



 **Cyclone
Rake®**

OWNER'S MANUAL

ASSEMBLY & PARTS



SAFETY

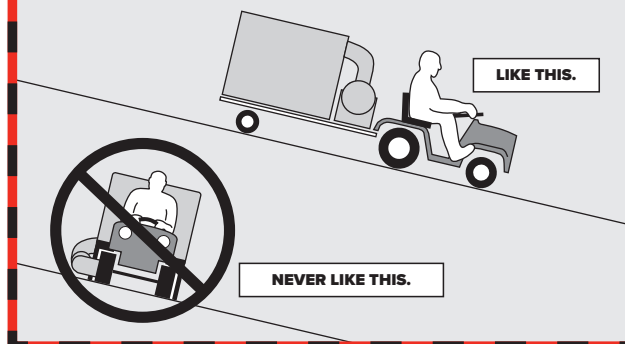
**THE CYCLONE RAKE® IS A POWERFUL MACHINE.
DO NOT attempt to operate until you have read and
completely understand this safety section.**

IMPORTANT

- **THE CYCLONE RAKE ENGINE IS NOT SHIPPED WITH OIL.**
Please read all instructions and fill the engine with oil before starting.
- **NEVER START THE ENGINE UNLESS IT IS BOLTED FIRMLY TO THE CHASSIS AND THE CHASSIS IS ATTACHED TO THE RIDING MOWER OR TRACTOR.**
The wheels on the engine unit are for ease of storage **ONLY**. They will **NOT SUPPORT THE ENGINE** while running and you risk a serious overturning or a roll-away accident.
- **DO NOT USE THE ENGINE UNIT AS A STAND-ALONE VACUUM. IT MUST ALWAYS BE BOLTED TO THE CHASSIS BEFORE OPERATING.** You risk serious injury from a roll-away accident.
- **DO NOT MAKE DESIGN MODIFICATIONS TO THIS EQUIPMENT** or any of its accessories or upgrades. You could risk serious personal injury or damage to the equipment.
- **NEVER CHANGE HOSES UNLESS THE ENGINE IS STOPPED.** You can be seriously injured by rotating machinery, high vacuum forces or flying debris.
- **NEVER OPERATE UNLESS ALL HOSES AND AIR FLOW CONNECTIONS ARE FIRMLY LATCHED IN PLACE.**
- **NEVER CLEAR JAMS UNLESS BOTH THE CYCLONE RAKE AND MOWER ENGINES ARE STOPPED.**
- **ALWAYS WEAR EYE PROTECTION** when you operate the Cyclone Rake.
- **NEVER STAND OR WORK DIRECTLY BEHIND THE CYCLONE RAKE WHEN THE ENGINE IS RUNNING.**
High velocity air and debris venting through the top screen can cause serious injury.
- **NEVER DUMP THE COLLECTOR** unless the engine is stopped. Flying debris can cause serious injury.
- **NEVER OPEN THE COLLECTOR BAG WHEN THE ENGINE IS RUNNING, EVEN TO CHECK CONTENTS.** You risk serious injury. **ALWAYS STOP** the engine first.
- **ALWAYS KEEP THE ENGINE/BLOWER UNIT FREE FROM ALL ORGANIC MATERIAL BUILD UP.** Clean this area after every use.
- **DO NOT ALLOW CHILDREN TO OPERATE THIS EQUIPMENT.**
- **KEEP CHILDREN AND PETS AWAY.** They can be seriously injured by this machinery.
- **LOOK CAREFULLY BEFORE BACKING UP.** You cannot see directly behind when backing up. You could injure children, pets or property.
- **ORGANIC LAWN DEBRIS ONLY! DO NOT ATTEMPT TO VACUUM METAL, GLASS, TRASH, STONES, SAND, CARPENTRY CUTTINGS OR ANYTHING ELSE EXCEPT NATURAL LAWN DEBRIS.** You risk damage to the Cyclone Rake and serious personal injury.
- **STOP THE ENGINE AND REMOVE THE SPARK PLUG WIRE** before performing any service or adjustment functions.
- **DO NOT CHANGE ENGINE OR GOVERNOR SETTINGS.** They are there for your safety.
- **CHECK ALL BOLTS AND FITTINGS FOR TIGHTNESS** at frequent intervals. If you sense any abnormal vibration, **IMMEDIATELY STOP** the equipment and check thoroughly.
- **USE ONLY THE NYLON LOCK NUTS AND FASTENERS** supplied with the Cyclone Rake for product assembly. **DO NOT REPLACE EXCEPT WITH IDENTICAL PARTS.**
- **DO NOT FILL FUEL TANK INDOORS. DO NOT SMOKE WHILE FUELING. WIPE UP ANY FUEL SPILLS IMMEDIATELY.**

**DO NOT DRIVE SIDWAYS ON HILLS OR SLOPES.
DRIVE IN AN UPHILL OR DOWNHILL DIRECTION ONLY.
FOLLOW THE WARNINGS IN YOUR MOWER'S MANUAL.**

Driving sideways can create a serious
overturning accident.



CHAPTER 1**INTRODUCTION & UNPACKING**

Congratulations on your purchase of the Cyclone Rake Single!

You'll find it's one of the most useful and convenient outdoor products on the market. If you use and care for it properly, it will provide you with years and years of service.

CONTENTS OF THIS MANUAL

This manual covers the assembly, operation and maintenance of your Cyclone Rake Single. *If you purchased additional accessories, each accessory comes packed with its own clearly illustrated instruction sheet.*

EASY TO ACCESS ASSEMBLY VIDEOS

To make assembly easier, we recommend checking out our videos before you begin the process

<https://www.cyclonerake.com/cr-assembly-videos/>

USING A QR CODE

Whenever you see a QR code like this one, just scan them with your mobile phone or tablet, and immediately watch a video related to that section of your owner's manual. These codes and the videos they take you to will demonstrate some of the key maintenance and operating features of your new Cyclone Rake Single. Just use your phone's camera to scan the QR code and open the link. If your camera doesn't support scanning, you can download a free QR code scanner from your app store. Try them out! We think you'll find them helpful, and we're confident they'll make your ownership experience more enjoyable.

**GETTING STARTED**

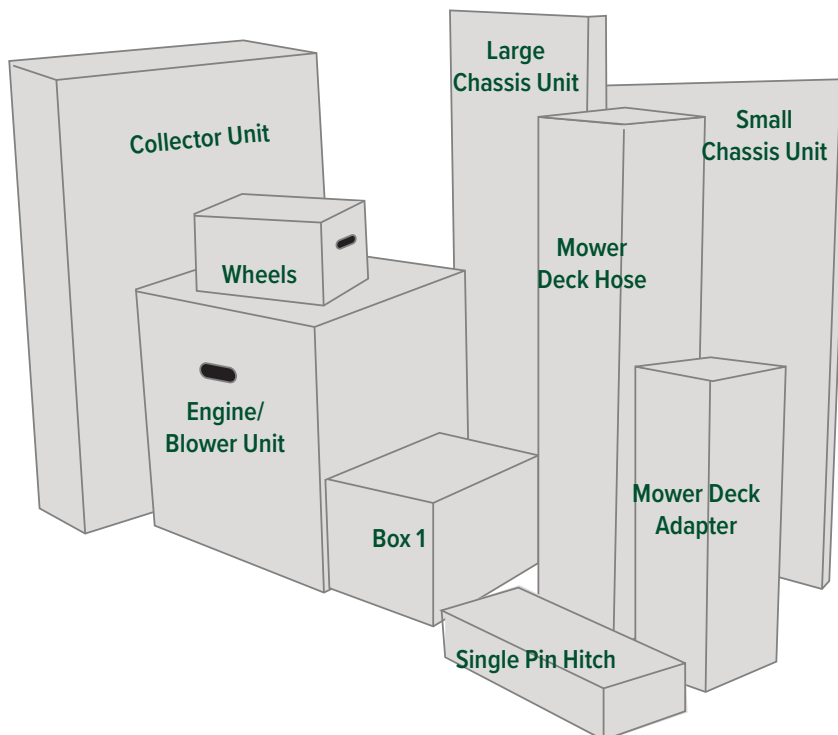
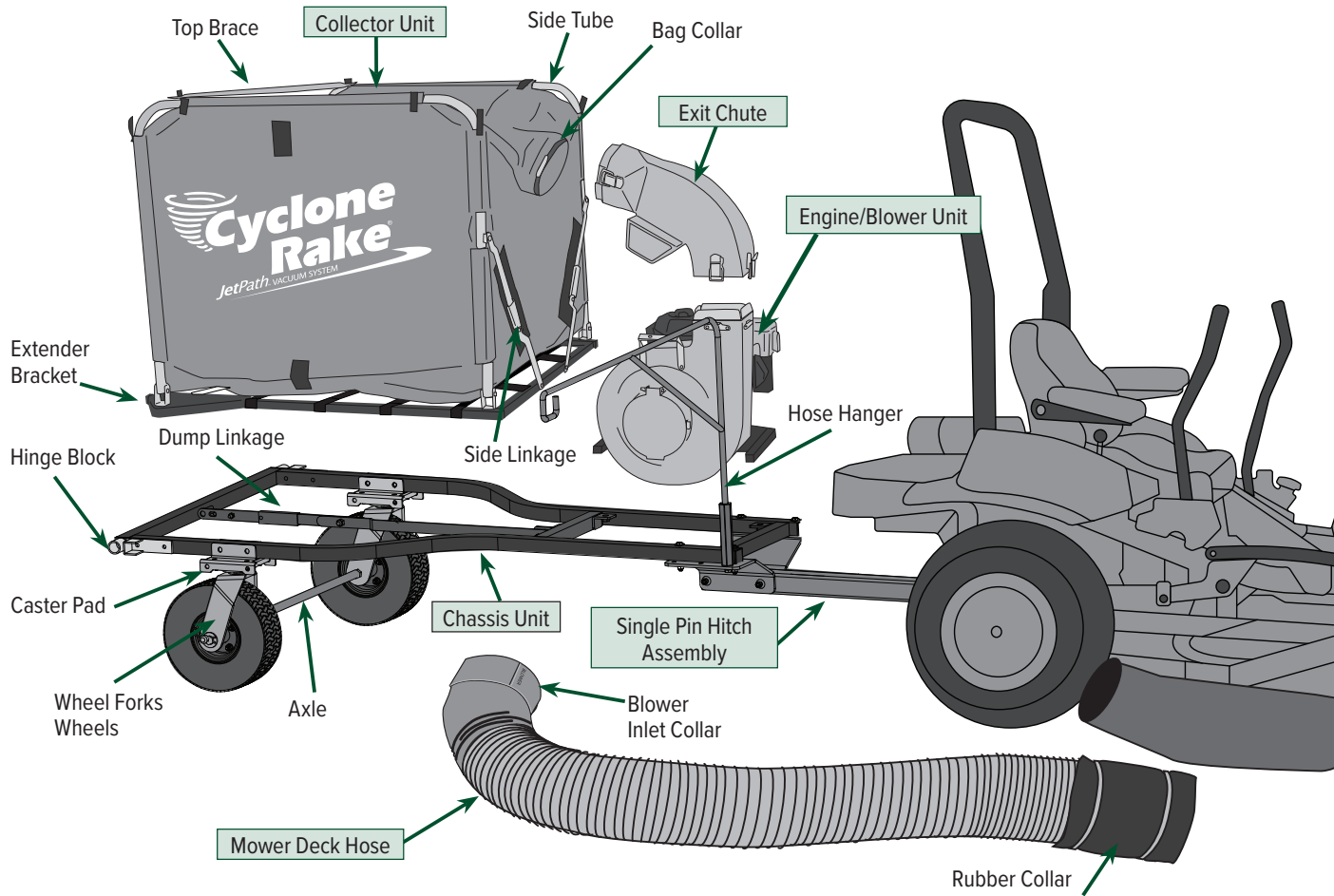
Your basic Cyclone Rake is shipped in seven or eight boxes. If you have other boxes, these hold the accessories you ordered.

To get started, first identify your seven boxes, which have these box names:

- **Box 1 (You found this one already!) Owner's Manual, Exit Chute, Blower Inlet Collar, Hose Hammock and Rubber Collar (if you did not order a Mower Deck Adapter).**
- **Mower Deck Hose**
- **Mower Deck Adapter (if you ordered one will also include your Standard Hitch)**
- **Engine/Blower Unit**
- **Chassis Unit**
- **Collector Unit: (Will include the Hose Hanger and Wheel Axle)**
- **Single Pin Hitch**
- **Wheels (If you ordered the Dual-PRO Super Wheels, they will be delivered in two boxes)**

Depending on the Cyclone Rake model and accessories you purchased, your order may include additional boxes. Each box is clearly labeled.

THE CYCLONE RAKE® SINGLE MAIN COMPONENTS



HELP! WHAT'S IN ALL THOSE BOXES?

You might find quite a few boxes in your shipment, depending on what you ordered. However, they are all clearly marked with the Box Name.



TOOLS NEEDED

Most of the tools you will need to assemble and service your Cyclone Rake can be found at any hardware store if you don't already have them.

- 1/4" Drill bit
- 5/16" Drill bit
- 3/8" Drill bit
- Center punch
- Two 1/2" Box wrenches or sockets
- Two 9/16" Box wrenches or sockets
- 7/16" Wrench
- 1" Wrench
- Marker pen
- Flat blade screwdriver
- 5/16" Nut driver or socket
- 7/16" Socket
- 3/8" Socket

Depending on what model of mower you own, you might also need the following additional items:

- Hammer
- Tape measure
- Electric drill
- Utility knife
- Cutting pliers
- Light Grease

INSTALLATION NOTE:

If you need these extra items, it will be clear from the instructions in this manual.

OK, LET'S GET STARTED!

USING YOUR NEW CYCLONE RAKE VIDEOS

Once your new Cyclone Rake is completely assembled, it's time to start using it! The QR codes below link you to videos showing some helpful tips and tricks, and best practices when using your Cyclone Rake Single.

If you don't happen to have a smart phone, that's okay! Simply type the link below into any web browser to watch these videos on Owning a Cyclone Rake.

<https://www.cyclonerake.com/video-landing-page>



Unloading Your
Cyclone Rake Single
Collector.



Folding Up Your
Collector for Storage



The Importance of
Using Fuel Stabilizer.



Using and Maintaining
Your Power Vacuum
Pickup or Estate Vacuum.

As always, if you run into any questions during the assembly process or when you're using your Cyclone Rake Single, don't hesitate to reach out to us. We're just a phone call, chat message, or email away, and are always more than happy to speak with you. Thanks again for choosing the Cyclone Rake.

Happy Raking!



Matthew Coz
CEO

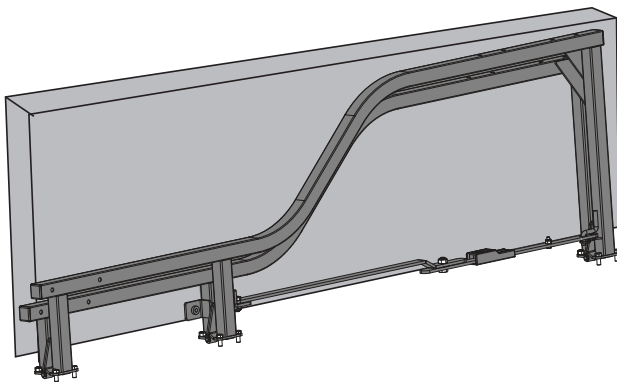
CHAPTER 2

ASSEMBLING THE CHASSIS UNIT, WHEELS & HITCH

The Cyclone Rake Chassis comes in two sizes, small for the CRS Commander model and large for the CRS XL Model. Each is packaged differently. The **Small Chassis** will be delivered flat. The **Large Chassis** will be delivered folded and will require a few more steps to assemble. However, once assembled the rest of the installation is the same. We will start with the **Large Chassis (XL)**. If you have the **Small Chassis (Commander)**, please move on to page 2.



ASSEMBLING THE LARGE FOLDED CHASSIS (XL)



WHERE TO FIND THE PARTS:

Open the boxes labeled **Chassis Unit**. All other parts will be attached to the included **skin board**.

TOOLS YOU'LL NEED:

- (2) 1/2" Box wrenches or sockets

1. Lay the Chassis flat and unfold it with the **"Top Side"** label facing up.
2. **(Fig. 1)** Remove the six, 5/16-18 x 0.75 bolts and six of the nylon lock nuts from the hardware skin board.
3. **(Fig. 2)** Use the 1/2" wrench and secure the 2 sides of the unfolded Chassis with the 6 bolts and lock nuts in the 3 places shown.
4. Remove the Hinge Blocks from the Skin board and then move on to page 2 to **Installing the Hinge Blocks**.

INSTALLATION NOTE: Save the J-Hooks for the Collector Unit assembly. Also set aside the Engine Clamp Knobs and Rubber Washers for installing the Engine/Blower Unit.

SAFETY NOTE:

Single cylinder engines always create high vibration. For safety, the Cyclone Rake® makes extensive use of "shake-proof" nylon lock nuts. Always use them where indicated. Do not substitute ordinary nuts. If you lose any, you can buy them at any hardware store.

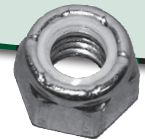
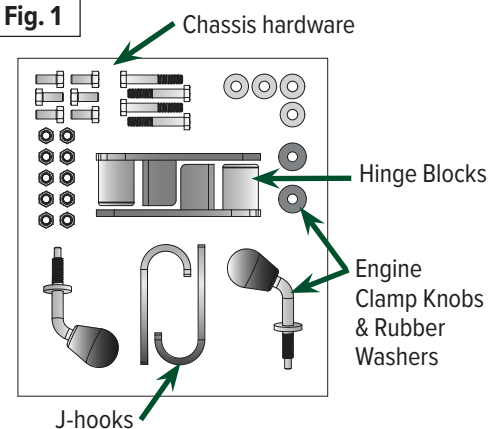
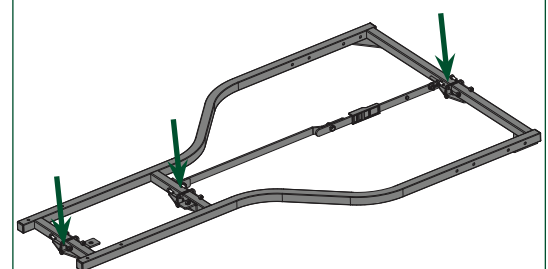


Fig. 1



Large Chassis Skin-board Parts

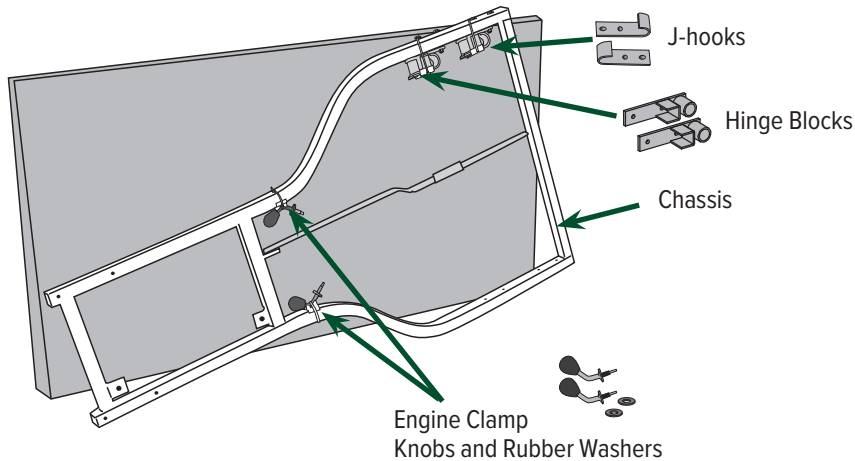
Fig. 2



Secure the Chassis in 3 places

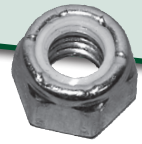
ASSEMBLING THE SMALL CHASSIS

(COMMANDER)



SAFETY NOTE:

Single cylinder engines always create high vibration. For safety, the Cyclone Rake® makes extensive use of “shake-proof” nylon lock nuts. Always use them where indicated. Do not substitute ordinary nuts. If you lose any, you can buy them at any hardware store.



WHERE TO FIND THE PARTS:

Open the boxes labeled **Chassis Unit**.

1. Lay the Chassis flat with the “**Top Side**” label facing up. Remove the Hinge Blocks, J-Hooks, two Engine Clamp Knobs and Rubber Washers that are attached to the Chassis.

INSTALLATION NOTE: Save the J-hooks for the Collector Unit assembly and the Engine Clamp Knobs and Rubber Washers for installing the Engine/Blower Unit.



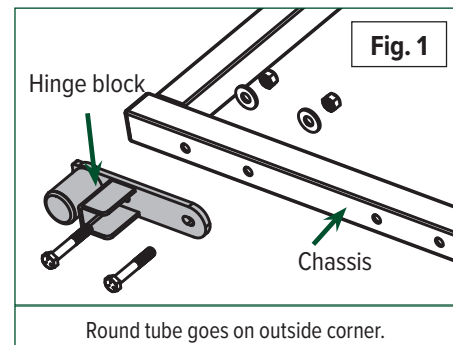
INSTALLING THE HINGE BLOCKS

(BOTH SIZES)

TOOLS YOU'LL NEED:

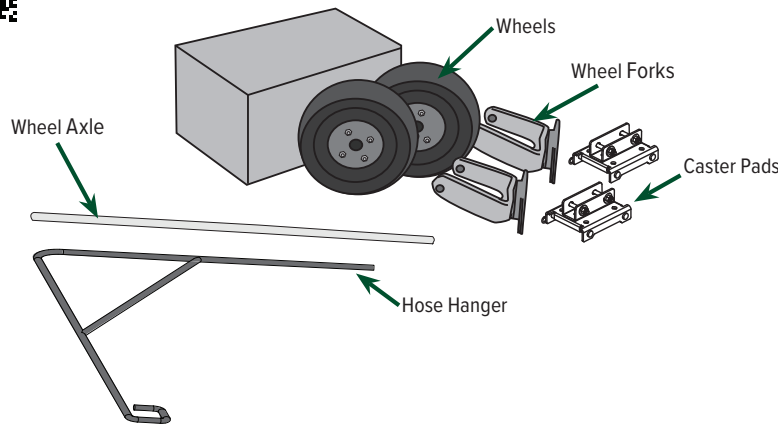
- (2) 1/2" Box wrenches or sockets

1. **(Fig.1)** To attach each hinge block, position the round tube on the outside corner of the wide end of the chassis. Using two 1/2" box wrenches or sockets, attach each hinge block with the two 5/16 x 2" bolts, washers and nylon lock nuts provided. Tighten the bolts snugly, but don't crush the tubing.





INSTALLING THE CASTER PADS & WHEELS



WHERE TO FIND THE PARTS:

Open the **Wheel Box(es)** to find the **wheels, wheel forks, caster pads, and hardware**. Find and open the **Collector Unit Box**. When you open this box, be extra careful when using a knife or sharp tool as it might slice the Collector Bag. In this box, you will find the **Collector Unit** components, as well as a few other parts including the **Hose Hammock**, and the **Wheel Axle** that you will need for installing your wheels, and a cardboard sleeve with the **Hose Hanger** that you will install later.

TOOLS YOU'LL NEED:

- (2) 1/2" Box wrenches or sockets
- (2) 9/16" Box wrenches or sockets
- Light grease

INSTALLATION NOTE: *Dual-PRO Super Wheels™ and caster pads are installed the same way.*

INSTALLING THE CASTER PADS

1. Flip the chassis over so the **"Top Side"** label is underneath.
2. **(Fig. 2)** Attach both **Caster Pads** to the **Chassis** using the two 5/16 x 2-1/4" bolts, washers and nylon lock nuts. Tighten the bolts firmly with the 1/2" wrenches or sockets.

INSTALLING THE WHEELS (2 WAYS)

QUICK RELEASE INSTALLATION

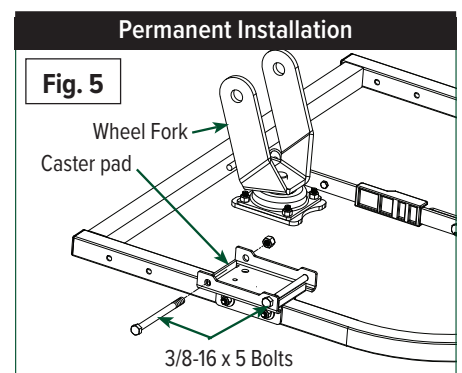
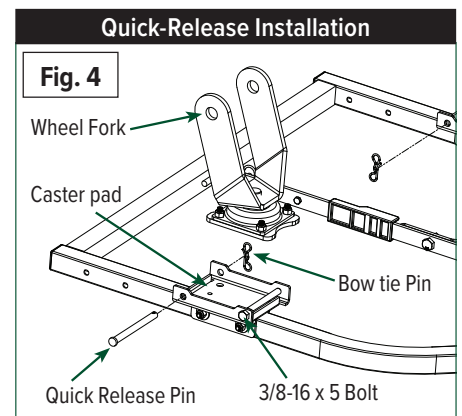
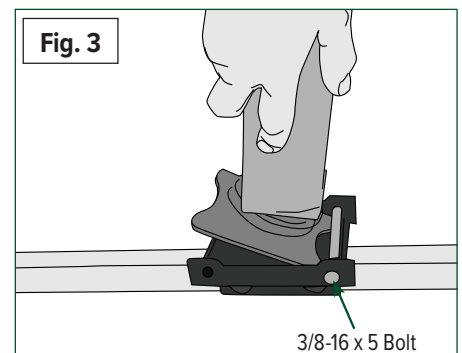
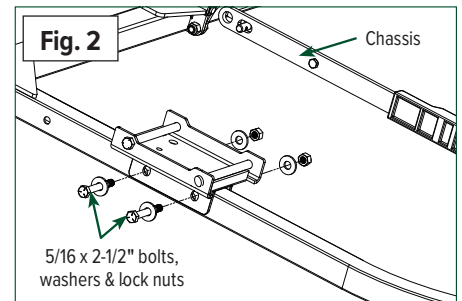
If you are planning on removing your wheels when storing your Cyclone Rake.

1. Remove the Bow-tie pin from the Quick Release Pin and remove it.
2. **(Fig. 3)** Slip the wheel fork under the bolt.
3. **(Fig. 4)** Then reinstall the Quick-Release Pin into lower hole and secure it with the bow-tie pin **on the inside of the Chassis**.
4. Repeat on the other side.

PERMANENT INSTALLATION

If you are planning to keep your wheels attached at all times

1. Remove the Bow-tie pin from the **Quick Release Pin** and remove it.
2. **(Fig. 3)** Slip the wheel fork under the bolt.
3. **(Fig. 5)** Then install the 3/8-16 x 5" hex head bolt into the lower hole and secure with a 3/8-16 nylon lock nut.
4. Repeat on the other side.



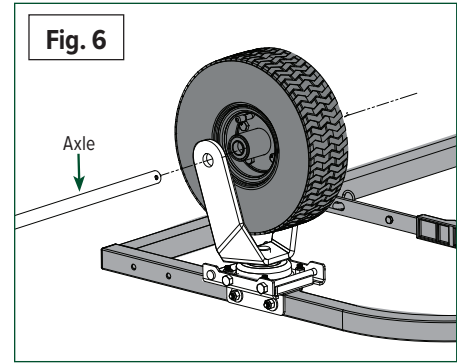
RECOMMENDED TIRE INFLATION:

Single Wheel tires: 25 psi

Dual-PRO Super Wheel tires: 15 psi

INSTALLING THE WHEELS & AXLE

1. Locate the light grease, the axle, and the bag of bow-tie pins and washers you removed from the wheel box.
2. Next, remove the the protective caps from the ends of the axle. Now, slide one washer onto one end of the axle, then insert one bow-tie pin into the hole behind the washer.
3. At the other end of the axle, apply a small amount of light grease. This will help ease the axle through the hub and prevents damage.
4. **(Fig. 6)** Next, align both wheel forks as shown, with each fork angled back toward the rear of the chassis.
5. **(Fig. 6)** Starting with either wheel fork, hold one of the single wheels or one of the dual wheels in the center of the wheel fork. Then slide the axle through the outside of the wheel fork, through the center hub of the wheel(s) (apply steady, gentle pressure) and out through the opposite side of the wheel fork.



INSTALLATION NOTE: *DO NOT force the axle through the wheel hub. Forcing it may damage the hub or internal bearings. Applying light grease as instructed ensures a smooth installation.*

6. Continue sliding the axle across through to the other wheel fork and wheel(s).
Do not force or hammer the axle through the wheel hub.
7. Install the other washer and bow tie pin into the open hole on the end of the axle.



INSTALLING THE SINGLE PIN HITCH & HOSE

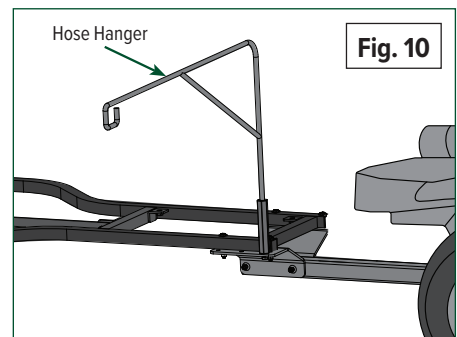
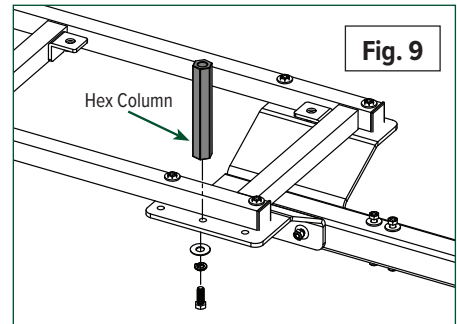
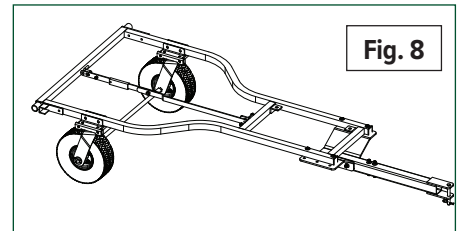
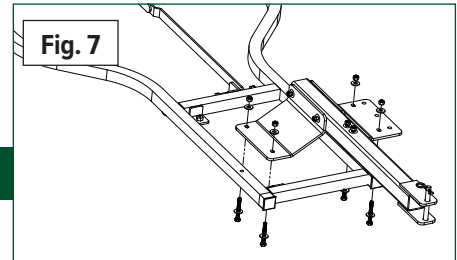
WHERE TO FIND THE PARTS:

Open the box labeled **Single Pin Hitch**. It will include the **Hitch**, the **Hitch Pin** and **Hex Column**. Locate the **Hose Hanger** you removed earlier from the **Collector Unit Box**.

TOOLS YOU'LL NEED:

- (2) 1/2" Box wrenches or sockets
- 1" Wrench
- 9/16" Box wrenches or sockets

1. **(Fig. 7)** With the **Chassis** still upside down, attach **Single Pin Hitch** as shown with four 2.5" bolts, washers, and nylon lock nuts provided.
2. **(Fig. 8)** Flip the Chassis over onto the wheels.
3. **(Fig. 9)** Next, attach **Hex Column** to the bracket in the middle hole, using one 3/8-16 x 1" bolt, lock washer and washer.
4. **(Fig. 10)** Attach **Single Pin Hitch** to the existing hitch on the rear of your mower. Then place the **Hose Hanger** into the **Hex Column**.

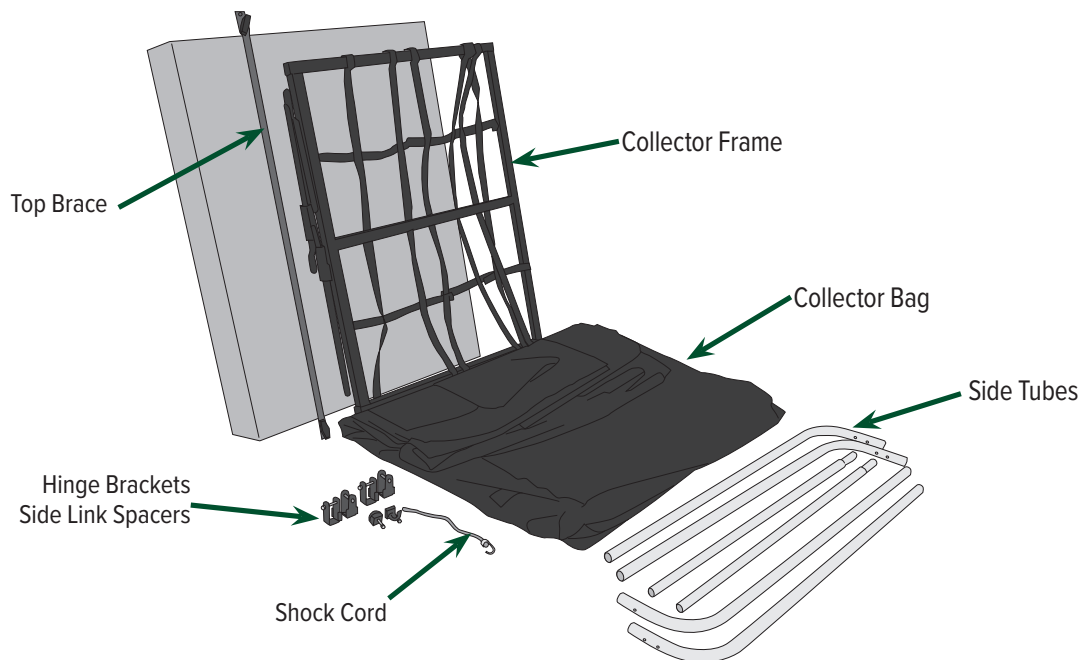


CHAPTER 3

ASSEMBLING & INSTALLING THE COLLECTOR UNIT

When you open the box labeled **Collector Unit**, remember to take extra care with any knife or sharp tool so you don't damage the Collector Bag inside. Earlier in the assembly, you already took out the Wheel Axle, Hose Hanger and Hose Hammock from this box, but you'll also find the **Collector Frame, Top Brace, Side Tubes, Collector Bag, Wheel Axle, Extender Bracket Box, and a Hardware Box**. For this part of the assembly, you'll only need the **Collector Frame, Side Tubes, Collector Bag, Extender Brackets, and the Hardware Box**, along with the two **J-Hooks** that were attached to the skin board in the **Chassis Unit** box. Set the **Top Brace** aside you will install that later.

3



EXPANDING THE COLLECTOR FRAME

There are 3 sets of bolts, washers and lock nuts. You will find them in the Hardware Box in the **bag labeled "A"**.

PARTS YOU'LL NEED:

- (3) 5/16-18 x 1.75" Bolts
- (6) 5/16" Washers
- (3) 5/16" Lock Nuts

TOOLS YOU'LL NEED:

- (2) 1/2" Box wrenches or sockets

1. **(Fig. 1)** Locate the Collector Frame and lay it flat on the ground.
2. Pull the two sides apart, sliding the tubes until the center holes line up.
3. Secure with 3 nuts bolts and washes on each side and in the center.
4. Rearrange the Support Grid so it's evenly spaced.

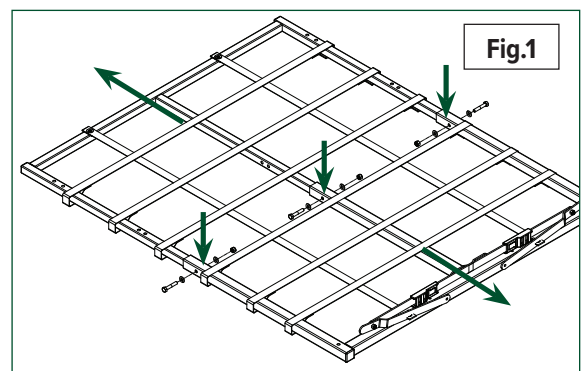


Fig.1



INSTALLING THE EXTENDER BRACKETS & J-HOOKS

The extender brackets come as a left and right pair and will be installed onto back end of the Collector Frame.

PARTS: YOU'LL NEED

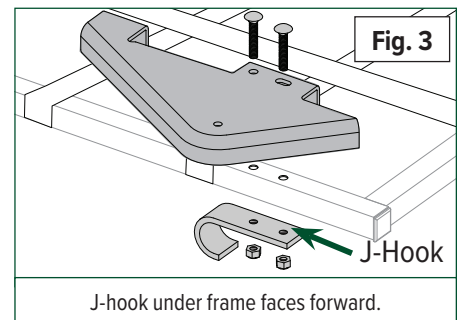
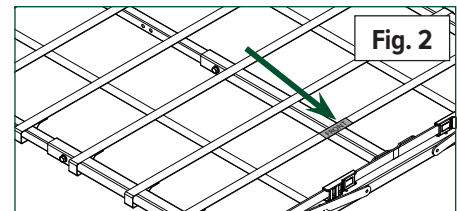
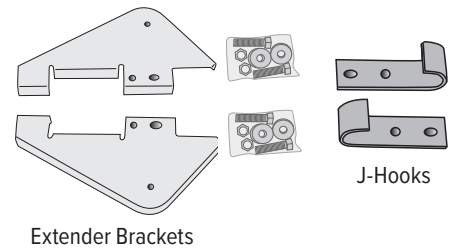
- (2) Extender Brackets
- (2) J-Hooks
- (2) 5/16 x 1.75" Carriage Bolts
- (2) 5/16" Nylon Lock Nuts

TOOLS YOU'LL NEED:

- (2) 1/2" Box wrenches or sockets

1. **(Fig. 2)** Start with the Collector Frame with the Support Grid on top and you can see the "FRONT" label.
2. **(Fig. 3)** At the **BACK** of the Collector Frame, place one of the Extender Brackets over one side of the frame. Then, install the two 5/16 x 1.75" carriage bolts down through the bracket and Collector Frame **with the round heads on top**.
3. **(Fig. 3)** Place a J-Hook under the Collector Frame with the curved end facing toward the front of the frame. Fasten the carriage bolts with two nylon lock nuts.
Tighten the nuts firmly.
4. Repeat on the otherside of the fame with the second Extender Bracket.

HINT: Place a finger on the round heads of the carriage bolts to prevent them from turning while you tighten the nuts.



INSTALLING THE HINGE BRACKETS

There are 4 sets of Hinge Brackets and hardware. You will find them in the Hardware Box in the **bag labeled "B"**. You will attach them to the corners of the Collector Frame.

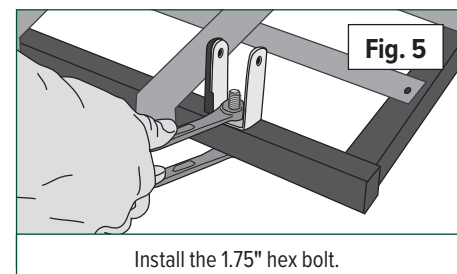
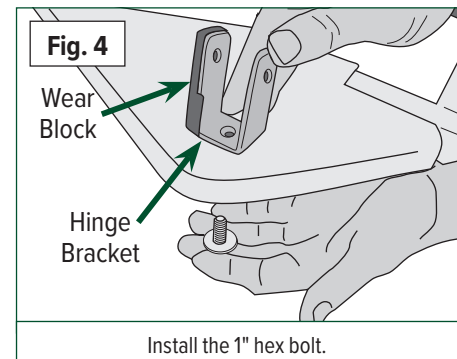
PARTS: YOU'LL NEED

- (4) Hinge Brackets with Plastic Wear Blocks
- (2) 5/16 x 1" Bolts (from the Extender Bracket box)
- (2) 5/16" Nylon Lock Nuts (from the Extender Bracket box)
- (2) 5/16 x 1.75" Bolts
- (2) 5/16" Nylon Lock Nuts

TOOLS YOU'LL NEED:

- (2) 1/2" Box wrenches or sockets

1. **(Fig. 4)** Bolt one of the Hinge Brackets onto the Extender Bracket using a 5/16 x 1" bolt, washer and nylon lock nut provided in the **Extender Bracket hardware bag**. Install the bolt and washer up from the bottom.
2. **(Fig. 4)** Repeat on the other Extender Bracket.
3. **(Fig. 5)** Move to the front of the frame and bolt the hinge brackets onto both sides of the frame using the 5/16 x 1.75" bolts, washers and nylon lock nuts provided in **Bag "B"**. Install the bolt and washer up from the bottom.





ASSEMBLING & INSTALLING THE SIDE TUBES

PARTS YOU'LL NEED:

- Collector Bag
- (6) Side Tube Sections
- (2) Side Tube Insertion Plugs
- Completed Collector Frame with Hinge Brackets attached

ASSEMBLING THE SIDE TUBES

You will be assembling 2 Side Tubes. There are 3 sections for each Side Tube.

1. **(Fig. 6)** Take the straight section of the side tube and locate both swaged ends. Insert one swaged end of the straight section into one of the bent legs.
2. **(Fig. 7)** Make sure the snap buttons on the straight section align with the holes on the bent leg. You should hear a “click” sound when the two pieces are connected properly. Repeat with the other bent leg on the other end.
3. Repeat with the second Side Tube.

INSTALLING THE SIDE TUBES

1. **(Fig. 8)** Place the Collector Bag onto the Collector Frame with the round Bag Collar facing the side with the Side Links and opposite the Extender Brackets.

INSTALLATION NOTE: *There is a label on the Support Grid that says “Front”.*

2. **(Fig. 9)** Place the plastic Side Tube Insertion Plugs into both ends of one Side Tube.
3. **(Fig. 10)** Slide the side tube into the pockets on the Collector Bag. Slide the tube evenly for least resistance.
4. **(Fig. 11)** When side tube is completely inserted, remove the plugs and secure the upper Velcro flap.

NOTE: *The Velcro strap should completely cover the Velcro strip on the collector bag.*

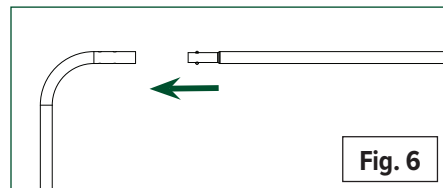


Fig. 6

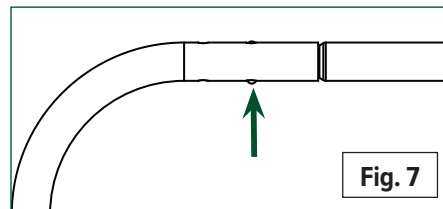


Fig. 7

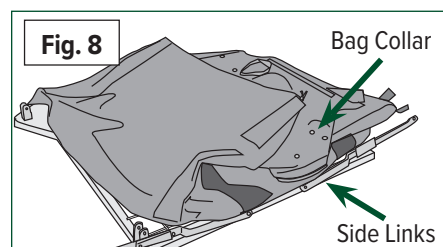


Fig. 8

Bag Collar

Side Links

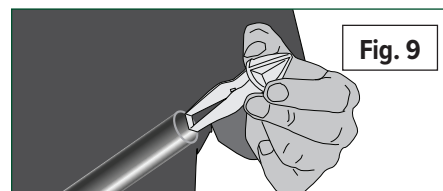


Fig. 9

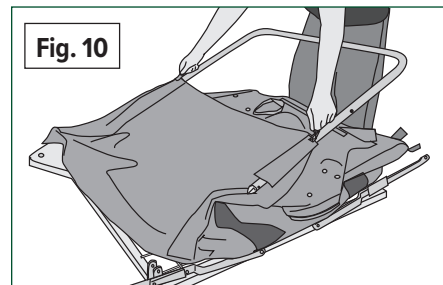


Fig. 10

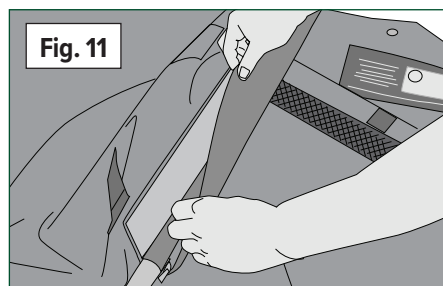


Fig. 11

ATTACHING THE SIDE TUBES TO THE HINGE BRACKETS

There are 4 sets of bolts and lock nuts. One set for each Hinge Bracket in the **bag labeled "C"** in the hardware box.

PARTS YOU'LL NEED:

- (4) 1/4-20 x 1.75" Bolts
- (4) 1/4" Lock Nuts

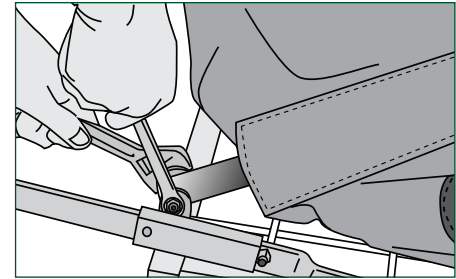
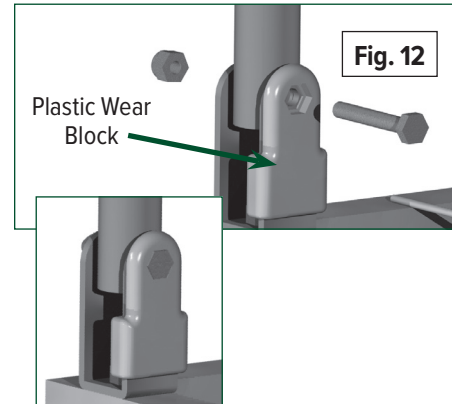
TOOLS YOU'LL NEED:

- (2) 7/16" Box wrenches or sockets

1. **(Fig. 12)** Start on either side of the Collector Frame. Slide one of the ends of the side tube into the hinge bracket and secure with the 1.75" Bolt and lock nut.
2. Repeat on the other end of the same side tube.

INSTALLATION NOTE: *Do not over-tighten the bolts. The Side Tube must be free to rotate in the hinge bracket. It's also important the bolt heads sit flush with plastic wear block.*

3. Install the other side tube the same way.



ATTACHING THE SIDE LINKS TO THE SIDE TUBES

There are 2 sets of Plastic Spacers, bolts and lock nuts located in the **bag labeled "D"** in the hardware box.

PARTS YOU'LL NEED:

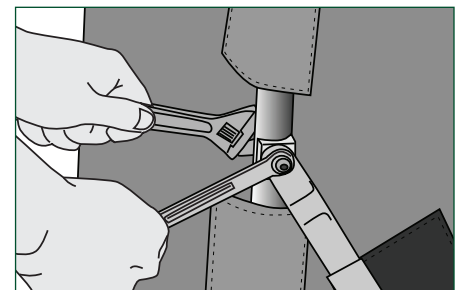
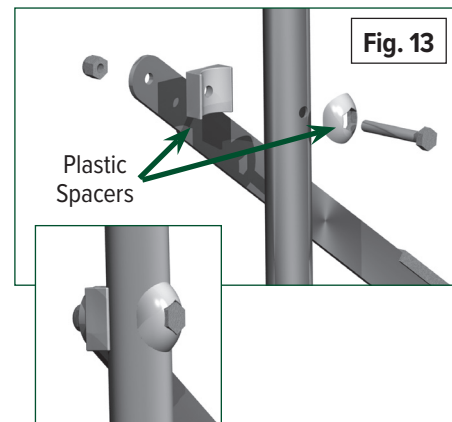
- (2) Set of Plastic Spacers
- (2) 1/4-20 x 1.75" Bolts
- (2) 1/4" Lock Nuts

TOOLS YOU'LL NEED:

- (2) 7/16" Box wrenches or sockets

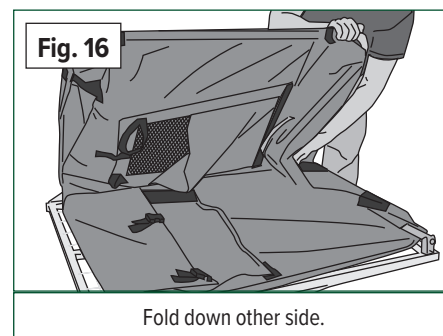
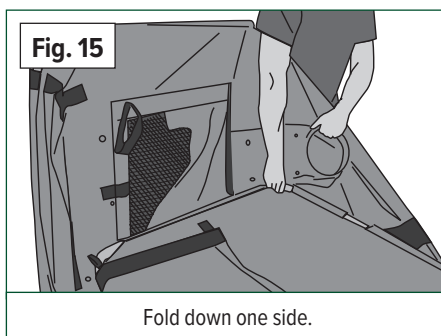
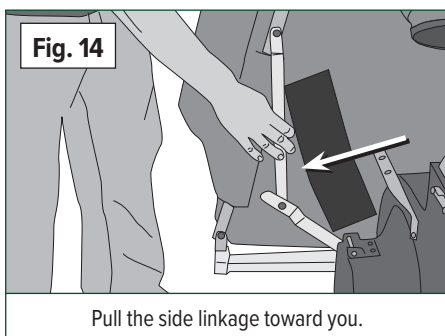
1. At the front of the Collector Frame, lift the end of one of the Side Links up to the hole in the center of the side tube.
2. **(Fig. 13)** Install one of the sets of plastic spacers with the square one in front of the side tube and the round one in back. Secure with the 1.75" Bolt and nylon lock nut as shown.
3. Repeat with the other Side Link.

INSTALLATION NOTE: *It is important that the bolt heads be placed on the inside of the frame (facing the collector bag). (Fig. 13) The bolt heads must sit flush with plastic spacers.*





FOLDING UP THE COLLECTOR BAG



1. (Fig. 14) Starting on either side, release only one side linkage. **Pull the link elbow toward you**, so it points to the outside of the frame.
2. (Fig. 15) Pull the bag collar out of the way and push the aluminum side tube all the way down. Push on both ends of the side tube until the first side lies completely flat on the frame.
3. (Fig. 16) Release the other side linkage, **pulling the elbow toward the outside of the frame**. Fold the side tube all the way down. As you reach the bottom, adjust the bag collar so it lies flat as you push the side of the collector down.
4. Secure the collector with the green shock cord.

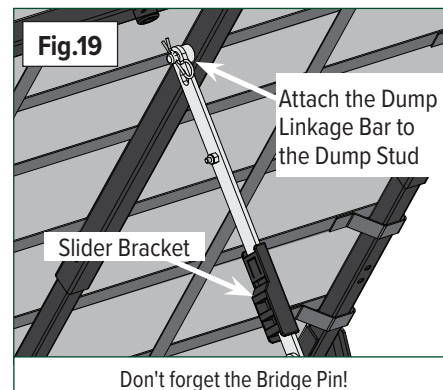
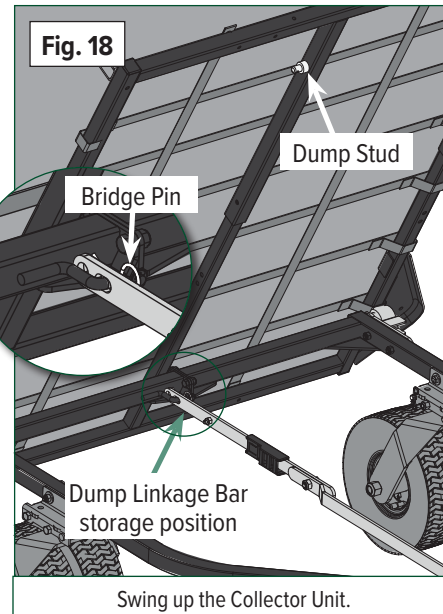
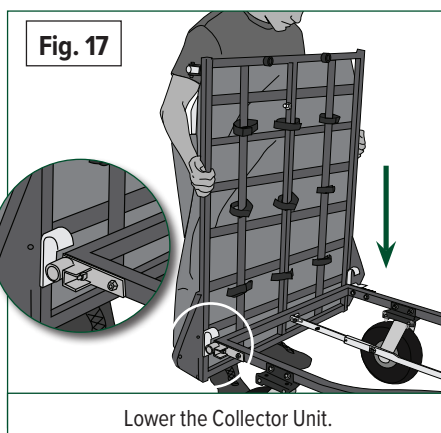
Note: You may also need to adjust the backend of the Collector Bag.



INSTALLING THE COLLECTOR UNIT

The **Collector Unit** is engineered to be easily installed and removed from the chassis without any tools.

1. (Fig. 17) Lift and hold it vertically so that the J-hooks are at the bottom. Lower the J-hooks onto the round tubes of the hinge blocks at the back of the Chassis.
2. (Fig. 18) With the Collector Unit in the upright position, locate the dump linkage bar on the chassis. The dump linkage bar comes attached to the chassis and is secured with a bridge pin. It lies this way when you store the Cyclone Rake with the collector removed. Remove the bridge pin to release the dump linkage bar.
3. (Fig. 19) Attach the dump linkage bar onto the large dump stud on the underside of the collector frame. Push the bridge pin through the hole in the dump stud to secure the dump linkage bar.
4. Fasten any loose Velcro® straps that secure the collector bag to the collector frame.
5. To lower the Collector Unit onto the Chassis, move the slider bracket up to release the lock. As you lower the collector, the linkage bar will fold neatly underneath.

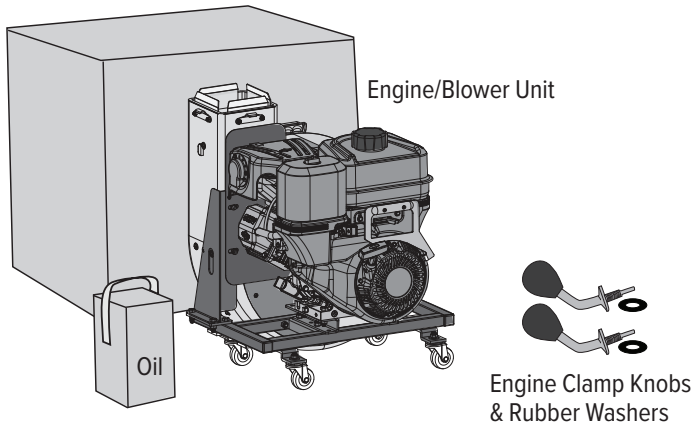


CHAPTER 4

INSTALLING THE PULL-START ENGINE



The **Pull-Start Engine/Blower Unit** is on its own chassis with wheels. It's located in the box labeled **Blower Unit**.



CAUTION!
The Engine/Blower Unit is heavy. You may need assistance removing it from the box and lining it up on the chassis.

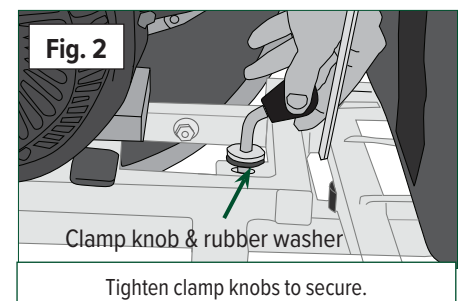
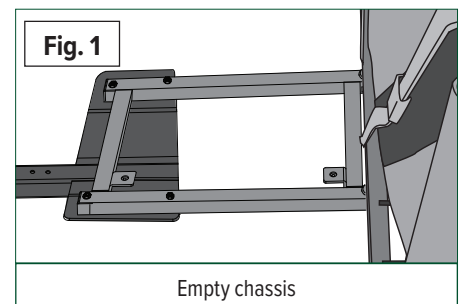
4

PARTS YOU'LL NEED:

- Engine Blower Unit
- Engine Clamp Knobs and Rubber Washers
- Engine Oil

INSTALLATION NOTE: *Locate the two engine clamp knobs and rubber washers you removed from beneath the Chassis or Skin board.*

1. **(Fig. 1)** Remove the Engine/Blower Unit using the handles on each side and position it on the Chassis in front of the Collector. Make sure the blower inlet is facing the same direction as your mower's discharge chute.
2. **(Fig. 2)** Line up the mounting brackets on the front and rear of the Engine/Blower Unit, over the threaded holes in the chassis. Install one rubber washer on each clamp knob then securely clamp the engine to the chassis by screwing the engine clamp knobs through the holes.



WARNING!

Do not start the engine now! The engine contains **NO Oil or Gasoline** and you have not completed the assembly of your Cyclone Rake.

FILLING THE PULL-START ENGINES WITH OIL

OIL CAPACITY:

- XR950-PRO: 18-20 oz. • Vanguard 6.5HP VG200: 18-20 oz.
- Vanguard 10HP 19L: 26-28 oz.

NOTE: The oil refill amounts are slightly lower than total oil capacity due to residual oil left in the engine during the testing process.



XR950-PRO & VANGUARD 10HP 19L ENGINES

IMPORTANT: Do not use the dipstick on the Butterfly Plug to measure when filling the engine oil. It is hard to read when the oil is new, and you might over or under fill, resulting in engine damage. Instead, use this simple procedure:

1. **(Fig. 3)** There are two YELLOW plastic “butterfly” plugs at the base of the engine. Remove one of the plugs and place a rag under the opening to catch any spilled oil.
2. **(Fig. 4)** Using a small funnel, slowly pour oil into the opening *until the oil reaches the bottom edge of the butterfly hole.* (See chart above for recommended oils.)
3. Replace the butterfly plug and **tighten firmly by hand.** Do not use a wrench or pliers as you might break the plug. Wipe up any spilled oil.



VANGUARD 6.5 HP VG200 ENGINE

IMPORTANT: Do not use the large dipstick (Fig. 5) or the large yellow plastic “butterfly” cap (Fig. 6) to measure when filling the engine oil. It is hard to read when the oil is new, and you might over or under fill, resulting in engine damage. Instead, use this simple procedure.

1. **(Fig. 3)** There are two YELLOW plastic “butterfly” plugs at the base of the engine. Remove one of the plugs and place a rag under the opening to catch any spilled oil.
2. **(Fig. 4)** Using a small funnel, slowly pour oil into the opening *until the oil reaches the bottom edge of the butterfly hole.* (See chart above for recommended oils.)
3. Replace the butterfly plug and **tighten firmly by hand.** Do not use a wrench or pliers as you might break the plug. Wipe up any spilled oil.

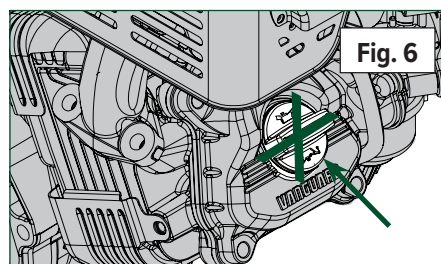
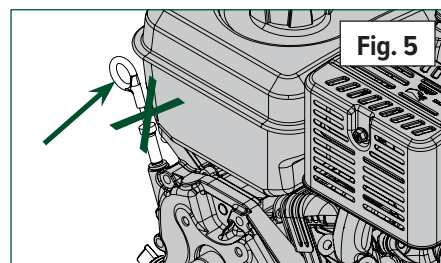
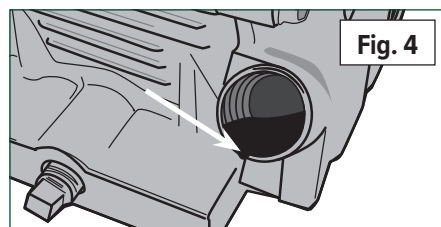
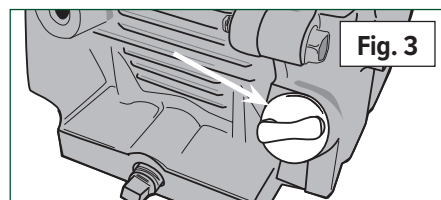
All pull-start engine owners please proceed to Chapter 6: Installing The Mower Deck Hose to complete your Cyclone Rake installation.

Recommended Oil Chart

The oil should be marked A.P.I. service “SF,” “SG,” “SH,” “SJ” or higher.

Air Temperature	Type of Oil
Above 32° F	SAE 30 or SAE 10W30 oil
Below 32° F	SAE 5W30 oil

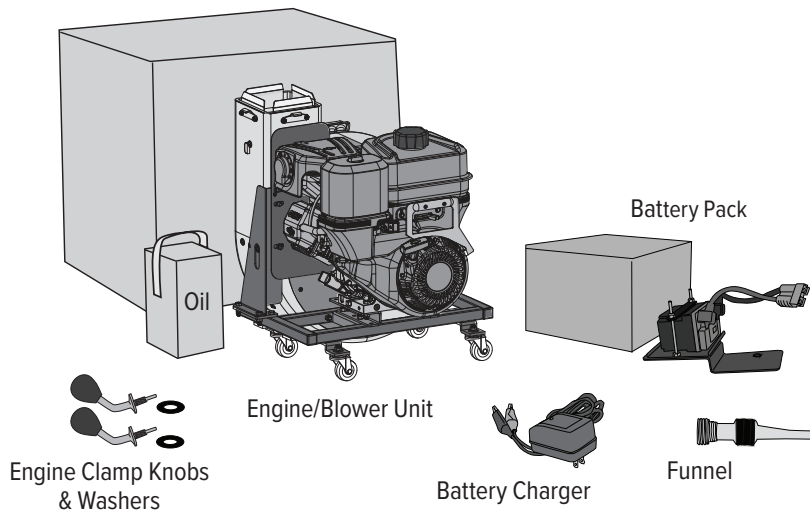
If synthetic oil is preferred 5W-30 is good in all temps.
SAE 10W40 is specifically not recommended.



CHAPTER 5

ASSEMBLING & INSTALLING THE ELECTRIC START ENGINE

The Vanguard **6.5 HP VG200E** and the Vanguard **10HP 19L Electric Start Engine/Blower Units** are on their own chassis with wheels. It's located in the box labeled **Engine/Blower Unit**. The battery for the electric start engine will be in its own box labeled **Battery Pack**.



CAUTION!
The Engine/Blower Unit is heavy. You may need assistance removing it from the box and lining it up on the chassis.

5

PARTS YOU'LL NEED:

- Engine Blower Unit
- Engine Clamp Knobs and Rubber Washers
- Engine Oil
- Funnel
- Battery Pack



FILLING THE ELECTRIC START ENGINE WITH OIL

OIL CAPACITY:

- Vanguard 6.5HP VG200: 18-20 ounces
- Vanguard 10HP 19L: 26-28 ounces

IMPORTANT: Do not use the dipstick on the butterfly plug to measure when filling the engine oil. It is hard to read when the oil is new, and you might over or under fill, resulting in engine damage. Instead, use this simple procedure.

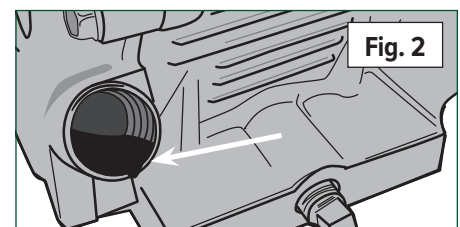
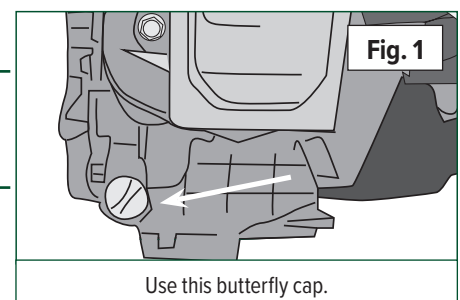
1. Remove the Engine/Blower Unit from the box using the handles on each side.
2. **(Fig. 1)** Locate the YELLOW plastic "butterfly" plug at the base of the engine, **under the exhaust deflector**.
3. Remove the YELLOW butterfly plug and place a rag under the opening to catch any spilled oil.
4. **(Fig. 2)** Using the small flexible funnel packed inside the Battery Pack box, slowly pour oil into the opening **until the oil reaches the bottom edge of the butterfly hole**. (See chart above for recommended oils.)
5. Replace the butterfly plug and **tighten firmly by hand**. Do not use a wrench or pliers, as you might break the plug. Wipe up any spilled oil.

Recommended Oil Chart

The oil should be marked A.P.I. service "SF," "SG," "SH," "SJ" or higher.

Air Temperature	Type of Oil
Above 32° F	SAE 30 or SAE 10W30 oil
Below 32° F	SAE 5W30 oil

If synthetic oil is preferred 5W-30 is good in all temps.
SAE 10W40 is specifically not recommended.





INSTALLING THE ELECTRIC START ENGINE

CAUTION!

The Engine/Blower Unit is heavy. You may need assistance removing it from the box and lining it up on the chassis.

1. (Fig. 3) Lift the Engine/Blower Unit using the handles on each side and position it on the Chassis in front of the Collector. The blower inlet faces the same direction as your mower's discharge.
2. (Fig. 4) Line up the mounting brackets on the front and rear of the Engine/Blower Unit over the threaded holes in the chassis.

INSTALLATION NOTE: Install **ONLY** the **REAR** Engine Clamp Knob with one rubber washer.

CHARGING THE LITHIUM-ION BATTERY

IMPORTANT - CHARGE FIRST: Before installing the lithium-ion battery for the first time—or after seasonal storage—fully charge it with the Cyclone Rake approved lithium-ion trickle charger (included).

*Always remove the battery from the engine/blower unit before charging. **DO NOT** charge the battery on the engine!*

1. Locate and use only the Cyclone Rake approved lithium-ion trickle charger.
2. Slide the rubber covers off the battery terminals and connect the charger's alligator clips to the terminals—**RED to RED (+), BLACK to BLACK (-)**. **DO NOT** reverse the clips. You do not need to remove the battery cable leads.
3. Plug the charger into a wall socket. The LED will be **RED** while charging and turn **GREEN** when the battery is about 95% charged. You may use the battery at **GREEN**; allow extra time to reach 100% if desired.

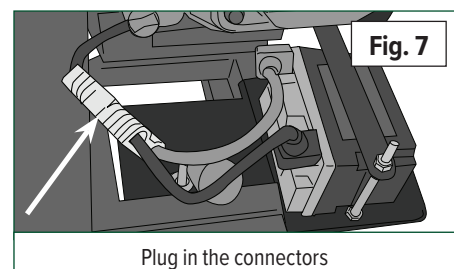
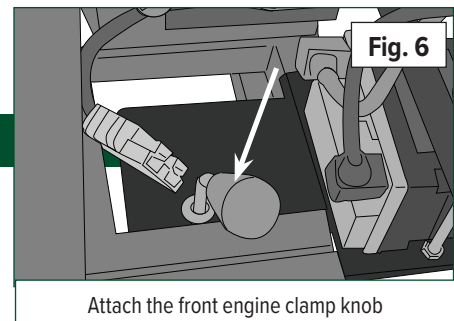
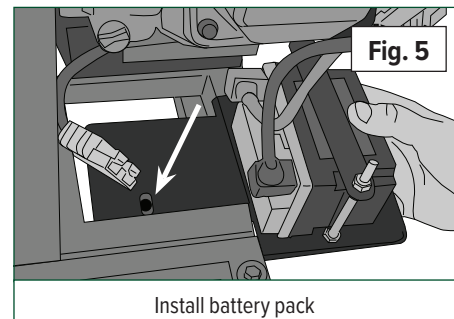
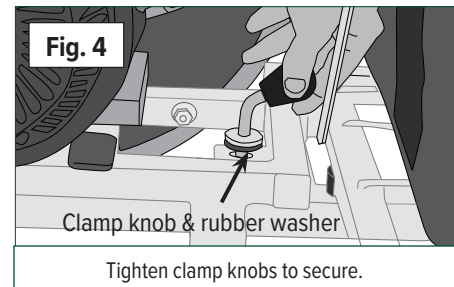
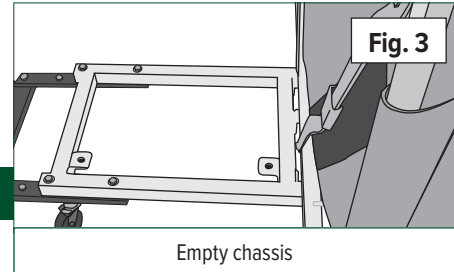
NOTE: The engine does not recharge the lithium-ion battery during use. Recharge with the supplied charger whenever cranking slows.

PERFORMANCE NOTE: A full charge typically provides up to **100 starts** in our testing in both hot and cold conditions. Actual results vary with temperature. If cranking slows, recharge with the supplied charger.

INSTALLING THE BATTERY PACK

1. (Fig. 5) Install the battery pack by **placing it on to the engine frame making sure the holes in the battery plate line up with the holes in the engine frame** as shown.
2. (Fig. 6) Install the FRONT engine clamp knob and rubber washer then tighten.
3. (Fig. 7) Plug the battery harness connector into the engine harness connector.

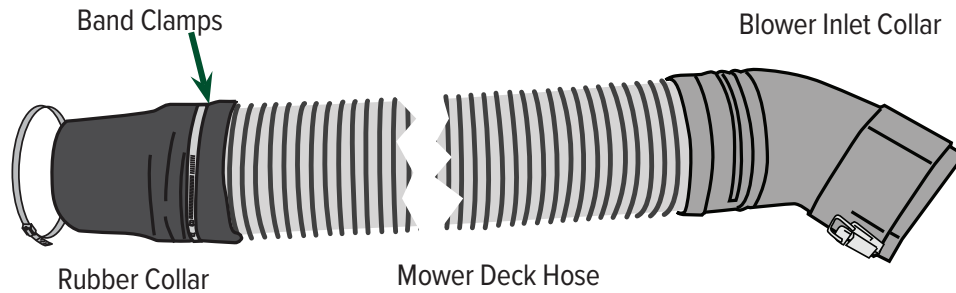
NOTE: For complete lithium-ion charging instructions, see Chapter 9: Maintenance.



CHAPTER 6

ASSEMBLING & INSTALLING THE DECK HOSE & HAMMOCK

IMPORTANT: If you purchased a Mower Deck Adapter (MDA), your mower deck hose will not have the rubber collar shown below. Please refer to the separate instruction sheet packaged with your MDA for installation instructions.



6



INSTALLATION WITH THE RUBBER COLLAR

WHERE TO FIND THE PARTS:

The **mower deck hose** is in its own box marked, **Hose**. The **rubber collar** will be in a box marked, **Rubber Collar** and the **blower inlet collar** will be packed in **Box 1**.

TOOLS YOU'LL NEED:

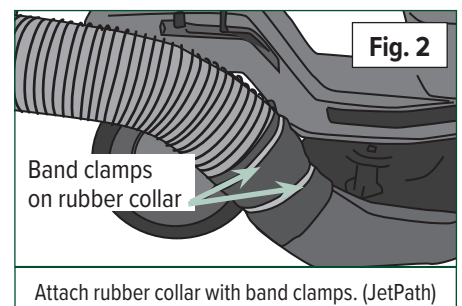
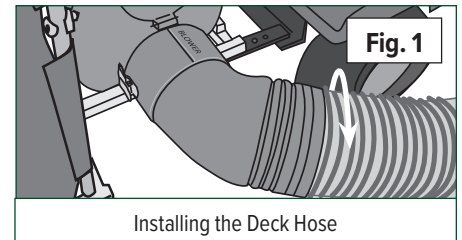
- 5/16" Nut driver or socket
- Utility knife (if you need to shorten the hose)
- Cutting pliers (if you need to shorten the hose)

1. **(Fig. 1)** Connect the curved plastic elbow marked "**BLOWER**" onto the blower intake opening and secure it with the two latches.
2. Install the deck hose by inserting it into the collar and twist it **counterclockwise** until it stops.

CONNECTING THE RUBBER COLLAR:

3. Pull the rubber collar over the other end of the deck hose and secure using one of the band clamps provided.
4. **(Fig. 2)** Next, loosely slip the other band clamp onto the grass catcher boot. Then slip the rubber collar with the deck hose over the grass catcher boot on your mower deck. Pull the band clamp over the rubber collar and tighten to secure.

INSTALLATION NOTE: Depending on your mower, the collar may slip right on—or you may need to stretch it slightly to fit.

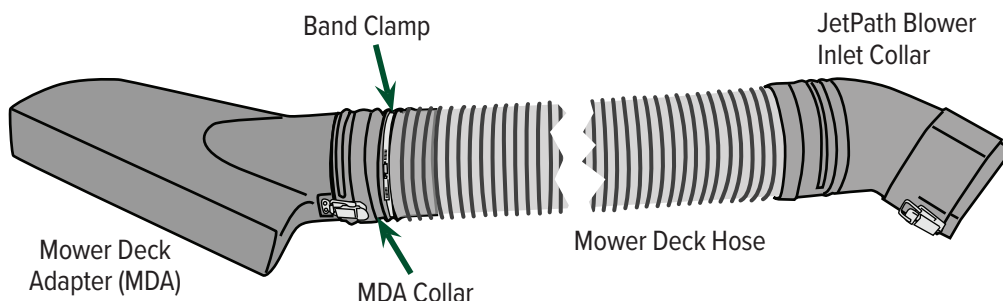


Continue to **INSTALLING THE HOSE HAMMOCK** section on page 3.



INSTALLATION WITH THE MOWER DECK ADAPTER

If you purchased the Cyclone Rake® **Mower Deck Adapter (MDA)**, it will be packed in the box labeled **Mower Deck Adapter**. Inside you will find the MDA, the MDA Collar and a band clamp. The **mower deck hose** is in its own box marked, **Hose** and the **blower inlet collar** is packed in **Box 1**.



INSTALLATION NOTE: Follow the MDA installation instructions included with your Mower Deck Adapter, then return to this manual.

6

INSTALLING THE MDA COLLAR

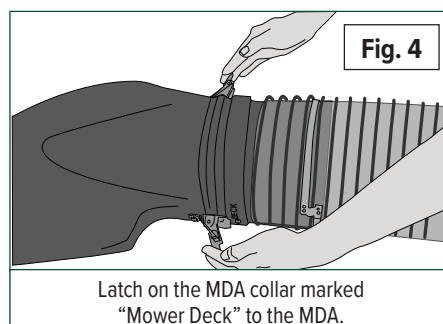
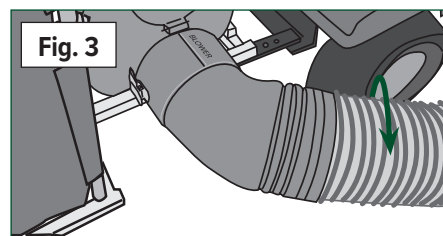
TOOLS YOU'LL NEED:

- 5/16" Nut driver or socket
- Utility knife (if you need to shorten the hose)
- Cutting pliers (if you need to shorten the hose)

1. (Fig. 3) Connect the curved plastic elbow marked **"BLOWER"** onto the blower intake opening and secure it with the two latches.
2. Install the deck hose by inserting it into the collar and twisting it in a **counterclockwise** direction until it stops.

CONNECTING THE MDA COLLAR

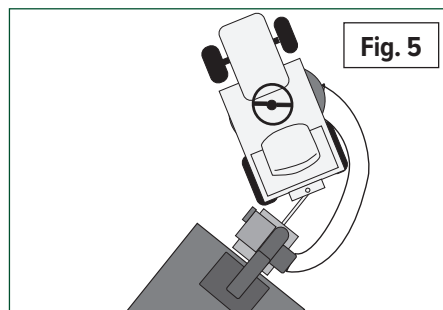
1. Insert the MDA collar, marked **"MOWER DECK"** into the other end of the mower deck hose and secure using the bridge-type band clamp provided.
2. Install your Mower Deck Adapter (MDA) on to your mower deck (if it's not already attached).
3. (Fig. 4) Connect the MDA collar to the MDA and secure with the latches.



CHECK THE HOSE LENGTH

For some mowers, the deck hose included may be too long. Follow the instructions below to determine the correct length for you tractor.

1. (Fig. 5) Turn your mower's steering wheel all the way to the left to determine the longest hose dimension needed.
2. The hose should not be sagging or touching the ground. If it is, follow the steps on the next page to shorten it to the proper length.



SHORTENING THE MOWER DECK HOSE

(IF NEEDED)

TOOLS YOU'LL NEED:

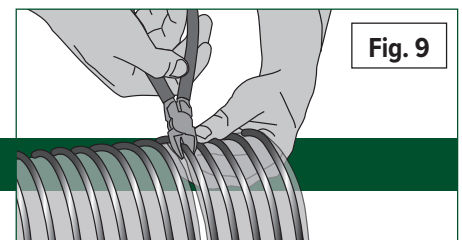
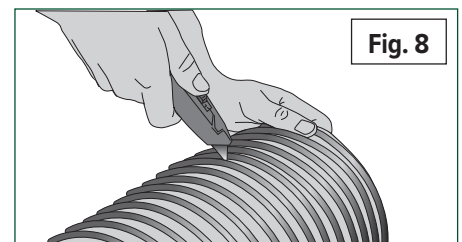
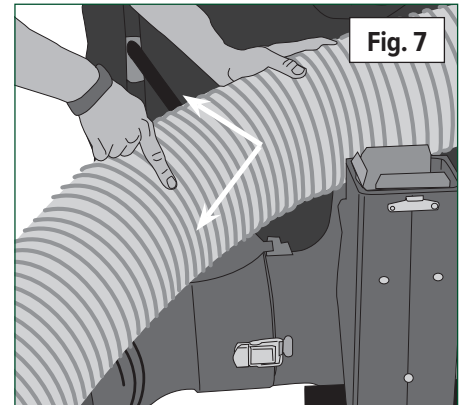
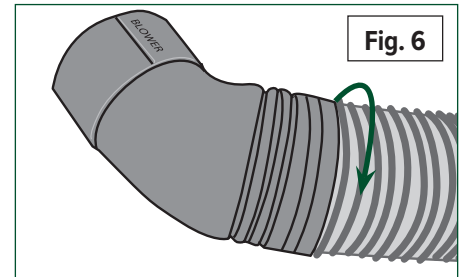
- Utility knife
- Cutting pliers

1. Unhook hose from the blower housing.
2. **(Fig. 6)** Screw the hose further into the blower collar; if this shortens the hose enough, you are done. Move on to *Installing the Hose Hammock*.

IF YOU STILL NEED TO SHORTEN THE HOSE

CAUTION: *Cut off only a few inches at a time, so you don't shorten the hose too much.*

1. **(Fig. 7)** Remove the hose from the Blower Inlet Collar and reattach the collar onto the Blower Inlet. Stretch the hose over the Blower Unit until the hose is off the ground. Look down at the Blower Collar and mark the hose where it lines up just past the threads of the collar. This is the amount of hose needed to be cut.
2. **(Fig. 8)** Puncture through the hose web with a utility knife. Roll the hose on the ground while slitting the web until you meet your cut on the other side.
3. **(Fig. 9)** Make a small cut in the reinforcing rib using a utility knife or cutting pliers, then twist to break it off.
4. Install the collar back on the hose and attach the collar to the blower housing.
5. Straighten out the tractor and Cyclone Rake.



INSTALLING THE HOSE HAMMOCK

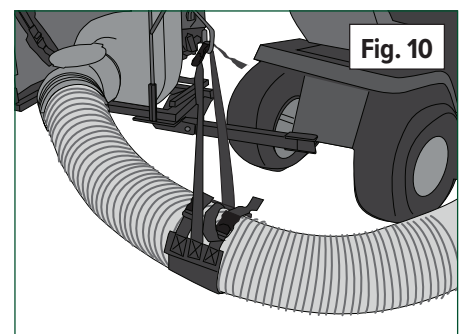
TOOLS YOU'LL NEED:

- None

1. **(Fig. 10)** Wrap the 2 shorter straps around the hose and secure both buckles. Keep the straps slightly loose so you can slide the Hammock into the best position.
2. Lift the center straps and attach them to the hose hanger.
3. Slide the Hammock along the hose until it's in a good spot to support the hose. Then tighten the shorter straps for a secure fit.

INSTALLATION NOTE:

If needed, you can move the Hex Tube and Hose Hanger from the center hole to either of the two other holes in order to get a natural curve.



CONGRATULATIONS!
YOU'VE FINISHED ASSEMBLING YOUR CYCLONE RAKE SINGLE!

CHAPTER 7

USING THE COLLECTOR BAG

This section shows how to set up the Collector Bag, dump your debris, and fold the Collector Bag up again.



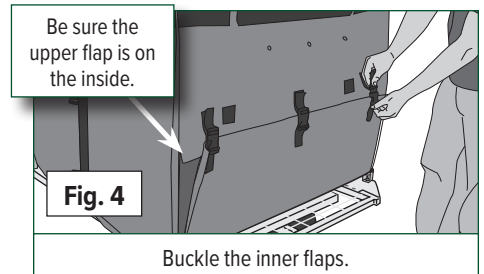
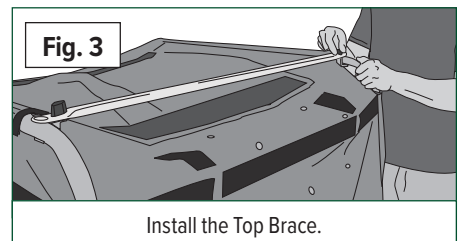
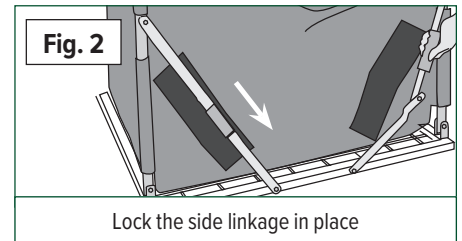
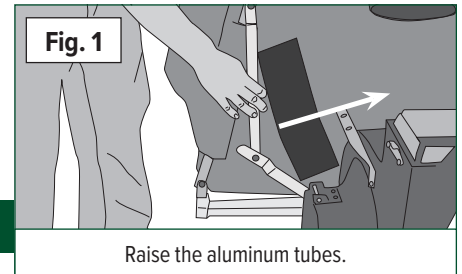
SETTING UP THE COLLECTOR

INSTALLATION NOTE: Find the Top Brace that you removed from the bottom of the Collector Frame.

1. **(Fig. 1)** Remove the green shock cord. Raise one of the aluminum side tubes by lifting the side tube and **pushing inward** on the side linkage.
2. **(Fig. 2)** Lock it in the upright position by **moving the slider bracket down** into the locked position.
3. Repeat on the other side of the collector.
4. **(Fig. 3)** **Install the Top Brace at the rear of the Collector Bag.** Position it over the two rear holes in the top of the side tubes.
5. **(Fig. 3)** Secure the Top Brace using the two attached knobs and clamp brackets.

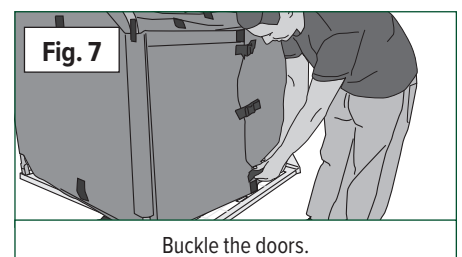
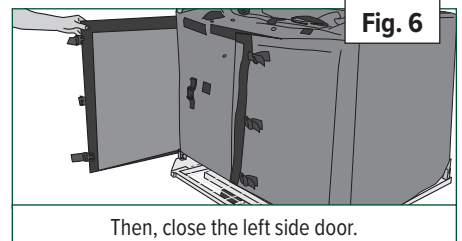
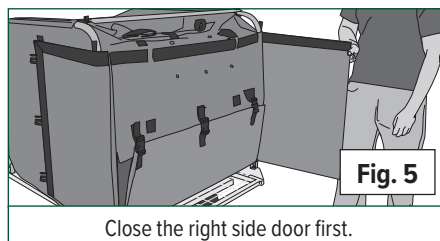
INSTALLATION NOTE: There is only one Top Brace. The second set of holes at the front is for the Roof Rack Carrier.™

ACCESSORY NOTE: If you purchased the Cyclone Rake Roof Rack Carrier, attach it now. The rear strut will replace the Top Brace and you will use the holes in the front to secure the front strut of the Roof Rack Carrier.



CLOSING THE COLLECTOR

1. **(Fig. 4)** Lift the collector's lower flap and secure the inner flaps with the buckles.
2. **(Fig. 5)** Secure the collector's outer panels. **First, pull the right door** off its Velcro® attachment and swing it across the rear. Press the Velcro on the door onto the Velcro strip across the top of the collector.
3. **(Fig. 6)** Next, close the left door and press the Velcro on the door onto the Velcro strip across the top of the collector and edge of the right door. Be sure the Velcro strips line up evenly.
4. **(Fig. 7)** Clip the three outer buckles closed to secure the panels.



INSTALLING THE EXIT CHUTE

WHERE TO FIND THE PARTS:

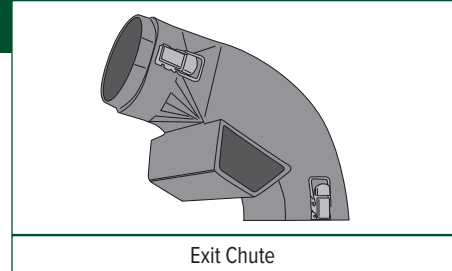
The exit chute is packed in **Box 1**.

1. **(Fig. 8)** Connect the bottom of the exit chute onto the top of the Engine/Blower Unit. Be sure all three latches are secured.

INSTALLATION NOTE: *There are only three latches on the Exit Chute and four strikes on the Blower Unit. The fourth strike is used for the Power Unloader accessory.*

2. **(Fig. 9)** Connect the collector bag collar onto the top of the exit chute using the two quick-connect latches.

Now you are almost ready to clean up your yard! But WAIT!
Before you go out and give the Cyclone Rake a test drive,
learn how to EMPTY THE COLLECTOR BAG,
FOLD IT UP FOR STORAGE and HOW TO OPERATE YOUR ENGINE.



Exit Chute

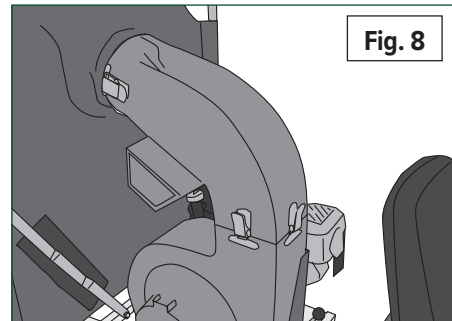


Fig. 8

Connect the exit chute onto the Engine/Blower Unit.

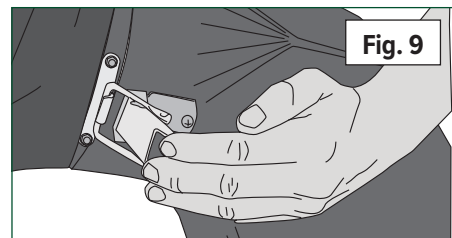


Fig. 9

Connect the bag collar onto the exit chute.

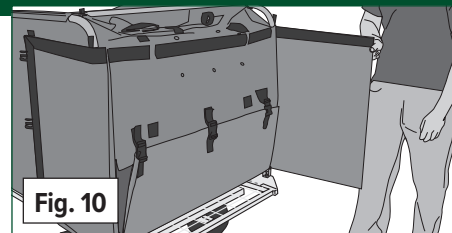


Fig. 10

Pin doors to the Velcro on the side of the bag

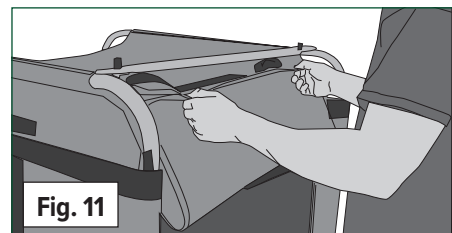


Fig. 11

Pin the upper flap.

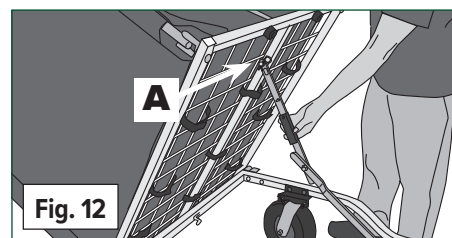


Fig. 12

Raise the Collector and lock the dump linkage.

EMPTYING THE COLLECTOR BAG

1. **(Fig. 10)** Open the three outer buckles on the rear doors. Pin the two doors back onto the Velcro® on the sides of the collector bag.
2. **(Fig. 11)** Open the inner buckles and pin the upper flap onto the Velcro strips at the top of the bag.
3. **Disconnect the bag collar from the Exit Chute!**
4. **(Fig. 12)** Raise the collector bag by lifting the front corner of the collector frame (A) and **lock the dump linkage in the up position.**

NOTE: *Do not lift the Collector Unit using the side tubes.*

5. Give the sides of the bag a little shake with your hands to loosen the contents. Then drive forward to empty the collector.

UNLOADING TIP

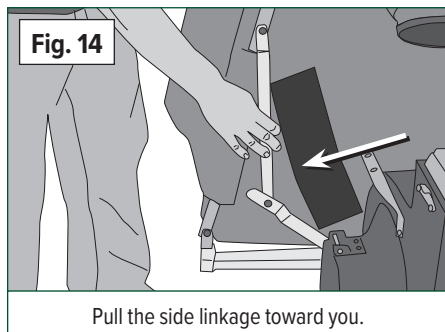
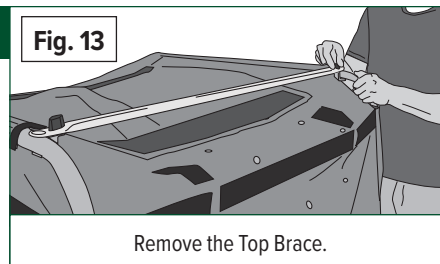
Debris can become tightly packed inside the collector unit because of the weight and the jostling caused by driving on rough ground.

- When you lift the collector unit to dump, give it a few shakes before driving forward. Another way is to give the sides of the bag a few pushes inward with your hands after you raise the collector into the dump position. This will help the debris to tumble out.
- Try not to overfill the collector bag. After some practice, you will become familiar with using the Cyclone Rake and how much you can pick up.

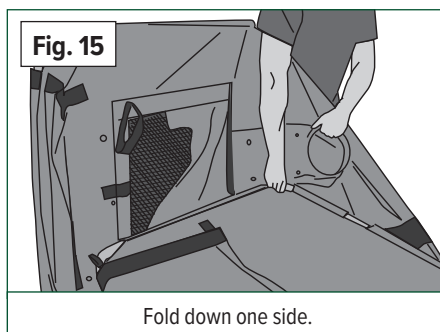


FOLDING THE COLLECTOR BAG FOR STORAGE

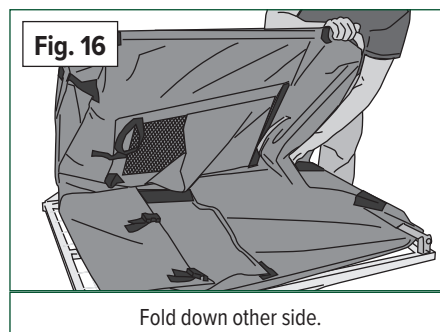
1. Open the rear collector doors. Pin the two outer doors to the sides and fold the upper flap on top and secure with the Velcro strips.
2. **(Fig. 13)** Remove the Top Brace and place inside the Collector Bag and lift the lower flap into the inside of the bag, over the top brace.



3. **(Fig. 14)** Starting on either side, release only one side linkage. ***Pull the link elbow toward you,*** so it points to the outside of the frame.



4. **(Fig. 15)** ***Pull the bag collar out of the way and push the aluminum side tube all the way down.*** Push on both ends of the side tube until the first side lies completely flat on the frame.



5. **(Fig. 16)** Release the other side linkage, ***pulling the elbow toward the outside of the frame.*** Fold the side tube down. As you reach the bottom, ***adjust the bag collar so it lies flat*** as you push the side of the collector down.
6. Secure the collector with the green shock cord.

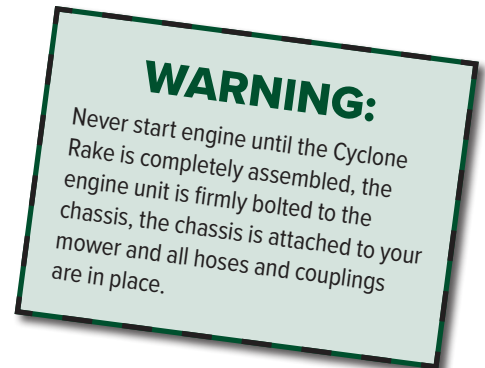
CHAPTER 8

OPERATING THE ENGINE

This section shows you the basics for starting and stopping your Briggs & Stratton Engine

IMPORTANT:

- *Be sure the engine has sufficient oil before starting.*
- *Be sure the fuel tank has only clean, fresh, unleaded regular gasoline.*
- *Be sure the gas cap is firmly secured to prevent spillage.*
- *We highly recommend adding fuel stabilizer to every tank of gas.*
- *Make sure to wipe up any gasoline spills before starting.*



OPERATING THE B&S XR950-PRO ENGINE

(CRS COMMANDER)

IMPORTANT: Always add fuel stabilizer per Briggs & Stratton's instructions. This is available at any hardware store or in our Engine Maintenance Kit. See Chapter 9: Maintenance for further details or refer to your Briggs & Stratton® Operating and Maintenance Manual.

STARTING XR950-PRO ENGINE

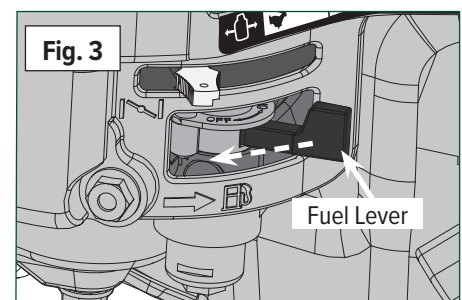
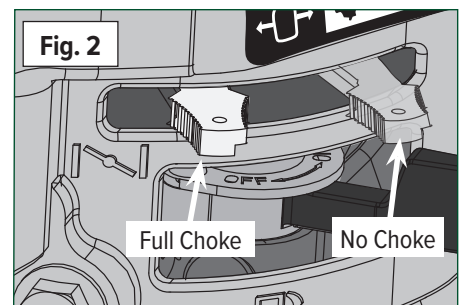
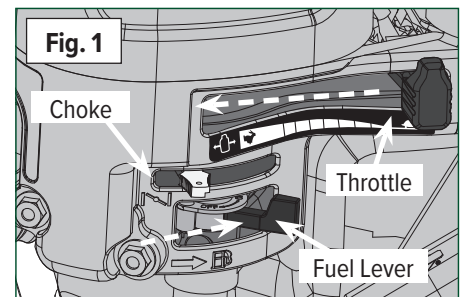
1. **(Fig. 1)** Push the black fuel lever on the front of the engine to the **"ON"** position.
2. **(Fig. 1)** Slide the throttle control lever **all the way to the left (rabbit)** for full throttle.
3. **(Fig. 2)** Move the **gray choke lever to the left, or full choke** position. Grasp the starter cord and pull slowly until you feel resistance. **Then pull rapidly.**
4. As the engine warms up, **move the choke lever right to the no choke** position.
5. The engine should always run at full throttle during use.

NOTE: When restarting a warm engine, use of the choke may not be necessary.

STOPPING THE XR950-PRO ENGINE

1. **(Fig. 3)** First, **move the throttle lever right to the slow position (turtle) for 15-30 seconds** to idle down the engine.
2. Then continue to **move the throttle lever all the way to the right ("Stop" position).**
3. After the engine stops, **move the fuel lever left to the closed position.**

For more information on your engine, refer to the Briggs & Stratton Engine Operating and Maintenance Instructions provided with your Cyclone Rake.





OPERATING THE B&S VAGUARD 6.5HP VG200

(CRS COMMANDER)

IMPORTANT:

Always add fuel stabilizer per Briggs & Stratton's instructions. This is available at any hardware store or in our Engine Maintenance Kit. See Chapter 9: Maintenance for further details or refer to your Briggs & Stratton® Operating and Maintenance Manual.

WARNING!

Never start engine until the Cyclone Rake is completely assembled, the engine unit is firmly bolted to the chassis, the chassis is attached to your mower and all hoses and couplings are in place.

STARTING 6.5HP VG200 OR VG200E ENGINE

1. **(Fig. 1)** Slide the dark gray **Throttle Control Lever** all the way to the left (**rabbit**) for full throttle.
2. **(Fig. 2)** Move the light gray **Choke Control Lever** to the left, or full choke position. Grasp the starter cord and pull slowly until you feel resistance. **Then pull rapidly.**
3. **(Fig. 2)** As the engine warms up, move the choke lever right to the **no choke** position.
4. The engine should always run at full throttle during use.

NOTE: When restarting a warm engine, use of the choke may not be necessary.

STOPPING THE 6.5HP VG200 PULL START ENGINE

1. **(Fig. 3)** Move the **Throttle Control Lever** right to the OFF/STOP position as shown.

NOTE: DO NOT choke the carburetor to stop the engine.

STARTING THE 6.5HP VG200E ELECTRIC START ENGINE

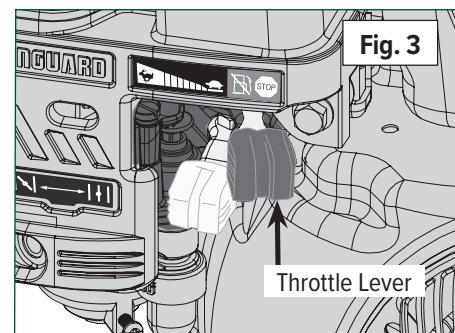
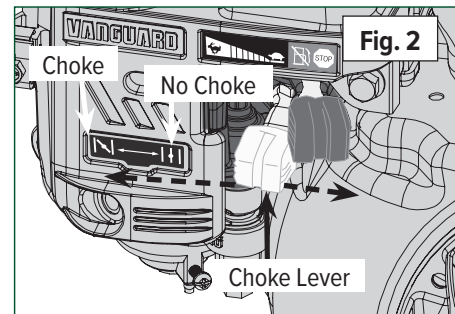
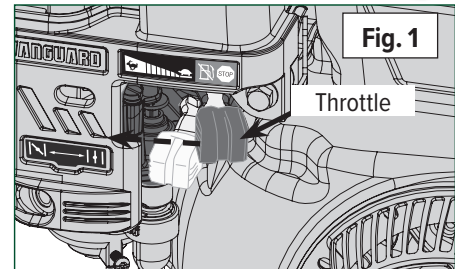
1. **(Fig. 1)** Slide the dark gray **Throttle Control Lever** all the way to the left (**rabbit**) for full throttle.
2. **(Fig. 2)** Move the light gray **Choke Control Lever** to the left, or full choke position. Turn the key.
3. As the engine warms up, move the choke lever right to the **no choke** position.
4. The engine should always run at full throttle during use.

NOTE: When restarting a warm engine, use of the choke may not be necessary.

STOPPING THE 6.5HP VG200E ELECTRIC START ENGINE

1. **(Fig. 3)** To stop the engine, move the **Throttle Control Lever** right to the OFF/STOP position as shown.
2. Then remove the key.

For more information on your engine, refer to the Briggs & Stratton Engine Operating and Maintenance Instructions provided with your Cyclone Rake.



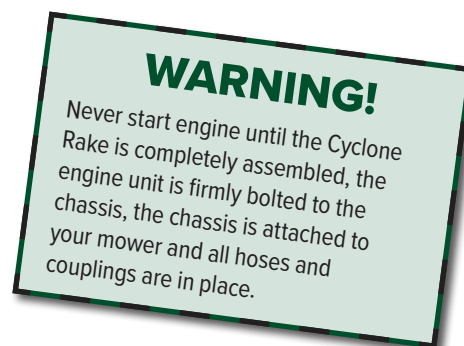


OPERATING THE B&S VANGUARD 10HP 19L ENGINE

(CRS XL SUPER)

IMPORTANT:

Always add fuel stabilizer per Briggs & Stratton's instructions. This is available at any hardware store or in our Engine Maintenance Kit. See Chapter 9: Maintenance for further details or refer to your Briggs & Stratton® Operating and Maintenance Manual.



STARTING THE PULL-START ENGINE

1. **(Fig. 1)** Push the red fuel lever on the front of the engine to the right. The **"ON" position**.
2. **(Fig. 1)** Slide the throttle control lever **all the way to the right (rabbit)** for full throttle.
3. **(Fig. 2)** Move the gray choke lever to the **left, or full choke position**. Grasp the starter cord and pull slowly until you feel resistance. Then **pull rapidly**.
4. As the engine warms up, **move the choke lever right to the no choke position**.
5. The engine should always run at full throttle during use.

NOTE: When restarting a warm engine, use of the choke may not be necessary.

STOPPING THE PULL-START ENGINE

1. **(Fig. 3)** To stop the engine, idle down your engine using the throttle lever **(Fig. 1)** for 15-30 seconds, before moving the red fuel shut-off lever to the **"OFF" position**.

STARTING THE ELECTRIC START ENGINE

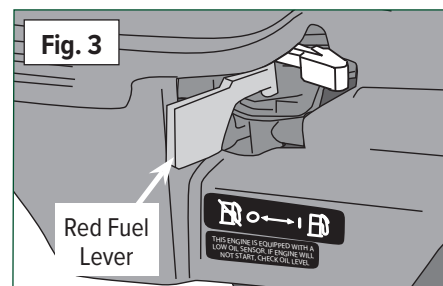
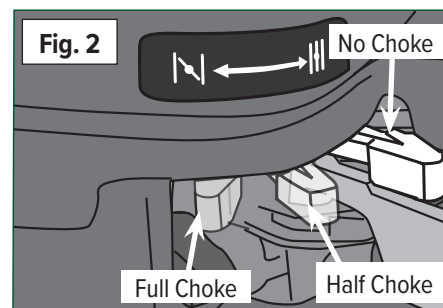
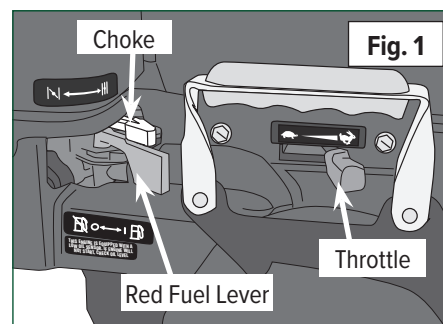
1. **(Fig. 1)** Push the red fuel lever on the front of the engine to the right to the **"ON" position**.
2. **(Fig. 1)** Slide the throttle control lever **all the way to the right (rabbit)** for full throttle.
3. **(Fig. 2)** Move the gray choke lever to the **left, or full choke position**. Turn the key.
4. As the engine warms up, move the choke lever right to the **no choke position**.
5. The engine should always run at full throttle during use.

NOTE: When restarting a warm engine, use of the choke may not be necessary.

STOPPING THE ELECTRIC START ENGINE

1. **(Fig. 3)** To stop the engine, idle down your engine using the throttle lever **(Fig. 1)** for 15-30 seconds, before moving the red fuel shut-off lever to the **"OFF" position**.
2. Then remove the key.

For more information on your engine, refer to the Briggs & Stratton Engine Operating and Maintenance Instructions provided with your Cyclone Rake.



CHAPTER 9

MAINTENANCE

PROTECT YOUR INVESTMENT— PLEASE READ CAREFULLY

Your Cyclone Rake Single is fully warrantied against defects in materials and workmanship for a period of three years on our Premium Models (XL) and two years for our Performance Edition Model (Commander) from date of delivery for home use and one year for commercial use. It's very similar to a new car warranty. If we did anything wrong in building your Cyclone Rake, we will fix it. The owner is responsible for routine maintenance including oil changes, air filters and spark plugs.

NOTE: *Our Engine Maintenance Kit includes everything you need: air filter, oil, spark plug, spark plug wrench, fuel stabilizer, funnel, and shop towel. Order online or by phone.*

WHAT'S NOT COVERED

Just like your new car warranty, you are **not covered for collision damage, accidents, abuse, improper storage or failure to perform basic maintenance**, like changing the engine oil, spark plug and air filter. Good news: There should be no need for out-of-warranty service if you follow these simple guidelines.

ENGINE MAINTENANCE

Your engine is the most costly component of your Cyclone Rake. To maintain your warranty and to ensure long life, you must do five things:

- *Change the engine oil after the first 5 hours of operation.*
- *Change the engine oil every 20 operating hours.*
- *Always add fuel stabilizer per Briggs & Stratton's instructions.*
- *Change or clean the air filter at least annually, and never run the engine without the air filter.*
- *Change the spark plug annually.*

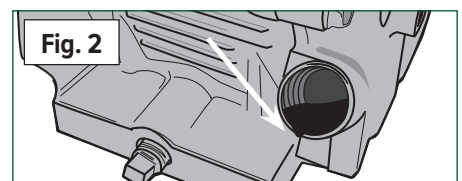
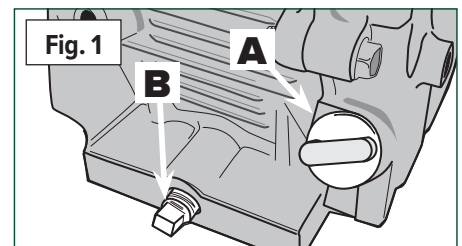


CHANGING THE ENGINE OIL:

XR950-PRO & VANGUARD 10HP 19L ENGINE

(PULL OR ELECTRIC START)

1. **(Fig. 1A)** There are two **YELLOW** plastic "butterfly" plugs at the base of the. Remove either one.
2. **(Fig. 1B)** Place a shallow pan under the engine and remove the metal drain plug. Drain until the oil flow stops.
3. Replace drain plug and **tighten firmly**.
4. Place a rag under the butterfly cap opening
5. **(Fig. 2)** Using a small funnel, slowly pour oil into the opening **until the oil reaches the bottom edge of the butterfly hole**.
6. Replace the butterfly plug and **tighten firmly by hand**. Wipe up any spilled oil.
7. Oil capacity is approximately **18-20 ounces for the XR950-PRO**, and **26-28 ounces for the 10HP 19L engines**.





VANGUARD 6.5HP VG200 ENGINE

(PULL OR ELECTRIC START)

1. With engine off, disconnect the spark plug wire and keep it away from the spark plug.
2. **(Fig. 1)** Locate the **YELLOW dipstick** on the side of the engine.
Remove the dipstick and wipe with a clean cloth.
3. **(Fig. 2)** There are two drain plugs on either side of the engine's base. Remove either one.
4. Place a shallow pan under the engine and remove the drain plug.
Drain until the oil flow stops.
5. After the oil has drained, install and tighten the oil drain plug, wipe up any spilled oil, and replace the dipstick.

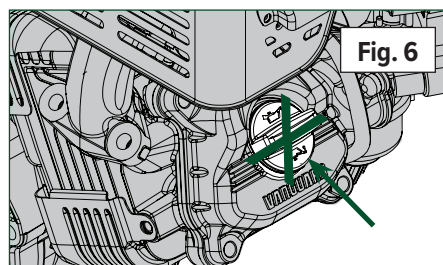
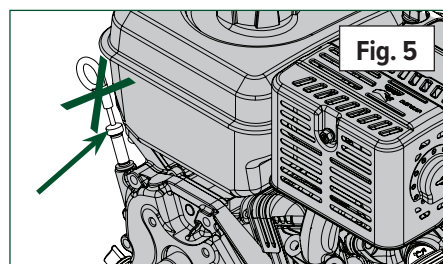
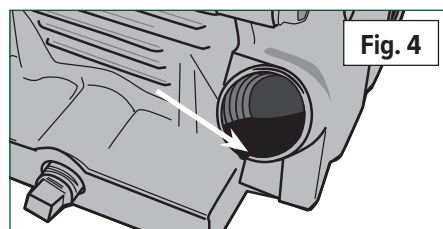
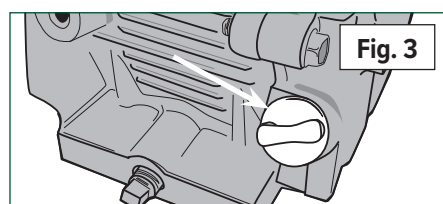
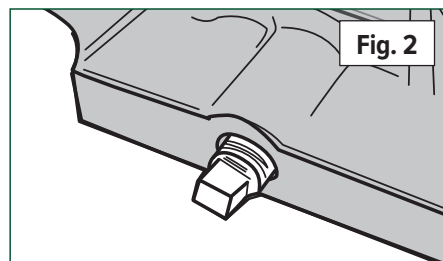
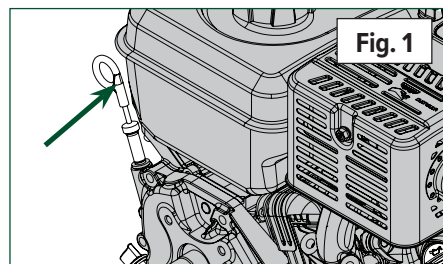
NOTE: Before you begin adding new oil:

- Make sure the engine is level.
- Clean the oil fill area of any debris.

IMPORTANT: DO NOT use the large dipstick (Fig. 5) or the large yellow plastic “butterfly” cap (Fig. 6) to measure when filling the engine oil. It's hard to read when the oil is new, and you might over or under fill the engine, resulting in damage. Instead, use this simple procedure:

6. **(Fig. 3)** There are two YELLOW plastic “butterfly” plugs at the base of the engine. Remove one of the plugs and place a rag under the opening to catch any spilled oil.
7. **(Fig. 4)** Using a small funnel, slowly pour oil into the opening **until the oil reaches the bottom edge of the butterfly hole**. (See chart below for recommended oils.)
8. Replace the butterfly plug and **tighten firmly by hand**. Do not use a wrench or pliers as you might break the plug. Wipe up any spilled oil.

NOTE: Oil capacity is approximately 18-20 ounces for the 6.5HP VG200 engines.



Recommended Oil Chart

The oil should be marked A.P.I. service “SF,” “SG,” “SH,” “SJ” or higher.

Air Temperature	Type of Oil
Above 32° F	SAE 30 or SAE 10W30 oil
Below 32° F	SAE 5W30 oil

If synthetic oil is preferred 5W-30 is good in all temps.
SAE 10W40 is specifically not recommended.

CHANGING THE AIR FILTER

Like oil changes, we recommend an air filter inspection every 20 hours of operation. Regular inspection and replacement will ensure full engine power and prolong engine life.

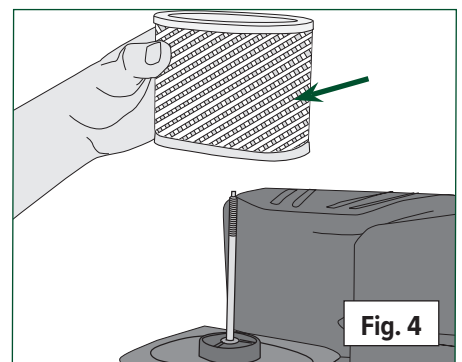
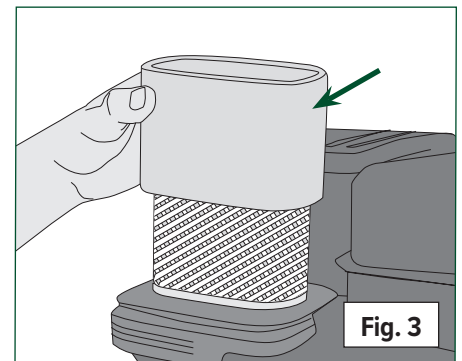
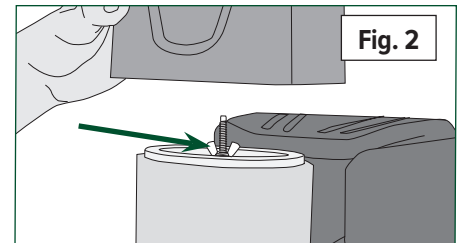
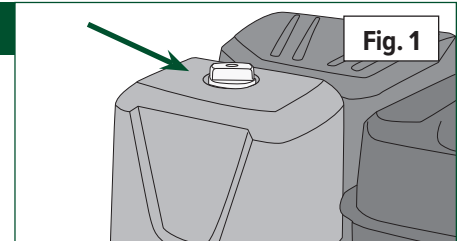
NOTE: NEVER run your engine without an air filter. This will void your warranty!



XR950-PRO & VANGUARD 10HP 19L ENGINES

(PULL OR ELECTRIC START)

1. **(Fig. 1)** Unscrew the knob at the top of the air filter housing.
2. **(Fig. 2)** Lift the housing to expose the air filter.
3. **(Fig. 2)** Remove the wing nut that secures the filter to the housing.
4. **(Fig. 3)** Remove the foam pre-filter.
5. **(Fig. 4)** Remove the filter. Loosen the debris by gently tapping the filter on a hard surface. If the filter is excessively dirty, replace it with a new filter.
6. Wash the pre-filter in liquid detergent and water. Squeeze dry in a clean cloth. Allow it to air dry thoroughly. **Do not oil the pre-filter.**
7. Place the dry pre-filter over the air filter, place them onto the threaded rod and secure with the wing nut.
8. Replace the filter housing and secure with the plastic knob.



9

VANGUARD 6.5HP VG200 ENGINES

(PULL OR ELECTRIC START)

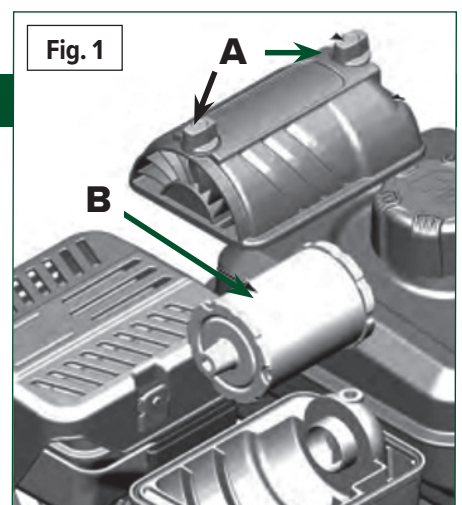
1. **(Fig. 1A)** Unscrew the two knobs at the top of the air filter housing.
2. **(Fig. 1B)** Lift the housing to expose the air filter.
3. Remove the old filter.
4. Loosen debris by gently tapping the filter on a hard surface. If the filter is excessively dirty, replace it with a new filter.
5. Install the air filter.
6. Replace the filter housing and tightly secure both knobs.



REPLACING THE SPARK PLUG

(ALL ENGINES)

We recommend replacement once a year. Replace with **Bosch FR8DCX** spark plug or equivalent. The spark plug gap should be 0.030.





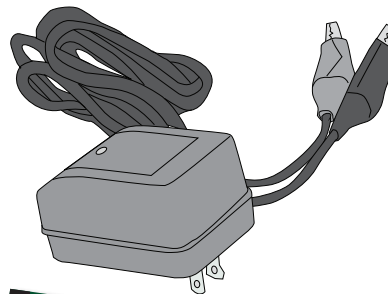
CHARGING THE ELECTRIC START LITHIUM-ION BATTERY

When you are not using the Cyclone Rake for extended periods (say a month or more), it is very important to connect the battery charger. Failure to do so may result in a dead and unchargeable battery.

WHERE TO FIND THE PARTS:

If you purchased the **Briggs & Stratton® Vanguard™ Electric Start Engine**, the **Battery Charger** will be packed in the Battery Pack Box.

IMPORTANT: Use only the Cyclone Rake approved lithium-ion trickle charger supplied with your unit. It is designed for this battery and maintains charge without over-charging.



WARNING!

DO NOT attempt to start the engine with the charger attached. You will destroy the charger!

USING THE BATTERY CHARGER

IMPORTANT Always remove the battery from the engine/blower unit before charging. **DO NOT** charge the battery on the engine!

1. Carefully unplug the gray cable connector from the battery harness and remove the battery pack from the Cyclone Rake. **Always charge the battery off the engine/blower unit.**

NOTE: DO NOT PULL ON THE BATTERY CABLES!
Separate the cables while holding the connectors.

2. Slide the rubber covers off the battery terminals and connect the charger's alligator clips to the terminals—**RED to RED (+), BLACK to BLACK (-).** **DO NOT** reverse the clips. You do not need to remove the battery cable leads.
3. Plug the charger into a wall socket. The LED will be **RED** while charging and turn **GREEN** when the battery is about 95% charged. You may use the battery at GREEN; allow extra time to reach 100% if desired.

NOTE: The engine does not recharge the lithium-ion battery during use. Recharge with the supplied charger whenever cranking slows.

PERFORMANCE NOTE: A full charge typically provides up to **100 starts** in our testing in both hot and cold conditions. Actual results vary with temperature. If cranking slows, recharge with the supplied charger.

BEST PRACTICES

- Charge in a dry, well-ventilated area away from gasoline, solvents, or open flame.
- Inspect cables and clips before use. Do not use if insulation is damaged.
- If the battery was stored in very cold conditions, allow it to warm to room temperature before charging for best performance.
- Keep terminal covers on when not charging to prevent accidental contact.

GENERAL MAINTENANCE

CHECK WEAR STRIPS IN THE COLLECTOR BAG

Your Cyclone Rake collector bag has two replaceable vinyl wear strips. One wear strip is positioned inside the bag collar (**Fig. 1**). The second is located at the rear of the collector, behind the top screen (**Fig. 2**). Inspect them each time you set up your machine for use. Replace them if they are worn through or show signs of heavy abrasion. They mount easily with metal snaps.

CHECK BOLTS & FITTINGS

The Cyclone Rake is subject to strong vibrations during operation. Take a few seconds each time you set up to check that all bolts and fittings are tight. If anything has loosened, tighten it. If you sense unusual vibration when operating, immediately stop both engines and check things out. This is particularly important the first few times you use your Cyclone Rake.

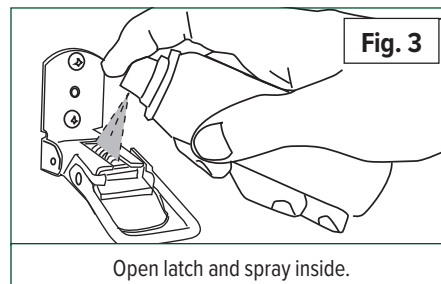
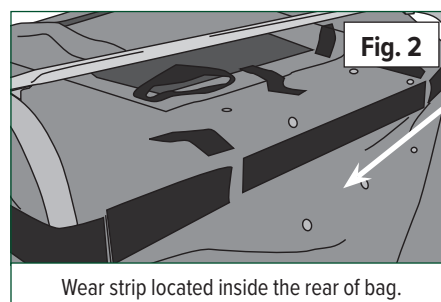
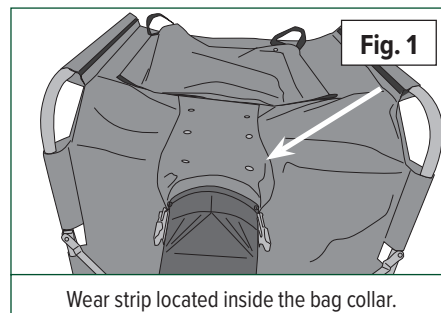
MAINTAINING THE LATCHES

(**Fig. 3**) WOpen each latch and spray a quick burst of lubricant inside. We recommend lubricating all your Cyclone Rake latches with WD-40 every six months.

NOTE: *One quick spray is sufficient. Do not over lubricate.*

CLEANING THE TOP SCREEN

The top screen on the collector bag should be kept clear for proper venting. Brush it occasionally with a stiff bristle brush. A long handle nylon brush is the best tool. It's a good idea to brush the underside of the screen as well.



STORING YOUR CYCLONE RAKE SINGLE

NOTE: *We recommend adding fuel stabilizer, per manufacturers instructions, to your storage container each time you refill at the gas station.*

SHORT TERM STORAGE

Do not store the Cyclone Rake outdoors for extended periods. House it, like any good equipment, in a dry sheltered place. If possible, find a heated, indoor spot.

LONG TERM STORAGE

Fuel can become stale when stored over 30 days. Stale fuel causes acid and gum deposits in the fuel system or essential carburetor parts. To keep fuel fresh, **always add fuel stabilizer per Briggs & Stratton's instructions. This is available at any hardware store or in our Engine Maintenance Kit.** There is no need to drain gasoline from the engine if a fuel stabilizer is added. Run the engine for two minutes to circulate the stabilizer throughout the fuel system before storage. If gasoline in the engine has not been treated with stabilizer, it must be drained into an approved container. Run the engine until it stops from lack of fuel.

See your Briggs & Stratton® Operating and Maintenance Manual for further details.

CHAPTER 10

OPERATING TIPS & TROUBLESHOOTING GUIDE

OPERATING THE CYCLONE RAKE SINGLE

EYE PROTECTION

Always wear eye protection, as with any power tool. That's why we've included safety goggles with your Cyclone Rake.

OPERATING NOISE

With two engines running, there's no way to avoid noise. Whenever you operate loud machinery, you should always wear hearing protection. That's why we've included a pair of disposable ear plugs in your Owner's Kit. You can get replacements inexpensively at most hardware stores. Or use power equipment "ear muffs" found at any good hardware store or home center.

PRACTICE DRIVING FIRST

The most frequent cause of Cyclone Rake repairs is collision with stationary objects like tree branches, outdoor furniture, stone walls, fences, buildings, etc. **Practice driving** in an open area before you charge into the woods.

DRIVE SLOW UNTIL YOU KNOW

Lots of nasty surprises can hide under heavy leaf cover or in fields of tall grass. Things like large rocks, fallen branches, holes, or even low-cut tree stumps can be impossible to see. The power and capacity of your Cyclone Rake will encourage you to "tame the wilderness." Be cautious until you're sure what's on the ground. The best way is to walk an unknown area first, wearing heavy work boots. Remove harmful objects, or stake off dangerous areas before using your Cyclone Rake.

ENGAGE THE MOWER BLADES

When using the Cyclone Rake attached to the mower deck, the mower blades must be engaged. **However, your mower blades should not be engaged when using the Power Vacuum Pickup, Estate Vacuum or Power Unloader.**

SET MOWER BLADES HIGH AT FIRST

When clearing heavy debris like deep leaf drifts or overgrown grass, set your mower blades to their highest setting first. Then, go over the area again at a lower blade setting. Every mower behaves differently. You will quickly learn what works best for your machine and property.

USE HIGH LIFT MOWER BLADES

Mowers are sometimes equipped with "mulching blades", which are designed to direct material downward, rather than lift it. If so, switch to either standard or **high-lift blades**, which are available for nearly any mower.

HEAVY, WET OR MATTED LEAF COVER

If leaves have become heavy, wet and matted (for example, uncleared debris from a previous season) then do the job in two steps. Go over the top layer at a low blade setting. Then give the remaining leaves a day or two to dry out. A second pass should get them all.

UNLOADING TIP

Debris can become tightly packed inside the collector unit because of the weight and the jostling caused by driving on rough ground.

- When you lift the collector unit to dump, give it a few shakes before driving forward. Another way is to give the sides of the bag a few pushes inward with your hands after you raise the collector into the dump position. This will help the debris to tumble out.
- Try not to overfill the collector bag. After some practice, you will become familiar with using the Cyclone Rake and how much you can pick up.

PROTECTING HOSES

Don't drag your Power Vacuum Pickup™, Estate Vacuum™ or Power Unloader™ hoses over curbs, stone walls or piles of cut branches. They're tough, but they do puncture on sharp objects. Sad to say, replacements are expensive. If you need to carry your hoses a long way, we recommend our Roof Rack Carrier™ accessory. It's inexpensive and designed for the job.

POWER VACUUM PICKUP™ TIPS

The Power Vacuum Pickup is a great tool and will lift just about anything it touches. DO NOT use it on dangerous stuff like rocks, glass, trash, metal scraps, etc. Watch out for hidden rocks, glass, metal, etc. **Remove them before you vacuum.** Never vacuum up anything except organic lawn debris.

POWER UNLOADER™ TIPS

Here's another great tool. But, it can be dangerous. Don't stand anywhere near the hose exit when using it. **Always wear your goggles, and warn the kids to stay away.** They may be fascinated, but don't let them near it.

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Correction
Where do I put the Top Brace? There are two sets of holes in the Side Tubes.	The holes in the front end of the side tubes are for our Roof Rack Carrier accessory.	Place your Top Brace in the rear set of holes at the back of the Collector bag.
The tabs on my Engine Chassis do not line up with the tabs on the main Chassis.	Main Chassis was assembled upside down.	The Chassis must be re-assembled. When the hitch assembly is attached properly underneath the Chassis the tabs should be flush with the top of the chassis frame. (See Chapter 2)
The Pull-Start Engine will not start.	1. Fuel tank empty, or stale fuel. 2. Spark plug wire is disconnected. 3. Faulty spark plug. 4. Fuel shut-off lever not in the correct position. 5. Throttle control lever not in the correct position.	1. Gas should be fresh, clean gas. If the gas is old change it. If you keep gas longer than 30 days, always add an ethanol specific fuel stabilizer per Briggs & Stratton's instructions. 2. Connect the wire to the spark plug. 3. Clean, adjust the gap or replace the spark plug. 4. Place the fuel shut-off lever to the "ON" position. 5. Slide the throttle control all the way to the right (rabbit).
The Electric Start Engine will not start. After checking the Pull-Start corrections above, proceed to the following items.	1. Battery is not charged. 2. Wiring harnesses are not secured. 3. Key start wires not secure. 4. Wires connected to the battery may be reversed.	1. Connect the alligator clips to the battery and plug the charger to a wall socket. 2. Plug the battery harness connector into the engine harness connector. 3. Be sure all wires are properly connected to the back of the key switch. 4. Be sure the red wire is connected to the (+) battery terminal and the black is going to the (-) battery terminal.
The engine is smoking.	1. Oil level incorrect. 2. Incorrect type of oil. 3. Air filter is dirty. 4. Operating on a steep incline.	1. Check the oil level and adjust accordingly. (See Briggs & Stratton owner's manual). 2. Check that you are using the proper oil. 3. Clean or replace the air filter. 4. Travel up and down slopes, avoid going across slopes. Avoid towing on slopes more than 15 degrees.
The recoil will not pull or is difficult to pull.	1. Blower housing is clogged with debris. 2. Oil level is low. 3. The recoil is tangled up on itself. 4. There is debris in the recoil.	1. Make sure the engine has had time to cool. Remove the spark plug wire. Disconnect any hoses attached to the blower housing, remove the Exit Chute and check for any debris inside the blower housing. Remove any debris, re-attach items and try re-starting the engine. 2. Check the engine oil level, the engine may be seized. Fill with oil if necessary. (See Briggs & Stratton owner's manual.) 3. Disconnect the spark plug wire, reach into the blower housing. Slowly turn the impeller by hand counter-clockwise, at the same time pull the starter cord. The rope should pull out. Reconnect the spark plug and try re-starting the engine. 4. Locate and remove the 4 bolts that secure the recoil housing to the engine. Remove housing check for debris and clean if necessary. Re-install the housing and try re-starting the engine.

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Correction
The engine is not running smoothly.	1. Choke is in the incorrect position. 2. Air filter is dirty. 3. Spark plug is faulty. 4. Gas is old. 5. Oil is not at the proper level or is dirty. 6. The exhaust from the mower is overheating the engine.	1. Once the engine has started the gray choke lever should be all the way to the left or full choke position. 2. Clean or replace the air filter. 3. Clean, adjust gap or replace the spark plug. 4. Gas should be fresh and clean. If the gas is old change it. If you keep gas longer than 30 days, always add an ethanol specific fuel stabilizer per Briggs & Stratton's instructions. 5. Check the oil level and adjust accordingly. (See Briggs & Stratton owner's manual.) If dirty, change the oil per the instructions in the owner's manual. 6. In some cases the exhaust from your mower can be blowing directly onto the engine of the Cyclone Rake. You will need to divert the exhaust on your mower.
Debris is left under the mower deck.	1. Mower blades are not engaged and at the proper height. 2. The Cyclone Rake Engine is not on full throttle. 3. Driving too fast. 4. Using mulching blades on the mower deck. 5. System is clogged.	1. Be sure that the mower deck is engaged and you have the mower deck set at the correct mowing height depending on the amount of debris that you are collecting. 2. Slide the throttle control all the way to the right (rabbit). 3. Use a slower gear/speed on your mower for best results. 4. If you are using mulching blades on your mower deck, we recommend that you switch to standard or high lift blades. 5. Check for clogs along the length of the vacuum system – all the way from the mower deck to the neck of the collector bag.
The blower housing seems to vibrate a lot. (This typically only happens on older Cyclone Rakes that have seen a great deal of use, but it is serious and needs immediate attention.)	1. Impeller bolt loose 2. Impeller blade is damaged. 3. Impeller has separated from the hub.	1. Disconnect the spark plug wire, look inside the blower housing and confirm that the impeller bolt is firmly in place. 2. Disconnect the spark plug wire, look inside the blower housing. Inspect each blade of the impeller and make sure none of the blades are damaged. If so, please call us and get a replacement. 3. Disconnect the spark plug wire, look inside the blower housing. The center of the impeller should be very concentric. Everything should look like a bulls eye. The edge of the impeller, the washers and the bolt itself. If not please call us and get a replacement.
The Collector Bag will not fold down.	1. The side link assembly is pointing in wrong direction. 2. The back of the collector is closed. 3. The Bag collar is not in the correct position.	1. When you lift the slide covering the joint of the side link assembly at the front of the Collector Bag the joint must bend to the outside of the Collector bag. (See Chapter 7) 2. Be sure the back of the bag is open as if you were going to empty debris before attempting to fold the bag. 3. As you fold down the second side make sure you flip the bag collar flat as you lower the side.
There is no, or very little suction when using the extension hoses.	1. Cyclone Rake Engine not running on full throttle. 2. System is clogged. 3. Too many twist and turns in the hose	1. Slide the throttle control all the way to the right (rabbit). 2. Check for clogs along the length of the vacuum system — all the way from the inside the vacuum wand to the neck of the collector bag. 3. Keep the hose as straight as possible when vacuuming.

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Correction
The Power Lift Unloader is not working.	1. Battery is not charged. 2. The switch on the handle does not “click.” 3. The light on the charger turns right to green when plugged into the wall. 4. The light on the charger goes from red to green but lifter still not working. 5. There are no lights on the charger block.	1. Plug in the charger and leave it for a few hours or overnight. 2. When you depress the switch to go up the button should spring back and it should make a clicking noise. If the switch seems loose (like a see saw) call us for a replacement. 3. When the charger is plugged into the control panel and then the plug into the wall the lights on the plug block should start on red even if only for a short time, then it will turn to green. If the light on the charger block goes straight to green, the battery is over discharged and needs to be replaced. 4. If the light goes from red to green and the switch is operating properly, there is either a bad connection with the wiring or the actuator needs to be replaced. Double check the wiring according to their instructions. If the wiring looks like it is all in the right place and in good condition, replace the actuator. 5. If there are no lights on the plug block once it is plugged into the wall, replacing the charger will be required.



MANUFACTURER'S WARRANTY

CYCLONE RAKE SINGLE COMMANDER - RESIDENTIAL USE

- Your new Cyclone Rake with the Briggs & Stratton® XR950-PRO engine is covered under a bumper-to-bumper warranty for two years from the date of delivery for residential use. This covers you against any defects in materials and workmanship.
- If you purchased your new Cyclone Rake with a Briggs & Stratton® Vanguard 6.5HP VG200 or 10HP 19L engine, it's covered under a bumper-to-bumper warranty for three years from the date of delivery for residential use. This covers you against any defects in materials and workmanship.

Both the two and three year engine warranties are covered by Briggs & Stratton® directly. You are responsible for routine maintenance including (but not limited to) oil changes, air filters, and spark plugs. ***Collision damage and normal wear/age damage are not covered under the warranty.***

CYCLONE RAKE SINGLE COMMANDER - COMMERCIAL USE

Your new Commercial use Cyclone Rake with the Briggs & Stratton® XR950-PRO engine or the Vanguard 6.5HP VG200 engine is covered under a bumper-to-bumper warranty for six months from the date of delivery. This covers you against defects in materials and workmanship. The engine warranty is covered by Briggs & Stratton® directly. You are responsible for routine maintenance including oil changes, air filters, and spark plugs. ***Collision damage, and normal wear/age damage is not covered under the warranty.***

CYCLONE RAKE SINGLE XL SUPER - RESIDENTIAL USE

Your new Cyclone Rake with a Briggs & Stratton® Vanguard 10HP 19L engine is covered under a bumper-to-bumper warranty for three years from the day of delivery for residential use. This covers you against any defects in materials and workmanship. The engine warranty is covered by Briggs & Stratton® directly. You are responsible for routine maintenance including (but not limited to) oil changes, air filters, and spark plugs. ***Collision damage and normal wear/age damage are not covered under the warranty.***

CYCLONE RAKE SINGLE XL SUPER - COMMERCIAL USE

Your new commercial use Cyclone Rake with a Briggs & Stratton® Vanguard 10HP 19L engine is covered under a bumper-to-bumper warranty for six months from the day of delivery. This covers you against any defects in materials and workmanship. The engine warranty is covered by Briggs & Stratton® directly. You are responsible for routine maintenance including (but not limited to) oil changes, air filters, and spark plugs. ***Collision damage and normal wear/age damage are not covered under the warranty.***

WOODLAND POWER PRODUCTS, INC.

KEEP THIS WARRANTY FOR YOUR RECORDS

REGARDING YOUR BRIGGS & STRATTON® ENGINE

Please refer to the separate Engine Operating & Maintenance Instructions included with your Cyclone Rake for detailed instructions on engine care and maintenance. Just like your new car, your engine warranty will be made void if you fail to maintain it. There are two things you must be sure to do: (1) Change the engine oil regularly. We recommend changing the oil after the first five hours of operation. Then, every 20 hours. (2) Never operate the engine without the air filter. Dust and grit can destroy it. Air filters should be changed at least once a year; more often if operating in very dusty environments or in commercial service. We also recommend ***always adding fuel stabilizer to your gasoline*** and replacing the spark plug once a year for peak engine performance. Be sure to use an exact replacement plug, as described in your Owner's Manual.

REPLACEMENT PARTS

We maintain a complete parts inventory and as well as manufacturer's approved engine maintenance kits available on-line at CycloneRake.com/store/owners-marketplace/parts/ or through our technical sales team.

If you have any questions regarding your Cyclone Rake, please contact us toll-free at 888-531-7253, or visit CycloneRake.com.

Your Cyclone Rake Model: _____ Date Delivered: _____

ASSEMBLING YOUR CYCLONE RAKE VIDEOS

We want to make assembling and using the Cyclone Rake Single as easy as possible. For that reason, you will find QR codes below and throughout your manual that you can access with your smart phone to watch videos that will help walk you through the assembly process.

Again, if you don't happen to have a smart phone, don't worry about it! All our assembly videos are also in one easy spot on our website. Simply type the link below into any web browser to watch all our assembly videos.

WWW.CYCLONERAKE.COM/CR-ASSEMBLY-VIDEOS



Assembling the Folded Chassis



Installing Hinge Blocks



Installing Caster Pads & Wheels



Installing the Single Pin Hitch & Hose Hanger



Expanding the Collector Frame



Installing Extender Brackets & J-Hooks



Installing the Hinge Brackets



Assembling & Installing the Side Tubes



Folding Down the Collector



Installing the Collector onto the Chassis



Installing the Pull-Start Engine



Filling the XR950-PRO, & 10HP 19L Pull-Start Engines with Oil



Filling the Vanguard 6.5HP VG200 Engine with Oil



Filling the Electric Start Engine with Oil



Installing the Electric Start Engine



Installing the Deck Hose with the Rubber Collar



Installing the Deck Hose with the MDA Collar



Checking the Length of the Deck Hose



Using the Collector: Set up and Unloading



Folding the Collector for Storage



Starting & Stopping the XR950-PRO Engine



Starting & Stopping the Vanguard 6.5HP VG200 Engines



Starting & Stopping the Vanguard 10HP 19L Engines



Changing the Engine Oil on the XR950-PRO and 10HP 19L Engines



Changing the Oil on the Vanguard 6.5HP VG200 Engines



Changing the Air Filter on All Engines



Replacing the Spark plug on All Engines



Charging the Electric Start Battery