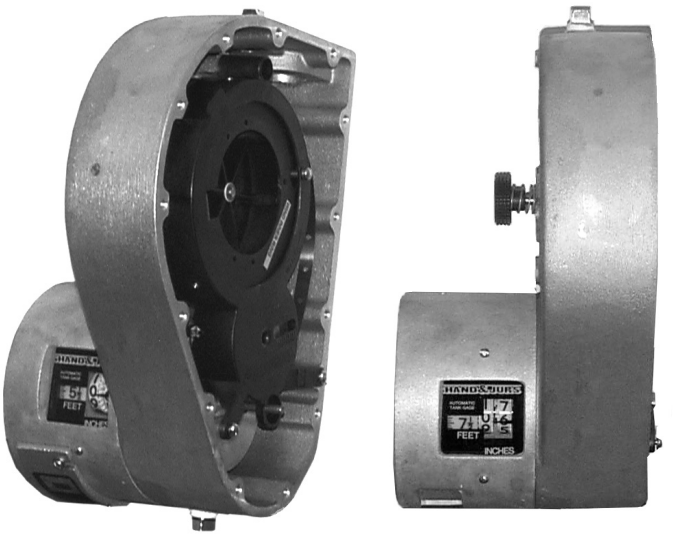
92500 Retrofit Automatic Tank Gauge

The Shand & Jurs 92500 Retrofit Gauge is specifically designed to replace existing Varec Model 2500 Gauges and GSI 2500 Model in existing installations. The S&J 92500 allows for improvement in accuracy while minimizing field labor to replace existing gauges.

S&J's design allows for a simple retrofit onto existing gauge piping in ground reading installations. Absolutely no piping modifications are necessary, allowing for easy replacement of Varec or GSI Gauges. Future field service and maintenance is reduced due to the 92500's improved design over existing gauges.

The S&J 92500 meets or exceeds the Varec or GSI stated accuracy for the existing installation. Since the 92500 is equipped with the Accutrak 90 Modular Cartridge, gauging accuracy and ease of maintenance with respect to existing systems improves.

Choice of materials, rugged construction and counter housing sealed from gauge head permits application of the gauging system to a wide variety of environmental conditions. An operational checker for manually jogging the tape to insure a "free movement" system is standard on gauge head as well as provisions for optional high and low level limit switches. A hand crank for manually raising and lowering the float is also optional. Complete accessory kits are available for all standard and most special tank configurations and cover a broad selection of materials.



Features

- Replaces existing Varec 2500 Gauge
- Replaces existing GSI 2500 Gauge
- Mounts to existing gauge piping
- Absolutely no field modifications necessary
- Meets and exceeds original manufacturer's accuracy
- Reduces maintenance
- Easy Service
- Includes Acutrak 90™ Cartridge

Specifications:

Type of Service
Normal (Aluminum)
Ammonia (Aluminum)
Severe (Iron)

Maximum Pressure
15 PSIG, Normal or Ammonia Service
50 PSIG, Severe Service

Temperature Range
-30° to 180° F*

Gauging Range
to 90 feet (Standard)**
to 27.4 meters (Standard)**

* For service below -30°F consult factory.
** For higher ranges consult factory.

Materials of Construction:

Body and Cover
Cast Aluminum (Normal & Ammonia Service)
Nodular Iron (Severe Service)

Counter Housing
Cast Aluminum

Constant Power Spring
Stainless Steel

Perforated Tape
316 Stainless Steel

Sprocket Wheel
Cast Aluminum

Tape Reel
Ryton®

Bearing & Seals
Ball Bearings and Teflon

Hardware
Steel

Storage Hub
Ryton®

* For service below -30°F consult factory.
** For higher ranges consult factory.

Advantages & Benefits:

Accuracy
Large digital readout driven by accurately perforated tape meets API standards of accuracy.

Reliability
Long contact arc of tape on sprocket and non-jamming instruction of rotating parts assure reliability. Constant tension on float results in accurate reading; also, ventilated counter housing is non-fogging

Versatile
Low copper aluminum body, carefully selected materials for internals, optional features and accessories make this system adaptable to most products and storage vessels.

Economical
Limited number of mounting brackets minimize installation cost. Complete gauging system "kits" for each installation further reduce cost.

Easier Service
Negator spring and housing easily replaced.

Safe
Totally enclosed negator motor protects maintenance personnel during service.

92500
Retrofit Automatic Tank Gauge

SHAND & JURS

Specifications:

Type of Kit Class:
Class (A) Normal Service
Class (B) Ammonia Service
Class (C) Severe Service

Maximum Pressure:
15 PSIG* (With Standard 316 Stainless Steel Float)
50 PSIG* (With Reinforced 304 Stainless Steel Float)

Support Bracket:
Steel

Anchor Bar:
Steel

Guide Wire Spring Assembly:
Steel

Guide Wire:
Stainless Steel

Pulley Housing:
Cast Aluminum - Class A & B; Nodular Iron- Class C

Pulley:
Delrin - Class A; Cast Aluminum - Class B Class C

Floats:

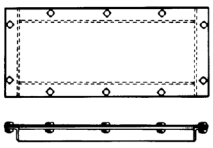
Model JB3010 - 23
Standard Stainless Steel Pan Float (14" Dia.)
15 PSIG with guides (17" Centers)

Model JB3010-23-1
Stainless Steel Pan Type Float (14" Dia.)- for Floating Roof tanks below 3 PSIG without guides

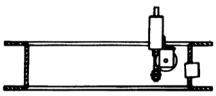
Model JB3031-23
Reinforced Stainless Steel Pan Type. Float (14" Dia.)
*50 PSIG with guides (17" Centers)

*50 PSIG service available for Kit No. 12C & 14C

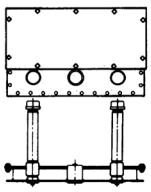
Auxiliary Gauging Accessories:



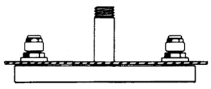
Inspection Frame & Cover Model JB3530-1
Recommended for use on in-service cone roof tank, Type I, installation through existing manhole.



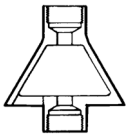
Model JB3516-2 (20" API) or JB3516-3 (24" API)
Manhole adapter & Cover for use on in-service cone roof tank, Type II, installation through existing manhole.



Model JC3517-2
Recommended for use on tank entry in-service cone roof tank, Type III, installation through tank top.



Model JB3518-3
Tank entry assembly for in-service cone roof tank, Type IV, installation through tank top.



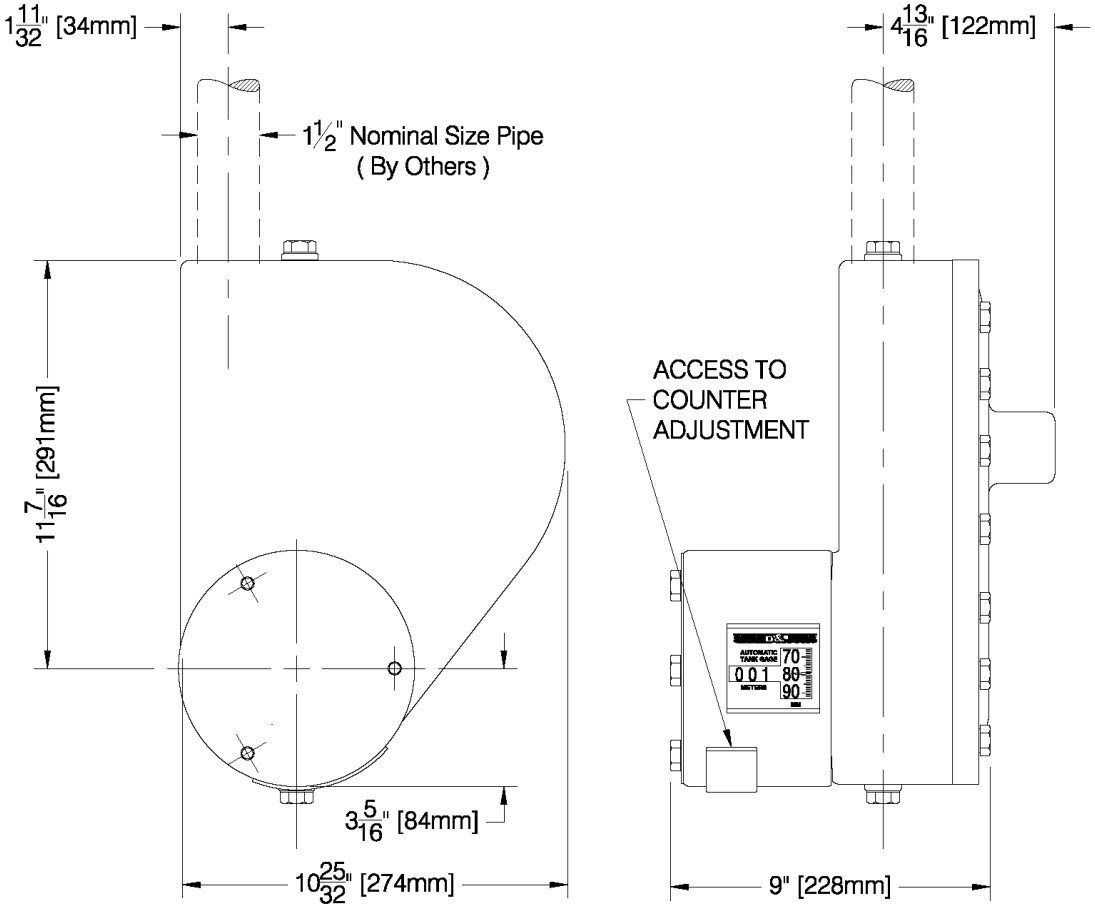
Ventilator Model JB3555-2
Recommended to prevent corrosive vapors from entering the gauge head.

Flexible Tank Entry Model 9399-19000
Provides a non-rigid tape entry if roof movement is present.

Tape/Cable Block Valve Model 93421
Isolates the gauge head from tank; recommended for inspection and servicing fo gauging system.

Limit Switch Model 99050
Contains up to 6 cam operated switches in an explosion-proof housing for Class I, Group D, Division 1. Switches can be used to indicate high and/or low level alarms, or to actuate pump, motor operated valves or other actuating equipment.

Outline Dimensions



Horizontal center line of reading window install at any height above grade to suit installation.

All designs subject to change. Certified dimensions and specifications available upon request.

92500 Ordering Guide

Model Number Selection

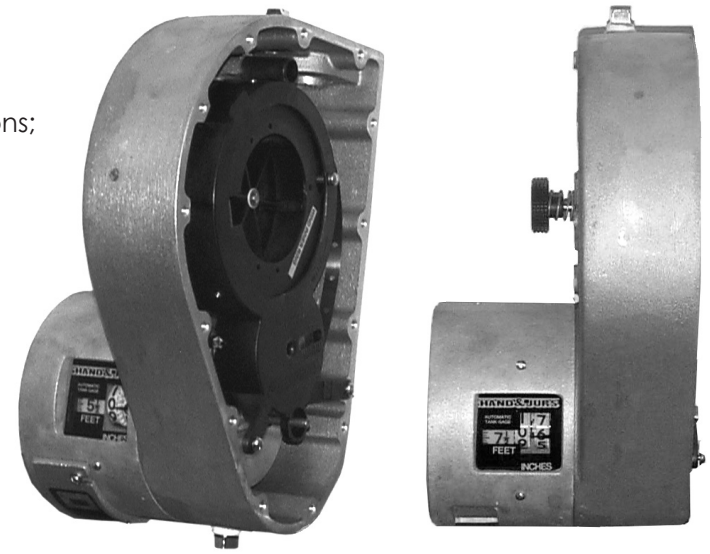
The model number will have a base number 92500 followed by 8 digit numbers. These digits will represent 5 sets of option tables.

92500 - AB - CD - EF - GH

Ordering Information

Specify:

1. Model 92500 Automatic Tank Gauge
2. Type of Service: Normal, Ammonia or Severe
3. Gauge Head Options:
   Gauge Head Only; with Limit Switch* Provisions; With Float Lifting Hand Crank; With Float Lifting Hand Crank; With Float Lifting Hand Crank and Limit Switch* Provisions.
4. Type of Calibration:
   Feet and Inches; Decimal feet or Metric
5. Type of Readout:
   A) Innage or Outage
   B) Maximum Tank Height
6. Type of Installation:
   A) Gauge Head only (Without Tape for Ground Reading)
   B) Ground Reading (fixed roof tanks)
   C) Ground Reading (floating roof tanks)
   D) Roof Reading
   E) Turbulent Tanks**
7. Type of Accessory Kit and Class
8. Auxiliary Gauging Accessories, as Required



*Limit Switch Must Be Ordered Separately.
**Use Kits 3 or 14 Only.

Materials of Construction - Gaugehead

Service	Body	Cover	Counter Housing	Tape Reel	Sprocket	Hardware
Normal	CA	CA	CA	CA	CA	RP
Ammonia	CA	CA	CA	CA	CA	RP
Severe	NI	NI	CA	CA	CA	RP

Sprocket pins, negator, tapes, shafts, and Ball Bearings are SS. Sleave Bearings are Teflon.

CA = Cast Aluminum
NI = Nodular Iron
RP = Rust Proof Steel
SS = Stainless Steel

Pipe Support Bracket = Steel angle Brackets are furnished to fasten pipe to tank every 10'

Table AB - Gauge Head Options and Service (with Operation Checker)

Option AB	Description	Service
31	Gauge Head Only	Normal*
41		Ammonia*#
51		Severe**
32	Gauge Head with Provision for Limit Switch Assembly MTD. to Side of Gauge Head***	Normal*
42		Ammonia*#
52		Severe**
33	Gauge Head with Float Lifting Hand Crank	Normal*
43		Ammonia*#
53		Severe**
34	Gauge Head with Float Lifting Hand Crank & Prov. for Limit Switch Assembly MTD. to Side of Gauge Head***	Normal*
44		Ammonia*#
54		Severe**

* Maximum Pressure: 15 psig

** Maximum Pressure: 50 psig.
Specify kits 12C or 14C when used for 3 to 50 psig service. Select tape block valves from 94321 Product Data Sheet.

*** When mounting limit switch assembly to counter housing there will be a charge applied to the gauge price. See 99050 Product Data Sheet for selection of limit switch assembly and appropriate adapter price.

Table C - Calibration Reading

Option C	Calibration	Reading
0	Feet and Inches	Innage
1		Outage
2	Decimal Feet	Innage
3		Outage
4	Metric	Innage
5		Outage

Table D - Maximum Tank Height

Option D	Maximum Tank Height
5	60 Feet or 18.2 Meters
8	90 Feet or 30 Meters
9	120 Feet*

*Does not have Acutrak Cartridge

Table EF - Type of Installation

Option EF	Description
01	Ground Reading (Fixed Roof)
02	Ground Reading (Internal Floating Roof)
03	Roof Reading
04	Turbulent Tanks*
05	Ground Reading (External Floating Roof)

*Use Kits 3 or 14 only

Table GH - Certification

Option GH	Description
00	Standard
10	CE
30	ATEX Certification

Accessory Kits:

The following accessories are grouped together in various typical combinations for use with the gage head to provide a complete gauging system. These accessory combinations are assigned kit numbers for convenient references. When the tank requirement is known, select the corresponding kit and material. From the kit shown, select the parts required and list separately on the sales order. Other accessories are available and are listed on this Key Data.

Pressure Ratings:

The standard accessory kits listed are for low pressure tanks (less than 3 psi) with the exception of kits 12C and 14C which are rated up to 50 psi.

Kit Legend (For use with kit diagrams):

1 - Tank Gauge
2 - Tank Bracket
3 - 90° Pulley
4 - Tape
5 - Stainless Steel Float
6 - Guide Wire
7 - Anchor Bar
8 - Guide Wire Spring
9 - 45° Pulley
10 - Header Assembly
11 - Guide Wire Bracket
12 - Cable Block Valve
13 - Cut-Off Pulley
14 - Guide Wire Bracket
16 - "A" Frame
17 - Pan Float
18 - Cable
19 - Inspection Frame
20 - Manhole Adaptor Assembly
21 - Tank Entry
22 - Guide Wire Hanger Assembly
23 - Ventilator
24 - Liquid Seal

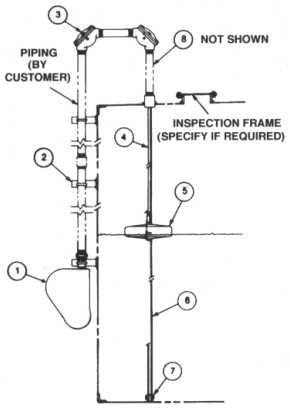
Materials of Construction

Guide Wire and Spring Assemblies							
Type	Housing	Cap	Tube	Washer	Spring	Retainer	Wire
Class A	Steel	Steel	Steel	Steel	Steel	Steel	Stainless Steel
Class B							
Class C							

Pulley Assembly					
Type	Housing	Cover	Pulley	Bearing	Shaft
Class A	Cast Aluminum	Cast Aluminum	Delrin	Teflon	Stainless Steel
Class B	Cast Aluminum	Cast Aluminum	Aluminum	Teflon	Stainless Steel
Class C	Nodular Iron	Nodular Iron	Aluminum	Teflon	Stainless Steel

NOTE: MAX. Pressure: 3psig, Except Kits 12C & 14C
Kit Class: A = Normal
B = Ammonia
C = Severe (Rated 50 psig MAX)

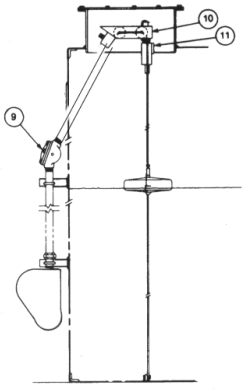
Kit Number 1 - Cone Roof Tank



Description	Number Required	Kit 1A Class "A"	Kit 1B Class "B"	Kit 1C Class "C"
Pulley, 90°, 1-1/2" NPT	2	9399-13440	9399-13450	9399-13460
Guide Wire Spring Assembly	2	JB3486-11	JB3486-11	JB3486-11
Float	1	JB3010-23	JB3010-23	JB3010-23
Anchor Bar	1	JA3540-12	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142	090142
Tape Thimble	1	514-504	514-504	514-504
Tank Bracket	*	JB3435-1A	JB3435-1A	JB3435-1A
Float to Tape Clip	1	9399-15082	9399-15082	9399-15082

* One Bracket for every 10 feet
Installation through Tank Roof.
NOTE: Float Guide Centers = 17 Inches

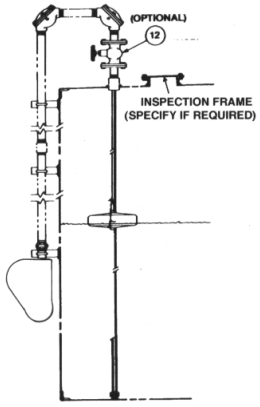
Kit Number 2 - Cone Roof Tank, Shell Entry



Description	Number Required	Kit 2A Class "A"	Kit 2C Class "C"
Pulley, 45°, 1-1/2" NPT	1	9399-13470	9399-13490
Guide Wire Spring Assembly	2	JB3485-17	JB3485-17
Float	1	JB3010-23	JB3010-23
Anchor Bar	1	JA3540-12	JA3540-12
Header Assembly	1	JB3505-2	JB3505-2
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Guide Wire Bracket Assembly	1	JB3490-1	JB3490-1
Tank Bracket	*	JB3435-1A	JB3435-1A
Float to Tape Clip	1	9399-15082	9399-15082

* One Bracket for every 10 feet

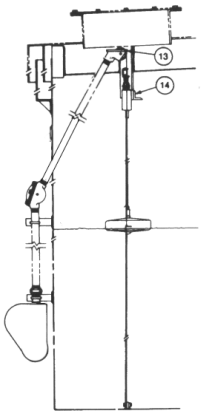
Kit Number 3 - Turbulent Tank for Cone Roof Tank, Side Mounted



Description	Number Required	Kit 3B Class "B"	Kit 3C Class "C"
Float	1	JB3010-23	JB3010-23
Pulley, 90°, 1-1/2" NPT	2	9399-13450	9399-13460
Tape Clamp	1	090142	090142
Guide Wire Spring Assembly	2	JB3486-11	JB3486-11
Anchor Bar	1	JA3540-12	JA3540-12
Tank Bracket	**	JB3435-1A	JB3435-1A
Float to Tape Clip	1	9399-15082	9399-15082
*Cable Block Valve	1	93421-21*	93421-21*

* Block Valve NOT INCLUDED in Kit; Specify separately, and price per list 93421
** One Bracket for every 10 feet

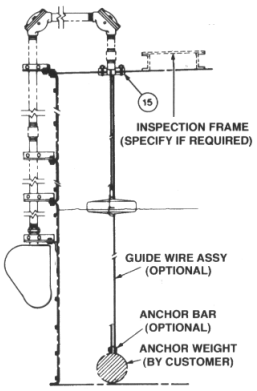
Kit Number 4 - Moveable Roof Tank, Side Mounted



Description	Number Required	Kit 4A Class "A"	Kit 4C Class "C"
Pulley, 45°, 1-1/2" NPT	1	9399-13470	9399-13490
Guide Wire Spring Assembly	2	JB3485-17	JB3485-17
Float	1	JB3010-23	JB3010-23
Cutoff Pulley	1	9399-13500	9399-13500
Anchor Bar	1	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Guide Wire Bracket Assembly	1	JB3490-1	JB3490-1
Tank Bracket	*	JB3435-1A	JB3435-1A
Float to Tape Clip	1	9399-15082	9399-15082

* One Bracket for first 10 feet

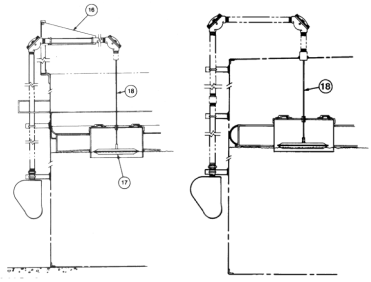
Kit Number 5 - Bolted Tank, Side Mounted



Description	Number Required	Kit 5A Class "A"	Kit 5C Class "C"
Pulley, 90°, 1" NPT	2	JB3561-1	JB3560-3
Float	1	JB3010-23	JB3010-23
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Pipe Bushing 1-1/2" x 1" NPT	1	229-194	229-194
Tank Bracket Assembly	*	JA3446-1A	JA3446-1A
Tape Entry Assembly	1	090871	090871
Float to Tape Clip	1	9399-15082	9399-15082

* Standard Height for Bolted Tanks are: 8 feet, 16 feet, and 24 feet
Number of brackets required are: 2 for 8 foot tank
3 for 16 foot tank
4 for 24 foot tank

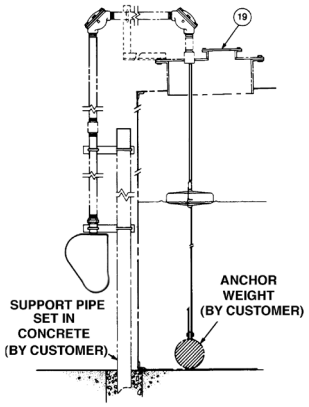
Kit Number 6 - Floating Roof Tank, Side Mounted
Kit Number 7 - Covered Floating Roof Tank, Side Mounted



Description	Number Required	Kit 6A Class "A"	Kit 7A Class "A"
Pulley, 90°, 1-1/2" NPT	2	9399-13440	9399-13440
A Frame	1	JC3436-1	----------
Pan Type Float	1	JB3025-18	JB3025-18
Tank Bracket	*	JB3435-1A	JB3435-1A

* One Bracket for every 10 feet

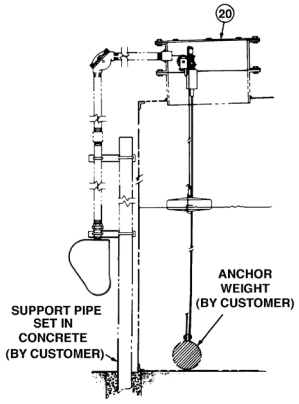
Kit Number 8 - Tank in Service (Type 1)



Description	Number Required	Kit 8A Class "A"	Kit 8C Class "C"
Pulley, 90°, 1-1/2" NPT	2	9399-13440	9399-13460
Guide Wire Spring Assembly	2	JB3486-11	JB3486-11
Float	1	JB3010-23	JB3010-23
Anchor Bar	1	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Tank Bracket	*	JB3435-1A	JB3435-1A
Inspection Frame	1	JB3530-1	JB3530-1
Float to Tape Clip	1	9399-15082	9399-15082

* One Bracket for every 10 feet

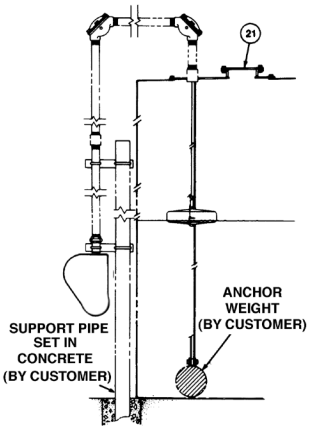
Kit Number 9 - Tank in Service (Type 2)



Description	Number Required	Kit 9A Class "A"	Kit 9C Class "C"
Pulley, 90°, 1-1/2" NPT	1	9399-13440	9399-13460
Float	1	JB3010-23	JB3010-23
Anchor Bar	1	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Manhole Adapter Assembly	1	JB3516-2** or JB3516-3***	JB3516-2** or JB3516-3***
Tank Bracket	*	JB3435-1A	JB3435-1A
Float to Tape Clip	1	9399-15082	9399-15082

* One Bracket for first 10 feet
** API 650, 20" Diameter. Consult factory for other sizes.
*** API 650, 24" Diameter. Consult factory for other sizes.

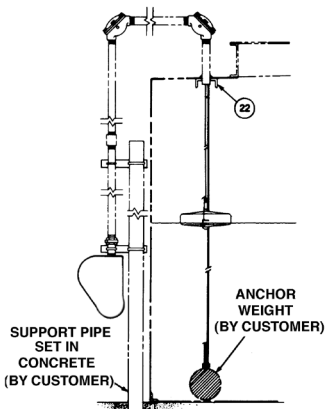
Kit Number 10 - Tank in Service (Type 3)



Description	Number Required	Kit 10A Class "A"	Kit 10C Class "C"
Pulley, 90°, 1-1/2" NPT	2	9399-13440	9399-13460
Tank Entry Assembly	1	JC3517-2	JC3517-2
Float	1	JB3010-23	JB3010-23
Anchor Bar	1	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Tank Bracket	*	JB3435-1A	JB3435-1A
Float to Tape Clip	1	9399-15082	9399-15082

* One Bracket for every 10 feet

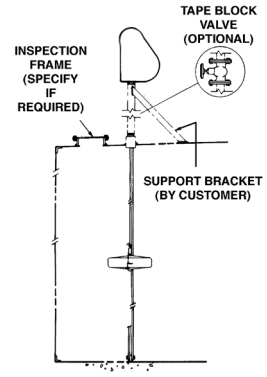
Kit Number 11 - Tank in Service (Type 4)



Description	Number Required	Kit 11A Class "A"	Kit 11C Class "C"
Pulley, 90°, 1-1/2" NPT	1	9399-13440	9399-13460
Float	1	JB3010-23	JB3010-23
Anchor Bar	1	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Guide Cable Hanger Assembly	2	JB3518-3	JB3518-3
Tank Bracket	*	JB3435-1A	JB3435-1A
Float to Tape Clip	1	9399-15082	9399-15082

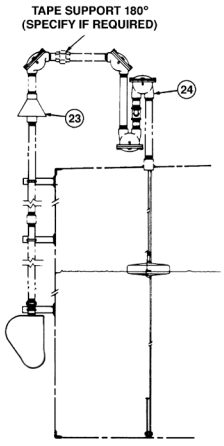
* One Bracket for first 10 feet

Kit Number 12 - Roof Reading



Description	Number Required	Kit 12A Class "A"	Kit 12C Class "C"
Float	1	JB3010-23	JB3031-23
Tape Clamp	1	090142	090142
Tape Thimble	1	514-504	514-504
Guide Wire Spring Assembly	2	JB3486-11	JB3486-11
Anchor Bar	1	JA3540-12	JA3540-12

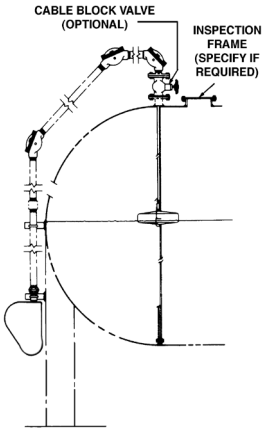
Kit Number 13 - Cone Roof Tank with Liquid Seal, Side



Description	Number Required	Kit 13A Class "A"
Pulley, 90°, 1-1/2" NPT	1	9399-13440
Guide Wire Spring Assembly	2	JB3486-11
Float	1	JB3010-23
Anchor Bar	1	JA3540-12
Tape Clamp	1	090142
Tape Thimble	1	514-504
Liquid Seal	1	See Chart on Next Page*
Tank Bracket	**	JB3435-1A
Ventilator	***	JB3555-2

* Substitution of any liquid seals on next page is at no additional cost.
** One Bracket for first 10 feet
*** Ventilator not included in Kit; specify separately and price.

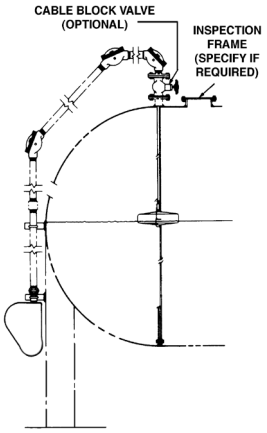
Kit Number 14 - Turbulent Spherical Tank



Description	Number Required	Kit 14B Class "B"	Kit 14C Class "C"
Float, Pan Type	1	JB3010-23	JB3031-23
Pulley, 90°, 1-1/2" NPT	1	9399-13450	9399-13460
Pulley, 45°, 1-1/2" NPT	2	9399-13480	9399-13490
Guide Wire Spring Assembly	2	JB3486-11	JB3486-11
Anchor Bar	1	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142
Tank Bracket	2	JB3435-1A	JB3435-1A
* Cable Block Valve	1	93421-21*	93421-21*
Float to Tape Clip	1	9399-15082	9399-15082

* Cable Block Valve not included in Kit

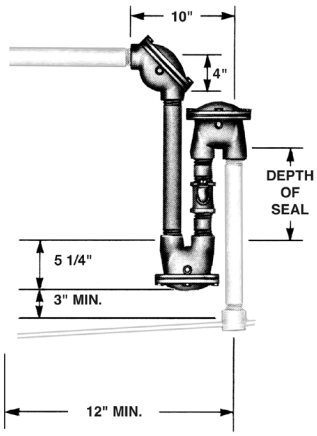
Kit Number 15 - Spirally Guided Cover



Description	Number Required	Kit 15A Class "A"	Kit 15B Class "B"
Float, Pan Type	1	JB3010-23	JB3031-23
Pulley, 90°, 1-1/2" NPT	1	9399-13450	9399-13460
Pulley, 45°, 1-1/2" NPT	2	9399-13480	9399-13490
Guide Wire Spring Assembly	2	JB3486-11	JB3486-11
Anchor Bar	1	JA3540-12	JA3540-12
Tape Clamp	1	090142	090142
Tank Bracket	2	JB3435-1A	JB3435-1A
* Cable Block Valve	1	93421-21*	93421-21*
Float to Tape Clip	1	9399-15082	9399-15082

* Cable Block Valve not included in Kit

Maximum Tank Pressure with Fluids Used



Description	Seal Depth (Inches)	Ethylene Glycol (oz./sq. in.)	Oil (0.8 sp. gr.) (oz./sq. in.)	Class
JC3603-10	8-1/2	5.2	3.9	A
JC3603-11	9-1/2	5.9	4.4	A
JC3603-12	11-1/2	7.1	5.3	A
JC3603-13	13-1/2	8.3	6.2	A
JC3603-14	15-1/2	9.6	7.2	A
JC3603-15	17-1/2	10.8	8.1	A

Seal depth over 17-1/2 are special, consult factory for pricing. When liquid seal is used, the next highest tank height should be used on the gauge head (Table II B).

Anti-freeze Solution 1.07 Specific Gravity Median Weight Lubrication Oil 0.8 Specific Gravity

Accessories

A. Floats

Description	Part Number
316 Stainless Steel (17" Centers) Max Pres 50 psig.	JB3010-23
304 Stainless Steel (17" Centers)	JB3031-1
Monel (17" Centers)	C.F.
304 Stainless Steel (17" Centers) (For asphalt service only)	C.F.

B. Pulley Assemblies Upgrades - 1-1/2" NPT Connection - 90° Degree

Description	Part Number
316 Stainless Steel Housing 316 Stainless Steel Wheel	LB270-692
Aluminum Housing 316 Stainless Steel Wheel	LB270-649
Nodular Iron Housing 316 Stainless Steel Wheel	LB270-651
PVC Housing Delrin Wheel	BB3560-012

C. Liquid Seals - 1-1/2" NPT Connection- 8-1/2" Depth (Kit 13 Only)

Description	Part Number
All 316 Stainless Steel	LA277-536-21
Aluminum Housing 316 Stainless Steel Wheel	LA277-536-12
Nodular Iron Housing	LA277-536-6
All PVC	LB277-543

D. Anchor Bar - 17"

Description	Part Number
All 316 Stainless Steel	JA3540-12-1

E. Guide Wire Spring Assemblies

Description	Part Number
All 316 Stainless Steel	93486-18
All 304 Stainless Steel	93486-12

The following are Adders to Upgrade Kits. To purchase parts individually, Consult Factory.