

Services Guide

Truck Repairing & Service

**NOTE 1: This information is pulled from credible sources. This information is a guide. Any information used from this guide must be re-contextualized (no copying and pasting). Re-contextualize information incorporating SEO and business specifics.*

**NOTE 2: For MCP websites, stick to general information and avoid specifics.*

Table of Contents

Contents

1. Truck Repairing & Service Overview	1
1.1 General Information	1
1.2 SEO	2
2. Services	2
2.1 Maintenance & Diagnostics	2
2.1.1 Maintenance	2
2.1.2 Diagnostics	3
2.2 Motor Vehicle Inspections	4
2.3 Clutch & Drivetrain	5
2.3.1 Drivetrain	5
2.3.2 Clutch	5
2.4 Electronics Repairs	5
2.5 Differential Rebuilds	7
2.6 Engine Rebuild/Replace	8
2.7 Breaks	9
2.8 Air Conditioning	11
2.9 Suspension	12
2.10 Tires	13
2.11 Exhaust & Emissions Control	13
2.12 Truck transmission Rebuild, maintenance and repair	13
2.13 Welding/Fabrication	14
2.14 Fleet Maintenance	15
2.15 Mobile Service	15
2.16 24/7 Emergency Service	15
2.17 Refueling	15
2.18 Painting	16
2.19 Frame repairs/alterations	16
2.20 Towing	18
3. Truck Types	19

1. TRUCK REPAIRING & SERVICE OVERVIEW

1.1 GENERAL INFORMATION

<http://usedsemitrailers.com/semi-trailers-versus-full-trailers/>

https://en.wikipedia.org/wiki/Tractor_unit

<http://www.westtechmobile.com/blog/finding-a-great-heavy-truck-equipment-shop>

- A great truck and equipment shop will possess these three qualities:
 - Certifications: Anyone can open a workshop, but if they don't have the skills and technical knowledge to back up their work, that's a big red flag! These are some certifications your shop may have:
 - AMVIC council member - means the company follows a code of ethics set by an outside party.
 - Red Seal licenses - ensures consistent quality and standard of service.
 - Licensed CVIP (Commercial Vehicle Inspection Program) technicians who can attest that your heavy-duty truck or trailer is road-worthy.
 - COR-certified health and safety program - protects the shop's employees and benefits customers because the company's high standards facilitate better service and repair quality.
 - Convenience: If time is of the essence, you don't want to be waiting for weeks to get necessary work done.
 - Shops that have a fleet of fully-equipped service trucks that can come to you – loaded with computer diagnostics, welders, mobile cranes, and more – provide max convenience, performing maintenance on the spot and bringing your vehicle back to the main shop if needed.
 - The main shop should ideally be located close to commercial and industrial routes, with easy access to the lot.
 - Good shops send out text, mail, or email reminders (whatever you prefer) to let you know when a preventative maintenance check-up is needed.
 - Shops are ideally open at least six days a week to help fit with your busy schedule. The best shops will respond to specific requests, like night-time work or specialized locations, because that's what is most convenient for customers.
 - Customer service:
 - The right shop will have a commercial vehicle inspection station, up-to-date computer diagnostics equipment/software, a computer history of your vehicle that they can monitor, and a transparent invoice system that clearly states what each charge is, so you know what you are paying for.
 - The staff should be friendly and speak with you in easy-to-understand terms, and will work in partnership with you to look after your vehicle and extend its life.
 - They will also emphasize preventative maintenance, rather than fixing problems after they show up, which is cheaper and easier in the long run, and will take other customer considerations into account, like environmentally-friendly zero-drip on-site oil and lube services.

Services Guide: Truck Repairing & Service

- The difference between a semi-trailer and a full trailer truck: a full trailer is fixed to the tractor unit whereas the semi is detachable. Semi-trailers dominate in North America.
 - A semi-trailer truck or full trailer-truck is the combination of a tractor unit and one or more semi-trailers to carry freight.
 - A tractor unit is a characteristically heavy-duty towing engine that provides motive power for hauling a towed or trailered load.

1.2 SEO

Keywords (First Row – BEST, Last Row – LEAST)

○ Tractor	○ Truck	○ Body shop	○ Trailer
○ Truck repair	○ Truck and trailer	○ Trailer repair	○ Truck and trailer repair
○ Welding companies	○ Fleet services	○ Semi-trailer	○ Truck repair shop
○ Truck mechanic	○ Tow truck company	○ Fleet maintenance	○ Mobile truck repair

Note: keywords for this industry seem to mostly be long tail, with the low competition/high avg monthly searches being words like “oil change” which aren’t really specific to this industry

2. SERVICES

2.1 MAINTENANCE & DIAGNOSTICS

2.1.1 Maintenance

<http://www.atitruckrepair.ca/maintenance.php>

- Regular maintenance prevents costly breakdowns – it’s how you keep from having to fix your truck.
- Maintenance may include:
 - Lube oil and filter
 - Engine oil, or motor oil, is the oil used for lubricating the various parts of your truck’s internal combustion engine. The oil reduces wear, lessens friction, cools the engine parts, and inhibits corrosion. One of the cheapest and most effective ways to prolong the life of your truck’s engine is to have its oil and oil filters changed regularly. Oil changes keep engines healthy. With regular oil changes, your engine will run stronger for longer.

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- Brakes
 - Hydraulic brakes
 - Air brakes
 - Electric brakes
- Power train
 - Transmission
 - Clutch
 - Differential
- Radiator and cooling system
 - The cooling system is one of the most important components in a well-functioning diesel engine, and maintaining the cooling system is crucial to ensuring the engine runs properly and lasts a long time. Effectively, the systems operate the same way, only the coolant condition in a diesel engine may even be more important than in a gasoline engine.
 - Coolant leaks are caused by cracked or ill-fitting hoses or a hole in the radiator itself. Radiator metal is thin and easily damaged, but the number one cause of coolant leaks is corrosion. The number one cause of corrosion is a lack of routine maintenance.
 - For diesel trucks using green antifreeze, the recommendation for coolant service is usually around two years or 30,000 miles. For diesel engines running extended life coolant, service is around five years or 100,000 miles. To be on the safe side, have a mechanic check the antifreeze every six months during other routine semi-truck maintenance.
- Mechanical repairs
- Electrical repairs
- Steel and aluminum welding
- DPF repair

2.1.2 Diagnostics

<http://www.truckinginfo.com/article/story/2012/11/diagnostics-on-the-move-telematics-help-fleets-stay-ahead-in-maintenance.aspx>

- Inside the shop, technicians use high-tech tools designed to help them diagnose and repair today's sophisticated truck engines and other components.
- Diagnostic tools called vehicle communication interfaces plug into an engine's computer to extract fault codes and other information. A software application on the computer evaluates the fault codes and returns an SAE-defined short description. For more detailed information, technicians can type the fault codes into another application to find more detailed service information.

2.2 MOTOR VEHICLE INSPECTIONS

<http://driving.ca/auto-news/news/heres-what-a-car-safety-inspection-really-looks-at>
http://www2.gnb.ca/content/gnb/en/services/services_renderer.201143.Motor_Vehicle_Inspections.htm

- As vehicle and road safety are under the mandates of provinces and territories, each has their own set of rules and regulations. For the most part, the safety inspection/certification process of each is relatively similar.
- Regular inspections should encourage vehicle safety by checking key equipment such as brakes and steering, so that critical maintenance issues may be addressed. However, a safety standards certificate is no indication of a vehicle's value or serviceability. It is simply a statement attesting to the condition of a very specific and limited number of parts and components on a vehicle on the day it was inspected. Like building codes, the guidelines that are issued to licensed technicians specify only the bare minimum standards.

Areas that are inspected by a mechanic during an inspection on a bus, truck and/or tractor trailer include:

- Power train
- Suspension
- Hydraulic brakes
- Air brakes
- Steering
- Instruments and auxiliary equipment (i.e. windshield wipers)
- Lamps
- Electric system
- Body
- Tire and wheels
- Couplers and hitches

Mandatory vehicle inspections apply to the following vehicles:

<http://vanaxle.com/inspections/>

○ Buses	○ School buses	○ Commercial vehicles with a licensed gross vehicle weight greater than 8,200 kg	○ Vehicles issued a Notice and Order for Inspection
○ Commercial trailers	○ Farm vehicles	○ Emergency vehicles with a licensed gross vehicle weight greater than 8,200 kg	○ Farm vehicles with a licensed gross vehicle weight greater than 17,300 kg

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	<ul style="list-style-type: none">○ Private vehicles previously registered outside of BC	<ul style="list-style-type: none">○ Vehicles operating under the authority of the Passenger Transportation Act (limousine, bus, taxi)	<ul style="list-style-type: none">○ Industrial machines (X-plated) with a licensed gross vehicle weight greater than 17,300 kg
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2.3 CLUTCH & DRIVETRAIN

<http://semitruckrepairatlanta.com/drive-train-clutches-differential-drive-line/>

2.3.1 Drivetrain

The drivetrain has two essential functions:

- To transmit power from your engine to your wheels.
- To vary the amount of torque (pushing or pulling power).

The drivetrain will need periodic repair, rebuild, and maintenance services.

2.3.2 Clutch

A clutch is a component of the drivetrain that engages and disengages the power transmission from the driving shaft to driven shaft. The clutch is located between the gearbox and the engine. During a gear change, disengaging is required and the clutch facilitates this disengagement. Clutches need periodic servicing and replacing.

2.4 ELECTRONICS REPAIRS

<http://whiteystruckcenter.com/index.php/news/shop-news/280->

Type	Description
Computer or ECM (Engine Control Module) Repairs	<ul style="list-style-type: none">○ The computer's main function is to monitor and adjust engine and transmission operations. The computer receives input information from different sensors, controlling spark plugs, idle speed, and fuel injectors so as to get you the best possible performance. Failure of the computer will greatly affect the things it controls.

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You may require ECM repair work if:

<http://www.autocomputerspecialist.com/1332-2/>

Type	Description
The check engine light comes on	<ul style="list-style-type: none">○ When the ECM detects a problem within the circuits of the truck, the light comes on. Sometimes there are not problems with the engine at all, and the ECM is shorting out.
The engine is constantly stalling	<ul style="list-style-type: none">○ When the ECM is failing, it may result in misfiring of the engine and strange engine behaviors. If these symptoms occur infrequently, you should get the ECM checked for a repair just in case.
The truck fails to start	<ul style="list-style-type: none">○ When the ECM is dead, your engine will not be able to run or start. However, the issue may be caused by a variety of problems so it is important to get everything checked out so you can properly repair the truck.
The engine has performance issues	<ul style="list-style-type: none">○ Fuel settings and timings may be thrown off due to a faulty ECM.

A technician can:

<http://www.thecarsalon.com/home/tires-auto-repair/auto-repair/electrical-electronic-systems/>
<http://www.miamicarcomputerservice.com/truck-computer-repairs>

- Locate shorts, grounds, open, and resistance problems.
- Repair wiring harnesses and connectors.
- Solder repair and electrical wiring.
- Determine the cause of brighter than normal lights, intermittent lights, dim lights, or no light operation at all.
- Replace and install headlights and bulbs.
- Correct intermittent turning signal and hazard light operation.
- Diagnose and correct inoperative driver information systems if dashboard warning lights are acting up.
- Inspect motor-driven accessory circuits, heated glass operation, and electric lock operation.
- Repair problems plaguing your truck radio and anti-theft system.
- Restore proper flow of electrical energy to ensure proper deployment of airbags.
- Do hardware and software repairs.

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Other electronics that technicians may service include:

<http://www.raneystruckparts.com/electronics/>

○ CB radios	○ Electronic logging devices	○ Jump starters	○ Analog instrument gauges
○ Antennas	○ Audio/speakers	○ Back up cameras	○ CB microphones
○ Hour metre gauges	○ Dash cameras	○ Digital gauges	

2.5 DIFFERENTIAL REBUILDS

<https://www.aatransmissionyukon.com/rear-differential-rebuilds-repair/>

The automotive differential is designed to drive a pair of wheels while allowing them to rotate at different speeds, thereby making it easy and efficient to make turns. For example, if you're making a right turn, the inner wheels will need to rotate slower than the outer wheels. A differential gear system takes care of this for you.

Indications that you need a differential rebuild include:

<https://www.reference.com/vehicles/symptoms-bad-rear-differential-21fcc911ff96ba59>

Type	Description
Your truck is making strange noises	<ul style="list-style-type: none">○ A steady whining or grinding sound that increases in intensity with the speed of the vehicle is the most commonly reported symptom of a failing differential. This sound typically indicates worn gears, under-lubricated gears or gears that are out of alignment with each other.○ Another common sound is a banging or clunking sound while turning a corner. This symptom can also be related to insufficient lubrication, broken spider gears or worn components, such as positraction or clutches. Broken spider gears can cause the differential to freeze and make a noisy crunching sound. Clunking every few feet, rather than just on corners, may indicate that there is a broken ring gear.○ A heavy clicking sound that occurs every 8 feet or so indicates a chipped or missing high spot on a gear tooth. If the problem is on the pinion, the clicking sound occurs every few feet and has a higher frequency sound.○ Noise in the differential is never a good sign, and any

Services Guide: Truck Repairing & Service

	<p>persistent or unusual sounds in that area need to be checked out immediately.</p>
The differential seems to be running at a hotter temperature	<ul style="list-style-type: none">○ You could need more fluid; a lower level requires more effort, which will eventually wear out the differential prematurely
Your truck has frozen up while in motion	<ul style="list-style-type: none">○ This is very dangerous, and it could be a signal that your differential has failed.

2.6 ENGINE REBUILD/REPLACE

<http://www.overdriveonline.com/time-for-an-overhaul/>

The following symptoms are indicators that you may need an engine rebuild or replacement:

Type	Description
Water in the oil	<ul style="list-style-type: none">○ This will manifest itself as foam or gunk on the fill cap or neck or on the dipstick. Sometimes water droplets will form on the dipstick and rust will develop.
Oil overheating	<ul style="list-style-type: none">○ Oil that's overheating smells like burning oil.
Fuel dilution	<ul style="list-style-type: none">○ You can also smell a high level of fuel dilution. With injection system failure, fuel that isn't fully atomized works its way past the piston rings and into the crankcase. Oil viscosity will decrease and oil will smell like fuel. Put a drop of oil on the back of a business card and watch it spread. Rapid spreading indicates fuel.
Engine noise	<ul style="list-style-type: none">○ Listen closely. If your engine's pinging or running roughly, take it to the shop.
Exhaust smoke	<ul style="list-style-type: none">○ Trouble is at hand if you see heavy smoke in the exhaust or blue smoke with pre-2007 engines.
Loose seals	<ul style="list-style-type: none">○ Look daily for loose seals around the intake piping that could lead to contamination of the intake track. Dirt or dust could cause premature wear of piston rings and turbochargers, thereby contaminating the oil.

Services Guide: Truck Repairing & Service

Antifreeze Contamination	<ul style="list-style-type: none">○ Low cylinder compression can be a sign of worn liners, piston rings or valves, which can be caused by antifreeze contamination of the oil. Run a compression test on each cylinder to know for sure.
Oil Filter Test	<ul style="list-style-type: none">○ A technician can use a special tool to cut open the filter and look for signs of metal in its pleats. Certain engine problems can produce large metal particles that aren't found in oil analysis because they become lodged in the filter. If you see large particles there, notify the lab to do additional analysis besides the spectrographic analysis.
Oil Pressure Gauge	<ul style="list-style-type: none">○ While the gauge may not be perfectly calibrated, if you see a noticeable change in its reading, take action. It could mean something's wrong with the gauge, but it could also mean you're not getting proper oil flow.
Engine Mileage	<ul style="list-style-type: none">○ Most operators should be looking at an overhaul beginning at about 750,000 miles for new engines.

Rebuilding or replacing an engine is a major job and often a large expense. It's worth it to tow your truck to a reputable shop rather than just the closest one – shops that do quality work should:

Description

- Use new parts designated by the engine manufacturer, not aftermarket parts.
- Warranty their work.
- The shop and its equipment should be clean and organized, with a concrete floor that's cleaned after each job. There should be a designated area, with closed doors, for overhauls.
- Tools should be up to the task, such as proper torque wrenches and a rail crane to hoist the engine.

2.7 BREAKS

<http://fleetanswers.com/content/semi-truck-maintenance-tips-keeping-brakes-fully-functional>
<http://semitruckrepairatlanta.com/air-brake-system-maintenance-repair/>

- Braking systems are vital to any vehicle, but a semi-truck is perhaps the most critical type of vehicle when it comes to the importance of brakes. When 80,000 pounds of truck and trailer

Services Guide: Truck Repairing & Service

are barreling down the freeway, you need to know that they will be able to stop efficiently and quickly when needed.

- Brake failure is a common cause for accidents involving tractor trailers, and these accidents are an excellent cause for a lawsuit. If you wish to avoid a lawsuit for your fleet, pay close attention to proper maintenance for your brakes.
- Air brakes are used in trucks, buses, trailers and semitrailers. This is the preferred type of braking system for these vehicles for several reasons. First, the use of air allows multiple vehicle units to be coupled so that all units have braking capability and so that all of those units' brakes may be controlled from the cab. Coupling would be unfeasible if a liquid were used as the mode of transmission of force, as it is in hydraulic brakes.
- In addition, the use of an air brake system allows for the incorporation of an emergency braking system that utilizes parts of the service brake and parking brake systems. Emergency braking systems are required on all semitrailers by CFR 49 393.43, as it states "Every motor vehicle, if used to tow a trailer equipped with brakes, shall be equipped with a means for providing that in the case of a breakaway of the trailer, the service brakes on the towing vehicle will be capable of stopping the towing vehicle."

Air brake systems are three braking systems combined:

Description

- The service brake system applies and releases the brakes when one uses the brake pedal during normal driving.
- The parking brake system applies and releases the parking brakes when one uses the parking brake control.
- The emergency brake system uses parts of the service and parking brake systems to stop the vehicle in the event of a brake system failure.

Break work includes:

Type

Description

Replacing pads and other parts

- Brakes have parts that need to be replaced on a regular basis to keep them working well. Brake shoes have indicators built into the pads that show when replacement is necessary.
- When you take the truck in to have the brake pads replaced, also replace the springs, pins and bushings for the brakes.
- The drums should also be replaced when the shoes are replaced, because they can wear down and can also develop heat cracks.

Services Guide: Truck Repairing & Service

Greasing the slack adjusters	<ul style="list-style-type: none">○ The slack adjusters work to keep the brakes in alignment when they are used. Trucks can have either manual or automatic slack adjusters. Both need to be greased to work well.○ Automatic slack adjusters will automatically keep the brakes in adjustment, while manual require you to do the adjustment yourself.○ Many operators forget about greasing the automatic slack adjusters, because they do not regularly use these. When they are not greased, these seize up and stop working, which eventually leads to brake failure.
Checking and greasing the S cams	<ul style="list-style-type: none">○ Slack adjusters work by turning a shaft that then turns the S cams. The S cams push the brake shoe into the drum to stop the truck.○ S cams are equipped with bushings. When your brake shoes are changed, check the bushings as well. These may not need to be changed as frequently as the shoes, but they should be greased as part of your regular brake maintenance.
Check linings and hoses	<ul style="list-style-type: none">○ Before using a truck, check all linings and hoses. Linings should not be soaked with lubricant and should be at least 1/4 of an inch thick.○ Air hoses must not have any cracks and should not appear worn.○ Proper brake maintenance requires replacing worn or damaged lining or hoses regularly.
Servicing	<ul style="list-style-type: none">○ While the distance a truck can travel between brake service is going to vary depending on the driving habits of the driver, it's best to have the brakes inspected and maintained every time you have the truck's oil changed. This will keep the driver, the truck and everyone on the road with them as safe as possible.

2.8 AIR CONDITIONING

<http://semitruckrepairatlanta.com/air-conditioning-service/>

A/C service and preventative maintenance are very important. The A/C system may break eventually with usage. Hose pipes and tubes may clog and drip if not serviced, causing reduced efficiency heating and cooling capabilities.

Services Guide: Truck Repairing & Service

Indications your A/C system may be having issues include:

Description

- If your air conditioning blows only slightly cooler air compared to the exterior air.
- Air that blows in smells damp, musty, or like mildew and mold.
- Your cabin does not warm up in cold weather, or is just a little warmer than outside.
- The defroster takes longer than normal to operate, or does not operate.
- Your heater or A/C only functions when driving, not when idling, or stops blowing when the vehicle is stationary.
- Your heating system blows cold air, or the air conditioning blows warm air.
- Airflow is low, even at the highest fan setting.

A comprehensive evaluation of heating and A/C system includes:

Description

- Examining the internal controls and blower
- Checking radiator coolant operating temperature, hoses, pressure radiator cap and thermostat
- Inspecting the compressor belt
- Inspecting system and seals for leaks or various other damages
- A cooling system pressure test
- Verifying the A/C pressure meets manufacturer specifications
- Measuring the interior vent air temperature

2.9 SUSPENSION

Regular travel adds wear and tear to truck suspension and trailer suspension. The following may need to be repaired, replaced or serviced once they wear out:

○ Air springs	○ Shock absorbers	○ Leveling valves	○ Suspension hangers
○ Spring pins	○ Bushings	○ Trailer hitch	○ Pintle hook
○ Pintle hitch	○ Torque arms	○ U-bolts	○ Fifth wheels

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2.10 TIRES

Tire services usually include replacing tires and changing flats. There isn't much to explain about this service.

2.11 EXHAUST & EMISSIONS CONTROL

<https://www.yelp.ca/biz/diesel-emissions-service-vancouver-2>

<http://www.dieselexhaust.com/services/>

Diesel emissions control services include:

Description

- OEM replacement for center sections (in both Diesel Particulate Filters and Diesel Oxidation Catalysts)
- DPF and DOC cleanings to ensure your filters stay in the best possible condition
- Replacements for parts, including gaskets, v-bands, and bungs
- Retrofitting with CARB verified devices
- Exhaust sales and service
- Yearly opacity test
- Custom exhaust pipes & tubing

2.12 TRUCK TRANSMISSION REBUILD, MAINTENANCE AND REPAIR

<http://semitruckrepairatlanta.com/transmission-maintenance/>

- The transmission is a major part of your vehicle. It is made up of hundreds of complex components that enable your vehicle to move. The transmission fluid also serves a multitude of purposes. It cools, lubricates, transmits force, transmits pressure, inhibits varnish build-up and protects the transmission.
- Transmission service helps keep the transmission fluid clean and the transmission running smoothly.
- Harsh driving conditions can shorten the life of the transmission fluid, which can then lead to transmission failure. Old and dirty transmission fluid can ruin your transmission, resulting in the need for an entirely new transmission. Regular transmission maintenance services can help to prevent transmission failures and keep your transmission in road ready condition.
- With time, a truck's transmission wears out and starts developing problems. Transmission problems are known to cause mechanical breakdowns. When this happens, you need to have the transmission repaired, rebuilt, or replaced.

Signs of transmission trouble include:

Services Guide: Truck Repairing & Service

Description

- Loss of power upon acceleration
- Transmission is unable to go into gear
- Hard or late shifting of gears
- Transmission slipping
- Chatter or grinding noise in the transmission
- Transmission leaking
- Truck is unable to move

2.13 WELDING/FABRICATION

Shops can repair frames, hitches, racking and more.

Truck welding services may include:

<http://www.jrtruckrepairservice.com/welding.html>

Type	Description
Tungsten inert gas (TIG)	<ul style="list-style-type: none">○ Tungsten is used as the electrode for fusing two pieces of metal. TIG welding takes time but creates precise, beautiful results.
Metal inert gas (MIG)	<ul style="list-style-type: none">○ Steel welding wire is used as an electrode. It's fed into the hole or rent to fuse it.
Arc	<ul style="list-style-type: none">○ The easiest and cheapest option, arc welding is perfect on thick metal, especially steel. Portable arc welding is also possible.
Aluminum MIG	<ul style="list-style-type: none">○ Using an aluminum wire is more difficult than steel, but this will work for aluminum vehicle bodies.
Helliarc	<ul style="list-style-type: none">○ This is basically like TIG welding, but it uses helium as an electrode. As with TIG, it produces results that are aesthetically pleasing.
Acetylene oxygen cutting processes	<ul style="list-style-type: none">○ Acetylene is used as the fuel in this type of welding, which is good for removing rusted or seized bolts.

Services Guide: Truck Repairing & Service

2.14 FLEET MAINTENANCE

Some shops provide maintenance for your entire fleet. See 2.1 Maintenance and Diagnostics. Shops will have the technology to handle multiple trucks from the same company at once.

2.15 MOBILE SERVICE

<http://www.bigrigbreakdowns.ca/mobile.html>

<http://www.englandsonsitetruckrepair.com/>

- Mobile services come to you and fix your truck on the road.
- The main benefit of mobile service is convenience – saves towing expenses and minimizes downtime.

Mobile services may include:

○ Trailer repair	○ RV/Motor coach repair	○ Reefer/heater repairs	○ Diesel repairs
○ Truck repair	○ Tire repair/ replacement	○ Boost (hot/cold start system) services	○ Chassis repair
○ Car hauler repair	○ Tire rotation	○ Welding	○ Diagnostics
○ Electronics repair	○ Lights/electrical work	○ Suspension services	○ Brake repair

2.16 24/7 EMERGENCY SERVICE

Repair companies will provide their services at any time in the case of an emergency. They are usually mobile services (e.g. “we will meet you wherever you’re broken down”).

2.17 REFEUELING

<http://4refuel.com/mobile-on-site-refuelling/>

- Do you know how long it takes your business to get fuel? When your operators take time out of their day to refuel, the time and expense of refueling adds up quickly. Consider the travel time to a filling station, the time it takes to fill up the tank, and the time it takes to return to work. According to industry averages this process can take 30 minutes for every vehicle or piece of equipment, every day, equaling thousands of hours every year. You may not see it, but your business is paying big for the extra labour, administration, overhead and lost productivity.
- During this downtime you’re not getting anything in return. No product is delivered, and no construction is taking place. A fleet of 30 vehicles loses over 3,900 hours a year just getting

Services Guide: Truck Repairing & Service

fuel, which is the equivalent of over 16 unproductive days in a year. Worse still, few businesses accurately track their fueling details so there is no way of managing where it goes, how efficiently it's used, how much may be going missing, or simply how much their fuel investment earned them.

- When equipment is fuelled and ready for the start of the work day, there are no interruptions for fleet or site managers to worry about.
- Mobile on-site refuelling saves you time and labour while increasing your productivity.
- Companies may deliver fuel directly to your vehicles or equipment during periods of downtime or when vehicles are parked.

2.18 PAINTING

<http://www.majestictruck.com/services-offered-by-majestic-truck/automotive-paint-department.html>

Whether the truck or trailer is brand new and needing a colour change, or one with a few years on it in need of some minor touch-up work, truck repair/service shops can provide a professional paint finish.

- Computer-controlled mixing banks ensure a perfect paint match occurs each and every time, and extensive color libraries allow shops to match any OEM or custom color.
- Shops with 100' or 85' paint booths can handle the largest jobs. Booths may be able to be sectioned off to perform multiple jobs at the same time.
- AFC side draft paint booths feature computerized temperature controls that regulate baking and drying systems for a properly cured paint finish.

Paint departments may provide these services:

<ul style="list-style-type: none">○ Minor paint repairs	<ul style="list-style-type: none">○ Complete truck paint jobs (including interior door jambs)	<ul style="list-style-type: none">○ Custom striping and design paint	<ul style="list-style-type: none">○ Frame painting
<ul style="list-style-type: none">○ Wheel painting	<ul style="list-style-type: none">○ Trailer painting	<ul style="list-style-type: none">○ Trailer undercarriage painting	<ul style="list-style-type: none">○ Spray in bed liners

2.19 FRAME REPAIRS/ALTERATIONS

Proper vehicle alignment is a major area of concern because of its direct implications on the life of tires, fuel economy and safety. Alignment is often thought of in connection with a truck's steer axles only. However, the rear axles on a tractor also must be properly aligned, and tractor and trailer units need to be aligned with each other (in combination vehicles) for optimal performance. Fleet experience and industry research shows that misalignment can cause a variety of problems, including:

Services Guide: Truck Repairing & Service

<http://www.vehicleservicepros.com/on-the-vehicle/under-vehicle/axles-chassis-frames/article/10740495/trailer-frame-and-axle-maintenance-issues>

Type	Description
Irregular tire wear	<ul style="list-style-type: none"> ○ Misalignment cause tires to scrub and oppose each other. What's more, excessive and/or uneven tire wear can reduce control of steering inputs, particularly on low-friction surfaces like wet pavement, which compromises the vehicle operator's ability to execute quick, precise maneuvers.
Fuel economy	<ul style="list-style-type: none"> ○ Misalignment between front and rear axles on a tractor, and/or between the tractor and trailer units themselves, creates dog-tracking going down the road. This, in turn, causes the engine to work harder because rolling resistance is increased, and fuel economy suffers. ○ Dog-tracking is a condition where the rear end is offset from the front. In the case of a tractor trailer, the trailer is offset from the tractor.
Vehicle vibration	<ul style="list-style-type: none"> ○ Misalignment conditions can also often lead to higher-than-normal vibration levels in the steering wheel and/or the operator's seat. The result can be an uncomfortable ride that contributes to driver discomfort, muscular fatigue and stress. ○ Trailer misalignment will also cause increased tire wear, greater aerodynamic drag, reduced stability and diminished fuel economy. Essentially, trailer alignment involves adjusting trailer components to line up according to three parameters - axle orientation, axle toe and axle camber - so that the trailer tracks straight and true.

Experienced mechanics and state-of-the-art equipment are required to repair truck frames. Repair shops may have frame-straightening machines, alignment bays, and mechanical bays. Shops may provide the following services:

<http://www.majestictruck.com/services-offered-by-majestic-truck/truck-frame-repair-shop.html>

Type	Description
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[Back to Top](#)

Services Guide: Truck Repairing & Service

Alignments	<ul style="list-style-type: none">○ Various types of alignment systems may be used to provide precise alignment.
PTOs and Hydraulics	<p>PTO stands for power take-off, and is commonly found on tractors and commercial trucks. The PTO is a splined driveshaft and can be used to power attachments or a completely separate machine. Some examples include:</p> <ul style="list-style-type: none">○ Running a water pump on a fire engine or water truck○ Powering a blower system used to move dry materials such as cement○ Raising and lowering a dump truck bed○ Operating the mechanical arm on a bucket truck used by electrical maintenance personnel or Cable TV maintenance crews○ Operating a winch on a tow truck○ Operating the compactor on a garbage truck○ Operating a hiab/grapple truck○ Truck accessories and parts

Other services may include:

<ul style="list-style-type: none">○ Frame straightening	<ul style="list-style-type: none">○ Frame rail replacement	<ul style="list-style-type: none">○ Frame lengthening and shortening	<ul style="list-style-type: none">○ Suspension slides
<ul style="list-style-type: none">○ Auxiliary axle installation	<ul style="list-style-type: none">○ Gross vehicle weight rating modification	<ul style="list-style-type: none">○ Tractor alignment	<ul style="list-style-type: none">○ Trailer alignment
<ul style="list-style-type: none">○ Box mounts	<ul style="list-style-type: none">○ Aluminum welding	<ul style="list-style-type: none">○ Mechanical Repairs	<ul style="list-style-type: none">○ Welding and fabrication

2.20 TOWING

<http://heavytowing.ca/heavy-duty-towing-hwy-11.html>

<http://www.quiringtowing.com/services/>

<http://www.bigrigtowing.com/towing/>

http://www.tuminostowing.com/services/heavy_duty.asp

- For those moments when there is no quick fix to get your truck moving.
- Medium-duty vehicles are 10,001lbs to 26,000lbs and vehicles over 26,001to 49,999 lbs are in the heavy-duty category. Depending on the equipment installed on the truck, some medium-duty vehicles may require a larger truck to tow them.

Shops may advertise the different types of tow trucks they have available, including:



[Back to Top](#)

Services Guide: Truck Repairing & Service

Description

- Rotators
- Heavy duty wreckers
- Tilt decks
- Lifts
- Tandem axle units
- Tri-drive units

Towing services a company may provide include:

Description

- Damage-free under reach towing
- Trailer lifts
- Coach, motor home, and bus towing and hauling
- Winching
- Tractor swaps
- Tractor service
- 12 and 24 volt boosts
- Crane service
- Air cushion recovery

3. TRUCK TYPES

<http://truckyeah.jalopnik.com/truck-sizes-classification-explained-from-tacomaz-to-1613958192>
https://en.wikipedia.org/wiki/Truck_classification#cite_note-Clayton1-16

In the US “Gross Vehicle Weight Rating” (GVWR) is ranked from 1 to 8 (smallest to largest). GVWR refers to the maximum operating weight a truck can possibly carry while driving *including the truck itself*. If a truck’s GVWR is 10,000 pounds, that’s the most the manufacturer and government have certified the truck to possibly weigh with fuel, passengers, and cargo. These classes exist for safety regulation, commercial designation, and registration purposes.

Vehicle classifications vary among provinces in Canada, due to differences in size and weight regulations, economic activity, physical environment, and other issues. While several provinces use their own classification schemes for traffic monitoring, Manitoba, Ontario, Prince Edward Island and Saskatchewan have adopted the 13-class system from the United States' Federal Highway Administration – sometimes with modifications, or in Ontario's case, for limited purposes. British Columbia and Ontario also distinguish between short- and long-combination trucks. In accident reporting, eight jurisdictions subdivide trucks by GVWR into light and heavy classes at approximately 4500 kg 9921 lb.

Services Guide: Truck Repairing & Service



TRUCK CLASSIFICATIONS

CLASS 1 6,000 lbs or less



CLASS 2 6,001 to 10,000 lbs



CLASS 3 10,001 to 14,000 lbs



CLASS 4 14,001 to 16,000 lbs



CLASS 5 16,001 to 19,500 lbs



CLASS 6 19,501 to 26,000 lbs



CLASS 7 26,001 to 33,000 lbs



CLASS 8 33,001 to REALLY HUGE

