

# ***Discount Forklift***

## FORKLIFT TROUBLESHOOTING



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# Introduction

Forklifts are super important in many kinds of jobs, especially when it comes to handling materials and products around quickly and easily. These machines are built to be strong and durable, but because they have a lot of parts that move and are used often, they're likely to need some repairs at some point.

In this guide, we're going to explore the most common forklift issues and how to fix them. We'll discuss simple problems that you can often fix by yourself. These are usually smaller issues that don't need a lot of technical skills or special tools to solve. To make things even easier, we'll include QR codes with links to videos. These videos will show you exactly how to do certain repairs, making it simpler to follow along and fix your forklift.

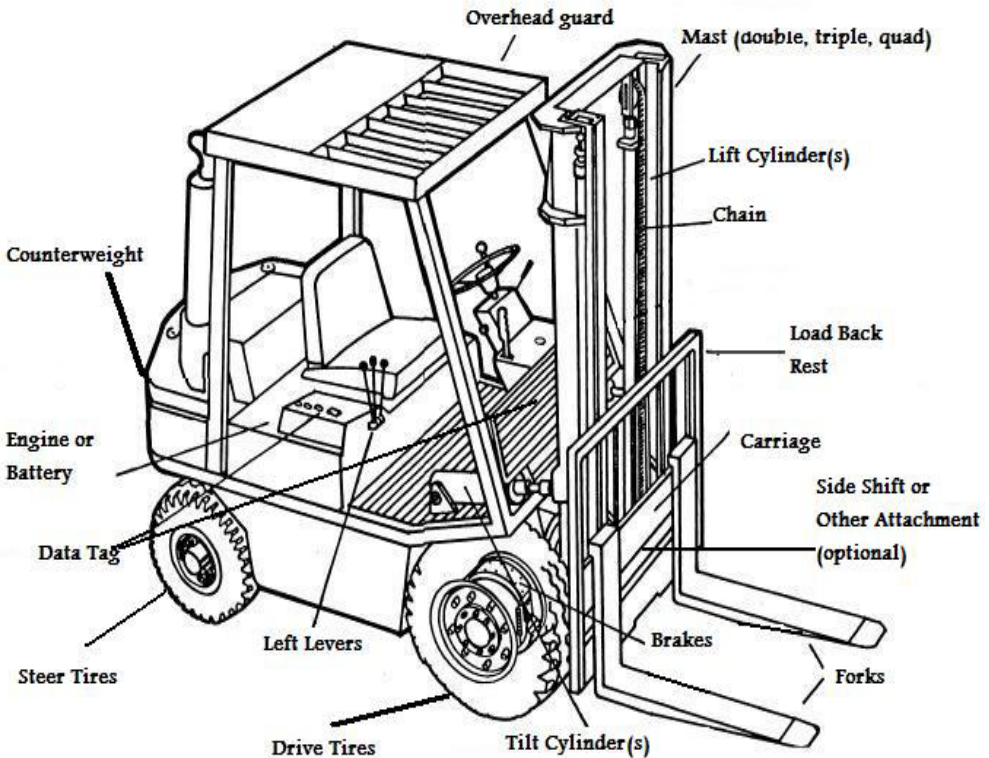
We'll also talk about more complex problems that should be handled by professionals. These issues might be more complicated or require special tools and expertise to fix. We'll help you understand these problems better, so you know when it's time to call in an expert. And don't forget, regular maintenance is key to keeping your forklift in top shape and preventing future issues. We'll provide some great maintenance tips as well.

So, whether you're doing a quick fix yourself or figuring out if you need professional help, this guide, with its handy QR code-linked videos, is your go-to resource for all things forklift repair!



# What is the Anatomy Of a Forklift?

Before we can talk about trouble shooting an issue with your forklift it is important you understand the terms used to describe parts of your forklift.



# What Are the Most Common Forklift Failures?

If you own a forklift, it's a good idea to familiarize most likely to encounter. The most common yourself with the issues you're problems are the following:

- **Mast issues:** The mast, which controls the forklift's lifting, lowering and tilting, is a common source of problems. Attached to the mast is the carriage, which allows for your forks or other attachments to be installed onto the forklift in order to carry a load. The mast lifts loads using hydraulic power and lowers loads using a combination of gravity and hydraulic check valves. A forklift's mast lifts in several stages, which can cause various wear points. In this guide we will cover troubleshooting, lifting and lowering issues, jittering while lifting, and indications of mast component wear.
- **Starting issues:** When your forklift won't start, it can be irritating. It can also be costly, as it may delay jobs and force drivers to spend time trying to solve the problem instead of working. In this guide we will cover crank no start and no crank conditions on internal combustion engines, as well as troubleshooting electric forklift starting issues.

- **Fluid leaks:** internal combustion engine forklifts, like cars, require several different fluids to be able to operate; fuel, coolant, oil, transmission fluid, and hydraulic fluid. If it is important to you to lower the possibility of leaks from your forklift, electric is the way to go. Electric forklifts only have one fluid to operate the unit, hydraulic, so the unit has less failure points to cause a mess. In this guide we will help pinpoint when to be concerned over a leak and when a drip, is just a drip.
- **Rough Running Conditions:** While there are many things that could make your forklift run rough, we often see two main concerns; Frozen LP Regulators, and rough running due to severe elevation changes.



# How to Diagnose a Forklift

When experiencing any technical problem, you may need to complete a bit of troubleshooting to pinpoint the source. For each problem, we'll share some tips on how to figure out what the issue is and how it can be fixed.

## 1. Mast Issues

**Lifting and Lowering issues:** Lifting and lowering Issues can be caused by several issues. So, let's start with the basics. The forklift is using hydraulic power to raise the lift cylinders, and gravity and check valves to lower those cylinders, in doing so your mast and carriage should raise and lower smoothly.

**Hydraulic Fluid levels:** If you are experiencing issues lifting a load, it may very well be your hydraulic fluid levels. To check these, lower your mast all the way to the ground and tilt the mast all the way back towards the operator. Each lift is different, however there should be some sort of indicator, a dip stick, sight glass, or in some cases, a large opening with a level line inside of the tank. **DO NOT CHECK FLUID LEVELS UNLESS YOUR MAST IS COMPLETELY LOWERED AND TILTED ALL THE WAY BACK.** You run the risk of overflowing your tank.



**Hydraulic Fluid Condition:** You were just checking the levels, right? How did the fluid look? Was it a mostly clear amber color, or was it milky and look dirty? Lift cylinders and check valves don't like working properly with dirty fluid. It may be time for a hydraulic service. If this is the case, remember to change out all filters, including the air breather, and any filters in the tank. **My Full Free Lift Cylinder Isn't Working Right!!!** You got a lift with a full free lift cylinder (that big cylinder in the center of your mast) because you needed it and the main lift cylinders (the ones on the outside of the mast)

are lifting and now you can't unstack pallets inside a truck. Even though this isn't something that looks super complicated and might be an expensive repair, it's usually a pretty simple fix. This is usually caused by a valve in the full free lift cylinder being stuck from lack of use. Take the machine outside or where you won't come near a ceiling with the lift raised completely and let the mast all the up and down a few times. 95% of the time this will fix the problem.

**Jittering During Lifting:** Jittering during lifting is almost always caused by low hydraulic fluid. Refer to the previous **Hydraulic Fluid Levels** section.

**Mast Wear Points:** Your forklifts mast has several wear points that can cause safety concerns that you should be aware of:

**Mast Rails:** These are the guides that keep the carriage stable as it moves up and down. They can wear due to constant friction from the carriage rollers.

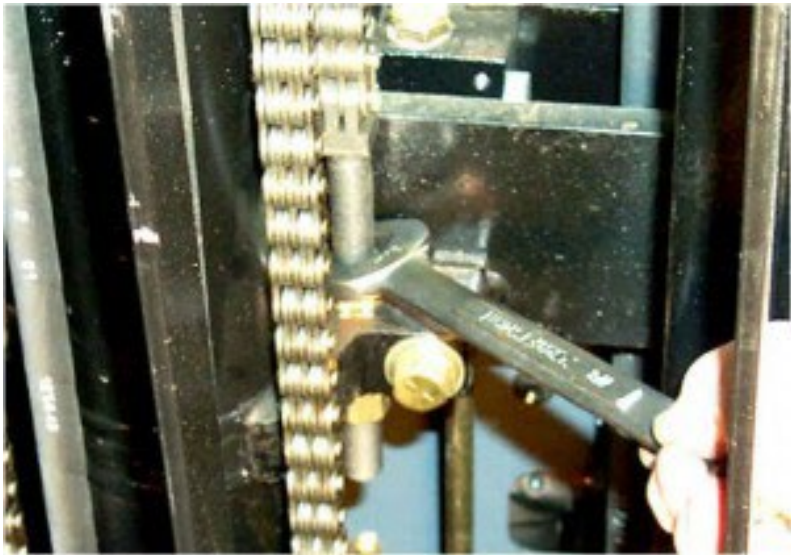
**Carriage Rollers:** These rollers help the carriage move smoothly along the mast rails. They can wear down from continuous movement and heavy loads, leading to lowered performance in the lifting mechanism.

**Chains:** The lift chains bear a lot of the weight and tension as loads are lifted. Over time, the links can wear, which might affect the forklift's ability to lift loads to its full height safely.

**Bushings and Bearings:** Located in the mast and carriage, these components help reduce friction between the moving parts. Wear on these parts can lead to increased friction and instability in the mast operation.

**Forklift Tilt Cylinders:** These are responsible for tilting the forks and the carriage to adjust the angle of the load. The cylinders can wear at the connections and seals, potentially leading to hydraulic fluid leaks and reduced effectiveness in tilting operations.

**Side to Side Mast Sway:** Inside each set of rails in your mast is a set of roller bearings to allow the mast rails to travel smoothly. Over time these bearings will wear. If you notice side to side mast sway, during your next service, have those bearings checked. They can often be adjusted to eliminate the mast sway, but it may also be time to have them replaced. Trunnion bushings may also cause side to side mast sway. If the trunnion bushing is loose, it may also have other effects on your machine, such as stressing the cylinder. This repair should always be done by a professional.

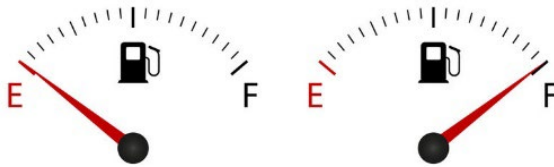


**Chain Slack:** You may notice over time that the chains that attach your carriage to the mast start to slack or sag. If left unaddressed, over time this can cause damage to your carriage and make loads unstable to carry due to uneven lifting. If you notice excessive chain slack when your mast is lowered completely, have it checked during your next service. **We don't recommend doing this on your own.**

## 2. Starting Issues

### Internal Combustion Forklifts

When I turn the key the starter cranks, but it won't start!!! Alright time to roll up our sleeves and figure it out.



**First things First, Let's check our Fuel Levels:** I know, silly question, but did you make sure your forklift has fuel? For diesel and gasoline forklifts, I will tell you now, never trust the gauge. Always start the day knowing you topped off the fuel. For LP, again, never trust the gauge on the tank, make sure you have fuel in the tank. You'd be surprised how much propane a machine can go through, especially during heavy use. Alright. so we know we have fuel. It still won't start? Ok, on to the next step.

**We're going to talk about just LP units for a minute:** alright, we have a full LP tank on the back of the lift, let's make sure that tank is connected to the forklift properly now. It is common to cross tread and improperly attach the LP tank. This can cause a fuel leak and not allow it to run properly.

















### 3. Fluid Leaks

**Forklift Tilted at an Angle:** Anytime a forklift is tipped at an extreme angle, you run the risk of spilling some hydraulic fluid or coolant. This happens most commonly when a forklift has been recently loaded/unloaded during travel and usually stops dripping after a week of operation.

**Post-Service Dripping:** Some mechanical fluids such as coolant and hydraulic fluid have valves and plugs in place that allow for internal pressure regulation in the machine. If your lift has been serviced recently, it is normal to see a little dripping and typically stops within a week.

## 4. Rough Running

Sometimes it may seem that your forklift is running a bit rough. There are a few things to check if this is the case.

**Frozen Propane:** Just like your car, sometimes your forklift needs to run a little bit to warm up the internal components for operation. With propane forklifts, this means the anti-freeze needs a chance to melt the propane fuel in the regulator. Try letting your lift run for a bit and listen for an improvement in run quality. Low levels of anti-freeze can also cause this issue. Another issue can be the LP regulator clogging. If you suspect this is the case, **this repair can be completed by a qualified technician.**

**Elevation Change:** Sometimes changes in elevation or climate can affect how a forklift runs. This has to do with air density, humidity, and how electricity and heat transfer work under different conditions. If you suspect this could be the issue, your forklift may need to be retuned for your climate and elevation.



# When to Call an Expert

When you're familiar with the most common forklift problems and solutions, you can be better prepared to deal with an issue. However, keep in mind that most fixes, including technical repairs and part replacements, should still be left to professional technicians. While you may be tempted to DIY these repairs to save money, you run the risk of damaging your equipment. In fact, some of the most expensive forklift repairs are because a nonprofessional attempted to fix an issue but ended up causing even more damage.

Keep in mind the common forklift repairs and maintenance tasks you can easily and safely perform. These include:



- **Filter replacements:** Replacing filters can be performed in-house without professional help. This simple task can greatly prolong your forklift's longevity and enhance its performance over time.







