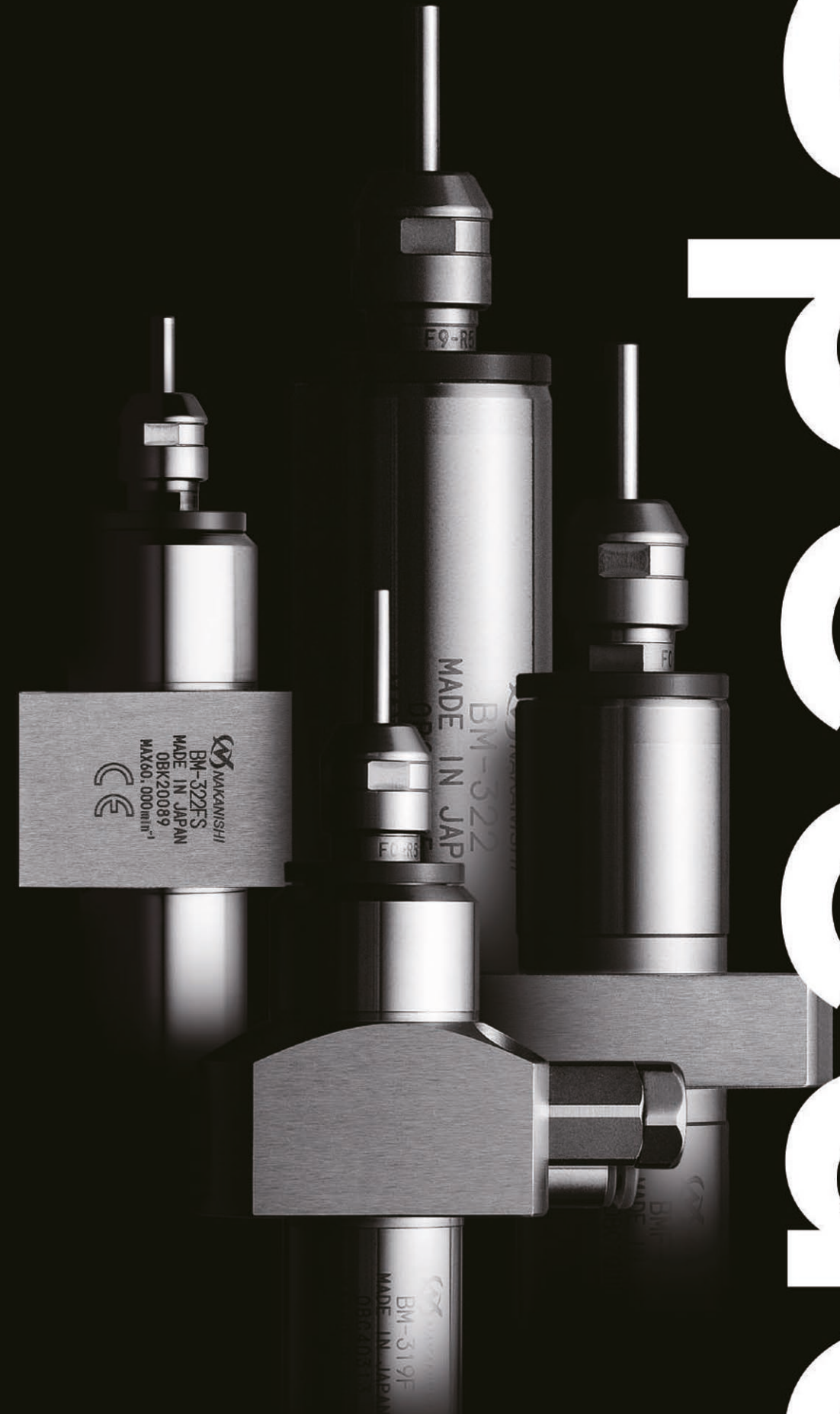


is p e o 3



MAFRA
MAILE GMBH
PRÄZISIONSMASCHINEN



iSpeed3

NAKANISHI INC. 2022



MAFRA
MAILE GMBH
PRÄZISIONSMASCHINEN
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NAKANISHI INC.

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www.nakanishi-inc.com
PR-K368E Ver.1 2022-02-28 03. 440

※Specifications and design are subject to change without notice.


SERIES **iSpeed3**
ULTRA-HIGH-SPEED & SUPER-PRECISION

The Finger Tips


You can arrange this finger spindle as you wish and realize a magical machining

Max. power 140W, Max. rpm 80,000min⁻¹


Max. power 150W, Max. rpm 60,000min⁻¹

 **Spindle accuracy within 1 μm**

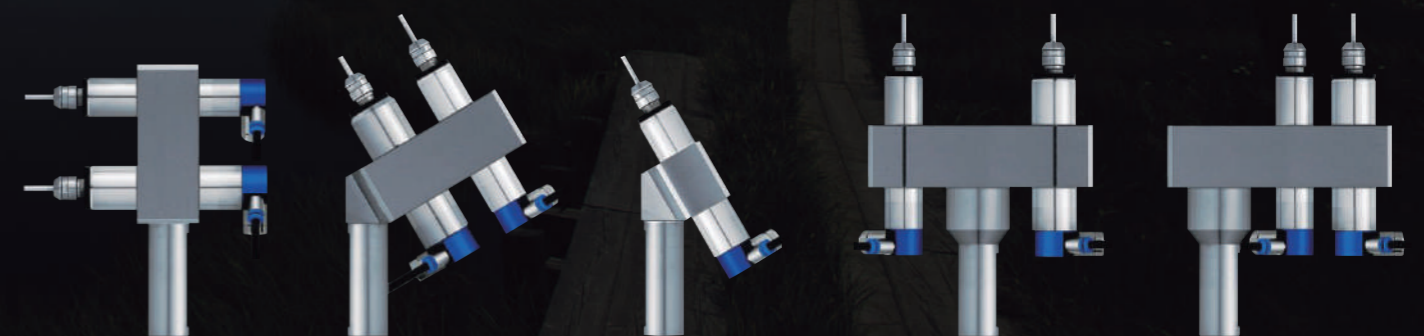
- Optimum for high-precision machining
- Longer tool life

 **Ceramic Bearing**

- Longer bearing life
- Higher rigidity for heavy cutting

 **Brushless motor**

- No need to replace carbon brushes to enable maintenance-free operation
- Carbon brush dust will no longer penetrate the bearing to extend the product life



Index

Flange type motor spindle

BM-319F p.5
With 50cm joint cord
Max.rpm 80,000min⁻¹



BM-320F p.5
With 50cm joint cord
Max.rpm 80,000min⁻¹



BM-322FL p.7
With 50cm joint cord
Max.rpm 60,000min⁻¹



BM-322FR p.7
With 50cm joint cord
Max.rpm 60,000min⁻¹



BM-322FS p.9
With 50cm joint cord
Max.rpm 60,000min⁻¹



BMF-319 p.11
Max.rpm 80,000min⁻¹



Straight type motor spindle

BMJ-319 p.13
Max.rpm 80,000min⁻¹



BMJ-320 p.13
Max.rpm 80,000min⁻¹



BMJ-322 p.15
Max.rpm 60,000min⁻¹



BM-319 p.17
With 50cm joint cord
Max.rpm 80,000min⁻¹



BM-320 p.17
With 50cm joint cord
Max.rpm 80,000min⁻¹



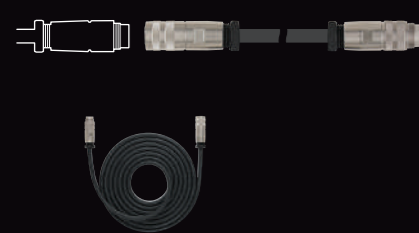
BM-322 p.19
With 50cm joint cord
Max.rpm 60,000min⁻¹



Motor cord

1. Joint type

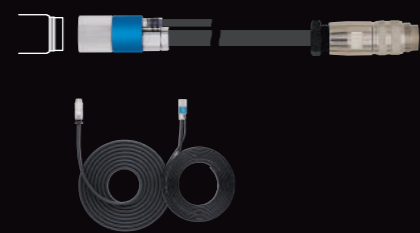
[Feature] Connection possible out of the machine
[Length] 3m, 5m, 7m



EMCD-BM3 p.22
Joint type motor cord

2. Straight type

[Feature] Connection at the body end
[Length] 4m, 6m, 8m



EMCD-BM3S p.22
Straight type motor cord

3. Angle type

[Feature] Connection at the body end into 90° degrees
[Length] 4m, 6m, 8m



EMCD-BM3A p.22
Angle type motor cord

Controller

iSpeed3 CONTROLLER
Controller p.21

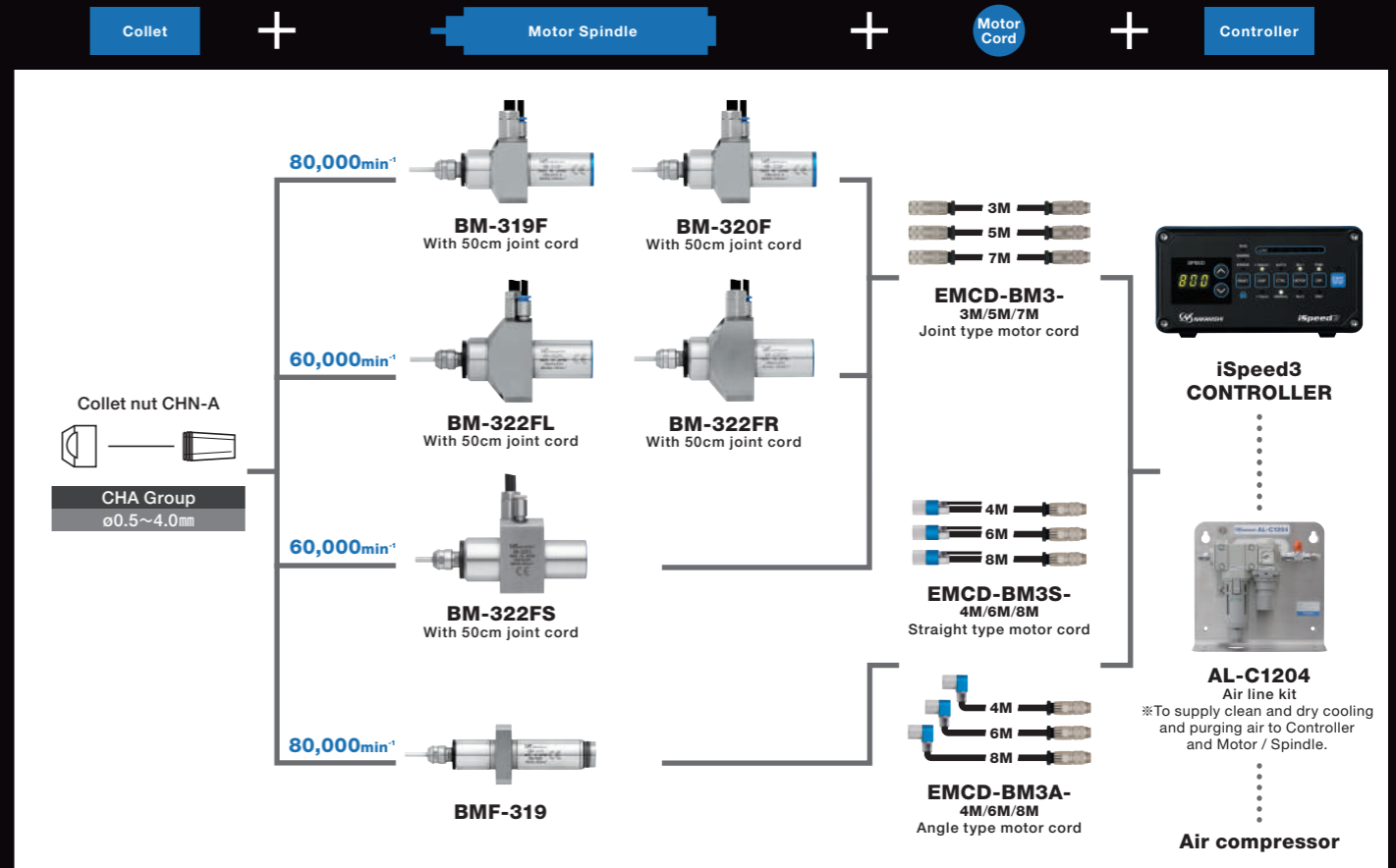
Accessories

AL-C1204
Air line kit p.22

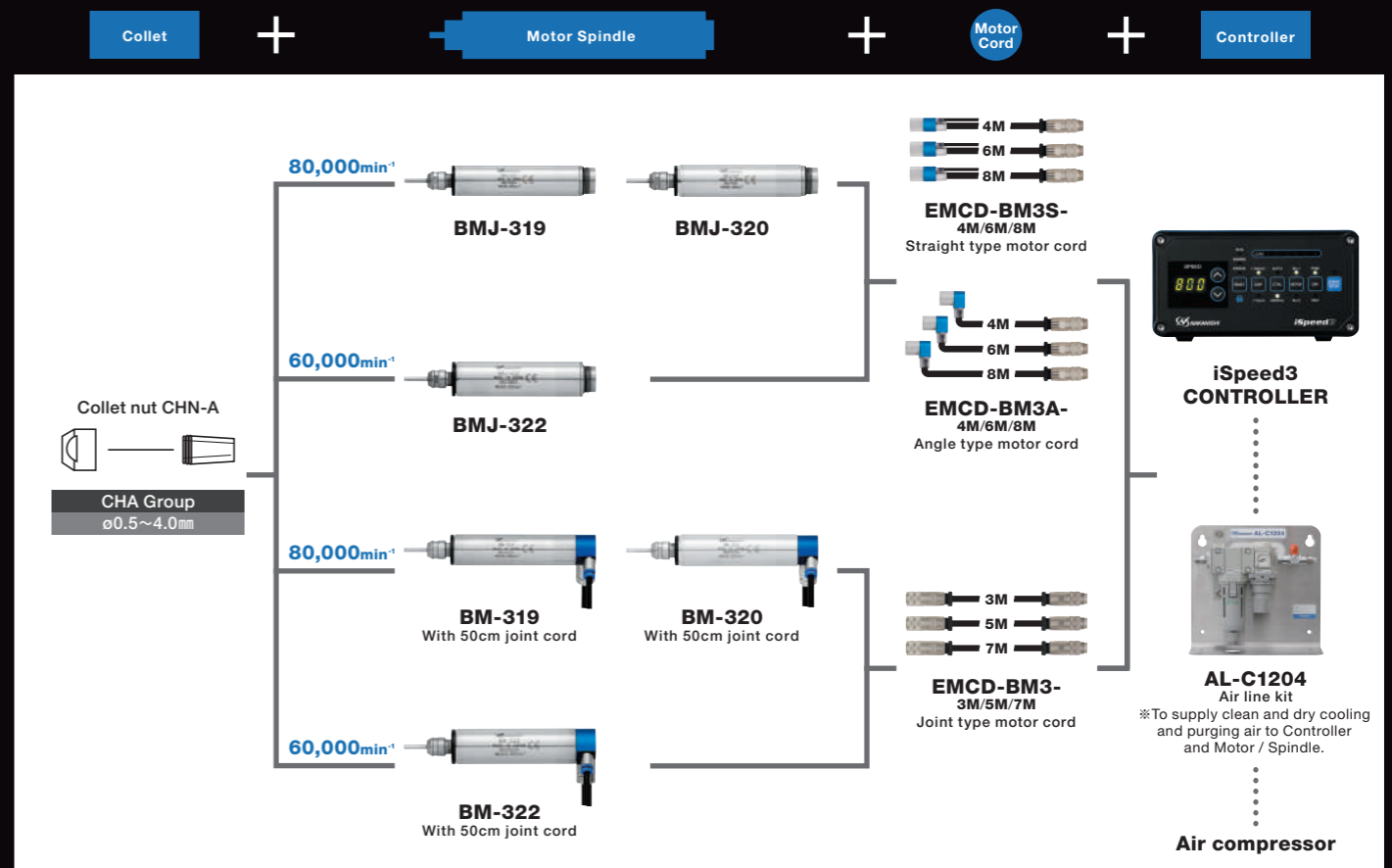
CHA / CHN-A
Collet / Collet nut p.23

System Chart

Flange type motor spindle



Straight type motor spindle



Spindle Guide



BM-319F



BM-320F



EMCD-BM3



iSpeed3 CONTROLLER



AL-C1204

iSpeed3 SERIES

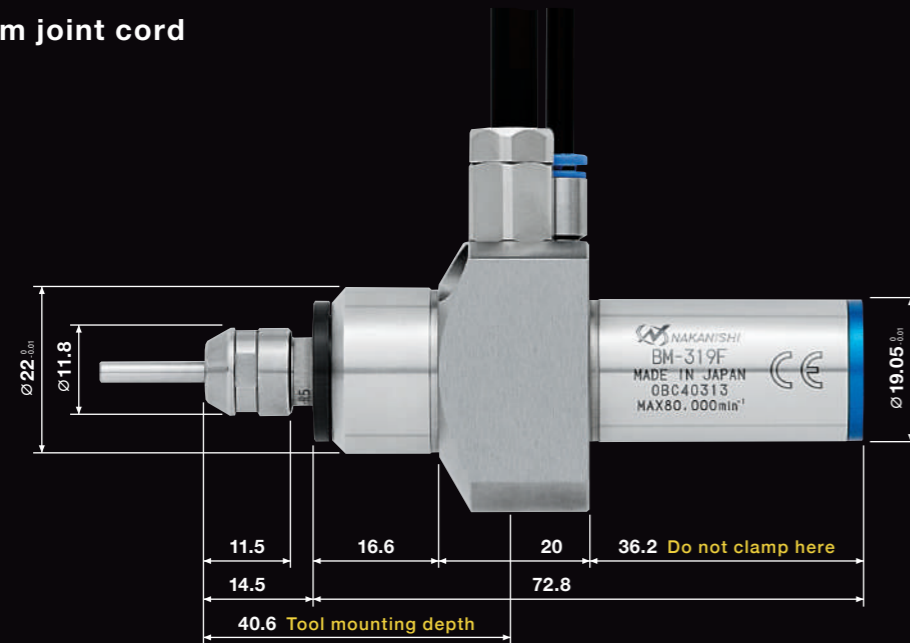
Shown In Actual Size

Flange type motor spindle

BM-319F
With 50cm joint cord



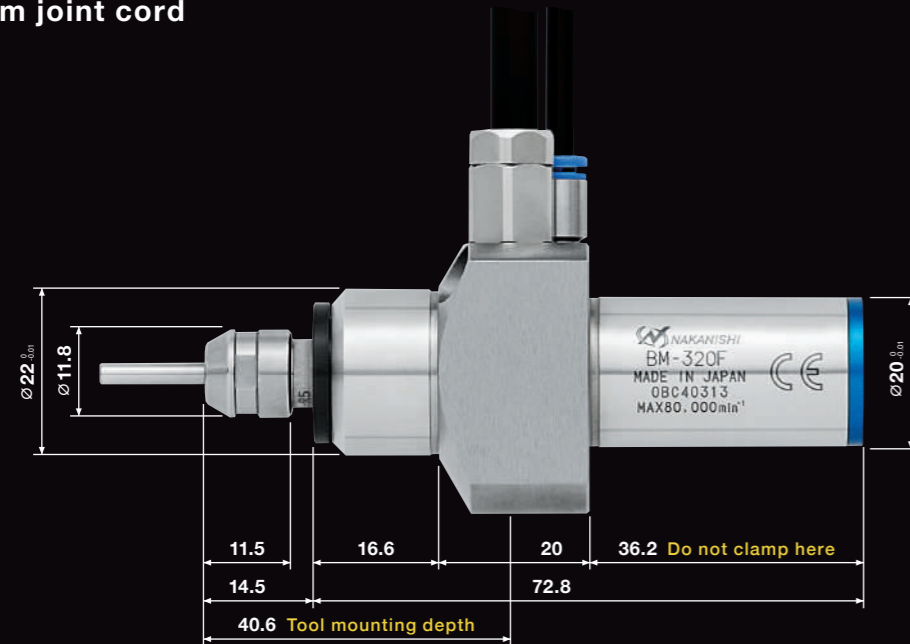
O.D. ϕ 19.05mm



BM-320F
With 50cm joint cord



O.D. ϕ 20mm



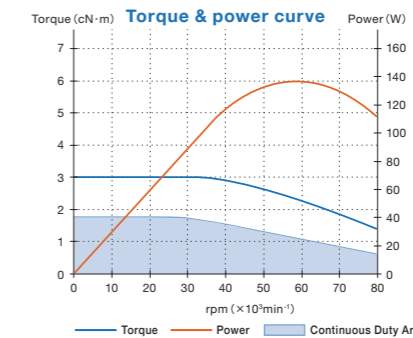
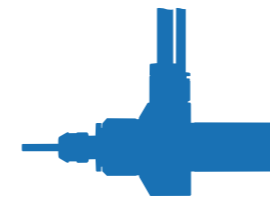
Specifications

DXF data DXF files are available on our website

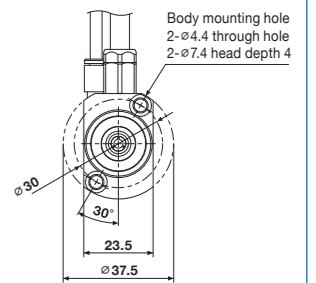
Order by Code No.

BM-319F

Code No. **7813** Model **BM-319F**



Dimensions of the holes on the flange

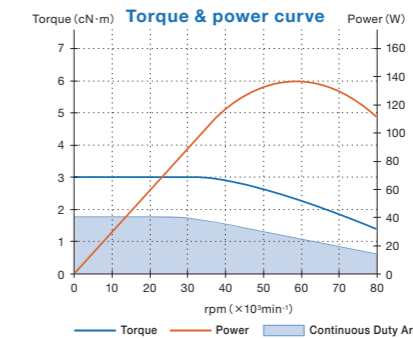
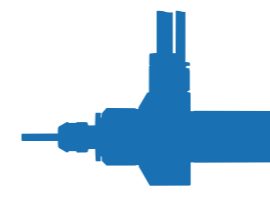


| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|--|------------|------------------|--------|
| ϕ 19.05mm | 80,000min ⁻¹ | 140w | Within1 μ m | 260g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each / Bolt : 2pcs. (M4×L25) | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

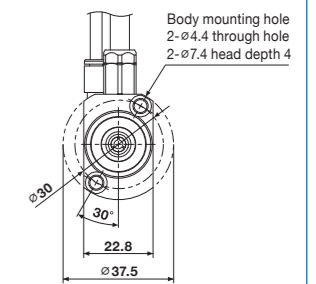
※ Cord length L=0.5m
※ Collet is sold separately.

BM-320F

Code No. **7816** Model **BM-320F**



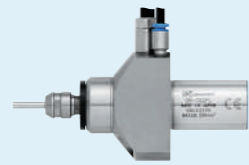
Dimensions of the holes on the flange



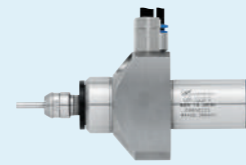
| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|--|------------|------------------|--------|
| ϕ 20mm | 80,000min ⁻¹ | 140w | Within1 μ m | 270g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each / Bolt : 2pcs. (M4×L25) | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

※ Cord length L=0.5m
※ Collet is sold separately.

Spindle Guide



BM-322FL



BM-322FR



EMCD-BM3



iSpeed3 CONTROLLER



AL-C1204

iSpeed3 SERIES

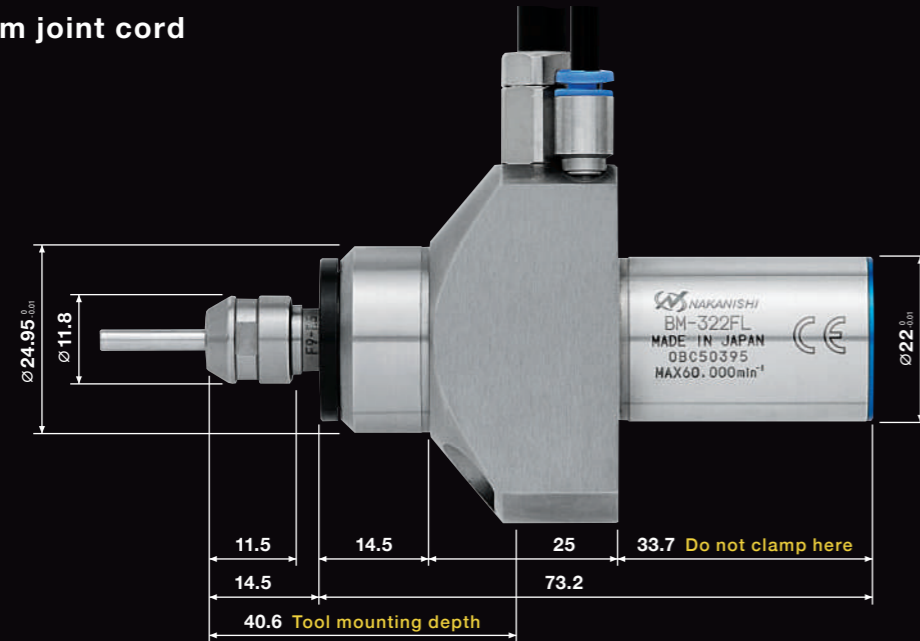
Shown In Actual Size

Flange type motor spindle

BM-322FL
With 50cm joint cord



O.D. ϕ 22mm



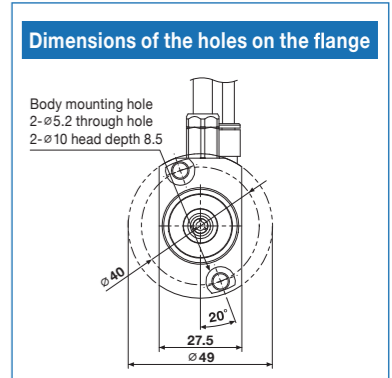
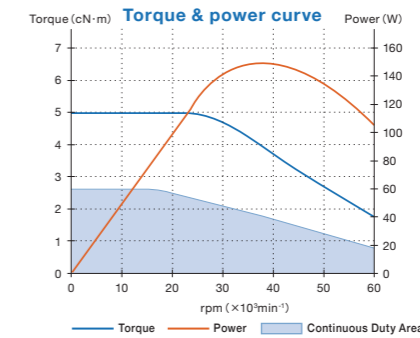
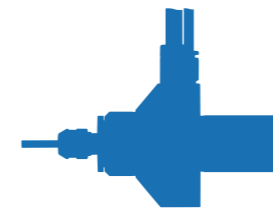
Specifications

DXF data DXF files are available on our website

Order by Code No.

BM-322FL

Code No. **7815** Model **BM-322FL**



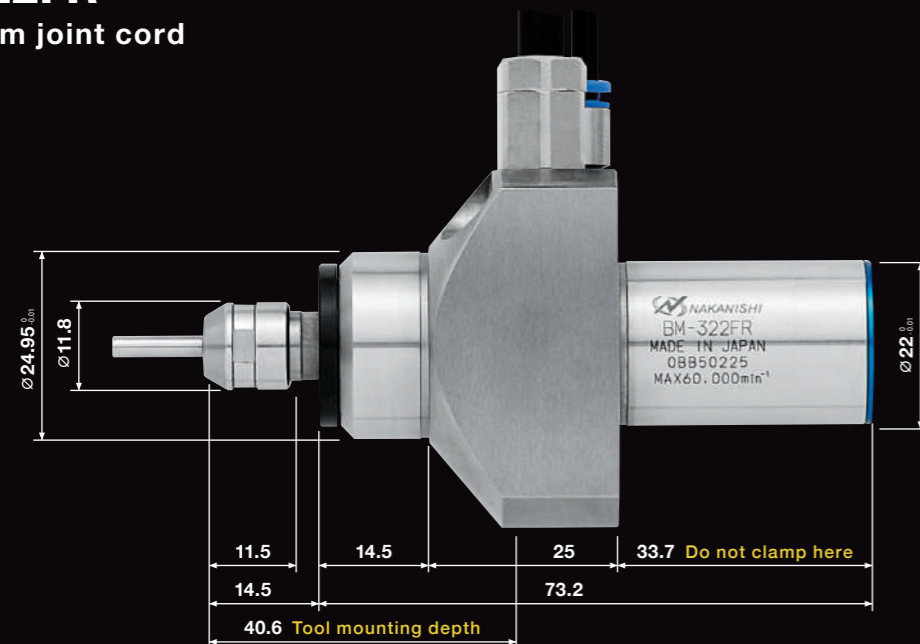
| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|--|------------|------------------|--------|
| ϕ 22mm | 60,000min ⁻¹ | 150w | Within1 μ m | 360g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each / Bolt : 2pcs. (M5×L25) | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

※ Cord length L=0.5m
※ Collet is sold separately.

BM-322FR
With 50cm joint cord

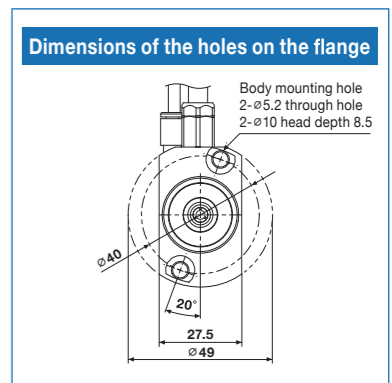
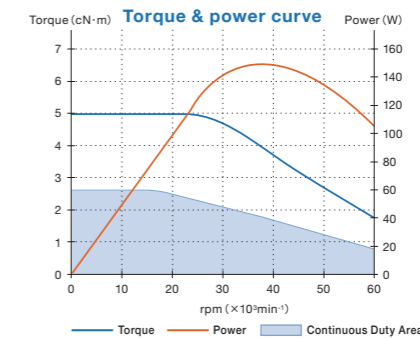
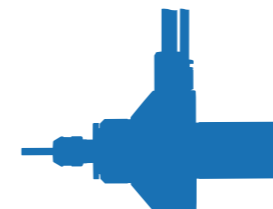


O.D. ϕ 22mm



BM-322FR

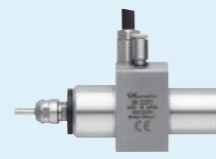
Code No. **7817** Model **BM-322FR**



| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|--|------------|------------------|--------|
| ϕ 22mm | 60,000min ⁻¹ | 150w | Within1 μ m | 360g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each / Bolt : 2pcs. (M5×L25) | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

※ Cord length L=0.5m
※ Collet is sold separately.

Spindle Guide



BM-322FS



EMCD-BM3



iSpeed3 CONTROLLER



AL-C1204

iSpeed3 SERIES

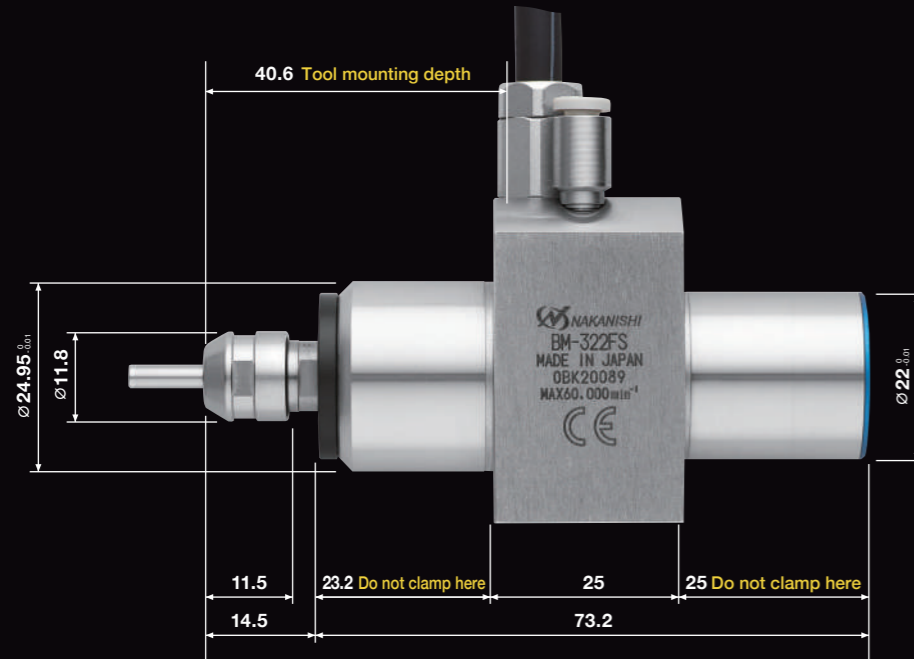
Shown In Actual Size

Flange type motor spindle

BM-322FS
With 50cm joint cord



O.D. 22mm



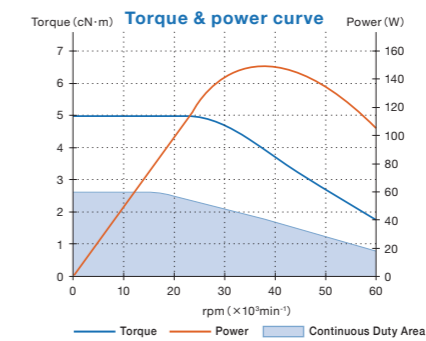
Specifications

DXF data DXF files are available on our website

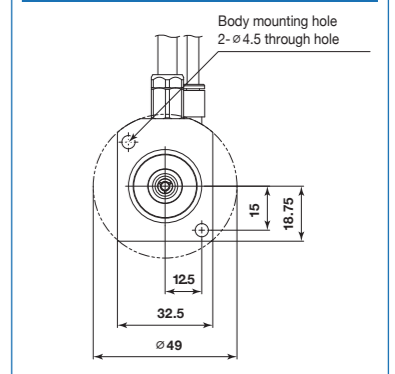
Order by Code No.

BM-322FS

Code No. **7823** Model **BM-322FS**



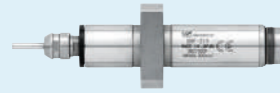
Dimensions of the holes on the flange



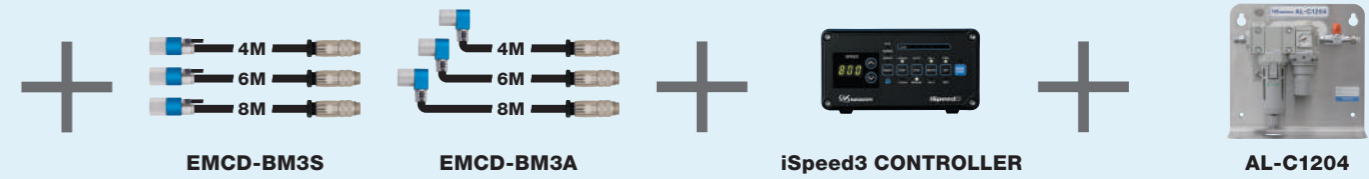
| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|-----------------------------|--|-------------|-------------------------------|-------------|
| $\varnothing 22 \text{mm}$ | 60,000 min^{-1} | 150w | Within 1 μm | 430g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each / Bolt : 2pcs. (M4×L35) | | | |
| Options | Collet (CHA Group) : $\varnothing 0.5 \sim \varnothing 4.0 \text{mm}$ p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

※ Cord length L=0.5m
※ Collet is sold separately.

Spindle Guide



BMF-319



iSpeed3 SERIES

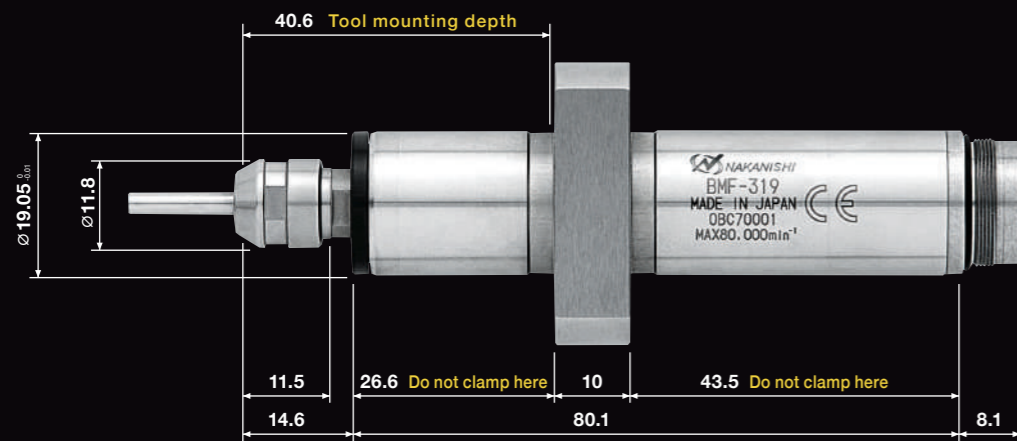
Shown In Actual Size

Flange type motor spindle

BMF-319



O.D. ϕ 19.05mm



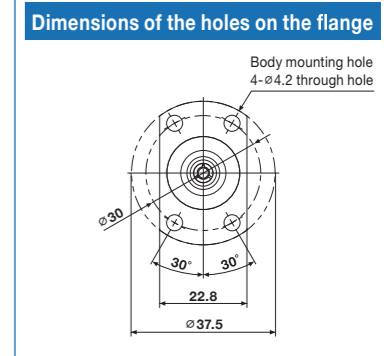
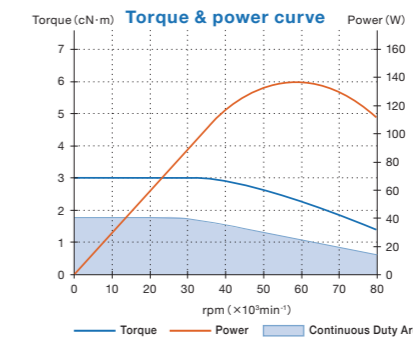
Specifications

DXF data DXF files are available on our website

Order by Code No.

BMF-319

Code No. **7822** Model **BMF-319**



| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|-----------------------------|--|------------|------------------|--------|
| ϕ 19.05mm | 80,000min ⁻¹ | 140w | Within1 μ m | 180g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each / Bolt : 2pcs. (M4×L16) | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 | | | |
| | Motor cord (Straight) : Length 4m (9264), 6m (9265), 8m (9266) | | | |
| | Motor cord (Angle) : Length 4m (9267), 6m (9268), 8m (9269) | | | |

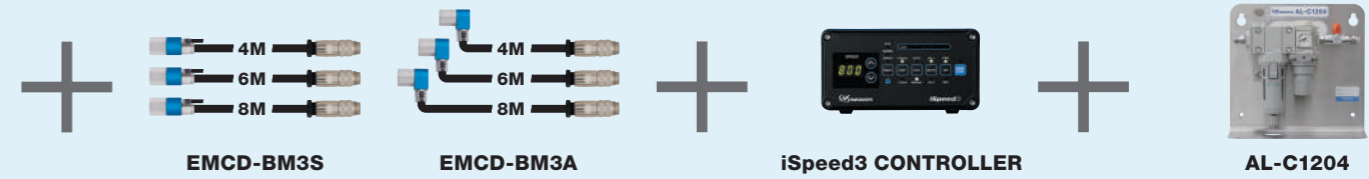
※ Collet is sold separately.

Spindle
Guide

BMJ-319



BMJ-320

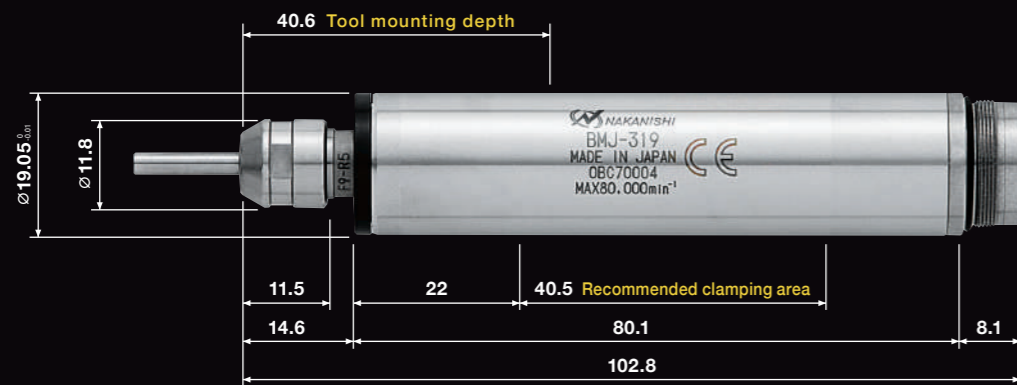


iSpeed3 SERIES

Shown In Actual Size

Straight type motor spindle

BMJ-319

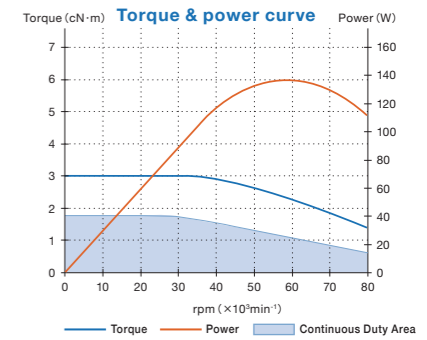
O.D. ϕ 19.05mm

Specifications

DXF data DXF files are available on our website

Order by Code No.

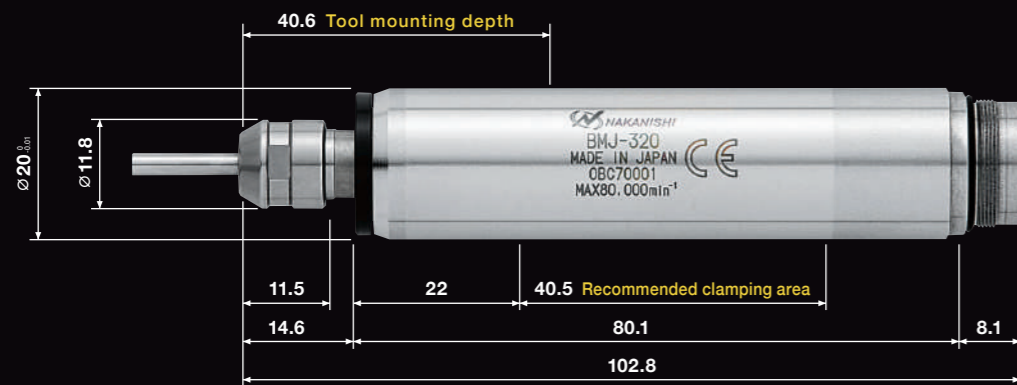
BMJ-319

Code No. **7819** Model **BMJ-319**

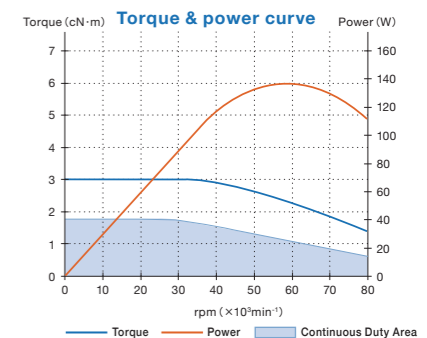
| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|---|------------|------------------|--------|
| ϕ 19.05mm | 80,000min ⁻¹ | 140w | Within1 μ m | 145g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord (Straight) : Length 4m (9264), 6m (9265), 8m (9266) Motor cord (Angle) : Length 4m (9267), 6m (9268), 8m (9269) | | | |

※ Collet is sold separately.

BMJ-320

O.D. ϕ 20mm

BMJ-320

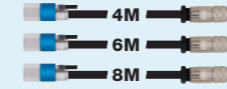
Code No. **7820** Model **BMJ-320**

| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|---|------------|------------------|--------|
| ϕ 20mm | 80,000min ⁻¹ | 140w | Within1 μ m | 160g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord (Straight) : Length 4m (9264), 6m (9265), 8m (9266) Motor cord (Angle) : Length 4m (9267), 6m (9268), 8m (9269) | | | |

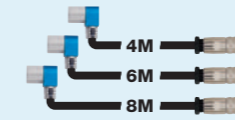
※ Collet is sold separately.

Spindle
Guide

BMJ-322



EMCD-BM3S



EMCD-BM3A



iSpeed3 CONTROLLER



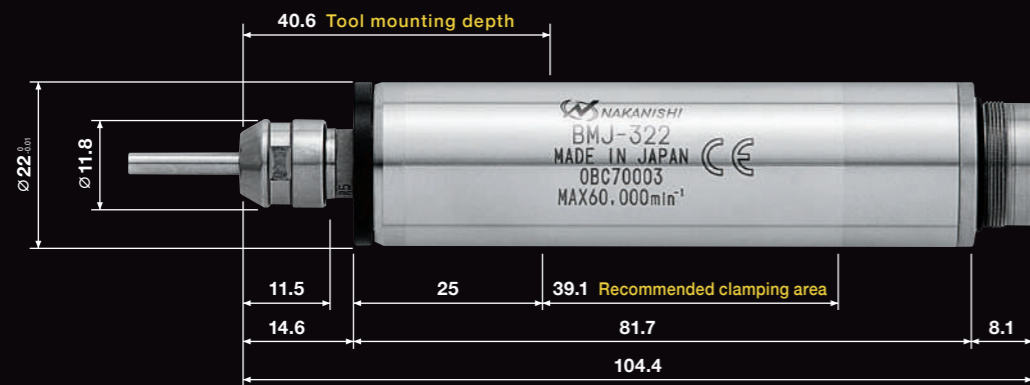
AL-C1204

iSpeed3 SERIES

Shown In Actual Size

Straight type motor spindle

BMJ-322

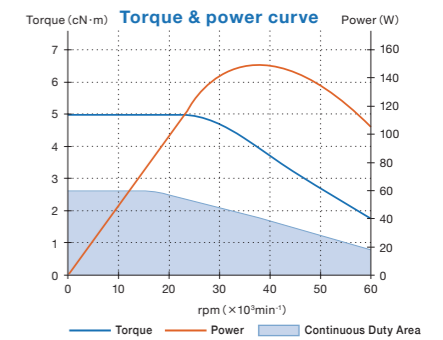
O.D. ϕ 22mm

Specifications

DXF data DXF files are available on our website

Order by Code No.

BMJ-322

Code No. **7821** Model **BMJ-322**

| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|-----------------------------|--|------------|------------------|--------|
| ϕ 22mm | 60,000min ⁻¹ | 150w | Within1 μ m | 190g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 | | | |
| | Motor cord (Straight) : Length 4m (9264), 6m (9265), 8m (9266) | | | |
| | Motor cord (Angle) : Length 4m (9267), 6m (9268), 8m (9269) | | | |

* Collet is sold separately.

Spindle
Guide

BM-319



BM-320



EMCD-BM3



iSpeed3 CONTROLLER



AL-C1204

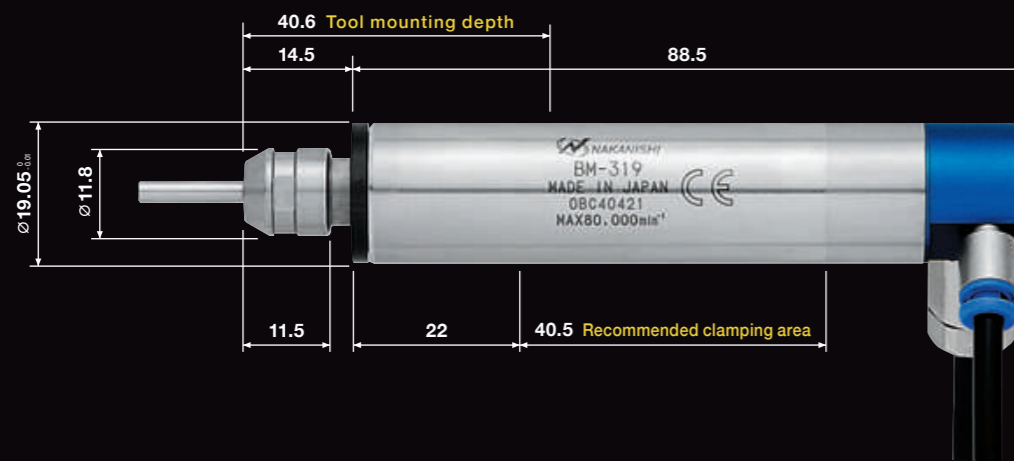
iSpeed3 SERIES

Shown In Actual Size

Straight type motor spindle

BM-319

With 50cm joint cord

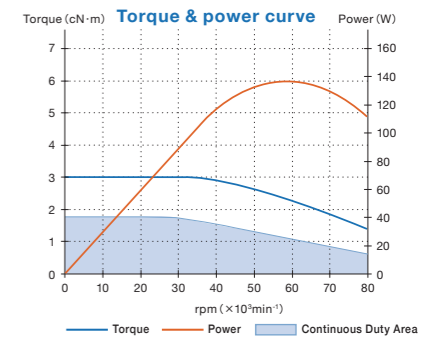
O.D. ϕ 19.05mm

Specifications

DXF data DXF files are available on our website

Order by Code No.

BM-319

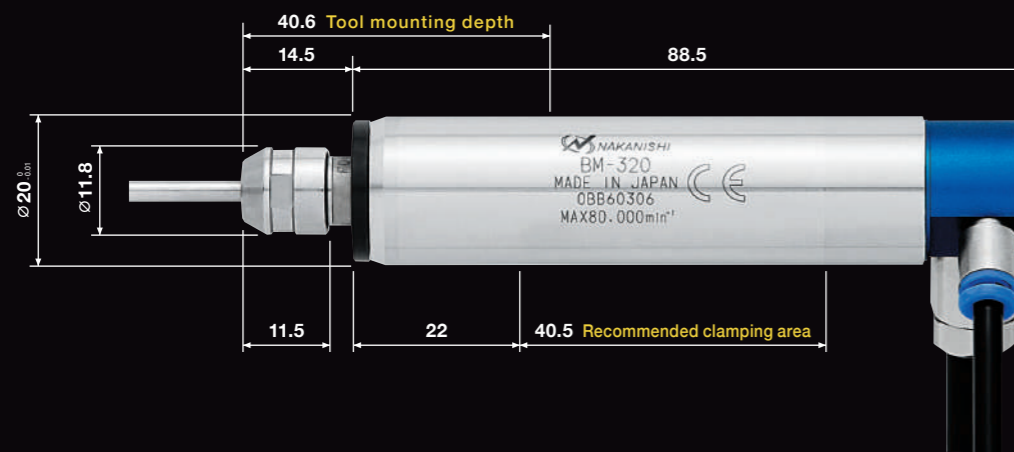
Code No. **7810** Model **BM-319**

| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|--|------------|-----------------------|--------|
| ϕ 19.05mm | 80,000 min^{-1} | 140w | Within1 μm | 210g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8 \times 5) · (9 \times 11) : 1pc. each | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

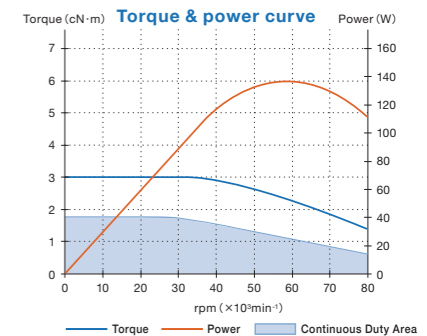
※ Cord length L=0.5m
 ※ Collet is sold separately.

BM-320

With 50cm joint cord

O.D. ϕ 20mm

BM-320

Code No. **7811** Model **BM-320**

| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|--|------------|-----------------------|--------|
| ϕ 20mm | 80,000 min^{-1} | 140w | Within1 μm | 230g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8 \times 5) · (9 \times 11) : 1pc. each | | | |
| Options | Collet (CHA Group) : ϕ 0.5~ ϕ 4.0mm p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

※ Cord length L=0.5m
 ※ Collet is sold separately.

Spindle
Guide

BM-322



EMCD-BM3



iSpeed3 CONTROLLER



AL-C1204

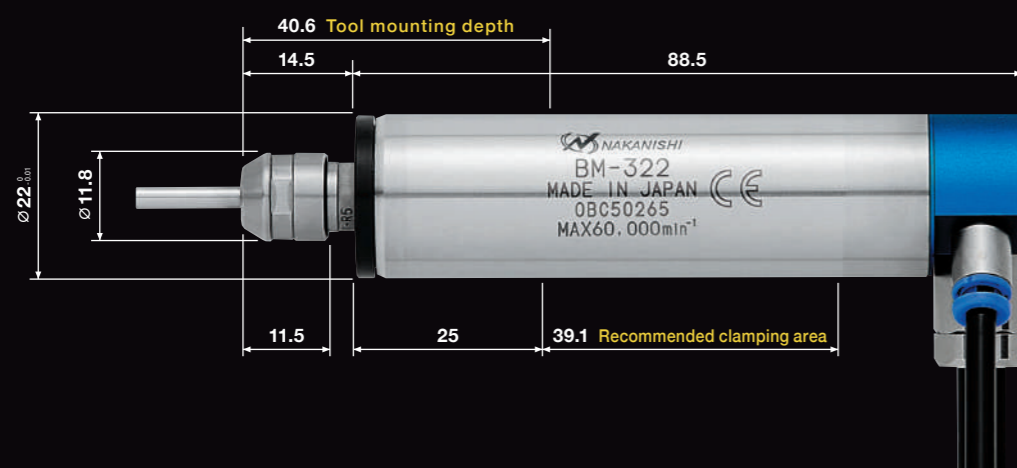
iSpeed3 SERIES

Shown In Actual Size

Straight type motor spindle

BM-322

With 50cm joint cord

O.D. \varnothing 22mm

Specifications

DXF data DXF files are available on our website

Order by Code No.

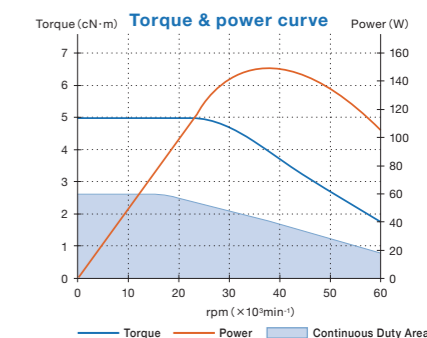
BM-322

Code No.

7814

Model

BM-322

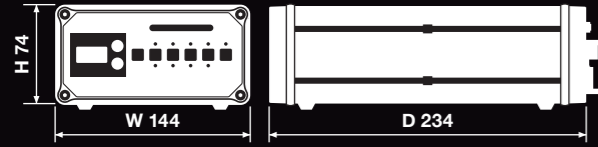


| O.D. | Max. rpm | Max. power | Spindle Accuracy | Weight |
|----------------------|---|------------|------------------------|--------|
| \varnothing 22mm | 60,000 min^{-1} | 150w | Within 1 μm | 250g |
| Standard Accessories | Collet nut (CHN-A) / Wrench (8×5) · (9×11) : 1pc. each | | | |
| Options | Collet (CHA Group) : \varnothing 0.5~ \varnothing 4.0mm p.23 Motor cord : Length 3m (9261), 5m (9262), 7m (9263) | | | |

※ Cord length L=0.5m
 ※ Collet is sold separately.

iSpeed3 Controller

iSpeed3 CONTROLLER Controller



External Input / Output Control Signal Operation

- External Input
Motor Rotating / Stopped, Error Released, Rotating Direction, Motor Speed Setting and etc.
- External Monitor
Motor Current, Error, Warning, Rotating pulse and etc.
- Parameter Setting
Maximum motor speed setting, Fix the motor speed
※For more information, please refer to the operation manual on our website.

| Plug type | Code No. |
|---------------|----------|
| 200V (C Type) | 8479 |

※ 8477 (100V), 8478 (120V), 8480 (230V) are available.

| Plug type | Area | Product |
|---------------|---------------|---------|
| 100V (A Type) | Japan | |
| 120V (B Type) | USA Canada | |
| 200V (C Type) | Without plug | |
| 230V (D Type) | Europe | |

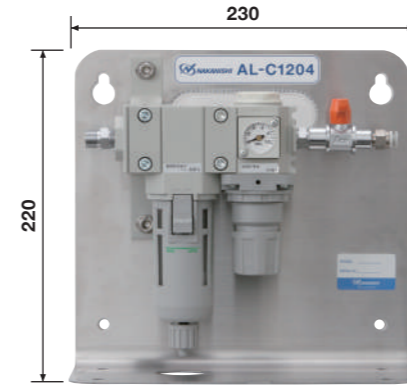
※ Please select Voltage for purchasing.



| Motor output | Speed Range | Max. power | Power consumption | Air consumption | Weight |
|---|--|------------|-------------------|---|--------|
| 2 Motor spindles (Can't be operated simultaneously.) | 1,000~80,000min ⁻¹ | 150w | 0.65A (200V) | 1 spindle : 30Nℓ/min (0.25MPa) 2 spindles : 60Nℓ/min (0.25MPa) | 3.5kg |
| Standard Accessories | Power cord : 2m / Air hose with filter (K-251 : 2058) : 2m / Motor connector cap : 2pcs. Bracket : 2pcs. / Plate nut : 4pcs. / M3 bolt : 4pcs. / Fuse : 2pcs. | | | | |

Accessories (Air line kit, Motor cord)

AL-C1204 Air line kit



1.9kg

※Recommendation of nominal filtration rating: 0.3μm, Pressure range: 0.1-1.0MPa
Recommendation of air filter: M2000-WS (CKD)

| | | | |
|----------------------|------------------------|-------|----------|
| Code No. | 4504 | Model | AL-C1204 |
| Standard Accessories | Hose pipe (K-260) : 2m | | |

Motor cord

| Motor cord | Code No. | Model | Length | Standard Accessories | Compatible model |
|-------------------------------------|----------|--------------|--------|---|--|
| Straight type 4M 6M 8M | 9264 | EMCD-BM3S-4M | 4m | Air hose Connector cap (Included) | BMF-319 · BMF-320 BMF-322 · BMF-325 BMJ-319 · BMJ-320 BMJ-322 · BMJ-325 |
| | 9265 | EMCD-BM3S-6M | 6m | | |
| | 9266 | EMCD-BM3S-8M | 8m | | |
| Angle type 4M 6M 8M | 9267 | EMCD-BM3A-4M | 4m | Air hose Connector cap (Included) | BMF-319 · BMF-320 BMF-322 · BMF-325 BMJ-319 · BMJ-320 BMJ-322 · BMJ-325 |
| | 9268 | EMCD-BM3A-6M | 6m | | |
| | 9269 | EMCD-BM3A-8M | 8m | | |
| Joint type 3M 5M 7M | 9261 | EMCD-BM3-3M | 3m | Air hose Connector cap (Included) | BM-319F · BM-320F BM-322FL · BM-322FR BM-322FS BM-319 · BM-320 BM-322 · BM-325 |
| | 9262 | EMCD-BM3-5M | 5m | | |
| | 9263 | EMCD-BM3-7M | 7m | | |

Accessories (Collet, etc.)

| Collet | Code No. | Model | I.D. | Compatible model |
|-------------------------|--------------|-------------|--|---|
| <p>Collet CHA Group</p> | 91494 | CHA-3.0AA | ø3.0AA* | BMF-319 · BMF-320 BMF-322 · BMF-325 BMJ-319 · BMJ-320 BMJ-322 · BMJ-325 BM-319F · BM-320F BM-322FL · BM-322FR BM-322FS BM-319 · BM-320 BM-322 · BM-325 *High precision type AA (Run-out Accuracy within 2 μm) |
| | 91496 | CHA-3.175AA | ø3.175AA* | |
| | 91495 | CHA-4.0AA | ø4.0AA* | |
| | 91492 | CHA-2.35 | ø2.35 | |
| | 91430 | CHA-3.0 | ø3.0 | |
| | 91493 | CHA-3.175 | ø3.175 | |
| | 91440 | CHA-4.0 | ø4.0 | |
| | — | CHA-□□ | ø0.5, ø0.6, ø0.7, ø0.8, ø0.9 | |
| | — | CHA-□□ | ø1.1, ø1.2, ø1.3, ø1.4, ø1.7, ø1.8, ø1.9 ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9 ø3.1, ø3.2, ø3.3, ø3.4, ø3.6, ø3.7, ø3.8, ø3.9 | |
| | — | CHA-□□ | ø1.0, ø1.5, ø2.0, ø2.5, ø3.5 ø1.6 | |

| Collet nut | Code No. | Model | Description | Compatible model |
|------------|-------------|-------|---------------------------|--|
| | 2102 | CHN-A | Collet nut for CHA collet | BMF-319 · BMF-320 · BMF-322 BMF-325 · BMJ-319 · BMJ-320 BMJ-322 · BMJ-325 · BM-319F BM-320F · BM-322FL BM-322FR · BM-322FS BM-319 · BM-320 BM-322 · BM-325 |

| Spacer · Bush | Code No. | Model | Description | Compatible model |
|---------------|-------------------|--|--|---|
| | 1882 | SP-22×10L | Spacer (for BM-322FL / BM-322FR) Dimensions : ø22 (I.D.) × 10mm | BM-322FL · BM-322FR |
| | 1875 | RB-20×23 | ø23 Bush Dimensions : ø20 (I.D.) × ø23 (O.D.) × 40mm | BMJ-320 · BM-320 BMF-320 |
| | 1876 | RB-20×22.8 | ø22.8 Bush Dimensions : ø20 (I.D.) × ø22.8 (O.D.) × 40mm | BMJ-320 · BM-320 BMF-320 |
| | 1877 | RB-20×22 | ø22 Bush Dimensions : ø20 (I.D.) × ø22 (O.D.) × 40mm | BMJ-320 · BM-320 BMF-320 |
| | 1878 | RB-20×25 | ø25 Bush Dimensions : ø20 (I.D.) × ø25 (O.D.) × 40mm | BMJ-320 · BM-320 BMF-320 |
| | 1879 | RB-20×25.4 | ø25.4 Bush Dimensions : ø20 (I.D.) × ø25.4 (O.D.) × 40mm | BMJ-320 · BM-320 BMF-320 |
| | 1883 | RB-22×25×34L | ø25 Bush Dimensions : ø22 (I.D.) × ø25 (O.D.) × 33.5mm | BM-322FL · BM-322FR BM-322FS · BMF-322 BMJ-322 · BM-322 |
| | 1884 | RB-22×25.4×34L | ø25.4 Bush Dimensions : ø22 (I.D.) × ø25.4 (O.D.) × 33.5mm | BM-322FL · BM-322FR BM-322FS · BMF-322 BMJ-322 · BM-322 |
| 1887 | RB-19.05×25.4×36L | ø25.4 Bush Dimensions : ø19.05 (I.D.) × ø25.4 (O.D.) × 36mm | BM-319F · BMJ-319 BM-319 · BMF-319 | |

NAKANISHI Solutions LINE UP

Electric Motors & Spindles



Application for CNC lathes / Special purpose machines

Application for machining centers and milling machines

E4000 SERIES

1,000~40,000min⁻¹ Max.1,200W
[ø40mm]



- World's highest power in this class
- Max. power: 1,200W, Max. torque: 1.0N·m

E3000 SERIES

1,000~80,000min⁻¹ Max.350W
[ø30/25/20mm]



- The largest product lines for various processing
- Space-saving solution for small CNC lathe

HES SERIES

Max.80,000min⁻¹
[For small diameter endmills and drills only]



- The most cost effective solution to add high-speed machining capability
- 80,000min⁻¹, 6.0cN·m
- BT, HSK A63, ST shanks are available
- Driven by E3000 Controller

E2000 SERIES

1,000~50,000min⁻¹ Max.200W
[ø22.8/25mm]



- Small size spindle allows multi-axis installation in limited space

iSpeed3 SERIES

1,000~80,000min⁻¹ Max.150W
[ø19.05/20/22mm]



- Super short motor spindle
- High efficiency brushless motor



- The most cost effective solution to add high-speed machining capability
- 50,000min⁻¹, 8.75cN·m
- BT, NT, CAT, IT, HSK A, ST shanks are available
- Driven by E3000 Controller

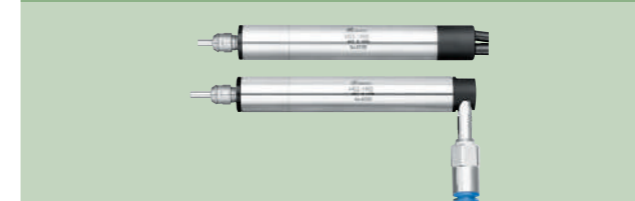
Air Motors & Spindles



Application for CNC lathes / Special purpose machines

Air-Speed SERIES One-piece type

Max.30,000min⁻¹ Max.130W
[ø25/23/20/19.05mm]



- Short body enables the spindle to mount in a limited space on a small NC/CNC lathe or on a special purpose machine

Air-Speed SERIES Modular type

Max.30,000min⁻¹ Max.130W
[ø30/25/22.8mm]



- Separate motor and spindle for flexible application changes
- Adjustable to various application through changing spindles

Air Turbine Spindles

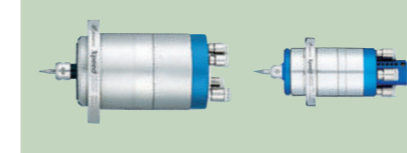


Application for CNC lathes / Special purpose machines

Application for machining centers and milling machines

Xpeed SERIES

Max.160,000min⁻¹
[ø65/40mm]



- Extreme accuracy-Runout 1μm
- For high precision small diameter drilling, internal grinding of ceramics
- Long life of spindle thanks to contactless rotation mechanism

PLANET SERIES

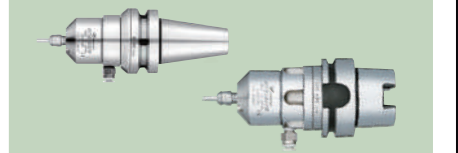
Max.65,000min⁻¹



- A milling machine turns into a jig grinder
- For high precision internal grinding

HTS SERIES

150,000min⁻¹
[For small diameter endmills and drills only]



- No thermal expansion on Z axis thanks to air turbine generating little heat
- Ultra high speed 150,000min⁻¹ with higher rigidity thanks to ceramic bearings
- BT, HSK E and straight (M2040) shanks are available