

## Air-Driven Agitators

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EN

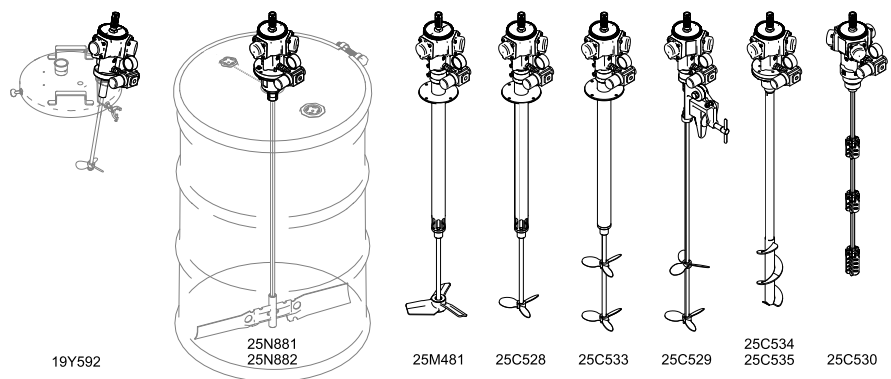
Radial piston, pneumatic motor driven agitators for maintaining suspension and even mixing in industrial paints and coatings. For professional use only.



### Important Safety Instructions

Read all warnings and instructions in this manual and in your associated component manuals before using the equipment. **Save these instructions.**

*70 psi (0.5 MPa, 5 bar) Maximum  
Recommended Working Pressure  
See page 3 for model part numbers and  
approvals information.*



PROVEN QUALITY. LEADING TECHNOLOGY.

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## Related Manuals











Manual Number	Title
<b>306287</b>	<b>Elevators and Pump Supports</b>
<b>308466</b>	<b>Stainless Steel, Passivated Drum Covers</b>
<b>3A5050</b>	<b>Motor Repair Manual</b>
<b>306670</b>	<b>Air Driven, 5 Gal. (19 Liter) Size Agitators</b>








# Models

Part No.	Description	Recommended Agitator Rotation	Approvals
25C528	Stainless Steel Direct Drive, 30/55 Gallon, One SS 5.5" Propeller	Clockwise	  II 1/2 G Ex h IIB T4 Ga/Gb IECEx ETL 17.0019 ITS17ATEX1001809 0°C ≤ Tamb ≤ 50°C
25C533	Carbon Steel Direct Drive, 30/55 Gallon, Two Alum 5.5" Propellers	Clockwise	
25M481	Stainless Steel Direct Drive, 30/55 Gallon, One SS 8" Impeller	Clockwise	
25C534	Stainless Steel Direct Drive, Helix, Bung Mount	Clockwise	
25C535	Carbon Steel Direct Drive, Helix, Bung Mount	Clockwise	
25C530	Stainless Steel Direct Drive, 55 Gallon, Bung Mount, Expanding Blade	Counter Clockwise	
25N881	In-Drum, 1.5" Bung Mount	Clockwise	  II 2 G Ex h IIB T4 Gb
25N882	In-Drum, 2" Bung Mount	Clockwise	
25C529	Carbon Steel Direct Drive, 55 Gallon, Side Mount, Two Aluminum 5.5" Propellers	Clockwise	
25C765	Kit, Motor with Air Regulator (to replace drive motor on existing agitators)		  II 2 G Ex h IIB T4 Gb
19Y592	Kit, Motor and parts to retrofit an existing 5–10 gallon pail agitator	Clockwise	  II 2 G Ex h IIB T4 Gb



# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h2>WARNING</h2>	
   	<b>FIRE AND EXPLOSION HAZARD</b> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Never spray or flush solvent at high pressure.</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are antistatic or conductive.</li> <li>• <b>Stop operation immediately</b> if static sparking occurs or you feel a shock, Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
 	<b>MOVING PARTS HAZARD</b> <p>Moving parts can pinch, cut, or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Do not wear loose clothing, jewelry, or long hair while operating equipment.</li> <li>• Equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>
  	<b>PRESSURIZED EQUIPMENT HAZARD</b> <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying/dispensing and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>

 <h1>WARNING</h1>	
 	<p><b>EQUIPMENT MISUSE HAZARD</b> Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Specifications</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Specifications</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request SDS from distributor or retailer.</li> <li>• Do not leave the work area while equipment is energized or under pressure.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>
 	<p><b>TOXIC FLUID OR FUMES HAZARD</b> Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>• Read Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>BURN HAZARD</b> Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> <li>• Do not touch hot fluid or equipment.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b> Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eyewear, and hearing protection.</li> <li>• Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.</li> </ul>

# Installation

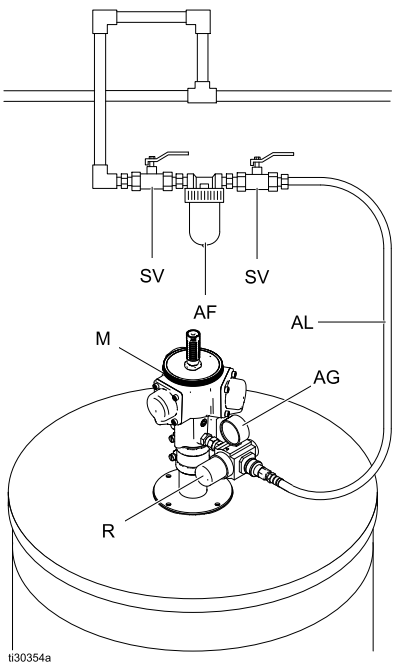
				
<p>To reduce the risk of fire and explosion, always maintain a minimum of 1 in. (25.4 mm) clearance between the rotating agitator parts and the container to prevent sparks from contact.</p>				

## Note

Throughout the manual, reference numbers and letters in parentheses refer to callouts in figures and the parts drawings.

See [Air Line Accessories, page 11](#) for parts not included in your system.

**Table 1 Typical Installation**

	
Reference	Description
SV	Air Shutoff Valve
AF	Air Line Filter
M	Motor
AL	Supply Line, Air-In
AG	Air Pressure Gauge
R	Regulator

## Air Regulator and Mufflers

The air motor is capable of operating in a clockwise or counterclockwise direction, depending on where the air regulator is mounted.

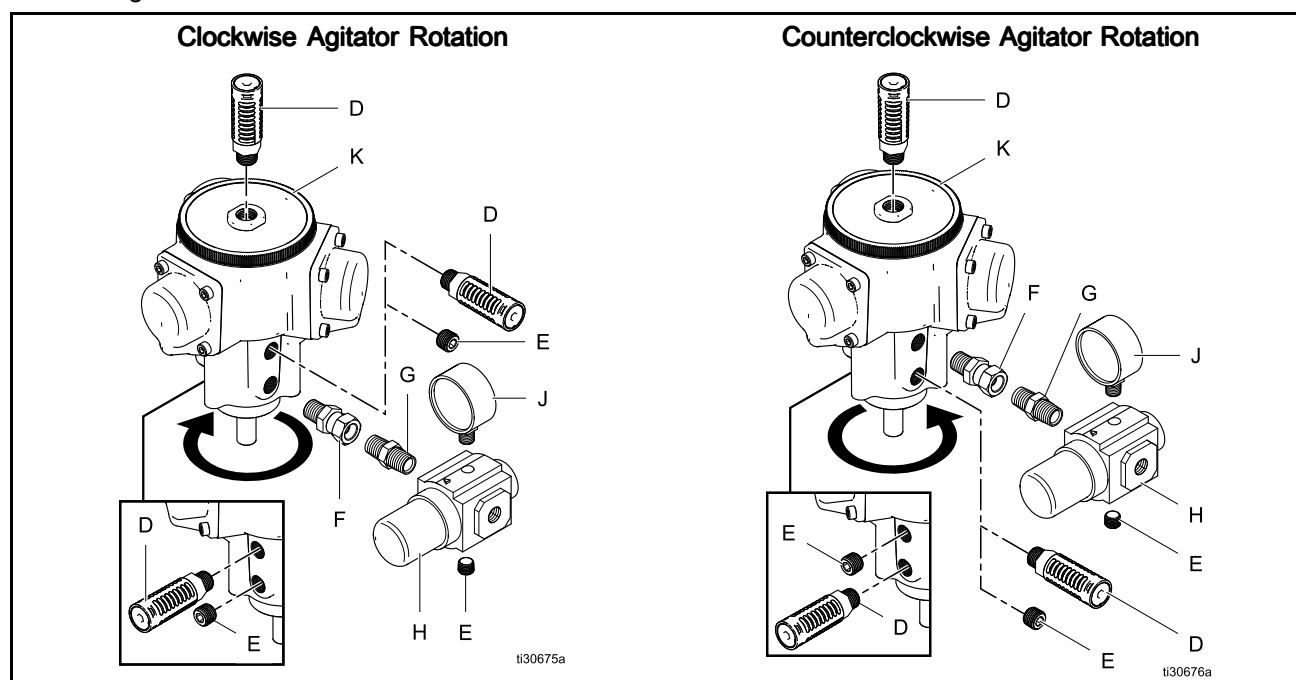
- When the air regulator is installed in one of the two lower ports on the motor, a clockwise rotation results, as viewed from the top of the motor.
- When installed on either side in one of the two upper ports, a counterclockwise rotation results.
- The port opposite the regulator must be plugged for the motor to operate.

The air regulator, mufflers, air gauge, nipple connector, and swivel connector are not factory installed. Follow the directions below to install these items:

1. Screw the swivel connector (F) into the desired port (upper or lower) in the motor (K).
2. Screw the nipple connector (G) into the air regulator (H) outlet. Note arrow directions on the regulator.



3. Attach the air regulator by screwing it into the swivel connector.
4. Install a plug (E) in the port opposite the regulator (this is necessary for motor operation).
5. Attach the air gauge (J) by screwing it into the hole in the top of the air regulator.
6. Install a plug (E) in the regulator in the port opposite the air gauge.
7. Screw one muffler (D) into the top of the motor.
8. Screw the second muffler into the open port on the far side of the motor from the regulator.
9. Install the third muffler in the open port above or below the regulator. An additional fitting may be needed (not provided) to space the regulator farther away from the motor.

**Note:** Use of the third muffler is not necessary, but is beneficial for increased air circulation in humid conditions. If a third muffler is not used, the hole must be plugged (E).



Reference Letter	Description
D	Mufflers
E	Plugs
F	Swivel connector
G	Nipple connector
H	Air regulator
J	Air gauge
K	Air motor

## Agitator

				
<p>To reduce the risk of fire and explosion, always maintain a minimum of 1 in. (25.4 mm) clearance between the rotating agitator parts and the container to prevent sparks from contact.</p>				

### Models 25C528, 25C533, and 25M481

1. Mark and drill holes in the cover to mount the agitator. See [Mounting Hole Layout, page 29](#) for dimensions.
2. Install the agitator in the cover of the fluid supply tank with the gasket (29) in place. See [Model 25C528, page 16](#), [Model 25C533, page 18](#), and [Model 25M481, page 19](#).
3. Position the air motor so the air line easily attaches to the air regulator inlet without obstructing any other system components.
4. Bolt in place (mounting bolts not included).

### Model 25C529

Mount the agitator on the edge of the drum or tank and securely tighten the clamp screw (6). Squeeze the end of the retainer (17) to set in place. See [Model 25C529, page 20](#).

To adjust the angle of the agitator in the drum, loosen the bracket screw (4), and position the air motor so the air line easily attaches to the air regulator inlet without obstructing any other system components.

### Models 25C534 and 25C535

Install the agitator in the container cover by screwing the helix (5) through the drum bung hole and screwing the agitator housing (3) into the bung hole. Torque the socket head screw (2) to 150–170 in-lbs (17–19 N•m). Torque the hex head cap screw (14) to 80–100 in-lbs (9–11 N•m). See [Models 25C534 and 25C535, page 21](#).

Position the air motor so the air line easily attaches to the air regulator inlet without obstructing any other system components.

### Model 25C530

To install the agitator in the container cover, lower the shaft (2) with folding blade assemblies (5, 6) through the drum bung hole, then screw the bung adapter (4) into the bung hole. See [Model 25C530, page 23](#).

Position the air motor so the air line easily attaches to the air regulator inlet without obstructing any other system components.

Due to variability in drum heights, the lowest set of blades may contact the bottom of the drum. If the bung adapter (4) does not fully seat, or if resistance is felt when installing the agitator, move the blades up the shaft.

To move the blades, loosen the setscrews (SS) in the coupler and slide the assembly up or down to the desired position. The setscrew must always remain on the top, with the blades hanging down, so the blades are able to pass into and out of the bung hole.

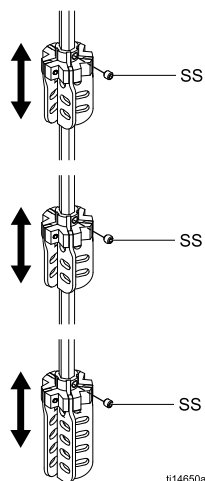




Figure 1 Adjustable Blade Assemblies

				
<p>To reduce the risk of fire and explosion, when using a modified drum, check that there is no interference between the base of the drum and the shaft of the agitator to avoid sparks from contact .</p>				
<p><b>NOTICE</b></p>				
<p>Keep the agitator tightly mounted to the drum bung to prevent damage to the threads from vibration.</p>				



## Angled Adapter 16H294 — Model 25C530 only

If the agitator is used on a drum with an off-center bung and the blades contact the side of the drum, the angled adapter 16H294 must be used.

1. Thread the locking ring (28) onto the angled adapter (27) by hand, as far as it will go.
2. Thread the angled adapter into the bung until it bottoms out, then back it out until the widest portion of the adapter top is pointing just to the left of drum center.

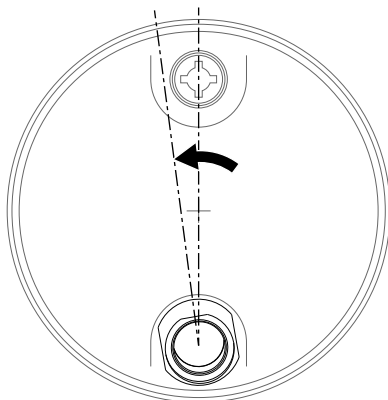


Figure 2 Angled Adapter Just Left of Center

3. Turn down the locking ring until it contacts the drum. Use an appropriately sized pipe wrench or adjustable wrench to tighten the adapter until the widest portion of the adapter top is in line with the drum center.

## Models 25N881 and 25N882

See [Models 25N881 and 25N882, page 24](#).

1. Determine the agitator shaft size: 7/16" (11.1 mm) or 1/2" (12.4 mm) square. Determine the size of the shaft adapter (9). Select the size by placing the adapters onto the built-in agitator shaft inside the drum. Use the smallest adapter that will fit. There should only be a small amount of slip between the adapter nut and the shaft.
2. Attach the shaft adapter (9) to the flat side of the motor shaft close to the bottom of the motor. Tighten the set screw (12) securely to 8–9 ft-lbs (11–12 N•m).

**Note:** There is approximately 1/2" (12 mm) of adjustment travel of the adapter shaft on the motor shaft if needed for later adjustment.

3. Torque the socket head screw (8) to 12.5–14 ft-lbs (17–19 N•m).
4. Place the threaded housing adapter (6) onto the motor plate (7) and secure with washers (13) and screws (11). Torque to 8–9 ft-lbs (11–12 N•m).
5. Align the adapter nut to engage the built-in shaft in the 55-gallon drum.
6. Slowly screw the unit onto the threads on the center bung fitting of the 55-gallon drum. Secure tightly so the motor does not rotate in the bung.

## Motor Replacement Kit 25C765

Motor replacement kit 25C765 is a drop-in replacement for rotary vane air motor PN 101140. On page 16 —Parts, Ref No. 1 lists the items included with the kit. Use the agitator manual motor replacement procedure or parts page diagram to install the new motor.

### NOTICE

Do not immerse or splash the bottom of the motor in fluids. The bearing at the bottom of the motor and the shaft may corrode.

## Retrofit Kit 19Y592

1. Relieve the pressure to the existing agitator. See [Pressure Relief Procedure, page 12](#).
2. Remove the cover from the pail.
3. Remove the shaft/blade from the existing agitator by loosening the set screw in the coupling. Clean the shaft/blade.
4. Remove the existing motor from the pail lid.
5. Insert the new motor/sleeve into the existing collar and tighten the set screw.
6. Insert the shaft in the new coupling and tighten the set screw. There is room to make slight length adjustments as needed.
7. Install the cover on the pail.
8. Install the air line. The agitator speed is adjusted by adjusting the air regulator pressure.

**Note:** Agitator rotation direction is determined by the supply port used on the air motor. See [Air Regulator and Mufflers, page 7](#).

## Grounding

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The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. To reduce the risk of static sparking, the mounting cover and all electrically conductive objects or devices in the spray area must be properly grounded.

A ground wire and clamp are not included. For a ground wire and clamp, order part number 237569.

To ground the agitator, do the following:

- **For models 25C528, 25C533, and 25M481:**  
Connect one end of the ground wire (GW) to the ground connector (GC) on the rim of the drum cover. Connect the other end of the ground wire to a true earth ground.

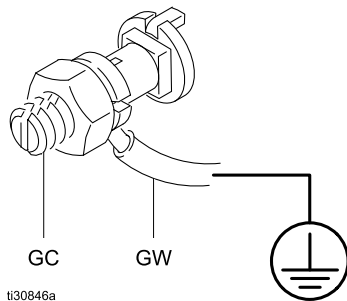


Figure 3 Ground Connector - Models 25C528, 25C533, and 25M481

- **For models 25C529, 25C530, 25C534, 25C535, 25N881, and 25N882:** Connect one end of the ground wire (GW) to the agitator ground connector (GC). Connect the other end of the ground wire to a true earth ground.

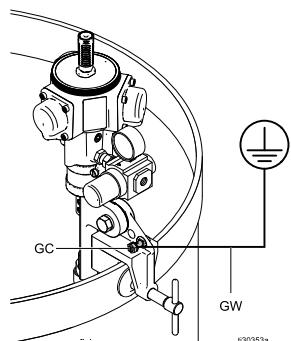


Figure 4 Ground Connector - Model 25C529

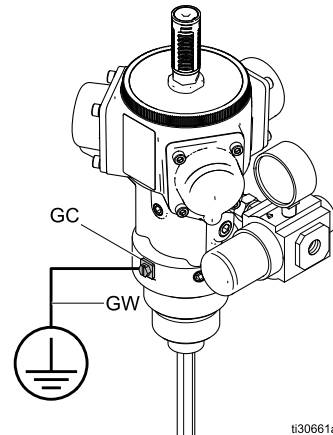


Figure 5 Ground Connector - Model 25C530

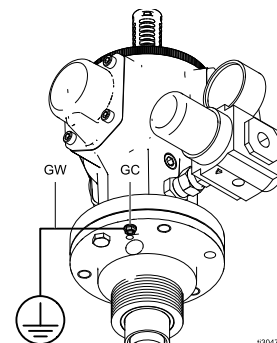


Figure 6 Ground Connector - Models 25C534, 25C535

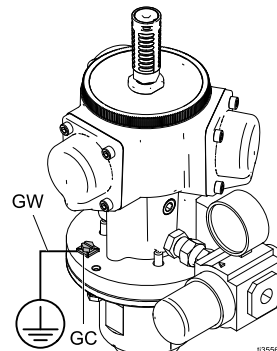


Figure 7 Ground Connector - Models 25N881, 25N882

## Air Line Accessories

Install the following accessories in the order shown below, using adapters as necessary.

### Air Shut-off Valve

A bleed-type master air shutoff valve (A) for mounting location) isolates the air line components for servicing. An air shutoff valve should be installed in the supply line and used to stop and start the agitator. If the valve is installed, you do not need to set the agitator speed each time it is used.

Order bleed-type air shutoff valves using the part numbers listed below:

**Table 2 Bleed-Type Shutoff Valves**

Part No.	Inlet/Outlet npt	Max WPR			Material
		psi	bar	MPa	
<b>110223</b>	1/4 (fxf)	250	17.2	1.7	Brass
<b>110224</b>	3/8 (fxf)	250	17.2	1.7	Brass
<b>110225</b>	1/2 (fxf)	250	17.2	1.7	Brass
<b>110226</b>	3/4 (fxf)	250	17.2	1.7	Brass
<b>113163</b>	1 (fxf)	250	17.2	1.7	Brass
<b>107142</b>	1/2 (mxf)	250	17.2	1.7	Brass
<b>107141</b>	3/4 (mxf)	250	17.2	1.7	Brass

### Air Line Filter

Air line filters remove harmful dirt, moisture, and oil from the compressed air supply. Order part 106148 for 3/8 npt or 106149 for 1/2 npt.

Install an air line filter (AF) to remove contaminants such as dirt, moisture, and oil from the compressed air supply. Air line filters (AF) remove harmful dirt and moisture from the compressed air supply. Order part 106148 for 3/8 npt or 106149 for 1/2 npt. See [Installation, page 6](#).

### Air Requirements

The air motor does not require lubricated air. See [Air Consumption, page 29](#) for requirements.

Connect the supply air to the inlet side of the air regulator.

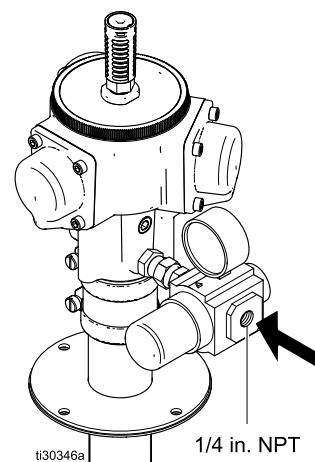





Figure 8 Supply Air Hose Connection

# Operation

				
<p>Personal injury, such as splashing in the eyes, may result from pressure in the tank. Always follow the <a href="#">Pressure Relief Procedure, page 12</a> before opening the tank cover or fill port.</p> <p>Personal injury or equipment damage may result from lifting/falling heavy equipment. To avoid personal injury or equipment damage:</p> <ul style="list-style-type: none"> <li>• Do not lift the drum cover and agitator without proper assistance.</li> <li>• Do not walk or stand beneath a raised elevator.</li> </ul>				

use a shaker or some other device to thoroughly agitate the fluid before installing and operating the agitator.

Below is a general procedure to find the suggested agitator speed. Consult your material supplier for specific recommendations on recommended agitation speeds.

1. Be sure ground wire is attached. See [Grounding, page 10](#).
2. Fill the fluid supply container to about 3 or 4 inches (75 to 100 mm) above the agitator blade.
3. Open the air shutoff valve (SV).
4. Start the agitator by gradually turning the air regulator knob (R) to increase air pressure until a vortex begins to form in the paint.
5. Reduce the speed slightly, then fill the fluid container.

When the container is full a vortex should not be seen. Material should only be moving at a fast enough speed to ensure adequate mixing.

6. Operate the agitator continuously while supplying paints or other fluids to the system.

## Agitator Operation





1. Start the agitator by opening the air shutoff valve (SV). Regulate the speed with the air regulator knob (R).
2. Operate the agitator continuously when supplying paints or other fluids to the system.
3. Stop the agitator by closing the air shutoff valve or by reducing pressure with the air regulator knob.

## Finding the Proper Agitator Speed

<b>NOTICE</b>
<p>To avoid damaging the equipment, do not operate the agitator at a high speed for a long period of time. Excessive agitator speed can cause foaming of fluid (making the fluid unusable), vibration, and increased wear on parts. Only agitate the fluid enough to maintain even mixing.</p>

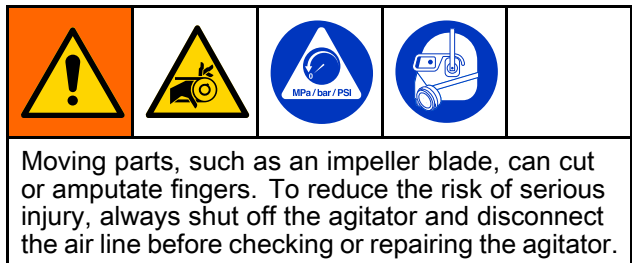
Agitators are used to keep solids in suspension, which assists in keeping solids from clogging the siphon tube. If solids have settled in the container,

## Pressure Relief Procedure

				
<p>This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from splashing fluid and moving parts, follow the Pressure Relief Procedure before cleaning, checking, or servicing the equipment.</p>				

1. Disconnect the air line.
2. Close the bleed-type air shutoff valve (A) to relieve pressure to the air regulator.

# Maintenance

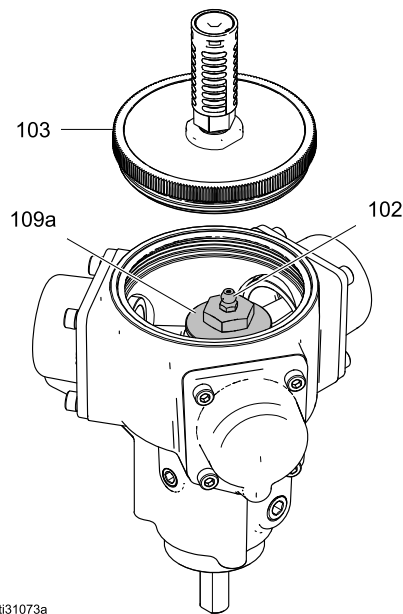


Before performing any maintenance procedure, follow the [Pressure Relief Procedure, page 12](#).

## Greasing the Air Motor

After approximately 20 million revolutions or every three to four months (whichever comes first), grease the motor needle bearing. Recommended grease: MOBILGREASE XHP 222 SPECIAL or equivalent with minimum flash point temperature of 399.2° F (204° C).

1. Follow the [Pressure Relief Procedure, page 12](#).
2. Remove the motor top cover (103).
3. Using a manual grease gun, push grease into the 21RC fitting (102) until grease is seen below the top washer (109a).



## Air Motor Muffler

Depending on the environment of the motor, periodically check the cleanliness of the air motor muffler. Dirty or clogged air mufflers result in decreased motor efficiency and may cause the motor to run irregularly. If the muffler is dirty or clogged, replace it with a new muffler.

## Cleaning the Shaft





### For models 25C528, 25C533, 25M481

Each week, clean any dried fluid from around the bearing (6) area of the shaft (7) and inspect the bearing for cracking or excessive wear.

### For model 25C529

Each week, clean any dried fluid from around the bearing (18) and bracket (23) area of the shaft (21). Lubricate with several drops of light oil.

# Service

				
<p>Moving parts, such as an impeller blade, can cut or amputate fingers. To reduce the risk of serious injury, always shut off the agitator and disconnect the air line before checking or repairing the agitator.</p>				

If the air motor requires more than installation of a service kit, it is usually quickest and easiest to send it to a Graco distributor for repair or replacement.

Motor rebuild kits are available and listed in the table below. See manual 3A5050 for more information.

Kit	Description
25M535	Full air motor rebuild kit
25P720	Needle bearing rebuild kit
25P721	Single piston assembly rebuild kit
25P860	End cap kit
19Y509	Muffler kit (set of 3)

## Removing the Air Motor

### Model 25C528, 25C529, 25C533, and 25M481

- Follow the [Pressure Relief Procedure, page 12](#).
- Remove the air regulator by unscrewing the swivel fitting (12).
  - See [Model 25C528, page 16](#)
  - See [Model 25C529, page 20](#)
  - See [Model 25C533, page 18](#)
  - See [Model 25M481, page 19](#)
- Loosen the upper clamp (2) and raise the motor so the upper two set screws (3) are accessible. Use a 1/8 inch hex to remove the set screws from the shaft.
- Lift the air motor straight up off the shaft.

### Model 25C534 and 25C535

- Follow the [Pressure Relief Procedure, page 12](#).
- Remove the air regulator by unscrewing the swivel fitting (11). See [Models 25C534 and 25C535, page 21](#).
- Remove the screws (14) holding the motor mounting plate (13) to the outlet housing (3).
- Remove the socket head screws (2) holding the motor (1) to the mounting plate.
- Raise the motor so the two set screws (9) in the shaft (4) are accessible. Use a 1/8 inch hex to remove the set screws from the shaft.
- Lift the air motor straight up off the shaft.

### Model 25C530

- Follow the [Pressure Relief Procedure, page 12](#).
- Remove the air regulator by unscrewing the swivel fitting (9). See [Model 25C530, page 23](#).
- Using a 3/16 inch hex, remove the three set screws (8) on the bung adapter (4).
- Raise the motor so the top two set screws (7) in the coupler (3) are accessible. Use a 1/8 inch hex to remove the top two set screws.
- Lift the air motor (1) straight up off the coupler.

### Model 25N881 and 25N882

- Follow the [Pressure Relief Procedure, page 12](#).
- Remove the air regulator by unscrewing the swivel fitting (5). See [Models 25N881 and 25N882, page 24](#).
- Remove the screws (11) holding the bung adapter (6) to the motor plate (7).
- Lift the motor off the bung adapter (6) and remove the screws (8) that attach the motor plate (7) to the motor (1).

## Aligning the Outlet Housing — 25C534, 25C535 Only

### NOTICE

Improper installation of the outlet housing could cause the agitator shaft to bind against the outlet housing bearing and damage it.

After repairing or replacing the outlet housing or air motor, perform the following steps:

1. Follow the [Pressure Relief Procedure, page 12](#).
2. Place the agitator in a vertical position and loosen the three outlet housing screws (14). See [Models 25C534 and 25C535, page 21](#).
3. Apply 25 psi (1.7 bar) minimum air pressure to the air regulator (12). Adjust the air regulator so the agitator shaft is barely turning.
4. While the agitator shaft is turning, torque the three outlet housing screws to 80 to 100 in-lbs (9 to 11.3 N•m).
5. If the agitator shaft binds, repeat steps 1 to 3 above.

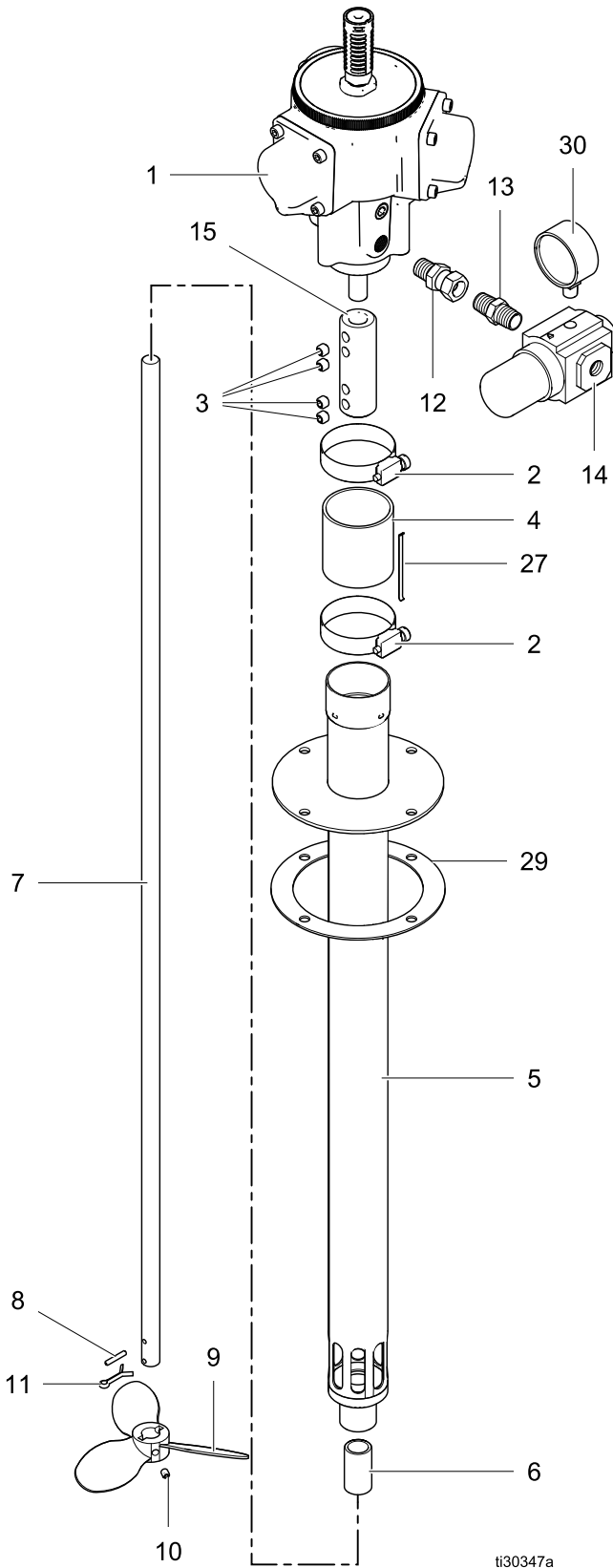
## Inspecting the Shaft and Agitator Blades — Model 25C530 Only

1. Follow the [Pressure Relief Procedure, page 12](#).
2. Turn off/disconnect power to the agitator.
3. Remove the agitator.
4. Clean with a compatible solvent and inspect the shaft (2) and blades (5, 6) for wear or damage. See [Model 25C530, page 23](#).
5. If no wear or damage is detected, reinstall the agitator into drum.

6. If the shaft needs replacing:
  - a. Remove the air motor following the steps in [Removing the Air Motor, page 14](#).
  - b. Raise the bung adapter (4) to expose the bottom two setscrews (7) in the coupler (3). Use the 1/8 inch hex to remove them.
  - c. Slide the shaft (2) out of the coupler.
  - d. Slide the new shaft into the coupler. Use a 1/8 inch hex to tighten the two lower setscrews in the coupler. Torque to 65 in-lb (7.3 N•m).
  - e. Lower the bung adapter on the shaft or raise the shaft through the bung adapter and insert the air motor into the coupler. Use the 1/8 inch hex to tighten the two upper set screws (SS) in the coupler. Torque to 65 in-lb (7.3 N•m). See [Model 25C530, page 23](#).
  - f. Raise the bung adapter and use a 3/16 inch hex to tighten the three setscrews (8) into the bung adapter. Torque to 80 in-lb (9 N•m).
  - g. Reinstall agitator into the drum.
7. If the blade needs replacing:
  - a. Use a 3 mm (1/8 inch) hex to remove the setscrew in the long (6) or short (5) blade hub and slide the hub/blade assembly off the shaft.
  - b. To install a new hub/blade assembly, slide it onto the shaft and tighten the set screw. The setscrew must always remain on the top, with the blades hanging down, so the blades pass into and out of the bung hole.
  - c. Reinstall the agitator into the drum.

# Parts

## Model 25C528



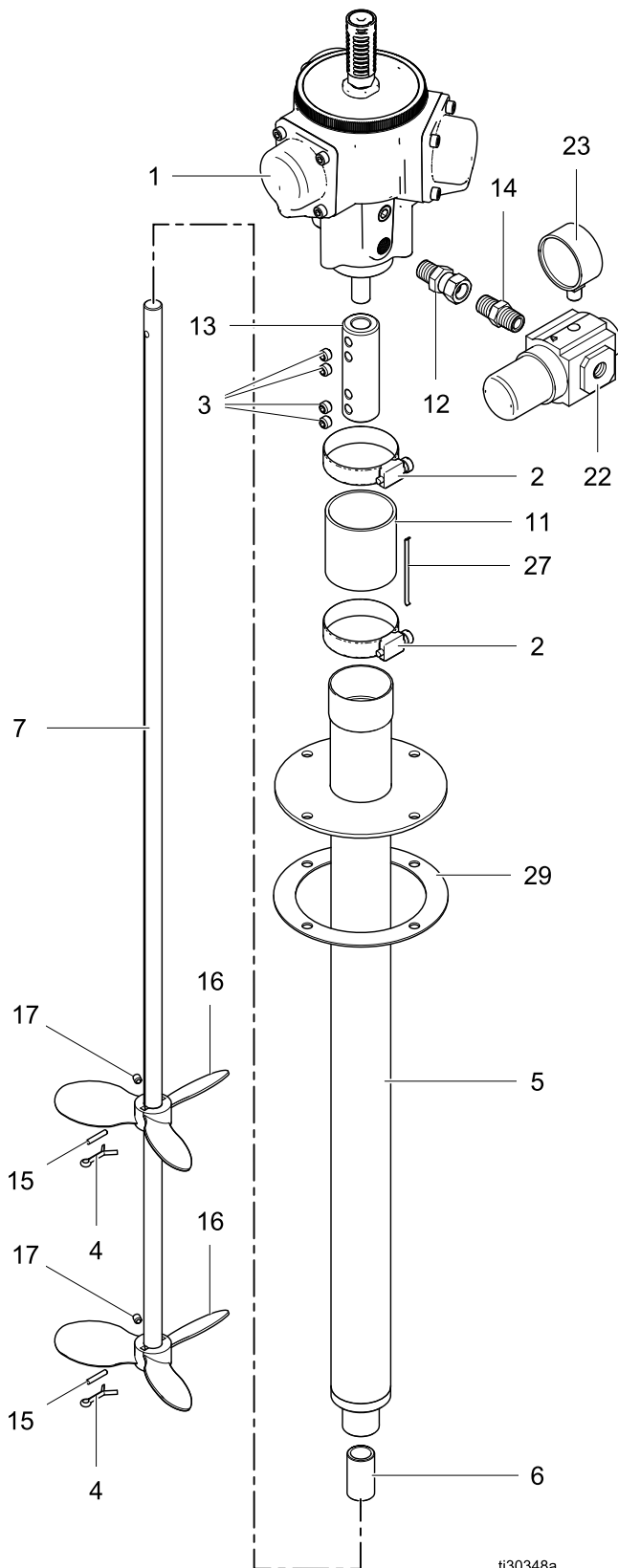
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Ref No.	Part No.	Description	Qty
1	25C765	MOTOR, Air, Rotary Piston; includes 12, 13, 14, and 30.	1
2	101368	CLAMP, Hose	2
3	100053	SCREW, Set, Socket Head; 5/16-18 x 0.25"; torque to 96-132 in-lb (11-15 N•m)	4
4	158865	COUPLING, Motor	1
5	222696	GUIDE, Agitator	1
6	115166	BEARING, Agitator, Press Fit	1
7	185389	SHAFT, Agitator	1
8	185401	PIN, Shear	1
9	185398	PROPELLER, Agitator	1
10	110248	SCREW, Set, Socket Head; #10-24 x 0.25"; torque to 15-20 in-lb (1.7-2.3 N•m)	1

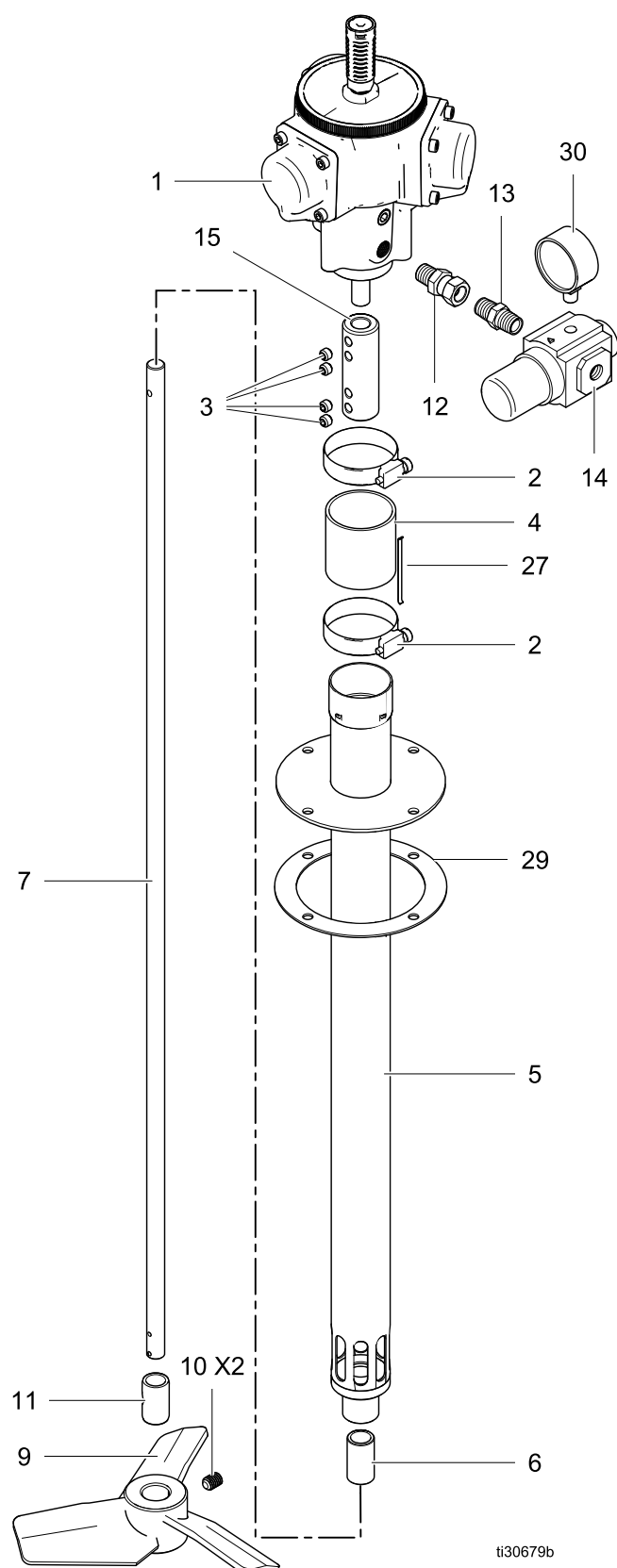
Ref No.	Part No.	Description	Qty
11	100579	PIN, Cotter	1
12	156823	FITTING, Union, Swivel	1
13	156971	FITTING, Nipple, Short	1
14	116513	REGULATOR, Air	1
15	159858	COUPLING	1
19	100633	TOOL, Wrench, Allen (not shown)	1
20	101369	TOOL, Wrench, Allen (not shown)	1
27	065251	CABLE, Copper, Flat Braid, 0.33 ft	1
29	190192	GASKET, Guide, Agitator	1
30	104655	GAUGE, Pressure, Air	1
32▲	17P806	Safety Tag (not shown)	1
▲ Replacement safety labels, signs, tags, and cards are available at no cost.			

## Model 25C533



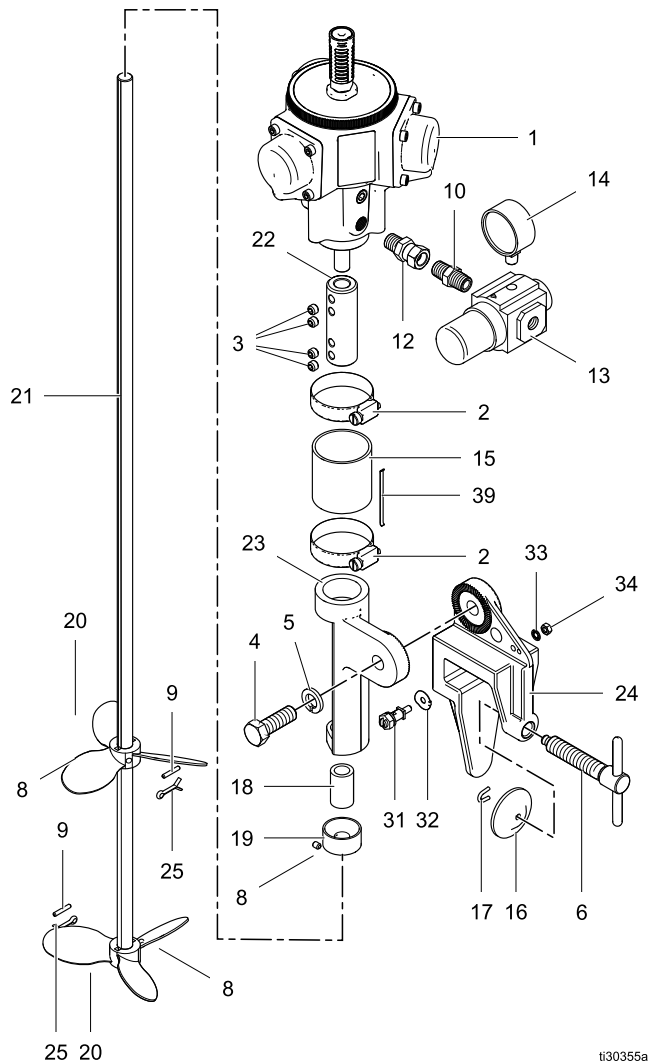
Ref No.	Part No.	Description	Qty
1	25C765	MOTOR, Air, Rotary Piston; includes 12, 13, 14, and 30.	1
2	101368	CLAMP, Hose	2
3	100053	SCREW, Set, Socket Head; 5/16-18 x 0.25"; torque to 96-132 in-lb (11-15 N•m)	4
4	100579	PIN, Cotter	2
5	207622	GUIDE, Agitator	1
6	166565	BEARING, Agitator, Press Fit	1
7	172313	SHAFT, Agitator	1
8	100633	TOOL, Wrench, Allen (not shown)	1
9	101369	TOOL, Wrench, Allen (not shown)	1
11	158865	COUPLING, Motor	1
12	156823	FITTING, Union, Swivel	1
13	159858	COUPLING	1
14	156971	FITTING, Nipple, Short	1
15	160077	PIN, Shear	2
16	159854	PROPELLER, Agitator	2
17	101118	SCREW, Set, Socket Head; #10-24 x 0.25"; torque to 15-20 in-lb (1.7-2.3 N•m)	2
22	116513	REGULATOR, Air	1
23	104655	GAUGE, Pressure, Air	1
27	065251	CABLE, Copper, Flat Braid, 0.33 ft	1
29	190192	GASKET, Guide, Agitator	1
35▲	17P806	Safety Tag (not shown)	1
▲ Replacement safety labels, signs, tags, and cards are available at no cost.			

## Model 25M481



Ref No.	Part No.	Description	Qty
1	25C765	MOTOR, Air, Rotary Piston; includes 12, 13, 14, and 30.	1
2	101368	CLAMP, Hose	2
3	100053	SCREW, Set, Socket Head; 5/16-18 x 0.25"; torque to 96-132 in-lb (11-15 N•m)	4
4	158865	COUPLING, Motor	1
5	222696	GUIDE, Agitator	1
6	115166	BEARING, Agitator, Press Fit	1
7	185389	SHAFT, Agitator	1
9	17N708	IMPELLER, Hydrafoil; 8" Stainless Steel; includes item 10. <b>Note:</b> Install the impeller so that the bent portion of the blade is on the leading edge when turning clockwise.	1
10	— — —	SCREW, Set, Socket Head; 3/8-16 x 0.5"; torque to 180-200 in-lb (20-23 N•m)	2
11	17R167	SPACER, Shaft	1
12	156823	FITTING, Union, Swivel	1
13	156971	FITTING, Nipple, Short	1
14	116513	REGULATOR, Air	1
15	159858	COUPLING	1
19	100633	TOOL, Wrench, Allen (not shown)	1
20	101369	TOOL, Wrench, Allen (not shown)	1
27	065251	CABLE, Copper, Flat Braid, 0.33 ft	1
29	190192	GASKET, Guide, Agitator	1
30	104655	GAUGE, Pressure, Air	1
32 ▲	17P806	Safety Tag (not shown)	1
▲ Replacement safety labels, signs, tags, and cards are available at no cost.			

## Model 25C529



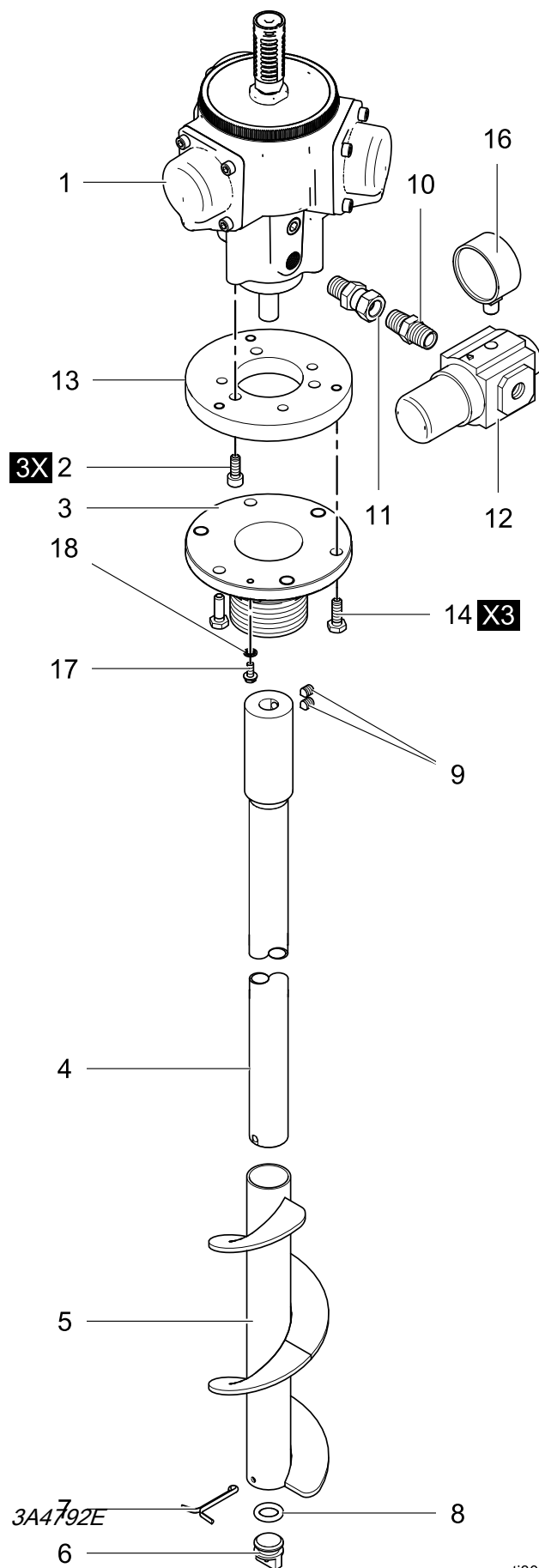
ti30355a

Ref No.	Part No.	Description	Qty
1	25C765	MOTOR, Air, Rotary Piston; includes 12, 13, 14, and 30.	1
2	101368	CLAMP, Hose	2
3	100053	SCREW, Set, Socket Head; 5/16-18 x 0.25"; torque to 96-132 in-lb (11-15 N•m)	4
4	100017	SCREW, Cap, Hex Head; 1/2-13 x 1.5"; tighten securely; do not over-tighten	1
5	100018	WASHER, Lock, Spring	1

Ref No.	Part No.	Description	Qty
6	203399	CLAMP, Screw	1
7	100633	TOOL, Wrench, Allen (not shown)	1
8	101118	SCREW, Set, Socket Head; #10-24 x 0.25"; torque to 15-20 in-lb (1.7-2.3 N•m)	3
9	160077	PIN, Shear	2
10	156971	FITTING, Nipple, Short	1
11	101369	TOOL, Wrench, Allen (not shown)	1
12	156823	FITTING, Union, Swivel	1
13	116513	REGULATOR, Air	1
14	104655	GAUGE, Pressure, Air	1
15	158865	COUPLING, Motor	1
16	159056	PAD, Mounting, Screw	1
17	159057	RETAINER	1
18	104391	BEARING, Agitator, Press Fit	1
19	159704	CUP, Protector, Bearing	1
20	159854	PROPELLER, Agitator	2
21	172311	SHAFT, Agitator	1
22	159858	COUPLING	1
23	159863	BRACKET, Mounting	1
24	159864	CLAMP, Agitator	1
25	100579	PIN, Cotter	2
31	104029	CLAMP, Ground, Electric	1
32	104582	WASHER, Tab	1
33	100718	WASHER, Lock	1
34	110911	NUT, Hex; M5 x 8	1
37	186620	LABEL, Symbol, Ground (not shown)	1
39	065251	CABLE, Copper, Flat Braid, 0.33 ft	1
43▲	17P806	Safety Tag (not shown)	1

▲ Replacement safety labels, signs, tags, and cards are available at no cost.

# Models 25C534 and 25C535

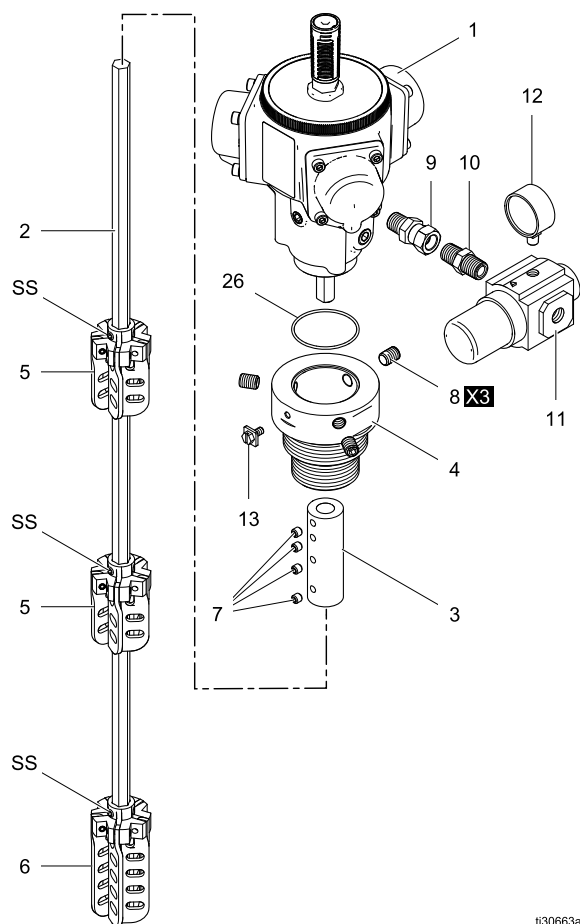


## Parts

Ref No.	Part No.	Description	Qty
1	25C765	MOTOR, Air, Rotary Piston; includes 12, 13, 14, and 30.	1
2	124313	SCREW, Socket Head; M6-1 x 16 mm, Stainless Steel; torque to 80-100 in-lb (9-11 N•m)	3
3	235535	HOUSING, Agitator Outlet, Stainless Steel (model 25C534)	1
	224876	HOUSING, Agitator Outlet, Carbon Steel (model 25C535)	1
4	235530	SHAFT, Agitator (model 25C534)	1
	224852	SHAFT, Agitator (model 25C535)	1
5	224393	HELIX, Agitator	1
6	187054	PLUG, Tube, Fluid	1
7	101946	PIN, Cotter; Stainless Steel	1
8	111312	PACKING, O-ring	1
9	112364	SCREW, Set, Socket Head; 1/4-20 x 0.38"; torque to 35-40 in-lb (4-5 N•m)	2

Ref No.	Part No.	Description	Qty
10	156823	FITTING, Nipple, Short	1
11	156971	FITTING, Union, Swivel	1
12	116513	REGULATOR, Air	1
13	187577	PLATE, Mounting, Motor	1
14	102023	SCREW, Cap, Hex Head; 1/4-20 x 0.75"; torque to 80-100 in-lb (9-11 N•m)	3
16	104655	GAUGE, Pressure, Air	1
17	111593	SCREW, Grounding, Slotted Hex Washer Head; #8-32 x 0.375"	1
18	157021	WASHER, Lock, Internal	1
19	186620	LABEL, Symbol, Ground (not shown)	1
27	403123	CAP, Plug (not shown)	1
30▲	17P806	Safety Tag (not shown)	1
▲ Replacement safety labels, signs, tags, and cards are available at no cost.			

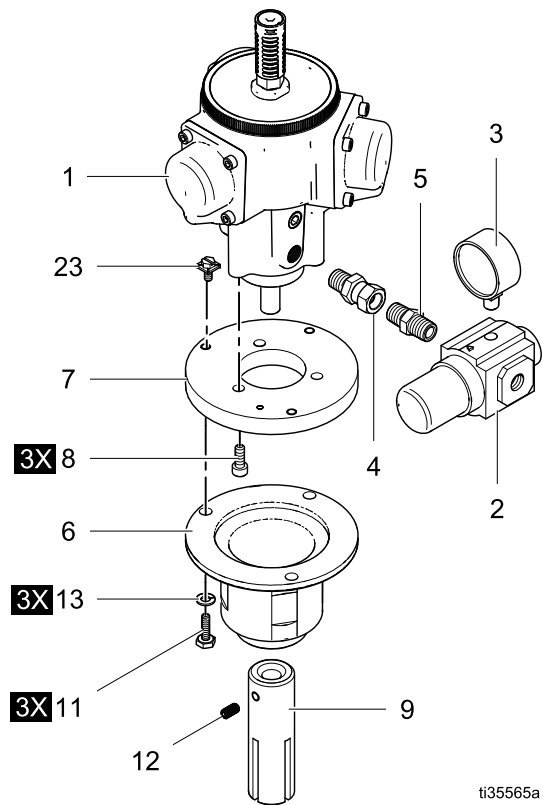
## Model 25C530



ti30663a

Ref No.	Part No.	Description	Qty
SS	— — —	SCREW, Blade Set; tighten securely after adjusting; do not over-tighten	3
1	25C765	MOTOR, Air, Rotary Piston; includes 12, 13, 14, and 30.	1
2	16A867	SHAFT, Agitator	1
3	16A868	COUPLER, Agitator	1
4	16A872	ADAPTER, Bung, Double	1
5	24C860	AGITATOR, Arm, Short	2
6	24C861	AGITATOR, Arm, Long	1
7	102207	SCREW, Set, Socket Head; 1/4-20 x 0.25"; torque to 96-132 in-lb (11-15 N•m)	4
8	101679	SCREW, Set, Socket Head; 3/8-24 x 0.5"; torque to 80-100 in-lb (9-11 N•m)	3
9	156823	FITTING, Union, Swivel	1
10	156971	FITTING, Nipple, Short	1
11	116513	REGULATOR, Air	1
12	104655	GAUGE, Pressure, Air	1
13	116343	SCREW, Ground; M5 x .8	1
25	186620	LABEL, Symbol, Ground (not shown)	1
26	113082	PACKING, O-ring	1
27	16H294	ADAPTER, Angled, Expanding Blade (not shown)	1
28	16H295	RING, Locking (not shown)	1
30▲	17P806	Safety Tag (not shown)	1
▲ Replacement safety labels, signs, tags, and cards are available at no cost.			

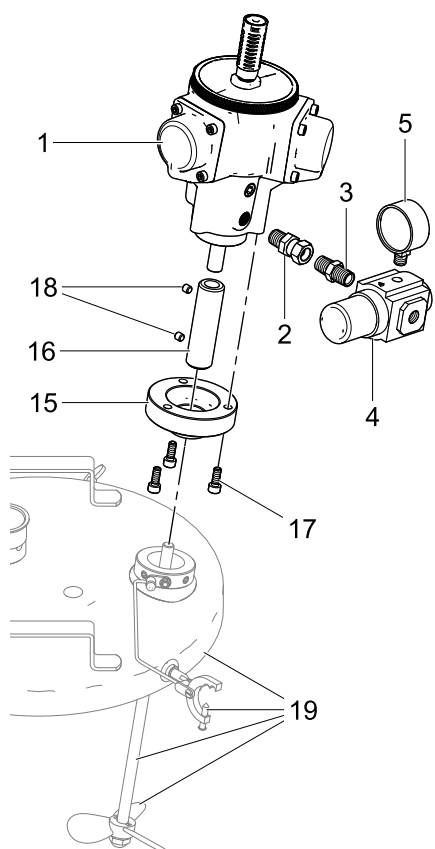
## Models 25N881 and 25N882



Ref No.	Part No.	Description	Qty
1	25C765	MOTOR, Air, Radial Piston; includes items 2, 3, 4, and 5	1
2	116513	REGULATOR, Air	1
3	104655	GAUGE, Pressure, Air	1
4	156971	FITTING, Nipple, Short	2
5	156823	FITTING, Union, Swivel	1
6	16A521	HOUSING, Adapter, 1 1/2–11.5 NPSM (model 25N881)	1
	16A754	HOUSING, Adapter, 2–11.5 NPSM (model 25N882)	
7	18A192	PLATE, In-Drum Mounting	1
8	117028	SCREW, Socket Head, M6–1 x 16 mm; torque to 80–100 in-lb (9–11 N•m)	3
9	17X562	ADAPTER, Shaft, 7/16" Square	1
	17X563	ADAPTER, Shaft, 1/2" Square	1
11	555337	SCREW, Hex Head 1/4–20 x .750; torque to 80–100 in-lb (9–11 N•m)	3
12	131497	SCREW, Set, Cup pt, 1/4–20 x .500; Tighten securely on flat of motor shaft.; use a light strength anaerobic sealant	1
13	100016	WASHER, Lock	3
22	116343	SCREW, Ground	1
24▲	17P806	Safety Tag (not shown)	1
▲ Replacement safety labels, signs, tags, and cards are available at no cost.			



## Model 19Y592



ti37867a

Ref No.	Part No.	Description	Qty
1	25C765	MOTOR, Air, Radial Piston; includes items 2, 3, 4, and 5	1
2	156823	FITTING, Union, Swivel	1
3	156971	FITTING, Nipple, Short	1
4	116513	REGULATOR, Air	1
5	104655	GAUGE, Press Air	1
10▲	17Z460	Safety Tag (not shown)	1
15	25P708	ADAPTER, Agitator, Mount, 5 Gallon	1
16	25P709	COUPLER, Shaft, Agitator, 1/2 – 3/8 Inch	1
17	124313	SCREW, SHCS, M6–1X16M, SST	1
18	110272	SCREW, Set, SCH	1
19	The pail cover, shaft, and blade are not part of the kit. See manual 306670 to order the pail cover and related parts.		
▲ Replacement safety labels, signs, tags, and cards are available at no cost.			

## **Accessories**

### **Sensor Kit 25C373**

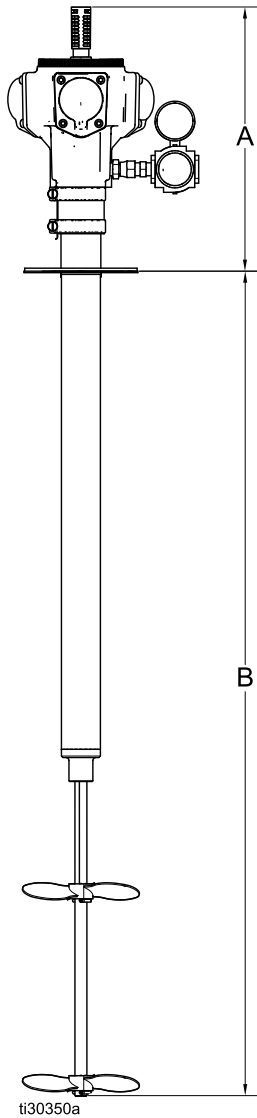
Use the Sensor Kit 25C373 for sensing motor revolution. The kit includes a sensor and sensor bracket for mounting to the air motor.

### **DataTrak Kit 25P394**

Use the DataTrak Kit 25P394 for monitoring speed and totalizing revolutions of radial piston motor driven agitators.

# Dimensions

Models 25C528 and 25C533



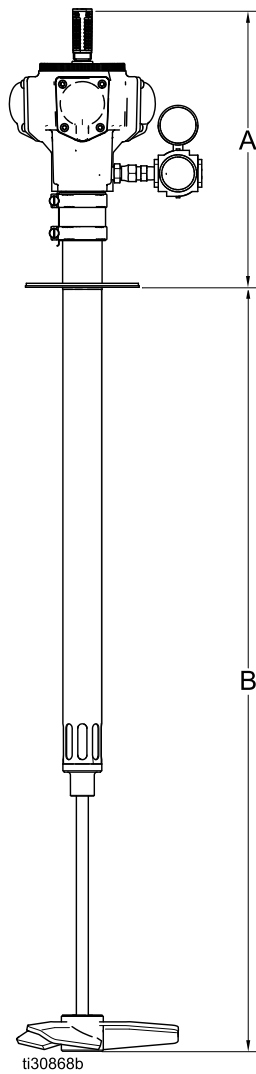
Reference A = 11.5 in. (29.3 cm)

Reference B

Model 25C528 =  
31.9 in (81.0 cm)

Model 25C533 =  
34.3 in. (87.2 cm)

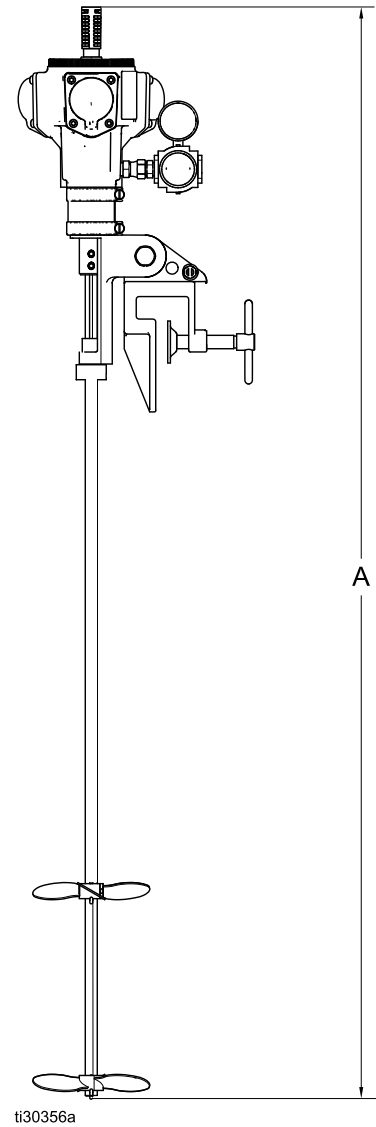
Model 25M481



Reference A = 11.5 in. (29.3 cm)

Reference B = 31.9 in (81.0 cm)

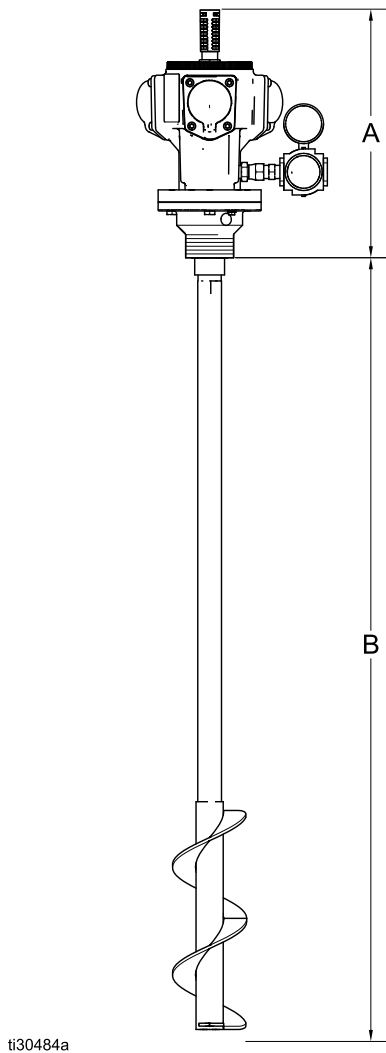
Model 25C529



Reference A =  
45.6 in. (115.8 cm)

Dimensions

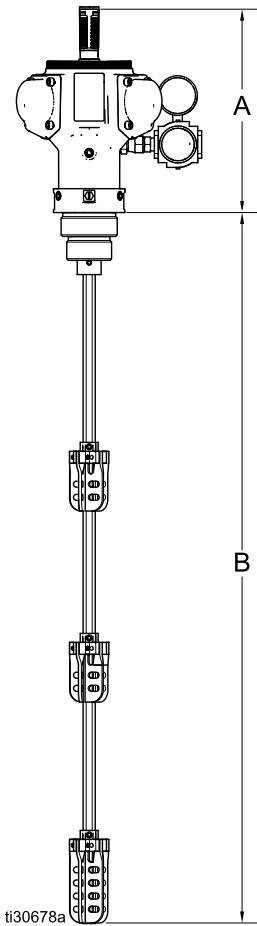
Models 25C534 and 25C535



Reference A = 10.4 in. (26.3 cm)

Reference B = 32.2 in. (81.8 cm)

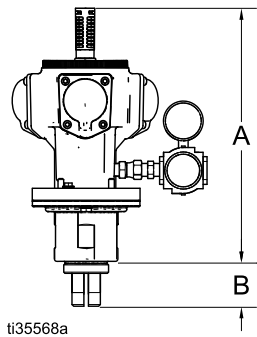
Model 25C530



Reference A = 8.5 in. (21.6 cm)

Reference B = 29.8 in. (75.6 cm)

Models 25N881 and 25N882

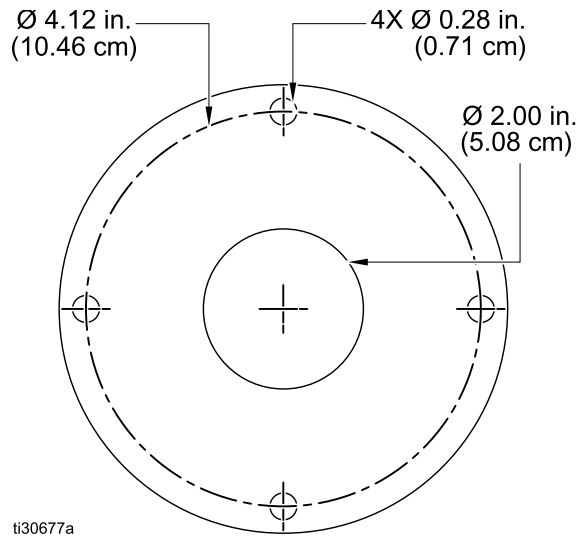


Reference A =  
10.4 in. (26.3 cm)

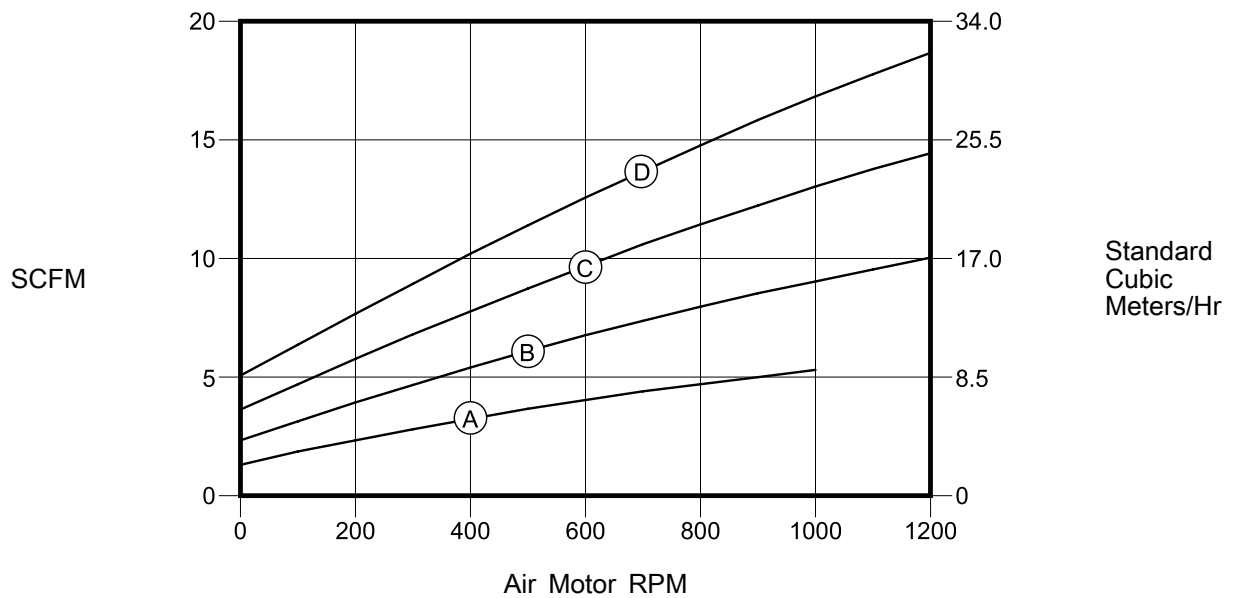
Reference B = 32.2 (81.8  
cm)

# Mounting Hole Layout

Models 25C528, 25C533, 25M481



## Air Consumption



- A — 20 psi (1.4 bar, 0.14 MPa)
- B — 40 psi (2.8 bar, 0.28 MPa)
- C — 60 psi (4.1 bar, 0.41 MPa)
- D — 80 psi (5.5 bar, 0.55 MPa)

# Technical Specifications

Note: Operating above recommended maximum speeds increases wear on components and decreases operating efficiencies.

## Models 25C528, 25C533, and 25M481

Air-Driven Agitators, Standard			
	25C528	25C533	25M481
Maximum Recommended Working Pressure	70 psig (5 bar)		
Air Consumption	See chart		
Maximum Recommended Speed	500 rpm		500 rpm
Maximum Allowable Process Fluid Temperature	194° F (90° C)		
Maximum Recommended Material Viscosity	1000 cP		500 cP
Wetted Parts	Stainless Steel, Polyether Ether Keytone	Carbon Steel, Aluminum, PTFE	Stainless Steel, Polyether Ether Keytone
Weight	11 lb (5 kg)	12 lb (5.4 kg)	13 lb (5.9 kg)
Sound Pressure Level at 70 psig, Maximum Recommended Speed	Less than 75 dBA		

## Model 25C529

Air-Driven Agitator, Outboard	
Maximum Recommended Working Pressure	70 psig (5 bar)
Air Consumption	See chart
Maximum Recommended Speed	500 rpm
Maximum Recommended Material Viscosity	1000 cP
Wetted Parts	Aluminum, carbon steel, ductile iron, bronze
Weight	15 lb (6.8 kg)
Sound Pressure Level at 70 psig, Maximum Recommended Speed	Less than 75 dBA

## Models 25C534 and 25C535

<b>Air-Driven Agitators, Twistork® Helix Mixer</b>		
Maximum Recommended Working Pressure		70 psig (5 bar)
Air Consumption		See chart
Maximum Recommended Speed		500 rpm
Maximum Allowable Process Fluid Temperature		158° F (70° C)
Maximum Recommended Material Viscosity		1000 cP
Wetted Parts		
	25C534	Carbon Steel, Fluoroelastomer, Acetal
	25C535	304 and 316 Stainless Steel, Fluoroelastomer, Acetal
Weight		16 lb (7.3 kg)
Sound Pressure Level at 70 psig, Maximum Recommended Speed		Less than 75 dBA

## Model 25C530

<b>Air-Driven Agitators, Expanding Blade Mixer</b>	
Maximum Recommended Working Pressure	70 psig (5 bar)
Air Consumption	See chart
Maximum Recommended Speed	500 rpm
Maximum Allowable Process Fluid Temperature	194° F (90° C)
Maximum Recommended Material Viscosity	1000 cP
Bung Adapter Sizes	1 1/2–11.5 npsm and 2–11.5 npsm
Wetted Parts	303, 304, 18–8 stainless steel
Weight	12 lb (5.4 kg)
Sound Pressure Level at 70 psig, Maximum Recommended Speed	Less than 75 dBA


## Models 25N881 and 25N882

<b>Air-Driven Agitators, In Drum</b>	
Maximum Recommended Working Pressure	70 psig (5 bar)
Air Consumption	See chart
Maximum Recommended Speed	100 rpm
Maximum Allowable Process Fluid Temperature	194° F (90° C)
Maximum Recommended Material Viscosity	500 cP
Bung Adapter Sizes	1 1/2–11.5 npsm and 2–11.5 npsm
Wetted Parts	N/A
Weight	11.4 lb (5.2 kg)
Sound Pressure Level at 70 psig, Maximum Recommended Speed	Less than 75 dBA

## Model 19Y592

<b>Air-Driven Agitator, In Pail</b>	
Maximum Recommended Working Pressure	70 psig (5 bar)
Air Consumption	See chart
Maximum Recommended Speed	500 rpm
Maximum Allowable Process Fluid Temperature	194° F (90° C)
Maximum Recommended Material Viscosity	500 cP
Weight	7.4 lb (3.4 kg)
Sound Pressure Level at 70 psig, Maximum Recommended Speed	Less than 75 dBA

## California Proposition 65

 **WARNING:** This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).



## Notes

[illegible]

# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

## FOR GRACO CANADA CUSTOMERS

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## Graco Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).  
For patent information, see [www.graco.com/patents](http://www.graco.com/patents).

**To place an order**, contact your Graco Distributor or call to identify the nearest distributor.

**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

All written and visual data contained in this document reflects the latest product information available at the time of publication.

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Original Instructions. This manual contains English. MM 3A4792

**Graco Headquarters:** Minneapolis  
**International Offices:** Belgium, China, Japan, Korea

**GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA**  
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