CENTRAL LUBRICATION SYSTEMS

WE MEASURE OUR SUCCESS BY YOUR UP-TIME SINCE 1927
ABOUT BEKAWORLD

BEKAWORLD
A WORLD OF SOLUTIONS FOR ADVANCED INDUSTRIAL LUBRICATION

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.
WHY BEKA

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.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems – Overview</td>
<td>5</td>
</tr>
<tr>
<td>Pumps – Overview</td>
<td>6</td>
</tr>
<tr>
<td>EP-1</td>
<td>7</td>
</tr>
<tr>
<td>PICO</td>
<td>8</td>
</tr>
<tr>
<td>GIGA</td>
<td>9</td>
</tr>
<tr>
<td>OC-1</td>
<td>10</td>
</tr>
<tr>
<td>HAMAX SYSTEM 2</td>
<td>11</td>
</tr>
<tr>
<td>HAMAX 2 COMPACT</td>
<td>12</td>
</tr>
<tr>
<td>HAMAX 11</td>
<td>13</td>
</tr>
<tr>
<td>HPG 2</td>
<td>14</td>
</tr>
<tr>
<td>Distributors – Overview</td>
<td>16</td>
</tr>
<tr>
<td>SX-1</td>
<td>17</td>
</tr>
<tr>
<td>SXE-2</td>
<td>18</td>
</tr>
<tr>
<td>MX-F</td>
<td>19</td>
</tr>
<tr>
<td>LX-4</td>
<td>20</td>
</tr>
<tr>
<td>MX-I</td>
<td>21</td>
</tr>
<tr>
<td>LX-3</td>
<td>22</td>
</tr>
<tr>
<td>SX-3</td>
<td>23</td>
</tr>
<tr>
<td>Hoses &amp; Hose Connectors</td>
<td>24</td>
</tr>
<tr>
<td>Pre-Packaged Service Parts</td>
<td>25</td>
</tr>
<tr>
<td>Single Line Distributors</td>
<td>26</td>
</tr>
<tr>
<td>Fittings</td>
<td>28</td>
</tr>
<tr>
<td>Manual Lube &amp; Pump Refill Equipment</td>
<td>30</td>
</tr>
<tr>
<td>BEKA-DiSys</td>
<td>32</td>
</tr>
<tr>
<td>Troubleshooting &amp; Repair Guide</td>
<td>33</td>
</tr>
<tr>
<td>Notes</td>
<td>34</td>
</tr>
</tbody>
</table>
LUBRICATION SYSTEMS

PROGRESSIVE SYSTEMS

PG 6 CENTRAL LUBRICATION PUMPS

PG 15 MAIN DISTRIBUTOR

HOSES & CONNECTORS

PG 24 FITTINGS

PG 15 MAIN DISTRIBUTOR

SINGLE LINE SYSTEMS

PG 9 SINGLE LINE SYSTEM PUMP

PG 25 SINGLE LINE DISTRIBUTORS

PG 26 FITTINGS
## PUMPS - OVERVIEW

<table>
<thead>
<tr>
<th>Application</th>
<th>Maximum # of outlets</th>
<th>Maximum pressure (bar)</th>
<th>Maximum delivery volume (cm³ /stroke per outlet)</th>
<th>See complete product specs Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EP-1 Pump</strong></td>
<td>6</td>
<td>350</td>
<td>0.06 – 0.17</td>
<td>7</td>
</tr>
<tr>
<td>A versatile solution for progressive and multi line installation for most mobile and stationary equipment installations. Recommended for all climates.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>PICO Pump</strong></td>
<td>10</td>
<td>200</td>
<td>Various Outputs Available. PE5 (0.005 cm³) to PE120F (0.12 cm³)</td>
<td>8</td>
</tr>
<tr>
<td>Recommended for point-to-point lubrication in compact equipment. Ideal for machines with lower number of lube points.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GIGA Pump</strong></td>
<td>3</td>
<td>300</td>
<td>0.25 - 0.75</td>
<td>9</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OC-1 Multi Line Pump</strong></td>
<td>21</td>
<td>200</td>
<td>0.005 - 0.050</td>
<td>10</td>
</tr>
<tr>
<td>Multi line pump with 10 to 34 outlets delivers lubricant directly to service points. Full range of metering and monitoring controls.</td>
<td></td>
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</tr>
<tr>
<td><strong>HAMAX</strong></td>
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<tr>
<td>Complete line of tool-mounted grease pumps for hydraulic breakers.</td>
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</tr>
<tr>
<td>Hamax System 2</td>
<td>11</td>
<td></td>
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<td></td>
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<tr>
<td>Hamax 2 Compact</td>
<td>12</td>
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</tr>
<tr>
<td>Hamax 11</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPG2</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**TECHNICAL DATA**

**PUMP**

- Delivery volume per stroke (= 1 pump revolution) and outlet: 0.06 to 0.17 cm³ (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-troniX 1 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**

- A versatile solution for progressive and multiline installation for most mobile and stationary equipment installations.
- Suitable for all climates.
- Recommended 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.

<table>
<thead>
<tr>
<th>Pump elements (see documentation pump elements)</th>
<th>Metering volume cm³ / stroke and outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE 60</td>
<td>0.06</td>
</tr>
<tr>
<td>PE 120 with/without pressure limiting valve</td>
<td>0.12</td>
</tr>
<tr>
<td>PE 170</td>
<td>0.17</td>
</tr>
<tr>
<td>PE 120 V</td>
<td>max. 0.12 (adjustable)</td>
</tr>
</tbody>
</table>
TECHNICAL DATA

PUMP
Delivery volume per stroke (= 1 pump revolution) and outlet: 0.005 to 0.12 cm³ (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.

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 mm³
- 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 cm³ / stroke and outlet
---|---
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 | 0.12
PE 120 FV | max. 0.12 (adjustable)

All dimensions are in mm
GREASE LUBRICATION PUMPS

GIGA PUMP

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 t.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 5-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

GIGA PUMP
**TECHNICAL DATA**

**PUMP**

- **Delivery volume per stroke (= 1 pump revolution) and outlet:** 0.005 to 0.12 cm³ (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:** pipeØ6 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)

<table>
<thead>
<tr>
<th>Pump elements (see documentation pump elements)</th>
<th>Metering volume cm³ / stroke and outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE 5</td>
<td>0.005</td>
</tr>
<tr>
<td>PE 10</td>
<td>0.010</td>
</tr>
<tr>
<td>PE 15</td>
<td>0.015</td>
</tr>
<tr>
<td>PE 25</td>
<td>0.025</td>
</tr>
<tr>
<td>PE 50</td>
<td>0.050</td>
</tr>
</tbody>
</table>

**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**

- Min. level monitoring: (10 - 60 V DC standard) acc. to drawing FAZ02205-18
- Filling nipple
- Fastening drillings
- Connection cable, 10 m
- Cable assignment: blue + brown -
- Pressure connections M14x1 see documentation on pump elements
- Upper outlet row numbering 10 to 21
- 2.5 kg Ø 153
- 8 kg (2-parts) Ø 225
- 4.2 u. 8 kg (2-parts) Ø 180
- 1.9 kg Ø 150.5
- Bushing M12x1 with 5 m cable (standard), included in the delivery of the pump order no.: 1000912997

**Filling nipple**

- Fastening drillings
- Connection cable, 10 m
- Cable assignment: blue + brown -
- Pressure connections M14x1 see documentation on pump elements
- Upper outlet row numbering 10 to 21
- Pump element

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All dimensions are in mm
TECHNICAL DATA

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

PUMPING ELEMENTS

Pressure limiting valve: 4,061 psi (280 bar)
Delivery rate/ stroke PE20FH: 0.12 cm³
Delivery rate regulation: sixfold notches per 1/2 revolution
Reduction: 0.013 cm³ per notch
Default stroke number: 14 strokes/min.

Stroke number can be adjusted with throttle

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

GENERAL

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

KEY FEATURES

• 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

DELIVERY RATE DIAGRAM

PE-120FVH

Delivery rate (cm³)

<table>
<thead>
<tr>
<th>Notches</th>
<th>Revolutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.01</td>
<td>0.5</td>
</tr>
<tr>
<td>0.02</td>
<td>1</td>
</tr>
<tr>
<td>0.03</td>
<td>1.5</td>
</tr>
<tr>
<td>0.04</td>
<td>2</td>
</tr>
<tr>
<td>0.05</td>
<td>2.5</td>
</tr>
<tr>
<td>0.06</td>
<td>3</td>
</tr>
<tr>
<td>0.07</td>
<td>3.5</td>
</tr>
<tr>
<td>0.08</td>
<td>4</td>
</tr>
<tr>
<td>0.09</td>
<td>4.5</td>
</tr>
<tr>
<td>0.1</td>
<td>5</td>
</tr>
<tr>
<td>0.11</td>
<td>5.5</td>
</tr>
<tr>
<td>0.12</td>
<td>6</td>
</tr>
</tbody>
</table>

TECHNICAL DRAWINGS
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/mm)
- **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 cm³
- **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**

All dimensions are in mm
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**

All dimensions are in mm
HPG2 BREAKER PUMP

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 mm³/stroke to the progressive MX-2 progressive distributor

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 mm³/per pulse
Output rate regulation: MX-2 progressive distributor
Number of strokes: 1 stroke per pulse at the hydraulic connection
Grease cartridge capacity: 400 cm³
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
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.

<table>
<thead>
<tr>
<th>Application</th>
<th>Dosage volumes (mm³)</th>
<th>Max outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>SX-1</td>
<td>69 – 430</td>
<td>20</td>
</tr>
<tr>
<td>Due to up-positioned sealing washers, easy outlet combination without loosening of pipe lines and fittings.</td>
<td></td>
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<tr>
<td>SXE-2</td>
<td>100 – 760</td>
<td>20</td>
</tr>
<tr>
<td>Designed for the use as main distributor for grease lubrication systems on construction machinery.</td>
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<td></td>
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<tr>
<td>• use of dummy elements, which can be replaced my metering elements, if necessary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For use on optional equipment on machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MX-F</td>
<td>25 – 105</td>
<td>24</td>
</tr>
<tr>
<td>Use in mobile range (on- and off-road vehicles, agricultural and construction machinery, etc.).</td>
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<td></td>
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<tr>
<td>• special coating for hardest operating conditions available</td>
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<td></td>
</tr>
<tr>
<td>LX-4</td>
<td>50 – 200</td>
<td>20</td>
</tr>
<tr>
<td>Clearly less space necessary due to various dosage possibilities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• high metering flexibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MX-I (stainless)</td>
<td>45 – 105</td>
<td>16</td>
</tr>
<tr>
<td>Especially suitable for food industry and aggressive environments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LX-3 (stainless)</td>
<td>200</td>
<td>20</td>
</tr>
<tr>
<td>Perfectly suitable for beverage and oils packing industry.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 100 % compatible dimensions and output rate to similar block distributors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• highest material quality (1.4404, 1.4401)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SX-3 (stainless)</td>
<td>75 - 470</td>
<td>20</td>
</tr>
<tr>
<td>SX-3 - alternative to SX-2, but with V2A (1.4301).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• especially suitable for food industry and aggressive environments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

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

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).

<table>
<thead>
<tr>
<th>Designation middle element</th>
<th>Metering volume (mm³/stroke)</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SX-1 05</td>
<td>68</td>
<td>05</td>
</tr>
<tr>
<td>SX-1 10</td>
<td>105</td>
<td>10</td>
</tr>
<tr>
<td>SX-1 15</td>
<td>150</td>
<td>15</td>
</tr>
<tr>
<td>SX-1 20</td>
<td>210</td>
<td>20</td>
</tr>
<tr>
<td>SX-1 25</td>
<td>275</td>
<td>25</td>
</tr>
<tr>
<td>SX-1 35</td>
<td>350</td>
<td>35</td>
</tr>
<tr>
<td>SX-1 45</td>
<td>430</td>
<td>45</td>
</tr>
</tbody>
</table>

All dimensions are in mm
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 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 DRAWINGS**

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

**Designation metering element**

<table>
<thead>
<tr>
<th>Designation metering element</th>
<th>Metering volume (mm³/stroke)</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 SXE-2</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>150 SXE-2</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>220 SXE-2</td>
<td>220</td>
<td>220</td>
</tr>
<tr>
<td>300 SXE-2</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>400 SXE-2</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>500 SXE-2</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>620 SXE-2</td>
<td>620</td>
<td>620</td>
</tr>
<tr>
<td>760 SXE-2</td>
<td>760</td>
<td>760</td>
</tr>
</tbody>
</table>
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 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.

<table>
<thead>
<tr>
<th>Designation piston element</th>
<th>Metering volume (mm³/stroke) p. outlet p. element</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX-F 25</td>
<td>25 p. outlet 50 p. element</td>
<td>25</td>
</tr>
<tr>
<td>MX-F 45</td>
<td>45 p. outlet 90 p. element</td>
<td>45</td>
</tr>
<tr>
<td>MX-F 75</td>
<td>75 p. outlet 150 p. element</td>
<td>75</td>
</tr>
<tr>
<td>MX-F 105</td>
<td>105 p. outlet 210 p. element</td>
<td>105</td>
</tr>
</tbody>
</table>

All dimensions are in mm
DISTRIBUTORS

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

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

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.

<table>
<thead>
<tr>
<th>Name of piston element</th>
<th>Dosage volume (mm³/hub)</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>p. outlet</td>
<td>p. element</td>
</tr>
<tr>
<td>LX-4 50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>LX-4 100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>LX-4 150</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td>LX-4 200</td>
<td>200</td>
<td>400</td>
</tr>
</tbody>
</table>
DISTRIBUTORS - STAINLESS STEEL

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 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)

<table>
<thead>
<tr>
<th>Designation middle element</th>
<th>Metering volume (mm³/stroke)</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>p. outlet  p. element</td>
<td></td>
</tr>
<tr>
<td>MX-I 45</td>
<td>45  90</td>
<td>45</td>
</tr>
<tr>
<td>MX-I 75</td>
<td>75  150</td>
<td>75</td>
</tr>
<tr>
<td>MX-I 105</td>
<td>105 210</td>
<td>105</td>
</tr>
</tbody>
</table>

All dimensions are in mm

TECHNICAL DRAWINGS

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

Dimensional drawing:
**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 - greese up to NLGI-cl. 2
- **Metering volume:** 200 mm³/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 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 DRAWINGS**

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

Dimensional drawing:
DISTRIBUTORS - STAINLESS STEEL

TX-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 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).

<table>
<thead>
<tr>
<th>Designation middle element</th>
<th>Metering volume (mm³/stroke)</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SX-3 07</td>
<td>75 150</td>
<td>07</td>
</tr>
<tr>
<td>SX-3 11</td>
<td>117 234</td>
<td>11</td>
</tr>
<tr>
<td>SX-3 17</td>
<td>170 340</td>
<td>17</td>
</tr>
<tr>
<td>SX-3 23</td>
<td>230 460</td>
<td>23</td>
</tr>
<tr>
<td>SX-3 30</td>
<td>300 600</td>
<td>30</td>
</tr>
<tr>
<td>SX-3 38</td>
<td>380 760</td>
<td>38</td>
</tr>
<tr>
<td>SX-3 47</td>
<td>470 940</td>
<td>47</td>
</tr>
</tbody>
</table>

All dimensions are in mm
## HOSES & HOSE CONNECTORS

<table>
<thead>
<tr>
<th>Product</th>
<th>Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Polyamide Tube</strong></td>
<td>Part #100120100 100 meter rolls</td>
</tr>
<tr>
<td><strong>High Pressure Hose</strong></td>
<td>Part #100120200 straight Part #100120205 spiral</td>
</tr>
<tr>
<td><strong>Steel Tube</strong></td>
<td>3 meter lengths Part #0612020001 - 6 mm Part #0612020002 - 4 mm</td>
</tr>
<tr>
<td><strong>Helical Pipe</strong></td>
<td>Part # 100121005 50 meter bag</td>
</tr>
<tr>
<td><strong>Threaded Sleeve</strong></td>
<td>Part #100121200</td>
</tr>
<tr>
<td><strong>Tubular Socket</strong></td>
<td>Part # 100121201 Many sizes available</td>
</tr>
<tr>
<td><strong>45° Pipe Union</strong></td>
<td>Part # 100121206 Many sizes available</td>
</tr>
<tr>
<td><strong>Zip Ties</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hose Clamps For HP Hose</strong></td>
<td></td>
</tr>
</tbody>
</table>
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)

**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:

![Dimensional drawing](image)

Model single metering valve, for installation into manifold

Table of drawing torques:

<table>
<thead>
<tr>
<th>A/F</th>
<th>Drawing torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>15 ± 2</td>
</tr>
<tr>
<td>22</td>
<td>65 ± 5</td>
</tr>
</tbody>
</table>

(\(\text{inch dimensions in brackets}\))
SINGLE LINE DISTRIBUTORS
BL-11 METERING VALVE (STATIC SYSTEM)

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:

Table of drawing torques:

<table>
<thead>
<tr>
<th>A/F</th>
<th>Drawing torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>15 ± 2</td>
</tr>
<tr>
<td>50</td>
<td>160 ± 10</td>
</tr>
</tbody>
</table>

Filling connection art.-no. 412507006 acc. to drawing FAZ03594_00 enclosed, loose

Outlet or inlet fitting on request, if needed

All dimensions are in mm
FITTINGS

BEKA WORLD 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

90° Screw Coupling
Part #04012200506
Many sizes available

Extension
Part #04011600606
Many sizes available

45° Coupling
Part #100210080
Many sizes available

Double Cone Olive
Part #09038620023

Straight Screw Coupling
Part #04012000406
Many sizes available
<table>
<thead>
<tr>
<th>Fittings</th>
<th>Image 1</th>
<th>Image 2</th>
<th>Image 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Square Coupling</td>
<td><img src="image1.png" alt="Square Coupling" /></td>
<td><img src="image2.png" alt="Square Coupling" /></td>
<td><img src="image3.png" alt="Square Coupling" /></td>
</tr>
<tr>
<td>Part #100210085</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
</tr>
<tr>
<td>90° Angular Swivel Union</td>
<td><img src="image4.png" alt="90° Angular Swivel Union" /></td>
<td><img src="image5.png" alt="90° Angular Swivel Union" /></td>
<td><img src="image6.png" alt="90° Angular Swivel Union" /></td>
</tr>
<tr>
<td>Part #04013200206</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
</tr>
<tr>
<td>Straight Screw Coupling (Union)</td>
<td><img src="image7.png" alt="Straight Screw Coupling (Union)" /></td>
<td><img src="image8.png" alt="Straight Screw Coupling (Union)" /></td>
<td><img src="image9.png" alt="Straight Screw Coupling (Union)" /></td>
</tr>
<tr>
<td>Part #04013600306</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
</tr>
<tr>
<td>Straight Bulkhead Coupling</td>
<td><img src="image10.png" alt="Straight Bulkhead Coupling" /></td>
<td><img src="image11.png" alt="Straight Bulkhead Coupling" /></td>
<td><img src="image12.png" alt="Straight Bulkhead Coupling" /></td>
</tr>
<tr>
<td>Part #04014701006</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
</tr>
<tr>
<td>Straight Rotating Joining, Brass</td>
<td><img src="image13.png" alt="Straight Rotating Joining, Brass" /></td>
<td><img src="image14.png" alt="Straight Rotating Joining, Brass" /></td>
<td><img src="image15.png" alt="Straight Rotating Joining, Brass" /></td>
</tr>
<tr>
<td>Part #0402020</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
</tr>
<tr>
<td>Hinge</td>
<td><img src="image16.png" alt="Hinge" /></td>
<td><img src="image17.png" alt="Hinge" /></td>
<td><img src="image18.png" alt="Hinge" /></td>
</tr>
<tr>
<td>Part #040201</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
<td>Many sizes available</td>
</tr>
</tbody>
</table>
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
**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
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 T1
- EP-tronic LBH
- EP-tronic LFR
- BEKA-troniX1
- 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

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>REASON</th>
<th>CORRECTION</th>
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</table>
| Agitator not rotating | • Incorrect wiring  
• Incorrect voltage  
• Pump Element incorrectly seated  
• Foreign object in pump | • Check wiring and voltage  
• Remove and inspect pump element  
• Check pump and reservoir for foreign object and remove |
| Pump is working, but does not supply grease | • Air in feed piston  
• Pump element incorrectly seated  
• Worn pump element | • Bleed the pump  
• Reseat pump element  
• Replace pump element |
| No grease collar at all points of lubrication | • Pump does not work  
• Period between cycles is too long  
• Lubrication times are too short | • Check wiring  
• Check pump element output  
• Adjust controller timer |
| No grease collar at one lubrication point | • Broken hose in system  
• Blockage at distributor block | • Replace hose  
• Check with pressure gauge, then clean block |
| Reduced pump speed | • Not enough voltage  
• High pressure due to low ambient temperature | • Check voltage  
• Use an arctic grease or an NLGI-1 grease |
| Leakage of grease at the pressure relief valve (PRV) | • Excessive pressure in the system  
• Distribution blocks are blocked  
• System is blocked  
• Defective valve spring | • Check the system  
• Find and clean block  
• Clogged or seized bearing  
• Replace PRV |
| Everything working, but grease not flowing out of end of hose | • Hose not filled with grease at factory  
• Pump element not functioning | • Connect a grease gun to the end of the hose and force grease through it  
• Inspect and test pump element |
| Not enough grease coming out of the pump element | • Overfilled reservoir blocking the vent tube causing a vacuum  
• Pump element worn | • Remove lid and vent tube and clean grease out of breather  
• Only fill reservoir to Max mark  
• Test pump element pressure |
| Points are getting too much grease | • Wasting too much grease | • Reduce the duration of the lubrication time |