DRUM TECH

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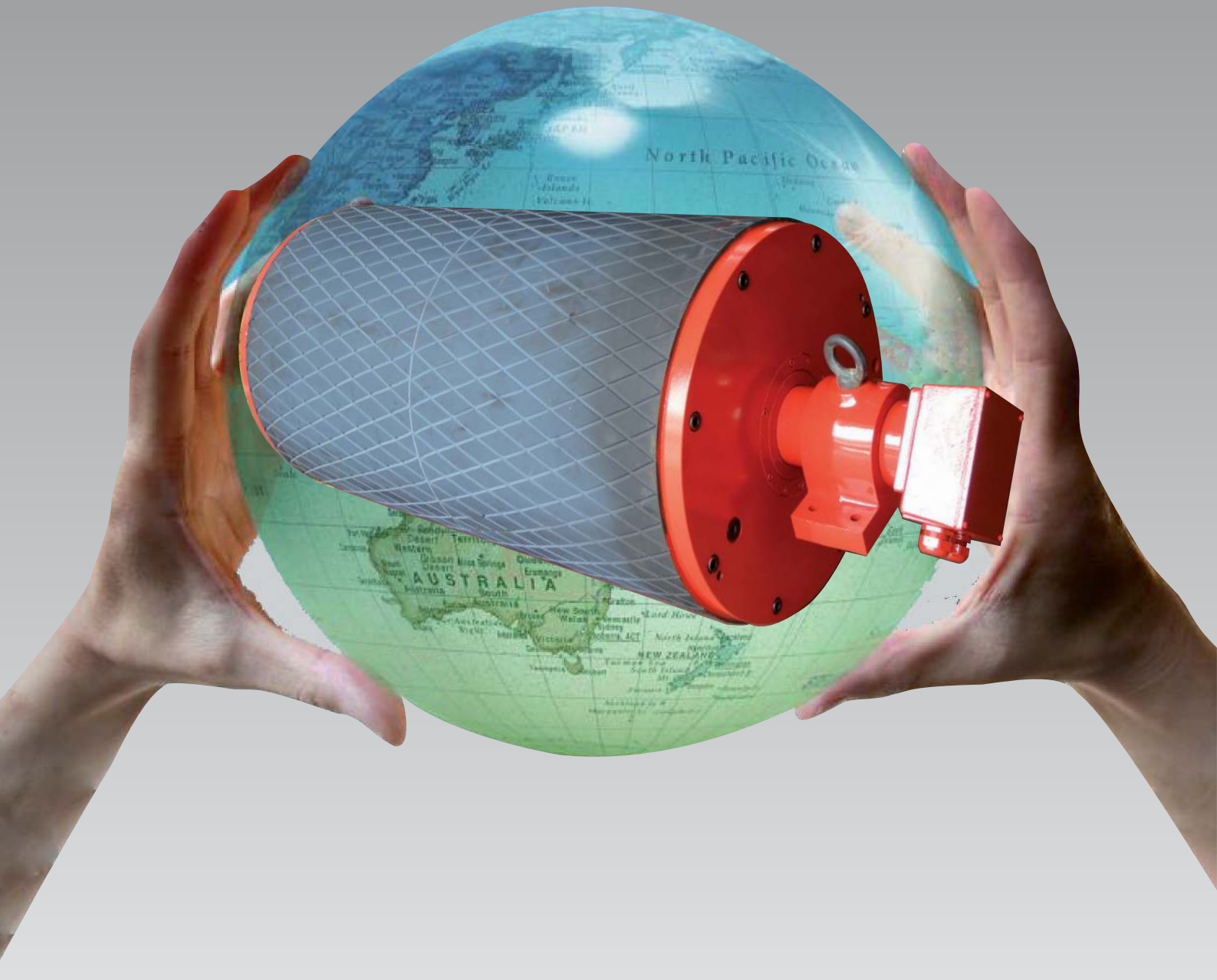
DRUM MOTORS

DIAMETER 216 - 1200 MM



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Program survey

Drum-diameter		Power-range			Belt speed		
mm	refer to page	P2 [kW] Minimum		Maximum	V [m/s] Minimum		Maximum
Ø 216	38	0,37	→	3,0	0,25	→	2,20
Ø 321	42	1,5	→	7,5	0,39	→	3,28
Ø 400	46	3,0	→	15	0,60	→	2,17
Ø 500	50	4,0	→	22	0,51	→	2,14
Ø 620	54	7,5	→	22	0,77	→	2,56
Ø 630	58	30	→	55	1,25	→	4,00
Ø 800	60	22	→	132	1,00	→	4,50
Ø 1000		22	→	132	1,60	→	4,00
Ø 1200			→			→	

Technical commentary

General part

DrumoTec® conveyor drummotors serve to drive stationary or transportable belt conveyors for the transport of bulk goods of several kinds; they can also be used in transport systems without belts.
TheDrumoTec® conveyor drummotor has as a result of its compact construction and good adaptability, gained more and more functional ranges in driving technology. DrumoTec® conveyor drum motors have been used with great success for decades in many ranges of transport technology.

Mechanical structure

The electromotor and the reduction gear are situated in the drum – jacket and are enclosed units which are almost totally protected against outside influences.
Ample dimensions of the single parts guarantee a long lifetime even when put into rough operating conditions. Modern production methods guarantee low – noise level running at high efficiency.
The shafts are flattened and allow easy timesaving assembly when using a two part clamping bearing.
The bonding from the terminal box to the integrated electromotor is in all electric drums done trough the hollow shaft which is built as a quilt; the joining is as at all normal electromotors done at the stationary terminal board.
Because there are no moveable transmission elements which might suffer a certain wear (such as slip rings and brushes) the feeding does not need any maintenance.

Protection system

DrumoTec® - conveyor drummotors are built as totally enclosed dust – proof and hose-proof models according to protecting system IP65 or higher depending to DIN EN 60529. Therefore they are appropriate for outdoor use and in dusty or wet rooms.

Electromagnetic brakes

DrumoTec® - conveyor drummotors as oil-cooled types can, with increased price, be delivered with integrated electromagnetic brake.
DrumoTec® - conveyor drummotors with brake are used if no move on is required after switching off.
DrumoTec® - conveyor drummotors TM 80 up to TM 1200 can be supplied with internal brake.
If conveyor drum motors are delivered with electromagnetic brakes, the minimum length of the drum is announced in the separate selection table.

Driving motors

In standard cases the motors are three phase induction motors with special squirrel cage rotor, which give the engine the highest breakaway torque at highest operation security.

Technical commentary

Operation Voltage

The motors are supplied for the standard voltages 230V, 400V at 50 Hz and can be operated, without reduction of the nominal power, with variations of the nominal voltage in accordance of VDE 0530.
Motors for systems with different voltages and frequencies are available (extra charge). When ordering, please state type of starting method (direct–on–line or star-delta starting or with frequency converter).
The motors normally have a terminal board with 6 terminals and one ground terminal in the terminal box. The stator winding can be connected for star or delta operation by repositioning the connecting bridges. For star/delta starting, the operating voltage must be specified; the operating circuit of the motor must be in this case the delta connection.

Operating voltage 400V delta:
Motor winding for 400/690V.
Operating voltage 230V delta:
Motor winding for 230/400V.
In many cases star/delta starting is not possible, due to e.g. loaded conveyor belts which need a higher breakaway torque during starting process. Using star/delta starting method you can achieve only 1/3 of the breakaway torque you normally achieve with direct starting.

Frequency

All statements in lists are related to main frequency of
50 Hz. At different frequencies the belt speed changes according to the change in frequency.

Insulation of the motor windings

Windings and insulation of the DrumoTec® conveyor drummotors correspond to insulation-class F according to VDE 0530 (max. Temp. 155°C)

Motor protection

With an increase of price the drummotors can be supplied with a winding thermostat (WT) or temperature probes (PTC) in order to protect the motor winding against any abnormal temperature rises.

Conveyor drummotors as dual speed motors

By using of a change – pole motor the conveyor can be driven with 2 or 3 different belt speeds. If you want a change – pole motor we need some details about the belt –
pull, the belt speed as well as the existing voltage.

Drum coatings

A standard DrumoTec® drummotor is always supplied without rubber coating.
On request we can supply them with rubber or ceramic coatings as far as this is possible in respect of heat appearance.

Technical commentary

Rubber coatings

DrumoTec® conveyor drummotors can be supplied with various rubber coatings. The exact coating thickness is fixed according to the drum diameter
Rubber coating:
Cold glued:
•3-4 mm smooth at TM110 - TM160
•10 mm rhombus profile from TM400
•2 mm food save burl profile
Hot vulcanised on customer request possible.
Consider the increase of belt speed

Ceramic friction coatings

DrumoTec® conveyor drummotors can also be supplied with friction coatings. The ceramic friction coating will be fixed onto the drum shell and has a thickness of around 3 to 5 mm. The rubber and ceramic coatings extend the diameter of the drum by twice of the coatings thickness. The peripheral velocity raises analogical to this.

Drum shell

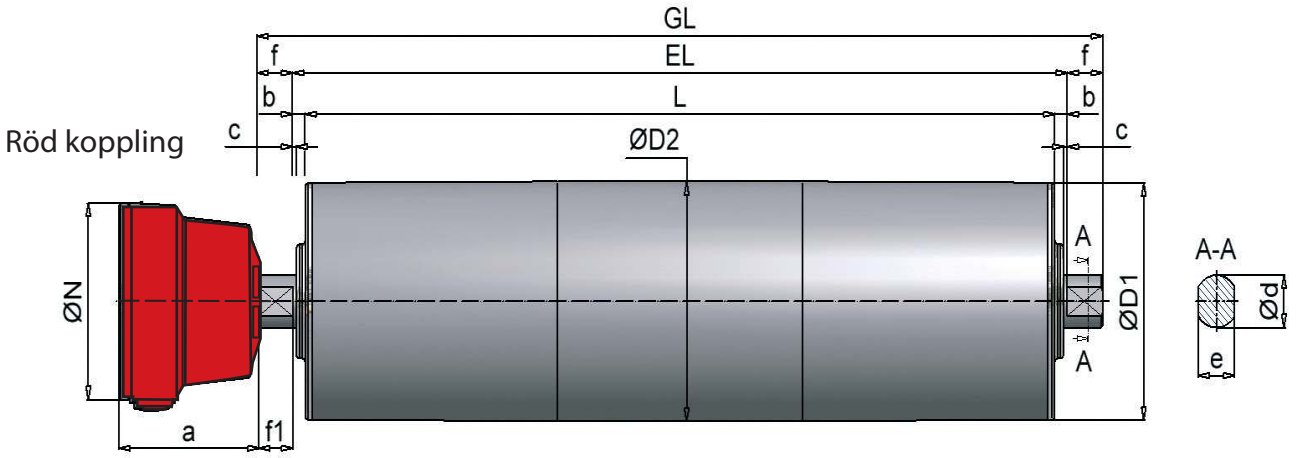
DrumoTec® conveyor drummotors are designed with a crowned shell profile. The corresponding measurements can be taken from the measurement sheets (measurements D2 and D1).

Special options

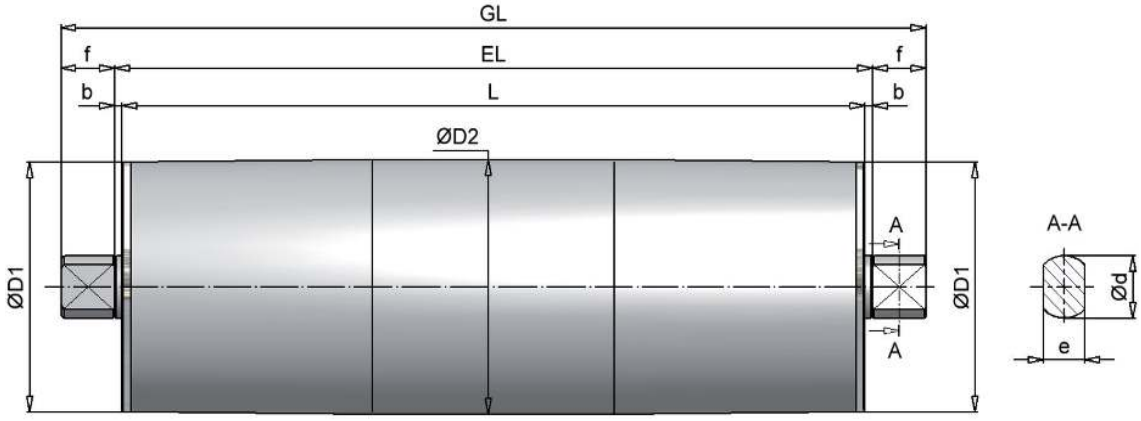
All variations which are different from the list models cause longer delivery time and higher prices.
Winding for abnormal frequency between 40 and 60 Hz (normal 50 Hz)
Winding for abnormal voltage
(normal ≤2,2 kW 400V Star; ≥ 3,0 kW 400V delta)
Winding for abnormal voltage and frequency
Thermal protection of the winding by the insertion of winding protection contacts (WT) or thermistor temperature probe (PTC)
Rust or acid protecting coating of the metal parts
Pole change (double or tripled)
Higher temperature of environment (normal up to 40°C)
Rubber – coatings, ceramic friction
Drum shell cylindrical
Round shafts or other dimensions.
Labyrinth seal, sealing disk
Backstop, brake
Incremental encoder on request

TM / UT 216

Drum Motor Typ TM 216 (Standard)



Guide Drum Typ UT 216 (Standard)



Dimensions in mm

Drum Motor											Standard IP66					
size	Typ	ØD1	ØD2**	a	ØN	c	Ød	e	f	f1	b	EL	b	EL	b	EL
216	TM216	213,5	216	95	112	3	40	30	55	55	20	L + 40	20	L + 40	37	L + 74

Guide Drum																
216	UT216	213,5	216			3	40	30	55		20	L + 40	20	L + 40	37	L + 74

* with 1 m cable

** Diameter with cylindrical drum design

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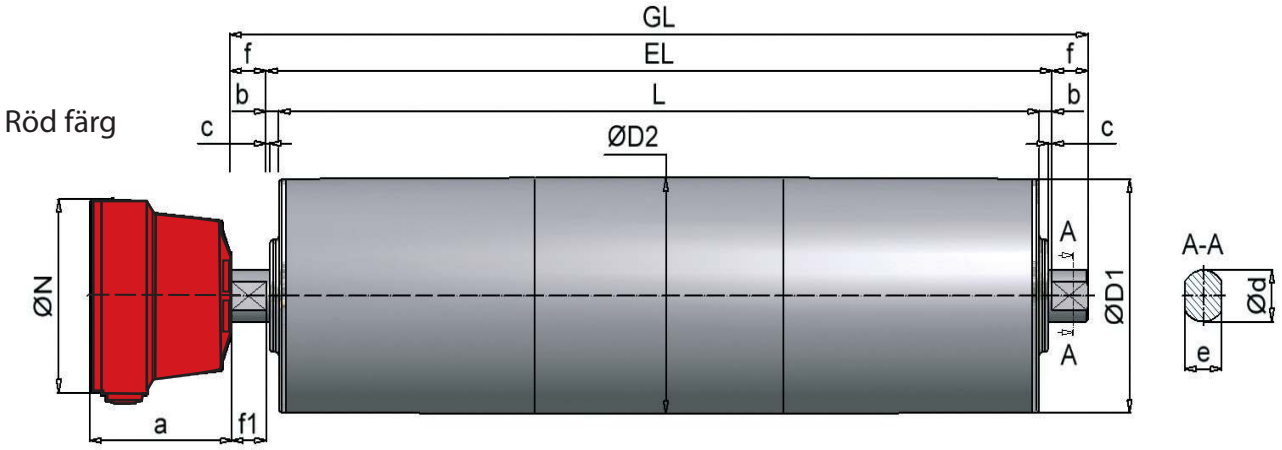
Performance data Typ TM 216

Typ	Power	Belt speed	Rotation speed	Belt pull	Torque	Power input at 400V / 50Hz	Drum length	Weight
	P2	v	n2	F	T2		L min.	L=500 mm
	[kW]	[m/s]	[1/min]	[N]	[Nm]	[A]	[mm]	[kg]
TM216	0,37 8-polig	0,25	22	1460	158	1,50	400	50,0
		0,31	27	1202	130			
		0,37	33	1005	108			
		0,44	39	849	92			
		0,51	45	723	78			
		0,60	53	619	67			
		0,71	63	521	56			
		0,86	76	429	46			
		1,03	91	359	39			
		1,22	108	303	33			
		1,43	127	258	28			
		1,67	148	221	24			
TM216	0,75 6-polig	0,33	29	2251	243	2,20	400	50,0
		0,40	36	1854	200			
		0,48	43	1549	167			
		0,57	51	1309	141			
		0,67	59	1115	120			
		0,79	69	954	103			
		0,93	82	804	87			
		1,13	100	662	71			
		1,36	120	553	60			
		1,60	142	468	51			
		1,88	167	398	43			
		2,20	195	341	37			
TM216	1,50 4-polig	0,33	29	4604	497	3,20	420	57,0
		0,37	33	4016	434			
		0,48	42	3134	338			
		0,60	53	2504	270			
		0,86	76	1749	189			
		1,17	104	1279	138			55,0
		1,34	119	1116	120			
		1,72	152	871	94			
		2,16	191	696	75			
TM216	2,20 4-polig	0,47	42	4679	505	4,80	420	59,0
		0,59	52	3738	404			
		0,84	75	2610	282			
		1,15	102	1909	206			
		1,32	117	1665	180			
		1,69	150	1300	140			57,0
		2,12	187	1038	112			
TM216	3,00 4-polig	0,85	75	3547	383	6,60	450	59,0
		1,16	102	2594	280			57,0
		1,33	117	2263	244			
		1,70	150	1766	191			
		2,13	188	1411	152			

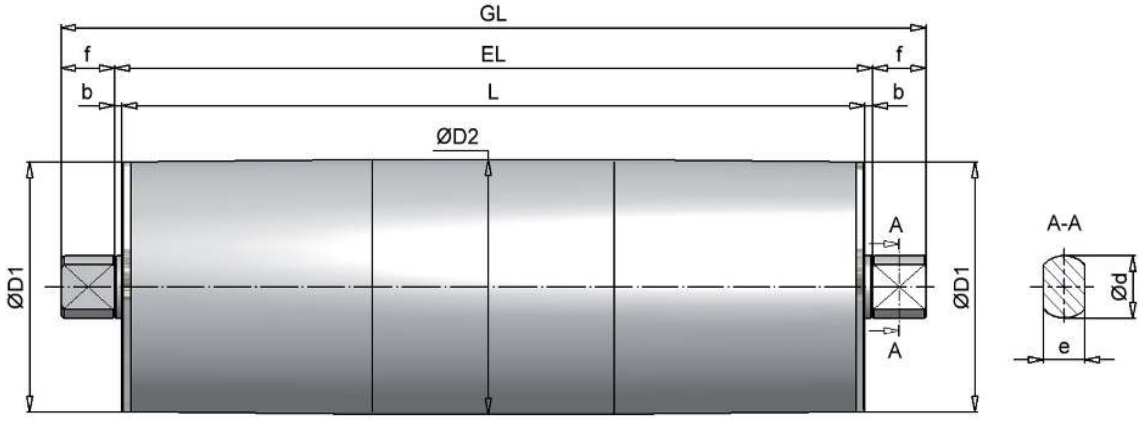
- additional weight: approx. 5 kg for 100 mm add. length
- with brake mounting L min. dimension raises up 100 mm

TM / UT 320

Drum Motor Typ TM 320 (Standard)



Guide Drum Typ UT 320 (Standard)



Dimensions in mm

Drum Motor											Standard IP66		Optional IP67	
size	Typ	ØD1	ØD2**	a	ØN	c	Ød	e	f	f1	b	EL	b	EL
320	TM 320	318	321	95	112	3	45	35	53	53	22	L + 44	43	L + 86

Guide Drum														
320	TM 320	318	321			3	45	35	53		22	L + 44	43	L + 86

* with 1 m cable

** Diameter with cylindrical drum design

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Performance data Typ TM320

Typ	Power	Belt speed	Rotation speed	Belt pull	Torque	Power input at 400V / 50Hz	Drum length	Weight
	P2	v	n2	F	T2		L min.	L=500 mm
	[kW]	[m/s]	[1/min]	[N]	[Nm]	[A]	[mm]	[kg]
TM320	1,50 4-polig	0,48	29	3098	497	3,20	520	95,0
		0,56	33	2702	434			
		0,71	42	2109	338			
		0,89	53	1685	270			
		1,11	66	1356	218			
		1,27	76	1177	189			
		1,74	104	861	138			
		2,00	119	751	120			
		2,34	139	641	103			
TM320	2,20 4-polig	0,39	23	5622	902	4,80	550	100,0
		0,48	28	4593	737			
		0,70	42	3148	505			
		0,87	52	2516	404			
		1,09	65	2025	325			
		1,25	75	1756	282			
		1,71	102	1285	206			
		1,96	117	1121	180			
		2,30	137	957	154			
TM320	3,00 4-polig	0,60	36	4986	800	6,60	550	105,0
		0,74	44	4070	653			
		0,84	50	3564	572			
		1,09	65	2751	442			
		1,26	75	4387	383			
		1,72	102	1746	280			
		1,97	117	1523	244			
TM320	4,00 4-polig	0,73	44	5465	877	9,00	550	110,0
		1,08	64	3694	593			
		1,33	79	3019	484			
		1,66	99	2411	387			
		2,03	121	1968	316			
TM320	5,50 4-polig	1,04	62	5282	848	11,50	680	140,0
		1,28	76	4312	692			
		1,65	98	3324	533			
		2,04	121	2697	433			
		2,68	159	2054	330			
		3,28	195	1677	269			
TM320	7,50 4-polig	1,65	98	4532	727	15,50	680	150,0
		2,04	121	3678	590			
		2,68	159	2801	450			
		3,28	195	2287	367			

- indication of weight incl. oil filling (ready for operating)
- additional weight: approx. 6 kg for 100 mm add. length
- with brake mounting L min. dimension raises up 130 mm

Norm width [L] : 520, 550, 600, 680 … 1600 mm, from 1600 mm reinforced construction

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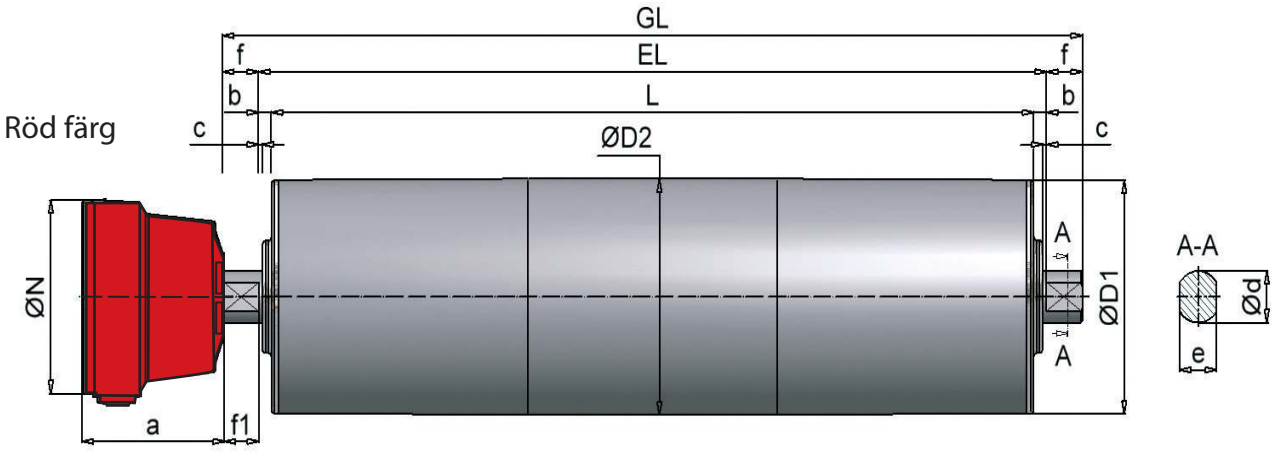
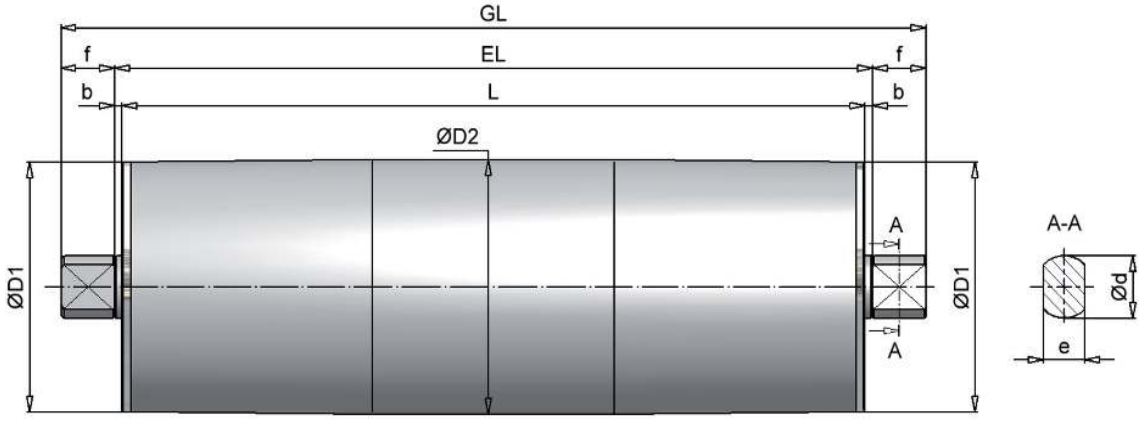
TM / UT 400

Drum Motor Typ TM 400 (Standard)



Guide Drum Typ UT 400 (Standard)



Dimensions in mm

Drum Motor											Standard IP66		Optional IP67	
size	Typ	ØD1	ØD2**	a	ØN	c	Ød	e	f	f1	b	EL	b	EL
400	TM 400	400	403	95	112	3	60	50	75	75	25	L + 50	35	L + 70

Guide Drum														
400	TM 400	400	403			3	60	50	75		25	L + 50	35	L + 70

* with 1 m cable

** Diameter with cylindrical drum design

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Performance data Typ TM400

Typ	Power	Belt speed	Rotation speed	Belt pull	Torque	Power input at 400V / 50Hz	Drum length	Weight
	P2	v	n2	F	T2		L min.	L=750 mm
	[kW]	[m/s]	[1/min]	[N]	[Nm]	[A]	[mm]	[kg]
TM400	3,00 4-polig	0,78	36	3857	800	3,20	550	160,0
		0,95	44	3148	653			
		1,32	61	2276	472			
		1,61	74	1858	386			
TM400	4,00 4-polig	0,60	28	6678	1386	9,00	550	170,0
		0,84	39	4746	985			
		0,95	44	4227	877			
		1,31	60	3056	634			
		1,60	74	2495	518			
		2,08	96	1923	399			
TM400	5,50 4-polig	0,87	40	6344	1316	11,50	750	290,0
		1,04	48	5267	1093			
		1,29	59	4266	885			
		1,56	72	3530	733			
		1,72	79	3201	664			
		2,17	100	2534	526			
TM400	7,50 4-polig	1,04	48	7182	1490	15,50	750	300,0
		1,29	59	5818	1207			
		1,56	72	4814	999			
		1,72	79	4365	906			
		2,17	100	3456	717			
TM400	10,00 4-polig	1,28	59	7811	1621	21,00	750	320,0
		1,55	71	6464	1341			
		1,71	79	5861	1216			
		2,16	99	4640	963			
TM400	15,0 4-polig	1,71	79	8792	1824	29,50	750	360,0
		2,16	99	6959	1444			

- indication of weight incl. oil filling (ready for operating)
- additional weight: approx. 10 kg for 100 mm add. length
- with brake mounting L min. dimension raises up 200 mm

Norm width [L] : 550, 600, 650 … 1400 mm, from 1400 mm reinforced construction

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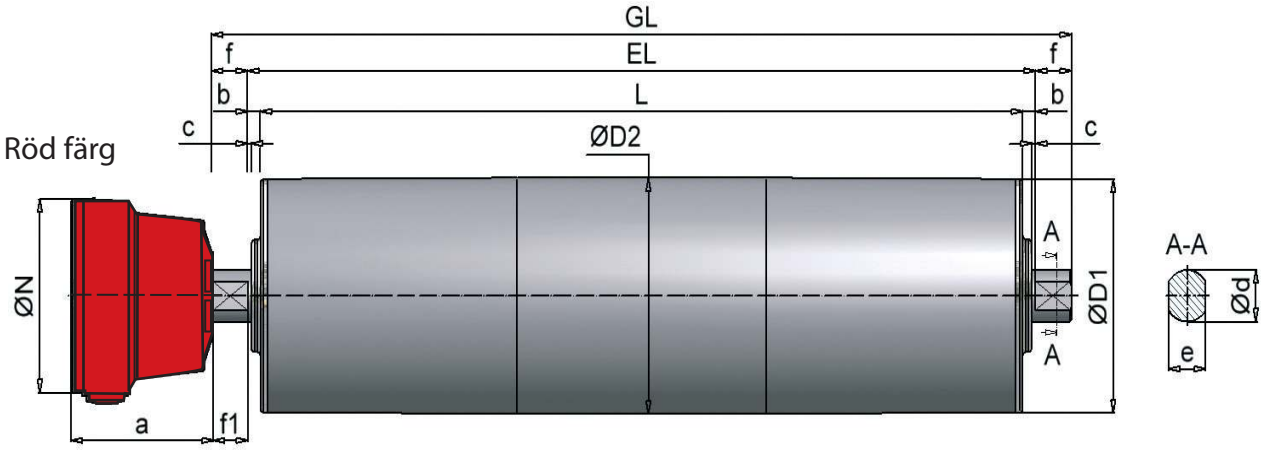
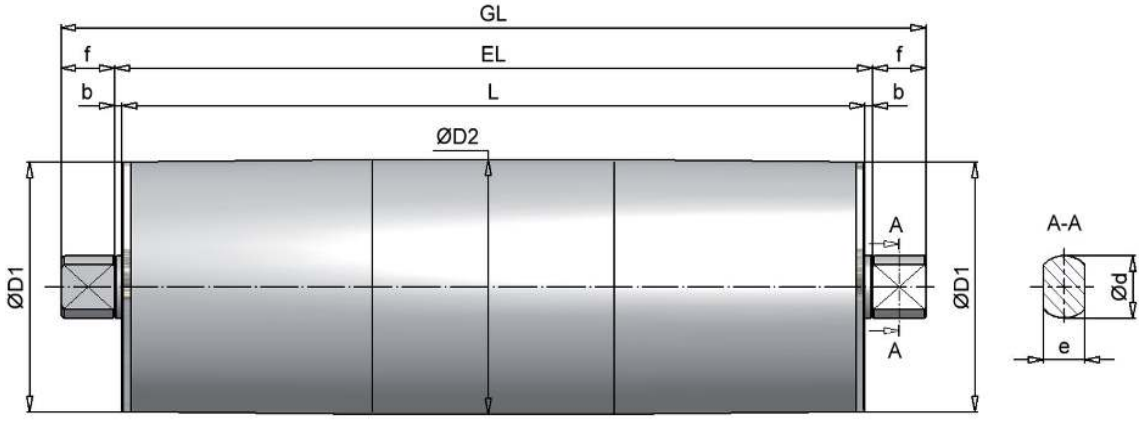
TM / UT 500

Drum Motor Typ TM 500 (Standard)



Guide Drum Typ UT 500 (Standard)



Dimensions in mm

Drum Motor											Standard IP65		Optional IP66/67	
size	Typ	ØD1	ØD2**	a	ØN	c	Ød	e	f	f1	b	EL	b	EL
500	TM 500	500	504	100	150	5	75	65	85	85	30	L + 60	45	L + 90

Guide Drum														
500	TM 500	500	504			5	75	65	85		30	L + 60	45	L + 90

* with 1 m cable
** Diameter with cylindrical drum design

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Performance data Typ TM500

Typ	Power	Belt speed	Rotation speed	Belt pull	Torque	Power input at 400V / 50Hz	Drum length	Weight
	P2	v	n2	F	T2		L min.	L=750 mm
	[kW]	[m/s]	[1/min]	[N]	[Nm]	[A]	[mm]	[kg]
TM500	4,00 4-polig	0,51	19	7813	2024	9,00	750	350
		0,63	23	6396	1657			
TM500	5,50 4-polig	0,53	19	10445	2705	11,50	750	335
		0,64	24	8551	2215			
		0,84	31	6545	1695			
		1,08	40	5083	1316			
		1,30	48	4219	1093			
		1,61	59	3418	885			
TM500	7,50 4-polig	0,64	24	11660	3020	15,50	750	340
		0,84	31	8924	2311			
		1,07	39	7012	1816			
		1,31	48	5740	1487			
		1,55	57	4845	1255			
		1,61	59	4661	1207			
		1,94	72	3857	999			
		2,14	79	3497	906			
TM500	10,00 4-polig	0,83	31	11982	3103	21,00	820	462
		1,06	39	9415	2438			
		1,30	48	7707	1996			
		1,54	57	6506	1685			
		1,70	63	5899	1528			
		2,08	77	4817	1248			
TM500	15,00 4-polig	1,31	48	11480	2973	29,50	800	448
		1,55	57	9691	2510			
		1,71	63	8787	2276			
		2,09	77	7176	1859			
TM500	18,50 4-polig	1,59	58	11668	3022	37,00	850	470
		1,75	64	10580	2740			
		2,14	79	8640	2238			
TM500	22,00 4-polig	1,75	64	12582	3259	43,50	850	470
		2,14	79	10275	2661			

- additional weight: approx. 10 kg for 100 mm add. length
- with brake mounting L min. dimension raises up 200 mm

Norm width [L] : 750 … 1600 mm

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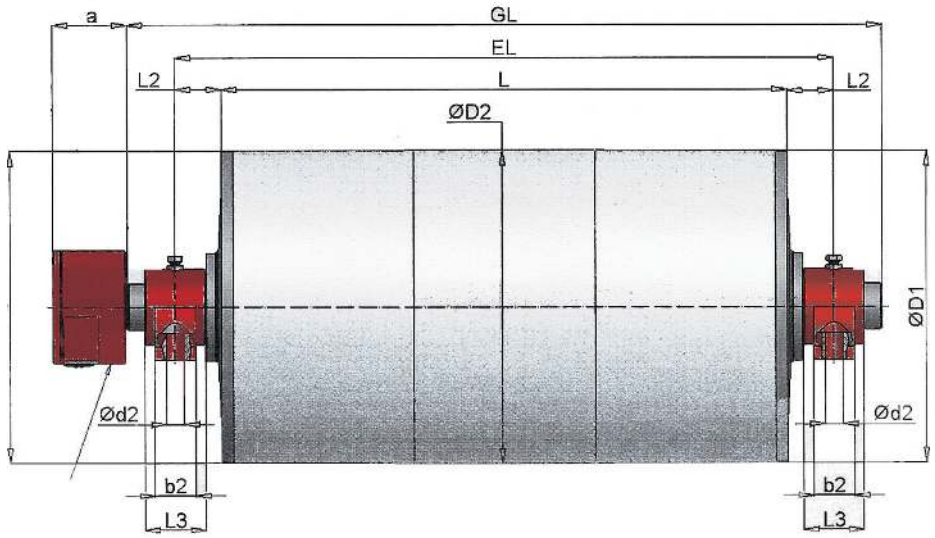
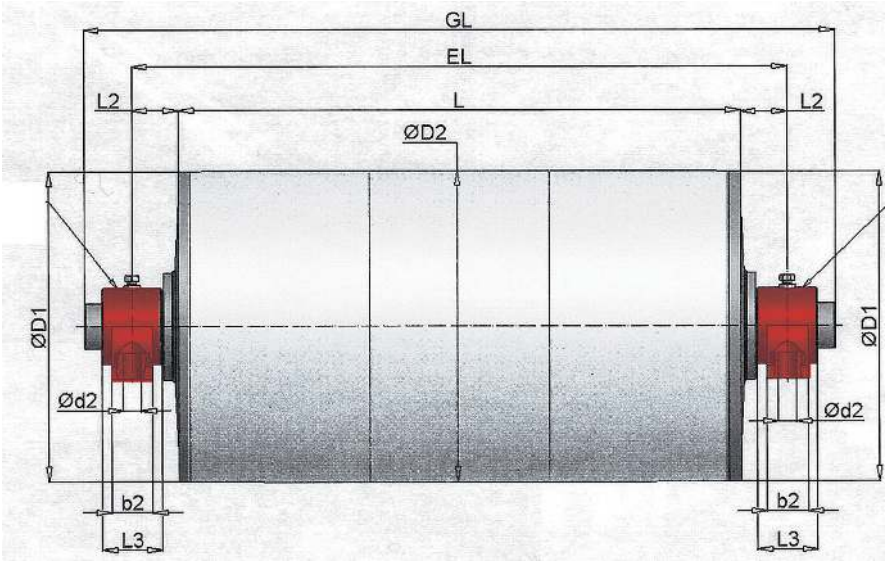
TM / UT 630

Drum Motor Typ TM 630 (Standard)



Guide Drum Typ UT 630 (Standard)



Dimensions in mm

Drum Motor										Standard IP65				IP66	IP67
size	Typ	ØD1	ØD2**	a	b2	Ød1	Ød2	e1	f1	h1	h2	L2	L3	EL	EL
630	TM 630	626	630	165	80	90	26	250	320	100	183	150	117	L + 300	L + 300

Guide Drum															
630	TM 630	626	630		80	90	26	250	320	100	183	150	117		L + 300

** Diameter with cylindrical drum design

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Performance data Typ TM630

Typ	Power	Belt speed	Rotation speed	Belt pull	Torque	Power input at 400V / 50Hz	Drum length	Weight
	P2	v	n2	F	T2		L min.	L=750 mm
	[kW]	[m/s]	[1/min]	[N]	[Nm]	[A]	[mm]	[kg]
TM630	30,00 8-polig	1,25	38	22791	7179	57,00	950	825
		1,60	49	17807	5609			
		2,00	61	14245	4487			
		2,50	76	11394	3589			
		3,15	95	9045	2849			
TM630	37,00 6-polig	1,60	49	21969	6920	70,00	950	825
		2,00	61	17569	5534			
		2,50	76	14054	4427			
		3,15	95	11153	3513			
TM630	45,00 4-polig	2,50	76	17092	5384	85,00	950	845
		3,15	95	13565	4273			
		4,00	121	10683	3365			
TM630	55,00 4-polig	2,50	76	20902	6584	105,00	950	845
		3,15	95	16581	5223			
		4,00	121	13057	4115			

- additional weight: approx. 10 kg for 100 mm add. length
- with brake mounting L min. dimension raises up 200 mm

Norm width [L] : 950, 1000, 1050, … 2000 mm

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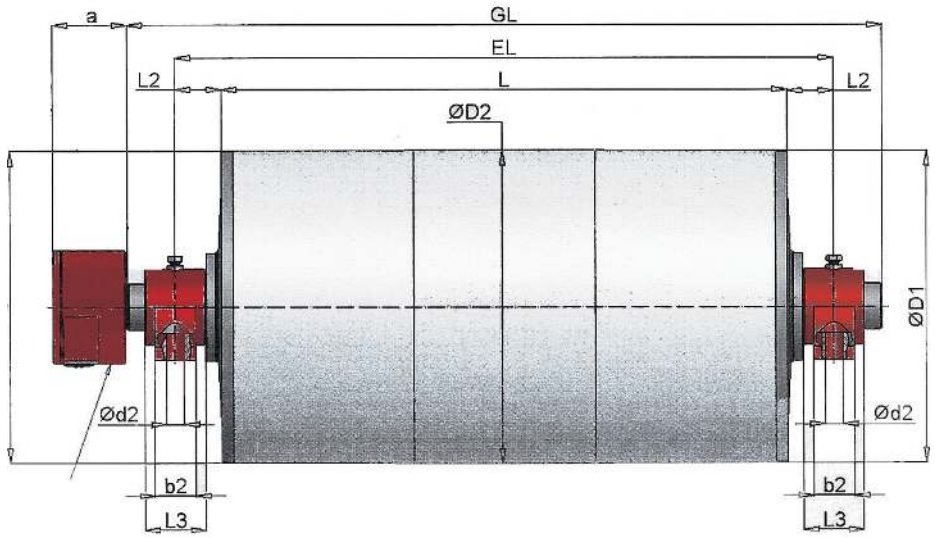
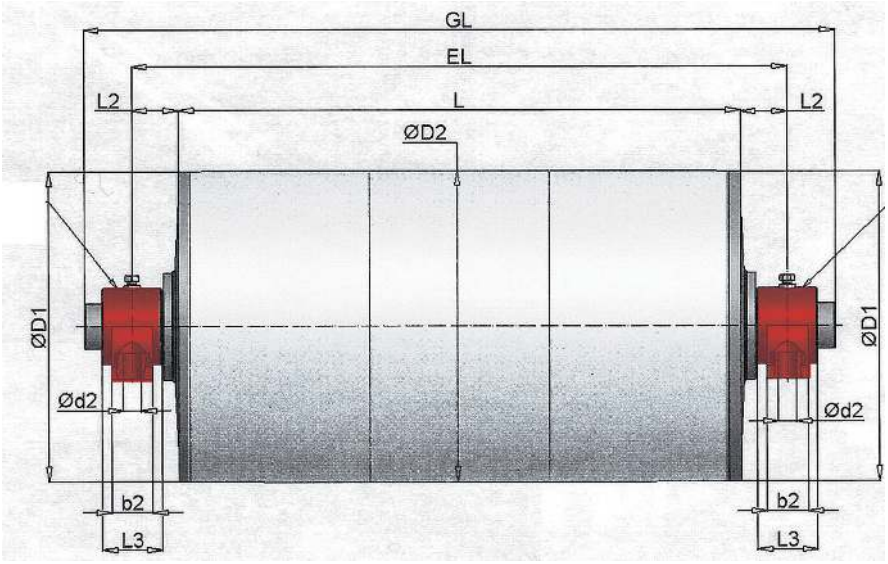
TM / UT 800

Drum Motor Typ TM 800 (Standard)



Guide Drum Typ UT 800 (Standard)



Dimensions in mm

Drum Motor										Standard IP65				IP66	IP67
size	Typ	ØD1	ØD2**	a	b2	Ød1	Ød2	e1	f1	h1	h2	L2	L3	EL	EL
800	TM 800	796	800	200	120	120	33	300	370	110	213	150	160		L + 300

Guide Drum															
800	TM 800	796	800		120	120	33	300	370	110	213	150	160		L + 300

** Diameter with cylindrical drum design

DRUM-TECH
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Performance data Typ TM800

Typ	Power	Belt speed	Rotation speed	Belt pull	Torque	Power input at 400V / 50Hz	Drum length	Weight
	P2	v	n2	F	T2		L min.	L=750 mm
	[kW]	[m/s]	[1/min]	[N]	[Nm]	[A]	[mm]	[kg]
TM800	22,00 8-polig	1,00	30	16720	6688	42	950	935
		1,60	38	13058	5223			
		2,00	48	10445	4178			
		2,50	60	8358	3343			
		3,15	75	6633	2653			
TM800	30,00 8-polig	1,60	38	17805	7122	56	950	975
		2,00	48	14245	5698			
		2,50	60	11395	4558			
		3,15	75	9043	3617			
TM800	37,00 6-polig	2,00	48	17575	7030	70	950	975
		2,50	60	14055	5622			
		3,15	75	11155	4462			
		4,00	96	8783	3513			
TM800	45,00 4-polig	3,15	75	13565	5426	84	950	995
		4,00	96	10683	4273			
TM800	55,00 4-polig	4,00	96	13058	5223	95	950	995
TM800	8-polig / 55,00 6-polig	1,60	38	32630	13052	95	1400	2150
		2,00	48	26125	10450			
		2,50	60	20900	8360			
		3,15	75	16588	6635			
		4,00	96	13063	5225			
		4,50	108	11610	4644			
TM800	75,00 6-polig	2,00	48	35610	14244	134	1400	2150
		2,50	60	28488	11395			
		3,15	75	22610	9044			
		4,00	96	1805?	7122			
		4,50	108	15828	6331			
TM800	90,00 6-polig	2,50	60	34185	13674	158	1400	2200
		3,15	75	27130	10852			
		4,00	96	21365	8546			
		4,50	108	18993	7597			
TM800	110,00 4-polig	3,15	75	33160	13264	196	1400	2175
		4,00	96	26113	10445			
		4,50	108	23163	9265			
TM800	132,00 4-polig	4,00	96	31338	12535	238	1400	2215
		4,50	108	27855	11142			

- additional weight: approx. 10 kg for 100 mm add. length
- with brake mounting L min. dimension raises up 200 mm

Norm width [L] : 950, 1000, 1050, … 2000 mm