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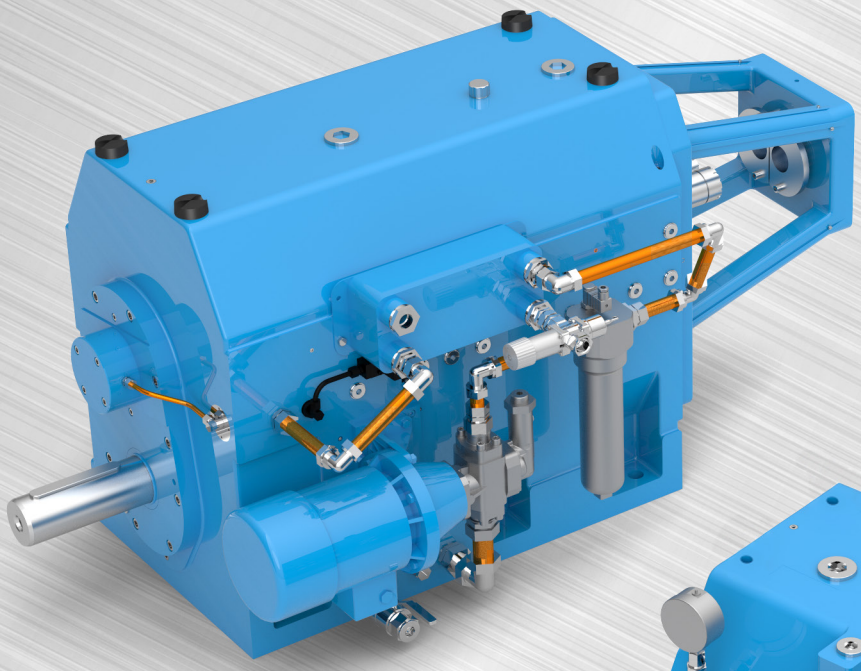
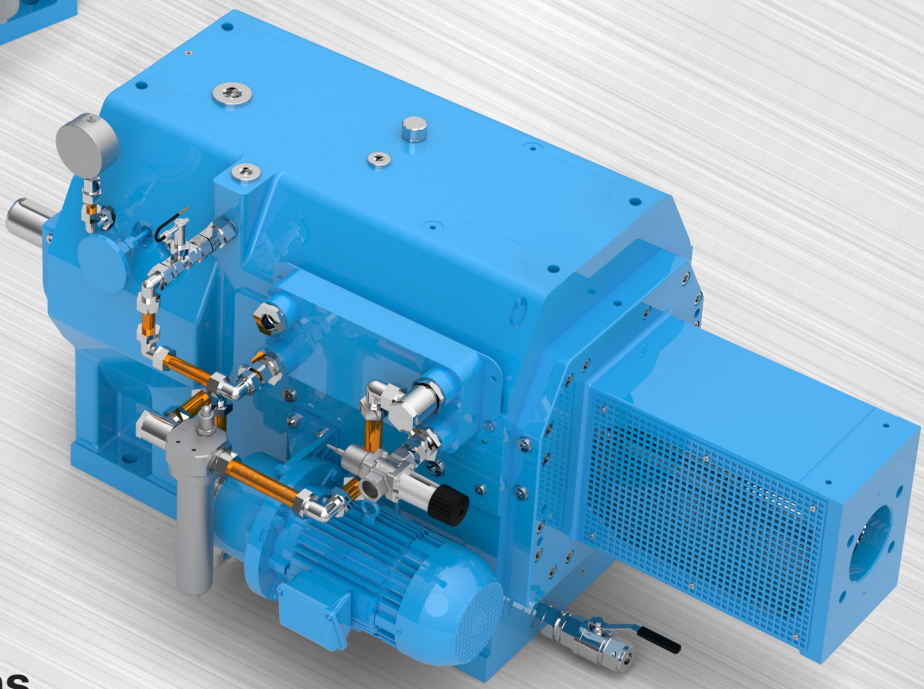
Product Catalog

Twin Screw Extruder Drives
PIV™ Positwin® Series

Torques from 82 Nm to 35.000 Nm





Extruder solutions

The Postwin gearboxes are designed for continue running application 24 / 7 in the plastic and rubber industry.
They ensure high performances in demanding applications based on their modularity and a wide range of center distance.


PIV
TM


DANA

PIV™ Positwin

The PIV™ Positwin gearbox series is series from DANA Motion Systems Deutschland GmbH. The development has incorporated over 90 years of application knowledge and customer feedback and the outcome is a series of highly reliable, efficient and economical products.

The development of the PIV™ Positwin gearbox series enabled the improvement in torque density, smaller physical envelope, higher efficiency, lower weight, noise and power consumption. Overall, the modular design of the PIV™ Positwin series gives sustainable and efficient transmission that minimize operating costs and maximize availability.

The DANA Motion Systems Deutschland GmbH ISO 9001:2015 quality assurance system for design, development, production, assembly, and aftersales service guarantees a uniformly high World-class standard.

PIV™ Positwin
is an “intelligent” transmission concept with advantages to customers including:
- Short delivery times due to a high degree of standardization
- Cost-efficient gear selection for every application due to better torque distribution between sizes
- High product quality resulting from a more robust construction
- Greater product flexibility enables a wide range of uses
- Custom-made production based on a modular system

Available Options
- 1 -stage helical gear units
- 1 standard thrust bearing per size
- Other thrust bearings on demand
- 19 sizes based on the modular principle

Construction and Design
- Horizontal standing installation with vertical splited housing

Output torques
- T_2 from 82 Nm to 35.000 Nm per shaft

Ratios
- i_N = 1 to 5.6 for spur gears

Housing
The innovative housing of the PIV™ Positwin series have been developed using the latest calculation methods to ensure optimum stiffness and acoustics with minimal use of material.
For the axial forces from the extrusion process we use a tandem bearing in the standard gearbox housing.

Housing Material
- Main housing standard is gray cast iron EN-GJL-250
- Output housing is standard nodular cast iron EN-GJS 400
- On request steel welded

Output Shaft Designs
- Solid shaft teeth according to DIN5480
- Shaft according to customer requirements on request

Input Shaft Designs
- Solid shaft with key
- On demand, input shaft with hole for air lifted coupling

Keys
- according to DIN 6885/1 are included in the scope of delivery

Center holes
- on the shaft ends acc. to DIN 332 form DS

Gears
The PIV™ Positwin series uses helical spur gears. All gears are designed for optimum load-bearing behavior and to minimize noise. In our own hardening shop, the gears are case-hardened and then the profiles are ground with the necessary correction according to the design.

Bearings
The dimensioning of the rolling bearing service life takes into account the high expectations of mechanical and plant engineering. Only bearings from premium manufacturers are used.

Seals
Sealing systems available as standard for input and output shafts are:
- Radial shaft seals in various materials
- Radial shaft seals with additional dust lip
- No-contact seals
- Maintenance cover with reusable seal

Lubrication
- Gears and roller bearings are splash lubricated / force lubricated as standard
- Standardized injection lubrication systems with shaft or motor driven pump
- Oil sight glass as standard

Cooling
Additional cooling devices available as standard are:
- Cooling coil (cartridge type)
- External oil-water cooler

Accessories
- Output coupling
- Force sensor

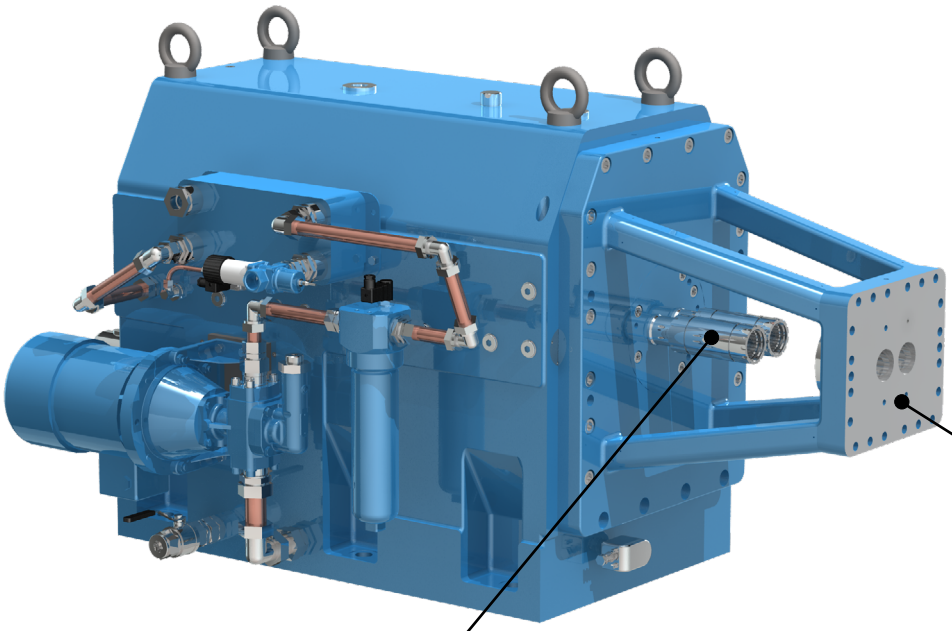
Couplings
At the input, suitable for the series drive shafts and gearbox torques:
- Flexible couplings
- Other couplings on request

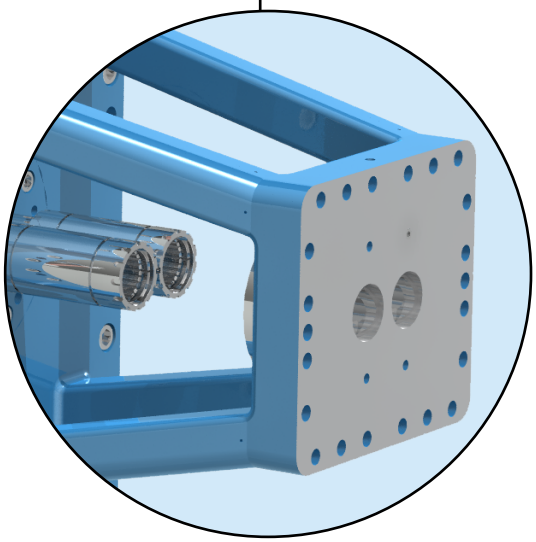
Other Accessories
- Heaters mounted from the outside
- Operating monitoring systems for speed, torque
- Indicators for temperature, oil flow, oil level etc.
- Diagnostic systems for bearing monitoring

General information
- Dimension sheets are available as CAD files for various IT systems and interfaces
- Computer programs for drive selection
- Gear, shaft and bearing calculation with proof of calculation
- The degree of protection corresponds to IP 55
- Information on the weight of the gear unit and the amount of gear oil are guide values. Exact values can be found on the gear unit nameplate or technical description
- The standard color is RAL 5012, other colors are available
- Protection covers and air guides painted in RAL 1003 (signal yellow)

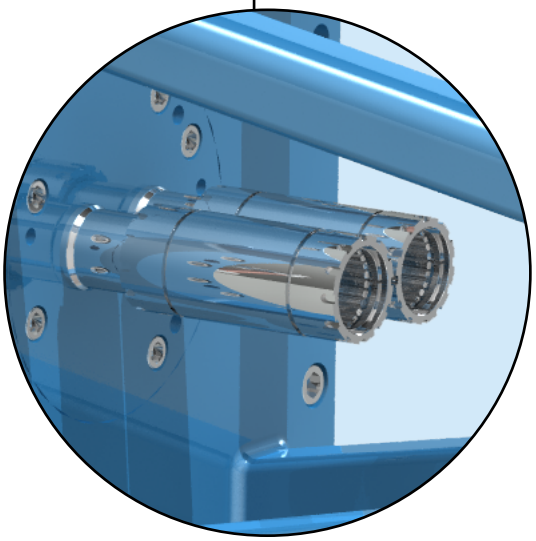
Scope of delivery, installation and commissioning
- The delivery takes place without oil filling
- Transport aids such as eye bolts are not included
- Oil type and oil quantity according to the nameplate or technical description
- Recommended quality: CLP according to DIN 51517 part 3 or see technical description
- The standard preservation under normal transport and storage conditions is sufficient for a period of 18 months
- Installation and commissioning according to PIV Motion Systems operating instructions
- On request, we can supply the legally prescribed contact protection on rotating parts

TECHNICAL DESCRIPTION





Customized connection to extruder
Individual flange for perfect connectability



Adjustable centre distance
Variable output shafts and customised output splines. The axial forces from the extruder screws are absorbed safely within the gear unit by means of tandem bearings and self-aligning thrust roller bearings.

Symbology	
Output torque [Nm]	T_2
Input torque [Nm]	T_1
Torque factor [Nm/cm^3]	**d_f /shaft**
Gear unit weight [kg]	
Oil quantity in liters [l]	
Reference to page	

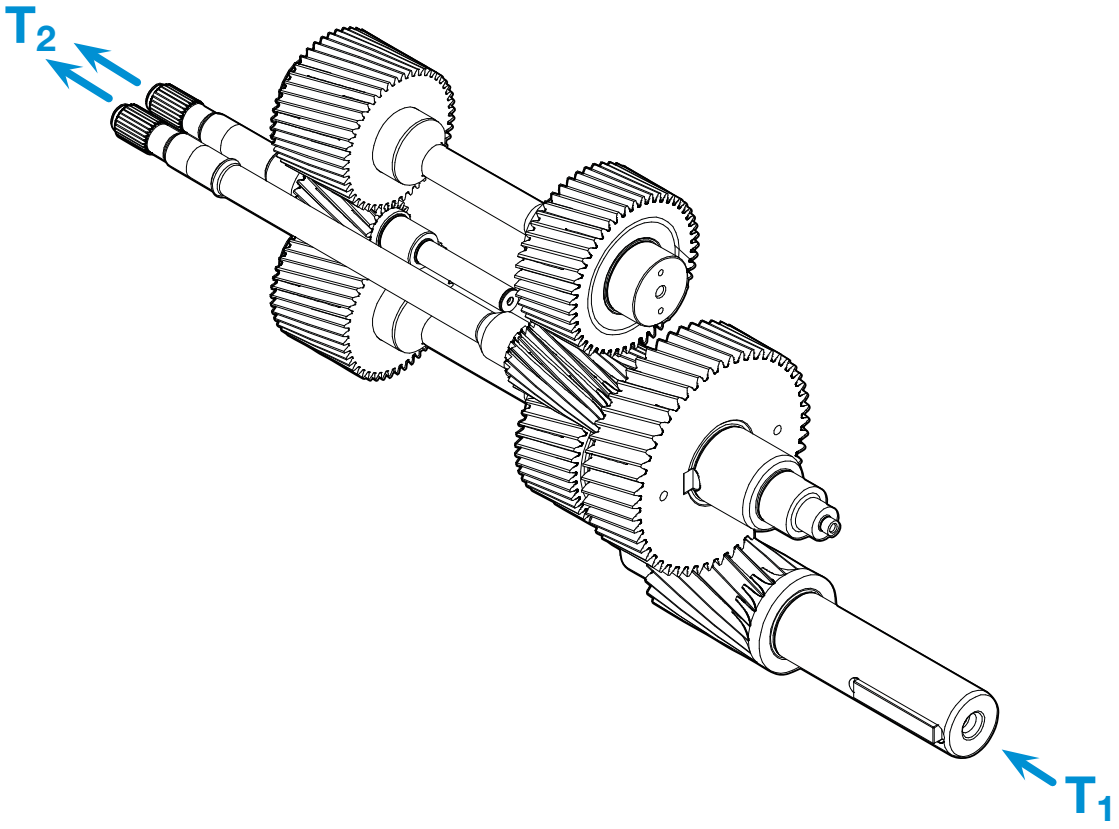
TRANSMISSION SYSTEM

PIV Drives offers two different drive types for dual-shaft co-rotating extruder gear units, which allow with their adapted transfer systems an optimal commercial drive utilization:

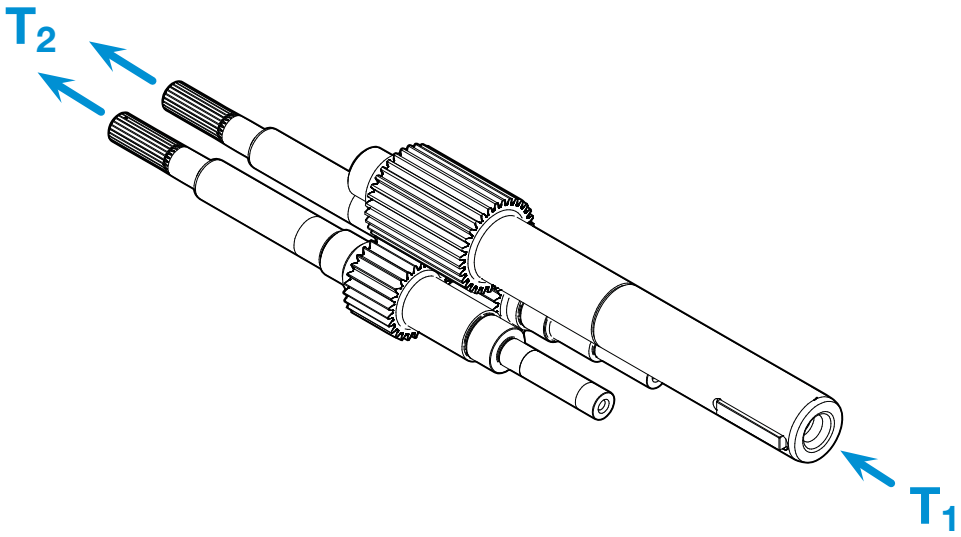
- Gear unit for heavy duty extruders (compounders).
- Gear unit for side feeding (side feeder):

Data for side feeder gear units are available upon request.

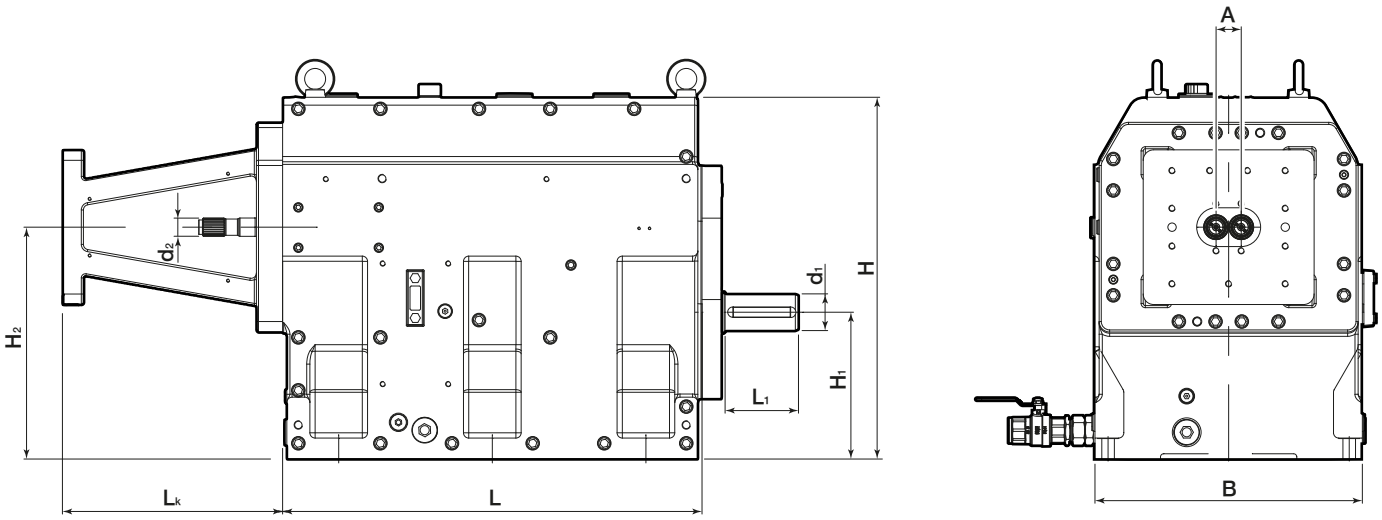
Heavy duty extruder



Side feeder



Twin Shaft Co-Rotating Extruder Drive

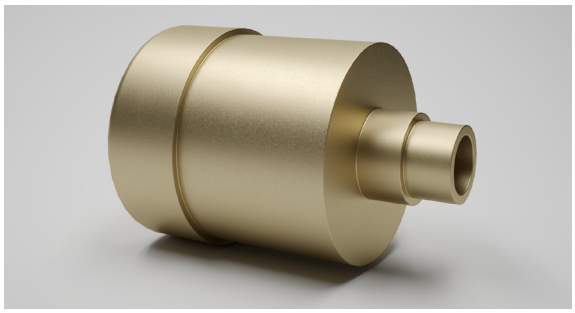


Type	A (from ÷ to) [mm]	B [mm]	L [mm]	L_k [mm]	H [mm]	H_1 [mm]	H_2 [mm]	d_2 DIN 5482	d_1 [mm]	L_1 [mm]	[kg]	[l]	T_2 [Nm]	d_f /shaft [Nm/cm³]
21.1/25-B2N 82010	21.1 ÷ 25.0	240	302	211	326	132	216	W14 x 1.00 x 30 x 12 x 9e	24	73	115	8	82	7
22/32-B2N 21110	22.0 ÷ 32.0	270	403	221	347	132	225	W15 x 0.60 x 30 x 23 x 9e	35	100	146	14	212	20
26.2/31-B2N 32110	26.2 ÷ 31.0	322	572	294	380	220	220	W20 x 0.50 x 30 x 38 x 8e	40	90	365	30	325	18
31/37.5-B2N 40110	31.0 ÷ 37.5	310	553	240	455	160	286	W22 x 1.00 x 30 x 20 x 8f	45	119.3	305	18	400	13
33.4/43-B2N 50110	33.4 ÷ 43.0	360	600	432	561	200	326	W25 x 1.25 x 30 x 18 x 9e	45	120	500	25	509	13
35/50-B2N 77110	35.0 ÷ 50.0	430	759	432	540	300	300	W25 x 0.50 x 30 x 48 x 8f	50	110	750	35	772	18
41/50-B2N 82110	41.0 ÷ 50.0	510	752	410	690	250	413	W30 x 1.25 x 30 x 22 x 8f	40/50	110	880	52	815	12
41.5/50-B2N 14210	41.0 ÷ 50.0	516	825	455	630	355	355	W34 x 1.25 x 30 x 25 9d	50	110	1030	50	1400	20
50/62.5-B2N 14210	50.0 ÷ 62.5	510	762	380	790	380	542	W35 x 1.25 x 30 x 26 x 8f	60	140	1200	100	1400	11
48/63-B2N 20210	48.0 ÷ 63.0	560	908	520	750	400	400	W40 x 1.25 x 30 x 30 x 8e	70	140	1470	90	2000	18
58.5/64-B2N 35210	58.5 ÷ 64.0	600	1070	519	1060	700	700	W48 x 1.50 x 30 x 30 x 8e	85/60	170/140	2600	210	3500	17
62.5/75-B2N 37210	62.5 ÷ 75.0	650	1082	475	1000	400	645	W45 x 1.50 x 30 x 28 x 9e	90	170	2390	180	3700	15
62/80-B2N 43210	62 ÷ 80.0	630	1100	602	1104	500	745	W50 x 1.50 x 30 x 32 x 8e	75	140	2780	228	4300	18
75/80-B2N 50210	75.0 ÷ 90.0	646	1080	567	927	280	527	W60 x 2.00 x 30 x 28 x 8f	100	180	2490	136	5000	12
75/90-B2N 50210	75.0 ÷ 92.0	660	1194	567	1095	450	694	W60 x 2.00 x 30 x 28 x 8f	100	180	2850	200	6500	15
87/101-B2N 10310	87.0 ÷ 101.0	680	1330	547	1150	400	699	W68 x 1.50 x 30 x 44 x 8f	85	170	4080	260	10000	15
98/112-B2N 15310	98.0 ÷ 112.0	880	1560	740	1360	450	821	W75 x 2.00 x 30 x 36 x 8f	120	210	7300	316	15000	16
116/125-B2N 20310	116.0 ÷ 125.0	1020	1540	740	1426	450	871	W95 x 2.50 x 30 x 36 x 8f	120	210	8400	350	20000	13
146/205-B2N 35310	146.0 ÷ 205.0	1260	1903	860	1647	600	924	W110 x 2.5 x 30 x 42 x 8e	120	200	14600	550	35000	11

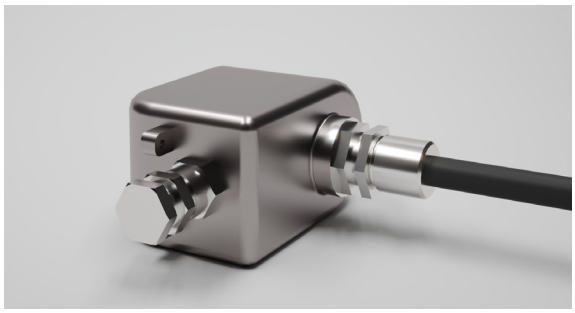
Dimensions not strictly binding.
Complete and exact dimensioning of the gear units takes place in the customized dimensional sketch.
Gear units for side feeder, upon request.

OPTIONAL ACCESSORIES

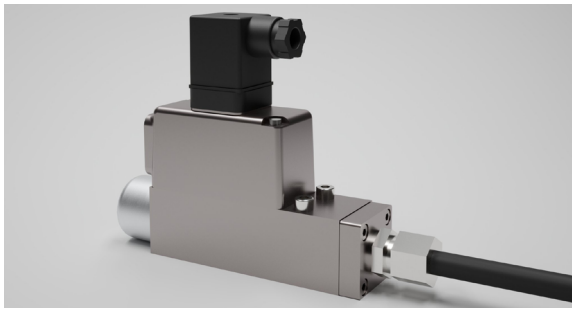
Breather with filter
A breather with a filter can be used to prevent dust from entering the gearbox while the gear unit is cooling down.



Breather with wet filter
If the humidity is high, we recommend a breather with wet filter to prevent water vapor from penetrating the gear oil.

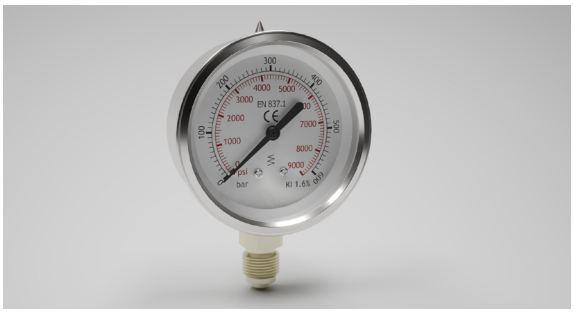


Temperature switch
To control the max. oil temperature there is the possibility to install a Temperature switch into the oil sump and get output signal when the temperature is above certain level.



Pressure switch
In case of a force lubrication or cooling unit there is the possibility to control the oil pressure with a pressure switch. If the oil pressure is below certain pressure a signal will stop the main motor of the gearbox.

PT100
To monitor the oil temperatures on the gearbox, and set up different level of attention at certain temperature, for instance start, alert and stop of the gearbox.



Manometer
In case of a force lubrication or cooling unit there is the possibility to have visual control the oil pressure with a manometer.

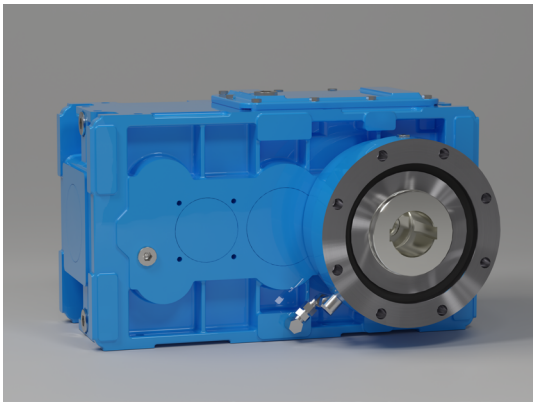
Oil level switch
With the oil level switch is it possible to control the min. oil level of the gearbox in case you use a heater.

Oil drain with ball valve
For an easy, safe and clean oil drain from the gearbox, we can deliver an oil drain with a ball valve

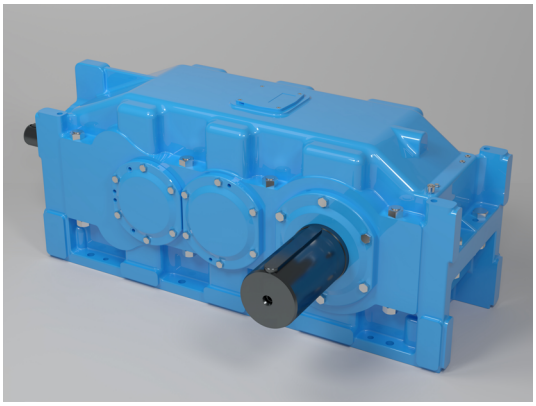
OPTIONAL ACCESSORIES

Oil filter, single, double
To increase the bearing lifetime is it possible in case of force lubrication / cooling to use an oil filter. We recommend a double switching filter for 24 hours operation.

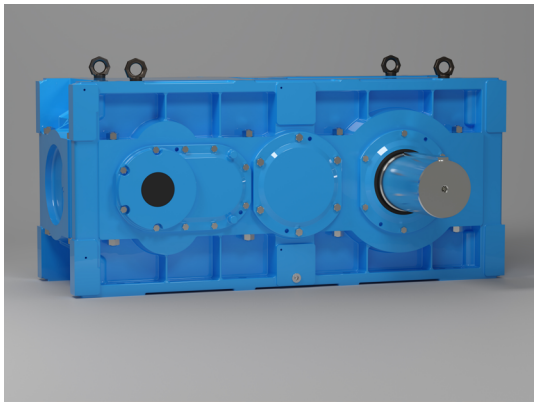
Regulator for quantity of cooling water
In order to have a constant gear oil temperature with water cooling, we recommend the installation of a water regulator.



Posirex
Posirex Evo gearboxes are designed for continue running application 24 / 7 in the plastic & rubber industry.
They ensure high performances in demanding applications based on their modularity and a wide range of combinations.
Output torque up to 178 kNm.
Ratios from 4 up to 500.

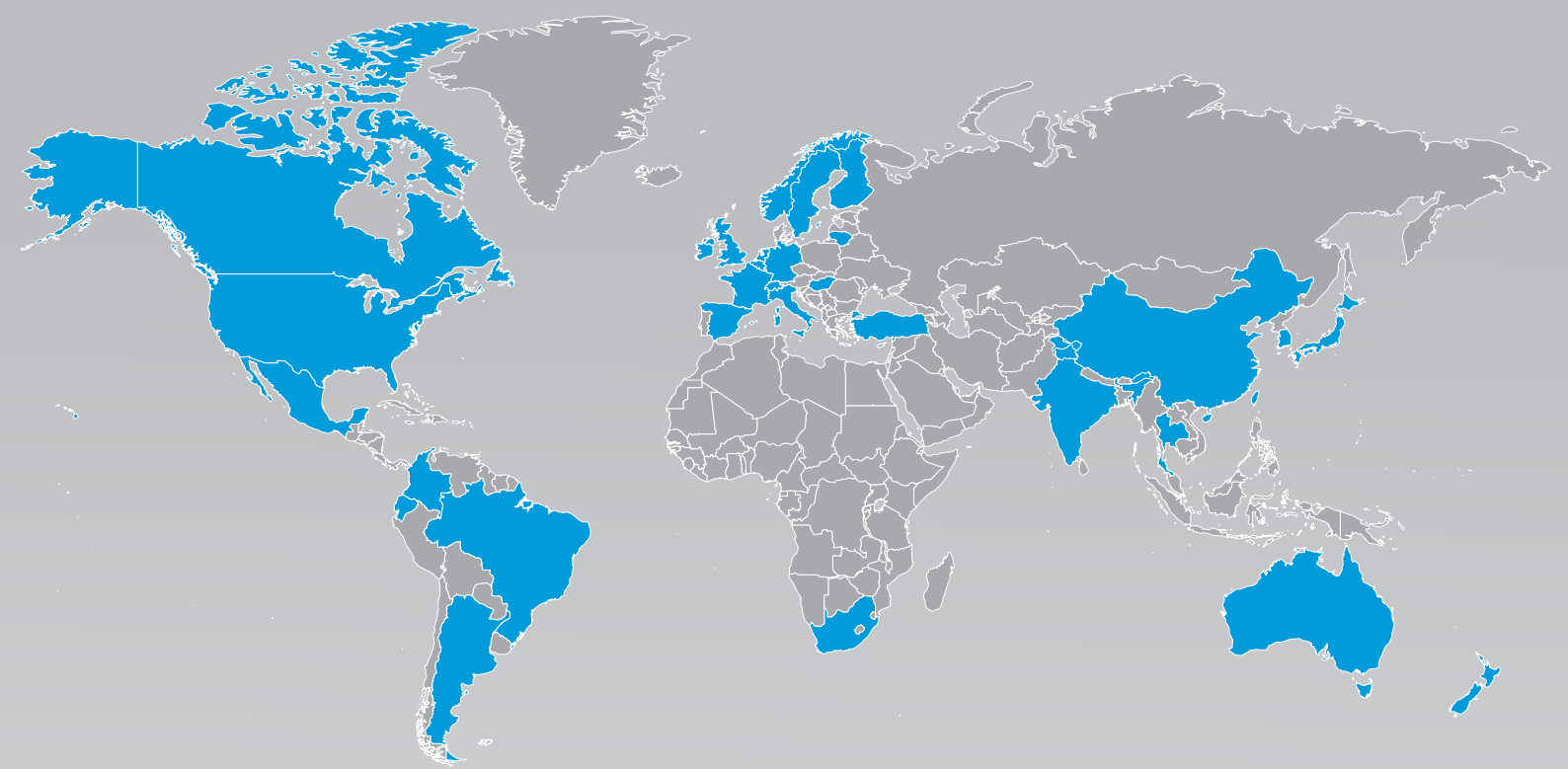


Brevini EvoMax™
The Brevini EvoMax™ gearbox series is a further development of the POSIRED 2 series from PIV Drives GmbH. The development has incorporated over 90 years of application knowledge and customer feedback and the outcome is a series of highly reliable, efficient and economical products.
The development of the Brevini EvoMax™ gearbox series enabled the improvement in torque density, smaller physical envelope, higher efficiency, lower weight, noise and power consumption.
Overall, the modular design of the Brevini EvoMax™ series gives sustainable and efficient transmission that minimize operating costs and maximize availability.
Torque range 10 kNm up to 290 kNm.
Ratios from 4 up to 500.



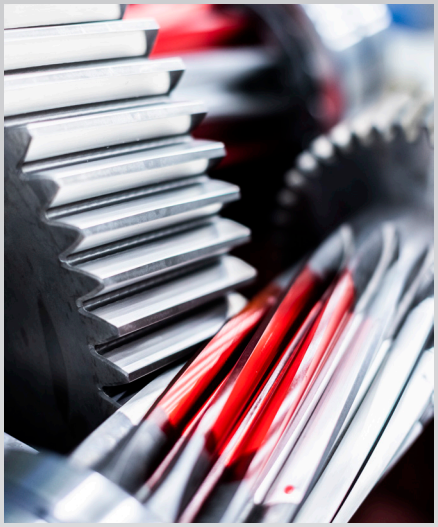
Brevini POSIRED 2 Big sizes
The POSIRED 2 is a bevel-helical gearbox series with 2, 3 and 4 helical bevel helical gear stages.
The gearbox based on the modular system of Brevini EvoMax™ .
Torque range from 340 kNm up to 805 kNm.
Ratios up to 560.

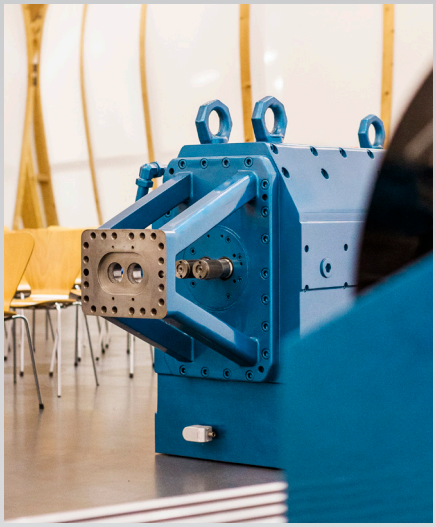
NOTE



Technologies Customized to **Every Part of the Globe**

With a presence in 31 countries, Dana Incorporated boasts more than 150 engineering, manufacturing, and distribution facilities. Our worldwide network of local service centers provides assurance that each customer will benefit from the local proximity and responsiveness.





About Dana Incorporated

Dana is a leader in the design and manufacture of highly efficient propulsion and energy-management solutions that power vehicles and machines in all mobility markets across the globe. The company is shaping sustainable progress through its conventional and clean-energy solutions that support nearly every vehicle manufacturer with drive and motion systems; electrodynamic technologies, including software and controls; and thermal, sealing, and digital solutions. Founded in 1904, we employ thousands of people across six continents.

About Dana Off-Highway Drive and Motion Systems

Dana delivers fully optimized Spicer® drivetrain and Brevini® motion systems to customers in construction, agriculture, material-handling, mining, and industrial markets. We bring our global expertise to the local level with technologies customized to individual requirements through a network of strategically located technology centers, manufacturing locations, and distribution facilities.

Learn more about Dana's drivetrain and motion systems at **dana.com/offhighway**.

Dana-Industrial.com

Application Policy
Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.

PIV™

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