GÜHRING

System 208

Grooving tool system for sliding headstock lathes

Our new grooving solution

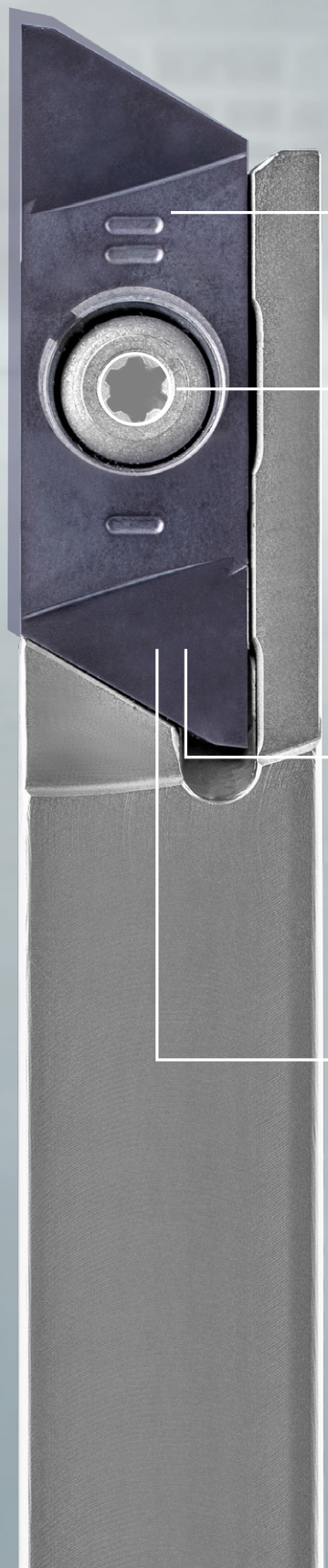
Precision and process reliability for Swiss-type turning technology

With the new System 208, Gühring presents a grooving system that has been specially developed for use on sliding headstock lathes.

The precisely designed geometry, high change accuracy and proven tool life advantages specifically meet the high requirements for machining complex micro turned parts. With the new grooving insert, grooving depths of up to 8 mm can be achieved. Thanks to a wide selection of different types of inserts, the system offers flexible application options – from parting off and groove turning to back turning.

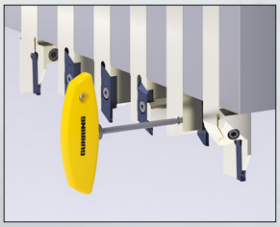
- **high process reliability**, even with demanding materials, in small batches and in series production
- **powerful & smooth** – ideal for precision machining of complex micro turned parts
- **exceptionally long tool life**: up to 30% above the benchmark
- **easy operation & shorter set-up times** thanks to clamping screws with double-sided Torx-Plus

- X high process reliability
- X powerful & smooth
- X exceptionally long tool life
- X easy operation & shorter set-up times

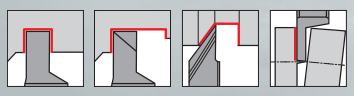


high-precision interface
with ± 0.015 mm change accuracy
for exact cutting positioning

double-sided Torx-Plus on the clamping screw enables quick insert changes in the machine



different types of inserts
make the system universally applicable for any grooving application



carbide, coating & geometry
perfectly combined for longer tool life

System 208: Through the night without interruption

Precise flatness in the parting cut

Veile Feindrehteile GmbH was facing a critical bottleneck in stainless steel machining: insufficient tool life, unstable cutting edges and unreliability in unmanned operation. However, close technical cooperation with Gühring led to a tool design that is precisely tailored to the requirements of sliding headstock turning.

In the small town of Bretten near Karlsruhe, Veile Feindrehteile manufactures high-precision components from high-grade steel, brass, steel and aluminium for the electrical industry. The components are produced on sliding headstock lathes that must run unattended for up to ten hours overnight. For Patrick Kratt, director of the family-owned company, it is therefore clear that tools must guarantee absolute process reliability.

However, when machining high-alloyed, saltwater- and acid-resistant high-grade steels, the cutting tool used by a competitor showed weaknesses: the cutting edge was very sharp, which led to rapid cutting edge wear in high-grade steel. „I was dissatisfied with the tool life I achieved with the competitor‘s tool,“ says Patrick Kratt.

Demonstrates its effectiveness from the initial test

When Gühring product manager Marc Wiesner analysed the problem together with Patrick Kratt, it quickly became clear what the new tool had to deliver: maximum tool life, stable cutting edges, smooth cutting behaviour, defined flatness of the parting cut and a geometry that optimally takes into account the forces of the sliding headstock lathe. Fortunately, Gühring had a new solution in its programme that perfectly met these requirements: the 208 grooving system. The switch was quick, recalls Patrick Kratt: „I told the sales representative: I have a problem, I want to improve something. Do you have a solution? We drew up a sketch and angle specifications together, Gühring supplied the right tool – and right from the first test, the insert worked exactly as I wanted it to.”

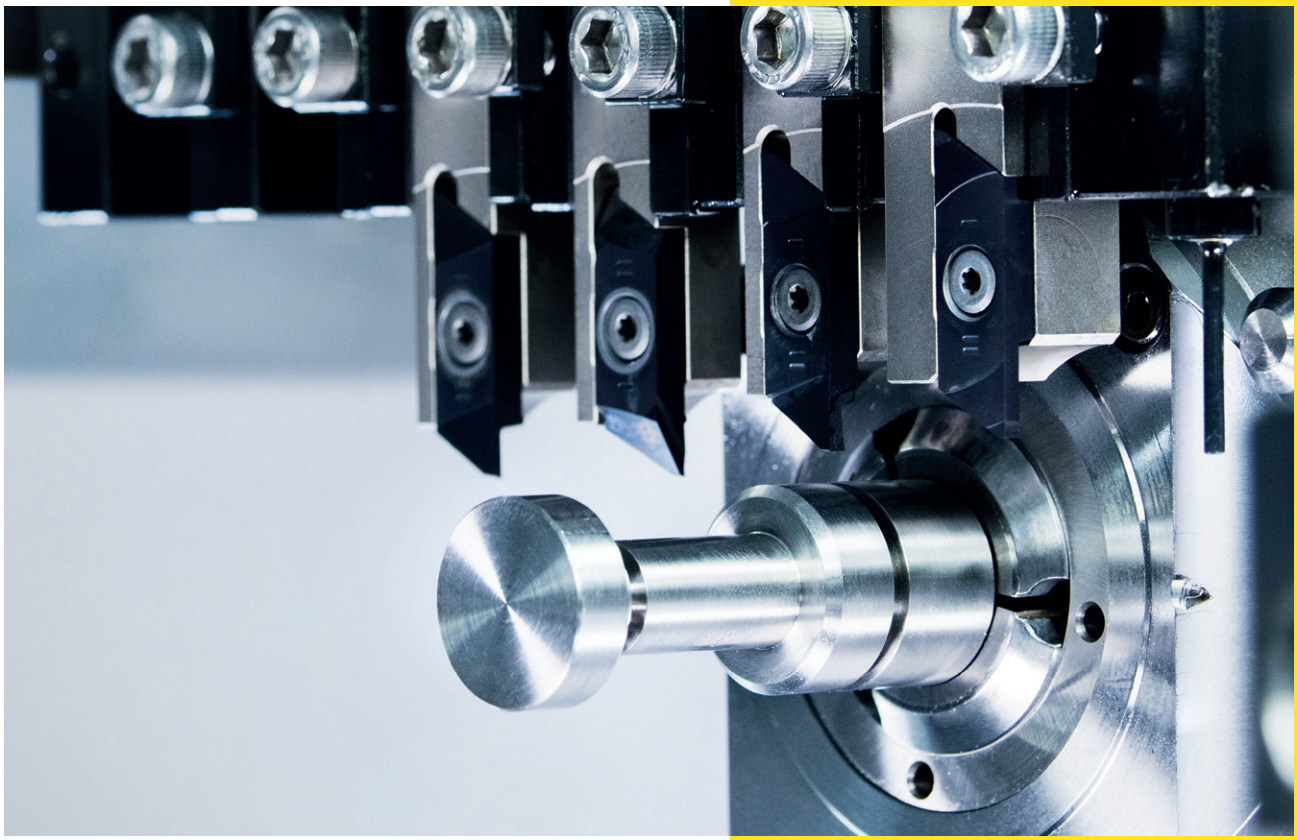
Designed for greater stability

The 208 system impresses Veile in several ways. Thanks to its targeted, minimal cutting edge rounding combined with the Nano-A coating, the tool produces a smooth cut, less wear and a consistently high surface quality. A special chip former also ensures that the

Tool Performance Report

Tool	**Competitor**	**System 208, type GZ neutral**
Maschine	Sliding headstock lathe STAR SR20	Sliding headstock lathe STAR SR20
Material	X 2 CrNiMoN 17 12	X 2 CrNiMoN 17 12
Diameter (Ø)	12 mm	**12 mm**
Cutting speed (v_c)	100 m/min	**100 m/min**
Feed (f)	0.04 mm/rev	**0.05 mm/rev**
Thread depth (a_p)	6 mm	**6 mm**
Components / Number of parting cuts	1,000	**1,800**

Tool lives increased by 80 % and runtime per component reduced



chips fly into the chip chamber in a controlled manner – without frictional heat, without jamming and without the risk of chips jamming in the groove. This is crucial for a permanently stable unmanned process. „I can be sure that the cutting edge will last the ten hours overnight. I used to have rejects after the night shift. Now I can be sure of the earnings from the night shift," says Patrick Kratt.

The decision paid off

Thanks to its stable projection and constant cutting forces, the system 208 also achieves a very high degree of flatness at the parting cut. „My specification was to achieve flatness in the range of one to two hundredths," says Patrick Kratt. „The tool manages this with ease – even with parts that need to be even more precise."

For Veile Feindrehteile, the decision has paid off. In high-grade steel, system 208 delivers stable processes, long tool life, excellent surfaces and a flatness in the parting cut that reliably meets specifications. In addition, thanks to the precise geometry, higher feed rates can be achieved – for a clear cost advantage. Patrick Kratt draws a clear conclusion: „I now have exactly the process I wanted back then. Gühring listened, understood and implemented. For us, that is an extreme advantage."

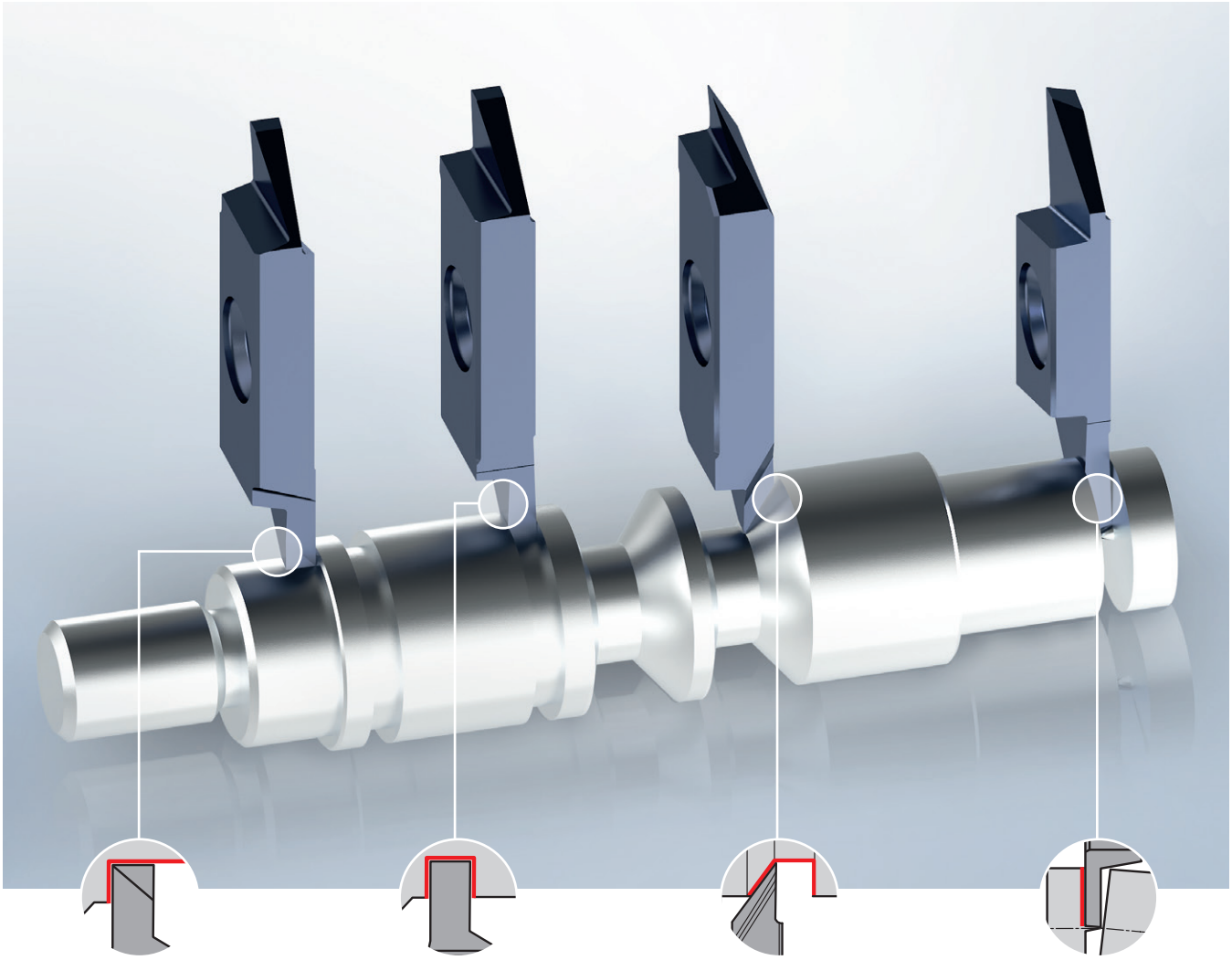
Gühring supplied the right tool – and even during the first test, the insert performed exactly as I wanted it to.

Patrick Kratt, Director of
Veile Feindrehteile GmbH

Technical information

Various types of inserts

The system 208 is suitable for universal grooving applications thanks to the following **four types of inserts**:



Type: GP
Longitudinal turning

This type of insert, also known as a „Paris grind“, allows machining in two feed directions. It is suitable for both radial grooving and longitudinal grooving.

#26808 P.10
#26810 P.10

Type: GE
Grooving

These grooving inserts are primarily designed for radial grooving, but is also suitable for simple copying operations under certain conditions.

#26800 P.10
#26802 P.10

Type: GR
Back turning

This tool geometry is ideal for turning external contours. Depending on the requirements, different variants are available for finishing operations or contour turning with high infeeds.

#26812 P.11
#26814 P.11

Type: GZ
Parting off

Parting off a turned part is one of the final process steps and places high requirements on process reliability. Therefore, various geometries and cutting edge designs are available.

#26816 P.12
#26818 P.12
#26820 P.12
#26822 P.12
#26824 P.13
#26826 P.13

Article descriptions

Article descriptions indexable insert

Order number example: GE208.200.400.005.04.AC.R

type	system	cutting edge width	max. grooving depth	corner radius	insert seat size	chip breaker	design
GE	**208**	**200**	**400**	**005**	**04**	**AC**	**R**

Order number example: GP208.200.400.010.04.AB.R

type	system	cutting edge width	max. grooving depth	corner radius	insert seat size	chip breaker	design
GP	**208**	**200**	**400**	**010**	**04**	**AB**	**R**

Order number example: GR208.000.500.005.04.AE.R

type	system	cutting edge width	max. grooving depth	corner radius	insert seat size	chip breaker	design
GR	**208**	**000**	**500**	**005**	**04**	**AE**	**R**

Order number example: GZ208.100.400.000.04.BF.RN

type	system	cutting edge width	max. grooving depth	corner radius	insert seat size	chip breaker	design
GZ	**208**	**100**	**400**	**000**	**04**	**BF**	**RN**

Article descriptions holder

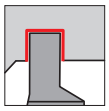
Order number example: GH208.1616.125.00.04.R.IK

type	system	shank size	total length	alignment	insert seat size	design	internal cooling
GH	**208**	**1616**	**125**	**00**	**04**	**R**	**IK**

P	M	K	N	S	H	Tool illustration	Type	Cutting direction	Tool material	Surface	Article no.	Page
Indexable inserts for radial grooving and copying												
●	●		○	○			GE208	R	VHM	a	26800	10
●	●		○	○			GE208	L	VHM	a	26802	10
Indexable inserts for radial grooving and longitudinal turning												
●	●		○	○			GP208	R	VHM	a	26808	10
●	●		○	○			GP208	L	VHM	a	26810	10
Indexable inserts for back turning												
●	●		○	○			GR208	R	VHM	a	26812	11
●	●		○	○			GR208	L	VHM	a	26814	11
Indexable inserts for parting off												
●	●		○	○			GZ208	R	VHM	a	26816	12
●	●		○	○			GZ208	L	VHM	a	26818	12
●	●		○	○			GZ208	R	VHM	a	26820	12
●	●		○	○			GZ208	L	VHM	a	26822	12
●	●		○	○			GZ208	R	VHM	a	26824	13
●	●		○	○			GZ208	L	VHM	a	26826	13

Tool illustration	Type	Design	Article no.	Page
Square shank holder straight, external machining, without IC				
	GH208	R	26700	14
	GH208	L	26701	14
Square shank holders straight, external machining, with IC				
	GH208	R	26702	15
	GH208	L	26703	15
Accessories				
			25914	16
			25911	16

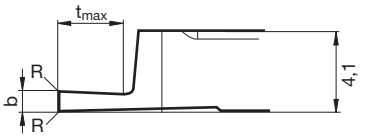
Indexable inserts for radial grooving and copying



grooving depth up to 4 mm

right handed inserts in right, left handed inserts in left tool holders

• geometry .AC ground



P	M	K	N	S	H
●	●		○	○	

VHM GE208 a

cutting data see page 17

Right-hand design as shown. Left-hand design is mirror image.

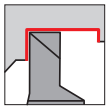
Article no. **26800** a R

b ±0,02 mm	R mm	tmax. mm	s mm	Size	Code no.	Description
1.00		3.00	4.10	04	9.020	GE208.100.300.000.04.AC.R
1.50		3.00	4.10	04	9.030	GE208.150.300.000.04.AC.R
2.00		4.00	4.10	04	9.040	GE208.200.400.000.04.AC.R
2.00	0.05	4.00	4.10	04	9.050	GE208.200.400.005.04.AC.R
2.50		4.00	4.10	04	9.060	GE208.250.400.000.04.AC.R
2.50	0.05	4.00	4.10	04	9.070	GE208.250.400.005.04.AC.R
3.00		4.00	4.10	04	9.080	GE208.300.400.000.04.AC.R
3.00	0.05	4.00	4.10	04	9.090	GE208.300.400.005.04.AC.R

On the left-hand design, the designation changes to .L

Article no. **26802** a L

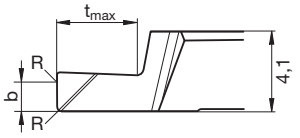
Indexable inserts for radial grooving and longitudinal turning



grooving depth up to 4 mm

right handed inserts in right, left handed inserts in left tool holders

• geometry .AB ground



P	M	K	N	S	H
●	●		○	○	

VHM GP208 a

cutting data see page 17

Right-hand design as shown. Left-hand design is mirror image.

Article no. **26808** a R

b ±0,02 mm	R mm	tmax. mm	s mm	Size	Code no.	Description
1.50	0.05	2.50	4.10	04	9.020	GP208.150.250.005.04.AB.R
2.00	0.05	4.00	4.10	04	9.030	GP208.200.400.005.04.AB.R
2.00	0.10	4.00	4.10	04	9.040	GP208.200.400.010.04.AB.R

On the left-hand design, the designation changes to .L

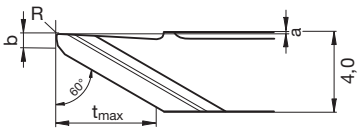
Article no. **26810** a L

Indexable inserts for back turning

grooving depth up to 5 mm

right handed inserts in right, left handed inserts in left tool holders

• geometry .AE ground



P	M	K	N	S	H
●	●		○	○	

VHM GR208 a

Right-hand design as shown. Left-hand design is mirror image.

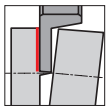
Article no. **26812** a R

b ±0,02 mm	R mm	tmax. mm	s mm	Angle °	Code no.	Description
	0.05	5.00	4.000	60.00	9.020	GR208.000.500.005.04.AE.R
	0.10	5.00	4.000	60.00	9.030	GR208.000.500.010.04.AE.R
0.80	0.00	5.00	4.000	60.00	9.040	GR208.080.500.000.04.AE.R
0.80	0.05	5.00	4.000	60.00	9.050	GR208.080.500.005.04.AE.R
0.80	0.15	5.00	4.000	60.00	9.060	GR208.080.500.015.04.AE.R

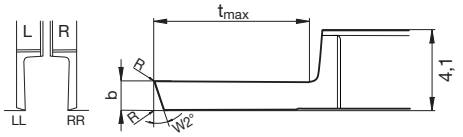
On the left-hand design, the designation changes to .L

Article no. **26814** a L

Indexable inserts for parting off



grooving depth up to 8 mm
right handed inserts in right, left handed inserts in left tool holders
• geometry .AC ground



P	M	K	N	S	H
●	●		○	○	

VHM GZ208 a

cutting data see page 19

Right-hand design as shown. Left-hand design is mirror image.

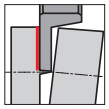
Article no. **26816** a R

b ±0,02 mm	R mm	W2 °	tmax. mm	s mm	Size	Code no.	Description
1.00		15	4.00	4.10	04	9.020	GZ208.100.400.000.04.AC.RR
1.20		15	4.00	4.10	04	9.030	GZ208.120.400.000.04.AC.RR
1.50	0.05	15	6.00	4.10	04	9.040	GZ208.150.600.005.04.AC.RR
2.00	0.05	15	8.00	4.10	04	9.050	GZ208.200.800.005.04.AC.RR

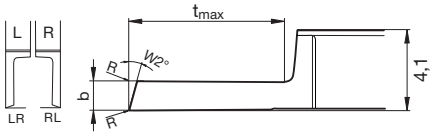
On the left-hand design, the designation changes to .LL

Article no. **26818** a L

Indexable inserts for parting off



grooving depth up to 8 mm
right handed inserts in right, left handed inserts in left tool holders
• geometry .AC ground



P	M	K	N	S	H
●	●		○	○	

VHM GZ208 a

cutting data see page 19

Right-hand design as shown. Left-hand design is mirror image.

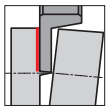
Article no. **26820** a R

b ±0,02 mm	R mm	W2 °	tmax. mm	s mm	Size	Code no.	Description
1.00		15	4.00	4.10	04	9.020	GZ208.100.400.000.04.AC.RL
1.20		15	4.00	4.10	04	9.030	GZ208.120.400.000.04.AC.RL
1.50	0.05	15	6.00	4.10	04	9.040	GZ208.150.600.005.04.AC.RL
2.00	0.05	15	8.00	4.10	04	9.050	GZ208.200.800.005.04.AC.RL

On the left-hand design, the designation changes to .LR

Article no. **26822** a L

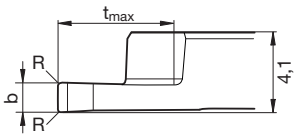
Indexable inserts for parting off



grooving depth up to 8 mm

right handed inserts in right, left handed inserts in left tool holders

• geometry .BF ground



P	M	K	N	S	H
●	●		○	○	

VHM GZ208 a

cutting data see page 19

Right-hand design as shown. Left-hand design is mirror image.

Article no. **26824** a R

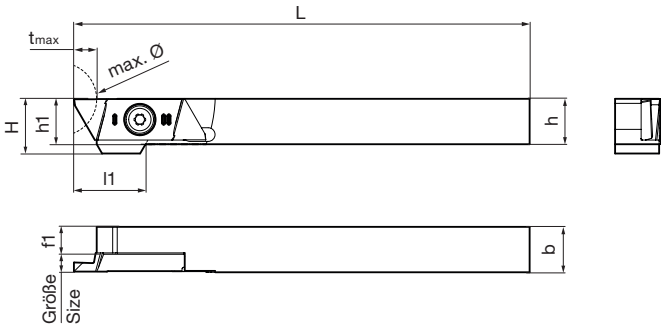
b ±0,02 mm	R mm	tmax. mm	s mm	Size	Code no.	Description
1.00		4.00	4.10	04	9.020	GZ208.100.400.000.04.BF.RN
1.20		4.00	4.10	04	9.030	GZ208.120.400.000.04.BF.RN
1.50	0.05	6.00	4.10	04	9.040	GZ208.150.600.005.04.BF.RN
2.00	0.05	8.00	4.10	04	9.050	GZ208.200.800.005.04.BF.RN

On the left-hand design, the designation changes to .LN

Article no. **26826** a L

Square shank holder straight, external machining, without IC

grooving depth up to 8 mm
without internal coolant supply



GH208

Right-hand design as shown. Left-hand design is mirror image.

Article no. **26700**

h mm	b mm	L mm	h1 mm	f1 mm	Dmax. mm	Size	Code no.	Description
10.00	10.00	95.00	9.80	5.750	18.0	04	8.030	GH208.1010.100.00.04.R
12.00	12.00	120.00	11.80	7.750	22.0	04	8.040	GH208.1212.125.00.04.R
12.70	12.70	122.00	12.50	8.450	22.0	04	8.050	GH208.0500.500.00.04.R
15.87	15.87	122.00	15.67	11.620	34.0	04	8.060	GH208.0625.500.00.04.R
16.00	16.00	120.00	15.80	11.750	34.0	04	8.070	GH208.1616.125.00.04.R

On the left-hand design, the designation changes to .L

Article no. **26701**

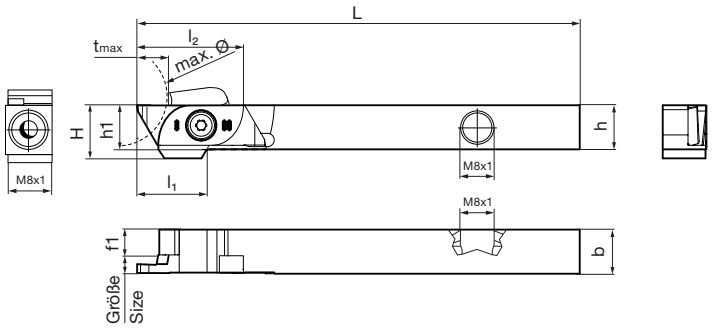
Spare parts

Article no. 25914	Clamping screw	Tightening torque Nm	Description
Code 4.501	M4.5x9 IP9	2.2	GH208.1010....
Code 4.502	M4.5x11 IP9	2.2	GH208.1212....; GH208.0500....
Code 4.503	M4.5x15 IP9	2.2	GH208.0625....; GH208.1616....

Article no. 25911	Torx Plus wrench
Code 9.000	T9IP

Square shank holders straight, external machining, with IC

grooving depth up to 8 mm
with internal coolant supply



GH208

Right-hand design as shown. Left-hand design is mirror image.

Article no. **26702**

h mm	b mm	L mm	h1 mm	f1 mm	Dmax. mm	Size	Code no.	Description
10.00	10.00	95.00	9.80	5.750	18.0	04	8.030	GH208.1010.100.00.04.R.IK
12.00	12.00	120.00	11.80	7.750	22.0	04	8.040	GH208.1212.125.00.04.R.IK
12.70	12.70	122.00	12.50	8.450	22.0	04	8.050	GH208.0500.500.00.04.R.IK
15.87	15.87	122.00	15.67	11.620	34.0	04	8.060	GH208.0625.500.00.04.R.IK
16.00	16.00	120.00	15.80	11.750	34.0	04	8.070	GH208.1616.125.00.04.R.IK

On the left-hand design, the designation changes to .L

Article no. **26703**

Spare parts

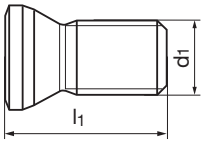
Article no. 25914	Clamping screw	Tightening torque Nm	Description
Code 4.501	M4.5x9 IP9	2.2	GH208.1010....
Code 4.502	M4.5x11 IP9	2.2	GH208.1212....; GH208.0500....
Code 4.503	M4.5x15 IP9	2.2	GH208.0625....; GH208.1616....

Article no. 25911	Torx Plus wrench
Code 9.000	T9IP

Clamping screws

NEW WN

for system 208



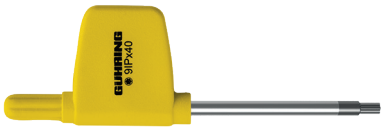
Article no. **25914**

Size	d1	l1 mm	Code no.
9IP	M 4.5 x 9 x 9IP	9.000	4.501
9IP	M 4.5 x 11 x 9IP	11.000	4.502
9IP	M 4.5 x 15 x 9IP	15.000	4.503

Torx-Plus screwdriver

NEW WN

Key with flag handle



Article no. **25911**

Size	l1 mm	Code no.
9IP	73.400	9.000

Radial grooving contour turning System 208

Machining group	v_c (m/min)	f (mm/U) by width			
		< 1	< 2	< 3	≥ 3
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB	100	0.040	0.060	0.085	0.100
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB	100	0.040	0.060	0.085	0.100
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB	100	0.040	0.060	0.085	0.100
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB	100	0.040	0.060	0.085	0.100
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB	100	0.040	0.060	0.085	0.100
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB	100	0.040	0.060	0.085	0.100
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB	100	0.040	0.060	0.085	0.100
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB	100	0.040	0.060	0.085	0.100
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB	100	0.040	0.060	0.085	0.100
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB	100	0.040	0.060	0.085	0.100
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB	100	0.040	0.060	0.085	0.100
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB	100	0.040	0.060	0.085	0.100
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB	100	0.040	0.060	0.085	0.100
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives	80	0.035	0.045	0.065	0.080
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB	80	0.035	0.045	0.065	0.080
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB	80	0.035	0.045	0.065	0.080
M2.1.1 Stainless steel, austenitic, quenched, 180 HB	80	0.035	0.045	0.065	0.080
M2.2.1 Duplex steel, high-strength stainless steels	80	0.035	0.045	0.065	0.080
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB					
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB					
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB					
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB					
K1.3.1 Malleable cast iron, ferritic, 130 HB					
K1.3.2 Malleable cast iron, pearlitic, 230 HB					
K2.1.1 Vermicular graphite cast iron (GJV)					
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)					
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB	200	0.040	0.060	0.085	0.100
N1.1.2 Wrought aluminium alloys, hardened, 100 HB	200	0.040	0.060	0.085	0.100
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB	200	0.040	0.060	0.085	0.100
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB	200	0.040	0.060	0.085	0.100
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB	200	0.040	0.060	0.085	0.100
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %	200	0.040	0.060	0.085	0.100
N3.1.2 Copper and copper alloys: CuZn, CuSnZn	200	0.040	0.060	0.085	0.100
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte	200	0.040	0.060	0.085	0.100
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics	200	0.040	0.060	0.085	0.100
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.	200	0.040	0.060	0.085	0.100
N4.1.3 Non-metallic materials: Graphite	200	0.040	0.060	0.085	0.100
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB	60	0.015	0.025	0.035	0.040
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB	60	0.015	0.025	0.035	0.040
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB	60	0.015	0.025	0.035	0.040
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB	60	0.015	0.025	0.035	0.040
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB	60	0.015	0.025	0.035	0.040
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²	60	0.015	0.025	0.035	0.040
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²	60	0.015	0.025	0.035	0.040
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC	60	0.015	0.025	0.035	0.040
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC	60	0.015	0.025	0.035	0.040
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC	60	0.015	0.025	0.035	0.040
H2.1.1 Chilled cast iron, 400 HB	60	0.015	0.025	0.035	0.040
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC	60	0.015	0.025	0.035	0.040

All the values stated are guide values. You can find detailed cutting values online in our Gühring Navigator at navigator.guehring.de/en.

Parting-off right / left System 208

Machining group	v_c (m/min) by width		f (mm/U) by width			
	< 2	≤ 4	< 1	< 2	< 3	≥ 3
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB	85	100	0.040	0.060	0.085	0.100
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB	85	100	0.040	0.060	0.085	0.100
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB	85	100	0.040	0.060	0.085	0.100
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB	85	100	0.040	0.060	0.085	0.100
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB	85	100	0.040	0.060	0.085	0.100
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB	85	100	0.040	0.060	0.085	0.100
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB	85	100	0.040	0.060	0.085	0.100
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB	85	100	0.040	0.060	0.085	0.100
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB	85	100	0.040	0.060	0.085	0.100
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB	85	100	0.040	0.060	0.085	0.100
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB	85	100	0.040	0.060	0.085	0.100
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB	85	100	0.040	0.060	0.085	0.100
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB	85	100	0.040	0.060	0.085	0.100
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives	65	80	0.025	0.035	0.050	0.060
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB	65	80	0.025	0.035	0.050	0.060
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB	65	80	0.025	0.035	0.050	0.060
M2.1.1 Stainless steel, austenitic, quenched, 180 HB	65	80	0.025	0.035	0.050	0.060
M2.2.1 Duplex steel, high-strength stainless steels	65	80	0.025	0.035	0.050	0.060
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB						
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB						
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB						
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB						
K1.3.1 Malleable cast iron, ferritic, 130 HB						
K1.3.2 Malleable cast iron, pearlitic, 230 HB						
K2.1.1 Vermicular graphite cast iron (GJV)						
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)						
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB	165	200	0.040	0.060	0.085	0.100
N1.1.2 Wrought aluminium alloys, hardened, 100 HB	165	200	0.040	0.060	0.085	0.100
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB	165	200	0.040	0.060	0.085	0.100
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB	165	200	0.040	0.060	0.085	0.100
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB	165	200	0.040	0.060	0.085	0.100
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %	165	200	0.040	0.060	0.085	0.100
N3.1.2 Copper and copper alloys: CuZn, CuSnZn	165	200	0.040	0.060	0.085	0.100
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte	165	200	0.040	0.060	0.085	0.100
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics	165	200	0.040	0.060	0.085	0.100
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.	165	200	0.040	0.060	0.085	0.100
N4.1.3 Non-metallic materials: Graphite	165	200	0.040	0.060	0.085	0.100
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB	50	60	0.015	0.025	0.035	0.040
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB	50	60	0.015	0.025	0.035	0.040
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB	50	60	0.015	0.025	0.035	0.040
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB	50	60	0.015	0.025	0.035	0.040
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB	50	60	0.015	0.025	0.035	0.040
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²	50	60	0.015	0.025	0.035	0.040
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²	50	60	0.015	0.025	0.035	0.040
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC	50	60	0.015	0.025	0.035	0.040
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC	50	60	0.015	0.025	0.035	0.040
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC	50	60	0.015	0.025	0.035	0.040
H2.1.1 Chilled cast iron, 400 HB	50	60	0.015	0.025	0.035	0.040
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC	50	60	0.015	0.025	0.035	0.040

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Parting-off neutral System 208

Machining group	v_c (m/min) by width		f (mm/U) by width			
	< 2	≤ 4	< 1	< 2	< 3	≥ 3
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB	85	100	0.040	0.060	0.085	0.100
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB	85	100	0.040	0.060	0.085	0.100
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB	85	100	0.040	0.060	0.085	0.100
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB	85	100	0.040	0.060	0.085	0.100
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB	85	100	0.040	0.060	0.085	0.100
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB	85	100	0.040	0.060	0.085	0.100
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB	85	100	0.040	0.060	0.085	0.100
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB	85	100	0.040	0.060	0.085	0.100
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB	85	100	0.040	0.060	0.085	0.100
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB	85	100	0.040	0.060	0.085	0.100
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB	85	100	0.040	0.060	0.085	0.100
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB	85	100	0.040	0.060	0.085	0.100
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB	85	100	0.040	0.060	0.085	0.100
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives	65	80	0.025	0.035	0.050	0.060
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB	65	80	0.025	0.035	0.050	0.060
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB	65	80	0.025	0.035	0.050	0.060
M2.1.1 Stainless steel, austenitic, quenched, 180 HB	65	80	0.025	0.035	0.050	0.060
M2.2.1 Duplex steel, high-strength stainless steels	65	80	0.025	0.035	0.050	0.060
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB						
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB						
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB						
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB						
K1.3.1 Malleable cast iron, ferritic, 130 HB						
K1.3.2 Malleable cast iron, pearlitic, 230 HB						
K2.1.1 Vermicular graphite cast iron (GJV)						
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)						
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB	165	200	0.040	0.060	0.085	0.100
N1.1.2 Wrought aluminium alloys, hardened, 100 HB	165	200	0.040	0.060	0.085	0.100
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB	165	200	0.040	0.060	0.085	0.100
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB	165	200	0.040	0.060	0.085	0.100
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB	165	200	0.040	0.060	0.085	0.100
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %	165	200	0.040	0.060	0.085	0.100
N3.1.2 Copper and copper alloys: CuZn, CuSnZn	165	200	0.040	0.060	0.085	0.100
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte	165	200	0.040	0.060	0.085	0.100
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics	165	200	0.040	0.060	0.085	0.100
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.	165	200	0.040	0.060	0.085	0.100
N4.1.3 Non-metallic materials: Graphite	165	200	0.040	0.060	0.085	0.100
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB	50	60	0.015	0.025	0.035	0.040
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB	50	60	0.015	0.025	0.035	0.040
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB	50	60	0.015	0.025	0.035	0.040
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB	50	60	0.015	0.025	0.035	0.040
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB	50	60	0.015	0.025	0.035	0.040
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²	50	60	0.015	0.025	0.035	0.040
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²	50	60	0.015	0.025	0.035	0.040
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC	50	60	0.015	0.025	0.035	0.040
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC	50	60	0.015	0.025	0.035	0.040
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC	50	60	0.015	0.025	0.035	0.040
H2.1.1 Chilled cast iron, 400 HB	50	60	0.015	0.025	0.035	0.040
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC	50	60	0.015	0.025	0.035	0.040

All the values stated are guide values. You can find detailed cutting values online in our Gühring Navigator at navigator.guehring.de/en.

system 208 for sliding headstock lathes

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