



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

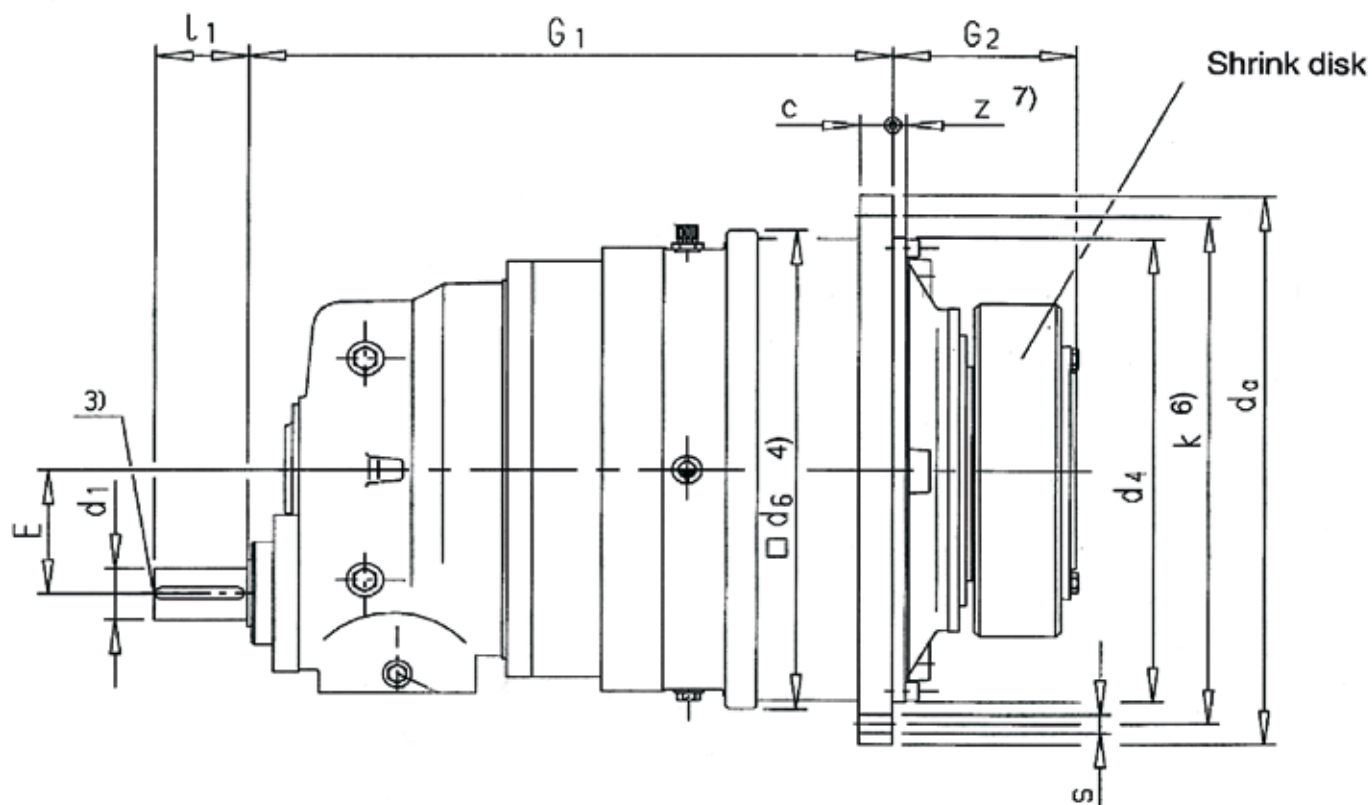
As early as the 1960s all the Swiss cement factories were equipped with Kissling gearboxes. Many of these robust products are still in operation. In due course of globalization together with several European OEMs Kissling cement gearboxes have been installed around the world. Especially where machines 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.



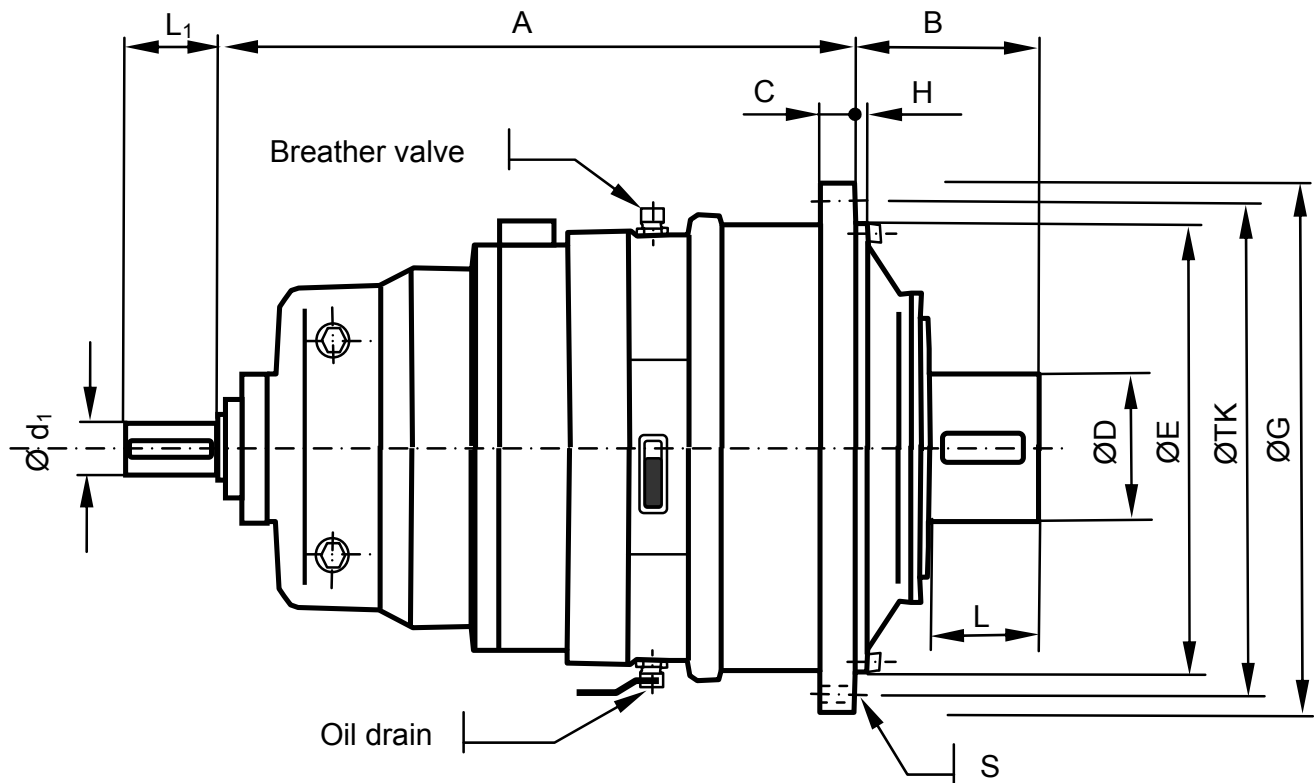
Summary of Design Basic Two Planetary Gear Stages + 1 Helical Gear Stage



Type	Nominal output torque [kNm]	G1	G2	d4	d6	d _a	k	s	c	z	E	d1	L1	Output Shaft
PS-350	350	1200	316	980	1100	1300	1200	39	50	30	210	100	150	320
PS-810	810	1570	420	1220	1230	1470	1370	32 x 52	85	20	320	110	180	380
PS-1050	1050	1655	445	1350	1330	1570	1470	32 x 52	90	25	360	120	210	400
PS-1220	1220	1655	445	1350	1320	1570	1470	32 x 52	90	25	360	120	210	420
PS-1400	1400	1810	500	1410	1460	1670	1550	32 x 62	100	30	380	130	220	440
PS-2100	2100	2000	570	1650	1700	1960	1840	36 x 62	110	35	400	160	250	480
PS-3100	3100	2300	610	1880	1930	2190	2070	40 x 62	120	40	450	180	280	550
PS-4300	4300	2650	640	2110	2170	2430	2310	48 x 62	130	45				620

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.

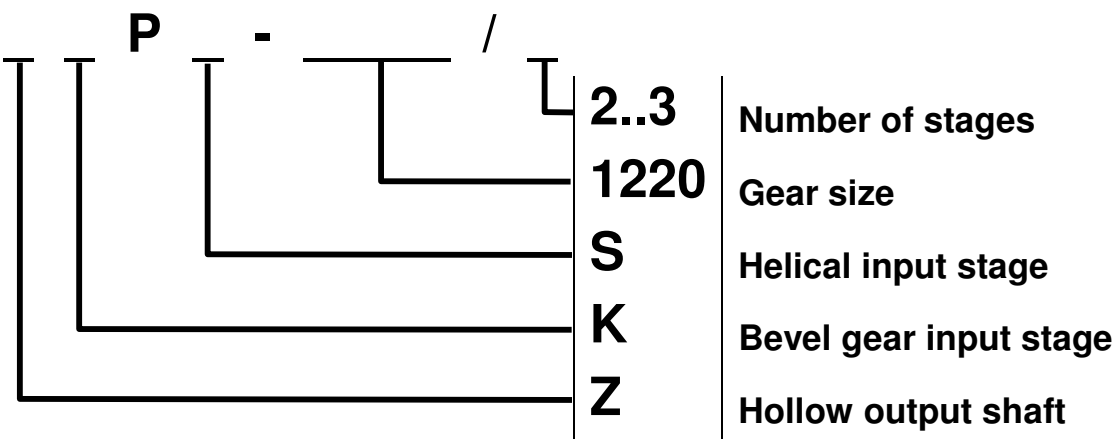
Summary of Design Basic Three Planetary Gear Stages



Type	Nominal output torque [kNm]	A	B	C	E	TK	G	H	S	D1 [n6]	L1	D [n6]	L
P-350	350	1200	316	50	980	1200	1300	30	32x39	100	150	320	320
P-763	760	1570	420	75	1115	1220	1320	20	32x52	130	220	380	420
P-1050	1050	1655	445	90	1350	1470	1570	25	32x52	130	220	400	440
P-1220	1220	1655	445	90	1350	1470	1570	25	32x52	130	220	420	440
P-1400	1400	1810	500	100	1410	1550	1670	30	32x62	130	220	440	500
P-2100	2100	2000	570	110	1650	1840	1960	35	36x62	160	250	480	550
P-3100	3100	2300	610	120	1880	2070	2190	40	40x62	180	280	550	610
P-4300	4300	2650	640	130	2110	2310	2430	45	48x62	tba	tba	tba	tba

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.

Type designation



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 toothing or helical gears with case hardened and ground toothing.

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.

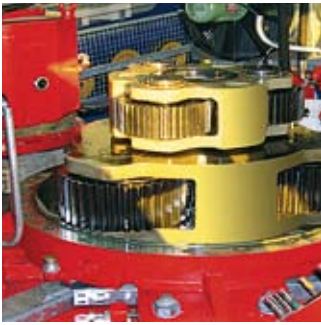
Lubrication

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

Number of stages	2	3	4
with oil bath lubrication	97%	96,5%	96%
with forced lubrication	98%	97,5%	97%

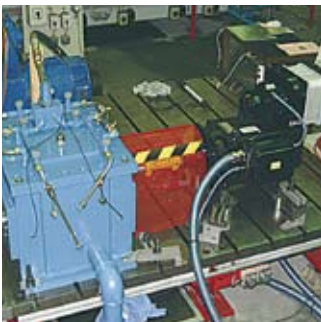


KISSLING im Überblick

Seilbahngetriebe für

- Umlaufbahnen ■ Pendelbahnen
- Standseilbahnen / -Schleplifte
- Seilgezogene Systeme

Antriebs Elemente 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 Seilscheibe und Kupplungsvorrichtungen mit den verschiedensten Eigenschaften gehören zu unserem Sortiment.



Spezialgetriebe für

- Turbo-Anlagen
- Rollenpressen
- Vergnügungspark-Anlagen
- Prüfstände
- Extrusionsanlagen
- Verteiler-Getriebe
- 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
- Koaxiale 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
- Coaxial 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.