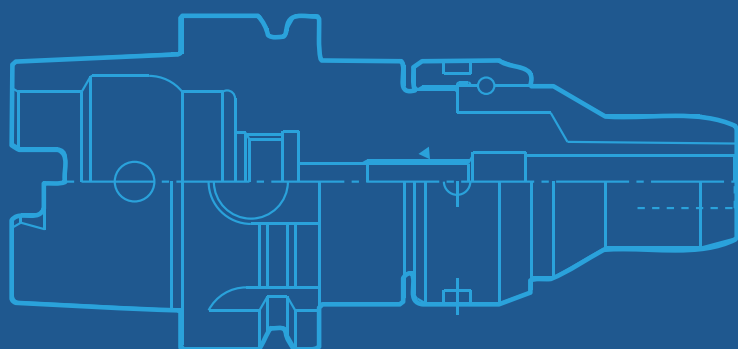




# HSK

## series

### HSKシリーズ

|                                |                                                   |         |
|--------------------------------|---------------------------------------------------|---------|
| マイクロンチャック Rシリーズ                | MICRON CHUCK R series                             | 100     |
| マイクロンチャック Hシリーズ                | MICRON CHUCK H series                             | 101,102 |
| マイクロンチャック Mシリーズ                | MICRON CHUCK M series                             | 103,104 |
| マイクロンチャック Nシリーズ                | MICRON CHUCK N series                             | 105     |
| ハードチャック                        | HARD CHUCK                                        | 106     |
| コレットチャック                       | COLLET CHUCK                                      | 107     |
| コレットチャック高速タイプ                  | COLLET CHUCK G Type                               | 108     |
| コレットチャック(スリムタイプ)               | COLLET CHUCK (SLIM TYPE)                          | 109     |
| ZERO-1 CHUCK                   | ZERO-1 CHUCK                                      | 110     |
| ドリルチャック(シャンク一体型)               | DRILL CHUCK                                       | 111     |
| パワーサイレントアーバ                    | POWER SILENT ARBOR                                | 112     |
| ハイデュアルチャック                     | Hy-Dual CHUCK                                     | 113     |
| シンクロタップホルダ SYFN型               | SYNCHRO TAP HOLDER type SYFN                      | 114     |
| シンクロタップホルダ SYFS型               | SYNCHRO TAP HOLDER type SYFS                      | 114     |
| <ボーリングシステム>ツインカット              | <BORING SYSTEM> TWINCUT                           | 115     |
| <ボーリングシステム>大径用ツインカット           | <BORING SYSTEM> TWINCUT for LARGE BORE            | 116     |
| <ボーリングシステム>ファーストカット            | <BORING SYSTEM> FIRSTCUT                          | 117     |
| <ボーリングシステム>ファーストカット [小径穴加工ツール] | <BORING SYSTEM> FIRSTCUT [Small-hole Boring Tool] | 118     |
| サイドロックホルダA型                    | END MILL HOLDER                                   | 119     |
| サイドロックドリルホルダ                   | SIDE LOCK DRILL HOLDER                            | 120     |
| モールステーバホルダA型                   | MORSE TAPER HOLDER (Type A)                       | 121     |
| 正面フライスアーバA型                    | FACE MILL ARBOR (Type A)                          | 122     |
| 正面フライスアーバB型                    | FACE MILL ARBOR (Type B)                          | 123     |
| 正面フライスアーバC型                    | FACE MILL ARBOR (Type C)                          | 124     |
| 正面フライスアーバH型                    | FACE MILL ARBOR (Type H)                          | 125,126 |

# HSK series

HSKシリーズ

ミーリングチャック標準型 P.100

特徴 FEATURES ▶ P.17-24



**HPC**  
マイクロンチャック Rシリーズ  
MICRON CHUCK R series

ミーリングチャック高速型 P.101,102

特徴 FEATURES ▶ P.17-24



**HPC-H**  
マイクロンチャック Hシリーズ  
MICRON CHUCK H series

ミーリングチャックスリムタイプ P.103,104

特徴 FEATURES ▶ P.17-24



**HPC-M**  
マイクロンチャック Mシリーズ  
MICRON CHUCK M series

ミーリングチャック スリムタイプ P.105

特徴 FEATURES ▶ P.17-24



**HPC-N**  
マイクロンチャック Nシリーズ  
MICRON CHUCK N series

ミーリングチャック標準型 P.106

特徴 FEATURES ▶ P.27-28



**CTH**  
ハードチャック  
HARD CHUCK

コレットチャック標準型 P.107

特徴 FEATURES ▶ P.29-30



**NSC**  
コレットチャック  
COLLET CHUCK

コレットチャック高速型 P.108

特徴 FEATURES ▶ P.29-30



**NSC-G**  
コレットチャック高速タイプ  
COLLET CHUCK G type

コレットチャック(スリムタイプ) P.109

特徴 FEATURES ▶ P.31



**SSC**  
コレットチャック(スリムタイプ)  
COLLET CHUCK (SLIM TYPE)

振れ調整式コレットチャック P.110

特徴 FEATURES ▶ P.26



**SSZ**  
ZERO-1 CHUCK  
ZERO-1 CHUCK

ドリルチャック P.111



**SDC**  
ドリルチャック(シャンク一体型)  
DRILL CHUCK

防振アーバ P.112

特徴 FEATURES ▶ P.25



**FMH-DP**  
パワーサイレントアーバ  
POWER SILENT ARBOR

ハイドデュアルチャック P.113

特徴 FEATURES ▶ P.39-40



**HDU**  
ハイドデュアルチャック  
Hy-Dual CHUCK

シンクロタップホルダ P.114

特徴 FEATURES ▶ P.33-34



**SYFN, SYFS**  
シンクロタップホルダ SYFN型, SYFS型  
SYNCHRO TAP HOLDER type SYFN, SYFS

ボーリングシステム P.115,116



**TWC**  
ツインカット  
TWINCUT

ボーリングシステム P.117,118

特徴 FEATURES ▶ P.41-46



**FIC**  
ファースト カット  
FIRSTCUT

一般ツーリング P.119



**SLA**  
サイドロックホルダA型  
END MILL HOLDER

一般ツーリング P.120



**CSL**  
サイドロックドリルホルダ  
SIDE LOCK DRILL HOLDER

一般ツーリング P.121



**MTA**  
モールステーパホルダA型  
MORSE TAPER HOLDER (Type A)

一般ツーリング P.122-124



**FMA, FMB, FMC**  
正面フライスアーバ A型・B型・C型  
FACE MILL ARBOR (Type A, B, C)

一般ツーリング P.125,126



**FMH**  
正面フライスアーバH型  
FACE MILL ARBOR (Type H)

# マイクロンチャック Rシリーズ

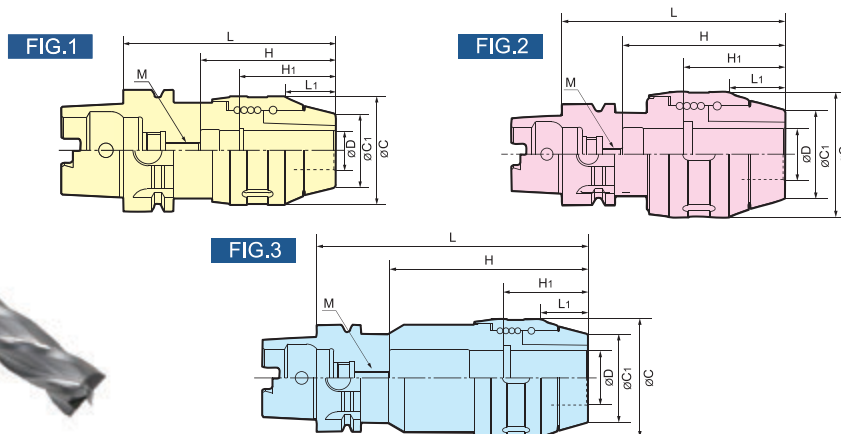
## MICRON CHUCK R series

**HSK**  
series  
HSKシリーズ

特徴 FEATURES ▶ P17-24 **HSKA (No.)-HPC (D)-L**

▶ センタースルー対応 Thru-the-tool Coolant Available

▶ シャンクスルー対応 Thru-the-shank Coolant Available



シャンク公差h7以内の刃具をご使用下さい。  
Please use a cutting tool with shank tolerance within h7

| MODEL                       |            | CODE  | FIG | ΦD | L   | L1   | ΦC | Φ<br>C1 | H   | H1 | 最小刃具挿入量<br>Minimum insertion amount |         | 調整量<br>Adjustment amount | M   | N/W<br>(kg) |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|                             |            | A     |     |    |     |      |    |         |     |    | シャンク(ST)                            | センタ(CT) |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max.10,000min <sup>-1</sup> |            |       |     |    |     |      |    |         |     |    |                                     |         |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| HSKA50                      | HPC16- 110 | 25855 | 2   | 16 | 110 | 26   | 56 | 34      | 75  | 50 | 40                                  | 51      | 57~67                    | M6  | 1.4         |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC20- 110 | 25865 |     | 20 |     |      |    | 38      |     |    | 45                                  |         |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC25- 115 | 25875 |     | 25 |     |      |    | 44      |     |    | 50                                  |         |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC32- 120 | (△)   |     | 32 |     |      |    | 52      |     |    | 70                                  |         |                          |     |             | 55 |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max.10,000min <sup>-1</sup> |            |       |     |    |     |      |    |         |     |    |                                     |         |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| HSKA63                      | HPC16- 110 | 26855 | 1   | 16 | 110 | 26   | 56 | 34      | 75  | 50 | 40                                  | 51      | 57~67                    | M8  | 1.9         |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC20- 110 | 26865 |     | 20 |     |      |    | 38      |     |    | 45                                  |         |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC25- 115 | 26875 |     | 25 |     |      |    | 44      |     |    | 80                                  |         |                          |     |             | 50 |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC32- 120 | 26878 | 2   | 32 | 120 | 27.5 | 70 | 52      | 85  | 53 | 55                                  | 55      | 64~72                    | 2.1 |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC32- 160 | 26886 | 3   | 42 | 160 | 30.5 | 82 | 62      | 100 | 57 | 60                                  | 60      | 96~104                   | 2.9 |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC42- 160 | (△)   |     |    |     |      |    |         |     |    |                                     |         | 67~87                    | 3.8 |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max.8,000min <sup>-1</sup>  |            |       |     |    |     |      |    |         |     |    |                                     |         |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| HSKA100                     | HPC16- 110 | 27855 | 1   | 16 | 110 | 26   | 56 | 34      | 70  | 50 | 40                                  | 51      | 59~65                    | M12 | 3.0         |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC20- 110 | 27865 |     | 20 |     |      |    | 38      |     |    | 45                                  |         |                          |     |             |    |    |    |    |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC25- 115 | 27869 |     | 25 |     |      |    | 115     |     |    | 62                                  |         |                          |     |             | 44 | 80 | 50 | 50 | 63~65 |       |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             |            | 135   |     |    |     |      |    |         |     |    |                                     |         | 27875                    |     |             |    |    |    |    |       | 135   | 90    | 73~80 |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC32- 120 | 27877 |     | 32 |     |      |    | 120     |     |    | 27.5                                |         | 70                       |     |             | 52 | 80 | 53 | 55 | 55    | 63~70 |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             |            | 135   |     |    |     |      |    |         |     |    |                                     |         |                          |     |             |    |    |    |    |       |       | 27885 | 135   | 90    | 73~80   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             |            | 165   |     |    |     |      |    |         |     |    |                                     |         |                          |     |             |    |    |    |    |       |       | 27886 | 165   | 117   | 100~107 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             | HPC42- 135 | 27895 |     | 42 |     |      |    | 135     |     |    | 30.5                                |         | 82                       |     |             | 62 | 95 | 57 | 60 | 60    | 78~85 |       |       |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                             |            | 27895 |     |    |     |      |    |         |     |    |                                     |         |                          |     |             |    |    |    |    |       |       | 27895 | 27895 | 27895 | 27895   | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 | 27895 |

- 注: 1. クーラントパイプは付属されております。(固定式)  
2. チャックレンチ・調整ネジは付属してありません。  
3. センタースルーでご利用の際は、化粧箱内に付属しているOリングをチャッキング穴内周奥にあるOリング溝に取付け、ご使用ください。また、Oリングは取付けなくても、そのまま機械側からクーラント供給した場合、シャンクスルーとしてご利用出来ます。  
4. 表記の許容回転数は、機械の剛性と刃物のバランスに大きく左右されますので、表記中の回転数と異なる場合があります。  
5. 他社製ストレートコレットでツバ径が大きい場合、装着時にチャック本体端面部にシャンクが出来る場合があります。

- NOTE: 1. Coolant pipe is included.  
2. Chuck wrench and adjust screw are sold separately.  
3. When using in the center through coolant, Attach the O-ring included in the box to the O-ring shank at the back of the inner circumference of the chucking hole before use. Also, if the coolant is supplied from the machine side as it is without attaching the O-ring, it will be thru the shank coolant.  
4. The above -mentioned maximum speed will vary depending rigidity of the machine and balance of cutter. An adequate cutting condition should be selected for each case.  
5. If the brim diameter is large with a straight collet made by another company, there may be a gap on the end face of the chuck body when mounting.  
6. Mark "ST" indicates Thru-the-shank Coolant Available, and Mark "CT" indicates Central -thru-tool Coolant Available.

### ご注文例 ORDERING EXAMPLE

|              |                     |     |    |        |
|--------------|---------------------|-----|----|--------|
| ①            | ②                   | ③   | ④  | ⑤      |
| HSKA50       | -                   | HPC | 16 | -110 A |
| ① シャンクサイズ    | Shank Size          |     |    |        |
| ② 呼称         | Holder's Name       |     |    |        |
| ③ 刃具シャンク径 φD | Cutter's Shank Dia. |     |    |        |
| ④ GL長さ L     | G.L. Length         |     |    |        |
| ⑤ 等級         | Grade               |     |    |        |

アクセサリ ACCESSORIES

▶ P.159 コレット・チャックレンチ STRAIGHT COLLETS, CHUCK WRENCH

アクセサリ ACCESSORIES

▶ P.160 調整ネジ ADJUST SCREW

# マイクロンチャック Hシリーズ

## MICRON CHUCK H series

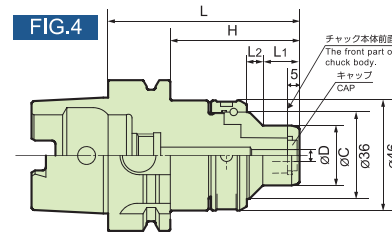
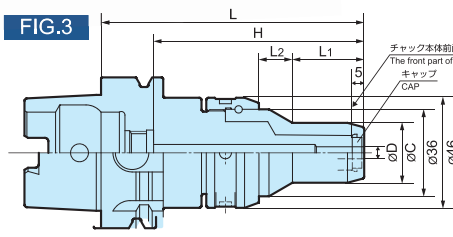
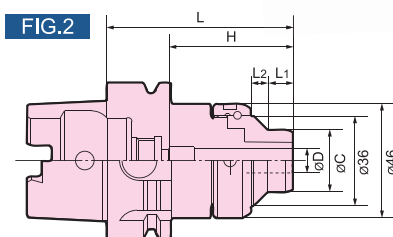
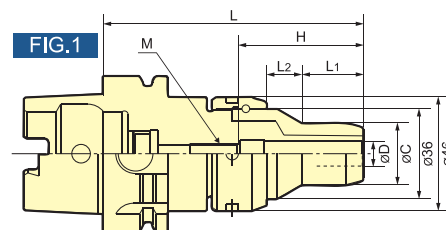
特徴 FEATURES ▶ P17-24 HSKA (No.) -HPC (D) H-L



▶ センタースルー対応 (オプション) Thru-the-tool Coolant Available (Option)

▶ シャンクスルー対応 (オプション) Thru-the-shank Coolant Available (Option)

シャンク公差h7以内の刃具をご使用下さい。  
Please use a cutting tool with shank tolerance within h7



| MODEL                                                              |         |        | CODE(ST:シャンクスルー) |        |         |          | FIG | ΦD  | L    | L1   | L2  | ΦC | H   | 最小刃具<br>挿入量<br>Minimum<br>insertion<br>amount | 調整量<br>Adjustment<br>amount |               | 調整ネジ<br>ADJUST<br>SCREW | シャンク<br>スルー<br>ST | センター<br>スルー<br>CT | N/W<br>(kg) |     |
|--------------------------------------------------------------------|---------|--------|------------------|--------|---------|----------|-----|-----|------|------|-----|----|-----|-----------------------------------------------|-----------------------------|---------------|-------------------------|-------------------|-------------------|-------------|-----|
|                                                                    |         |        | A                | AA     | A<br>ST | AA<br>ST |     |     |      |      |     |    |     |                                               | MIN                         | MAX           |                         |                   |                   |             |     |
| Max.20,000min <sup>-1</sup> (G Type : Max30,000min <sup>-1</sup> ) |         |        |                  |        |         |          |     |     |      |      |     |    |     |                                               |                             |               |                         |                   |                   |             |     |
| HSKA50                                                             | HPC03H- | 075    | 25802            | 25801  | —       | —        | 2   | 3   | 75   | 10.3 | 6.7 |    | 55  |                                               |                             |               |                         |                   |                   | 0.9         |     |
|                                                                    |         | 105    | 300710           | 300750 | —       | —        | 1   |     | 105  | 25   | 14  |    | 85  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    | HPC04H- | 075    | 25804            | 25803  | —       | —        | 2   | 4   | 75   | 10.3 | 6.7 |    | 55  | 15                                            |                             |               |                         |                   |                   | 0.9         |     |
|                                                                    |         | 105    | 300711           | 300751 | —       | —        | 1   |     | 105  | 25   | 14  |    | 85  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    | HPC05H- | 075    | 300712           | 300752 | —       | —        | 2   | 5   | 75   | 10.3 | 6.7 |    | 55  |                                               |                             |               |                         |                   |                   | 0.9         |     |
|                                                                    |         | 105    | 300713           | 300753 | —       | —        | 1   |     | 105  | 25   | 14  |    | 85  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    | HPC03H- | 080-CT | 300740           | 300780 | —       | —        | 4   | 3   | 80   | 15.3 | 6.7 |    | 60  |                                               | —                           | —             | —                       | —                 |                   | 0.9         |     |
|                                                                    |         | 110-CT | 300741           | 300781 | —       | —        | 3   |     | 110  | 30   | 14  |    | 90  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    | HPC04H- | 080-CT | 300742           | 300782 | —       | —        | 4   | 4   | 80   | 15.3 | 6.7 |    | 60  | 20                                            |                             |               |                         |                   | 注4                | 0.9         |     |
|                                                                    |         | 110-CT | 300743           | 300783 | —       | —        | 3   |     | 110  | 30   | 14  |    | 90  |                                               |                             |               |                         |                   | NOTE4             | 1.2         |     |
|                                                                    | HPC05H- | 080-CT | 300744           | 300784 | —       | —        | 4   | 5   | 80   | 15.3 | 6.7 |    | 60  |                                               |                             |               |                         |                   |                   | 0.9         |     |
|                                                                    |         | 110-CT | 300745           | 300785 | —       | —        | 3   |     | 110  | 30   | 14  |    | 90  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    | HPC06H- | 075    | 25808            | 25806  | 300970  | 300977   | 2   | 6   | 75   | 10.3 | 6.7 |    |     | 23                                            | 28                          | 37            | AS17-2-M5-CTW           |                   |                   | 0.9         |     |
|                                                                    |         | 105    | 300714           | 300754 | 300826  | 300846   | 1   |     | 105  | 25   | 14  |    |     | 30                                            | 30                          |               |                         |                   |                   | 1.2         |     |
|                                                                    | HPC07H- | 075    | 300715           | 300755 | 300971  | 300978   | 2   | 7   | 75   | 10.3 | 6.7 |    |     | 23                                            | 28                          | AS17-2-M6-CTW |                         |                   | 0.9               |             |     |
|                                                                    |         | 105    | 300716           | 300756 | 300827  | 300847   | 1   |     | 105  | 25   | 14  |    |     | 30                                            | 30                          |               |                         |                   | 1.2               |             |     |
|                                                                    | HPC08H- | 075    | 25818            | 25816  | 300972  | 300979   | 2   | 8   | 75   | 10.3 | 6.7 |    |     | 23                                            | —                           | —             | —                       |                   |                   | 0.9         |     |
|                                                                    |         | 105    | 300717           | 300757 | 300828  | 300848   | 1   |     | 105  | 25   | 14  |    |     | 35                                            | 35                          | 50            | AS22-2-M6-CTW           |                   |                   | 1.2         |     |
|                                                                    | HPC09H- | 075    | 300718           | 300758 | 300973  | 300980   | 2   | 9   | 75   | 10.3 | 6.7 |    |     | 23                                            | —                           | —             | —                       |                   |                   | 0.9         |     |
|                                                                    |         | 105    | 300719           | 300759 | 300829  | 300849   | 1   |     | 105  | 25   | 14  |    | 50  | 35                                            | 35                          | 50            | AS22-2-M6-CTW           |                   |                   | 1.2         |     |
| HPC10H-                                                            | 075     | 25828  | 25826            | 300974 | 300981  | 2        | 10  | 75  | 10.3 | 6.7  |     |    | 23  | —                                             | —                           | —             | 注3                      | 注5                | 0.9               |             |     |
|                                                                    | 105     | 300720 | 300760           | 300830 | 300850  | 1        |     | 105 | 25   | 14   |     |    | 35  | 35                                            | 50                          | AS22-2-M6-CTW | NOTE3                   | NOTE5             | 1.2               |             |     |
| HPC11H-                                                            | 075     | 300721 | 300761           | 300975 | 300982  | 2        | 11  | 75  | 12.2 | 4.8  |     |    | 25  | —                                             | —                           | —             |                         |                   | 0.9               |             |     |
|                                                                    | 105     | 300722 | 300762           | 300831 | 300851  | 1        |     | 105 | 25   | 14   |     | 55 | 40  | 40                                            | 55                          | AS22-2-M6-CTW |                         |                   | 1.2               |             |     |
| HPC12H-                                                            | 075     | 25838  | 25836            | 300976 | 300983  | 2        | 12  | 75  | 12.2 | 4.8  |     |    | 50  | 25                                            | —                           | —             | —                       |                   | 0.9               |             |     |
|                                                                    | 105     | 300723 | 300763           | 300832 | 300852  |          |     |     |      |      |     |    |     |                                               |                             |               |                         |                   | 1.2               |             |     |
| HPC13H-                                                            | 105     | 300724 | 300764           | 300833 | 300853  |          | 13  |     |      |      |     | 32 | 55  | 40                                            | 55                          | AS22-2-M6-CTW |                         |                   | 1.0               |             |     |
|                                                                    | HPC14H- | 105    | 300725           | 300765 | 300834  | 300854   |     | 1   | 14   | 105  | 25  | 14 |     |                                               |                             |               |                         |                   |                   | 1.0         |     |
| HPC15H-                                                            |         | 105    | 300726           | 300766 | 300835  | 300855   | 15  |     |      |      |     |    |     |                                               |                             |               |                         |                   |                   |             |     |
|                                                                    | HPC16H- | 105    | 300727           | 300767 | 300836  | 300856   |     | 16  |      |      |     |    | 60  |                                               | 45                          |               | 60                      |                   |                   | 1.0         |     |
| Max.20,000min <sup>-1</sup> (G Type : Max30,000min <sup>-1</sup> ) |         |        |                  |        |         |          |     |     |      |      |     |    |     |                                               |                             |               |                         |                   |                   |             |     |
| HSKA63                                                             | HPC03H- | 075    | 26799            | 26798  | —       | —        | 2   | 3   | 75   | 10.3 | 6.7 |    | 53  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    |         | 105    | 26801            | 26800  | —       | —        |     |     | 105  |      |     |    | 83  |                                               |                             |               |                         |                   | 1.4               |             |     |
|                                                                    |         | 135    | 26792            | 26782  | —       | —        | 1   |     | 135  | 25   | 14  |    | 113 |                                               |                             |               |                         |                   | 1.9               |             |     |
|                                                                    | HPC04H- | 075    | 26803            | 26802  | —       | —        | 2   | 4   | 75   | 10.3 | 6.7 |    | 53  | 15                                            |                             |               |                         |                   | —                 | 1.2         |     |
|                                                                    |         | 105    | 26805            | 26804  | —       | —        |     |     | 105  |      |     |    | 83  |                                               |                             |               |                         |                   |                   | 1.4         |     |
|                                                                    |         | 135    | 26793            | 26783  | —       | —        | 1   |     | 135  | 25   | 14  |    | 113 |                                               |                             |               |                         |                   |                   | 1.9         |     |
|                                                                    | HPC05H- | 075    | 321010           | 321050 | —       | —        | 2   | 5   | 75   | 10.3 | 6.7 |    | 53  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    |         | 105    | 321011           | 321051 | —       | —        |     |     | 105  |      |     |    | 83  |                                               |                             |               |                         |                   | 1.4               |             |     |
|                                                                    |         | 135    | 321012           | 321052 | —       | —        | 1   |     | 135  | 25   | 14  |    | 113 |                                               |                             | —             | —                       | —                 |                   | 1.9         |     |
|                                                                    | HPC03H- | 080-CT | 321040           | 321080 | —       | —        | 4   | 3   | 80   | 15.3 | 6.7 |    | 58  |                                               |                             |               | —                       | —                 |                   | 1.2         |     |
|                                                                    |         | 110-CT | 321041           | 321081 | —       | —        |     |     | 110  |      |     |    | 88  |                                               |                             |               |                         |                   |                   | 1.4         |     |
|                                                                    |         | 140-CT | 321042           | 321082 | —       | —        | 3   |     | 140  | 30   | 14  |    | 118 |                                               |                             |               |                         |                   |                   | 1.9         |     |
|                                                                    | HPC04H- | 080-CT | 321043           | 321083 | —       | —        | 4   | 4   | 80   | 15.3 | 6.7 |    | 58  | 20                                            |                             |               |                         |                   | 注4                | 1.2         |     |
|                                                                    |         | 110-CT | 321044           | 321084 | —       | —        |     |     | 110  |      |     |    | 88  |                                               |                             |               |                         |                   |                   | NOTE4       | 1.4 |
|                                                                    |         | 140-CT | 321045           | 321085 | —       | —        | 3   |     | 140  | 30   | 14  |    | 118 |                                               |                             |               |                         |                   |                   |             | 1.9 |
|                                                                    | HPC05H- | 080-CT | 321046           | 321086 | —       | —        | 4   | 5   | 80   | 15.3 | 6.7 |    | 58  |                                               |                             |               |                         |                   |                   | 1.2         |     |
|                                                                    |         | 110-CT | 321047           | 321087 | —       | —        |     |     | 110  |      |     |    | 88  |                                               |                             |               |                         |                   |                   | 1.4         |     |
|                                                                    |         | 140-CT | 321048           | 321088 | —       | —        | 3   |     | 140  | 30   | 14  |    | 118 |                                               |                             |               |                         |                   |                   | 1.9         |     |

| MODEL                                                              |                | CODE(ST:シャンクスルー) |        |         |          | FIG    | ΦD  | L   | L1  | L2   | ΦC  | H  | 最小刃具<br>挿入量<br>Minimum<br>insertion<br>amount | 調整量 |     | 調整ネジ<br>ADJUST<br>SCREW | シャンク<br>スルー<br>ST | センター<br>スルー<br>CT | N/W<br>(kg)   |             |     |
|--------------------------------------------------------------------|----------------|------------------|--------|---------|----------|--------|-----|-----|-----|------|-----|----|-----------------------------------------------|-----|-----|-------------------------|-------------------|-------------------|---------------|-------------|-----|
|                                                                    |                | A                | AA     | A<br>ST | AA<br>ST |        |     |     |     |      |     |    |                                               | MIN | MAX |                         |                   |                   |               |             |     |
|                                                                    |                |                  |        |         |          |        |     |     |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
| Max.20,000min <sup>-1</sup> (G Type : Max30,000min <sup>-1</sup> ) |                |                  |        |         |          |        |     |     |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
| HSKA63                                                             | HPC06H-        | 075              | 26807  | 26806   | 321380   | 321387 | 2   |     | 75  | 10.3 | 6.7 |    |                                               | 23  | 25  | 35                      | AS17-2-M5-CTW     |                   |               | 1.2         |     |
|                                                                    |                | 105              | 26809  | 26808   | 321159   | 321190 |     | 6   | 105 |      |     |    |                                               | 30  | 30  | 37                      |                   |                   |               | 1.4         |     |
|                                                                    |                | 135              | 26794  | 26784   | 321160   | 321191 | 1   |     | 135 | 25   | 14  |    |                                               |     |     |                         |                   |                   | 1.9           |             |     |
|                                                                    | HPC07H-        | 075              | 321013 | 321053  | 321381   | 321388 | 2   |     | 75  | 10.3 | 6.7 |    | 37.5                                          | 23  | 25  | 35                      | AS17-2-M6-CTW     |                   |               | 1.2         |     |
|                                                                    |                | 105              | 321014 | 321054  | 321161   | 321192 |     | 7   | 105 |      |     |    |                                               | 30  | 30  | 37                      |                   |                   |               | 1.4         |     |
|                                                                    |                | 135              | 321015 | 321055  | 321162   | 321193 | 1   |     | 135 | 25   | 14  |    |                                               |     |     |                         |                   |                   | 1.9           |             |     |
|                                                                    | HPC08H-        | 075              | 26817  | 26816   | 321382   | 321389 | 2   |     | 75  | 10.3 | 6.7 |    | 53                                            | 23  | -   | -                       | -                 |                   |               | 1.2         |     |
|                                                                    |                | 105              | 26819  | 26818   | 321163   | 321194 |     | 8   | 105 |      |     |    |                                               | 35  | 35  | 50                      |                   | AS22-2-M6-CTW     |               |             | 1.4 |
|                                                                    |                | 135              | 26795  | 26785   | 321164   | 321195 | 1   |     | 135 | 25   | 14  | 25 |                                               |     |     |                         |                   |                   |               | 1.9         |     |
|                                                                    | HPC09H-        | 075              | 321016 | 321056  | 321383   | 321390 | 2   |     | 75  | 10.3 | 6.7 |    |                                               | 23  | -   | -                       | -                 |                   |               |             | 1.2 |
|                                                                    |                | 105              | 321017 | 321057  | 321165   | 321196 |     | 9   | 105 |      |     |    |                                               | 35  | 35  | 50                      |                   | AS22-2-M8-CTW     |               |             | 1.4 |
|                                                                    |                | 135              | 321018 | 321058  | 321166   | 321197 | 1   |     | 135 | 25   | 14  | 50 |                                               |     |     |                         |                   |                   |               | 1.9         |     |
|                                                                    | HPC10H-        | 075              | 26827  | 26826   | 321384   | 321391 | 2   |     | 75  | 10.3 | 6.7 |    |                                               | 23  | -   | -                       | -                 |                   | 注3<br>NOTE3   | 注5<br>NOTE5 | 1.2 |
|                                                                    |                | 105              | 26829  | 26828   | 321167   | 321198 |     | 10  | 105 | 25   | 14  |    |                                               | 35  | 35  | 50                      |                   | AS22-2-M8-CTW     |               |             | 1.4 |
|                                                                    |                | 135              | 26796  | 26786   | 321168   | 321199 | 1   |     | 135 |      |     |    |                                               |     |     |                         |                   |                   |               |             | 1.9 |
|                                                                    | HPC11H-        | 075              | 321019 | 321059  | 321385   | 321392 | 2   |     | 75  | 12.2 | 4.8 |    | 50                                            | 25  | -   | -                       | -                 |                   |               |             | 1.2 |
|                                                                    |                | 105              | 321020 | 321060  | 321169   | 321200 |     | 11  | 105 | 25   | 14  |    | 55                                            | 40  | 40  | 55                      |                   | AS22-2-M8-CTW     |               |             | 1.4 |
|                                                                    |                | 135              | 321021 | 321061  | 321170   | 321201 | 1   |     | 135 |      |     |    |                                               |     |     |                         |                   |                   |               | 1.9         |     |
|                                                                    | HPC12H-        | 075              | 26837  | 26836   | 321386   | 321393 | 2   |     | 75  | 12.2 | 4.8 |    | 50                                            | 25  | -   | -                       | -                 |                   |               |             | 1.2 |
|                                                                    |                | 105              | 26839  | 26838   | 321171   | 321202 |     | 12  | 105 |      |     |    | 32                                            | 55  |     |                         |                   | 55                | AS22-2-M8-CTW |             | 1.4 |
|                                                                    |                | 135              | 26797  | 26787   | 321172   | 321203 |     |     | 135 |      |     |    |                                               |     |     |                         |                   |                   |               |             | 1.9 |
|                                                                    | 105            | 321022           | 321062 | 321173  | 321204   |        | 105 |     |     |      |     |    |                                               |     |     |                         | 1.5               |                   |               |             |     |
|                                                                    | HPC13H-        | 135              | (△)    | (△)     | (△)      | (△)    |     | 13  | 135 |      |     |    | 32                                            | 55  |     |                         | 55                | AS22-2-M8-CTW     |               | 1.7         |     |
|                                                                    |                | 105              | 321024 | 321064  | 321175   | 321206 |     |     | 105 |      |     |    |                                               |     |     |                         |                   |                   |               | 1.5         |     |
|                                                                    |                | 135              | (△)    | (△)     | (△)      | (△)    |     |     | 135 |      |     |    |                                               |     |     |                         |                   |                   |               | 1.7         |     |
|                                                                    | HPC14H-        | 105              | 321026 | 321066  | 321177   | 321208 |     | 14  | 105 |      |     |    | 40                                            | 40  |     |                         | 58                | AS25-2-M8-CTW     |               | 1.5         |     |
|                                                                    |                | 135              | (△)    | (△)     | (△)      | (△)    |     |     | 135 |      |     |    |                                               |     |     |                         |                   |                   |               | 1.7         |     |
|                                                                    |                | 105              | (△)    | (△)     | (△)      | (△)    |     |     | 135 |      |     |    |                                               |     |     |                         |                   |                   |               | 1.5         |     |
|                                                                    | HPC15H-        | 135              | (△)    | (△)     | (△)      | (△)    |     | 15  | 135 |      |     |    | 60                                            | 60  |     |                         | 60                | AS25-2-M8-CTW     |               | 1.7         |     |
|                                                                    |                | 105              | 321028 | 321068  | 321179   | 321210 |     |     | 105 |      |     |    |                                               |     |     |                         |                   |                   |               | 1.5         |     |
|                                                                    |                | 135              | (△)    | (△)     | (△)      | (△)    |     |     | 135 |      |     |    |                                               |     |     |                         |                   |                   |               | 1.7         |     |
| HPC16H                                                             | 135            | (△)              | (△)    | (△)     | (△)      |        | 16  | 135 |     |      |     |    |                                               |     |     | 60                      |                   | 1.7               |               |             |     |
| Max.12,000min <sup>-1</sup>                                        |                |                  |        |         |          |        |     |     |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
| HSKA100                                                            | HPC03H-        | 110              | 27805  | 27804   | -        | -      |     | 3   |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC04H-        | 110              | 27807  | 27806   | -        | -      | 1   | 4   | 110 | 25   |     |    | 81                                            | 15  |     |                         |                   | -                 |               |             |     |
|                                                                    | HPC05H-        | 110              | 350900 | 350930  | -        | -      |     | 5   |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC03H- 115-CT | 351040           | 351060 | -       | -        |        | 3   | 3   |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC04H- 115-CT | 351042           | 351062 | -       | -        | 3      | 4   | 115 | 30  |      |     | 86 | 20                                            |     |     |                         |                   | 注4<br>NOTE4       |               |             |     |
|                                                                    | HPC05H- 115-CT | 351044           | 351064 | -       | -        |        | 5   |     |     |      | 25  |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC06H-        | 110              | 27817  | 27816   | 351003   | 351020 |     | 6   |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC07H-        | 110              | 350901 | 350931  | 351004   | 351021 |     | 7   |     |      |     |    | 37.5                                          | 30  | 30  | 37                      | AS17-2-M5-CTW     | 注3<br>NOTE3       | 注5<br>NOTE5   | 2.7         |     |
|                                                                    | HPC08H-        | 110              | 27827  | 27826   | 351005   | 351022 |     | 8   |     |      |     |    |                                               |     |     |                         | AS17-2-M6-CTW     |                   |               |             |     |
|                                                                    | HPC09H-        | 110              | 350902 | 350932  | 351006   | 351023 |     | 9   |     |      |     |    | 50                                            | 35  | 35  | 50                      | AS22-2-M6-CTW     |                   |               |             |     |
|                                                                    | HPC10H-        | 110              | 27837  | 27836   | 351007   | 351024 |     | 10  |     |      |     |    |                                               |     |     |                         |                   | AS22-2-M8-CTW     |               |             |     |
|                                                                    | HPC11H-        | 110              | 350903 | 350933  | 351008   | 351025 | 1   | 11  | 110 | 25   |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC12H-        | 110              | 27847  | 27846   | 351009   | 351026 |     | 12  |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC13H-        | 110              | 350904 | 350934  | 351010   | 351027 |     | 13  |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC14H-        | 110              | 350905 | 350935  | 351011   | 351028 |     | 14  |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC15H-        | 110              | 350906 | 350936  | 351012   | 351029 |     | 15  |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |
|                                                                    | HPC16H-        | 110              | 350907 | 350937  | 351013   | 351030 |     | 16  |     |      |     |    |                                               |     |     |                         |                   |                   |               |             |     |

- 注：1. クーラントパイプは付属されており、(固定式)  
2. チャックレンチ・調整ネジは付属しておりません。  
3. HPC06H以上のシャンクスルー対応商品には「ST」とマーキングされます。  
4. HPC03H、HPC04H、HPC05H-L-CTはセンタースルー専用です。  
5. HPC06H以上のセンタースルー対応は標準装備していますので、そのまま対応可能です。  
6. 表記の許容回転数は、機械の剛性と刃物のバランスに大きく左右されますので、表記中の回転数と異なる場合があります。  
7. HPC03H、HPC04H、HPC05H-L-CTを長時間、高圧使用した場合、キャップの劣化が原因で水漏れが発生することがあります。  
その際、交換パーツ「キャップ」を交換することをお勧めします。  
8. 調整ネジが取り付け可能なチャック本体は、HPC06H以上のタイプのみです。  
9. 表中の「-」は、メネジなし貫通形状を表わす。  
10. (△) 表記製品は特殊対応品です。

- NOTE：1. Coolant pipe is included.  
2. Chuck wrench and adjust screw are sold separately.  
3. Shank-through compatible products for HPC06H and above are "ST" will be marked for this application.  
4. HPC03H、HPC04H、HPC05H-L-CT is for center through tool coolant type only.  
5. For HPC06H or longer will be center-through support is standard equipment.  
6. The above-mentioned maximum speed will vary depending rigidity of the machine and balance of cutter.  
An adequate cutting condition should be selected for each case.  
7. If HPC03H、HPC04H、HPC05H-L-CT is used for a long time at high pressure, water leakage may occur due to deterioration of the cap. In that case, we recommend exchanging the replacement part "cap". (Repair for a fee)  
8. The chuck body to which the adjusting screw can be attached is only the type of HPC06H or higher.  
9. "—" In the table represents a through shape without female threads.  
10. Mark "ST" indicates Thru-the-shank Coolant Available, and Mark "CT" indicates Central-thru-tool Coolant Available.  
11. CODE(△)The listed products are made-to-order products.

## ご注文例 ORDERING EXAMPLE

|              |                     |    |    |     |   |
|--------------|---------------------|----|----|-----|---|
| ①            | ②                   | ③  | ④  | ⑤   | ⑥ |
| HSKA50       | -HPC                | 03 | H- | 075 | A |
| ① シャンクサイズ    | Shank Size          |    |    |     |   |
| ② 呼称         | Holder's Name       |    |    |     |   |
| ③ 刃具シャンク径 φD | Cutter's Shank Dia. |    |    |     |   |
| ④ Hシリーズ      | H series            |    |    |     |   |
| ⑤ GL長さ L     | G.L. Length         |    |    |     |   |
| ⑥ 等級         | Grade               |    |    |     |   |

## ご注文例 ORDERING EXAMPLE

|              |                     |    |    |    |   |     |
|--------------|---------------------|----|----|----|---|-----|
| ①            | ②                   | ③  | ④  | ⑤  | ⑥ | ⑦   |
| HSKA50       | -HPC                | 03 | H- | 80 | A | -CT |
| ① シャンクサイズ    | Shank Size          |    |    |    |   |     |
| ② 呼称         | Holder's Name       |    |    |    |   |     |
| ③ 刃具シャンク径 φD | Cutter's Shank Dia. |    |    |    |   |     |
| ④ Hシリーズ      | H series            |    |    |    |   |     |
| ⑤ GL長さ L     | G.L. Length         |    |    |    |   |     |
| ⑥ 等級         | Grade               |    |    |    |   |     |
| ⑦ クーラントスルー仕様 | STor CT             |    |    |    |   |     |



# マイクロンチャック Mシリーズ

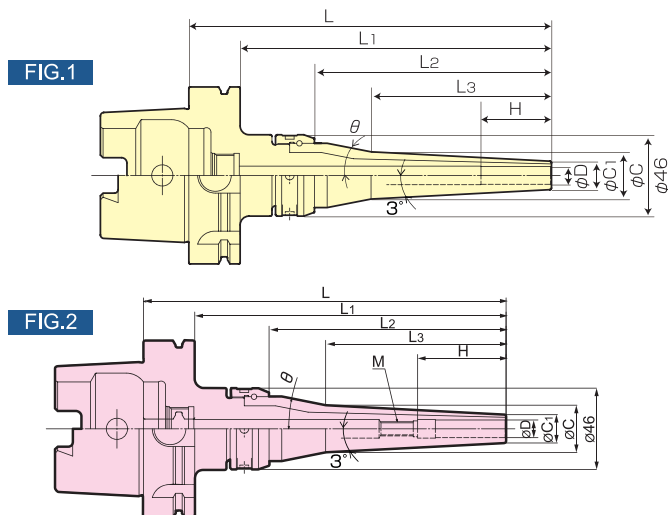
## MICRON CHUCK M series

特徴 FEATURES ▶ P 17-24 HSKA (No.)-HPC (D) M-L

▶ センタースルー対応 Thru-the-tool Coolant Available



シャンク公差h6以内の刃具をご使用下さい。  
Please use a cutting tool with shank tolerance within h6



| MODEL                        |         | CODE | FIG    | φD | φC1 | φC | L  | L1  | L2  | L3  | H   | 最小刃具<br>挿入量<br>Minimum<br>insertion<br>amount | 調整量<br>Adjustment<br>amount |    | M  | θ   | N/W<br>(kg) |     |     |
|------------------------------|---------|------|--------|----|-----|----|----|-----|-----|-----|-----|-----------------------------------------------|-----------------------------|----|----|-----|-------------|-----|-----|
| Max. 15,000min <sup>-1</sup> |         |      |        |    |     |    |    |     |     |     |     |                                               |                             |    |    |     |             |     |     |
| HSKA50                       | HPC03M- | 150  | 300901 | 1  | 3   | 9  | 16 | 150 | 124 | 84  | 67  | —                                             | 20                          | —  | —  | —   | 34          | 1.1 |     |
|                              | HPC04M- | 150  | 300903 |    | 4   | 10 | 17 |     |     |     |     |                                               |                             |    |    |     | 33          | 1.1 |     |
|                              | HPC05M- | 150  | 300905 |    | 5   | 11 | 18 |     |     |     |     |                                               |                             |    |    |     | 32          | 1.1 |     |
|                              | HPC06M- | 150  | 300907 |    | 6   | 12 | 19 |     |     |     |     |                                               |                             |    |    |     | 30          | 1.1 |     |
|                              | HPC07M- | 150  | 300909 |    | 7   | 13 | 20 |     |     |     |     |                                               |                             |    |    |     | 28          | 1.1 |     |
|                              | HPC08M- | 150  | 300911 | 2  | 8   | 14 | 21 |     |     | 50  | 35  | 35                                            | 50                          | M6 | 27 | 1.1 |             |     |     |
|                              | HPC09M- | 150  | 300913 |    | 9   | 15 | 22 |     |     |     |     |                                               |                             |    | M8 | 26  | 1.1         |     |     |
|                              | HPC10M- | 150  | 300915 |    | 10  | 16 | 23 |     |     |     |     |                                               |                             |    |    | 24  | 1.1         |     |     |
|                              | HPC11M- | 150  | 300917 |    | 11  | 17 | 24 |     |     |     |     |                                               |                             | 55 | 37 | 55  | M8          | 23  | 1.1 |
|                              | HPC12M- | 150  | 300919 |    | 12  | 18 | 25 |     |     |     |     |                                               |                             |    |    |     |             | 21  | 1.1 |
| Max. 15,000min <sup>-1</sup> |         |      |        |    |     |    |    |     |     |     |     |                                               |                             |    |    |     |             |     |     |
| HSKA63                       | HPC03M- | 150  | 420110 | 1  | 3   | 9  | 16 | 150 | 124 | 84  | 67  | —                                             | 20                          | —  | —  | —   | 34          | 1.3 |     |
|                              |         | 200  | 420116 |    |     |    | 20 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 18          | 1.5 |     |
|                              | HPC04M- | 150  | 420111 |    | 4   | 10 | 17 | 150 | 124 | 84  | 67  |                                               |                             |    |    |     | 33          | 1.3 |     |
|                              |         | 200  | 420117 |    |     |    | 21 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 17          | 1.5 |     |
|                              | HPC05M- | 150  | 321130 |    | 5   | 11 | 18 | 150 | 124 | 84  | 67  |                                               |                             |    |    |     | 32          | 1.3 |     |
|                              |         | 200  | 321131 |    |     |    | 22 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 16          | 1.5 |     |
|                              | HPC06M- | 150  | 420112 |    | 6   | 12 | 19 | 150 | 124 | 84  | 67  |                                               |                             |    |    |     | 30          | 1.3 |     |
|                              |         | 200  | 420118 |    |     |    | 23 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 15          | 1.5 |     |
|                              | HPC07M- | 150  | 321132 |    | 7   | 13 | 20 | 150 | 124 | 84  | 67  |                                               |                             |    |    |     | 28          | 1.3 |     |
|                              |         | 200  | 321133 |    |     |    | 24 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 14          | 1.5 |     |
|                              | HPC08M- | 150  | 420113 |    | 8   | 14 | 21 | 150 | 124 | 84  | 67  |                                               |                             |    |    |     | 27          | 1.4 |     |
|                              |         | 200  | 420119 |    |     |    | 25 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 13          | 1.5 |     |
|                              | HPC09M- | 150  | 321134 | 2  | 9   | 15 | 22 | 150 | 124 | 84  | 67  | 50                                            | 35                          | 35 | 50 | M8  | 26          | 1.4 |     |
|                              |         | 200  | 321135 |    |     |    | 26 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 12          | 1.5 |     |
|                              | HPC10M- | 150  | 420114 |    | 10  | 16 | 23 | 150 | 124 | 84  | 67  |                                               |                             |    |    |     | 24          | 1.4 |     |
|                              |         | 200  | 420120 |    |     |    | 27 | 200 | 174 | 134 | 102 |                                               |                             |    |    |     | 11          | 1.5 |     |
|                              | HPC11M- | 150  | 321136 |    | 11  | 17 | 24 | 150 | 124 | 84  | 67  | 55                                            | 37                          | 55 | 23 |     | 1.4         |     |     |
|                              |         | 200  | 321137 |    |     |    | 28 | 200 | 174 | 134 | 102 |                                               |                             |    | 10 |     | 1.6         |     |     |
|                              | HPC12M- | 150  | 420115 |    | 12  | 18 | 25 | 150 | 124 | 84  | 67  | 40                                            | 40                          |    | 21 |     | 1.4         |     |     |
|                              |         | 200  | 420121 |    |     |    | 29 | 200 | 174 | 134 | 102 |                                               |                             |    | 9  |     | 1.6         |     |     |

| MODEL                        |         | CODE       | FIG | ΦD | ΦC1 | ΦC | L   | L1  | L2  | L3  | H  | 最小刃具<br>挿入量<br>Minimum<br>insertion<br>amount | 調整量<br>Adjustment<br>amount |     | M   | θ  | N/W<br>(kg) |     |
|------------------------------|---------|------------|-----|----|-----|----|-----|-----|-----|-----|----|-----------------------------------------------|-----------------------------|-----|-----|----|-------------|-----|
|                              |         |            |     |    |     |    |     |     |     |     |    |                                               | MIN                         | MAX |     |    |             |     |
| Max. 10,000min <sup>-1</sup> |         |            |     |    |     |    |     |     |     |     |    |                                               |                             |     |     |    |             |     |
| HSKA100                      | HPC03M- | 155 450220 | 1   | 3  | 9   | 16 | 155 | 126 | 84  | 67  | -  | 20                                            |                             |     |     |    | 34          | 3.1 |
|                              |         | 205 450206 |     |    |     | 20 | 205 | 176 | 134 | 102 |    |                                               |                             |     |     |    | 18          | 3.2 |
|                              | HPC04M- | 155 450201 | 1   | 4  | 10  | 17 | 155 | 126 | 84  | 67  |    |                                               |                             |     |     |    | 33          | 3.1 |
|                              |         | 205 450207 |     |    |     | 21 | 205 | 176 | 134 | 102 |    |                                               |                             |     |     |    | 17          | 3.3 |
|                              | HPC05M- | 155 350960 | 1   | 5  | 11  | 18 | 155 | 126 | 84  | 67  |    |                                               |                             |     |     |    | 32          | 3.1 |
|                              |         | 205 350961 |     |    |     | 22 | 205 | 176 | 134 | 102 |    |                                               |                             |     |     |    | 16          | 3.3 |
|                              | HPC06M- | 155 450202 | 1   | 6  | 12  | 19 | 155 | 126 | 84  | 67  |    | 30                                            | 3.1                         |     |     |    |             |     |
|                              |         | 205 450208 |     |    |     | 23 | 205 | 176 | 134 | 102 |    | 15                                            | 3.3                         |     |     |    |             |     |
|                              | HPC07M- | 155 350963 | 1   | 7  | 13  | 20 | 155 | 126 | 84  | 67  |    | 28                                            | 3.1                         |     |     |    |             |     |
|                              |         | 205 350964 |     |    |     | 24 | 205 | 176 | 134 | 102 |    | 14                                            | 3.3                         |     |     |    |             |     |
|                              | HPC08M- | 155 450203 | 1   | 8  | 14  | 21 | 155 | 126 | 84  | 67  |    | 27                                            | 3.1                         |     |     |    |             |     |
|                              |         | 205 450209 |     |    |     | 25 | 205 | 176 | 134 | 102 |    | 13                                            | 3.3                         |     |     |    |             |     |
|                              | HPC09M- | 155 350966 | 1   | 9  | 15  | 22 | 155 | 126 | 84  | 67  |    | 26                                            | 3.1                         |     |     |    |             |     |
|                              |         | 205 350967 |     |    |     | 26 | 205 | 176 | 134 | 102 |    | 12                                            | 3.3                         |     |     |    |             |     |
|                              | HPC10M- | 155 450204 | 1   | 10 | 16  | 23 | 155 | 126 | 84  | 67  |    | 24                                            | 3.2                         |     |     |    |             |     |
|                              |         | 205 450210 |     |    |     | 27 | 205 | 176 | 134 | 102 |    | 11                                            | 3.3                         |     |     |    |             |     |
|                              | HPC11M- | 155 350969 | 1   | 11 | 17  | 24 | 155 | 126 | 84  | 67  |    | 23                                            | 3.2                         |     |     |    |             |     |
|                              |         | 205 350970 |     |    |     | 28 | 205 | 176 | 134 | 102 |    | 10                                            | 3.3                         |     |     |    |             |     |
|                              | HPC12M- | 155 450205 | 2   | 12 | 18  | 25 | 155 | 126 | 84  | 67  | 55 | 40                                            | 40                          | 55  | M10 | 21 | 3.2         |     |
|                              |         | 205 450211 |     |    |     | 29 | 205 | 176 | 134 | 102 |    |                                               |                             |     |     | 9  | 3.3         |     |

- 注：1. クーラントパイプは付属されております。（固定式）  
 2. チャックレンチ・調整ネジは付属しておりません。  
 3. ドリルをご使用の際は調整ネジ及び調整ねじ穴付（特殊対応）が必要です。  
 製作につきましては別途ご相談下さい。  
 4. 表記の許容回転数は、機械の剛性と刃物のバランスに大きく左右されますので、表記中の回転数と異なる場合があります。  
 5. センタースルー対応は標準装備していますので、そのまま対応可能です。  
 シャンクスルーにつきましては対応出来ません。  
 6. 表中の「-」は、メネジなし貫通形状を表わす。

- NOTE：1. Coolant pipe is included.  
 2. Chuck wrench and adjust screw are sold separately.  
 3. Adjust screw is manufactured to order. Please instruct when ordering.  
 4. The above -mentioned maximum speed will vary depending rigidity of the machine and balance of cutter.  
 An adequate cutting condition should be selected for each case.  
 5. Center-through support is standard equipment, so it can be used as it is.  
 Thru the shank coolant type can not be support.  
 6. 「-」 In the table represents a through shape without female threads.

| ご注文例 ORDERING EXAMPLE |                     |
|-----------------------|---------------------|
| ①                     | ②                   |
| ③                     | ④                   |
| ⑤                     |                     |
| HSKA63-HPC06M-150     |                     |
| ① シャンクサイズ             | Shank Size          |
| ② 呼称                  | Holder's Name       |
| ③ 刃具シャンク径 øD          | Cutter's Shank Dia. |
| ④ Mシリーズ               | M series            |
| ⑤ GL長さ L              | G.L. Length         |

| ご注文例 ORDERING EXAMPLE |                     |
|-----------------------|---------------------|
| ①                     | ②                   |
| ③                     | ④                   |
| ⑤                     |                     |
| HSKA100-HPC10M-205    |                     |
| ① シャンクサイズ             | Shank Size          |
| ② 呼称                  | Holder's Name       |
| ③ 刃具シャンク径 øD          | Cutter's Shank Dia. |
| ④ Mシリーズ               | M series            |
| ⑤ GL長さ L              | G.L. Length         |



アクセサリ ACCESSORIES

▶ P.159 チャックレンチ CHUCK WRENCH



アクセサリ ACCESSORIES

▶ P.160 調整ネジ ADJUST SCREW

# マイクロンチャック Nシリーズ

## MICRON CHUCK N series

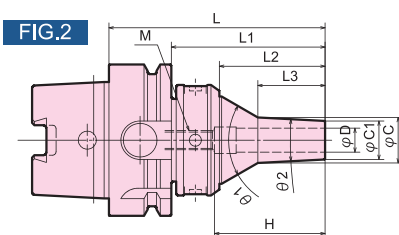
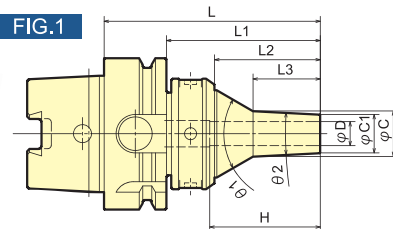
特徴 FEATURES ▶ P17-24 HSKA<sup>Ⓐ</sup>-HPC<sup>Ⓓ</sup> N-<sup>Ⓕ</sup>L

N-series  
Nシリーズ



シャンク公差h6以内の刃具をご使用下さい。  
Please use a cutting tool with shank tolerance within h6

▶ センタースルー対応 Thru-the-tool Coolant Available



| MODEL                                                             |            | CODE   |        |        | FIG | φD | φC1 | φC   | L   | L1 | L2 | L3 | H  | 最小刃具挿入量<br>Minimum<br>insertion<br>amount | 調整量<br>Adjustment<br>amount |     | M  | θ1 | θ2 |
|-------------------------------------------------------------------|------------|--------|--------|--------|-----|----|-----|------|-----|----|----|----|----|-------------------------------------------|-----------------------------|-----|----|----|----|
|                                                                   |            | A      | AA     | G Type |     |    |     |      |     |    |    |    |    |                                           | MIN                         | MAX |    |    |    |
| Max.20,000min <sup>-1</sup> (G Type: Max30,000min <sup>-1</sup> ) |            |        |        |        |     |    |     |      |     |    |    |    |    |                                           |                             |     |    |    |    |
| HSKA50                                                            | HPC03N-105 | 301000 | 301006 | 301012 | 1   | 3  | 9   | 10.4 | 105 | 79 | 44 | 27 | 20 | -                                         | -                           | -   | 80 | 3  |    |
|                                                                   | HPC04N-105 | 301001 | 301007 | 301013 |     | 4  | 10  | 11.5 |     |    |    | 28 |    |                                           |                             |     |    |    |    |
|                                                                   | HPC06N-105 | 301002 | 301008 | 301014 |     | 6  | 12  | 13.5 |     |    |    | 29 |    |                                           |                             |     |    |    |    |
|                                                                   | HPC08N-105 | 301003 | 301009 | 301015 | 2   | 8  | 14  | 15.5 |     |    |    | 50 | 35 | 35                                        | 50                          | M6  | 74 |    |    |
|                                                                   | HPC10N-105 | 301004 | 301010 | 301016 |     | 10 | 16  | 17.5 |     |    |    |    |    |                                           |                             |     |    |    | 28 |
|                                                                   | HPC12N-105 | 301005 | 301011 | 301017 |     | 12 | 18  | 21   |     |    |    |    |    |                                           |                             |     |    |    | 55 |
| HSKA63                                                            | HPC03N-090 | 320920 | 320940 | 320960 | 1   | 3  | 9   | 10.4 | 90  | 64 | 44 | 27 | 20 | -                                         | -                           | -   | 80 | 3  |    |
|                                                                   | HPC04N-090 | 320921 | 320941 | 320961 |     | 4  | 10  | 11.5 |     |    |    | 28 |    |                                           |                             |     |    |    |    |
|                                                                   | HPC06N-090 | 320922 | 320942 | 320962 |     | 6  | 12  | 13.5 |     |    |    | 29 |    |                                           |                             |     |    |    |    |
|                                                                   | HPC08N-090 | 320923 | 320943 | 320963 | 2   | 8  | 14  | 15.5 |     |    |    | 50 | 35 | 35                                        | 45                          | M8  | 74 |    |    |
|                                                                   | HPC10N-090 | 320924 | 320944 | 320964 |     | 10 | 16  | 17.5 |     |    |    |    |    |                                           |                             |     |    |    | 28 |
|                                                                   | HPC12N-090 | 320925 | 320945 | 320965 |     | 12 | 18  | 21   |     |    |    |    |    |                                           |                             |     |    |    | 28 |

- 注: 1. クーラントパイプは付属されております。(固定式)  
 2. チャックレンチ・調整ネジは付属していません。  
 3. 表記の許容回転数は、機械の剛性と刃物のバランスに大きく左右されますので、表記中の回転数と異なる場合があります。  
 4. 調整ネジが取付け可能なチャック本体はFIG.2のタイプのみです。  
 5. 表中の「-」は、メネジなし貫通形状を表わす。  
 6. センタースルー対応は標準装備していますので、そのまま対応可能です。  
 シャンクスルーにつきましては対応出来ません。

- NOTE: 1. Coolant pipe is included.  
 2. Chuck wrench and adjust screw are sold separately.  
 3. The above -mentioned maximum speed will vary depending rigidity of the machine and balance of cutter.  
 An adequate cutting condition should be selected for each case.  
 4. The chuck body to which the adjusting screw can be attached is only the FIG.2 type.  
 5. 「-」 In the table represents a through shape without female threads.  
 6. Center-through support is standard equipment, so it can be used as it is.  
 Thru the shank coolant type can not be support.

### ご注文例 ORDERING EXAMPLE

| ①            | ②                   | ③  | ④ | ⑤   |
|--------------|---------------------|----|---|-----|
| HSKA63       | HPC                 | 06 | N | 090 |
| ① シャンクサイズ    | Shank Size          |    |   |     |
| ② 呼称         | Holder's Name       |    |   |     |
| ③ 刃具シャンク径 φD | Cutter's Shank Dia. |    |   |     |
| ④ Nシリーズ      | N series            |    |   |     |
| ⑤ GL長さL      | G.L. Length         |    |   |     |

### アクセサリ ACCESSORIES

▶ P.159 チャックレンチ CHUCK WRENCH

### アクセサリ ACCESSORIES

▶ P.160 調整ネジ ADJUST SCREW



# ハードチャック

## HARD CHUCK

**HSK**  
series  
HSKシリーズ

特徴 FEATURES ▶ P.27-28 **HSKA** (No.) - **CTH** (D) - (L)

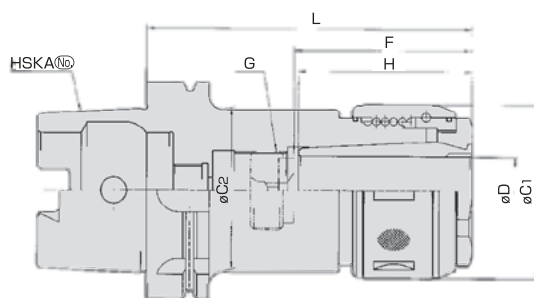
▶ センタースルー対応 Thru-the-tool Coolant Available

### 特 長

ハードチャックはツーリングに要求される条件（剛性・求心性・操作性・経済性）を総合的に考えて設計していますので、あらゆる条件にもハイレベルで調和を計り無理のないツールレイアウトが可能です。

### FEATURES

- The ball screw structure provides high clamping power.
- Easy handling.
- High accuracy and rigidity are kept long.



| MODEL   | CODE       | øD    | L  | øC1 | øC2 | H  | G       | F    |      | スプリングコレット<br>SPRING COLLET | 調整ネジ<br>ADJUST SCREW | N/W<br>(kg) |
|---------|------------|-------|----|-----|-----|----|---------|------|------|----------------------------|----------------------|-------------|
|         |            |       |    |     |     |    |         | MIN. | MAX. |                            |                      |             |
| HSKA63  | -CTH16-120 | 26890 | 16 | 120 | 52  | 50 | M18×1.5 | 50   | 70   | C16-(16)                   | OR-M18-25            |             |
|         | -CTH20-120 | 26892 | 20 |     | 60  | 54 |         |      |      | C20-(20)                   |                      |             |
|         | -CTH25-120 | 26894 | 25 |     | 68  | 62 |         |      |      | C25-(25)                   |                      |             |
|         | -CTH32-135 | 26896 | 32 |     | 80  | 62 |         |      |      | C32-(32)                   |                      |             |
| HSKA100 | -CTH16-135 | 27250 | 16 | 135 | 52  | 50 | M18×1.5 | 50   | 69   | C16-(16)                   | OR-M18               |             |
|         | -CTH20-135 | 27252 | 20 |     | 60  | 54 |         |      |      | C20-(20)                   |                      |             |
|         | -CTH25-135 | 27254 | 25 |     | 68  | 62 | M28×1.5 | 68   | 79   | C25-(25)                   | OR-M28-25            |             |
|         | -CTH32-150 | 27256 | 32 |     | 80  | 75 | M36×1.5 | 80   | 100  | C32-(32)                   | OR-M36-20            |             |
|         | -CTH42-165 | 27258 | 42 |     | 95  | 85 |         | 90   | 114  | C42-(42)                   |                      |             |

- 注：1. クーラントパイプは付属されております。（固定式）  
 2. スプリングコレット（最大把握径）は付属しております。  
 他のサイズのスプリングコレットをご希望の際は別途お申し付け下さい。  
 3. チャックレンチ・調整ネジは付属しておりません。別途お求め下さい。  
 4. センタースルーにてご使用の際は、調整ネジ（ORタイプ）を別途お求め下さい。  
 5. 全サイズスピンドルスルーにて使用可能です。（調整ネジはORタイプを別途ご注文下さい。）

- NOTE: 1. A Coolant pipe is supplied with chuck.  
 2. A spring collet is supplied with Hard chuck.  
 Unless otherwise required, maximum ID spring collet is supplied.  
 3. Chuck wrench and adjust screw are sold separately.  
 4. For thru-the-tool coolant application, OR-adjust screw is used.  
 OR-adjust screw is sold separately.  
 5. All sizes can be available through the tool coolant.  
 (Please order OR type adjusting screw separately.)

### ご注文例 ORDERING EXAMPLE

① HSKA63 - ② CTH - ③ 16 - ④ 120

- ① シャンクサイズ Shank Size  
 ② 呼称 Holder's Name  
 ③ 刃具シャンク径 øD Cutter's Shank Dia.  
 ④ GL長さ L G.L. Length

#### アクセサリ ACCESSORIES

▶ P.159 ストレートコレット STRAIGHT COLLET

#### アクセサリ ACCESSORIES

▶ P.161 スプリングコレット・調整ネジ SPLING COLLET, ADJUST SCREW

#### アクセサリ ACCESSORIES

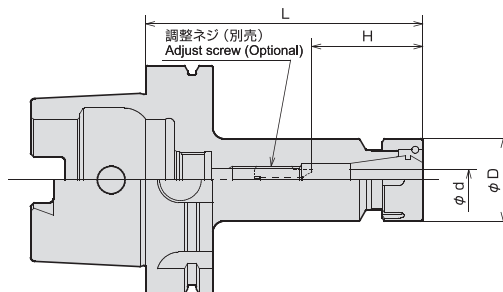
▶ P.162 チャックレンチ・ノーズ CHUCK WRENCH, NOSE

## コレットチャック COLLET CHUCK

特徴 FEATURES ▶ P.29-30 HSKA (No.) -NSC (d) MAX-L (L)

▶ センタースルー対応 Thru-the-tool Coolant Available

▶ シャンクスルー対応 Thru-the-shank Coolant Available



| MODEL                        | CODE                        | φ <sup>d</sup><br>(GRIPPING RANGE) | φD     | L      | H     | COLLET     | NUT      | 調整ネジ<br>ADJUST SCREW |              |              |            |
|------------------------------|-----------------------------|------------------------------------|--------|--------|-------|------------|----------|----------------------|--------------|--------------|------------|
| Max. 20,000min <sup>-1</sup> |                             |                                    |        |        |       |            |          |                      |              |              |            |
| HSKA50                       | NSC07R-090                  | 310020                             | 0.5~7  | 23     | 90    | 24~40      | CR07-(d) | RSN07NB              | M6×20L-CTW   |              |            |
|                              | NSC10-090                   | 310022                             | 0.5~10 | 30     | 120   | 31~43      | CR10-(d) | NSN10NB              | RAS10-25-2.5 |              |            |
|                              | - 120                       | 310024                             |        |        | 31~48 |            |          |                      |              |              |            |
|                              | NSC13-090                   | 310026                             | 0.5~13 | 36     | 90    | 35~43      | CR13-(d) | NSN13NB              | RAS13-25-2.5 |              |            |
|                              | - 120                       | 310028                             |        |        | 120   | 35~52      |          |                      |              |              |            |
|                              | NSC16-090                   | 310030                             | 1~16   | 42     | 90    | 38~43      | CR16-(d) | NSN16NB              | RAS16-25-5   |              |            |
|                              | - 120                       | 310032                             |        |        | 120   | 38~66      |          |                      |              |              |            |
|                              | NSC20-090                   | 310034                             | 1.5~20 | 50     | 90    | 68         | CR20-(d) | NSN20NB              | —            |              |            |
| - 120                        | 310036                      | 120                                |        |        | 44~67 | RAS20-25-5 |          |                      |              |              |            |
| HSKA63                       | NSC07R-090                  | 321600                             | 0.5~7  | 23     | 90    | 24~40      | CR07-(d) | RSN07NB              | M6×20L-CTW   |              |            |
|                              | NSC10-090                   | 321602                             | 0.5~10 | 30     | 120   | 31~40      | CR10-(d) | NSN10NB              | RAS10-25-2.5 |              |            |
|                              | - 120                       | 321604                             |        |        | 150   | 31~48      |          |                      |              |              |            |
|                              | - 150                       | 321606                             |        |        | 90    | 35~40      |          |                      |              |              |            |
|                              | NSC13-090                   | 321608                             |        |        | 120   | 35~52      |          |                      |              |              |            |
|                              | - 120                       | 321610                             | 0.5~13 | 36     | 150   | CR13-(d)   | NSN13NB  | RAS13-25-2.5         |              |              |            |
|                              | - 150                       | 321612                             |        |        | 90    |            |          |                      | 38~40        |              |            |
|                              | NSC16-090                   | 321614                             |        |        | 120   |            |          |                      | 38~66        |              |            |
|                              | - 120                       | 321616                             |        |        | 150   |            |          |                      | CR16-(d)     | NSN16NB      | RAS16-25-5 |
|                              | - 150                       | 321618                             | 90     | 66     |       |            |          |                      |              |              |            |
|                              | NSC20-090                   | 321620                             | 1.5~20 | 50     | 120   | CR20-(d)   | NSN20NB  | —                    |              |              |            |
|                              | - 120                       | 321622                             |        |        | 120   |            |          | 44~61                |              |              |            |
|                              | - 150                       | 321624                             |        |        | 150   |            |          |                      |              |              |            |
|                              |                             |                                    |        |        |       |            |          |                      |              |              |            |
|                              | Max. 8,000min <sup>-1</sup> |                                    |        |        |       |            |          |                      |              |              |            |
|                              | HSKA100                     | NSC10-105                          | 351520 | 0.5~10 | 30    | 105        | 31~43    | CR10-(d)             | NSN10NB      | RAS10-25-2.5 |            |
| - 135                        |                             | 351522                             | 135    |        |       | 31~48      |          |                      |              |              |            |
| - 165                        |                             | 351524                             | 165    |        |       |            |          |                      |              |              |            |
| - 195                        |                             | 351526                             | 195    |        |       |            |          |                      |              |              |            |
| - 225                        |                             | 351528                             | 225    |        |       |            |          |                      |              |              |            |
| - 255                        |                             | 351530                             | 255    |        |       |            |          |                      |              |              |            |
| - 285                        |                             | 351532                             | 285    |        |       |            |          |                      |              |              |            |
| NSC13-105                    |                             | 351534                             | 0.5~13 |        |       |            | 36       |                      |              |              | 105        |
| - 135                        |                             | 351536                             |        | 135    | 35~52 |            |          |                      |              |              |            |
| - 165                        |                             | 351538                             |        | 165    |       |            |          |                      |              |              |            |
| - 195                        |                             | 351540                             |        | 195    |       |            |          |                      |              |              |            |
| - 225                        |                             | 351542                             |        | 225    |       |            |          |                      |              |              |            |
| - 255                        |                             | 351544                             |        | 255    |       |            |          |                      |              |              |            |
| - 285                        |                             | 351546                             |        | 285    |       |            |          |                      |              |              |            |
| NSC16-105                    |                             | 351548                             |        | 1~16   |       | 42         |          | 105                  | 38~48        | CR16-(d)     | NSN16NB    |
| - 135                        |                             | 351550                             | 135    |        | 38~76 |            |          |                      |              |              |            |
| - 165                        |                             | 351552                             | 165    |        |       |            |          |                      |              |              |            |
| - 195                        |                             | 351554                             | 195    |        |       |            |          |                      |              |              |            |
| - 225                        |                             | 351556                             | 225    |        |       |            |          |                      |              |              |            |
| - 255                        |                             | 351558                             | 255    |        |       |            |          |                      |              |              |            |
| - 285                        |                             | 351560                             | 285    |        |       |            |          |                      |              |              |            |
| NSC20-105                    |                             | 351562                             | 1.5~20 |        |       |            | 50       | 105                  | 44~48        |              |            |
| - 135                        |                             | 351564                             |        | 135    | 44~78 |            |          |                      |              |              |            |
| - 165                        |                             | 351566                             |        | 165    |       |            |          |                      |              |              |            |
| - 195                        |                             | 351568                             |        | 195    |       |            |          |                      |              |              |            |
| - 225                        |                             | 351570                             |        | 225    |       |            |          |                      |              |              |            |
| - 255                        |                             | 351572                             |        | 255    |       |            |          |                      |              |              |            |
| - 285                        |                             | 351574                             |        | 285    |       |            |          |                      |              |              |            |

- 注：1.クーラントパイプは付属しております。（固定式）  
2.コレット・チャックレンチは付属していません。  
3.センタースルーでご利用の際は、CROHコレットをお求めください。  
シャンクスルーでご利用の際は、CR※Cコレットをお求めください。  
4.表記の許容回転数は、機械の剛性と刃物のバランスに大きく左右されますので、表記中の回転数と異なる場合があります。

- NOTE: 1. Coolant pipe is included.  
2. Collet and chuck wrench are sold separately.  
3. CROH collet is used for thru-the-tool coolant application.  
CR※C collet is used for thru-the-shank coolant application.  
4. The above-mentioned maximum speed will vary depending rigidity of the machine and balance of cutter. An adequate cutting condition should be selected for each case.

### ご注文例 ORDERING EXAMPLE

① HSKA50 - ② NSC ③ 10 - ④ 090

- ① シャンクサイズ Shank Size  
② 呼称 Holder's Name  
③ Max. φD Max. φD  
④ GL長さ L G.L. Length

### アクセサリ ACCESSORIES

▶ P.163 ナット・調整ネジ・チャックレンチ NUT, ADJUST SCREW, CHUCK WRENCH

### アクセサリ ACCESSORIES

▶ P.165-168 コレット COLLETS

# コレットチャック高速タイプ

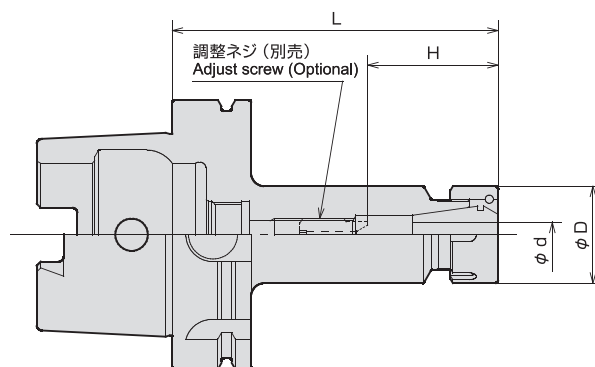
## COLLET CHUCK G Type

**HSK**  
series  
HSKシリーズ

特徴 FEATURES ▶ P.29-30 **HSKA<sup>Ⓝ</sup>-NSC<sup>Ⓓ</sup> MAX<sup>Ⓛ</sup> G**

▶ センタースルー対応 Thru-the-tool Coolant Available

▶ シャンクスルー対応 Thru-the-shank Coolant Available



| MODEL                        |             | CODE   | φd<br>(GRIPPING RANGE) | φD | L     | H          | COLLET   | NUT     | 調整ネジ<br>ADJUST SCREW |
|------------------------------|-------------|--------|------------------------|----|-------|------------|----------|---------|----------------------|
| Max. 27,000min <sup>-1</sup> |             |        |                        |    |       |            |          |         |                      |
| HSKA50                       | NSC07R-090G | (△)    | 0.5~7                  | 23 | 90    | 24~40      | CR07-(d) | RSN07NB | M6×20L-CTW           |
|                              | NSC10-090G  | 310052 | 0.5~10                 | 30 |       | 31~43      | CR10-(d) | NSN10NB | RAS10-25-2.5         |
|                              | - 120G      | 310054 |                        |    | 120   | 31~48      |          |         |                      |
|                              | NSC13-090G  | 310056 | 0.5~13                 | 36 | 90    | 35~43      | CR13-(d) | NSN13NB | RAS13-25-2.5         |
|                              | - 120G      | 310058 |                        |    | 120   | 35~52      |          |         |                      |
|                              | NSC16-090G  | 310060 | 1~16                   | 42 | 90    | 38~43      | CR16-(d) | NSN16NB | RAS16-25-5           |
|                              | - 120G      | 310062 |                        |    | 120   | 38~66      |          |         |                      |
|                              | NSC20-090G  | 310064 | 1.5~20                 | 50 | 90    | 68         | CR20-(d) | NSN20NB | —                    |
| - 120G                       | 310066      | 120    |                        |    | 44~67 | RAS20-25-5 |          |         |                      |
| HSKA63                       | NSC07R-090G | (△)    | 0.5~7                  | 23 | 90    | 24~40      | CR07-(d) | RSN07NB | M6×20L-CTW           |
|                              | NSC10-090G  | 321642 | 0.5~10                 | 30 |       | 31~40      | CR10-(d) | NSN10NB | RAS10-25-2.5         |
|                              | - 120G      | 321644 |                        |    | 120   | 31~48      |          |         |                      |
|                              | - 150G      | 321646 | 150                    |    |       |            |          |         |                      |
|                              | NSC13-090G  | 321648 | 0.5~13                 | 36 | 90    | 35~40      | CR13-(d) | NSN13NB | RAS13-25-2.5         |
|                              | - 120G      | 321650 |                        |    | 120   | 35~52      |          |         |                      |
|                              | - 150G      | 321652 |                        |    | 150   |            |          |         |                      |
|                              | NSC16-090G  | 321654 | 1~16                   | 42 | 90    | 38~40      | CR16-(d) | NSN16NB | RAS16-25-5           |
|                              | - 120G      | 321656 |                        |    | 120   | 38~66      |          |         |                      |
|                              | - 150G      | 321658 |                        |    | 150   |            |          |         |                      |
|                              | NSC20-090G  | 321660 | 1.5~20                 | 50 | 90    | 66         | CR20-(d) | NSN20NB | —                    |
|                              | - 120G      | 321662 |                        |    | 120   | 44~61      |          |         | RAS20-25-5           |
|                              | - 150G      | 321664 |                        |    | 150   |            |          |         |                      |

- 注: 1. クーラントパイプは付属しております。(固定式)  
 2. コレット・チャックレンチは付属しておりません。  
 3. センタースルーでご使用の際は、CROHコレットをお求めください。  
 シャンクスルーでご使用の際は、CR※Cコレットをお求めください。  
 4. 表記の許容回転数は、機械の剛性と刃物のバランスに大きく左右されますので、表記中の回転数と異なる場合があります。  
 5. (△) 表記製品は特殊対応品です。

- NOTE: 1. Coolant pipe is included.  
 2. Collet and chuck wrench are sold separately.  
 3. CROH collet is used for thru-the-tool coolant application.  
 CR※C collet is used for thru-the-shank coolant application.  
 4. The above-mentioned maximum speed will vary depending rigidity of the machine and balance of cutter.  
 An adequate cutting condition should be selected for each case.  
 5. CODE(△)The listed products are made-to-order products.

### ご注文例 ORDERING EXAMPLE

| ①         | ②             | ③   | ④  | ⑤      |
|-----------|---------------|-----|----|--------|
| HSKA50    | -             | NSC | 10 | -090 G |
| ① シャンクサイズ | Shank Size    |     |    |        |
| ② 呼称      | Holder's Name |     |    |        |
| ③ Max. φD | Max. φD       |     |    |        |
| ④ GL長さ L  | G.L. Length   |     |    |        |
| ⑤ Gタイプ    | G Type        |     |    |        |

アクセサリ ACCESSORIES

▶ P.163 ナット・チャックレンチ・調整ネジ NUT, CHUCK WRENCH, ADJUST SCREW

アクセサリ ACCESSORIES

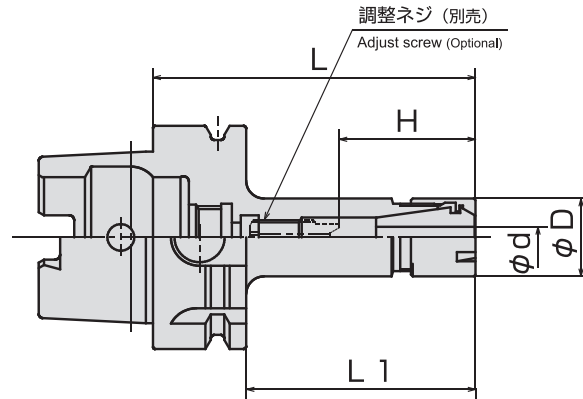
▶ P.165-168 コレット COLLETS

## コレットチャック (スリムタイプ) COLLET CHUCK (SLIM TYPE)

特徴 FEATURES ▶ P.31 **HSKA** (No) **-SSC** (d) **MAX-L**

▶ センタースルー対応 Thru-the-tool Coolant Available

▶ シャンクスルー対応 Thru-the-shank Coolant Available



| MODEL  | CODE      | ød     | øD | L   | L1  | H<br>(調整量) | COLLET | NUT    | 調整ネジ<br>ADJUST SCREW |
|--------|-----------|--------|----|-----|-----|------------|--------|--------|----------------------|
| HSKA50 | SSC07-090 | 0.5~7  | 16 | 90  | 64  | 25~40      | CR07-d | ER11MN | M6×20L-CTW           |
|        | SSC07-135 |        |    | 135 | 109 |            |        |        |                      |
|        | SSC10-090 | 0.5~10 | 22 | 90  | 64  | 31~43      | CR10-d | ER16MN | RAS10-25-2.5         |
|        | SSC10-135 |        |    | 135 | 109 |            |        |        |                      |
|        | SSC13-090 | 0.5~13 | 28 | 90  | 64  | 35~43      | CR13-d | ER20MN | RAS13-25-2.5         |
|        | SSC13-135 |        |    | 135 | 109 |            |        |        |                      |
| HSKA63 | SSC07-090 | 0.5~7  | 16 | 90  | 64  | 25~40      | CR07-d | ER11MN | M6×20L-CTW           |
|        | SSC07-135 |        |    | 135 | 109 |            |        |        |                      |
|        | SSC10-090 | 0.5~10 | 22 | 90  | 64  | 31~40      | CR10-d | ER16MN | RAS10-25-2.5         |
|        | SSC10-135 |        |    | 135 | 109 |            |        |        |                      |
|        | SSC13-105 | 0.5~13 | 28 | 105 | 79  | 35~52      | CR13-d | ER20MN | RAS13-25-2.5         |
|        | SSC13-150 |        |    | 150 | 124 |            |        |        |                      |

全て受注生産

- 注: 1. クーラントパイプは付属されております。(固定式)  
 2. コレット・チャックレンチは付属していません。  
 3. センタースルーでご使用の際は、CROHコレットをお求めください。  
 シャンクスルーでご使用の際は、CR※Cコレットをお求めください。

NOTE: 1. A Coolant pipe is supplied with chuck.  
 2. Collet and chuck wrench are sold separately.  
 3. CROH collet is used for thru-the-tool coolant application.  
 CR※C collet is used for thru-the-shank coolant application.

### ご注文例 ORDERING EXAMPLE

| ①         | ②             | ③  | ④    |
|-----------|---------------|----|------|
| HSKA63    | -SSC          | 10 | -135 |
| ① シャンクサイズ | Shank Size    |    |      |
| ② 呼称      | Holder's Name |    |      |
| ③ Max. øD | Max. øD       |    |      |
| ④ GL長さ L  | G.L. Length   |    |      |

### アクセサリ ACCESSORIES

▶ P.164 ナット・調整ネジ・チャックレンチ NUT, ADJUST SCREW, CHUCK WRENCH

### アクセサリ ACCESSORIES

▶ P.165-168 コレット COLLETS

# ZERO-1 CHUCK

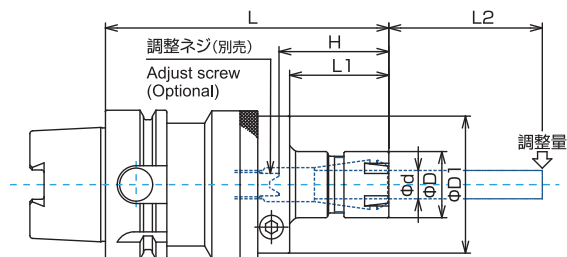
## Runout Adjustment Type Holder

**HSK**  
series  
HSKシリーズ

特徴 FEATURES ▶ P.26 **HSKA (No.)-SSZ (d) - (L)**

▶ センタースルー対応 Thru-the-tool Coolant Available

▶ シャンクスルー対応 Thru-the-shank Coolant Available



| MODEL  |           | CODE   | ød     | øD | øD1 | L   | L1 | H       | COLLET   | NUT     | 振れ調整量<br>Runout adjustment amount |          | 調整ネジ<br>ADJUST SCREW |
|--------|-----------|--------|--------|----|-----|-----|----|---------|----------|---------|-----------------------------------|----------|----------------------|
|        |           |        |        |    |     |     |    | (刃具調整量) |          |         | L2=50mm                           | L2=100mm |                      |
| HSKA63 | SSZ13-120 | 320194 | 0.5~13 | 28 | 58  | 120 | 42 | 35~52   | CR13-(d) | ER20MN  | 15μm                              | 25μm     | RAS13-25-2.5         |
|        | SSZ20-135 | 320196 | 1.5~20 | 50 | 76  | 135 | 50 | 44~66   | CR20-(d) | ER32-UM | 10μm                              | 15μm     | RAS20-25-5           |

注: 1. コレット・チャックレンチ・調整ネジ・T形レンチは付属していません。

NOTE: 1. Collet, chuck wrench, adjustment screw, and T-type wrench are not included.

### ■ アクセサリ (ACCESSORIES for ZERO-1 CHUCK)

| MODEL | NUT (付属品)<br>(accessories) | COLLET    |                   |                  | チャックレンチ<br>CHUCK WRENCH | 調整ネジ<br>ADJUST SCREW |
|-------|----------------------------|-----------|-------------------|------------------|-------------------------|----------------------|
|       |                            | STANDARD  | センタースルー<br>centre | シャンクスルー<br>shank |                         |                      |
| SSZ13 | ER20MN                     | CR13-d AA | CROH13-d AA       | CR13C-d AA       | ER20MS                  | RAS13-25-2.5         |
| SSZ20 | ER32-UM                    | CR20-d AA | CROH20-d AA       | CR20C-d AA       | WER32UM                 | RAS20-25-5           |

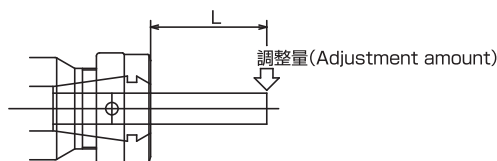
### ■ 振れ調整量 (Runout adjustment amount)

調整量はホルダの長さ、工具の突出し長さによって変わってきます。各寸法表に工具の突出し長さが50mm、100mmの位置での最大調整量を記載していますのでご参照ください。最大調整量は調整軸を許容トルクで締め付けた時の値です。

The amount of adjustment depends on the length of the holder and the protruding length of the tool.

Please refer to each dimension table for the maximum adjustment amount when the protruding length of the tool is 50 mm or 100 mm.

The maximum adjustment amount is the value when the adjustment shaft is tightened with the allowable torque.



### ■ T形レンチ (T-type wrench)

| チャックタイプ<br>Chuck type | 適合レンチ<br>Compatible wrench | 許容トルク(Nm)<br>Allowable torque |
|-----------------------|----------------------------|-------------------------------|
| SSZ13                 | TH-W5-100                  | 6                             |
| SSZ20                 | (CODE: 700461)             | 10                            |

### ご注文例 ORDERING EXAMPLE

|           |               |     |          |
|-----------|---------------|-----|----------|
| ①         | ②             | ③   | ④        |
| HSKA63    | -             | SSZ | 13 - 120 |
| ① シャンクサイズ | Shank Size    |     |          |
| ② 呼称      | Holder's Name |     |          |
| ③ Max. øD | Max. øD       |     |          |
| ④ GL長さL   | G.L. Length   |     |          |

アクセサリ ACCESSORIES

▶ P.164 ナット・調整ネジ・チャックレンチ NUT, ADJUST SCREW, CHUCK WRENCH

アクセサリ ACCESSORIES

▶ P.165-168 コレット COLLETS



# ドリルチャック (シャンク一体型)

## DRILL CHUCK

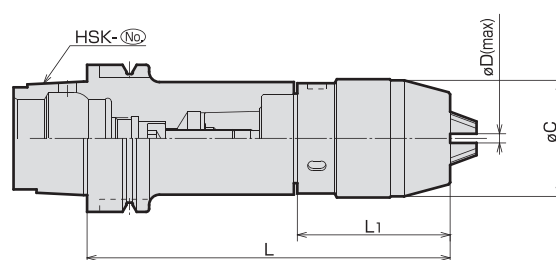
### HSKA (No.)-SDC (D) MAX-(L)

### 特 長

- 従来のドリルチャックよりL寸法が短くコンパクトです。
- シャンク一体化の為、脱落はありません。
- 高トルク加工の場合、付属レンチで締めることも出来ます。

### FEATURES

- Drill chuck is positively coupled with the holder.
- Short (L length) and compact.
- Clamping force can be increased by the attached wrench.



| MODEL   |            | CODE  | øD     | L    |       | L1   |       | øC   | N/W (kg) |
|---------|------------|-------|--------|------|-------|------|-------|------|----------|
|         |            |       |        | OPEN | CLOSE | OPEN | CLOSE |      |          |
| HSKA50  | -SDC08-125 | 25380 | 0.5~ 8 | 128  | 135.5 | 50   | 57.5  | 37.5 | 1.1      |
|         | -SDC13-155 | 25390 | 1~13   | 154  | 166.5 | 66   | 78.5  | 50   | 1.7      |
| HSKA63  | -SDC08-125 | 26380 | 0.5~ 8 | 128  | 135.5 | 50   | 57.5  | 37.5 | 1.3      |
|         | -SDC13-155 | 26390 | 1~13   | 154  | 166.5 | 66   | 78.5  | 50   | 1.9      |
| HSKA100 | -SDC08-130 | 27380 | 0.5~ 8 | 133  | 140.5 | 50   | 57.5  | 37.5 | 2.5      |
|         | -SDC13-155 | 27390 | 1~13   | 154  | 166.5 | 66   | 78.5  | 50   | 3.1      |
|         | -SDC13-205 | 27391 |        | 204  | 216.5 |      |       |      | 3.9      |

注：1. クーラントパイプは付属されております。(固定式)  
2. チャックレンチは付属されております。

NOTE: 1. Coolant pipe is included.  
2. Each SDC chuck is supplied with a wrench.

### ご注文例 ORDERING EXAMPLE

| ①         | ②             | ③  | ④    |
|-----------|---------------|----|------|
| HSKA50    | -SDC          | 08 | -125 |
| ① シャンクサイズ | Shank Size    |    |      |
| ② 呼称      | Holder's Name |    |      |
| ③ Max. øD | Max. øD       |    |      |
| ④ GL長さ L  | G.L. Length   |    |      |

| 振れ精度 RUNOUT |                               |                |
|-------------|-------------------------------|----------------|
| SDC NO.     | 使用するテストバー<br>DIA. OF TEST BAR | 振れ精度<br>RUNOUT |
| SDC08       | 4&8mm                         | 0.05mm以下       |
| SDC13       | 6.5&13mm                      |                |

- 測定位置等の試験方法は、JIS B6001に準拠しております。
- 規格テストバー以外での振れ精度も上記をクリアしております。
- The test method such as measurement position conforms to JIS B 6001.
- The runout accuracy other than the standard test bar also clears the above.

| 把握力 CLAMPING POWER                      |                        |                             |                     |
|-----------------------------------------|------------------------|-----------------------------|---------------------|
|                                         | 締め方<br>CLAMPING        | ねじりモーメント<br>TWISTING MOMENT | 比較%<br>COMPARISON % |
| 市販キーレスチャック<br>TRADITIONAL KEYLESS CHUCK | 手締め<br>Manual          | 6.9 N・m                     | 100                 |
| 聖和SDCチャック<br>SHOWA SDC CHUCK            |                        |                             |                     |
| 聖和SDCチャック+レンチ締め<br>SHOWA SDC CHUCK      | 付属レンチ締め<br>With wrench | 21.6 N・m                    | 314                 |

注：上記ねじりモーメントの値は、把握径：ø9の場合を示します。  
NOTE : Twisting moment was measured with a ø9mm test bar.

# パワーサイレントアーバ

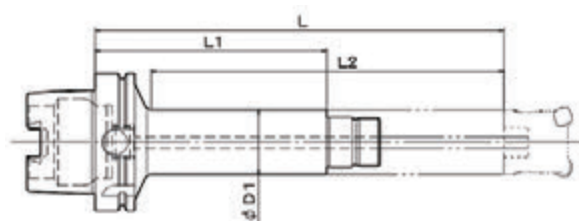
## POWER SILENT ARBOR

**HSK**  
series  
HSKシリーズ

特徴 FEATURES ▶ P.25 **HSKA** (No) **-FMH** (D1) **-L** **-DP**

▶ センタースルー対応 Thru-the-tool Coolant Available

### 【ベースホルダ】 BASE HOLDER



|         | MODEL        | CODE   | φD1 | L   | L1  | L2  | DAMPER UNIT |
|---------|--------------|--------|-----|-----|-----|-----|-------------|
| HSKA100 | -PS36-47-170 | 350980 | 47  | 350 | 170 | 307 | FMH□-47-DP  |
|         | -PS36-47-220 | 350982 |     | 400 | 220 | 357 |             |
|         | -PS36-60-170 | 350984 | 60  | 350 | 170 | 307 | FMH□-60-DP  |
|         | -PS36-60-220 | 350986 |     | 400 | 220 | 357 |             |

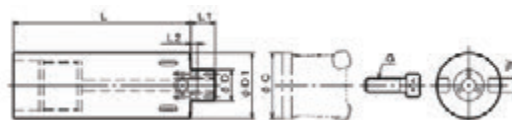
注：切削による発熱により、ダンパーユニットの防振機構部品が劣化し防振機能が低下します。加工時は、必ずセンタースルーによるエアブローまたは、クーラントを使用してください

Note: Due to the heat generated by cutting, the vibration isolation mechanism parts of the damper unit deteriorate and the vibration isolation function deteriorates. When processing, be sure to use center through Use air blow or coolant

#### ご注文例 ORDERING EXAMPLE

|           |             |     |      |
|-----------|-------------|-----|------|
| ①         | ②           | ③   | ④    |
| HSKA100   | -PS36       | -47 | -170 |
| ① シャンクサイズ | Shank Size  |     |      |
| ② ダンパーサイズ | Damper Size |     |      |
| ③ 胴 径     | φD1         |     |      |
| ④ L1寸法    | L1          |     |      |

### 【ダンパーユニット】 DAMPER UNIT



|      | MODEL                | CODE   | φD     | φD1 | L   | L1 | L2 | W  | G   | WRENCH | MinφC |
|------|----------------------|--------|--------|-----|-----|----|----|----|-----|--------|-------|
| PS36 | -FMH22-47-180-DP     | 700700 | 22     | 47  | 180 | 18 | 5  | 10 | M10 | FK0045 | 36    |
|      | -FMH22-60-180-DP     | 700702 | 22     | 60  | 180 | 18 | 5  | 10 | M10 | FK0058 | 49    |
|      | -FMH22.225-47-180-DP | 700704 | 22.225 | 47  | 180 | 18 | 4  | 8  | M10 | FK0045 | 40    |
|      | -FMH22.225-60-180-DP | 700706 | 22.225 | 60  | 180 | 18 | 4  | 8  | M10 | FK0058 | 52    |

注：ベースホルダとダンパーユニットを取り付け、加工に使用された後は、ダンパーユニットの取り外しが不可となります

Note: The damper unit cannot be removed after the base holder and damper unit have been assembled.

#### ご注文例 ORDERING EXAMPLE

|           |             |     |      |     |
|-----------|-------------|-----|------|-----|
| ①         | ②           | ③   | ④    | ⑤   |
| PS36      | -FMH22      | -47 | -180 | -DP |
| ① ダンパーサイズ | Damper Size |     |      |     |
| ② アーバサイズ  | Arber Size  |     |      |     |
| ③ 胴 径     | φD1         |     |      |     |
| ④ L寸法     | L           |     |      |     |
| ⑤ 防振機構    | Damper      |     |      |     |

#### アクセサリ ACCESSORIES

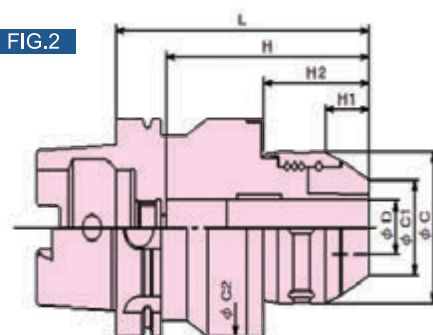
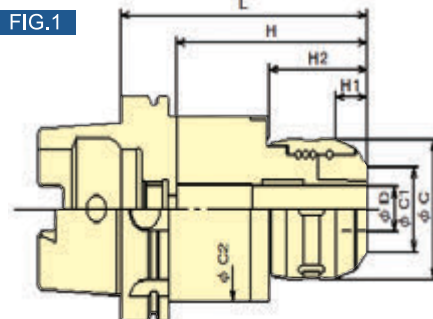
▶ P.173 正面フライスアーバ用 クランプボルト CLAMP BOLT FOR FACE MILL ARBOR

# ハイデュアルチャック

## Hy-Dual CHUCK

特徴 FEATURES ▶ P.39-40 HSKA (No.) -HDU (D) - (L)

▶ センタースルー対応 Thru-the-tool Coolant Available



シャンク公差h6以内の刃具をご使用下さい。  
Please use a cutting tool with shank tolerance within h6

| MODEL   |         |     | CODE   | Fig | φD | L   | H  | φC | φC1 | φC2 | H1   | H2   | 最小刃具<br>挿入量 |
|---------|---------|-----|--------|-----|----|-----|----|----|-----|-----|------|------|-------------|
| HSKA100 | -HDU16- | 115 | 351600 | 1   | 16 | 115 | 80 | 62 | 47  | 82  | 14   | 54.5 | 54          |
|         | -HDU20- | 115 | 351602 |     | 20 |     |    |    |     |     |      |      |             |
|         | -HDU25- | 125 | 351604 | 2   | 25 | 125 | 92 | 70 | 54  | 100 | 17.5 | 56.5 | 65          |
|         | -HDU32- | 130 | 351606 |     | 32 | 130 | 97 | 82 | 62  |     |      | 58.5 | 70          |

- 注: 1. クーラントパイプは付属されております。(。固定式)  
2. ストレートコレットは内部を破損する恐れがありますので、絶対にご使用にならないで下さい。  
3. 刃具を約100回着脱または、3カ月に毎にハイドロチャック部の把握力確認を行って下さい。  
4. ハイドロチャック部の把握力確認は、専用テスト (別売り・P.153参照) をご使用下さい。

NOTE: 1. Coolant pipe is included.  
2. Please don't use with collets because it may destroy the inside of the holder.  
3. After 100 clamping cycles, or every 3 month interval, please confirm clamping power of hydraulic portion.  
4. When you check clamping power of hydraulic portion, please use exclusive test bar (separately sold).

### ご注文例 ORDERING EXAMPLE

| ①         | ②             | ③  | ④     |
|-----------|---------------|----|-------|
| HSKA100   | - HDU         | 32 | - 130 |
| ① シャンクサイズ | Shank Size    |    |       |
| ② 呼称      | Holder's Name |    |       |
| ③ Max. φD | Max. φD       |    |       |
| ④ GL長さ L  | G.L. Length   |    |       |

### アクセサリ ACCESSORIES

▶ P.169 把握力テスター・チャックレンチ Tester for clamping power, CHUCK WRENCH

# シンクロタップホルダ SYFN/SYFS型

## SYNCHRO TAP HOLDER

**HSK**  
series  
HSKシリーズ

特徴 FEATURES ▶ P.33-34 **HSKA<sup>®</sup>-SYFN/SYFS-L**

- ▶ センタースルー対応 Thru -the-tool Coolant Available
- ▶ シャンクスルー対応 (オプション) Thru-the-shank Coolant Available (Option)



FIG.1

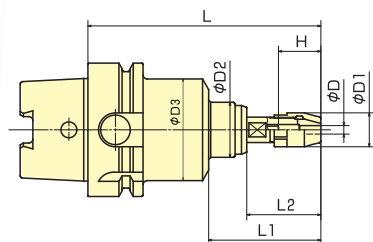


FIG.2

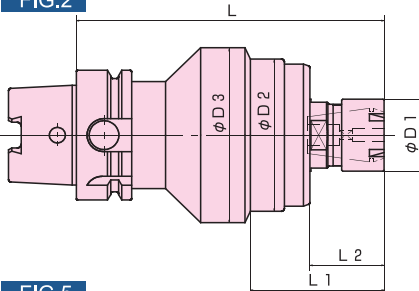


FIG.3

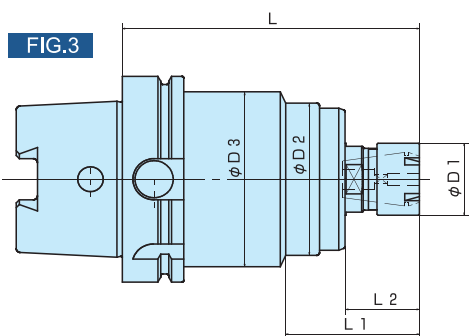


FIG.4

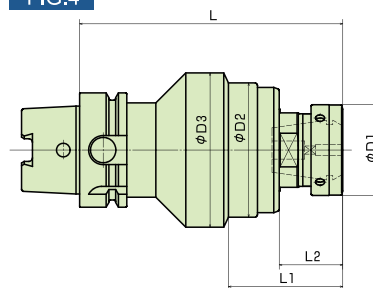
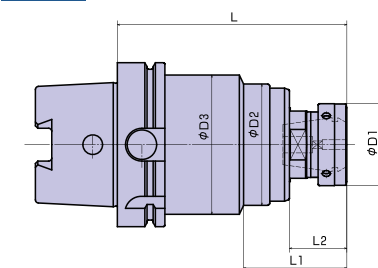


FIG.5



SYFS型はシャンク公差h7以内の刃具をご使用下さい。  
Please use a cutting tool with shank tolerance with in h7 for SYFS type.

| MODEL   |          |      | CODE   | FIG | øD     | øD1 | øD2 | øD3  | L   | L1  | L2  | H  | TAP SIZE                        | COLLET     |
|---------|----------|------|--------|-----|--------|-----|-----|------|-----|-----|-----|----|---------------------------------|------------|
| HSKA50  | -SYFN12  | -125 | 310001 | 4   | —      | 36  | 51  | 62.5 | 125 | 54  | 30  | —  | M4~M12,No.8~U1/2<br>P1/8        | CR13GBorGH |
|         |          | -155 | 310002 |     |        |     |     |      | 155 | 84  | 60  |    |                                 |            |
| HSKA63  | -SYFS02  | -110 | 321282 | 1   | 3<br>4 | 16  | 26  | 48   | 110 | 53  | 35  | 22 | M1,M1.6,M2,No.3,No.4            | —          |
|         | -SYFS03  | -110 | 321284 |     |        |     |     |      |     |     |     |    | M3,No.5,No.6                    |            |
|         | -SYFN12  | -115 | 321291 | 5   | —      | 36  | 51  | 62.5 | 115 | 54  | 30  | —  | M4~M12,No.8~U1/2<br>P1/8        | CR13GBorGH |
|         |          | -145 | 321292 |     |        |     |     |      | 145 | 84  | 60  |    |                                 |            |
|         | -SYFN16S | -145 | 321297 | 2   | —      | 35  | 74  | 85   | 145 | 63  | 35  | —  | M4~M16,No.8~U5/8,<br>P1/4       | CR16GBorGH |
|         |          | -175 | 321298 |     |        |     |     |      | 175 | 93  | 65  |    |                                 |            |
|         |          | -205 | 321299 |     |        |     |     |      | 205 | 123 | 95  |    |                                 |            |
|         | -SYFN20  | -145 | 321294 | 4   | —      | 50  | 74  | 85   | 145 | 63  | 35  | —  | M4~M20,U5/16~U5/8,<br>P1/8~P3/8 | CR20GBorGH |
|         |          | -175 | 321295 |     |        |     |     |      | 175 | 93  | 65  |    |                                 |            |
|         |          | -205 | 321296 |     |        |     |     |      | 205 | 123 | 95  |    |                                 |            |
| HSKA100 | -SYFS02  | -115 | 351081 | 1   | 3<br>4 | 16  | 26  | 48   | 115 | 53  | 35  | 22 | M1,M1.6,M2,No.3,No.4            | —          |
|         | -SYFS03  | -115 | 351082 |     |        |     |     |      |     |     |     |    | M3,No.5,No.6                    |            |
|         | -SYFN16S | -140 | 351107 | 3   | —      | 35  | 74  | 85   | 140 | 63  | 35  | —  | M4~M16,No.8~U5/8,<br>P1/4       | CR16GBorGH |
|         |          | -170 | 351108 |     |        |     |     |      | 170 | 93  | 65  |    |                                 |            |
|         |          | -200 | 351109 |     |        |     |     |      | 200 | 123 | 95  |    |                                 |            |
|         |          | -230 | 351110 |     |        |     |     |      | 230 | 153 | 125 |    |                                 |            |
|         |          | -260 | 351111 |     |        |     |     |      | 260 | 183 | 155 |    |                                 |            |
|         | -SYFN20  | -140 | 351104 | 5   | —      | 50  | 74  | 85   | 140 | 63  | 35  | —  | M4~M20,U5/16~U5/8,<br>P1/8~P3/8 | CR20GBorGH |
|         |          | -170 | 351105 |     |        |     |     |      | 170 | 93  | 65  |    |                                 |            |
|         |          | -200 | 351106 |     |        |     |     |      | 200 | 123 | 95  |    |                                 |            |

- 注: 1. クーラントパイプは付属されております。(固定式)  
2. コレット・チャックレンチは付属しておりません。  
3. シンクロタッピング機能付MCでの使用に限りません。  
4. シャンクスルー対応(オプション)も可能です。別途お申し付けください。

NOTE: 1. Each holder supplied with built-in coolant pipe. (Stationary type)  
2. Collet and chuck wrench are sold separately.  
3. Applicable to synchronized machines only.  
4. Thru-the-shank coolant type is manufactured to orders.

### ご注文例 ORDERING EXAMPLE

| ①         | ②           | ③  | ④     |
|-----------|-------------|----|-------|
| HSKA63    | - SYFN      | 20 | - 145 |
| ① シャンクサイズ | Shank Size  |    |       |
| ② 呼称      | Name        |    |       |
| ③ タイプ番号   | Type No     |    |       |
| ④ GL長さ    | G.L. Length |    |       |

#### アクセサリ ACCESSORIES

▶ P.174 SYFN12・SYFN20用 ナット・チャックレンチ NUT, CHUCK WRENCH

#### アクセサリ ACCESSORIES

▶ P.164 SYFN16S用 ナット・チャックレンチ NUT, CHUCK WRENCH

#### アクセサリ ACCESSORIES

▶ P.165-168 コレット・タップコレット COLLETS

## 〈ボーリングシステム〉ツインカット 〈BORING SYSTEM〉 TWINCUT HSA (No.) -TWC (D) MIN - (L) -S

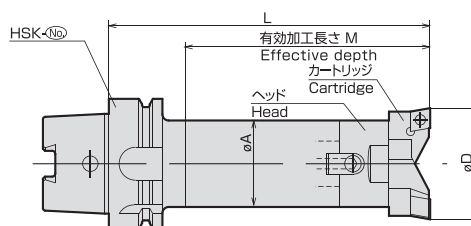
▶ センタースルー対応 (オプション) Thru -the-tool Coolant Available (Option)

### 特 長

- 使い易さを追及した新モジュラータイプ
- ドローイングボルトを利用した新しい連結法とセレーション機構の採用により剛性が大巾に向上し、重切削が可能です。
- バランスカットによる、重切削可。
- エクステンションの連結により深穴も自在に加工可能。

### FEATURES

- Versatile modular type boring system.
- Rigidity is increased by the new coupling method and the serrated head.
- Twin blades allow heavy cutting.
- Extensions are used for deep holes.



| 加工径(D)<br>RANGE | MODEL   |                    | CODE   | シャंक<br>SHANK | ヘッド<br>HEAD  | カートリッジ<br>CARTRIDGE | チップ<br>INSERT | L           | M   | φA  | N/W<br>(kg) |      |
|-----------------|---------|--------------------|--------|---------------|--------------|---------------------|---------------|-------------|-----|-----|-------------|------|
| φ25～33          | HSAK63  | - TWC 25 - 120 - S | 320100 | HSAK63        | - SBS1 - 120 | HE25                | CT25          | WT25-079    | 120 | 85  | 24          | 1.2  |
| φ32～45          |         | TWC32-135-S(3.97)  | 320106 |               | - SBS2 - 135 | HE32                | CT32-3.97     | 注5          | 135 | 100 | 31          | 1.5  |
| φ44～63          |         | TWC44-135-S(3.97)  | 320108 |               | - SBS3 - 135 | HE44                | CT44-3.97     | NOTE5       | 135 | 100 | 42          | 2.0  |
| φ62～89          |         | - TWC 62 - 135 - S | 320103 |               | - SBS4 - 135 | HE62                | CT62          | WT62-127    | 135 | 100 | 54          | 3.0  |
| φ88～126         |         | - TWC 88 - 165 - S | 320104 |               | - SBS5 - 165 | HE88                | CT88          |             | 165 | 130 | 64          | 5.7  |
| φ25～33          | HSAK100 | - TWC 25 - 150 - S | 350150 | HSAK100       | - SBS1 - 150 | HE25                | CT25          | WT25-079    | 150 | 104 | 24          | 2.6  |
| φ32～45          |         | TWC32-165-S(3.97)  | 350164 |               | - SBS2 - 165 | HE32                | CT32-3.97     | 注5<br>NOTE5 | 165 | 119 | 31          | 3.0  |
| φ44～63          |         | TWC44-165-S(3.97)  | 350166 |               | - SBS3 - 165 | HE44                | CT44-3.97     |             | 165 | 119 | 42          | 3.6  |
|                 |         | TWC44-225-S(3.97)  | 350168 |               | - SBS3 - 225 |                     |               |             | 225 | 179 |             | 4.2  |
| φ62～89          |         | - TWC 62 - 165 - S | 350154 |               | - SBS4 - 165 | HE62                | CT62          | 165         | 119 | 54  | 4.7         |      |
|                 |         | - TWC 62 - 240 - S | 350155 |               | - SBS4 - 240 |                     |               | 240         | 194 |     | 5.9         |      |
| φ88～126         |         | - TWC 62 - 285 - S | 350156 |               | - SBS4 - 285 | HE88                | CT88          | 285         | 239 | 64  | 6.7         |      |
|                 |         | - TWC 88 - 165 - S | 350157 |               | - SBS5 - 165 |                     |               | 165         | 119 |     | 6.0         |      |
|                 |         | - TWC 88 - 240 - S | 350158 |               | - SBS5 - 240 |                     |               | 240         | 194 |     | 7.8         |      |
| φ125～175        |         | - TWC 88 - 330 - S | 350159 |               | - SBS5 - 330 | HE125               | CT125         | 330         | 284 | 82  | 10.0        |      |
|                 |         | - TWC125 - 185 - S | 350160 |               | - SBS6 - 185 |                     |               | 185         | 139 |     | 8.8         |      |
|                 |         | - TWC125 - 240 - S | 350161 |               | - SBS6 - 240 |                     |               | 240         | 194 |     | 9.6         |      |
|                 |         | - TWC125 - 330 - S | 350162 |               | - SBS6 - 330 |                     |               |             | 330 | 284 |             | 14.8 |

- 注: 1. クーラントパイプは付属されております。(固定式)  
 2. チップは付属していません。別途お求め下さい。  
 3. 刃先とドライブキーは同位相です。  
 4. センタースルーは、OH仕様のヘッド(受注生産)に交換することにより対応します。  
 型番は、ヘッド型番の後ろに"-OH"が付きます。別途お申し付け下さい。  
 5. TWC32,44用チップにつきましては、市販のチップをご使用下さい。(ISO型式: CC\*\*090308)

- NOTE: 1. Coolant pipe is included.  
 2. Inserts are sold separately.  
 3. Inserts are in phase with the drive key.  
 4. Through the tool coolant can be supported by replacing the head with OH specifications (made-to-order).  
 The model number has "-OH" after the head model number. Please tell us separately.  
 5. TWC32,44 chips, use commercially available chips (ISO model: CC \*\* 090308)

### ご注文例 ORDERING EXAMPLE

| ①         | ②           | ③  | ④    | ⑤ |
|-----------|-------------|----|------|---|
| HSKA63    | -TWC        | 25 | -120 | S |
| ① シャंकサイズ | Shank Size  |    |      |   |
| ② 呼称      | Name        |    |      |   |
| ③ Min. øD | Min. øD     |    |      |   |
| ④ GL長さ L  | G.L. Length |    |      |   |
| ⑤ Set     | Set         |    |      |   |



# 〈ボーリングシステム〉大径用ツインカット

## 〈BORING SYSTEM〉TWINCUT for LARGE BORE

### HSKA (No.) -TWC (D) MIN-(L) -S

**HSK**  
series  
HSKシリーズ

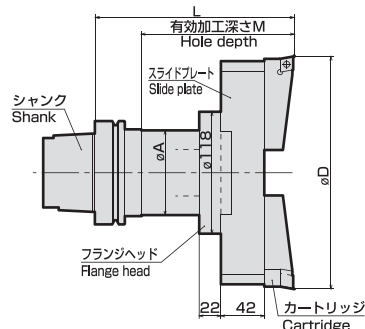
▶ センタースルー対応 (オプション) Thru-the-tool Coolant Available (Option)

#### 特 長

φ175～φ375までバランスカットで重切削

#### FEATURES

For high stock removal with balanced blade,  
for φ175～φ375mm bores.



| 加工径(D)<br>RANGE | MODEL   |                    | CODE   | シャンク<br>SHANK |              | フランジヘッド<br>FLANGE HEAD          | スライドプレート<br>SLIDE PLATE | カートリッジ<br>CARTRIDGE | チップ<br>INSERT |     | L   | M  | φA   | N/W<br>(kg) |
|-----------------|---------|--------------------|--------|---------------|--------------|---------------------------------|-------------------------|---------------------|---------------|-----|-----|----|------|-------------|
| φ175～225        | HSKA100 | - TWC175 - 205 - S | 350185 | HSKA100       | - SBS6 - 185 | TWC - FH - 0<br>(TWC - FH - 90) | SP175 - 42              | CT125               | WT62-127      | 205 | 159 | 82 | 12.2 |             |
|                 |         | - TWC175 - 260 - S | 350186 |               | - SBS6 - 240 |                                 |                         |                     |               | 260 | 214 |    | 14.5 |             |
|                 |         | - TWC175 - 350 - S | 350187 |               | - SBS6 - 330 |                                 |                         |                     |               | 350 | 304 |    | 17.9 |             |
| φ225～275        |         | - TWC225 - 205 - S | 350188 |               | - SBS6 - 185 |                                 | SP225 - 42              |                     |               | 205 | 159 |    | 13.6 |             |
|                 |         | - TWC225 - 260 - S | 350189 |               | - SBS6 - 240 |                                 |                         |                     |               | 260 | 214 |    | 15.9 |             |
|                 |         | - TWC225 - 350 - S | 350190 |               | - SBS6 - 330 |                                 |                         |                     |               | 350 | 304 |    | 19.4 |             |
| φ275～325        |         | - TWC275 - 205 - S | 350191 |               | - SBS6 - 185 |                                 | SP275 - 42              |                     |               | 205 | 159 |    | 16.1 |             |
|                 |         | - TWC275 - 260 - S | 350192 |               | - SBS6 - 240 |                                 |                         |                     |               | 260 | 214 |    | 18.3 |             |
|                 |         | - TWC275 - 350 - S | 350193 |               | - SBS6 - 330 |                                 |                         |                     |               | 350 | 304 |    | 21.8 |             |
| φ325～375        |         | - TWC325 - 205 - S | 350194 |               | - SBS6 - 185 |                                 | SP325 - 42              |                     |               | 205 | 159 |    | 17.3 |             |
|                 |         | - TWC325 - 260 - S | 350195 |               | - SBS6 - 240 |                                 |                         |                     |               | 260 | 214 |    | 19.6 |             |
|                 |         | - TWC325 - 350 - S | 350196 |               | - SBS6 - 330 |                                 |                         |                     |               | 350 | 304 |    | 23.1 |             |

- 注：1. クーラントパイプは付属されております。(固定式)  
 2. チップは付属していません。別途お求め下さい。  
 3. 標準品は刃先とドライブキーが同位相です。  
 4. TWC - FH - 90は、刃先とドライブキーの位相が90° になります。  
 5. ヘッド中央のボルトをクーラントボルトに交換することにより、センタースルーが可能となります。  
 (CLB-T:コードNo.32970)

NOTE: 1. Coolant pipe is included.  
 2. Inserts are sold separately.  
 3. Inserts are in phase with the drive key.  
 4. TWC-FH-90 Flange Head is used to change the phase to 90°.  
 5. Through the tool coolant is possible by replacing the bolt in the center of the head with a coolant bolt.  
 (CLB-T: Code No.32970)

#### ご注文例 ORDERING EXAMPLE

① ② ③ ④ ⑤  
 HSKA100 - TWC 175 - 185 - S

|           |             |
|-----------|-------------|
| ① シャンクサイズ | Shank Size  |
| ② 呼称      | Name        |
| ③ Min. φD | Min. φD     |
| ④ GL長さ L  | G.L. Length |
| ⑤ Set     | Set         |



アクセサリ ACCESSORIES

▶ P.172 エクステンション・リダクション・チップ EXTENSION, REDUCTION, INSERTS

## 〈ボーリングシステム〉ファーストカット 〈BORING SYSTEM〉 FIRSTCUT

特徴 FEATURES ▶ P43-46 HSKA (No) - FIC (D) MIN N - L - S

▶ センタースルー対応 Thru-the-tool Coolant Available



FIG.1

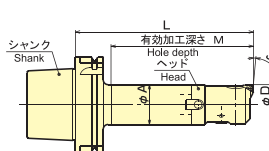


FIG.2

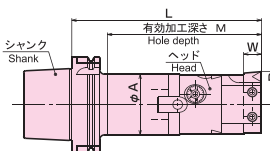
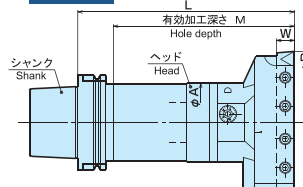


FIG.3



| 加工径 D RANGE | MODEL          | Fig | CODE   | シャング SHANK | ヘッド HEAD  | バイト BORING TOOL | チップ INSERT                                           | L   | M   | φA | W   | N/W (kg) |
|-------------|----------------|-----|--------|------------|-----------|-----------------|------------------------------------------------------|-----|-----|----|-----|----------|
| φ25~32      | -FIC25N-130-S  | 1   | 321500 | HSKA63     | -SBS1-120 | FCH25N          | TP□□0802□□                                           | 130 | 95  | 24 | —   | 1.3      |
| φ32~44 注7)  | -FIC32N-155-S  |     | 321502 |            | -SBS2-135 | FCH32N          |                                                      | 155 | 120 | 31 |     | 1.6      |
| φ44~57      | -FIC44N-155-S  |     | 321504 |            | -SBS3-135 | FCH44N          |                                                      | 150 | 115 | 42 |     | 2.3      |
| φ55~73      | -FIC55N-150-S  |     | 321506 |            | -SBS4-135 | FCH55N          |                                                      | 150 | 115 | 54 |     | 3.1      |
| φ70~140     | -FIC70N-200-S  | 2   | 321508 | HSKA63     | -SBS5-165 | FCH70N          | TBS119C12<br>SBS919<br>TBS919<br>TSBS919             | 200 | 165 | 64 | □19 | 5.3      |
| φ90~160     | -FIC90N-250-S  |     | 321510 |            | -SBS6-200 | FCH90N          |                                                      | 250 | 215 | 83 |     | 9.7      |
| φ25~32      | -FIC25N-160-S  | 1   | 351300 | HSKA100    | -SBS1-150 | FCH25N          | TP□□0802□□                                           | 160 | 114 | 24 | —   | 3.0      |
| φ32~44 注7)  | -FIC32N-185-S  |     | 351302 |            | -SBS2-165 | FCH32N          |                                                      | 185 | 139 | 31 |     | 3.5      |
| φ44~57      | -FIC44N-185-S  |     | 351304 |            | -SBS3-165 | FCH44N          |                                                      | 245 | 199 | 42 |     | 4.2      |
| φ44~57      | -FIC44N-245-S  |     | 351306 |            | -SBS3-225 | FCH44N          |                                                      | 180 | 134 | —  |     | 5.1      |
| φ55~73      | -FIC55N-180-S  | 2   | 351308 |            | -SBS4-165 | FCH55N          | TP□□0802□□                                           | 255 | 209 | 54 | —   | 6.3      |
| φ55~73      | -FIC55N-255-S  |     | 351310 |            | -SBS4-240 | FCH55N          |                                                      | 300 | 254 | —  |     | 7.1      |
| φ55~73      | -FIC55N-300-S  |     | 351312 |            | -SBS4-285 | FCH55N          |                                                      | 200 | 154 | 64 |     | 6.7      |
| φ70~140     | -FIC70N-200-S  |     | 351314 |            | -SBS5-165 | FCH70N          |                                                      | 275 | 229 | —  |     | 8.6      |
| φ70~140     | -FIC70N-275-S  | 3   | 351316 | HSKA100    | -SBS5-240 | FCH70N          | TBS119C12<br>SBS919<br>TBS919<br>TSBS919             | 365 | 319 | 64 | □19 | 10.8     |
| φ70~140     | -FIC70N-365-S  |     | 351318 |            | -SBS5-330 | FCH70N          |                                                      | 235 | 189 | —  |     | 9.5      |
| φ90~160     | -FIC90N-235-S  |     | 351320 |            | -SBS6-185 | FCH90N          |                                                      | 290 | 244 | —  |     | 12.5     |
| φ90~160     | -FIC90N-290-S  |     | 351322 |            | -SBS6-240 | FCH90N          |                                                      | 380 | 334 | —  |     | 16.2     |
| φ90~160     | -FIC90N-380-S  | 3   | 351324 |            | -SBS6-330 | FCH90N          | CP□□1204□□<br>TP□□1603□□<br>CC□□1204□□<br>TC□□16T3□□ | 225 | 179 | 83 | □19 | 10.3     |
| φ150~220    | -FIC150N-225-S |     | 351326 |            | -SBS6-185 | FCH150N         |                                                      | 280 | 234 | —  |     | 13.3     |
| φ150~220    | -FIC150N-280-S |     | 351328 |            | -SBS6-240 | FCH150N         |                                                      | 370 | 324 | —  |     | 17.0     |
| φ150~220    | -FIC150N-370-S |     | 351330 |            | -SBS6-330 | FCH150N         |                                                      | 225 | 179 | —  |     | 11.6     |
| φ220~290    | -FIC220N-225-S | 3   | 351332 | HSKA100    | -SBS6-185 | FCH220N         | CP□□1204□□<br>TP□□1603□□<br>CC□□1204□□<br>TC□□16T3□□ | 280 | 234 | —  | □19 | 14.6     |
| φ220~290    | -FIC220N-280-S |     | 351334 |            | -SBS6-240 | FCH220N         |                                                      | 370 | 324 | —  |     | 18.3     |
| φ220~290    | -FIC220N-370-S |     | 351336 |            | -SBS6-330 | FCH220N         |                                                      | 225 | 179 | —  |     | 12.9     |
| φ220~290    | -FIC220N-470-S |     | 351338 |            | -SBS6-470 | FCH220N         |                                                      | 280 | 234 | —  |     | 15.9     |
| φ290~360    | -FIC290N-225-S | 3   | 351340 | HSKA100    | -SBS6-185 | FCH290N         | CP□□1204□□<br>TP□□1603□□<br>CC□□1204□□<br>TC□□16T3□□ | 370 | 324 | —  | □19 | 19.6     |
| φ290~360    | -FIC290N-280-S |     | 351342 |            | -SBS6-240 | FCH290N         |                                                      | —   | —   | —  |     | —        |
| φ290~360    | -FIC290N-370-S |     | 351344 |            | -SBS6-330 | FCH290N         |                                                      | —   | —   | —  |     | —        |
| φ290~360    | -FIC290N-470-S |     | 351346 |            | -SBS6-470 | FCH290N         |                                                      | —   | —   | —  |     | —        |

## ファーストカットヘッド FIRSTCUT HEAD

FIG.1

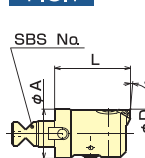


FIG.2

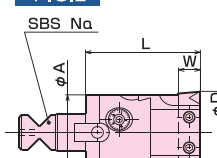
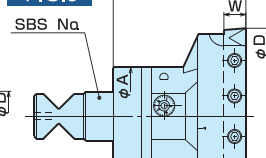


FIG.3



| 加工径 D RANGE | MODEL   | Fig | CODE   | スライド量 SLIDE DISTANCE | バイト BORING TOOL                          | チップ INSERT                                           | SBS No. | L   | φA | W   | N/W (kg) |
|-------------|---------|-----|--------|----------------------|------------------------------------------|------------------------------------------------------|---------|-----|----|-----|----------|
| φ25~32      | FCH25N  | 1   | 700130 | 3.5                  | —                                        | TP□□0802□□                                           | SBS1    | 47  | 24 | —   | 0.2      |
| φ32~44 注7)  | FCH32N  |     | 700131 | 5.0                  |                                          |                                                      | SBS2    | 57  | 31 |     | 0.4      |
| φ44~57      | FCH44N  |     | 700132 | 6.5                  |                                          |                                                      | SBS3    | 64  | 42 |     | 0.7      |
| φ55~73      | FCH55N  |     | 700133 | 9.0                  |                                          |                                                      | SBS4    | 68  | 54 |     | 1.2      |
| φ70~140     | FCH70N  | 2   | 700134 | 20                   | TBS119C12<br>SBS919                      | CP□□1204□□<br>TP□□1603□□                             | SBS5    | 100 | 64 | □19 | 2.6      |
| φ90~160     | FCH90N  |     | 700135 |                      |                                          |                                                      | SBS5    | 122 | —  |     | 4.7      |
| φ150~220    | FCH150N | 3   | 700136 | 20                   | TBS119C12<br>SBS919<br>TBS919<br>TSBS919 | CP□□1204□□<br>TP□□1603□□<br>CC□□1204□□<br>TC□□16T3□□ | SBS6    | 112 | 83 | □19 | 5.5      |
| φ220~290    | FCH220N |     | 700137 |                      |                                          |                                                      |         |     |    |     | 6.8      |
| φ220~290    | FCH220N |     | 700138 |                      |                                          |                                                      |         |     |    |     | 8.1      |
| φ290~360    | FCH290N |     | 700139 |                      |                                          |                                                      |         |     |    |     | —        |

- 注: 1. クラントパイプは付属されております。(固定式)  
2. 一目盛当りの調整量はφ0.01です。  
3. 刃先とドライブキー溝は、同位相です。  
4. 全品センタースルー対応品です。  
5. FIC70N以上の刃先は角バイト式です。  
6. チップ、バイトは、付属していません。別途お求めください。  
7. 最大加工径は、スペーサ(同梱品)を取り付けた場合です。  
スペーサなしの場合、最大加工径はφ42となります。

- NOTE: 1. A coolant pipe is installed(fixed type).  
2. Adjustable in φ0.01mm per scale  
3. Insert is in face with drive key.  
4. Through the tool coolant is standard.  
5. Inserts over than FIC70 are square shank tool.  
6. Inserts and bites are sold separately.  
7. The max. machining range means when installed spacer(included).  
Without spacer, max range is φ42mm.

### ご注文例 ORDERING EXAMPLE

| ①          | ②             | ③  | ④ | ⑤    | ⑥  |
|------------|---------------|----|---|------|----|
| HSKA100    | -FIC          | 70 | N | -200 | -S |
| ① シャングサイズ  | Shank Size    |    |   |      |    |
| ② 呼称       | Holder's Name |    |   |      |    |
| ③ Min. φD  | Min. φD       |    |   |      |    |
| ④ New Type | New Type      |    |   |      |    |
| ⑤ GL長さ L   | G.L. Length   |    |   |      |    |
| ⑥ Set      | Set           |    |   |      |    |

### アクセサリ ACCESSORIES

▶ P.171 スローアウェイ式ボーリングバイト・チップ THROWAWAY SQUARE SHANK TOOLS

### アクセサリ ACCESSORIES

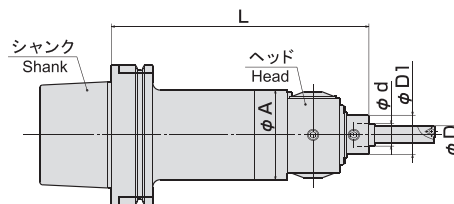
▶ P.172 エクステンション・リダクション EXTENSION, REDUCTION

## 〈ボーリングシステム〉ファーストカット[小径穴加エツール] 〈BORING SYSTEM〉FIRSTCUT[Small-hole Boring Tool]

特徴 FEATURES ▶ P.41-42 **HSKA (No.)-FIC HEAD (No.) NJ- L-S**



センタースルー対応 Thru-the-tool Coolant Available



| 加工径 D<br>RANGE | MODEL   |               | CODE   | シャंक<br>SHANK |           | ヘッド<br>HEAD | L   | φA | φd | φD1 | ダイヤル1目盛<br>DIAL CALIBRATION | コレット<br>COLLET | N/W<br>(kg) |
|----------------|---------|---------------|--------|---------------|-----------|-------------|-----|----|----|-----|-----------------------------|----------------|-------------|
| φ3~23          | HSKA63  | -FIC1NJ-130-S | 321516 | HSKA63        | SBS3-114  | FCH1NJ      | 130 | 46 | 10 | 18  | φ0.005                      | SCP10-□        | 2.0         |
| φ3~23          |         | -FIC1NJ-151-S | 321520 |               | -SBS3-135 | FCH1NJ      | 151 |    |    |     |                             |                | 2.2         |
| φ3~28          |         | -FIC2NJ-180-S | 321522 |               | -SBS5-165 | FCH2NJ      | 180 | 64 | 16 | 28  | φ0.010                      | SCP16-□        | 4.5         |
| φ3~23          | HSKA100 | -FIC1NJ-135-S | 351346 | HSKA100       | SBS3-119  | FCH1NJ      | 135 | 46 | 10 | 18  | φ0.005                      | SCP10-□        | 3.5         |
| φ3~23          |         | -FIC1NJ-181-S | 351350 |               | -SBS3-165 | FCH1NJ      | 181 |    |    |     |                             |                | 4.1         |
| φ3~28          |         | -FIC2NJ-180-S | 351352 |               | -SBS5-165 | FCH2NJ      | 180 | 64 | 16 | 28  | φ0.010                      | SCP16-□        | 5.9         |
|                |         |               |        |               |           |             |     |    |    |     |                             |                |             |

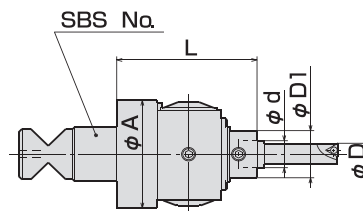
- 注: 1. クーラントパイプは付属されております。(固定式)  
2. 刃先とドライブキー溝は、同位相です。  
3. 全品センタースルー対応品です。  
4. チップ、バイト、コレットは付属していません。別途お求めください。

NOTE: 1. A coolant pipe is installed (fixed type).  
2. Insert is in face with drive key.  
3. Through the tool coolant is standard.  
4. Inserts and bites and collets are sold separately.

### ご注文例 ORDERING EXAMPLE

| ①                    | ②                  | ③ | ④  | ⑤    | ⑥  |
|----------------------|--------------------|---|----|------|----|
| HSKA100              | -FIC               | 1 | NJ | -181 | -S |
| ① シャックサイズ            | Shank Size         |   |    |      |    |
| ② 呼称                 | Holder's Name      |   |    |      |    |
| ③ ヘッド No.            | Head No.           |   |    |      |    |
| ④ New Jig Borer Type | New Jig Borer Type |   |    |      |    |
| ⑤ GL長さ L             | G.L. Length        |   |    |      |    |
| ⑥ Set                | Set                |   |    |      |    |

## ファーストカットヘッド [小径穴加エツール] FIRSTCUT HEAD [Small-hole Boring Tool]



| 加工径 D RANGE | MODEL  | CODE   | SBS No. | L  | φA | φd | φD1 | ダイヤル1目盛 DIAL CALIBRATION | スライド量 SLIDE DISTANCE | コレット COLLET | N/W (kg) |
|-------------|--------|--------|---------|----|----|----|-----|--------------------------|----------------------|-------------|----------|
| φ3~23       | FCH1NJ | 700139 | SBS3    | 60 | 46 | 10 | 18  | φ0.005                   | 2.5                  | SCP10-□     | 0.6      |
| φ3~28       | FCH2NJ | 700140 | SBS5    | 80 | 64 | 16 | 28  | φ0.010                   | 3.5                  | SCP16-□     | 1.8      |

- 注: 1. 全品センタースルー対応品です。  
2. チップ、バイト、コレットは付属していません。別途お求めください。

NOTE: 1. Through the tool coolant is standard.  
2. Inserts and bites and collets are sold separately.

### アクセサリ ACCESSORIES

▶ P.171 ジグボーラーバイト・コレット・チップ JIG BORER TOOLS, COLLET, INSERTS

### アクセサリ ACCESSORIES

▶ P.172 エクステンション・リダクション EXTENSION, REDUCTION

# サイドロックホルダA型

## SIDE LOCK HOLDER

### HSKA (No.) -SLA (D) - (L)

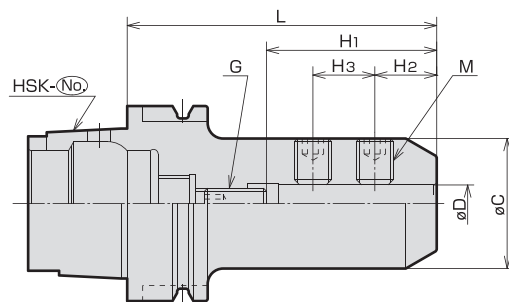
▶ センタースルー対応 Thru -the-tool Coolant Available



### 特 長

偏芯構造により、振れ精度の向上。

Run-out of the cutting tool is improved by the eccentric ID.



| MODEL   |            | CODE  | øD(H6) | L   | øC | H1   |      | H2 | H3 | M   | G   | N/W<br>(kg) |
|---------|------------|-------|--------|-----|----|------|------|----|----|-----|-----|-------------|
|         |            |       |        |     |    | MIN. | MAX. |    |    |     |     |             |
| HSKA50  | -SLA06-075 | (△)   | 6      | 75  | 30 | 18   | 28   | 13 | —  | M 6 | M 5 | 0.7         |
|         | -SLA08-080 | (△)   | 8      | 80  | 35 | 23   | 33   | 15 |    | M 8 | M 6 | 0.8         |
|         | -SLA10-090 | (△)   | 10     | 90  |    | 25   | 38   | 18 |    | M10 | M 8 | 0.9         |
|         | -SLA12-100 | (△)   | 12     | 100 | 42 | 30   | 43   | 20 |    | M12 | M10 | 1.1         |
|         | -SLA16-120 | (△)   | 16     | 120 | 48 | 35   | 50   | 24 |    | M14 | M12 | 1.7         |
|         | -SLA20-140 | (△)   | 20     | 140 | 50 | 55   | 70   | 25 |    | M16 |     | 2.0         |
| HSKA63  | -SLA06-075 | (△)   | 6      | 75  | 30 | 18   | 28   | 13 | —  | M 6 | M 5 | 0.9         |
|         | -SLA08-080 | (△)   | 8      | 80  | 35 | 23   | 33   | 15 |    | M 8 | M 6 | 1.0         |
|         | -SLA10-090 | (△)   | 10     | 90  |    | 25   | 38   | 18 |    | M10 | M 8 | 1.1         |
|         | -SLA12-100 | (△)   | 12     | 100 | 42 | 30   | 43   | 20 |    | M12 | M10 | 1.3         |
|         | -SLA16-100 | 26750 | 16     |     | 48 | 35   | 46   | 24 |    | M14 | M12 | 1.6         |
|         | -SLA20-120 | 26760 | 20     | 120 | 50 | 55   | 65   | 25 |    | M16 |     | 2.5         |
|         | -SLA25-130 | 26770 | 25     | 130 | 61 |      |      | 24 |    | 25  |     | M18         |
|         | -SLA32-140 | 26780 | 32     | 140 | 72 | 65   | 75   |    |    |     |     | 24          |
| HSKA100 | -SLA06-085 | (△)   | 6      | 85  | 30 | 18   | 28   | 13 | —  | M 6 | M 5 | 2.2         |
|         | -SLA08-090 | (△)   | 8      | 90  | 35 | 23   | 33   | 15 |    | M 8 | M 6 | 2.3         |
|         | -SLA10-100 | (△)   | 10     | 100 |    | 25   | 38   | 18 |    | M10 | M 8 | 2.4         |
|         | -SLA12-110 | (△)   | 12     | 110 | 42 | 30   | 43   | 20 |    | M12 | M10 | 2.6         |
|         | -SLA16-110 | 27750 | 16     |     | 48 | 35   | 50   | 24 |    | M14 | M12 | 2.9         |
|         | -SLA20-130 | 27760 | 20     | 130 | 50 | 55   | 70   | 25 |    | M16 |     | 3.8         |
|         | -SLA25-140 | 27770 | 25     | 140 | 61 |      |      | 24 |    | 25  |     | M18         |
|         | -SLA32-150 | 27780 | 32     | 150 | 72 | 65   | 80   |    |    |     |     | 24          |

- 注：1. クーラントパイプは付属されております。(固定式)  
 2. フラット付ストレートシャンク刃具をご使用下さい。  
 3. (△) 表記製品は特殊対応品です。

NOTE: 1. Coolant pipe is included.  
 2. For endmill of straight shank with flat.  
 3. CODE(△) The listed products are made-to-order products.

### ご注文例 ORDERING EXAMPLE

① HSKA50 ② - SLA ③ 06 ④ - 075

① シャンクサイズ Shank Size  
 ② 呼称 Holder's Name  
 ③ 刃具シャンク径 φD Cutter's Shank Dia.  
 ④ GL長さ L G.L. Length

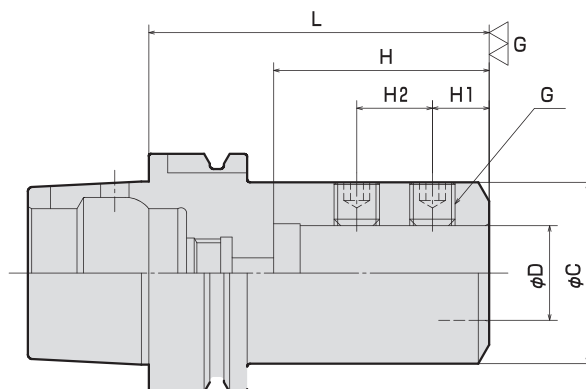
# サイドロックドリルホルダ

## SIDE LOCK DRILL HOLDER

HSKA<sup>®</sup>-CSL<sup>®</sup>D-L

**HSK**  
series  
HSKシリーズ

▶ センタースルー対応 Thru-the-tool Coolant Available



| MODEL    | CODE       | φD     | L  | φC  | H  | H <sub>1</sub> | H <sub>2</sub> | G        |
|----------|------------|--------|----|-----|----|----------------|----------------|----------|
| HSK-A63  | -CSL16-090 | 321540 | 16 | 90  | 48 | 14             | 14             | M10      |
|          | -CSL20-090 | 321542 | 20 |     | 51 |                |                |          |
|          | -CSL25-090 | 321544 | 25 |     | 57 |                |                |          |
|          | -CSL32-105 | 321546 | 32 | 105 | 63 | 15             | 20             | M12      |
|          | -CSL40-120 | 321548 | 40 | 120 | 68 |                |                | M12×1.25 |
| HSK-A100 | -CSL16-090 | 351400 | 16 | 90  | 48 | 14             | 14             | M10      |
|          | -CSL20-090 | 351402 | 20 |     | 51 |                |                |          |
|          | -CSL25-090 | 351404 | 25 |     | 57 |                |                |          |
|          | -CSL32-105 | 351406 | 32 | 105 | 63 | 15             | 20             | M12      |
|          | -CSL40-105 | 351408 | 40 |     | 68 |                |                | M12×1.25 |
|          | -CSL50-120 | 351410 | 50 |     | 84 |                |                | M14×1.5  |

注: 1. クーラントパイプは付属されております。(固定式)  
2. フラット付ストレートシャンク刃具をご使用下さい。

NOTE: 1. Coolant pipe is included.  
2. If for endmill of straight shank with flat.

### ご注文例 ORDERING EXAMPLE

① HSKA63 - ② CSL ③ 16 - ④ 090

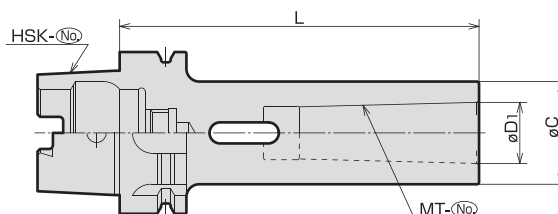
① シャンクサイズ Shank Size  
② 呼称 Holder's Name  
③ 刃具シャンク径 φD Cutter's Shank Dia.  
④ GL長さ L G.L. Length



# モールステーパホルダA型

## MORSE TAPER HOLDER(Type A)

### HSKA (No.) - MTA (No.) - L



|         | MODEL     | CODE  | MT No. | L   | øD1    | øC | N/W (kg) |
|---------|-----------|-------|--------|-----|--------|----|----------|
| HSKA50  | -MTA1-100 | (△)   | 1      | 100 | 12.065 | 25 | 1.2      |
|         | -MTA2-120 | (△)   | 2      | 120 | 17.780 | 32 | 1.4      |
|         | -MTA3-140 | (△)   | 3      | 140 | 23.825 | 40 | 1.5      |
| HSKA63  | -MTA1-100 | 26410 | 1      | 100 | 12.065 | 25 | 1.6      |
|         | -MTA2-120 | 26420 | 2      | 120 | 17.780 | 32 | 1.8      |
|         | -MTA3-140 | 26430 | 3      | 140 | 23.825 | 40 | 2.2      |
| HSKA100 | -MTA2-120 | 27420 | 2      | 120 | 17.780 | 32 | 3.0      |
|         | -MTA3-140 | 27430 | 3      | 140 | 23.825 | 40 | 3.4      |
|         | -MTA4-160 | 27440 | 4      | 160 | 31.267 | 50 | 3.7      |

- 注：1. クーラントパイプは付属されております。(固定式)  
 2. タング付MTシャンク刃具をご使用下さい。  
 3.(△) 表記製品は特殊対応品です。

NOTE: 1. Coolant pipe is included.  
 2. For tongue type Morse taper shank cutting tools.  
 3. CODE(△)The listed products are made-to-order products.

#### ご注文例 ORDERING EXAMPLE

① HSKA50 ② MTA ③ 1 ④ 100

① シャンクサイズ Shank Size  
 ② 呼称 Holder's Name  
 ③ MT No. MT No.  
 ④ GL長さ L G.L. Length

# 正面フライスアーバA型

## FACE MILL ARBOR(Type A)

HSKA<sup>®</sup>-FMA<sup>®</sup>-L

**HSK**  
series  
HSKシリーズ

▶ センタースルー対応 (オプション) Thru -the-tool Coolant Available (Option)



FIG.1

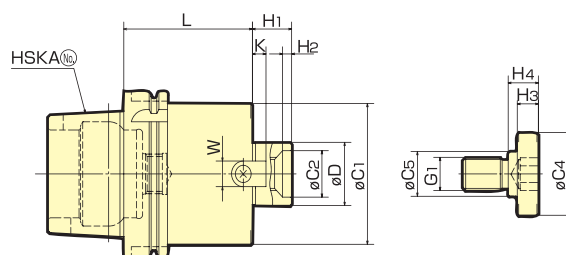


FIG.2

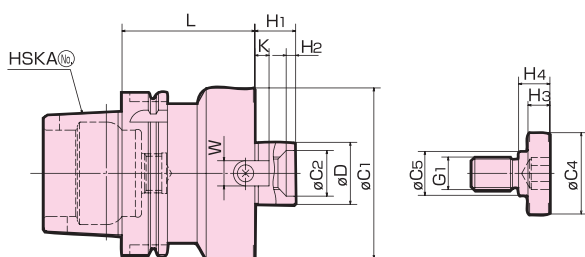
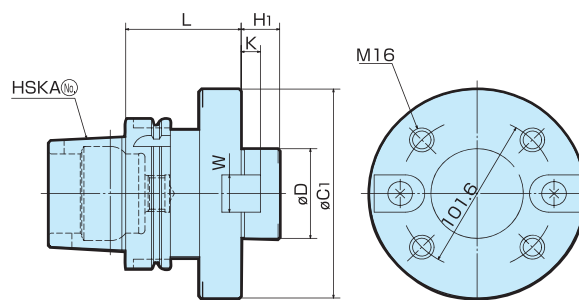


FIG.3



| MODEL   |                | CODE   | FIG. | øD(h6) | L  | øC1   | øC2 | H1 | H2 | KEY   |      | G1  | CLAMP BOLT |     |    |    | N/W<br>(kg) |
|---------|----------------|--------|------|--------|----|-------|-----|----|----|-------|------|-----|------------|-----|----|----|-------------|
|         |                |        |      |        |    |       |     |    |    | W     | K    |     | øC4        | øC5 | H3 | H4 |             |
| HSKA50  | -FMA22.225-045 | (△)    | 1    | 22.225 | 45 | 40    | —   | 18 | —  | 8.0   | 4    | M8  | 20         | 15  | 7  | 9  | 0.6         |
|         | -FMA25.4 -060  | 300572 | 2    | 25.4   | 60 | 50    | —   | 22 | —  | 9.5   | 5    | M12 | 33         | 23  | 10 | 12 | 0.8         |
| HSKA63  | -FMA25.4 -060  | 320660 | 1    | 25.4   | 60 | 50    | —   | 22 | —  | 9.5   | 5    | M12 | 33         | 23  | 10 | 12 | 1.2         |
|         | -FMA31.75 -060 | 320662 | 2    | 31.75  |    | 60    | 24  | 30 | 6  | 12.7  | 7    | M16 | 40         | 23  |    | 16 | 1.4         |
|         | -FMA38.1 -060  | 320664 |      | 38.1   |    | 80    | 28  | 34 |    | 15.9  | 9    | M20 | 50         | 27  |    | 14 | 20          |
| HSKA100 | -FMA25.4 -060  | (△)    | 1    | 25.4   | 60 | 50    | —   | 22 | —  | 9.5   | 5    | M12 | 33         | 23  | 10 | 12 | 2.5         |
|         | -FMA31.75 -060 | (△)    |      | 31.75  |    | 60    | 24  | 30 | 6  | 12.7  | 7    | M16 | 40         | 23  |    | 16 | 2.8         |
|         | -FMA38.1 -060  | 350664 |      | 38.1   |    | 80    | 28  | 34 |    | 15.9  | 9    | M20 | 50         | 27  |    | 14 | 20          |
|         | -FMA50.8 -075  | (△)    | 2    | 50.8   | 75 | 100   | 38  | 36 | 10 | 19.05 | 10   | M24 | 65         | 37  | 14 | 24 | 4.9         |
|         | -FMA47.625-075 | 350668 | 3    | 47.625 |    | 128.6 | —   | 38 | —  | 25.4  | 12.5 | —   | —          | —   |    | —  | 6.2         |

注：1. クーラントパイプは付属されております。(固定式)  
2. (△) 表記製品は特殊対応品です。

NOTE: 1. Coolant pipe is included.  
2. CODE(△)The listed products are made-to-order products.

### ご注文例 ORDERING EXAMPLE

① HSKA63 ② -FMA ③ 25.4 ④ -060

① シャンクサイズ Shank Size  
② 呼称 Name  
③ ボス径 øD øD  
④ GL長さ L G.L. Length

アクセサリ ACCESSORIES

▶ P.173 正面フライスアーバ用 クランプボルト CLAMP BOLT FOR FACE MILL ARBOR

## 正面フライスアーバ B型

### FACE MILL ARBOR(Type B)

#### HSKA<sup>®</sup>-FMB<sup>®</sup>-L

▶ センタースルー対応 (オプション) Thru -the-tool Coolant Available (Option)



FIG.1

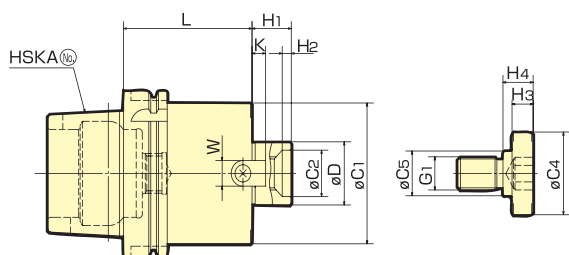


FIG.2

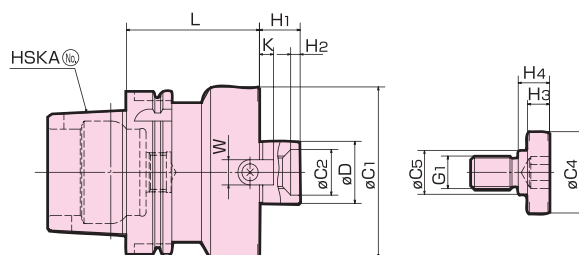


FIG.3

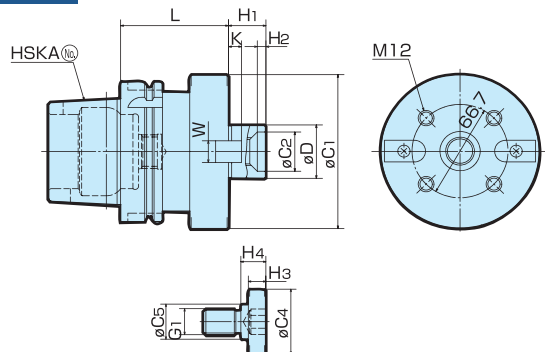
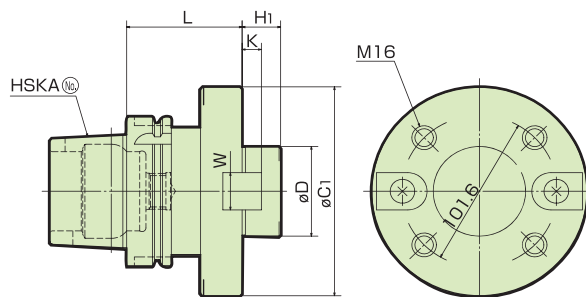


FIG.4



| MODEL   | CODE          | FIG. | øD(h6) | L  | øC1 | øC2 | H1 | H2 | KEY  |      | G1  | CLAMP BOLT |     |    |    | N/W (kg) |
|---------|---------------|------|--------|----|-----|-----|----|----|------|------|-----|------------|-----|----|----|----------|
|         |               |      |        |    |     |     |    |    | W    | K    |     | øC4        | øC5 | H3 | H4 |          |
| HSKA63  | -FMB25.4 -060 | (△)  | 25.4   | 60 | 80  | —   | 26 | —  | 9.5  | 5    | M12 | 33         | 23  | 10 | 12 | 1.7      |
|         | -FMB38.1 -060 | (△)  | 38.1   |    | 85  | 28  |    | 6  | 15.9 | 9    | M20 | 50         | 27  | 14 | 20 | 1.8      |
|         | -FMB27 -060   | (△)  | 27     |    | 80  | —   |    | —  | 12   | 6    | M12 | 33         | 23  | 10 | 12 | 1.7      |
|         | -FMB40 -060   | (△)  | 40     |    | 85  | 28  |    | 6  | 16   | 8.5  | M20 | 50         | 27  | 14 | 20 | 1.8      |
| HSKA100 | -FMB25.4 -060 | (△)  | 25.4   | 60 | 80  | —   | 26 | —  | 9.5  | 5    | M12 | 33         | 23  | 10 | 12 | 2.9      |
|         | -FMB38.1 -060 | (△)  | 38.1   |    | 85  | 28  |    | 6  | 15.9 | 9    | M20 | 50         | 27  | 14 | 20 | 3.5      |
|         | -FMB38.1F-075 | (△)  | 38.1   | 75 | 110 | —   |    | —  | 12   | 6    | M12 | 33         | 23  | 10 | 12 | 4.8      |
|         | -FMB27 -060   | (△)  | 27     | 60 | 80  | —   |    | —  | 12   | 6    | M12 | 33         | 23  | 10 | 12 | 2.9      |
|         | -FMB40 -060   | (△)  | 40     |    | 85  | 28  |    | 6  | 16   | 8.5  | M20 | 50         | 27  | 14 | 20 | 3.5      |
|         | -FMB40F -075  | (△)  | 40     | 75 | 110 | —   |    | —  | 12   | 6    | M12 | 33         | 23  | 10 | 12 | 4.8      |
|         | -FMB60 -075   | (△)  | 60     |    | 140 | —   | 25 | —  | 25.4 | 12.5 | —   | —          | —   | —  | —  | 6.8      |

注：1. クーラントパイプは付属されております。(固定式)

2. (△) 表記製品は特殊対応品です。

NOTE : 1. Coolant pipe is included.

2. CODE(△)The listed products are made-to-order products.

#### ご注文例 ORDERING EXAMPLE

① HSKA63 ② FMB ③ 38.1 ④ 060

① シャンクサイズ Shank Size  
② 呼称 Name  
③ ボス径 øD øD  
④ GL長さ L G.L. Length

#### アクセサリ ACCESSORIES

▶ P.173 正面フライスアーバ用 クランプボルト CLAMP BOLT FOR FACE MILL ARBOR

# 正面フライスアーバ C型

FACE MILL ARBOR(Type C)

HSKA<sup>Ⓜ</sup>-FMC<sup>Ⓢ</sup>-L

**HSK**  
series  
HSKシリーズ

▶ センタースルー対応 (オプション) Thru -the-tool Coolant Available (Option)



FIG.1

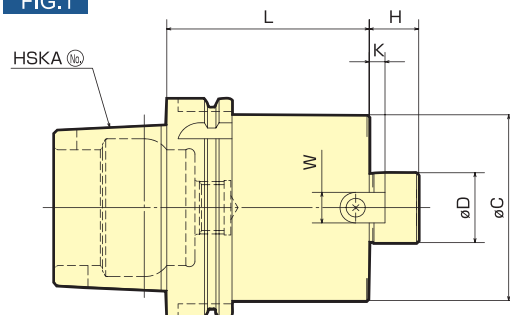
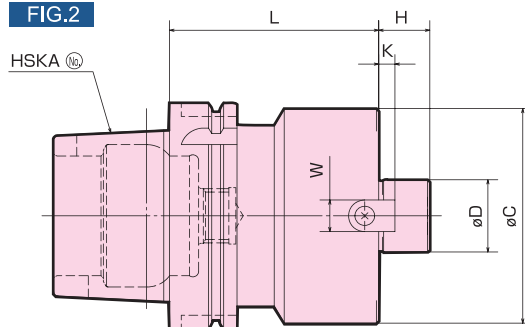


FIG.2



| MODEL   | CODE         | FIG.   | øD(h6) | L  | øC | H  | KEY  |   | CLAMP BOLT | N/W (kg) |
|---------|--------------|--------|--------|----|----|----|------|---|------------|----------|
|         |              |        |        |    |    |    | W    | K |            |          |
| HSKA50  | -FMC22 -060  | (△)    | 22     | 60 | 45 | 18 | 10   | 5 | M10 × 30L  | 0.9      |
|         | -FMC27 -060  | (△)    | 27     |    | 70 | 20 | 12   | 6 | M12 × 35L  | 1.3      |
| HSKA63  | -FMC25.4-060 | (△)    | 25.4   | 60 | 70 | 20 | 9.5  | 5 | M12 × 35L  | 1.5      |
|         | -FMC38.1-060 | (△)    | 38.1   |    | 85 | 22 | 15.9 | 7 | M16 × 40L  | 0.8      |
|         | -FMC22 -060  | 320684 | 22     | 60 | 45 | 18 | 10   | 5 | M10 × 30L  | 1.1      |
|         | -FMC27 -060  | 320686 | 27     |    | 70 | 20 | 12   | 6 | M12 × 35L  | 1.5      |
|         | -FMC32 -060  | 320688 | 32     |    | 85 | 22 | 14   | 7 | M16 × 40L  | 1.8      |
|         | -FMC25.4-060 | (△)    | 25.4   |    | 70 | 20 | 9.5  | 5 | M12 × 35L  | 2.9      |
| HSKA100 | -FMC38.1-060 | (△)    | 38.1   | 60 | 85 | 22 | 15.9 | 7 | M16 × 40L  | 3.5      |
|         | -FMC22 -060  | (△)    | 22     |    | 45 | 18 | 10   | 5 | M10 × 30L  | 2.4      |
|         | -FMC27 -060  | (△)    | 27     |    | 70 | 20 | 12   | 6 | M12 × 35L  | 3.0      |
|         | -FMC32 -060  | (△)    | 32     |    | 85 | 22 | 14   | 7 | M16 × 40L  | 3.4      |

注：1. クーラントパイプは付属されております。(固定式)  
2. (△) 表記製品は特殊対応品です。

NOTE: 1. Coolant pipe is included.

2. CODE(△)The listed products are made-to-order products.

## ご注文例 ORDERING EXAMPLE

① HSKA63 - FMC ② 22 - ③ 060 ④

① シャンクサイズ Shank Size  
② 呼称 Name  
③ ボス径 øD øD  
④ GL長さ L G.L. Length



アクセサリ ACCESSORIES

▶ P.173 正面フライスアーバ用 クランプボルト CLAMP BOLT FOR FACE MILL ARBOR

## 正面フライスアーバ H型

### FACE MILL ARBOR (Type H)

#### HSKA<sup>Ⓝ</sup>-FMH<sup>Ⓛ</sup>-<sup>ⓐ</sup>-<sup>Ⓛ</sup>



▶ センタースルー対応 Thru-the-tool Coolant Available

| MODEL   |            |     |        | CODE   | FIG. | ΦD     | ΦC1 | L   | LH  | R  | H  | W    | K   | GLAMP BOLT |     |
|---------|------------|-----|--------|--------|------|--------|-----|-----|-----|----|----|------|-----|------------|-----|
|         |            |     |        |        |      |        |     |     |     |    |    |      |     | M          | L1  |
| HSKA50  | -FMH16     | -37 | -060   | 301100 | 1    | 16     | 37  | 60  | 34  | 3  | 16 | 8    | 4   | M8         | 25L |
|         | -FMH22     | -47 | -060   | 301102 | 1    | 22     | 47  | 60  | 34  | —  | 17 | 10   | 5   | M10        | 30L |
|         |            |     | -090   | 301104 | 1    |        |     | 90  | 64  | —  |    |      |     |            |     |
|         | -FMH27     | -60 | -060   | 301106 | 2    | 27     | 60  | 60  | 34  | —  | 20 | 12   | 6   | M12        | 35L |
|         |            |     | -090   | 301108 | 2    |        |     | 90  | 64  | —  |    |      |     |            |     |
|         | -FMH22.225 | -47 | -060   | 301110 | 1    | 22.225 | 47  | 60  | 34  | —  | 17 | 8    | 3.5 | M10        | 30L |
| -090    | 301112     | 1   | 90     | 64     | —    |        |     |     |     |    |    |      |     |            |     |
| HSKA63  | -FMH16     | -37 | -060   | 321560 | 1    | 16     | 37  | 60  | 34  | 3  | 16 | 8    | 4   | M8         | 25L |
|         |            |     | -090   | 321562 | 1    |        |     | 90  | 64  | 3  |    |      |     |            |     |
|         | -FMH22     | -47 | -045   | 321564 | 1    | 22     | 47  | 45  | 19  | 3  | 17 | 10   | 5   | M10        | 30L |
|         |            |     | -060   | 321566 | 1    |        |     | 60  | 34  | 3  |    |      |     |            |     |
|         |            |     | -090   | 321568 | 1    |        |     | 90  | 64  | 3  |    |      |     |            |     |
|         |            |     | -150   | 321570 | 1    |        |     | 150 | 124 | 3  |    |      |     |            |     |
|         | -FMH27     | -60 | -060   | 321572 | 1    | 27     | 60  | 60  | 34  | —  | 20 | 12   | 6   | M12        | 35L |
|         |            |     | -090   | 321574 | 1    |        |     | 90  | 64  | —  |    |      |     |            |     |
|         | -FMH32     | -85 | -060   | 321576 | 2    | 32     | 85  | 60  | 34  | —  | 22 | 14   | 7   | M16        | 40L |
|         |            |     | -090   | 321578 | 2    |        |     | 90  | 64  | —  |    |      |     |            |     |
|         | -FMH22.225 | -47 | -045   | 321580 | 1    | 22.225 | 47  | 45  | 19  | 3  | 17 | 8    | 3.5 | M10        | 30L |
|         |            |     | -060   | 321582 | 1    |        |     | 60  | 34  | 3  |    |      |     |            |     |
|         |            |     | -090   | 321584 | 1    |        |     | 90  | 64  | 3  |    |      |     |            |     |
|         |            |     | -150   | 321586 | 1    |        |     | 150 | 124 | 3  |    |      |     |            |     |
|         | -FMH25.4   | -70 | -060   | 321588 | 2    | 25.4   | 70  | 60  | 34  | —  | 22 | 9.5  | 5   | M12        | 35L |
|         |            |     | -090   | 321590 | 2    |        |     | 90  | 64  | —  |    |      |     |            |     |
|         |            |     | -150   | 321592 | 2    |        |     | 150 | 124 | —  |    |      |     |            |     |
|         | -FMH31.75  | -76 | -060   | 321594 | 2    | 31.75  | 76  | 60  | 34  | —  | 30 | 12.7 | 7   | M12        | 35L |
| -090    |            |     | 321596 | 2      | 90   |        |     | 64  | —   |    |    |      |     |            |     |
| HSKA100 | -FMH22     | -47 | -105   | 351420 | 1    | 22     | 47  | 105 | 76  | 5  | 17 | 10   | 5   | M10        | 30L |
|         |            |     | -150   | 351422 | 1    |        |     | 150 | 121 | 5  |    |      |     |            |     |
|         |            |     | -200   | 351424 | 1    |        |     | 200 | 171 | 5  |    |      |     |            |     |
|         |            |     | -250   | 351426 | 1    |        |     | 250 | 221 | 5  |    |      |     |            |     |
|         |            |     | -060   | 351428 | 1    |        |     | 60  | 31  | 5  |    |      |     |            |     |
|         | -FMH22     | -60 | -105   | 351430 | 1    | 60     | 105 | 76  | 5   | 20 | 12 | 6    | M12 | 35L        |     |
|         |            |     | -150   | 351432 | 1    |        | 150 | 121 | 5   |    |    |      |     |            |     |
|         |            |     | -200   | 351434 | 1    |        | 200 | 171 | 5   |    |    |      |     |            |     |
|         |            |     | -250   | 351436 | 1    |        | 250 | 221 | 5   |    |    |      |     |            |     |
|         |            |     | -060   | 351438 | 1    |        | 60  | 31  | 5   |    |    |      |     |            |     |
|         | -FMH27     | -60 | -090   | 351440 | 1    | 27     | 60  | 90  | 61  | 5  | 20 | 12   | 6   | M12        | 35L |
|         |            |     | -150   | 351442 | 1    |        |     | 150 | 121 | 5  |    |      |     |            |     |
|         |            |     | -060   | 351444 | 1    |        |     | 60  | 31  | 5  |    |      |     |            |     |
|         | -FMH27     | -76 | -090   | 351446 | 1    | 76     | 90  | 61  | 5   | 20 | 12 | 6    | M12 | 35L        |     |
|         |            |     | -150   | 351448 | 1    |        | 150 | 121 | 5   |    |    |      |     |            |     |

- 注: 1. 刃先スルー対応カット用フェイスミルアーバです。  
 2. カッタ締め付け用クランプボルトは付属しています。  
 3. 付属(M12、M16)のクランプボルトが適合しない場合は、  
 P.85のクランプボルト表(MBH-M12、M16)より別途お選びください。  
 4. クーラントパイプは付属されています。  
 5. 本品は全て受注生産品です。

NOTE: 1. Face Mill Arbor for cutters with OH hole.  
 2. Clamp bolt for fastening cutter is included.  
 3. When included clamp bolt (M12, M16) does not fit, please choose suitable  
 MBH-M12, M16 bolt from the clamp bolt list on page 85  
 4. Coolant pipe is included.  
 5. The listed products are made-to-order products.

#### ご注文例 ORDERING EXAMPLE

| ①       | ②    | ③  | ④   | ⑤    |
|---------|------|----|-----|------|
| HSKA100 | -FMH | 27 | -60 | -060 |

|           |               |
|-----------|---------------|
| ① シャンクサイズ | Shank Size    |
| ② 呼称      | Holder's Name |
| ③ ボス径 øD  | øD            |
| ④ 胴径 øC1  | øC1           |
| ⑤ GL長さ L  | G.L. Length   |

▶ センタースルー対応 Thru-the-tool Coolant Available

FIG.1

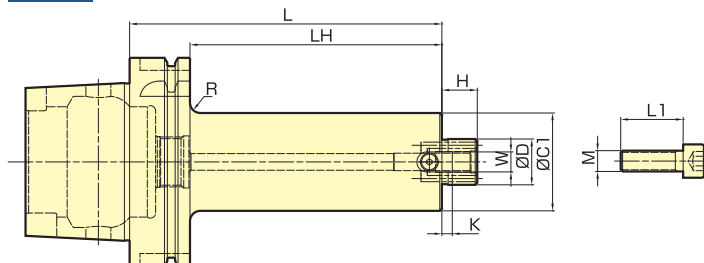
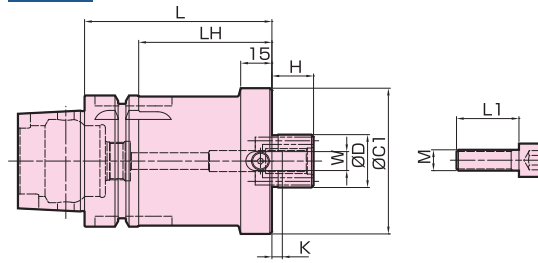


FIG.2



| MODEL   | CODE           | FIG. | ΦD     | ΦC1 | L   | LH  | R | H  | W    | K   | CLAMP BOLT |     |
|---------|----------------|------|--------|-----|-----|-----|---|----|------|-----|------------|-----|
|         |                |      |        |     |     |     |   |    |      |     | M          | L1  |
| HSKA100 | -FMH32 -96     | -060 | 32     | 96  | 60  | 31  | — | 22 | 14   | 7   | M16        | 40L |
|         |                | -090 |        |     | 90  | 61  | — |    |      |     |            |     |
|         |                | -150 |        |     | 150 | 121 | — |    |      |     |            |     |
|         | -FMH40 -100    | -075 | 40     | 100 | 75  | 46  | — | 26 | 16   | 8.5 | MBA-M20    |     |
|         |                | -105 |        |     | 105 | 76  | — |    |      |     |            |     |
|         | -FMH22.225 -47 | -105 | 22.225 | 47  | 105 | 76  | 5 | 17 | 8    | 3.5 | M10        | 30L |
|         |                | -150 |        |     | 150 | 121 | 5 |    |      |     |            |     |
|         |                | -200 |        |     | 200 | 171 | 5 |    |      |     |            |     |
|         |                | -250 |        |     | 250 | 221 | 5 |    |      |     |            |     |
|         |                | -060 |        |     | 60  | 31  | 5 |    |      |     |            |     |
|         | -FMH22.225 -60 | -105 |        | 60  | 105 | 76  | 5 | 17 | 8    | 3.5 | M10        | 30L |
|         |                | -150 |        |     | 150 | 121 | 5 |    |      |     |            |     |
|         |                | -200 |        |     | 200 | 171 | 5 |    |      |     |            |     |
|         |                | -250 |        |     | 250 | 221 | 5 |    |      |     |            |     |
|         |                | -060 |        |     | 60  | 31  | 5 |    |      |     |            |     |
|         | -FMH25.4 -70   | -090 | 25.4   | 70  | 90  | 61  | 5 | 22 | 9.5  | 5   | M12        | 35L |
|         |                | -150 |        |     | 150 | 121 | 5 |    |      |     |            |     |
|         |                | -200 |        |     | 200 | 171 | 5 |    |      |     |            |     |
|         |                | -060 |        |     | 60  | 31  | 5 |    |      |     |            |     |
|         |                | -090 |        |     | 90  | 61  | 5 |    |      |     |            |     |
|         | -FMH31.75 -76  | -105 | 31.75  | 76  | 105 | 76  | 5 | 30 | 13   | 7   | M16        | 40L |
|         |                | -150 |        |     | 150 | 121 | 5 |    |      |     |            |     |
|         |                | -200 |        |     | 200 | 171 | 5 |    |      |     |            |     |
|         |                | -060 |        |     | 60  | 31  | — |    |      |     |            |     |
|         |                | -090 |        |     | 90  | 61  | — |    |      |     |            |     |
|         | -FMH31.75 -96  | -105 |        | 96  | 105 | 76  | — | 30 | 13   | 7   | M16        | 40L |
|         |                | -150 |        |     | 150 | 121 | — |    |      |     |            |     |
|         |                | -200 |        |     | 200 | 171 | — |    |      |     |            |     |
|         |                | -060 |        |     | 60  | 31  | — |    |      |     |            |     |
|         |                | -090 |        |     | 90  | 61  | — |    |      |     |            |     |
|         | -FMH38.1 -100  | -105 | 38.1   | 100 | 105 | 76  | — | 34 | 15.9 | 9   | MBA-M20    |     |
|         |                | -150 |        |     | 150 | 121 | — |    |      |     |            |     |
|         |                | -060 |        |     | 60  | 31  | — |    |      |     |            |     |
|         |                | -090 |        |     | 90  | 61  | — |    |      |     |            |     |

- 注：1. 刃先スルー対応カット用フェイスミルアーバです。  
 2. カッタ締め付け用クランプボルトは付属しています。  
 3. 付属(M12、M16)のクランプボルトが適合しない場合は、  
 P.85のクランプボルト表(MBH-M12、M16)より別途お選びください。  
 4. クーラントパイプは付属されております。  
 5. 本品は全て受注生産品です。

NOTE: 1. Face Mill Arbor for cutters with OH hole.  
 2. Clamp bolt for fastening cutter is included.  
 3. When included clamp bolt (M12, M16) does not fit, please choose suitable  
 MBH-M12, M16 bolt from the clamp bolt list on page 85  
 4. Coolant pipe is included.  
 5. The listed products are made-to-order products.

## ご注文例 ORDERING EXAMPLE

|         |      |    |     |      |
|---------|------|----|-----|------|
| ①       | ②    | ③  | ④   | ⑤    |
| HSKA100 | -FMH | 27 | -60 | -060 |

|           |               |
|-----------|---------------|
| ① シャンクサイズ | Shank Size    |
| ② 呼称      | Holder's Name |
| ③ ボス径 øD  | øD            |
| ④ 胴径 øC1  | øC1           |
| ⑤ GL長さ L  | G.L. Length   |

## アクセサリ ACCESSORIES

▶ P.173 正面フライスアーバ用 クランプボルト CLAMP BOLT FOR FACE MILL ARBOR