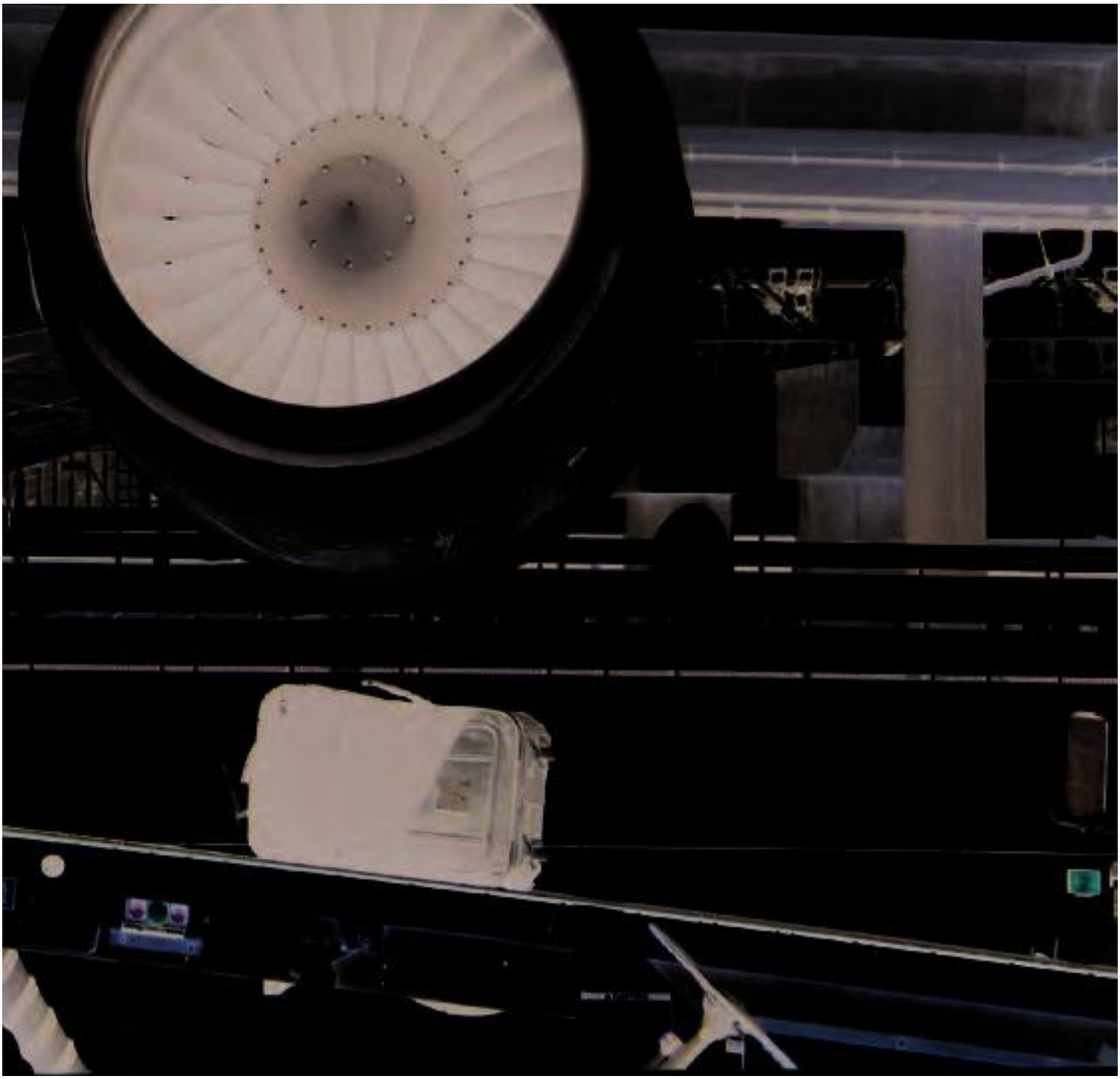
Product information

Drummotors

TM 138-25



Van der Graaf

Power Transmission Equipment

www.vandergraafpte.nl





The TM 138's playground



TM 138-25

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 fl ow, tyre manufacturing, fi sh processing, poultry processing, meat processing, agriculture, fruit and vegetable, farming, forestry, baking, dairy and many more.

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Selection table

TYPE TM 138.25	Power kW	Beltspeed m/s at 50 Hz Beltpull N							Min. L mm Design A	Min. L mm Design B	Full load curr. 400 V - 50 Hz I = ... A	Weight kg L=350
415 Z	1,10	1,40 745	1,10 950	0,90 1160	0,55 1925				350	350	2,8	23
210 Z	0,75	2,80 255	2.20 325	1,80 395					300	325	1,4	22
410 Z 410 PL2	0,75	1,4 510 0 215	1,1 650 0 265	0,9 790 0 313	0,7 101 0 5	0,55 1295			30 0	32 5	1,9	22
275 Z	0,55	0,3 2,80 2 85	0,2 2,20 6 40	0,2 1,80 2 90	0,1 380 7 0				35 275 0	37 300 5	1,1	20
475 Z 475 PL2	0,55	1,4 375 0 158	1,1 475 0 194	0,9 580 0 230	0,7 745 0 297	0,55 950	0,45 1160		27 5	30 0	1,3	20
405 Z 405 PL2 405 PL3	0,37	0,3 1,40 2 50 0,22 154 0,05 5 0 380	0,2 1,10 6 20 0,17 2000 0,03 3800 9	0,2 0,90 2 90 0,033 3800	0,1 0,70 7 00 0,026 3800	0,55 640	0,45 780	0,35 1005	32 27 5 5 32 5	35 30 0 0 35 0	1,0	19
605 Z 605 PL2	0,37	0,2 130 0 7 0	0,12 2835						27 37 5 5	30 40 0 0	1,1	20
434 Z	0,25	0,1 1,40 227 5 170 0	1,10 215	0,90 265	0,70 340	0,55 430	0,45 530	0,35 680	32 250 5	35 275 0	0,7	18
834 Z 834 PL2 834 PL3	0,25	0,27 880 0,13 177 0,02 0 5 380	0,22 108 0,11 0 0,01 209 9 0	0,17 139 0,09 5 0,01 255 6 5	0,013 3800				27 5 32 5	30 0 35 0	1,0	20
825 Z	0,18	0,27 635 0	0,22 775 380	0,17 1005 380					275 37 5	300 40 0	0,8	19
818 Z	0,13	0,27 455	0,22 0 560	0,17 0 725					250	275	0,6	18
1218 Z 1218 PL2 1218 PL3	0,13	0,13 950 0,09 133 0,01 0 6 380	0,11 112 0,08 5 0,01 149 3 5	0,06 199 0,01 5 1 380	0,009 3800				30 0 35 0	32 5 37 5	0,9	22
1213 Z	0,10	0,13 730 0	0,11 865 380 0						275 40 0	300 45 0	0,6	20

Available standard facewidth's: 250 - 275 - 300 - 325 - 350 - 375 - 400 - 450 - 500 - 550 - 600 - 650 - 700 - 750 - 800 - 850 - 900 - 950 - 1000 mm When an electro-mechanical brake is fitted, the minimum facewidth is increased by 75 mm

The total weight of a Drummotor grows approx. 2,0 kg per 100 mm

Maximum beltpull: 3800 N (Imax on request or on data plate)

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

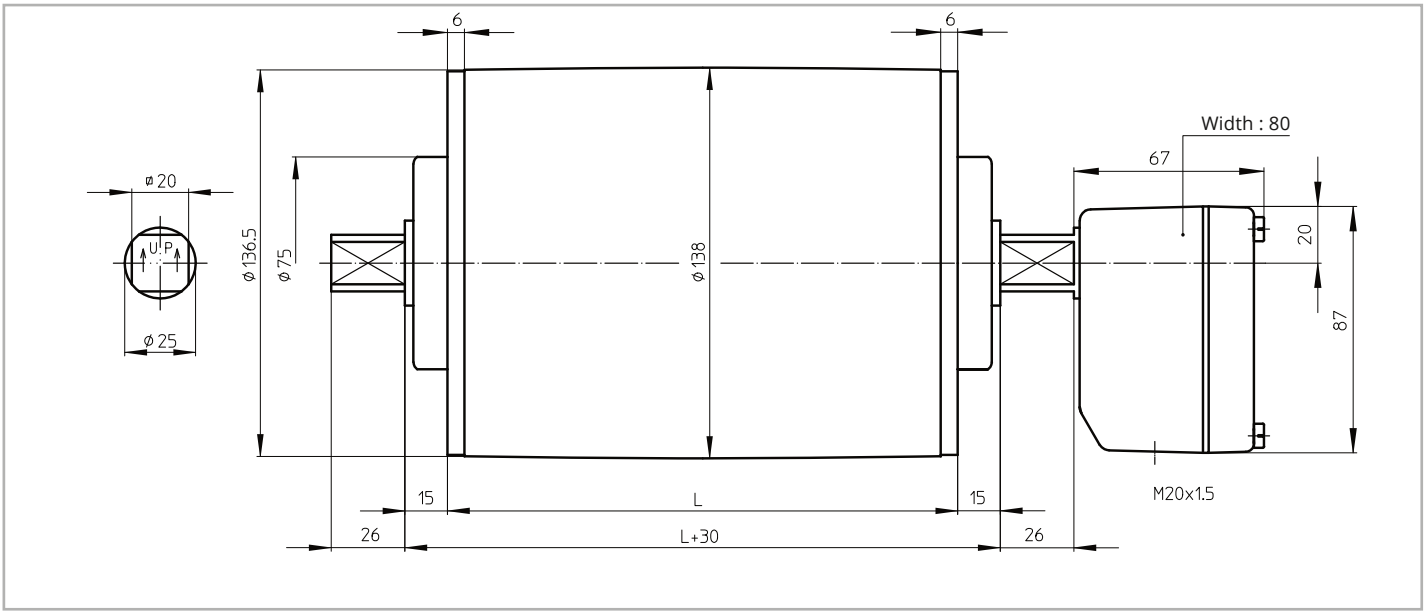
Selection table Dahlander motors

TYPE TM 127.25	Power kW	Beltspeed m/s at 50 Hz Beltpull N							Min. L mm Design A	Min. L mm Design B	Full load curr. 400 V - 50 Hz I = ... A	Weight kg L=350
475/210 Z	**0,55/0,75**	**1,40/2,80** 375/255	**1,10/2,20** 475/325	**0,90/1,80** 580/395	**0,70/1,40** 745/510	**0,55/1,10** 950/650	**0,45/0,90** 1160/790		300	325	1,4/1,7	22
437/275 Z	**0,27/0,55**	**1,40/2,80** 185	**1,10/2,20** 240	**0,90/1,80** 290	**0,70/1,40** 375	**0,55/1,10** 475	**0,45/0,90** 580	**0,35/0,70** 745	275	300	0,9/1,3	20
825/405 Z	**0,18/0,37**	**0,35/0,70** 500	**0,27/0,54** 650	**0,22/0,44** 800	**0,17/0,34** 1035				27	30	1,0/0,9	20
825/405 PL2		**0,13/0,26** 131	**0,11/0,22** 154	**0,09/0,18** 189					5	0		
825/405 PL3		**0,025/0,050** 0	**0,020/0,040** 5	**0,017/0,034** 0	**0,013/0,026** **3800**				32	35		
		380	**380**	**380**					5	0		
		0	0	0					37	40		
									5	0		

Available standard facewidth's: 275 - 300 - 325 - 350 - 375 - 400 - 450 - 500 - 550 - 600 - 650 - 700 - 750 - 800 - 850 - 900 - 950 - 1000 mm When an electro-mechanical brake is fitted, the minimum facewidth is increased by 75 mm
The total weight of a Drummotor grows approx. 1,5 kg per 100 mm
Maximum beltpull: 3800 N (Imax on request or on data plate)
Available torque: (Beltpull N x drum diameter m) / 2 Nm

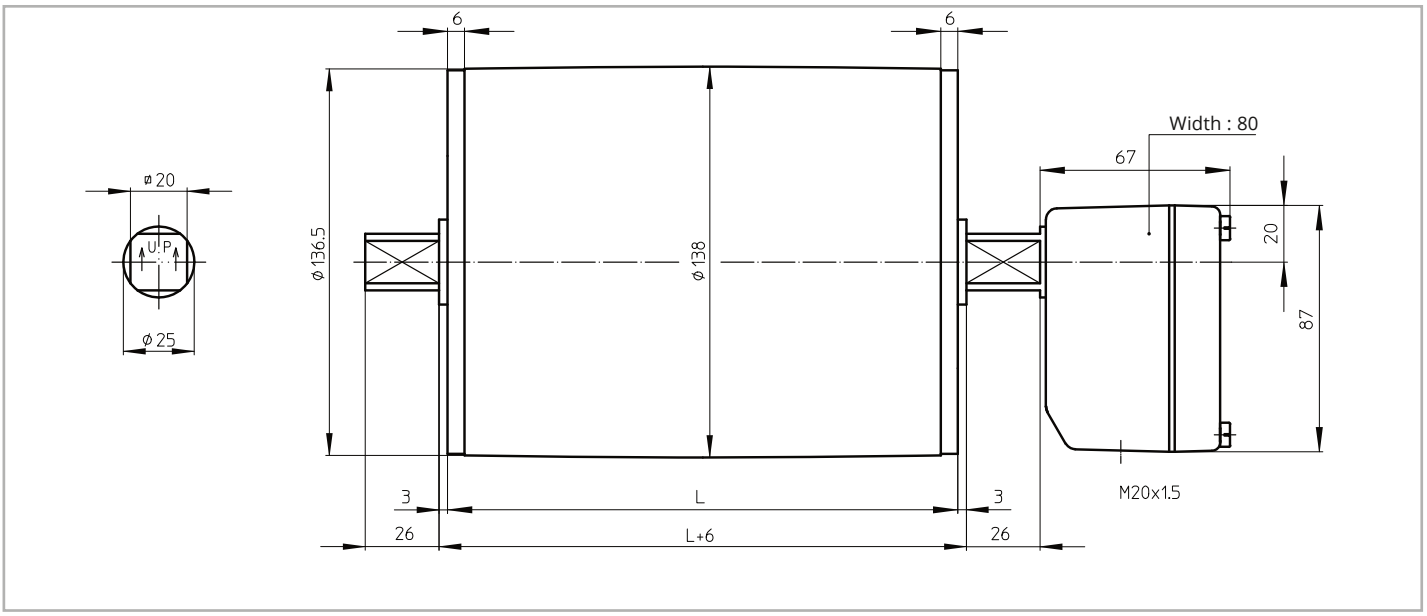
TM 138A25

TM 138A25, mild steel Drummotor with cast iron junctionbox



TM 138B25

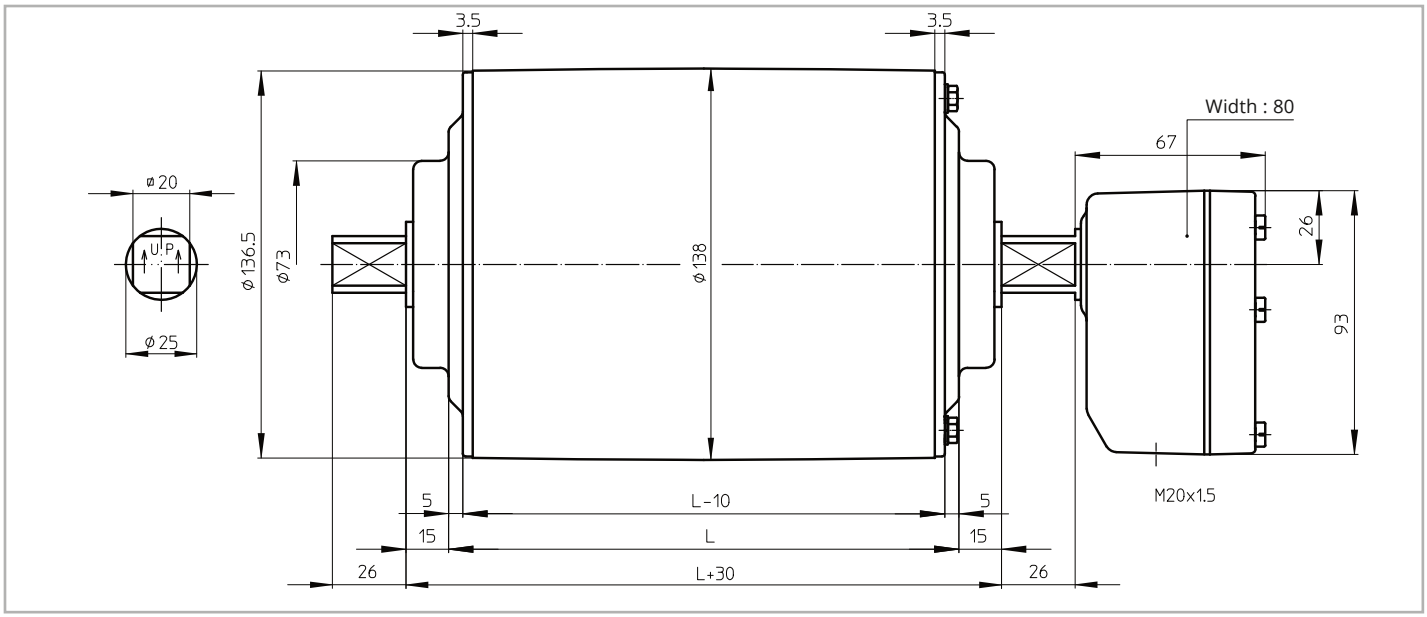
TM 138B25, mild steel Drummotor with cast iron junctionbox



Dimensions Drummotors stainless steel

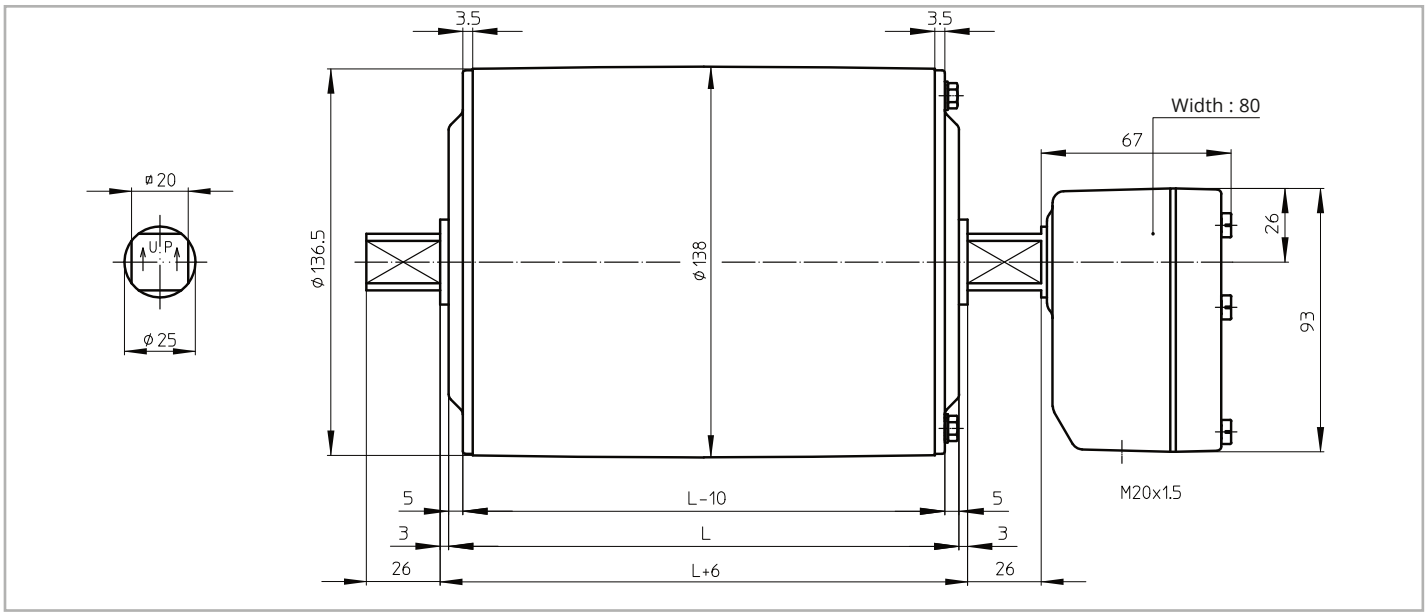
TM 138A25 CR

TM 138A25 CR, stainless steel Drummotor with polyamide junctionbox and CR sealing



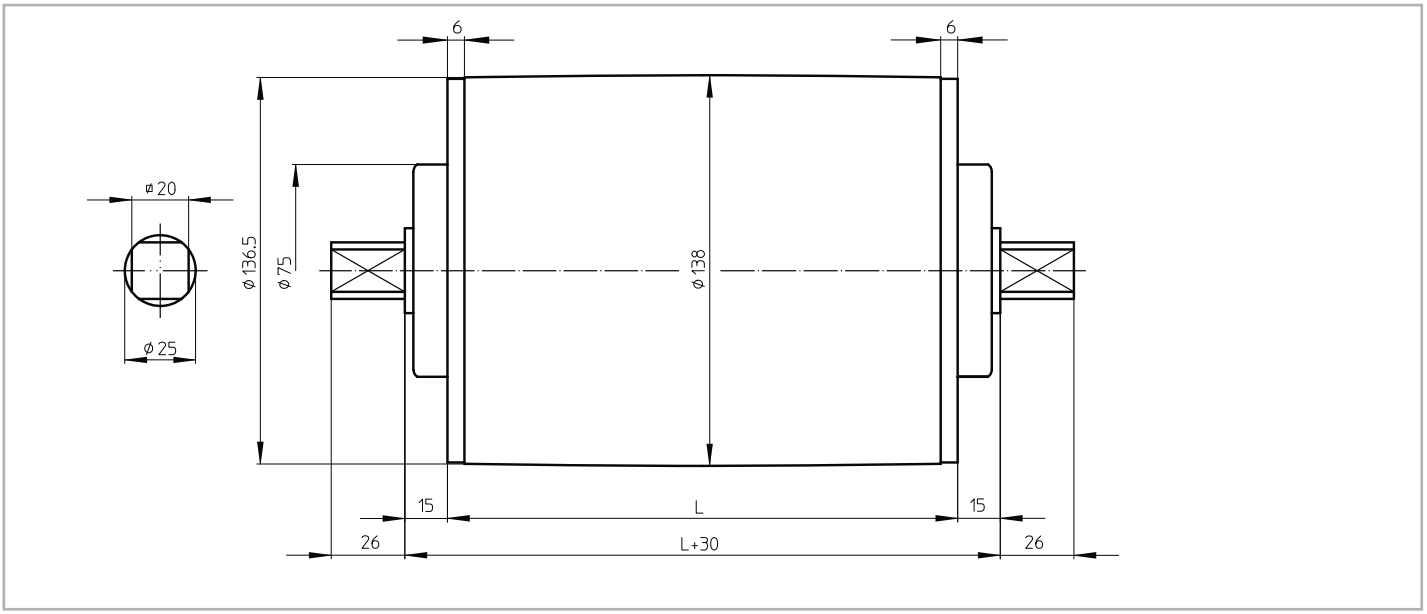
TM 138B25 CR

TM 138B25 CR, stainless steel Drummotor with polyamide junctionbox and CR sealing



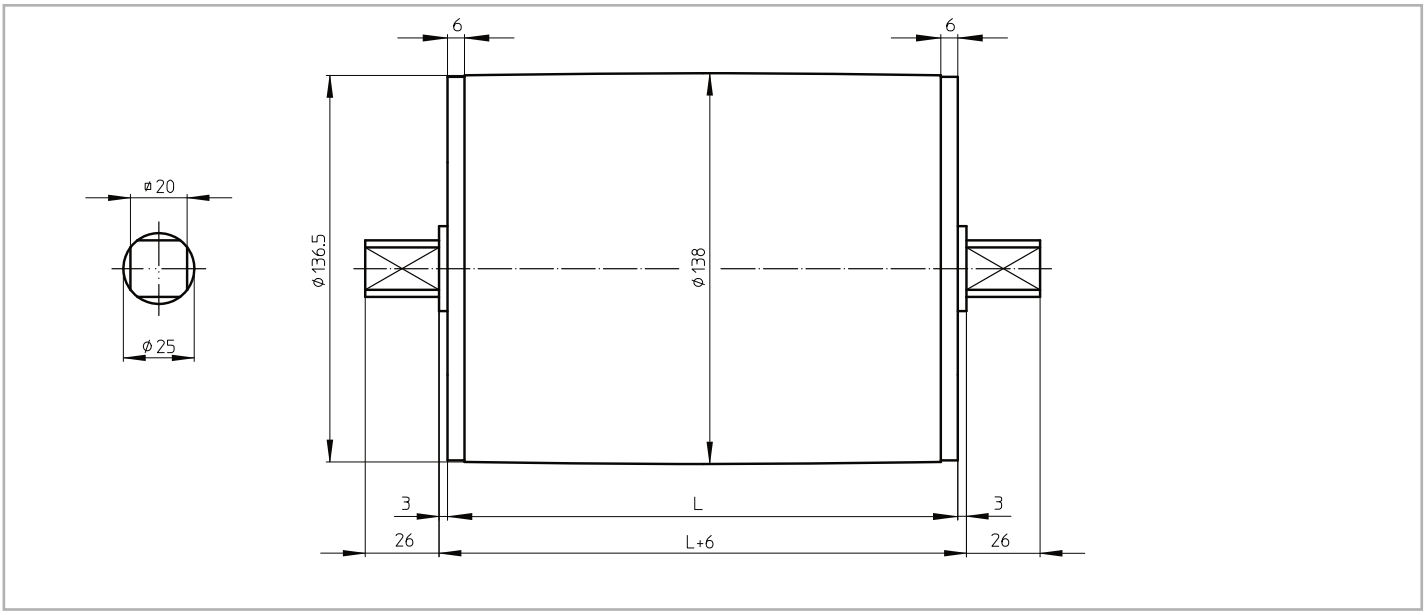
KT 138A25

KT 138A25, mild steel Taildrum



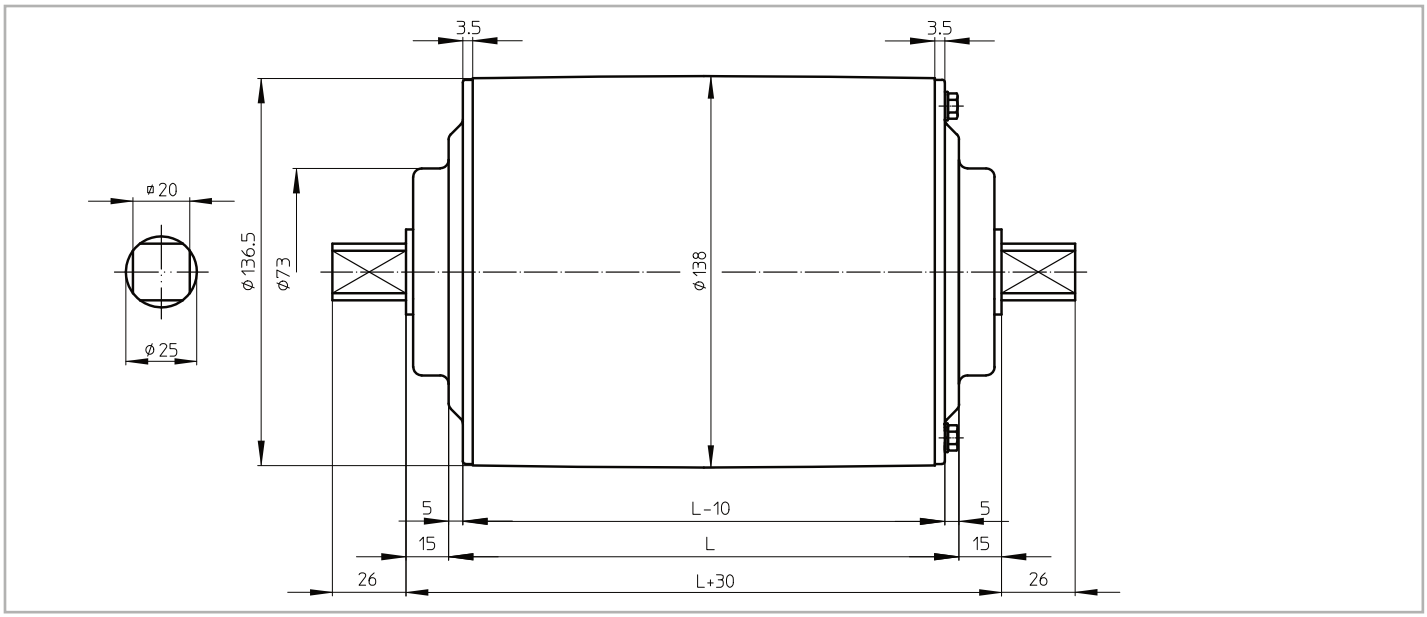
KT 138B25

KT 138B25, mild steel Taildrum



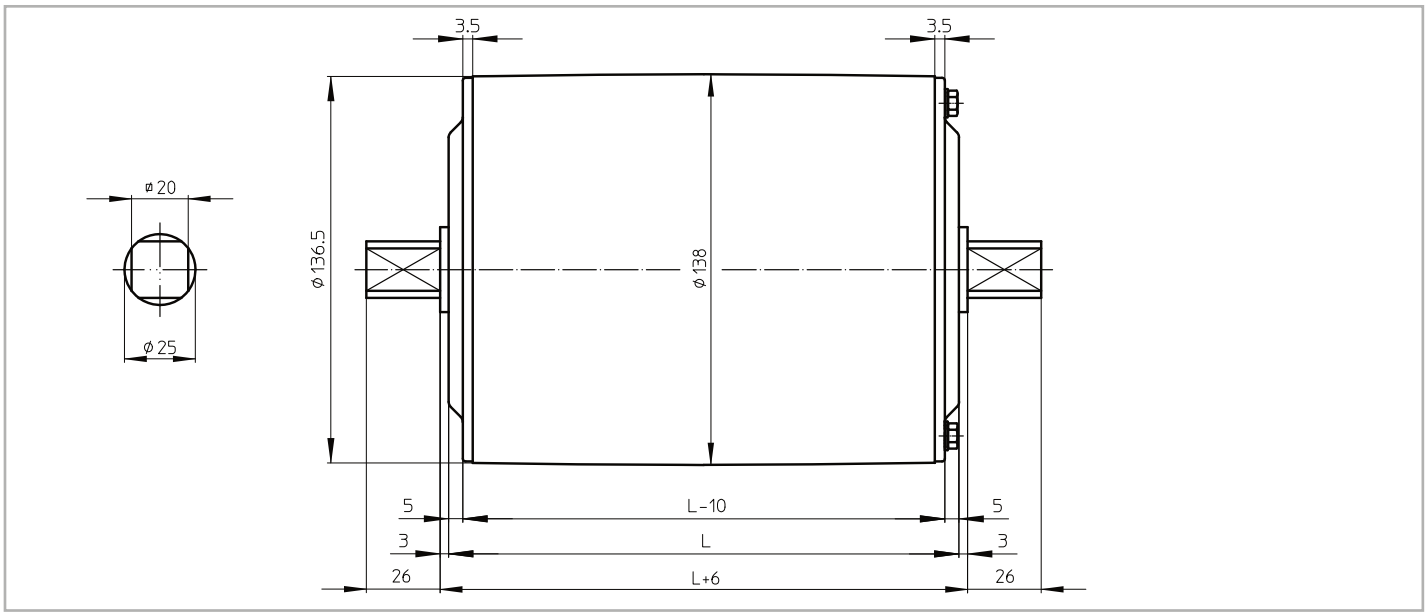
KT 138A25 CR

KT 138A25 CR, stainless steel Taildrum with CR sealing



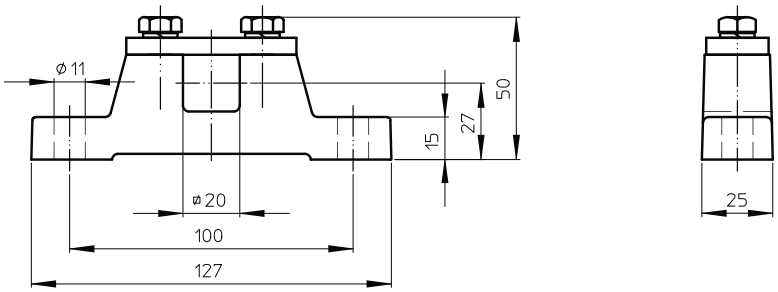
KT 138B25 CR

KT 138B25 CR, stainless steel Taildrum with CR sealing



AB 25

AB 25, cast iron or stainless steel bracket Weight: 1,2 kg per pair



Cable exit

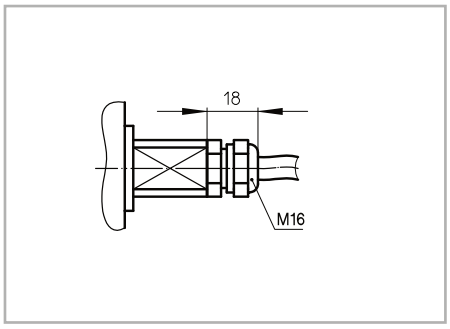
Standard design of a TM 138-25 is with a cast iron junctionbox. For stainless steel design, this can be either a polyamide or stainless steel junctionbox.

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.

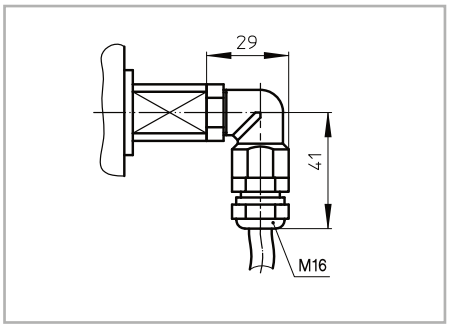
Option 1

Straight cable exit with cable gland



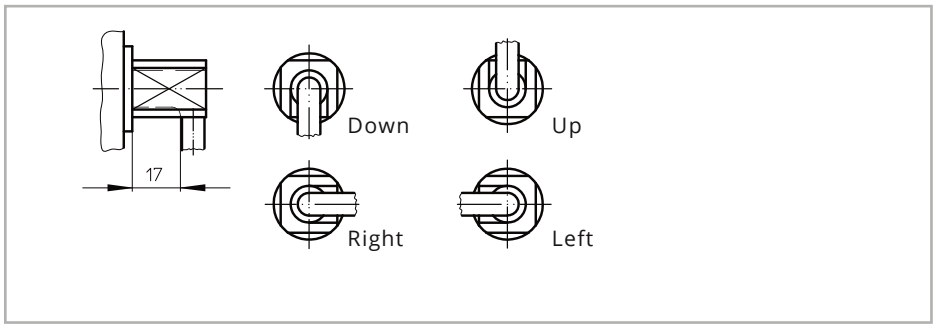
Option 3

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

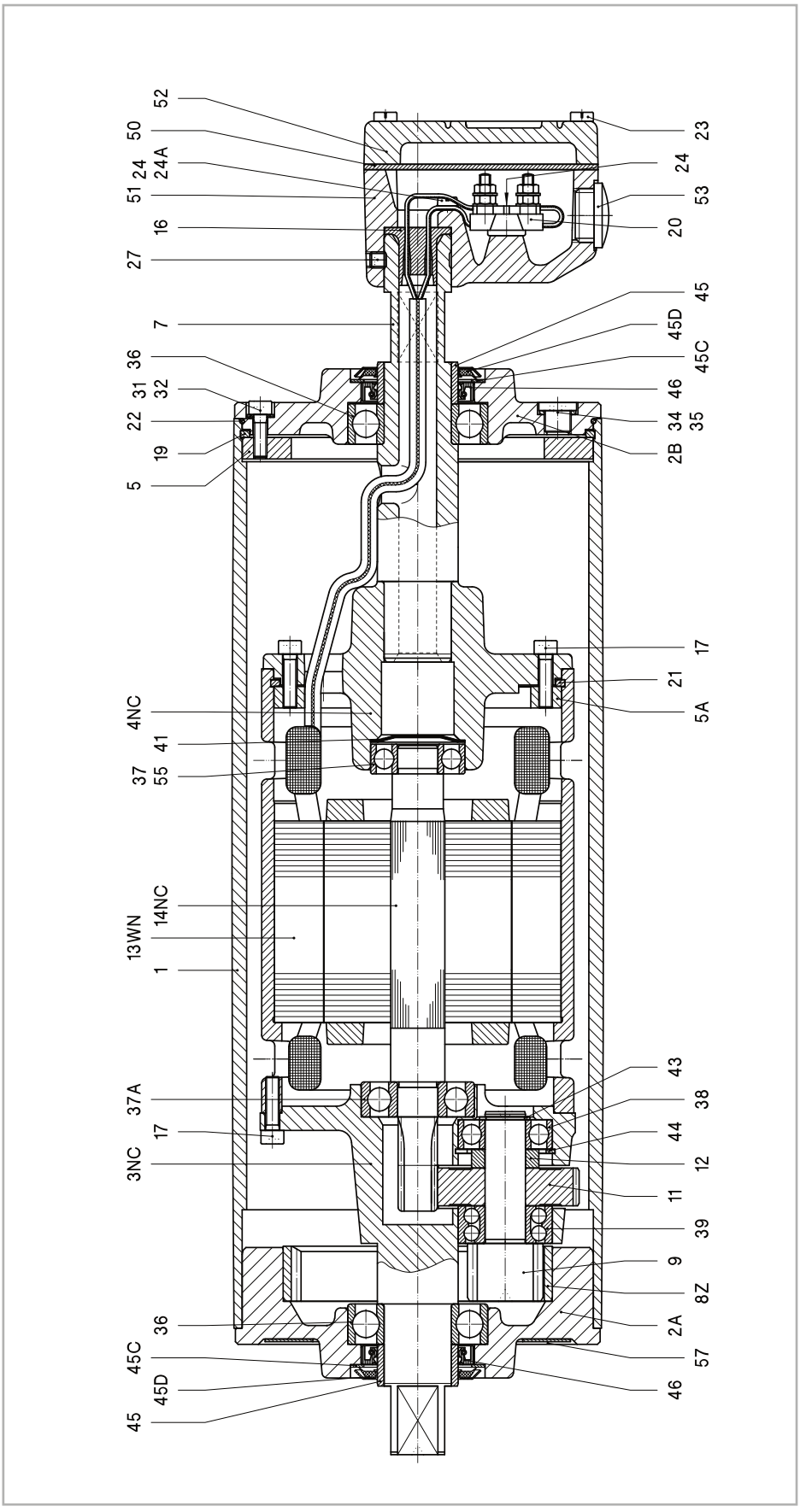


Option 4

Open cable exit (minimum facewidth increases with 25 mm)



TM 138A25 Z

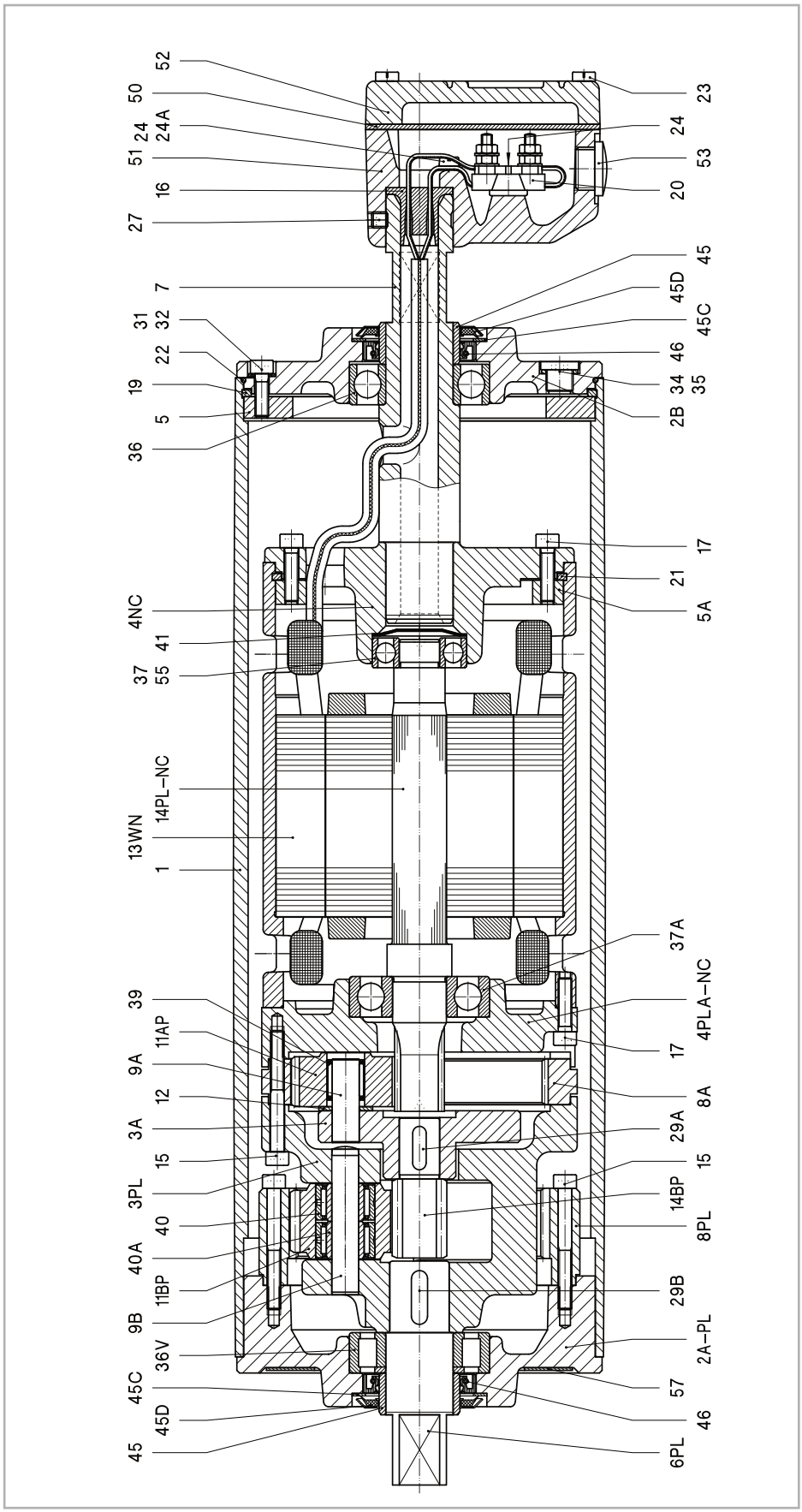


Remark: Drummotor also available in B-design (TM138B25 Z)

Legenda

1 Shell
2A Endflange
2B Endflange
3NC Gearhousing
4NC Motorflange
5 Mountingring 5A
Mountingring 7
Hollow shaft
8Z Internal gear
9 Pinion
11 Gear
12 Distance ring
13WN Stator
14NC Rotor
16 Cable passage 17 Int. hex screw
19 Springring
20 Terminalboard
21 Springring
22 O-ring
23 Cyl. head screw37A Ballbearing50 24 Cyl. head screw38 Ballbearing51
24A Toothed lock washer39 Double-row ballbearing52 27 Setscrew41
Locking disc53 31 Int. hex screw43 Circlip55 32 Washer44 Circlip
34 Fillerplug45 Bearing race57 35 Washer45C Shim plated
36 Ballbearing45D Gammaring
37 Ballbearing46 Oilseal
Seal
Junctionbox
Junctionbox cover
Stopping plug
Ballbearing incl. backstop
Dataplate

TM 138A25 PL2

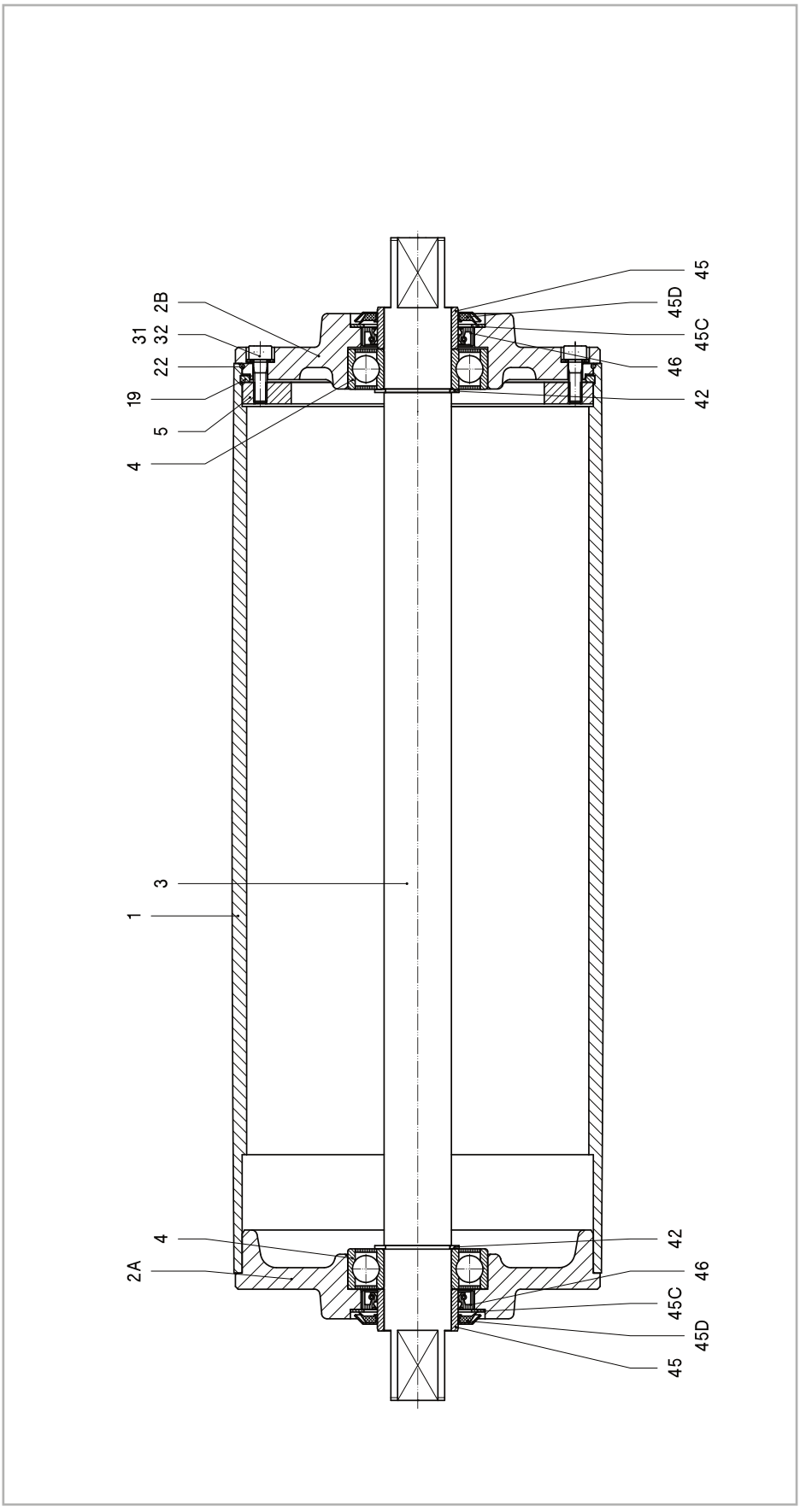


Remark: Drummotor also available in B-design (TM138B25 PL2)

Legenda

1 Shell
2A-PL Endflange
2B Endflange
3A Planetary housing 3PL
Planetary carrier
4NC Motorflange
4PLA-NC Motorflange
5 Mountingring
5A Mountingring
6PL Shaftend
7 Hollow shaft
8A Internal gear
8PL Internal gear
9A Cylindrical pin
9B Cylindrical pin
11AP Planetary gear
11BP Planetary gear
12 Shim
13WN Stator
14PL-NC Rotor
14BP Sunwheel
15 Int. hex screw
16 Cable passage 17 Int. hex screw
19 Springring34 Fillerplug
20 Terminalboard35 Washer
21 Springring36 Ballbearing
22 O-ring36V Cyl. roller bearing 23 Cyl. head screw37 Ballbearing
24 Cyl. head screw37A Ballbearing
24A Toothed lock washer39 Neadlebearing
27 Setscrew40 Neadlebearing
29A Key40A Innerring
29B Key41 Locking disc
31 Int. hex screw45 Bearing race
32 Washer45C Shim plated
45D Gammaring
46 Oilseal
50 Seal
51 Junctionbox
52 Junctionbox cover 53 Stopping plug
55 Ballbearing incl. backstop
57 Dataplate

KT 138A25



Remark: Taildrum also available in B-design (KT138B25)

Legenda

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

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

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

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	Stainless steel
Endflanges	steel	Stainless steel
Shell	Cast iron	Stainless steel
Junctionbox	Mild steel	Stainless steel or polyamide
Cable		Shielded or non-shielded
Sealing mild steel	Cast iron 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
Two speed (Dahlander)		•
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 drum motor		•
Encoder or sensor bearing in tail drum		•
Certificates		
CE	•	
UL		•
CSA		•
ATEX zone 22, dust		•
UW Under water application (IP68)		•

Our products, an overview

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

Drummotor type	TM 215B50	TM 273.40	TM 315.40	TM 315.50	TM 400.50	TM 400.60	TM 500.60	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	0.16-4.95	0.18-5.20	0.16-4.40	0.20-4.80	0.20-4.60	0.25-4.70	0.80-3.20

Drummotor 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

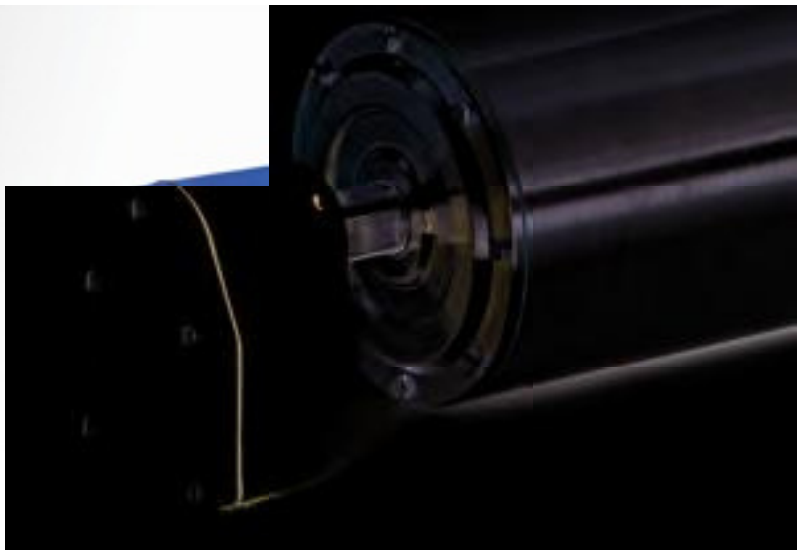


Design benefi ts

- Robust, industrial design
- Fully enclosed
- Oil fi lled
- 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

Contact us

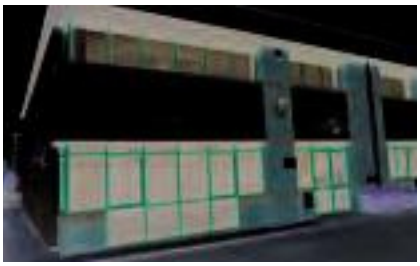
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