



# OPERATOR MANUAL

**Fradan**

**Power Rake**

**PR-6RSS, PR-6RSF & PR-6HDS, PR-6HDF**



Warning  Danger

Read instructions carefully and follow rules for safe operation.

Fradan Manufacturing Corp.

# **Welcome to the Fradan Family**

Congratulations! You are now the owner of a quality **FRADAN POWER RAKE**.

Fradan manufactures a family of high performance, reliable power equipment. Our designs are based on years of personal use of landscape equipment.

We at Fradan have revolutionized the landscaping industry, offering modern, reliable, high performance equipment designed to meet today's environmental demands and exceed tomorrow's.

FRADAN built means durability, quality, maximum performance and non-obsolescence. With proper care and maintenance of your unit, we assure you years of service-free operation. This booklet refers to the information which you should learn in order to take advantage of its outstanding performance.

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*Specifications, descriptions and illustrative material in this manual are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.*

## Introduction

The **FRADAN POWER RAKE** model is a ruggedly built, high performance gasoline powered unit specially designed to remove the layer of thatch and surface-treat lawns such as de-thatching, demossing and collecting thatch in the form of old grass or moss. With an attachment, it can also be used for both initial sowing or over seeding. Proper maintenance and use of the Fradan Power Rake will guarantee years of safe, service-free, reliable operation.

We wish for you to gain sufficient knowledge from this booklet before operating your Fradan, and make the best use of it in the future. We urge you to follow these instructions to assure safe and reliable operation.


## Technical Data


<b>Model</b>	<b>PR-6RSS, PR-6RSF</b>	<b>PR-6HDS, PR-6HDF</b>
<b>Engine</b>	6HP Robin Subaru	
<b>Engine Displacement</b>	169cc	160cc
<b>Starter</b>	Rope Start	Rope Start
<b>Fuel Capacity</b>	3.4 quarts (3.6L)	1 quart
<b>Tire</b>	Solid rubber, no flat	Solid rubber, no flat
<b>Machine Width</b>	27 inches	27 inches
<b>Working Width</b>	18 ½ inches	18 ½ inches
<b>Blade type</b>	Flail or Spring Tine	Flail or Spring Tine
<b>Ignition</b>	Flywheel magneto (electric ignition system)	Flywheel magneto (electric ignition system)
<b>Dry Weight</b>	173 lbs	173 lbs


*\*All Specifications are subject to change without notice*

## Graphic Warnings

Proper Safety precautions must be observed to reduce the risk of personal injury. Like all power equipment this unit must be handled carefully. Read this manual carefully. Be familiar with the controls and the proper use of the machine.

 Stay Alert!! This graphic accompanied by the words **WARNING** and **DANGER** calls attention to an act or condition which can lead to serious injury when you see this symbol,

 heed its Warning!

 Read & understand operator's manual and safety manual.



Fradan Logo



Always wear eye and ear protection.



Keep hands and feet away. Rotating blades will cause serious injury.



Safety Rules and Precaution. Read and fully understand





Fradan caution decal



### Safety Rules and Precautions




 **IN THE INTEREST OF SAFETY.....BEFORE STARTING ENGINE, READ AND UNDERSTAND THE ENTIRE OPERATOR'S MANUAL & ENGINE MANUAL!**

Warning  Danger. To reduce the potential for accidents, comply with the safety instructions in this manual. Failure to comply may result in serious personal injury and/ or equipment and property damage.

**DO NOT EXPOSE YOURSELF OR OTHERS TO DANGER.** Follow these general rules. Do not permit others to use this machine unless they are thoroughly responsible and have read, and understand the operator's manual and are trained in its operation.



#### General Safety Rules and Precautions to Observe

-  Always wear safety goggles for eye protection.
- Dress properly; do not wear loose clothing, scarves or jewelry that could become caught in moving parts of the unit. Safe, sturdy, nonskid foot wear should always be worn. Long hair should be tied back.
- Always wear ear protectors when operating machine.
- Do not use the unit if it is damaged or poorly adjusted.
- Do not use this unit for any job other than those for which it is intended as described in this manual.
- Always wear gloves to protect your hands.
  - Do not remove any shields, guards or decals. If a shield, guard or decal is damaged or does not function, repair or replace it before operating the vacuum.
- DO NOT USE** any attachment with this Power Rake other than the ones recommended by FRADAN. Serious injury to the operator or bystanders could result as well as damage to the machine.




## Continuation of Safety Rules and Precautions



- ☑ Onlookers should be kept at a safe distance from the work area, at least 100 feet/30 meters.
- ☑  **WARNING- KEEP CHILDREN, PETS, AND BYSTANDERS AWAY-** Do not permit children to contact Power Rake. Keep children a safe distance from work area.
- ☑ Whenever approaching an operator of the machine, carefully call his attention and confirm that the operator stops the engine. Be careful not to startle or distract the operator which can cause an unsafe situation.
- ☑ Never allow a person mentally ill, under influence of alcoholic drinks or drugs or too young in age, to operate the blower.
- ☑ Do not use the unit when you are tired or under the influence of medication, drugs or alcohol.
- ☑ Never leave the machine unattended while in operation.
- ☑ Never allow a person to ride, sit or stand on the machine
- ☑ When operating the Power Rake, operator must stand behind the machine. Never in front.
- ☑ Always keep a safe distance between two or more operators when working together simultaneously.
- ☑ Beware that the machine is loud and during normal operation it may interfere with speech communication.
- ☑ Pay special attention to operation in the rain or just after the rain as the ground may be slippery.
- ☑ Make sure you have proper footing when using the machine.
- ☑ Do not operate during excessive vibration.
- ☑ Do not park machine on a steep grade or slope, the machine can roll away uncontrollably causing injury or damage.
- ☑ Keep the machine away from fire or spark.
- ☑ Never tamper with governor springs, governor links or other parts which may change the governed engine speed.
- ☑ Never use the machine indoors or in spaces lacking proper ventilation.
- ☑ Never transport the Power Rake while the engine is still running.
- ☑ Do not use the machine on any surface other than grass.
- ☑ Do not use the machine on grades of more than 20 degree.
- ☑ Warning  **Danger.** The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.
- ☑ Overexposure to vibration may lead to circulatory or nerve damage, particularly in people who have impaired circulation. Contact your doctor if you experience symptoms that could have been caused by overexposure to vibration. Examples of common symptoms include numbness, pain, muscle weakness, change of skin color or an uncomfortable feeling of tingling. These symptoms appear most frequently in the fingers, hands or wrists



**Danger!** Warning  danger- If the Power Rake is used improperly or safety precautions are not followed the user risks serious injury to themselves and others. Read and understand the following before attempting to operate this Power Rake.




### Fuel & Oil

Note: When preparing fuel, use only the amount needed for the job. Do not use fuel that has been stored longer than two months. Fuel stored longer than this will cause hard starting and poor performance. If fuel has been stored longer than this time, it should be removed and filled with fresh fuel.





### General Safety Rules and Precautions to observe for Fuel

- ☑ Do not fuel machine in an enclosed room or near open flames. Assure adequate ventilation. Outdoor refueling is recommended.
- ☑ Always store the fuel in a properly marked container that is approved by local codes and ordinances for such usage.
- ☑ Do not store in a closed area where fuel vapors can reach an open flame from hot water heaters, furnaces, etc. Store in a locked, well-ventilated area only.
- ☑  When refueling, be sure to stop the engine and confirm that it is cooled down. Never refuel when the engine is running.
- ☑ Do not fuel machine in an enclosed room or near open flames. Assure adequate ventilation. Outdoor refueling is recommended.
- ☑ Do not smoke while handling fuel or filling tank
- ☑ Do not attempt to refuel a hot engine.
- ☑ Never fill the fuel tank to the very top.
- ☑ Never add fuel to the tank in a closed non-ventilated area.
- ☑ Do not add fuel to this unit close to an open fire or sparks.
- ☑ Be sure to wipe off spilled fuel before attempting to start engine.

### **Oil Type:**

Engine: Refer to engine owner's manual

 <p style="text-align: center;">All Fradan Power Rakes are shipped <b>WITHOUT OIL</b></p> <p style="text-align: center;">When filling oil, refer to engine manufactures' instruction manual.</p> 
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### Engine

See your engine manual for proper engine prep and operation.



### Safety Rules and Precautions pertaining to Engine

- ☑ Never remove the tank cap while the engine is running.
- ☑ Never start or run the engine inside a closed room or building. Fumes from the exhaust contain dangerous carbon monoxide.
- ☑ Never attempt to make engine adjustments while the unit is running. Always make engine adjustments with the unit resting on a flat, clear surface.
- ☑ In start-up or during operation of the engine, never touch hot parts such as the muffler, the high voltage wire or the spark plug.
- ☑ After the engine has stopped, the muffler is still hot. Never place the machine in any places where there are flammable materials (dry grass, etc.), combustible gases or combustible liquids.
- ☑ Do not choke carburetor to stop engine. To properly stop the engine, gradually reduce engine speed to an idle, allow two minutes for the engine to cool down and then use appropriate switch to stop the engine.
- ☑ Never tamper with the engine speed selected by the engine manufacturer.
- ☑ Do not operate engine without a muffler. Inspect periodically and replace, if necessary.
- ☑ Do not operate engine with an accumulation of grass, leaves, dirt or other combustible material in the muffler area.
- ☑ Never run engine at excessive speeds. This may result in injury and/ or damage to unit.
- ☑ Do not use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on the muffler. The arrester must be maintained in



effective working order by the operator. In the state of California the above is required by law (section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.

- ☑ **Engine exhaust, some of its constituents and certain vehicle components contain or emit chemicals considered to cause cancer, birth defects or other reproductive harm.**

**The engine emits carbon monoxide, which is a colorless, poisonous gas. Do not use the machine in enclosed spaces.**

- ☑ Do not run engine without air cleaner or air cleaner cover.

## Preparing For Operations



Be Sure Power Rake is Fully Assembled!



Never operate Power Rake without all guards and deflectors in place.



Handle Fuel with Care. It is highly flammable. Fueling a hot engine or fueling an engine near an ignition source can cause fire and result in serious personal injury and/ or property damage.



### Understanding Thatch

Thatch is the dense layer of clippings, roots and stems that forms between the soil and the base of the grass. As thatch builds up, it prevents air, water and fertilizer from being absorbed into the soil causing shallow root development, leading to vulnerability to drought and frost. Excessive thatch also creates an ideal environment for insects and lawn diseases.

### The Fradan Power Rake offers blade versatility (Flail Blade or Spring tine)

#### **Flail blade**

Of all the blades offered, Flail Blades offer the most aggressive dethatching. Power-raking with flail blades removes the thatch layer and restores your lawn to good health.

#### **Spring tine**

Spring tines offer less aggressive dethatching than flail blades. They are designed to pull dead grass and thatch out of the lawn without tearing or damaging existing root structure. With the flexible tines, the lawn is combed only 0.5cm into the soil, so it cannot penetrate the root structure. This is ideal for the established lawn that is not in need of a complete renovation but requires dethatching (dry-spots, fungus, etc).

### Understanding Power Rakes Controls

#### **Depth Lever**

The Depth Lever allows operator to control the depth at which the blades penetrate the soil to a depth of 1/8" to 1/4" with a maximum penetration of a 1/2".

#### **Bail Lever**

The Bail lever tightens the drive belt and engages the drive for the blades. When the Bail lever is pressed against the handle, the blades begin to rotate.

Hold the Bail lever tightly when operating so that the belt does not slip.

## Check Points Before Operation

- 1) Check the entire machine for loose parts (bolts, nuts, screws and fittings) and any damage. Repair or replace as necessary before using the machine.
- 2) Check the air cleaner for dirt. Clean the air filter of all dirt, debris etc. before operation.
- 3) Check to be sure air intake screen on engine is securely in place and clean.
- 4) Check oil level.
- 5) Check that unit has been removed of all debris, leaves, grass, dirt etc.
- 6) Check and clear the lawn of any debris.
- 7) Clearly mark rocks, tree routes and other fixed objects.
- 8) Check for hidden electrical cables or similar in the surface of the lawn



Warning: Under no circumstances may the original design of the machine be modified. Modifications not only affect the performance and durability of the machine but may even pose a safety risk for users and those in the vicinity.

## Operating Instructions



Like all mechanical tools, reasonable care must be used when operating machine. Inspect machine work area and machine before operating. Making sure that all operators of this equipment are trained in general machine use and safety.

- Pay attention to loosening and overheating of parts. If there is any abnormality of the machine, stop operation immediately and check the machine carefully. If necessary, have the machine serviced by an authorized FRADAN dealer. Never continue to operate a machine which may be malfunctioning.



### **WARNING DANGER**

**CAUTION**



Never attempt to remove grass or other debris from any part of the Power Rake while it is running.

### **Before you start**

- Mow the lawn to its normal length.
- Allow the lawn to dry.

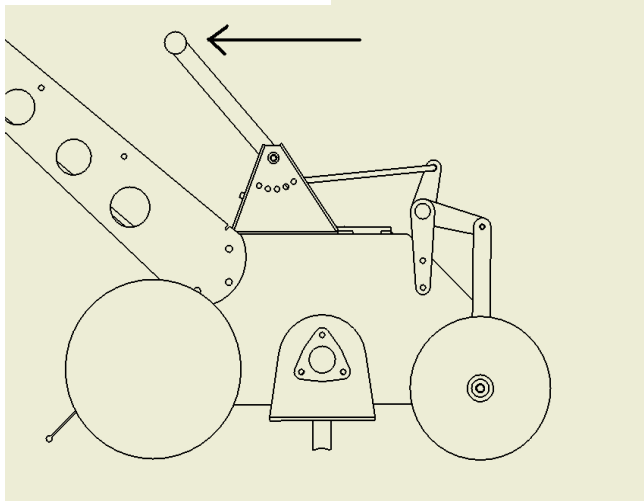
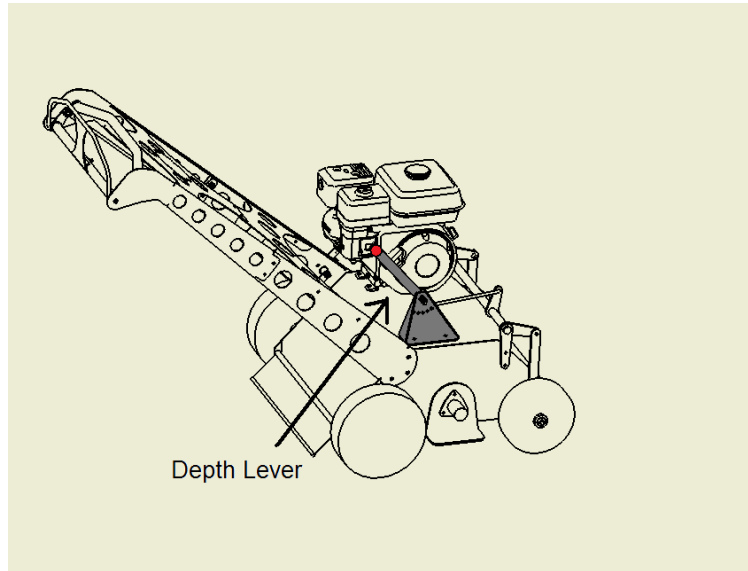
### **Start the machine**

1. Place the machine onto grass area.
2. Adjust blade height by using the depth lever on the right side of the machine. Push to the right and move lever to the correct height.
  - To determine the correct height for your lawn, it is suggested to set blade or tine depth to first highest setting and test small area at a slow walking pace. If user feels the height is incorrect stop and adjust blade or tine depth to a lower setting and test small area again.
    - If the engine speed drops excessively, the depth setting is too deep.

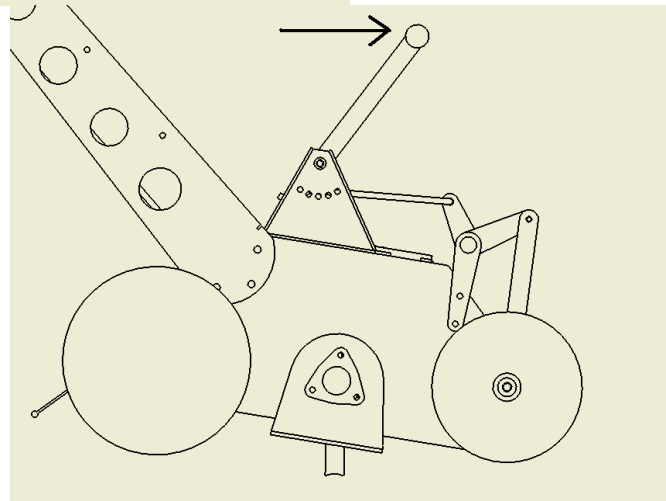


- If the machine pulls forward and bucks roughly, the depth setting is too deep.
- 3. • To engage hold down on the handle and raise the front wheels slightly. Hold the Bail lever against the handle and carefully lower the machine into the turf.
- 4. Start walking at a slow pace
- 5. Always check for routes, stones or fixed objects in the lawn, they can damage the machine.
- 6. Remove all extracted thatch from the grass and dispose of properly.

Note: Lawns with deep thatch exceeding ¾ inch may be best dethatched in two treatments (spring and fall) to avoid major shock to an older lawn.



***Heights setting***



***Lowest setting***

## **Transportation**

### Movement/Transport

- Pressing down on the handle and turning on the back wheels will allow you to turn and steer the machine.
- Always turn off the engine and allow it to cool at least 2 minutes before transport.
- Always be careful and use safe lifting and moving techniques when loading/unloading the machine.
  - Having two people lift the machine is recommended.

- Fasten the machine properly in place with approved fasteners,(chains, rope or tension belts).
- Before transporting the machine, check that you are in compliance with all related traffic regulations



## Maintenance Instructions

 **Any adjustments needed should be performed by a qualified mechanic and made while engine is not running.**

### General Maintenance

Before proceeding to adjust or repair the machine, be sure to stop the engine and detach spark plug cap from the spark plug.

While engine is not running:

1. Clear intake screens on housing and engine throughout use.
2. Inspect machine for loose bolts before starting the engine. Repair or replace worn, damaged or missing components promptly.
3. Use only recommended parts, fluids and lubricants specified by engine manufacture. See engine manual.
4. **Keep air filters clean.** Always refer to engine manual regarding engine maintenance.
5. **Grease fittings should be lubricated once a month. ( See figure 4 to locate all three grease fittings)**
6. **Change engine oil- refer to engine owner's manual.**

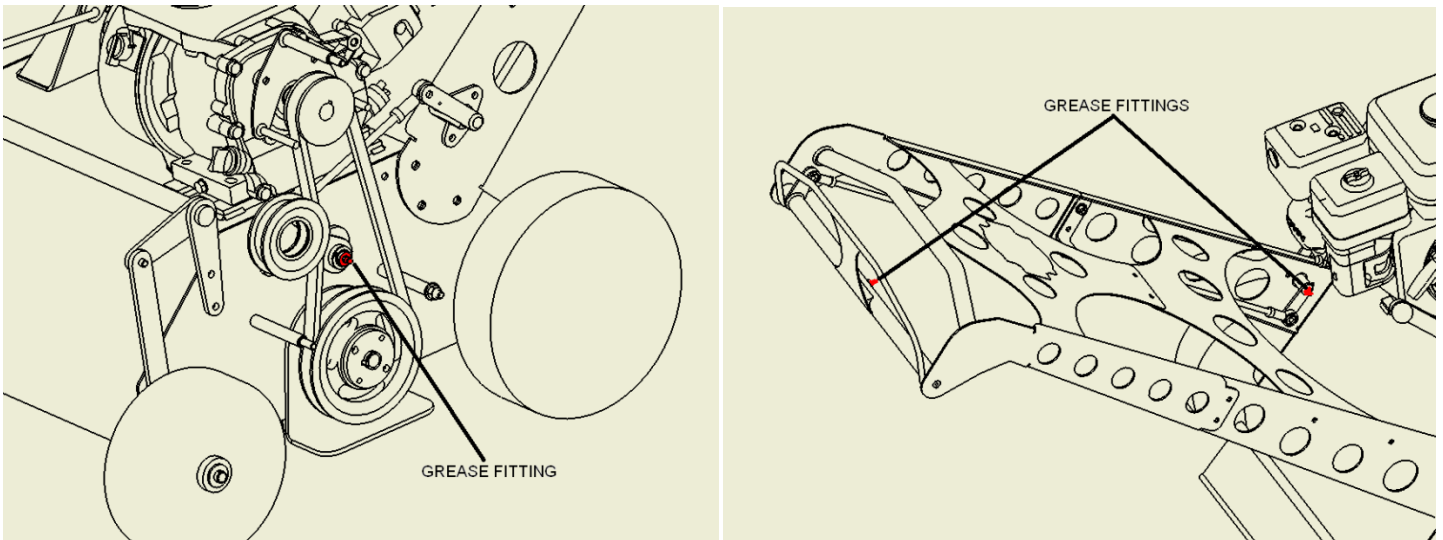


Figure 4



### Safety Rules and Precautions for Maintaining Unit

- Use only Fradan original equipment parts when servicing the unit. This will ensure safe and proper performance of your product. These parts are available from your dealer. The use of any other

accessories or attachments may cause a potential hazard or injury to the user, damage to the machine and void this warranty.

- ☑ Make periodic inspections to assure safe and efficient operation. For a thorough inspection of your machine, please contact a FRADAN dealer.
- ☑ Never change attachments or make any adjustments, repairs or replacements until the unit is completely shut down.



**Use only a qualified mechanic for any adjustments, disassembly, or any kind of repair**



## **Storage**

Never store engine indoors or in enclosed poorly ventilated areas with fuel in tank, where fumes may reach and open flame, spark or pilot light, as in furnace, water heater, clothes dryer or other gas appliance.

When the machine is placed in storage for a long time, drain fuel from the fuel tank and carburetor.

Wipe machine down before storing.

If engine is to be unused for 60 days or more, prepare as follows:

- Be sure engine is cool. Do not smoke. Remove all gasoline from carburetor and fuel tank to prevent gum deposits from forming on these parts and causing possible malfunction of engine. Drain fuel outdoors, into an approved container, away from open flame. Run engine until fuel tank is empty and engine runs out of gasoline
- Note: Fuel stabilizers may be used, refer to engine manufacture's owners manual.

## **Trouble shooting**



**Use only a qualified mechanic for any adjustments, disassembly, or any kind of repair**



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**[www.fradanpower.com](http://www.fradanpower.com)**