

# SERVICE CENTER MANUAL

## PISTON PUMP AIRLESS SPRAYER

Models covered in this manual:

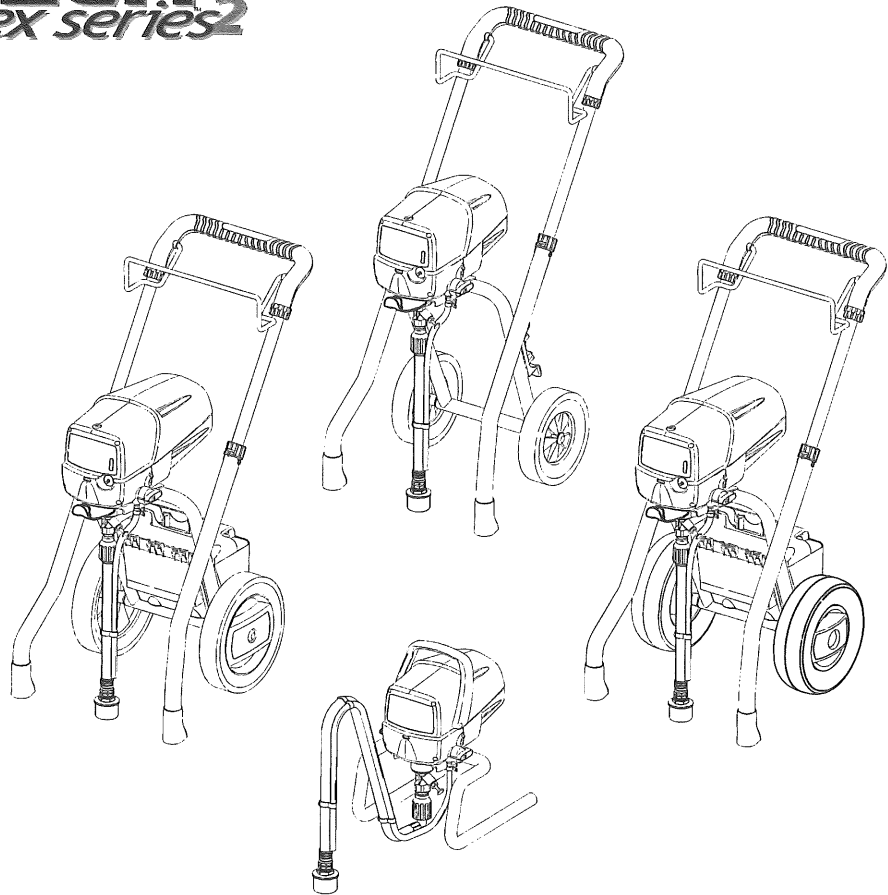
**Spray**TECH<sup>®</sup>  
*Apex series 2*

**1420**

**1620**

**1720**

**1920**



**IMPORTANT - THIS MANUAL IS INTENDED FOR AUTHORIZED SERVICE CENTERS ONLY AND SHOULD NOT BE USED FOR CONSUMER REFERENCE.**

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**1-800-746-6595**

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1770 Fernbrook Lane, Plymouth, MN 55447

# PRIME/SPRAY Valve Assembly (all models)

## Failure:

Leak from valve or unit will prime but not spray.

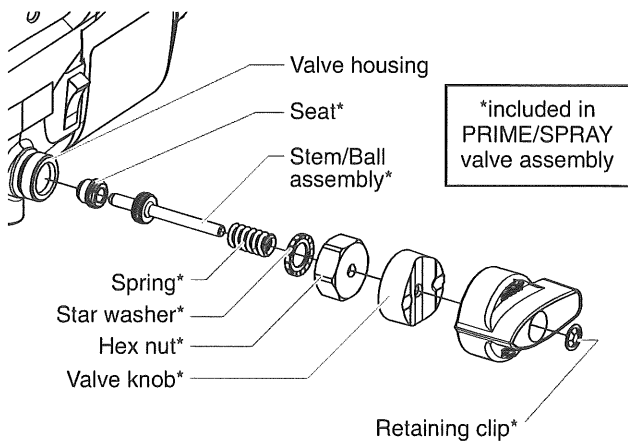
## Tools Required:

Locking pliers or adjustable pliers; 7/32 hex wrench; shop grease or petroleum jelly.

PRIME/SPRAY Valve Assembly	
SprayTech Apex 2 Models	PRIME/SPRAY assembly part number
1420	0516761
1620	
1720	
1920	

## To Remove:

1. Turn PRIME/SPRAY knob to **PRIME** to release any pressure in the system.
2. Place PRIME/SPRAY knob in **SPRAY** position (towards ON/OFF switch).
3. Using channel locks, grab PRIME/SPRAY knob on round portion of knob, turn counter-clockwise, and pull assembly out.
4. Use a hex wrench to remove the seat located in the housing by turning it counter-clockwise.



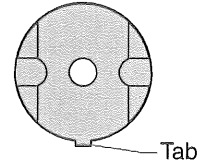
## To Install:

1. Tighten the new seat into the valve housing. Use a 7/32 inch hex wrench. Torque to 6-8 ft./lbs.
2. Apply a light coating of oil around the o-ring on the new stem/ball assembly.
3. Push the stem/ball assembly into the seat in the valve housing.
4. Place the new spring and star washer around the stem/ball assembly.
5. Slide the new hex nut onto the stem of the stem/ball assembly, thread it onto the valve housing and tighten with a wrench. Torque the nut to 12-14 ft./lbs.
6. Apply a light coating of grease to the top of the cam.
7. Slide the new cam onto the stem of the stem/ball assembly and over the hex nut. The design of the cam

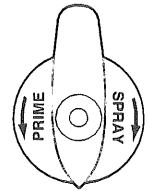
will allow the hex nut to fit inside the cam, causing the cam to lock in position.

Tab on cam in 6:00 position

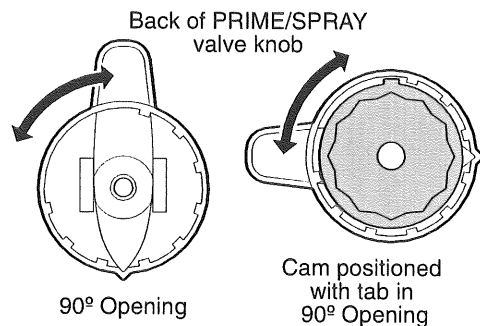
**NOTE:** Position the cam on the hex nut so that the tab on the side of the cam is as close to the 6:00 position as possible.



8. Place the new PRIME/SPRAY valve knob over the cam with the pointer on the knob as close to the 6:00 position as possible. Make sure the knob is pushed completely onto the cam (the knob should cover the cam completely).



**NOTE:** The knob is designed to allow 90° of movement between the SPRAY and PRIME positions. The inside of the knob has a 90° opening in its circumference where the tab of the cam should be positioned to allow this movement. When placing the knob with the arrow in the 6:00 position, make sure that the tab on the cam is within the 90° opening on the inside of the knob. Then, make sure the knob is at the end of its movement in the clockwise direction (this is the SPRAY position) before continuing with this procedure.



9. Slowly turn the knob counterclockwise until the bottom of the knob moves out to where it is flush with the bottom of the cam (approximately 5-7°).
10. Using a 5/16" (8mm) nut driver, push the clip into the recessed portion of the knob with steady, even pressure until it stops.

**NOTE - Do not hammer or wiggle the clip into position. It will damage the clip.**

11. Check that the pressure control knob is turned to the lowest pressure setting.
12. Turn the PRIME/SPRAY knob to the SPRAY position.
13. Run water through the system and check for leaks.
14. Slowly turn the pressure control knob to increase the pressure and continue to check for leaks. If there are no leaks, the unit is ready to use.

# Piston Repair Kit (all models)

## Failure:

Unit will not prime or maintain pressure.

## Tools Required:

T20 Torx driver, torque wrench, flat head screwdriver, rubber mallet.

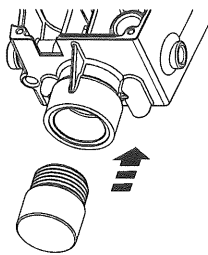
Piston Repair Kit	
SprayTech Apex 2 Models	Piston repair kit part number
1420 1620	0512221A
1720 1920	0516725

## Disassembly of the Fluid Section

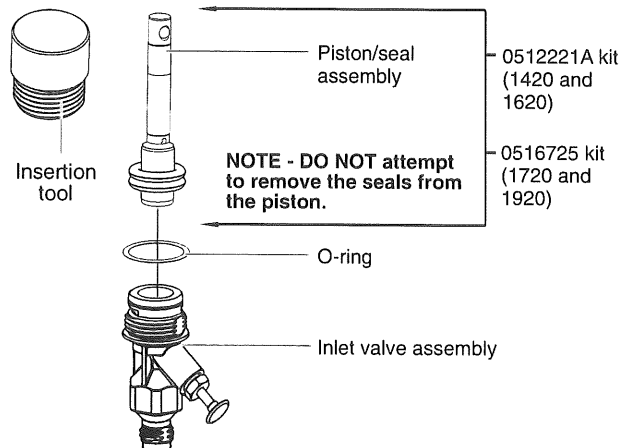
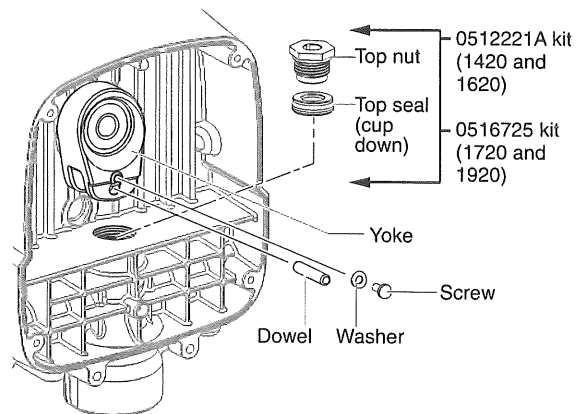
1. Remove the suction set.
2. Remove the front cover and the four screws that secure it using a T20 Torx head driver.
3. Remove the yoke screw and washer that secures the dowel pin. The dowel pin connects the yoke to the piston.
4. Using a pliers, pull the dowel pin out.
- 5a. **For Spray Tech Apex 2 models 1420 and 1620:**  
Rotate the pump shaft so the piston is in the top dead center position. This can be done by pushing on the yoke. This is required to disassemble all the parts.
- 5b. **For SprayTech Apex 2 models 1720 and 1920:**  
Inspect the yoke assembly and piston. In order to remove all the necessary parts, the piston must not be in the bottom of the stroke, install the front cover and screws, turn the pump on briefly to index the piston, unplug the unit, and repeat step 2.
6. Unscrew and remove the inlet valve assembly.
7. Remove the piston assembly by pushing down on the piston near the yoke.
8. Unscrew and remove the top nut using an adjustable wrench.
9. Remove the worn seals using a flat head screwdriver or punch. Remove the top seal from the top and the bottom seal from the bottom by pressing against the side of the seal and popping it out. Be sure not to scratch the housing where the seals are located.
10. Clean the area where the new seals are to be installed.

## Assembly of the Fluid Section

1. Lubricate the new top seal with Separating Oil (P/N 0516913) or light household oil and by hand place the seal (cup side of seal down) into the top port of the housing.
2. Place a small amount of anti-seize on the threads of the top nut. Place the top nut into the top of the housing and tighten with an adjustable wrench. This will drive the top seal into the correct position.
3. Turn the pump upside down. Lubricate the seal on the piston/seal assembly similar to the top seal. Place the piston/seal assembly into the bottom of the housing. Insert the plastic insertion tool and thread into position to properly seat the piston/seal. Thread fully until tight. Remove the insertion tool.
4. Install the new O-ring on the inlet valve assembly, lubricate with Separating Oil (P/N 0516913), thread into the bottom (inlet) of the housing, and tighten with an adjustable wrench. This will drive the bottom seal into the correct position.



5. Align the piston with the yoke. Be careful not to damage the piston.
6. Apply a lithium grease to the holes in the yoke where the dowel is inserted.
7. Install the dowel pin to connect the yoke to the piston. The piston may have to be moved up or down to do this. The inlet valve may need to be removed again to move the piston.
8. Install the yoke screw and washer to secure the dowel pin.
9. Turn pump right side up and apply a few drops of Separating Oil or light household oil between the top nut and piston. This will prolong the seal life.
10. Install front cover and four (4) screws.
11. Replace inlet valve. Install the suction set.



# Motor Assembly

SprayTech Apex 2  
1420 1620

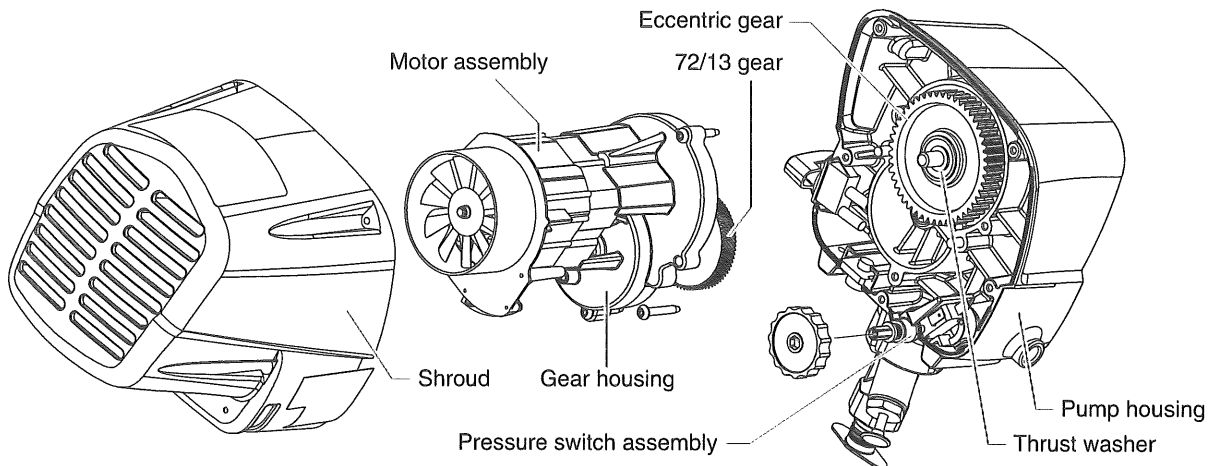
## Failure:

The unit does not run with 1) power cord plugged in; 2) ON/ OFF switch is in ON position; 3) Pressure control dial in maximum setting and 4) PRIME/SPRAY knob in the PRIME position.

## Tools Required:

Torx 25 driver, Torx T20 driver, 1/4 inch wrench or socket, small flat head screwdriver.

Motor Assembly	
SprayTech Apex 2 Models	Motor kit part number
1420 1620	0523220A

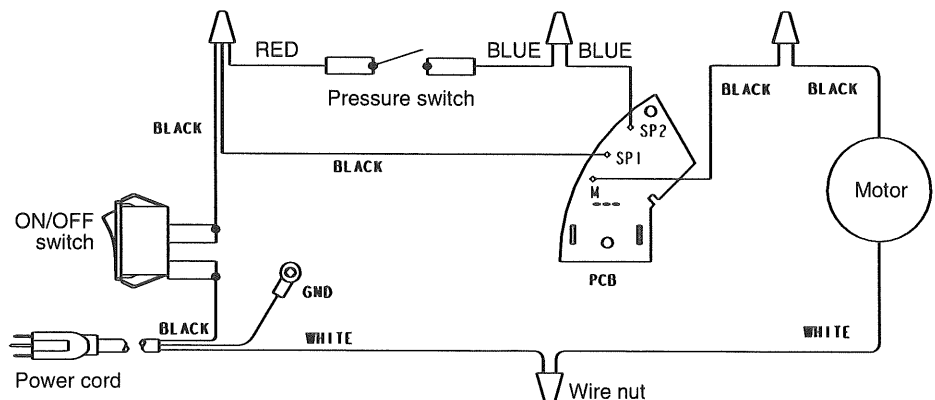


## To Remove:

1. Remove shroud by removing the 4 shroud screws using a Torx T20 driver. The pressure control dial will slide off the pressure switch assembly when the shroud is being removed.
2. Disconnect all wire leads including the ground wire.
3. Check continuity of motor. Check resistance by attaching a probe to the white wire lead and one to the black wire lead from the motor.
  - A reading of zero ohms indicates an open circuit verifying that the motor is bad.
  - A reading other than zero indicates a good motor.
4. If bad, proceed with motor replacement. If good, check the ON/OFF switch, pressure switch assembly, and power cord for continuity. Replace if bad.
5. Remove the four screws holding the gear housing to the pump housing using the Torx T25 driver.
6. Pull the motor / gear assembly straight out.
7. Make sure the thrust washer stays on the eccentric gear.

## To Replace:

1. Grease motor pinion, and place new motor / gear housing assembly back into position and secure with four screws (45 – 50 in lbs).
2. Connect electrical wires, white to white, green to ground, black to pressure switch (see schematic, below).
3. Insert the pressure dial with cup side to the front in the shroud and hold by hand. Install shroud so that the dial slides over the pressure switch shaft.
4. Install four screws to secure the shroud (11 – 15 in lbs).
5. Plug unit in, turn switch on, increase pressure to start pump and confirm proper operation.



# Motor Assembly

SprayTech Apex 2  
1720 1920

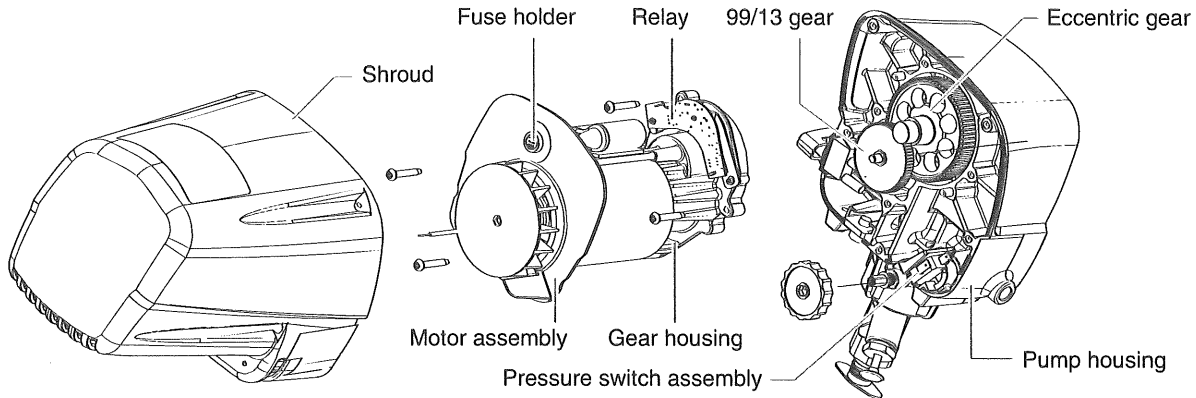
## Failure:

The unit does not run with 1) power cord plugged in; 2) ON/ OFF switch is in ON position; 3) Pressure control dial in maximum setting and 4) PRIME/SPRAY knob in the PRIME position.

## Tools Required:

Torx 25 driver, Torx T20 driver, 1/4 inch wrench or socket, small flat head screwdriver.

Motor Assembly		
SprayTech Apex 2 Models	Motor kit part number	Fuse part number
1720	0523223A	53732
1920	0523211A	9852309

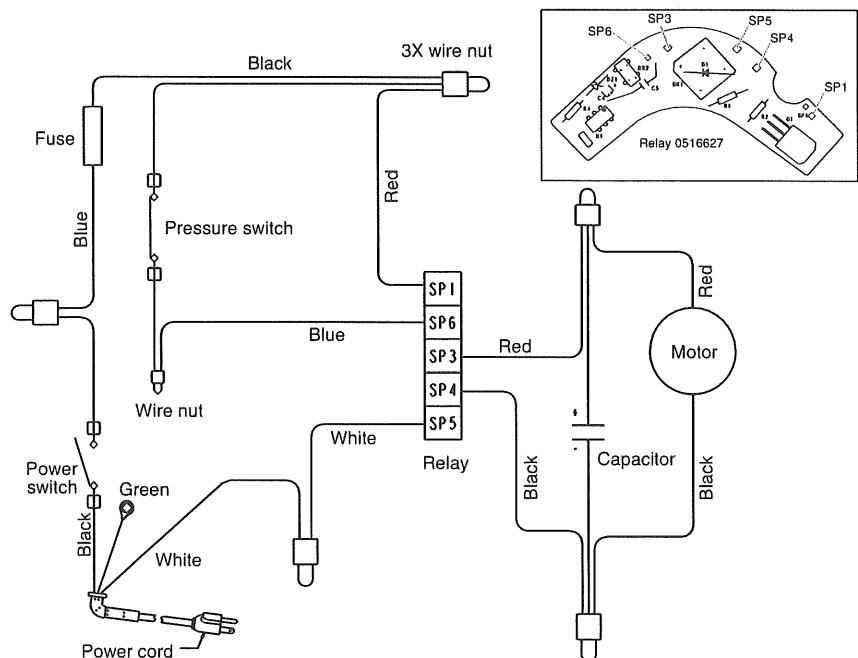


## To Remove:

1. Remove shroud by removing the 4 shroud screws.
2. Remove fuse by turning gray fuse holder cap 1/8 turn counter-clockwise and inspect. Replace if necessary.
3. Remove red and black motor leads from relay.
4. Check continuity of motor. Check resistance by attaching a probe to the red and black motor leads.
  - A reading of zero ohms indicates an open circuit verifying that the motor is bad.
  - A reading other than zero indicates a good motor.
5. If bad, proceed with motor replacement. If good, check the on/off switch, pressure adjust pressure switch, and power cord for continuity. Replace if bad.
6. Disconnect green ground wire, red pressure switch wires from relay, black power wire from the fuse holder, white power cord wire from relay and black wire from fuse holder to relay (see schematic below).
7. Remove fuse holder from motor baffle.
8. Remove the four screws holding the gear housing to the pump housing using a Torx T25.
9. Pull the motor / gear assembly straight out.

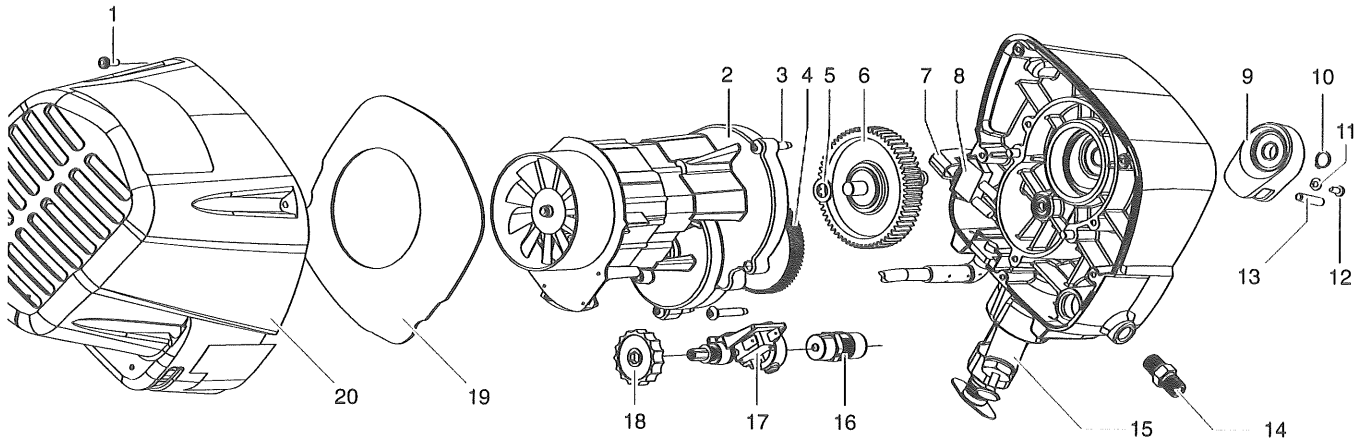
## To Replace:

1. Grease motor pinion and place new motor / gear assembly back into position and secure with four screws (45 – 50 in lbs).
2. Connect electrical wires (see schematic, right).
3. Insert the pressure dial with cup side to the front in the shroud and hold by hand. Install shroud so that the dial slides over the pressure switch shaft.
4. Install four screws to secure the shroud (11 – 15 in lbs).
5. Plug unit in, turn switch on, increase pressure to start pump and confirm proper operation.



# Parts List

SprayTech Apex 2  
1420 1620

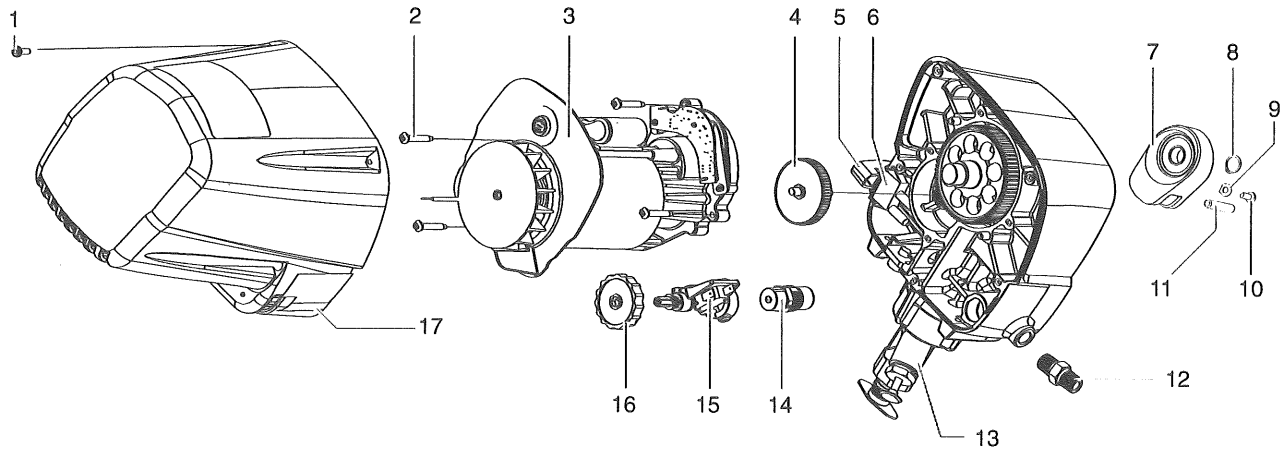


<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Quantity</u>
1		Shroud screw (8 - 32 X 1/2).....	4
2	0523220A	Motor assembly .....	1
3		Gear housing screw (10 - 24 X 1 1/4) .....	4
4		Gear assembly.....	1
5	9822606	Thrust washer .....	1
6		Eccentric gear .....	1
7	0516761	PRIME/SPRAY valve assembly (other side of main housing assembly).....	1
8	0523909	ON/OFF switch, no power cord (1420) .....	1
	0523912	ON/OFF switch and power cord (1620) .....	1
9	0512248	Yoke .....	1
10	9822530	Snap ring .....	1
11	9822608	Washer, flat .....	1
12	0293395	Yoke screw (8 - 32 X 3/8 TAP).....	1
13	9830103	Dowel pin .....	1
14	05045	Hose fitting .....	1
15	0516292	Inlet valve assembly.....	1
16	0516267	Transducer kit.....	1
17	0516669A	Pressure switch assembly .....	1
18	0512334	Pressure control dial .....	1
19	0523338A	Motor baffle plate .....	1
20	0523335A	Shroud .....	1
	0523336A	Face plate assembly, 1420 (not pictured) .....	1
	0523217A	Face plate assembly, 1620, 1720, 1920 (not pictured) .....	1

WAGNER ALSO

# Parts List

SprayTech Apex 2  
1720 1920



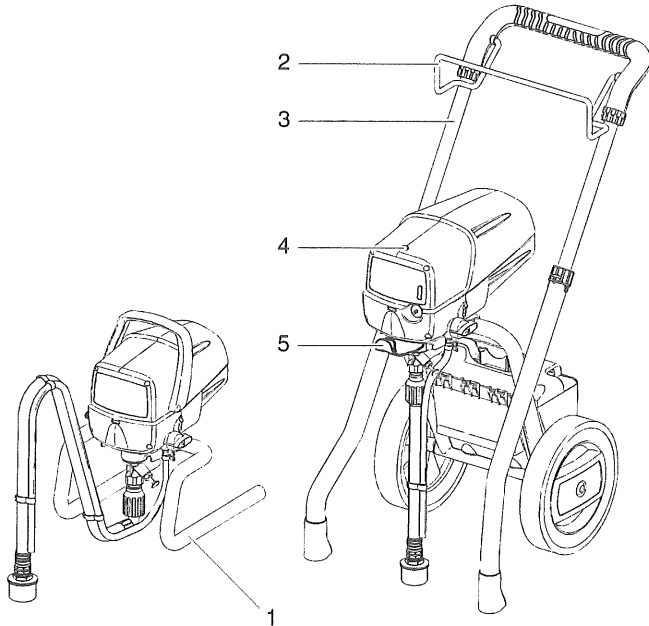
Item	Part #	Description	Quantity
1		Shroud screw (8 - 32 X 1/2).....	4
2		Gear housing screw (10 - 24 X 1 1/4) .....	4
3	0523222A	Motor assembly (1720) .....	1
	0523211A	Motor assembly (1920) .....	1
4	0512213	99 - 17 Gear assembly.....	1
5	0516761	PRIME/SPRAY valve assembly .....	1
6	0523911	ON/OFF switch and power cord (1720) .....	1
	0523910	ON/OFF switch and power cord (1920) .....	1
7	0512242	Yoke .....	1
8	9822529	Snap ring .....	1
9	9822608	Washer, flat .....	1
10	0293395	Yoke screw (8 - 32 X 3/8 TAP).....	1
11	9832105	Dowel pin .....	1
12	05045	Hose fitting .....	1
13	0516296	Inlet valve assembly.....	1
14	0516267	Transducer kit.....	1
15	0516669A	Pressure switch assembly .....	1
16	0512334	Pressure control dial .....	1
17	0512352	Shroud .....	1

9871045 TRANSDUCER ORING

0523332A

# Parts List (all models)

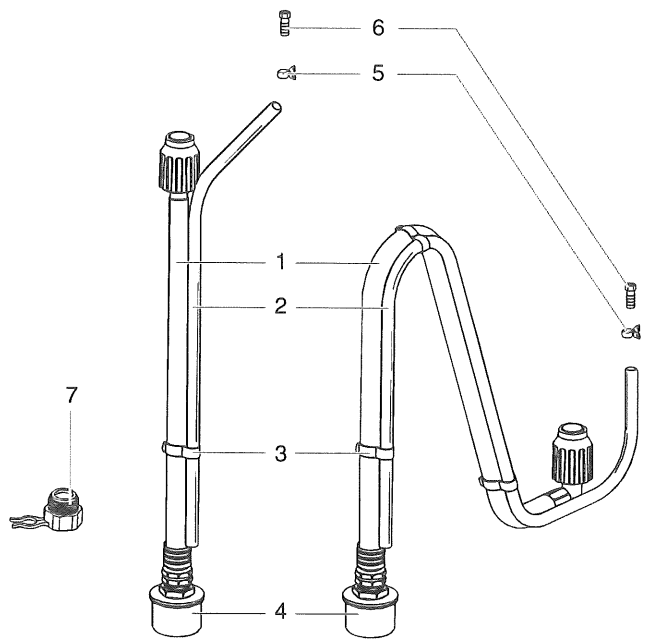
## Cart / Stand Assembly



Item	Part #	Description	Quantity
1	0523204A	Stand assembly (1420 only) ..	1
2	0523320A	Hose bracket .....	1
3	0523207A	Cart assembly (1620) .....	1
	0523206A	Cart assembly (1720) .....	1
	0523205A	Cart assembly (1920) .....	1
4	0516581A	Oiler cap .....	1
5	0523322A	Pail bracket assembly .....	1

## Suction Set

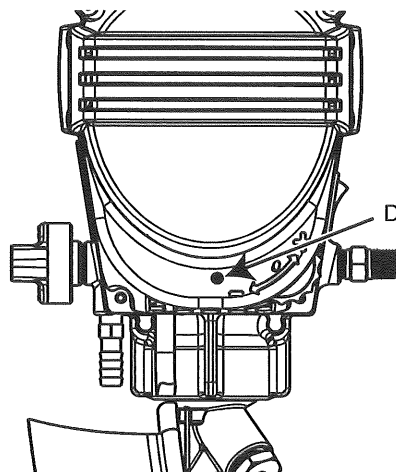
*RETURN TUBE  
3/8 ID x 1/2 OD x 13"  
@cart*



Item	Part #	Description	Quantity
1	0516196	Suction set (1420) .....	1
	0516198	Suction set (all cart models) .....	1
2	<del>0512371</del>	Return tube (1420) <i>0295492</i>	1
	0512389	Return tube (all cart models) ..	1
3	0512390	Clip .....	1
4	0516697	Inlet filter .....	1
5	0327226	Squeeze clip .....	1
6	9885553	Return tube fitting .....	1
7	0515146	Pump cleaning adapter .....	1

*3/8 ID x 1/2 x 13"*

## Date Code Location (all models)



Date code location

*STAPLED  
2 onto motor  
COVER AFTER  
TAKEN OFF  
STAND OR CART*