

# john deere 790 3 point hitch parts diagram

john deere 790 3 point hitch parts diagram is an essential resource for any owner of this robust compact tractor. Understanding the various components and their specific locations is crucial for proper maintenance, troubleshooting, and ensuring the longevity of your John Deere 790. This comprehensive guide will delve deep into the intricacies of the 790's 3-point hitch system, providing detailed explanations and clear identification of each part. We will explore the critical functions of these components and how they work in unison to attach and operate implements. Furthermore, we will discuss common maintenance needs and where to find specific replacement parts, all while referencing a hypothetical but detailed parts diagram. Whether you are a seasoned farmer or a new tractor owner, this article aims to equip you with the knowledge necessary to confidently manage your John Deere 790's 3-point hitch.

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## Understanding the John Deere 790 3-Point Hitch System

The 3-point hitch is a fundamental attachment system on most modern tractors, allowing for the secure and efficient connection of various implements like plows, mowers, tillers, and loaders. The John Deere 790, a popular choice for small farms and homeowners, features a well-engineered 3-point hitch designed for versatility and durability. This system is hydraulic, meaning it uses fluid pressure to raise and lower implements, providing precise control over their working depth and position. A thorough understanding of this system's mechanics is paramount for optimizing its performance and preventing costly damage.

The primary function of the 3-point hitch is to provide a standardized, three-point connection to implements. Two lower lift arms, attached to the tractor's rear axle housing, provide the primary lifting and lowering action. A third, adjustable link at the top, known as the top link, connects to the upper rear of the implement. This configuration creates a stable triangular arrangement that transfers weight and forces efficiently to the tractor's frame. The hydraulic system, powered by the tractor's engine, actuates a lift cylinder that directly manipulates the lift arms.

# Key Components of the John Deere 790 3-Point Hitch

A detailed examination of the John Deere 790 3-point hitch parts diagram reveals a series of interconnected components, each playing a vital role in its operation. These parts work in concert to ensure stable, controlled, and efficient attachment and use of implements. Recognizing each part by its function and appearance is the first step in effective maintenance and repair.

## Lower Lift Arms

The lower lift arms are the most prominent components of the 3-point hitch, extending outwards from the tractor's rear. They are responsible for directly supporting and lifting the implement. These arms are typically robust, cast iron or steel structures designed to withstand significant loads. Each lift arm has a connection point for the implement, usually a Category 1 hitch, which includes a ball and socket arrangement. The free movement and proper lubrication of these arms are essential for smooth operation.

On the John Deere 790, the lower lift arms are actuated by the hydraulic lift cylinder. They pivot on sturdy pins mounted to the tractor's rear frame. The angle and position of these arms are critical for proper implement alignment and stability. Any wear or damage to the lift arms or their mounting points can compromise the entire hitch system's integrity.

## Top Link and its Components

The top link is a crucial element that provides the third point of connection and allows for vertical adjustment of the implement's angle. It connects the upper part of the implement to the tractor's rear. The top link assembly often includes a turnbuckle mechanism, allowing the operator to lengthen or shorten the link. This adjustment is vital for setting the implement's pitch and ensuring it operates correctly on uneven terrain.

The components of the top link typically include the link itself, which is often adjustable, and the connection points at both the tractor and the implement. For the John Deere 790, the tractor-side connection is usually a bracket or a clevis, and the implement side is also a clevis or a similar attachment point. The top link's ability to absorb torsional forces and maintain proper implement geometry is indispensable for balanced operation.

## Stabilizers and Sway Control

Stabilizers, often in the form of adjustable arms or chains, are essential for preventing excessive side-to-side movement (sway) of the attached implement. Without proper stabilization, implements can swing wildly, especially during transport or when operating on slopes, posing a safety hazard and potentially damaging the tractor or implement. The John Deere 790 typically features some form of sway control to mitigate this issue.

These stabilizers connect from the lower lift arms or the tractor's frame to the sides of the implement. They can be adjustable to allow for slight controlled movement when necessary, such as when turning, but they firmly restrict excessive swinging. Ensuring these components are properly adjusted and functional is a key safety measure for operating any tractor with a 3-point hitch.

## **Draft Control and Position Control Levers**

The 3-point hitch on the John Deere 790 is equipped with control levers that allow the operator to manage the implement's depth and position. Position control allows the operator to set the implement at a specific height and keep it there, regardless of ground conditions. This is useful for tasks like grading or carrying implements.

Draft control, on the other hand, is a more advanced feature that automatically adjusts the implement's depth based on the resistance (draft) it encounters in the soil. If the implement hits harder soil, the draft control senses the increased resistance and automatically lowers the hitch to maintain a consistent working depth. Conversely, if the soil becomes easier to penetrate, the hitch will raise slightly. This feature is invaluable for plowing and tilling, as it helps maintain consistent work and reduces operator fatigue.

## **Hydraulic Ram and Lift Cylinder**

The heart of the 3-point hitch's lifting mechanism is the hydraulic ram, also known as the lift cylinder. This component is powered by the tractor's hydraulic system. When the operator moves the control lever, hydraulic fluid is directed into or out of the cylinder, causing a piston to extend or retract. This movement is directly transferred to the lift arms, raising or lowering the implement.

The lift cylinder is typically mounted internally or externally on the tractor's rear housing. Its seals and internal components must be in excellent condition to maintain hydraulic pressure and prevent leaks. A properly functioning lift cylinder ensures smooth and responsive lifting and lowering of even heavy implements. Regular inspection for leaks or signs of wear is recommended.

## **Ball and Socket Ends**

The connection points between the tractor's lower lift arms and the top link, and the corresponding points on the implement, often utilize a ball and socket design. This system allows for the articulation and flexibility needed for the 3-point hitch to function correctly, especially on uneven ground. The balls are typically attached to the implement, while the sockets are on the tractor's lift arms and top link.

These ball and socket ends are critical for secure attachment. They are usually designed to fit Category 1 implements, which is standard for tractors like the John Deere 790. Maintaining these connection points, ensuring they are clean and lubricated, and replacing them if worn or damaged, is vital for preventing implement detachment and ensuring safety.

## Bushings and Pins

Various pivot points throughout the 3-point hitch system rely on heavy-duty pins and bushings to allow for smooth articulation. These include the points where the lift arms attach to the tractor, the top link connects to the tractor, and wherever stabilizer arms pivot. Bushings are wear surfaces that protect the more expensive pins and the surrounding metal from abrasion and wear.

Over time, these pins and bushings can wear down, leading to slop and looseness in the hitch system. This can cause implement chatter, improper operation, and even damage to the hitch components and the implement. Regularly inspecting and replacing worn pins and bushings is a cost-effective way to maintain the integrity of the 3-point hitch.

## Maintaining Your John Deere 790 3-Point Hitch

Regular maintenance is the key to ensuring the longevity and reliable performance of your John Deere 790's 3-point hitch. Proactive care can prevent costly repairs and ensure your tractor is always ready for work. A consistent maintenance schedule, combined with attention to detail, will go a long way in preserving this essential tractor component.

One of the most important aspects of maintenance is lubrication. All pivot points, including lift arm connection points, top link ends, and stabilizer arms, should be regularly greased. This reduces friction, prevents wear, and stops rust formation. The hydraulic system also requires attention. Checking the hydraulic fluid level and condition is crucial. Contaminated or low hydraulic fluid can lead to poor performance and damage to the lift cylinder and pump.

## Common Issues and Troubleshooting

Even with regular maintenance, some common issues can arise with 3-point hitches. One frequent problem is sagging or slow operation, which can be caused by low hydraulic fluid, worn seals in the lift cylinder, or a malfunctioning hydraulic pump. Another issue is excessive play or looseness, often stemming from worn pins, bushings, or ball and socket ends.

If an implement is difficult to attach, it could be due to misaligned lift arms, worn hitch pins, or worn ball ends on the implement. Swaying implements, even with stabilizers, can indicate improperly adjusted or worn stabilizer components. Addressing these issues promptly with the correct parts and procedures will prevent more significant problems down the line.

## Finding Specific John Deere 790 3-Point Hitch Parts

When it's time to replace worn or broken parts for your John Deere 790 3-point hitch, locating the correct components is essential. A detailed parts diagram is invaluable for identifying the exact part numbers. Official John Deere dealerships are excellent resources for genuine OEM parts, ensuring

perfect fit and quality. These dealerships can often provide up-to-date diagrams and expert advice.

Alternatively, reputable aftermarket parts suppliers can offer high-quality replacement components, sometimes at a more competitive price. When purchasing aftermarket parts, it's crucial to verify compatibility with the John Deere 790 and ensure they meet the necessary specifications for durability and performance. Always consult your tractor's operator manual or a comprehensive parts manual for accurate identification before ordering.

## **Frequently Asked Questions about John Deere 790 3-Point Hitch Parts Diagrams**

### **Q: What is the primary function of a 3-point hitch on a John Deere 790?**

A: The primary function of a 3-point hitch on a John Deere 790 is to provide a standardized, three-point connection system for attaching and operating various implements like plows, mowers, and tillers, allowing for hydraulic control of lifting, lowering, and depth adjustment.

### **Q: Where can I find a genuine John Deere 790 3-point hitch parts diagram?**

A: You can typically find a genuine John Deere 790 3-point hitch parts diagram through your local John Deere dealership, on the official John Deere website (often in their parts catalog section), or in your tractor's operator or technical manual.

### **Q: What are the most common wear items on a John Deere 790 3-point hitch that I should inspect regularly?**

A: The most common wear items include pins and bushings at pivot points, ball and socket ends for implement connection, and potentially the seals within the hydraulic lift cylinder. Stabilizer chains or arms can also experience wear.

### **Q: How does the draft control system work on a John Deere 790 3-point hitch?**

A: The draft control system on a John Deere 790 automatically adjusts the implement's working depth based on the resistance it encounters in the soil. It senses increased draft (resistance) and lowers the hitch to maintain depth, and vice versa for easier soil conditions.

## **Q: Is it safe to operate a John Deere 790 with a worn 3-point hitch component?**

A: No, it is not safe to operate a John Deere 790 with worn 3-point hitch components. Worn parts can lead to implement detachment, improper operation, loss of control, and potentially serious accidents.

## **Q: What type of hitch category is typically used on a John Deere 790?**

A: The John Deere 790 typically uses a Category 1 three-point hitch, which is a common standard for compact and utility tractors.

## **Q: How often should I lubricate the 3-point hitch on my John Deere 790?**

A: It is generally recommended to lubricate the 3-point hitch pivot points and connection points on your John Deere 790 before each use, or at least daily if in constant operation, to ensure smooth movement and prevent wear.

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