



Hydraulic Equipment Catalogue

Please note before using this catalogue:

This catalogue was planned and edited in such manner it can be used in the planning of hydraulic system, for product recommendation, and as technical material for those who usually handle oil hydraulic equipment.

The specifications and characteristics listed in the catalogue are typical performance under certain conditions and are not guaranteed to work under all conditions. Please select products based on the assumption that there will be some fluctuations due to errors in each product.

Product description

The principal details described for each model include the following.

- Specifications
- Accessories
- List of seals
- Model Number Designation
- Outer dimensional drawing
- Interchangeability between current and new products
- Instructions
- Performance characteristics
- Others

About a unit

Unit in this catalogue is shown with SI unit only. Pressure in this catalogue is shown at “gauge pressure”.

About graphic symbols

The graphical symbols used to indicate the functions of hydraulic and pneumatic equipment and devices are specified in JIS B 0125-1. JIS B 0125-1 was revised in November 2007, and the graphical symbols of the former JIS are used in this catalogue. A table comparing the graphical symbols in this catalogue with those in JIS B0125-1:2007 is shown at the end of this catalogue for reference.

About the change of the design number

The design numbers are subject to change.

But the last digit of the design number is changed, the installation dimensions and performance characteristics will remain the same.

Please be sure to confirm the design number when ordering.

Safety Precautions

To prevent serious accidents, equipment damage, and other property damage, please observe the following precautions and "Instructions" in this catalogue, as well as all related regulations regarding safety.

Before using the product, be sure you read and understand all the instructions in the Operator's Manual entirely.

In this catalogue, safety precautions are classified into three ranks.



DANGER

Indicates an imminent danger that is very likely to cause death or severe injury unless the situation is avoided.



WARNING

Indicates a potential danger that may cause death or severe injury unless the situation is avoided.



CAUTION

Indicates a potential danger that may cause a minor or moderate injury or that may result in property damage.

1. Precautions for Use



CAUTION

To avoid possible injury when handling the products, wear protective safety equipment in accordance with the instructions in the Operator's Manual.



CAUTION

Failure to support the weight of the product or lifting the product with improper posture may result in injury to the hands or back. Be sure to follow the instructions in the Operator's Manual.



CAUTION

Do not climb on, strike, drop or exert unnecessary force on the product. This may lead to injury or fire due to improper operation, damage, or oil leakage.



CAUTION

Oil on the product or floor must be cleaned up thoroughly. Oil could cause you to drop the product or slip on the floor.

2. Precautions for Installation, Removal, and Maintenance



WARNING

All installation, removal, seal replacement, piping or wiring should be performed by properly trained personnel.



WARNING

Before starting the work for installation, removal, maintenance, piping and wiring, do the following jobs. Failure to do these jobs may cause the equipment to move suddenly or spout the oil from it during the work, which eventually may cause the serious accidents.

- Shut off the power supply to the equipment and make sure that all the electrical motors or engines have stopped.
- Fix the Cylinder rod not move/move down when installing/removing the Cylinder.
- Get the pressure in the pipes and cylinders in the hydraulic system back to zero pressure.



WARNING

Before working on any electrical wiring, be sure to shut off the power supply. Failure to do this may cause electrical shock.



CAUTION

Keep all installation holes and surfaces clean. Failure to do this may cause insufficient tightening of the bolts that may cause fire due to oil leakage.



CAUTION

Before installing the product, be sure that all specified bolts are tightened with the specified torque. Tightening with the outside specifications may cause fire due to improper operation, damage, oil leakage, etc.

3. About Maximum Operating Pressure



WARNING

The maximum operating pressure described in this catalogue includes the surge pressure. Using the product at the pressure higher than the maximum operating pressure may cause damage to the product, resulting in a serious accident.

4. Precautions for Operation



DANGER

Never operate any device in an environment where there is danger of explosion or fire, unless the device is fully protected. This may lead to major and serious accidents including explosion or fire.



WARNING

Always provide protective covers for rotating shafts of pumps, motors, etc. Do not approach near the pumps or motors in operation. There is a fear of injury by such an accident that the hands or clothes are caught by or coiled into the pumps and the motors.



WARNING

In event of abnormal operation (unusual sounds, oil leakage, smoke, etc.), immediately stop operation and take appropriate corrective measures. Continued operation may result in damage, fire, injury, or other accidents.



WARNING

Completely discharge air from the cylinder at low pressure. Failure to do so may result in unexpected movement of the cylinder, which in turn may cause injury.



WARNING

Do not loosen the air vent valve more than the specified lift during the air bleeding operation. Doing so may result in a serious accident due to valve ejecting or oil spurting out.



WARNING

[Cylinders with Cushion]
When adjusting the cushion, do not loosen the cushion adjustment valve more than the specified lift. Doing so may cause valve to protrude or oil to spray out, which could result in a serious accident.



CAUTION

To adjust the cushion, gradually increase the cylinder speed from a low speed [50 mm/s or less]. Rapidly accelerating the cylinder may produce abnormal surge pressure, resulting in damage to the cylinder or the machinery and consequently leading to a serious accident.



CAUTION

Before operating this device for the first time, check that hydraulic and electrical circuits are properly connected and that adjoining surfaces are tightly aligned.



CAUTION

Do not use the product out of the specification as described in the catalogue, related data sheets, drawings, etc. Not doing so may cause improper operation, damage or injury.



CAUTION

During operation, high temperatures in the hydraulic system or solenoid units may occur. Wear protective gear on hands and body when around these parts.



CAUTION

Be sure to operate the product with proper oil, and within established ranges for temperature, viscosity and purity. Use outside of specified limits may cause improper operation or fire due to oil leakage.

5. Maintenance Precautions



WARNING

Never convert the products. If any conversions are made, unexpected machine movement may cause injury.



CAUTION

Do not disassemble or change the products without prior consent of the manufacturer. Failure to do this will cause the products not to perform the specified performance and characteristics, and moreover will become the causes of the accidents or failures.



CAUTION

For transportation/storage of the product, pay attention to environmental conditions, such as ambient temperature and humidity, and take anti-dust/rust measures.



CAUTION

The seals may be required to replace if the products is used after long-term storage.



CAUTION

Read the manual thoroughly and take due care to replace the seals.

6. Related Regulations



CAUTION

To ensure that this product is used in a safe manner, it is essential to observe the above precautions, as well as all related regulations regarding safety.