



SERVICE INFORMATION - AGITATOR ASSEMBLY FOR 25 Litre (5 Gall) PAIL

MODELS - 41-3312-CE & 31-133-CE



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Part Sheet
77-2877 R1

AGITATOR ASSEMBLY FOR 25 Litre (5 Gall) PAIL

IMPORTANT: Read and follow all instructions and SAFETY PRECAUTIONS before using this equipment. Retain for future reference.

DESCRIPTION

This manual covers the following models;

41-3312-CE Direct Dive Agitator only for use with 25 litre (5 Gall pail. Stainless Steel wetted parts).

31-133-CE Kit comprising of Agitator 41-3312-CE and 41-3205 Lid assembly for use with 25 litre (5 Gall pail).

All models are suitable for use with flammable coating materials and for use in a Zone 1 classified hazardous area.

These Agitators are CE marked in accordance with the ATEX Directive 94/9/EC for hazardous area use and Machinery Safety Directive 98/37/EC.

If installing this equipment in a potentially explosive atmosphere, check the ATEX equipment category and temperature ratings meet the requirements for the zoned area.



Part Number

ATEX classification

Type approval certificate Number

41-3312-CE Agitator only



II 1/2 G c T5

TRL06ATEX11108X

31-133-CE Agitator and Lid



II 1/2 G c T5

All Models

Ambient temperature range +1°C to 40°C (34 to 104°F)

All models are certified for use in Hazardous areas, Zone 1 for areas around the tank and Zone 0 for inside the tank. Temperature class T5 (100°C).

In this Bulletin, the words WARNING, Caution and NOTE are used to emphasize important safety information as follows:

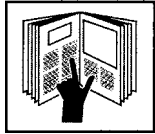
⚠ WARNING
 Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

⚠ CAUTION
 Hazards or unsafe practices which could result in minor personal injury, product or personal damage.

⚠ NOTE
 Important installation, operation or maintenance information.

WARNING

Read the following warnings before using this equipment



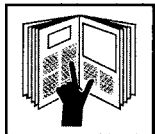
READ THE MANUAL
 Before operating the equipment, read and understand all safety, operation and maintenance information provided in this manual.



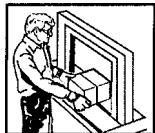
WEAR SAFETY GLASSES
 Failure to wear safety glasses with side shields could result in serious eye injury or blindness.



DE-ENERGISE, DEPRESSURISE, DISCONNECT AND LOCK OUT ALL POWER SUPPLIES DURING MAINTENANCE
 Failure to De-energise, disconnect and lock out all power supplies before performing equipment maintenance could cause serious injury or death.



OPERATOR TRAINING
 All personnel must be trained before operating this equipment.



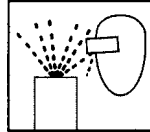
KEEP EQUIPMENT GUARDS IN PLACE
 Do not operate the equipment if any safety devices or guards have been removed.



PRESSURE RELIEF PROCEDURE
 Always follow the pressure relief procedure in this instruction manual.



NOISE Sound level from air motors may exceed 80 dba. Wearing of ear protection is recommended.



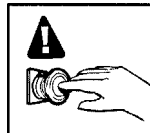
PROJECTILE HAZARD
 You may be injured by venting liquids or gases that are released under pressure under pressure, or flying debris.



INSPECT THE EQUIPMENT DAILY
 Inspect the equipment for worn or broken parts on a daily basis. Do not operate the equipment if you are uncertain about its condition.



NEVER MODIFY THE EQUIPMENT
 Do not modify the equipment unless the manufacturer provides written approval. Only use the Agitator with the proper lid assembly 41-3205.



KNOW WHERE AND HOW TO SHUT OFF THE EQUIPMENT IN CASE OF AN EMERGENCY

SPECIAL CONDITIONS FOR SAFE USE REQUIRED BY ATEX CERTIFICATION



AIR SUPPLY
 Air supplies (compressors etc) shall be sited in a non-hazardous area with a filter on the air intake system to prevent the ingress of dust or similar foreign material into the parts where compression takes place.



FIRE AND EXPLOSION HAZARD
 Improper equipment grounding, poor ventilation, open flames or sparks can cause hazardous conditions and result in fire or explosion and serious injury.



ELECTRIC SHOCK/GROUNDING
 Improper grounding or sparks can cause a hazardous condition and result in fire, explosion or electric shock and other serious injury. Check electrical continuity of the air supply to earth - should be no greater than $10^6 \Omega$. Electrically bond all metallic equipment to earth. Should be no greater than 1 Ω .



STATIC CHARGE
 Fluid and air may develop a static charge that must be dissipated through proper grounding of the equipment, objects to be sprayed and all other electrically conductive objects in the dispensing area. Use suitably approved static dissipating or conductive air supply hoses.



EQUIPMENT MISUSE HAZARD
 Do not exceed the stated maximum working pressures and motor speed as specified on page 3.



FIRE AND EXPLOSION HAZARD
 Use lubricating medium resistant to carburisation and has an auto ignition temperature of 185°C for T4 and 150°C for T5 equipment.

SPECIFICATION

Agitator Code	Type of Agitation	Max rpm	Max recommended rpm	Max pressure
41-3312-CE	Direct Drive	3000	3000	7 bar

Materials of Construction

Air Motor bodies	Cast Iron	Shaft Seals	Steel/Nitrile Rubber
Motor End Plates	Aluminium	Vanes	Phenolic
Motor Rotor	Cast Iron rotor, Stainless Steel Shaft	Agitator Shaft	Stainless Steel
Lid	Steel Zinc plated	Propeller	Stainless Steel

INSTALLATION

WARNING

Air Supply

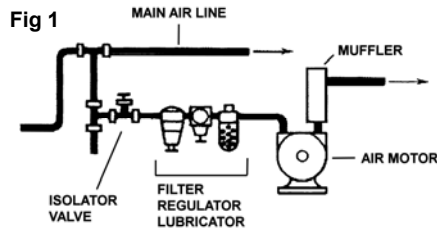
Air supplies (compressors etc) shall be sited in a non-hazardous area with a filter on the air intake system to prevent the ingress of dust or similar foreign material into the parts where compression takes place.

Air Motor Lubrication

WARNING

An automatic air line filter/lubricator should be installed in the air supply line no more than 0.5m from the air motor. The filter should be 5 micron. Install the lubricator level with or above the motor so the oil mist will blow directly into or down into the motor (see Fig. 1).

Fill the oil reservoir with SAE 10W motor oil. Adjust lubricator to feed 1 drop of oil for every 1400 litres (50 cfm) of air or 1 drop per minute for continuous running.



Kit Assembly

Only Use the proper Lid assembly 41-3205 with this Agitator.

1. Remove the propeller (12) from the shaft (3) by loosening the lock screw 11.
2. Unscrew the locknut (7) from the housing, and remove washer (10).
3. Push out the blank (16) in the lid (17), insert the shaft into the aperture in the lid and rotate until the pin locates in the slot.
4. Slide the washer (10) over the shaft, the

raised centre towards the locknut.

5. Replace the locknut (7) and tighten.
6. Replace the propeller (12) and secure with screw (11).
7. Remove the blank (14) for the pickup tube or pipe.
8. Place the lid assembly over the pail or drum.

CAUTION

9. Make sure the pail has a minimum depth of 325mm for a 25mm clearance, or the propeller may contact the bottom and create possible sparking hazards.
10. Clamp the lid by screwing in the 3 thumb screws (15) evenly to centre the lid to the pail.
11. **Before operating any of these agitators lubricate the air motor by adding 4 of 5 drops of SAE 10 weight oil into the air fitting.**
12. Close the Air Adjusting valve (2) by rotating clockwise.
13. Connect the airline to the valve (2). The Agitator is now ready for use.

CAUTION

OPERATION

Failure to operate and maintain these agitators correctly could result in premature motor failure and void warranty.

If not already done so, before operating any of these agitators lubricate the air motor by adding 4 of 5 drops of SAE 10 weight oil into the air fitting.

1. Before turning on the air supply, screw in the air adjusting valve (2) fully. Turn on the air supply and slowly open up the air adjusting valve.
2. The optimum speed is dependent on the type of coating material being agitated. If the speed is too high, the propeller will cavitate and aerate the material.
3. It is not recommended to run the motor faster than 1000 rpm. **Do not exceed**

3000 rpm.

4. When the tank is empty, the motor speed will rise. Stop the motor to avoid unnecessary high speed running. Prolonged high speed running may result in premature wear and failure of the motor.

PREVENTATIVE MAINTENANCE

1. Turn off the main air supply to the Agitator with the isolator valve.
2. Check exhaust muffler for blockage. Clean if necessary.
3. If the Air motor starts to run slowly or is sluggish, flushing the motor with solvent may restore its performance due to excessive contamination from oil, moisture and foreign particles. Use only Gast #AH255B Flushing Solvent or equivalent for this.
4. This cleaning operation should only be carried out in a well ventilated area.
5. Wear eye protection.
6. Do not use combustible solvents for flushing.
7. Disconnect the airline and muffler. Add about 100ml (4 fluid oz) of solvent into the air intake port of the motor. Rotate the motor by hand in both directions for a few minutes.
8. Re-connect the airline and cover the exhaust port with a cloth. Apply low pressure 0.7bar (10psi) and re-start the motor. Run until no more traces of solvent can be seen.
9. The motor should be running smoothly. If not, then a re-build may be required (see Replacement of Parts).

REPLACEMENT OF PARTS

1. Remove the propeller (12) from the shaft (3) by loosening the lock screw (11).
2. Unscrew the locknut (7) from the housing, and remove washer (10).
3. Withdraw the Agitator from the aperture in the lid.
4. Loosen the top 2 screws (11) in the

- coupling (13) and remove the shaft and coupling from the motor drive shaft.
- Loosen the screw (4) and separate the motor from the housing (6).

37-478 Air Motor Replacement of parts (see fig 3)

- Remove the end cap (14).
- Remove dead end plate bolts (28).
- Remove dead end plate (17). Use a puller, do not use screwdriver to remove the end plate.)
- Remove the dowel pins (21) from the body and push back into end plate (17) until flush or just below the machined surface of the dead end plate. Remove rotor (20) using an arbor press.
- Remove vanes (19).
- Remove shaft seal (27) and drive end plate bearing (26) from drive end plate (24) and bearing (16) from dead end plate (17). Do Not remove drive end plate bolts or drive end plate.
- Clean parts. Check for scoring on the end plates and rotor assembly. If scoring

- exists, replace the end plates.
- Check the bearings for signs of wear. Replace the bearings at least every 2 years.
- Place the drive shaft of the rotor assembly (20) through the body into the drive end plate (24). Press the drive end bearing (26) onto the drive shaft using a bearing pusher.
- Using a suitable tool, lightly tap on inner race of the drive end bearing (26) to snug up rotor (20) to drive end plate (24).
- Check the vanes (19) for wear. If the height of the vanes are less than 6.8mm (0.270") then re-new the vanes. Install new vanes (19), the angle cuts on the vane face to the center of the rotor.
- Place the dead end plate gasket (18) on the body (22). If the original is damaged, replace with a new one supplied in the service kit.
- Place the dead end plate (17) on the body.
- Install the dead end bearing (16) and press into place with bearing pusher tool.
- Install the dowel pins (21).

- Fully tighten the bolts (28).
- Set end clearance to the values at the end of this section. lightly tap on the inner race of the dead end bearing to free up and center the rotor in the body.
- Apply a small amount of grease to bearing seal (27) and install the drive end bearing seal by pressing flush with bearing pushing tool.
- Reattach end cap (14) with new gasket (15).
- Apply a few drops of 10w oil lubricant into ports and rotate shaft by hand for a few rotations.
- Re-assemble in reverse order.

End Clearances

Total clearance
.051mm (0.002")
Top end clearance
.038mm (0.0015")

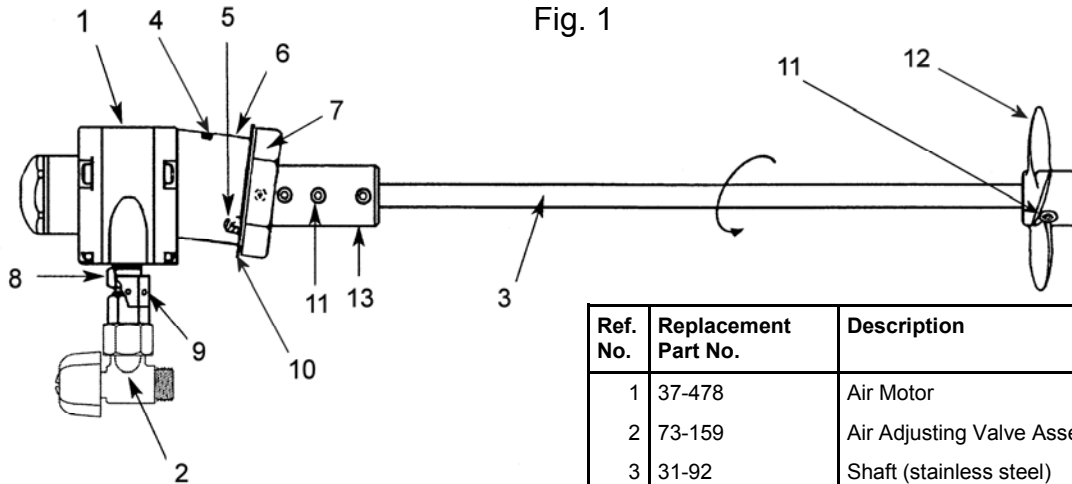


Fig. 1

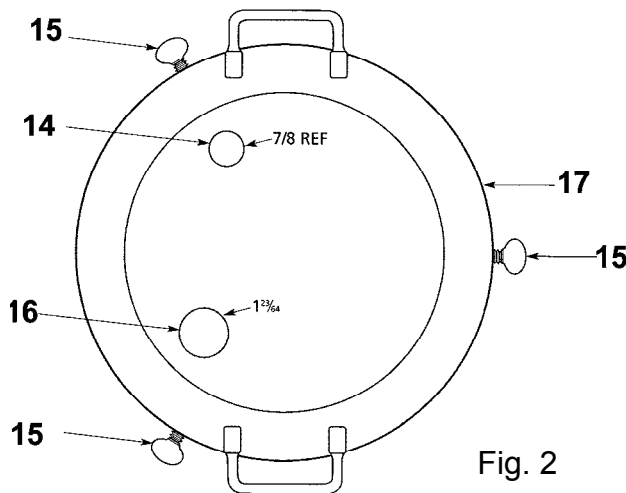


Fig. 2

41-3205 Lid Assembly

Ref. No.	Replacement Part No.	Description	Individual Parts Req.
1	37-478	Air Motor	1
2	73-159	Air Adjusting Valve Assembly	1
3	31-92	Shaft (stainless steel)	1
4	20-1735	Screw	1
5	20-3548	Pin	1
6	41-649	Housing	1
7	20-6450	Locknut (stainless steel)	1
8	71-28	Nipple	1
9	41-656	Muffler	1
10	41-718	Washer	1
11	20-2141	Screw (stainless steel)	4
12	31-91	Propeller (stainless steel)	1
13	41-645	Coupling	1
14	20-2535	Snap-in blank, 1/2" pipe thread	1
15	20-2601	Thumb screw, 3/8-16 x 1-1/2	3
16	20-2603	Snap-in blank, 1" pipe thread	1
17	41-626	Cover	1

37-478 Air Motor Parts

Ref. No.	Replacement Part No.	Description	Individual Parts Req.
14	37-705	End Cap	1
*15	37-530	Gasket	1
*16	37-525	Bearing Dead End Plate	1
17	37-519	Dead End Plate	1
*18	37-528	Gasket Dead End Plate	1
*19	37-703	Vane	4
20	37-520	Rotor	1
21	37-527	Dowel Pin	2
22	37-517	Body	1
23	37-528	Gasket Drive End Plate	1
24	37-518	Drive End Plate	1
25	37-527	Dowel Pin	2
26	37-525	Bearing Drive End Plate	1
*27	37-526	Seal	1
28	20-3266	Screw	10
	6-196	Motor repair kit	

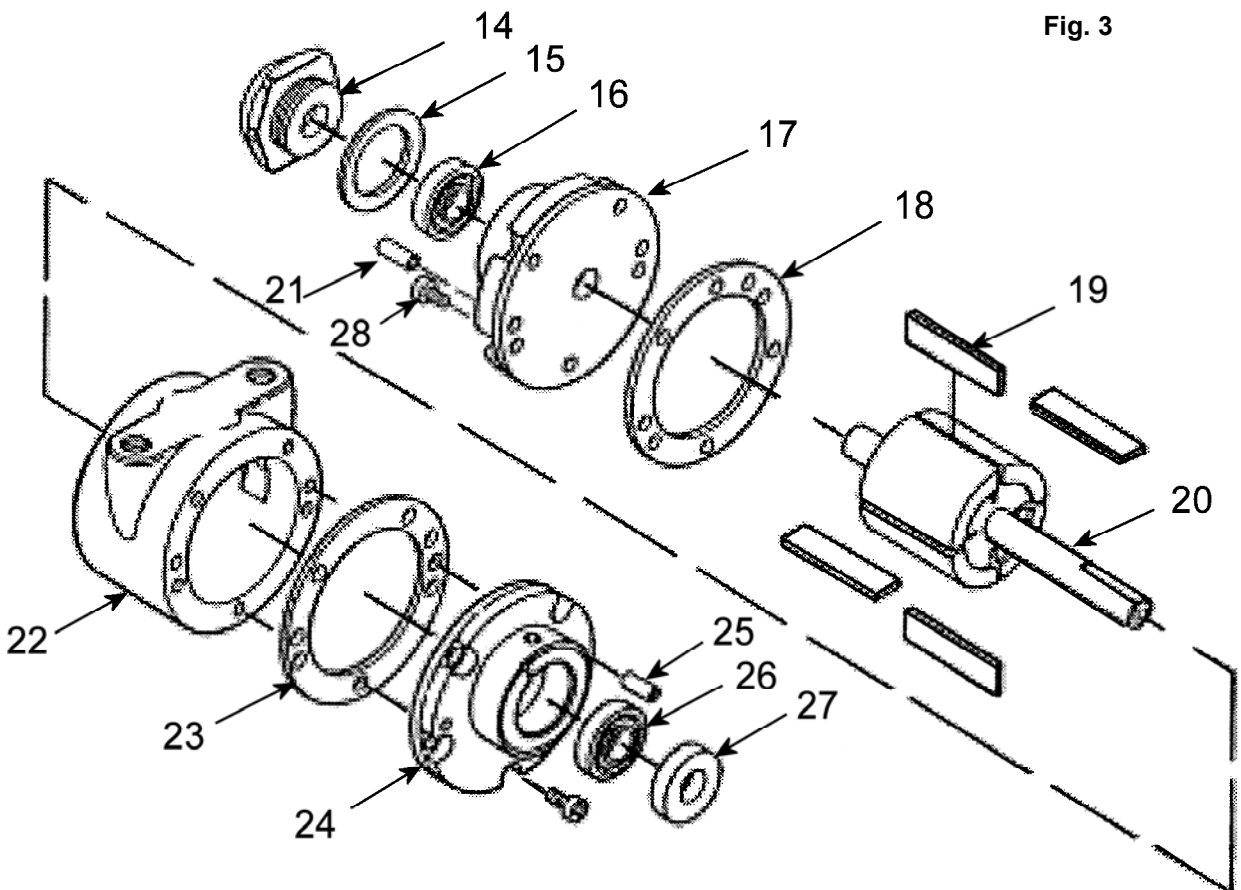


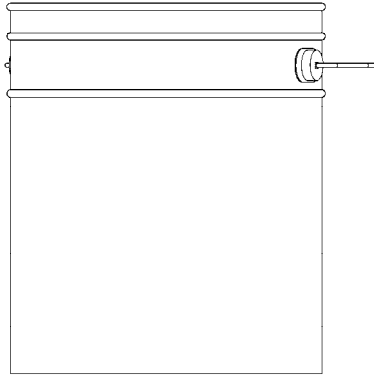
Fig. 3

Service Checks

Condition	Cause	Correction
Air motor is sluggish or rotates slowly or stops	Dirt or foreign object trapped in the motor or from Internal corrosion	Flush the motor, or strip motor and clean as instructed on P4
Air motor runs hot and slows down	Vanes misaligned	Strip and rebuild motor
Air motor runs slowly	Low air pressure	Raise air pressure
Motor runs slowly even at max pressure	Air line bore too small and/or length of airline. Exhaust restricted	Use larger bore airline and/or shorten airline. Change muffler filter or flush motor or strip and clean.

ACCESSORIES

5 Gallon Pail 41-662



BINKS
DVP 1:1 RATIO
DIAPHRAGM PUMP
PACKAGES



- Rapid delivery of up to 17 litres per minute (max)
- Even material flow at up to 60 cycles/minute
- Economic air consumption at pressures up to 7 bar (100 psi)
- Corrosion resistant models for ceramic/abrasive materials
- Functions as a material transfer or delivery pump
- Choice of pail, wall, tripod or cart mounted outfits
- ATEX/CE approved.

**PRESSURE FEED
TANKS & CUPS**

- Sizes to suit all applications
- 10, 40 & 60 litre capacity tanks complete with nylon inner container for easy colour changes and cleaning
- Stainless steel and mild steel options
- Compatible with your standard gun and hose connections
- Remote pressure cups – aluminium and stainless steel options
2 litre capacity
- ATEX/CE approved.



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