



**Cyclone  
Rake®**

# OWNER'S MANUAL

## ASSEMBLY & PARTS





# SAFETY

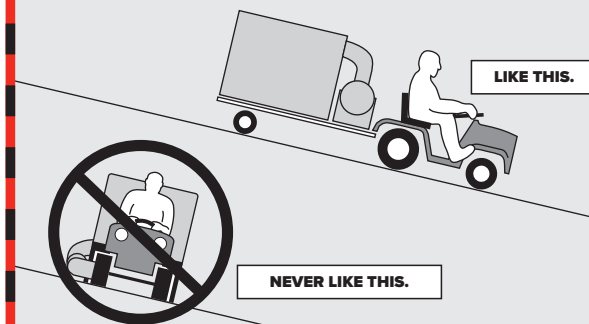
**THE CYCLONE RAKE® IS A POWERFUL MACHINE.**  
**DO NOT attempt to operate until you have read and completely understand this safety section.**

## 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 SIDEWAYS 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**

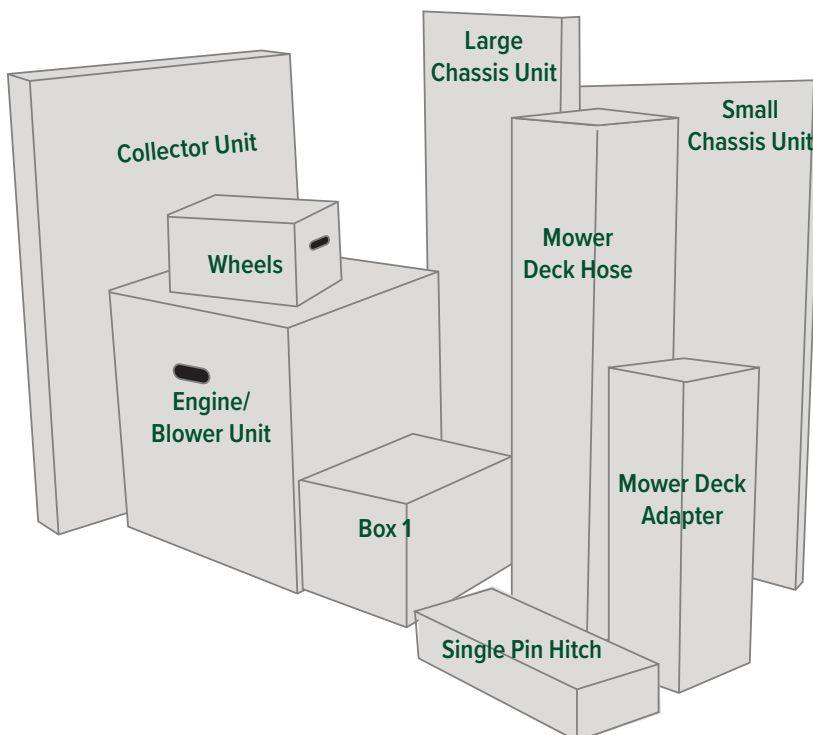
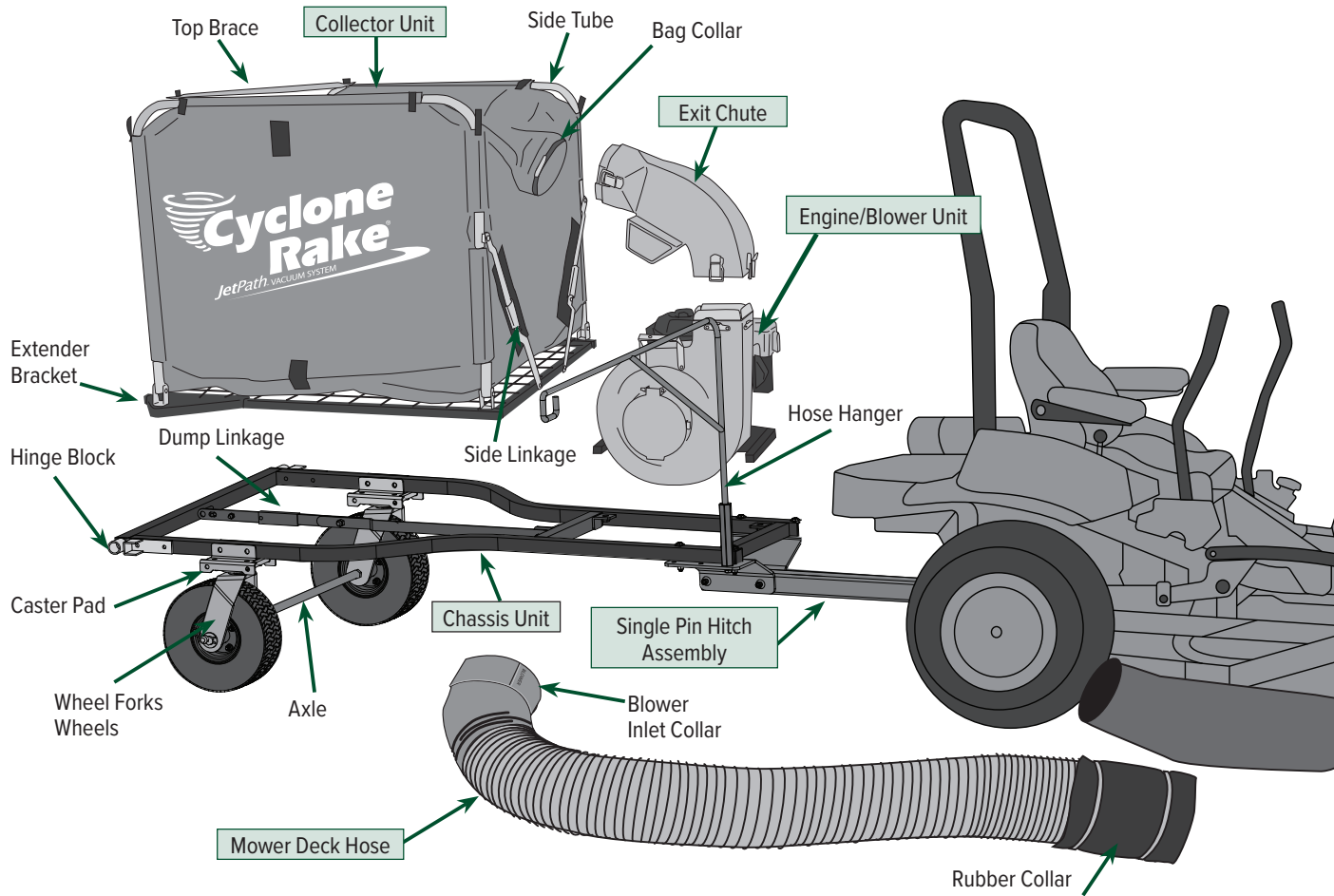
Your basic Cyclone Rake is shipped in seven or eight boxes. If you have other boxes, these hold the accessories you ordered.

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.



Box Name & Contents



## TOOLS NEEDED

1

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

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### ***INSTALLATION NOTE:***

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

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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, 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



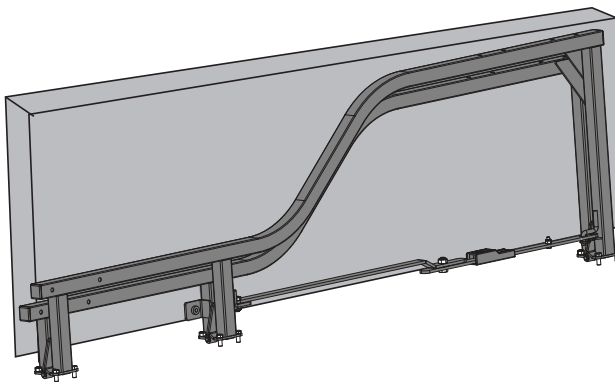
## CHAPTER 2

# 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.

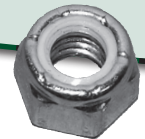
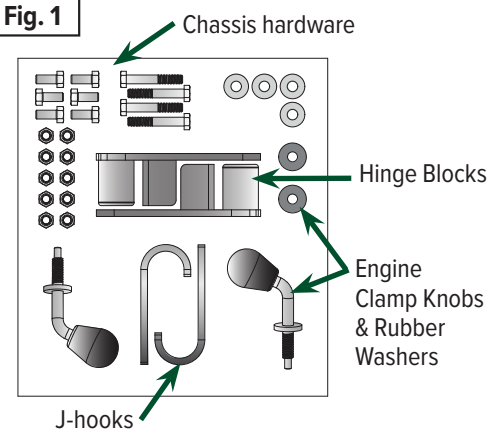
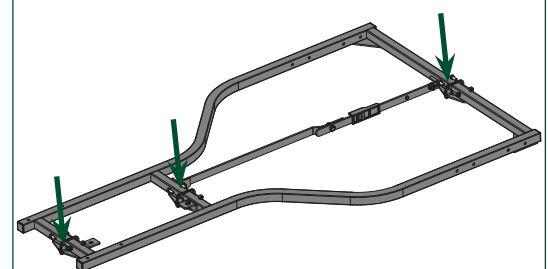


Fig. 1



Large Chassis Skin-board Parts

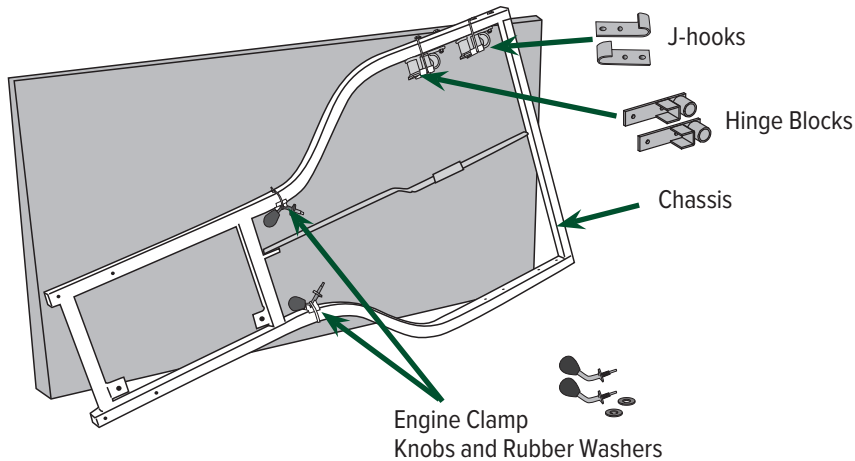
Fig. 2



Secure the Chassis in 3 places

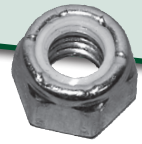
## ASSEMBLING THE SMALL CHASSIS

(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.*



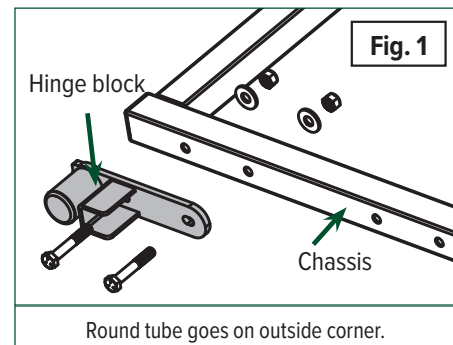
## INSTALLING THE HINGE BLOCKS

(BOTH SIZES)

### TOOLS YOU'LL NEED:

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

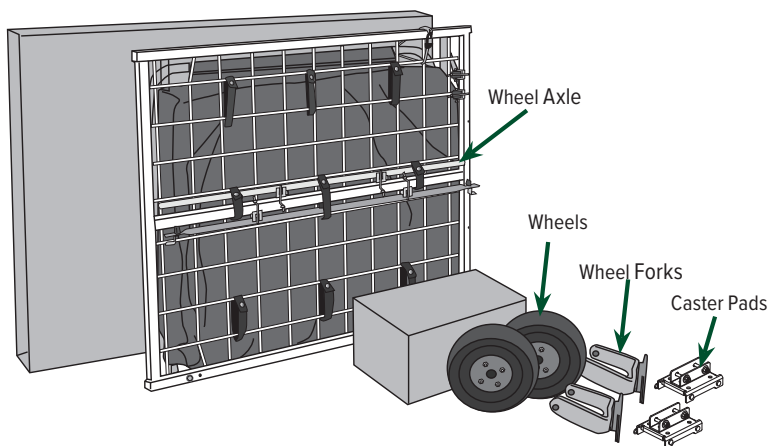
1. **(Fig.1)** To attach each hinge block, position the round tube on the outside corner of the wide end of the chassis. Using two 1/2" box wrenches or sockets, attach each hinge block with the two 5/16 x 2" bolts, washers and nylon lock nuts provided. Tighten the bolts snugly, but don't crush the tubing.







## 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. 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** and a cardboard sleeve with the **Hose Hanger** you will install later. Attached to the **underside of the Collector Unit**, find and remove the **Wheel Axle** that you will need for installing your wheels.

### TOOLS YOU'LL NEED:

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

### 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" caster pad 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

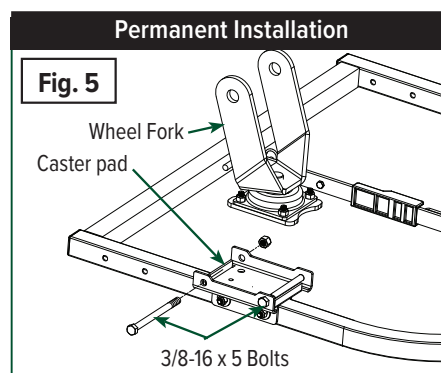
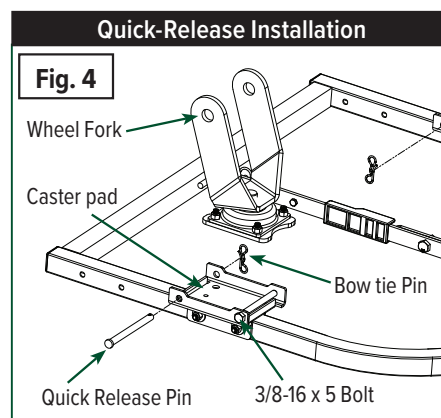
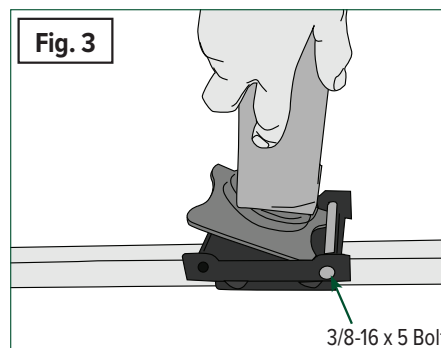
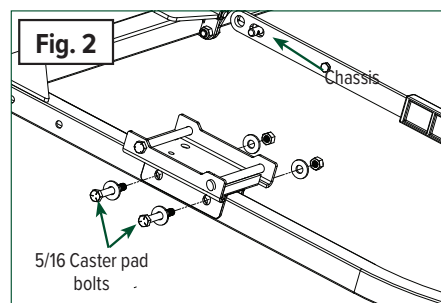
If you are planning on removing your wheels when storing your Cyclone Rake.

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** as shown in Fig 3.
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.



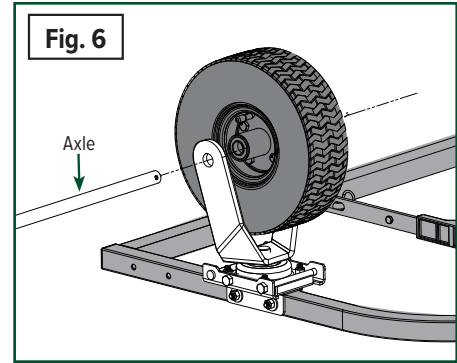
## RECOMMENDED TIRE INFLATION:

Single Wheel tires: 25 psi

Dual-PRO Super Wheel tires: 15 psi

## INSTALLING THE WHEELS & AXLE

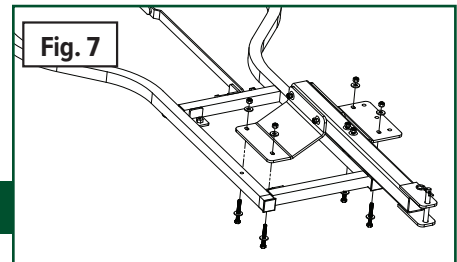
1. Locate the light grease, the axle, and the bag of bow-tie pins and washers you removed from the wheel box.
2. Next, remove the the protective caps from the ends of the axle. Now, slide one washer onto one end of the axle, then insert one bow-tie pin into the hole behind the washer.
3. At the other 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 HANGER



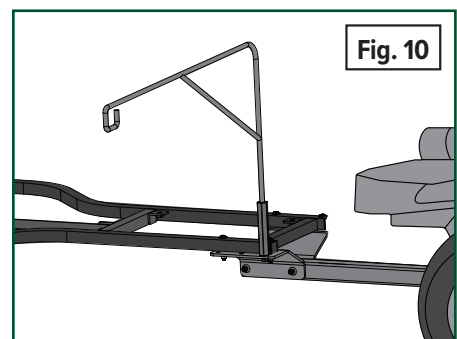
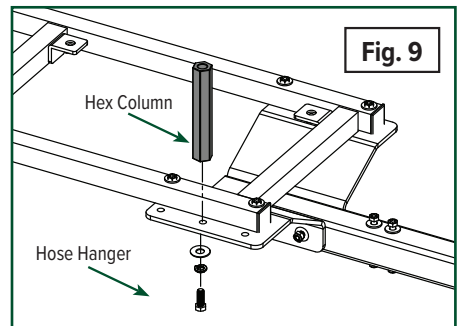
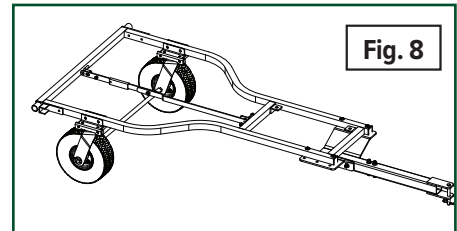
### WHERE TO FIND THE PARTS:

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.

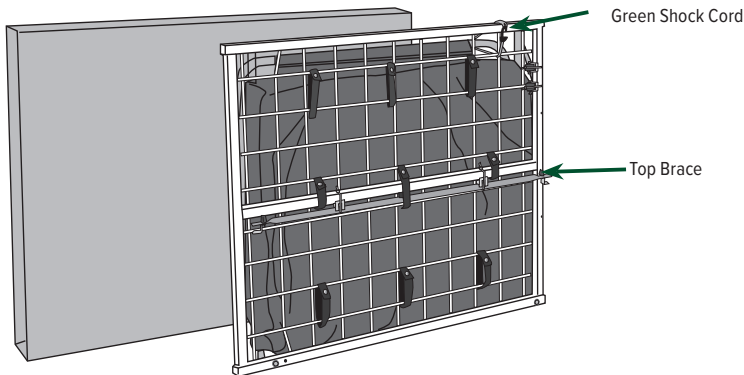




## CHAPTER 3

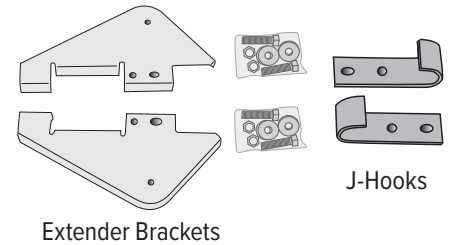
# ASSEMBLING & INSTALLING THE COLLECTOR UNIT

Open the box labeled **Collector Unit**. Be extra careful when using a knife or sharp tool. It could accidentally cut the Collector Bag. You will also need the two J-hooks that were attached to the **Chassis Unit** skin board for this part of the assembly.



### INSTALLATION NOTE:

*There are two other important items attached to the Collector Frame. These are the Top Brace and the green shock cord. Remove the Top Brace and the green shock cord that holds the bag to the frame.*



## INSTALLING EXTENDER BRACKETS & J-HOOKS

### WHERE TO FIND THE PARTS:

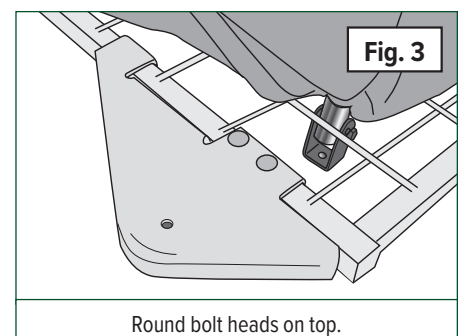
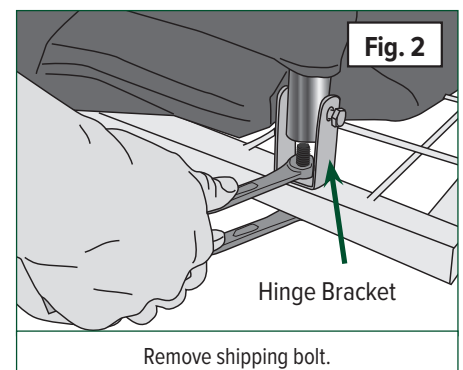
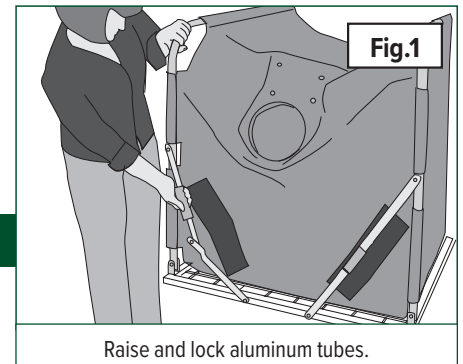
The Extender Bracket Kit will be in a **thin box** packed **inside the Collector Box**.

### TOOLS YOU'LL NEED:

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

The extender brackets come as a left and right pair. You can attach either one first. To install the second bracket, repeat steps 2 through 5.

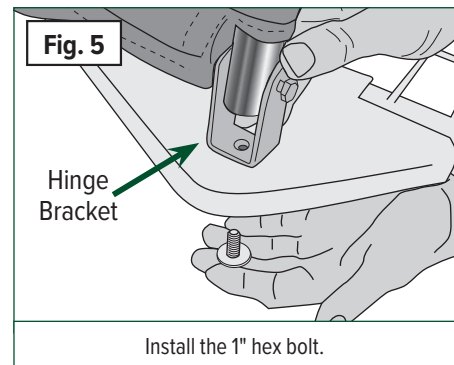
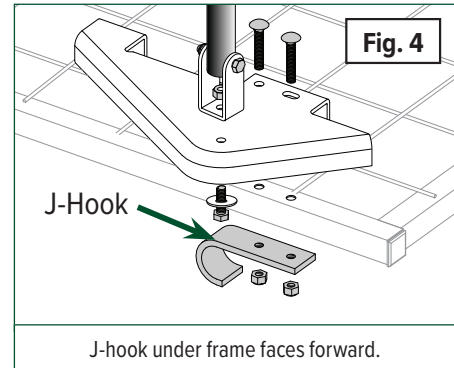
1. **(Fig. 1)** At the **FRONT** of the collector frame, raise the aluminum side tubes and lock them in place by moving the slider brackets down into the locked position. Do this on both sides of the Collector Bag.
2. **(Fig. 2)** At the **REAR** of the collector frame (**the end opposite the slider brackets**), locate the hinge bracket. Using the two 1/2" box wrenches, remove and discard the temporary shipping bolt and nut.
3. **(Fig. 3)** Place the extender bracket over the collector frame. Install the two 5/16" x 1.75" carriage bolts down through the bracket and chassis **with the round heads on top**.



4. **(Fig. 4)** Place a J-hook under the collector frame with the curved end facing forward, pointing toward the slider bracket end of the frame. Fasten the carriage bolts with two nylon lock nuts. ***Tighten the nuts firmly.***

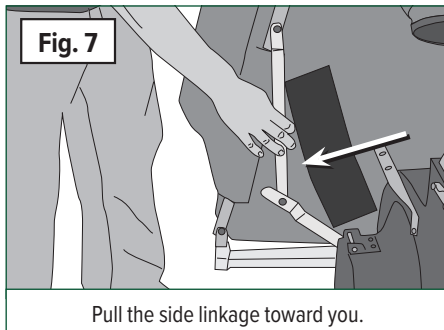
**HINT:** Place a finger on the round heads of the carriage bolts to prevent them from turning while you tighten the nuts.

5. **(Fig. 5)** Move the hinge bracket over the outer hole in the extender bracket. Bolt the hinge bracket in place using the 5/16 x 1" hex bolt, washer and nylon lock nut provided. Install the bolt up from the bottom.

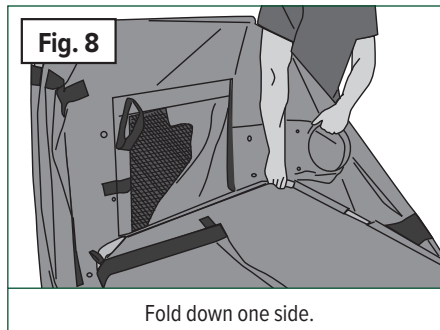


## FOLDING UP THE COLLECTOR BAG

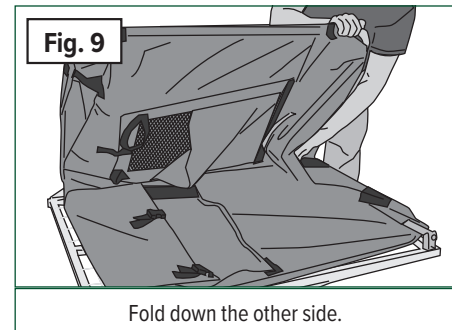
To fold the Collector Bag for storage, follow these steps:



1. **(Fig. 7)** 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. 8)** 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. 9)** 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.

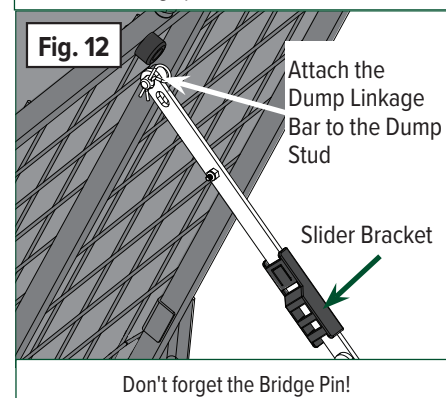
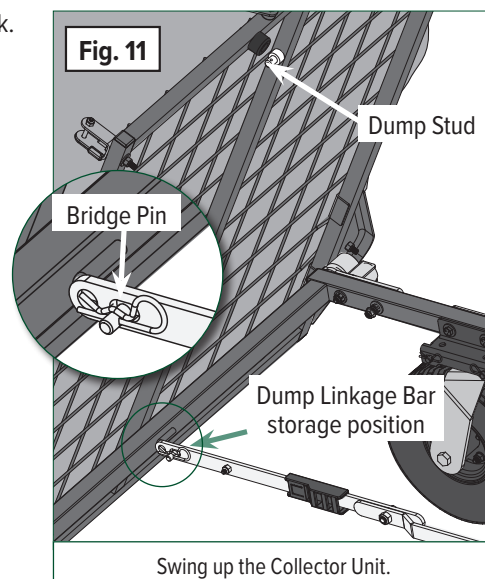
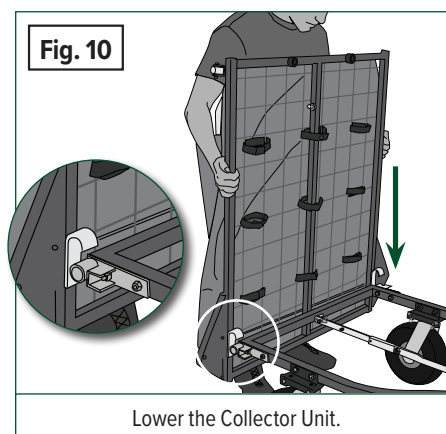




## INSTALLING THE COLLECTOR UNIT

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

1. **(Fig. 10)** 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. 11)** 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. 12)** 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 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.



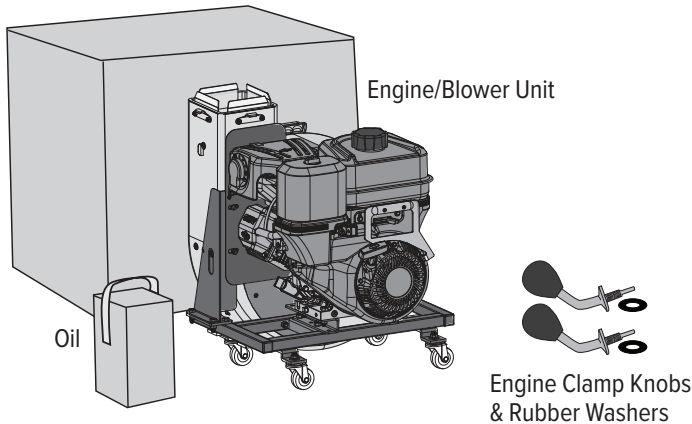


## CHAPTER 4

# 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**.



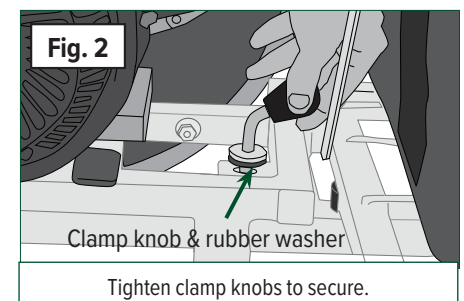
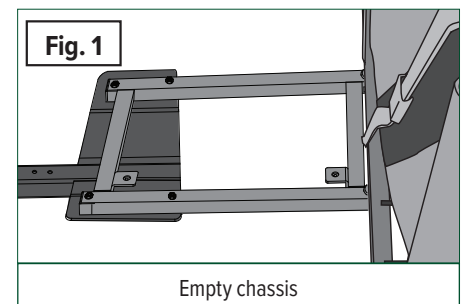
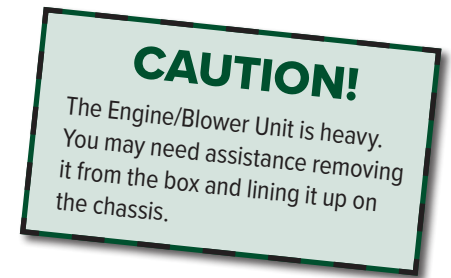
### PARTS YOU'LL NEED:

- 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. • 6.5HP Vanguard Cyclonic: 18-20 oz.
- 8HP Vanguard: 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 AND 8 HP VANGUARD 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.



### 6.5 HP VANGUARD CYCLONIC 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.

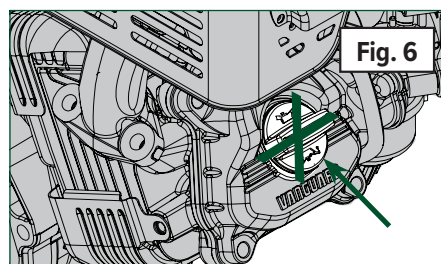
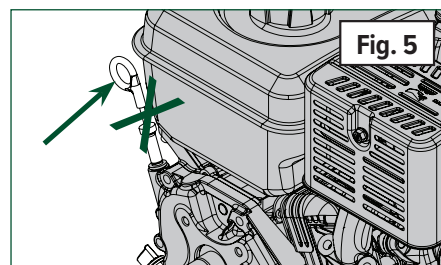
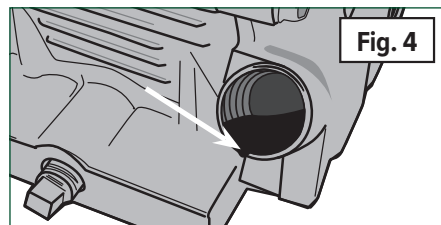
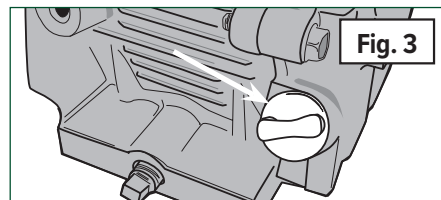
*All pull-start engine owners please proceed to Chapter 6: Installing The Mower Deck Hose to complete your Cyclone Rake installation.*

### 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.

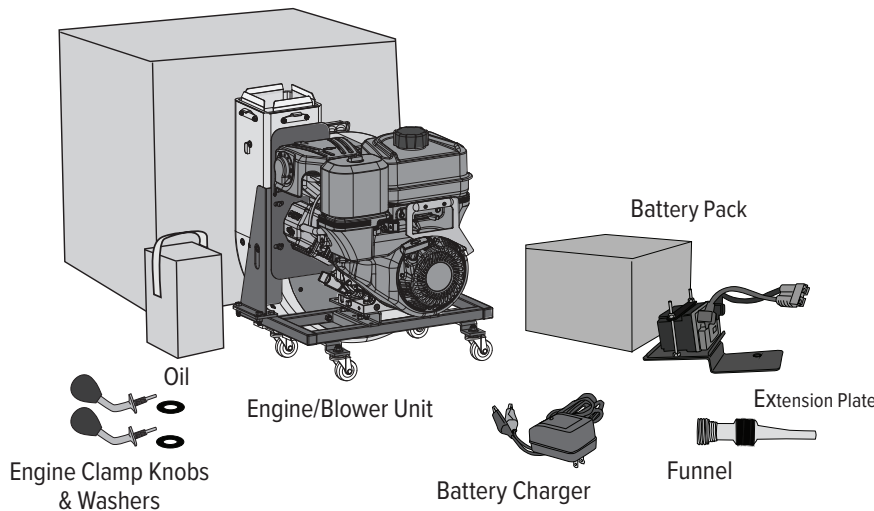




## CHAPTER 5

# ASSEMBLING & INSTALLING THE ELECTRIC START ENGINE

The **8 HP & 10 HP Electric Start Engine/Blower Unit** is on its 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:

- 8HP Vanguard: 26-28 ounces
- 10HP Vanguard: 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.*

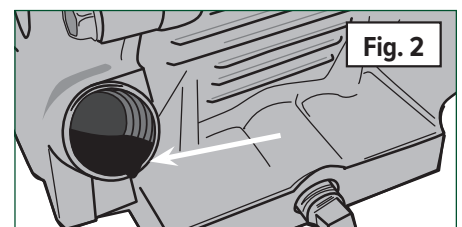
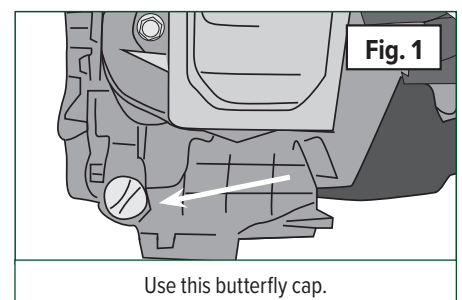
1. Remove the Engine/Blower Unit from the box using the handles on each side.
2. **(Fig. 1)** Locate the YELLOW plastic "butterfly" plug at the base of the engine, **under the exhaust deflector**.
3. Remove the YELLOW butterfly plug and place a rag under the opening to catch any spilled oil.
4. **(Fig. 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

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. make sure the blower inlet is facing the same direction as your mower's discharge chute.
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 at this stage, using one rubber washer. You'll install the front clamp knob after the battery is in place.

## 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 instructions on how to recharge the battery, please go to Chapter 9: Maintenance.

### WARNING!

Do not start the engine now! The engine contains no gasoline and you have not completed the assembly of your Cyclone Rake.

### WARNING:

When disconnecting the battery, grasp both halves of the grey connector and pull it apart. Do not pull by the wires or only one side of the connector.

It may be difficult to disconnect, but this type of connector is required for carrying high current with no risk of shaking loose in operation.

Fortunately, you should only have to do this once a season.

### CAUTION!

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

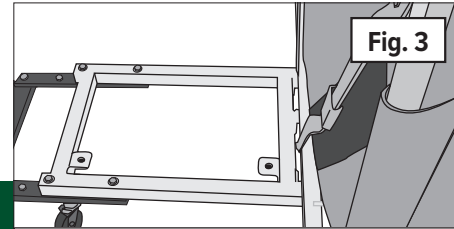


Fig. 3

Empty chassis



Fig. 4

Clamp knob & rubber washer

Tighten clamp knobs to secure.

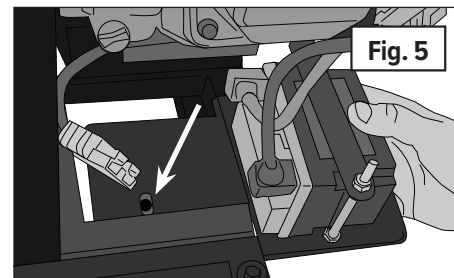


Fig. 5

Install battery pack

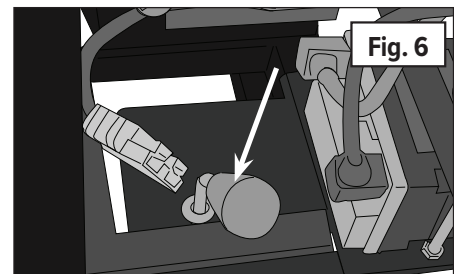


Fig. 6

Attach the front engine clamp knob

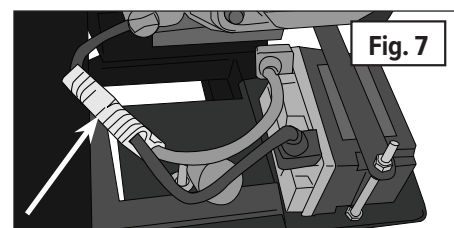


Fig. 7

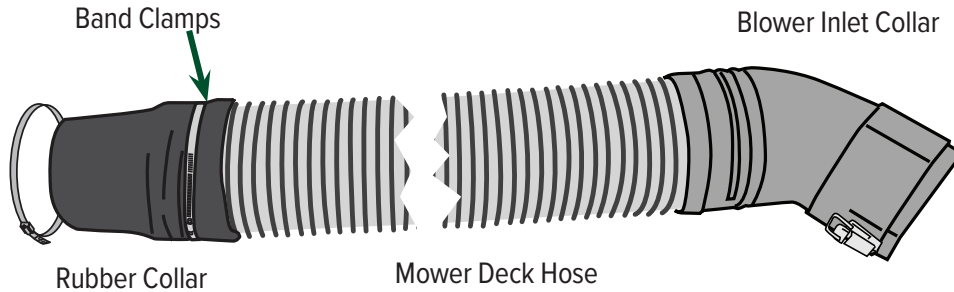
Plug in the connectors

## 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)

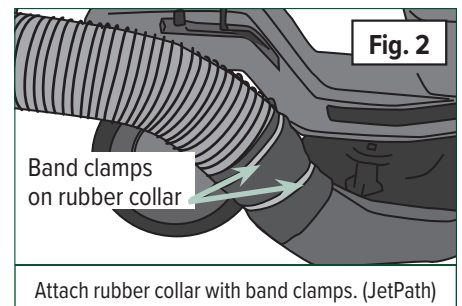
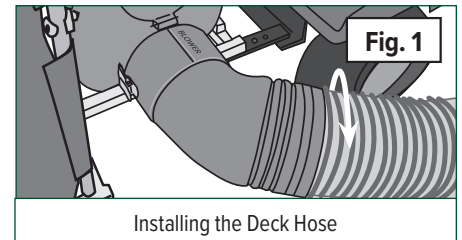
1. **(Fig. 1)** Connect the curved plastic elbow marked "**BLOWER**" onto the blower intake opening and secure it with the two latches.
2. Install the deck hose by inserting it into the collar and twist it **counterclockwise** until it stops.

### 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.

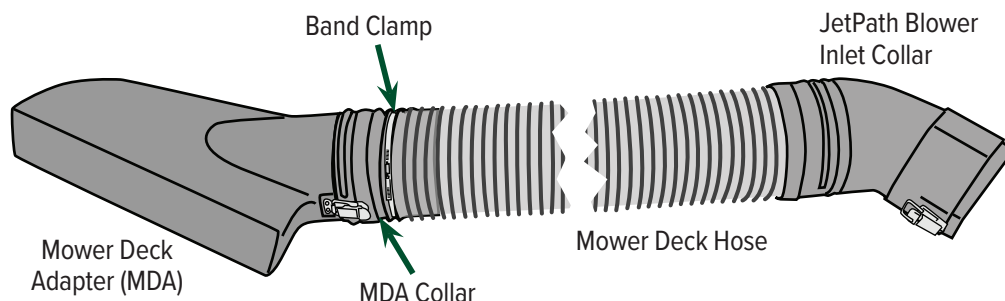


Continue to **INSTALLING THE HOSE HAMMOCK** section on page 3.



## 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

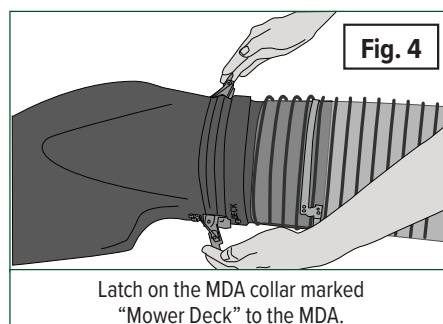
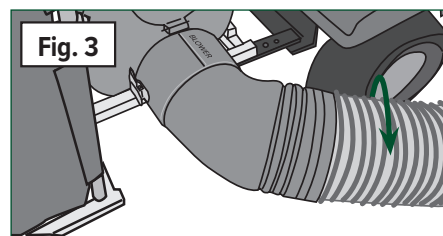
#### TOOLS YOU'LL NEED:

- 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.



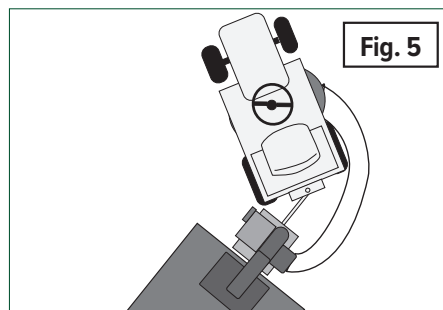
Latch on the MDA collar marked "Mower Deck" to the MDA.



## 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 your 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

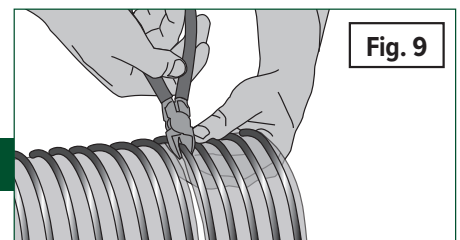
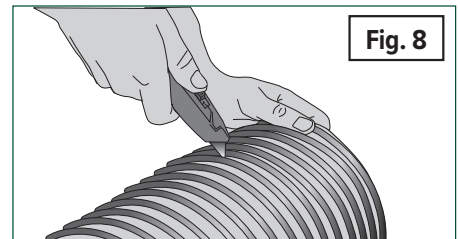
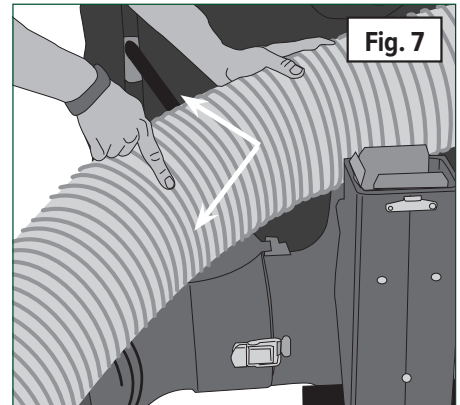
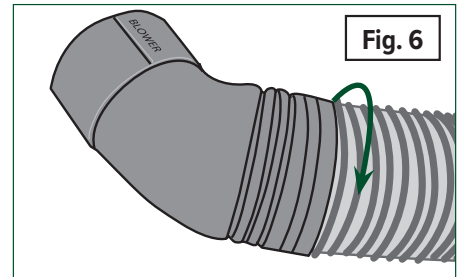
1. Unhook hose from the blower housing.
2. **(Fig. 6)** Screw the hose further into the blower collar; if this shortens the hose enough, you are done. Move on to *Installing the Hose Hammock*.

### 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

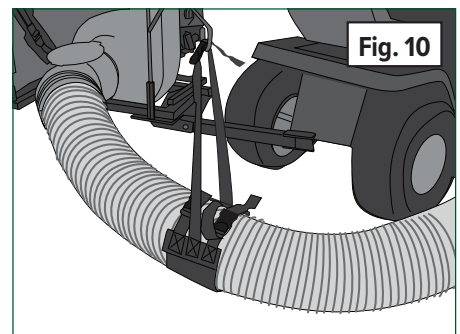
### TOOLS YOU'LL NEED:

- 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.*

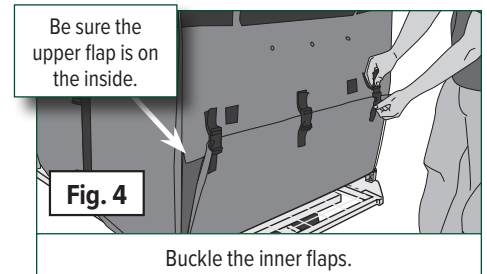
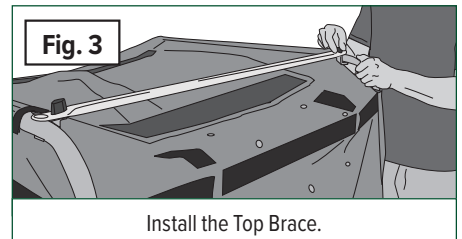
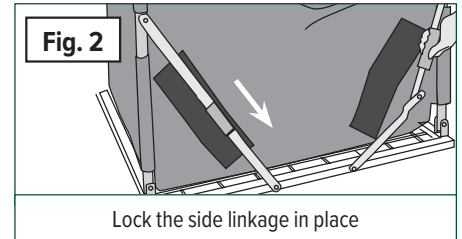
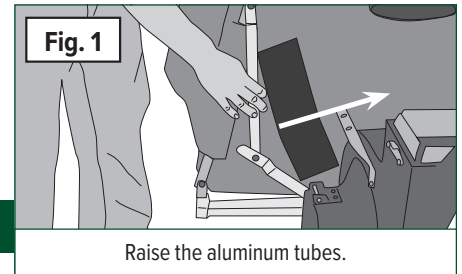
1. **(Fig. 1)** Remove the green shock cord. Raise one of the aluminum side tubes by lifting the side tube and **pushing inward** on the side linkage.
2. **(Fig. 2)** Lock it in the upright position by **moving the slider bracket down** into the locked position.
3. Repeat on the other side of the collector.
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.™*

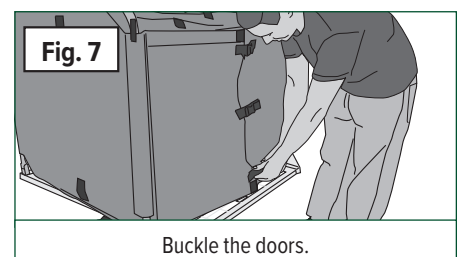
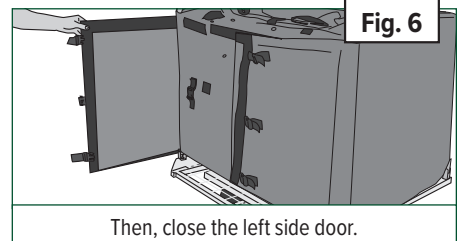
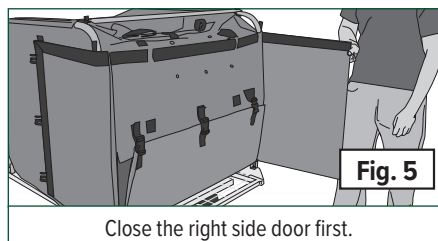
### ACCESSORY NOTE:

*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**.

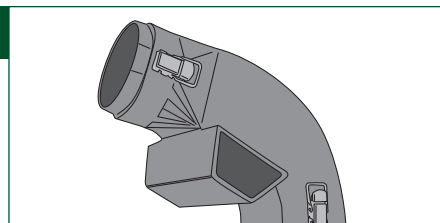
1. **(Fig. 8)** Connect the bottom of the exit chute onto the top of the Engine/Blower Unit. Be sure all three latches are secured.

### 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

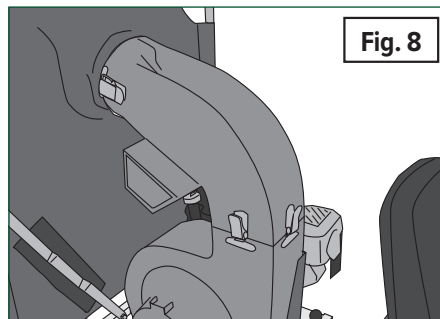


Fig. 8

Connect the exit chute onto the Engine/Blower Unit.

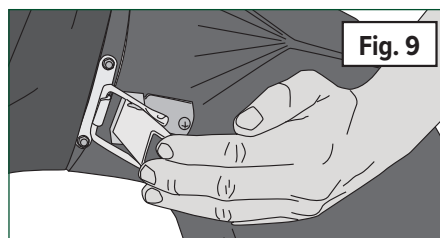


Fig. 9

Connect the bag collar onto the exit chute.

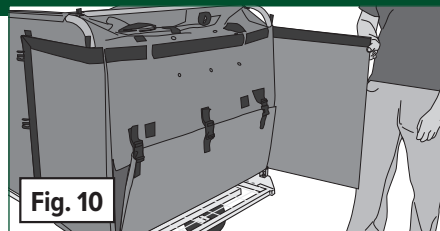


Fig. 10

Pin doors to the Velcro on the side of the bag

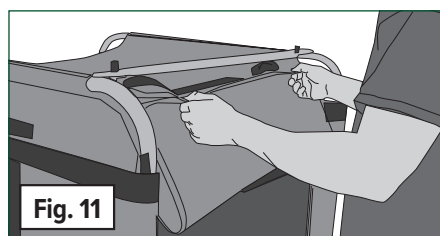


Fig. 11

Pin the upper flap.

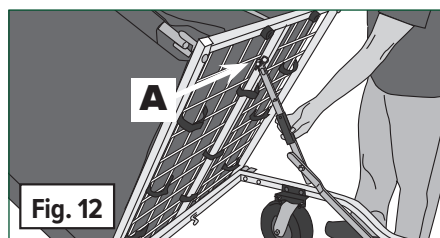


Fig. 12

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.

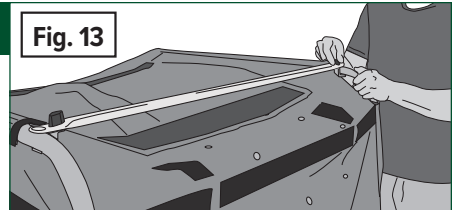


Fig. 13

Remove the Top Brace.

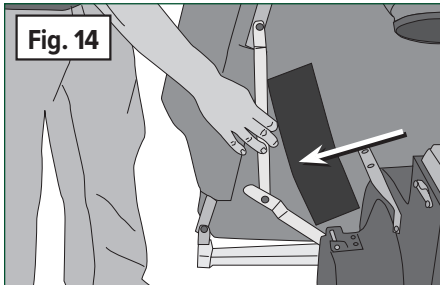


Fig. 14

Pull the side linkage toward you.

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.

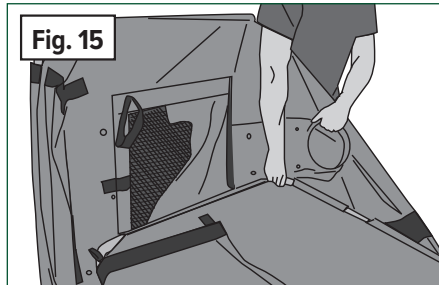


Fig. 15

Fold down one side.

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.

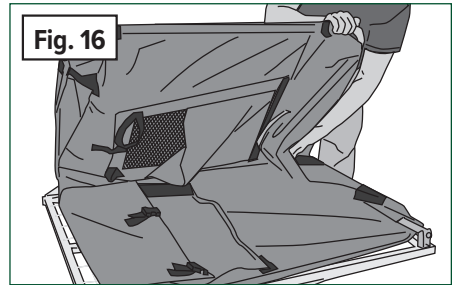


Fig. 16

Fold down other side.

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.



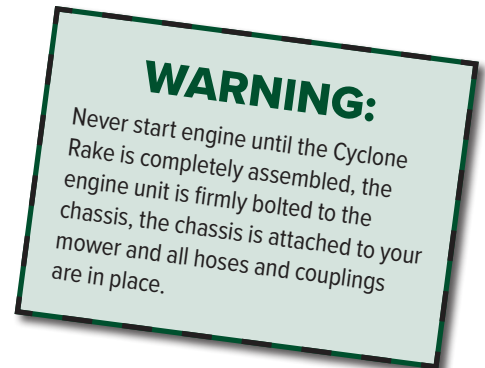
## CHAPTER 8

# OPERATING YOUR 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

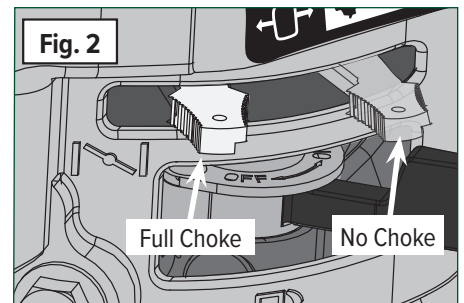
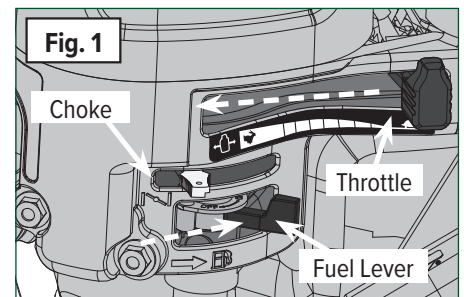
**IMPORTANT:** Always add fuel stabilizer per Briggs & Stratton's instructions. This is available at any hardware store or in our Engine Maintenance Kit. See Chapter 9: Maintenance for further details or refer to your Briggs & Stratton® Operating and Maintenance Manual.



### 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.

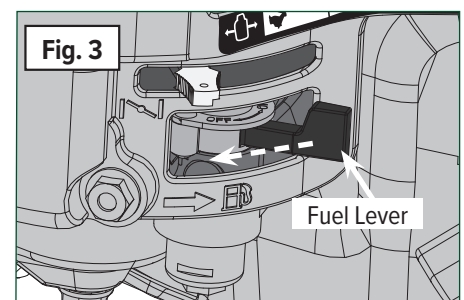


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### STOPPING THE XR950-PRO ENGINE

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 6.5HP VANGUARD CYCLONIC ENGINE

### 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 6.5HP CYCLONIC 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 CYCLONIC ENGINE

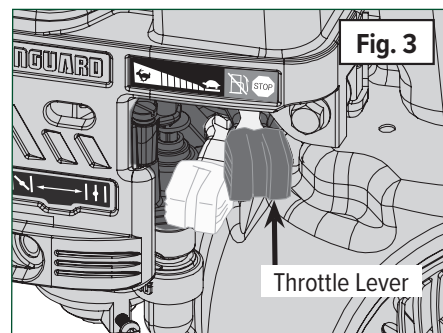
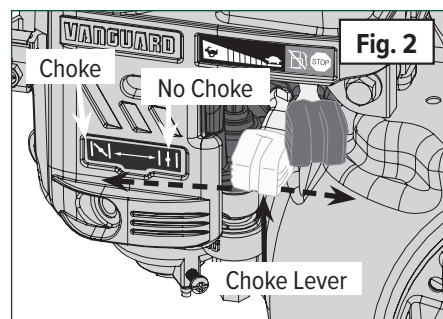
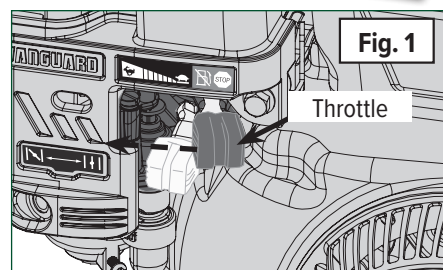
1. (Fig. 3) Move the **Throttle Control Lever** right to the OFF/STOP position as shown.

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

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

### 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.

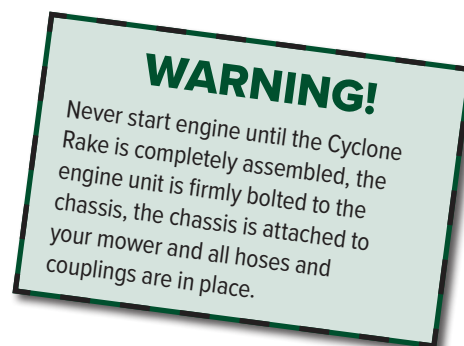




## OPERATING THE B&S 8HP VANGUARD ENGINE

### 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

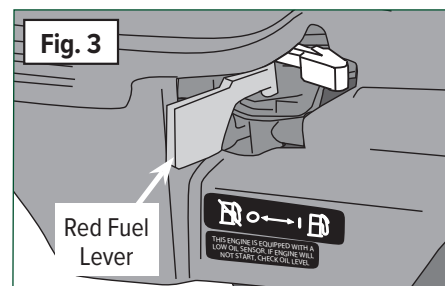
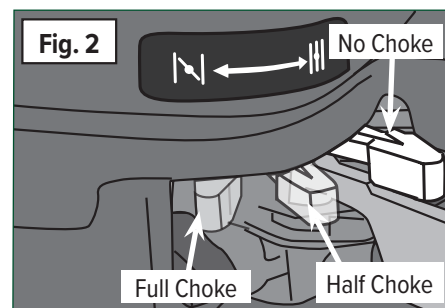
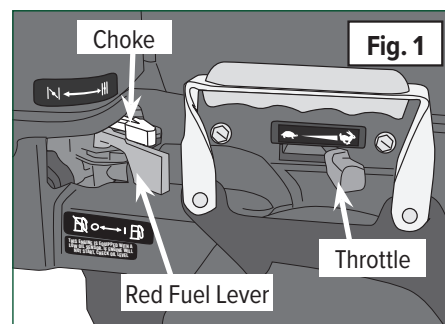
1. **(Fig. 1)** Push the red fuel lever on the front of the engine to the right to the **"ON"** position.
2. **(Fig. 1)** Slide the throttle control lever **all the way to the right (rabbit)** for full throttle.
3. **(Fig. 2)** Move the gray choke lever to the **left, or full choke position**. Turn the 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:

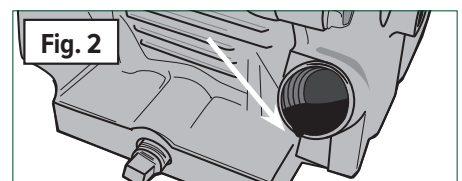
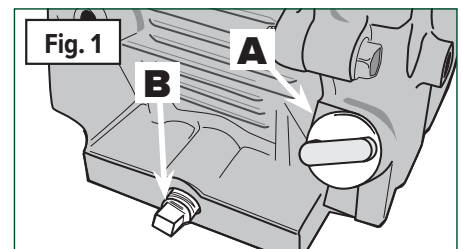
- **Change the engine oil after the first 5 hours of operation.**
- **Change the engine oil every 20 operating hours.**
- **Always add fuel stabilizer per Briggs & Stratton's instructions.**
- **Change or clean the air filter at least annually, and never run the engine without the air filter.**
- **Change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



## CHANGING THE ENGINE OIL:

### XR950-PRO & 8HP VANGUARD ENGINES

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 8 HP engine**.





## 6.5HP VANGUARD CYCLONIC ENGINE

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.

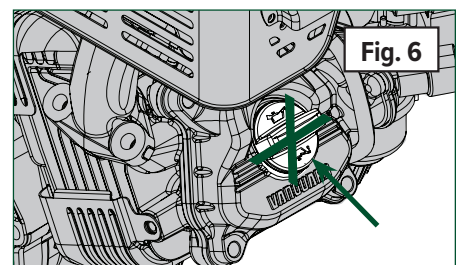
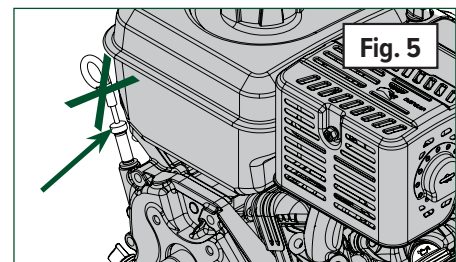
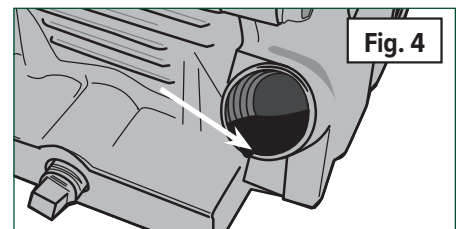
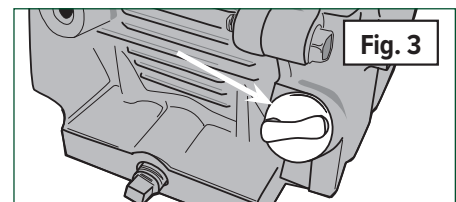
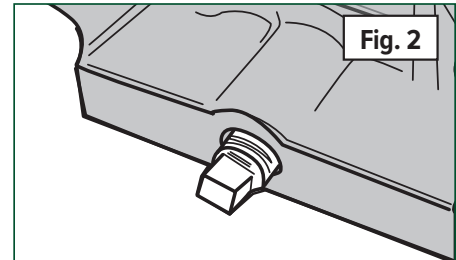
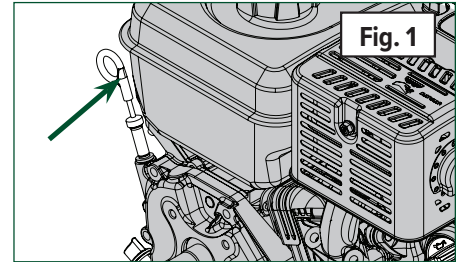
**NOTE:** Oil capacity is approximately 18-20 ounces for the 6.5 HP Vanguard Cyclonic engine.

### 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

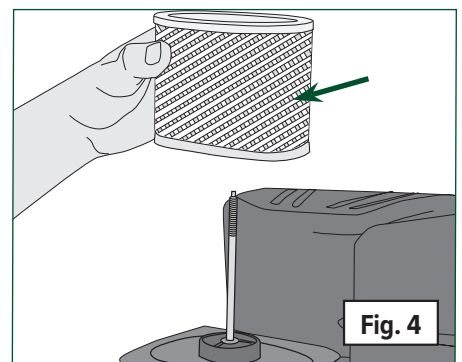
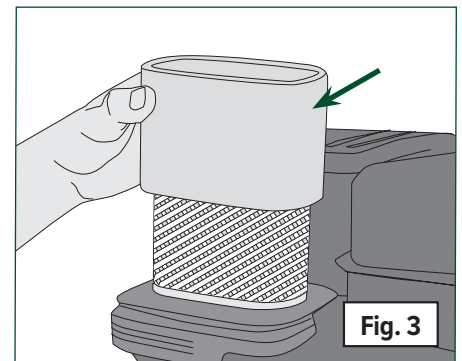
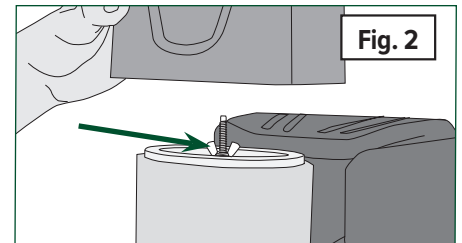
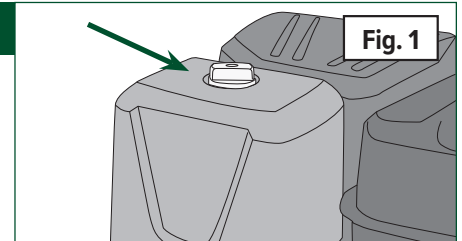
Like oil changes, we recommend an air filter inspection every 20 hours of operation. Regular inspection and replacement will ensure full engine power and prolong engine life.

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



### XR950-PRO & 8HP VANGUARD ENGINES

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

### 6.5HP VANGUARD CYCLONIC ENGINES

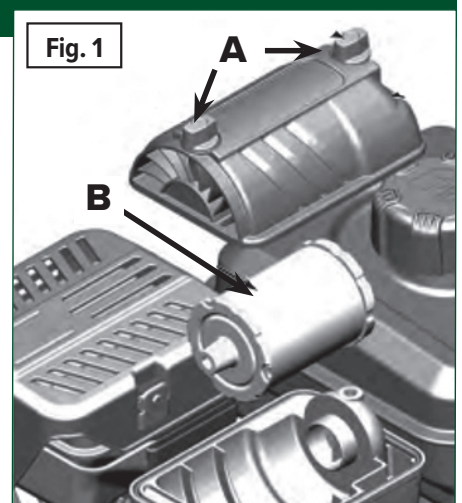
1. **(Fig. 1A)** Unscrew the two knobs at the top of the air filter housing.
2. **(Fig. 1B)** Lift the housing to expose the air filter.
3. Remove the old filter.
4. Loosen debris by gently tapping the filter on a hard surface. If the filter is excessively dirty, replace it with a new filter.
5. Install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





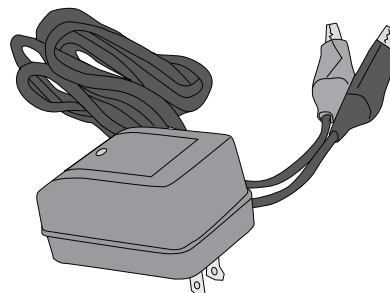


## CHARGING THE ELECTRIC START BATTERY

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.

### **IMPORTANT:**

*Use only the battery charger supplied with the unit.  
It is microprocessor controlled to maintain the battery  
without overcharging.*



### 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.

### USING THE BATTERY CHARGER

1. Carefully unplug the gray cable connector from the battery harness. It may be easier to remove the battery pack from the Cyclone Rake, but it is not necessary.

### **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 alligator clips to the terminals (RED to RED and BLACK to BLACK). It isn't necessary to unscrew the battery cable leads.
3. Plug the charger into a wall socket. The LED light will be **RED** indicating charging. When the battery is about 95% charged the LED light will turn **GREEN**.

### **IMPORTANT:**

*At this point the battery may be used, however an additional three hours may be required to reach 100% charge.*

*The charger should be left on if you are not planning to use it right away.*

*The charger can be left on in "float" mode indefinitely to maintain the charge.*

## 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.

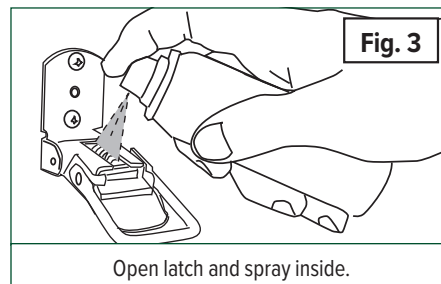
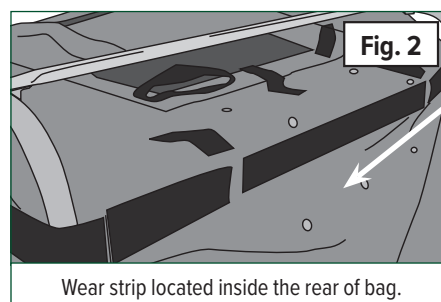
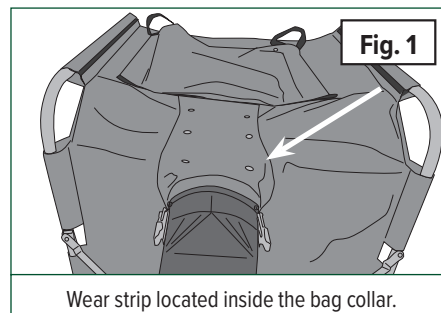
### MAINTAINING THE LATCHES

(**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 &amp; 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
<b>Where do I put the Top Brace?</b> 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.
<b>The tabs on my engine chassis do not line up with the tabs on the main Chassis.</b>	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)
<b>The Pull-Start Engine will not start.</b>	<ol style="list-style-type: none"> <li>1. Fuel tank empty, or stale fuel.</li> <li>2. Spark plug wire is disconnected.</li> <li>3. Faulty spark plug.</li> <li>4. Fuel shut-off lever not in the correct position.</li> <li>5. Throttle control lever not in the correct position.</li> </ol>	<ol style="list-style-type: none"> <li>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 &amp; Stratton's instructions.</li> <li>2. Connect the wire to the spark plug.</li> <li>3. Clean, adjust the gap or replace the spark plug.</li> <li>4. Place the fuel shut-off lever to the "ON" position.</li> <li>5. Slide the throttle control all the way to the right (rabbit).</li> </ol>
<b>The Electric Start Engine will not start. After checking the Pull-Start corrections above, proceed to the following items.</b>	<ol style="list-style-type: none"> <li>1. Battery is not charged.</li> <li>2. Wiring harnesses are not secured.</li> <li>3. Key start wires not secure.</li> <li>4. Wires connected to the battery may be reversed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect the alligator clips to the battery and plug the charger to a wall socket.</li> <li>2. Plug the battery harness connector into the engine harness connector.</li> <li>3. Be sure all wires are properly connected to the back of the key switch.</li> <li>4. Be sure the red wire is connected to the (+) battery terminal and the black is going to the (-) battery terminal.</li> </ol>
<b>The engine is smoking.</b>	<ol style="list-style-type: none"> <li>1. Oil level incorrect.</li> <li>2. Incorrect type of oil.</li> <li>3. Air filter is dirty.</li> <li>4. Operating on a steep incline.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the oil level and adjust accordingly. (See Briggs &amp; Stratton owner's manual).</li> <li>2. Check that you are using the proper oil.</li> <li>3. Clean or replace the air filter.</li> <li>4. Travel up and down slopes, avoid going across slopes. Avoid towing on slopes more than 15 degrees.</li> </ol>
<b>The recoil will not pull or is difficult to pull.</b>	<ol style="list-style-type: none"> <li>1. Blower housing is clogged with debris.</li> <li>2. Oil level is low.</li> <li>3. The recoil is tangled up on itself.</li> <li>4. There is debris in the recoil.</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>2. Check the engine oil level, the engine may be seized. Fill with oil if necessary. (See Briggs &amp; Stratton owner's manual.)</li> <li>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.</li> <li>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.</li> </ol>



## TROUBLESHOOTING GUIDE

Problem	Possible Cause	Correction
<b>The engine is not running smoothly.</b>	<ol style="list-style-type: none"> <li>1. Choke is in the incorrect position.</li> <li>2. Air filter is dirty.</li> <li>3. Spark plug is faulty.</li> <li>4. Gas is old.</li> <li>5. Oil is not at the proper level or is dirty.</li> <li>6. The exhaust from the mower is overheating the engine.</li> </ol>	<ol style="list-style-type: none"> <li>1. Once the engine has started the gray choke lever should be all the way to the left or full choke position.</li> <li>2. Clean or replace the air filter.</li> <li>3. Clean, adjust gap or replace the spark plug.</li> <li>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 &amp; Stratton's instructions.</li> <li>5. Check the oil level and adjust accordingly. (See Briggs &amp; Stratton owner's manual.) If dirty, change the oil per the instructions in the owner's manual.</li> <li>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.</li> </ol>
<b>Debris is left under the mower deck.</b>	<ol style="list-style-type: none"> <li>1. Mower blades are not engaged and at the proper height.</li> <li>2. The Cyclone Rake Engine is not on full throttle.</li> <li>3. Driving too fast.</li> <li>4. Using mulching blades on the mower deck.</li> <li>5. System is clogged.</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>2. Slide the throttle control all the way to the right (rabbit).</li> <li>3. Use a slower gear/speed on your mower for best results.</li> <li>4. If you are using mulching blades on your mower deck, we recommend that you switch to standard or high lift blades.</li> <li>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.</li> </ol>
<b>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.)</b>	<ol style="list-style-type: none"> <li>1. Impeller bolt loose</li> <li>2. Impeller blade is damaged.</li> <li>3. Impeller has separated from the hub.</li> </ol>	<ol style="list-style-type: none"> <li>1. Disconnect the spark plug wire, look inside the blower housing and confirm that the impeller bolt is firmly in place.</li> <li>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.</li> <li>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.</li> </ol>
<b>The Collector Bag will not fold down.</b>	<ol style="list-style-type: none"> <li>1. The side link assembly is pointing in wrong direction.</li> <li>2. The back of the collector is closed.</li> <li>3. The Bag collar is not in the correct position.</li> </ol>	<ol style="list-style-type: none"> <li>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)</li> <li>2. Be sure the back of the bag is open as if you were going to empty debris before attempting to fold the bag.</li> <li>3. As you fold down the second side make sure you flip the bag collar flat as you lower the side.</li> </ol>
<b>There is no, or very little suction when using the extension hoses.</b>	<ol style="list-style-type: none"> <li>1. Cyclone Rake Engine not running on full throttle.</li> <li>2. System is clogged.</li> <li>3. Too many twist and turns in the hose</li> </ol>	<ol style="list-style-type: none"> <li>1. Slide the throttle control all the way to the right (rabbit).</li> <li>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.</li> <li>3. Keep the hose as straight as possible when vacuuming.</li> </ol>

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Correction
The Power Lift Unloader is not working.	<ol style="list-style-type: none"> <li>1. Battery is not charged.</li> <li>2. The switch on the handle does not “click.”</li> <li>3. The light on the charger turns right to green when plugged into the wall.</li> <li>4. The light on the charger goes from red to green but lifter still not working.</li> <li>5. There are no lights on the charger block.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug in the charger and leave it for a few hours or overnight.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>5. If there are no lights on the plug block once it is plugged into the wall, replacing the charger will be required.</li> </ol>



## 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 the Briggs & Stratton® 6.5HP Vanguard™ Cyclonic 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 6.5HP Vanguard™ Cyclonic 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 - RESIDENTIAL USE

Your new Cyclone Rake with the Briggs & Stratton® 8HP Vanguard™ 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 - COMMERCIAL USE

Your new commercial use Cyclone Rake with the Briggs & Stratton® 8HP Vanguard™ 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/](http://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](http://WWW.CYCLONERAKE.COM/CR-ASSEMBLY-VIDEOS)**



Assembling the Folded Chassis



Installing Hinge Blocks



Installing Caster Pads & Wheels



Installing the Single Pin Hitch & Hose Hanger



Installing Extender Brackets & J-Hooks



Folding Up the Collector



Installing the Collector onto the Chassis



Installing the Pull-Start Engine



Filling the XR950-PRO, 8HP Pull-Start Engine with Oil



Filling the 6.5HP Vanguard Cyclonic 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 Down for Storage.



Starting & Stopping the XR950-PRO Engine



Starting & Stopping the 6.5HP Vanguard Cyclonic Engine



Starting & Stopping the 8HP Pull-Start Engines



Starting & Stopping the 8HP Electric Start Engine



Changing the Engine Oil on the XR950-PRO and 8HP Engine.



Changing the Oil on the 6.5HP Vanguard Cyclonic Engine



Changing the Air Filter on the XR950-PRO, 8 HP & 10 HP Engines



Replacing the Spark plug.



Charging the Electric Start Battery

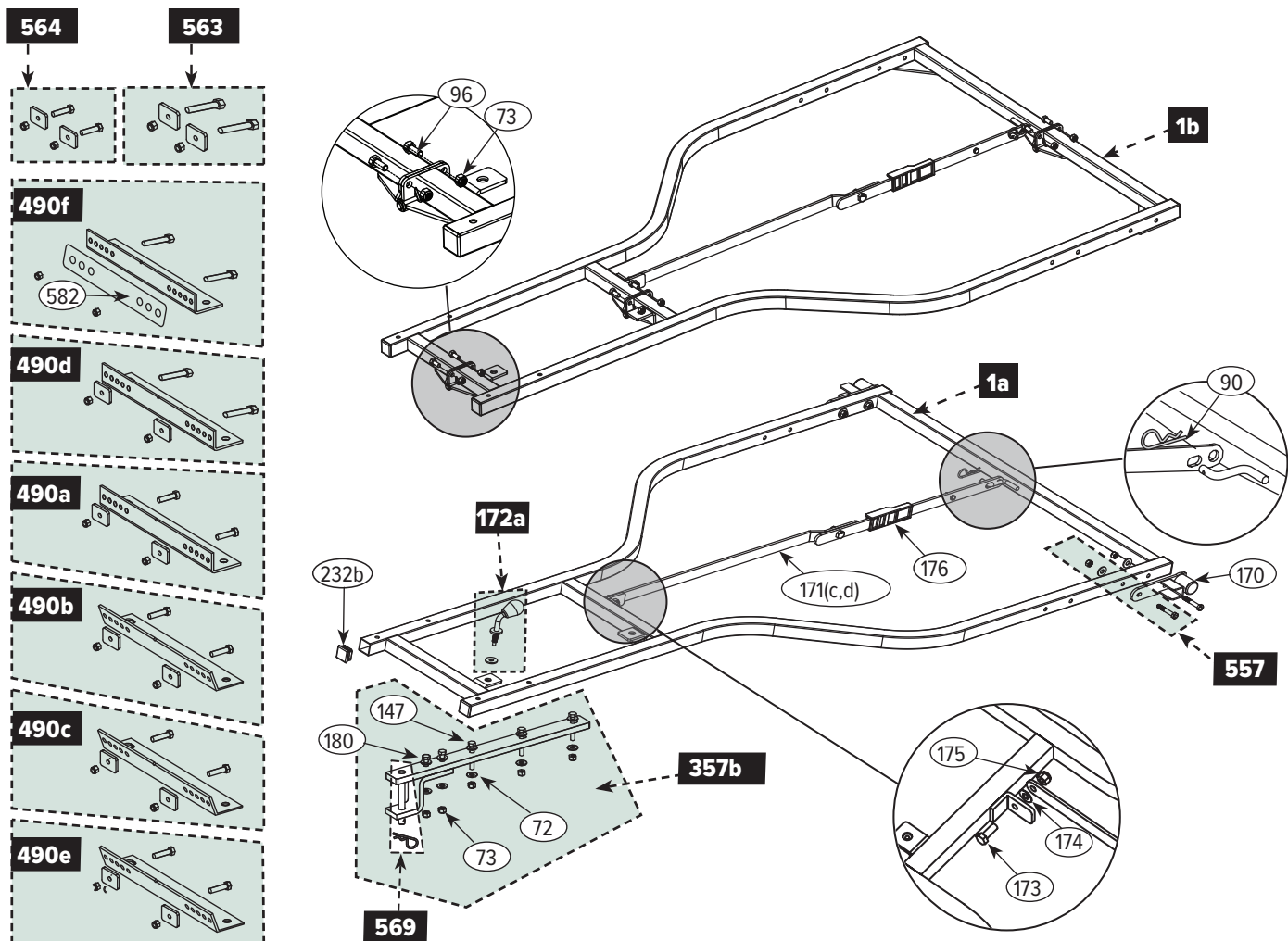


## **PARTS LIST**

- **CRS COMMANDER**
- **CRS XL**

## CHASSIS UNIT - ALL CYCLONE RAKES

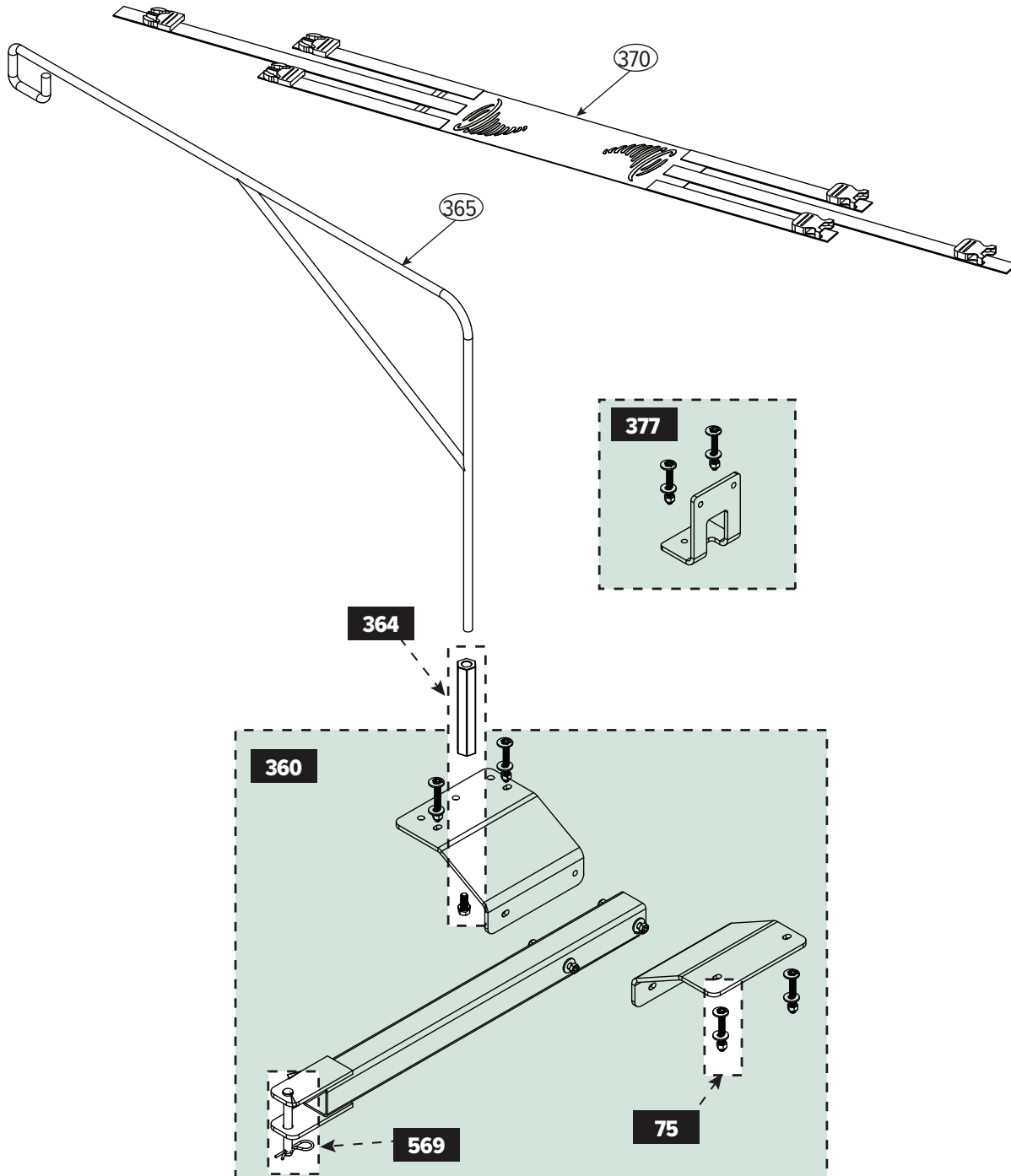
Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
1a	Chassis Unit, complete as boxed - Classic & Commander	01-01-600	176	Slider bracket for dump link	01-01-1856
1b	Chassis Unit, (folded) complete as boxed - Commercial PRO, XL & Z-10	02-04-700	180	5/16-18 x 1.5" Bolt	01-01-482
72	5/16" Washer	01-01-152	232b	1.25" Cap plug - black	09-01-056
73	5/16-18 Nylon lock nut	01-01-151	357b	Extended Hitch leaves- (set of 2)	01-04-154
90	Bridge pin, large (0.118 dia. x 2.4" long)	01-01-203	490a	90° Hitch bar w/hardware	208-090A
96	5/16-18 x .75" bolt	01-01-201	490b	70° Hitch bar w/hardware	208-070A
147	5/16-18 x 2.5" bolt	01-01-165	490c	55° Hitch bar w/hardware	208-055A
170	Hinge block	01-02-014	490d	90° Hitch bar w/long bolts	208-090XA
171c	Dump link assembly, w/slider bracket - Classic & Commander - black	01-02-584	490e	80° Hitch bar w/hardware	208-080A
171d	Dump link assembly, w/slider bracket - Commercial PRO, XL & Z-10 - black	02-02-584	490f	90° Hitch bar w/reinforced plate	208-090ZA
172a	Engine clamp handle w/rubber washers (set of 2)	01-02-681	557	5/16-18 x 2" Bolt, nut & washer	01-02-124
173	M10 x 25 mm Bolt, for dump linkage	01-01-802	563	Standard Hitch Bar hardware w/standard bolts (set of 2)	01-02-1434
174	3/8" I.D. x 1" O.D. Nylon washer	01-01-196	564	Standard Hitch Bar hardware w/long bolts (set of 2)	01-02-683
175	M10 Nylon lock nut	01-01-803	569	1/2" x 4.5" Hitch pin & 2-1/2" Bridge pin (set of 2)	01-02-127
			582	Reinforcing Plate	01-01-1899





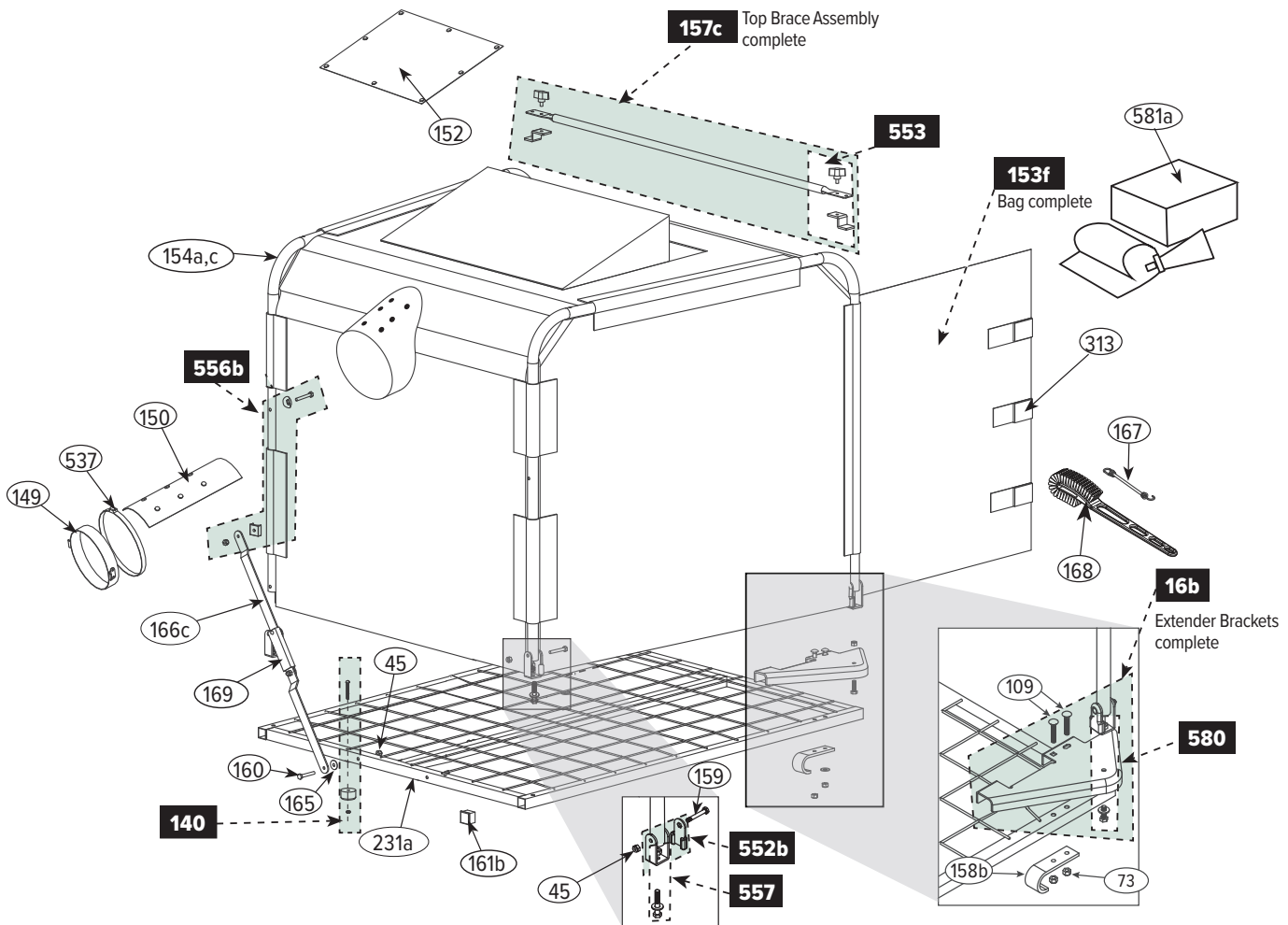
# SINGLE POINT HITCH - CRS

Ref. #	Part Name	Part #
75 .....	5/16-18 2.5 bolt, nut and washer (set of 4).....	01-02-129
360.....	Tow Bar Assembly-CRS.....	14-03-001
364.....	Hose Hanger mount & hardware.....	14-02-008
365.....	Hose Hanger Assembly.....	14-02-006
370.....	Hose Hammock .....	14-01-013
377.....	Jack Stand Conversion Kit .....	14-02-012
569.....	1/2" x 4" Hitch pin and 2-1/2" Bridge pin .....	01-02-127



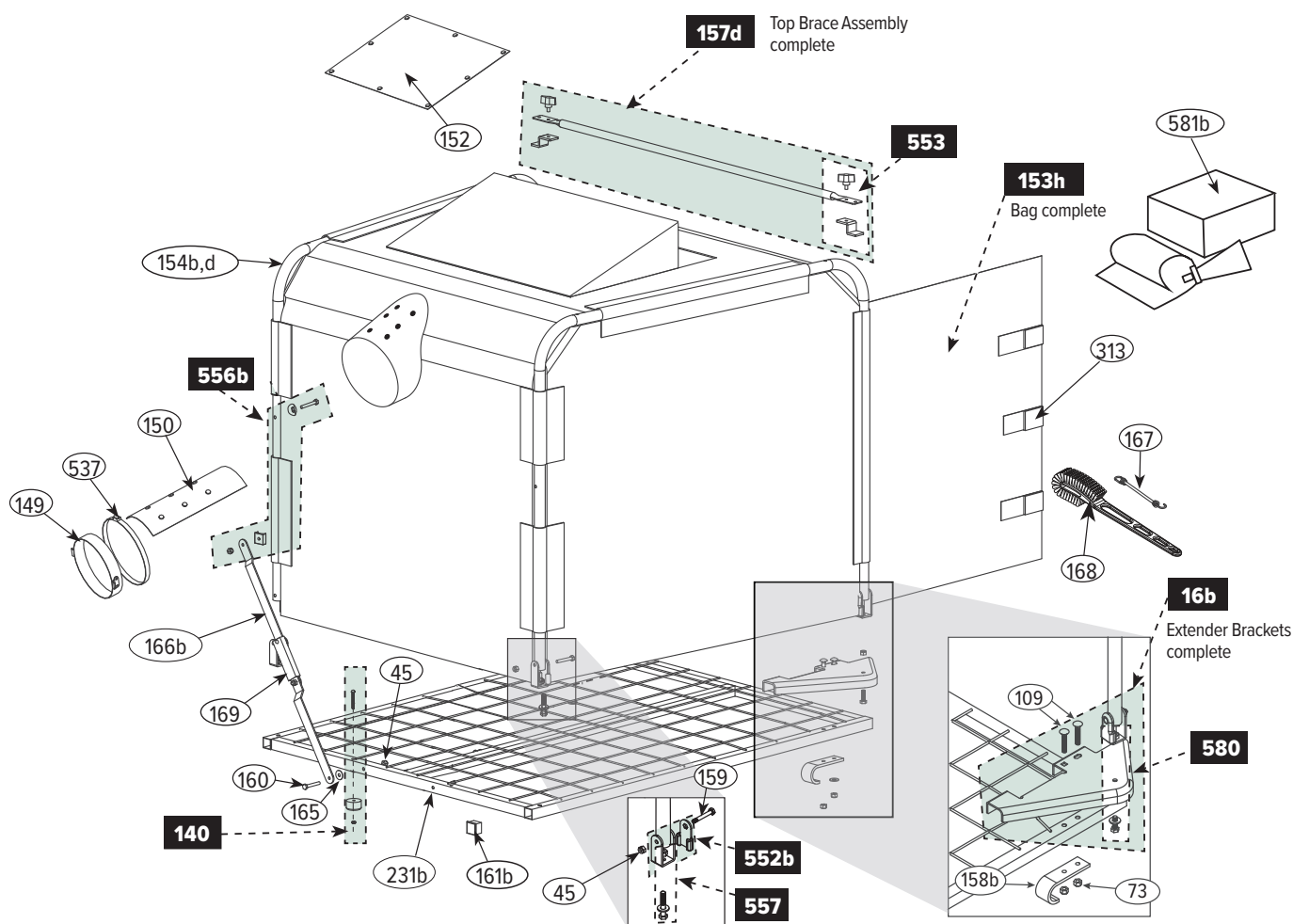
## COLLECTOR UNIT - CRS COMMANDER

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
2c.....	Collector Unit, complete as boxed - Commander .....	03-01-601	165.....	1/4" I.D. x 1" O.D. Nylon washer .....	01-01-158
16b.....	Extender bracket, complete pair as boxed - black .....	05-03-040	166c.....	Side link assembly w/slider bracket - Commander - black.....	01-02-585
45.....	1/4"-20 Nylon lock nut.....	01-01-157	167.....	1/4" x 12" Short bungee, for collector frame.....	01-01-242
73.....	5/16-18 Nylon lock nut.....	01-01-151	168.....	Top screen brush.....	01-01-500
109.....	5/16-18 x 1.75" Carriage bolt.....	01-01-1034	169.....	Slider bracket for side link - black.....	01-01-1855
140.....	Rubber foot kit w/hardware (set of 2).....	01-02-070	231a.....	Collector frame complete as boxed - Commander .....	03-04-001
149.....	Metal bag collar assembly, w/strikes.....	01-02-250	313.....	Buckle set, male & female .....	01-02-472
150.....	Vinyl neck insert, for collector bag .....	02-01-305	537.....	Band clamp, for bag collar.....	01-01-1148
152.....	Rear vinyl insert, for collector bag .....	01-01-568	552b.....	Hinge bracket & guard - black.....	01-02-679
153f.....	Collector Bag complete - Commander.....	03-03-308	553.....	Top brace bracket & Clamp knob (set of 2) .....	01-02-120
154a.....	1 Three-Piece Side tube as boxed - Commander .....	01-03-2195	556b.....	Side tube spacers w/nut & bolt - black .....	01-02-680
154c.....	2 Three-Piece Side tube as boxed - Commander.....	01-03-2196	557.....	5/16-18 x 2" Bolt, nut & washer .....	01-02-124
157c.....	Top brace assembly complete as boxed - Commander .....	01-03-039	580.....	5/16-18 x 1" Bolt, nut & washer .....	01-02-157
158b.....	J-hook .....	01-01-025	581a.....	Collector Bag Repair Kit - green.....	01-04-152
159.....	1/4-20 x 1.75 Special bolt w/short thread.....	01-01-598			
160.....	1/4-20 x 1.75 hex bolt.....	01-01-159			
161b.....	1" Cap plug - black.....	09-01-055			



## COLLECTOR UNIT - CRS XL

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
2d	Collector Unit, complete as boxed - XL	05-01-601	165	1/4" I.D. x 1" O.D. Nylon washer	01-01-158
16b	Extender bracket, complete pair as boxed - black	05-03-040	166d	Side link assembly w/slider bracket - XL - black	02-02-585
73	5/16-18 Nylon lock nut	01-01-151	167	1/4" x 12" Short bungee, for collector frame	01-01-242
45	1/4-20 Nylon lock nut	01-01-157	168	Top screen brush	01-01-500
109	5/16-18 x 1.75" Carriage bolt	01-01-1034	169	Slider bracket for side link - black	01-01-1855
140	Rubber foot kit w/hardware (set of 2)	01-02-070	231c	Collector frame complete as boxed - black - XL	05-04-001
149	Metal bag collar assembly, w/strikes	01-02-250	313	Buckle set, male & female	01-02-472
150	Vinyl neck insert, for collector bag	02-01-305	537	Band clamp, for bag collar	01-01-1148
152	Rear vinyl insert, for collector bag	01-01-568	552b	Hinge bracket & guard - black	01-02-679
153h	Collector Bag complete- XL	05-03-308	553	Top brace bracket & Clamp knob (set of 2)	01-02-120
154b	1 Side tube as boxed - XL (3 pc)	02-03-2195	556b	Side tube spacers w/nut & bolt - black	01-02-680
154d	2 Side tube as boxed - XL (6 pc)	02-03-2196	557	5/16-18 x 2" Bolt, nut & washer	01-02-124
157d	Top brace assembly complete as boxed - XL	02-03-004	580	5/16-18 x 1" Bolt, nut & washer	01-02-157
158	J-hook	01-01-025	581b	Collector Bag Repair Kit - black	01-04-153
159	1/4-20 x 1.75 Special bolt w/short thread	01-01-598			
160	1/4-20 x 1.75 hex bolt	01-01-159			
161b	1" Cap plug - black	09-01-055			



## CYCLONE RAKE SINGLE WHEELS

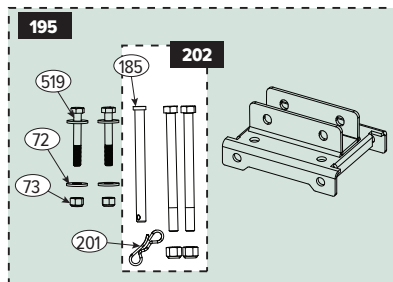
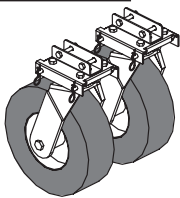
Ref. #	Part Name	Part #
6a	Single wheels w/caster pads (set of 2)	14-04-031
72	5/16" Washer	01-01-152
73	5/16-18 Nylon lock nut	01-01-151
185	10mm x 120mm Clevis pin, Single wheel for caster pad	01-01-244
195	Caster pad, complete w/hardware	01-03-018
201	Set of 4 bow tie cotter pins	01-02-2198
202	Hardware for Caster Pad (4 bolts w/nuts, 2 bow tie, 2clevis)	01-03-2198
221	Single tire & hub assembly	01-01-826
240	Valve stem cap	01-01-597
368	Axle with hardware for CRS Single Wheels	14-02-009
378	CRS Single Wheel Fork (1)	
451	Inner tube (includes valve stem & cap)	01-01-399
519	5/16-18 x 2.25" Bolt	01-01-1310

## CYCLONE RAKE DUAL-PRO WHEELS

Ref. #	Part Name	Part #
72	5/16" Washer	01-01-152
73	5/16-18 Nylon lock nut	01-01-151
185	10mm x 120mm Clevis pin, Dual-PRO wheel for caster pad	01-01-244
195	Caster pad, complete w/hardware	01-03-065
201	Set of 4 Bow tie cotter pins	01-02-2198
202	Hardware for Caster Pad (4 bolts w/nuts, 2 bow Tie, 2 clevis)	01-03-2198
217a	Dual-PRO Super Wheels w/caster pads (1 set)	14-04-070
221	Single tire & hub assembly	01-01-826
240	Valve stem cap	01-01-597
369	Axle with hardware for CRS Dual-Pro Wheels	14-01-010
380	CRS Dual Wheel Fork (1)	14-02-428
451	Inner tube (includes valve stem & cap)	01-01-399
510	Dual wheel connector	01-02-477
519	5/16-18 x 2.25" bolt	01-01-1310

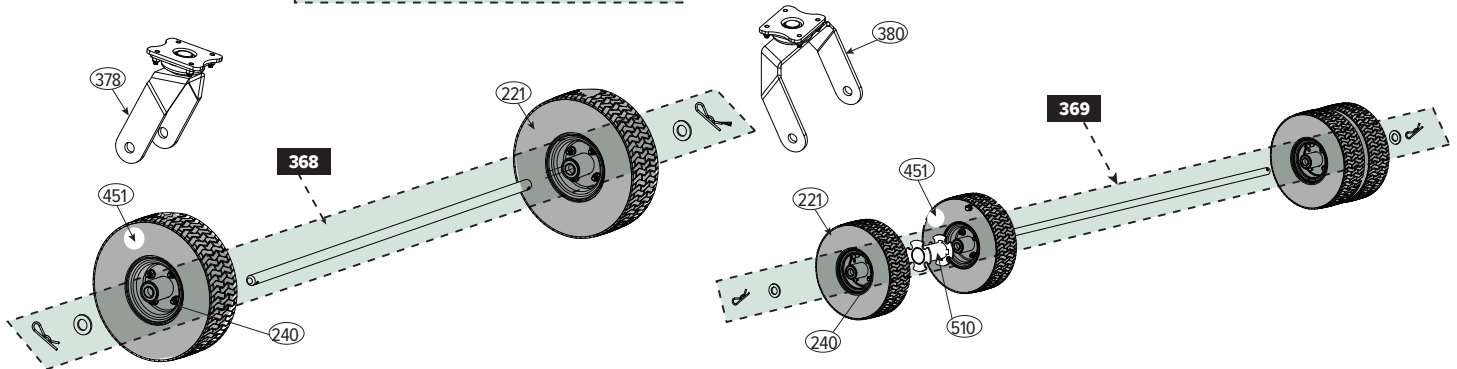
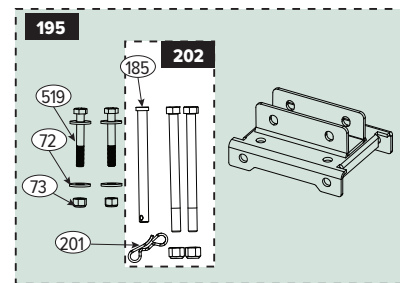
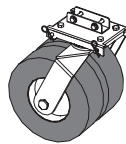
**6a** Single Wheels, as boxed,  
set of 2 w/caster pads.

**Recommended:  
25 PSI per tire**



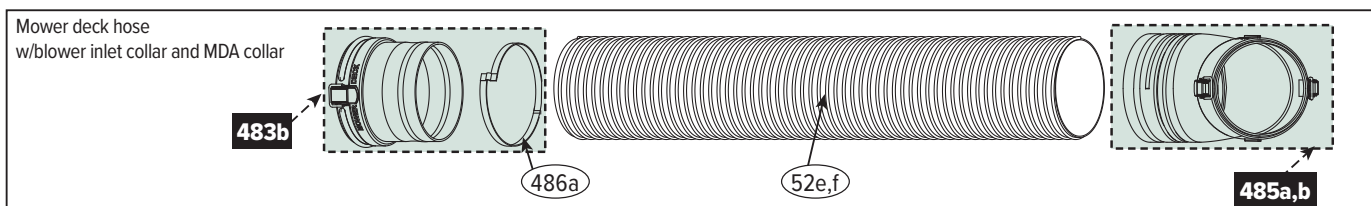
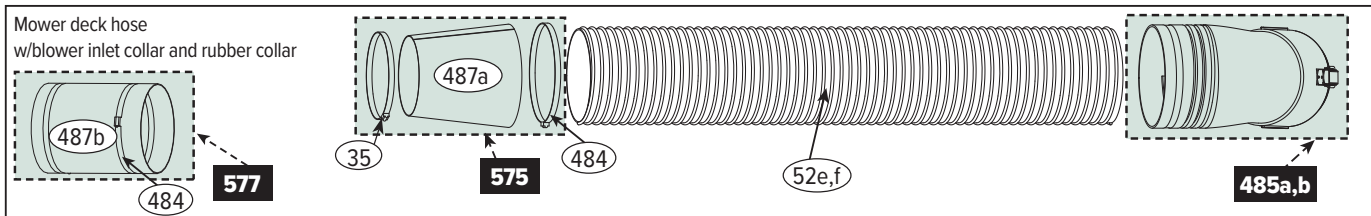
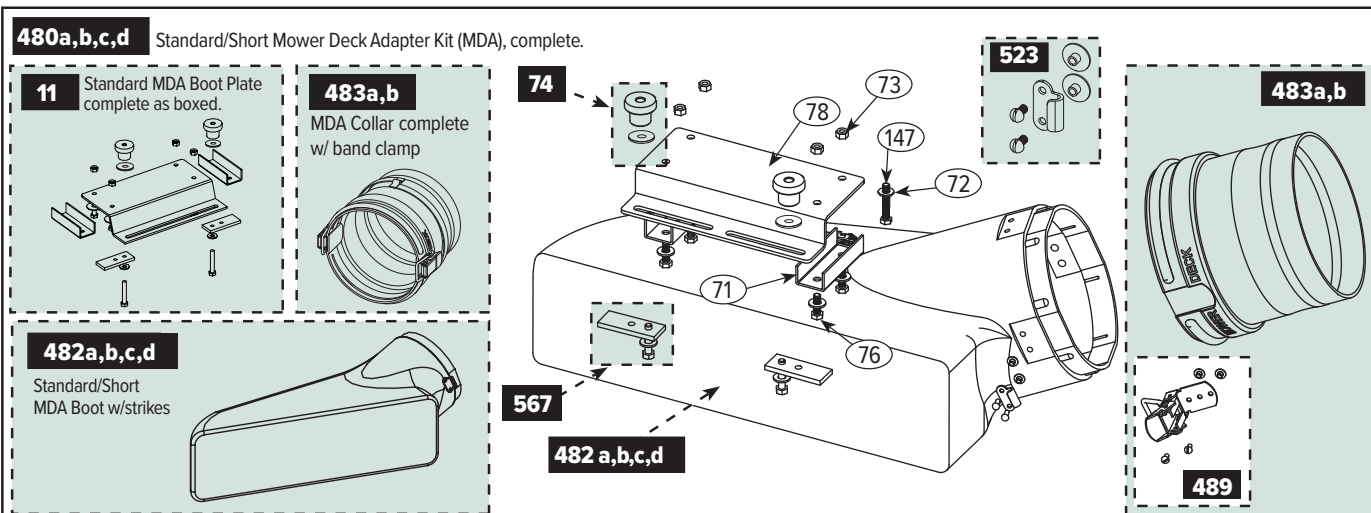
**217a** Dual-PRO Super Wheels,  
as boxed set of 1 w/caster pad.

**Recommended:  
15 PSI per tire  
(Only one set)**



## MDA & DECK HOSE - CRS COMMANDER & CRS XL

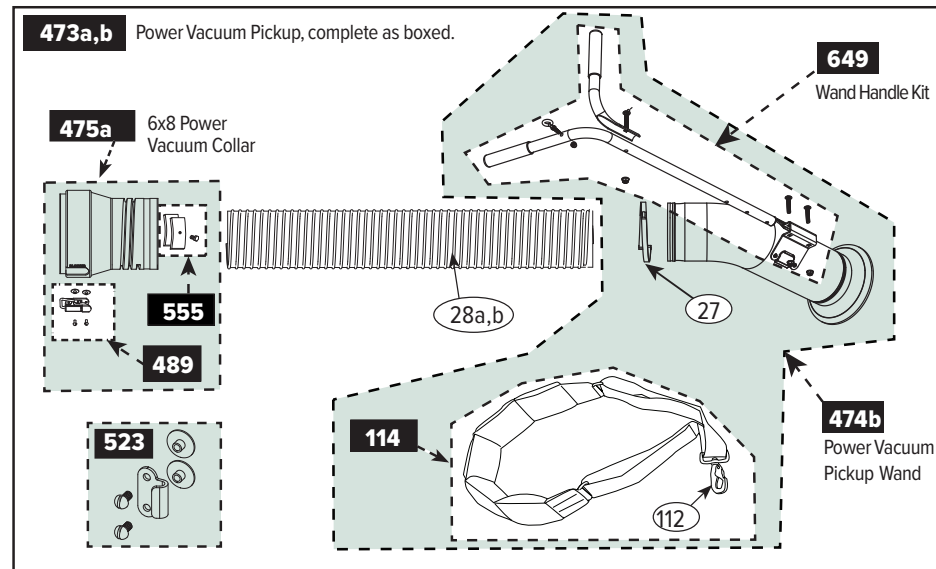
Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
11.....	Standard MDA boot plate complete as boxed.....	01-04-020	482b....	Short MDA boot w/strikes (uncut) - Commander.....	01-02-145
35.....	7" Band clamp, flat type.....	01-01-227	482c....	Standard MDA boot w/strikes (uncut) - XL.....	05-02-143
52e.....	Hose by the foot - PVC (green) 8"dia - available in 4, 5, 6, 8, 10, 12 & 25 ft.....	RPVC-08-LL	482d....	Short MDA boot w/strikes (uncut) - XL.....	05-02-145
52f.....	Hose by the foot - Urethane (yellow) 8"dia - available in 4, 5, 6, 8, 10, 12 & 25 ft.....	RPUR-08-LL	483a....	8" MDA collar complete w/ band clamp.....	01-02-080
71.....	Boot plate spacer.....	01-01-495	483b....	8" MDA collar complete w/ band clamp - XL.....	05-02-080
72.....	5/16" Washer.....	01-01-152	484.....	9" Band clamp, flat type.....	01-01-1152
73.....	5/16-18 Nylon lock nut.....	01-01-151	485a....	8" x 8" Blower inlet collar, complete w/latches, 8" dia. - Commander.....	01-02-059
74.....	Clamp knob w/rubber washers, for boot plate (set of 2).....	01-02-291	485b....	8" x 8" Blower inlet collar, complete w/latches, 8" dia. - XL.....	05-02-059
76.....	5/16-18 x 1" Bolt.....	01-01-171	486a....	8" Band clamp, bridge type.....	01-01-1154
78.....	Standard MDA boot plate.....	01-01-069	487a....	Tapered rubber collar for deck hose.....	01-01-1151
147.....	5/16-18 x 2.5" Hex bolt.....	01-01-165	487b....	8" x 8" rubber collar for deck hose.....	01-01-1705
480a....	Standard MDA Kit, complete - Commander.....	230	489.....	Latch w/hardware (set of 2).....	01-03-045
480b....	Standard MDA Kit, complete - XL.....	240	523.....	Standard strike w/hardware (set of 4).....	01-02-564
480c....	Short MDA Kit, complete - Commander.....	230G	567.....	MDA Support Block w/bolt & washer (set of 2).....	01-02-125
480d....	Short MDA Kit, complete - XL.....	240G	575.....	7" x 8" Tapered rubber collar kit.....	01-02-012
482a....	Standard MDA boot w/strikes (uncut) - Commander.....	01-02-143	577.....	8" x 8" Straight rubber collar kit.....	01-02-013



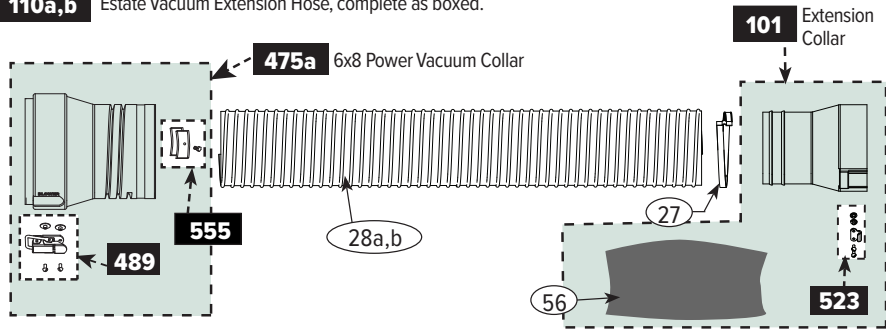
## ACCESSORIES - CRS COMMANDER & CRS XL

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
27	6" Band clamp, bridge type	01-02-024	477b	Power Unloader, complete as boxed - Urethane (yellow)	
28a	15 ft. - PVC (green), 6" dia	RPVC-06-15	- Commander	215	
28b	15 ft. - Urethane (yellow), 6" dia	RPUR-06-15	477c	Power Unloader, complete as boxed - PVC (green) - XL	236
36a	15 ft. - PVC (green), 7" dia	RPVC-07-15	477d	Power Unloader, complete as boxed - Urethane (yellow)	
36b	15 ft. - Urethane (yellow), 7" dia	RPUR-07-15	- XL	237	
54	7" Band clamp, bridge type	01-02-023	478a	Power Unloader chute, complete w/latches	
56	Estate Vacuum Sleeve	01-01-2190	- Commander	01-02-078	
112	Spring clip	01-01-1109	478b	Power Unloader chute, complete w/latches - XL	05-02-078
114	Strap w/ spring clip	01-04-055	479a	15 ft. Estate Vacuum extension hose complete as boxed	
472a	Estate Vacuum, complete as boxed - PVC (green)	227	- PVC (green), 6" dia	01-02-294	
472b	Estate Vacuum, complete as boxed - Urethane (yellow)	232	479b	15 ft. Estate Vacuum extension hose complete as boxed	
473a	Power Vacuum Pickup, complete as boxed - PVC (green)	225	- Urethane (yellow), 6" dia.	01-02-296	
473b	Power Vacuum Pickup, complete as boxed		489	Latch w/hardware (set of 2)	01-03-045
- Urethane (yellow)	229		523	Standard strike w/hardware (set of 4)	01-02-564
474b	Wand, complete w/handles & shoulder strap	01-04-2120	555	Inner & outer hose clamp w/screw	01-02-122
475a	6" x 8" Power Vacuum collar, complete w/latches	01-02-137	649	Wand Handle Replacement Kit	01-03-2124
476	Extension collar, complete w/strikes	01-02-295			
477a	Power Unloader, complete as boxed - PVC (green)-				
Commander	226				

**472a,b** Estate Vacuum, complete as boxed.

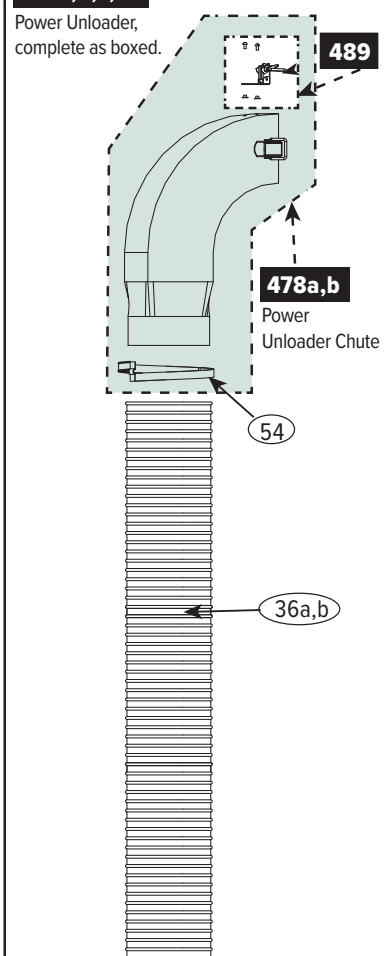


**110a,b** Estate Vacuum Extension Hose, complete as boxed.



**477a,b,c,d**

Power Unloader, complete as boxed.

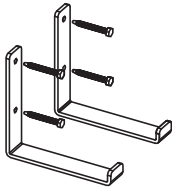




## ACCESSORIES - ALL CYCLONE RAKE MODELS

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
38	Wall Mount Kit, complete as boxed	205	92	M10 Lock nut, for Jack Stand	01-01-546
41c	Roof Rack Carrier, complete as boxed - Commander	220	93	M10 x 16 mm Set screw, for Jack Stand	01-01-545
41d	Roof Rack Carrier, complete as boxed - XL	221	94	Tab bracket, for Jack Stand	01-02-029
45	1/4-20 Nylon lock nut	01-01-157	376	CRS-3rd Wheel Jack Stand, complete as boxed	218CRS
46	1/4-20 x 1/2" Truss head screw	01-01-310	377	CRS 3rd Wheel Jack Stand Conversion Kit	14-02-012
47	5/16" x 30" Bungee cord for Roof Rack Carrier	01-01-396	554	Clamp bracket & knob for Roof Rack Carrier	01-02-121
81b	5" Caster wheel, for Jack Stand w/wrench	01-01-1718	558	Hose hanger bracket assembly for Roof Rack Carrier	01-02-160
82	Caster wrench, for Jack Stand 5" wheel	01-01-2077	564	Engine Maintenance Kit - 8 HP B&S Vanguard engines	231
83	Jack assembly, for Jack Stand	01-02-036	656	Engine Maintenance Kit - B&S XR950-PRO engines	213XR
84	Jack handle, for Jack Stand	01-01-554	657	Engine Maintenance Kit	
89	Clevis pin & ring, for Jack Stand	01-02-032		- B&S 6.5 HP Vanguard Cyclonic engine	213VG
90	Bridge pin, large (0.118 dia. x 2.4")	01-01-203			
91	5 mm Hex wrench, for Jack Stand	01-01-556			

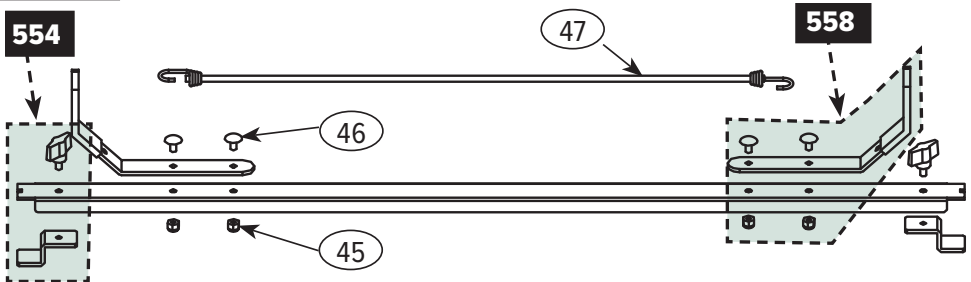
**38** Wall Mount Kit, complete as boxed.



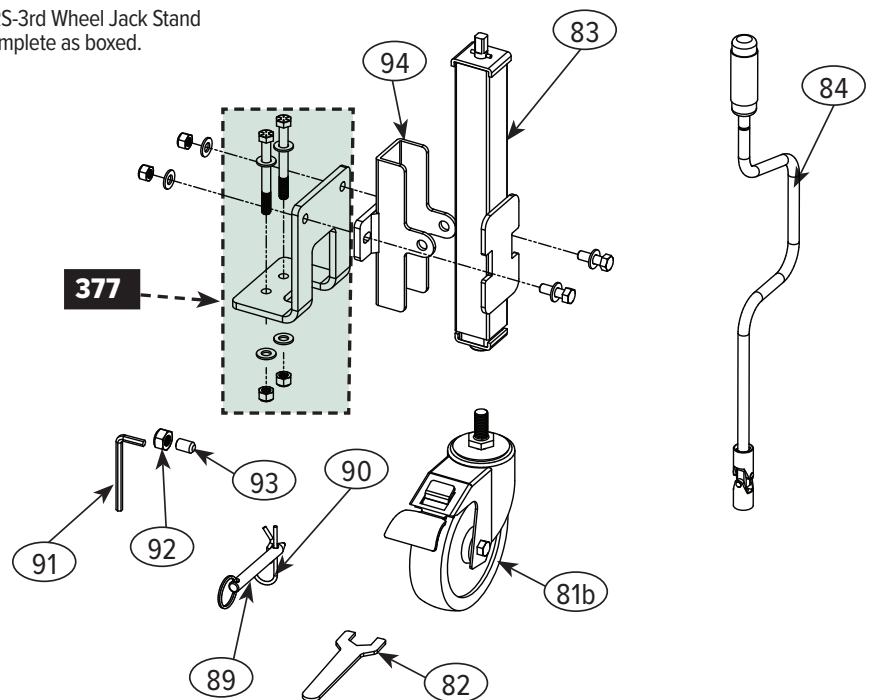
**564, 656, 657** Engine Maintenance Kit, complete as boxed.



**41c,d** Roof Rack Carrier, complete as boxed.



**376** CRS-3rd Wheel Jack Stand complete as boxed.



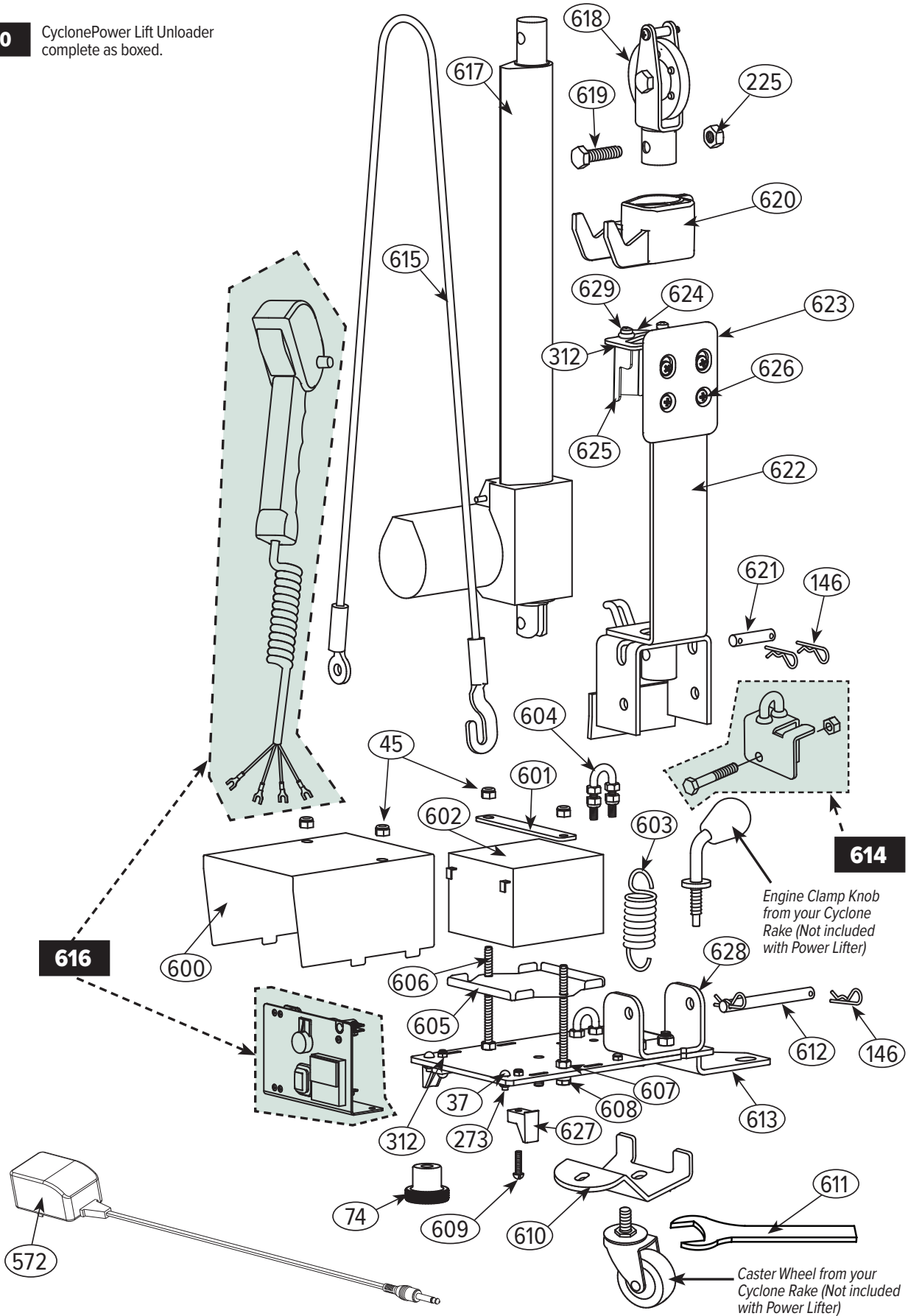
## ACCESSORIES - POWER-LIFT UNLOADER

Ref. #	Part Name	Part #
37 .....	10-24 x 1/2" Screw.....	01-01-173
45 .....	1/4-20 Nylon lock nut.....	01-01-157
74.....	Clamp knob .....	01-01-291
146.....	Bridge pin, 42 mm .....	01-01-473
225.....	3/8" Nylon lock nut .....	01-01-240
273 .....	10-24 Low profile nylon lock nut.....	01-01-199
312.....	M5 Nylon lock nut, 0.8 mm pitch.....	01-01-1122
520.....	Cyclone Power Lift Unloader, complete as boxed .....	244
572.....	Charger - Power-Lift .....	01-01-1504
600 .....	Battery cover - Power-Lift .....	01-01-1538
601 .....	Battery strap - Power-Lift.....	01-01-1552
602.....	Battery - Power Lifter.....	01-01-1539
603.....	Return spring - Power-Lift .....	01-01-1545
604.....	U-bolt w/nuts.....	01-02-554
605.....	Battery tray - Power-Lift .....	01-01-1537
606.....	1/4-20 x 4" Full thread bolt, grade 5.....	01-01-1536
607.....	1/4-20 Hex nut .....	01-01-1551
608.....	Spacer, battery bolt .....	01-01-1632
609.....	M5 x 20 mm Screw .....	01-01-1489
610 .....	Caster bracket - Power-Lift .....	01-01-1540
611 .....	Caster wrench - Power-Lift .....	01-01-1996
612.....	Pivot shaft - Power-Lift .....	01-01-1535
613.....	Base plate w/stud - Power-Lift.....	01-02-536
614.....	Collector bracket - Power-Lift.....	01-03-404
615.....	Lifter cable assembly - Power-Lift.....	01-02-543
616.....	Control panel assembly & Hand control - Power-Lift.....	01-03-540
617.....	Linear actuator - Power-Lift .....	01-01-1612
618.....	Pulley assembly complete - Power-Lift.....	01-03-395
619.....	3/8-16 x 1.75" Full thread bolt, grade 5 .....	01-01-1668
620.....	Hand control holder - Power-Lift .....	01-02-555
621.....	Holding pin - Power-Lift.....	01-01-1592
622.....	Actuator pivot assembly - Power-Lift .....	01-02-542
623.....	Wear plate - Power-Liftr .....	01-01-1627
624.....	Actuator brace - Power-Lift.....	01-01-1622
625.....	Lifter cable guide - Power-Lift.....	01-01-2167
626.....	M6 x 16 mm Pan head screw, 1.0 mm pitch.....	01-01-1642
627.....	Base plate foot - Power-Lift.....	01-01-1548
628.....	Pivot bracket - Power-Lift.....	01-01-1510
629.....	M5 x 16 mm Screw, 0.8 mm pitch.....	01-01-1641
645.....	Spare parts kit - Power-Lift (not shown).....	01-02-557

## ACCESSORIES - POWER-LIFT UNLOADER

**520**

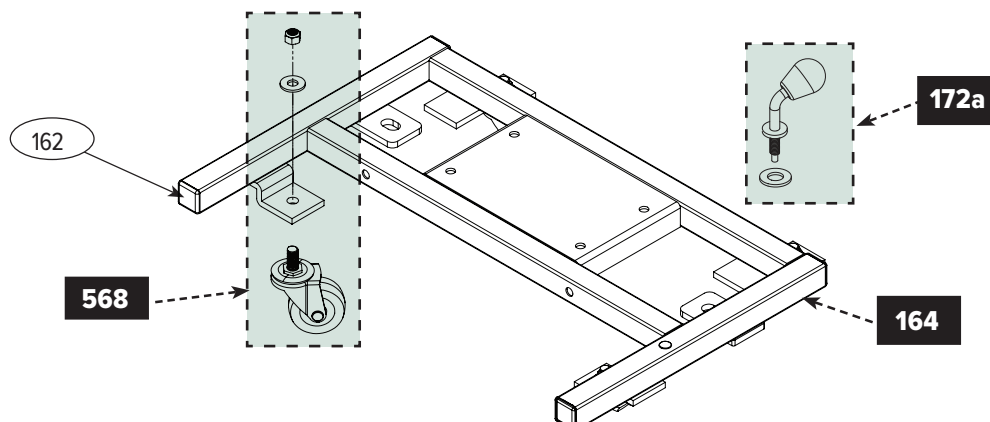
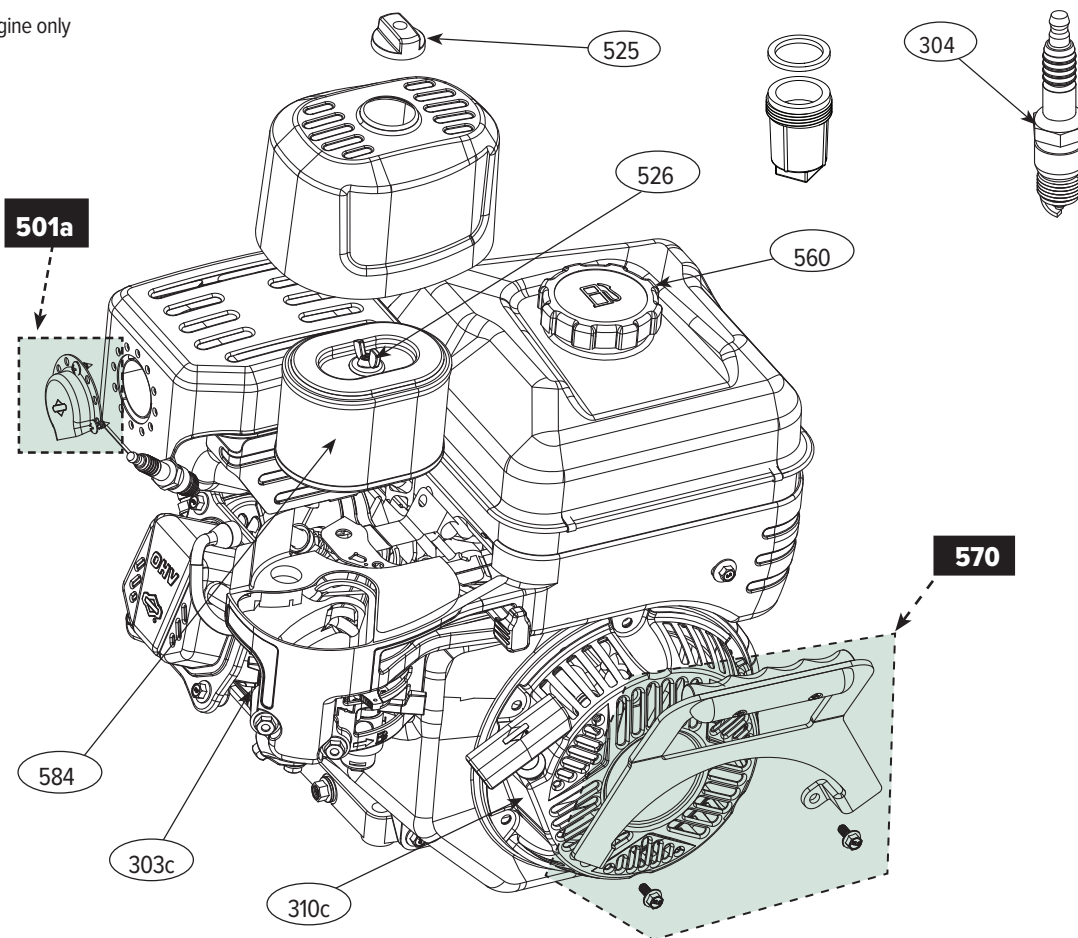
CyclonePower Lift Unloader  
complete as boxed.



## ENGINE - B&S XR950-PRO

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
162.....	1" Cap plug - black (set of 4) .....	09-02-055	525.....	Air filter cover knob - plastic .....	01-01-1744
164.....	Engine frame w/cap plugs .....	05-02-003	526.....	Wing nut - air filter .....	01-01-1745
172a.....	Engine clamp handle w/rubber washers (set of 2) .....	01-02-681	560.....	Carbon canister gas cap .....	01-01-782
302t.....	Engine - B&S - XR950-PRO .....	04-02-302	568.....	Caster wheel w/nut & washer for engine frame (set of 4).....	01-02-126
303c.....	Butterfly dipstick - XR950-PRO & Cyclonic engine .....	01-01-2151	570.....	Engine handle w/hardware, B&S XR950-PRO.....	01-03-2109
304.....	Spark plug, Bosch FR8DCX or equiv.....	01-01-758	584.....	Air & foam filters, B&S XR950-PRO.....	01-01-2116
310c.....	Recoil starter, B&S XR950-PRO .....	01-01-2113			
501a.....	Exhaust deflector w/hardware.....	01-01-1331			

**302t** XR950-PRO Engine only

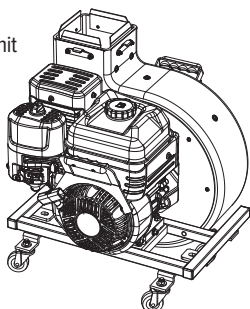


## BLOWER UNIT - B&S XR950-PRO

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
3f.....	Exit chute, w/latches - Commander .....	01-02-077	449.....	8" Blower Unit replacement kit, - std liner & 4-blade impeller - Commander .....	01-04-1039
4c.....	8" Blower Unit - XR950-PRO engine, 4-blade impeller & std liner - Commander .....	01-04-510	450.....	8" Blower Unit replacement kit, - blue liner & 4-blade impeller - Commander.....	01-04-1069
4d.....	8" Blower Unit - XR950-PRO engine, 5-blade orange impeller & std liner .....	02-04-400	452.....	8" Blower Unit replacement kit, - blue liner & 5-blade impeller .....	01-04-1070
4g.....	8" Blower Unit - XR950-PRO engine, 4-blade impeller & blue liner - Commander.....	01-04-560	454.....	Yellow 4-blade impeller replacement kit for Commander w/XR950-PRO engine .....	02-03-018
4h.....	8" Blower Unit - XR950-PRO engine, 5-blade orange impeller & blue liner .....	02-04-450	455.....	Orange 5-blade impeller replacement kit XR950-PRO engine .....	02-03-021
269.....	10-24 x 1/2" Truss head screw .....	01-01-563	489.....	Latch w/hardware (set of 2) .....	01-03-045
276.....	Safety cover hinge bracket w/t-nut & screw .....	01-02-261	523.....	Standard strike, w/hardware (set of 4).....	01-02-564
278b.....	8" Safety cover w/bolt & nut - Commander.....	01-02-1160	571.....	Exit plate w/studs, wide strike & nuts .....	01-02-128
289.....	Blower liner nut (special part - 8 req'd).....	01-01-145			
298.....	Blower front handle w/hardware .....	01-03-1866			
445.....	8" Blower housing replacement kit - std liner (no impeller) - Commander.....	01-03-1039			
446.....	8" Blower housing replacement kit - blue liner (no impeller)- Commander.....	01-03-1069			

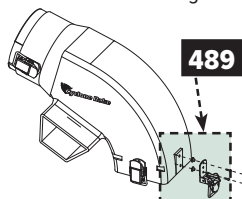
### 4 c,d,g

B&S XR950-PRO  
Engine/Blower Unit  
with impeller



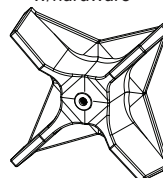
### 3f

Exit Chute,  
w/latches - geen



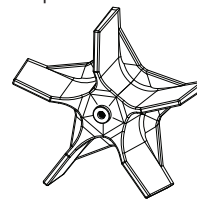
### 454

4-Blade Yellow Impeller  
Replacement kit  
w/hardware



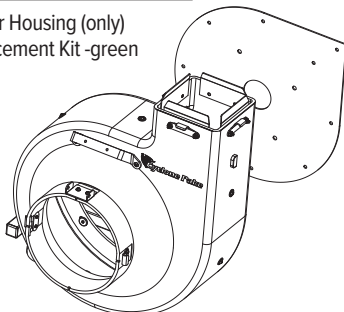
### 455

5-Blade Orange Impeller  
Replacement Kit w/hardware



### 445, 446

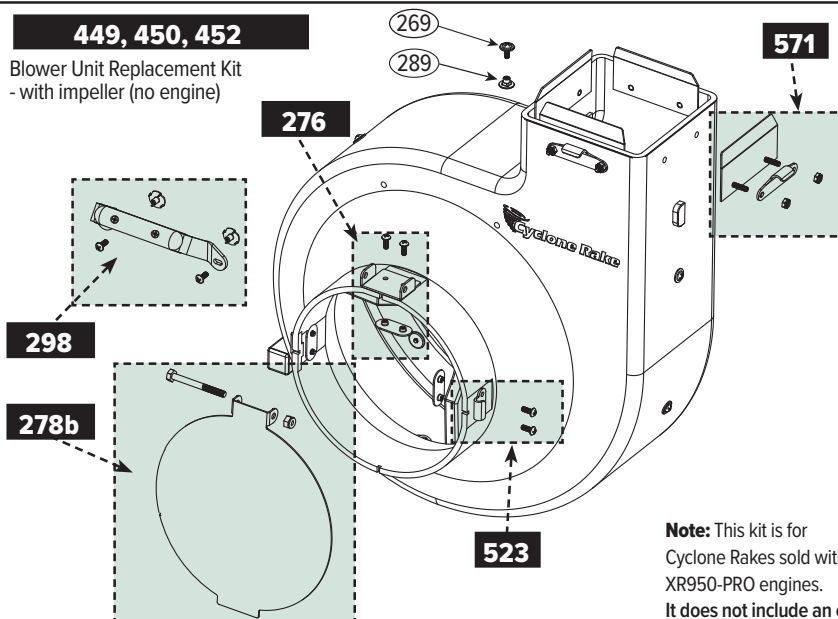
Blower Housing (only)  
Replacement Kit -green



**Note:** This kit is for Cyclone Rakes  
sold with XR950-PRO engines.  
It does not include an impeller  
or engine.

### 449, 450, 452

Blower Unit Replacement Kit  
- with impeller (no engine)



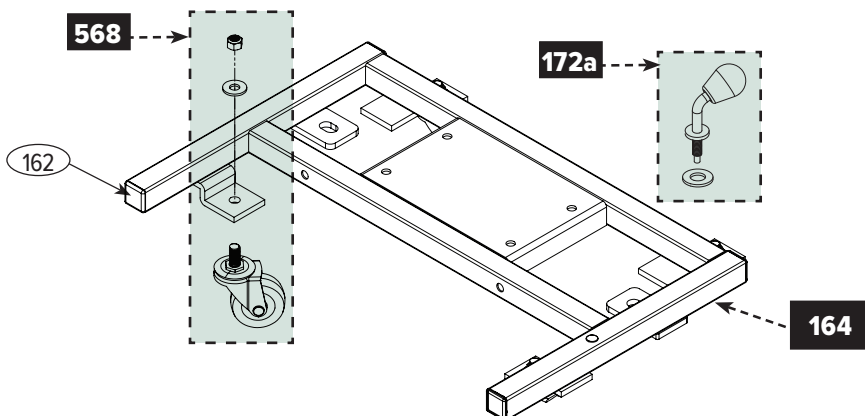
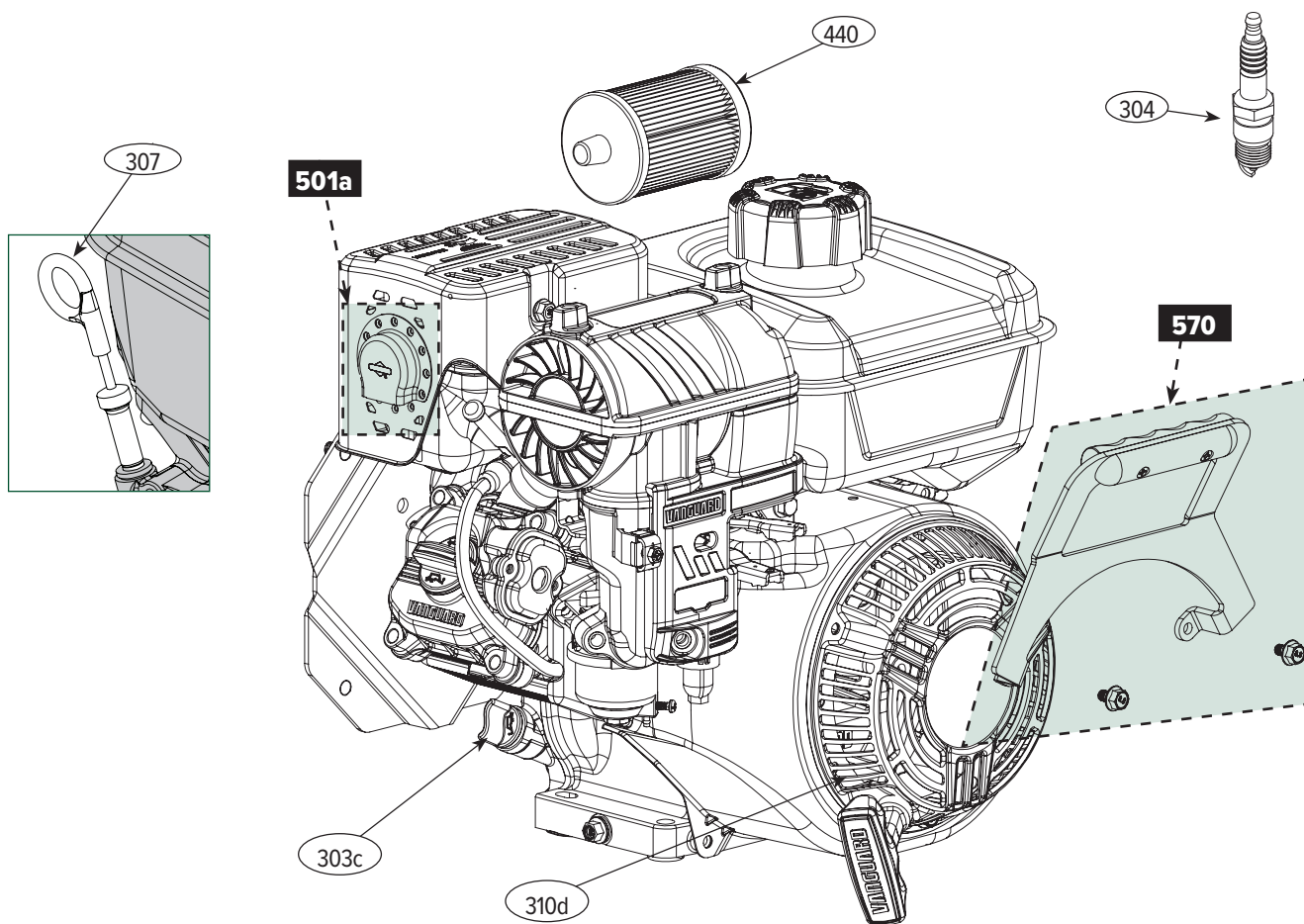
**Note:** This kit is for  
Cyclone Rakes sold with  
XR950-PRO engines.  
It does not include an engine.



## ENGINE - B&S 6.5 HP VANGUARD CYCLONIC

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
162.....	1" Cap plug - black (set of 4) .....	09-02-055	310d ....	Recoil starter, - B&S 6.5HP Cyclonic .....	01-01-2153
164.....	Engine frame w/cap plugs .....	05-02-003	440.....	Air filter, B&S 6.5HP Cyclonic .....	01-01-2116
172a.....	Engine clamp handle w/rubber washers (set of 2) .....	01-02-681	441.....	Exhaust deflector, B&S 6.5HP Cyclonic .....	01-01-2114
302s.....	Engine - B&S 6.5HP Vanguard Cyclonic .....	01-04-307	501a ....	Exhaust deflector w/hardware .....	01-01-1331
303c.....	Butterfly dipstick - XR950-PRO & Cyclonic engines.....	01-01-2151	568.....	Caster wheel w/nut & washer for engine frame (set of 4).....	01-02-126
304.....	Spark plug, Bosch FR8DCX or equiv.....	01-01-758	570.....	Engine handle, B&S XR950-PRO .....	01-03-2109
307.....	Long dipstick - B&S 6.5HP Cyclonic .....	01-01-2150			

### 302s 6.5 HP Vanguard Cyclonic Engine Only



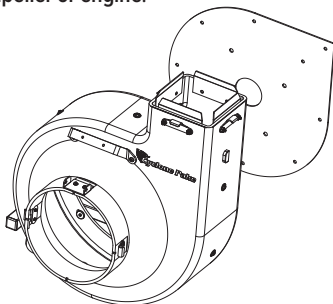


## BLOWER UNIT - B&S 6.5 HP VANGUARD CYCLONIC

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
3f.....	Exit chute, complete w/latches - Commander .....	01-02-077	449.....	8" Blower Unit replacement kit - std liner & 4-blade impeller - Commander .....	01-04-1039
4u.....	8" Blower Unit - 6.5 HP Cyclonic Engine, std liner & 4-blade impeller - Commander .....	01-04-610	450.....	8" Blower Unit replacement kit - blue liner & 4-blade impeller - Commander .....	01-04-1069
4v.....	8" Blower Unit - 6.5 HP Cyclonic Engine, blue liner & 4-blade impeller - Commander .....	01-04-660	452.....	8" Blower Unit replacement kit - blue liner & 5-blade impeller .....	01-04-1070
4w.....	8" Blower Unit - 6.5 HP Cyclonic Engine, std liner & orange 5-blade impeller.....	02-04-610	453.....	8" Blower Unit replacement kit - std liner & 5-blade impeller .....	01-04-1040
4x.....	8" Blower Unit - 6.5 HP Cyclonic Engine, blue liner & orange 5-blade impeller.....	02-04-660	454.....	Yellow 4-blade impeller replacement kit for Commander w/ 6.5HP Cyclonic engine .....	02-03-018
269.....	10-24 x 1/2" Truss head screw .....	01-01-563	455.....	Orange 5-blade impeller replacement kit for 6.5HP Cyclonic engine .....	02-03-021
276.....	Safety cover hinge bracket w/t-nut & screw .....	01-02-261	489.....	Latch w/hardware (set of 2) .....	01-03-045
278b.....	8" Safety cover w/bolt & nut - Commander.....	01-02-1160	523.....	Standard strike, w/hardware (set of 4).....	01-02-564
289.....	Blower liner nut (special part - 8 req'd).....	01-01-145	531.....	Collar shoe for latch .....	01-01-1276
298.....	Blower front handle w/hardware .....	01-03-1866	571.....	Exit plate w/studs, wide strike & nuts .....	01-02-128
445.....	8" Blower housing replacement kit - std liner (no impeller) - Commander.....	01-03-1039			
446.....	8" Blower housing replacement kit - blue liner (no impeller) - Commander.....	01-03-1069			

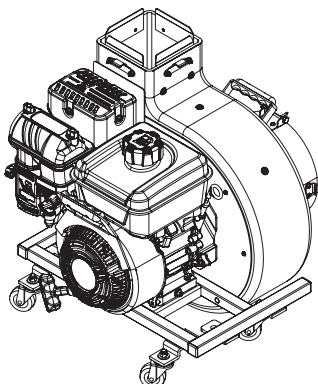
### 445, 446 Blower Housing (only) Replacement Kit -green

**Note:** This kit is for Cyclone Rakes sold with 6.5 HP Vanguard Cyclonic engines. It does not include an impeller or engine.

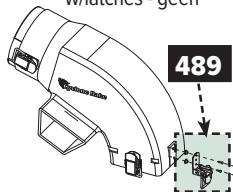


### 4u, v, w, x

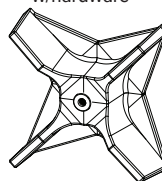
B&S 6.5 HP Cyclonic Engine/  
Blower Unit with impeller



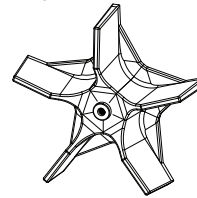
### 3d, f Exit Chute, complete w/latches - geen



### 454 4-Blade Yellow Impeller Replacement kit w/hardware

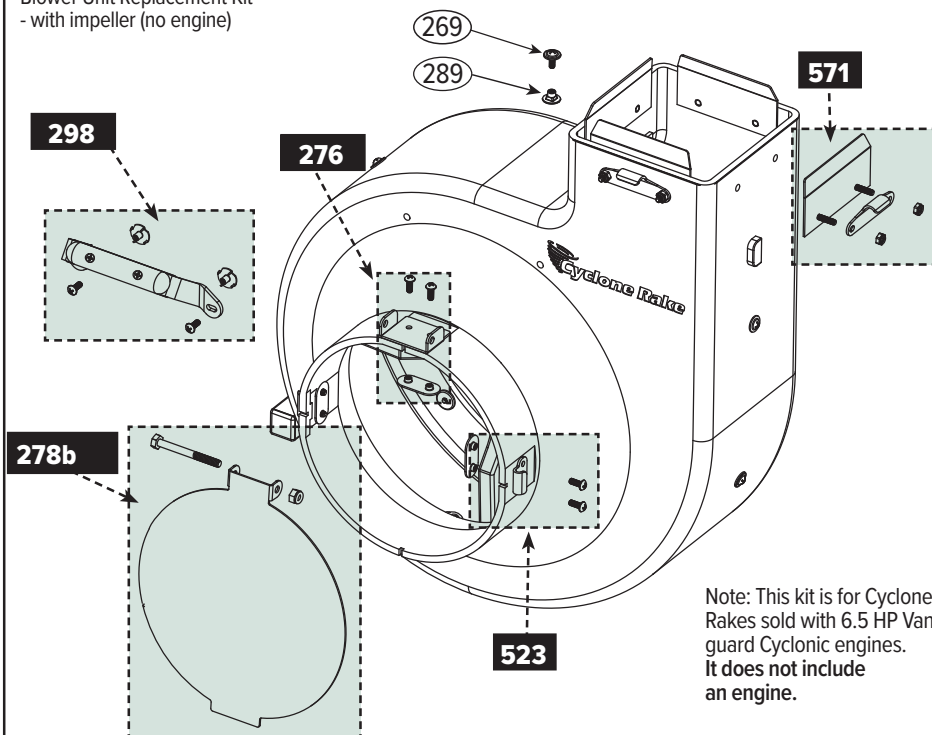


### 455 5-Blade Orange Impeller Replacement Kit w/hardware



### 449, 450, 452, 453

Blower Unit Replacement Kit  
- with impeller (no engine)

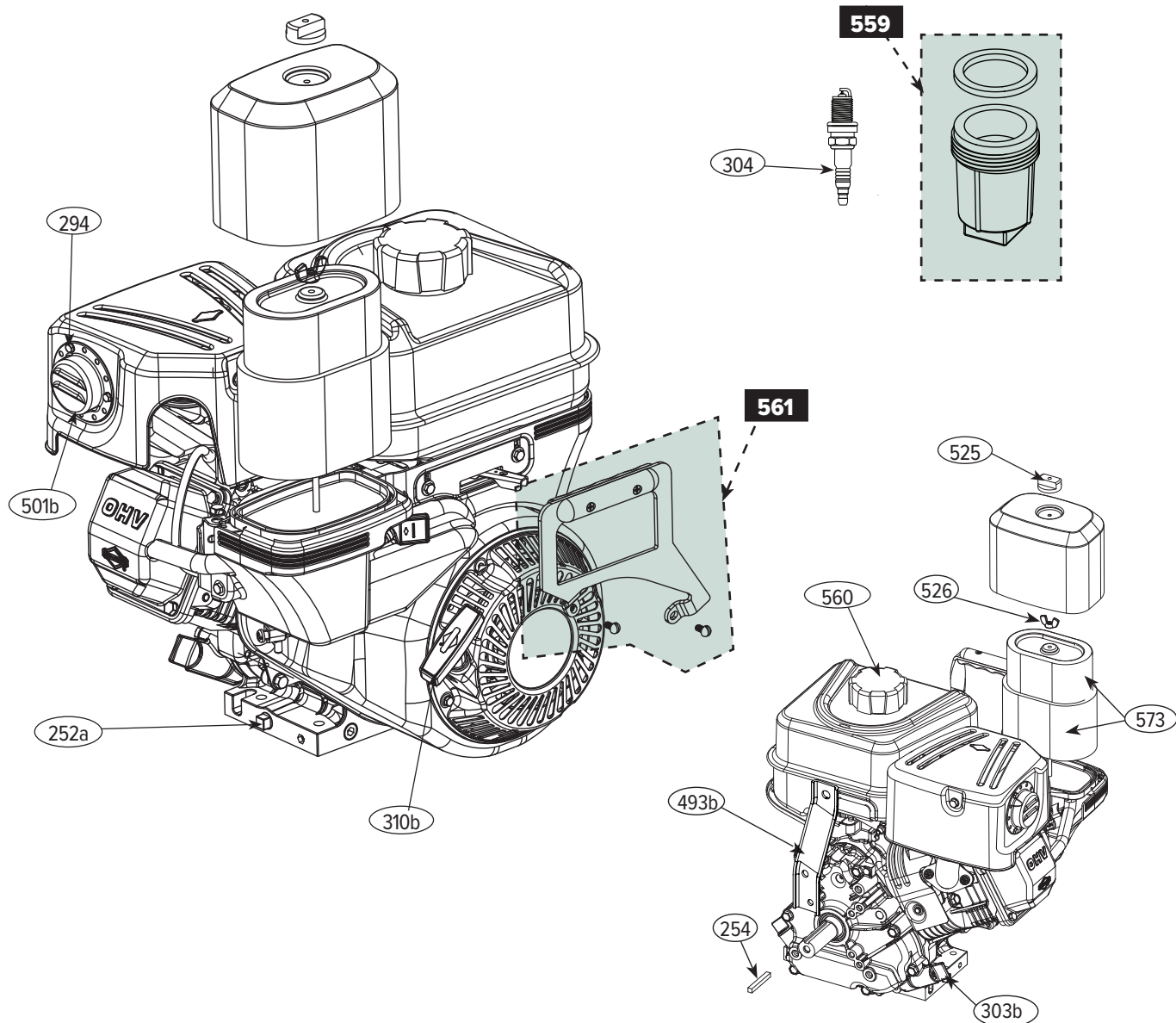


**Note:** This kit is for Cyclone Rakes sold with 6.5 HP Vanguard Cyclonic engines. It does not include an engine.

## ENGINE - B&S 8 HP - PULL-START

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
252a	Oil drain plug	01-01-812	526	Wing nut - air filter	01-01-1745
254	Shaft key	01-01-301	559	Fuel bowl & gasket - aluminum	01-02-609
294	8-3/8" Sheet metal screw	01-01-298	560	Carbon canister gas cap	01-01-782
302i	8 HP Briggs & Stratton Vanguard - XL (engine only)	05-02-302	561	Engine handle - Briggs & Stratton Vanguard - 8HP	06-02-017
303b	Oil fill butterfly plug	01-01-1356	573	Air & foam filters	
304	Spark plug, Bosch FR8DCX or equiv	01-01-758		- Briggs & Stratton Vanguard - 8 HP	01-01-1908
310b	Recoil starter, Briggs & Stratton Vanguard	01-01-1353			
311b	Engine handle bolt, Briggs & Stratton Vanguard	01-01-1800			
493b	Briggs front bracket 8 HP	06-01-014			
501b	Exhaust deflector - Briggs & Stratton Vanguard 8HP	05-01-1331			
525	Air filter cover knob - plastic	01-01-1744			

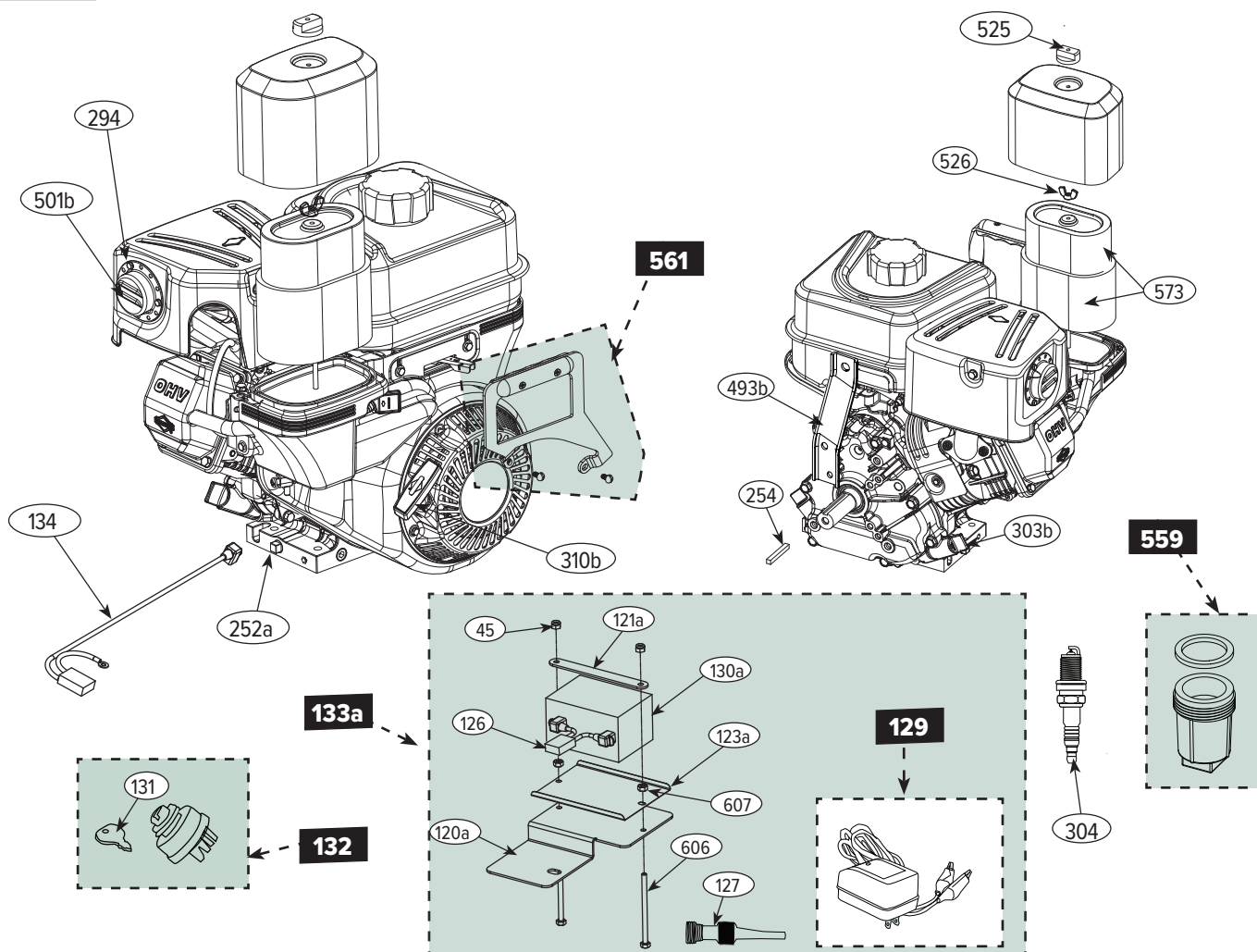
### 302i 8HP & 10HP B&S Vanguard Pull Start Engine Only



## ENGINE - B&S 8 HP - ELECTRIC START

Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
45	1/4-20 Nylon lock nut	01-01-157	303b	Oil fill butterfly plug	01-01-1356
120a	Battery platform	05-01-2226	304	Spark plug, Bosch FR8DCX or equiv.	01-01-758
121a	Battery hold down	05-01-2231	310b	Recoil starter, Briggs & Stratton Vanguard	01-01-1353
123a	Battery tray	05-01-2232	311b	Engine handle bolt, Briggs & Stratton Vanguard	01-01-1800
126	Battery harness	01-01-1942	493b	Briggs Front Bracket 8 HP	06-01-014
127	Funnel	01-01-1905	501b	Exhaust deflector	
129	Charger 800ma	01-01-1954		- Briggs & Stratton Vanguard 8HP	05-01-1331
130a	Battery- Lithium Ion	05-01-2225	525	Air filter cover knob - plastic	01-01-1744
131	Key - Electric Start	01-01-1978	526	Wing nut - air filter	01-01-1745
132	Switch & Key Assembly - Electric Start	01-02-1978	559	Fuel bowl & gasket - aluminum	01-02-609
133a	Battery Pack complete - Electric Start	05-03-1200	560	Carbon canister gas cap	01-01-782
134	Engine harness	01-01-1941	561	Engine handle - Briggs & Stratton Vanguard - 8HP	06-02-017
252a	Oil drain plug	01-01-812	573	Air & foam filters	
254	Shaft key	01-01-301		- Briggs & Stratton Vanguard - 8 HP	01-01-1908
294	8-3/8" Sheet metal screw	01-01-298	606	1/4-20 x 4" Hex bolt	01-01-1536
302m	8 HP Briggs & Stratton Vanguard w/electric start - XL (engine only)	05-02-302E	607	1/4-20 Hex nut	01-01-1551

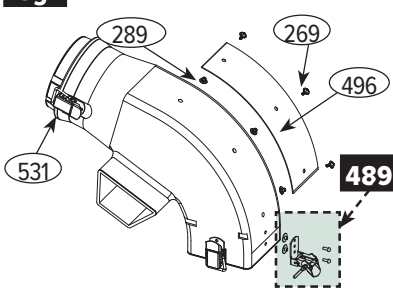
### 302m 8HP B&S Vanguard Electric Start Engine Only



## BLOWER UNIT - BRIGGS & STRATTON 8 HP ENGINES

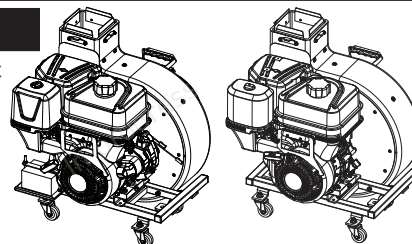
Ref. #	Part Name	Part #	Ref. #	Part Name	Part #
3g	Exit chute, complete w/latches - XL	05-02-077	298	Blower front handle w/hardware	01-03-1866
4i	8" Blower Unit - 8HP pull-start engine, std liner		289	Blower liner nut (special part - 8 req'd)	01-01-145
	- XL	05-04-500	489	Latch w/hardware (set of 2)	01-03-045
4k	8" Blower Unit - 8HP pull-start engine, blue liner		496	Exit chute liner	05-01-005
	- XL	05-04-550	523	Standard strike, w/hardware (set of 4)	01-02-564
4n	8" Blower Unit - 8HP electric start engine, std liner		531	Collar shoe for latch	01-01-1276
	- XL	05-04-500E	547	8" Blower Unit replacement kit - std liner & impeller-	
4q	8" Blower Unit - 8HP electric start engine, blue liner			XL	05-04-038
	- XL	05-04-550E	548	8" Blower Unit replacement kit - blue liner & impeller	
22	Green 5-blade impeller replacement kit w/hardware			- XL	05-04-068
	- XL	02-03-023	568	Caster wheel w/nut & washer for engine frame	01-02-126
88	8" Blower housing replacement kit - std liner & frame		571	Exit plate w/studs, wide strike & nuts	01-02-128
	(no impeller) - XL	05-03-1038			
97	8" Blower housing replacement kit - blue liner & frame				
	(no impeller) - XL	05-03-1068			
162	1" Cap plug - black (set of 4)	09-02-055			
172a	Engine clamp handle w/rubber washers (set of 2)	01-02-681			
269	10-24 x 1/2" Truss head screw	01-01-563			
276	Safety cover hinge bracket w/t-nut & screw	01-02-261			
278c	8" Safety cover, yellow w/bolt & nut - XL	05-02-1160			
289	Blower liner nut (special part - 8 req'd)	01-01-145			

**3g** Exit Chute, complete w/latches - yellow



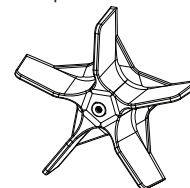
**4 i,k,n,q**

Engine/Blower Unit  
with impeller



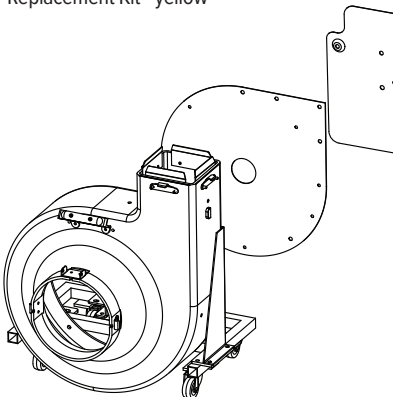
**22**

5-Blade Green Impeller  
replacement kit w/hardware



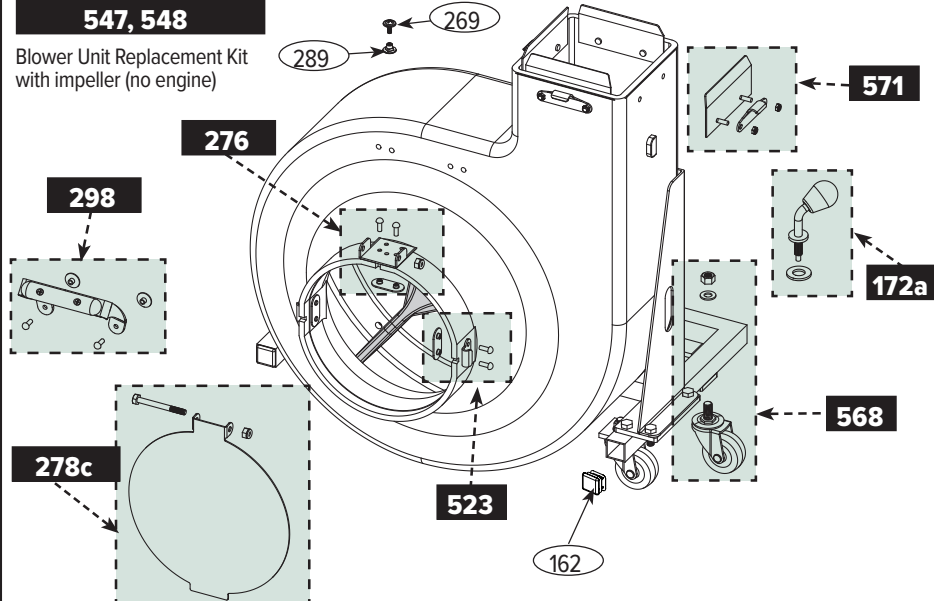
**88, 97**

Blower Housing (no impeller)  
Replacement Kit - yellow



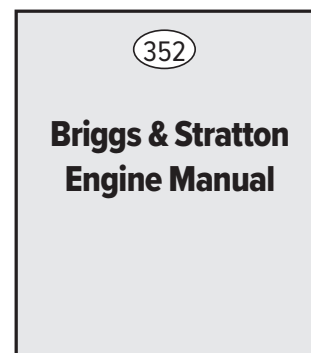
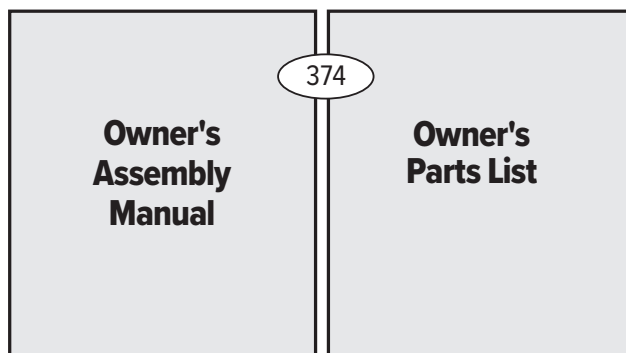
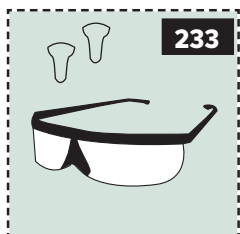
**547, 548**

Blower Unit Replacement Kit  
with impeller (no engine)



## OWNER'S KIT - ALL CYCLONE RAKE MODELS

Ref. #	Part Name	Part #
233.....	Safety glasses & ear plug set.....	01-04-013
352.....	Briggs & Stratton Operating & Maintenance Instructions .....	01-06-021
374.....	Owner's Assembly Manual & Parts List .....	14-06-010



## NOTES

