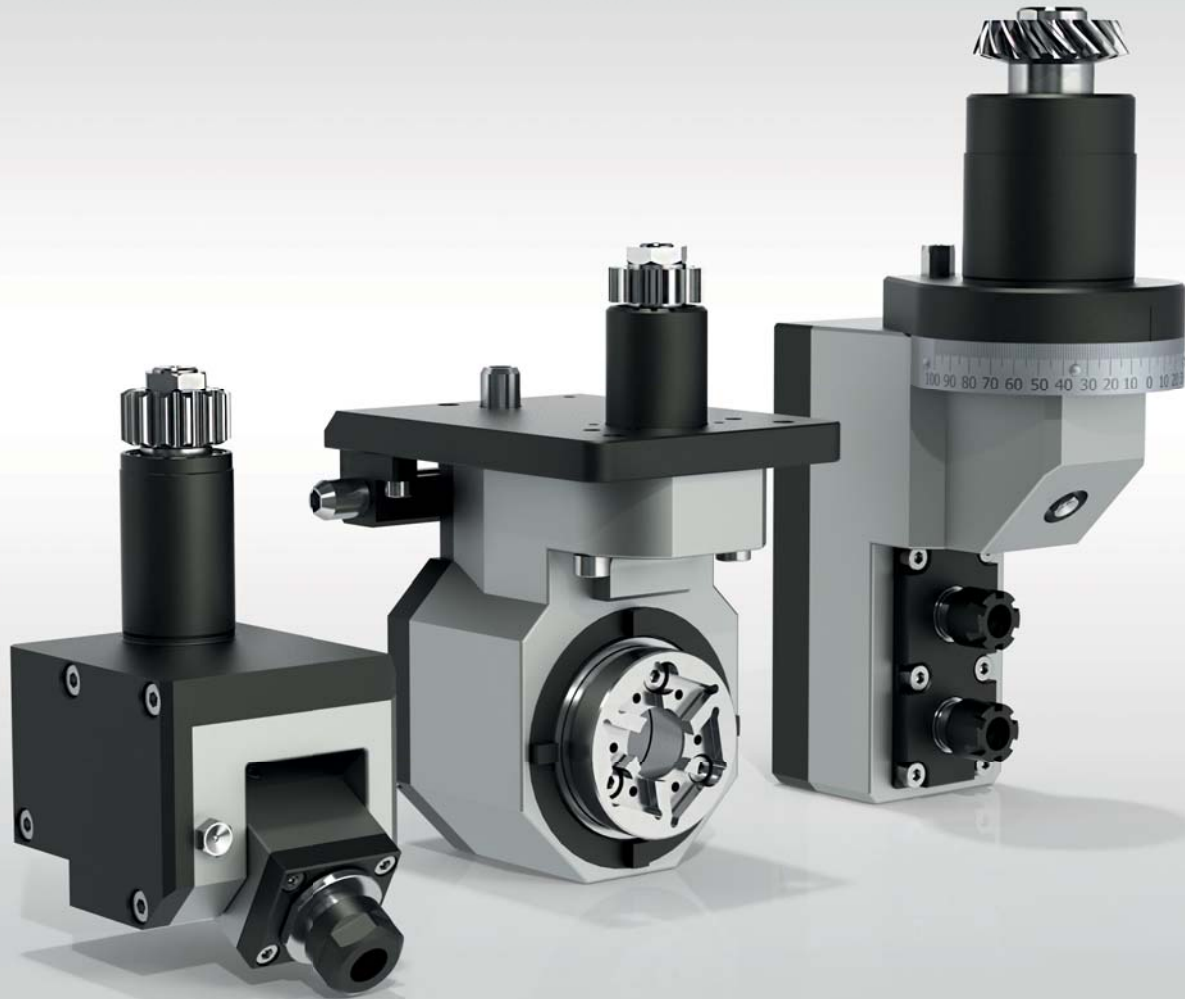


Live tooling for Swiss type lathes

CITIZEN - STAR

MADAULA
creative solutions



“Perfect work requires passion, precision
and well designed and reliable tools.
Madaula’s focus
is to supply these tools to world-wide industry”

Tradition in precision

Since 1956 **Madaula** has stood for the highest quality and the best reliability of its products.

We have more than 55 years of experience in design, development and manufacture all kind of accessories for the machine tool industry.



Depuis 1956, **Madaula** est synonyme de la plus haute qualité et de la meilleur fiabilité pour ses produits. Nous avons plus de 55 ans d'expérience dans la conception, le développement et la fabrication de tous types de accessoires pour l'industrie de la machine-outil.

Dal 1956 **Madaula** è sinonimo di massima qualità e di grande affidabilità. Abbiamo più di 55 anni di esperienza nella progettazione, sviluppo e produzione di tutti i tipi di accessori per il settore delle machine utensili.



Innovation and reliability

We're focused on our ability to create products adapted to our customer's needs, reduce their manufacturing cost, thereby improving their competitive edge in the market.

We work to ensure optimally designed, precise, robust and durable products.

We love challenges.

Our goal is to turn your vision into reality and thereby increase your productivity.

Nous nous sommes consacrés sur notre capacité à créer des produits adaptés aux besoins des clients, à réduire leurs coûts de fabrication et ainsi améliorer leur avantage compétitive sur le marché.

Nous travaillons pour créer des produits de conception optimale, durables, robustes et précis.

Nous aimons les défis.

Notre objectif est d'augmenter votre productivité.

Siamo concentrati sulla nostra capacità di creare prodotti adatti alle esigenze dei nostri clienti, ridurre i loro costi di produzione, migliorando in tal modo il loro vantaggio competitivo nel mercato.

Lavoriamo costantemente per progettare in modo ottimale i nostri prodotti per renderli precisi, robusti e durevoli.

Noi amiamo le sfide. Il nostro obiettivo è quello di trasformare la vostra richiesta in realtà e di conseguenza aumentare la vostra produttività.

All over the world

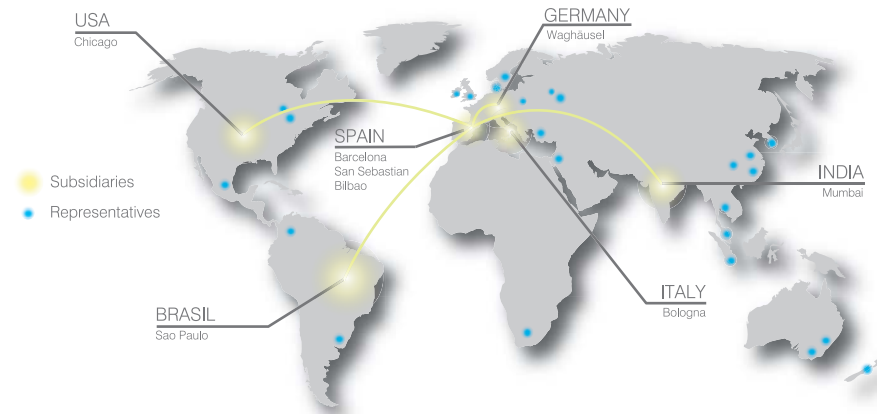


Our head office and factory are located in Barcelona, recognized city throughout the world by the creativity and constant innovation of its industries.

We sell all over the world with subsidiaries in Germany, USA, Italy, Brazil and India with representatives all over the world. We export the 80% of our production.

Notre siège social et l'usine sont situés à Barcelone, ville reconnue mondialment par sa la créativité et constante innovation. Nous vendons partout dans le globe avec des filiales en Allemagne, USA, Italie, Brésil et l'Inde, et avec des rprésentations dans le monde entier. Nous exportons le 80% de notre production.

La nostra sede principale e lo stabilimento si trova a Barcellona, città riconosciuta in tutto il mondo per la creatività e l'innovazione costante delle sue industrie. Vendiamo in tutto il mondo con filiali in Germania, Stati Uniti, Italia, Brasile e India con i rappresentanti di tutto il mondo. Esportiamo l'80% della nostra produzione.



New manufacturing facility

We welcome you to our brand new facility designed with modern, bright and eco-friendly architecture which includes open space offices and production area.

Nous avons le plaisir de vous accueillir dans ôtre nouveau bâtiment conçu de façon moderne, lumineux et respectueux de notre environnement qui comprend les bureaux et la production.

Vi diamo il benvenuto alla nostra nuovissima struttura progettata con architettura moderna, luminosa ed eco-friendly, che comprende uffici open space e zona di produzione.



Passion for precision

Precise and rigid manufacture
Adaptable to all types of machines
100% Checked and tested
High speed rotation
Longer tool life

Adjustable coolant nozzle.

Buse orientable pour l'arrosage.
Ugello refrigerante regolabile.

Improved sealing design combining a labyrinth and optimized friction seals to get hermetically sealed spindles.

Amélioration de la conception de l'étanchéité en combinant un labyrinthe et joints à friction optimisée pour obtenir une parfaite étanchéité.

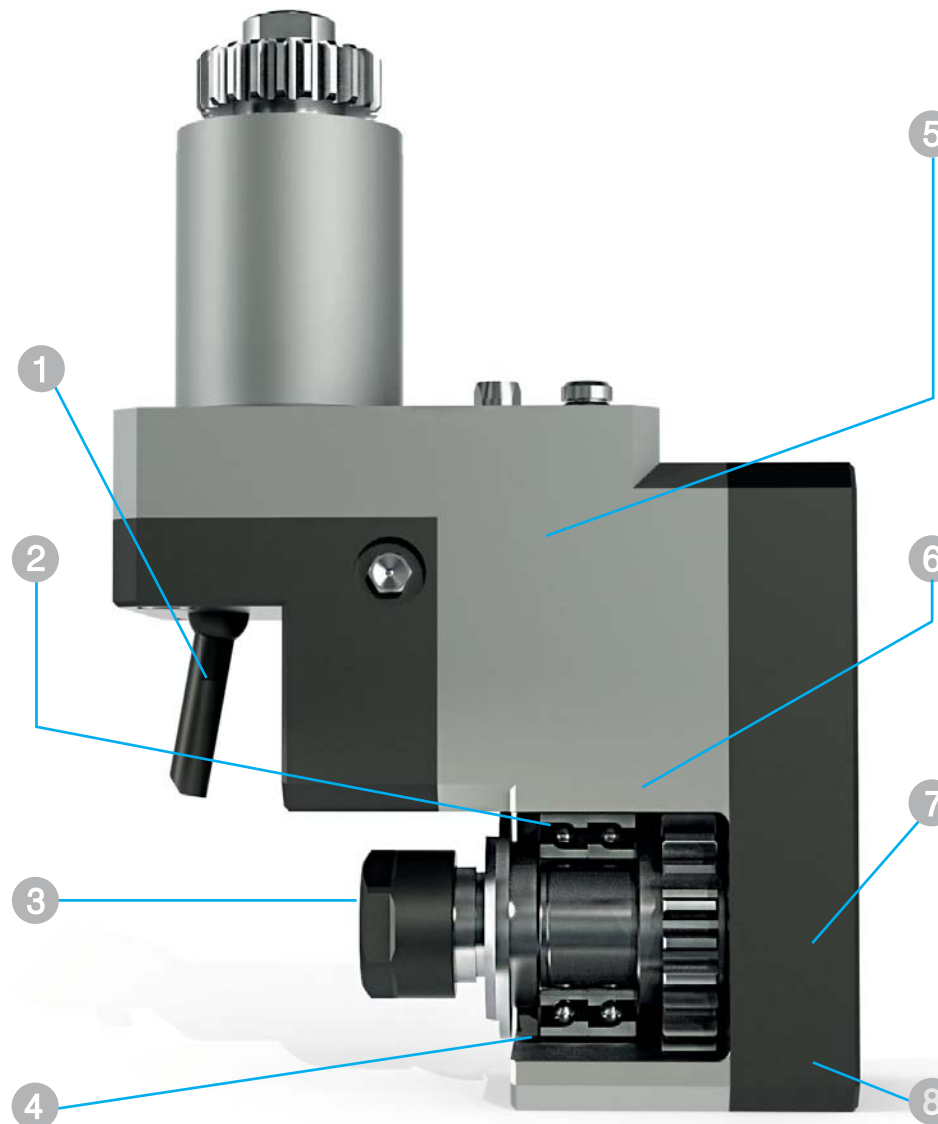
Design migliorato che combina labirinti e guarnizioni di tenuta, ottimizzati per ottenere mandrini ermetici.

Multiple output options.

Multiples options de sortie.
Diverse opzioni di uscita.

Primary labyrinth seal.

Joint à labyrinthe primaire.
Tenuta primaria a labirinto.



5 Hand matched or ground spiral bevel gears to minimize backlash. Smooth and quiet running with higher torque.

Engrenages conique-spirales rectifiés ou rodés pour un jeu minimale.
Fonctionnement souple et silencieux avec un couple élevé.

Abbinato a ingranaggi conici a spirale per ridurre al minimo il contraccolpo.
Fluida e silenziosa con una coppia più elevata.

6 High precision P4 quality preloaded bearings.

Roulements de haute précision précharges.

Cuscinetti di alta precisione qualità P4 precaricati.

7 Available with coolant through the spindle up to 80 bar.

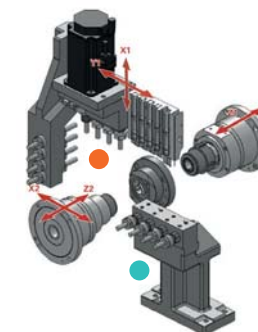
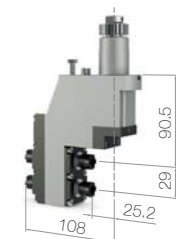
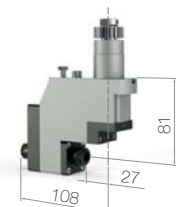
Disponibile avec passage du liquide de refroidissement à travers de la broche 80 bar.

Disponibili con refrigerante interno (mandrino) 80 bar.

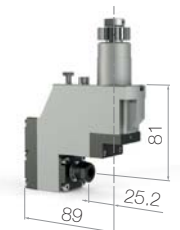
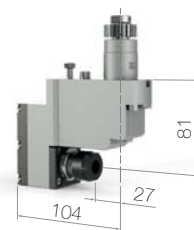
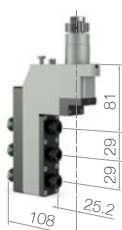
8 High grade synthetic grease for long life lubrication.

Lubrification à la graisse à longue durée de vie.

Grasso sintetico per la lubrificazione a lunga durata.



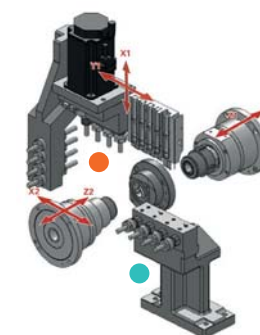
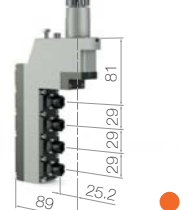
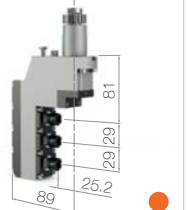
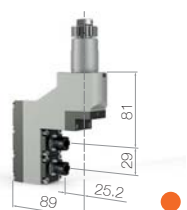
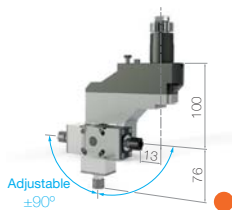
| Type | Axial | Axial Speeder | Axial Reducer | Radial Double Output | Radial 2+2 Outputs |
|------------------------------------|----------------------|----------------------|-----------------|-----------------------|-------------------------|
| Code Citizen ref. | CZ.000.A20 BSC210 | CZ.002.A20 BSC510 | CZ.003.A20 - | CZ.008.A20 BSE1007 | CZ.008.A20-4 BSE2007 |
| | ER-16 | ER-11 | ER-20 | ER-11 | ER-11M |
| RPM Max | 8.000 | 15.000 | 2.700 | 8.000 | 8.000 |
| | 1:1 | 1:3 | 3:1 | 1:1 | 1:1 |



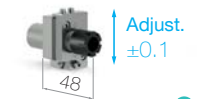
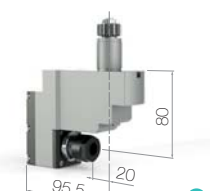
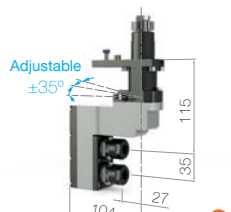
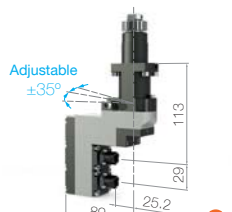
| Type | Radial 3+3 Outputs | Radial 4+4 Outputs | Radial Set-Back | Radial Set-Back | Radial Set-Back Speeder |
|------------------------------------|------------------------|--------------------|------------------------|-------------------|-------------------------|
| Code Citizen ref. | CZ.008.A20-6 BSE707 | CZ.008.A20-8 - | CZ.011.A20-A BSE107 | CZ.011.A20-B - | CZ.013.A20 - |
| | ER-11 | ER-11 | ER-11 | ER-16 | ER-11 |
| RPM Max | 8.000 | 8.000 | 8.000 | 8.000 | 15.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:2 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



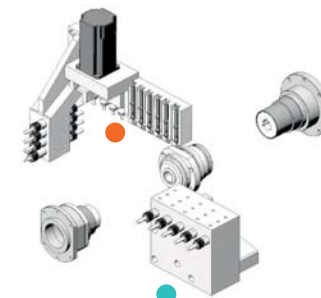
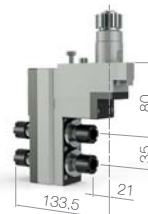
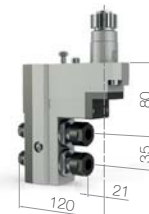
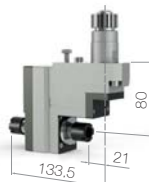
| Type | Radial Adjustable ±90° | Radial 2 Outputs | Radial 3 Outputs | Radial 4 Outputs | Thread Whirling ±15° | Thread Whirling ±30° |
|------------------------------------|------------------------|----------------------|------------------------|-------------------------|-------------------------|----------------------|
| Code Citizen ref. | CZ.021.A20 BSA107 | CZ.029.A20 BSE207 | CZ.029.A20-3 BSE607 | CZ.029.A20-4 BSE2007 | CZ.035.A20-15 BSW215 | CZ.035.A20-30 - |
| | ER-11M | ER-11M | ER-11M | ER-11M | Cutting head | Cutting head |
| RPM Max | 8.000 | 8.000 | 8.000 | 8.000 | 8.000 | 8.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |



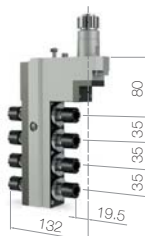
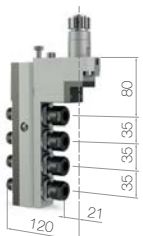
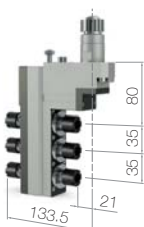
| Type | Axial Saw-Mill | Radial "Y" Axis ±35° 2 Outputs | Radial "Y" Axis ±35° 2 Outputs | Axial Back Rotary Tool | Radial Set-Back Back Rotary Tool | Tool Holder with Fine "Y" Axis Adjust. ±0.1 |
|------------------------------------|-----------------|--------------------------------|--------------------------------|------------------------|----------------------------------|---|
| Code Citizen ref. | CZ.038.A20 - | CZ.051.A20-A - | CZ.051.A20-B - | CZ.000.A20-BACK - | CZ.011.A20-BACK - | CZ.025.A20-BACK - |
| | Cyl-Shaft | ER-11M | ER-16 | ER-11 | ER-11 | ER-11M |
| RPM Max | 8.000 | 8.000 | 8.000 | 5.000 | 5.000 | - |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 | - |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



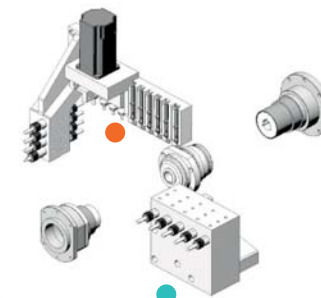
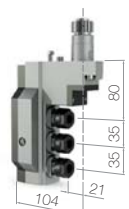
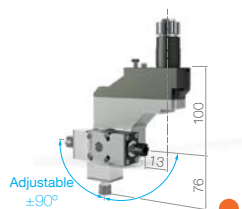
| Type | Axial | Axial Speeder | Radial Double Output | Radial 2+2 Outputs | Radial 2+2 Outputs |
|------------------------------------|-----------------------|----------------------|----------------------|--------------------|--------------------------|
| Code Citizen ref. | CZ.000.A32 GSC1110 | CZ.002.A32 BSC610 | CZ.008.A32 - | CZ.008.A32-4A - | CZ.008.A32-4B BSE3207 |
| | ER-16 | ER-11 | ER-16M | ER-16/ER11 | ER-16M |
| RPM Max | 5.000 | 15.000 | 5.000 | 5.000 | 5.000 |
| | 1:1 | 1:3 | 1:1 | 1:1 | 1:1 |



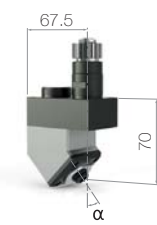
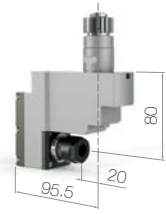
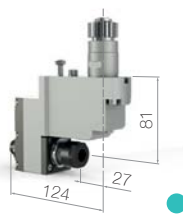
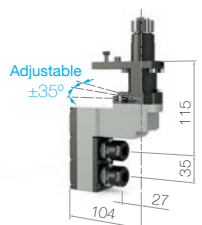
| Type | Radial 3+3 Outputs | Radial 4+4 Outputs | Radial 4+4 Outputs | Radial Set-Back | Radial Set-Back Speeder |
|------------------------------------|--------------------|--------------------|--------------------------|-----------------|-------------------------|
| Code Citizen ref. | CZ.008.A32-6B - | CZ.008.A32-8A - | CZ.008.A32-8B BSE3208 | CZ.011.A32 - | CZ.013.A32 - |
| | ER-16M | ER-16/ER11 | ER-16M | ER-16 | ER-11 |
| RPM Max | 5.000 | 5.000 | 5.000 | 5.000 | 15.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:3 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



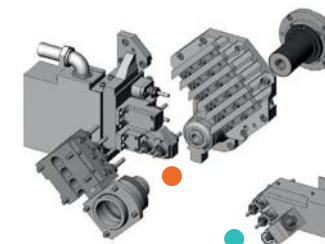
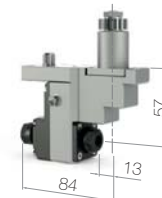
| Type | Radial Adjustable ±90° | Radial 3 Outputs | Radial 3 Outputs (Same Rotation Sense) | Polygon Maker | Thread Whirling ±15° | Thread Whirling ±30° |
|----------------------|------------------------|--------------------|--|----------------------|-------------------------|----------------------|
| Code Citizen ref. | CZ.021.A32 BSA3107 | CZ.029.A32-3A - | CZ.029.A32-3B - | CZ.034.A32 BSF509 | CZ.035.A32-15 BSW315 | CZ.035.A32-30 - |
| | ER-11M | ER-16 | ER-16 | Cyl-Shaft | Cutting head | Cutting head |
| RPM Max | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |



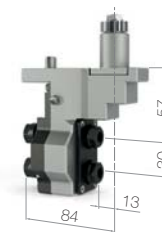
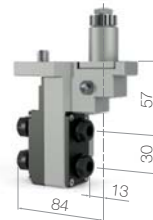
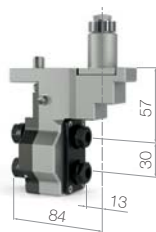
| Type | Radial "Y" Axis ±35° 2 Outputs | Axial Back Rotary Tool | Radial Set-Back Back Rotary Tool | Radial Set-Back Back Rotary Tool | Fix. Angle Speeder Back Rotary Tool | Tool Holder with Fine "Y" Axis Adjust. ±0.1 |
|----------------------|--------------------------------|------------------------|----------------------------------|----------------------------------|-------------------------------------|---|
| Code Citizen ref. | CZ.051.A32 - | CZ.000.A32-BACK - | CZ.011.A32-BACK-A - | CZ.011.A32-BACK-B - | CZ.012.A32-BACK - | CZ.025.A32-BACK - |
| | ER-16 | ER-16 | ER-16 | ER-16 | ER-11A | ER-16M |
| RPM Max | 8.000 | 5.000 | 5.000 | 5.000 | 10.000 | - |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:2 | - |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



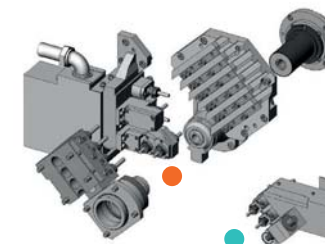
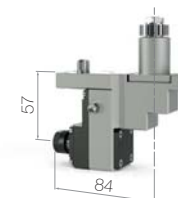
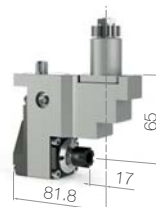
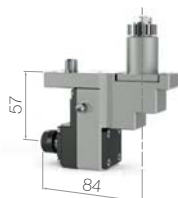
| Type | Axial | Axial | Axial Speeder | Radial Double Output |
|------------------------------------|----------------------------|-----------------------|-----------------------------|-----------------------------------|
| Code Citizen ref. | CZ.000.K12/K16-A GSC807 | CZ.000.K12/K16-B - | CZ.002.K12/K16 GSC807-3X | CZ.008.K12/K16 GSE2307/GSE2807 |
| | ER-11 | ER-16M | ER-11 | ER-11 |
| RPM Max | 6.000 | 6.000 | 15.000 | 6.000 |
| | 1:1 | 1:1 | 1:3 | 1:1 |



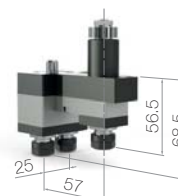
| Type | Radial Double Output Speeder | Radial 2+2 Outputs | Radial 2+2 Outputs | Radial 2+2 Outputs Speeder |
|------------------------------------|--------------------------------|--------------------------------------|------------------------------|---------------------------------|
| Code Citizen ref. | CZ.008.K12/K16-S GSE2807-2X | CZ.008.K12/K16-4A GSE2007/GSE2507 | CZ.008.K12/K16-4B GSE2407 | CZ.008.K12/K16-4S GSE2507-2X |
| | ER-11 | ER-11 | ER-11 | ER-11 |
| RPM Max | 12.000 | 6.000 | 6.000 | 12.000 |
| | 1:2 | 1:1 | 1:1 | 1:2 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



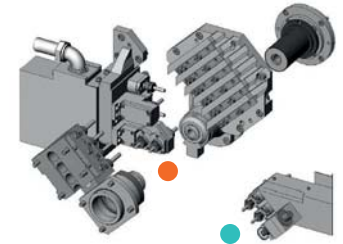
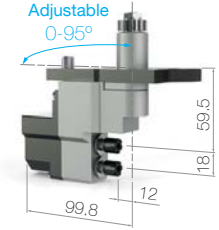
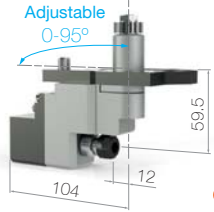
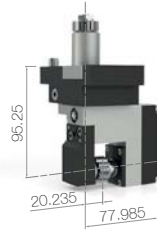
| Type | Radial Set-Back | Radial Set-Back Subspindle | Radial Set-Back Speeder | Radial Set-Back Speeder Subspindle |
|------------------------------------|-----------------------------------|---------------------------------------|------------------------------|------------------------------------|
| Code Citizen ref. | CZ.011.K12/K16 GSE2107/GSE2607 | CZ.011.K12/K16-SUB GSE2207/GSE2707 | CZ.013.K12/K16 GSE2207-2X | CZ.013.K12/K16-SUB GSE2207-2X |
| | ER-11M | ER-11 | ER-11M | ER-11 |
| RPM Max | 6.000 | 6.000 | 12.000 | 12.000 |
| | 1:1 | 1:1 | 1:2 | 1:2 |



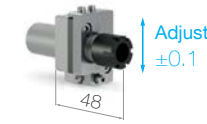
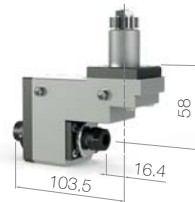
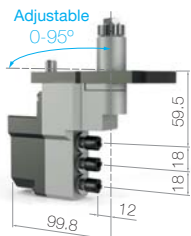
| Type | Axial Double Output | Axial Triple Output Speeder | Polygon Maker Reducer | Thread Whirling ±15° |
|------------------------------------|--------------------------|--------------------------------|-----------------------|-----------------------------|
| Code Citizen ref. | CZ.023.K12/K16 GSC860 | CZ.023.K12/K16-S GSC860S-2X | CZ.034.K12/K16 - | CZ.035.K12/K16-15 GSW101 |
| | ER-11 | ER-11 | Cyl-Shaft | Cutting Head |
| RPM Max | 6.000 | 6.000/12.000 | 2.000 | 6.000 |
| | 1:1 | 1:1/1:2 | 3:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



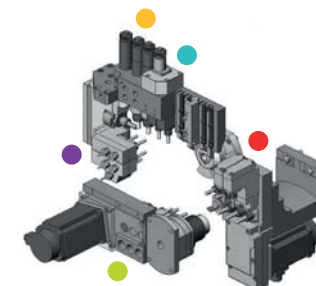
| Type | Thread Whirling ±30° | Gear Hobbing ±30° | Axial Saw-Mill Reducer | Radial "Y" Axis 0-95° | Radial "Y" Axis 0-95° 2 Outputs |
|------------------------------------|------------------------|---------------------|--------------------------|-----------------------|---------------------------------|
| Code Citizen ref. | CZ.035.K12/K16-30 - | CZ.036.K12/K16 - | CZ.038.K12/K16 GSS850 | CZ.051.K12/K16 - | CZ.051.K12/K16-2 - |
| | Cutting Head | Cyl-Shaft | Cyl-Shaft | ER-11 | ER-8M |
| RPM Max | 6.000 | 6.000 | 3.000 | 6.000 | 6.000 |
| | 1:1 | 1:1 | 2:1 | 1:1 | 1:1 |



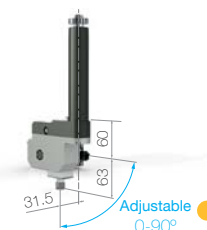
| Type | Radial "Y" Axis 0-95° 3 Outputs | Axial Back Rotary Tool | Radial Set-Back Back Rotary Tool | Radial Set-Back Speeder Back Rotary Tool | Tool Holder with Fine "Y" Axis Adjust. ±0.1 |
|------------------------------------|---------------------------------|----------------------------|----------------------------------|--|---|
| Code Citizen ref. | CZ.051.K12/K16-3 - | CZ.000.K12-BACK GSC1107 | CZ.011.K12-BACK GSS1430 | CZ.013.K12-BACK GSS1430-2X | CZ.025.K12-BACK - |
| | ER-8M | ER-11 | ER-11 | ER-11 | ER-11M |
| RPM Max | 6.000 | 6.000 | 6.000 | 10.000 | - |
| | 1:1 | 1:1 | 1:1 | 1:1.8 | - |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



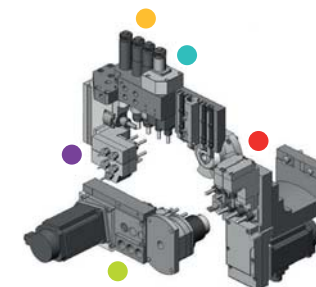
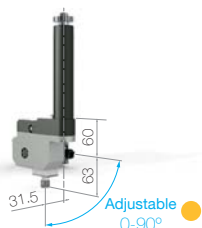
| Type | Axial | Axial Offset | Axial Speeder | Radial Double Output | Radial Double Output Speeder |
|------------------------------------|----------------------------------|------------------------------|------------------------------|------------------------------|----------------------------------|
| Code Citizen ref. | CZ.000.L16/L20 GSC510/GSC1010 | CZ.001.L16/L20 - | CZ.002.L16/L20 GSC510-3X | CZ.008.L16/L20 - | CZ.008.L16/L20-S GSE306-DE312 |
| | ER-16 | ER-16 | ER-11 | ER-11M | ER-11 |
| RPM Max | 5.000 | 5.000 | 15.000 | 5.000 | 15.000 |
| | 1:1 | 1:1 | 1:3 | 1:1 | 1:3 |
| Machine | Compatible with all versions | Compatible with all versions | Compatible with all versions | Compatible with all versions | Compatible with all versions |



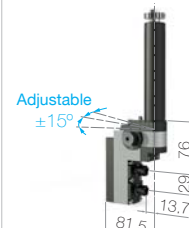
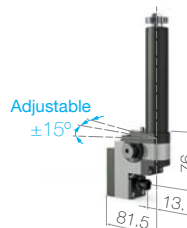
| Type | Radial 2+2 Outputs | Radial 3+3 Outputs | Radial Set-Back | Radial Set-Back Speeder | Radial Adjustable 0-90° |
|------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Code Citizen ref. | CZ.008.L16/L20-4 - | CZ.008.L16/L20-6 GSE1307 | CZ.011.L16/L20 GSE306 | CZ.013.L16/L20 - | CZ.021.L16/L20 - |
| | ER-11M | ER-11M | ER-11M | ER-11M | ER-11M |
| RPM Max | 5.000 | 5.000 | 5.000 | 15.000 | 5.000 |
| | 1:1 | 1:1 | 1:1 | 1:3 | 1:1 |
| Machine | Compatible with all versions | Compatible with all versions | Compatible with all versions | Compatible with all versions | Compatible with all versions |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



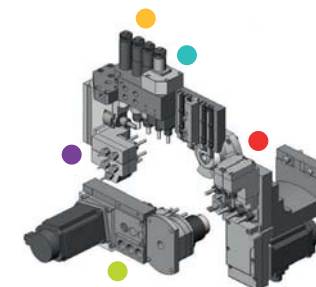
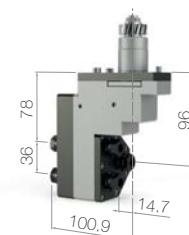
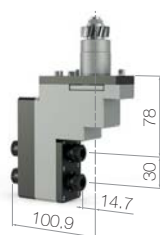
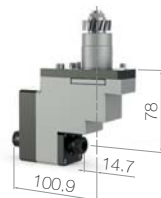
| Type | Radial Adjustable 0-90° Speeder | Axial Offset Reducer | Radial 2 Outputs | Radial 3 Outputs | Thread Whirling ±15° |
|---------------------|---------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Code | CZ.021.L16/L20-S | CZ.027.L16/L20 | CZ.029.L16/L20-2 | CZ.029.L16/L20-3 | CZ.035.L16/L20-15 |
| Citizen ref. | - | - | - | - | LSW215 |
| | ER-11M | ER-16 | ER-11M | ER-11M | Cutting head |
| RPM Max | 15.000 | 4.500 | 5.000 | 5.000 | 5.000 |
| | 1:2.5 | 1:0.75 | 1:1 | 1:1 | 1:1 |
| Machine | Compatible with all versions | Compatible with all versions | Compatible with all versions | Compatible with all versions | Compatible with all versions |



| Type | Thread Whirling ±30° | Axial Saw-Mill Reducer | Radial "Y" Axis ±15° | Radial "Y" Axis ±15° Double Output | Axial |
|---------------------|------------------------------|------------------------------|------------------------------|------------------------------------|-----------------------------|
| Code | CZ.035.L16/L20-30 | CZ.038.L16/L20 | CZ.051.L16/L20-A | CZ.051.L16/L20-B | CZ.000.L20-S |
| Citizen ref. | - | GSS510 | GSA107 | - | GSC907 |
| | Cutting head | Cyl-Shaft | ER-11M | ER-11M | ER-11 |
| RPM Max | 5.000 | 2.500 | 5.000 | 5.000 | 5.000 |
| | 1:1 | 2:1 | 1:1 | 1:1 | 1:1 |
| Machine | Compatible with all versions | Compatible with all versions | Compatible with all versions | Compatible with all versions | L20-VIII/L20E/L20-X/L-20XII |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



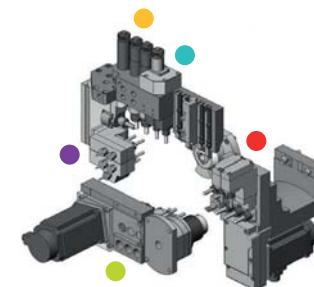
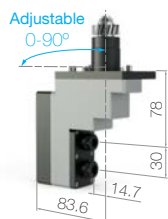
| Type | End Face Drilling (Without Rotatory Tool) | Axial | Radial Double Output | Radial 2+2 Outputs | Radial 3+3 Outputs |
|----------------------|--|------------------------|----------------------|--------------------------|--------------------------|
| Code Citizen ref. | CZ.029.L20N GSC3010/GSC3110 | CZ.000.L20N GSC1210 | CZ.008.L20N - | CZ.008.L20N-4 GSE3107 | CZ.008.L20N-6 GSE3207 |
| | - | ER-16 | ER-11 | ER-11 | ER-11 |
| RPM Max | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |
| Machine | L20E/L20-X | L20E/L20-X | L20E/L20-X | L20E/L20-X | L20E/L20-X |



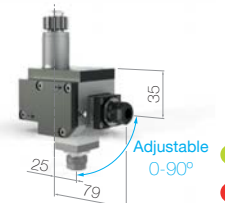
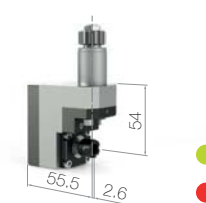
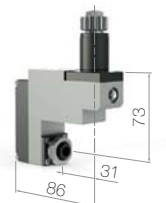
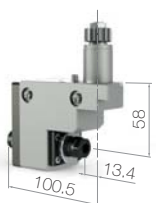
| Type | Axial Double Output | Polygon Maker Reducer | Thread Whirling ±15° | Thread Whirling ±30° | Gear Hobbing ±30° |
|----------------------|------------------------|--------------------------|----------------------|----------------------|---------------------|
| Code Citizen ref. | CZ.023.L20N GSC1307 | CZ.034.L20N - | CZ.035.L20N-15 - | CZ.035.L20N-30 - | CZ.036.K12/K16 - |
| | ER-11 | Cyl-Shaft | Cutting head | Cutting head | Cyl-Shaft |
| RPM Max | 5.000 | 1.600 | 5.000 | 5.000 | 6.000 |
| | 1:1 | 3:1 | 1:1 | 1:1 | 1:1 |
| Machine | L20E/L20-X | L20E/L20-X | L20E/L20-X | L20E/L20-X | L20E/L20-X |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



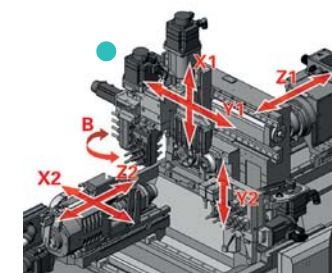
| Type | Radial "Y" Axis 0-90° | Radial Set-Back Back Rotary Tool | Tool Holder with Fine "Y" Axis Adjust. ±0.1 | Axial Back Rotary Tool | Axial Speeder Back Rotary Tool |
|------------------------------------|-----------------------|-------------------------------------|--|-----------------------------|-----------------------------------|
| Code Citizen ref. | CZ.051.L20N - | CZ.011.L16/L20-BACK - | CZ.025.L16/L20-BACK - | CZ.000.L20N-BACK GSE3307 | CZ.002.L20N-BACK GSE3507 |
| | ER-11 | ER-11 | ER-16M | ER-11 | ER-11 |
| RPM Max | 5.000 | 5.000 | - | 5.000 | 15.000 |
| | 1:1 | 1:1 | - | 1:1 | 1:3 |
| Machine | L20E/L20-X | L16/L20-VII/L20-VIII | L16/L20-VII/L20-VIII | L20E/L20-X/L-20XII | L20E/L20-X/L-20XII |



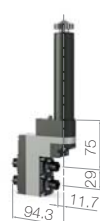
| Type | Radial Set-Back Back Rotary Tool | Radial Set-Back Back Rotary Tool | Radial Set-Back Speeder Back Rotary Tool | Radial Adjustable 0-90° Reducer Back Rotary Tool | Saw-Mill Back Rotary Tool |
|------------------------------------|-------------------------------------|-------------------------------------|---|---|------------------------------|
| Code Citizen ref. | CZ.011.L20N-BACK-A GSS1330 | CZ.011.L20N-BACK-B GSC1507 | CZ.013.L20N-BACK - | CZ.021.L20N-BACK - | CZ.030.L20N-BACK - |
| | ER-11 | ER-11 | ER-11M | ER-11M | Cyl-Shaft |
| RPM Max | 5.000 | 5.000 | 10.000 | 4.000 | 5.000 |
| | 1:1 | 1:1 | 1:2 | 1.26:1 | 1:1 |
| Machine | L20E/L20-X/L-20XII | L20-X/L-20XII | L20E/L20-X/L-20XII | L20E/L20-X/L-20XII | L20E/L20-X/L-20XII |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



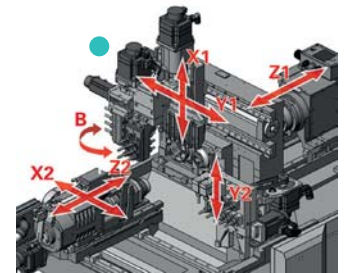
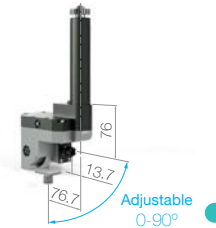
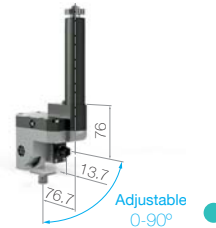
| Type | Axial | Axial Offset | Axial Speeder | Axial Reducer |
|------------------------------------|--------------------------|---------------------|-----------------------------|---------------------|
| Code Citizen ref. | CZ.000.L25/L32 GSC310 | CZ.001.L25/L32 - | CZ.002.L25/L32 GSE310-3X | CZ.003.L25/L32 - |
| | ER-16 | ER-16 | ER-11M | ER-20M |
| RPM Max | 6.000 | 6.000 | 15.000 | 3.000 |
| | 1:1 | 1:1 | 1:3 | 2:1 |



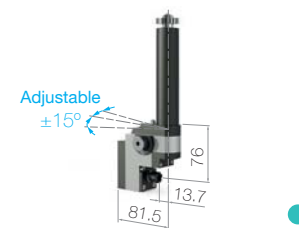
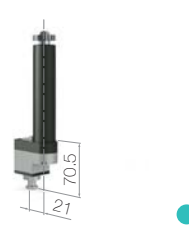
| Type | Radial Double Output | Radial Double Output Speeder | Radial 2+2 Outputs | Radial 3+3 Outputs |
|------------------------------------|--------------------------|-------------------------------|-----------------------|-----------------------|
| Code Citizen ref. | CZ.008.L25/L32 GSX310 | CZ.008.L25/L32-S GSX310-3X | CZ.008.L25/L32-4 - | CZ.008.L25/L32-6 - |
| | ER-11M | ER-11M | ER-11M | ER-11M |
| RPM Max | 6.000 | 15.000 | 6.000 | 6.000 |
| | 1:1 | 1:3 | 1:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



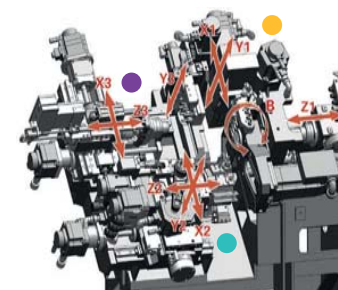
| Type | Radial Set-Back | Radial Set-Back Speeder | Radial Adjustable 0-90° | Radial Adjustable 0-90° Speeder |
|----------------------|---------------------|-------------------------|-------------------------|---------------------------------|
| Code Citizen ref. | CZ.011.L25/L32 - | CZ.013.L25/L32S - | CZ.021.L25/L32 - | CZ.021.L25/L32-S - |
| | ER-11M | ER-11M | ER-11M | ER-11M |
| RPM Max | 6.000 | 15.000 | 6.000 | 15.000 |
| | 1:1 | 1:3 | 1:1 | 1:2.5 |



| Type | Thread Whirling ±15° | Thread Whirling ±25° | Axial Saw-Mill Reducer | Radial "Y" Axis ±15° |
|----------------------|------------------------|-----------------------------|--------------------------|----------------------|
| Code Citizen ref. | CZ.035.L25/L32-15 - | CZ.035.L25/L32-25 LSW101 | CZ.038.L25/L32 GSS510 | CZ.051.L25/L32 - |
| | Cutting head | Cutting head | Cyl-Shaft | ER-11M |
| RPM Max | 6.000 | 6.000 | 3.000 | 6.000 |
| | 1:1 | 1:1 | 2:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



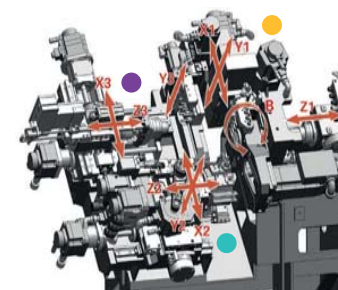
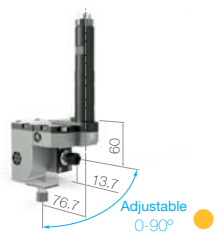
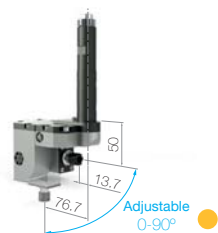
| Type | Axial | Axial | Axial Offset | Axial Offset | Axial Speeder |
|------------------------------------|----------------------------|-----------------------|-----------------------|-----------------------|-----------------------------|
| Code Citizen ref. | CZ.000.M12/M16-A GSC607 | CZ.000.M12/M16-B - | CZ.001.M12/M16-A - | CZ.001.M12/M16-B - | CZ.002.M12/M16 GSC607-2X |
| | ER-11 | ER-16M | ER-16M | ER-16A | ER-11 |
| RPM Max | 8.000 | 8.000 | 8.000 | 8.000 | 15.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:2 |



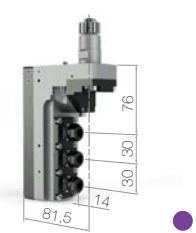
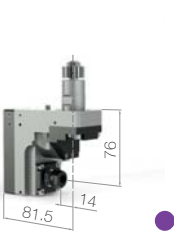
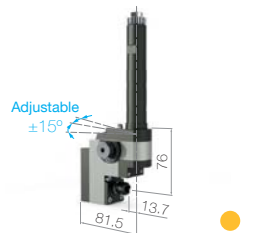
| Type | Radial Double Output | Radial Double Output Speeder | Radial Set-Back | Radial Set-Back | Radial Set-Back Speeder |
|------------------------------------|-----------------------------|-------------------------------|----------------------------|----------------------------|-----------------------------|
| Code Citizen ref. | CZ.008.M12/M16 GSE507-DE | CZ.008.M12/M16-S GSE507-DS | CZ.011.M12/M16-A GSE507 | CZ.011.M12/M16-B GSE508 | CZ.013.M12/M16 GSE507-2X |
| | ER-11/ER-8M | ER-11M | ER-11 | ER-11 | ER-11 |
| RPM Max | 8.000 | 15.000 | 8.000 | 8.000 | 15.000 |
| | 1:1 | 1:2 | 1:1 | 1:1 | 1:2 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



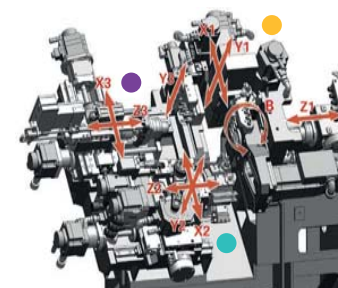
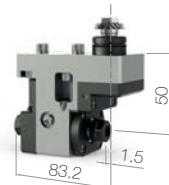
| Type | Radial Adjustable 0-90° | Radial Adjustable 0-90° Speeder | Polygon Maker Reducer | Thread Whirling ±15° | Thread Whirling ±30° |
|------------------------------------|--------------------------|---------------------------------|--------------------------|-----------------------------|------------------------|
| Code Citizen ref. | CZ.021.M12/M16 GSA507 | CZ.021.M12/M16-S GSA407 | CZ.034.M12/M16 GSE509 | CZ.035.M12/M16-15 LSW424 | CZ.035.M12/M16-30 - |
| | ER-11M | ER-11M | Cyl-Shaft | Cutting Head | Cutting Head |
| RPM Max | 8.000 | 20.000 | 5.000 | 8.000 | 8.000 |
| | 1:1 | 1:2.5 | 1.6:1 | 1:1 | 1:1 |



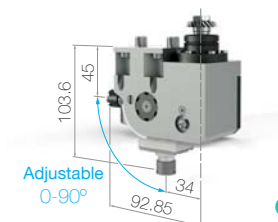
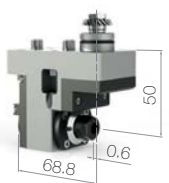
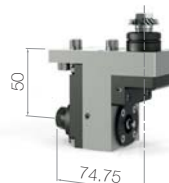
| Type | Axial Saw-Mill Reducer | Radial "Y" Axis ±15° | Axial Back Rotary Tool | Radial Set-Back Back Rotary Tool | Radial 3 Outputs Back Rotary Tool |
|------------------------------------|--------------------------|----------------------|-------------------------------|----------------------------------|-----------------------------------|
| Code Citizen ref. | CZ.038.M12/M16 GSS250 | CZ.051.M12/M16 - | CZ.000.M12/M16-BACK GSE307 | CZ.011.M12/M16-BACK - | CZ.029.M12/M16-BACK-3 MSE607 |
| | Cyl-Shaft | ER-11M | ER-11 | ER-11 | ER-11 |
| RPM Max | 4.000 | 8.000 | 8.000 | 8.000 | 8.000 |
| | 2:1 | 1:1 | 1:1 | 1:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



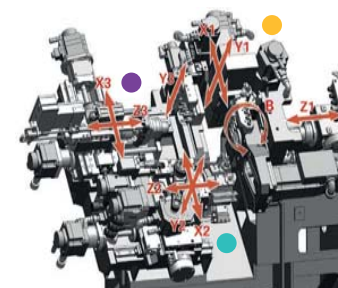
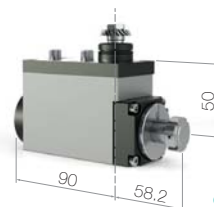
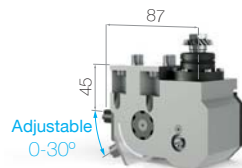
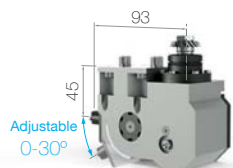
| Type | Axial | Axial Speeder | Radial Double Output | Radial 2+2 Outputs |
|------------------------------------|---------------------------|------------------------------|------------------------------|------------------------|
| Code Citizen ref. | CZ.000.M12/M16T MSC106 | CZ.002.M12/M16T MSC106-2X | CZ.008.M12/M16T MSE106-DS | CZ.008.M12/M16T-4 - |
| | ER-11M | ER-11 | ER-11 | ER-11M |
| RPM Max | 6.500 | 13.000 | 6.500 | 6.500 |
| | 1:1 | 1:2 | 1:1 | 1:1 |



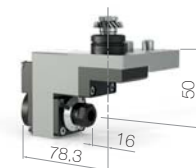
| Type | Radial Set-Back | Radial Set-Back Subspindle | Radial Set-Back Speeder | Radial Adjustable 0-90° |
|------------------------------------|-----------------------------|---------------------------------|------------------------------|---|
| Code Citizen ref. | CZ.011.M12/M16T MSE106-K | CZ.011.M12/M16T-SUB MSE306-K | CZ.013.M12/M16T MSE106-3X | CZ.021.M12/M16T MSA103/MSA203/MSA303 |
| | ER-11 | ER-11 | ER-11 | ER-11M |
| RPM Max | 6.500 | 6.500 | 15.000 | 6.500 |
| | 1:1 | 1:1 | 1:3 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



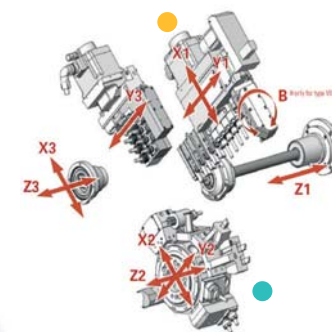
| Type | Radial Adjustable 0-30° Speeder | Radial Adjustable 0-30° Speeder | Polygon Maker Reducer | Thread Whirling ±15° Reducer |
|------------------------------------|---------------------------------|---------------------------------|---------------------------|------------------------------|
| Code Citizen ref. | CZ.021.M12/M16T-2S MSA103-2X | CZ.021.M12/M16T-3S MSA103-3X | CZ.034.M12/M16T MSP160 | CZ.035.M12/M16T-15 MSW101 |
| | ER-8M | ER-8M | Cyl-Shaft | Cutting Head |
| RPM Max | 13.000 | 15.000 | 2.000 | 3.250 |
| | 1:2 | 1:3 | 3:1 | 2:1 |



| Type | Thread Whirling ±30° Reducer | Gear Hobbing ±10° Reducer | Axial "Y" Axis ±3 mm | Radial "Y" Axis |
|------------------------------------|------------------------------|---------------------------|----------------------|---------------------------|
| Code Citizen ref. | CZ.035.M12/M16T-30 - | CZ.036.M12/M16T MSH132 | CZ.050.M12/M16T - | CZ.051.M12/M16T MSM106 |
| | Cutting Head | Cyl-Shaft | ER-11M | ER-11 |
| RPM Max | 3.250 | 2.000 | 6.500 | 6.500 |
| | 2:1 | 3:1 | 1:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



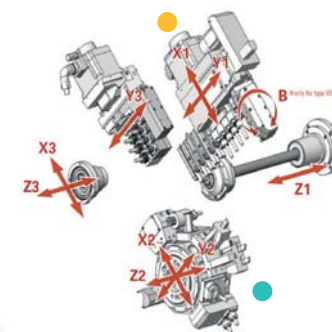
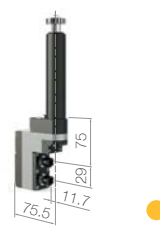
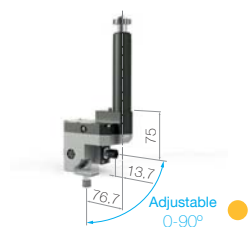
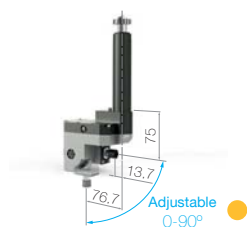
| Type | Axial | Axial Offset | Axial Speeder | Radial Double Output | Radial Double Output Speeder |
|------------------------------------|--------------------------|---------------------|-----------------------------|--------------------------|-------------------------------|
| Code Citizen ref. | CZ.000.M20/M32 GSC510 | CZ.001.M20/M32 - | CZ.002.M20/M32 GSC510-3X | CZ.008.M20/M32 GSE306 | CZ.008.M20/M32-S GSE306-3X |
| | ER-16 | ER-16 | ER-11M | ER-11M | ER-11M |
| RPM Max | 6.000 | 6.000 | 15.000 | 6.000 | 15.000 |
| | 1:1 | 1:1 | 1:3 | 1:1 | 1:3 |



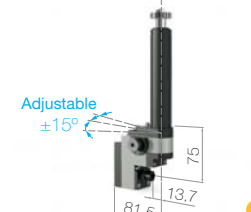
| Type | Radial 2+2 Outputs | Radial 3+3 Outputs | Radial Set-Back | Radial Set-Back | Radial Set-Back Speeder |
|------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|
| Code Citizen ref. | CZ.008.M20/M32-4 - | CZ.008.M20/M32-6 - | CZ.011.M20/M32-A - | CZ.011.M20/M32-B - | CZ.013.M20/M32 - |
| | ER-11M | ER-11M | ER-11M | ER-11M | ER-11M |
| RPM Max | 6.000 | 6.000 | 6.000 | 6.000 | 15.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:3 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



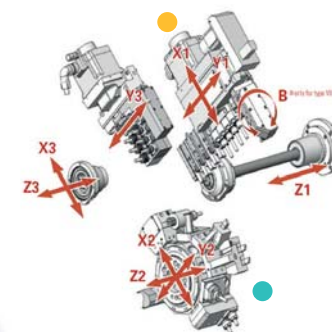
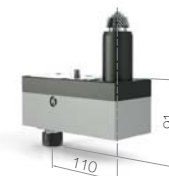
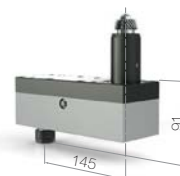
| Type | Radial Adjustable 0-90° | Radial Adjustable 0-90° Speeder | Radial 2 Outputs | Radial 3 Outputs |
|----------------------|---------------------------|---------------------------------|-----------------------|-----------------------|
| Code Citizen ref. | CZ.021.M20/M32 GSA-107 | CZ.021.M20/M32 - | CZ.029.M20/M32-2 - | CZ.029.M20/M32-3 - |
| | ER-11M | ER-11M | ER-11M | ER-11M |
| RPM Max | 6.000 | 15.000 | 6.000 | 6.000 |
| | 1:1 | 1:2.5 | 1:1 | 1:1 |



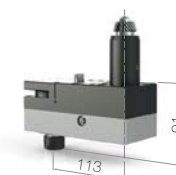
| Type | Thread Whirling ±15° | Thread Whirling ±30° | Axial Saw-Mill Reducer | Radial "Y" Axis ±15° |
|----------------------|-----------------------------|------------------------|---------------------------|----------------------|
| Code Citizen ref. | CZ.035.M20/M32-25 LSW215 | CZ.035.M20/M32-30 - | CZ.038.M20/M32 GSS-510 | CZ.051.M20/M32 - |
| | Cutting Head | Cutting Head | Cyl-Shaft | ER-11M |
| RPM Max | 6.000 | 6.000 | 3.000 | 6.000 |
| | 1:1 | 1:1 | 2:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



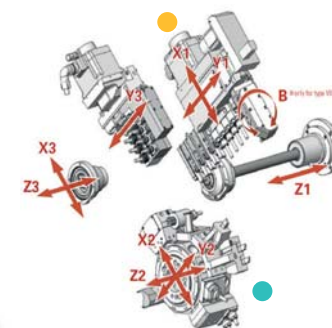
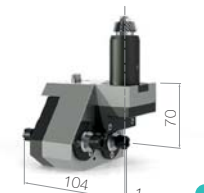
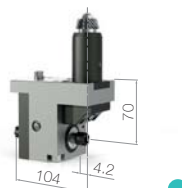
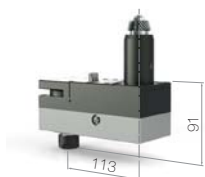
| Type | Axial | Axial | Axial | Axial Offset | Axial Offset |
|------------------------------------|-----------------------------|------------------------|------------------------|------------------------|------------------------|
| Code Citizen ref. | CZ.000.M20/M32T-A KSC110 | CZ.000.M20/M32T-B - | CZ.000.M20/M32T-C - | CZ.001.M20/M32T-A - | CZ.001.M20/M32T-B - |
| | ER-16 | ER-20 | ER-25 | ER-16 | ER-16 |
| RPM Max | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |







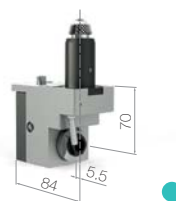
| Type | Axial Speeder | Axial Speeder | Axial Offset Reducer | Axial IC 15 bar | Axial Offset IC 15 bar |
|------------------------------------|--------------------------------|---------------------------------|----------------------|----------------------|---------------------------|
| Code Citizen ref. | CZ.002.M20/M32T-2 KSC110-2X | CZ.002.M20/M32T-3A KSC110-3X | CZ.003.M20/M32T - | CZ.005.M20/M32T - | CZ.006.M20/M32T - |
| | ER-11 | ER-11 | ER-16 | ER-20 | ER-16 |
| RPM Max | 10.000 | 15.000 | 2.500 | 5.000 | 5.000 |
| | 1:2 | 1:3 | 2:1 | 1:1 | 1:1 |



Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque






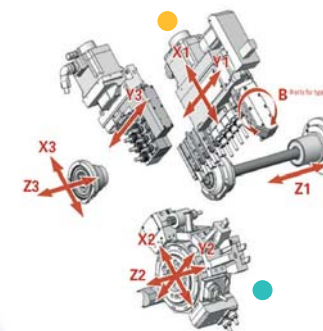
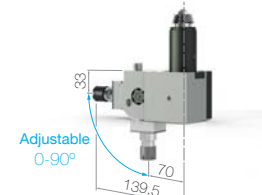
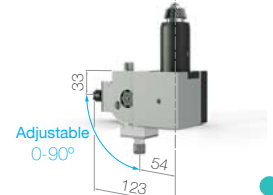
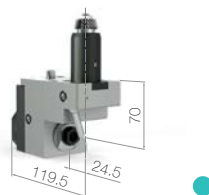
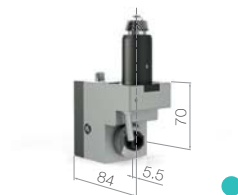
| Type | Axial Offset Speeder IC 15 bar  | Radial Double Output | Radial Double Output | Radial 2+2 Outputs |
|---|--|------------------------|----------------------------------|------------------------|
| Code Citizen ref. | CZ.007.M20/M32T - | CZ.008.M20/M32T-A - | CZ.008.M20/M32T-B KSE110-DE32 | CZ.008.M20/M32T-4 - |
|  | ER-16 | ER-11M | ER-16A/ER-16M | ER-11M |
| RPM Max | 15.000  | 5.000 | 5.000 | 5.000 |
|  | 1:3 | 1:1 | 1:1 | 1:1 |







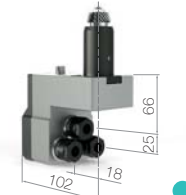
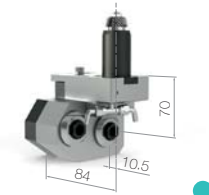
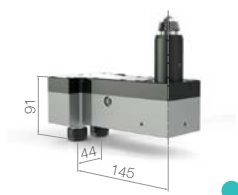
| Type | Radial | Radial Set-Back | Radial Set-Back | Radial Set-Back |
|---|----------------------|------------------------|-----------------------------|-----------------------------|
| Code Citizen ref. | CZ.010.M20/M32T - | CZ.011.M20/M32T-A - | CZ.011.M20/M32T-B KSE110 | CZ.011.M20/M32T-C KSE310 |
|  | ER-25 | ER-20A | ER-16A | ER-16A |
| RPM Max | 5.000 | 5.000 | 5.000 | 5.000 |
|  | 1:1 | 1:1 | 1:1 | 1:1 |




Symbology

-  Internal coolant
-  High frequency
-  Speeder
-  Reducer / Higher torque







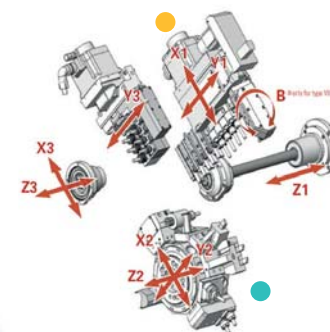
| Type | Radial Set-Back Speeder | Radial Set-Back IC 80 bar  | Radial Adjustable 0-90° | Radial Adjustable 0-90° |
|---|--|--|-------------------------------|-------------------------|
| Code Citizen ref. | CZ.013.M20/M32T KSE110-2X | CZ.017.M20/M32T KSE110-KAI | CZ.021.M20/M32T-A KSA107BT | CZ.021.M20/M32T-B - |
|  | ER-16A | ER-16A | ER-11M | ER-16M |
| RPM Max | 10.000  | 5.000 | 5.000 | 5.000 |
|  | 1:2 | 1:1 | 1:1 | 1:1 |



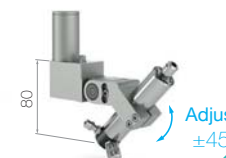
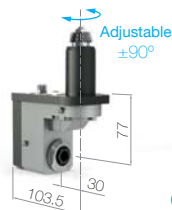
| Type | Axial Double Output | Radial 2 Outputs | Radial 3 Outputs Reducer | Thread Whirling ±15° |
|---|---------------------------|------------------------|---|-------------------------------|
| Code Citizen ref. | CZ.023.M20/M32T KSC510 | CZ.029.M20/M32T-2 - | CZ.029.M20/M32T-3 - | CZ.035.M20/M32T-15 KSW-101 |
|  | ER-16 | ER-16A | ER-16 | Cutting Head |
| RPM Max | 5.000 | 5.000 | 3.300  | 5.000 |
|  | 1:1 | 1:1 | 1.5:1 | 1:1 |

Symbology

-  Internal coolant
-  High frequency
-  Speeder
-  Reducer / Higher torque



| Type | Thread Whirling $\pm 30^\circ$ | Gear Hobbing $\pm 30^\circ$ | Gear Hobbing $\pm 30^\circ$ | Axial Saw-Mill |
|---------|--------------------------------|-----------------------------|------------------------------|-------------------|
| Code | CZ.035.M20/M32T-30 | CZ.036.M20/M32T-A | CZ.036.M20/M32T-B KSS-660 | CZ.038.M20/M32T-A |
| | Cutting Head | Cyl-Shaft | Cyl-Shaft | Cyl-Shaft |
| RPM Max | 5.000 | 1.600 | 625 | 5.000 |
| | 1:1 | 3:1 | 8:1 | 1:1 |



| Type | Axial Saw-Mill Offset Reducer | Radial "Y" Axis $\pm 90^\circ$ Substitute KSA107/207/407 | High Frequency Spindle 90° holder | Adjustable $\pm 45^\circ$ High Frequency Spindle |
|---------|-------------------------------|---|--|---|
| Code | CZ.038.M20/M32T-B | CZ.051.M20/M32T | CZ.010.M20/M32T-HFS | CZ.021.M20/M32T-HFS |
| | Cyl-Shaft | ER-16A | ER-8 | ER-8 |
| RPM Max | 2.500 | 5.000 | 80.000 | 80.000 |
| | 2:1 | 1:1 | *Includes converter + slip ring unit for turret mounting | |

Symbology

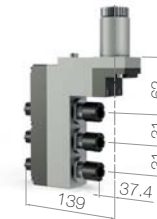
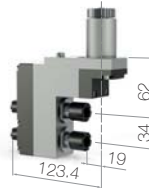
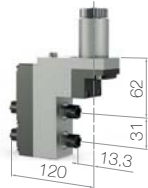
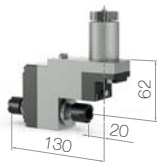
- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque

STAR

MODEL
 ECAS 12/20, SR16RII, SR20R-RIII, SR32J, SV12/20/32, SV32J-JII, SW20
 Ø34 Gang Tooling



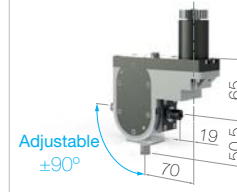
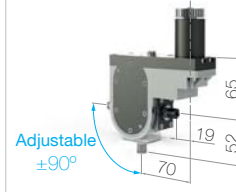
| Type | Axial | Axial Long | Axial Offset | Axial Speeder | Axial Offset Reducer |
|-----------------------|---------------------|-----------------------|----------------|----------------|----------------------|
| Code Star ref. | ST.000.34 331-50 | ST.000.34-L 571-55 | ST.001.34 - | ST.002.34 - | ST.003.34 - |
| | ER-16 | ER-16 | ER-11M | ER-11 | ER-16 |
| RPM Max | 8.000 | 8.000 | 8.000 | 15.000 | 4.000 |
| | 1:1 | 1:1 | 1:1 | 1:3 | 2:1 |



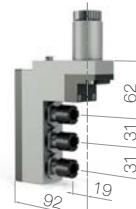
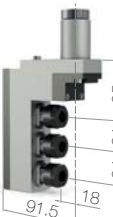
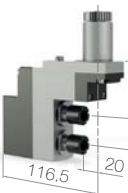
| Type | Radial Double Output | Radial 2+2 Outputs | Radial 2+2 Outputs | Radial 2+2 Outputs | Radial 3+3 Outputs |
|-----------------------|----------------------|------------------------|--------------------|--------------------|-----------------------|
| Code Star ref. | ST.008.34-A - | ST.008.34-4B 661-59 | ST.008.34-4C - | ST.008.34-4D - | ST.008.34-6 671-61 |
| | ER-16M | ER-11M | ER-16M/ER-11M | ER-16 | ER-16M/ER-11M |
| RPM Max | 8.000 | 8.000 | 8.000 | 8.000 | 8.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



| Type | Radial Set-Back | Radial Set-Back | Fixed Angle (Any Angle) | Radial Adjustable ±90° | Radial Adjustable ±90° Speeder |
|-----------------------|-----------------------|------------------|----------------------------|------------------------|-----------------------------------|
| Code Star ref. | ST.011.34-A 571-51 | ST.011.34-B - | ST.012.34 - | ST.021.34 - | ST.021.34-S - |
| | ER-16 | ER-20 | ER-16 | ER-8M | ER-8M |
| RPM Max | 8.000 | 8.000 | 8.000 | 8.000 | 24.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:3 |



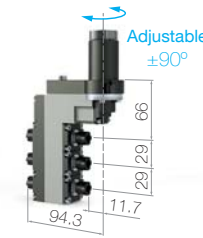
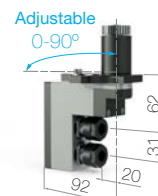
| Type | Radial 2 Outputs | Radial 2 Outputs IC 70 bar | Radial 3 Outputs | Radial 3 Outputs | Saw-Mill |
|-----------------------|---------------------|-------------------------------|-------------------|------------------------|----------------|
| Code Star ref. | ST.029.34 541-51 | ST.029.34-IC 7.078.325 | ST.029.34-3A - | ST-029.34-3B 661-51 | ST.030.34 - |
| | ER-16M | ER-16M | ER-16 | ER-16M | Cyl-Shaft |
| RPM Max | 8.000 | 8.000 | 8.000 | 8.000 | 8.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



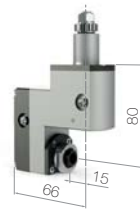
| Type | Polygon Maker Reducer | Thread Whirling $\pm 12.5^\circ$ | Thread Whirling $\pm 15^\circ$ | Thread Whirling $\pm 30^\circ$ |
|-----------------------|-----------------------|----------------------------------|--------------------------------|--------------------------------|
| Code Star ref. | ST.034.34 541-91 | ST.035.34-12.5 - | ST.035.34-15 - | ST.035.34-30 - |
| | Cyl-Shaft | Cutting Head | Cutting Head | Cutting Head |
| RPM Max | 4.000 | 8.000 | 8.000 | 8.000 |
| | 2:1 | 1:1 | 1:1 | 1:1 |



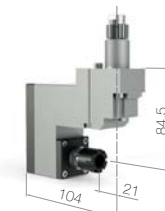
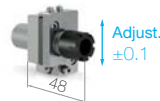
| Type | Thread Whirling $\pm 15^\circ$ Only for SR20-RIII/RIV | Axial Saw-Mill Reducer | Radial "Y" Axis 0-90° 2 Outputs | Radial "Y" Axis $\pm 90^\circ$ 3+3 Outputs |
|-----------------------|--|------------------------|------------------------------------|---|
| Code Star ref. | ST.035.34-R4 - | ST.038.34 541-54 | ST.051.34-A - | ST.051.34-B - |
| | Cutting Head | Cyl-Shaft | ER-16 | ER-11M |
| RPM Max | 8.000 | 2.800 | 8.000 | 8.000 |
| | 1:1 | 2.67:1 | 1:1 | 1:1 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



| Type | Axial | Axial | Axial IC 15 bar | Radial Set-Back | Radial Set-Back Reducer | Fixed Angle (Any Angle) | Radial Reducer |
|-----------------------|-----------------------|-----------------------|--------------------|------------------|----------------------------|----------------------------|----------------|
| Code Star ref. | ST.000.22-A 541-61 | ST.000.22-B 571-61 | ST.005.22 - | ST.011.22-A - | ST.011.22-B 7.072.855 | ST.012.22 - | ST.014.22 - |
| | ER-11M | ER-16 | ER-16 | ER-11A | ER-16A | ER-11A | ER-8M |
| RPM Max | 6.000 | 6.000 | 6.000 | 6.000 | 3.300 | 6.000 | 4.600 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1.8:1 | 1:1 | 1.3:1 |



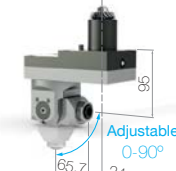
| Type | Radial Adjustable 0-90° | Tool Holder with Fine "Y" Axis ±0.1 | Saw-Mill Reducer | Polygon Maker | Axial (Only SW20, SR20RIV) | Axial IC 15 bar (Only SW20, SR20RIV) | Radial Set-Back (Only SW20, SR20RIV) |
|-----------------------|----------------------------|--|------------------------|----------------|-------------------------------|---|---|
| Code Star ref. | ST.021.22 - | ST.025.22 - | ST.030.22 7.072.661 | ST.034.22 - | ST.000.SW20 OR1-61 | ST.000.SW20 - | ST.011.SW20 OR1-51 |
| | ER-11M | ER-16M | Cyl-Shaft | Cyl-Shaft | ER-16M | ER-16M | ER-16M |
| RPM Max | 6.000 | - | 3.000 | 6.000 | 8.000 | 8.000 | 8.000 |
| | 1:1 | - | 2:1 | 1:1 | 1:1 | 1:1 | 1:1 |

Symbology

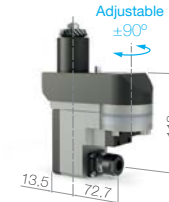
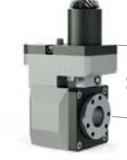
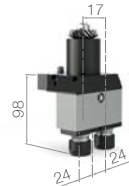
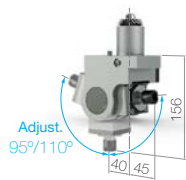
- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque

STAR

MODEL
ECAS 20 Turret, KNC16/20, SV12/20, SV32J
Turret Tooling



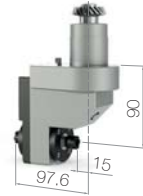
| Type | Axial | Axial | Axial Offset IC 80 bar | Radial Double Output | Radial 2+2 Outputs | Radial Set-Back | Radial Adjust. 0-90° |
|-----------------------|-----------------------|------------------|---------------------------|-------------------------|-----------------------|-----------------|-------------------------|
| Code Star ref. | ST.000.20-A 221-50 | ST.000.20-B - | ST.006.20 - | ST.008.20 221-56 | ST.008.20-4 421-59 | ST.011.20 - | ST.021.20-A - |
| | ER-16 | ER-25 | ER-16 | ER-11M | ER-11M | ER-11M | ER-16A |
| RPM Max | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |



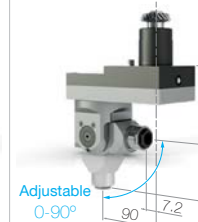
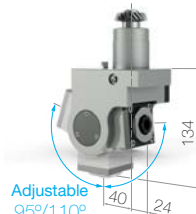
| Type | Radial Adjust. +95/-110° | Axial 2 Outputs Opt. IC 80 bar | Axial Double Output Offset | Polygon Maker Reducer | Thread Whirling ±15° | Thread Whirling ±30° Reducer | Radial "Y" Axis ±90° Speeder |
|-----------------------|-----------------------------|-----------------------------------|-------------------------------|--------------------------|---------------------------|---------------------------------|---------------------------------|
| Code Star ref. | ST.021.20-B 7.073.560 | ST.023.20-A 421-51 | ST.023.20-B - | ST.034.20 - | ST.035.20-15 7.073.670 | ST.035.20-30 - | ST.051.20 - |
| | ER-16M | ER-16 | ER-16 | Cyl-Shaft | Cutting Head | Cutting Head | ER-16 |
| RPM Max | 6.000 | 6.000 | 6.000 | 4.000 | 6.000 | 3.750 | 12.000 |
| | 1:1 | 1:1 | 1:1 | 1.5:1 | 1:1 | 1.6:1 | 1:2 |

Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



| Type | Axial Opt. IC 15 bar | Axial Opt. IC 15 bar | Axial Opt. IC 15 bar | Radial Double Output | Radial Double Output | Radial 2+2 Outputs |
|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------------------|
| Code Star ref. | ST.000.32-A 201-50 | ST.000.32-B 581-51 | ST.000.32-C - | ST.008.32-A 201-56 | ST.008.32-B - | ST.008.32-4 431-59 |
| | ER-16 | ER-20 | ER-25 | ER-11M | ER-16M | ER-11M |
| RPM Max | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |



| Type | Radial Set-Back | Radial Set-Back | Radial Adjustable +95°/-110° | Radial Adjustable +95°/-110° | Radial Adjustable 0-90° | Axial Double Output |
|-----------------------|-----------------------|------------------|---------------------------------|---------------------------------|----------------------------|------------------------|
| Code Star ref. | ST.011.32-A 201-52 | ST.011.32-B - | ST.021.32-A - | ST.021.32-B - | ST.021.32C - | ST.023.32A 431-51 |
| | ER-11M | ER-16 | ER-16A | ER-20A | ER-20A | ER-16 |
| RPM Max | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 |
| | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 | 1:1 |

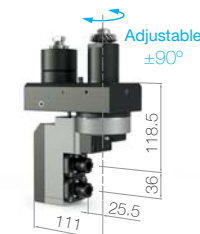
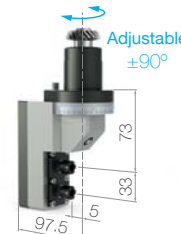


Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque



| Type | Axial Double Output Offset Speeder | Radial 2 Outputs | Thread Whirling ±15° Reducer | Thread Whirling ±30° Reducer | Gear Hobbing 360° |
|-----------|------------------------------------|------------------|------------------------------|------------------------------|-------------------|
| Code | ST.023.32B | ST.029.32 | ST.035.32-15 | ST.035.32-30 | ST.036.32 |
| Star ref. | - | - | - | - | 431-58 |
| | ER-16 | ER-11M | Cutting Head | Cutting Head | Cyl-Shaft |
| RPM Max | 7.000 | 6.000 | 4.000 | 4.000 | 3.000 |
| | 1:1.18 | 1:1 | 1.5:1 | 1.5:1 | 1:1 |



| Type | Axial Saw-Mill Reducer | Radial "Y" Axis ±90° | Radial "Y" Axis ±90° | Radial "Y" Axis 2 Outputs ±90° | Tilting "B" Axis 2 Outputs ±90° |
|-----------|------------------------|----------------------|----------------------|--------------------------------|---------------------------------|
| Code | ST.038.32 | ST.051.32-A | ST.051.32-B | ST.051.32-2 | ST.051.SV38 |
| Star ref. | 431-54 | 421-55 | - | 581-55 | Only for SV-38R Type B |
| | Cyl-Shaft | ER-11M | ER-16 | ER-11M | ER-16M |
| RPM Max | 1.800 | 6.000 | 6.000 | 6.000 | 5.700 |
| | 3.33:1 | 1:1 | 1:1 | 1:1 | 1:1 |

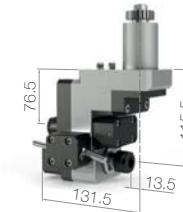
Symbology

- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque

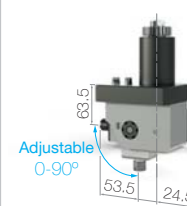
STAR

MODEL
SF-25

MADAULA
creative solutions



| Type | Axial | Axial Offset | Axial Speeder | Axial Reducer | Radial Double Output | Radial 2 Outputs IC 80 bar |
|-----------------------|-----------------------|------------------|------------------|------------------|----------------------|----------------------------|
| Code Star ref. | ST.000.SF25 121-53 | ST.001.SF25 - | ST.002.SF25 - | ST.003.SF25 - | ST.008.SF25 - | ST.008.SF25-IC - |
| | ER-20 | ER-16 | ER-11 | ER-20 | ER-16 | ER-16 |
| RPM Max | 8.000 | 8.000 | 15.000 | 4.000 | 8.000 | 8.000 |
| | 1:1 | 1:1 | 1:2 | 2:1 | 1:1 | 1:1 |



| Type | Radial Set-Back | Fixed Angle (Any Angle) | Radial Set-Back Speeder | Radial Set-back IC 80 bar | Radial Adjustable 0-90° | Axial Double Output |
|-----------------------|------------------|-------------------------|-------------------------|---------------------------|-------------------------|-----------------------|
| Code Star ref. | ST.011.SF25 - | ST.012.SF25 - | ST.013.SF25 - | ST.017.SF25 - | ST.021.SF25 - | ST.023.SF25 121-52 |
| | ER-16 | ER-16A | ER-11 | ER-16 | ER-11M | ER-16 |
| RPM Max | 8.000 | 8.000 | 15.000 | 8.000 | 8.000 | 8.000 |
| | 1:1 | 1:1 | 1:2 | 1:1 | 1:1 | 1:1 |






Symbology

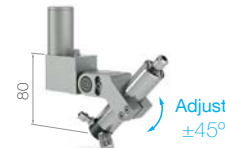
- Internal coolant
- High frequency
- Speeder
- Reducer / Higher torque








STAR

MODEL
SF-25







| Type | Radial 2 Outputs IC 80 bar  | Saw-Mill Reducer | Axial Double Output IC 80 bar  | Polygon Maker | Thread Whirling ±15° | Thread Whirling ±30° |
|---|---|---|--|------------------|-------------------------|-------------------------|
| Code Star ref. | ST.029.SF25 121-51 | ST.030.SF25 - | ST.033.SF25 - | ST.034.SF25 - | ST.035.SF25-15 - | ST.035.SF25-30 - |
|  | ER-16 | Cyl-Shaft | ER-16 | Cyl-Shaft | Cutting head | Cutting head |
| RPM Max | 8.000 | 4.000  | 8.000 | 8.000 | 8.000 | 8.000 |
|  | 1:1 | 2:1 | 1:1 | 1:1 | 1:1 | 1:1 |



| Type | Gear Hobbing ±30° Reducer | Radial "Y" Axis ±90° | Axial High Frequency Spindle | Radial High Frequency Spindle | Radial Set-Back High Freq. Spindle | Radial Adjust. ±45° High Freq. Spindle |
|---|---|-------------------------|---|--|--|--|
| Code Star ref. | ST.036.SF25 - | ST.051.SF25 - | ST.000.SF25-HFS - | ST.010.SF25-HFS - | ST.011.SF25-HFS - | ST.021.SF25-HFS - |
|  | Cyl-Shaft | ER-16M | ER-8 | ER-8 | ER-8 | ER-8 |
| RPM Max | 5.000  | 8.000 | 80.000  | 80.000  | 80.000  | 80.000  |
|  | 1.5:1 | 1:1 | *Includes converter + slip ring unit for turret mounting | | | |




Symbology

-  Internal coolant
-  High frequency
-  Speeder
-  Reducer / Higher torque

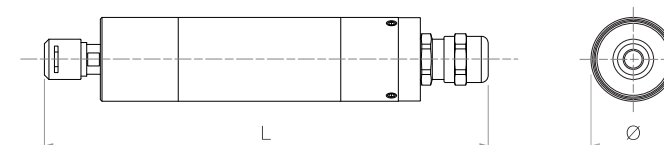
High Frequency Spindles



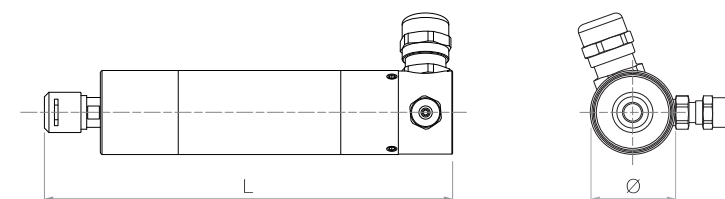
Technical Data

| Product | DS-19.05 DS-20 / DS-22 | | DS-25 / DS-25.4 DS-28 / DS-30 / DS-33 | | DS-42 DS-45 | |
|---|---------------------------|----------|--|----------|----------------|----------|
| Ø mm | 19 / 20 / 22 | | 25 / 25.4 / 28 / 30 / 33 | | 42 / 45 | |
|  | D6-UP | | ER-8UP | | ER-11UP | |
| W S1-100% | 165 | | 225 | | 320 | |
| Ncm max | 1.5 | | 2.5 | | 4.8 | |
|  | Grease | Oil Mist | Grease | Oil Mist | Grease | Oil Mist |
| RPM - u/min | 60.000 | 80.000 | 60.000 | 80.000 | 35.000 | 50.000 |
|  | Axial | Radial | Axial | Radial | Axial | Radial |
| L mm | 107 | 90 | 114.5 | 104 | 180 | 175 |

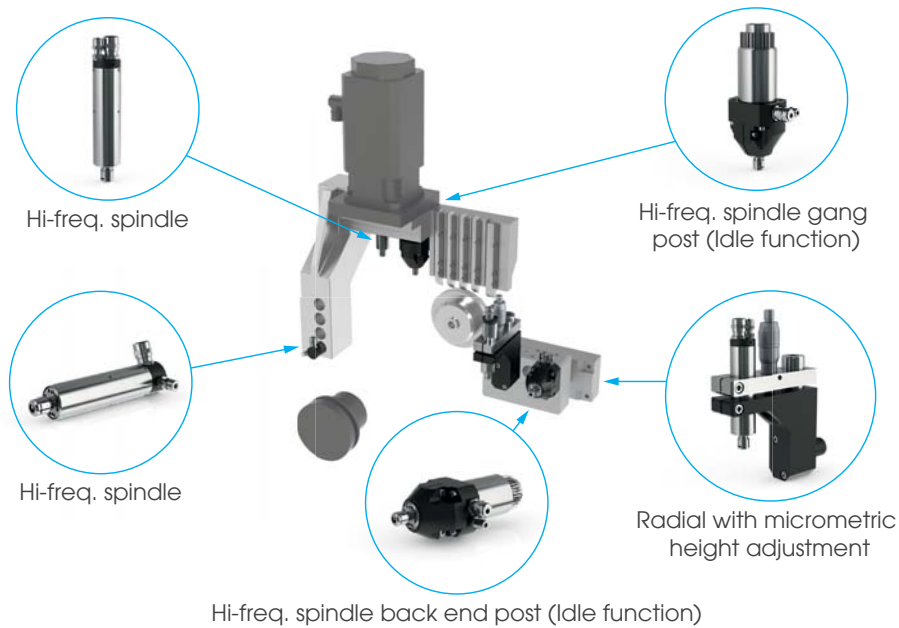
Axial dimensions



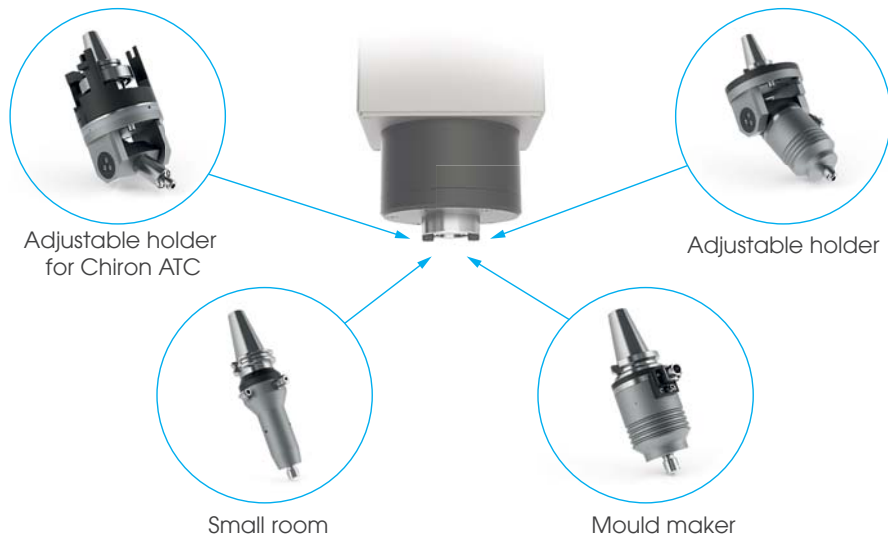
Radial dimensions



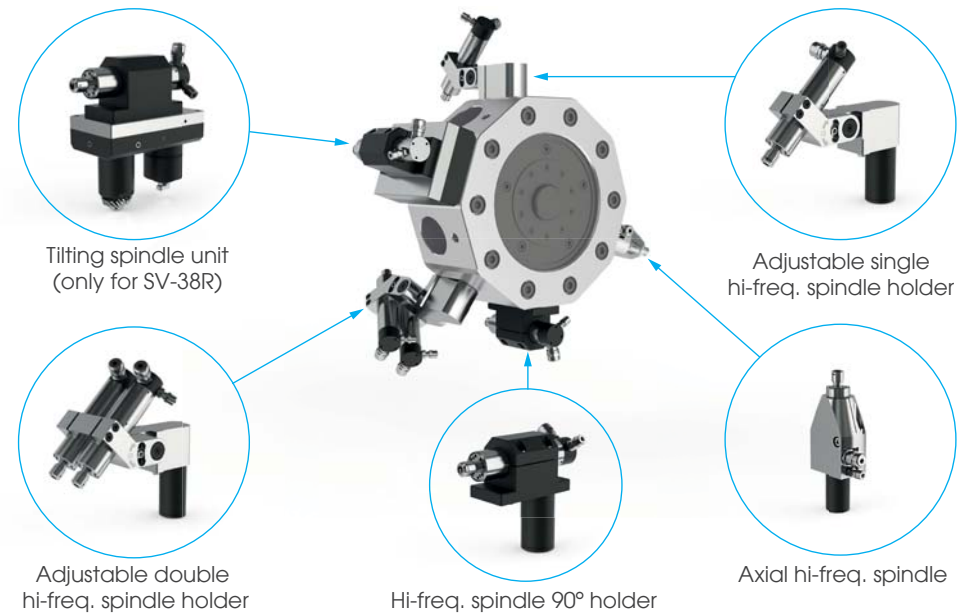
High Frequency Accessories for Gang & Back End Posts



for machining centers



for Turrets



Equipment for high frequency spindles



Repair Service

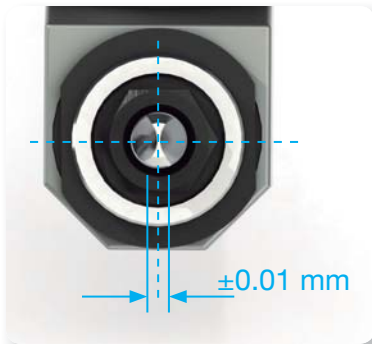
Specialized repair team with extensive experience, at your disposal to service all kind of high frequency spindles.

Equipe d'assistance technique spécialisée avec une vaste expérience, à votre disposition pour réparation de tous les types de broches à haute fréquence.

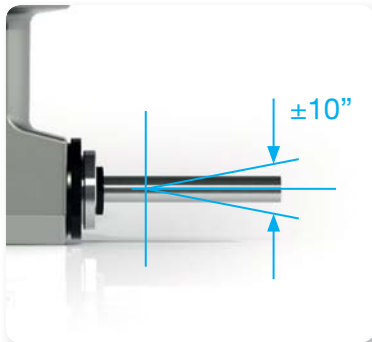
Reparto specializzato di assistenza tecnica con una vasta esperienza, alla vostra disposizione per dare servizio a tutti i tipi di mandrini ad alta frequenza.

Precision

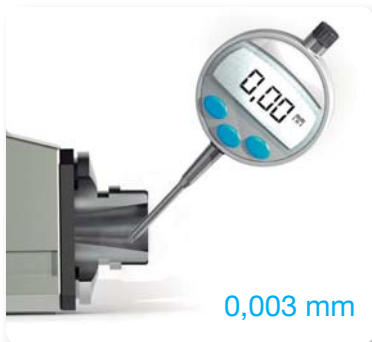
Maximum misalignment



Angle tolerance



Max. runout inside the spindle



Quality procedures

· Progressive increasing to full speed:
Temperature, speed, noise, leakage and vibration control.

· Main dimensions control with Coordinate Measuring Machine for all products.

· Quality certificate on delivery.

· Accélération progressive jusqu'à la vitesse maximale, contrôle de température, vitesse, bruit, fuites et vibrations.

· Contrôle des principales dimensions avec machine à mesurer CNC.

· Livraison du certificat de qualité.

· Progressivo aumento a tutta velocità:
Controllo di temperatura, velocità, rumorosità, perdite e vibrazioni.

· Controllo dimensione su tutti i prodotti con macchina per misure a coordinate.

· Certificato di qualità sulla consegna.



Certificate ISO 9001:2008 since 1999.

Certificat ISO 9001:2008 depuis le 1999.

Certificato ISO 9001: 2008 da 1999.



100% Tested



Global services

· Specialized technical assistance team with extensive experience at your disposal.

· Repair service includes: disassembly, inspection, quote, replace, rebuilt and dynamic tests, all in a shortest delivery time frame.

· Preventive maintenance.

· For our existing customers, we will inspect and repair competitor's products upon request.

· Express service, when required.

· Une équipe spécialisée en assistance technique et avec une vaste expérience est mis à votre disposition.

· La réparation comprend: démontage, inspection, devis, remplacement des éléments abimés, remontage et essais dynamiques, tout dans les plus brefs délais.

· Maintenance preventive.

· Seulement pour nos clients, nous réparons tous les types de produits qu'ils soient ou non de notre fabrication.

· Service express, si nécessaire.

· Servizio di assistenza tecnica con team specializzato con una vasta esperienza a vostra disposizione.

· Il servizio di riparazione comprende: smontaggio, verifica tecnica, quotazione, sostituzione, rodaggio e collaudo, il tutto in una consegna breve.

· Manutenzione preventiva

· Per i nostri clienti offriamo servizio di riparazione anche su prodotti non di nostra produzione.

· Servizio espresso, su richiesta.



Everything is possible

Customized products for Innovative solutions: We match the tool to the part and the machine.

Our team of engineers and technicians are working to create new products, which enhance the machine capability and increase the productivity of our customers.

Successful technical experience

and market knowledge.

Réussi savoir-faire technique et connaissance du marché.
Esperienza tecnica e successo di mercato.

Engineers and technicians

working together.

Ingénieurs et techniciens qui travaillent ensemble.
Ingenieri e tecnici che lavorano assieme.

Ingenuity and open mind

to find the best solutions.

Ingéniosité et l'esprit ouvert pour trouver les meilleures solutions.
L'ingegno e la mente aperta per trovare le migliori soluzioni.



Continuous innovation: We ensure close cooperation with our customers worldwide.



Innovation non-stop:

Nous assurons une étroite coopération avec nos clients dans le monde entier.

Innovazione continua:

Garantiamo una stretta collaborazione con i nostri clienti in tutto il mondo.

Live tooling available for:

Citizen, DMG, Doosan, Hanwha, Maier, Manurhin, Miyano, Nexturn, Nomura, Star, Tornos, Tsugami



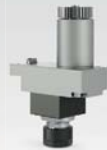
Axial



Axial offset



Axial speeder



Axial reducer



Axial IC



Axial offset IC



Radial double output



Radial 90°



Fixed angle



Radial 90° speeder



Radial 90° reducer



Radial set back IC



Radial adjustable



Axial multiple spindles



Axial offset reducer



Radial multiple outputs



Saw-mill



Axial multiple spindles IC



Polygon maker



Thread whirling



Gear hobbing



Axial saw-mill



Radial "Y" axis