

Intelligent Drivesystems, Worldwide Services



Ⓜ

G1035

UNIVERSAL Worm gear units  
SI und SMI

IE1  
Standard

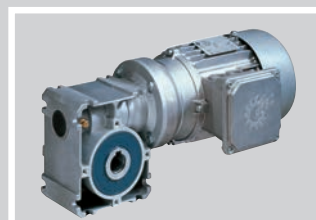
IE2

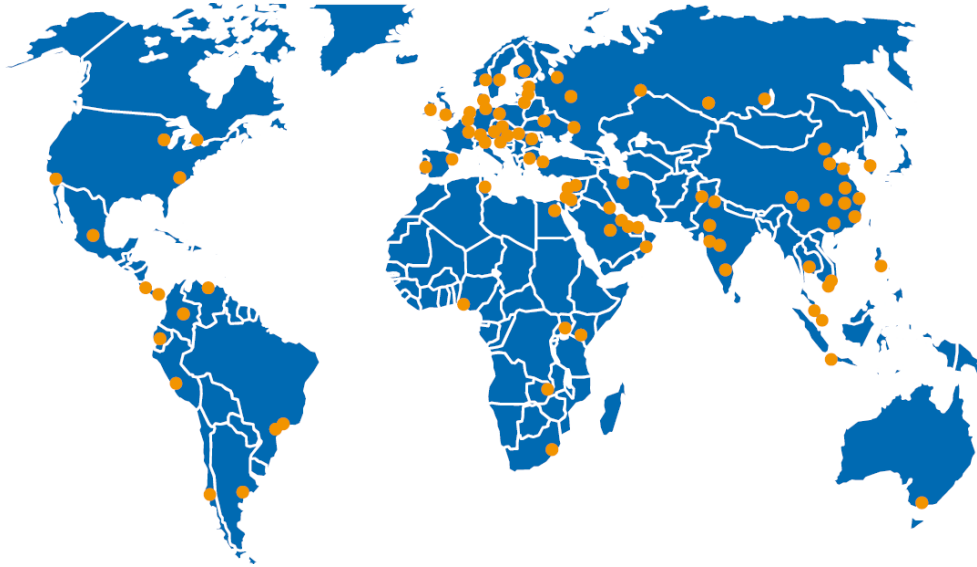
IE3

  
DRIVESYSTEMS

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## Global presence

- **NORD** has subsidiaries in 35 countries
- with its representatives **NORD** is present in over 52 countries
- Service and sales partner
- Technical support
- Support for installation and commissioning
- Spare parts management

**NORD DRIVESYSTEMS** with its headquarters in Bargteheide near Hamburg and subsidiaries in 35 countries is a global company with an extensive range of products and services for electrical, mechanical and electronic drive technology.

With a staff of approx. 3000 in its German factories and international production facilities, **NORD** produces and distributes drive technology for the global market.

The design of user-specific drive solutions with close customer support from the planning phase right up to commissioning is what makes **NORD** a strong and dependable partner.

We consider 24-hour service, fast availability and being close to our customers as both a responsibility and an obligation, just as you can expect from a leading drive manufacturer such as **NORD**.

## PRODUCTION SITES



**NORD headquarters  
Bargteheide**



**NORD Electronic DRIVESYSTEMS  
Aurich**



**NORD gear factory Glinde**



**NORD Production Technology  
Gadebusch**

## SOME OF OUR OVERSEAS PRODUCTION FACILITIES



**Vieux Thann  
France**



**Nowa Sol  
Poland**



**Waunakee, Wisconsin  
USA**



**Suzhou  
China**



## SI worm gear units (Catalogue G1035)

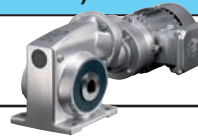
- ✓ Modular
- ✓ universal mounting
- ✓ IEC versions
- ✓ Die-cast aluminium housing



Sizes	5
kW	0.12 – 4.0
Nm	21 – 427
i	5.00:1 – 10,000.00:1

## SMI worm gear units (Catalogue G1035)

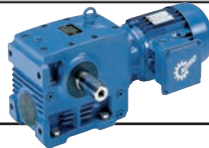
- ✓ Smooth surfaces
- ✓ Shaft, foot or flange mounted



Sizes	5
kW	0.12 – 4.0
Nm	21 – 427
i	5.00:1 – 10,000.00:1

## Helical worm gear units (Catalogue G1000)

- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE



Sizes	6
kW	0.12 – 15
Nm	46 – 3,090
i	4.40:1 – 7,095.12:1

## 3-stage bevel gear units (Catalogue G1000)

- ✓ Up to 95 % efficiency
- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE



Sizes	11
kW	0.12 – 200
Nm	180 – 50,000
i	8.04:1 – 13,432.68:1

## Parallel shaft gear units (Catalogue G1000)

- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ Compact design
- ✓ UNICASE



Sizes	15
kW	0.12 – 200
Nm	65 – 90,000
i	4.03:1 – 6,616.79:1

## More power, less weight – the new bevel gear units from NORD DRIVESYSTEMS.

### 2-stage bevel gear units (Catalogue G1014)

- ✓ Up to 97% efficiency
- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE
- ✓ Die-cast aluminium housing



Sizes	5
kW	0.12 – 9.2
Nm	90 – 660
i	3.55:1 – 70:1

### 2-stage bevel gear units (Catalogue G1000)

- ✓ Up to 97% efficiency
- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ Alternative to worm gear motors
- ✓ UNICASE



Sizes	5
kW	0.12 – 9.2
Nm	45 – 650
i	3.85:1 – 72.31:1

### Helical gear units (Catalogue G1000)

- ✓ Foot or flange mounted
- ✓ UNICASE



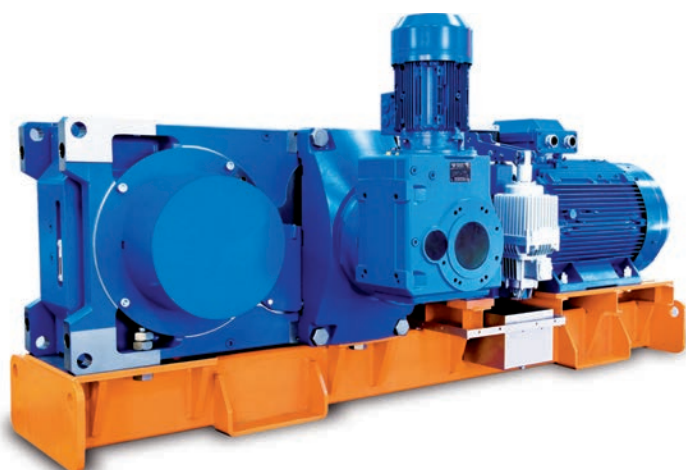
Sizes	11
kW	0.12 – 160
Nm	23 – 23,160
i	1.24:1 – 14,340.31:1

### NORDBLOC. 1 helical gear units (Catalogue G1012)

- ✓ Foot or flange mounted
- ✓ Die-cast aluminium housing (5 sizes)
- ✓ UNICASE
- ✓ Dimensions compliant with industrial standards



Sizes	8
kW	0.12 – 37
Nm	55 – 3,300
i	2.10:1 – 456.77:1



### Industrial gear units (Catalogue G1050)

- ✓ All bearing points and sealing surfaces are machined in one operation
- ✓ No separating joints in the housing, no sealing surfaces subject to torque
- ✓ High-precision axis alignment, quiet running
- ✓ Long life, low maintenance service
- ✓ Short, compact design
- ✓ Gear ratios from 5.54 to 400: 1 with the same foot dimensions
- ✓ Parallel axis and right-angled gear units

Sizes	4
kW	2.2 – 1,000
kNm	60/90/135/200
i	5.54: 1 – 1,600.00: 1



### IE2/IE3 motors and components for decentralised drive control (Catalogue M7000)

Single and 3-phase electric motors up to 200 kW. Further range of starters and components for decentralised drive control.

### SK 200E (F3020)

- ✓ "Safe stop" as per EN 954-1
- ✓ Commissioning via integrated DIP switches and potentiometer possible
- ✓ Energy-saving function
- ✓ Ethernet-based BUS systems
- ✓ Performance grading according to application
- ✓ Decentralised modules combined as a system
- ✓ Integrated "Posicon" positioning control
- ✓ On board AS interface versions



Sizes	4
U[V]	1~100 ... 120 ± 10% 1~200 ... 240 ± 10% 3~200 ... 240 ± 10% 3~380 ... 500 -20% / +10%
P[kW]	0.25 – 22

### SK 500E (F3050)

- ✓ Compact design
- ✓ Energy-saving function
- ✓ Performance grading according to application (e.g. "Posicon" positioning control)
- ✓ Plug-in modules for control and communication (field bus)
- ✓ Ethernet-based BUS systems



Sizes	10
U[V]	1~110 ... 120 ± 10% 1/3~200 ... 240 ± 10% 3~200 ... 240 ± 10% 3~380 ... 480 -20% / +10%
P[kW]	0.25 – 132 * * from 3rd quarter 2012

### SK 700E (F3070)

- ✓ Flexible due to interchangeable modular expansion cards (e.g. "Posicon" positioning control)
- ✓ Plug-in modules for control and communication (field bus)
- ✓ Self-detecting modules
- ✓ Various field bus systems



Sizes	8
U[V]	3~380 ... 480 -20% / +10%
P[kW]	1.5 – 160

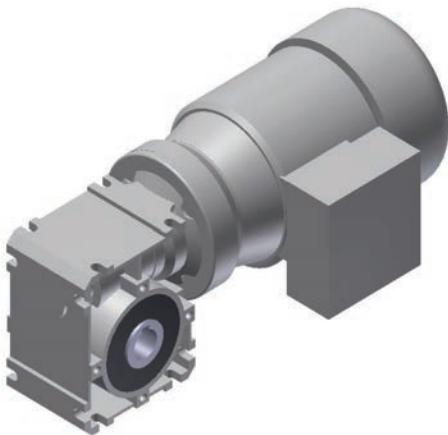


This catalogue contains both series of the NORD UNIVERSAL worm gear product range - SI worm gear units and SMI worm gear units

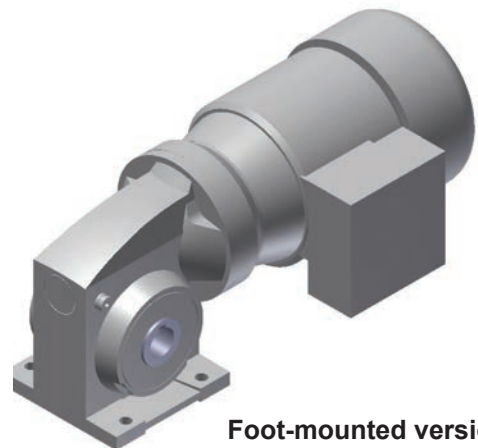
The **SI series** is a modular gear unit family which uses a universal housing. The basic gear unit is supplemented with a range of easily configured components which are either supplied as assembled units by NORD, or which are assembled by the customer. These modular standard components provide maximum flexibility for applications. Due to the global availability of the individual components, very short delivery times are guaranteed.

The **SMI series** is characterised by its smooth surface design. This series can either be supplied with IEC/ NEMA motors, or for direct mounting on the motor without a coupling. Because of the smooth surfaces, the **SMI series** is especially suitable for washdown applications, as well as for applications in the **food and beverage industry**. A differentiation is made between the foot-mounted version (Version X) and the flange-mounted version (Version Z).

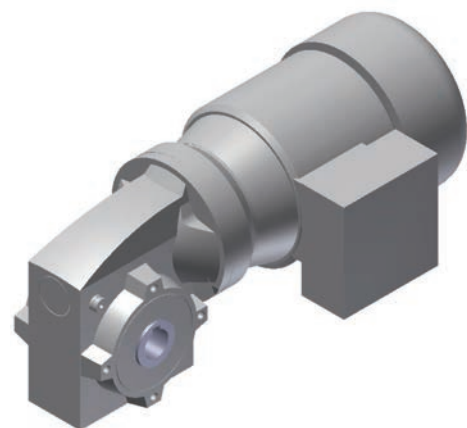
## SI worm gear units



## SMI worm gear unit



Foot-mounted version X



Flange-mounted version Z



- **Components for individual combinations**

The possibility of ordering from a selection of individual components demonstrates the variety and versatility of NORD UNIVERSAL worm gear units. NORD offers this solution for the **SI** series. Customers can select the optimum combination for their application using only a few components. The great flexibility of being able to order individual components instead of completely assembled drive units often results in lower stock levels for our customers.

The components include all parts which are required for the assembly of complete drive units, including assembly instructions.

It is no longer necessary to state the version and the mounting position.

- **Fully assembled drive units ex-works**

Ordering of completely assembled drive units ex-works is made via the type designation (⇒ [A30-31](#)). For this type of order, the installation position and the speed ratio must be stated in addition to the version.

Gear unit versions for **direct mounting on the motor** can only be ordered in this manner.

Similarly, the **SMI** series is only supplied in the form of complete drive units. For solid shaft versions a one-piece output shaft is always supplied. The dimensions of this shaft correspond to those of the plug-in shaft of the SI series.

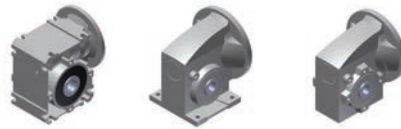
- **NORD UNIVERSAL worm gear motors with directly mounted motors**

NORD also supplies both UNIVERSAL worm gear motors from the series SI and SMI in a version for direct mounting on the motor without the use of a coupling. These gear units are only assembled to order.

Because the gear unit is attached to the motor without a coupling, the direct motor-mounted version is especially compact, which is useful where space is at a premium. For further information please refer to Page ⇒ [A29](#).



# Construction kit system



## Construction kit - overview

Worm gear units



Helical gear input stage H10



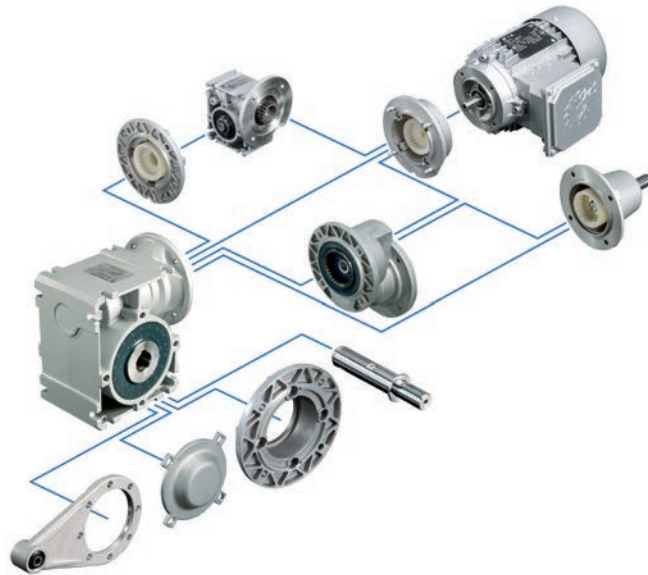
Double worm gear adapter



IEC three-phase motor / brake motor



IEC motor adapter  
NEMA motor adapter



Free drive shaft  
Type W



Plug-in shaft V, L, VF



Vent  
(not illustrated)

Output flange B5



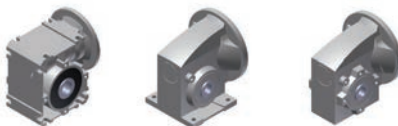
Torque support



Cover





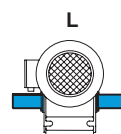
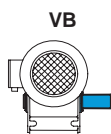


## Overview of versions (⇒ A23-28 mounting variants)

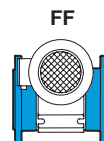
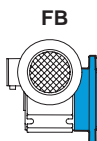
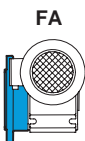
Basic version



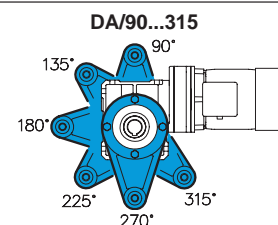
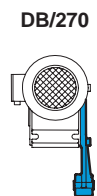
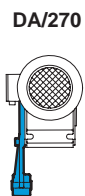
Plug-in shaft



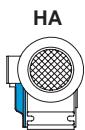
Flange B5



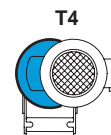
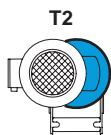
Torque support



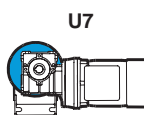
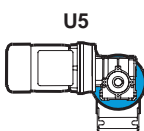
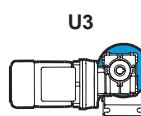
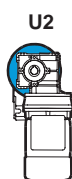
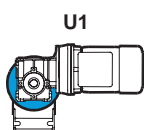
Covering cap



Helical gear input stage H10



Double worm gear input stage

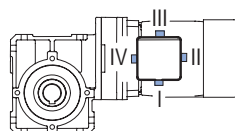
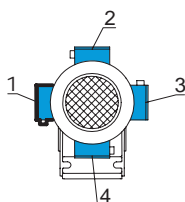


KK1/I, KK2/I, KK3/I, KK4/I

Cable gland

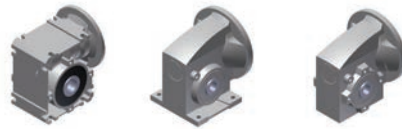
KK1/I, KK1/II, KK1/III, KK1/IV

Terminal box





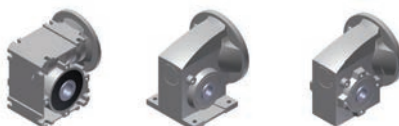
# IEC / NEMA mounting



## Overview of IEC / NEMA adapters

Designation	Description	Sizes and version						
		SI31	SMI31X	SMI31Z	SI40	SMI40X	SMI40Z	
<b>1SI__</b>	UNIVERSAL worm gear units	x			x			B52 - 77
<b>1SMI__X</b>	UNIVERSAL worm gear units Foot-mounted version, smooth surface		x			x		
<b>1SMI__Z</b>	UNIVERSAL worm gear units Flange-mounted version, smooth surface			x			x	
<b>Input options</b>								
<b>IEC__</b>	IEC motor adapter							B30 - 47
	IEC56	x	x	x	x	x	x	
	IEC63	x	x	x	x	x	x	
	IEC71	x	x	x	x	x	x	
	IEC80				x	x	x	
	IEC90				x	x	x	
	IEC100							
	IEC112							
<b>NEMA__</b>	NEMA motor adapter							See USA catalogue www.2.nord.com - Heading DOCUMENTATION
	NEMA 48C	x	x	x				
	NEMA 56C	x	x	x	x	x	x	
	NEMA140TC				x	x	x	
	NEMA180TC							
<b>H10</b>	Helical gear input stage				x	x	x	B72 - 77
<b>W</b>	Free drive shaft				x	x	x	
<b>_/__</b>	Double worm gear adapter				x	x	x	
<b>Output options</b>								
<b>D</b>	Torque support	x		x	x		x	B52 - 71
<b>F</b>	Output flange B5	x		x	x		x	
<b>H</b>	Covering cap	x		x	x		x	
<b>L</b>	Plug-in shaft on both sides	x	x <sup>1)</sup>	x <sup>1)</sup>	x	x <sup>1)</sup>	x <sup>1)</sup>	
<b>V</b>	Plug-in shaft on one side	x	x <sup>1)</sup>	x <sup>1)</sup>	x	x <sup>1)</sup>	x <sup>1)</sup>	
<b>VF</b>	One-side extended plug-in shaft with output flange B5	x		x <sup>1)</sup>	x		x <sup>1)</sup>	
<b>Further options</b>								
	Vent	x	x	x	x	x	x	
	Painting	x	x	x	x	x	x	
	NSD TupH		x	x		x	x	
	Long-term storage	x	x	x	x	x	x	

x<sup>1)</sup> One-piece solid shaft, as only assembled to order, Plug-in shaft are available on special request



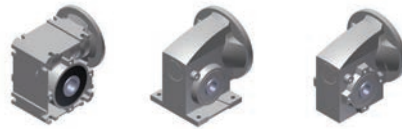
## Overview of IEC / NEMA adapters

Designation	Description	Sizes and version									
		SI50	SMI50X	SMI50Z	SI63	SMI63X	SMI63Z	SI75	SMI75X	SMI75Z	
<b>1SI__</b>	UNIVERSAL worm gear units	x			x			x			B52 - 77
<b>1SMI__X</b>	UNIVERSAL worm gear units Foot-mounted version, smooth surface		x			x			x		
<b>1SMI__Z</b>	UNIVERSAL worm gear units Flange-mounted version, smooth surface			x			x			x	
<b>Input options</b>											
<b>IEC__</b>	IEC motor adapter										B30 - 47
	IEC56	x	x	x	x	x	x				
	IEC63	x	x	x	x	x	x				
	IEC71	x	x	x	x	x	x	x	x	x	
	IEC80	x	x	x	x	x	x	x	x	x	
	IEC90	x	x	x	x	x	x	x	x	x	
	IEC100 IEC112							x	x	x	
<b>NEMA__</b>	NEMA motor adapter										See USA catalogue www.2.nord.com - Heading DOCUMENTATION
	NEMA 48C										
	NEMA 56C	x	x	x	x	x	x	x	x	x	
	NEMA140TC	x	x	x	x	x	x	x	x	x	
	NEMA180TC				x	x	x	x	x	x	
<b>H10</b>	Helical gear input stage	x	x	x	x	x	x				B72 - 77
<b>W</b>	Free drive shaft	x	x	x	x	x	x	x	x	x	
<b>__/_</b>	Double worm gear adapter	x	x	x	x	x	x	x	x	x	
<b>Output options</b>											
<b>D</b>	Torque support	x		x	x		x	x		x	B52 - 71
<b>F</b>	Output flange B5	x		x	x		x	x		x	
<b>H</b>	Covering cap	x		x	x		x	x		x	
<b>L</b>	Plug-in shaft on both sides	x	x1)	x1)	x	x1)	x1)	x	x1)	x1)	
<b>V</b>	Plug-in shaft on one side	x	x1)	x1)	x	x1)	x1)	x	x1)	x1)	
<b>VF</b>	One-side extended plug-in shaft with output flange B5	x		x1)	x		x1)	x		x1)	
<b>Further options</b>											
	Vent	x	x	x	x	x	x	x	x	x	
	Painting	x	x	x	x	x	x	x	x	x	
	NSD TupH		x	x		x	x		x	x	
	Long-term storage	x	x	x	x	x	x	x	x	x	

x1) One-piece solid shaft, as only assembled to order, Plug-in shaft are available on special request



# Direct motor mounting

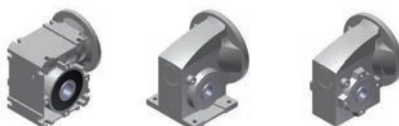


## Overview of direct motor mounting

Designation	Description	Sizes and version							
		SID31	SMID31X	SMID31Z	SID40	SMID40X	SMID40Z		
1SID__	UNIVERSAL worm gear units	x			x			The NORDCAD program can be found on the NORD homepage under <a href="http://www.nord.com">www.nord.com</a> - Heading DOCUMENTATION / Software.	
1SMID__X	UNIVERSAL worm gear unit, foot-mounted version, smooth surface		x			x			
1SMID__Z	UNIVERSAL worm gear unit, flange-mounted version, smooth surface			x			x		
<b>Input options</b>									
	Direct motor mounting								
	Motor size 63	x	x	x	x	x	x		
	Motor size 71	x	x	x	x	x	x		
	Motor size 80				x	x	x		
	Motor size 90								
2S__	Helical gear input stage				x	x	x		
_/__	Double worm gear adapter				x	x	x		
<b>Output options</b>									
D	Torque support	x		x	x		x		
F	Output flange B5	x		x	x		x		
H	Covering cap	x		x	x		x		
L	Plug-in shaft on both sides	x	x <sup>1)</sup>	x <sup>1)</sup>	x	x <sup>1)</sup>	x <sup>1)</sup>		
V	Plug-in shaft on one side	x	x <sup>1)</sup>	x <sup>1)</sup>	x	x <sup>1)</sup>	x <sup>1)</sup>		
VF	One-side extended plug-in shaft with output flange B5	x		x <sup>1)</sup>	x		x <sup>1)</sup>		
<b>Further options</b>									
	Vent	x	x	x	x	x	x		
	Painting	x	x	x	x	x	x		
	NSD TupH		x	x		x	x		
	Long-term storage	x	x	x	x	x	x		

x<sup>1)</sup> One-piece solid shaft, as only assembled to order, Plug-in shaft are available on special request



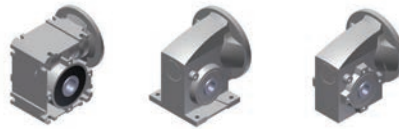


## Overview of direct motor mounting

Designation	Description	Sizes and version										
		SID50	SMID50X	SMID50Z	SID63	SMID63X	SMID63Z	SID75	SMID75X	SMID75Z		
1SID__	UNIVERSAL worm gear units	x			x							The NORDCAD program can be found on the NORD homepage under <a href="http://www.nord.com">www.nord.com</a> - Heading <b>DOCUMENTATION / Software</b> .
1SMID__X	UNIVERSAL worm gear unit, foot-mounted version, smooth surface		x			x						
1SMID__Z	UNIVERSAL worm gear unit, flange-mounted version, smooth surface			x			x					
<b>Input options</b>												
	Direct motor mounting											
	Motor size 63											
	Motor size 71	x	x	x								
	Motor size 80	x	x	x	x	x	x					
	Motor size 90	x	x	x	x	x	x					
2S__	Helical gear input stage	x	x	x	x	x	x					
_/__	Double worm gear adapter	x	x	x	x	x	x					
<b>Output options</b>												
D	Torque support	x		x	x		x					
F	Output flange B5	x		x	x		x					
H	Covering cap	x		x	x		x					
L	Plug-in shaft on both sides	x	x <sup>1)</sup>	x <sup>1)</sup>	x	x <sup>1)</sup>	x <sup>1)</sup>					
V	Plug-in shaft on one side	x	x <sup>1)</sup>	x <sup>1)</sup>	x	x <sup>1)</sup>	x <sup>1)</sup>					
VF	One-side extended plug-in shaft with output flange B5	x		x <sup>1)</sup>	x		x <sup>1)</sup>					
<b>Further options</b>												
	Vent	x	x	x	x	x	x					
	Painting	x	x	x	x	x	x					
	NSD TupH		x	x		x	x					
	Long-term storage	x	x	x	x	x	x					



x<sup>1)</sup> One-piece solid shaft, as only assembled to order, Plug-in shaft are available on special request



## Sizes

Both the SI and SMI gear unit series are available in sizes 31, 40, 50, 63 and 75.

## Speed ratios

The speed ratios of the single-stage gear units cover a wide range. The speed ratios are the same for all sizes.

Standard speed ratios													
5	7,5	10	12,5	15	20	25	30	40	50	60	80	100	

All speed ratios are finite and specified precisely. The worms of all worm gear units in the NORD UNIVERSAL range have a right-handed helix, from which the direction of rotation results.

Size 40, 50 and 63 SI and SMI series gear units can be extended to form 2-stage helical worm gear units by fitting a H10 helical gear. The speed ratio of the H10 helical gear is the same for all sizes, namely  $i_{vor} = 10$ .

In addition, the SMI gear unit series also provides the possibility of creating a highly compact first stage with a speed ratio of  $i_{vor} = 5$  by mounting the motor directly. This first stage is available for sizes 40, 50 and 63.

By means of the double worm gear adapter the speed ratio range can be extended up to  $i_{ges} = 10000$ . The double worm gear adapter allows the combination of two worm gear units to form a single drive unit. This is available for SI and SMI series gear units. Sizes 40/31, 50/31, 63/31 and 75/40 can be combined.

## NSD TupH nsd tupH

As a global leader in the field of drive technology, NORD DRIVESYSTEMS now has a coating solution for drive technology used in extreme ambient conditions that is applied to product materials that are familiar for standard gear motors yet offer the durability of stainless steel and provide an excellent price/performance ratio.

In a special process, an extremely durable protective layer is created from the basic material. In combination with a special sealing, this layer is up to 7x harder than the basic aluminium material and up to 1000x harder than paints and varnishes, and therefore offers excellent protection against corrosion.

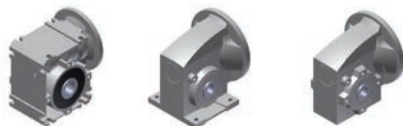
We call this treatment nsd tupH.

This NORD process is free of chromium (VI), is compliant with RoHS and even without further painting it achieves corrosion categories C4 / C5.

Further advantages of treated surfaces:

- no formation of blisters
- no detachment or flaking
- scratch resistant, impact resistant and corrosion resistant
- resistant to chemical cleaning agents and salt

Due to the considerably improved adhesion of nsd tupH to the treated aluminium components, additional corrosion protection can be achieved by subsequent painting. As a weight-saving to stainless steel, aluminium components treated with nsd tupH are therefore suitable for the most stringent requirements and once again ensure NORD's optimisation of efficiency.



## Torques

In continuous operation with uniform loading, the maximum output torques  $M_{2max}$  represent the maximum load limit.

Design of the gear units is carried out according to the section "Gear unit selection" taking the operating factors into account.

Type designations and torques				
Type	IEC motor mounting		Torques in Nm	
	SI	SMI	$M_{2max}$	$M_{2grenz}$
Single-stage worm gear units	1SI31	1SMI31	30	75
	1SI40	1SMI40	50	125
	1SI50	1SMI50	90	225
	1SI63	1SMI63	160	400
	1SI75	1SMI75	260	650
Helical worm gear units $i_{vor} = 10$	1SI40/H10	1SMI40/H10	81	125
	1SI50/H10	1SMI50/H10	146	225
	1SI63/H10	1SMI63/H10	260	400
Double worm gear units	1SI40/31	1SMI40/31	99	125
	1SI50/31	1SMI50/31	178	225
	1SI63/31	1SMI63/31	316	400
	1SI75/40	1SMI75/40	427	650

Type designations and torques				
Type	Direct motor mounting		Torques in Nm	
	SI	SMI	$M_{2max}$	$M_{2grenz}$
Single-stage worm gear units	1SID31	1SMID31	30	75
	1SID40	1SMID40	50	125
	1SID50	1SMID50	90	225
	1SID63	1SMID63	160	400
Helical worm gear units $i_{vor} = 5$	2SID40	2SMID40	74	125
	2SID50	2SMID50	133	225
	2SID63	2SMID63	237	400
Double worm gear units	2SID40/31	2SMID40/31	99	125
	2SID50/31	2SMID50/31	178	225
	2SID63/31	2SMID63/31	316	400
	2SID75/40	2SMID75/40	427	650

The torques  $M_{2max}$  apply for an input speed of  $n_1 = 1400\text{min}^{-1}$ . The limiting output torques  $M_{2grenz}$  can be withstood while stationary and for short periods of operation without damage to the gear unit.

The limiting output torques  $M_{2grenz}$  represent the permissible load limit and must not be exceeded, even with short peak loads.

## Speeds

The gear units are designed for a motor or input speed of up to  $1800\text{min}^{-1}$ . Higher input speeds reduce the service life of the gear unit. NORD UNIVERSAL worm gear units are suitable for short period or intermittent operation with frequency inverters up to the 87Hz characteristic curve.

Please enquire in case of other modes of operation with input speeds greater than  $1800\text{min}^{-1}$ .

## Efficiency

Specially smoothed gear flanks and the standard use of synthetic lubricants ensure favourable efficiencies for NORD UNIVERSAL worm gear units.

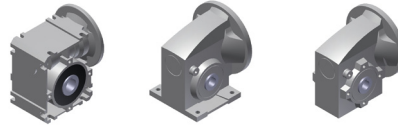
With new worm gear units, the efficiency is increased by running-in the worm gear meshing in the initial phase of normal operation.

The output torques and powers which are stated in the selection lists take the efficiency  $\eta$  in the run-in state into account.

Efficiency $\eta$ [%] at $n_1 = 1400\text{min}^{-1}$							
$i_{sch}$	5	7,5	10	12,5	15	20	25
Size 31	86	82	80	76	71	67	63
Size 40	88	85	82	80	75	71	68
Size 50	90	87	85	83	79	75	72
Size 63	92	89	87	86	82	79	76
Size 75	93	90	84	88	84	82	80

Efficiency $\eta$ [%] at $n_1 = 1400\text{min}^{-1}$						
$i_{sch}$	30	40	50	60	80	100
Size 31	55	50	45	42	36	32
Size 40	60	54	50	46	41	36
Size 50	65	60	56	52	46	42
Size 63	69	64	61	57	51	47
Size 75	77	69	65	62	57	52

(Continuation  $\Rightarrow$  A14)



## Efficiency

Due to the hydrodynamic lubrication of the teeth, the efficiency of worm gear units increases with the input speed. Because of this, when starting from standstill, there is initially a lower efficiency  $\eta_a$ . This must be taken into account for the motor torque if the unit is to be started under load. The following table gives guideline values for the starting efficiency  $\eta_a$  depending on the worm gear speed ratio  $i_{sch}$ :

Efficiency on start-up													
Speed ratio $i_{sch}$	5	7,5	10	13	15	20	25	30	40	50	60	80	100
Start-up efficiency $\eta_a$ [%]	72	67	62	59	53	47	43	36	31	27	25	20	17

## Lubrication

Ex-works, the worm gear units are lubricated for life with a high quality, synthetic long-life lubricant on a polyglycol basis. The gear units are therefore maintenance-free. As standard, NORD UNIVERSAL worm gear units are equipped with oil plugs. This enables the worm gear units to be vented  $\Rightarrow$  A28 Vent.

Lubricant quantity CLP PG VG 680 DIN 51502					
Size	31	40	50	63	75
SI series	30ml	55ml	95ml	180ml	360ml
SMI series	45ml	80ml	130ml	240ml	410ml

When the gear types with direct motor mounting (SID, SMID) the lubricant quantity is dependent on the mounting position.

## Self-locking

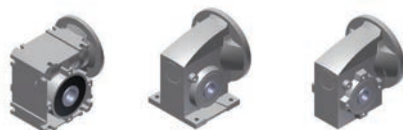
Due to the self-locking of NORD UNIVERSAL worm gear units, the stationary gear unit cannot rotate, even with large torques at the output (worm gear shaft). Due to the self-locking characteristics while running, the drive automatically comes to rest when the motor is switched off.

With a mass-acceleration factor of  $m_{af} > 1$  (see the section 'Gear unit selection') the self-locking can result in sudden blocking of the drive or rattling vibrations in case of load reversals in thrust operation (see VDI 2158). Gear units which are not self-locking should be selected for these fields of application.

Self-locking and self-braking depends on the speed ration in the worm stage.

Self-locking with NORD UNIVERSAL worm gear units			
$i_{sch} = 5 - 10$	$i_{sch} = 12.5 - 40$	$i_{sch} = 50 - 80$	$i_{sch} = 100$
No self-locking	No specific statement regarding self-locking	Self-locking at rest and with no vibration	Self-locking
No self-braking	No self-braking	No specific statement regarding self-braking	Self-braking at $n_1 < 1500 \text{min}^{-1}$ for sizes 31, 40, 50





## Radial and axial forces

In the selection lists, the permissible radial forces  $F_R$  and  $F_{RF}$  are listed in addition to the torques  $M_2$  which may act on the output shaft. Calculation of the permissible radial force is based on the assumption that the external forces act on the centre of the shaft journal.

SI series worm gear units are supplied with a hollow shaft as standard. Plug-in shaft are available for the solid shaft versions. As standard, the SMI series is also available in a solid shaft version. The dimensions of the free ends of the shafts correspond to the plug-in shaft.

The permissible radial forces  $F_R$  apply for the plug-in shaft VA/I and L (see dimensioned drawings). The permissible radial forces  $F_{RF}$  apply for the plug-in shaft VA/II, which are used in combination with the B5 output flange.

With central application of the force on the hollow shaft, the permissible radial force is  $2x F_R$ .

The calculation of the permissible radial forces takes into account the unfavourable direction of the application of the force, the bearings of the gear unit, the gear unit housing and the shaft geometry.

With NORD UNIVERSAL worm gear units, the standard output shaft is equipped with unusually large ball bearings. Because of this, NORD UNIVERSAL the output sides of worm gear units can also withstand radial forces in addition to the axial forces.

Permissible axial force at output $F_A$					
Size	31	40	50	63	75
$F_{Azul}$	1800N	3200N	4800N	6300N	8000N

For the input shaft Type W, the permissible radial forces with application of the force to the centre of the free end of the shaft are given in the following table.

Permissible radial force $F_R$ on the free input shaft - Type W					
Size	31	40	50	63	75
$F_{Rzul}$	-	1200N			1500N

## Weights

The following table shows the weights of the worm gear unit. The details are approximate values.

Weight of the worm gear					
Size	31	40	50	63	75
Weight	1.3kg	2.4kg	4.1kg	7.6kg	12kg

## Dimensions and tolerances

Definitive dimensioned drawings, CAD models and CAD outline drawings of the drive units are available for download from the NORD homepage [www.nord.com](http://www.nord.com).

The drive units are produced to the following tolerances:

- Threaded holes in the shaft journals: DIN 332, Sheet 2
- Parallel keys: DIN 6885, Sheet 1
- Flange centring: H7 or j6 according to DIN ISO 286-2
- Shaft tolerances: H7 or h6 according to DIN ISO 286-2
- Flange hole circle diameter: DIN 42948
- Axis height: DIN 747

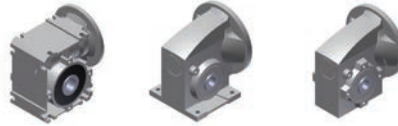
The dimensions  $k_{Bre}$  and  $g_{1Bre}$  in the dimensioned drawings ( $\Rightarrow$  B28 - B50) relate to the brake motor version.

As standard, all NORD UNIVERSAL worm gear units have a hollow output shaft with normal dimensions. For large series, the gear unit concept allows the possibility of providing considerably larger hollow shaft diameters.

Hollow shaft with parallel key groove according to DIN 6885, sheet 1					
Size	31	40	50	63	75
Standard	14mm	18mm	25mm	25mm	35mm
Max.	17mm	25mm	30mm	42mm	50mm

## Assembly /disassembly of plug-in shafts

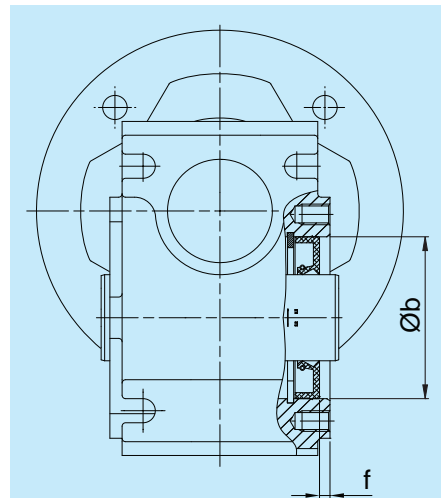
A small amount of a suitable lubricant applied to the shaft or the the plug-in shaft and the hollow output shaft during assembly facilitates assembly and subsequent disassembly and reduces fretting corrosion. For this, we recommend the use of NORD Anti-Corrosion-Paste (5g per packet), available under order number 08900099.



## Centring of output flange B14

The standard B14 output flanges of NORD SI and SMI series UNIVERSAL worm gear units (Version Z) provide the possibility for centring. For this, the radial shaft-end seal on the B14 flange side must be pressed in further by the distance 'f'. The B5 output flange can be used as a tool in order to evenly press in the radial shaft sealing ring.

Centring of output flange B14					
Size	31	40	50	63	75
ØbH7	47	62	80	100	120
f	3	3	3	4	4

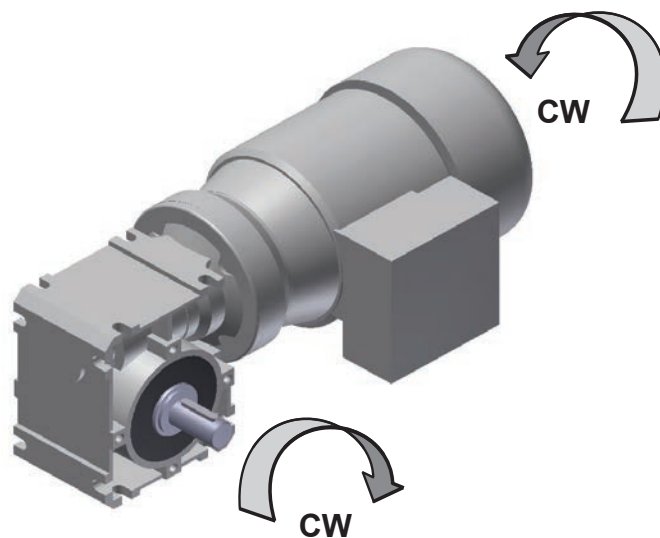


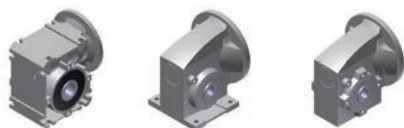
## Direction of rotation

All worms of NORD UNIVERSAL worm gear units have a right-handed helix  
The direction of rotation results as follows:

**CW** = Clockwise - Clockwise direction of rotation, **Right-hand rotation**

**CCW** = Counter clockwise - Counter clockwise direction of rotation, **Left-hand rotation**





# Installation positions

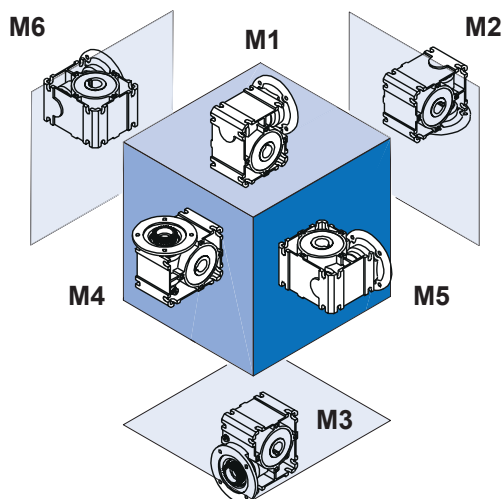
## Installation positions

NORD UNIVERSAL worm gear units are suitable for all installation positions. Separate sealing of each stage of the gear unit and the design of the housing enables a uniform oil quantity for all installation positions.

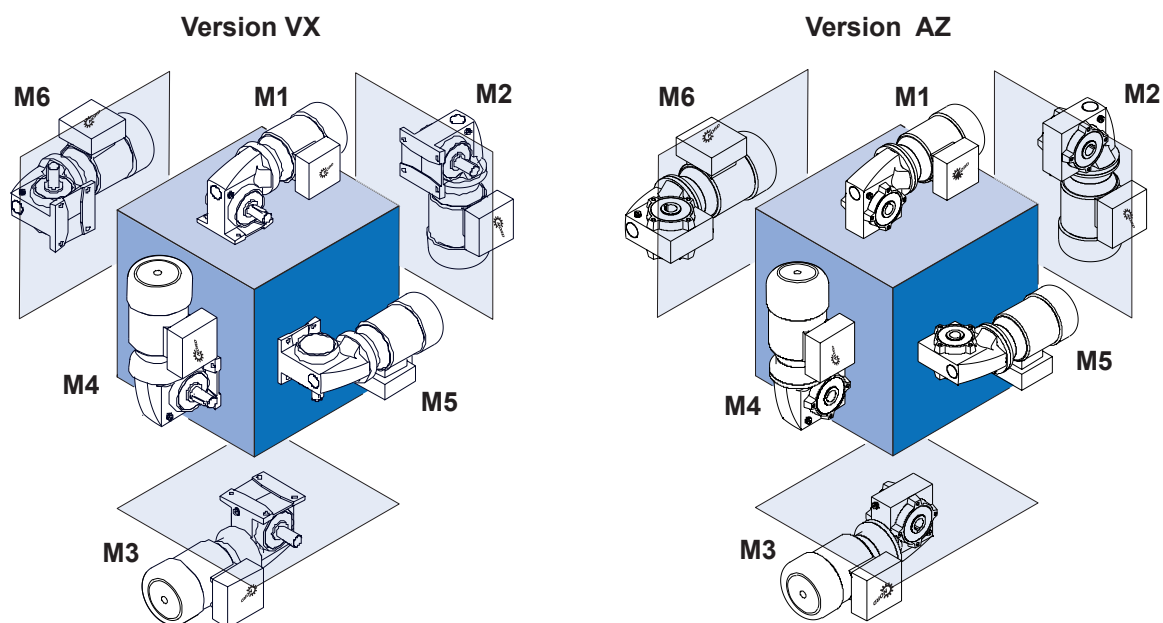
For gear units with direct motor mounting, the installation position must be stated, in order to install the optional vent in the correct position at the factory.

**Please give us a call if you have any special questions!**

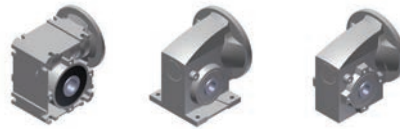
### SI worm gear units



### SMI worm gear motors



# Gear unit selection



## Gear unit selection

The selection lists for the combination of UNIVERSAL worm gear units with 4-pole standard three-phase motors state the resulting output torques of the gear unit  $M_2$ , output speeds  $n_2$  and the operating factors  $f_B$ . The operating factor  $f_B$  designates the reliability of the gear unit with the stated drive power.

Every application has its own specific loads, e.g. due to shocks, frequent starts, intermittent operation and high ambient temperatures, and therefore requires a certain minimum operating factor  $f_{Bmin}$ , in order to ensure reliable operation. When selecting gear units with the aid of the selection lists, care should be taken that the selected drive unit has the same or higher operating factor  $f_B$  than the minimum operating factor  $f_{Bmin}$ .

The selection list "n<sub>1</sub> = 1400 / 900 / 500 / 250 min<sup>-1</sup>" on page ⇨ B24 and the following pages should be used if a standard 4-pole three-phase motor is not fitted.

This selection list is based on an operating factor of  $f_B = 1.0$ . Taking into account the minimum operating factor  $f_{Bmin}$  the installed motor power must not exceed  $P_{emax} / f_{Bmin}$ .

The necessary minimum operating factor  $f_{Bmin}$  for a particular application is calculated as follows:

$$f_{Bmin} = f_{B0} \cdot f_{B1} \cdot f_{B2}$$

The operating factor  $f_{B0}$  takes into account load types A, B or C, the frequency of switching and the daily operating time. The operating factor  $f_{B1}$  takes various ambient temperatures into account.

The operating factor  $f_{B2}$  takes intermittent operation into account. The following diagrams are used to determine the operating factors  $f_{B0}$ ,  $f_{B1}$  and  $f_{B2}$ .

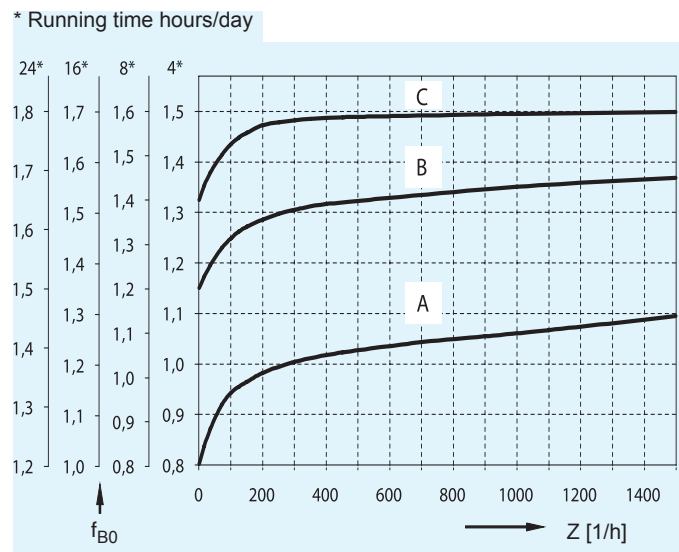


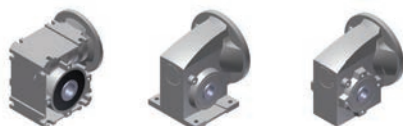
Diagram 1: Minimum operating factor  $f_{B0}$

If the gear unit transmits a very high power over a longer continuous period (>1h), high gear oil temperatures result, which reduce the service life.

In order to avoid these high temperatures, the motor powers listed below should not be exceeded in continuous operation. A larger gear units should be selected if higher motor powers are required in continuous operation.

Max. motor powers in continuous operation - Thermal power limits [kW]							
$i_{sch}$	5	7.5	10	12.5	15	20	25
<b>Size 50</b>	1.5	1.5	1.5	1.1	1.1	0.75	0.55
<b>Size 63</b>	1.5	1.5	1.5	1.5	1.5	1.1	1.1
<b>Size 75</b>	4	4	3	2.2	2.2	1.5	1.1

Max. motor powers in continuous operation - Thermal power limits [kW]						
$i_{sch}$	30	40	50	60	80	100
<b>Size 50</b>	0.55	0.37	0.37	0.37	0.25	0.18
<b>Size 63</b>	0.75	0.55	0.55	0.55	0.37	0.37
<b>Size 75</b>	1.1	0.75	0.75	0.55	0.37	0.37



## Examples of gear unit loadings:

- A** Light conveyor screws, fans, assembly lines, light conveyor belts, small agitators, elevators, controlling machines, belt conveyors.
- B** Decoilers, feed drives for woodworking machines, hoists, balancing machines, tapping units, medium-size agitators and mixers, winches, sliding doors, dung removal machines, packaging machines, bending machines and gear pumps.
- C** Shears, presses, punching machines, folding machines, tumbling barrels, vibrators and chopping machines

The load types A, B, and C are defined as follows:

**A:** uniform operation and  $m_{af} \leq 0,25$

**B:** irregular operation and  $m_{af} \leq 3$

**C:** highly irregular operation and  $m_{af} \leq 10$

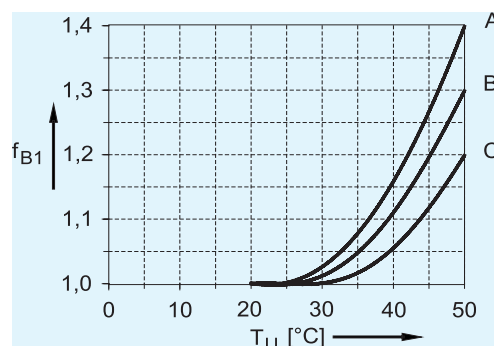
Whereby  $m_{af}$  is the mass acceleration factor:

$$m_{af} = \frac{J_{ex.red.}}{J_{Mot.}} = \frac{J_{ex.}}{J_{Mot.}} \cdot \left( \frac{1}{i_{ges}} \right)^2$$

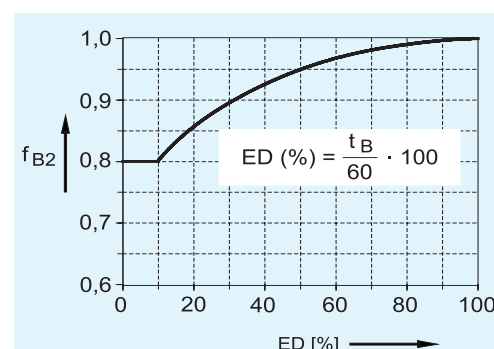
$J_{ex.red.}$  = all external moments of inertia are reduced to the drive motor

$J_{mot}$  = moment of inertia of the motor

Please contact us for  $m_{af} > 10$ .



**Diagram 2: Operating factor  $f_{B1}$**

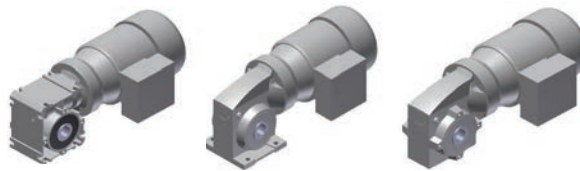


**Diagram 3: Operating factor  $f_{B2}$**

ED = Duration of switch-on  
 $t_B$  = Load time in min/h

Energy-saving motors with the classification IE2 have higher breakdown torques and performance reserves. If required by the application and not limited electrically, they may also provide a permanently impermissible power. This should be considered when selecting a gear unit.

# Motor selection



## NORD three-phase motors

The IEC three-phase motors are self-cooled, 4-pole squirrel-cage motors in a three-phase version. They are suitable both for mains operation as well as for operation with frequency inverters and are available as IE1 and IE2 versions. As standard, the three-phase motors are equipped with IEC-B14 flanges.

If required, B5 flanges, single-phase motors, 2, 6 and 8-pole motors, phase-switched motors, integrated encoders, external fans, ATEX and CUS/UL- compliant motors as well as other versions are available.

**Please request our motor catalogue M7000.**

Motor relevant standards	
IEC 60034-30 DIN-EN 60034-30	Efficiency classification
IEC 60 034-1 (DIN EN 60 034-1)	General regulations
IEC 60 034-5 (DIN EN 60 034-5)	Protection classes
IEC 60 034-6 (DIN EN 60 034-6)	Cooling types
IEC 60 034-8 (DIN EN 60 034-8)	Connection designations and direction of rotation
IEC 60 034-9 (DIN EN 60 034-9)	Noise level limits
IEC 60 034-11 (DIN EN 60 034-11)	Integrated thermal protection
IEC 60 034-14 (DIN EN 60 034-14)	Mechanical vibrations
IEC 60 038 (DIN EN 60 038)	IEC standard voltages

Motors with efficiency class IE1 with powers of 0.75 kW and above may only be used in special cases in Europe. For continuous operation under standard conditions, motors with efficiency class IE2 must be used. All motors comply with the standards for the product and have the CE mark.

## Standard / IE1

1500 1/min  
50 Hz

230/400 V / 400/690 V  
4-pole

Type	$-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +45^{\circ}\text{C}$											Noise emission from self-cooled motors		J	kg	
	$P_N$	$n_N$	$I_N$	$\cos \varphi$	$\eta$			$M_N$	$M_A/M_N$	$M_K/M_N$	$I_A/I_N$	50 Hz 1500/min				* [kg]
	S1, S9 [kW]	[1/min]	400 V [A]	$\varphi$	1/2xP <sub>N</sub> [%]	3/4xP <sub>N</sub> [%]	4/4xP <sub>N</sub> [%]	[Nm]				L <sub>PA</sub> [dB(A)]	L <sub>WA</sub> [dB(A)]			
**63 S/4	0.12	1335	0.55	0.64	40.9	48.1	49.9**	0.86	2.7	2.7	2.9	40	52	0.00021	3.6	
**63 L/4	0.18	1360	0.68	0.64	51.2	56	56.2**	1.26	2.5	2.6	3.3	40	52	0.00028	4.2	
**71 S/4	0.25	1380	0.76	0.77	51.7	58.2	61.3**	1.73	2.2	2.1	3.3	45	57	0.00072	5.4	
**71 L/4	0.37	1380	1.09	0.71	52.8	59.2	64.4**	2.56	2.0	2.4	3.6	45	57	0.00086	6.3	
80 S/4	0.55	1375	1.52	0.73	74.5	75.9	75.1	3.82	1.9	2.0	3.3	47	59	0.00109	8.0	
80 L/4	0.75	1375	2.1	0.74	74.7	76.3	75.5	5.21	2.0	2.1	3.5	47	59	0.00145	9.0	
90 S/4	1.1	1395	2.81	0.74	75.7	77.9	77.6	7.53	2.3	2.6	4.4	49	61	0.00235	12.0	
90 L/4	1.5	1395	3.55	0.78	78.7	79.1	77.5	10.3	2.3	2.6	4.8	49	61	0.00313	14.0	
100 L/4	2.2	1440	5.22	0.74	79.5	81.2	80.8	14.6	2.3	3.0	5.1	51	64	0.0045	18.0	
100 LA/4	3	1415	6.54	0.80	83.3	84.2	83.3	20.2	2.5	2.9	5.4	51	64	0.006	21.0	
112 M/4	4	1445	8.3	0.80	86.4	86.4	85.1	26.4	2.3	2.8	5.3	54	66	0.011	30.0	

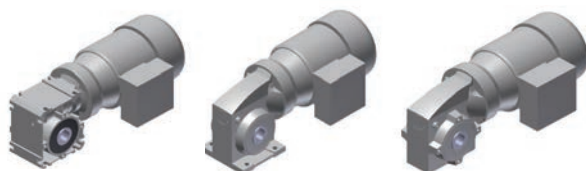
\* Version B5, without options \*\* not IE1

## IE2

1500 1/min  
50 Hz

230/400 V & 400/690 V  
4-pole

Type	IE2 S1														
	$P_N$	$n_N$	$M_N$	$I_N$		$\cos \varphi$	$\eta$			$\eta^{(1)}$	$M_A/M_N$	$M_K/M_N$	$I_A/I_N$	J	kg
	[kW]	[1/min]	[Nm]	230/400 V [A]	400/690 V [A]	$\varphi$	1/2xP <sub>N</sub> [%]	3/4xP <sub>N</sub> [%]	4/4xP <sub>N</sub> [%]	4/4xP <sub>N</sub> [%]				[kgm <sup>2</sup> ]	[kg]
80 SH/4	0.55	1420	3.73	2.44/1.41	1.41/0.81	0.70	77.7	80.7	80.8	80.4	3.1	3.2	5.1	0.0014	9.0
80 LH/4	0.75	1415	5.06	3.05/1.76	1.76/1.02	0.75	81.6	83.0	82.4	81.6	3.0	3.1	5.2	0.0019	10.2
90 SH/4	1.1	1435	7.32	4.19/2.42	2.42/1.4	0.80	80.9	82.0	81.8	81.4	3.1	3.5	6.1	0.0034	15.1
90 LH/4	1.5	1415	10.1	5.8/3.34	3.34/1.93	0.79	81.3	82.4	82.8	82.8	3.3	3.5	5.8	0.0039	16.8
100 LH/4	2.2	1445	14.5	8.1/4.65	4.65/2.68	0.79	85.2	86.7	86.6	85.3	3.7	4.3	7.3	0.0075	25.2
100 AH/4	3	1425	20.3	11.4/6.59	6.59/3.8	0.77	86.4	86.7	85.6	85.5	3.1	3.5	6.3	0.0075	25.2
112 MH/4	4	1440	26.6	13.9/8.02	8.02/4.63	0.83	87.4	87.6	86.7	86.6	3.1	3.6	7.5	0.014	35.5



# Motor selection

## NORD brake motors

Motors for the IEC three-phase motors are also available with a brake. The brake motors are indicated in the selection lists and the dimensioned drawings section with the symbol (Ⓜ). NORD brake motors are NORD three-phase motors with integrated electro-magnetic spring-loaded brakes. The brake is released by means of the DC electromagnet. In case of power interruptions the brake is applied automatically by means of pressure springs. The adjustment ring enables continuous reduction of the braking torque by up to 50%.

As standard, the DC voltage of the brake windings is 205V or 180V DC. Therefore the rectifier which is installed in the terminal box enables the brake to be connected to the three-phase  $\Delta 230V/Y400V$  AC or  $\Delta 400V/Y690V$  AC power supply.

If required, different winding voltages or brake torques, higher protection classes, dust protection rings, stainless scraper plates, manual release levers and other options are available.

Please request our motor catalogue M7000.

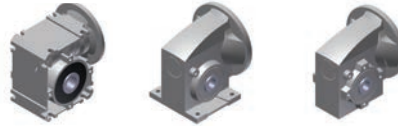
Techn. data of brakes for brake motors				
Type	$M_B$ [Nm]	$P_{20}$ [W]	$W_{max}$ [J]	a [mm]
63S/4 BRE5 63L/4 BRE5	5	22	1500	0.2
71S/4 BRE5 71L/4 BRE5	5	22	1500	0.2
80S/4 BRE5 80L/4 BRE10	5 10	22 28	1500 3000	0.2 0.2
90S/4 BRE10 90L/4 BRE20	10 20	28 34	3000 6000	0.2 0.3
100L/4 BRE20 100LA/4 BRE40	20 40	34 42	6000 12500	0.3 0.3
112M/4 BRE40	40	42	12500	0.3

Protection class: IP 55  
Coil voltage: 205V DC suitable for  $\Delta 230V/Y400V$  AC  
180V DC suitable for  $\Delta 400V/Y690V$  AC

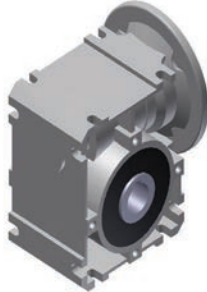
$M_B$ : Braking torque;  
 $P_{20}$ : Coil power;  
 $W_{max}$ : Max. friction per application at  $n_1 = \text{approx. } 1400 \text{ min}^{-1}$ ;  
a: Nominal air gap

Abbreviations	Meaning	Unit
ED	Relative switch-on time	[%]
$P_N$	Nominal power	[kW]
$n_N$	Nominal speed	[ $\text{min}^{-1}$ ]
$n_{syn}$	Synchronous speed:	[ $\text{min}^{-1}$ ]
$I_N$	Nominal current	[A]
$I_{\Delta}/I_N$	Start-up current / nominal current (Relationship of start-up current to nominal current)	[-]
$\cos \varphi$	Power factor	[-]
$\eta$	Efficiency	[%]
$M_N$	Nominal torque	[Nm]
$M_{\Delta}/M_N$	Starting torque / nominal torque (relationship of starting torque to nominal torque)	[-]
$M_K/M_N$	Breakdown torque / nominal torque (relationship of breakdown torque to nominal torque)	[-]
$M_B$	Braking torque	[Nm]
J	Moment of inertia	[ $\text{kgm}^2$ ]
$L_{PA}$	Noise level	[dB(A)]
$L_{WA}$	Noise level	[dB(A)]
$T_{amb}$	Ambient temperature	[°C]

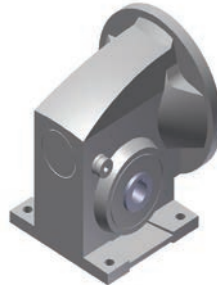
# NORD UNIVERSAL Worm gear units



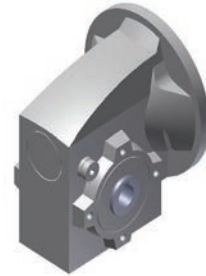
## NORD UNIVERSAL worm gear units



**SI version**



**SMI - version X**



**SMI - version Z**

NORD UNIVERSAL worm gear units are available in three different housing versions:

- Die-cast aluminium housing UNIVERSAL foot-mounted and flange-mounted, Type SI
- Cast aluminium housing, foot-mounted version, Type SMI X
- Cast aluminium housing, B14-flange-mounted version, Type SMI Z

The one-piece housings are characterised by high rigidity and precision machining. The housings are a consistent continuation of the NORD "Unicase" concept. All bearing and seal seats are integrated into the housing and therefore ensure great reliability.

Machining of the bearing seats and mounting surfaces is carried out in a single step. This ensures precise positioning of the intermeshing, bearings and radial shaft sealing rings and results in both a long service life of all components and quiet running.

The innovative assembly principle requires oversize output bearings, so that the gear units can accept high additional external loads. This design results in a very long bearing life. The use of larger output bearings also enable the use of large hollow shaft diameters or free shaft ends with an increased diameter.

All housings are produced from a high-strength aluminium alloy. NORD UNIVERSAL worm gear units therefore provide a better power-to-weight ratio than comparable cast iron worm gear units of a similar power. As well as this, the natural corrosion protection of the aluminium alloy also provides an advantage, as no additional painting is necessary for protected installations (indoor installation).

If NORD UNIVERSAL worm gear units are used in an aggressive environment (outdoor installation, washdown applications) our NSD TupH treatment [nsd tuph](#) provides excellent corrosion protection as an option for these applications (see A12).

The SMI series was specially developed for applications in the food and beverage industry as well as for hygiene applications. It features smooth surfaces without undercuts, which greatly facilitates cleaning of the gear units. We recommend our NSD TupH especially for these applications [nsd tuph](#).

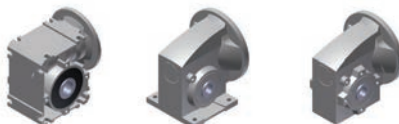
As standard, NORD UNIVERSAL worm gear units are provided with life-long lubrication and do not require any maintenance.

The standard version of the NORD UNIVERSAL worm gear unit is designed as a hollow shaft version. The hollow shaft is equipped with a parallel key groove in accordance with DIN 6885 Sheet 1. The following table shows the standard diameter as well as the maximum possible hollow shaft diameter for each size.

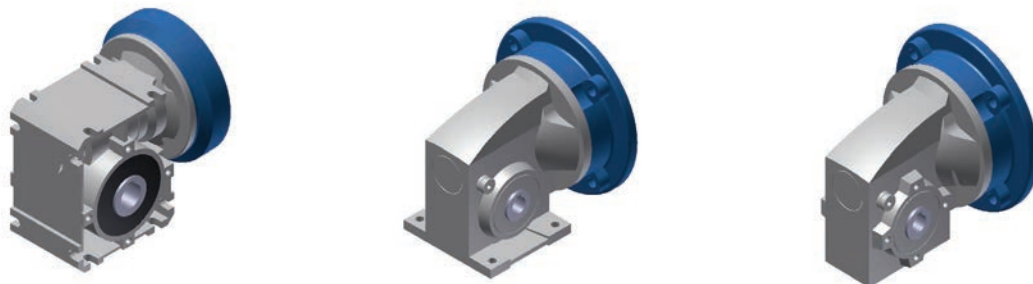
Hollow shaft with parallel key groove according to DIN 6885, Sheet 1					
Size	31	40	50	63	75
Standard	14mm	18mm	25mm	25mm	35mm
Max.	17mm	25mm	30mm	42mm	50mm

The input sides of NORD UNIVERSAL worm gear units are equipped with coupling splines, which enables the simple attachment of IEC or NEMA motors, or the attachment of input components by means of a coupling sleeve. The coupling sleeve is always supplied with the relevant components.





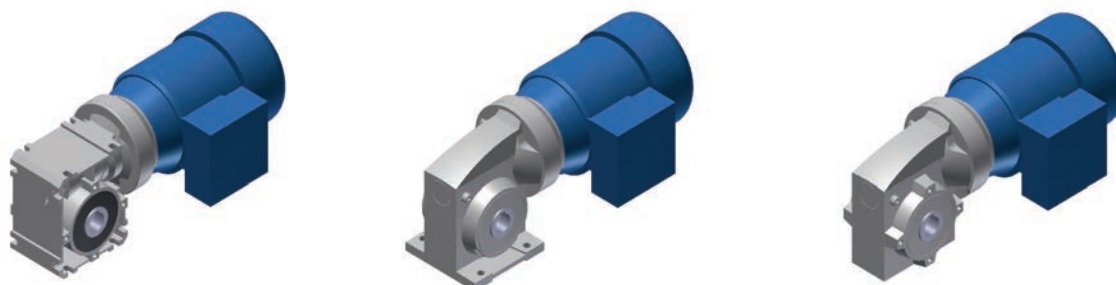
## IEC motor mounting, NEMA motor mounting



Short, compact motor mounts enable the attachment of standard IEC motor sizes from 56 to 112 or NEMA standard motors from 48C to 184TC

(For details please refer to the USA Motor Catalogue [www.2.nord.com](http://www.2.nord.com) - Heading DOCUMENTATION).

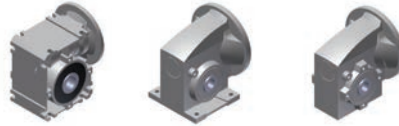
## IEC three-phase motor / brake motor



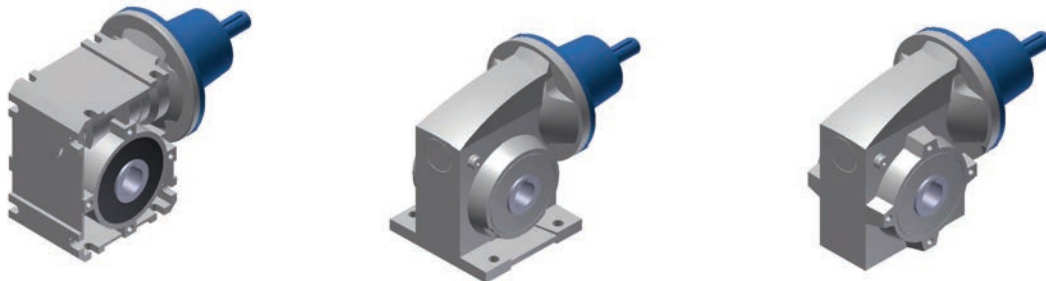
In combination with the IEC standard motor mounting, NORD 3-phase squirrel-cage asynchronous motors can be mounted on NORD UNIVERSAL worm gear units.

The motors are also available as energy-efficient motors compliant with IE2, or as brake motors. For further details, please refer to the NORD motor catalogue M7000.

# Mounting variants



## Type W free input shaft



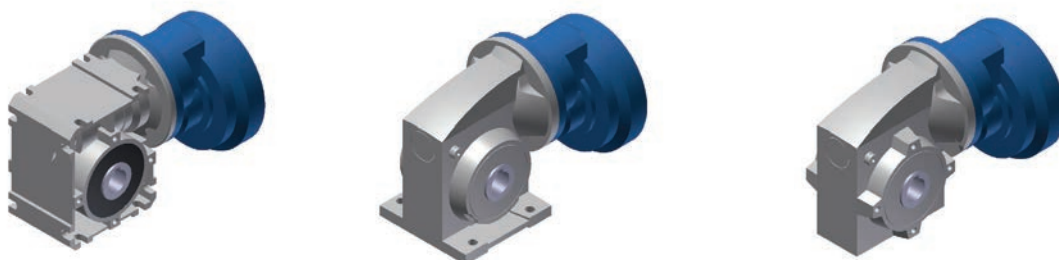
The Type W free input shaft was developed to attach couplings, belt pulleys or chain wheels to the input of NORD UNIVERSAL worm gear units. The Type W free drive shaft is available for sizes 40, 50, 63 and 75. The components includes the pre-assembled, lubricated-for-life unit, the coupling sleeve and all the necessary fastening elements.

The Type W free input shaft can be combined with NORD UNIVERSAL worm gear units as well as the H10 helical gear input. It can be used in all installation positions.

The free shaft end is produced in the tolerance k6. The dimensions are shown in the following table:

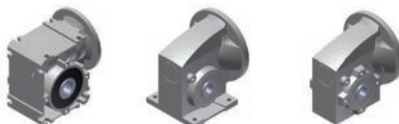
free shaft end - Typ W Parallel key according to DIN 6885, Sheet 1:					
Size	31	40	50	63	75
Shaft end	--	Ø16x40			Ø24x50

## Helical input stage H10

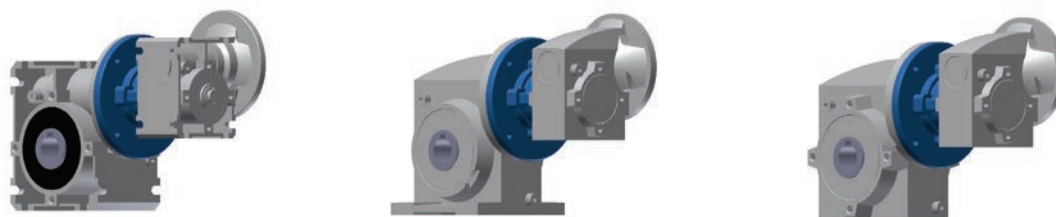


With the H10 helical gear input, the NORD UNIVERSAL worm gear unit is converted into a 2-stage helical worm gear unit. The speed ratio of the H10 helical gear is the same for all sizes, namely  $i_{vor} = 10$ .

The H10 helical gear is a lubricated-for-life unit, which is available for NORD UNIVERSAL worm gear units sizes 40, 50 and 63.



## Double worm gear adapter



The double worm gear adapter enables the connection of two NORD UNIVERSAL worm gear units to form a double worm gear unit. The double worm gear units can be installed as both angular gear units or as parallel axis units.

The SI series or the SMI series can be used as input gear units.

The double gear unit adapter is available for the size combinations 40/31, 50/31, 63/31 and 75/40.

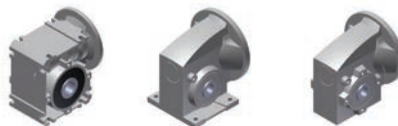
## Plug-in shaft V



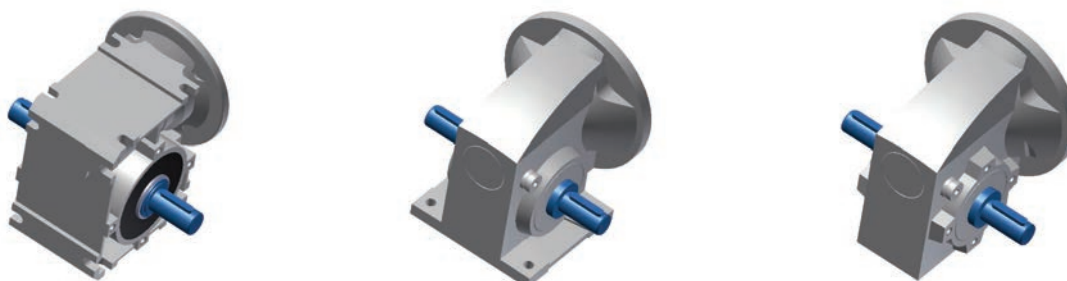
The plug-in shaft V (single side plug-in shaft) are plugged in to the standard hollow shaft of the NORD UNIVERSAL worm gear unit and axially secured. The standard journal dimensions for the individual sizes are shown in the following table. The tolerance of the free shaft journal is h6 for all units.

Free shaft end of the plug-in shaft with parallel key DIN 6885 Sheet 1					
Size	31	40	50	63	75
Shaft journal	ø14 x 30	Ø18 x 40	ø25 x 50	ø25 x 50	ø35 x 70

# Mounting variants



## Plug-in shaft L



The plug-in shaft L converts the NORD UNIVERSAL worm gear unit with standard hollow shaft into a gear unit with solid shafts on both sides.

The dimensions of the free shaft ends correspond to those of version V.

## Plug-in shaft for output flange B5 VF



The plug-in shaft VF is an extended form of the plug-in shaft V, which matches the B5 output flange.

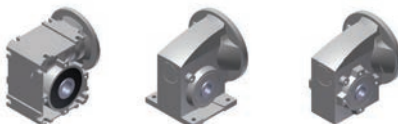
The plug-in shaft VF is not available for NORD UNIVERSAL foot-mounted worm gear units (Type series SM X) as in this case, a flange cannot be fitted.

**Attention :** For the SMI series, instead of

- Plug-in shaft V,
- Plug-in shaft L and
- Plug-in shaft for output flange B5 VF

an output shaft is supplied as standard, as these drive units are assembled to order.


**Plug-in shaft are available by special request!**



## B5 flange



The B5 flange provides a simple possibility for mounting the NORD UNIVERSAL worm gear unit onto a large diameter flange with through holes.

The flange is centred on the NORD UNIVERSAL worm gear units in the radial shaft sealing ring holes (⇒  A16).

B5 output flange are available in various flange diameters and optionally with inner or outer centring.

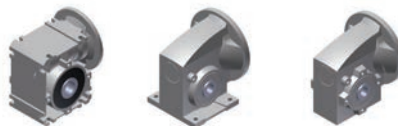
## Torque arm



The torque arm is a compact and simple method for absorbing reaction torques with shaft-mounted gear units. The torque arm is mounted on the B14 threaded holes of the NORD UNIVERSAL worm gear unit and can be installed with rotation steps of 45°.

The torque arm includes a pressed-in rubber element on the fastening holes to absorb shock loads.

# Mounting variants



## Cover



The cover covers the rotating output shaft and the shaft sealing rings.

The scope of delivery consists of the cover and the necessary screws.

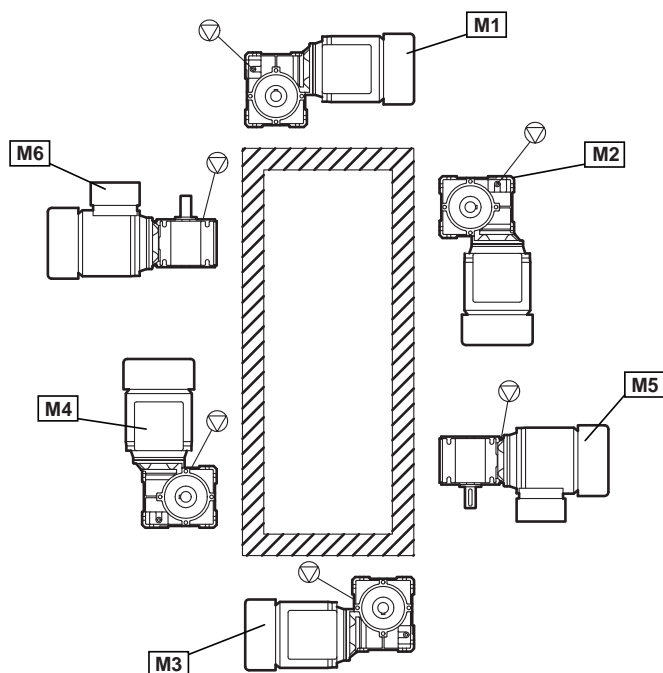
## Vent (not illustrated)

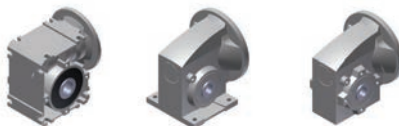
Optionally, the worm gear units can be supplied with a vent for most installation positions. The installation position must be stated for vented gear units ⇒ [A17](#).

The vent can be used for worm gear units in the following installation positions with input speeds  $n_1 = 1800\text{min}^{-1}$ .

Vent for worm gear units						
Size	Installation positions					
	M1	M2	M3	M4	M5	M6
31		x	x	x		x
40		x	x	x		x
50	x	x	x	x		x
63	x	x	x	x	x	x
75	x	x	x	x		x

## The venting position in response to the mounting position

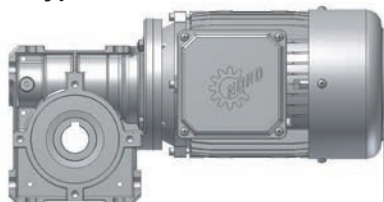




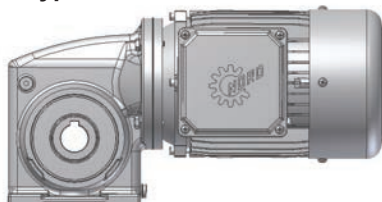
## Direct motor mounting / IEC motor mounting

### Direct motor mounting

Typ SID

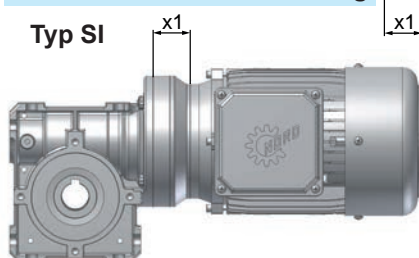


Typ SMID

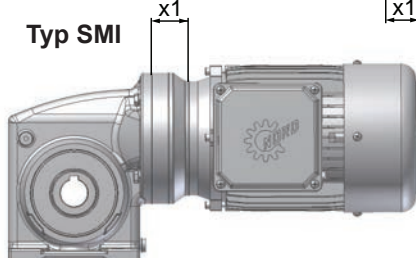


### Standard IEC motor mounting

Typ SI



Typ SMI



Reduction of total length by x1 in mm

Size	Motor sizes			
	63S/L	71S/L	80S/L	90S/L
31	29.5	29.5		
40	32.5	32.5	32.5	
50		32.5	32.5	45.5
63			32.5	32.5

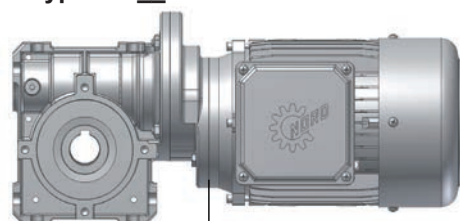
Direct mounting of the motor considerably reduces the total length of NORD UNIVERSAL worm gear units. This applies to both the SI and the SMI series. The table shows the length reduction for the selection of direct motor mounting in comparison with an IEC standard motor mounting for the various sizes of gear units with mounting of various motor sizes.

Direct motor mounting does not utilise a coupling. The worm is attached directly to a special motor shaft. For this reason, directly mounted motors can only be supplied as fully assembled worm gear motor units.

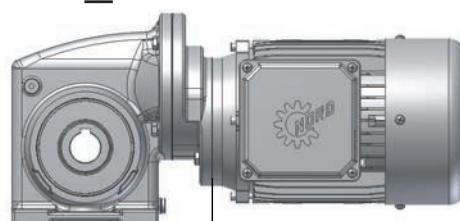
## 2-stage helical worm gear unit

### Direct motor mounting

Typ 2SID\_\_

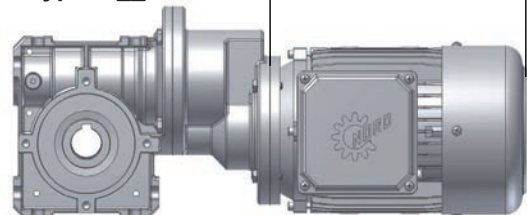


Typ 2SMID\_\_

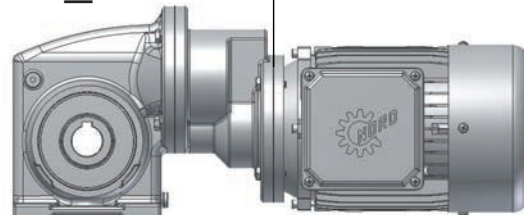


### Standard IEC motor mounting

Typ 1SI\_/H10



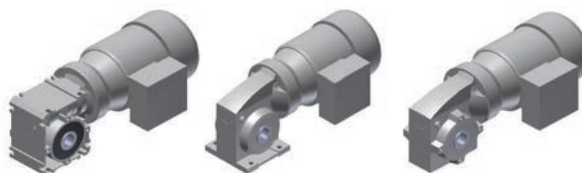
Typ 1SMI\_/H10



The total length of a helical worm gear unit from the NORD UNIVERSAL worm gear unit series has a shorter total length of  $z_1 = 48\text{mm}$  with direct mounting of the motor.

In the case of direct motor mounting, the input speed ratio  $i_{\text{vor}}$  is  $i_{\text{vor}} = 5$ .

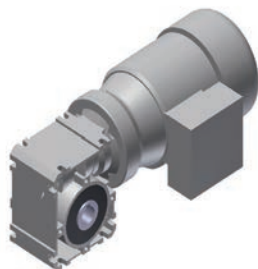
# Assembly combinations



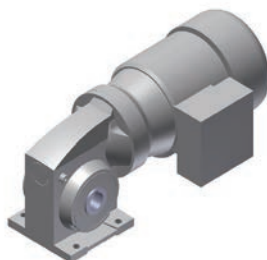
## Combinations with the basic versions of NORD UNIVERSAL

- worm gear motors using the example of size 50

### Single-stage worm gear motor with IEC motor



1SI50-IEC71-71S/4

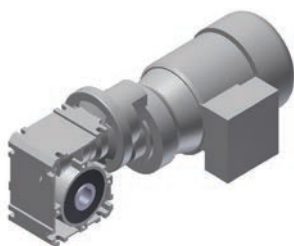


1SMI50X-IEC71-71S/4

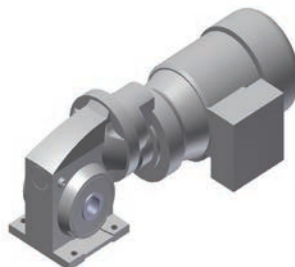


1SMI50Z-IEC71-71S/4

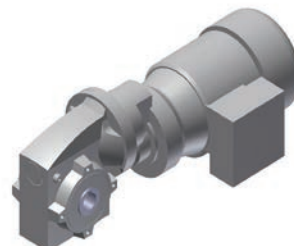
### Helical worm gear motor with IEC motor



1SI50/H10-IEC71-71S/4

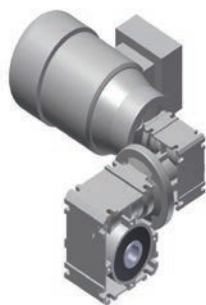


1SMI50/H10X-IEC71-71S/4



1SMI50/H10Z-IEC71-71S/4

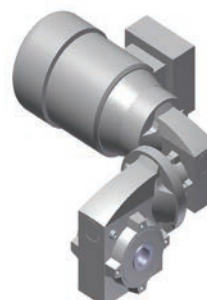
### Double worm gear motor with IEC motor



1SI50/31-IEC71-71S/4

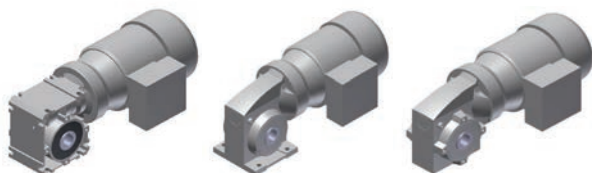


1SMI50/31X-IEC71-71S/4



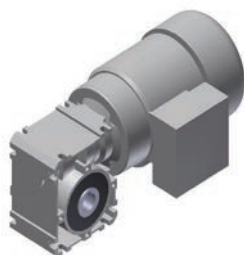
1SMI50/31Z-IEC71-71S/4



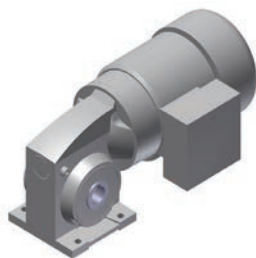


# Assembly combinations

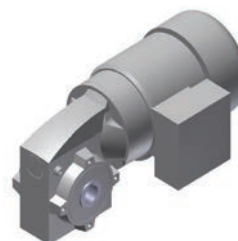
## Single-stage worm gear motor with directly mounted motor



1SID50-71S/4

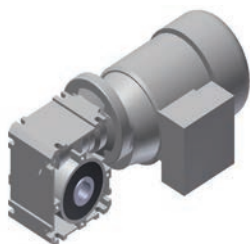


1SMID50X-71S/4

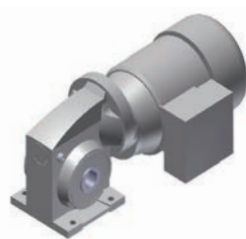


1SMID50Z-71S/4

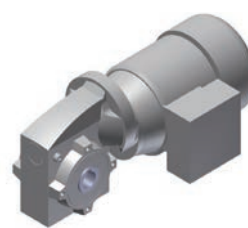
## Helical worm gear motor with directly mounted motor



2SID50-71S/4

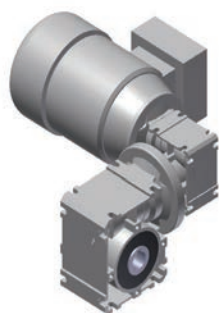


2SMID50X-71S/4



2SMID50Z-71S/4

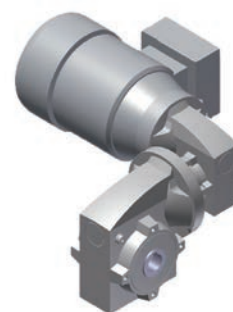
## Double worm gear motor with directly mounted motor



2SID50/31-71S/4



2SMID50/31X-71S/4

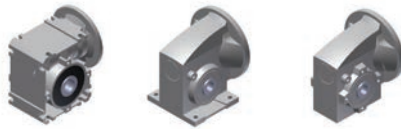


2SMID50/31Z-71S/4

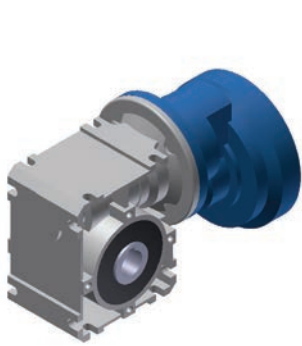


With our NORDCAD program you can depict all the possible variants as 3D models as well as 2D dimensioned drawings. The NORDCAD program can be found on the NORD homepage under [www.nord.com](http://www.nord.com) - Heading **DOCUMENTATION / Software**.

# Versions



## H10 helical gear input stage versions



Version T1



Version T2



Version T3



Version T4

## Double worm attachment versions



Version U1



Version U2



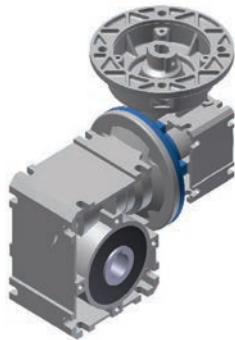
Version U3



Version U4



Version U5



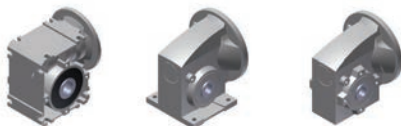
Version U6



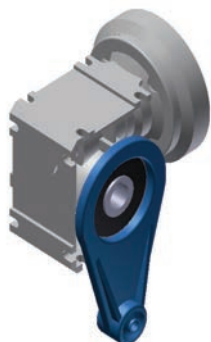
Version U7



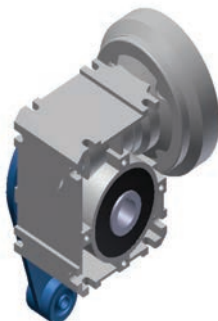
Version U8



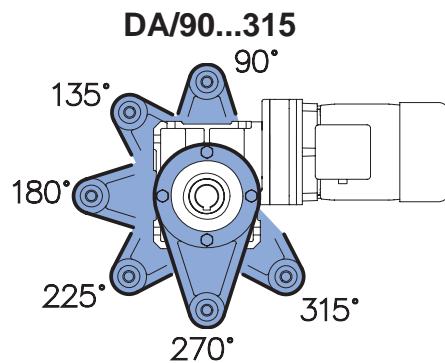
## Torque support versions



Version DA/270

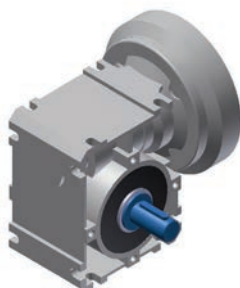


Version DB/270

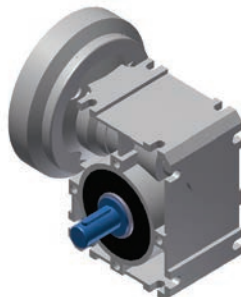


The torque support can be mounted in 45° steps to the angles 90 - 315 both on output side A and output side B.

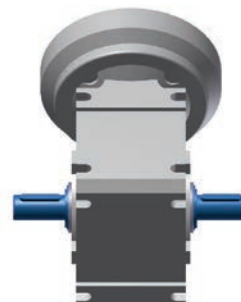
## Plug-in shaft versions



Version VA

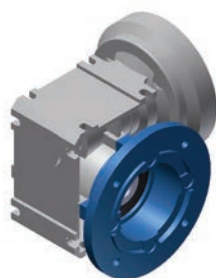


Version VB

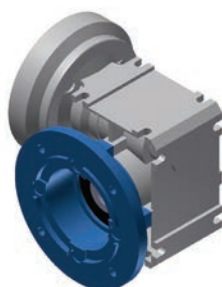


Version L

## B5 output shaft versions



Version FA

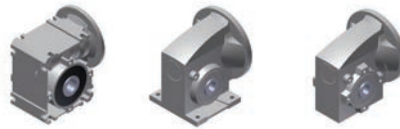


Version FB

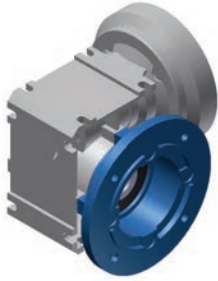


Version FF

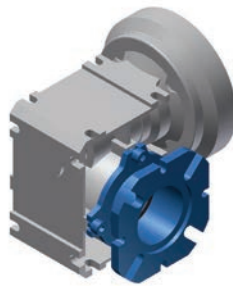
# Versions



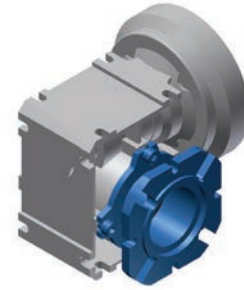
## Type of flange



FA I round flange  
with external centring

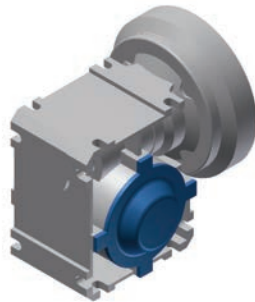


FA II square flange  
with internal centring

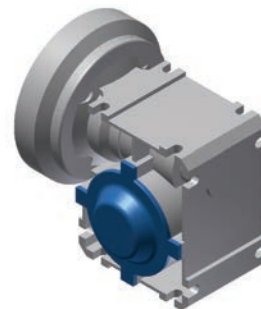


FA III square flange  
with external centring

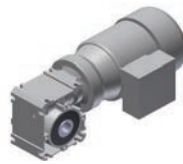
## Cover versions



Version HA



Version HB



## UNIVERSAL SI worm gear motors

SK      Gear units: 1SI      Size:      Gear unit options:      Input:      Motor:      Motor options: See catalogue M7000

**UNIVERSAL Version**

**Mounting position for venting option**

M1     M2     M3  
 M4     M5     M6  
 Special  
 ⇒ A28

**Size**  
 31     40     40/H10  
 40/31     50     50/H10  
 50/31     63     63/H10  
 63/31     75     75/40

**Gear unit options**  
 V - single side plug-in shaft  
      VA     VB  
 L - plug-in shaft, both sides  
 VF - plug-in shaft, output flange B5  
      VFA     VFB  
 F - output flange B5  
      FA     FB     FF  
 D - Torque support  
      DA     DB  
 H - cover  
      HA     HB  
 Vent  
 Pressure vent

NEMA - see USA catalogue  
[www.2.nord.com](http://www.2.nord.com)  
 - Heading DOCUMENTATION

NEMA Adapter	IEC
N48C	IEC 63
N56C	IEC 71
N140TC	IEC 80
N180TC	IEC 90
	IEC 100
	IEC 112

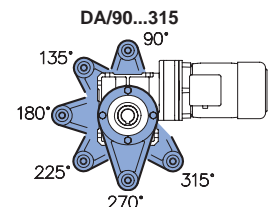
Motors	Energy efficient motors	Brake motors	Energy efficient brake motors
63S/4 - 0.12kW	80SH/4 - 0.55kW	63S/4 BRE 5 - 0.12kW	80SH/4 BRE 5 - 0.55kW
63L/4 - 0.18kW	80LH/4 - 0.75kW	63L/4 BRE 5 - 0.18kW	80LH/4 BRE10 - 0.75kW
71S/4 - 0.25kW	90SH/4 - 1.1kW	71S/4 BRE 5 - 0.25kW	90SH/4 BRE10 - 1.1kW
71L/4 - 0.37kW	90LH/4 - 1.5kW	71L/4 BRE 5 - 0.37kW	90LH/4 BRE20 - 1.5kW
80S/4 - 0.55kW	100LH/4 - 2.2kW	80S/4 BRE 5 - 0.55kW	100LH/4 BRE20 - 2.2kW
80L/4 - 0.75kW	100AH/4 - 3kW	80L/4 BRE10 - 0.75kW	100AH/4 BRE40 - 3kW
90S/4 - 1.1kW	112MH/4 - 4kW	90S/4 BRE10 - 1.1kW	112MH/4 BRE40 - 4kW
90L/4 - 1.5kW		90L/4 BRE20 - 1.5kW	
100L/4 - 2.2kW		100L/4 BRE20 - 2.2kW	
100A/4 - 3kW		100A/4 BRE40 - 3kW	
112M/4 - 4kW		112M/4 BRE40 - 4kW	

## Product specifications

Worms		Helical worm SI_/H10		Double worm SID_/31 or SI 75/40	
Speed ratios	Speed ratios	Version	Speed ratios	Version	
<input type="radio"/> 5	<input type="radio"/> 50	<input type="radio"/> T1	<input type="radio"/> 150	<input type="radio"/> U1	
<input type="radio"/> 7,5	<input type="radio"/> 75	<input type="radio"/> T2	<input type="radio"/> 225	<input type="radio"/> U2	
<input type="radio"/> 10	<input type="radio"/> 100	<input type="radio"/> T3	<input type="radio"/> 300	<input type="radio"/> U3	
<input type="radio"/> 12,5	<input type="radio"/> 125	<input type="radio"/> T4	<input type="radio"/> 375	<input type="radio"/> U4	
<input type="radio"/> 15	<input type="radio"/> 150		<input type="radio"/> 450	<input type="radio"/> U5	
<input type="radio"/> 20	<input type="radio"/> 200		<input type="radio"/> 600	<input type="radio"/> U6	
<input type="radio"/> 25	<input type="radio"/> 250		<input type="radio"/> 750	<input type="radio"/> U7	
<input type="radio"/> 30	<input type="radio"/> 300		<input type="radio"/> 900	<input type="radio"/> U8	
<input type="radio"/> 40	<input type="radio"/> 400		<input type="radio"/> 1200		
<input type="radio"/> 50	<input type="radio"/> 500		<input type="radio"/> 1500		
<input type="radio"/> 60	<input type="radio"/> 600		<input type="radio"/> 1800		
<input type="radio"/> 80	<input type="radio"/> 800		<input type="radio"/> 2400		
<input type="radio"/> 100	<input type="radio"/> 1000		<input type="radio"/> 3000		

Painting	Direction of torque support (if selected)	
<input type="radio"/> Unpainted (standard)	<input type="radio"/> 90°	<input type="radio"/> 225°
<input type="radio"/> NSD TupH	<input type="radio"/> 135°	<input type="radio"/> 270°
<input type="radio"/> Paint type _____	<input type="radio"/> 180°	<input type="radio"/> 315°
Colour _____		

Output flange B5 versions (if selected)
<input type="radio"/> F I round flange, externally centred
<input type="radio"/> F II square flange, internally centred
<input type="radio"/> F III square flange, externally centred



## Details of geared motor only

Voltage/Frequency
<input type="radio"/> 230/400V - 50 Hz
<input type="radio"/> 400/690V - 50 Hz
<input type="radio"/> Other _____

Terminal box position
<input type="radio"/> KK1
<input type="radio"/> KK2
<input type="radio"/> KK3
<input type="radio"/> KK4

Cable gland
<input type="radio"/> I*
<input type="radio"/> II
<input type="radio"/> III*
<input type="radio"/> IV

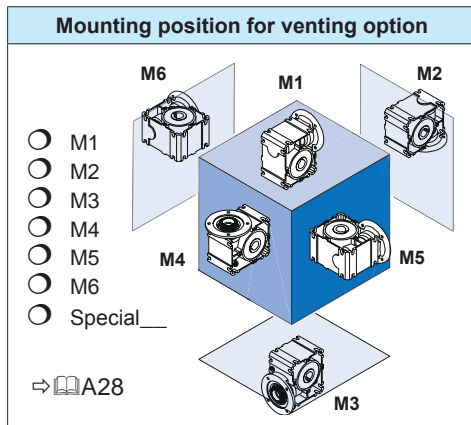
\* Brake motor options

# Order check list



## UNIVERSAL SI worm gear units

SK	Gear units 1SI	Size	Gear unit options	-	Input
	UNIVERSAL Version	<b>Size</b> <input type="radio"/> 31 <input type="radio"/> 40 <input type="radio"/> 40/H10 <input type="radio"/> 40/31 <input type="radio"/> 50 <input type="radio"/> 50/H10 <input type="radio"/> 50/31 <input type="radio"/> 63 <input type="radio"/> 63/H10 <input type="radio"/> 63/31 <input type="radio"/> 75 <input type="radio"/> 75/40	<b>Gear unit options</b> <input type="checkbox"/> V - single side plug-in shaft <input type="radio"/> VA <input type="radio"/> VB <input type="checkbox"/> L - plug-in shaft, both sides <input type="checkbox"/> VF - plug-in shaft, output flange B5 <input type="radio"/> VFA <input type="radio"/> VFB <input type="checkbox"/> F - output flange B5 <input type="radio"/> FA <input type="radio"/> FB <input type="radio"/> FF <input type="checkbox"/> D - Torque support <input type="radio"/> DA <input type="radio"/> DB <input type="checkbox"/> H - cover <input type="radio"/> HA <input type="radio"/> HB <input type="checkbox"/> Vent <input type="checkbox"/> Pressure vent		



**Input options**

<input type="radio"/> W		
<input type="radio"/> IEC56	<input type="radio"/> B14 C105	<input type="radio"/> B5 A120
<input type="radio"/> IEC63	<input type="radio"/> B14 C90	<input type="radio"/> B14 C120 <input type="radio"/> B5 A140
<input type="radio"/> IEC71	<input type="radio"/> B14 C105	<input type="radio"/> B14 C140 <input type="radio"/> B5 A160
<input type="radio"/> IEC80	<input type="radio"/> B14 C120	<input type="radio"/> B14 C160 <input type="radio"/> B5 A200
<input type="radio"/> IEC90	<input type="radio"/> B14 C140	<input type="radio"/> B14 C160 <input type="radio"/> B5 A200
<input type="radio"/> IEC100	<input type="radio"/> B14 C160	<input type="radio"/> B14 C200 <input type="radio"/> B5 A250
<input type="radio"/> IEC112	<input type="radio"/> B14 C160	<input type="radio"/> B14 C200 <input type="radio"/> B5 A250

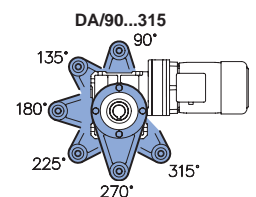
## Product specifications

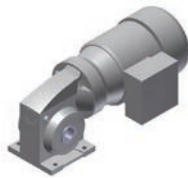
Worms		Helical worm SI_/H10		Double worm SID_/31 or SI 75/40	
Speed ratios	Speed ratios	Version	Speed ratios	Version	
<input type="radio"/> 5	<input type="radio"/> 50	<input type="radio"/> T1	<input type="radio"/> 150	<input type="radio"/> U1	
<input type="radio"/> 7.5	<input type="radio"/> 75	<input type="radio"/> T2	<input type="radio"/> 225	<input type="radio"/> U2	
<input type="radio"/> 10	<input type="radio"/> 100	<input type="radio"/> T3	<input type="radio"/> 300	<input type="radio"/> U3	
<input type="radio"/> 12.5	<input type="radio"/> 125	<input type="radio"/> T4	<input type="radio"/> 375	<input type="radio"/> U4	
<input type="radio"/> 15	<input type="radio"/> 150		<input type="radio"/> 450	<input type="radio"/> U5	
<input type="radio"/> 20	<input type="radio"/> 200		<input type="radio"/> 600	<input type="radio"/> U6	
<input type="radio"/> 25	<input type="radio"/> 250		<input type="radio"/> 750	<input type="radio"/> U7	
<input type="radio"/> 30	<input type="radio"/> 300		<input type="radio"/> 900	<input type="radio"/> U8	
<input type="radio"/> 40	<input type="radio"/> 400		<input type="radio"/> 1200		
<input type="radio"/> 50	<input type="radio"/> 500		<input type="radio"/> 1500		
<input type="radio"/> 60	<input type="radio"/> 600		<input type="radio"/> 1800		
<input type="radio"/> 80	<input type="radio"/> 800		<input type="radio"/> 2400		
<input type="radio"/> 100	<input type="radio"/> 1000		<input type="radio"/> 3000		

Painting	Direction of torque support (if selected)	
<input type="radio"/> Unpainted (standard) <input type="radio"/> NSD TupH <input type="radio"/> Paint type _____ Colour _____	<input type="radio"/> 90° <input type="radio"/> 135° <input type="radio"/> 180°	<input type="radio"/> 225° <input type="radio"/> 270° <input type="radio"/> 315°

**Output flange B5 versions (if selected)**

<input type="radio"/> F I round flange, externally centred <input type="radio"/> F II square flange, internally centred <input type="radio"/> F III square flange, externally centred
---





# Order check list

## UNIVERSAL SMI worm gear motors

SK      Gear units: 1SMI      Size:      Gear unit options: X      Input:      Motor:      Motor options: See catalogue M7000

**UNIVERSAL Version**

**Mounting position for venting option**

M1     M2     M3  
 M4     M5     M6  
 Special  
 ⇒ A28

**Size**

31     40  
 40/H10     40/31  
 50     50/H10  
 50/31     63  
 63/H10     63/31  
 75     75/40

**Gear unit options**

V - single side solid shaft  
      VA     VB  
 L - solid shaft, both sides  
 Vent  
 Pressure vent

NEMA - see USA catalogue  
www.2.nord.com  
- Heading DOCUMENTATION

NEMA Adapter	IEC
N48C	IEC 63
N56C	IEC 71
N140TC	IEC 80
N180TC	IEC 90
	IEC 100
	IEC 112

Motors	Energy efficient motors	Brake motors	Energy efficient brake motors
63S/4 - 0.12kW	80SH/4 - 0.55kW	63S/4 BRE 5 - 0.12kW	80SH/4 BRE 5 - 0.55kW
63L/4 - 0.18kW	80LH/4 - 0.75kW	63L/4 BRE 5 - 0.18kW	80LH/4 BRE10 - 0.75kW
71S/4 - 0.25kW	90SH/4 - 1.1kW	71S/4 BRE 5 - 0.25kW	90SH/4 BRE10 - 1.1kW
71L/4 - 0.37kW	90LH/4 - 1.5kW	71L/4 BRE 5 - 0.37kW	90LH/4 BRE20 - 1.5kW
80S/4 - 0.55kW	100LH/4 - 2.2kW	80S/4 BRE 5 - 0.55kW	100LH/4 BRE20 - 2.2kW
80L/4 - 0.75kW	100AH/4 - 3kW	80L/4 BRE10 - 0.75kW	100AH/4 BRE40 - 3kW
90S/4 - 1.1kW	112MH/4 - 4kW	90S/4 BRE10 - 1.1kW	112MH/4 BRE40 - 4kW
90L/4 - 1.5kW		90L/4 BRE20 - 1.5kW	
100L/4 - 2.2kW		100L/4 BRE20 - 2.2kW	
100A/4 - 3kW		100A/4 BRE40 - 3kW	
112M/4 - 4kW		112M/4 BRE40 - 4kW	

## Product specifications

Worms		Helical worm SMI_/H10		Double worm gear SMI_/31 or SMI 75/40	
Speed ratios	Version	Speed ratios	Version	Speed ratios	Version
<input type="radio"/> 5	<input type="radio"/> T1	<input type="radio"/> 50	<input type="radio"/> T1	<input type="radio"/> 150	<input type="radio"/> U1
<input type="radio"/> 7.5	<input type="radio"/> T2	<input type="radio"/> 75	<input type="radio"/> T2	<input type="radio"/> 225	<input type="radio"/> U2
<input type="radio"/> 10	<input type="radio"/> T3	<input type="radio"/> 100	<input type="radio"/> T3	<input type="radio"/> 300	<input type="radio"/> U3
<input type="radio"/> 12.5	<input type="radio"/> T4	<input type="radio"/> 125	<input type="radio"/> T4	<input type="radio"/> 375	<input type="radio"/> U4
<input type="radio"/> 15		<input type="radio"/> 150		<input type="radio"/> 450	<input type="radio"/> U5
<input type="radio"/> 20		<input type="radio"/> 200		<input type="radio"/> 600	<input type="radio"/> U6
<input type="radio"/> 25		<input type="radio"/> 250		<input type="radio"/> 750	<input type="radio"/> U7
<input type="radio"/> 30		<input type="radio"/> 300		<input type="radio"/> 900	<input type="radio"/> U8
<input type="radio"/> 40		<input type="radio"/> 400		<input type="radio"/> 1200	
<input type="radio"/> 50		<input type="radio"/> 500		<input type="radio"/> 1500	
<input type="radio"/> 60		<input type="radio"/> 600		<input type="radio"/> 1800	
<input type="radio"/> 80		<input type="radio"/> 800		<input type="radio"/> 2400	
<input type="radio"/> 100		<input type="radio"/> 1000		<input type="radio"/> 3000	

**Painting**

Unpainted (standard)  
 NSD TupH  
 Paint type \_\_\_\_\_  
 Colour \_\_\_\_\_

## Details of geared motor only

**Voltage/Frequency**

230/400V - 50 Hz  
 400/690V - 50 Hz  
 Other \_\_\_\_\_

**Terminal box position**

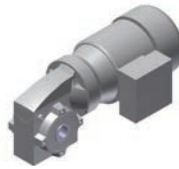
KK1     KK2  
 KK3     KK4

**Cable gland**

I\*  
 II  
 III\*  
 IV

\* Brake motor options

# Order check list



## UNIVERSAL SMI worm gear motors

SK 1SMI Size Z Gear unit options - Input - Motor Motor options

UNIVERSAL Version

Mounting position for venting option

- M1
- M2
- M3
- M4
- M5
- M6
- Special

⇒ A28

**Size**

- 31
- 40
- 40/H10
- 40/31
- 50
- 50/H10
- 50/31
- 63
- 63/H10
- 63/31
- 75
- 75/40

**Gear unit options**

- V - single side solid shaft
  - VA  VB
- L - solid shaft, both sides
- VF - solid shaft, output flange B5
  - VFA  VFB
- F - output flange B5
  - FA  FB  FF
- D - Torque support
  - DA  DB
- H - cover
  - HA  HB
- Vent
- Pressure vent

See catalogue M7000

NEMA - see USA catalogue  
www.2.nord.com  
- Heading DOCUMENTATION

NEMA Adapter	IEC
N48C	IEC 63
N56C	IEC 71
N140TC	IEC 80
N180TC	IEC 90
	IEC 100
	IEC 112

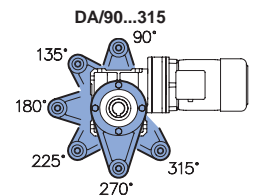
Motors	Energy efficient motors	Brake motors	Energy efficient brake motors
63S/4 - 0.12kW	80SH/4 - 0.55kW	63S/4 BRE 5 - 0.12kW	80SH/4 BRE 5 - 0.55kW
63L/4 - 0.18kW	80LH/4 - 0.75kW	63L/4 BRE 5 - 0.18kW	80LH/4 BRE10 - 0.75kW
71S/4 - 0.25kW	90SH/4 - 1.1kW	71S/4 BRE 5 - 0.25kW	90SH/4 BRE10 - 1.1kW
71L/4 - 0.37kW	90LH/4 - 1.5kW	71L/4 BRE 5 - 0.37kW	90LH/4 BRE20 - 1.5kW
80S/4 - 0.55kW	100LH/4 - 2.2kW	80S/4 BRE 5 - 0.55kW	100LH/4 BRE20 - 2.2kW
80L/4 - 0.75kW	100AH/4 - 3kW	80L/4 BRE10 - 0.75kW	100AH/4 BRE40 - 3kW
90S/4 - 1.1kW	112MH/4 - 4kW	90S/4 BRE10 - 1.1kW	112MH/4 BRE40 - 4kW
90L/4 - 1.5kW		90L/4 BRE20 - 1.5kW	
100L/4 - 2.2kW		100L/4 BRE20 - 2.2kW	
100A/4 - 3kW		100A/4 BRE40 - 3kW	
112M/4 - 4kW		112M/4 BRE40 - 4kW	

### Product specifications

Worms		Helical worm SMI_/H10		Double worm gear SMI_/31 or SMI 75/40	
Speed ratios	Version	Speed ratios	Version	Speed ratios	Version
<input type="radio"/> 5	<input type="radio"/> T1	<input type="radio"/> 50	<input type="radio"/> T1	<input type="radio"/> 150	<input type="radio"/> U1
<input type="radio"/> 7,5	<input type="radio"/> T2	<input type="radio"/> 75	<input type="radio"/> T2	<input type="radio"/> 225	<input type="radio"/> U2
<input type="radio"/> 10	<input type="radio"/> T3	<input type="radio"/> 100	<input type="radio"/> T3	<input type="radio"/> 300	<input type="radio"/> U3
<input type="radio"/> 12,5	<input type="radio"/> T4	<input type="radio"/> 125	<input type="radio"/> T4	<input type="radio"/> 375	<input type="radio"/> U4
<input type="radio"/> 15		<input type="radio"/> 150		<input type="radio"/> 450	<input type="radio"/> U5
<input type="radio"/> 20		<input type="radio"/> 200		<input type="radio"/> 600	<input type="radio"/> U6
<input type="radio"/> 25		<input type="radio"/> 250		<input type="radio"/> 750	<input type="radio"/> U7
<input type="radio"/> 30		<input type="radio"/> 300		<input type="radio"/> 900	<input type="radio"/> U8
<input type="radio"/> 40		<input type="radio"/> 400		<input type="radio"/> 1200	
<input type="radio"/> 50		<input type="radio"/> 500		<input type="radio"/> 1500	
<input type="radio"/> 60		<input type="radio"/> 600		<input type="radio"/> 1800	
<input type="radio"/> 80		<input type="radio"/> 800		<input type="radio"/> 2400	
<input type="radio"/> 100		<input type="radio"/> 1000		<input type="radio"/> 3000	

Painting	Direction of torque support (if selected)	
<input type="radio"/> Unpainted (standard)	<input type="radio"/> 90°	<input type="radio"/> 225°
<input type="radio"/> NSD TupH	<input type="radio"/> 135°	<input type="radio"/> 270°
<input type="radio"/> Paint type _____	<input type="radio"/> 180°	<input type="radio"/> 315°
Colour _____		

Output flange B5 versions (if selected)
<input type="radio"/> F I round flange, externally centred
<input type="radio"/> F II square flange, internally centred
<input type="radio"/> F III square flange, externally centred



### Details of geared motor only

Voltage/Frequency
<input type="radio"/> 230/400V - 50 Hz
<input type="radio"/> 400/690V - 50 Hz
<input type="radio"/> Other _____

Terminal box position
<input type="radio"/> KK1
<input type="radio"/> KK2
<input type="radio"/> KK3
<input type="radio"/> KK4

Cable gland
<input type="radio"/> I*
<input type="radio"/> II
<input type="radio"/> III*
<input type="radio"/> IV

\* Brake motor options





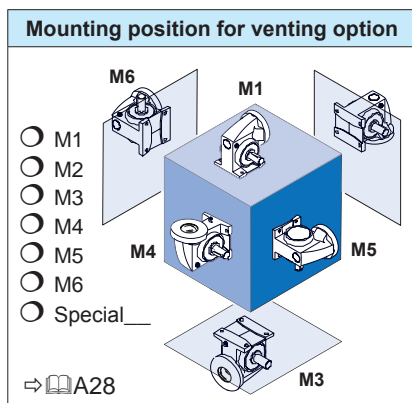
## UNIVERSAL SMI worm gear unit

SK **1SMI** **Size** **X** - **Input**

UNIVERSAL  
Version

- Size**
- 31
  - 40
  - 40/H10
  - 40/31
  - 50
  - 50/H10
  - 50/31
  - 63
  - 63/H10
  - 63/31
  - 75
  - 75/40

- Gear unit options**
- V - single side solid shaft
    - VA  VB
  - L - solid shaft, both sides
  - Vent
  - Pressure vent



- Input options**
- W
  - IEC56
    - B14 C105
    - B5 A120
  - IEC63
    - B14 C90
    - B14 C120
    - B5 A140
  - IEC71
    - B14 C105
    - B14 C140
    - B5 A160
  - IEC80
    - B14 C120
    - B14 C160
    - B5 A200
  - IEC90
    - B14 C140
    - B14 C160
    - B5 A200
  - IEC100
    - B14 C160
    - B14 C200
    - B5 A250
  - IEC112
    - B14 C160
    - B14 C200
    - B5 A250

### Product specifications

Worms		Helical worm SMI_/H10		Double worm SMI_/31 or SMI 75/40	
Speed ratios	Version	Speed ratios	Version	Speed ratios	Version
<input type="radio"/> 5		<input type="radio"/> 50	<input type="radio"/> T1	<input type="radio"/> 150	<input type="radio"/> U1
<input type="radio"/> 7,5		<input type="radio"/> 75	<input type="radio"/> T2	<input type="radio"/> 225	<input type="radio"/> U2
<input type="radio"/> 10		<input type="radio"/> 100	<input type="radio"/> T3	<input type="radio"/> 300	<input type="radio"/> U3
<input type="radio"/> 12,5		<input type="radio"/> 125	<input type="radio"/> T4	<input type="radio"/> 375	<input type="radio"/> U4
<input type="radio"/> 15		<input type="radio"/> 150		<input type="radio"/> 450	<input type="radio"/> U5
<input type="radio"/> 20		<input type="radio"/> 200		<input type="radio"/> 600	<input type="radio"/> U6
<input type="radio"/> 25		<input type="radio"/> 250		<input type="radio"/> 750	<input type="radio"/> U7
<input type="radio"/> 30		<input type="radio"/> 300		<input type="radio"/> 900	<input type="radio"/> U8
<input type="radio"/> 40		<input type="radio"/> 400		<input type="radio"/> 1200	
<input type="radio"/> 50		<input type="radio"/> 500		<input type="radio"/> 1500	
<input type="radio"/> 60		<input type="radio"/> 600		<input type="radio"/> 1800	
<input type="radio"/> 80		<input type="radio"/> 800		<input type="radio"/> 2400	
<input type="radio"/> 100		<input type="radio"/> 1000		<input type="radio"/> 3000	

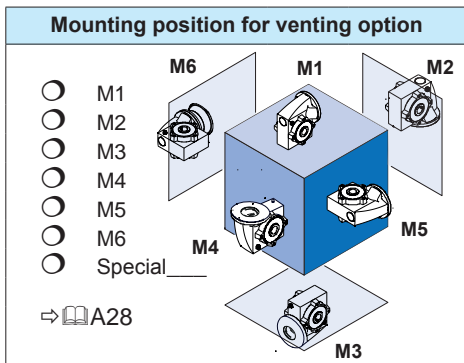
- Painting**
- Unpainted (standard)
  - NSD TupH
  - Paint type \_\_\_\_\_  
Colour \_\_\_\_\_

# Order check list



## UNIVERSAL SMI worm gear unit

SK	Gear units 1SMI	Size	Gear unit options Z	-	Input
	UNIVERSAL Version	Size	Gear unit options		
		<input type="radio"/> 31 <input type="radio"/> 40 <input type="radio"/> 40/H10 <input type="radio"/> 40/31 <input type="radio"/> 50 <input type="radio"/> 50/H10 <input type="radio"/> 50/31 <input type="radio"/> 63 <input type="radio"/> 63/H10 <input type="radio"/> 63/31 <input type="radio"/> 75 <input type="radio"/> 75/40	<input type="checkbox"/> V - single side solid shaft <input type="radio"/> VA <input type="radio"/> VB <input type="checkbox"/> L - solid shaft, both sides <input type="checkbox"/> VF - solid shaft, output flange B5 <input type="radio"/> VFA <input type="radio"/> VFB <input type="checkbox"/> F - output flange B5 <input type="radio"/> FA <input type="radio"/> FB <input type="radio"/> FF <input type="checkbox"/> D - Torque support <input type="radio"/> DA <input type="radio"/> DB <input type="checkbox"/> H - cover <input type="radio"/> HA <input type="radio"/> HB <input type="checkbox"/> Vent <input type="checkbox"/> Pressure vent		



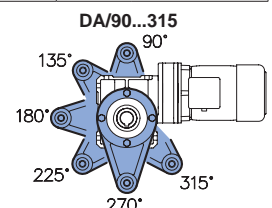
Input options			
<input type="radio"/> W			
<input type="radio"/> IEC56	<input type="radio"/> B14 C105	<input type="radio"/> B5 A120	
<input type="radio"/> IEC63	<input type="radio"/> B14 C90	<input type="radio"/> B14 C120	<input type="radio"/> B5 A140
<input type="radio"/> IEC71	<input type="radio"/> B14 C105	<input type="radio"/> B14 C140	<input type="radio"/> B5 A160
<input type="radio"/> IEC80	<input type="radio"/> B14 C120	<input type="radio"/> B14 C160	<input type="radio"/> B5 A200
<input type="radio"/> IEC90	<input type="radio"/> B14 C140	<input type="radio"/> B14 C160	<input type="radio"/> B5 A200
<input type="radio"/> IEC100	<input type="radio"/> B14 C160	<input type="radio"/> B14 C200	<input type="radio"/> B5 A250
<input type="radio"/> IEC112	<input type="radio"/> B14 C160	<input type="radio"/> B14 C200	<input type="radio"/> B5 A250

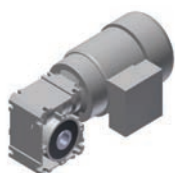
## Product specifications

Worms		Helical worm SMI_/H10		Double worm SMI_/31 or SMI 75/40	
Speed ratios	Speed ratios	Version	Speed ratios	Version	
<input type="radio"/> 5	<input type="radio"/> 50	<input type="radio"/> T1	<input type="radio"/> 150	<input type="radio"/> U1	
<input type="radio"/> 7,5	<input type="radio"/> 75	<input type="radio"/> T2	<input type="radio"/> 225	<input type="radio"/> U2	
<input type="radio"/> 10	<input type="radio"/> 100	<input type="radio"/> T3	<input type="radio"/> 300	<input type="radio"/> U3	
<input type="radio"/> 12,5	<input type="radio"/> 125	<input type="radio"/> T4	<input type="radio"/> 375	<input type="radio"/> U4	
<input type="radio"/> 15	<input type="radio"/> 150		<input type="radio"/> 450	<input type="radio"/> U5	
<input type="radio"/> 20	<input type="radio"/> 200		<input type="radio"/> 600	<input type="radio"/> U6	
<input type="radio"/> 25	<input type="radio"/> 250		<input type="radio"/> 750	<input type="radio"/> U7	
<input type="radio"/> 30	<input type="radio"/> 300		<input type="radio"/> 900	<input type="radio"/> U8	
<input type="radio"/> 40	<input type="radio"/> 400		<input type="radio"/> 1200		
<input type="radio"/> 50	<input type="radio"/> 500		<input type="radio"/> 1500		
<input type="radio"/> 60	<input type="radio"/> 600		<input type="radio"/> 1800		
<input type="radio"/> 80	<input type="radio"/> 800		<input type="radio"/> 2400		
<input type="radio"/> 100	<input type="radio"/> 1000		<input type="radio"/> 3000		

Painting	Direction of torque support (if selected)	
<input type="radio"/> Unpainted (standard) <input type="radio"/> NSD TupH <input type="radio"/> Paint type _____ <input type="radio"/> Colour _____	<input type="radio"/> 90° <input type="radio"/> 135° <input type="radio"/> 180°	<input type="radio"/> 225° <input type="radio"/> 270° <input type="radio"/> 315°

Output flange B5 versions (if selected)
<input type="radio"/> F I round flange, externally centred <input type="radio"/> F II square flange, internally centred <input type="radio"/> F III square flange, externally centred





## UNIVERSAL SID worm gear motor with direct motor mounting

Nr. of stages	Gear units	Size	Gear unit options	Motor	Motor options		
SK	SID			-			
<b>Number of stages</b> <input type="radio"/> 1 <input type="radio"/> 2		<b>Size</b> <input type="radio"/> 31 <input type="radio"/> 40 <input type="radio"/> 40/31 <input type="radio"/> 50 <input type="radio"/> 50/31 <input type="radio"/> 63 <input type="radio"/> 63/31 <input type="radio"/> 75/40		<b>Gear unit options</b> <input type="checkbox"/> V - single side solid shaft <input type="radio"/> VA <input type="radio"/> VB <input type="checkbox"/> L - solid shaft, both sides <input type="checkbox"/> VF - solid shaft, output flange B5 <input type="radio"/> VA <input type="radio"/> VB <input type="checkbox"/> F - output flange B5 <input type="radio"/> FA <input type="radio"/> FB <input type="radio"/> FF <input type="checkbox"/> D - Torque support <input type="radio"/> DA <input type="radio"/> DB <input type="checkbox"/> H - cover <input type="radio"/> HA <input type="radio"/> HB <input type="checkbox"/> Vent <input type="checkbox"/> Pressure vent		See catalogue M7000	

**Mounting position for venting option**

- M1
- M2
- M3
- M4
- M5
- M6
- Special \_\_\_\_\_

⇒ A28

Motors	Energy efficient motors	Brake motors	Energy efficient brake motors
63S/4 - 0.12kW	80SH/4 - 0.55kW	63S/4 BRE 5 - 0.12kW	80SH/4 BRE 5 - 0.55kW
63L/4 - 0.18kW	80LH/4 - 0.75kW	63L/4 BRE 5 - 0.18kW	80LH/4 BRE10 - 0.75kW
71S/4 - 0.25kW	90SH/4 - 1.1kW	71S/4 BRE 5 - 0.25kW	90SH/4 BRE10 - 1.1kW
71L/4 - 0.37kW	90LH/4 - 1.5kW	71L/4 BRE 5 - 0.37kW	90LH/4 BRE20 - 1.5kW
80S/4 - 0.55kW		80S/4 BRE 5 - 0.55kW	
80L/4 - 0.75kW		80L/4 BRE10 - 0.75kW	
90S/4 - 1.1kW		90S/4 BRE10 - 1.1kW	
90L/4 - 1.5kW		90L/4 BRE20 - 1.5kW	

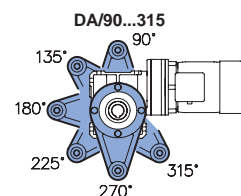
### Product specifications

Worms Single-stage Speed ratios	Helical worm 2-stage Speed ratios	Double worm SID_/31 or SID 75/40	
		Speed ratios	Version
<input type="radio"/> 5	<input type="radio"/> 25	<input type="radio"/> 150	<input type="radio"/> U1
<input type="radio"/> 7,5	<input type="radio"/> 37,5	<input type="radio"/> 225	<input type="radio"/> U2
<input type="radio"/> 10	<input type="radio"/> 50	<input type="radio"/> 300	<input type="radio"/> U3
<input type="radio"/> 12,5	<input type="radio"/> 62,5	<input type="radio"/> 375	<input type="radio"/> U4
<input type="radio"/> 15	<input type="radio"/> 75	<input type="radio"/> 450	<input type="radio"/> U5
<input type="radio"/> 20	<input type="radio"/> 100	<input type="radio"/> 600	<input type="radio"/> U6
<input type="radio"/> 25	<input type="radio"/> 125	<input type="radio"/> 750	<input type="radio"/> U7
<input type="radio"/> 30	<input type="radio"/> 150	<input type="radio"/> 900	<input type="radio"/> U8
<input type="radio"/> 40	<input type="radio"/> 200	<input type="radio"/> 1200	
<input type="radio"/> 50	<input type="radio"/> 250	<input type="radio"/> 1500	
<input type="radio"/> 60	<input type="radio"/> 300	<input type="radio"/> 1800	
<input type="radio"/> 80	<input type="radio"/> 400	<input type="radio"/> 2400	
<input type="radio"/> 100	<input type="radio"/> 500	<input type="radio"/> 3000	

Painting	Direction of torque support (if selected)	
<input type="radio"/> Unpainted (standard)	<input type="radio"/> 90°	<input type="radio"/> 225°
<input type="radio"/> NSD TupH	<input type="radio"/> 135°	<input type="radio"/> 270°
<input type="radio"/> Paint type _____ Colour _____	<input type="radio"/> 180°	<input type="radio"/> 315°

**Output flange B5 versions  
(if selected)**

- F I round flange, externally centred
- F II square flange, internally centred
- F III square flange, externally centred



### Details of geared motor only

**Voltage/Frequency**

- 230/400V - 50 Hz
- 400/690V - 50 Hz
- Other \_\_\_\_\_

**Terminal box position**

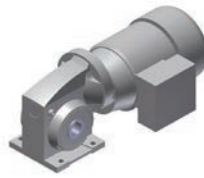
- KK1
- KK2
- KK3
- KK4

**Cable gland**

- I\*
- II
- III\*
- IV

\* Brake motor options

# Order check list



## UNIVERSAL SMID worm gear motor with direct motor mounting

Nr. of stages	Gear units	Size	Gear unit options	Motor	Motor options
SK	SMID		X	-	
<b>Number of stages</b> <input type="radio"/> 1 <input type="radio"/> 2		<b>Size</b> <input type="radio"/> 31 <input type="radio"/> 40 <input type="radio"/> 40/31 <input type="radio"/> 50 <input type="radio"/> 50/31 <input type="radio"/> 63 <input type="radio"/> 63/31 <input type="radio"/> 75/40		<b>Gear unit options</b> <input type="checkbox"/> V - single side solid shaft <input type="radio"/> VA <input type="radio"/> VB <input type="checkbox"/> L - solid shaft, both sides <input type="checkbox"/> Vent <input type="checkbox"/> Pressure vent	

See catalogue M7000

**Mounting position for venting option**

- M1
- M2
- M3
- M4
- M5
- M6
- Special \_\_\_\_\_

⇒ A28

Motors	Energy efficient motors	Brake motors	Energy efficient brake motors
63S/4 - 0.12kW	80SH/4 - 0.55kW	63S/4 BRE 5 - 0.12kW	80SH/4 BRE 5 - 0.55kW
63L/4 - 0.18kW	80LH/4 - 0.75kW	63L/4 BRE 5 - 0.18kW	80LH/4 BRE10 - 0.75kW
71S/4 - 0.25kW	90SH/4 - 1.1kW	71S/4 BRE 5 - 0.25kW	90SH/4 BRE10 - 1.1kW
71L/4 - 0.37kW	90LH/4 - 1.5kW	71L/4 BRE 5 - 0.37kW	90LH/4 BRE20 - 1.5kW
80S/4 - 0.55kW		80S/4 BRE 5 - 0.55kW	
80L/4 - 0.75kW		80L/4 BRE10 - 0.75kW	
90S/4 - 1.1kW		90S/4 BRE10 - 1.1kW	
90L/4 - 1.5kW		90L/4 BRE20 - 1.5kW	

### Product specifications

Worms Single-stage	Helical worm 2-stage	Double worm SMID_/31 or SMID 75/40	
		Speed ratios	Version
<input type="radio"/> 5	<input type="radio"/> 25	<input type="radio"/> 150	<input type="radio"/> U1
<input type="radio"/> 7,5	<input type="radio"/> 37,5	<input type="radio"/> 225	<input type="radio"/> U2
<input type="radio"/> 10	<input type="radio"/> 50	<input type="radio"/> 300	<input type="radio"/> U3
<input type="radio"/> 12,5	<input type="radio"/> 62,5	<input type="radio"/> 375	<input type="radio"/> U4
<input type="radio"/> 15	<input type="radio"/> 75	<input type="radio"/> 450	<input type="radio"/> U5
<input type="radio"/> 20	<input type="radio"/> 100	<input type="radio"/> 600	<input type="radio"/> U6
<input type="radio"/> 25	<input type="radio"/> 125	<input type="radio"/> 750	<input type="radio"/> U7
<input type="radio"/> 30	<input type="radio"/> 150	<input type="radio"/> 900	<input type="radio"/> U8
<input type="radio"/> 40	<input type="radio"/> 200	<input type="radio"/> 1200	
<input type="radio"/> 50	<input type="radio"/> 250	<input type="radio"/> 1500	
<input type="radio"/> 60	<input type="radio"/> 300	<input type="radio"/> 1800	
<input type="radio"/> 80	<input type="radio"/> 400	<input type="radio"/> 2400	
<input type="radio"/> 100	<input type="radio"/> 500	<input type="radio"/> 3000	

**Painting**

- Unpainted (standard)
- NSD TupH
- Paint type \_\_\_\_\_
- Colour \_\_\_\_\_

### Details of geared motor only

**Voltage/Frequency**

- 230/400V - 50 Hz
- 400/690V - 50 Hz
- Other \_\_\_\_\_

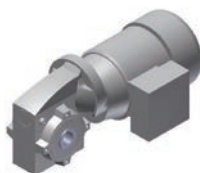
**Terminal box position**

- KK1
- KK2
- KK3
- KK4

**Cable gland**

- I\*
- II
- III\*
- IV

\* Brake motor options



## UNIVERSAL SMID worm gear motor with direct motor mounting

Nr. of stages	Gear units	Size	Gear unit options	Motor	Motor options		
SK	SMID		Z	-			
<b>Number of stages</b> <input type="radio"/> 1 <input type="radio"/> 2		<b>Size</b> <input type="radio"/> 31 <input type="radio"/> 40 <input type="radio"/> 40/31 <input type="radio"/> 50 <input type="radio"/> 50/31 <input type="radio"/> 63 <input type="radio"/> 63/31 <input type="radio"/> 75/40		<b>Gear unit options</b> <input type="checkbox"/> V - single side solid shaft <input type="radio"/> VA <input type="radio"/> VB <input type="checkbox"/> L - solid shaft, both sides <input type="checkbox"/> VF - solid shaft, output flange B5 <input type="radio"/> VA <input type="radio"/> VB <input type="checkbox"/> F - output flange B5 <input type="radio"/> FA <input type="radio"/> FB <input type="radio"/> FF <input type="checkbox"/> D - Torque support <input type="radio"/> DA <input type="radio"/> DB <input type="checkbox"/> H - cover <input type="radio"/> HA <input type="radio"/> HB <input type="checkbox"/> Vent <input type="checkbox"/> Pressure vent		See catalogue M7000	

**Mounting position for venting option**

- M1
- M2
- M3
- M4
- M5
- M6
- Special \_\_\_\_\_

⇒ A28

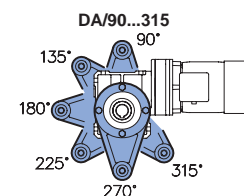
Motors	Energy efficient motors	Brake motors	Energy efficient brake motors
63S/4 - 0.12kW	80SH/4 - 0.55kW	63S/4 BRE 5 - 0.12kW	80SH/4 BRE 5 - 0.55kW
63L/4 - 0.18kW	80LH/4 - 0.75kW	63L/4 BRE 5 - 0.18kW	80LH/4 BRE10 - 0.75kW
71S/4 - 0.25kW	90SH/4 - 1.1kW	71S/4 BRE 5 - 0.25kW	90SH/4 BRE10 - 1.1kW
71L/4 - 0.37kW	90LH/4 - 1.5kW	71L/4 BRE 5 - 0.37kW	90LH/4 BRE20 - 1.5kW
80S/4 - 0.55kW		80S/4 BRE 5 - 0.55kW	
80L/4 - 0.75kW		80L/4 BRE10 - 0.75kW	
90S/4 - 1.1kW		90S/4 BRE10 - 1.1kW	
90L/4 - 1.5kW		90L/4 BRE20 - 1.5kW	

### Product specifications

Worms Single-stage	Helical worm 2-stage	Double worm SMID__/31 or SMID 75/40		Painting	Direction of torque support (if selected)	
Speed ratios	Speed ratios	Speed ratios	Version			
<input type="radio"/> 5	<input type="radio"/> 25	<input type="radio"/> 150	<input type="radio"/> U1	<input type="radio"/> Unpainted (standard)	<input type="radio"/> 90°	<input type="radio"/> 225°
<input type="radio"/> 7,5	<input type="radio"/> 37,5	<input type="radio"/> 225	<input type="radio"/> U2	<input type="radio"/> NSD TupH	<input type="radio"/> 135°	<input type="radio"/> 270°
<input type="radio"/> 10	<input type="radio"/> 50	<input type="radio"/> 300	<input type="radio"/> U3	<input type="radio"/> Paint type _____	<input type="radio"/> 180°	<input type="radio"/> 315°
<input type="radio"/> 12,5	<input type="radio"/> 62,5	<input type="radio"/> 375	<input type="radio"/> U4	Colour _____		
<input type="radio"/> 15	<input type="radio"/> 75	<input type="radio"/> 450	<input type="radio"/> U5			
<input type="radio"/> 20	<input type="radio"/> 100	<input type="radio"/> 600	<input type="radio"/> U6			
<input type="radio"/> 25	<input type="radio"/> 125	<input type="radio"/> 750	<input type="radio"/> U7			
<input type="radio"/> 30	<input type="radio"/> 150	<input type="radio"/> 900	<input type="radio"/> U8			
<input type="radio"/> 40	<input type="radio"/> 200	<input type="radio"/> 1200				
<input type="radio"/> 50	<input type="radio"/> 250	<input type="radio"/> 1500				
<input type="radio"/> 60	<input type="radio"/> 300	<input type="radio"/> 1800				
<input type="radio"/> 80	<input type="radio"/> 400	<input type="radio"/> 2400				
<input type="radio"/> 100	<input type="radio"/> 500	<input type="radio"/> 3000				

**Output flange B5 versions (if selected)**

- F I round flange, externally centred
- F II square flange, internally centred
- F III square flange, externally centred



### Details of geared motor only

**Voltage/Frequency**

- 230/400V - 50 Hz
- 400/690V - 50 Hz
- Other \_\_\_\_\_

**Terminal box position**

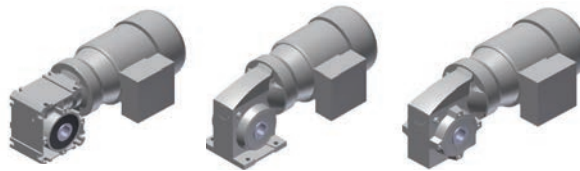
- KK1
- KK2
- KK3
- KK4

**Cable gland**

- I\*
- II
- III\*
- IV

\* Brake motor options

# Selection list structure



## 0,55 kW → Gear unit motor power

Rated motor power

Output speed at the rated motor speed

Output torque

Service factor

Gear unit motor types

with standard efficiency level

with high efficiency level

Dimension drawing see page

Weight

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Getriebemotor			IE1 kg	mm
									IE1	IE2	IE3		
0,55	6,3	417	0,8	225	30	7,5	8,0	4,6	SK 1SI 75/40 IEC80 - 80 S/4	SK 1SI 75/40 IEC80 - 80 SH/4		25	B50
	9,5	303	1,1	150	30	5	8,0	4,8			SK 1SMI 75/40 IEC80 - 80 S/4		
0,75	9,4	414	0,8	150	30	5	8,0	4,6	SK 1SI 75/40 IEC80 - 80 L/4	SK 1SI 75/40 IEC80 - 80 LH/4	SK 1SI 75/40 IEC80 - 80 LP/4	26	B50

Gear unit reduction ratio  
Total

Gear unit reduction ratio  
Worm gear units

Gear unit reduction ratio  
Input stage

Permitted overhung force, output end  
at plug-in shaft for output flange B5

Permitted overhung force, output end  
at plug-in shaft

According to the ecological design directive, known as EU Directive 2009/125/EU Ordinance No. 640/2009, at present only motors of at least efficiency class IE2 may be sold in the European Union for certain applications in the power range from 0.75 kW to 375 kW.

NORD already supplies motors with efficiency class IE2 from a power of 0.55 kW, even though this is only mandatory above a power of 0.75 kW. In addition, NORD already supplies highly efficient IE3 motors, which will only become mandatory from 2015 or 2017.

However, depending on the application, the previously used lower efficiency motors, e.g. with efficiency class IE1 may also be used.

The exempted applications are listed on page ⇒ A5 of the NORD motor catalogue M7000.

The power and speed ratio tables for gear units and geared motors apply for both geared motor types with the high efficiency levels IE2 and IE3 as well as for geared motor types with standard efficiency (IE1).

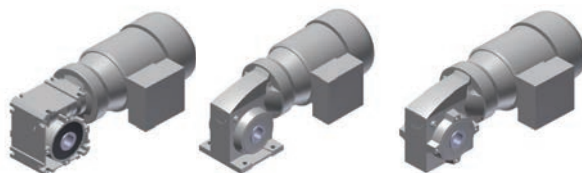
The output speeds n<sub>2</sub>, output torques M<sub>2</sub> and operating factors f<sub>B</sub> are based on motor powers of 0.55 kW and above for NORD motors with efficiency level IE2, and rated motor powers less than 0.55 kW are based on the nominal speeds of NORD motors with efficiency class IE1.

Regardless of the efficiency class which is actually selected, the output speeds n<sub>2</sub>, output torques M<sub>2</sub> and operating factors f<sub>B</sub> as listed in the power and speed tables always give sufficiently accurate results, as the deviation in speed due to the efficiency class is at the most 3% for IE1 and IE3.

Usually, other influences, e.g. the torque required by the application (idling, partial load, full load) have a greater effect on the precise speed.

**Please contact us in case you have very high requirements for precise speed.**

The NORD motor catalogue M7000 lists the motor data for the various efficiency classes IE1, IE2, IE3.



# Selection list structure

- Power and speed ratio tables for various input speed

Gear unit motor types

various gear units input speeds

Type SI Type SMI	$i_{ges}$	$i_{sch}$	$i_{vor}$	$n_1 = 1400 \text{ min}^{-1}$			$n_1 = 900 \text{ min}^{-1}$			$n_1 = 500 \text{ min}^{-1}$			$n_1 = 250 \text{ min}^{-1}$		
				$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$
				[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]
<b>SK 1SI 40/31</b>	150	30	5	9,3	74	0,18	6	79	0,11	3,3	83	0,06	1,7	89	0,04
<b>SK 1SMI 40/31</b>	225	30	7,5	6,2	79	0,13	4	82	0,08	2,2	87	0,05	1,1	94	0,03
	300	30	10	4,7	81	0,11	3	85	0,06	1,7	89	0,04	0,83	96	0,02
<b>W</b>	375	30	12,5	3,7	83	0,10	2,4	87	0,05	1,3	92	0,03	0,67	97	0,02
	450	30	15	3,1	84	0,09	2	88	0,04	1,1	94	0,03	0,56	98	0,01
<b>+</b>	600	30	20	2,3	87	0,07	1,5	90	0,03	0,83	96	0,02	0,42	99	0,01
	750	30	25	1,9	88	0,06	1,2	93	0,03	0,67	97	0,02	0,33	100	0,01
<b>IEC</b>	900	30	30	1,6	90	0,06	1	94	0,02	0,56	98	0,01	0,28	104	0,01
	1200	30	40	1,2	93	0,05	0,75	97	0,02	0,42	99	0,01	0,21	109	0,01
	1500	30	50	0,93	95	0,05	0,6	98	0,01	0,33	100	0,01	0,17	112	0
mm $\Rightarrow$ B53, 49	1800	30	60	0,78	96	0,04	0,5	99	0,01	0,28	104	0,01	0,14	115	0
	2400	30	80	0,58	98	0,04	0,38	100	0,01	0,21	109	0,01	0,1	117	0
	3000	30	100	0,47	99	0,03	0,3	102	0,01	0,17	112	0	0,08	119	0

Gear unit reduction ratio **Total**  $\leftarrow$

Gear unit reduction ratio **Worm gear units**  $\leftarrow$

Gear unit reduction ratio **Input stage**  $\leftarrow$

$\rightarrow$  max. drive power ( $f_B=1,0$ ) at input of gear unit

$\rightarrow$  max. output torque ( $f_B=1,0$ ) at drive speed  $n_1=900\text{min}^{-1}$

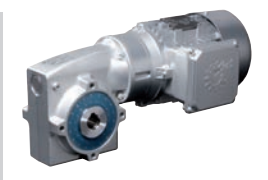
$\rightarrow$  Gear unit output speed

## Tolerances

Category	Information			
<b>Output and input shafts</b>	<p>Tolerance of shaft diameters (DIN 478):  <math>\varnothing 14 - \varnothing 35 \text{ mm} = \text{ISO h6}</math></p> <p>Threaded holes:  <math>= \varnothing 14 - \varnothing 16 \text{ mm} \rightarrow \text{M5}</math>  <math>&gt; \varnothing 16 - \varnothing 21 \text{ mm} \rightarrow \text{M6}</math>  <math>&gt; \varnothing 21 - \varnothing 24 \text{ mm} \rightarrow \text{M8}</math>  <math>&gt; \varnothing 24 - \varnothing 30 \text{ mm} \rightarrow \text{M10}</math>  <math>&gt; \varnothing 30 - \varnothing 38 \text{ mm} \rightarrow \text{M12}</math></p> <p>Parallel keys according to DIN 6885, sheets 1 and 3</p>			
<b>Hollow shafts</b>	<p>Hollow shaft tolerances - <math>\varnothing</math> (DIN 748) according to ISO H7</p> <p>Parallel keys according to DIN 6885, sheets 1 and 3</p> <p>Parallel keys according to DIN 6885, sheet 3</p>			
<b>Frame size</b>	Shaft height „h“ according to DIN 747			
<b>Flanges</b>	<p>Tolerance of hole circle diameter according to DIN EN 50347</p> <p>Tolerance of flange centring diameters: <math>\leq \varnothing 230 \text{ mm}</math> according to ISO j6  <math>&gt; \varnothing 230 \text{ mm}</math> according to ISO h6</p>			
<b>IEC - adapter</b>	<p>Tolerance of hole circle diameter according to DIN EN 50347</p> <p>Tolerance of flange centring diameters according to ISO H7</p>			
<b>Motors</b>	<p>Some motor dimensions may change under certain circumstances.</p> <table style="margin-left: 40px;"> <tr> <td style="vertical-align: middle;"> g1Bre  kBre  oBre  mBre  nBre  pBre </td> <td style="font-size: 3em; vertical-align: middle; padding: 0 10px;">}</td> <td style="vertical-align: middle;">Brake motor dimensions</td> </tr> </table>	g1Bre kBre oBre mBre nBre pBre	}	Brake motor dimensions
g1Bre kBre oBre mBre nBre pBre	}	Brake motor dimensions		
<b>Thread</b>	Fastening threads in cast components for use by customers (housing /IEC attachment adapter) are produced as standard threads according to DIN 13-1.			



# Worm gear unit type SI, SMI



AVAILABLE VERSIONS . . . . . B - 2

## GEAR UNIT MOTOR DATA

Power and speed tables . . . . . B - 4  
 Power and speed ratio tables  
 W and IEC adapters . . . . . B - 24

## DIMENSIONED DRAWINGS

Worm gear unit Type SI . . . . . B - 28  
 Worm gear unit Type SMI . . . . . B - 38  
 Helical gear input stage H10 . . . . . B - 48  
 Double worm gear adapter . . . . . B - 49  
 IEC-motor adapter . . . . . B - 51  
 IEC-three-phase motor / brake motor . . . . . B - 52  
 Free drive shaft Type W . . . . . B - 53

**Available versions**

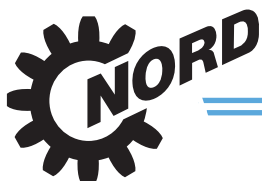
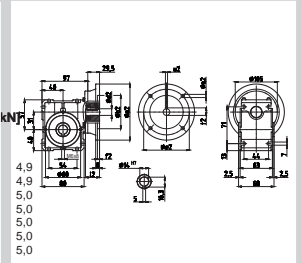
Examples - available versions - Type SI worm gear motors

SK 1SI 63  
IEC00 - IEC 50/44  
Hollow shaft,  
basic version

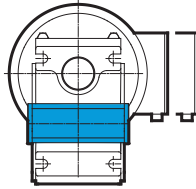
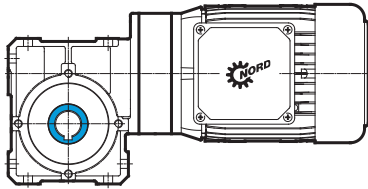
SK 1SI 40 VAU  
IEC00 - IEC 50/44  
Plug-in shaft, side

SK 1SI 40 VAU  
IEC00 - IEC 50/44  
Plug-in shaft, side  
flange, side A

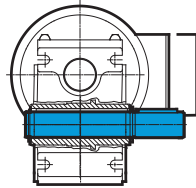
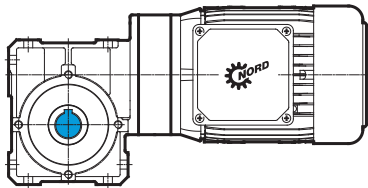
$P_1$	$n_2$	$M_2$	$f_B$	$i_{ges}$	$i_{sch}$	$i_{vor}$	$F_F$
[kW]	[min <sup>-1</sup> ]	[Nm]					
0,55	14	199	0,9	100	100	8,1	4,9
	17	171	1,2	80	80	8,1	4,9
	23	142	1,6	60	60	8,1	5,0
	28	124	1,9	50	50	8,1	5,0
	34	105	2,4	40	40	8,1	5,0
	46	88	2,5	30	30	8,1	5,0
55	75	3,0	25	25	8,1	5,0	



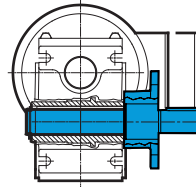
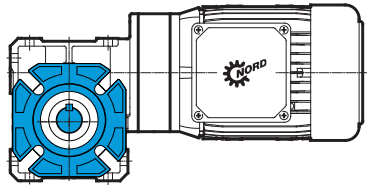
## Examples - available versions - Type SI worm gear motors



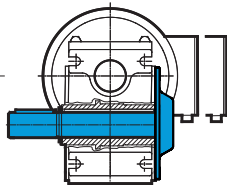
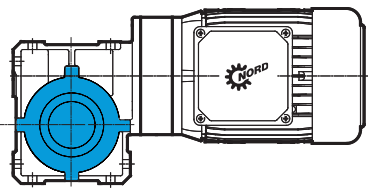
**SK 1SI 63**  
**IEC90 - 90 SH/4**  
Hollow shaft,  
basic version



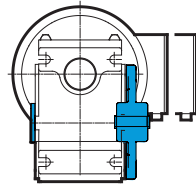
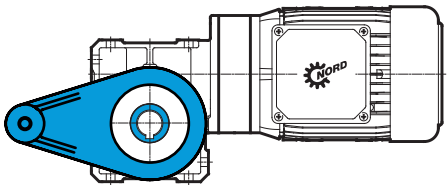
**SK 1SI 40 VA/I**  
**IEC80 - 80 SH/4**  
Plug-in shaft, side A



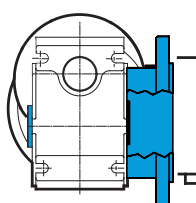
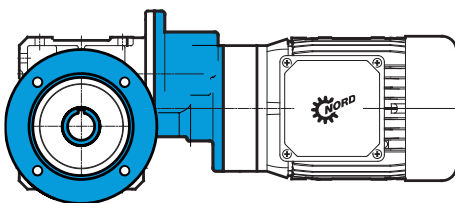
**SK 1SI 40 VA/I FA/II**  
**IEC80 - 80 SH/4**  
Plug-in shaft, side A,  
flange, side A



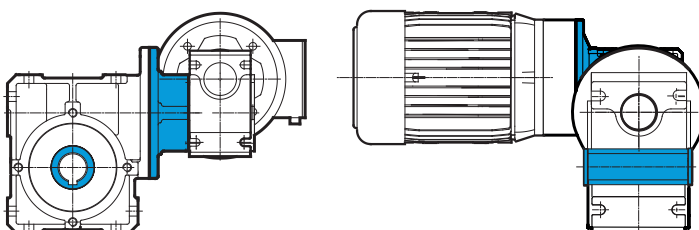
**SK 1SI 50 VB/I HA**  
**IEC90 - 90 SH/4**  
Plug-in shaft, side B,  
cover side A



**SK 1SI 50 DA 180°**  
**IEC71 - 71 S/4**  
Hollow shaft,  
torque support 180° side A



**SK 1SI 63/H10 FA/I**  
**IEC71 - 71 L/4**  
Hollow shaft,  
flange side A,  
helical worm gear motor T1

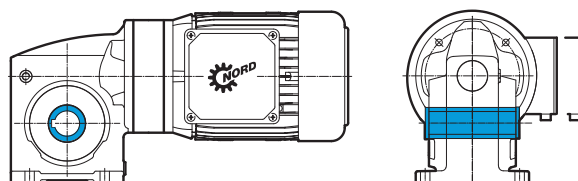


**SK 1SI 75/40**  
**IEC80 - 80 SH/4**  
Hollow shaft,  
double worm gear motor U1,  
terminal box location KK1

## Examples - available versions - Type SMI worm gear motors

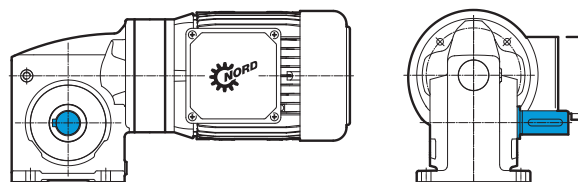
**SK 1SMI 63 AX**  
**IEC90 - 90 SH/4**

Foot-mounted housing,  
Hollow shaft,



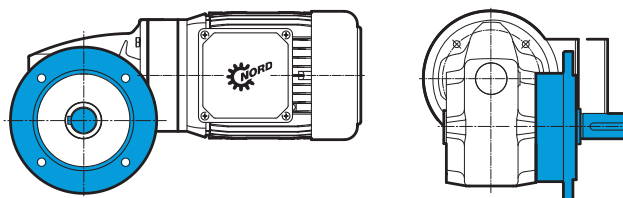
**SK 1SMI 40 VX**  
**IEC80 - 80 SH/4**

Foot-mounted housing,  
Solid shaft, side A



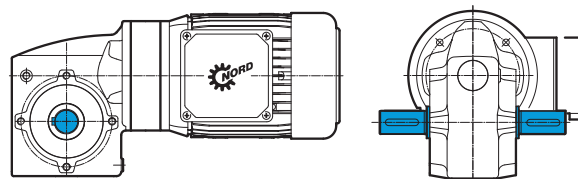
**SK 1SMI 40 V FA/**  
**IEC80 - 80 SH/4**

Solid shaft, side A,  
flange, side A



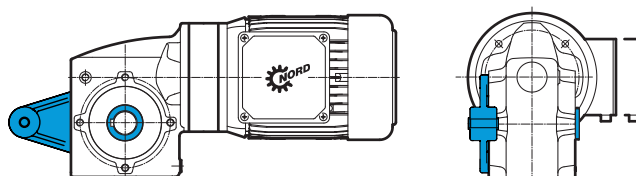
**SK 1SMI 50 LZ**  
**IEC90 - 90 SH/4**

Solid shaft, side A and B,



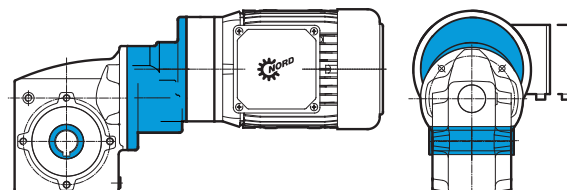
**SK 1SMI 50 DB 180°**  
**IEC71 - 71 S/4**

Hollow shaft,  
torque support 180°, side B



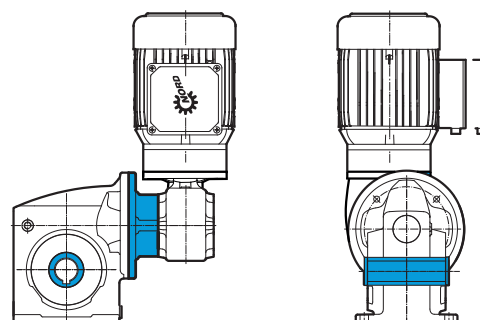
**SK 1SMI 50/H10**  
**IEC71 - 71 L/4**

Hollow shaft,  
helical worm gear unit motor T3



**SK 1SMI 63/31**  
**IEC71 - 71 L/4**

Housing for foot mounting,  
hollow shaft,  
double worm gear motor U6,  
terminal box location KK4



# 0,12 kW



## 1 SI, 1 SMI - Worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H B
									IE1	IE2	IE3		
0,12	13	39	2,8	100	100		5,6	2,5	SK 1SI 63 IEC63 - 63 S/4				B34-35
									SK 1SMI 63 IEC63 - 63 S/4			10	B44-45
	13 17 22	35 32 27	1,8 2,1 2,7	100 80 60	100 80 60		4,8 4,8 4,8	2,5 2,5 2,5	SK 1SI 50 IEC63 - 63 S/4				B32-33
									SK 1SMI 50 IEC63 - 63 S/4			8	B42-43
	13 17 22 27 33 44 53	31 27 24 21 19 15 14	1,1 1,3 1,7 2,0 2,5 3,3 2,9	100 80 60 50 40 30 25	100 80 60 50 40 30 25		2,8 2,8 2,8 2,8 2,8 2,8 2,8	1,1 1,1 1,2 1,2 1,2 1,2 1,2	SK 1SI 40 IEC63 - 63 S/4				B30-31
									SK 1SMI 40 IEC63 - 63 S/4			6	B40-41
	13 17 22 27 33 44 53 67 89 107 134 178 267	26 25 21 19 17 14 14 12 9 8 7 5 4	0,8 0,9 1,1 1,3 1,6 2,1 1,8 2,3 3,2 2,9 3,8 5,1 6,2	100 80 60 50 40 30 25 20 15 12,5 10 7,5 5	100 80 60 50 40 30 25 20 15 12,5 10 7,5 5		1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,7 1,6 1,5 1,3 1,2	0,6 0,6 0,6 0,6 0,6 0,6 0,6 0,7 0,7 0,7 0,7 0,7 0,7 0,7	SK 1SI 31 IEC63 - 63 S/4				B28-29
									SK 1SMI 31 IEC63 - 63 S/4			5	B38-39



# 0,12 kW

## 1 SI, 1 SMI - Helical worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm B
									IE1	IE2	IE3		
0,12	1,3	*224	0,8	1000	100	10	4,6	2,1	SK 1SI 63/H10 IEC63 - 63 S/4				B48
	1,7	213	0,9	800	80	10	4,7	2,1					
	2,2	191	1,1	600	60	10	4,9	2,2					
	2,7	172	1,3	500	50	10	5,0	2,3					
	3,3	151	1,6	400	40	10	5,2	2,3					
	4,4	129	2,0	300	30	10	5,3	2,4					
	5,3	124	1,8	250	25	10	5,3	2,4					
	6,7	106	2,2	200	20	10	5,4	2,4					
	8,9	85	3,0	150	15	10	5,5	2,5					
	11	77	2,7	125	12,5	10	5,5	2,5					
13	64	2,9	100	10	10	5,5	2,5	SK 1SMI 63/H10 IEC63 - 63 S/4	11	B48			
1,3	*126	0,8	1000	100	10	4,8	2,4						
1,7	*135	0,8	800	80	10	4,8	2,3						
2,2	*148	0,8	600	60	10	4,8	2,3						
2,7	*156	0,8	500	50	10	4,8	2,3						
3,3	148	0,9	400	40	10	4,8	2,3						
4,4	124	1,2	300	30	10	4,8	2,4						
5,3	120	1,0	250	25	10	4,8	2,4						
6,7	103	1,3	200	20	10	4,8	2,4						
8,9	84	1,7	150	15	10	4,8	2,4						
11	76	1,5	125	12,5	10	4,8	2,5						
13	64	1,9	100	10	10	4,8	2,5	SK 1SMI 50/H10 IEC63 - 63 S/4	10	B48			
18	50	2,6	75	7,5	10	4,8	2,5						
27	35	2,9	50	5	10	4,8	2,5						
1,3	*69	0,8	1000	100	10	2,6	1,0						
1,7	*75	0,8	800	80	10	2,5	1,0						
2,2	*82	0,8	600	60	10	2,4	1,0						
2,7	*88	0,8	500	50	10	2,4	1,0						
3,3	*94	0,8	400	40	10	2,3	0,9						
4,4	*101	0,8	300	30	10	2,2	0,9						
5,3	*86	0,8	250	25	10	2,4	1,0						
6,7	*91	0,8	200	20	10	2,3	0,9						
8,9	81	1,0	150	15	10	2,4	1,0						
11	74	0,9	125	12,5	10	2,5	1,0						
13	62	1,1	100	10	10	2,6	1,1						
18	49	1,5	75	7,5	10	2,7	1,1						
27	35	1,8	50	5	10	2,8	1,1	SK 1SMI 40/H10 IEC63 - 63 S/4	8	B48			

\* maximales Abtriebsdrehmoment bei f<sub>B</sub> = 0,8

# 0,12 kW



## 1 SI, 1 SMI - Double worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H	
									IE1	IE2	IE3			
0,12	0,44	464	0,9	3000	30	100	8,0	4,4	SK 1SI 75/40 IEC63 - 63 S/4				B50	
	0,56	420	1,0	2400	30	80	8,0	4,5						
	0,74	362	1,1	1800	30	60	8,0	4,7						
	0,89	328	1,3	1500	30	50	8,0	4,7						
	1,1	289	1,4	1200	30	40	8,0	4,8						
	1,5	237	1,6	900	30	30	8,0	4,9						
	1,8	229	1,7	750	30	25	8,0	4,9						
	2,2	194	1,9	600	30	20	8,0	4,9						
									SK 1SMI 75/40 IEC63 - 63 S/4			20	B50	
0,44	340	0,9	3000	30	100	2,7	1,2	SK 1SI 63/31 IEC63 - 63 S/4				B49		
0,56	334	0,9	2400	30	80	2,9	1,3							
0,74	285	1,1	1800	30	60	3,8	1,7							
0,89	261	1,2	1500	30	50	4,1	1,9							
1,1	232	1,3	1200	30	40	4,5	2,0							
1,5	195	1,5	900	30	30	4,8	2,2							
1,8	187	1,5	750	30	25	4,9	2,2							
2,2	162	1,7	600	30	20	5,1	2,3							
3,0	132	2,1	450	30	15	5,3	2,4							
3,6	120	2,2	375	30	12,5	5,3	2,4							
4,4	102	2,6	300	30	10	5,4	2,4							
5,9	81	3,1	225	30	7,5	5,5	2,5							
									SK 1SMI 63/31 IEC63 - 63 S/4			11	B49	
0,44	*222	0,8	3000	30	100	4,7	2,1	SK 1SI 50/31 IEC63 - 63 S/4				B49		
0,56	*220	0,8	2400	30	80	4,7	2,1							
0,74	*216	0,8	1800	30	60	4,7	2,1							
0,89	*214	0,8	1500	30	50	4,7	2,1							
1,1	*210	0,8	1200	30	40	4,8	2,1							
1,5	195	0,8	900	30	30	4,8	2,2							
1,8	187	0,9	750	30	25	4,8	2,2							
2,2	159	1,0	600	30	20	4,8	2,3							
3,0	129	1,2	450	30	15	4,8	2,4							
3,6	115	1,3	375	30	12,5	4,8	2,4							
4,4	98	1,5	300	30	10	4,8	2,4							
5,9	78	1,8	225	30	7,5	4,8	2,5							
8,9	56	2,4	150	30	5	4,8	2,5							
														SK 1SMI 50/31 IEC63 - 63 S/4
0,44	*124	0,8	3000	30	100	1,8	0,7	SK 1SI 40/31 IEC63 - 63 S/4				B49		
0,56	*123	0,8	2400	30	80	1,8	0,7							
0,74	*120	0,8	1800	30	60	1,9	0,8							
0,89	*119	0,8	1500	30	50	1,9	0,8							
1,1	*116	0,8	1200	30	40	1,9	0,8							
1,5	*112	0,8	900	30	30	2,0	0,8							
1,8	*110	0,8	750	30	25	2,0	0,8							
2,2	*109	0,8	600	30	20	2,1	0,8							
3,0	*105	0,8	450	30	15	2,1	0,9							
3,6	*104	0,8	375	30	12,5	2,1	0,9							
4,4	94	0,9	300	30	10	2,3	0,9							
5,9	73	1,1	225	30	7,5	2,5	1,0							
8,9	53	1,4	150	30	5	2,7	1,1							
														SK 1SMI 40/31 IEC63 - 63 S/4

\* maximales Abtriebsdrehmoment bei f<sub>B</sub> = 0,8



**0,18 kW**

**1 SI, 1 SMI - Worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H-D B
									IE1	IE2	IE3		
0,18	14	58	1,9	100	100		5,5	2,5	SK 1SI 63 IEC63 - 63 L/4				B34-35
	17	52	2,3	80	80		5,5	2,5					
	23	43	3,0	60	60		5,6	2,5					
									SK 1SMI 63 IEC63 - 63 L/4			10	B44-45
	14	52	1,2	100	100		4,8	2,5	SK 1SI 50 IEC63 - 63 L/4				B32-33
	17	47	1,4	80	80		4,8	2,5					
	23	39	1,9	60	60		4,8	2,5					
	27	35	2,2	50	50		4,8	2,5					
	34	30	2,7	40	40		4,8	2,5					
	45	24	3,7	30	30		4,8	2,5					
	54	23	3,3	25	25		4,8	2,5	SK 1SMI 50 IEC63 - 63 L/4			9	B42-43
	17	40	0,9	80	80		2,7	1,1	SK 1SI 40 IEC63 - 63 L/4				B30-31
	23	35	1,1	60	60		2,8	1,1					
	27	32	1,4	50	50		2,8	1,1					
	34	27	1,7	40	40		2,8	1,1					
	45	22	2,2	30	30		2,8	1,2					
	54	21	2,0	25	25		2,8	1,2					
	68	18	2,5	20	20		2,8	1,2					
	91	14	3,4	15	15		2,8	1,2					
	109	13	3,2	12,5	12,5		2,8	1,2	SK 1SMI 40 IEC63 - 63 L/4			7	B40-41
	23	32	0,8	60	60		1,8	0,6	SK 1SI 31 IEC63 - 63 L/4				B28-29
	27	28	0,9	50	50		1,8	0,6					
	34	25	1,1	40	40		1,8	0,6					
	45	21	1,4	30	30		1,8	0,6					
	54	20	1,3	25	25		1,8	0,6					
	68	17	1,6	20	20		1,8	0,6					
	91	13	2,2	15	15		1,6	0,6					
	109	12	2,0	12,5	12,5		1,5	0,7					
	136	10	2,6	10	10		1,4	0,7					
	181	8	3,5	7,5	7,5		1,3	0,7					
	272	5	4,2	5	5		1,1	0,7					

# 0,18 kW



## 1 SI, 1 SMI - Helical worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub> [kN]	Gear motor			IE1 kg	mm H B	
									IE1	IE2	IE3			
0,18	2,7	253	0,9	500	50	10	4,2	1,9	SK 1SI 63/H10 IEC63 - 63 L/4				B48	
	3,4	222	1,1	400	40	10	4,6	2,1						
	4,5	190	1,4	300	30	10	4,9	2,2						
	5,4	183	1,2	250	25	10	4,9	2,2						
	6,8	157	1,5	200	20	10	5,1	2,3						
	9,1	125	2,0	150	15	10	5,3	2,4						
	11	114	1,8	125	12,5	10	5,4	2,4						
	14	95	2,0	100	10	10	5,4	2,4						
18	74	2,0	75	7,5	10	5,5	2,5	SK 1SMI 63/H10 IEC63 - 63 L/4	12	B48				
4,5	182	0,8	300	30	10	4,8	2,2				SK 1SI 50/H10 IEC63 - 63 L/4			B48
6,8	154	0,9	200	20	10	4,8	2,3							
9,1	123	1,2	150	15	10	4,8	2,4							
11	112	1,1	125	12,5	10	4,8	2,4							
14	94	1,3	100	10	10	4,8	2,4							
18	73	1,7	75	7,5	10	4,8	2,5							
27	52	2,0	50	5	10	4,8	2,5	SK 1SMI 50/H10 IEC63 - 63 L/4	10	B48				
14	91	0,8	100	10	10	2,3	0,9							
18	72	1,0	75	7,5	10	2,5	1,0							
27	51	1,2	50	5	10	2,7	1,1	SK 1SMI 40/H10 IEC63 - 63 L/4	8	B48				





**0,18 kW**

**1 SI, 1 SMI - Double worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H
									IE1	IE2	IE3		
0,18	0,76	534	0,8	1800	30	60	8,0	4,2	SK 1SI 75/40 IEC63 - 63 L/4				B50
	0,91	483	0,9	1500	30	50	8,0	4,4					
	1,1	426	0,9	1200	30	40	8,0	4,5					
	1,5	349	1,1	900	30	30	8,0	4,7					
	1,8	337	1,1	750	30	25	8,0	4,7					
	2,3	285	1,3	600	30	20	8,0	4,8					
	3,0	235	1,6	450	30	15	8,0	4,9					
	3,6	209	1,7	375	30	12,5	8,0	4,9					
	4,5	177	2,0	300	30	10	8,0	4,9					
									SK 1SMI 75/40 IEC63 - 63 L/4			20	B50
	0,91	384	0,8	1500	30	50	0,9	0,4	SK 1SI 63/31 IEC63 - 63 L/4				B49
	1,1	341	0,9	1200	30	40	2,7	1,2					
	1,5	288	1,0	900	30	30	3,8	1,7					
	1,8	275	1,0	750	30	25	4,0	1,8					
	2,3	239	1,2	600	30	20	4,4	2,0					
	3,0	194	1,4	450	30	15	4,8	2,2					
	3,6	177	1,5	375	30	12,5	5,0	2,2					
	4,5	150	1,7	300	30	10	5,2	2,3					
	6,0	119	2,1	225	30	7,5	5,3	2,4					
	9,1	88	2,7	150	30	5	5,5	2,5					
									SK 1SMI 63/31 IEC63 - 63 L/4			12	B49
	3,0	190	0,8	450	30	15	4,8	2,2	SK 1SI 50/31 IEC63 - 63 L/4				B49
	3,6	169	0,9	375	30	12,5	4,8	2,3					
	4,5	144	1,0	300	30	10	4,8	2,3					
	6,0	114	1,2	225	30	7,5	4,8	2,4					
	9,1	83	1,6	150	30	5	4,8	2,4					
									SK 1SMI 50/31 IEC63 - 63 L/4			10	B49
	9,1	78	0,9	150	30	5	2,5	1,0	SK 1SI 40/31 IEC63 - 63 L/4				B49
									SK 1SMI 40/31 IEC63 - 63 L/4			8	B49

# 0,25 kW



## 1 SI, 1 SMI - Worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H B
									IE1	IE2	IE3		
0,25	14	90	2,1	100	100		8,0	5,0	SK 1SI 75 IEC71 - 71 S/4				B36-37
	17	78	2,6	80	80		8,0	5,0		SK 1SMI 75 IEC71 - 71 S/4			19
	14	81	1,4	100	100		5,5	2,5	SK 1SI 63 IEC71 - 71 S/4				B34-35
	17	71	1,7	80	80		5,5	2,5					
	23	59	2,2	60	60		5,5	2,5					
	28	53	2,6	50	50		5,5	2,5					
	34	44	3,3	40	40		5,6	2,5	SK 1SMI 63 IEC71 - 71 S/4			12	B44-45
	14	71	0,9	100	100		4,8	2,5	SK 1SI 50 IEC71 - 71 S/4				B32-33
	17	64	1,1	80	80		4,8	2,5					
	23	54	1,4	60	60		4,8	2,5					
	28	48	1,6	50	50		4,8	2,5					
	34	42	2,0	40	40		4,8	2,5					
	46	34	2,7	30	30		4,8	2,5					
	55	31	2,4	25	25		4,8	2,5					
	69	26	3,1	20	20		4,8	2,5	SK 1SMI 50 IEC71 - 71 S/4			10	B42-43
	23	48	0,8	60	60		2,7	1,1	SK 1SI 40 IEC71 - 71 S/4				B30-31
	28	43	1,0	50	50		2,7	1,1					
	34	37	1,2	40	40		2,8	1,1					
	46	31	1,6	30	30		2,8	1,1					
	55	29	1,4	25	25		2,8	1,1					
	69	25	1,8	20	20		2,8	1,2					
	92	19	2,5	15	15		2,8	1,2					
	110	17	2,4	12,5	12,5		2,8	1,2					
	138	14	3,0	10	10		2,8	1,2	SK 1SMI 40 IEC71 - 71 S/4			8	B40-41
	34	35	0,8	40	40		1,8	0,6	SK 1SI 31 IEC71 - 71 S/4				B28-29
	46	29	1,1	30	30		1,8	0,6					
	55	27	0,9	25	25		1,8	0,6					
	69	23	1,2	20	20		1,7	0,6					
	92	18	1,6	15	15		1,5	0,6					
	110	16	1,5	12,5	12,5		1,4	0,6					
	138	14	1,9	10	10		1,3	0,6					
	184	11	2,5	7,5	7,5		1,2	0,7					
	276	7	3,1	5	5		1,1	0,7	SK 1SMI 31 IEC71 - 71 S/4			7	B38-39



**0,25 kW**

**1 SI, 1 SMI - Helical worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H
									IE1	IE2	IE3		
0,25	3,5	304	0,8	400	40	10	3,5	1,6	SK 1SI 63/H10 IEC71 - 71 S/4				B48
	4,6	259	1,0	300	30	10	4,2	1,9					
	5,5	251	0,9	250	25	10	4,3	1,9					
	6,9	215	1,1	200	20	10	4,7	2,1					
	9,2	171	1,5	150	15	10	5,0	2,3					
	11	156	1,3	125	12,5	10	5,1	2,3					
	14	130	1,5	100	10	10	5,3	2,4					
	18	101	1,4	75	7,5	10	5,4	2,4					
	28	72	1,5	50	5	10	5,5	2,5					
									SK 1SMI 63/H10 IEC71 - 71 S/4			13	B48
	9,2	169	0,8	150	15	10	4,8	2,3	SK 1SI 50/H10 IEC71 - 71 S/4				B48
	11	154	0,8	125	12,5	10	4,8	2,3					
	14	128	1,0	100	10	10	4,8	2,4					
	18	100	1,3	75	7,5	10	4,8	2,4					
	28	71	1,5	50	5	10	4,8	2,5					
									SK 1SMI 50/H10 IEC71 - 71 S/4			12	B48
	28	70	0,9	50	5	10	2,5	1,0	SK 1SI 40/H10 IEC71 - 71 S/4				B48

# 0,25 kW



## 1 SI, 1 SMI - Double worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H B
									IE1	IE2	IE3		
0,25	1,5	478	0,8	900	30	30	8,0	4,4	SK 1SI 75/40 IEC71 - 71 S/4				B50
	1,8	468	0,8	750	30	25	8,0	4,4					
	2,3	398	0,9	600	30	20	8,0	4,6					
	3,1	321	1,1	450	30	15	8,0	4,8					
	3,7	291	1,2	375	30	12,5	8,0	4,8					
	4,6	243	1,4	300	30	10	8,0	4,9					
	6,1	195	1,7	225	30	7,5	8,0	4,9					
												22	B50
	1,8	376	0,8	750	30	25	1,4	0,6	SK 1SI 63/31 IEC71 - 71 S/4				B49
	2,3	327	0,9	600	30	20	3,0	1,3					
	3,1	265	1,0	450	30	15	4,1	1,8					
	3,7	242	1,1	375	30	12,5	4,4	2,0					
	4,6	205	1,3	300	30	10	4,8	2,1					
	6,1	163	1,5	225	30	7,5	5,1	2,3					
	9,2	121	2,0	150	30	5	5,3	2,4					
												13	B49
	6,1	156	0,9	225	30	7,5	4,8	2,3	SK 1SI 50/31 IEC71 - 71 S/4				B49
	9,2	116	1,1	150	30	5	4,8	2,4					
												12	B49



**0,37 kW**

**1 SI, 1 SMI - Worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H-D B
									IE1	IE2	IE3		
0,37	14	133	1,4	100	100		8,0	5,0	SK 1SI 75 IEC71 - 71 L/4				B36-37
	17	115	1,8	80	80		8,0	5,0					
	23	95	2,3	60	60		8,0	5,0					
	28	83	2,8	50	50		8,0	5,0					
									SK 1SMI 75 IEC71 - 71 L/4			20	B46-47
	14	120	0,9	100	100		5,3	2,4	SK 1SI 63 IEC71 - 71 L/4				B34-35
	17	104	1,1	80	80		5,4	2,4					
	23	88	1,5	60	60		5,5	2,5					
	28	78	1,8	50	50		5,5	2,5					
	34	66	2,2	40	40		5,5	2,5					
	46	53	3,0	30	30		5,5	2,5					
	55	49	2,8	25	25		5,6	2,5	SK 1SMI 63 IEC71 - 71 L/4			12	B44-45
	23	80	0,9	60	60		4,8	2,4	SK 1SI 50 IEC71 - 71 L/4				B32-33
	28	72	1,1	50	50		4,8	2,5					
	34	61	1,4	40	40		4,8	2,5					
	46	50	1,8	30	30		4,8	2,5					
	55	46	1,6	25	25		4,8	2,5					
	69	38	2,1	20	20		4,8	2,5					
	92	30	2,9	15	15		4,8	2,5					
	110	27	2,7	12,5	12,5		4,8	2,5					
	34	55	0,8	40	40		2,7	1,1	SK 1SI 40 IEC71 - 71 L/4				B30-31
	46	45	1,1	30	30		2,7	1,1					
	55	44	1,0	25	25		2,7	1,1					
	69	36	1,2	20	20		2,8	1,1					
	92	29	1,7	15	15		2,8	1,1					
	110	26	1,6	12,5	12,5		2,8	1,1					
	138	21	2,0	10	10		2,8	1,2					
	184	16	2,7	7,5	7,5		2,8	1,2					
	69	34	0,8	20	20		1,5	0,6	SK 1SI 31 IEC71 - 71 L/4				B28-29
	92	27	1,1	15	15		1,4	0,6					
	110	24	1,0	12,5	12,5		1,3	0,6					
	138	20	1,3	10	10		1,2	0,6					
	184	16	1,7	7,5	7,5		1,1	0,6					
	276	11	2,1	5	5		1,0	0,7					

# 0,37 kW



## 1 SI, 1 SMI - Helical worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H B
									IE1	IE2	IE3		
0,37	9,2	253	1,0	150	15	10	4,2	1,9	SK 1SI 63/H10 IEC71 - 71 L/4				B48
	11	230	0,9	125	12,5	10	4,5	2,0					
	14	192	1,0	100	10	10	4,9	2,2					
	18	150	1,0	75	7,5	10	5,2	2,3					
	28	106	1,0	50	5	10	5,4	2,4					
									SK 1SMI 63/H10 IEC71 - 71 L/4	14	B48		
	18	148	0,9	75	7,5	10	4,8	2,3	SK 1SI 50/H10 IEC71 - 71 L/4				B48
	28	105	1,0	50	5	10	4,8	2,4					
									SK 1SMI 50/H10 IEC71 - 71 L/4	12	B48		



**0,37 kW**

**1 SI, 1 SMI - Double worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm mm
									IE1	IE2	IE3		
0,37	3,1	475	0,8	450	30	15	8,0	4,4	SK 1SI 75/40 IEC71 - 71 L/4				B50
	3,7	430	0,8	375	30	12,5	8,0	4,5					
	4,6	359	1,0	300	30	10	8,0	4,7					
	6,1	289	1,2	225	30	7,5	8,0	4,8					
	9,2	210	1,5	150	30	5	8,0	4,9					
									SK 1SMI 75/40 IEC71 - 71 L/4		22	B50	
	4,6	303	0,9	300	30	10	3,5	1,6	SK 1SI 63/31 IEC71 - 71 L/4				B49
	6,1	241	1,0	225	30	7,5	4,4	2,0					
	9,2	178	1,3	150	30	5	5,0	2,2					
									SK 1SMI 63/31 IEC71 - 71 L/4		14	B49	
	9,2	172	0,8	150	30	5	4,8	2,2	SK 1SI 50/31 IEC71 - 71 L/4				B49

**0,55 kW****1 SI, 1 SMI - Worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H-D B
									IE1	IE2	IE3		
0,55	14	192	1,0	100	100		8,0	4,9	SK 1SI 75 IEC80 - 80 S/4	SK 1SI 75 IEC80 - 80 SH/4			B36-37
	18	169	1,2	80	80		8,0	4,9					
	24	138	1,6	60	60		8,0	5,0					
	28	120	1,9	50	50		8,0	5,0					
	36	102	2,4	40	40		8,0	5,0					
	47	85	2,6	30	30		8,0	5,0					
	57	74	3,1	25	25		8,0	5,0					
									SK 1SMI 75 IEC80 - 80 S/4	SK 1SMI 75 IEC80 - 80 SH/4		23	B46-47
	18	154	0,8	80	80		5,1	2,3	SK 1SI 63 IEC80 - 80 S/4	SK 1SI 63 IEC80 - 80 SH/4			B34-35
	24	126	1,0	60	60		5,3	2,4					
	28	113	1,2	50	50		5,4	2,4					
	36	96	1,5	40	40		5,4	2,4					
	47	77	2,1	30	30		5,5	2,5					
	57	70	1,9	25	25		5,5	2,5					
	71	58	2,5	20	20		5,5	2,5					
	95	45	3,4	15	15		5,6	2,5					
	114	40	3,2	12,5	12,5		5,6	2,5	SK 1SMI 63 IEC80 - 80 S/4	SK 1SMI 63 IEC80 - 80 SH/4		15	B44-45
	36	89	0,9	40	40		4,8	2,4	SK 1SI 50 IEC80 - 80 S/4	SK 1SI 50 IEC80 - 80 SH/4			B32-33
	47	72	1,2	30	30		4,8	2,5					
	57	67	1,1	25	25		4,8	2,5					
	71	55	1,5	20	20		4,8	2,5					
	95	44	2,0	15	15		4,8	2,5					
	114	38	1,9	12,5	12,5		4,8	2,5					
	142	31	2,4	10	10		4,8	2,5					
	189	24	3,2	7,5	7,5		4,8	2,5	SK 1SMI 50 IEC80 - 80 S/4	SK 1SMI 50 IEC80 - 80 SH/4		14	B42-43
	47	67	0,8	30	30		2,6	1,1	SK 1SI 40 IEC80 - 80 S/4	SK 1SI 40 IEC80 - 80 SH/4			B30-31
	71	53	0,9	20	20		2,7	1,1					
	95	42	1,2	15	15		2,7	1,1					
	114	37	1,1	12,5	12,5		2,8	1,1					
	142	30	1,4	10	10		2,8	1,1					
	189	24	1,9	7,5	7,5		2,8	1,2					
	284	16	2,3	5	5		2,5	1,2					





**0,55 kW**

**1 SI, 1 SMI - Double worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm
									IE1	IE2	IE3		
0,55	6,3	417	0,8	225	30	7,5	8,0	4,6	SK 1SI 75/40	SK 1SI 75/40		25	B50
	9,5	303	1,1	150	30	5	8,0	4,8	IEC80 - 80 S/4	IEC80 - 80 SH/4			
									SK 1SMI 75/40	SK 1SMI 75/40			B50
									IEC80 - 80 S/4	IEC80 - 80 SH/4			

**0,75 kW****1 SI, 1 SMI - Worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H-D B
									IE1	IE2	IE3		
<b>0,75</b>	18	231	0,9	80	80		8,0	4,9	SK 1SI 75 IEC80 - 80 L/4	SK 1SI 75 IEC80 - 80 LH/4	SK 1SI 75 IEC80 - 80 LP/4		B36-37
	24	188	1,2	60	60		8,0	4,9					
	28	164	1,4	50	50		8,0	4,9					
	35	140	1,8	40	40		8,0	5,0					
	47	117	1,9	30	30		8,0	5,0					
	57	101	2,3	25	25		8,0	5,0					
	71	83	3,0	20	20		8,0	5,0					
									SK 1SMI 75 IEC80 - 80 L/4	SK 1SMI 75 IEC80 - 80 LH/4	SK 1SMI 75 IEC80 - 80 LP/4	24	B46-47
	24	173	0,8	60	60		5,0	2,2	SK 1SI 63 IEC80 - 80 L/4	SK 1SI 63 IEC80 - 80 LH/4	SK 1SI 63 IEC80 - 80 LP/4		B34-35
	28	154	0,9	50	50		5,1	2,3					
	35	132	1,1	40	40		5,3	2,4					
	47	105	1,5	30	30		5,4	2,4					
	57	96	1,4	25	25		5,4	2,4					
	71	80	1,8	20	20		5,5	2,5					
	94	62	2,5	15	15		5,5	2,5					
	113	54	2,4	12,5	12,5		5,5	2,5					
	142	44	3,0	10	10		5,6	2,5	SK 1SMI 63 IEC80 - 80 L/4	SK 1SMI 63 IEC80 - 80 LH/4	SK 1SMI 63 IEC80 - 80 LP/4	16	B44-45
	47	99	0,9	30	30		4,8	2,4	SK 1SI 50 IEC80 - 80 L/4	SK 1SI 50 IEC80 - 80 LH/4	SK 1SI 50 IEC80 - 80 LP/4		B32-33
	57	91	0,8	25	25		4,8	2,4					
	71	76	1,1	20	20		4,8	2,5					
	94	60	1,5	15	15		4,8	2,5					
	113	53	1,4	12,5	12,5		4,8	2,5					
	142	43	1,7	10	10		4,8	2,5					
	189	33	2,4	7,5	7,5		4,8	2,5					
	283	23	2,9	5	5		4,8	2,5					
									SK 1SMI 50 IEC80 - 80 L/4	SK 1SMI 50 IEC80 - 80 LH/4	SK 1SMI 50 IEC80 - 80 LP/4	15	B42-43
	94	57	0,9	15	15		2,6	1,1	SK 1SI 40 IEC80 - 80 L/4	SK 1SI 40 IEC80 - 80 LH/4	SK 1SI 40 IEC80 - 80 LP/4		B30-31
	113	51	0,8	12,5	12,5		2,7	1,1					
	142	42	1,0	10	10		2,7	1,1					
	189	32	1,4	7,5	7,5		2,8	1,1					
	283	22	1,7	5	5		2,4	1,2					
									SK 1SMI 40 IEC80 - 80 L/4	SK 1SMI 40 IEC80 - 80 LH/4	SK 1SMI 40 IEC80 - 80 LP/4	13	B40-41



**0,75 kW**

**1 SI, 1 SMI - Double worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm mm
									IE1	IE2	IE3		
0,75	9,4	414	0,8	150	30	5	8,0	4,6	SK 1SI 75/40 IEC80 - 80 L/4	SK 1SI 75/40 IEC80 - 80 LH/4	SK 1SI 75/40 IEC80 - 80 LP/4	26	B50
									SK 1SMI 75/40 IEC80 - 80 L/4	SK 1SMI 75/40 IEC80 - 80 LH/4	SK 1SMI 75/40 IEC80 - 80 LP/4		

**1,10 kW**  
**1,50 kW**



**1 SI, 1 SMI - Worm gear motors**

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H-D B						
									IE1	IE2	IE3								
1,10	24	272	0,8	60	60		8,0	4,8	SK 1SI 75 IEC90 - 90 S/4	SK 1SI 75 IEC90 - 90 SH/4	SK 1SI 75 IEC90 - 90 SP/4	B36-37							
	29	238	1,0	50	50		8,0	4,9											
	36	202	1,2	40	40		8,0	4,9											
	48	171	1,3	30	30		8,0	4,9											
	57	146	1,6	25	25		8,0	5,0											
	72	120	2,0	20	20		8,0	5,0											
	96	92	2,9	15	15		8,0	5,0											
	115	81	2,7	12,5	12,5		8,0	5,0											
														SK 1SMI 75 IEC90 - 90 S/4	SK 1SMI 75 IEC90 - 90 SH/4	SK 1SMI 75 IEC90 - 90 SP/4	29	B46-47	
		36	190	0,8	40	40		4,9						2,2	SK 1SI 63 IEC90 - 90 S/4	SK 1SI 63 IEC90 - 90 SH/4	SK 1SI 63 IEC90 - 90 SP/4	B34-35	
	48	152	1,1	30	30		5,2	2,3											
	57	139	1,0	25	25		5,2	2,3											
	72	116	1,2	20	20		5,3	2,4											
	96	90	1,7	15	15		5,4	2,4											
	115	79	1,6	12,5	12,5		5,5	2,5											
	144	64	2,1	10	10		5,5	2,5											
	191	49	2,8	7,5	7,5		5,6	2,5											
									SK 1SMI 63 IEC90 - 90 S/4	SK 1SMI 63 IEC90 - 90 SH/4	SK 1SMI 63 IEC90 - 90 SP/4	21	B44-45						
	96	87	1,0	15	15		4,8	2,4	SK 1SI 50 IEC90 - 90 S/4	SK 1SI 50 IEC90 - 90 SH/4	SK 1SI 50 IEC90 - 90 SP/4	B32-33							
	115	76	0,9	12,5	12,5		4,8	2,5											
	144	62	1,2	10	10		4,8	2,5											
	191	48	1,6	7,5	7,5		4,8	2,5											
	287	33	2,0	5	5		4,8	2,5											
														SK 1SMI 50 IEC90 - 90 S/4	SK 1SMI 50 IEC90 - 90 SH/4	SK 1SMI 50 IEC90 - 90 SP/4	20	B42-43	
1,50	35	279	0,9	40	40		8,0	4,8	SK 1SI 75 IEC90 - 90 L/4	SK 1SI 75 IEC90 - 90 LH/4	SK 1SI 75 IEC90 - 90 LP/4	B36-37							
	47	234	0,9	30	30		8,0	4,9											
	57	202	1,1	25	25		8,0	4,9											
	71	166	1,5	20	20		8,0	4,9											
	94	128	2,1	15	15		8,0	5,0											
	113	111	1,9	12,5	12,5		8,0	5,0											
	142	90	2,5	10	10		8,0	5,0											
														SK 1SMI 75 IEC90 - 90 L/4	SK 1SMI 75 IEC90 - 90 LH/4	SK 1SMI 75 IEC90 - 90 LP/4	31	B46-47	
		47	210	0,8	30	30		4,7						2,1	SK 1SI 63 IEC90 - 90 L/4	SK 1SI 63 IEC90 - 90 LH/4	SK 1SI 63 IEC90 - 90 LP/4	B34-35	
		71	160	0,9	20	20		5,1						2,3					
	94	125	1,2	15	15		5,3	2,4											
	113	109	1,2	12,5	12,5		5,4	2,4											
	142	88	1,5	10	10		5,5	2,5											
	189	68	2,1	7,5	7,5		5,5	2,5											
	283	47	2,5	5	5		5,6	2,5											
									SK 1SMI 63 IEC90 - 90 L/4	SK 1SMI 63 IEC90 - 90 LH/4	SK 1SMI 63 IEC90 - 90 LP/4	23	B44-45						
	142	86	0,9	10	10		4,8	2,4	SK 1SI 50 IEC90 - 90 L/4	SK 1SI 50 IEC90 - 90 LH/4	SK 1SI 50 IEC90 - 90 LP/4	B32-33							
	189	66	1,2	7,5	7,5		4,8	2,5											
	283	46	1,4	5	5		4,6	2,5											
									SK 1SMI 50 IEC90 - 90 L/4	SK 1SMI 50 IEC90 - 90 LH/4	SK 1SMI 50 IEC90 - 90 LP/4	21	B42-43						



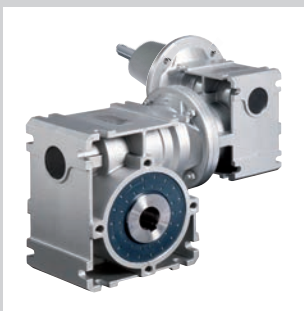
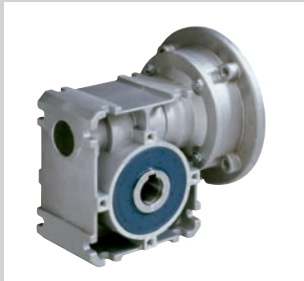
**2,20 kW**  
**3,00 kW**  
**4,00 kW**

## 1 SI, 1 SMI - Worm gear motors

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	f <sub>B</sub>	i <sub>ges</sub>	i <sub>sch</sub>	i <sub>vor</sub>	F <sub>R</sub>	F <sub>RF</sub>	Gear motor			IE1 kg	mm H-D B						
									IE1	IE2	IE3								
2,20	58	291	0,8	25	25		8,0	4,8	SK 1SI 75 IEC100 - 100 L/4	SK 1SI 75 IEC100 - 100 LH/4	SK 1SI 75 IEC100 - 100 LP/4	39	B36-37						
	72	238	1,0	20	20		8,0	4,9											
	96	183	1,4	15	15		8,0	4,9											
	116	160	1,4	12,5	12,5		8,0	5,0											
	144	129	1,8	10	10		8,0	5,0											
	193	99	2,4	7,5	7,5		8,0	5,0											
	289	68	2,9	5	5		8,0	5,0											
3,00	95	253	1,0	15	15		8,0	4,9	SK 1SI 75 IEC100 - 100 LA/4	SK 1SI 75 IEC100 - 100 AH/4	SK 1SI 75 IEC100 - 100 AP/4	39	B36-37						
	114	221	1,0	12,5	12,5		8,0	4,9											
	142	179	1,3	10	10		8,0	4,9											
	190	137	1,7	7,5	7,5		8,0	5,0											
	285	93	2,1	5	5		8,0	5,0											
	4,00	96	334	0,8	15	15		8,0						4,7	SK 1SI 75 IEC112 - 112 M/4	SK 1SI 75 IEC112 - 112 MH/4	SK 1SI 75 IEC112 - 112 MP/4	49	B36-37
		144	236	1,0	10	10		8,0						4,9					
192		181	1,3	7,5	7,5		8,0	4,9											
288		123	1,6	5	5		8,0	5,0											
3,00		95	253	1,0	15	15		8,0	4,9	SK 1SMI 75 IEC100 - 100 LA/4	SK 1SMI 75 IEC100 - 100 LH/4	SK 1SMI 75 IEC100 - 100 LP/4	39	B46-47					
		114	221	1,0	12,5	12,5		8,0	4,9										
		142	179	1,3	10	10		8,0	4,9										
	190	137	1,7	7,5	7,5		8,0	5,0											
4,00	96	334	0,8	15	15		8,0	4,7	SK 1SMI 75 IEC112 - 112 M/4	SK 1SMI 75 IEC112 - 112 MH/4	SK 1SMI 75 IEC112 - 112 MP/4	49	B46-47						
	144	236	1,0	10	10		8,0	4,9											
	192	181	1,3	7,5	7,5		8,0	4,9											
	288	123	1,6	5	5		8,0	5,0											



# Gear units for W + IEC standard motors





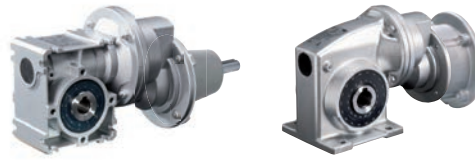
**Worm gear units**

Type SI Type SMI				$n_1 = 1400 \text{ min}^{-1}$			$n_1 = 900 \text{ min}^{-1}$			$n_1 = 500 \text{ min}^{-1}$			$n_1 = 250 \text{ min}^{-1}$		
	$i_{ges}$	$i_{sch}$	$i_{vor}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$
				[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]
<b>SK 1SI 75</b> <b>SK 1SMI 75</b>  <b>W</b> <b>+</b> <b>IEC</b>	100	100		14	185	0,52	9	217	0,43	5	250	0,33	2,5	278	0,21
	80	80		18	199	0,66	11	233	0,52	6,2	269	0,39	3,1	299	0,26
	60	60		23	218	0,85	15	255	0,69	8,3	295	0,50	4,2	327	0,33
	50	50		28	231	1,04	18	270	0,83	10	312	0,59	5	346	0,38
	40	40		35	247	1,31	22	289	1,03	12	334	0,71	6,2	371	0,46
	30	30		47	216	1,38	30	253	1,07	17	292	0,75	8,3	324	0,45
	25	25		56	228	1,67	36	267	1,30	20	308	0,89	10	342	0,54
	20	20		70	242	2,17	45	284	1,69	25	327	1,14	12	364	0,66
	15	15		93	260	3,03	60	305	2,34	33	352	1,56	17	392	0,96
	12,5	12,5		112	216	2,88	72	252	2,21	40	291	1,47	20	324	0,86
	10	10		140	224	3,70	90	263	2,81	50	303	1,87	25	337	1,09
	7,5	7,5		187	232	4,00	120	271	2,64	67	313	2,00	33	348	0,72
5	5		280	194	4,00	180	227	2,64	100	262	2,00	50	291	0,72	
mm $\rightarrow$ B53, 36, 46 I															
<b>SK 1SI 63</b> <b>SK 1SMI 63</b>  <b>W</b> <b>+</b> <b>IEC</b>	100	100		14	110	0,34	9	129	0,29	5	149	0,22	2,5	165	0,14
	80	80		18	118	0,44	11	138	0,34	6,2	160	0,25	3,1	177	0,16
	60	60		23	130	0,55	15	152	0,45	8,3	175	0,32	4,2	194	0,21
	50	50		28	137	0,66	18	160	0,53	10	185	0,38	5	206	0,24
	40	40		35	147	0,84	22	172	0,65	12	198	0,45	6,2	220	0,29
	30	30		47	160	1,14	30	187	0,90	17	216	0,64	8,3	240	0,38
	25	25		56	135	1,04	36	158	0,82	20	183	0,56	10	203	0,34
	20	20		70	144	1,34	45	169	1,05	25	195	0,71	12	216	0,41
	15	15		93	155	1,50	60	182	0,99	33	210	0,75	17	233	0,27
	12,5	12,5		112	129	1,50	72	151	0,99	40	174	0,75	20	193	0,27
	10	10		140	134	1,50	90	157	0,99	50	181	0,75	25	201	0,27
	7,5	7,5		187	139	1,50	120	163	0,99	67	188	0,75	33	209	0,27
5	5		280	118	1,50	180	138	0,99	100	159	0,75	50	177	0,27	
mm $\rightarrow$ B53, 34, 44 I															
<b>SK 1SI 50</b> <b>SK 1SMI 50</b>  <b>W</b> <b>+</b> <b>IEC</b>	100	100		14	62	0,22	9	72	0,18	5	84	0,13	2,5	93	0,08
	80	80		18	67	0,27	11	78	0,21	6,2	90	0,15	3,1	100	0,10
	60	60		23	73	0,34	15	85	0,28	8,3	98	0,20	4,2	109	0,12
	50	50		28	77	0,40	18	90	0,33	10	104	0,23	5	116	0,14
	40	40		35	83	0,50	22	97	0,40	12	112	0,27	6,2	124	0,17
	30	30		47	90	0,68	30	105	0,54	17	122	0,38	8,3	135	0,23
	25	25		56	76	0,62	36	89	0,49	20	103	0,33	10	114	0,20
	20	20		70	81	0,79	45	95	0,61	25	109	0,42	12	122	0,24
	15	15		93	87	1,08	60	102	0,85	33	118	0,56	17	131	0,34
	12,5	12,5		112	72	1,02	72	85	0,79	40	98	0,52	20	109	0,30
	10	10		140	75	1,30	90	88	1,00	50	102	0,66	25	113	0,38
	7,5	7,5		187	78	1,50	120	91	0,99	67	105	0,75	33	117	0,27
5	5		280	66	1,50	180	77	0,99	100	89	0,75	50	99	0,27	
mm $\rightarrow$ B53, 32, 42 I															
<b>SK 1SI 40</b> <b>SK 1SMI 40</b>  <b>W</b> <b>+</b> <b>IEC</b>	100	100		14	34	0,14	9	40	0,11	5	46	0,08	2,5	52	0,05
	80	80		18	37	0,17	11	43	0,13	6,2	50	0,10	3,1	55	0,06
	60	60		23	40	0,21	15	47	0,17	8,3	55	0,12	4,2	61	0,07
	50	50		28	43	0,25	18	50	0,20	10	58	0,14	5	64	0,09
	40	40		35	46	0,31	22	54	0,24	12	62	0,17	6,2	69	0,10
	30	30		47	50	0,41	30	58	0,32	17	67	0,23	8,3	75	0,13
	25	25		56	42	0,37	36	50	0,29	20	57	0,20	10	64	0,12
	20	20		70	45	0,47	45	53	0,37	25	61	0,25	12	68	0,14
	15	15		93	49	0,63	60	57	0,49	33	66	0,33	17	73	0,20
	12,5	12,5		112	41	0,59	72	47	0,46	40	55	0,31	20	61	0,18
	10	10		140	42	0,75	90	50	0,50	50	57	0,38	25	64	0,14
	7,5	7,5		187	44	0,75	120	52	0,50	67	60	0,38	33	66	0,14
5	5		280	38	0,75	180	45	0,50	100	51	0,38	50	57	0,14	
mm $\rightarrow$ B53, 30, 40 I															



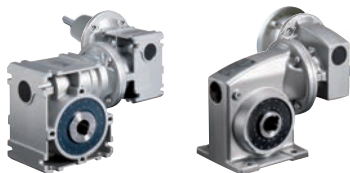

**Worm gear units**

Type SI Type SMI				$n_1 = 1400 \text{ min}^{-1}$			$n_1 = 900 \text{ min}^{-1}$			$n_1 = 500 \text{ min}^{-1}$			$n_1 = 250 \text{ min}^{-1}$		
	$i_{\text{ges}}$	$i_{\text{sch}}$	$i_{\text{vor}}$	$n_2$	$M_{2\text{max}}$	$P_{\text{emax}}$	$n_2$	$M_{2\text{max}}$	$P_{\text{emax}}$	$n_2$	$M_{2\text{max}}$	$P_{\text{emax}}$	$n_2$	$M_{2\text{max}}$	$P_{\text{emax}}$
				[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]
<b>SK 1SI 31</b>	100	100		14	21	0,10	9	24	0,08	5	28	0,06	2,5	31	0,04
<b>SK 1SMI 31</b>	80	80		18	22	0,12	11	26	0,09	6,2	30	0,06	3,1	33	0,04
	60	60		23	24	0,14	15	28	0,11	8,3	33	0,08	4,2	36	0,05
<b>W</b>	50	50		28	26	0,17	18	30	0,13	10	35	0,09	5	39	0,05
	40	40		35	28	0,20	22	32	0,16	12	37	0,11	6,2	41	0,07
<b>+</b>	30	30		47	30	0,27	30	35	0,21	17	41	0,15	8,3	45	0,08
	25	25		56	25	0,24	36	30	0,18	20	34	0,12	10	38	0,07
<b>IEC</b>	20	20		70	27	0,30	45	32	0,23	25	37	0,15	12	41	0,09
	15	15		93	29	0,37	60	34	0,24	33	40	0,19	17	44	0,07
	12,5	12,5		112	24	0,37	72	29	0,24	40	33	0,19	20	37	0,07
	10	10		140	26	0,37	90	30	0,24	50	34	0,19	25	38	0,07
mm $\rightarrow$ B28, 38	7,5	7,5		187	27	0,37	120	31	0,24	67	36	0,19	33	40	0,07
$\leftarrow$ 5	5	5		280	23	0,37	180	27	0,24	100	31	0,19	50	35	0,07



**Helical worm gear units**

Type SI Type SMI				$n_1 = 1400 \text{ min}^{-1}$			$n_1 = 900 \text{ min}^{-1}$			$n_1 = 500 \text{ min}^{-1}$			$n_1 = 250 \text{ min}^{-1}$		
	$i_{ges}$	$i_{sch}$	$i_{vor}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$
				[min <sup>-1</sup> ]	[Nm]	[kW]	[min <sup>-1</sup> ]	[Nm]	[kW]	[min <sup>-1</sup> ]	[Nm]	[kW]	[min <sup>-1</sup> ]	[Nm]	[kW]
<b>SK 1SI 63/H10</b> <b>SK 1SMI 63/H10</b>  <b>W</b>  <b>+</b>  <b>IEC</b>  mm $\Rightarrow$ B53, 51, 48 	1000	100	10	1,4	179	0,10	0,9	186	0,07	0,5	196	0,04	0,25	211	0,02
	800	80	10	1,8	192	0,12	1,1	200	0,08	0,62	210	0,05	0,31	227	0,03
	600	60	10	2,3	210	0,14	1,5	219	0,10	0,83	231	0,06	0,42	248	0,03
	500	50	10	2,8	223	0,16	1,8	232	0,12	1	244	0,07	0,5	263	0,04
	400	40	10	3,5	239	0,19	2,2	248	0,13	1,2	261	0,08	0,62	282	0,05
	300	30	10	4,7	260	0,26	3	271	0,18	1,7	285	0,11	0,83	307	0,06
	250	25	10	5,6	220	0,22	3,6	229	0,15	2	241	0,09	1	260	0,05
	200	20	10	7	234	0,28	4,5	244	0,19	2,5	257	0,11	1,2	276	0,06
	150	15	10	9,3	253	0,37	6	263	0,25	3,3	277	0,15	1,7	298	0,09
	125	12,5	10	11	209	0,33	7,2	218	0,23	4	229	0,14	2	247	0,07
	100	10	10	14	189	0,37	9	227	0,29	5	239	0,17	2,5	257	0,09
	75	7,5	10	19	145	0,37	12	227	0,37	6,7	248	0,23	3,3	267	0,12
	50	5	10	28	105	0,37	18	161	0,37	10	210	0,27	5	226	0,15
<b>SK 1SI 50/H10</b> <b>SK 1SMI 50/H10</b>  <b>W</b>  <b>+</b>  <b>IEC</b>  mm $\Rightarrow$ B53, 51, 48 	1000	100	10	1,4	101	0,06	0,9	105	0,04	0,5	110	0,02	0,25	119	0,01
	800	80	10	1,8	108	0,07	1,1	113	0,04	0,62	118	0,03	0,31	128	0,02
	600	60	10	2,3	118	0,08	1,5	123	0,06	0,83	130	0,03	0,42	140	0,02
	500	50	10	2,8	125	0,09	1,8	131	0,06	1	137	0,04	0,5	148	0,02
	400	40	10	3,5	134	0,11	2,2	140	0,08	1,2	147	0,05	0,62	158	0,03
	300	30	10	4,7	146	0,15	3	152	0,10	1,7	160	0,06	0,83	173	0,03
	250	25	10	5,6	124	0,13	3,6	129	0,09	2	136	0,05	1	146	0,03
	200	20	10	7	132	0,16	4,5	137	0,11	2,5	144	0,07	1,2	155	0,03
	150	15	10	9,3	142	0,21	6	148	0,15	3,3	156	0,09	1,7	168	0,05
	125	12,5	10	11	118	0,19	7,2	122	0,13	4	129	0,08	2	139	0,04
	100	10	10	14	122	0,24	9	128	0,16	5	134	0,10	2,5	145	0,05
	75	7,5	10	19	127	0,33	12	132	0,22	6,7	139	0,13	3,3	150	0,07
	50	5	10	28	103	0,37	18	111	0,26	10	117	0,15	5	126	0,08
<b>SK 1SI 40/H10</b> <b>SK 1SMI 40/H10</b>  <b>W</b>  <b>+</b>  <b>IEC</b>  mm $\Rightarrow$ B53, 51, 48 	1000	100	10	1,4	56	0,03	0,9	58	0,02	0,5	61	0,01	0,25	66	0,01
	800	80	10	1,8	60	0,04	1,1	62	0,03	0,62	66	0,02	0,31	71	0,01
	600	60	10	2,3	66	0,05	1,5	68	0,03	0,83	72	0,02	0,42	78	0,01
	500	50	10	2,8	70	0,06	1,8	72	0,04	1	76	0,02	0,5	82	0,01
	400	40	10	3,5	75	0,07	2,2	78	0,05	1,2	82	0,03	0,62	88	0,02
	300	30	10	4,7	81	0,09	3	85	0,06	1,7	89	0,04	0,83	96	0,02
	250	25	10	5,6	69	0,07	3,6	72	0,05	2	75	0,03	1	81	0,02
	200	20	10	7	73	0,09	4,5	76	0,06	2,5	80	0,04	1,2	87	0,02
	150	15	10	9,3	79	0,12	6	82	0,08	3,3	87	0,05	1,7	93	0,03
	125	12,5	10	11	66	0,11	7,2	69	0,08	4	72	0,04	2	78	0,02
	100	10	10	14	69	0,14	9	72	0,09	5	75	0,06	2,5	81	0,03
	75	7,5	10	19	72	0,19	12	75	0,13	6,7	79	0,07	3,3	85	0,04
	50	5	10	28	62	0,22	18	64	0,15	10	68	0,09	5	73	0,05



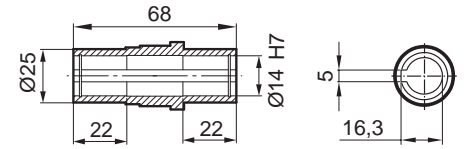
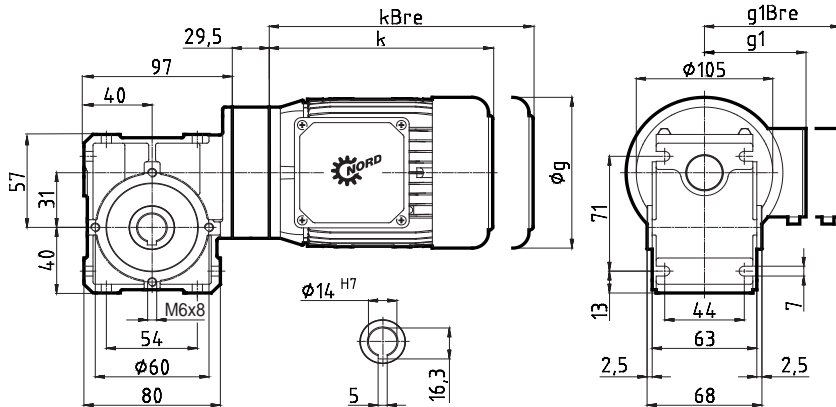
## Double worm gear units

Type SI Type SMI	$i_{ges}$	$i_{sch}$	$i_{vor}$	$n_1 = 1400 \text{ min}^{-1}$			$n_1 = 900 \text{ min}^{-1}$			$n_1 = 500 \text{ min}^{-1}$			$n_1 = 250 \text{ min}^{-1}$		
				$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$	$n_2$	$M_{2max}$	$P_{emax}$
				[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]	[ $\text{min}^{-1}$ ]	[Nm]	[kW]
<b>SK 1SI 75/40</b> <b>SK 1SMI 75/40</b>  <b>W</b> <b>+</b> <b>IEC</b>  mm $\rightarrow$ B53, 50 	3000	30	100	0,47	427	0,13	0,3	443	0,03	0,17	486	0,02	0,08	513	0,01
	2400	30	80	0,58	423	0,14	0,38	431	0,03	0,21	473	0,02	0,1	506	0,01
	1800	30	60	0,78	416	0,16	0,5	426	0,04	0,28	450	0,03	0,14	495	0,01
	1500	30	50	0,93	411	0,17	0,6	422	0,05	0,33	432	0,03	0,17	486	0,02
	1200	30	40	1,2	402	0,19	0,75	417	0,06	0,42	429	0,04	0,21	473	0,02
	900	30	30	1,6	388	0,22	1	408	0,08	0,56	424	0,05	0,28	450	0,03
	750	30	25	1,9	382	0,23	1,2	401	0,10	0,67	420	0,06	0,33	432	0,03
	600	30	20	2,3	375	0,25	1,5	390	0,12	0,83	414	0,07	0,42	429	0,04
	450	30	15	3,1	364	0,3	2	380	0,15	1,1	404	0,09	0,56	424	0,05
	375	30	12,5	3,7	358	0,36	2,4	374	0,17	1,3	396	0,10	0,67	420	0,06
	300	30	10	4,7	351	0,37	3	365	0,24	1,7	384	0,19	0,83	414	0,07
	225	30	7,5	6,2	340	0,37	4	356	0,24	2,2	377	0,19	1,1	404	0,07
	150	30	5	9,3	320	0,37	6	341	0,24	3,3	361	0,19	1,7	384	0,07
<b>SK 1SI 63/31</b> <b>SK 1SMI 63/31</b>  <b>W</b> <b>+</b> <b>IEC</b>  mm $\rightarrow$ B53, 49 	3000	30	100	0,47	316	0,11	0,3	328	0,02	0,17	360	0,01	0,08	380	0,01
	2400	30	80	0,58	423	0,14	0,38	431	0,03	0,21	473	0,02	0,1	506	0,01
	1800	30	60	0,78	416	0,16	0,5	426	0,04	0,28	450	0,03	0,14	495	0,01
	1500	30	50	0,93	411	0,17	0,6	422	0,05	0,33	432	0,03	0,17	486	0,02
	1200	30	40	1,2	402	0,19	0,75	417	0,06	0,42	429	0,04	0,21	473	0,02
	900	30	30	1,6	388	0,22	1	408	0,08	0,56	424	0,05	0,28	450	0,03
	750	30	25	1,9	382	0,23	1,2	401	0,10	0,67	420	0,06	0,33	432	0,03
	600	30	20	2,3	375	0,25	1,5	390	0,12	0,83	414	0,07	0,42	429	0,04
	450	30	15	3,1	364	0,3	2	380	0,15	1,1	404	0,09	0,56	424	0,05
	375	30	12,5	3,7	358	0,36	2,4	374	0,17	1,3	396	0,10	0,67	420	0,06
	300	30	10	4,7	351	0,37	3	365	0,24	1,7	384	0,19	0,83	414	0,07
	225	30	7,5	6,2	340	0,37	4	356	0,24	2,2	377	0,19	1,1	404	0,07
	150	30	5	9,3	320	0,37	6	341	0,24	3,3	361	0,19	1,7	384	0,07
<b>SK 1SI 50/31</b> <b>SK 1SMI 50/31</b>  <b>W</b> <b>+</b> <b>IEC</b>  mm $\rightarrow$ B53, 49 	3000	30	100	0,47	178	0,06	0,3	185	0,01	0,17	203	0,01	0,08	214	0
	2400	30	80	0,58	176	0,07	0,38	179	0,02	0,21	197	0,01	0,1	211	0,01
	1800	30	60	0,78	173	0,07	0,5	178	0,02	0,28	188	0,01	0,14	206	0,01
	1500	30	50	0,93	171	0,08	0,6	176	0,02	0,33	180	0,01	0,17	203	0,01
	1200	30	40	1,2	168	0,09	0,75	174	0,03	0,42	179	0,02	0,21	197	0,01
	900	30	30	1,6	162	0,11	1	170	0,04	0,56	177	0,02	0,28	188	0,01
	750	30	25	1,9	159	0,11	1,2	167	0,05	0,67	175	0,03	0,33	180	0,01
	600	30	20	2,3	156	0,12	1,5	163	0,06	0,83	173	0,03	0,42	179	0,02
	450	30	15	3,1	152	0,15	2	158	0,07	1,1	168	0,04	0,56	177	0,02
	375	30	12,5	3,7	149	0,17	2,4	156	0,09	1,3	165	0,05	0,67	175	0,03
	300	30	10	4,7	146	0,18	3	152	0,10	1,7	160	0,06	0,83	173	0,03
	225	30	7,5	6,2	141	0,22	4	148	0,13	2,2	157	0,08	1,1	168	0,04
	150	30	5	9,3	133	0,30	6	142	0,18	3,3	150	0,11	1,7	160	0,06
<b>SK 1SI 40/31</b> <b>SK 1SMI 40/31</b>  <b>W</b> <b>+</b> <b>IEC</b>  mm $\rightarrow$ B53, 49 	3000	30	100	0,47	99	0,03	0,3	102	0,01	0,17	112	0	0,08	119	0
	2400	30	80	0,58	98	0,04	0,38	100	0,01	0,21	109	0,01	0,1	117	0
	1800	30	60	0,78	96	0,04	0,5	99	0,01	0,28	104	0,01	0,14	115	0
	1500	30	50	0,93	95	0,05	0,6	98	0,01	0,33	100	0,01	0,17	112	0
	1200	30	40	1,2	93	0,05	0,75	97	0,02	0,42	99	0,01	0,21	109	0,01
	900	30	30	1,6	90	0,06	1	94	0,02	0,56	98	0,01	0,28	104	0,01
	750	30	25	1,9	88	0,06	1,2	93	0,03	0,67	97	0,02	0,33	100	0,01
	600	30	20	2,3	87	0,07	1,5	90	0,03	0,83	96	0,02	0,42	99	0,01
	450	30	15	3,1	84	0,09	2	88	0,04	1,1	94	0,03	0,56	98	0,01
	375	30	12,5	3,7	83	0,10	2,4	87	0,05	1,3	92	0,03	0,67	97	0,02
	300	30	10	4,7	81	0,11	3	85	0,06	1,7	89	0,04	0,83	96	0,02
	225	30	7,5	6,2	79	0,13	4	82	0,08	2,2	87	0,05	1,1	94	0,03
	150	30	5	9,3	74	0,18	6	79	0,11	3,3	83	0,06	1,7	89	0,04

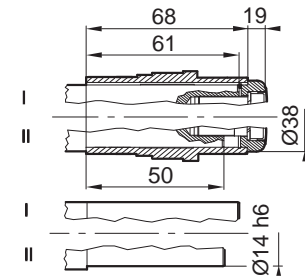
# SK 1SI 31 IEC...



## Worm gear unit motor

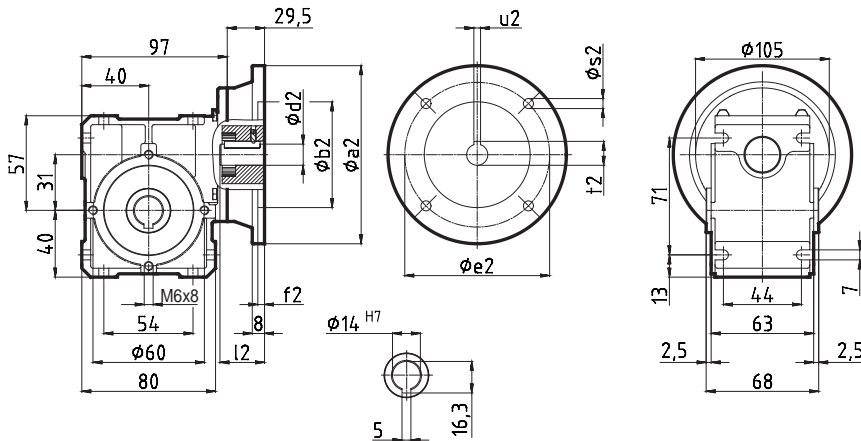


### SK 1SI 31 B



	SK 1SI 31 IEC63	SK 1SI 31 IEC71
IE1	63 S/L	71 S/L
IE2	-	-
IE3	-	-
<b>g</b>	130	145
<b>g1</b>	115	124
<b>g1Bre</b>	123	133
<b>k</b>	192	214
<b>kBre</b>	248	272

## Worm gear unit for attachment to IEC standard motors

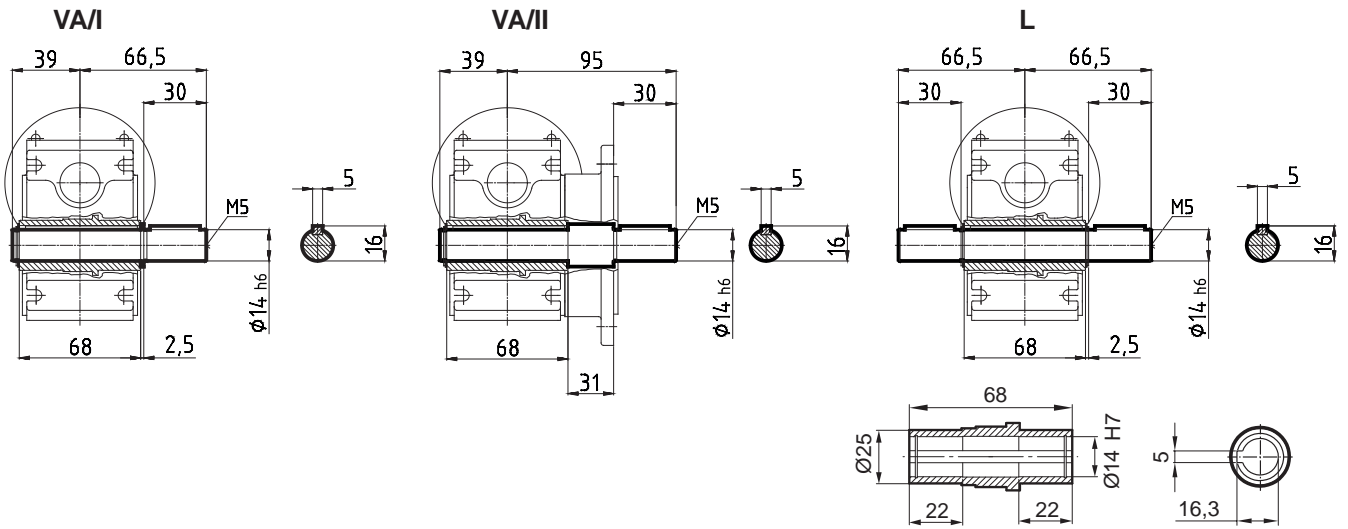


## IEC-standard motor-adapter

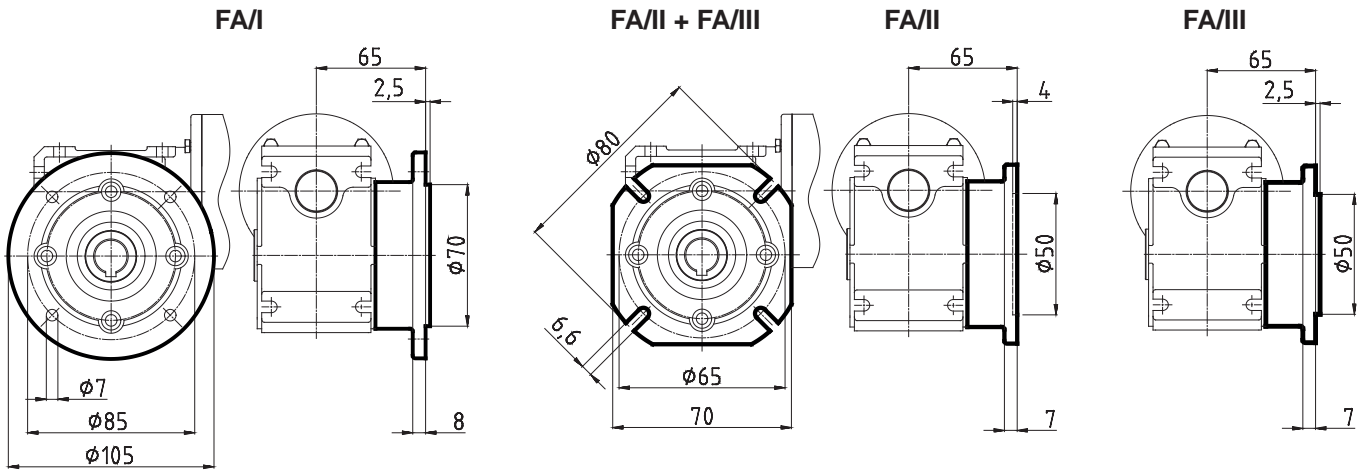
	IEC 56	IEC 56	IEC 63	IEC 63	IEC 63	IEC 71	IEC 71			
	B14	B5	B14	B14	B5	B14	B14			
	C105	A120	C90	C120	A140	C105	C140			
<b>a2</b>	105	120	90	120	140	105	140			
<b>b2</b>	70	80	60	80	95	70	95			
<b>c2</b>	-	-	-	-	8	-	-			
<b>d2</b>	9	9	11	11	11	14	14			
<b>e2</b>	85	100	75	100	115	85	115			
<b>f2</b>	3	3,5	3	3,5	3,5	3	3,5			
<b>l2</b>	20	20	23	23	23	30	30			
<b>s2</b>	7	7	6	7	9	7	9			
<b>t2</b>	11,4	11,4	12,8	12,8	12,8	16,3	16,3			
<b>u2</b>	3	3	4	4	4	5	5			



## Plug-in shafts

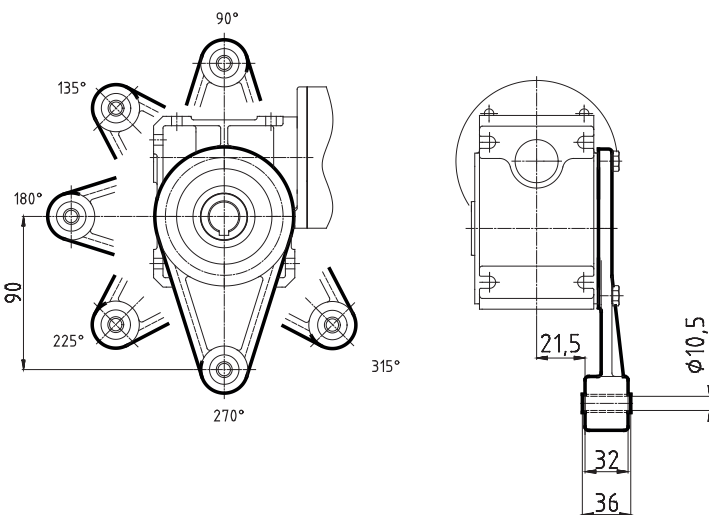


## Output flange B5



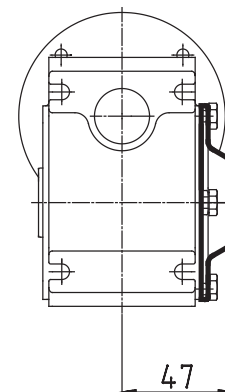
## Torque support

DA/I 90 .. DA/I 315



## Covering cap

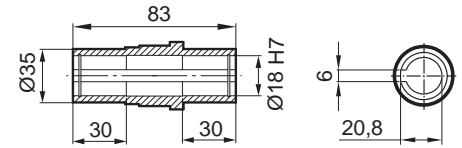
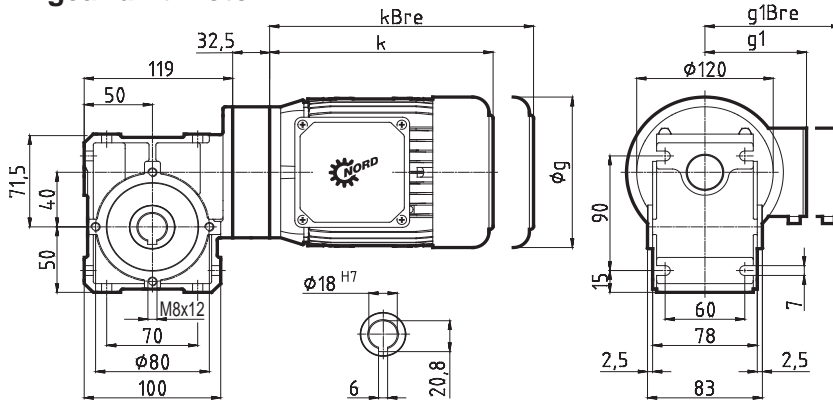
HA



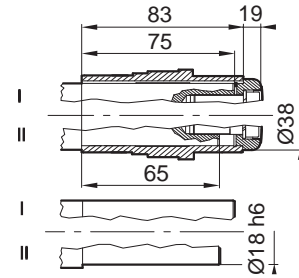
# SK 1 SI 40 IEC...



## Worm gear unit motor

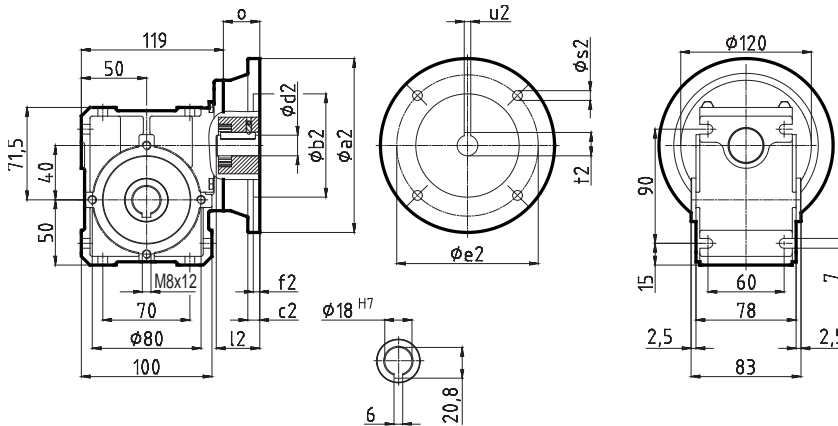


## SK 1 SI 40 B



	SK 1 SI 40 IEC63	SK 1 SI 40 IEC71	SK 1 SI 40 IEC80
IE1	63 S/L	71 S/L	80 S / L
IE2	-	-	SH / LH
IE3	-	-	- / LP
<b>g</b>	130	145	165
<b>g1</b>	115	124	142
<b>g1Bre</b>	123	133	143
<b>k</b>	192	214	236
<b>kBre</b>	248	272	300

## Worm gear unit for attachment to IEC standard motors

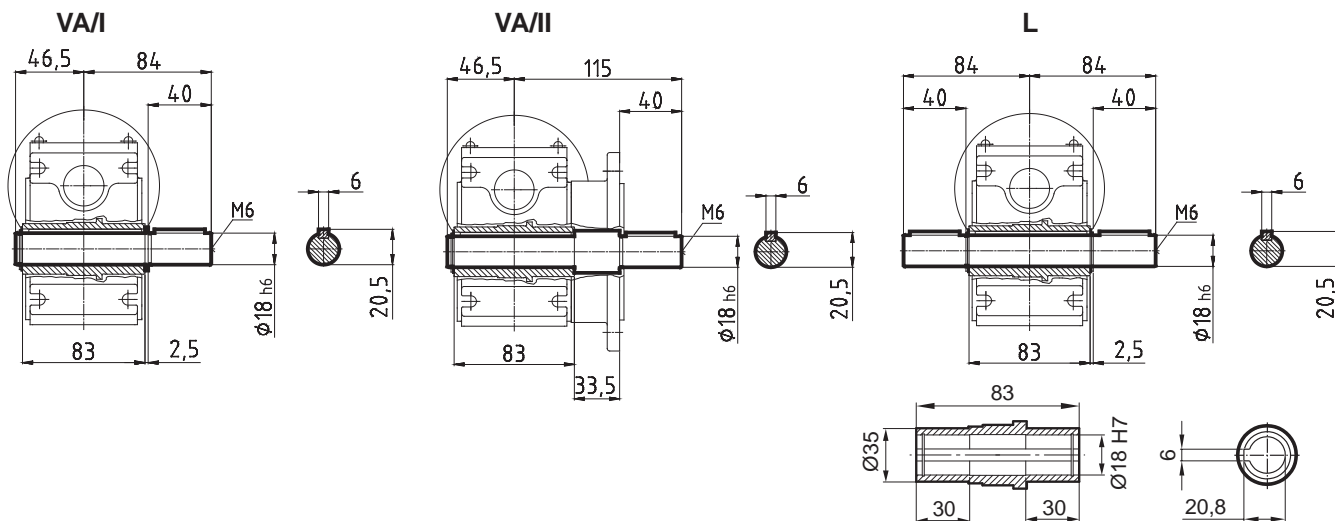


## IEC-standard motor-adapter

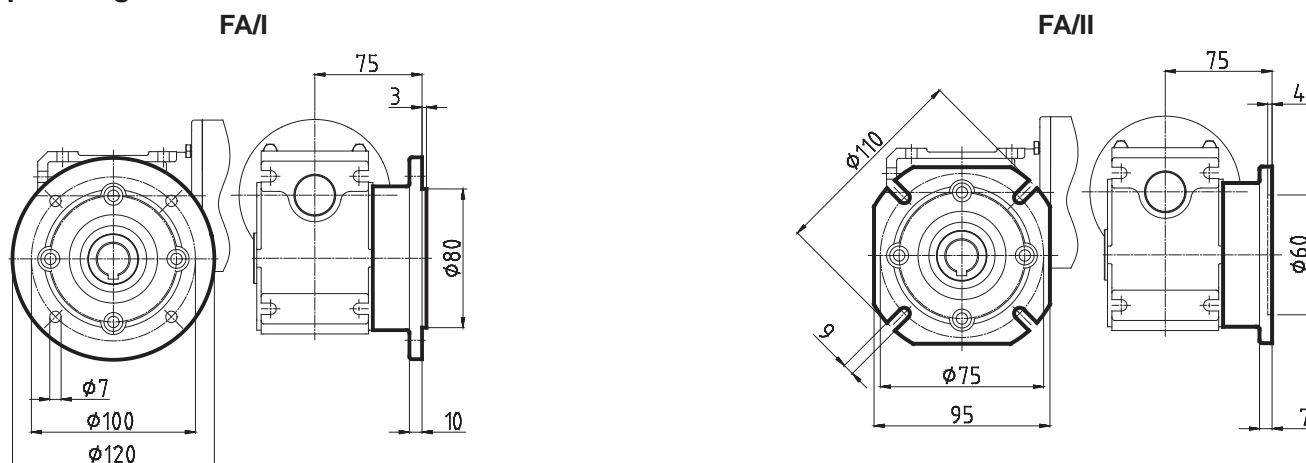
	IEC 56	IEC 56	IEC 63	IEC 63	IEC 63	IEC 71	IEC 71	IEC 71	IEC 80	IEC 80	IEC 80	IEC 90	IEC 90
	B14	B5	B14	B14	B5	B14	B14	B5	B14	B14	B5	B14	B14
	C105	A120	C90	C120	A140	C105	C140	A160	C120	C160	A200	C140	C160
<b>a2</b>	105	120	90	120	140	105	140	160	120	160	200	140	160
<b>b2</b>	70	80	60	80	95	70	95	110	80	110	130	95	110
<b>c2</b>	-	-	-	-	8	-	-	8	-	8	20	-	8
<b>d2</b>	9	9	11	11	11	14	14	14	19	19	19	24	24
<b>e2</b>	85	100	75	100	115	85	115	130	100	130	165	115	130
<b>f2</b>	3	3,5	3	3,5	3,5	3	3,5	4	3,5	4	4	3,5	4
<b>l2</b>	20	20	23	23	23	30	30	30	40	40	40	50	50
<b>o</b>	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	45,5	45,5
<b>s2</b>	7	7	6	7	9	7	9	9	7	9	M10	9	9
<b>t2</b>	11,4	11,4	12,8	12,8	12,8	16,3	16,3	16,3	21,8	21,8	21,8	27,3	27,3
<b>u2</b>	3	3	4	4	4	5	5	5	6	6	6	8	8



## Plug-in shafts



## Output flange B5



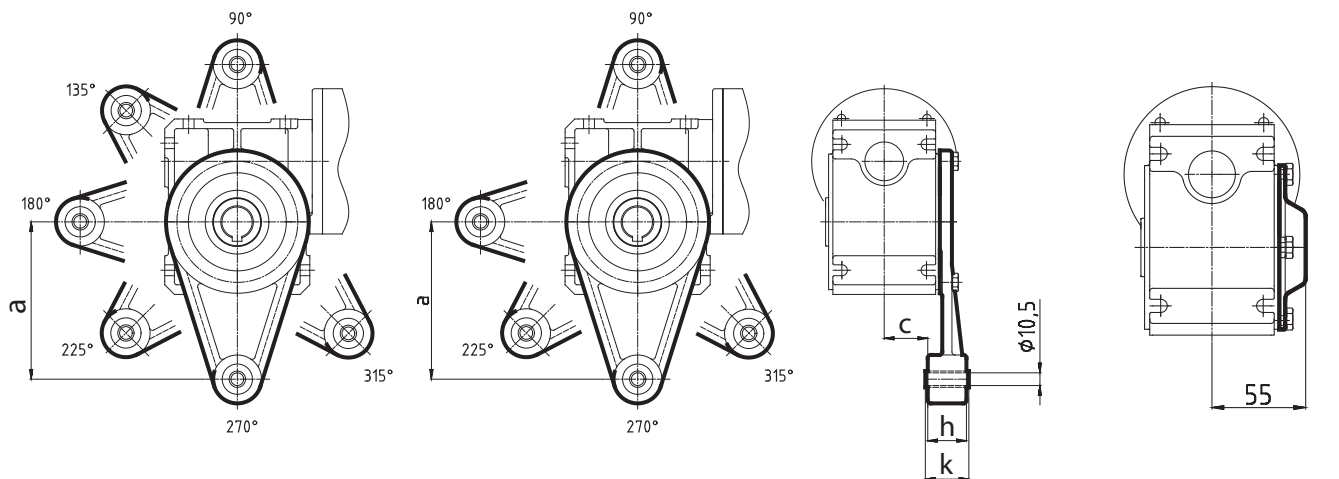
## Torque support

DA/I 90 .. DA/I 315

DA/III 90 .. DA/III 315

## Covering cap

HA

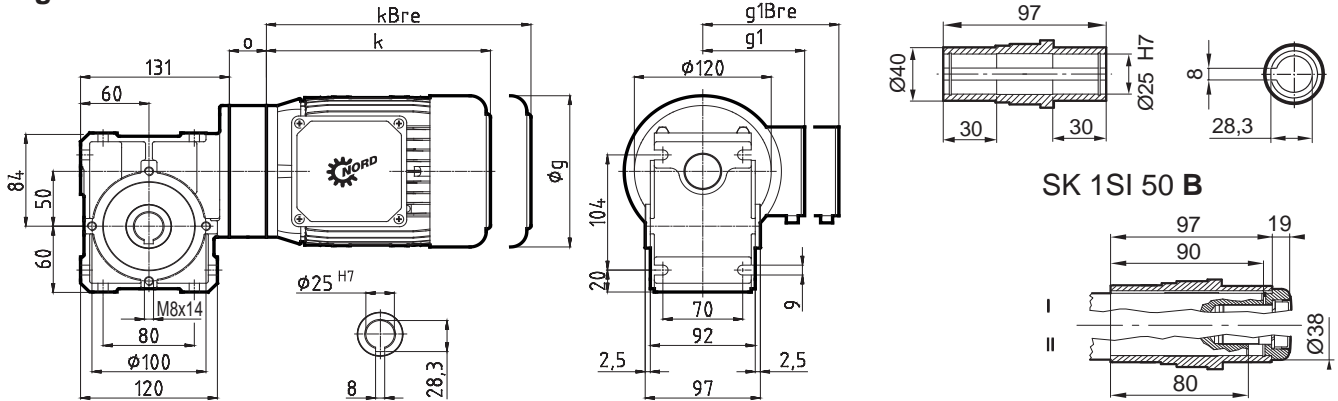


	a	c	h	k
I	130	29	32	36
III	100	34	14	14

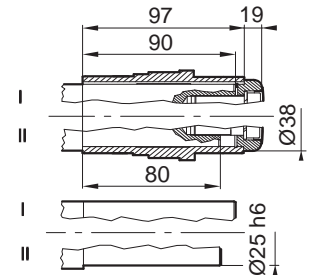
# SK 1 SI 50 IEC...



## Worm gear unit motor

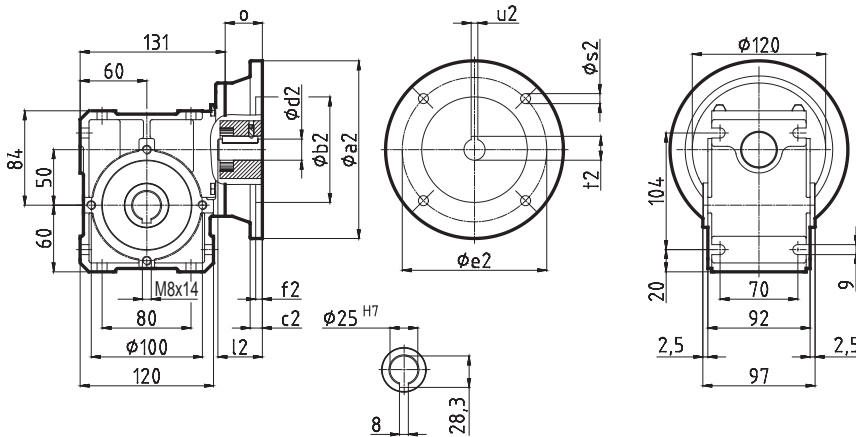


### SK 1 SI 50 B



	SK 1 SI 50 IEC63	SK 1 SI 50 IEC71	SK 1 SI 50 IEC80	SK 1 SI 50 IEC90
IE1	63 S/L	71 S/L	80 S / L	90 S / L
IE2	-	-	SH / LH	SH / LH
IE3	-	-	- / LP	SP / LP
<b>g</b>	130	145	165	183
<b>g1</b>	115	124	142	147
<b>g1Bre</b>	123	133	143	148
<b>k</b>	192	214	236	276
<b>kBre</b>	248	272	300	351
<b>o</b>	32,5	32,5	32,5	45,5

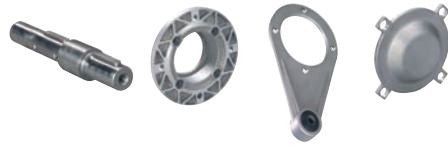
## Worm gear unit for attachment to IEC standard motors



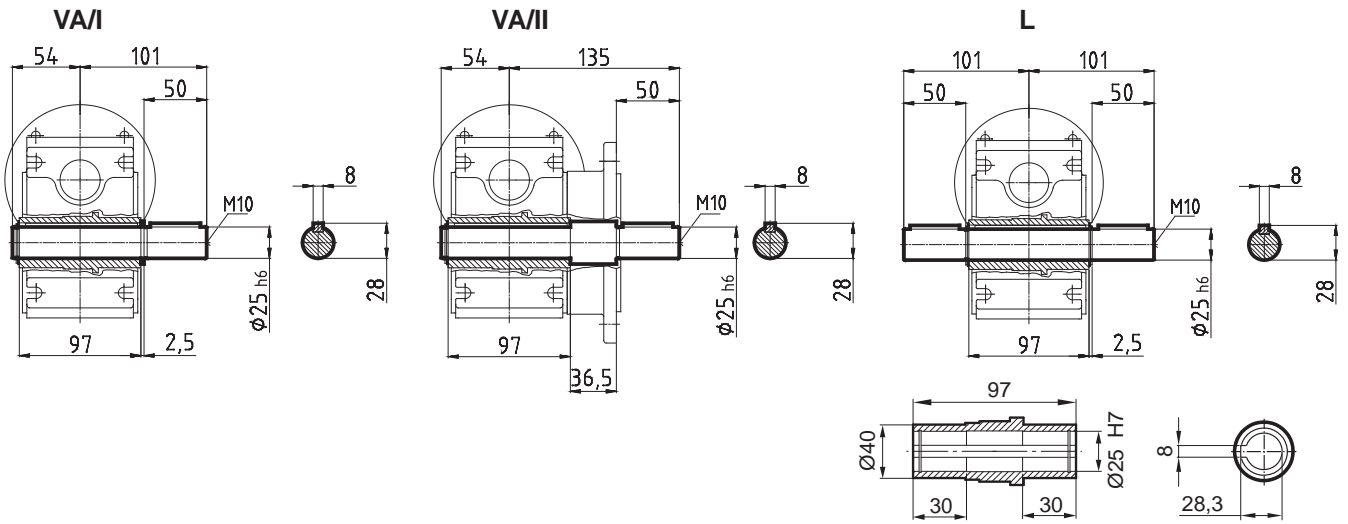
## IEC-standard motor-adapter

	IEC 56	IEC 56	IEC 63	IEC 63	IEC 63	IEC 71	IEC 71	IEC 71	IEC 80	IEC 80	IEC 80	IEC 90	IEC 90
	B14	B5	B14	B14	B5	B14	B14	B5	B14	B14	B5	B14	B14
	C105	A120	C90	C120	A140	C105	C140	A160	C120	C160	A200	C140	C160
<b>a2</b>	105	120	90	120	140	105	140	160	120	160	200	140	160
<b>b2</b>	70	80	60	80	95	70	95	110	80	110	130	95	110
<b>c2</b>	-	-	-	-	8	-	-	8	-	8	20	-	8
<b>d2</b>	9	9	11	11	11	14	14	14	19	19	19	24	24
<b>e2</b>	85	100	75	100	115	85	115	130	100	130	165	115	130
<b>f2</b>	3	3,5	3	3,5	3,5	3	3,5	4	3,5	4	4	3,5	4
<b>l2</b>	20	20	23	23	23	30	30	30	40	40	40	50	50
<b>o</b>	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	45,5	45,5
<b>s2</b>	7	7	6	7	9	7	9	9	7	9	M10	9	9
<b>t2</b>	11,4	11,4	12,8	12,8	12,8	16,3	16,3	16,3	21,8	21,8	21,8	27,3	27,3
<b>u2</b>	3	3	4	4	4	5	5	5	6	6	6	8	8

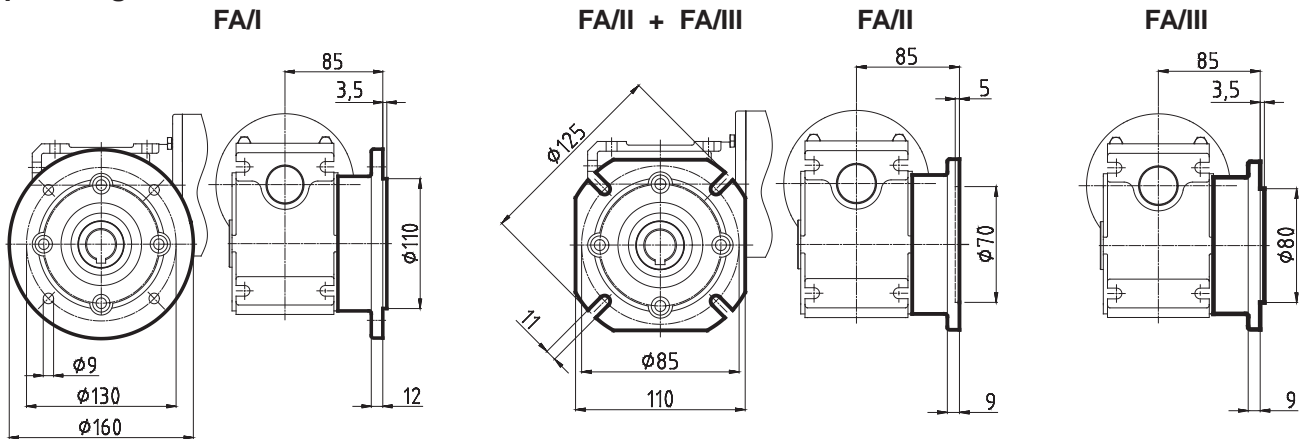




## Plug-in shafts



## Output flange B5



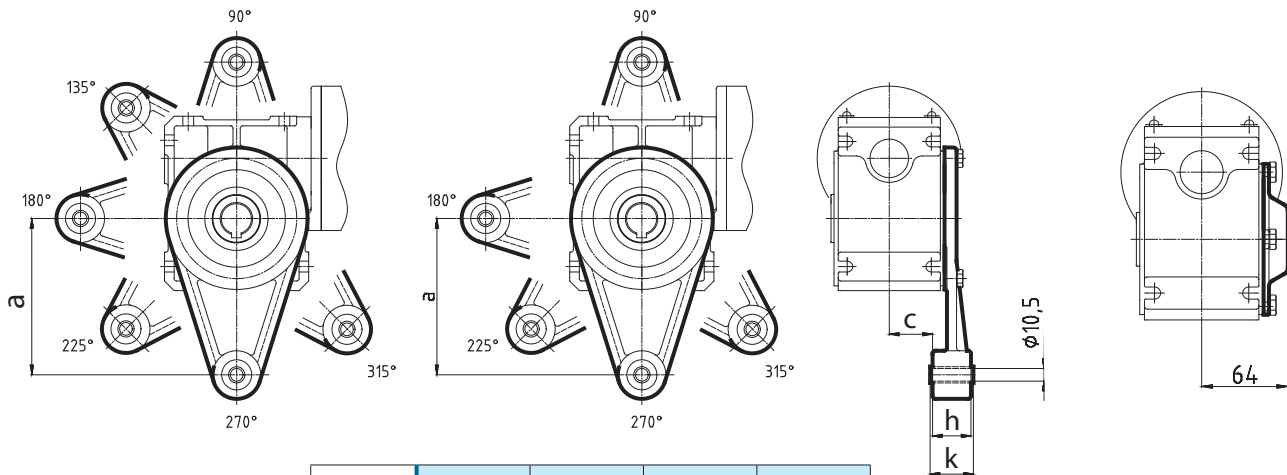
## Torque support

DA/I 90 .. DA/I 315

DA/II 90.. DA/II 315 + DA/III 90.. DA/III 315

## Covering cap

HA

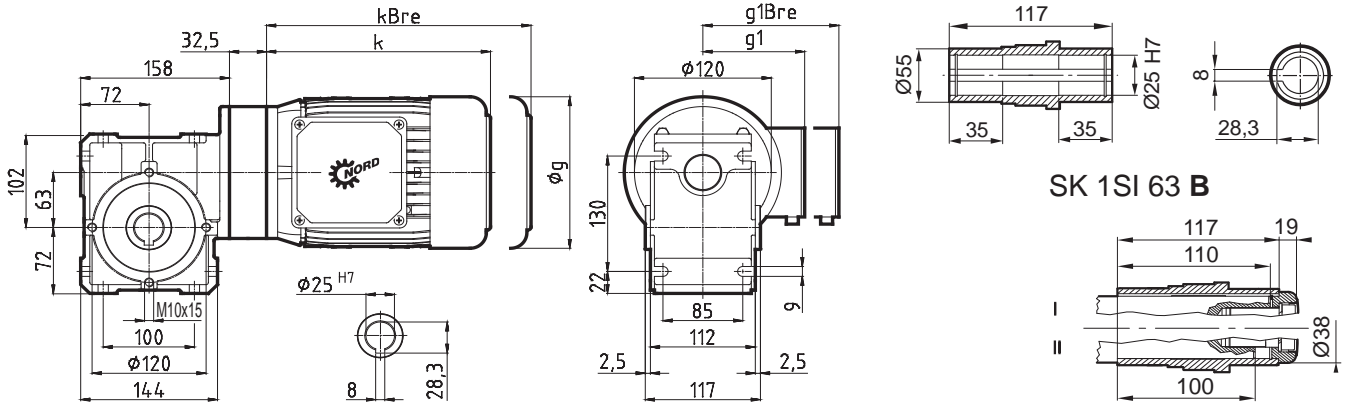


	a	c	h	k
I	130	36	32	36
II	110	41	14	14
III	100	41	14	14

# SK 1 SI 63 IEC...



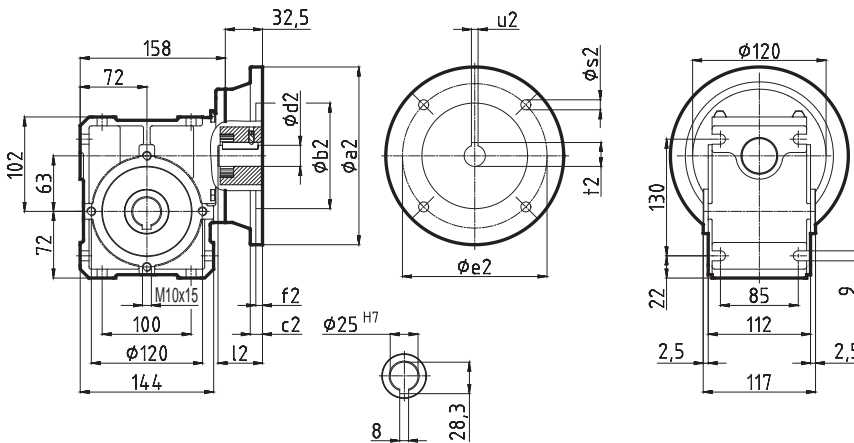
## Worm gear unit motor



SK 1 SI 63 B

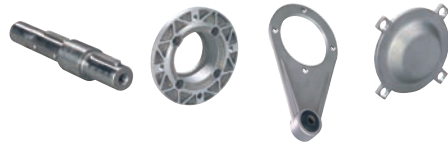
	SK 1 SI 63 IEC63	SK 1 SI 63 IEC71	SK 1 SI 63 IEC80	SK 1 SI 63 IEC90
IE1	63 S/L	71 S/L	80 S / L	90 S / L
IE2	-	-	SH / LH	SH / LH
IE3	-	-	- / LP	SP / LP
<b>g</b>	130	145	165	183
<b>g1</b>	115	124	142	147
<b>g1Bre</b>	123	133	143	148
<b>k</b>	192	214	236	276
<b>kBre</b>	248	272	300	351

## Worm gear unit for attachment to IEC standard motors

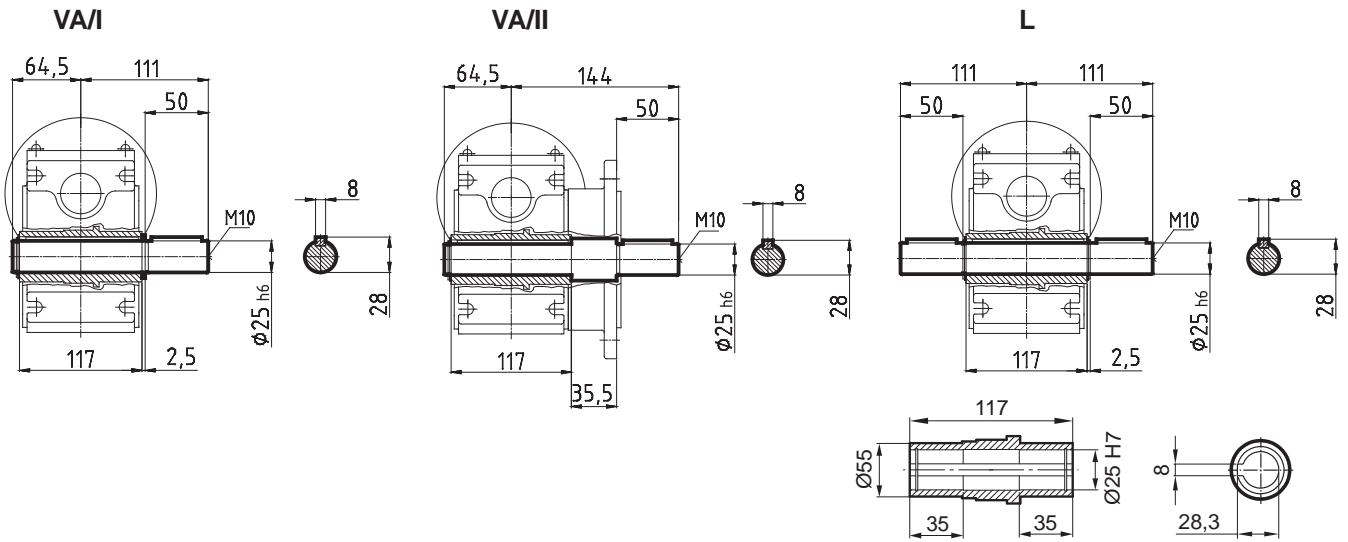


## IEC-standard motor-adapter

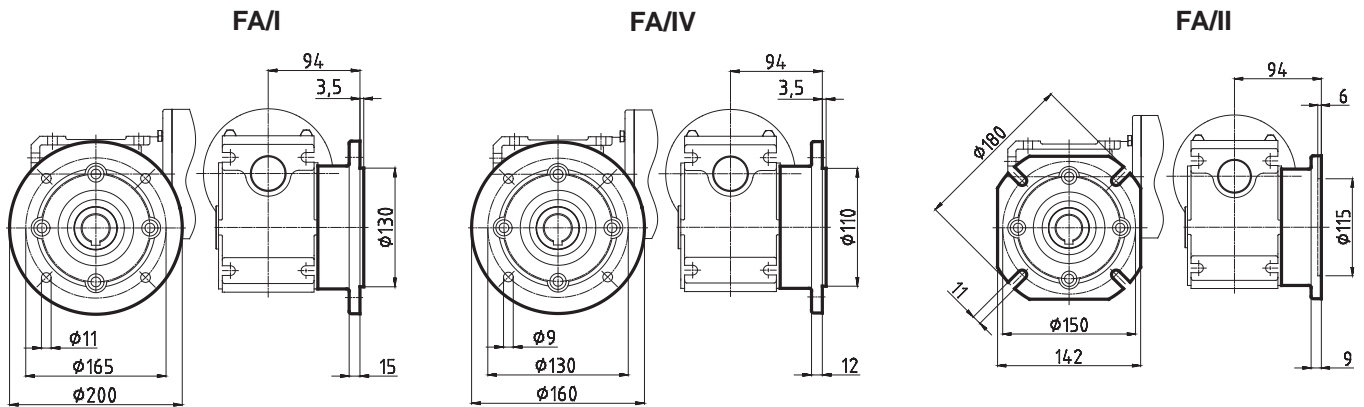
	IEC 56	IEC 56	IEC 63	IEC 63	IEC 63	IEC 71	IEC 71	IEC 71	IEC 80	IEC 80	IEC 80	IEC 90	IEC 90	IEC 90
	B14	B5	B14	B14	B5	B14	B14	B5	B14	B14	B5	B14	B14	B5
	C105	A120	C90	C120	A140	C105	C140	A160	C120	C160	A200	C140	C160	A200
<b>a2</b>	105	120	90	120	140	105	140	160	120	160	200	140	160	200
<b>b2</b>	70	80	60	80	95	70	95	110	80	110	130	95	110	130
<b>c2</b>	-	-	-	-	8	-	-	8	-	8	20	-	8	20
<b>d2</b>	9	9	11	11	11	14	14	14	19	19	19	24	24	24
<b>e2</b>	85	100	75	100	115	85	115	130	100	130	165	115	130	165
<b>f2</b>	3	3,5	3	3,5	3,5	3	3,5	4	3,5	4	4	3,5	4	4
<b>l2</b>	20	20	23	23	23	30	30	30	40	40	40	50	50	50
<b>s2</b>	7	7	6	7	9	7	9	9	7	9	M10	9	9	M10
<b>t2</b>	11,4	11,4	12,8	12,8	12,8	16,3	16,3	16,3	21,8	21,8	21,8	27,3	27,3	27,3
<b>u2</b>	3	3	4	4	4	5	5	5	6	6	6	8	8	8



## Plug-in shafts

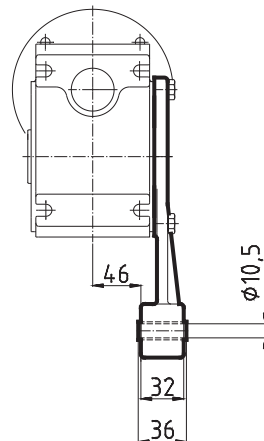
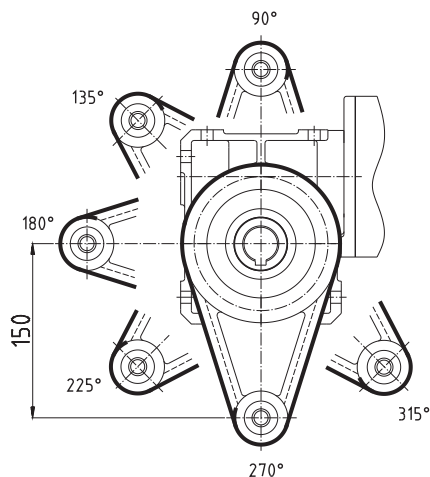


## Output flange B5



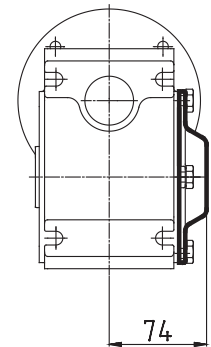
## Torque support

DA/I 90 .. DA/I 315



## Covering cap

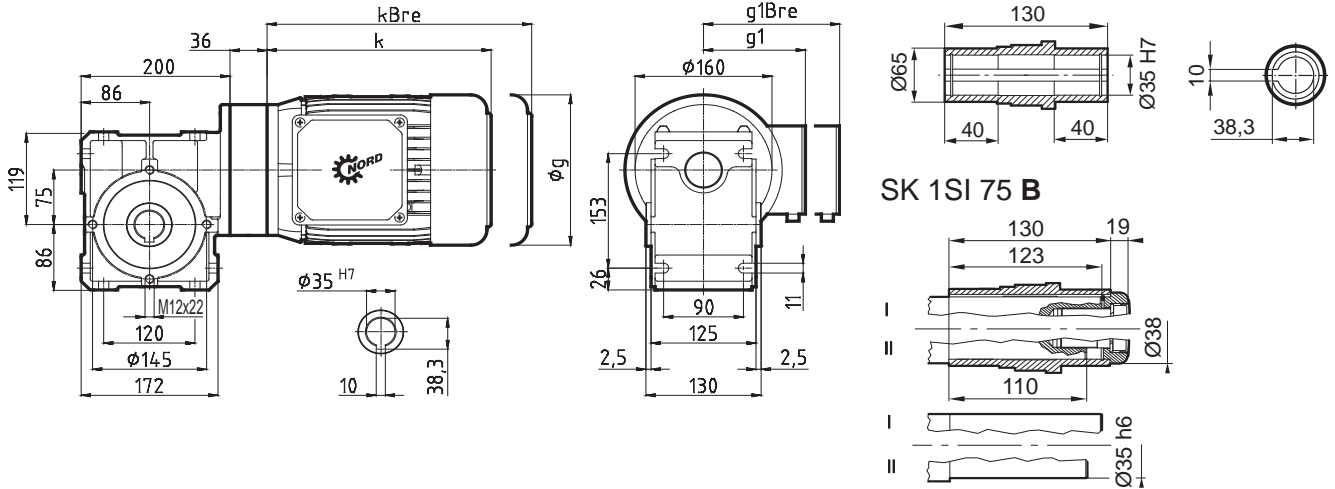
HA



# SK 1SI 75 IEC...

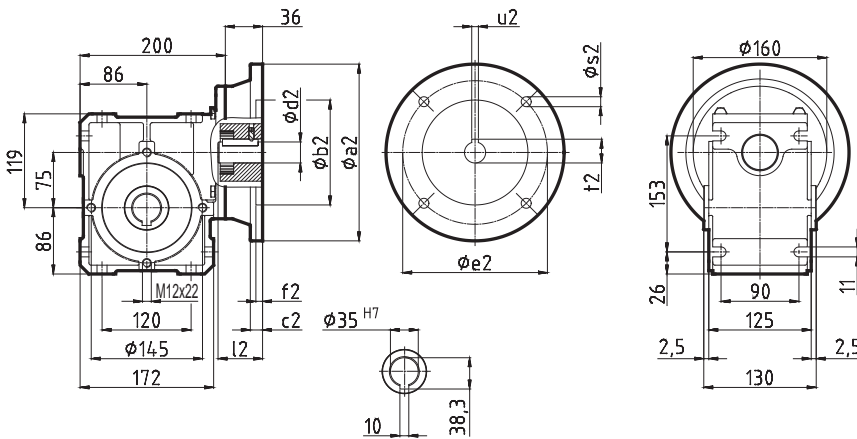


## Worm gear unit motor



	SK 1SI 75 IEC71	SK 1SI 75 IEC80	SK 1SI 75 IEC90	SK 1SI 75 IEC100	SK 1SI 75 IEC112	
IE1	71 S/L	80 S / L	90 S / L	100 L / LA	112 M	112 -
IE2	-	SH / LH	SH / LH	LH / AH	-	MH
IE3	-	- / LP	SP / LP	LP / AP	-	MP
<b>g</b>	145	165	183	201	228	228
<b>g1</b>	124	142	147	169	179	179
<b>g1Bre</b>	133	143	148	159	170	170
<b>k</b>	214	236	276	306	326	351
<b>kBre</b>	272	300	351	397	419	444

## Worm gear unit for attachment to IEC standard motors

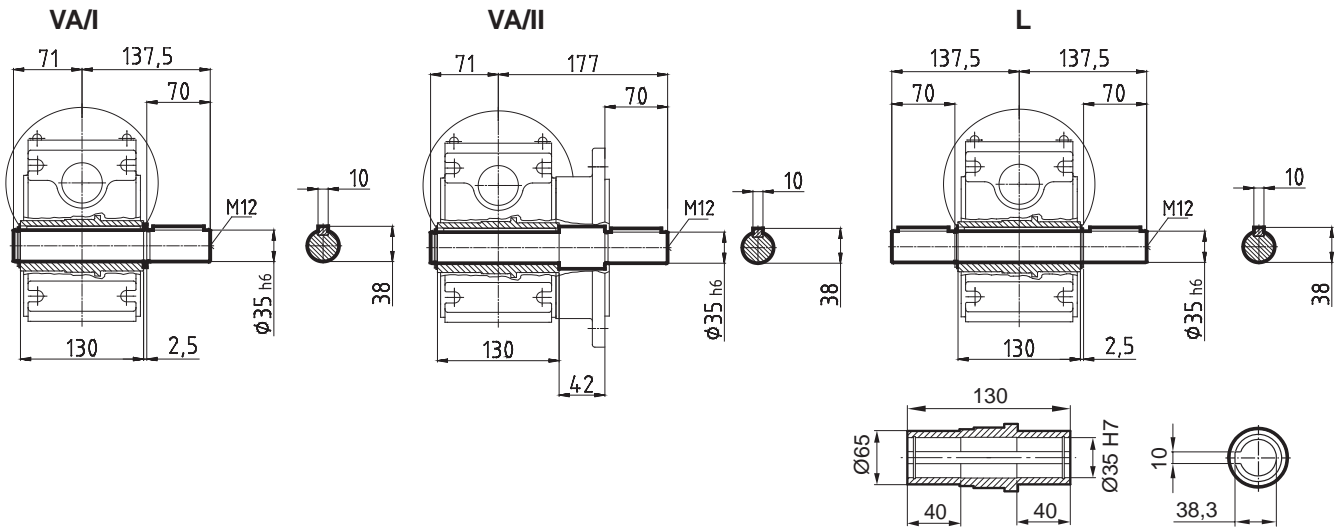


## IEC-standard motor-adaptor

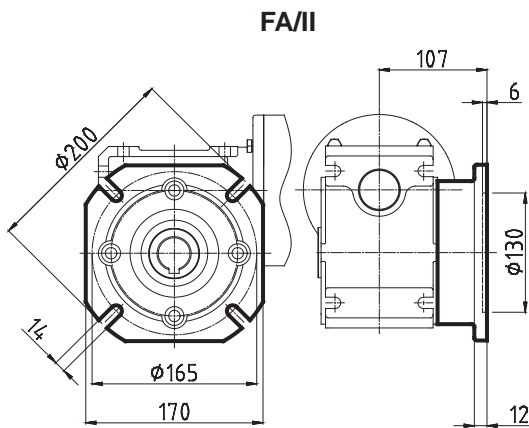
	IEC 71 B14 C105	IEC 71 B14 C140	IEC 71 B5 A160	IEC 80 B14 C120	IEC 80 B14 C160	IEC 80 B5 A200	IEC 90 B14 C140	IEC 90 B14 C160	IEC 90 B5 A200	IEC 100 B14 C160	IEC 100 B14 C200	IEC 100 B5 A250	IEC 112 B14 C160	IEC 112 B14 C200	IEC 112 B5 A250
<b>a2</b>	105	140	160	120	160	200	140	160	200	160	200	250	160	200	250
<b>b2</b>	70	95	110	80	110	130	95	110	130	110	130	180	110	130	180
<b>c2</b>	-	-	-	-	-	-	-	-	-	-	-	12	-	-	12
<b>d2</b>	14	14	14	19	19	19	24	24	24	28	28	28	28	28	28
<b>e2</b>	85	115	130	100	130	165	115	130	165	130	165	215	130	165	215
<b>f2</b>	3	3,5	4	3,5	4	4	3,5	4	4	4	4	5	5	5	5
<b>l2</b>	30	30	30	40	40	40	50	50	50	60	60	60	60	60	60
<b>s2</b>	7	9	9	7	9	11	9	9	11	9	11	M12	9	11	M12
<b>t2</b>	16,3	16,3	16,3	21,8	21,8	21,8	27,3	27,3	27,3	31,3	31,3	31,3	31,3	31,3	31,3
<b>u2</b>	5	5	5	6	6	6	8	8	8	8	8	8	8	8	8



## Plug-in shafts

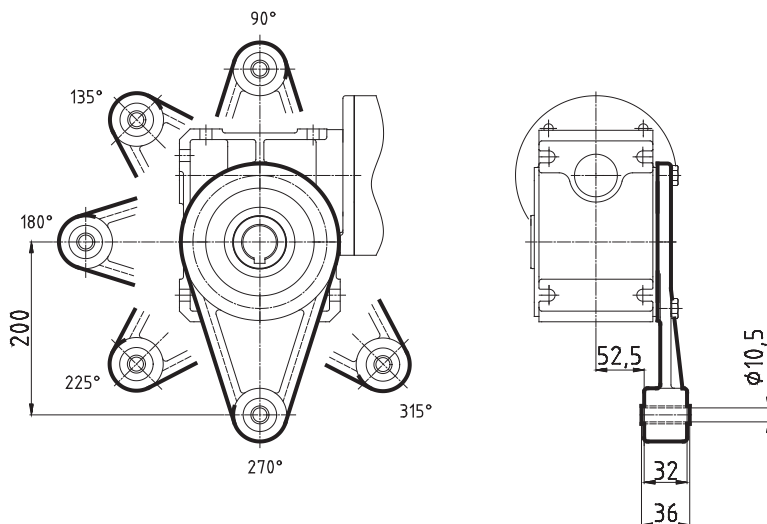


## Output flange B5



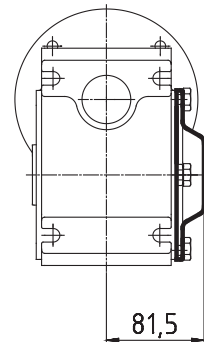
## Torque support

DA/I 90 .. DA/I 315



## Covering cap

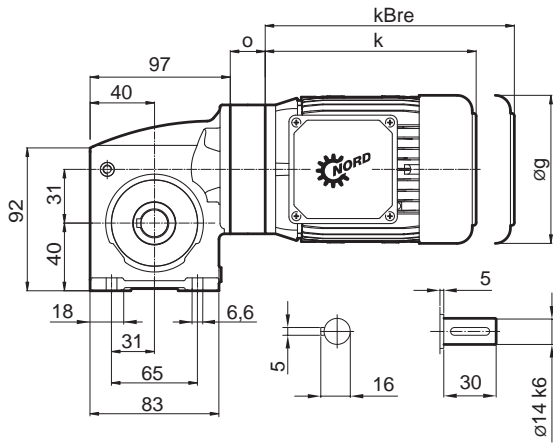
HA



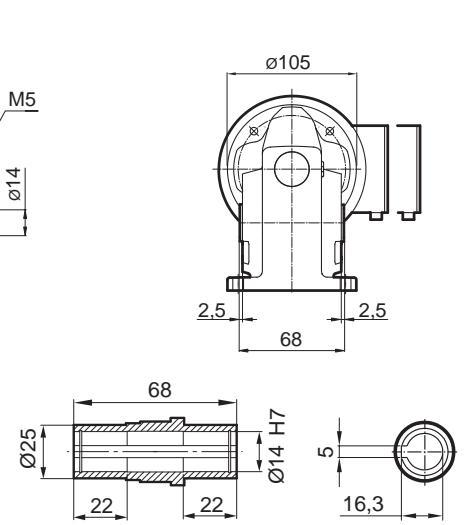
# SK 1SMI 31



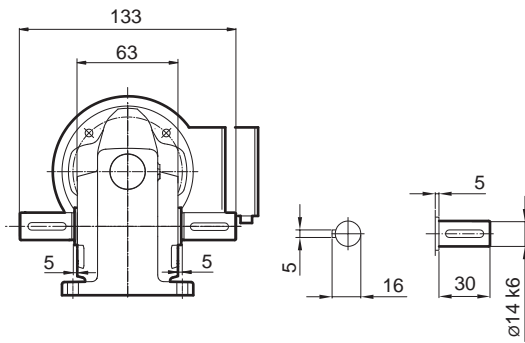
## SK 1SMI 31 VX



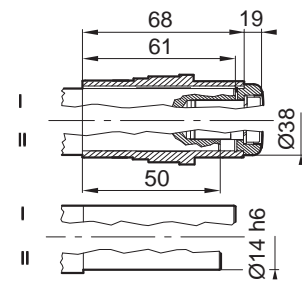
## SK 1SMI 31 AX



## SK 1SMI 31 LX



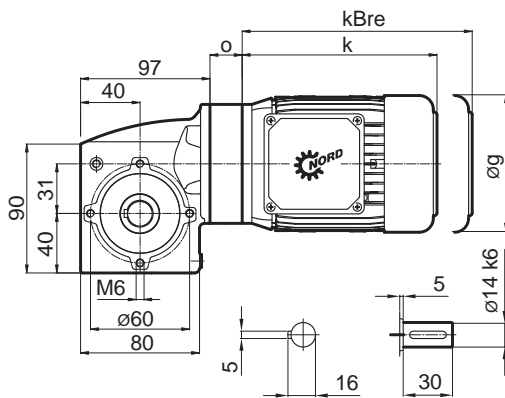
## SK 1SMI 31 AXB(AZB)



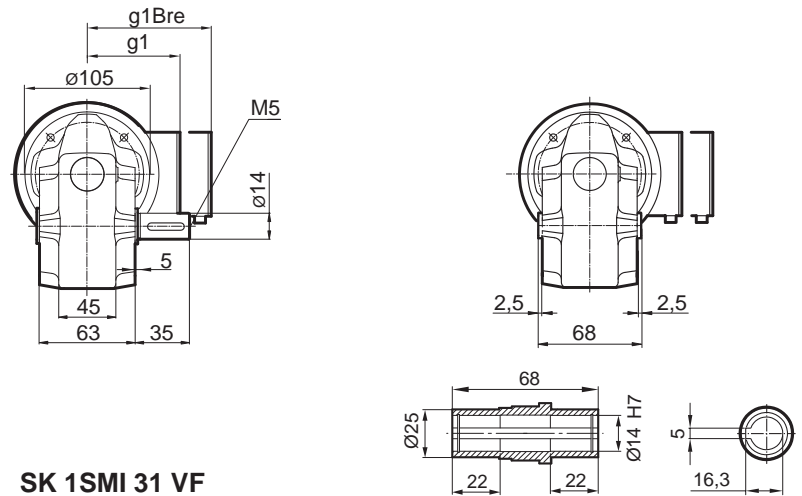
IE1	63 S / L	71 S / L			
IE2	-	-			
IE3	-	-			
<b>g</b>	130	145			
<b>g1</b>	115	124			
<b>g1Bre</b>	123	133			
<b>k</b>	192	214			
<b>kBre</b>	248	272			
<b>o</b>	29,5	29,5			



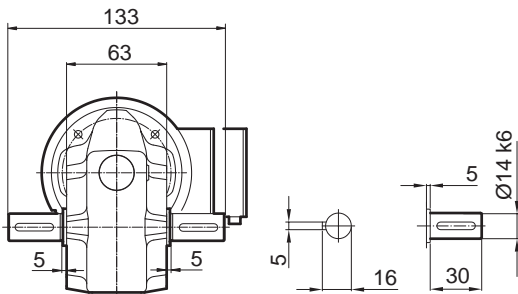
## SK 1SMI 31 VZ



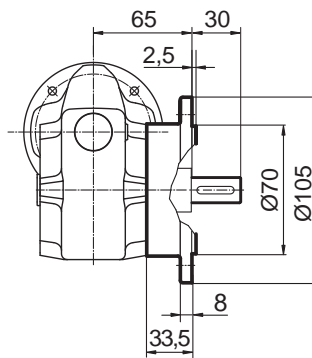
## SK 1SMI 31 AZ



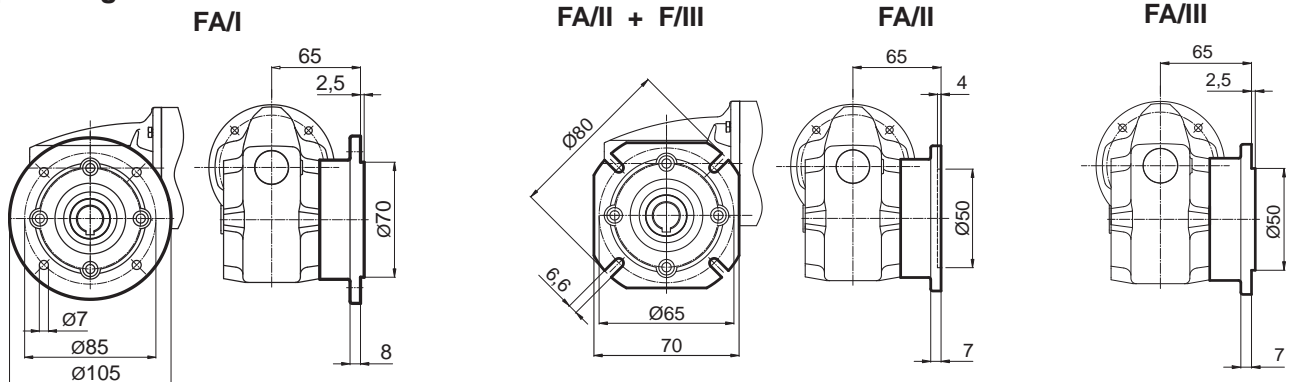
## SK 1SMI 31 LZ



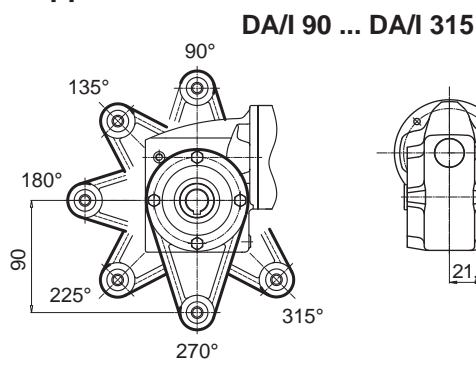
## SK 1SMI 31 VF



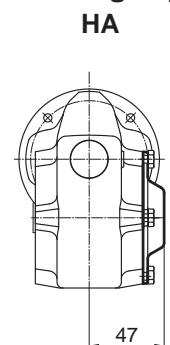
## Output flange B5



## Torque support



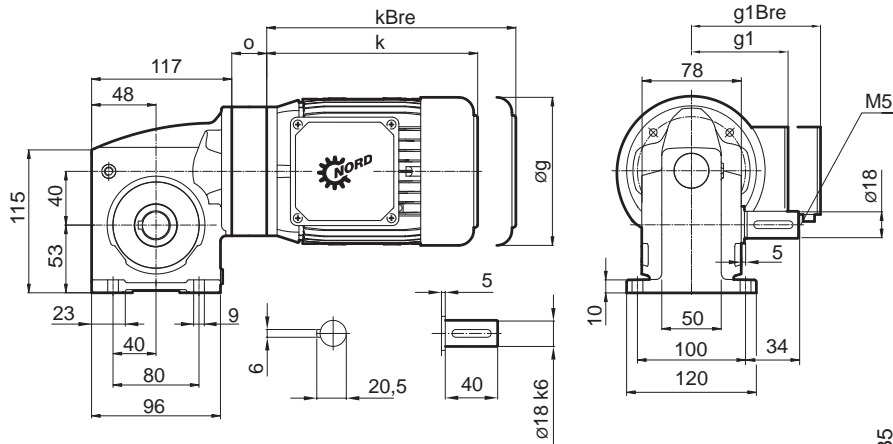
## Covering cap



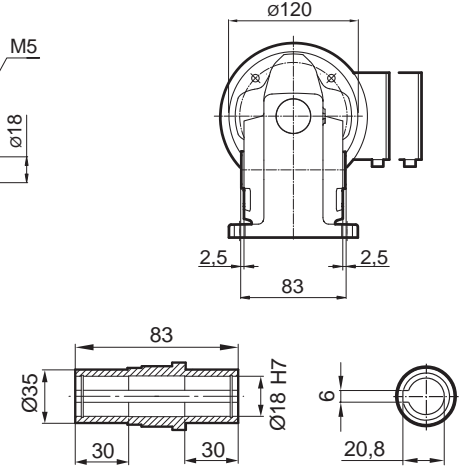
# SK 1SMI 40



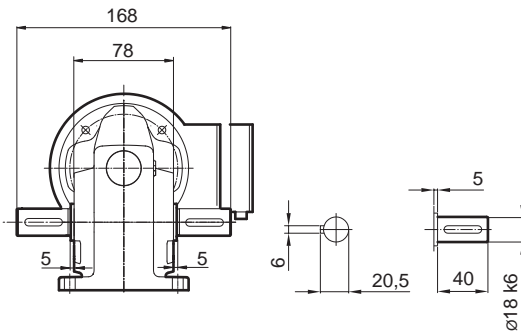
## SK 1SMI 40 VX



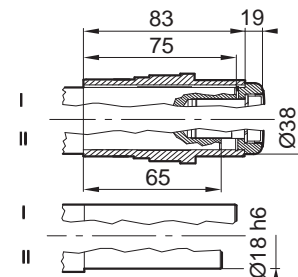
## SK 1SMI 40 AX



## SK 1SMI 40 LX



## SK 1SMI 40 AXB(AZB)

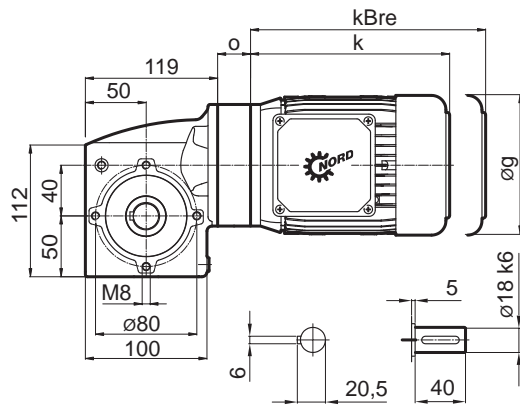


IE1 IE2 IE3	63 S / L	71 S / L	80 S / L SH / LH - / LP		
<b>g</b>	130	145	165		
<b>g1</b>	115	124	142		
<b>g1Bre</b>	123	133	143		
<b>k</b>	192	214	236		
<b>kBre</b>	248	272	300		
<b>o</b>	32,5	32,5	32,5		

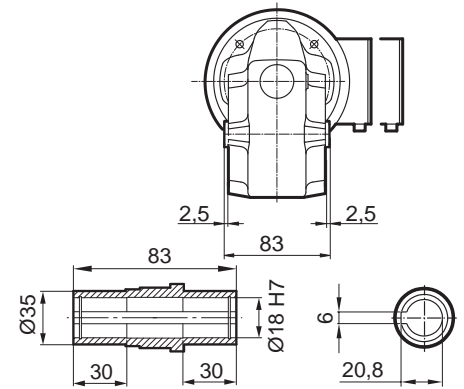
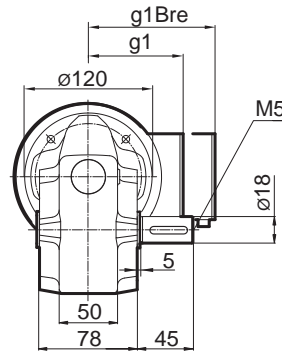




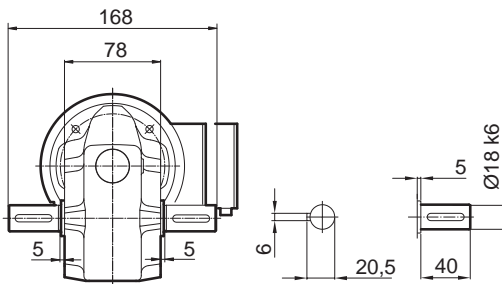
## SK 1SMI 40 VZ



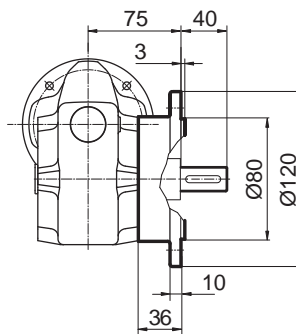
## SK 1SMI 40 AZ



## SK 1SMI 40 LZ

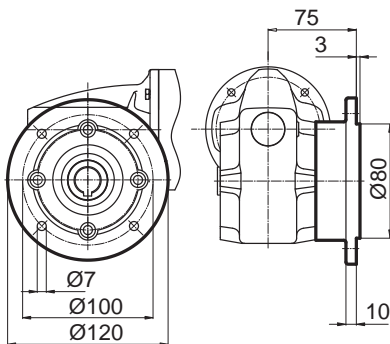


## SK 1SMI 40 VF

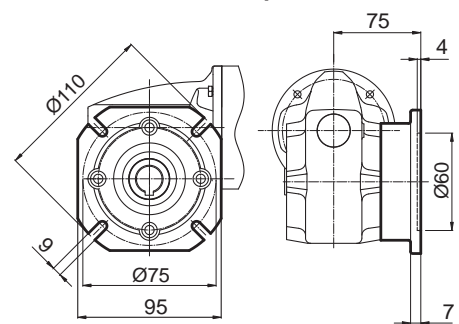


## Output flange B5

### FA/I

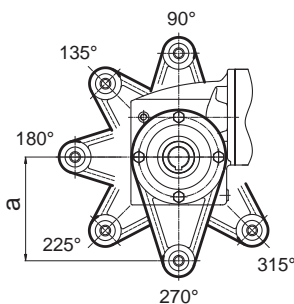


### FA/II

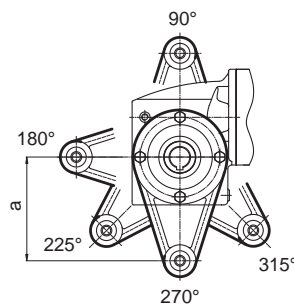


## Torque support

### DA/I 90 ... DA/I 315

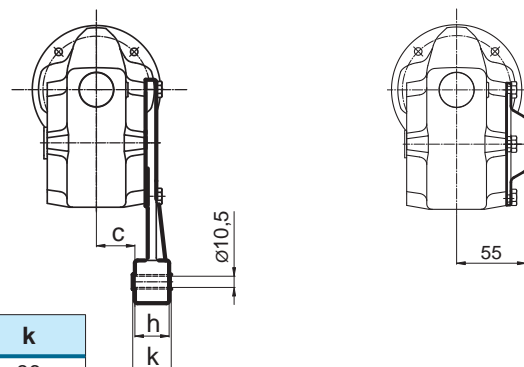


### DA/III 90 ... DA/III 315



## Covering cap

### HA

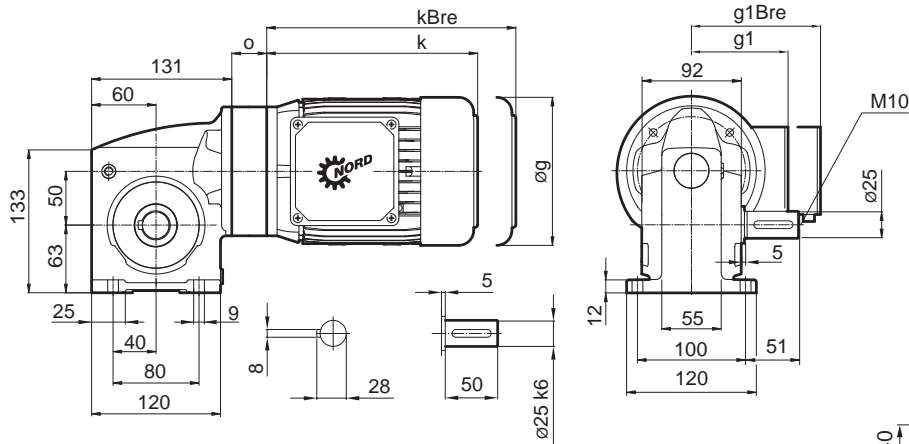


	a	c	h	k
I	130	29	32	36
III	100	34	14	14

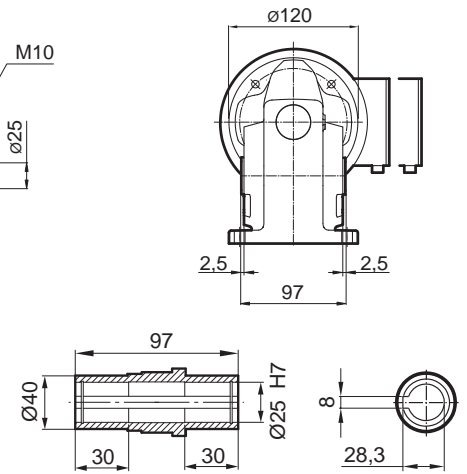
# SK 1 SMI 50



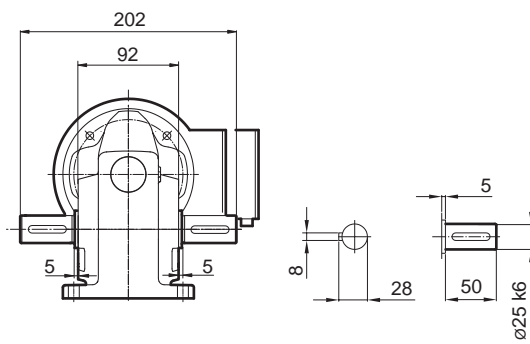
## SK 1 SMI 50 VX



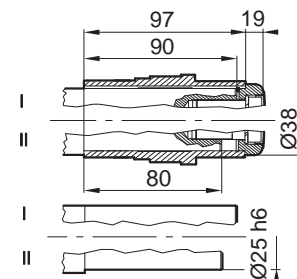
## SK 1 SMI 50 AX



## SK 1 SMI 50 LX



## SK 1 SMI 50 AXB(AZB)

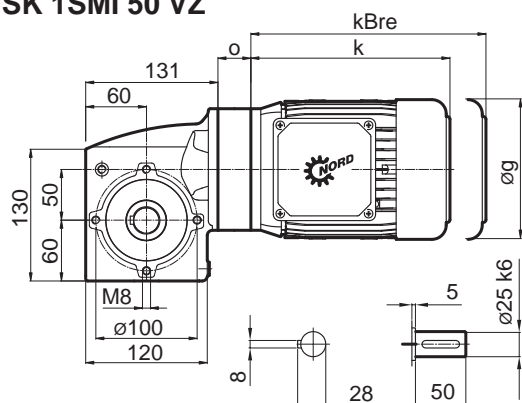


IE1 IE2 IE3	63 S / L	71 S / L	80 S / L SH / LH - / LP	90 S / L SH / LH SP / LP	
<b>g</b>	130	145	165	183	
<b>g1</b>	115	124	142	147	
<b>g1Bre</b>	123	133	143	148	
<b>k</b>	192	214	236	276	
<b>kBre</b>	248	272	300	351	
<b>o</b>	32,5	32,5	32,5	45,5	

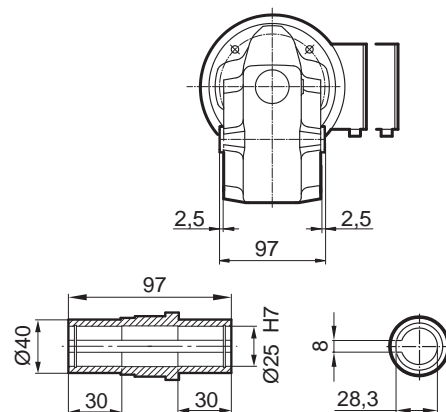
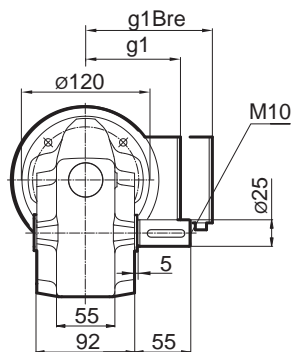


# SK 1 SMI 50

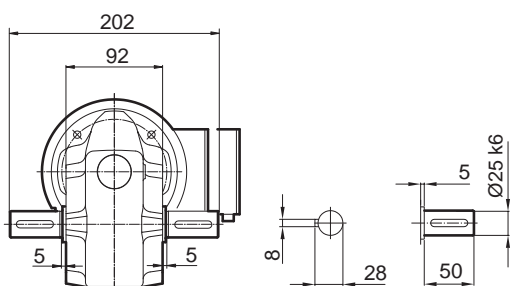
## SK 1 SMI 50 VZ



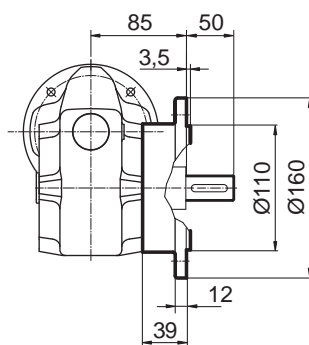
## SK 1 SMI 50 AZ



## SK 1 SMI 50 LZ

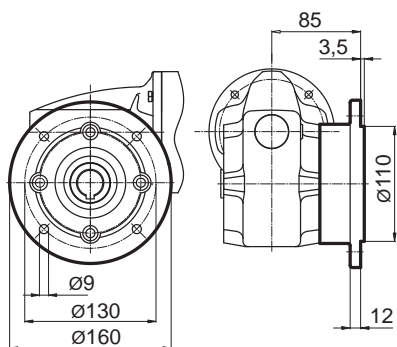


## SK 1 SMI 50 VF

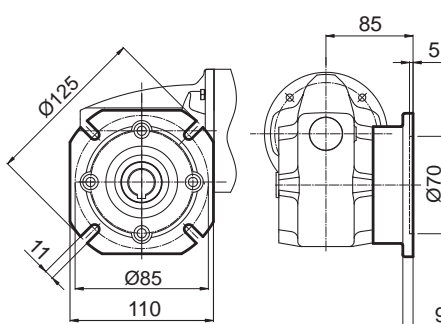


## Output flange B5

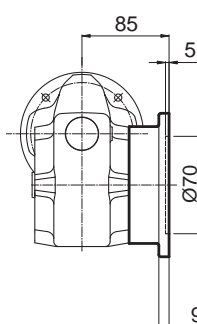
### FA/I



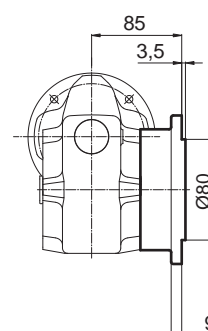
### FA/II + FA/III



### FA/II

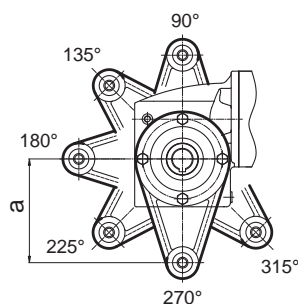


### FA/III

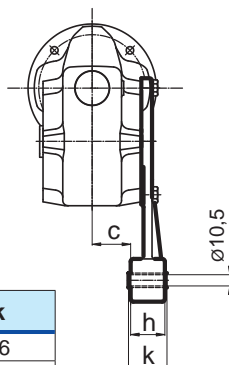
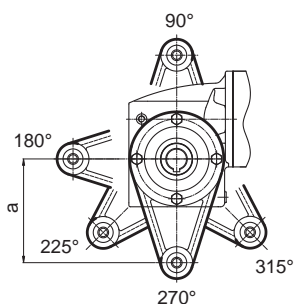


## Torque support

### DA/I 90 ... DA/I 315

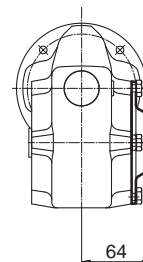


### DA/II 90.. DA/II 315 + DA/III 90.. DA/III 315



## Covering cap

### HA

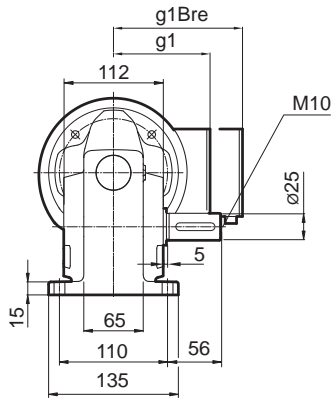
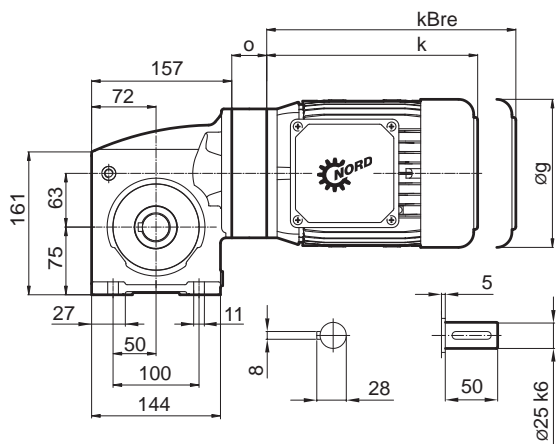


	a	c	h	k
I	130	36	32	36
II	110	41	14	14
III	100	41	14	14

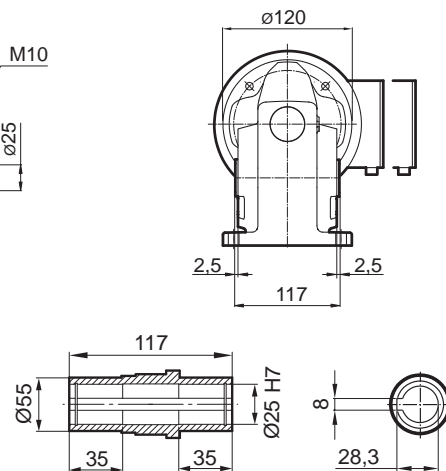
# SK 1 SMI 63



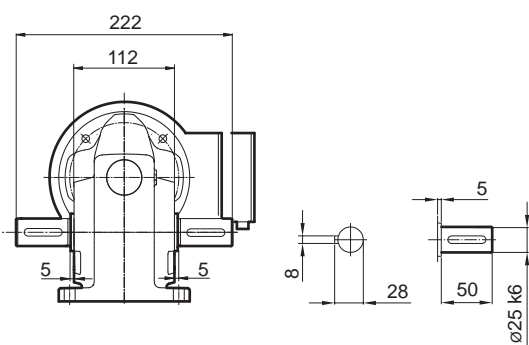
## SK 1 SMI 63 VX



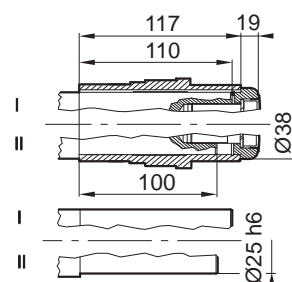
## SK 1 SMI 63 AX



## SK 1 SMI 63 LX



## SK 1 SMI 63 AXB(AZB)

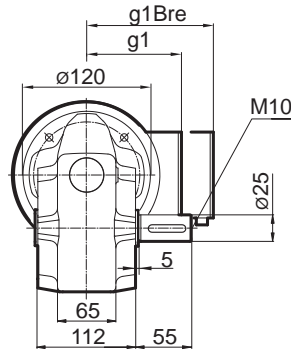
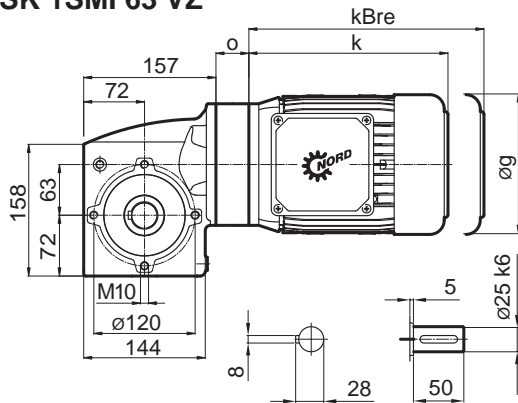


IE1 IE2 IE3	63 S / L	71 S / L	80 S / L SH / LH - / LP	90 S / L SH / LH SP / LP	
<b>g</b>	130	145	165	183	
<b>g1</b>	115	124	142	147	
<b>g1Bre</b>	123	133	143	148	
<b>k</b>	192	214	236	276	
<b>kBre</b>	248	272	300	351	
<b>o</b>	32,5	32,5	32,5	32,5	

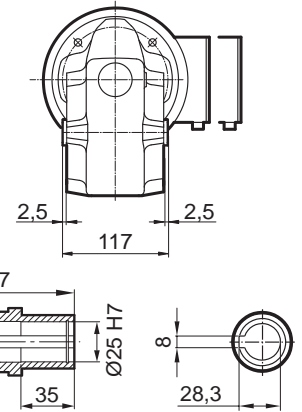


# SK 1 SMI 63

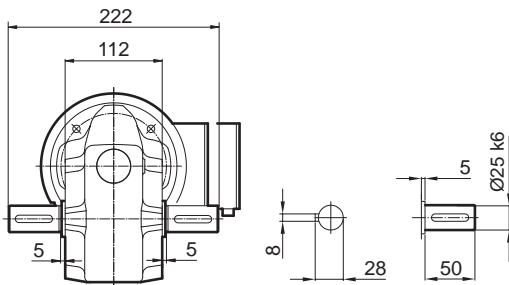
## SK 1 SMI 63 VZ



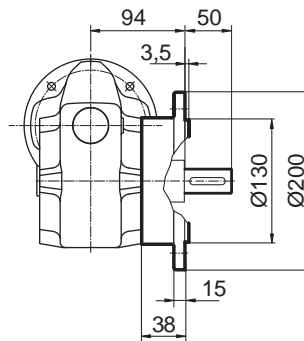
## SK 1 SMI 63 AZ



## SK 1 SMI 63 LZ

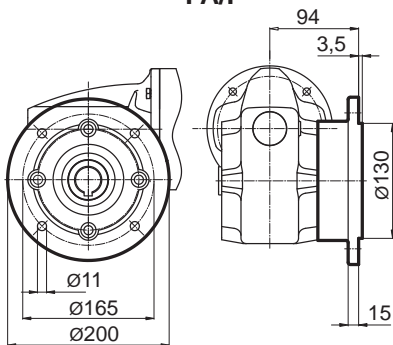


## SK 1 SMI 63 VF

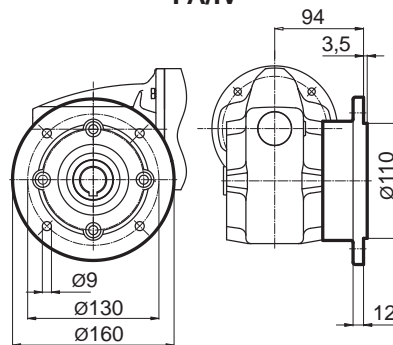


## Output flange B5

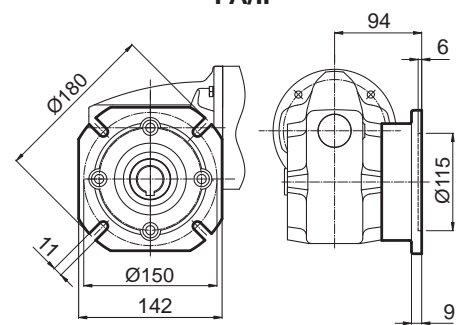
### FA/I



### FA/IV

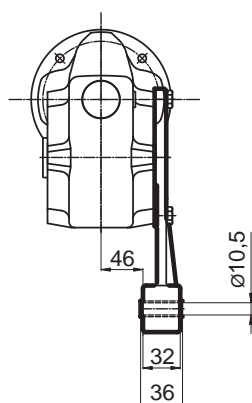
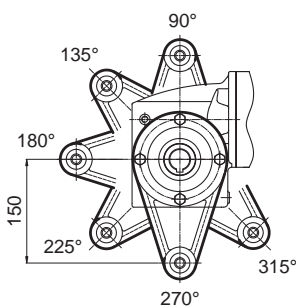


### FA/II



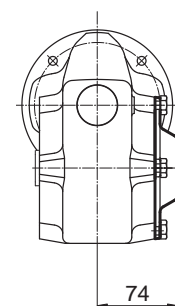
## Torque support

### DA/I 90 ... DA/I 315



## Covering cap

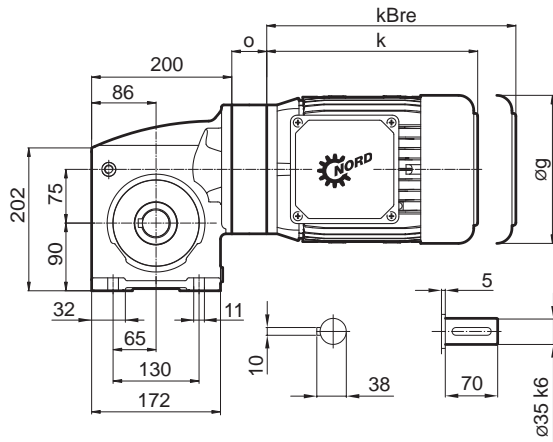
### HA



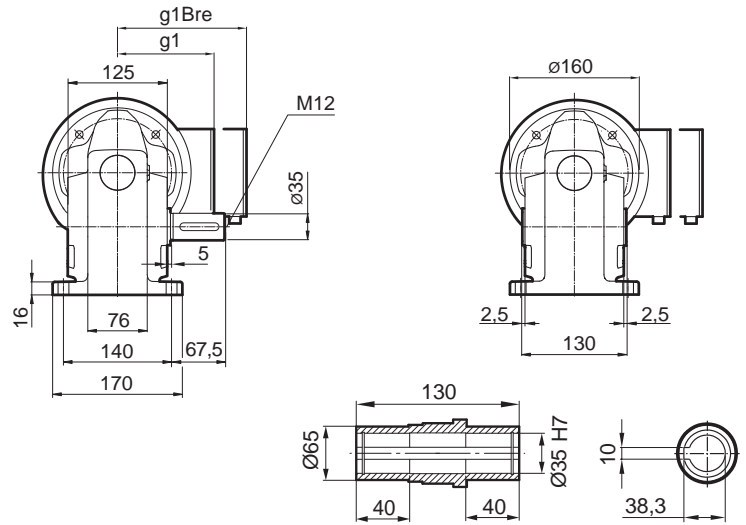
# SK 1 SMI 75



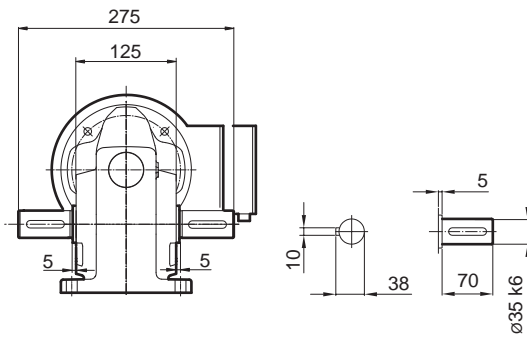
## SK 1 SMI 75 VX



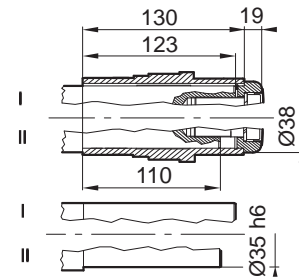
## SK 1 SMI 75 AX



## SK 1 SMI 75 LX



## SK 1 SMI 75 AXB(AZB)

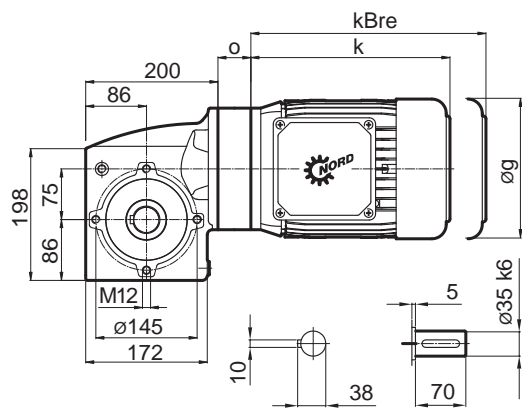


	71 S / L	80 S / L SH / LH - / LP	90 S / L SH / LH SP / LP	100 L / LA LH / AH LP / AP	112 M	112 - MH MP
IE1	-	-	-	-	-	-
IE2	-	-	-	-	-	-
IE3	-	-	-	-	-	-
<b>g</b>	145	165	183	201	228	228
<b>g1</b>	124	142	147	169	179	179
<b>g1Bre</b>	133	143	148	159	170	170
<b>k</b>	214	236	276	306	326	351
<b>kBre</b>	272	300	351	397	419	444
<b>o</b>	36	36	36	36	36	36

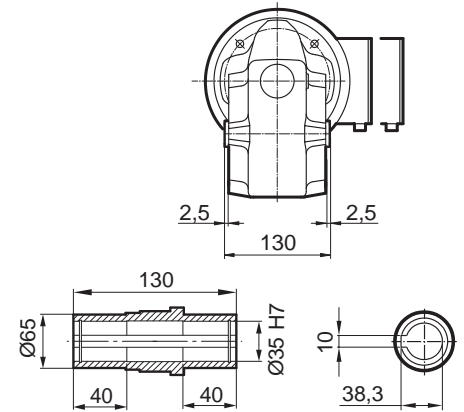
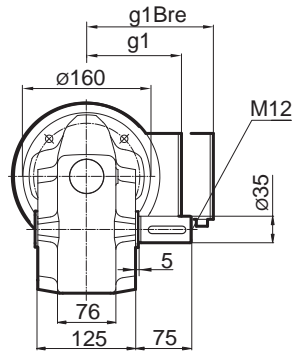


# SK 1SMI 75

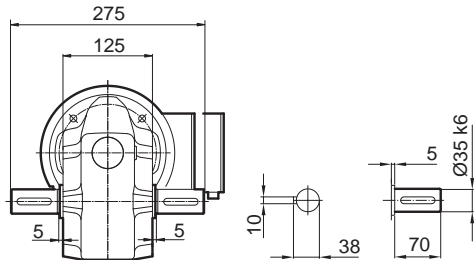
## SK 1SMI 75 VZ



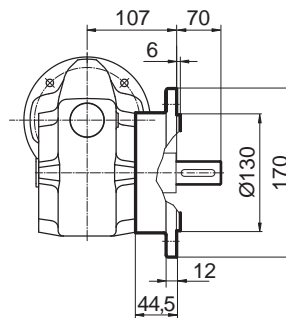
## SK 1SMI 75 AZ



## SK 1SMI 75 LZ

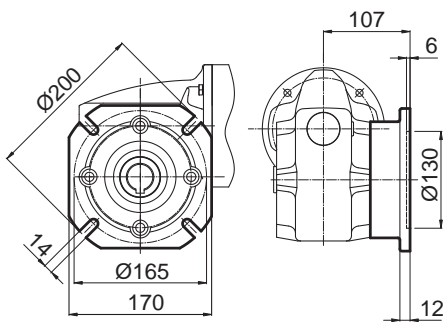


## SK 1SMI 75 VF



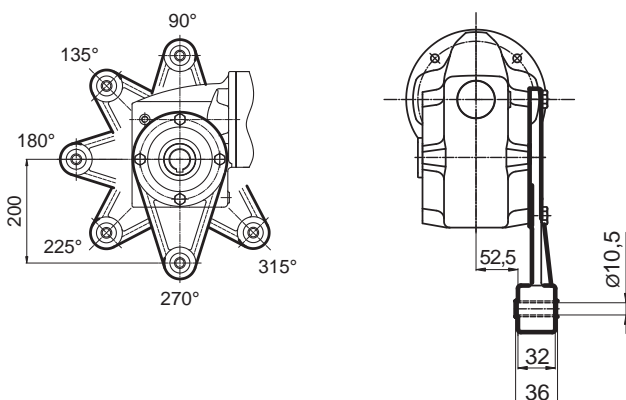
## Output flange B5

### FA/II



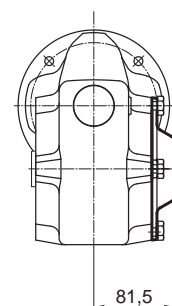
## Torque support

### DA/I 90 ... DA/I 315



## Covering cap

### HA



# SK 1SI 40... 50... 63/H10 SK 1SMI 40... 50... 63/H10



## Helical input stage

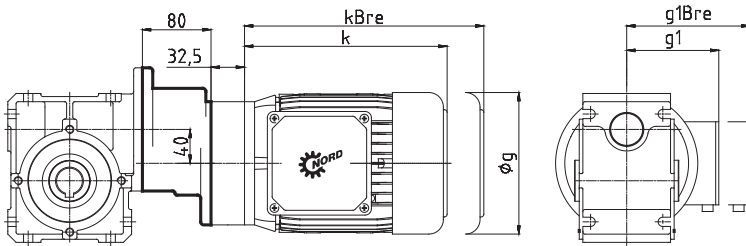
### Helical input stage Type H10

The helical input stage has a speed ratio  $i=10$  and is suitable for the worm gear modules SK 1SI 40, SK 1SI 50 and SK 1SI 63 as well as for the worm gear units SK 1SMI 40, SK 1SMI 50 and SK 1SMI 63.

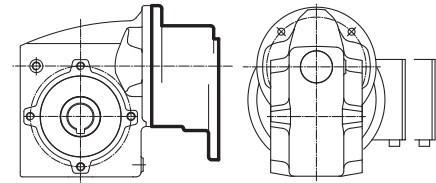
The helical input allows the construction of 2-stage helical worm gear motors and helical worm gear unit.

### Helical worm gear motors

#### SK 1SI...



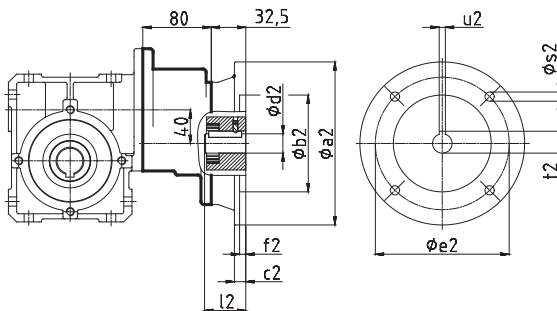
#### SK 1SMI...



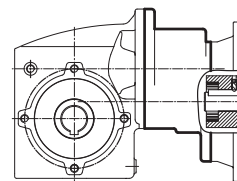
IE1	63 S / L	71 S / L
<b>g</b>	130	145
<b>g1</b>	115	124
<b>g1Bre</b>	123	133
<b>k</b>	192	214
<b>kBre</b>	248	272

### Helical worm gear unit for attachment to IEC standard motors

#### SK 1SI...



#### SK 1SMI...



### IEC-standard motor-adapter

	IEC 56	IEC 56	IEC 63	IEC 63	IEC 63	IEC 71	IEC 71	IEC 71	IEC 80	IEC 80	IEC 80		
	B14	B5	B14	B14	B5	B14	B14	B5	B14	B14	B5		
	C105	A120	C90	C120	A140	C105	C140	A160	C120	C160	A200		
<b>a2</b>	105	120	90	120	140	105	140	160	120	160	200		
<b>b2</b>	70	80	60	80	95	70	95	110	80	110	130		
<b>c2</b>	-	-	-	-	8	-	-	8	-	8	20		
<b>d2</b>	9	9	11	11	11	14	14	14	19	19	19		
<b>e2</b>	85	100	75	100	115	85	115	130	100	130	165		
<b>f2</b>	3	3,5	3	3,5	3,5	3	3,5	4	3,5	4	4		
<b>l2</b>	20	20	23	23	23	30	30	30	40	40	40		
<b>s2</b>	7	7	6	7	9	7	9	9	7	9	M10		
<b>t2</b>	11,4	11,4	12,8	12,8	12,8	16,3	16,3	16,3	21,8	21,8	21,8		
<b>u2</b>	3	3	4	4	4	5	5	5	6	6	6		





# SK 1SI 40... 50... 63/31 SK 1SMI 40... 50... 63/31

## Double worm gear adapter

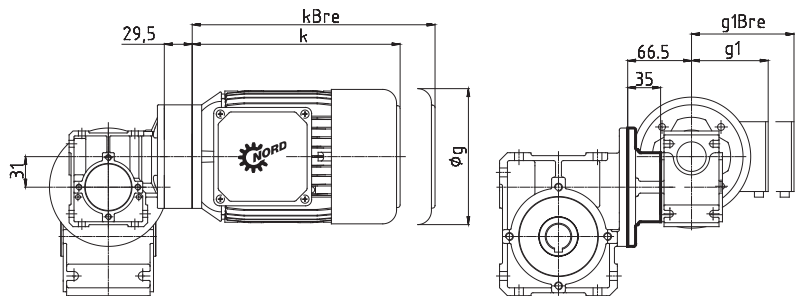
### Double worm gear unit adapter

The double worm gear unit is an adapter which allows the worm gear SK 1SI 31 to be used as an input stage for the worm gear SK 1SI 40, SK 1SI 50 and SK 1SI 63 as well as for the worm gear units SK 1SMI 40, SK 1SMI 50 and SK 1SMI 63.

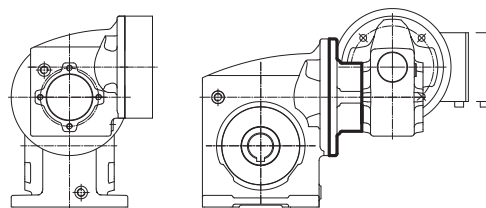
The double worm gear allows the construction of double worm gear motors and double worm gear units.

### Double worm gear motors

#### SK 1SI...



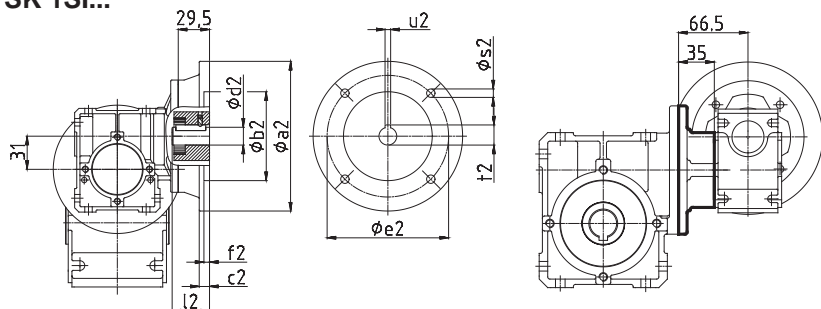
#### SK 1SMI...



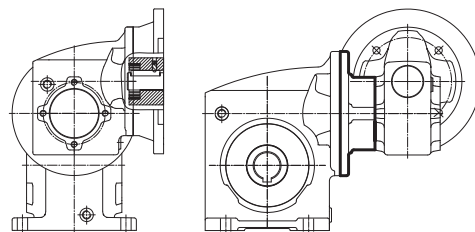
IE1	63 S / L	71 S / L
<b>g</b>	130	145
<b>g1</b>	115	124
<b>g1Bre</b>	123	133
<b>k</b>	192	214
<b>kBre</b>	248	272

### Double worm gear unit for attachment to IEC standard motors

#### SK 1SI...



#### SK 1SMI...



### IEC-standard motor-adapter

	IEC 56	IEC 56	IEC 63	IEC 63	IEC 63	IEC 71	IEC 71						
	B14	B5	B14	B14	B5	B14	B14						
	C105	A120	C90	C120	A140	C105	C140						
<b>a2</b>	105	120	90	120	140	105	140						
<b>b2</b>	70	80	60	80	95	70	95						
<b>c2</b>	-	-	-	-	8	-	-						
<b>d2</b>	9	9	11	11	11	14	14						
<b>e2</b>	85	100	75	100	115	85	115						
<b>f2</b>	3	3,5	3	3,5	3,5	3	3,5						
<b>l2</b>	20	20	23	23	23	30	30						
<b>s2</b>	7	7	6	7	9	7	9						
<b>t2</b>	11,4	11,4	12,8	12,8	12,8	16,3	16,3						
<b>u2</b>	3	3	4	4	4	5	5						

# SK 1SI 75/40 SK 1SMI 75/40



## Double worm gear adapter

### Double worm gear adapter

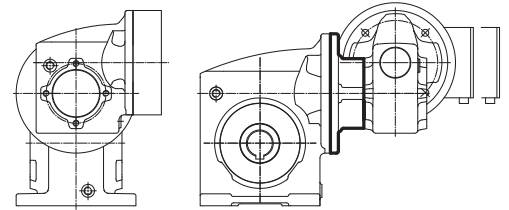
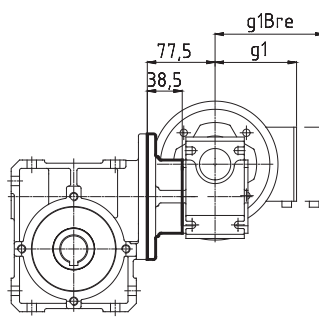
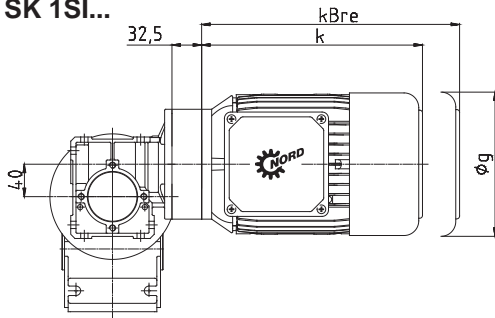
The double worm gear is an adapter, which allows the worm gear unit SK 1SI 40 to be used as the input stage for the worm gear SK 1SI 75 and for the worm gear unit SK 1SMI 75.

The double worm gear allows the construction of double worm gear motors and double worm gear units.

### Double worm gear motor

SK 1SI...

SK 1SMI...

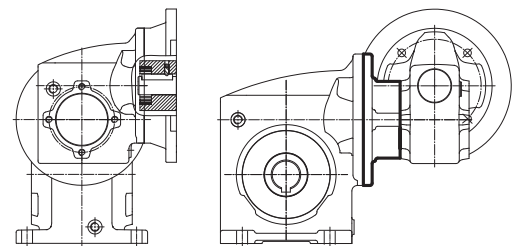
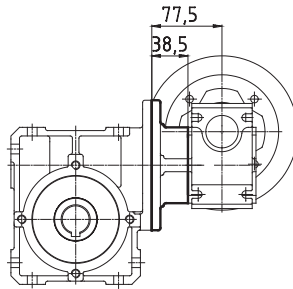
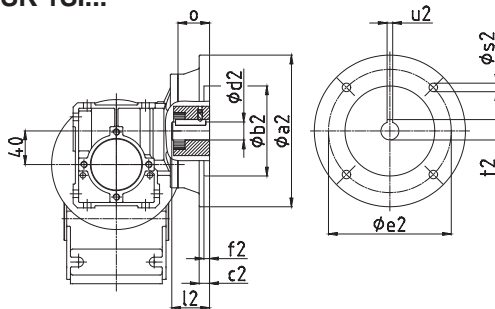


IE1	63 S / L	71 S / L
<b>g</b>	130	145
<b>g1</b>	115	124
<b>g1Bre</b>	123	133
<b>k</b>	192	214
<b>kBre</b>	248	272

### Double worm gear unit for attachment to IEC standard motors

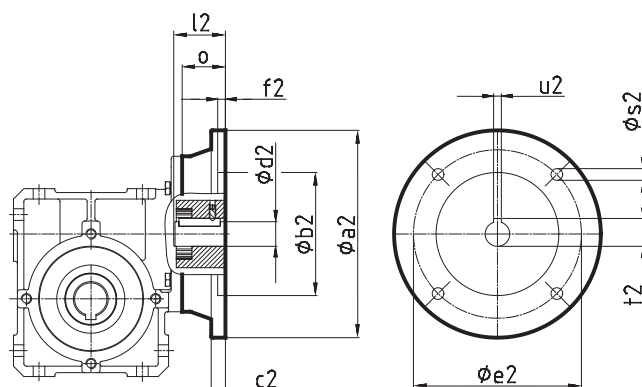
SK 1SI...

SK 1SMI...



### IEC-standard motor-adapter

	IEC 56 B14 C105	IEC 56 B5 A120	IEC 63 B14 C90	IEC 63 B14 C120	IEC 63 B5 A140	IEC 71 B14 C105	IEC 71 B14 C140	IEC 71 B5 A160	IEC 80 B14 C120	IEC 80 B14 C160	IEC 80 B5 A200	IEC 90 B14 C140	IEC 90 B14 C160
<b>a2</b>	105	120	90	120	140	105	140	160	120	160	200	140	160
<b>b2</b>	70	80	60	80	95	70	95	110	80	110	130	95	110
<b>c2</b>	-	-	-	-	8	-	-	8	-	8	20	-	8
<b>d2</b>	9	9	11	11	11	14	14	14	19	19	19	24	24
<b>e2</b>	85	100	75	100	115	85	115	130	100	130	165	115	130
<b>f2</b>	3	3,5	3	3,5	3,5	3	3,5	4	3,5	4	4	3,5	4
<b>l2</b>	20	20	23	23	23	30	30	30	40	40	40	50	50
<b>o</b>	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	32,5	45,5	45,5
<b>s2</b>	7	7	6	7	9	7	9	9	7	9	M10	9	9
<b>t2</b>	11,4	11,4	12,8	12,8	12,8	16,3	16,3	16,3	21,8	21,8	21,8	27,3	27,3
<b>u2</b>	3	3	4	4	4	5	5	5	6	6	6	8	8



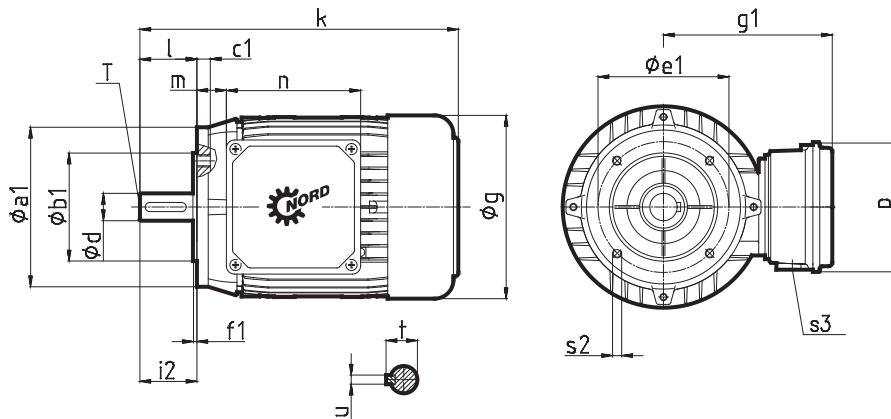
Motor-adapter	a2	b2	e2	f2	s2	d2	l2	t2	u2	o					
										SI 31	SI 40	SI 50	SI 63	SI 75	H10
IEC 56 B14 C105	105	70	85	3	7	9	20	11,4	3	29,5	32,5	32,5	32,5		32,5
IEC 56 B5 A120	120	80	100	3,5	7	9	20	11,4	3	29,5	32,5	32,5	32,5		32,5
IEC 63 B14 C90	90	60	75	3	6	11	23	12,8	4	29,5	32,5	32,5	32,5		32,5
IEC 63 B14 C120	120	80	100	3,5	7	11	23	12,8	4	29,5	32,5	32,5	32,5		32,5
IEC 63 B5 A140	140	95	115	3,5	9	11	23	12,8	4	29,5	32,5	32,5	32,5		32,5
IEC 71 B14 C105	105	70	85	3	7	14	30	16,3	5	29,5	32,5	32,5	32,5	36	32,5
IEC 71 B14 C140	140	95	115	3,5	9	14	30	16,3	5	29,5	32,5	32,5	32,5	36	32,5
IEC 71 B5 A160	160	110	130	4	9	14	30	16,3	5	-	32,5	32,5	32,5	36	32,5
IEC 80 B14 C120	120	80	100	3,5	7	19	40	21,8	6	-	32,5	32,5	32,5	36	32,5
IEC 80 B14 C160	160	110	130	4	9	19	40	21,8	6	-	32,5	32,5	32,5	36	32,5
IEC 80 B5 A200	200	130	165	4	M10	19	40	21,8	6	-	32,5	32,5	32,5	36	32,5
IEC 90 B14 C140	140	95	115	3,5	9	24	50	27,3	8	-	45,5	45,5	32,5	36	-
IEC 90 B14 C160	160	110	130	4	9	24	50	27,3	8	-	45,5	45,5	32,5	36	-
IEC 90 B5 A200	200	130	165	4	M10	24	50	27,3	8	-	45,5	45,5	32,5	36	-
IEC 100 B14 C160	160	110	130	4	9	28	60	31,3	8	-	-	-	-	36	-
IEC 100 B14 C200	200	130	165	4	11	28	60	31,3	8	-	-	-	-	36	-
IEC 100 B5 A250	250	180	215	5	M12	28	60	31,3	8	-	-	-	-	36	-
IEC 112 B14 C160	160	110	130	4	9	28	60	31,3	8	-	-	-	-	36	-
IEC 112 B14 C200	200	130	165	4	11	28	60	31,3	8	-	-	-	-	36	-
IEC 112 B5 A250	250	180	215	5	M12	28	60	31,3	8	-	-	-	-	36	-

Motor-adapter	Available version					
	SK 1SI 31	SK 1SI 40	SK 1SI 50	SK 1SI 63	SK 1SI 75	SK H10
IEC 56 B14 C105	✓	✓	✓	✓		✓
IEC 56 B5 A120	✓	✓	✓	✓		✓
IEC 63 B14 C90	✓*	✓*	✓*	✓*		✓*
IEC 63 B14 C120	✓	✓	✓	✓		✓
IEC 63 B5 A140	✓	✓	✓	✓		✓
IEC 71 B14 C105	✓*	✓*	✓*	✓*	✓*	✓*
IEC 71 B14 C140	✓	✓	✓	✓	✓	✓
IEC 71 B5 A160		✓	✓	✓	✓	✓
IEC 80 B14 C120		✓*	✓*	✓*	✓*	✓
IEC 80 B14 C160		✓	✓	✓	✓	✓
IEC 80 B5 A200		✓	✓	✓	✓	✓
IEC 90 B14 C140		✓*	✓*	✓*	✓*	
IEC 90 B14 C160		✓	✓	✓	✓	
IEC 90 B5 A200		✓	✓	✓	✓	
IEC 100 B14 C160					✓	
IEC 100 B14 C200					✓	
IEC 100 B5 A250					✓*	
IEC 112 B14 C160					✓	
IEC 112 B14 C200					✓	
IEC 112 B5 A250					✓*	

\* Standard



# IEC three-phase motor / brake motor



Three-phase motors					$M_B$	$P_1$	$n_1$	$a_1$	$\overset{\text{kg}}{\square}$	$k$	$c_1$	$d$	$t$	$f_1$	$g$	$i_2$	$s_3$	$m$
					[Nm]	[kW]	[min <sup>-1</sup> ]	$b_1$	[g]		$e_1$	$T$	$u$	$s_2$	$g_1$	$l$	$n$	$p$
63	S/4	-	-	B14 C90		0,12	1335	90 60	3,6	215	8 75	11 M4	12,5 4	2,5 M5	130 115	23 23	M20 100	12 100
63	L/4	-	-	B14 C90		0,18	1350	90 60	4,2	215	8 75	11 M4	12,5 4	2,5 M5	130 115	23 23	M20 100	12 100
71	S/4	-	-	B14 C105		0,25	1380	105 70	5,4	244	12 85	14 M5	16 5	2,5 M6	145 124	30 30	M20 100	20 100
71	L/4	-	-	B14 C105		0,37	1380	105 70	6,3	244	12 85	14 M5	16 5	2,5 M6	145 124	30 30	M20 100	20 100
80	S/4	SH/4	-	B14 C120		0,55	1375	120 80	8	276	12 100	19 M6	21,5 6	3,0 M6	165 142	40 40	M25 114	22 114
80	L/4	LH/4	LP/4	B14 C120		0,75	1375	120 80	9	276	12 100	19 M6	21,5 6	3,0 M6	165 142	40 40	M25 114	22 114
90	S/4	SH/4	SP/4	B14 C140		1,1	1395	140 95	12	326	15 115	24 M8	27 8	3,0 M8	183 147	50 50	M25 114	26 114
90	L/4	LH/4	LP/4	B14 C140		1,5	1395	140 95	14	326	15 115	24 M8	27 8	3,0 M8	183 147	50 50	M25 114	26 114
100	L/4	LH/4	LP/4	B5 A250		2,2	1440	250 180	24	366	15 215	28 M10	31 8	4,0 14	201 169	60 60	M32 114	32 114
100	LA/4	AH/4	AP/4	B5 A250		3,0	1415	250 180	27	366	15 215	28 M10	31 8	4,0 14	201 169	60 60	M32 114	32 114
112	M/4	-	-	B5 A250		4,0	1445	250 180	36	386	15 215	28 M10	31 8	4,0 14	228 179	60 60	M32 114	45 114
112	-	MH/4	MP/4	B5 A250		4,0	1445	250 180	36	411	15 215	28 M10	31 8	4,0 14	228 179	60 60	M32 114	45 114

Brake motors					$M_B$	$P_1$	$n_1$	$a_1$	$\overset{\text{kg}}{\square}$	$k$	$c_1$	$d$	$t$	$f_1$	$g$	$i_2$	$s_3$	$m$
					[Nm]	[kW]	[min <sup>-1</sup> ]	$b_1$	[g]		$e_1$	$T$	$u$	$s_2$	$g_1$	$l$	$n$	$p$
63	S/4	-	-	B14 C90 BRE 5	(1)5	0,12	1335	90 60	5,6	271	8 75	11 M4	12,5 4	2,5 M5	130 123	23 23	M20 132	19 87
63	L/4	-	-	B14 C90 BRE 5	(1)5	0,18	1350	90 60	6,2	271	8 75	11 M4	12,5 4	2,5 M5	130 123	23 23	M20 132	19 87
71	S/4	-	-	B14 C105 BRE 5	(1)5	0,25	1380	105 70	7,4	302	12 85	14 M5	16 5	2,5 M6	146 133	30 30	M20 132	27 87
71	L/4	-	-	B14 C105 BRE 5	(1)5	0,37	1380	105 70	8,3	302	12 85	14 M5	16 5	2,5 M6	146 133	30 30	M20 132	27 87
80	S/4	SH/4	-	B14 C120 BRE 5	(1)5	0,55	1375	120 80	11	340	12 100	19 M6	21,5 6	3,0 M6	165 143	40 40	M25 153	26 108
80	L/4	LH/4	LP/4	B14 C120 BRE 10	(1)10	0,75	1375	120 80	12	340	12 100	19 M6	21,5 6	3,0 M6	165 143	40 40	M25 153	26 108
90	S/4	SH/4	SP/4	B14 C140 BRE 10	(1)10	1,1	1395	140 95	17	401	15 115	24 165	27 8	3,0 M8	183 148	50 50	M25 153	30 108
90	L/4	LH/4	LP/4	B14 C140 BRE 20	(1)20	1,5	1395	140 95	19	401	15 115	24 M8	27 8	3,0 M8	183 148	50 50	M25 153	30 108
100	L/4	LH/4	LP/4	B5 A250 BRE 20	(1)20	2,2	1440	250 180	31	457	15 215	28 M10	31 8	4,0 14	201 159	60 60	M25 153	36 108
100	LA/4	AH/4	AP/4	B5 A250 BRE 40	(1)40	3,0	1415	250 180	34	479	15 215	28 M10	31 8	4,0 14	201 159	60 60	M25 153	36 108
112	M/4	-	-	B5 A250 BRE 40	(1)40	4,0	1445	250 180	46	598	15 215	28 M10	31 8	4,0 14	228 170	60 60	M25 153	49 108
112	-	MH/4	MP/4	B5 A250 BRE 40	(1)40	4,0	1445	250 180	46	623	15 215	28 M10	31 8	4,0 14	228 170	60 60	M25 153	49 108



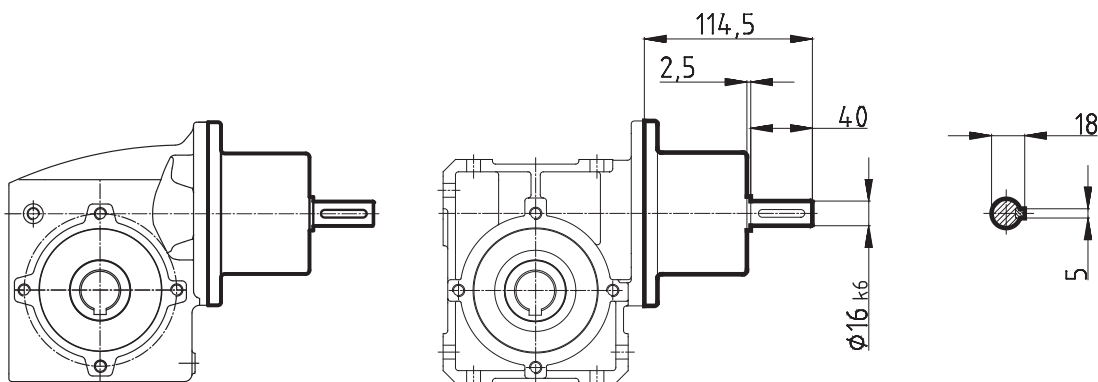
# SK 1SI 40... 50... 63... 75 - W SK 1SMI 40... 50... 63... 75 - W

## Type W - free drive shaft

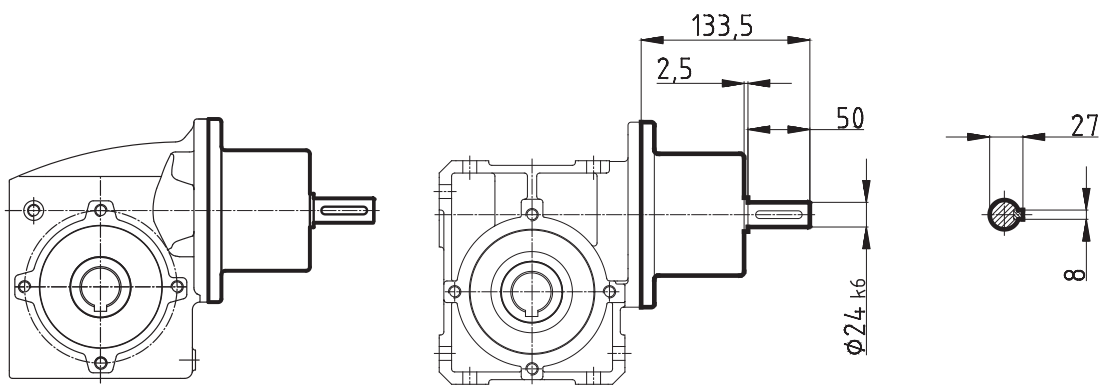
### Free Drive Shaft - Type W

The Type W free drive shaft implements a free drive shaft for the worm gear modules SK 1SI 40, SK 1SI 50, SK 1SI 63, SK 1SI 75 as well as for the worm gear units SK 1SMI 40, SK 1SMI 50, SK 1SMI 63, SK 1SMI 75 and the helical gear input stage H10.

SK 1SI 40 ... 50 ... 63 - W  
SK 1SMI 40 ... 50 ... 63 - W



SK 1SI 75 - W  
SK 1SMI 75 - W





# An overview of the NORD range

## G1000 Fixed speeds UNICASE housing 50 Hz, 60 Hz

- Helical geared motors
- Parallel geared motors
- Bevel geared motors
- Helical worm geared motors

## G1012 NORDBLOC 50 Hz

- Helical geared motors

## G1050 Industrial gear units

## G1001 Explosion protected drive units

- Category 2G, Zone 1, Gas

## G1022 Explosion protected drive units

- Category 3D, Zone 22, Dust

## F3020 frequency inverter SK200E

## F3050 frequency inverter SK500E

## F3070 frequency inverter NORD SK700E



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