MEFE

Mitchell Engineering
Food Equipment

CAT 3301
Core Sampler

Rev 1

Instruction manual

CONTENTS

CONTENTS **2**

PRODUCT DESCRIPTION **4**

SECTION 1 - INTRODUCTION **4**
ABOUT THIS MANUAL 4
SAFETY GUIDELINES 4
WARRANTY 5
GETTING TO KNOW THE CORE SAMPLER 5
OPERATION AND MECHANICAL OVERVIEW 6

SECTION 2 - USING THE CORE SAMPLER **7**
INSTALLATION AND OPERATING INSTRUCTIONS 7
Inspection before Installation 7
Inspection Before Startup 7
Setup 7
Start-Up Test 7
OPERATION INSTRUCTIONS 8
Operations 8
Take a sample 8
Discharge the sample 8

SECTION 3 – CORE SAMPLER MAINTENANCE **9**
MAINTENANCE PROCEDURES 9
T-Pipe Installation 9
Ball Valve Installation 9
Vacuum Transducer Installation 10
S-Pipe Installation & White Air Collar 10
SS Hub Installation and SS Hub Reducer 10
SS Core Tube Installation 11
Beginning & End Installation 11
Handle Positioning 11
Grease Areas 12
PREVENTATIVE MAINTENANCE 13
Daily 13
Weekly 13
Yearly 13
Reduce Down Time 13

SECTION 4 - CLEANING PROCEDURE **14**
CLEANING THE CORE SAMPLER 14
Critical Areas That Need Scrubbing 14
Reset Core Sampler 14

SECION 5 - TROUBLESHOOTING **15**
TROUBLESHOOTING DIAGNOSTICS 15

SECTION 6 – BILL OF MATERIALS 16
Parts Drawing 16
Drill Drawing 17
Part No and Order 18
Address and Site 20

TABLE OF FIGURES

Figure 1: Core Sampler features 5
Figure 2: T-Pipe installation detail 9
Figure 3: Ball Valve installation detail 9
Figure 4: Vacuum Transducer installation detail 10
Figure 5: S-Pipe installation detail & White Air Collar 10
Figure 6: SS Hub and SS Hub Reducer detail 10
Figure 7: SS Core Tube installation detail 11
Figure 8: Beginning & end detail 11
Figure 9: Lubrication guidelines 12

PRODUCT DESCRIPTION

Thank you for purchasing a MEFE CORE SAMPLER. This sampling tool, when properly used, will give you years of trouble-free service. When servicing these samplers, we've recognized that the majority of problems with the sampler are related to water entering the air motor via the compressed air line. Please follow the enclosed recommendations to reduce this problem. Personnel in our company are available to answer any of your questions regarding the operations and maintenance of this sampler.

SECTION 1 - INTRODUCTION

ABOUT THIS MANUAL

This manual is intended for technicians and personnel responsible for repair and routine maintenance of the Core Sampler. Familiarity with drive components and reading technical drawings or schematics is recommended. The manual addresses mechanical operation and maintenance as well as illustrations of the Core Sampler.

SAFETY GUIDELINES

As part of its obligation and commitment to each of its customers, MEFE has taken every step possible to make the Core Sampler free from any recognized hazards, which may cause harm or injury to anyone who may operate this equipment.

Wherever you see this sign in the manual, please follow these safety guidelines when operating the Core Sampler.

- *Do not operate the machine until you have complied with all local safety rules and regulations.*
- *Do not disconnect or override any safety interlocking switches for any reason.*
- *Do not obstruct or remove any warning signs that are attached to the machine. If warning signs become damaged, lost or illegible, please order replacement signs immediately.*
- *Pay attention at all times. Do not operate this machine in a careless manner.*
- *Do not use this machine for any purpose other than its intended use.*

WARRANTY

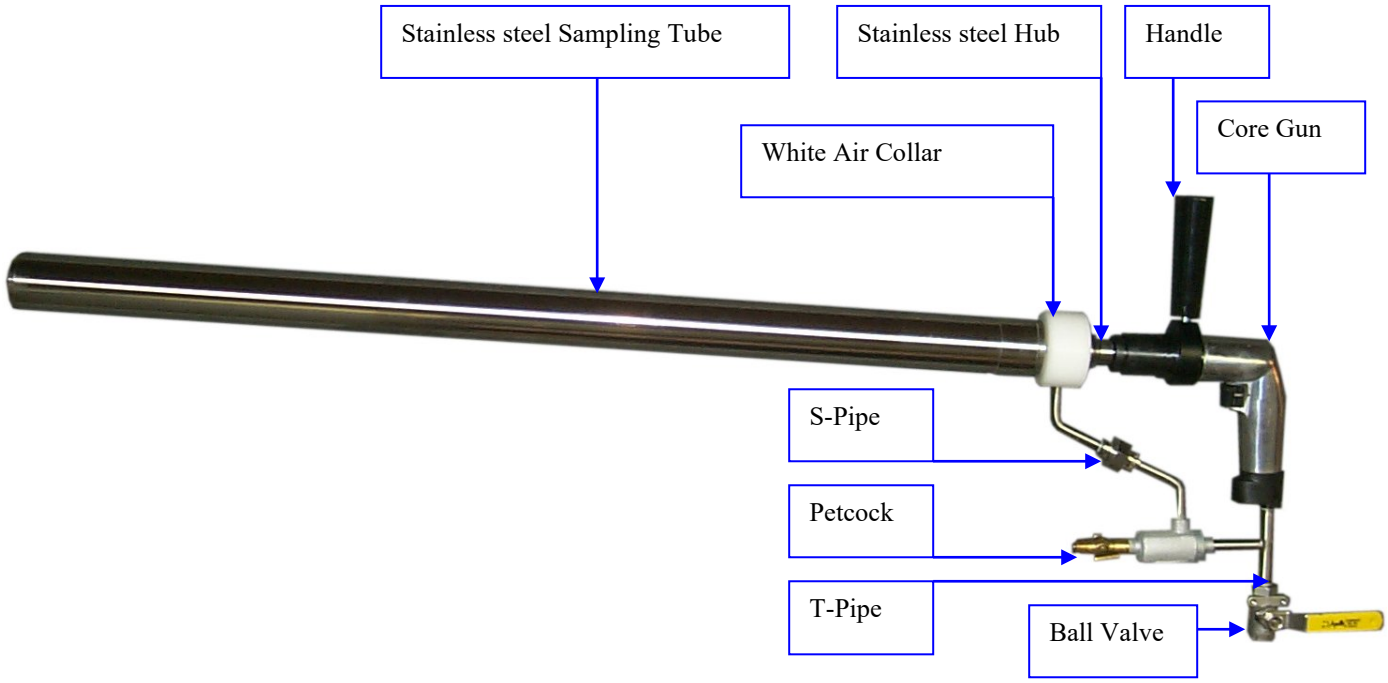
All components not manufactured but sold by MEFE are covered under the original manufacturer's warranty. All warranties apply provided the equipment is operated under normal conditions specified by the procedures and maintenance guidelines illustrated in the equipment manual. MEFE shall not be liable for any other damages, direct, indirect or consequential, and specifically any recall products and associated costs Under no circumstances will MEFE be liable for product loss. Failure to follow procedures and maintenance guidelines as specified will void all product warranties. Use of any replacement parts on this equipment that are not approved by MEFE as authorized replacement parts shall void all warranties.

- *Use of any parts on this equipment that are not approved by Seller as authorized replacement parts shall void all warranties and guarantees.*

GETTING TO KNOW THE CORE SAMPLER

These are just basic descriptions that appear on our Core Samplers.

Figure 1: Core Sampler features



OPERATION AND MECHANICAL OVERVIEW

The Core Sampler you have selected is very simple to use and operate. The purpose of a Core Sampler is typically to obtain a sample of a product for test analysis. A MEFE CORE SAMPLER does it by having the operator applied ample downward force while depressing the trigger of the gun. The revolving core tube will burrow into the product attaining a sample.

SECTION 2 - USING THE CORE SAMPLER
INSTALLATION AND OPERATING INSTRUCTIONS

> ➢ ***IMPORTANT:*** *Check for damage immediately upon receipt of your Core Sampler. Report any damage immediately so that an appropriate claim can be filed with the freight carrier.*

> ➢ ***IMPORTANT:*** *Do not drop*

Inspection before Installation

Upon arrival, inspect the following items on the machine.

1. Stainless Steel Sampling Tube
2. Sampling Gun
3. Stainless Steel Hub
4. White Collar
5. S-Pipe And T-Pipe
6. Ball Valve

Inspection Before Startup

Before the start of each shift, check the following:

- The Core Sampler properly maintained.
- The Core Sampler parts are secure.
- The connections are secure.
- No damage to the unit.
- Sampling tubes sample end is sharp.
- The area is free of any foreign material.

Setup

Before start up of the machine ensure that all personnel have been trained in safe operation of this unit. Also inspect for proper function of the Core Sampler.

Start-Up Test

Before beginning operation, check the switches and ensure the Core Sampler functions properly and that it stops when you release the switch.

OPERATION INSTRUCTIONS

- *The customer is responsible to instruct all operators and personnel on the safe operation of this equipment. All guarding and safety equipment needs to be reviewed and supplied by the customer as well.*
- *Inspect the Core Sampler before every shift for wear or fatigue in the equipment.*

➢ *Dropping causes excessive stress on the gun, which will damage the unit and shorten its life or render it useless.*

Operations

1. Attach unit to air line at about 90 PSI. To prevent damage to the air motor, be sure supply is properly filtered and free of moisture.
2. Treat the air drill as you would any air-operated tool. Keep it free of excessive moisture. Be sure it is properly lubricated and internally oiled 10-20 drops daily.
3. The Core Sampler is rated at 24 CFM @ zero load.

Take a sample

1. Open the stainless steel shut-off valve at the base of the drill. Depress the drill trigger to rotate tube.
2. Place sharpened tip of sampling tube against the meat in the combo.
3. Press down firmly while rotating the 2" DIA. sampling tube. Do not let tube "find" its own path in meat; this may produce a fatter sample.
    - Note: When taking a sample, the 1/4" S.S. ball valve and the brass petcock must be open. You must also depress the trigger to rotate the tube while sampling.

Discharge the sample

1. Place the end of the 2" diameter tube in the sample collection bag or pan.
2. Close the brass valve so air is diverted through the S-pipe and expels the sample into the collection pans. The air valve at the base of the drill must be open at the same time.
    - Note: When discharging the sample, the 1/4" S.S. ball valve must be open and the brass petcock must be closed. It is not necessary to press the trigger to rotate the tube during this cycle
3. All parts coming in contact with the food are constructed of Type 304 stainless steel or UHMW Polyethylene.
4. The sampler can be easily disassembled, and all parts of the unit, except the air drill, can be immersed for cleaning after disassembly.
5. The knife-edge of the core tube must be kept sharp to facilitate proper sampling. Depending on usage, this may require weekly or daily sharpening. CAUTION: Use extra care when working with the sharp tube. Since lean cuts harder than fat, a more accurate core will be taken if tube is always sharp.
6. Before performing any maintenance or installing or removing tube make sure that the air is disconnected from the core sampler.

SECTION 3 – CORE SAMPLER MAINTENANCE

> ➢ *Important: Removing and replacing parts needs to be done by trained personnel. Failure to do so can damage the equipment, which may be considered as customer error. Styles of Core Samplers may vary considerably from the photos. The method of maintenance is still consistent. Vendor documentation included on the CD or in print should provide any additional information.*

MAINTENANCE PROCEDURES

The following section covers routine maintenance and repair procedures required to perform when setting up, adjusting or troubleshooting. The other sections of this manual refer to this section for thorough explanations of each component assembly.

> CAUTION *Before doing any maintenance work on components, always follow in-plant lockout/tag-out procedures.*

T-Pipe Installation

Figure 2: T-Pipe installation detail

Install thread sealant on all pipe threads. Then screw the T-Pipe into the lower end of the Core Gun. Tighten securely keeping the center pipe pointing to the trigger.

Ball Valve Installation

Figure 3: Ball Valve installation detail

Screw on the Ball Valve onto the T-Pipe using thread sealant. Tighten securely keeping the on side of the valve handle in its final position pointing to the trigger.

Vacuum Transducer Installation

Figure 4: Vacuum Transducer installation detail

Screw on Vacuum Transducer onto the T-Pipe using thread sealant. Tighten securely keeping the center port final position facing the trigger.

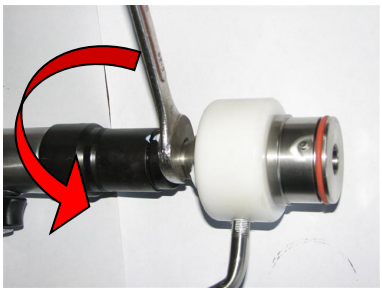
S-Pipe Installation & White Air Collar

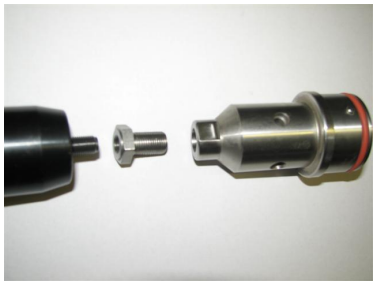
Figure 5: S-Pipe installation detail & White Air Collar

Install thread sealant to threads. Install one male end into Vacuum Transducer. Install other female end into the White Collar. Apply food grade grease to o-rings inside White Collar before siding over the SS Hub.

SS Hub Installation and SS Hub Reducer

Figure 6: SS Hub and SS Hub Reducer detail

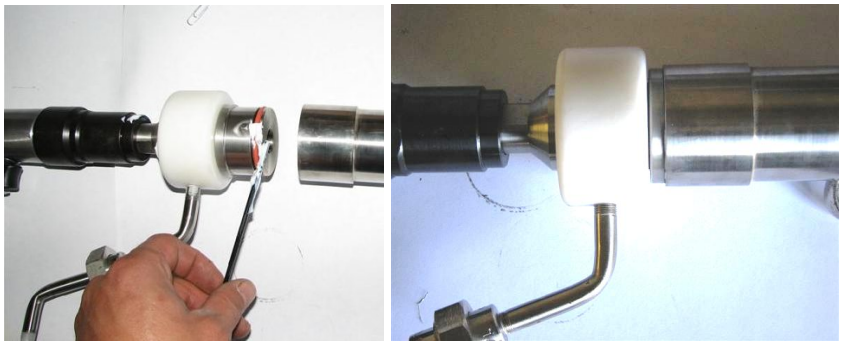




Insert SS Hub Reducer into SS Hub. Screw onto drill shaft by turning clockwise. **Tap the end of the wrench with a hammer clockwise to tighten and counter clockwise to loosen.**

SS Core Tube Installation

Figure 7: SS Core Tube installation detail



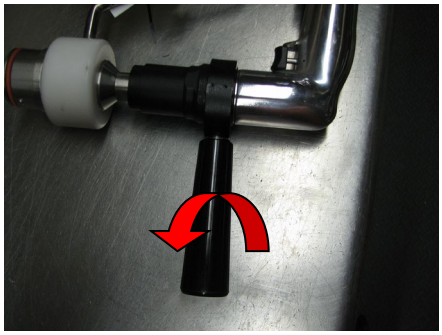
Apply food grade grease to o-ring. Insert the Core Tube over the SS Hub. Clockwise to tighten and counter clockwise to loosen.

Beginning & End Installation

Figure 8: Beginning & end detail

Parts photo (Ball valve replaces brass petcock) Assembled photo.

Handle Positioning



Handle must be loosened first before relocating position. This will avoid loosening the barrel from the drill allowing air to be redirected causing the drill to act as if inoperable. Clockwise to tighten and counter clockwise to loosen.

Point of Lubrication	Lubricant	Interval
White Collar	Lubriplate FML *2 or equivalent food grade grease	Daily
Point of Lubrication	**Lubricant**	**Interval**
SS Hub	Lubriplate FML *2 or equivalent food grade grease	Daily
Point of Lubrication	**Lubricant**	**Interval**
Core Gun	Lubriplate FMO-85 or equivalent food grade oil	Daily

Figure 9: Lubrication guidelines

Grease Areas

Apply grease to o-rings

Apply oil using a tub that reaches though the hose fitting, ball valve, T-Pipe till it reaches directly into the Core Gun.

At the end of the day, drip 10 to 20 drops of oil into air inlet of the gun. Connect air line and run gun for 1 to 2 seconds to distribute the oil inside the air motor. Disconnect air line and hang the gun up with air inlet up and air exhaust down. This will help prevent rusting of the inside of the air gun between uses.

PREVENTATIVE MAINTENANCE

The Preventative Maintenance section provides references to corresponding topics.

> ➢ *MEFE strongly recommends following these procedures. Keep a chart for operators and maintenance personnel. This chart should list all maintenance steps and their intervals and should require a signature next to each task upon completion. This ensures that all Preventative Maintenance procedures have been completed at their required intervals.*

Daily

- ☐ Keep Core Tube sharp.
- ☐ Check o-rigs for damage.
- ☐ Lubricate and oil.
- ☐ Check connections
- ☐ Make sure air supply is at 90 PSI and 12 CFM

Weekly

- ☐ Inspect for damage, replace if necessary.
- ☐ Inspect for excessive wear, replace if necessary

Yearly

- ☐ Inspect for damage, replace if necessary.
- ☐ Inspect for excessive wear, replace if necessary
- ☐ Replace Core Tube.

Reduce Down Time

- Purchase a Coalescing Filter to install in the air line ahead of Core Gun, with a gauge and regulator.
  - Example: Regulator Filter and Gauge **(part # 05-006-0008)**
- Purchase an Inline Air Heater if gun is having freezing problem:
  - Example: "Kentmaster" Air Heater **(part # 06100)**
- Purchase a Tool Balancer to relive operator fatigue when tool is in use:
  - Example: CP Tool Balancer 4.0-6.0kg 8.8-13.2lb **(part # 06937)**
  - Example: Tool Balancer Hanger Bracket required **(part # CS06942 and 06934)**
- Treat the air drill as you would any air-operated tool. Keep it free of excessive moisture. Be sure it is properly lubricated.

SECTION 4 - CLEANING PROCEDURE

For your safety, do not work around the dumper with the cradle in the raised position. When working around the dumper proper safety attire should be worn.

Remove guarding, bolts or pins to facilitate cleaning or maintenance procedures. Lock out/tag out the equipment whenever you intend to remove guarding or other safety features for maintenance. Replace all safety equipment upon completion.

CLEANING THE CORE SAMPLER

- *The following cleaning procedures are general and are to be used as guidelines only in developing your sanitation and cleaning procedures. You will need to tailor these general guidelines to comply with your company's sanitation policies, practices and procedures. Furthermore, it is recommended that daily and/or periodic bacteria/pathogen testing be done to ensure that any cleaning procedures are achieving desired results. If needed, adjustments should be made to your cleaning process to satisfy your requirements*

Apply lockout to electrical panel. Lockout must be performed whenever the possibility of the unexpected start up of the equipment exposes the technician to the danger.

Once the Core Sampler has been locked out, verify that power to the Core Sampler has been removed by depressing the trigger. If the Core Sampler starts running, notify your supervisor immediately and do not proceed with maintenance or cleaning until the issue has been resolved.

All parts coming in contact with the food are constructed of Type 304 stainless steel or UHMW Polyethylene.

The sampler can be easily disassembled, and all parts of the unit, except the air drill, can be immersed for cleaning after disassembly.

Critical Areas That Need Scrubbing

- Core Tube.
- Core Gun.
- Any area where product comes in contact with the Core Sampler.
- Any areas where rust or grease are present.

Reset Core Sampler

Fallow all lockout/tag-out procedures before any cleaning

SECION 5 - TROUBLESHOOTING

TROUBLESHOOTING DIAGNOSTICS

These are common problems that may occur while operating the Core Sampler and suggestions for resolving them. The possible causes are listed in the order of probability of occurrence. To perform the maintenance operations required.

PROBLEM: Can not get a sample	
POSSIBLE SOLUTION:	
A	Fallow section 2 / Operation Instructions in manual
B	Check air connections

PROBLEM: Can not get a sample	
POSSIBLE SOLUTION:	
A	Check Brass petcock should be open
B	Check all connections should be free from air leaks

PROBLEM: Can not get a sample	
POSSIBLE SOLUTION:	
A	Check all o-rings for any damage or wear, replace is necessary
B	Check for proper air pressure

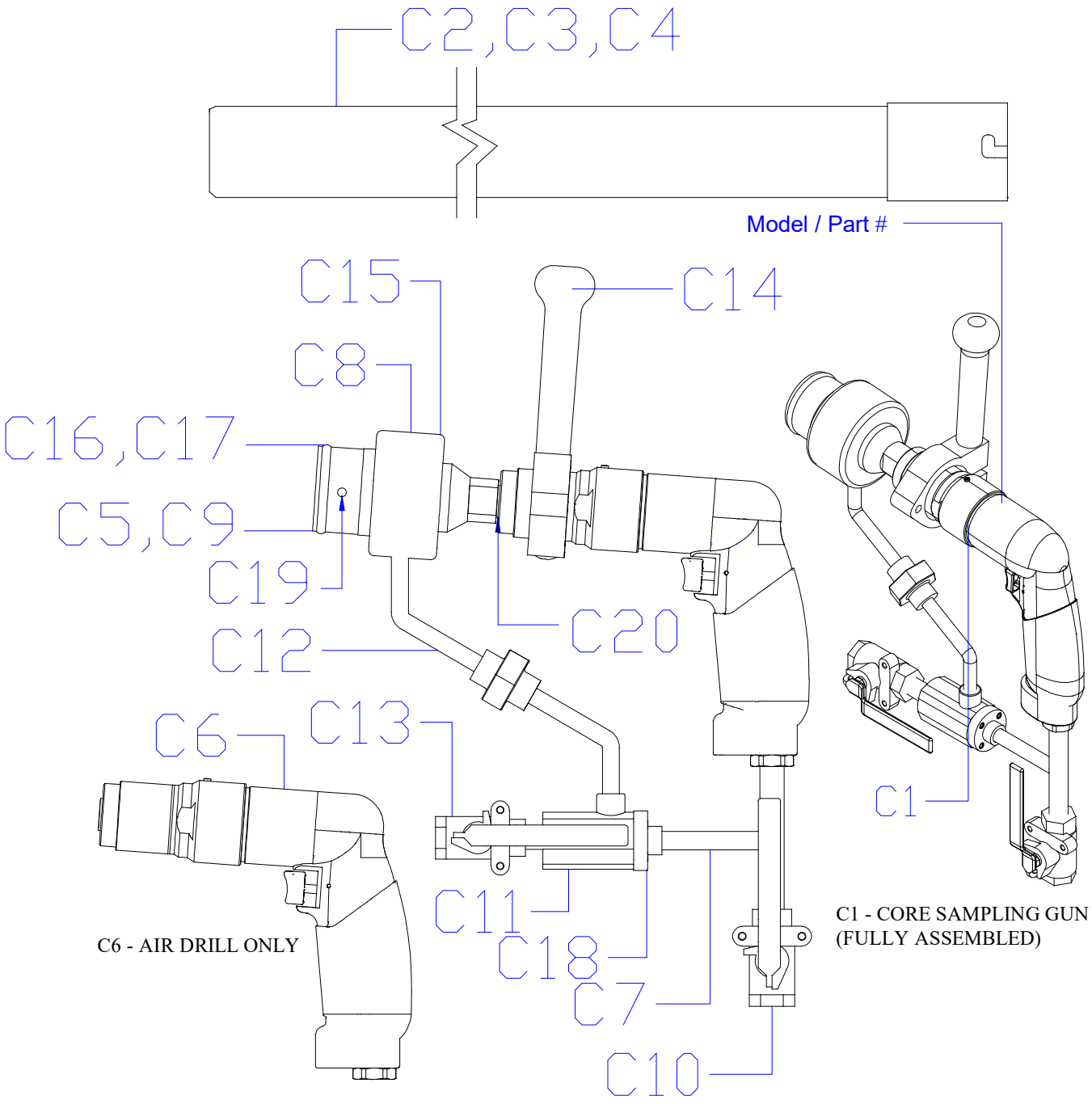
PROBLEM: Can not get a sample	
POSSIBLE SOLUTION:	
A	Check for voids in the product
B	Too many voids it can not form a vacuum

PROBLEM: Can not remove a sample	
POSSIBLE SOLUTION:	
A	Check Brass petcock should be closed
B	Check all o-rings for any damage or wear, replace is necessary
C	Check all connections should be free from air leaks
D	Fallow section 2 / Operation Instructions in manual
E	Check for proper air pressure

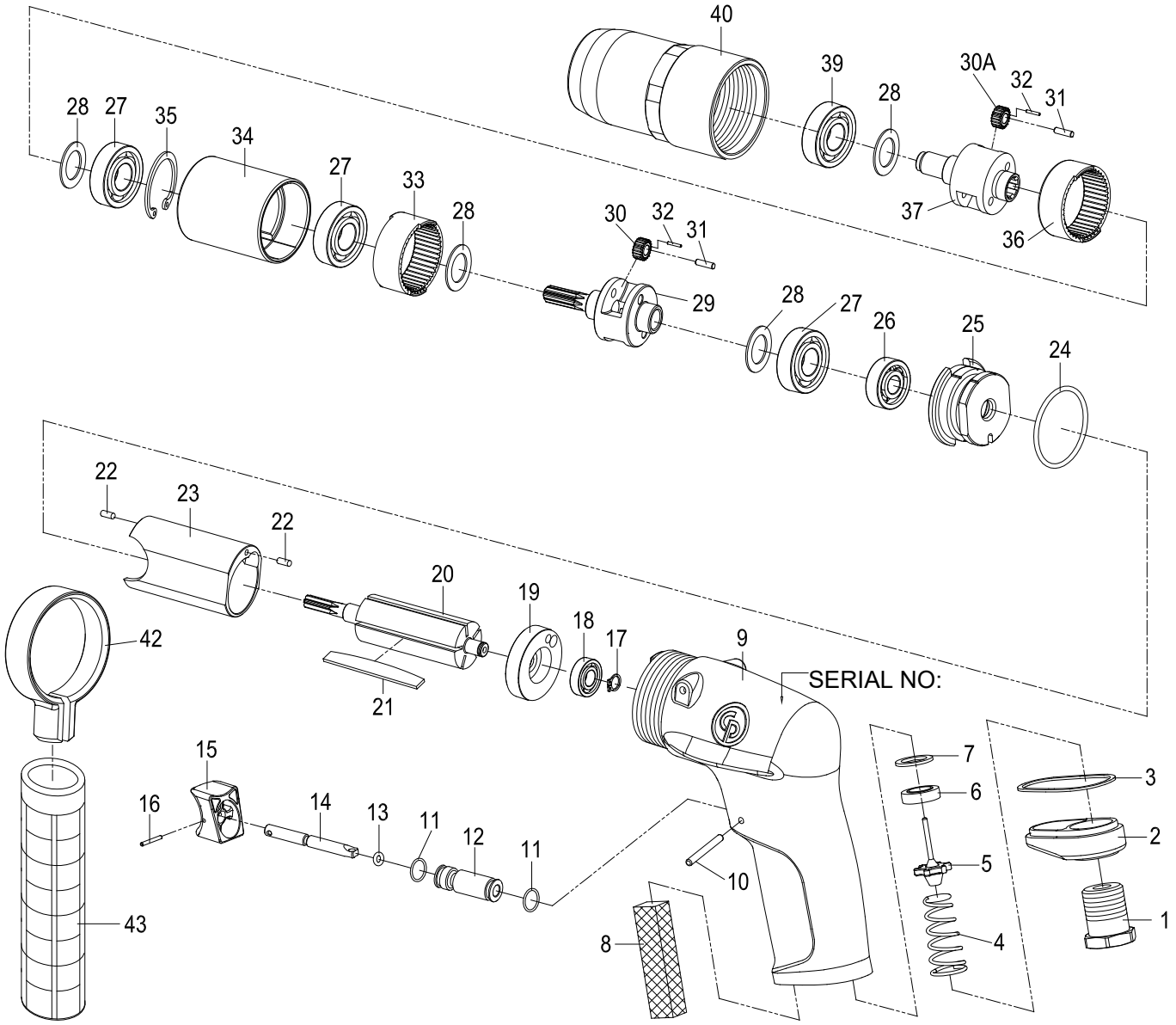
PROBLEM: Gun not running correctly	
POSSIBLE SOLUTION:	
A	Check for water in lines, remove all moisture in air line
B	Check all o-rings for any damage or wear, replace is necessary
C	Check for proper maintenance, perform maintenance repairs
D	Check for proper air pressure
E	Check for proper vacuum or vacuum blockage, replace or clean parts

SECTION 6 – BILL OF MATERIALS

Parts Drawing



Drill Drawing



Part No and Order Form

MODEL: CAT 3301 Core Sampler			MODEL: CAT 3301 5/10/2013
PARTS WITHOUT A LISTED PART NUMBER ARE NOT SOLD SEPARATELY			
NO	**PART #**	**DESCRIPTION**	**Qty**
C1	**06999**	CORE SAMPLER COMPLETE W/O TUBE	1
C2	**06070**	TUBE-SAMPLE-36" 2" DIAM.	1
C3	**06080**	TUBE-SAMPLE-42" 2" DIAM.	1
C3-1	**06080-32**	TUBE-SAMPLE-32" 2" DIAM.	1
C3-2	**06080-18**	TUBE-SAMPLE-18" 2" DIAM.	1
C3-3	**06080-12**	TUBE-SAMPLE-12" 2" DIAM.	1
C3-4	**06080-9**	SAMPLER TUBE-9" 2" DIAM.	1
C4	**06083**	TUBE-SAMPLE-36 3" DIAM.	1
C5	**06023**	HUB-SS 3" DIAM. (WITH O-RINGS)	1
C6	**06999-P**	AIR DRILL ONLY -CP(No components/ Drill only)	1
C7	**CS06941**	T-PIPE CP	1
C8	**06010**	COLLAR-WHITE (WITH O-RINGS)	1
C9	**06020**	HUB-SS 2" DIAM. (WITH O-RINGS)	1
C10	**06030**	VALVE-BALL 1/4	1
C11	**06040**	VACUUM TRANSDUCER	1
C12	**06050**	PIPE-S W/S.S. UNION	1
C13	**06030**	VALVE-BALL 1/4	1
C15	**06015**	O-RING FOR WHITE COLLAR (2 REQ'D)	2
C16	**06025**	O-RING FOR S.S. HUB 2" DIAM.	1
C17	**06026**	O-RING FOR S.S. HUB 3" DIAM.	1
C18	**06045**	CAPS-END FOR VACUUM TRANSDUCER	1
C19	**06021**	DOWEL PIN FOR SAMPLER HUB	1
C20	**CS06940**	HUB ADAPTOR	1
	05-006-0101	FILTER/REG./LUB w/LOCKOUT 3/8 NPT	
	06937	TOOL BALANCER 4.0-6.0kg 8.8-13.2lb CP	
	CS06942	BALANCER HANGER BRACKET (Part# 06934 required also)	
	06100	AIR HEATER Kentmaster	
NO	**PART #**	**DESCRIPTION**	**Qty**
A	**06912**	**INLET KIT**	1
1		AIR INLET	1
2		DEFLECTOR	1
3		GASKET	1
B	**06913**	**THROTTLE KIT**	1
4		SPRING	1
5		VALVE	1
6		VALVE SEAT	1
7		SPACER	1
C	**06914**	**TRIGGER KIT**	1
10		DOWEL PIN	1
11		O-RING	2
12		VALVE BUSH	1
13		O-RING	1
14		VALVE STEM	1
15		TRIGGER	1
16		SPRING PIN	1
D	**06915**	**ROTOR BLADE KIT (set of 5 pcs)**	1
21		ROTOR BLADE	5
E	**06916**	**REAR PLATE KIT**	1
17		RETAINER	1
18		BALL BEARING	1
19		REAR PLATE	1
22		PIN	2

NO	PART #	DESCRIPTION	Qty
F	**06917**	**FRONT PLATE KIT**	1
22		PIN	2
24		O-RING	1
25		FRONT PLATE	1
26		BALL BEARING	1
G	**06920**	**NEEDLE KIT**	1
32		NEEDLE	18
31		PIN	2
H	**06918**	**GEARBOX ASSY (500 RPM)**	1
29		GEAR CAGE	1
I	**06919**	**PINION GEAR KIT 500RPM**	1
30		PINION GEAR	2
L	**06921**	**GEARBOX ASSY Front**	1
37		GEAR CAGE	1
M	**06922**	**PINION GEAR KIT Front**	1
30A		PINION GEAR	1
G	**06920**	NEEDLE KIT	1
N	**06925**	**BEARING KIT Gear box**	1
27		BALL BEARING	3
39		BALL BEARING	1
O	**06926**	**BEARING KIT motor**	1
18		BALL BEARING	1
26		BALL BEARING	1
P	**06923**	**TUNE UP KIT**	1
3		GASKET	1
6		VALVE SEAT	1
7		SPACER	1
8		SILENCER	1
11		O-RING	2
13		O-RING	1
17		RETAINER	1
21	**06915**	ROTOR BLADE KIT (set of 5 pcs)	1
24		O-RING	1
Q	**06924**	**SMALL PARTS KIT**	1
40-1		CHUCK SPACER (In kit but not used)	1
10		DOWEL PIN	1
16		SPRING PIN	1
22		PIN	2
28		WASHER	4
		PARTS	
9	**06927**	HOUSING	1
23	**06928**	CYLINDER	1
20	**06929**	ROTOR 500RPM	1
33	**06936**	GEARED RING CAGE	1
34	**06930**	GEARED RING	1
36	**06931**	RING GEAR CAGE	1
35	**06932**	C-RING	1
40	**06933**	GEARED RING CAGE LOW SPEED	1
42	**06934**	HANDLE FIXTURE	1
43	**06935**	HANDLE	1

PARTS WITHOUT A LISTED PART NUMBER ARE NOT SOLD SEPARATELY

Address and Site

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