The following Value Added Accesory Products will allow the Operator to easily make high quality Salt Brine quickly, store it safely, recirculate it as necessary, load out to waiting trucks quickly (while still making salt brine simultaneously) and spray salt brine effectively on the roadways.

And we provide technical support for each product and instructions on how to install them as an integrated equipment package

VALUE ADDED ACCESSORY ITEM: DU1A045

Anti-Ice, De-Ice & Dust Control Spray Systems

Omaha, Nebraska (800) 228-9666 • Davenport, Iowa (800) 553-6975

1065 & 1800 Gallon Self-Loading Anti-Ice/De-Ice Spray Systems:

SYSTEM FEATURES:

- Two 900 gallon "twin" tanks on 1,800 gallon system (with double suction) fits tandem axle trucks.
- 1,065 gallon tank system fits single axle trucks.
- Heavy-duty self-loading steel leg frame (Front legs rotate up as truck backs up to load unit; front wheels provide smooth roll-in).
- Individual telescoping rear legs for "bind-free" lifting.
- Adjustable height **stainless steel** boom with high-flow solid stream nozzles (spray 1, 2 or 3 lanes at once). Flooding nozzles also included for center lane.
- High flow hydraulic-drive pump; engine-drive pumps also available.
- ***Raven* DCS 400 Automatic Control System** or ***Microtrak Roadmaster*** - complete with flow meter & control valve. Pre-programmable controller with multiple application rates.
- Precise application rate in Gals/Lane-Mile; automatically maintains preset rate regardless of speed changes or the number of lanes being sprayed.
- Plumbed with polypropylene **flanged** fittings, drain/fill valve, strainer and check valves for quick & easy maintenance.
- Also great for dust control, watering subgrades & other uses.

DU 1A054: 1,065 Gallon
DU 1A045: 1,800 Gallon

Call for System Pricing

Heavy-Duty Stainless Boom System

PLANNING A LIQUID DE-ICING OPERATION?

Complete systems ready to go - or all the components to build your own!

- **Brine Production Systems**
- **Anti-Ice/De-Ice Spray Systems**
- **Storage Tanks**
- **Transfer & Sprayer Pumps**
- **Plumbing, Valves, Controls & Thousands of components!**

Everything you need to set up your complete operation!

Valve Added System
DU 1A045 Specs

Specifications for Complete 1,800 Gal. Anti-ice/De-ice Spraying System with Raven DCS400 Control System for 3-Lane Spraying (Fits Standard 10 Ton Tandem Axle Dump Trucks)-DU 1A045:

A. Tank System:

1. Tank system shall consist of twin (two) 900 Gal. tanks, each tank having its own sump. The tanks shall fit together with a "tongue & groove" interface on the skid frame (The individual twin tanks provide a baffling effect).

2. Each tank shall be a natural translucent color so that the liquid level can be seen inside the tank. Each tank shall be cylindrical-shaped with integral legs; tank dimensions shall be approx. 62" dia. x 74.5" long each (149" length for both tanks combined).

3. Each tank shall be molded of high density polyethylene resin with UV protection and be capable of holding material with a specific gravity of 1.9. Tanks shall carry a 3-year warranty.

4. Each tank shall have a 16" dia. top manway opening with screw type vented lid.

5. Each tank shall have molded-in gallonage markers.

6. Tanks shall be securely mounted to the skid frame with four 1 1/2" dia. steel hoops and two 1 1/2" wide lateral steel straps. J-bolts shall secure the bottom of the steel hoops to the skid frame.

B. Self-Loading Skid Frame System:

1. System shall be "self-loading" style with rotating steel front legs, steel wheels at front of frame, individual "telescoping" steel rear legs, and steel "frame guides".

2. Frame shall be constructed of 6 x 8.2 lb. steel side channels running full-length on each side with similar cross members running under each tank molded leg across the frame. Proper tank "stops" shall also be included.

3. Front legs shall rotate on 1 1/4" dia. high strength bolts and shall be constructed of 3" sq. steel tube with steel capped bottoms.

4. Rear legs shall telescope up individually (to allow one person to easily lift up each rear leg without binding). Upper rear leg sleeves shall be constructed of 4" x 1/4" sq. steel tube and upper rear legs of 3 1/2" x 3/16" sq. steel tube. Lower rear legs of 3" x 31/6" sq. steel tube with 6" x 6" x 1/4" thick steel base plates at bottom of each rear leg shall be included.

5. Front end of frame shall include two 4" steel caster wheels with grease fittings.

6. Four steel frame "guides" shall be included to guide unit into dump body when backing up. Two steel tailgate latch pins shall also be included.

7. Entire frame system shall be painted with a powder coat paint finish (black).

C. Automatic Programmable Control System:

1. System will include an Automatic Programmable Control System which is ground-speed orientated to provide automatic rate control of the spraying system at any speed. This control system will also include the following additional features:

2. Controller (Raven DCS400) can be pre-programmed for up to 6 different application rates (flowrates input in gallons per lane-mile) and will keep the spray system on the pre-set target rate regardless of speed changes. Rate adjustment dial allows for "on the fly" changes between pre-programmed rates. Optional Controller is Raven DCS410; can be pre-programmed for up to 10 different application rates including other enhanced features.

3. Controller will also keep system on target rate (gallons per lane-mile) regardless of the number of lanes being sprayed (1, 2 or 3 lanes at once) and will allow for "on the fly" changes to the number of lanes being sprayed.

4. Manual override button allows operator to increase or decrease the pre-programmed rates at any time. Controller also includes programmable "blast" feature to momentarily increase flowrate for bridge decks, etc. Boom control switch allows for instantaneous switching between 1, 2 or 3 lane spraying.

5. Rate (gallons per lane-mile) is displayed in left display screen at all times. Right display screen can display: total area, total volume, day area, day volume, distance, speed, volume per minute (GPM), area per hour, volume remaining in tank, and time.

6. Control system also includes 2" flowmeter (Raven RFM-100), and automatic adjusting hydraulic control valve, GPS speed sensor, and all necessary control and console cables with weatherpack connectors.

7. System shall be capable of spraying up to 3 lanes at 40 Gals Per Lane-Mile (on each lane) at up to 50 MPH.

D. Plumbing & Boom Systems:

1. All plumbing components used shall consist of corrosion-resistant materials including reinforced polypropylene and stainless steel. Hoses shall be EPDM suction/discharge hose with thermal plastic helix and internal braiding and 100% EPDM tube.

2. Maximum use of polypropylene "flanged" fittings shall be utilized to allow for quick and easy maintenance of the plumbing system.

3. A 2" Drain-Fill valve shall be located at the rear of the unit for easy access and shall include a 2" male adaptor and cap for quick hose hook-up.

4. Pump shall be a 2" x 1 1/2" cast iron centrifugal pump with integral hydraulic-drive motor. Pump shall provide a maximum flowrate of 200 GPM or more and will also provide 175 GPM at 40 PSI (at 10 GPM hydraulic oil flowrate at 1,800 PSI). (Hypro 9304 Series with nylon impeller and severe-duty mechanical seal with silicon-carbide faces or Ace FMC-200-HYD-304).

5. 12 Volt Valve Assembly shall of the "stackable" style and include three 1" Full Port Valves constructed of polypropylene with stainless balls, stems & hardware. Valve Assembly inlet shall be 1 1/2" minimum. Each valve shall include a high torque motor with auto reset circuit breaker and DPDT relay inside a waterproof polypropylene NEMA 4X or 6P rated housing with valve position indicator. Valve assembly shall be rated to 150 PSI working pressure. Valve Assembly mounting bracket shall be provided.

6. Boom system shall include 1 1/4" stainless steel boom securely mounted to the rear of the spray system with two stainless steel "cusha" clamps. Boom shall be adjustable from 1'2" to 2'6" above the pavement. The center-lane section of the boom shall include a 3-way manual valve to allow the operator to direct liquid flow to either two stainless steel flooding nozzles (Spraying Systems SS QCKSS150 or similar) for anti-icing, or to 19 stainless steel solid stream nozzles for de-icing. Left and right lane nozzles shall include 6 solid stream nozzles inserted into "swivel ball" assemblies for effective coverage of left & right lanes. Each boom lane section (left, right, center) will be supplied through an adjustable check valve (5-15psi) to avoid liquid in the hose from "dribbling out" when application is not desired. All nozzles will be " reasonably balanced" to ensure the anti-icing/de-icing liquid is distributed approximately equally to all lanes being sprayed (Other nozzle combinations are also available).

Valve Added Brine Storage Tank (Large)

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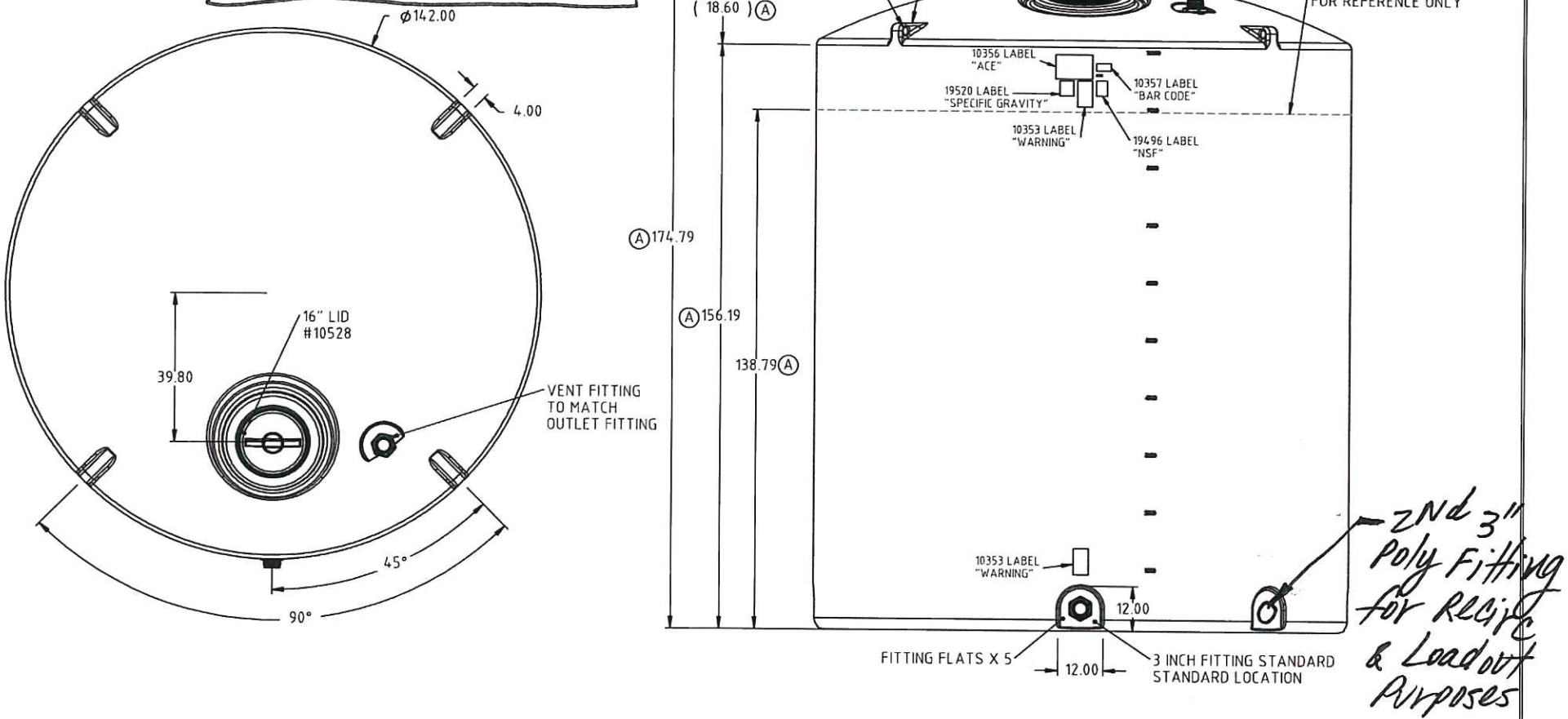
VT10500-142

A

Ace Roto-Mold
10,500 Gallon Vertical Poly Tank

RTVT10500-23



REV	DESCRIPTION	BY / DATE	CCN
A	HEIGHT ADJUSTED. 174.79" WAS 179.00", 138.79" WAS 143.00".	DHJ 8/28/19	3837

ALL DIMENSIONS ARE IN DECIMAL INCHES
TOLERANCES UNLESS OTHERWISE SPECIFIED

POLYETHYLENE	METAL
±1% @ 68° F	DECIMAL ± .125" FRACTION ± 1/4" ANGLE ± 1°

THIRD ANGLE PROJECTION
ANSI Y14.5M

DRAWN / DATE: ADH 7/10/13

APPRD. / DATE: REH 8/7/13

SHOT WEIGHT: 2800.00 LBS S.G. 1.75
2500.00 LBS S.G. 1.60

SHIPPING WEIGHT: 2802.00 LBS S.G. 1.75
2502.00 LBS S.G. 1.60

FINISH:

MATERIAL: 10538 2 MELT

NOTES:
1.) WHITE, BLACK, OR YELLOW COLOR

Den Hartog
INDUSTRIES, INC.
Ace Roto-Mold Injection Molding Blow Molding Sowjay
4010 HOSPERS DRIVE S. BOX 425, HOSPERS, IOWA 51238-0425

DESCRIPTION: 10500 GALLON VERTICAL TANK

SCALE: N.S.

PART NO.: VT10500-142

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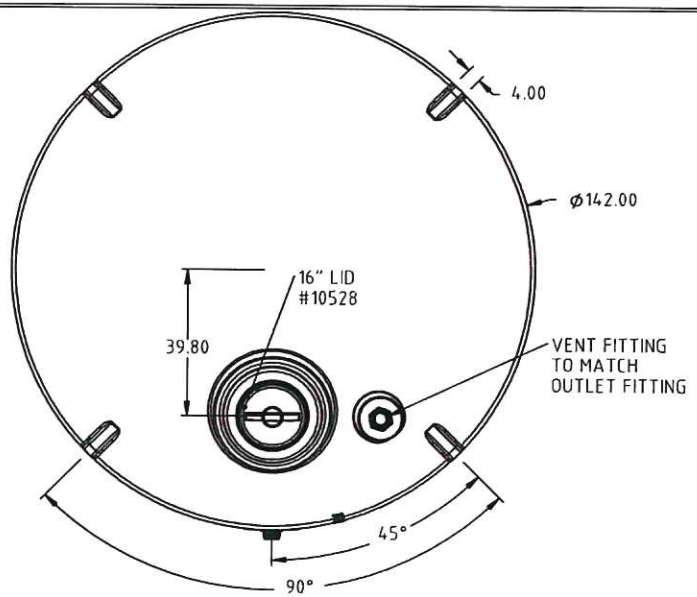
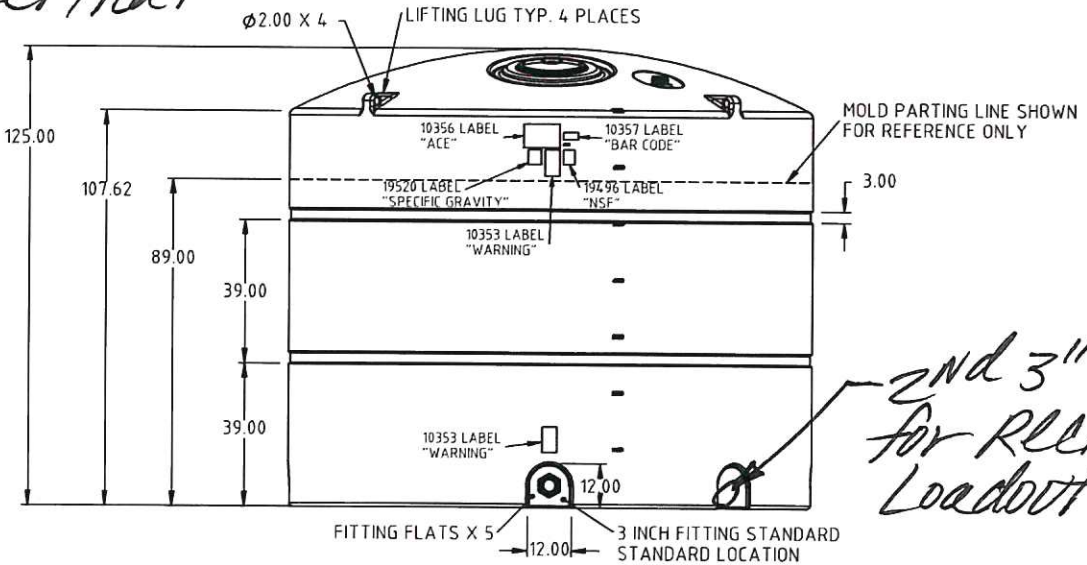
VT7000-142

Valve Added
Brine Storage Tank
(medium size)
RTVT7000-23
7,000 Gallon Vertical
Poly Tank





2nd 3" Poly Fitting for Recirc & Loadout Purposes

REV	DESCRIPTION	BY / DATE	CCN

ALL DIMENSIONS ARE IN DECIMAL INCHES
TOLERANCES UNLESS OTHERWISE SPECIFIED

POLYETHYLENE	METAL
±1% @ 68° F	DECIMAL ± .125" FRACTION ± 1/4" ANGLE ± 1°

THIRD ANGLE PROJECTION
ANSI 14.5M

DRAWN / DATE: ADH 7/10/13

APPRD. / DATE: REH 8/7/13

SHOT WEIGHT: 1750.00 LBS

SHIPPING WEIGHT: 1752.00 LBS

FINISH:

MATERIAL: 10538 2 MELT

NOTES:
1.) WHITE, BLACK, OR YELLOW COLOR
2.) 0.77 WALL @ FLAT

Den Hartog
INDUSTRIES, INC.
Ace Roto-Mold Injection Molding Blow Molding Sowjay
4010 HOSPERS DRIVE S. BOX 425, HOSPERS, IOWA 51238-0425

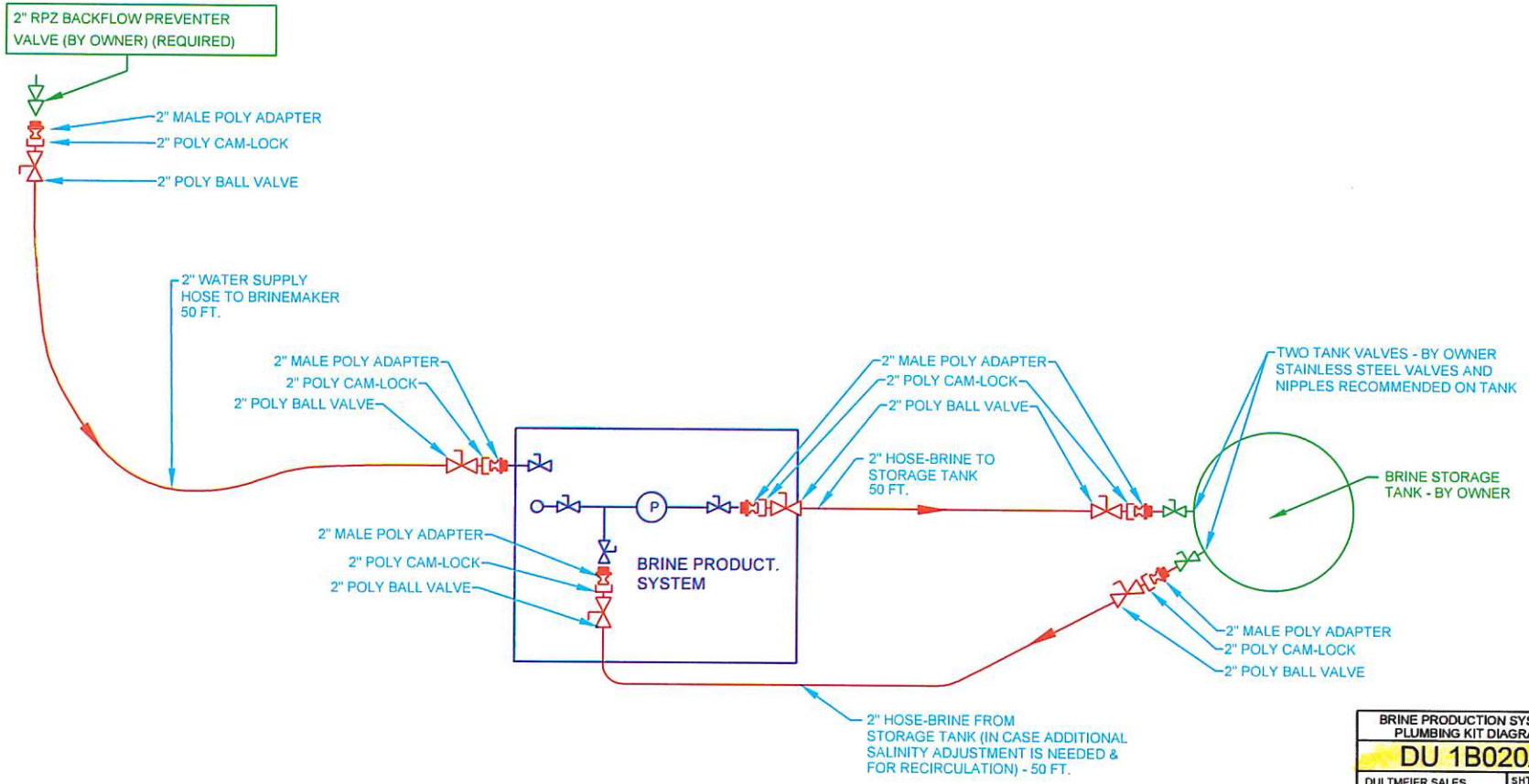
DESCRIPTION: 7000 GALLON VERTICAL TANK WITH DOME TOP

SCALE: N.S.

PART NO.: VT7000-142

Valve Added Accessory
DU 1B020A Plumbing Kit

DU BPS3000-SS
PLUMBING KIT DIAGRAM
NO SCALE



BRINE PRODUCTION SYSTEM PLUMBING KIT DIAGRAM	
DU 1B020A	
DULTMEIER SALES OMAHA & DAVENPORT	SHT. 1 OF 1
	6-1-15

VALUE ADDED ACCESSORY ITEM

DU 1A056 PLUMBING KIT

NOTE: ITEMS SHOWN & NOTED HERE ARE INCLUDED IN PLUMBING KIT # DU 1A056. VARIATIONS TO ALL PLUMBING KITS ARE AVAILABLE-PLEASE INQUIRE.

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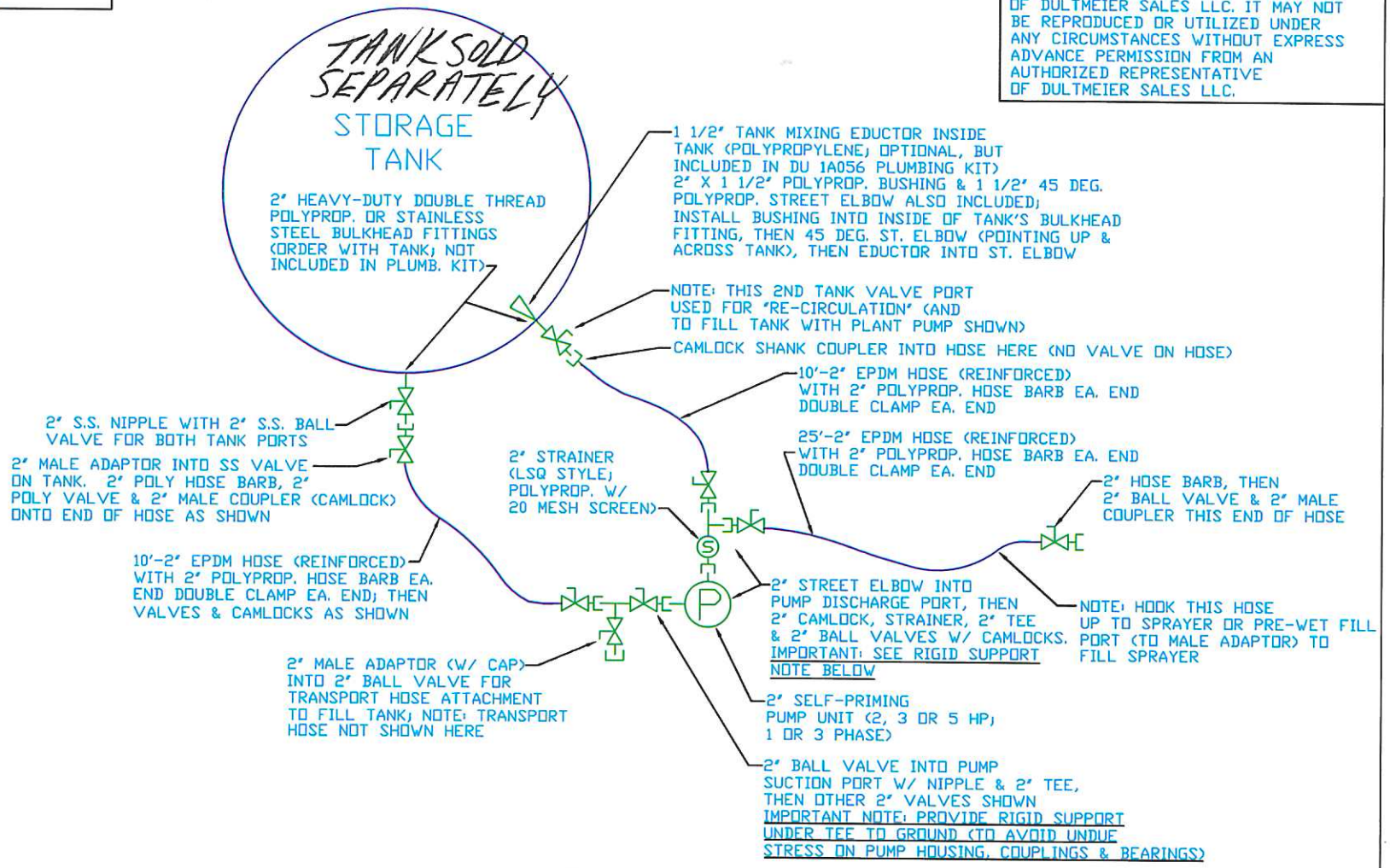


DEICING LIQUID STORAGE TANK & PUMP PLUMBING

NOT TO SCALE

DEICING LIQ. STORAGE TANK & PUMP PLUMBING	
DULTMEIER SALES OMAHA & DAVENPORT	SHT. 1 OF 1
	12-12-03

Value Added

Liquid Deice & Brine Transfer Pumps

Polyester Transfer Pumps (Motor Drive)

Deice transfer units, with ***PACER*** glass-filled polyester centrifugal pumps, have a *Lovejoy* shaft coupling with safety shield between the motor and pump shaft. EPDM mechanical seals. Units with TEFC, 3450-RPM, one or three phase motors in 2, 3, 5 and 7-1/2 HP are available. *All models here rated for deicing liquids.*

2 to 7-1/2-HP Self-Priming

HEAD (in feet)			10	20	30	40	50	60
PRESSURE (PSI)			4.3	8.7	13.0	17.3	21.7	26.0
SIZE	HP							
2"	2	GPM	120	100	80	60	50	25
2"	3	GPM	175	160	155	140	125	100
2"	5	GPM	175	165	150	135	125	100
*2"	5	GPM	240	230	215	190	155	115
3"	7-1/2	GPM	275	275	250	220	180	150

* *High flow units.*

NOTE: 3" Units not available with the carrying handle.

DULTMEIER SALES

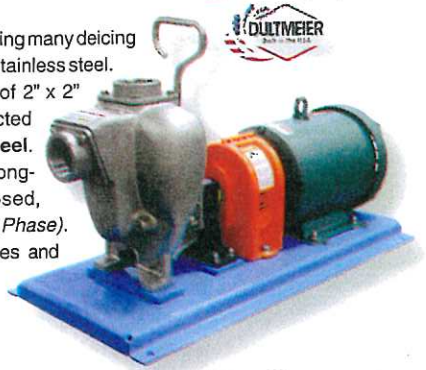
Part No.	Ports	HP	Phase	Max. Specific Gravity	Volts	Wt. Lbs.
DU PR2010	2"	2	1	1.2	115/230	85
DU PR2030	2"	2	3	1.2	230/460	80
DU PR3010-E	2"	3	1	1.7	115/230	120
DU PR5010	2"	5	1	1.4	230	130
DU PR5030	2"	5	3	1.4	208/230/460	110
DU PR5010A	*2"	5	1	1.4	230	180
DU PR5030A	*2"	5	3	1.4	208/230-460	110
DU PR5030B	#2"	5	3	1.4	208/230-406	110
DU PR7510	3"	7-1/2	1	1.4	230	165
DU PR7530	3"	7-1/2	3	1.4	208/230/460	140

* *High flow series with Buna seal.* # *High Flow Series with Viton® Seal. Both with 975.30 Impeller.*

316SS Stainless Self-Priming Pump Units

DULTMEIER

An excellent choice for pumping many deicing liquids compatible with 316 stainless steel. These pump units consist of 2" x 2" self-priming pumps constructed of 316 **cast stainless steel**. Viton® seals. Pumps are long-coupled to Totally Enclosed, Fan Cooled motors *(1 or 3 Phase)*. Heavy duty steel base plates and OSHA approved coupling guards with powder coat paint finish.



316 SS Pump Units

Part No.	HP	Phase	Ports	Max. S.G.	Wt. Lbs.
DU TK3530-SSV	5	3	2" x 2" FPT	1.4	145
DU TK3510-SSV	5	1	2" x 2" FPT	1.4	145

Valve Added Stainless Salt Screener

DULTMEIER SALES™

THE ALL STAINLESS SALT SCREENER | DU SSA

SIGNIFICANTLY INCREASES BRINE PRODUCTION RATE

Easily Screens Out Most Fine Particles
so you can use more coarse salt to produce brine.

Cleaner Brine
produces cleaner brine, less fine particles going into brine storage tanks

Clean Out Much Less Often
Much longer times between clean out of brine production system.

All 304 SS Construction
Large: 9′ 8″ across; 8′ up the grated incline. Incline angle is adjustable

Forklift Pockets
For easy movement by forklift.

AN EXCELLENT COMPLIMENT TO YOUR

BPS3000-SS BRINE PRODUCTION SYSTEM