Bar-wire Mill Main Drive Gearbox Series

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Note: The model numbers and parameters will be updated occasionally without notice, please refer to the latest NGC brochures.

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About NGC

NGC was founded in 1969 and has been publicly listed on the Hong Kong stock exchange since 2007. NGC is focused on gearbox & drive technology solutions for wind energy, rail vehicles, industrial applications, marine equipment, machine tools and LED.

NGC provides products, technologies and services to the global market. During the past ten years, tremendous investment has been made in the fields of clean energy and high efficiency-low consumption applications. With its state-of-the-art technology, reliable quality and excellent service, NGC has become a competitive partner in the global drive technology market.

In the pursuit of excellence in the industrial transmission sector, NGC has taken a leadership role by developing multiple ground breaking products and services.

Over the years, with an improved product portfolio widely applied in cement processing, metallurgical equipment, rubber & plastic machinery, power generation, marine, lifting equipment, paper-making and material handling, NGC has met the demand from customers in almost every industry.

Through close cooperation with domestic and international customers, supported by global R&D centers, NGC has always been able to provide solutions beyond customers' expectations. With full confidence in heart, NGC is leading the industry for a higher standard.
## Gearbox Overview

Bar-wire Mill Main Drive Gearbox, mainly used on the Bar-wire mill of steel rolling industry equipment, is the core driving part of Bar-wire mill production lines. Generally, Bar-wire Mill Main Drive Gearbox driven by an electric motor is connected to the rolling mill through crown gear coupling, gearbox casing and universal coupling or multiple spline. NGC’s Bar-wire Mill Main Drive Gearbox of small volume, low weight and great transmission torque has already reached leading technical level and been widely used.

### Classification of Gearbox

Bar-wire mill main drive gearbox is mainly classified into horizontal gearbox and vertical gearbox pursuant to the commonly used drive type. Among them, the gearbox includes four arrangement forms, namely, H1, H2, H3 and V. NGC can also customize product design and manufacture according to the special requirements of the customer.

<table>
<thead>
<tr>
<th>gearbox construction style</th>
<th>center distance of output shaft</th>
<th>reduction stage</th>
<th>construction direction of gearbox</th>
<th>style of output shaft</th>
<th>nominal ratio</th>
<th>rolling direction</th>
<th>serial number</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>580</td>
<td>3</td>
<td>R</td>
<td>S</td>
<td>70</td>
<td>R</td>
<td>01</td>
</tr>
</tbody>
</table>

### Features

#### Overview

- **Gear units specification**: the distance range of output shaft is between 350mm and 580mm, the nominal torque range of the gear units is between 15kNm and 280kNm. NGC can also customize product design and manufacture if requirements are out of these range.
- **Lubrication type**: The gearbox adopts forced lubrication.

#### Construction style

- **Gearbox is mainly classified into horizontal gearbox and vertical gearbox.**
- **The horizontal gearbox includes three arrangement forms, according to the spatial arrangement forms of its shaft, namely, H1, H2 and H3.**

#### Cylindrical gear

- The gear are designed to consider the common use. Reduce the stock of replacement part obviously.
- The gears are made out of high quality alloy steel with the case-hardened processing.
- The accuracy grade according to ISO1328 is above 6 grade.

#### Bevel gear

- The gear are designed to consider the common use. Reduce the stock of replacement part obviously.
- The gears are made out of high quality alloy steel with the case-hardened processing.
- The klingelnberg bevel gears transmission smoothly and have high load capacity.
Features

Selection guideline

Bearing
- The bearings are selected to consider the common use. Reduce the stock of bearings obviously.
- Adopt international famous brand bearing.
- The life-time is designed according to standard ISO 281/16281.

Seal
- Both the input and output of the gearbox adopt mechanical seal structure. Every gearbox have trial run before leave factory, avoid seal maintain in service life.
- The oil outlet pipe of the vertical gearbox adopt a slope to enhance the efficiency of the mechanical seal.

Monitoring
- Gearbox equip temperature monitoring port for the bearing at the input shaft according to the requirement of the customer.

Selection of construction style

<table>
<thead>
<tr>
<th>Construction style included in this catalogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>construction style</td>
</tr>
</tbody>
</table>

NGC offer non-standard design except the gearbox mentioned above.

Table 1 construction style

| Drawing | H1 construction drawing | H2 construction drawing | H3 construction drawing | V construction drawing |

Table 2 output shaft center distance

<table>
<thead>
<tr>
<th>Output shaft center distance included in this catalogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output shaft center distance</td>
</tr>
</tbody>
</table>

NGC offer non-standard design except the gearbox mentioned above.

Relationship between construction style and output shaft center distance.

Table 3 Comparison table between construction style and output shaft center distance

<table>
<thead>
<tr>
<th>Output shaft center distance</th>
<th>350</th>
<th>365</th>
<th>450</th>
<th>580</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>H2</td>
<td>—</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>H3</td>
<td>—</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>V</td>
<td>✓✓</td>
<td>✓✓</td>
<td>✓</td>
<td>✓✓</td>
</tr>
</tbody>
</table>

Notes: “✓✓” means two construction styles can be offered named V1, V2 to distinguish.
Selection of Construction direction
Construction direction is the relative location of the input shaft and the output shaft. Facing output shaft: L: Input shaft on the left; R: Input shaft on the right. Only H1 and H3 construction direction exist this distinction.

Selection of Gearbox rolling direction
Facing output shaft: L: Bar rolling from left to right; R: Bar rolling from right to left.

Selection of Gearbox output style
The standard gearbox in this catalogue can be classified into parallel key output and hub spline output. You can choose according to the detailed dimension showing in corresponding chapter of this catalogue to satisfy your demands. NGC offers non-standard design except the gearbox mentioned above.

Selection of Gearbox speed ratio
Overall gear ratio of gearbox models.

<table>
<thead>
<tr>
<th>Table 4 Recommended gear ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio series of all gearbox models</td>
</tr>
<tr>
<td>H1350</td>
</tr>
<tr>
<td>V1350</td>
</tr>
<tr>
<td>V2350</td>
</tr>
<tr>
<td>H1365</td>
</tr>
<tr>
<td>V1365</td>
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<tr>
<td>V2365</td>
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<tr>
<td>H1450</td>
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<tr>
<td>H2450</td>
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<tr>
<td>H3450</td>
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<tr>
<td>V1450</td>
</tr>
<tr>
<td>H1580</td>
</tr>
<tr>
<td>H2580</td>
</tr>
<tr>
<td>H3580</td>
</tr>
<tr>
<td>V1580</td>
</tr>
<tr>
<td>V2580</td>
</tr>
</tbody>
</table>

NGC offers non-standard design except the gear ratio mentioned above. Better to choose the listed gear ratio considering favorable interchangeability.

Rolling torque check
NGC technology department execute calculation and check of rolling torque and motor data offered by the chooser.

Requirements of Gearbox lubrication assembly
The lubrication instrumentation of this Gearbox series include fitting flange, ball valve, flow annunciator, electro connecting pressure gauge which are default made in china. If there are special requirements, please remark in the technical protocol.
Boundary dimension and lubrication Information

Contour dimension diagram

NGC can provide the model with mirror layout direction. Please refer the H13501LS to select the model directly.

Oil inlet flange
Dia. Of input shaft
Dia. Of output shaft

Oil drain flange

NGC can provide the model with mirror layout direction. Please refer the H13501LS to select the model directly.

Oil inlet flange
Dia. Of input shaft
Dia. Of output shaft

Oil drain flange

Dia of input shaft
Dia of output shaft

Dia of input shaft

Dia of output shaft
NGC can provide the model with mirror layout direction. Please refer the H13501LS to select the model directly.

NGC can provide the model with mirror layout direction. Please refer the H13501LS to select the model directly.
NGC can provide the model with mirror layout direction. Please refer the H13501LS to select the model directly.
注：NGC 也提供布置方向镜像关系的型号，选型时可直接按 H15803LS 订货。
Boundary dimension and Lubrication Information

H25803S Gearbox Model

H25803K Gearbox Model
H34502LS Gearbox Model

H34502LK Gearbox Model

**Boundary Dimension and Lubrication Information**

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**Note:** NGC also provides models with reversed layout, and for selection purposes, you can directly order H34502RS.
Boundary dimension and Lubrication Information

H35803RS Gearbox Model

H35803RK Gearbox Model

Notes:
- NGC also provides models with mirror image relationships. Models can be ordered directly as H35803LS.
- NGC also provides models with mirror image relationships. Models can be ordered directly as H35803LK.

Dia. Of input shaft Dia. Of output shaft

Dia. Of input shaft Dia. Of output shaft

Dia. Of input shaft Dia. Of output shaft

Dia. Of input shaft Dia. Of output shaft

Deep 35 equ
Boundary dimension and Lubrication Information

V23502S Gearbox Model

- Oil inlet flange
- Oil drain flange
- Dia. Of input shaft
- Dia. Of output shaft

V23502K Gearbox Model

- Oil inlet flange
- Oil drain flange
- Dia. Of input shaft
- Dia. Of output shaft
Boundary dimension and lubrication Information

V13651S Gearbox Model

V13651K Gearbox Model
Lubrication Information

Oil mass of every gearbox size

Table 5: Comparison table between oil mass and gearbox size

<table>
<thead>
<tr>
<th></th>
<th>350</th>
<th>365</th>
<th>450</th>
<th>580</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>45</td>
<td>45</td>
<td>95</td>
<td>130</td>
</tr>
<tr>
<td>H2</td>
<td>—</td>
<td>—</td>
<td>95</td>
<td>130</td>
</tr>
<tr>
<td>H3</td>
<td>—</td>
<td>—</td>
<td>95</td>
<td>130</td>
</tr>
<tr>
<td>V1</td>
<td>45</td>
<td>45</td>
<td>90</td>
<td>125</td>
</tr>
<tr>
<td>V2</td>
<td>65</td>
<td>65</td>
<td>—</td>
<td>140</td>
</tr>
</tbody>
</table>

Unit L/min

Oil pressure

Oil pressure should be controlled in range of 0.12 and 0.18 MPa. The highest oil pressure should not be above 0.2 MPa.