

Small diameter internal turning tool

TINY^{INI}MTURN

Tungaloy Report No. 402S2-US

Three major additions to boost productivity

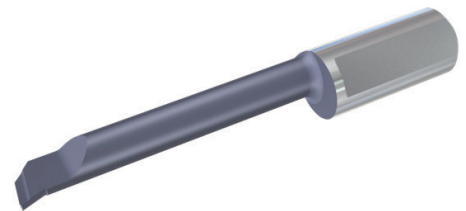




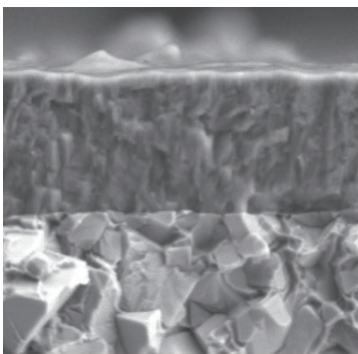
Expanded miniature boring tool lineup for a wider application coverage

① Expansion of SH725 grade for solid boring bar lineup

- Excellent wear and chipping resistance offers longer and predictable tool life combined with stable machining
- Solid bars without coolant hole



SH725



PVD coated grade SH725

(Ti,Al)N coating combined with a tough carbide substrate dedicated for small parts machining offers excellent coating adhesion and edge sharpness.

Excellent resistance to wear and chip welding

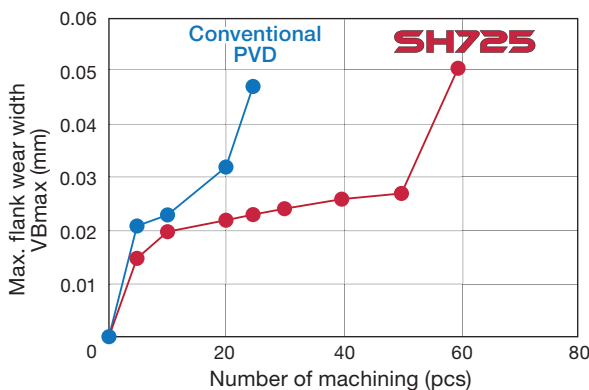
Smooth coating surface of the cutting edge prevents coating from peeling off, while its incredible wear resistance provides longer tool life than existing grades.

High resistance to plastic deformation

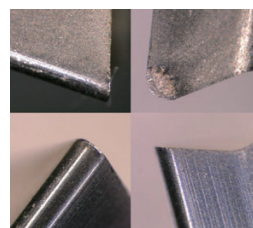
Tough carbide substrate offers stable and longer tool life.

CUTTING PERFORMANCE

M SUS316L / X2CrNiMo17-12-2

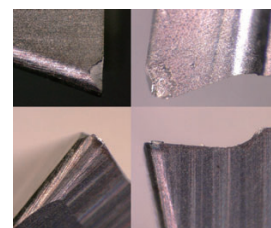


After machining 50 pcs



SH725

After machining 25 pcs



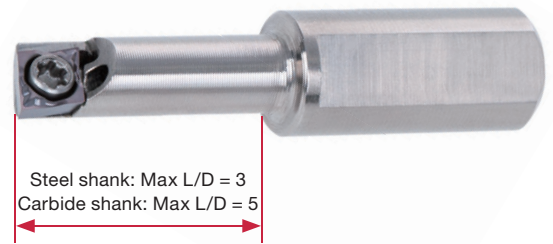
Conventional PVD

Solid bar : TBTR07210015-D060
 Grade : SH725
 Cutting speed : $V_c = 60$ m/min
 Feed : $f = 0.02$ mm/rev
 Depth of cut : $a_p = 0.5$ mm
 Coolant : Wet

SH725 showed excellent wear resistance.

② New economical indexable solution for miniature boring applications

- Applicable for boring operations as small as $\varnothing 5$ mm
- Available in a wide variety of chipbreakers and grades
- Provides excellent chip control due to unique chipbreakers
- Coolant-through tools dramatically improve chip evacuation
- Long overhang with carbide tools



Workpiece material	PMS	PMNS	PMS	SH	N
Chipbreaker	JS	W08	J08	None	None
Image					
Applicable grade EPG*04...	SH725 / SH730	SH725 / SH730 GT9530 / NS9530 TH10	SH725 / SH730 J740	BX310* / BX470*	DX140
Applicable grade EPG*03...	SH725 / SH730	SH725 / SH730 TH10	-	BX310* / BX470*	-
Chip control range				-	-

*Designation: 1QP-EPGW...

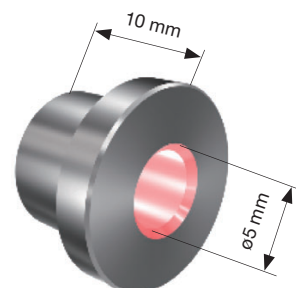
CUTTING PERFORMANCE

P S45C / C45

Tool	New indexable tool Tool: A07050-SEXPR03-3 Insert: EPGT040101F-JS SH725	Conventional Solid bar: Conventional PVD
Chipbreaker		
Surface quality		

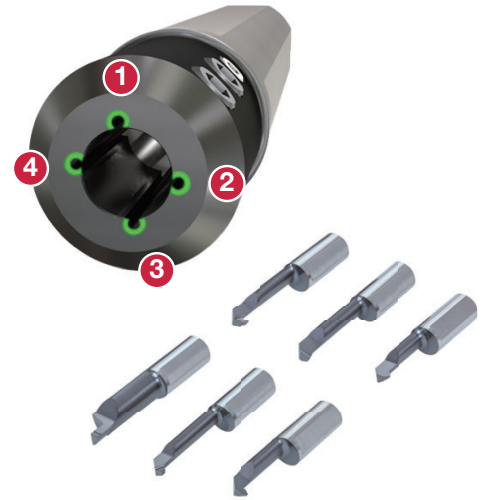
Cutting speed : $V_c = 80$ m/min
 Feed : $f = 0.03$ mm/rev
 Depth of cut : $a_p = 0.3$ mm
 Coolant : Wet

Excellent chip control and surface finish thanks to tool stability and perfect chip formation and evacuation.



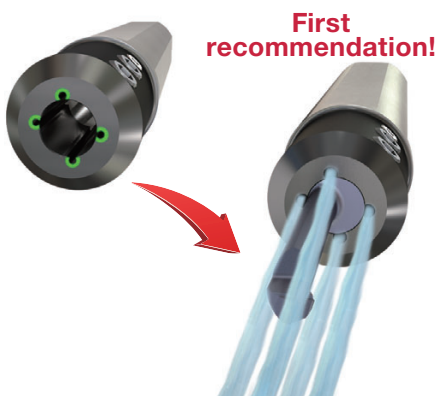
③ New sleeve with four coolant holes for optimal performance

- Optimum sleeve option for all boring operations. Sleeves with four coolant holes can be used with all TinyMini-Turn tools
- 4 streams of coolant jets are directed to the cutting point, improving chip evacuation
- Sufficient coolant supply eliminates chip bird-nesting on the tools or workpiece, enabling trouble-free, unattended operation over an extended time
- Significantly prolongs tool life



■ Perfect chip evacuation

Internal coolant sleeve

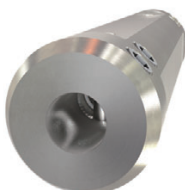


Excellent chip evacuation



- No chip jamming
- No machine stoppage
- No downtime

Conventional (External coolant)



- Chip jamming
- Increased machine downtime

STANDARD CUTTING CONDITIONS

For solid boring bar



Boring, profiling, chamfering, back boring

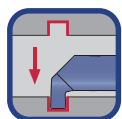
ISO	Workpiece material	Grade	Cutting speed Vc (m/min)	Cutting speed Vc (sfm)	Feed f (mm/rev)	Feed f (ipr)
P	Low carbon steel 1015, 1025, etc.	SH725	40 - 140	131 - 459	0.01 - 0.08	0.0004 - 0.003 *
	Carbon steel, Alloy steel 1055, 4140, etc.	SH725	40 - 140	131 - 459	0.01 - 0.08	0.0004 - 0.003 *
	Prehardened steel NAK80, PX5, etc.	SH725	40 - 140	131 - 459	0.01 - 0.08	0.0004 - 0.003 *
M	Stainless steel 304, 316, etc.	SH725	40 - 140	131 - 459	0.01 - 0.08	0.0004 - 0.003 *
K	Gray cast iron No.250B, No.300B, etc.	SH725	30 - 100	98 - 328	0.01 - 0.08	0.0004 - 0.003 *
	Ductile cast iron 65-45-12, 80-55-06, etc.	SH725	30 - 100	98 - 328	0.01 - 0.08	0.0004 - 0.003 *
N	Aluminum alloys, Copper alloys Si < 12%	SH725	90 - 200	295 - 656	0.01 - 0.08	0.0004 - 0.003 *
S	Titanium alloys Ti-6Al-4V, etc.	SH725	30 - 100	98 - 328	0.01 - 0.08	0.0004 - 0.003 *
	Superalloys Inconel718, etc.	SH725	30 - 100	98 - 328	0.01 - 0.08	0.0004 - 0.003 *

* JBTR/L04020004-D006, JBTR/L04030004-D006 : Max. f = 0.0004 ipr (0.01 mm/rev)



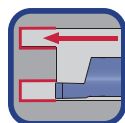
Threading (metric thread)

ISO	Workpiece material	Grade	Cutting speed Vc (m/min)	Cutting speed Vc (sfm)	Number of passes Pitch: mm (in)				
					0.5 (0.020")	0.75 (0.030")	1 (0.039")	1.25 (0.049")	1.5 (0.059")
P	Low carbon steel 1015, 1025, etc.	SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
	Carbon steel, Alloy steel 1055, 4140, etc.	SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
	Prehardened steel NAK80, PX5, etc.	SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steel 304, 316, etc.	SH725	40 - 140	131 - 459	8	10	12	15	18
K	Gray cast iron No.250B, No.300B, etc.	SH725	30 - 100	98 - 328	7	9	12	14	17
	Ductile cast iron 65-45-12, 80-55-06, etc.	SH725	30 - 100	98 - 328	7	9	12	14	17
N	Aluminum alloys, Copper alloys Si < 12%	SH725	90 - 200	295 - 656	6	8	10	12	15



Internal grooving

ISO	Workpiece material	Grade	Cutting speed Vc (m/min)	Cutting speed Vc (sfm)	Feed f (mm/rev)	Feed f (ipr)
P	Low carbon steel 1015, 1025, etc.	SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
	Carbon steel, Alloy steel 1055, 4140, etc.	SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
	Prehardened steel NAK80, PX5, etc.	SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
M	Stainless steel 304, 316, etc.	SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
K	Gray cast iron No.250B, No.300B, etc.	SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001
	Ductile cast iron 65-45-12, 80-55-06, etc.	SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001
N	Aluminum alloys, Copper alloys Si < 12%	SH725	90 - 200	295 - 656	0.01 - 0.03	0.0004 - 0.001
S	Titanium alloys Ti-6Al-4V, etc.	SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001
	Superalloys Inconel718, etc.	SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001



Face grooving

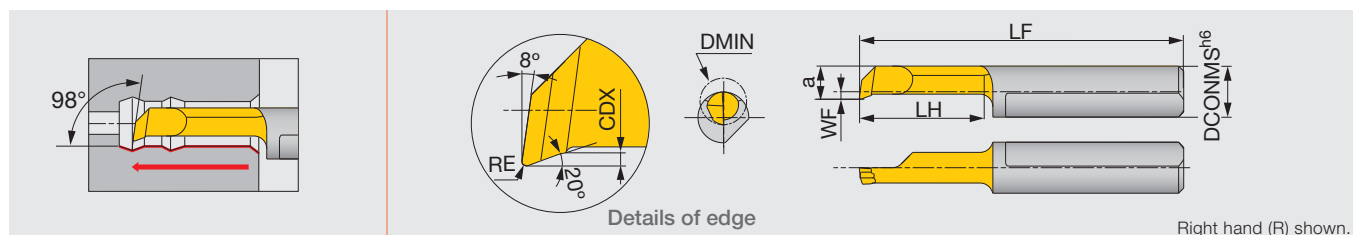
ISO	Workpiece material	Grade	Cutting speed Vc (m/min)	Cutting speed Vc (sfm)	Feed f (mm/rev)	Feed f (ipr)
P	Low carbon steel 1015, 1025, etc.	SH725	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
	Carbon steel, Alloy steel 1055, 4140, etc.	SH725	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
	Prehardened steel NAK80, PX5, etc.	SH725	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
M	Stainless steel 304, 316, etc.	SH725	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
K	Gray cast iron No.250B, No.300B, etc.	SH725	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002
	Ductile cast iron 65-45-12, 80-55-06, etc.	SH725	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002
N	Aluminum alloys, Copper alloys Si < 12%	SH725	90 - 200	295 - 656	0.01 - 0.05	0.0004 - 0.002
S	Titanium alloys Ti-6Al-4V, etc.	SH725	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002
	Superalloys Inconel718, etc.	SH725	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002

For new indexable boring bar (EPG*04 / EPG*03 insert)

ISO	Workpiece material	Grade	Cutting speed Vc (m/min)	Cutting speed Vc (sfm)
P	Low carbon steels 1015, 1025, etc. Carbon steels 1055, 4140, etc. Alloy steels 4140, 8620, etc.	SH725	50 - 200	164 - 656
		SH730	50 - 150	164 - 492
		J740	10 - 100	33 - 328
		NS9530	150 - 300	492 - 984
		GT9530	150 - 300	492 - 984
M	Stainless steels 304, 316, etc.	SH725	50 - 200	164 - 656
		SH730	30 - 150	98 - 492
K	Gray cast iron No.250B, No.300B, etc.	TH10	30 - 100	98 - 328
N	Aluminum alloys Si < 12%	TH10	> 100	> 328
		DX140	> 500	> 1640
	Aluminum alloys Si > 12%	TH10	> 100	> 328
		DX140	> 400	> 1312
	Copper alloys	TH10	> 100	> 328
		DX140	> 500	> 1640
S	Titanium alloys Ti-6Al-4V, etc.	SH725	30 - 50	98 - 164
	Superalloys Inconel718, etc.	SH730	30 - 50	98 - 164
H	Hardened materials	BX310	30 - 150	98 - 492
Powder metal	Sintered powder metals	BX470	100 - 300	328 - 984

TBTR/L

Solid boring bar for boring, profiling, and chamfering

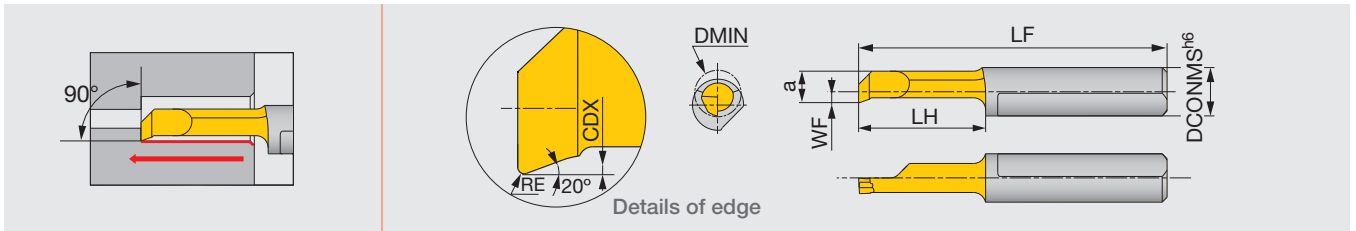


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE ^{+0.05} ₀
TBTR04045005-D010	●	1	4	-1.1	0.9	21	4.5	0.1	0.05
TBTR04065005-D010	●	1	4	-1.1	0.9	23	6.5	0.1	0.05
TBTR04040005-D020	●	2	4	-0.3	1.7	20.5	4	0.1	0.05
TBTR04090005-D020	●	2	4	-0.3	1.7	25.5	9	0.1	0.05
TBTR04140005-D020	●	2	4	-0.3	1.7	30.5	14	0.1	0.05
TBTR/L04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
TBTR04150010-D028	●	2.8	4	0.9	2.6	31.5	15	0.2	0.1
TBTR04190010-D028	●	2.8	4	0.9	2.6	35.5	19	0.2	0.1
TBTR04090010-D040	●	4	4	1.5	3.5	25.5	9	0.3	0.1
TBTR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
TBTR04190010-D040	●	4	4	1.5	3.5	35.5	19	0.3	0.1
TBTR04230010-D040	●	4	4	1.5	3.5	39.5	23	0.3	0.1
TBTR04270010-D040	●	4	4	1.5	3.5	43.5	27	0.3	0.1
TBTR07090015-D050	●	5	7	0.9	4.4	25	9	0.5	0.15
TBTR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
TBTR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15
TBTR07240015-D050	●	5	7	0.9	4.4	40	24	0.5	0.15
TBTR07290015-D050	●	5	7	0.9	4.4	45	29	0.5	0.15
TBTR07340015-D050	●	5	7	0.9	4.4	50	34	0.5	0.15
TBTR07140015-D060	●	6	7	1.8	5.3	30	14	0.5	0.15
TBTR/L07210015-D060	●	6	7	1.8	5.3	37	21	0.5	0.15
TBTR07240015-D060	●	6	7	1.8	5.3	40	24	0.5	0.15
TBTR07290015-D060	●	6	7	1.8	5.3	45	29	0.5	0.15
TBTR07340015-D060	●	6	7	1.8	5.3	50	34	0.5	0.15
TBTR07410015-D060	●	6	7	1.8	5.3	57	41	0.5	0.15
TBTR07190015-D068	●	6.8	7	2.8	6.3	35	19	0.6	0.15
TBTR07240015-D068	●	6.8	7	2.8	6.3	40	24	0.6	0.15
TBTR07290015-D068	●	6.8	7	2.8	6.3	45	29	0.6	0.15
TBTR07340015-D070	●	7	7	2.8	6.3	50	34	0.6	0.15
TBTR07390015-D070	●	7	7	2.8	6.3	55	39	0.6	0.15
TBTR07440015-D070	●	7	7	2.8	6.3	60	44	0.6	0.15
TBTR07490015-D070	●	7	7	2.8	6.3	65	49	0.6	0.15

● : New product

TBPR

Solid boring bar for boring and chamfering

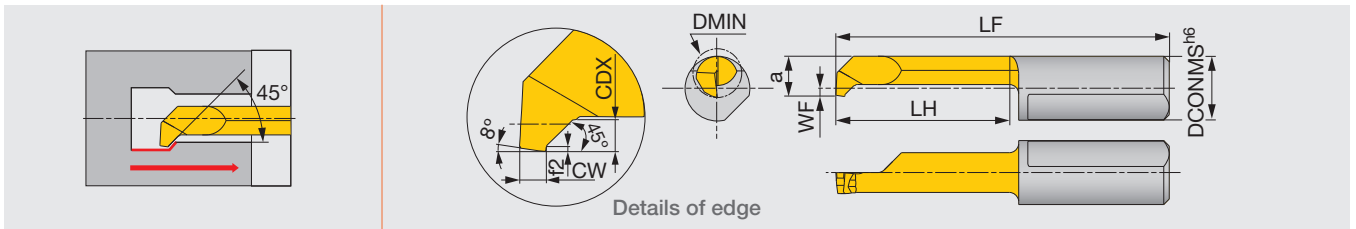


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE ^{+0.05} ₀
TBPR04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
TBPR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
TBPR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
TBPR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15

● : New product

TBUR

Solid boring bar for back boring and chamfering

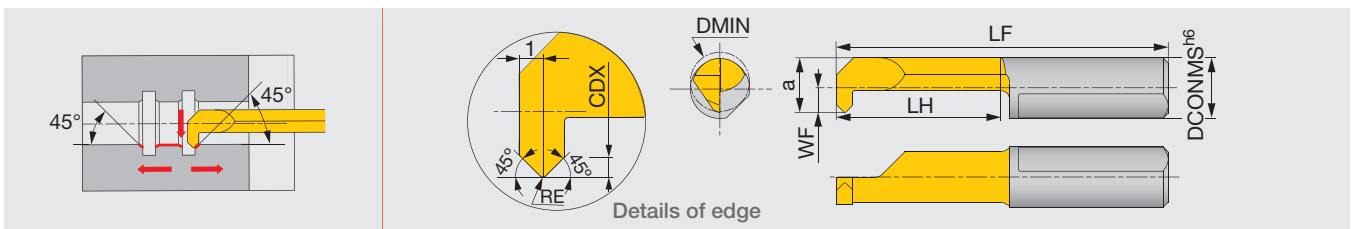


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW ^{+0.05} ₀
TBUR07140010-D050	●	5	7	0.9	4.4	30	14	0.2	1	1
TBUR07190010-D050	●	5	7	0.9	4.4	35	19	0.2	1	1

● : New product

TBCR

Solid boring bar for boring and 45° chamfering

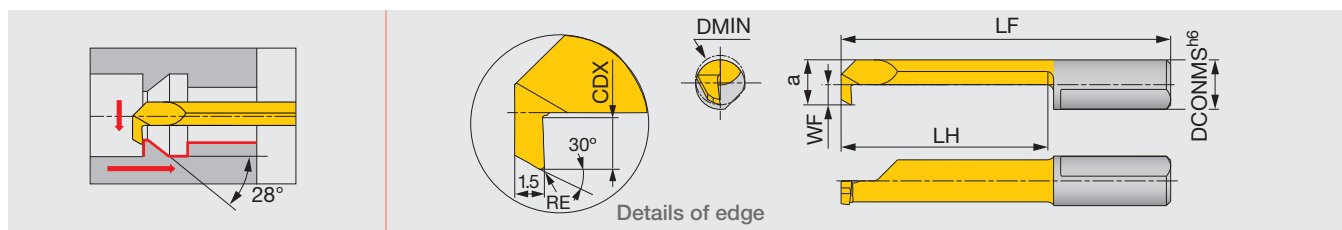


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE ^{+0.05} ₀
TBCR07140020-D050	●	5	7	0.9	4.4	30	14	0.7	0.2
TBCR07190020-D068	●	6.8	7	2.8	6.3	35	19	0.7	0.2

● : New product

TBBR

Solid boring bar for back boring

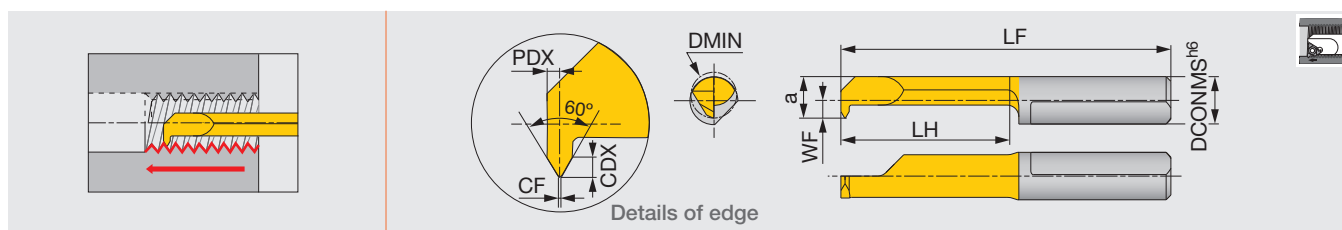


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE ^{+0.05} ₀
TBBR04140020-D030	●	3	4	0.6	2.6	30	14	0.5	0.2
TBBR04140015-D040	●	4	4	1.5	3.5	30	14	0.8	0.15
TBBR07190020-D050	●	5	7	0.9	4.4	35	19	1	0.2

● : New product

TBIR

Solid boring bar for threading (metric)

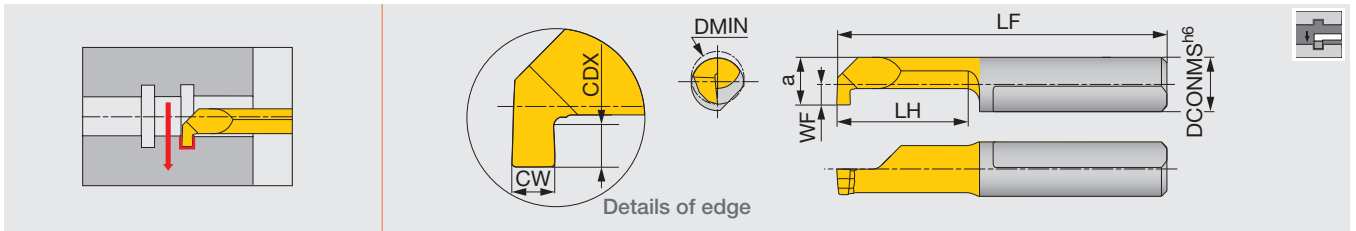


Metric	SH725	Pitch	DMIN	CF ⁰ _{-0.02}	DCONMS	WF	a	LF	LH	CDX	PDX
TBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
TBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
TBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
TBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
TBIR07140100-D060	●	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
TBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75

● : New product

TBGR

Solid boring bar for internal grooving



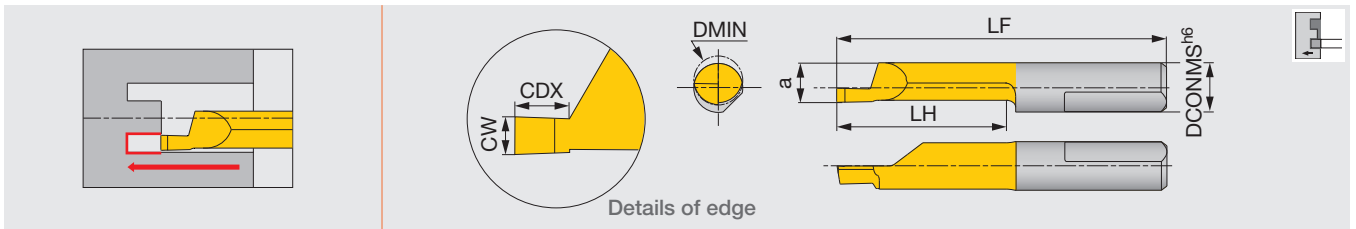
Metric	SH725	$CW^{+0.05}_0$	DMIN	DCONMS	WF	a	LF	LH	CDX
TBGR04100050-D020	●	0.5	2	4	-0.2	1.8	26	10	0.4
TBGR04090100-D040	●	1	4	4	1.5	3.5	25.5	9	0.8
TBGR04150100-D040	●	1	4	4	1.5	3.5	31.5	15	0.8
TBGR07090200-D050	●	2	5	7	0.9	4.4	25	9	1
TBGR07090100-D060	●	1	6	7	1.8	5.3	25	9	1.8
TBGR07140100-D060	●	1	6	7	1.8	5.3	30	14	1.8
TBGR07090150-D060	●	1.5	6	7	1.8	5.3	25	9	1.8
TBGR07090200-D060	●	2	6	7	1.8	5.3	25	9	1.8
TBGR07140200-D060	●	2	6	7	1.8	5.3	30	14	1.8
TBGR07090100-D068	●	1	6.8	7	2.7	6.2	25	9	2.5
TBGR07090150-D068	●	1.5	6.8	7	2.7	6.2	25	9	2.5
TBGR07140150-D068	●	1.5	6.8	7	2.7	6.2	30	14	2.5
TBGR07090200-D068	●	2	6.8	7	2.7	6.2	25	9	2.5
TBGR07140200-D068	●	2	6.8	7	2.7	6.2	30	14	2.5
TBGR07210200-D068	●	2	6.8	7	2.7	6.2	37	21	2.5
TBGR07290200-D068	●	2	6.8	7	2.7	6.2	45	29	2.5

* Corner radius : less than 0.1 mm.

● : New product

TBFR

Solid boring bar for face grooving



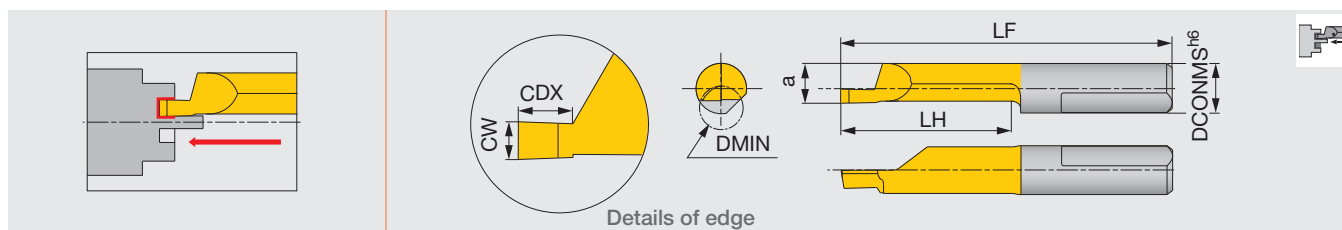
Metric	SH725	$CW^{+0.05}_0$	DMIN	DCONMS	a	LF	LH	CDX
TBFR07110100-D060	●	1	6	7	5.2	26	10	1.5
TBFR07110200-D060	●	2	6	7	5.2	26	10	3
TBFR07110100-D080	●	1	8	7	5.9	27	11	1.5
TBFR07110250-D080	●	2.5	8	7	5.9	27	11	3.5
TBFR07300300-D080	●	3	8	7	5.9	46	30	3.5
TBFR07200250-D150	●	2.5	15	7	5.9	36	20	20
TBFR07200300-D150	●	3	15	7	5.9	36	20	20
TBFR07300300-D150	●	3	15	7	5.9	46	30	30

* Corner radius : less than 0.1 mm.

● : New product

TBSR

Solid boring bar for face grooving (for shaft)



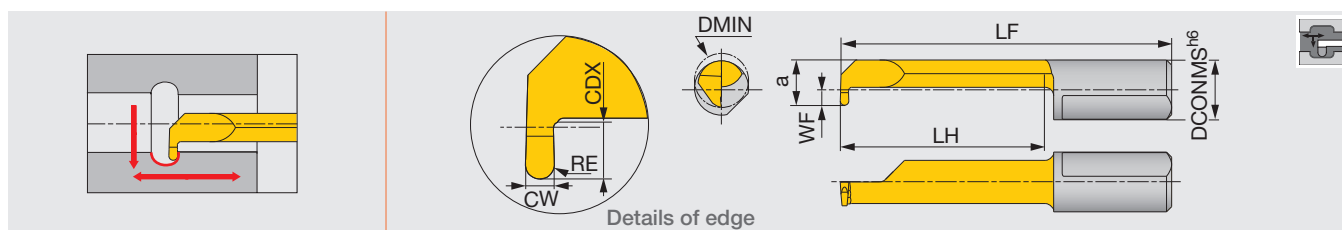
Metric	SH725	$CW^{+0.05}_0$	DMIN	DCONMS	a	LF	LH	CDX
TBSR07200200-D060	●	2	6	7	5.2	36	20	4

* Corner radius : less than 0.1 mm.

● : New product

TBRR

Solid boring bar for boring and profiling

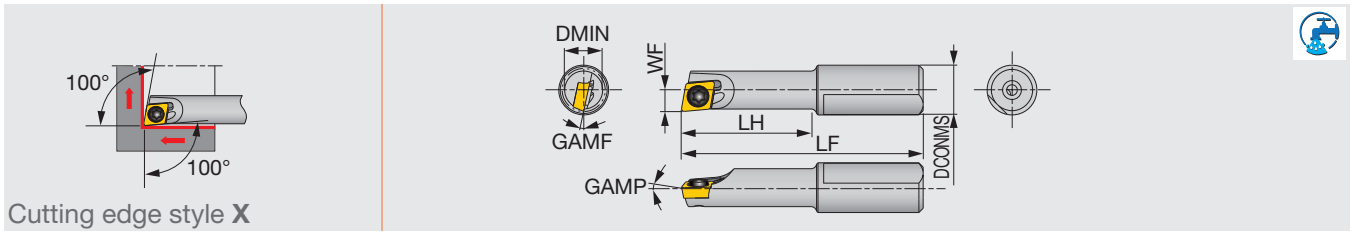


Metric	SH725	$CW^{+0.05}_0$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
TBRR07190050-D050	●	1	5	7	0.9	4.4	35	19	1	0.5
TBRR07240050-D060	●	1	6	7	1.8	5.3	40	24	1.8	0.5
TBRR07290050-D068	●	1	6.8	7	2.8	6.3	45	29	2.5	0.5

● : New product

A/E-SEXPR

Screw-on boring bar, for positive 75° rhombic inserts



Metric	Material	DMIN	DCONMS	WF	LF	LH	GAMP	GAMF	RE**	Insert	Torque*
A07050-SEXPR03-3	Steel	5	7	2.5	31	15	0°	-13°	0.2	EPGT03X1...	0.6
A07060-SEXPR04-3	Steel	6	7	3.1	34	18	0°	-12°	0.2	EPGT0401...	0.6
E07050-SEXPR03-4	Carbide	5	7	2.5	37	20	0°	-13°	0.2	EPGT03X1...	0.6
E07050-SEXPR03-5	Carbide	5	7	2.5	42	25	0°	-13°	0.2	EPGT03X1...	0.6
E07060-SEXPR04-5	Carbide	6	7	3.1	46	30	0°	-12°	0.2	EPGT0401...	0.6

*Torque: Recommended clamping torque (N·m)

**RE : Standard corner radius

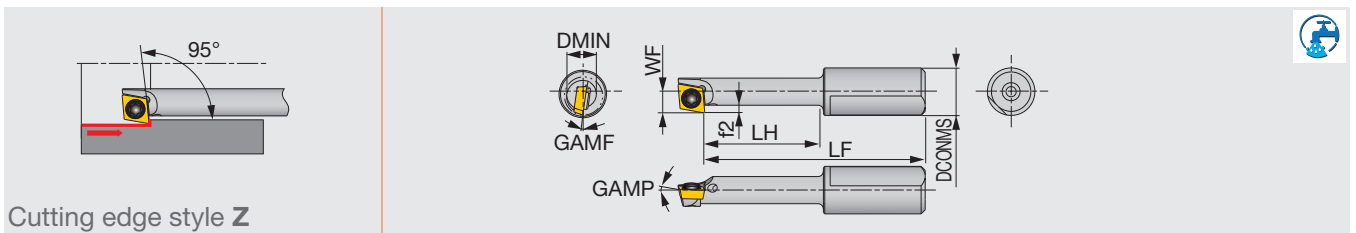
Note: Use right-hand toolholders (SEXPR**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E070**03-...	CSTA-1.6	T-6F
A/E070**04-...	CSTB-2	T-6F

A/E-SEZPR

Screw-on boring bar, for positive 75° rhombic inserts



Metric	Material	DMIN	DCONMS	WF	LF	LH	f2	GAMP	GAMF	RE**	Insert	Torque*
A07055-SEZPR03-3	Steel	5.5	7	3.2	32.5	16.5	1.2	0°	-8°	0.2	EPGT03X1...	0.6
E07055-SEZPR03-5	Carbide	5.5	7	3.2	44.7	27.5	1.2	0°	-8°	0.2	EPGT03X1...	0.6

*Torque: Recommended clamping torque (N·m)

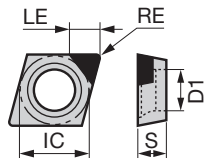
**RE : Standard corner radius

Note: Use right-hand toolholders (SEZPR**) with right-hand inserts (R).

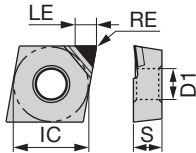
SPARE PARTS

Designation	Clamping screw	Wrench
A/E070**03-...	CSTA-1.6	T-6F

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

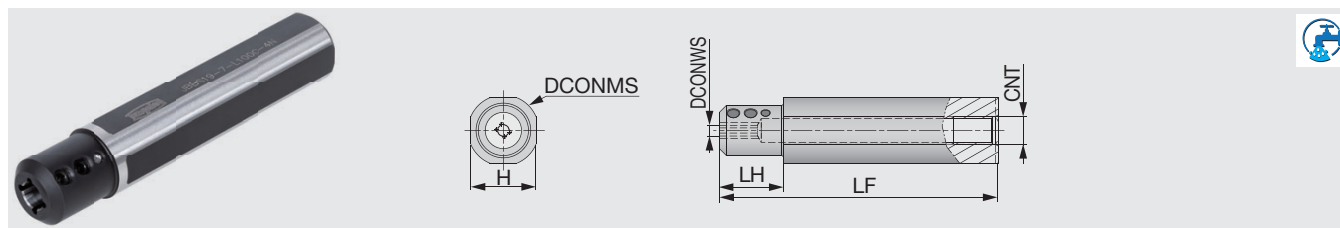
			<table><tr><td>P</td><td>Steel</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>M</td><td>Stainless</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>K</td><td>Cast iron</td><td>●</td><td>●</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>N</td><td>Non-ferrous</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>Superalloy</td><td></td><td>●</td><td>●</td><td></td><td></td><td></td><td></td></tr><tr><td>H</td><td>Hard material</td><td>●</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Sintered metal</td><td></td><td>●</td><td>●</td><td></td><td></td><td></td><td></td></tr></table>							P	Steel								M	Stainless								K	Cast iron	●	●						N	Non-ferrous								S	Superalloy		●	●					H	Hard material	●								Sintered metal		●	●								
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Shape	Designation		BX310	BX470					Dimension (in)																																																																			
	Inch	Metric							RE	IC	S	D1																																																																
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		1QP-EPGW 4.51.81	1QP-EPGW03X104	●	●				0.016	0.141	0.055	0.075																																																																
		1QP-EPGW 520.5	1QP-EPGW040102	●	●				0.008	0.156	0.063	0.091																																																																
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Positive type with rake

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	EPGW**-DIA	EPGW 520.5-DIA	EPGW040102-DIA	●					0.008	0.125	0.063	0.091																																																	
		EPGW 521-DIA	EPGW040104-DIA	●					0.016	0.125	0.063	0.091																																																	
● : Line up																																																													

JBBS-4N

Sleeve for internal coolant supply with 4 coolant holes



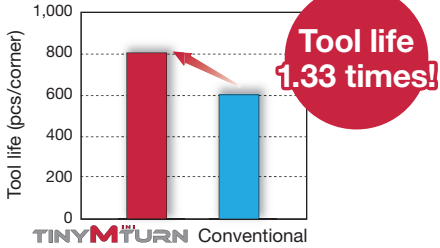
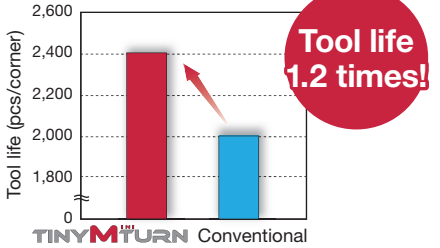
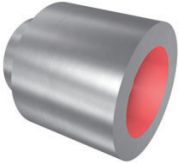
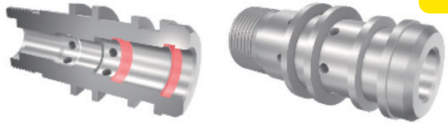
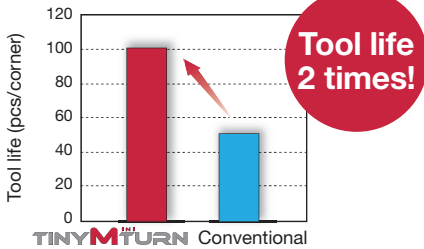
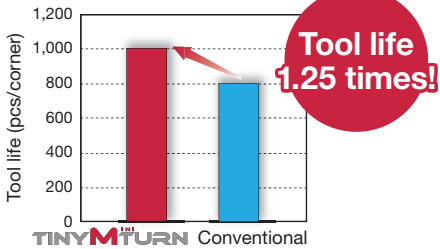
Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBS12-4-L80C-4N	12	4	80	10	10.3	Rc1/16
JBBS127-4-L80C-4N	12.7	4	80	10	11.6	Rc1/16
JBBS14-4-L80C-4N	14	4	80	10	12	Rc1/8
JBBS159-4-L100C-4N	15.875	4	100	10	14.58	Rc1/8
JBBS159-7-L100C-4N	15.875	7	100	10	14.58	Rc1/8
JBBS16-4-L100C-4N	16	4	100	10	15	Rc1/8
JBBS16-7-L100C-4N	16	7	100	10	15	Rc1/8
JBBS19-4-L100C-4N	19.05	4	100	20	17.2	Rc1/8
JBBS19-7-L100C-4N	19.05	7	100	20	17.2	Rc1/8
JBBS20-4-L100C-4N	20	4	100	20	18	Rc1/8
JBBS20-7-L100C-4N	20	7	100	20	18	Rc1/8
JBBS22-4-L100C-4N	22	4	100	20	20	Rc1/8
JBBS22-7-L100C-4N	22	7	100	20	20	Rc1/8
JBBS25-4-L100C-4N	25	4	100	23	23	Rc1/8
JBBS25-7-L100C-4N	25	7	100	23	23	Rc1/8
JBBS254-4-L100C-4N	25.4	4	100	23	23.4	Rc1/8
JBBS254-7-L100C-4N	25.4	7	100	23	23.4	Rc1/8

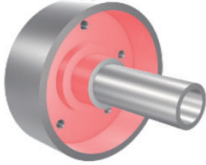
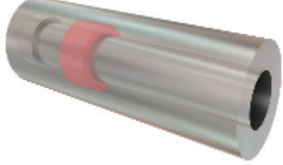
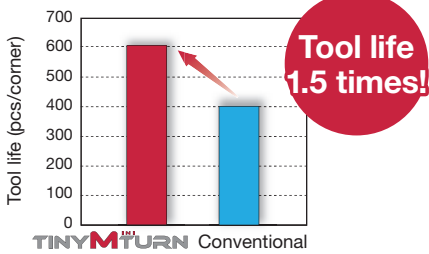
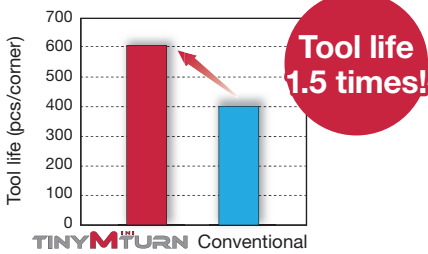
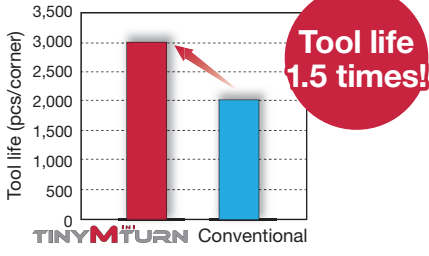
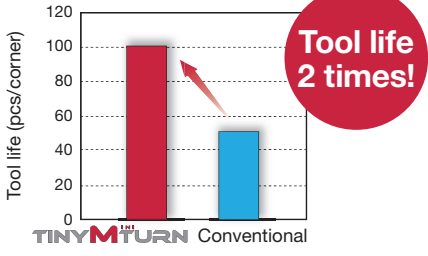
SPARE PARTS



Designation	Clamping screw	Wrench
JBBS**-4-L***C-4N	SSHM5-6PF-S	P-2.5
JBBS**-7-L***C-4N	SSHM5-4PF-S	P-2.5

PRACTICAL EXAMPLES

Workpiece type		Sleeve	Motor part
Sleeve / Toolholder		JBBS16-4-7	JBBS25-4-7 / A07050-SEXPR03-3
Insert		TBTR04090010-D028	EPGT03X102F-JS / EPGT 4.51.80.5 F-JS
Grade		SH725	SH725
Workpiece material		SUS303 / X10CrNiS18-9 / 303SS	SUM24L / 11SMnPb28 / 12L14
		 M	 P
Cutting conditions	Cutting speed V_c : m/min (sfm)	61 (200)	120 (394)
	Feed f : mm/rev (ipr)	0.02 (0.001)	0.02 (0.001)
	Depth of cut a_p : mm (in)	0.5 (0.020)	0.1 (0.004)
	Machining	Internal turning	Internal turning
	Coolant	Wet (External)	Wet (External)
Results		 Tool life 1.33 times! TinyMini-Turn SH725 provides high adhesion and excellent wear resistance, achieving 1.33 times longer tool life than the competitor.	 Tool life 1.2 times! SH725 grade combined with JS geometry drastically improved chip control over the competitor's solid bar, providing 1.2 times tool life.
Workpiece type		Socket	Connector
Sleeve		JBBS16-7-L100C-4N	JBBS25-7-L100C-4N
Insert		TBTR07140015-D060	TBBR07190020-D050
Grade		SH725	SH725
Workpiece material		SUS316 / X5CrNiMo17-12-3 / 316SS	SUS304 / X5CrNi18-9 / 304SS
		 M	 M
Cutting conditions	Cutting speed V_c : m/min (sfm)	60 (197)	90 (295)
	Feed f : mm/rev (ipr)	0.06 (0.002)	0.05 (0.002)
	Depth of cut a_p : mm (in)	0.15 (0.006)	0.1 (0.004)
	Machining	Internal turning	Back boring
	Coolant	Wet (Internal)	Wet (Internal)
Results		 Tool life 2 times! New JBBS-4N sleeve, combined with SH725 grade insert, eliminated chip jamming thanks to its four streams of coolant jets, while achieving double tool life.	 Tool life 1.25 times! New JBBS-4N sleeve, combined with SH725 grade insert, eliminated chip jamming in back boring application, thanks to its four streams of coolant jets, while achieving 1.25 times tool life.

Workpiece type		Gear head	Gear part
Sleeve		JBBS16-7-L100C-4N	JBBS20-7-L100C-4N
Insert		TBFR07110250-D080	TBGR07140200-D060
Grade		SH725	SH725
Workpiece material		SUS316L / 316L	SUJ2 / 100Cr6 / 52100
		 M	 P
Cutting conditions	Cutting speed V_c : m/min (sfm)	80 (262)	152 (499)
	Feed f : mm/rev (ipr)	0.02 (0.001)	0.1 (0.004)
	Grooving depth : mm (in)	3 (0.118)	1 (0.039)
	Machining	Face grooving	Internal grooving
	Coolant	Wet (Internal)	Wet (Internal)
Results		 Tool life 1.5 times!	 Tool life 1.5 times!
		New JBBS-4N sleeve, combined with SH725 grade insert, eliminated chip jamming in face grooving application, thanks to its four streams of coolant jets, while achieving 1.5 times tool life.	New JBBS-4N sleeve, combined with SH725 grade insert, eliminated chip jamming thanks to its four streams of coolant jets, while providing 1.5 times tool life.
Workpiece type		Thrust spacer	Valve
Sleeve / Toolholder		JBBS16-7-L100C-4N / A07050-SEXPR03-3	JBBS19-7-L100C-4N / E07060-SEXPR04-5
Insert		EPGT03X104R-W08 / EPGT 4.51.81 R-W08	1QP-EPGW040102 / 1QP-EPGW 520.5
Grade		SH725	BX310
Workpiece material		S15C / C15 / 1015	SCM415H
		 P	 H
Cutting conditions	Cutting speed V_c : m/min (sfm)	113 (371)	60 (197)
	Feed f : mm/rev (ipr)	0.05 (0.002)	0.03 (0.001)
	Depth of cut a_p : mm (in)	0.3 (0.012)	0.05 (0.002)
	Machining	Internal turning	Internal turning
	Coolant	Wet (Internal)	Wet (Internal)
Results		 Tool life 1.5 times!	 Tool life 2 times!
		New JBBS-4N sleeve, combined with W08 geometry & SH725 grade insert, eliminated chip jamming thanks to its four streams of coolant jets, while achieving 1.5 times tool life.	New JBBS-4N sleeve, combined with BX310 grade insert, eliminated chip jamming thanks to its four streams of coolant jets, while achieving double tool life.

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Jan. 2022 (TJ)