

# **SPOKANE INDUSTRIES, INC.**

## **SPOKANE METAL PRODUCTS DIVISION**

Spokane Washington

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## **75 LITER FUEL BOWSER TECHNICAL MANUAL PARTS, OPERATION AND MAINTENANCE MODEL NUMBER BOW 75-00 G99-360**

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# 75 LITER BOWSER

## TECHNICAL MANUAL

### PARTS, OPERATION AND MAINTENANCE

#### MODEL NUMBER BOW 75-00

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## 1.0 Introduction

- 1.1 To obtain optimum benefit from your bowser unit, it is recommended that all personnel operating it read and understand this manual prior to operation.
- 1.2 Upon receipt of the refueler unit, a visual inspection should be made to determine that it is complete and has not sustained any damage during transportation.

## 2.0 Safety

- 2.1 Potential Fire and Explosion
  - 2.1.1 Due to the nature of fuel, care should be exercised to eliminate all sparks and open flame in the area of the bowser unit.
  - 2.1.2 A 50-foot radius area around the bowser unit for no smoking, sparks or open flames is usually a good practice. It is strongly recommended all local or other regulations be consulted for further restrictions.
- 2.2 CAUTION: The bowser should never be used inside of an enclosed area. Proper ventilation is required at all times.
- 2.3 Grounding
  - 2.3.1 To eliminate static sparks; the bowser unit is equipped with two (2) grounding reels with clamp connectors. Connect prior to draining or filling operations as described in the "Operations Section".
- 2.4 Towing
  - 2.4.1 Make sure the tow bar is securely attached to the towing vehicle.
  - 2.4.2 Before moving the bowser unit, check to assure the parking brakes are released.
  - 2.4.3 Maximum allowable towing speed is 5 KPH.
- 2.5 Parking
  - 2.5.1 Parking brake must be applied when filling and draining or when left unattended.

## 2.0                      Safety (Continued)

### 2.7              Inspections

2.7.1      Inspections of tires, undercarriage, tow bar, vent, valves, hoses, sight gauge, reflectors, safety labels, etc., should be inspected on a periodic basis. It is recommended these inspections be performed weekly.

2.7.2      Internal inspection will be necessary to insure structural integrity and cleanliness. It is recommended that interval inspections be performed at least every six (6) months.  
CAUTION: Care should be taken to provide proper breathing equipment and a separate person dedicated solely to a safety watch of the inspecting person. It is strongly recommended that all local or other regulations be consulted.

### 2.8              Handhole

2.8.1      Insure the Handhole cover is secured in the closed position whenever not in use to prevent unwanted elements from being introduced to the fuel supply.

## 3.0                      Operations

### 3.1              Intended Use

3.1.1      The bowser unit is intended for use in draining and collection of fuel or waste oil from aircraft or storage area and then transportation to the aircraft or storage area. Any other use is prohibited and may void any and all warranties.

### 3.2              Tow Bar

3.2.1      The bowser unit is equipped with swivel front wheels and steering controlled by the tow bar.

3.2.2      Care should be taken not to jackknife the bowser when backing up.

3.2.3      Tire inspection should be maintained as described in the "Maintenance Section".

3.2.4      Before towing, check to see the brake is disengaged, grounding reel and hoses are disconnected, valves are closed, tow bar is securely attached to the towing vehicle and the Handhole cover are closed and latched.

3.2.5      The bowser unit is equipped with a tow bar pin to hold it in the upright position.

3.0Operations (Continued)

## 3.3 Parking Brake

- 3.3.1 The bowser unit is equipped with a mechanically operated caster brake. The Brake should be applied prior to disengaging tow bar. The brake should be applied when filling, draining tank or whenever left unattended.

## 3.4 Handhole

- 3.4.1 The bowser unit is equipped with a 6" quick opening Handhole assembly for internal inspections.
- 3.4.2 The Handhole is equipped with a flip locking cross arm assembly to ensure sealing and securing the coverlid in place.

## 3.5 Vent

- 3.5.1 The bowser unit is equipped with splashguard protection and a screened vent cover.

## 3.6

## 3.7

## 3.8 Grounding

- 3.8.1 The bowser unit is supplied with two (2)-grounding reels with clamp connectors.
- 3.8.2 Before filling or draining the grounding reels must be attached between the aircraft or object being serviced and an appropriate ground.

## 3.9

## 3.10

## 3.11 Telescoping Drain Assembly

- 3.11.1 The bowser unit is equipped with a telescoping drain assembly.

3.0Operations (Continued)

## 3.11 Telescoping Drain Assembly Continued

## 3.11.2 To Raise:

- (1) Loosen clamp if necessary.
- (2) Grasp section with one hand and lift until desired height is obtained or assembly is fully extended.

## 3.11.3 To Lower:

- (1) Tightly grasp extended tube with one hand and loosen the securing clamp.
- (2) Slowly lower tube; hand over hand, until the funnel section is lowered completely.
- (3) Tighten clamp if necessary.

4.0Maintenance

## 4.1 Tow Bar

4.1.1 The bowser unit is equipped with swivel front wheels, steering controlled by the tow bar and fixed rear wheels.

## 4.1.2 Maintenance should consist of the following:

- 1) Self locking pin should be inspected monthly replace if needed.
- 2) Inspect wheel bearings at three (3) month intervals. Replace wheel assembly if needed.
- 3) Check tire weekly. If foam-filling leakage is present or tire is cut or marring is present replace wheel assembly.

4.1.3 Tow bar pivot pin and hook ring should be inspected monthly for excessive wear or cracks. Replace as needed.

## 4.2 Parking Brake

4.2.1 The Bowser unit is equipped with a parking brake pre assembled with the front wheel assembly. No Maintenance is required.

## 4.3 Handhole

4.3.1 Inspect Handhole gasket weekly for cuts, cracks or galling. Replace as needed.

## 4.4 Vent

4.4.1 The Vent is located centered on top of the tank and has a cover assembly.

## 4.0

Maintenance (Continued)

## 4.4. Vent Continued

4.4.2 Inspect vent cover assembly screening daily. Insure the vent screening is unobstructed.

## 4.5

## 4.6 Sight Gauge Assembly

4.6.1 The sight gauge should be inspected monthly for loose connections and weathering of clear tubing. Replace as needed.

## 4.7 Grounding

4.7.1 Grounding reel cables should be pulled out, cleaned and inspected monthly.

4.7.2 Cable clamps and ends should be inspected for loose connections monthly.

## 4.8

## 4.9

## 4.10 Telescoping Drain Assembly

4.10.1 The telescoping drain assembly consists of stainless steel housing permanently attached to the tank and one (1) aluminum tube section.

4.10.2 The aluminum tube section is equipped with a funnel assembly and a clamp assembly.

4.10.3 The aluminum tube is crimped on the lower end, which acts as a stop to prevent the tube from sliding through the clamp.

4.10.4 Disassembling o the telescope assembly is accomplished by rotating the funnel section 180 degrees from normal position and gently lifting the section so that the crimped edge on the tube is aligned with the slot on the clamp.

## 4.11

## 4.12

## 4.13



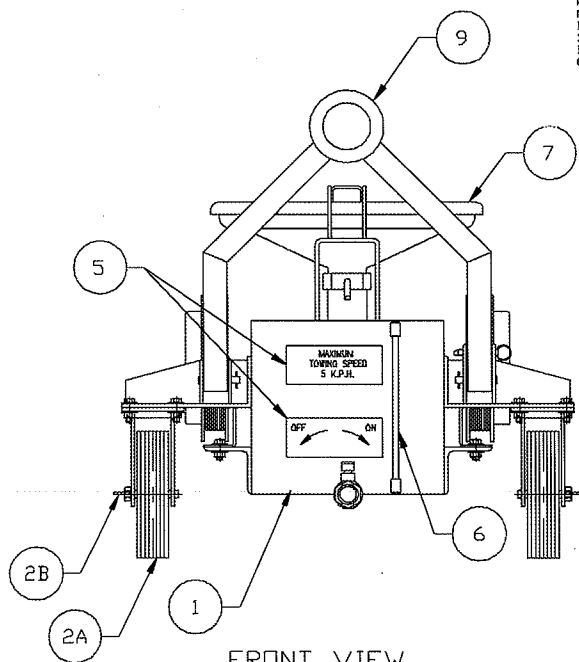
## 4.14 Trouble Shooting

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>PROBABLE CORRECTIONS</u>
Bowser does not track or steer	Bent Pivot Pin	Replace Pin see section 5.9 Item #2
	Defective Wheel Assembly	Replace Wheel See section 5.2 Item #5
	Loose or worn out bearings	Replace Wheel See section 5.2 Item #5
Tow Bar does not Stay in the up-Right position	Missing Self Locking Pin	Replace as needed see section 5.9 item #3
Parking Brake does not work	Broken Brake Lever	Replace Wheel See section 5.2 Item #5
Fuel Drains out Vent	Bowser is overfilled	Drain Fuel as required

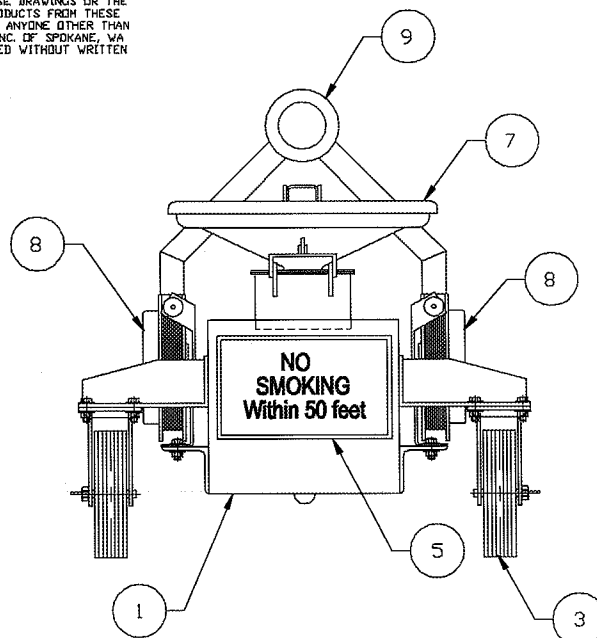
5.0 Replacement Parts

This section provides information for identification of parts for ordering. To Order, it is important to have the Model Number, Subassembly Number, Part Number and Description. Parts may be ordered by calling or writing to:

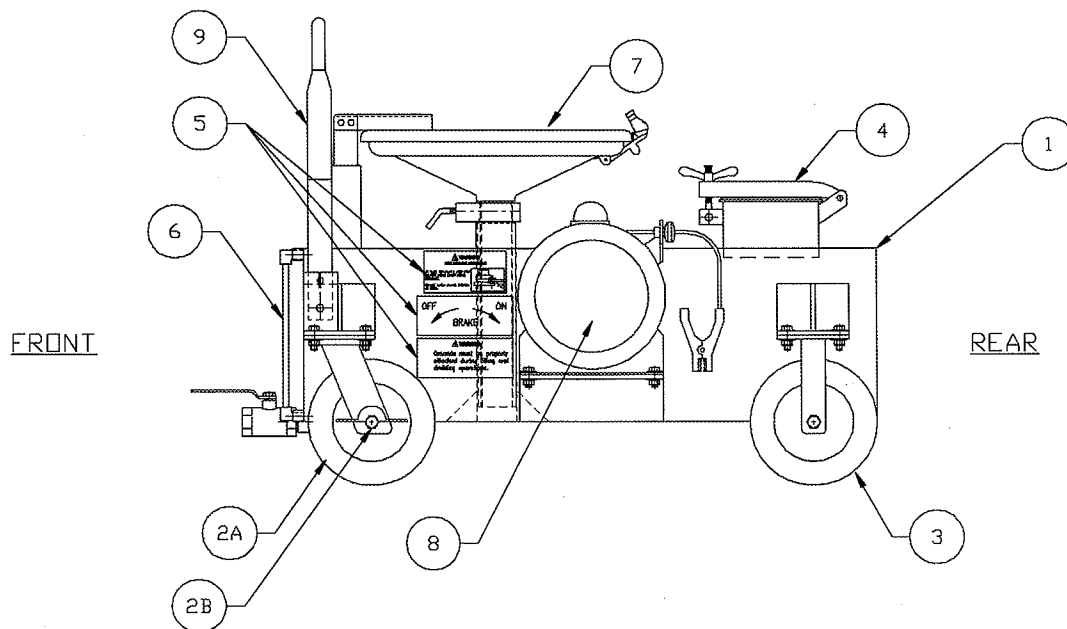
Spokane Industries, Inc.  
 Spokane Metal Products Division  
 P.O. Box 3303  
 Spokane, WA 99220-3303  
 Telephone: (509) 928-0720  
 Tele Fax: (509) 927-0826  
 Email: DYORKE@SPOKANEINDUSTRIES.COM



FRONT VIEW



REAR VIEW



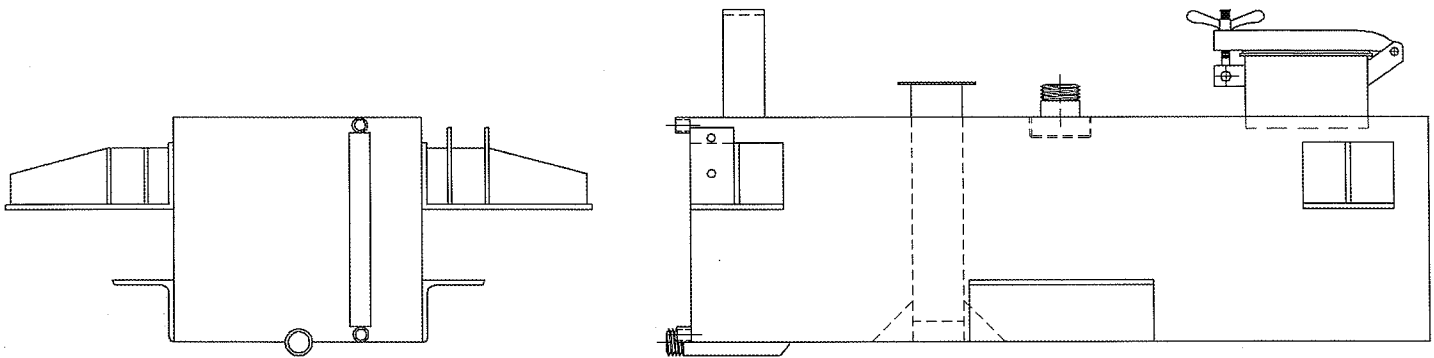
FRONT

REAR

<u>ITEM No.</u>	<u>ASSEMBLY</u>	<u>SECTION</u>
1	Main Tank	5.1
2A	Wheel Assembly, Front	5.2.1
2B	Brake, Parking	5.2.2
3	Wheel Assembly, Rear	5.3
4	Handhole Assembly	5.4
5	Decal Package	5.5
6	Sight Guage Assembly	5.6
7	Telescoping Funnel Assembly	5.7
8	Miscellaneous Fixtures	5.8
9	Tow Bar Assembly	5.9

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## SECTION 5.1

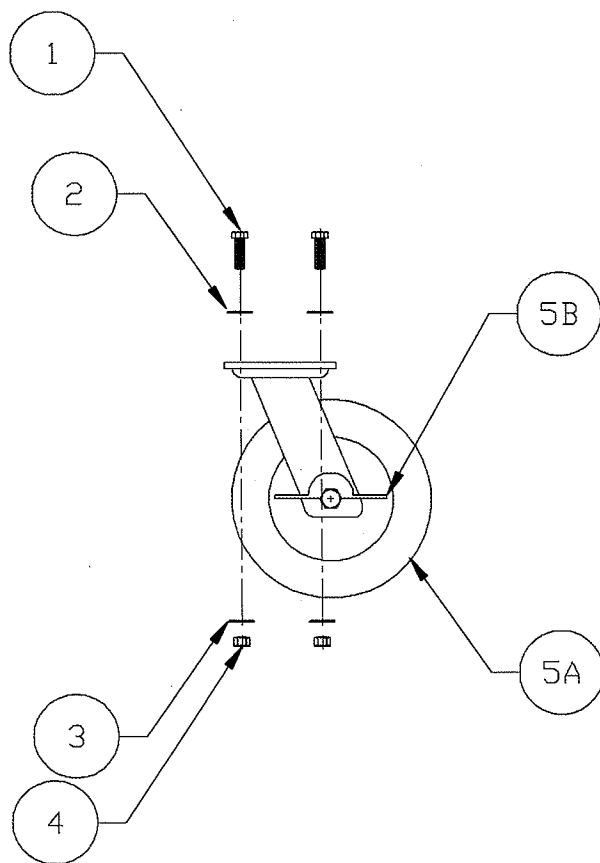


ASSEMBLY No. 01-903S  
MAJOR ASSEMBLY - TANK WELDMENT

Sub Assy	Item No.	Part No.	Description	Weight
	1	01-903S	Stainless Steel Tank Weldment 75 Liter Capacity	100#

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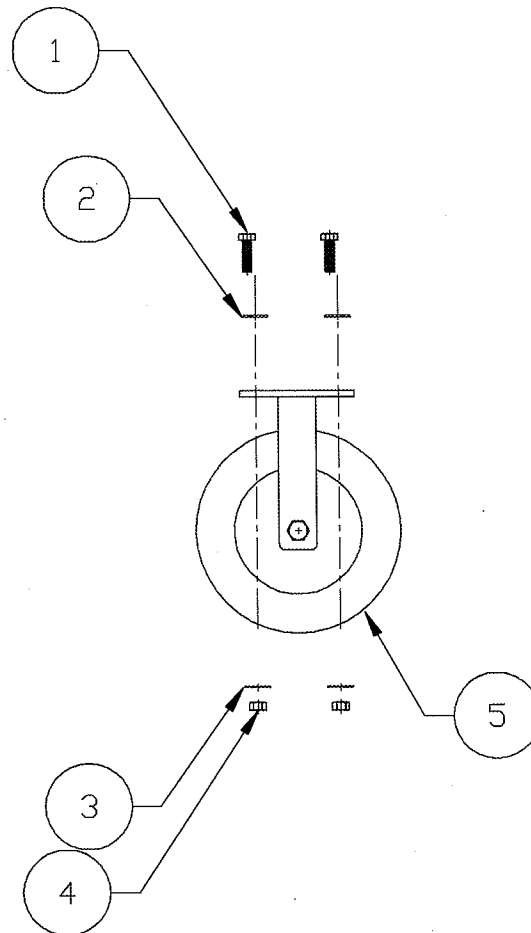
## SECTION 5.2



ASSEMBLY No. 15731-A  
MAJOR ASSEMBLY - FRONT WHEEL

Sub Assy	QNT.	Item No.	Part No.	Description	Weight
	4	1	-	Bolt, 3/8" UNC	1#
	4	2	-	Washer, Flat	1#
	4	3	-	Washer, Lock	1#
	4	4	-	Nut, Nylon Lock	1#
	1	5	-	Swival Caster, 8" Pnumatic, Foam Filled W/ Braking Lock	10#

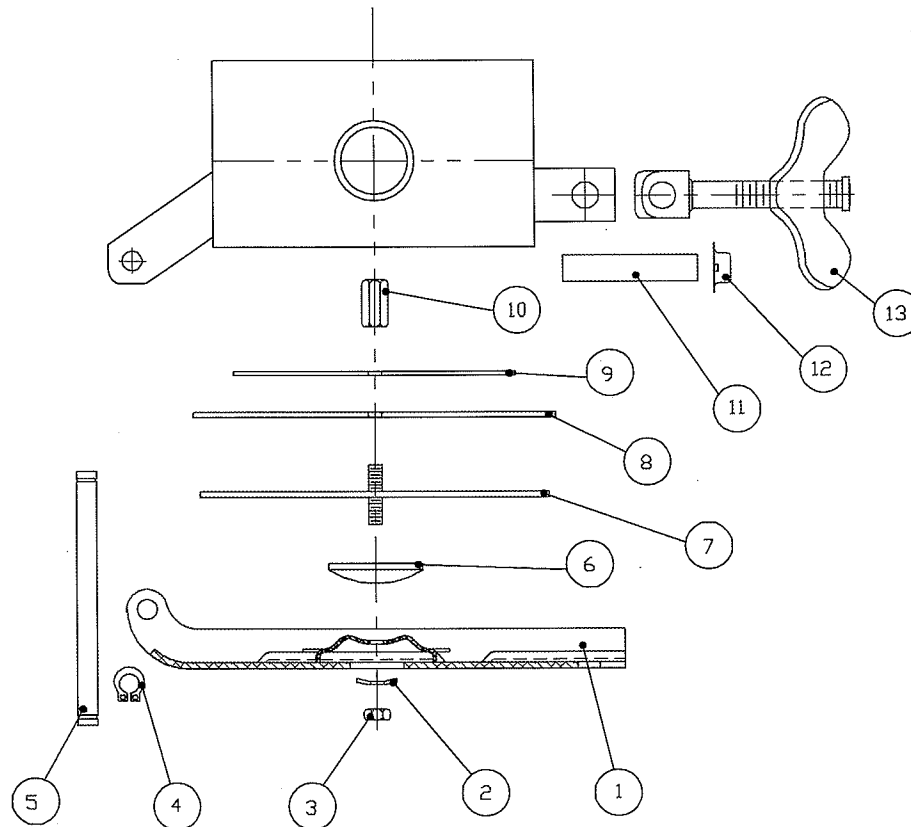
## SECTION 5.3



ASSEMBLY No. 15731-B  
 MAJOR ASSEMBLY - REAR WHEEL

Sub Assy	QNT.	Item No.	Part No.	Description	Weight
	4	1	-	Bolt, 3/8" UNC	1#
	4	2	-	Washer, Flat	1#
	4	3	-	Washer, Lock	1#
	4	4	-	Nut, Nylon Lock	1#
	1	5	-	Rigid Caster, 8" Pnumatic, Foam	10#

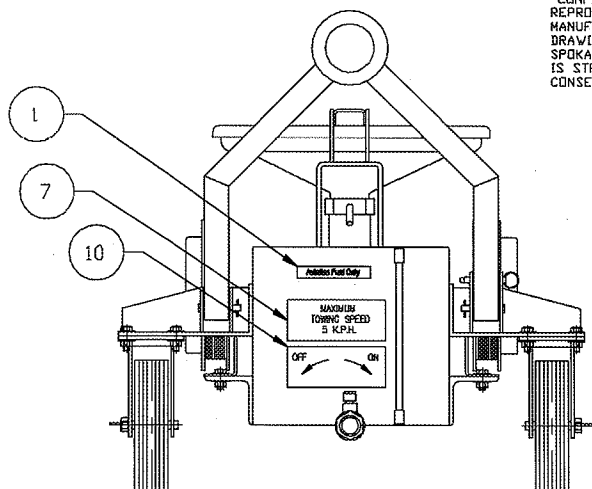
## SECTION 5.4



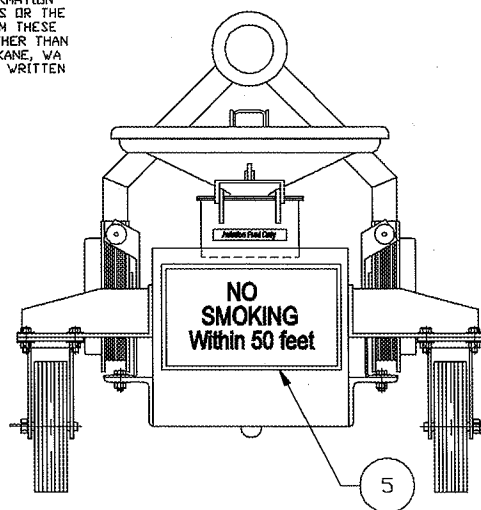
ASSEMBLY No. 04-1058  
MAJOR ASSEMBLY - HANDHOLE

Sub Assy	QNT.	Item No.	Part No.	Description	Weight
04-1058	1		04-10581	KIT,REPAIR,SUMP	5#
	1	1	2655	LID,SUMP	1#
	1	2	1117	WASHER,RETAINER	1#
	1	3	1104	NUT,HEX,SUMP	1#
	2	4	4096	RING,SNAP,HINGE PIN	1#
	1	5	5045	PIN,HINGE	
	1	6	1101	SPACER,COVER,GASKET	
	1	7	2652	COVER,GASKET	
	1	8	2526	GASKET,SUMP	
	1	9	3765	RETAINER,GASKET	
	1	10	4988	NUT,CAP,HEX,SUMP	
	1	11	1038	PIN,STUD ASSY.	
	2	12	1020	NUT,PAL	
	1	13	2627	STUD,ASSY.	

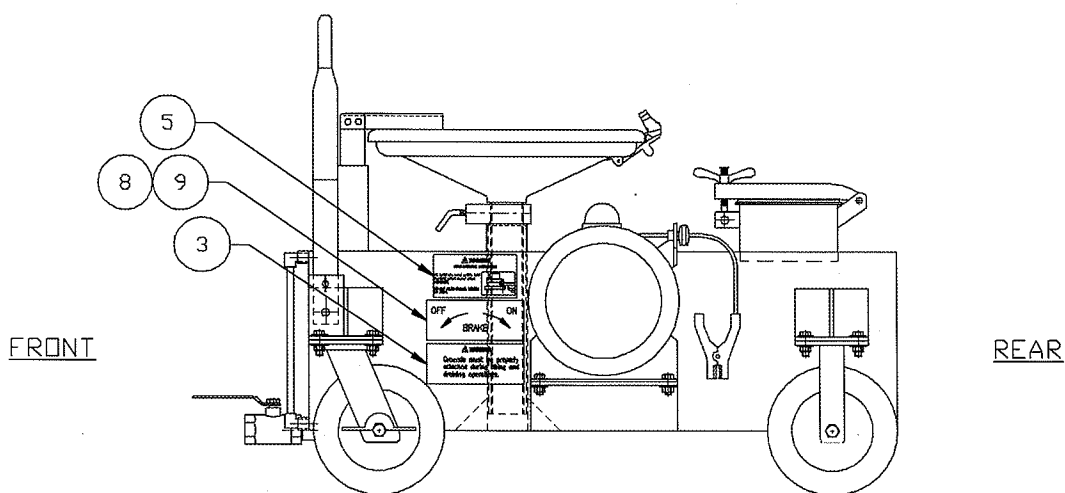
SECTION 5.5



FRONT VIEW



REAR VIEW

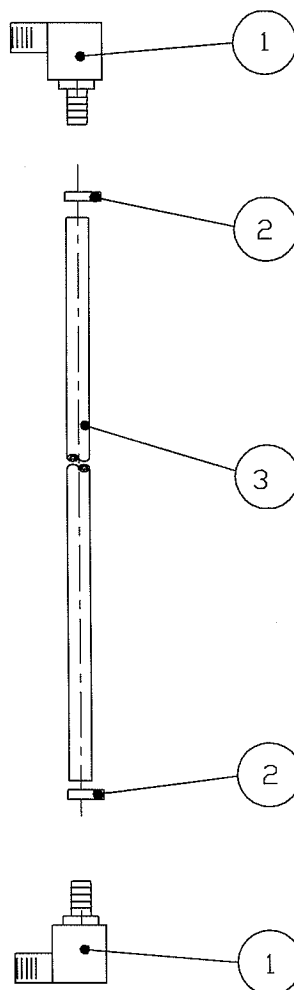


ASSEMBLY No. 10-100070SP  
MAJOR ASSEMBLY- DECAL PACKAGE

Sub Assy.	Item	Part No.	Quantity	Description	Wt. #'s
10-100070SP	-	-	1	DECAL PACKAGE (MODIFIED)	2.7#
	1	-	1	Aviation Fuel Only	.1
	2	06-1003	1	Caution-Park Brake	.1
	3	06-1004	2	Warning-Grounding Reels	.1
	4	-	-	-	.1
	5	-	2	Danger-No Smoking (MODIFIED)	.2
	6	06-1007	1	Notice-Read Manual	.1
	7	-	1	Maximum Tow Speed (MODIFIED)	.1
	8	06-1010	1	On/Off-Park Brake	.1
	9	06-1010	1	On/Off-Park Brake	.1
	10	06-1011	8	On/Off Drain Valve	.8
	11	-	8	Reflector Tape, 6" lg.	.8
	12	-	-	-	-

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## SECTION 5.6

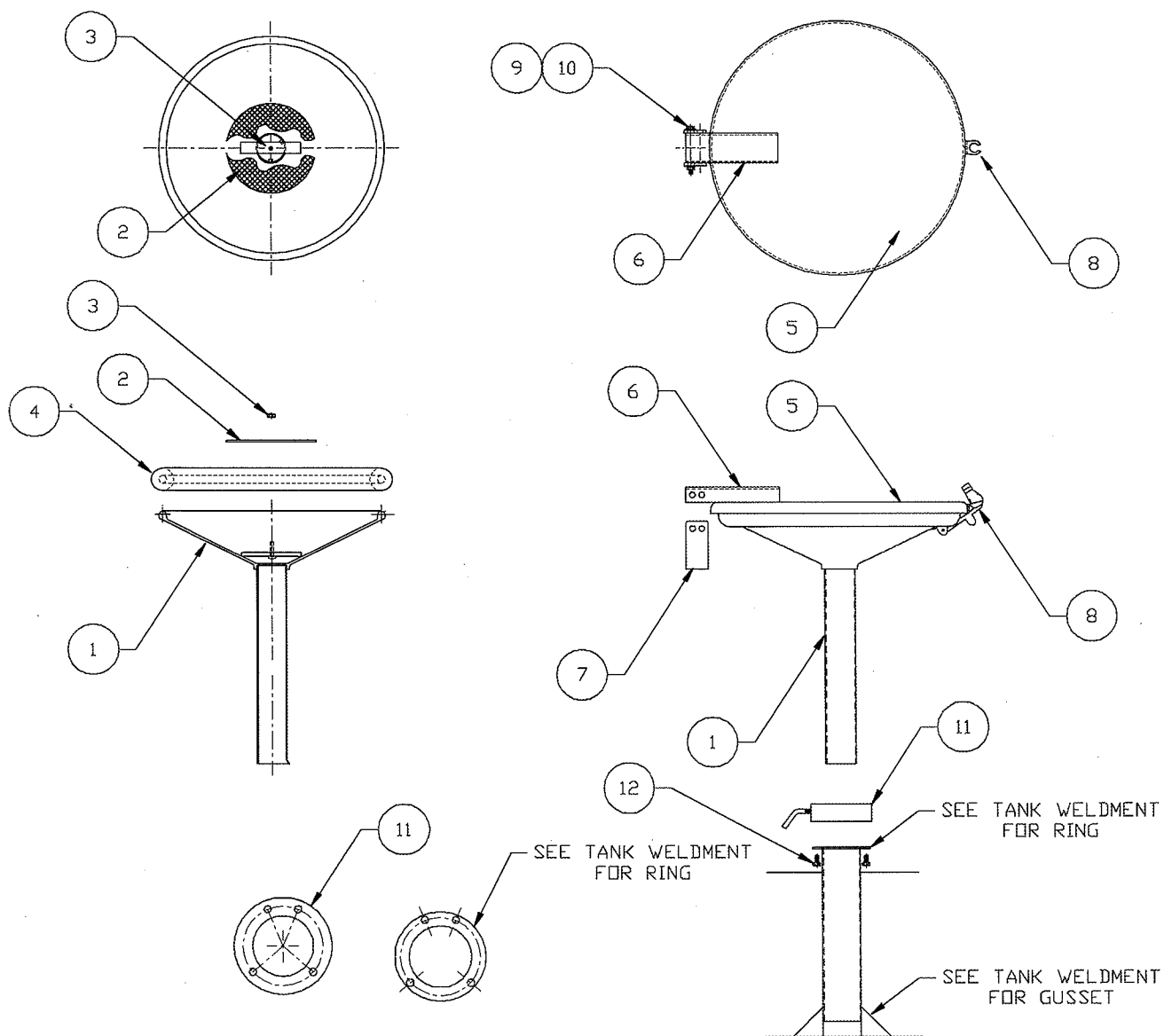


ASSEMBLY No. 08-1014SP  
 MAJOR ASSEMBLY - SIGHT GAUGE

Sub Assy	QNT.	Item No.	Part No.	Description	Weight
08-1014SP	1			GAUGE,SIGHT,ASSY. (MODIFIED)	.4#
	2	1	15731-F	Elbow,Steet,1/4" To Hose	.2
	2	2	15731-E	Tube, 1/4"ID	.1
	1	3	03-1010	Clamp, Hose,1/2"	.1



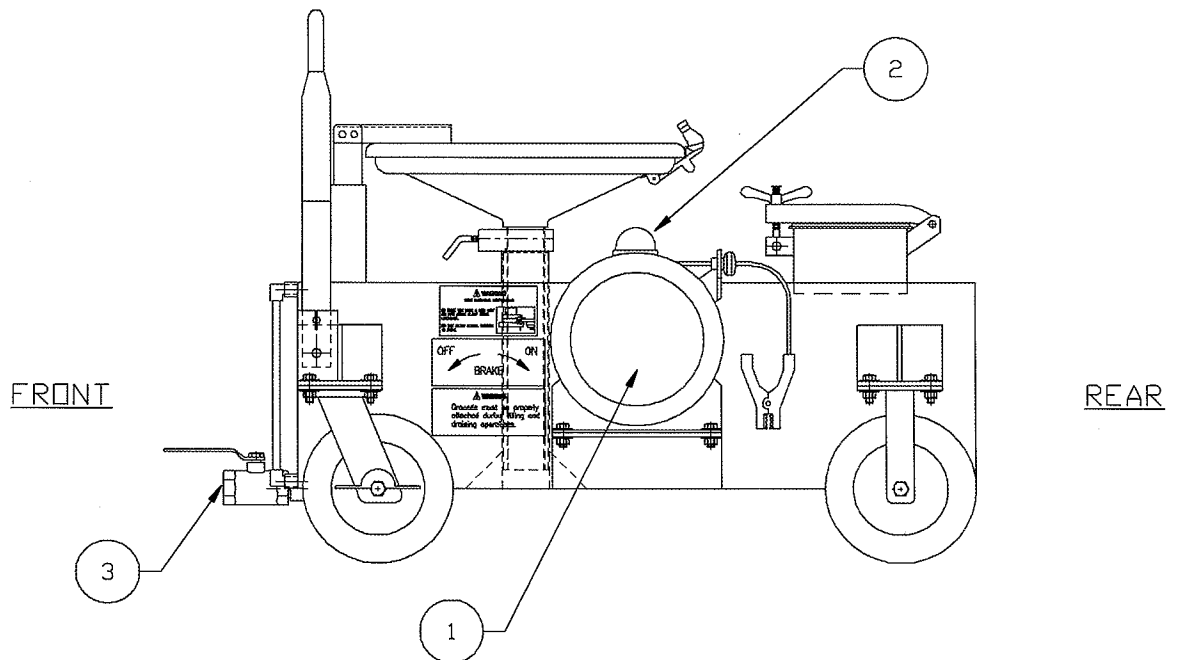
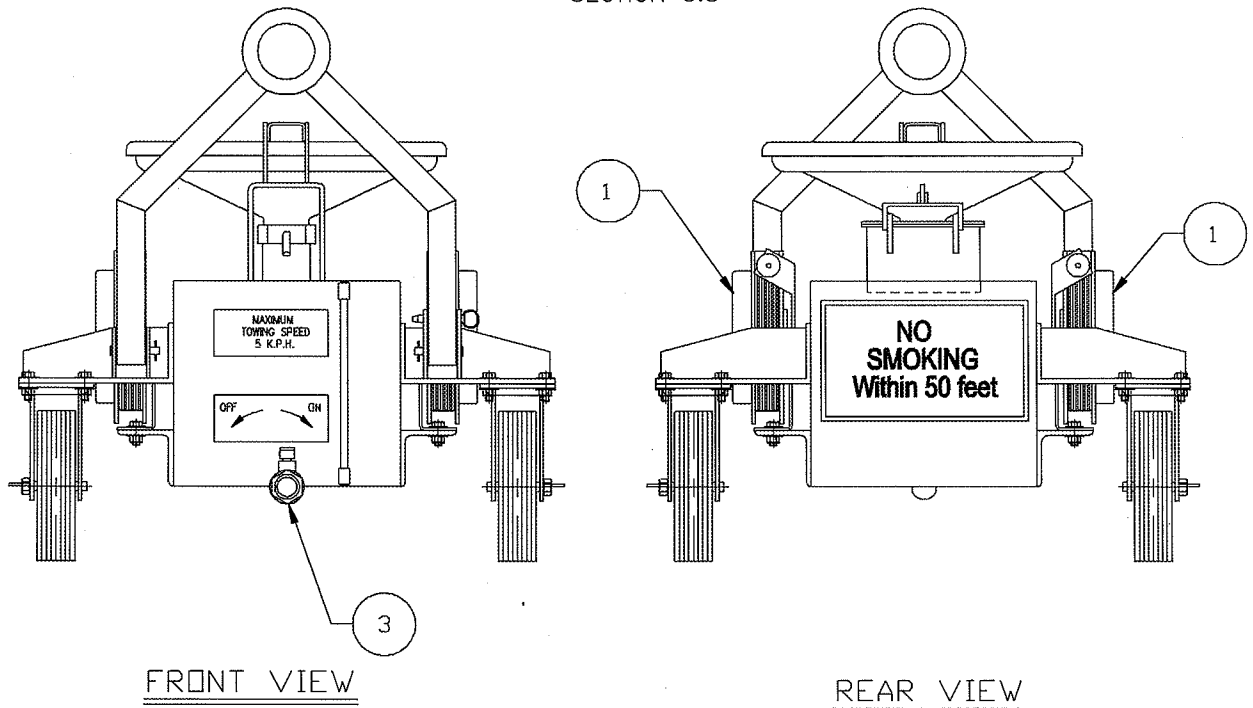
# SECTION 5.7



ASSEMBLY No. 08-1016USP  
MAJOR ASSEMBLY - TELESCOPING FUNNEL ASSEMBLY

Sub Assy	QNT.	Item No.	Part No.	Description	Weight
	1	1	07-10541	FUNNEL WELDMENT SECTION	3.5
	1	2	04-1039	Screen	.1
	1	3	02-1200	Nut	.1
	1	4	06-1022	Gasket	.2
	1	5	01-86001	Cover Plate	6
	1	6	01-9005S	Cross Arm	.98
	2	7	01-9025S	Mounting Tab	.48
	1	8	04-1062	Latch	1
	1	9	02-10014	Bolt	.01
	2	10	02-1202	Nut, Nylon Insert	.01
	1	11	05-10271SP	Clamp	1
	4	12	02-100121	Bolt	.2

SECTION 5.8

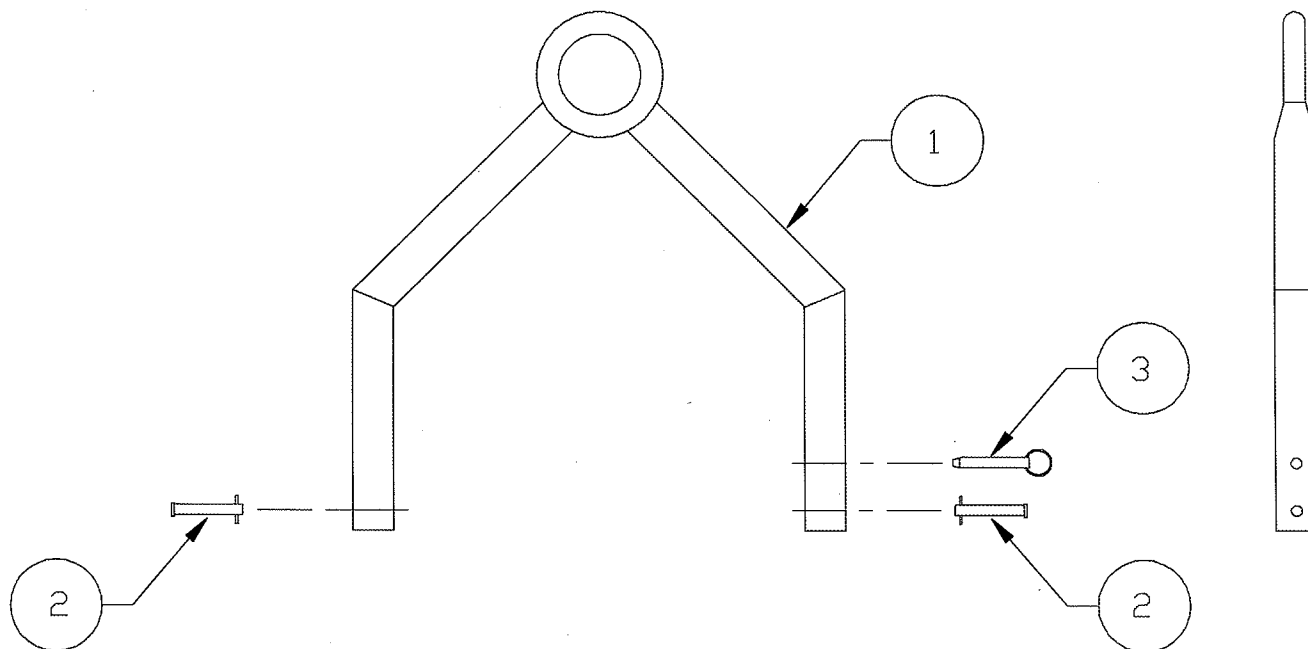


ASSEMBLY No. 10-100110SP  
MAJOR ASSEMBLY - MISCELLANEOUS FIXTURES

Sub Assy	QNT.	Item No.	Part No.	Description	Weight
10-10011SP	1			Miscellaneous Fixtures	3.5
	2	1	08-1013	Grounding Reel Assemblies	24.4
	1	2	04-1037	Vent	2
	1	3	15731-G	Valve	.2

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## SECTION 5.9



ASSEMBLY No. 07-1103SP  
MAJOR ASSEMBLY - TOW BAR

Sub Assy	QNT.	Item No.	Part No.	Description	Weight
07-1103SP	1			Tow Bar Assembly	3.5
	1	1	01-9364S	Tow Bar W/ Toe Eye	24.4
	2	2	15731-C	Clevis Pin	.2
	1	3	15731-D	Self Locking Pin	.5

# SPOKANE INDUSTRIES, INC.

SPOKANE METAL PRODUCTS DIVISION

Spokane Washington

## 75 LITER BOWSER TANK ONE YEAR LIMITED WARRANTY

Seller warrants its "75 Liter Bowser Tank" to be free from defects in material and workmanship under the normal use and service for which the unit is intended if, but only if the unit has been properly operated, maintained and stored in accordance with printed directions contained in the product manual. Our obligation under this warranty shall be limited to the repair or exchange of equipment and parts which may prove defective within one year of the date the unit is put into service but shall in no event extend beyond a date two years from the date the unit is shipped from our plant. All transportation charges on parts returned to us for replacement under this warranty must be returned pre-paid.

This warranty does not extend to damages caused by environmental factors varying from normal design conditions, whether natural or man-made, or to units subjected to misuse, negligence or accident. This warranty likewise does not extend to the unit or any parts thereof which have been repaired or altered improperly or in any way so as to effect adversely its stability or reliability. This warranty does not cover parts or labor required to repair or replace parts whose usefulness is exhausted due to normal operation of this unit.

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