



Spraying Systems Co.
Experts in Spray Technology

TankJet[®] M60 Mobile Tank Cleaner



Operation & Maintenance Instructions
Model: TJM60AG Tank Cleaner

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IMPORTANT! *Read all instructions in this manual before operating machine.*

FORWARD

This manual covers the complete TankJet® M60 Mobile Tank Cleaner with all the options. Your TankJet M60 may vary based on the configuration and options you purchased. Pictures in this manual may include options which are not part of your TankJet M60. Statements in this manual may describe options which are not part of your TankJet M60 configuration. Pictures in this manual may represent components which are different than those of your TankJet M60. Statements in this manual may describe components which are different than those of your TankJet M60. The manufacturer reserves the right to make changes in this standard TankJet M60 without notification.

INTRODUCTION

The TankJet M60 is designed to clean the inside surfaces of standard size wine barrels or other similar size drums, vessels or containers using hot water. The TankJet M60 is an air motor driven type of tank washer. The air motor drives a rotating shaft that is connected to a set of bevel gears that translate rotational motion to a final drive shaft that rotates the nozzle head. The rotational movement of the nozzles and path of spray are indexed controlled with a set of bevel gears. The solid stream nozzles mounted on the nozzle hub produce a spray that provides the scrubbing action to clean the inside surface of the barrel. The maximum liquid pressure for the tank washer is 1,000 psi (70 bar) at a maximum liquid pressure of 180°F (82°C). The typical air pressure to drive the air motor is 10 psi (.7 bar) to 20 psi (1.4 bar). The maximum allowable pressure for the air motor is 20 psi (1.4 bar).

The TankJet M60 comes with a set of valves mounted at the top of the cart handle. One valve is a high pressure 316SS valve needed to open and close the liquid line that supplies the nozzle head. The other valve is a trigger valve needed to open and close the air line that supplies air to the air motor needed to provide rotational motion to the nozzle head. The TankJet M60 must be only operated in the washing mode when the nozzle head is completely inside the barrel. Never operate the TankJet M60 when outside the barrel or vessel. Always make sure liquid line is off by closing the ball valve. Also, it is advisable to close the trigger valve to shut off the air line to the air motor

Another feature for the TankJet M60 is the portable wheel cart design that allows for easy movement of barrel washer to install and remove the nozzle head from the barrel. This provides for an efficient and back saving method to install and remove the nozzle head from the barrel.

This TankJet M60 is typically used with a pressure washer with a positive displacement pump. For safety reasons, it is important to note that the TankJet M60 must only be used with a pressure washer or any other pump having a properly operating unloader valve.

The minimum and maximum ambient temperature the TankJet M60 can be exposed to is +35°F to +125°F (2°C to +52°C).

GENERAL SAFETY INSTRUCTIONS



READ AND FOLLOW INSTRUCTIONS:

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:** 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.
- **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:

- Safety shoes
- Safety glasses or face shield
- Chemical and heat-resistant gloves
- Long sleeve shirt and long pants

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

- **WARNING: DO NOT USE TO SPRAY FLAMMABLE LIQUIDS--SUCH USE COULD RESULT IN FIRE OR EXPLOSION CAUSING BODILY INJURY OR DEATH.**
- **WARNING:** Never operate tank cleaning machine in the open due to the potential of bodily injury.
- **WARNING!** Never operate barrel washer with nozzle head outside of tank. Make sure ball valve is in off position for water line whenever nozzle head of tank washer is outside of tank.
- **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:** Removed equipment from the tank before attempting any repairs.
- **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:** 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:** Do not use any equipment outside the intended purposes of the product. Misuse can result in personal injury or product damage.



ASSEMBLY INSTRUCTIONS

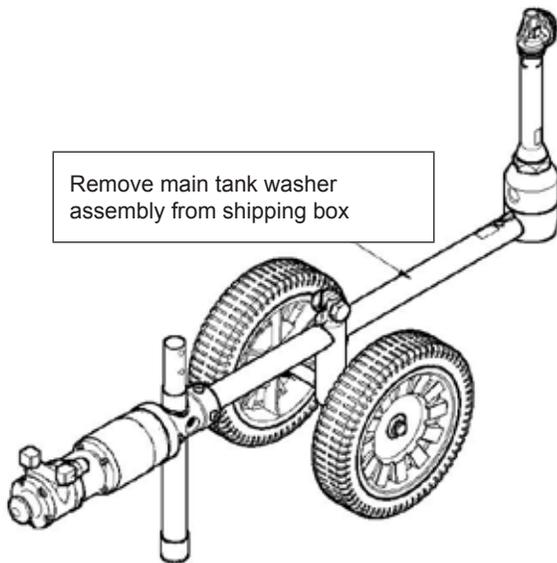
There is some assembly and installation required before the TankJe® M60 can be used for cleaning. Please see the information below for the tools needed to complete assembly of the TankJet M60.

Tools needed for assembly

1. Adjustable Crescent Wrench
2. Pipe Wrench
3. Open end Wrench (3/8 x 7/16)
4. Socket Drive Ratchet Wrench (7/16 socket)

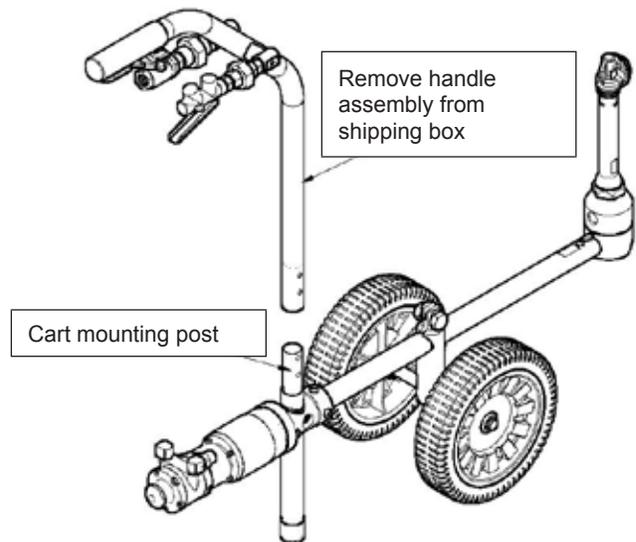
STEP 1.

Remove main TJM60AG tank washer assembly from shipping box.



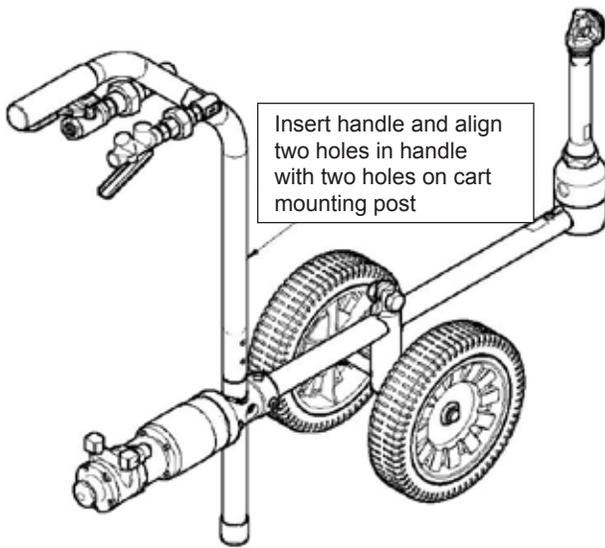
STEP 2.

Remove handle assembly from shipping box and position handle assembly to mount to cart mounting post above cart stand.



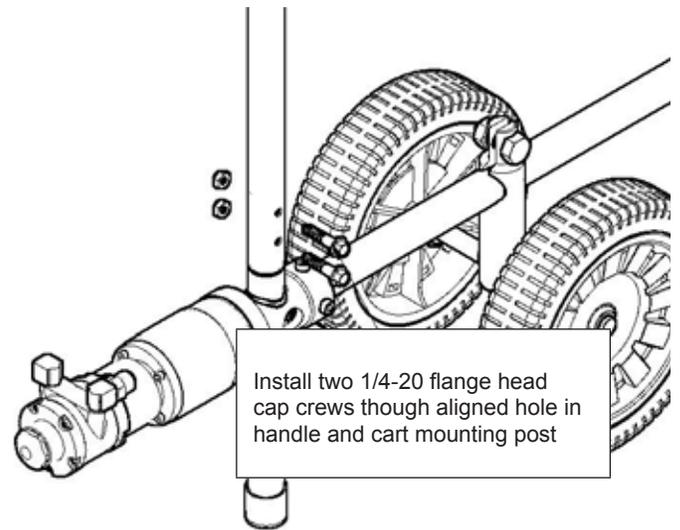
Step 3.

Mount handle to tube end with two holes to align with two holes on cart mounting post.



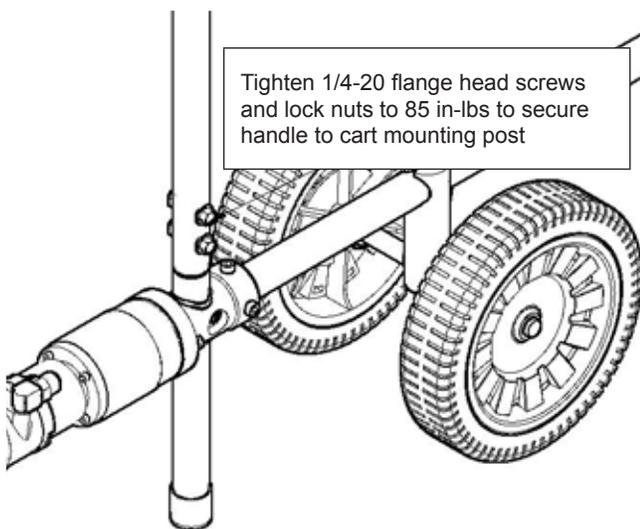
Step 4.

Install two 1/4-20 flange head cap screws through aligned holes in handle and cart mounting post.



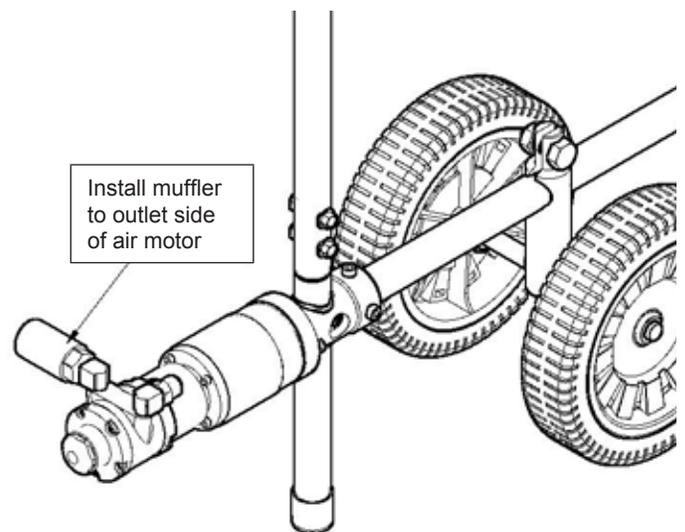
Step 5.

Next, screw on the 2 provided 1/4-20 lock nuts and securely tighten nut and screw with suitable wrenches to an approximate torque of 85 in-lbs.



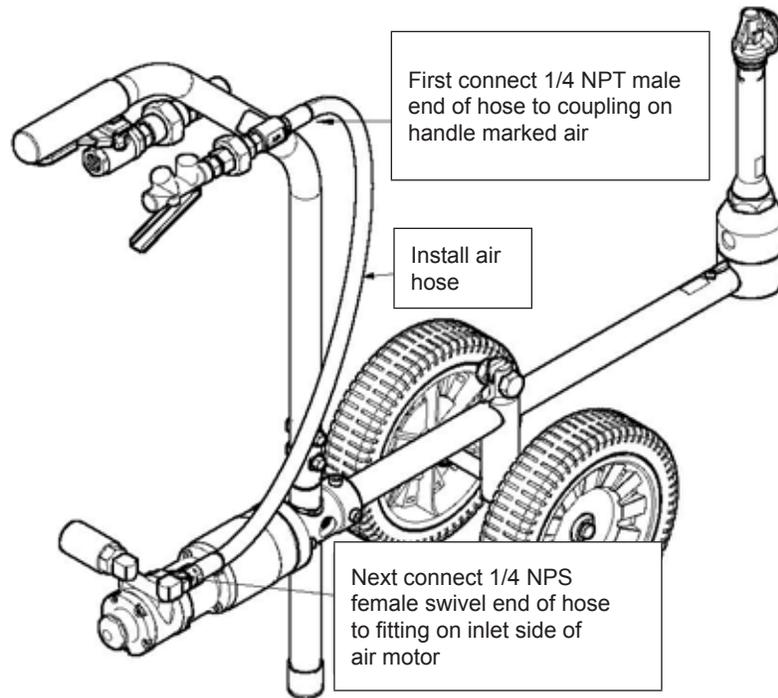
Step 6.

Install muffler on the marked outlet side of the air motor.



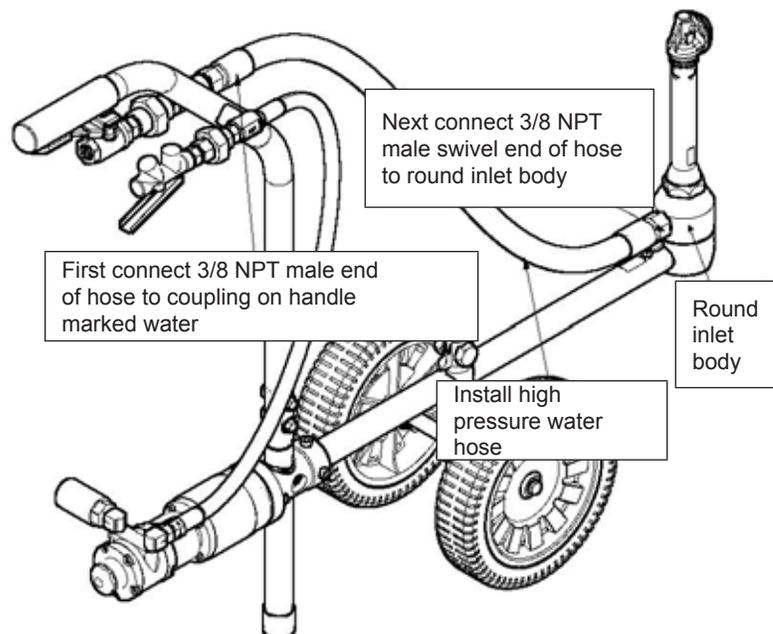
Step 7.

Install the included 1/4 NPT (male) x 1/4 NPS (swivel female) air hose. First, using an adjustable crescent wrench, connect the 1/4 NPT male end of hose to coupling marked air on handle assembly. Next, connect the 1/4 NPS (swivel female) end of hose to fitting on in side of air motor.



Step 8.

Install high pressure water hose 3/8 NPT (male) X 3/8 NPT (male swivel). First connect 3/8 NPT (male) end to coupling marked water using an adjustable crescent wrench. Next connect 3/8 NPT (male swivel) end to round inlet body using an adjustable crescent wrench. Note: it is suggested to wrap pipe thread sealant tape on pipe threads to provide good sealed connections.



INSTALLATION

Installation for connecting barrel washer to pressure washer pump and air compressor.

Tools needed for assembly

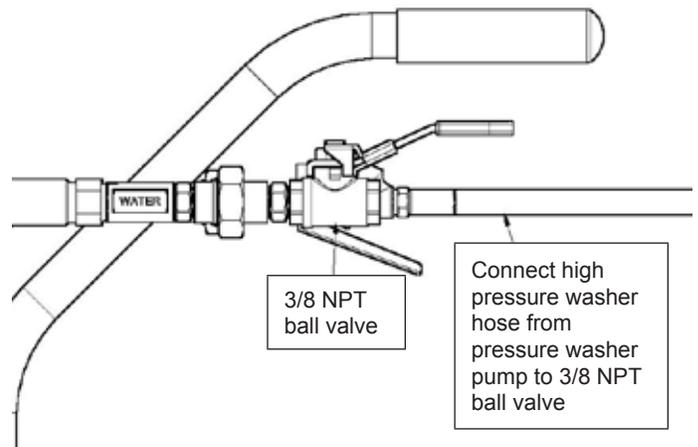
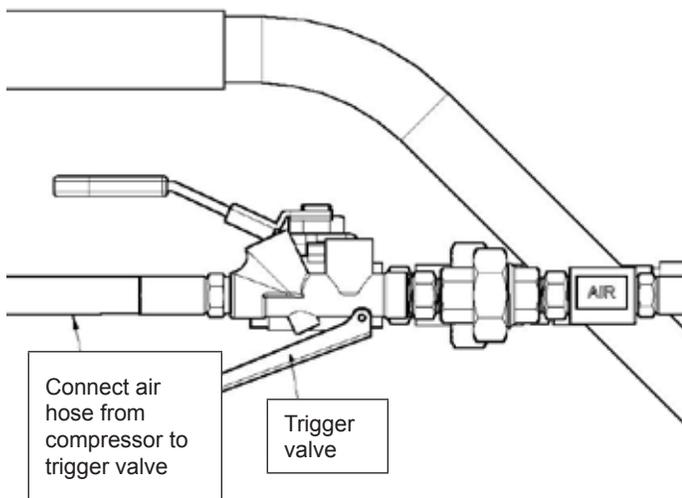
1. Adjustable Crescent Wrench
2. Pipe Wrench

Step 1.

First connect air hose from air compressor to trigger valve located on handle coupling marked air. Air hose must be a minimum 1/4 inch size. An air filter with a 40 micron filter and air pressure regulator need to be installed to allow for proper operating performance. The air filter should be installed after the air compressor, next the air pressure regulator and then the air hose to the trigger valve. If your current systems does not have an air filter pressure regulator, then this optional item can be provided by Spraying Systems Co.. Important safety note: Never connect a water hose line to the trigger valve located on the air line!

Step 2.

Before connectig hose, make sure to flush water line from pressure washer pump. Next, connect the high pressure hose 3/8 NPT size from the pressure washer pump to the 3/8 NPT ball valve located near the handle coupling marked water. Important: high pressure water hose must have a minimum pressure rating of 1,500 psi. It is suggested to use a liquid strainer with a 100 mesh screen side on the inlet suction side of the pressure washer pump. If a strainer is needed Spraying Systems Co. can provide a strainer as an optional item.



OPERATION AND SPECIFICATIONS

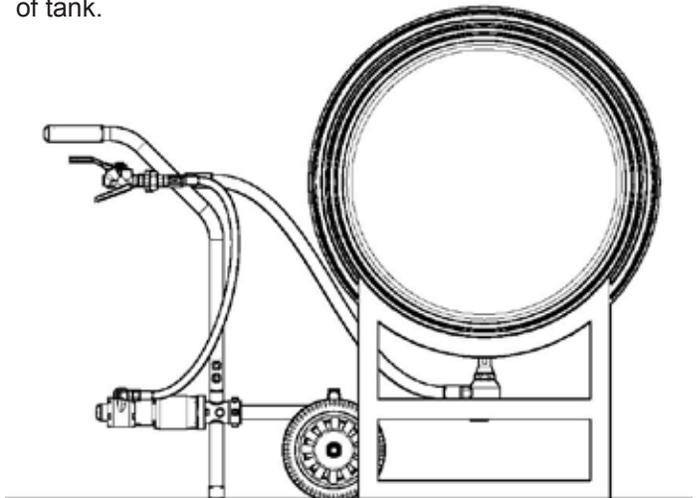
Specifications	
Max. Operating Liquid Pressure	1,000 PSI (70 BAR)
Max. Liquid Temp.	180°F (82°C)
Motor Driven Type	Air-Non Lubricated
Max. Air Pressure	20 PSI (1.4 BAR)
Max. and Min. Ambient Temp.	+35°F to +125°F (+2°C to +52°C)
Liquid Pipe Conn. Size	3/8 NPT or 3/8 BSPT
Air Line Conn. Size	1/4 NPT or 1/4 BSPT
Effective Cleaning Dia.	To 5 ft. maximum (1.5 m)
Nozzle Quantity	2
Installation Hole Dia.	1.75 in. dia. (44.5 mm)
Approx. Weight	26 lbs. (11.8 Kg)
Material of construction for components in contact with cleaning fluid.	316 Stainless Steel, Carbon Graphite PTFE filled Peek, EPDM, PTFE
Optional Air Pressure Regulator/Filter and Gage	40 Micron Size
Optional Liquid Strainer to be low pressure inlet side of pressure washer pump	Liquid TWD Strainer available in various pipe size connections 100 Mesh screen

Protective clothing when operating TankJet® M60.

- Safety shoes
- Safety glasses or face shield
- Chemical and heat-resistant gloves
- Long sleeve shirt and long pants

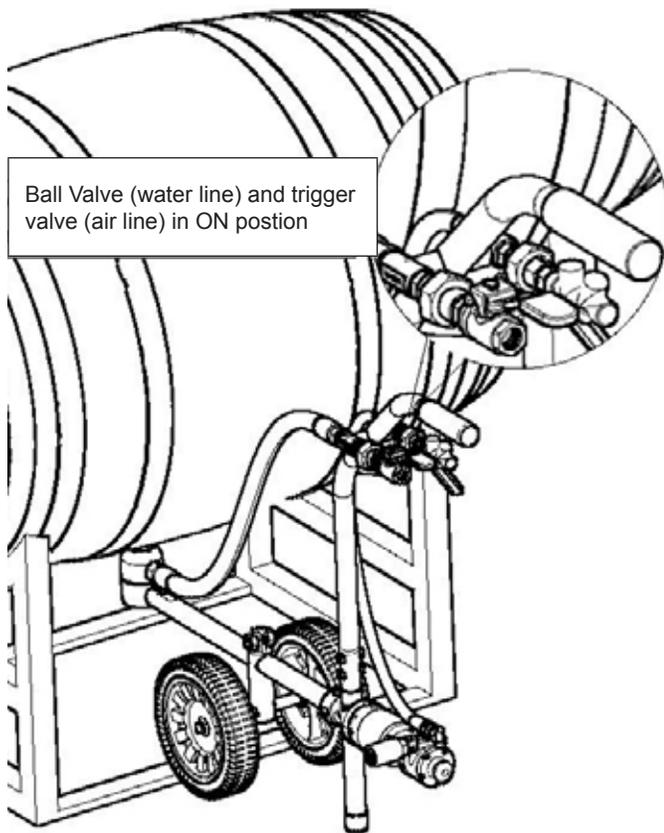
Step 1.

First, move the TJM60AG mobile tank cleaner to allow insertion of nozzle head into tank through tank access hole before operating high pressure tank washing. Warning! Never operate TJM60AG tank cleaner with nozzle head outside of tank. Make sure ball valve is in off position for water line whenever nozzle head of tank cleaner is outside of tank.



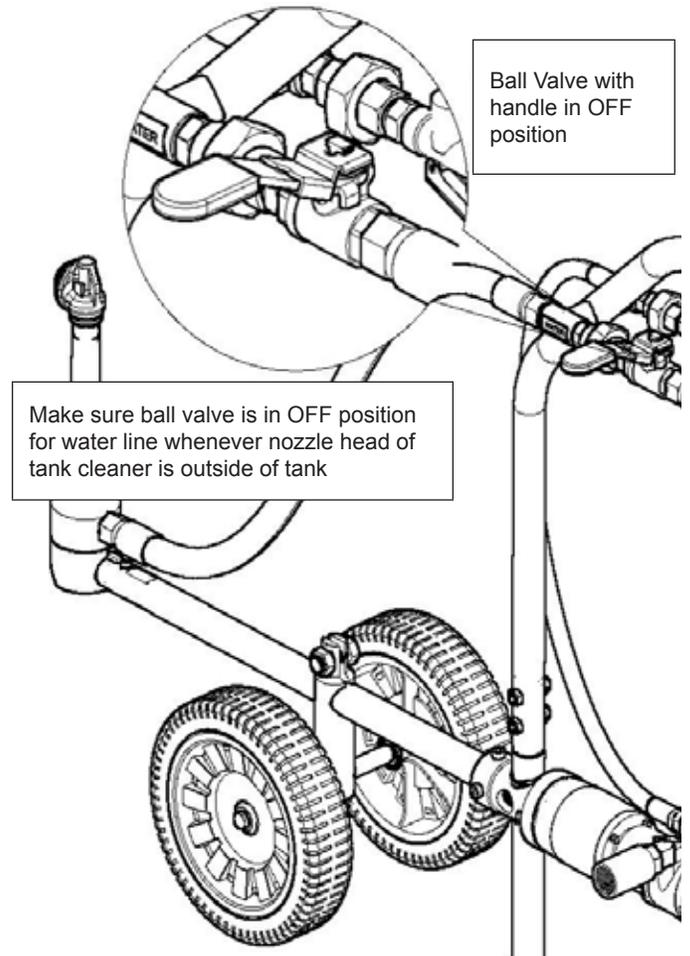
Step 2.

Once, tank cleaner nozzle head is in tank, the tank cleaner can be used for tank washing operation. First, turn the handle on the ball valve to the on position and then adjust the water pressure regulator and temperature setting on the pressure washer pump. The maximum allowable water pressure is 1,000 psi (70 bar) at a maximum water temperature of 180°F (82°C). Next, turn on the air line by squeezing and locking the trigger in place to drive the air motor to actuate rotational motion of the nozzle head. The barrel washer is now cleaning the inside surfaces of the barrel. Once the cleaning cycle is completed shut off the ball valve on the water line and then shut off the air line by closing the trigger valve. Once the ball valve and trigger valve are closed the tank cleaner can be removed from the tank.



Step 3.

WARNING! Never operate tank cleaner with nozzle head outside of tank. Make sure ball valve is in off position for water line whenever nozzle head of tank cleaner is outside of tank. Please see below drawing with ball valve in off position.



MAINTENANCE

The following are instructions for replacing seals located in the nozzle hub and the gear box for the TankJet® M60. After many hours of operation the seals will wear and should be replaced to prevent performance problems and wear problems on other system components. It is suggested to change the seals after 300 hours of TankJet M60 operating time.

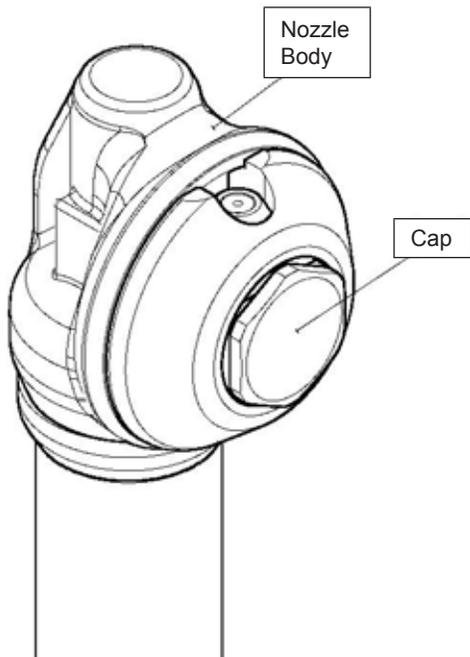
Replacing Nozzle Hub Seals

Replace worn seals in nozzle hub

1. Adjustable Crescent Wrench
2. Screw Driver

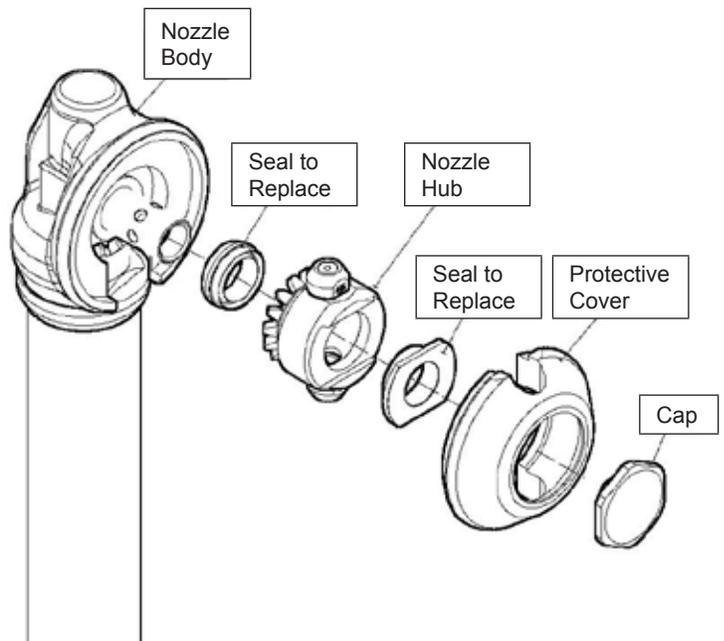
Step 1.

To remove and replace worn seals from nozzle hub, first remove cap from nozzle body by using an adjustable crescent wrench



Step 2.

To remove and replace worn seals from nozzle hub first remove cap from nozzle body using an adjustable crescent wrench



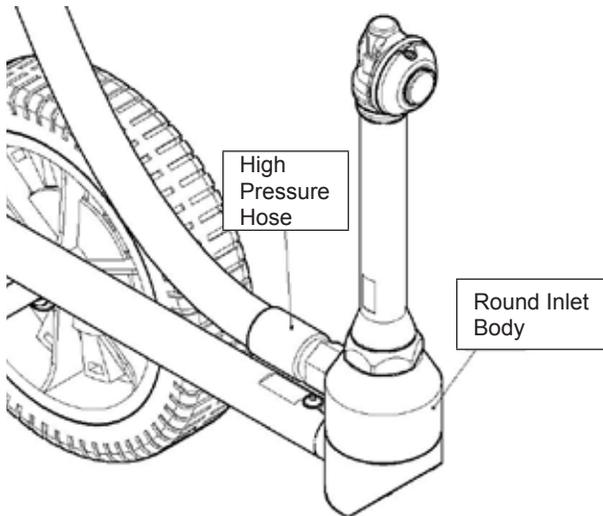
Replacing Gear Box Seals

Replace worn seals in gear box

1. Adjustable Crescent Wrench
2. Screw Driver

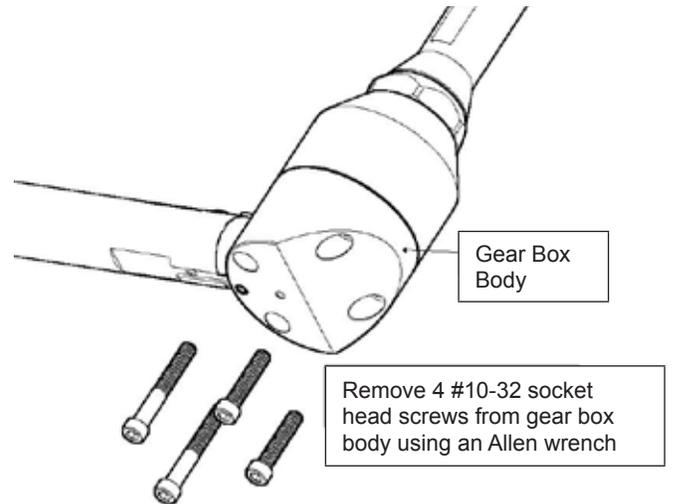
Step 1.

First disconnect high pressure hose from round inlet body.



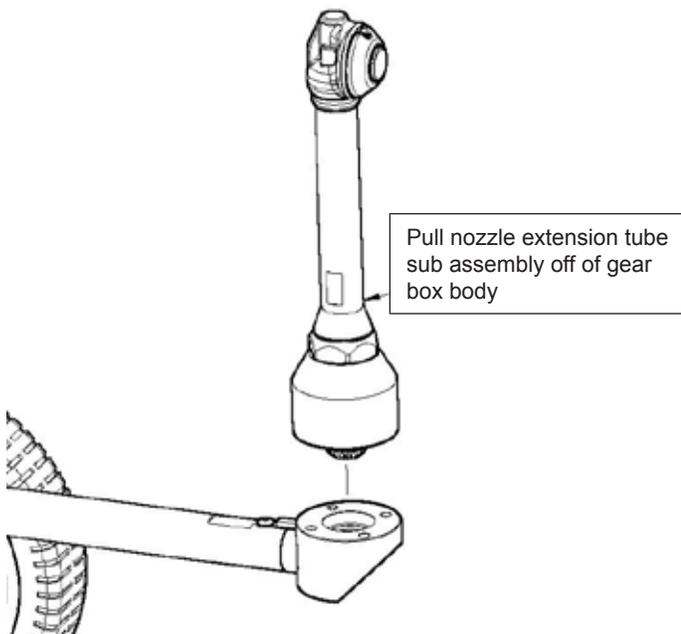
Step 2.

Remove 4 #10-32 socket head screws from gear box body using an Allen wrench.



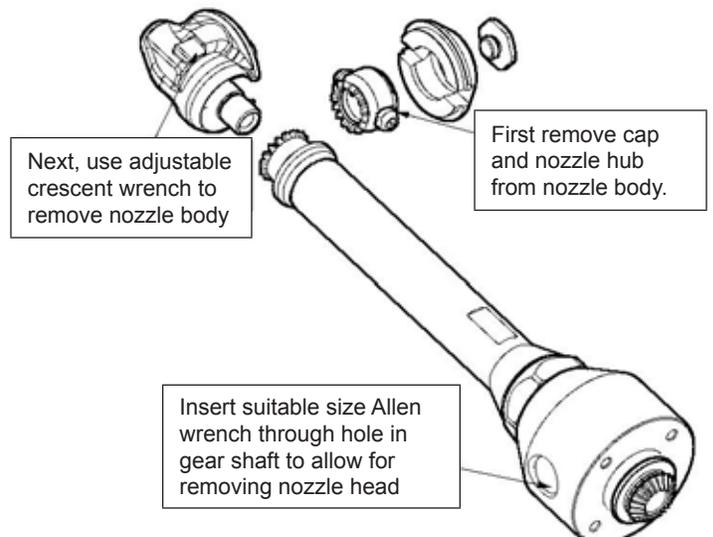
Step 3.

Next, pull nozzle extension tube sub assembly off of gear box body.



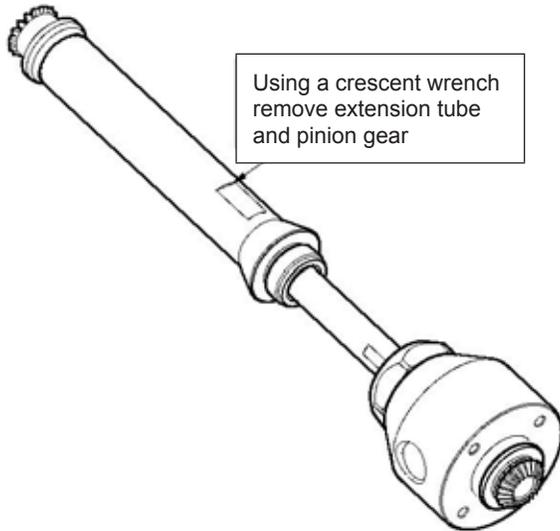
Step 4.

First remove cap and nozzle hub from nozzle body. Then remove nozzle head assembly from extension tube assembly using an adjustable crescent wrench to turn nozzle head and insert a suitable size Allen wrench through hole in gear shaft inside round inlet body.



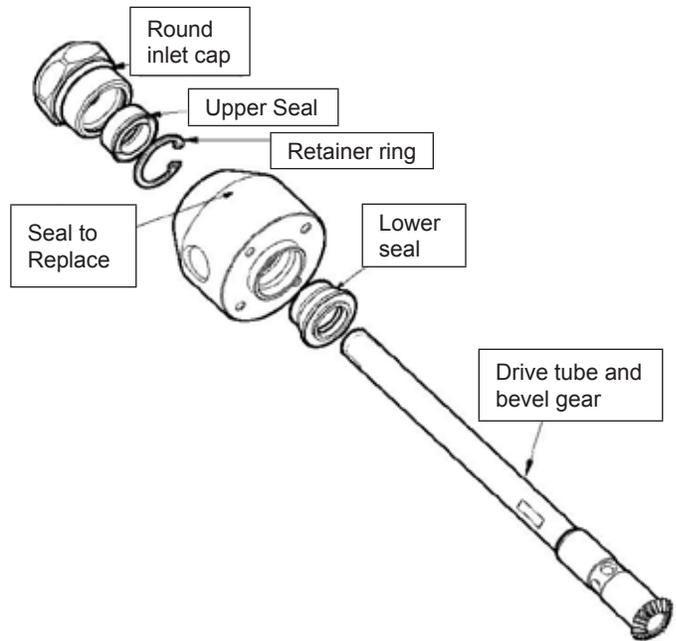
Step 5.

Using a crescent wrench remove extension tube and pinion gear.



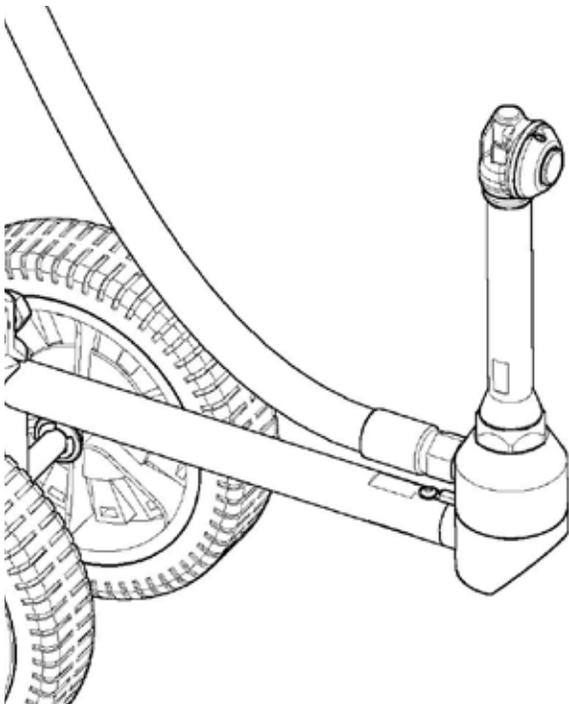
Step 6.

First pull out drive tube and bevel gear from round inlet body. Then remove lower seal from round inlet body. Next disassemble round inlet cap by removing retainer ring with snap ring tool. Then replace worn upper and lower seals and reassemble.



Step 7. Reassemble

Reassemble all components.



STORAGE

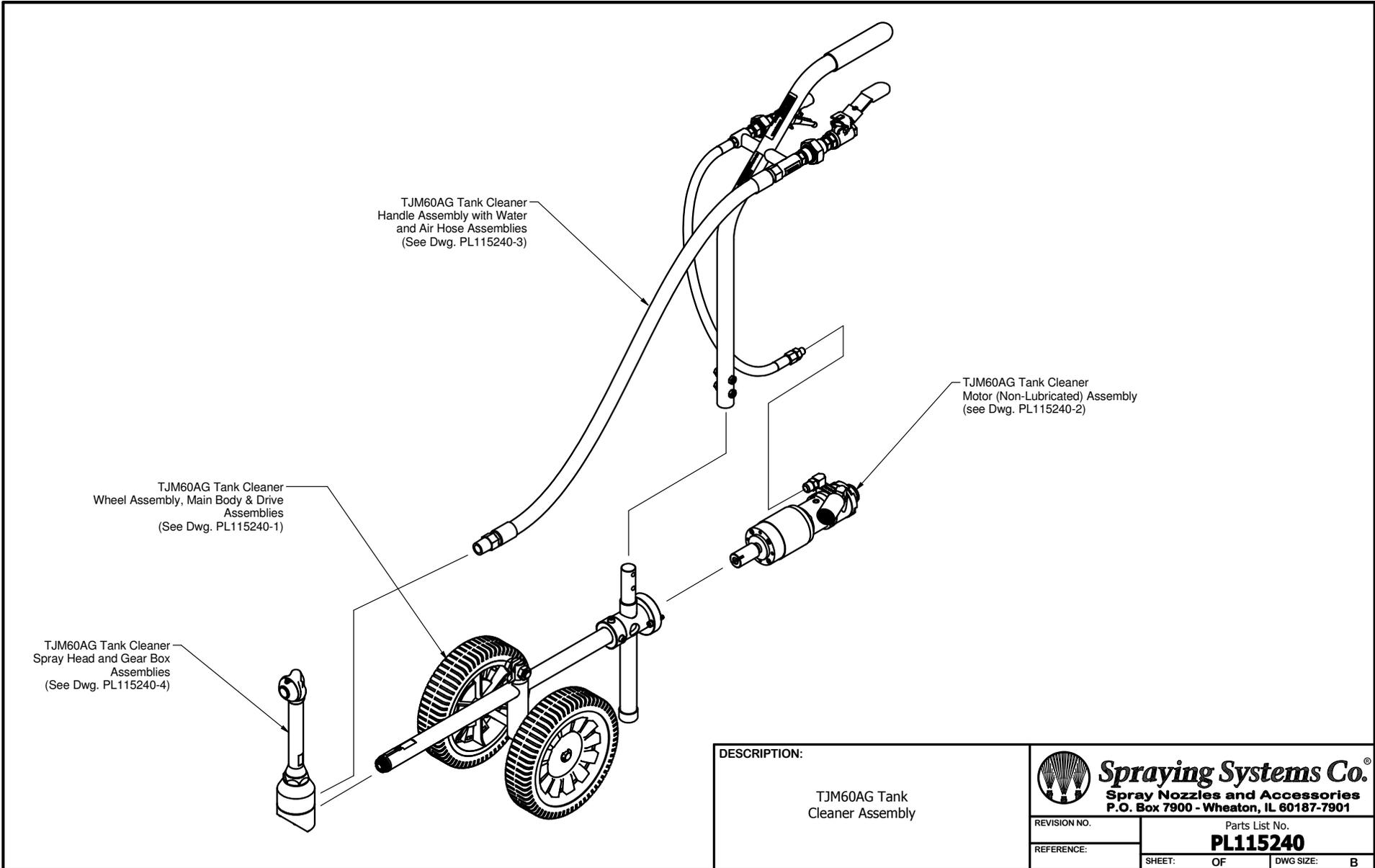
When the TJM60AG tank cleaner is not being used flush tank cleaner with clean water and then drain water from tank cleaner. Then store tank cleaner in a warm dry storage area.

PARTS

The following pages contains complete parts list drawing for the TJM60AG Tank Cleaner.
The following table is a list the spare parts list for the TJM60AG Tank Cleaner.

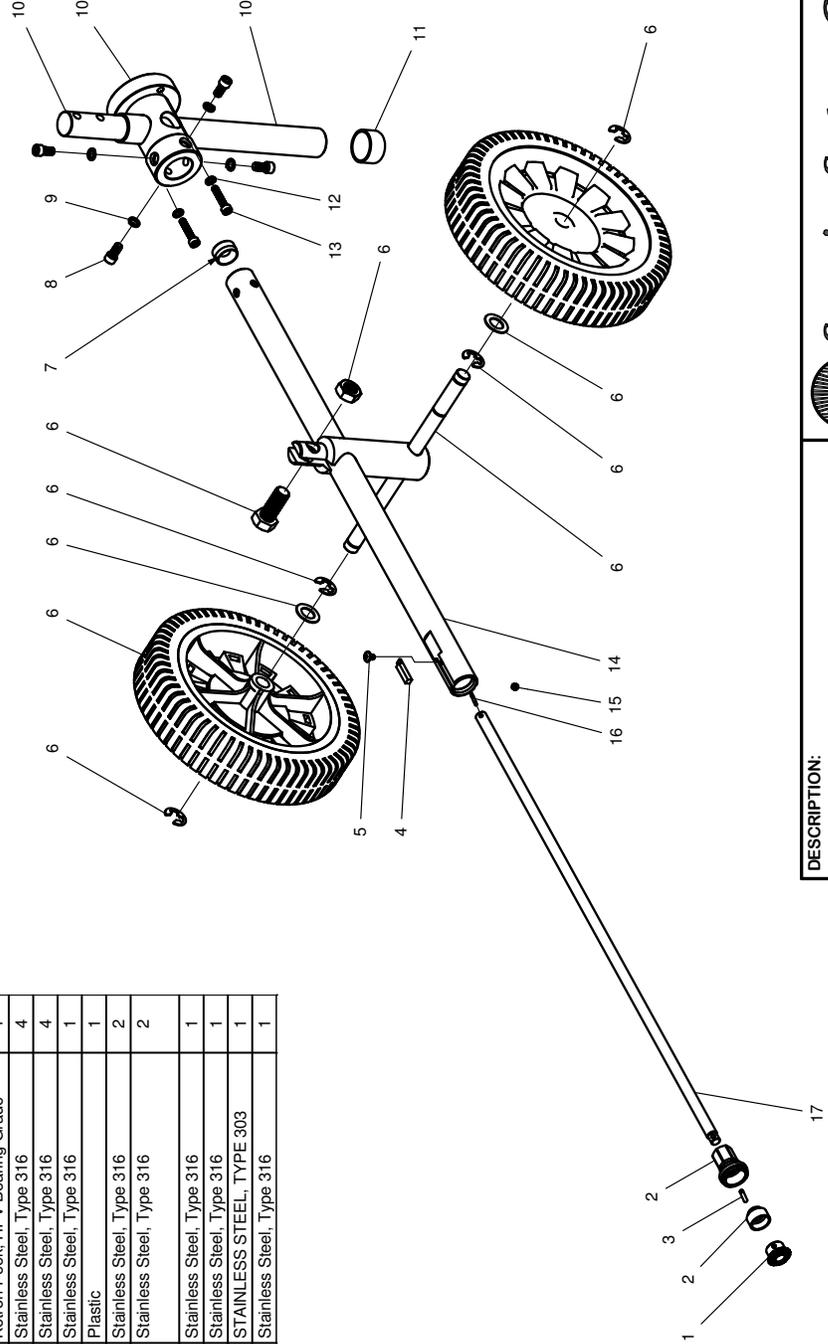
TJM60AG Tank Cleaner Spare Parts List

Description	Part No.	Quantity	Material
Nozzle Hub Seal 1	CP115256-PEEKHPV	1	Peek-HPV
Nozzle Hub Seal 2	CP115253-PEEKHPV	1	Peek-HPV
Gearbox Seal 1	115285-PEEKHPV/EPDM	1	Peek-HPV / EPDM
Gearbox Seal 2	115290-PEEKHPV/EPDM	1	Peek-HPV / EPDM
Nozzle	CP72158-046-316SS	2	316 Stainless Steel
	CP72158-055-316SS	2	316 Stainless Steel
	CP72158-060-316SS	2	316 Stainless Steel
	CP72158-066-316SS	2	316 Stainless Steel
	CP72158-078-316SS	2	316 Stainless Steel
Shear Pin	CP19109-SS	1	303 Stainless Steel



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TJM60AG Tank Cleaner Sub-Assembly (Wheel Assembly, Main Body & Drive Shaft Assemblies)				
ITEM	DESCRIPTION	PART NO.	MATERIAL	QTY
1	Lower Bevel Gear Finish	115251-316SS	Stainless Steel, Type 316	1
2	Drive Bushing Bearing Sub-Assembly	115280		1
3	Dowel Pin	115277-316SS	Stainless Steel, Type 316	1
4	Key	115279-316SS	Stainless Steel, Type 316	1
5	Flanged Button Hd. Cap Scr.	55001-79-316SS	Stainless Steel, Type 316	1
6	Wheel Assembly	115285		1
7	Guide	115282-PEEK	Ketron Peek, HPV Bearing Grade	1
8	1/4-28 X 1/2 Lg. Socket Hd. Cap Scr.	55001-83-188SS	Stainless Steel, Type 316	4
9	Lock Washer, 1/4	20128-188SS	Stainless Steel, Type 316	4
10	Main Body Connection Weldment	115270-316SS	Stainless Steel, Type 316	1
11	Plastic Cap	115288-PL	Plastic	1
12	Metric Spring Washer	46352-5-316SS	Stainless Steel, Type 316	2
13	M5 X 25mm LG., .8mm Pitch Socket Hd. Cap Scr.	55001-84-316SS	Stainless Steel, Type 316	2
14	extension Tube	115278-316SS	Stainless Steel, Type 316	1
15	10-24 X .188 Lg. Cup Point Set Scr.	55002-10-316SS	Stainless Steel, Type 316	1
16	Groove Pin	19109-SS	STAINLESS STEEL, TYPE 303	1
17	Drive Shaft	115276-316SS	Stainless Steel, Type 316	1



DESCRIPTION:

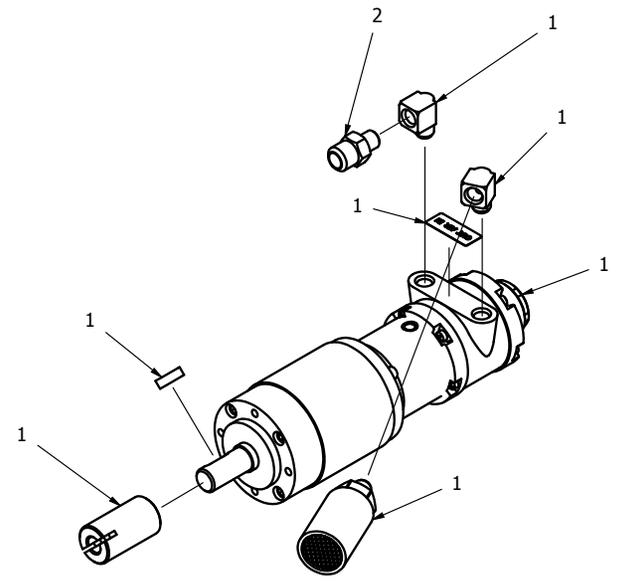
TJM60AG Tank Cleaner Wheel Assembly,
Main Body & Drive Shaft Assemblies



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

REVISION NO.	Parts List No.
REFERENCE:	PL115240-1
SHEET: OF	DWG SIZE: B

TJM60AG Tank Cleaner Motor (Non-Lubricated) Assembly				
ITEM	DESCRIPTION	PART NO.	MATERIAL	QTY
1	Air Motor Assembly (Non-Lubricated)	46340-TMJ60AG		1
2	Hex Pipe Nipple	26396-1-SS	Stainless Steel, Type 18-8	1



DESCRIPTION:
 TJM60AG Tank Cleaner Motor
 (Non-Lubricated) Assembly

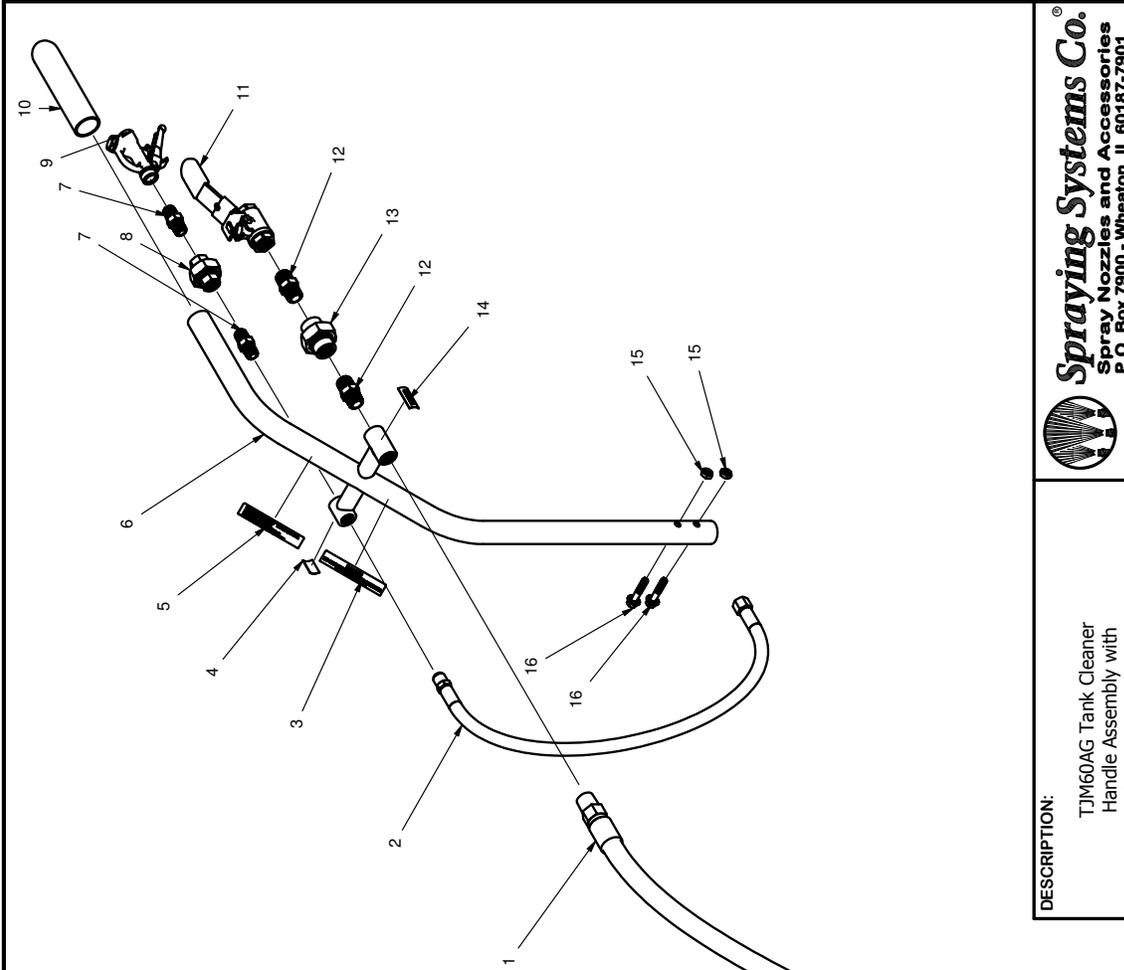


Spraying Systems Co.
 Spray Nozzles and Accessories
 P.O. Box 7900 - Wheaton, IL 60187-7901

REVISION NO.	Parts List No.
REFERENCE:	PL115240-2
SHEET: OF	DWG SIZE: B

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TJM60AG Tank Cleaner Handle Assembly with Water & Air Hose Assemblies				
ITEM	DESCRIPTION	PART NO.	MATERIAL	QTY
1	Water Hose Assembly (High Pressure)	115321		1
2	Air Hose Assembly	115319		1
3	Warning Label	1-464-AL	Aluminum	1
4	Air Label	1-461-AL	Aluminum	1
5	Name PLate	1-463-AL	Aluminum	1
6	Welded Handle Assembly	115275-316SS	Stainless Steel, Type 316	1
7	1/4 X 1/4 NPT X 1.45 Lg. Pipe Nipple (High Pressure)	115298-316SS	Stainless Steel, Type 316	2
8	1/4 NPT Union (150 PSI)	115304-316SS	Stainless Steel, Type 316	1
9	#6104-NP Trigger Teelet Assembly	13017		1
10	Grip	115302-VL	Vinyl, Black	1
11	High Pressure 3/8" NPT Ball Valve (1000 PSI Rating)	115301-316SS	Stainless Steel, Type 316	1
12	3/8 X 3/8 NPT X 1.45 Lg. Pipe Nipple (Extreme Pressure)	115289-316SS	Stainless Steel, Type 316	2
13	3/8" NPT Union (1000 PSI)	115303-316SS	Stainless Steel, Type 316	1
14	Water Label	1-462-AL	Aluminum	1
15	1/4-20 X 13/64 Thk. Nylon-Insert Lock Nut	55009-17-316SS	Stainless Steel, Type 316	2
16	1/4-20 X 1-1/4 Lg. Serrated Flange Hd. Cap Scr.	55001-80-36SS	Stainless Steel, Type 316	2



DESCRIPTION:

TJM60AG Tank Cleaner
Handle Assembly with
Water and Air Hose
Assemblies



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Spray Nozzles and Accessories
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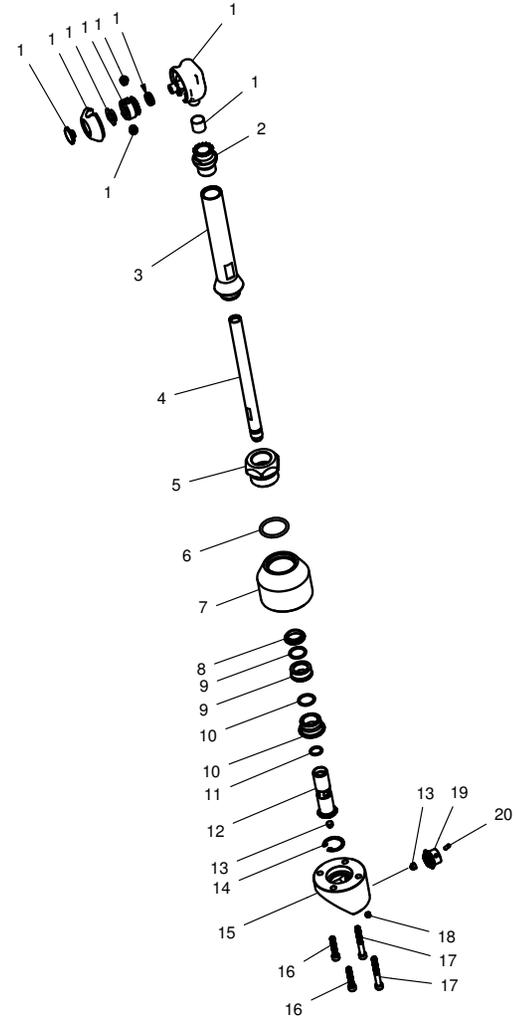
REVISION NO.

Parts List No.

PL115240-3

SHEET: OF DWG SIZE: B

TJM60AG Tank Cleaner Assembly with Water Hose Assembly				
ITEM	DESCRIPTION	PART NO.	MATERIAL	QTY
1	Spray Head Sub-Assembly	115255		1
2	Pinion Gear	72155-316SS	Stainless Steel, Type 316	1
3	Fixed Tube	115246-316SS	Stainless Steel, Type 316	1
4	Drive Tube	115252-316SS	Stainless Steel, Type 316	1
5	Cap	115242-316SS	Stainless Steel, Type 316	1
6	O-Ring	7717-2-121-BU	BUNA-N (Nitrile Rubber)	1
7	Round Inlet	115241-316SS	Stainless Steel, Type 316	1
8	bearing Sleeve	115243-PEEK	Ketron Peek HPV, Bearing Grade	1
9	Upper Gear Box Seal Sub-Assembly	115290		1
10	Lower Gear Box Seal Sub-Assembly	115285		1
11	O-Ring	7717-7-EPR	Ethylene Propylene Rubber (EPDM)	1
12	Upper Bevel Gear Finish	115248-316SS	Stainless Steel, Type 316	1
13	Bearing Post	115258-PEEK	Ketron Peek HPV, Bearing Grade	2
14	Snap Ring	55012-185-157SS	Stainless Steel, Type 15-7 MO	1
15	Gear Box Machined	115257-316SS	Stainless Steel, Type 316	1
16	10-32 X 1" Lg. Socket Hd. Cap Scr.	55001-81-316SS	Stainless Steel, Type 316	2
17	10-32 X 1 1/2 Lg. Socket Hd. Cap Scr.	55001-82-316SS	Stainless Steel, Type 316	2
18	10-24 X .188 Lg. Cuo Point Set Scr.	55002-10-316SS	Stainless Steel, Type 316	1
19	Lower Bevel Gear Finish	115251-316SS	Stainless Steel, Type 316	1
20	Dowel Pin	115277-316SS	Stainless Steel, Type 316	1



DESCRIPTION:

TJM60AG Tank Cleaner Spray
Head and Gear Box Assemblies



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

REVISION NO.

Parts List No.

REFERENCE:

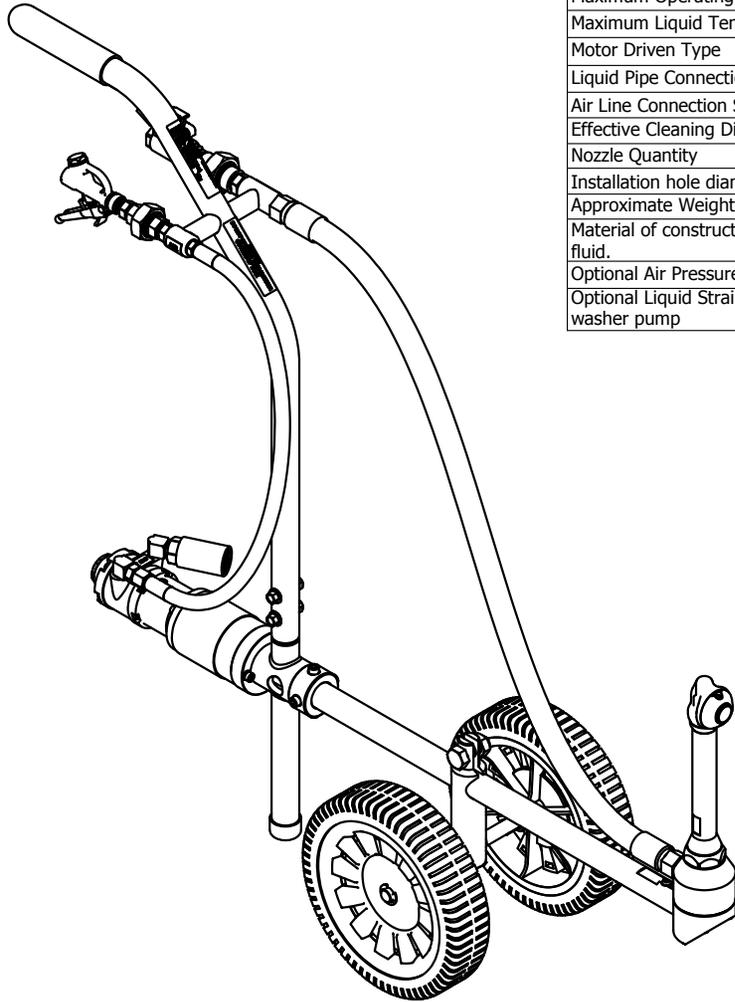
PL115240-4

SHEET:

OF

DWG SIZE:

B



TJM60 AG Tank Cleaner Specifications

Specification Description	Specification
Maximum Operating Liquid Pressure	1,000 PSI (69 BAR)
Maximum Liquid Temperature	180°F (82°C)
Motor Driven Type	Air Non-Lubricated
Liquid Pipe Connection Size	3/8 NPT or 3/8 BSPT
Air Line Connection Size	1/4 NPT or 1/4 BSPT
Effective Cleaning Diameter	To 5 ft. maximum (1.5 m)
Nozzle Quantity	2
Installation hole diameter	1.75 in. dia. (44.5 mm)
Approximate Weight	26 lbs (11.8 kg)
Material of construction for components in contact with cleaning fluid.	316 Stainless Steel, Carbon Graphite PTFE filled Peek, EPDM, PTFE
Optional Air Pressure Regulator/Filter and Gage	40 Micron Size
Optional Liquid Strainer to be low pressure inlet side of pressure washer pump	Liquid TWD Strainer available in various pipe size connections 100 Mesh screen

TJM60AG Tank Cleaner

Features and Benefits

- High impact barrel washer provides efficient cleaning up to 5 ft (1.5 m) diameter for oak barrels, stainless steel barrels, drums or vessels.
- Non lubricated air motor driven barrel washer design provides adjustment for variable speed to easily adjust cleaning cycle time.
- Barrel washer can operate up to a maximum liquid pressure of 1,000 psi (70 bar) and a maximum liquid temperature of 180°F (82°C).
- 360° Coverage
- TJM60AG wheel cart type design allows for easy movement of nozzle head in and out of barrel.
- Nozzle head on tjm60ag fits through minimum size hole diameter of 1.75 inches (44.5 mm).
- Material of construction for components in contact with cleaning fluid are 316 stainless steel, carbon graphite PTFE filled PEEK, EPDM, and PTFE.
- Two nozzle hub design. Choice of 5 different solid stream nozzle sizes.
- Approximate flow rate range with total capacity for two nozzle hub ranges from a minimum of 1.11 GPM (4.2 LPM) with 046 nozzles at 100 psi (7 bar) up to 10.12 GPM (38.3 LPM) with 078 nozzles at 1,000 psi. (70 bar).

DESCRIPTION:

TJM60AG Tank Cleaner General
Specifications & Design
Features



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REFERENCE:

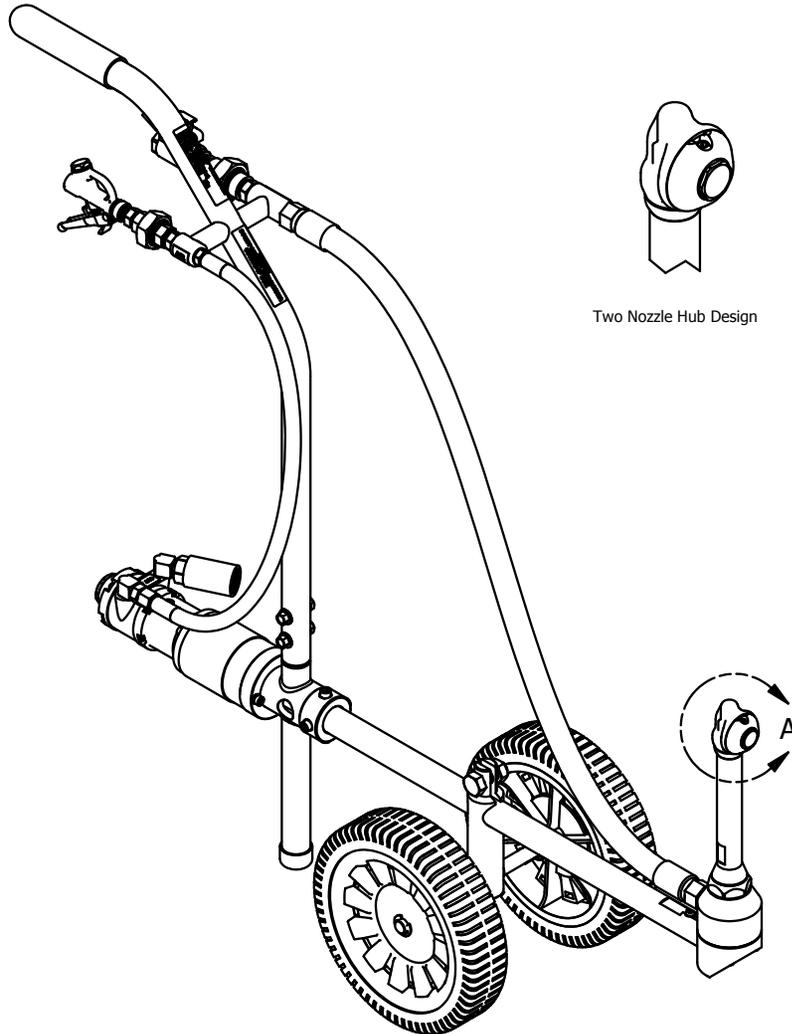
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SHEET:

OF

DWG SIZE:

B



Two Nozzle Hub Design

Total flow rate in G.P.M. for two nozzle hub operating at pressure in P.S.I.							
Nozzle No.	100 PSI	200 PSI	300 PSI	400 PSI	500 PSI	700 PSI	1,000 PSI
046	1.11	1.57	1.92	2.22	2.48	2.94	3.51
055	1.59	2.25	2.75	3.18	3.56	4.21	5.03
060	1.89	2.67	3.27	3.78	4.23	5.00	5.98
066	2.29	3.24	3.97	4.58	5.12	6.06	7.24
078	3.2	4.53	5.54	6.40	7.16	8.47	10.12

Total flow rate in L.P.M. for two nozzle hub operating at pressure in bar							
Nozzle No.	7 bar	15 bar	20 bar	30 bar	35 bar	50 bar	70 bar
046	4.2	6.1	7.1	8.7	9.4	11.2	13.3
055	6.0	8.8	10.2	12.5	13.4	16.1	19.0
060	7.2	10.5	12.1	14.8	16.0	19.1	22.6
066	8.7	12.7	14.6	17.9	19.4	23.1	27.4
078	12.1	17.7	20.4	25.0	27.0	32.3	38.3

TJM60AG Tank Cleaner cycle time with non-lubricated air motor			
Air Pressure	Air Consumption	Approx. Speed in RPM	Approx. Time for 1 Complete Cycle
P.S.I.	SCFM	Pressure Range (100 PSI to 1,000 PSI) @ 180°F	In Minutes
10	2.9	3.5	4.5
12	3.5	4.5	3.5
15	3.9	6	2.7
20	5.1	9.5	1.7

TJM60AG Tank Cleaner cycle time with Non-Lubricated air motor			
Air Pressure	Air Consumption	Approx. Speed in RPM	Approx. Time for 1 Complete Cycle
bar	L.P.M.	Pressure Range (100 P.S.I. to 1,000 P.S.I.) @ 180°F	In Minutes
.7	82	3.5	4.5
.85	99	4.5	3.5
1	110	6	2.7
1.4	144	9.5	1.7

Note:

Cycle time refers to time to complete one cycle. One full cycle is completed every 16 revolutions. Actual complete washing cycle of barrel will vary depending on application. Typical wash cycle for wine barrel applications is 3 to 5 minutes.

Note:

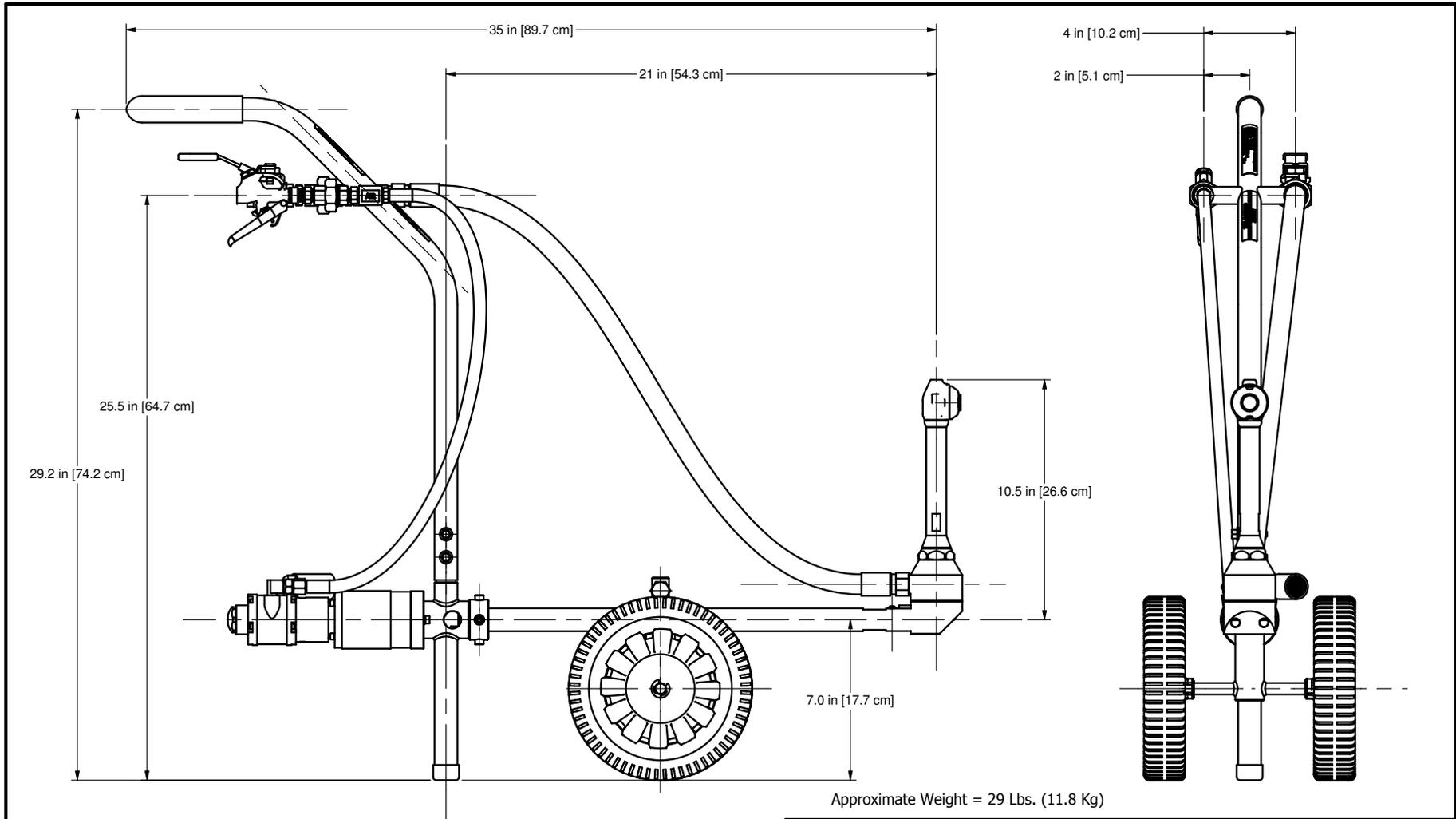
Cycle times are based on 6104 trigger valve in locked open position. Cycle times are approximate.

DESCRIPTION:
TJM60AG Tank Cleaner Operating Performance for Flow Rate and Cycle Times



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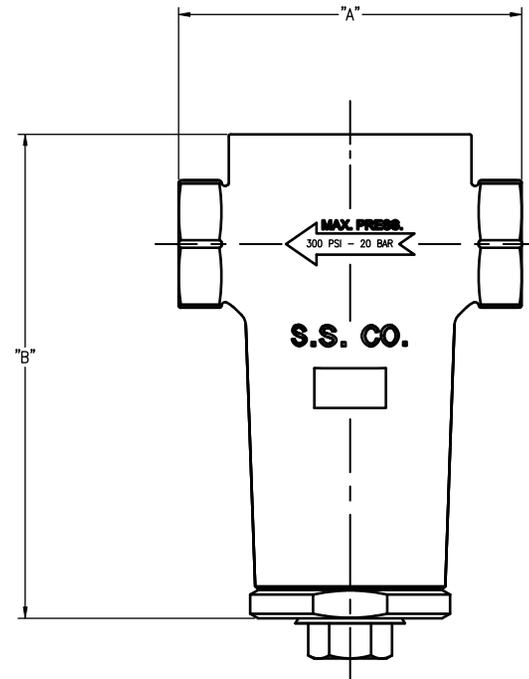
REVISION NO.	Data Sheet No.
REFERENCE:	115240x2
SHEET: OF	DWG SIZE: B



Approximate Weight = 29 Lbs. (11.8 Kg)

DESCRIPTION:		 Spraying Systems Co.[®] Spray Nozzles and Accessories P.O. Box 7900 - Wheaton, IL 60189-7900	
General Dimensions & Weight of TJM60AG Tank Cleaner			
REVISION NO.		Data Sheet No.	
REFERENCE:		115240x3	
SHEET:	OF	DWG SIZE:	B

STRAINER NO.	PIPE CONN. FEMALE	MATERIAL	SCREEN -- STAINLESS STEEL, TYPE 304				DIMENSIONS	
			MESH	FULL AREA SQUARE INCHES	OPEN AREA		"A"	"B"
					SQUARE INCH	TIMES INLET PIPE AREA		
1/4 TWD	1/4" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	2.5	1.0	9.9	2.50	3.22
B1/4 TWD	1/4" BSPT				.54	5.1		
P1/4 TWD	1/4" BSPP				.56	5.3		
					.53	5.1		
3/8 TWD	3/8" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	5.8	2.4	12.3	3.25	4.13
B3/8 TWD	3/8" BSPT				1.8	9.3		
P3/8 TWD	3/8" BSPP				1.2	6.4		
					1.3	6.7		
					1.2	6.4		
1/2 TWD	1/2" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	5.8	2.4	7.7	3.25	4.13
B1/2 TWD	1/2" BSPT				1.8	5.8		
P1/2 TWD	1/2" BSPP				1.2	4.0		
					1.3	4.2		
					1.2	4.0		
3/4 TWD	3/4" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	16	6.5	12.1	4.50	6.53
B3/4 TWD	3/4" BSPT				4.9	9.2		
P3/4 TWD	3/4" BSPP				3.4	6.3		
					3.5	6.5		
					3.4	6.3		
1 TWD	1" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	16	6.5	7.4	4.50	6.53
B1 TWD	1" BSPT				4.9	5.6		
P1 TWD	1" BSPP				3.4	3.9		
					3.5	4.5		
					3.4	3.8		
1 1/4 TWD	1-1/4" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	30.6	12.4	8.3	6.00	8.03
B1 1/4 TWD	1-1/4" BSPT				9.4	6.3		
P1 1/4 TWD	1-1/4" BSPP				6.5	4.3		
					6.7	4.5		
					6.4	4.3		
1 1/2 TWD	1-1/2" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	30.6	12.4	6.0	6.00	8.03
B1 1/2 TWD	1-1/2" BSPT				9.4	4.6		
P1 1/2 TWD	1-1/2" BSPP				6.5	3.1		
					6.7	3.3		
					6.4	3.1		
2 TWD	2" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	55.1	22.3	6.6	8.00	10.08
B2 TWD	2" BSPT				16.8	5.0		
P2 TWD	2" BSPP				11.6	3.4		
					12.1	3.6		
					11.6	3.4		
2 1/2 TWD	2-1/2" NPT	BRASS OR STAINLESS STEEL	40 X 200 DUTCH WEAVE	55.1	22.3	4.6	8.00	10.08
B2 1/2 TWD	2-1/2" BSPT				16.8	3.5		
P2 1/2 TWD	2-1/2" BSPP				11.6	2.4		
					12.1	2.5		
					11.6	2.4		



DESCRIPTION:
 1/4" TWD TO 2 1/2" TWD
 BRASS AND STAINLESS STEEL
 STRAINERS
 MAX. PRESS.: 300 PSI/20 bar

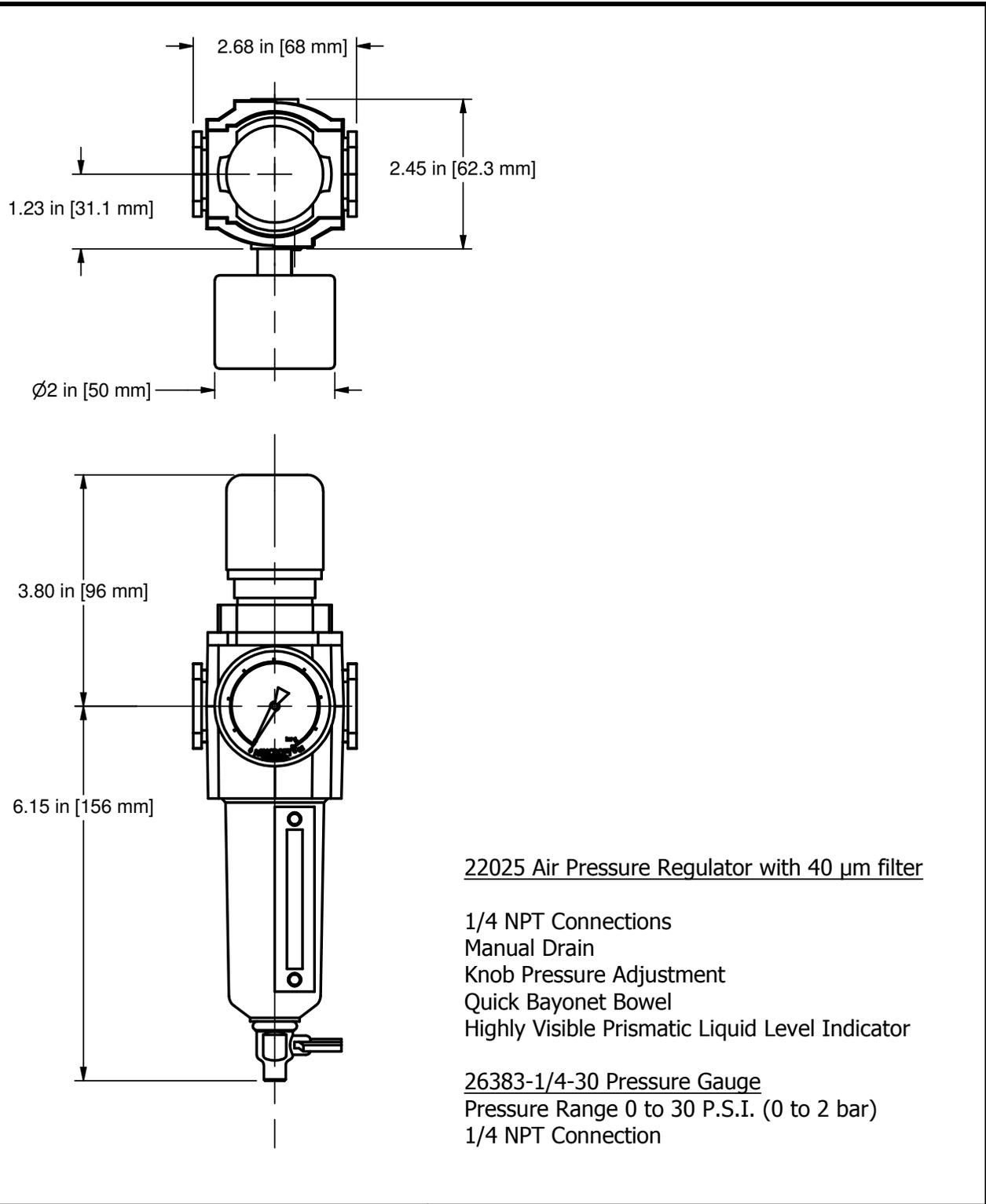


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Rev. No. 1

Ref.

Data Sheet No.
TWD STRAINERS
 SHEET OF



22025 Air Pressure Regulator with 40 µm filter

- 1/4 NPT Connections
- Manual Drain
- Knob Pressure Adjustment
- Quick Bayonet Bowl
- Highly Visible Prismatic Liquid Level Indicator

- 26383-1/4-30 Pressure Gauge
- Pressure Range 0 to 30 P.S.I. (0 to 2 bar)
- 1/4 NPT Connection

DESCRIPTION:
 Filter Regulator Relieving Type with 1/4 NPT Ports, 40 µm Filter, Manual Drain, Metal Bowl, Sight Glass and 0 to 30 P.S.I. Gauge



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REVISION NO.	Data Sheet No.	
REFERENCE:	72207	
SHEET: 1 OF 1	DWG SIZE: A	

TROUBLE SHOOTING GUIDE

The following is a table indicating various potential modes of failure for this product.

Mode of Failure	Description	Preventative or Corrective Actions
Maximum pressure and temperature ratings	Maximum fluid pressure for the TJM60AG is 1,000 PSI (70 BAR)	Do not exceed maximum fluid pressure rating.
	Maximum fluid temperature for the TJM60AG is 180°F (82°C)	Do not exceed maximum temperature pressure rating.
	Maximum air pressure for air motor is 20 psi	Do not exceed maximum air pressure rating. Use suggested air pressure range of 10 psi to 20 psi to operate TJM60AG tank cleaner.
	Minimum and maximum ambient temperature the TJM60AG tank cleaner can be exposed to is +35°F to +125°F (+2°C to +52°C)	Do not operate TJM60AG tank cleaner outside the acceptable ambient temperature range.
Worn nozzle hub seals	Excessive fluid leakage in nozzle hub	Replace worn nozzle hub seals with new seals. See maintenance section for instructions on how to replace seals
Worn gear box seals	Excessive fluid leakage in gear box	Replace gear box seals with new seals. See maintenance section for instructions on how to replace seals.
Nozzle head on TJM60AG tank cleaner does not rotate and shear pin is broken	Check to see if shear pin that is located on drive shaft that engages with coupling near motor is broken	<p>If shear pin is broken could be the result of excessive seal leakage causing an overload condition. If seals are worn replace seals and then replace shear pin.</p> <p>If shear pin still breaks could be the result of an excessive load from worn bevel gears in gear box. Tank cleaner should be sent back to Spraying Systems Company for repairs.</p>

Mode of Failure	Description	Preventative or Corrective Actions
<p>Nozzle head on TJM60AG tank cleaner does not rotate and shear pin is <u>not</u> broken.</p>	<p>Possible cause is that the air motor is not rotating.</p>	<p>First, check to see if minimum requirement of ¼ inside diameter hose is connected to air inlet connection near trigger valve on TJM60AG tank cleaner. If the hose is under sized it must be replaced with a hose meeting minimum size requirements.</p> <p>If hose size is correct the motor may have minor amount of dirt or corrosion.</p> <p>Remove air motor from gear box on TJM60AG tank cleaner and disconnect air hose. Leave muffler on air motor. Then apply a few drops of light oil (not grease) into air motor. Then free up air motor by rotating shaft by hand. Then connect air hose to air motor and try running air motor at a low pressure of 10 psi. If motor runs freely, reassemble air motor to TJM60AG tank cleaner.</p> <p>If motor still does not run freely, motor may require major cleaning. Please refer to included Gast Air motor owner's manual.</p>

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