

1. INTRODUCTION

We congratulate you on this purchase. Read the instructions before using the tool. These instructions contain all aspects relevant to safe and optimal use of the tool.

This pump is suitable for driving both single (AHS1400FS / AHS1400FDU) and double-acting (AHS1400D) hydraulic tools operating on mineral oil and suitable for an allowable operating pressure of 720 bar. See Table 1 "Specifications" for further details. The pump can be connected to a compressed air source of max. 8 bar. Compressed air bottles with a pressure regulator can also be used as compressed air sources.

For safety instructions see the booklet "Safety Instructions" as supplied.

1.1 Disclaimer

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2. PRODUCT IDENTIFICATION

- | | | | |
|----|--|----|---|
| A. | Foot switch | G. | AutoLock couplings (AHS 1400 FDU) |
| B. | Air connection | H. | Control valve (AHS 1400 D) |
| C. | Oil tank | I. | Pressure relief handle (AHS 1400 D) |
| D. | Hydraulic filling nozzle / Vent button | J. | Hydraulic hose connection / "High-flow" coupling (AHS 1400 D) |
| E. | Plug for transport | | |
| F. | Valve for air supply | | |

3. OPERATION

The pump operates according to the booster principle. The inlet air pressure is amplified to approx. 100 times higher hydraulic pressure by a pneumatic plunger connected to a hydraulic plunger. Each pump is provided with a safety valve to limit the maximum pressure. Never change the setting of this safety valve.

AHS 1400 FS

This pump is suitable for single-acting hydraulic tools such as nut crackers and cable cutters.

AHS 1400 FDU

This pump is suitable for driving Holmatro® rescue equipment. In this case the hydraulic control system is located in the rescue equipment.

AHS 1400 D

This pump is provided with a 4/3-way valve and is suitable for driving double-acting hydraulic cylinders.

4. USE

4.1 Initial use (first time only)

When you receive the pump it must first be prepared for operation. Remember the following activities:

- * Check the pump for external damage.
- * Check whether all hose connections are firmly tightened.
- * The pump is supplied with oil in the tank.
- * Remove the transport plug from the filling nozzle. Fit the supplied filling cap/vent knob (see also label on the pump)
- * Fit a high-pressure hydraulic hose or a High-Flow coupling to the pump using PTFE tape. (AHS1400FS / AHS1400D)

4.2 Preparation for use

1. Connect the tool to the pump using hoses and couplings. See also the relevant operating instructions.
2. Connect the pump to the compressed air source using the air coupling. Set the air pressure at 7 bar.
3. Check whether sufficient oil is present in the mist lubricator unit (if available). Add Shell No-Ice fluid, if necessary.
 - !!! A lubricator-filter unit is not required if the pump is connected to a compressed air bottle. It is, however, required if a different compressed air source is used.

Coupling AHS 1400 FDU, see Fig. 1

The unit is equipped with "AutoLock" couplings - one male and one female.

- * Check whether the pump is in its neutral/release pressure relief position. Never connect the couplings if the pump is switched to operation.
- * Remove the dust caps from the couplings and put them into each other to avoid dirt.
- * Insert the couplings into each other.
- * Pull both couplings to check whether the couplings are properly connected and to check whether the retainer ring sits in the correct position.
- * Repeat this procedure for all couplings.

Coupling AHS 1400 FS / AHS 1400 D, see Fig. 2

The pump may be equipped with a high-pressure hydraulic hose directly to the pump or with "High Flow" couplings. The unit is equipped with female High-Flow couplings. The hydraulic hose from the pump is provided with male High-Flow couplings.

- * Never use pliers or similar to connect the High-Flow couplings.
- * Release the pump by depressing the foot pedal (AHS 1400 FD/FDU) or by setting the valve in its neutral position (AHS 1400 D)
- * Never connect the High-Flow coupling if the pump is in its operation position.
- * Remove the dust caps from the High-Flow couplings and screw them together to prevent fouling.
- * Insert the male coupling into the female coupling and tighten the locking ring as far as possible.
- * Repeat this procedure for all High-Flow couplings.

Compressed Air Source

The pump must always be connected to a compressed air source with a min. capacity of 0.56 m³/min. and max. 8 bar. A filter-lubricator unit suitable for that capacity must be installed in the air hose to the pump. A filter-lubricator unit consists of (see Fig. 3): an air filter with water separator, a pressure regulator, a mist lubricator set at one drop per minute. Use SAE No. 10 oil.

4.3 Use

Checking

- * Ensure that the pump is located on a firm base (max. 25°).
- * Check the hydraulic oil level.
- * Unscrew the oil filler cap to vent the tank.
- * Connect the equipment to be used.

Operating AHS 1400 FS / AHS 1400 FDU

- Depress the foot pedal at "PUMP". The pump will operate. The jack is extended. The pump stops as soon as the foot pedal is released. The hydraulic oil pressure is maintained.
- Depress the foot pedal at "RELEASE", the hydraulic oil pressure decreases and the plunger will retract.

If the pump is started before the tools are connected or disconnected while the pump is operating, the oil must be depressurized to allow the tools to be reconnected. Depressurizing is achieved by depressing the front of the foot pedal.

Operating AHS 1400 D

- Move the control valve handle to the side where the pressure must be developed.
- Depress the foot pedal at "PUMP". The pump will operate. The jack is extended. The pump stops as soon as the foot pedal is released. The hydraulic oil pressure is maintained. Depressurizing is achieved by turning the valve handle to its neutral position.

Venting the oil reservoir

- The pump delivery and the amount of usable oil will increase by removing the vent screw from the filler cap.

4.4 Shutting down

Disconnection after use

- Depressurize the hydraulic oil.
- First disconnect the compressed air source.
- Then disconnect the hydraulic couplings, the high pressure hose and the compressed air control hose.
- Close the vent knob on the pump

Disconnection AHS 1400 FDU, see Fig. 4

- * First check whether the pump is in its neutral/release pressure relief position.
- * Turn (1) and slide (2) the ring of the female coupling backwards. The male coupling will come off.
- * First remove any dirt from the couplings and the dust caps to prevent it entering the hydraulic system.
- * Separate the dust caps and replace them on the relevant couplings.

Disconnection AHS 1400 FS / AHS 1400 D, see Fig. 5

First check whether the pump is in its neutral/release position.

- * Unscrew the locking ring. The male coupling will then be released.
- * First remove any dirt from the couplings and dust covers to prevent contaminants from penetrating the hydraulic system.
- * Disengage the dust covers and replace them at the relevant High-Flow couplings.

Cleaning and storage

- * Clean the unit and any accessories used before storage.
- * Clean all couplings. Ensure that the dust caps are installed.

5. TROUBLESHOOTING

In case of failures or repairs, always specify the model and serial number of the equipment to the supplier.

Problem		Possible cause		Remedy	
1.	The pump operates but is not developing pressure	1.	Oil level too low	1.	Add oil
		2.	Air in the system	2.	Vent the hydraulic system.
		3.	Dirt in the pump filters	3.	Clean the oil filter.
2.	Low oil delivery	1.	The filler cap is not open	1.	Open the filler cap
		2a.	Compressed air capacity too low	2a.	Min. capacity 0.56 m ³ /min.
		2b.	Compressed air hose size too small	2b.	Use a larger size compressed air hose
		3.	Dirt in the pump filters	3.	Clean the oil filter
		4.	Air in hydraulic system.	4.	Vent the hydraulic system.
3.	Pump does not achieve 720 bar	1.	Air pressure too low	1.	A min. compressed air pressure of 7 bar is required to achieve 720 bar
4.	Pump does not maintain its pressure	1.	There is a leakage in the hydraulic system	1.	Check the hydraulic connections
		2.	Valve not operating properly	2.	Contact your supplier.

Consult your supplier if the solutions provided do not have the required results or in case of other defects.

6. MAINTENANCE

Wear personal protection equipment during maintenance. Ensure that any spent replaced hydraulic oil is collected and disposed of in a responsible manner. Remember the environment.

6.1 Regular maintenance (minimum every 3 months)

It is sensible to carry out regular maintenance. Depending on the use at least every 3 months and/or 25 operating hours.

- * Check the hoses, quick-action couplings and dust caps.

Hydraulic oil

- * Regularly check the hydraulic oil level. The jack plunger must always be retracted. The oil level must be max. 1 cm below the filler cap. Use only the hydraulic oil specified by Holmatro, such as SHELL Tellus T-22.
- * Replace the oil after every 300 operating hours or sooner if the oil appears to be contaminated.
- * Release the pump flange if the oil is severely contaminated to allow cleaning of the tank and oil filters.

For cleaning AutoLock couplings, see fig. 6

Regularly check and clean the couplings to ensure that the automatic locking system will continue to operate properly.

1. Rinse the coupling with luke warm water and a soft soap solution.
2. Lubricate the end (A) of the coupling with hydraulic oil or inject WD-40 when the coupling is dry.
3. Lubricate the locking ring by injecting WD-40 into the space (B) between the back section and the locking ring.
4. Connect the couplings and check whether the coupling locks automatically. Check the locking by pulling the locking ring straight back. The couplings must not slip.
5. Detach the couplings by turning the locking ring and pulling it backwards.
6. Repeat steps 4 and 5 a few times to improve the internal lubrication of the locking system.

6.2 Venting

Air can enter the hydraulic system when a new hose, coupling or jack is fitted or after the hydraulic oil is replaced. This is shown by slow or jerky extension of the jack.

Venting, see fig. 7

- * Place the jack upside down and lower than the pump.
- * Remove the small vent screw on the filler cap.
- * Let the plunger extend and retract fully a few times without load. Let the plunger retract fully.
- * The jack should now extend rapidly and without jerking.
- * Repeat this procedure, if necessary.

Venting the pump

- Connect the pump in the normal manner.
- Depress the foot pedal at "RELEASE".
- At the same time depress the air valve using a screwdriver. The air valve is located below the mark "PUMP" of the foot pedal.
- Leave the pump operating in that manner for approximately 15 sec.
- Check whether the pump is developing pressure again. If not, vent the pump again.

6.3 Annual maintenance

Many years of safe use is guaranteed if the unit is properly cared for and maintained. To this end the unit must be inspected at least once a year. This must be carried out by a trained engineer who has the necessary tools and testing equipment available. It is also possible for you, the user, to carry out the maintenance yourself. In the context of your own safety and the product liability it is necessary that appropriate training should be undertaken first. Your supplier can advise you on this and/or attend to the annual maintenance on a contract basis, if desired. In the latter case you will be assured of proper and safe operation.

6.4 Five-yearly maintenance and testing

We advise you to have the unit checked and tested by your supplier or other body certified by Holmatro after a maximum of five years of use. Consult your supplier for further details.

6.5 Long-term storage

- * Ensure that the equipment is completely depressurized.
- * Store the equipment in a dry, well-ventilated area. Use additional preservatives on the external steel parts.

7. DECOMMISSIONING/RECYCLING

The various parts can be re-used at the end of their service life. Collect the hydraulic oil and dispose of it separately. The unit consists of steel, aluminium, neoprene (seals) and plastic. The unit does not contain any pressurized components. Consult your supplier about recycling.