



ROCHESTER *Threaded Spiral Gauge* GAUGES, INC. *Installation Instructions*

MS-516
Spiral
(Mounting Standard)

ISO 9001:2008 CERTIFIED

READ COMPLETELY BEFORE ATTEMPTING INSTALLATION*

WARNING: IMPROPER INSTALLATION OR USE OF THIS PRODUCT MAY CAUSE SERIOUS INJURY OR PROPERTY DAMAGE.

These instructions are prepared to assist tradesmen and others qualified to service liquid storage tank equipment. Consumers are not qualified to perform the installation described below. If you have any questions concerning installation or operation of the gauge, contact Rochester Gauges or one of our authorized distributors for assistance. This document is not instructions for tank filling.

BE SURE YOU HAVE THE PROPER GAUGE.

MODEL	HEAD	SUPPORT
8260	BRASS	BRASS
8280	BRASS	BRASS
8660	ZINC	STEEL
8680	ZINC	STEEL

IS THE GAUGE RIGHT FOR YOUR APPLICATION?

Gauges should only be installed in applications recommended by the manufacturer. Verify that the gauge is the proper gauge for your application prior to attempting installation.

The gauge, and coupling must be constructed of materials compatible with the liquid to be measured and the service environment. The float and head must be adequately rated for your specific pressure and temperature service. These gauges are not intended for use in pressurized vessels.

IS THE GAUGE THE PROPER SIZE?

As a general rule, the gauge should be sized to provide approximately 1/2" clearance between the bottom of the tank and the lowest portion of the gauge when the gauge head is fully tightened into the mounting coupling.

NOTE:

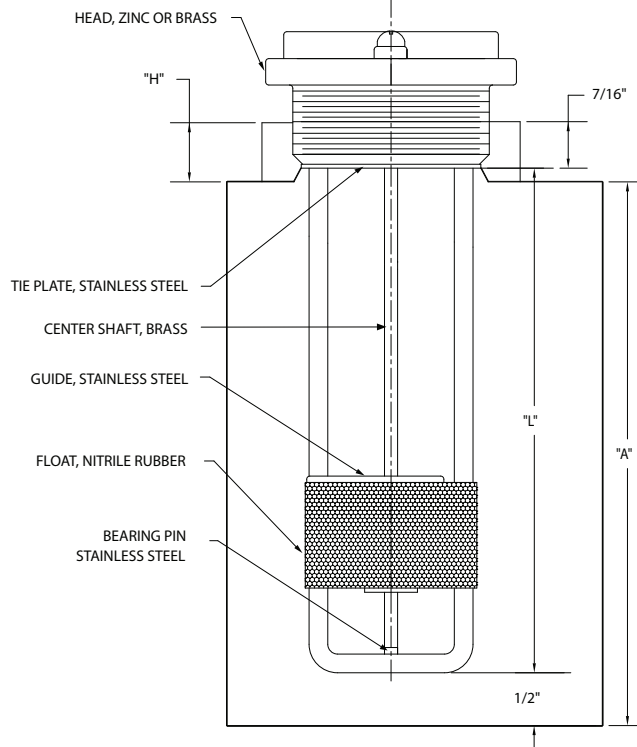
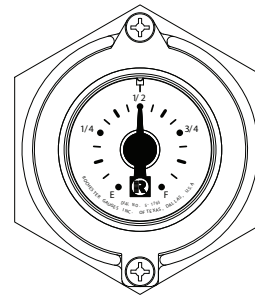
During shipping, the support or center shaft on this type of gauge may occasionally be slightly bent which may restrict free movement of the float throughout its travel. Before installation, raise and lower the float the entire length of the support. If any binding is encountered, it is a simple matter to correct. At the point on the support where the float binds, either the center shaft or one of the support wires will not be parallel to the other two. This can be corrected by bending the appropriate wire back into its proper position.

CAUTION: Improper gauge or dial selection or application may result in inaccurate readings. Release of tank contents as well as damage to equipment and safety hazard may result if tank is overfilled. Fuel exhaustion may occur if tank contents are less than indicated.

WARNING: Determine and install the appropriate gauge based on system requirements. The information contained herein is intended for guideline use only and the suitability of any part for a particular application must be determined by the user prior to installation. Improper application or installation may result in seal failure, subsequent release of tank contents and serious injury and or property damage.

GAUGE REMOVAL WARNING: Should it appear necessary, for any reason, to remove the gauge from the tank, do not attempt removal unless under competent supervision with all due precautions taken against the hazards of released liquid gas.

* Materials and specifications are subject to change without notice. Pressure ratings subject to change due to temperature and other environmental considerations.



**Threaded Spiral Gauge
Installation Instructions**

See reverse side for gauge mounting dimensions.

The Measure of Excellence

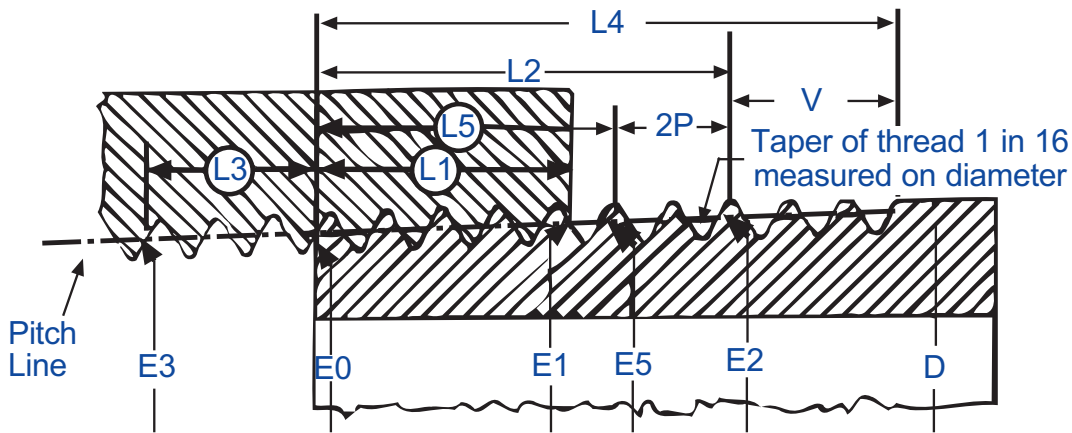
MS-516 Spiral

Threaded Spiral Gauge Installation Instructions

An American National Standard
Pipe Threads, General Purpose (INCH)

ANSI/ASME B1.20.1-1983

(Vanish threads due to chamfer on die)



Basic dimensions of American National Standard Taper Pipe Thread. NPT¹

Nominal Pipe Size (NPT)	O.D. of Pipe (D)	Threads/in. (n)	Pitch of Thread (P)	Pitch dia. at beginning of External Thread (E ₀)	Handtight Engagement			Effective Thread, External		
					Length ² (L ₁)		Dia. ³ (E ₁)	Length ⁴ (L ₂)		Dia. (E ₂)
					inch	Threads		inch	Threads	
1	2	3	4	5	6	7	8	9	10	11
1 1/2	1.900	11.5	0.08696	1.79609	0.420	4.83	1.82234	0.7235	8.32	1.84130

Nominal Pipe Size (NPT)	Length, L ₁ Plane to L ₂ Plane External Thread (L ₂ -L ₁)		Wrench Make-Up Length for Internal Thread ⁷			Vanish Thread (V)		Overall ⁸ Length External Thread (L ₄)	Nominal Complete External Threads ⁵		Height of Thread (h)	Increase in Dia./ Thread (0.0625/n)	Basic ⁶ Minor Dia. at Small End of Pipe (K ₀)
	inch	Threads	Length (L ₃)		Dia. (E ₅)	inch	Threads		Length (L ₅)	Dia. (E ₅)			
			inch	Threads									
1	12	13	14	15	16	17	18	19	20	21	22	23	24
1 1/2	0.3035	3.49	0.2609	3	1.77978	0.3017	3.47	1.0252	0.5496	1.83043	0.06957	0.00543	1.7265

Notes:

- The basic dimensions of the American National Standard Taper Pipe Thread are given in inches to four or five decimal places. While this implies a greater degree of precision than is ordinarily attained, these dimensions are the basis of gauge dimensions and are so expressed for the purpose of eliminating errors in computations.
- Also the length of thin ring gauge and length from gauging notch to small end of plug gauge.
- Also pitch diameter at gauging notch (handtight plane).
- Also length of plug gauge.
- The length L₅ from the end of the pipe determines the plane beyond which the thread form is incomplete at the crest. The next two threads are complete at the root. At this plane the cone formed by the crests of the thread intersects the cylinder forming the external surface of the pipe. L₅=L₂-2p
- Given as information for use in selecting tap drills.
- Military Specification MIL-P-7105 gives the wrench make-up as three threads for sizes 3 and smaller.
- Reference dimension.

Installation

- Gauges are normally fastened to tank using a coupling which has previously been welded into the tank. Check coupling with certified thread plug gage for correct dimensions after welding.
- Apply appropriate pipe thread compound to gauge mounting threads.
- Carefully insert float into coupling and work gauge's gear housing and support through coupling being careful not to bend or damage them.
- Torque head to range listed below.

Gauge Thread	Dry Torque (ft. lbs.)
1 1/2" NPT	25-50

CAUTION: Do not over torque. Do not re-torque later unless leaking. Over tightening may cause damage to head and threads.