



Gearbox

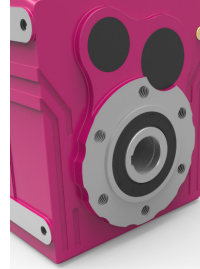
Options

Output Shaft Options



Solid Output Shaft

All gearbox types have output shaft with key according to DIN6685. Materials for output shaft are C45 or 42CrMo4 according to size of gear unit.



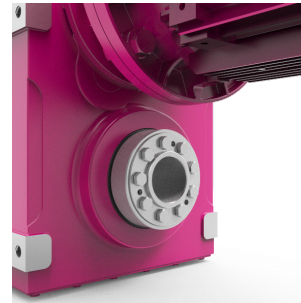
Hollow Output Shaft

Lots of our gearboxes can be manufactured with hollow shaft according to DIN6685.



Output Shaft with Spline

Output shafts can be manufactured according to DIN5480 recommended for high frequent start stop applications with high inertia.



Output Shaft with Shrink Disk

Shrink Disk applications are recommended for high frequent start stop working conditions, key is not sufficient. Output shafts are without key and with the help of screws on disk output torque on driven machine can be adjusted. Also it is useful in humid working conditions for easy demontage.



Hollow Output Shaft with Spline

Hollow output shafts can be manufactured according to DIN5480 recommended for high frequent start stop applications with high inertia.



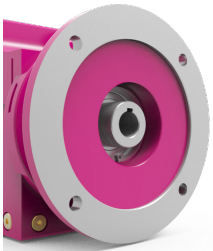
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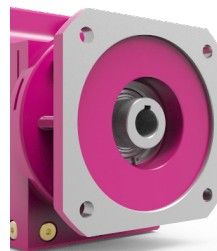
Options

Input Flange Options



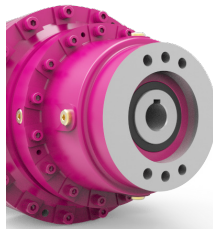
Input Flanges according to IEC B5-B14 and NEMA

Our input flanges and input shafts can be produced according to IEC B5-B14 and NEMA standards.



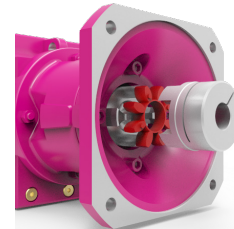
Servo-Motor connection

We have different input flange options and dimensions according to common servo-motors in the market.



HydroMotor Connection

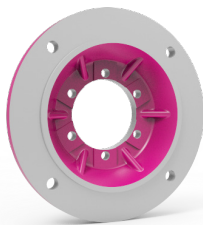
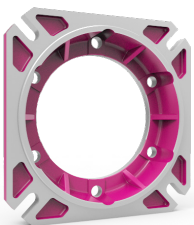
P and R series gearboxes input flange can be produced for hydro-motor connections.



Input flanges with coupling and shrink disk

Especially for servo-motors without key, input shaft with shrink disk is suitable. It is recommended for high frequent start stop applications to prevent faults about keys.

Output Flange Options



Output Flange

Our gearboxes have lots of different output flange options with square, circle types. They can be with solid or hollow shafts according to customer needs



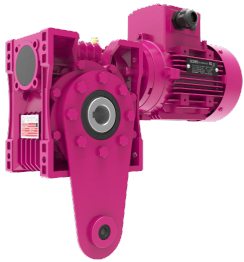
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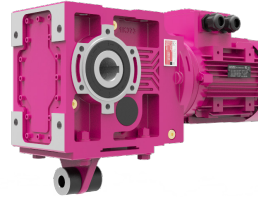
Options

Torque Arm Options



E series Torque Arm

E series torque arm can be used in three different 90 degree positions which is mounted on housing.



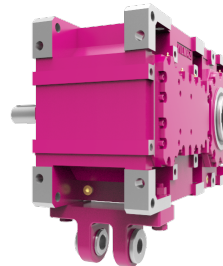
K series Torque Arm

K series have two different torque arm options; standard and optional.



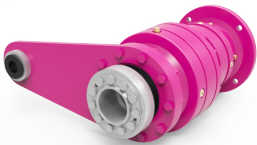
D series Torque Arm

Rubber torque arms are standard with D series which have to be used when mounting through holes on housing.



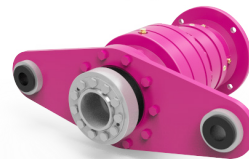
H and B series Torque Arms

H and B series torque arms designed to mount on foot mounting holes.



P series Torque Arm

P series torque arm options; one sided.



P series Torque Arm

P series torque arm options; two sided.



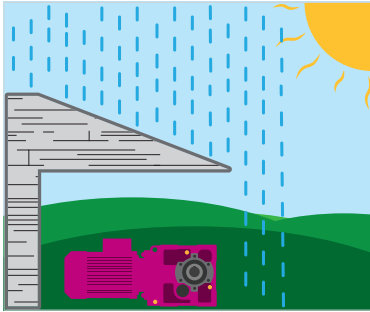
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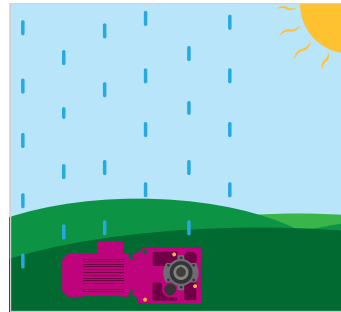
Options

Painting Options



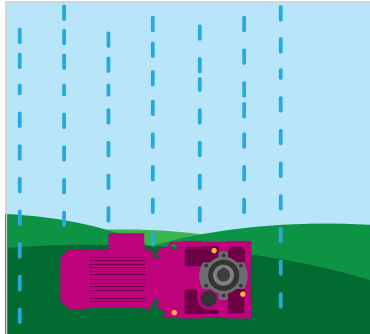
C2 Corrosion Category

Our standard painting class. It is suitable for indoor and outdoor installation with protection where humidity and contamination is low.



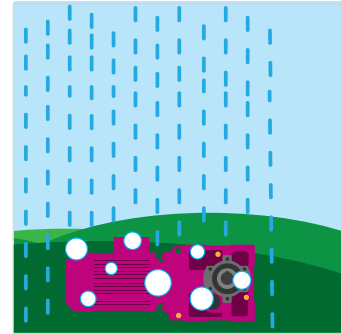
C3 Corrosion Category

It is suitable for indoor installation and outdoor installation subject to weathering where humidity and chemical contamination is mean.



C4 Corrosion Category

It is suitable for indoor installation and outdoor installation subject to weathering where humidity and chemical contamination is usually high.



C5 Corrosion Category

It is suitable for indoor installation and outdoor installation subject to weathering where humidity and chemical contamination is permanently high.



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Oil Types



Mineral Oils

ISO VG 220, 320 and 460 viscosity oils are used in our units. They are usually recommended for temperatures higher than zero and up to 40 degrees. The mineral lubricant should be changed after every 10000 hours.



Synthetic Oils

They are recommended for higher and lower ambient temperatures compared to mineral oils, because their viscosity change is low with the temperature. 25000 hours change interval is recommended between -25C / 40C ambient temperatures.



-40° Ambient Oils

Special ISO VG 150 and 220 viscosity synthetic oils are recommended for gear units working under -25 °C ambient temperature conditions.



Food Grade Oils

Recommended oils for gear units working in food production lines, where oil can be mix in products accidentally. They are suitable for NSF H1 category.



Biodegradable

They are not harmful to the environment as low as possible with their high soluble properties. They are compatible to CEC-L-33-A-93 test standard which defines maximum 21 days of biological solubility.



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Sealing Options



Nitrile Sealing (NBR)

Nitrile sealings are suitable for low speed shafts. Their working temperatures are between -40 °C +100 °C. We are using nitrile sealings with dust lip on output shaf



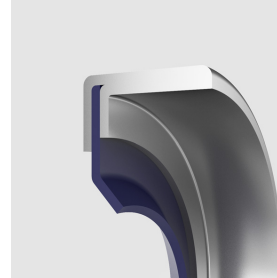
Viton Sealing (FKM)

These sealings are produced from fluorocarbon material and used on high speed shafts. They are suitable for -25 °C to the +160 °C working temperatures. We use viton sealing on our input shafts.



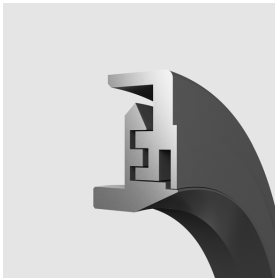
PTFE Sealing

Sealings made from polytetrafluoroethylene material which has low friction coefficient and are very resistant to chemical environments. They can work between -80C and +200C temperatures. They are useful for chemical working conditions.



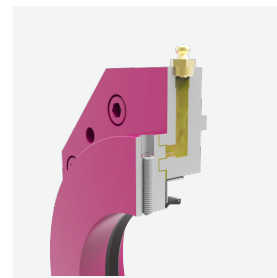
Cassette Sealing (FKM, NBR)

They are specially designed sealings made from FKM and NBR materials. They are mostly used corrosive environments to prevent these corrosive materials to enter inside gear unit. We use these sealings on low speed shafts.



Labyrinth Seal Application

Different protective techniques applied on sealings working on very dusty environments.



Taconite Sealing Application

Labyrinth sealing application suitable for very dusty and corrosive working environments. They are usually mounted with extra graser system.



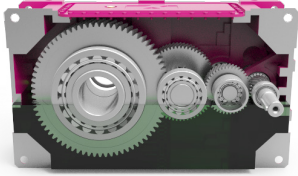
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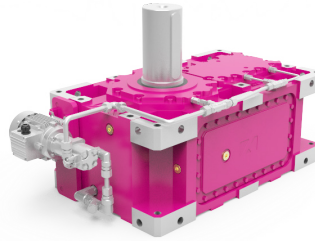
Options

Lubrication Options



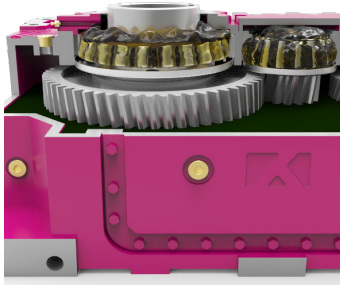
Oil Bath Lubrication

Lubrication system without any additional equipment. All of interior parts (gears, bearings and seals) get lubricated by splash or directly.



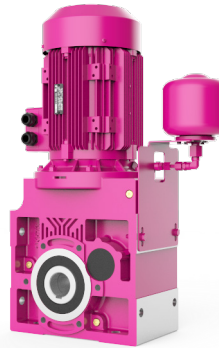
Forced Lubrication

Especially for industrial gearboxes upper bearings can not get oil with bath lubrication while working on some mounting positions. To lubricate these bearings oil from lower levels pump up directly to the bearing. Efficiency is much higher with the help of lower churning losses.



Nilos Ring Application

Upper bearings that can not lubricated by splash are made closed bearing by sheet metals named nilos ring. Closed bearings are lubricated by greasers.



Oil Expansion Tank

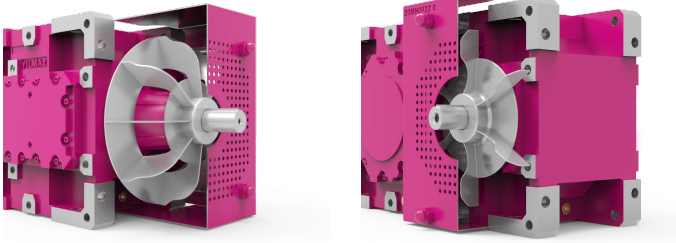
While gear unit is working on some mounting positions oil level needs to be very high to lubricate higher working parts and this can cause oil leakage when working speed is high. To prevent leakage an expansion tank is mounted on gear unit, creating extra space for increasing volume of inside oil while working.



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Cooling Options

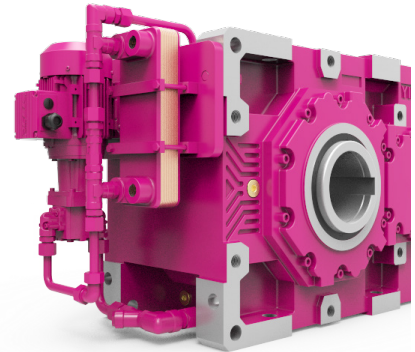
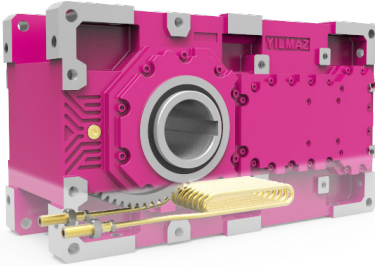


Cooling with Fan

A cooling fan is mounted on input shaft to create air flow through gear unit. It is the most practical cooling option without any need for cooling water. It is suitable for working conditions below 40 degrees and it is not suitable for dusty environments.

Cooling with Coil

Cooling is done with cold water passing through copper pipes inside gear units oil. It needs cold water maximum 30 °C temperature. It is suitable for H and B series gear units for M1 mounting position.

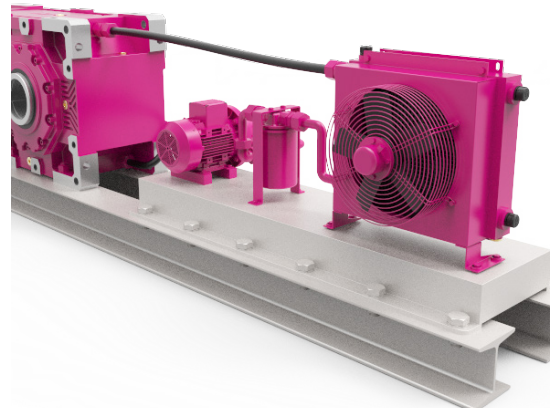


Cooling with Oil/Water Heat Exchanger

An oil/water heat exchanger with pump is mounted on gear unit. Cooling is done through heat exchanger with cold water. Additional equipment is available if needed like pressure switch, flow switch and manometer. It is suitable for every mounting position.

Cooling with Oil/Air Heat Exchanger

Cooling system consists oil/air heat exchanger, motor pump and a filter. Gear unit and cooling system mounts on a steel base frame. It is recommended for ambient temperatures below 40°C and not very dusty environments. Another advantage is that it does not need cooling water.



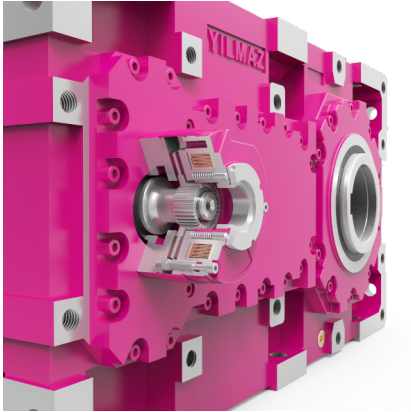
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Brake Options

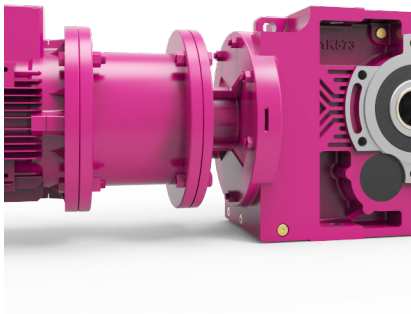
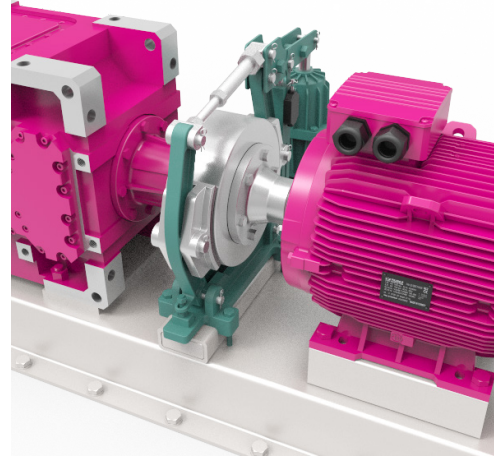


Electromagnetic Brakes on Housing

Electromagnetic brakes are mounted on opposite side of input shaft in H series gear units. Usually preferred for crane applications because they enable easy maintenance of AC motor.

Eldro Brake Application

Eldro brakes are usually preferred for high tonnage crane applications. They are mounted between gear unit and AC motor. We use Eldro brakes on H series gear units if our customer wants.



Centrifugal Brake

Centrifugal brakes are mounted between AC motor and gear unit for extra safety purposes with main brake. It stops the AC motor while running with inertia of main load that occurs if main brake has any failure.



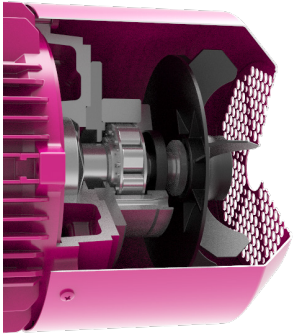
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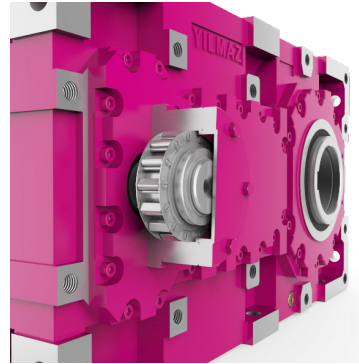
Options

Brake Options



Backstop on Motor Shaft

Backstop applications that are mounted on back side cover of AC Motor. They are usually preferred because they are economic and compact.

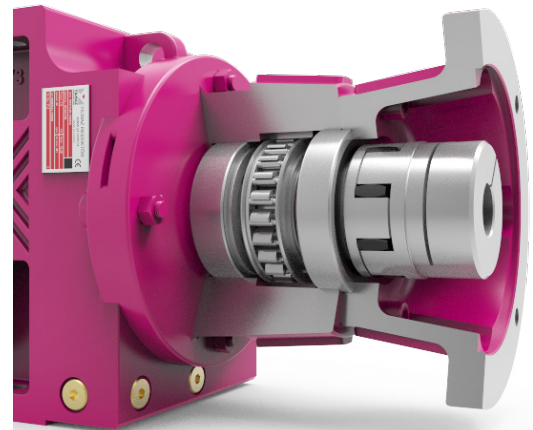
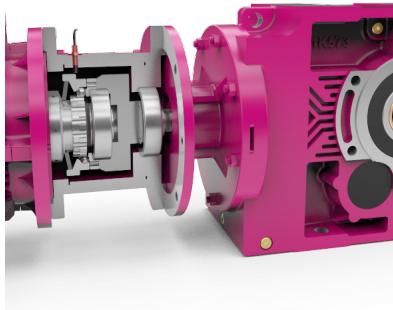


Backstop on Housing

Backstop application that are mounted opposite side of input shafts on H series gear units and on secondary stage shafts on K and B series gear units.

Torque Limiter

Torque limiters are mounted between AC motor and gear unit with B5 flange. They limit the passing torque to the set value between motor and gearbox. When the limit torque reached proximity sensor sends signal to stop motor to prevent damage to limiter.



B5/B14 Input Flange with Backstop

Backstop can be supplied inside new B5/B14 input flange which includes two bearings and elastic coupling.



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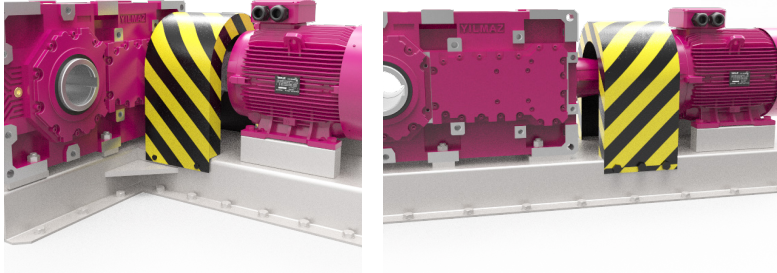
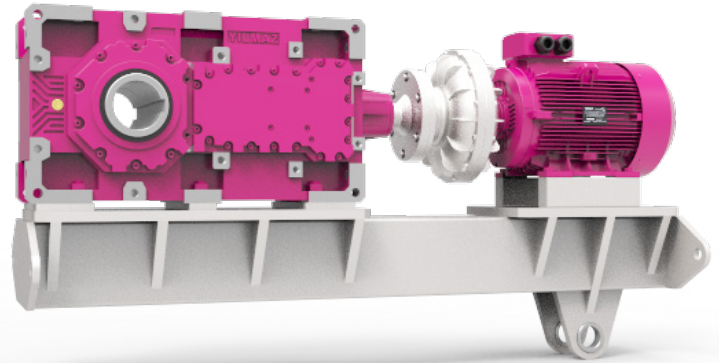
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Options

Base Frame

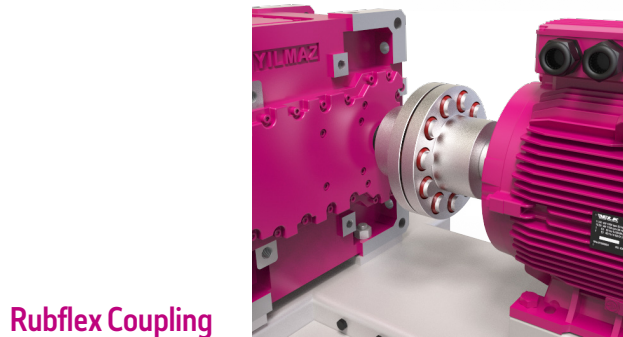
BT Series Base Frame Application with Torque Arm

BT series gear unit with hollow output shaft, coupling and AC motor with foot are all mounted on steel base frame with torque arm. Gear units are mounted to driven machine shaft with hollow output shaft and base frame is mounted to machine base with torque arm.



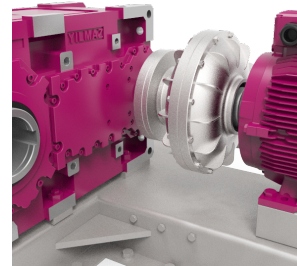
BT - HT Series Base Frame Application

BT series gear unit, coupling and AC motor with foot are all mounted on steel base frame. Couplings can be geared, rubflex or hydraulic.



Rubflex Coupling

It can be used on input or output shafts of gear units. It compensates misalignment of shaft connection. Material of coupling housing is GS52 steel.



Hydraulic Coupling

They are mounted between AC motor and gear unit. It is preferred for applications with high inertia to soft start the motor and lengthen the gearbox life.



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