

L U B R I C A T I O N   S Y S T E M S

# CENTRAL LUBRICATION SYSTEMS



WE MEASURE OUR SUCCESS BY YOUR UP-TIME

SINCE 1927

# BEKAWORLD

## A WORLD OF SOLUTIONS FOR ADVANCED INDUSTRIAL LUBRICATION

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BEKAWORLD is the global network of sales, service and support centers for BEKA lubrication products and systems from Baier & Köppel GmbH + Co KG.

BEKA lube systems originated in Bavaria, Germany, in 1927. Founded by Georg Köppel and Georg Baier, the company originally produced oil pumps for motorcycles and aircraft. Building on this experience in high performance equipment, the firm later focused on the design and manufacture of premium quality central lubrication systems.

Now led by Bernhard Köppel, the third generation of the Köppel family, BEKA's commitment to continuity and sustainability are the foundation of its sustained growth worldwide.

### Quality and innovation

With three production sites and technology centers in Germany, BEKA has developed a highly integrated manufacturing base to ensure dependable quality and reliable service to customers. Our facilities are certified to ISO 9001:2008 and our environmental management is certified to ISO 14001:2009. All critical components in BEKA systems are produced in-house.

Fully 10% of BEKA staff are employed in research and development. Our engineers have earned their reputation for innovation and customized solutions. Through this effort, BEKA has developed multiple lines of specialized systems for a wide range of industrial sectors, covering all mobile and stationary applications.

Along with BEKA pumps and distribution elements, BEKA is recognized for continuing innovation in environmental technology, monitoring electronics and telematics.

### Customer support

BEKA's global leadership in precision manufacturing and engineering flexibility are matched by its local expertise and responsiveness to customers. Anywhere In America and around the world, BEKAWORLD is the dependable source for the complete solution to every lubrication challenge.



# BEKA - TECHNOLOGY YOU CAN RELY ON

Through more than 90 years experience designing and manufacturing high performance pumps, BEKA engineering has led the central lubrication industry with generations of patents and innovations.

Our standard lines now include solutions for virtually any system that runs on grease, from food processing to wind turbines. We operate in the most severe working conditions and the most extreme climates.

To maintain sure control over the quality and dependability of all our products, BEKA machines and assembles all of its critical components in-house.

Anywhere business productivity depends on precise, reliable, long lasting lubrication technology, you will find BEKA on the job.

## Springless design

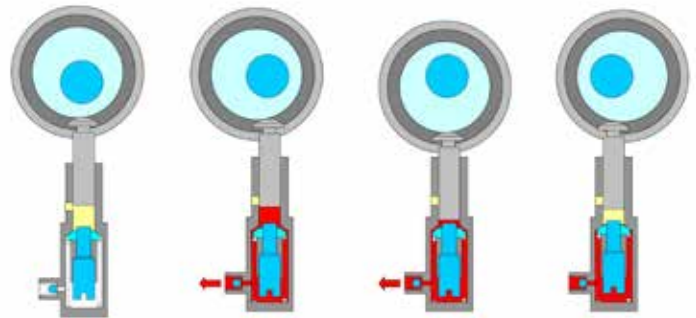
Pumps that rely on spring operation are vulnerable to temperature changes and rapid wear. BEKA created springless drives for EP-1 and GIGA pumps by using an eccentric gear to operate the pump element. As a result, our pumps ensure powerful, consistent dosing of all standard greases, even in temperatures down to -13°F (-25°C), stroke after stroke, year after year.

## Long-life body

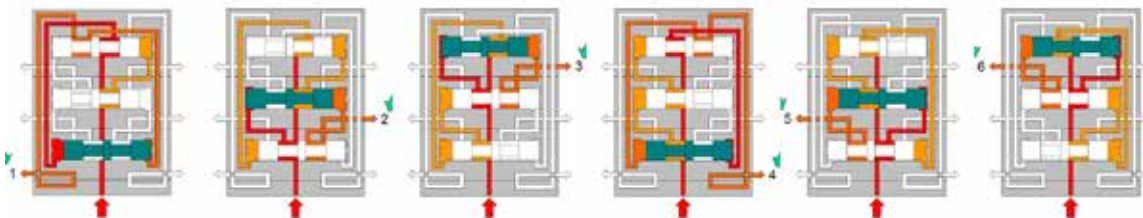
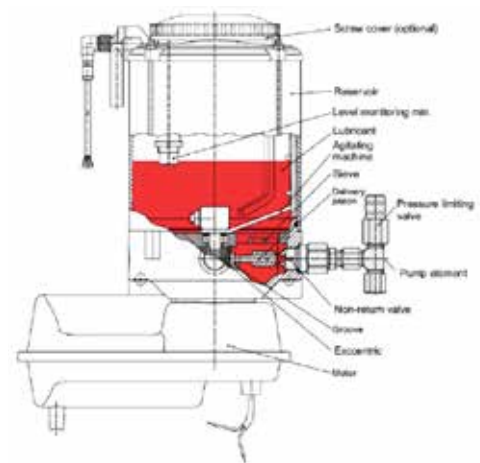
Every BEKA pump is built on cast aluminum bodies produced in our own factories. These bodies provide a secure, long-lasting housing for the precision components inside, highly resistant to extreme industrial and outdoor environments.

## Versatile distributors

BEKA progressive systems utilize distribution blocks that are meticulously machined in-house and assembled-to-order to match every system's specific needs. Our variable disk construction gives BEKA a flexible assembly process that can combine multiple elements with varied flow rates. The number of elements in any block can be extended easily to accommodate the required number of lines at any point in the system.



Function of the pump element



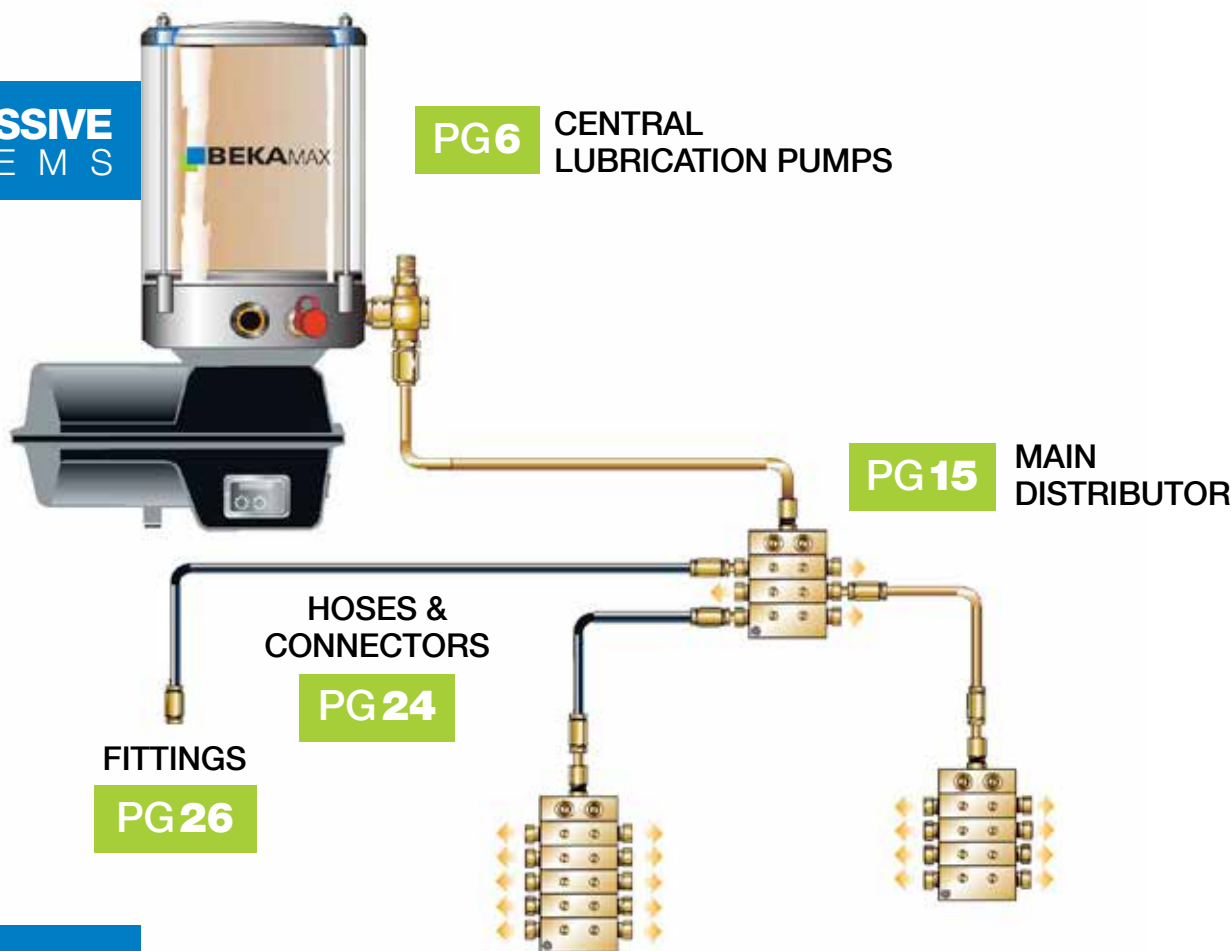
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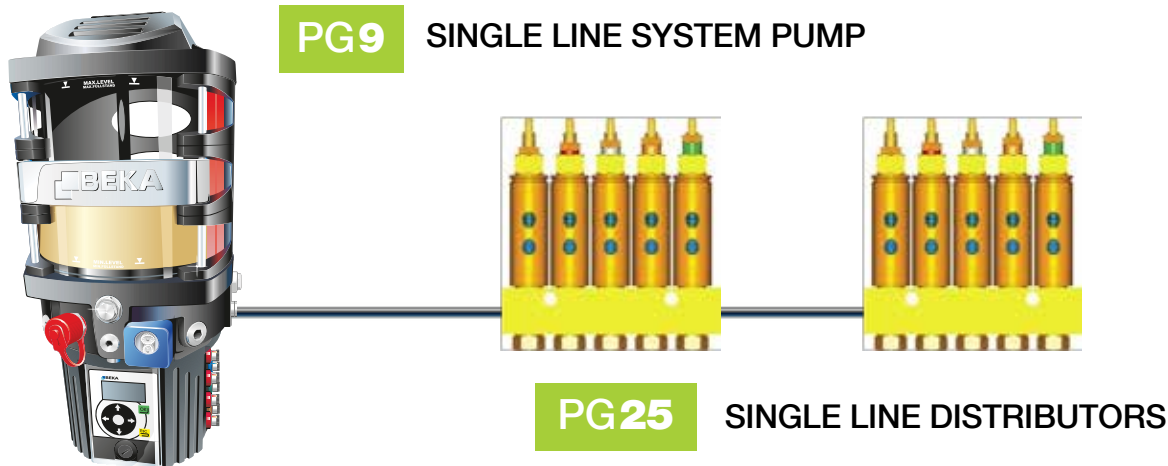


# LUBRICATION SYSTEMS

## PROGRESSIVE SYSTEMS



## SINGLE LINE SYSTEMS



# PUMPS

	Application	Maximum # of outlets	Maximum pressure (bar)	Maximum delivery volume (cm <sup>3</sup> /stroke per outlet)	See complete product specs Page #
	<b>EP-1 Pump</b> A versatile solution for progressive and multi line installation for most mobile and stationary equipment installations. Recommended for all climates.	6	350	0.06 – 0.17	7
	<b>PICO Pump</b> Recommended for point-to-point lubrication in compact equipment. Ideal for machines with lower number of lube points.	10	200	Various Outputs Available. PE5 (0.005 cm <sup>3</sup> ) to PE120F (0.12 cm <sup>3</sup> )	8
	<b>GIGA Pump</b> Full range of electric auto-lube solutions for single line, dual line, and progressive systems. Intelligent lubrication with choice of control systems; control flow rates for selected zones.	3	300	0.25 - 0.75	9
	<b>OC-1 Multi Line Pump</b> Multi line pump with 10 to 34 outlets delivers lubricant directly to service points. Full range of metering and monitoring controls.	21	200	0.005 - 0.050	10
	<b>HAMAX</b> Complete line of tool-mounted grease pumps for hydraulic breakers. Hamax System 2 Hamax 2 Compact Hamax 11 HPG2				11 12 13 14

# GREASE LUBRICATION PUMPS

## EP-1 PUMP



### KEY FEATURES

A versatile solution for progressive and multi line installation for most mobile and stationary equipment installations.

Recommended for all climates.

Suitable for all common lubricants (NLGI 000, 00, 0, 1, 2).

Springless pump element with desmodromic drive for highest reliability.

Integrated control unit EP-tronic with:

- 3 operating modes: time, cycles or revolutions
- electronic monitoring of grease level, pump function, distributor function, pipe rupture, lubricant feeding
- selection of operating conditions: light, medium or heavy
- integrated data logger with diagnosis module

Perfectly matched installation kits in OE quality.

Used as initial equipment by leading manufacturers.

### TECHNICAL DATA

#### PUMP

**Delivery volume per stroke (= 1 pump revolution) and outlet:** 0,06 to 0,17 cm<sup>3</sup> (depends on pump element)

**Regulation:** possible for PE 120 V

**Reservoir content:** 1,9/2,5/4,2/8 kg, Reservoir material plastic, transparent

**Operating pressure:** max. 5076 psi (350 bar)

**Pressure limiting valve adjusted to:** max. 4061 psi (280 bar)

**Lubricant:** greases up to NLGI cl. 2 (grease with solid contents only on demand)

**Operating temperature:** -4°F to 158°F (-20°C to 70°C)

**No. of outlets:** max. 6

**Outlet type:** pipe Ø6 mm, as standard

**Rotation direction of agitator blade:** counter clockwise

**Installation position:** reservoir vertical, as shown

**Protection class:** IP65

**Weight:** max. 5,1 kg (without pump elements, without grease filling)

#### MOTOR

**Drive:** DC motor

**Operating voltage:** 12 V DC / 24 V DC

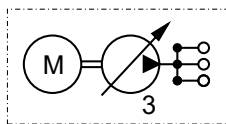
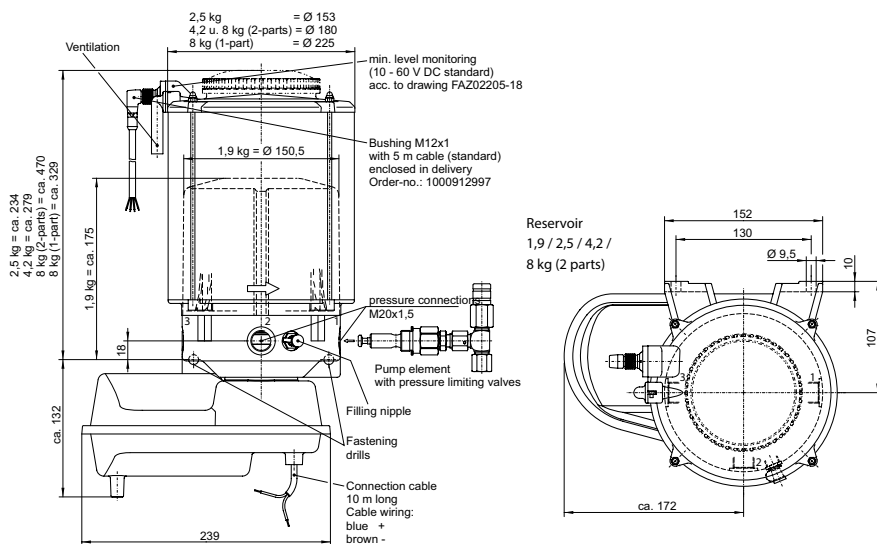
**Current consumption:** max. 3,2 A at 24 V DC

**Speed (= pump revolutions):** 15 r.p.m.

**Note:** The installation of an integrated control unit BEKA-troniX1 or EP-tronic is possible for this pump\* (see documentation control- and monitoring devices). In this case, the type-no. changes.

\*Please indicate type of control separately for model with integrated control unit.

### TECHNICAL DRAWINGS



Pump elements (see documentation pump elements)		Metering volume cm <sup>3</sup> / stroke and outlet
PE 60	with/without pressure limiting valve	0,06
PE 120		0,12
PE 170		0,17
PE 120 V		max. 0,12 (adjustable)

# GREASE LUBRICATION PUMPS

## PICO PUMP



### KEY FEATURES

The compact lubrication solution for compact machines

#### Multi Line Pumps

- Includes PICO and OC-1/EP Pumps
- Point to point lubrication with up to 10 outlets
- Pump elements range from 5, 10, 15, 25, and 50 mm<sup>3</sup>
- Pump elements (PEF and PEFV) allow optional use of distribution blocks
- Ideal for machines with lower number of lube points

SYSTEM	Pump elements (see documentation pump elements)	Metering volume cm <sup>3</sup> / stroke and outlet
MULTI LINE	PE 5	0,005
	PE 10	0,010
	PE 15	0,015
	PE 25	0,025
	PE 50	0,050
PROGRESSIVE	PE 120 F	with/ without pressure limitation valve
	PE 120 FV	max. 0,12 (adjustable)

### TECHNICAL DATA

#### PUMP

**Delivery volume per stroke (= 1 pump revolution) and outlet:** 0,005 to 0,12 cm<sup>3</sup> (depend on pump element)

**Regulation:** possible for PE 120 FV

**Reservoir content:** 1,2 kg

**Material:** plastic, transparent

**Operating pressure:** max. 2900 psi (200 bar) at multi line system: max. 4061 psi (280 bar) at progressive system

**Delivering medium:** greases up to NLGI cl. 2 (grease with solid contents only on demand)

**Operating temperature:** -13°F to 158°F (-25 to 70°C)

**No. of outlets:** max. 10

**Outlet type:** see order key

**Rotation direction of agitator blade:** clockwise

**Installation position:** reservoir vertical as shown

**Weight:** max. 4,5 kg (without pump elements, with basic grease filling)

**Level monitoring:** integrated into the pump

#### MOTOR

**Drive:** DC motor

**Operating voltage:** 12 V DC or 24 V DC

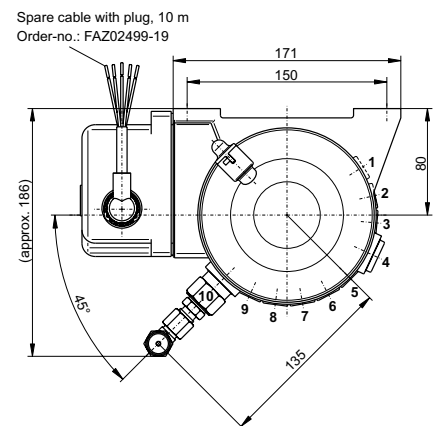
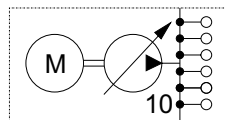
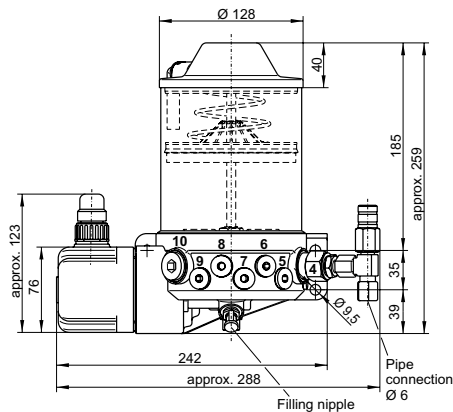
**Current consumption at 280 bar counter-pressure and -25° C:** max. 3,8 A for 24 V DC max. 7,5 A for 12 V DC

**Speed (= pump revolutions):** 15 r.p.m.

**Protection class:** IP 65

Note: The installation of an integrated control unit PICO-tronic (standard) is possible for this pump\* (see documentation control- and monitoring devices).

\*Please indicate type of control separately for model with integrated control unit.



# GIGA PUMP



## KEY FEATURES

Electric Powered Pump for central lubrication

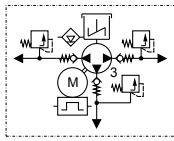
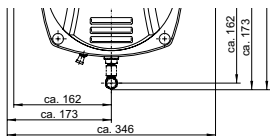
Full range of electric auto-lube solutions:

- Reservoirs from 9 to 35 lb. (4 to 16 kg)
- Deliver 3 to 12.5 mm<sup>3</sup>/min
- Single line, dual line and progressive systems

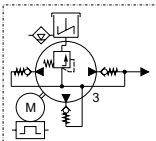
## Intelligent lubrication:

- Control flow rates for selected zones
- Optical monitoring, precise metering
- Choice of control systems

Pump Series	Pump elements	Dosage volume cm³ / stroke and outlet
GIGA	PE 120 G	0,12
	PE 250 G	0,25
GIGA PLUS	PE 250 G	0,25



## GIGA PLUS



## TECHNICAL DATA

## PUMP

**Delivery volume per stroke (= 1 pump revolution) and outlet:** see table (depend on pump element)

**Regulation:** possible for PE 120 FV

**Reservoir / recommended usable volume:** 4 l / 3,5 l, 8 l / 6 l, 16 l / 15 l

**Material:** plastic, transparent

**Housing material:** aluminum

**Other pump components:** zinc-nickel coating acc. to DIN 50979

**Operating pressure:** max. 4351 psi (300 bar)

**Pressure limiting valve adjusted to: 4061 psi (280 bar)**

**Lubricant:** greases up to NLGI cl. 2 (grease with solid contents on request)

**Operating temperature:** -22°F to 158°F (-30°C to 70°C)

**No. of outlets:** max. 3**Outlet type:** see order key

**Rotation direction of agitator blade:** clockwise

**Installation position:** reservoir vertical as shown

**Degree of protection:** IP 65

**Weight:** for 4l reservoir: ca. 24.25 lbs (11 kg)

for 8l reservoir: ca. 26.5 lbs (12 kg)

for 16l reservoir: ca. 30.86 lbs (14 kg)

(without pump elements, without grease filling - depending on configuration)

## MOTOR

**Drive:** DC motor

**Operating voltage:** 24 V DC

**Current consumption:** max. 3,8 A at 24 V DC

**Rotational Speed (= pump revolutions):** 17 r.p.m.

**Control with or without control unit integrated control unit (optional):** GIGA-tronic or GIGA-multitronic

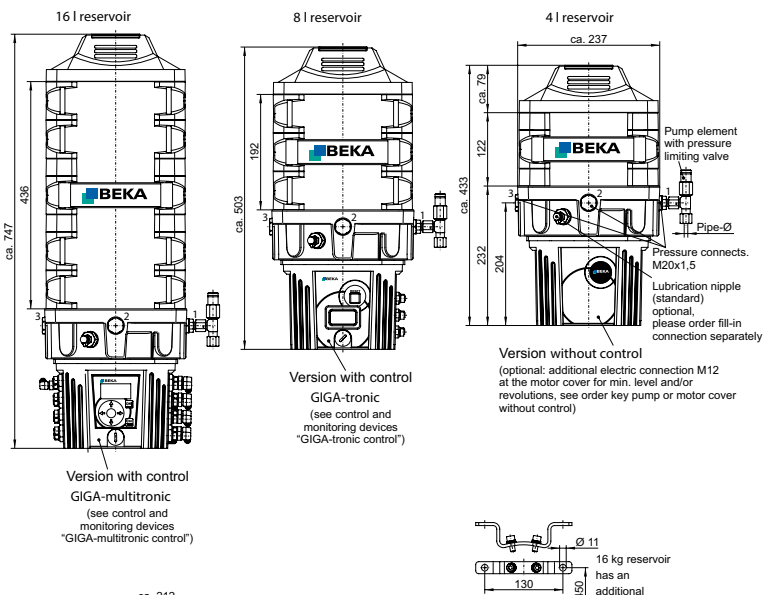
**Voltage connection without control:** bayonet plug set, 7 poles with 2-core connection line, length 10 m

**Voltage connection with GIGA-tronic:** bayonet plug set, 7 poles with 5-core connection line, length 10 m

**Voltage connection with GIGA-multitronic:** bayonet plug set, 7 poles with 7-core connection line, length 10 m

**Additional connections (M12x1):** The cables for connection to additional connections are not included in the delivery (see parts catalogue, 3. pump accessory).

## TECHNICAL DRAWINGS



All dimensions are in mm

# GREASE LUBRICATION PUMPS

## OC-1 MULTI LINE PUMP



### TECHNICAL DATA

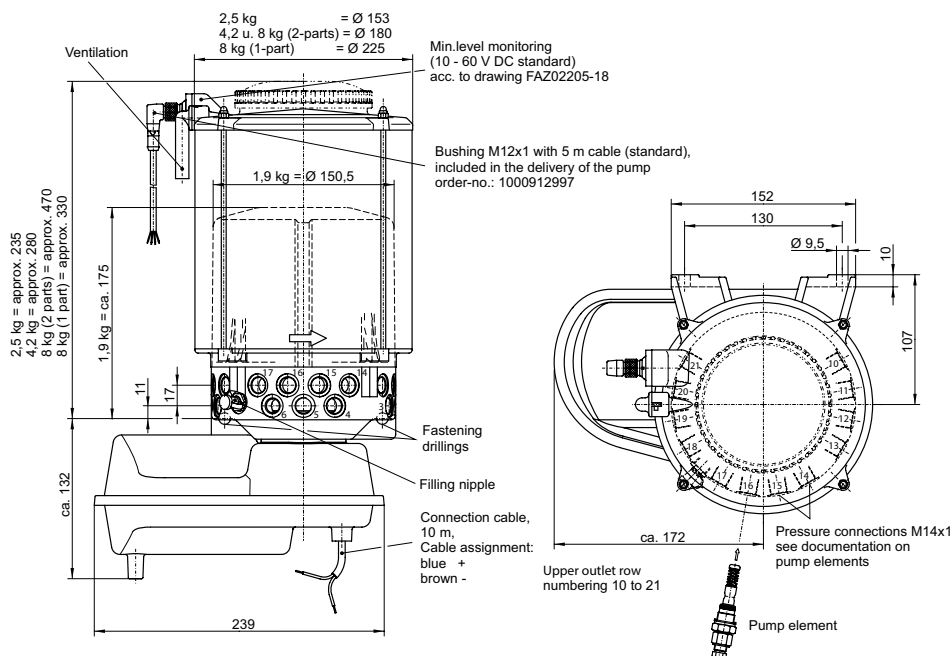
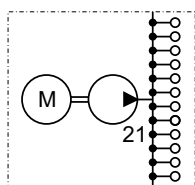
#### PUMP

**Delivery volume per stroke (= 1 pump revolution) and outlet:** 0,005 to 0,12 cm<sup>3</sup> (depends on pump element)  
**Regulation:** pump elements cannot be adjusted  
**Reservoir content:** 1,9 / 2,5 / 4,2 / 8 kg  
**Material:** plastic, transparent  
**Operating pressure:** max. 2900 psi (200 bar)  
**Delivering medium:** greases up to NLGI cl. 2 (grease with solid contents only on demand)  
**Operating temperature:** 4°F to 158°F (-20°C to 70°C)  
**No. of outlets:** max. 21  
**Outlet type:** pipe Ø6 mm, as standard  
**Rotation direction of agitator blade:** counter-clockwise  
**Installation position:** reservoir vertical, as shown  
**Protection class:** IP65  
**Weight:** max. 5,9 kg (without pump elements, without grease filling)

#### MOTOR

**Drive:** DC motor 24 V DC  
**Connection voltage:** 230 V AC/ 50 Hz - 115 V AC/ 60 Hz (via installed power supply unit)  
**Current consumption:** max. 0,2A (230 V AC)  
**Speed (= pump revolutions):** 15 r.p.m.  
**Duty cycle:** 10% duty cycle (10 min)

### TECHNICAL DRAWINGS



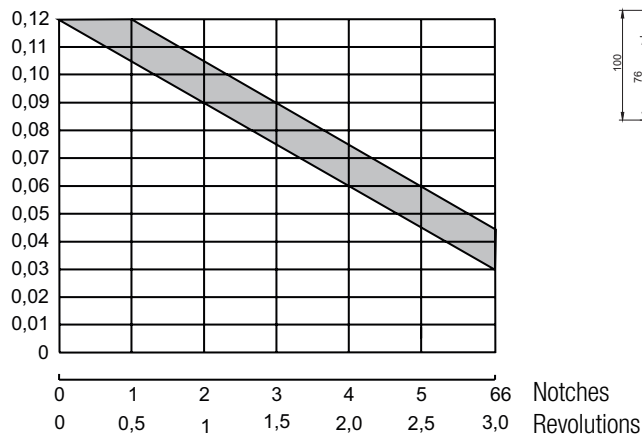


# HAMAX SYSTEM 2 BREAKER PUMP



- Tool-mounted, hydraulically actuated grease pump
- Continuous, automatic lubrication protects against chisel wear
- Recommended for copper-based chisel pastes
- Adjustable output rates to suit equipment and application

**PE-120FVH**

Delivery rate (cm<sup>3</sup>)

## HYDRAULIC MOTOR

**Supply:** Hydraulic hammer circuit, 1,305 – 3,626 psi (90-250 bar)

**Difference pressure in operation:** min. 1,015 psi (70 bar)

**Admissible return pressure:** max. 290 psi (20 bar)

**Displacement:** max. 0.53 gal/min. (2 l/min.)

**Default speed of the eccentric with oil ISO VG 46 at 68°F (20°C):** 14 rpm at 0.48 gal/min. (1.8 l/min.)

**Hydraulic oil:** ISO VG 46-100

**Temperature range:** -4°F up to 158°F (-20°C up to +70°C)

Speed can be adjusted with throttle

**Pressure limiting valve:** 4,061 psi (280 bar)

**Delivery rate/ stroke PEI20FH:** 0.12 cm<sup>3</sup>

**Delivery rate regulation:** sixfold notches p

**Reduction:** 0.013 cm<sup>3</sup> per notch

**Default stroke number:** 14 strokes

Stroke number can be adjusted with throttle

In case of minor lubricant requirements a pump element with adjustable delivery rate is optionally available.

**Lubricant:** EP2 grease or Cu paste

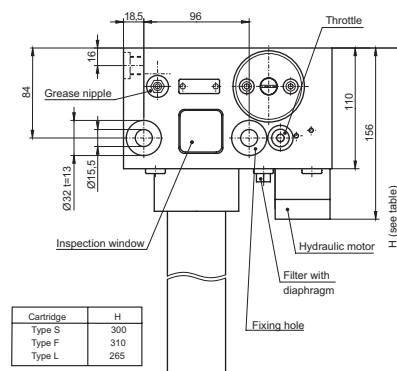
**Grease supply:** different types of cartridges

**Type of cartridge:** dependant of cartridge sleeve

**Weight:** approx. 14.7 lb. (6.7 kg)

Grease nipple for manual greasing available

### Four different lubricant outlets possible





# HAMAX 2 COMPACT BREAKER PUMP



## KEY FEATURES

- Easily connects to hydraulic unit of carrier system
- Adjustable output rates to match equipment and application
- Driven by a hydraulic motor ensures continuous supply of lubricant

## TECHNICAL DATA

### HYDRAULIC MOTOR

**Supply:** Hydraulic hammer circuit, 1,305-3,625 psi (90-250 bar)

**Pressure in operation:** min. 1,015 psi (70 bar)

**Admissible return pressure:** max. 290 psi (20 bar)

**Displacement:** max. 0.53 gal/min. (2 l/min)

**Default speed of the eccentric gear 14 rpm - with oil ISO VG 46 at 68°F (20°C):** at 0.48 gal/min. (1.8 l/min.)

**Temperature range:** 32°F to 158°F (0°C to +70°C)

Speed can be adjusted with throttle

### PUMPING ELEMENT

**Delivery rate/stroke:** 0.12 cm<sup>3</sup>

**Default stroke:** 14 strokes/min.

Stroke number can be adjusted with throttle

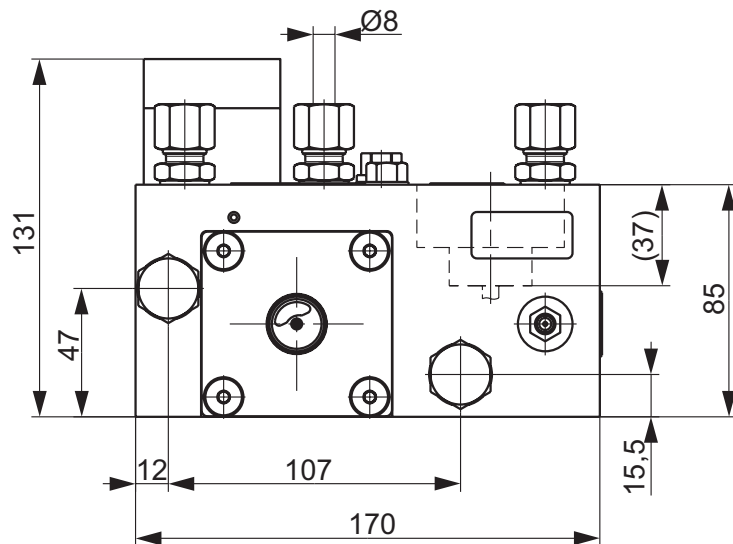
### GENERAL

**Weight:** approx. 8.6 lb. (3.9 kg)

**Lubricant container:** Cartridge

**Lubricant:** EP-grease without solid contents or chisel pastes

## TECHNICAL DRAWINGS



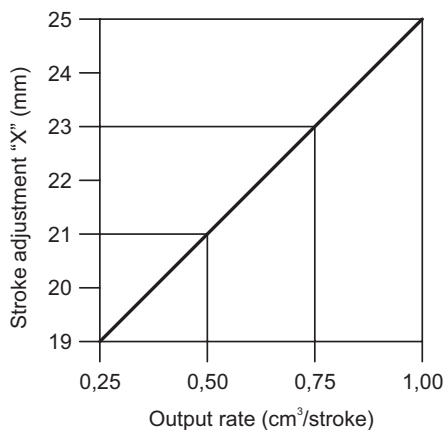
# GREASE LUBRICATION PUMPS

## HAMAX 11 BREAKER PUMP



### KEY FEATURES

- Tool-mounted, hydraulically actuated grease pump
- Delivers lubricant dose with each stroke of the hammer
- Recommended for copper-based chisel pastes
- Adjustable output rates to suit equipment and application



### TECHNICAL DATA

#### HYDRAULIC MOTOR

**Drive:** hydraulic

**No. of strokes:** 1 stroke per pulse at hydraulic connection

**Operating pressure:** min. 1,740 psi (120 bar) - max. 4,351 psi (300 bar)

**Counter press. of lube point:** max. 1,088 psi (75 bar)

**Relief pressure:** max. 363 psi (25 bar)

**Reservoir capacity:** 100, 200 or 400 cm³

**Lubricant:** greases up to NLGI-cl. 2

**Output rate:** 0 or 0.25 to 1 cm³/stroke

**Output rate regulation:** continuously (regulation distance 6 mm)

**Operating temperature:** -13 °F to 167 °F (-25°C to +75°C) (with suitable grease)

**Weight (without lubricant storage):**

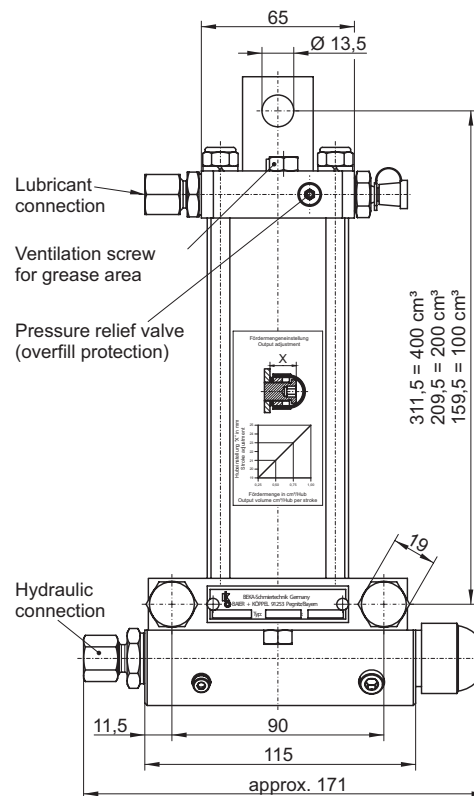
at reservoir capacity 100 cm³: 9.9 lb. (4.5 kg)

at reservoir capacity 200 cm³: 10.8 lb. (4.9 kg)

at reservoir capacity 400 cm³: 12.6 lb. (5.7 kg)

**Filling with grease:** Connection to the hydraulic system necessary

### TECHNICAL DRAWINGS



# GREASE LUBRICATION PUMPS

## HPG 2 BREAKER PUMP



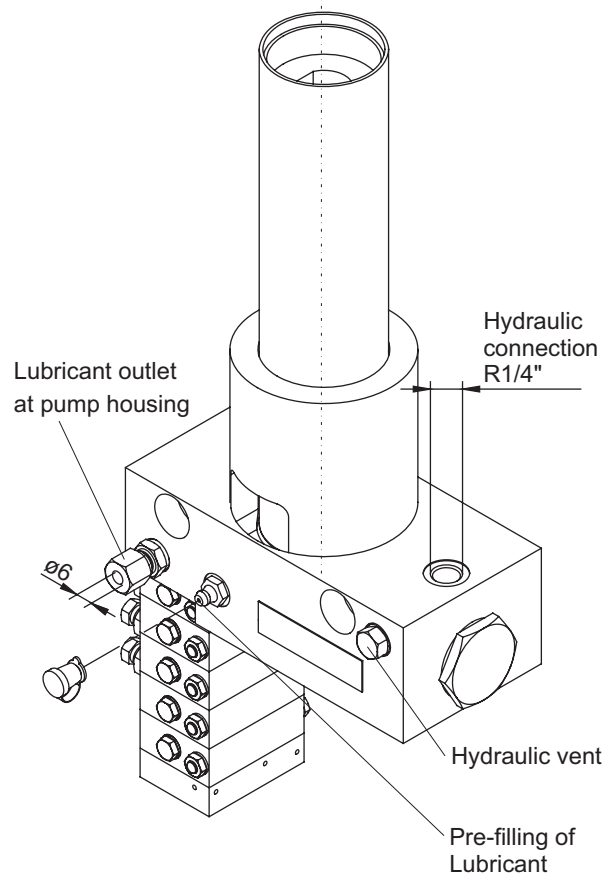
### TECHNICAL DATA

**Drive type:** hydraulic  
**Min. actuation pressure:** 1,015 psi (70 bar)  
**Max. actuation pressure:** 5,801 psi (400 bar)  
**Max. residual pressure hydraulic system:** 290 psi (20 bar)  
**Number of outlets:** depends on distributor at pump housing  
**Dosage volume:** depends on distributor  
**Output rate pump:** 270 mm<sup>3</sup>/per pulse  
**Output rate regulation:** MX-2 progressive distributor  
**Number of strokes:** 1 stroke per pulse at the hydraulic connection  
**Grease cartridge capacity:** 400 cm<sup>3</sup>  
**Temperature range (depending on lubricant and hydraulic inlet pressure):** 14°F to 122°F (-10°C to +50°C)  
**Installation position:** grease cartridge vertically upwards

### TECHNICAL DRAWINGS

#### KEY FEATURES

- A sturdy, compact grease pump designed for use with progressive centralized lubrication systems
- Designed to deliver multi-purpose grease NLG1 and 2
- Equipped with an MX-2 type progressive distributor
- Provides 270 mm<sup>3</sup>/stroke to the progressive MX-2 progressive distributor












# DISTRIBUTORS

Following is a sample of our progressive distributors that are assembled in a variable segment construction. This allows the distributor to be extended or shortened to accommodate the number of lubrication points. This also allows the segments to be changed to modify the amount of lubricant a point will get. The difference in output is achieved by a difference in the diameter of the pistons in each segment.

A minimum of three segments (not including the starter segment) are required per block, with a maximum of 12 segments. Each segment can do one or two points, depending on configuration.

	<b>Application</b>	<b>Dosage volumes (mm<sup>3</sup>)</b>	<b>Max outlets</b>
	<b>SX-1</b> Due to up-positioned sealing washers, easy outlet combination without loosening of pipe lines and fittings.	69 – 430	20
	<b>SXE-2</b> Designed for the use as main distributor for grease lubrication systems on construction machinery. <ul style="list-style-type: none"> <li>• use of dummy elements, which can be replaced by metering elements, if necessary</li> <li>• For use on optional equipment on machinery</li> </ul>	100 – 760	20
	<b>MX-F</b> Use in mobile range (on- and off-road vehicles, agricultural and construction machinery, etc.). <ul style="list-style-type: none"> <li>• special coating for hardest operating conditions available</li> </ul>	25 – 105	24
	<b>LX-4</b> Clearly less space necessary due to various dosage possibilities. <ul style="list-style-type: none"> <li>• high metering flexibility</li> </ul>	50 – 200	20
	<b>MX-I (stainless)</b> Especially suitable for food industry and aggressive environments.	45 – 105	16
	<b>LX-3 (stainless)</b> Perfectly suitable for beverage and oils packing industry. <ul style="list-style-type: none"> <li>• 100 % compatible dimensions and output rate to similar block distributors</li> <li>• highest material quality (1.4404, 1.4401)</li> </ul>	200	20
	<b>SX-3 (stainless)</b> SX-3 - alternative to SX-2, but with V2A (1.4301). <ul style="list-style-type: none"> <li>• especially suitable for food industry and aggressive environments</li> </ul>	75 - 470	20

# SX-1 PROGRESSIVE DISTRIBUTOR



## TECHNICAL DATA

**Operating pressure inlet:** max. 4351 psi (300 bar)

**Temperature range:** -22°F to 176°F (-30°C to 80°C)

**Metering medium:** oil - fluid grease - grease up to NLGI-cl. 2

**No. of revolutions:** max. 180 r.p.m.

**Material:** steel corrosion protection category corresponds to a protection period of up to 720 h red rust resistance

**No. of middle elements (metering elements):**

min. 3 middle elements: SX-1 3/6

max. 10 middle elements: SX-1 10/20

## TECHNICAL DRAWINGS

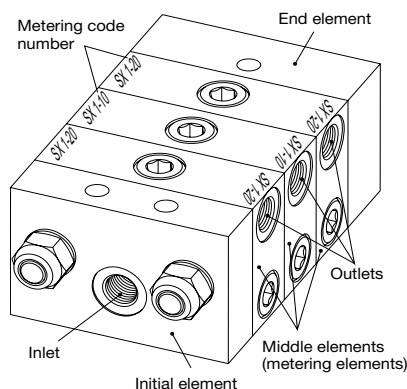
### TECHNICAL DESCRIPTION

Progressive distributors SX-1 are built in a variable disk construction. Therefore the distributor can be, depending on the number of lubrication points, extended or shortened. Because of the disk construction, there is the possibility to form individual middle elements (metering elements) with different metering volumes to one complete progressive distributor.

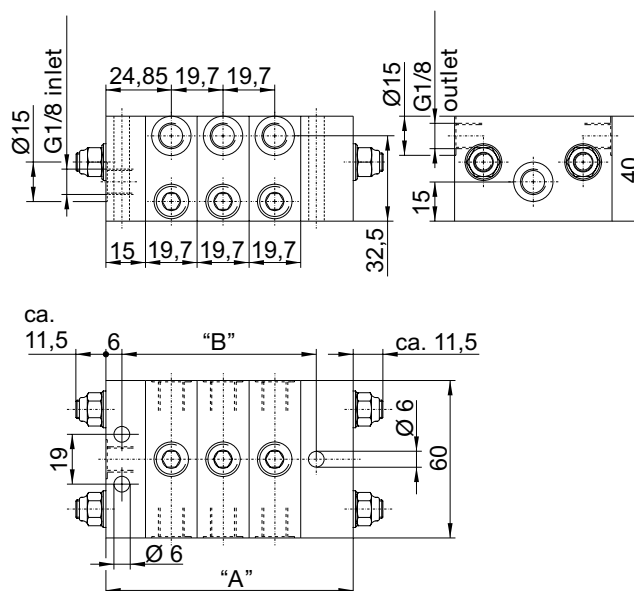
The different metering volume per stroke is effected by different piston diameters.

A progressive distributor needs at least three pistons, i.e. at least three middle elements (metering elements).

Progressive distributor SX-1 with three middle elements and six outlets:



Dimensional drawing:



Designation middle element	Metering volume (mm <sup>3</sup> /stroke)		Code no.
	p. outlet	p. element	
SX-1 05	68	136	05
SX-1 10	105	210	10
SX-1 15	150	300	15
SX-1 20	210	420	20
SX-1 25	275	550	25
SX-1 35	350	700	35
SX-1 45	430	860	45



# SXE-2 PROGRESSIVE DISTRIBUTOR



## TECHNICAL DESCRIPTION

Progressive distributors SXE-2 are built in a variable disk construction. Therefore the distributor can be optionally arranged, depending on the number of lubrication points and their lubricant need.

The SXE-2 distributor consists of distributor disks. These disks consist of a basic element (without piston) and a metering element (with piston), respectively a dummy element (without piston). Basic elements are divided into initial, middle and end elements. All basic elements have two outlets on the side.

The variable system enables changes of the metering volume of the individual outlets as well as the number of outlets.

The different metering volume per stroke is effected by different piston diameters.

For reducing the number of distributor outlets of an existing distributor SXE-2, a dummy element is available or a basic element with metering element can be removed.

The distributor can be enlarged with an additional basic element with metering element.

A progressive distributor needs at least three metering elements (piston elements).

## TECHNICAL DATA

**Operating pressure inlet:** max. 4351 psi (300 bar)

**Temperature range:** -31°F to 178°F (-35°C to 80°C)

**Lubricant:** oil - fluid grease - grease up to NLGI-cl. 2

**No. of revolutions:** max. 180 r.p.m.

**Material:** steel corrosion protection category corresponds to a protection period of up to 720 h red rust resistance

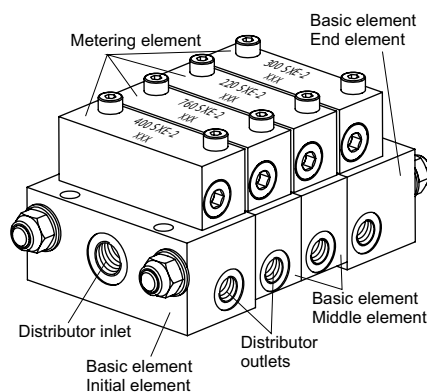
**No. of elements:**

Min. 3 metering elements: SXE-2 3/6

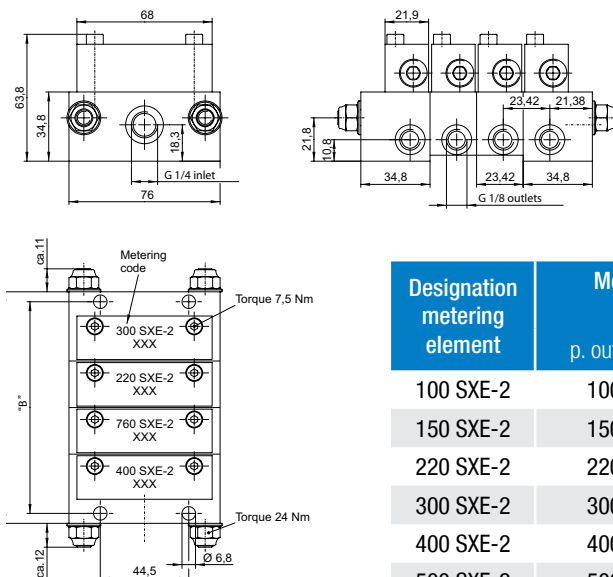
Max. 10 metering elements: SXE-2 10/20

## TECHNICAL DRAWINGS

**Progressive distributor SXE-2 with four distributor disks and eight outlets:**



**Dimensional drawing:**



Designation metering element	Metering volume (mm³/stroke)		Code no.
	p. outlet	p. element	
100 SXE-2	100	200	100
150 SXE-2	150	300	150
220 SXE-2	220	440	220
300 SXE-2	300	600	300
400 SXE-2	400	800	400
500 SXE-2	500	1000	500
620 SXE-2	620	1240	620
760 SXE-2	760	1520	760



# MX-F PROGRESSIVE DISTRIBUTOR



## TECHNICAL DESCRIPTION

Progressive distributors MX-F are built in a variable disk construction. Therefore, the distributor can be, depending on the number of lubrication points, extended or shortened. Because of the disk construction there is the possibility to join individual distributor disks (middle element, end element) with different metering volumes together to one complete progressive distributor.

The different metering volume per stroke is effected by different piston diameters.

A progressive distributor needs at least three pistons.

Designation piston element	Metering volume (mm <sup>3</sup> /stroke)		Code no.
	p. outlet	p. element	
MX-F 25	25	50	25
MX-F 45	45	90	45
MX-F 75	75	150	75
MX-F 105	105	210	105

## TECHNICAL DATA

**Operating pressure inlet:** max. 4351 psi (300 bar)

**Temperature range:** -22°F to 178°F (-30°C to 80°C)

**Metering medium:** oil - fluid grease - grease up to NLGI-cl. 2

**No. of revolutions:** max. 180 r.p.m.

**Material:** steel corrosion protection category corresponds to a protection period of up to 720 h red rust resistance

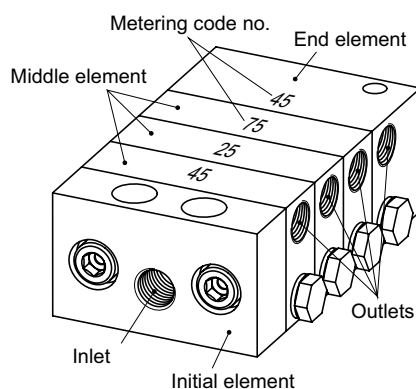
**No. of elements:**

Min. 3 piston elements: MX-F 3/6

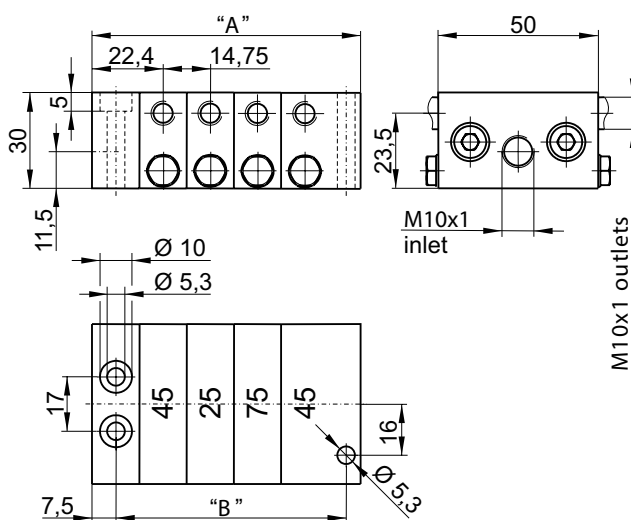
Max. 12 piston elements: MX-F 12/24

## TECHNICAL DRAWINGS

**Progressive distributor MX-F with four piston elements (middle element, end element) and eight outlets:**



**Dimensional drawing:**



# LX-4 PROGRESSIVE DISTRIBUTOR



## TECHNICAL DATA

**Operating pressure inlet:** max. 4351 psi (300 bar)

**Temperature range:** -22°F to 176°F (-30°C to 80°C)

**Medium:** oil - fluid grease - grease up to NLGI-cl. 2

**No. of revolutions:** max. 180 r/min

**Material:** steel corrosion protection category corresponds to a protection period of up to 720 h red rust resistance

**No. of piston elements:**

Min. 3 piston elements: LX-4 3/6

Max. 10 piston elements: LX-4 10/20

## TECHNICAL DRAWINGS

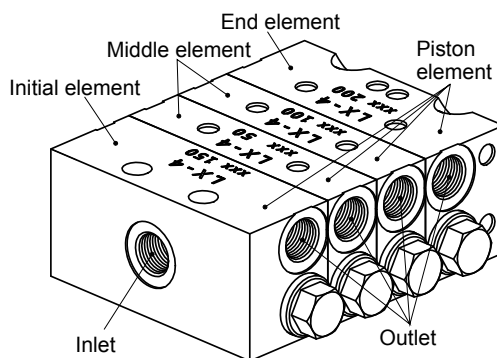
### TECHNICAL DESCRIPTION

The LX-4 progressive distributors are designed in a variable disk construction with the advantage that the distributor can be extended or shortened, depending on the number of lubrication points. The disk construction offers the possibility to make up a complete progressive distributor of individual elements (initial-, middle- and end elements) which have different dosage volumes.

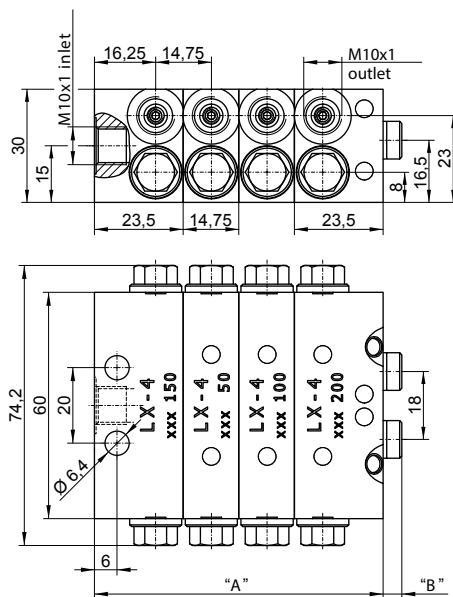
Those different dosage volumes per piston stroke are realized by different piston diameter.

A progressive distributor requires at least three pistons, i.e. one initial and one end element and at least one middle element.

**LX-4 progressive distributor with four piston elements and eight outlets:**



**Dimensional drawing:**



Name of piston element	Dosage volume (mm <sup>3</sup> /hub)		Code no.
	p. outlet	p. element	
LX-4 50	50	100	50
LX-4 100	100	200	100
LX-4 150	150	300	150
LX-4 200	200	400	200

# MX-I PROGRESSIVE DISTRIBUTOR



## TECHNICAL DATA

**Operating pressure inlet:** max. 4351 psi (300 bar)  
**Temperature range:** -22°F to 176°F (-30°C to 80°C)  
**Lubricant:** oil - fluid grease - grease up to NLGI-cl. 2  
**No. of revolutions:** max. 60 r.p.m.  
**Material:** V4A (1.4404)  
 Stainless Steel  
**No. of middle elements:**  
 Min. 3 middle elements: MX-I 3/6  
 Max. 8 middle elements: MX-I 8/16

## TECHNICAL DRAWINGS

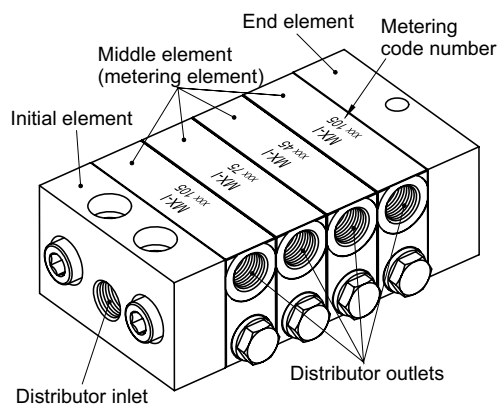
### TECHNICAL DESCRIPTION

Progressive distributors MX-I are built in a variable disk construction. Therefore, the distributor can be, depending on the number of lubrication points, extended or shortened. Due to the disk construction there is the possibility to join individual middle elements (metering elements) with different metering volumes together to one complete progressive distributor.

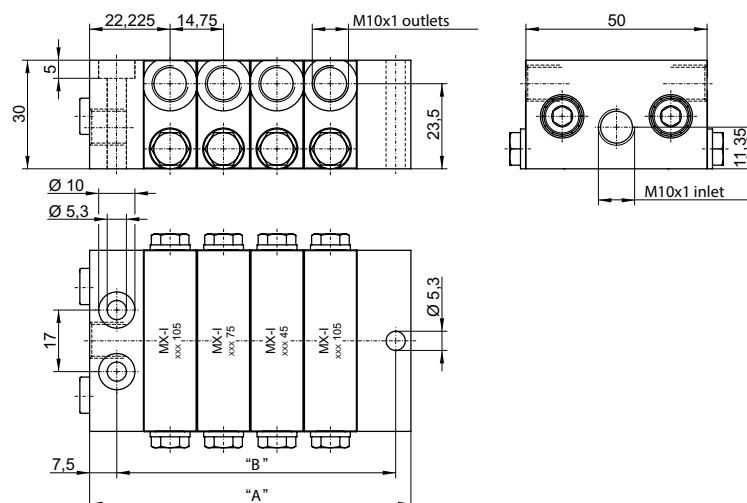
The different metering volume per stroke is effected by different piston diameters.

A progressive distributor needs at least three pistons i.e. at least three middle elements (metering elements)

Progressive distributor MX-I with four middle elements and eight outlets:



Dimensional drawing:



Designation middle element	Metering volume (mm <sup>3</sup> /stroke)		Code no.
	p. outlet	p. element	
MX-I 45	45	90	45
MX-I 75	75	150	75
MX-I 105	105	210	105

## LX-3 PROGRESSIVE DISTRIBUTOR



### TECHNICAL DESCRIPTION

The progressive distributor LX-3 is built in a variable disk construction. Therefore, the distributor can be, depending on the number of lubrication points, extended or shortened.

A progressive distributor needs at least three pistons for function, i.e. an initial and end element as well as a middle element for distributor LX-3.

### TECHNICAL DATA

**Operating pressure inlet:** max. 4351 psi (300 bar)

**Temperature range:** -22°F to 176°F (-30°C to 80°C)

**Metering medium:** oil - fluid grease - grease up to NLGI-cl. 2

**Metering volume:** 200 mm<sup>3</sup>/stroke per outlet

**No. of revolutions:** max. 60 r.p.m.

**Material:** V4A (1.4404 / 1.4401)  
Stainless Steel

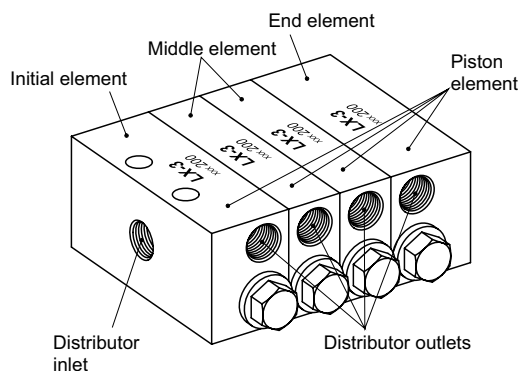
**No. of piston elements:**

Min. 3 piston elements: LX-3 3/6

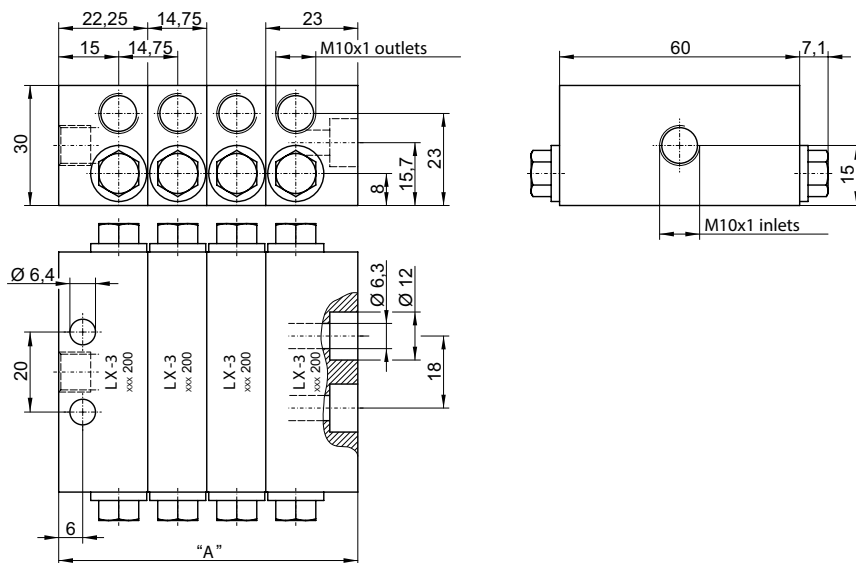
Max. 10 piston elements: LX-3 10/20

### TECHNICAL DRAWINGS

**Progressive distributor LX-3 with four piston elements and eight outlets:**



**Dimensional drawing:**



# SX-3 PROGRESSIVE DISTRIBUTOR



## TECHNICAL DATA

**Operating pressure inlet:** max. 4351 psi (300 bar)

**Temperature range:** -22°F to 176°F (-30°C to 80°C)

**Lubricant:** oil - fluid grease - grease up to NLGI-cl. 2

**No. of revolutions:** max. 60 r.p.m.

**Material:** V2A (1.4301)

Stainless Steel

**No. of elements:**

Min. 3 metering elements: SX-3 3/6

Max. 10 metering elements: SX-3 10/20 (max. up to 12 metering elements possible on enquiry)

## TECHNICAL DRAWINGS

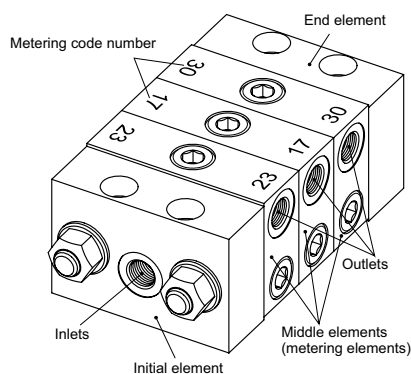
### TECHNICAL DESCRIPTION

Progressive distributor SX-3 is built in a variable disk construction. Therefore, the distributor can be, depending on the number of lubrication points, extended or shortened. Because of the disk construction there is the possibility to form individual middle elements (metering elements) with different metering volumes to one complete progressive distributor.

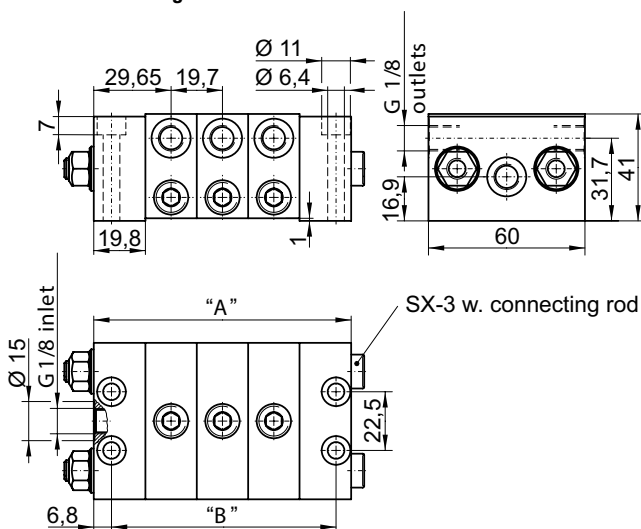
The different metering volume per piston stroke is effected by different piston diameters.

A progressive distributor needs at least three pistons, i.e. at least three middle elements (metering elements).

**Progressive distributor SX-3 with three metering elements and six outlets:**



**Dimensional drawing:**



Designation middle element	Metering volume (mm <sup>3</sup> /stroke)		Code no.
	p. outlet	p. element	
SX-3 07	75	150	07
SX-3 11	117	234	11
SX-3 17	170	340	17
SX-3 23	230	460	23
SX-3 30	300	600	30
SX-3 38	380	760	38
SX-3 47	470	940	47

# HOSES & HOSE CONNECTORS



## Polyamide Tube

Part #100120100  
100 meter rolls



## Zip Ties



## High Pressure Hose

Part #100120200 straight  
Part #100120205 spiral



## Hose Clamps For HP Hose



## Steel Tube

3 meter lengths  
Part #0612020001 - 6 mm  
Part #0612020002 - 4 mm



## Threaded Sleeve

Part #100121200



## Helical Pipe

Part # 100121005  
50 meter bag



## Tubular Socket

Part # 100121201  
Many sizes available



## 45° Pipe Union

Part # 100121206  
Many sizes available



# PRE-PACKAGED SERVICE KITS

BEKA service kits include a complete set of fittings, connectors, wear parts and other hardware required for all maintenance and repairs to your lubrication system.

Each kit is custom stocked when you order, with parts matched to your specific BEKA pump and lube system. Includes a convenient reference chart for easy identification and sorting of your parts. Please call BEKA @ 1.888.862.7461 for your customized kit.



Call us for more information about your customized service kit.



# SINGLE LINE DISTRIBUTORS

Dosing injectors for single line systems are available in 2 sizes:

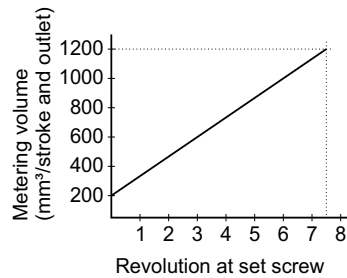
- BL 1: up to 6 outlets; temperatures down to -14.8°F (-26°C)
- BL 11 single outlet; temperatures down to -40°F (-40°C).

All injectors are rated up to 3480 psi (240 Bar) for heavy-duty applications such as mining, steel, paper mill process equipment.

## BL-1 (STATIC SYSTEM)



Model	Adjustable metering volume (mm <sup>3</sup> / stroke and outlet)	Metering volume per turning of the set-screw (mm <sup>3</sup> )
BL-1	200 to 1200	approx. 130



### TECHNICAL DESCRIPTION

The BL-1 single line distributors (static system) deliver the lubricant under pressure via lines directly to the lube points. Only one lube point is assigned to each metering valve.

Metering can infinitely be adjusted for each lube point at each distributor, respectively each metering valve. The BL-1 single line distributors have an indicator pin for the visual control of the function.

We use elastomeric seals for the BL-1. Those can be replaced by the customer, if necessary. The required material for assembly can be ordered.

### TECHNICAL DATA

**Operating pressure:** max. 3480 psi (240 bar)  
min. 2030 psi (140 bar)

**Relief pressure:** < 725 psi (50 bar)

**Temperature range:** -15°F to 194°F (-26°C to 90°C)

**Medium:** oil - fluid grease - grease up to NLGI-cl. 2

**Dosage volume:** see table

**Material:** steel, the category of corrosion protection means protection against red rust of up to 720 h

**No. of outlets or metering valves of a single line distributor:**

Min. 1

Max. 6

**Weights:** see table

### TECHNICAL DRAWINGS

**Dimensional drawing:**

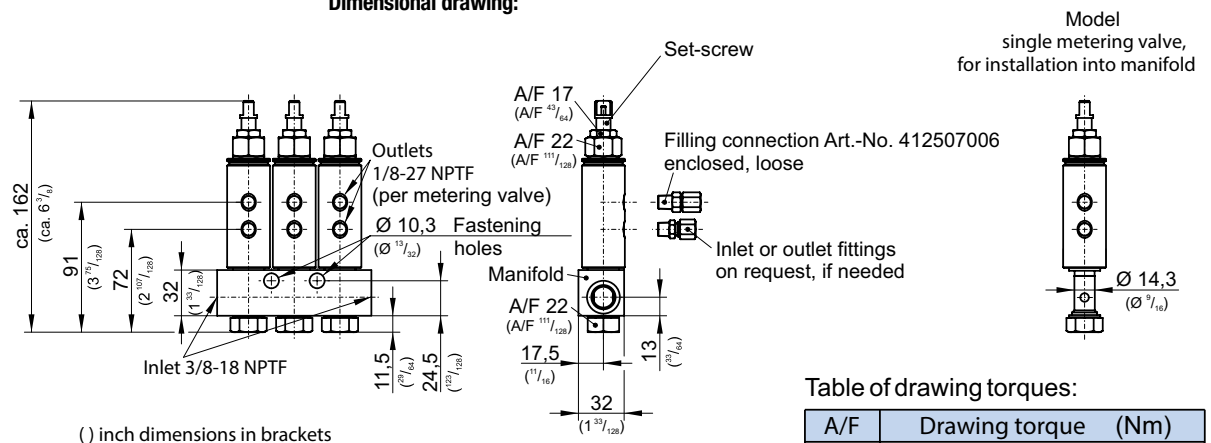


Table of drawing torques:

A/F	Drawing torque (Nm)
17	15 ± 2
22	65 ± 5

## SINGLE LINE DISTRIBUTORS

# BL-11 METERING VALVE (STATIC SYSTEM)



Model	Adjustable dosage volume (mm <sup>3</sup> / stroke and outlet)	Dosage volume per revolution of the set-screw (mm <sup>3</sup> )
BL-11	1000 to 11000	approx. 600

### TECHNICAL DESCRIPTION

The BL-11 metering valve (static system) delivers the lubricant under pump pressure directly to the lubrication point.

The lubricant dosage can infinitely be adjusted. A pin serves for visual function control.

We use elastomeric seals for the BL-11. These seals can be replaced by the customer if necessary. The required tools for assembly can be ordered..

### TECHNICAL DATA

**Operating pressure:** max. 3480 psi (240 bar)  
min. 1015 psi (70 bar)

**Relief pressure:** < 797 psi (55 bar)

**Temperature range:** -40°C to 199°C (-40°C to 93°C)

**Medium:** fluid grease - grease up to NLGI-cl. 2

**Dosage volume:** see table

**Material:** steel, corrosion protection category corresponds to a protection period of up to 720 h red rust resistance

**Weights:**

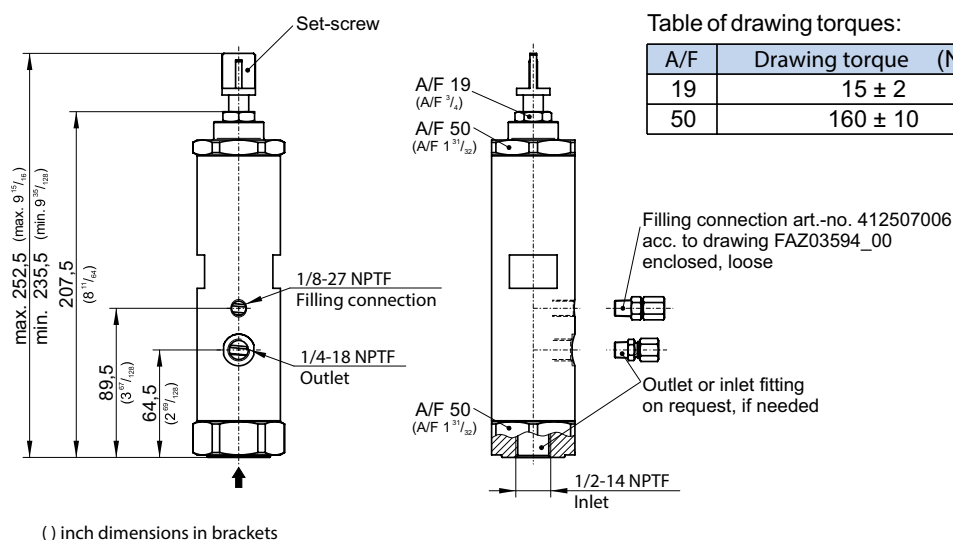
Metering valve: 6.2 lbs (2.8 kg)

Filling connection: 0.02 kg

**Weights:** see table

### TECHNICAL DRAWINGS

Dimensional drawing:



# FITTINGS

BEKAWORLD maintains inventories of all fittings required to complete any single line or progressive lubrication system. Most fittings shown here are available in a variety of sizes.



**Cap Screw**

Part #0802000190



**Double Cone Olive**

Part #09038620023



**90° Screw Coupling**

Part #04012200506

Many sizes available



**Straight Screw Coupling**

Part #04012000406

Many sizes available



**Extension**

Part #04011600606

Many sizes available



**45° Coupling**

Part #100210080

Many sizes available

# FITTINGS



## **Square Coupling**

Part #100210085

Many sizes available



## **90° Angular Swivel Union**

Part #04013200206

Many sizes available



## **Straight Screw Coupling (Union)**

Part #04013600306

Many sizes available



## **Straight Bulkhead Coupling**

Part #04014701006

Many sizes available



## **Straight Rotating Joining, Brass**

Part #0402020



## **Hinge**

Part #040201

Many sizes available

# MANUAL LUBRICATION & REFILL EQUIPMENT

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**Lube-Shuttle® - One-Hand Pistol Grip (300 bar)**  
Part #3036010

- 4 jaw coupler
- Available with rigid tube, high-pressure plastic hose or high-pressure rubber hose
- Accessories can mount on top or on side of steel barrel



**Lube-Shuttle® - Ergonomic Side-Lever (400 – 800 bar)**  
Part #3032050

- 1.5 cc per stroke
- Approved for NLGI class 2, TUV, DLG, BLT
- 4 jaw coupler for rigid tube, high-pressure plastic hose or high-pressure rubber hose



**Lube-Shuttle® - Battery-Operated (400 bar)**  
Part #3427030

- Up to 100 cc/min
- 14.4 lithium battery
- DC motor with planetary gearbox, piston drive
- 4 jaw couple

# MANUAL LUBRICATION & REFILL EQUIPMENT

---



## **LubeJet-eco Part #3378080**

- The clean solution for telescoping booms, vehicle gears, steel ropes, chains
- Compressed air spraying unit - no propellants or chemical additives required
- Adjustable nozzle provides complete control for precise spraying
- Size (LxBxH) 7.4 X 2.75 X 16.5" (188 x 70 x 420 mm)
- Spray Capacity 400 cc Lube-Shuttle® system cartridge
- Air Pressure (min/max) 3 - 5 bar
- Air Connection G1/4"
- Weight 3.3 lb. (1.5 kg)



## **LubeJet pneuMATO 55 – Static and Mobile models**

- The sure, fast lube solution for telescoping booms, vehicle gears, steel ropes, chains
- Compressed air spraying unit – no propellants or chemical additives required
- Unique twin-hose design for convenient delivery of air pressure and grease
- Also available is the 440 lb. (200 kg) drum and cart
- Compatible with all standard shop greases up to NLGI 2\*
- Mobile includes portable cart for grease drums both 55 lb. (25 kg) and 110 lb. (50 kg)
- Static couples to all large grease kegs for uninterrupted supply in high-volume applications



## **Refill Equipment**

- High volume, low pressure pumps for refilling Lube-Shuttle® tubes or BEKA pump reservoirs
  - Attach to 55 lb. (25 kg) or 110 lb. (50 kg) drums to pump all standard shop greases up to NLGI 2\*
  - Available with pneumatic power or manual lever.
  - Choice of static model or with drum cart for mobile applications
- \*Not for use with silicone pastes without lubricating properties or containing abrasives

## DIAGNOSTIC SYSTEM FOR CENTRAL LUBRICATION

# BEKA-DiSys

The BEKA-DiSys diagnostics program is designed to help technicians to setup newly installed lube pumps and control systems and to assist in servicing central lubricating systems.

The BEKA-DiSys program is recommended for setting and monitoring all BEKA control systems, including:

EP-tronic	EP-tronic LFR
EP-tronic T1	BEKA-troniX1
EP-tronic LBH	PICO-tronic

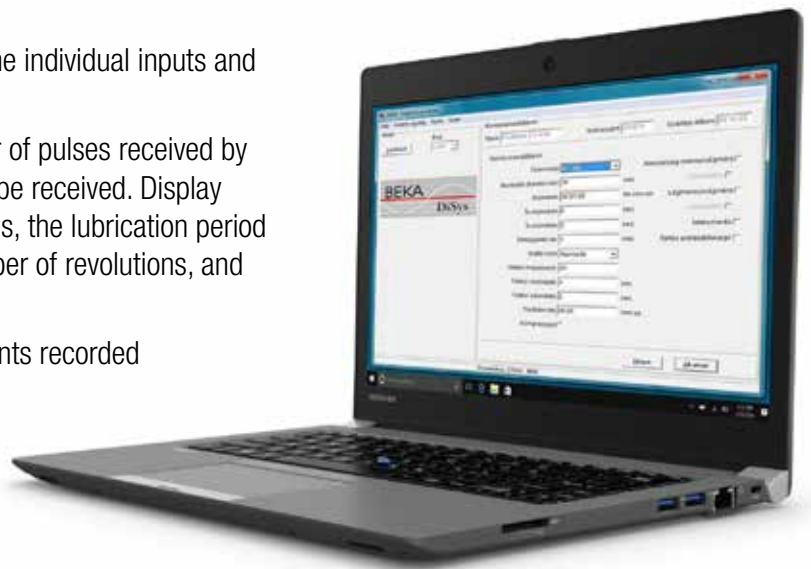


BEKA-DiSys displays pump settings and operating data quickly, with a user-friendly interface to easily adjust and control the system.

The software installs simply onto any Windows-based computer, laptop or tablet, using the supplied CD and the data cable required to connect the PC to the pump or control unit available from your factory representative.

Once downloaded and on the screen, simply click the “Connect” button to retrieve the data from the control system and/or make your modifications.

- **In the “settings” area**, select the desired operating mode (time, pulse, revolution) and cycle time; then the corresponding lubrication time, cycle or revolution ranges can be set.
- **“HW Test” (hardware test)** can be used to test the individual inputs and outputs
- **The “monitoring” interface** will track the number of pulses received by the control system and the number of pulses yet to be received. Display reports are based on the cycle period, the revolutions, the lubrication period as well as the monitoring periods of the pulse, number of revolutions, and fullness level.
- **The “error list” button** displays all errors and events recorded and saved in the control system.
- **The “statistics” button** shows the operating hours, the pump motor run time, the interim lubrications and fullness level errors, reported in total and since the last report.





# TROUBLESHOOTING GUIDE

PROBLEM	REASON	CORRECTION
Agitator not rotating	<ul style="list-style-type: none"> <li>• Incorrect wiring</li> <li>• Incorrect voltage</li> <li>• Pump Element incorrectly seated</li> <li>• Foreign object in pump</li> </ul>	<ul style="list-style-type: none"> <li>• Check wiring and voltage</li> <li>• Remove and inspect pump element</li> <li>• Check pump and reservoir for foreign object and remove</li> </ul>
Pump is working, but does not supply grease	<ul style="list-style-type: none"> <li>• Air in feed piston</li> <li>• Pump element incorrectly seated</li> <li>• Worn pump element</li> </ul>	<ul style="list-style-type: none"> <li>• Bleed the pump</li> <li>• Reseat pump element</li> <li>• Replace pump element</li> </ul>
No grease collar at all points of lubrication	<ul style="list-style-type: none"> <li>• Pump does not work</li> <li>• Period between cycles is too long</li> <li>• Lubrication times are too short</li> </ul>	<ul style="list-style-type: none"> <li>• Check wiring</li> <li>• Check pump element output</li> <li>• Adjust controller timer</li> </ul>
No grease collar at one lubrication point	<ul style="list-style-type: none"> <li>• Broken hose in system</li> <li>• Blockage at distributor block</li> </ul>	<ul style="list-style-type: none"> <li>• Replace hose</li> <li>• Check with pressure gauge, then clean block</li> </ul>
Reduced pump speed	<ul style="list-style-type: none"> <li>• Not enough voltage</li> <li>• High pressure due to low ambient temperature</li> </ul>	<ul style="list-style-type: none"> <li>• Check voltage</li> <li>• Use an arctic grease or an NLGI-1 grease</li> </ul>
Leakage of grease at the pressure relief valve (PRV)	<ul style="list-style-type: none"> <li>• Excessive pressure in the system</li> <li>• Distribution blocks are blocked                             <ul style="list-style-type: none"> <li>• System is blocked</li> </ul> </li> <li>• Defective valve spring</li> </ul>	<ul style="list-style-type: none"> <li>• Check the system</li> <li>• Find and clean block</li> <li>• Clogged or seized bearing</li> <li>• Replace PRV</li> </ul>
Everything working, but grease not flowing out of end of hose	<ul style="list-style-type: none"> <li>• Hose not filled with grease at factory</li> <li>• Pump element not functioning</li> </ul>	<ul style="list-style-type: none"> <li>• Connect a grease gun to the end of the hose and force grease through it</li> <li>• Inspect and test pump element</li> </ul>
Not enough grease coming out of the pump element	<ul style="list-style-type: none"> <li>• Overfilled reservoir blocking the vent tube causing a vacuum</li> <li>• Pump element worn</li> </ul>	<ul style="list-style-type: none"> <li>• Remove lid and vent tube and clean grease out of breather</li> <li>• Only fill reservoir to Max mark</li> <li>• Test pump element pressure</li> </ul>
Points are getting too much grease	<ul style="list-style-type: none"> <li>• Wasting too much grease</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce the duration of the lubrication time</li> </ul>

## This image shows a full page of blank graph paper. The background is a very light gray, and it is covered by a precise grid of thin, dark gray horizontal and vertical lines. These lines intersect to form a series of small, identical squares across the entire surface of the page. There are no margins, text, or other markings present.

## NOTES

This image shows a full page of blank graph paper. The background is a very light gray, and it is covered by a precise grid of thin, dark gray horizontal and vertical lines. These lines intersect to form a series of small, identical squares across the entire area of the page. There are no margins, text, or other markings present.



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