

Lubricant tables

**Suitable lubricants for KraussMaffei Berstorff
machinery**



1 About this document

This document specifies the suitable lubricating oils and greases for KraussMaffei Berstorff machinery. It is intended as a reference only and provides information that may prove useful in the selection of the correct lubricant.

In addition to general specifications for different applications, lubricants of specific manufacturers are recommended. We would like to point out that we only considered the most important international makes in this selection.

This list only specifies recommended lubricants. As a matter of course, lubricants from other manufacturers can also be used, provided they feature equivalent quality.



CAUTION

Risk of damage to machine components!

The use of inappropriate lubricant types or mixing of lubricants of different type and make may cause damage to the machine.

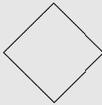
- ▶ Never mix lubricants of different type and make.
- ▶ Strictly observe the lubrication and maintenance instructions included in the KraussMaffei Berstorff manuals and in the vendor documentation.

2 Information on the specified lubrication points

No.*	Lubrication point designation	Information
1	Antifriction bearings (antifriction plain bearings)	Forced grease lubrication for rolls of pressure, take-off, laminating, smelting and stretching systems as well as for bearings of preloading, bending and conveying equipment. Circulatory oil lubrication for sliding and antifriction bearings for calender and mill rolls as well as for drum and roll bearings in AUMA lines and similar machinery.
2	Sliding surfaces	Sliding surfaces of adjustable calender, mill and AUMA line rolls. Sliding surfaces of the bearing shoes for extruder barrel supports, sliding surfaces of sliding block guides.
3	Gear units	Main drive gear units, e.g. for calenders, mills, AUMA lines, extruders and auxiliary equipment.  <i>The manufacturer instructions must be strictly observed!</i>
4	Open gear drives in closed protective covers	Drive and coupling wheels for heating, cooling and clamping systems, feed roll drive for extruders. High-temperature drive and coupling wheels in laboratory mills. Drive and coupling wheels, e.g. for calenders, mills and AUMA lines.
5	Universal joint shafts and gear couplings	Couplings and universal joint shafts between main gear units and rolls and/or drums of calenders, mills and AUMA lines.
6	Hydraulic systems	Hydraulic installations, e.g. for actuators, closing and actuation mechanisms and for driving hydraulic presses.
7	Heat transfer systems (filling with heat transfer agents)	Temperature control units with oil-type thermal agents for extruders, mills and AUMA lines.
8	Wing areas	Bayonet couplings between extruder barrel and extrusion die, connecting bolts between barrel and die, mating surfaces at extrusion dies, profile shells for V-belt AUMA lines.
9	Threaded spindles	Adjusting spindles and transmission threads, e.g. adjusting devices for calenders, mills and AUMA lines.

* You find these numbers in column 1 of the tables.

3 Key to tables

Designation to DIN 51502	Meaning
	Lubricating oils on the basis of mineral oil
	Lubricating oils on the basis of synthetic oil
	Lubricating greases on the basis of mineral oil
	Lubricating greases on the basis of synthetic oil
C	Circulating lubricating oils
L	Lubricating oils with additives to increase corrosion protection and/or ageing resistance.
P	Lubricants with additives to reduce friction and wear in the mixing/friction area and/or to give enhanced resistance.
PG	Polyglycol oils
CG	Lubricating oils (slideway oils)
K	Lubricating greases for antifriction bearings, sliding bearings and sliding surfaces
G	Lubricating greases for enclosed gear units
HC	Synthetic hydrocarbons



The lubricants may not be marked by the manufacturer to the specified standards. However, the indicated lubricants comply with the specifications for the relevant applicatio.

10 Mark LUKOIL

10.1 Lubricating oils LUKOIL

No.1	Lubrication point/ location	Designation/s ymbol to DIN	Viscosity class to	Kinematic viscosity to		
		51502	DIN ISO 6743	DIN 51519 40 °C mm ² /s	min.	
1	Antifriction bearings (antifriction plain bearings)...					
	...Surface temperature < 60 °C		ISO VG 220 ISO L-MHA	198	242	Round 220
	...Surface temperature ² > 60 °C < 120 °C		ISO VG 320 ISO L-MHA	228	352	Round 320
	...Surface temperature ² > 120 °C < 200 °C		ISO VG 460 ISO L-MHA	414	506	Round 460
	...Surface temperature ² > 200 °C		ISO VG 220 ISO L-MAG	198	242	—
2	Sliding surfaces		ISO VG 220	198	242	Slido 220
3	Gear units					
	Spur and bevel gears ³ Ambient temperature -15°-+40 °C		ISO VG 220 ISO L-CKD	198	242	Steelo 220
	Spur and bevel gears ³ Ambient temperature -20°-+25 °C		ISO VG 150 ISO L-CKD	135	165	Steelo 150
	Spur and bevel gears ³ Ambient temperature -25°-+80 °C		ISO VG 220	198	242	—
	Worm gears ³ Ambient temperature 0°-+40 °C		ISO VG 680	612	748	Steelo 680
	Worm gears ³ Ambient temperature -20°-+40 °C		ISO VG 220	198	242	—
	Worm gears ³ Ambient temperature -40°-+30 °C		ISO VG 150	135	165	Steelo Premium 150
	Chain drives ³		ISO VG 68	61	75	Steelo 68
4	Open gear drives in closed protective covers		ISO VG 460	414	506	Steelo 460
5	Universal joint shafts and gear couplings		ISO VG 680			Steelo 680
6	Hydraulic systems Temperature <= 60°C		ISO VG 46	41	50	Geyser ST 46 Geyser ZF 46
			ISO VG 68	61	75	Geyser ST 68 Geyser ZF 68
7	Heat transfer systems (filling with heat transfer agents)		ISO VG 22	20	24	—

¹ For information on the lubrication points, see section 2 on page 7.

² Temperature on the roll face (< bearing temperature)

³ Strictly observe the information included in the vendor manuals.



The lubricants may not be marked by the manufacturer to the specified standards, see note on page 8.

18 Disposal and environmental protection

The machine and its individual components must be disposed of in accordance with the applicable national rules and regulations.

Operating fluids and lubricants must be disposed of in compliance with the applicable national regulations and the applicable material safety data sheets.

When disposing of / scrapping KraussMaffei Berstorff machines the following measures must be taken:

- ▶ Observe the safety instructions.
- ▶ Dismantle the machine into transportable components.
- ▶ Collect all liquids and dispose of them in the correct manner.
- ▶ Empty and properly clean all pipes and containers.
- ▶ Gas and special waste must be disposed of in the correct manner.

When maintenance or repair work is carried out on the machine, the following materials and liquids must be disposed of by the user in the correct manner:

- ▶ residual material,
- ▶ operating fluids and lubricants,
- ▶ cleaning agents, preservative agents,
- ▶ consumables,
- ▶ waste of any kind, worn machine parts,
- ▶ other waste.

Follow the instructions below when disposing of these materials:

- ▶ Liquid waste that may contaminate groundwater must be collected in approved containers and prepared for disposal in the correct manner in accordance with the applicable water management regulations.
- ▶ Leaked out or spilt liquids must be bound or mopped up immediately to avoid hazards.

19 Ordering data

Please quote the following information when placing orders for spares and wear parts:



*Make sure to quote the information marked * when placing orders for spares and wear parts. These details are essential to process your order.*

- ▶ Reference no. *
- ▶ Designation
- ▶ Identification numbers
- ▶ Order no. *
- ▶ Parts list/spares list number *
- ▶ Machine no.
- ▶ Drawing no.
- ▶ Parts list item number *
- ▶ Quantity *

19.1 Spare parts orders and customer service

Please send your spare parts orders to the KraussMaffei Berstorff Customer Service Centre at the address below.

KraussMaffei Berstorff GmbH
Postfach 61 03 60
30603 Hannover
Germany

Phone – Switchboard: + 49 511 5702–0
Hotline – Customer Service Centre: + 49 172 5119623
Fax – Customer Service Centre: + 49 511 5702–444

E-Mail: spares@Berstorff.de
service@Berstorff.de