



SPARTAN

MODEL 81

Owner's Manual

Record the Serial Number of your

Model 81

and give the number to the factory
when ordering parts.

Serial

Number



SPARTAN TOOL L.L.C.

800.435.3866

www.spartantool.com



Warning



- 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 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 the company at the address shown below.

“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.”

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Specifications & Features



Specification:

Pipe sizes:1-1/4" to 3" diameter

Weight35 lbs.

Cable capacity:50 feet of 1/4 or 5/16 inch diameter cable

Size:18" W x 16" H x 16" D

Motor:115 Volt / 1.85 Amp

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

Air-operated foot switch

Quick interchangeable drum capability

25' power cord with ground fault interrupter

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



How to Assemble



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, machine will not operate. Tighten (3) wing nuts.



How to Assemble



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 2" 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 machine comes to dead stop and then only to remove cable through cross bar.
5. Depress foot switch pedal, causing cable to rotate through cross bar or into 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 cable 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 dead stop!

9. Repeat this action as often as necessary to clean the line.
10. When 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 replacable 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 repair 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 at www.spartantool.com.



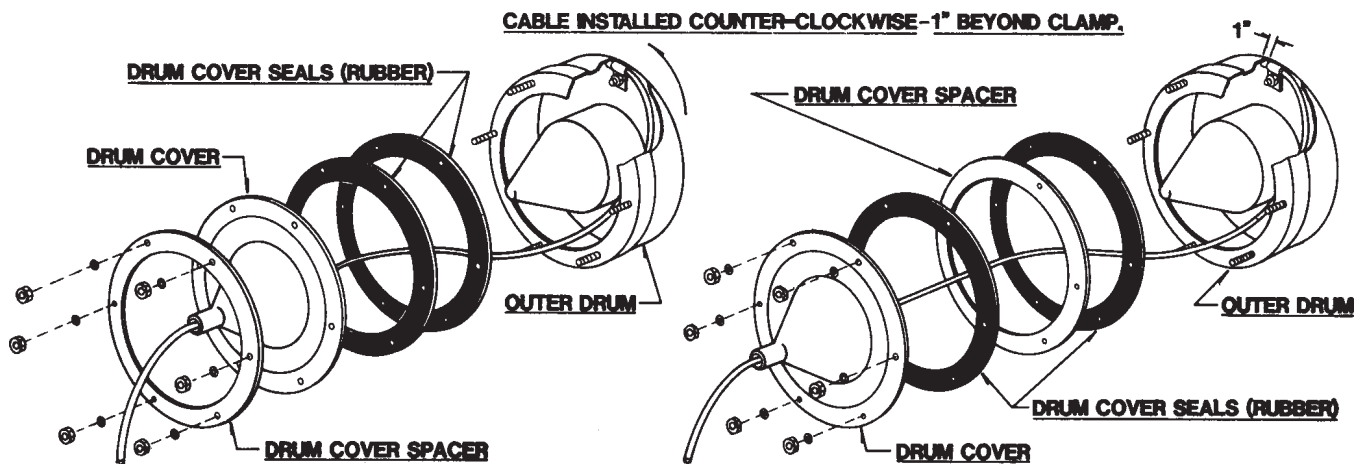
Operating a Power Driven Cleaning Tool



1. Stay close to 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



For 1/4\"
With Open Hook End.

Fig 1

For Other 5/16\"
Inner-Core Cables.

Fig 2

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. 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.

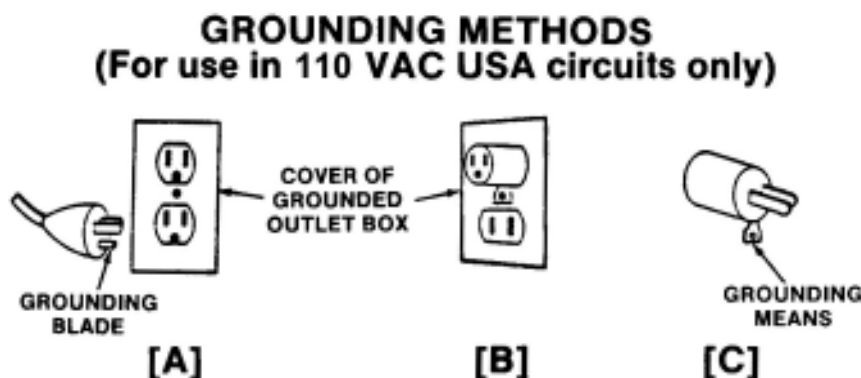


Figure 1

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 (cont.)



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 of an 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 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.

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.



Safety Instructions (cont.)



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 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 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 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 as having flattened coils on the outside of cable. Worn cable should be replaced as soon as possible.



Safety Instructions (cont.)



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.



Model 81 Cables



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.

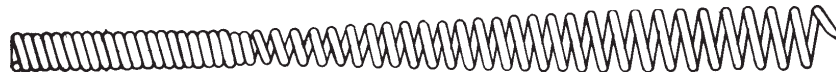
04212101 1/4" x 15'

04212102 1/4" x 25'

04212103 1/4" x 30'

04212104 1/4" x 35'

04212105 1/4" x 50'



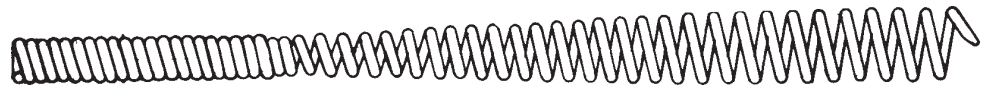
5/16" Open Hook End Cable Designed for rodding 1 1/4" to 1 1/2" lines, such as those leading from lavatories, bath tubs, shower stalls.

04212402 5/16" x 25'

04212403 5/16" x 30'

04212404 5/16" x 35'

04212405 5/16" x 50'



Spartan Drop-Head Cable

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)

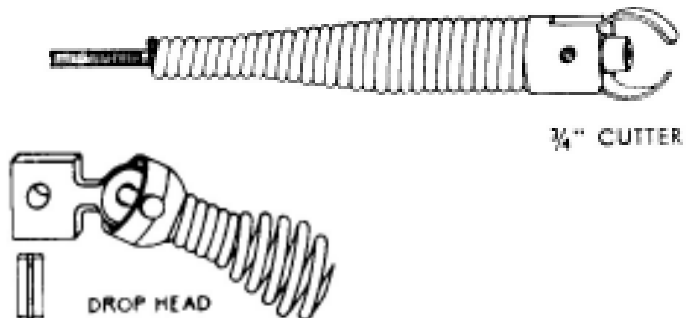
03449004 5/16" x 35' (With Inner-Core)

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:

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		





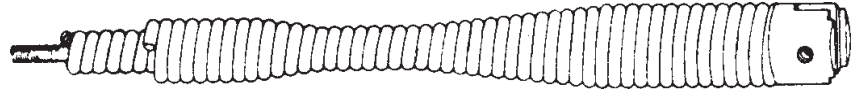
Model 81 Cables (cont.)



Repair Bulbs

For 5/16" Inner-Core Cables:

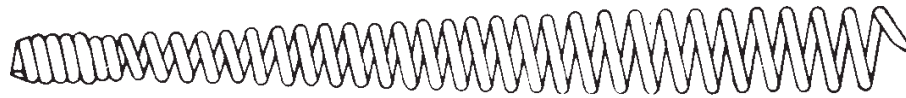
02885200 Repair Bulb



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.

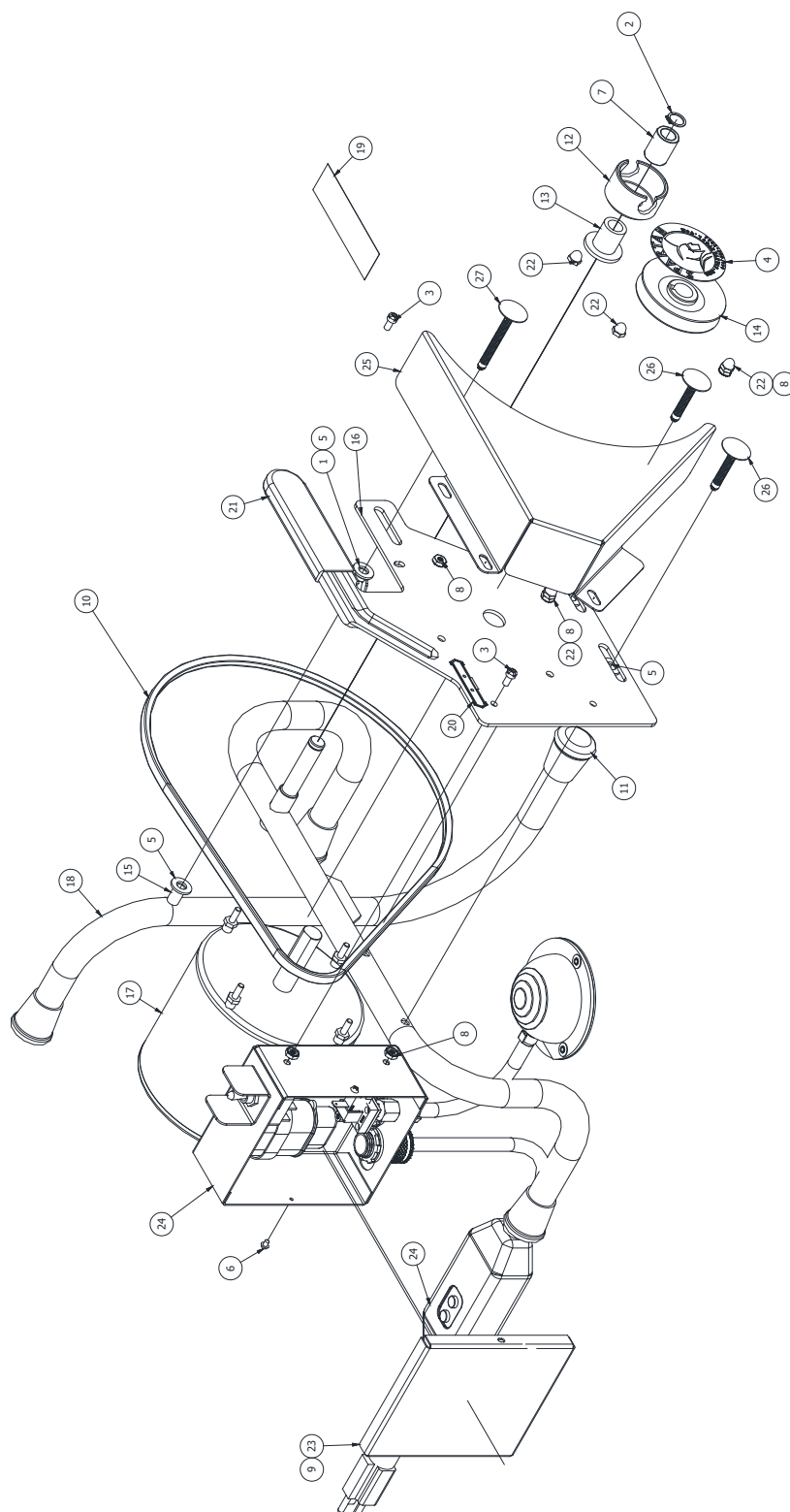


02789700 for 1/4" Cable Right Hand Wound

02789800 for 5/16" Cable Right Hand Wound

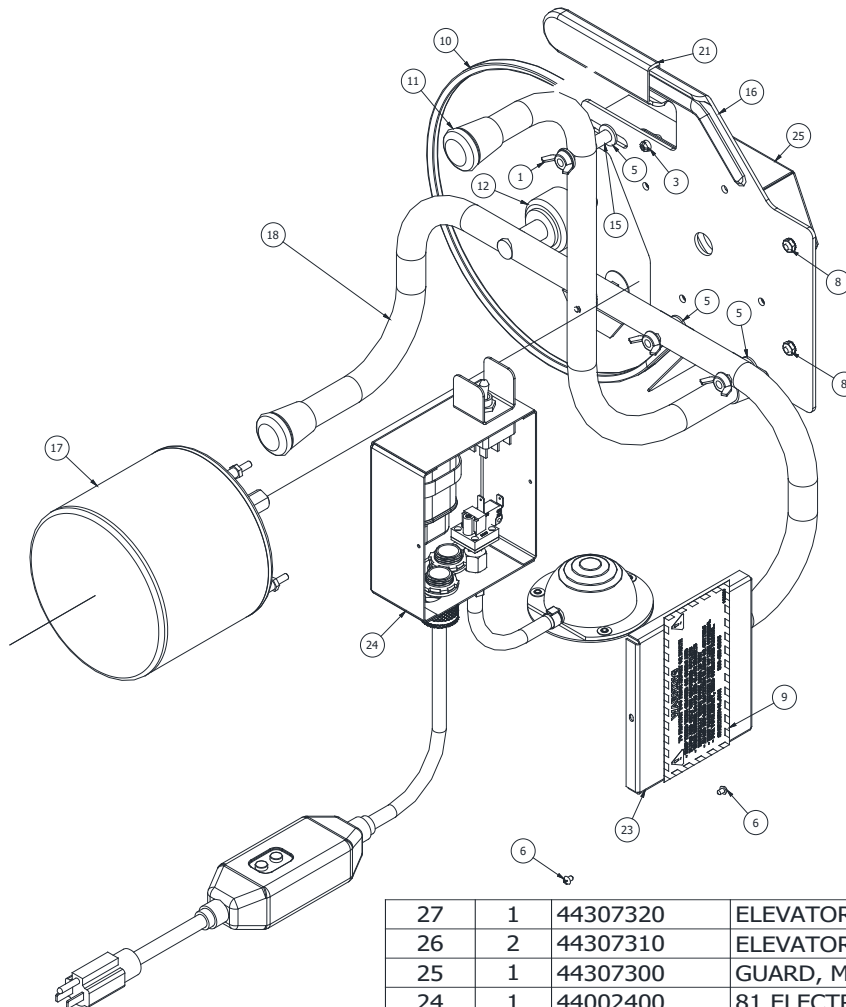


Power Unit -04703300-





Power Unit -04703300-

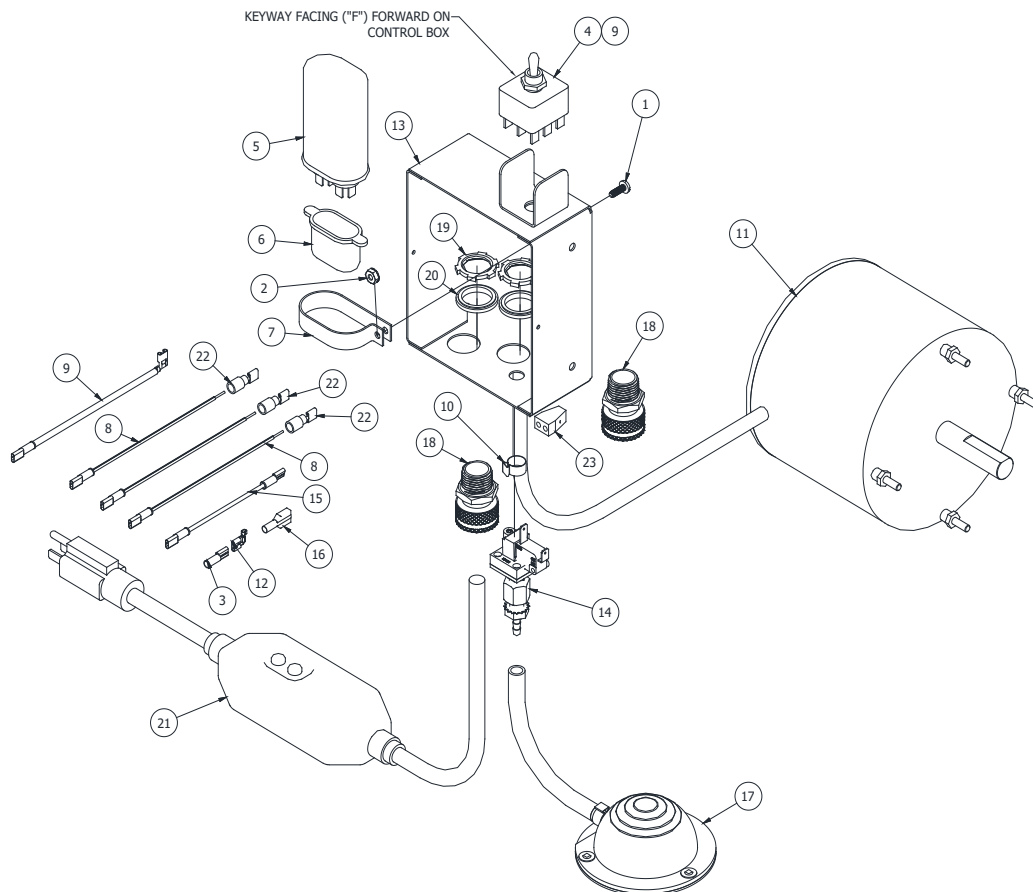


27	1	44307320	ELEVATOR BOLT 1/4-20 X 2-1/2
26	2	44307310	ELEVATOR BOLT 1/4-20 X 1-3/4
25	1	44307300	GUARD, MOD 81 BELT
24	1	44002400	81 ELECTRICAL ASSEMBLY
23	1	44002100	COVER, CONTROL BOX (MODEL 81)
22	4	04725200	NUT, ACORN 10-32
21	1	04715200	GRIP, MODEL 81 HANDLE
20	1	04714900	LABEL, SWITCH DIRECTION
19	1	04703600	DECAL, 81 BELT COVER
18	1	04702810	WELDMENT, MODEL 81 FRAME
17	1	04702401	MOTOR, MODEL 81 (included in 44002400 assembly)
16	1	04702200	PLATE, MOTOR MOUNTING
15	1	04700700	SPACER, 3/8 OD X 1/4 ID X 5/8
14	1	04700600	SHEAVE, MODEL 81
13	1	04700400	BEARING, FLANGED 1/2 ID X 3/4 OD
12	1	04700300	COLLAR, SHAFT (MODEL 81)
11	4	04699810	MOUNTING TIP, RUBBER
10	1	04233200	V-BELT, MODEL 81
9	1	04220200	DECAL, WARNING
8	5	03850100	NUT, HEX KEP 10-32
7	1	03421300	BRONZE BRG MDL-81
6	2	03394400	SCREW, SHEET METAL #6 X 1/4
5	4	02899200	WASHER, FLAT 5/16 USS
4	1	02830900	DECAL, EASY-LIFT
3	3	02823800	SCREW, MACHINE 10-32 X 3/8
2	1	02822500	RETAINING RING- SMALL
1	3	00140500	NUT, WING 1/4-20
ITEM	QTY	PART NUMBER	DESCRIPTION



Electrical Assembly

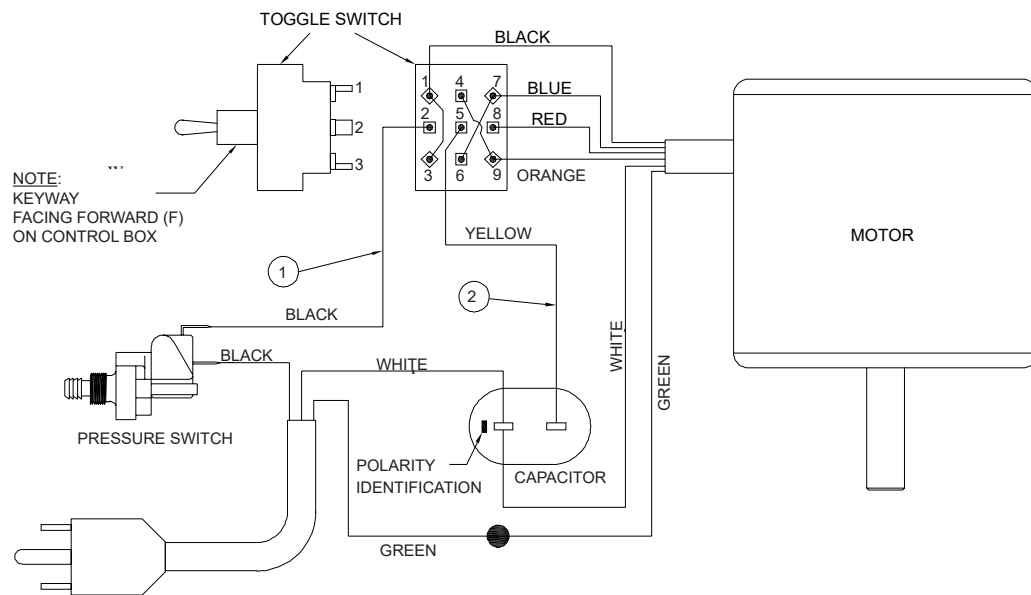
- 44002400 -



23	1	79925700	CONNECTOR-PUSH-ON 2 WIRE
22	3	77807800	TERMINAL, NYLON SELF-INSULATED
21	1	71103300	POWER (12GA) CORD 25' W/GFI
20	2	44227605	LOCKNUT, WATER SEAL 1/2 TRADE SIZE
19	2	44227600	LOCKNUT, 1/2 TRADE SIZE
18	2	44227500	CORD GRIP, 1/2 ALUM STRT. .375
17	1	44225800	ASSY AIR FT SWTCH TRANSMIT
16	1	44216100	DISCONNECT, .250 FEMALE 16-14
15	1	44003000	ASSY, WIRE JUMPER BLACK 5"
14	1	44002800	ASSY, PRESSURE SWITCH (WM)
13	1	44002200	WELDMENT, MODEL 81 CONTROL BOX
12	1	06517743	TERMINAL, FLAG SILP ON
11	1	04702401	MOTOR, MODEL 81
10	1	04652700	CLAMP, STEPLESS EAR 1/2
9	1	04234400	JUMPER WIRE16GA YELLOW 5"
8	3	04234000	JUMPER WIRE16GA BLACK 2"
7	1	04230900	CLAMP, CAPACITOR
6	1	04230000	CAP, RUBBER (CAPACITOR)
5	1	04229900	CAPACITOR
4	1	04225800	SWITCH, TOGGLE
3	1	03447200	TERMINAL, SPADE MVU-14-250-DFK
2	1	03312001	NUT, KEP #8-32 ZINC PLATED
1	1	01921801	SCREW, MACHINE SLOTTED 8-32 X 1/2
ITEM	QTY	PART NUMBER	DESCRIPTION



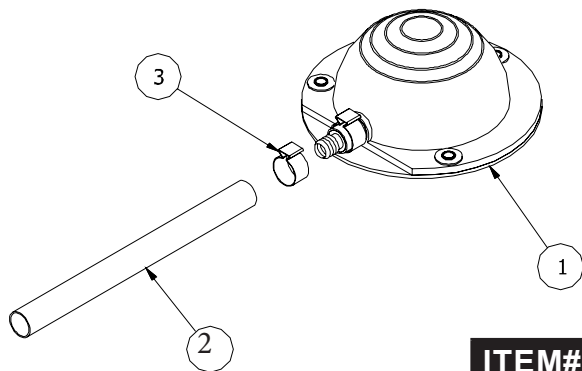
Wiring Diagram



ITEM#	PART #	NUMBER	DESCRIPTION
1	1	44003000	Jumper Wire (Black)
2	1	04234400	Jumper Wire (Yellow)



Air Bulb Transmitter 44225800

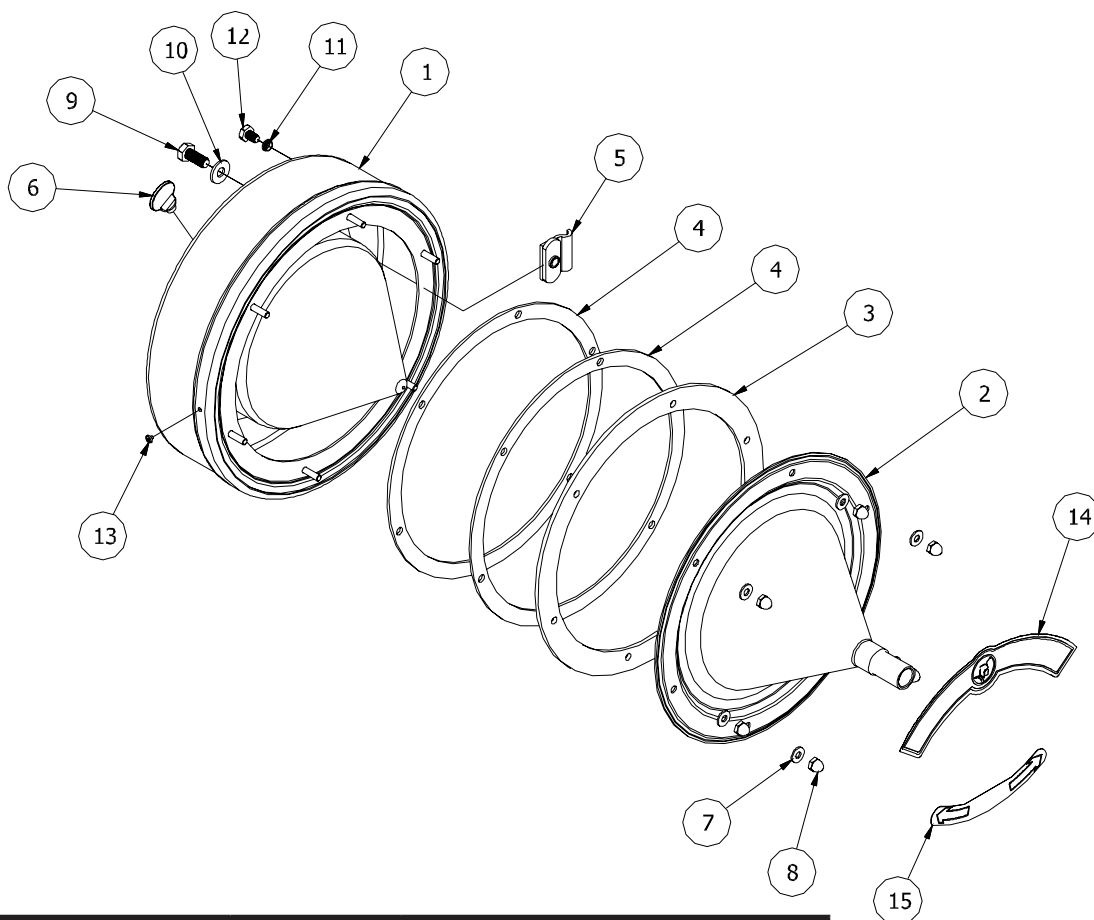


ITEM#	PART #	NUMBER	DESCRIPTION
1	1	04576900	Pressure Transmitter
2	1	04577100	Air Hose, 8'
3	2	04652700	Hose Clamp



Drum Assembly

- 04722600 -



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



Warranty Information



ONE YEAR WARRANTY

Spartan Tool warrants its equipment to be free from defects in material and workmanship for one year from the date of purchase. To obtain warranty service, a purchaser should notify Spartan Tool in writing, at the address provided below, within the warranty period, and Spartan Tool will direct where to take or send the equipment for service. If the defect is covered by the warranty, Spartan Tool will repair or replace, at its option, the defective equipment, without charge for labor or materials. (Freight and insurance are the purchaser's responsibility.)

This warranty is limited to the original retail purchaser and is not transferable. Spartan Tool assumes no responsibility for damage due to accident, neglect, abuse, tampering or misuse, nor damage from repairs or alterations by others. This warranty does not cover damage to the equipment resulting from the use of replacement parts other than Spartan Tool parts.

Spartan Tool's sole obligation and the original retail purchaser's exclusive remedy under this warranty shall be for repair or replacement as described above. ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL SPARTAN TOOL BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SPARTAN TOOL L.L.C.

Niles, Michigan 49120

Spartan Tool L.L.C. reserves the right to make changes at any time, without notice, to specifications and models and also discontinue models. The right is also reserved to change specifications or parts at any time without incurring any obligation to equip same on models manufactured prior to the date of change.

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