Instructions for use and maintenance of hydraulic cylinders

General

Single- and double acting hydraulic cylinders produced by Nuia PMT AS Ø25-220 mm for:

- Mobile equipment
- Industrial equipment
- Agricultural machinery

Materials being used:
Cylinder tubes:

- Steel grade St 52-3
- Honed/rolled burnished cylinder tubes. Surface finish Ra max.0,4my
- Bright drawn cylinder tubes. Surface finish Ra max.0,8my

Piston rod:

- Steel grade 20MnV6
- Thickness of the chrome coat 25±5µ
- Corrosion resistance ISO 9227:91 min. 200 hours

Seals:

- Piston seals – double acting compact seal, nitrile rubber
- Back-up rings – polyester elastomer
- Guide rings – polyamide with special filling
- Rod seals – polyurethane
- Wipers; O-rings – nitrile rubber

Operating pressure: up to 24 MPa (240 bar)
Operating temperature: -30ºC - +110ºC
Max. speed: 0,5 m/s

Suitable oils:
Hydraulic oils HL, HLP

- HL 10…68 Zinc-free hydraulic oils; suitable for hydraulic systems with nominal pressures up to 16 MPa.
- HLP 10…100 Hydraulic fluids for industrial and mobile hydraulic systems, suited for high pressures and specific wear protection.

User guidance

- Before starting using the hydraulic cylinder, visually inspect all components for shipping damage.
- Connect the hydraulic cylinder to your hydraulic system.
- Remove air from the cylinder:
    - Single-acting cylinders:
        - Position the cylinder so that the plunger is pointed down and the cylinder is lower than the pump.
        - Fully extend and retract the cylinder.
        - Repeat the process several times, until operation is smooth.
    - Double-acting cylinders:
        - Lay the cylinder on its side so that the couplers are facing up.
        - Fully extend and retract the cylinder.
        - Repeat the process several times, until operation is smooth.
- Do not exceed the maximum working pressure that is set by the manufacturer.
- Do not weld the cylinder or new details onto the cylinder.
- Keep hydraulic cylinder away from open flames and heat.
- Do not load cylinders with a position measuring system using a magnet crane.
- Refer to the following table to help identify the most common faults:

Problem	**Possible cause**
Cylinder will not advance	Coupler not fully tightened Pump oil level too low Pump malfunctioning Load is too heavy for cylinder Cylinder seals leaking
Cylinder only advances part way	Pump oil capacity insufficient External obstruction
Cylinder advances but will not hold load	Leaking seals Leaking connection Pump or valve malfunctioning
Cylinder leaks oil	Damaged seals Internal cylinder damage Loose connection
Cylinder will not retract or retracts slower than normal	Coupler not fully tightened Pump reservoir over-filled Narrow hose restricting flow Cylinder damaged internally

**The troubleshooting chart is not all-inclusive, and should be considered only as an aid to help diagnose the problems.*

ISO 9001
AS NUIA PMT
reg. nr. 10053718
Ettevõtluse 1 | Karksi-Nuia
69103 Estonia
tel +372 435 4560
info@nuiapmt.ee
SEB Pank SWIFT kood EEUHEE2X a/a EE641010302010368006
Swedbank SWIFT kood HABAEE2X a/a EE752200001120161252

Maintenance

- Regularly check the visual condition of the cylinder (incl. corrosion, oil leaks, damaged parts etc).
- Unless the cylinder is equipped with maintenance-free bearings, the radial spherical plain bearings need regular greasing.
- If the cylinders are going to be left unused for long time, fill them with oil and cover the piston rod with protective grease MOTUL MT OIL Protect.
- If possible, store the cylinders always with fully retracted position.
- Use dust caps when cylinder is disconnected from the hoses.
- Hydraulic cylinders must be stored in a room which is dry and free of dust, which is also free of corrosive substances and vapors.
- Do not disassembly the hydraulic cylinder without the agreement from Nuia PMT AS.
- With a new cylinder, there may be a slight release of oil between the end plugs. It’s not a leak, the mounting oil moves out between the threads. This phenomenon will disappear over time.

Warranty: 1 year

AS NUIA PMT
reg. nr. 10053718
Ettevõtluse 1 | Karksi-Nuia
69103 Estonia
tel +372 435 4560
info@nuiapmt.ee
SEB Pank SWIFT kood EEUHEE2X a/a EE641010302010368006
Swedbank SWIFT kood HABAEE2X a/a EE752200001120161252