimension (mm) | | Grade |
|---|-------|---------------|----------------|------|-------|
| | | | d | S | N40 |
|  | | RPMT 1604M0GB | 16.0 | 4.76 | ● |
| | | 2004M0GB | 20.0 | 4.76 | ● |

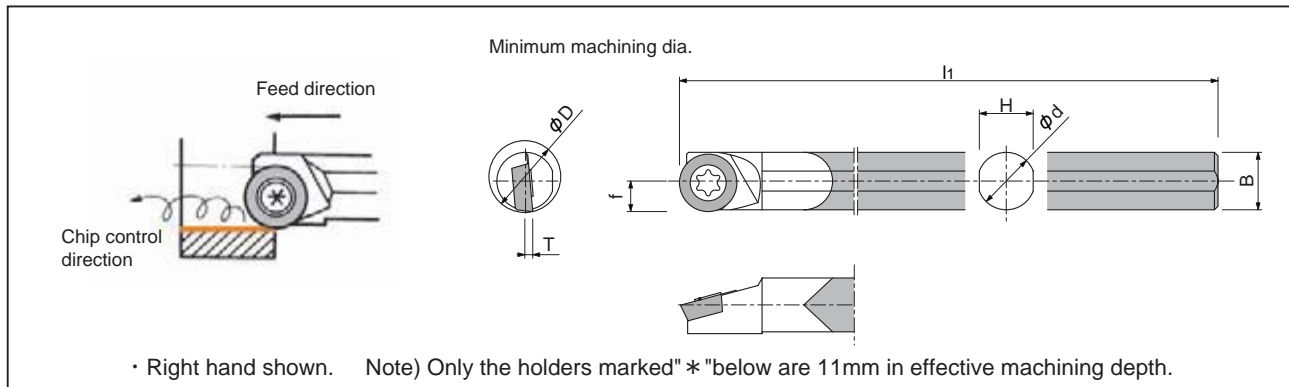
● Parts


| Parts | Clamping screw | Wrench |
|---|----------------|---|
|  | |  |
| Toolholder | | |
| SRG ^{R/L} 20K16F 25M20F 20K16B 25M20B | LRIS-5 X 10 | LLR-28S |
| SRF ^{R/L} 20K16B 25M20B | | |

Internal Machining Holders (screw-on-type)

C

(Carbide Shank)

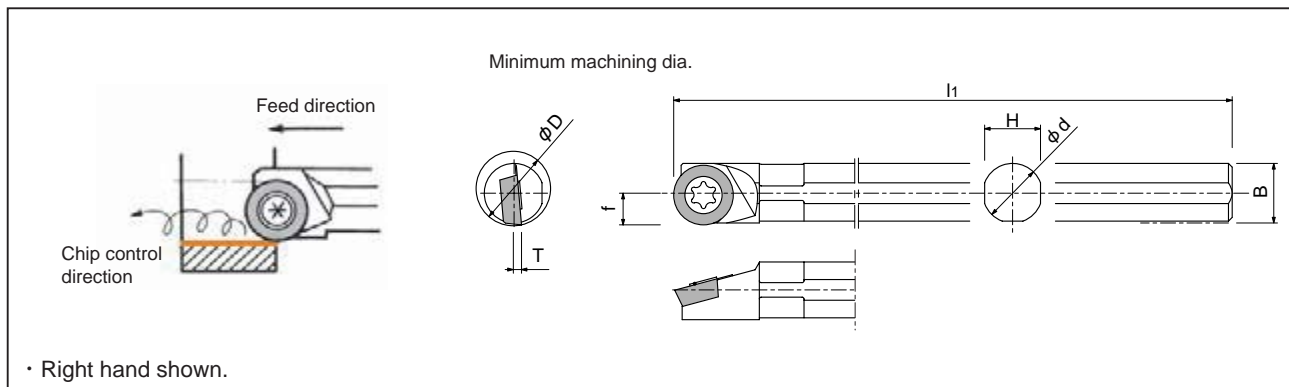



| Toolholder | Stock | | Dimensions (mm) | | | | | | Insert | |
|------------------------------|-------|---|-----------------|----|------|-----|-----|-----|--------|---|
| | R | L | ϕd | H | B | l1 | f | T | ϕD |  |
| *C08K-SRC ^{R/L} 06F | ● | | 8 | 7 | 7.5 | 125 | 4.0 | 1.0 | 8 | RPMT 0602M0GB 0802M0GB 10T2M0GB 1203M0GB |
| C08K-SRC ^{R/L} 08F | | ● | 8 | 7 | 7.5 | 125 | 4.5 | 0.8 | 10 | |
| C10M-SRC ^{R/L} 10F | ● | | 10 | 9 | 9.5 | 150 | 5.5 | 1.2 | 12 | |
| C12M-SRC ^{R/L} 12F | ● | | 12 | 11 | 11.5 | 150 | 6.5 | 1.5 | 15 | |

• It is designed so that the chips are thrown in the **SAME** direction as the tool's feed.

S

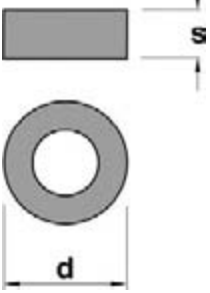


(Steel Shank)






| Toolholder | Stock | | Dimensions (mm) | | | | | | Insert | |
|-----------------------------|-------|---|-----------------|----|------|-----|------|-----|--------|---|
| | R | L | ϕd | H | B | l1 | f | T | ϕD |  |
| S08K-SRC ^{R/L} 08F | ● | | 8 | 7 | 7.5 | 125 | 4.5 | 0.3 | 10 | RPMT 0802M0GB 10T2M0GB 1203M0GB 1604M0GB 2004M0GB 2004M0GB |
| S10M-SRC ^{R/L} 10F | ● | | 10 | 9 | 9.5 | 150 | 5.5 | 1.2 | 12 | |
| S12M-SRC ^{R/L} 12F | ● | | 12 | 11 | 11.5 | 150 | 6.5 | 1.5 | 15 | |
| S16Q-SR ^{R/L} 16F | ● | | 16 | 15 | 15.5 | 180 | 8.5 | 2.0 | 20 | |
| S20Q-SRC ^{R/L} 20F | ● | | 20 | 19 | 19.5 | 180 | 10.5 | 2.0 | 25 | |
| S25Q-SRC ^{R/L} 20F | | | 25 | 24 | 24.5 | 180 | 13.0 | 2.0 | 30 | |

For details of insert, please see next page.

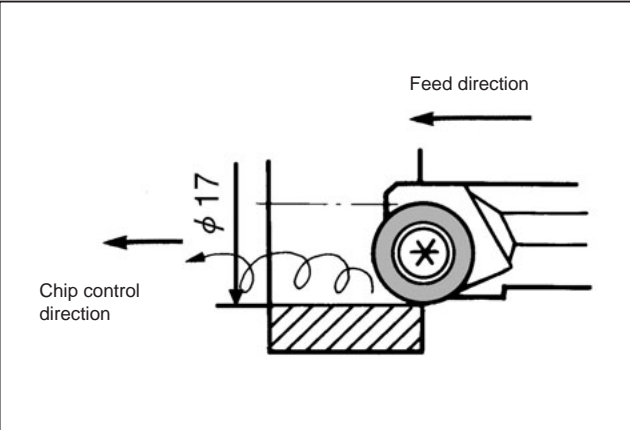
● Insert

|  | Shape | Insert Number | Dimension (mm) | | Grade |
|---|---|---------------|----------------|------|-------|
| | | | d | S | N40 |
|  |  | RPMT 0602M0GB | 6.0 | 2.38 | ● |
| | | 0802M0GB | 6.0 | 2.38 | ● |
| | | 10T2M0GB | 10.0 | 2.78 | ● |
| | | 1203M0GB | 12.0 | 3.18 | ● |
| | | 1604M0GB | 16.0 | 4.76 | ● |
| | | 2004M0GB | 20.0 | 4.76 | ● |

● Parts

| Carbide Shank | Steel Shank | Clamping screw | Wrench | |
|--|--|--|---|---|
| | |  | RLR-  | LLR-  |
| C08K-SRC ^R / _L 06F | S08K-SRC ^R / _L 08F S10M-SRC ^R / _L 10F S12M-SRC ^R / _L 12F S16Q-SRC ^R / _L 16F S20Q-SRC ^R / _L 20F S25Q-SRC ^R / _L 20F | LRIS-2.2 × 6 | RLR-13S | |
| C08K-SRC ^R / _L 08F | | LRIS-3 × 6 | RLR-20S | |
| C10M-SPC ^R / _L 10F | | LRIS-4 × 6 | LLR-25S | |
| C12M-SRC ^R / _L 12F | | LRIS-4 × 8 | | |
| | | LRIS-5 × 10 | LLR-28S | |

● Application Examples of N40 GB Chipbreakers

| Tool shape | | Current tool | NTK | Part Name | Bearing |
|-------------------|-------------------------|--------------|--------------|--|---------|
| Insert | Shape | SPMR090308 | RPMT1203M0GB | Work Material | 100 Cr6 |
| | Grade | Carbide | N40 | | |
| Cutting condition | Cutting speed V (m/min) | 45 | 65 |  | |
| | Feed f (mm/rev) | 0.23 | 1.2 | | |
| | Depth of cut d (mm) | 0.7 | 0.7 | | |
| | Coolant | DRY | DRY | | |
| Tool life (pcs) | | 2000 | 3000 | | |

Comment: It has been possible to extend life to 1.5 times that of the carbide tool. It has also been possible to increase the feed rate to 5 times and thus to improve machining efficiency significantly.