

Gear Hobbing Unit

High Productive Manufacturing of Gears
with CNC Turning Centers.

Maximum flexibility, high quality, optimal handling.

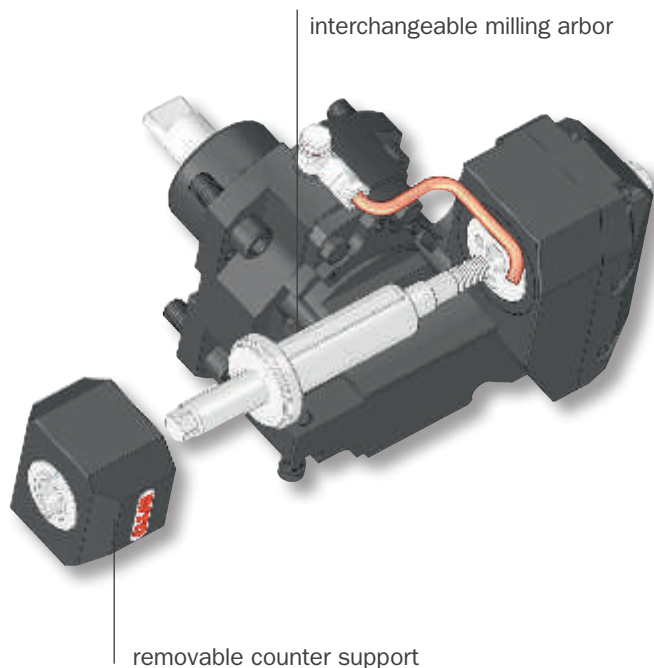
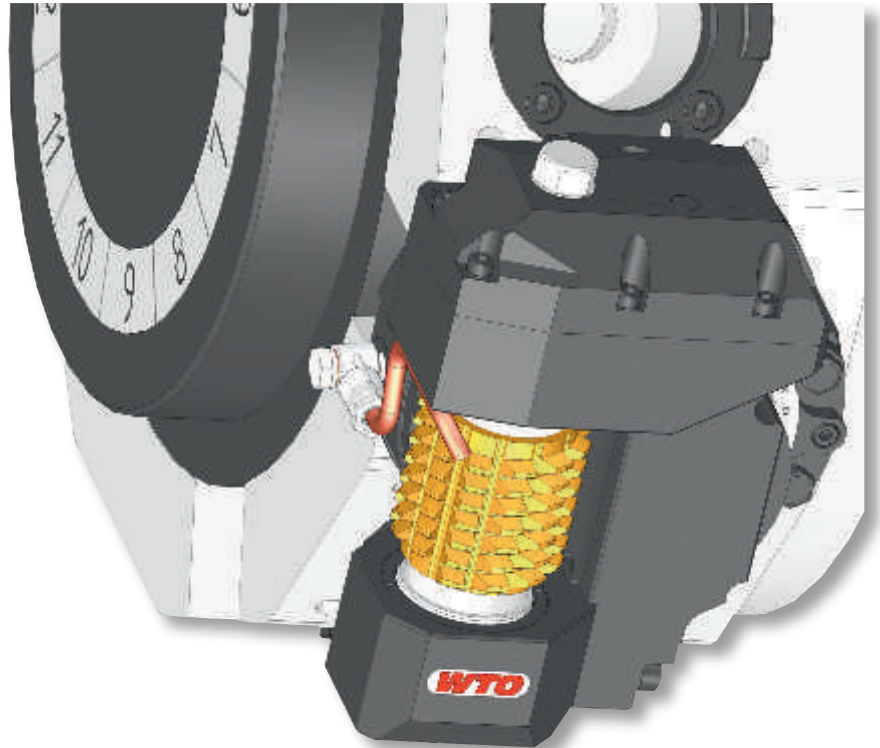


In operation:

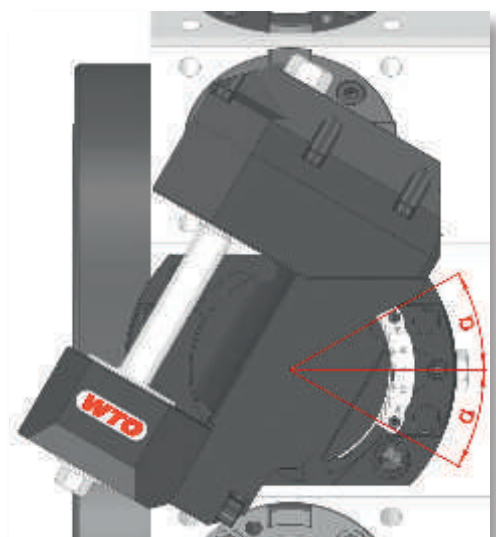


Gear Hobbing Unit for Turn/Mill Centers

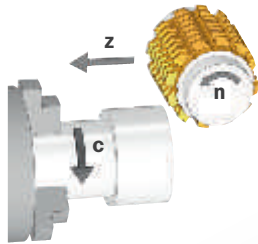
- | Usable for machining gear quality according to standard 8 ISO 1328, AGMA 8
- | Maximum scale swing of $\pm 30^\circ$
- | High stiffness and runout accuracy
- | Interchangeable milling arbor available in different sizes
- | Easy cutting tool change through removable counter support and withdrawal of the complete milling arbor
- | Cutting tools can be pre-set



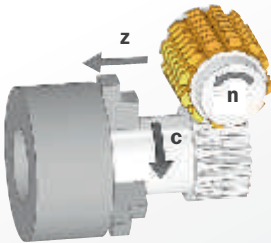
Angular adjustment $\pm 30^\circ$
with scale and vernier



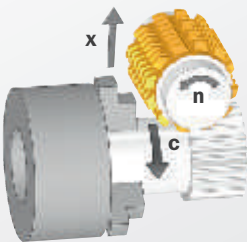
Operation principle: Gear hobbing



Synchronization of work piece and tool rotation.



Feed movement in Z axis.

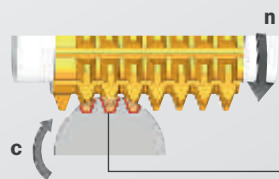


When hobbing is finished the hob has to move towards X.

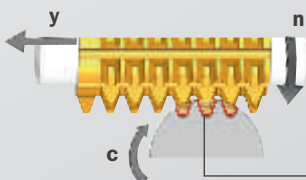
Please consider:

At the end of the gear/spline there has to be sufficient clearance for the hob.

Shifting



Initial hob position after tool change with new cutting tool.



Hob position at end of cutting tool life.

To optimize the cutting tool life you can move the hob step by step in Y axis direction. This movement enables the usage of all cutting edges of the hob. This procedure is called shifting.

Sample workpieces



| Splines

e.g. DIN 5480, DIN 5482, TORX

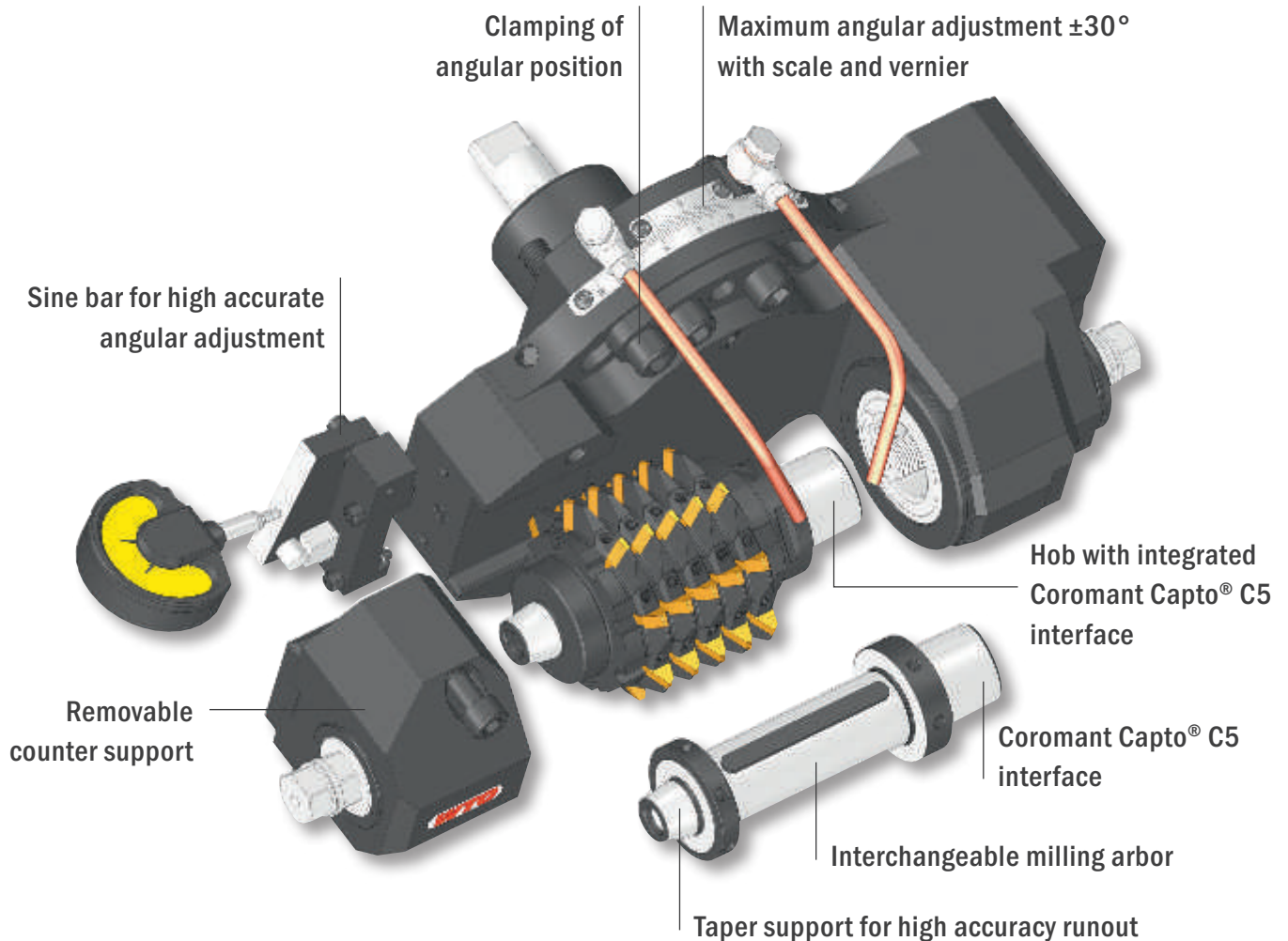


| Spur gear



| Helical gear

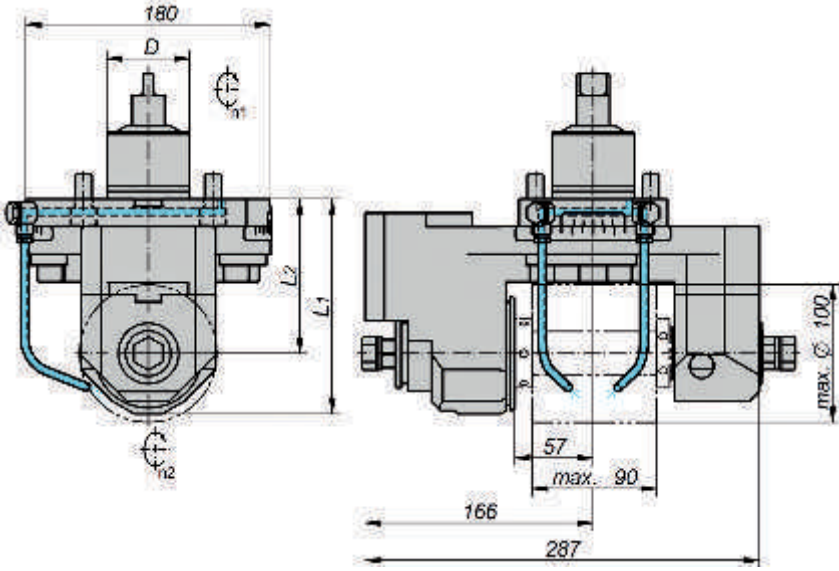
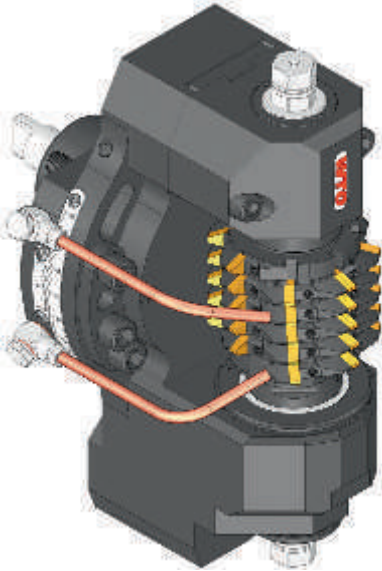
Gear Hobbing Unit



Max. cutting tool size	Ø100x90 mm
Ratio i (n1:n2)	2:1
Max. RPM (n2)	3,000
Max. torque M	150 Nm
Max. scale swing	$\pm 30^\circ$

Your benefit with WTO's gear hobbing unit

- | Gears up to module 6 mm
- | Usable for machining gear quality according to standard 8 ISO 1328, AGMA 8
- | High stiffness and runout accuracy
- | High precision interface for solid hobs and interchangeable milling arbors
- | Interchangeable milling arbor available in different sizes
- | Easy cutting tool change through removable counter support and withdrawal of the complete milling arbor
- | Cutting tools can be pre-set



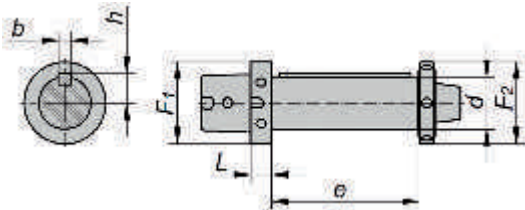
4109... (EC) with external coolant supply

Item No.	Interface		Drive coupling	Clamping system type	Dimensions/Data					Wrench
	ØD	Machine specification			L1	L2	n2 1/min	M2 Nm	i n1:n2	
410900001-75	75	BMT 75P	DIN 1809	C5-1	156	112	3000	150	2:1	0067500... ...1008
410900000-85	85	BMT 85P	DIN 1809	C5-1	163	119	3000	150	2:1	...1008
410900002-60	60	DMG MORI NLX 1500-4000	DIN 1809	C5-1	156	112	3000	150	2:1	...1008
410900003-60	60	DMG MORI NLX 4000 (High Torque Milling)	DIN 1809	C5-1	156	112	3000	150	2:1	...1008
410900000-75	75	DMG MORI NZX 4000	DIN 1809	C5-1	158	114	2000	150	2:1	...1008
410900000-A1	110	DMG MORI NZX 6000	DIN 1809	C5-1	176	132	2000	150	2:1	...1008
410900005-50	50	Mazak QTN 300/350/400	DIN 1809	C5-1	169	125	3000	150	2:1	...1008

Dimensions in mm

Order milling arbor, sine bar and wrenches separately.

Milling arbor type C5-1



Item No.	d	e	b	h	L	F1	F2		
160027C51	27	90	7	15.50	13	50	50	100091	99760
160032C51	32	90	8	18.00	13	50	50	20870	99760
160025C51	1"	90	1/4"	15.07	13	50	50	99761	99760
160031C51	1 1/4"	90	5/16"	19.05	13	50	50	100090	99760

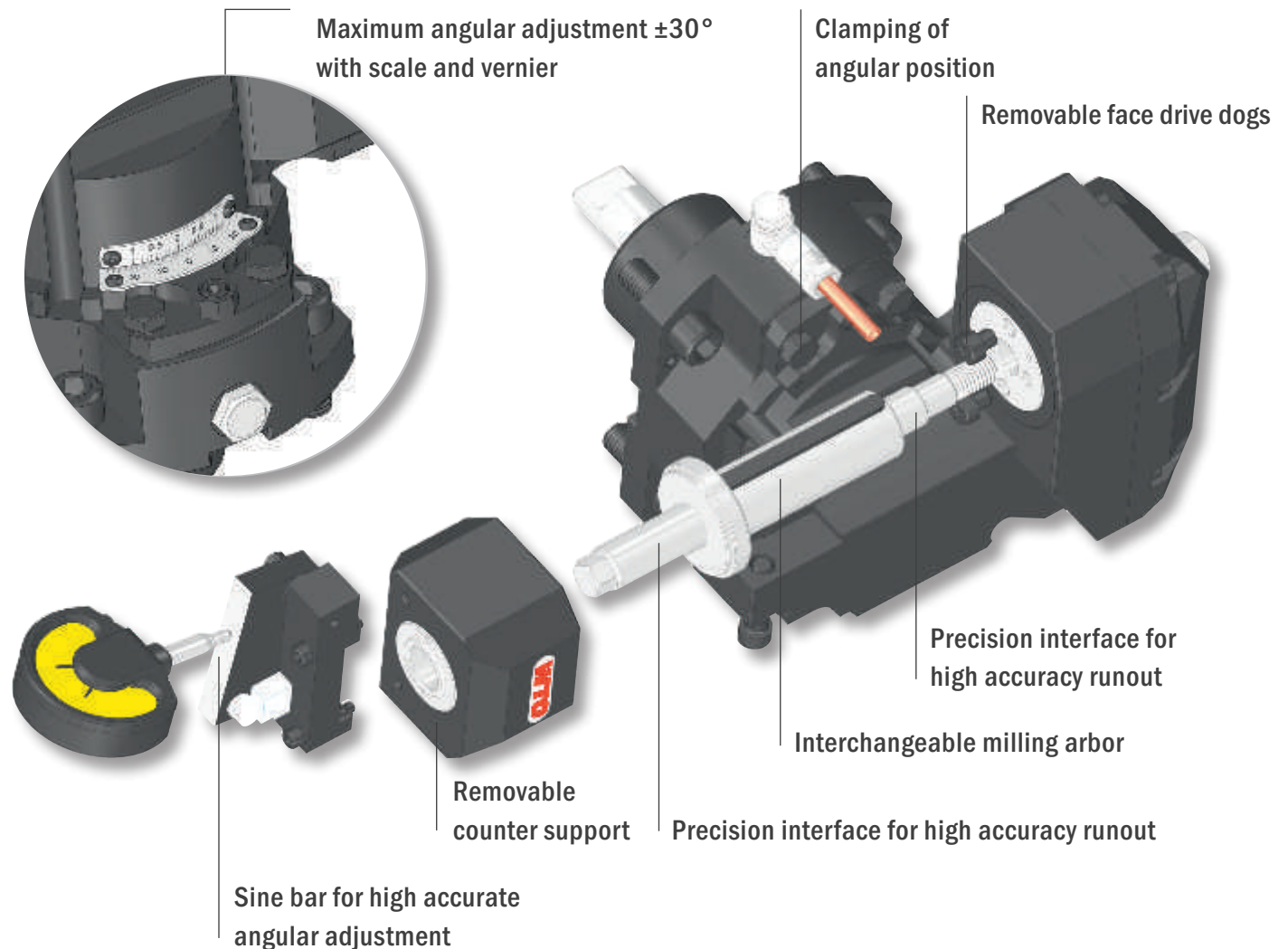
Dimensions in mm

Sine bar



Item No.	Range
96394	0° - 45°

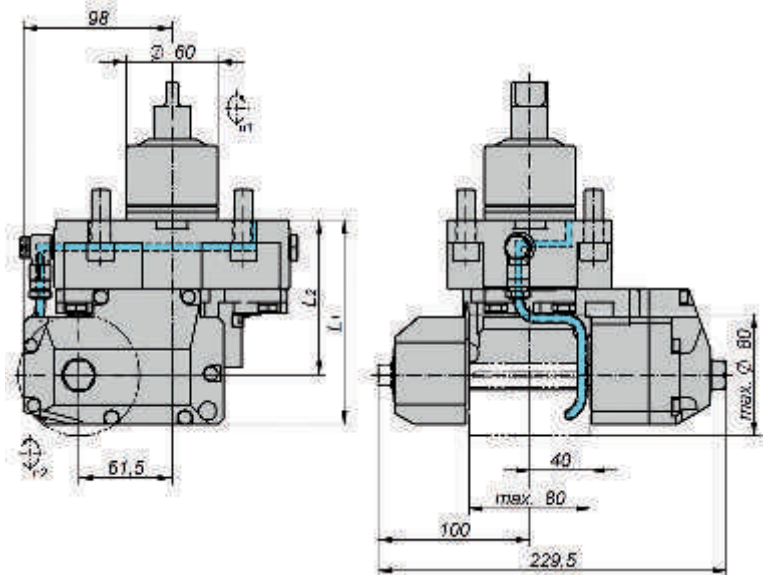
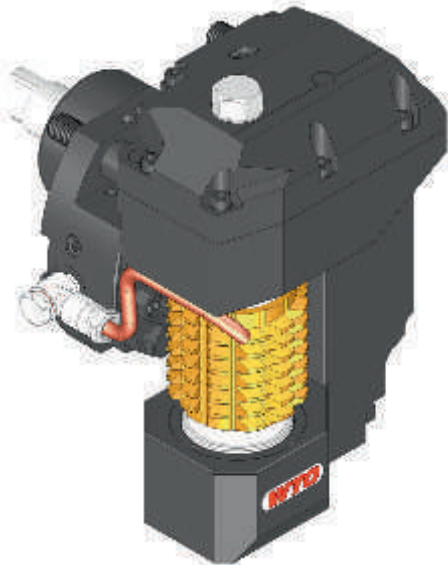
Gear Hobbing Unit



Max. cutting tool size	Ø80x80 mm	Ø80x80 mm
Ratio i (n1:n2)	1:1	2:1
Max. RPM (n2)	6,000	3,000
Max. torque M	60 Nm	80 Nm
Max. scale swing	$\pm 30^\circ$	$\pm 30^\circ$

Your benefit with WTO's gear hobbing unit

- | Gears up to module 3 mm
- | Usable for machining gear quality according to standard 8 ISO 1328, AGMA 8
- | High stiffness and runout accuracy
- | Interchangeable milling arbor available in different sizes
- | Easy cutting tool change through removable counter support and withdrawal of the complete milling arbor
- | Cutting tools can be pre-set



4115... (EC) with external coolant supply

Item No.	Interface		Drive coupling	Clamping system type	Dimensions/Data					Wrench
	ØD	Machine specification			L1	L2	n2 1/min	M2 Nm	i n1:n2	
411500003-55	55	Biglia Quattro D55	DIN 1809	16x1	99.5	67	6000	60	1:1	...0927
411500004-55	55	Biglia Quattro D55	DIN 1809	16x1	99.5	67	3000	80	2:1	...0927
411500002-55	55	BMT 55P	DIN 1809	16x1	99.5	67	6000	60	1:1	...0927
411500001-55	55	BMT 55P	DIN 1809	16x1	99.5	67	3000	80	2:1	...0927
411500003-65	65	BMT 65P	DIN 1809	16x1	102.5	70	6000	60	1:1	...0927
411500002-65	65	BMT 65P	DIN 1809	16x1	102.5	70	3000	80	2:1	...0927
411500009-55	55	BMT55-short	DIN 1809	16x1	113.5	81	3000	80	2:1	...0927
411500008-55	55	BMT55-short	DIN 1809	16x1	113.5	81	6000	60	1:1	...0927
411500008-65	65	BMT65-short	DIN 1809	16x1	104.5	72	3000	80	2:1	...0927
411500007-65	65	BMT65-short	DIN 1809	16x1	104.5	72	6000	60	1:1	...0927
411500000-68	68	CDI68-TN 340 000	DIN 5480	16x1	114.5	82	6000	60	1:1	...0954
411500018-60	60	Goodway GS-2000-4000 (12 stations)	DIN 1809	16x1	134.5	102	3000	80	2:1	...0926
411500017-60	60	Goodway GS-2000-4000 (12 stations)	DIN 1809	16x1	134.5	102	6000	60	1:1	...0926
411500001-63	63	Goodway GTS-200, 260	DIN 1809	16x1	104.5	72	3000	80	2:1	...0927
411500000-63	63	Goodway GTS-200, 260	DIN 1809	16x1	104.5	72	6000	60	1:1	...0927
411500039-40	40	JYOTI AX300	DIN 1809	16x1	112.5	80	3000	80	2:1	...0926
411500028-40	40	Mazak HQR-100/150MSY	DIN 1809	16x1	127.5	95	3000	80	2:1	...0962
411500030-40	40	Mazak HQR-200/250MSY	DIN 1809	16x1	157.5	125	3000	80	2:1	...0954
411500029-40	40	Mazak QTN-100M	DIN 1809	16x1	114.5	82	3000	80	2:1	...0962
411500032-40	40	Mazak QTN-200/250M	DIN 1809	16x1	147.5	115	3000	80	2:1	...0962
411500006-68	68	Mazak QTN-250MSY (BOT)	DIN 1809	16x1	117.5	85	3000	80	2:1	...0926
411500017-50	50	Mazak QTN-300/350/400/450M	DIN 1809	16x1	157.5	125	6000	60	1:1	...0954
411513000-60	60	DMG MORI NL1500, NL2000	DIN 1809	16x1	134.5	102	6000	40	1:1	...0926
411500008-60	60	DMG MORI NLX 1500-4000	DIN 1809	16x1	134.5	102	3000	80	2:1	...0926
411500007-60	60	DMG MORI NLX 1500-4000	DIN 1809	16x1	134.5	102	6000	60	1:1	...0926
411500018-40	40	DMG MORI NZX 1500-2000	DIN 1809	16x1	107.5	75	3000	80	2:1	...0926
411500017-40	40	DMG MORI NZX 1500-2000	DIN 1809	16x1	107.5	75	6000	60	1:1	...0926
411500000-75	75	DMG MORI NZX 4000	DIN 1809	16x1	147.5	115	3000	80	2:1	...0954
411500038-40	40	Muratec MT12/200	DIN 1809	16x1	122.5	90	3000	80	2:1	...0927
411500005-65	65	Nakamura D65/B100	DIN 1809	16x1	99.5	67	6000	60	1:1	...0927

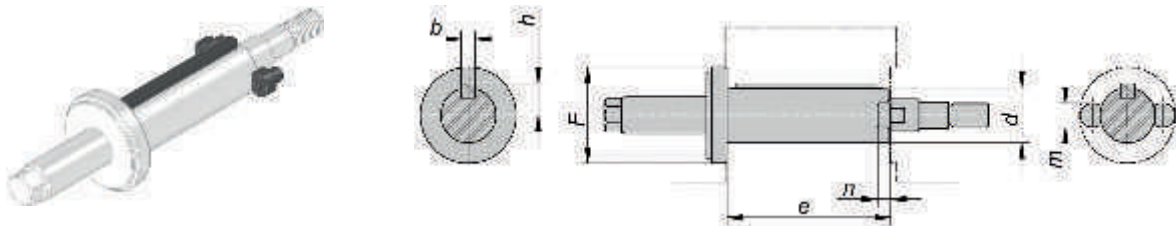
Dimensions in mm

Item No.	Interface			Clamping system type	Dimensions/Data					Wrench
	ØD	Machine specification	Drive coupling		L ₁	L ₂	n ₂ 1/min	M ₂ Nm	i n ₁ :n ₂	
411500004-65	65	Nakamura D65/B100	DIN 1809	16x1	99.5	67	3000	80	2:1	...0927
411500015-60	60	Okuma LB/LU 2000-3000M	DIN 1809	16x1	102.5	70	3000	80	2:1	...0962
411500013-60	60	Okuma LB/LU 2000-3000M	DIN 1809	16x1	102.5	70	6000	60	1:1	...0962
411500011-60	60	Okuma LB4000M	DIN 1809	16x1	112.5	80	6000	60	1:1	...0927
411500010-60	60	Okuma LB4000M	DIN 1809	16x1	112.5	80	3000	80	2:1	...0927
411500023-60	60	Okuma LT 3000 EX M	DIN 1809	16x1	119.5	87	3000	80	2:1	...0962
411500022-60	60	Okuma LT 3000 EX M	DIN 1809	16x1	119.5	87	6000	60	1:1	...0962
411500020-40	40	Okuma LT-300M	1-stufig	16x1	112.5	80	3000	80	2:1	...0926
411500019-40	40	Okuma LT-300M	1-stufig	16x1	112.5	80	6000	60	1:1	...0926
411500037-40L	40	Gildemeister, Trifix	DIN 5480	16x1	132.5	100	3000	80	2:1	...0926
411500035-40	40	Sauter/Duplomatic	DIN 5480	16x1	112.5	80	3000	80	2:1	...0926
411500021-60	60	Takisawa EX 3.../5.../7.../9...	DIN 1809	16x1	107.5	75	3000	80	2:1	...0926
411500014-50	50	Takisawa TCN-2000, 2500	DIN 1809	16x1	107.5	75	6000	60	1:1	...0926
411500013-50	50	Takisawa TCN-2000, 2500	DIN 1809	16x1	107.5	75	3000	80	2:1	...0926
411500018-50	50	Takisawa TCY-160, 200	DIN 1809	16x1	107.5	75	3000	80	2:1	...0926
411500015-50	50	Takisawa TCY-160, 200	DIN 1809	16x1	107.5	75	6000	60	1:1	...0926
411500016-50	50	Takisawa TCY-160, 200	DIN 1809	16x1	107.5	75	3000	80	2:1	...0926
411500027-40	40	Takisawa TMM 200/250	DIN 1809	16x1	104.5	72	6000	60	1:1	...0962
411500025-40	40	Takisawa TMM 200/250	DIN 1809	16x1	109.5	77	3000	80	2:1	...0962
411500004-68	68	Takisawa TY-2000	DIN 1809	16x1	147.5	115	3000	80	2:1	...0969
411500003-68	68	Takisawa TY-2000	DIN 1809	16x1	147.5	115	6000	60	1:1	...0969
411500005-68	68	Takisawa TY-2000 (HPI Revolver)	DIN 1809	16x1	147.5	115	3000	80	2:1	...0969

Dimensions in mm

Order milling arbor, sine bar and wrenches separately.

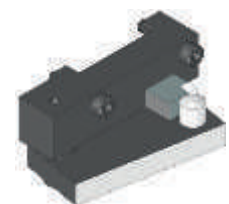
Milling arbor type 16x1



Item No.	d	e	b	h	m	n	F		
160016161	16	80	4	9.2	8	4.5	47	104358	45988
160022161	22	80	6	12.6	10	5.6	47	80120	45151
160027161	27	80	7	15.5	12	6.3	47	77856	77558
160015161	5/8"	80	1/8"	9.51	7.94	4.5	47	77705	77704
160019161	3/4"	80	1/8"	11.11	7.94	4.5	47	77706	77704
160023161	7/8"	80	1/8"	12.69	7.94	4.5	47	77705	91840
160025161	1"	80	1/4"	15.07	9.53	5.0	47	77870	85352
160031161	1 1/4"	80	1/4"	18.26	-	-	47	77870	-

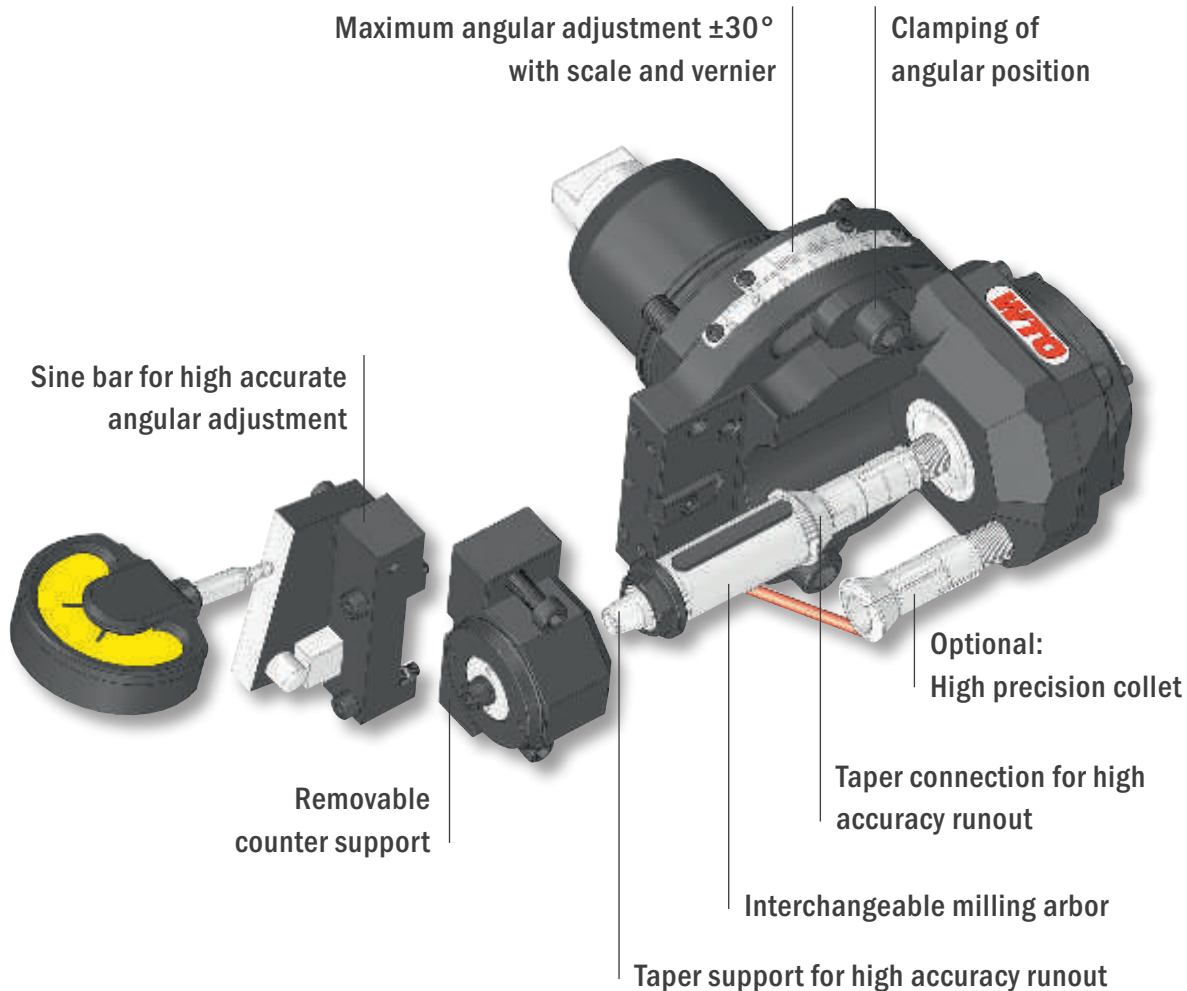
Dimensions in mm

Sine bar



Item No.	Range
96394	0° - 45°

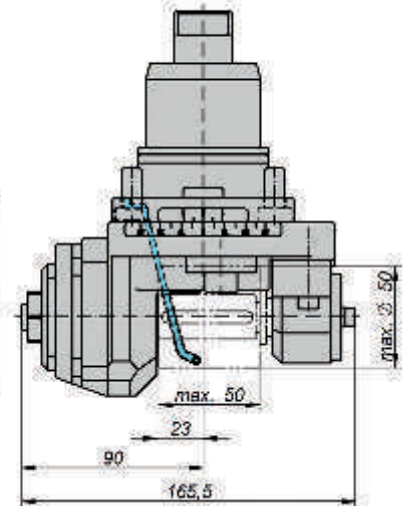
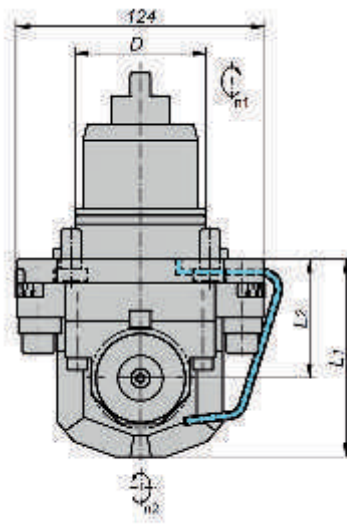
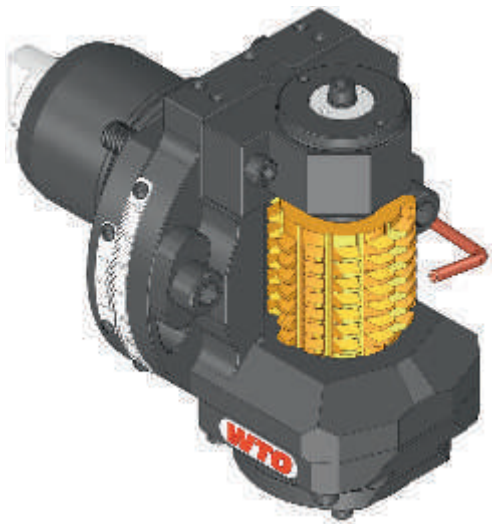
Gear Hobbing Unit



Max. cutting tool size	Ø50x50 mm
Ratio i (n1:n2)	1:1
Max. RPM (n2)	4,000
Max. torque M	32 Nm
Max. scale swing	$\pm 30^\circ$

Your benefit with WTO's gear hobbing unit

- | Gears up to module 2 mm
- | Usable for machining gear quality according to standard 8 ISO 1328, AGMA 8
- | High stiffness and runout accuracy
- | Interchangeable milling arbor available in different sizes
- | Easy cutting tool change through removable counter support and withdrawal of the complete milling arbor
- | Cutting tools can be pre-set



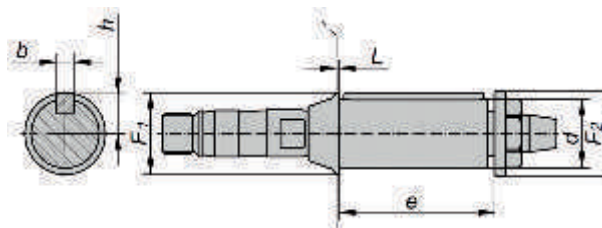
4109... (EC) with external coolant supply

Item No.	Interface		Drive coupling	Clamping system type	Dimensions/Data					Wrench
	ØD	Machine specification			L1	L2	n2 1/min	M2 Nm	i n1:n2	
410900001-45	45	BMT 45P	DIN 1809	15-2	98	59	4000	32	1:1	0067500... ...1015
410900002-55	55	BMT 55P	DIN 1809	15-2	98	59	4000	32	1:1	...1015
410900002-45	45	Goodway/Miyano D45	DIN 1809	15-2	98	59	4000	32	1:1	...1015
410900000-65	65	Nakamura-Tome Super Mill WY-250	DIN 1809	15-2	98	59	4000	32	1:1	...1015
410900003-55	55	Okuma LT 2000 X M/MY (16 stations)	DIN 1809	15-2	111	72	4000	32	1:1	...1015

Dimensions in mm

Order milling arbor, sine bar and wrenches separately.

Milling arbor type 15-2



Collet for 15-2 (324E-UP)

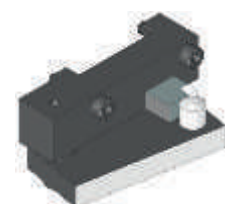


Item No.	Ø
199015130	13
199015050-in	1/2"

Item No.	d	e	b	h	L	F1	F2		
160008152	8	35	2	4.7	14	14.0	15.0	104271	98852
160010152	10	40	3	6.20	7	16.0	21.5	20588	86055
160013152	13	50	3	7.70	1	26.0	20.0	87770	86054
160016152	16	50	4	9.20	1	26.0	27.0	20642	97265
160022152	22	50	6	12.60	1	26.0	27.0	20804	97265
160015152	5/8"	50	1/8"	9.52	1	26.0	27.0	44683	97265
160019152	3/4"	50	1/8"	11.11	1	26.0	27.0	44683	97265

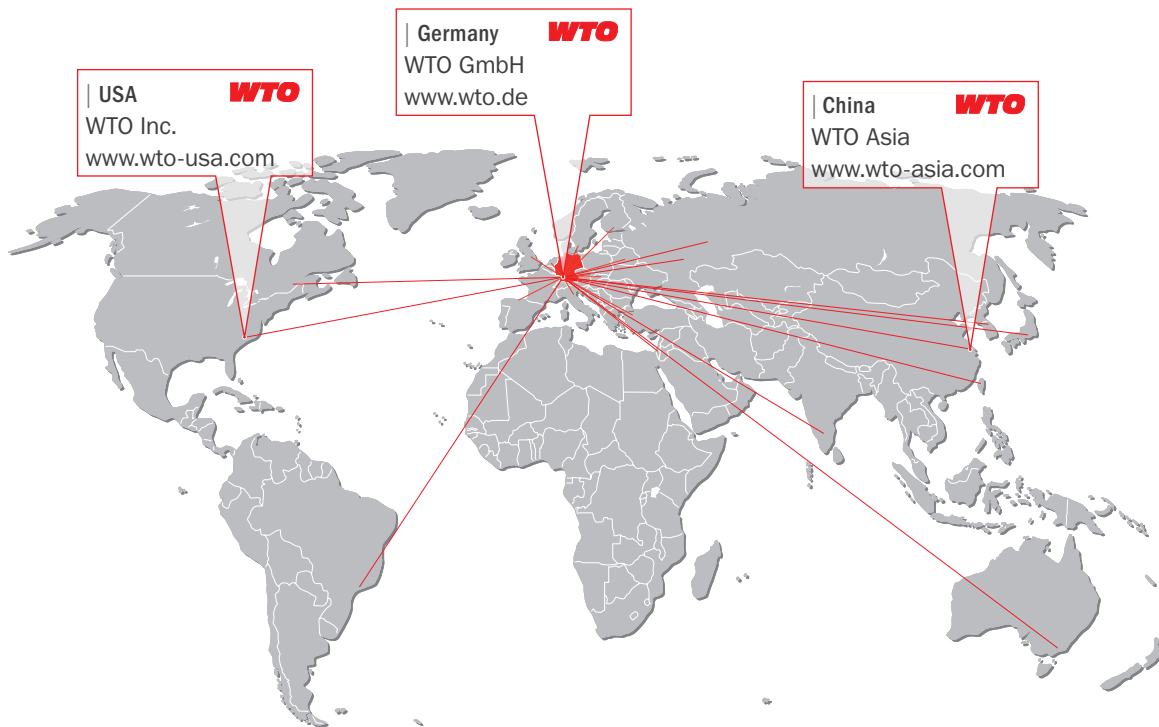
Dimensions in mm

Sine bar



Item No.	Range
96394	0° - 45°

WTO worldwide



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