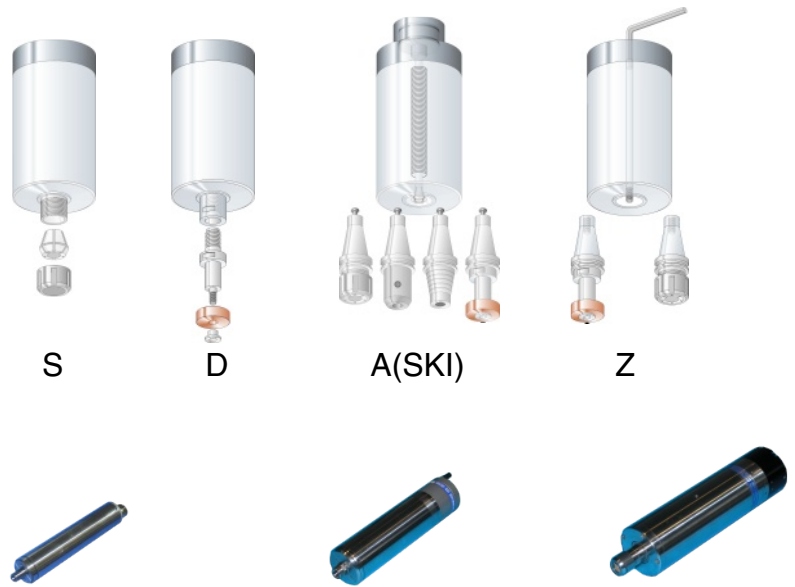


### Small Sized Motor Spindles



#### Spindle Type

| Spindle Type                 |                                       |             | HF25          | HF33           | HF42                 | HF45                 | HF60   |
|------------------------------|---------------------------------------|-------------|---------------|----------------|----------------------|----------------------|--------|
| Spindle Model (*)            |                                       |             | 25S           | 33 A/S/D 33 S  | 42 S/D               | 45.2 S 45.4 S 45 A   | 60 A/S |
| Speed                        | Hybrid bearings with oil/air          | RPM         | (80'000)      | - -            | 140'000              | - 96'000 -           | 70'000 |
|                              | Steel bearings with oil/air           | RPM         | -             | 60'000 100'000 | 120'000              | 80'000 80'000 -      | -      |
|                              | Hybrid bearings with grease           | RPM         | 55'000        | 40'000 40'000  | 80'000               | 50'000 60'000 60'000 | 60'000 |
| Permanent power S1           | kW                                    | 0,140       | 0.125 0.125   | 0.2            | 0.375 0.6 0.4        | 1.5                  |        |
| Peak power                   | kW                                    | 0.200       | 0.165 0.165   | 0.26           | 0.475 0.8 0.65       | 4.1                  |        |
| Torque at permanent power S1 | Nm                                    | 0.02        | 0.02 0.02     | 0.014          | 0.1 0.045 0.064      | 0.2                  |        |
| Taper size                   | HSK (Opt. W available with all sizes) |             | -             | - -            | -                    | - - -                | -      |
|                              | SKI; BT; CAT; SK; Y=Capto             |             | -             | - -            | -                    | - - -                | SKI 16 |
| Clamping capacity            | mm                                    | 0.3-3.175   | 1-5 1-5       | 1-5            | 1-7 1-7 1-6.35       | 1-8 (10)             |        |
| Housing dia. / length        |                                       | 25/166      | 33/151 33/120 | 42/120         | 45/172 45/191 45/214 | 60/218               |        |
| Weight                       | kg                                    | 0.44        | 0.9 0.9       | 1.1            | 1.6 1.8 2.5          | 3.9                  |        |
| Spindle cooling required     | kW                                    | -           | - -           | 0.5            | - 0.5 0.5            | 0.7                  |        |
| IBAG Vector Control          |                                       | DC-Bruschl. | - -           | -              | - - -                | -                    |        |

(\*) S = Collet clamping direct in the spindle shaft; D = Grinding arbor to be attached direct on the spindle shaft; Z = Manual drawbar for tool interface with collet clamping or grinding arbor; A = Drawbar for ATC - Automatic Tool Change for tool holder HSK, SKI, BT, SK, CAT, Capto; W = Option with coolant through the center (not available with SKI). Other tooling interface on request. Y = Capto tool interface is available eith HF 230 and HF 250 in C6 / C8.

All the IBAG tooling interfaces with SK are also available with BT or CAT. They can be produced with the very precision "BIG Plus" system (with shoulder contact).