Product information

Drummotors

TM 215-30



Van der Graaf

Power Transmission Equipment

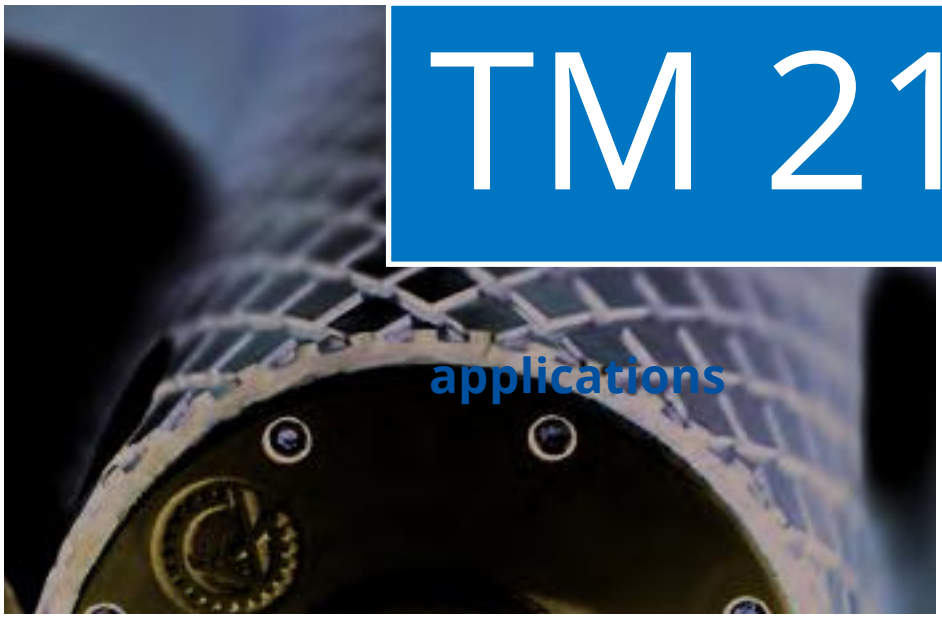
www.vandergraafpte.nl



The TM 215's



playground



TM 215-30

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 215.30	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=500
230 230 ZV	2,20	**5,30** 395 **1,90** 1100	**4,50** 460 **1,70** 1230	**3,70** 565 **1,60** 1305	**3,40** 615 **1,50** 1395	**2,80** 745 **1,40** 1495	**2,30** 905 **1,20** 1745					400	450	4,6	48
220 220 Z	1,50	**5,30** 270 **1,90** 750	**4,50** 315 **1,70** 840	**3,70** 385 **1,60** 890	**3,40** 420 **1,50** 950	**2,80** 510 **1,40** 1020	**2,30** 620 **1,20** 1190	**1,10** 1295				350	400	3,1	47
420 420 Z 420 ZV	1,50	**3,30** 430 **1,10** 1295 **0,90** 1585	**2,80** 510 **1,00** 1425 **0,85** 1675	**2,40** 595 **0,80** 1780	**2,10** 680 **0,70** 2035	**1,70** 840	**1,50** 950					400	450	3,7	48
415 415 Z 415 ZV	1,10	**2,70** 385 **0,90** 1160 **0,65** 1610	**2,30** 455 **0,85** 1230 **0,60** 1725	**1,90** 550 **0,80** 1305 **0,55** 1900	**1,70** 615 **0,75** 139 5	**1,40** 745	**1,20** 870					350	400	2,8	47
410 410 Z 410 ZV 410 PL2	0,75	**2,70** 265 **0,85** 840 **0,45** 1585 **0,36** 1915	**2,30** 31 **0,80** 0 89 **0,30** 2300	**1,90** 37 **0,75** 5 95 0	**1,7** 420 **0** 109 **0,6** 5 **5**	**1,4** 510 **0** 119 **0,6** 0 **0**	**1,2** 595 **0** 129 **0,5** 5 **5**	**1,00** 715	**0,90** 790			35 0 35 0 35 0	40 0 40 0 40 0	1,9	46
475 475 Z 475 PL2	0,55	**2,70** 195 **0,85** 615 **0,24** 2110	**2,30** 22 **0,65** 5 80	**1,9** 27 **0** 5 **0,6** 87	**1,7** 30 **0** 5 **0,5** 95	**1,4** 375 **0** 116 **0,4** 0	**1,2** 435 **0** 130 **0,4** 5	**1,00** 525	**0,90** 580	**0,70** 745		35 0 0 40 35 0	40 0 0 42 40 5	1,6	45
675 675 Z 675 ZV	0,55	**1,25** 420 **0,50** 1045 **0,30** 1740	**0,7** 695 **5** 137 **0,3** 5	**0** 0 **0,36** 1450	**5** 0	**5**	**0**					0 40 350 0	0 42 400 5	1,6	47
605 605 Z 605 PL2	0,37	**1,80** 195 **0,45** 780 **0,24** 1420	**8** **1,50** 235 **0,40** 880 **0,20** 1700	**1,25** 280 **0,38** 925 **0,16** 2130	**1,2** 29 **0** 5 **0,3** 97	**0,9** 390 **0** 117 **0,3** 0	**0,7** 470 **5** 130 **0,2** 0	**0,65** 540	**0,60** 585			35 0 35 0	40 0 40 0	1,4	46
634 634 Z 834	0,25	**1,80** 130 **0,38** 625 **1,40**	**1,50** 160 **0,36** 660 **0,85**	**1,25** 190 **0,30** 790 **0,70**	**6** **1,20** 200 **0,27** 880 **0,55**	**0** **0,90** 265 **0,50**	**7** **0,75** 315	**0,65** 365	**0,60** 395	**0,45** 530	**0,40** 595	40 350 0	42 400 5	0,9	45
834 Z 834 PL2 825	0,25	170 **0,22** 1080 **0,18** 1280 **1,40**	280 **0,20** 1190 **0,16** 1440 **1,20**	340 **0,12** 1915 **0,90**	430 **0,85**	475 **0,70**	**0,55**	**0,50**				35 0 35 0	40 0 40 0	1,0	47
825 Z 818	0,18	120 **0,26** 660 **1,40**	145 **0,22** 775 **1,20**	190 **0,20** 855 **0,90**	200 **0,85**	245 **0,70**	310 **0,55**	340 **0,50**	380 **0,45**	505 **0,34**	570 **0,30**	40 350 0	42 400 5	0,9	46
818 Z	0,13	**0,26** 90 47 5	**0,22** 5 56 0	13 **0,20** 5 62 0	145	175	225	245	275	365	410	350	400	0,6	45

1218 1218 Z 1218 PL2	0,13	0,60 20 0 5 0,17 2 7 5	0,1 685 8 825 0,1 133 5	0,1 950 3 149 0,0									35 0 35 0 40	40 0 40 0 42	0,9	47
1213 1213 Z	0,10	0,80 0,1 99 5 2 5 0,14 56 7 5	0,7 0,9 0 9 5 0,1 63 5	0,6 8 6 0 0 0,1 73 3	0,55 175	0,45 210	0,36 265	0,32 300	0,29 330	0,22 430	0,18 530		350 0	400 5	0,8	46

Available standard facewidth's: 350 - 400 - 425 - 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 100 mm
The total weight of a Drummotor grows approx. 4,5 kg per 100 mm
Available torque: (Beltpull N x drum diameter m) / 2 Nm

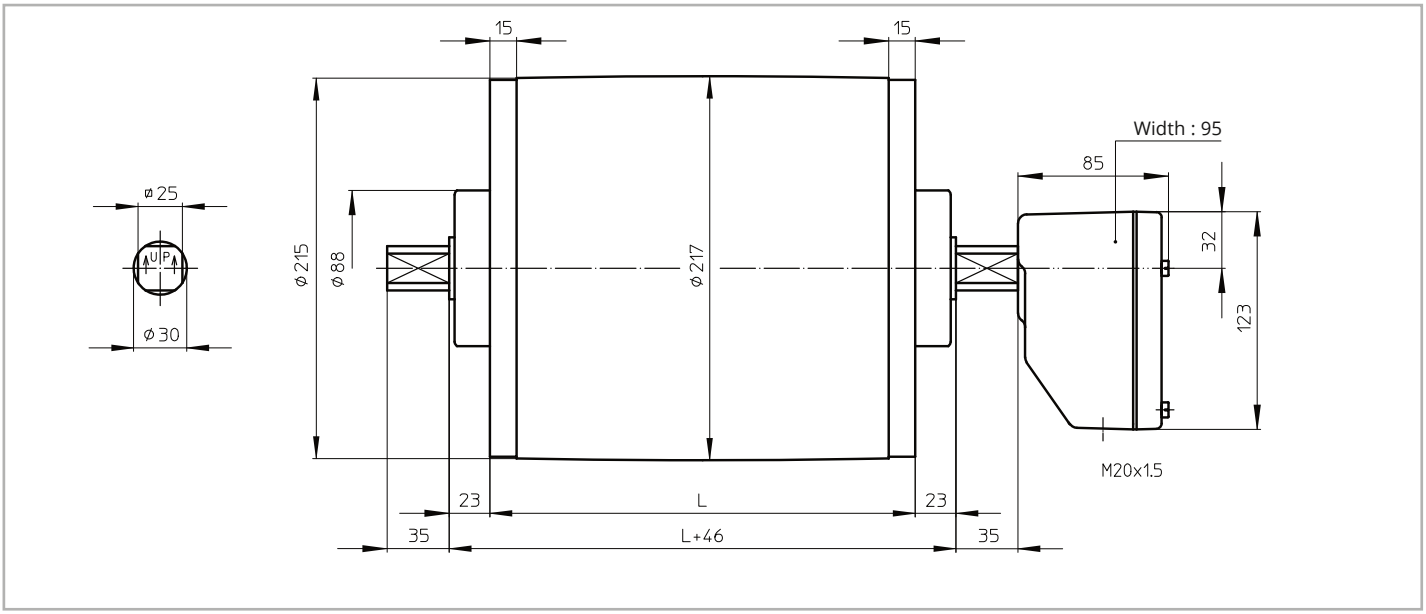
Dahlander motors

TYPE TM 215.30	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=500
410/220 410/220 Z 410/220 ZV	0,75/1,50	2,70/5,40 265 0,85/1,70 840 0,45/0,90 1585	2,30/4,60 31 0,80/1,60 89	1,90/3,80 37 0,75/1,50 95	1,70/3,40 420 0,65/1,30 5	1,40/2,80 510 0,60/1,20 0	1,20/2,40 595 0,55/1,05	1,00/2,00 715 0,50/1,05	0,90/1,80 790	400	450	2,3/3,3	48
475/215 475/215 Z	0,55/1,10	2,70/5,40 195 0,85/1,70 615 0,40/0,80 1305	2,30/4,60 22 0,80/1,60 65	1,90/3,80 27 0,75/1,50 69	1,70/3,40 30 0,65/1,30 80	1,40/2,80 37 0,60/1,20 87	1,20/2,40 43 0,55/1,10 95	1,00/2,00 525 0,50/1,05	0,90/1,80 580 0,45/0,90	350	400	1,6/2,5	47
405/210 405/210 ZV	0,37/0,75	2,70/5,40 130 0,85/1,70 420 0,40/0,80 890	2,30/4,60 15 0,80/1,60 44	1,90/3,80 19 0,75/1,50 47	1,70/3,40 21 0,65/1,30 55	1,40/2,80 25 0,60/1,20 59	1,20/2,40 29 0,55/1,10 65	1,00/2,00 35 0,50/1,05 71	0,90/1,80 39 0,45/0,90 79	350	400	1,0/1,8	45
837/475 837/475 Z 837/475 PL2	0,27/0,55	2,70/5,40 0,85/1,70 0,40/0,80	1,15/2,30 225 0,30/0,60 870 0,23/0,45 1160 0,15/0,30 1685	0,95/1,90 275 0.20/0.40 1305 0,12/0,24 2110	0,85/1,70 305	0,70/1,40 375	0,60/1,20 435	0,50/1,00 525	0,45/0,90 580	350 35 0	400 40 0	1,5/1,3	47
825/405 825/405 Z 825/405 PL2	0,18/0,37	1,35/2,70 50 0,35/0,70 195 0,25/0,50 745 0,18/0,35 1045 1445	1,15/2,30 155 0,30/0,60 585 0,23/0,45 780 0,15/0,30 1130	0,95/1,90 185 0,20/0,40 880 0,12/0,24 1420	0,85/1,70 205	0,70/1,40 250	0,60/1,20 295	0,50/1,00 350	0,45/0,90 390	40 350 0 35 0 40 0	42 400 5 40 0 42 5	1,2/1,0	46

Available standard facewidth's: 350 - 400 - 425 - 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 100 mm
The total weight of a Drummotor grows approx. 4,5 kg per 100 mm
Available torque: (Beltpull N x drum diameter m) / 2 Nm

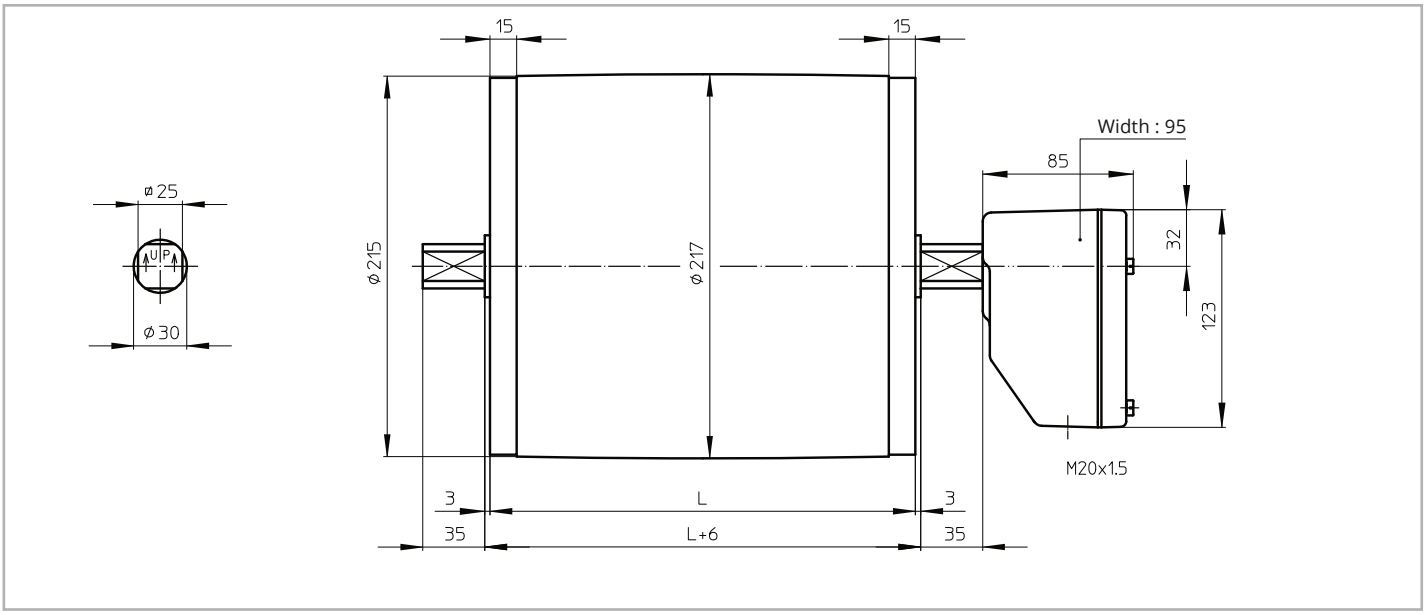
TM 215A30

TM 215A30, mild steel Drummotor with cast iron junctionbox



TM 215B30

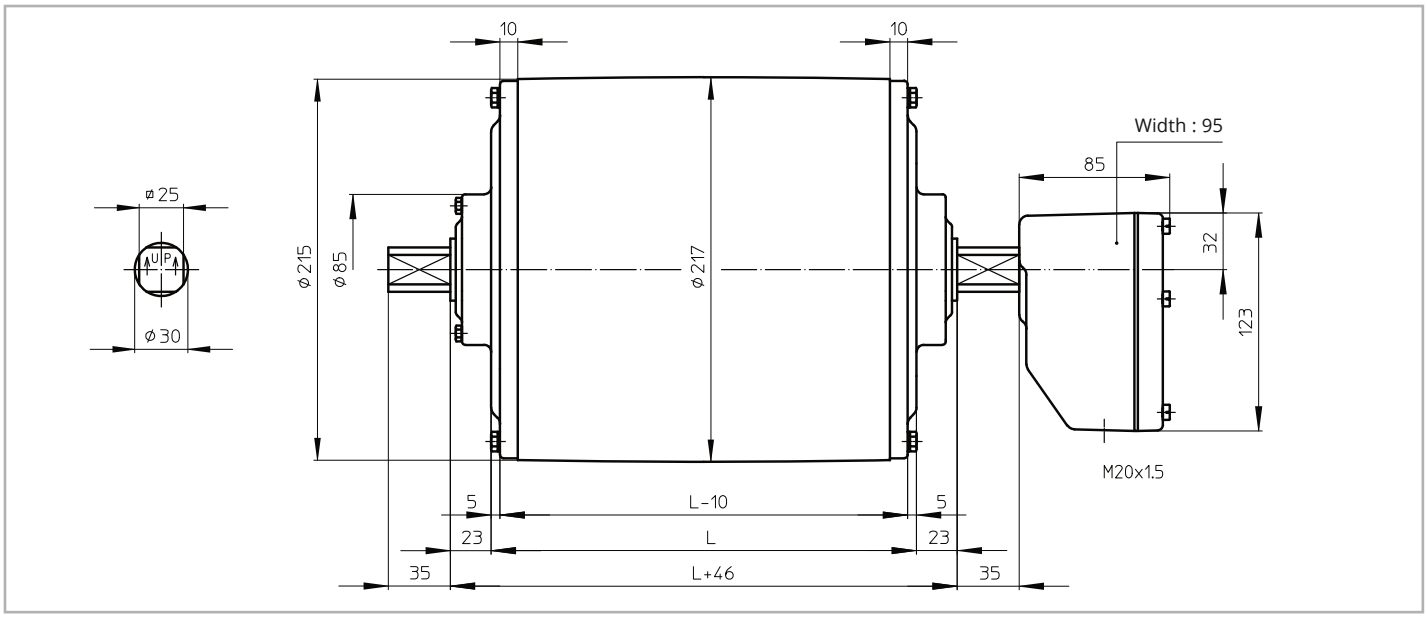
TM 215B30, mild steel Drummotor with cast iron junctionbox



Dimensions Drummotors stainless steel

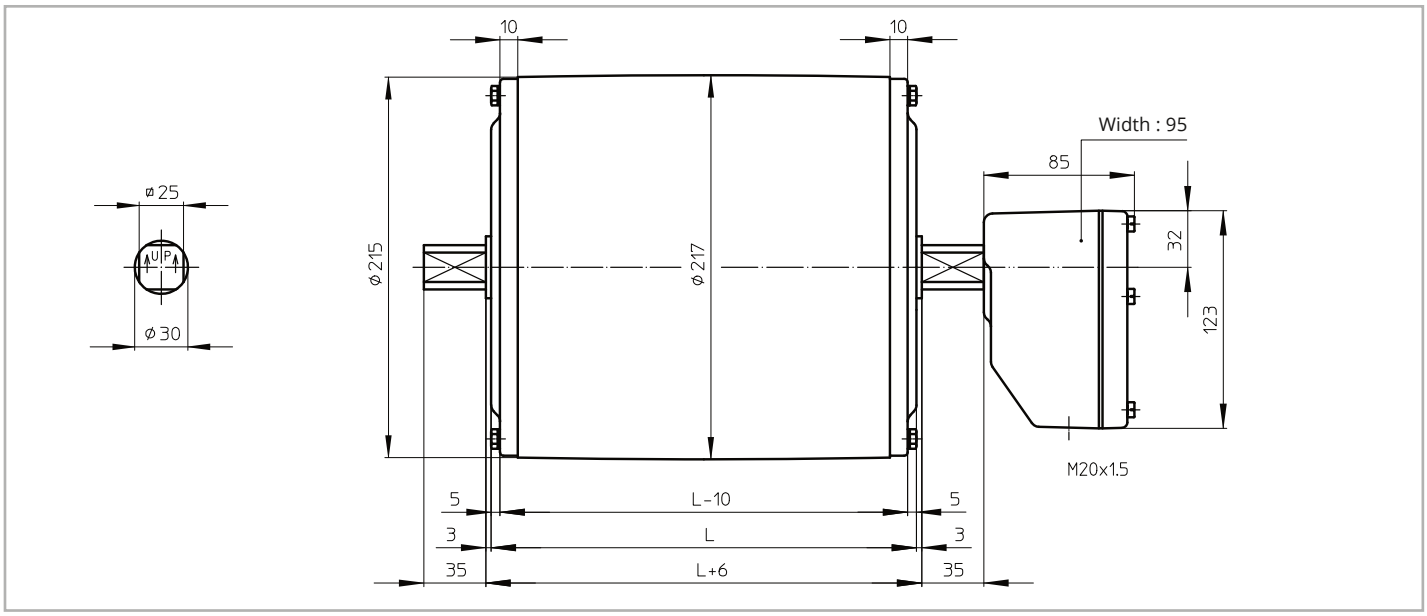
TM 215A30 CR

TM 215A30 CR, stainless steel Drummotor with polyamide junctionbox and CR sealing



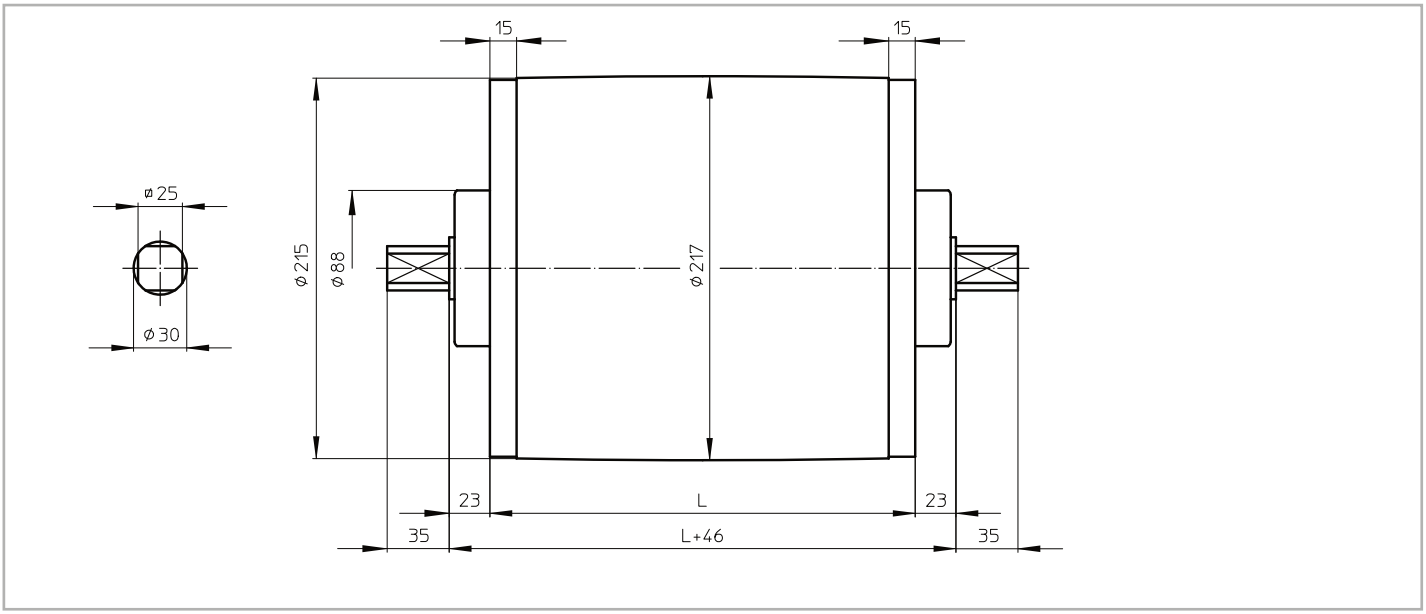
TM 215B30 CR

TM 215B30 CR, stainless steel Drummotor with polyamide junctionbox and CR sealing



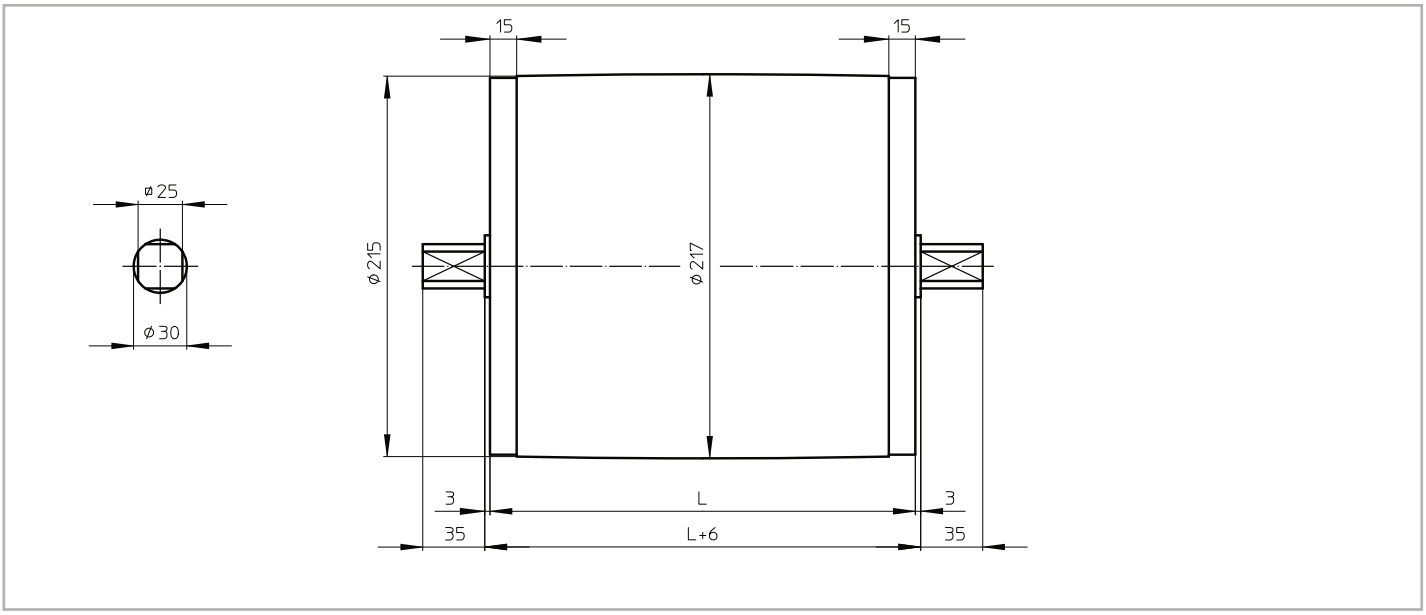
KT 215A30

KT 215A30, mild steel Taildrum



KT 215B30

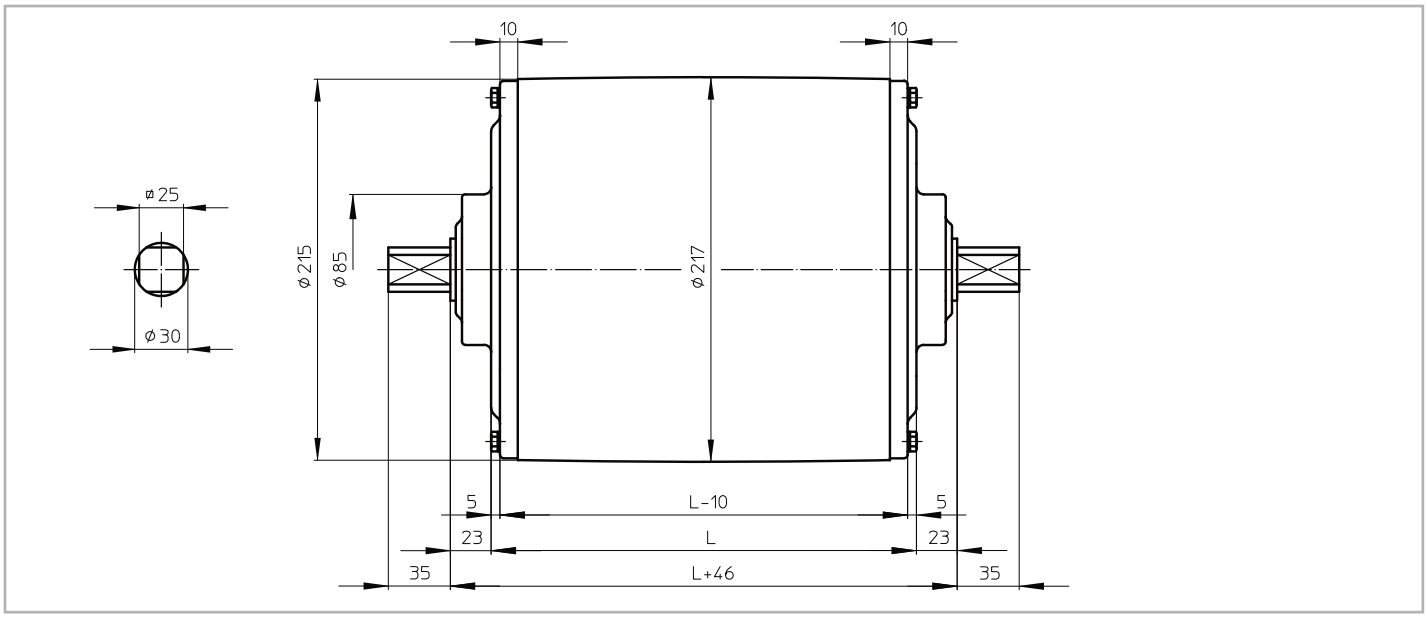
KT 215B30, mild steel Taildrum



Dimensions Taildrums stainless steel

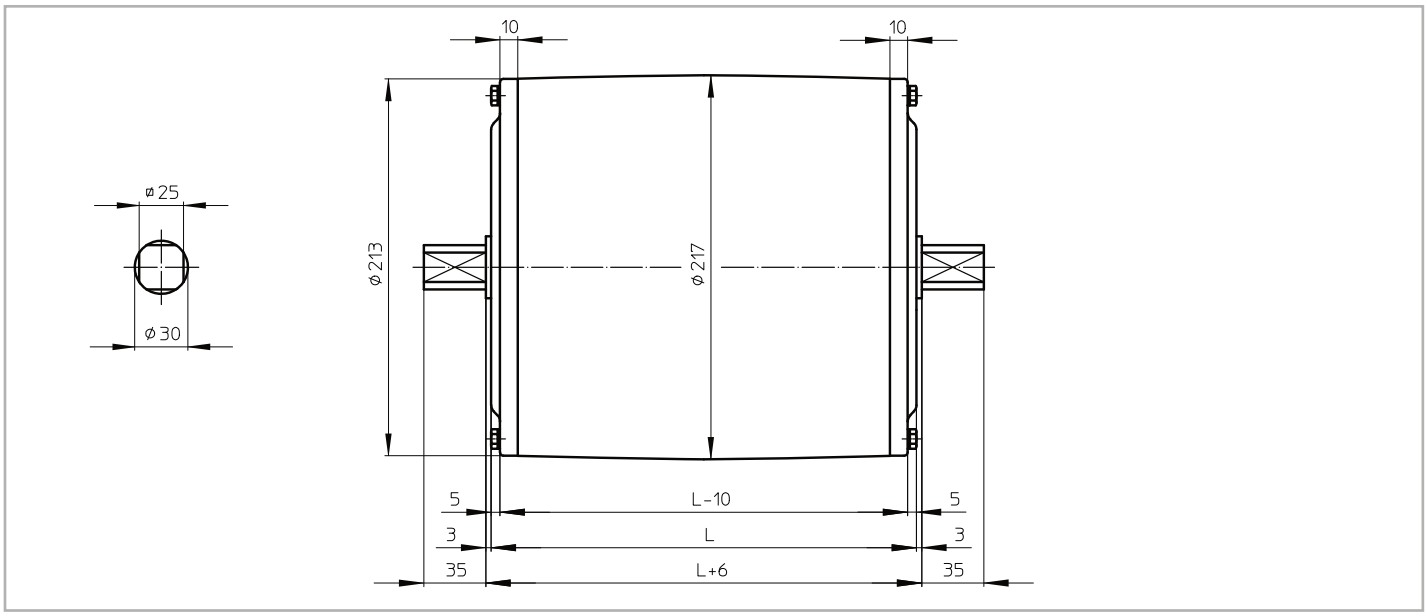
KT 215A30 CR

KT 215A30 CR, stainless steel Taildrum with CR sealing



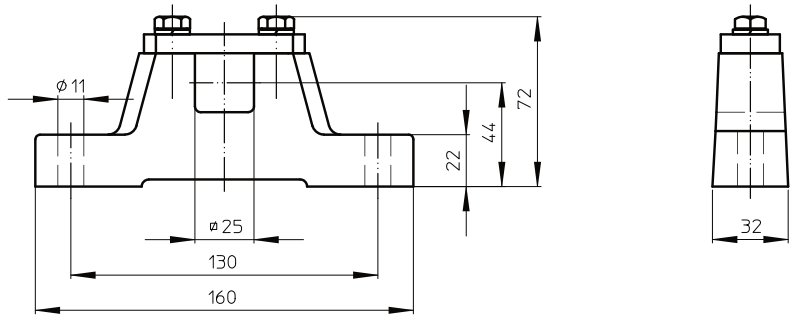
KT 215B30 CR

KT 215B30 CR, stainless steel Taildrum with CR sealing



AB 30

AB 30, cast iron or stainless steel bracket
Weight: 2,4 kg per pair

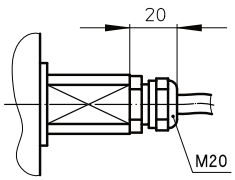


Standard design of a TM 215-30 is with a cast iron junctionbox. For stainless steel design, this can be either a polyamide or stainless steel junctionbox.

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.

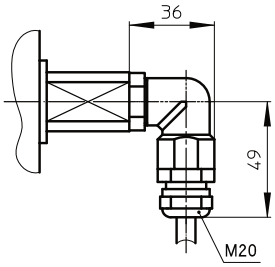
Option 1

Straight cable exit with cable gland



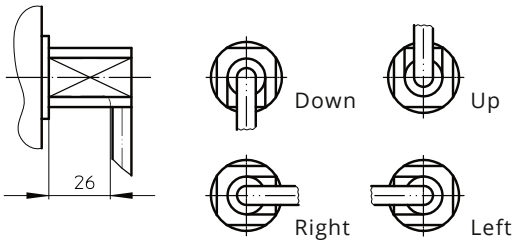
Option 3

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



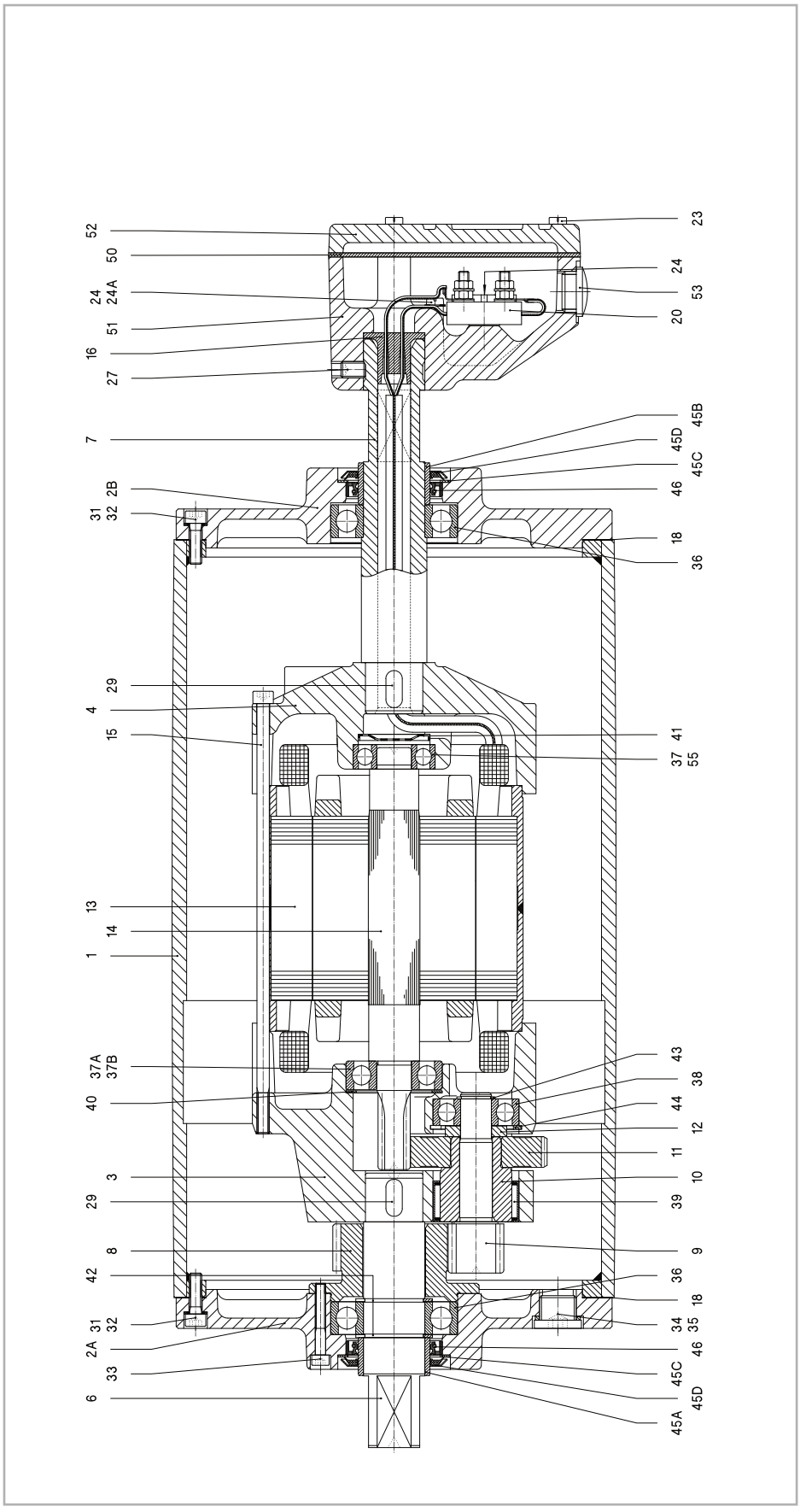
Option 4

Open cable exit (minimum facewidth increases with 25 mm)



Cross sectional / parts description

TM 215A30

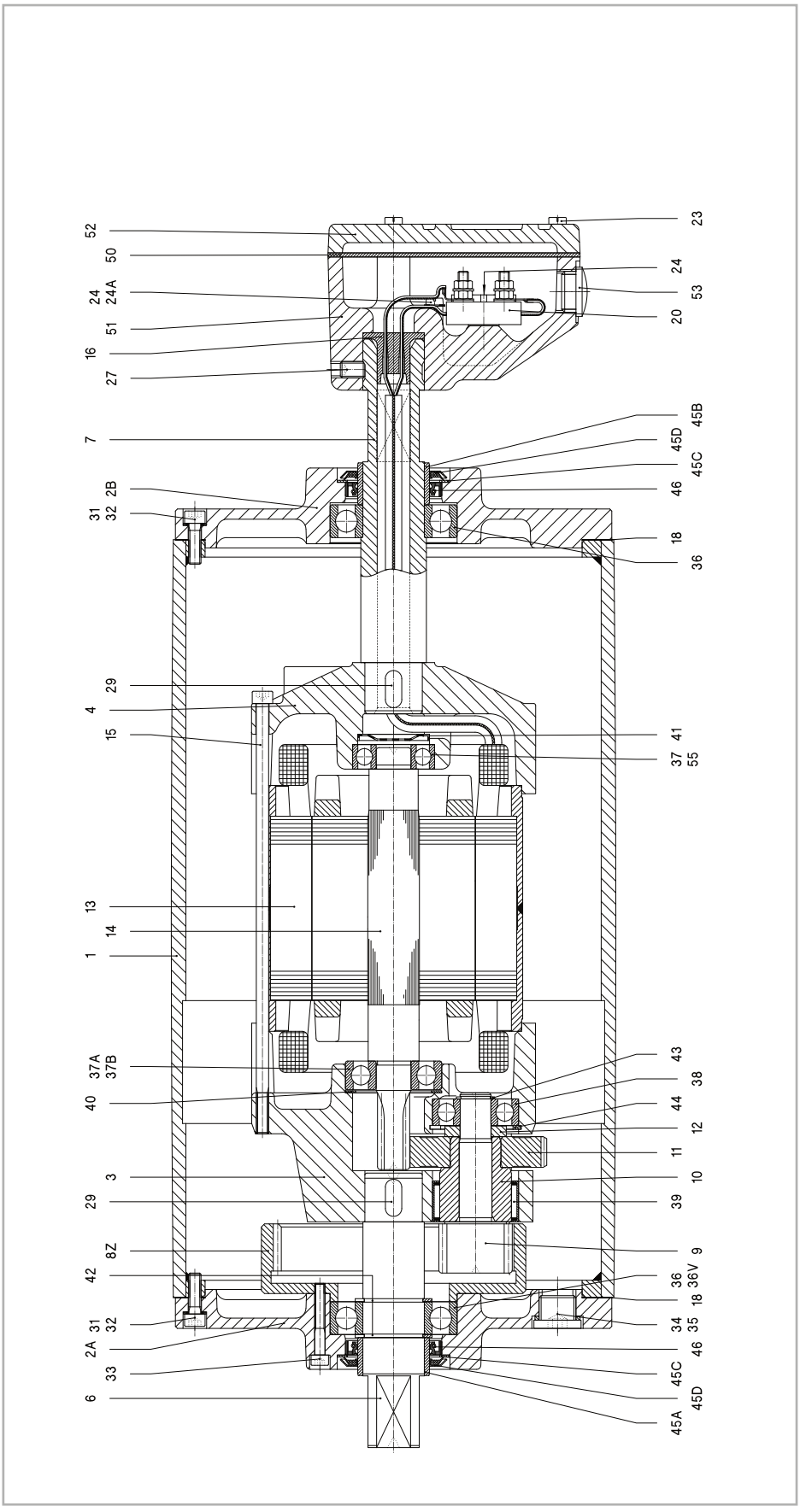


Remark: Drummotor also available in B-design (TM215B30)

Legenda

1 Shell
2A Endflange
2B Endflange
3 Gearhousing
4 Motorflange
6 Shaftend
7 Hollow shaft
8 External gear
9/10 Pinion with bush 11
Gear
12 Distance ring27 Setscrew
13 Stator29 Key
14 Rotor31 Int. hex screw 15 Int. hex screw32 Washer
16 Cable passage33 Int. hex screw 18 Gasket34 Fillerplug
20 Terminalboard35 Washer
23 Cyl. head screw36 Ballbearing
24 Cyl. head screw37 Ballbearing
24A Toothed lock washer37A/B Ballbearing
38 Ballbearing
39 Needlebearing 40
Shim
41 Disc
42 Circlip
43 Circlip
44 Circlip
45A Bearing race
45B Bearing race
45C Shim plated
45D Gammaring
46 Oilseal
50 Seal
51 Junctionbox
52 Junctionbox cover 53
Stopping plug
55 Ballbearing incl. backstop
57 Dataplate

TM 215A30 Z

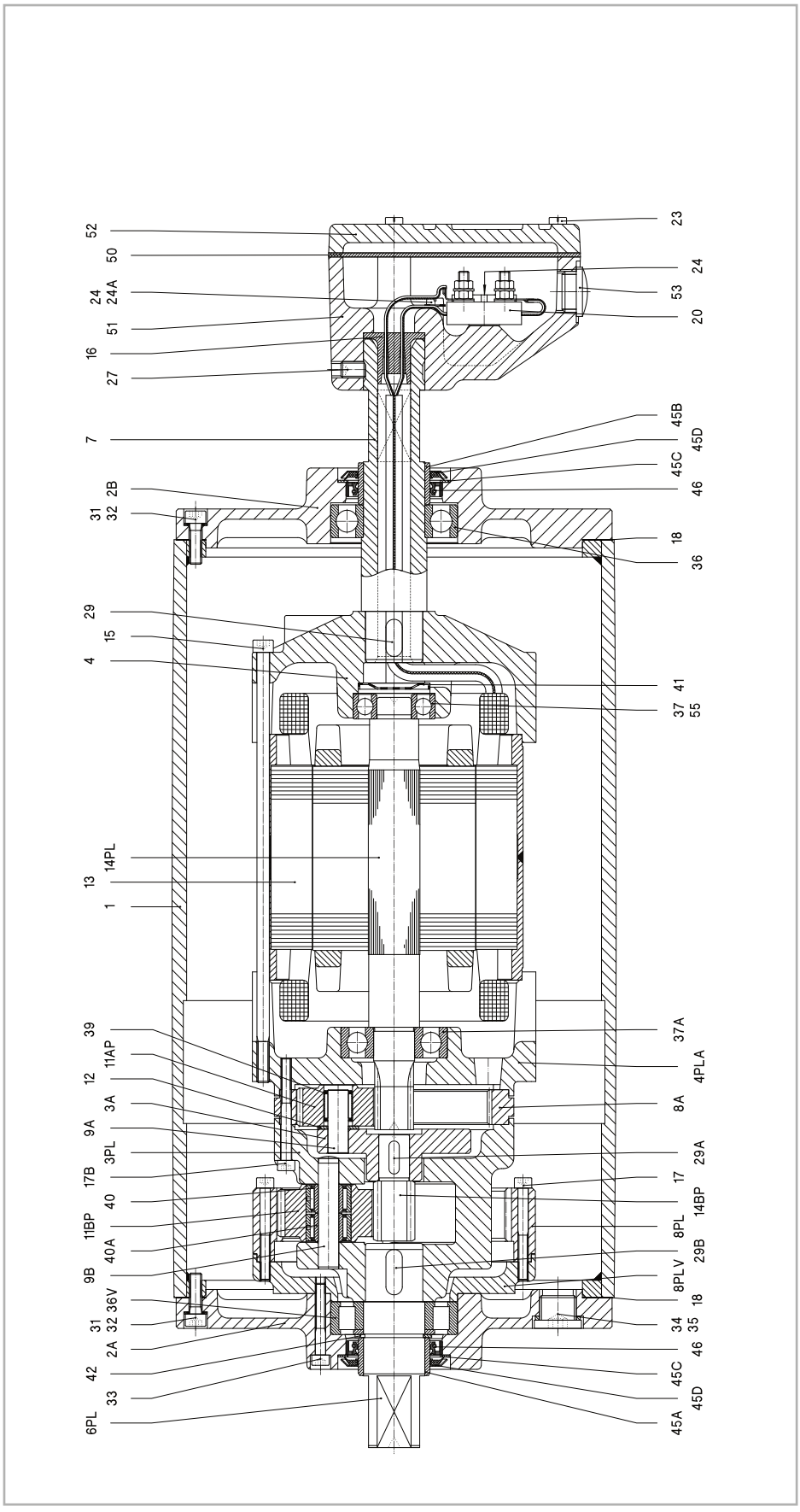


Remark: Drummotor also available in B-design (TM215B30 Z)

Legenda

1 Shell
2A Endflange
2B Endflange
3 Gearhousing
4 Motorflange
6 Shaftend
7 Hollow shaft
8Z Internal gear
9/10 Pinion with bush 11
Gear
12 Distance ring27 Setscrew
13 Stator29 Key
14 Rotor31 Int. hex screw
15 Int. hex screw32 Washer
16 Cable passage33 Int. hex screw
18 Gasket34 Fillerplug
20 Terminalboard35 Washer
23 Cyl. head screw36 Ballbearing
24 Cyl. head screw36V Cyl. roller bearing
washer37 Ballbearing
37A/B Ballbearing
38 Ballbearing
39 Needlebearing 40
Shim
41 Disc
42 Circlip
43 Circlip
44 Circlip
45A Bearing race
45B Bearing race
45C Shim plated
45D Gammaring
46 Oilseal
50 Seal
51 Junctionbox
52 Junctionbox cover 53
Stopping plug
55 Ballbearing incl. backstop
24A Toothed lock
57 Dataplate

TM 215A30 PL2

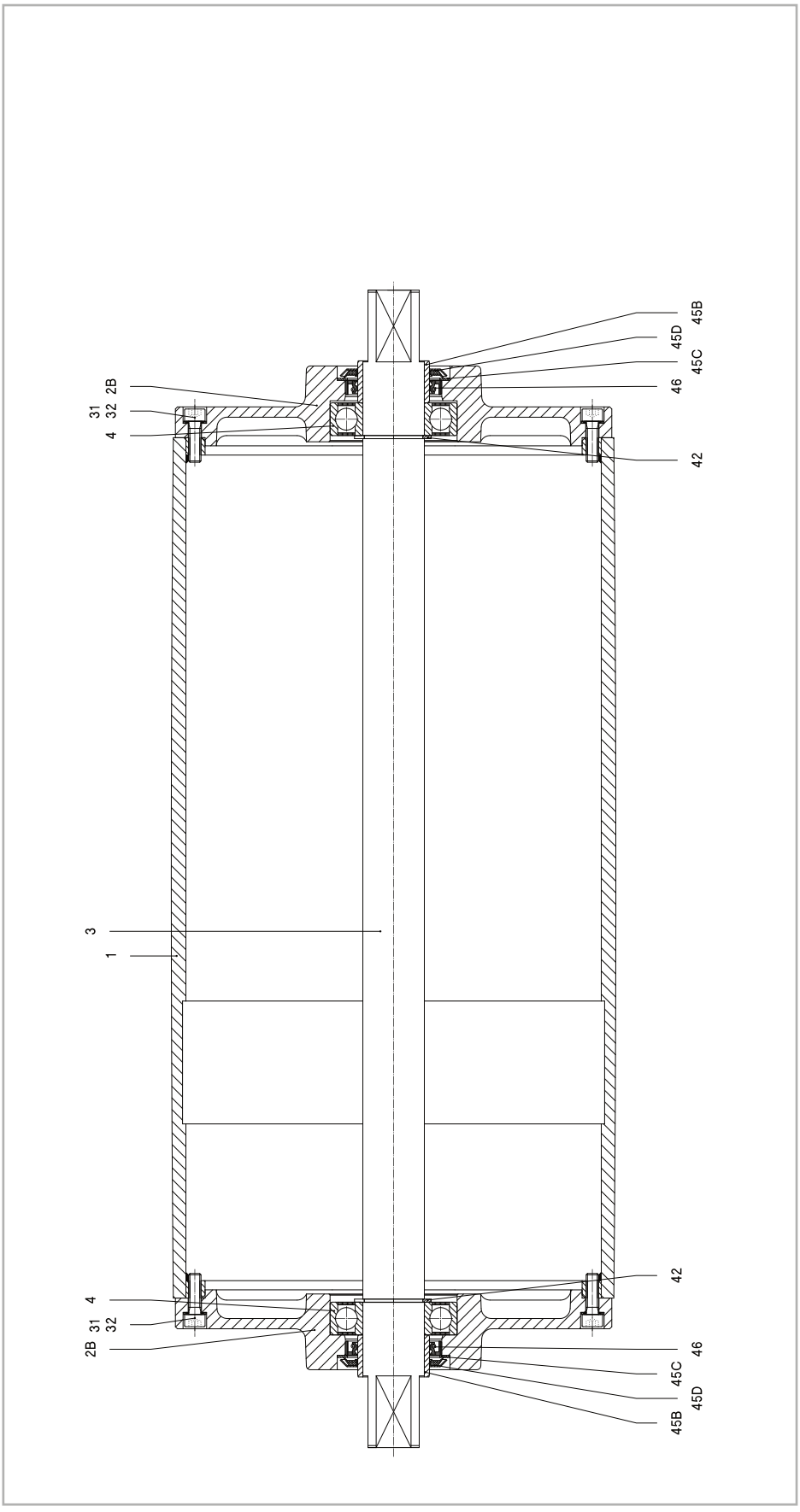


Remark: Drummotor also available in B-design (TM215B30 PL2)

Legenda

1 Shell
2A Endflange
2B Endflange
3A Planetary housing 3PL
Planetary carrier
4 Motorflange
4PLA Motorflange
6PL Shaftend
7 Hollow shaft
8A Internal gear
8PL Internal gear
8PLV Adapter ring
9A Cylindrical pin
9B Cylindrical pin
11AP Planetary gear
11BP Planetary gear
12 Shim
13 Stator
14PL Rotor
14BP Sunwheel
15 Int. hex screw
16 Cable passage 17 Int. hex screw
17B Int. hex screw
18 Gasket34 Fillerplug
20 Terminalboard35 Washer
23 Cyl. head screw36 Ballbearing
24 Cyl. head screw36V Cyl. roller bearing 24A Toothed lock washer37 Ballbearing
27 Setscrew37A Ballbearing
29 Key39 Needlebearing
29A Key40 Needlebearing
29B Key40A Innerring
31 Int. hex screw41 Disc
32 Washer42 Circlip
33 Int. hex screw45A Bearing race
45B Bearing race
45C Shim plated
45D Gammaring
46 Oilseal
50 Seal
51 Junctionbox
52 Junctionbox cover 53 Stopping plug
55 Ballbearing incl. backstop
57 Dataplate

KT 215A30



Remark: Taildrum also available in B-design (KT215B30)

Legenda

1	Shell	42	Circlip
2B	Endflange	45B	Bearing race 45C
3	Shaft		Shim plated
4	Ballbearing	45D	Gammaring
31	Int. hex screw	46	Oilseal
32	Washer		

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

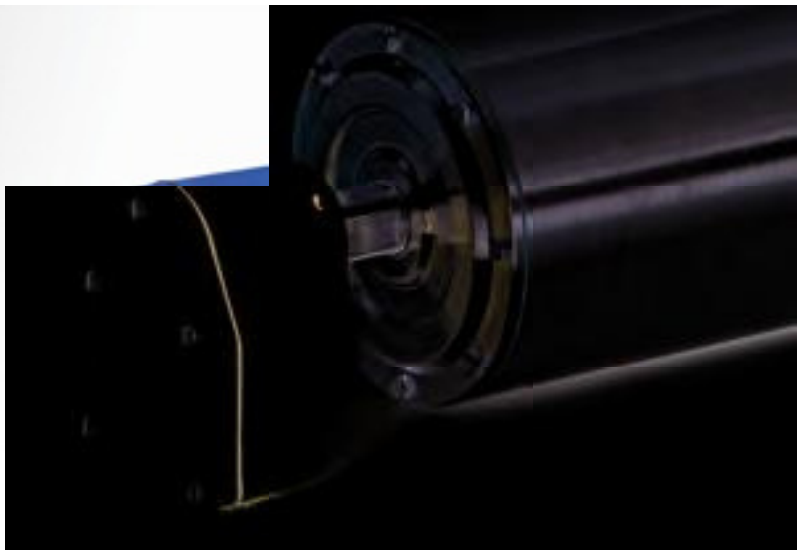


Design benefi ts

- 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

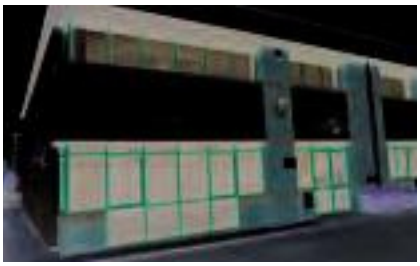
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