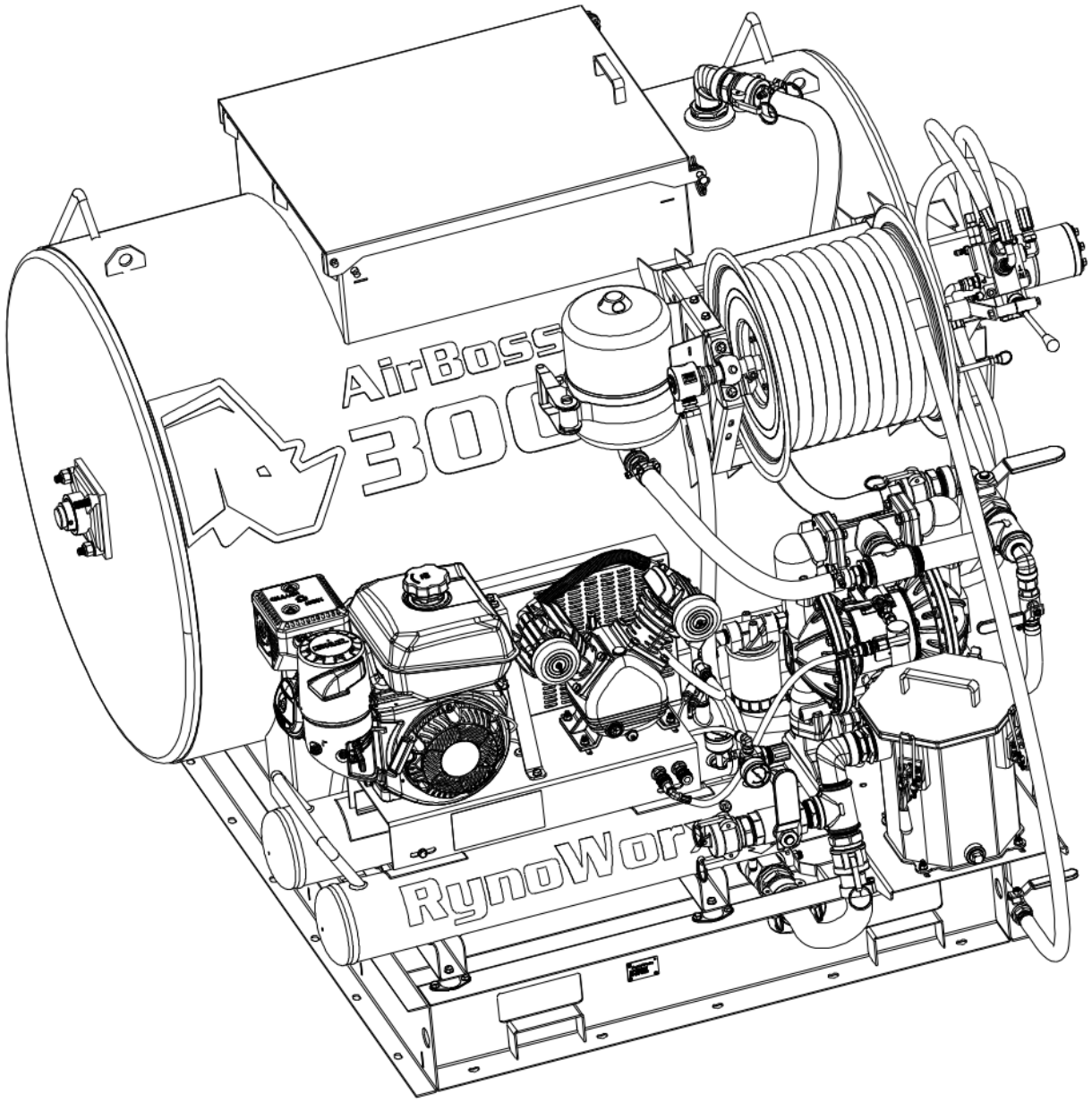
RynoWorx

AirBoss 300-V2
Operator's Manual

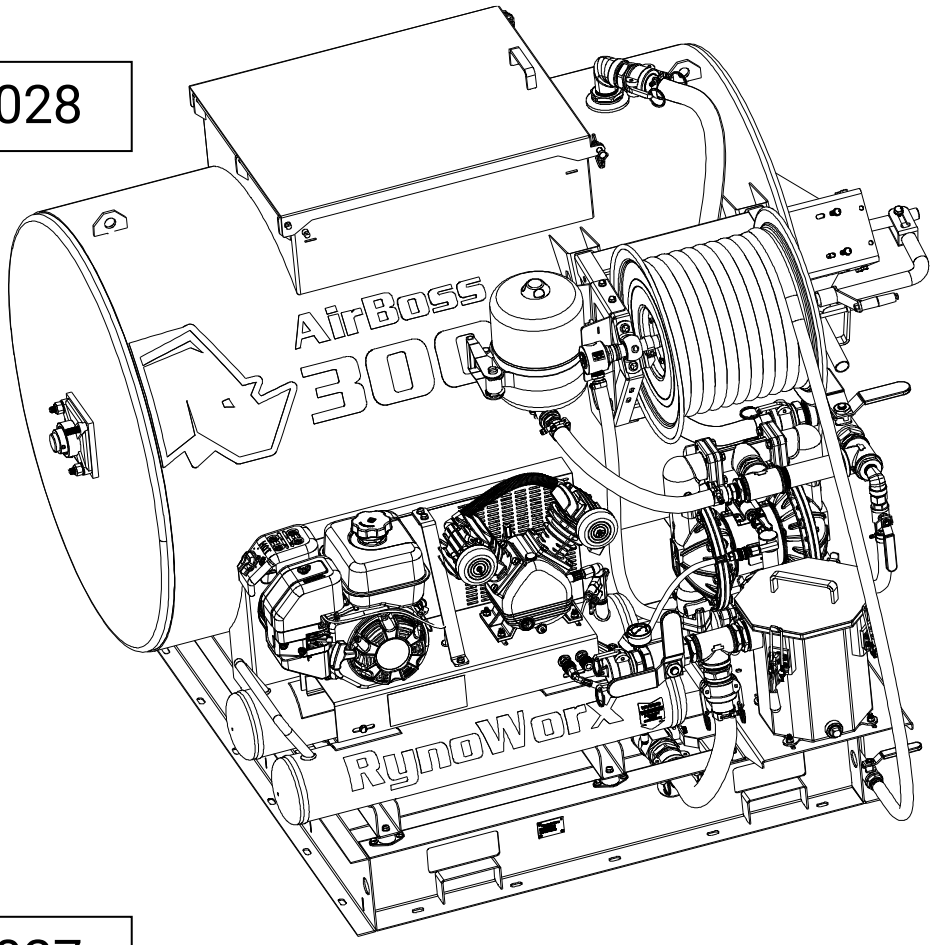


RA-SSY-0027 RA-SSY-0028 RA-SSY-0030

*RA-SSY-0030 Pictured Above

RC-SUM-0014 - Rev 3

RA-SSY-0028



RA-SSY-0027

1 SAFETY & GENERAL INFORMATION

⚠ Warnings

⚠ Failure to follow all safety precautions can result in serious injury or death

⚠ RynoWorx Inc. assumes no liability for any accident or injury incurred through improper use of machine

⚠ CHECK ENGINE, COMPRESSOR, AND HYDRAULIC OIL LEVELS BEFORE FIRST USE

⚠ Read all instructions and warnings in this manual as well as the engine manufacturer's manual before operating this equipment

⚠ Verify all seals and clamps for all connections are tightened before each use of this equipment

⚠ This equipment is designed for outdoor use only

⚠ Be sure to always wear personal protective equipment when operating this equipment. Eyes, Gloves, Hearing, Boots, Long Pant, Long Sleeves, etc…

⚠ Carefully read all Material Safety Data Sheets (SDS) for sealer products being used before operating this equipment. Refined coal tar, and Asphalt Emulsion sealers can cause health risks if not properly handled

⚠ Only genuine replacement parts should be used for any replacements or repairs. Do not attempt to modify or alter this product in any way

⚠ Observe all caution and warning signs on machine

⚠ Do not leave unattended when running

⚠ Never point the spray wand at another person

⚠ Keep all body parts out of lid opening when the unit is running

⚠ Keep hands and arms clear while opening and closing the lid

⚠ Keep the tank lid closed during operation

⚠ Do not let any sealer freeze or dry inside the unit's plumbing

⚠ Never enter the tank with sealer inside

⚠ Always drain the tank and let any residual sealer dry before entering the tank

⚠ Replace any hoses that show wear, fraying or splits. Be sure all joints are leak-proof

⚠ Shut down and allow compressor engine to cool prior to refilling the gas tank

⚠ Never operate near an open flame or use any type of flame to unclog the plumbing

⚠ Check all operation manuals for warnings, cautions and to ensure proper maintenance procedures are followed

⚠ Always turn the gas off on the engine before transporting

⚠ Only stainless-steel thread seal tape should be used, on the diaphragm pump plumbing components, as the parts are aluminum and stainless steel. Regular Teflon based thread seal tape will not work as well

Factory Calibrations:

Your AirBoss was calibrated using:

- 2.0 GPM tips with water
- 50 psi in the expansion tank
- regulator set to 90psi

Your AirBoss was factory tested for several hours, and calibrated to meet the following performance specifications:

- Engine kick-up RPM: 2000 +/- 50
- Engine Kick-down RPM: 3600 +/- 50
- Fill from 0 – 115 psi: 70 seconds
- Duty cycle with 2GPM tip (spraying): 30 seconds
- Kick-down psi: 120 psi
- Kick-up psi: 90 psi

Technical Specifications:

	RA-SSY-0027 (Entry)	RA-SSY-0028 (Standard)	RA-SSY-0030 (Pro)
Airline Water Filter	Yes	Yes	Yes
Compressor Oil Capacity (US qt / L)	0.26 / 0.25	0.26 / 0.25	0.26 / 0.25
Compressor Oil Grade (Conventional)	20 Weight	20 Weight	20 Weight
Compressor Oil Grade (Synthetic)	ISO 46	ISO 46	ISO 46
Compressor Pump CFM	12	12	12
Compressor Pump Psi (Working / Max)	90 / 120	90 / 120	90 / 120
Compressor Tank Capacity (US gal / L)	9 / 34	9 / 34	9 / 34
Engine Displacement (cu. in. / cc)	12 / 196	12 / 196	16.9 / 277
Engine Oil Capacity (US qt / L)	0.63 / 0.6	0.63 / 0.6	1.16 / 1.1
Engine Oil Grade (Conventional)	5W30 or 10W30	5W30 or 10W30	5W30 or 10W30
Engine Oil Grade (Synthetic)	5W50 or 10W50	5W50 or 10W50	5W50 or 10W50
Engine Power (HP / KW)	6.5 / 4.8	6.5 / 4.8	9.5 / 7.1
Engine Torque (Ft lbs/Nm)	10.2 / 13.9	10.2 / 13.9	13.9 / 18.8
Expansion tank – psi	See Chart	See Chart	See Chart
Fuel Tank Capacity (US qt / L)	3.3 / 3.4	3.3 / 3.4	7.2 / 6.8
Hydraulic Oil Capacity	N/A	N/A	5 Gallons
Hydraulic Oil Grade	ISO 46 or ISO 68	ISO 46 or ISO 68	ISO 46 or ISO 68
Spark plug gap (in / mm)	0.030 / 0.76	0.030 / 0.76	0.030 / 0.76
Tank Capacity	304 US Gallons	304 US Gallons	304 US Gallons
Weight – Empty Tank	1150 Lbs	1250 Lbs	1450 Lbs
Weight – Filled Tank * Approx	4150 Lbs	4250 Lbs	4450 Lbs

Required Tools

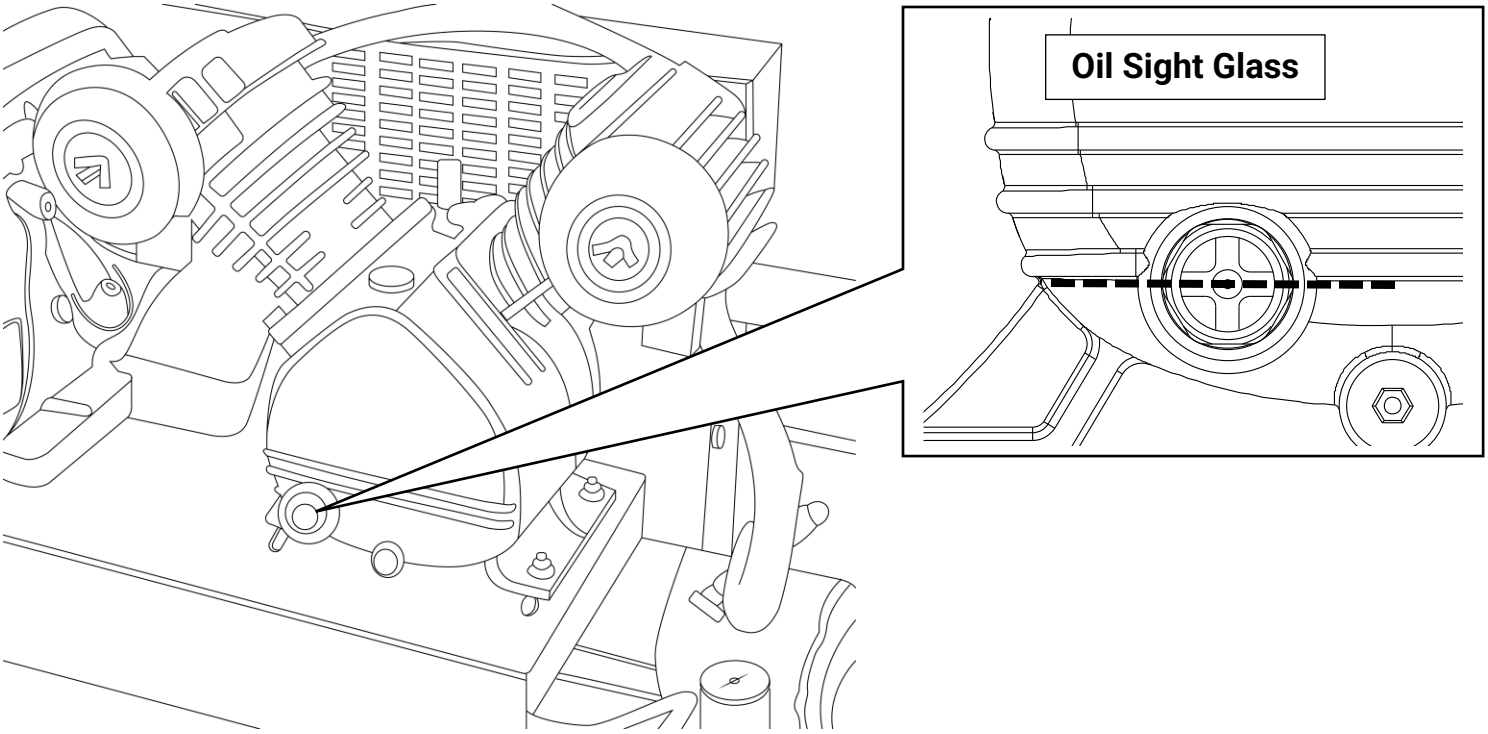
Your AirBoss spray system should arrive completely assembled. No tools are required to begin operation.

Suggested tools to have on hand:

- 12" Pipe Wrench (with 2.5" Jaw)
- Adjustable wrench (1.5” width) or Channel Lock pliers
- Ratchet set
- Allen Key Set
- Screwdriver Set
- Stainless steel thread tape
- Power Drill
- Drum or tote mixer
- 5 gallons of clean water for priming and cleaning (not including what you need to mix with your sealer)

Compressor Details

MAINTENANCE SCHEDULE
Check oil levels:



Compressor oil should be level with the red dot at the center of the sight glass shown above.

Compressor Oil Capacity: 0.26 qt / 0.25 L

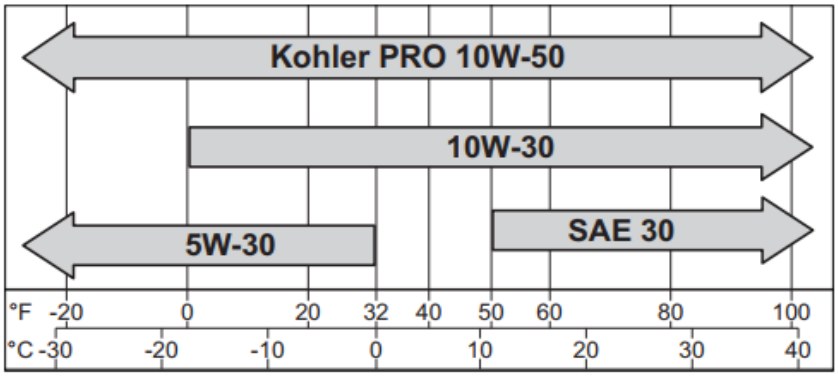
20 weight compressor oil
Or
ISO 46 or 68 synthetic compressor oil

Engine Details

The Entry & Standard AirBoss systems are equipped with a Kohler SH265 engine
The Pro AirBoss system is equipped with a Kohler CH395 engine

REPAIRS/SERVICE PARTS
Kohler genuine service parts can be purchased from Kohler authorized dealers. To find a local Kohler authorized dealer visit KohlerEngines.com or call 1-800-544-2444 (U.S. and Canada).

OIL RECOMMENDATIONS
All-season KOHLER® PRO 10W-50 Synthetic Oil is the ideal oil for KOHLER engines. It is specifically formulated to extend the oil change interval to 300 Hours. Contact your Kohler authorized dealer for availability. 300-Hour oil change intervals are exclusive to and only authorized on KOHLER engines that utilize the KOHLER PRO 10W-50 Synthetic Oil. Alternative engine oils may be used with KOHLER engines but require 100-Hour oil change intervals for proper maintenance. Oil must be API (American Petroleum Institute) service class SJ or higher. Select viscosity based on air temperature at time of operation as shown below.

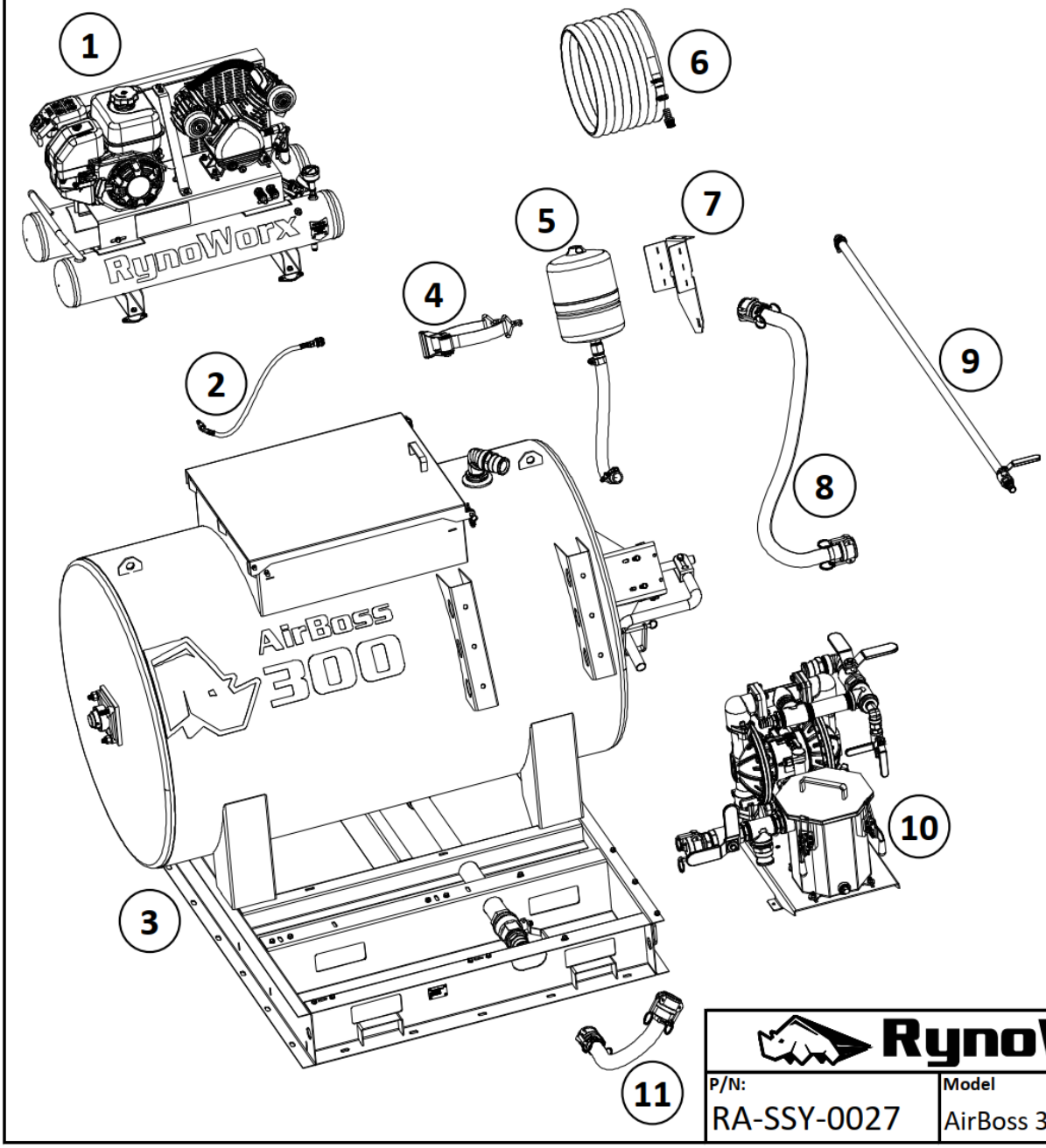


FUEL RECOMMENDATIONS
⚠ WARNING
● Explosive Fuel can cause fires and severe burns.
● Do not fill fuel tank while engine is hot or running.
● Gasoline is extremely flammable, and the vapors can explode if ignited. Store gasoline only in approved containers, in well ventilated, unoccupied buildings, away from sparks or flames. Spilled fuel could ignite if it encounters hot parts or sparks from ignition. Never use gasoline as a cleaning agent.

NOTE: E15, E20 and E85 are NOT approved and should NOT be used; effects of old, stale, or contaminated fuel are not warrantable.
Fuel must meet these requirements:
● Clean, fresh, unleaded gasoline.
● Octane rating of 87 (R+M)/2 or higher.
● Research Octane Number (RON) 90 octane minimum.
● Gasoline up to 10% ethyl alcohol, 90% unleaded is acceptable.
● Methyl Tertiary Butyl Ether (MTBE) and unleaded gasoline blend (max 15% MTBE by volume) are approved.
● do not add oil to gasoline.
● do not overfill fuel tank.
● do not use gasoline older than 30 days.

2 PART DIAGRAMS

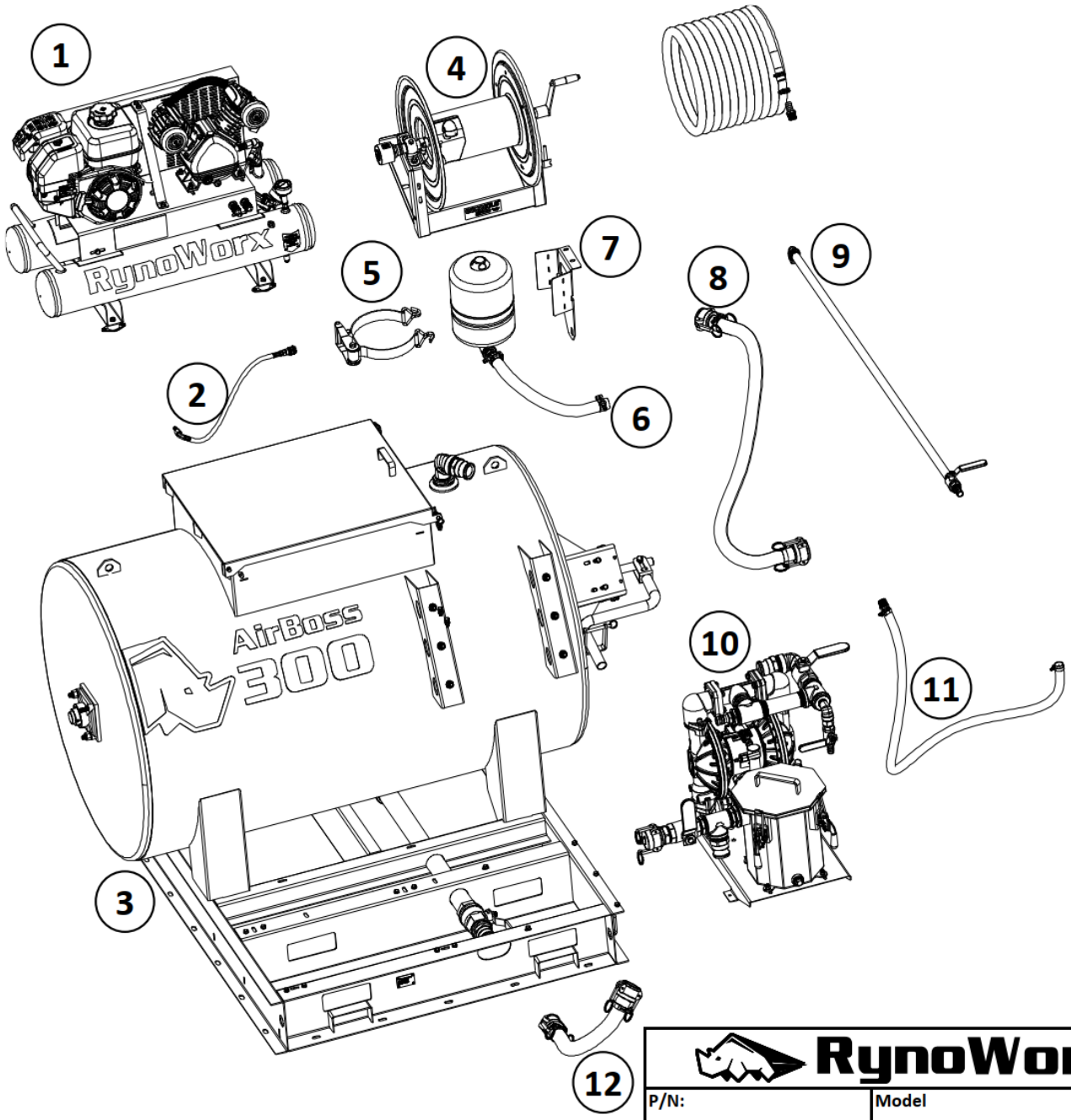
No	P/N	Qty	Description
1	RA-CMP-0007	1	9 Gallon Twin Tank Compressor with Kohler SH265 Engine
2	RA-HFA-0063	1	Air Line with 90 Degree Male to Straight Female 1/4" Quick Connect Fittings
3	RA-TNK-0014	1	300 Gallon Sealcoat Tank with Manual Agitation Complete Assembly
4	RC-STR-0001	1	Propane Tank Ratchet Strap
5	RA-EXP-0003	1	Tank Ratchet Strap
6	RA-HFA-0066	1	75' - 3/4" Spray Hose with 3/4" NPT Fititng and Two Hose Clamps
7	RC-FAB-0256	1	Expansion Tank Mounting Bracket
8	RA-HFA-0051	1	1.5" Return Hose Assembly
9	RA-SWA-0005	1	3/4" Commercial Spray Wand - Air Op
10	RA-PFA-0006	1	Pump with Fitting Assembly - 1.5" Air Op V2 Pump with Filter
11	RA-HFA-0050	1	1.5" Intake Hose Assembly - Tank to Filter Pot



RynoWorx

P/N:	Model	Rev:
RA-SSY-0027	AirBoss 300 Base V2	1

No	P/N	Qty	Description
1	RA-CMP-0007	1	9 Gallon Twin Tank Compressor with Kohler SH265 Engine
2	RA-HFA-0063	1	Air Line with 90 Degree Male to Straight Female 1/4" Quick Connect Fittings
3	RA-TNK-0014	1	300 Gallon Sealcoat Tank with Manual Agitation Complete Assembly
4	RA-HRL-0008	1	Coxreel - 3/4" x 100' - 1125 Series Hand Crank Hose Reel
5	RC-STR-0001	1	Tank Ratchet Strap
6	RA-EXP-0002	1	Expansion Tank with 90 Degree Fitting, Hose, and Clamps
7	RC-FAB-0256	1	Expansion Tank Mounting Bracket
8	RA-HFA-0051	1	1.5" Return Hose Assembly
9	RA-SWA-0005	1	3/4" Commercial Spray Wand - Air Op
10	RA-PFA-0006	1	Pump with Fitting Assembly - 1.5" Air Op V2 Pump with Filter
11	RA-HFA-0064	1	V2 Pump to Hose Reel Connection Hose
12	RA-HFA-0050	1	1.5" Intake Hose Assembly - Tank to Filter Pot



RynoWorx

P/N:	Model	Rev:
RA-SSY-0028	AirBoss 300 Loaded V2	1

3 OPERATION

3.1 Operation Guidelines

- The AirBoss system was pre-tested for leaks before shipping, however, we recommend that you test the system using WATER to ensure you do not have leaks before moving onto sealant
- The air-pump is self-priming
- Flush clean water through the pump and hoses at the end of each day
- Place any used spray tips into a soapy water solution at the end of each day
- Do not let sealant dry onto the spray tips
- Clean the spray tips with soft nylon brushes only
- Have clean water available at the job site for emergency rinsing
- Clean the strainer daily to ensure proper sealant flow
- Check the engine oil levels daily
- Check the compressor oil levels daily
- Check the hydraulic oil levels daily *if equipped
- Check the airline oiler oil levels daily *if equipped

⚠ WARNING
● Turn the engine off for extended work stoppages (10+ minutes), such as breaks, lunches, or other unplanned work stoppages
● avoid recirculating for more than 10 minutes at a time
NOTE: Apart from wasting fuel, this may cause your sealant to become foamy, which can introduce excessive air into the lines and can cause inconsistent spray intensity.
● Foamy sealant can take an hour or more to return to a useable state.
● Set fuel control to OFF while traveling (if equipped)

Spray Tips

Each system ships with 4 sizes of spray tips (80/30, 80/40, 80/50, 80/70). The spray wand (RA-SWA-0005) included with your AirBoss will have an 80/20 tip installed on it for a total of FIVE tips.

The 80/20 tip is what all our benchmarks were completed with (see the specifications chart for details). The 2 numbers are used to designate the spray tip size denote the spray fan angle and tip flow when sprayed at 40 psi (for example, an 80/20 has an 80° spray fan angle and has approximately 2.0 GPM of flow when sprayed at 40 psi). Increasing or decreasing the regulator pressure will also increase or decrease the tip flow rate from the 40 psi rating.

Tip sizes like an 80/20 or 80/30 are ideal for smaller jobs, like driveways, while larger tips are more suitable for large driveways and parking lots. You will also need to consider the type of product you are working with.

Coal tar products have less solids in them and should work trouble free with any of the included sizes. Emulsion based sealers have more solids in them, and will likely require 80/50 tips or larger to work effectively.

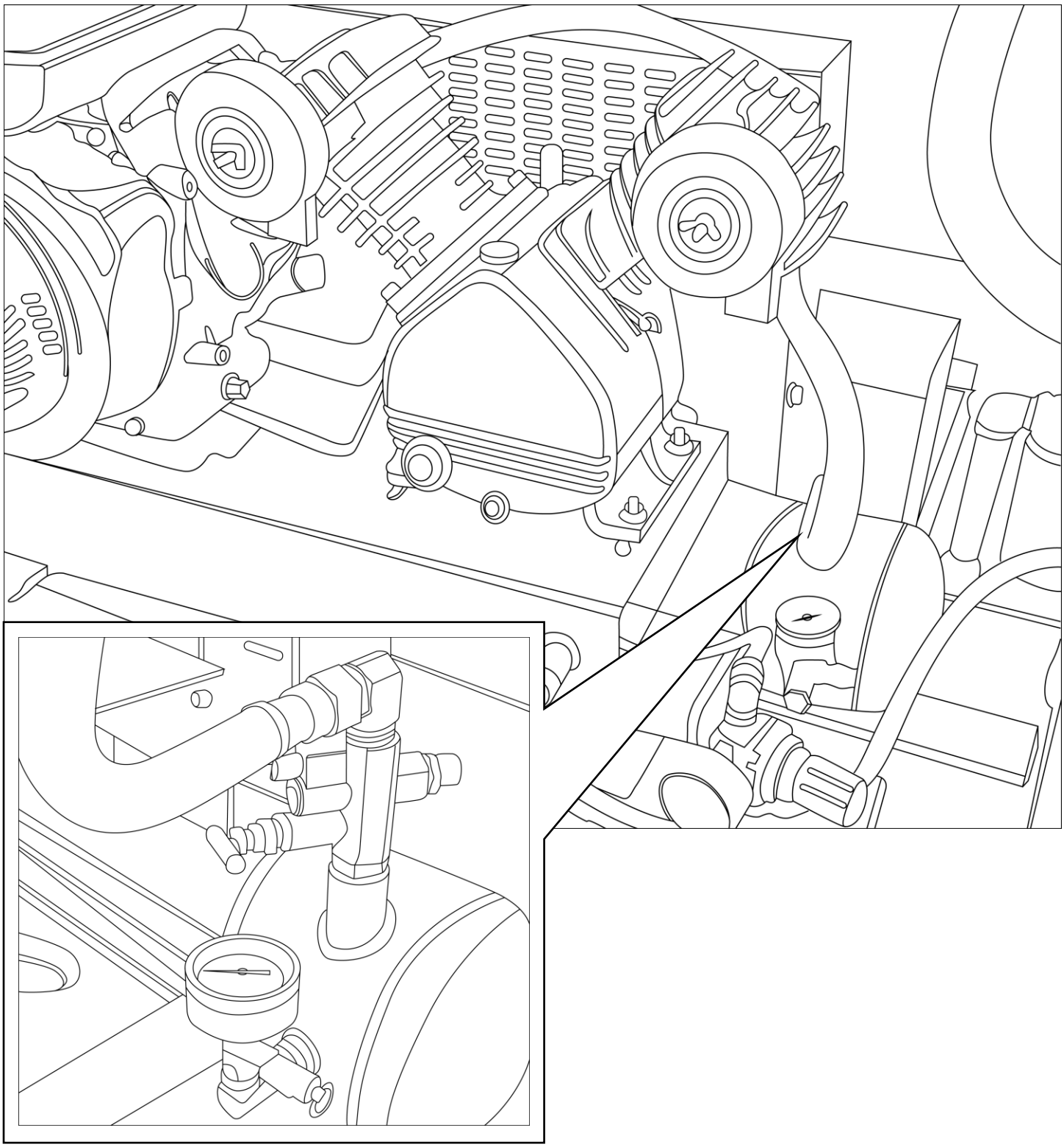
Filter baskets

Your system comes with 2 sizes of filter baskets. 4 mm (approx. 5/32”) and 5.5 mm (approx. 7/32”). We recommend using the larger basket for emulsion and sealers with more solid, and the smaller filter for coal tar sealers.

If you find that you are getting a lot of clogs in your spray tips, we suggest:

- Recirculating more to get a more uniform consistency
- Adding more water and recirculate
- Changing to a large spray tip size
- Using the smaller filter basket and cleaning it more often

3.2 Compressor Operation



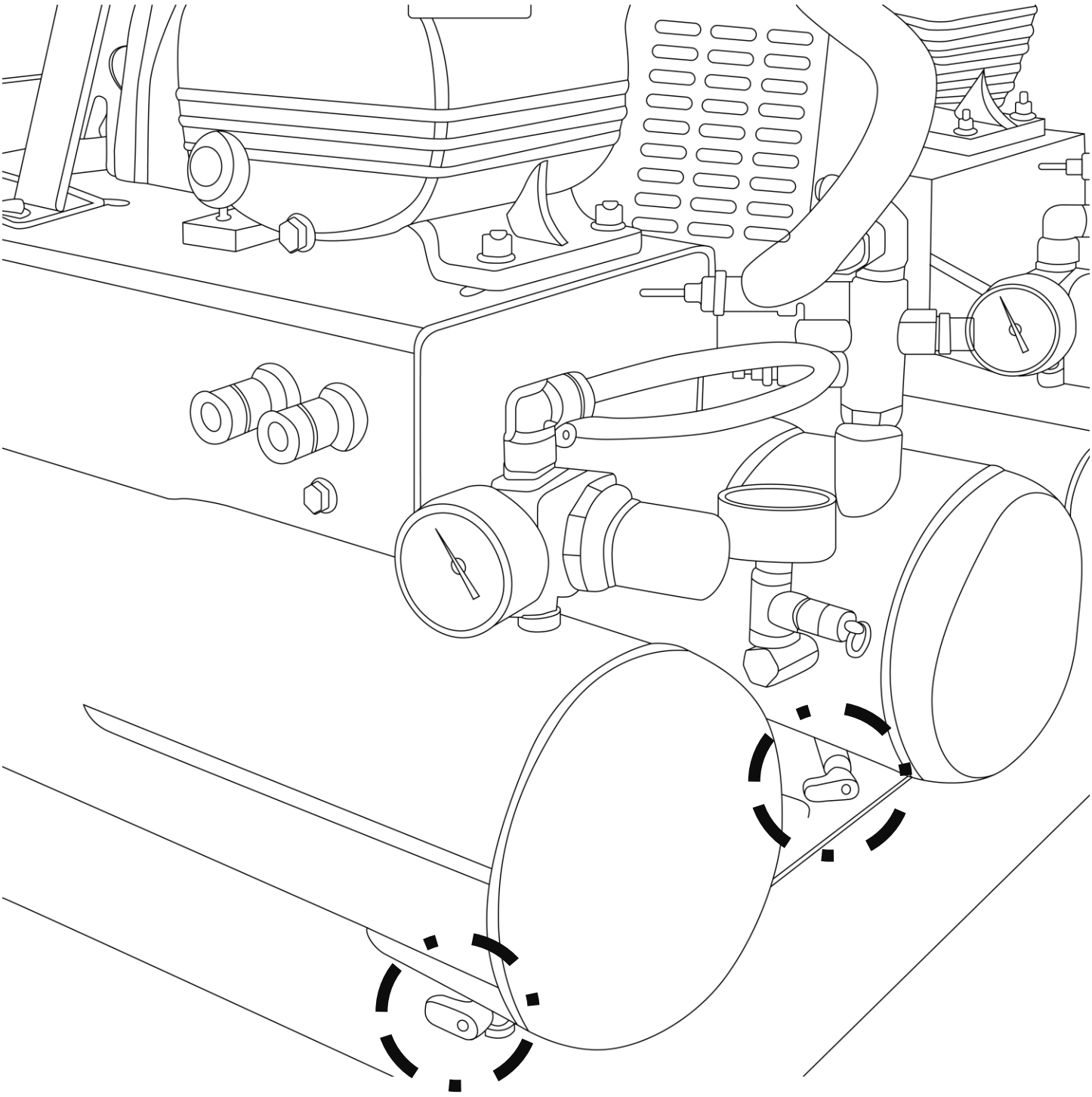
Auto Idle Throttle Control Cable (kick-down)

Your AirBoss Spray system is equipped with an auto idle kickdown to lower engine RPM when the compressor tanks are full. This cable runs from the brass valve to the throttle on your engine.

This sensor is attached between the compressor and the tank and will reduce the engine RPM when the target PSI has been achieved.

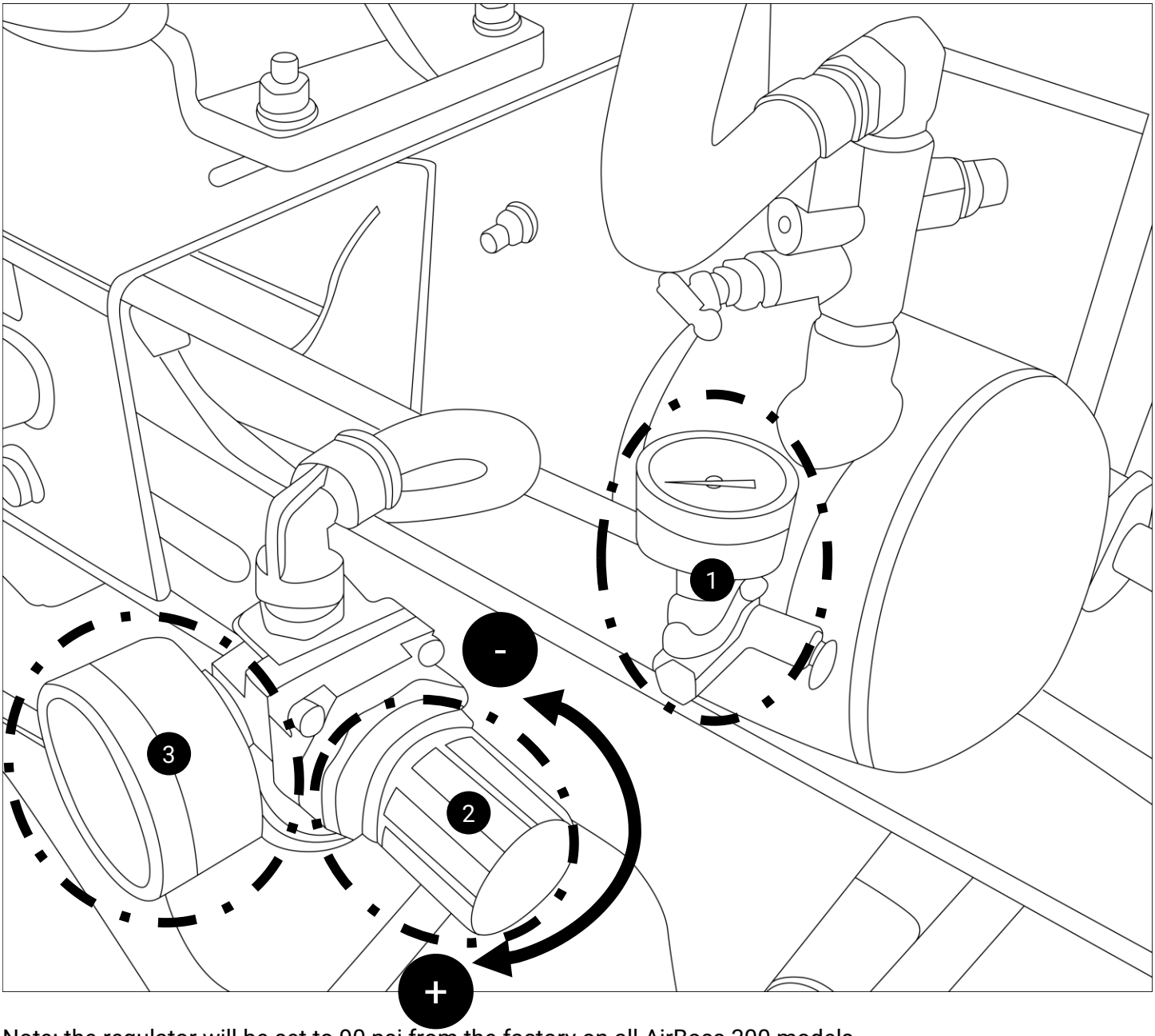
Compressor & Air Tanks:

NOTE: You must fully open the pressure relief valves at the bottom of **BOTH** tanks at the end of each day. Condensation and sediment can form and shorten the life of the tanks.



Setting the desired pressure:

1. Gauge that displays the current pressure in the tanks
2. Regulator valve to adjust desired operating air pressure
    - Clockwise to increase pressure, counter-clockwise to decrease
    - Push to lock, pull to unlock
3. Gauge that displays the operating air pressure



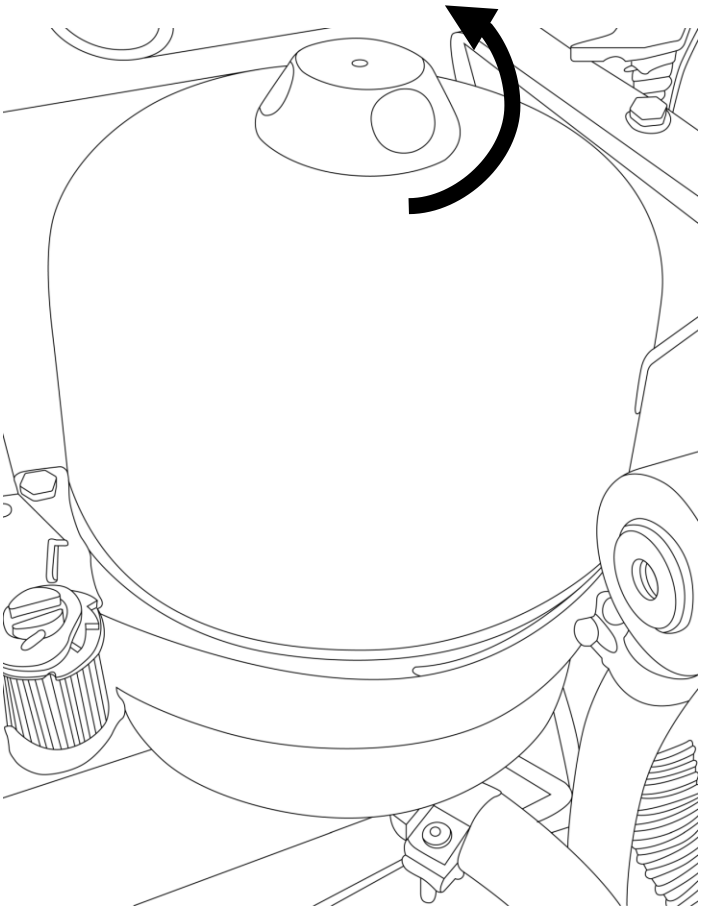
Note: the regulator will be set to 90 psi from the factory on all AirBoss 300 models

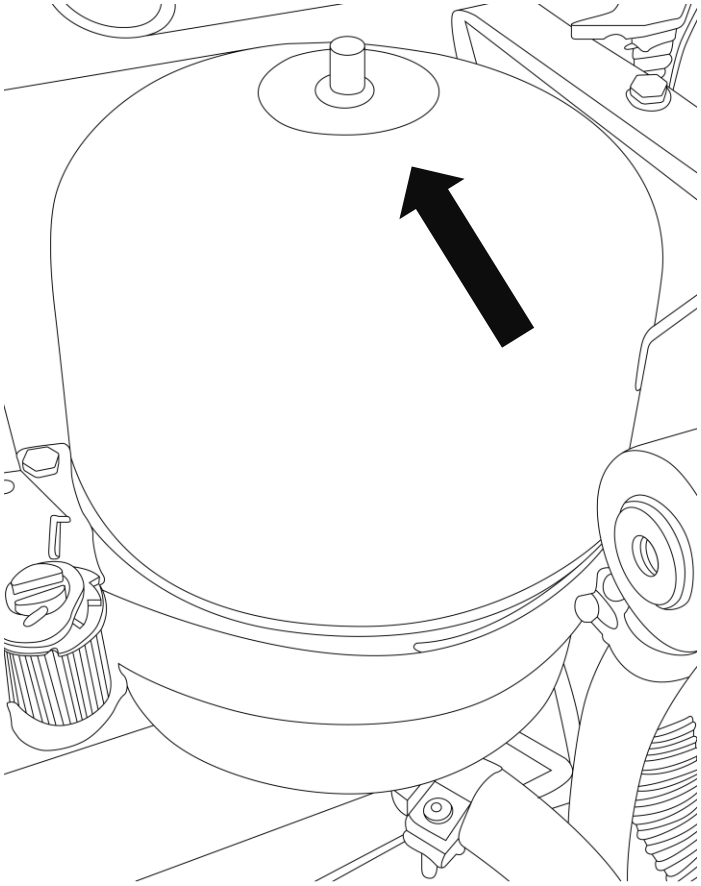
Expansion tank:

Your AirBoss is equipped with an expansion tank that helps to minimize pulses created by the diaphragm pump. This expansion tank has a bladder inside that can be charges with air to help dial in the perfect amount a dampening.

The expansion tank is pre-charged with 50psi from the factory. You may find that you prefer increasing or decreasing this amount if you are operating a very high or very log pressures from your AirBoss. 50psi was found to be a sweet spot that covers most of the typical operating pressures you will encounter.

The valve is a Shrader style valve – the same as equipped on all cars and trucks. It can be accessed by unscrewing the plastic cover on the top of the tank.

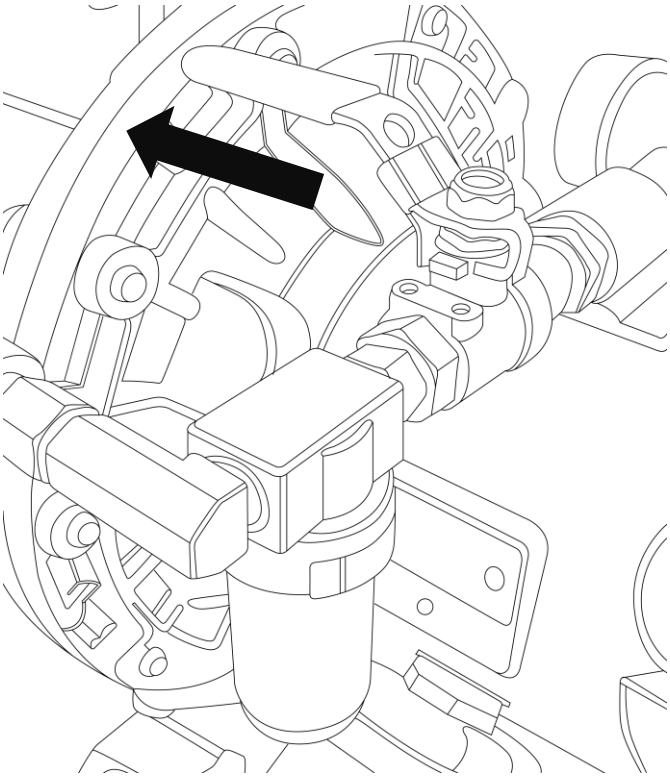




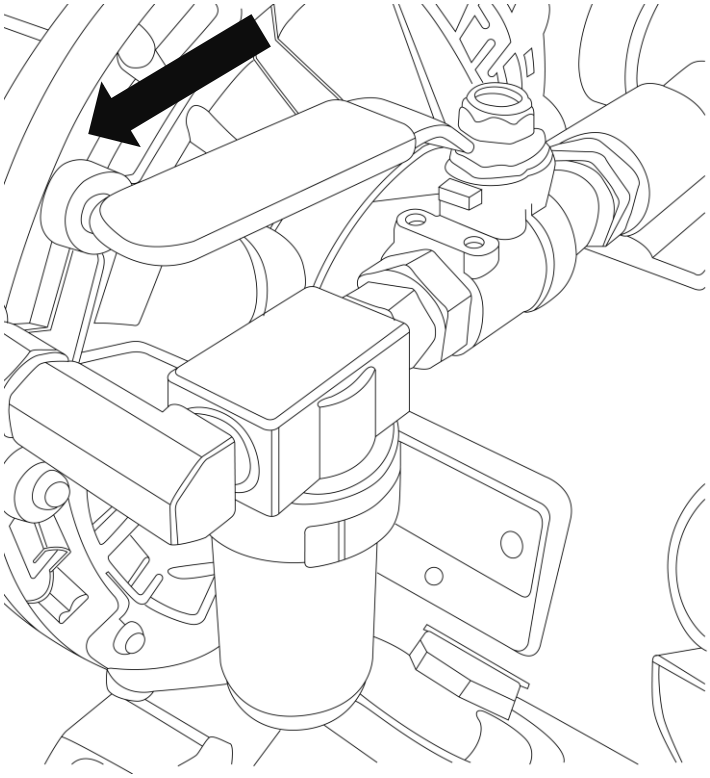
Airline Valve:

The AirBoss unit is equipped with a ball valve to control the air flow to the diaphragm pump. This valve should be closed when not in use, and open during all operations.

THE PUMP CANNOT WORK WITH THE VALVE CLOSED.



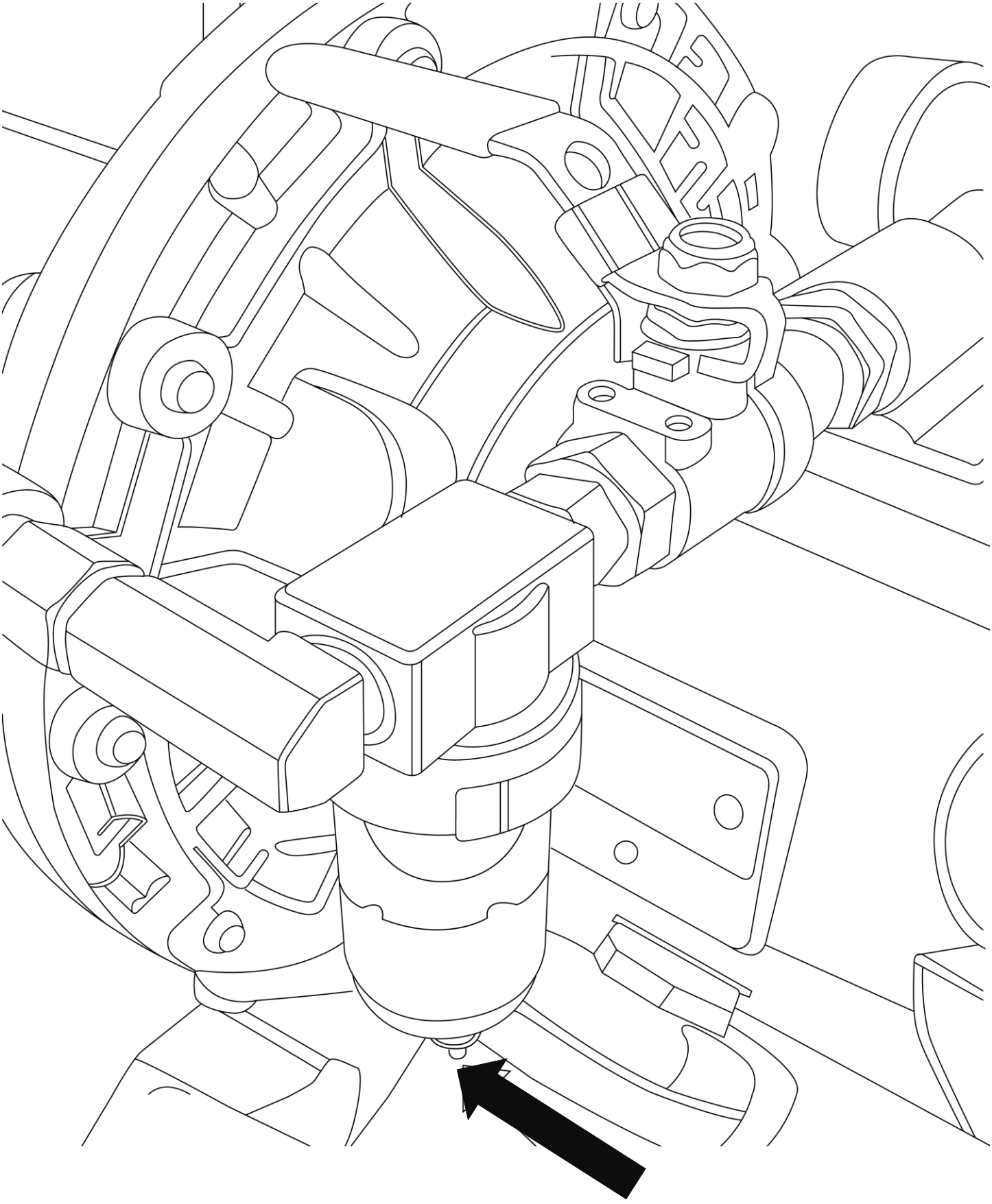
CLOSED



OPEN

Water Separator:

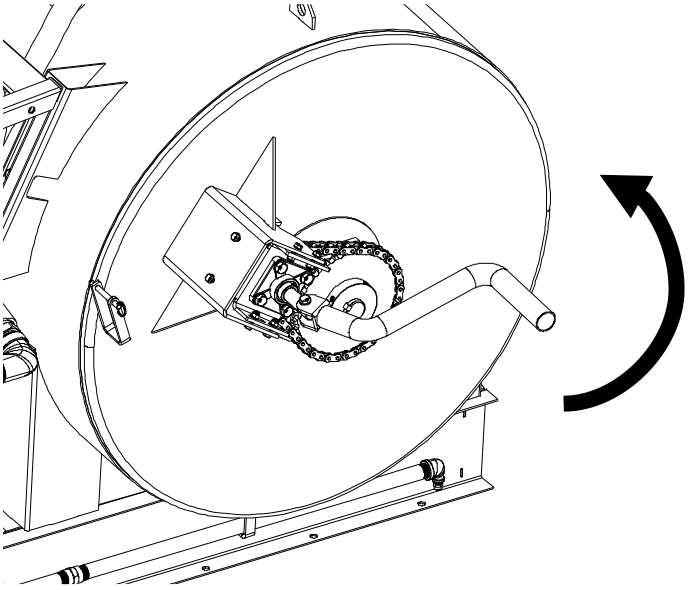
There is also a water separator attached to this valve. During normal operation, water will collect in the reservoir and will need to be emptied. It can be emptied by pushing upwards on the bottom of the vial.



3.3 System Modes

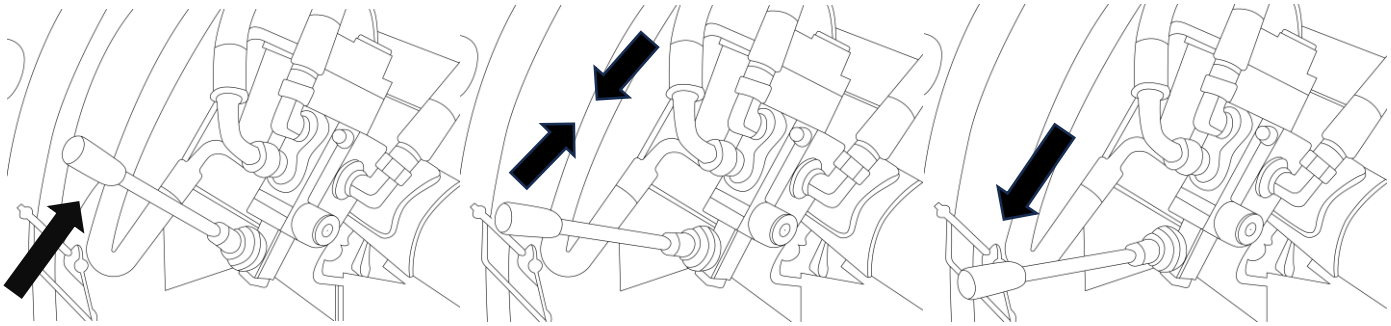
Agitation: Entry / Standard System
Notes:

- we suggest that you turn the agitation handle a few times hourly to prevent aggregate from settling
- Agitation handle is approximately 3:1 (3 turns of handle = 1 turn inside tank)
- After work stoppages of more than 30 minutes, we recommend recirculating for 2-3 minute before resuming work



Always turn the agitation handle counter-clockwise

Agitation: Pro System



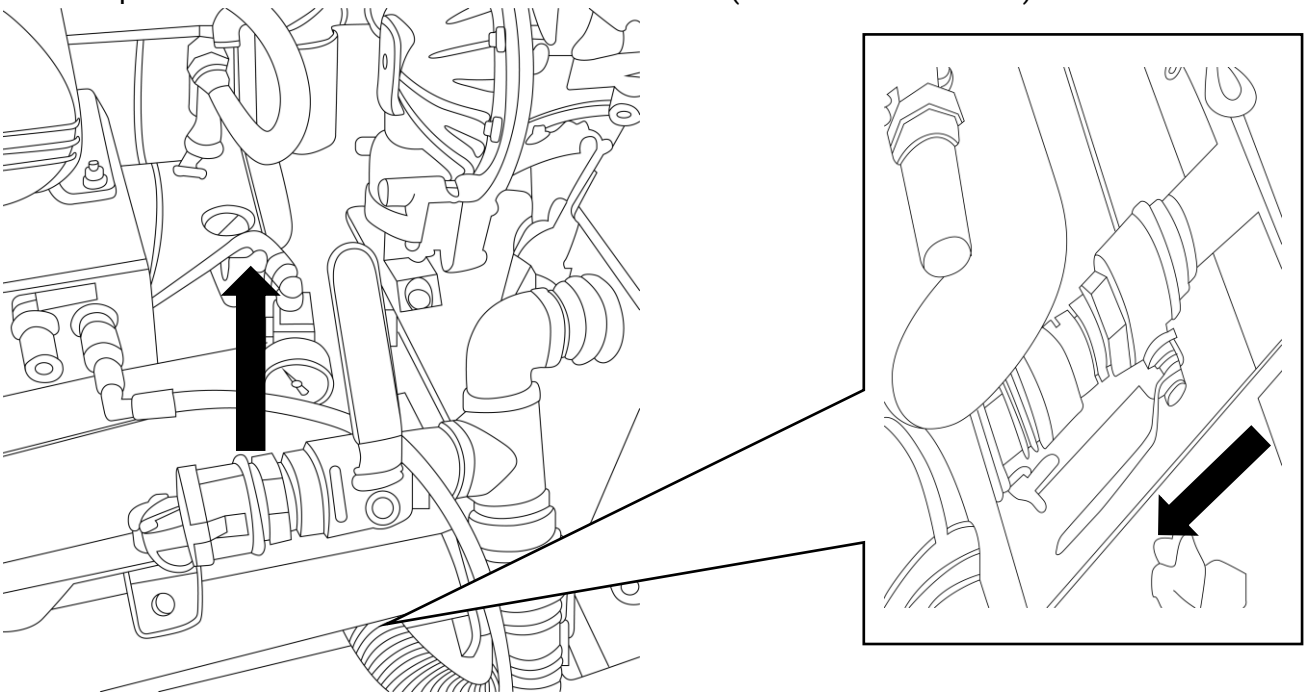
Forward Off Reverse

Input Modes

1) Main 300-gallon Tank

This is going to be the way you will be operating most of the time. Feeding from your main 300-gallon tank.

- Close the 1.5” valve at the front/top of the unit (connected to the filter pot)
- Open the 2” valve at the front/bottom of the unit (connected to the tank)

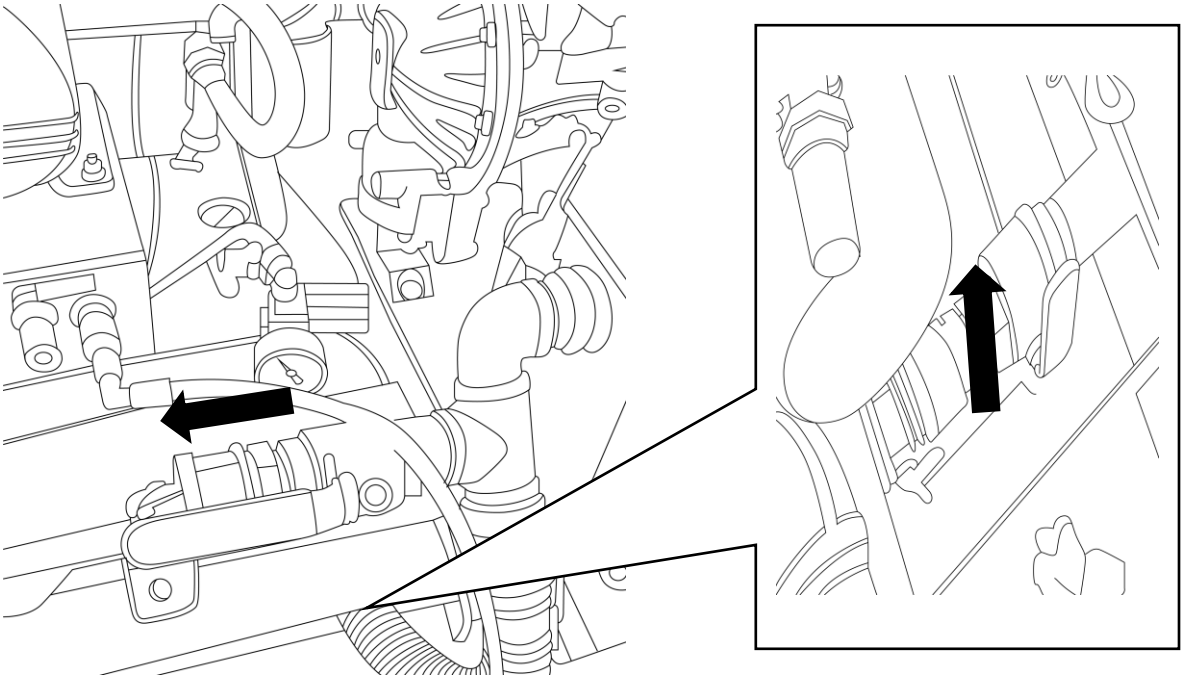


2) Secondary Input Source/ Transfer

This is primarily going to be for re-filling your 300-gallon tank from a 2ndary source, such as a barrel or tote

However, this secondary source can also be used for general spraying as well (spraying directly from a tote or barrel)

- Open the 1.5” valve at the front/top of the unit (connected to the filter pot)
- Close the 2” valve at the front/bottom of the unit (connected to the tank)

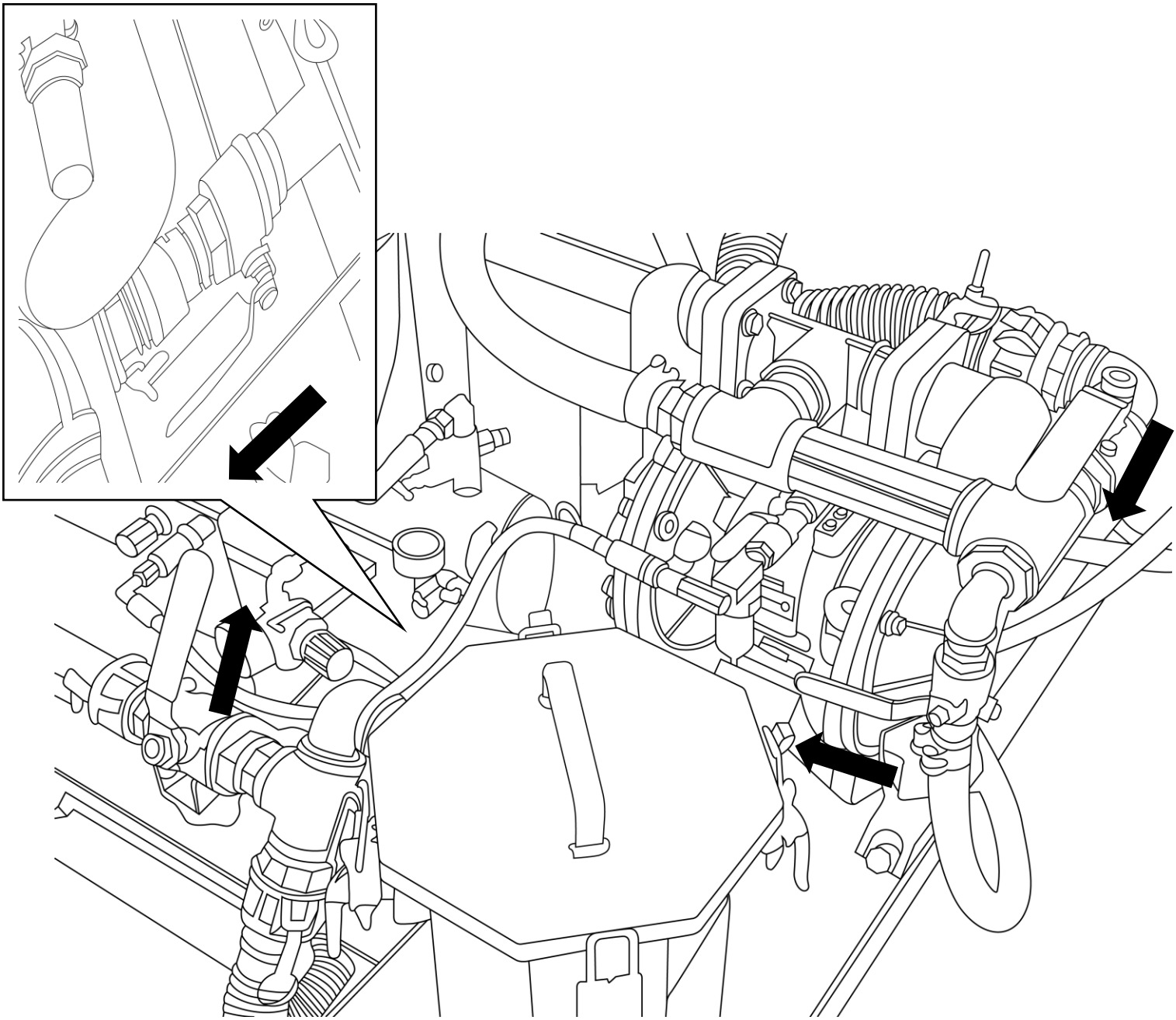


Output Modes

1) **Recirculation Mode**

This is one of 2 ways that you can mix your product. This will output back into the 300-gallon tank to help mix your product before beginning work

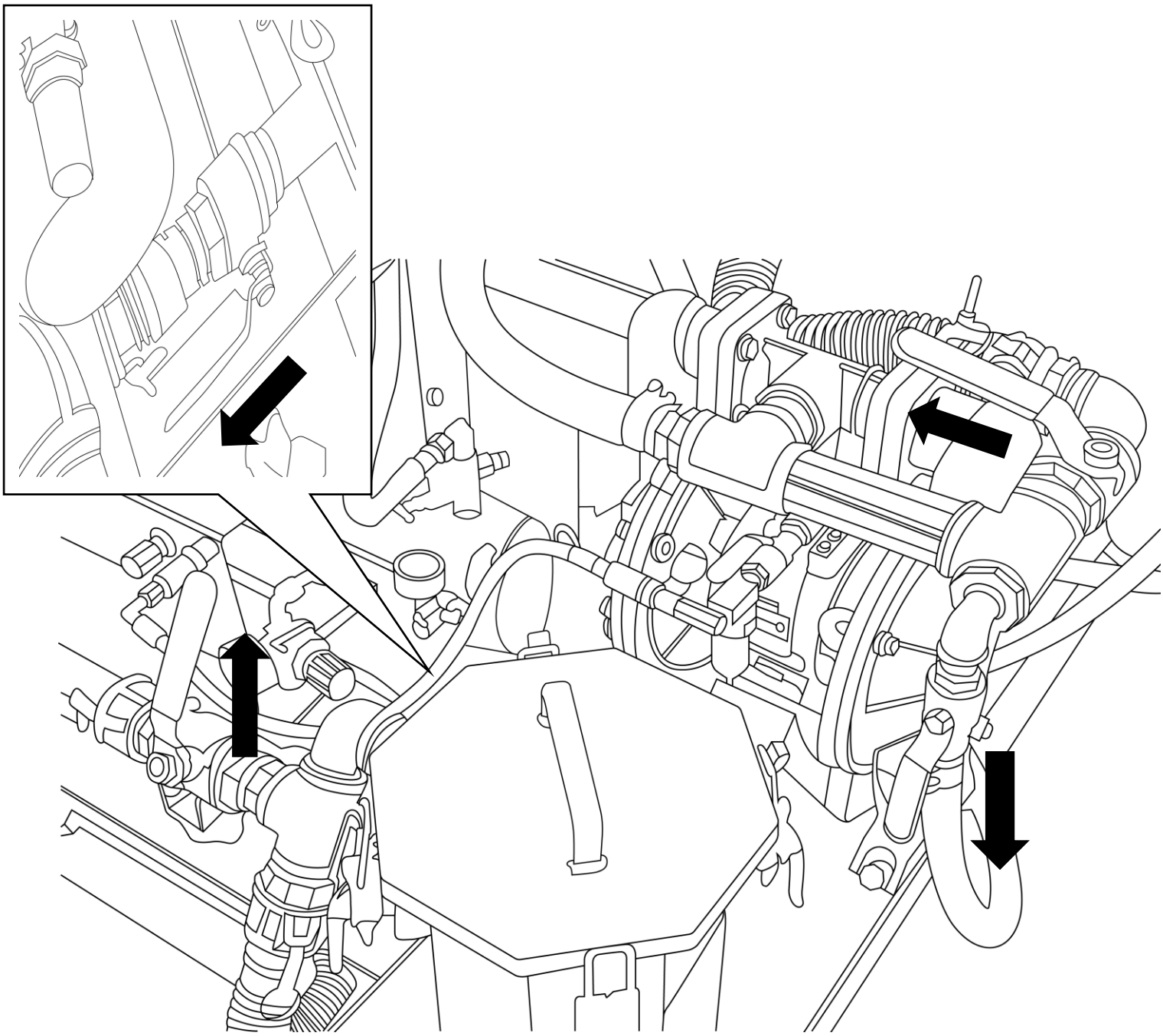
- Close the 1.5” valve at the front/top of the unit (connected to the filter pot)
- Open the 2” valve at the front/bottom of the unit (connected to the tank)
- Open the 1.5” valve at the back/top of the unit (connected to the pump)
- Close the ¾” valve at the back/top of the unit (connected to the pump)



2) Spray Mode

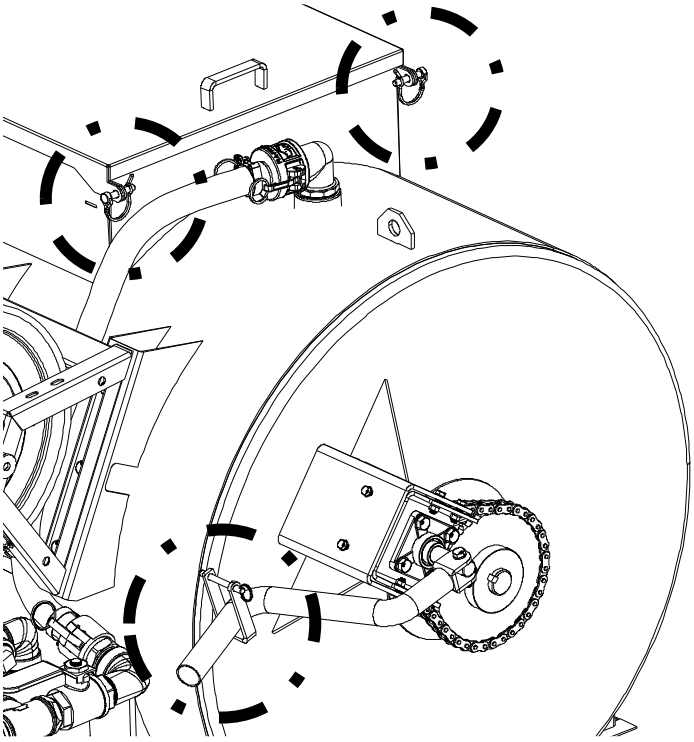
This is how you will be operating your system most of the time. Spraying through your spray wand.

- Close the 1.5” valve at the front/top of the unit (connected to the filter pot)
- Open the 2” valve at the front/bottom of the unit (connected to the tank)
- Close the 1.5” valve at the back/top of the unit (connected to the pump)
- Open the ¾” valve at the back/top of the unit (connected to the pump)



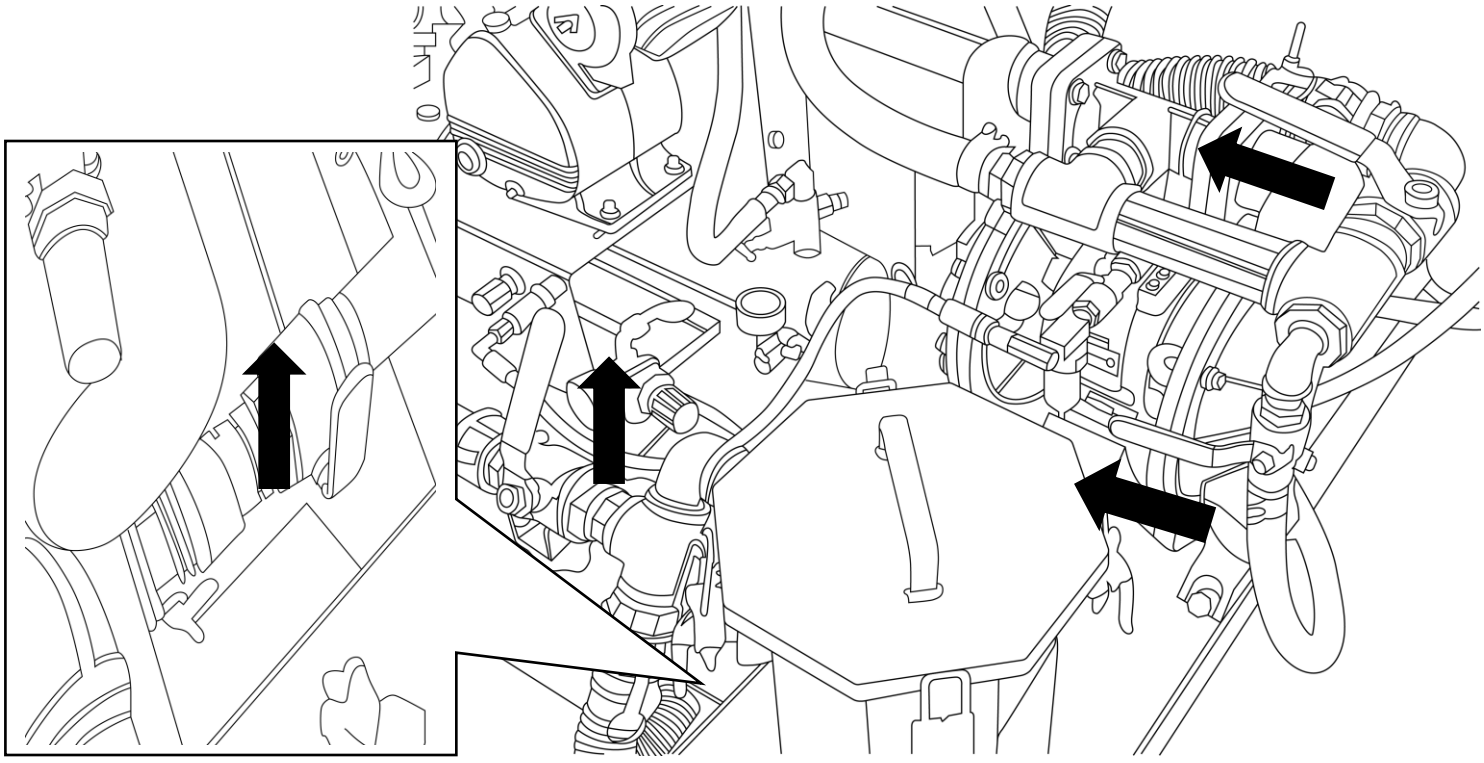
Travel Mode

Make sure to secure the pins on the manway as well as the pin on the agitation handle before transporting the unit.



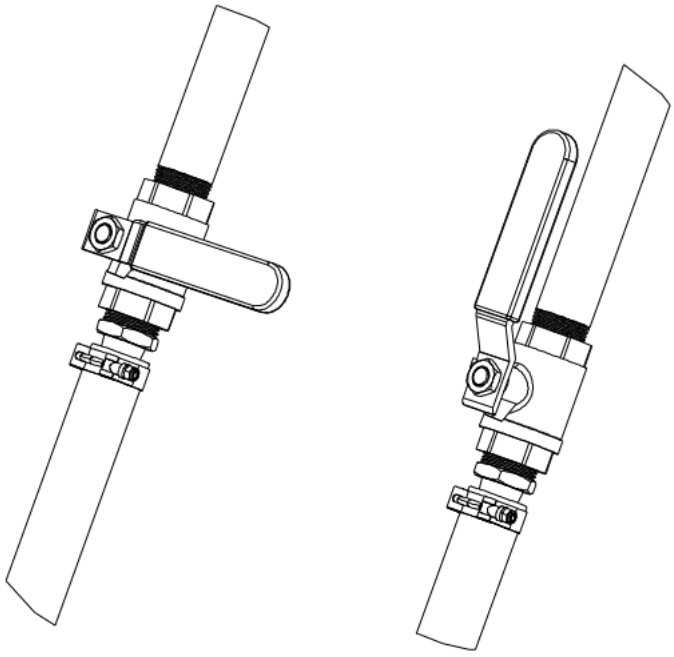
In order to reduce any risks of spillage while traveling, we recommend that you close ALL FOUR valves whenever traveling with the unit.

- Close the 1.5” valve at the front/top of the unit (connected to the filter pot)
- Close the 2” valve at the front/bottom of the unit (connected to the tank)
- Close the 1.5” valve at the back/top of the unit (connected to the pump)
- Close the ¾” valve at the back/top of the unit (connected to the pump)



3.3.1 Spray Wand Operation

The spray wand included with this system has a ball valve handle to accurately control the flow of sealer. Please refer to the following diagram for the valve positions.

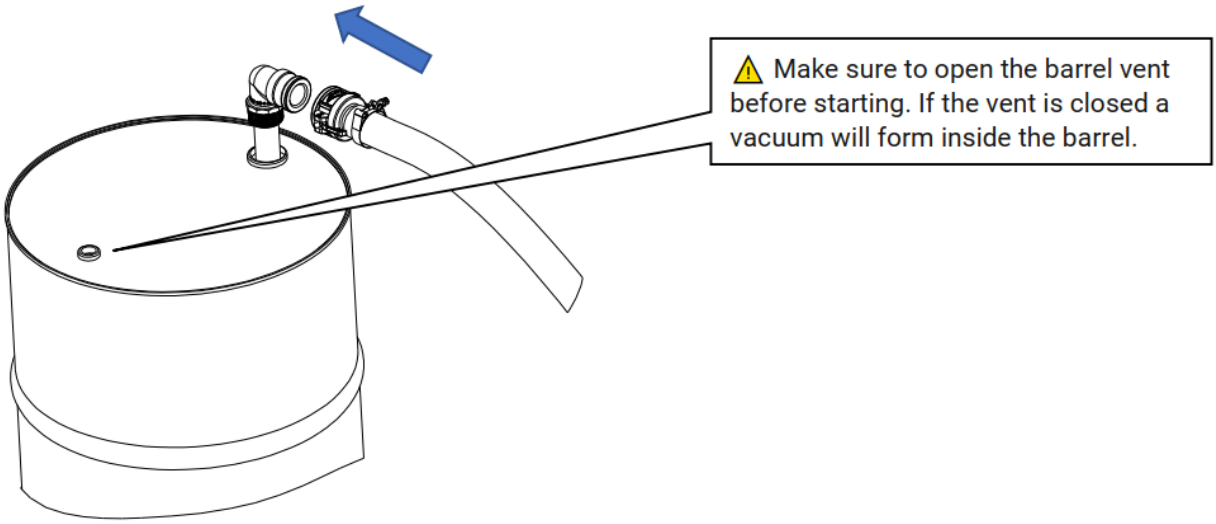


Spray wand valve closed Spray wand valve open

3.4 Transferring Sealer from a Drum
(Transfer kit sold separately)

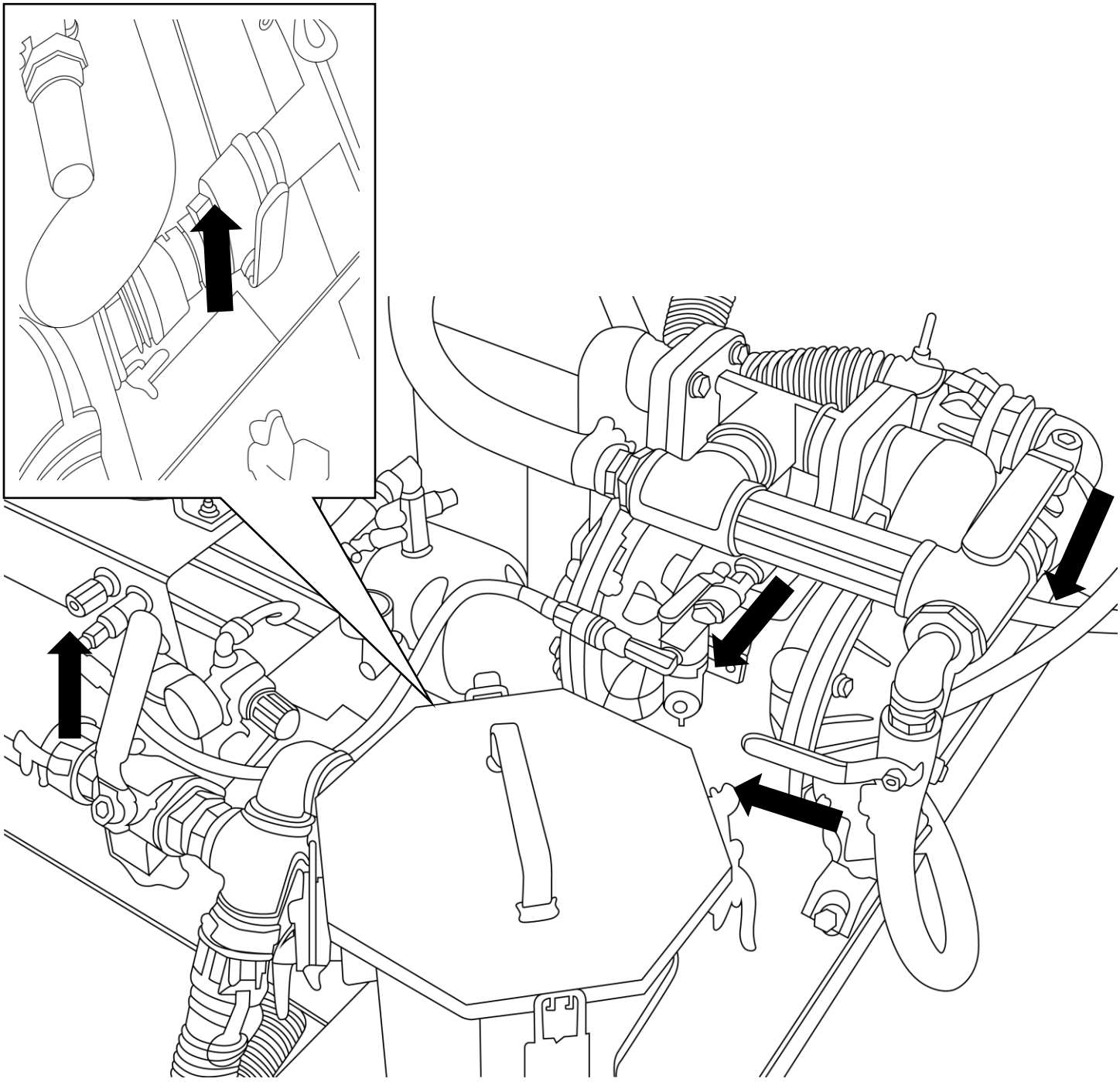
Mix the sealer with a drum mixer for several minutes before transferring

1. Insert the transfer tube into the barrel's 2" NPT opening
2. Open any vents in the barrel
3. Connect the female cam lock on the 15' transfer hose to the transfer tube.

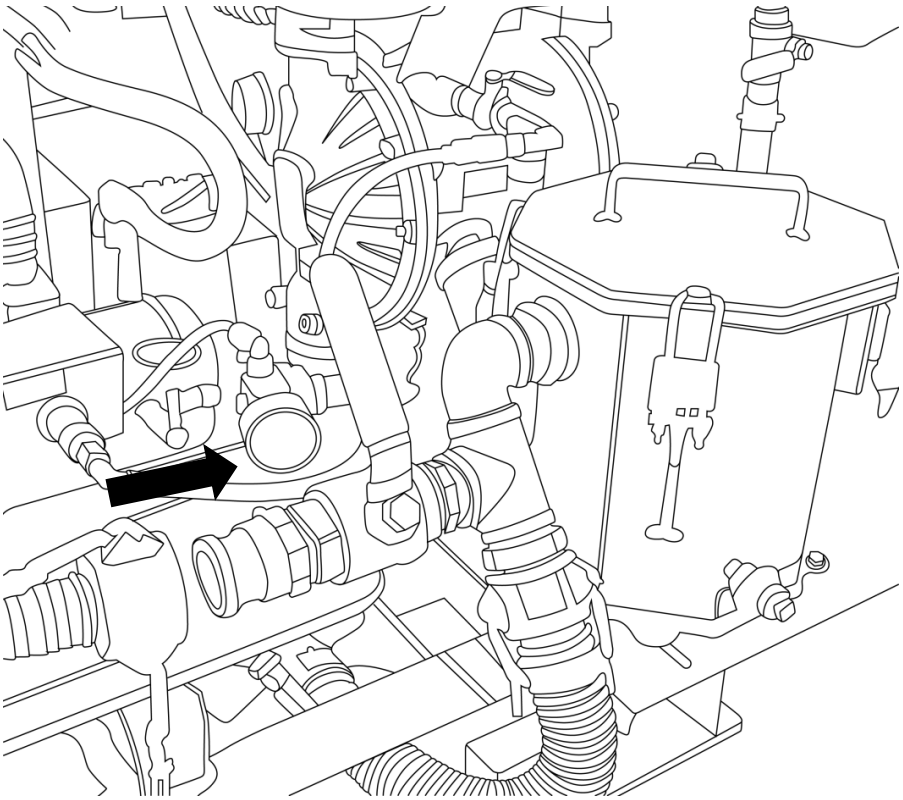


4. Set up the valves on the unit to prepare for transfer.

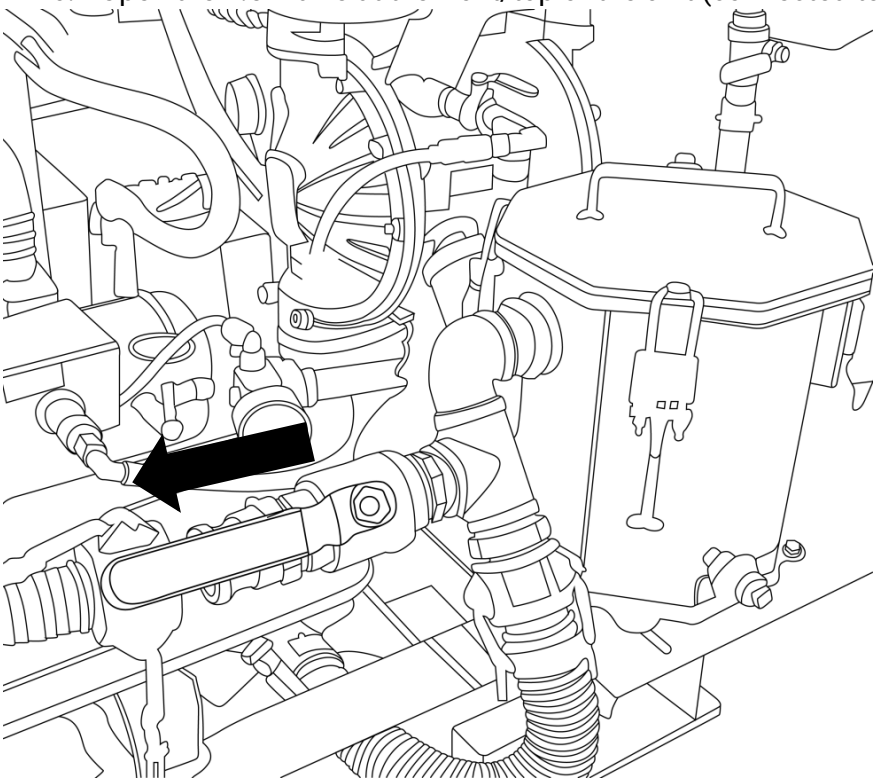
- Close the 1.5” valve at the front/top of the unit (connected to the filter pot)
- Close the 2” valve at the front/bottom of the unit (connected to the tank)
- Open the 1.5” valve at the back/top of the unit (connected to the pump)
- Close the ¾” valve at the back/top of the unit (connected to the pump)
- Open the ¾” valve at the front of the diaphragm pump controlling the air



5. Remove the cap and connect the other end of the transfer hose to the SECONDARY input on the AirBoss



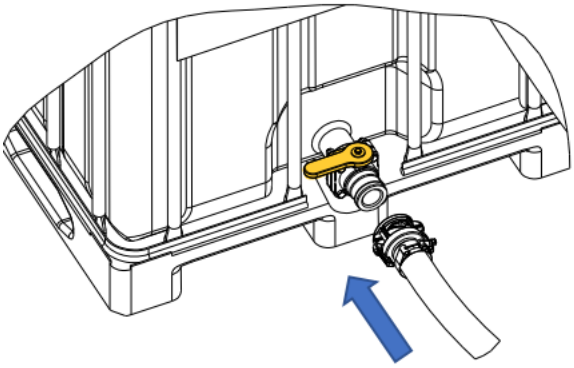
6. Open the 1.5” valve at the front/top of the unit (connected to the filter pot)



7. Start the pump to begin transferring sealer.

3.5 Transferring Sealer from a Tote
(Transfer kit sold separately)

1. Mix the sealer with a drum mixer for several minutes before transferring
2. Connect the 2” female cam lock on the 15’ transfer hose to outlet port on the tote.



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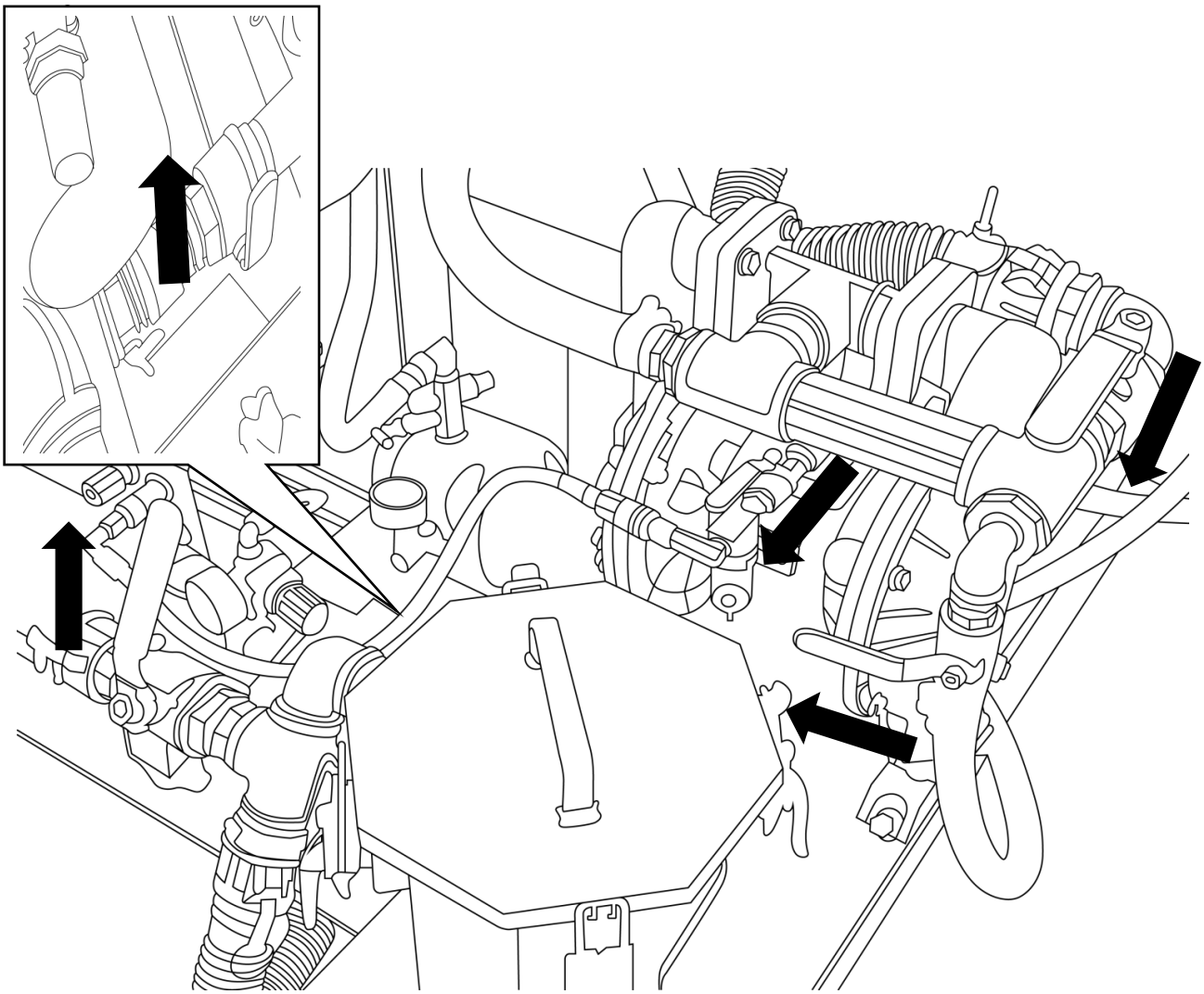
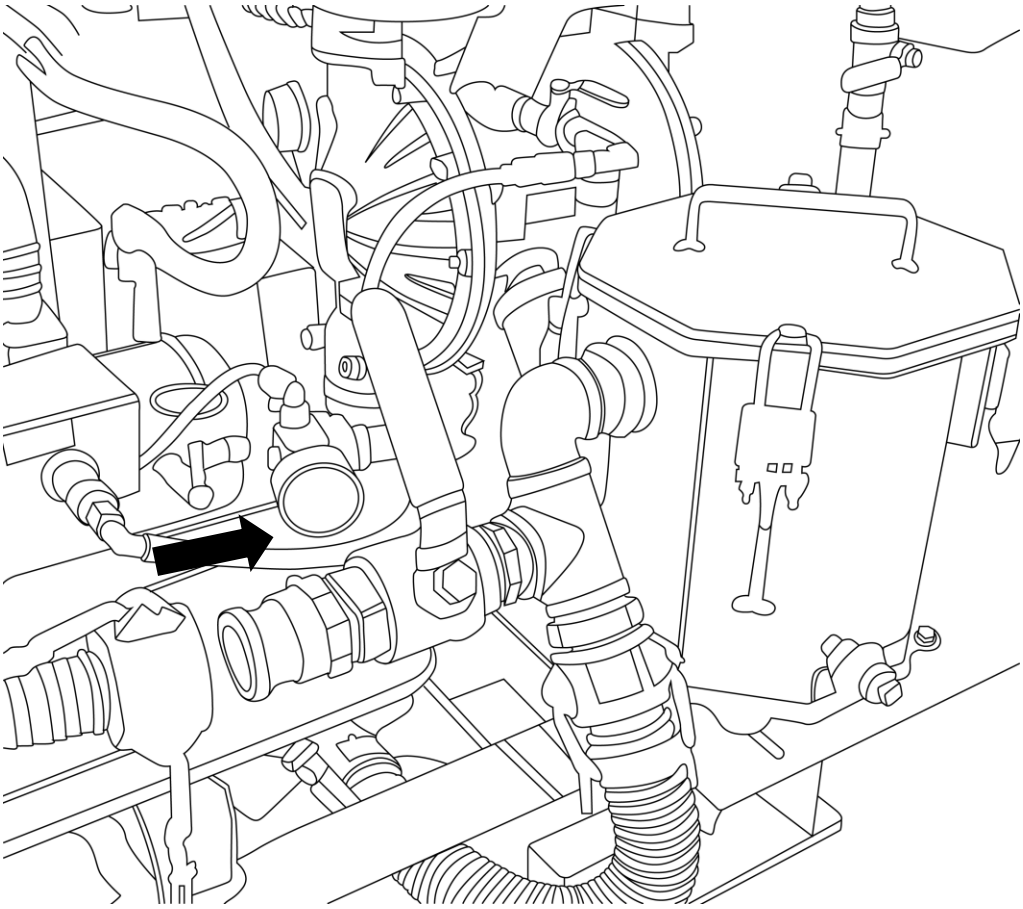
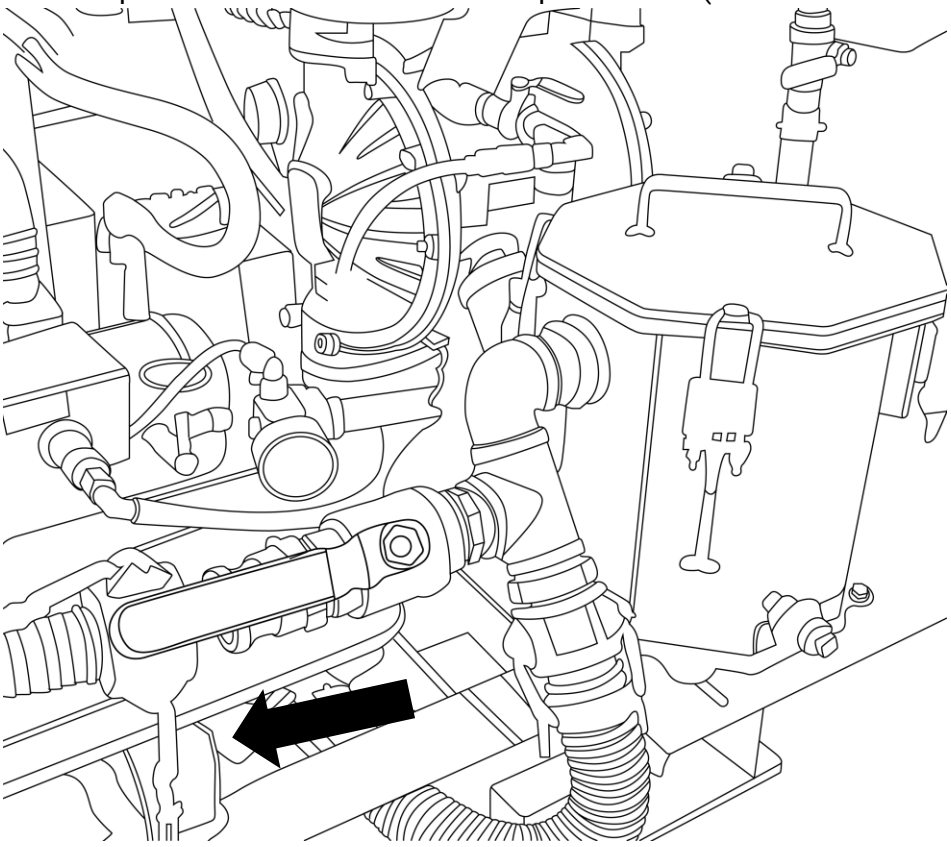
- Close the 1.5” valve at the front/top of the unit (connected to the filter pot)
- Close the 2” valve at the front/bottom of the unit (connected to the tank)
- Open the 1.5” valve at the back/top of the unit (connected to the pump)
- Close the ¾” valve at the back/top of the unit (connected to the pump)
- Open the ¾” valve at the front of the diaphragm pump controlling the air



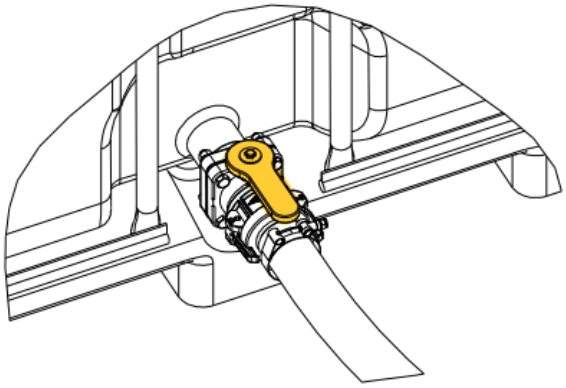
4. Remove the cap and connect the other end of the transfer hose to the SECONDARY input on the AirBoss



5. Open the 1.5” valve at the front/top of the unit (connected to the filter pot)



6. Open the valve at the tote outlet.



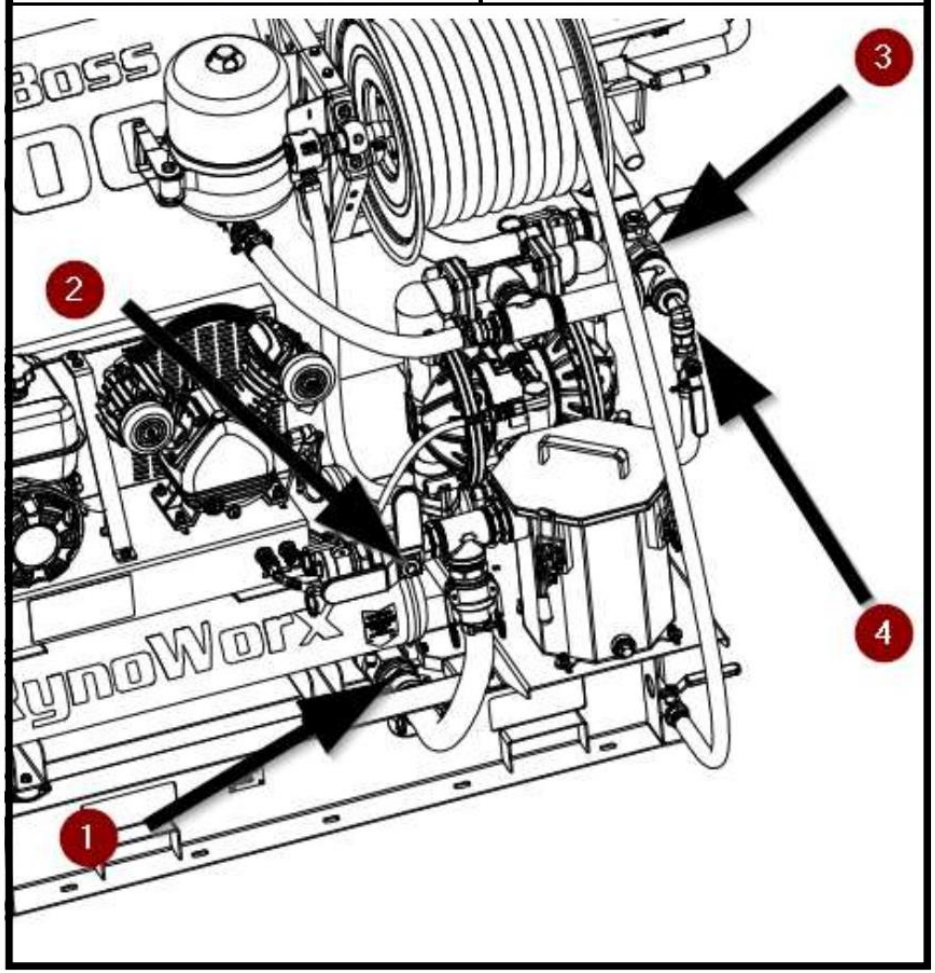
7. Loosen the lid on the top of the tote
8. Start the pump to begin transferring sealer.

AIRBOSS QUICK-START GUIDE

RynoWorx HOW-TO Videos

RynoWorx Support

Input Valves	Output Valves
1. Primary Valve (Tank)	3. Recirculation Valve (Mixing)
2. Secondary Valve (Barrel or Tote)	4. Spray Valve (Spraying)



Pre Check - Check the following fluid levels:

- Engine fuel
- Compressor oil level with red dot on sight glass
  - 30 weight compressor oil
  - ISO 46 synthetic
- Engine oil at "full" line of the dipstick.
  - 5W-50 synthetic oil
  - 5W-30 or 10W-30
  - SAE30

LOADING FROM BARREL OR TOTE:

Primary Input Closed

Secondary Input Open

Recirculate Output Open

Spray Output Closed

FAQ:

My AirBoss keeps kicking up and down even when it's not spraying. Shouldn't the pressure remain at 120?

- This is normal. Once your unit kicks down to idle, the compressor pump is still making pressure. That pressure is being released through the loader valve. While this is happening, some of the pressure from your tank is also being released.

I can't seem to build up to full pressure.

- This can happen if you are operating the pump without fluid. The most likely cause is that the main input valve is closed. Opening the valve should get your AirBoss running normally.
- This can also happen if your sealer is too thick. See next question for mixing and ratios.

I keep getting clogs in my spray tips or incomplete fan patterns when spraying.

- Mix your sealer more before spraying. Put your unit into recirculation mode for 10-15 minutes.
- This may also be caused by excessively thick sealer. Your sealer should be the consistency of tomato soup. If it is any thicker than that, try adding 5 gallons of water to the top of the tank and recirculate for 5-10 minutes. Repeat until the appropriate consistency is achieved. Consider swapping to the smaller of the two filter baskets.

RECIRCULATING:

Primary Input Open

Secondary Input Closed

Recirculate Output Open

Spray Output Closed

SPRAYING:

Primary Input Open

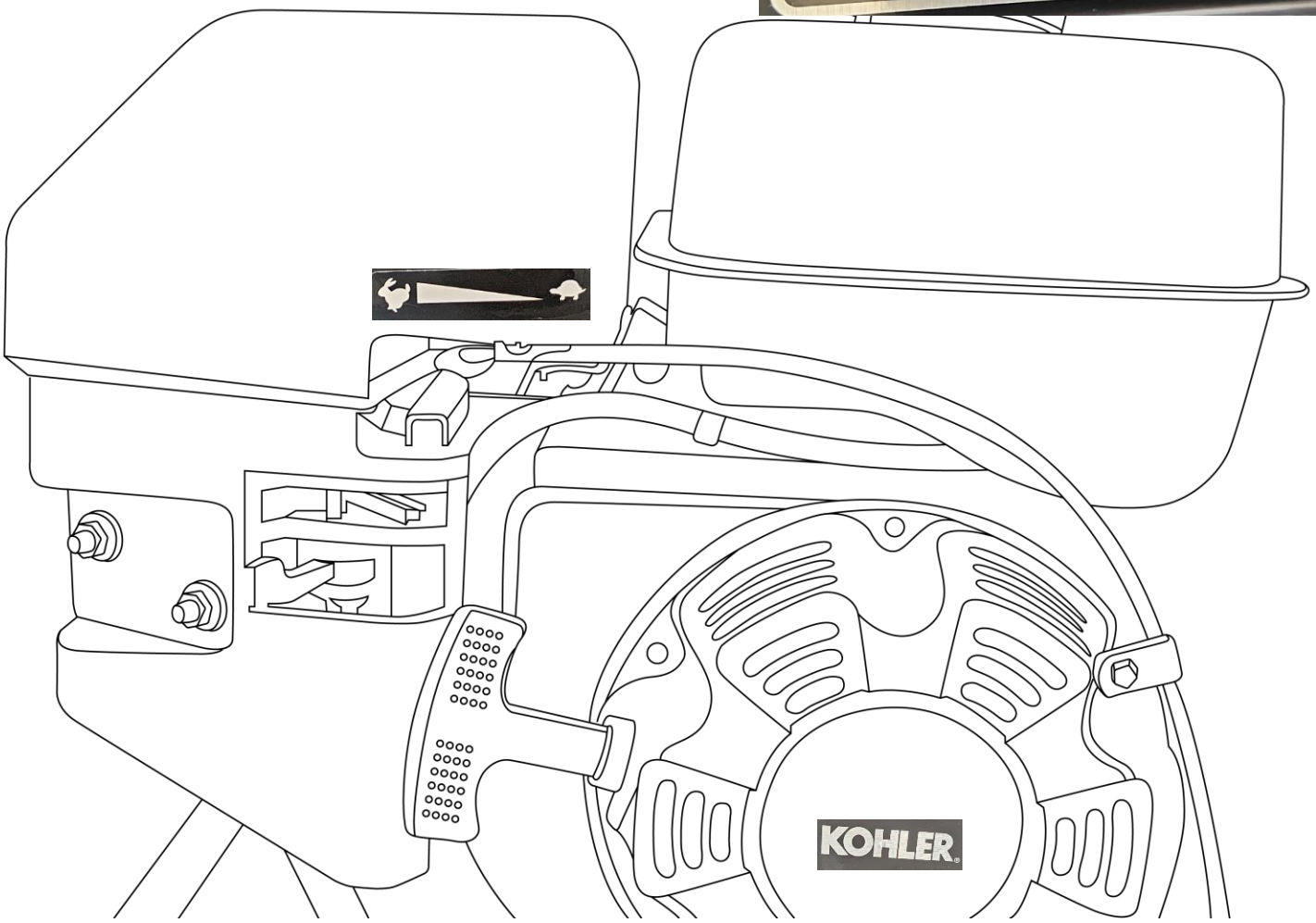
Secondary Input Closed

Recirculate Output Closed

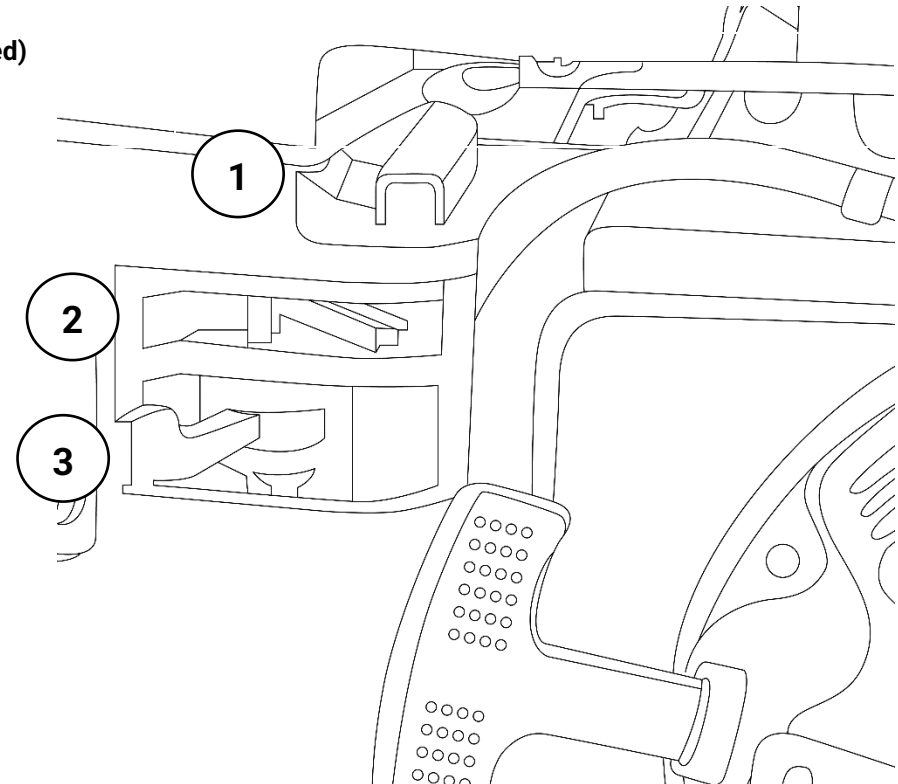
Spray Output Open

3.6 Starting the Engine

Kohler - SH265 (Entry and Standard models)



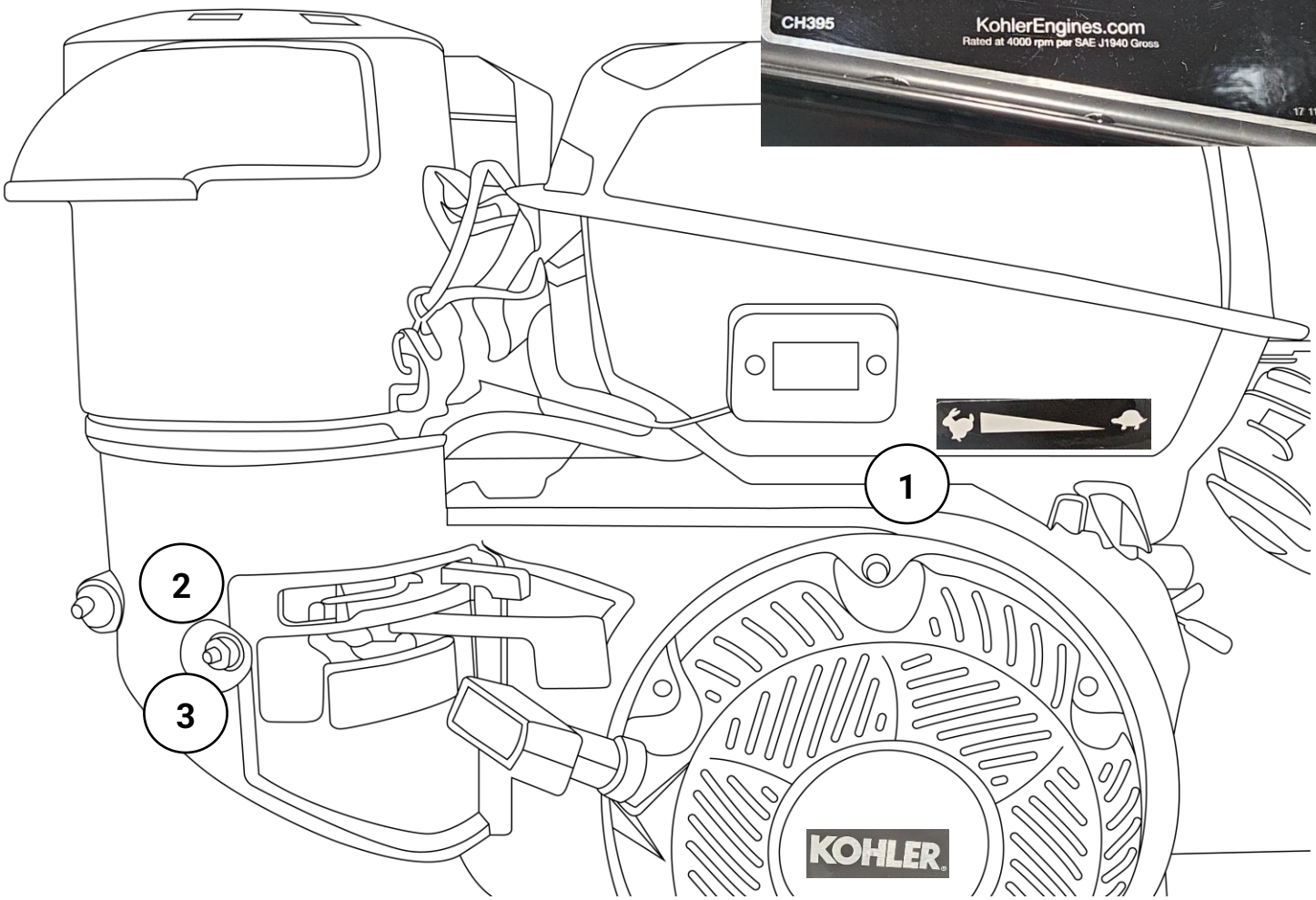
1. **Engine RPM (automatically controlled)**
2. **Choke ← ON → OFF**
3. **Fuel → ON ← OFF**



SH265 Starting:

1. Turn the fuel shut-off valve to ON position
2. Turn the engine on/off switch to ON position
3. Start the engine as follows:
   Cold engine:
   a. Place the throttle control midway between the SLOW and FAST positions
   b. Place the choke control into the ON position
   Warm engine:
   a. Place the throttle control midway between the SLOW and FAST positions
   b. Return the choke to OFF position as soon as the engine starts
   c. A warm engine usually does not require the choke on
4. Slowly pull the starter handle until just past compression-STOP! Return the starter handle; firmly pull straight out to avoid excessive rope wear from the starter rope guide
5. Gradually return the choke control to OFF position after the engine starts and warms up. Engine/equipment may be operated during warm up period, but it may be necessary to leave the choke partially on until the engine warms up

Kohler – CH395 (Pro models)



1. **Engine RPM (automatically controlled)**
2. **Choke** **← ON → OFF**
3. **Fuel Secure Lever** **← OFF → RUN**

Staring Instructions

1. Slide the fuel secure lever to the ON position
2. Start the engine as follows:
   Cold engine:
   a. Place the choke control into the ON position
   Warm engine:
   b. Return the choke to OFF position as soon as the engine starts
   c. A warm engine usually does not require the choke on
3. Slowly pull the starter handle until just past compression-STOP! Return the starter handle; firmly pull straight out to avoid excessive rope wear from the starter rope guide
4. Gradually return the choke control to OFF position after the engine starts and warms up. Engine/equipment may be operated during warm up period, but it may be necessary to leave the choke partially on until the engine warms up

4 MAINTENANCE

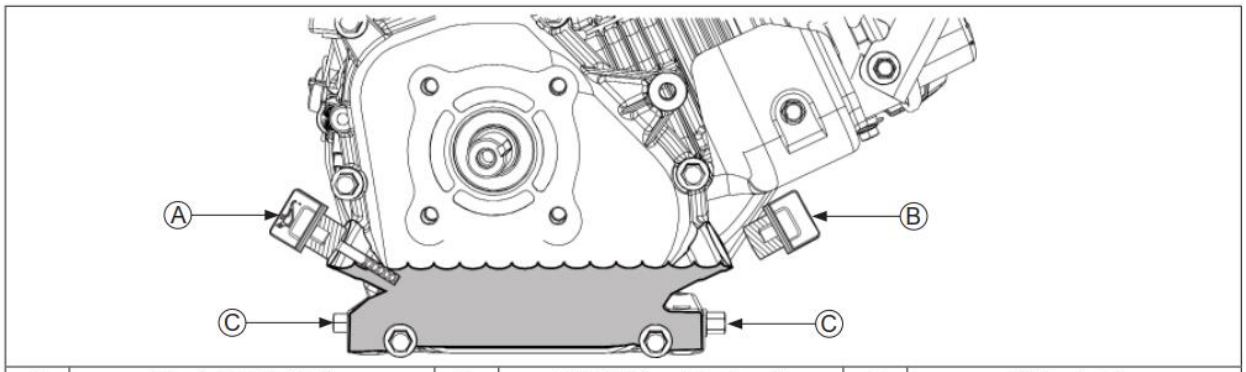
Table A: Maintenance Schedule

Maintenance Procedure	Before Each Use	After Each Use	End of Day	Every 50 Hours	Every 100 Hours	Every 200 hours	Every 500 hours	Every 1000 hrs
Check Engine Oil Level	X							
Check Compressor Oil Level	X							
Check Hydraulic Oil Level *	X							
Check Airline Oiler level *								
Check Fuel Level	X							
Close compressor tank drain valves (both)	X							
Check all connections for hoses, spray wands, belts, and transfer kits.	X							
Check sealer consistency, add water to compensate for evaporation.	X							
Use agitation cycle to circulate sealer for 2-3 minutes.	X							
Drain the reservoir on the inline water filter	X	X	X					
Clean spray tips		X	X					
Open both compressor tank drain valves			X					
Flush lines with water			X					
Clean filter basket strainer			X					
Inspect / clean air filter				X				
Inspect and tighten any clamps, screws, or other fasteners				X				
Grease diaphragm pump pumping chamber components				X				
Check the battery on the engine hour meter					X			
Inspect / replace air filter					X			
Change engine oil (conventional oil)					X			
Inspect agitation system: external gaskets and internal paddle mechanism including replaceable paddle gaskets, set screws, ensure gears are not moving, use thread locker on screws as needed					X			
Oil the agitation chain					X			
Inspect and tighten any clamps, screws, or other fasteners					X			
Change compressor oil					X			
Change Engine oil (Full synthetic oil only)					X			
Change Quad-Clean ™ air filter *						X		
Replace spark plug							X	
Change Hydraulic Fluid every 1000 hrs or every 2 years, whichever comes first *								X

***if equipped**

4.1 Changing Engine Oil

Place the engine on a level surface and place a suitable container under the drain plug bolt



A	Dipstick/Oil Fill Plug	B	Oil Fill Plug (Optional)	C	Oil Drain Plug

1. Remove the oil filler cap
2. Remove the drain plug bolt and drain plug washer
3. Drain the oil into a suitable container

   Please dispose of used oil in a manner that is compatible with the environment. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash, pour it on the ground, or pour it down a drain.

4. Install the drain plug bolt with a new drain plug washer and tighten it to the specified torque
   a. Torque 18 N·m (13 ft. lb.)
5. Fill the crankcase with new oil, up to the point of overflowing filler neck, or to the FULL line on the dipstick
   Engine Oil Capacity:
   6HP SH265: 0.63 qt / 0.6L
   9.5HP CH395: 1.16qt / 1.1L
   Do not add commercial additives to the oil
   Do not mix gasoline into the oil

6. After adding the oil, check the oil level on the dip stick.
7. Install and tighten the oil filler cap securely
8. Make sure there are no oil leaks

4.2 Spark Plug Maintenance

Engine is equipped with following spark plugs:

Gap	0.76 mm (0.030 in.)
Thread Size	14 mm
Reach	19.1 mm (3/4 in.)
Hex Size	15.9 mm (5/8 in.)

4.3 End of season maintenance

1. Drain as much sealant from the tank into long term storage containers.
    - You can connect the recirculation hose to the storage tank and use the system to push sealant into the container
    - or use gravity feed from the main tank input
    - or remove the spray tip from the spray wand, and spray directly into the container
2. Clean the filter basket
3. Partially fill the tank with water 15-20% full
4. Recirculate into the storage tank until only water comes out of the hose
5. Switch to spray mode and spray into the storage container until you see water coming out of the spray wand
6. Reconnect the hoses back to the AirBoss
7. Run the pump in re-circulate for several minutes to remove as much residue from the recirculate hoses
8. Run the pump in spay mode for several minutes to remove as much residue from the spray hose and wand
9. Rotate the agitation handle several times to clean off the paddles
10. Drain all the water from the tank
11. Run the system in recirculate mode until water is no longer flowing
12. Run the system in spray mode until water is no longer flowing
13. Stop the engine
14. Disconnect and drain all the hoses, and spray wand.
15. Open the drain plug at the bottom of the filter canister
16. Let any water drain from filter canister
17. Replace the drain plug
18. Empty the inline water filter reservoir
19. Power wash both the inside and outside of the bulk tank.
    - Consider having the inside of your bulk tank professionally cleaned
20. Drain the tank
21. Remove spray tip from spray wand
22. Submerge spray tip(s) and the quick connect end of the spray wand in soapy water for several minutes.
23. Clean the tips and quick connect fitting with a **NYLON** bristle brush (not brass or other metal brush)
24. Perform an oil change
25. Fog & Stabilize engine:
    1. Add fuel stabilizer to the gas tank
    2. Run the engine for 2-3 minutes to circulate the stabilizer
    3. Turn off the engine
    4. Remove the air filter cover
    5. Start the engine
    6. Spray engine fogger into the air intake until you see heavy smoke and the engine stalls
       * If the engine does not stall on its own, turn the kill switch to off manually while spraying until the engine completely stops
    7. Re-install the air filter
    8. Remove the spark plug
    9. Pull the pull cord gently until the piston is near the bottom
    10. Spray engine fogging oil into the spark plug hole

11. Turn the crank 2 full revolutions by pulling the pull cord gently this is to assure even coating on cylinder wall
12. Replace the spark plug and spark plug wire
13. If possible, store equipment out of weather in a shed or garage
    a. If this is not possible, cover it with a tarp
14. Store spare sealant in a place where it will not freeze

Troubleshooting:

The best place to start is with the quick start guide that came with the machine. It walks you through how to start your machine for the first time. It also walks you through the various operating modes.
Quick start is located on page 27 / 37

Engine / Compressor – Page 37

1. My engine won't start
2. My engine keeps changing speeds on it's own even when not spraying
3. My compressor will not build up to full pressure
4. My engine won't drop to idle once full pressure has been reached
5. My engine won't kick up to full speed once the regulator pressure has been reached
6. My engine stalls when it kicks up
7. My engine stalls randomly

Spraying – Page 40

1. I don't get a nice fan pattern when spraying
2. Spray wand keeps pulsing
3. Spray wand keeps sputtering, like the lines are full of air
4. My machine makes a "machine gun" noise
5. My machine never builds to full pressure
6. When I try to spray, nothing happens
7. I am getting a lot of clogs in my spray tip

Recirculating – Page 41

1. I have low pressure while recirculating
2. Nothing happens when I try to recirculate

Loading – Page 42

1. I can't load from a barrel or tote
2. Loading from barrel or tote is very slow

FAQ – Page 43

Quick Start:

1. Put ~45 gallons of fresh water in your tank
2. Open the filter pot, pour ~3-4 gallons of fresh water into the filter pot
3. Re-secure the filter pot lid
4. Disconnect the air line from the front of the compressor or diaphragm pump
5. Choke: ON, Fuel: ON, Kill: ON – Do not touch the throttle, it's controlled by the kickdown
6. Start the engine, and slowly adjust the choke
7. Verify that the compressor builds to 120psi, then kicks down the engine
8. Turn off engine - Kill: OFF
9. With the engine off, and the compressor tanks full, listen/inspect for any air leaks, repair if needed
10. Adjust the regulator to be 90psi
11. Restart the engine – Kill: ON
12. Open one of the compressor tank drain valves until the pressure drops below 90psi
13. Close the valve
14. The kick-down should ramp the engine back up to full speed, and then kick down to idle again while once it reaches 120psi again
15. Open the main input valve at the bottom of the tank
16. Open the recirculation output valve
17. Re-connect the airline from step 4
18. The pump should now be recirculating the water into the tank
    a. You can open the manway to observe
    b. the recirculation hose will also be pulsating or shaking
19. Rotate the paddle mixer a dozen times to ensure it rotates correctly
20. Close the recirculation output valve
21. Confirm the compressor builds to full pressure and kicks down
22. Make sure the spray wand valve is closed
23. Open the spray output valve
24. Unlock the hose reel
25. Pick up the spray wand and take a few steps away from the unit
26. Slowly open the spray wand valve, and confirm that you are getting consistent spray.
27. Close the spray wand valve
28. Turn off the engine
29. Inspect all the fittings to see if there are any leaks
    a. Small drips will seal themselves once you put sealer through the unit
    b. Larger leaks may need to be re-tightened

Engine / Compressor:

To start your engine please check the following (refer to quick start guide)

1. Fresh Fuel in the tank
2. Engine Oil at full
3. Compressor pump oil in the middle of the viewing window
4. Kill switch set to ON
5. Choke ON
6. Fuel ON – if this is the initial fuel fill, leave the unit for 5-10 min to allow the fuel to fill the carburetor before starting
7. Pull the recoil sharply until the engine starts
8. Slowly slide the choke to the off position

My engine stalls when I slide the choke to off:

- The engine is cold, leave the choke on full for a minute or two, then slowly slide it to the off position

My engine stalls randomly, but then works again after a few minutes

- Check the engine oil – your engine oil has a low oil sensor that turns off your engine automatically. If the oil is low, it can falsely trigger this while it's running
- Try loosening the gas cap – some gas caps have charcoal in them, if they get wet/saturated it can cause a vapour lock in your gas tank
- Reseat the spark plug cable
- Clean the air filter

My engine keeps changing from high speed to low speed on it's own

- This is normal. The engine speed is controlled by a "kickdown" attached to the compressor. It will kickdown to idle when max pressure is hit, and kickup to full speed once the regulator pressure was been reached

My compressor keeps cycling from high to low, even when I'm not spraying

- This it normal. Once your unit kicks down to idle, the compressor pump is still making pressure. That pressure is being released through the loader valve. While this is happening, some of the pressure from your tank is also being released.

My engine stalls when trying to kick back up to full speed from idle

- This is most likely caused by the low idle speed being too low. When the engine tried to kick back up, a flood of fuel comes into the engine, and if the RPM is too low, it will flood the engine and induce a stall.
- Try adjusting the low idle screw on the side of the carburetor, ¼ turn clockwise and see if the idle speed rises slightly. Repeat ¼ turns until the idle rpm rises slightly
- The kickdown may need to be adjusted

Showing 0 or low psi

- Adjust the regulator to the desired pressure

Burning rubber smell

- Check the belt that connects the engine to the compressor pump

Compressor oil is black

- It is normal for oil to turn dark after a few hours of use. Continue to change the oil at regular service intervals laid out in the manual

Compressor oil is milky

- Compressor oil can get milky if you are operating in areas of high humidity. The only solution is to increase the frequency of oil change maintenance
- It can also get milky if operated under extremely cold temperatures (below freezing)

The system will not build all the way to full pressure

- Make sure the air line is disconnected from the front of the diaphragm pump
- Turn off the engine, listen for any air leaking noises
- Put your hand under each intake on the compressor pump. The should both generate a sucking sensation against your skin. If one is not sucking, or if it is blowing, there may be a problem with your compressor pump

Engine runs roughly

- Ensure choke is all the way off after warming up
- Ensure your gas is fresh
- Clean air filter
- Reseat spark plug cable
- Ensure spark plug is tight
-

Spraying:

Many of the steps outlined in this document refer back to the quick start guide. The reason for this is that it is designed to highlight all of the possible failure points in trying to get your AirBoss up and running. Being able to spray requires all of the steps from the quick start to be confirmed as working.

1. Begin by walking through the steps of the quick start, this will ensure that all the components are working as expected
2. Make sure the filter basket is not clogged
3. Make sure there is fluid in the filter pot
    - fill the filter pot with as much water as it will hold ~5 gallons
4. Ensure the primary input valve is open, and the secondary input valve is closed
5. Ensure the spray output valve is open, and the recirculation output valve is closed
6. Ensure the spray wand valve is open
7. Turn the paddle mixer a few times to loosen up any aggregate that may have settled to the bottom of the main tank
8. Unplug / re-plug in the airline in the front of the diaphragm pump
9. Ensure the air valve on the front of you diaphragm pump is open
10. Check for blockages
    - The drain in the tank – you may need a long stick
    - The input hose
    - The recirculation hose
11. Use the tote mixer, to stir the sealant in the tank
    - If mixing alone does not help, add a few gallons of water while mixing
12. Consider using a larger spray tip
13. Adjust regulator pressure – this is set to 90psi from factory
14. If there are engine starting/stalling/kickdown problems, see the Engine/Compressor section

Recirculating:

Recirculating is the best way to keep your sealant mixed and prevent settling of aggregate.

Many of the steps outlined in this document refer back to the quick start guide. The reason for this is that it is designed to highlight all of the possible failure points in trying to get your AirBoss up and running. Being able to recirculate requires all of the steps from the quick start to be confirmed as working.

1. Begin by walking through the steps of the quick start, this will ensure that all the components are working as expected
2. Make sure the filter basket is not clogged
3. Make sure there is fluid in the filter pot
    - fill the filter pot with as much water as it will hold ~5 gallons
4. Ensure the primary input valve is open, and the secondary input valve is closed
5. Ensure the recirculation output valve is open, and the spray output valve is closed
6. Turn the paddle mixer a few times to loosen up any aggregate that may have settled to the bottom of the main tank
7. Check for blockages
    - The drain in the tank – you may need a long stick
    - The input hose
    - The recirculation hose
8. Unplug / re-plug in the airline in the front of the diaphragm pump
9. Ensure the air valve on the front of you diaphragm pump is open
10. Use the tote mixer, to stir the sealant in the tank
    - If mixing alone does not help, add a few gallons of water while mixing
11. Adjust regulator pressure – this is set to 90psi from factory
12. If there are engine starting/stalling/kickdown problems, see the Engine/Compressor section

Loading:
There are several things to consider when loading

1. The height difference between the source container and the AirBoss
2. The viscosity (thickness) of the sealant
3. The valve configurations on the AirBoss
4. Is the AirBoss operating as it should be?
5.

Many of the steps outlined in this document refer back to the quick start guide. The reason for this is that it is designed to highlight all of the possible failure points in trying to get your AirBoss up and running. Being able to transfer fluids from a barrel or tote to the tank requires all the quick start steps to be confirmed as working. If this is the case:

1. Begin by walking through the steps of the quick start, this will ensure that all the components are working as expected
2. Make sure the filter basket is not clogged
3. Make sure there is fluid in the filter pot
    - fill the filter pot with as much water as it will hold ~5 gallons
4. Ensure the primary input valve is closed, and the secondary input valve is open
5. Ensure the spray wand valves are closed, and the recirculation valve is open
6. Ensure the air valve on the front of you diaphragm pump is open
7. Adjust regulator pressure – this is set to 90psi from factory
8. Mix your sealant with the tote mixer util it is of uniform consistency
    - Sealant wants to separate with the solids sinking to the bottom, and the liquid floating to the top – similar to oil and water
    - Mixing with a tote mixer for several minutes will re-combine the liquids and solids
    - Your AirBoss cannot pump thick liquids, similar to mud, yogurt, or sour cream
    - If you don't mix your sealant regularly, you can clog the filter basket
9. Add some water to your barrel or tote, and mix until uniform
    - Many sealers come as a concentrate and require 5-40% water to be added
    - Make sure you are following your manufacturers mixing instructions
    - Try to scrape the edged of the barrel of tote with the tote mixer
10. Try to bring the barrel or tote closer to the same level as the AirBoss
    - Ensure the barrel or tote is on the same level ground as your AirBoss trailer
    - The AirBoss can struggle to overcome a large height variance, if you can raise the source slightly, it makes the pump's job easier
11. Check for blockages in
    - Recirculation hose
    - Transfer hose
    - Barrel adapter

FAQ:

My AirBoss keeps kicking up and down, even when not spraying. Shouldn't the pressure remain at 120?

- This is normal. Once your unit kicks down to idle, the compressor pump is still making pressure. That pressure is being released through the loader valve. While this is happening, some of the pressure from your tank is also being released.

My AirBoss sometimes makes a "machine gun" noise while pumping.

- This is normal when running water through your system. Your AirBoss is designed to run asphalt sealer through it, which is thicker than water. Due to the slight manufacturing tolerances in the balls of your diaphragm pump, some may be slightly smaller than others, which can cause a slight vibration when running water through your system. This noise should go away once you run sealant through your system.

I can't seem to build up to full pressure

- This can happen if you are operating the pump without fluid. The most likely cause is that the main input valve is closed. Opening the valve should get your AirBoss running normally
- This can also happen if your sealer is too thick – see next section for mixing and ratios

I keep getting clogs in my spray tips, or incomplete fan patterns while spraying

- Mix your sealer more before spraying. Put your unit into recirculation mode for 10-15 minutes.
- This may also be caused by excessively thick sealer. Your sealer should be the consistency of tomato soup. If it's any thicker than that, try adding a 5 gallons of water to the top of the tank, and recirculate for 5-10 min, repeat until the appropriate constancy is achieved.
- Consider swapping to the smaller of the two filter baskets

There is water / condensation in the glass tube on the diaphragm pump

- This is normal. This is a water filter, designed to remove much of the water from entering into the pump mechanism. Simply push the little button on the bottom to drain the liquid

Muffler is freezing over

- This can happen when the air temperature is low. The air coming out of the diaphragm pump is under a lot of pressure, and when it escapes, it also expands quickly and this can cause some freezing

It's hard to rotate the paddle sweeper

- The paddles have ruber gaskets on them that slide against the tank. Like a squeegee. Once you rotate it will begine to get easier. Also, try only rotating in one direction. Changing direction forces the gaskets to bend in the opposite direction.

It feels like there is an air leak at the front of the pump

- If the air leak coincides with the cycling of the diaphragm pump, it is most likely the exhaust air through the diffuser / muffler

I have a small drip/leak

- Small leaks should not be of major concern. When you are testing your unit with water, you may encounter a small drip here or there. Try to tighter the fittings.
- Once you run sealant through your machine, all the small drips will plug/seal themselves
- If you have any spraying coming from any joints, the must be tightened to stop the leak
- You may have a damaged fitting or hose – check for cracked or torn hoses, and any loose fittings or other connections

My chain is loose

- Follow the instructions for how to tighten the chain

My chain sprocket seems to be coming off

- Tap the sprocket to relieve tension on the chain
- Tighten both set screws
- Consider using blue thread locker on the set screws