

High Feed Turning (HFT) with CBN

HFT System with Octagon CBN insert



Advantages:

- 8 times higher productivity than conventional hard turning
- Octagon insert offers 8 cutting edges
- Special wiper geometry
- Good surface roughness ($R_z < 4 \mu$) even at elevated feed rates of $f = 1,2 \text{ mm/rev}$
- High stiffness monoblock design holders based on HSK, ISO-PSC, VDI or DIN coupling
- High metal removal rates



For Hardened Steel

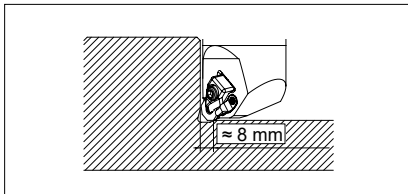
High Feed Turning

Monoblock Tool Holders in Various Design

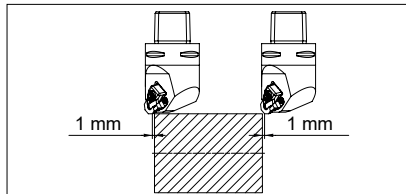
Combination possible to adopt to different applications like boring, facing, outer diameter turning, chamfering.
Couplings available as HSK, VDI, ISO-PSC and DIN shank.



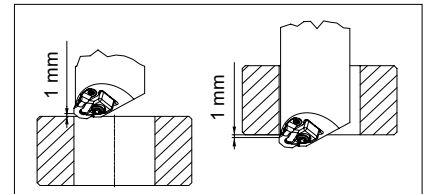
General Details



To machine close to shoulder (inner or outer diameter) you need a relief groove of approximately 8 mm.



Distance overhang shaft exit 1 mm Safety distance shaft entrance 1 mm



Safety distance hole entrance 1 mm Distance overhang hole exit 1 mm

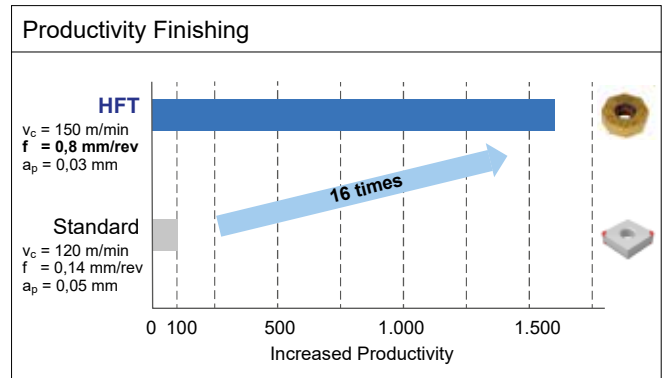
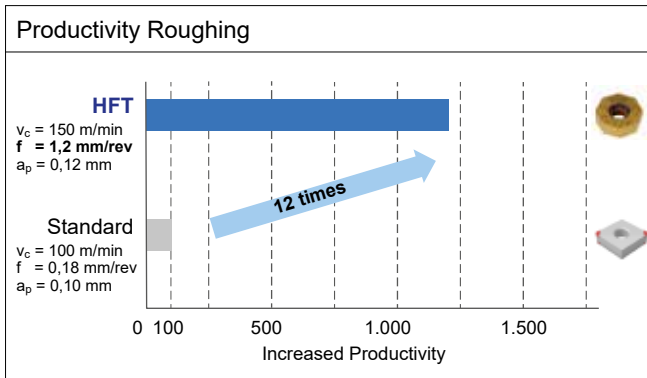
Cutting Conditions

General Conditions*	$v_c = 80 \sim 200 \text{ m/min}$	$f = 0,2 \sim 1,2 \text{ mm/rev}$	$a_p = 0,05 \sim 0,25 \text{ mm}$
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* are set according to the project

HFT - Offering Production Cost Reduction

Cutting Process Time up to 90 %



Result: HFT = 12–16 times faster than existing process with keeping the requested tolerances and surface roughness requirements. Insert offers double number of cutting edges. Additionally, the tool life could be doubled.

Application Range

Inner Diameter Cutting



- ▶ Through hole application is not recommended (blind hole makes chip stacking and jamming).
- ▶ Inner diameter has to be more than 50 mm.
- ▶ Length of cut is recommended less than 3xD.

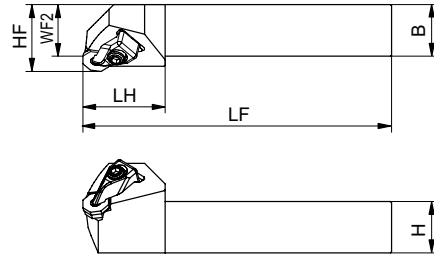
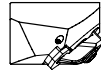
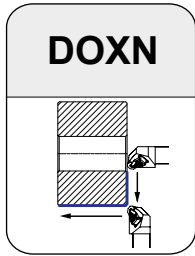
Outer Diameter and Facing



- ▶ Straight outer diameter turning and facing.
- ▶ No limitation of work size. But rigidity of the workpieces and clamping are important.

HFT DOXN R/L 2525M 1204

Outer Diameter Turning, Facing, Boring possible



Above figures show right hand tools.

Attention: You need approximately 8 mm overhang on the shoulder (see page 2)

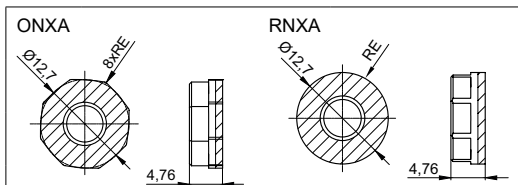
■ Holders

Cat. No.	Stock		Dimensions (mm)					
	R	L	H	B	LF	WF2	HF	LH
HFT DOXN R/L 2525M 1204	●	●	25	25	150	25	32,5	40

■ Spare Parts for Clamping System

Clamp	Spring	Clamp Bolt	Clamp Wrench	Shim	Screw	Screw Wrench
SCP2 (Set)		5	LH040	CSCFHFT	MIB1.6-3	SDBSM

■ CBN-Inserts



E00200: Cutting edge rounded 10–20 µm, B: Full top CBN insert

Cat. No.	Grade		RE (mm)	Outer Diam. Turning	Facing	Boring possible	Applicable Holder
	BNC30G	BNC200					
ONXA 1204 R150 R E00200 B*	●	●	150	⊙	—	—	HFT DOXN R 2525M 1204
ONXA 1204 R150 L E00200 B**	●	●	150	⊙	—	—	HFT DOXN L 2525M 1204
ONXA 1204 R28 R E00200 B*	●	●	28	○	⊙	⊙	HFT DOXN R 2525M 1204
ONXA 1204 R28 L E00200 B**	●	●	28	○	⊙	⊙	HFT DOXN L 2525M 1204
RNXA 1204 N E00200 B***	●	●	6,35	○	○	○	HFT DOXN R/L 2525M 1204

* Right handed octagon inserts can only be used in right handed tools.

** Left handed octagon inserts can only be used in left handed tools.

*** Can be used in right or left handed tool holders. Round inserts produce less cutting pressure when turning compared to octagonal inserts, but the quality of surface finish Ra / Rz is also reduced.

⊙ Preferred choice

○ Suitable

— Not possible

■ Identification Details - Holder

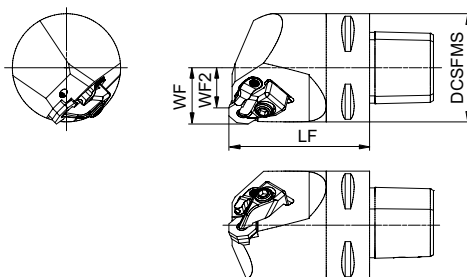
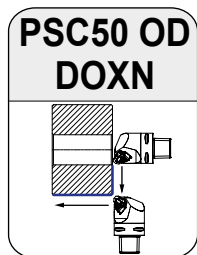
HFT	DOXN	R/L	25	25	M	1204
Holder Description „High Feed Turning“	Clamping System D: Double Clamp O: Insert Shape X: Holder Style N: Relief Angle=0°	Feed Direction R: Right Hand L: Left Hand	Shank Height (H)	Shank Width (B)	Holder Length	Insert Size

For Hardened Steel

High Feed Turning

PSC50 HFT OD 26065 DOXN R/L 1204

Outer Diameter Turning and Facing



Above figures show right hand tools.

Attention: You need approximately 8 mm overhang on the shoulder (see page 2)

■ Holders

Cat. No.	Stock		Dimensions (mm)					
	R	L	WF	WF2	LF	DCSFMS		
PSC50 HFT OD 26065 DOXN R/L 1204	●	●	26	18,5	65	50		

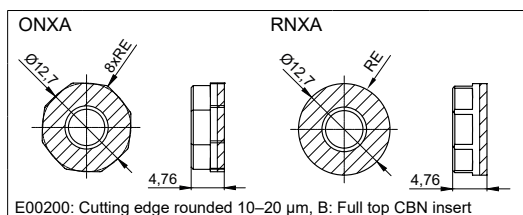
■ Spare Parts for Clamping System

Clamp	Spring	Clamp Bolt	Clamp Wrench	Shim	Screw	Screw Wrench
SCP2 (Set)		5	LH040	CSCFHFT	MIB1.6-3	SDBSM

■ Spare Parts for Coolant Supply

For Holder Right:	PSC50 HFT OD 26065 DOXN R 1204		For Holder Left:	PSC50 HFT OD 26065 DOXN L 1204	
Cooling Block Left	Screw	Seal	Cooling Block Right	Screw	Seal
CBLHFTSP (Set)			CBRHFTSP (Set)		

■ CBN-Inserts



Cat. No.	Grade		RE (mm)	Outer Diam. Turning	Facing	Applicable Holder
	BNC30G	BNC200				
ONXA 1204 R150 R E00200 B*	●	●	150	⊙	—	PSC50 HFT OD 26065 DOXN R 1204
ONXA 1204 R150 L E00200 B**	●	●	150	⊙	—	PSC50 HFT OD 26065 DOXN L 1204
ONXA 1204 R28 R E00200 B*	●	●	28	○	⊙	PSC50 HFT OD 26065 DOXN R 1204
ONXA 1204 R28 L E00200 B**	●	●	28	○	⊙	PSC50 HFT OD 26065 DOXN L 1204
RNXA 1204 N E00200 B***	●	●	6,35	○	○	PSC50 HFT OD 26065 DOXN R/L 1204

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⊙ Preferred choice

○ Suitable

— Not possible

■ Identification Details - Holder

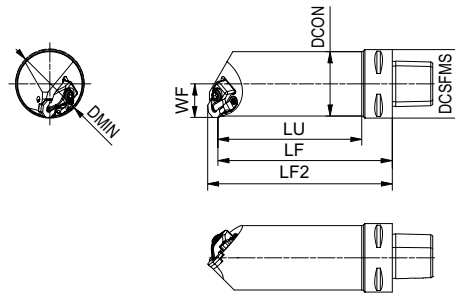
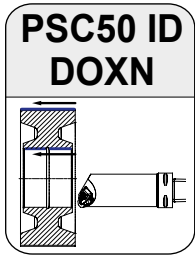
PSC	50	HFT	OD	26	065	DOXN	R/L	1204
Polygon Shank	Shank Diameter	Holder Description „High Feed Turning“	Outer Diameter Turning	Cutting Edge Distance	Holder Length	Clamping System D: Double Clamp O: Insert Shape X: Holder Style N: Relief Angle=0°	Feed Direction R: Right Hand L: Left Hand	Insert Size

● = Euro stock

For Hardened Steel High Feed Turning

PSC50 HFT ID 25105 DOXN R/L 1204

Boring, Outer Diameter Turning possible



Above figures show right hand tools.

Attention: You need approximately 8 mm overhang on the shoulder (see page 2)

■ Holders

Cat. No.	Stock		Dimensions (mm)						
	R	L	DMIN	DCON	WF	LU	LF	LF2	DCSFMS
PSC50 HFT ID 25105 DOXN R/L 1204	●	●	50	47	24,5	105	127,3	134,8	50

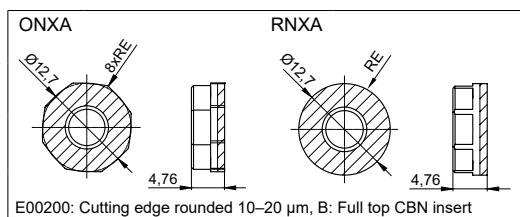
■ Spare Parts for Clamping System

Clamp	Spring	Clamp Bolt	Clamp Wrench	Shim	Screw	Screw Wrench
SCP2 (Set)	5	LH040	CSCFHFT	MIB1.6-3	SDBSM	

■ Spare Parts for Coolant Supply

For Holder Left:	PSC50 HFT ID 25105 DOXN L 1204		For Holder Right:	PSC50 HFT ID 25105 DOXN R 1204	
Cooling Block Left	Screw	Seal	Cooling Block Right	Screw	Seal
CBLHFTSP (Set)			CBRHFTSP (Set)		

■ CBN-Inserts



Cat. No.	Grade		RE (mm)	Boring	Outer Diam. Turning	Applicable Holder
	BNC30G	BNC200				
ONXA 1204 R28 R E00200 B*	●	●	28	⊙	○	PSC50 HFT ID 25105 DOXN L 1204
ONXA 1204 R28 L E00200 B**	●	●	28	⊙	○	PSC50 HFT ID 25105 DOXN R 1204
ONXA 1204 R150 R E00200 B*	●	●	150	–	⊙	PSC50 HFT ID 25105 DOXN L 1204
ONXA 1204 R150 L E00200 B**	●	●	150	–	⊙	PSC50 HFT ID 25105 DOXN R 1204
RNXA 1204 N E00200 B***	●	●	6,35	○	○	PSC50 HFT ID 25105 DOXN R/L 1204

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⊙ Preferred choice

○ Suitable

– Not possible

■ Identification Details - Holder

PSC	50	HFT	ID	25	105	DOXN	R/L	1204
Polygon Shank	Shank Diameter	Holder Description „High Feed Turning“	Inner Diameter Turning	Cutting Edge Distance	Holder Length	Clamping System D: Double Clamp O: Insert Shape X: Holder Style N: Relief Angle=0°	Feed Direction R: Right Hand L: Left Hand	Insert Size

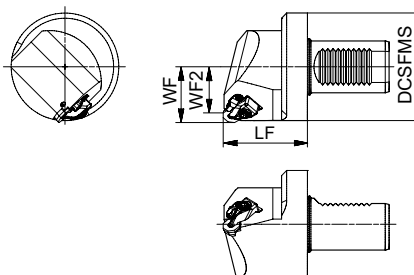
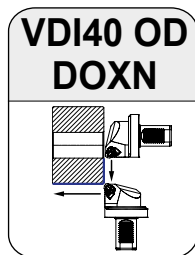
● = Euro stock

For Hardened Steel

High Feed Turning

VDI40 HFT OD 43065 DOXN R/L 1204

Outer Diameter Turning and Facing



Above figures show right hand tools.

Attention: You need approximately 8 mm overhang on the shoulder (see page 2)

■ Holders

Cat. No.	Stock		Dimensions (mm)					
	R	L	WF	WF2	LF	DCSFMS		
VDI40 HFT OD 43065 DOXN R/L 1204	●	●	43	35,5	65	83		

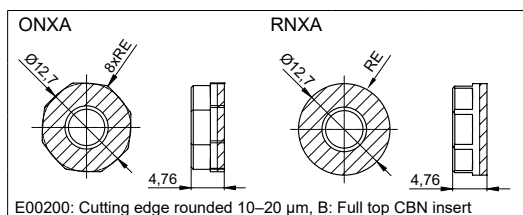
■ Spare Parts for Clamping System

Clamp	Spring	Clamp Bolt	Clamp Wrench	Shim	Screw	Screw Wrench
SCP2 (Set)		5	LH040	CSCFHFT	MIB1.6-3	SDBSM

■ Spare Parts for Coolant Supply

For Holder Right:	VDI40 HFT OD 43065 DOXN R 1204		For Holder Left:	VDI40 HFT OD 43065 DOXN L 1204	
Cooling Block Left	Screw	Seal	Cooling Block Right	Screw	Seal
CBLHFTSP (Set)			CBRHFTSP (Set)		

■ CBN-Inserts



Cat. No.	Grade		RE (mm)	Outer Diam. Turning	Facing	Applicable Holder
	BNC30G	BNC200				
ONXA 1204 R150 R E00200 B*	●	●	150	⊙	—	VDI40 HFT OD 43065 DOXN R 1204
ONXA 1204 R150 L E00200 B**	●	●	150	⊙	—	VDI40 HFT OD 43065 DOXN L 1204
ONXA 1204 R28 R E00200 B*	●	●	28	○	⊙	VDI40 HFT OD 43065 DOXN R 1204
ONXA 1204 R28 L E00200 B**	●	●	28	○	⊙	VDI40 HFT OD 43065 DOXN L 1204
RNXA 1204 N E00200 B***	●	●	6,35	○	○	VDI40 HFT OD 43065 DOXN R/L 1204

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⊙ Preferred choice

○ Suitable

— Not possible

■ Identification Details - Holder

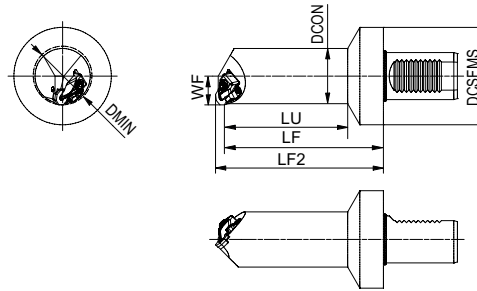
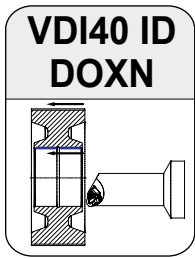
VDI	40	HFT	OD	43	065	DOXN	R/L	1204
Cylindrical Shank	Shank Diameter	Holder Description „High Feed Turning“	Outer Diameter Turning	Cutting Edge Distance	Holder Length	Clamping System D: Double Clamp O: Insert Shape X: Holder Style N: Relief Angle=0°	Feed Direction R: Right Hand L: Left Hand	Insert Size

● = Euro stock

For Hardened Steel High Feed Turning

VDI40 HFT ID 25105 DOXN R/L 1204

Boring, Outer Diameter Turning possible



Above figures show right hand tools.

Attention: You need approximately 8 mm overhang on the shoulder (see page 2)

■ Holders

Cat. No.	Stock		Dimensions (mm)						
	R	L	DMIN	DCON	WF	LU	LF	LF2	DCSFMS
VDI40 HFT ID 25105 DOXN R/L 1204	●	●	50	47	24,5	105	135,4	142,8	83

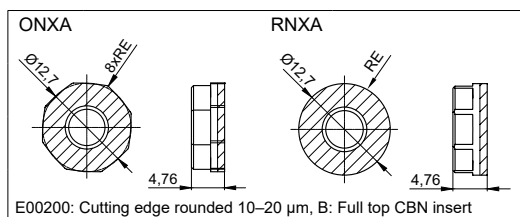
■ Spare Parts for Clamping System

Clamp	Spring	Clamp Bolt	Clamp Wrench	Shim	Screw	Screw Wrench
SCP2 (Set)	5	LH040	CSCFHFT	MIB1.6-3	SDBSM	

■ Spare Parts for Coolant Supply

For Holder Left:	VDI40 HFT ID 25105 DOXN L 1204		For Holder Right:	VDI40 HFT ID 25105 DOXN R 1204	
Cooling Block Left	Screw	Seal	Cooling Block Right	Screw	Seal
CBLHFTSP (Set)			CBRHFTSP (Set)		

■ CBN-Inserts



Cat. No.	Grade		RE (mm)	Boring	Outer Diam. Turning	Applicable Holder
	BNC30G	BNC200				
ONXA 1204 R28 R E00200 B*	●	●	28	⊙	○	VDI40 HFT ID 25105 DOXN L 1204
ONXA 1204 R28 L E00200 B**	●	●	28	⊙	○	VDI40 HFT ID 25105 DOXN R 1204
ONXA 1204 R150 R E00200 B*	●	●	150	—	⊙	VDI40 HFT ID 25105 DOXN L 1204
ONXA 1204 R150 L E00200 B**	●	●	150	—	⊙	VDI40 HFT ID 25105 DOXN R 1204
RNXA 1204 N E00200 B***	●	●	6,35	○	○	VDI40 HFT ID 25105 DOXN R/L 1204

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⊙ Preferred choice

○ Suitable

— Not possible

■ Identification Details - Holder

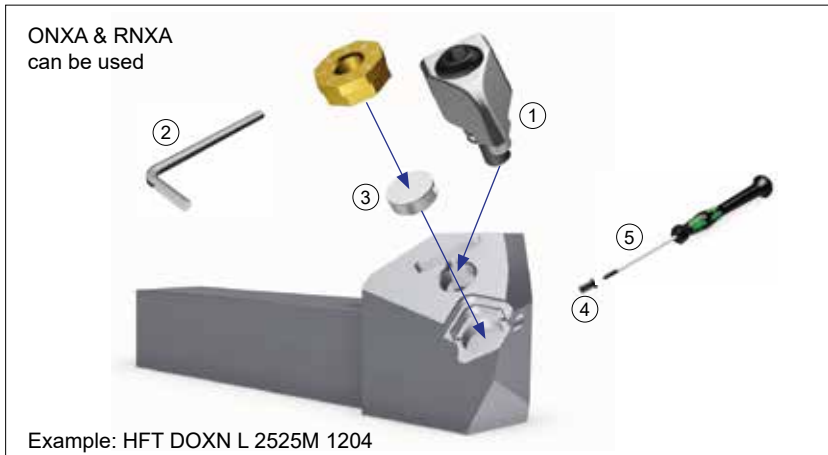
VDI	40	HFT	ID	25	105	DOXN	R/L	1204
Cylindrical Shank	Shank Diameter	Holder Description „High Feed Turning“	Inner Diameter Turning	Cutting Edge Distance	Holder Length	Clamping System D: Double Clamp O: Insert Shape X: Holder Style N: Relief Angle=0°	Feed Direction R: Right Hand L: Left Hand	Insert Size

● = Euro stock

For Hardened Steel High Feed Turning

Application Examples

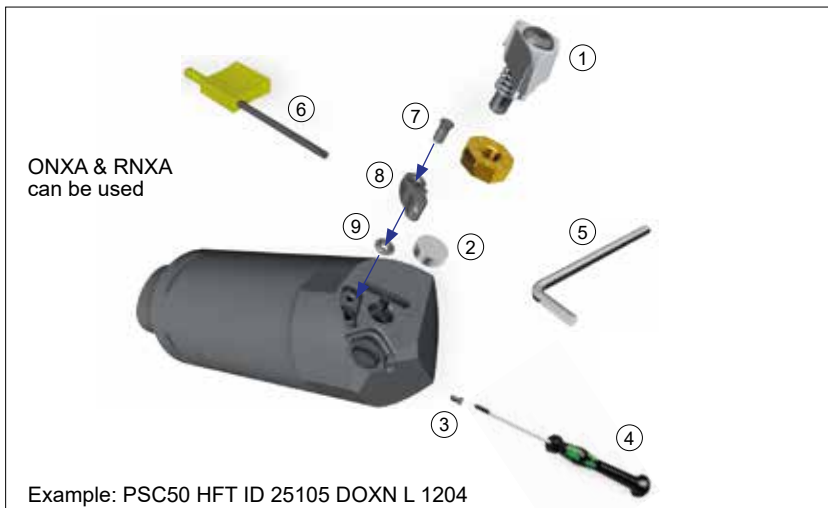
Spare Parts for HFT-Shank



Spare Parts for Clamping System:

- ① SCP2 → Clampset
- ② LH040 → Clamp Wrench
- ③ CSCFHFT → Shim
- ④ MIB1.6-3 → Screw
- ⑤ SDBSM → Screw Wrench

Spare Parts for VDI40-, PSC50- Toolholders



Spare Parts for Clamping System:

- ① SCP2 → Clampset
- ② CSCFHFT → Shim
- ③ MIB1.6-3 → Screw
- ④ SDBSM → Screw Wrench
- ⑤ LH040 → Clamp Wrench
- ⑥ TRX10 → Torx Wrench

Spare Part Set for Coolant Supply:

- CBLHFTSP/
 - CBRHFTSP
- ⑦ Screw
 - ⑧ Coolant Block
 - ⑨ Seal

CARBIDE - CBN - DIAMOND

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