

john deere 660 hay rake parts diagram

john deere 660 hay rake parts diagram is an invaluable resource for any owner or operator of this robust agricultural implement. Whether you are performing routine maintenance, addressing a mechanical issue, or simply seeking to understand the intricate workings of your John Deere 660, a detailed parts diagram is essential. This comprehensive guide will delve into the various components, their functions, and how a parts diagram can significantly aid in maintenance and repair. We will explore the critical systems of the 660 hay rake, such as the frame, rake wheels, drive mechanism, and hydraulic components, illustrating how to interpret the diagrams effectively. Understanding these elements will empower you to identify specific parts, source replacements, and ensure your equipment operates at peak efficiency during crucial haying seasons.

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Understanding the John Deere 660 Hay Rake

The John Deere 660 is a highly regarded rotary rake known for its durability and effective hay gathering capabilities. Designed to create uniform windrows, it is a vital piece of equipment for farmers and custom operators. Its robust construction and efficient design have made it a popular choice for generations, ensuring consistent performance in the field. The 660's ability to handle various crop types and field conditions contributes to its widespread adoption and ongoing utility. Understanding its fundamental structure is the first step to effective management and repair.

Historical Context and Evolution

The 660 represents a significant iteration in John Deere's line of hay rakes, building upon previous designs to offer improved performance and reliability. Early models focused on basic raking mechanisms, while later versions, including the 660, incorporated advancements in wheel design, frame stability, and hydraulic control for greater operator ease and efficiency. This evolution reflects John Deere's commitment to innovation in agricultural machinery, adapting to the changing needs of the farming industry.

Operational Principles

At its core, the John Deere 660 operates by using a series of rotating rake wheels that lift and turn the hay, depositing it into a windrow. The angle and speed of these wheels are critical for creating an optimal windrow, minimizing crop damage, and ensuring efficient pickup by a baler. The machine's frame provides the structure for these wheels, and a drive system, often powered by the tractor's PTO, transfers power to the rake wheels. Understanding these basic principles is key to interpreting the function of individual parts as seen in a diagram.

Key Components and Their Functions

A John Deere 660 hay rake is comprised of several interconnected systems, each playing a crucial role in its overall operation. Identifying these components and their functions is fundamental to effective maintenance and troubleshooting, especially when consulting a parts diagram. The machine is engineered for reliability and efficiency in the demanding agricultural environment.

Frame and Structural Elements

The main frame of the 660 provides the robust backbone for the entire rake. It supports the rake wheels, the drive system, and any hydraulic components. The frame's integrity is paramount for withstanding the stresses of operation in varied terrain. Key structural parts include the main beam, hitch components, and mounting brackets for other assemblies. A stable frame ensures consistent rake wheel operation and prolongs the lifespan of the machine.

Rake Wheel Assemblies

The heart of the 660 lies in its rake wheel assemblies. Each wheel typically consists of a hub, tines, and a mounting mechanism. The tines, often made of spring steel, are designed to lift and turn the hay without excessive crop damage. The number and spacing of the rake wheels are optimized for effective windrow formation. Understanding the individual components of a rake wheel, such as the tine arms and their attachment points, is crucial for replacement and maintenance.

Drive Mechanism

The drive mechanism transmits power from the tractor to the rake wheels, causing them to rotate. This typically involves a gearbox, drive shafts, and connecting components. The efficiency and condition of the drive system directly impact the rake's performance. Issues within the drive system can lead to uneven rotation of rake wheels or complete operational failure.

Hydraulic System Components

Many John Deere 660 hay rakes utilize a hydraulic system for adjusting rake wheel height, angle, and for folding the machine for transport. This system includes cylinders, hoses, couplers, and control valves. Proper functioning of the hydraulic system is essential for ease of operation and for adapting the rake to different field conditions and transport needs.

Navigating the John Deere 660 Hay Rake Parts Diagram

A John Deere 660 hay rake parts diagram is more than just an illustration; it's a technical blueprint designed to help operators and mechanics identify, order, and assemble components. Familiarity with the diagram's layout and symbology is key to its effective use. These diagrams are meticulously detailed to provide precise information for every part.

Understanding Schematic Conventions

Parts diagrams often employ specific conventions to denote different types of parts and their relationships. These can include numbering systems, callouts, and exploded views. Identifying how parts are grouped by sub-assembly or system will streamline the process of finding what you need. Familiarizing yourself with these conventions will significantly improve your efficiency when consulting the diagram.

Interpreting Exploded Views

Exploded views are particularly useful as they show how components fit together. Each part is typically assigned a number that corresponds to a list or description of the part. By following the visual arrangement of an exploded view, one can understand the order of assembly or disassembly, which is invaluable during repair work or when inspecting a particular section of the rake.

Utilizing Part Numbers

The most critical element of any parts diagram is the part number. Each unique component is assigned a specific alphanumeric identifier. When ordering replacement parts, using the exact part number from the diagram ensures you receive the correct item, preventing costly errors and delays. These numbers are the universal language for specifying components.

Locating Specific Parts Using the Diagram

The process of finding a particular part on the John Deere 660 hay rake parts diagram involves a systematic approach. Whether you're looking for a common wear item like a tine or a more complex component like a gearbox, the diagram provides the roadmap. Effective navigation will save time and frustration.

Identifying Assemblies and Sub-Assemblies

Parts diagrams are typically organized to show major assemblies first, with sub-assemblies broken down within them. For instance, the rake wheel assembly might be a primary section, and within that, you'll find the tines, tine arms, and hub details. Starting with the general area where the part is located will help narrow down your search.

Cross-Referencing with the Parts List

The diagram is usually accompanied by a numbered parts list. Once you've visually located a component of interest on the diagram, find its corresponding number and then refer to the list to get the official part number, description, and sometimes even the quantity required. This cross-referencing is a fundamental step in accurate part identification.

Troubleshooting Common Wear Items

For frequently replaced parts like tines, locating them on the diagram is straightforward. The diagram will clearly show how these items attach to the tine arms and their position on the rake wheel. This makes it easy to confirm the type and quantity needed for replacement.

Common Parts and Their Importance

Certain components on the John Deere 660 hay rake are subjected to more wear and tear than others due to their function. Understanding these common parts and their significance is crucial for proactive maintenance and for anticipating potential repair needs. Keeping these parts in good condition ensures optimal performance.

Rake Tines and Tine Arms

Rake tines are perhaps the most frequently replaced parts. They are in direct contact with the hay and the ground, making them susceptible to bending, breaking, or wearing down. Tine arms, which hold the tines, can also experience stress. Regular inspection and timely replacement of these components are vital for effective raking and preventing damage to the rest of the rake.

Bearings and Seals

Bearings in the rake wheel hubs and drive system are critical for smooth rotation. Worn or damaged bearings can lead to increased friction, component failure, and reduced efficiency. Seals protect these bearings from dirt and moisture, extending their life. The parts diagram will detail the types and locations of all bearings and seals within the rake.

Drive Chain and Sprockets

If your 660 utilizes a chain drive system, the drive chain and sprockets are key components. They transmit power from the gearbox to the rake wheels. Wear on these parts can result in skipping, noise, and ultimately, loss of power. The diagram will show the configuration and part numbers for these elements.

Hydraulic Hoses and Fittings

For hydraulic-driven rakes, hoses, couplers, and fittings are essential. Leaks or damage to hoses can cause a loss of hydraulic pressure, rendering adjustment functions inoperable. The diagram helps in identifying the correct specifications for replacing any damaged hydraulic lines.

Maintenance and Troubleshooting with Parts Diagrams

A John Deere 660 hay rake parts diagram is an indispensable tool for both routine maintenance and diagnosing mechanical issues. It provides a visual reference that simplifies complex systems and aids in identifying the root cause of problems. Utilizing the diagram effectively can save significant time and resources.

Preventative Maintenance Checks

Before and after each haying season, a thorough inspection is recommended. The parts diagram can guide you through checking critical areas such as the frame for cracks, drive components for wear, and hydraulic connections for leaks. By systematically referencing the diagram, you can ensure all key areas are inspected.

Diagnosing Mechanical Failures

When a component fails, the parts diagram is invaluable for understanding how that part fits into the larger system. For example, if a rake wheel is not turning, the diagram can help you trace the drive line from the gearbox to the wheel, identifying potential points of failure, such as a broken shaft, worn gear, or damaged chain.

Planning for Replacements

When a part needs replacement, the diagram provides the exact part number and often illustrates how the part is secured. This knowledge is crucial for acquiring the correct replacement part and for understanding the steps involved in its removal and installation, making the repair process much smoother.

Sourcing John Deere 660 Hay Rake Parts

The ability to source the correct replacement parts is critical for keeping your John Deere 660 hay rake operational. The parts diagram serves as the primary document for identifying the specific components you need. Knowing where and how to get these parts is the next essential step.

Authorized John Deere Dealerships

The most reliable source for genuine John Deere 660 hay rake parts is an authorized John Deere dealership. They have access to the manufacturer's complete parts catalog and can often provide expert advice. Using genuine parts ensures compatibility and maintains the integrity of your equipment.

Online Parts Retailers

Numerous online retailers specialize in agricultural equipment parts. When using these sources, always ensure they provide accurate part numbers and descriptions that match your John Deere 660 parts diagram. Verify the reputation and return policies of any online vendor before making a purchase.

Used Parts and Salvage Yards

For older or less critical components, used parts from salvage yards can be a cost-effective option. However, it's crucial to carefully inspect used parts for wear or damage before purchasing. The parts diagram can help you identify what to look for in a used component.

The Role of the Parts Diagram in Repair

The John Deere 660 hay rake parts diagram is more than just a list of components; it is a fundamental tool that underpins successful repair and maintenance. Its detailed illustrations and numbering systems demystify the machine's engineering, empowering operators and technicians alike. Without this guide, repairs can become a frustrating guessing game, leading to incorrect installations and further damage.

Ensuring Correct Assembly

When disassembling a section of the rake for repair or maintenance, the parts diagram acts as a reverse blueprint. It shows the precise order in which components should be removed and, more importantly, reassembled. This prevents errors such as installing parts backward or missing essential fasteners, which can compromise the rake's functionality and safety.

Efficient Troubleshooting

The diagram helps in systematically diagnosing problems. If a specific function is not working correctly, one can use the diagram to trace the involved components. For example, if the hydraulic lift is slow, the diagram will show the hydraulic cylinder, hoses, and control valve, allowing for focused inspection of these elements and their connections.

Cost Savings and Downtime Reduction

By accurately identifying parts and understanding the repair process, the parts diagram contributes significantly to cost savings. It minimizes the risk of ordering incorrect parts, which often incur return shipping fees and cause delays. Furthermore, a clear understanding of the repair procedure can reduce the time spent working on the rake, thereby decreasing costly downtime during critical operational periods.

FAQ

Q: Where can I find an official John Deere 660 hay rake parts diagram?

A: You can typically find official John Deere 660 hay rake parts diagrams through authorized John Deere dealerships, either in print or via their online parts portals. Manuals purchased with the equipment will also contain these diagrams.

Q: What information is essential to have before ordering parts using a diagram?

A: Before ordering, you will need the exact part number as indicated on the diagram, a clear description of the part, and the quantity required. Having the serial number of your specific 660 hay

rake can also be beneficial for cross-referencing.

Q: Are there differences in parts diagrams for different model years of the John Deere 660?

A: Yes, there can be variations in parts diagrams between different model years of the John Deere 660 due to design updates and component changes made by the manufacturer over time. Always ensure you are using a diagram that corresponds to your specific model year.

Q: What are the most common components that require replacement on a John Deere 660 hay rake?

A: The most common components requiring replacement are typically wear items such as rake tines, tine arms, bearings, and sometimes hydraulic seals or hoses due to constant exposure to the elements and operational stress.

Q: Can I use a parts diagram to understand how to adjust the rake wheel angle or height on my John Deere 660?

A: While a parts diagram shows the components involved in the adjustment mechanisms (like hydraulic cylinders and linkages), it doesn't typically provide step-by-step instructions for adjustment. Consult the operator's manual for detailed operational and adjustment procedures.

Q: If I find a part number on the diagram, can I order it from any farm equipment parts supplier?

A: You can attempt to order by part number from many farm equipment parts suppliers, but to ensure compatibility and quality, it is always recommended to use genuine John Deere parts or equivalent high-quality aftermarket parts specifically listed for your 660 model.

Q: How do I interpret an "exploded view" within a John Deere 660 hay rake parts diagram?

A: An exploded view shows how individual parts are assembled. The parts are depicted as if slightly separated from each other but arranged in their correct relative positions, allowing you to see how they connect and fit together. Each part is usually numbered for reference in a corresponding parts list.

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