

# 92021 Automatic Tank Gauge

The Shand & Jurs 92021 Automatic Tank Level Gauge is a float actuated tape driven gauge and by means of a digital counterindicates float travel accurately to 1/16 inch. The 92021 meets all the specifications and recommendations of the American Petroleum Institute in accordance with API Bulletin 2509B.

This Automatic Tank Gauge comes equipped with the Acutrak 90<sup>TM</sup> modular cartridge kit. The kit consists of a spring motor drum, a power hub and a stainless steel constant power spring. The cartridge and tape drum are constructed of RYTON®, a specially engineered polymer that offers outstanding chemical resistance, mechanical strength and abrasion resistance. Also included in the tank gauge is an accurately perforated stainless steel tape. Bearing loads are well distributed through Teflon bushings rotating on polished stainless steel shafts.

Local readout is by means of a digital counter featuring large black numerals on a white background. Remote reading is added by simply removing the counter housing cover, installing a 2" coupling and bolting a transmitter in place of the counter housing cover. Gauge calibration is quick and easy. Loosen screws and swing open access plate; then simply rotate large inch wheel until counter wheels are set. This is the fastest and most positive calibration available on any float actuated counter type gauge.

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**

- 1/16" Accuracy
- 90 Foot gauging range
- Simple installation
- Ground or roof reading
- Completely automatic
- Easily serviced
- Economical



# **92021**Automatic Tank Gauge



# **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)\*\*

# **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®

# **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 nonjamming construction 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.



<sup>\*</sup> For service below -30°F consult factory.

<sup>\*\*</sup> For higher ranges consult factory.



# **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 - 21

Standard Stainless Steel Pan Float (11-3/4" Diameter) 15 PSIG with guides (13-1/4" Centers)

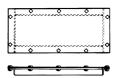
#### Model JB3025-18

Stainless Steel Pan Type Float (17-1/4" Diameter)- for Floating Roof tanks below 3 PSIG without guides

#### Model JB3031-1

Reinforced Stainless Steel Pan Type Float (11-3/4" Diameter) 50 PSIG with guides (13-1/4" Centers)

# **Auxiliary Gauging Accessories:**



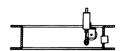
# Inspection Frame & Cover Model JB3530-1

Recommended for use on in-service cone roof tank, Type I, installation through existing manhole.



# Ventilator Model JB3555-2

Recommended to prevent corrosive vapors from entering the gauge head.



# 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.



# Flexible Tank Entry Model 9399-19000

Provides a non-rigid tape entry if roof movement is present.



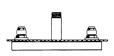
#### Model JC3517-2

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



# Tape/Cable Block Valve Model 93421

Isolates the gauge head from tank; recommended for inspection and servicing of gauging system.



#### Model JB3518-3

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



#### **Limit Switch Model 99050**

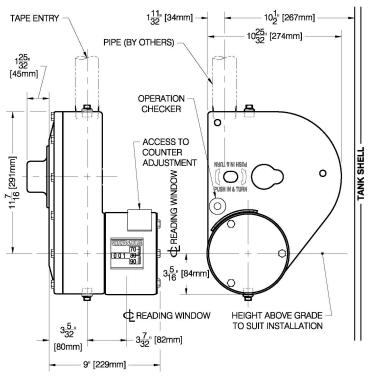
Contains up to 6 cam operated switches in an explosion-proof housing for Class I, Group D, Division 1. Switches can be used to indicate high and/or low level alarms, or to actuate pump, motor operated valves or other actuating equipment.



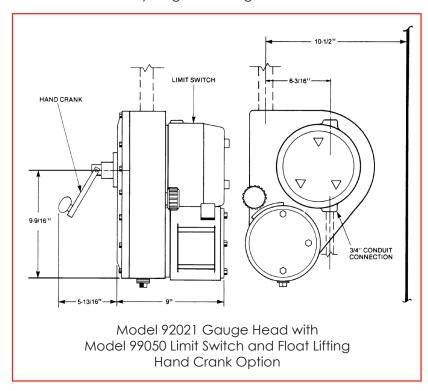
<sup>\*50</sup> PSIG service available for Kit No. 12C & 14C



# **Outline Dimensions**



Shipping Weight: 46 LBS. 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.





# 92021 Ordering Guide

#### **Model Number Selection**

The model number will have a base number 92021 followed by 8 digit numbers. These digits will represent 5 sets of option tables.

92021 - AB - CD - EF - GH

# **Ordering Information**

#### Specify:

- 1. Model 92021 Automatic Tank Gauge
- 2. Type of Service:

Normal, Ammonia or Severe

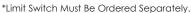
3. Gauge Head Options:

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
- 9. Specify CE for Ordinary EU Locations use Table G1 or G2
- 10. ATEX Certification for II 1 G Ex h II B T1...T6 Ga EU Locations, use Table G3 or G4



<sup>\*\*</sup>Use Kits 3 or 14 Only.





# Materials of Construction - Gauge Head

| 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 Stainless Steel, Sleave Bearings are Teflon.

CA = Cast Aluminum

SS = Stainless Steel

RP = Rust Proof Steel

NI = Nodular Iron

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        |  | Normal*   |
| 41        | Gauge Head Only  | Ammonia*# |
| 51        |  | Severe**  |
| 32        | Gauge Head with Provision for                          | Normal*   |
| 42        | Limit Switch Assembly Mounted                          | Ammonia*# |
| 52        | to Side of Gauge Head***                               | Severe**  |
| 33        |  | Normal*   |
| 43        | Gauge Head with Float Lifting Hand Crank               | Ammonia*# |
| 53        | Haria Craffic  | Severe**  |
| 34        | Gauge Head with Float Lift-                            | Normal*   |
| 44        | ing Hand Crank & Provision for                         | Ammonia*# |
| 54        | Limit Switch Assembly Mounted to Side of Gauge Head*** | 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 the 94321 product data sheet.

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

Table C - Calibration Reading

| Option C | Calibration     | Reading |
|----------|-----------------|---------|
| 0        | Feet and Inches | Innage  |
| 1        | reel and inches | Outage  |
| 2        | Decimal Feet    | Innage  |
| 3        | Decimal reel    | Outage  |
| 4        | Metric          | Innage  |
| 5        | Mellic          | 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*              |  |  |

<sup>\*</sup>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) |  |  |  |  |

<sup>\*</sup>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 gauge 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 <u>12C</u> and <u>14C</u> 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 Bracket16 - "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 |                                  |       |       |        |        |          | Clatalana          |  |
| Class B | Steel                            | Steel | Steel | Steel  | Steel  | Steel    | Stainless<br>Steel |  |
| Class C |                                  |       |       |        |        |          | 31661              |  |

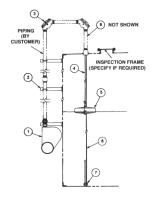
| Pulley Assembly |               |               |          |         |                 |  |
|-----------------|---------------|---------------|----------|---------|-----------------|--|
| Type            | Housing       | Cover         | Pulley   | Bearing | Shaft           |  |
| Class A         | 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)

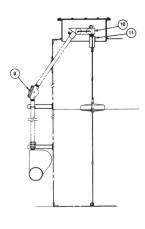
# Kit Number 1 - Cone Roof Tank



| Description                 | Number<br>Required | Kit 1A<br>Class "A" | Kit 1B<br>Class "B" | Kit 1C<br>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                  | JB3010-21           | JB3010-21           | JB3010-21           |
| Anchor Bar                  | 1                  | JA3540-3            | JA3540-3            | JA3540-3            |
| Tape Clamp                  | 1                  | 090142              | 090142              | 090142              |
| Tape Thimble                | 1                  | 514-504             | 514-504             | 514-504             |
| Tank Bracket                | *                  | JB3435-1            | JB3435-1            | JB3435-1            |
|                             | 40'                | 1A1                 | 1B1                 | 1C1                 |
| Tank Height &<br>Kit Number | 66'                | 1A2                 | 1B2                 | 1C2                 |
| KII NOMBEI                  | 90'                | 1A3                 | 1B3                 | 1C3                 |

<sup>\*</sup> One Bracket for every 10 feet Installation through Tank Roof.

# Kit Number 2 - Cone Roof Tank, Shell Entry



| Description                 | Number<br>Required | Kit 2A<br>Class "A" | Kit 2C<br>Class "C" |
|-----------------------------|--------------------|---------------------|---------------------|
| Pulley, 45°, 1-1/2" NPT     | 1                  | 9399-13470          | 9399-13490          |
| Guide Wire Spring Assembly  | 2                  | JB3485-17           | JB3485-17           |
| Float                       | 1                  | JB3010-21           | JB3010-21           |
| Anchor Bar                  | 1                  | JA3540-3            | JA3540-3            |
| 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                | *                  | JB3435-1            | JB3435-1            |
|                             | 40'                | 2A1                 | 2C1                 |
| Tank Height &<br>Kit Number | 66'                | 2A2                 | 2C2                 |
| KITNOTTIDET                 | 90'                | 2A3                 | 2C3                 |

<sup>\*</sup> One Bracket for every 10 feet





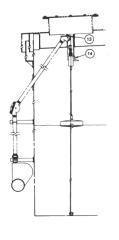
# INSPECTION FRAME PECIFY IF REQUIRED)

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

| Description                 | Number<br>Required | Kit 3B<br>Class "B" | Kit 3C<br>Class "C" |
|-----------------------------|--------------------|---------------------|---------------------|
| Float                       | 1                  | JB3010-21           | JB3010-21           |
| 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                  | JA3540-3            | JA3540-3            |
| Tank Bracket                | **                 | JB3435-1            | JB3435-1            |
| *Cable Block Valve          | 1                  | 93421-21*           | 93421-21*           |
|                             | 40'                | 3B1                 | 3C1                 |
| Tank Height &<br>Kit Number | 66'                | 3B2                 | 3C2                 |
| KII TAOITIDEI               | 90'                | 3B3                 | 3C3                 |

<sup>\*</sup> Block Valve NOT INCLUDED in Kit; Specify separately, and price per list 93421

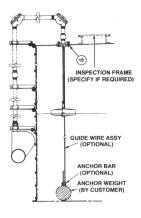
# Kit Number 4 - Moveable Roof Tank, Side Mounted



| Description                 | Number<br>Required | Kit 4A<br>Class "A" | Kit 4C<br>Class "C" |  |
|-----------------------------|--------------------|---------------------|---------------------|--|
| Pulley, 45°, 1-1/2" NPT     | 1                  | 9399-13470          | 9399-13490          |  |
| Guide Wire Spring Assembly  | 2                  | JB3485-17           | JB3485-17           |  |
| Float                       | 1                  | JB3010-21           | JB3010-21           |  |
| Cutoff Pulley               | 1                  | 9399-13500          | 9399-13500          |  |
| Anchor Bar                  | 1                  | JA3540-3            | JA3540-3            |  |
| Tape Clamp                  | 1                  | 090142              | 090142              |  |
| Tape Thimble                | 1                  | 514-504             | 514-504             |  |
| Guide Wire Bracket Assembly | 1                  | JB3490-1            | JB3490-1            |  |
| Tank Bracket                | *                  | JB3435-1            | JB3435-1            |  |
|                             | 40'                | 4A1                 | 4C1                 |  |
| Tank Height &<br>Kit Number | 66'                | 4A2                 | 4C2                 |  |
| KII NOTTIDEI                | 90'                | 4A3                 | 4C3                 |  |

One Bracket for first 20 feet plus one for each additional 10 feet

# Kit Number 5 - Bolted Tank, Side Mounted



| Description                  | Number<br>Required | Kit 5A<br>Class "A" | Kit 5C<br>Class "C" |
|------------------------------|--------------------|---------------------|---------------------|
| Pulley, 90°, 1" NPT          | 2                  | JB3561-1            | JB3560-3            |
| Float                        | 1                  | JB3010-21           | JB3010-21           |
| 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        | *                  | JA3446-1            | JA3446-1            |
| Tape Entry Assembly          | 1                  | 090871              | 090871              |
|                              | 8'                 | 5A1                 | 5C1                 |
| Tank Height &<br>Kit Number  | 16'                | 5A2                 | 5C2                 |
| MINORIDE                     | 24'                | 5A3                 | 5C3                 |

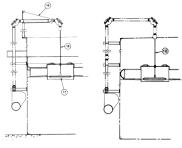
<sup>\*</sup> Standard Height for Bolted Tanks are: 8 feet, 16 feet, and 24 feet Number of brackets required are:

<sup>2</sup> for 8 foot tank; 3 for 16 foot tank; 4 for 24 foot tank



<sup>\*\*</sup> One Bracket for every 10 feet





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

| Description              | Number<br>Required | Kit 6A<br>Class "A" | Kit 7A<br>Class "A" |
|--------------------------|--------------------|---------------------|---------------------|
| Pulley, 90°, 1-1/2" NPT  | 2                  | 9399-13440          | 9399-13440          |
| Elbow Support Bracket    | 1                  | JC3436-1            |                     |
| Pan Type Float           | 1                  | JB3025-18           | JB3025-18           |
| Tank Bracket             | *                  | JB3435-1            | JB3435-1            |
| T 111 : 11 0             | 40'                | 6A1                 | 7A1                 |
| Tank Height & Kit Number | 66'                | 6A2                 | 7A2                 |
| KII NOITIOCI             | 90'                | 6A3                 | 7A3                 |

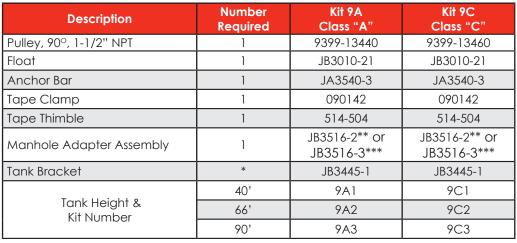
<sup>\*</sup> One Bracket for every 10 feet

# Kit Number 8 - Tank in Service (Type 1), Side Mounted

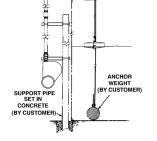
| Description                 | Number<br>Required | Kit 8A<br>Class "A" | Kit 8C<br>Class "C" |
|-----------------------------|--------------------|---------------------|---------------------|
| Pulley, 90°, 1-1/2" NPT     | 2                  | 9399-13440          | 9399-13460          |
| Guide Wire Spring Assembly  | 2                  | JB3486-11           | JB3486-11           |
| Float                       | 1                  | JB3010-21           | JB3010-21           |
| Anchor Bar                  | 1                  | JA3540-3            | JA3540-3            |
| Tape Clamp                  | 1                  | 090142              | 090142              |
| Tape Thimble                | 1                  | 514-504             | 514-504             |
| Tank Bracket                | *                  | JB3445-1            | JB3445-1            |
| Inspection Frame            | 1                  | JB3530-1            | JB3530-1            |
|                             | 40'                | 8A1                 | 8C1                 |
| Tank Height &<br>Kit Number | 66'                | 8A2                 | 8C2                 |
| NI NOMBO                    | 90'                | 8A3                 | 8C3                 |

<sup>\*</sup> One Bracket for every 10 feet

# Kit Number 9 - Tank in Service (Type 2), Side Mounted



<sup>\*</sup> One Bracket for every 10 feet

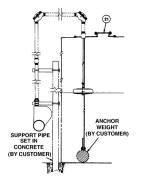




<sup>\*\*</sup> API 650, 20" Diameter. Consult factory for other sizes.

<sup>\*\*\*</sup> API 650, 24" Diameter. Consult factory for other sizes.





# Kit Number 10 - Tank in Service (Type 3), Side Mounted

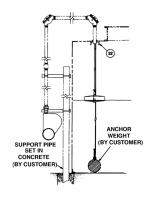
| Description                 | Number<br>Required | Kit 10A<br>Class "A" | Kit 10C<br>Class "C" |
|-----------------------------|--------------------|----------------------|----------------------|
| Pulley, 90°, 1-1/2" NPT     | 2                  | 9399-13440           | 9399-13460           |
| Tank Entry Assembly         | 1                  | JC3517-2             | JC3517-2             |
| Float                       | 1                  | JB3010-21            | JB3010-21            |
| Anchor Bar                  | 1                  | JA3540-3             | JA3540-3             |
| Tape Clamp                  | 1                  | 090142               | 090142               |
| Tape Thimble                | 1                  | 514-504              | 514-504              |
| Tank Bracket                | *                  | JB3445-1             | JB3445-1             |
|                             | 40'                | 10A1                 | 10C1                 |
| Tank Height &<br>Kit Number | 66'                | 10A2                 | 10C2                 |
| IXII I TOTTIDOT             | 90'                | 10A3                 | 10C3                 |

<sup>\*</sup> One Bracket for every 10 feet

# Kit Number 11 - Tank in Service (Type 4), Side Mounted

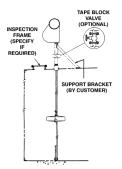
| Description                 | Number<br>Required | Kit 11A<br>Class "A" | Kit 11C<br>Class "C" |
|-----------------------------|--------------------|----------------------|----------------------|
| Pulley, 90°, 1-1/2" NPT     | 1                  | 9399-13440           | 9399-13460           |
| Float                       | 1                  | JB3010-21            | JB3010-21            |
| Anchor Bar                  | 1                  | JA3540-3             | JA3540-3             |
| Tape Clamp                  | 1                  | 090142               | 090142               |
| Tape Thimble                | 1                  | 514-504              | 514-504              |
| Guide Cable Hanger Assembly | 2                  | JB3518-3             | JB3518-3             |
| Tank Bracket                | *                  | JB3445-1             | JB3445-1             |
|                             | 40'                | 11A1                 | 11C1                 |
| Tank Height &<br>Kit Number | 66'                | 11A2                 | 11C2                 |
|                             | 90'                | 11A3                 | 11C3                 |

<sup>\*</sup> One Bracket for first 10 feet



# Kit Number 12 - Roof Reading, Roof Mounted

| Description                | Number<br>Required | Kit 12A<br>Class "A" | Kit 12C<br>Class "C" |
|----------------------------|--------------------|----------------------|----------------------|
| Float                      | 1                  | JB3010-21            | JB3031-1             |
| Tape Clamp                 | 1                  | 090142               | 090142               |
| Tape Thimble               | 1                  | 514-504              | 514-504              |
| Guide Wire Spring Assembly | 2                  | JB3486-11            | JB3486-11            |
| Anchor Bar                 | 1                  | JA3540-3             | JA3540-3             |
| Kit Number                 |                    | 12A1                 | 12C1                 |





# TAPE SUPPORT 180° (SPECIFY IF REQUIRED)

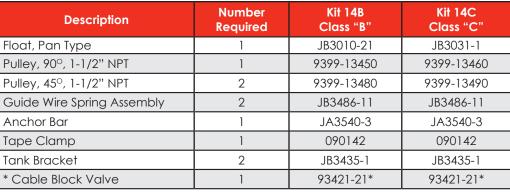
(OPTIONAL)

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

| 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               | JB3010-21               |
| Anchor Bar                 | 1               | JA3540-3                |
| Tape Clamp                 | 1               | 090142                  |
| Tape Thimble               | 1               | 514-504                 |
| Liquid Seal                | 1               | See Chart on Next Page* |
| Tank Bracket               | **              | JB3435-1                |
| Ventilator                 | ***             | JB3555-2                |
|                            | 40'             | 13A1                    |
| Tank Height & Kit Number   | 66'             | 13A2                    |
| NI NOTIBEI                 | 90'             | 13A3                    |

<sup>\*</sup> Substitution of any liquid seals on next page is at no additional cost.

# Kit Number 14 - Turbulent Spherical Tank



<sup>\*</sup> Cable Block Valve not included in Kit

# CABLE BLOCK VALVE (OPTIONAL) INSPECTION FRAME RECUIRED)

# Kit Number 15 - Spirally Guided Cover

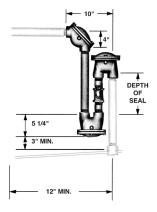
| Description                | Number<br>Required | Kit 15A<br>Class "A" | Kit 15B<br>Class "B" |
|----------------------------|--------------------|----------------------|----------------------|
| Float, Pan Type            | 1                  | JB3010-21            | JB3031-1             |
| Pulley, 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                  | JA3540-3             | JA3540-3             |
| Tape Clamp                 | 1                  | 090142               | 090142               |
| Tank Bracket               | 2                  | JB3435-1             | JB3435-1             |
| * Cable Block Valve        | 1                  | 93421-21*            | 93421-21*            |

<sup>\*</sup> Cable Block Valve not included in Kit

<sup>\*\*</sup> One Bracket for first 10 feet

<sup>\*\*\*</sup> Ventilator not included in Kit; specify separately and price.





# Liquid Seals Maximum Tank Pressure with Fluids Used

| Description | Seal Depth<br>(Inches) | Ethylene Glycol<br>(oz./sq. in.) | Oil (0.8 sp. gr.)<br>(oz./sq. in.) | Class |
|-------------|------------------------|----------------------------------|------------------------------------|-------|
| JC3603-10   | 8-1/2"                 | 5.2                              | 3.9                                | Α     |
| JC3603-11   | 9-1/2''                | 5.9                              | 4.4                                | Α     |
| JC3603-12   | 11-1/2"                | 7.1                              | 5.3                                | Α     |
| JC3603-13   | 13-1/2"                | 8.3                              | 6.2                                | Α     |
| JC3603-14   | 15-1/2''               | 9.6                              | 7.2                                | Α     |
| 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 Medium Weight Lubrication Oil 0.8 Specific Gravity.

# **Adapter**

| Part Number | Description   |
|-------------|---|
| 9202-11000  | To mount Model 92021 gauge to an existing Model<br>92006 gauge mounting bracket.<br>This adapter requires a special model number<br>when ordering. Consult Factory. |

NOTE: Model 92021 replaces models: 92006, 92007, 92105, 92106, 93206, 93207, 93275, 93274, 92020

# **Accessories**

#### A. Floats

| Description                                      | Part Number   |
|--|---------------|
| 304 Stainless Steel (11-3/4" DIA)                | JB3010-7      |
| Monel (11-3/4" DIA)                              | JB3010-4      |
| (11-3/4" DIA) Max Pres 50 psig.                  | JB3031-1      |
| 304 Stainless Steel Foamglass<br>(9" x 12" x 3") | JC3000-1      |
| 316 Stainless Steel 4.25 LBS                     | JB3010-21-4LB |
| * 304 Stainless Steel (11-3/4" DIA)              | JB3010-8      |

<sup>\*</sup> For asphalt service only

# 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<br>316 Stainless Steel Wheel | LA277-536-12 |
| Nodular Iron Housing                          | LA277-536-6  |
| All PVC                                       | LB277-543    |

# E. Guide Wire Spring Assemblies

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

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

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

# D. Anchor Bar - 13-1/4"

| Description             | Part Number |
|-------------------------|-------------|
| All 316 Stainless Steel | JA3540-4    |

