

ZOLLERN

Solid metals. Fine solutions.

Drive Technology
Electric motors



The ZOLLERN Group

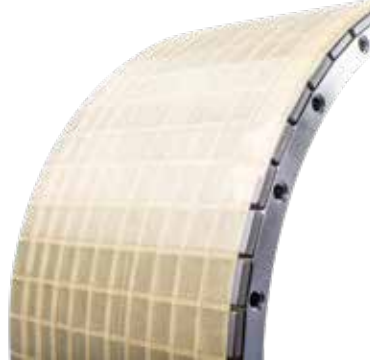
ZOLLERN is one of the pioneers in the metal industry. At several locations in Europe, North America and Asia, 2,000 employees develop, produce and service a wide range of high-quality metal products. ZOLLERN supplies sophisticated solutions for a wide range of applications with its business areas of drive technology, investment casting, sand casting and forging as well as steel profiles.

Contents	Page
ZOLLERN Electric motors	3
Applications	
Machine tools	4
Winch drives and marine propulsion systems	5
Forming technology and presses	6
Stirrers and centrifuges	7
Torque motors product range / Motor types	8
Torque motors type TM	9
Technical data of TM torque motors	10
Technical data TM 140/089-H	13
Technical data TM 175/119-H	14
Technical data TM 210/169-H	15
Technical data TM 290/229-H	16
Technical data TM 360/295-H	17
Technical data TM 360/298-H	18
Technical data TM 420/350-H	19
Technical data TM 450/384-H	20
Technical data TM 530/459-H	21
Technical data TM 760/690-H	22
Technical data TM 992/919-H	23
Technical data TM 1220/1149-H	24
Technical data TM 1380/1290-H	25
Technical data TM 2070/1920-H	26
Torque motors type TMS	28
Torque motors type TMSHT	29
Synchronous motors type SM	30
Inquiry checklist	31

ZOLLERN Electric motors



Pre-assembled for fast installation



Mechanical protection of the magnets



Electric interface

Meanwhile, Drive Technology has evolved into the largest business division within the ZOLLERN Group. It primarily consists of the products groups: gearboxes and winches, automation, and electric motors.

ZOLLERN Electric motors are synchronous or torque drive motors with permanent magnets. The torque motors were developed for high torques at comparably low speeds. Synchronous motors are used for high speeds. Product planning, electrical configuration, engineering, manufacturing and assembly as well as commissioning take place in-house. This ensures efficient and cost-optimised configuration as well as high quality. Customer-specific requests and requirements within the standard design can be realised easily.

ZOLLERN Electric motors offer high energy efficiency with a high power density and excellent general efficiency. The drives are characterised by good control properties, optimal cooling and improved heat dissipation.

ZOLLERN Electric motors are wear and backlash-free as well as low-maintenance. Large dimensions with diameters of up to 2,200 mm and maximum torques of 100,000 Nm are also possible.

The annular high-precision motors consist of a stator unit with a winding and a rotor with a permanent magnets.

Features and advantages:

- Up to 25% less power dissipation compared with conventional solutions
- Rated current up to 15% lower than in conventional solutions
- Torque ripple <1%
- Lower heat impact on the adjacent components
- Closed cooling jacket optional
- Application-specific motor configuration possible
- Compatible with all frequency converters on the market
- Customisable cable outlets
- Customisable stator housing and rotor ring



Electric motors for machine tools



For use as

- drives in rotary tables
- drives in swivel axis
- drives in spindles «



- Synchronous motor SM for driving hydrostatic workpiece spindles



Electric motors for winch drives and marine propulsion systems

- »» For use as
- drives in winches
 - marine propulsion systems «



- Synchronous motor SM for driving electronic winches



Electric motors for forming technology and presses

- »» For use as
- drives for eccentric presses ««



- Torque motor for accelerating or decelerating the eccentric shaft
- Torque motor as a flywheel drive



Electric motors for stirrers and centrifuges

- »» For use as
- drives in stirrers for sugar mills
 - drives in centrifuges
 - drives in stirrers in energy engineering (biogas) ««



- Torque motor as stirrer drive

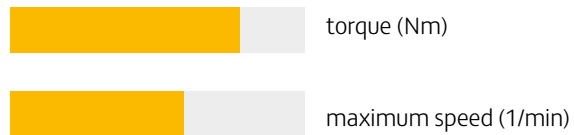
Torque motors

Product range / Motor types

Torque motor standard / Type TM



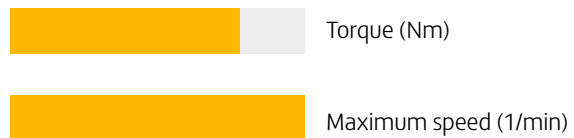
- Design with surface magnets
- Single-layer stator winding



Torque motor high speed / Type TMS



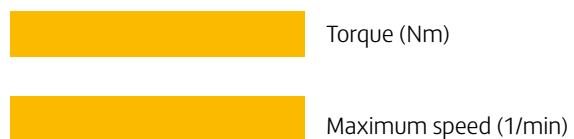
- Design with surface magnets
- Double-layer stator winding



Torque motor high speed and high torque / Type TMSHT



- Design with an inserted magnet
- Double-layer stator winding



Torque motors

Type TM

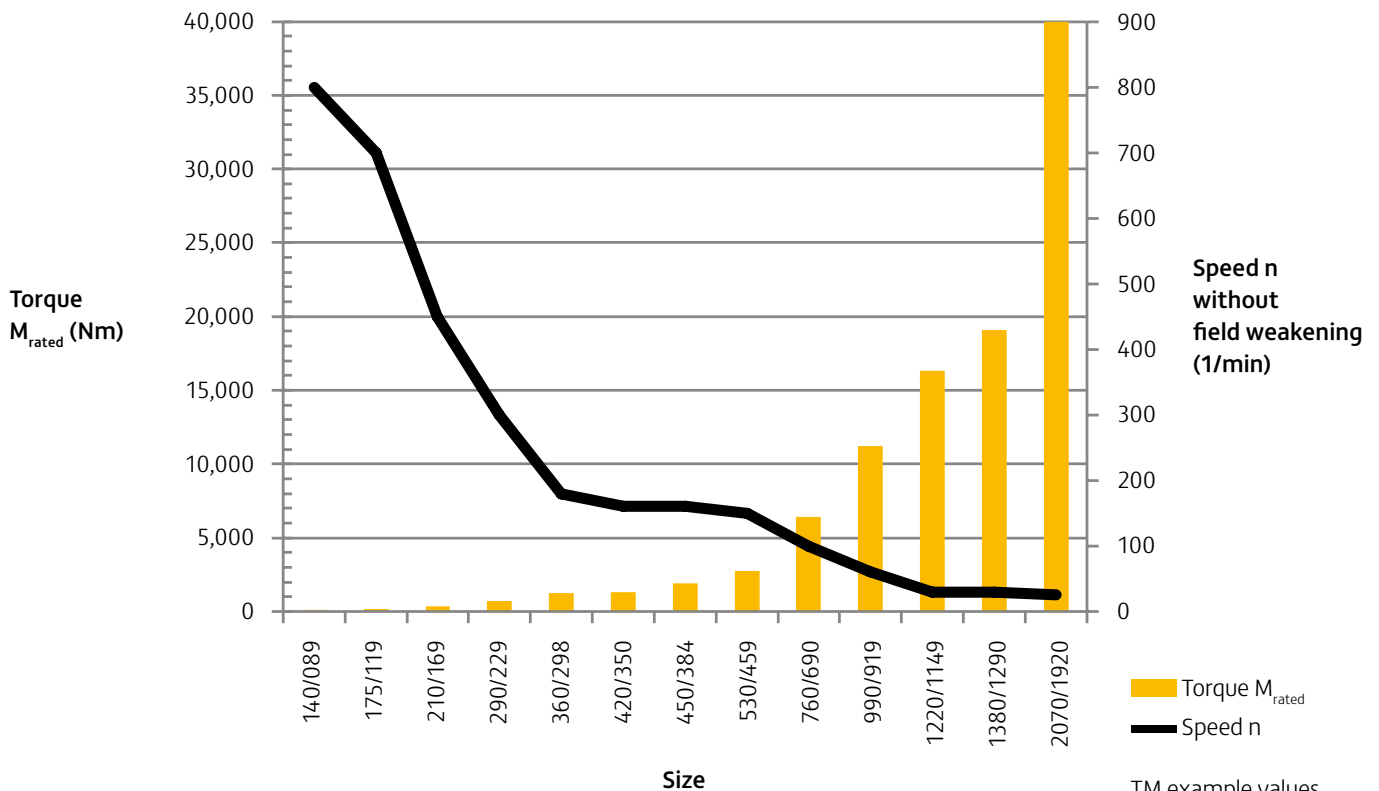
high torques / speeds

Features

- internal rotor
- exterior cooling jacket open / closed
- surface magnets
- sleeve on rotor
- coils with orthocyclic winding
- standard and special sizes
- customer-specific designs possible



Torque / speed ratio by size



TM example values
H = 150 mm

Technical data overview

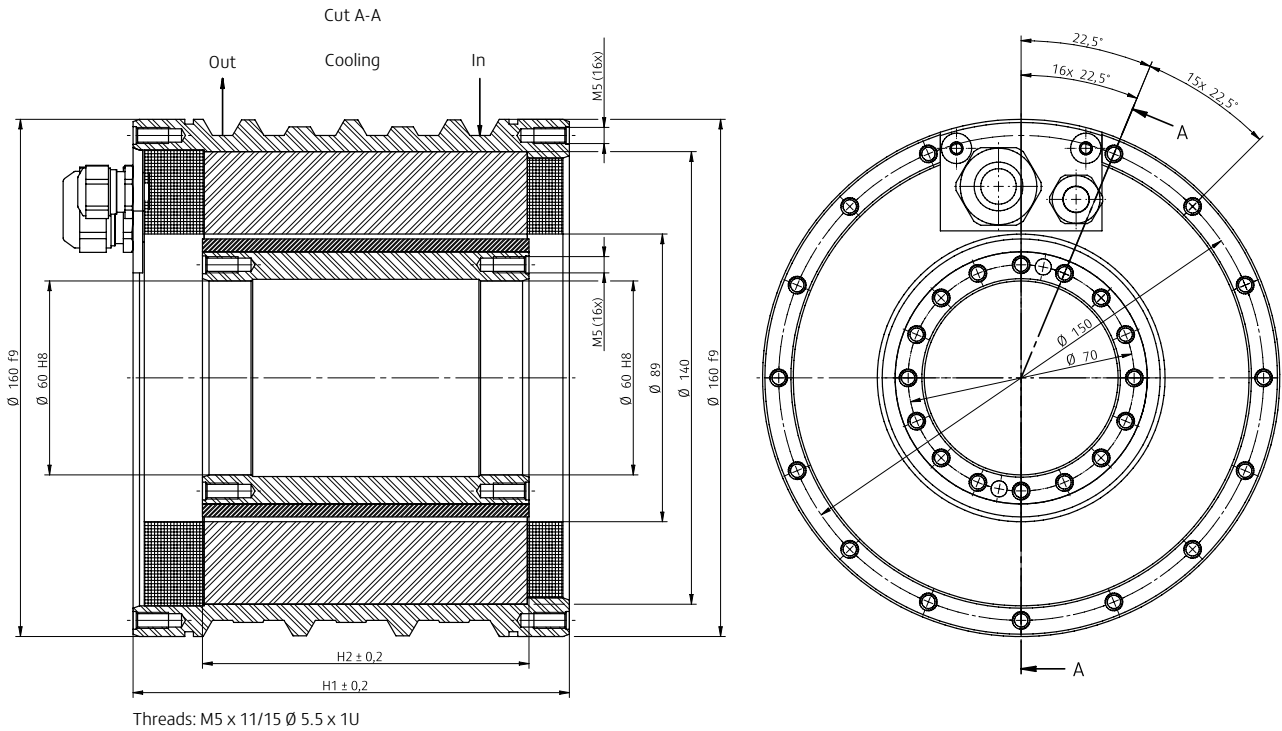
Torque motors TM

// Technical data									
Motor	Stator-Ø	Rotor Ø	Stator length H1	Rotor length H2	Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 140/089-030	160	60	65	31	9	20	38	800	400
TM 140/089-050	160	60	85	51	16	33	63	800	400
TM 140/089-070	160	60	105	71	21	46	89	800	400
TM 140/089-100	160	60	135	101	31	66	127	800	400
TM 140/089-150	160	60	185	151	45	100	190	800	400
TM 175/119-030	198	90	75	31	16	33	68	700	400
TM 175/119-050	198	90	95	51	25	55	114	700	400
TM 175/119-070	198	90	115	71	34	78	159	700	400
TM 175/119-100	198	90	145	101	48	113	228	700	400
TM 175/119-150	198	90	195	151	71	170	341	700	400
TM 210/169-030	230	140	70	31	28	70	135	450	400
TM 210/169-050	230	140	90	51	47	120	225	450	400
TM 210/169-070	230	140	110	71	66	170	312	450	400
TM 210/169-100	230	140	140	101	92	245	450	450	400
TM 210/169-150	230	140	190	151	140	370	680	450	400
TM 290/229-030	310	200	70	31	65	135	260	300	400
TM 290/229-050	310	200	90	51	108	230	430	300	400
TM 290/229-070	310	200	110	71	145	320	590	300	400
TM 290/229-100	310	200	140	101	207	460	845	300	400
TM 290/229-150	310	200	190	151	305	700	1,260	300	400
TM 360/295-030	385	255	90	31	95	210	404	180	400
TM 360/295-050	385	255	110	51	158	350	673	180	400
TM 360/295-070	385	255	130	71	211	490	942	180	400
TM 360/295-100	385	255	160	101	315	700	1,346	180	400
TM 360/295-150	385	255	210	151	473	1,050	2,019	180	400
TM 360/298-030	385	265	90	31	115	243	440	180	400
TM 360/298-050	385	265	110	51	195	405	720	180	400
TM 360/298-070	385	265	130	71	255	560	1,020	180	400
TM 360/298-100	385	265	160	101	355	825	1,420	180	400
TM 360/298-150	385	265	210	151	530	1,230	2,130	180	400
TM 420/350-030	450	300	90	31	130	270	519	160	400
TM 420/350-050	450	300	110	51	210	445	856	160	400
TM 420/350-070	450	300	130	71	290	625	1,202	160	400
TM 420/350-100	450	300	160	101	405	890	1,712	160	400
TM 420/350-150	450	300	210	151	590	1,340	2,577	160	400

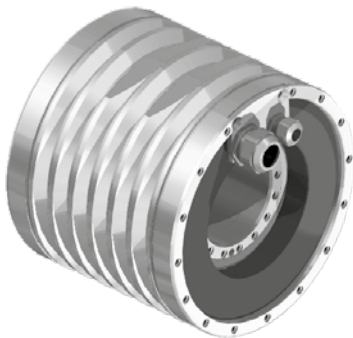
// Technical data									
Motor	Stator-Ø	Rotor Ø	Stator length H1	Rotor length H2	Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 450/384-030	485	345	90	31	185	370	710	160	400
TM 450/384-050	485	345	110	51	300	640	1,180	160	400
TM 450/384-070	485	345	130	71	415	890	1,650	160	400
TM 450/384-100	485	345	160	101	580	1,350	2,340	160	400
TM 450/384-150	485	345	210	151	850	1,930	3,510	160	400
TM 530/459-030	565	420	90	31	275	525	1,010	150	400
TM 530/459-050	565	420	110	51	435	910	1,684	150	400
TM 530/459-070	565	420	130	71	600	1,285	2,350	150	400
TM 530/459-100	565	420	160	101	820	1,820	3,336	150	400
TM 530/459-150	565	420	210	151	1310	2,740	5,020	150	400
TM 760/690-030	795	640	90	31	630	1,230	2,250	100	400
TM 760/690-050	795	640	110	51	1,050	2,165	3,900	100	400
TM 760/690-070	795	640	130	71	1,430	2,915	5,310	100	400
TM 760/690-100	795	640	160	101	2,010	4,290	7,780	100	400
TM 760/690-150	795	640	210	151	3,000	6,420	11,602	100	400
TM 992/919-030	1,030	860	90	31	1,100	2,100	4,060	60	400
TM 992/919-050	1,030	860	110	51	1,800	3,650	6,900	60	400
TM 992/919-070	1,030	860	130	71	2,475	5,196	9,350	60	400
TM 992/919-100	1,030	860	160	101	3,400	7,486	13,720	60	400
TM 992/919-150	1,030	860	210	151	5,025	11,200	20,332	60	400
TM 1220/1149-030	1,290	1,070	90	31	1,725	3,150	6,300	40	400
TM 1220/1149-050	1,290	1,070	110	51	2,800	5,500	10,580	40	400
TM 1220/1149-070	1,290	1,070	130	71	3,625	7,450	14,530	40	400
TM 1220/1149-100	1,290	1,070	160	101	5,150	11,200	20,910	40	400
TM 1220/1149-150	1,290	1,070	210	151	7,200	16,300	31,350	40	400
TM 1380/1290-030	1,450	1,200	100	31	1,720	3,800	6,080	30	400
TM 1380/1290-050	1,450	1,200	120	51	2,900	6,400	10,250	30	400
TM 1380/1290-070	1,450	1,200	140	71	4,000	8,900	14,200	30	400
TM 1380/1290-100	1,450	1,200	170	101	5,700	12,700	19,900	30	400
TM 1380/1290-150	1,450	1,200	220	151	8,600	19,100	29,600	30	400
TM 2070/1920-030	2,200	1,720	137	31	2,975	6,000	8,000	25	400
TM 2070/1920-050	2,200	1,720	157	51	4,950	10,000	13,300	25	400
TM 2070/1920-070	2,200	1,720	177	71	6,925	14,000	18,660	25	400
TM 2070/1920-100	2,200	1,720	207	101	9,900	20,000	26,600	25	400
TM 2070/1920-150	2,200	1,720	257	151	14,850	30,000	40,000	25	400



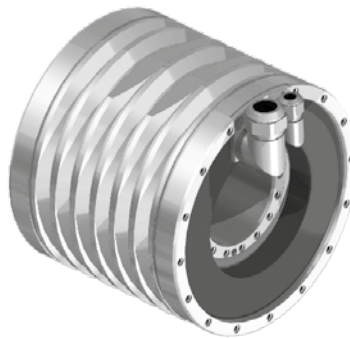
TM 140/089-H



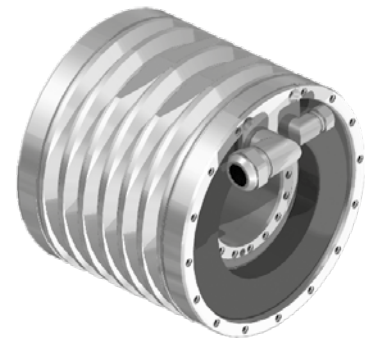
Cable outlet design:



axial



radial



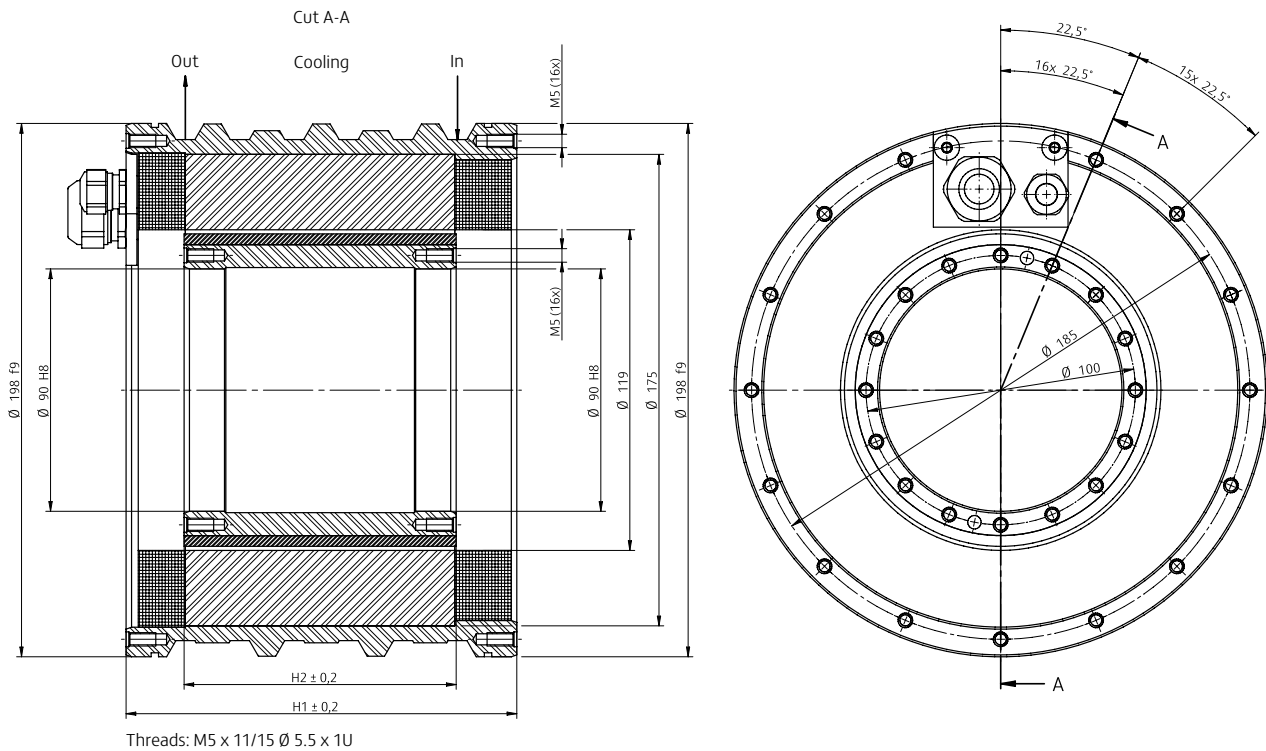
tangential

// Technical data

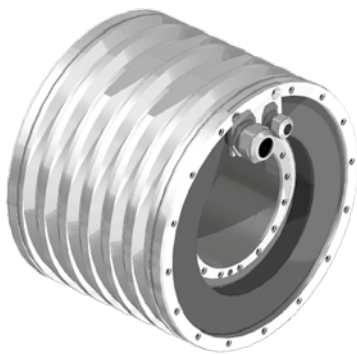
Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 140/089-030	160	60	65	31	150	70	9	20	38	800	400
TM 140/089-050	160	60	85	51	150	70	16	33	63	800	400
TM 140/089-070	160	60	105	71	150	70	21	46	89	800	400
TM 140/089-100	160	60	135	101	150	70	31	66	127	800	400
TM 140/089-150	160	60	185	151	150	70	45	100	190	800	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

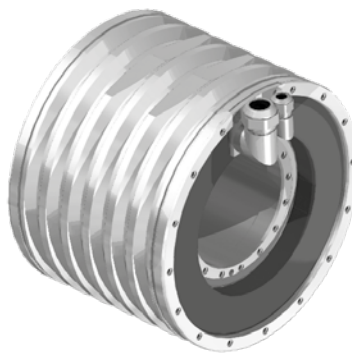
TM 175/119-H



Cable outlet design:



axial



radial



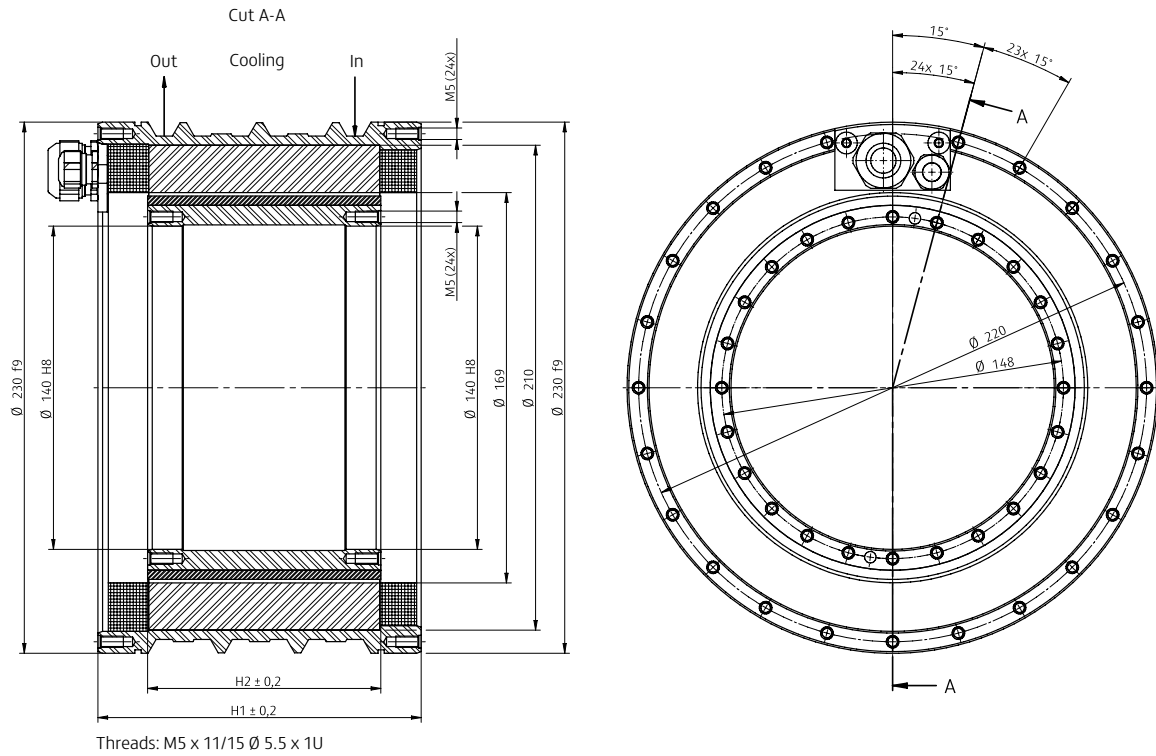
tangential

// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 175/119-030	198	90	75	31	185	100	16	33	68	700	400
TM 175/119-050	198	90	95	51	185	100	25	55	114	700	400
TM 175/119-070	198	90	115	71	185	100	34	78	159	700	400
TM 175/119-100	198	90	145	101	185	100	48	113	228	700	400
TM 175/119-150	198	90	195	151	185	100	71	170	341	700	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 210/169-H



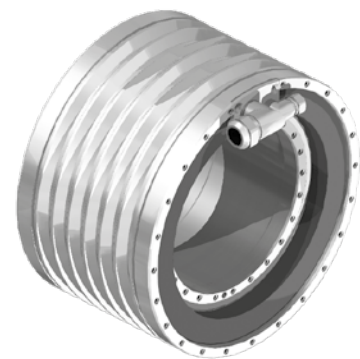
Cable outlet design:



axial



radial



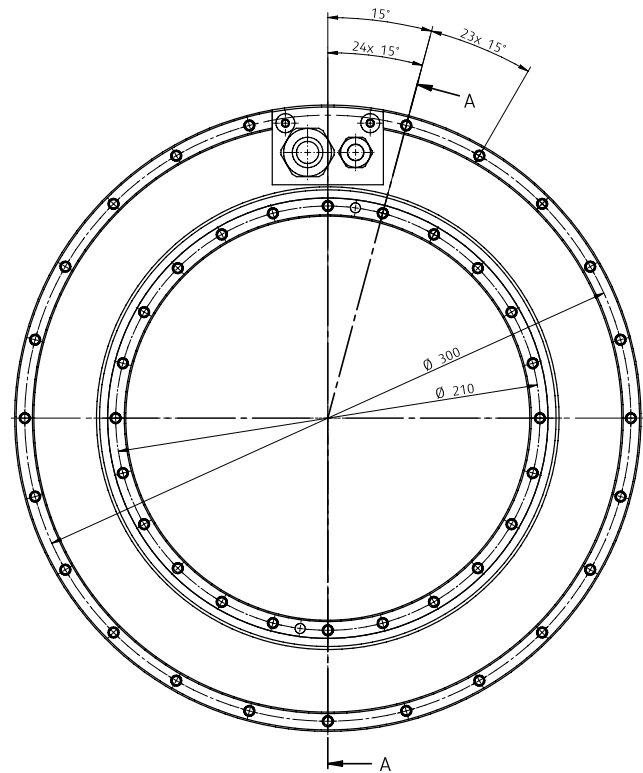
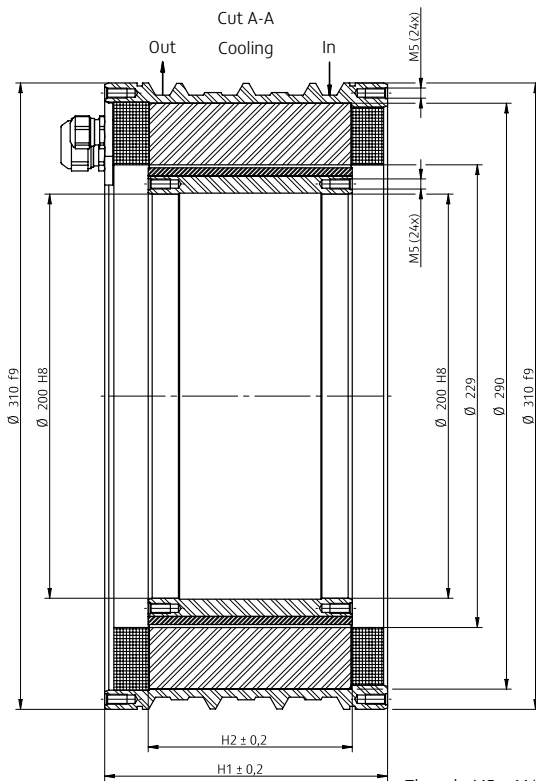
tangential

// Technical data

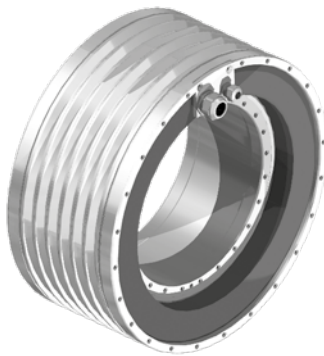
Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 210/169-030	230	140	70	31	220	148	28	70	135	450	400
TM 210/169-050	230	140	90	51	220	148	47	120	225	450	400
TM 210/169-070	230	140	110	71	220	148	66	170	312	450	400
TM 210/169-100	230	140	140	101	220	148	92	245	450	450	400
TM 210/169-150	230	140	190	151	220	148	140	370	680	450	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

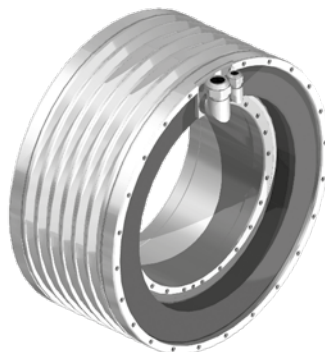
TM 290/229-H



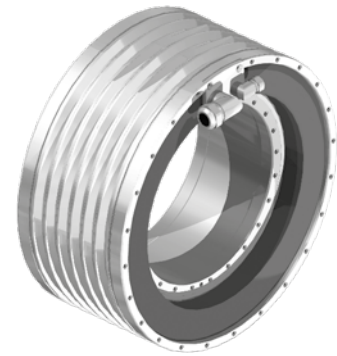
Cable outlet design:



axial



radial



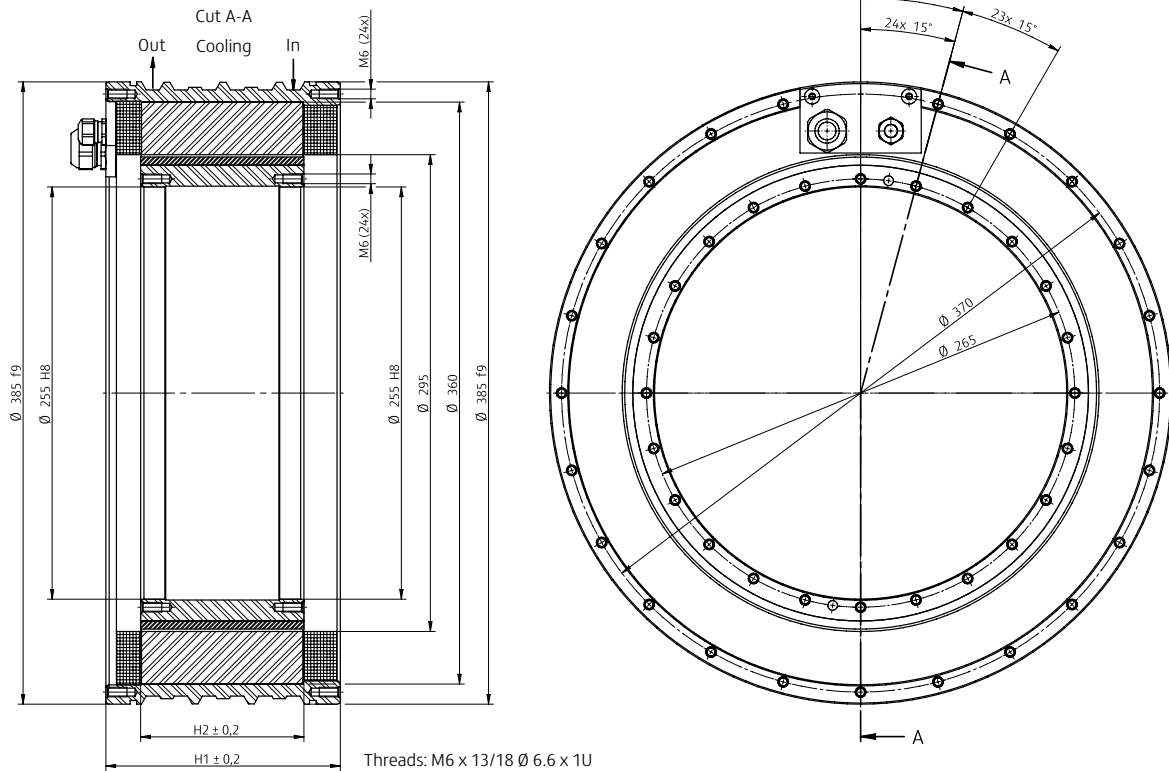
tangential

// Technical data

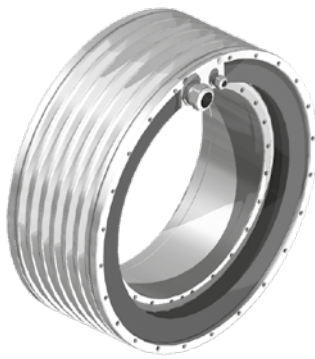
Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 290/229-030	310	200	70	31	300	210	65	135	260	300	400
TM 290/229-050	310	200	90	51	300	210	108	230	430	300	400
TM 290/229-070	310	200	110	71	300	210	145	320	590	300	400
TM 290/229-100	310	200	140	101	300	210	207	460	845	300	400
TM 290/229-150	310	200	190	151	300	210	305	700	1,260	300	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

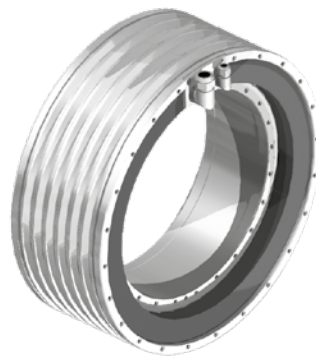
TM 360/295-H



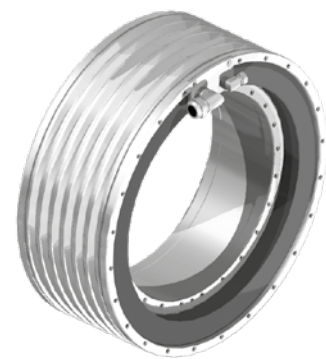
Cable outlet design:



axial



radial



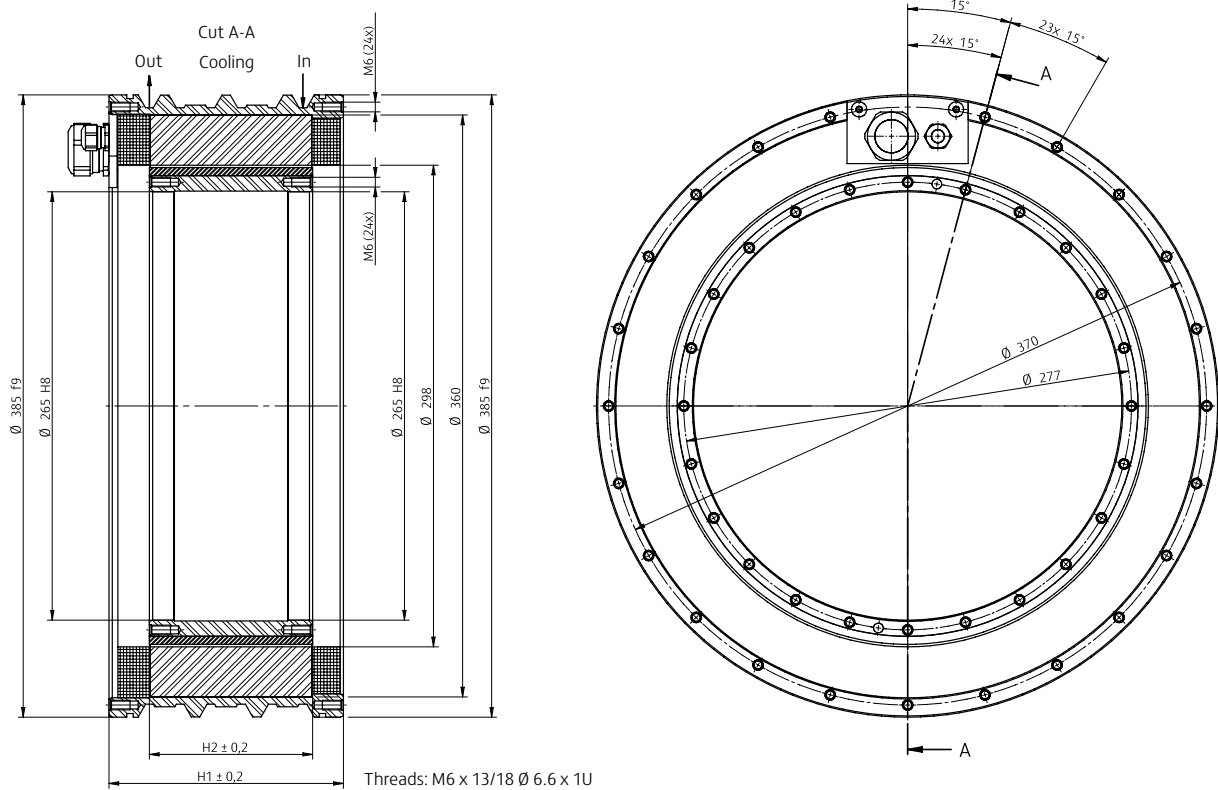
tangential

// Technical data

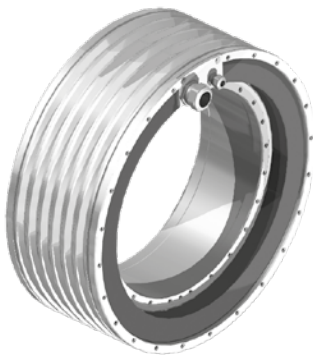
Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 360/295-030	385	255	90	31	370	265	95	210	404	180	400
TM 360/295-050	385	255	110	51	370	265	158	350	673	180	400
TM 360/295-070	385	255	130	71	370	265	211	490	942	180	400
TM 360/295-100	385	255	160	101	370	265	315	700	1,346	180	400
TM 360/295-150	385	255	210	151	370	265	473	1,050	2,019	180	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

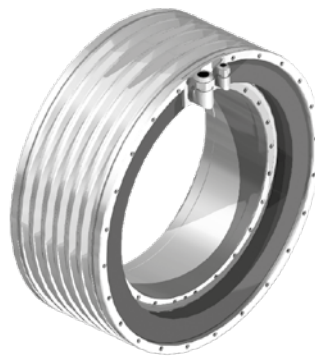
TM 360/298-H



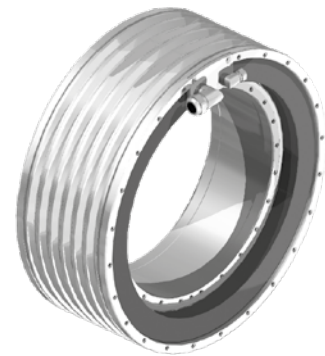
Cable outlet design:



axial



radial



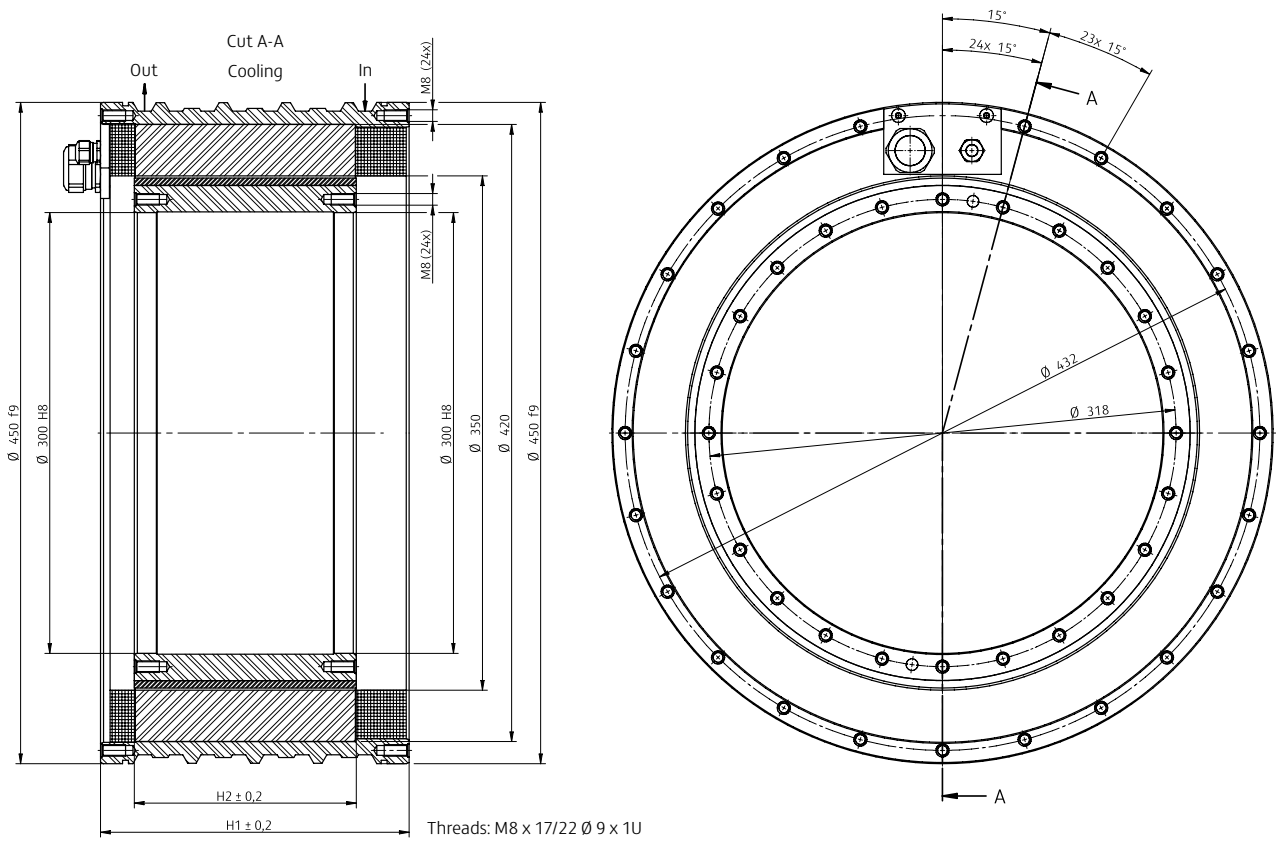
tangential

// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 360/298-030	385	265	90	31	370	277	115	243	440	180	400
TM 360/298-050	385	265	110	51	370	277	195	405	720	180	400
TM 360/298-070	385	265	130	71	370	277	255	560	1,020	180	400
TM 360/298-100	385	265	160	101	370	277	355	825	1,420	180	400
TM 360/298-150	385	265	210	151	370	277	530	1,230	2,130	180	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 420/350-H



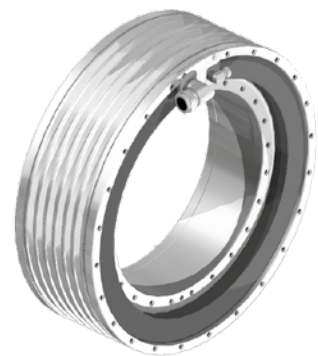
Cable outlet design:



axial



radial



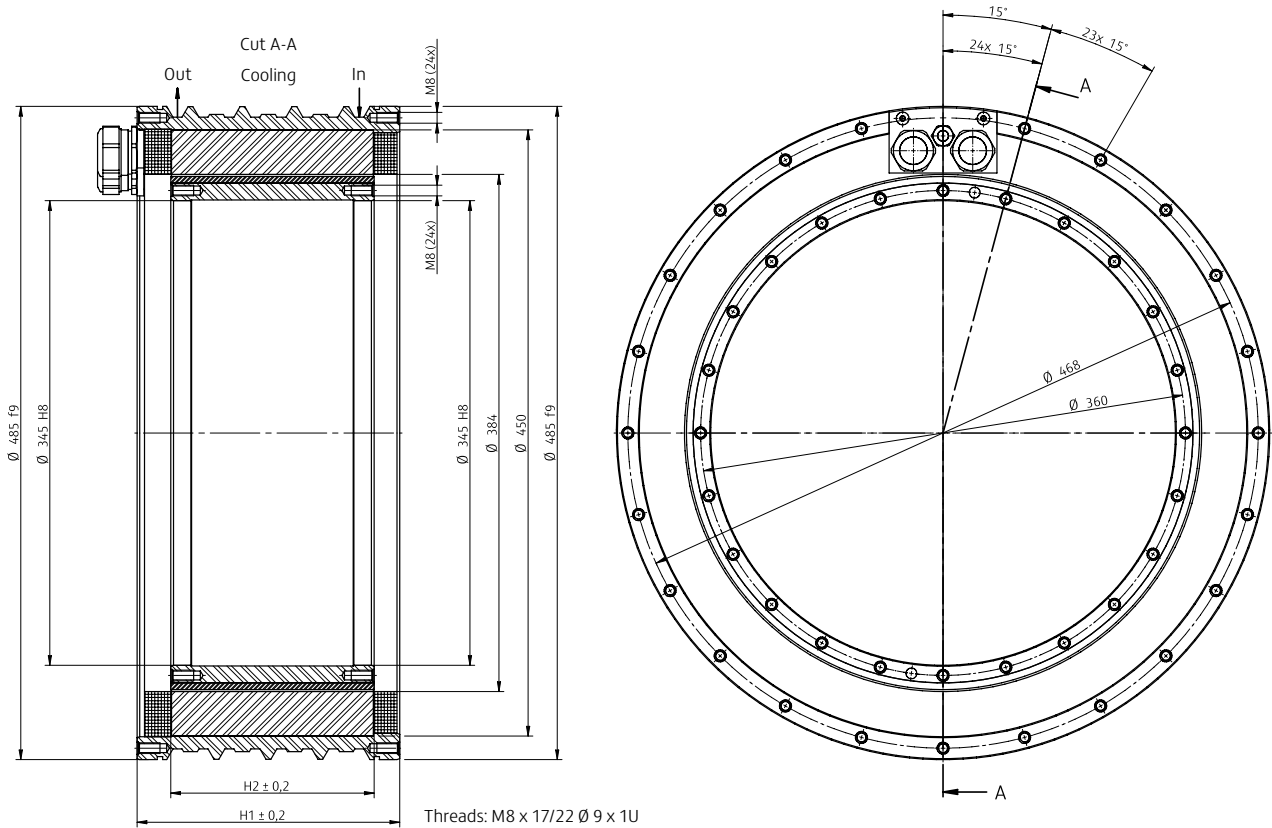
tangential

// Technical data

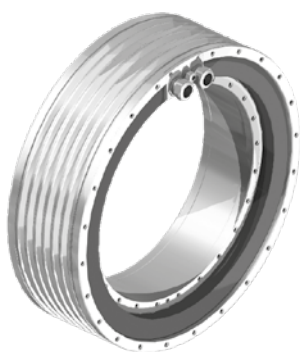
Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 420/350-030	450	300	90	31	432	318	130	270	519	160	400
TM 420/350-050	450	300	110	51	432	318	210	445	856	160	400
TM 420/350-070	450	300	130	71	432	318	290	625	1,202	160	400
TM 420/350-100	450	300	160	101	432	318	405	890	1,712	160	400
TM 420/350-150	450	300	210	151	432	318	590	1,340	2,577	160	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 450/384-H



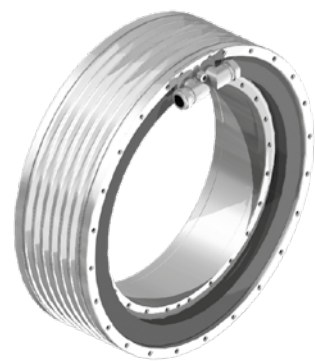
Cable outlet design:



axial



radial



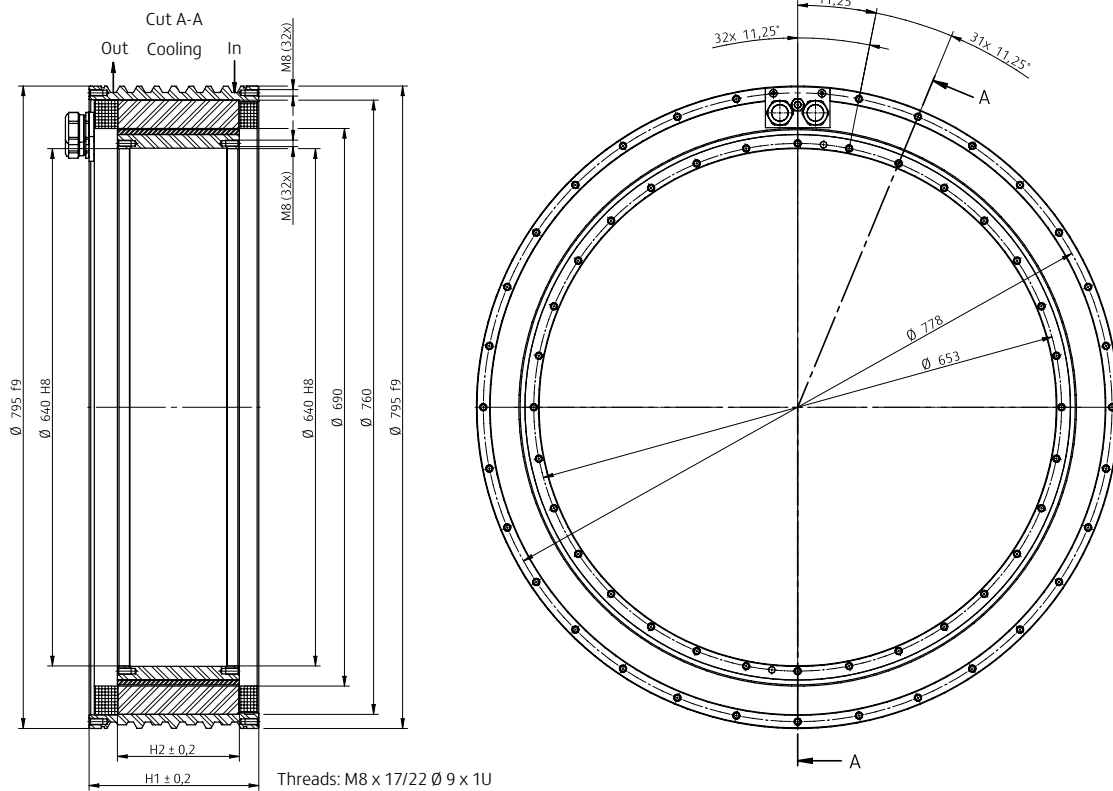
tangential

// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 450/384-030	485	345	90	31	468	360	185	370	710	160	400
TM 450/384-050	485	345	110	51	468	360	300	640	1,180	160	400
TM 450/384-070	485	345	130	71	468	360	415	890	1,650	160	400
TM 450/384-100	485	345	160	101	468	360	580	1,350	2,340	160	400
TM 450/384-150	485	345	210	151	468	360	850	1,930	3,510	160	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 760/690-H



Cable outlet design:



axial



radial



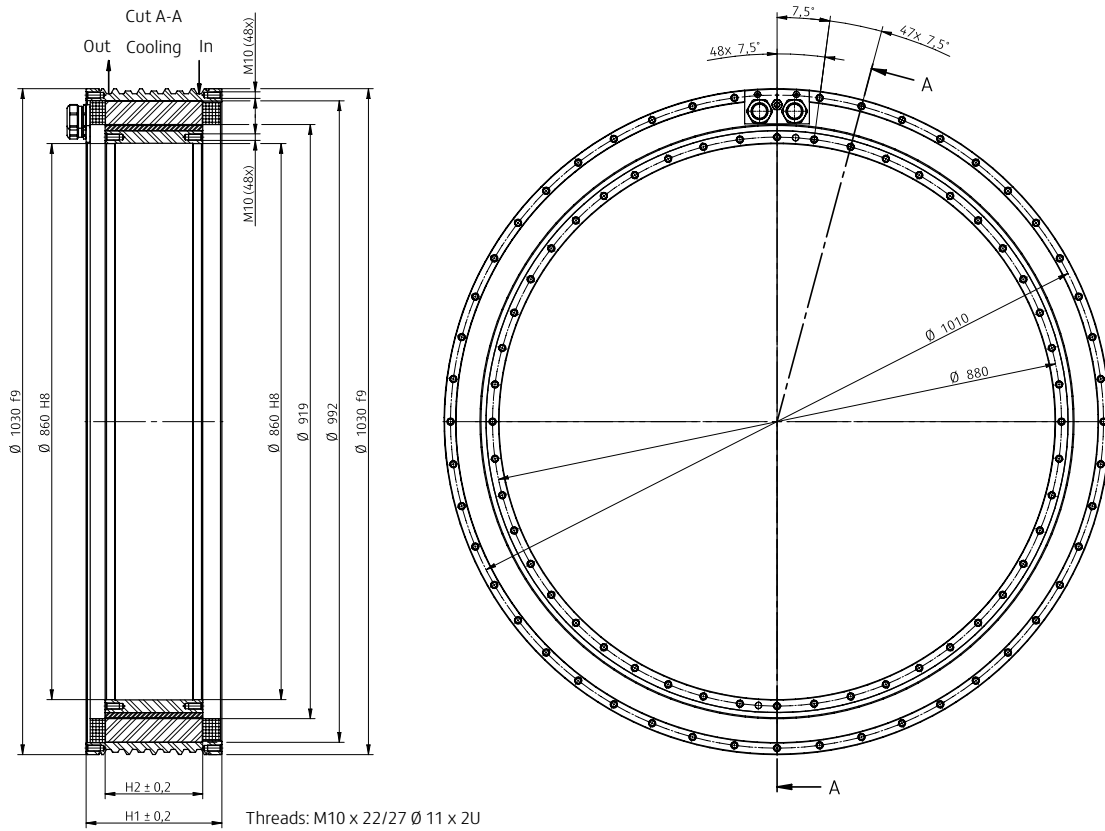
tangential

// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 760/690-030	795	640	90	31	778	653	630	1,230	2,250	100	400
TM 760/690-050	795	640	110	51	778	653	1,050	2,165	3,900	100	400
TM 760/690-070	795	640	130	71	778	653	1,430	2,915	5,310	100	400
TM 760/690-100	795	640	160	101	778	653	2,010	4,290	7,780	100	400
TM 760/690-150	795	640	210	151	778	653	3,000	6,420	11,602	100	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 992/919-H



Cable outlet design:

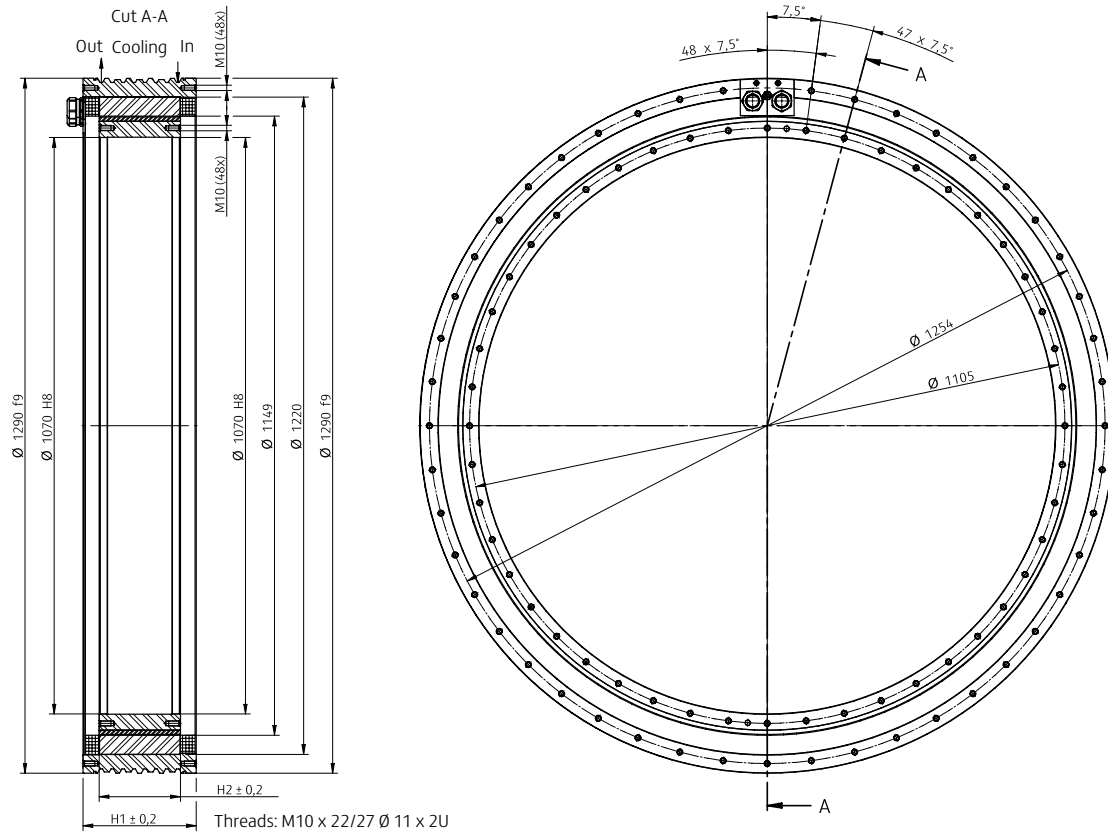


// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 992/919-030	1,030	860	90	31	1,010	880	1,100	2,100	4,060	60	400
TM 992/919-050	1,030	860	110	51	1,010	880	1,800	3,650	6,900	60	400
TM 992/919-070	1,030	860	130	71	1,010	880	2,475	5,196	9,350	60	400
TM 992/919-100	1,030	860	160	101	1,010	880	3,400	7,486	13,720	60	400
TM 992/919-150	1,030	860	210	151	1,010	880	5,025	11,200	20,332	60	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 1220/1149-H



Cable outlet design:



axial



radial



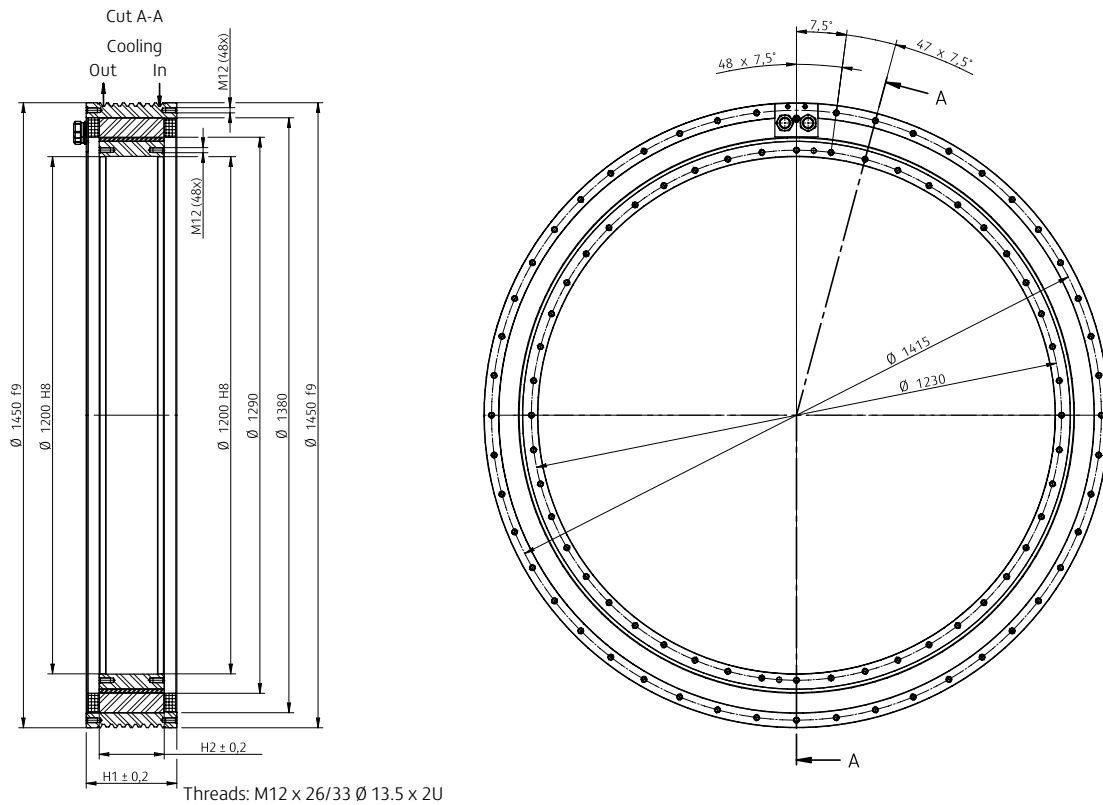
tangential

// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 1220/1149-030	1,290	1,070	90	31	1,254	1,105	1,725	3,150	6,300	40	400
TM 1220/1149-050	1,290	1,070	110	51	1,254	1,105	2,800	5,500	10,580	40	400
TM 1220/1149-070	1,290	1,070	130	71	1,254	1,105	3,625	7,450	14,530	40	400
TM 1220/1149-100	1,290	1,070	160	101	1,254	1,105	5,150	11,200	20,910	40	400
TM 1220/1149-150	1,290	1,070	210	151	1,254	1,105	7,200	16,300	31,350	40	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 1380/1290-H



Cable outlet design:



axial



radial



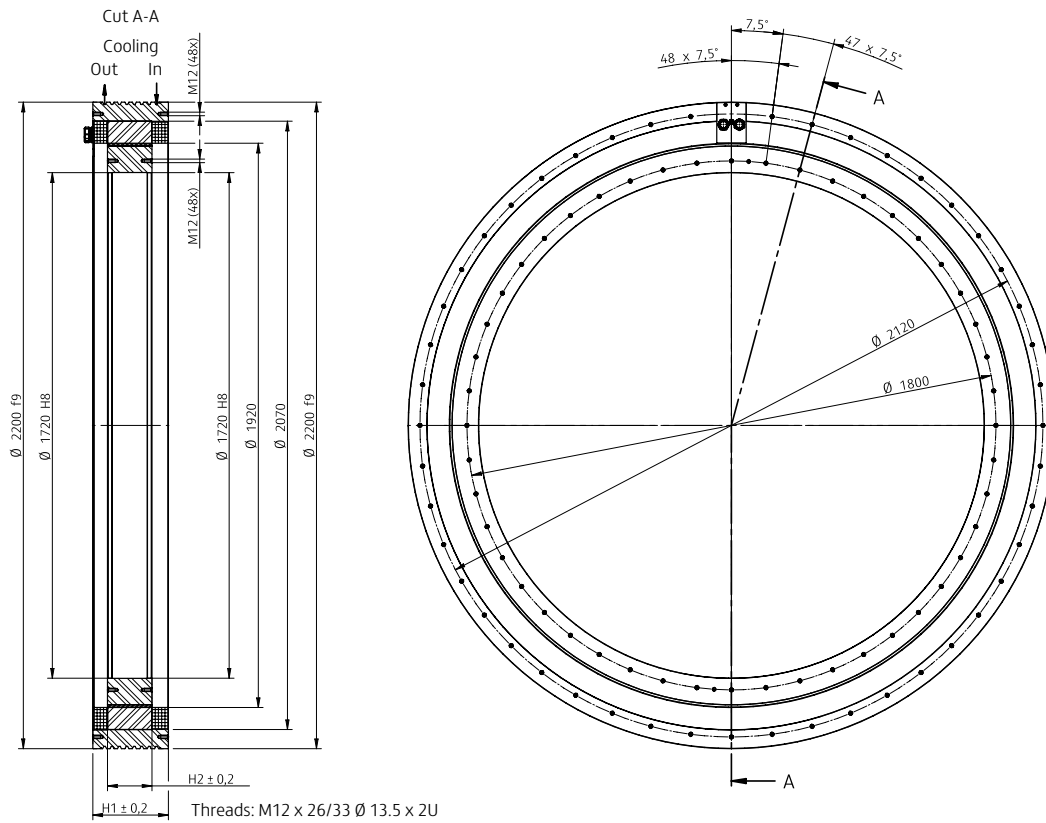
tangential

// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 1380/1290-030	1,450	1,200	100	31	1,415	1,230	1,720	3,800	6,080	30	400
TM 1380/1290-050	1,450	1,200	120	51	1,415	1,230	2,900	6,400	10,250	30	400
TM 1380/1290-070	1,450	1,200	140	71	1,415	1,230	4,000	8,900	14,200	30	400
TM 1380/1290-100	1,450	1,200	170	101	1,415	1,230	5,700	12,700	19,900	30	400
TM 1380/1290-150	1,450	1,200	220	151	1,415	1,230	8,600	19,100	29,600	30	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.

TM 2070/1920-H



Cable outlet design:



axial



radial



tangential

// Technical data

Motor	Stator Ø	Rotor Ø	Stator length H1	Rotor length H2	Bolt hole Ø		Rated torque		Peak torque up to 2 sec.	Max. speed	Voltage
					Stator	Rotor	Air cooled	Water cooled			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(Nm)	(1/min)	(V)
TM 2070/1920-030	2,200	1,720	137	31	2,120	1,800	2,975	6,000	8,000	25	400
TM 2070/1920-050	2,200	1,720	157	51	2,120	1,800	4,950	10,000	13,300	25	400
TM 2070/1920-070	2,200	1,720	177	71	2,120	1,800	6,925	14,000	18,660	25	400
TM 2070/1920-100	2,200	1,720	207	101	2,120	1,800	9,900	20,000	26,600	25	400
TM 2070/1920-150	2,200	1,720	257	151	2,120	1,800	14,850	30,000	40,000	25	400

All technical data are within a tolerance of +/- 5 %. Higher speeds and torques as well as other lengths on request.



Torque motors

Type TMS

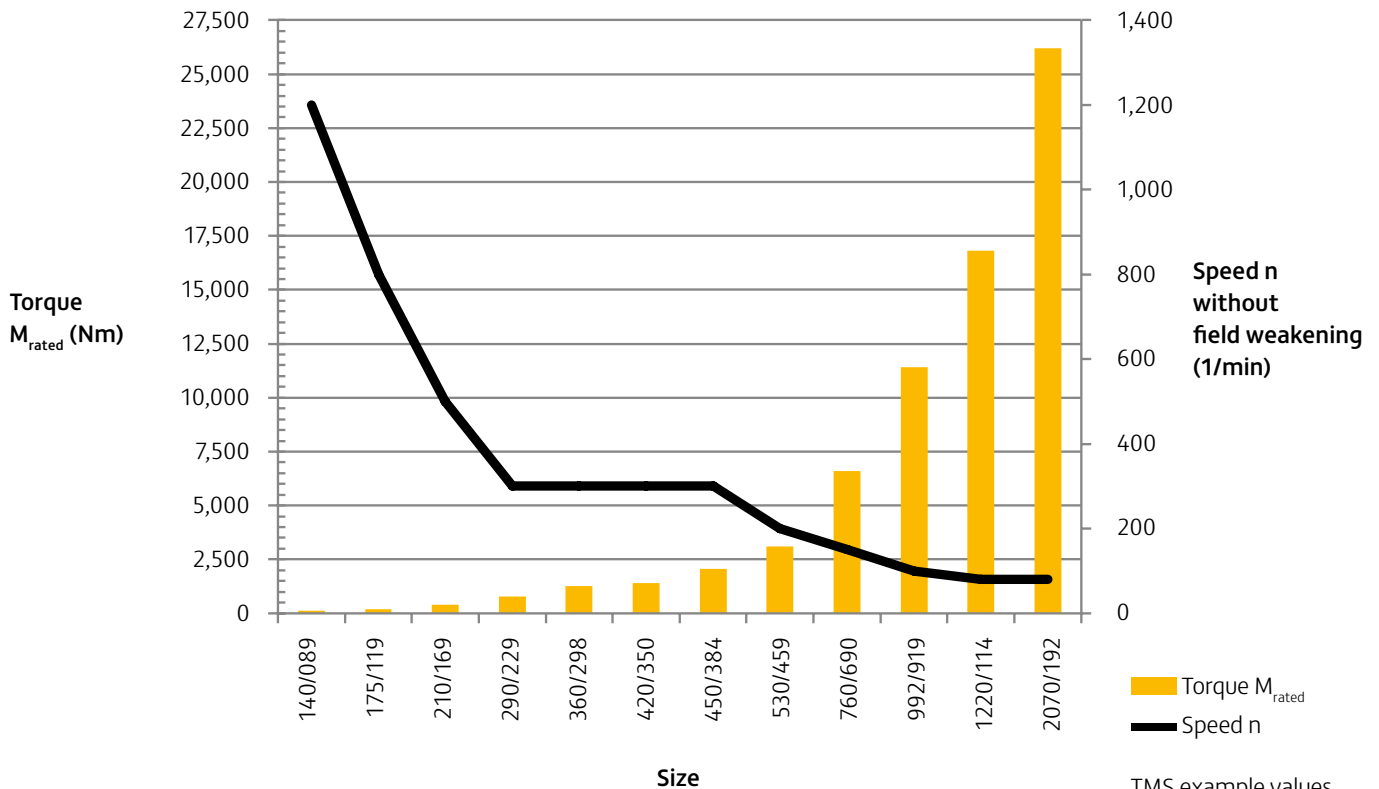
higher torques / speeds

Features

- internal rotor
- exterior cooling jacket open / closed
- surface magnets
- sleeve on rotor
- coils with orthocyclic winding
- double number of coils
- standard and special sizes
- customer-specific designs possible



Torque / speed ratio by size



TMS example values
H = 150 mm

Torque motors

Type TMSHT

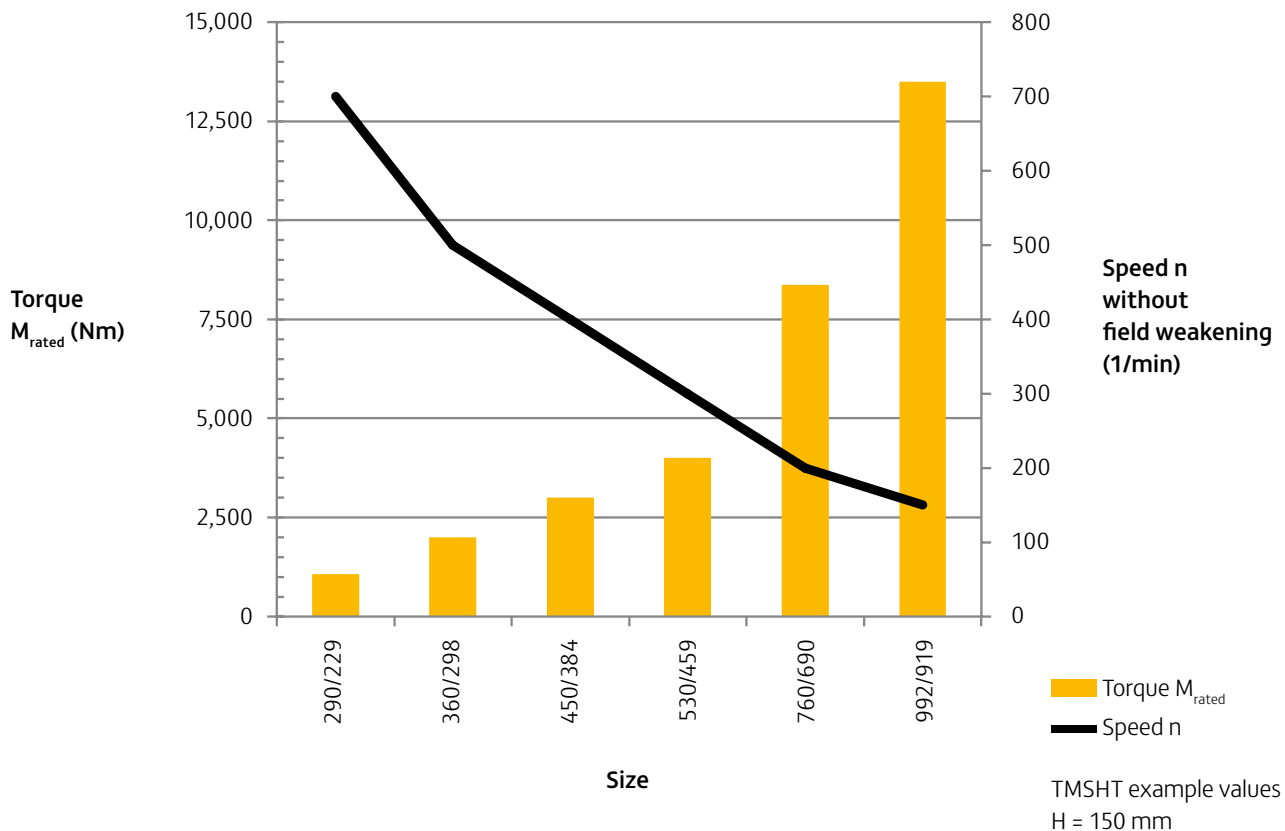
highest torques / speeds

Features

- internal rotor
- exterior cooling jacket open / closed
- embedded magnets
- coils with orthocyclic winding
- double number of coils
- standard and special sizes
- customer-specific designs possible



Torque / speed ratio by size




Synchronous motors

Type SM



Features

- internal rotor
- exterior cooling jacket open / closed
- surface magnets / embedded magnets
- sleeve or carbon fiber shell on rotor with surface magnets
- standard sizes as well as special sizes
- optimised cooling connection for a higher power density
- Efficiency levels > 97%

 Torque (Nm)

 Maximum speed (1/min)



Pre-finished SM with bearing



SM kit for spindles

Inquiry torque motors

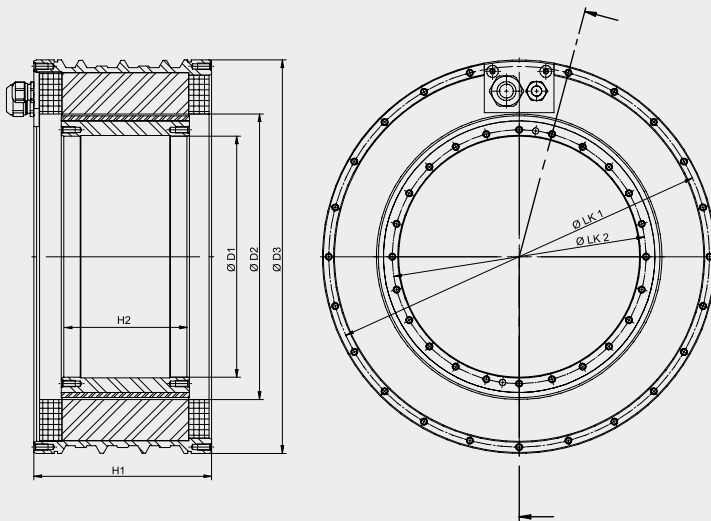
Customer _____	Item no. _____
Project _____	Drawing no. _____
Contact _____	Inquiry no. _____
Phone _____	Email _____
Fax _____	Date _____

Offer	<input type="checkbox"/>
Draft	<input type="checkbox"/>
Feasibility study	<input type="checkbox"/>

Motor	
Torque	<input type="checkbox"/>
Asynchronous	<input type="checkbox"/>
Synchronous	<input type="checkbox"/>

Reply to inquiry required by:

Speed	Power S1	Torque S1	Stall torque	Max. torque	Current S1	Peak current
(min ⁻¹)	(kW)	(Nm)	(Nm)	(Nm)	(A)	(A)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____



Ø D1	Ø D2	Ø D3	Ø LK1	Ø LK2	H1	H2
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)

Size	Cooling
_____	Water <input type="checkbox"/>
_____	Air <input type="checkbox"/>
_____	Oil <input type="checkbox"/>
_____	ISO VG _____

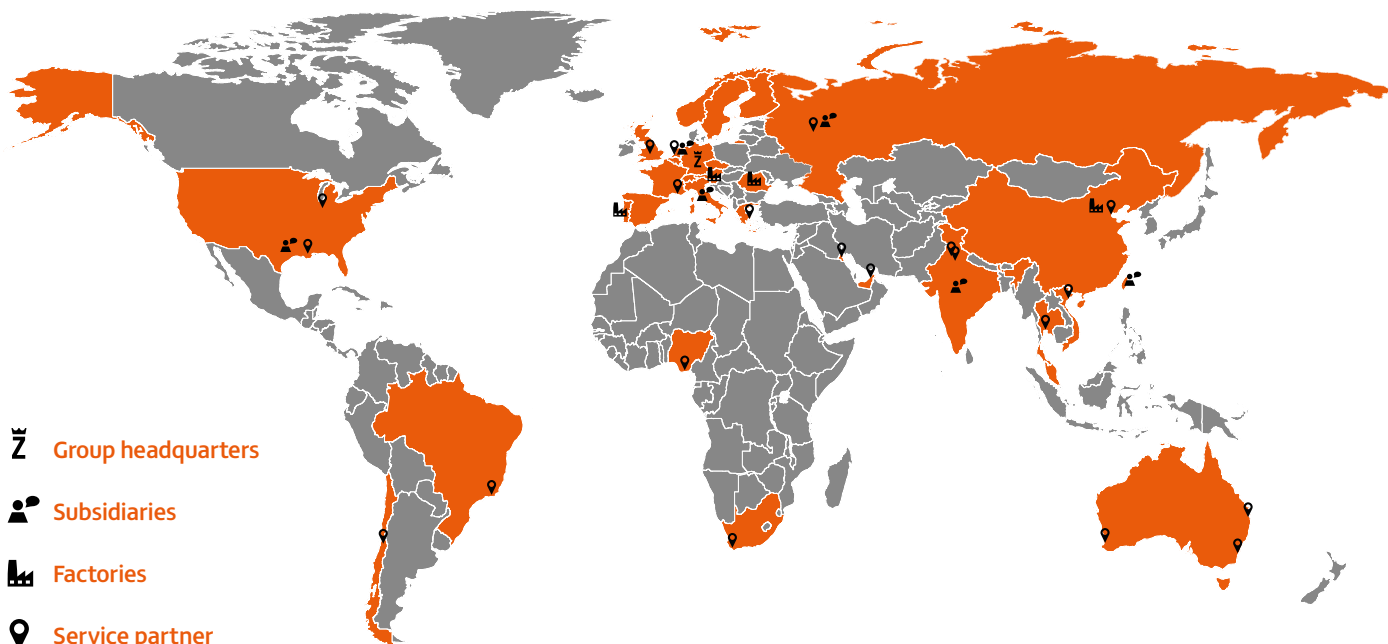
Frequency converter information





Manufacturer	_____
Rated current	_____
Max. current	_____
Type	_____
Intermediate circuit voltage	_____

Motors in contest

Manufacturer	_____
Type	_____

Additional comments/information



-  Group headquarters
-  Subsidiaries
-  Factories
-  Service partner

ZOLLERN GmbH & Co. KG

Heustrasse 1
 88518 Herbertingen
 Germany
 T +49 7586 959-0
 F +49 7586 959-575
 zat@zollern.com
 www.zollern.com

