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Spokane Washington

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**400 GALLON FUEL BOWSER**

**TECHNICAL MANUAL  
PARTS, OPERATION AND MAINTENANCE**

**MODEL NUMBER BOW 400-02 SPECIAL**

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**NOTICE OF MANUAL CHANGES**

**400 GALLON FUEL BOWSER**

**MODEL NUMBER BOW 400-02 SPECIAL**

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**This technical manual is specifically designed for the 400-02 Fuel Bowser. The 400-02 Special is design to Boeing specifications and is the same as the 400-02 except for the following alterations;**

- 1) Flame arresters for the Telescoping Funnel**
- 2) The Telescoping Funnel is a 16 foot funnel -vs- the 12 foot**
- 3) Special Grounding Connectors**
- 4) Extra large Fork Lift Pockets**
- 5) Special 1 1/4" Fuel Hose for de-puddling**

# 400 GALLON FUEL BOWSER

## TECHNICAL MANUAL

### PARTS, OPERATION AND MAINTENANCE

### MODEL NUMBER BOW 400-02 SPECIAL

#### INDEX

	<u>Page</u>
<u>Section 1.</u> Introduction . . . . .	3
<u>Section 2.</u> Safety . . . . .	3
<u>Section 3.</u> Operation	
3.1 Intended Use . . . . .	4
3.2 Parking Brake . . . . .	4
3.3 Tow Bar and Under Carriage . . . . .	4
3.4 Telescoping Drain Assembly . . . . .	5
3.5 Vacuum Assembly . . . . .	6
3.6 Grounding Reels . . . . .	6
3.7 Drain Valve . . . . .	7
3.8 Sample Port . . . . .	7
3.9 Telescoping Drain Strainer . . . . .	7
3.10 Vent Overflow Preventor . . . . .	7
<u>Section 4.</u> Maintenance	
4.1 Parking Brake . . . . .	7
4.2 Under Carriage and Tow Bar . . . . .	8
4.3 Telescoping Drain Assembly . . . . .	8
4.4 Vacuum Assembly . . . . .	8
4.5 Grounding Reels . . . . .	9
4.6 Sight Gauge . . . . .	9
4.7 Telescoping Drain Strainer . . . . .	9
4.8 Vent Overflow Preventor . . . . .	10

	PAGE
<u>Section 5.</u> Replacement Parts . . . . .	10
5.1 Main Tank . . . . .	12
5.2 Under Carriage	
Axle, Front . . . . .	13
Axle, Rear . . . . .	16
Brake, Parking . . . . .	17
Wheel Assembly, Front . . . . .	19
Wheel Assembly, Rear . . . . .	21
5.3 Manway Assembly . . . . .	23
5.4 Decal Package . . . . .	24
5.5 Telescoping Drain . . . . .	26
5.6 Vacuum Assembly . . . . .	30
5.7 Miscellaneous Fixtures . . . . .	34
5.9 Vent, Overflow Preventor . . . . .	36
<u>Warranty</u> . . . . .	37

## 1.0 INTRODUCTION

- 1.1 To obtain optimum benefit from your fuel bowser unit, it is recommended that all personnel operating it read and understand this manual prior to operation.
- 1.2 Upon receipt of the Bowser 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 Or 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 fuel bowser.
  - 2.1.2 A 50 foot radius area around the fuel bowser 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 Telescoping Drain
  - 2.2.1 Care should be exercised in using the telescope to prevent injuring fingers between clamps by dropping sections.
- 2.3 Grounding
  - 2.3.1 To eliminate static sparks, the bowser unit is equipped with two grounding reels which should be connected prior to draining or filling operations.
- 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 brake is released.
  - 2.4.3 Maximum allowable towing speed is 15 MPH.
- 2.5 Parking
  - 2.5.1 Parking brake must be applied when filling and draining or when left unattended.

## 2.6 Air Supply

2.6.1 **Caution:** Check the air pressure of supply lines to the vacuum generator to assure it is not in excess of 100 PSI.

## 2.7 Inspections

2.7.1 Inspection 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 (6) six months. **Caution!** When entering confined spaces such as the interior of the bowser tank, care should be taken to provide proper breathing equipment and a separate person dedicated solely to a safety watch of the person inside. It is strongly recommended that all local or other regulations be consulted.

## 3.0 OPERATION

### 3.1 Intended Use

3.1.1 The fuel bowser unit is intended for use in draining and collection of fuel from aircraft and the transportation to a disposal site. Any other use is prohibited and may void any and all warranties.

### 3.2 Parking Brake

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

### 3.3 Tow Bar and Undercarriage

3.3.1 The bowser unit is equipped with steerable front wheels controlled by the tow bar.

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

3.3.3 Tire inflation should be checked and maintained as described in the maintenance section.

3.3.4 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, telescoping drain is collapsed, and all manways and covers are closed and latched.

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

### 3.4 Telescoping Drain Assembly

3.4.1 The fuel bowser is equipped with a telescoping drain assembly. It is capable of being adjusted from 4'2" to 16'0" high.

#### 3.4.2 To Raise:

- (1) Loosen top clamp if necessary.
- (2) Grasp top section with one hand and lift until the top clamp raises approximately 6 inches.
- (3) Tighten clamp securely with the other hand.
- (4) Reposition lifting hand by grasping tube below tightened clamp and lift until next clamp is raised approximately 6 inches.
- (5) Repeat steps 1-4 until desired height is obtained or assembly is fully extended.

#### 3.4.3 To Lower:

- (1) Tightly grasp bottom extended tube with one hand and loosen the securing clamp.
- (2) Slowly lower tube, hand over hand, until the following clamp is resting on the loosened clamp.
- (3) Repeat steps 1 and 2 until all sections are lowered.

3.4.4 Funnel is equipped with a nitrile rubber seal around the top edge to allow placement against the underside of a wing.

3.4.5 When not in use, telescope should be collapsed and the cover closed to eliminate contamination.

### 3.5 Vacuum Assembly

3.5.1 This assembly is equipped with an air powered vacuum generator.

3.5.2 It is intended for vacuum draining or depuddling fuel and condensation. Caution! If other objects such as rock or metallic pieces are vacuumed into the vacuum chamber, they may create a hazard due to sparks.

3.5.3 Vacuum is started by attaching a recommended air supply of 60CFM at 100 PSI and turning on the air supply valve.

3.5.4 The vacuum chamber is equipped with an automatic drain valve that opens whenever vacuum is eliminated in the chamber. This valve opens directly into the main tank.

3.5.5 The vacuum generator is equipped with an automatic overflow protector. When the level of product is full, the valve shuts off and eliminates the vacuum. The vacuum chamber will then automatically drain. The air supply must be shut off to reset the overflow valve. Vacuuming may then continue.

3.5.6 The vacuum assembly is supplied with 50 feet of vacuum hose and a ball valve on the vacuum suction.

3.5.7 The vacuum assembly is equipped with (4) four each 1/2" NPT opening for use with pencil drains. To use, the pipe caps must be removed and self closing quick disconnects attached that match local standards. To operate, close vacuum suction valve and turn air supply on and connect drain lines.

### 3.6 Grounding Reels SPECIAL

3.6.1 The bowser unit is supplied with two grounding reels.

3.6.2 Before filling, draining, or vacuuming, the grounding reels must be attached to the aircraft or object being serviced and an appropriate ground.

- 3.7 Drain Valves
  - 3.7.1 The bowser unit is equipped with a 1-1/2" NPT ball valve with a camlock connector.
- 3.8 Sample Port
  - 3.8.1 The bowser unit is equipped with a 1/2" NPT valve for use as a sample port.
- 3.9 Telescoping Drain Strainer
  - 3.9.1 The bowser unit is equipped with a sump with removable bottom to allow cleaning of the drain strainer.
- 3.10 Vent Overflow Preventor
  - 3.10.1 The bowser unit is equipped with a float actuated seal to prevent fuel from flowing out the vent in the event the bowser is overfilled.

#### 4.0 MAINTENANCE

- 4.1 Parking Brake
  - 4.1.1 The bowser unit is equipped with a parking brake assembly consisting of a 7" diameter brake drum with 2-1/4" wide brake shoes.
  - 4.1.2 The shoes are activated via a mechanical linkage, eccentric and lever.
  - 4.1.3 Adjustment may be necessary as the shoes wear.
    - (1) Tightening is accomplished by removing the bolt through one yoke and screwing yoke in to shorten connecting rod.
    - (2) Do not over tighten or brakes may drag when released.
  - 4.1.4 Replacement of shoes.
    - (1) Remove wheel.
    - (2) Remove nut retaining hub and drum assembly.
    - (3) Disconnect actuating rod.
    - (4) Remove shoe retainers.
    - (5) Install new shoes.
    - (6) Replace shoe retainers.
    - (7) Adjust actuator rod length.
    - (8) Replace wheel.

#### 4.2 Under Carriage and Tow Bar

4.2.1 The bowser unit is equipped with steerable front wheels, fixed rear wheels, and a tow bar.

4.2.2 Maintenance should consist of the following:

- (1) King pin bushing, turning bushings and tie rod ends are self lubricating and need no additional maintenance.
- (2) Inspect wheel bearing at (3) month intervals. Repack and, or replace as needed.
- (3) Check tire pressure weekly. Maintain pressure as per tire markings.

4.2.3 Tow bar pivot pin and hook ring should be inspected monthly for excessive wear or cracks.

#### 4.3 Telescoping Drain Assembly

4.3.1 The telescoping Drain Assembly consists of stainless steel housing 4 1/2" in diameter permanently attached to the tank and five (5) aluminum tube sections.

4.3.2 The stainless tube and four largest aluminum tubes are equipped with a clamp assembly.

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

4.3.5 Disassembling of the telescope assembly is accomplished by rotating the four sections 180 degrees from normal position and gently lifting each section so that the crimped edge on the tube is aliend with the slot on the clamp.

#### 4.4 Vacuum Assembly

4.4.1 The vacuum assembly consists of a vacuum chamber with an air powered vacuum generator mounted on a removable cover. The cover is held in place by three (3) eccentric latches.

4.4.2 The vacuum chamber is equipped with an automatic drain valve. This valve is pre-adjusted at the factory and should not need further adjustment.

- 4.4.3 The vacuum cover is equipped with an overflow valve which should require no maintenance.
- 4.4.4 The vacuum generator is attached to the chamber cover. It is equipped with an exhaust silencer which should be cleaned at six (6) month intervals or more often depending on the amount of use and conditions.
- 4.4.5 The vacuum hose should be inspected monthly for cracks. Any sudden loss of vacuum suction power may indicate a crack in the vacuum hose.
- 4.4.6 The cover gasket should be inspected monthly for deterioration. This gasket should be pliable and free from weather checking.
- 4.5 Grounding Reels SPECIAL
- 4.5.1 Grounding reel cables should be pulled out, cleaned and inspected monthly.
- 4.5.2 Cable clamps and ends should be inspected for loose connections monthly.
- 4.6 Sight Gauge
- 4.6.1 The sight gauge should be inspected monthly or loose connections and weathering of clear tubing.
- 4.7 Telescoping Drain Strainer
- 4.7.1 Telescoping drain strainer is located on the bottom of the stainless steel drain housing.
- 4.7.2 Maintenance should consist of inspection and cleaning monthly.
- 4.7.3 Removal:
- (1) Removal is accomplished by loosening the wing nut on the clamp holding the base of the sump. NOTE! Check interior to assure fuel has been thoroughly drained before loosening wing nut.
  - (2) Remove clamp and sump base.
  - (3) Loosen clamp holding screen to stainless steel drain housing and pull screen down.

#### 4.8 Vent Overflow Preventor

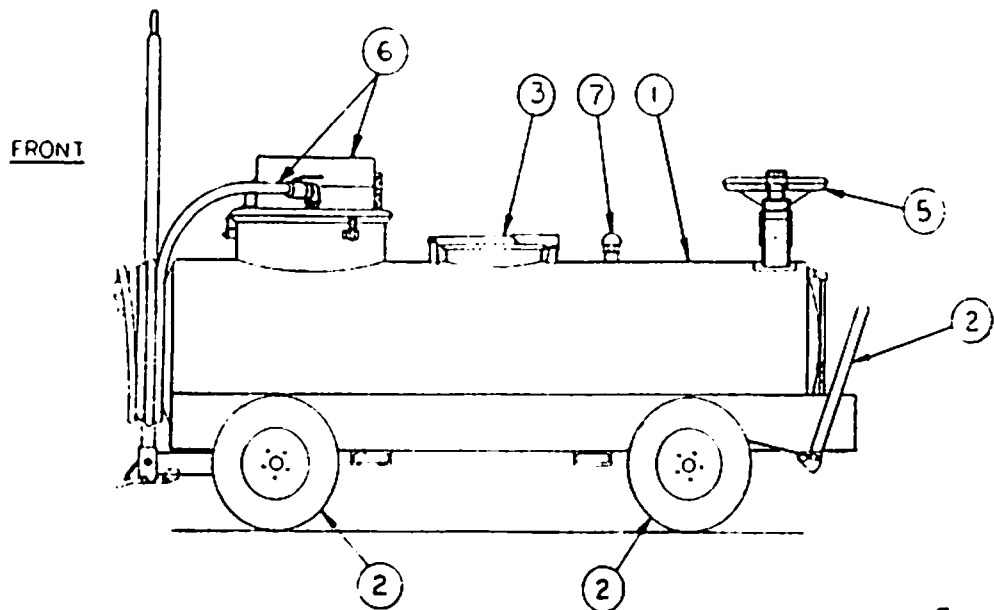
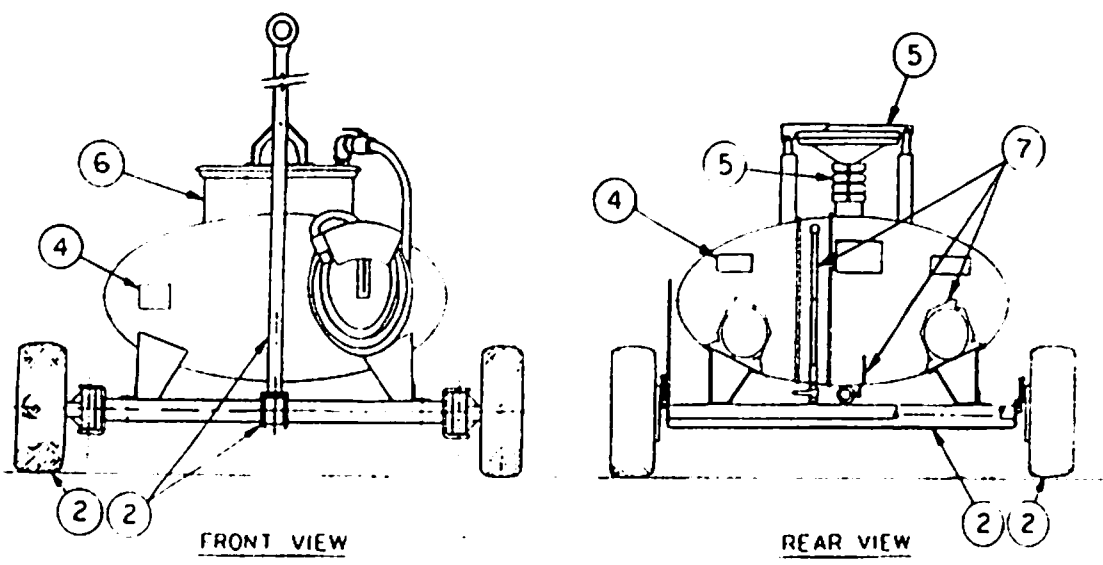
4.8.1 The vent overflow preventor is located inside the tank directly under the vent.

4.8.2 It consists of a caged float with an elastomer seal.

### 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 METAL PRODUCTS  
P.O. Box 3303  
Spokane, WA 99220-3303  
Telephone: (509)928-0720  
Tele Fax: (509)927-0826



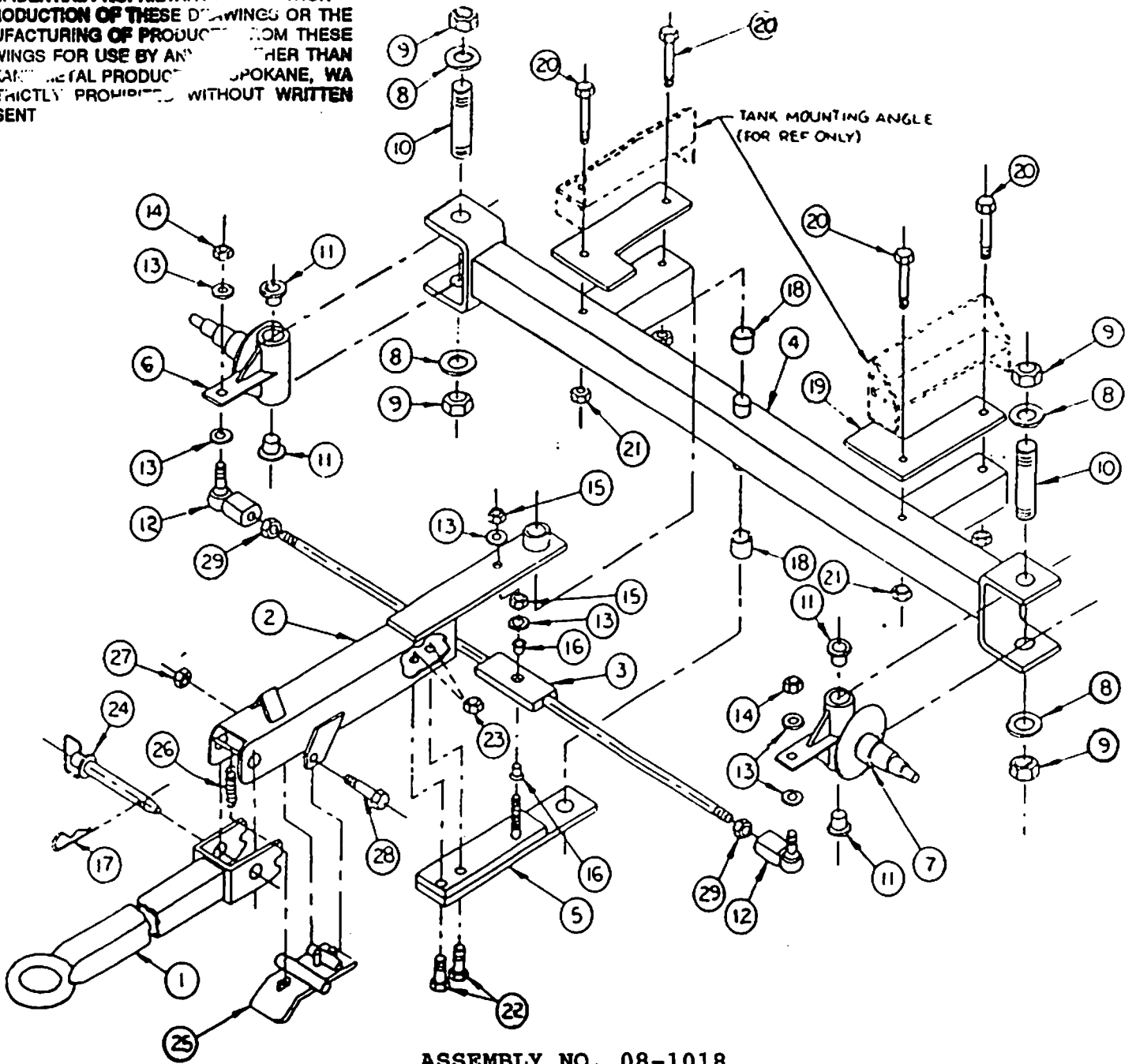
<u>Item No.</u>		<u>Section</u>
1	Main Tank . . . . .	5.1
2	Axle, Front . . . . .	5.2.1
2	Axle, Rear . . . . .	5.2.2
2	Brake, Parking . . . . .	5.2.3
2	Wheel Assembly, Front . . . . .	5.2.4
2	Wheel Assembly, Rear . . . . .	5.2.5
3	Manway Assembly . . . . .	5.3
4	Decal Package . . . . .	5.4
5	Telescoping Drain . . . . .	5.5
6	Vacuum Assembly . . . . .	5.6
7	Miscellaneous Fixtures . . . . .	5.7
7	Vent, Overflow Preventor . . . . .	5.8

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**ASSEMBLY NO. 08-1018**

**MAJOR ASSEMBLY - AXLE ASSEMBLY  
 SECTION 5.2.1**

Sub Assy.	Item	Part No.	Quantity	Description	Wt. #
08-1018				Axle, Assembly, Front	
	1	07-1103	1	Tow Bar	23
	2	07-1104	1	Arm, Turning	16
	3	07-1005	1	Tie Rod	7.3
	4	07-11071	1	Axle, Front	53

ASSEMBLY NO 08-1018

MAJOR ASSEMBLY - AXLE ASSEMBLY (CONTINUED)

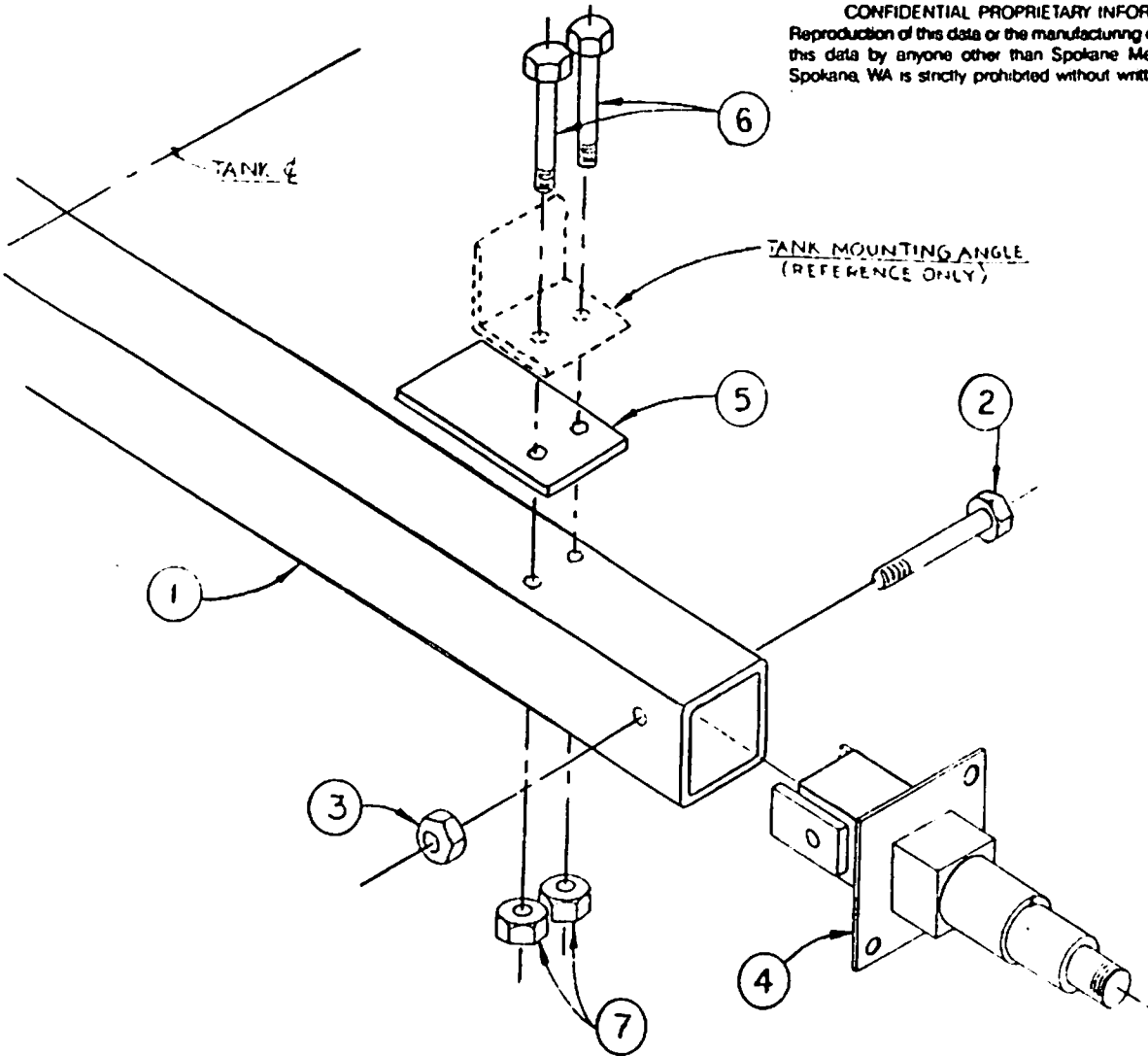
Sub Assy.	Item	Part No.	Quantity	Description	Wt.#
	5	07-1016	1	Steering Arm, Lower Plate	6.1
	6	05-1009	1	Sleeve, King Pin, Right	24
	7	05-1009	1	Sleeve, King Pin, Left	24
	8	02-11131	4	Washer, King Pin	1
	9	02-12131	4	Nut, King Pin	2
	10	05-1010	2	King Pin	11
	11	03-1013	4	Bushing, King Pin Sleeve	1
	12	03-1016	2	Ends, Tie Rod	5
	13	02-11072	5	Washers, Tie Rod	
	14	02-12071	2	Nuts, Tie Rod Ends	1
	15	02-12071	1	Nut, Tie Rod Pivot	.5
	16	03-1015	2	Bushing, Tie Rod Pivot	.8
	17	02-1300	2	Cotter Pin	.2
	18	03-1014	2	Bushing, Axle Pivot	1
	19	06-1023	2	Mounting Pad, Tank	4
	20	02-1503	4	Bolts, Tank Mounting	1.3
	21	02-12041	4	Nuts, Tank Mounting	.5
	22	02-1502	2	Bolts, Turning Arm Clamp	.32
	23	02-12041	2	Nuts, Turning Arm Clamp	.2
	24	02-1304	1	Hitch Pin	2
	25	07-1020	1	Toe Latch	3.1

ASSEMBLY NO. 08-1018

MAJOR ASSEMBLY - AXLE ASSEMBLY (CONTINUED)

Sub Assy.	Item	Part No.	Quantity	Description	
	26	04-1054	1	Spring, Toe Latch	.5
	27	02-1201	1	Nut, Toe Latch	.1
	28	02-1501	1	Bolt, Toe Latch	.2
	29	02-12141	2	Hex Nut, Tie Rod	.2

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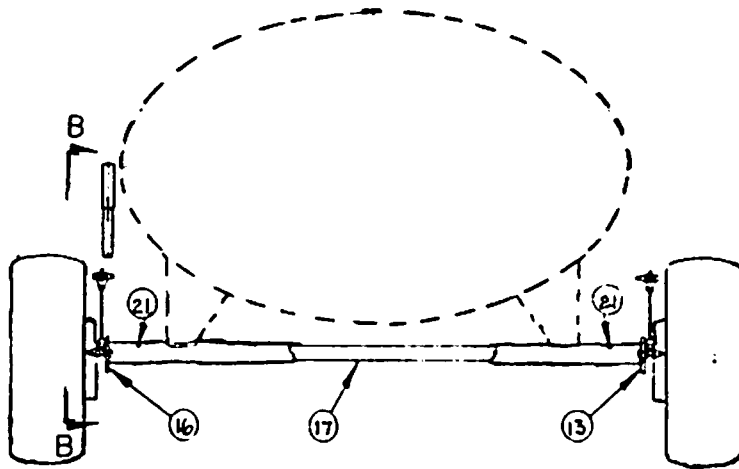
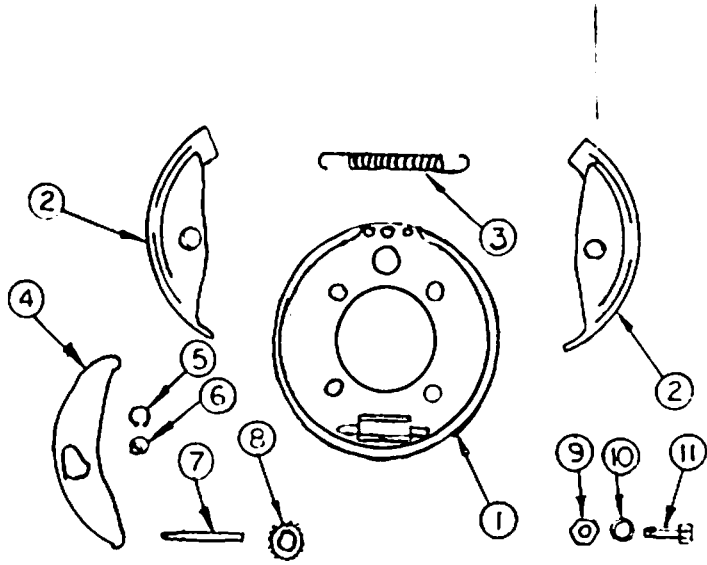


ASSEMBLY NO. 08-10102

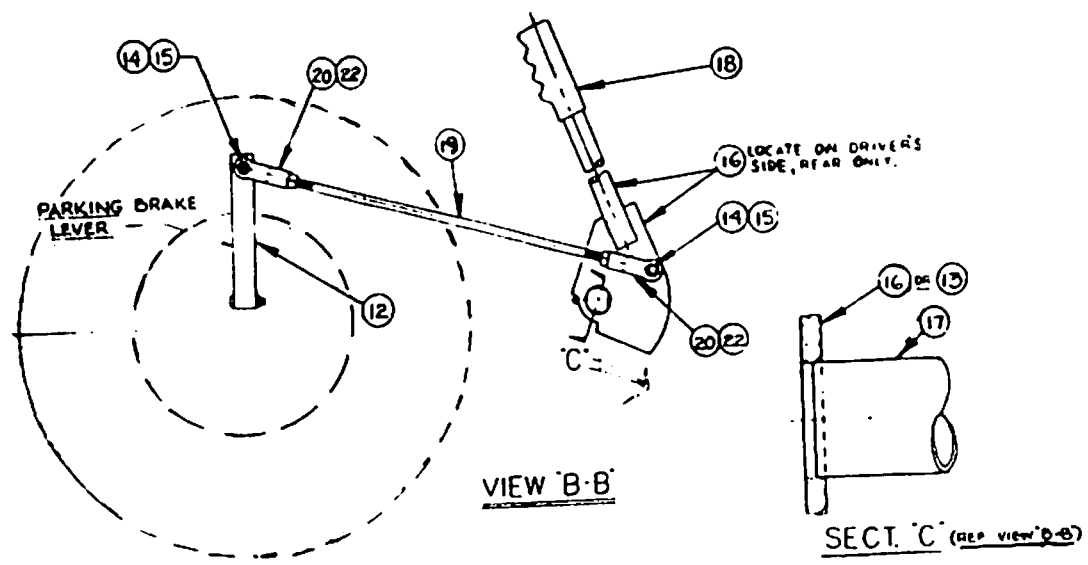
MAJOR ASSEMBLY - AXLE ASSEMBLY (CONTINUED)

SECTION 5.2.2

08-10102				Axle Assembly, Rear	
	1	05-1023	1	Axle, Rear Weldment	40
	2	02-1505	2	Bolts, Mounting Spindle	.6
	3	02-12041	2	Nuts, Mounting Spindle	.5
	4	05-1022	2	Spindle, Rear	17
	5	06-1012	2	Mounting Pad, Tank	1
	6	02-1503	4	Bolt, Tank Mounting	1.3
	7	02-12041	4	Nuts, Tank Mounting	.5



REAR VIEW  
HTS



VIEW 'B-B'

SECT. 'C' (REF VIEW 'B-B')

SECTION 5.2.3

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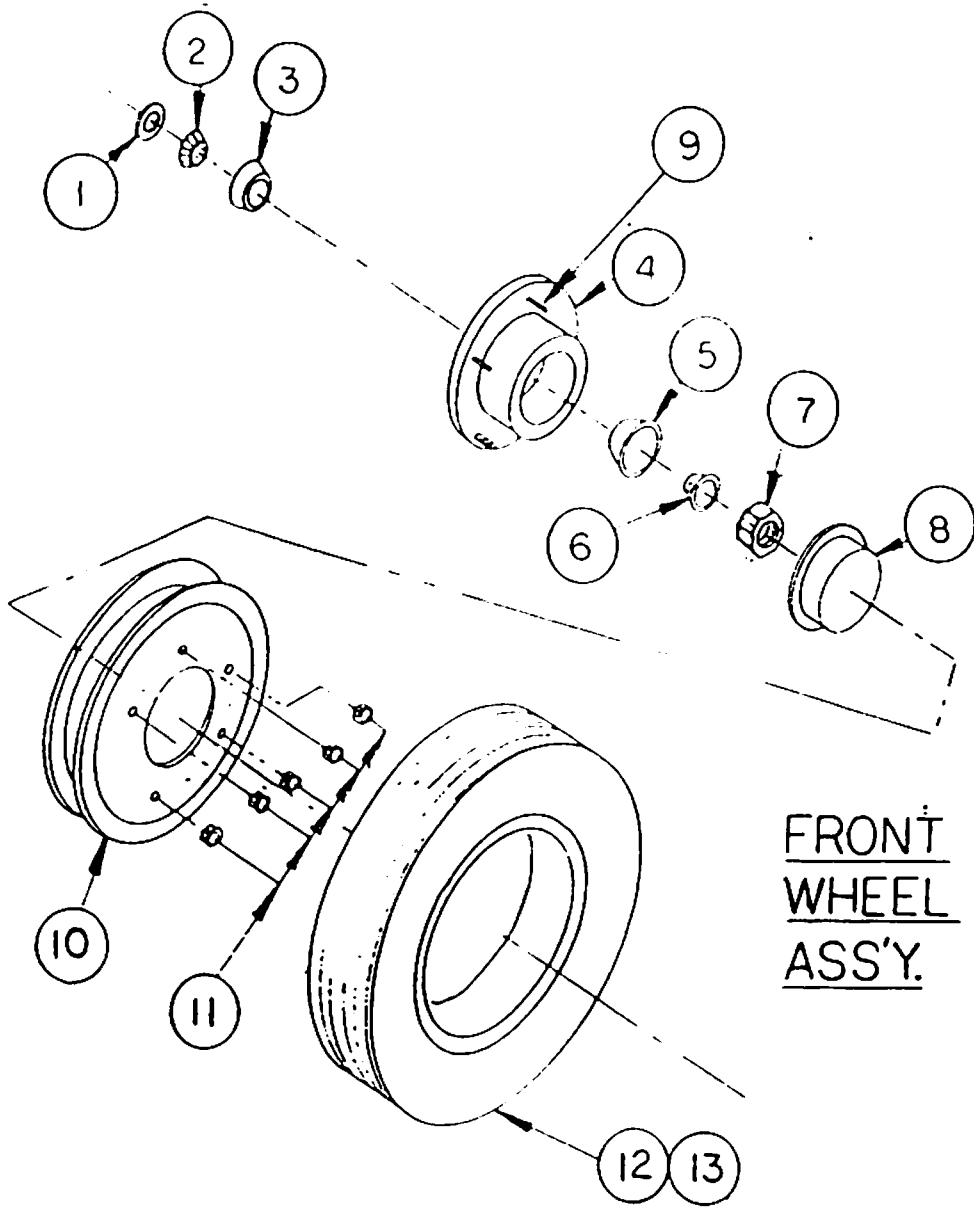
ASSEMBLY NO. 10-100030

MAJOR ASSEMBLY - BRAKE, PARKING

Sub Assy.	Item	Part No.	Quantity	Description	Wt.#
08-1007		04-1063		Brake Assembly (2 Req'd)	
	1	04-1023	1	Brake, Plate Assembly	7
	2	04-1024	1	Brake, Shoe Assembly	4
	3	04-1026	2	Brake, Shoe Lever Spring	1
	4	04-1025	2	Brake, Shoe Lever	1
	5	02-1400	2	1\2" Retaining Ring	.2
	6	02-1303	2	Anchor Pin	.2
	7/8	04-1027	2	Adjusting Screw Assembly	.7
	9	02-12031	4	Nut	.2
	10	02-11031	4	Lockwasher	.1
	11	02-10031	4	Bolt, 7/16" Shoulder	.5
	12	04-1030	1	Brake, Control Arm	3
08-1008				Brake Linkage Assembly	
	13	05-1025	1	Cam, Brake Linkage	1.4
	14	02-10012	1	Bolt	.4
	15	02-12021	1	Nut	.1
	16	07-1033	1	Brake Handle, Fabd Sub-Ass	5.4
	17	01-8104	1	Brake Handle, Connector	4
	18	04-1055	1	Grip, Vinyl	1
	19	05-1026	1	Rod, Brake Linkage	1
	20	04-2516	4	Yoke Ends	.5
	21	03-1020	2	Grease Fitting	.5
	22	02-100231	4	Jam Nut, 3/8"	.5

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### SECTION 5.2.4



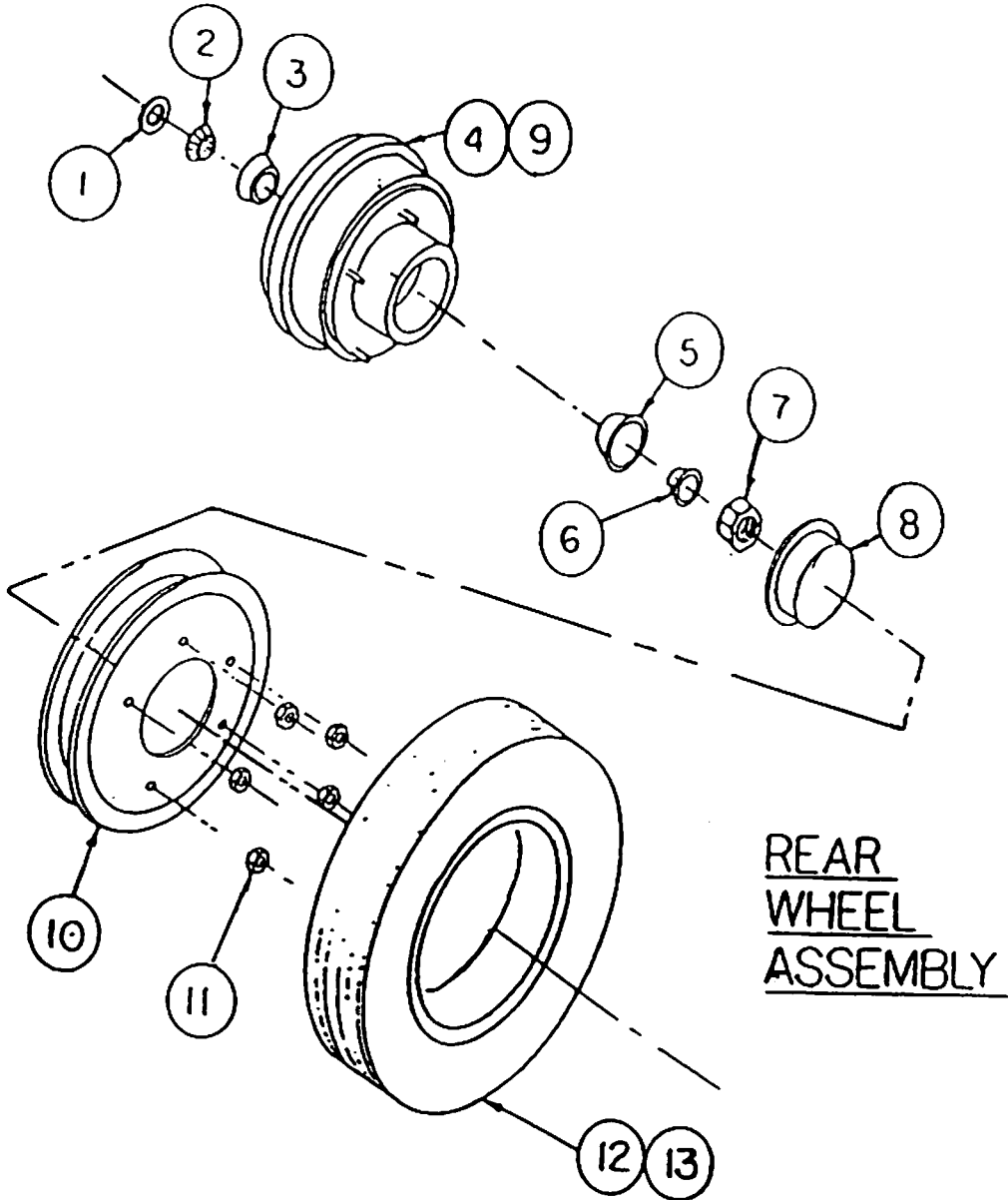
ASSEMBLY NO. 10-100042

MAJOR ASSEMBLY - WHEEL ASSEMBLY, FRONT

Sub Assy.	Item	Part No.	Quantity	Description	Wt.#
08-1011		04-1050		Bearing & Hub Assembly (2 Reqd)	
	1	04-1012	1	Seal, Bearing	1
	2	04-1013	1	Bearing, Inner	3
	3	04-1015	1	Cup, Inner	2
	4	04-1017	1	Hub, Wheel	7
	5	04-1016	1	Cup, Outer	4
	6	04-1014	1	Bearing, Outer	3
	7	02-1205	1	Spindle Nut	1
	8	04-1019	1	Dust Cap	1
	9	02-1017	5	Studs, Hub	1
08-10061		04-10201		Tire/Wheel/Tube Assembly (2 Reqd)	
	10	04-1020	1	Wheel, Split Rim, 10"	9.5
	11	04-1021	5	Lug Nuts, Wheel	1
	12	04-10221	1	Tire, 10"	4
	13	04-1045	1	Tube Assembly	11

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SECTION 5,2.5.



REAR  
WHEEL  
ASSEMBLY

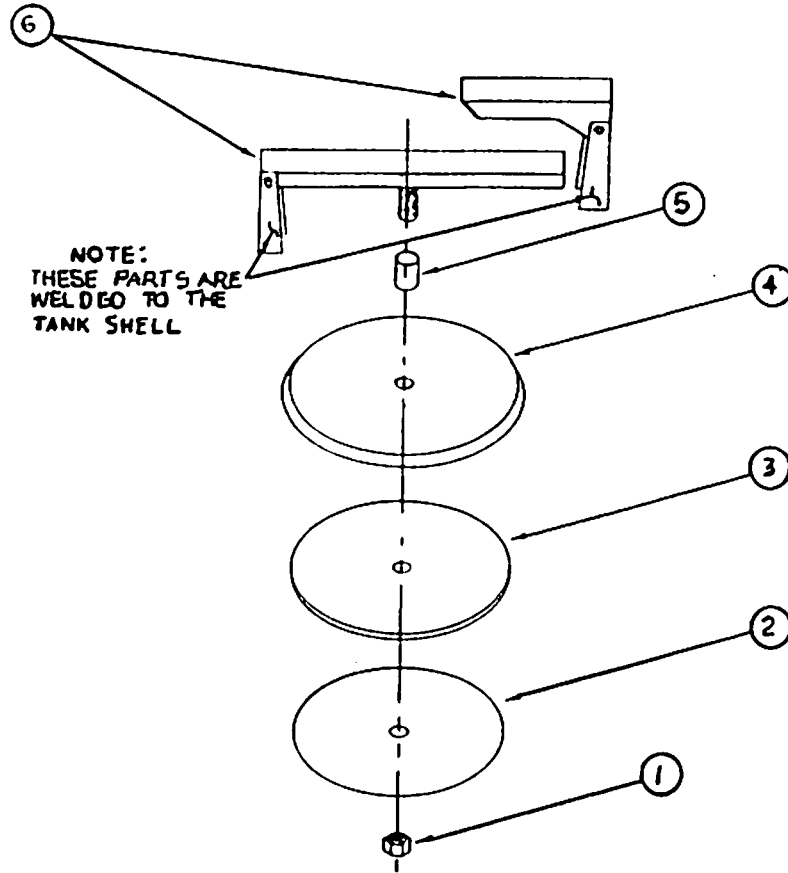
ASSEMBLY NO. 10-100052

MAJOR ASSEMBLY - WHEEL ASSEMBLY, REAR

Sub Assy.	Item	Part No.	Quantity	Description	Wt.#
08-10111		04-1062		Bearing & Hub Assembly (2 Reqd)	
	1	04-1012	1	Seal, Bearing	1
	2	04-1013	1	Bearing, Inner	3
	3	04-1015	1	Cup, Inner	2
	4	05-1008	1	Hub/Brake Drum Sub-Assy	16
	5	04-1016	1	Cup, Outer	4
	6	04-1014	1	Bearing, Outer	3
	7	02-1205	1	Nut, Spindle	1
	8	04-1019	1	Dust Cap	1
08-10061		04-1020		Tire/Wheel/Tube Assembly (2 Reqd)	
	10	04-10201	1	Wheel, Split Rim	9.5
	11	04-1021	5	Lug Nuts, Wheel	1
	12	04-10221	1	Tire, 10"	4
	13	04-1045	1	Tube Assembly	11

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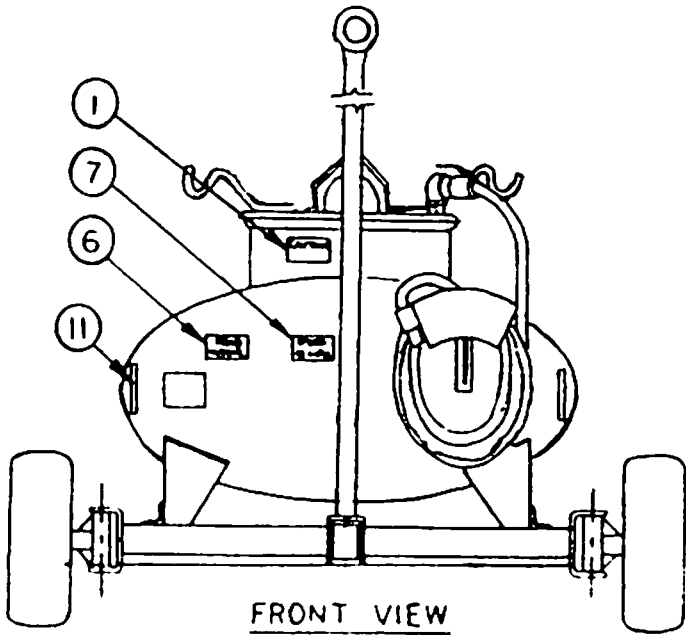
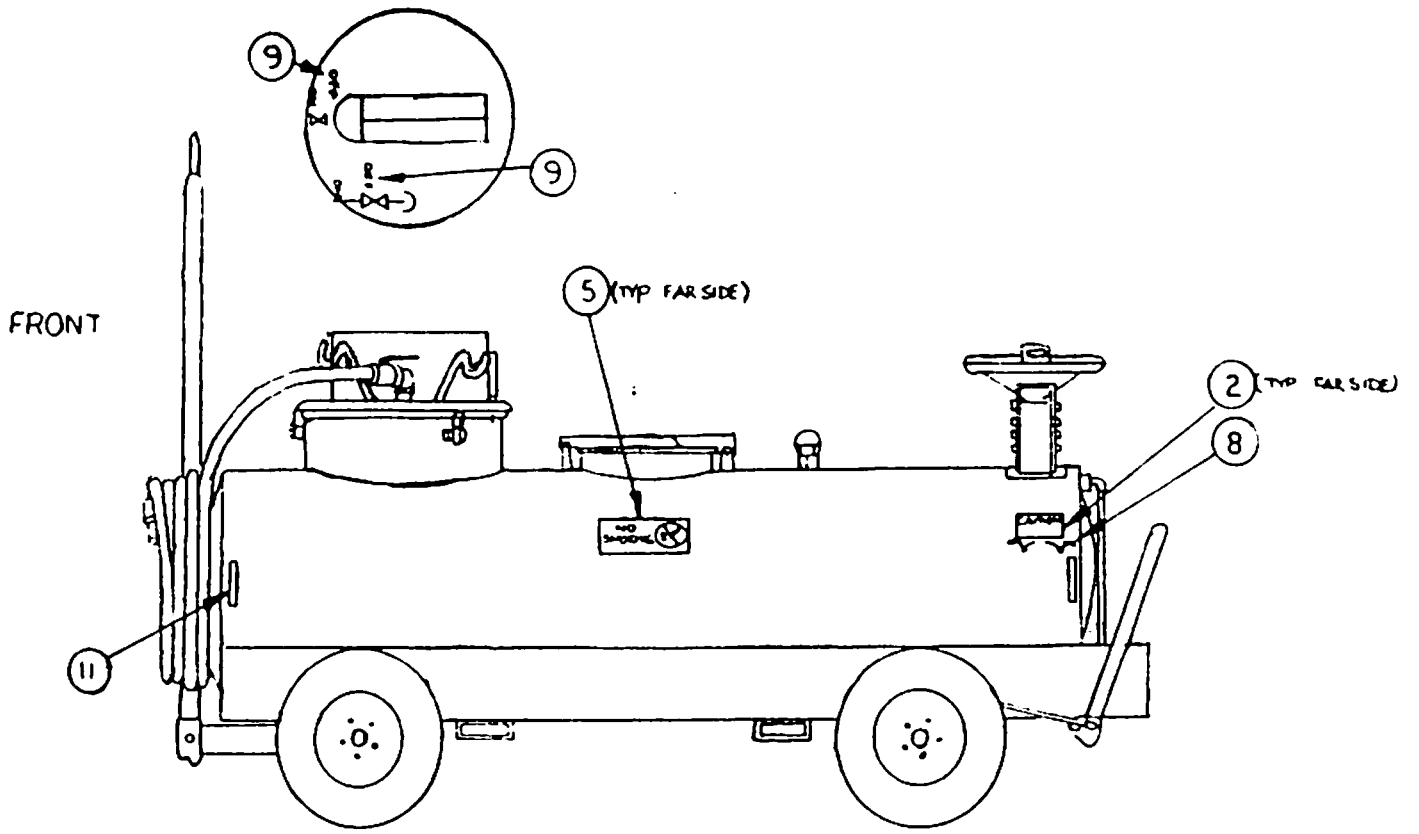
ASSEMBLY NO. 10-100060

MAJOR ASSEMBLY - MANWAY ASSEMBLY  
SECTION 5.3

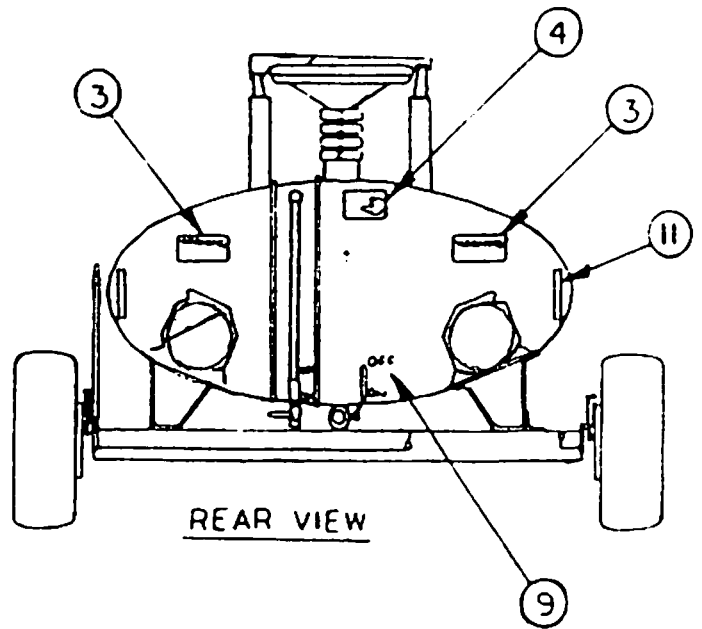
Sub Assy.	Item	Part No.	Quantity	Description	Wt. #
08-1025				Manway Cover Assembly	
	1	07-1039S	1	19-1/2" Cross Arm Sub-Assy	2.5
	2	01-8222S	1	7" Cross Arm	4
	3	01-93455S	1	Spacer	.5
	4	01-86001	1	Cover	5
	5	06-25025	1	Gasket	1
	6	07-2303	1	Gasket Retainer	2
	7	02-1206	1	Nut	.5
	8	02-10013	1	Bolt	1
	9	02-10014	1	Bolt	1
	10	02-1202	2	Nut	.5

# SECTION 5.4

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FRONT VIEW



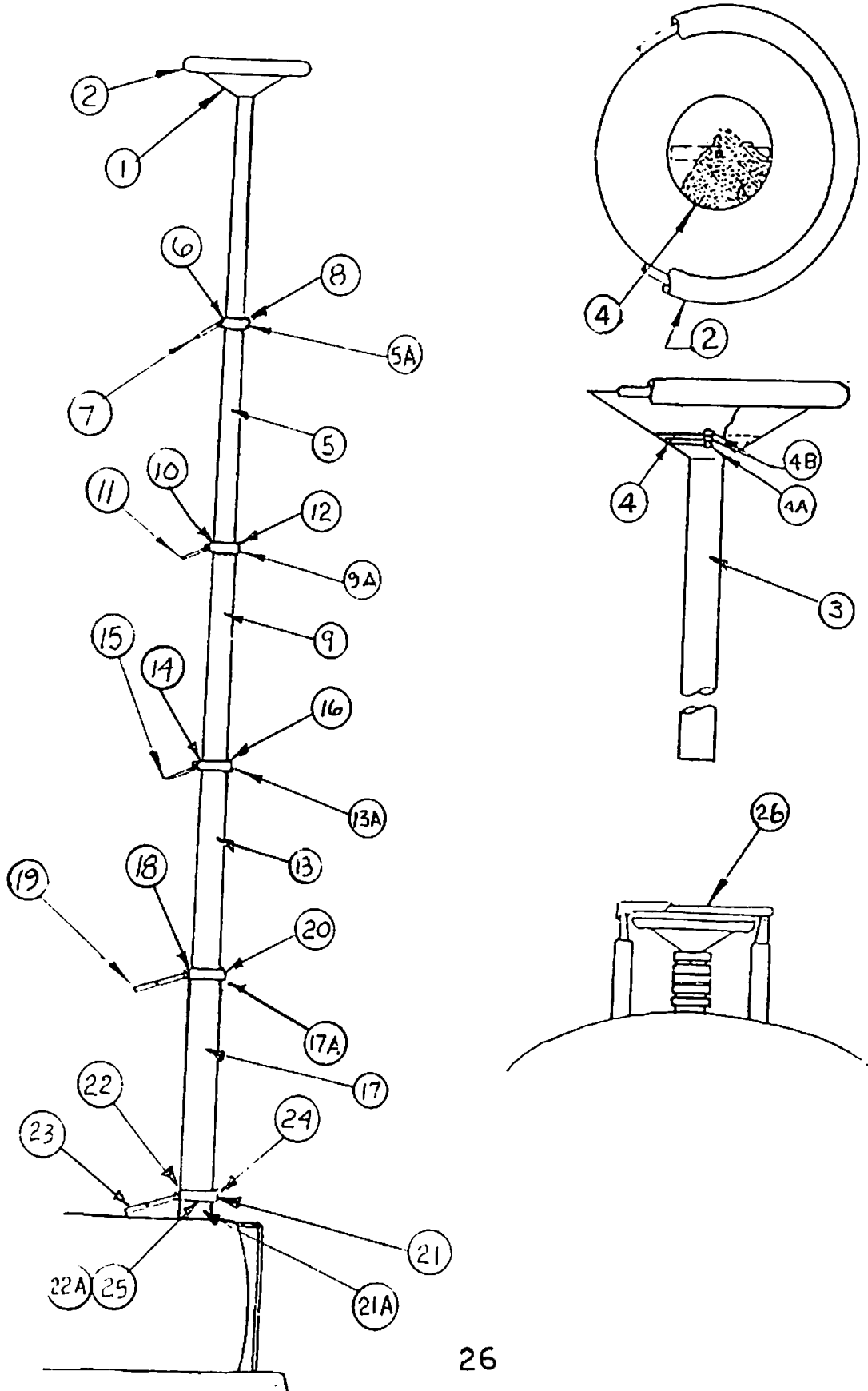
REAR VIEW

ASSEMBLY NO 10-100070

MAJOR ASSEMBLY - DECAL PACKAGE

Sub Assy.	Item	Part No.	Quantity	Description	Wt.#
10-100070				Decal Assembly	.1
	1	06-1002	1	Caution, Vacuum System	.1
	2	06-1003	1	Caution, Parking Brake	.1
	3	06-1004	2	Warning, Grounding Reels	.1
	4	06-1005	1	Warning, Telescoping Drain	.1
	5	06-1006	2	Danger, No Smoking	.2
	6	06-1007	1	Notice, Read Manual	.1
	7	06-1008	1	Maximum Towing Speed 15MPH	.1
	8	06-1010	1	Off/On, Parking Brake	.1
	9	06-1011	8	Off/On, Drain Valve	.8
	11		8	Reflector Tape	.8

SECTION 5.5

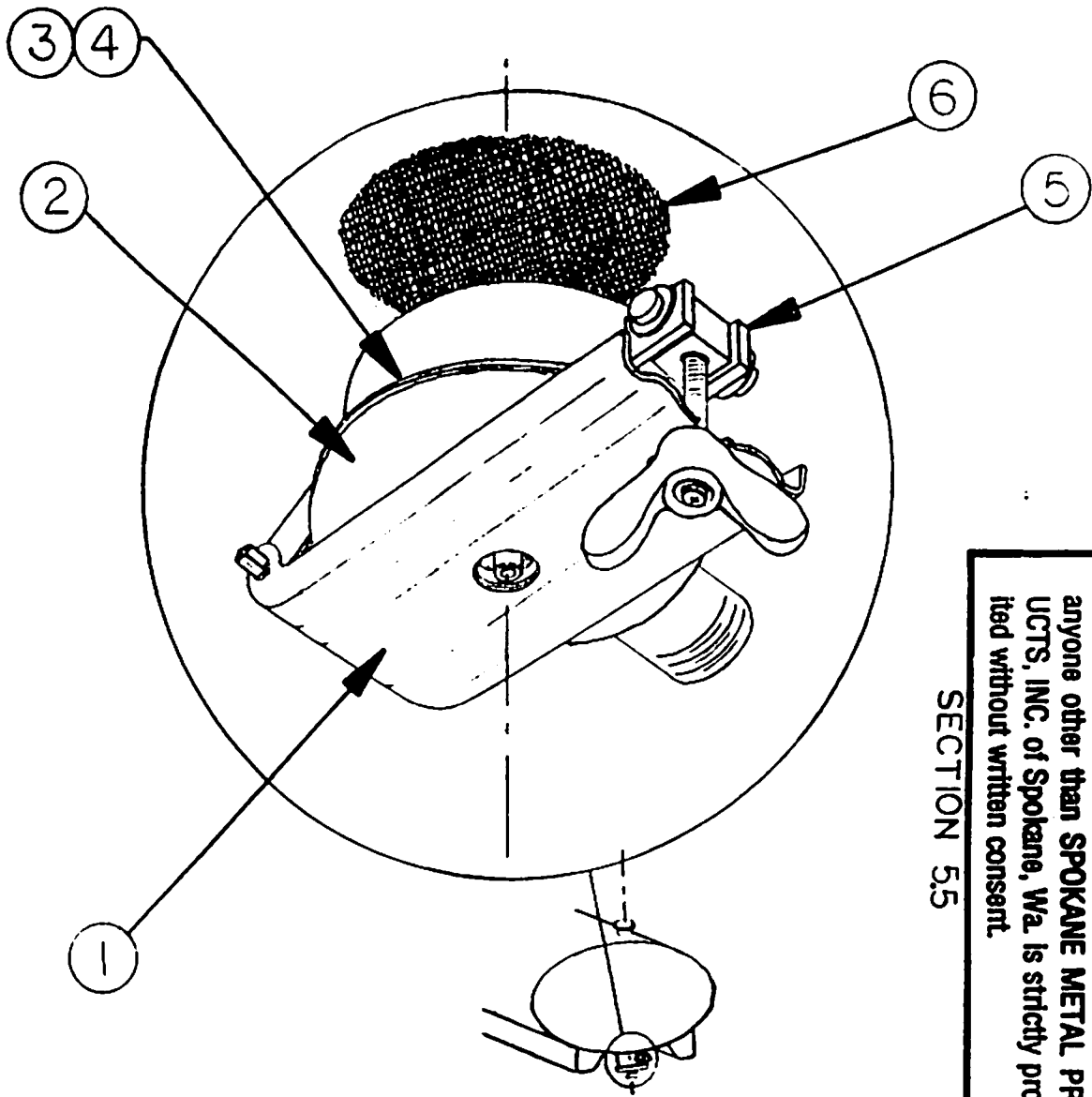


ASSEMBLY 08-1034U  
MAJOR ASSEMBLY - TELESCOPING DRAIN ASSEMBLY

Sub Assy.	Item	Part No.	Quantity	Description	Wt.#
07-10541				Drain Funnel Section Assembly	
	1	01-8250	1	Drain, Top (funnel)	5
	2	06-1022	1	Gasket	.7
	3	01-92402	1	Tubing, 2" OD	
	4	04-1039	1	Screen	.5
	4A	2-10002	1	Bolt, 1/4"	.2
	4B	02-1200	1	Nut, 1/4"	.1
08-1017U				Drain, Telescoping Sect. Assembly, 2-1/2" OD	
	5A	05-10271	1	Clamp, 2"	
	5	01-9242	1	Tubing, 2-1/2" OD	
	6	05-10051	1	WEDGE, 1"x11/16"x1 1/4"	.2
	7	05-10181	1	HANDLE, CLAMP	.3
	8	02-1005	1	SCREW, SET	.01
08-1027U				Drain, Telescoping Sect. Assembly, 3" OD	
	9A	05-10281	1	Clamp, 2-1/2" OD	
	9	01-92452	1	Tubing, 3" OD	
	10	05-10021	1	WEDGE, 1"x7/8"x1 9/16"	.3
	11	05-10181	1	HANDLE, CLAMP	.3
	12	02-1005	1	SCREW, SET	.01

ASSEMBLY 08-1034U CONTINUED  
 MAJOR ASSEMBLY - TELESCOPING DRAIN ASSEMBLY

08-1028U				Drain, Telescoping Sect. Assembly, 3-1/2" OD	
	13A	05-10291	1	Clamp, 3" OD	
	13	01-9248	1	Tubing, 3-1/2" OD	
	14	05-10031	1	WEDGE, 1"x1 1/16"x1 13/16"	.4
	15	05-10181	1	HANDLE, CLAMP	.3
	16	02-1005	1	SCREW, SET	.01
07-1014U				Drain, Telescoping Section Assembly, 4" O.D.	
	17A	05-10301	1	Clamp, 3-1/2" OD	
	17	01-9259	1	Tubing, 4" OD	
	18	05-10041	1	WEDGE, 1"x1 7/32"x2 1/8"	.5
	19	05-10181	1	Handles, Clamp	.3
	20	02-1005	1	SCREW, SET	.01
07-1041U				Drain, Telescoping Section Assembly, 4-1/2" O.D.	
	21A	01-92565S	1	Tube, 4-1/2" O.D.	
	21	05-10302	1	BASE CLAMP, 4"	4.4
	22	05-10051	1	WEDGE, 1"x1"x2 1/2"	.6
	22A	04-10561	1	Base Flange	
	23	05-10181	1	HANDLE, CLAMP	.3
	24	02-1005	1	SCREW, SET	.01
	25	02-100121	4	MOUNTING BOLTS, 1/4-16x3/4"	.2
	26	08-1026	1	COVER ASSEMBLY	5



SECTION 5.5

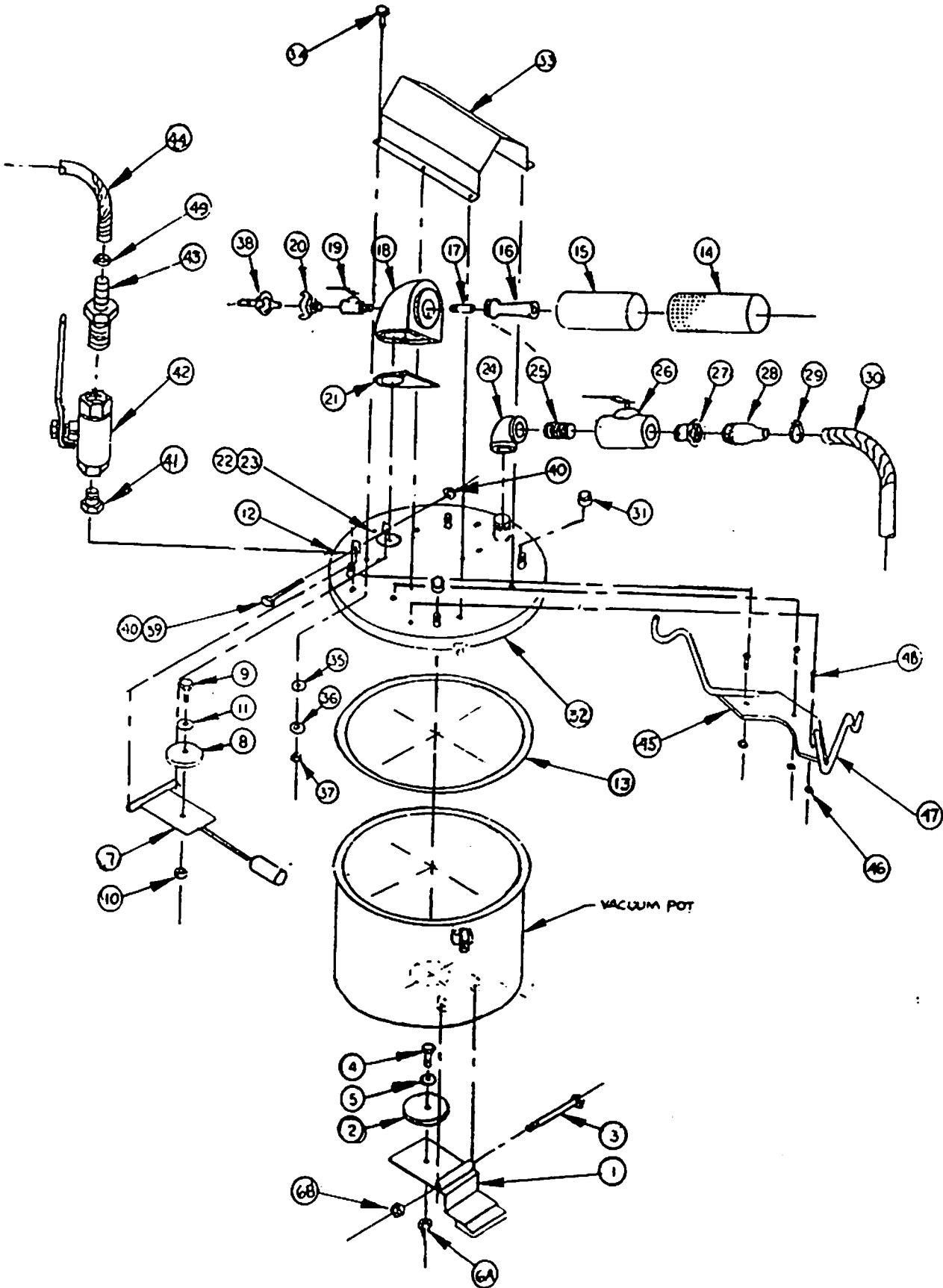
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ASSEMBLY 07-1035

MAJOR ASSEMBLY - DRAIN SUMP ASSEMBLY

07-1035				DRAIN SUMP ASSEMBLY, 6"	12.4
	1	04-10581	1	REPAIR KIT INCLUDES ITEMS 2,3,4&5	6.3
	2	04-125252	1	COVER	2.3
	3	06-1058	1	GASKET, BLACK BUNA N	.4
	4	04-12637	1	GASKET RETAINER	1.4
	5	04-11162	1	PIVOTING WING NUT ASSY	2.1
	6	01-8223	1	SUMP STRAINER SCREEN	.1

SECTION 5/6



## ASSEMBLY NO. 08-0001U

## VACUUM SYSTEM ASSEMBLY

Sub Assy.	Item	Part No.	Quantity	Description	Wt. #
08-1000				Drain Stop Assembly	
	1	07-1000	1	Drain Stop Arm	3.5
	2	04-1000	1	Gasket	1.5
	3	02-10016	1	Bolt	.1
	4	02-10002	1	Bolt	.1
	5	02-1100	1	Flatwasher	.1
	6A	02-1201	1	Nut	.1
	6B	02-1200	1	Nut	.1
08-1001				Overflow Stop Assembly	
	7	07-1109	1	Float Sub. Assembly	4
	8	04-1001	1	Gasket	.1
	9	02-10003	1	Bolt	.1
	10	02-1200	1	Nut	.1
	11	02-1100	1	Flatwasher	.1
08-10022				Cover Assembly	
	12	07-1002	1	Lid	5
	13	06-1022	1	Gasket	2.7
08-1003				Nortech Vacuum Head Assy.	
	14	04-1004	1	Exhaust Housing	9.5
	15	04-1005	1	Exhaust Silencer	4.7
	16	04-1006	1	Venturi	2.2

## ASSEMBLY NO. 08-0001U (CONTINUED)

## VACUUM SYSTEM ASSEMBLY

	17	04-1007	1	Air Jet	2.7
	18	04-1008	1	Venturi Box	2.7
	19	04-1032	1	Valve	5.8
	20	04-1056	1	Coupler	1.7
	21	04-1010	1	Gasket	.1
	22	02-10010	3	Bolt	.1
	23	02-11001	3	Washer	.1
08-1004				Accessories	
	24	03-1001	1	Elbow	2
	25	03-02922S	1	Nipple	.5
	26	04-10321	1	Valve	3
	27	03-1002	1	Hex Bushing	.2
	28	03-1003	1	Nipple	.1
	29	03-10101	1	Hose Clamp	.1
	30	06-10161	1	Hose	15
	31	03-1021	4	Pipe Cap (Optional)	1
	32	07-1019	1	Lid	24
	33	07-1034	1	Cover, Vacuum Generator	8
	34	02-10010	6	Bolt	.1
	35	06-1021	6	Washer	.1
	36	02-1100	6	Washer	.1
	37	02-1200	6	Nuts	.1

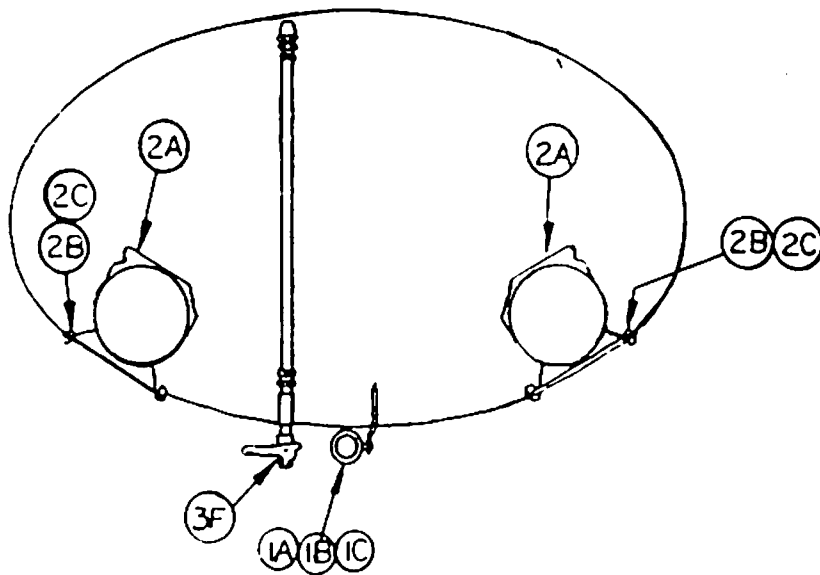
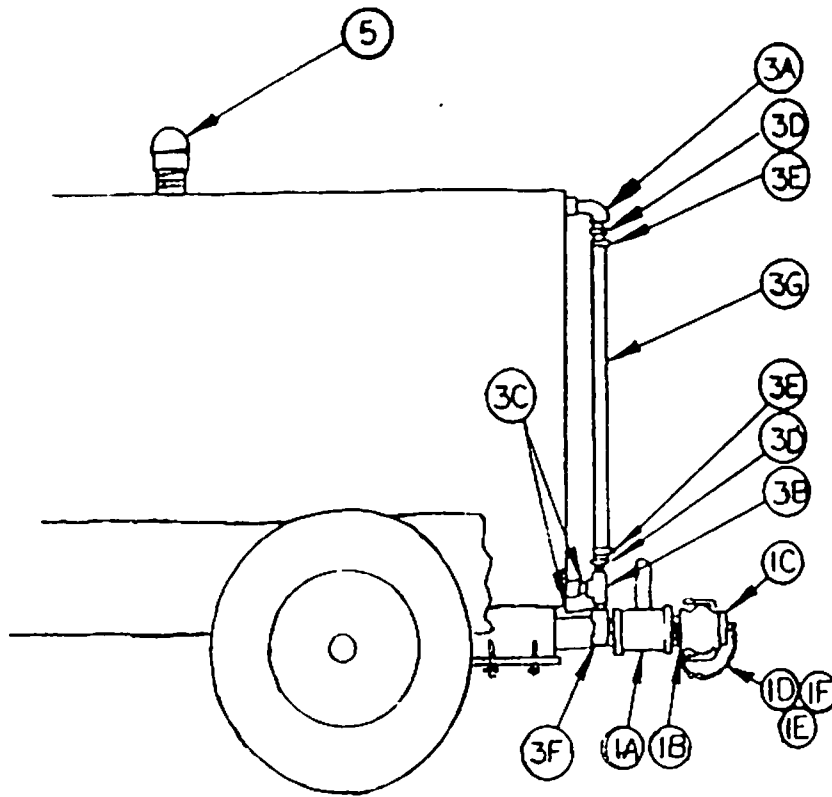
## ASSEMBLY NO. 08-0001U (CONTINUED)

## VACUUM SYSTEM ASSEMBLY

	38	04-1057	1	Coupler	.5
	39	02-10016	1	Bolt	.5
	40	02-1201	1	Nut	.1
	41	03-10155	4	Bushing (Optional)	.5
	42	04-10320	4	Ball Valve (Optional)	4
	43	03-10091	4	Hose Barb (Optional)	2
	44	06-10185	4	Tubing (Optional)	4
	45	01-9026S	2	Hanger Plate (Optional)	3
	46	02-12014	6	Hex Nuts (Optional)	.5
	47	01-9172S	4	Tubing Hangers (Optional)	2.5
	48	02-100115	6	Bolt (Optional)	1
	49	03-101005	4	Hose Clamp (Optional)	.5

SECTION 5.7

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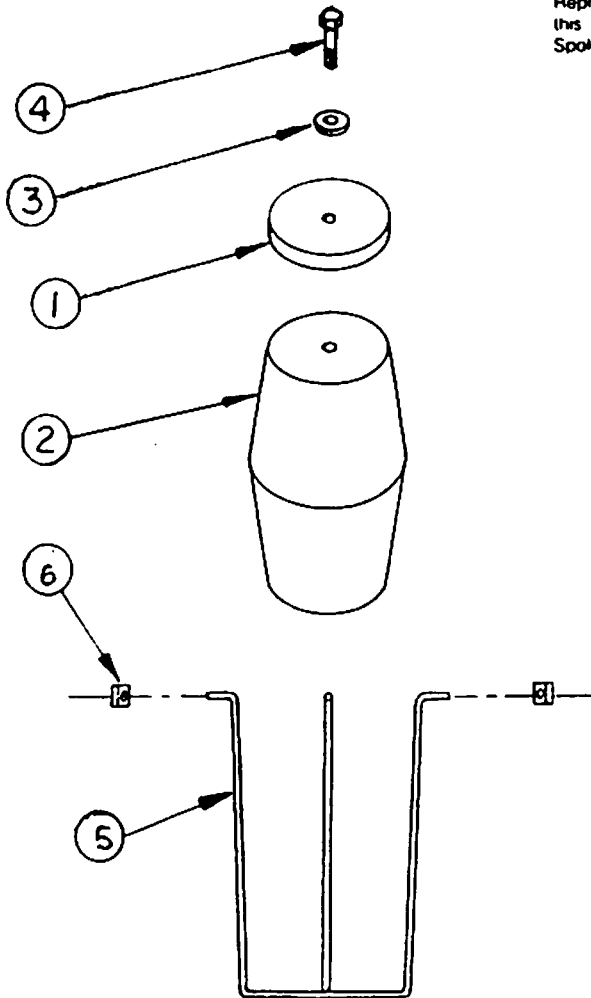


REAR VIEW

ASSEMBLY NO. 10-100110

MAJOR ASSEMBLY - MISC. FIXTURES

Sub Assy.	Item	Part No.	Quantity	Description	Wt. #
08-1012				Drain Assembly	
	1A	04-10321	1	Ball Valve	6
	1B	04-1033	1	Camlock Adaptor	1.5
	1C	04-10331	1	Camlock Plug	.5
	1D	04-1034	1	Safety Chain	.2
	1E	04-1035	1	S-Hook, Safety Link	.1
	1F	04-1035	1	S-Hook, Safety Link	.1
08-1013				Grounding Reel Assembly	
	2	04-10361	1	Grounding Reel	12
	2A	04-1036	1	Grounding Reel	12
	2B	02-10040	4	Bolts	.3
	2C	02-12041	4	Nuts	.1
08-1014	3			Sight Gauge Assembly	
	3A	03-0017S	2	Elbow	.5
	3B	03-1007	1	Tee	.5
	3C	03-1008	2	Nipple	.5
	3D	03-11130	2	Hose Barb	1
	3E	03-1010	2	Hose Clamp	.1
	3F	04-1032	1	Ball Valve	2.7
	3G	06-2527	1	Tubing	.1
	5	04-1037	1	Vent	3



ASSEMBLY NO. 08-10011

MAJOR ASSEMBLY - VENT, OVERFLOW PREVENTOR  
 SECTION 5.8

Sub Assy.	Item	Part No.	Quantity	Description	Wt. #
08-1022				Float Assembly	
	1	04-1047	1	Gasket	1
	2	06-1013	1	Float	.5
	3	02-1100	1	Washer	.1
	4	02-10001	1	Bolt	.1
08-1023				Cage Assembly	
	5	07-1032	2	Wire Cage	.9
	6	02-12140	4	Nut	.1

# SPOKANE METAL PRODUCTS

Spokane Washington

400 GALLON BOWSER FUEL DRAIN TANK

ONE YEAR LIMITED WARRANTY

Seller warrants its 400 Gallon Bowser Fuel Drain 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 three 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 damage 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 the unit.

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