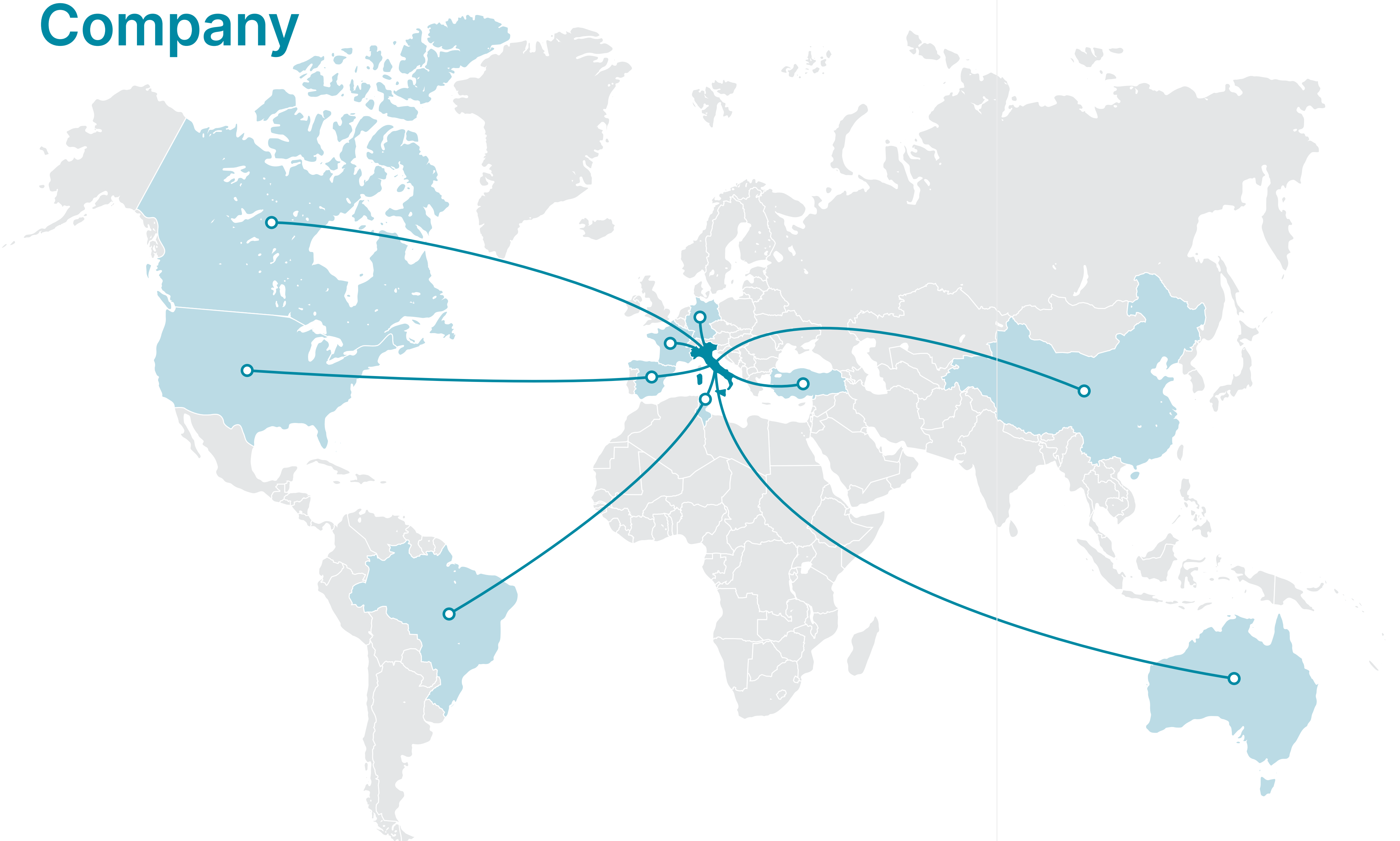
Solutions for
Centrifugal Separation
Industry

Summary

Company



Omme Gears specializes in the production of cycloidal and planetary gearboxes, as well as medium and large gears.

Omme works with **over a hundred companies worldwide**, providing them with tailor-made solutions that grant a significant competitive advantage.

Thanks to its medium size, Omme Gears is able to **manage production peaks and prototyping with the utmost flexibility**, guaranteeing maximum attention to detail and product quality.

Omme Gears' production philosophy is based on the **innovative system of Lean Production**, which has enabled the company to increase its production capacity by 20%, reduce lead time by 50% and optimize factory spaces.

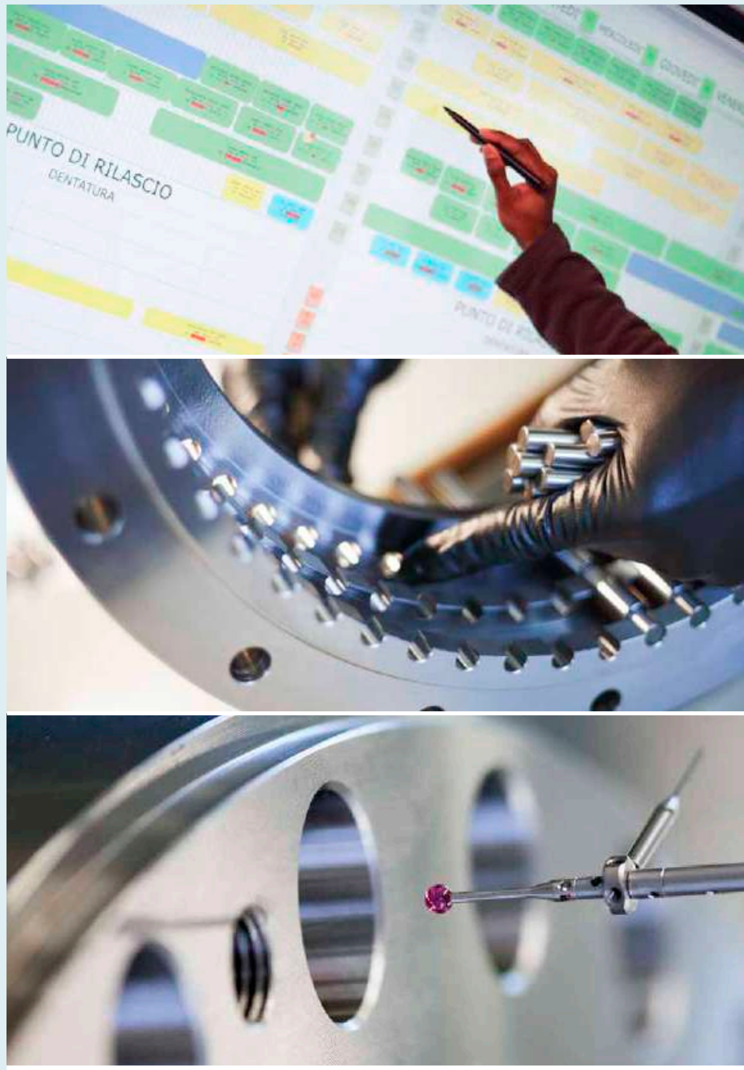
The **machine tools used** and the **constant attention paid to technological evolution** have allowed Omme Gears to be recognized as a reliable partner. Through collaborations with renowned global partners started in 2015,

Omme Gears has expanded its international present and considerably increased exports, which account for 75% of annual revenues. All this makes Omme Gears a qualified partner for companies all over the world.

DIRECT COLLABORATIONS

Omme Gears addresses industrial decanter manufacturers directly, without using intermediaries.

This distinctive feature is one of the strengths of the company. Having a **direct relationship with Omme Gears technical department** allows customers to discuss customizations or technical improvements, thus increasing the efficiency and performance of their decanters.



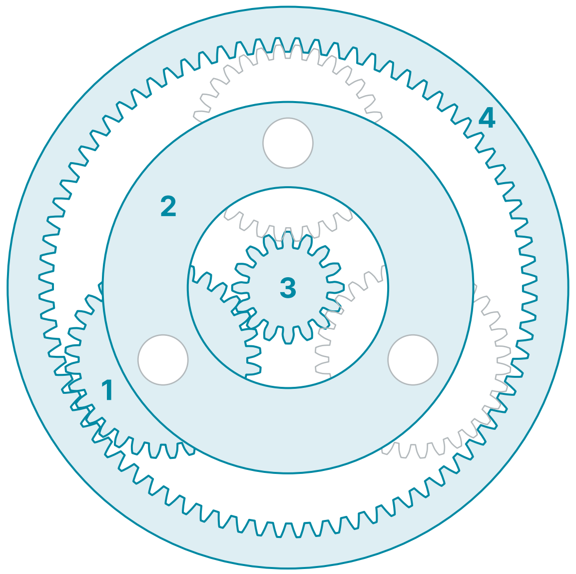
Some production phases: programming, assembling and testing of the gearbox.

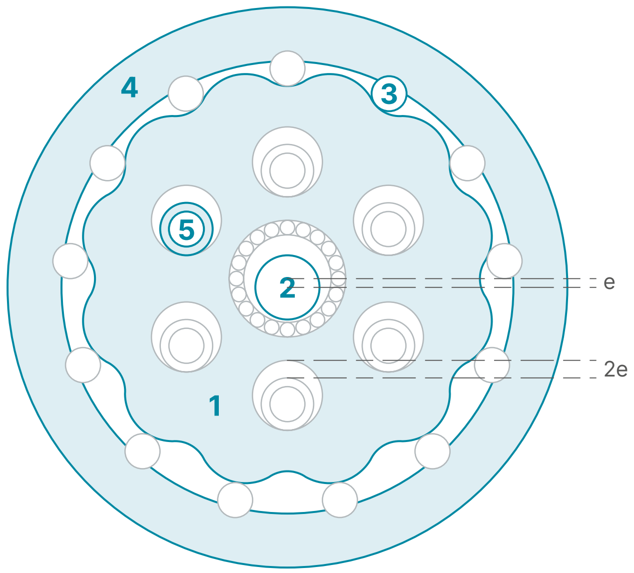
Planetary Cycloidal

Choosing the power of the Decanter Centrifuge

When it comes to power transmission and speed reduction in industrial decanters, two solutions emerge as protagonists: cycloidal and planetary gearboxes.

Yet, which of the two options is the best choice? Below is an in-depth analysis of both technologies, including a comparison of their advantages, disadvantages, and ideal applications. We will see that, although both solutions are excellent, there are several aspects to be taken into account before making an informed decision.





Planetary gearboxes are systems of one or more gears called planets or **planetary gears (1)**, arranged on a **planet carrier (2)**, also known as spider, which rotate around a center pinion, also called **sun pinion (3)**. All this is inside an internally toothed gear called **ring gear (4)**.

The rotation axis of the planet carrier and that of the sun pinion coincide. **The reduction ratio** is determined by the number of teeth on the gears but also depends on which gear is fixed and which one is free to rotate.

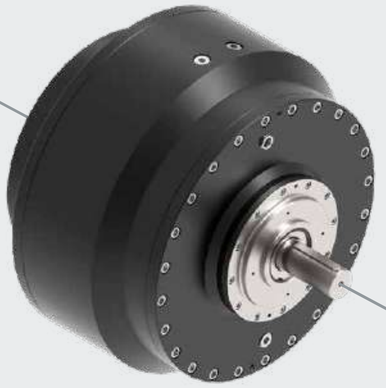
On the other hand, a **Cycloidal gearbox** is a mechanical system with two degrees of freedom in which **cam discs (1)** coupled with an **eccentric bearing (2)** transmit motion via **pins and rollers (3)** arranged on an external **fixed case (4)**.

The rotation of the eccentric allows the cams to move inside the pin case thanks to the cycloidal profile that rolls without sliding on the fixed pins. The rotation of the cam discs transmits motion to the **output** via **pins and rollers (5)** arranged inside and equally distributed on a circle which is concentric with respect to the axis of the fixed pin case. The cycloidal profile of the cam disc generally has one or two fewer "teeth" than the crown.

Which of these two mechanical solutions best meets the needs of your industrial decanter? The table below illustrates all the benefits of both mechanisms.

	Planetary	Cycloidal
Kinematics	Mechanism with two degrees of freedom in which the direction of rotation is kept concordant between input and output	Mechanism with two degrees of freedom with output motion reversal. Discordant direction of rotation between input and output
Reduction ratio	Each planetary stage can reach a reduction ratio of up to 1:10. Higher ratios of up to 1:224 are obtained with multi-stage solutions. A greater range of reduction ratios can be chosen.	Each two-cam cycloidal stage can reach a reduction ratio of up to 1:119. Higher ratios of up to 1:348 are obtained with hybrid planetary-cycloidal solutions.
Output torque	Torque up to 120kNm for two/three planetary reduction stage wheelwork. When compared in size with cycloidal wheelwork, planetary wheelwork can transfer more torque.	Torque up to 50kNm for single cycloidal stage and for hybrid planetary-cycloidal solutions.
Conveyor/bowl direction of rotation	Multi-stage solutions usable in applications in which the conveyor has a slower rotation than the bowl. The rotation of the bowl always affects the rotation of the conveyor with little margin for maneuver.	Cycloidal single-stage usable only in applications in which the conveyor has a greater rotation than the bowl. Hybrid solutions also allow adaptability to solutions in which the conveyor has a lower rotation speed than the bowl. Possibility of decoupling the rotation of the conveyor with the rotation of the bowl through "planetary double-stage" applications.
Dimensions	Larger dimensions in comparison with a cycloidal gearbox, to the detriment of rotating inertias and the distribution of the centers of mass.	Reduced dimensions in comparison with a planetary gearbox. This eases inertia and improves the distribution of the weight and the center of mass of the machine.
Lubrication	Oil	Grease, oil.
Mechanical stress	Bending stress between the transmission elements. Sliding-free motion transmission	Compressive stress between the main transmission elements. Rolling motion.
Overload capacity	Overlapping factor of up to 2.5 for standard wheelwork. Proven overload capacity of up to 25% of the nominal torque for short periods of time.	Up to 500% of the nominal torque thanks to 75% of the coupling surfaces always in contact.
Maintenance	More complex maintenance when compared to cycloidal gearboxes, given the high number of parts present in the mechanical transmission.	Less complex maintenance when compared to planetary gearboxes thanks to the low number of parts present in the mechanical transmission. Focus on the quality of oil and seals.

Products Overview



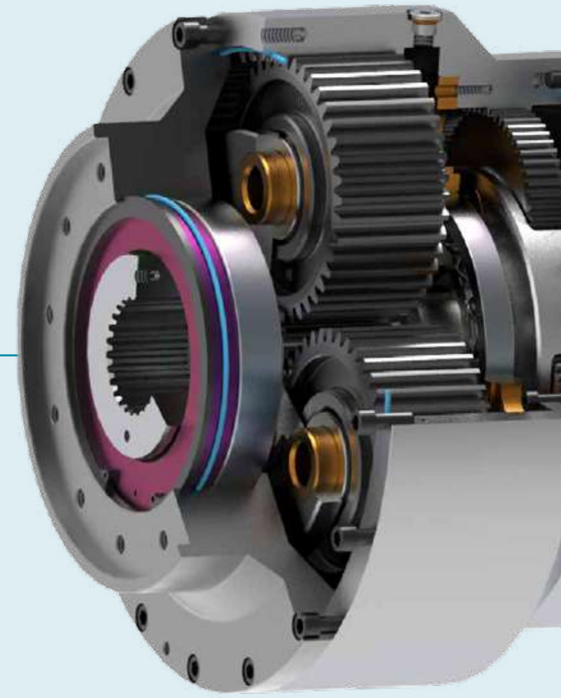
ONE MANUFACTURER FOR THREE TECHNOLOGIES

Omme Gears is the only manufacturer of **both cycloidal and planetary gearboxes** for centrifugal separation applications. Furthermore, in recent years, the company has also successfully introduced **hybrid technology**, combining cycloidal and planetary elements.

Omme Gears guarantees **flexibility in the collaboration with customers** right from the design phase, providing them with the best possible solution. Thanks to its long experiencein the sector, Omme Gears guides its customers to choose the best gearbox for decanter centrifuges by turning process inputs into suitable mechanical solutions.

In markets where stringent **health and safety requirements** are necessary, such as pharmaceuticals and food & beverage, Omme's technical department helps the customer in choosing materials.

Furthermore, all three types of gearboxes are **certified ATEX devices**, fit for operation even in more critical and restrictive environments such as those in which there is a risk of detonation.



Are you looking for a customized design?

We create highly reliable gearboxes that are customized to the specific needs of the customer. Scan the QRcode to talk about your next project...

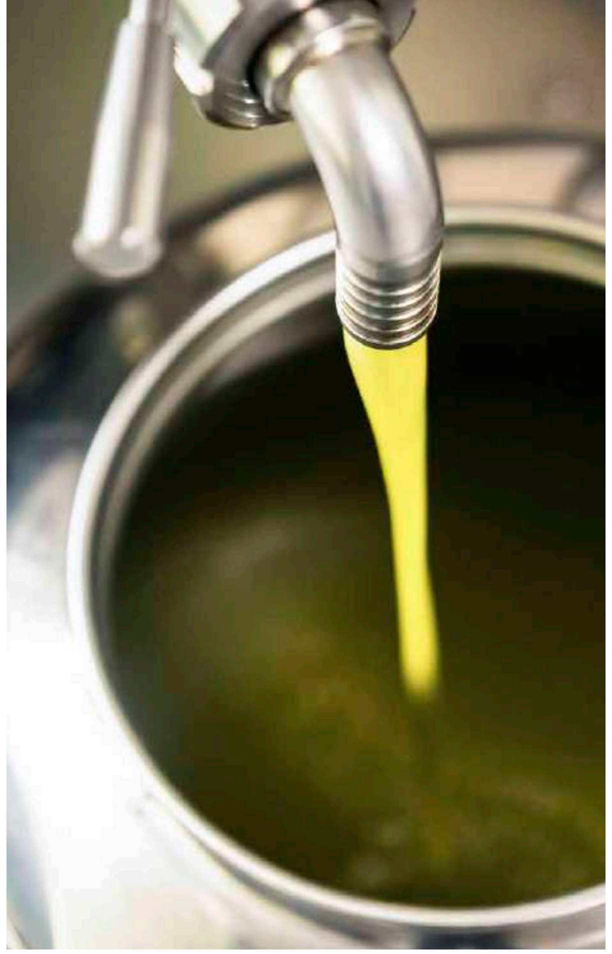
Typical applications for Centrifugal Separation

Omme Gears is aware that **every centrifugal separation process always requires different solutions**.

From chemical processes to food industry, environmental applications and pharmaceutical manufacturing, **our centrifugal gearboxes offer reliable performance, precision, and durability**.

TECHNOLOGY FOR THE ENVIRONMENT

- Recovery of microplastics
- Sludge dewatering
- Process recycling, e.g., drilling muds
- Water purification



FOOD INDUSTRY

- Oil (soybean oil, olive oil and palm oil)
- Wine
- Coffee
- Lactose, milk powder
- Sugar, salt
- Starch
- Extracts

CHEMICALS

- Extraction of metals and resins
- Solvents
- PVC
- Polymers
- Ethanol
- Pharmaceutical products
- Cosmetics, essential oils

Construction Sizes 13

Output Torque Up to 46500 Nm

Direction of rotation between Input and Output
Discordant

Input cylinder shaft
With key

Dynamic Balance
According to ISO1940

Noise Level
Low noise level thanks to transmission by rolling friction

Reduction Ratios
From 15:1 to 87:1 (the version with planetary pre-torque is recommended for higher ratios)

Output connection
Hub with male or female spline according to DIN5480

Execution for fitting
Flanged with male and female centring

Lubrication
Grease lubrication up to O18; oil lubrication from O19 (optional from O10 to O18 as well)

Seals resistant to high pressures
Static and dynamic

Seals resistant to high temperatures
Thanks to fluoroelastomer (FKM)

Single-stage cycloidal gearboxes

Atex certification (Group 2)

Optional stainless-steel covers AISI304 – AISI316

This series of gearboxes is characterized by a **cycloidal stage** (2 cam discs operating simultaneously) and allows **high reduction ratios** (up to 1:87) to be achieved with a truly compact design.

This series of gearboxes is the ideal drive solution **for a wide range of centrifuges**, from small laboratory machines to large industrial plants, thanks to the 13 construction sizes.

Ideal for centrifugal applications with **constant differential speed** (torque arm fixed to the input shaft or single-motor operation with two belts for motor and conveyor), **as well as** for dual motor applications (Backdrive) for **adjustable differential speeds**.

The output hub of the gearboxes allows the **connection with the conveyor via DIN5480 involute teeth**, providing the torque required to convey solids.

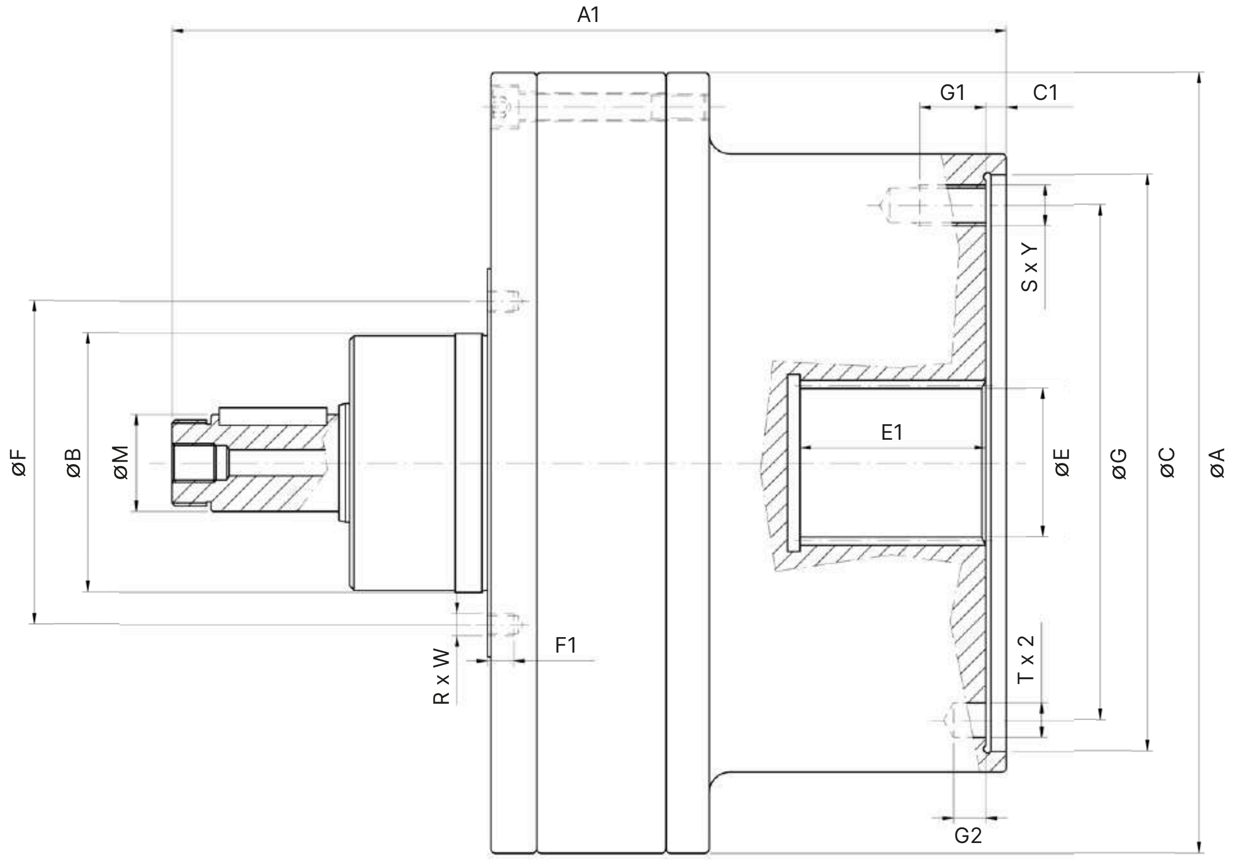
It is also possible to **integrate the gearbox inside the centrifuge**. This includes mounting the main bearing (centrifuge support) to the gearbox input cover.

Other construction features

- High transmissible torque/overall dimension ratios
- Compact construction: stiffer centrifuge operation with less vibration
- Ideal for conveyors faster than bowls
- Wear-free operation even at low differential speeds

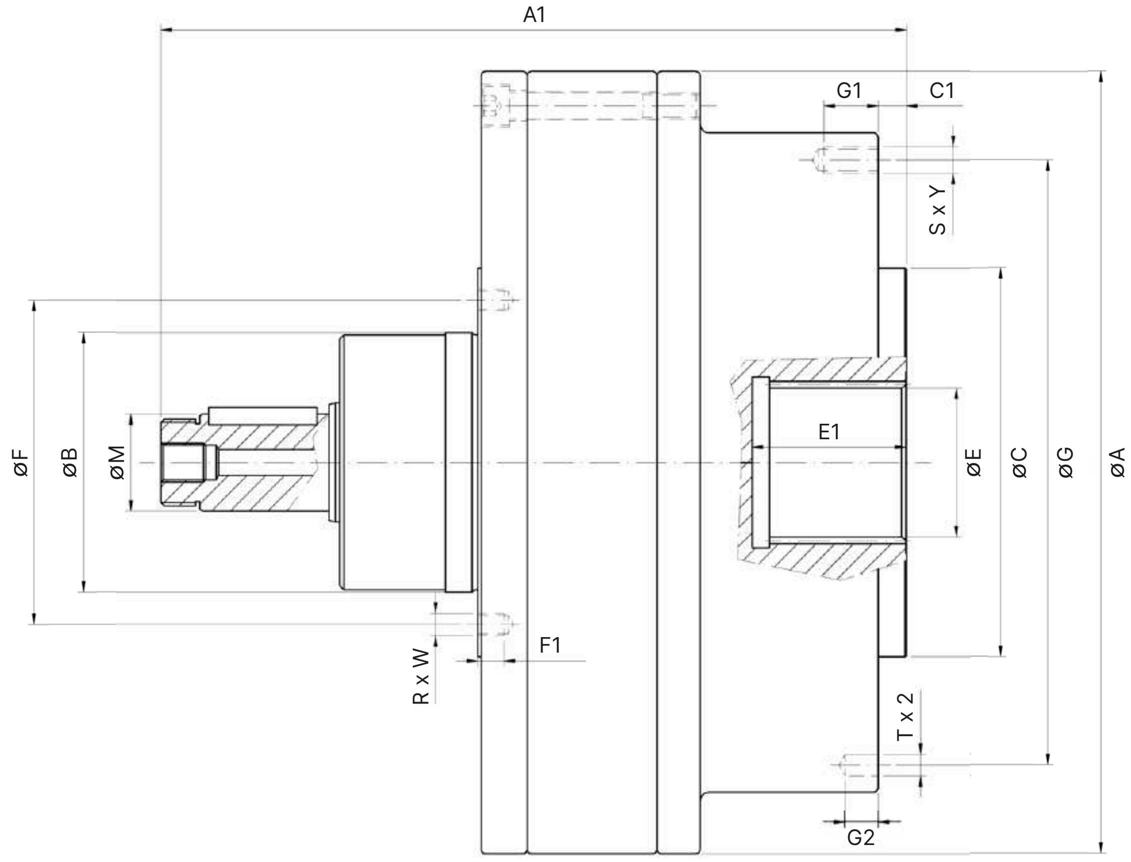
		Reduction ratios										
Size	Torque [Nm]	15	17	21	25	29	35	43	51	59	71	87
O10	400	■	■	■	■	■	■	■	■	■	■	■
O12	700	■	■	■	■	■	■	■	■	■	■	■
O14	1380	■	■	■	■	■	■	■	■	■	■	■
O16	2180	■	■	■	■	■	■	■	■	■	■	■
O17	3900	■	■	■	■	■	■	■	■	■	■	■
O18	5200	■	■	■	■	■	■	■	■	■	■	■
O19	8350	■	■	■	■	■	■	■	■	■	■	■
O21	13300	■	-	■	-	■	-	■	-	■	-	■
O22	16800	■	-	■	-	■	-	■	-	■	-	■
O23	21400	■	-	■	-	■	-	■	-	■	-	■
O24	26000	■	-	■	-	■	-	■	-	■	-	■
O25	35500	■	-	■	-	■	-	■	-	■	-	■
O26	46500	■	-	■	-	■	-	■	-	■	-	■

> **More information about Cycloidal Rotism Torque are available at p.25**



#	A	C	G	B	F	M	G2	T(n.2)	R	W	F1	A1	E	E1	C1	S	Y	G1
O10	150	120	105	65	80	19	10	8	M6	4	9	193	N30×1,25×30×22×9H	30	4	M8	8	14
O12	204	150	135	75	90	24	15	10	M6	6	9	225	N40×2×30×18×9H	45	5	M10	8	15
O14	230	160	145	80	95	24	15	10	M6	6	10	250	N50×2×30×24×9H	45	5	M10	8	15
O16	300	230	205	110	130	32	15	12	M6	6	12	326	N60×3×30×18×9H	64	5	M12	8	18
O17	340	260	230	120	145	32	20	16	M8	6	12	368	N75×3×30×24×9H	65	6	M16	8	20
O18	370	280	250	130	165	38	20	16	M10	6	15	410	N85×3×30×27×9H	70	6	M16	8	20
O19	430	300	265	150	180	45	20	16	M10	8	15	450	N85×3×30×27×9H	78	7	M16	12	21
O21	485	380	340	160	200	50	20	16	M12	8	20	480	N100×3×30×32×9H	80	8	M24	6	24
O22	526	380	340	180	220	55	20	16	M12	8	20	515	N100×3×30×32×9H	80	8	M24	6	27
O23	562	380	340	190	230	60	20	16	M12	8	20	525	N120×3×30×38×9H	90	8	M24	6	30
O24	614	380	340	200	240	65	20	16	M12	8	20	545	N120×3×30×38×9H	90	8	M24	12	30
O25	670	380	340	240	290	80	20	16	M16	8	24	610	N130×3×30×42×9H	110	10	M24	12	35
O26	736	380	340	260	310	85	20	16	M16	8	24	630	N130×3×30×42×9H	110	10	M24	12	35

* All dimensions [mm] may be subject to changes agreed with the customer



#	A	C	G	B	F	M	G2	T(n.2)	R	W	F1	A1	E	E1	C1	S	Y	G1
O10	150	100	120	65	80	19	10	8	M6	4	9	193	N30×1,25×30×22×9H	30	8	M8	6	14
O12	204	100	120	75	90	24	15	10	M6	6	9	225	N40×2×30×18×9H	45	8	M8	6	14
O14	230	150	180	80	95	24	15	10	M6	6	10	250	N50×2×30×24×9H	45	10	M10	8	15
O16	300	150	180	110	130	32	15	12	M6	6	12	326	N60×3×30×18×9H	64	10	M10	8	15
O17	340	180	280	120	145	32	20	16	M8	6	12	368	N75×3×30×24×9H	65	13	M12	8	18
O18	370	180	280	130	165	38	20	16	M10	6	15	410	N85×3×30×27×9H	70	13	M12	8	18
O19	430	180	280	150	180	45	20	16	M10	8	15	450	N85×3×30×27×9H	78	13	M12	8	18
O21	485	280	340	160	200	50	20	16	M12	8	20	480	N100×3×30×32×9H	80	15	M16	8	20
O22	526	280	340	180	220	55	20	16	M12	8	20	515	N100×3×30×32×9H	80	15	M16	8	20
O23	562	280	340	190	230	60	20	16	M12	8	20	525	N120×3×30×38×9H	90	15	M16	8	20
O24	614	280	340	200	240	65	20	16	M12	8	20	545	N120×3×30×38×9H	90	15	M24	12	35
O25	670	280	340	240	290	80	20	16	M16	8	24	610	N130×3×30×42×9H	110	15	M24	12	35
O26	736	280	340	260	310	85	20	16	M16	8	24	630	N130×3×30×42×9H	110	15	M24	12	35

* All dimensions [mm] may be subject to changes agreed with the customer

Construction Sizes 12

Output Torque Up to 46500 Nm

Direction of rotation between Input and Output
Concordant/Discordant

Input cylinder shaft
With key

Dynamic Balance
According to ISO1940

Noise Level
Low noise level thanks to transmission by rolling friction

Reduction Ratios
Double reduction stage; with ratios from 45:1 to 348:1

Output connection
Hub with male or female spline according to DIN5480

Execution for fitting
Flanged with male and female centring

Lubrication
Oil lubrication with closed system, expansion tank or external hydraulic control unit

Seals resistant to high pressures
Static and dynamic

Seals resistant to high temperatures
Thanks to fluoroelastomer (FKM)

Cycloidal gearboxes with planetary stage

Atex certification (Group 2)

Optional stainless-steel covers AISI304 – AISI316

This series of gearboxes is characterized by a **cycloidal stage** (2 cam discs operating simultaneously) **coupled to a planetary stage** connected to the high-speed shaft (sun gear, planetary gears, ring gear). This configuration allows **high reduction ratios** (up to 1:348).

Furthermore, it is possible to **exploit the two degrees of freedom** of the planetary wheel-work in order to generate a wider range of ratios and have efficient solutions for centrifuges in which the **conveyor rotates slower than the bowl**, **as well as** for solutions requiring the **conveyor to rotate faster than the bowl**.

The **ON and OV models** are suitable for centrifugal applications with **constant differential speed** (torque arm fixed to the input shaft or single-motor operation with two belts for motor and conveyor), **as well as** for dual-motor centrifuge operation (Backdrive) for **adjustable differential speeds**.

The **OR model** uses the double planetary pre-torque to have **completely independent adjustment** thanks to the possibility of installing a double motor. The bowl speed and the speed differential are independently adjustable (much simpler movement control), the conveyor can be motorized (smaller bowl motor and electrical system, reduced energy consumption of the centrifuge).

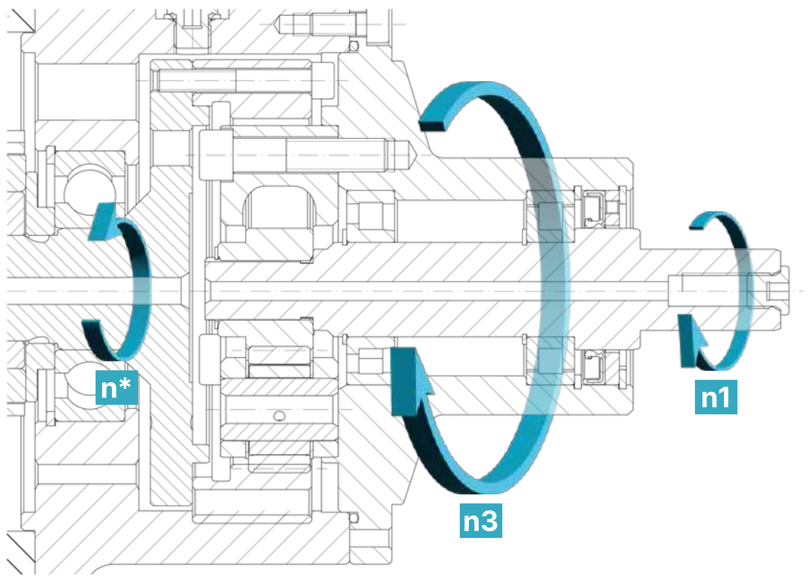
Other construction features

- Fourth rotation shaft for OR series. The conveyor rotation depends only on n1, independent of n3
- High efficiency and low operating temperature

		Reduction ratios																					
		ON / OR Models											OV / OR Models										
Size	Torque [Nm]	45	51	63	75	87	105	129	153	177	213	261	60	68	84	100	116	140	172	204	236	284	348
12	700	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
14	1380	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
16	2180	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
17	3900	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
18	5200	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
19	8350	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
21	13300	-	-	■	-	■	-	■	-	■	-	■	■	-	■	-	■	-	■	-	■	-	■
22	16800	-	-	■	-	■	-	■	-	■	-	■	■	-	■	-	■	-	■	-	■	-	■
23	21400	-	■	■	■	■	-	■	-	■	-	■	■	-	■	-	■	-	■	-	■	-	■
24	26000	-	■	-	■	■	■	■	-	■	-	■	■	-	■	■	■	■	■	-	■	-	■
25	35500	-	■	-	■	-	■	■	-	■	-	■	-	-	■	■	■	■	■	-	■	-	■
26	46500	-	-	-	-	-	■	■	■	-	■	■	-	-	-	■	-	■	■	-	■	-	■

ON

used for centrifuges requiring a slower conveyor speed than the bowl



E.g.

n3=3000 rpm
n1=1000 rpm

ratio (planetary)=4

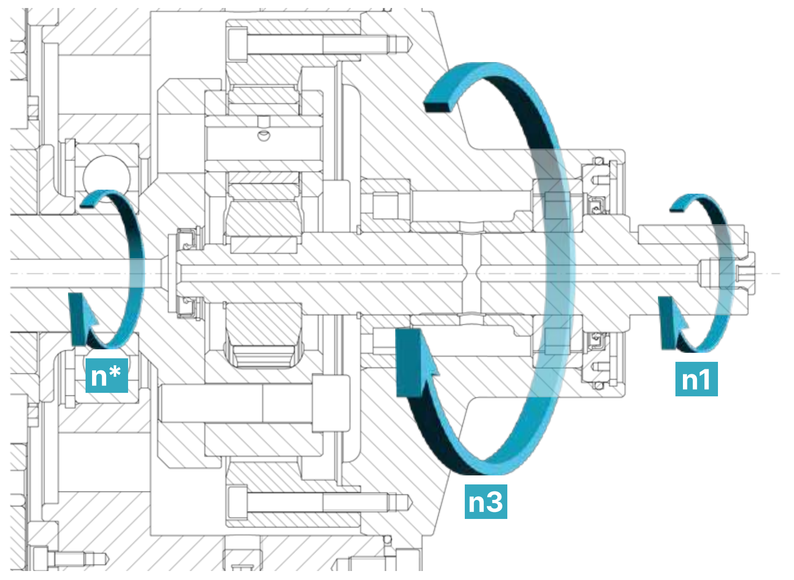
ratio (cycloidal)=43

>> **n***=3667 rpm

>> n2 (out)=2984.5 rpm
(slower)

OV

used for centrifuges requiring a faster conveyor speed than the bowl



E.g.

n3=3000 rpm
n1=1000 rpm

ratio (planetary)=4

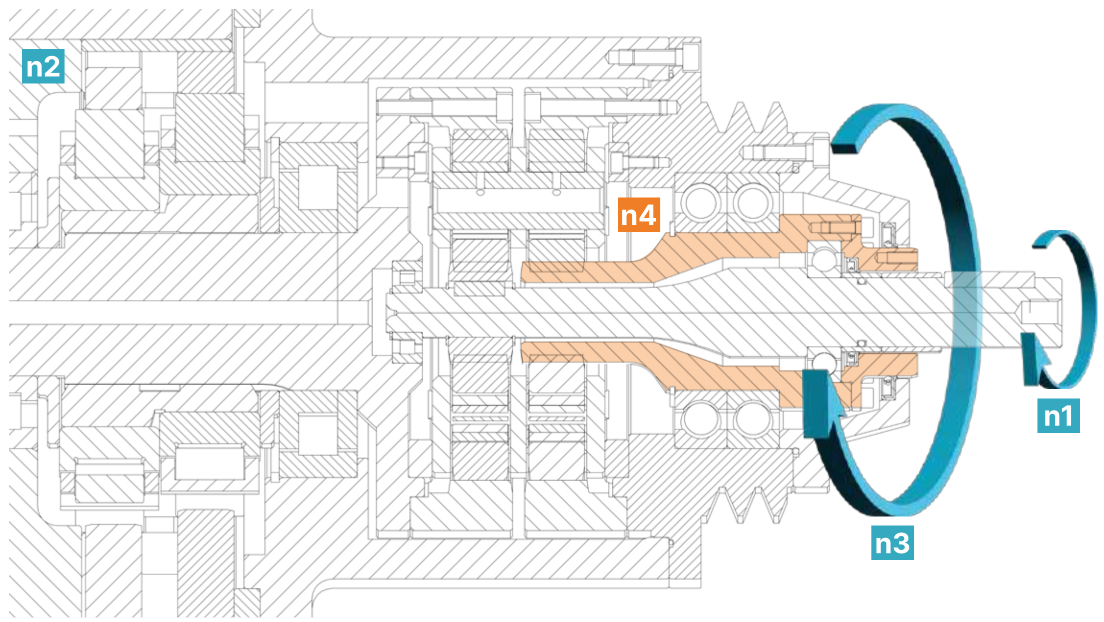
ratio (cycloidal)=43

>> **n***=2500 rpm

>> n2 (out)=3011.6 rpm
(faster)

OR

used for centrifuges requiring completely independent adjustment



n2 - n3
differential relative speed

n3
bowl speed

n2
conveyor speed

n1
input shaft speed
(coaxial connection with motor)

n4
input hollow shaft speed
(connection with torque arm) >> **n4**=0

E.g.

1) **n3**=0; **n1**≠0 >> **n2**=n1/i

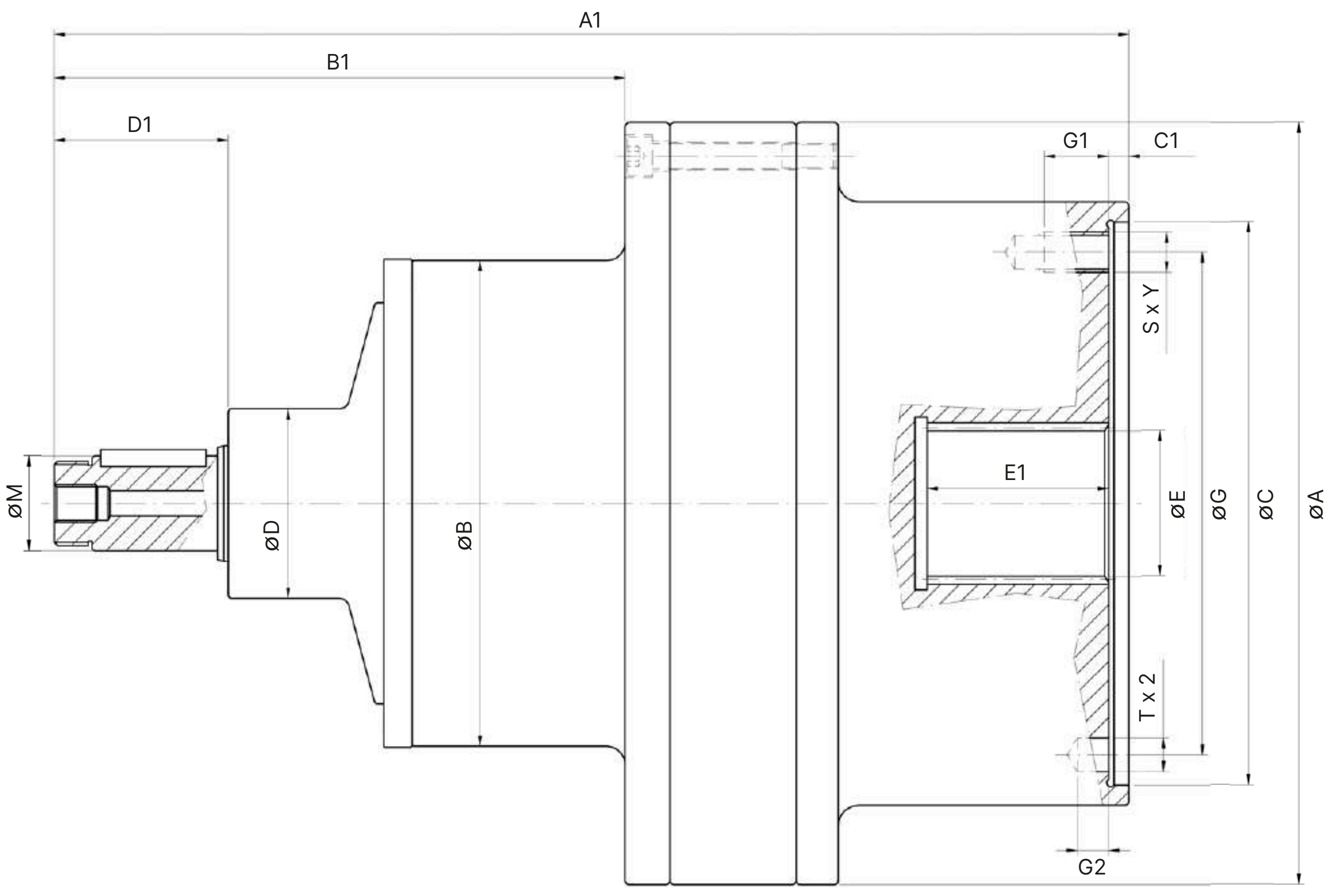
2) **n3**≠0; **n1**=0 >> **n2-n3**=0 >> **n2**=**n3**
(there is no speed differential because it depends only on n1)

3) **n3**≠0; **n1**≠0 >> **n2-n3**=n1/i
(there is a speed differential because it depends on n1)

- **n3**>0 e **n1**>0
(concordant rotation; conveyor faster than bowl)
- **n3**>0 e **n1**<0
(discordant rotation; conveyor slower than bowl)

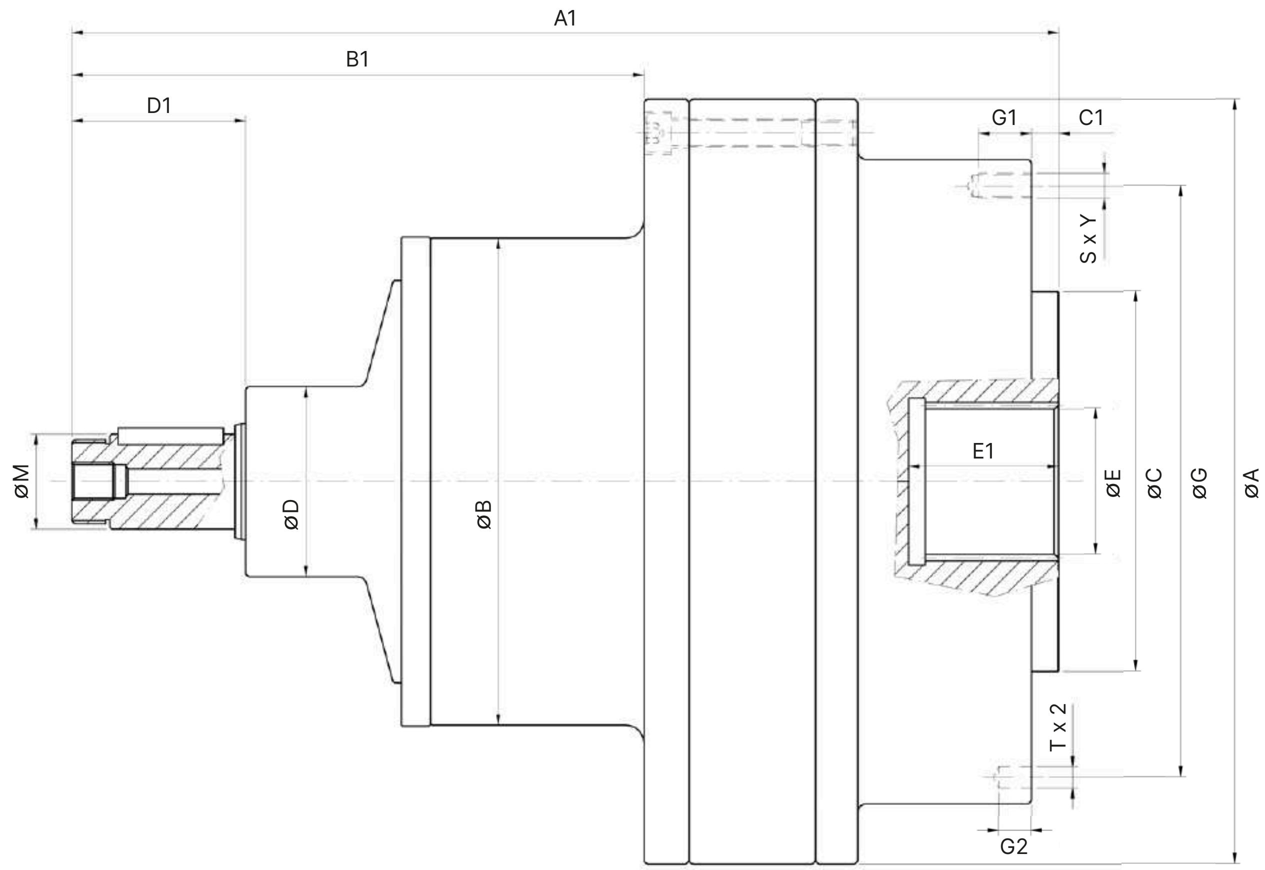
Advantages of using OR models

- It is possible to start the centrifuge without generating any speed differential because the bowl speed and the conveyor speed are independent (there is no synchronization)
- The speed differential depends only on the input speed n1 (coaxial motor)
- It is possible to have the conveyor both slower and faster than the bowl with the same gearbox model
- It is possible to measure the input reaction torque by equipping the second shaft (the hollow one) with a load cell on the torque arm. A safety control system on the centrifuge is obtained



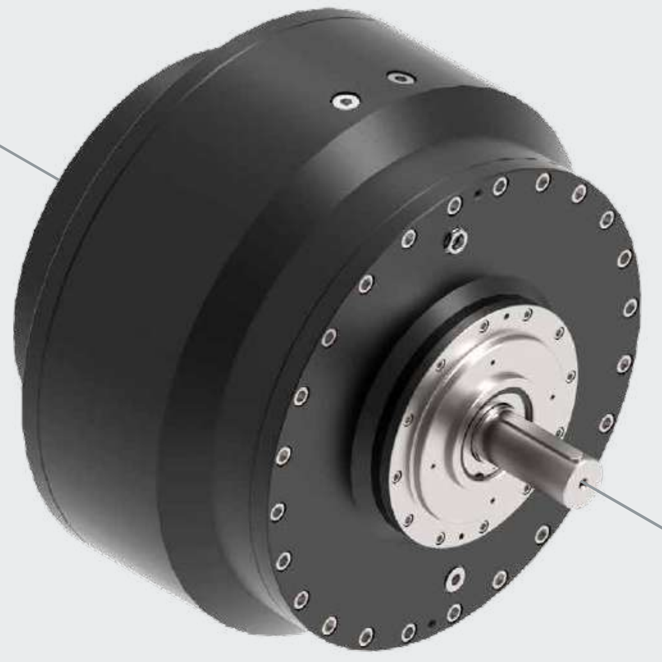
OV / ON Models																	
#	A	C	G	B	B1	D	D1	G2	T(n.2)	M	A1	E	E1	C1	S	Y	G1
O12	204	150	135	161	190	72	42	15	10	24	330	N40×2×30×18×9H	45	5	M10	8	15
O14	230	160	145	161	190	72	42	15	10	24	345	N50×2×30×24×9H	45	5	M10	8	15
O16	300	230	205	161	190	72	42	15	12	32	415	N60×3×30×18×9H	64	5	M12	8	18
O17	340	260	230	210	266	95	70	20	16	32	440	N75×3×30×24×9H	65	6	M16	8	20
O18	370	280	250	210	266	95	70	20	16	38	480	N75×3×30×24×9H	70	6	M16	8	20
O19	430	300	265	270	272	105	70	20	16	45	520	N85×3×30×27×9H	78	7	M16	12	21
O21	485	380	340	270	272	105	70	20	16	50	540	N100×3×30×32×9H	80	8	M24	6	24
O22	526	380	340	270	272	105	70	20	16	55	575	N100×3×30×32×9H	80	8	M24	6	27
O23	562	380	340	270	272	105	70	20	16	60	620	N120×3×30×38×9H	90	8	M24	6	30
O24	614	380	340	340	295	125	85	20	16	65	680	N120×3×30×38×9H	90	8	M24	12	30
O25	670	380	340	340	295	125	85	20	16	80	725	N130×3×30×42×9H	110	10	M24	12	35
O26	736	380	340	340	295	125	85	20	16	85	780	N130×3×30×42×9H	110	10	M24	12	35

* All dimensions [mm] may be subject to changes agreed with the customer



OV / ON Models																	
#	A	C	G	B	B1	D	D1	G2	T(n.2)	M	A1	E	E1	C1	S	Y	G1
O12	204	100	135	161	190	72	42	15	10	24	330	N40×2×30×18×9H	45	5	M10	8	15
O14	230	100	145	161	190	72	42	15	10	24	345	N50×2×30×24×9H	45	5	M10	8	15
O16	300	150	205	161	190	72	42	15	12	32	415	N60×3×30×18×9H	64	5	M12	8	18
O17	340	150	230	210	266	95	70	20	16	32	440	N75×3×30×24×9H	65	6	M16	8	20
O18	370	180	250	210	266	95	70	20	16	38	480	N75×3×30×24×9H	70	6	M16	8	20
O19	430	180	265	270	272	105	70	20	16	45	520	N85×3×30×27×9H	78	7	M16	12	21
O21	485	180	340	270	272	105	70	20	16	50	540	N100×3×30×32×9H	80	8	M24	6	24
O22	526	280	340	270	272	105	70	20	16	55	575	N100×3×30×32×9H	80	8	M24	6	27
O23	562	280	340	270	272	105	70	20	16	60	620	N120×3×30×38×9H	90	8	M24	6	30
O24	614	280	340	340	295	125	85	20	16	65	680	N120×3×30×38×9H	90	8	M24	12	30
O25	670	280	340	340	295	125	85	20	16	80	725	N130×3×30×42×9H	110	10	M24	12	35
O26	736	280	340	340	295	125	85	20	16	85	780	N130×3×30×42×9H	110	10	M24	12	35

* All dimensions [mm] may be subject to changes agreed with the customer



Construction Sizes 11

Output Torque Up to120000 Nm

Direction of rotation between Input and Output Concordant

Input cylinder shaft
With key

Dynamic Balance
According to ISO1940

Noise Level
Low noise level thanks to transmission by rolling friction and to the choice of bearings ISO281

Reduction Ratios
Double reduction stage up to a ratio of 1:100; three planetary stages from 1:100 to 1:224

Output connection
Hub with female spline according to DIN5480

Execution for fitting
Flanged with female centring

Lubrication
Oil lubrication with closed system, expansion tank or external hydraulic control unit

Seals resistant to high pressures
Static and dynamic

Seals resistant to high temperatures
Thanks to fluoroelastomer (FKM)

Planetary gearboxes

Atex certification (Group 2)

Optional stainless-steel covers AISI304 – AISI316

This series of gearboxes is characterized by **two or three planetary stages** (sun gears, planetary gears, ring gear) in 9 sizes available from 5KNm to 120KNm with **gear ratios ranging from 1:20 to 1:224**.

This series of gearboxes is particularly suitable for **centrifuges with high bowl speed and** for industrial machines where a **high centrifugal acceleration force** is required.

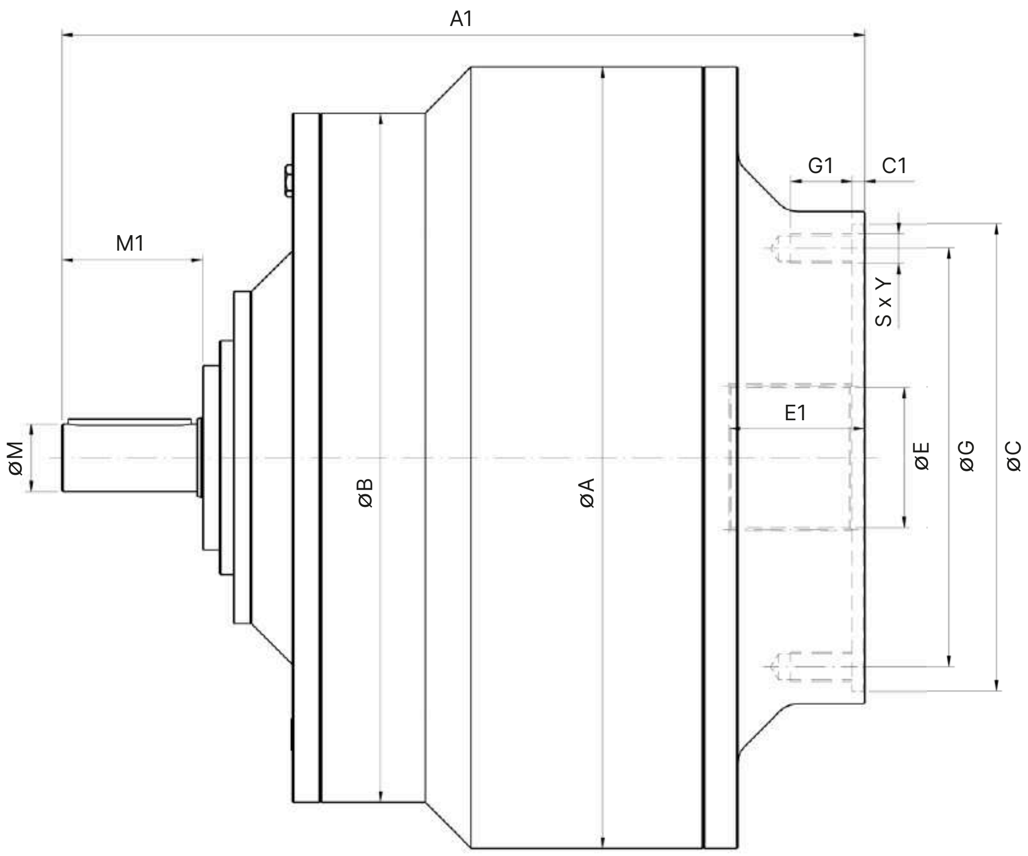
The models are suitable for centrifugal applications with **constant differential speed** (torque arm fixed to the input shaft or single-motor operation with two belts for motor and conveyor), **as well as** for dual-motor centrifuge operation (Backdrive) for **adjustable differential speeds**.

Other construction features

- Trasmission ratios from 1:20 to 1:224
- High transmittable torques thanks to the engagement designed according to ISO6336

		Reduction ratios										
		Double planetary stages							Triple planetary stages			
Size	Torque [Nm]	20	25	32	40	60	80	100	125	160	184	224
OEPI5	5000	■	■	■	■	■	■	■	■	■	■	■
OEPI8	8000	■	■	■	■	■	■	■	■	■	■	■
OEPI12	12000	■	■	■	■	■	■	■	■	■	■	■
OEPI20	20000	■	■	■	■	■	■	■	■	■	■	■
OEPI30	30000	■	■	■	■	■	■	■	■	■	■	■
OEPI40	40000	-	-	-	■	-	■	■	-	-	-	-
OEPI50	50000	-	■	-	■	-	■	■	■	-	-	-
OEPI80	80000	-	■	-	■	-	■	■	-	■	-	-
OEPI120	120000	-	■	-	■	-	■	■	-	-	-	-

* Different ratios can be analyzed for specific costumer needs



#	A	B	M	M1	A1	C	C1	E (DIN5480)	E1	G	S	Y	G1	Max Drum speed (rpm)	Weight (Kg)
	Double planetary stages														
OEPI2.5	270	270	18	36	260	130	10	N48×2×30×22×9H	40	120	M12	40	20	6000	60
OEPI4	280	280	20	40	285	150	10	N50×2×30×24×9H	45	140	M16	45	25	6000	80
OEPI5	300	280	25	45	300	160	10	N50×2×30×24×9H	45	150	M16	8	25	6000	100
OEPI8	400	340	30	50	350	200	10	N60×2×30×28×9H	55	180	M16	12	30	4200	160
OEPI12	420	370	30	55	400	240	10	N70×3×30×34×9H	65	230	M16	12	30	3800	200
OEPI20	460	390	30	60	470	300	10	N80×3×30×25×9H	75	280	M16	12	30	3400	265
OEPI30	510	455	42	80	530	380	10	N90×3×30×28×9H	85	340	M24	12	45	3000	350
OEPI40	580	525	50	100	610	380	10	N100×3×30×32×9H	90	340	M24	12	45	2600	540
OEPI50	635	560	55	110	652	380	10	N120×3×30×38×9H	100	340	M24	12	45	2400	650
OEPI80	750	670	60	130	730	520	15	N140×4×30×34×9H	115	480	M24	32	45	1600	1000
OEPI120	860	755	80	170	840	580	18	N180×5×30×34×9H	125	520	M30	24	50	900	1500

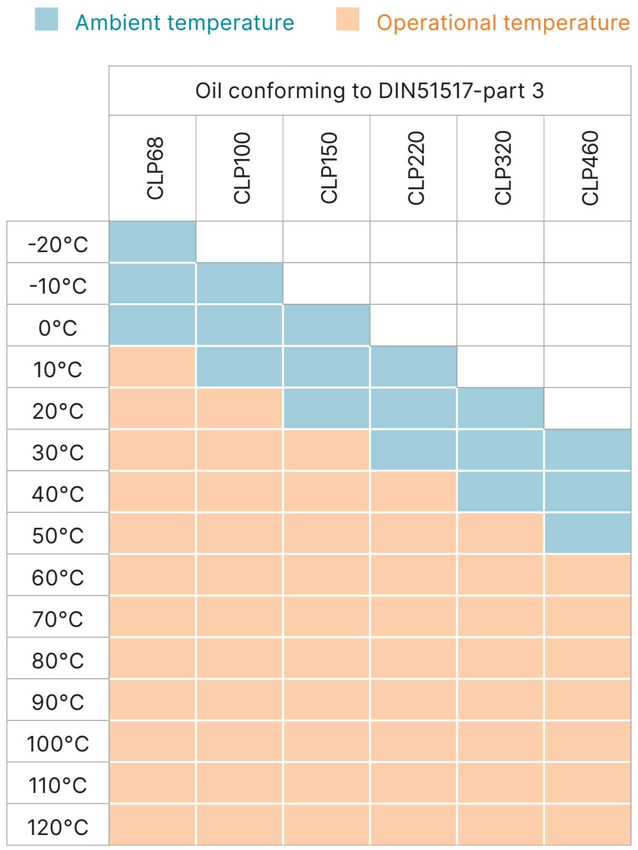
* All dimensions [mm] may be subject to changes agreed with the customer

01 What type of Lubricant to use?

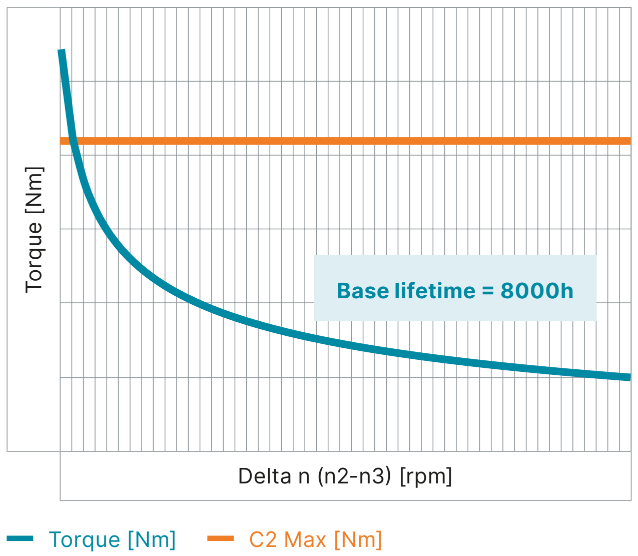
Omme Gears technicians are asked this question more and more frequently and the answer is usually complex because it is based on a careful evaluation of the working conditions of the decanter centrifuge and of where it is installed.

Before putting the gearbox into service, it is crucial to adopt an adequate lubrication procedure to guarantee its optimal functioning and maximum durability over time. To do this, the gearbox must be filled with lubricant to the indicated level at the specified mounting position. This process requires maximum attention to detail and the choice of the appropriate lubricant is essential.

This should be based on various factors, including the type of service expected and the ambient temperature in which the gearbox will operate, as indicated in the diagram below. The scrupulous respect of these lubrication guidelines ensures not only the efficiency of the gearbox but also its long-term reliability, thus helping to reduce maintenance costs and extending the service life of the device.



02 Torque Diagram



In this paragraph the user is guided in choosing the size of the gearbox and the transmission ratio according to the torques developed in operation. The equation describing the transmission torque pattern on the slow shaft for this gearbox series is defined by the following mathematical relationship:

$$C_2 = \frac{K}{(n_2 - n_3)^{0.3}}$$

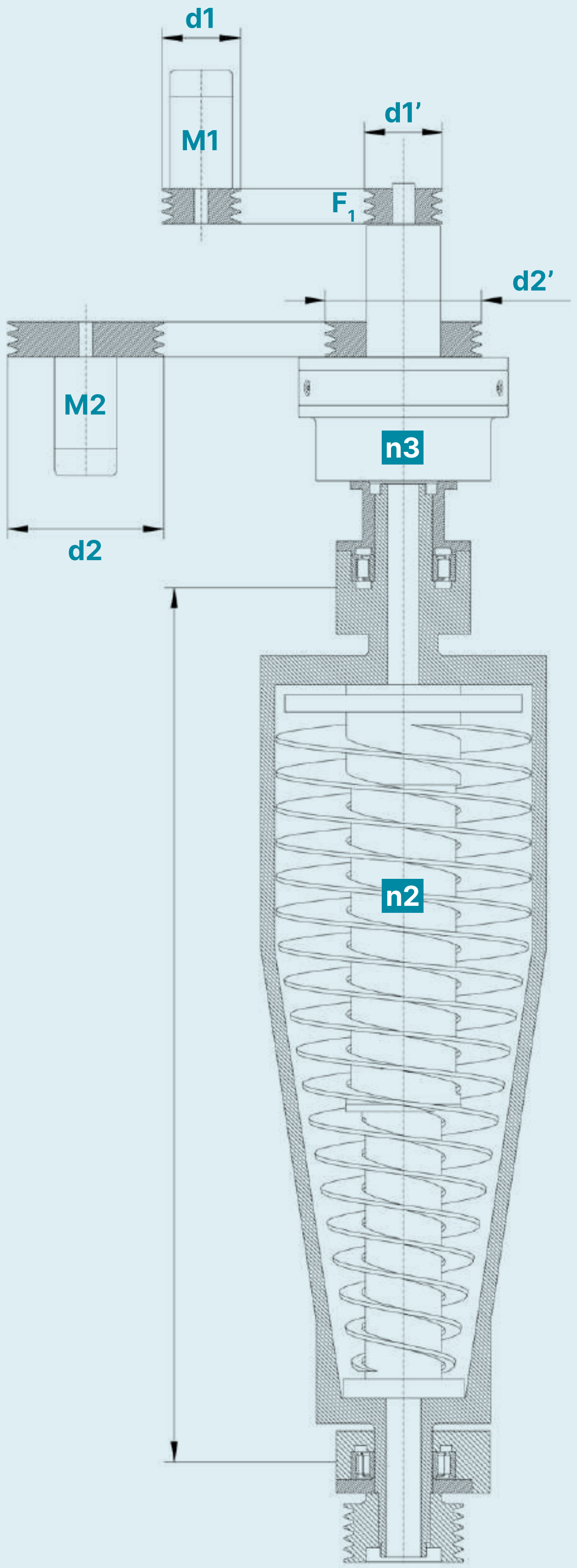
n1 = fast shaft reducer revolutions per minute [rpm]

n2 = slow shaft/screw revolutions per minute [rpm]

n3 = reducer casing/drum revolutions per minute [rpm]

$$i = \frac{n_3 - n_1}{n_2 - n_3}$$

K = Numerical coefficient valid for average life of 8000 hours of eccentric bearing. Torque diagrams can also be provided for longer average life.



CHOICE OF THE GEARBOXES

For a correct sizing of the gearbox in your machine it is absolutely important to have the completeness of the data and know the specifications of the process.

A correct sizing of the gearbox is essential to minimize maintenance costs and to extend the useful life as much as possible.

Filling in the table next to Omme will help you design the most suitable gearbox for your needs.

Customer Name ____________________ Date __________

Market application ____________________

	INPUT DATA OF THE BOWL				REFERENCES FROM Customer	REFERENCES FROM Builder
1	Dimension	mm	Diameter (D)	Lenght (L)	☐	☐
2	Motor tyme (M1)		Asincronous ☐ Hidraulic ☐ Other ☐		☐	☐
3	Power	KW			☐	☐
4	Number of poles				☐	☐
5	Speed range	rpm	Min	Max	☐	☐
6	Motor type (M2)		Asincronous ☐ Hidraulic ☐ Other ☐		☐	☐
7	Power	KW			☐	☐
8	Number of poles				☐	☐
9	Speed range	rpm	Min	Max	☐	☐
10	Rotational bowl speed (n_3)	rpm			☐	☐
11	Pulley diameter from motor shaft to input (d_2)	mm	d2	d2'	☐	☐
	INPUT DATA OF THE CONVEYOR					
12	Relative speed between conveyor and bowl (Δn)	rpm			☐	☐
13	Operation		Faster than bowl ☐	Slower than bowl ☐	☐	☐
14	Torque needed on the conveyor (C2)	Nm			☐	☐
15	Pulley diameter from motor shaft to input (d_2)	mm	d1	d1'	☐	☐
	OTHER INFORMATIONS					
16	Ambient temperature	°C	Min	Max	☐	☐
17	Working temperature	°C	Min	Max	☐	☐
18	Radial load on input shaft (F_1)	N			☐	☐
	LUBRIFICATION SYSTEM					
19	Grease	°C	Yes ☐ No ☐		☐	☐
20	Oil bath lubrification	°C	Yes ☐ No ☐		☐	☐
21	Oil bath lubrification + External compensation tank	N	Yes ☐ No ☐		☐	☐
22	Forced lubrification (idraulic system)		Yes ☐ No ☐		☐	☐
23	Other				☐	☐

Note

Let’s talk about your next project.

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