

Bobcat 853 Manual Hydraulic Pump



Bobcat 853 manual hydraulic pump systems are essential for the efficient operation of Bobcat 853 skid-steer loaders. These hydraulic pumps play a critical role in converting mechanical energy into hydraulic energy, enabling the machine to perform various tasks such as lifting, moving, and digging. In this article, we will explore the functionality, maintenance, troubleshooting, and benefits of the Bobcat 853 manual hydraulic pump, providing you with a comprehensive understanding of this vital component.

Understanding the Bobcat 853 Manual Hydraulic Pump

The Bobcat 853 is known for its versatility and power, and the manual hydraulic pump is integral to its operation. This pump is responsible for generating hydraulic pressure that powers various attachments and implements. Understanding how this system works can help operators maximize the efficiency of their machines.

What is a Manual Hydraulic Pump?

A manual hydraulic pump is a device that generates hydraulic pressure through manual effort, often using a lever or handle. In the case of the Bobcat 853, this pump works in conjunction with the loader's hydraulic system to perform essential functions.

- Components of a Manual Hydraulic Pump:
- Pump Body: The housing that contains the pump mechanism.
- Handle/Lever: Used to manually operate the pump and create hydraulic pressure.
- Fluid Reservoir: Holds hydraulic fluid that is pumped through the system.
- Inlet and Outlet Ports: Facilitate the flow of hydraulic fluid into and out of the pump.

How the Hydraulic System Works

The hydraulic system of the Bobcat 853 operates on the principles of fluid mechanics. Here's a simplified explanation of the process:

1. Fluid Intake: As the operator pulls the lever, hydraulic fluid is drawn from the reservoir into the pump.
2. Pressure Generation: The lever compresses the fluid, creating high pressure within the pump.
3. Fluid Distribution: The pressurized fluid is directed to various hydraulic cylinders or motors that control the loader's movements.
4. Operation of Attachments: The hydraulic pressure powers attachments like buckets, forks, and augers, allowing them to lift and move loads efficiently.

Advantages of the Bobcat 853 Manual Hydraulic Pump

The manual hydraulic pump in the Bobcat 853 offers several advantages, making it a preferred choice for many operators.

1. Efficient Power Transfer

- High Torque Output: The manual hydraulic pump provides high torque, enabling the Bobcat 853 to handle heavy loads with ease.
- Consistent Performance: Operators can expect consistent hydraulic performance, which is crucial for tasks that require precision.

2. Cost-Effective Maintenance

- Simplicity of Design: The manual hydraulic pump has fewer components compared to electric or complex hydraulic systems, making it easier and cheaper to maintain.
- Easier Repairs: In the event of a malfunction, repairs can often be conducted without the need for specialized tools or extensive training.

3. Versatility in Applications

- **Wide Range of Attachments:** The Bobcat 853 can accommodate various attachments, from buckets to grapples, thanks to its powerful hydraulic system.
- **Adaptability:** Operators can switch between tasks easily, making the Bobcat 853 a versatile machine for construction, landscaping, and agricultural work.

Maintenance of the Bobcat 853 Manual Hydraulic Pump

Regular maintenance of the manual hydraulic pump is crucial for ensuring long-term reliability and performance. Here are some key maintenance tips:

1. Regular Fluid Checks

- **Hydraulic Fluid Level:** Check the hydraulic fluid level regularly. Low fluid levels can lead to inadequate pressure and damage the pump.
- **Fluid Quality:** Inspect the hydraulic fluid for contamination or degradation. Replace it as necessary.

2. Inspecting Components

- **Check for Leaks:** Regularly inspect the pump and hoses for any signs of hydraulic fluid leaks.
- **Examine the Handle and Connections:** Ensure that the handle operates smoothly and that all connections are secure.

3. Cleaning the Pump

- **Debris Removal:** Keep the pump clean from dirt and debris that could interfere with its operation.
- **Wash with Appropriate Solvents:** Use compatible cleaning agents to maintain the pump's surfaces without causing damage.

4. Professional Servicing

- **Annual Inspection:** Schedule an annual inspection with a certified technician to ensure the hydraulic system is functioning optimally.

- Replace Worn Parts: Promptly replace any worn or damaged components to prevent further issues.

Troubleshooting Common Issues

Despite regular maintenance, operators may encounter issues with the Bobcat 853 manual hydraulic pump. Here's a guide to troubleshooting common problems:

1. Insufficient Hydraulic Pressure

- Possible Causes:
 - Low hydraulic fluid levels
 - Air trapped in the system
 - Worn or damaged pump components
- Solutions:
 - Check and refill hydraulic fluid as needed.
 - Bleed the hydraulic system to remove trapped air.
 - Inspect and replace worn components.

2. Hydraulic Fluid Leaks

- Possible Causes:
 - Loose connections
 - Worn seals or hoses
- Solutions:
 - Tighten all connections and fittings.
 - Replace damaged seals or hoses.

3. Pump Handle Sticking

- Possible Causes:
 - Dirt accumulation
 - Lack of lubrication
- Solutions:

- Clean the handle and surrounding areas regularly.
- Apply appropriate lubricant to ensure smooth operation.

Conclusion

The Bobcat 853 manual hydraulic pump is a critical component that enhances the functionality and versatility of the Bobcat 853 skid-steer loader. Understanding its operation, maintenance, and troubleshooting can significantly improve the efficiency of your machine and prolong its lifespan. By following the maintenance tips and addressing common issues, operators can ensure that their Bobcat 853 remains a reliable and powerful tool for various applications. With the right care and attention, the manual hydraulic pump will continue to deliver the performance needed to tackle tough jobs with ease.

Frequently Asked Questions

What is the purpose of the manual hydraulic pump on a Bobcat 853?

The manual hydraulic pump on a Bobcat 853 is used to operate the hydraulic system, allowing for the lifting and moving of heavy loads by providing hydraulic pressure.

How do you manually operate the hydraulic pump on a Bobcat 853?

To manually operate the hydraulic pump, you typically need to engage the pump lever or handle, ensuring that you have a clear path for the hydraulic fluid and that all safety precautions are observed.

What are common issues with the Bobcat 853 manual hydraulic pump?

Common issues include leaks in the hydraulic lines, pump failure due to lack of maintenance, and air trapped in the hydraulic system, which can cause reduced efficiency or failure to operate.

What type of hydraulic fluid is recommended for the Bobcat 853?

It is recommended to use a high-quality hydraulic fluid that meets the Bobcat specifications, typically AW32 or AW46 hydraulic oil, depending on the operating temperature.

How can I troubleshoot low hydraulic pressure in my Bobcat 853?

To troubleshoot low hydraulic pressure, check for leaks in the hydraulic lines, ensure the hydraulic fluid is at the proper level, inspect the manual pump for damage, and verify that the hydraulic filter is clean.

Is it possible to convert the manual hydraulic pump on a Bobcat 853 to an electric pump?

Yes, it is possible to convert to an electric pump, but it requires careful consideration of the hydraulic system's compatibility, proper installation, and potential changes to the electrical system.

What maintenance is required for the Bobcat 853 manual hydraulic pump?

Regular maintenance includes checking hydraulic fluid levels, inspecting for leaks, checking hoses and fittings for wear, and replacing the hydraulic filter as recommended in the service manual.

Where can I find a replacement manual hydraulic pump for the Bobcat 853?

Replacement manual hydraulic pumps can be found at authorized Bobcat dealers, heavy equipment parts suppliers, or online marketplaces that specialize in heavy machinery parts.

What safety precautions should be taken when using the Bobcat 853 manual hydraulic pump?

Safety precautions include wearing appropriate personal protective equipment (PPE), ensuring the area is clear of bystanders, and following the operating procedures outlined in the Bobcat 853 manual.

How can I increase the efficiency of the hydraulic system on my Bobcat 853?

To increase efficiency, ensure the hydraulic fluid is clean and at the proper level, regularly maintain the hydraulic components, and avoid overloading the machine beyond its rated capacity.

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