

Product information

Drummotors

**TM 500A75**

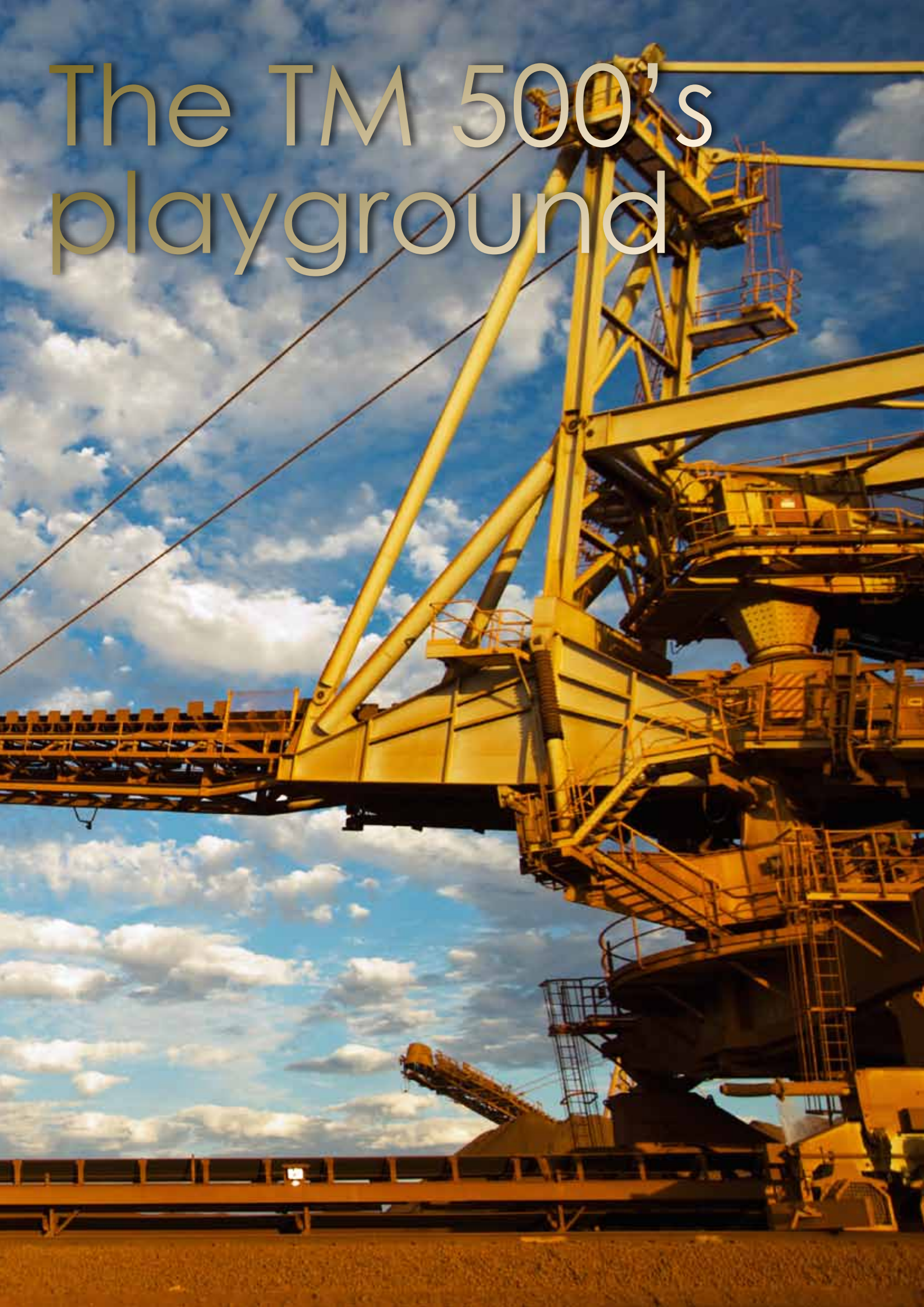


*Van der Graaf*  
Power Transmission Equipment

[www.vandergraafpte.nl](http://www.vandergraafpte.nl)



# The TM 500's playground





# TM 500A75

## 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.

- 4 Introduction
- 5 Selection table
- 6 Dimensions Drummotors  
Dimensions Taildrums
- 7 Dimensions bracket / Cable exit
- 8 Cross sectional / parts description
- 10 Options
- 13 Product range
- 14 Notes
- 16 Contact us



## Selection table

TYPE TM 500A75	Power kW	Beltspeed m/s at 50 Hz				Min. L mm Design A	Full load curr. 400 V - 50 Hz I = ... A	Weight kg L=850
		3,20 8905	2,50 11400	2,00 14250	1,60 13065			
<b>440 Z</b>	<b>30,0</b>	<b>3,20</b> 8905	<b>2,50</b> 11400	<b>2,00</b> 14250		950	52,0	600 (L=950)
<b>430 Z</b>	<b>22,0</b>	<b>3,20</b> 6530	<b>2,50</b> 8360	<b>2,00</b> 10450	<b>1,60</b> 13065	850	37,0	500
<b>425 Z</b>	<b>18,5</b>	<b>3,20</b> 5490	<b>2,50</b> 7030	<b>2,00</b> 8790	<b>1,60</b> 10985	850	32,0	490
<b>620 Z</b>	<b>15,0</b>	<b>2,10</b> 6785	<b>1,70</b> 8380	<b>1,30</b> 10960	<b>1,00</b> 14250	850	31,5	500
<b>815 Z</b>	<b>11,0</b>	<b>1,60</b> 6530	<b>1,25</b> 8360	<b>1,00</b> 10450	<b>0,80</b> 13065	850	26,0	500

Available standard facewidth's: 850 - 900 - 950 - 1000 - 1050 - 1100 - 1150 - 1400 - 1600 mm

When an electro-mechanical brake is fitted, the minimum facewidth is increased by 150 mm

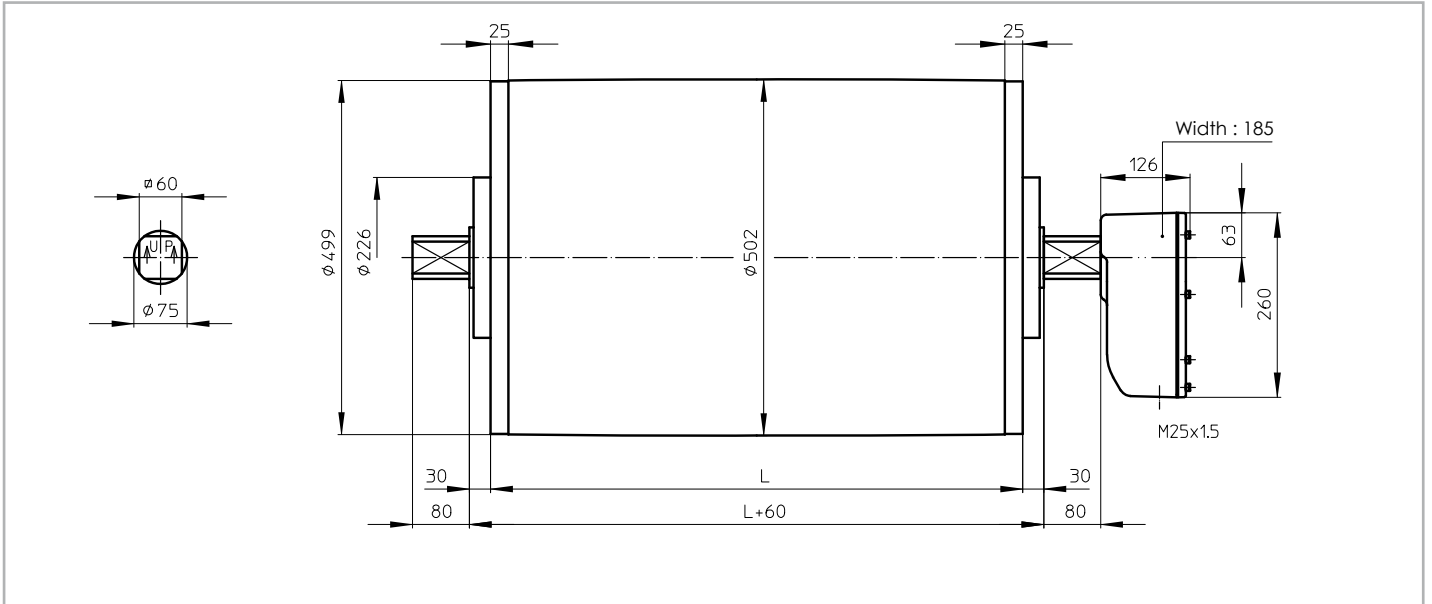
The total weight of a Drummotor grows approx. 25.7 kg per 100 mm

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

# Dimensions

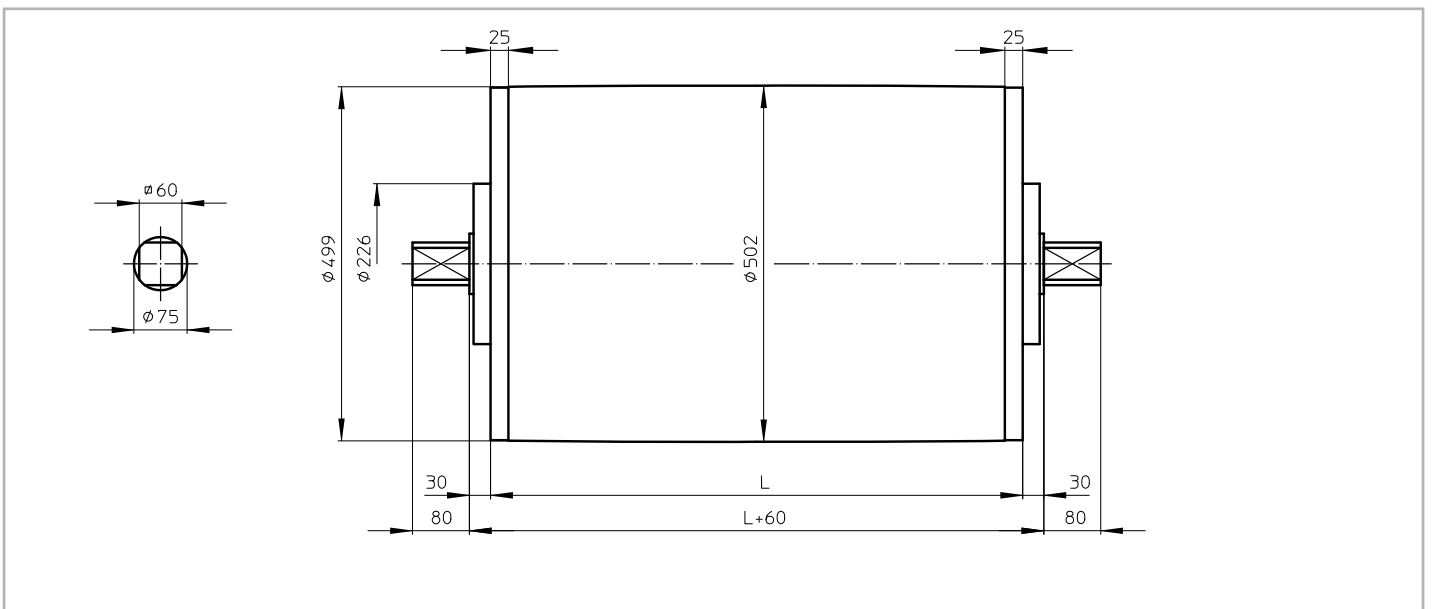
## TM 500A75

TM 500A75, mild steel Drummotor with cast iron junctionbox



## KT 500A75

KT 500A75, mild steel Taildrum

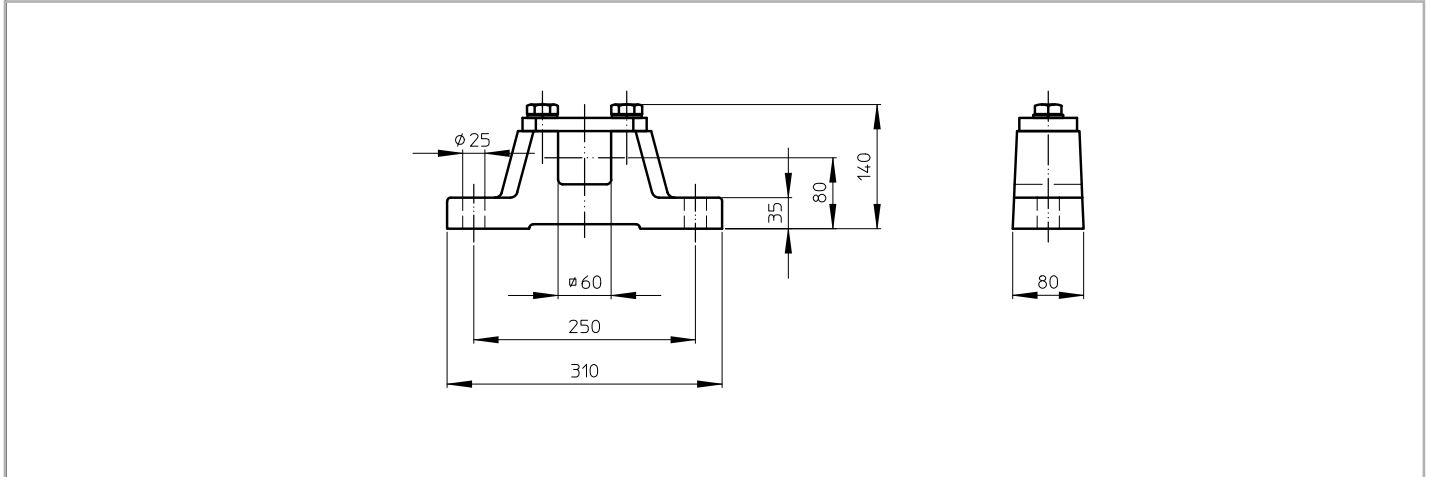




## Dimensions bracket / Cable exit

### AB 75

AB 75, cast iron or stainless steel bracket  
Weight: 22 kg per pair



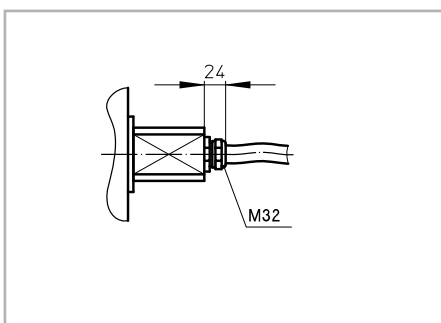
Standard design of a TM 500A75 is with a cast iron junctionbox. For stainless steel design, this can be either a cast iron PU coated or stainless steel junctionbox.

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.

The available cable exit is shown below.

### Option 1

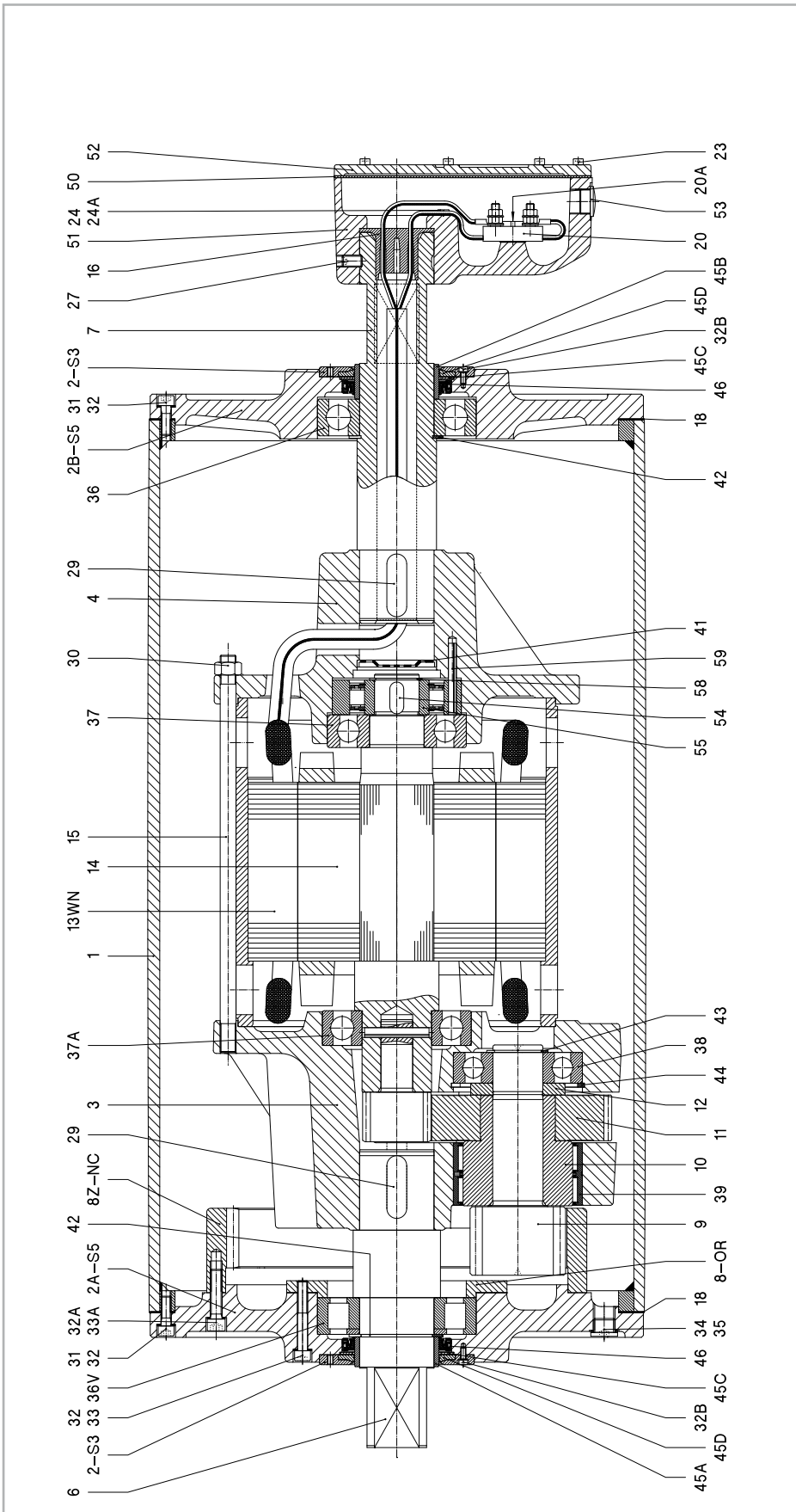
Straight cable exit with cable gland



# Cross sectional / parts description

TM 500A75 Z HDW

Legenda



1	Shell	29	Key	37	Ballbearing	46	Cassette seal
2A-S5	Endflange	30	Nut	37A	Ballbearing	50	Seal
2B-S5	Endflange	31	Int. hex screw	38	Ballbearing	51	Junctionbox
2-S3	Endplate	32	Washer	39	Needlebearing	52	Junctionbox cover
3	Gearhousing	32A	Washer	41	Disc	53	Stopping plug
4	Motorflange	32B	Int. hex screw	42	Circlip	54	Key
6	Shaftend	33	Int. hex screw	43	Circlip	55	Backstop
7	Hollow shaft	33A	Int. hex screw	44	Circlip	57	Dataplate
8Z-NC	Internal gear	34	Fillerplug	45A	Bearing race	58	Circlip
8-OR	Locking ring	35	Washer	45B	Bearing race	59	Spiral pin
9/10	Pinion with bush	36	Ballbearing	45C	Support ring		
11	Gear	36V	Cyl. roller bearing	45D	Wiper		
		12	Distance ring				
		13WN	Stator				
		14	Rotor				
		15	Int. hex screw				
		16	Cable passage				
		18	Gasket				
		20	Terminalboard				
		20A	Cyl. head screw				
		23	Cyl. head screw				
		24	Cyl. head screw				
		24A	Toothed lock washer				
		27	Setscrew				
		6	2-S3				
		7	2B-S5				
		8	2A-S5				
		9	8Z-NC				
		10	13WN				
		11	14				
		12	15				
		13	37A				
		14	30				
		15	31				
		16	32				
		17	32A				
		18	32B				
		19	33				
		20	33A				
		21	34				
		22	35				
		23	36				
		24	36V				
		25	41				
		26	42				
		27	43				
		28	44				
		29	45A				
		30	45B				
		31	45C				
		32	45D				
		33	46				
		34	45B				
		35	45C				
		36	45D				
		37	46				
		38	45B				
		39	45C				
		40	45D				
		41	46				
		42	45B				
		43	45C				
		44	45D				
		45	46				
		46	45B				
		47	45C				
		48	45D				
		49	46				
		50	45B				
		51	45C				
		52	45D				
		53	46				
		54	45B				
		55	45C				
		56	45D				
		57	46				
		58	45B				
		59	45C				
		60	45D				

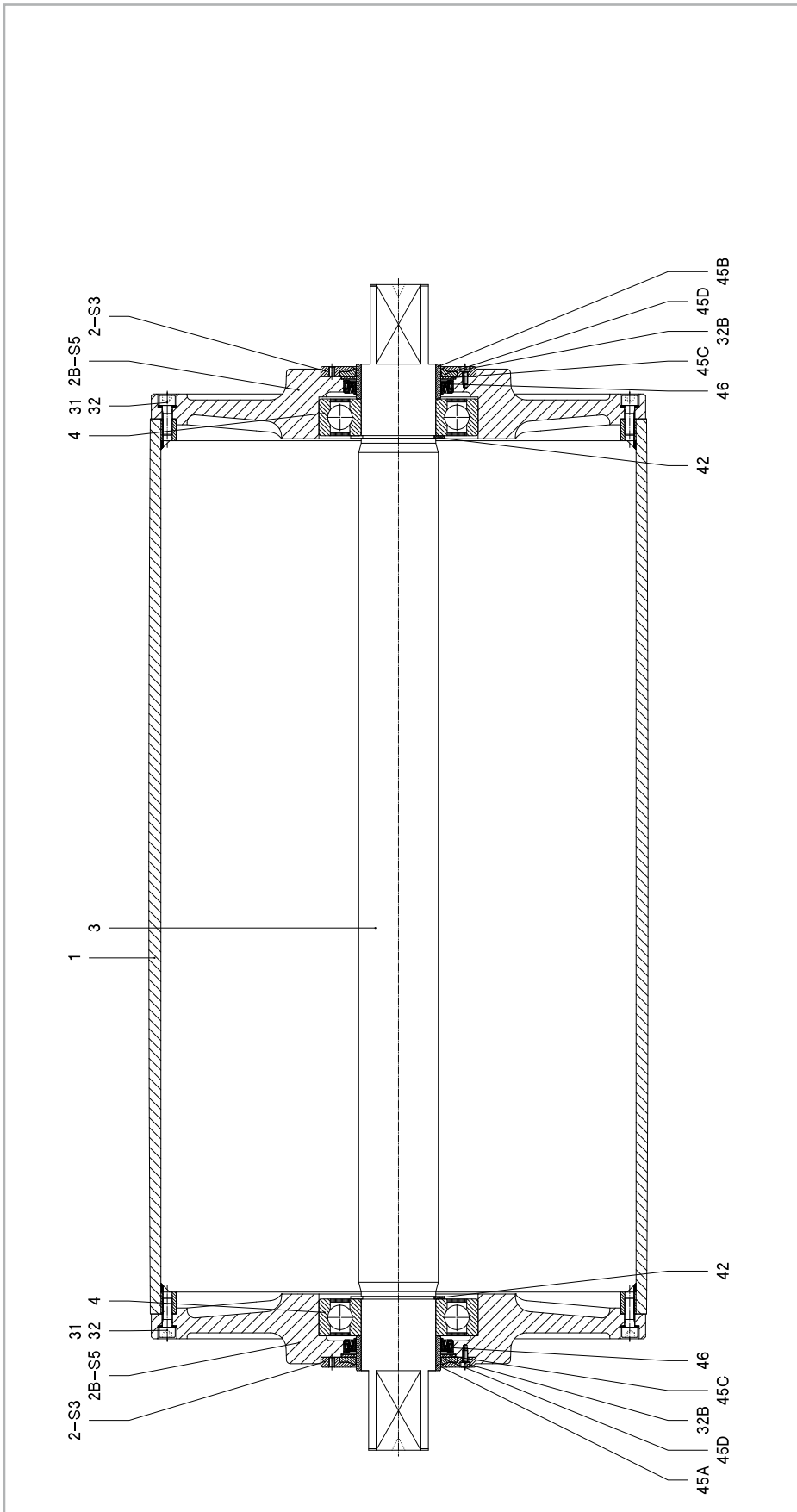




# Cross sectional / parts description

KT 500A75 HDW

Legenda



1	Shell	32B	Int. hex screw
2B-S5	Endflange	42	Circlip
2-S3	Endplate	45B	Bearing race
3	Shaft	45C	Shim plated
4	Ballbearing	45D	Wiper
31	Int. hex screw	46	Cassette seal
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



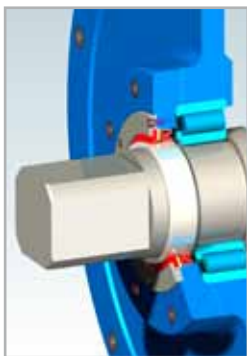
This sealing is specifically designed for those applications where high water pressure is used for cleaning.

HD sealing - IP 66

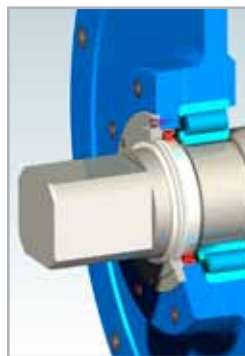


This sealing is designed for abrasive applications, like sand, gravel and soil.

HDW sealing - IP 66



HDLR sealing - IP 66



These sealings are designed for extreme abrasive conditions. Choice of seal depends on the material to be conveyed.

## 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
<b>Construction</b>		
Shafts and bolts	Mild steel	Stainless steel
Endflanges	Cast iron	Stainless steel
Shell	Mild steel	Stainless steel
Junctionbox	Cast iron	Cast iron PU coated or stainless steel
Cable		Shielded or non-shielded
Sealing mild steel	RB, HDW, HDLR	RBS, HD
Sealing stainless steel	CR	UW
<b>Shell</b>		
Crowned	•	
Cylindrical		•
Balanced		•
Lagging, cold vulcanised		•
Lagging, hot vulcanised		•
Lagging, FDA approved		•
Fitted with grooves, patterns		•
Sprockets		•
<b>Electro motor</b>		
Three-phase asynchronous	•	
Power supply	400/690 V - 50 Hz	Other voltages and frequencies on request
Twin drive (double power)		•
Insulation class	F	H
Thermal protection		Bi-metal or thermistor
Run by frequency inverter	•	
<b>Other options</b>		
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		•
Encoder or sensor bearing in Taildrum		•
<b>Certificates</b>		
CE	•	
UL		•
CSA		•
ATEX zone 22, dust		•



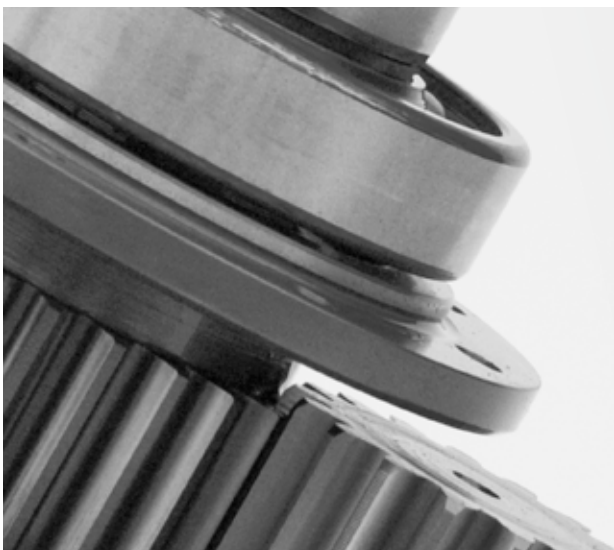
## Product range

### 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



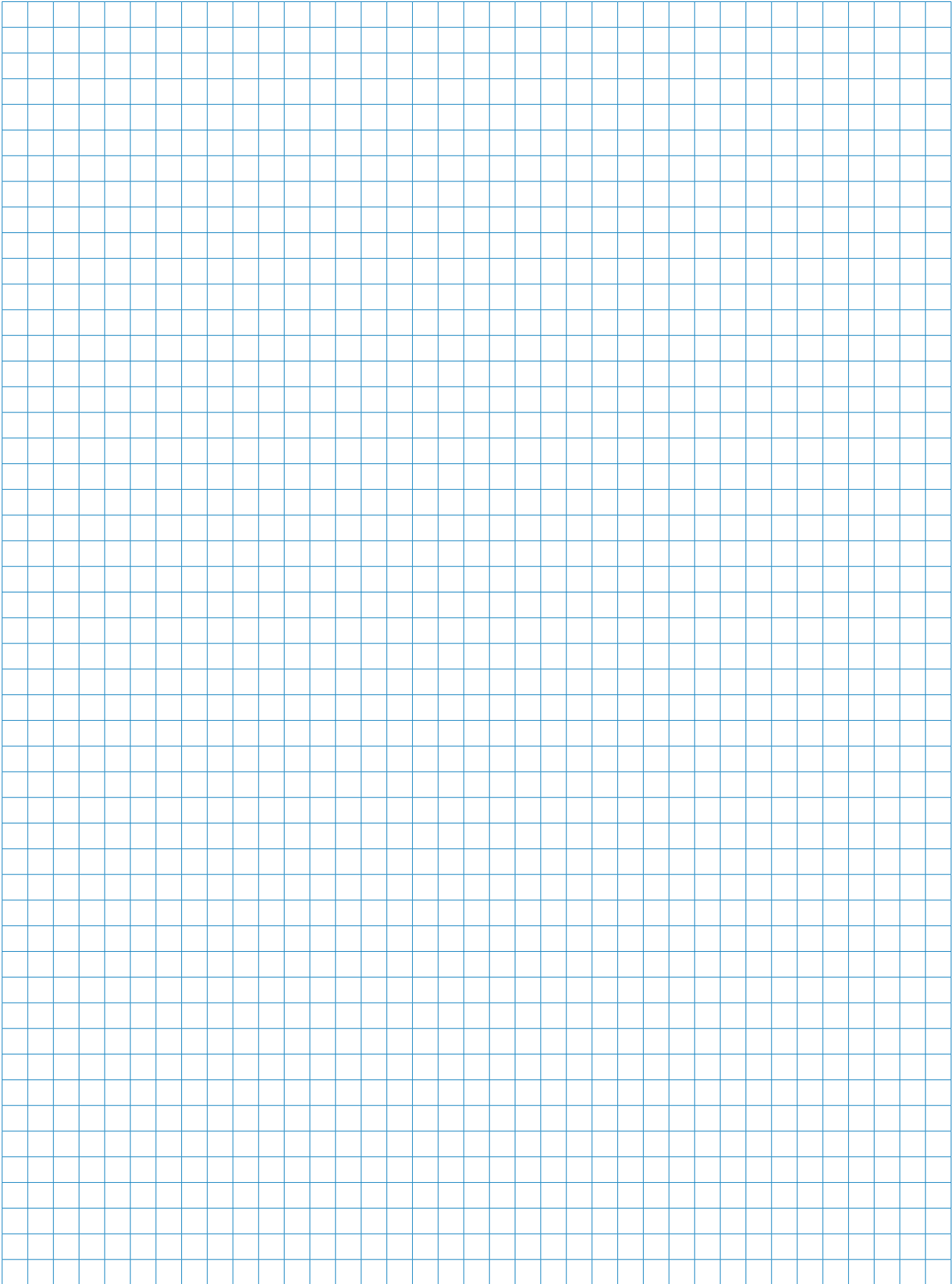
#### Design benefits

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

#### Installation advantages

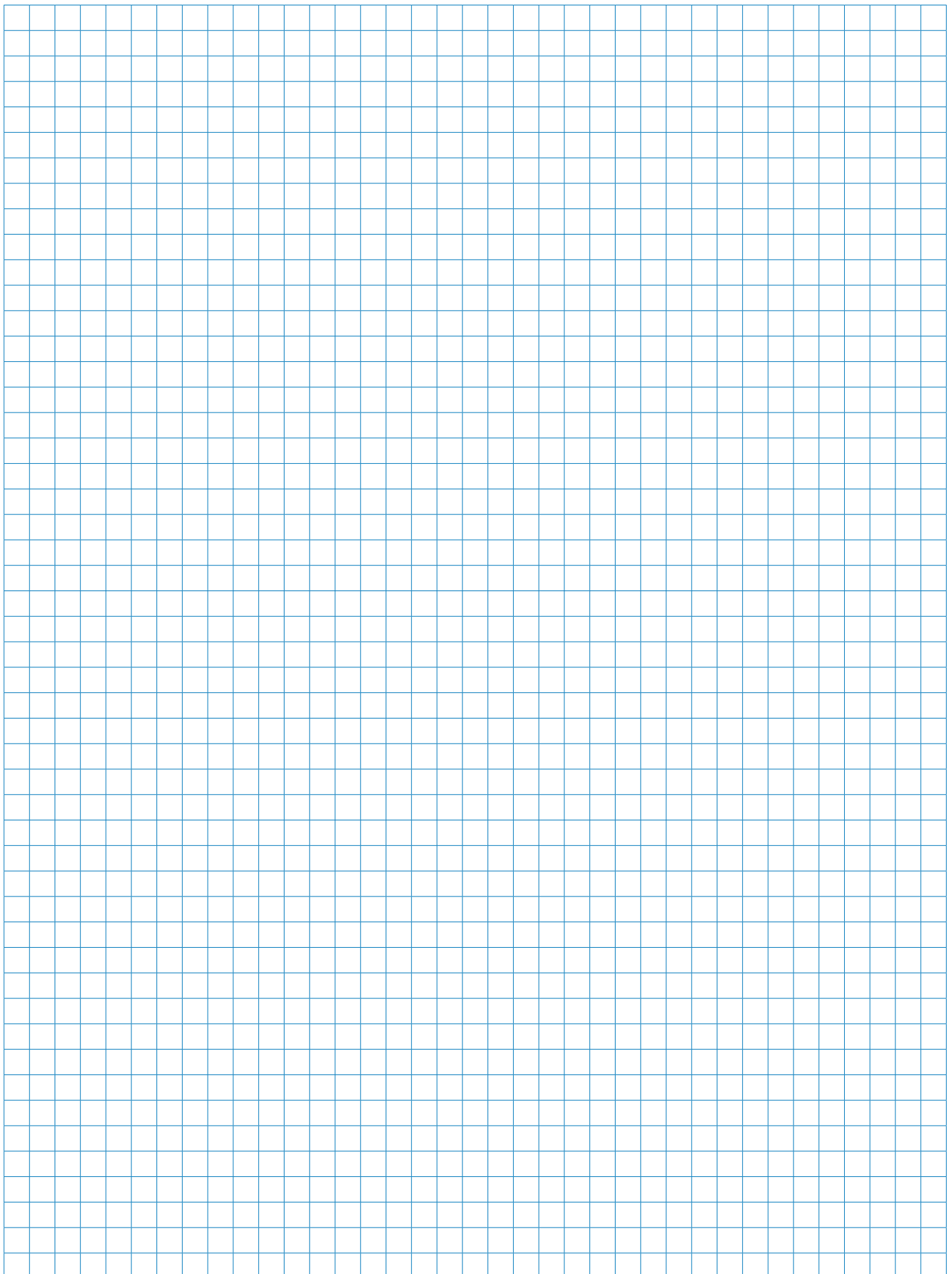
- Easy to install
- Compact and reliable
- Easy to clean
- Virtually maintenance free
- Low Life Cycle Costs







# Notes





# Van der Graaf

## Power Transmission Equipment

### Contact us

#### Netherlands

Van der Graaf B.V.  
De Weijert 14  
P.O. Box 3  
8325 ZG Vollenhove  
Tel: 00 31 527 241441  
Fax: 00 31 527 241488  
E-mail: [info@vandergraafpte.nl](mailto:info@vandergraafpte.nl)  
[www.vandergraafpte.nl](http://www.vandergraafpte.nl)



#### Canada

Van der Graaf Inc.  
2 Van der Graaf Court  
Brampton  
Ontario L6T 5R6  
Tel: 00 1 905 793 8100  
Fax: 00 1 905 793 812  
E-mail: [info@vandergraaf.com](mailto:info@vandergraaf.com)  
[www.vandergraaf.com](http://www.vandergraaf.com)



#### Great Britain

Van der Graaf U.K. Ltd.  
Unit 23, The Metro Centre  
Welbeck Way Woodston  
Peterborough PE2 7UH  
Tel: 00 44 1733 391777  
Fax: 00 44 1733 391044  
E-mail: [sales@vandergraaf.co.uk](mailto:sales@vandergraaf.co.uk)  
[www.drummy.com](http://www.drummy.com)



#### USA

Van der Graaf Corp.  
51515 Celeste  
Shelby Township  
48315 Michigan  
Tel: 00 1 866 595 3292  
Fax: 00 1 888 326 0089



#### Germany

Van der Graaf GmbH  
Rheiner Straße 24 B  
48432 Rheine-Mesum  
Tel: 00 49 5975 306210  
Fax: 00 49 5975 3062120  
E-mail: [info@vandergraaf.de](mailto:info@vandergraaf.de)  
[www.vandergraaf.de](http://www.vandergraaf.de)



#### Sweden

Van der Graaf Scandinavia AB  
Spinngatan 2  
267 73 Billesholm  
Tel: 00 46 42 22 0802  
Fax: 00 46 42 22 0803  
E-mail: [info@vandergraaf.se](mailto:info@vandergraaf.se)  
[www.vandergraaf.se](http://www.vandergraaf.se)



#### Finland

Van der Graaf Scandinavia AB  
Tel: 00 358 400 419063  
E-mail: [info@vandergraaf.fi](mailto:info@vandergraaf.fi)  
[www.vandergraaf.fi](http://www.vandergraaf.fi)