

# MATERIAL LIST

## MODEL 9-S

For All Vertical Tanks 36' to 50'



**Material Supplied by Customer** (see diagram to match square with number)

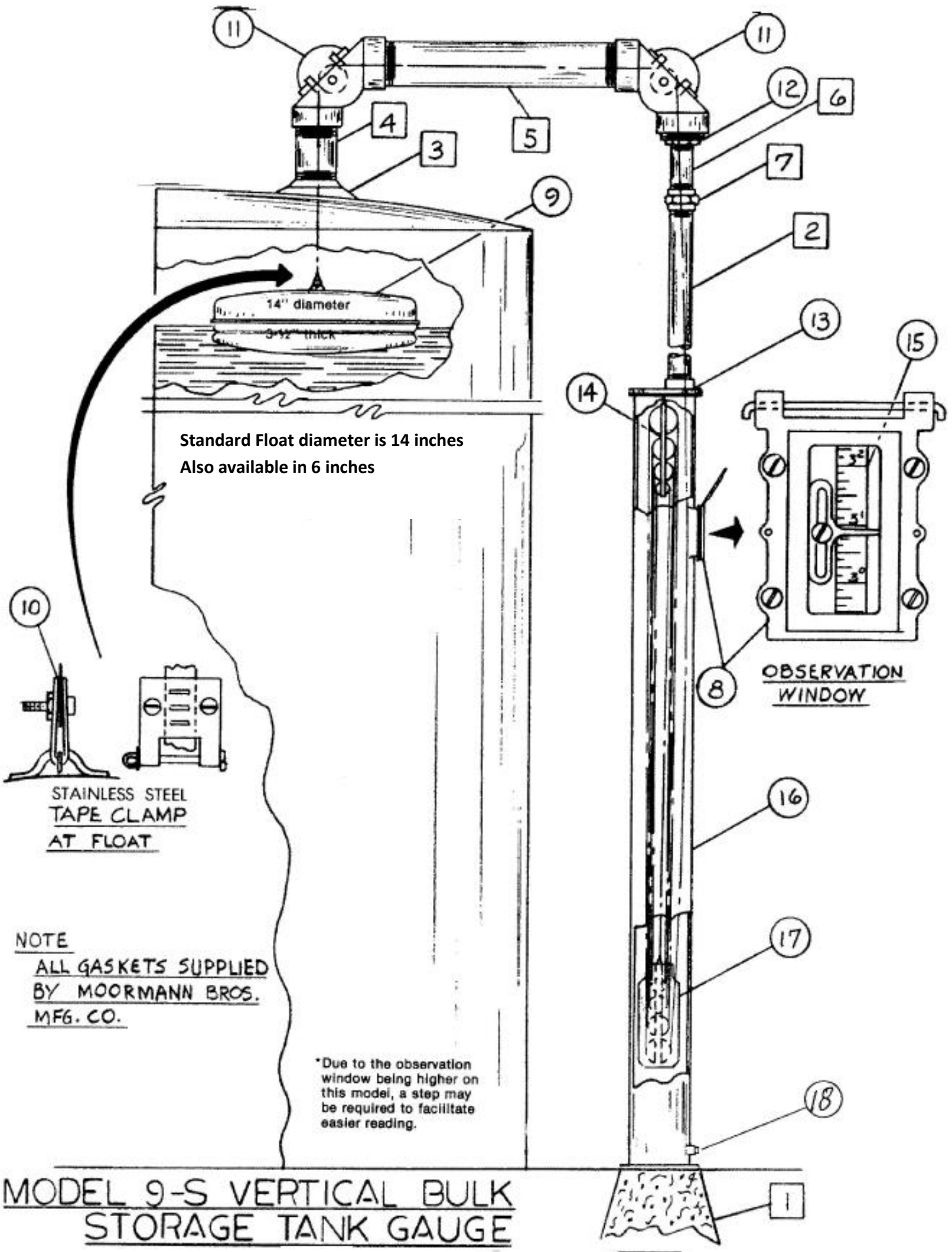
1. Gauge Housing Base Support
2. 1" Galvanized Pipe (cut to length)
3. Tank Roof Flange
4. 2" Tank Opening Pipe
5. 2" Galvanized Pipe (cut to length)
6. 1" Galvanized Nipple (any length)
7. 1" Galvanized Union



**Material Supplied by Moormann Bros.**

(see diagram to match circle with number)

	Part Name	Part No.	Quantity per Unit
8.	Observation Window Assembly (Frame & Lid)	A-34 / A-38	1
9.	Stainless Steel Float / 14 inch Diameter	V-75	1
10.	Stainless Steel Tape Clamp & Screws	V-93	1
11.	Elbow Assembly Complete	A-30, A-33	2
12.	2" to 1" Reducing Bushing	B-15	1
13.	Eccentric Cap Complete with Nuts & Bolts	V-71	1
14.	Pulley Rack Assembly	10-S	2
15.	Lufkin Stainless Steel High Visibility Tape	G-52	1
16.	Painted Steel Gauge Housing	V-79	1
17.	Counterweight	9-S-CW	2
18.	Condensation Drain Plug	D-16	1
19.	PE -9 Parts Envelope to include the following: (not shown on diagram)		
	• Gaskets – Set for Observation Window	V-81, V-82	1
	• Gasket – Elbow Cap	V-83	2
	• Gasket – V-71 Eccentric Cap	V-84	1
	• Glass – Window	V-86	1
	• Stainless Steel Indicator Finger for Observation Window	V-94	1
	• Cotter Pin – Stainless Steel	V-96	4



Standard Float diameter is 14 inches  
 Also available in 6 inches

OBSERVATION WINDOW

STAINLESS STEEL TAPE CLAMP AT FLOAT

NOTE  
ALL GASKETS SUPPLIED  
BY MOORMANN BROS.  
MFG. CO.

\*Due to the observation window being higher on this model, a step may be required to facilitate easier reading.

MODEL 9-S VERTICAL BULK STORAGE TANK GAUGE

## INSTALLATION INSTRUCTIONS – MODEL 9-S

1. Locate gauge position on ground – mark top edge of tank directly above ground location.
2. Measure, cut and thread 2" pipe (as marked on print).
3. Use pipe dope on all connections.
4. Assemble both A-30 elbows and 2" pipe as shown on print.
5. Screw (1) elbow A-30 onto 2" pipe with reducing bushing, close nipple and union as shown on print; other A-30 elbow into 2" nipple in tank then screw other end of 2" pipe into tank elbow, make straight with tank marking.
6. Level 2" pipe, use temporary wood brace if necessary.
7. Set gauge housing with eccentric cap assembled on ground directly below overhanging elbow.
8. Measure for 1" pipe (reducing bushing in elbow to eccentric cap V-71 on gauge housing) allow for threads, cut and thread 1" pipe.
9. Screw 1" pipe into elbow, then remove V-71 eccentric cap from housing and put on 1" pipe.  
CAUTION – Be sure eccentric cap is straight and 1" outlet is farthest away from tank.
10. Fasten pulley rack with large pulley up to eccentric cap using stainless steel cotter pin.
11. Assemble other pulley rack in counterweights with large pulley down.
12. Place counterweight on ground directly beneath eccentric cap pulley rack.
13. Remove A-33 caps from both elbows.
14. Thread tape from tank elbow with numbers up and clip end first through 2" pipe and over elbow pulleys, down through 1" pipe and out eccentric cap, straight down and around pulley No.1, up and over pulley No. 2, down and around pulley No. 3, up and around pulley No. 4, down and around pulley No. 5, up and around pulley No. 6, down and around pulley No. 7, up and over pulley No. 8, down and fasten to lug on counterweight pulley rack – use stainless steel cotter pin. CAUTION – Do not thread tape over or under cross bars in pulley rack. Use caution – do not kink or bend tape. SEE DIAGRAM FOR TAPE ROUTING.
15. Fasten tape to float with tape clamp (as per print). CAUTION – Do not fasten tape clamp too tight as this may damage tape.
16. Place eccentric cap gasket on housing top and insert counterweight assembly into housing.  
CAUTION – Do not allow COUNTERWEIGHT to drop or jerk as this may cause damage to bearings, also be sure the tape is in groove of pulleys and not on the edge.
17. Fasten housing to eccentric cap with observation window directly below 1" pipe.
18. Place outside strand of tape over tape guide in observation window, CAUTION – Do not bend or kink tape, or place 2 strands of tape over the tape guide.
19. If tank is empty, adjust tape reading at 1-3/8" (float draft), if it is partially full, set reading exactly with stick, make major tape reading adjustments with the float by slipping tape through tape clamp. Minor adjustments (within 1" make the observation finger). **DO NOT CUT TAPE UNTIL FINAL CALIBRATION IS ACCURATE.**
20. In setting the reading on the gauge, 1/2" 1/4" or even 1/8" is not close enough, be particular, set gauge to the exact amount of liquid in tank.
21. CAUTION – Let float down in tank easily. Do not let it drop.
22. Assemble observation frame and lid A-34 \ A-38 place on housing, tighten for vapor-proofing.
23. Replace A-33 elbow caps with gaskets – tighten for vapor-proofing.
24. Fix base for housing either, concrete, wood post, or steel plate welded to tank, CAUTION – Do not weld gauge housing to tank.
25. Provide step as per print – either concrete step or step welded to tank.
26. In most climates, condensation forms inside the tank and gauge. A drain plug has been provided for draining at the bottom of housing. In most climates, this is necessary 2 times a year (spring & fall). However, in extreme cases, draining is required more often.



## GAUGE USE GUIDE FOR MOORMANN BROS. TANK GAUGES

### THE 7-S AND 9-S TANK GAUGE CAN GAUGE THESE ITEMS

- Petroleum Products
- Gas
- Diesel
- #1 or #2 Fuel Oil
- Kerosene
- Mineral Oil
- Glycol
- Alcohol Blends – UNDER 10%
- Lube Oil – NOT HEATED
  
- E85
- Acetic Acid
- Asphalt – FLOAT MUST BE VENTED
- Ethanol
- BIO Fuels – ALL
- Jet Fuel
- Aviation Fuel
- MEK – Methyl Ethanol Ketone
- Mineral Spirits
- Toluene
  
- VMP – NAPHTHA
- Water
- Waste Oil
- #4 or #5 Fuel Oil – FLOAT MUST BE VENTED IF HEATED
- Alcohol Blends – OVER 10%
- Dialectic Fluid – IF CAUSTIC MIXTURE USE TEFLON ELBOWS
  
- Xylene
- Solvents
- Urea
- Lube Oil – HEATED – FLOAT MUST BE VENTED
- Additives
- Food Products
- PERK
- Potable and Non Potable Water

### TEFLON (TEFLON COATED ELBOWS AND S.S. FLOAT COMES STANDARD WITH 7-S-T AND 9-S-T)

- Caustic Soda (Sodium Hydroxide)
- Dialectic Fluid with Caustic Mixture
- Sulfuric Acid (93% or Higher Concentration)
- Alum
- Vinegar

### PRODUCTS WE CANNOT GAUGE

- Chlorine
- Bleach
- Hydrochloric Acid
- Hydrofluoric Acid
- Muriatic Acid – HCL
- Sodium Hypochlorite (only 5% can gauge)
- Paraffin Wax – (Gums up everything when steam evaporates leaving particles of wax in the steam)
- Ferric Chloride
- Ferrous Chloride

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