Electric Eel®

MODEL CT

Drain Cleaning Machine

Operator's Manual

Purchase Date: _____

Serial Number: _____

! ! DANGER ! !

FOR YOUR SAFETY

Before you operate or maintenance this equipment, READ this manual carefully and completely!

DESCRIPTION/SPECIFICATIONS

NOTE: Always refer to Operating and Safety Instructions before Operating any drain and sewer cleaning equipment.

DESCRIPTION

The ELECTRIC EEL Model CT Drain Cleaning Machine has an excellent reputation for handling Small Drain Problems. This machine is specifically designed for cleaning 3/4 to 2 ½ inch diameter lines, using cable diameters of 1/4, 5/16, or 3/8 inches, up to 25 to 35 feet long.

- **Unique variable speed motor feature** gives operator maximum cable control and exceptional cleaning power from 75 to 350 RPM with constant torque.
- 1/7 H.P., 90 Volt DC motor for quiet, powerful and dependable operation.
- Two-way auto cable feed keeps hands off rotating cable, advances and retrieves cable with push of a lever.
- Heavy-duty housing protects motor and internal wiring.
- Cable guide hose eliminates cable whipping and helps keep work area clean.
- Stainless steel cable drum will not rust and resists denting.
- Well balanced, heavy-duty steel tubular frame allows for two position operation.
- Build-in GFCI (Ground Fault Circuit Interrupter) on 20 ft. line cord protects operator from electrical shock.
- Air operated foot switch and cord assembly for ease of operation.

MODEL CT SPECIFICATIONS/ STANDARD EQUIPMENT

Motor:

Type.....Belt Driven
Rating.....90V DC
Toggle Switch.....Forward/Reverse
Operating Speed.....75 to 350 RPM
Drain Line Capacity.....3/4" thru 2 ½"
Weight with 25' – 5/16-25IC Cable and Guide Hose Autofeed Assembly.....36 lbs.

Cables:

- Constructed of certified music wire. Inner core, (IC) cables have a **genuine** galvanized aircraft wire inner core for corrosion resistance and long lasting operation.
- Expanded end cables, (E), are available to open kitchen and bath drains or go down vents in 1/4", 5/16", and 3/8" diameters.
- Expanded end inner core cables, (EIC), are specifically designed to break through tough clogs while resisting kinks, and is available in 5/16" and 3/8" diameters.
- Special tools can be easily attached to 5/16" and 3/8" inner core cables, (IC), using a DH-4 swivel fitting, (Drop Head), to enable the cleaning tools to follow the contour of the drain.

Safety Instructions

The following safety rules for operating ELECTRIC EEL the Model C Sewer and Drain Cleaning equipment **MUST** be read and followed carefully before operating this machine.

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To prevent serious injuries including:

- Shock, electrocution or burns due to improper grounding.
- Serious injuries to body, limbs or hands and feet due to cables that twist, kink and break.
- Eye injuries caused by loose cable, thrown debris or splashed water.

READ SAFETY INFORMATION THOROUGHLY!

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TO PREVENT SERIOUS BODILY INJURY AND AVOID DANGER FROM ROTATING CABLES AND EQUIPMENT:

GENERAL SAFETY

1. **ALWAYS** wear **HEAVY** reinforced leather gloves and **SAFETY** glasses when operating this equipment.
2. Place this machine within 2 feet of inlet between drain opening and machine.
3. **NEVER** handle rotating cable or cable under tension.
4. **DO NOT WEAR** loose clothing or jewelry while operating this machine.

WARNING: This product can expose you to chemicals including lead, which is 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.

5. The Model CT Sewer and Drain Cleaning Machine should be **OPERATED BY ONE PERSON ONLY.** Additional personnel in the work area **MUST** observe all safety instructions.
6. Wear rubber soled **NON-SLIP SHOES, HEAVY LEATHER** gloves, and **EYE Protection.**
7. **ALWAYS AVOID** direct contact of skin, facial area and especially the EYES with drain water. Chemical compounds used in drains can result in serious burns and other injuries.
8. **REPLACE** fittings, cables, and any rotating parts as soon as they become visibly worn. **REPLACE** any cables which become fractured, bent, kinked, or are otherwise damaged.
9. **NEVER** attempt to service equipment beyond the recommendations of the operating instructions. All other servicing should be referred to qualified Electric Eel service personnel.
10. To maintain safe operation, **USE ONLY** identical replacement parts and cables from Electric Eel.
11. **ALWAYS KEEP CLEAR** of rotating shafts, pulleys, belts, or other rotating parts.
12. **DO NOT** continue to operate machine when cleaning tool becomes stuck in obstruction. **EXCESS TORQUE ON A CABLE COULD CAUSE IT TO FRACTURE. RELEASE CABLE TENSION** to prevent unnecessary build-up of torque on the cable. Keep machine under control at all times. (Refer to operating instructions to free cleaning tool).
13. **NEVER HANDLE ANY CABLE UNDER TENSION.* ALWAYS** relieve tension on the cable by reverse rotation or by turning the switch off and unplugging the cord.
14. **NEVER** force a tool and cable into pipeline blockage. This may overload the cable or tool and cause it to fracture.
15. Use CORRECT TOOL for the job or application. Check the tool chart and use the proper tool for the size of the line being cleaned.
16. To maintain safe and efficient operation CLEAN THOROUGHLY all cables and tools with water after use. Acids in the drain and sewer lines can attack and deteriorate the metal of the cables and tools. Deterioration can cause premature fracture or breakage in tools or cable.

***Relieve all tension build-up before attempting to handle cable.**

⚠ DANGER ⚠

TO AVOID SERIOUS BODILY INJURY AND TO AVOID DANGER FROM ELECTRICAL SHOCK:

GENERAL SAFETY – ELECTRICAL

1. **ALWAYS** use a ground fault interrupted circuit with a properly grounded outlet for all electrical cords, connections, and parts as installed by factory. **DO NOT** make any alterations.
2. **NEVER** use machine while standing in damp or wet conditions.
3. **NEVER** expose machine to rain.
4. **THE USER SHOULD NEVER ATTEMPT TO SERVICE THE ELECTRICAL COMPONENTS.** For safety reasons all electrical replacement components should be installed by a qualified electrician.
5. **BEFORE MAKING ADJUSTMENTS OR CHANGES TO POWER UNITS, DISCONNECT FROM ELECTRICAL SOURCE.**

THE GROUND FAULT CIRCUIT INTERRUPTER

This machine is equipped with a **Ground Fault Circuit Interrupter** which is designed to prevent a serious electrical shock. This device should be **TESTED** on the job site **BEFORE** putting the machine into operation, as follows:

1. To ensure protection against electrical shock, test the device before each use. When test button is pushed in, the indicator light should go OFF. Reactivate the device by pushing the reset button in. If the indicator light goes ON, the device is ready for use. **DO NOT** use the device, if the indicator light does not go ON WHEN RESET or if the indicator light REMAINS ON, when the TEST BUTTON IS PUSHED IN.
2. This device **DOES NOT** guard against electric shock resulting from defects or faults in any wiring supplying power to this device, or from contact with both circuit conductors.
3. **DO NOT** use with an extension cord on the plug end.
4. If an extension cord is used, the power source **MUST** be equipped with a ground fault interrupter circuit and properly grounded.
5. **ONLY** use 14 ga. or larger, three-wire, extension cord, (with ground wire), with three prong grounding plugs and three pole receptacles.
6. When using extension cord outdoors, **ONLY** use those intended for outdoor use. (Indicated on cord by suffix, "W-A", after cord type).

ASSEMBLY INSTRUCTIONS

INSTALL CABLE INTO DRUM

CAUTION: UNPLUG AND DISCONNECT DRAIN CLEANER FROM POWER SOURCE

1. Use a vise or pair of pliers to make a bend in the tail end of the cable. This bend should be approximately 30 degrees, and located about 1" from the tail end of the cable.
2. Turn Drain Cleaner chuck counterclockwise to open.
3. Insert tail end of cable through chuck jaws or feeder and into drum. Use short (10" to 12" at a time), thrusts to feed remainder of the cable into drum.
4. Turn chuck body clockwise to close chuck jaws securing the cable in the drum if so equipped.
5. If cable feeder equipped, install cable guide hose to front of feeder.

Operating Instructions

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OPERATOR MUST BE THOROUGHLY FAMILIAR WITH ALL SAFETY INSTRUCTIONS BEFORE OPERATING THIS EQUIPMENT

The Model CT Drain Cleaner is designed to clean drain pipes that are between 3/4" and 2-1/2" in diameter. A variety of accessory cables and heads are listed on the following pages of this manual. The following chart shows the recommended cable dimensions for cleaning the various size drains.

DRAIN SIZE	CABLE SIZE
3/4" – 1-1/4"	1/4 or 5/16"
1-1/2"	5/16 or 3/8"
2" – 2-1/2"	5/16 or 3/8"

DO NOT use a cable in a larger drain than recommended: damage to the cable, tool, or personal injury could result.

DRAIN CLEANER CHUCK

The Drain Cleaner is equipped with a KEYLESS type chuck. To operate chuck, grasp the outer body of the chuck with your hand and twist it counter-clockwise to OPEN: twist it clockwise to CLOSE.

CLEANING DRAIN LINE USING MACHINE WITHOUT AUTOFEED

1. Place the **FORWARD/REVERSE** switch in the **FORWARD** position.
2. Pull out enough cable by hand to insert into the drain opening and hand-feed the cable into the drain until it stops feeding easily.

NOTE! Power Unit must be completely stopped before moving FORWARD/REVERSE switch. REVERSE position is used only when removing cable from an obstruction.

3. Turn the machine on by depressing the foot pedal.
4. Continue hand-feeding the cable slowly until the drain is opened or blockage is encountered. Keep your cable hand close to the drain opening to keep control of the cable and help prevent cable flip-over.
5. Keep your other hand on the extended cable between CT and your cable hand to steady the exposed cable and maintain cable control.
6. When you reach the blockage, work the cable back and forth to clear the obstruction. At this point, progress depends on the type of tool being used and nature of the blockage. Advance cable slowly.
7. If cable/blade gets hung up in obstruction, release the foot pedal and let motor come to a complete stop before reversing.
8. Place **FORWARD/REVERSE** lever in **REVERSE** position.
9. Press foot pedal only until cable/blade is free of obstruction. Release foot pedal immediately.

NOTE! Only run machine in **REVERSE** if relieving cable from a blockage or retrieving the cable with the Autofeed.

10. As soon as cable/blade is free and motor has stopped, return **FORWARD/REVERSE** lever to **FORWARD** position.
11. Continue feeding cable by following Steps 4 through 9 until through obstruction.
12. To withdraw cable from line with machine running, leave **FORWARD/REVERSE** lever in **FORWARD** position and slowly pull cable from drain.
13. As excess cable is retrieved from line, hand-feed cable back into CT drum.
14. Turn machine **OFF** just prior to cable or tool emerging from drain opening. Retrieve by hand as cable or tool may contain debris and splash work area.

CLEANING DRAIN LINE USING AUTOFEED WITH GUIDE HOSE

1. Place **FORWARD/REVERSE** switch into **FORWARD** position. Keep autofeed close to drain opening, approximately 2" – 6".
2. Hand feed approximately one to two feet of cable into the drain opening.
3. Turn machine **ON** by depressing foot pedal and be sure entire cable is spinning before continuing.
4. Depress the autofeed's feed actuator lever and feed cable into drain.
5. Know how long your run of pipe is prior to cleaning. Running too much cable can damage your equipment and the drain.
6. Feed cable into drain until obstruction is encountered or cable begins to bind up.
7. If cable begins to bind up, release feed actuator lever and pull cable back slightly by hand. Refeed cable into blockage again. If advancing the cable with the autofeed is difficult, discontinue using it and advance the cable by hand until the line clears.
8. Once drain is open and flowing, continue feeding additional cable with autofeed to clean rest of drain.
9. To retrieve cable, stop machine completely.
10. Switch the **FOR/REV** switch to **REV.**
11. Turn machine **ON** and depress the feed actuator lever. It will automatically retrieve the cable from the drain
12. Turn machine **OFF** just prior to cable or tool emerging from drain opening. Retrieve by hand as cable or tool may contain debris and splash work area.
13. If your cable tool/retriever bulb has hooked onto a solid blockage such as a rag or ball or hair, it may be wise to pull the cable out of the drain by hand. Reversing the cable to retrieve it may cause the blockage to unscrew off the cable.
14. The adjustment on the autofeed is the round top adjustment screw under the feed actuator lever. Its purpose is to adjust the distance the feed actuator lever has to be depressed to engage the different size cables. Turn knob clockwise to accommodate the larger 3/8" cable and turn knob counter clockwise to accommodate the 5/16" and 1/4" cable. No adjustment is necessary direct from the factory.

STORAGE

The cable should always be thoroughly cleaned with fresh water and oiled prior to storing the Drain Cleaner.

CAUTION: UNPLUG AND DISCONNECT DRAIN CLEANER FROM POWER SOURCE.

1. Open the chuck and remove the entire cable from the drum.
2. Wash cable thoroughly and allow to dry.
3. Use an oily rag to coat cable with oil.
4. Reinstall the cable into the drum.

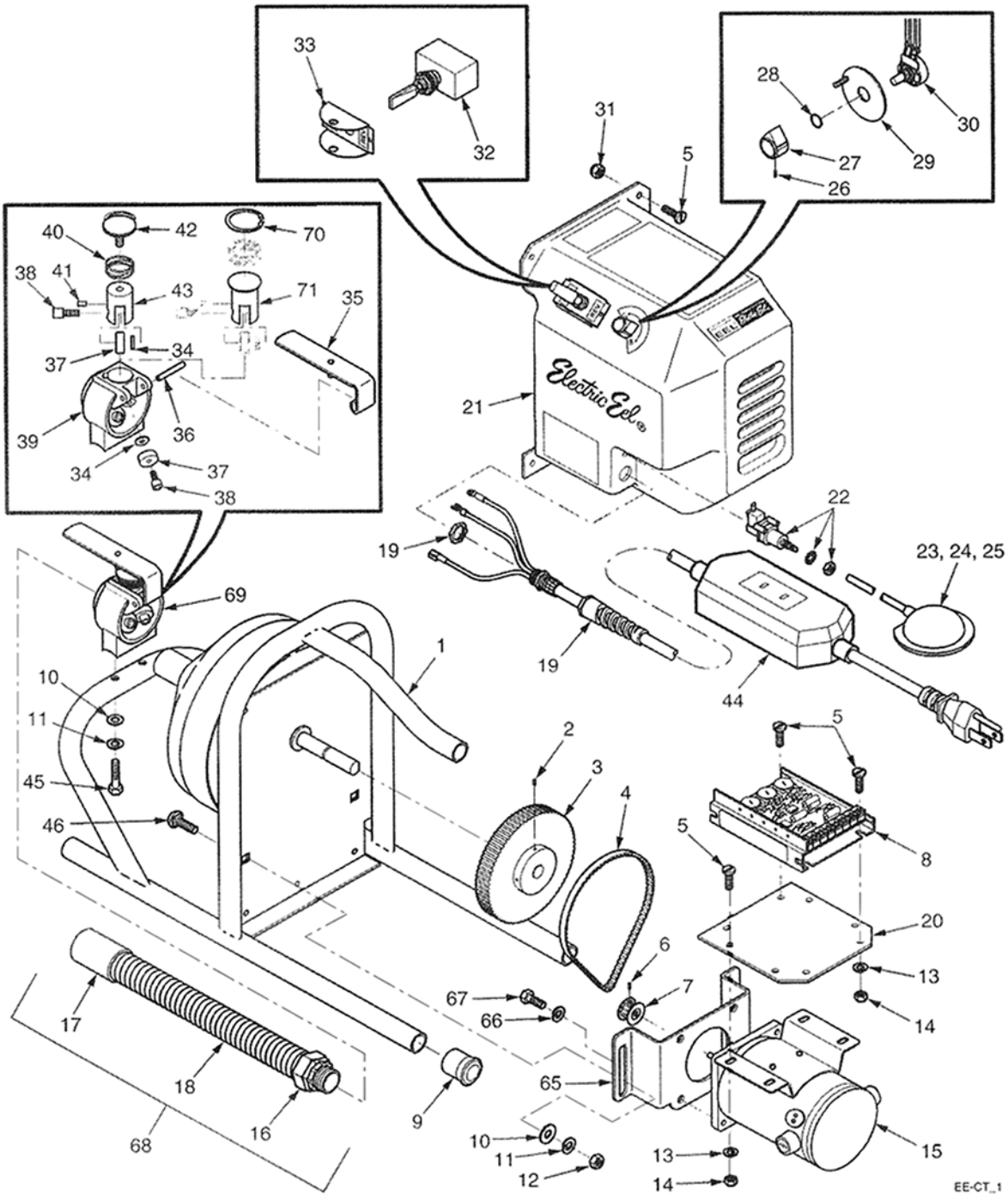
MAINTENANCE

KEEP TOOL CLEAN

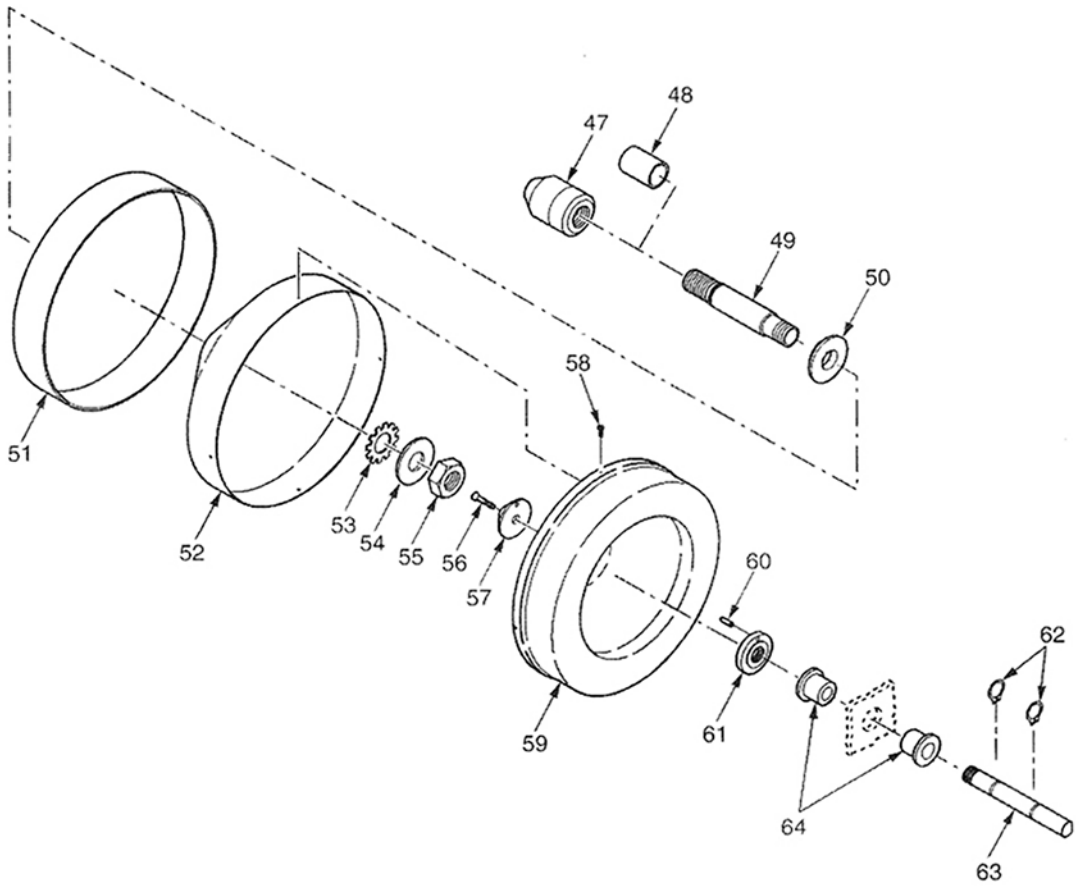
Periodically blow out all air passages with dry compressed air. All plastic parts should be cleaned with a soft damp cloth. NEVER use solvents to clean plastic parts. They could possible dissolve or otherwise damage the material.

CAUTION: Wear Safety Glasses while using compressed air.

MODEL CT DRAIN CLEANING MACHINE



MODEL CT DRAIN CLEANING MACHINE



MODEL CT DRAIN CLEANING MACHINE

ITEM NUMBER	PART NUMBER	DESCRIPTION	AMT
1	CT9	Frame	1
2	SS102812	10-24 x 1/2" Set Screw	1
3	CT4	Drive Pulley	1
4	CT5	Drive Belt	1
5	MS102412RH	10-24 x 1/2 Round Head Machine Screw	12
6	SS832316	8-32 x 3/16 Set Screw	1
7	CT3	Motor Pulley	1
8	CT2 (See Note 4)	Control Board	1
9	EE-14	Rubber Tips	5
10	WA516S	5/16 SAE Flatwasher	2
11	LW516	5/16 Lockwasher	4
12	NU51618FHP	5/16-18 Hex Nut	2
13	LW10	#10 Lockwasher	8
14	NU1024FHP	10-24 Hex Nut	8
15	CTM-15	Motor	1
16	CT-GTC	Guide Tube Coupler	1
17	CT-GTCAP	Guide Tube End Cap	1
18	CT-GT	Guide Tube	1
19	CT-PCSR	Power Cord Strain Relief	1
20	CT19	Control Board Mounting Plate	1
21	CT8	Motor Housing	1
22	TBS3218	Air Switch	1
23	FP-1	Foot Pedal	1
24	FP-2	Foot Pedal Hose	1
25	FP-1A (See Note 1)	Foot Pedal Assembly	1
26	SS83214	8-32 x 1/4 Set Screw	1
27	CT16	Speed Control Knob	1
28	ORO1008	O-Ring	1
29	CT6	Speed Control Switch Support	1
30	CT1	Speed Control Switch	1
31	NU1024NY	10-24 Hex Nut Nylock	4
32	CT-SWFR	Forward/Reverse Switch	1
33	SW-Guard	Switch Guard	1
34	C138290	Spacer	3
35	CT12	Feeder Handle	1
36	RP316114	3/16 x 1 1/4 Roll Pin	1
37	CT13SET	Feeder Bearing Set	1
38	CSSH142058	1/4-20 x 5/8 Socket Head Cap Screw	3
39	CT14	Feeder Body	1
40	CT7	Tension Spring	1
41	GP1438	Guide Pin	1
42	CT10 (See Note 5)	Tension Knob	1
43	CT18 (See Note 5)	Upper Bearing Insert	1
44	GFC1	Ground Fault Circuit Interruptr	1

MODEL CT DRAIN CLEANING MACHINE

ITEM NUMBER	PART NUMBER	DESCRIPTION	AMT
45	CSHH51618112	5/16-18 x 1 1/2 Hex Head Cap Screw	2
46	CB516181	5/16-18 x 1" Carriage Bolt	2
47	S-JC	Jacob Chuck	1
48	CT11CAP	Spindle Cap	1
49	CT11	Drum Spindle	1
50	S-6	Collar	1
51	S-EDB	Elastic Drum Band	1
52	S-1	Drum	1
53	LW34E	3/4 External Lockwasher	1
54	S-9	Washer	1
55	NU3416J	3/4 Hex Jam Nut	1
56	LHS103278SH	Left Hand Screw Socket Head	1
57	S-8	Lock Collar	1
58	MS63238SS	Stainless Steel Metal Screw	4
59	S-2	Drum Cover	1
60	RP1812	Roll Pin for S-7	1
61	S-7	Spacer	1
62	RR50	Retaining Ring	2
63	CT15	Drive Shaft	1
64	OBSF162412	Oilite Bushing	2
65	CT21	Motor Mount Bracket	1
66	LW14	1/4" Lockwasher	4
67	CSHH142034G8	1/4-20 x 3/4 Hex Head Cap Screw Grade 8	4
68	CT-GTA (See Note 2)	Guide Tube Assembly	1
69	CT14A (See Note 3)	Feeder Assy	1
70	RR87	Retaining Ring	1
71	CT20 (See Note 5)	Upper Bearing Insert	1

Note:

1 Consist of Items 23 and 24
2 Consist of Items 16, 17, and 18
3 Consist of Items 34 through 43
4 Consist of Item 30
5 Replace by Item 70 and 71 as of 2-15-10