

TurnLine

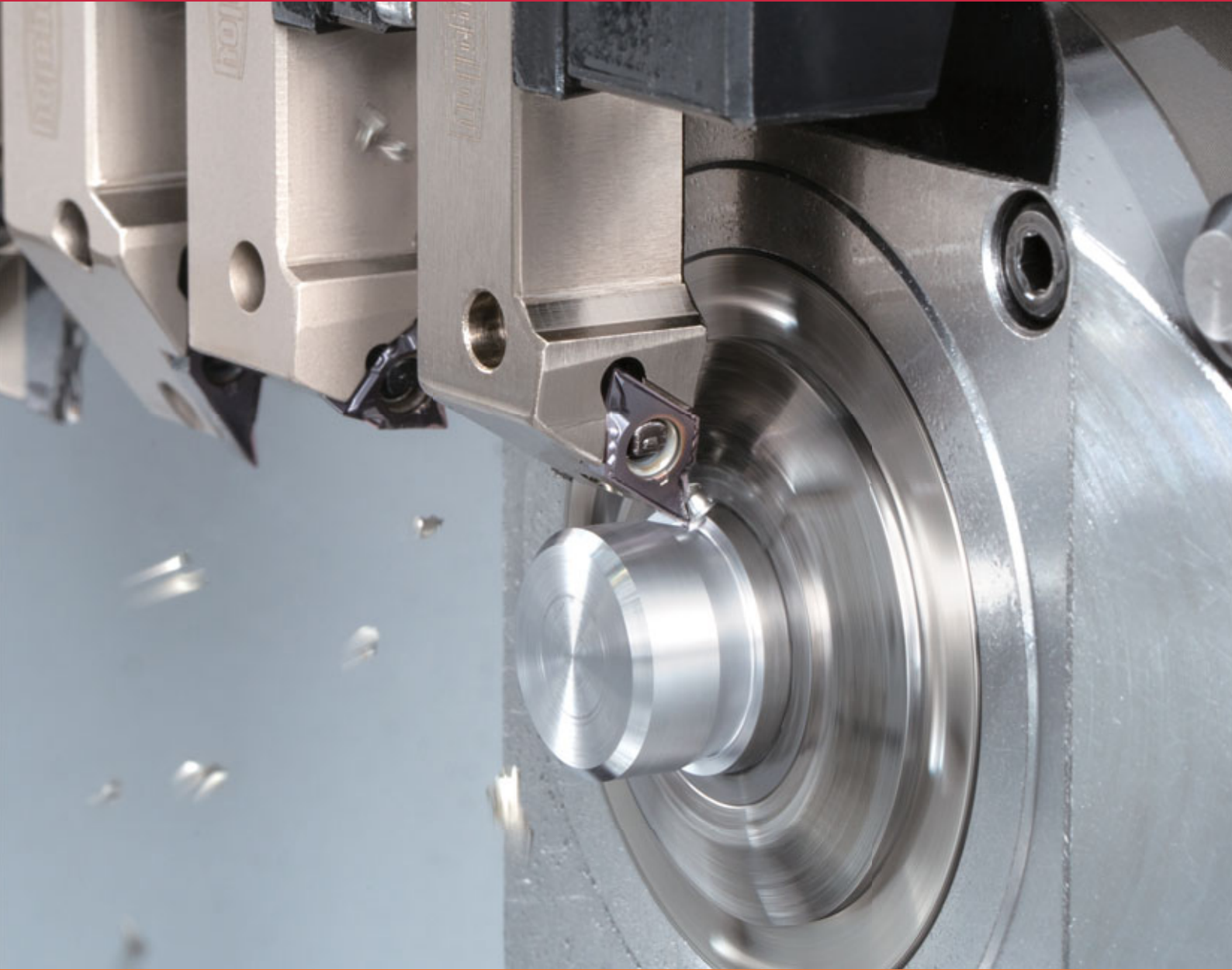


MINIFORCETURN

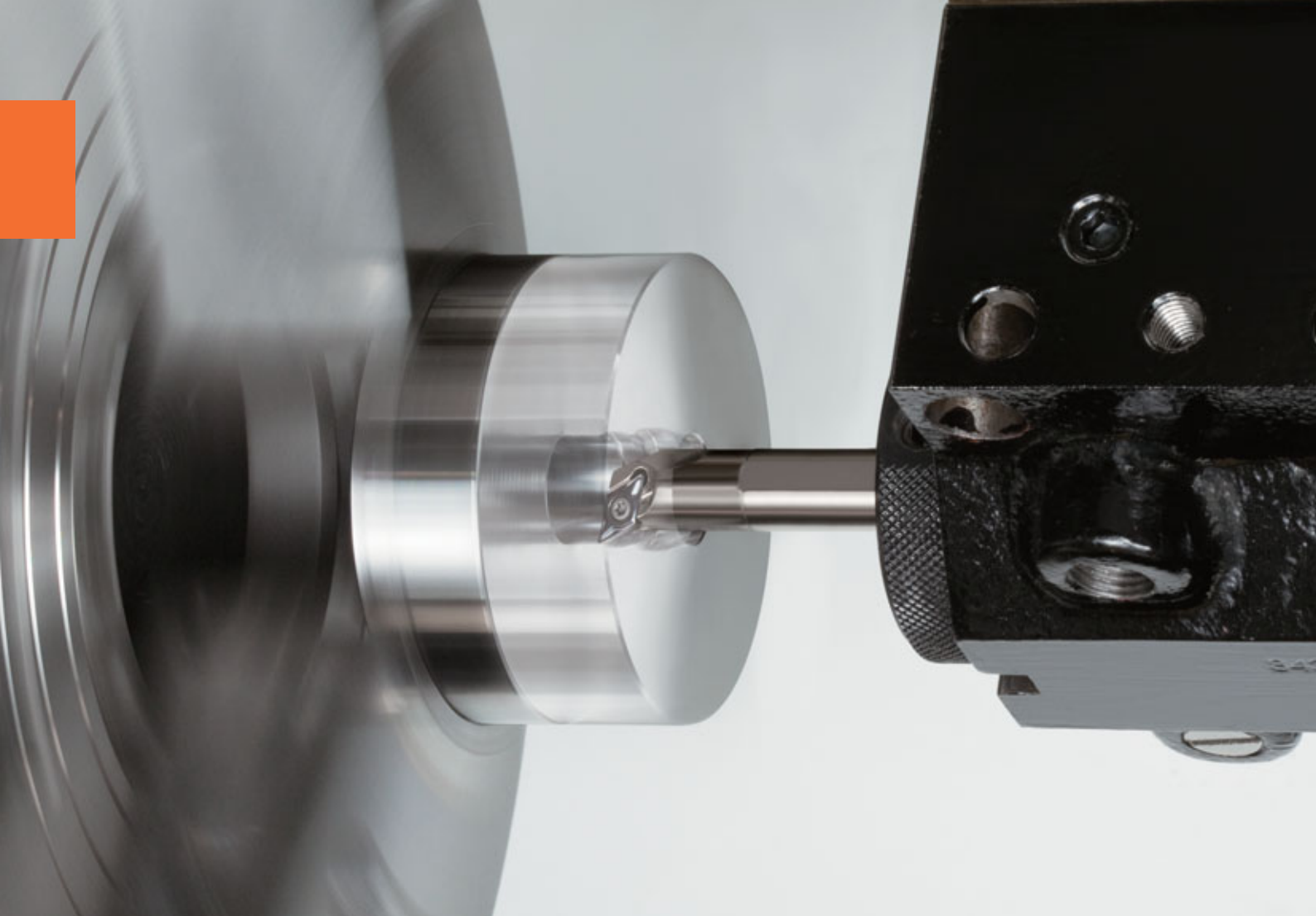
www.tungaloy.com

Tungaloy Report No. 417-G

New chipbreaker for improved chip control
in small part machining



INDUSTRY 4.0
FEED the SPEED!



ACCELERATED MACHINING



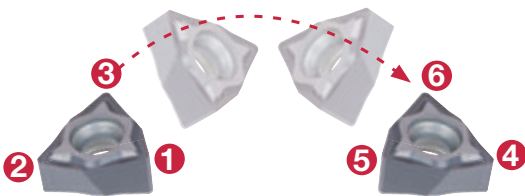
Improved chip control with new chipbreaker
and AH8000 grade series

Economical double-sided positive insert

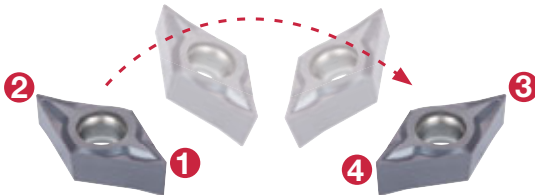
Innovative geometry and seat interface ensures stability and high performance

Inserts

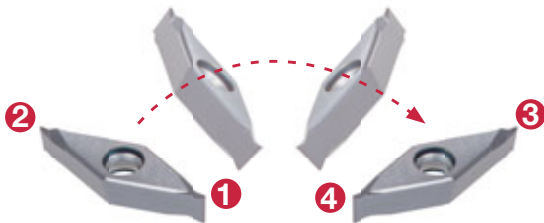
WXGU0403.. 6 positive cutting edges



DXGU0703.. 4 positive cutting edges



VXGU09T2.. 4 positive cutting edges

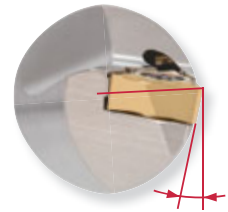


High rake angle

External turning



Internal turning



External turning



Internal turning

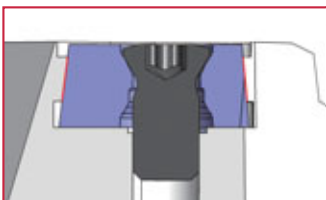


External turning



Toolholders

Dovetail clamping ensures secure insert retention



External turning

The JP holder screw is accessible from either side



Internal turning

Optimal design for smooth chip flow



Square shank holder lineup for general lathes

Square shank sizes 2020 and 2525 are available for OD turning

MINIF^oTURN



TURNINGA



ISOE^oTURN

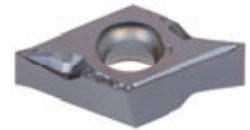


Light cutting chipbreaker

New JS chipbreaker - features and benefits

- Provides excellent chip control in a wide range of applications
- A large inclination angle on the cutting edge ensures free cutting
- Excellent cutting edge integrity for smooth surface finishing

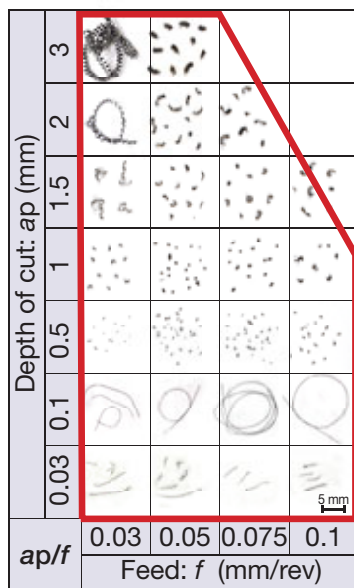
Note: Due to chipbreaker profile, max aP for face turning is 1 mm



DXGU0703...-JS

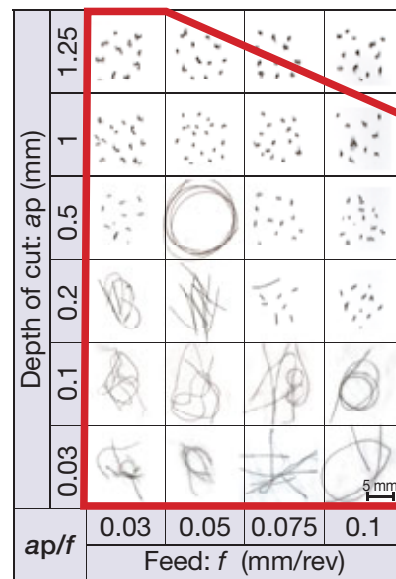
CHIP CONTROL

P



Workpiece : S45C / C45
 Insert : DXGU070302MFL-**JS** SH725
 Toolholder : JSDJ2XR1212X07
 Cutting speed : Vc = 100 m/min
 Coolant : Wet

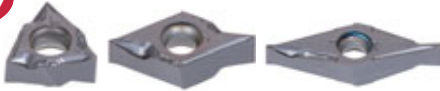
M



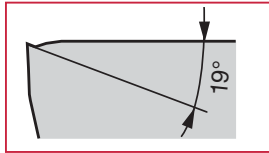
Workpiece : SUS316L
 Insert : DXGU070302MFL-**JS** SH725
 Toolholder : JSDJ2XR1212X07
 Cutting speed : Vc = 50 m/min
 Coolant : Wet

JS chipbreaker

New



WXGU0403.. DXGU0703.. VXGU0903..



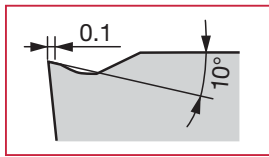
- First choice chipbreaker for medium to finish cutting
- Excellent chip control
- Ideal for small part machining

PM

TS / JTS / TSW chipbreaker



WXGU0403.. DXGU0703..



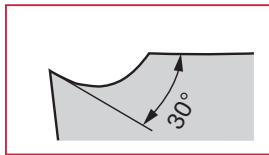
- First choice chipbreaker for medium to finish cutting
- Excellent chip control
- Ideal for small part machining

PMK

SS / JSS chipbreaker



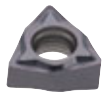
WXGU0403.. DXGU0703..



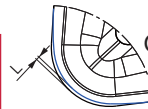
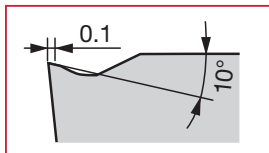
- General purpose chipbreaker with excellent chip control
- Recommended for stainless steel machining

MP

TSW chipbreaker (Wiper)



WXGU0403..



Offset: $L = 0.05 \text{ mm}$

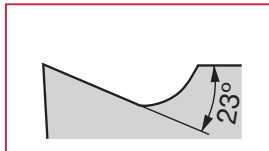
Built-in wiper for better surface finish at high feed rates

PMK

JRP chipbreaker



DXGU0703.. VXGU09T2..



Sharp cutting edge and ground chipbreaker with excellent chip control

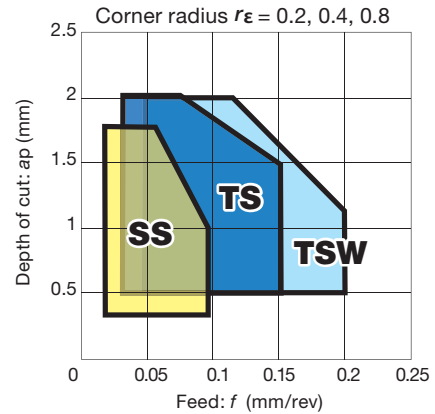
Chipbreakers for general purpose machining

WXGU0403.. - TS/SS/TSW

DXGU0703.. - TS/SS

Strong cutting edge for semi-finishing and finishing operations at medium to low feed rates

■ Application area



Chipbreakers for small part machining

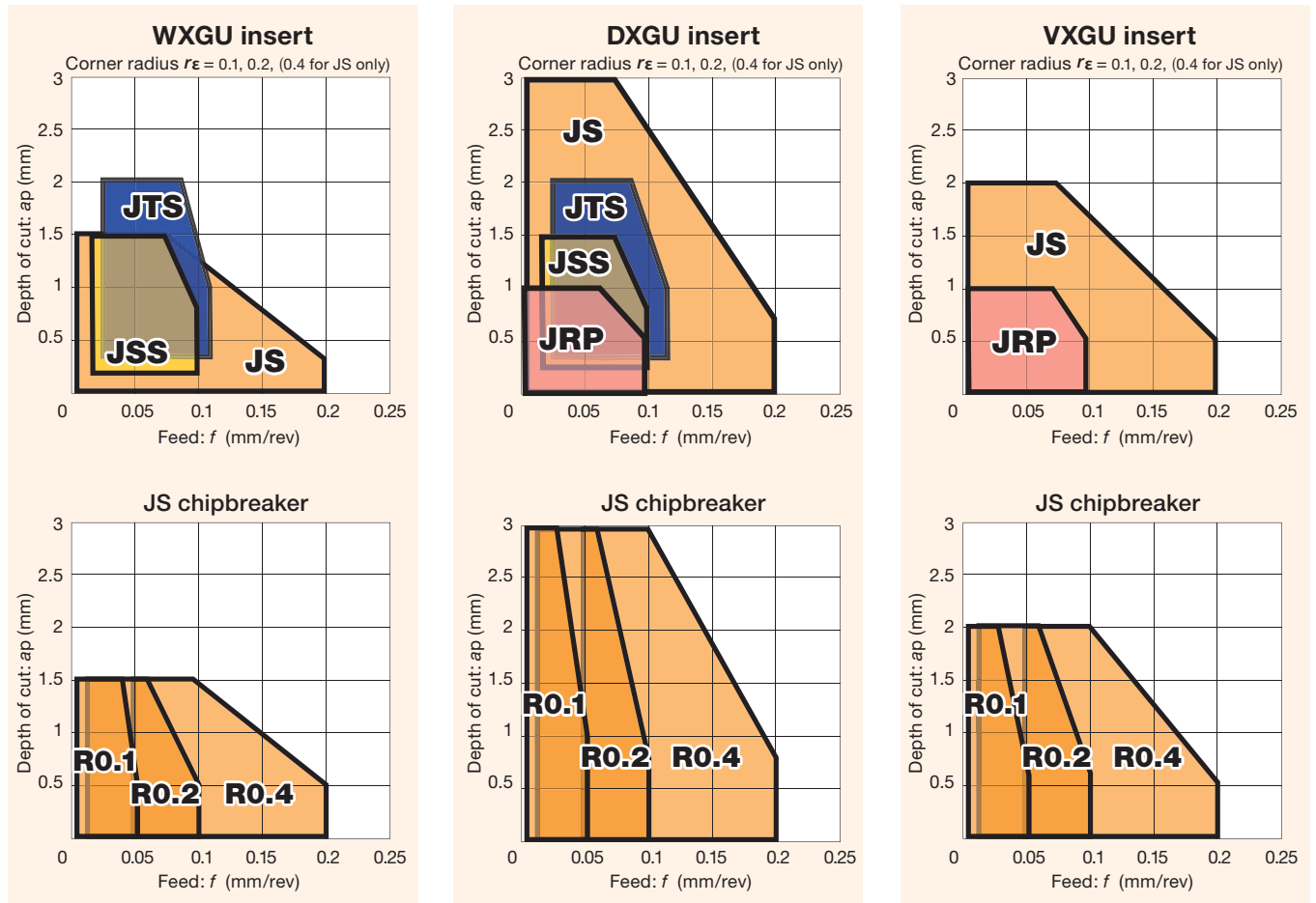
WXGU0403.. - JTS/JSS/JS

DXGU0703.. - JRP/JTS/JSS/JS

VXGU09T2.. - JRP/JS

Extra sharp cutting edge used at low feeds for finishing operations. An excellent solution to reduce vibration.

■ Application areas



TUNG T^{URN}JET Thru-coolant holder system

Jets of coolant are supplied through the holder to facilitate **Improved chip control and reduced machine downtime**



Eliminates chip re-cutting



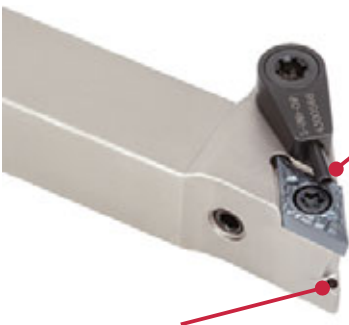
External coolant supply
(at normal pressure)



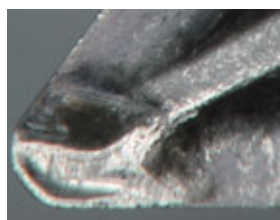
High pressure coolant
(>7MPa)

Coolant supply both over and under the insert improves tool life and efficiency

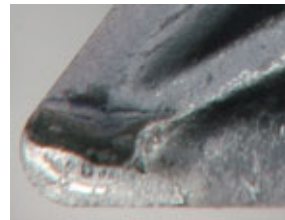
- **Coolant jet over the insert**
Ensures stable chip control



Coolant jet is directed close to the cutting point
Reduces crater and notch wear

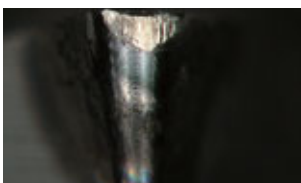


External coolant supply
(at normal pressure)



High pressure coolant
(>7MPa)

Coolant jet under the insert
Reduces flank wear



External coolant supply
(at normal pressure)



High pressure coolant
(>7MPa)

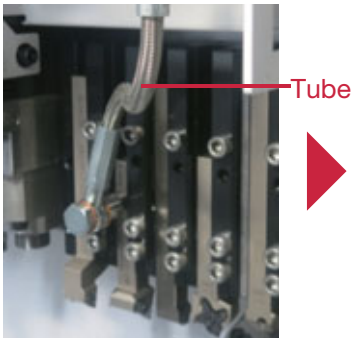


Nozzle extends to ensure optimal coolant delivery

DIRECTTUNGJET system

Tubeless design streamlines tool setup Through-coolant supply enables high productivity

External coolant tube

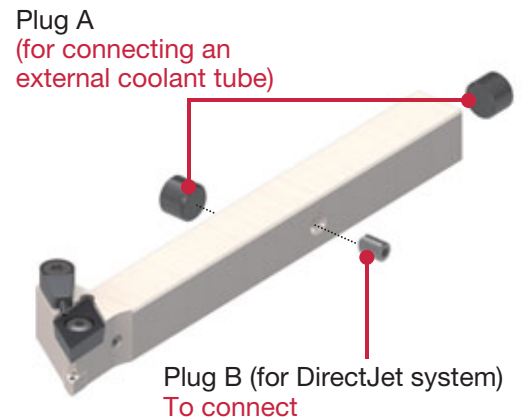
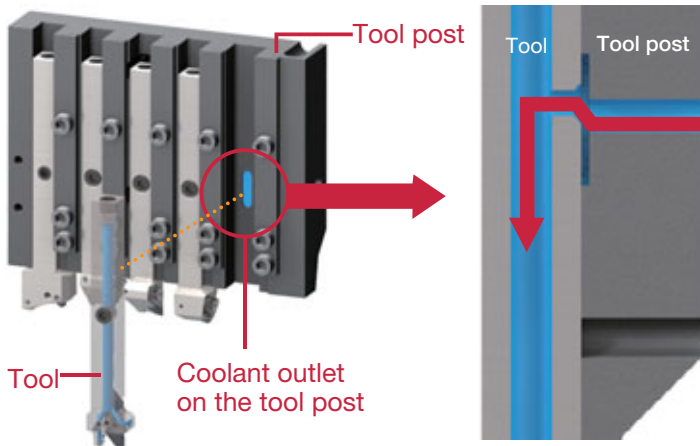


DirectTungJet system



No need for coolant tube setups. Eliminates chip entanglement on tubes and streamlines tool replacements.

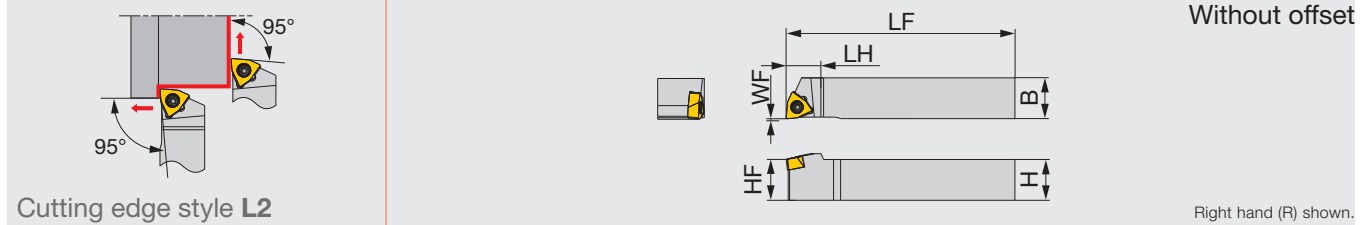
Coolant is supplied from the tool post directly to the tools



Use a non-coolant-through tool when coolant supply is not needed through the tool.

JSWL2XR/L

Screw-on toolholder without offset with 95° approach angle, for WXGU inserts



| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|------------------|----|----|-----|----|----|----|------|------------------|---------|
| JSWL2XR/L1010X04 | 10 | 10 | 120 | 11 | 10 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |
| JSWL2XR/L1212F04 | 12 | 12 | 85 | 11 | 12 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |
| JSWL2XR/L1212X04 | 12 | 12 | 120 | 11 | 12 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |
| JSWL2XR/L1616X04 | 16 | 16 | 120 | 13 | 16 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |
| JSWL2XR/L2020H04 | 20 | 20 | 100 | 13 | 20 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |

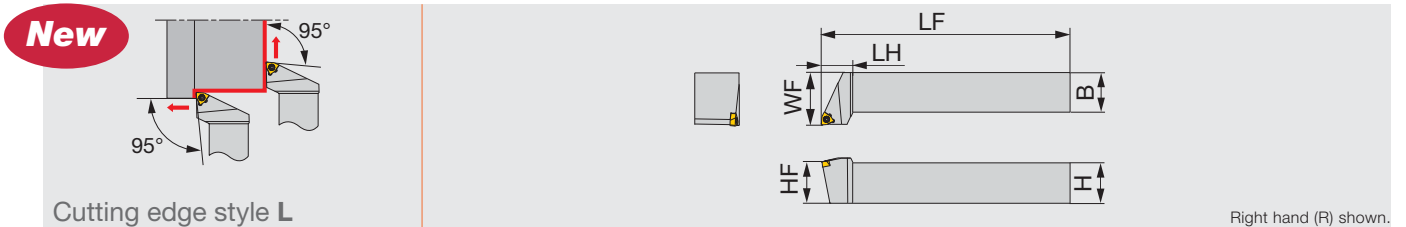
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|--------------|----------------|--------|
| JSWL2XR/L... | SR34-514 | T-7F |

JSWLXR/L

Screw-on toolholder without offset with 95° approach angle, for WXGU inserts



| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|-----------------|----|----|-----|----|----|----|------|------------------|---------|
| JSWLXR/L2020K04 | 20 | 20 | 125 | 15 | 20 | 25 | 0.4 | WXGU0403**L/R... | 0.9 |
| JSWLXR/L2525M04 | 25 | 25 | 150 | 19 | 25 | 32 | 0.4 | WXGU0403**L/R... | 0.9 |

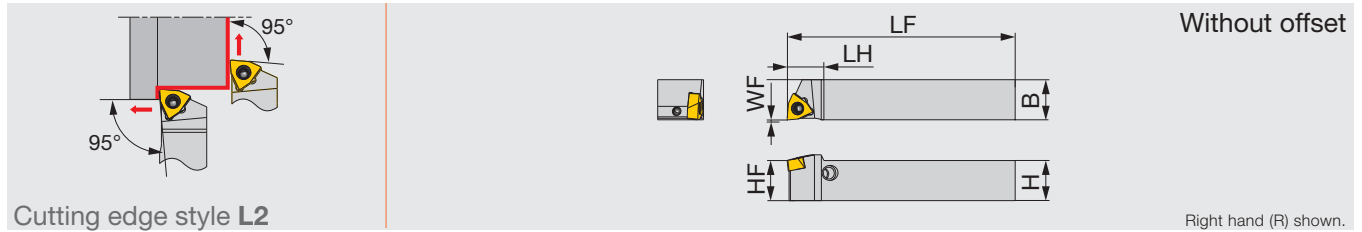
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|-------------|----------------|--------|
| JSWLXR/L... | SR34-514 | T-7F |

JPWL2XR/L

Lever lock type toolholder without offset with 95° approach angle, for WXGU inserts



Cutting edge style L2

| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|------------------|----|----|-----|----|----|----|------|------------------|---------|
| JPWL2XR/L1010X04 | 10 | 10 | 120 | 11 | 10 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |
| JPWL2XR/L1212F04 | 12 | 12 | 85 | 11 | 12 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |
| JPWL2XR/L1212X04 | 12 | 12 | 120 | 11 | 12 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |
| JPWL2XR/L1616X04 | 16 | 16 | 120 | 13 | 16 | 0 | 0.2 | WXGU0403**L/R... | 0.9 |

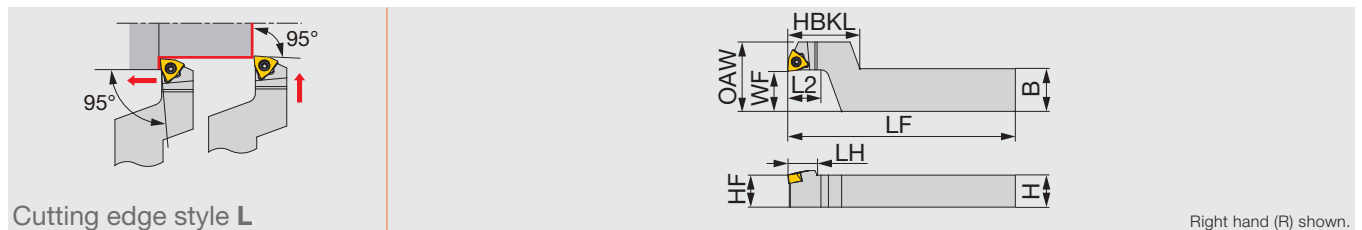
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Lever | Pin | Clamping screw | Wrench |
|--------------|--------|---------|----------------|------------|
| JPWL2XR/L... | SLLV-2 | SL-PI-2 | SR10400611 | HW2.0/5RED |

JSWLXR-F

Screw-on stepped-head toolholder with 95° approach angle, for WXGU inserts



Cutting edge style L

| Designation | H | B | LF | L2 | HBKL | LH | HF | WF | OAW | RE** | Insert | Torque* |
|-------------------|----|----|-----|----|------|----|----|----|-----|------|----------------|---------|
| JSWLXR1016X04-F15 | 10 | 16 | 120 | 12 | 27 | 11 | 10 | 15 | 26 | 0.2 | WXGU0403**L... | 0.9 |
| JSWLXR1216F04-F15 | 12 | 16 | 85 | 12 | 27 | 11 | 12 | 15 | 26 | 0.2 | WXGU0403**L... | 0.9 |
| JSWLXR1216X04-F15 | 12 | 16 | 120 | 12 | 27 | 11 | 12 | 15 | 26 | 0.2 | WXGU0403**L... | 0.9 |
| JSWLXR1620X04-F15 | 16 | 20 | 120 | 12 | 27 | 11 | 16 | 15 | 26 | 0.2 | WXGU0403**L... | 0.9 |

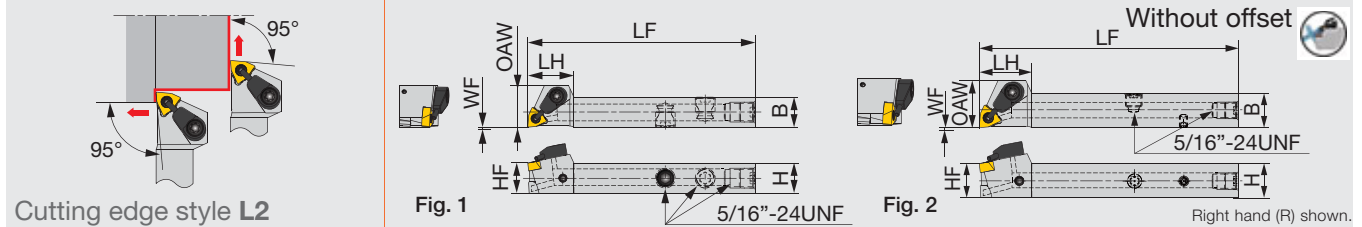
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|--------------|----------------|--------|
| JSWLXR**-F15 | SR34-514 | T-7F |

JSWL2XR/L-CHP

Screw-on toolholder without offset with 95° approach angle, for WXGU inserts, with channels for high pressure coolant



| Designation | H | B | LF | LH | HF | WF | OAW | RE** | Insert | Torque* | Fig. |
|----------------------|----|----|-----|------|----|----|------|------|------------------|---------|------|
| JSWL2XR/L1212F04-CHP | 12 | 12 | 85 | 18 | 12 | 0 | 16.5 | 0.2 | WXGU0403**L/R... | 0.9 | 1 |
| JSWL2XR1212X04-CHP | 12 | 12 | 120 | 18.5 | 12 | 0 | 16.5 | 0.2 | WXGU0403**L | 0.9 | 2 |
| JSWL2XR1616X04-CHP | 16 | 16 | 120 | 18.5 | 16 | 0 | 16.5 | 0.2 | WXGU0403**L | 0.9 | 2 |

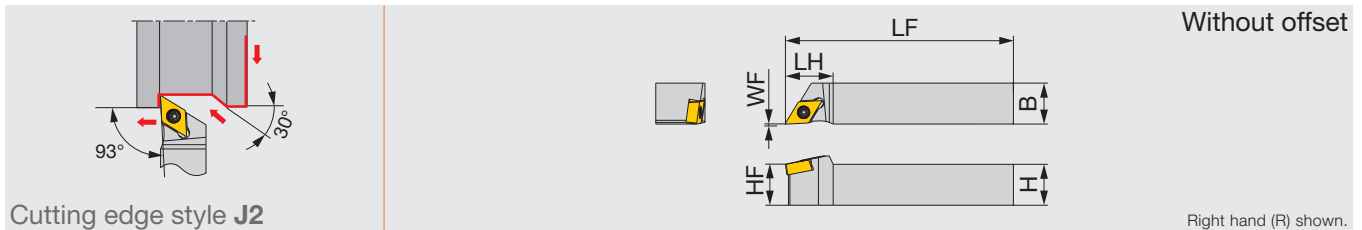
*Torque: Recommended torque (N·m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Clamping screw | Coolant unit | Wrench |
|-----------------|----------------|--------------|--------|
| JSWL2XR**04-CHP | SR34-514 | S-CU-CHP | T-7F |

JSDJ2XR/L

Screw-on toolholder without offset with 93° approach angle, for DXGU inserts



| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|------------------|----|----|-----|----|----|----|------|------------------|---------|
| JSDJ2XR/L1010X07 | 10 | 10 | 120 | 14 | 10 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |
| JSDJ2XR/L1212F07 | 12 | 12 | 85 | 14 | 12 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |
| JSDJ2XR/L1212X07 | 12 | 12 | 120 | 14 | 12 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |
| JSDJ2XR/L1616X07 | 16 | 16 | 120 | 18 | 16 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |
| JSDJ2XR/L2020H07 | 20 | 20 | 100 | 18 | 20 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |

*Torque: Recommended torque (N·m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

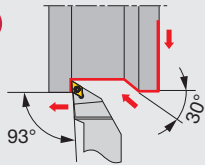
SPARE PARTS

| Designation | Clamping screw | Wrench |
|--------------|----------------|--------|
| JSDJ2XR/L... | SR34-514 | T-7F |

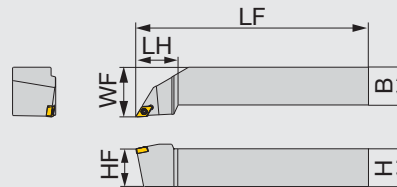
JSDJXR/L

Screw-on toolholder without offset with 93° approach angle, for DXGU inserts

New



Cutting edge style J



Right hand (R) shown.

| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|-----------------|----|----|-----|----|----|----|------|------------------|---------|
| JSDJXR/L2020K07 | 20 | 20 | 125 | 27 | 20 | 25 | 0.4 | DXGU0703**L/R... | 0.9 |
| JSDJXR/L2525M07 | 25 | 25 | 150 | 27 | 25 | 32 | 0.4 | DXGU0703**L/R... | 0.9 |

*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

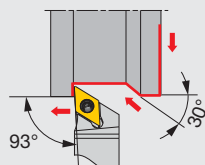
SPARE PARTS



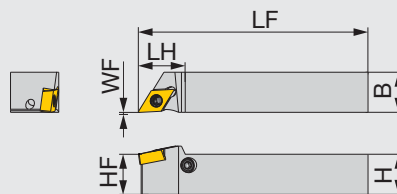
| Designation | Clamping screw | Wrench |
|-------------|----------------|--------|
| JSDJXR/L... | SR34-514 | T-7F |

JPDJ2XR/L

Lever lock type toolholder without offset with 93° approach angle, for DXGU inserts



Cutting edge style J2



Without offset

Right hand (R) shown.

| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|------------------|----|----|-----|----|----|----|------|------------------|---------|
| JPDJ2XR/L1010X07 | 10 | 10 | 120 | 14 | 10 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |
| JPDJ2XR/L1212F07 | 12 | 12 | 85 | 14 | 12 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |
| JPDJ2XR/L1212X07 | 12 | 12 | 120 | 14 | 12 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |
| JPDJ2XR/L1616X07 | 16 | 16 | 120 | 18 | 16 | 0 | 0.2 | DXGU0703**L/R... | 0.9 |

*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

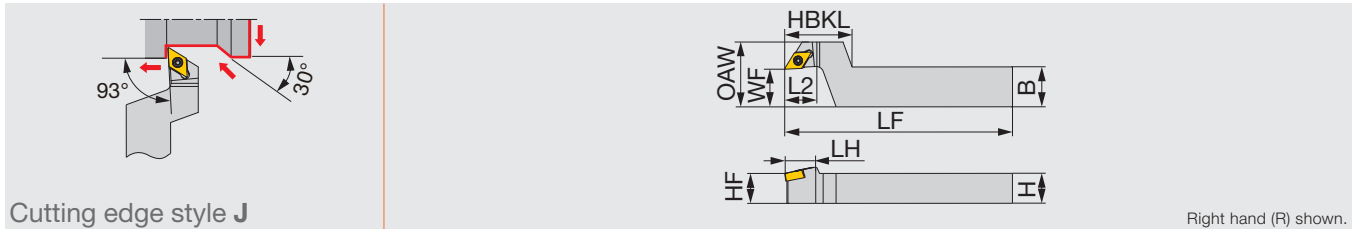
SPARE PARTS



| Designation | Lever | Pin | Clamping screw | Wrench |
|--------------|--------|---------|----------------|------------|
| JPDJ2XR/L... | SLLV-2 | SL-PI-2 | SR10400611 | HW2.0/5RED |

JSDJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for DXGU inserts



Cutting edge style J

Right hand (R) shown.

| Designation | H | B | LF | L2 | HBKL | LH | HF | WF | OAW | RE** | Insert | Torque* |
|-------------------|----|----|-----|----|------|----|----|----|-----|------|----------------|---------|
| JSDJXR1016X07-F15 | 10 | 16 | 120 | 12 | 27 | 14 | 10 | 15 | 26 | 0.2 | DXGU0703**L... | 0.9 |
| JSDJXR1216F07-F15 | 12 | 16 | 85 | 12 | 27 | 14 | 12 | 15 | 26 | 0.2 | DXGU0703**L... | 0.9 |
| JSDJXR1216X07-F15 | 12 | 16 | 120 | 12 | 27 | 14 | 12 | 15 | 26 | 0.2 | DXGU0703**L... | 0.9 |
| JSDJXR1620X07-F15 | 16 | 20 | 120 | 12 | 27 | 14 | 16 | 15 | 26 | 0.2 | DXGU0703**L... | 0.9 |

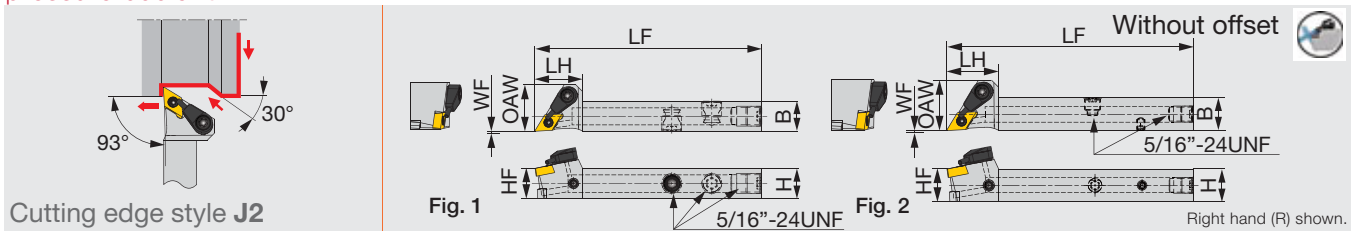
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|--------------|----------------|--------|
| JSDJXR**-F15 | SR34-514 | T-7F |

JSDJ2XR/L-CHP

Screw-on toolholder without offset with 93° approach angle, for DXGU inserts, with channels for high pressure coolant



Cutting edge style J2

Right hand (R) shown.

| Designation | H | B | LF | LH | HF | W | OAW | RE** | Insert | Torque* | Fig. |
|----------------------|----|----|-----|----|----|---|------|------|------------------|---------|------|
| JSDJ2XR/L1212F07-CHP | 12 | 12 | 85 | 19 | 12 | 0 | 18.5 | 0.2 | DXGU0703**L/R... | 0.9 | 1 |
| JSDJ2XR1212X07-CHP | 12 | 12 | 120 | 19 | 12 | 0 | 18.5 | 0.2 | DXGU0703**L | 0.9 | 2 |
| JSDJ2XR1616X07-CHP | 16 | 16 | 120 | 19 | 16 | 0 | 18.5 | 0.2 | DXGU0703**L | 0.9 | 2 |

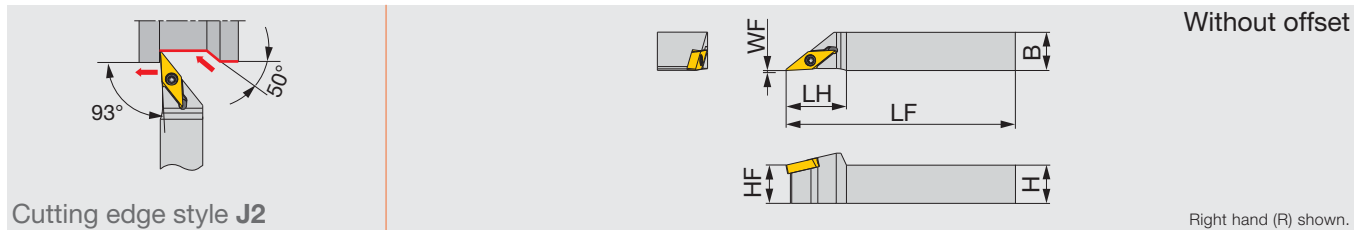
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand tool holder (R) for the left-hand insert (L). Use the left-hand tool holder (L) for the right-hand insert (R).

SPARE PARTS

| Designation | Clamping screw | Coolant unit | Wrench |
|-----------------|----------------|--------------|--------|
| JSDJ2XR**07-CHP | SR34-514 | S-CU-CHP | T-7F |

JSVJ2XR/L

Screw-on toolholder without offset with 93° approach angle, for VXGU inserts



| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|------------------|----|----|-----|----|----|----|------|-------------------|---------|
| JSVJ2XR/L1010X09 | 10 | 10 | 120 | 17 | 10 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |
| JSVJ2XR/L1212F09 | 12 | 12 | 85 | 19 | 12 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |
| JSVJ2XR/L1212X09 | 12 | 12 | 120 | 19 | 12 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |
| JSVJ2XR/L1616X09 | 16 | 16 | 120 | 19 | 16 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |
| JSVJ2XR/L2020H09 | 20 | 20 | 100 | 19 | 20 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |

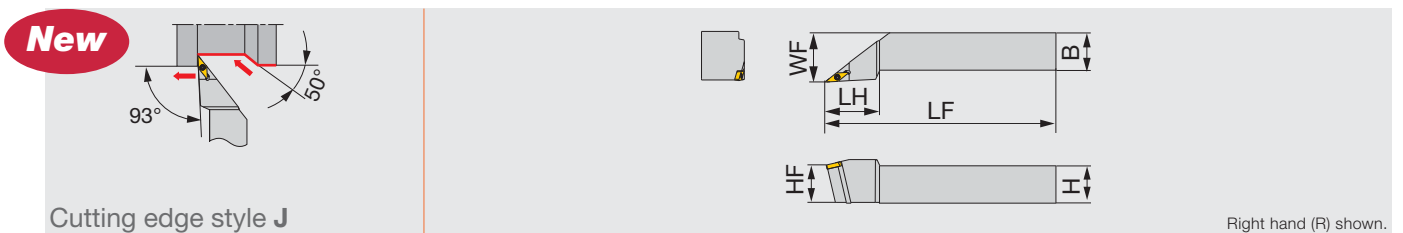
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|--------------|----------------|--------|
| JSVJ2XR/L... | SR34-508 | T-7F |

JSVJXR/L

Screw-on toolholder without offset with 93° approach angle, for VXGU inserts



| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|-----------------|----|----|-----|----|----|----|------|-------------------|---------|
| JSVJXR/L2020K09 | 20 | 20 | 125 | 35 | 20 | 25 | 0.4 | VXGU09T2**/L/R... | 0.9 |
| JSVJXR/L2525M09 | 25 | 25 | 150 | 35 | 25 | 32 | 0.4 | VXGU09T2**/L/R... | 0.9 |

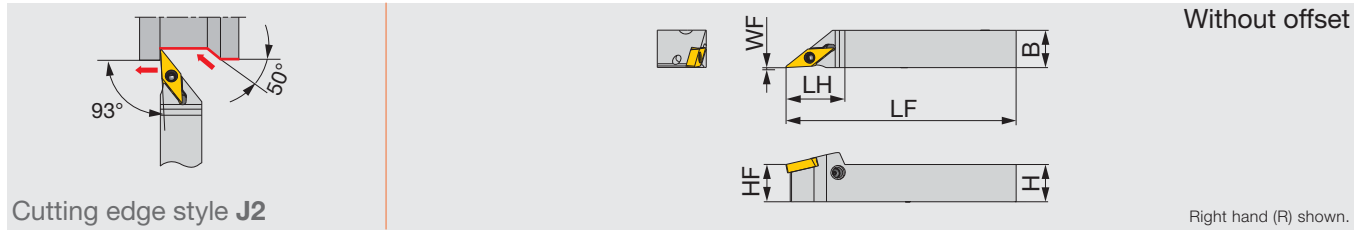
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|-------------|----------------|--------|
| JSVJXR/L... | SR34-508 | T-7F |

JPVJ2XR/L

Lever lock type toolholder without offset with 93° approach angle, for VXGU inserts



Cutting edge style **J2**

| Designation | H | B | LF | LH | HF | WF | RE** | Insert | Torque* |
|------------------|----|----|-----|----|----|----|------|-------------------|---------|
| JPVJ2XR/L1010X09 | 10 | 10 | 120 | 19 | 10 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |
| JPVJ2XR/L1212F09 | 12 | 12 | 85 | 19 | 12 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |
| JPVJ2XR/L1212X09 | 12 | 12 | 120 | 19 | 12 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |
| JPVJ2XR/L1616X09 | 16 | 16 | 120 | 19 | 16 | 0 | 0.2 | VXGU09T2**/L/R... | 0.9 |

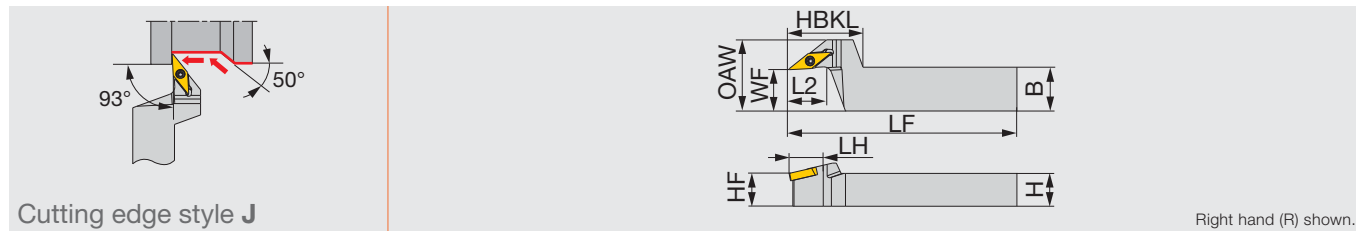
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Lever | Pin | Clamping screw | Wrench |
|--------------|--------|---------|----------------|------------|
| JPVJ2XR/L... | SLLV-1 | SL-PI-2 | SR10400611 | HW2.0/5RED |

JSVJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**

| Designation | H | B | LF | L2 | HBKL | LH | HF | WF | OAW | RE** | Insert | Torque* |
|-------------------|----|----|-----|----|------|----|----|----|-----|------|-----------------|---------|
| JSVJXR1016X09-F15 | 10 | 16 | 120 | 12 | 27 | 19 | 10 | 15 | 26 | 0.2 | VXGU09T2**/L... | 0.9 |
| JSVJXR1216F09-F15 | 12 | 16 | 85 | 12 | 27 | 19 | 12 | 15 | 26 | 0.2 | VXGU09T2**/L... | 0.9 |
| JSVJXR1216X09-F15 | 12 | 16 | 120 | 12 | 27 | 19 | 12 | 15 | 26 | 0.2 | VXGU09T2**/L... | 0.9 |
| JSVJXR1620X09-F15 | 16 | 20 | 120 | 12 | 27 | 19 | 16 | 15 | 26 | 0.2 | VXGU09T2**/L... | 0.9 |

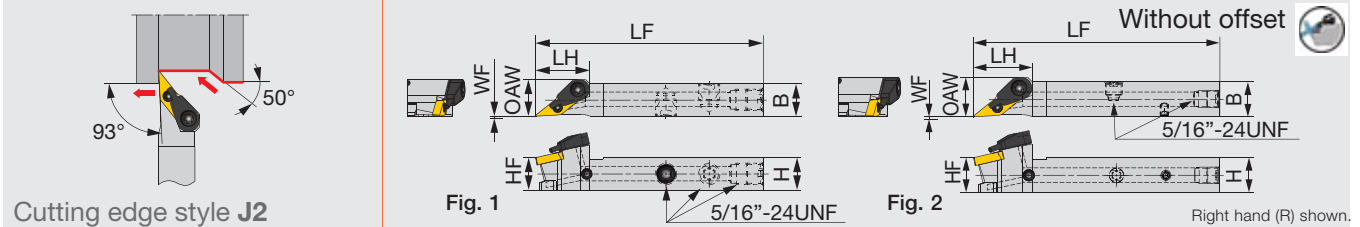
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|-------------|----------------|--------|
| JSVJXR**F15 | SR34-508 | T-7F |

JSVJ2XR/L-CHP

Screw-on toolholder without offset with 93° approach angle, for VXGU inserts, with coolant nozzle for high pressure



| Designation | H | B | LF | LH | HF | WF | OAW | RE** | Insert | Torque* | Fig. |
|----------------------|----|----|-----|------|----|----|------|------|------------------|---------|------|
| JSVJ2XR/L1212F09-CHP | 12 | 12 | 85 | 20 | 12 | 0 | 13.5 | 0.2 | VXGU09T2**L/R... | 0.9 | 1 |
| JSVJ2XR1212X09-CHP | 12 | 12 | 120 | 19.5 | 12 | 0 | 13.4 | 0.2 | VXGU09T2**L | 0.9 | 2 |
| JSVJ2XR1616X09-CHP | 16 | 16 | 120 | 19.5 | 16 | 0 | 16 | 0.2 | VXGU09T2**L | 0.9 | 2 |

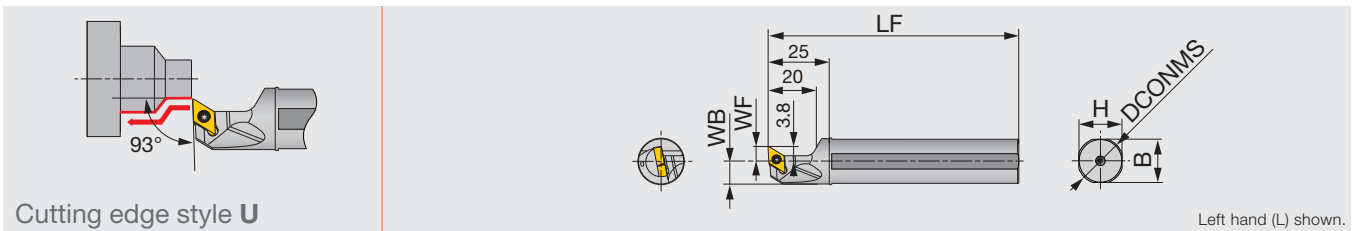
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right-hand toolholder (R) for the left-hand insert (L). Use the left-hand toolholder (L) for the right-hand insert (R)

SPARE PARTS

| Designation | Clamping screw | Coolant unit | Wrench |
|------------------|----------------|--------------|--------|
| JSVJ2XR**F09-CHP | SR34-508 | S-CU-CHP | T-7F |

JS-SDUXL

Screw-on toolholder with 93° approach angle, for DXGU inserts



| Designation | DCONMS | WF | LF | H | B | WB | RE** | Insert | Torque* |
|----------------|--------|----|-----|----|-------|-------|------|----------------|---------|
| JS14H-SDUXL07 | 14 | 6 | 100 | 13 | 6.75 | 6.75 | 0.2 | DXGU0703**L... | 0.9 |
| JS159F-SDUXL07 | 15.875 | 6 | 85 | 15 | 7.687 | 7.687 | 0.2 | DXGU0703**L... | 0.9 |
| JS16F-SDUXL07 | 16 | 6 | 85 | 15 | 7.75 | 7.75 | 0.2 | DXGU0703**L... | 0.9 |
| JS19G-SDUXL07 | 19.05 | 6 | 90 | 18 | 9.275 | 9.275 | 0.2 | DXGU0703**L... | 0.9 |
| JS19X-SDUXL07 | 19.05 | 6 | 120 | 18 | 9.275 | 9.275 | 0.2 | DXGU0703**L... | 0.9 |
| JS20G-SDUXL07 | 20 | 6 | 90 | 19 | 9.75 | 9.75 | 0.2 | DXGU0703**L... | 0.9 |
| JS20X-SDUXL07 | 20 | 6 | 120 | 19 | 9.75 | 9.75 | 0.2 | DXGU0703**L... | 0.9 |
| JS22X-SDUXL07 | 22 | 10 | 120 | 21 | 10.75 | 10.75 | 0.2 | DXGU0703**L... | 0.9 |
| JS25H-SDUXL07 | 25 | 10 | 100 | 24 | 12.25 | 12.25 | 0.2 | DXGU0703**L... | 0.9 |
| JS254X-SDUXL07 | 25.4 | 10 | 120 | 24 | 12.45 | 12.45 | 0.2 | DXGU0703**L... | 0.9 |

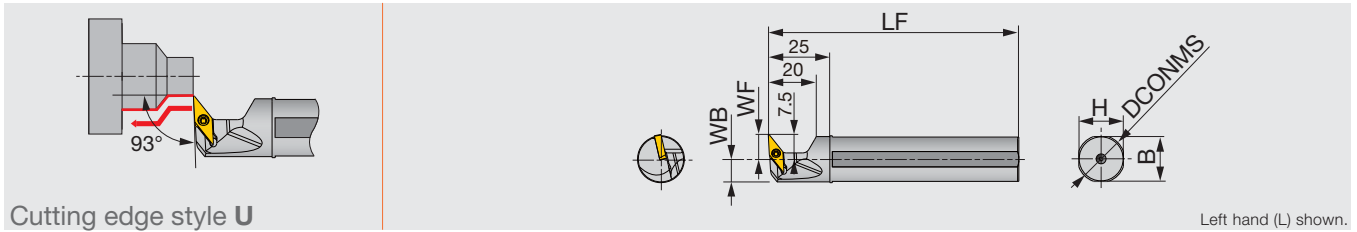
*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the left-hand toolholder (L) for the left-hand insert (L)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|--------------|----------------|--------|
| JS**-SDUXL07 | SR34-514 | T-7F |

JS-SVUXL

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style U

| Designation | DCONMS | WF | LF | H | B | WB | RE** | Insert | Torque* |
|----------------|--------|----|-----|----|------|------|------|----------------|---------|
| JS159F-SVUXL09 | 15.875 | 10 | 85 | 15 | 7.7 | 7.7 | 0.2 | VXGU09T2**L... | 0.9 |
| JS16F-SVUXL09 | 16 | 10 | 85 | 15 | 7.7 | 7.7 | 0.2 | VXGU09T2**L... | 0.9 |
| JS19G-SVUXL09 | 19.05 | 10 | 90 | 18 | 9.2 | 9.2 | 0.2 | VXGU09T2**L... | 0.9 |
| JS19X-SVUXL09 | 19.05 | 10 | 120 | 18 | 9.2 | 9.2 | 0.2 | VXGU09T2**L... | 0.9 |
| JS20G-SVUXL09 | 20 | 10 | 90 | 19 | 9.7 | 9.7 | 0.2 | VXGU09T2**L... | 0.9 |
| JS20X-SVUXL09 | 20 | 10 | 120 | 19 | 9.7 | 9.7 | 0.2 | VXGU09T2**L... | 0.9 |
| JS22X-SVUXL09 | 22 | 10 | 120 | 21 | 10.7 | 10.7 | 0.2 | VXGU09T2**L... | 0.9 |
| JS25H-SVUXL09 | 25 | 10 | 100 | 24 | 12.2 | 12.2 | 0.2 | VXGU09T2**L... | 0.9 |
| JS254X-SVUXL09 | 25.4 | 10 | 120 | 24 | 12.4 | 12.4 | 0.2 | VXGU09T2**L... | 0.9 |

*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius

Note: Use the left-hand toolholder (L) for the left-hand insert (L)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|--------------|----------------|--------|
| JS**-SVUXL09 | SR34-508 | T-7F |

CUTTING PERFORMANCE

● Excellent chatter stability

MINIFURN
TUNGALOY

| | | | | | |
|--------------------------|-----|------|------|------|------|
| Depth of cut: ap (mm) | 2.0 | OK | OK | OK | OK |
| | 1.5 | OK | OK | OK | OK |
| | 1.0 | OK | OK | OK | OK |
| | 0.5 | OK | OK | OK | OK |
| ap/f | | 0.05 | 0.10 | 0.15 | 0.20 |
| Feed: f (mm/rev) | | | | | |

Workpiece : S45C / C45
 Insert : WXGU040304L-TS AH725
 Toolholder : A12M-SWLXR04-D140
 Cutting speed : $V_c = 150$ m/min
 Overhang length : 36 mm (L/D = 3)
 Coolant : Wet (internal supply)

ISO positive insert

| | | | | | |
|--------------------------|-----|------|------|------|------|
| Depth of cut: ap (mm) | 2.0 | OK | OK | OK | OK |
| | 1.5 | OK | OK | OK | OK |
| | 1.0 | OK | OK | OK | OK |
| | 0.5 | OK | OK | OK | OK |
| ap/f | | 0.05 | 0.10 | 0.15 | 0.20 |
| Feed: f (mm/rev) | | | | | |

CHIP CONTROL

P

| | | | | | |
|-----------------------|-----|------|------|------|------|
| Depth of cut: ap (mm) | 2.0 | | | | |
| | 1.5 | | | | |
| | 1.0 | | | | |
| | 0.5 | | | | |
| ap/f | | 0.05 | 0.10 | 0.15 | 0.20 |
| Feed: f (mm/rev) | | | | | |

Workpiece : S45C / C45
 Insert : WXGU040304L-TS AH725
 Toolholder : A12M-SWLXR04-D140
 Cutting speed : $V_c = 150$ m/min
 Boring depth : H = 36 mm (L/D = 3)
 Coolant : Wet (internal supply)

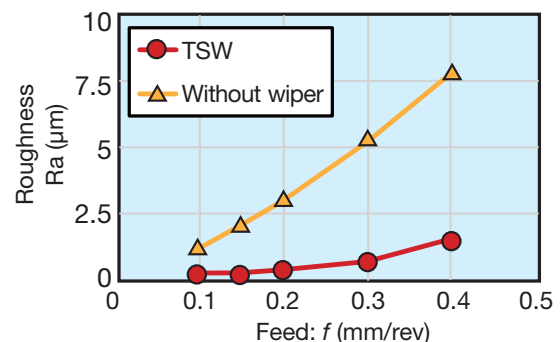
M

| | | | | | |
|-----------------------|------|------|-------|------|------|
| Depth of cut: ap (mm) | 1.50 | | | | |
| | 1.00 | | | | |
| | 0.50 | | | | |
| | 0.25 | | | | |
| ap/f | | 0.05 | 0.075 | 0.10 | 0.15 |
| Feed: f (mm/rev) | | | | | |

Workpiece : SUS304 / X5CrNi18-9
 Insert : WXGU040304L-SS AH725
 Toolholder : E12Q-SWLXR04-D140
 Cutting speed : $V_c = 150$ m/min
 Boring depth : H = 60 mm (L/D = 5)
 Coolant : Wet (internal supply)

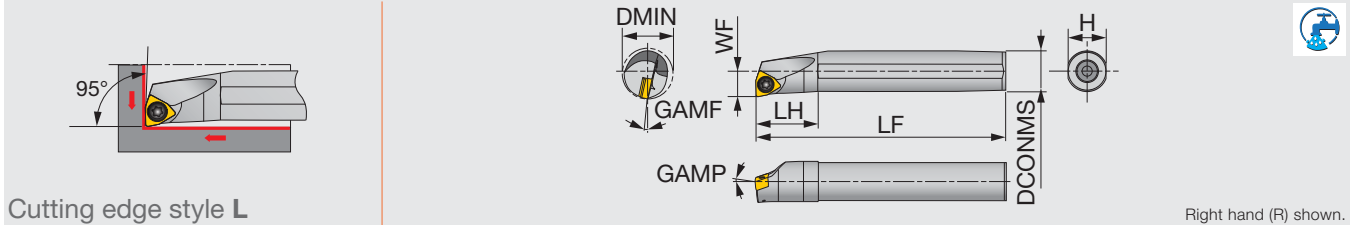
WIPER PERFORMANCE

Workpiece : S45C / C45
 Insert : WXGU040304L-TSW
 CCMT09T304-**(Without wiper)
 Toolholder : E16R-SWLXR04-D180
 Cutting speed : $V_c = 150$ m/min
 Depth of cut : ap = 0.5 mm
 Hole depth : H = 48 mm (L/D = 3)
 Coolant : Wet (internal supply)



A/E-SWLXR/L

For trigon insert with 6 edges



Cutting edge style L

Right hand (R) shown.

| Designation | Material | DMIN | DCONMS | WF | LF | LH | H | GAMP | GAMF | RE** | Insert | Torque* |
|---------------------|----------|------|--------|----|-----|----|----|------|------|------|------------------|---------|
| A10K-SWLXR/L04-D120 | STEEL | 12 | 10 | 6 | 125 | 20 | 9 | -10 | -16 | 0.4 | WXGU0403**L/R... | 0.9 |
| A12M-SWLXR/L04-D140 | STEEL | 14 | 12 | 7 | 150 | 24 | 11 | -10 | -14 | 0.4 | WXGU0403**L/R... | 0.9 |
| A16Q-SWLXR/L04-D180 | STEEL | 18 | 16 | 9 | 180 | 32 | 15 | -10 | -11 | 0.4 | WXGU0403**L/R... | 0.9 |
| A20R-SWLXR/L04-D220 | STEEL | 22 | 20 | 11 | 200 | 36 | 18 | -10 | -10 | 0.4 | WXGU0403**L/R... | 0.9 |
| E10M-SWLXR/L04-D120 | CARBIDE | 12 | 10 | 6 | 150 | 25 | 9 | -10 | -16 | 0.4 | WXGU0403**L/R... | 0.9 |
| E12Q-SWLXR/L04-D140 | CARBIDE | 14 | 12 | 7 | 180 | 27 | 11 | -10 | -14 | 0.4 | WXGU0403**L/R... | 0.9 |
| E16R-SWLXR/L04-D180 | CARBIDE | 18 | 16 | 9 | 200 | 32 | 15 | -10 | -11 | 0.4 | WXGU0403**L/R... | 0.9 |
| E20S-SWLXR/L04-D220 | CARBIDE | 22 | 20 | 11 | 250 | 36 | 18 | -10 | -10 | 0.4 | WXGU0403**L/R... | 0.9 |

*Torque: Recommended torque (N·m) for clamping **RE: The holder measurements are true with this insert radius

Note: Use the right hand toolholder (R) for the left hand insert (L). Use the left hand toolholder (L) for the right hand insert (R)

SPARE PARTS



| Designation | Clamping screw | Wrench |
|------------------|----------------|--------|
| A/E**-SWLXR/L... | SR34-514 | T-7F |

- 1 Use the right hand toolholder (R) for the left hand insert (L)
- 2 Use the left hand toolholder (L) for the right hand insert (R)



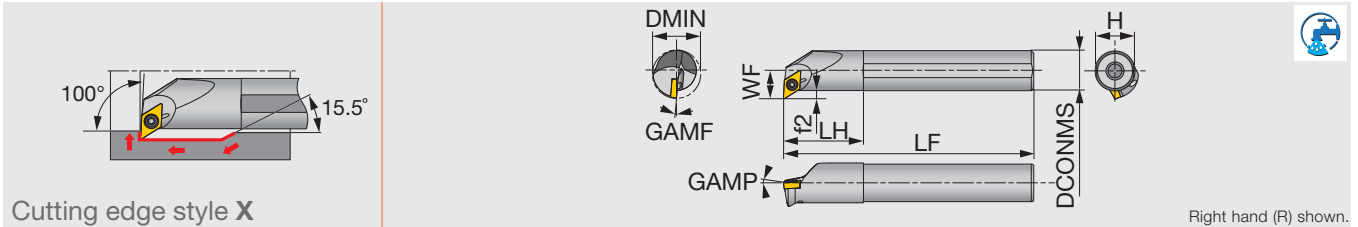
1 Right hand toolholder with left hand insert shown



2 Left hand toolholder with right hand insert shown

A/E-SDXXR/L

For 55° rhombic insert with 4 edges



Right hand (R) shown.

| Designation | Material | DMIN | DCONMS | WF | LF | LH | H | f2 | GAMP | GAMF | RE** | Insert | Torque* |
|---------------------|----------|------|--------|------|-----|----|----|-----|------|------|------|------------------|---------|
| A10K-SDXXR/L07-D130 | STEEL | 13 | 10 | 7.6 | 125 | 20 | 9 | 2.6 | -14 | -16 | 0.4 | DXGU0703**L/R... | 0.9 |
| A12M-SDXXR/L07-D160 | STEEL | 16 | 12 | 8.6 | 150 | 24 | 11 | 2.6 | -14 | -14 | 0.4 | DXGU0703**L/R... | 0.9 |
| A16Q-SDXXR/L07-D200 | STEEL | 20 | 16 | 10.6 | 180 | 32 | 15 | 2.6 | -13 | -13 | 0.4 | DXGU0703**L/R... | 0.9 |
| A20R-SDXXR/L07-D240 | STEEL | 24 | 20 | 12.6 | 200 | 36 | 18 | 2.6 | -13 | -12 | 0.4 | DXGU0703**L/R... | 0.9 |
| E10M-SDXXR/L07-D130 | CARBIDE | 13 | 10 | 7.6 | 150 | 25 | 9 | 2.6 | -14 | -16 | 0.4 | DXGU0703**L/R... | 0.9 |
| E12Q-SDXXR/L07-D160 | CARBIDE | 16 | 12 | 8.6 | 180 | 27 | 11 | 2.6 | -14 | -14 | 0.4 | DXGU0703**L/R... | 0.9 |
| E16R-SDXXR/L07-D200 | CARBIDE | 20 | 16 | 10.6 | 200 | 32 | 15 | 2.6 | -13 | -13 | 0.4 | DXGU0703**L/R... | 0.9 |
| E20S-SDXXR/L07-D240 | CARBIDE | 24 | 20 | 12.6 | 250 | 36 | 18 | 2.6 | -13 | -12 | 0.4 | DXGU0703**L/R... | 0.9 |

*Torque: Recommended torque (N-m) for clamping **RE: The holder measurements are true with this insert radius

Note: Use the right hand toolholder (R) for the left hand insert (L). Use the left hand toolholder (L) for the right hand insert (R)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|------------------|----------------|--------|
| A/E**-SDXXR/L... | SR34-514 | T-7F |

- 1 Use the right hand toolholder (R) for the left hand insert (L)
- 2 Use the left hand toolholder (L) for the right hand insert (R)



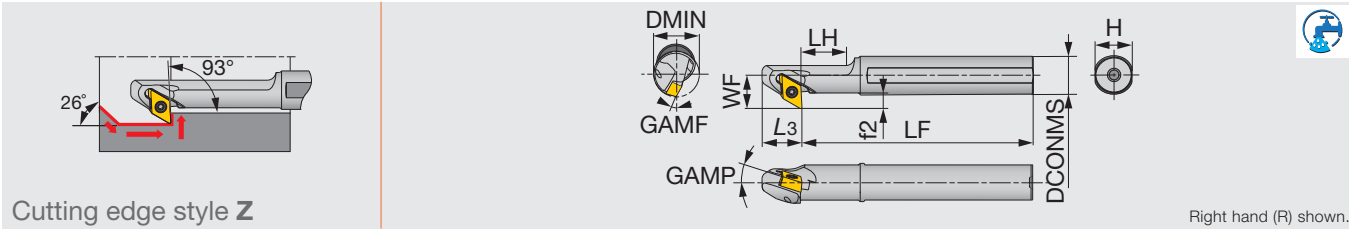
1 Right hand toolholder with left hand insert shown



2 Left hand toolholder with right hand insert shown

A/E-SDZXR/L

For 55° rhombic insert with 4 edges



Right hand (R) shown.

| Designation | Material | DMIN | DCONMS | WF | LF | LH | L3 | H | f2 | GAMP | GAMF | RE** | Insert | Torque* |
|---------------------|----------|------|--------|------|-----|----|----|----|-----|------|-------|------|------------------|---------|
| A12M-SDZXR/L07-D140 | STEEL | 14 | 12 | 10.5 | 150 | 30 | 13 | 11 | 4.5 | -10 | -14 | 0.4 | DXGU0703**R/L... | 0.9 |
| A16Q-SDZXR/L07-D160 | STEEL | 16 | 16 | 12.5 | 180 | 35 | 13 | 15 | 4.5 | -10 | -12.5 | 0.4 | DXGU0703**R/L... | 0.9 |
| A20R-SDZXR/L07-D200 | STEEL | 20 | 20 | 14.5 | 200 | 40 | 13 | 18 | 4.5 | -10 | -10.5 | 0.4 | DXGU0703**R/L... | 0.9 |
| E12Q-SDZXR/L07-D180 | CARBIDE | 18 | 12 | 10.5 | 180 | - | 13 | 11 | 4.5 | -11 | -11 | 0.4 | DXGU0703**R/L... | 0.9 |
| E16R-SDZXR/L07-D220 | CARBIDE | 22 | 16 | 12.5 | 200 | - | 13 | 15 | 4.5 | -11 | -9 | 0.4 | DXGU0703**R/L... | 0.9 |

*Torque: Recommended torque (N·m) for clamping **RE: The holder measurements are true with this insert radius
 Note: Use the right hand toolholder (R) for the right hand insert (R). Use the left hand toolholder (L) for the left hand insert (L)

SPARE PARTS

| Designation | Clamping screw | Wrench |
|------------------|----------------|--------|
| A/E**-SDZXR/L... | SR34-514 | T-7F |

- ① Right hand toolholders (R) are used with right hand inserts (R)
- ② Left hand toolholders (L) are used with left hand inserts (L)

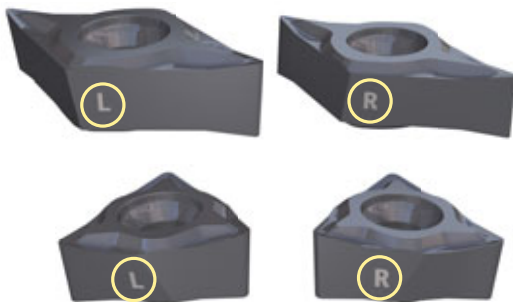


① Right hand toolholder with right hand insert shown



② Left hand toolholder with left hand insert shown

MARKING



Insert hand is identified on the flank side

● : Continuous cutting
 ● : Light interrupted cutting
 ✱ : Heavy interrupted cutting

TurnLine - Insert

POSITIVE TYPE
 DOUBLE-SIDED



Trigon, 80°
 with hole

| | P | M | K | N | S | H |
|----------------|----|----|----|----|----|----|
| Steel | ●● | ●● | ●● | ●● | ●● | ●● |
| Stainless | ●● | ●● | ●● | ●● | ●● | ●● |
| Cast iron | ●● | ●● | ●● | ●● | ●● | ●● |
| Non-ferrous | ●● | ●● | ●● | ●● | ●● | ●● |
| Superalloys | ●● | ●● | ●● | ●● | ●● | ●● |
| Hard materials | ●● | ●● | ●● | ●● | ●● | ●● |

| Application | Chipbreaker | Designation | Corner radius | Coated | | Coated cermet | | Cermet | | Carbide | |
|--|-------------|------------------------------|---------------|--------|-------|---------------|--|--------|--|---------|--|
| | | | | AH725 | SH725 | GT9530 | | NS9530 | | KS05F | |
| Finishing to medium cutting (Sharp edge) | | JS WXGU040301MFR-JS | <0.1* | ● | ● | | | | | | |
| | | WXGU040301MFL-JS | <0.1* | ● | ● | | | | | | |
| | | WXGU040302MFR-JS | <0.2* | ● | ● | | | | | | |
| | | WXGU040302MFL-JS | <0.2* | ● | ● | | | | | | |
| | | WXGU040304MFR-JS | <0.4* | ● | ● | | | | | | |
| | | WXGU040304MFL-JS | <0.4* | ● | ● | | | | | | |
| Finishing to medium cutting (Sharp edge) | | JTS WXGU040301MFR-JTS | <0.1* | ● | ● | | | | | | |
| | | WXGU040301MFL-JTS | <0.1* | ● | ● | | | | | | |
| | | WXGU040302MFR-JTS | <0.2* | ● | ● | | | | | | |
| | | WXGU040302MFL-JTS | <0.2* | ● | ● | | | | | | |
| Finishing to medium cutting | | JTS WXGU040301MR-JTS | <0.1* | ● | ● | | | | | | |
| | | WXGU040301ML-JTS | <0.1* | ● | ● | | | | | | |
| | | WXGU040302MR-JTS | <0.2* | ● | ● | | | | | | |
| | | WXGU040302ML-JTS | <0.2* | ● | ● | | | | | | |
| Finishing (Low cutting force) (Sharp edge) | | JSS WXGU040301MFR-JSS | <0.1* | ● | ● | | | | | | |
| | | WXGU040301MFL-JSS | <0.1* | ● | ● | | | | | | |
| | | WXGU040302MFR-JSS | <0.2* | ● | ● | | | | | | |
| | | WXGU040302MFL-JSS | <0.2* | ● | ● | | | | | | |
| Finishing (Low cutting force) | | JSS WXGU040301MR-JSS | <0.1* | ● | ● | | | | | | |
| | | WXGU040301ML-JSS | <0.1* | ● | ● | | | | | | |
| | | WXGU040302MR-JSS | <0.2* | ● | ● | | | | | | |
| | | WXGU040302ML-JSS | <0.2* | ● | ● | | | | | | |

* Corner radius has minus tolerance.

● : Line up
 ● : New

● : Continuous cutting
 ● : Light interrupted cutting
 ✱ : Heavy interrupted cutting

TurnLine - Insert

POSITIVE TYPE
 DOUBLE-SIDED



Trigon, 80°
 with hole

| | P | M | K | N | S | H | C | | CC | | OC | | CC | | OC | | OC | | OC | |
|----------------|---|---|---|---|---|---|---|---|----|--|----|---|----|--|----|---|----|--|----|--|
| Steel | | | | | | | ● | ● | | | ● | ● | | | ● | ● | | | | |
| Stainless | | | | | | | ● | ● | | | | | | | | | | | | |
| Cast iron | | | | | | | ● | | | | ● | ● | | | ● | ● | | | | |
| Non-ferrous | | | | | | | | | | | | | | | | | | | | |
| Superalloys | | | | | | | ● | | | | | | | | ● | | | | | |
| Hard materials | | | | | | | | | | | | | | | | | | | | |

| Application | Chipbreaker | Designation | Corner radius | Coated | | | Coated cermet | | | Cermet | | | Carbide | | |
|-------------------------------|-------------|----------------------------|---------------|--------|--------|-------|---------------|--|--|--------|--|--|---------|-------|--|
| | | | | AH725 | AH8015 | SH725 | GT9530 | | | NS9530 | | | | KS05F | |
| Finishing to medium cutting | | TS WXGU040302R-TS | 0.2 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040302L-TS | 0.2 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040304R-TS | 0.4 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040304L-TS | 0.4 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040308R-TS | 0.8 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040308L-TS | 0.8 | ● | ● | | ● | | | ● | | | ● | | |
| Finishing (Wiper) | | TSW WXGU040304R-TSW | 0.4 | ● | ● | | ● | | | ● | | | | | |
| | | WXGU040304L-TSW | 0.4 | ● | ● | | ● | | | ● | | | | | |
| | | WXGU040308R-TSW | 0.8 | ● | ● | | ● | | | ● | | | | | |
| | | WXGU040308L-TSW | 0.8 | ● | ● | | ● | | | ● | | | | | |
| Finishing (Low cutting force) | | SS WXGU040302R-SS | 0.2 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040302L-SS | 0.2 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040304R-SS | 0.4 | ● | ● | | ● | | | ● | | | ● | | |
| | | WXGU040304L-SS | 0.4 | ● | ● | | ● | | | ● | | | ● | | |

* Corner radius has minus tolerance.

● : Line up
 ● : New

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting






TurnLine - Insert

**POSITIVE TYPE
DOUBLE-SIDED**

| | |
|---|----------------|
| P | Steel |
| M | Stainless |
| K | Cast iron |
| N | Non-ferrous |
| S | Superalloys |
| H | Hard materials |



**Rhombic, 55°
with hole**

| Application | | Chipbreaker | Designation | Corner radius | Coated | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-------------|--------------------|---------------|--------|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | AH725 | SH725 | | | | | | | | | | | | | | | | | | | | | |
| Finishing (Sharp edge) |  | JRP | DXGU070301MFRE-JRP | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070301MFLE-JRP | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFRE-JRP | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFLE-JRP | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| Finishing to medium cutting (Sharp edge) |  | JS | DXGU070301MFR-JS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070301MFL-JS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFR-JS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFL-JS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070304MFR-JS | <0.4* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070304MFL-JS | <0.4* | ● | | | | | | | | | | | | | | | | | | | | | | |
| Finishing to medium cutting (Sharp edge) |  | JTS | DXGU070301MFR-JTS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070301MFL-JTS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFR-JTS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFL-JTS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| Finishing to medium cutting |  | JTS | DXGU070301MR-JTS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070301ML-JTS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MR-JTS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302ML-JTS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| Finishing (Low cutting force) (Sharp edge) |  | JSS | DXGU070301MFR-JSS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070301MFL-JSS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFR-JSS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |
| | | | DXGU070302MFL-JSS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | | |

* Corner radius has minus tolerance.

● : Line up
● : New




● : Continuous cutting
 ● : Light interrupted cutting
 ✱ : Heavy interrupted cutting

TurnLine - Insert

POSITIVE TYPE

 Rhombic, 55° with hole

| | P | M | K | N | S | H |
|----------------|---|---|---|---|---|---|
| Steel | ● | ● | ● | ● | ● | ● |
| Stainless | ● | ● | ● | ● | ● | ● |
| Cast iron | ● | ● | ● | ● | ● | ● |
| Non-ferrous | ● | ● | ● | ● | ● | ● |
| Superalloys | ● | ● | ● | ● | ● | ● |
| Hard materials | ● | ● | ● | ● | ● | ● |

| Application | Chipbreaker | Designation | Corner radius | Coated | | Coated cermet | | Cermet | | Carbide | |
|-------------------------------|---|-----------------------------|---------------|--------|--------|---------------|--------|--------|---|---------|--|
| | | | | AH725 | AH8015 | GT9530 | NS9530 | KS05F | | | |
| Finishing (Low cutting force) |  | JSS DXGU070301MR-JSS | <0.1* | ● | ● | | | | | | |
| | | DXGU070301ML-JSS | <0.1* | ● | ● | | | | | | |
| | | DXGU070302MR-JSS | <0.2* | ● | ● | | | | | | |
| | | DXGU070302ML-JSS | <0.2* | ● | ● | | | | | | |
| Finishing to medium cutting |  | TS DXGU070302R-TS | 0.2 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070302L-TS | 0.2 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070304R-TS | 0.4 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070304L-TS | 0.4 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070308R-TS | 0.8 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070308L-TS | 0.8 | ● | ● | ● | ● | ● | ● | | |
| Finishing (Low cutting force) |  | SS DXGU070302R-SS | 0.2 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070302L-SS | 0.2 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070304R-SS | 0.4 | ● | ● | ● | ● | ● | ● | | |
| | | DXGU070304L-SS | 0.4 | ● | ● | ● | ● | ● | ● | | |

* Corner radius has minus tolerance.

● : Line up
 ● : New



● : Continuous cutting
 ● : Light interrupted cutting
 * : Heavy interrupted cutting

TurnLine - Insert

DOUBLE-SIDED

 Rhombic, 35° with hole

| | | |
|---|----------------|----|
| P | Steel | ●● |
| M | Stainless | ●● |
| K | Cast iron | |
| N | Non-ferrous | |
| S | Superalloys | |
| H | Hard materials | |

| Application | Chipbreaker | Designation | Corner radius | Coated | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-------------|--------------------|--------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | SH725 | | | | | | | | | | | | | | | | | | | | | | |
| Finishing to medium cutting (Sharp edge) |  | JS | VXGU09T201MFR-JS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | |
| | | | VXGU09T201MFL-JS | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | |
| | | | VXGU09T202MFR-JS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | |
| | | | VXGU09T202MFL-JS | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | |
| Finishing to sharp edge |  | JRP | VXGU09T201MFRE-JRP | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | |
| | | | VXGU09T201MFLE-JRP | <0.1* | ● | | | | | | | | | | | | | | | | | | | | | |
| | | | VXGU09T202MFRE-JRP | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | |
| | | | VXGU09T202MFLE-JRP | <0.2* | ● | | | | | | | | | | | | | | | | | | | | | |

* Corner radius has minus tolerance.

● : Line up
 ● : New

STANDARD CUTTING CONDITIONS

FOR EXTERNAL TURNING

| Applications | ISO | Workpiece material | Priority | Chip-breaker | Grade | Cutting speed Vc (m/min) | Depth of cut ap (mm) | Feed f (mm/rev) |
|---------------------------------|-----|---|-----------------------------|--------------|--------|--------------------------|----------------------|-----------------|
| For swiss type automatic lathes | P | Low carbon steel SS400, etc. E275A, etc. Carbon steel S45C, etc. C45, etc. | First choice | JS | SH725 | 50 - 180 | 0.1 - 3 | 0.03 - 0.1 |
| | | Low alloy steel SCM415, etc. 18CrMo4, etc. Alloy steel SCM440, etc. 42CrMo4, etc. | With high sharpness | JSS | SH725 | 50 - 180 | 0.1 - 1.5 | 0.03 - 0.1 |
| | M | Stainless steel (Austenitic) SUS304, etc. X5CrNi18-9, etc. | First choice | JS | SH725 | 50 - 180 | 0.1 - 1.25 | 0.03 - 0.1 |
| | | Stainless steel (Martensitic and ferritic) SUS430, etc. X6Cr17, etc. Stainless steel (Precipitation hardened) SUS630, etc. X5CrNiCuNb16-4, etc. | With high sharpness | JSS | SH725 | 50 - 180 | 0.1 - 1.5 | 0.03 - 0.1 |
| For small size CNC lathes | P | Low carbon steel SS400, etc. E275A, etc. Carbon steel S45C, etc. C45, etc. Low alloy steel SCM415, etc. 18CrMo4, etc. Alloy steel SCM440, etc. 42CrMo4, etc. | First choice | SS | AH725 | 50 - 180 | 0.15 - 1.5 | 0.05 - 0.2 |
| | | | For improved surface finish | TS | AH725 | 50 - 180 | 0.3 - 2 | 0.08 - 0.3 |
| | | | For wear resistance | SS | NS9530 | 50 - 200 | 0.15 - 1.5 | 0.05 - 0.2 |
| | M | Stainless steel (Austenitic) SUS304, etc. X5CrNi18-9, etc. Stainless steel (Martensitic and ferritic) SUS430, etc. X6Cr17, etc. Stainless steel (Precipitation hardened) SUS630, etc. X5CrNiCuNb16-4, etc. | For wear resistance | TS | NS9530 | 50 - 200 | 0.3 - 2 | 0.08 - 0.3 |
| | | | For impact resistance | SS | GT9530 | 50 - 250 | 0.15 - 1.5 | 0.05 - 0.2 |
| | | | For impact resistance | TS | GT9530 | 50 - 250 | 0.3 - 2 | 0.08 - 0.3 |

STANDARD CUTTING CONDITIONS

FOR INTERNAL TURNING

| ISO | Workpiece material | Grade | | | Cutting speed Vc (m/min) | Depth of cut ap (mm) | Feed f (mm/rev) |
|----------|---|--------------|--------------------|----------------------------------|-----------------------------|-------------------------|--------------------|
| | | First choice | For surface finish | For wear resistance (High speed) | | | |
| P | Low carbon steel SS400, S25C, etc. E275A, C25, etc. | AH725 | - | - | 50 - 180 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | - | AH8015 | 50 - 200 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | NS9530 | - | 80 - 250 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | GT9530 | - | 80 - 300 | 0.3 - 2 | 0.08 - 0.3 |
| | Carbon steel S45C, S55C, etc. C45, C55, etc. | AH725 | - | - | 50 - 180 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | - | AH8015 | 50 - 200 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | NS9530 | - | 80 - 250 | 0.3 - 2 | 0.08 - 0.3 |
| | Low alloy steel SCM415, etc. 18CrMo4, etc. | - | GT9530 | - | 80 - 300 | 0.3 - 2 | 0.08 - 0.3 |
| | | AH725 | - | - | 50 - 180 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | - | AH8015 | 50 - 200 | 0.3 - 2 | 0.08 - 0.3 |
| | Alloy steel SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc. | - | NS9530 | - | 80 - 250 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | GT9530 | - | 80 - 300 | 0.3 - 2 | 0.08 - 0.3 |
| AH725 | | - | - | 50 - 180 | 0.3 - 2 | 0.08 - 0.3 | |
| M | Stainless steel (Austenitic) SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc. | AH8015 | - | - | 50 - 150 | 0.3 - 2 | 0.08 - 0.3 |
| | | AH8015 | - | - | 50 - 150 | 0.3 - 2 | 0.08 - 0.3 |
| | | AH8015 | - | - | 50 - 150 | 0.3 - 2 | 0.08 - 0.3 |
| K | Grey cast iron FC250, etc. 250, etc. | AH725 | - | - | 50 - 180 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | - | AH8015 | 50 - 200 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | NS9530 | - | 80 - 250 | 0.3 - 2 | 0.08 - 0.3 |
| | Ductile cast iron FCD700, etc. 600-3, etc. | - | GT9530 | - | 80 - 300 | 0.3 - 2 | 0.08 - 0.3 |
| | | AH725 | - | - | 50 - 180 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | - | AH8015 | 50 - 200 | 0.3 - 2 | 0.08 - 0.3 |
| N | Non ferrous Metal Aluminum alloy, etc. | - | NS9530 | - | 80 - 250 | 0.3 - 2 | 0.08 - 0.3 |
| | | - | GT9530 | - | 80 - 300 | 0.3 - 2 | 0.08 - 0.3 |
| S | Heat-resistant alloys Titanium alloys, etc. | AH8015 | - | - | 20 - 80 | 0.3 - 2 | 0.08 - 0.3 |
| | | AH8015 | - | - | 20 - 80 | 0.3 - 2 | 0.08 - 0.3 |

GRADES

AH725**P M K****PREMIUMTEC**
TUNGALOY

- Versatile PVD coated grade suitable for a wide range of work materials
- Demonstrates a balanced resistance to wear and fracture

New**AH8015****P M K S****PREMIUMTEC**
TUNGALOY

- PVD coated grade with a balanced resistance to wear and fracture
- First choice for stainless steel and heat-resistant superalloys

SH725**P M K**

- PVD coating grade most suited for sharp cutting edges
- Suitable for machining of small and precision parts

GT9530**P K****PREMIUMTEC**
TUNGALOY

- Coated cermet grade with PremiumTec treatment for exceptional wear resistance
- Provides remarkable performance in high-speed finishing of steel

NS9530**P K****PREMIUMTEC**
TUNGALOY

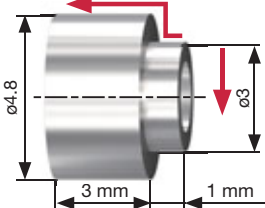
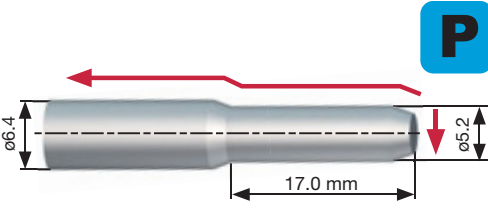
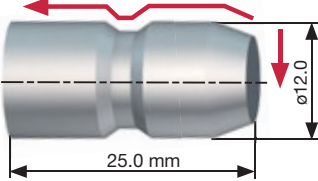
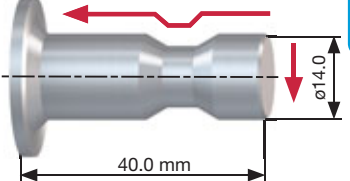
- General-purpose cermet grade with incredible fracture and wear resistance.
- Ensures long tool life and excellent surface finishing of steel

KS05F**N**

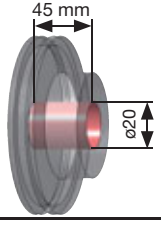
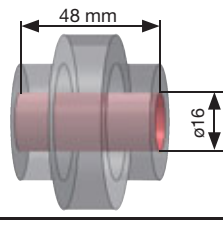
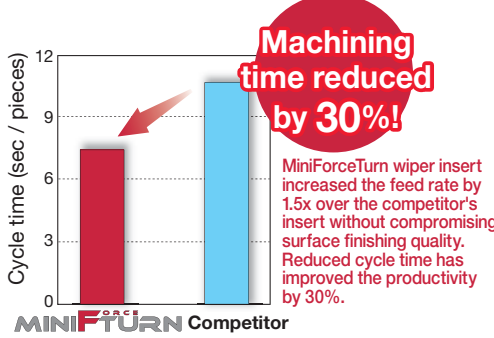
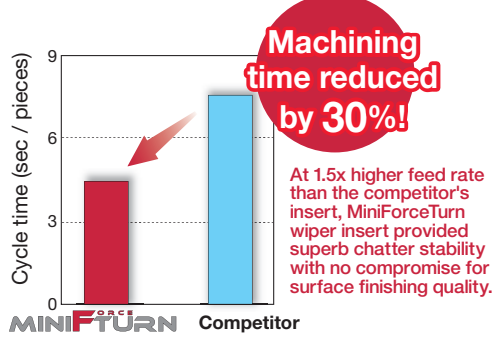
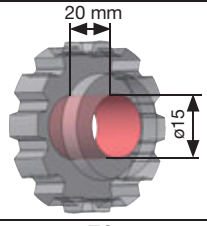
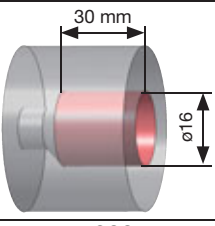
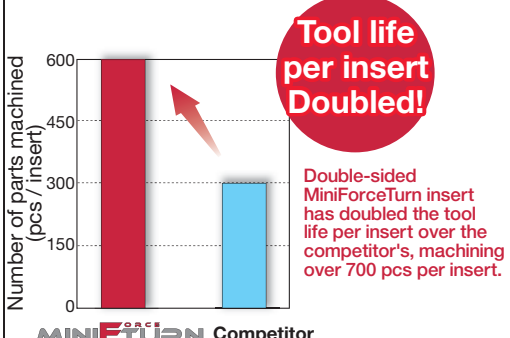
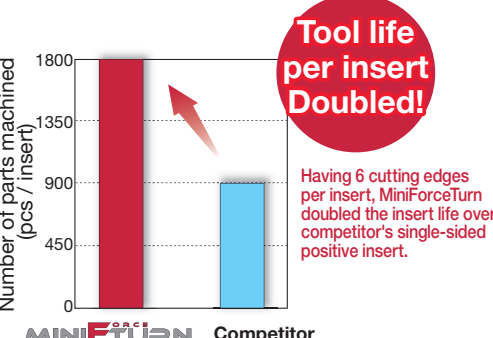
- Sub-micron grain cemented carbide with balanced wear and impact resistance
- Homogeneous fine-grained structure provides excellent resistance to wear, fracture, and built-up edge

PRACTICAL EXAMPLES

External turning

| Workpiece | | Shaft | Shaft |
|------------------------------|--|---|---|
| Toolholder | | JSDJ2XR1212X07 | JSWL2XR1212X04 |
| Insert | | DXGU07030MFLE-JS | WXGU040302ML-TS |
| Grade | | SH725 | AH725 |
| Workpiece material | | SUS316 / X5CrNiMo17-12-3 | S45C / C45 |
| Cutting conditions | | | |
| Cutting speed: V_c (m/min) | | 61 | 66 - 80 |
| Feed : f (mm/rev) | | 0.02 | 0.15 |
| Depth of cut : ap (mm) | | 0.12 | 0.6 |
| Machining | | External | External |
| Coolant | | Wet | Wet |
| Results | |  <p>Tool life 1.3 times!</p> <p>MiniForceTurn improved chip control, while the SH725 grade increased tool life by 1.3x.</p> |  <p>Number of parts machined 3 times!</p> <p>Double-sided MiniForceTurn insert machined 3x more parts per insert than the competitor's single-sided insert, due to extended tool life and increased number of cutting edges. Cost-per-edge was also reduced.</p> |
| Workpiece material | | Alloy steels | Low carbon steel (cold drawn) |
| Cutting conditions | | | |
| Cutting speed: V_c (m/min) | | 66 - 80 | 170 |
| Feed : f (mm/rev) | | 0.15 | 0.03 |
| Depth of cut : ap (mm) | | 0.6 | 0.2 |
| Machining | | External | External |
| Coolant | | Wet | Wet |
| Results | |  <p>Number of parts machined Doubled!</p> <p>Double-sided MiniForceTurn insert machined 2x as many number of parts.</p> |  <p>Tool life 2.4 times!</p> <p>A combination of JRP chipbreaker and SH725 grade provided high wear resistance and improved surface finishing, extending tool life by 2.4x over the competitor's insert.</p> |

Internal turning

| Workpiece | | Machine Parts | Machine Parts |
|--------------------|------------------------------|--|--|
| Toolholder | | A16Q-SWLXR04-D180 | E12Q-SWLXR04-D140 |
| Insert | | WXGU040304L-TSW | WXGU040304L-TSW |
| Grade | | AH725 | GT9530 |
| Workpiece material | | S45C / C45  P | SCM435 / 34CrMo4  P |
| Cutting conditions | Cutting speed: V_c (m/min) | 160 | 200 |
| | Feed : f (mm/rev) | 0.10 → 0.15 | 0.10 → 0.15 |
| | Depth of cut : ap (mm) | 0.5 | 0.2 |
| | Machining | Internal Turning (continuous cutting) | Internal Turning (continuous cutting) |
| | Coolant | Wet | Wet |
| Results | |  MINIFUTURE Competitor |  MINIFUTURE Competitor |
| Workpiece | | Machine Parts | Machine Parts |
| Toolholder | | A10K-SWLXR04-D120 | A12M-SDXXR04-D140 |
| Insert | | WXGU040302L-SS | DXGU070304L-TS |
| Grade | | KS05F | KS05F |
| Workpiece material | | CAC406 / Bronze casting  N | A5056 (Al - Mg)  N |
| Cutting conditions | Cutting speed: V_c (m/min) | 70 | 200 |
| | Feed : f (mm/rev) | 0.1 | 0.1 |
| | Depth of cut : ap (mm) | 1.0 | 1.0 |
| | Machining | Internal Turning (continuous cutting) | Internal Turning (continuous cutting) |
| | Coolant | Wet | Wet |
| Results | |  MINIFUTURE Competitor |  MINIFUTURE Competitor |

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