

Electrically operated compact pump ECP

Reliable and adaptable pump for single-line lubrication systems

INCL.
ONLINE CAD
CONFIGURATOR AND
DOCUMENTATION
DOWNLOAD
LINK

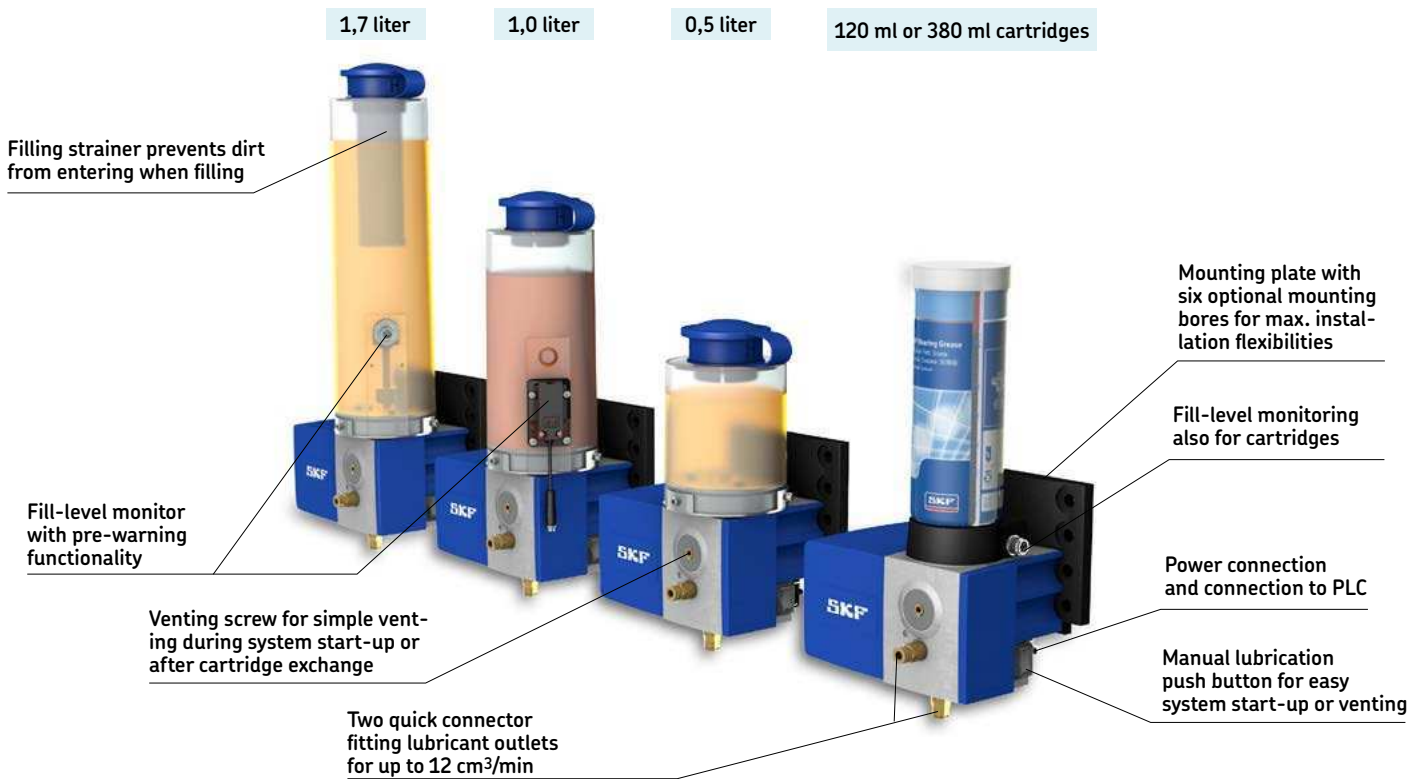
	Oil or fluid grease
	38 bar (552 psi)
	+10 to 50 °C (+50 to 122 °F)
	Small- to medium-size machines
	24V operating voltage



Applications

- Injection molding machines
- Automotive (E-Mobility)
- Lifts and lifting systems
- Material handling
- Industrial robots
- Machine tools
- Linear guides
- Automation

Product information



Description

The electrically driven compact pump ECP for oil and fluid grease was developed to lubricate bearings and linear guides in small machines. ECP has integrated pressure relief and therefore meets the requirements for single-line lubrication system pumps. This piston pump requires 24V DC power and can be controlled by the machine's programmable logic controller (PLC). In addition, the pump offers a switch for manually activating an additional lubrication cycle and it can be operated with an optional, integrated level switch to monitor the filling level of the reservoir or cartridge. ECP offers designs with 0,5 to 1,7 liters lubricant reservoirs or easy-to-exchange standard cartridges with 120 or 380 ml. It is compatible with oil viscosities from 20 to 1 500 mm²/s and fluid grease grades of NLGI 00 and 000. ECP is a adaptable pump because it has 2 outlets, that can serve two lubrication lines simultaneously.

Features and benefits

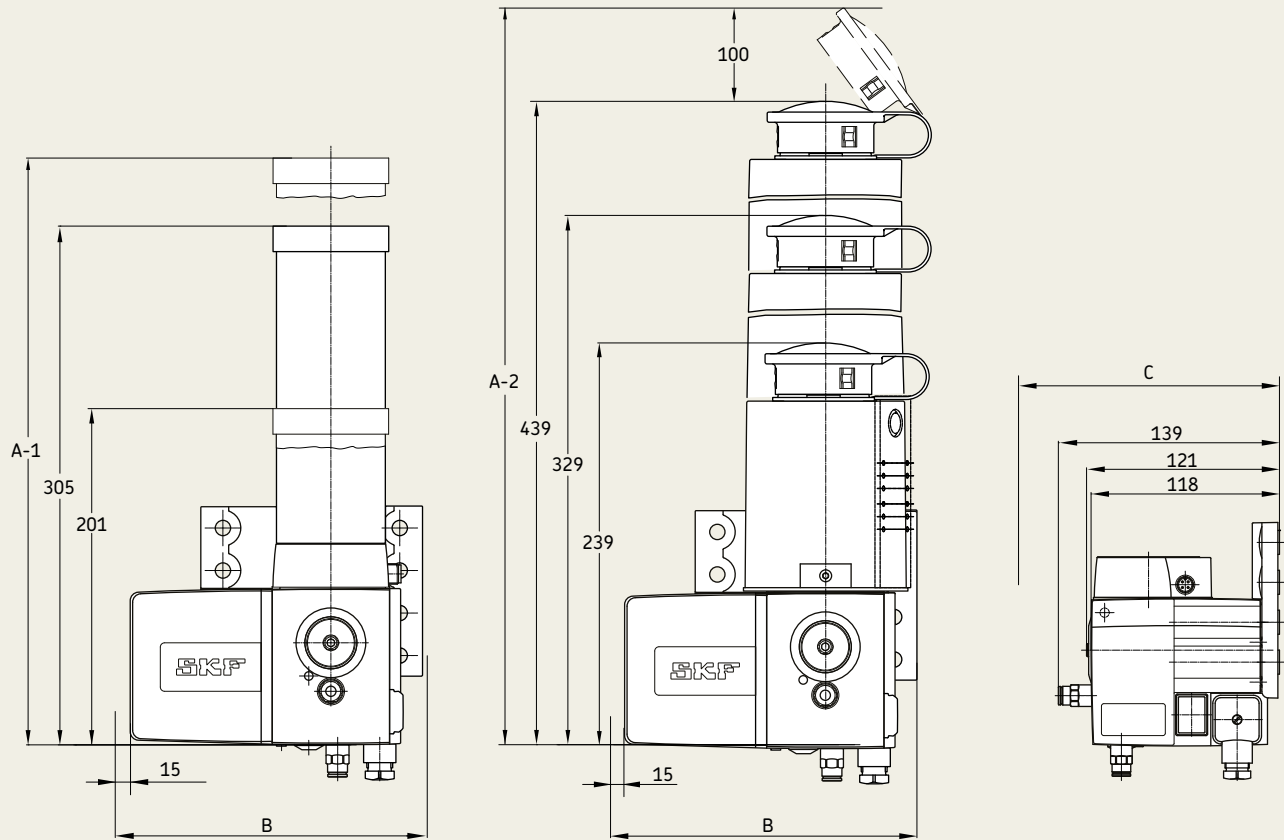
- Reduces unplanned downtime and extends maintenance intervals
- Suitable for use with SKF oil and fluid grease metering devices
- Minimizes environmental impact via efficient use of lubricants
- Minimizes risk of using wrong or contaminated lubricant
- Fill-level monitoring with pre-warning functionality
- Energy efficient 24 V DC operating voltage
- Optional reservoir or cartridge design
- Easy to install and operate

Technical data

Function principle	electrically operated piston pump
Outlets	2
Metering quantity	fluid grease: 12 cm ³ /min; 0.73 in ³ /min oil: 0,012 l/min; 0.0027 gal/min
Lubricant	oil: 20 to 1 500 mm ² /s fluid grease: NLGI 00, 000
SKF cartridge fluid grease	Fluid Grease Type 00 work stable lithium soap lubricating grease, based on synthetic ester, water resistant; oxidation and corrosion resistant
Zeller+Gmelin Divinol	Fluid Grease Type 000 formulated from highly refined petroleum base oils, a lithium thickener, and Tribol Grease Oil Additive (TGOA)
Castrol Tribol GR 3020/1000-000 PD	+10 to +50 °C; +50 to +122 °F
Operating temperature	max. 38 bar; 550 psi
Operating pressure	prefilled cartridge with 120 ml; 4.06 oz. or 380 ml; 12.8 l. oz. or fixed reservoir 0,5; 1,0 or 1,7 l; 1.06; 2.1; 3.6 pt
Reservoir	M10×1 thread or SKF Quick Connector tube/pipe Ø 6–8 mm
Outlet connection	24 VDC
Operating voltage	without cartridge: 143 × 172 × 121 mm 5.63 × 6.77 × 4.76 in
Dimensions	with cartridge: 307,5 × 172 × 121 mm 12.1 × 6.77 × 4.76 in
	with fixed reservoir: min. 240 × 239 × 210 mm min. 9.45 × 9.40 × 8.27 in
	max. 240 × 439 × 210 mm min. 9.45 × 17.28 × 8.27 in
Mounting position	upright

Drawings

ECP designs



Minimum mounting dimensions:

Height: A-1 = 440 mm

A-2 = pump height plus 100 mm

Width: B = 240 mm

Depth: C = 210 mm

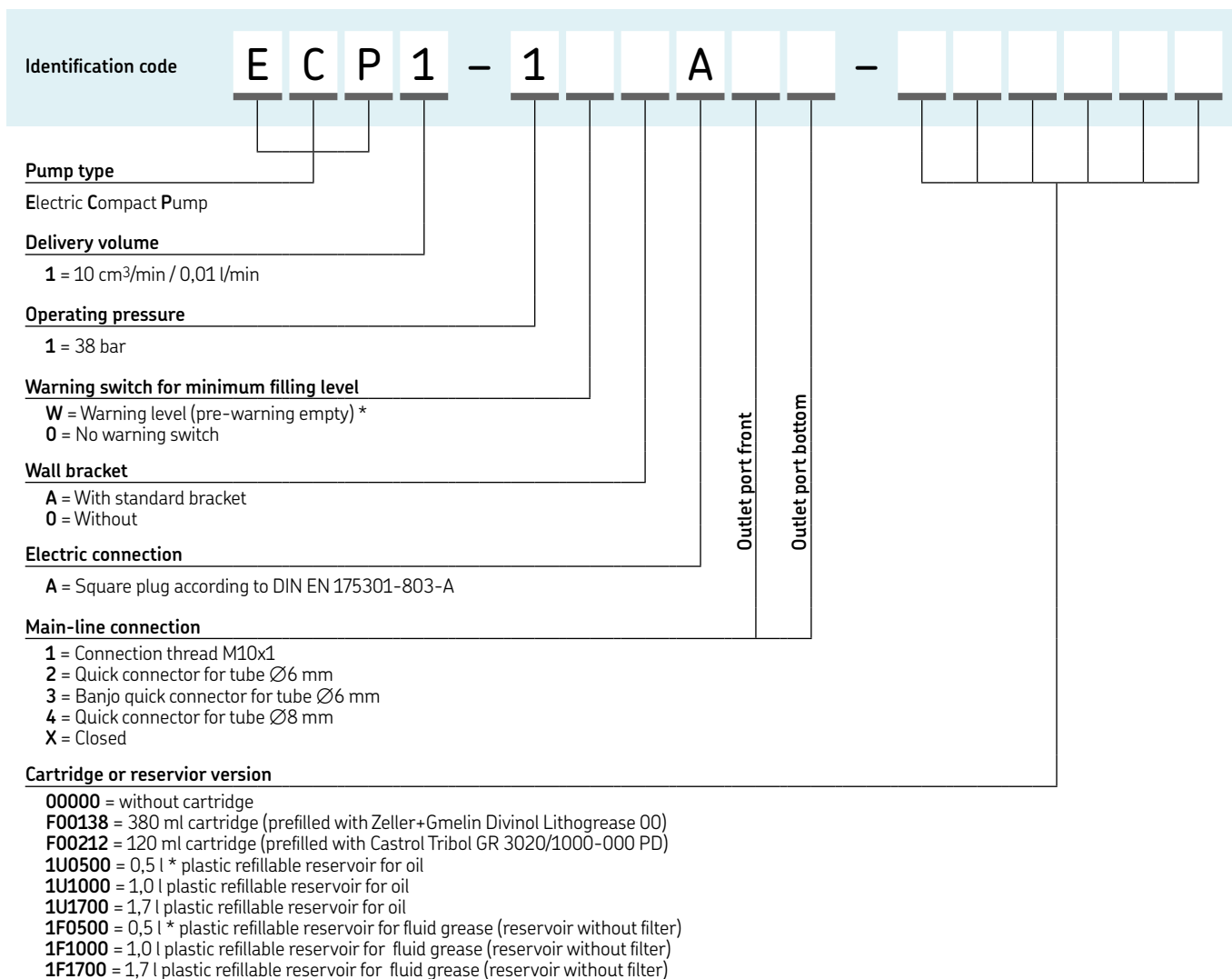


Control and monitoring options

The ECP works independently of the reservoir used with 24 V DC and can easily be integrated into any existing machine control system (PLC). Controlled lubrication intervals, lubricant quantities and level reports are no problem. In addition, the pump is capable of manually activating a lubrication cycle. An easy-to-access venting screw enables simple installation and operational start-up.

With an ECP pump based lubrication system and a few lubricant cartridges in stock, you have a very reliable, easy to monitor and practical lubrication solution for your injection molding machine.

Order information



* NOTE: The 0,5 liter version can not be ordered with warning switch and/or oil filling filter.

Example: ECP1-1WAA22-1F1000

- Electric compact pump
- Output volume 10 cm³/min
- Operating pressure 38 bar
- With warning switch (1)
- With standard wall bracket (2)
- With electric connector square plug (3)
- With quick connector Ø6 mm, front (4)
- With quick connector Ø6 mm, bottom (5)
- Reservoir version
- Fluid grease
- 1,0 liter reservoir



Online configuration

Below you can find the QR code linking to digital product configurator for reliable and efficient product configuration, CAD models and documentation.



Accessories and applications

Main-line connectors

Order number	Designation	Connection
898-110-120	Connection thread	M10x1
406-004-VS	Quick connector	Ø6 mm
506-140-VS	Banjo fitting	Ø6 mm
408-004-VS	Quick connector	Ø8 mm
466-431-001	Closing plug	-

Electrical connectors

Order number	Designation
179-990-033 / -147	Rectangular connectors acc. to DIN EN175301-803-A Circular plug M12x1, straight acc. to DIN EN61076-2-101 Circular plug M12x1, angled acc. to DIN EN61076-2-101
179-990-371 / -381	
179-990-372 / -382	

Main-line pressure-relief valves

Order number	Designation	TubeØ
451-006-060	Pressure-relief valve, operating pressure max. 60 bar	6 mm
451-008-060	Pressure-relief valve, operating pressure max. 60 bar	8 mm

Pre-filled standard cartridges

Order number	Lubricant ¹⁾	Package
LF002/MR120	Castrol Tribol GR 3020/1000-000 PD ²⁾	10 pcs
LF002/MR380	Castrol Tribol GR 3020/1000-000 PD ³⁾	10 pcs
LF001/MR380	Zeller Gmelin Divinol Lithogrease 00 ³⁾	10 pcs

1) Further lubricants on request

2) 120 ml

3) 380 ml

Spare parts

Order number	Designation
995-901-069	0,5 liter reservoir, spare part kit 1,0 liter reservoir, spare part kit 1,7 liter reservoir, spare part kit
995-901-070	
995-901-071	
5112-00000005	levelswitch kit, fluid grease levelswitch kit, oil filling strainer
24-2540-2955	
44-1874-2018	

Benefits for injection molding machine applications:

- Two outlets, for separate toggle press and linear guide lubrication lines
- Reliable automated lubrication
- Simple to install and operate
- Extended service life of bearings and linear guides
- Increased machine uptime
- Reduced machine maintenance and repair costs



Related products



340 metering devices

Offered in two-, three- and five-port models, series 340 metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. These metering devices are designed for installation directly on the machine/system requiring lubrication.

- 0,01 to 0,16 cm³ metering quantity (oil)
- Designed for installation directly on the machine/system requiring lubrication
- Select optional push-in or screw-in type metering nipples for feed line connections
- Choose optional push-in or screw-in type main line fittings



341 metering devices

Developed for installation in manifolds, series 341 single-port, prelubrication metering devices are suitable for use with single-line, centralized lubrication systems for oil and fluid grease. The combination of these metering devices with one- to six-port manifolds provides flexible options for lubrication system design. Manifolds customized for product series 341 are available in aluminum and stainless steel.

- 0,01 to 0,16 cm³ metering quantity (oil)
- Suitable with manifolds having one to six ports to match number of lubrication points
- Provides flexible options for systems with remote single lubrication points or multiple-port metering devices with up to six ports
- Optional push-in or screw-in type metering nipples for feed line connection
- Wide range of manifold models with different thread sizes for main lines



Plastic tubes

Lubrication lines made from plastic come in nominal diameters from 2 to 10 mm and optionally also with hose protection and customer-specific markings as hose label, printing or with clips. Configuration takes place via SKF online tube configurator. Materials are Polyamide: PA12H (natural, semi-rigid) PA12HL (black, semi-rigid), PA12PH (natural, flexible), PA12PHL (black, flexible)

- Reliable and long-term lubricant transfer solutions for low pressure oil and fluid grease lubrication systems
- Quick installation as tubes are easy to bend and flexible to mount
- Wide range of available versions

Related products



Quick connector fittings

SKF quick connectors are the faster alternative when it comes to connecting pipes. Push-in type connectors are available for fast establishment of secure connections. Simply plug the end of the line into the pre-installed connector – all done! No wrench is required. Connections can be made more easily and quickly, especially in difficult-to-access areas. Push-in type fittings can be used to connect the entire system of lines from the pump to the metering devices, pressure switches, etc – all the way to the lubrication points.

- Fast and virtually leakage-free connection
- No wrench tightening required
- Time savings due to easy and quick system assembly
- Connections in systems (without system pressure) can be easily opened and reclosed again
- Optional protective caps for protection from penetrating dirt



Pressure switch DSA

DSA pressure switches monitor the pressure of a lubrication system and help assess its proper function. They monitor parameters as pressure buildup, pressure head and pressure reduction e.g. in intermittently operated lubrication systems with single-line oil metering devices. Switching pressures are factory set for plug&play operation.

- Easy to wire and install
- Simple and efficient design
- Cost-efficient market proven solution
- Micro switch for reliable switching function
- Change-over switch, suitable for both normally closed contact (NC) and normally open contact (NO)
- Available for rising and falling pressures from 1 to 30 bar (14.5 to 435 psi)



Pressure sensor DSC1

DSC1 are electronic pressure switches with integrated digital display for relative pressure measurement. They are used primarily for pressure monitoring. Depending on the design, they also can assume control functions. Pressure switch points, pressure indication, and the switching logic can be configured and programmed easily. The values are displayed as 4-digit alphanumeric characters, at the same time there is an alternating display (red / green) to indicate the switching status. DSC1 can be operated with both hysteresis and window functions and the mode can be set separately for each switching output.

- 2 signal outputs: 1 x PNP and 1 x PNP/IO-Link (configurable)
- Available for rising and falling pressures from 1 to 40 bar in 0,5 bar increments
- Can be operated with both, hysteresis and window function modes
- Encodable access protection

Choose the right lubricant for your application

SKF single-line systems are available for all types of lubricants: oil, fluid and hard grease. Selecting the right lubricant for your application can be a differentiator in terms of productivity and environmental impact. The ECP and 340/341 metering devices are designed for use with either oil or fluid grease. Both lubricant types prevent crush and excessive abrasion on linear guides or bearings.



Oil

Oils are measured in viscosity. The viscosity is an expres-

sion of a fluid's internal friction. Oils are classified in ISO VG viscosity classes from 2 to 3 200. Different types of oils are available, including mineral oils, organic oils and synthetic oils. A compatibility check is recommended prior to using any oil with SKF lubrication systems.

Features:

- Removal of waste, pollution, abrasive wear
- Oil distribution at low pressures possible, lower system pressures required
- Eligible for high rotating speeds
- Damping of vibrations
- Cooling effect (heat dissipation) at the lubrication points
- Removal of condensate and process water
- Protection against corrosion
- No solidification



Fluid grease

Greases are more consistent lubricants measured in

NLGI classes. Fluid greases are softer greases in NLGI class 000, 00 and 0. Fluid greases are a mixture of a base oil as lubricating fluid, a thickening agent and additives. A compatibility check is recommended prior to using any fluid grease with SKF lubrication systems.

Features:

- Creates better sealing effect of the bearing against external influences
- For use with lower rotating speeds
- No dripping of lubricant, good adherent properties, less lubricant waste
- Longer maintenance of lubrication film, therefore less lubricant usage
- Longer machine coolant lifetime, due to less contamination through lubricant
- Less lubricant spillage helps to increase worker safety by reducing risk of slips and falls
- Higher protection against corrosion

Lubricant expertise

Selecting the right lubricant can be a delicate process. Production processes and raw materials greatly influence lubricant properties and performance. It is virtually impossible to select or compare lubricants based only on their composition. Therefore, performance tests are needed to provide crucial information. In its 100-plus years, SKF has accrued vast knowledge about the interaction of lubricants, materials and surfaces. For more information, contact your local SKF partner.

As pioneers in automatic lubrication systems and with its extensive experience in the machine tool industry, SKF has selected Zeller+Gmelin Divinol Fluid Grease 00 and Castrol Tribol GR 3020/1000 PD as the standard media for ECP cartridges. Both proven media for the machine tool industry, these fluid greases fulfill the requirements of automotive industry standards (e.g. Daimler DBL 6833).

skf.com | skf.com/lubrication | skf.com/ecp

© SKF and Lincoln are registered trademarks of the SKF Group.

© SKF Group 2023

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

PUB LS/P2 15966 EN · September 2023

Certain image(s) used under license from Shutterstock.com.