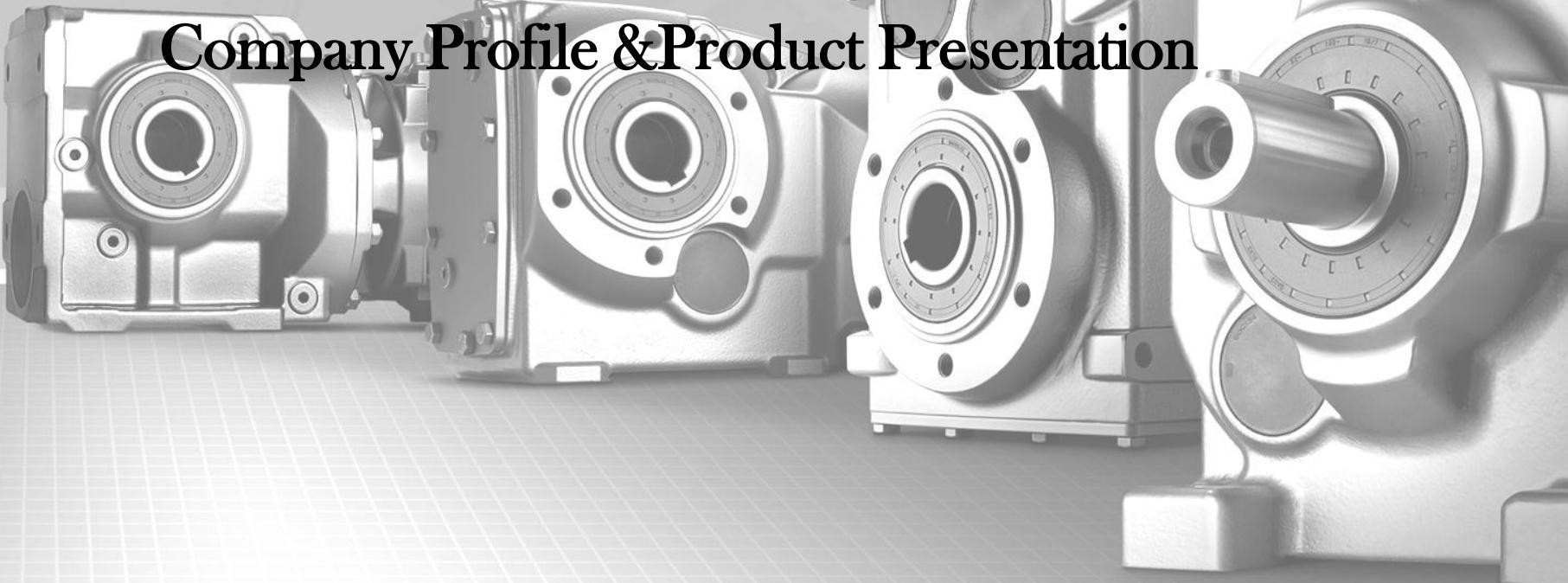


**SIEMENS
FLENDER**

PT. Proteknik Mega Persada

Company Profile & Product Presentation



COMPANY PREVIEW

SIEMENS

PT. Proteknik Mega Persada (PMP) was established in 2008 by Ir. Edyson Lo, who has experience in the field of Mechanical Drive for nearly more than 20 years. PT. Proteknik Mega Persada was appointed as Authorised Distributor for SIEMENS FLENDER Mechanical Drives (Gear Box), which has distributed all the needs of mechanical drive across the country.

Today, PT Proteknik Mega Persada entrusted to build an Assembly and Service Center (ASC), which is representative of SIEMENS FLENDER for Geared Motor products in Indonesia, so it can serve the needs of industry in Indonesia, in terms of assembly and Service, especially for products Geared Motor (SIMOGEAR).



“Energy Efficient Industrial Electric Motors and Drives”

Authorized Distributor

Siemens – Flender for Mechanical Drive Division

SIEMENS

SIEMENS

Approved Partner

Certificate

This is to certify that

PT. Proteknik Mega Persada

with company address:

Ruko Mutiara Taman Palem Blok B.8 No.60
Cengkareng
Jakarta Barat, 11730

is The Authorized Partner of
Digital Factory – Process Industries and Drives Division
PT Siemens Indonesia

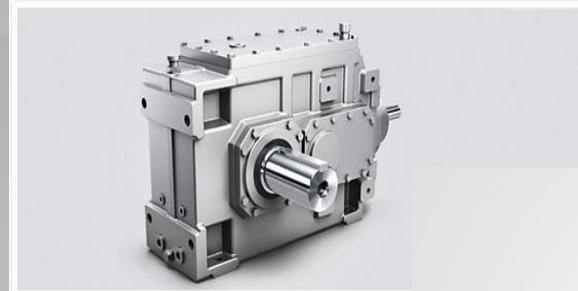
to promote and sell products:

Mechanical Drives (MD) - Flender Couplings
Motion Control (MC) - Standard Geared Motors Assembly
Large Drives (LD) - LV AC Motors & Drives
Mechanical Drives (MD) - Gear Units

This certificate is valid until 30.09.2016



Stefanus Arif
General Manager
Digital Factory – Process Industries and Drives
PT Siemens Indonesia



“Energy Efficient Industrial Electric Motors and Drives”

Excellent image and highest brand awareness:

FLENDER® – The brand reflects a success story of 120 years in power transmission technology. For 80 years we have been making high-quality gear units and couplings for the industry and for primary production. FLENDER is the most important brand on the mechanical power transmission market, in all relevant sectors, holding the highest average market share.



Over than 80 years and based on an experience of more than 13 000 gear units, Flender manufactures high efficiency gear units with Germany Technology used in all processes in power plants, refineries, offshore and onshore oil and gas installations, petrochemical and industrial process plants around the world.

In 2005 Siemens acquired the majority shareholding in Flender

SIEMENS

FLENDER

Now **FLENDER** incorporated into **SIEMENS** A&D
Division and known as :

Mechanical Drives (MD) & Standard Drives (SD)

FLENDER – Manufacturing Facilities

SIEMENS



SIEMENS FLENDER - SIMOGEAR (ASC)

Siemens Assembly Partner in Asean

SIEMENS

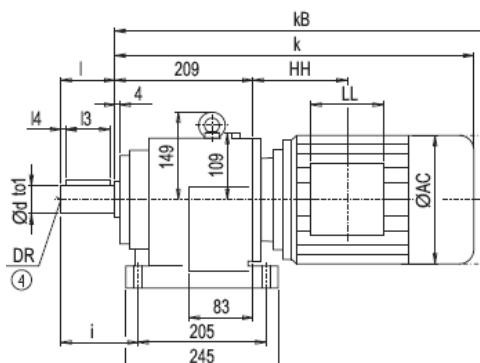
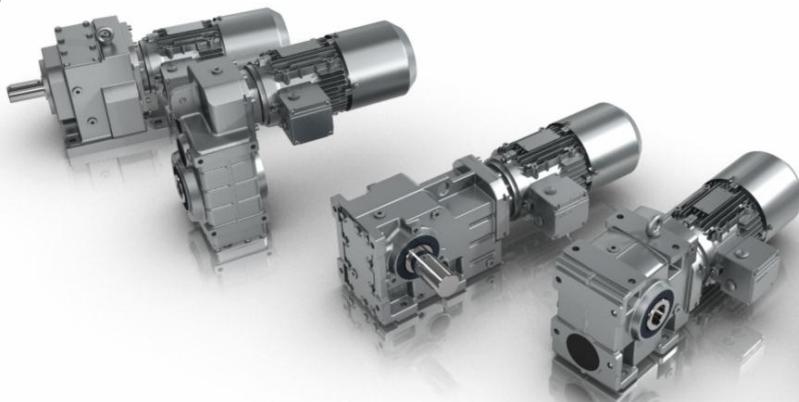


Advantage of Simogear

Siemens-Flender Geared motor

SIEMENS

The most **Important technical objectives** of the new series of geared motors

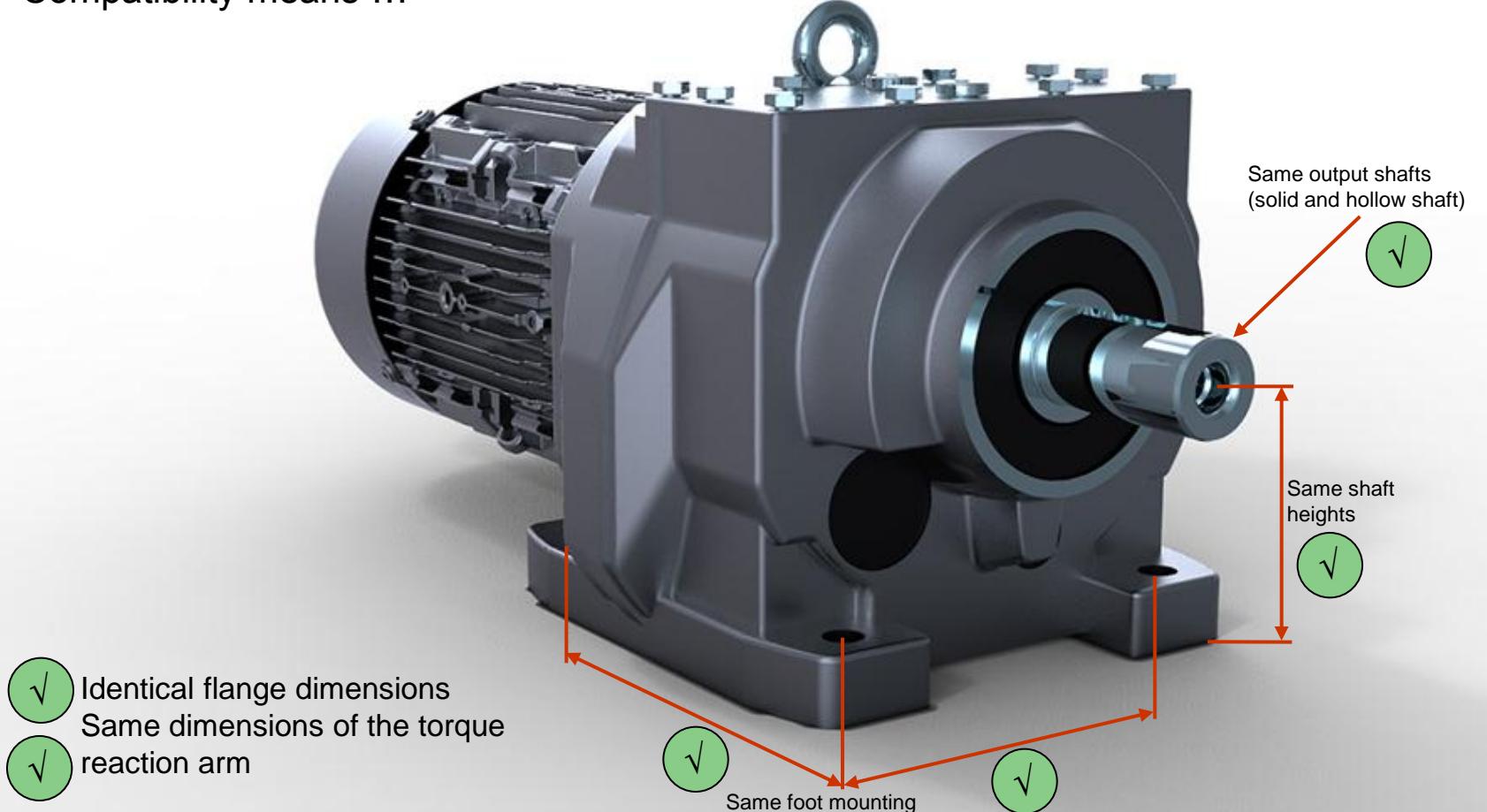


- The gearbox types generally available in the market (**helical, parallel shaft, bevel helical, helical worm, worm gearboxes**) are classified according to torque stages.
- In one **torque class** - for the various gearbox types - approximately the **same output torques** are achieved.
- The new series of geared motors fulfills **customer-relevant mounting dimensions** generally used in the market and can therefore be **exchanged** with the most important competitors.

SIMOGEAR geared motors are compatible to the market standard

SIEMENS

- Compatibility means ...

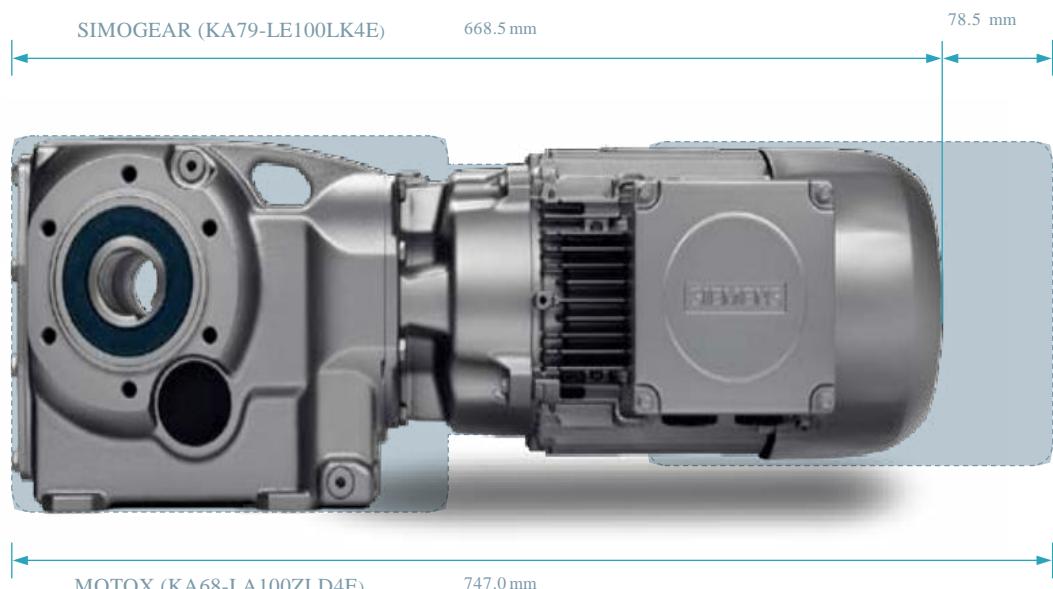


Maximum power

SIEMENS

Minimum space requirement

Less is more. With SIMOGEAR, you achieve the maximum degree of compactness in the smallest space. The length of SIMOGEAR geared motors has been reduced when compared to the previous series, and their low weight means less space is required as well as straightforward and easy installation.



The shorter length plays a role

An integrated motor DE bearing shield forms the interface to the gear unit. This helps to achieve a compact design and reduces the number of interface and sealing locations. Fur- ther, for bevel gear units, the bevel pinion shaft bearing has been optimized. As a consequence, the length and therefore the weight have been able to be reduced. Another advan-tage: The frame size stays the same when changing from efficiency class IE2 to IE3.

High energy efficiency for a fast return on investment

SIEMENS

2-stage bevel helical gearbox



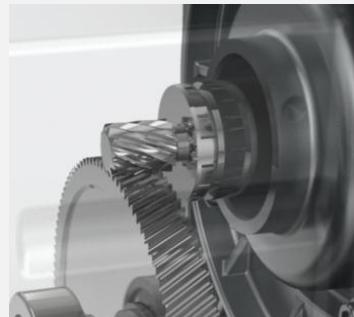
- Specifically designed to address the requirements of conveyor technology
- Range of ratios up to $i_{tot} = 3.5 \dots 60$
- Efficiency $\geq 96\%$

High-efficiency motors



- Motors with efficiency classes IE2 and IE3

High ratios using the shank pinion principle



- Helical/parallel shaft gearboxes in 2-stage range with an efficiency $\geq 96\%$ instead of 3-stage gearboxes with an efficiency of approx. 94%
- Few components
- Quiet

PRODUCT PREVIEW

SIMOGEAR	ADVANTAGE	APPLICATION
Helical Geared Motor Z : 2-stage D : 3-stage	<ul style="list-style-type: none"> - High reliability - Continuous operation - Favorably priced solution - Gearbox efficiency per stage, approx . 98% - Large selection of ratios - For some applications, relatively high amount of axial space required 	<ul style="list-style-type: none"> - Conveyor - Package Transport - Vertical Conveyor - Pumps - Fans



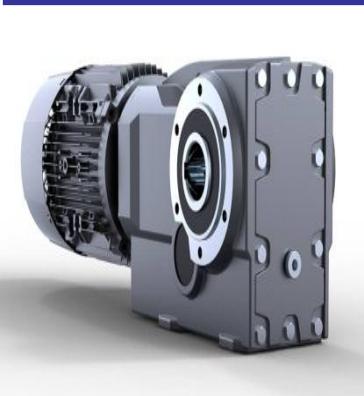
Roller conveyor drive

- Several rolls are driven by a helical geared motor
- Torque transmission by a chain

Used, because:

- Efficient
- Favorably priced
- Enough axial space available
- Compact SIMOGEAR design

PRODUCT PREVIEW

SIMOGEAR	ADVANTAGE	APPLICATION	
Bevel Helical Geared Motor B : 2-stage K : 3-stage		<ul style="list-style-type: none"> - High efficiency - High power density - Space saving - Lower output speeds - Long service life-time - Low Wear - Favorably priced - Hollow / Solid Shaft 	<ul style="list-style-type: none"> - Baggage Conveyor - Packaged Goods Conveyor - Mixer - Agitators



Bucket conveyor

Run two conveyor at same time.

Used, because:

- Efficient
- Restricted space requirement
- Hollow and Solid shaft mounting
- Low wear



Baggage conveyor

Space-saving mounting of bevel helical gearboxes

PRODUCT PREVIEW

SIMOGEAR	ADVANTAGE	APPLICATION
Parallel Shaft Geared Motor FZ : 2-stage FD : 3-stage	<ul style="list-style-type: none"> - Hollow shaft units can be mounted directly onto machines - Space-saving and compact solution - Gearbox efficiency per stage, approx. 98% - Assembly-friendly 	<ul style="list-style-type: none"> - Mixers - Agitator - Travel gear - Stacker Cranes - Vertical Conveyor



Sheet press

- Parallel shaft geared motors to drive the press spindle
- Parallel shaft geared motors directly mounted using the hollow shaft.

Used, because:

- Efficient.
- Favorably priced.
- Shaft mounted design.



Agitator

Parallel Geared Motor with hollow shaft to increase operational reliability.

Used, because:

- Efficient.
- Favorably priced.
- Space-saving.
- Redundant.

PRODUCT PREVIEW

SIMOGEAR	ADVANTAGE	APPLICATION
Worm Geared Motor S : 2-stage C : 3-stage	<ul style="list-style-type: none"> - Smooth running and vibration damping - Insensitive to shock, high overload capability - Favorable purchase price - Lower efficiency than bevel gear - Quiet - High ratio 	<ul style="list-style-type: none"> - Helical worm gearbox for cable winch drives - Hoisting gear - Theater technology - Small conveyor belts - Small mechanical railway switches



Theater technology

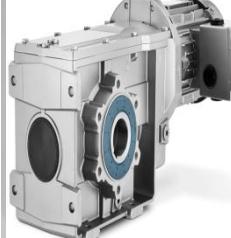
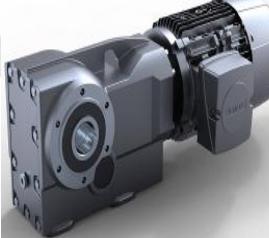
- Helical worm gearbox for cable winch drives

Used, because:

- Favorably priced
- Quiet
- No continuous duty
- High overload capability



PRODUCT RANGE

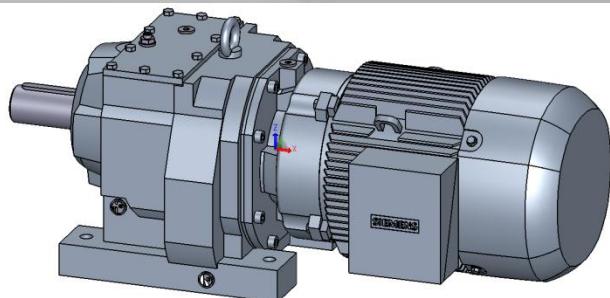
	Helical geared motor	Parallel shaft geared motor	Bevel helical geared motor 2-stage	Bevel helical geared motor 3-stage	Helical worm geared motor	Worm geared motor
						
Gearbox designation	E39...E149 (1-stage) Z19...Z189(2-stage) D19...D189 (3-stage)	FZ29...FZ189 (2-stage) FD29...FD189 (3-stage)	B19...B49 (2-stage)	K39...K189 (3-stage)	C29...C89 (2-stage)	S09...S29 (1-stage)
Number of gearbox frame sizes	7 (1-stage) 13 (2-/3-stage)	13	4	12	5	3
Rated gearbox torque [Nm]	50...20.000	100...20.000	50... 450	200... 20.000	100...1600	20.. 75
Gearbox ratio	1.1... 10 (1-stage) 3.0..60 (2-stage) 50..330 (3-stage) 250..50,000 (multi-stage)	3.5..60 (2-stage) 50..330 (3-stage) 250..50,000 (multi-stage)	3.5..60 (2-stage)	5..330 (3-stage) 250..50,000 (multi-stage)	10..290 (2-stage) 250..25,000 (multi-stage)	5...100 (1-stage)
Max. motor power [kW]	200	200	7.5	200	15	1.1

Mounting & Shaft

Simogear geared motor

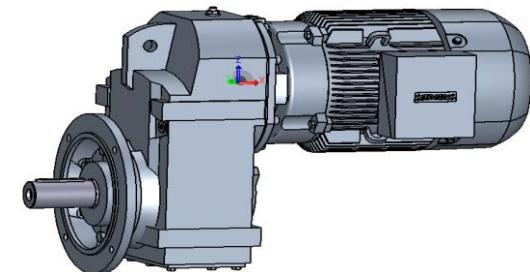
SIEMENS

Foot Mounting

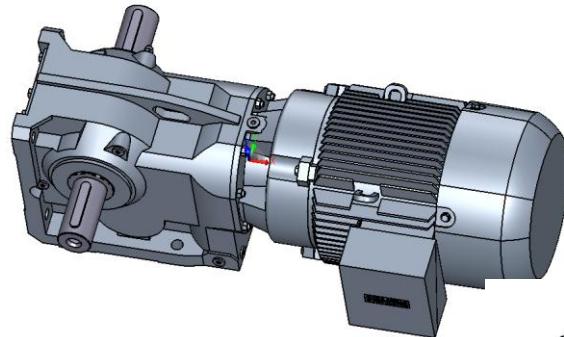


Double Solid
Shaft

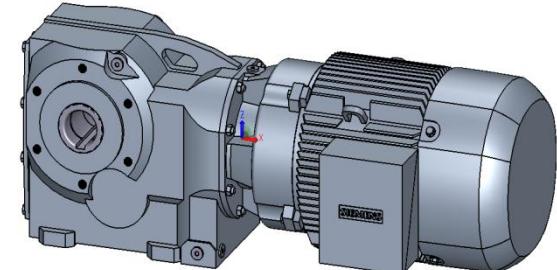
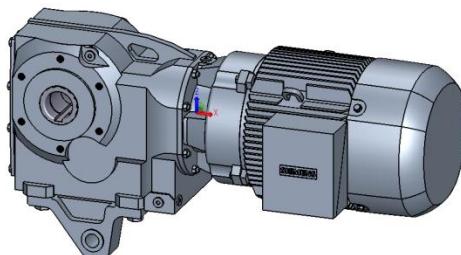
Flange Mounting



Torque Arm



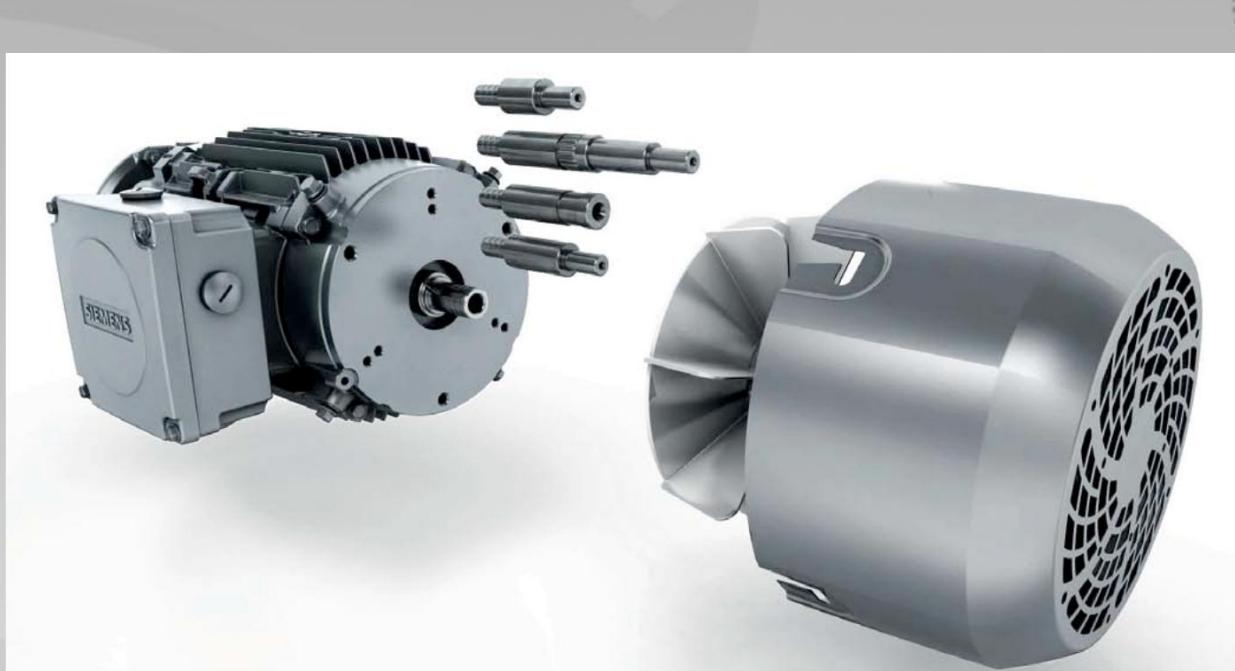
Housing Flange



A modular system

Many possibilities

SIEMENS



Remain flexible with MODULOG

On the motor side, SIMOGEAR uses the well-proven MODULOG modular principle – and is optimized from a logistical perspective. By means of mounting shafts, function units such as brake, separately driven fan and encoder can be mounted to the basic motor that always remains the same. This means that even after the motor has been installed, function units can still be added.



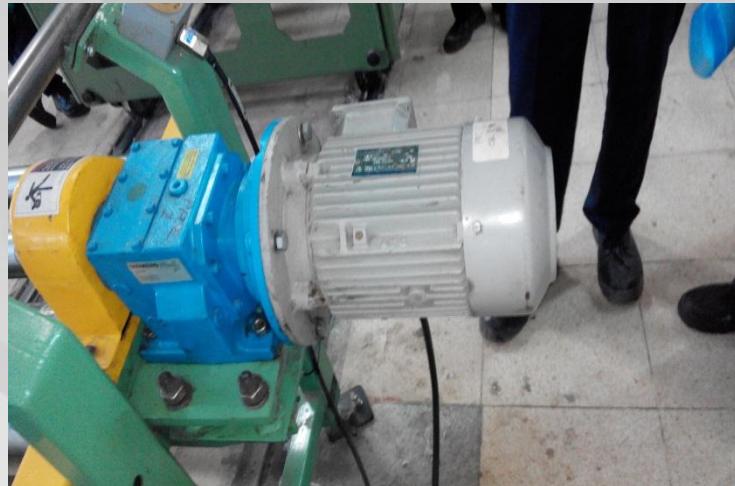
Siemens – Flender Gearbox unit with Adapter

SIEMENS



Advantages:

- High efficiency for a fast return on investment.
- Extremely compact and low weight for easy handling in the machine or system in the smallest space.
- Harmoniously coordinated modular system to provide the optimum solution for your particular drive task
 - Maximum output torque
 - Permissible radial force
 - Housing stiffness
 - Gearing reliability (fatigue endurable)
 - Shaft strength (fatigue endurable)



Siemens – Flender Gearbox unit with Adapter

SIEMENS

Simogear Gearbox Adapter

Input Adapter for :



IEC Motor



SERVO Motor



NEMA Motor

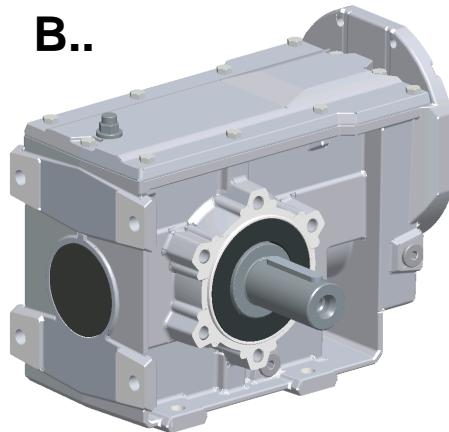
K4		Short adapter with plug-in connection <ul style="list-style-type: none">- Universal solution- Short design	K2		Coupling adapter with flexible coupling <ul style="list-style-type: none">- Rugged solution- Harsher environmental conditions- Torsionally flexible cam coupling
KQ		Coupling adapter for mounting a servo motor <ul style="list-style-type: none">- Coupling adapter with feather key (KQ)- Coupling adapter without feather key (KQS)- Square shape- Zero-backlash coupling	K8		Coupling adapter with flexible coupling <ul style="list-style-type: none">- Square or round shape- Version for motor shafts with feather key
K5		Short adapter with plug-in connection <ul style="list-style-type: none">- Universal solution- Short design	K3		Coupling adapter with flexible coupling <ul style="list-style-type: none">- Rugged solution- Harsher environmental conditions- Torsionally flexible cam coupling

Siemens – Flender Gearbox unit with Adapter

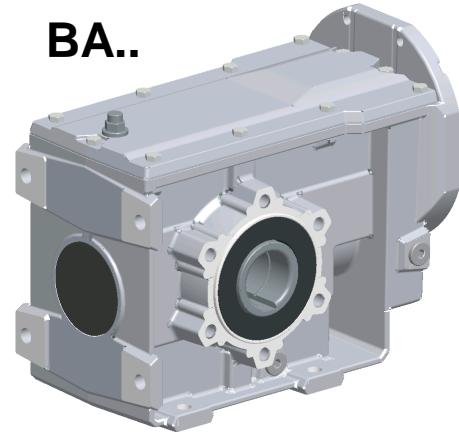
SIEMENS

Exemple for design

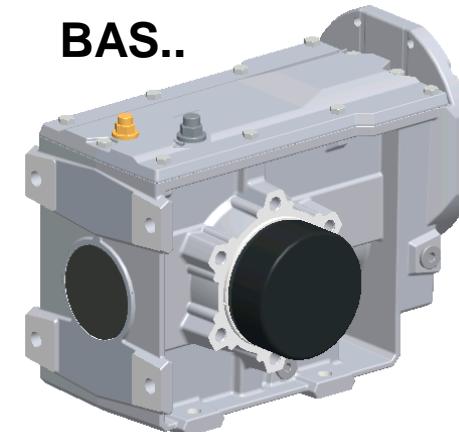
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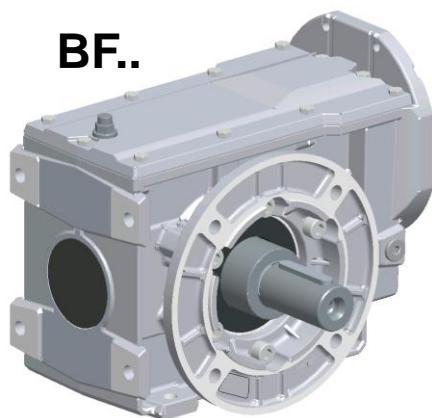
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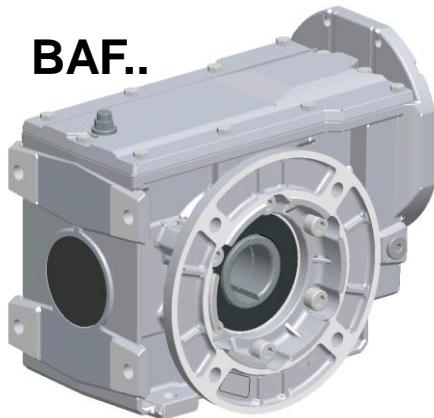
BAS..



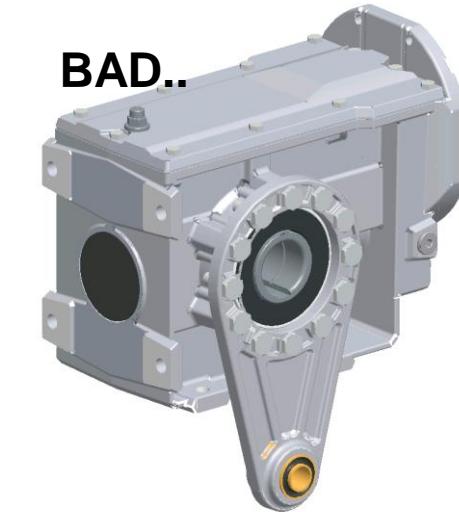
BF..



BAF..

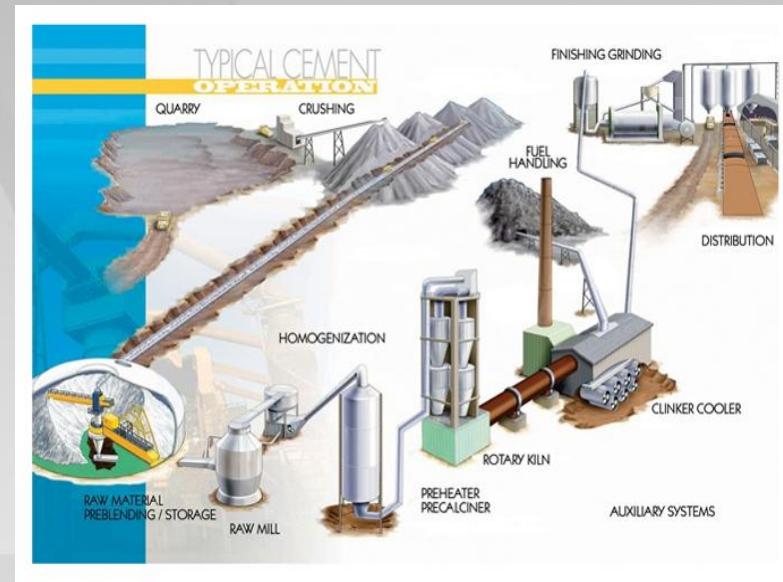


BAD..



Market segments :

- Cement Plants
- Fertilizer
- Pulp & Paper Mills
- Mining Quarrying and Drilling
- Chemical Industry
- Food & beverage
- Sugar Mills
- Power and Sewerage Plants
- Steel and Rolling Mills
- Palm Oil Industry
- Water Treatment Industry
- Material Handling Industry
- Other General Industries.



Assembly and Service Center (ASC)

- Stockiest Parts Geared Motor

SIEMENS

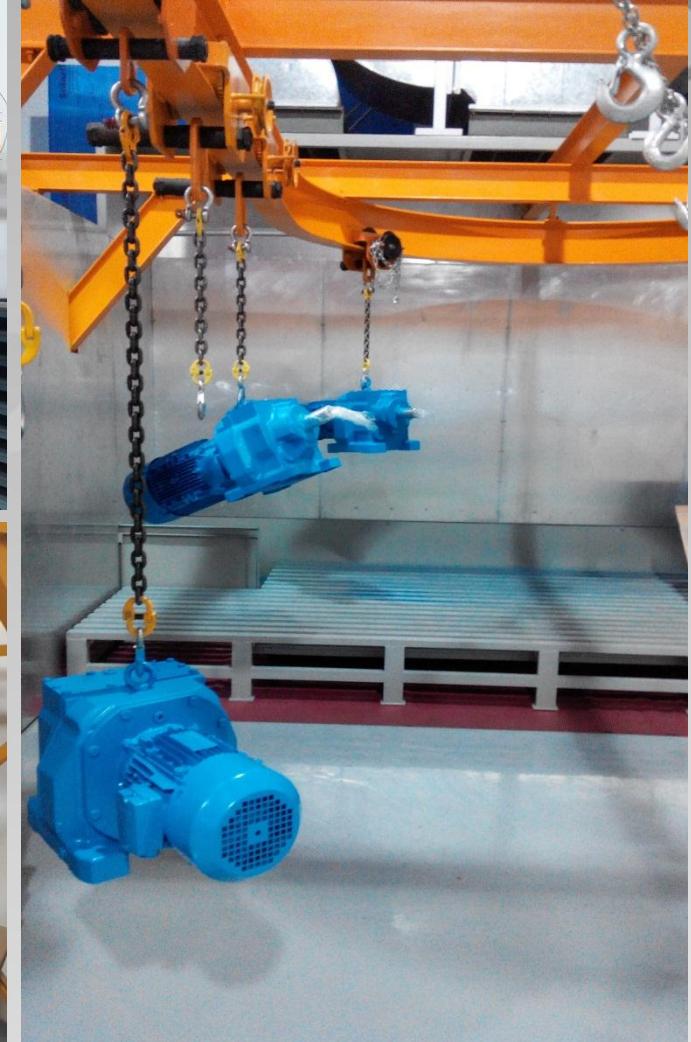


“Energy Efficient Industrial Electric Motors and Drives”

Assembly and Service Center (ASC)

- Painting

SIEMENS



Assembly and Service Center (ASC)

- Packaging

SIEMENS



“Energy Efficient Industrial Electric Motors and Drives”

OUR CUSTOMER

Project :

- Project Antam (PT. Asia Development)
- Project Asam Asam (PT. Krakatau Engineering)
- Project Tarahan (PT. Krakatau Engineering)
- Project Tapin (PT. Jakarta Prima Cranes)
- Project Senyiur Port (PT. Bayan Resource Tbk.)
- Project Tanjung Enim Coal Handling Phase IV & Phase V)
- Project Stockyard (PT. Krakatau Engineering)
- Project KBS – Conveyor Dermaga IV (PT. BMH Technologies)
- Dll



End Customer :

- PT. Semen Indonesia.
- PT. Kirana Megatara (Rubber).
- PT. Eastern Flour Mills (Flour).
- PT. Siam Indo.
- PT. Tiga Bintang Terang.
- PT. Bayan Resource Tbk.
- PT. Pindo Deli Pulp and Paper.
- PT. Lontar Papyrus Pulp and Paper.
- Dll
- PT. Astra Agro Lestari (Palm Oil).
- PT. Petro Kimia Gresik.
- PT. Semen Tonasa.
- PT. Golden Grand Mills.
- PT. Indah Kiat Pulp and Paper Tbk.
- PT. Bumi Mulia (Plastic)
- PT. Indorama Group
- PT. Indo Bharat



Thank You For Your Attention.