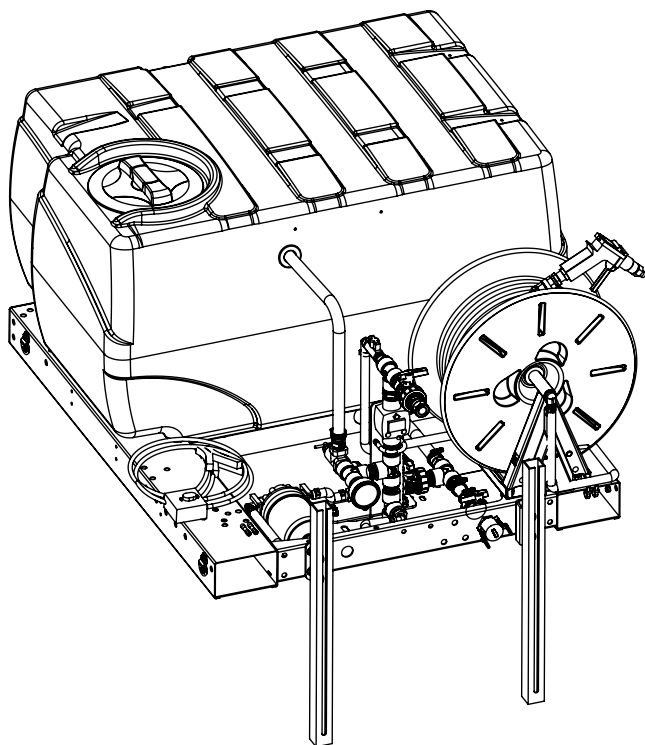


ICE MASTER® U-SERIES

OWNER'S MANUAL




Product Codes:
IMS100U7

Version 1.6

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INTRODUCTION

Congratulations! You now own an Camion™ sprayer. Durable design and construction assure you a lifetime of extreme performance. No sprayer is tougher. No sprayer will last longer.

Take a look through this owner's manual to learn how the pros use their Camion™ sprayer.



Watch Instruction Videos:

www.youtube.com

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WARNINGS

1. Do not exceed vehicle manufacturers loading, towing or lifting specifications and regulations.
2. Ensure tank is firmly secured in an appropriate manner.
3. Use caution at all times, particularly when driving on rough terrain.
4. Comply with chemical manufacturers safety requirements and all relevant legislations.
5. **ALWAYS** keep tank tightly covered, to prevent children or animals from entering tank.
6. Tank is not fire resistant. **NEVER** expose it to open flame or heat.
7. Keep sharp objects from tank. Tank could be punctured and contents could escape and cause injury to persons or property.
8. This tank can be used only with polyethylene compatible liquids. If you are uncertain, ask chemical supplier if material can safely be stored in a polyethylene tank. **USE OF TANK WITH ANY OTHER MATERIAL COULD CAUSE TANK TO FAIL, RESULTING IN INJURY OR PROPERTY DAMAGE.**
9. **DO NOT MIX CHEMICALS. THIS CAN RESULT IN DAMAGE TO THE TANK OR NEARBY PERSONS OR PROPERTY.**
10. Clean out tank before changing chemicals **OTHERWISE A DANGEROUS MIXTURE OF CHEMICALS COULD CAUSE DAMAGE TO PERSONS, TANK OR PROPERTY.**
11. Regular service and maintenance is the Owner's responsibility and is a condition of your warranty.
12. **FAILURE TO COMPLY WITH ALL WARNINGS AND INSTALLATION INSTRUCTIONS WILL VOID WARRANTY.**

13. No modifications and/or alterations may be made to this sprayer. Any such modifications not only void the sprayer warranty but can make the unit dangerous to anyone operating the pump.
14. Always inspect hoses and piping to avoid burst injuries.
15. DO NOT turn suction valve off while pump is running.
NEVER RUN PUMP DRY.

COMPATIBLE LIQUIDS

Calcium Chloride Brine, Salt Brine and Premium Branded Liquids.

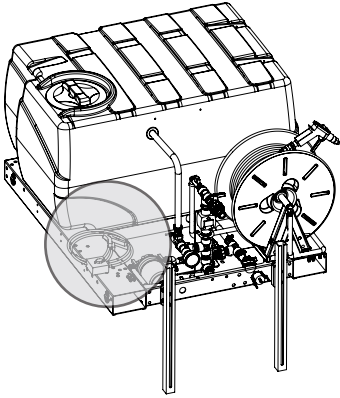
⚠ Caution: Brine that contain tacky substances or solid particles may clog pumps and nozzles. These are not recommended.

⚠ Warning: DO NOT USE any products that contain petroleum or petroleum by-products of any kind. These destroy seals and will void warranty.

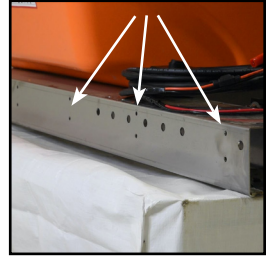
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GETTING STARTED

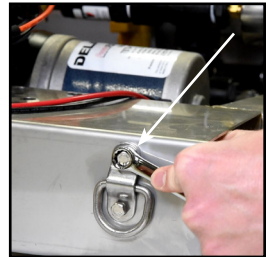
Installing the Mounting System



1) If you wish to use the d-ring tie-down system, select your desired mounting points on each side of the frame



2) Install 2 d-ring tie-downs on each side of the frame using the supplied nuts and bolts.

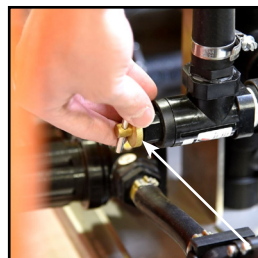


GETTING STARTED**Operating the Sprayer**

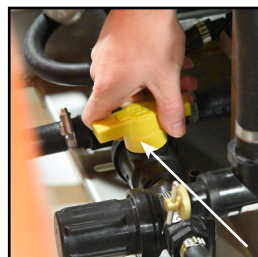
1) Connect the battery clips to the battery on your vehicle.



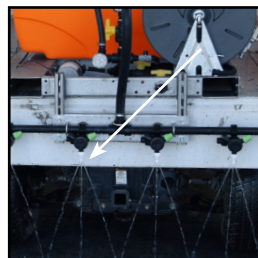
2) Before turning your pump on, make sure the pressure regulator is fully open (counter clockwise) to avoid premature wear or damage to the pump.



3) Ensure the valve to the pump is open before you turn the pump on.



4) We recommend you run clean water through the entire unit before using salt brine to check for any unexpected leaks caused in shipping.



CALIBRATING

Note: Always double check your application rates.

NOZZLE COLOR	PSI	CAPACITY ONE NOZZLE IN GPM				4 MPH	6 MPH	8 GPM	10 MPH
		0.50	0.71	0.87	1.00				
Stainless Steel	10	0.50	0.71	0.87	1.00	25	16.5	12.4	9.9
	20	0.71	0.87	1.00	1.17	35	23	17.6	14.1
	30	0.87	1.00	1.17	1.34	43	29	22	17.2
	40	1.00	1.17	1.34	1.50	50	33	25	19.8
White	20	0.56	0.72	0.80	0.88	42	28	21	16.6
	30	0.72	0.80	0.88	0.96	53	36	27	21
	40	0.80	0.88	0.96	1.04	59	40	30	24
	50	0.88	0.96	1.04	1.12	65	44	33	26
Green	15	0.092	0.106	0.12	0.134	68	46	34	27
	20	0.106	0.12	0.134	0.15	79	52	39	31
	30	0.12	0.134	0.15	0.166	97	64	48	39
	40	0.134	0.15	0.166	0.181	111	74	56	45

GPM = Gallons Per Minute

GPA = Gallons Per Acre

GAL/1000 FT = Gallons Per 1000 Square Feet

W = Nozzle spacing

Gallons Per Minute Formula:

$$\frac{\text{GPA} \times \text{MPH} \times \text{W (per nozzle)}}{5,940}$$

Gallons Per Minute Formula:

$$\frac{\text{GAL}/1000\text{FT} \times \text{MPH} \times \text{W (per nozzle)}}{136}$$

Gallons Per Acre Formula:

$$\frac{5,940 \times \text{GPM (per nozzle)}}{\text{MPH} \times \text{W}}$$

Gallons Per 1000 Square Feet:

$$\frac{136 \times \text{GPM (per nozzle)}}{\text{MPH} \times \text{W}}$$

Convert Acres to Lane Mile:

$$1.4545 = 1 \text{ Lane Mile}$$

MAINTAINING

Keeping your sprayer in good condition will help you lengthen the life of the sprayer. Everyone knows a well maintained piece of equipment ensures a longer life span. Sprayer maintenance can seem a huge task if you don't have the right tools.



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<p>The information applies in normal operating conditions. The specific intervals must be shortened accordingly for longer daily working hours. If the machine is only used occasionally, the intervals can be extended accordingly.</p>	Before starting work	X												
	At the end of work and/or daily			X	X	X								
	Weekly or every 40 operating hours													
	After the first 5 operating hours													
	Every 250 operating hours or once a year													
	If damaged									X			X	
	If required							X	X			X		
	Complete machine	Visual inspection (condition, leaks)												
		Clean												
		Clean												
Tank, hoses and fittings	Drain													
	Clean													
In-line filter	Clean													
	Clean													
Spray lance nozzle	Replace													
All accessible screws and nuts	Tighten													
Safety labels	Replace													
Pump	Maintain													
Read and follow all maintenance and care instructions in the Pump manual.														

TROUBLESHOOTING

CONDITION	CAUSE	REMEDY
Pump will not prime	1) Insufficient motor RPM 2) Air leak on suction plumbing 3) Blocked/Restricted intake hose 4) Filter cap disengaged 5) Filter gasket damaged/missing	1) Increase motor RPM until pump primes 2) Tighten/replace fittings & hose clamps. Verify suction hoses are in good condition 3) Remove blockage from suction line, ensure line is not kinked 4) Lock filter cap into position 5) Replace filter gasket
Pressure drops/ fluctuates during standard operation	1) Restriction on suction line 2) Pump sucking air 3) Plugged filter 4) Damaged regulator	1) Inspect tank and suction lines and remove restriction 2) Tighten fittings 3) Remove and clean filter mesh and housing 4) Remove regulator stem and inspect for broken parts/pieces

CONDITION	CAUSE	REMEDY
Pressure gauge not registering	1) Plugged with debris	1) Un-thread, check and clean pressure gauge
Hand gun loses pressure	1) Debris in hose or nozzle 2) Pump losing prime 3) Pump pressure dropping/fluctuating	1) Un-thread nozzle tip and clean 2) See Remedy for 'Pump will not prime or loses prime' 3) See Remedy for 'Pressure drops/ fluctuates during standard operation'



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WARRANTY

1. Poly Tank Limited Warranty - Subject to other terms in this Limited Warranty, Manufacturer warrants to the original end user that this Tank will be free from material defects caused during the manufacturing process for a period of 5 years from the Purchase Date provided such warranty to the original end user shall be extended to 10 years from the Purchase Date if the original end user registers the Tank with Manufacturer within 30 days of the Purchase Date. To register the Limited Warranty, registration must be completed in accordance with the requirements set forth at enduraplaswarranty.com

Other Products and Parts Limited Warranty - Subject to other terms in this Limited Warranty, Manufacturer warrants to the original end user that products and parts manufactured by Manufacturer (other than tanks) will be free from material defects caused during the manufacturing process for a period of 1 year from the Purchase Date unless otherwise expressly stated in writing by Manufacturer that an extended warranty applies.

2. Other Warranties Disclaimed and Excluded

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE LIMITED WARRANTY HEREIN STATED, AND MANUFACTURER EXPLICITLY DISCLAIMS AND EXCLUDES ANY AND ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, CUSTOM OR USAGE OF TRADE, AND COURSE OF DEALING. NO AGENT, EMPLOYEE OR REPRESENTATIVE OF MANUFACTURER HAS AUTHORITY TO BIND MANUFACTURER TO ANY REPRESENTATION OR WARRANTY EXCEPT AS STATED IN THIS LIMITED WARRANTY.

3. Limitation of Liability under the Limited Warranty - In addition to those warranties disclaimed and excluded in clause 2 above, Manufacturer expressly further limits its warranty and liability under the Limited Warranty as set forth below in this clause 3.
- 3.1. The liability of Manufacturer under this Limited Warranty is excluded to the extent that any defect has been caused or contributed to by:
- a) any accident, contamination, tampering, willful damage, abuse, modification, improper storage, improper use (including but without limitation the storage of material) or negligent act of, or omission by, any person other than Manufacturer;
 - b) the improper installation of the Goods, or deterioration of the base on which any of the Goods rest or are mounted to;
 - c) any damage to the Goods caused by storm, wash away, landslide, mudslide, lightning, or any other natural phenomenon, vermin or other pests, and any undermining of the base of the Tank through any cause whatsoever;
 - d) the repositioning of the Goods from their original installation;
 - e) weathering or degradation of the Goods due to extreme climatic conditions;
 - f) improper installation of extra fittings;
 - g) any staining or discoloration, including from trees or ash fall-out from fires or other causes;
 - h) a Tank not being placed on a base that is free of any protruding objects of any kind;
 - i) a Tank being used for any purpose other than the storage of suitable liquids at the ambient temperatures.

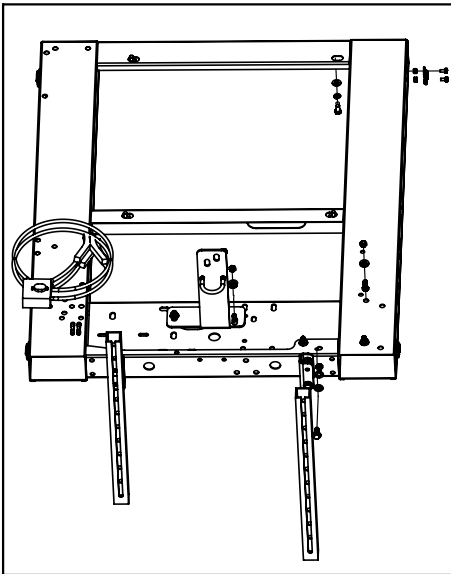
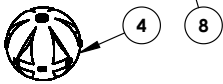
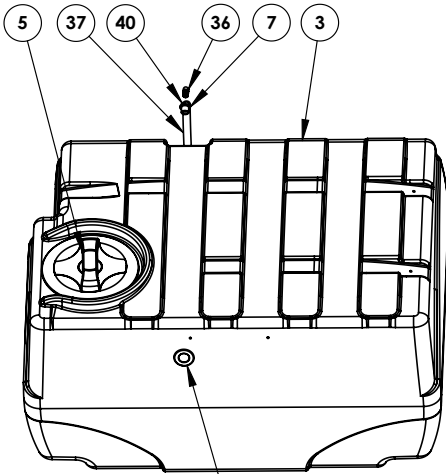
3.2. Without limiting the generality of clause 3.1:

- a) Manufacturer will not be liable for any personal injury, indirect or incidental damages, consequential losses, loss of liquids, loss of profit or any like claims whatsoever arising from any use of, or incidental to, or repairs to any of the Goods by a party other than Manufacturer;
- b) to the extent that any component or material (including, but without limitation the polyethylene) used in the manufacture of any of the Goods is supplied and/or manufactured by a third party, the liability of Manufacturer is limited to Manufacturer's right of redress (if any) against the third-party supplier/manufacturer;
- c) Tanks feature a vented lid at the time of manufacture. Any subsequent pressurization of the Tank by removing the vent, sealing the vent, or otherwise will cause this Limited Warranty as to such Tank to be null and void.
- d) The liability of Manufacturer under this Limited Warranty is limited to, at Manufacturer's discretion:
- e) providing a replacement Good (including shipping but excluding other replacement costs);
- f) refunding an amount equal to a sum equal to the current Retail price divided by the months in the warranty, multiplied by the months remaining in the warranty period;
- g) repairing the Good at no cost.

4. Proof of Purchase - The original invoice or other similar proof of purchase of the applicable must be provided by Purchaser to Manufacturer when making a claim under this Limited Warranty. Warranty claims must be received in writing by Manufacturer within the Limited Warranty period.

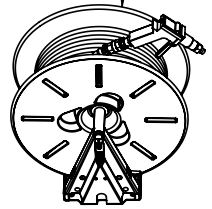
5. Claims and Questions - If you have questions about this Limited Warranty or to make a warranty claim, contact Manufacturer at: customercare@enduraplas.com
6. Definitions - For this Limited Warranty the following definitions apply:
 - a) Manufacturer means Enduraplas LLC.
 - b) Purchase Date means the date upon which the applicable goods were purchased by the original end user.
 - c) Purchase Price means the actual price paid for the Tank by the original Purchaser.
 - d) Tank means the storage Tank manufactured by Manufacturer and purchased by the original end user Purchaser being the subject matter of the Limited Warranty.
 - e) Good(s) mean Tanks and/or other products or parts manufactured by Enduraplas LLC.
 - f) Limited Warranty means this written Limited Warranty.
7. State Law - Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to certain parties. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to certain parties. This limited warranty gives specific legal rights and other rights, which vary from state to state, may also apply.
8. Governing Law - This Limited Warranty will be governed by the laws of the State of Minnesota, without giving effect to any choice of law rule that would cause the application of the laws of any other jurisdiction.

OVERVIEW

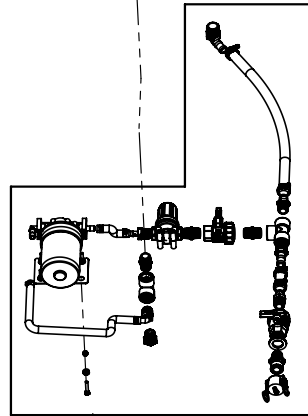
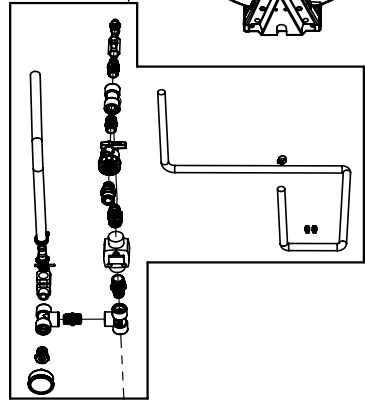


Detail View B

Deicing Hose Reel Detail

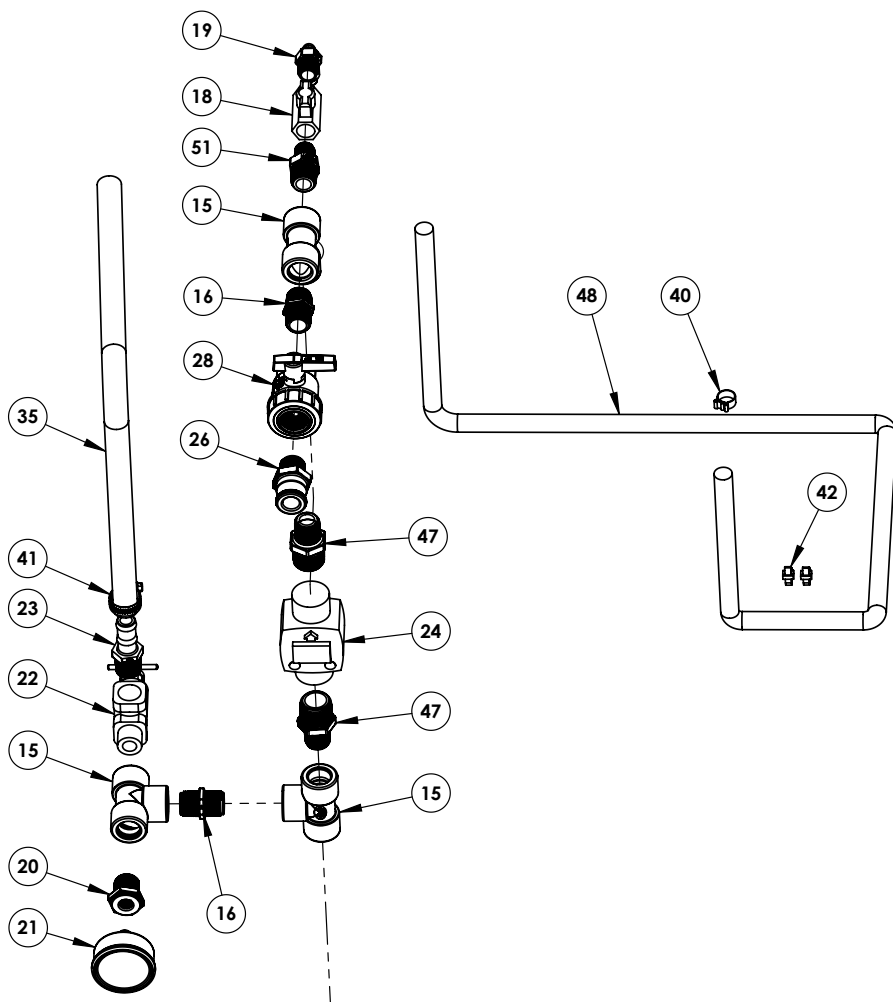


Detail View A

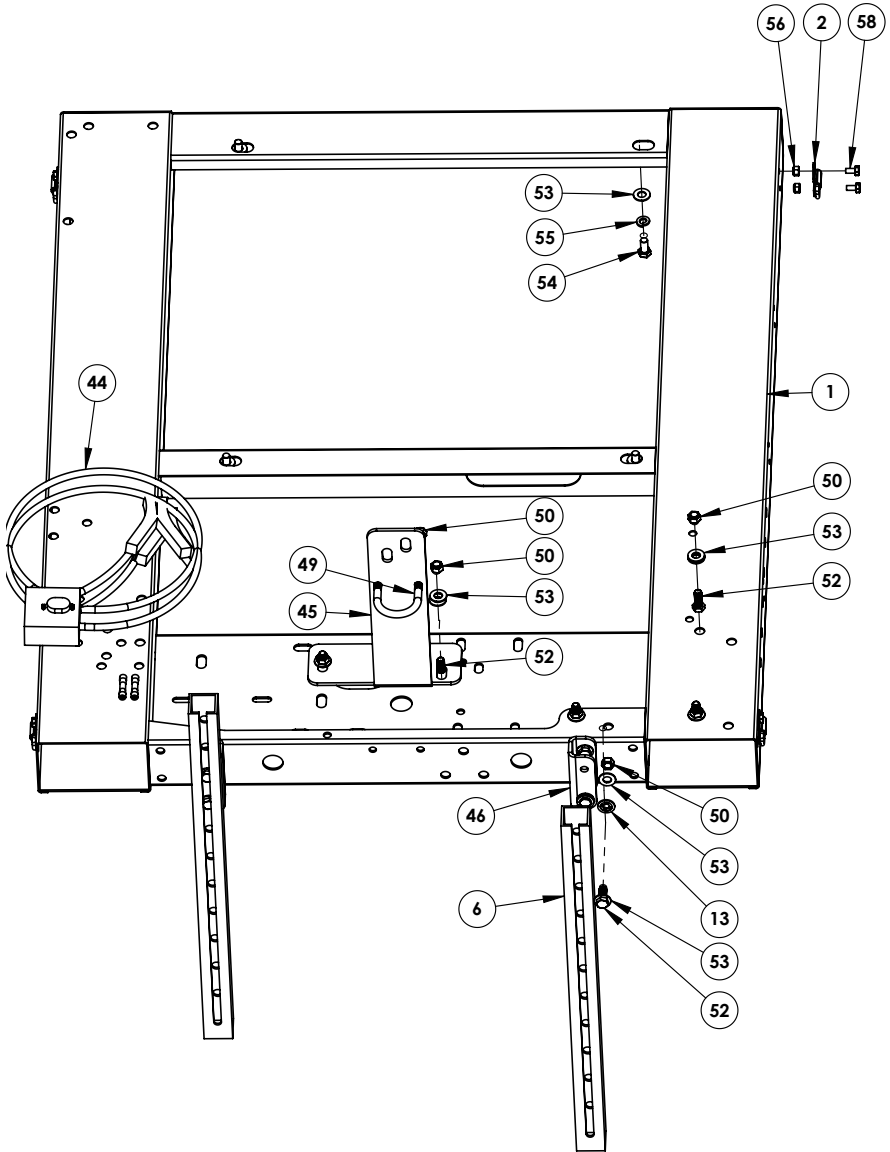


Detail View C

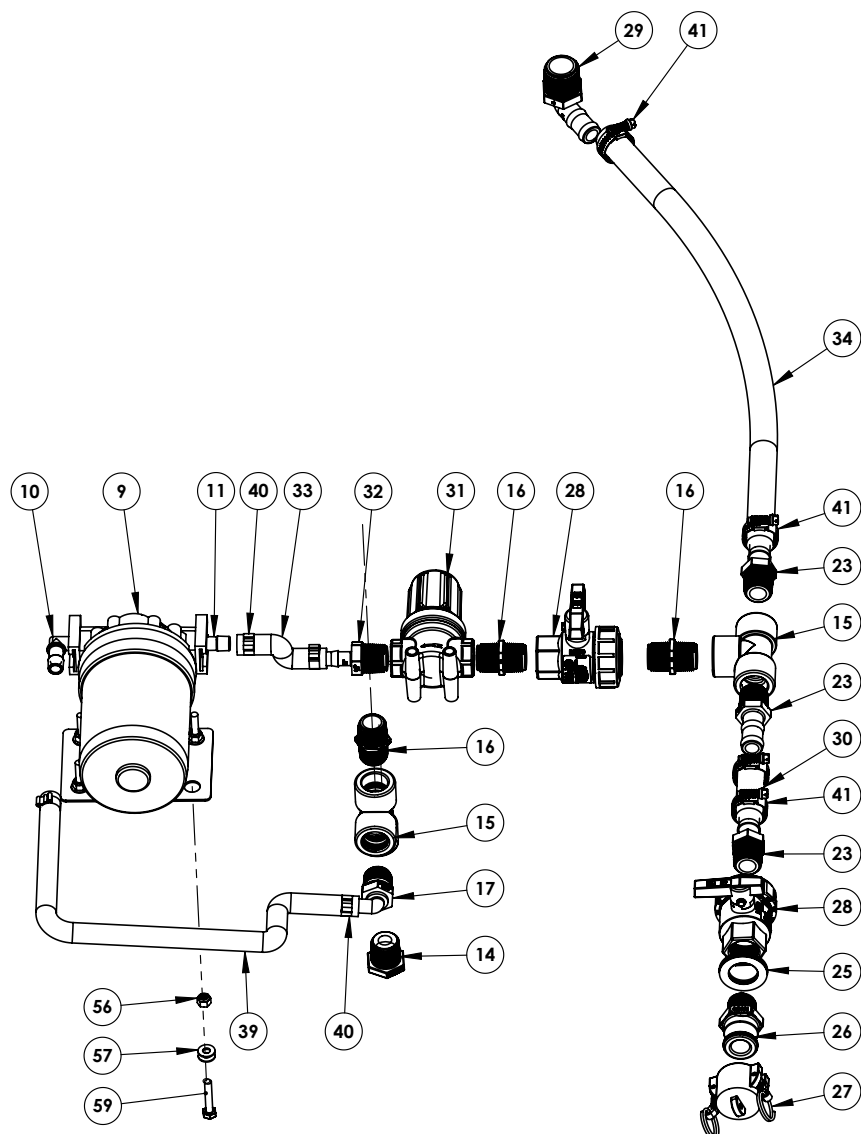
DETAIL VIEW A



DETAIL VIEW B



DETAIL VIEW C



PARTS LIST

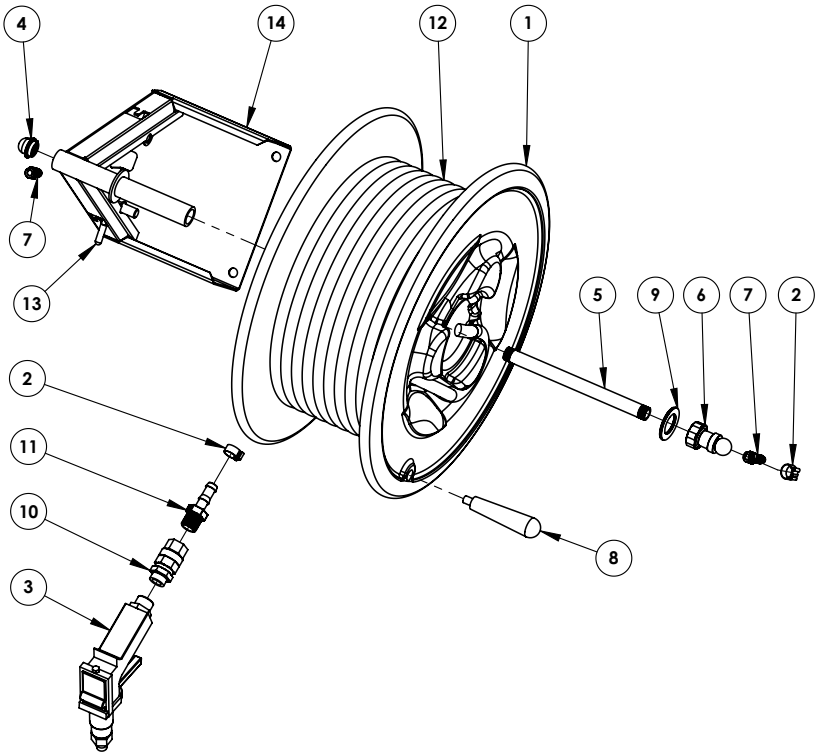
ITEM NO.	PART #	Description	Default/QTY.
1	AZFB060BSS	Base Only for 60 100 Gal SS	1
2	AZFB060DSS	D Ring Stainless Steel	4
3	AMTHSFB100OE	100 Gallon FB tank	1
4	AVB195	Baffle Ball For 8"lid tanks	48
5	CA3511221	8 inch lid	1
6	AZKB0005SS	23.75" Stainless Steel Adj. Boom Bracket	2
7	CPFG10	5/8 Top hat grommet	2
8	CPFG15	3/4 Press fit hose grommet	1
9	APD07G060PQB	7GPM 60PSI, Bypass, .5 quick attach	1
10	CPPDD006	5900 Series 1/2" Elbow 90	1
11	CPPDD003	5900 Series 1/2" Straight	1
13	CHWNR03	Self retaining washer for 3/8 and M9	4
14	CBPLUG075	3/4 Poly Pipe Plug	1
15	CBTEE075	3/4 Poly Pipe Tee	5
16	CFPN04M04M	3/4 Short Nipple	5
17	CFPE04M02B	3/4" MPT x 1/2" Hose Barb 90	1
18	CVS34DX1	.5 FIP x .5 FIP T-Handle Ball Valve	1
19	CBHB05090	1/2 Male Thread x 1/2 Hose Shank 90	1
20	CV3RB3414	3/4" x 1/4" Reducer Bushing	1
21	CV2241GXB100	Pressure gauge 100psi Glycerin filled	1
22	CVRV20660158	.75 Pressure Relief Valve	1
23	CFPS04M04B	3/4 Male thread to 3/4 hose shank	4
24	ARFD01	Digital Flow Meter	1
25	CHWZF105	1 SAE Flat Washer	2
26	CB075F	Male adaptor x .75 MPT	2
27	CB075CAP	1/2 and 3/4 Camlock cap	1
28	CVPBV234	3/4 FPT Union Valve	3
29	CFPE05M04B	1 MPT x .75 Hose Barb 90	1
30	CLUESB020004	3/4 hose from tee to drain	1
31	CBLSTM07550	3/4 T-Strainer with Mesh Screen	1
32	CFPS04M02B	3/4 MPT X 1/2 Hose Barb	1
33	CLUESB020002	1/2" hose from inline strainer to pump	1
34	CLUESB020004	.75 hose from Tank to Tee	1
35	CLUESB020004	.75 Hose Return to Tank	1
36	CV3EL12HB	1/2 X 1/2 90 Degree hose barb	2
37	CLUVGC02502	1/2" Site Glass Hose FG 100	1
38	CPSB01	10MM Site Glass Ball Level Indicator	1
39	CLUESB020002	.5 Hose Discharge Side Pump to outlet	1
40	CFCC003	Clamp for 1/2" Hose	8
41	CFCW001	Clamp for 3/4 hose	5
42	CXSC0002	Cable Tie 8"	2
43	CTEW029	Butt Connector Crimp	2
44	CEWCIM01	12 GA Ice Master Wire Harness	1
45	AZKF0018	Valve Holder for IM U-Series	1
46	AZFB060JSS	Stainless Field Boss Boom Mount Spacer	2

PARTS LIST

ITEM NO.	PART #	Description	Default/QTY.
47	CBRN100-075	1 x 3/4 Poly Reducer Nipple	2
48	CLUESB020002	.5 Hose from shutoff to Hose Reel	1
49	CHUS031234002	1.75 SS U-Bolt	1
50	CHNZN0325	3/8 Stainless Nylock nut	15
51	CBRN075050	Reducer Nipple .75-.5	1
52	CHBS030523	3-8 x 1 SS Hex Bolt	13
53	CHWSF033	3/8 SS flat washer	30
54	CHBS030423	3/8 x 3/4 Stainless bolt	4
55	CHWSL033	.375 Stainless Steel Lock Washer	4
56	CHNSN0123	1/4" Stainless Lock Nut	12
57	CHWSF013	.25 SS Flat Washer	8
58	CHBS010223	1/4 X 1/2 Stainless Bolt	8
59	CHBS010723	1/4 X 1-1/2 SS Bolt	4

DETAIL VIEW HOSE REEL

ITEM NO.	PART #	DESCRIPTION	QTY.
1	AMAH01GY	HR030/050 REEL ONLY	1
2	CFCC003	Clamp for 1/2" Hose	2
3	CPLF01	Heavy Duty Spray Gun STAL16-viton seals	1
4	CFRB06	1/4-3/8 BSP FEMALE ELBOW	1
5	CFRB07	STAINLESS PIPE 3/8 THREAD BOTH ENDS	1
6	CFRB08	3/8 X 1/4 BALL BEARING SWIVEL	1
7	CFRB09	1/4 MALE THREAD X 1/2 HOSE BARB	2
8	CFRH03C	PHENOIC TAPERED HANDLE	1
9	CHWZF105	1 SAE Flat Washer	1
10	CFBW04M04FB	.5 M BSP - .5 F NPT Heavy Duty Swivel	1
11	CFPS02M02B	1-2 MPT x 1-2 Hose Barb	1
12	CLUESB020002	1/2 EPDM HOSE	1
13	AZKH0018	Lock for Small Hose Reel	1
14	AZKH0003SS	3ASR03B HR FRAME 304 SS	1





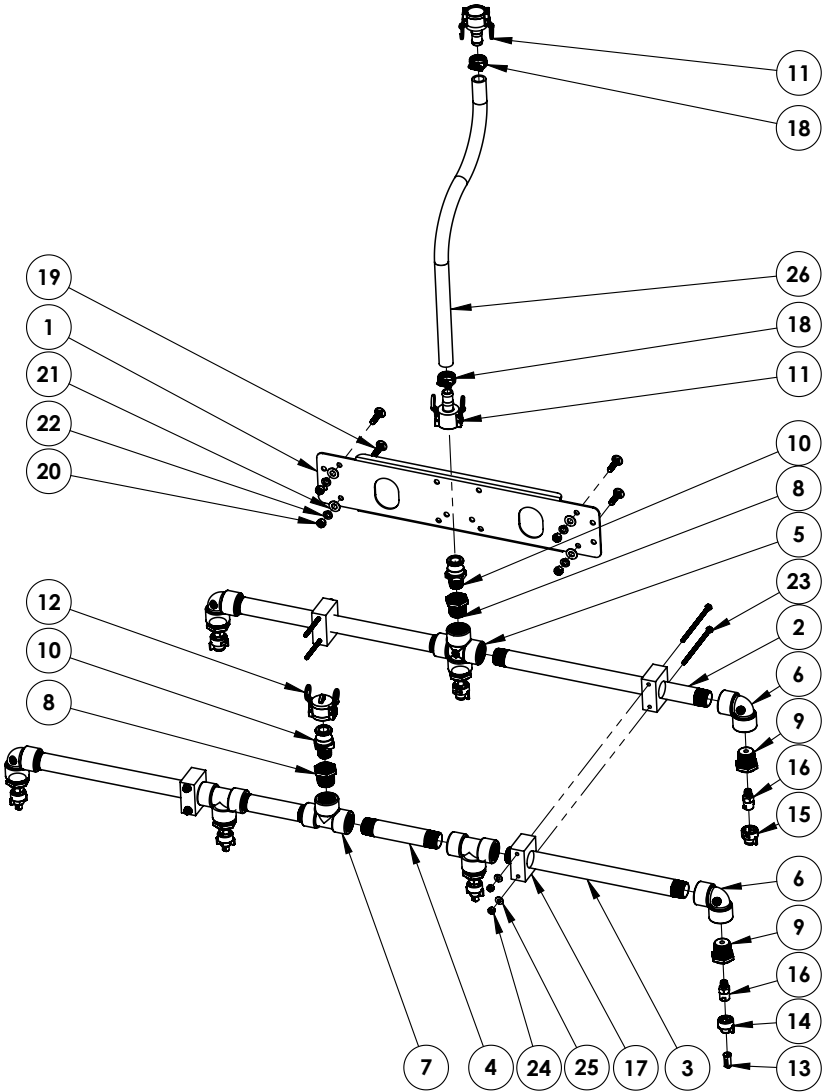
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OVERVIEW



PARTS LIST

ITEM NO.	Part #	DESCRIPTION	QTY.
1	AZFPM005	IMS4-6 Stainless boom bracket	1
2	AZFPM020	1" x 17-3/4" Poly Pipe For Deicing Boom	2
3	AZFPM022	1" x 14-13/16" Poly Pipe For Deicing Boom	2
4	AZFPM021	1" x 6-1/4" Poly Pipe For Deicing Boom	2
5	CBCR100	1" Poly Pipe Cross	1
6	CBEL10090	1" Poly Pipe Elbow 90	4
7	CBTEE100	1" Pipe Tee	3
8	CV3RB10034	Reducer Bushing 1" MPT X 3/4" FPT	2
9	CBRB100025	1" MPT x 1/4" FPT Reducer Bushing	7
10	CB075F	3/4" Male Adaptor x 3/4" MPT	2
11	CB075C	3/4" Female Coupling X 3/4" Hose Shank	2
12	CB075CAP	1/2 and 3/4 Camlock cap	1
13	CNST002	3 Stream White Nozzle	4
14	CNST004	25598 REP. CAP CE White & Washer	4
15	CNST009	Teejet Tip/CAP XR 1-1/2 GPM	3
16	CNST017	TeeJet 1/4" NPT x BSPT Female Connection Adapter	7
17	AZFPM015	1" Pipe Clamp	4
18	CFCW001	Clamp For 3/4" Hose	2
19	CHBS030723C	3/8" x 1-1/2" SS Carriage Bolt	4
20	CHNSH0323	3/8" SS Hex Nut	4
21	CHWSF033	3/8" SS Flat Washer	4
22	CHWSL033	3/8" SS Lock Washer	4
23	CHBS012123	1/4" x 5" Long 18-8 Stainless Hex Head Bolt	4
24	CHNSN0123	1/4" Stainless Lock Nut	4
25	CHWSF013	1/4" SS Flat Washer	4
26	CLUESB020004	3/4" Hose (Center Boom Hose)	1

ACTIVATE YOUR 10-YEAR WARRANTY

How to Activate

To double your 5-year tank warranty,
visit www.camionsystems.com/warranty/
and register this product.



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