BIJUR DELIMON INTERNATIONAL

Operating instructions

Pump EAP

INDEX

1. General

Before installing and operating this equipment, we highly recommend that you become thoroughly familiar with these instructions. DELIMON does not accept liability, expressed or implied, for any direct or inconsequential injuries to personnel or damage to equipment, including process interruption, arising from the misuse or misapplication of its products. Application and / or modification of product beyond its intended purpose is strictly prohibited.

DELIMON reserves the right to make modifications, changes and/or amendments to both products and to these instructions as may become necessary to assure ongoing technical clarity.

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2. Safety

These instructions provide basic guidance which must be followed during installation, operation and maintenance. It is assumed that personnel performing required tasks are skilled in the areas of electrical and mechanical millwright trades plus all local and federal safety requirements. These instructions should be kept near the point of use and made available for reference at all times.

2.1 Identification of safety warnings in the operating instructions

To minimize risk to people working with this equipment, safety warnings included within these instructions must be observed. Potential safety issues are identified through use of the following general danger symbols:

Safety Sign, per DIN 4844, provides warning of potential general danger.

Safety Sign, per DIN 4844, provides warning of potential electrical danger.

ATTENTION

Caution designation utilized to signify that damage to machinery and function may result if guidance is not properly followed.

Instructions affixed directly to machines and equipment must always be observed and maintained to ensure that they are fully legible. Examples of such instructions would be:

- Rotational direction arrows for shafts and couplings.
- Identification of fluid connections, direction of flow and substance contained in pipes.

Important Note: There is always increased risk of slipping or falling whenever spilled or leaking lubricants are present. In all cases, they should be properly removed and disposed of.

Safety Sign, per DIN 4844, provides warning of an increased risk of slipping and falling due to the presence of water, oil, grease or other foreign substances on pavements, floors and walkways.

2. Safety (continuation)

2.2 Personnel qualification and training

Personnel performing work required to install, operate, maintain or inspect this equipment must be adequately trained and qualified. In this regard, determination of competency, understanding and supervision levels required for individual assignment is left to the purchaser of the equipment. However, should assistance with on-site training be desired, please contact your local DELIMON office for assistance.

2.3 Dangers in case of nonobservance of the safety instructions

Failure to properly follow all safety instructions may result in hazard to personnel, the environment or to machinery and equipment. Failure to follow these instructions may also additionally void warranties and nullify claims for damages. Examples of such instances follow:

- Failure of machinery or operating systems to function properly
- Failure to observe proper methods of maintenance and repair
- Unnecessary creation of hazards to personnel by means of electrical shock, mechanical injury or exposure to potentially hazardous chemicals
- Unnecessary creation of environmental hazards through chemical leaks

2.4 Safety conscious working

All Safety Instructions resulting from National, Local or User mandated regulations, as well as those contained within this instruction, must be observed at all times.

2.5 Safety instructions for the user/operator

- Users should always take care that only authorized and skilled personnel are allowed to perform installation, maintenance and inspection work.
- Installation, maintenance and inspection of lubrication systems should only be performed while machinery and equipment being serviced is in “Shut-Down Mode”.
- Protective covers and guards, provided to ensure that contact with moving parts is eliminated during machine operation, (e.g. couplings, pulleys, gears, etc.), must be replaced following maintenance and repair.
- Use “Common Sense”! When hot or cold machine parts can lead to potential dangers, those parts must be handled in such manner so as to avoid human touch; i.e. shielding is required.
- Leaks from shaft seals, reservoirs, piping or fittings should be repaired so as to not cause potentially hazardous materials from escaping to the work area. In instances where such leaks have occurred, all local and National rules and regulations for their recovery and disposition must be followed.
- All potential hazards resulting from exposure to electrical sources must be eliminated. Please refer to VDE and local power company rules and regulations for guidance.
- Before restarting system and equipment, refer to instruction in Section 7; Start-Up Procedure.

2.6 Safety instructions for maintenance, inspection and installation work

Before installing or servicing lubrication equipment and machinery, management should insure that only persons who are fully trained, skilled and authorized to perform such work are assigned to such tasks.
Major installation or modification work should only be performed during shut-downs. It is also imperative that shut-down procedures recommended by equipment manufacturers be followed. Pumps, lubricators and distribution systems which deliver potentially hazardous materials to the environment must be thoroughly cleaned. All safety devices and protective equipment, disabled or removed during cleaning, must be immediately reinstalled and reactivated prior to machine use.

Safety Sign, per DIN 4844, Use Safety Glasses or Goggles.
Advice: Whenever working with compressed air, wear safety glasses

Safety Sign, per DIN 4844, Use Breathing Mask.
Advice: Observe EC-Safety Data Sheet for materials of consumption and additives used and use personal protective equipment.

2.7 Unauthorized conversion and manufacture of spare parts

The modification and/or manufacturing of parts for use as spare or replacement parts in DELIMON lubrication equipment, without the written consent and approval of DELIMON Engineering, is strictly prohibited. Any such modification and/or manufacture of component parts shall immediately render any and all warranties as null and void.

2. Safety (continuation)

2.8 Unacceptable modes of operation

The operational integrity and reliability of all equipment supplied is warranted only when said equipment is utilized in strict accordance with parameters established in Section 1; Introduction. Maximum operating parameters outlined in Engineering Data Sheets must never be exceeded.

2.9 Guidelines & standards

1., 2. and 3. guideline (see data sheet: R&N_2009_1_GB)

3.0 Notes on environmental protection and waste disposal

During proper operation, various component parts of lubricating systems are subject to special requirements as set forth by Environmental Legislation.
General requirements for handling lubricants are specified in their respective safety data sheets.
Used lubricants are hazardous forms of waste and therefore require special handling and supervision with regard to § 41 paragraph 1, sentence 1 and paragraph 3 no. 1 of KrW-/AbfG (Closed-Loop Waste Management Act).
Used oils must be handled in compliance with AltölV (Waste Oil Ordinance).
Any devices or components which become contaminated with lubricant must be disposed of by a certified waste management company. Additionally, records indicating proper conformance to waste management practice and law must be filed according to NachwV (Ordinance on Waste Recovery and Disposal Records).

GENERAL PRODUCT CHARACTERISTICS

- Mobile lubricating pump
- Discharge max. 130 cm^3/min
- Lubricant: oil, grease
- Surface signal grey RAL 7004

A. PUMP TYPE EAP

B. NUMBER OF OUTLETS

1 outlet (EAP 110, 350 bar)
1 outlet (EAP 130, 300 bar)

C. REVISION

Stage A

D. KINDS OF DRIVES

Three-phase A.C. motor 220 - 240/380 - 420 V; 50 Hz; 255 - 290/440 - 500 V; 60 Hz, 1500 r.p.m.; 0.37 kW
A.C. motor 230 V; 50 Hz; 0.37 kW

E. POSITION OF DRIVE

without

F. RESERVOIR

5 liters (EAP 110)
15 liters (EAP 130)
30 liters (EAP 130)

G. ACCESSORIES

without
with (grease gun, couplung, mouthpiece, etc.) for EAP 110
with (grease gun, couplung, mouthpiece, etc.) for EAP 130

3. Application

EAP lubricating units are designed for convenient portability where multiple lubrication points are serviced utilizing the same type and grade of lubricant.

EAP 130
Lubricant tanks are available in 15 kg and 30 kg capacities. A three-phase AC motor with integrated worm gear effectively powers the unit. An agitator blade circulates within the lubricant tank to ensure continued feeding of grease to the suction inlet.

4. Principle of operation

EAP 110

Motor rotation is converted into linear motion by means of a spur gear and crank mechanism. This, in turn, drives the piston. Simultaneously, an agitator blade in the lubricant tank operates to assure lubricant delivery to the pump intake and pressure chamber. Care should be taken when filling the reservoir to avoid introduction of air pockets. A pressure relief valve circuit is incorporated into the unit which returns lubricant to the tank whenever the grease gun is closed, or when backpressure encountered at the point of application is extreme.

EAP 130

Model EAP130 incorporates two high-pressure pump assemblies which operate independently of each other. Each unit consists of a pump, double acting non-return valve and a pressure relief valve. Output volume of the two units is combined into a single outlet via external conection.
The maximum working pressure of each independent pump assembly is determined by its respective relief valve. Therefore, the maximum working pressure of the combined units is determined by the unit having the lowest value relief valve. Whenever the grease gun is closed, lubricant contained within the high-pressure chamber is diverted back to the tank. Therefore, when the gun is closed, the pump should be turned off whenever possible to ensure unit longevity.

5. Specification

EAP 110

Working pressure max. : ..... 350 bar
Nominal oil flow : ..... 110 cm^3/min
Reservoir capacity : ..... 5 liters
Temperature range : ..... 0 up to 40 ^oC
Weight : ..... 21 kg
Usable lubricants:
- Grease: ..... NLGI-class according to DIN 51818; 000 ... 3
- Oil types: ..... minimum kinematic viscosity 200 mm^2/s at 40 ^oC

Electric motor: ..... three-phase A.C.motor
- Connection voltage: ..... 230 /400 V AC

Alternatively: ..... single-phase A.C. motor
- Connection voltage : ..... 230 V AC

Driving power : ..... 0.37 kW
Protection system : ..... IP 54

EAP 130

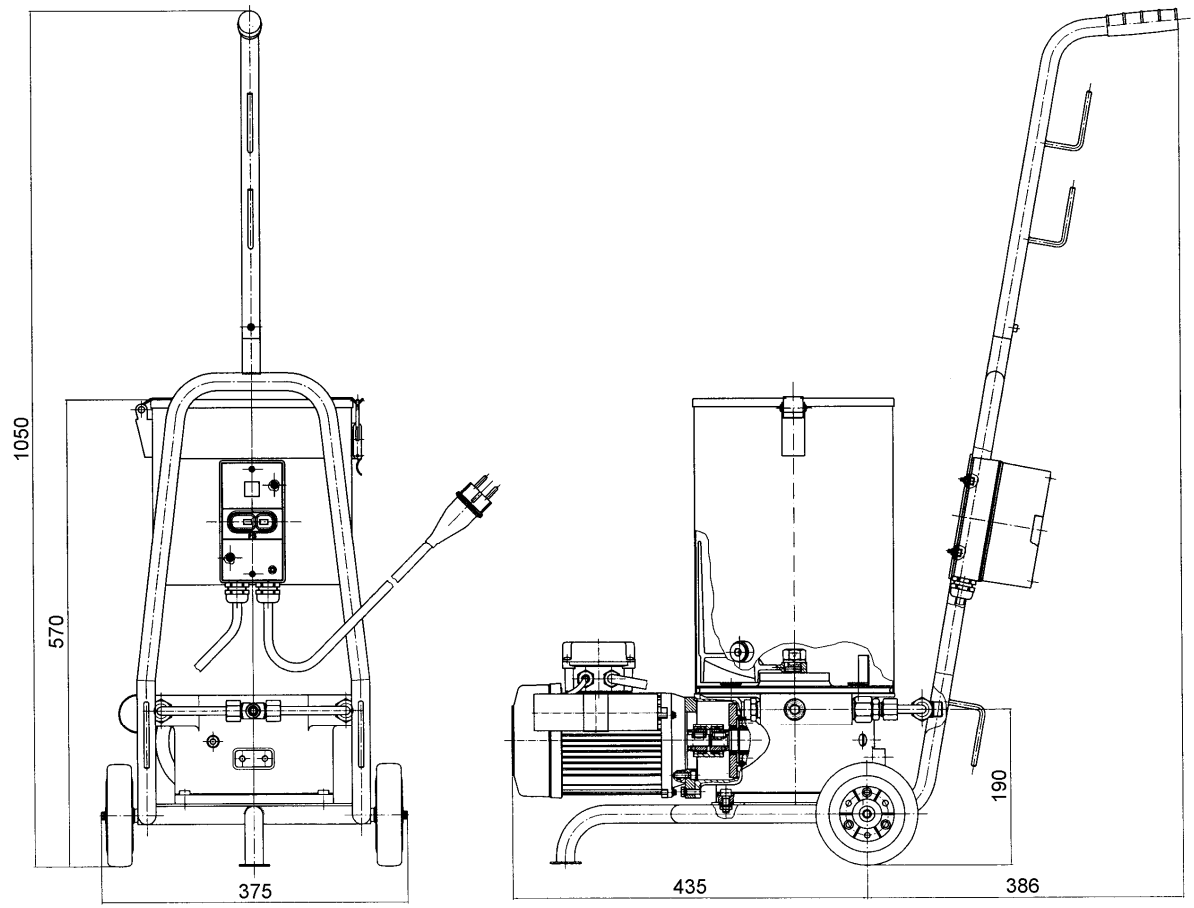
Working pressure max. : ..... 300 bar
Nominal oil flow : ..... 130 cm^3/min
Reservoir capacity : ..... 15 or 30 liters
Temperature range : ..... 0 up to 40 ^oC
Weight : ..... 26 kg
Usable lubricants:
- Grease: ..... NLGI-class according to DIN 51818; 000 ... 3
- Oil types: ..... minimum kinematic viscosity 200 mm^2/s at 40 ^oC

Electric motor: ..... three-phase A.C.motor
- Connection voltage: ..... 230 /400 V AC

Alternatively: ..... single-phase A.C. motor
- Connection voltage : ..... 230 V AC

Driving power : ..... 0.37 kW
Protection system : ..... IP 54

5. Specification (continuation)



6. Plates

Name plate

Type plate