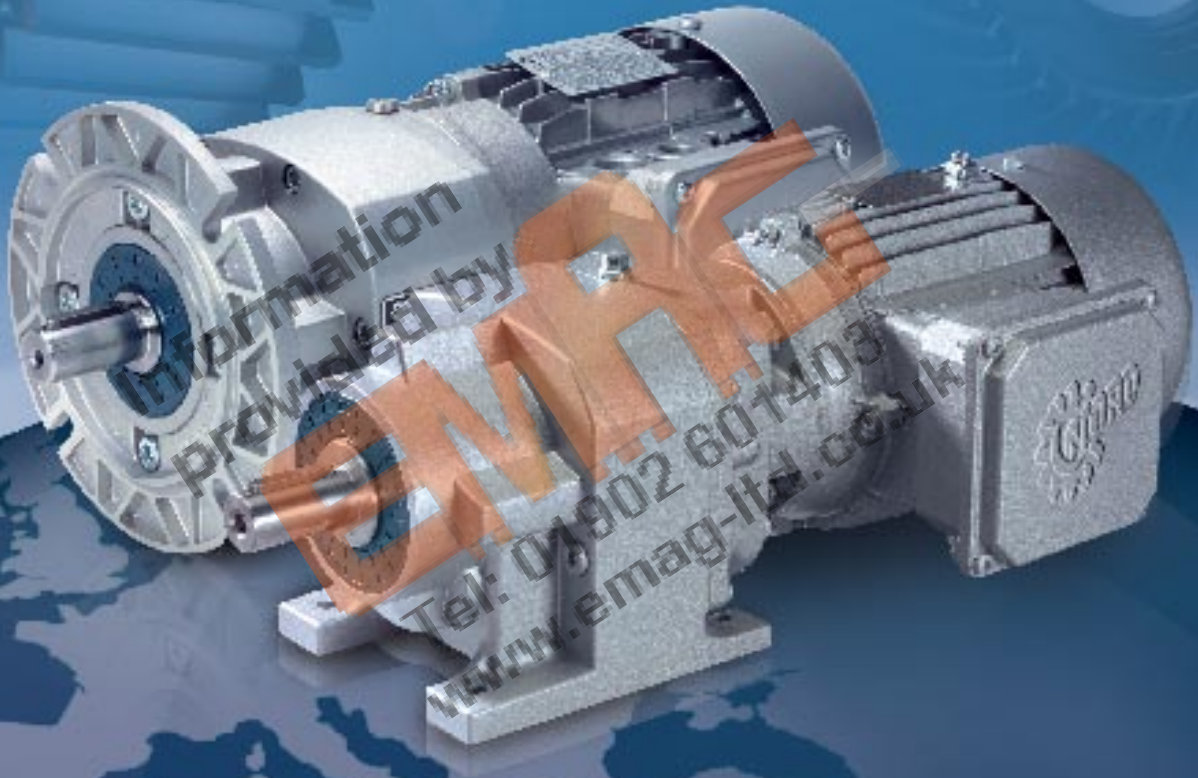
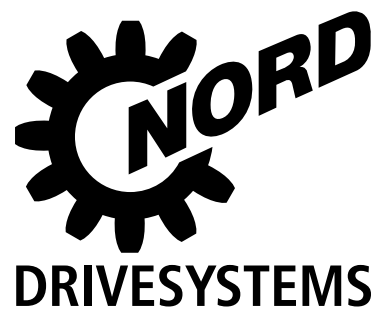


Intelligent Drivesystems, Worldwide Services



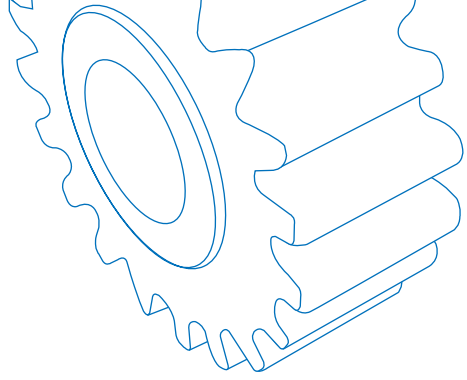
# NORDBLOC.1

Innovative design SK 072.1 – SK 673.1



# NORDBLOC.1

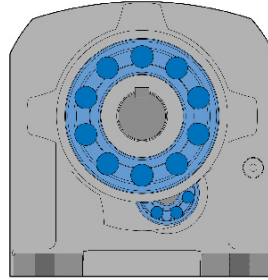
## Innovative Design



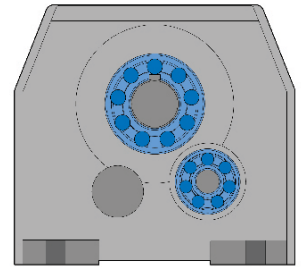
### Bearing Design

The fundamental structure of the gear system is the most important innovation of the new NORDBLOC.1 gear units. The generously dimensioned output bearing results in a number of important benefits. The output bearings are much larger than is usual in the industry. In order to accommodate the larger bearings, an innovative design known as staggered bearing topology was developed.

In a normal design the support bearings for different shafts are located in the same plane; this greatly restricts the physical size of the bearings. As can be seen in the scale drawing, in the NORD unit the bearings of the output and pinion shafts are much larger than those used in competitive units. An important feature of the design are the large axial distances between the output bearings. This also increases the overall bearing system capacity. A byproduct of the larger bearings is an increase in the internal shaft diameters – thus increasing the shaft strength. The unit does not have the usual additional assembly openings, resulting in a much stronger housing.



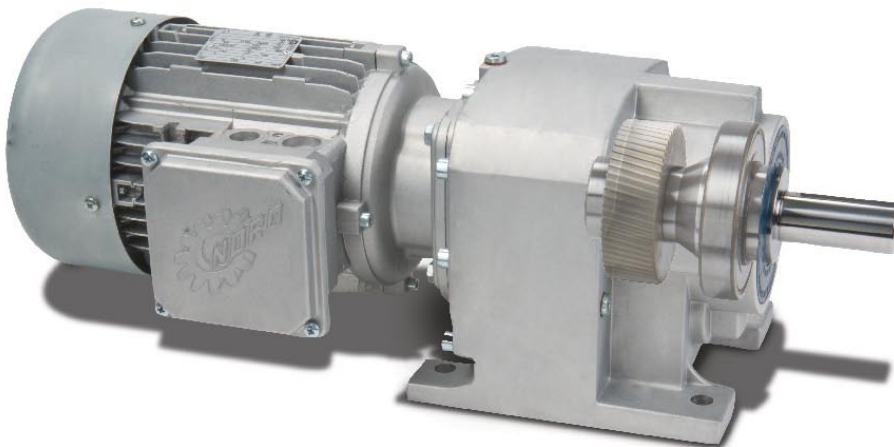
NORDBLOC.1 gear unit

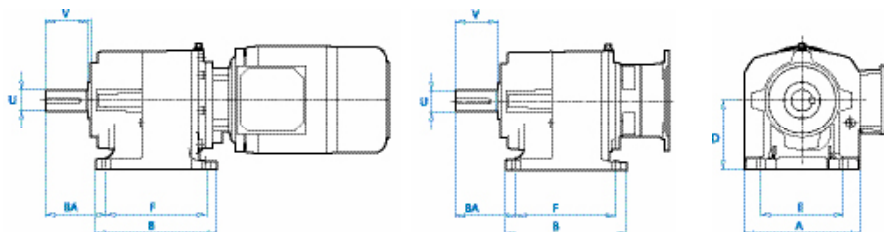
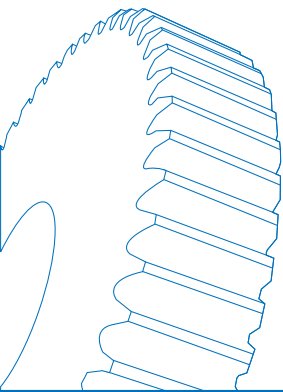


Conventional construction

### NORD Bearings, Advantages and Benefits

- ✓ Large dimension bearings
- ✓ Staggered bearing topology
- ✓ Longer bearing life
- ✓ Higher transverse forces possible
- ✓ Higher axial forces possible
- ✓ No additional assembly openings and sealing cap necessary





### Dimensions [mm]

Size	A	B	BA	D	E	F	U	V
SK 072.1	104	109	48	65	85	95	20	40
SK 172.1	140	135	58	75	110	110	20	40
SK 372.1 SK 373.1	150	160	75	90	110	130	25	50
SK 572.1 SK 573.1	190	200	90 100	115	135	165	30 35	60 70
SK 672.1 SK 673.1	210	235	100	130	150	195	35	70

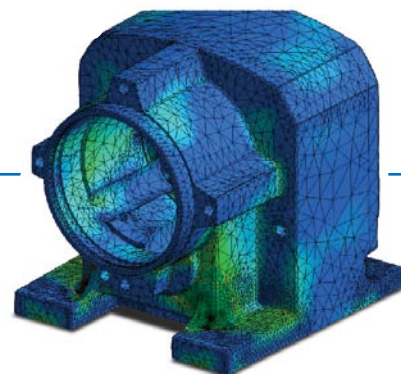
Also available in larger sizes (see G1012)

### NORD Unicase

NORD heavy-duty, one-piece housings are precisely machined to meticulous standards. Internal reinforcements further increase strength and rigidity. All bearings and seal seat are contained within the casing, eliminating joints which can weaken the housing and allow oil leakage. Bores and mounting faces are machined in one step enabling extremely precise tolerances — thus ensuring accurate positioning of gear teeth, bearings and seals, and longer life for all components.

### Rigid Housing Design (FEM)

The new NORDBLOC.1 design from NORD was primarily designed using the very latest 3D CAD software and optimised with the Finite Element Method. This allows an optimal structural design to maximize the strength and rigidity of the gear box components



### NORD Unicase: Advantages and Benefits

- ✓ Leak-free design
- ✓ Extended lubricant life
- ✓ Quiet operation
- ✓ Longer gear and bearing life
- ✓ High output torque capabilities
- ✓ Excellent reliability with low maintenance

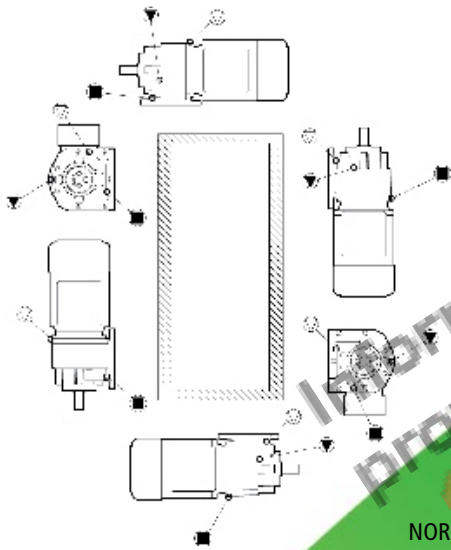


# NORDBLOC.1

## Innovative Design

### Gear unit ventilation

Even in the very smallest sizes, NORD provides gear unit ventilation for all installation orientations. This is especially important, as the pressure in the gear unit also affects the seals in the unit. The life of the seals is increased if there is no excessive pressure. Therefore vents are provided for all sizes and installation orientations, enabling the units to operate without pressure.



NORD gear drives  
– almost loss-free

Eff1 and Eff2 motors,  
especially for full load

### Energy Efficiency

Lowering your operating costs is one of our primary goals. NORD research and development focuses on energy efficiency inverters designed for lower energy consumption. Our wide range of coaxial, parallel and angled gear units and motors has been specially developed to suit your needs.

NORD drive technology opens up great potentials in the light-duty range and by means of energy saving functions (automatic flux adjustment).



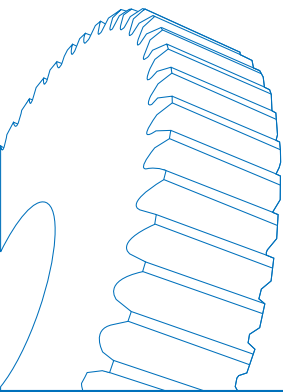
### High quality gearing

NORD continually invests in state-of-the-art gear production machinery and research. This allows us to produce exceptional high quality gears.

### Advantages and Benefits

- ✓ Designed and manufactured as per DIN 3990
- ✓ Fatigue-resistant design
- ✓ Case-hardened steel
- ✓ Exceptional hardness
- ✓ Brief overload possible
- ✓ Low noise
- ✓ Low maintenance



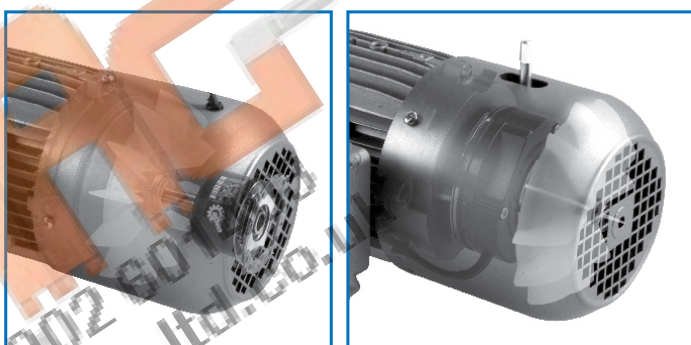


## Compact design even with IEC standard motors.

The unique new NORD adapter for IEC standard motors with B14 and B15 flanges and motors with NEMA-C flanges offers users an extremely effective and compact motor mounting system. These adapters are available from NORD in an exceedingly wide range of types and sizes. Due to the innovative gear configuration, the input shaft of the adapter has a counter bearing in the gear unit. Because of this, in spite of their compact design, all adapters have a coupling which provides a tension-free connection between the motor shaft and the input shaft of the gear unit. This eliminates the disadvantages of the usual hollow shaft solutions without couplings, e.g. high motor bearing loads due to tension, greater seal wear and the seizing of motors due to fretting corrosion. Thanks to the coupling, with NORD adapters, standard motors can be easily dismantled, even after long periods of operation.

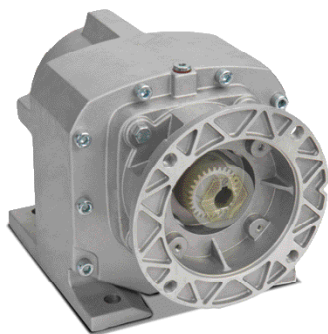
## NORD high performance motors and options

NORD motors are designed to run cool for a longer service life. Low rotor inertia and high starting torque allow peak performance in even the most difficult applications for inverter and vector operation as per NEMA MG 1-2006 Section 31.4.4.2 voltage spikes. Our motors are internationally approved and comply with both the international IEC standards and the North American NEMA MG 1 standard. Naturally, the range also includes other high performance options such as brakes, encoders and external cooling systems.

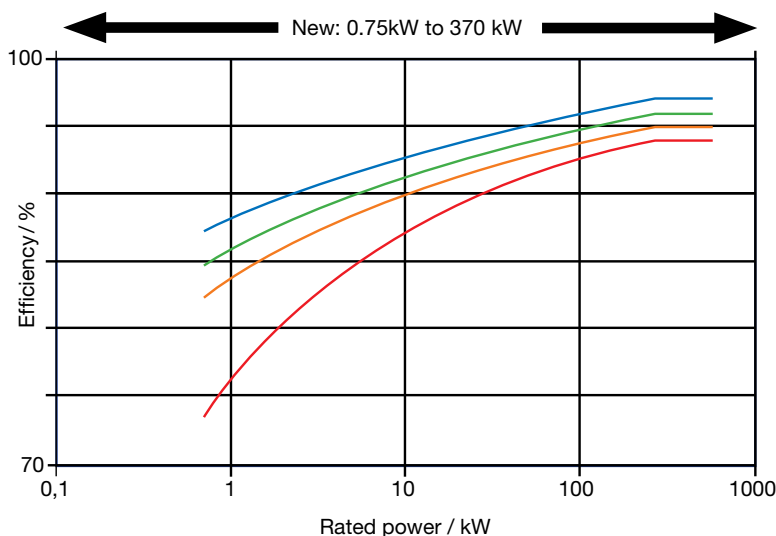


### IEC, NEMA C, B14- and B5 adapters

- ✓ Compact space saving design
- ✓ Easy mounting
- ✓ Easy motor removal
- ✓ Motor coupling (not hollow shaft)
- ✓ Low bearing loading (long bearing life)
- ✓ Low weight

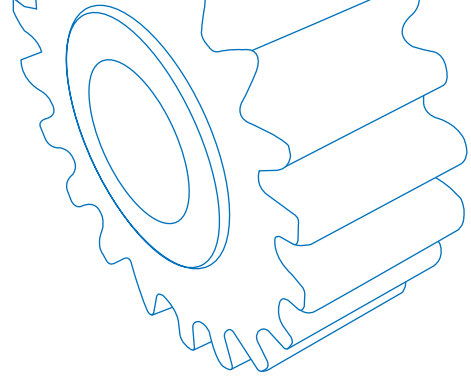


- IE4 = Super Premium Efficiency
- IE3 = Premium Efficiency
- IE2 = Eff1 High Efficiency
- IE1 = Eff2



# NORDBLOC.1

## Innovative Design



### Corrosion Resistant Aluminum Alloy Housing

The NORDBLOC.1 gear housing utilises many of the advantages provided by an optimised aluminum alloy. The die-cast aluminium housing is much stronger than the usual cast iron housings. The housing material is also inherently corrosion resistant and does not need to be painted. Finally the aluminum alloy housing is a much better heat conductor than cast iron. Because of the lower operating temperatures the internal gear components have a longer service life.

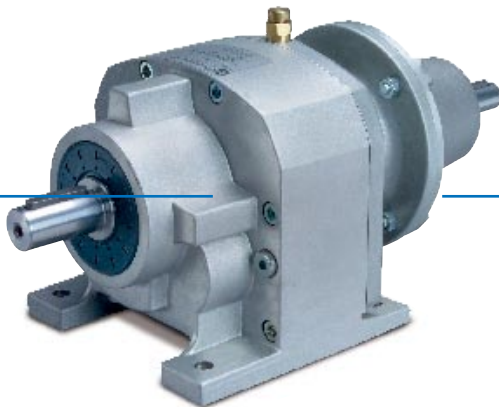
#### Aluminium Housings - Advantages and Benefits

- ✓ Light weight
- ✓ Often there is no need for painting
- ✓ Corrosion resistant
- ✓ Better thermal conductivity (lower temperature)
- ✓ Longer service life
- ✓ Less joints and openings, smooth base
- ✓ Especially suitable for the foodstuffs and chemicals industries



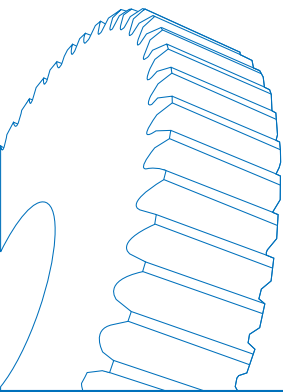
### Smooth Gear Housing Surface

One goal of the new NORDBLOC.1 units was to provide a smooth surface to prevent the deposit of liquids or solids on the units. This is an advantage in applications where cleanliness is important. Due to their innovative patented construction, the gear units were designed without any assembly openings. This increases strength and also provides a smoother surface. No rubberised bore plugs are used, which provides a smoother, more uniform surface, greater strength and increased sealing integrity.



#### Smooth Gear Housing - Advantages and Benefits

- ✓ Easy cleaning
- ✓ Smooth surface - especially suitable for the food industry
- ✓ No assembly covers
- ✓ No sealing caps



## Large Ratio per Gear Stage

NORD gear cutting technology allows the production of gear sets with a higher maximum ratio per stage than for many other manufacturers. Usually, NORD produces gear sets with a maximum ratio of 8 : 1 to 10 : 1 per stage. This enables two-stage gear units with a maximum ratio of 60 : 1 to 100 : 1. Normal gear ratios are 5 : 1 to 6 : 1. This means a two-stage gear unit with a maximum reduction of approx. 25 : 1 to 35 : 1. In many cases NORD can provide two-stage gear units where most companies require a three-stage unit. The same applies to gear units with three, four and more stages. In many circumstances this allows NORD to provide superior value and performances.

## Modular Design

All NORD products including the new NORDBLOC.1 units have a modular design and provide extraordinary flexibility. NORDBLOC.1 gear units provide great mounting versatility including:

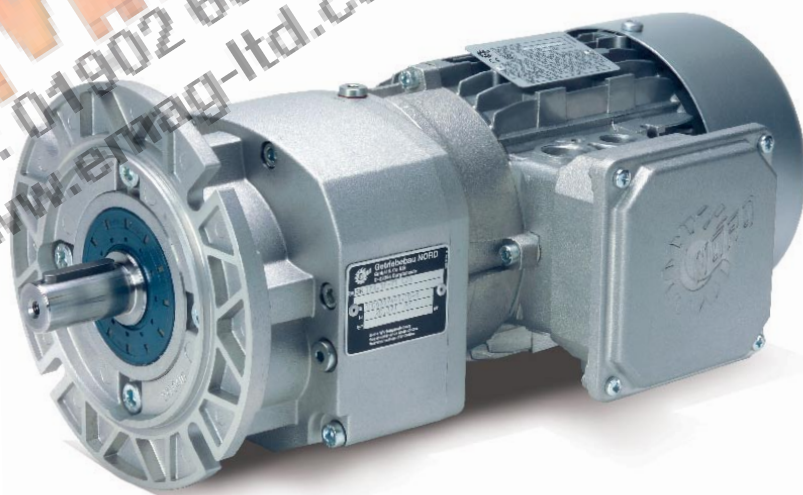
- ✓ Foot mounted version
- ✓ Flange mounted version B5
- ✓ Front flange version B14
- ✓ Foot mounted version with B5 or B14 flange

The NORBLOC 1 gear unit can also be supplied with a number of different drive components including:

- ✓ Integral motor (Gear motor)
- ✓ NEMA C flange motor adapter
- ✓ IEC, B5- and B14 motor adapter
- ✓ Free input shaft
- ✓ Custom motor adapter (servo, hydraulic motors etc.)

### Large Gear Ratio - Advantages and Benefits

- ✓ Higher efficiency
- ✓ Quieter operation
- ✓ Lower weight
- ✓ Longer service life





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