



SPARTAN TOOL

FOR TOUGH CUSTOMERS. SINCE 1943.



PRODUCT MANUAL

Model 81

Cable Machine

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 product. Drain and sewer cleaning can be dangerous if proper procedures are not followed and appropriate safety gear is not utilized. Read the engine owners' manual for instructions and safety precautions on engine operation.
- Gasoline is extremely flammable and is explosive under certain conditions.
 - Refuel in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
 - Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.
- 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.
- Carbon monoxide exhaust and/or gasoline fumes from this equipment can create a hazardous atmosphere in confined spaces (which may include, but are not limited to, manholes and septic tanks), closed garages or other areas which may not be properly ventilated. In particular, excess gasoline fumes can create an explosion hazard. Such hazardous atmospheres can cause death or severe injury. Do not operate this equipment with its cart (used to house the engine and gasoline tank) located in any confined space or area with inadequate ventilation. Operate this equipment only when the cart is located outdoors or in an open, well-ventilated area.
- Ensure the jet hose has been placed in the pipe a minimum of 6 feet before engaging the water pressure to prevent the hose from coming out of the pipe prematurely and causing injury.
- Always shut off the water pressure before pulling the hose out of the pipe. Mark the hose a minimum of 6 feet from the end to help ensure the hose is not accidentally pulled out of the pipe while still under pressure. Shut off the water pressure when the hose mark is encountered.
- Never point the wash gun at anyone while operating the unit. Injury may result.
- 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 during drain and sewer cleaning operations. To further help protect against exposure to 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 Spartan Tool at the address shown below.



CAUTION: Portions of the system can still be under pressure even if the unit is not operating.

CONTACT US

Spartan Tool LLC
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Niles, MI 49120
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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.



Technical Information

GENERAL

- Pipe Sizes: 1 1/4" - 3" diameter
- Weight: 35 lbs.
- Cable Capacity: 50 feet of 1/4 or 5/16 inch diameter cable
- Width: 18"
- Height: 16"
- Diameter: 16"
- Motor (Volt): 115
- Motor (Amp): 1.85
- RPM: 270

FEATURES

- Compact and lightweight power for 1-1/4" to 3" lines up to 50'
- Can be operated vertically or horizontally
- Easy to handle and carry
- Quick interchangeable drum capability
- 25' power cord with ground fault interrupter

- Unique cone-shaped internal drum applies extra torque to the cable

SAFETY

- Air-operated foot switch
- Belt guards
- GFCI power cord



Remove drum and power unit from cartons.

Step 1: Set power unit in vertical position. (See picture on front page.)

Step 2: Mount drum on power unit. Lock drum to power unit by tightening (2) thumb screws. (Thumb screw shoulder must enter hole in collar before tightening.)

Step 3: Loosen (3) wing nuts on motor mount plate. Put V-belt around pulley and drum. Move motor mounting plate until V-belt is firm. If the belt is too tight, the machine will not operate. Tighten (3) wing nuts.

1. Insert proper size of cable in machine. Use open hook cables in up to 1 1/2" lines, use 5/16" innercore cable for 1 1/2" to 3" lines.

WE DO NOT RECOMMEND USING YOUR 1/4" CABLE IN LINES LARGER THAN 1 1/2" IN DIAMETER.

2. Place unit close to pipe opening (ideally 12" if possible).
3. Pull out enough cable to enter waste line or cross bar.
4. Position switch in Forward (F) position. Don't reverse motor or use Reverse Action Switch until the machine comes to a dead stop and then only to remove cable through the cross bar.
5. Depress foot switch pedal, causing the cable to rotate through the cross bar or into the pipe opening. (Forward only.)
6. Take 6" to 8" length of cable, and slowly feed it into the line giving the cable time to round fittings and to remove stoppage.
7. When motor slows up, indicating a load on same, pull back a bit and start moving it forwards and backwards. This reciprocating action keeps the cable rotating - keeps cable from getting "hung-up" - the main cause of cable kinkage or breakage.
8. If cable gets "hung-up", stop your machine and reverse the direction of same through Reverse Switch, pulling back as you do so to free working end of cable.



WARNING: Do not use Reverse Switch until you motor unit comes to a dead stop!

9. Repeat this action as often as necessary to clean the line.
10. When the job is completed, feed all cable back into drum 6" to 8" at a time - DON'T take long bites.
11. You must reverse rotation of the drum to remove cable through a crossbar.
12. You may drain the drum of excess liquids by removing the drain plug which is the smaller hex bolt on the back of the drum.



How to Repair 1/4" and 5/16" Cables

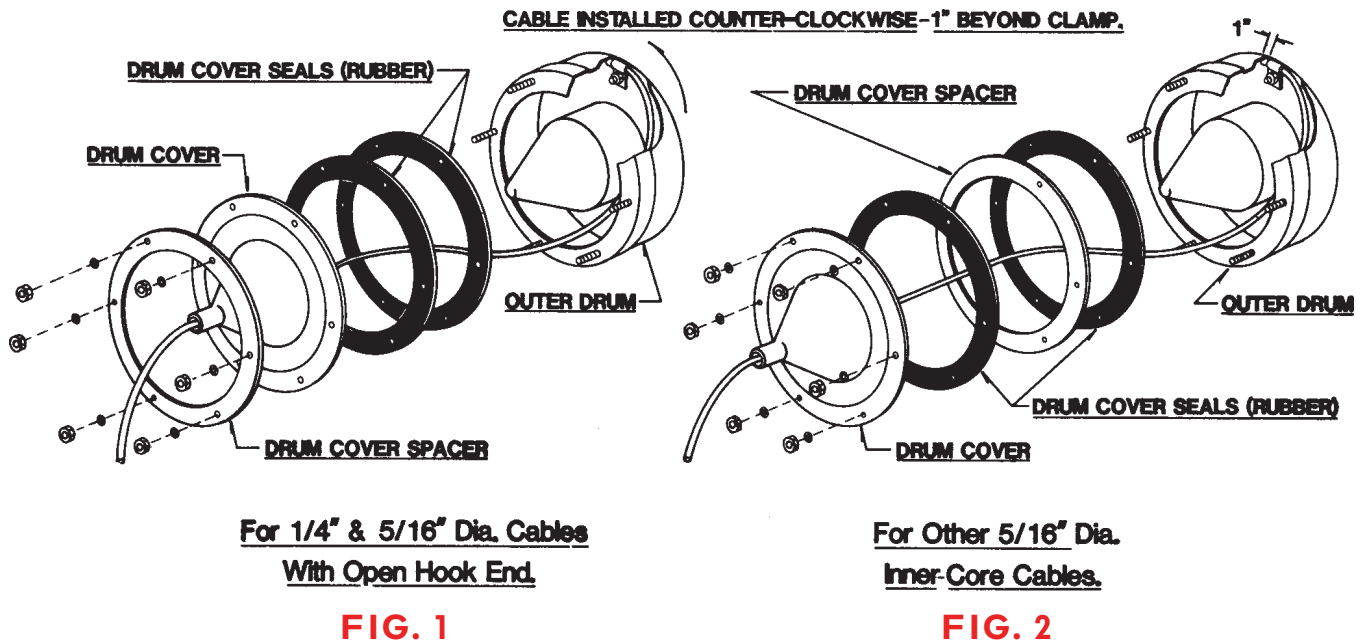
All 1/4" and 5/16" cables can be repaired with a replaceable end. If you kink your cable, cut the cable off at the kinked portion. Grind the end of same to provide a lead thread. Now, pick up your repaired end and thread same on the regular cable, as you would a nut on a bolt, turning same about three turns, which will fasten it to the cable securely. Repair ends can be purchased as www.spartantool.com.



Operating a Power Driven Cleaning Tool

1. Stay close to the pipe opening (ideally 12" if possible) during operations especially when rounding fittings or removing stoppage in lines.
2. Move your cable backwards and forwards constantly when you get into stoppage, thereby preventing your cable from getting "hung-up", causing unnecessary kinkage. Remember - a rotating cable cannot kink or break. Kinkage of cable takes place only when the working end of the cable gets "hung-up" and you keep on twisting the other end.
3. Don't attempt to round fittings or remove stoppage until your drum reaches full speed. It is the rotation of the cable that enables it to either (a) round fittings, or (b) remove stoppage - NOT push power.

How to Install Cable in Model 81



1. Position drum unit in a vertical position. Remove (6) nuts, washers, drum cover, drum cover spacer, and (2) drum cover seals.
2. Assemble drum cover spacer and (2) seals to outer drum as required for various cables. See Figure 1 and Figure 2.
3. Insert cable through drum cover as illustrated in Figure 1.
4. Place end of cable in outer drum. Slide cable under clamp. Cable should enter clamp in counterclockwise direction and extend approximately 1" beyond clamp. See Figure 1. tighten clamp screw.
5. Place drum cover on outer drum assembly and secure with (6) nuts and washers. Assemble all (6) nuts, tightening all nuts a little at a time; about 3 times around. Then give nuts a final tightening.
6. Feed remainder of cable into drum while drum is operating in forward only.



Safety Instructions

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 Operator's 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. If your unit is for use on less than 150 volts, it has a plug that looks like that shown in Fig. 3A. An adapter, (Fig. 3B and 3C), 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.

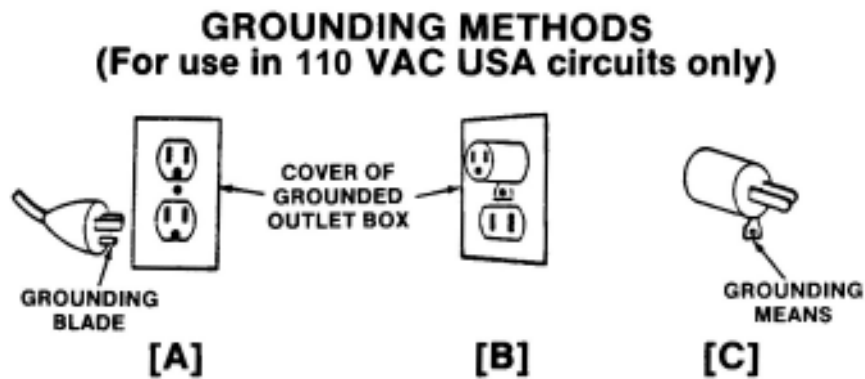


FIG. 3

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.

3. **Extension Cords.** See danger below. If an extension cord must be used, it must be of an approved, three-wire construction, equipped with a three-pronged plug, and in good condition. Replace or repair damaged 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.

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 gages 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.

Safety Instructions

If in doubt, use the next heavier gage. (The smaller the gage 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 the cable. Replace gloves if rivets or staples start to pull out.

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

12. Use Safety Glasses. Guard against foreign material that might fly off the cable.
13. Don't Overreach. Keep proper footing and balance at all times.
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 the 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 will cause cable to "jump" out of drum. Possible operator injury could result.

Safety Instructions

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 as having flattened coils on the outside of the 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 of 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.

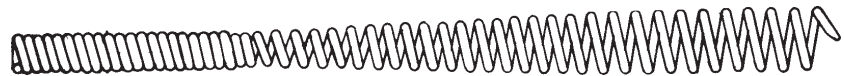


Spartan Cables Without Inner Core

Flexible open hook end enables operator to thread cable through cross bars - eliminating necessity of removing trap - to do a thorough job quickly. One repair hook furnished with each cable.

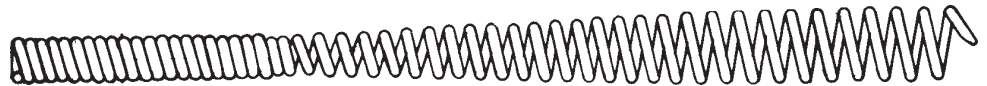
1/4" Open Hook End Cable Designed for rodding 1 1/4" lines only.

Part Number	Description
04212101	1/4" x 15'
04212102	1/4" x 25'
04212103	1/4" x 30'
04212104	1/4" x 35'
04212105	1/4" x 50'



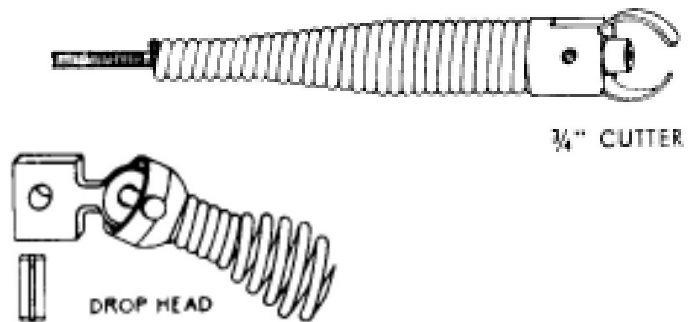
5/16" Open Hook End Cable Designed for rodding 1 1/4" to 1 1/2" lines, such as those leading from lavatories, bath tubs, shower stalls.

Part Number	Description
04212402	1/4" x 25'
04212403	1/4" x 30'
04212404	1/4" x 35'
04212405	1/4" x 50'



Spartan Drop-Head Cable

Part Number	Description
44104301	1/4" x 25' (No Inner-Core)
44104302	1/4" x 35' (No Inner-Core)
03449002	5/16" x 25' (With Inner-Core)
03449003	5/16" x 30' (With Inner-Core)
03449004	5/16" x 35' (With Inner-Core)
03449005	5/16" x 50' (With Inner-Core)



5/16" Multi-Purpose Inner-Core Cable. Designed for rodding 1 1/4" to 1 1/2" lavatory, sink line waste and for light duty in 2" lines.

Parts For 5/16" Inner-Core Cable:

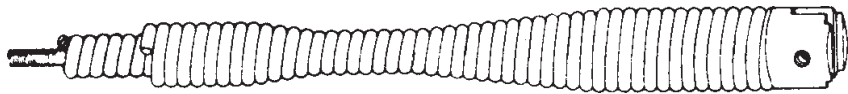
Part Number	Description	Part Number	Description
02867200	Blade, 3/4" Wide	02882200	Expansion Pin 1/4" x 5/8"
02867300	Blade, 1" Wide	02827700	Allen Key for Blades
02781100	Drop Head Assembly	02827400	Socket Set Screw for Blades
02814700	Bag of parts for 5/16" including drop head		

Model 81 Cables

Repair Bulbs

For 5/16" Inner-Core Cables:

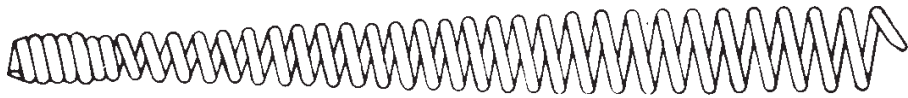
Part Number	Description
02885200	Repair Bulb



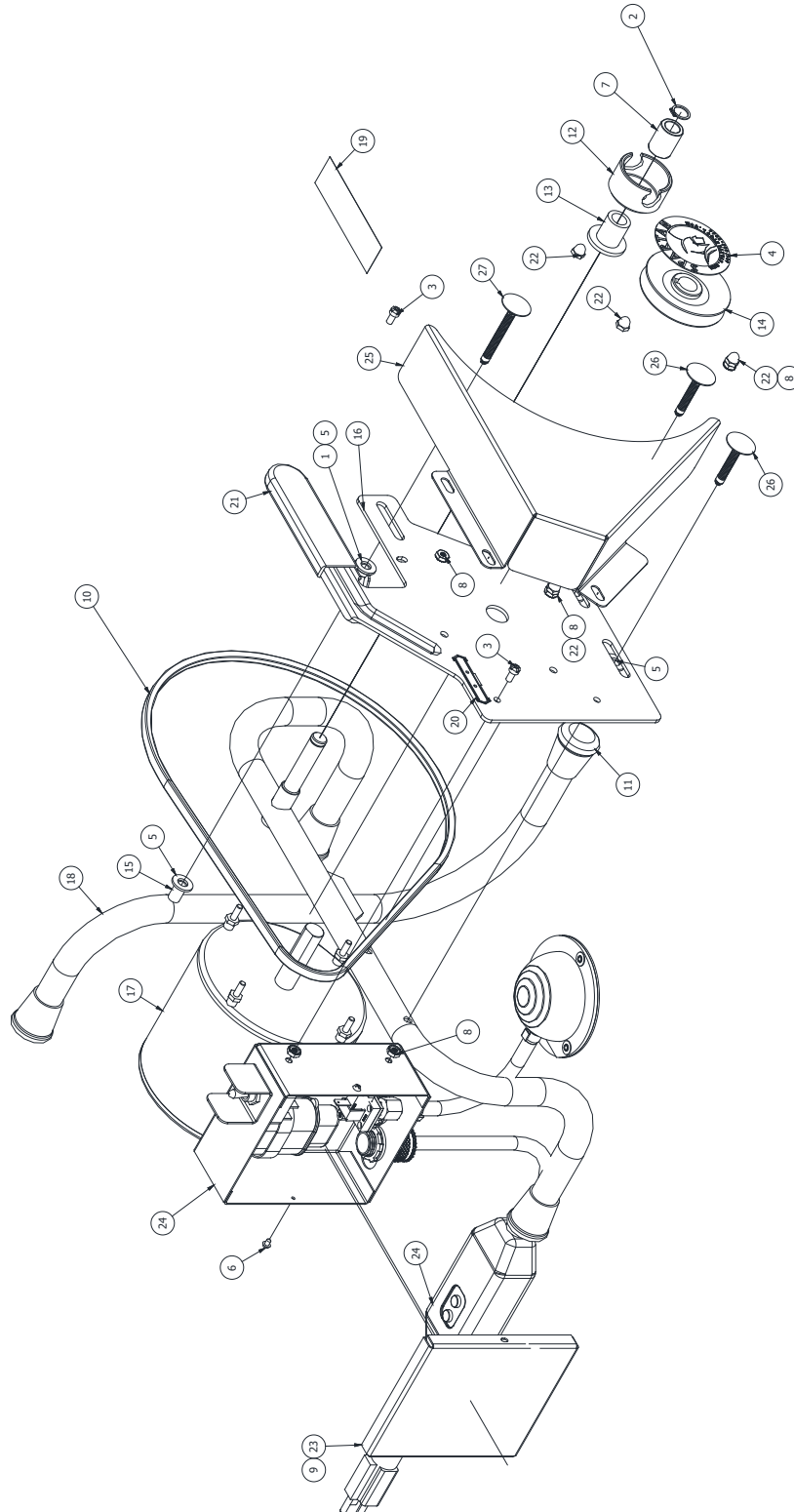
Repair Hooks

How to Use Repair Hook or Repair Bulbs

If cable is kinked, simply remove kinked portion by cutting it off at a point about 1" back of bent section. Attach Repair Hook by threading it over cable end about four turns.

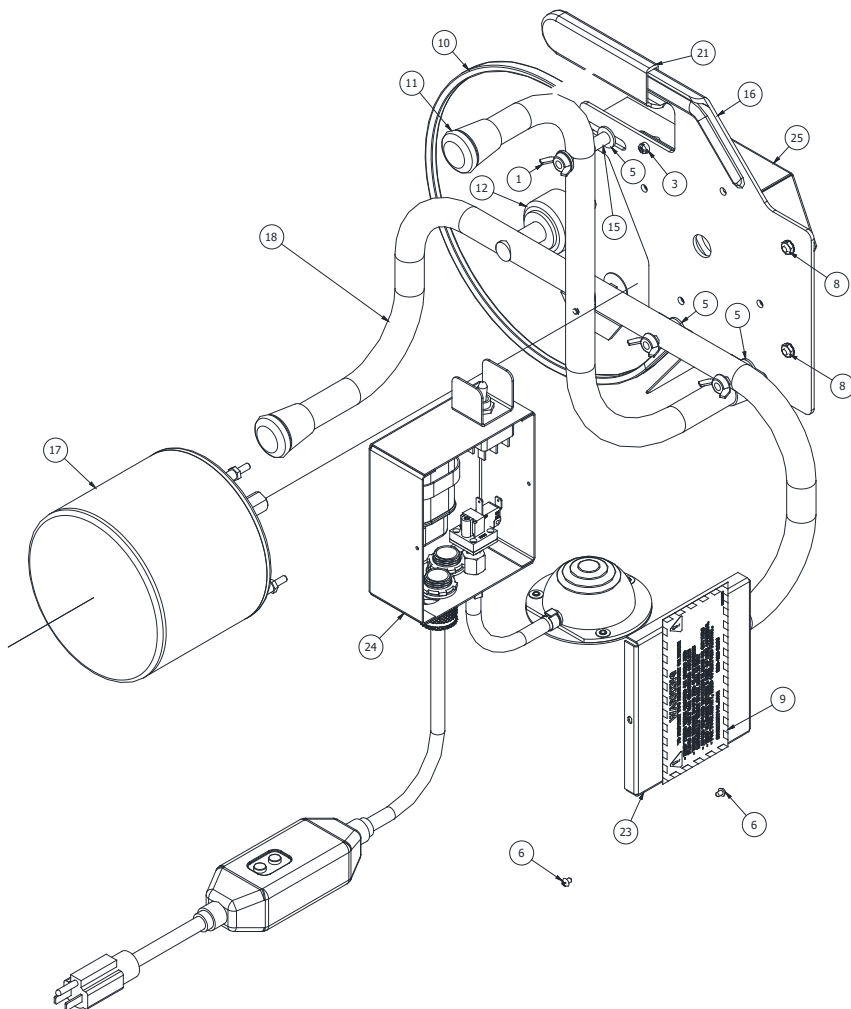


Part Number	Description
02789700	for 1/4" Cable Right Hand Wound
02789800	for 5/16" Cable Right Hand Wound



Power Unit - 04703300

Item	Part Number	Description	Qty.
1	00140500	Nut, Wing 1/4-20	3
2	02822500	Retaining Ring - Small	1
3	02823800	Screw, Machine 10-32 x 3/8	3
4	02830900	Decal, Easy-Lift	1
5	02899200	Washer, Flat 5/16 USS	4
6	03394400	Screw, Sheet Metal #6 x 1/4	2
7	03421300	Bronze Brg Mdl-81	1
8	03850100	Nut, Hex Kep 10-32	5
9	04220200	Decal, Warning	1
10	04233200	V-Belt, Model 81	1
11	04699810	Mounting Tip, Rubber	4
12	04700300	Collar, Shaft (Model 81)	1
13	04700400	Bearing, Flanged 1/2 ID x 3/4 OD	1
14	04700600	Sheave, Model 81	1
15	04700700	Spacer, 3/8 OD x 1/4 ID x 5/8	1
16	04702200	Plate, Motor Mounting	1
17	04702401	Spacer, 3/8 OD x 1/4 ID x 5/8	1
18	04702810	Weldment, Model 81 Frame	1
19	04703600	Decal, 81 Belt Cover	1
20	04714900	Label, Switch Direction	1
21	04715200	Grip, Model 81 Handle	1
22	04725200	Nut, Acorn 10-32	1

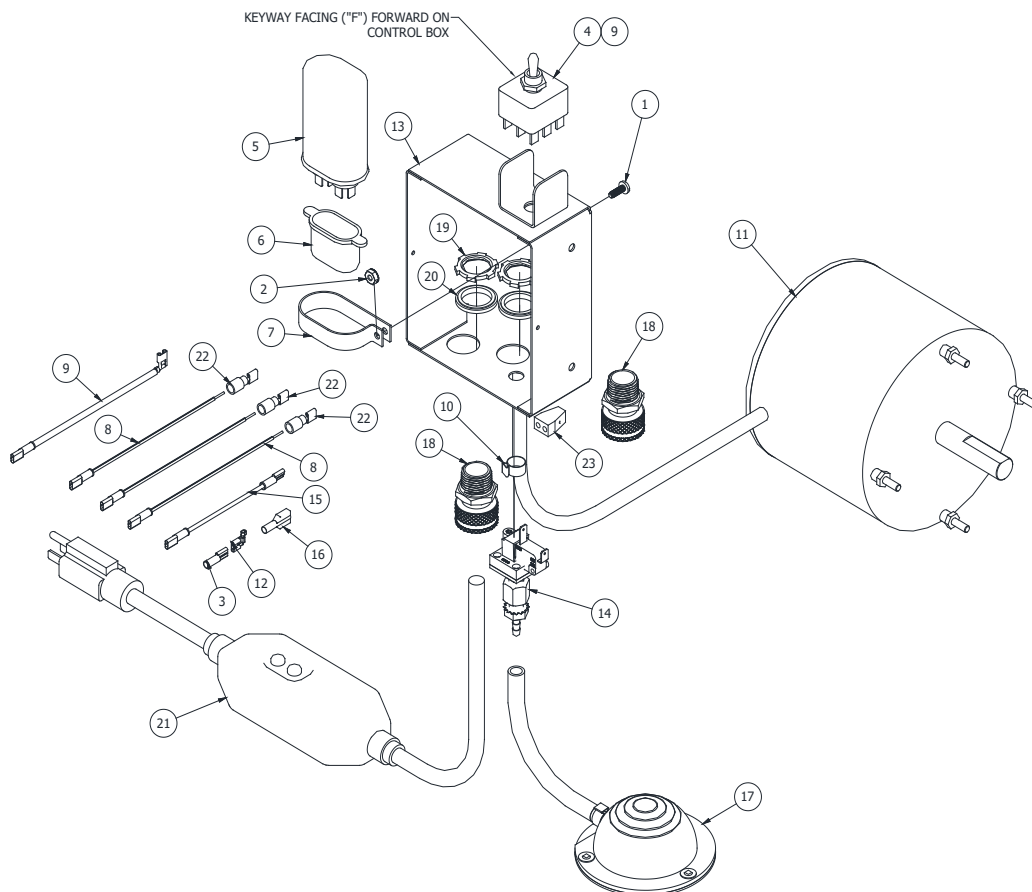


Item	Part Number	Description	Qty.
23	44002100	Cover, Control Box (Model 81)	4
24	44002400	81 Electrical Assembly	1
25	44307300	Guard, Mod 81 Belt	1
26	44307310	Elevator Bolt 1/4-20 x 1-3/4	2
27	44307320	Elevator Bolt 1/4-20 x 2-1/2	1

Electrical Assembly - 44002400

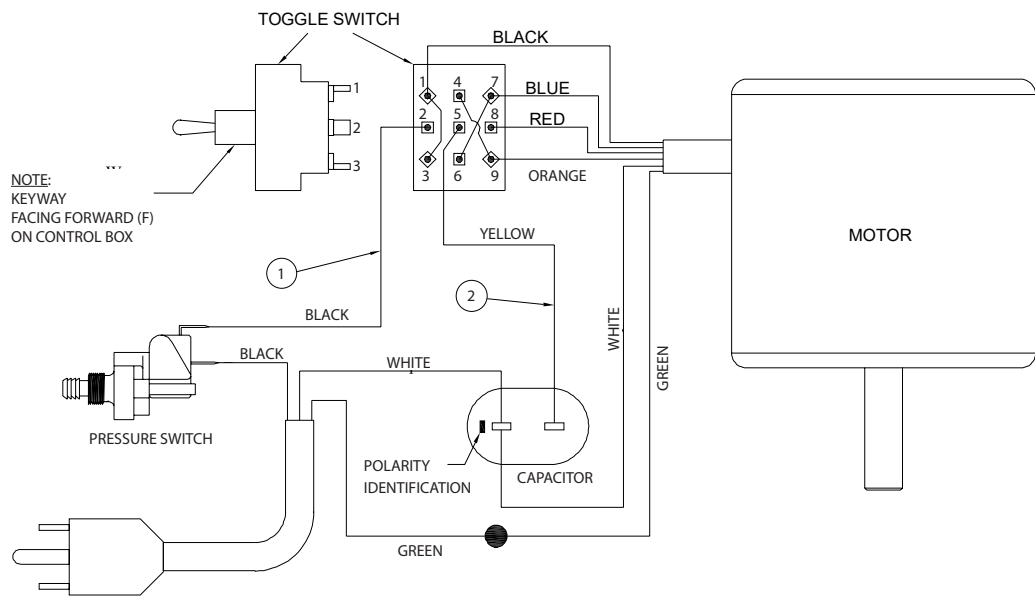


Item	Part Number	Description	Qty.	Item	Part Number	Description	Qty.
1	01921801	Screw, Machine Slotted 8-32 x 1/2	1	11	04702401	Motor, Model 81	1
2	03312001	Nut, Kep #8-32 Zinc Plated	1	12	06517743	Terminal, Flag Slip On	1
3	03447200	Terminal, Spade MVU-14-250-DFK	1	13	44002200	Weldment, Model 81 Control Box	1
4	04225800	Switch, Toggle	1	14	2202800	Assy, Pressure Switch (WM)	1
5	04229900	Capacitor	1	15	44003000	Assy, Wire Jumper Black 5"	1
6	04230000	Cap, Rubber (Capacitor)	1	16	44216100	Disconnect, .250 Female 16-14	1
7	04230900	Clamp, Capacitor	1	17	44225800	Assy Air Ft Switch Transmit	1
8	04234000	Jumper Wire 16GA Black 2"	3	18	44227500	Cord Grip, 1/2 Alum Strt. .375	2
9	04234400	Jumper Wire 16GA Yellow 5"	1	19	44227600	Locknut, 1/2 Trade Size	2
10	04652700	Clamp, Stepless Ear 1/2	1	20	44227605	Locknut, Water Seal 1/2 Trade Size	2
				21	71103300	Power (12GA) Cord 25' W/GFI	1
				22	77807800	Terminal, Nylon Self-Insulated	3
				23	79925700	Connector-Push-On 2 Wire	1





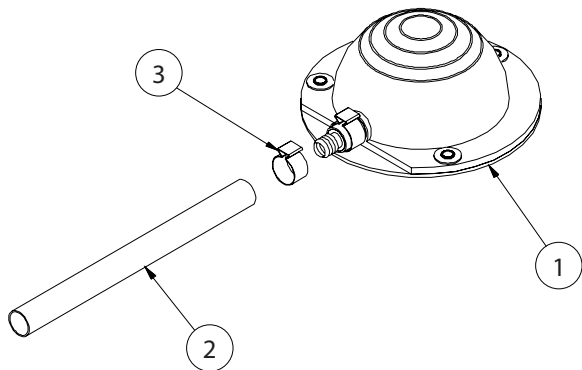
Wiring Diagram



Item	Part Number	Description	Qty.
1	44003000	Jumper Wire (Black)	1
2	04234400	Jumper Wire (Yellow)	1

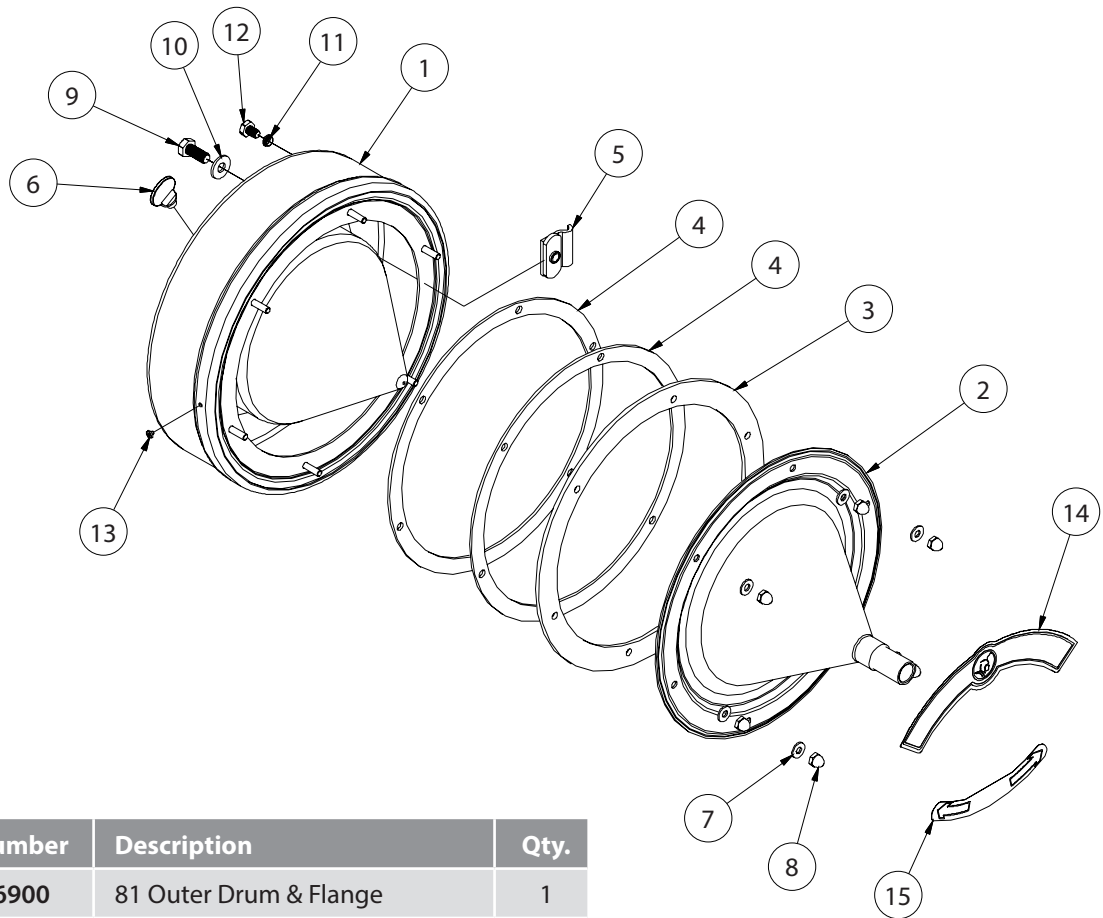


Air Bulb Transmitter - 44225800



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

Drum Assembly - 04722600



Item	Part Number	Description	Qty.
1	04726900	81 Outer Drum & Flange	1
2	04727000	81 Drum Cover	1
3	04720400	Drum Cover Spacer	1
4	04720300	Drum Cover Seal	2
5	44280500	81 Cable Clamp Assembly	1
6	04701400	Thumb Screw	2
7	01588200	Flat Washer, #10	6
8	04725200	Acorn Nut, #10-32	6
9	02939000	Hex Head Screw, 5/16-18 x 5/16	1
10	02825100	Flat Washer, 1/4	1
11	04707700	Nylon Collar	1
12	04728200	Hex Head Screw, 1/4-20 x 3/8	1
13	04233800	Pop Rivet, 1/8	1
14	04714700	Spartan Drum Decal	1
15	04714800	Warning Decal	1



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
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