PLANETARY AND BEVEL PLANETARY GEARS

Engineering & Development
Design • Manufacturing

Kissling - The Gear Company.
Since 1925
Kissling gears since 1925

Kissling is a 3rd generation family owned company. The Swiss company is among the leaders in gear design and manufacturing. Kissling is an ISO 9001 certified company and stands for highest quality and reliability; being a leading supplier for people transportation equipment (ropeways, roller coasters and cable cars) where highest safety requirements apply.

Product range
Over the years Kissling has developed into a specialist for planetary gears. Today more than 70% of the gearbox business are of planetary type with a torque range up to 5,000 kNm.

Cement industry
As early as the 1960s all the Swiss cement factories were equipped with Kissling gearboxes. Many of these robust products are still in operation. In due course of globalization together with several European OEMs Kissling cement gearboxes have been installed around the world. Especially where machines and plants are exposed to extreme operating conditions or where downtimes are extremely costly, customers rely on our robust and thorough design.

Helical planetary gear units
This design was originally developed for roller crushers in the cement industry. It consists of a double planetary stage and a helical stage on the input. The planetary stages are standard while the speed ratio can be adjusted easily in the helical stage. The same gearbox design is available with triple planetary stages and a bevel input stage.
## Summary of Design Basic

**Two Planetary Gear Stages**  
**+ 1 Helical Gear Stage**

For larger or intermediate units please contact Kissling AG:  
+41 44 308 97 97

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<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal output torque [ kNm ]</th>
<th>G1</th>
<th>G2</th>
<th>d4</th>
<th>d6</th>
<th>da</th>
<th>k</th>
<th>s</th>
<th>c</th>
<th>z</th>
<th>E</th>
<th>d1</th>
<th>L1</th>
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All dimensions are indicated in millimeters. Drawing has indicative character and is subject to changes without prior notice. Nominal torque based on a oil quality of ISO VG 220. All shaft keys acc. DIN 6885.
### Dimension and Data Sheet

**Summary of Design Basic**  
Three Planetary Gear Stages

For larger or intermediate units please contact Kissling AG:  
+41 44 308 97 97

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#### Type, Nominal Output Torque, Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal output torque [kNm]</th>
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<th>B</th>
<th>C</th>
<th>E</th>
<th>TK</th>
<th>G</th>
<th>H</th>
<th>S</th>
<th>D1 [n6]</th>
<th>L1</th>
<th>D   [n6]</th>
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<td>980</td>
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</table>

All dimensions in mm. Drawing has indicative character and is subject to changes without prior notice.  
Nominal torque based on a oil quality of ISO VG 220. All shaft keys acc. DIN 6885.
Operational data

**General**
High performance gears designed for difficult operating conditions and high torque transmissions. This modular range of gearboxes was designed for a wide variety of designs, installation positions and ratios. Optional input stages include bevel gear meshing with hardened spiral toothed or helical gears with case hardened and ground toothed.

**Shaft bearings**
The bearings on the input and output shafts allow application of external forces. Principally, all Kissling gears are calculated with a theoretical bearing lifetime of 20,000 hours of operation at nominal torque (application factor 1.0).

**Sealing**
Radial shaft sealing rings.

**Cover paint**
Standard deck paint exterior blue / gray RAL 7031 interior painted with oil-resistant paint.

**Lubrication**
Standard supply with forced oil circulation system consisting of external oil pump, filter, flow switch and oil/water cooler (optionally an air cooler is available). Gearboxes are also available with hollow shaft or shrink disk as shown on table for PS-Gearboxes.

**Efficiency**
Theoretical efficiency of planetary gears

<table>
<thead>
<tr>
<th>Number of stages</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tr>
<td>with oil bath lubrication</td>
<td>97%</td>
<td>96,5%</td>
<td>96%</td>
</tr>
<tr>
<td>with forced lubrication</td>
<td>98%</td>
<td>97,5%</td>
<td>97%</td>
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</table>
KISSLING im Überblick

Seilbahngänge für
- Umlaufbahnen
- Pendelbahnen
- Standseilbahnen / Schlepplifte
- Seilgezogene Systeme

Antriebskomponenten rund um das Getriebe wie zum Beispiel Hilfsantriebe für das Evakuieren von Fahrgästen, Stand-by-Antriebe zur Sicherstellung des Betriebes bei Stromausfall, Trägerrohre für die getriebeunabhängige Montage der Säilescheibe und Kupplungsvorrichtungen mit den verschiedensten Eigenschaften gehören zu unserem Sortiment.

Spezialgetriebe für
- Turbo-Anlagen
- Rollenpressen
- Vergnügungspar-Anlagen
- Prüfstände
- Extrusionsanlagen
- Verteiler-Güter
- Walzenmühlen

Entwicklung, Konstruktion und Herstellung von Spezialgetrieben für höchste Ansprüche & alle Anwendungen mit Drehmomenten von 10 bis 2.000 kNm und Drehzahlen bis zu 80'000 1/min. Spezielle Platzverhältnisse, Umwelteinflüsse, abnorme Temperaturen, extreme Drehmomentspitzen, Betriebssicherheiten, hohe Drehzahlen sind für Kissling keine Sonderfälle.

Standardgetriebe
- Planetengetriebe
- Stirnradgetriebe
- Kegelstirnradgetriebe
- Kooxial Stirnradgetriebe
- Schneckengetriebe

Standardgetriebereihen werden von 1 bis 2.000 kW angeboten. Verschiedene Untersetzungen, Ausführungen und Bauformen stehen zur Auswahl. Erhöhte Leistungen, Momente und Drehzahlen sind auch hier möglich.

Kissling Service Center
- Reparaturen, Revisionen, Kontrollen aller Getriebetypen im Haus und vor Ort
- Re-engineering, Leistungserhöhung, Anpassungen
- Diagnosen und Zustandsanalysen mit KissCom (Kissling Condition Monitoring) und KissOn (Kissling Online Condition Monitoring)
- Herstellung und Verkauf von Ersatzteilen

KISSLING at a glance

Ropeway gear units for the following
- Detachable ropeways
- Fixed grip ropeways
- Aerial ropeways
- Surface lifts
- Cable transport systems

Our product line also includes drive components associated with gearboxes, such as auxiliary drives for passenger evacuation, stand-by drives for continued operation in the event of a power failure, tubes for mounting bull wheels independently from the gearbox, disk breaks and various types of couplings.

Special gear units for many uses
- Turbo machinery
- Roller presses
- Amusement parks
- Test benches
- Extrusion machinery
- Multiple shaft gears
- Cement mills

Development, design and fabrication of special gearboxes for the most demanding requirements in various applications with a torque range from 10 to 2,000 kNm and speeds up to 80,000 rpm. Mounting positions, ambient conditions, abnormal temperatures, dust, extreme torque peaks, safety requirements; high speeds - nothing is out of the ordinary for Kissling.

Standard gearboxes
- Planetary gearboxes
- Helical gearboxes
- Bevel helical gearboxes
- Coastal helical gearboxes
- Worm gearboxes

Standard gear units are available from 1 up to 2,000 kW. A variety of ratios, designs and mounting positions are available. Gear units with higher performance, speed, or torque are also available.