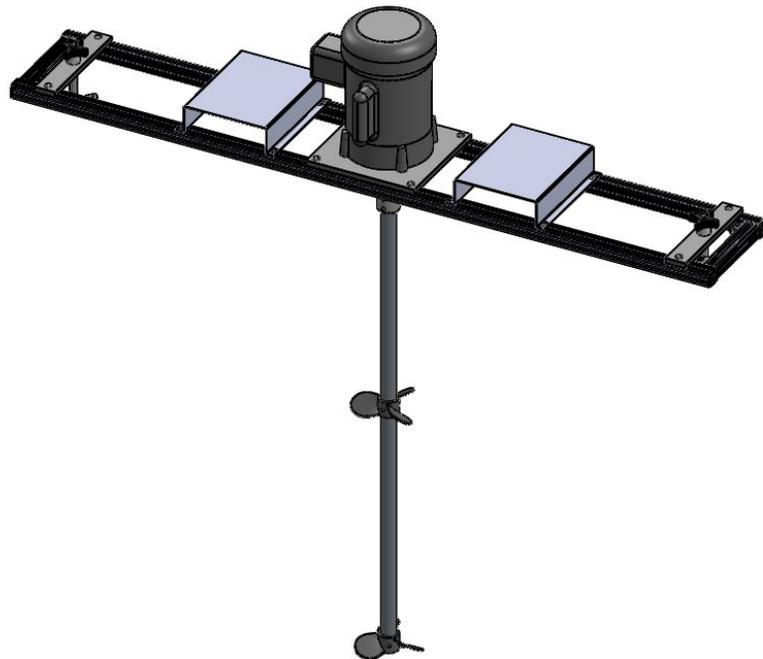
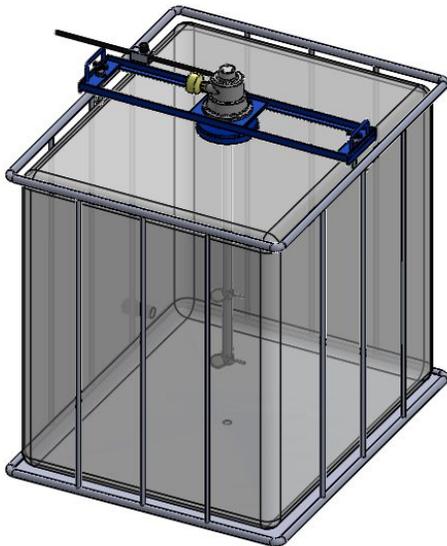
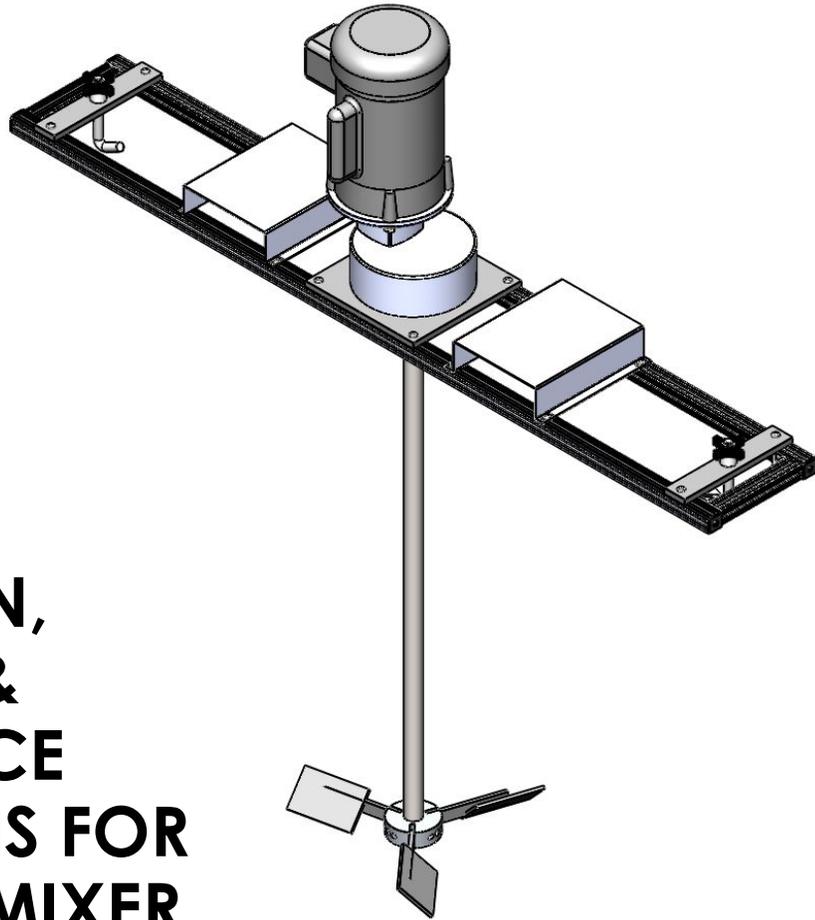




A brand of Subiaco, Inc.

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS FOR CLEVELAND MIXER TOTE TANK AGITATOR SERIES

Models: XTLA, XTLE, XTLGA, XTLGE, BCA, BCE, BCGA, BCGE



TOTE TANK AGITATOR MANUAL



Cleveland Mixer
A brand of Subiaco, Inc.

4 Heritage Park Rd.
Cleveland, OH 44115
U.S.A.

Tel. 800 669 1199
Tel. 800 743 1188
www.clevelandmixer.com
Tel. 800 669 7401

Cardboard Box
Foam Packing

UNPACKING YOUR MIXER

You will receive your BCA, BCE, BCGE, BCGA, XTLE, XTLA, XTLGE or XTLGA tote tank agitator packed in a Cleveland Mixer box, incased in foam. When unpacking the mixer, make sure to remove and account for all of your mixer's components.

The gear driven models (BCGA, BCGE, XTLGA, XTLGE) will come packed in two separate boxes: one box containing the mounting frame, propeller, shaft, hardware and instruction manual. The second box will contain the gear drive, motor and shaft coupling which will all be preassembled. The gear drive will be filled with oil from the factory (Klubersynth GH6-460).

Mixers with air powered motors will come with a needle valve (.25 NPT for .5-1HP units, .50 NPT for 2HP units). The needle valve is used to control the air pressure flowing into the motor.

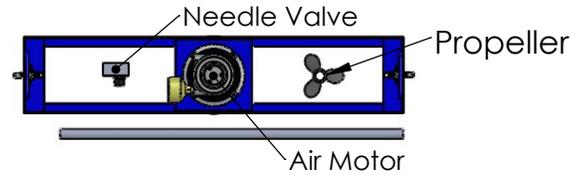
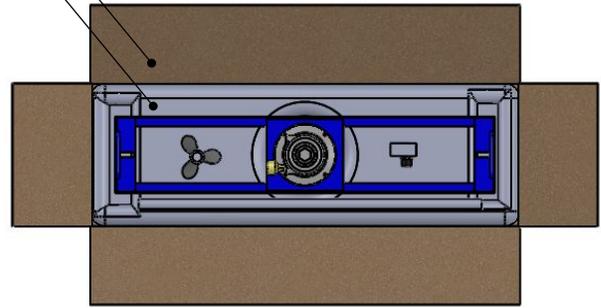
Please see the diagram to the right for examples of how your Cleveland Mixer tote tank agitator should be packed. If you receive your mixer with a damaged box or missing parts, please report it to the carrier and call the factory or distributor to report the issue right away.

*NOTE - Electric powered XTLE units will come packaged with the motor in a separate box to help prevent shipping damage.

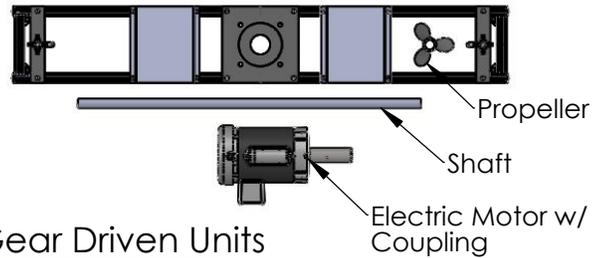
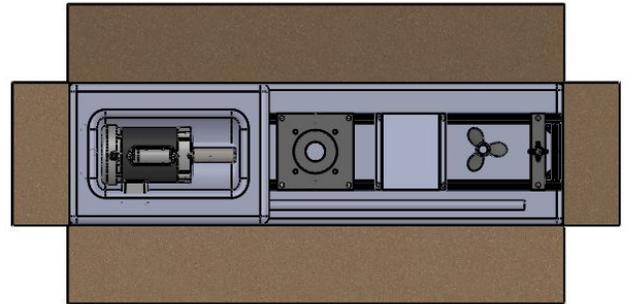


BOX/PACKAGING EXAMPLES

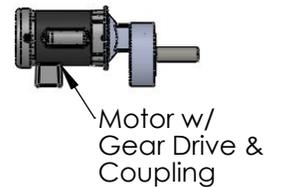
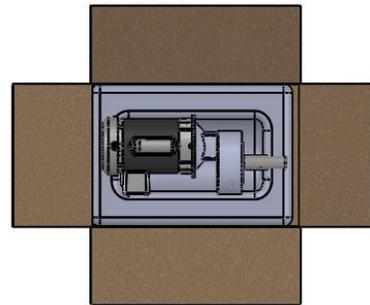
BCA - Air Powered w/
Steel Mounting Frame



Electric Powered w/ Aluminum Frame



Gear Driven Units



Gear drive units will come with a pack of 3/8-16 hex head cap bolts to connect the gear drive and motor to the mounting frame. The pack will also include a breather valve which must be installed in the gear drive prior to operation.



ASSEMBLY OF AGITATOR

Your Cleveland Mixer tote tank agitator will need some assembly.

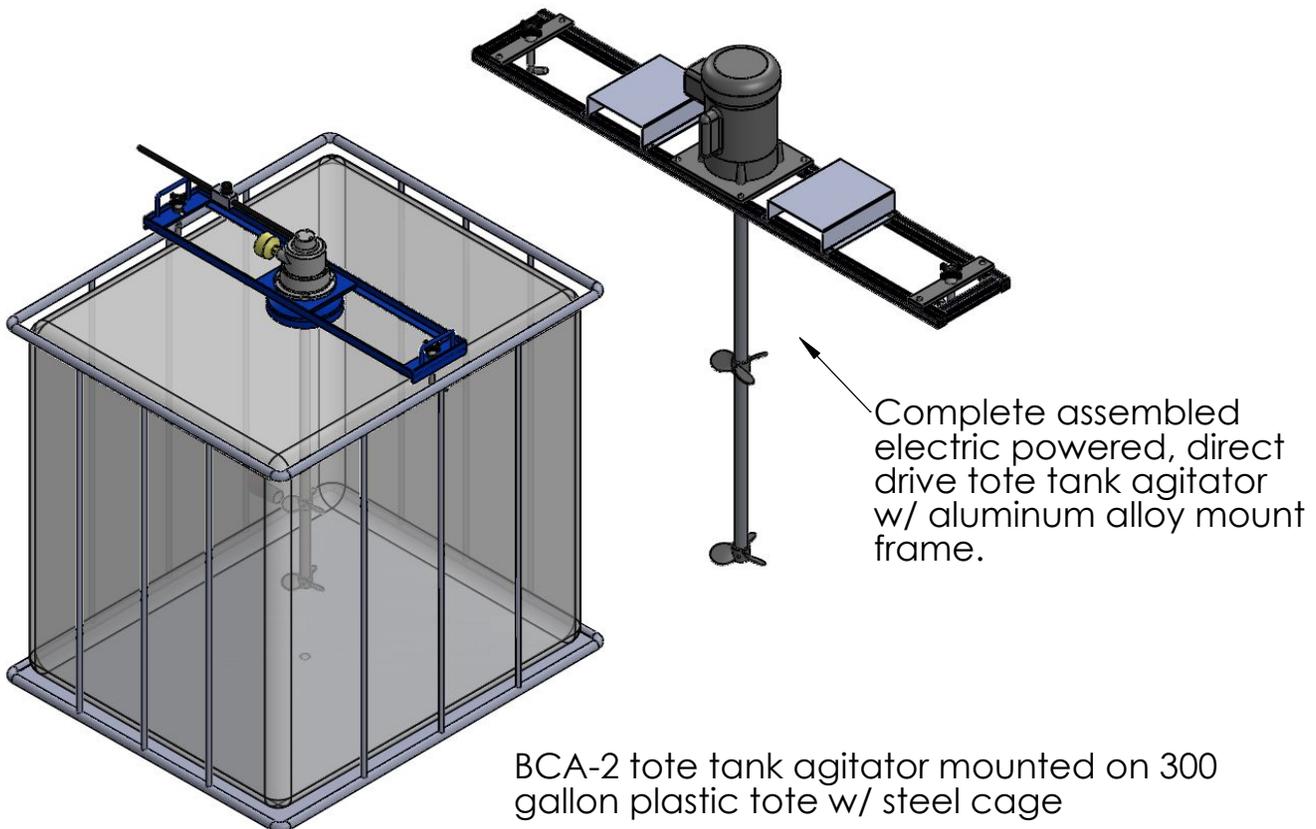
Both 1HP and 2HP air powered, direct drive units will come with the motor factory mounted to the frame, but due to the height of the motor, 1HP and 2HP electric powered, direct drive units will need to have the motor mounted to the frame before putting the mixers into service.

Both air powered and electric powered, gear driven units will need to have the drive end of the mixer mounted to the frame. Gear driven mixers will come with the drive end (motor and reducer) in a separate package.

All of our tote tank agitators will need to have the shaft and propeller(s) or turbine impeller(s) assembled prior to service.

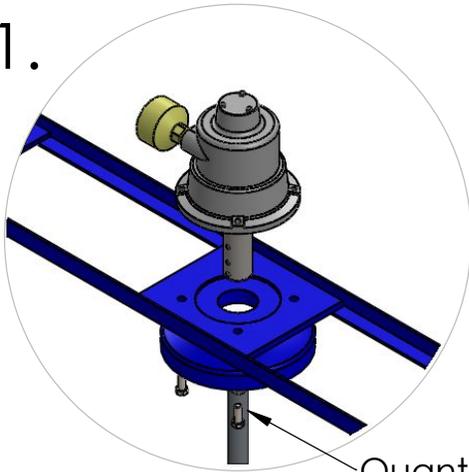
Once the motor or reducer shaft and propeller or turbine are assembled and securely fastened, you will need to secure the mixer to the tote and attach the power source to the motor.

Please follow the steps in this manual to ensure your Cleveland Mixer tote tank agitator is assembled properly prior to operation.



MIXER ASSEMBLY - HARDWARE

1.

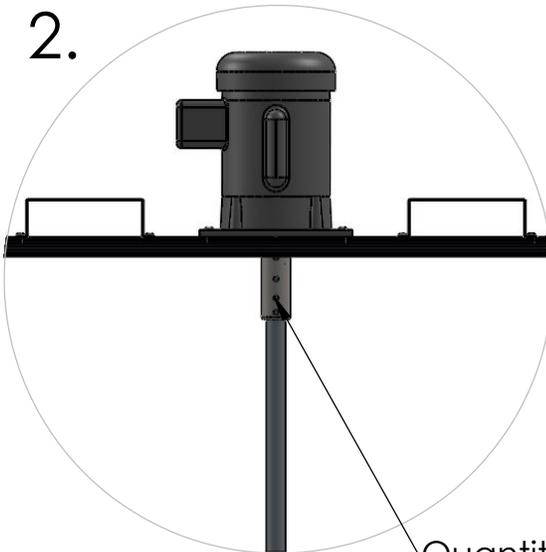


Quantity 4 - 3/8-16 x 1.00" steel hex head bolts w/ spring washer

STEP 1: Lower the motor (w/ coupling secured to motor shaft) onto the mounting frame. Make sure the male register on the motor face lines up w/ the female register on the face of the mounting plate. The four holes on the mounting plate must line up with the four threaded bolt holes on the motor (as shown in the diagram to the left). Insert the four 3/8-6 x 1" bolts w/ spring lock washers from under the mounting plate into the motor and tighten the bolts to fasten the motor to the frame.

Use this same step for BCE, BCA, BCGE, BCGA, XTLE, XTLA, XTLGE & XTLGA models

2.

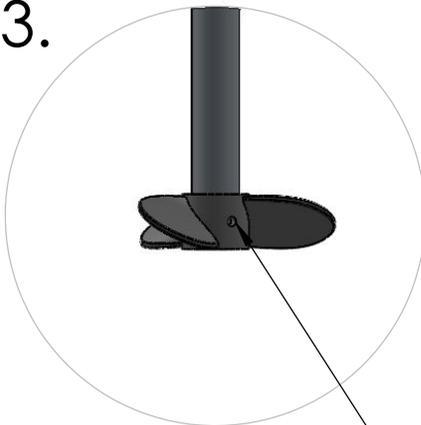


Quantity 5 - 5/16-18 x 3/8" cup point set screws, 316SS

STEP 2: Slide the mixer shaft into the motor or reducer shaft coupling. The mixer shaft is 1.00" diameter +/- .001 and the shaft coupling is 1.00" diameter +/- .0015 so it will be a very close fit. The shaft must bottom out in the coupling. Once it's in, secure the five cup point set screws provided. Cleveland Mixer recommends using a thread locker on these set screws (if your process allows it). Once the shaft is in and the screws are tightened down, turn the shaft to make sure it is locked in straight.

Use this same step for BCE, BCA, BCGE, BCGA, XTLE, XTLA, XTLGE & XTLGA models

3.



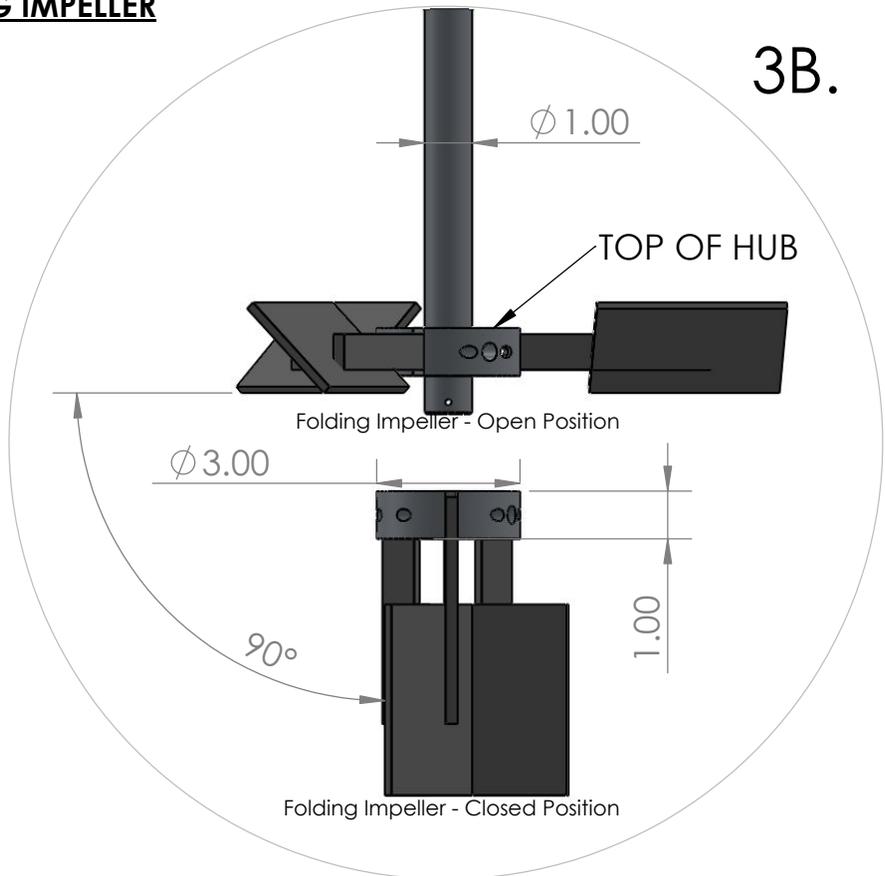
Quantity 2 - 3/8-16 x 3/8" cup point set screw 316SS

STEP 3: 1/2 - 1HP Cleveland Mixer tote tank agitators will come with a single propeller, 1.5-2HP Cleveland Mixer tote tank agitators come with two mixing propellers. The propellers secure to the mixer shaft by way of (2) 3/8-16 x 3/8" 316SS cup point set screws. The set screws are located in the propeller's hub, between the blades. Slide the propeller(s) onto the shaft and tighten down on the set screws. Cleveland Mixer recommends (when possible) to use thread locker on these set screws to help keep them tight when in operation.

Use this same step for BCE, BCA, BCGE, BCGA, XTLE, XTLA, XTLGE & XTLGA models

MIXER ASSEMBLY - FOLDING IMPELLER

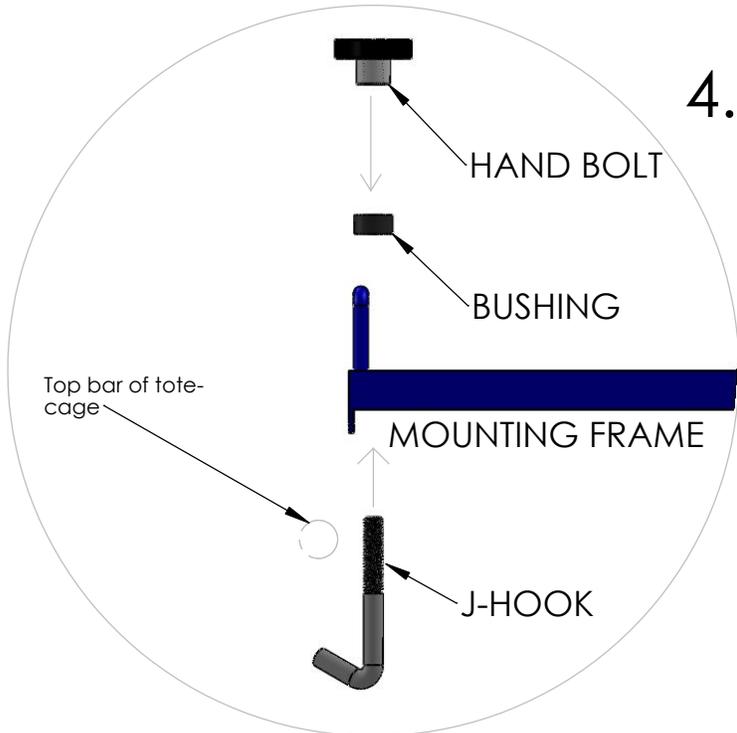
STEP 3B: Gear driven units come with a larger diameter folding axial impeller. The impeller hub is designed to fit through the minimum 6" diameter opening in a standard tote. The blades fold down to allow the impeller assembly to fit inside the tote. When the mixer shaft begins to rotate, the blades expand to their full diameter. If you are mixing thicker fluids that might coagulate or harden when not in motion, it's important to clean these folding blades after use.



Use this same step for BCE, BCA, BCGE, BCGA, XTLE, XTLA, XTLGE & XTLGA models

MIXER ASSEMBLY - J-Hook

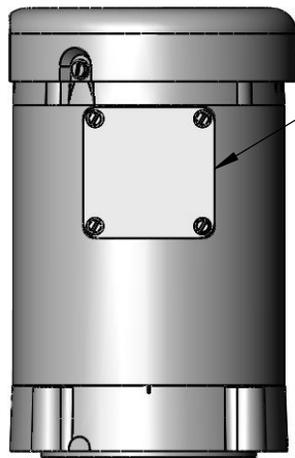
STEP 4: Tighten the J-Hook to the tote cage. Your mixer will come with a J-Hook assembly on both sides of the mounting frame. The J-Hook assembly mounts through the slot on the mounting frame as shown in the diagram to the right. The J-Hook assembly can be adjusted up to 1.5" on either side. Slide the J-Hook under the tubing on the tote cage and tighten down on the hand bolt until the frame is secure.



Use this same step for BCE, BCA, BCGE, BCGA, XTLE, XTLA, XTLGE & XTLGA models

MIXER ASSEMBLY - GEAR DRIVE UNITS

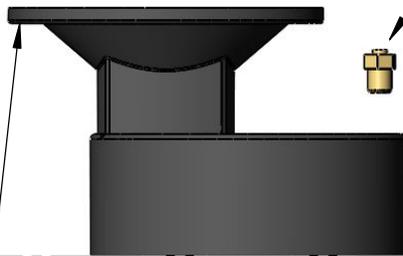
For applications with more viscous materials such as paints, syrups, gels, honey, waste water with solid particals, etc. you will need to use an appropriately powered motor with a gear reducer and a larger diameter impeller operating at a slower output speed. Please follow the directions below to run and maintain your gear speed reducer.



Check the motor's nameplate to find input voltage and wiring requirements. The motor should be wired so the mixer shaft's output rotation is clockwise. This will require the motor (on gear drive units) to be wired to run counter clockwise, as the reducer will change the direction of the output. Always have electrical work performed by a professional electrician.

Motor

The shaft key provided on the motor shaft drives the reducer.



Before operating, remove the oil-plug at the top of the reducer and replace it with the breather plug provided.

The breather plug should be checked regularly to make sure it is clean and clear.

The helical reducer is shipped factory filled with Klubersynth UH1 6-460 synthetic gear lubricant. Check, flush and refill the oil every 3000 hours of service. Do not use mineral oil or any other non-approved lubricants.

Reducer

Approved:
Klubersynth UH1 6-460
Mobil Glycoil 460



Coupling

Helical gear reducer:
5:1 ratio
183 lbs output torque
56C motor mounting flange
56C output face

Four 3/8-16 x 1" hex head bolts connect the motor to the reducer.

Five 5/16-18 x 3/8 socket cup point set screws, 316SS connect the coupling to the reducer output shaft. Make sure the set screws connect with the flat surface on the shaft.

MIXER ASSEMBLY SUMMARY

Cleveland Mixer portable mixers are designed to operate under all conditions normally encountered in liquid processing. It is precision machinery of the highest quality. With proper care your portable mixer will give you years of trouble-free service. If you should have any questions regarding operation, that are not answered in this manual, call Cleveland Mixer at 1-800-243-1188.

Your mixer is designed to operate continuously under all standard conditions at normal levels. It is not good practice, however, to operate the mixer continuously when extreme vortexing or surging occurs.

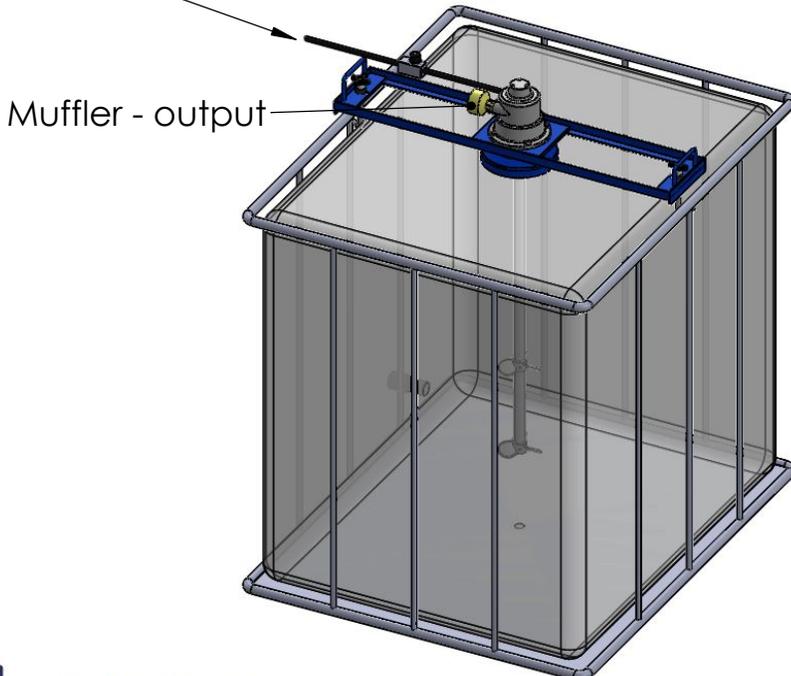
Storage

Do not remove wrappings or protective coating if the mixer is to be stored before it is placed in operation. Store the mixer upright, in a clean, dry location. When gear drive models have been stored for more than a year, the condition of the gear lubricant should be checked before the mixer is installed.

Air Motors

If your mixer is equipped with an air motor, install a moisture trap and filter in the air line ahead of the motor. For efficiency of output and control of speed, use air lines the same size as the intake port on the motor. The exhaust flow will create condensation that might drip from the muffler. Take this into account when the mixer is installed over an open tank or in an area that shouldn't get wet. Make sure to add air tool oil regularly to the input of the air motor to keep the inside of the motor lubricated.

Air motor input line .25"
NPT for the 1HP unit, .50"
NPT for the 2HP unit.
Install the filter and
speed control on this
line.



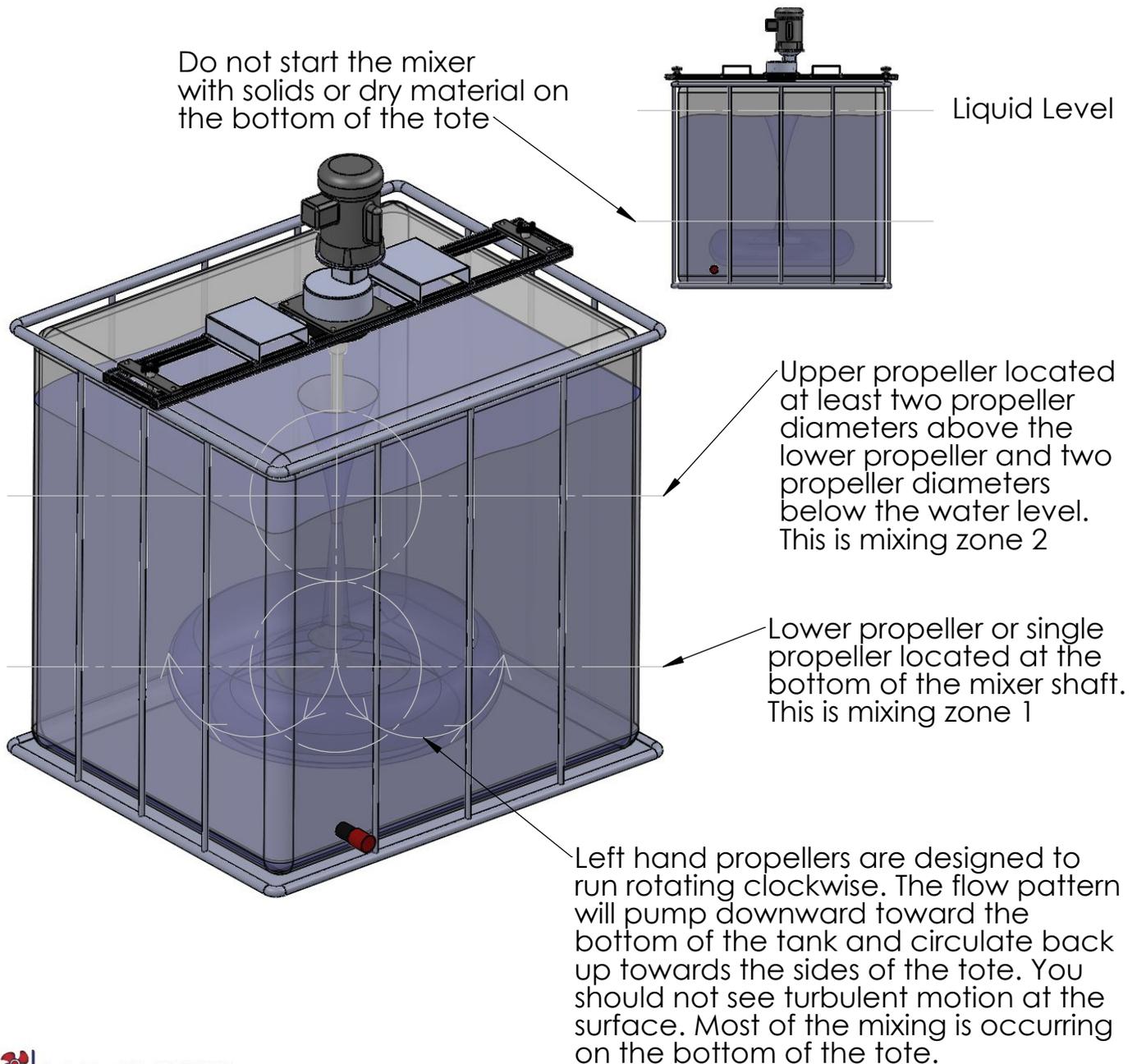
HP	Prop Dia.	Air Pres	CFM
2000RPM			
.5	5"	45	25
1	6"	90	45
2	6" dual	90	80
400RPM			
.5	12"	45	25
1	13"	90	45
2	14" dual	90	80

The square pitch marine propellers and folding axial flow turbines Cleveland Mixer provides will be designed to run clockwise and pump downward unless otherwise specified by design.

Running your Cleveland Mixer Tote Tank Agitator

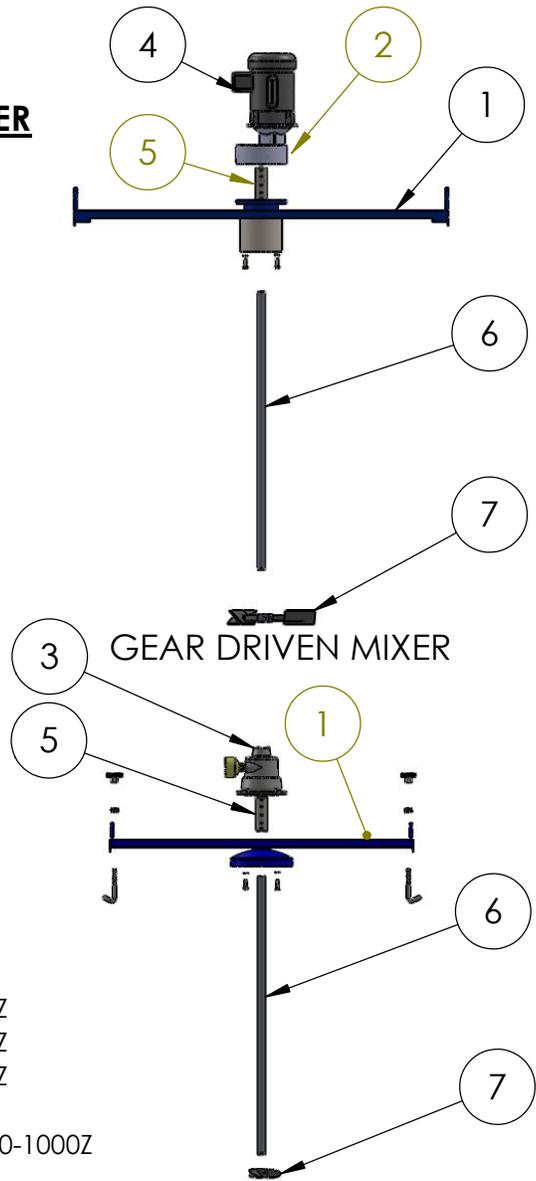
Cleveland Mixer tote tank agitators are designed to run continuously (if necessary) in order to suspend solids and keep the solids from settling out, transfer heat through liquid, blend liquids, etcetera. They are not designed to resuspend solids, mix dry ingredients or shearing of any kind. If you are using the mixer to suspend solids or to mix liquids that can separate, it is best to run the mixer continuously until the batch is complete then drain the tank completely. If you allow the solids to settle around the propeller and then start the mixer up with the propeller buried in solids or in dry, gummy or paste like material, you risk causing catastrophic damage to the mixer.

When adding powders, crystals or any other dry or clumped material into the water in the tote tank, make sure to add it slowly and give the mixer a chance to disperse the material evenly. Dumping a heavy mass into the tank while the mixer is running can cause catastrophic or serious damage to the mixer.

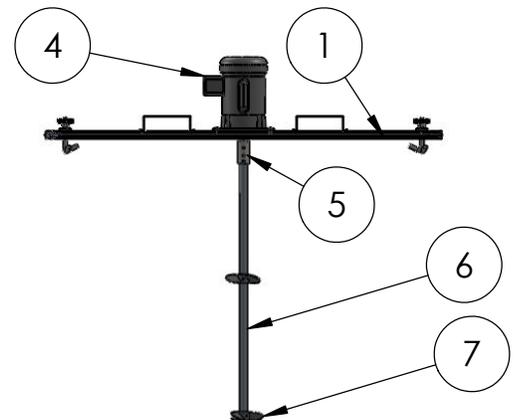


NUM DESCRIPTION PART NUMBER

1	BC FRAME - BL POWDER COAT, STEEL	330421
1	XTL FRAME - ALUMINUM ALLOY	330421-XTL
1	BCG FRAME - BL POWDER COAT, STEEL	16124
2	GEAR REDUCER - 5:1, 56C	991-333
3	AIR MOTOR - .33-1HP 56C	313866-2
3	AIR MOTOR - 2HP, 56C	313866-3
4	ELECTRIC MOTOR - .5HP 1750RPM 1PH	BALVL3504
4	ELECTRIC MOTOR - 1HP 1750RPM 1PH	BALVL3510
4	ELECTRIC MOTOR - .5HP 1750RPM 3PH	BALVM3538
4	ELECTRIC MOTOR - 1HP 1750RPM 3PH	BALVM3546
4	ELECTRIC MOTOR - 2HP 1750RPM 3PH	BALVM3558
5	COUPLING - 1"/5/8" BORE, 303SS	25792-1
6	SHAFT - 1 X 32" LONG, 316SS	330553-32Z
6	SHAFT - 1 X 35" LONG, 316SS	330553-35Z
7	PROPELLER - 5 X 5 X 1" SQ PITCH, 316SS	313850-EEZ8
7	PROPELLER - 6 X 6 X 1" SQ PITCH, 316SS	313850-GGZ8
7	FOLDING IMPELLER - 8" DIA, 316SS	AXF330C10008Z
7	FOLDING IMPELLER - 10" DIA, 316SS	AXF330C100010Z
7	FOLDING IMPELLER - 12" DIA, 316SS	AXF330C100012Z
7	FOLDING IMPELLER - 14" DIA, 316SS	AXF330C100014Z
	HIGH SHEAR DISP. BLADE, 6" DIA, 316SS	HIGHSHEAR1-600-1000Z
	NEEDLE VALVE - .25" NPT	330127-2
	NEEDLE VALVE - .50 NPT	330127-12



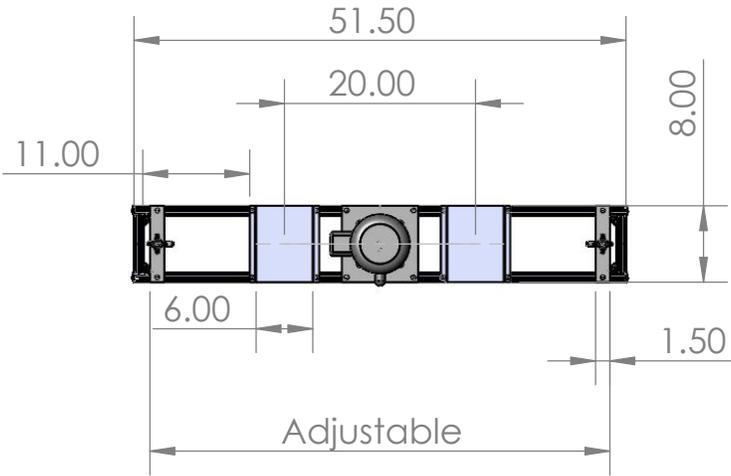
DIRECT DRIVE TOTE MIXER W/ STEEL FRAME



DIRECT DRIVE TOTE MIXER W/ ALUMINUM ALLOY FRAME

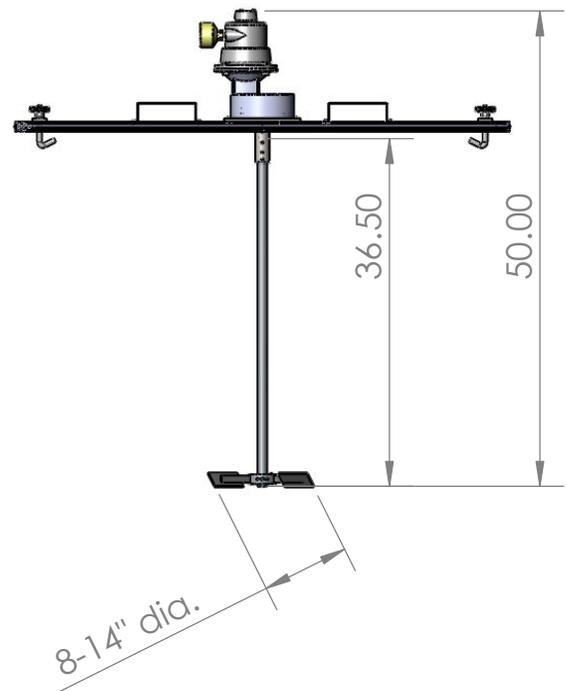
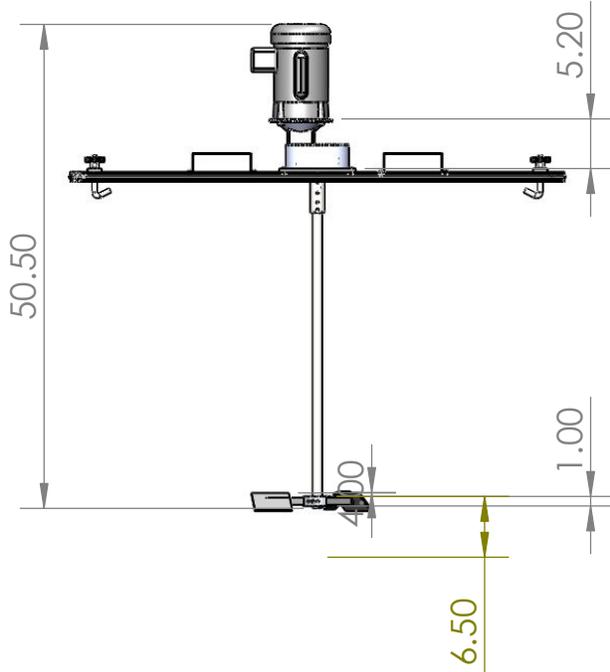
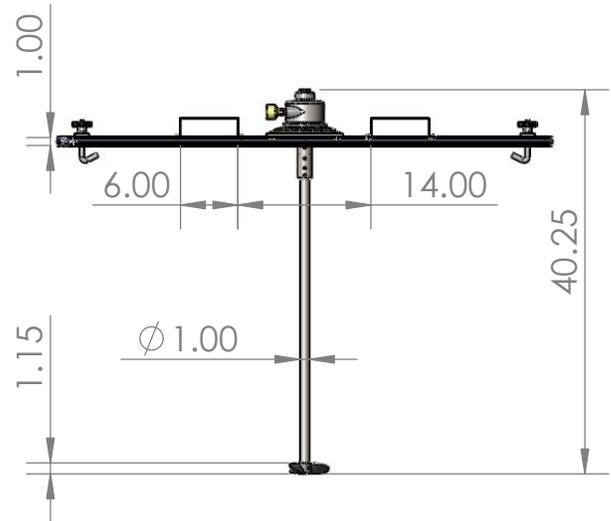
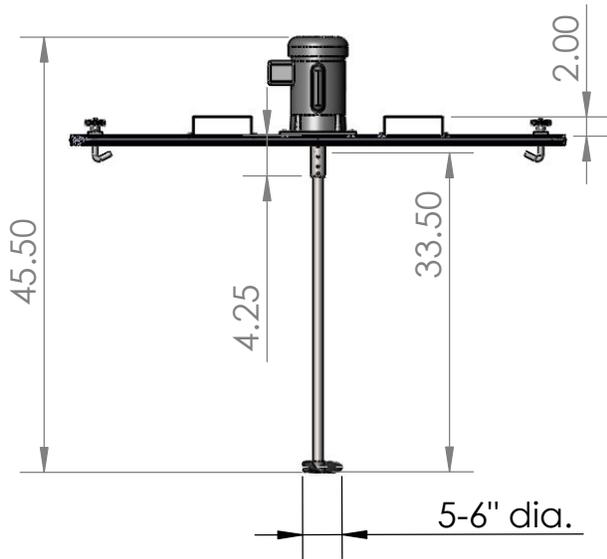
All Cleveland Mixer tote tank mixers are available in air or electric power. Electric motors can range from .33HP - 3HP. All Cleveland Mixer tote tank mixers can be supplied with a gear speed reducer. The AXF-3 folding impellers collapse to 5.5" diameter to fit through the typical 6" opening in a standard dimension tote tank.

Filters/lubricators, high shear ITT blades, welded and coated shaft assemblies, VFD's, various motor enclosures (TEXP, TENV, etc.) are available. Contact the factory with any questions or requests.



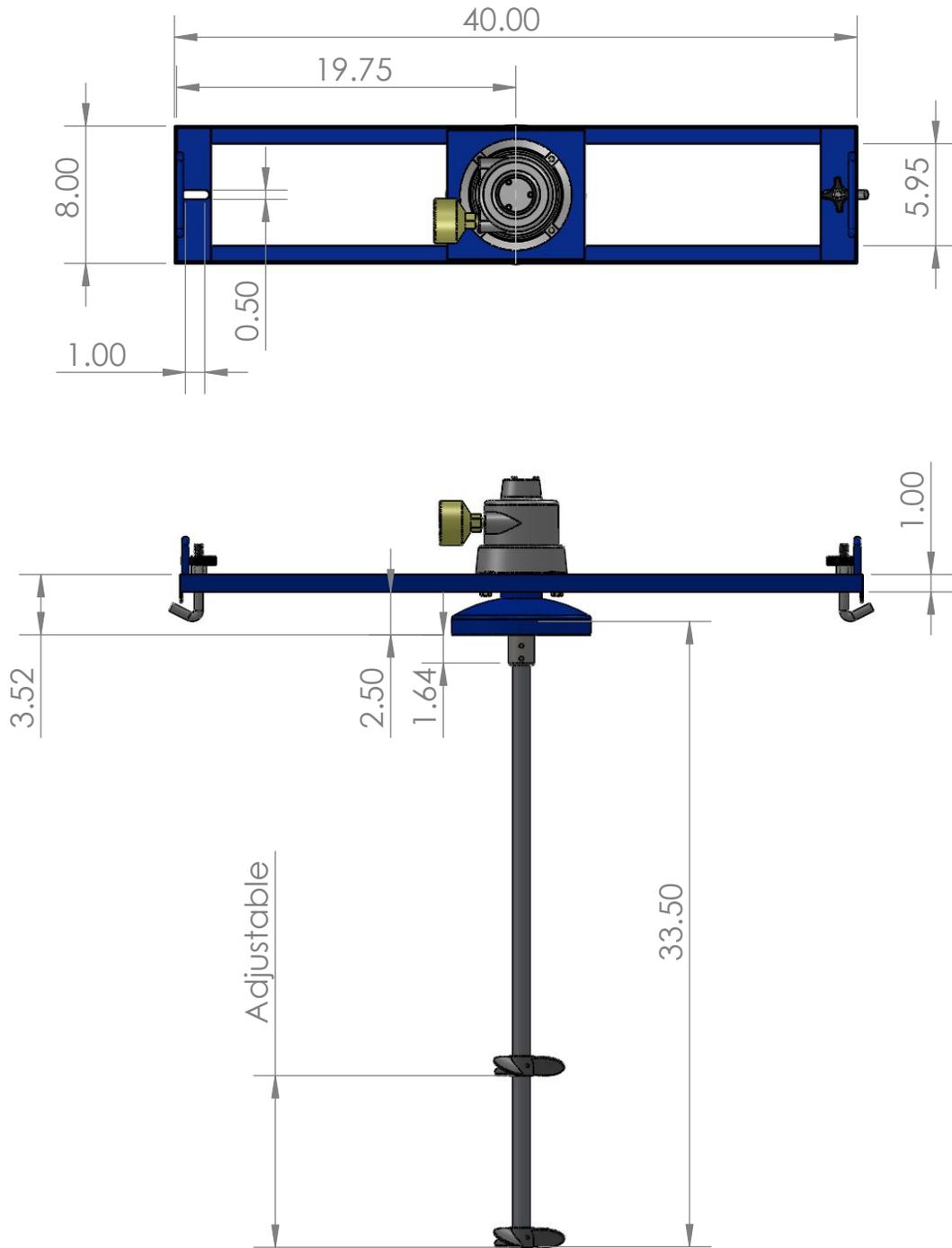
XTL MODEL DIMENSIONS

The Cleveland Mixer, XTL or Extraflow Lite Tote Tank Agitator comes with a lightweight aluminum alloy frame. It comes equipped with forklift lifting hoods and J-hook clamps to secure the mixer frame to your tote tank. This mixer is available with air or electric power and in direct drive or gear driven.



BC MODEL DIMENSIONS

The Cleveland Mixer, BC model Tote Tank Agitator comes with a heavy duty powder coated steel mounting frame. It comes equipped with J-hook clamps to secure the frame to your tote tank. This mixer is available in air or electric power and in direct drive or gear driven.



TOTE TANK AGITATOR MANUAL

