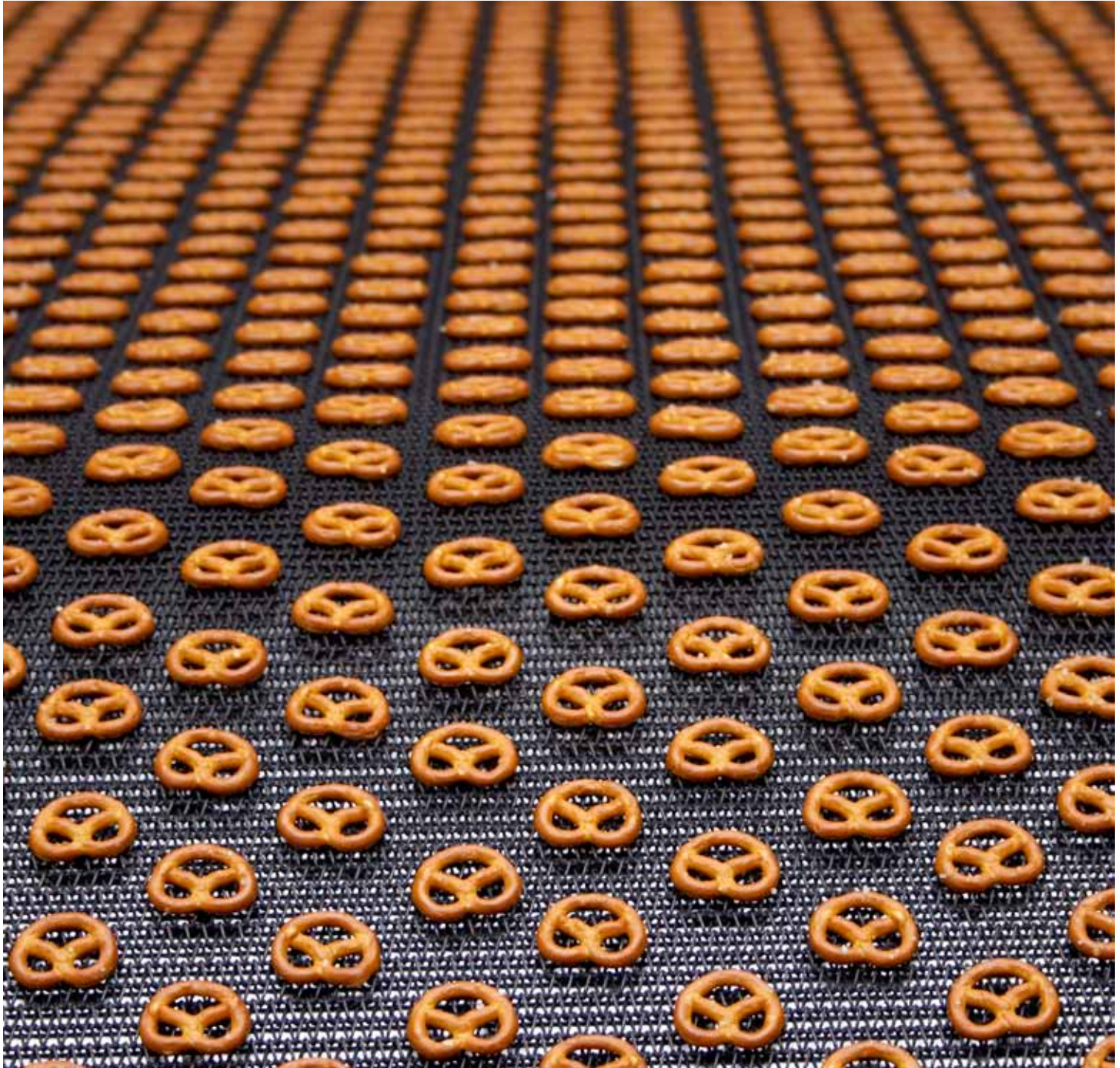


Product information

Drummotors

TM 100B25



Van der Graaf
Power Transmission Equipment

www.vandergraafpte.nl



The TM 100's



playground



TM 100B25

A wide range of applications

Van der Graaf has achieved a prominent position on both the domestic and international market with its "GV" Drummotors.

The "GV" Drummotor has found success in a wide range of applications including the following: automotive, X-ray, construction, postal, courier, mining, aggregate, airline baggage, package flow, tyre manufacturing, fish processing, poultry processing, meat processing, agriculture, fruit and vegetable, farming, forestry, baking, dairy and many more.

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Selection table

TYPE TM 100B25	Power kW	Beltspeed m/s at 50 Hz										Min. L mm Design B	Full load curr. 400 V - 50 Hz I = ... A	Weight kg L=350
		Beltpull N												
205 Z	0,37	3,60 95	2,80 120	2,50 135	2,20 155	2,00 175	1,70 205					310	0,85	14
425 Z	0,18	1,80 95	1,40 120	1,25 135	1,10 155	1,00 170	0,85 200					310	0,60	14
425 PL2		0,75 220	0,70 235	0,65 250	0,55 300	0,50 330	0,40 415	0,36 460	0,30 550	0,24 690	310			
425 PL3		0,20 835	0,16 990	0,14 1130	0,12 1300						360			
416 Z	0,12	1,10 105	1,00 115	0,85 135								275	0,40	14
416 PL2		0,75 145	0,70 160	0,65 170	0,55 200	0,50 220	0,40 275	0,36 305	0,30 370	0,24 460	275			
416 PL3		0,20 530	0,16 660	0,14 755	0,12 880	0,10 1055	0,09 1175				310			
616 Z	0,12	1,25 90	1,10 105	0,90 125	0,80 145	0,70 165	0,60 190					310	0,50	14
616 PL2		0,50 220	0,40 275	0,36 305	0,30 370	0,26 425	0,19 580	0,15 735			310			
616 PL3		0,07 1300									360			
414 Z	0,10	1,10 85	1,00 95	0,85 110								260	0,40	14
414 PL2		0,75 125	0,70 130	0,65 140	0,55 165	0,50 185	0,40 230	0,36 255	0,30 305	0,24 385	260			
414 PL3		0,20 440	0,16 550	0,14 630	0,12 735	0,10 880	0,09 980	0,06 1300			310			
611 Z	0,08	0,80 95	0,70 110	0,60 125								260	0,40	14
611 PL2		0,50 145	0,40 185	0,36 205	0,30 245	0,26 285	0,19 385	0,15 490			260			
611 PL3		0,13 540	0,10 705	0,07 1005	0,06 1175						310			
811 PL2	0,08	0,22 335	0,17 435	0,14 525	0,11 670							310	0,55	14
811 PL3		0,09 780	0,05 1300								360			
807 PL3	0,05	0,07 630	0,06 735	0,05 880	0,04 1100	0,028 1300						360	0,40	14
807 PL4		0,022 1300	0,020 1300	0,019 1300	0,017 1300	0,014 1300	0,013 1300	0,012 1300	0,011 1300	0,009 1300	0,007 1300	410		

Available standard facewidth's: 260 - 275 - 310 - 360 - 410 - 460 - 510 - 560 - 610 - 660 - 710 - 760 - 810 - 860 mm

When an electro-mechanical brake is fitted, the minimum facewidth is increased by 75 mm

The total weight of a Drummotor grows approx. 1,6 kg per 100 mm

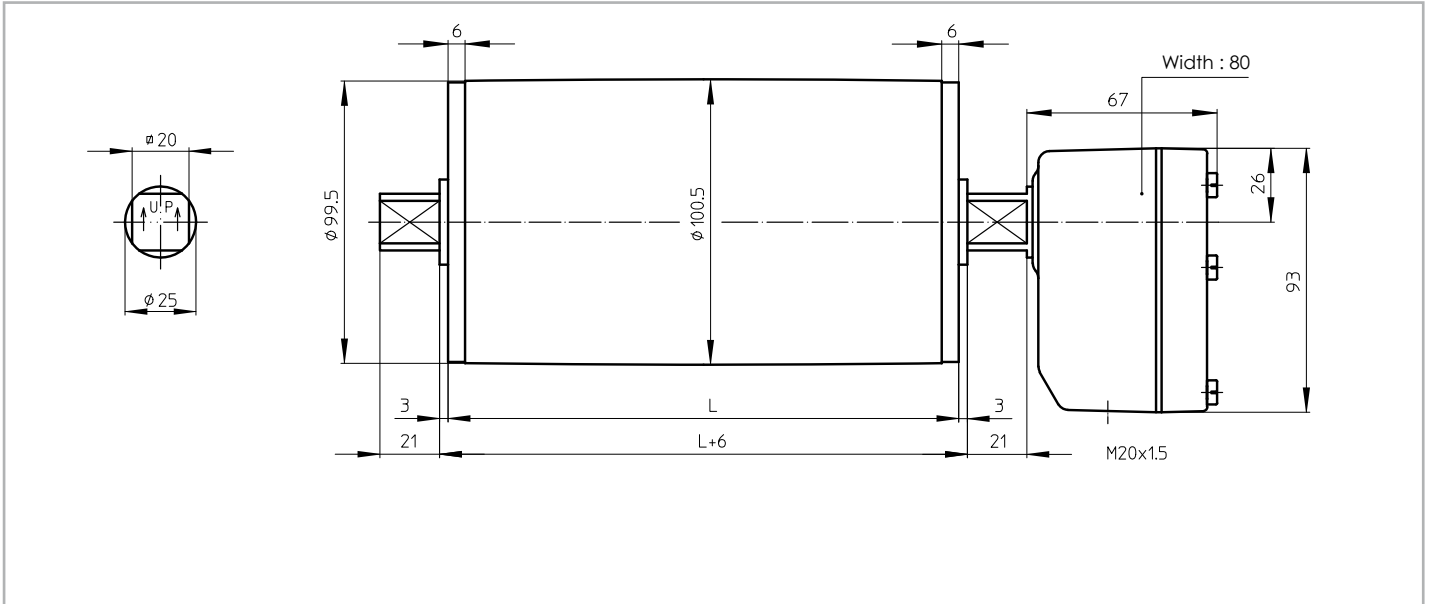
Maximum beltpull: 1300 N (Imax on request or on data plate)

Available torque: (Beltpull N x drum diameter m) / 2 Nm

Dimensions mild steel

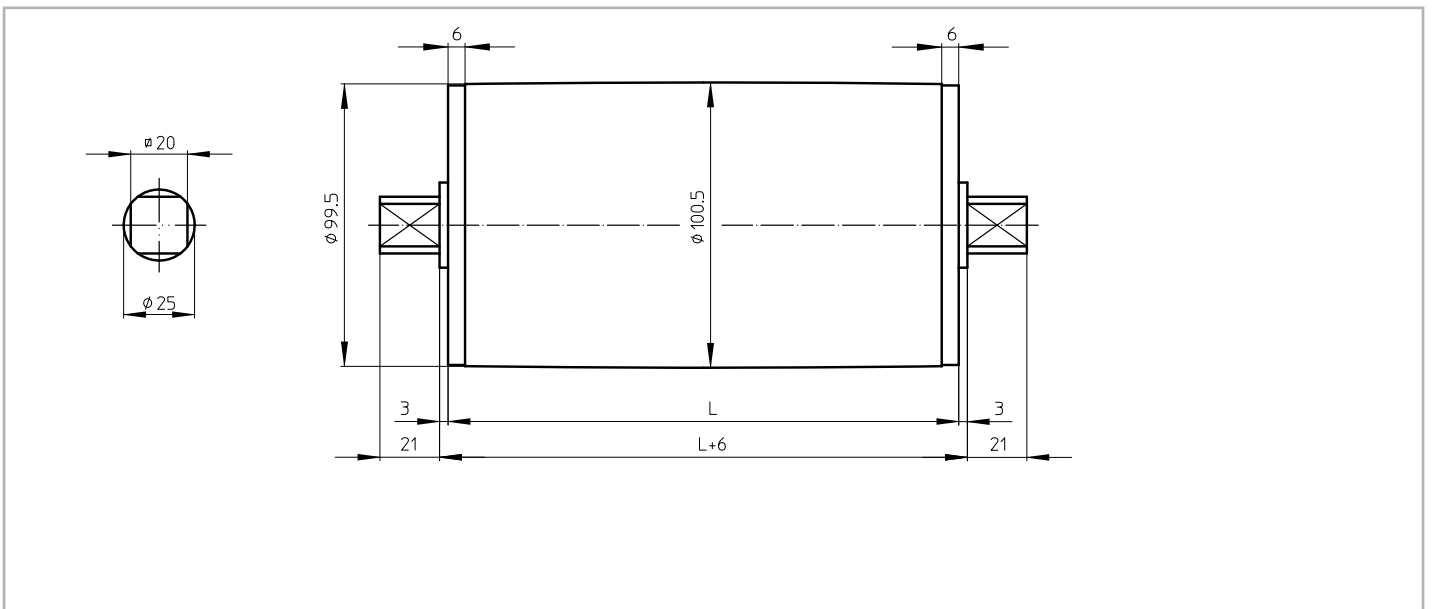
TM 100B25

TM 100B25, mild steel Drummotor with polyamide junctionbox



KT 100B25

KT 100B25, mild steel Taildrum

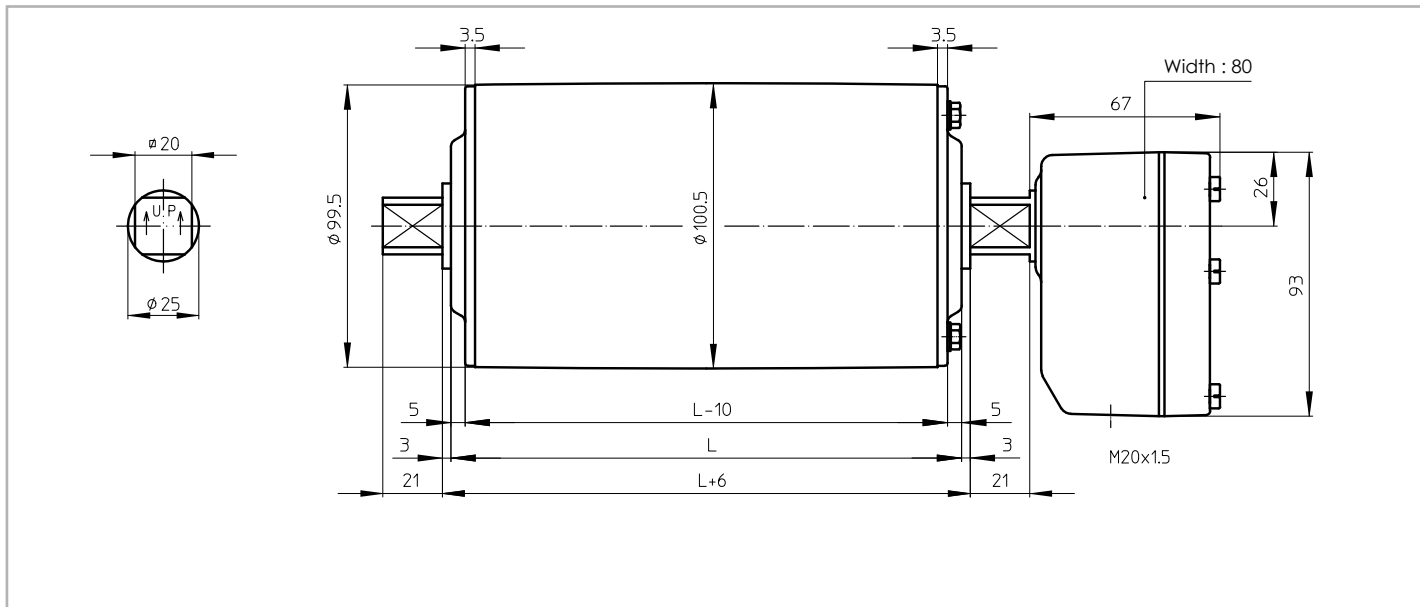




Dimensions stainless steel

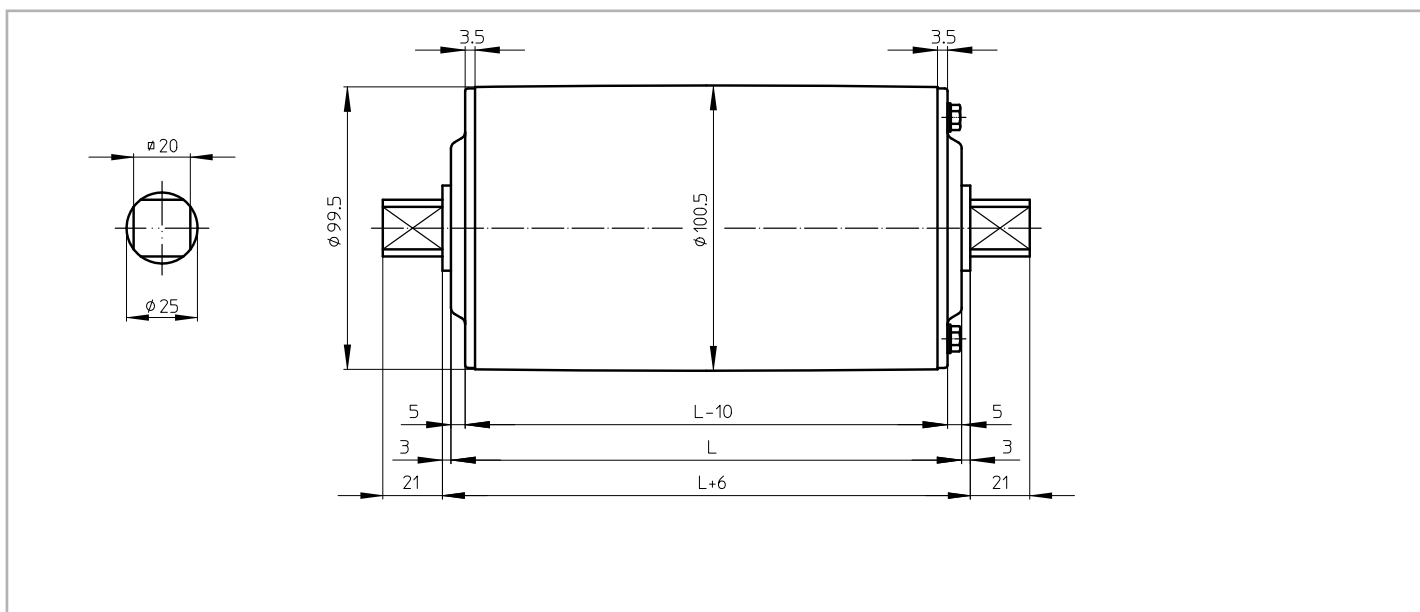
TM 100B25 CR

TM 100B25 CR, stainless steel Drummotor with polyamide junctionbox and CR sealing



KT 100B25 CR

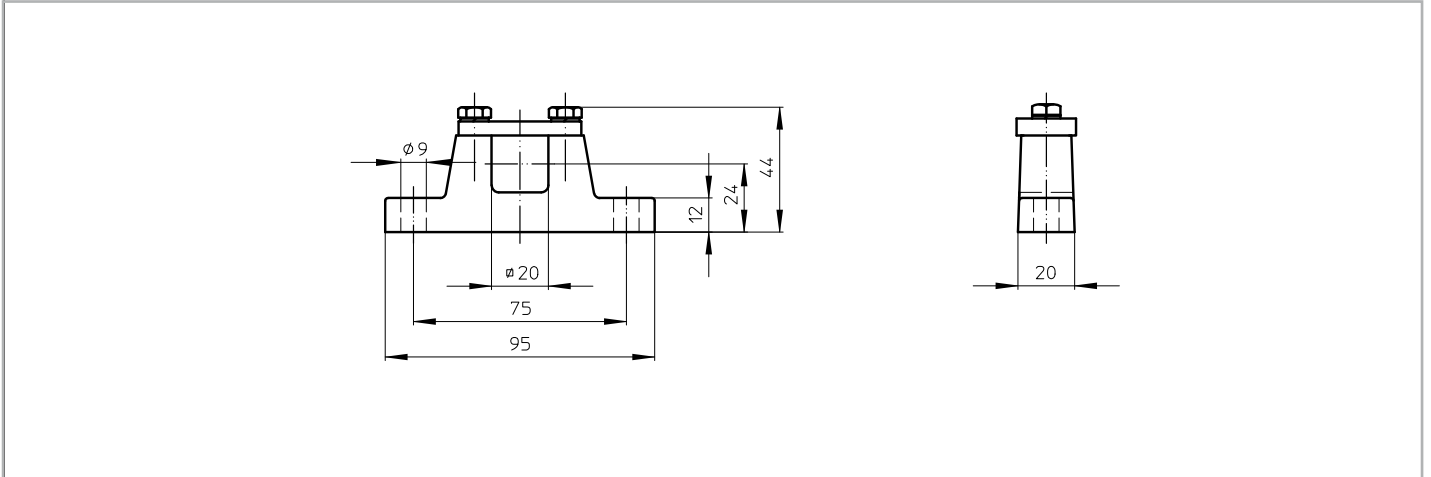
KT 100B25 CR, stainless steel Taildrum with CR sealing



Dimensions bracket / cable exit

AB 20

AB 20, cast iron or stainless steel bracket
Weight: 0,6 kg per pair

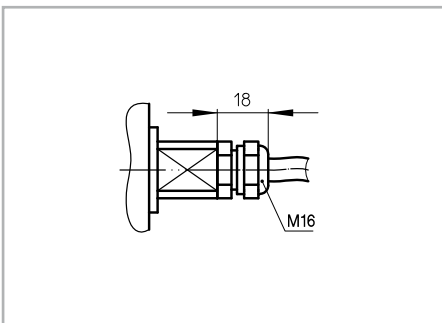


Standard design of a TM 100B25 is with a polyamide junctionbox. For stainless steel design, this can be either a polyamide or stainless steel junctionbox.

On request a Drummotor can be fitted with a cable. In this case it is important to know the available voltage (preferably 1 voltage), the length of the cable, whether the cable is shielded or not and the type of cable exit. An overview of available cable exits is shown below.

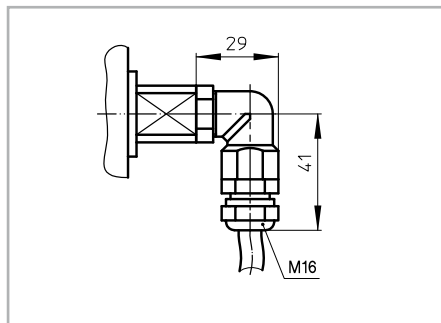
Option 1

Straight cable exit with cable gland



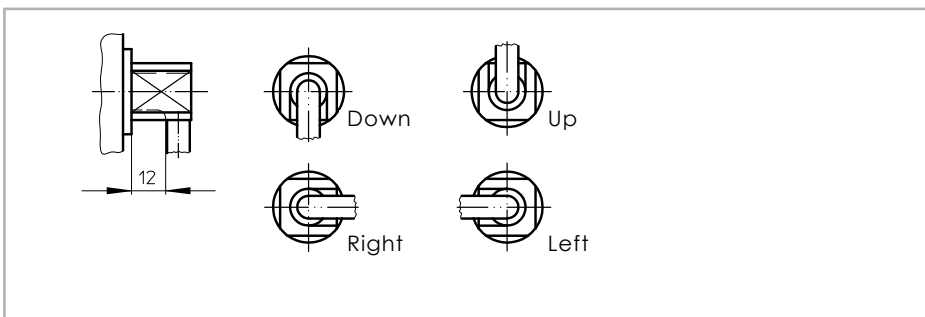
Option 3

Elbow cable exit with cable gland
(minimum facewidth increases with 25 mm)



Option 4

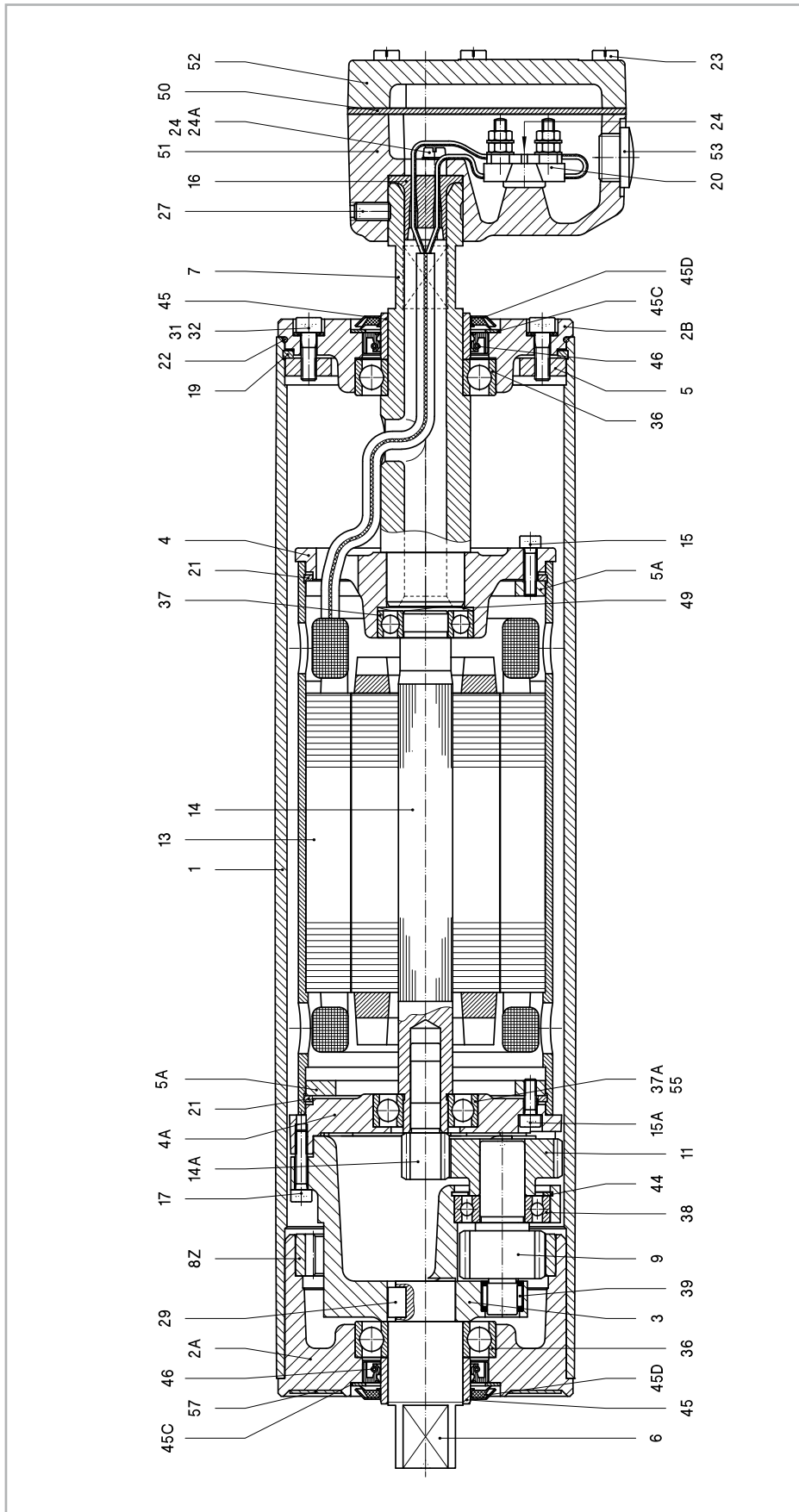
Open cable exit (minimum facewidth increases with 25 mm)





TM 100B25 Z

Legenda

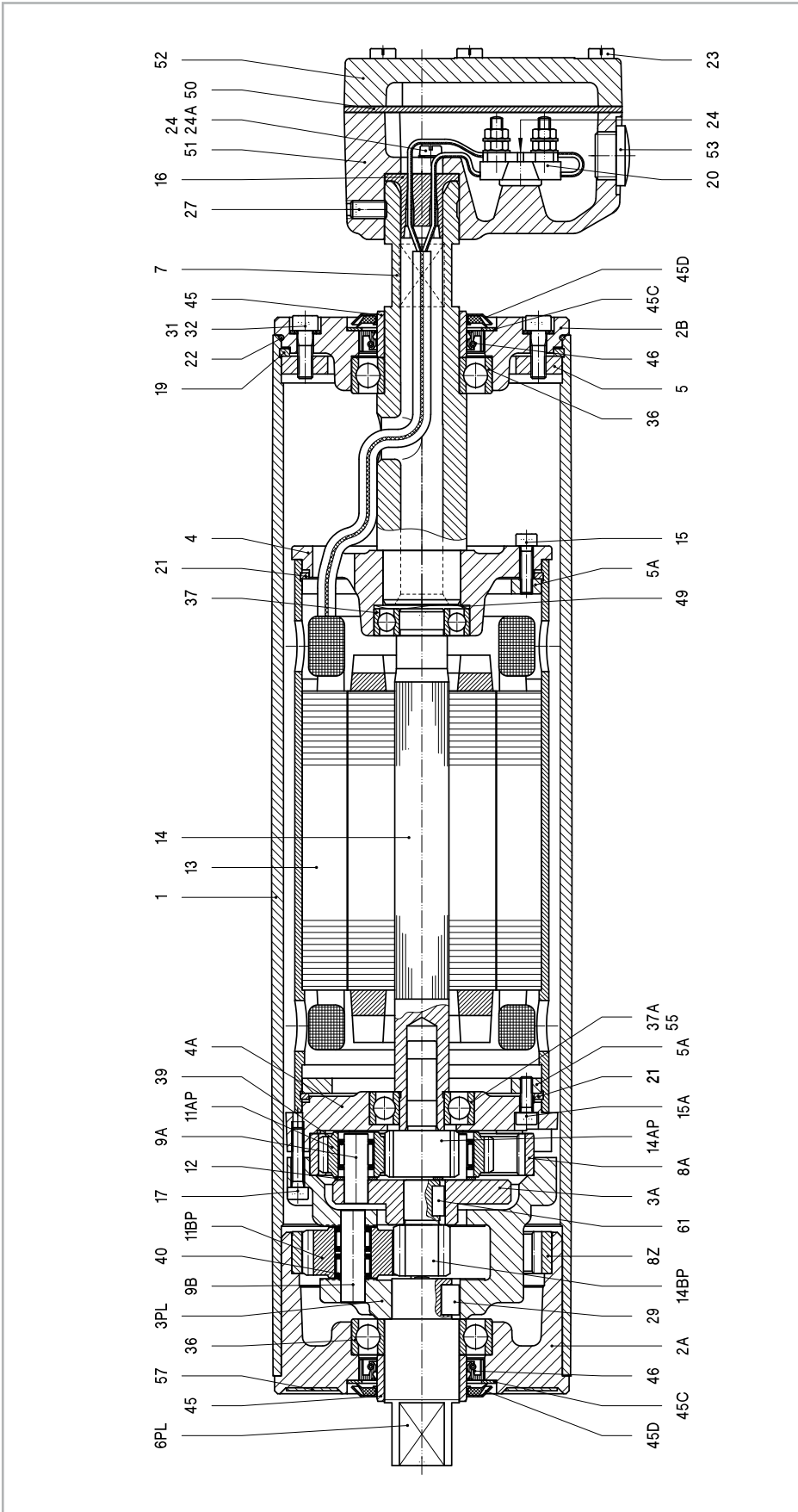


1	Shell	19	Springring	32	Washer	46	Oilseal
2A	Endflange	20	Terminalboard	36	Ballbearing	49	Wave washer
2B	Endflange	21	Springring	37	Ballbearing	50	Seal
3	Gearhousing	22	O-ring	37A	Ballbearing	51	Junctionbox
4	Motorflange	23	Cyl. head screw	38	Ballbearing	52	Junctionbox cover
4A	Motorflange	24	Cyl. head screw	39	Needlebearing	53	Stopping plug
5	Mountingring	24A	Toothed lock washer	44	Circlip	55	Ballbearing incl. backstop
5A	Mountingring	27	Setscrew	45	Bearing race	57	Dataplate
6	Shaftend	29	Key	45C	Shim plated		
7	Hollow shaft	31	Int. hex screw	45D	Gammaring		
8Z	Internal gear						
9	Pinion						
11	Gear						
13	Stator						
14	Rotor						
14A	Insert pinion						
15	Int. hex screw						
15A	Int. hex screw						
16	Cable passage						
17	Int. hex screw						
19	Springring						
20	Terminalboard						
21	Springring						
22	O-ring						
23	Cyl. head screw						
24	Cyl. head screw						
24A	Toothed lock washer						
27	Setscrew						
29	Key						
31	Int. hex screw						
32	Washer						
36	Ballbearing						
37	Ballbearing						
37A	Ballbearing						
38	Ballbearing						
39	Needlebearing						
44	Circlip						
45	Bearing race						
45C	Shim plated						
45D	Gammaring						
46	Oilseal						
49	Wave washer						
50	Seal						
51	Junctionbox						
52	Junctionbox cover						
53	Stopping plug						
55	Ballbearing incl. backstop						
57	Dataplate						

Cross sectional / parts description

TM 100B25 PL2

Legenda

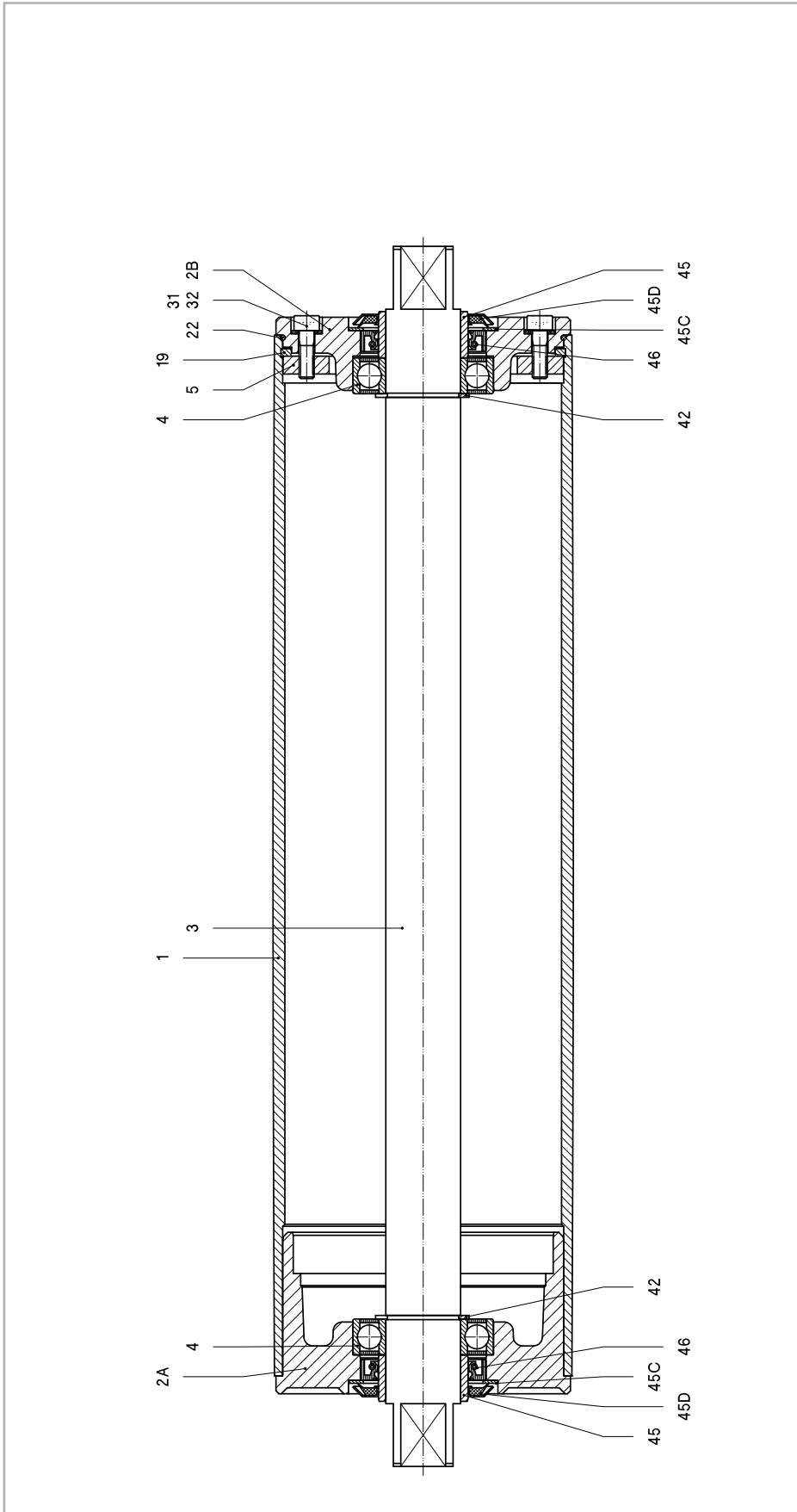


1	Shell	15	Int. hex screw	27	Setscrew	45D	Gammaring
2A	Endflange	15A	Int. hex screw	29	Key	46	Oilseal
2B	Endflange	16	Cable passage	31	Int. hex screw	49	Wave washer
3A	Planetary carrier	17	Int. hex screw	32	Washer	50	Seal
3PL	Planetary housing	19	Springring	36	Ballbearing	51	Junctionbox
4	Motorflange	20	Terminalboard	37	Ballbearing	52	Junctionbox cover
4A	Motorflange	21	Springring	37A	Ballbearing	53	Stopping plug
5	Mountingring	22	O-ring	39	Needlebearing	55	Ballbearing incl. backstop
5A	Mountingring	23	Cyl. head screw	40	Needlebearing	57	Dataplate
6PL	Shaftflend	24	Cyl. head screw	45	Bearing race	61	Key
7	Hollow shaft	24A	Toothed lock washer	45C	Shim plated		
		8Z	Internal gear				
		8A	Internal gear				
		9A	Cylindrical pin				
		9B	Cylindrical pin				
		11AP	Planetary gear				
		11BP	Planetary gear				
		12	Shim				
		13	Stator				
		14	Rotor				
		14AP	Insert pinion				
		14BP	Sunwheel				
		17					
		9A					
		11AP					
		4A					
		39					
		37A					
		5A					
		55					
		21					
		14AP					
		15A					
		8A					
		3A					
		8Z					
		29					
		14BP					
		2A					
		46					
		45C					
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KT 100B25

Legenda



1	Shell	31	Int. hex screw
2A	Endflange	32	Washer
2B	Endflange	42	Circlip
3	Shaft	45	Bearing race
4	Ballbearing	45C	Shim plated
5	Mountingring	45D	Gammaring
19	Springring	46	Oliseal
22	O-ring		

Material

The external parts of the Drummotor are made from mild steel and cast iron. Depending on the application it is also possible to manufacture in stainless steel (complete or part). You can choose between stainless steel 304 (general food industry) and stainless steel 316 (salt water applications).

Backstop - Brake

If an inclined belt conveyor is stopped fully loaded, it could run backwards.

To prevent this we can install a backstop. One of the bearings in the Drummotor is replaced by a one way bearing. The way this bearing is installed determines the direction of rotation of the drum. TBRH indicates a cw rotation and TBLH ccw.

In situations where a Drummotor needs to be able to drive in both directions it is not possible to use a backstop. In this case we use a brake. When an declined belt or a horizontal belt needs to be stopped quickly to pick or place items a brake is the best solution.

Inclined position

Sometimes a Drummotor needs to be installed on an inclined or even vertical position. This is possible, but we need to make adjustments to the oil level in the drum as the oil will flow to the lower side of the Drummotor causing the top bearing to run without lubrication. To prevent problems we will need to know the installation angle so we can fill the drum with extra oil and fit a double sealed bearing on the upper side.

Thermal protection

A Van der Graaf Drummotor can be fitted with thermal protection. This consists of either a thermistor (PTC) or bi-metal (klixon). We install these on each phase of the electric motor.

Encoder - Sensor bearing

In certain applications it is required to measure the speed or position of a conveyor belt. For this type of application we can install an encoder or sensor bearing to accurately measure rotational speed of the Drummotor.

The accuracy needed will determine the type of encoder or sensor used.

Lagging

The power produced by the Drummotor has to be transferred to the belt and lagging is used to give more friction between the Drummotor and the conveyor belt. Van der Graaf can fit your Drummotor with different kinds of lagging.

There is a difference between cold and hot vulcanised lagging. Cold vulcanised means the lagging is glued to the Drummotor usually in sheet form and the join 'welded' together. Hot vulcanising is a process where the shell is wrapped around with thin layers of rubber. The shell with the rubber is then baked in an autoclave fusing the layers together creating a seamless finish.

It is possible to cut grooves (e.g chevron or diamond) in the lagging.

Sprockets

Do you wish to use a Drummotor to drive modular belts? Van der Graaf can help you! Fitting sprockets suitable for various types of modular belts is a simple solution. The Drummotor is manufactured with a cylindrical shell and machined with a patented 'keying' system. The sprockets are simply 'slid' on and locked securely into position.

Sealings for mild steel Drummotors and Taildrums

RB sealing - IP 66



This is Van der Graaf's standard sealing. This type of sealing will work in most conditions.

RBS sealing - IP 66



This sealing is specifically designed for those applications where high water pressure is used for cleaning.

HD sealing - IP 66



This sealing is designed for abrasive applications, like sand, gravel and soil.

Sealings for stainless steel Drummotors and Taildrums

CR sealing - IP 66



This is our standard sealing for stainless steel Drummotors, a very effective, multi labyrinth sealing.

UW sealing - IP 68



This sealing is suitable for under water applications. The maximum depth is approx 2,5 m.

Options

Specification	Standard	Optional
Construction		
Shafts and bolts	Mild steel	Stainless steel
Endflanges	Cast iron	Stainless steel
Shell	Mild steel	Stainless steel
Junctionbox	Polyamide	Cast iron or stainless steel
Cable		Shielded or non-shielded
Sealing mild steel	RB	RBS, HD
Sealing stainless steel	CR	UW
Shell		
Crowned	•	
Cylindrical		•
Balanced		•
Lagging, cold vulcanised		•
Lagging, hot vulcanised		•
Lagging, FDA approved		•
Fitted with grooves, patterns		•
Sprockets		•
Electro motor		
Three-phase asynchronous	•	
Power supply	230/400 V - 50 Hz	Other voltages and frequencies on request
Single phase (230 V - 50 Hz)		•
Insulation class	F	H
Thermal protection		Bi-metal or thermistor
Run by frequency inverter	•	
Other options		
Food grade oil		•
Backstop, mechanical		•
Brake, electro mechanical		•
Clutch brake, electro mechanical		•
Inclined or vertical position		•
Other facewidth's		•
Different shaft designs		•
Encoder or sensor bearing in Drummotor		Sensor bearing
Encoder or sensor bearing in Taildrum		•
Certificates		
CE	•	
UL		•
CSA		•
ATEX zone 22, dust		•
UW Under water application (IP68)		•



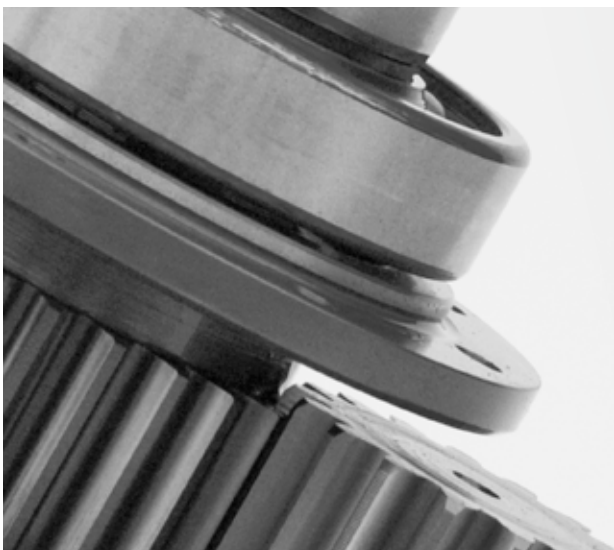
Product range

Our products, an overview

Drum motor type	TM 100B25	TM 113B25	TM 127.25	TM 138.25	TM 160.25	TM 160.30	TM 215.30	TM 215.40
Drum diameter (mm)	100	113	127	138	160	160	215	215
Shaft diameter (mm)	25	25	25	25	25	30	30	40
Power (kW)	0.05-0.37	0.04-0.55	0.10-1.1	0.10-1.1	0.10-0.75	0.10-2.2	0.10-2.2	0.37-5.5
Speed (m/s)	0.007-3.60	0.008-4.40	0.008-2.60	0.009-2.80	0.13-3.30	0.06-4.00	0.08-5.30	0.12-4.70

Drum motor type	TM 215B50	TM 273.40	TM 315.40	TM 315.50	TM 400A50	TM 400.60	TM 500A60	TM 500A75
Drum diameter (mm)	215	273	315	315	400	400	500	500
Shaft diameter (mm)	50	40	40	50	50	60	60	75
Power (kW)	1.5-4.0	0.37-5.5	0.37-5.5	1.1-11	1.1-11	1.5-22	1.5-22	11-30
Speed (m/s)	0.18-0.31	0.17-5.00	0.18-5.20	0.16-4.40	0.20-4.80	0.20-4.60	0.25-4.70	0.80-3.20

Drum motor type	TM 620A75	TM 630A100	TM 800A100	TM 800A130
Drum diameter (mm)	620	630	800	800
Shaft diameter (mm)	75	100	100	130
Power (kW)	11-30	22-55	22-55	55-132
Speed (m/s)	1.00-3.90	1.00-4.00	1.25-5.10	1.60-4.50



Design benefits

- Robust, industrial design
- Fully enclosed
- Oil filled
- Well-sized gears and bearings

Installation advantages

- Easy to install
- Compact and reliable
- Easy to clean
- Virtually maintenance free
- Low Life Cycle Costs





Van der Graaf

Power Transmission Equipment

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