



GORLITZ SEWER
& DRAIN **INC.**

GO 68HD • GO 68 • GO 62HD SERIES
GO 50 • GO 380 / 250 • GO 15 SERIES

OPERATING & MAINTENANCE INSTRUCTIONS

SEWER & DRAIN CLEANING MACHINES &
POWER CABLE FEEDERS



Thank you very much for choosing an Gorlitz product!

For future reference, please complete the owner's record below:

Serial Number/Lot Date Code:

Purchase Date:

Save the receipt, warranty, and this manual. It is important that you read the entire manual to become familiar with this product before you begin using it.

This drain cleaner is designed for certain applications only. Gorlitz Sewer & Drain Inc. is not responsible for issues arising from modification or improper use of this product such as an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed.

For technical questions, please contact via emailing to sales@gorlitz.com.



WARNING



DO NOT ATTEMPT TO OPERATE ANY DRAIN CLEANING MACHINE UNTIL YOU HAVE READ AND THOROUGHLY UNDERSTAND ALL INSTRUCTIONS, RULES, ETC. CONTAINED IN THIS MANUAL. FAILURE TO COMPLY CAN RESULT IN ACCIDENTS INVOLVING FIRE, ELECTRIC SHOCK, OR PERSONAL INJURY. MAINTAIN OWNERS MANUAL AND REVIEW FREQUENTLY FOR CONTINUING SAFE OPERATION.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



ELECTRIC SHOCK RESULTING IN DEATH CAN OCCUR IF YOU PLUG THIS MACHINE INTO AN IMPROPERLY WIRED OUTLET. IF THE GROUND WIRE IS ELECTRIFIED, YOU CAN BE ELECTROCUTED BY JUST TOUCHING THE MACHINE, EVEN WHEN THE POWER SWITCH IS OFF. A GROUND FAULT CIRCUIT INTERRUPTER WILL NOT PROTECT YOU IN THIS SITUATION. USE A UL LISTED TESTER TO DETERMINE IF THE OUTLET IS SAFE.



DO NOT OPERATE POWER TOOLS IN EXPLOSIVE ATMOSPHERES, SUCH AS IN THE PRESENCE OF FLAMMABLE LIQUIDS, GASES, OR DUST. POWER TOOLS CREATE SPARKS WHICH MAY IGNITE THE DUST OR FUMES.



ONLY WEAR LEATHER GLOVES. NEVER USE ANY OTHER TYPE OF GLOVE SUCH AS CLOTH, RUBBER, OR COATED GLOVES. NEVER GRASP A ROTATING CABLE WITH A RAG. THESE ITEMS COULD BECOME WRAPPED AROUND THE CABLE AND CAUSE SERIOUS INJURY.



ALWAYS WEAR SAFETY GLASSES AND RUBBER SOLED, NON-SLIP SHOES. USE OF THIS SAFETY EQUIPMENT MAY PREVENT SERIOUS INJURY.



DO NOT OVERSTRESS CABLES. OVERSTRESSING CABLES MAY CAUSE TWISTING, KINKING, OR BREAKING OF THE CABLE AND MAY RESULT IN SERIOUS INJURY.
















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.

GENERAL SAFETY INSTRUCTIONS

READ ALL SAFETY WARNINGS AND ALL INSTRUCTIONS. FAILURE TO FOLLOW ALL INSTRUCTIONS LISTED BELOW MAY RESULT IN ELECTRIC SHOCK, FIRE, AND/OR SERIOUS INJURY.



THIS IS THE SAFETY ALERT SYMBOL. IT IS USED TO ALERT YOU TO POTENTIAL PERSONAL INJURY HAZARDS. OBEY ALL SAFETY MESSAGES THAT FOLLOW THIS SYMBOL TO AVOID POSSIBLE INJURY OR DEATH.

-  **KNOW YOUR EQUIPMENT:** READ OWNERS MANUAL CAREFULLY, LEARN ITS APPLICATIONS AND LIMITATIONS.
-  **GUARD AGAINST ELECTRIC SHOCK:** THE DRILL MOTOR COMES WITH A TWO (2) PRONG, THIRTEEN (13) FOOT LONG CORD. IT IS INTENDED TO BE PLUGGED INTO AN OUTLET AWAY FROM THE WET ENVIRONMENT OF THE JOB SITE. THE MOTOR IS DOUBLE INSULATED FOR INCREASED OPERATOR PROTECTION.
-  **EXTENSION CORD:** DO NOT USE AN EXTENSION CORD OF ANY TYPE DUE TO THE POSSIBILITY OF THE CORD CONNECTIONS BEING EXPOSED TO WATER. NEVER YANK THE DRILL MOTOR CORD TO DISCONNECT FROM RECEPTACLE. KEEP CORD AWAY FROM SHARP EDGES, MOVING OBJECTS AND HIGH HEAT AREAS.
-  **AVOID ACCIDENTAL START:** BE SURE THE TRIGGER SWITCH IS NOT DEPRESSED BEFORE PLUGGING INTO ANY ELECTRICAL SOURCE.
-  **AVOID DANGEROUS ENVIRONMENT:** DO NOT EXPOSE OR OPERATE MACHINE IN RAIN OR USE IN DAMP OR WET LOCATIONS. DO NOT OPERATE IN PRESENCE OF FLAMMABLE LIQUIDS, GAS OR IN ANY TYPE OF EXPLOSIVE ATMOSPHERE.
-  **WEAR PROPER APPAREL:** FOR ADDED PROTECTION WHEN OPERATING MACHINE, USE RUBBER LATEX GLOVES WITH LEATHER GLOVES AND RUBBER BOOTS WITH NON SKID SOLES. ALWAYS USE EYE PROTECTION AS WELL AS A DUST MASK.
-  **KEEP UNAUTHORIZED PERSONS AWAY:** ALL SPECTATORS SHOULD BE KEPT AT A SAFE DISTANCE, ESPECIALLY CHILDREN.
-  **KEEP WORK AREA CLEAN AND WELL LIT:** KEEP AWAY ALL LOOSE OBJECTS LIKE TOOLS, WRENCHES, SHIRT SLEEVES, ETC. FROM ROTATING CABLE AND DRUM. ADEQUATE LIGHTING IS ESSENTIAL IN AVOIDING ACCIDENTS.
-  **DISCONNECT MACHINE:** UNPLUG MACHINE WHEN NOT IN USE, BEFORE SERVICING AND WHEN CHANGING CABLES.
-  **STAY ALERT:** WATCH WHAT YOU ARE DOING AND USE COMMON SENSE. DO NOT OPERATE MACHINE WHILE UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION.
-  **MAINTAIN DRAIN CLEANER WITH PROPER CARE:** KEEP ALL DRAIN CLEANING EQUIPMENT CLEAN FOR BEST AND SAFEST PERFORMANCE. FOLLOW INSTRUCTIONS FOR LUBRICATION, CHANGING ACCESSORIES AND MAINTENANCE. CHECK FOR MISALIGNMENTS OF ANY MOVING PARTS. IF DAMAGED, HAVE THE UNIT REPAIRED PRIOR TO USE. ACCIDENTS ARE CAUSED BY IMPROPERLY MAINTAINED TOOLS.
-  **DO NOT OVERLOAD THE DRAIN CLEANER:** THE GO 31 DRAIN CLEANER WILL ONLY DO THE JOB IT WAS DESIGNED FOR.
-  **MAINTAIN LABELS:** ALL LABELS HAVE IMPORTANT INFORMATION. IF WORN, UNREADABLE OR MISSING, CONTACT GORLITZ SEWER & DRAIN FOR REPLACEMENTS.

UNCRATING AND CHECKING CONTENTS

GORLITZ SEWER AND DRAIN CLEANING MACHINES ARE SHIPPED ASSEMBLED WITH CABLES INSTALLED IN REELS OR DRUMS. IN ORDER TO FACILITATE PACKING, CERTAIN ITEMS LIKE CHUCKS, BLADES, FEEDER, ETC., ARE NOT ATTACHED TO EQUIPMENT AND MUST BE ASSEMBLED WHEN RECEIVED BY PURCHASER. DUE TO SHIPMENT AND HANDLING BY VARIOUS FREIGHT COMPANIES, INSPECT ALL ITEMS AND CHECK FOR DAMAGED PARTS. INSPECT CABLES FOR KINKS, CHECK FOR ALIGNMENT OF MOVING PARTS, RETIGHTEN SET SCREWS ON DRIVE ARM, DRIVE PLATE, PULLEYS, BELT TENSIONER, ETC. AND ANY OTHER CONDITIONS THAT MAY AFFECT ITS OPERATION.



WHEN UNLOADING MACHINE FROM SHIPPING CARTON, DO NOT ALLOW MACHINE TO DROP, FALL OR SLAM HARD ON ITS BACK FRAME. THE SUDDEN IMPACT MAY BEND THE DRIVE SHAFT AND/OR DAMAGE THE BEARING OR PILLOW BLOCKS.

BROKEN THRUST BEARINGS AND FRACTURED RACES ARE A DIRECT RESULT OF THIS ABUSE, AND ARE NOT COVERED UNDER THE MANUFACTURER'S OR GORLITZ'S WARRANTY.

LUBRICATION

ALL GORLITZ SEWER AND DRAIN CLEANING MACHINES SHOULD BE GIVEN THE BEST OF CARE. IF KEPT CLEAN AND PROPERLY LUBRICATED, IT WILL PROVIDE MANY YEARS OF TROUBLE-FREE SERVICE. THE FOLLOWING INSTRUCTIONS SHOULD BE CAREFULLY OBSERVED AT ALL TIMES:

- SHAFT PILLOW BLOCKS, DRIVE ARM PILLOW BLOCKS AND BELT TENSIONER BEARING HAVE BEEN PACKED AT THE FACTORY WITH PROPER LUBRICANT AND REQUIRE NO ADDITIONAL LUBRICATION.
- OIL OR GREASE ALL POINTS WHERE FRICTION EXISTS BETWEEN TWO OR MORE MOVING PARTS.
- SPECIAL ATTENTION SHOULD BE GIVEN WHERE A SLIP FIT IS NECESSARY, ESPECIALLY BETWEEN DRUM OR REEL AND DRIVE SHAFT. REMOVE DRUM OR REEL PERIODICALLY IN ORDER TO APPLY GREASE TO THE INSIDE OF DRUM OR REEL CENTER TUBE AND DRIVE SHAFT.
- GREASE ALL REELS, WHEELS AND SHAFT SLEEVES EQUIPPED WITH ZERK FITTINGS.
- TO LUBRICATE MOTOR, CONSULT SEPARATE MOTOR MANUAL.
- TO MAINTAIN GEAR BOX, CHANGE OIL EVERY 100 HOURS OF OPERATION. USE A SYNTHETIC INDUSTRIAL GEAR LUBE ISO GRADE 460 OR EQUIVELANT.
- TO SERVICE HANDYGUN SEE SEPARATE CARE AND OPERATING INSTRUCTIONS



IF MACHINE IS NOT IN USE FOR SOME TIME, SPRAY CABLE WITH WD40 OR APPLY ANY GRADE MOTOR OIL TO PREVENT CABLE FROM OXIDATION.

MODEL COMPARISON CHART

MODEL	CABLE SIZE	MOTOR	CABLE RPM	PIPE DIAMETER	APPLICATION
GO 15 LITTLE ROOTER	1/4"X 35'	1/6 HP CAPACITOR	265	1 1/4" TO 2"	TUBS SINKS SHOWERS
GO 31 HANDYGUN*	5/16"X 25'	1.85 AMP	0-500	1 1/4" TO 2"	TUBS SINKS SHOWERS
GO 250 DRAIN CLEANING MACHINE	1/4"X 50'	1/4 HP CAPACITOR	235	1 1/4" TO 2"	TUBS SINKS SHOWERS
GO 380 DRAIN CLEANING MACHINE	3/8"X 65'	1/4 HP CAPACITOR	235	1 1/2" TO 3"	ROOFS VENTS SMALL DRAINS
GO 380A DRAIN CLEANING MACHINE	3/8"X 90'	1/4 HP CAPACITOR	235	1 1/2" TO 3"	ROOFS VENTS SMALL DRAINS
GO 380/250 DRAIN CLEANING MACHINE	3/8"X 65' 1/4"X 50'	1/4 HP CAPACITOR	235	1 1/4" TO 3"	SINKS, VENTS SHOWERS, TUBS SMALL DRAINS
GO 380A/250 DRAIN CLEANING MACHINE	3/8"X 90' 1/4"X 50'	1/4 HP CAPACITOR	235	1 1/4" TO 3"	SINKS, VENTS SHOWERS, TUBS SMALL DRAINS
GO 50 SERIES DRAIN CLEANING MACHINE	1/2"X 80'	1/3 HP CAPACITOR	190	2" TO 3"	VENTS SMALL DRAINS LIGHT ROOTS
GO 50A SERIES DRAIN CLEANING MACHINE	3/8"X 90'	1/3 HP CAPACITOR	190	1 1/2" TO 3"	VENTS SMALL DRAINS
GO 50B SERIES DRAIN CLEANING MACHINE	13/32"X 75'	1/3 HP CAPACITOR	190	1 1/2" TO 3"	VENTS SMALL DRAINS
GO 62HD SERIES COMBINATION SEWER & DRAIN CLEANING MACHINE	3/8"X 90' 1/2"X 80' 5/8"X 100'	1/3 HP CAPACITOR	165	1 1/2" TO 4"	VENTS GREASE DRAINS
GO 62A HD SERIES SEWER CLEANING MACHINE	5/8"X 100'	1/3 HP CAPACITOR	165	3" TO 4"	DRAINS GREASE MEDIUM ROOTS
GO 68 SERIES SEWER CLEANING MACHINE	11/16"X 150'	1/2 HP GEARED	160	3" TO 8"	DRAINS, ROOTS SAND, GREASE DIAPERS
GO 68HD SERIES SEWER CLEANING MACHINE	11/16"X 150'	3/4 HP CAPACITOR GEARED	175	3" TO 10"	DRAINS, ROOTS SAND, GREASE DIAPERS



THE MODEL COMPARISON CHART PICTURED ABOVE SHOULD BE ONLY USED AS A GUIDELINE. ITS SUGGESTED APPLICATION MAY VARY DEPENDING ON SITE OF LOCATION, AGE, BENDS, MATERIAL AND LENGTH OF DRAINAGE PIPE AND OPERATOR.

*** SEE SEPARATE MANUFACTURER'S OPERATING INSTRUCTIONS FOR MODEL GO 31 HANDYGUN.**

GENERAL OPERATING INSTRUCTIONS

(EXCEPT HANDYGUN MODEL GO31)

1. POSITION MACHINE AS CLOSE AS POSSIBLE TO CLEAN OUT. MAXIMUM 3 FEET DISTANCE BETWEEN MACHINE AND OPENING WORKED ON.
2. ATTACH YOUR CHOICE OF CUTTING TOOL.
3. BEFORE PLUGGING EXTENSION CORD INTO RECEPTACLE MAKE SURE ON/OFF SWITCH ON MACHINE IS IN OFF POSITION.

IF YOU ARE OPERATING ANY MACHINE WITH AN ELECTRIC FOOT SWITCH:

- PLUG FOOT SWITCH INTO MACHINE OUTLET.
- PUSH FEMALE END OF EXTENSION CORD INTO FOOT SWITCH.
- PLUG MALE END OF EXTENSION CORD INTO ELECTRICAL SOURCE.
- MOVE ON/OFF SWITCH ON MACHINE TO "ON" POSITION.
- STEP ON FOOT SWITCH AND MACHINE WILL START RUNNING.

IF YOU ARE OPERATING ANY MACHINE WITH AN AIR FOOT SWITCH:

- STEP ON AIR BULB AND MACHINE WILL START RUNNING.



ALWAYS KEEP AIR HOSE CLEAR OF ANY MOVING PARTS. REPLACE ANY LEAKING OR DAMAGED COMPONENTS.

4. MOVE SWITCH TO "ON" POSITION. IN NORMAL OPERATING MODE, DRUM OR REEL MUST TURN COUNTER CLOCKWISE WHEN THE OPERATOR FACING THE MACHINE.
 - IF DRUM OR REEL TURNS CLOCKWISE, STOP MACHINE. ALL MODELS ARE EQUIPPED WITH A FORWARD/REVERSE SWITCH LOCATED AT THE ELECTRIC CONTROL BOX. FOR MODELS GO 380/250 SERIES AND GO 15 THE FORWARD/REVERSE SWITCH IS LOCATED AT THE COVER HOUSING. ONLY WHEN THE MACHINE COMES TO A COMPLETE STOP SWITCH THE FORWARD/REVERSE TOGGLE SWITCH INTO THE OPPOSITE DIRECTION.
5. FEED CABLE INTO SEWER LINE SLOWLY, FEELING YOUR WAY AS YOU GO. PLACE BOTH HANDS EQUALLY DISTANT BETWEEN MACHINE AND CLEAN-OUT. NEVER LET YOUR HANDS GO, AS YOUR HANDS PROVIDE A GUIDE FOR THE CABLE AND PREVENT THE CABLE FROM SWINGING, BUCKLING OR KINKING.
6. MOST IMPORTANT, KEEP THE CABLE ROTATING AT ALL TIMES.
7. WHEN YOUR CUTTING TOOL MEETS BLOCKAGE, IT WILL SLOW DOWN OR EVEN MOMENTARILY STOP ROTATION OF CABLE. AS SOON AS YOU FEEL A RPM REDUCTION, PULL CABLE BACK IN ORDER TO PREVENT THE CUTTING TOOL FROM GETTING HUNG UP.



AVOID RUNNING OF MACHINE AT LOW RPM'S FOR EXTENDED PERIOD OF TIME AS THE UNIT MAY BECOME OVERHEATED.



IF YOUR CABLE GETS HUNG UP IN A MASS OF ROOTS, ETC. SWITCH OFF MACHINE IN ORDER TO ALLOW CABLE AND/OR REEL OR DRUM TO BACK SPIN. LET MACHINE COME TO A COMPLETE STOP.

IF YOU ARE UNABLE TO RETRIEVE CABLE, SWITCH MACHINE INTO REVERSE AND RUN MOMENTARILY TO ALLOW CABLE TO UNWIND FROM STOPPAGE. ONCE CABLE IS FREE, PULL CABLE BACK FOR SEVERAL FEET, PLACE REVERSING SWITCH IN FORWARD POSITION AND THEN START MACHINE AGAIN.

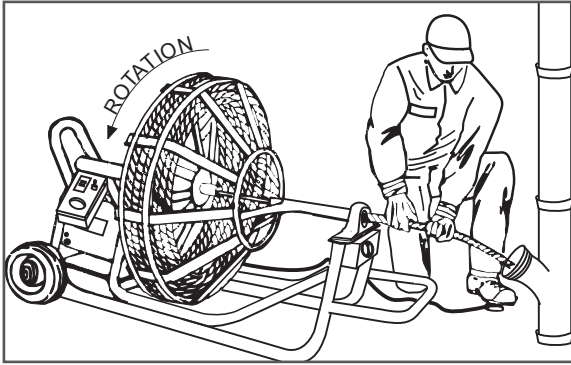
8. AS SOON AS MOTOR IS AT FULL RPM AGAIN, FEEL YOUR CABLE AGAINST STOPPAGE. PUSH AND PULL CABLE IN QUICK SUCCESSION AGAINST AND FROM OBSTRUCTION UNTIL YOU BREAK THROUGH BLOCKAGE.
9. ONCE YOU'VE CUT THROUGH BLOCKAGE, PULL CABLE BACK FOR SEVERAL FEET. NOW PASS CABLE THROUGH SAME STOPPAGE LOCATION AGAIN AND ADVANCE CABLE TO NEXT LARGER DRAIN LINE CONNECTION OR TO MAIN SEWER LINE FOR A THOROUGH CLEANING JOB.
10. AFTER THE CUTTING AND CLEANING OPERATION IS COMPLETED, RETURN CABLE INTO DRUM OR REEL WITH MACHINE RUNNING IN ORDER FOR YOUR DRIVE ARM TO DISTRIBUTE CABLE INTO DRUM OR REEL EVENLY.



WHEN OPERATING MACHINE WITH A POWER CABLE FEEDER AND PULLER, DO NOT ALLOW ANY CABLE ENDS OR CABLE CONNECTORS TO PASS THROUGH FEEDER AS IT MAY DAMAGE OR BREAK THE FEEDER BEARINGS.

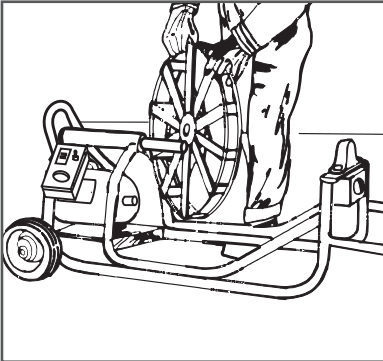
TO CLEAN SEWER LINE 100 FEET OR LONGER

STEP
1



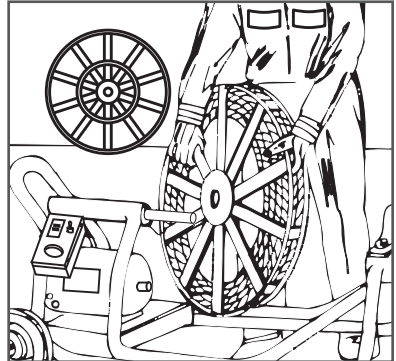
RUN OUT FULL LENGTH OF CABLE

STEP
2



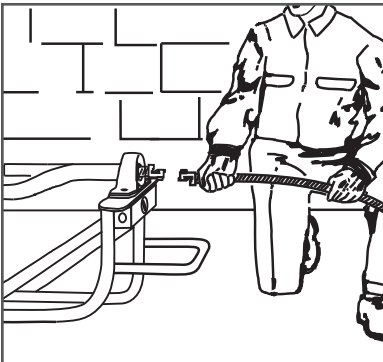
DISCONNECT AT ANCHOR CABLE AND REMOVE EMPTY REEL

STEP
3



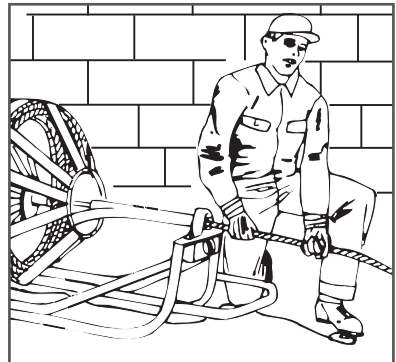
REPLACE WITH FULL REEL

STEP
4



COUPLE CABLES TOGETHER

STEP
5



CONTINUE DOWN THE PIPE

HOW TO SPLICE CABLES

1. CUT AWAY ANY KINKS OR SEPARATED COILS WITH A GOOD BOLT CUTTER.
2. CLAMP ONE END OF CABLE TO BE SPLICED IN VISE AND LET CABLE EXTEND FROM VISE JAWS APPROXIMATELY 1".
3. HOLD SPLICE TIGHT WITH VISE GRIP AND SCREW HALF WAY INTO CABLE
4. RECLAMP SPLICED CABLE SECTION IN VISE. CLAMP FIRM ON SPLICED END.
5. VISE GRIP THE SECOND CABLE SECTION TO BE SPLICED 1" FROM END.
6. APPLYING PRESSURE, TURN ALL THE CABLE WITH VISE GRIP OVER SECOND HALF OF SPLICE UNTIL ENDS OF CABLE MEET.



IF YOU ARE SPLICING CABLES WITH HEX SPLICES, SQUARE EACH END OF CABLE TO BE SPLICED ON DISC SANDER OR GRINDER. YOU MAY SPOT WELD EACH END OF CABLE TO SHOULDER OF HEX SPLICE.

SPLICING INNERCORE CABLES: MAKE SURE INNERCORE IS AT LEAST 1" INSIDE FROM EACH CABLE END.

- IF YOU HAVE TROUBLE GETTING SPLICE STARTED, SLIGHTLY SPREAD FIRST COIL OF CABLE WITH A DRIFT OR CENTER PUNCH.



DO NOT ATTEMPT TO REPAIR ANY BROKEN CABLES BY MEANS OF WELDING. WELDED CABLE SECTIONS DO CRYSTALLIZE AND WILL BREAK.



THE ABOVE CABLE SPLICED WITH A HEX SPLICE

(NOTE TACK WELD)



THE ABOVE CABLE SPLICED WITH A REGULAR SPLICE



THE ABOVE INNERCORE CABLE SPLICED WITH A REGULAR SPLICE.

(NOTE GAP BETWEEN SPLICE AND INNERCORE)

HOW TO INSTALL CABLE ENDS OR CABLE CONNECTORS

1. LET CABLE EXTEND FROM VISE JAWS APPROXIMATELY 1" AND CLAMP TIGHT.
2. HOLD CABLE END OR CABLE CONNECTOR FIRM WITH VISE GRIP.
3. SCREW COUPLING INTO CABLE BY APPLYING PRESSURE UNTIL SHOULDER OF COUPLING MEETS CABLE.



IF YOU HAVE TROUBLE GETTING CABLE END OR CABLE CONNECTOR STARTED, SLIGHTLY SPREAD FIRST COIL OF CABLE WITH A DRIFT OR CENTER PUNCH.

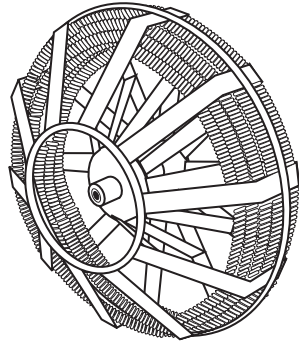


ONLY BY MEANS OF ARC WELDING, SPOTWELD CABLE TO COUPLING. ANY ATTEMPT TO WELD OR BRACE CABLE TO ANY COUPLING WITH AN ACETYLENE TORCH WILL SOFTEN THE FIRST COILS OF CABLE AND THEREBY RENDERING THE CABLE AT THAT POINT USELESS.

HOW TO INSTALL A NEW CABLE

MODEL GO 68HD, GO 68, GO 62 SERIES

1. UNCOIL CABLE TO BE INSTALLED AND LAY IN A STRAIGHT LINE ON THE FLOOR.
2. PASS A SHORT SECTION OF ANCHOR CABLE THROUGH DRIVE ARM.
3. SLIDE CABLE CONNECTORS TOGETHER AND FASTEN BOTH CAP SCREWS.
4. DRIVE ARM MUST TURN COUNTER CLOCKWISE (FACING MACHINE) WHEN STARTING TO INSTALL CABLE.
5. LAY OUTER CABLE TURNS BY HAND TO FILL REEL PROPERLY.
6. START MACHINE.
7. FEED REMAINING CABLE INTO REEL.
8. STOP MACHINE OCCASIONALLY TO CHECK DISTRIBUTION AND REPOSITION CABLE IF NEEDED.
9. ATTACH CUTTING TOOL OF YOUR CHOICE.



NOTE OUTER CABLE TURN LAYERS



IF YOU ARE USING OUR POWER CABLE FEEDER AND PULLER, DO NOT ALLOW TO PASS ANY CABLE ENDS OR CABLE CONNECTORS THROUGH FEEDER, AS IT MAY DAMAGE IT.

MODEL GO 50 SERIES

1. UNCOIL CABLE TO BE INSTALLED AND LAY IN A STRAIGHT LINE ON THE FLOOR.
2. MAKE SURE DRIVE ARM ROTATES FREELY.
3. FEED CABLE WITH INSTALLED CABLE END THROUGH DRIVE ARM.
4. SCREW CABLE END INTO REEL CONNECTOR.
5. FASTEN REEL CONNECTOR TO REEL WITH BOLT.
6. DRIVE ARM MUST TURN COUNTER CLOCKWISE (FACING MACHINE) WHEN STARTING TO INSTALL CABLE.
7. LAY OUTER CABLE TURNS BY HAND TO FILL REEL PROPERLY.
8. START MACHINE.
9. FEED REMAINING CABLE INTO REEL.
10. STOP MACHINE OCCASIONALLY TO CHECK DISTRIBUTION AND REPOSITION CABLE IF NEEDED.
11. ATTACH CUTTING TOOL OF YOUR CHOICE.

MODEL GO 380/250 SERIES, GO 15

1. UNCOIL CABLE TO BE INSTALLED AND LAY IN A STRAIGHT LINE ON THE FLOOR.
2. MAKE SURE DRIVE ARM ROTATES FREELY.
3. FEED CABLE THROUGH DRIVE ARM.
4. DRIVE ARM MUST TURN COUNTER CLOCKWISE WHEN INSTALLING CABLE.
5. START MACHINE.
6. FEED REMAINING CABLE INTO DRUM ALLOWING ADEQUATE LENGTH OF EXPOSED CABLE TO ATTACH FLEXIBLE LEADER (ELEPHANT TRUNK) WHEN APPLICABLE.
7. INSTALL CABLE END AND CUTTING BLADE (AVAILABLE ONLY FOR 3/8" DIA. CABLE) AND/OR MAKE CABLE BENDS OF YOUR CHOICE.



EXAMPLE 1



EXAMPLE 2



EXAMPLE 3

HOW TO ADJUST BELT TENSION:

PROPER BELT TENSION FOR ALL MODELS SHOULD BE 1/4" BELT MOVEMENT IN EITHER DIRECTION.

MODEL GO 68HD, GO 380/250 SERIES

1. LOOSEN MOTOR MOUNTING SCREWS.
2. ADJUST MOTOR AS NEEDED..
3. MAKE SURE PULLEY'S ARE IN LINE.
4. REFASTEN MOTOR MOUNTING SCREWS.

 **COVER HOUSING MUST BE REMOVED ON MODEL GO 380/250 SERIES.**

MODEL GO 68, GO 62 SERIES

1. LOOSEN BELT TENSIONER HEX BOLTS.
2. ADJUST BELT TENSION PLATE AS NEEDED.
3. MAKE SURE PULLEY'S ARE IN LINE.
4. REFASTEN BELT TENSIONER HEX BOLTS.

MODEL GO 50 SERIES

1. LOOSEN UPPER AND LOWER NUTS ON MOUNTING BOLTS.
2. RAISE OR LOWER MOTOR FOR RIGHT BELT TENSION.
3. CHECK ALIGNMENT OF BELT AND PULLEYS.
4. REFASTEN ALL NUTS.

MODEL GO 15

1. REMOVE TRUNK, PILLOW BLOCK AND DRUM.
2. LOOSEN MOTOR MOUNTING NUTS.
3. ADJUST MOTOR FOR PROPER BELT TENSION.
4. REFASTEN ALL MOTOR MOUNTING NUTS.
5. REINSTALL DRUM, PILLOW BLOCK AND TRUNK.

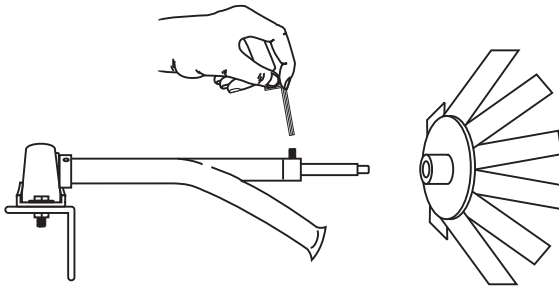
 **DRUM MUST BE REMOVED BEFORE BELT TENSION CAN BE PERFORMED.**



DO NOT OVER TIGHTEN BELT TENSION, AS YOU WILL RAISE MOTOR SHAFT, LOOSEN AND WEAR OUT SEALS AND EXPERIENCE THE LOSS OF GEAR LUBRICANT.

HOW TO ADJUST BELT TENSION

MODEL GO 68, GO 68HD, GO 62 SERIES



1. PUSH CABLE INTO DRIVE ARM..
2. LOOSEN SET SCREW ON DRIVE EXTENSION.
3. PUSH DRIVE ARM EXTENSION INTO DRIVE ARM BUSHING.
4. PULL DRIVE ARM OUT OF FRONT BEARING.
5. REMOVE REMAINING CABLE FROM DRIVE ARM AND PLACE INTO REEL.
6. SLIDE REEL FORWARD AND OFF DRIVE SHAFT.

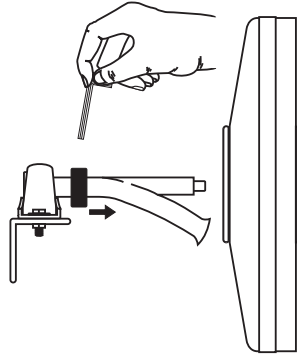


CABLE IS ALWAYS UNDER TENSION. DO NOT LET CABLE FLY OUT OF CAGE. WHEN INSTALLING REEL, REVERSE PROCEDURE. BE POSITIVE DRIVE PLATE ENGAGE PROPERLY INTO BACK OF REEL.

HOW TO REMOVE DRUMS OR REELS

MODEL GO 50 SERIES, GO 380/250 SERIES

1. PUSH CABLE INTO DRIVE ARM.
2. LOOSEN SET SCREW ON COLLAR AND SLIDE COLLAR TOWARD DRUM/REEL.
3. SLIDE DRIVE ARM INTO FRONT PILLOW BLOCK AS FAR AS POSSIBLE.
4. PUSH DRIVE ARM SIDeways, UP OR DOWN TO CLEAR CENTER STEM OF DRUM OR REEL.
5. MOVE DRIVE ARM TOWARD DRUM/REEL UNTIL IT CLEARS FRONT PILLOW BLOCK.
6. FEED REMAINING CABLE FROM DRIVE ARM INTO DRUM/REEL AND REMOVE DRIVE ARM.
7. SLIDE DRUM/REEL FORWARD AND OFF DRIVE SHAFT.



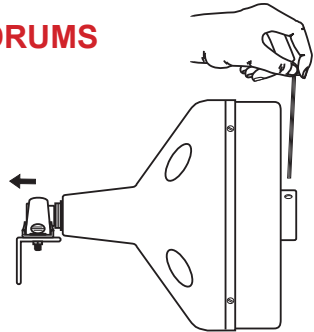
TO GAIN ACCESS TO INSIDE OF DRUMS ON MODEL 380/250 SERIES, REMOVE RETAINING RING AND PULL INNER HUB FROM CENTER GUIDE.

WHEN INSTALLING REEL OR DRUM, REVERSE PROCEDURE BUT MAKE CERTAIN DRIVE PLATE OR DRIVE PIN ENGAGE PROPERLY INTO REEL OR DRUM.

HOW TO REMOVE DRUMS

MODEL GO 15

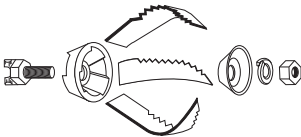
1. REMOVE FLEXIBLE TRUNK.
2. PUSH CABLE BACK INTO DRIVE ARM.
3. LOOSEN THUMP SCREWS AND REMOVE PILLOW BLOCK.
4. LOOSEN SET SCREW AT BACK SIDE OF DRUM.
5. SLIDE DRUM FORWARD AND OFF DRIVE SHAFT.



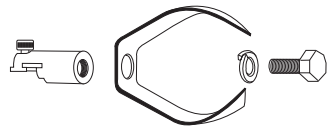
BEFORE SEPARATING DRUM PULL OUT ENTIRE CABLE. REMOVE 4 SMALL SCREWS AND PULL DRUM SECTIONS APART.

WHEN INSTALLING DRUM, REVERSE PROCESS. MAKE CERTAIN SET SCREW ENGAGES FLAT AREA ON DRIVE SHAFT.

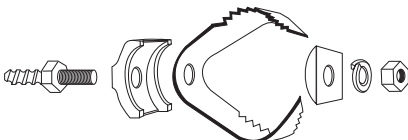
HOW TO ASSEMBLE CHUCK AND CUTTING TOOLS



EXAMPLE NO. 1



EXAMPLE NO. 2



EXAMPLE NO. 3



EXAMPLE NO. 4


HUBBELL & LEVITON GFCI OPERATING & TESTING INSTRUCTIONS

CIRCUIT GUARD® Module GFM20A, SMARTLOCKPRO® GFRBF-B

HUBBELL OPERATION AND TEST INSTRUCTIONS


NOTE: The automatic set version (A suffix) will immediately supply power to the load when power is applied to the line connections. Manual versions (no suffix) must be reset manually before power is applied to the load.


1. Turn on power to the Circuit Guard® Module.
2. Press the "RESET" button, the power "ON" light should go on.
3. Press the "TEST" button, the power "ON" light should go off.
4. Press the "RESET" button, the power "ON" light should go on.
5. **Do not use this device if it fails the above tests.** This device does not protect against electric shock due to contact with both circuit conductors and also due to a fault in any wiring supplying this device.
6. Connect the desired load equipment to the receptacle connected to Circuit Guard® Module and operate the equipment normally.

-  1. If the GFCI fails to trip when the test button is pressed (power "ON" light does not go off) or fails to reset (power "ON" light does not go on), the device is inoperative and should be replaced immediately.
2. If the GFCI tests properly without any appliance connected to it but trips each time an appliance is connected to it, the appliance has a ground fault and needs to be repaired or replaced. **DO NOT USE THE MACHINE IF THIS CONDITION OCCURS; A REAL SHOCK HAZARD MAY EXIST.**

LEVITON OPERATION AND TEST INSTRUCTIONS

1. A Self-Test GFCI receptacle has all the features of a conventional GFCI receptacle. In addition, this receptacle tests itself periodically to confirm the GFCI electronics are functional. The Status Indicator Light will be solid green when the GFCI is powered from Line side and working correctly.
2. **Self-Test Indications:** If the Status Indicator Light is solid or flashing RED a problem may exist. Press the TEST button to trip the GFCI. If unable to Reset, replace the GFCI. NOTE: The status indicator may flash Red at power "ON" and Reset. **IF GFCI WILL NOT RESET OR SOLID OR BLINKING RED LIGHT CONTINUES, REPLACE DEVICE.**

-  1. This device is to be used on normal electrical distribution systems on circuits rated at 120 V AC, 60 Hz ONLY.
2. **DO NOT USE** in a wet environment if any of the Circuit Guard® Module's push-button seals or its mounting gasket is damaged.
3. Test at least monthly, or preferably before each use, to ensure correct operation.
4. The Circuit Guard Module is designed as a protective device. Do not use as an OFF/ON switch.
5. To minimize false tripping, do not connect to swimming-pool equipment installed before adoption of the 1965 *National Electrical Code*®.

-  A GFCI limits the duration but not the magnitude of ground fault current and, therefore, does not prevent electric shock. It limits the duration of the shock to a period considered safe for healthy people.

GENERAL

The Hubbell Circuit Guard® & Leviton SmartLockPro® Modules provides personnel ground fault protection. Conventional overcurrent protection devices such as fuses and circuit breakers cannot protect people from electrical shock due to low level ground fault current. Fuses and circuit breakers are designed to disconnect the power when current levels (amperes) flowing in the circuit exceed the rating of the fuse or circuit breaker. However, currents as low as a few milliamperes can be harmful to normal healthy human beings. One ampere equals 1000 milliamperes. Many electric shocks occur where the path of current flow is from the hot wire through the metal housing of a defective tool or appliance, through the body of a human being to ground. Because of the resistance of the human body to electrical current flow, the current will be quite low relative to that required to cause conventional over-current devices to function. However, it may be high enough to cause a painful or possibly lethal electric shock to a human being. The Hubbell Circuit Guard® & Leviton SmartLockPro® Module is designed to remove power from equipment loads when these loads have a potential lethal current flow to ground in excess of six milliamperes. Normal loads will draw current from the Line Conductor (black wire) and return it to the power source through the Neutral Conductor (white wire). Faulty loads can return some of the current to the power source through a ground path such as a water pipe, gas pipe, wet floor, third conductor (green wire), or worst of all, through a person who is in contact with a grounding path. The Hubbell Circuit Guard® Module weather-resistant construction allows it to be used in outdoor or indoor locations, where ground fault protection is desired. When energized by actuation of the reset button, it will conveniently supply power to any power tool or appliance whose power requirement does not exceed 20 amperes at 120 volts RMS, 60 Hertz or 2400 watts.

GENERAL MAINTENANCE TIPS

TO KEEP YOUR GORLITZ ELECTRIC SEWER CLEANING MACHINES IN GOOD, CLEAN AND SAFE OPERATING CONDITION, PERIODICALLY CHECK THE FOLLOWING PARTS:

- LUBRICATE ALL SLIDING, ROTATING AND MOVING PARTS.
- PAY SPECIAL ATTENTION TO WEARS ON DRIVE ARMS.
- CHECK ALIGNMENT OF PULLEYS AND BELT.
- INSPECT, REFASTEN OR REPLACE ALL SET SCREWS ON DRIVE ARM, PULLEYS, DRIVE PLATE, SHAFT COLLARS AND PILLOW BLOCKS IF NEEDED.
- INSPECT ELECTRICAL OUTLET WIRING AND SWITCH BOX FOR VISIBLE WEAR AND TEAR.
- CHECK TIRE PROFILE.

WHY DO CABLES JUMP OUT OF REELS OR DRUMS?

- **CABLE WAS RETURNED INTO DRUM OR REEL BY HAND WHILE DRUM OR REEL WAS NOT ROTATING:** ALWAYS KEEP MACHINE RUNNING FEEDING CABLE BACK INTO DRUM OR REEL. CABLE MUST BE PACKED TIGHT.
- **SHARP KINKS IN CABLE:** CUT OUT ALL KINKS WITH A GOOD BOLT CUTTER AND INSTALL SPLICE OR CABLE CONNECTOR.
- **CABLE GOT HUNG UP OR USING TOO MUCH PRESSURE TO OPEN BLOCKAGE:** BACK PRESSURE MAY ALLOW CABLE TO FLY OUT OF DRUM OR REEL. USE CAUTION AND FEEL YOUR WAY AS YOU FEED CABLE INTO DRAIN PIPE.
- **CABLE HAS SOFT SPOTS:** CUT OUT ALL WEAK SECTIONS AND INSTALL SPLICE OR CABLE CONNECTOR.
- **CABLE EXCEEDED LIFESPAN:** REPLACE WITH A NEW CABLE.

MOST COMMON CAUSES FOR DAMAGED OR BROKEN CABLES

- **ALLOWING CABLES TO GET HUNG UP IN AN OBSTRUCTION:** THIS IS THE MOST COMMON REASON FOR CABLE BREAKAGE. THE OPERATOR ALLOWED THE CUTTING TOOL OR CABLE END TO GET HUNG UP IN ROOTS, TOWELS, PAPER, ETC. OR IN A BROKEN, SEPARATED OR CRUSHED SEWER LINE. REMEMBER, KEEP THE CABLE ROTATING AT ALL TIMES.
- **CABLE STARTS SWINGING WHEN DOING OVERHEAD JOBS:** WHILE DOING OVERHEAD JOBS, GUIDE CABLE BY MEANS OF TUBES OR PIPES (PVC, ETC.) AND/OR USE SECOND OPERATOR.
- **APPLYING TOO MUCH PRESSURE:** FEEL YOUR WAY THROUGH THE PIPE AND TRY NOT TO DO THE JOB IN A HURRY.
- **LETTING CABLE GET AWAY FROM YOU:** ALWAYS GUIDE YOUR CABLE WITH BOTH HANDS. KEEP DISTANCE AS CLOSE AS POSSIBLE BETWEEN CLEAN-OUT AND MACHINE.
- **FORCING CABLE AROUND TIGHT TURNS OR THROUGH A TRAP:** IF CABLE IS SLOWED OR STOPPED BECAUSE OF TIGHT TURNS, TRAPS OR BLOCKAGES, BUT YOU CONTINUE TO FEED CABLE INTO SEWER LINE, IT MAY BECOME WAVY. BE EXTREMELY CAREFUL WHEN USING SMALLER SIZE CABLES ON LONG RUNS OR TOO LARGE OF A DIAMETER SEWER LINE.
- **USING CABLES WITH SHARP KINKS OR SOFT SPOTS:** CUT OUT ALL SHARP KINKS, STRETCHED, LIMBER OR WEAK SECTIONS, INSTALL SPLICE.
- **CABLE EXCEEDED LIFESPAN:** REPLACE WITH A NEW CABLE.



CABLE EXPOSED TO A CHEMICAL DRAIN CLEANER MAY BECOME CRYSTALLIZED AND VERY BRITTLE. IT MAY ALSO BREAK INTO VERY SHORT SECTIONS. INSPECT CABLE FOR GRAY, WHITE OR BLUE COLOR AND/OR CHEMICAL ETCHINGS.

MODEL T 01 POWER CABLE FEEDER AND PULLER SAFETY INSTRUCTIONS

BEFORE SWITCHING ON SEWER CLEANING MACHINE, MAKE SURE MOVEMENT ASSEMBLY LEVER IS IN UPRIGHT POSITION. THIS PREVENTS ACCIDENTALLY RUNNING CABLE FITTINGS THROUGH POWER FEED DAMAGING COUPLINGS AND/OR DRIVE BEARINGS.

WHILE OPERATING THE POWER CABLE FEEDER AND PULLER, ALWAYS WEAR GLOVES AND KEEP FINGERS AND FOREIGN OBJECTS OUT OF DRIVE MECHANISMS.

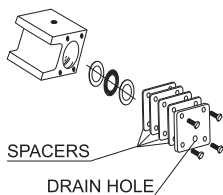
FOR STORAGE OR WHEN SEWER CLEANING MACHINE AND POWER FEED IS NOT IN USE, ALWAYS TIGHTEN HAND KNOB ASSEMBLY TO LOCK CABLE INTO DRUM OR REEL.

MAINTAIN POWER FEED WITH PROPER CARE, KEEP IT CLEAN FOR BEST AND SAFEST PERFORMANCE. FOLLOW INSTRUCTIONS FOR LUBRICATION, CHANGING BEARINGS AND MAINTENANCE.

INSTALLATION

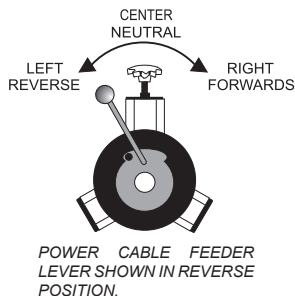
THE SEWER CABLE SHOULD PASS FROM THE DISTRIBUTING ARM OF THE MACHINE OVER THE TWO LOWER BEARINGS AND THROUGH THE CENTER HOLE OF THE MOVEMENT ASSEMBLY. THE MOUNTING BRACKET IS PROVIDED WITH SEVERAL MACHINED HOLES AND SLOTS TO ALLOW CENTERLINE LOCATIONS. IF FURTHER ADJUSTMENTS ARE NEEDED, USE SHIM STOCK.

ONCE YOU HAVE DETERMINED THE DESIRED CABLE SIZE, THE CHART BELOW SHOWS THE CORRECT AMOUNT OF SPACERS REQUIRED BETWEEN THE SHORT HOUSING AND LOWER END PLATES.



SHORT HOUSING, THRUST BEARING AND SPACER ASSEMBLY SHOWN.

CABLE SIZE	SPACE REQUIRED
5/16"	0
3/8"	1
13/32"	1
1/2"	2
5/8"	3
11/16"	4
3/4"	4



DRAIN HOLE ON LOWER END PLATE MUST BE TOWARD BOTTOM OF POWERFEED.

GENERAL OPERATING INSTRUCTIONS

1. THE MOVEMENT ASSEMBLY LEVER SHOULD BE IN THE NEUTRAL POSITION.
2. RELEASE PRESSURE FROM THE HAND KNOB ASSEMBLY.
3. START SEWER CLEANING MACHINE (FOR REFERENCE SEE OPERATING & MAINTENANCE INSTRUCTIONS IN THIS MANUAL).
4. PLACE MOVEMENT ASSEMBLY LEVER IN THE FORWARD POSITION (MOVE LEVER TO THE RIGHT) AND START TO TIGHTEN HAND KNOB. ONCE SEWER CABLE IS DRIVING STEADILY FORWARD, STOP TURNING HAND KNOB. POSITION MOVEMENT LEVER IN REVERSE POSITION (MOVE LEVER TO THE LEFT) AND SEWER CABLE SHOULD RETRIEVE STEADILY.
5. IF THE CABLE BEGINS TO SLIP OR DOES NOT FEED, THE HAND KNOB MAY BE TIGHTENED WITH CAUTION UNTIL CABLE IS MOVING AGAIN.



EXTREME TIGHTENING OF HAND KNOB ASSEMBLY MAY DAMAGE POWER FEEDER BEARING, OVERLOAD MOTOR AND/OR ADD EXCESSIVE TENTION TO CABLE.

6. WHEN YOUR CUTTING TOOL ENCOUNTERS THE BLOCKAGE, IT WILL SLOW DOWN OR MOMENTARILY STOP THE ROTATION OF CABLE. AS SOON AS YOU FEEL A RPM REDUCTION, PLACE LEVER INTO REVERSE POSITION TO RETRACT CABLE FROM STOPPAGE. ONCE TORQUE IS RELIEVED, MOVE LEVER INTO UPRIGHT POSITION AND RELEASE PRESSURE FROM HAND KNOB.



**IT IS RECOMMENDED TO CLEAR STOPPAGE MANUALLY.
TO CLEAR BLOCKAGE REFER TO PAGE 6, STEPS 6 THROUGH 10.**

7. ONCE YOU HAVE CUT THROUGH THE BLOCKAGE, TIGHTEN HAND KNOB. PLACE LEVER INTO REVERSE POSITION TO RETRACT CABLE INTO REEL OR DRUM.

LUBRICATION

THE GORLITZ POWER CABLE FEEDER AND PULLER SHOULD BE GIVEN THE BEST OF CARE AND IF KEPT CLEAN AND PROPERLY LUBRICATED, IT WILL PROVIDE MANY YEARS OF TROUBLE-FREE SERVICE. OBSERVE THE FOLLOWING INSTRUCTIONS AT ALL TIMES:

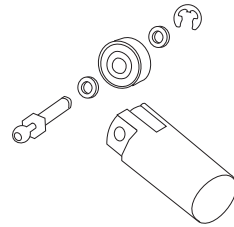
- THE DRIVE BEARING HAVE BEEN PACKED AT THE FACTORY WITH PROPER LUBRICANT AND REQUIRE NO ADDITIONAL LUBRICATION.
- GREASE ALL HOUSING EQUIPPED WITH ZERK FITTINGS.
- REMOVE FRONT DISC PERIODICALLY IN ORDER TO APPLY GREASE TO BOTH SIDES OF MOVEMENT ASSEMBLY.



IF THE POWER FEED IS NOT BEING USED FOR A LONG PERIOD OF TIME, LUBRICATE FEEDER WITH WD40 OR EQUIVALENT LUBRICANT TO PREVENT PARTS FROM OXIDATION.

HOW TO INSTALL A NEW DRIVE BEARINGS

1. REMOVE SIX ACORN NUTS AND LOCK WASHERS.
2. REMOVE FRONT DISC AND MOVEMENT ASSEMBLY.
3. SLIP LONG AND/OR SHORT HOUSINGS FROM HEX BOLTS.
4. REMOVE UPPER AND/OR LOWER PISTONS.
5. REMOVE SPRING RETAINER.
6. PULL OUT DRIVE PIN.
7. REMOVE SPACERS AND DRIVE BEARING.
8. CLEAN ALL PARTS IN A CLEANING SOLVENT.
9. LUBRICATE ALL MOVING PARTS.



DRIVE PIN ASSEMBLY AND PISTON SHOWN.



WHEN REASSEMBLING CABLE FEEDER AND PULLER, REVERSE PROCEDURES. BE POSITIVE DRIVE PINS ENGAGE PROPERLY INTO U-SHAPED BRACKETS.

LUBRICATION

TO KEEP YOUR GORLITZ POWER CABLE FEEDER AND PULLER IN GOOD AND SAFE OPERATING CONDITION, PERIODICALLY CHECK THE FOLLOWING ITEMS:

- LUBRICATE ALL SLIDING, ROTATING AND MOVING PARTS.
- PAY SPECIAL ATTENTION FOR WEAR ON DRIVE PINS AND DRIVE BEARINGS.
- CHECK, REFASTEN OR REPLACE IF NEEDED ALL BOLTS, NUTS, WASHERS AND SPRING RETAINERS.
- INSPECT MOVEMENT ASSEMBLY DISC FOR WEAR.
- CHECK ANGLE AND CENTER LINE ALIGNMENT OF POWER FEED.

MACHINE PARTS LIST

GO 15

GO 380/250

GO 50

GO 62HD

GO 68

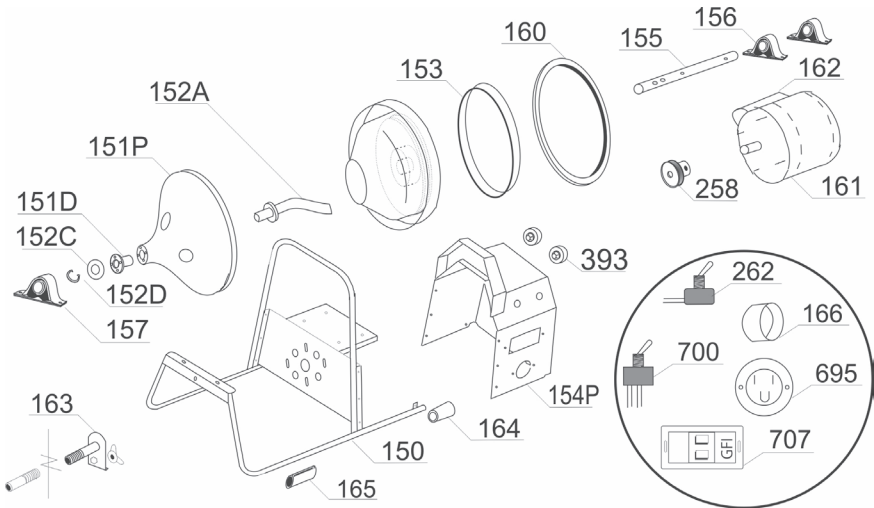
GO 68HD

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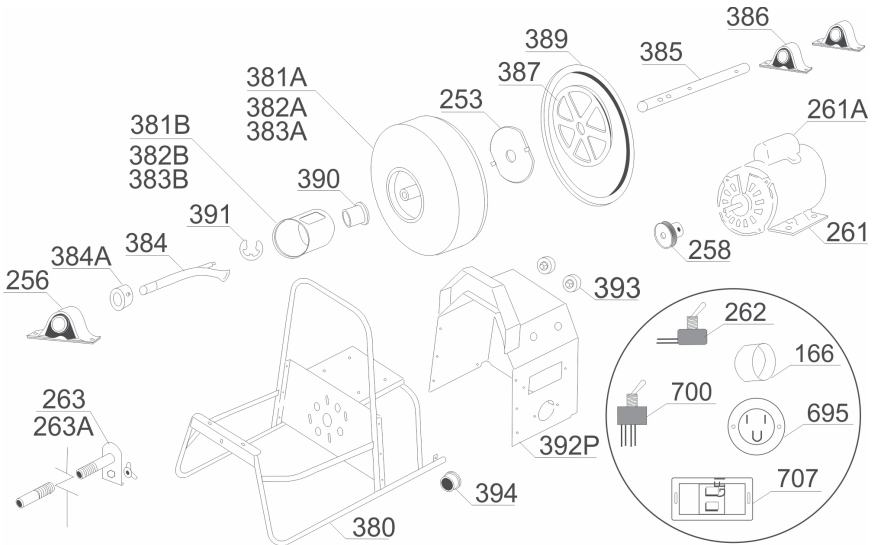
GO 15



PART #	DESCRIPTION	REQ
150	FRAME	1
151P	POLY DRUM - Red - Blue - Black	1
151D	BRASS DRUM BUSHING	1
152A	DRIVE ARM	1
152C	THRUST WASHER*	1
152D	RETAINING RING*	1
153	DRUM RUBBER SLEEVE*	1
154P	COVER HOUSING*	1
155	DRIVE SHAFT	1
156	PILLOW BLOCK 1/2**	2
157	PILLOW BLOCK 5/8**	1
159	SHAFT PULLEY*	1
160	BELT*	1

PART #	DESCRIPTION	REQ
161	MOTOR*	1
162	MOTOR CAPACITOR*	1
163	ELEPHANT TRUNK	1
164	RUBBER CUP*	2
165	RUBBER SLEEVE*	2
166	ELECTRIC PLUG SLEEVE*	1
258	MOTOR PULLEY*	1
262	TOGGLE SWITCH*	1
393	RUBBER BUMPER*	2
695	ELECTRIC PLUG*	1
700	FOR/REV SWITCH*	1
707	GFI*	1

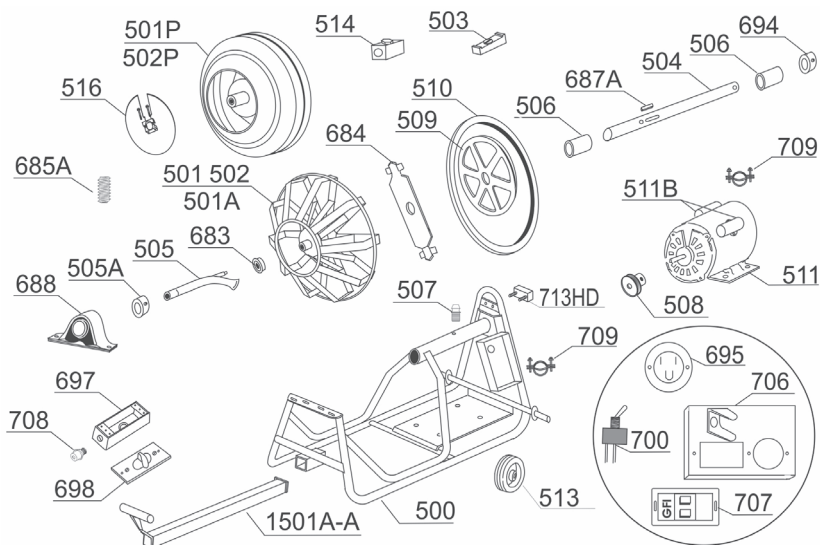
GO 380/250



PART #	DESCRIPTION	REQ
380	FRAME	1
381	DRUM ASSEMBLY (3/8" X 65" MAX)	1
381A	DRUM (3/8" X 65" MAX)	1
381B	INNER HUB	1
382	DRUM ASSEMBLY (1/4" X 50" MAX)	1
382A	DRUM (1/4" X 50" MAX)	1
382B	INNER HUB	1
383	DRUM ASSEMBLY (3/8" X 90" MAX)	1
383A	DRUM (3/8" X 90" MAX)	1
383B	INNER HUB	1
384	DRIVE ARM	1
384A	DRIVE ARM COLLAR*	1
385	DRIVE SHAFT	1
386	PILLOW BLOCK 5/8**	2
387	SHAFT PULLEY*	1
389	BELT*	1
390	BUSHING*	1

PART #	DESCRIPTION	REQ
391	RETAINING RING*	1
392P	COVER HOUSING*	1
393	RUBBER BUMPER*	4
394	PLUG*	2
166	ELECTRIC PLUG SLEEVE*	1
253	DRIVE PLATE	1
256	PILLOW BLOCK 7/8**	1
258	MOTOR PULLEY*	1
261	MOTOR*	1
261A	MOTOR CAPACITOR*	1
262	TOGGLE SWITCH*	1
263	ELEPHANT TRUNK (SM 1/4")	1
263A	ELEPHANT TRUNK (LG 3/8")	1
695	ELECTRIC PLUG*	1
700	FOR/REV SWITCH*	1
707	GFI*	1

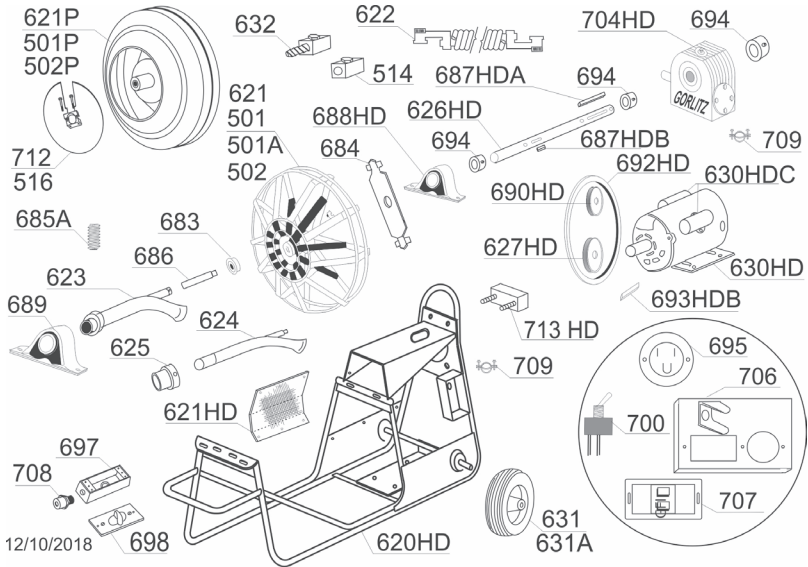
GO 50



PART #	DESCRIPTION	REQ
500	FRAME	1
501	REEL (1/2" X 100' MAX)	1
501A	REEL (1/2" X 125' MAX)	1
501P	POLY DRUM (1/2" X 100' MAX)	1
502	REEL (3/8" X 90' MAX)	1
502P	POLY DRUM (3/8" X 90' MAX)	1
503	REEL CABLE CONNECTOR	1
504	DRIVE SHAFT	1
505	DRIVE ARM	1
505A	DRIVE ARM COLLAR*	1
506	SHAFT BUSHING*	2
507	ZERK FITTING*	1
508	MOTOR PULLEY*	1
509	SHAFT PULLEY*	1
510	BELT*	1
511	MOTOR*	1
511A	MOTOR CAPACITOR*	1
512	PHENOLIC 4" WHEEL*	2
513	PHNEUMATIC 6" WHEEL*	1

PART #	DESCRIPTION	REQ
514	DRUM CONNECTOR 3/8" THRU 1/2"	1
516	REEL & DRUM SAFETY DISK	1
683	REEL CENTER BEARING*	1
684	DRIVE PLATE	1
685A	DRIVE ARM SET SCREW*	1
687A	SHAFT KEY	1
688	PILLOW BLOCK 1"*	1
694	SHAFT COLLAR*	2
695	ELECTRIC PLUG*	1
697	SWITCH BOX*	1
698	COVER PLATE*	1
700	FOR/REV SWITCH*	1
706	GFI COVER PLATE	1
707	GFI*	1
708	COMPRESSION FITTING*	1
709	CORD CONNECTOR*	2
713HD	RUBBER BUMPER*	1
1501A-A	PULL STICK ASSEMBLY	1

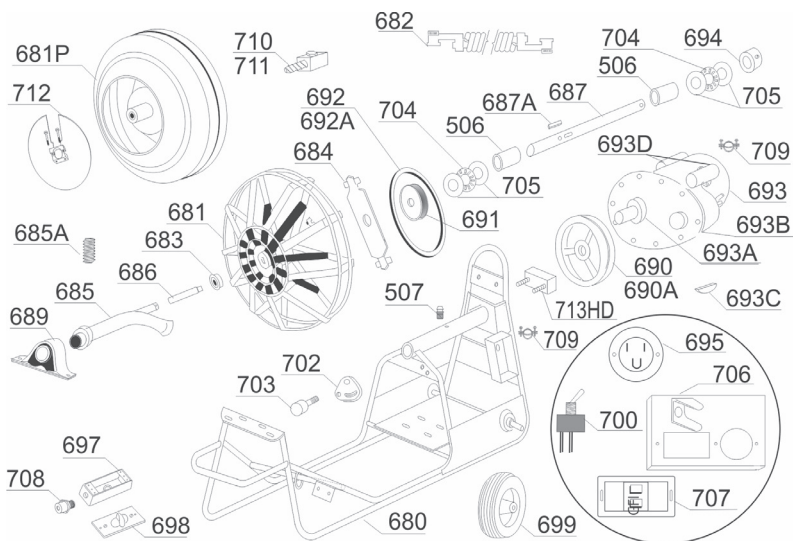
GO 62HD



PART #	DESCRIPTION	REQ
620HD	FRAME	1
621	REEL COMPLETE	1
621P	POLY DRUM COMPLETE	1
622	ANCHOR CABLE	1
623	DRIVE ARM-LARGE	1
624	DRIVE ARM-SMALL	1
625	DRIVE ARM BUSHING	1
626HD	DRIVE SHAFT	1
627HD	MOTOR PULLEY*	1
630HD	MOTOR* 1/3 HP, GO 62	1
630HDC	CAPACITOR SET	2
631	WHEEL*	2
631A	WHEEL BEARING *	1
632	DRUM CONNECTOR 5/8"	1
501	REEL (1/2" X 100' MAX)	1
501A	REEL (1/2" X 125' MAX)	1
501P	POLY DRUM (1/2" X 100' MAX)	1
502	REEL (3/8" X 90' MAX)	1
502P	POLY DRUM (3/8" X 90' MAX)	1
514	DRUM CONNECTOR 3/8" THRU 1/2"	1
516	REEL & DRUM SAFETY DISC	1
683	REEL CENTER BEARING*	1

PART #	DESCRIPTION	REQ
684	DRIVE PLATE	1
685A	DRIVE ARM SET SCREW*	1
686	DRIVE ARM EXTENSION	1
687HDA	SHAFT KEY	1
687HDB	SHAFT KEY	1
688HD	PILLOW BLOCK 1**	1
689	PILLOW BLOCK 1 1/4**	1
693HDB	MOTOR SHAFT KEY*	1
694	SHAFT COLLAR*	3
695	ELECTRIC PLUG*	1
697	SWITCH BOX*	1
698	COVER PLATE*	1
690HD	MOTOR PULLEY*	1
692HD	BELT*	1
700	FOR/REV SWITCH*	1
704HD	GEAR BOX*	1
706	GFI COVER PLATE	1
707	GFI*	1
708	COMPRESSION FITTING*	1
709	CORD CONNECTOR*	2
712	DRUM SAFETY DISK	1
713HD	RUBBER BUMPER*	1

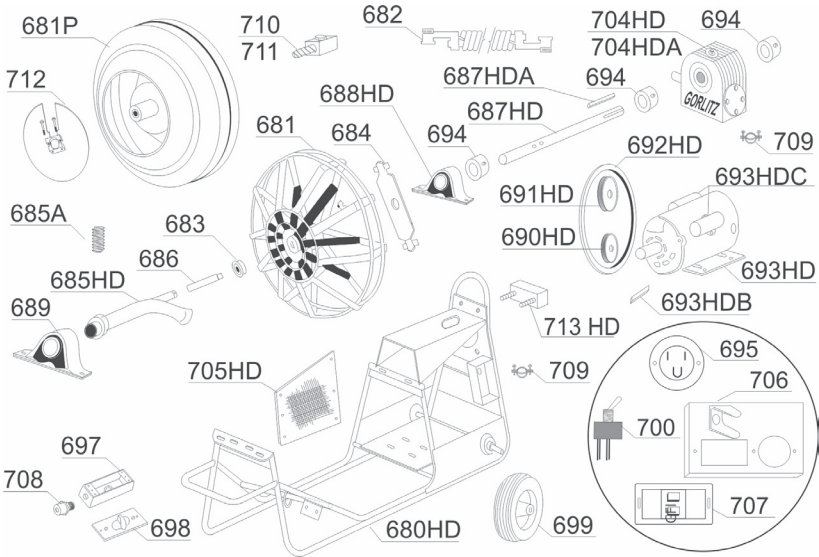
GO 68



PART #	DESCRIPTION	REQ
680	FRAME	1
681	REEL COMPLETE	1
681P	POLY DRUM COMPLETE	1
682	ANCHOR CABLE	1
683	REEL CENTER BEARING*	1
684	DRIVE PLATE	1
685	DRIVE ARM	1
685A	DRIVE ARM SET SCREW*	1
686	DRIVE ARM EXTENSION	1
687	DRIVE SHAFT	1
687A	SHAFT KEY	1
689	PILLOW BLOCK 1 1/4**	1
690	MOTOR PULLEY*	1
690A	MOTOR PULLEY-FAST*	1
691	SHAFT PULLEY*	1
692	BELT* (1980-2016)	1
692A	BELT* (2017-2018)	1
693	MOTOR*	1
693C	WOODRUFF KEY*	1
693D	CAPACITOR SET*	1

PART #	DESCRIPTION	REQ
694	SHAFT COLLAR*	1
695	ELECTRIC PLUG*	1
697	SWITCH BOX*	1
698	COVER PLATE*	1
699	WHEEL*	2
700	FOR/REV SWITCH*	1
702	BELT TENSION PLATE	1
703	BELT TENSION BEARING*	1
704	THRUST BEARING*	2
705	THRUST WASHER*	4
706	GFI COVER PLATE	1
707	GFI*	1
708	COMPRESSION FITTING*	1
709	CORD CONNECTOR*	2
710	DRUM CONNECTOR 11/16"	1
711	DRUM CONNECTOR 3/4"	1
712	DRUM SAFETY DISK	1
713HD	RUBBER BUMPER*	1
506	SHAFT BUSHING*	2
507	ZERK FITTING*	1

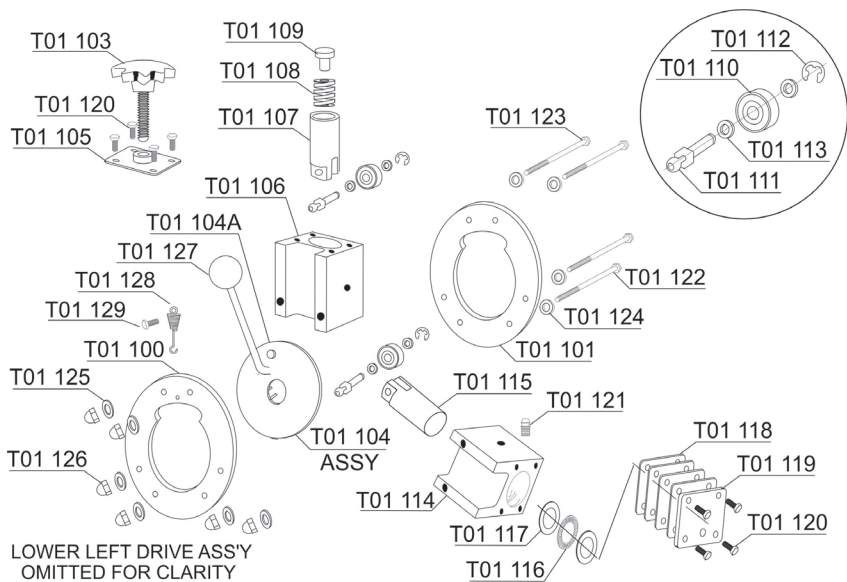
GO 68HD



PART #	DESCRIPTION	REQ
680HD	FRAME	1
681	REEL COMPLETE	1
681P	POLY DRUM COMPLETE	1
682	ANCHOR CABLE	1
683	REEL CENTER BEARING*	1
684	DRIVE PLATE	1
685HD	DRIVE ARM	1
685A	DRIVE ARM SET SCREW*	1
686	DRIVE ARM EXTENSION	1
687HD	DRIVE SHAFT	1
687HDA	SHAFT KEY	1
688HD	PILLOW BLOCK 1"*	1
689	PILLOW PLOCK 1 1/4"*	1
690HD	MOTOR PULLEY*	1
691HD	GEAR BOX PULLEY*	1
692HD	BELT*	1
693HD	MOTOR*	1
693HDB	MOTOR SHAFT KEY*	1

PART #	DESCRIPTION	REQ
693HDC	CAPACITOR SET*	1
694	SHAFT COLLAR*	3
695	ELECTRIC PLUG*	1
697	SWITCH BOX*	1
698	COVER PLATE*	1
699	WHEEL*	2
700	FOR/REV SWITCH*	1
704HD	GEAR BOX*	1
704HDA	GEAR BOX REPAIR KIT*	1
705HD	SCREEN GUARD	1
706	GFI COVER PLATE	1
707	GFI*	1
708	COMPRESSION FITTING*	1
709	CORD CONNECTOR*	2
710	DRUM CONNECTOR 11/16"	1
711	DRUM CONNECTOR 3/4"	1
712	DRUM SAFETY DISK	1
713HD	RUBBER BUMPER*	1

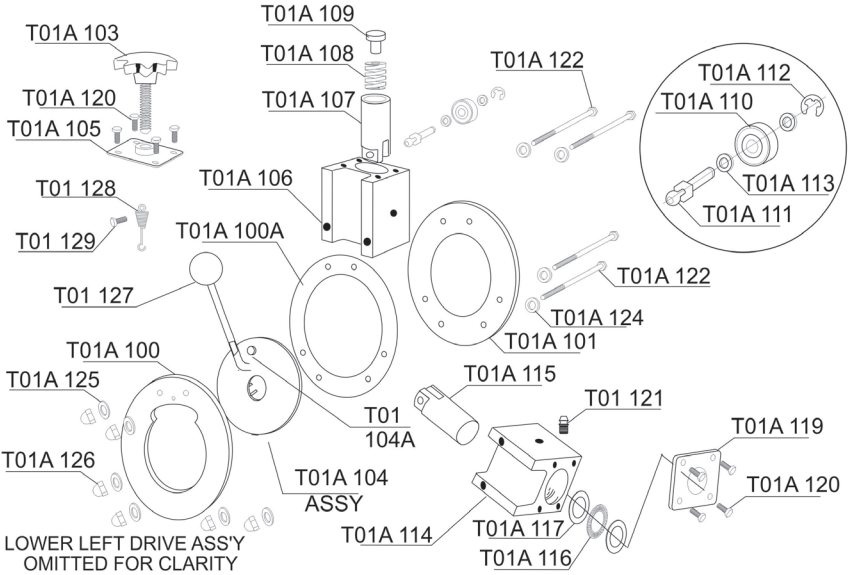
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PART #	DESCRIPTION	REQ
T01 100	FRONT DISK	1
T01 101	REAR DISK	1
T01 103	HAND KNOB*	1
T01 104	MOVEMENT ASSEMBLY	1
T01 104A	MOVEMENT STOP PIN	1
T01 105	UPPER END PLATE	1
T01 106	LONG HOUSING	1
T01 107	UPPER PISTON	1
T01 108	SPRING*	1
T01 109	PRESSURE PAD	1
T01 110	DRIVE BEARING*	3
T01 111	DRIVE PIN*	3
T01 112	SPRING RETAINER*	3
T01 113	SPACER	6
T01 114	SHORT HOUSING	2

PART #	DESCRIPTION	REQ
T01 115	LOWER PISTON	2
T01 116	THRUST BEARING*	2
T01 117	THRUST RACE*	4
T01 118	ADJUSTMENT PLATE	8
T01 119	LOWER END PLATE	2
T01 120	HEX BOLT*	12
T01 121	GREASE NIPPLE*	6
T01 122	LOWER HEX BOLT*	4
T01 123	UPPER HEX BOLT*	2
T01 124	FLAT WASHER*	6
T01 125	LOCK WASHER*	6
T01 126	ACORN NUT*	6
T01 127	BLACK PLASTIC KNOB*	1
T01 128	TENSION SPRING*	1
T01 129	TENSION SPRING SCREW*	1

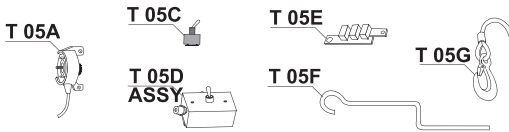
T 01A



PART #	DESCRIPTION	REQ
T01A 100	FRONT DISK	1
T01A 100A	MOVEMENT RETAINING RING	1
T01A 101	REAR DISK	1
T01A 103	HAND KNOB*	1
T01A 104	MOVEMENT ASSEMBLY	1
T01A 105	UPPER END PLATE	1
T01A 106	LONG HOUSING	1
T01A 107	UPPER PISTON	1
T01A 108	SPRING*	1
T01A 109	PRESSURE PAD	1
T01A 110	DRIVE BEARING*	3
T01A 111	DRIVE PIN*	3
T01A 112	SPRING RETAINER*	3
T01A 113	SPACER	6
T01A 114	SHORT HOUSING	2

PART #	DESCRIPTION	REQ
T01A 115	LOWER PISTON	2
T01A 116	THRUST BEARING*	2
T01A 117	THRUST RACE*	4
T01A 119	LOWER END PLATE	2
T01A 120	HEX BOLT*	12
T01A 122	LOWER HEX BOLT*	4
T01A 123	UPPER HEX BOLT*	2
T01A 124	FLAT WASHER*	6
T01A 125	LOCK WASHER*	6
T01A 126	ACORN NUT*	6
T01 104A	MOVEMENT STOP PIN	1
T01 121	GREASE NIPPLE*	6
T01 127	BLACK PLASTIC KNOB*	1
T01 128	TENSION SPRING*	1
T01 129	TENSION SPRING SCREW*	1

T 05 WINCH



PART #	DESCRIPTION	REQ
T 05A	WINCH REPL. SWITCH*	1
T 05C	R/C TOGGLE SWITCH*	1
T 05D	R/C TOGGLE SWITCH ASSEMBLY*	1

PART #	DESCRIPTION	REQ
T 05E	FUSE*	1
T 05F	WINCH CRANK*	1
T 05G	CABLE AND HOOK ASSEMBLY*	1

PROCEDURES AND TECHNIQUES FOR CLEANING A BLOCKED PIPE

At the Institute for Drain & Sewer Cleaning, the better part of the day is spent with "hands on" training using both electro-mechanical equipment and high velocity water jets in sewers and plumbing fixtures. The instructor may tell the class about the procedures and techniques for cleaning a pipe but until the technicians perform the procedures, they have not really learned.

Drain and sewer cleaning is like any other trade (or profession if you prefer). There are certain rules and procedures to be followed. The real skill involves the ability of the technician to execute the procedures. Skills and talents vary with the individual. That's the reason one sewer cleaner can follow another and clean a pipe once thought impossible to clean. A wise homeowner told by a sewer cleaner that the pipe must be dug up and replaced will ask for a second opinion and may discover the pipe, in fact can be cleaned without digging. With these thoughts in mind, lets walk through the process of cleaning a drain or sewer. The technician will, first of all analyze the design of the drain / waste / vent (dvw) sewer system and isolate the location of the blockage and the possible cause of the blockage. Once the blockage has been located, the technician will make a series of decisions to clean the pipe.

First, he will determine the size of the pipe. The size of the pipe determines the appropriate machine and cable size and type, which will be used. (if the obstruction is soft, a high velocity water jet may be chosen.) The length of the cable is important because the blockage may be beyond the reach of a shorter cable. If this is the case, the technician may be able to add cable or find a closer access point to the blockage. A cleanout may need to be installed. The choice of the cable size and type is important because a cable too small or too weak for the pipe or the obstruction is more likely to be kinked or broken. A good cable must be flexible enough to execute bends but strong enough to develop enough torque to clean the pipe. Proper cable selection is an important factor in cleaning a pipe.

Once the proper machine, cable size, length and type have been chosen, the next choice is the attachment for the cable if the blockage is in a drain, the choice is normally limited to a blade, a bulb, a hook, or a drophead attachment. If the technician is confident, he can pass a full-size blade the first time he will select that size blade to cut loose the obstruction. Discretion usually dictates the use of a smaller blade through a pipe before a larger blade is used.

The bulb attachment is designed to clear the obstruction by passing through it or pushing it out the pipe. The hook attachment is a "mini-retriever " designed to bring back the blockage if it can be physically removed. The drophead is a swing attachment designed to execute a tee. It also has enough surface area to clear the obstruction. If the blockage is in a sewer then the choice of attachments for a cable increase significantly. There are too many manufacturers and attachments to list them all. However, there are some attachments common to many manufactures. There are the standard pear-shaped blades. These blades may be serrated, knife edged or paddled. Serrated blades are designed to rip through obstructions, knife edged blades are designed to cut through obstructions; paddled blades are designed to create liquid movement. Some blades are double edged to allow cutting or ripping in both forward or reverse position. There are half knives which look like standard blades but have only one-side. Half knives are less likely to get caught in a pipe. There are spear blades (grease blades) designed to create movement or punch a hole in an obstruction. There are chain knockers designed to "pound out" the obstruction. There are tri-blades designed to be used 1, 2 or 3 at a time. There are "c shaped" blades designed to cut around the contour of the pipe. There are saw blades, completely circular with serrated edges on both sides, designed to rip through roots. There are four blades saw tooth cutters designed for extra cutting in heavy obstructions. There are retrieves designed to bring back obstruction or broken cable. There are brushes for scrubbing action. A qualified technician knows every attachment and understands its application. There is always a proper tool for the job.

Once the proper machine, cable and attachment have been chosen, the techniques for cleaning a pipe begin. The machine must be positioned close enough to the pipe opening to avoid the danger of a rotating, swinging cable. A maximum distance of 3 feet is used (unless extra precautions have been taken.) A safe electrical machine is plugged into a properly grounded three prong electrical outlet. A ground fault interrupter is an integral part of the electrical cord or machine. Precautions are taken to keep all electrical components away from water. The technician is properly dressed with overalls, rubber boots, sewer cleaning gloves (with rubber glove inserts) and goggles. He does not have long hair or loose-fitting clothing, which could tangle, in moving parts. He does not rub his eyes, ears or mouth when cleaning sewers. All cuts are properly covered to avoid additional exposure to bacteria. The technician positions himself next to the machine in a comfortable position, usually on one knee. One properly gloved hand is kept on the cable or guide hose to measure torque buildup. The other hand kept on the automatic feed to control cable entering or exiting the pipe. A skilled technician knows that once resistance is encountered, it is unsafe to place any more cable in the pipe until the resistance subsides. The machine is operated in the forward position at all times. The only time the machine is put in reverse position is when the cable is caught in the pipe. Even then, the machine operated in reverse for a few seconds. The technician knows that continual rotation in the reverse position may cause the cable to exit the machine rapidly resulting in possible injury. A machine with an automatic feed can feed the cable in and out

while the machine remains in the forward position. Once the cable and attachment has entered the pipe and encountered the obstruction, the technician has two choices. He can push the obstruction through the pipe, or he can try to retrieve the obstruction (or pieces of it) to determine the type of obstruction he is dealing with. The wise choice is to retrieve the cable and attachment to look for telltale signs. The technician may be lucky and have caused the obstruction to pass through the pipe. In this case, it doesn't matter what the obstruction was. If, however, this is not the case, observation is necessary.

Roots may be immediately noticeable on the attachment or wrapped around the cable. A technician will cut and retrieve a multitude of times when dealing with roots. If mud is noticed on the attachment, there may be broken or collapsed pipe. If the attachment is shiny or polished, contact with sand or gravel bedding is indicated-yet another sign of defective pipe. Digging may be necessary. The most important technique in cleaning drains and sewers is never to force the cable let the machine and the cable do the work. The only way a cable can kink or break is if the front of the cable with attachment is locked in an obstruction and the drum (or machine) continues to rotate. One of three possibilities exist (1) the attachment will cut loose the obstruction and release the tension on the cable (2) the attachment will lock into the obstruction and the strength of the cable causes the motor to slow down or (3) the attachment will break away from the cable.

Since there are three options, if the cable continues to rotate, it makes good sense to know when to rotate or not to rotate the cable. A skilled operator only builds up torque to a point prior to the cable kinking or breaking. If the torque is not released, then the operator must release the tension on the cable by releasing the foot-pedal which will allow tension to be released on the cable. After cable has been torqued thousands of times, it begins losing strength. A worn cable will eventually kink or break if it is continuously used. A smart operator replaces cable before it wears out.

A skilled technician also knows there is a big difference between a pipe which has been opened and one which has been cleaned. Earlier I mentioned that discretion dictates using a smaller blade in a pipe and passing through the pipe completely before returning with a blade the size of the pipe to actually clean the pipe. Too often, in an effort to maximize revenue a pipe is only opened. The technician fails to make a second pass with an attachment the size of the pipe to thoroughly clean the pipe. If one is hoping for a call back in a month or two, he thinks he had made a wise choice to open the pipe. If the technician is more concerned with building a reputation than a short-term monetary gain, he will thoroughly clean the pipe. I'm reminded of the commercial of the auto mechanic talking about changing an oil filter on an automobile regularly. He says, "you can pay me now (for an oil filter) or pay me later (for a new engine.)" The same holds true for the service technician. If you don't do the job properly the first time, your competitor will do it properly the next time. The choice is yours.

Anyone can attempt to clean a drain or sewer. All he has to do is rent a sewer cleaning machine. However, only a professional knows the safe, efficient and effective way to clean a pipe. That's why it pays the customer to call a professional drain and sewer cleaner.

HOW TO ORDER

In order to avoid mistakes or delays of your shipment, please refer to our part number and description.

PRICES

Since prices are subject to change we cannot guarantee them for more than 30 days. The prices listed are valid for the period indicated on the cover of the price list only. Prices are Net F.O.B. Factory, Santa Fe Springs, California.

SALES TAX

Gorlitz Sewer & Drain, Inc. is required to charge applicable State Sales Tax on every item sold unless a California State Sales Tax Exemption Certificate has been provided.

FREIGHT POLICY

All merchandise shipped per parcel service are prepaid and added to the invoice. All shipping fees per trucking lines are the responsibility of the customer. Gorlitz Sewer & Drain, Inc. is not responsible for loss or damage during shipping. All freight claims must be initiated by customer directly with the freight carrier.

MERCHANDISE CLAIMS AND RETURN POLICY

All discrepancies in goods received must be claimed within five days after receipt of goods. Any item to be returned must be referenced by invoice number, date of sale and written consent of seller.

GORLITZ LIMITED WARRANTY

All products manufactured at Gorlitz Sewer & Drain, Inc. are warranted to be free from defects in material and workmanship under normal use and maintenance for a period of one (1) year from date of purchase to original buyer. If any parts break or fail, we ask you to notify your nearest dealer or Gorlitz Sewer & Drain, Inc. and supply us with proof of purchase and nature of failure. Gorlitz will repair or replace (at our option) any parts found to be defective. The replacement part assumes the unused portion of the warranty. Transportation of the product to any service station is the responsibility of the user unless stated otherwise in this warranty. The equipment is being sold to Buyer on an "as is" and "where is" basis and that except as specifically set forth in this agreement, Gorlitz makes no other representations or warranties, whether express or implied.

This warranty does not apply to expendable items such as cables, knives, nozzles, hoses, pressure gauges, regulators, jaws, fittings, etc., or to shaved, kinked, or broken hoses or cables, which show evidence of misuse. This warranty is void, and Gorlitz will not be liable for any damages arising from negligence, the unauthorized repair or alteration to equipment, the misuse or abuse of the equipment, the use of chemicals or accidents.

This warranty is exclusive and in lieu of all other expressed warranties and Gorlitz Sewer & Drain, Inc. does not authorize any party to assume for it any other obligation or liability. In no event shall Gorlitz Sewer & Drain, Inc. be liable for special or consequential damages arising from the use of this product or for any delay in the performance of this warranty due to causes beyond our control.

BUYER'S REPRESENTATION

In placing this order Buyer expressly understands, acknowledges and agrees that: (1) Buyer has received and read, or prior to using the equipment, will read the Operating and Maintenance Instructions that accompanied this equipment order, including Gorlitz's Limited Warranty and all of the other Terms and Conditions of doing business with Gorlitz Sewer & Drain, Inc. ("Gorlitz") as stated therein; (2) Buyer will operate and maintain the equipment in accordance with the specifications stated in the Instructions; (3) Buyer indemnifies and holds Gorlitz harmless for Buyer's failure to use the equipment in accordance with the specifications stated in the Instructions; and (4) all disputes arising under this agreement shall be submitted to courts of competent jurisdiction in the State of California and the prevailing party in any action or proceeding to enforce any provision of this agreement will be awarded reasonable attorney fees and costs incurred in that action or proceeding or in efforts to negotiate the matter.

MANUFACTURERS WARRANTIES AND LITERATURE

Most products used on our equipment are warranted to the final consumer by their manufacturers. Copies of such warranties are supplied with our products or are available from the manufacturers. As a service, Gorlitz Sewer & Drain, Inc. will obtain copies of consumer warranties from the warrantor and will furnish them free of charge to consumers upon request. Gorlitz Sewer & Drain, Inc. assumes no responsibility for the content of such warranties or sales literature by performing this service.

Due to a continuing program of product improvement, Gorlitz Sewer & Drain, Inc. reserves the right without obligation to revise prices, specifications and equipment.



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