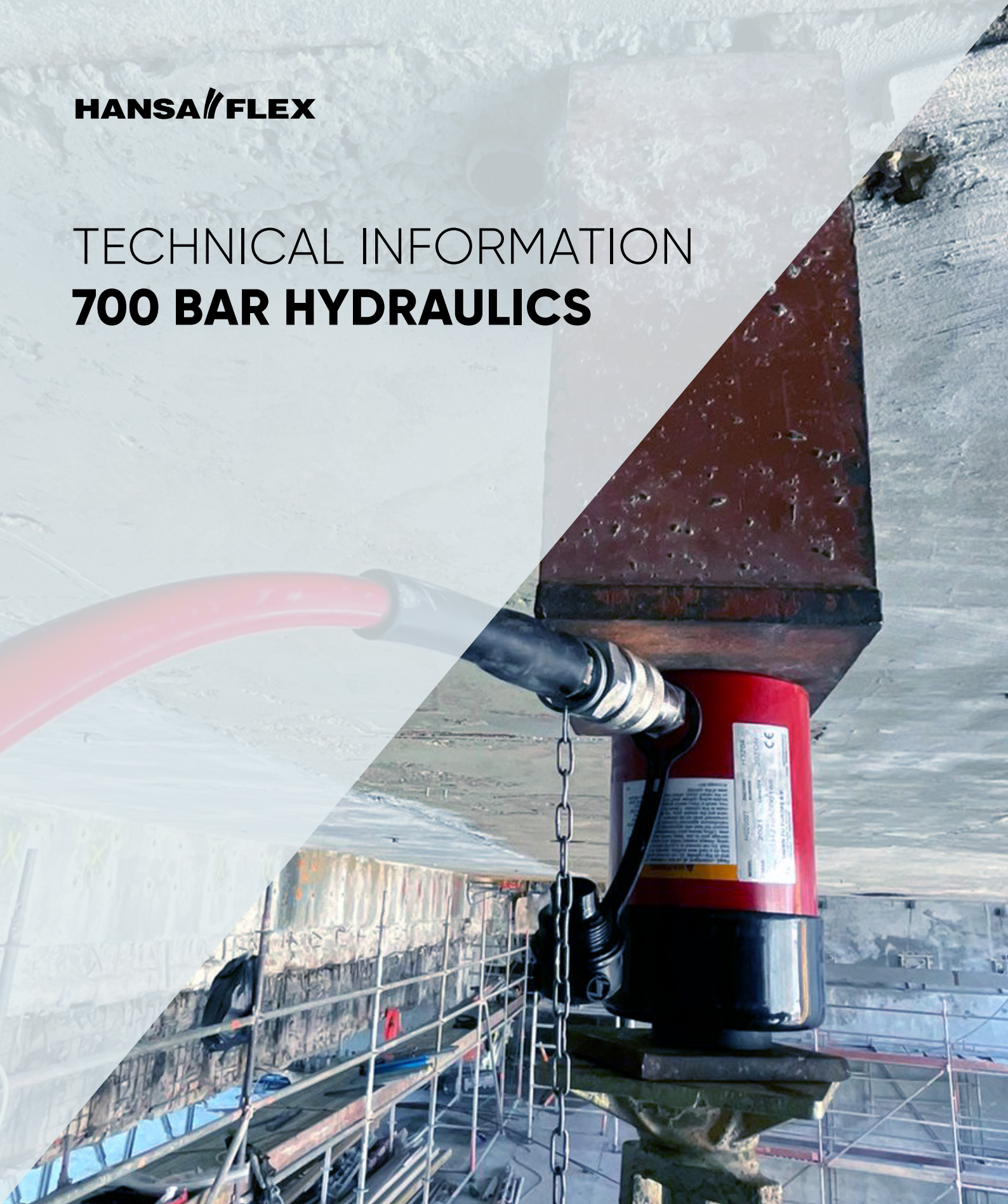


HANSA FLEX

TECHNICAL INFORMATION

700 BAR HYDRAULICS



Technical information 700 bar hydraulics

Table of contents









- 1. General**
- 2. Safety instructions**
- 3. Technical information**
 - 3.1. Installation instructions for 700 bar cylinders
 - 3.2. Installation instructions for 700 bar pumps
 - 3.3. Installation instructions for 700 bar hose lines and couplings
 - 3.4. Technical parameters for 700 bar cylinders
 - 3.5. Technical parameters for 700 bar pumps
 - 3.6. Technical parameters for 700 bar accessories
- 4. Maintenance**
- 5. Disposal information**

1. General

The products are used for numerous industrial applications and offer a simple and efficient way to solve the problems that can occur when moving heavy loads.

The installation, commissioning and maintenance of hydraulic systems or their components may be carried out only by suitably qualified personnel and in strict observance of all the relevant safety regulations.

2. Safety instructions

Safety requirements	
	Connecting a pump to a cylinder by means of a hydraulic hose in the correct way creates a machine for lifting, pulling, bending, holding in position etc. In order to avoid the possibility of accidents, this equipment must be used carefully due to the high thrust forces involved.
	Read this operating manual carefully and practice with the equipment before you bring it into use.
	Choose the correct device from our wide range of models such that you do not exceed 80 % of its rated capacity and stroke.
	Wear safety goggles or use a protective screen as eye protection.
	Wear safety footwear.
	Wear safety gloves.
	Do not modify the device (do not weld on e.g. any components, do not extend actuating levers etc.).
	Do not transport the device by using its hoses. Use the transport handles, if there are any, and place the pump lever in the transport position.

Safety requirements



Fill the pump with HANSA-FLEX hydraulic oil. Fill it only up to the marked filling level. Take into consideration that the cylinder piston must be able to retract.



Contact the technical department at HANSA-FLEX before you use pumps from another manufacturer. Otherwise, HANSA-FLEX accepts no liability for any damage that may occur.



Check that the installation is free of defects before each use, the person operating the equipment can do so safely and no other person can enter the working area.



The person operating the equipment must be thoroughly familiar with how to handle the device and use it in compliance with the evident criteria and regulations concerning safety that are required and must be followed when moving heavy loads.



Never use a hydraulic cylinder at a working pressure that exceeds that specified for the cylinder. Ensure that all tools and accessories are suitable for the maximum working pressure.

Check that all safety precautions have been taken to avoid the risk of injury and material damage from your application or your system. HANSA-FLEX accepts no responsibility for damage or injury that arises from the improper use, maintenance or application of the products.
















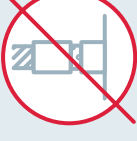


3. Technical information

The cylinders are manufactured out of the highest grade materials. Our range of products are suitable for all types of industrial applications, such as: lifting, pushing, pulling, bending, holding in position etc. All cylinders are tested at 125 % of their rated capacity in order to ensure the quality and safety of all the products. Mechanical limit screws prevent movement past the end position when under full pressure. The cylinder housing consists of solid, high-strength alloyed steel, the pistons are hard chrome plated. Heavy cylinders are fitted with carrying handles or eye bolts. All cylinders come with a quick release coupling connector with a plastic dust cap.

The pumps are available as hand pumps, air-hydraulic pumps, modular pumps and optionally as manually and electrically driven hydraulic units. Units complying with ATEX standards can be supplied on request.

A wide range of accessories for optimising the performance of the 700 bar products complement our product portfolio. These include hose lines, couplings, tilt saddles, hollow saddles, flow control valves, fittings and manifolds, pressure gauges and directional control valves.

3.1. Installation instructions for 700 bar cylinders

Correct	Safety requirements	Incorrect
	Stand the device on a smooth and level supporting surface. Identify strong points and zones to apply and transfer the loads and prepare safe areas for the operating personnel; keep these places separate from one another by using sufficiently long hoses. If necessary, use our base plates.	
	Once the movement of the loads is complete, mechanically block them against further movement and, if at all possible, do not work under a load.	
	Centre the load on the cylinder. Use the whole of the effective surfaces of the cylinder, at the top and bottom, to support the load. Plan for the use of swivel heads in cases where loads can also have a horizontal effect.	
	Do not expose the device to strong sources of heat (e.g. welding equipment) and do not allow its temperature to exceed 65 °C.	
	Perform maintenance work in clean and well-lit places with devices in the retracted position and not subject to load.	
	Install instruments (pressure gauges) that display the system pressure to allow you to check that the rated capacity of the device is not exceeded under any circumstances. Attach a safety valve and safety devices if specified by the relevant requirements.	
	Move the actuating elements of the cylinder manually and connect up the connections fitted with hose couplings (quick release connectors) between the elements by hand.	
	After use, check that the device is not damaged, clean it, apply preservatives and place it into storage. If necessary, replace any worn or damaged components with new ones.	
	Clean plug-in connectors before use. Check that the connections have been made correctly (fully inserted and then rotated into position by hand). A defective connection can cause the device to malfunction and even give rise to dangerous situations.	
	During the installation, ensure that the hoses are not kinked or bent too sharply and that they are not subject to any imposed loads that could cause them to burst. Do not disconnect any hoses as long as there is pressure in the system.	

3.2. Installation instructions for 700 bar pumps

Close the drain valve hand-tight. Using tools for this can damage the valve. Fill the pump only up to the recommended filling level with oil. Fill the pump only if the connected cylinder is fully retracted. Use only approved hydraulic oil. Do not use any handle extensions. If hand pumps are being used correctly, they should require only a low force to operate.

3.3. Installation instructions for 700 bar hose lines and couplings

Clean both coupling components before connecting them. Use dust protection caps if the coupling components are not connected. Keep the hoses away from the area under the loads. Do not use hoses to lift hydraulic devices. Remove hose lines only with the cylinder in the fully retracted state, if necessary install shut-off or safety valves between the cylinder and the hose line to prevent a sudden decay of pressure and retraction of the cylinder. Do not kink hoses. The bending radius should be at least 80 mm. Do not drive over hoses nor allow heavy objects to fall onto them. Do not lift the cylinder from the ground using the couplings.

3.4. Technical parameters for 700 bar cylinders

Multipurpose cylinders manufactured in steel:

- Industrial cylinders for general applications
- Single-acting with spring return
- Capacity from 5 to 220 tonnes
- Stroke up to 360 mm
- Heavy cylinders fitted with carrying handles and eye bolts as standard
- Guide strips to improve resistance to lateral loads

Multipurpose cylinders manufactured in aluminium:

- Lightweight cylinder, universal in use
- Single-acting with spring return
- Capacity from 23 to 200 tonnes
- Stroke up to 300 mm
- With steel base plate and steel saddle for increased wear resistance
- 40 % weight reduction compared to steel equivalent

Hollow piston cylinders manufactured in steel:

- For push and pull applications, e.g. tensioning of cables and pins, pulling of sleeves and bearings
- Single-acting with hollow pistons and spring return
- Capacity from 12 to 100 tonnes

- Stroke up to 150 mm
- Heavy cylinders fitted with carrying handles and eye bolts as standard
- Guide strips to improve resistance to lateral loads

Hollow piston cylinders manufactured in aluminium:

- For push and pull applications, e.g. tensioning of cables and pins, pulling of sleeves and bearings
- Single-acting with hollow pistons and spring return
- Capacity from 22 to 100 tonnes
- Stroke up to 250 mm
- With steel base plate and steel saddle for increased wear resistance
- 40 % weight reduction compared to steel equivalent

Flat cylinders manufactured in steel:

- Low-profile for use in tight spaces, e.g. machine positioning, tool attachment, load tests
- Single-acting with spring return
- Capacity from 4 to 150 tonnes
- Stroke up to 150 mm
- Optionally available with tilt saddle and locking nut for the piston

Traction cylinders manufactured in steel:

- For pulling applications, for suspending and connecting plates for welding, for tensioning cables etc.
- Single-acting with spring return
- Capacity from 45 to 50 tonnes
- Stroke up to 150 mm

3.5. Technical parameters for 700 bar pumps

Hand pumps:

- Pumps for use with single- or double-acting cylinders
- Models with one or two speeds. Two-speed pumps extend the cylinder faster to make contact with the load in less time
- Internal pressure safety valve

- Handle clips for easy transport

Pneumo-hydraulic pumps:

- Pumps for use with single- or double-acting cylinders
- The foot pedal acts as a control valve to control the extension, load-holding and retraction functions ("Hold" mode for maintaining the outlet pressure)
- Working pressure air: 2.8 – 10 bar
- Air consumption: 400 l/min

3.6. Technical parameters for 700 bar accessories

- Coupling plugs and sockets can be supplied separately
- Dust caps in steel available for the couplings
- All standard cylinders are supplied with coupling sockets
- All manifolds and flow and pressure control valves are supplied for 700 bar working pressure
- All valves and manifolds have 3/8" NPT pressure connectors to avoid leaks
- Highly accurate measuring devices in the form of a glycerine-filled pressure gauges, accuracy $\pm 1.6\%$ of the full-scale value
- Reliable monitoring of the working pressure or force

4. Maintenance

- Use only approved hydraulic oils. The use of other fluids can damage the seals or the device and void any related warranty claims. The oil to be used must be in accordance with the standards DIN ISO 6743-4: ISO HM32 for electric pumps and vehicle jacks and ISO HM46 for electric pumps.
- The machine must be switched off and free of pressure before maintenance work is carried out.
- The components must be clean and in fault-free condition, especially connectors, threads, connections, quick release couplings etc.
- Check the level of oil at the oil level indicator. If necessary, replenish the oil via the filling plug opening.
- Have the electrical power connections checked regularly only by appropriately qualified personnel. Loose or damaged cables and the like must be repaired or replaced immediately.
- In the case of work performed in corrosive or aggressive environments, the components must be appropriately protected.
- The oil in the oil tank should be regularly changed, at least once a year, depending on the operating conditions.
- After completion of the work, the system should be depressurised and all cylinders retracted.
- Fit dust protection caps etc. to the hose couplings as soon as the hoses are disconnected.

- Lubricate the areas that are exposed to wear or oxidation.
- Perform regular visual inspections.
- In the event of machine failure or malfunction, all repairs must be made by skilled personnel using original replacement parts.

5. Disposal information

Hydraulic oil, hydraulic hose lines and hydraulic components may not be thoughtlessly placed in the ordinary refuse; they must be collected and disposed of in accordance with the applicable waste disposal regulations. The national requirements of the respective country and, if appropriate, the information given in the safety data sheets must be observed.