



SAFETY INFORMATION

HYDRAULIC CYLINDER FOR DUMPING EQUIPMENT

The following information does not cover any kind of danger or risk in the use of dumping equipment, as the hydraulic cylinder is only a part of the lifting mechanism. Complete and exhaustive information about any type of residual and additional risk should be supplied by the equipment manufacturer.

! WARNING

- **Do not operate cylinder with personnel or equipment alongside.**
- **Never work, or stay under a dumping mechanism without taking proper precautions to block or support the dumping structure with something other than the hydraulic cylinder.**

CAUTION

- Always use the equipment within the specified limits. Never overload the dumping equipment. Overloading can result in damages to the equipment and could cause potential tip-overs or other failures.
- The load must be evenly distributed during loading and unloading.
- Uneven terrain, fresh fill, or high wind can cause a potential tip-over of the dumping equipment.
- A jack-knifed position of the truck and trailer is not recommended when dumping. Always align truck and trailer before dumping.
- Do not tamper with, adjust or modify the hydraulic relief valve in the system. Maintenance or adjustment should be performed by a qualified technician when required. Refer to dump body manufacturer for appropriate relief valve setting.
- Do not fully extend the cylinder if the whole load is still in the dump body. As an example, tipping tankers should be raised step by step and only when part of the load has been discharged (always stay within specified thrust/ pressure for each stage).
- Do not jerk or slingshot dump unit in an attempt to free a stuck or frozen load. Pulling forward or backing up and hitting the brakes, or lowering the body part way and then quickly engaging the valve in the “hold” or “raise” position will cause a tremendous pressure spike which may bulge or split the cylinder or cause other failures in your system.
- When lowering a load that is sticking, the dump body must be feathered down slowly to avoid a high pressure build up in the cylinder.

! This symbol indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTE: Muncie is not liable for damages, and consequential damages, related to lack of compliance with the previous suggestions and guidelines. When selecting a hydraulic cylinder for replacement, it is the responsibility of the purchaser, installer or end user to verify that overall dimensions, mounting and performance features of the replacement cylinder are appropriate for the application.

USER & MAINTENANCE INFORMATION

HYDRAULIC CYLINDER FOR DUMPING EQUIPMENT

1. CYLINDER APPLICATION RANGE

Telescopic cylinders are commonly installed on dumping equipment and are intended to provide only a lifting force. The machinery into which the cylinders are incorporated must comply with the requirements of the force directives and norms. The cylinder is not a structural member and is not designed nor intended to provide stability to the dumping vehicle. Failure to comply with the following instructions will void the product warranty and cancel any liability.

1.1 ORDINARY OPERATIONS

Under normal circumstances, the cylinder lifts up a dump body and the material contained in the body is dumped out. The cylinder has been built to support direct efforts along its axis, and it should not be subjected to lateral loads or used as a structural part. Cylinders are not designed to withstand side loads. Therefore, while cylinders are never a reason for tip-over, they may sustain damage as a result of it.

1.2 SELECTION OF THE CYLINDER

Muncie literature gives a rough indication of the lifting force to be intended as body weight + load and should be used as the first parameter in the selection of the cylinder. The lifting force can only be calculated by the design engineer of the dump equipment, and should take into account the geometry of the dump body, operating conditions and max admitted thrust and pressure of the selected cylinder. Also, the manufacturer of the dumping equipment must check that during normal operation of the equipment, the cylinder never exceeds the maximum allowed thrust and pressure. Furthermore, the manufacturer should check the maximum dumping angle of the dump body according to the dump body design and cylinder stroke and make sure that a loaded fully lowered dump body never rests on the cylinder.

1.3 ENVIRONMENTAL DETAILS AND RESTRICTIONS

The stages of any cylinder can be exposed to corrosion when used in very humid or aggressive environments, and should never remain extended for a period exceeding the tipping time. Chrome stages are recommended when previous conditions cannot be avoided. For this reason, all Muncie telescopic cylinders have the final stage chrome plated as standard. Muncie telescopic cylinders can be used with environmental or hydraulic oil temperatures ranging from -40°F to 212°F (-40°C to 100°C).

2. SUGGESTIONS FOR A PROPER INSTALLATION

Muncie Power recommends the following guidelines for proper installation and use of the dumping equipment.

- A pressure relief valve should always be used in the hydraulic circuit to prevent pressure spikes exceeding the maximum allowable value of the cylinder.
- A properly selected oil filter should always be used in the hydraulic circuit (pressure or return line). The hydraulic system (hoses, tank, etc.) should be carefully cleaned and the circuit should be flushed before operating.
- Good quality hydraulic oil should be used (see also oil specs specified for other parts, e.g. pumps or valves).
- Always maintain a minimum pull out of 1" (25mm) on the cylinder when the body is in its down position to allow the body to rest on the frame rails and not on the cylinder. This will extend the life of your cylinder.
- Always make sure that the cylinder does not interfere with other parts of the dump body when extended and retracted throughout its full travel.
- Always protect the cylinder from foreign particles, welding/grinding spatter, paint and dust.
- Any articulated joint of the cylinder must be considered a greasing point.
- Muncie ships cylinders that contain residual hydraulic oil (this is needed during final inspection). Take precautions not to spill oil when installing a cylinder.
- Always use structural parts of the cylinder when lifting the cylinder. Never weld hooks or eyes onto the ram tube and never lift using the pin eye.
- If storage is required, cylinders should be stored vertically in a dry place and not exposed to rain or extreme temperature changes. If horizontal storage is your only option, rotate every 45 – 60 days to prevent seal damage.
- Cylinders can be disposed of after dismantling and separating recyclable materials (steel, plastic parts, oil).

3. MAINTENANCE INSTRUCTIONS

- Always use hydraulic oil suitable for hydraulic systems according to the dump truck manufacturer. Never mix oils that have different chemical/physical specifications.
- Grease all articulated joints (pins, cradle, etc.) on a daily basis or according to usage. Avoid excessive grease and remove when possible.
- Do not over-grease the top pin/mount of the cylinder. Excessive grease can drop down along the stages and be mistaken as oil leakage.
- Pressure washers should never be used to clean the cylinder.
- Check tightness of screws, nuts, hose clamps and any other part of the dumping equipment on a weekly basis and re-set at the specified value if necessary.
- Cylinder removal from the dump body for repair or replacement should be performed by qualified personnel only from a specialized service provider recommended by the dumping equipment manufacturer.



IN12-04 Printed in the U.S.A.
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Muncie Power Products, Inc. Member of the Interpump Hydraulics Group
General Offices and Distribution Center • P.O. Box 548 • Muncie, IN 47308-0548
(765) 284-7721 • FAX (765) 284-6991 • E-mail info@munciepower.com
Web site <http://www.munciepower.com>

Drive Products, Exclusive Agents for Canada, ISO Certified by an Accredited Registrar

