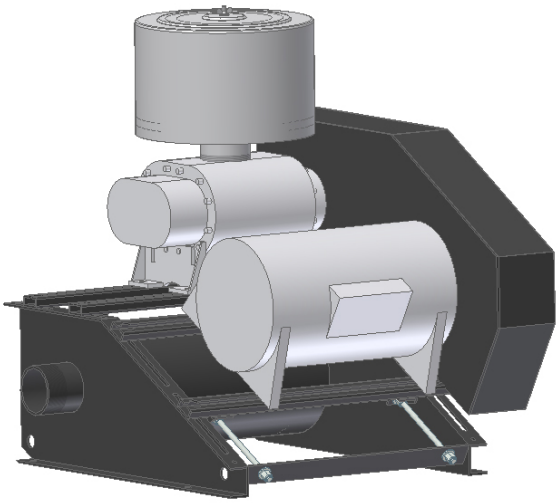
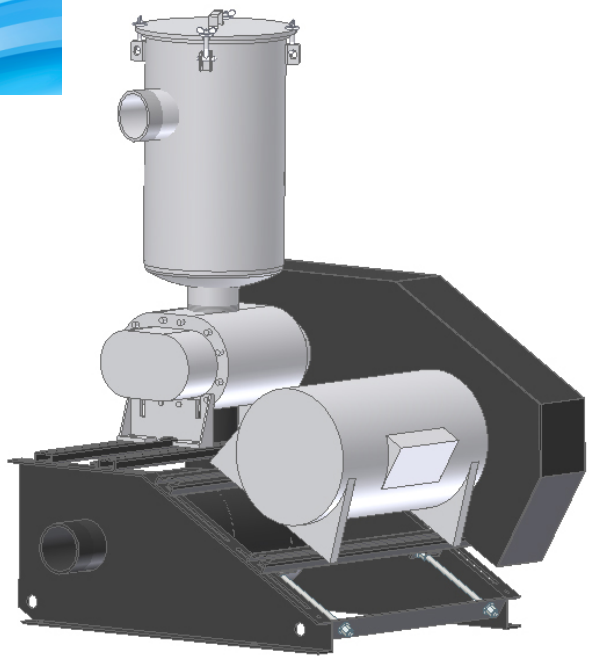




BBF Series
Blower Base Frame
Assembly Instructions

Rev.: BFA-9105

These assembly instructions are to be used as a general reference guide to facilitate assembly. Please consult the blower, bushing, sheave, and drive belt manufacturer's instruction manual for information and requirements regarding the installation of their equipment. All blower and motor models/brands are specified by the user.

Frequently Asked Questions
Important Information to Know
Before You Start

1. Can I use a right hand drive blower?
The Solberg BBF best accepts left hand drive blowers. To minimize issues during assembly, specify left hand drive blowers in the package design.

2. How can the BBF be adapted to work with small motor blower packages needing larger sheaves?
Some smaller blower and motor packages using larger sheaves may require component elevation to allow for proper operational clearance for sheaves and belts. This can be accomplished by fabricating spacer bars or adding a sliding motor base to raise the motor and/or blower appropriately. Solberg can quote & provide appropriate items upon request.

3. What can be done if motor mounting holes don't match bolts provided?
Motors smaller than 25 Horsepower may have 3/8" holes in the mounting base that are too small for the 1/2" carriage bolts provided as part of the kit. We suggest the following options to address the issue. Use a 3/8" (or appropriate size) bolt, wide flange flat washers (Solberg offers), lock washer and nut assembly to attach the motor. Additionally, some equipment may have cast mounting feet which are too thick for the standard bolts provided; Solberg can provide longer bolts upon request.

4. How can clearance issues between the belt guard and filter silencer be addressed?
Depending on your blower height, it may be necessary to use a nipple and/or coupling to elevate the filter silencer to obtain proper clearance above the belt guard.

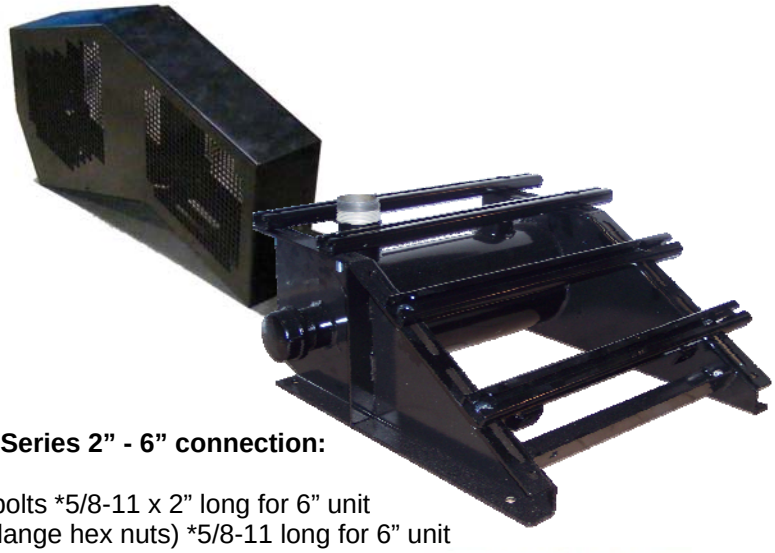
5. How is the blower connected to the BBF?
The BBF has a pipe stub connection extending from the base. A straight pipe nipple is inserted into the blower discharge and a rubber sleeve/boot and clamps are used to seal the connection. Refer to sections 2-5 of the instructions for more detail. Solberg offers optional Boot Kits designed for the BBF Series. For more information on rubber sleeve/boots or any other custom connection methods which may be required contact Solberg or your representative.

6. Why do I have extra hardware?
We include additional bolts, nuts, etc. for different belt centers and tensioning configurations.

Solberg's BBF Series
Blower Base Frame Parts List

Standard Solberg Supplied Base Frame Parts

1 BBF Series Base Frame



3 Channels

1 Tensioning Channel

1 Belt Guard

Assorted Nuts and Bolts for assembly of a BBF Series 2" - 6" connection:

(16) 1/2"-13 x 1-1/2" long carriage bolts *5/8-11 x 2" long for 6" unit
(16) 1/2"-13 "whiz" nuts, (serrated flange hex nuts) *5/8-11 long for 6" unit
(2) Beaded spacer tubes 7/8" long
(6) 1/2"-13 hex nuts
(6) 1/2" standard washers

Depending on your package use either:

(2) 1/2" -13 x 7" long carriage bolts
(2) 1/2"-13 x 4 1/2" long carriage bolts

Optional Flat Washer for 3/8" bolts for smaller motors

(4) 3/8" Flat Square Washer (supplied with 2" & 2-1/2" boot kits)

Included with Belt Guard:

(4) 1/2"-13 x 1 1/2" long carriage bolts
(4) 1/2"-13 "whiz" nuts, (serrated flange hex nuts)
(9) 1/4"-20 x 1/2" long cap screws

Customer Supplied Parts

(1) PD blower
(1) Electric motor
(1) Pipe nipple (threaded one end)
(2) Bushings
(2) Sheaves
(X) Belt(s)
(X) Thread Sealant
(1) Pressure Relief (If required)

<u>Customer or Solberg Supplied Parts</u> (Boot Kits available separately upon request)

(1) Rubber sleeve/boot
(2) Band clamps

Helpful Tools:
- Pipe wrench
- Allen wrench set
- 3/4" Combination wrench
- Screwdriver (for band clamps)
- Compact bolt/wire cutter
- Tension measuring tool
- Straight edge
- Lifting hoist
- 3/8” Socket wrench
- Soft mallet
- Tape measure
- Torque wrench (w/ sockets)
- Crescent wrench

Solberg’s BBF Series, Blower Base Frame Assembly Instructions

1.1 Materials Needed (MN):
- (1) Solberg blower base frame
- (2) Standard channels
- (4) ½”-13 x 1-1/2” carriage bolts
- (4) ½”-13 “Whiz” flange nuts

1.2 If a relief valve is required, install into the relief port prior to affixing the blower.

1.3 The frame is supplied with rails in place; slightly loosen rails for necessary adjustments.

1.4 If frame needs rails installed, place (2) standard channels on top of frame, the channels will overhang the frame on the right hand side. Place (4) carriage bolts through square holes and thread on nuts but do not tighten; rails need to be able to slide in frame slots.

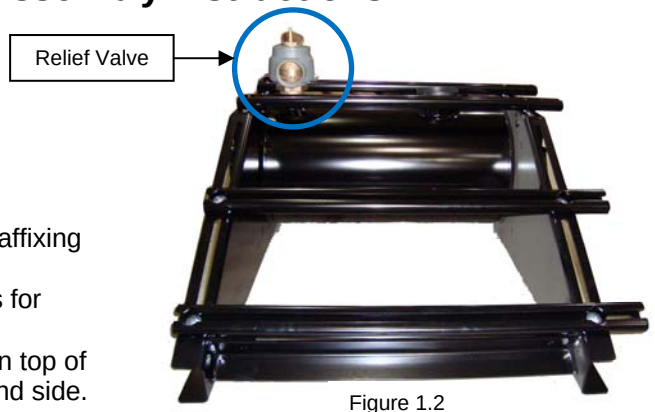


Figure 1.2

2.1 MN - (1) Flex Coupling
- (2) Band Clamps
- (4) ½”-13 x 1-1/2” carriage bolts

2.2 Slide flex coupling over the OD of the BBF inlet pipe stub. Slide band clamps over the OD of the flex coupling. Slide (4) carriage bolts, (2) into each channel with the threaded portion protruding up through the channel. These are for mounting the blower to the channels.

Figure 2.2

3.1 MN - (1) Blower
- (1) Pipe nipple
- Thread sealant

3.2 Tools Needed (TN): Pipe wrench

3.3 On blower, measure the distance from the bottom of the feet to the threaded inlet of the blower. Then measure the distance from the top of the inlet pipe stub to the top of the channels. This distance plus the thread engagement length of the pipe minus 1/8" inch for clearance should be the length of the pipe nipple. Seal to thread the nipple as appropriate.

4.1 MN - (1) Blower w/ pipe nipple
- (4) Blower washers (if supplied with blower)
- (4) ½"-13 "Whiz" flange nuts

4.2 TN - Lifting hoist
- ¾" Combination wrench

4.3 Lift the blower using a hoist system by the lifting eyelets; positioning it over the top of the BBF. As the blower is slowly lowered into place these actions need to be kept in mind:

4.3.1 The pipe nipple in bottom of blower needs to be fed into the flex coupling.

4.3.2 The channels need to be positioned on the BBF so the blower mounting feet will rest on them.

4.3.3 The carriage bolts need to be positioned in the channels so that they may be slid into the blower mounting feet after the blower is resting on the channels.

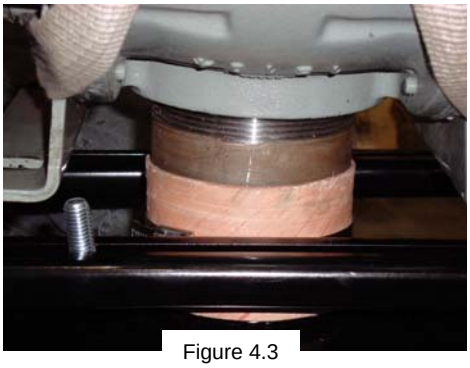


Figure 4.3

4.4 The location of the blower is dictated by the location of the BBF inlet. Once the blower is lowered and resting on the channels, use a ruler to square the channels to each other and to the BBF. Once the channels are square, tighten them securely into place. Next square the face of the blower with the edge of the rails. Squaring this precisely will make sheave alignment significantly easier later on in assembly. Slide carriage bolts into blower mounting feet and place blower washers on bolt. Then thread on nuts and tighten securely into place being careful not to twist the blower while tightening.

Figure 4.4

5.1 TN - Socket wrench or screwdriver

5.2 Slide flex coupling so that it covers both the BBF inlet pipe and blower pipe nipple equally. Tighten (1) band clamp around the blower pipe nipple and (1) band clamp around the BBF inlet pipe. They must be airtight seals.

6.1 MN - Skid or blocks

6.2 The BBF has 30-degree cuts in the side frame. Lift the front of the BBF until these 30-degree flats rest flat on the ground. Use a skid or blocks to prop the BBF in this position. Make sure to brace the BBF on the front and rear side so that it is not able to tip either direction.

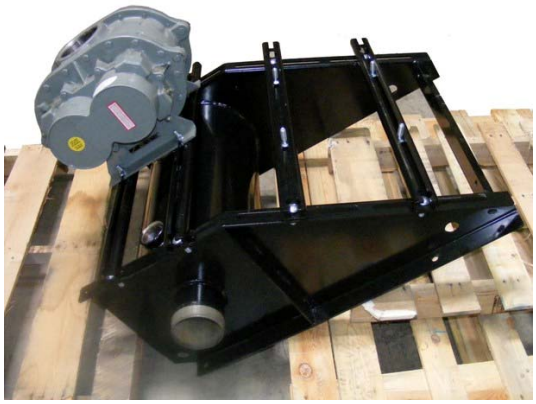


Figure 6.2

7.1 MN - (1) Standard channel
- (1) Tensioning channel
- (4) ½"-13 x 1-1/2" carriage bolts
- (4) ½"-13 "whiz" flange nuts
- (2) ½"-13 x X" carriage bolts, for tensioning
- (6) ½"-13 hex nuts, for tensioning
- (2) beaded spacer tubes 7/8" long
- (6) 1/2" standard washers

7.2 TN - ¾" combination wrench

7.3 Place standard channel in frame slots closest to blower, the channel will overhang the frame on the right. Place (2) carriage bolts through the square holes and thread on nuts lightly; it is necessary for rails to be able to slide. Holding the tensioning channel with the overhang to the right side place the (2) tensioning carriage bolts down through the square holes in the brackets welded to the bottom of the channel. The length of the tensioning carriage bolts will depend on the center distance that the drive belts are designed for. Note: There are 2 options for length of the carriage bolts depending on center distance on the 2" or 2-1/2" frames.

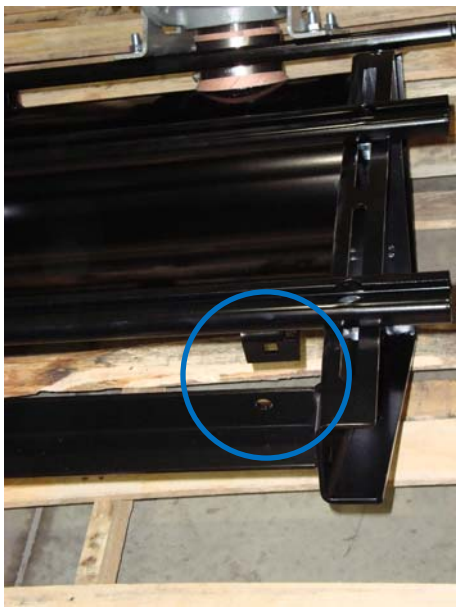


Figure 7.3

7.4 The 7" long carriage bolt does not have thread on the part closet to the head & will require a spacer before threading on a nut. The 4 ½" carriage bolts require a washer on the part closest to the head before threading on a nut. Thread (1) hex nut up the length of each carriage bolt and tighten them on the bracket. Thread the other hex nuts halfway up the length of each carriage bolt. Then place the tensioning channel on the frame slots at the front of the BBF: at the same time feeding the tensioning carriage bolts through the holes in the angle iron that is welded to the frame. Once the channel is in place, put (2) carriage bolts through the square holes and thread on nuts lightly; the rail needs to be able to slide.

4 ½"" Carriage Bolt Assembly

7" Carriage Bolt Assembly

Figure 7.4
w/ 4 ½" Carriage Bolt

Figure 7.4
w/ 7" Carriage Bolt

8.1 MN - (1) Electric motor
- (4) 1/2”-13 x 1-1/2” carriage bolts
- (4) ½”-13 “whiz” flange nuts

8.2 TN - ¾” combination wrench
- Lifting hoist

8.3 Slide (4) carriage bolts, threaded portion up, into the channels. Using a hoist and the lifting lug, raise the motor over the BBF. As the motor is slowly lowered keep these actions in mind:

8.3.1 The channels must be slid in the slots to match the footprint of the motor.

8.3.2 The carriage bolts must be fed through the holes in the motor mounting plate. Loosely thread on the flange nuts; the motor will need to slide on the channels during alignment.

Figure 8.3

8.4 The mounting plate of some smaller motors may not accommodate the provided 1/2" carriage bolt. In some cases the plate has 3/8” holes. We suggest two possible solutions.

8.4.1 Drill out 1/2" holes into you mounting plate to handle the provided 1/2" carriage bolt and “whiz” nut.

8.4.2 Use a 3/8” carriage bolt with a flat washer, lock washer and nut. (Optional accessories as part of kit, contact factory)

Figure 8.4.2

9.1 TN - ¾” combination wrench
- Straight Edge

9.2 Square the motor channels to each other and the BBF. Temporarily tighten the nuts to frame. Using the straightedge align the blower shaft bearing with the motor shaft bearing; the face of the blower with the face of the motor. When the blower and motor bearings are aligned, securely tighten the motor to the channels.

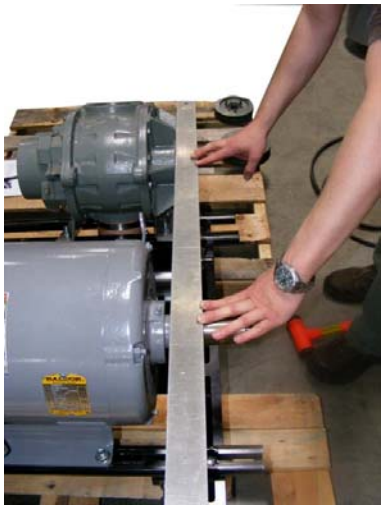


Figure 9.2

10.1 DL Series Purpose Built Belt Guard
MN - (1) Corresponding DL Series belt guard
- (4) ½”-13 x 1-1/2” carriage bolts
- (4) ½”-13 “whiz” flange nuts

10.2 TN - ¾” combination wrench
- Compact bolt/wire cutter *See section 10.6

10.3 Determine the centerline of your drive shaft and the height of each shaft from the top of the channel. This is determined by the sheave size and belt length. Transfer the measurements to the belt guard to remove grid to accommodate shafts.

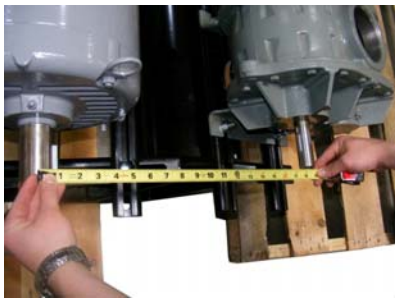


Figure 10.3

10.4 Remove only enough material to allow the drive shafts to freely pass through and accommodate any adjustments needed when tensioning the belts. Attach the belt guard to the channels. The belt guard should sit on all (4) channels.

Figure 10.4

10.5 Individually place a carriage bolt, (4) total through the slot in the bottom of the belt guard and through the slot in the channel. Loosely tighten a flange nut on each carriage bolt; the channels will need to slide in the slot in the belt guard during tensioning.

Figure 10.5

10.6 The grid material can be removed by using compact bolt/wire cutters (aviation snips, diagonal cutting pliers etc.) or grinder. Use caution and eliminate any hazardous sharp edges prior to final installation.

11.1 MN - (1) Motor shaft bushing
- (1) Blower shaft bushing
- (1) Motor sheave
- (1) Blower sheave

11.2 TN - Allen wrenches

11.3 **Follow the bushing and sheave manufacturer's instructions for assembling the bushing and sheave on the motor and blower shafts. Follow the manufacturer's instructions for bushing and sheave placement on shaft to reduce bearing wear.**

Figure 11.3

11.4 Set and begin aligning sheaves. Most manufacturers recommend no more than 1/8" to 1/4" gap between sheave face and blower or motor face. Consult the manufacturer's specifications.

Figure 11.4

12.1 MN - Drive belts
- (4) 1/2"-13 x 1-1/2" carriage bolts
- (4) ½"-13 "whiz" flange nuts

12.2 TN - Tension measurement device
- Straight edge

12.3 Loosen nuts on motor channels from BBF. Slide motor on channels towards the blower. Individually place the drive belts around each sheave in its' respective groove. Slide the motor on channels away from the blower to remove the slack from the drive belts.

Figure 12.3

13.1 At this point begin to use the tensioning system to tighten the belts. There should be (2) hex nuts, one on either side of the angle iron piece on each carriage bolt. The hex nut on the end of the bolt is used to pull the motor on its' channels and tighten the belts. The hex nut in between the angle iron and the channels is used to push the motor on its' channels to square the motor and the blower sheaves.

13.2 **Follow the drive belt manufacturer's instructions to achieve proper belt tension.** Make sure that when the belts have reached the proper tension that the sheaves are aligned using a straight edge. **Misalignment will result in short bearing and belt life and poor performance.** Once the belts have been correctly tensioned and the sheaves are aligned securely tighten the nuts on the motor channels to the BBF. Also be sure the center hex nut on the carriage bolt is tightened against the angle iron to prevent slacking in the belts.

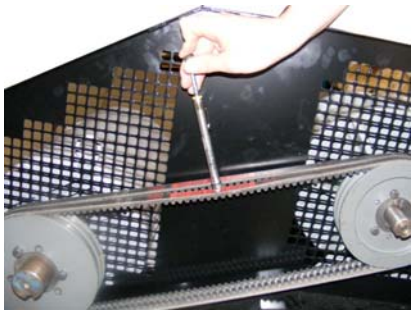


Figure 13.2a

Figure 13.2b

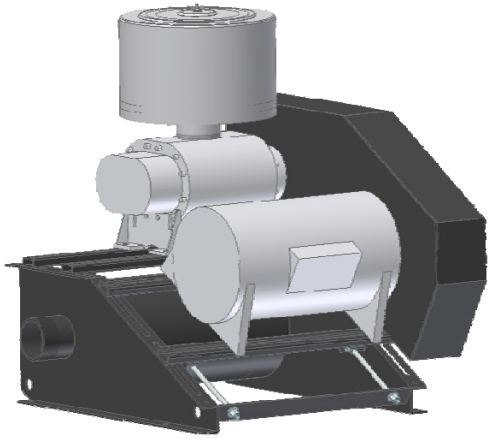
14.1 MN - DL belt guard cover
- (9) ¼"-20 hex cap screws

14.2 TN - 3/8" Sockets wrench

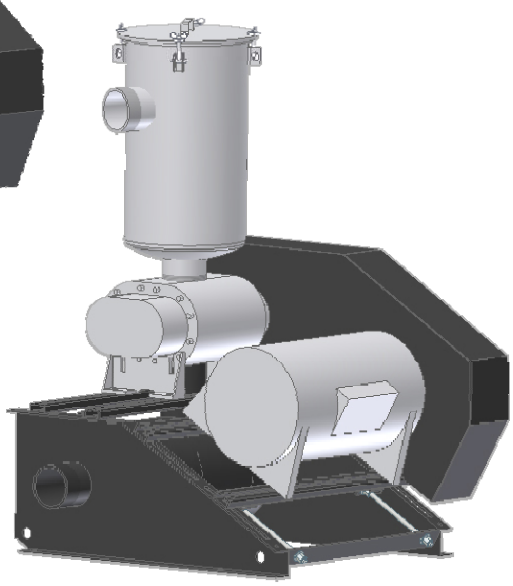
14.3 Align the slots in the belt guard cover with the weld nuts in the belt guard back frame. Secure the cover by threading and tightening the screws into their location.

15.1 Example of a BBF Series base frame package with SMI belt guard. Add Solberg Silencer Filter or Inlet Vacuum Filter for the total solution. For more information please contact Solberg or your reseller.

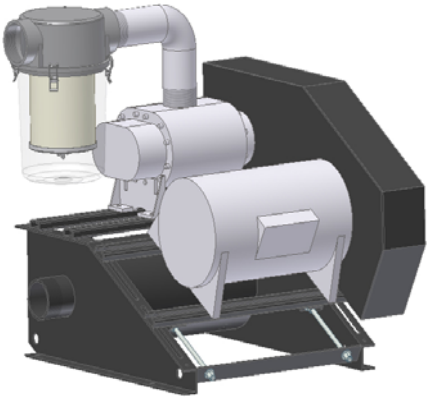
Configurations of Solberg's Total Solution for the PD Blower Industry



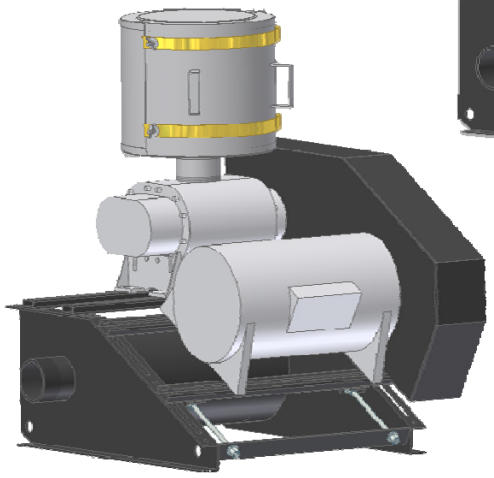
w/ "2G" Premium Grade
Silencer Filter



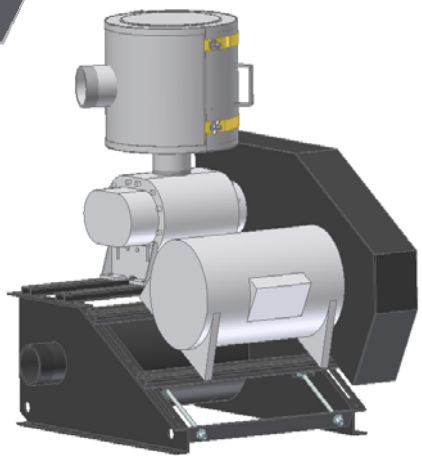
w/ "CSL" L-Style
Inlet Vacuum Filter



w/ "ST" See-Through
Compact Inlet Vacuum Filter



w/ "LQB" Lateral Access
Silencer Filter



w/ "IVPL" Lateral Access Inlet
Vacuum Filter

15.2 *Attaching the Filter:* Depending on your blower height, it may be necessary to use a nipple or coupling to elevate the filter silencer to obtain proper clearance above the belt guard.