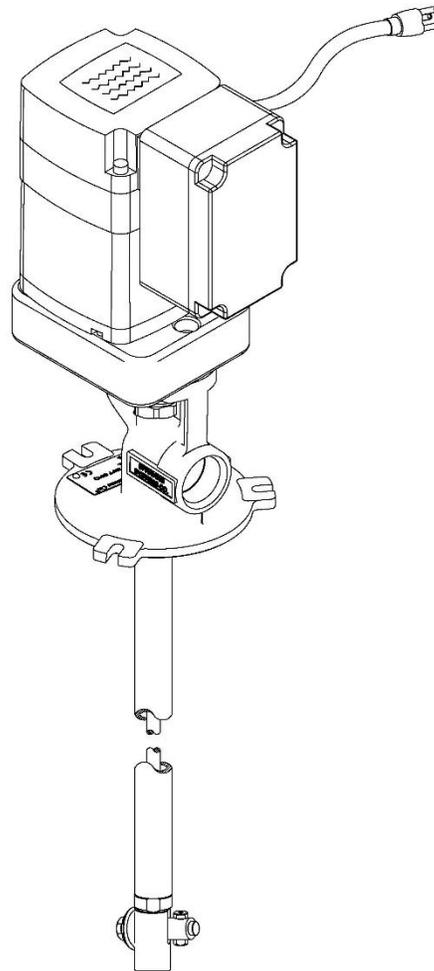




***Spraying Systems Co.***<sup>®</sup>

Experts in Spray Technology

# AA090E SERIES ELECTRIC MOTOR-DRIVEN TANK WASHER



**OWNER'S MANUAL**

**MI-AA090E**

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**IMPORTANT: PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLING OR OPERATING UNIT.**  
**SAVE FOR FUTURE REFERENCE**

## **PROPRIETARY NOTICE**

THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE EXCLUSIVE PROPERTY OF  
**SPRAYING SYSTEMS CO.**

REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT PRIOR CONSENT OF  
**SPRAYING SYSTEMS CO.**

## **FORWARD**

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The equipment and/or parts described in this document were manufactured and assembled with quality and high reliability, which have become synonymous with the name Spraying Systems Co.

The description and specifications contained herein were effective on the revision date of this MI. Spraying Systems Co. reserves the right to alter or modify any unit specification on Spraying Systems Co. product without notice or obligation.

## **INTRODUCTION**

---

The AA090E Rotary Tank Washer is designed for high pressure (500 psi/35 bar MAX) washing of tanks up to a recommended maximum diameter of 8 feet (2.4 m) with heated (200°F/93°C MAX) or unheated solutions at flow rates up to 7.3 gallons per minute (28 l/min).

Tanks over 8 feet (2.4 m) in diameter may be cleaned adequately depending on the maximum tank dimension, cleaning solutions being used, temperatures, spray pressures, flow rates and the material being cleaned from the tank. For larger tanks, the 190 and 290 Series Rotary Tank Washers are also suggested.

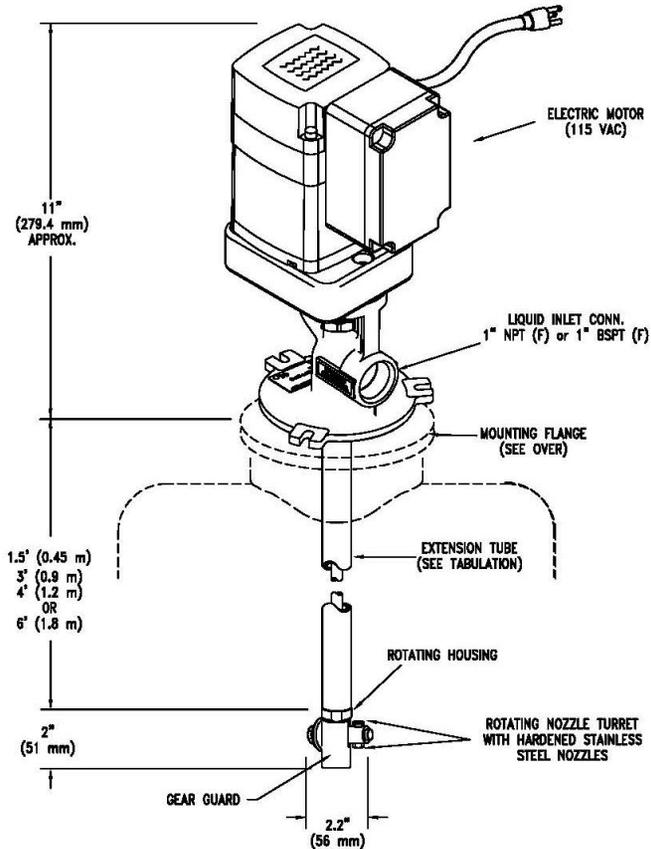
The AA090E Rotary Tank Washer may be used with plain water or with a variety of chemicals (compatible with 316SS). However, if chemicals are used, the unit should be flushed with clean water at the end of the cycle and before the unit is stored away. A liquid line strainer before the unit is recommended to remove large particles, which may damage unit.

***IMPORTANT: High impact sprays may cause severe injury. The liquid pressure to the tank washer should never be turned on while the unit is outside the tank.***

**CAUTION!**

POWER CORD, WITH 3-PRONG PLUG INTACT, MUST BE PLUGGED INTO PROPERLY GROUNDED 115 VAC ELECTRICAL SUPPLY.

THIS MOTOR MAY PRODUCE AN ELECTRICAL SPARK OR SHOCK. THE EXPLOSION PROOF MOTOR (D.S. 090E-EP) OR AIR MOTOR VERSION (D.S. 090A) WOULD BE BETTER SUITED FOR APPLICATIONS INVOLVING WET OR HAZARDOUS CONDITIONS.



© Spraying Systems Co.

THE AA090E ELECTRICALLY MOTORIZED TANK WASHER EASILY FITS INTO A 2.2" DIA. (2" NPT) OPENING. IT IS IDEAL FOR CLEANING DRUMS, TOTES, TANKS, REACTORS AND OTHER PROCESS VESSELS. WITH MULTI-AXIS ROTATION OF THE SOLID STREAM NOZZLES, IT PROVIDES COMPLETE INTERNAL COVERAGE OF THE ENTIRE CONTAINER. ITS MATERIALS OF CONSTRUCTION ENABLE IT TO BE USED WITH ALL TYPES OF CLEANING SOLUTIONS AND AGENTS.

**FEATURES:**

- FITS THROUGH A 2.2" DIA. (55.9 mm OR 2" NPT) OPENING.
- CAN BE PERMANENTLY INSTALLED OR USED AS A PORTABLE UNIT.
- MULTI-AXIS ROTATION PROVIDES FULL COVERAGE OF INTERNAL SURFACES.
- MOTORIZED DRIVE IS MOUNTED OUTSIDE OF THE TANK.
- EXPLOSION PROOF MOTOR IS ALSO AVAILABLE (D.S. 090E-EP)
- ROTATIONAL SPEED OF THE NOZZLE TURRET IS INDEPENDENT OF THE CLEANING LIQUID PRESSURE AND FLOW.
- FOR TANK DIAMETERS UP TO APPROXIMATELY 8 FT. (2.4 m).
- FOR SPECIFICATIONS AND ADDITIONAL INFORMATION, SEE DATA SHEET 090E-1.
- MAXIMUM PRESSURE 500 PSI (35 bar).

ROTARY TANK WASHER No.	EXTENSION LENGTH	WEIGHT
AA_090E-1.5+*	1.5' (0.45 m)	12 1/2 LBS. (5.7 kg.)
AA_090E-3+*	3' (0.9 m)	14 LBS. (6.4 kg.)
AA_090E-4+*	4' (1.2 m)	15 1/2 LBS. (7 kg.)
AA_090E-6+*	6' (1.8 m)	18 1/2 LBS. (8.4 kg.)

\* SPECIFY NOZZLE SIZE REQUIRED. (SEE D.S. 090E-1)

ORDER EXAMPLE: AA B 090E - 3 + W0005  
 "B" FOR BSPT VERSION      NOZZLE TYPE & CAPACITY  
 MODEL NO.      TANK WASH LENGTH

**DESCRIPTION:**  
 No. AA\_090E-- ELECTRICALLY  
 MOTOR-DRIVEN TANK WASHER



**Spraying Systems Co.**

Spray Nozzles and Accessories  
 P.O. Box 7900 - Wheaton, IL 60187-7901

Rev. No. 3

Data Sheet No.

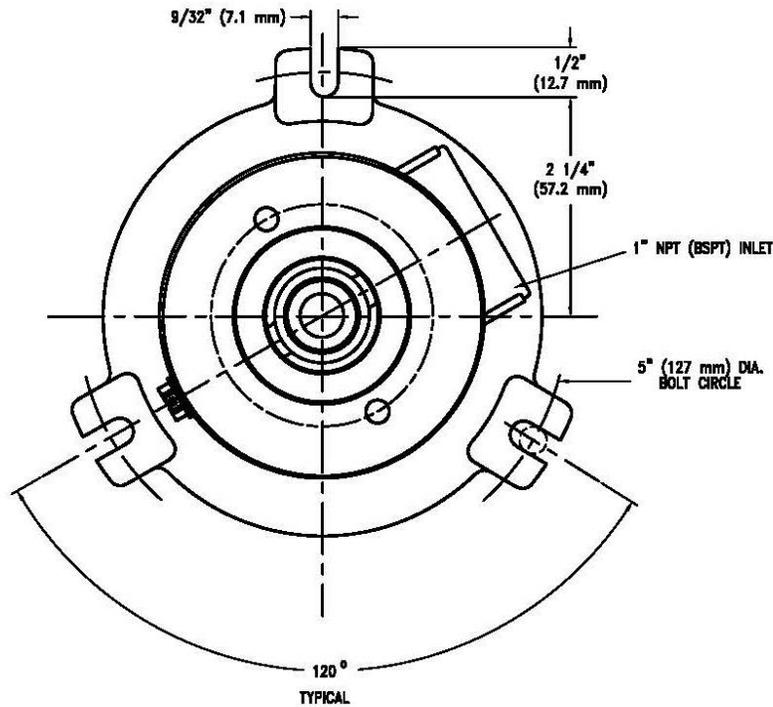
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# DATA SHEETS

**NOTE: CERTAIN ATMOSPHERES WITHIN THE TANK BEING CLEANED COULD BECOME EXPLOSIVE, SUCH AS DUST PARTICLES IN A FLOUR SILO, OR FUMES IN PAINT MIXING TANKS. FOR THIS REASON, THE FOLLOWING SAFETY PRECAUTIONS SHOULD BE OBSERVED.**



MOTOR END VIEW OF INLET BODY MOUNTING FLANGE

SPECIFICATIONS

- WETTED PARTS ARE TEFLON, DELRIN AND TYPE 316 STAINLESS STEEL.
- MAXIMUM PRESSURE - 500 PSI (35 bar).
- MAXIMUM RECOMMENDED FLOW - 7.3 GPM (27.6 l/min).
- MAXIMUM LIQUID TEMPERATURE - 200° F (93° C).
- SPRAY HEAD FITS THROUGH A 2.2" DIA. (2" NPT) OPENING.
- EXPLOSION PROOF MOTOR ALSO AVAILABLE (D.S. 090E-EP)

ELECTRIC MOTOR DATA (115 VAC)

AC FREQUENCY	SPEED RPM	CURRENT (AMPS)	POWER (WATTS)	1 COMPLETE CYCLE (MIN.)*	IP RATING
50 HZ.	3.1	.39	41	11	44
60 HZ.	3.8	.33	34	9	44

\* 31 REVOLUTIONS ARE REQUIRED FOR 1 COMPLETE CYCLE.

FLOW RATE DATA

U.S. UNITS

NOZZLE SIZE	AVG. TOTAL FLOW OF 2 NOZZLES (EQUAL CAPACITY) GALLONS PER MINUTE				
	INLET PRESSURE (PSI)				
	100	200	300	400	500
W0005	1.5	2.0	2.4	2.8	3.2
W0010	2.7	3.7	4.5	5.1	5.8
W0014	3.5	4.7	5.8	6.6	7.3

METRIC UNITS

NOZZLE SIZE	AVG. TOTAL FLOW OF 2 NOZZLES (EQUAL CAPACITY) LITERS PER MINUTE				
	INLET PRESSURE (bar)				
	7	15	20	30	35
W0005	5.7	7.6	9.1	10.6	12.1
W0010	10.2	14.0	17.0	19.3	22
W0014	13.2	17.8	22	25	28

NOTE: FLOW RATES TABULATED ABOVE INCLUDE EFFECT OF PRESSURE DROP THROUGH UNIT.

**DESCRIPTION:**  
SPECIFICATIONS FOR  
No. AA\_090E--- ELECTRICALLY  
MOTOR-DRIVEN TANK WASHER



**Spraying Systems Co.**

Spray Nozzles and Accessories  
P.O. Box 7900 - Wheaton, IL 60187-7901

Rev. No. 4

Data Sheet No.

090E-1

Ref.

SHEET OF

# SAFETY PRECAUTIONS

## **YOUR SAFETY AND THE SAFETY OF OTHERS IS EXTREMELY IMPORTANT.**

We have provided important safety messages in this manual for your product. Always read and obey all safety messages.



This is the safety alert symbol. This symbol alerts you to hazards that can kill or harm you as well as others. The safety alert symbol and the words “**DANGER**” and “**WARNING**” will precede all safety messages. Read the following words and what they signify:



**DANGER — YOU MAY BE KILLED OR SERIOUSLY INJURED IF YOU DON'T FOLLOW THESE INSTRUCTIONS.**



**WARNING — YOU MAY BE SERIOUSLY INJURED IF YOU DON'T FOLLOW THESE INSTRUCTIONS.**

All safety messages will identify the hazard, tell you how to reduce the chance of injury and tell you what can happen if the safety instructions are not followed.

**WARNING:** All safety related and operating instructions should be read before the nozzle is operated. Follow all operating instructions. Failure to do so could result in serious injury.

- **WARNING: DO NOT USE TO SPRAY FLAMMABLE LIQUIDS--SUCH USE COULD RESULT IN FIRE OR EXPLOSION CAUSING BODILY INJURY OR DEATH.**
- **WARNING:** It is important to recognize proper safety precautions when using a pressurized spray system. Fluids under pressure can penetrate skin and cause severe injury.
- **WARNING:** When dealing with pressure applications, the system pressure should never exceed the lowest rated component. Always know your system and all component capabilities, maximum pressures and flow rates.
- **WARNING:** Before performing any maintenance, make sure all liquid supply lines to the machine are shut off and /or disconnected and chemical/fluid are drained.
- **WARNING:** The use of any chemicals requires careful control of all worker hygiene.
- **WARNING:** Spraying Systems Co. does not manufacture or supply any of the chemical components used in this equipment and is not responsible for their effects. Because of the large number of chemicals that could be used and their different chemical reactions, the buyer and user of this equipment should determine compatibility of the materials used and any of the potential hazards involved.
- **WARNING:** Before use be sure appropriate connections are secure and made to withstand weight and reaction forces of the operating unit.
- **WARNING:** Spraying Systems Co. strongly recommends the use of appropriate safety equipment when working with potentially hazardous chemicals.

### **THIS EQUIPMENT INCLUDES BUT IS NOT LIMITED TO:**



- Protective hat
- Safety glasses or face shield
- Chemical-resistant gloves and apron
- Long sleeve shirt and long pants
- Appropriate footwear.



**NOTE: Always remember to carefully read the chemical manufacturer's label and follow all directions.**

- **WARNING:** It is important to operate equipment within the temperature range of all components. Also insure that appropriate time lapses or proper safety equipment is used when handling components after they're exposed to high temperatures.
- **WARNING:** Never operate tank cleaning equipment in the open due to the potential of bodily injury.
- **WARNING:** If walking on top of a tank is deemed safe and is necessary, use proper safety precautions to protect individuals as well as the equipment.
- **WARNING:** Do not put any part of your body in the tank during operation of the tank cleaner. This is NOT a safe procedure for verification of operation.
- **WARNING:** Proper hoisting procedures should be used when installing and removing all equipment.
- **WARNING:** To insure the safety of the equipment as well the individuals using them, only use Spraying Systems Co. components.
- **WARNING:** When packaging and transporting use structurally sound boxes or crates that can handle the weight of the equipment.
- **WARNING:** Tank cleaners should be flushed out with clean water before they're stored or shipped to minimize health hazards or cross contamination.
- **WARNING:** Remove equipment from the tank before attempting any repairs.
- **WARNING:** Do not use any equipment outside the intended purposes of the product. Misuse can result in personal injury or product damage.

## INSTALLATION

Qualified personnel must perform all work required to assemble, install, operate, maintain and repair this equipment. Improper installation and operation can result in severe personal injury and/or damage to property. Correct installation is your responsibility.



### **WARNING**

Install proper guards as needed. Follow basic lifting guides when transporting or handling this product. Failure to follow this instruction can result in back injury, burns or other serious injury.

### **MOUNTING**

Bolt or clamp the unit to the tank to be cleaned as dictated by the mounting flange provided. Adjustable flanges allow easy positioning of the tank wash unit to various spray depths for maximum cleaning effectiveness.

### **LIQUID INLET CONNECTION**

Proper installation requires liquid supply line (pipe, hose, etc.) Meet or exceed maximum working pressure. Use of PTFE pipe tape or other appropriate sealant compatible with your process fluids is highly recommended for leak free connections.



## DANGER

Failure to install the tank washer with insufficient connections could result in leaks and/or explosion. If you do not follow these instructions, you may be killed or seriously injured.

### MECHANICAL CLEARANCES

Proper installation requires that sufficient clearance be maintained between the rotary housing and nozzles of the tank wash unit and any internal baffles or the walls of the tank being cleaned.



## DANGER

It is your responsibility to ensure that there is no possibility of the moving parts coming in contact with fixed objects. Failure to install the tank washer with sufficient clearances could result in the generation of sparks with a resultant explosion or fire. If you do not follow these instructions, you may be killed or seriously injured.

### GROUNDING

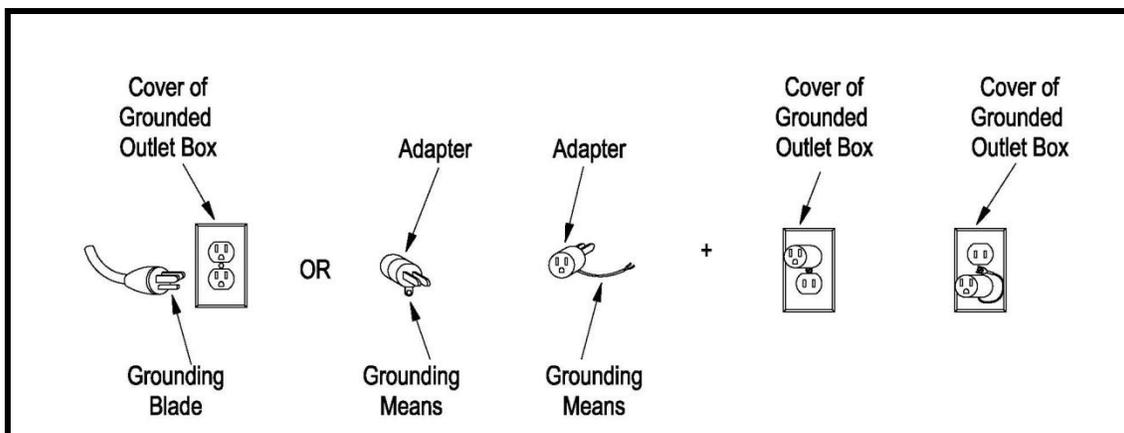
A ground screw is provided on the liquid inlet body marked with a ground symbol. A ground wire should be clamped under the screw head and connected to earth ground via an approved grounding method. Likewise, a ground wire should be affixed to the tank and terminated at an earth ground.



## DANGER

It is not sufficient to ground only the tank washer or the tank itself because the electrical continuity between the tank wash unit and tank cannot be guaranteed. A separate ground connection from both the tank wash unit and the tank itself should be made. Failure to follow this instruction can result in buildup of static charge between the tank and the tank washer parts which could cause a sudden discharge of current with a resultant explosion or fire.

- **WARNING:** Never touch unit with wet hands or while standing in a wet environment until power is turned off to unit.
- **WARNING:** Always use a properly grounded 110V-120V electrical outlet. See following chart:



- Use wire/extension cords of adequate size to minimize voltage drop at the motor. Extension cords should be Underwriters Laboratories listed and conform to the following minimum wire size chart. The proper fuse size should always be used.

Extension Cord Length	Min. Gauge Wire
1 to 150 ft.	18
150 to 300 ft.	16

- All wiring should be performed by a qualified electrician and follow all electrical and safety codes as well as the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
- Protect electrical cord from sharp objects, hot surfaces, oil, and chemicals. Avoid kinking the cord. Replace or repair damaged or worn cords immediately.
- Disconnect power before servicing unit. If power disconnect is out of sight, lock it in the open position and tag it to prevent unexpected application of power.
- Do not touch an operating motor. Modern motors are designed to operate at high temperatures.
- Never operate unit around explosive fumes or liquids or in an explosive atmosphere.

**YOU MAY BE KILLED OR SERIOUSLY INJURED IF YOU DO NOT FOLLOW THESE INSTRUCTIONS.**

### **HIGH IMPACT SPRAYS**

This tank washer may be equipped with solid stream nozzles which concentrate the flow energy into a small area for maximum impact and cleaning efficiency. Operation at high pressure increases their effectiveness but also creates a hazard if the proper precautions are not followed.



### **WARNING**

#### **INJURY HAZARD FROM HIGH IMPACT SPRAYS.**

High impact sprays can cause severe injury. The liquid pressure to the tank washer should never be turned on while the unit is outside the tank. ***FAILURE TO FOLLOW THIS INSTRUCTION CAN RESULT IN FLUID PENETRATION THROUGH CLOTHING AND INTO THE HUMAN SKIN CAUSING SEVERE INJURY, POSSIBLY RESULTING IN AMPUTATION OR DEATH.*** If any part of the body comes in contact with the spray stream, immediately consult a physician.

# OPERATION

***It is your responsibility to operate this product at recommended speeds, loads and temperatures.***

Run the unit within the specified pressures and flow rates to ensure safety. To maintain proper operations do not run the unit dry, always keep liquid flow on before stopping the electric motor.



## **WARNING**

**DO NOT USE TO SPRAY FLAMMABLE LIQUIDS--SUCH USE COULD RESULT IN FIRE OR EXPLOSION CAUSING BODILY INJURY OR DEATH.**



## **WARNING**

**SOUND LEVEL FROM MOTOR MAY EXCEED 85DB(A). CHECK COMPATIBILITY OF SERVICE FLUID WITH MATERIALS USED TO CONSTRUCT THIS PRODUCT. USE A PRESSURE GAUGE TO MONITOR LIQUID PRESSURE (SEE 190E-1 FOR FLOW RATE DATA). ENSURE THAT THE PUMPING SYSTEM HAS MONITOR CONTROLS AND EMERGENCY SHUT OFF SYSTEM IN CASE OF PRESSURE SPIKE WHICH CAN CAUSE HARM TO THIS PRODUCT. FAILURE TO FOLLOW THIS INSTRUCTION CAN RESULT IN BURNS, EYE INJURY OR OTHER SERIOUS INJURY.**



## **DANGER**

**SPRAYING SYSTEMS CO. STRONGLY RECOMMENDS THE USE OF APPROPRIATE SAFETY EQUIPMENT WHEN WORKING WITH POTENTIALLY HAZARDOUS CHEMICALS. SEE YOUR CHEMICAL'S MSDS SHEET FOR ALL SAFETY MEASURES RELATING TO YOUR CHEMICAL.**

### **THIS EQUIPMENT INCLUDES BUT IS NOT LIMITED TO:**



- Protective hat
- Safety glasses or face shield
- Chemical-resistant gloves and apron
- Long sleeve shirt and long pants
- Appropriate footwear.



Always remember to carefully read the chemical manufacturer's label and follow all directions.

# MAINTENANCE INFORMATION

**IMPORTANT: IT IS YOUR RESPONSIBILITY TO REGULARLY INSPECT AND MAKE NECESSARY REPAIRS TO THIS PRODUCT IN ORDER TO MAINTAIN PROPER OPERATION. IT IS RECOMMENDED THAT THE BUSHINGS AND SEALS BE INSPECTED EVERY 1000 HOURS OF OPERATION OR SOONER IF EXCESSIVE LEAKAGE OF THE SEALS OCCURS.**

## **REMOVAL AND REPLACEMENT OF SPRAY NOZZLES (ITEM 23 ON PARTS LIST DRAWING PL 090E)**

Make sure the unit is completely disconnected from the power source before attempting to service nozzles.

1. Unscrew spray nozzles (23) from pinion shaft (21) and inspect for plugging and wear.
2. If a nozzle is plugged or partially plugged, clean out the orifice and inlet area with a wooden toothpick or other relatively soft probe. Screwdrivers, wire or other hard metal items should not be used since they may scratch and severely damage the orifice.
  - A. If the nozzles need replacement, obtain new nozzles.
3. Replace spray nozzles (23) in pinion shaft (21) by tightly screwing them in.

## **REMOVAL AND REPLACEMENT OF NOZZLE PINION BUSHINGS (ITEM 20 ON PARTS LIST PL 090E)**

1. Remove guard (27) by removing hex head cap screw (28) and shake-proof washer (29).
2. Unscrew pinion guard (26) and slide pinion gear (25) off of woodruff key (22). Remove woodruff key (22).
3. Carefully remove pinion shaft (21). A slight twist motion will help in removal.
4. Push out the old pinion bushings (20) and clean, and inspect yoke (19) seating surfaces.
5. Install new pinion bushings (20) until they seat fully against the yoke (19).
6. Clean and inspect the pinion shaft (21) and slide through the pinion bushings (20). A suitable lubricant on the leading edge will help in installation.
7. Install the woodruff key (22) and pinion gear (25). The pinion shaft (21) may need to be rotated slightly to allow proper meshing of pinion gear (25) and gear (18).
8. Seat pinion gear (25) fully against pinion bushing (20) and thread pinion guard (26) onto pinion shaft (21), tighten to 17 ft/lbs.
9. Re-install guard (27) and tighten hex head cap screw (28) and shake-proof washer (29).

## **REMOVAL OF #21039 ELECTRIC MOTOR DRIVE (SEE PARTS LIST DRAWING PL 090E)**

1. First make sure the unit is completely disconnected from the power source.
2. Using a Allen Wrench, unscrew and remove all 4 10-32x3/4 socket cap screws (6) and respective spring washers (5).
3. You should now be able to lift the electric motor drive completely off the 090 inlet body casting.

## **REMOVAL/REPLACEMENT OF ELECTRIC MOTOR DRIVE COUPLING (ITEM 2 ON PARTS LIST PL 090E)**

1. If it is necessary to remove the coupling (2) from the gear motor sub-assembly (1) shaft, tap the coupling with a rubber or plastic mallet until it releases from the shaft.
2. To reassemble, align the keyway on the coupling (2) with the key on the gear motor sub-assembly (1) shaft and lightly tap the coupling (2) until it bottoms on the shaft.

**NOTE:** The coupling (2) on the gear motor sub-assembly (1) shaft has a press fit so the coupling (2) does not inadvertently come apart during removal or installation of the gear motor sub-assembly.

**DISASSEMBLY OF THE UNIT (SEE PARTS LIST PL 090E)(REPAIR KIT #AB090-KIT)**

1. If it has not already been done, the electric motor sub-assembly should be removed as described in the removal of #21039 electric motor drive section above.
2. Next, tap out the groove pin (11) and inspect hole in shaft (12). Remove any burrs and sharp edges.
3. Unscrew the upper shaft seal body sub-assembly (7) and slide off the shaft (12).
4. Inspect the o-ring and bushing inside the upper bushing retainer sub-assembly (7). If damaged or worn, replace with new sub-assemblies.
5. Using a 15/16" open-end wrench across the flats of the gear (18), loosen the entire assembly from the extension tube (13). Be careful not to damage gear teeth.
6. Remove shaft (12) by loosening shaft nut (14) and unscrewing the shaft (12) from the yoke (19). These are left hand threads.
7. Do not move shaft nut (14) more than necessary as this serves as an indicator during reassembly.
8. When shaft (12) is removed, loosen yoke nut (15) by holding collar (16). Remove yoke nut (15) and collar (16). This will allow replacement of thrust washer (17).
9. Replace collar (16) until it contacts thrust washer (17). Do not over-tighten.
10. Hold collar (16) and tighten yoke nut (15) against collar (16) torque to 20 ft/lbs. Thread shaft (12) back into yoke (19) until shaft nut (14) contacts top of yoke (19).

**REASSEMBLY OF THE UNIT (SEE PARTS LIST PL 090E)**

1. Tighten the shaft (12) against yoke (19). Remember these are left hand threads.
  2. Apply lubricant oil\* to the end of the shaft (12) and insert into the extension tube (13).
  3. Align shaft (12) and start it into upper bushing retainer sub-assembly (7).
  4. Thread gear (18) into extension tube (13). This will push assembly through upper bushing retainer sub-assembly (7). Tighten gear (18) into extension tube (13) to 20 ft/lbs.
  5. Replace groove pin (11) and electric motor assembly (1). Refer to the previous section titled replacement of #21039 electric motor drive.
  6. Be sure to align slot in electric motor assembly with groove pin (11). If groove pin (11) is not contacting slot or motor cannot be seated properly due to interference, then the shaft is either threaded into the yoke (19) too far or not enough. This is why, during disassembly, care should be taken when loosening the shaft nut (14).
- **USE APPROPRIATE LUBRICANT IF UNIT IS USED IN FOOD OR PHARMACEUTICAL APPLICATIONS.**

**REPLACEMENT OF #21039 ELECTRIC MOTOR DRIVE (SEE PARTS LIST DRAWING PL 090E)**

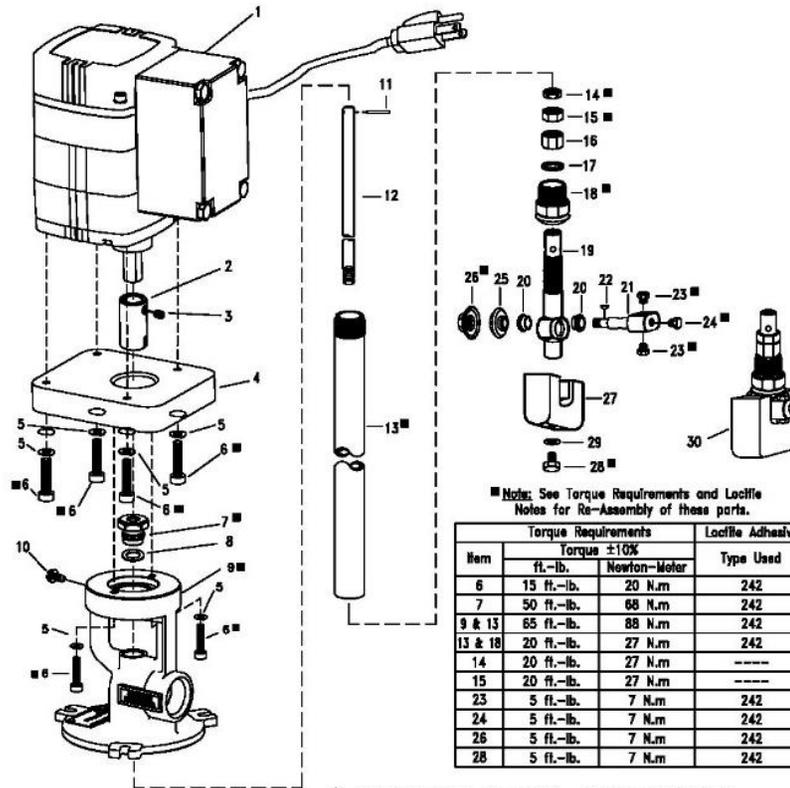
1. If it is not already attached, align the keyway on the coupling (2) with the key on the gear motor sub-assembly (1) shaft and lightly tap the coupling (2) until it bottoms on the shaft.
2. Insert the coupling (2) through the hole in the top of the 190 inlet casting.
3. The slot on the coupling (2) should be aligned and indexed over the groove pin and drive shaft on the 090 assembly.
4. The electric motor drive assembly can now be rotated until the through holes on the inlet casting align with the m5 female threaded inlet holes on the electric motor drive assembly.
5. Using a hex Allen Wrench, secure the gear motor sub-assembly (1) to the inlet casting using four 10-32 X 3/4" socket head cap screws (6) and spring lock washers (5). Before re-installing in a tank, connect power to the electric motor drive. Make sure the unit works properly.

# PART LISTS

ITEM	PART NO.	DESCRIPTION
▲	1	21039 Electric Gear Motor Sub-Assembly
	2	CP19094-1-316SS Coupling, Type 316 Stainless Steel
	3	CP19108-SS Set Screw, Stainless Steel, #1/4-20 x 1/4" Lg.
▲	4	CP19093-AL Adapter Plate, Aluminum
▲	5	CP20674-SS Lock Washer #10 Helical Spring, Stainless Steel (6 Req'd)
▲	6	CP26198-3/4-SS Socket Head Cap Screw, #10-32 x 3/4, Stainless Steel (6 Req'd)
★	7	1B330-316EPR Upper Bushing Retainer Assembly, Type 316 Stainless Steel, Ethylene Propylene Rubber & Carbon Graphite Filled PTFE
★	8	CP58382-NY Gasket, Nylon®
	9	1B335-SS Liquid Inlet Body-Mounting Plate Sub-Assembly, Stainless Steel & Type 316 Stainless Steel (1" N.P.T. Conn.) (Includes Item 10)
		81B335-SS Liquid Inlet Body-Mounting Plate Sub-Assembly, Stainless Steel & Type 316 Stainless Steel (1" B.S.P.T. Conn.) (Includes Item 10)
	10	CP55000-3-12P Grounding Screw, Steel Zinc Plated
★	11	CP19109-SS Groove Pin, Stainless Steel
	12	CP38827-__-316SS Shaft, Type 316 Stainless Steel (For AA090E-__ or AA090E-__)
	13	CP19098-__-316SS Extension Tube, Type 316 Stainless Steel (For AA090E-__ or AA090E-__)
	14	CP38828-316SS Shaft Nut, Type 316 Stainless Steel
	15	CP38830-316SS Yoke Nut, Type 316 Stainless Steel
	16	CP38831-316SS Collar, Type 316 Stainless Steel
★	17	CP38832-DEL Thrust Washer, Delrin®
	18	38846-316SS Gear & Yoke Bushing Sub-Assembly, Type 316 Stainless Steel
	19	CP38829-316SS Yoke, Type 316 Stainless Steel
★	20	CP38841-CGRTEF Pinion Bushing, Carbon Graphite Filled PTFE (2 Req'd)
	21	CP38840-316SS Pinion Shaft, Type 316 Stainless Steel
★	22	CP38836-SS Woodruff Key, #202, Stainless Steel
	23	W** Nozzle, Type 416 Hardened Stainless Steel (2 Req'd)
	24	CP38838-316SS Nozzle Plug, Type 316 Stainless Steel
	25	CP38837-316SS Pinion Gear, Type 316 Stainless Steel
	26	CP38835-316SS Pinion Guard, Type 316 Stainless Steel
	27	CP38842-316SS Guard, Type 316 Stainless Steel
	28	CP19278-1-SS Hex. Head Cap Screw, Stainless Steel, #1/4-20 NC x 7/16" Lg.
	29	CP13993-410SS Shakeproof Washer, #1/4, Type 410 Stainless Steel
	30	38626-316SS Sub-Assembly (Includes Items 15 Thru 29)
No. AA090E-__ + **, TankJet® Electric Motor Driven Tank Cleaner (N.P.T. Inlet Conn.)		
No. AA090E-__ + **, TankJet® Electric Motor Driven Tank Cleaner (B.S.P.T. Inlet Conn.)		

▲ Note: Use Motor Kit 72190 as Replacement Motor Kit on Older Tank Cleaner Units sold before 1/1/2007.

\*\* Specify Spray Nozzle Size Required. (SEE D.S. 090E-1)



■ Note: See Torque Requirements and Loctite Notes for Re-Assembly of these parts.

★ SOLD IN KITS ONLY NO. AB090-KIT SPARE PARTS KIT (INCLUDES ALL ITEMS MARKED WITH "★")

#### Description:

No. AA090E-\_\_ & AA090E-\_\_ TankJet® Electric Motor Driven Tank Cleaner



**Spraying Systems Co.**

Spray Nozzles and Accessories  
P.O. Box 7900 - Wheaton, IL 60187-7901

Rev. No. 5  
Ref. 38625

Parts List No.  
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# WARRANTY

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## SPRAYING SYSTEMS CO. WARRANTY

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