FAG

ARCANOL
ROLLING BEARING-TESTED GREASE

For a longer bearing life: FAG rolling bearing grease

FAG Industrial Bearings and Services

A GREASE HAS A LONG WAY TO GO BEFORE IT MAY CALL ITSELF ARCANOL

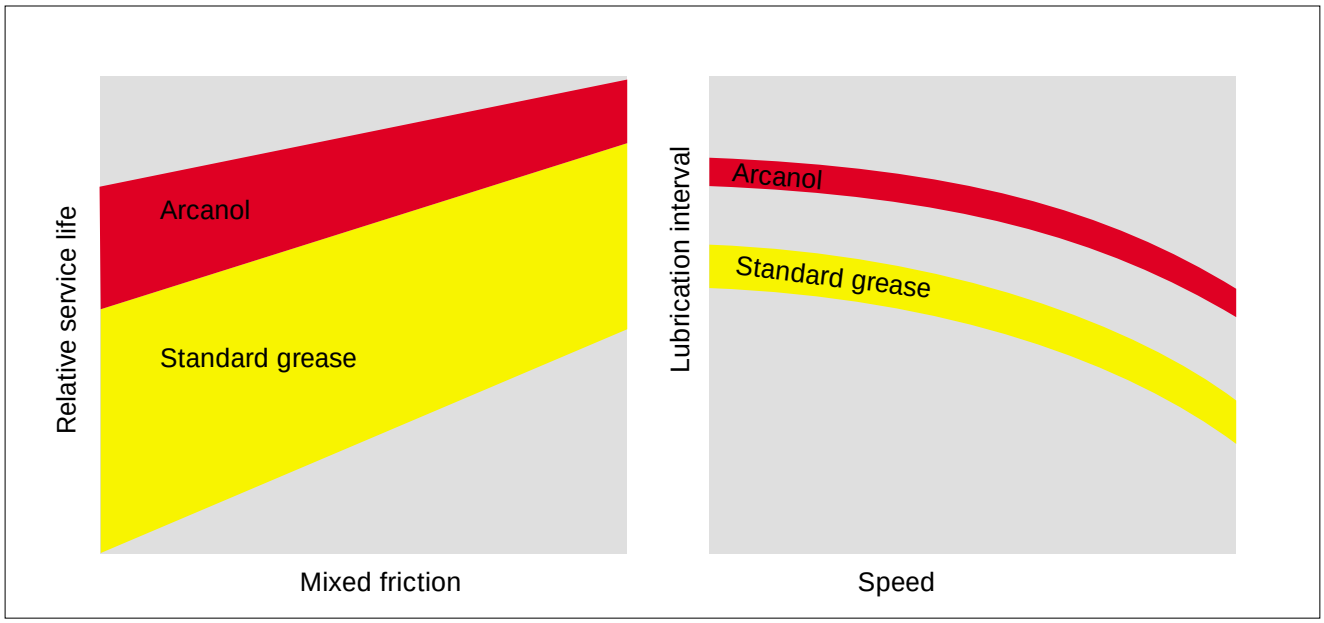
Special rolling bearing greases like Arcanol at first glance cost a little more than standard greases. But they are worth the price. For with Arcanol you buy some extra safety as FAG selects only the best from a number of good greases in a series of tests, provides quality assurance and gives lubrication recommendations for specific applications. Bearings which fail prematurely because they were lubricated with the wrong grease, with all the unpleasant and expensive consequences, increasingly belong to the past.
In cooperation with renowned lubricant manufacturers, we have for many years developed lubricating greases that are particularly suitable for rolling bearings. However, before a new grease is included in the Arcanol programme, it has to pass a series of stringent tests in the FAG lubricant lab.

On our lubricant test rigs FE8 (DIN 51819) and FE9 (DIN 51821) the greases are tested in rolling bearings to find out how they improve service life and reduce friction and wear. Only the best greases are subjected to the following tests under simulated field conditions in far more complicated rolling bearing test rigs. If the results meet the requirements of the stringent FAG specifications, the greases are included in the Arcanol programme.

In addition, we test every single batch to ensure the uniform quality of the product. Only after the grease has passed this final test it is allowed to be filled into containers labelled Arcanol.
The programme consists of fourteen greases which cover nearly all fields of application optimally.

The synoptic table on pages 2 and 3 shows chemico-physical data, fields of application and the conditions for which these greases are suitable. The selection of a suitable grease is considerably facilitated by the electronic FAG rolling bearing catalogue.

- **More than 80 % of all rolling bearings are lubricated with grease**
- **Inadequate lubrication causes more than 40 % of all cases of rolling bearing damage**
- **Therefore users need lubricants and lubrication recommendations which they can rely on.**
- **Arcanol rolling bearing greases ensure that a bearing can be used to its full capacity**
  – long service life
  – good running behaviour
  – very safe operation



SELECTION TABLE

Arcanol	**MULTITOP**	**MULTI2**	**MULTI3**	**LOAD220**	**LOAD400**	**LOAD1000**
DIN 51825	KP2N-40	K2N-30	K3N-30	KP2N-20	KP2N-20	KP2N-20
Thickener	Lithium soap with EP additives	Lithium soap	Lithium soap	Lithium/ calcium soap with EP additives	Lithium/ calcium soap with EP additives	Lithium/ calcium soap with EP additives
Base oil	Mineral oil+ester	Mineral oil	Mineral oil	Mineral oil	Mineral oil	Mineral oil
Base oil viscosity at 40 °C [mm^2/s]	85	ISO VG 100	80	ISO VG 220	400	ISO VG 1000
Consistency (NLGI class)	2	2	3	2	2	2
Operating temperature [°C]	-40...+150	-30...+140	-30...+140	-20...+140	-25...+140	-20...+140
Longtime limit temp. [°C]	80	75	75	80	80	80
Typical applications for Arcanol rolling bearing greases	Universal grease for ball and roller bearings **in** rolling mills, construction, machines, motor vehicles, spinning and grinding spindles **at** increased speeds, high loads, low and high temperatures	Universal grease for ball bearings ØD ≤ 62 mm **in** small electric motors, agricultural and construction machines, household appliances	Universal grease for ball bearings ØD > 62 mm **in** large electric motors, agricultural and construction machines, blowers	Special grease for ball and roller bearings **in** rolling mills, rail vehicles **at** high loads, large speed, range, high degree of humidity	Special grease for ball and roller bearings **in** mining machines, construction machines **at** extreme loads, medium temperatures, medium speeds	Special grease for ball and roller bearings **in** mining machines, construction machines, preferably for shock loads and large bearings **at** extreme loads, medium temperatures, low speeds
Low temperatures	++	+	+	o	–	o
High temperatures	o	o	o	o	o	o
Low friction, high speeds	+	o	o	–	–	– –
High loads, low speeds	+	o	o	++	++	++
Vibratory stressing	+	o	+	+	+	+
Sealing properties	o	o	+	+	+	+
Relubricatability	++	++	+	+	+	+

ISO VG = ISO viscosity class	++ extremely suitable	+ very suitable	o suitable	– less suitable	– – not suitable

TEMP90	**TEMP110**	**TEMP120**	**TEMP200**	**SPEED2,6**	**VIB3**	**BIO2**	**FOOD2**
KP2P-40	KE2P-40	KPHC2R-30	KFK2U-40	KE3K-50	KP3N-30	KPE2G-30	K2K-30
Calcium polyurea with EP additives	Lithium complex soap	Polyurea with EP additives	PTFE	Polyurea	Lithium complex soap with EP additives	Lithium-/ calcium soap	Aluminium complex soap
PAO oil	Ester oil	PAO/Ester oil	Fluor. poly. oil	PAO/ester oil	Mineral oil	Ester oil	White oil
ISO VG 130	ISO VG 150	460	ISO VG 400	22	170	58	192
2	2	2	2	2-3	3	2	2
-40...+160	-40...+160	-35...+180	-40...+260	-50...+120	-30...+150	-30..+140	-30..+120
90	110	120	200	80	90	80	70
Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings
in couplings, electric motors, motor vehicles	**in** electric machines, motor vehicles	**in** continuous casting plants	**in** track rollers in baking machines, piston pins in compressors, kiln trucks, chem. plants	**in** machine tools, instruments	**in** rotor blade adjusters in wind power stations, packing machines	**in** environmentally hazardous applications	**in** applications with food contact; USDA H1
at high temperatures, high loads	**at** high temperatures, high speeds	**at** high temperatures, high loads	**at** extremely high temp., chemically aggressive environments	**at** extremely high speeds, low temperatures	**at** high temperatures, high loads, oscillating motion		
++	++	+	++	++	+	+	+
+	++	++	++	o	+	+	–
o	+	–	– –	++	–	o	o
o	o	++	+	– –	+	o	o
o	o	o	–	–	++	o	o
o	o	o	o	o	o	o	o
o	o	o	o	+	–	+	++

UNIVERSAL GREASE MULTITOP

MULTITOP *)

Universal grease for ball bearings and roller bearings

Typical applications:
- Motor vehicles
- Rolling mills
- Construction machinery
- Spinning and grinding spindles

Suitability for

Low temperatures	++
High temperatures	o
Low friction, high speeds	+
High loads, low speeds	+
Vibratory stressing	+
Sealing effect	o
Relubrication	++

Rating
++ extremely suitable
+ very suitable
o suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol MULTITOP

Properties, applications: Bearing grease for high loads, low and high speeds, low and high temperatures, low noise, low friction

Characteristics		Unit	Value	Test method
Marking:			KP2N-40	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-40 to 150	DIN 51825
Longtime limit temperature:		[°C]	80	
Specifications:				
Thickener:			lithium soap	
Type of base oil:			mineral + ester oil	
Base oil viscosity	at 40°C:	[mm²/s]	85	DIN 51562 - 1
	at 100°C:	[mm²/s]	12,5	DIN 51562 - 1
Identification letters of additives:			A,K,EP	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	190	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 40	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -35 °C		[hPa]	< 1380	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	2000	DIN 51350 - 4
Wear scar of four ball test:		[mm]		DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 75/ 50 - 45	v10 / v50	[mg]	<1 / <1	DIN 51819
536048 - 3000/ 10 - 100	v10 / v50	[mg]	7 / 11	DIN 51819
536050 - 6000/ 5 - 90	v10 / v50	[mg]	<1 / 3	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 140	F10/F50	[h]	219 / 398	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	800.000	350.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
400 g cartridge
1 kg can
5 kg bucket
25 kg hobbock
180 kg cask

*) former FAG designation:
Arcanol L135V

UNIVERSAL GREASE MULTI2

MULTI2 *)

Universal grease for ball bearings with D ≤ 62 mm

Typical applications:
- Small electric motors
- Agricultural and construction machinery
- Household appliances

Suitability for

Low temperatures	+
High temperatures	o
Low friction, high speeds	o
High loads, low speeds	o
Vibratory stressing	o
Sealing effect	o
Relubrication	++

Rating
++ extremely suitable
+ very suitable
o suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol MULTI2

Properties, applications: grease for bearings up to ØD <= 62mm

Characteristics		Unit	Value	Test method
Marking:			K2N-30	DIN 51825
Colour:			yellowish	
Temperature range:		[°C]	-30 to 140	DIN 51825
Longtime limit temperature:		[°C]	75	
Specifications:				
Thickener:			lithium soap	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 100	DIN 51562 - 1
	at 100°C:	[mm²/s]		DIN 51562 - 1
Identification letters of additives:			A,K,P	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	185	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 50	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -30 °C		[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]		DIN 51350 - 4
Wear scar of four ball test:		[mm]	0,68	DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 750/ 20 - RT	v10 / v50	[mg]	<1 / 4	DIN 51819
536050 - 7,5/ 80 - RT	v10 / v50	[mg]	8 / 11	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 140	F10/F50	[h]	63 / 117	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	500.000	250.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
250 g tube
400 g cartridge
1 kg can
5 kg bucket
10 kg bucket
180 kg cask

*) former FAG designation:
Arcanol L78V

UNIVERSAL GREASE MULTI3

MULTI3 *)

Universal grease for ball bearings with D > 62 mm

Typical applications:
- Large electric motors
- Agricultural and construction machinery
- Ventilators

Suitability for

Low temperatures	+
High temperatures	o
Low friction, high speeds	o
High loads, low speeds	o
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating
+ very suitable
o suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol MULTI3

Properties, applications: Standard grease for bearings with ØD > 62mm; standard grease SF2

Characteristics		Unit	Value	Test method
Marking:			K3N-30	DIN 51825
Colour:			yellowish	
Temperature range:		[°C]	-30 to 140	DIN 51825
Longtime limit temperature:		[°C]	75	
Specifications:				
Thickener:			lithium soap	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	80	DIN 51562 - 1
	at 100°C:	[mm²/s]	8	DIN 51562 - 1
Identification letters of additives:			A,K,P	
Worked penetration:		[0,1 mm]	220-250	DIN ISO 2137
Consistency:		[NLGI-Cl.]	3	DIN 51818
Drop point:		[°C]	190	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 50	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -30 °C		[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	1800	DIN 51350 - 4
Wear scar of four ball test:		[mm]	0,68	DIN 51350 - 5
FE8 tests (rolling element wear)				
536050 - 7,5/ 80 - RT	v10 / v50	[mg]	<1 / <1	DIN 51819
536050 - 7,5/ 80 - 70	v10 / v50	[mg]	3 / 7	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 130	F10/F50	[h]	80 / 128	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	500.000	250.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
400 g cartridge
1 kg can
5 kg bucket
10 kg bucket
25 kg hobbock
180 kg cask

*) former FAG designation:
Arcanol L71V

SPECIAL GREASE LOAD220

LOAD220 *)

Special grease for ball bearings and roller bearings

Typical applications:
- Rolling mills
- Rail vehicles

Suitability for

Low temperatures	o
High temperatures	o
Low friction, high speeds	–
High loads, low speeds	++
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating
++ extremely suitable
+ very suitable
o suitable
– less suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol LOAD220

Properties, applications: Bearing grease for high loads and a wide speed range with good water resistance propertries

Characteristics		Unit	Value	Test method
Marking:			KP2N-20	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-20 to 140	DIN 51825
Longtime limit temperature:		[°C]	80	
Specifications:				
Thickener:			lithium/calcium	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 220	DIN 51562 - 1
	at 100°C:	[mm²/s]	16	DIN 51562 - 1
Identification letters of additives:			A,K,P,EP	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	198	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 30	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -20 °C		[hPa]	< 1117	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3000	DIN 51350 - 4
Wear scar of four ball test:		[mm]	0,47	DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 3000/ 10 - 120	v10 / v50	[mg]	10 / 20	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 120	F10/F50	[h]	390 / 720	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	500.000	300.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
1 kg can
10 kg bucket
180 kg cask

*) former FAG designation:
Arcanol L215V

SPECIAL GREASE LOAD400

LOAD400 *)

Special grease for ball bearings and roller bearings

Typical applications:
- Mining machinery
- Construction machinery

Suitability for

Low temperatures	–
High temperatures	o
Low friction, high speeds	–
High loads, low speeds	++
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating
- ++ extremely suitable
- + very suitable
- o suitable
- – less suitable

FAG

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol LOAD400

Properties, applications: Bearing grease for high loaded large bearings; low speed and shocks

Characteristics		Unit	Value	Test method
Marking:			KP2N-20	DIN 51825
Colour:			beige	
Temperature range:		[°C]	-25 to 140	DIN 51825
Longtime limit temperature:		[°C]	80	
Specifications:				
Thickener:			lithium/calcium	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	400	DIN 51562 - 1
	at 100°C:	[mm²/s]	28	DIN 51562 - 1
Identification letters of additives:			A,K,P,EP	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	170	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 40	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -25 °C		[hPa]	< 1200	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/130 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3400	DIN 51350 - 4
Wear scar of four ball test:		[mm]		DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 75/ 50 - RT	v10 / v50	[mg]	/ 19	DIN 51819
536048 - 3000/ 10 - 120	v10 / v50	[mg]	/ 25	DIN 51819
536050 - 7,5/ 80 - 120	v10 / v50	[mg]	/ <1	DIN 51819
536050 - 7,5/ 80 - RT	v10 / v50	[mg]	/ 5	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 130	F10/F50	[h]	120 / 210	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	400.000	200.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Available quantities:
400 g cartridge
1 kg can
5 kg bucket
10 kg bucket
180 kg cask

*) former FAG designation:
Arcanol L186V

SPECIAL GREASE LOAD1000

LOAD1000 *)

Special grease for large ball bearings and roller bearings

Typical applications:
- Mining machinery
- Construction machinery

Suitability for

Low temperatures	o
High temperatures	o
Low friction, high speeds	– –
High loads, low speeds	++
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating
++ extremely suitable
+ very suitable
o suitable
– – not suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol LOAD1000

Properties, applications: Bearing grease for very high load, shocks, large bearings

Characteristics		Unit	Value	Test method
Marking:			KP2N-20	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-20 to 140	DIN 51825
Longtime limit temperature:		[°C]	80	
Specifications:				
Thickener:			lithium/calcium	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 1000	DIN 51562 - 1
	at 100°C:	[mm²/s]	42	DIN 51562 - 1
Identification letters of additives:			A,K,P,EP	
Worked penetration:		[0,1 mm]	280	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	190	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 40	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -20 °C		[hPa]	< 1437	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3600	DIN 51350 - 4
Wear scar of four ball test:		[mm]	0,39	DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 75/ 50 - 50	v10 / v50	[mg]	3 / 6	DIN 51819
536048 - 1500/ 10 - 80	v10 / v50	[mg]	18 / 22	DIN 51819
536050 - 7,5/ 80 - RT	v10 / v50	[mg]	<1 / <1	DIN 51819
536050 - 3000/ 10 - 80	v10 / v50	[mg]	6 / 13	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 140	F10/F50	[h]	53 / 182	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	300.000	200.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
5 kg bucket
25 kg hobbock
180 kg cask

*) former FAG designation:
Arcanol L223V

SPECIAL GREASE TEMP90

TEMP90 *)

Special grease for ball bearings and roller bearings

Typical applications:
- Couplings
- Electric motors
- Motor vehicles

Suitability for

Low temperatures	++
High temperatures	+
Low friction, high speeds	o
High loads, low speeds	o
Vibratory stressing	o
Sealing effect	o
Relubrication	o

Rating
++ extremely suitable
+ very suitable
o suitable

FAG

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol TEMP90

Properties, applications: Bearing grease for car hub units and general applications in car systems

Characteristics		Unit	Value	Test method
Marking:			KP2P-40	DIN 51825
Colour:			light brown	
Temperature range:		[°C]	-40 to 160	DIN 51825
Longtime limit temperature:		[°C]	90	
Specifications:				
Thickener:			Ca-polyurea	
Type of base oil:				
Base oil viscosity	at 40°C:	[mm²/s]	130	DIN 51562 - 1
	at 100°C:	[mm²/s]	15,5	DIN 51562 - 1
Identification letters of additives:			A,K,P,EP	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	220	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 40	DIN 51808
Water resistance:		[Range]	0/1-90	DIN 51807 - 1
Flow pressure at -35 °C		[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/1	DIN 51802
Copper corrosion after 24 h/135 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3000	DIN 51350 - 4
Wear scar of four ball test:		[mm]		DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 3000/ 10 - 115	v10 / v50	[mg]	<1 / <1	DIN 51819
536050 - 7,5/ 80 - 30/200	v10 / v50	[mg]	<1 / <1	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 140	F10/F50	[h]	190 / 660	DIN 51821
C / 1500 / 6000 - 160	F10/F50	[h]	/ 300	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	500.000	250.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
400 g cartridge
1 kg can
5 kg bucket
25 kg hobbock
180 kg cask

*) former FAG designation:
Arcanol L12V

SPECIAL GREASE TEMP110

TEMP110 *)

Special grease for ball bearings and roller bearings

Typical applications:
- Electric machines
- Motor vehicles

Suitability for

Low temperatures	++
High temperatures	++
Low friction, high speeds	+
High loads, low speeds	o
Vibratory stressing	o
Sealing effect	o
Relubrication	o

Rating
++ extremely suitable
+ very suitable
o suitable

FAG

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol TEMP110

Properties, applications: bearing grease for low and high temperatures

Characteristics		Unit	Value	Test method
Marking:			KE2P-40	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-40 to 160	DIN 51825
Longtime limit temperature:		[°C]	110	
Specifications:				
Thickener:			lithium complex	
Type of base oil:			ester oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 150	DIN 51562 - 1
	at 100°C:	[mm²/s]	19,8	DIN 51562 - 1
Identification letters of additives:			A,K,P	
Worked penetration:		[0,1 mm]	280	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	250	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 40	DIN 51808
Water resistance:		[Range]	1-80	DIN 51807 - 1
Flow pressure at -40 °C		[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0-0	DIN 51802
Copper corrosion after 24 h/120 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]		DIN 51350 - 4
Wear scar of four ball test:		[mm]	0,68	DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 75/ 50 - RT	v10 / v50	[mg]	<1 / <1	DIN 51819
536050 - 7,5/ 80 - 120	v10 / v50	[mg]	<1 / <1	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 160	F10/F50	[h]	39 / 74	DIN 51821
Low Temperature Torque				
-54 °C	Start / Steady State	[Nmm]	1770 / 940	ASTM D1478
-40 °C	Start / Steady State	[Nmm]	100 / 40	ASTM D1478
Low Temperature Torque				
-55 °C	Start / Steady-state	[Nmm]	1771 / 941	IP 186
-41 °C	Start / Steady-state	[Nmm]	101 / 41	IP 186

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	600.000	250.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
400 g cartridge

*) former FAG designation:
Arcanol L30V

SPECIAL GREASE TEMP120

TEMP120 *)

Special grease for ball bearings and roller bearings

Typical applications:
- Continuous casting plants

Suitability for

Low temperatures	+
High temperatures	++
Low friction, high speeds	–
High loads, low speeds	++
Vibratory stressing	o
Sealing effect	o
Relubrication	o

Rating
++ extremely suitable
+ very suitable
o suitable
– less suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol TEMP120

Properties, applications: bearing grease for high temperatures, high loads

Characteristics		Unit	Value	Test method
Marking:			KPHC2R-30	DIN 51825
Colour:			greenish	
Temperature range:		[°C]	-35 to 180	DIN 51825
Longtime limit temperature:		[°C]	120	
Specifications:				
Thickener:			polyurea	
Type of base oil:			SHC/ester oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 460	DIN 51562 - 1
	at 100°C:	[mm²/s]	40	DIN 51562 - 1
Identification letters of additives:			A,K,P,EP	
Worked penetration:		[0,1 mm]	280	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	240	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]		DIN 51808
Water resistance:		[Range]	0-90	DIN 51807 - 1
Flow pressure at °C		[hPa]		DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	0	DIN 51811
Four ball weld load:		[N]		DIN 51350 - 4
Wear scar of four ball test:		[mm]		DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 750/ 50 - 65	v10 / v50	[mg]	<1 / <1	DIN 51819
536050 - 7,5/ 80 - RT	v10 / v50	[mg]	<1 / <1	DIN 51819
536050 - 7,5/ 80 - 150	v10 / v50	[mg]	<1 / <1	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 180	F10/F50	[h]	84 / 125	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	300.000	150.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
1 kg can
5 kg bucket
25 kg hobbock

*) former FAG designation:
Arcanol L195V

SPECIAL GREASE TEMP200

TEMP200 *)

Special grease for ball bearings and roller bearings

Typical applications:
- Track rollers in bakery machines
- Piston pins in compressors
- Kiln trucks
- Chemical plants

Suitability for

Low temperatures	++
High temperatures	++
Low friction, high speeds	– –
High loads, low speeds	+
Vibratory stressing	–
Sealing effect	o
Relubrication	o

Rating
++ extremely suitable
+ very suitable
o suitable
– less suitable
– – not suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol TEMP200

Properties, applications: High temperature grease for high loads

Characteristics		Unit	Value	Test method
Marking:			KFK2U-40	DIN 51825
Colour:			white	
Temperature range:		[°C]	-40 to 260	DIN 51825
Longtime limit temperature:		[°C]	200	
Specifications:				
Thickener:			PTFE	
Type of base oil:			fluorinated polyether oil	
Base oil viscosity	at 40°C:	[mm²/s]	400	DIN 51562 - 1
	at 100°C:	[mm²/s]	35	DIN 51562 - 1
Identification letters of additives:				
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	not measurable	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 80	DIN 51808
Water resistance:		[Range]	0-90	DIN 51807 - 1
Flow pressure at -30 °C		[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/1	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	4500	DIN 51350 - 4
Wear scar of four ball test:		[mm]		DIN 51350 - 5
FE8 tests (rolling element wear)				
536050 - 7,5/ 80 - 150	v10 / v50	[mg]	7 / 19	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 3000 - 150	F10/F50	[h]	1000 /	DIN 51821
A / 1500 / 3000 - 260	F10/F50	[h]	132 / 158	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	300.000	100.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
70 g tube
1 kg can

*) former FAG designation:
Arcanol L79V

SPECIAL GREASE SPEED2,6

SPEED2,6 *)

Special grease for ball bearings

Typical applications:
- Machine tools
- Instruments

Suitability for

Low temperatures	++
High temperatures	o
Low friction, high speeds	++
High loads, low speeds	– –
Vibratory stressing	–
Sealing effect	o
Relubrication	+

Rating
++ extremely suitable
+ very suitable
o suitable
– less suitable
– – not suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol SPEED2,6

Properties, applications: Grease for high speed bearings

Characteristics		Unit	Value	Test method
Marking:			KE3K-50	DIN 51825
Colour:			beige	
Temperature range:		[°C]	-50 to 120	DIN 51825
Longtime limit temperature:		[°C]	80	
Specifications:				
Thickener:			polyurea	
Type of base oil:			SHC/ester oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 22	DIN 51562 - 1
	at 100°C:	[mm²/s]	5	DIN 51562 - 1
Identification letters of additives:			A,K,P	
Worked penetration:		[0,1 mm]	250-280	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2-3	DIN 51818
Drop point:		[°C]	>250	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 40	DIN 51808
Water resistance:		[Range]	0-90	DIN 51807 - 1
Flow pressure at -50 °C		[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/1	DIN 51802
Copper corrosion after 24 h/130 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	1800	DIN 51350 - 4
Wear scar of four ball test:		[mm]	0,43	DIN 51350 - 5
FE8 tests (rolling element wear)				
536050 - 6000/ 5 - 90	v10 / v50	[mg]	<1 / 15	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 120	F10/F50	[h]	/ 166	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	2.000.000	200.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
250 g tube
1 kg can
25 kg hobbock

*) former FAG designation:
Arcanol L75

SPECIAL GREASE VIB3

VIB3 *)

Special grease for ball bearings and roller bearings

Typical applications:
- Rotor blade adjusters in wind power plants
- Packaging machinery

Suitability for

Low temperatures	+
High temperatures	+
Low friction, high speeds	–
High loads, low speeds	+
Vibratory stressing	++
Sealing effect	o
Relubrication	–

Rating
- ++ extremely suitable
- + very suitable
- o suitable
- – less suitable

FAG

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol VIB3

Properties, applications: high temperature and high load, oscillation

Characteristics		Unit	Value	Test method
Marking:			KP3N-30	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-30 to 150	DIN 51825
Longtime limit temperature:		[°C]	90	
Specifications:				
Thickener:			lithium complex	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	170	DIN 51562 - 1
	at 100°C:	[mm²/s]	13,5	DIN 51562 - 1
Identification letters of additives:			A,K,P,EP	
Worked penetration:		[0,1 mm]	220-250	DIN ISO 2137
Consistency:		[NLGI-Cl.]	3	DIN 51818
Drop point:		[°C]	250	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 30	DIN 51808
Water resistance:		[Range]		DIN 51807 - 1
Flow pressure at -20 °C		[hPa]	< 1600	DIN 51805
Emcor Test:		[Corr.Grad]	0	DIN 51802
Copper corrosion after 24 h/150 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3000	DIN 51350 - 4
Wear scar of four ball test:		[mm]		DIN 51350 - 5
FE8 tests (rolling element wear)				
536050 - 7,5/ 80 - RT	v10 / v50	[mg]	2 / 2	DIN 51819
536050 - 3000/ 10 - 80	v10 / v50	[mg]	2 / 3	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 150	F10/F50	[h]	/ 120	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	350.000	200.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:
1 kg can
5 kg bucket
25 kg hobbock

*) former FAG designation:
Arcanol L166V

SPECIAL GREASE BIO2

BIO2

Special grease for ball bearings and roller bearings

Typical applications:

- Environmentally hazardous applications

Suitability for

Low temperatures	+
High temperatures	+
Low friction, high speeds	o
High loads, low speeds	o
Vibratory stressing	o
Sealing effect	o
Relubrication	+

Rating

\+ very suitable

o suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol BIO2

Properties, applications: bearing grease - rapidly biodegradeable

Characteristics		Unit	Value	Test method
Marking:			KPE2G-30	DIN 51825
Colour:			light brown	
Temperature range:		[°C]	-30 to 140	DIN 51825
Longtime limit temperature:		[°C]	80	
Specifications:				
Thickener:			lithium/calcium	
Type of base oil:			ester oil	
Base oil viscosity	at 40°C:	[mm²/s]	58	DIN 51562 - 1
	at 100°C:	[mm²/s]	10	DIN 51562 - 1
Identification letters of additives:				
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	190	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 41	DIN 51808
Water resistance:		[Range]	0	DIN 51807 - 1
Flow pressure at -35 °C		[hPa]	< 1200	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/ °C		[Corr.Grad]		DIN 51811
Four ball weld load:		[N]	2800	DIN 51350 - 4
Wear scar of four ball test:		[mm]	1,18	DIN 51350 - 5
FE8 tests (rolling element wear)				
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 120	F10/F50	[h]	/ 1000	DIN 51821
A / 1500 / 6000 - 150	F10/F50	[h]	/ 160	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	300.000	200.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Edition: 01.03.2002

Available quantities:

1 kg can

10 kg bucket

SPECIAL GREASE FOOD2

FOOD2

Special grease for ball bearings and roller bearings

Typical applications:
- Applications with food contact

Suitability for

Low temperatures	+
High temperatures	–
Low friction, high speeds	o
High loads, low speeds	o
Vibratory stressing	o
Sealing effect	o
Relubrication	++

Rating
++ extremely suitable
+ very suitable
o suitable
– less suitable

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol FOOD2

Properties, applications: Bearing grease for food-applications according to USDA H1

Characteristics		Unit	Value	Test method
Marking:			KPF2K-30	DIN 51825
Colour:			white	
Temperature range:		[°C]	-30 to 120	DIN 51825
Longtime limit temperature:		[°C]	70	
Specifications:			USDA H1	
Thickener:			aluminium complex	
Type of base oil:			white oil	
Base oil viscosity	at 40°C:	[mm²/s]	192	DIN 51562 - 1
	at 100°C:	[mm²/s]	17,5	DIN 51562 - 1
Identification letters of additives:			A, K, P	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-Cl.]	2	DIN 51818
Drop point:		[°C]	230	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C:		[kPa]	< 200	DIN 51808
Water resistance:		[Range]	0	DIN 51807 - 1
Flow pressure at -20 °C		[hPa]	< 550	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h/100 °C		[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]		DIN 51350 - 4
Wear scar of four ball test:		[mm]	0,6	DIN 51350 - 5
FE8 tests (rolling element wear)				
536048 - 75/ 50 - 35	v10 / v50	[mg]	7 / 9	DIN 51819
536050 - 7,5/ 80 - 38	v10 / v50	[mg]	3 / 5	DIN 51819
FE9 tests (grease service lifetime)				
A / 1500 / 6000 - 120	F10/F50	[h]	266 / 333	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	500.000	200.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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Available quantities:
1 kg can
10 kg bucket

QUANTITIES · EXAMPLES OF HOW TO ORDER

Arcanol grease	Previous designation	70 g tube	250 g tube	400 g cartridge	1 kg can	5 kg bucket	10 kg bucket	25 kg hobbock	180 kg cask
MULTITOP	L135V			•	•	•		•	•
MULTI2	L78V		•	•	•	•	•		•
MULTI3	L71V			•	•	•	•	•	•
LOAD220	L215V				•		•		•
LOAD400	L186V			•	•	•	•		•
LOAD1000	L223V					•		•	•
TEMP90	L12V			•	•	•		•	•
TEMP110	L30V			•					
TEMP120	L195V				•	•		•	
TEMP200	L79V	•			•				
SPEED2,6	L75		•		•			•	
VIB3	L166V				•	•		•	
BIO2	–				•		•		
FOOD2	–				•		•		

Examples of how to order:

Order designation	Meaning
ARCA.GREASE.MULTITOP.5KG	FAG rolling bearing grease Arcanol MULTITOP (5 kg bucket)
ARCA.GREASE.MULTI2.10KG	FAG rolling bearing grease Arcanol MULTI2 (10 kg bucket)
ARCA.GREASE.MULTI3.25KG	FAG rolling bearing grease Arcanol MULTI3 (25 kg hobbock)
ARCA.GREASE.LOAD220.180KG	FAG rolling bearing grease Arcanol LOAD220 (180 kg cask)
ARCA.GREASE.LOAD400.400G	FAG rolling bearing grease Arcanol LOAD400 (400 g cartridge)
ARCA.GREASE.LOAD1000.5KG	FAG rolling bearing grease Arcanol LOAD1000 (5 kg bucket)
ARCA.GREASE.TEMP90.1KG	FAG rolling bearing grease Arcanol TEMP90 (1 kg can)
ARCA.GREASE.TEMP110.400G	FAG rolling bearing grease Arcanol TEMP110 (400 g cartridge)
ARCA.GREASE.TEMP120.25KG	FAG rolling bearing grease Arcanol TEMP120 (25 kg hobbock)
ARCA.GREASE.TEMP200.70G	FAG rolling bearing grease Arcanol TEMP200 (70 g tube)
ARCA.GREASE.SPEED2,6.250G	FAG rolling bearing grease Arcanol SPEED2,6 (250 g tube)
ARCA.GREASE.VIB3.25KG	FAG rolling bearing grease Arcanol VIB3 (25 kg hobbock)
ARCA.GREASE.BIO2.1KG	FAG rolling bearing grease Arcanol BIO2 (1 kg can)
ARCA.GREASE.FOOD2.10KG	FAG rolling bearing grease Arcanol FOOD2 (10 kg bucket)

FAG grease gun

Grease guns are used for lubricating bearings manually via lubrication nipples. Relubrication is easy, clean and swift if FAG grease guns with a reinforced hose are used.

Automatic FAG lubricators Motion Guard Compact and Motion Guard Champion

A sufficient amount of fresh grease is being constantly supplied to the contact areas of the rolling bearings by an automatic lubricator. The devices extend lubrication and maintenance intervals and reduce plant downtimes. The lubricators can be used everywhere, making costly central lubrication plants superfluous.

Suitability of the relubrication devices for Arcanol greases

Lubricating grease Arcanol	**Grease gun**	**Automatic lubricators** Motion Guard *Compact*	Motion Guard *Champion*	**Dosing devices** ARCA.PUMP.25	ARCA.PUMP.180
MULTITOP	+	–	+	+	+
MULTI2	+	–	+	–	+
MULTI3	+	–	+	+	+
LOAD220	+	–	+	–	+
LOAD400	+	+	+	–	+
LOAD1000	+	+	+	+	+
TEMP90	+	+	+	+	+
TEMP110	+	–	+	–	–
TEMP120	+	+	+	+	–
TEMP200	+	+	+	–	–
SPEED2,6	+	–	+	+	–
VIB3	+	–	+	+	–
BIO2	+	–	+	–	–
FOOD2	+	+	+	–	–

FAG Industrial Services

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