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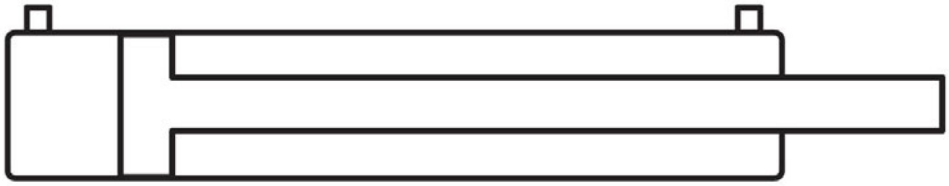
Welcome to the Nexteligence Newsletter!

Welcome to the third edition of the Nexteligence Newsletter. We hope everyone had a relaxing holiday season and is ready for another great year! We look forward to continuing to announce the latest news in the Nexteligence training community.

Are you getting bypassed?

In this month's edition of the Nexteligence Newsletter, we are going to describe cylinder bypass in double-acting cylinders and how to check for this condition. First, let's describe what a double-acting cylinder is. A double-acting cylinder uses hydraulic oil to pressurize both ends of the cylinder at different times, causing the cylinder to either extend or retract based on which end receives the hydraulic oil. An example of a double-acting cylinder would be an arm or fork cylinder that you find

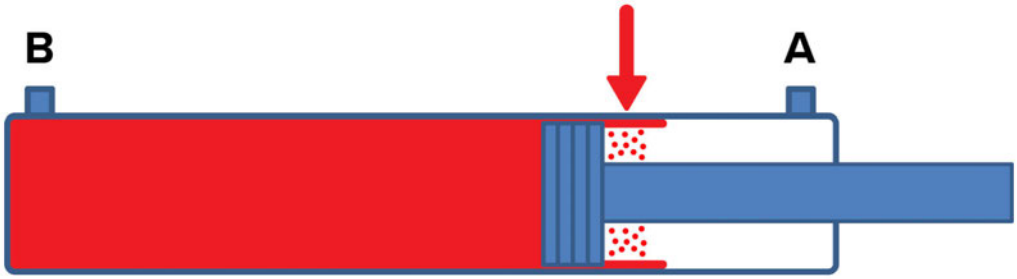
on a front loader or a grabber cylinder that you would see on an automated side loader.



Double Acting Cylinder Schematic

When a cylinder is ”bypassing,” the hydraulic oil “bypasses” the seals on the piston to the other side of the cylinder when pressurized. This can cause the hydraulic function to be slow and can cause erratic hydraulic functionality. 3 to 8oz per minute is considered an acceptable amount of oil bypass. When checking for bypass, keep in mind that If the oil bypass is above 8oz per minute, the cylinder should be rebuilt or replaced.

Pressurized oil bypassing the piston inside the cylinder



To prevent this from happening, we need to be sure that we are maintaining the hydraulic system by keeping leaks contained, and the oil clean by being careful when opening the system to fill or inspect, preventing side loading, maintaining proper system pressures, and by also adhering to the filter and oil change intervals recommended in the Heil Service Manual.

Sometimes cylinder bypass is unavoidable. Years of wear or an internal hydraulic part failure that may get into the cylinder seals and cause internal cylinder damage resulting in cylinder bypass. Let’s discuss how to diagnose a cylinder for this bypassing condition.

1.) To check for bypass in the extended position with the cylinder fully extended, remove the hose or tube from the “A” end of the hydraulic cylinder making sure to properly secure the hose or tube that was removed and relocate it to an area where contamination cannot be introduced to the system.

2.) Pressurize port “B” or “deadhead” the cylinder. The pressure used should be the pressure that is set in the hydraulic circuit for this cylinder. If more than 8oz per minute exits out of port “A,” this cylinder is experiencing cylinder bypass.

To properly diagnose for cylinder bypass, the cylinder needs to be checked in both directions for bypass by reversing the test procedure.

1.) To check for bypass in the retract position with the cylinder fully retracted, remove the hose or tube from the “B” end of the hydraulic cylinder making sure to properly secure the hose or tube that was removed and locate to an area where contamination cannot be introduced to the system.

2.) Pressurize port “A” or “deadhead” the cylinder. The pressure used should be the pressure that is set in the hydraulic circuit for this cylinder. If more than 8oz per minute exits out of port “B” this cylinder is experiencing cylinder bypass.

If more than 8oz of hydraulic oil bypasses the piston, the cylinder will need to be replaced or rebuilt to restore its full functionality. If you have cylinder bypass questions, please feel free to email or call the Heil Technical Service Team with the following contact information.

Contact Info & Helpful Links

Nexteligence Class Registration

Feel free to contact us anytime if you have any training questions or to register for one of our training classes.

Email Training

2023 NexteligenceTraining Schedule

Our 2023 Training Schedule is now available and can be viewed via the Nexteligence Training webpage, as well as the Heil Dealer Portal.

View Training Schedule

Service Shack

Visit the Heil Service Shack for helpful training and instructional videos

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Our mailing address is:
Environmental Solutions Group
201 W. Main Street, Ste 300
Chattanooga, TN 37408