



SPARTAN TOOL

FOR TOUGH CUSTOMERS. SINCE 1943.



PRODUCT MANUAL

Model 300

Spartan Tool LLC | 1618 Terminal Road | Niles, MI 49120
order by phone **800.435.3866** | order online **SpartanTool.com**

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Warnings

- Read the safety and operating instructions before using any Spartan Tool products. Drain and sewer cleaning can be dangerous if proper procedures are not followed and appropriate safety gear is not utilized.
- Before starting unit, be sure to wear personal protective equipment such as safety goggles or face shield and protective clothing such as gloves, coveralls or raincoat, rubber boots with metatarsal guards, and hearing protection.
- Drains and sewer can carry bacteria and other infectious micro-organisms or materials which can cause death or severe illness. Avoid exposing eyes, nose, mouth, ears, hands, and cuts and abrasions to waste water or other potentially infectious materials, wash hands, arms and other areas of the body, as needed, with hot, soapy water and, if necessary, flush mucous membranes with water. Also, disinfect potentially contaminated equipment by washing such surfaces with a hot soapy wash using a strong detergent.
- For any questions, contact the company at the address shown below.

CONTACT US

Spartan Tool LLC
1618 Terminal Road
Niles, MI 49120
800.435.3866
SpartanTool.com

CALIFORNIA PROP. 65

This product may contain an extremely small amount of lead in the coating. Lead is a material known to the State of California to cause cancer or reproductive toxicity.



The Spartan Model 300 electric drain and sewer cleaning machine has been designed and manufactured with high quality materials and care in workmanship. The instructions in this manual have been prepared to ensure that, when followed, the Spartan Model 300 will provide long and efficient service.



WARNING: It is the responsibility of the operator to read and understand the Product Manual and other information provided and use the correct operating procedure. Machines should be operated only by qualified operators. Failure to do so can result in personal injury, death, or machine damage.

Read the entire manual before the initial start-up of the machine. It is important to know the correct operating procedures of the machine and all safety precautions to prevent the possibility of property damage and/or personal injury.



NOTE: Information in this manual is current at the time of printing. Spartan Tool reserves the right to make changes and improvements to its products at any time without notice or obligation.

SERVICE INFORMATION

All requests for information, service, or parts should include machine serial number. Additional copies of this Product Manual can be downloaded free of charge from www.SpartanTool.com.

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Niles, MI 49120
800.435.3866
SpartanTool.com

SPARTAN MODEL 300

Unit Model Number

Unit Serial Number



Specifications and Features

Drum Capacity	75' of 5/8" cable or 100' of .55 Magnum cable
Cleaning Capacity	up to 250'
Recommended Line Size	3" to 6" diameter
Motor	Permanent magnet; 115 volt AC (rectified); 1.25 amps (DC) @ 300 rpm (no load); 4.6 amps (DC) 155 in-lb torque @ 160 rpm
Weight	103 lbs for a 300 Dial-A-Cable machine with 5' anchor cable
Height	30" to top of handle (retracted) 41" to top of handle (extended)
Width	18"
Length	29" with Dial-A-Cable power feed
Drum Speed	300 rpm with no load
Cable Feed	Spartan Dial-A-Cable Power Cable Feed
Frame	Extra strength aluminum/magnesium alloy

- Heavy duty permanent magnet motor with reverse capability.
- Inner drum rotates independently of outer drum, virtually eliminates cable kinking, buckling, and controls torque buildup.
- Outer drum keeps dirt inside, off operator and work area.
- Air foot switch with cord assembly keeps both hands free for safe, easy operation.
- Compact, portable design.
- Extra-strength aluminum and magnesium alloy construction.
- Integral continuous belt stair skids.
- Retractable "sure-grip" extending handle.



IMPORTANT: FOR YOUR OWN SAFETY—Before assembling and operating this unit, read this product manual carefully and completely. Learn the operation, applications and potential hazards peculiar to this unit.



Use of any electrical equipment in a wet or damp environment can cause fatal shock if not properly guarded against by the operator.

1. **Know your drain cleaning machine.** Read this Product Manual carefully. Learn the operation, applications, and limitations of this machine.
2. **Grounding instructions:** Before using your Spartan equipment, make sure that a properly grounded, (three hole) electrical outlet is available. If not, as in older homes, use a three-prong adapter and connect the green pigtail or grounding lug to a known ground, such as a (metallic) cold water pipe.

This tool should be grounded while in use to protect the operator from electric shock. The tool is equipped with a three-conductor cored and proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect this wire to a live terminal. Units designed for use on less than 150 volts, have a plug that looks like that shown in Fig. 1A. An adapter (Fig. 1B and 1C), is available for connecting three-prong plugs to two-prong receptacles (except in Canada). If such an adapter is used, the green colored rigid ear, lug, or the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

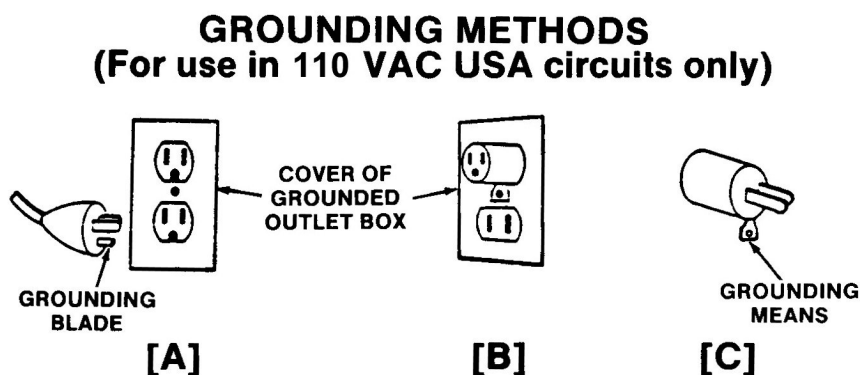


FIG. 1

This machine is equipped with a Ground Fault Circuit Interrupter (GFCI), which should always be plugged directly into an inspected, grounded receptacle. Plug the three-pronged plug on the machine power cord with GFCI directly into an inspected grounded outlet and then test and reset the GFCI.

Never cut off the grounding prong on the power cord for use in a two-hole outlet. Doing so cuts off your protection from shock. Replace or repair all damaged power cords and components.

Safety Instructions

3. Extension cords



DANGER: Improper use of an extension cord will cause death or severe injury. The GFCI on the machine's power cord does not protect the operator from electrical shock along the extension cord.

If an extension cord must be used, it must be approved, three-wire construction, equipped with a three-pronged plug, and in good condition. Replace or repair damaged cords.

Do not use an undersized extension cord. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Use the following minimum gauges depending upon the length of the extension cord:

- 16 Ga.: for cords of less than 100 feet in length
- 14 Ga.: for cords of 100 feet to 150 feet in length

If in doubt, use the next heavier gauge. (The smaller the gauge number, the heavier the cord.) When the machine is used outdoors, use only extension cords intended for use outdoors and so marked. Do not allow an extension cord to be exposed to water.

Don't assume that all three-hole outlets are properly installed. Check the outlet and also the adapter, if used, with an outlet testing device which quickly indicates if a ground is connected. Correct a faulty test indication before proceeding.

4. **Don't abuse cord.** Never move or lift tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
5. **Disconnect power cord.** When not in use, before servicing, and when changing accessories, such as blades and cutters.
6. **Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, refrigerator enclosures.
7. **Avoid accidental starting.** Don't move plugged-in tools. Make sure switch is in OFF position before plugging in power cord.
8. **Stay alert.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.
9. **Keep work area clean.** Cluttered areas invite injuries.
10. **Consider work area environment.** Don't expose power tools to rain. Keep work area well lit.

Do not use tool in presence of flammable liquids or gases.

Avoid operating the machine in areas of standing water.

11. **Dress properly.** Do not wear loose clothing or jewelry. They can be caught in moving parts. Wear protective hair covering to contain long hair.

Wear standard equipment (Spartan riveted gloves). Never grasp a rotating cable with a cloth or loose-fitting glove, which would get wrapped around a cable.

Wear rubber boots and wear rubber gloves inside your Spartan cable handling gloves to further insulate yourself.

12. **Use safety glasses.** Guard against foreign material that might fly off cable.
13. **Don't overreach.** Keep proper footing and balance at all times.

Safety Instructions

- 14. Keep children away.** Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.
- 15. Use recommended equipment and accessories.** Use of improper equipment may be hazardous.

Don't force small cable with attachment to do the job of heavy-duty cable.
- 16. Don't force tool.** It will do the job better and safer at the rate for which it was intended.
- 17. Remove punches and wrenches.** Form a habit of checking to see that punches and adjusting wrenches are removed from tool before turning it on.
- 18. Keep guards in place.** Never operate machine with guard removed.
- 19. Avoid operating machine in reverse.** Operating machine in reverse can result in cable damage and is used only to back tool away from an obstruction.



WARNING: Continued drum rotation in reverse position will cause cable to "jump" out of drum. Possible operator injury could result.

- 20. Do not over torque cables.** Excessive and/or continued rotation of the drum once an obstruction has been encountered will over torque the cable. Kinking or breakage of cable may result. A worn cable can be identified as being very limber, kinked, or having flattened coils on the outside of cable. Worn cable should be replaced as soon as possible.
- 21. Maintain tools with care.** Keep tools sharp and clean for better and safer performance.

Follow instructions for lubricating and changing accessories.

Never use damaged power cords.

Inspect tool cords periodically and, if damaged, repair with proper Spartan replacement parts.

Inspect extension cords periodically and replace if damaged.

Keep handles dry, clean, and free from oil and grease.
- 22. Check damaged parts.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding or moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

Replace defective switches with proper Spartan replacement parts.

Do not use tool if switch does not turn on and off
- 23. Store idle tools.** When not in use, tools should be stored in a dry and locked up place, away from children.
- 24. Handling cables.** Be very careful when cleaning drains exposed to cleaning compounds. Wear protective gloves when handling cable, and avoid direct contact of skin and especially the eyes and facial areas as serious burns can result from some drain cleaning compounds.



Machine Features

300 WITH DIAL-A-CABLE POWER CABLE FEED

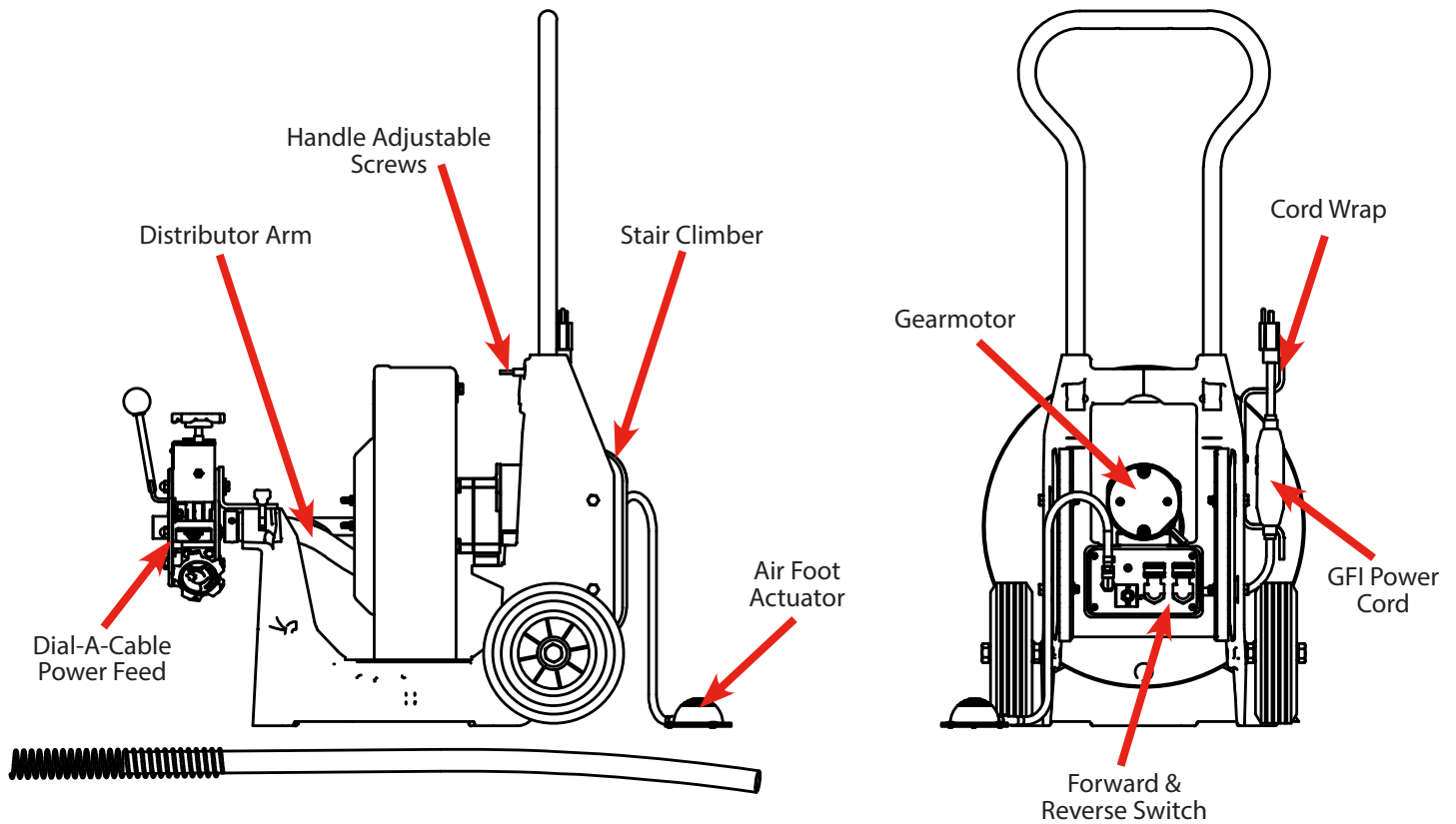


FIG. 2



STUDY THESE INSTRUCTIONS CAREFULLY BEFORE YOU OPERATE YOUR EQUIPMENT

JOINING CABLES

All cables and leaders are coupled together by male and female couplings, and held securely by means of expansion pins as illustrated.

The cable and coupling stand is furnished with the optional tool box to provide a support on which to rest your cable when assembling or disassembling the couplings.

Assembly

Place coupling in groove on top of stand with portion of expansion pin in upright position. Using hammer, drive expansion pin down flush with coupling. Assembly is complete, cable and machine are ready for use.

Disassembly

Position coupling stand at convenient distance from machine (2-3 feet.) Place coupling in groove, expansion pin up, on top of stand. Place tip of punch (provided with machine) in expansion pin. Drive expansion pin down with hammer. Note the shoulder on tip of punch, acts as a stop. Drive the punch until shoulder is flush with the coupling. This is sufficient to permit the male and female portions of the coupling to be separated but leaves the expansion pin, held securely in one half of the female coupling, in ready position for reassembly.

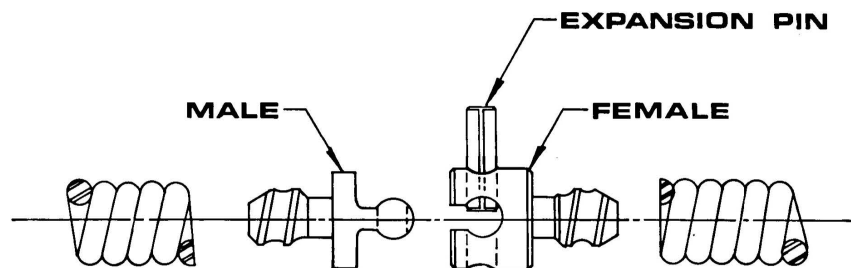


FIG. 3

LOADING CABLE INTO MACHINE



WARNING: Due to the amount of initial tension wound into your Spartan cable, care must be taken when uncoiling the bundle of cable. The cable will spring apart after the wire ties, which secure the cable, are cut.

After uncoiling the cable and laying out flat, attach the male end of the cable to the female end of the 10' anchor in the drum. With the machine plugged in, depress the foot actuator and check the rotation of the drum. The drum should rotate in a counter-clockwise direction, as you face the front of the machine. If the drum rotates in the wrong direction, reverse the toggle switch located (refer to Figure 2) on the motor support and check rotation again. With the drum rotating in the proper direction, start feeding the cable into the drum.

Assembly Instructions



CAUTION: Always wear your riveted Spartan gloves when handling a rotating cable. Read the section “How to Operate the Power Cable Feed” before you begin to feed cable into the drum. Feed the cable into the drum with the drum rotating. This insures proper distribution of cable inside the drum.

Leave about 2-3 feet of cable out of the machine to allow for attaching the next section of cable. After loading your desired length of cable, attach either a two foot leader cable or a double male coupling. You are now ready to attach your Spartan cutter blade assembly. (See Figures 4 & 5 for Cable Connection Diagram).

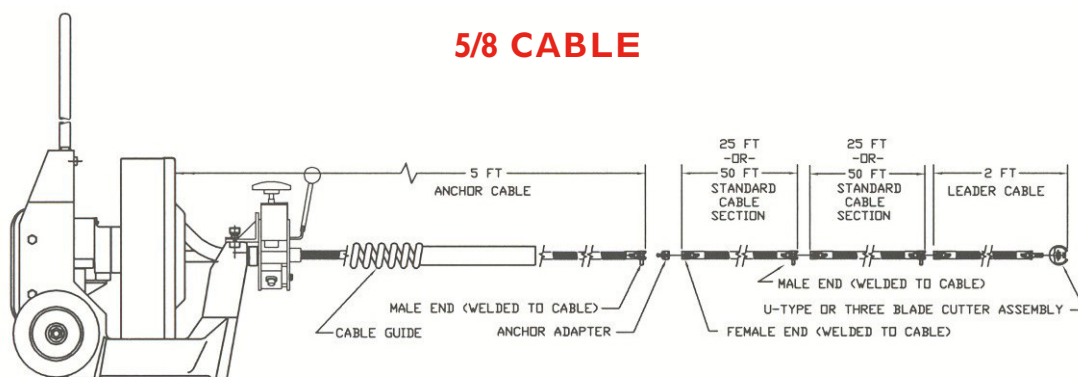


FIG. 4

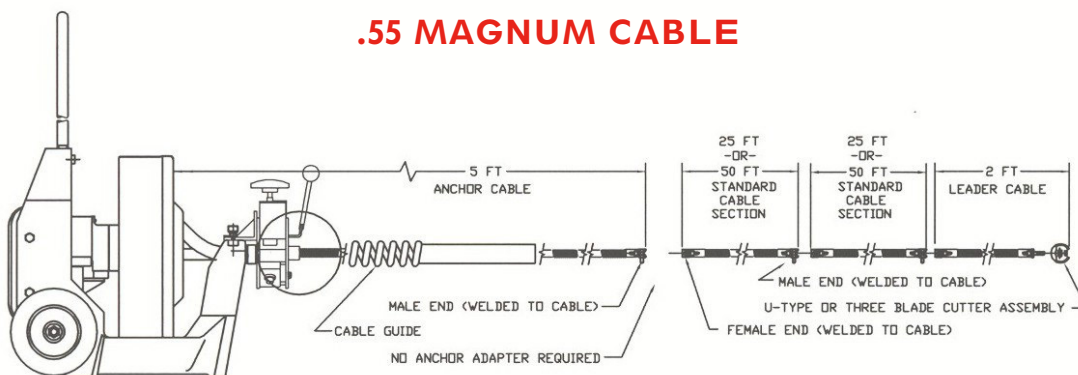


FIG. 5

ASSEMBLY OF BLADES TO CABLE



WARNING: Always disconnect power cord before attaching or changing blades.

Each U-Type Cutting Assembly consists of:

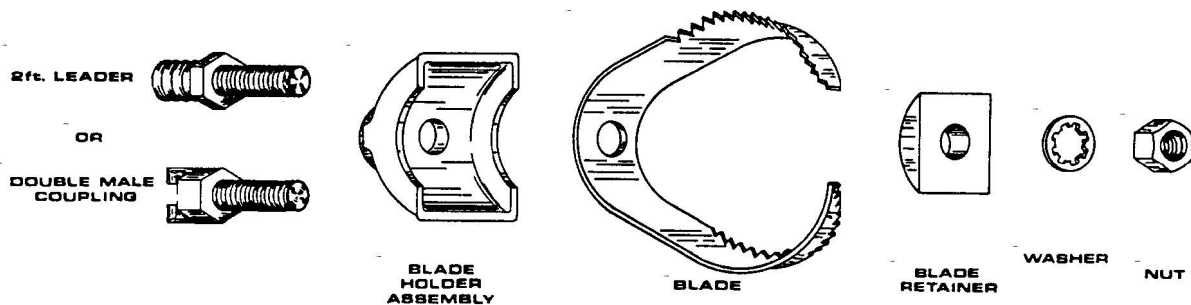


FIG. 6

Each Three-Blade Cutting Assembly consists of:

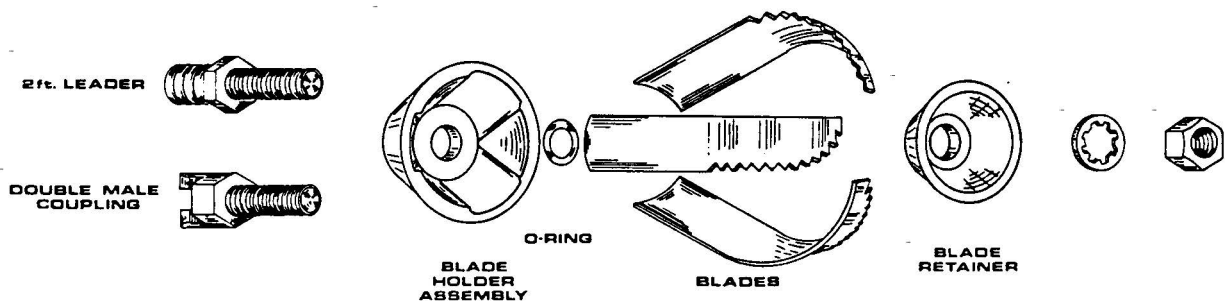


FIG. 7

Blades

The optional tool box is furnished with a number of different sizes and shapes of blades for various size sewers and types of cleaning work. (Additional tools are listed on page 14.)

Your Spartan blades can be attached to either a 2' leader cable or a double male coupling. To attach a cutter assembly the base of the blade holder assembly needs to be seated onto the hex part of the leader or double male coupling. Next, the proper blade size is placed into the blade holder base. After inserting the blade, secure with blade retainer, lock washer and nut. **Draw up all blades assemblies tightly** with your T-wrench, otherwise vibrating may cause unnecessary loss of blades. A T-wrench is furnished so you can quickly and conveniently assemble blades. With the blade assembly attached, your now ready to operate your Spartan machine.

Assembly Instructions

OPTIONAL TOOLS

Part Number	Description	Use
44006700	Extra Heavy Razor Sharp 2½" Round Cutter Blade	Used to cut roots and clear blockages in 3", 4", and 6" lines. High water resistance
44052600	Boring Tool	Used in 3", 4", and 6" lines for penetrating major blockages.
03416600	3" Grease Blade	For cleaning grease or muck lines. Integral "paddles" act as a scoop and cause a churning action within the line for quicker, more efficient cleaning.
03416700	4" Grease Blade	For cleaning grease or muck lines. Integral "paddles" act as a scoop and cause a churning action within the line for quicker, more efficient cleaning.

OPTIONAL ACCESSORIES

Tool box and the following accessories:

- Cable uncoupling stand
- Punch for expansion pin
- T wrench
- 3" and 3½" P-trap blades with blade holder assembly
- Spear blade
- 2" and 2½" blades with blade holder assembly
- 3", 4" blades with blade holder assembly
- Retriever
- Riveted gloves
- Expansion pins, double male, male and female couplings
- Splicer
- 2' flexible leader



WARNING: Never wear loose fitting clothing or jewelry when operating this machine. **Always** wear your Spartan riveted gloves when handling cable.

1. Couple the leader or double male coupling, complete with the proper tool, onto working end of the cable. See assembly instructions.
2. Use a small blade or spear blade on the end of your cable first. Most lateral lines are 4" to 6" in diameter. It is advisable to use a 3" blade or spear blade first. That enables you to cut the core out of the obstruction, to get the water running. Then remove the 3" blade, or spear blade. Put on a blade the size of the sewer line to be cleaned, so you can actually scrape the line - thereby giving a thorough, efficient cleaning job.
 - a. A good rule of thumb is to use a tool at least 1" smaller than the line to be cleaned. The style of tool is determined by the nature of job and is left to the discretion of the operator.
 - b. Flexible trap leaders should be used to negotiate p-traps and severe bends in line.
 - c. Double male couplings should be used when operating in heavy root build up or severe obstructions.
3. Place your machine as close to the cleanout as possible. **Do not allow more than 4 feet of cable between the machine and the cleanout. Always use the Cable Safety Guide.**



WARNING: Operator should be thoroughly familiar with the Safety Instructions section before attempting to operate this equipment.

4. Place foot switch, in a comfortable and accessible position in order to have power at all times.
5. Place the switch in the "F" (forward) position. Check by pressing down on footswitch making sure that drum rotates in counter clockwise direction as you face the drum.
 - a. Hand-feed the tool into the opening of the line and feed about 6" of cable in before turning machine on.
 - b. Refer to the section "How to Operate the Power Cable Feed" before proceeding.
6. Exert sufficient downward pressure on the Cable Safety Guide to keep cable in line while depressing foot actuator to start cable rotating.
 - a. When using a Dial-A-Cable Power Cable Feed, keep one hand on the Cable Safety Guide halfway between the cleanout and the power feed outlet. Keep your other hand on the power feed control handle.
7. When your blade meets an obstruction, it will no doubt fail to rotate. A reduction in RPM will be noticed. If RPM of the motor and drum decrease, quickly pull back on the cable to disengage blade from the root or other obstructions. Thereby releasing torque or tension on your cable—preventing buckling or kinking of cable.



WARNING: Do not permit blade end to get hung up in an obstruction for more than 2 to 3 seconds. Your job as an operator of this machine is to keep the cable rotating. Remember, do not operate the machine to the point where the cable begins to buckle. This practice is dangerous and could damage the cable.

Operation



NOTE: Kinkage and breakage of cable is caused solely by one thing: you permit the working end of the cable to get hung up in an obstruction and you keep on twisting the other end of same with your motor, until something must give. Remember, the only way you can clean an obstruction from a line, or negotiate a bend in a line, is when your blades are rotating. Let us repeat: your job is to keep the blades rotating. The design of your motor is such that as soon as the blade end of your cable gets hung up in an obstruction, your motor RPM reduces. That reduction in speed is notice to the operator to pull the blade away from the obstruction, thereby releasing the tension that has been built up in the coil-spring cable. That release of tension prevents buckling, kinking or breakage of the cable.

8. A good rule to follow for releasing tension on a cable is this: when your blade gets hung up in the obstruction and fails to rotate, an RPM reduction will be noticeable which indicates it is time to pull the blade away from the obstruction. As you pull it away, all tension in the cable will be released immediately and your blades will turn at a high speed. As soon as the blade is free, push it back into the obstruction quickly so as to utilize the built-up power which enables you to clean the line more quickly and efficiently.



WARNING: Do not allow a tool to get hung up in an obstruction. If a tool gets hung up in an obstruction, a reverse feature is provided on this machine for just this purpose. In the event your blade gets hung up on an obstruction and you are unable to release it in the normal manner, move the toggle switch to the "OFF" position, and permit your machine to come to a dead stop. Then, move the toggle switch in the "R" (reverse) position. Now start your machine slowly. See if you can remove the blade from the root or other obstruction by this reverse action. When the blade is released, let your machine come to a dead stop again. Then place the toggle switch in the "F" (forward) position. Make sure that the cable/blade rotates counter clockwise, when standing in front of the machine, except when reversing it to free cutting tool from obstruction.



WARNING: Do not reverse machine until motor and drum come to a dead stop.
Avoid operating this machine in reverse for any other purpose.

9. When you cut through one group of roots, it is always good to pull back your cable and take another cut. This final cut is what gives you a thorough cleaning job.
10. When the job is complete, feed the cable back into drum, making sure that your machine is running, so that the distributor arm can feed and distribute cable in the drum properly.
 - KEEP MACHINE RUNNING in the forward direction.



WARNING: Never retract tool from sewer inlet while cable is rotating.



NOTE: It is recommended that a continuous flush of water can be used to clean cable and tool as they are retrieved.

11. When tool is close to the clean out opening, release foot actuator and allow machine to come to a complete stop.
12. Move toggle switch to the "OFF" position and disconnect machine from power source.
13. Pull remaining cable and tool from the line and hand-feed cable back into the drum.

Operating the Power Cable Feed



1. The adjusting knob on the top controls the tension on the cable. It should be set so that the cable feeds freely in-and-out of the drum. Tension can be increased by turning handle to the right. Don't apply too much tension—just enough to keep the cable moving is sufficient.
2. Adjust the knobs on the Power Feed to match the size of the cable installed in the drum for optimal performance.
3. Cable is fed into the line by putting the handle in forward position. This speed will vary from 0-30 feet per minute depending on size of the cable and how far forward you push the handle.
4. Cable is brought out of the line by putting the handle in reverse position. You can also vary the speed in reverse.
5. When the handle is straight up, the drive is in neutral position. There is no lateral movement of cable at this point. This enables the operator to position the blade against the stoppage and chew it away if necessary.
6. Another feature of the Dial-A-Cable Power Cable Feed is its ability to change from FORWARD to REVERSE by simply moving the handle. The feed reacts immediately.
7. New drive design permits repair right in the field. Entire unit can be taken apart and put back in working order in just ten minutes.



WARNING: (1) Never try to force the cable into the line. Choose a proper feeding speed that gives a smooth cutting action. (2) Refer to operating and maintenance instructions for proper maintenance.

See Power Feed Manual for installation instructions.



Special Applications Procedure

CLEANING LINES THROUGH A MANHOLE

1. Position your machine at top and about 1' away from manhole.
2. Use a length of 1½" pipe with 45° elbow screwed there to (the depth of the manhole determines the proper length of pipe to be used).
3. Hand-feed your cable, less leader and blade, through proper length of 1½" pipe.
4. Fasten leader or double male coupling with proper size blade to end of cable.
5. Place blade into line by the use of extension pipe. The length of pipe referred to provides a guide for your flexible shaft from the top of the manhole to the entrance of the line, thereby preventing your cable from buckling or kinking. It likewise enables the operator to operate the machine in a convenient, comfortable position at the top of the manhole. **Never enter the manhole.**

RODDING FARTHER THAN 75' (5/8" CABLE*)

The object of the 5' anchor cable in the drum is this: When you have fed 75' of cable into the line, the female coupling on the end of the 5' piece will show up at the end of the distributor arm on your machine. You will then know that you have 75' of cable in the line. Now, let's suppose that the line you are cleaning requires more than 75' of cable.

This is the procedure to follow:

1. Disconnect the 75' of cable and leave it in the line. Insure that it cannot fall into the pipe beyond the opening.
2. Take the male end of your extension and add it to the 5' piece in the drum, feeding the whole extension piece into the drum.
 - **NOTE:** The machine should be operating in the forward direction.
3. Hook up to the 75' piece in the sewer and resume rodding.
 - ***NOTE:** 100' of .55 magnum cable can fit in the drum at one time.

MAIN SEWER OR SEPTIC TANK OVERRUN

It is very important to know the approximate distance from inlet to main sewer or septic tank. Overrunning cable too far into main sewer or septic tank can allow cables to knot up and prevent their retrieval.



WARNING: Make sure machine is unplugged from the electrical system before making any adjustment.

INSTRUCTIONS FOR SPLICING OR REPAIRING CABLE

Splicing Cable (Standard Single Wound Cable)

1. Square ends of cable to be spliced or repaired by placing each end against a grinding wheel, grinding down so that the shoulder of splicer or coupling will butt squarely against the cable ends. (If splicing "INNER-CORE CABLE", and inner-core protrudes from cable at point of repair, pull the inner-core out of the cable just far enough to allow for the insertion of the connector. Then cut the inner-core off and push back into cable.)
2. Put cable in vice and open ends slightly with drive punch so that opening is just large enough to allow connector to be inserted.
3. Clean splicer or coupling of rust or grease.

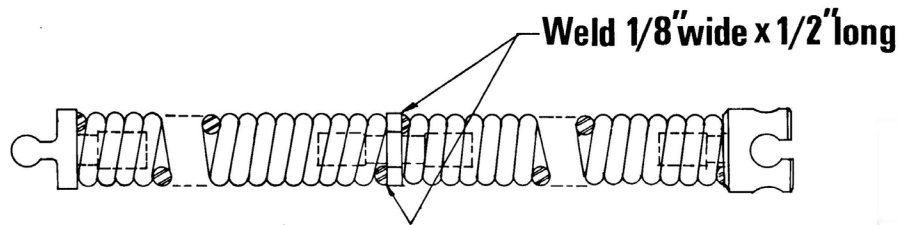


FIG. 8

4. Connect cables to splicer, or coupling and draw up tightly to shoulder of connector, as illustrated above.
5. Put cable in vice and open ends slightly with drive punch so that opening is just large enough to allow connector to be inserted.

Splicing the .55 Magnum Cable and Installing New .55 Couplings

Item	Part Number	Description
1	44110400	.55 Long Male Coupling
2	44110500	.55 Female Coupling
3	44114500	.55 Splicer
4	44111300	.55 Male Coupling
or	44114300	.55 Leader Male Coupling
5	44291601	Anchor Adapter .55 to 5/8"

NOTE: Couplings and splicer for the .55 Magnum Cable are **not** interchangeable with 1/2" or 5/8" Spartan cable connectors.

Maintenance Instructions

1. Grind cable square by placing the cable end against a grinding wheel. Care is to be taken to assure the innercore is flush with outer cable. Grind outer cable and innercore down enough to produce a flat contact surface between the cable and connector (splicer or coupling).
2. Secure the cable into a vise, making sure innercore remains flush with outer cable.
3. Clean connector and inside of cable from rust or dirt. (Care to be taken on cleaning connector threads.) Also it may be necessary to deburr inside of cable.
4. Insert connector into innercore in the manner of tightening a right hand threaded screw. Tighten connector enough so that contact is made between outer cable and the connector face. If required, step two through four should be repeated for the other cable end.

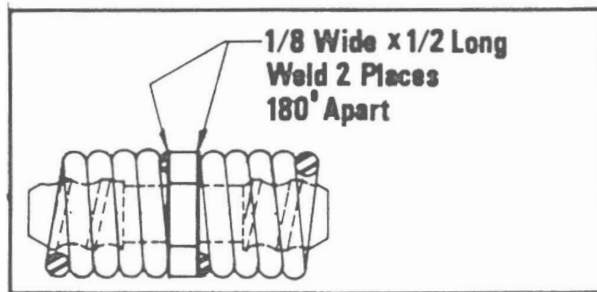


FIG. 9

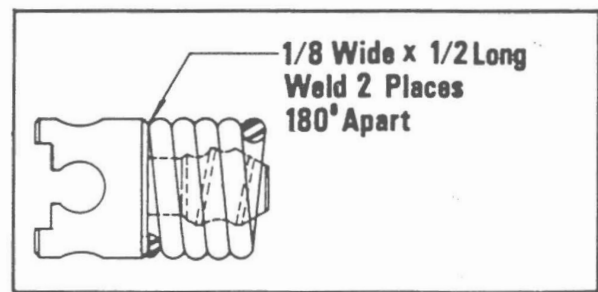


FIG. 10

5. Since the coupling and the wire in the cable are of high carbon steel, a special welding process is required. Before welding, use a propane torch to preheat the area where the weld will be. Hold the torch 4-5" away from the metal surface and heat for 2 minutes. Immediately, weld with an arc welder, using 3/32" diameter unit rod #70 or equivalent chromium-stainless steel rod. Use a heat range of 90-100 amps. Be sure weld bead is 1/8" wide and 1/2" long, where each wire end contacts the coupling.

After welding, it will be necessary to stress relieve the welded area. Again, using a propane torch holding 4-5" away from metal surface, heat up to approximately 5 minutes. Allow to cool and cable will be ready for use.



NOTE: Never heat the cable to a cherry red color. This indicates too high a temperature and will weaken the cable.

CHANGING MOTOR BRUSHES



WARNING: Make sure machine is unplugged from electrical system.



FIG. 11

1. Unscrew brush cap. (See Figure 11).
2. Remove brush, mark the top of the brush. Note the condition of brush end and brush length. If brush end is chipped or damaged in any way, replace brush. Brush length of $\frac{1}{4}$ " or less indicates time for replacement.
3. If brush is still good, replace into holder or; if not good, replace with new brush. Repeat procedure on other side then assemble cover and your machine is ready to run.



NOTE: If new brushes are used, run the machine for about 5 minutes before operating. Check brushes every 300 hours of operation and replace motor brushes every 5 years.

CARING FOR CABLES



NOTE: A new 5' anchor cable should be replaced each time new cable is installed.

Spartan cables are of such design that no special care is required. At the end of each day of use, cables and the inside of drum should be rinsed thoroughly with water to prevent damaging effects of drain cleaning compounds, acids and other organic compounds that eat away the cable's strength.

Cables should be replaced when they become severely corroded or worn. A "worn cable" can be identified when outside coils of cable become flattened and/or the cable becomes limber. A light weight rust inhibiting oil is recommended for use on cables when not in use. This serves to delay the effects of acid but only for a limited time.



NOTE: Worn or corroded cable reduce the machine efficiency in removing obstructions. New cable reduces chances of downtime and the time it takes to get the job done.

Maintenance Instructions

HOW TO INSTALL 5' DRUM ANCHOR CABLE

1. Position external drum in a vertical position so that cable can be inserted into the drum horizontally through the distributor arm.
2. Rotate the external drum until the heads of the cable clamp screws on the back of the drum indicate that the clamp is at the top of the drum. Unscrew the cable clamp screws to loosen the cable clamp inside the drum; DO NOT loosen these screws too much, as the cable clamp may become unfastened. (If this should occur, refer to the instructions for removing the inner drum in order to retrieve the cable clamp.) Remove old cable from drum.
3. Face the machine from the front. Place your left hand on top of the external drum; press the heads of the cable clamp screws forward with two fingers of your left hand, steadying the external drum with the palm of your left hand. Sight through the cut-out in the cover of the external drum and rotate the inner drum with your right hand; position the inner drum so that the distributor arm is aligned slightly to the right of the cable clamp. See Figure 12.
4. Allow the inner drum to rotate freely in a clockwise direction as you feed sufficient cable through the distributor arm into the external drum to position the cable within the external drum as illustrated in Figure 13.
5. Maintain the position of your left hand on the clamp screws and the top of the external drum as previously indicated above. Grasp the inner drum firmly with your right hand and rotate it counter-clockwise to the left with a snappy movement. This snappy motion will thread the non-working end of the cable into the correction position within the cable clamp. Tighten the cable clamp screws securely.

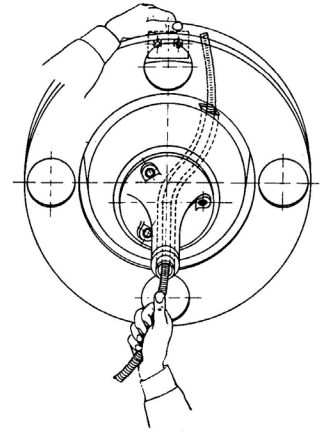


FIG. 12

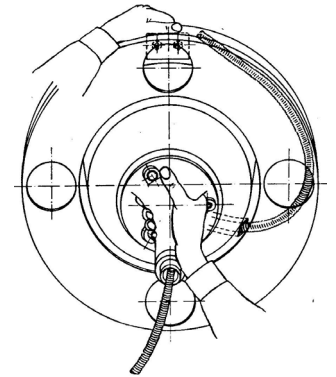


FIG. 13

MACHINE STORAGE

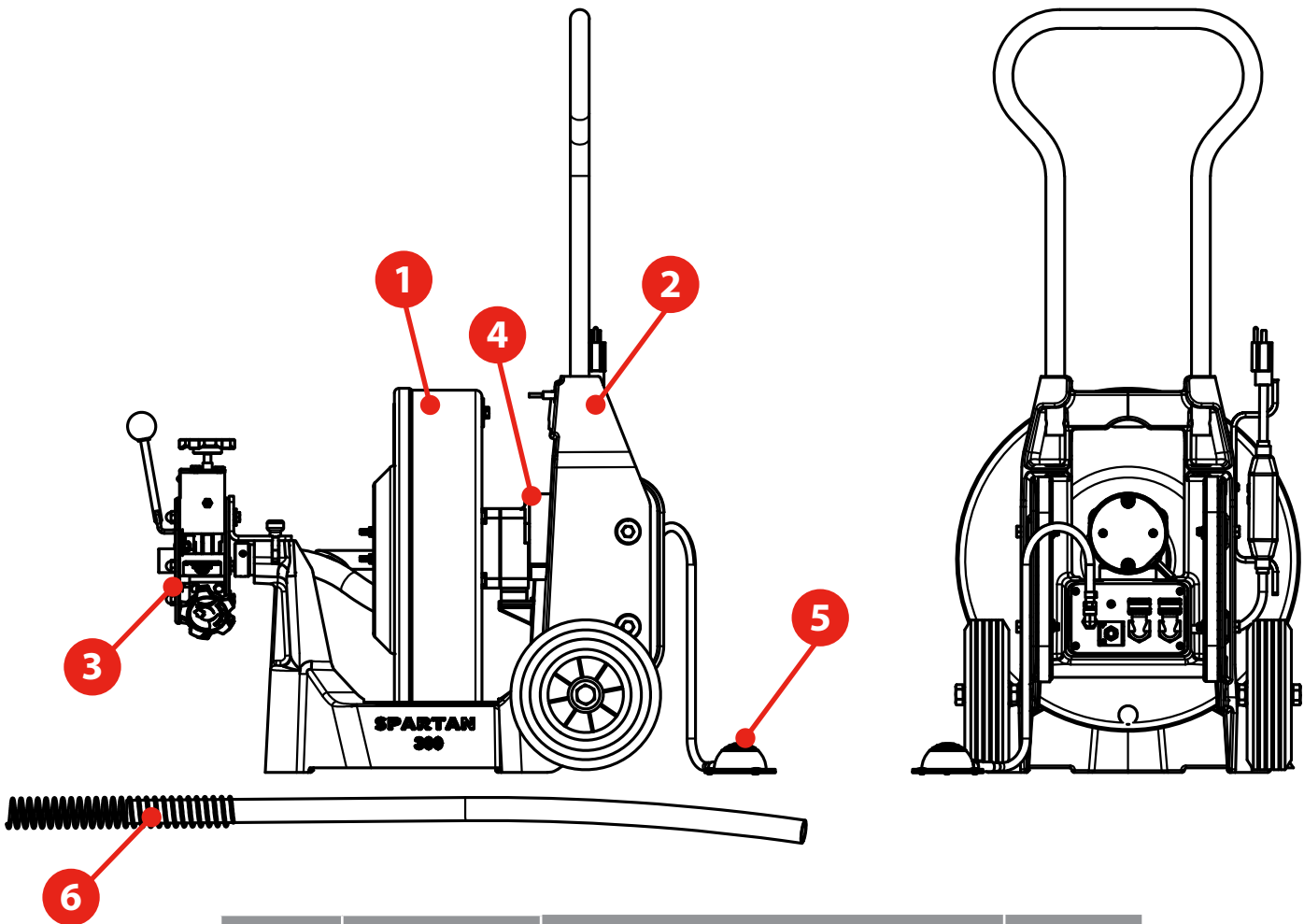
Electric motor driven equipment must be kept indoors or well covered in rainy weather.



NOTE: After every job, rotate drum so that the drain hole is on the bottom to allow for drainage before storage. A lightweight rust inhibiting oil is recommended for use on cables when not in use.

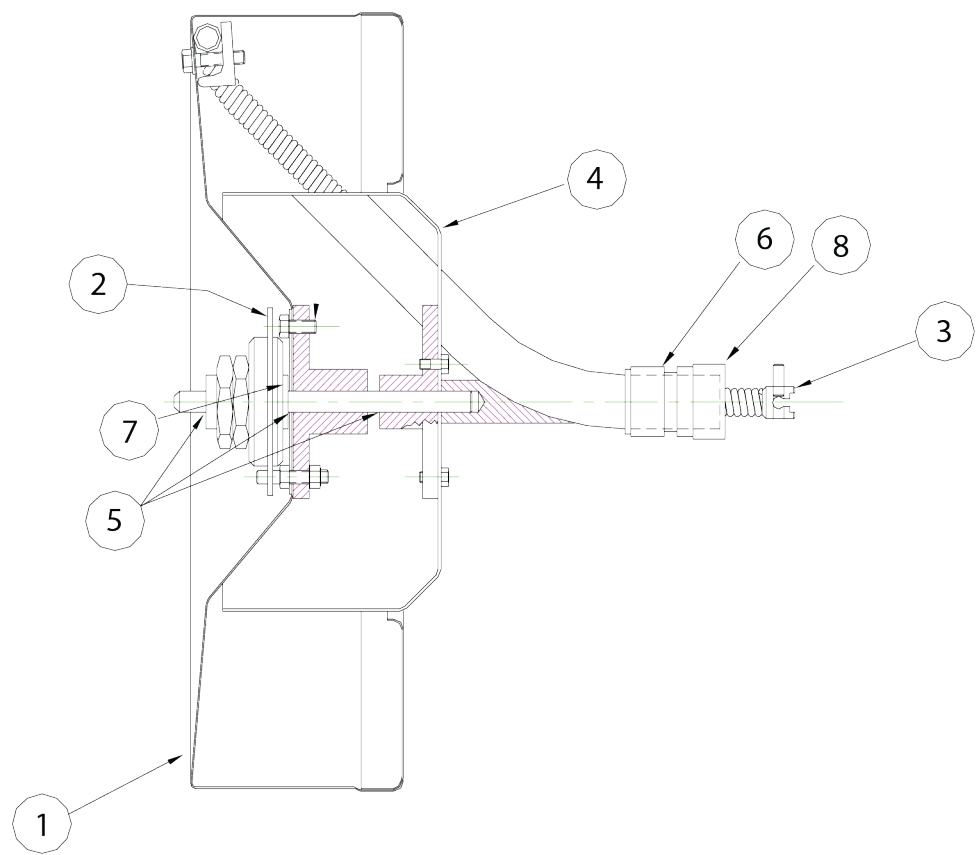


MODEL 300 (04221458)



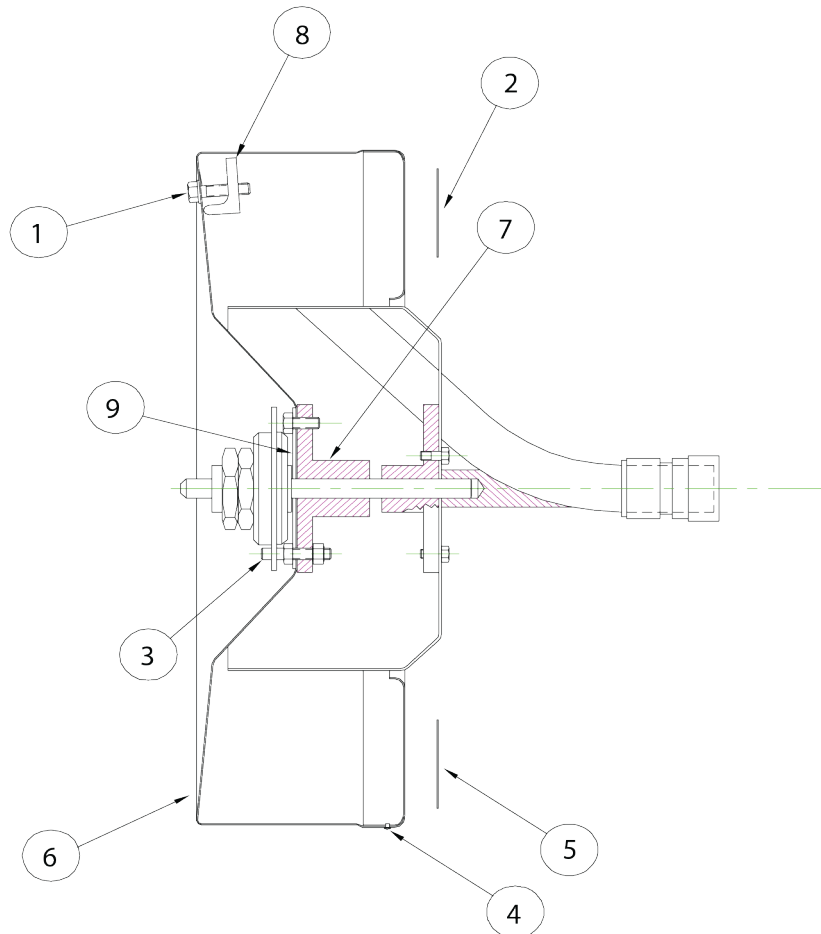
Item	Part Number	Description	Qty.
1	44129300	Model 300 Drum Complete	1
2	04217000	Frame, 300	1
3	04221000	Power Feed	1
4	44290200	PM Motor with Gearbox, 300	1
5	44225800	Air Bulb & Hose Assembly	1
6	44225300	Cable Guide Assembly	1

MODEL 300 DRUM COMPLETE (44129300)



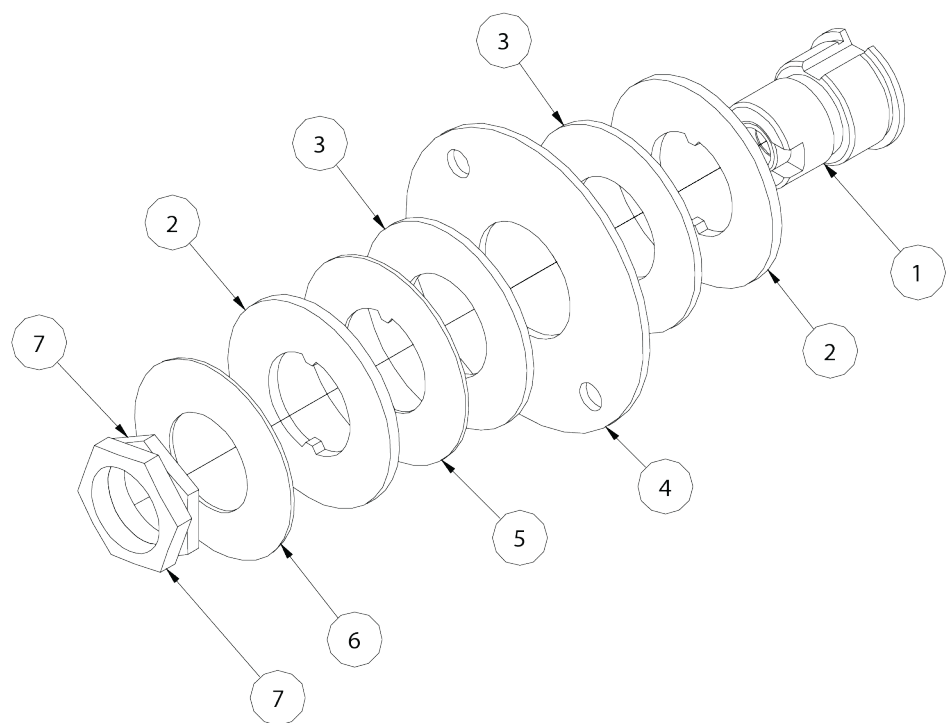
Item	Part Number	Description	Qty.
1	02875900	External Drum Assembly	1
2	04203300	Clutch Assembly $\frac{5}{8}$	1
3	44292700	Assembly, Universal Anchor .55	1
4	02875300	Model 300 Internal Drum	1
5	02822500	Retaining Ring, small	2
6	02873600	Distributor Arm Bushing	1
7	02890300	Sintered Bronze Thrust Washer	1
8	03407100	Set Collar Assembly 300	1

EXTERNAL DRUM ASSEMBLY (02875900)



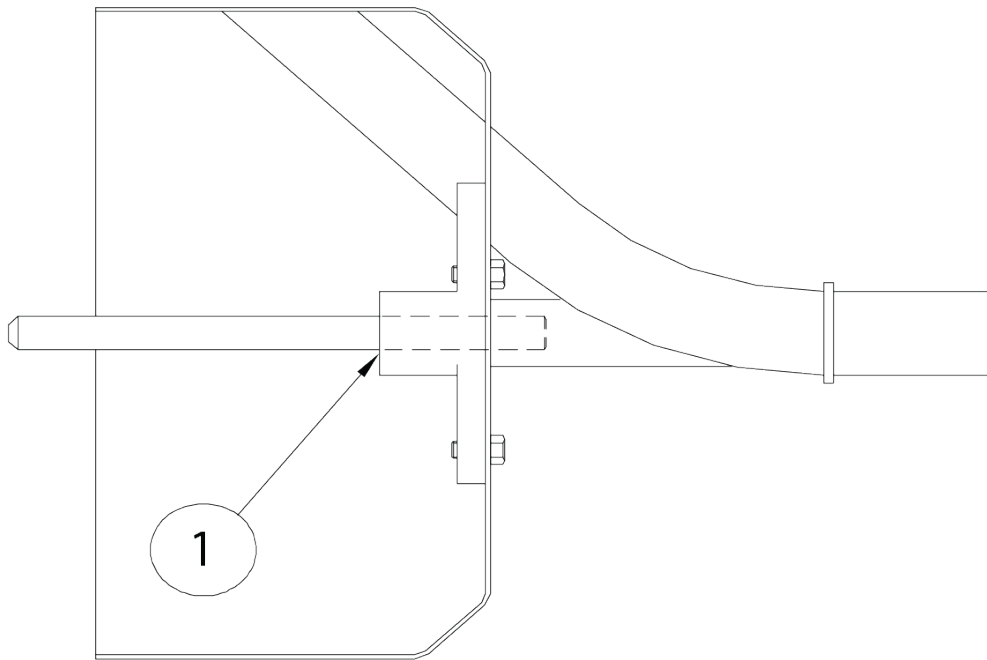
Item	Part Number	Description	Qty.
1	00115600	Screw, Hex HD Cap $\frac{5}{16}$ -18 x $1\frac{1}{4}$	2
2	02761200	Decal, Spartan Warning	1
3	02890200	300 Drive Stud	2
4	44039500	Rivet, Pop $\frac{1}{8}$ dia.	1
5	44052700	Decal Drum Model 200 & 300	1
6	04203500	Outer Drum & Cover 300	1
7	04203000	Drum Hub Assembly 300	1
8	02885000	Cable Clamp Assembly	1
9	02890000	300 Reinforcing Plate	1

CLUTCH ASSEMBLY (04203300)



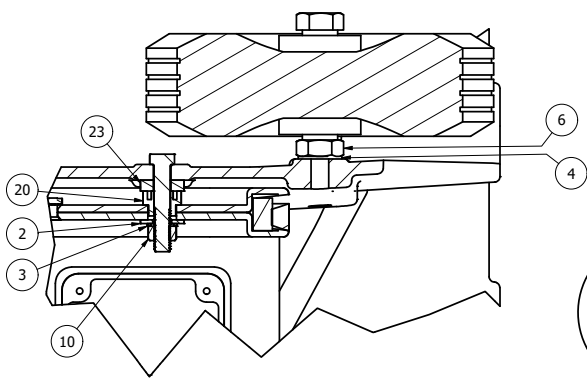
Item	Part Number	Description	Qty.
1	03414200	Clutch Hub & Bearing Assembly	1
2	02760300	Plate Drive Mod 100	2
3	02760400	Clutch Facing, Scan-Pac	2
4	02891063	Plate, Friction	1
5	04237000	Spacer 1.50 x 3.00 16 GA	1
6	02760500	Spring Clutch	1
7	02866300	Shouldered Adjusting Nut	1
8	02760700	Nut Adjusting	1

MODEL 300 INTERNAL DRUM (02875300)

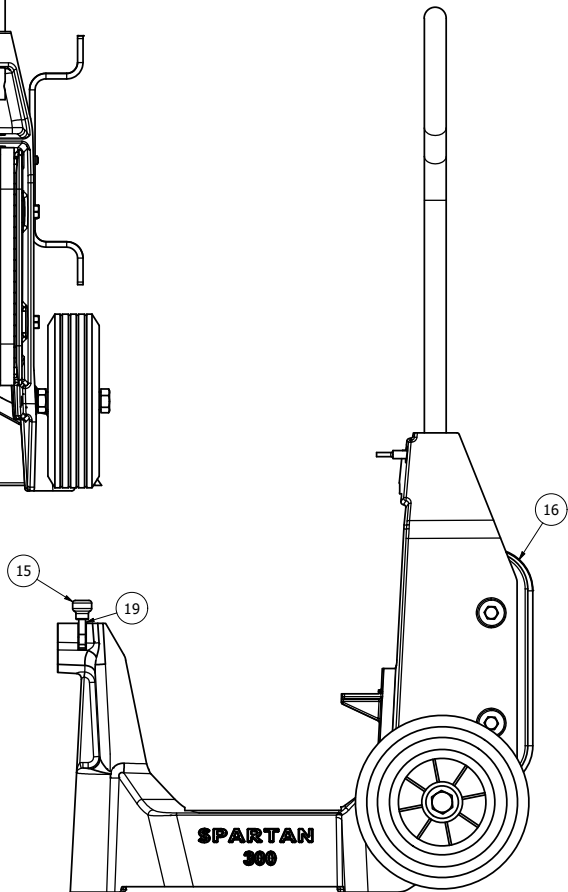
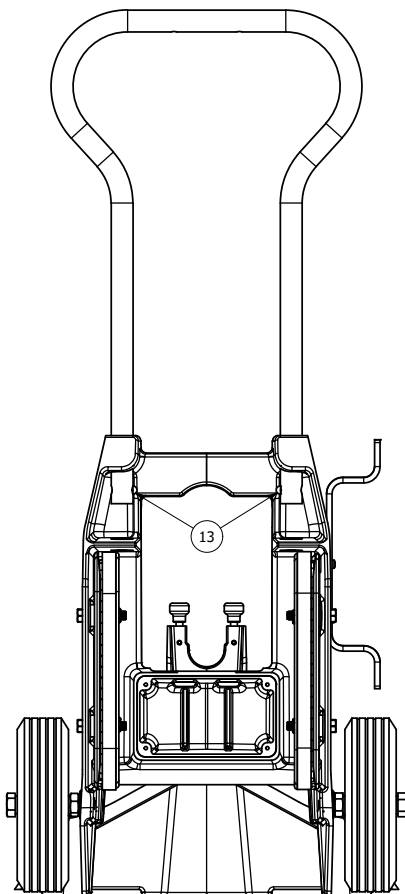
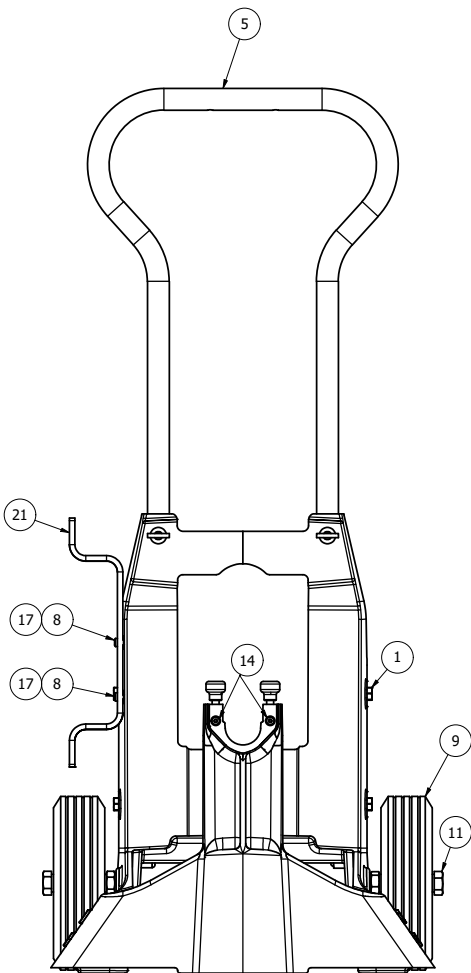
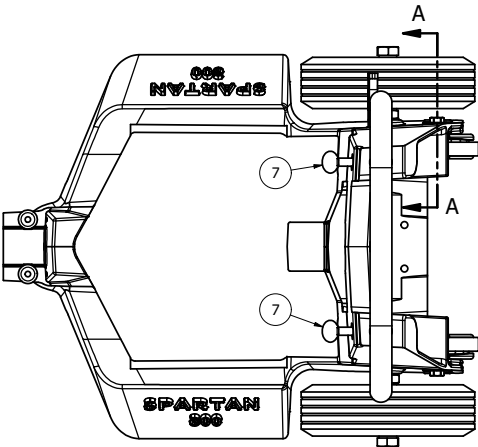


Item	Part Number	Description	Qty.
1	04202600	Drum Shaft Bracket Assembly 300	1

MODEL 300 FRAME ASSEMBLY (04217000)

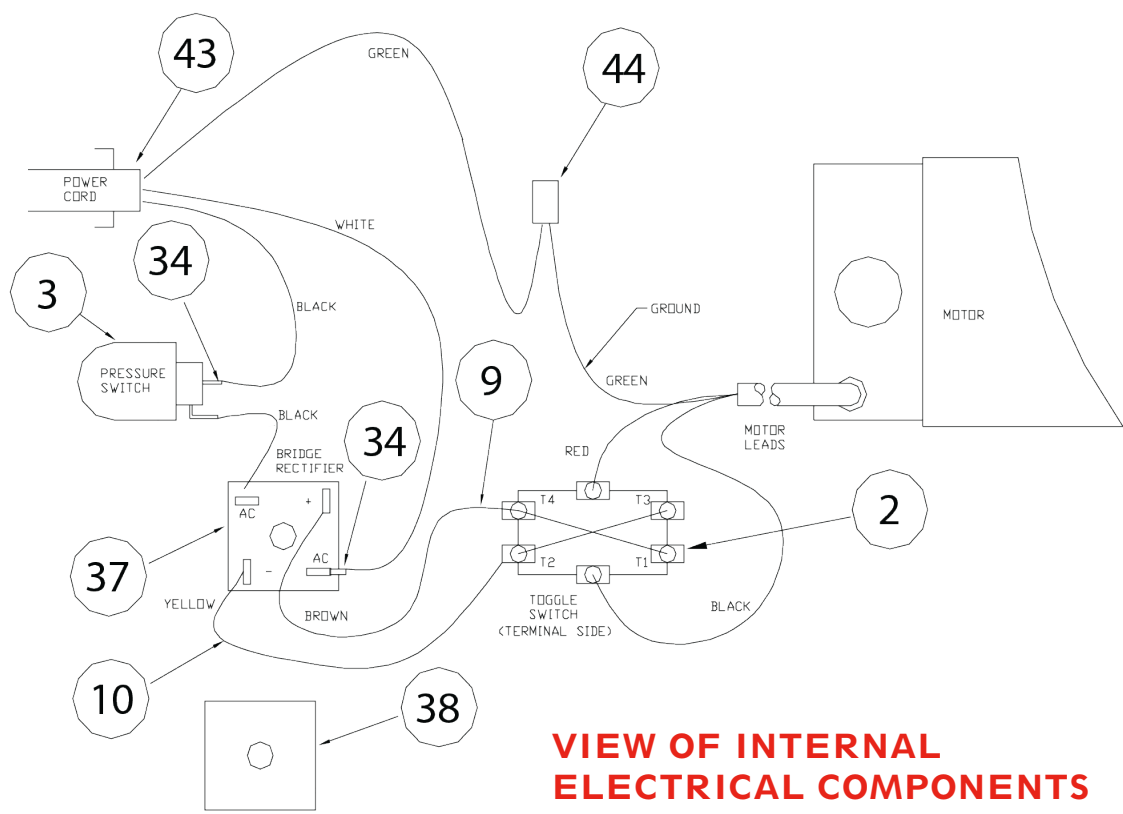


DETAIL B
SCALE 1 / 2



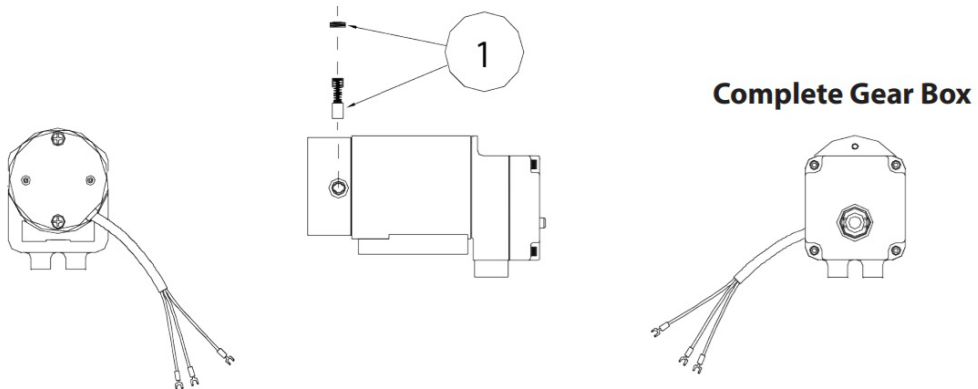
Item	Part Number	Description	Qty.
1	00117000	Screw, hex HD $\frac{3}{8}$ -16 x 2	4
2	00162700	Washer, flat $\frac{3}{8}$	4
3	00167200	Washer, lock-in tooth $\frac{3}{8}$	4
4	00167600	$\frac{5}{8}$ Lockwasher int tooth	2
5	02818200	Handle, 200-300-1065	1
6	02820800	Nut, hex jam $\frac{5}{8}$ -18	2
7	02822900	Thumb screw $\frac{3}{8}$ -16 x 2" LG	2
8	02824000	Screw, pan HD 10-32 x1	2
9	02897800	Rubber tired wheel 8 x 2.50	2
10	02934100	Nut, hex $\frac{3}{8}$ -16	4
11	02994400	Screw, hex HD cap $\frac{5}{8}$ -18 x 4"	2
13	03002200	Spring steel button pin	2
14	02881900	Roll Pin Plain $\frac{1}{4}$ x 1- $\frac{3}{4}$	2
15	03410500	Adjustable knob	2
16	03421100	Tread crawler	2
17	03850100	Nut, hex 10-32 zinc plated	2
18	04220200	Decal, warning	1
19	04653500	Swing bolt 1 $\frac{3}{4}$	2
20	44073500	Spacer, Smart Cart	4
21	44280700	Cord wrap 1065 & 300	1
22	44281400	Decal, 1065, 300, 2001 safety	1
23	77755000	Washer, robo $\frac{3}{8}$ "	4
24	00165400	Washer, lock $\frac{1}{4}$ -20	4
25	00113901	Screw, hx hd cap $\frac{1}{4}$ -20 x 1"	4

WIRING DIAGRAM



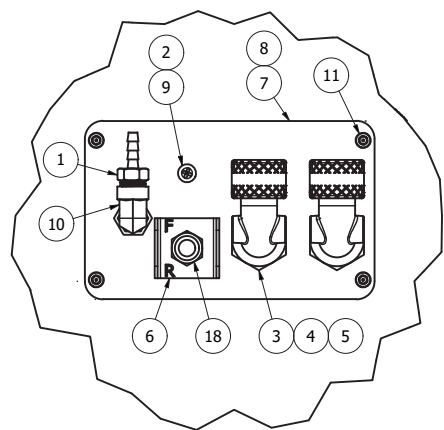
Item	Part Number	Description	Qty.
2	44221500	Forward Reverse Switch	1
3	44309100	Pressure Switch	1
9	44290700	Assy. Jumper Wire 5" brown	1
10	44290800	Assy. Jumper Wire 5" yellow	1
34	44216100	Disconnect, .250	2
37	44290500	Bridge Rectifier PM Motor	1
43	71103301	Power Cord 25' w/GFI	1
44	79925700	Connector-Push-On 2 wire	1

PM MOTOR WITH GEAR BOX 300 (44290200)



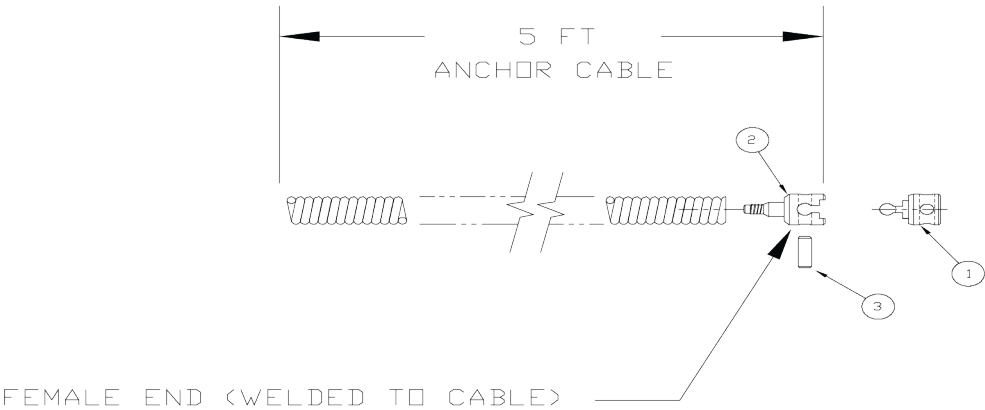
Item	Part Number	Description	Qty.
1	04231300	Repair Brush Kit 100-300-1065-2001	1

300 ELECTRICAL BOX DETAIL (04221458)



Item	Part Number	Description	Qty.
1	44308600	Barb Fitting, 3/16 Hose 1/4 NPT	1
2	03850100	Nut, Hex Kep 10-32	1
3	44227400	Cord Grip, 1/2 Alum Elbow .375	2
4	44227600	Locknut, 1/2 Trade Size	2
5	44227605	Locknut, Water Seal 1/2 Trade Size	2
6	04649500	Toggle Switch Guard	1
7	03002100	300, Electrical Box Cover	1
8	03002101	300 Electrical Box Cover Seal	1
9	02824000	Screw, Pan HD 10-32 x 1	1
10	44308500	Elbow, 90 deg 1/4 NPT x -2JIC swivel	1
11	75860300	Screw, 10-24 x 1/2 Socket Cap	4

ASSEMBLY, UNIVERSAL ANCHOR .55 (44292700)



Item	Part Number	Description	Qty.
1	44291601	Assembly, Anchor Adapter .55-5/8	1
2	44113100	.55 Female Coupling	1
3	44117400	Roll Pin Carbon Steel	1

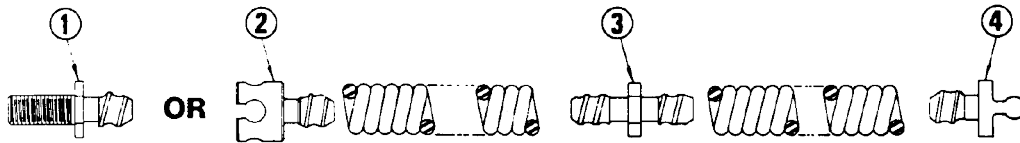
5/8" CABLE

5/8" INNER CORE

Dia - Lgth	Part Number
5/8" x 25'	03441702
5/8" x 50'	03441703
5/8" x 75'	03441704
5/8" x 100'	03441705

5/8" NO CORE

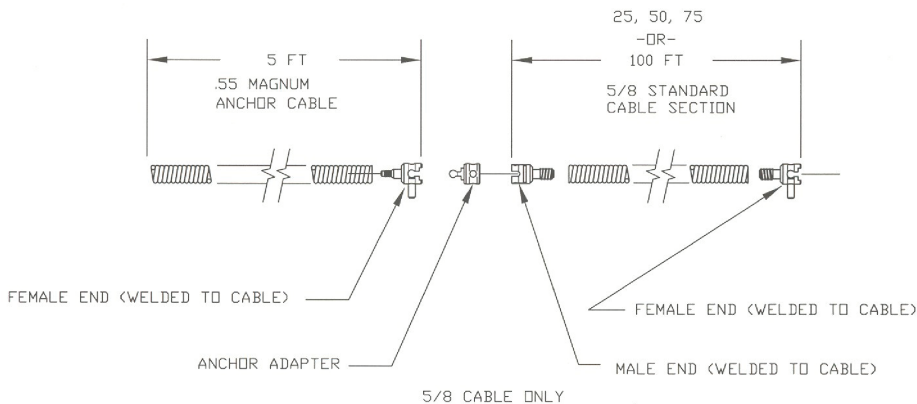
Dia - Lgth	Part Number
5/8" x 25'	00408901
5/8" x 50'	00408902
5/8" x 75'	00408903



5/8" CABLE PART NUMBERS

Item	Part Number	Description
1	02878200	Long Male Coupling
2	02878000	Female Coupling
3	02878300	Splicer
4	02878100	Male Coupling
5	44291600	Anchor Adapter

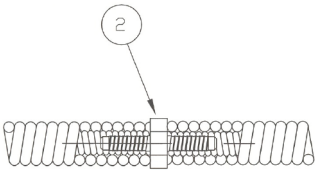
UNIVERSAL ANCHOR CABLE ASSEMBLY, .55"- 5/8" (44292700)



Part Number	Description
44117400	.55 Expansion Pin
44117500	Anchor .55 x 5 Magnum
44291601	Adapter, Anchor .55 - 5/8
02882200	5/8 Expansion Pin

.55" MAGNUM CABLE

Splice connector shown fully seated ready for welding

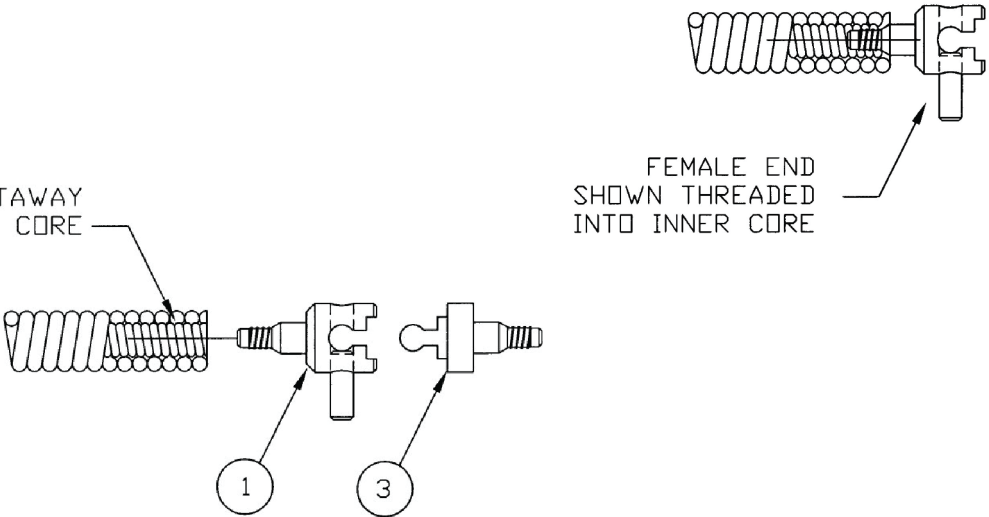


.55" MAGNUM CABLE PART NUMBERS

Item	Part Number	Description
1	44133100	.55" Female Couple
2	44114500	.55" Splicer
3	44133000	.55" Male Coupling

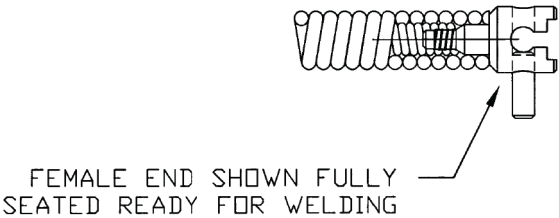
Dia - Lgth	Part Number
.55" x 50'	44128700
.55" x 10'	44128703
.55" x 2'	44116900

OUTER CABLE CUTAWAY
TO SHOW INNER CORE



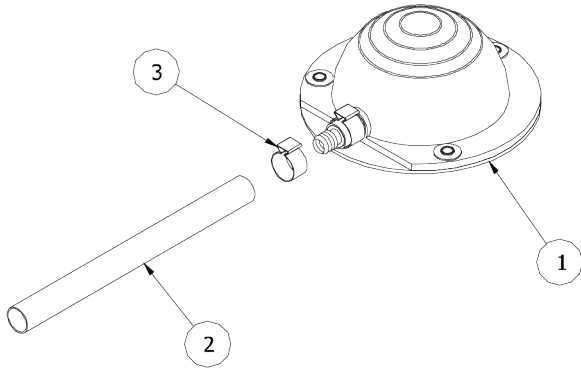
FEMALE END
SHOWN THREADED
INTO INNER CORE

Note: Couplings and splicer for the new .66 Magnum cable are **not** interchangeable with 3/4" or 5/8" Spartan cable connectors.



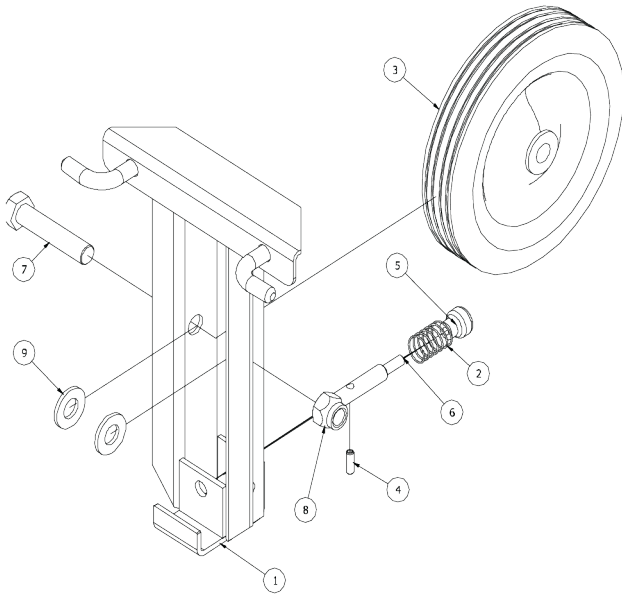
FEMALE END SHOWN FULLY
SEATED READY FOR WELDING

AIR BULB & HOSE ASSEMBLY (44225800)



Item	Part Number	Description	Qty.
1	04576900	Pressure Transmitter	1
2	04577100	Air Hose, 8'	1
3	04652700	Hose Clamp	2

OPTIONAL COMPACT LIFT (02884900)



Item	Part Number	Description	Qty.
1	02888700	Rail & Hook Assembly	1
2	02888500	Spring	1
3	02811900	Wheel, Model 100/200	1
4	02821800	Pin, Roll 1/4" dia x 3/4"	1
5	03410500	Adjustable Knob	1
6	02887600	Locating Pin	1
7	02826200	Screw, Hex Hd 5/8-18 x 3	1
8	02821300	Stop Nut 5/8-18	1
9	00760400	Washer, Flat 5/8 SAE	2

OPTIONAL MODEL 100 DRUM ADAPTERS

Part Number	Description
02766401	Model 100 Drum Assembly with $\frac{13}{32}$ Clutch (does not include items 141 & 142)
02766402	Model 100 Drum Assembly with $\frac{1}{2}$ Clutch (does not include items 141 & 142)
02766403	Model 100 Drum Assembly with $\frac{5}{16}$ Clutch (does not include items 141 & 142)

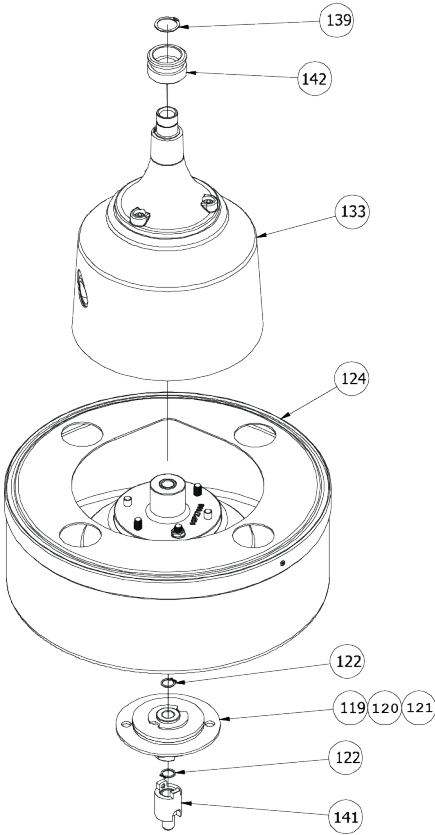
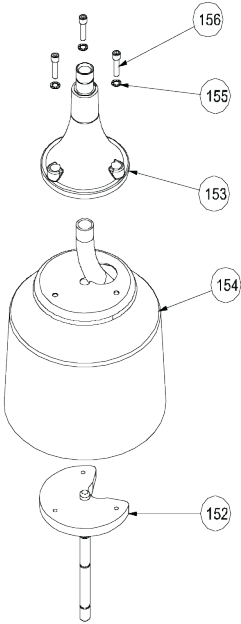
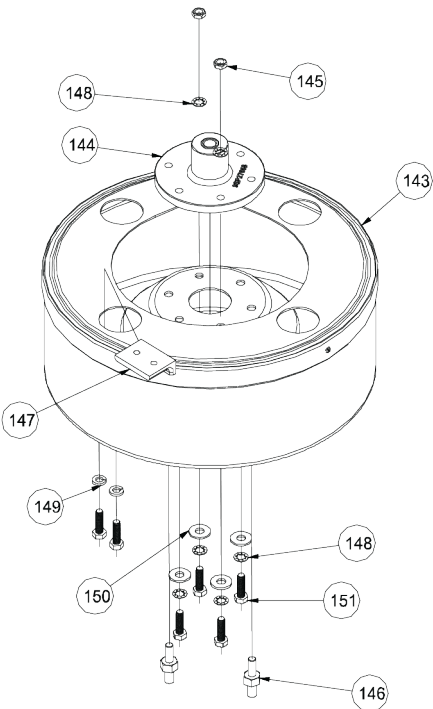


FIG 11



ITEM 133



ITEM 124

Item	Part Number	Description	Qty.
124	02766500	Complete Outer Drum Model 100	1
119	04203200	Clutch Assembly, 13/32	1
120	04204200	Clutch Assembly, 1/2	1
121	04204300	Clutch Assembly, 5/16	1
133	02766600	Inner Drum & Spinning	1
122	02822500	Retaining Ring, small	2
139	02822700	Retaining Ring, small	1
141	02887300	Rear Drum Adapter Assembly	1
142	04203800	Front Adapter Assembly <i>(includes Item 139)</i>	1
143	02767600	Outer Drum & Cover Assembly Model 100	1
144	02765700	Drum Hub Assembly	1
145	02820700	Nut, heavy hex jam 5/16-18	2
146	02765600	Drive Stud	2
147	02765500	Clamp Cable	1
148	00167100	Internal Tooth Lockwasher	6
149	00165600	Kantlink Lockwasher	2
150	00162600	Washer, Flat 3/8	4
151	00115100	Screw, cap hex hd 5/16-18 x 1	6
152	02676100	Mainshaft Assembly	1
153	02759900	End Bracket Assembly	1
154	02767500	Drum Internal Model 100	1
155	00167000	Internal Tooth Lockwasher	3
156	02827200	Screw, cap 1/4-20 x 7/8	3

TOOL BOX AND ACCESSORY KIT

.55 CABLE (44129400)

5/8 CABLE (04646900)



.55" TOOL BOX (44129400)

Item	Part No.	Description	Qty.
181	02883200	Uncoupling Stand	1
183	02752500	Tool Box Red w/Tote Tray	1
184	03406800	T Wrench	1
185	02893900	Glove, pair	1
186	02807700	Retriever LG Female CPLG	1
187	02798800	Spear Blade Cutter	1
188	02799100	3" P-Trap Blade	1
189	02799200	3½" P-Trap Blade	1
190	02799000	2" U-Blade (1065-300-200)	1
191	03400600	2½" Blade	1
192	02786600	3" Blade	1
193	02790900	4" Blade	1
194	02799500	P-Trap Blade Holder	1
195	02799300	2" & 2½" Blade Holder	1
196	02799400	3" - 4" - 6" - 8" Blade Holder	1
197	02790800	Blade Retainer	1
198	44113100	.55 Female Coupling	1
199	44113000	.55 Male Coupling	1
200	44114400	.55 Long Male Coupling	1
201	44114500	.55 Splicer	1
202	44117400	Roll Pin Carbon Steel	6
203	44116900	Leader .55 x 2 ICNT #5	1
207	44054900	.66 & .55 Pin Punch	1
208	44114200	.55 Double Male Coupling	1
209	00167200	Washer - Shakeproof	3
210	02821100	Nut, Hex ¾-24	3
211	44114300	.55 Male Leader Coupling <i>(not shown)</i>	1

5/8" TOOL BOX (04646900)

Item	Part No.	Description	Qty.
181	02883200	Uncoupling Stand	1
183	02752500	Tool Box Red w/Tote Tray	1
184	03406800	T Wrench	1
185	02893900	Glove, pair	1
186	02807700	Retriever LG Female CPLG	1
187	02798800	Spear Blade Cutter	1
188	02799100	3" P-Trap Blade	1
189	02799200	3½" P-Trap Blade	1
190	02799000	2" U-Blade (1065-300-200)	1
191	03400600	2½" Blade	1
192	02786600	3" Blade	1
193	02790900	4" Blade	1
194	02799500	P-Trap Blade Holder	1
195	02799300	2" & 2½" Blade Holder	1
196	02799400	3" - 4" - 6" - 8" Blade Holder	1
197	02790800	Blade Retainer	1
198	02878000	Female Coupling, 5/8 cable	1
199	02878100	Male Coupling, 5/8 cable	1
200	02878200	Long Male Coupling, 5/8 cable	1
201	02878300	Splicer, 5/8 cable	1
202	02882200	Pin for 5/8 cable	6
203	03441608	Leader 5/8 x 2 ICNT #5	1
207	02819100	Punch for ¾ & 5/8 cable	1
208	04204100	Coupling Double Male	1
209	00167200	Washer - Shakeproof	3
210	02821100	Nut, Hex ¾-24	3

PNEUMATIC TIRE UPGRADE KIT (44250700)



Item	Part Number	Description	Qty.
1	44218000	Axle	1
2	44250900	Casting, Wheel Adapter LH	1
3	44251000	Casting, Wheel Adapter RH	1
4	50HW12F0	Washer, flat	2
5	50H61600	Screw, hex head	2
6	71100700	Tire, 10" ½-13 x 1½	2
7	77747600	Cotter Pin ⅛ x 1	2
8	77759900	Screw, hex head ⅜-16 X 1¼	1

SPARTAN ACCESSORY BLADES



02799000
2" U-Blade



02799100
3" U-Blade



44261000
2" Double Cutter



03416600
3" Grease Blade



02786601
3" Half Blade



03400600
2½" Blade



02799100
3½" Blade



02786600
3" U-Blade



03416700
4" Grease Blade



02790901
4" Half Blade



02799300
2 - 2½" Blade Holder



02799500
P-Trap Blade Holder



44165200
4" Knife Blade



44006700
2½" Round Cutter



02807700
Retriever



02798800
Spear Blade



02799600
2" Single Blade



02791700
3" Single Blade



02813500
6" U-Blade



44161300
3" Knife Blade



44052600
Boring Tool



02791800
4" Single Blade



02798700
3½" Saw Blade



02797500
Tri Blade Holder



02870300
6" Single Blade



02818400
8" U-Blade



02799400
3" - 4" - 6" Blade Holder



034068
T-Wrench



Warranty Information

For our terms and conditions, including warranty, please visit <https://spartantool.com/pages/terms-and-conditions>. For warranty assistance, please contact us at (800) 435-3866 or customerservice@spartantool.com.

CONTACT US

Spartan Tool LLC
1618 Terminal Road
Niles, MI 49120
800.435.3866
SpartanTool.com

[illegible]



SPARTAN

FOR TOUGH CUSTOMERS.

SINCE 1943

CONTACT US

Spartan Tool LLC

1618 Terminal Road

Niles, MI 49120

800.435.3866

SpartanTool.com