
INSTRUCTIONS FOR MODEL CS-200 CYLINDER SCALES

THIS BOOKLET CONTAINS PROPRIETARY INFORMATION OF
ADVANCED SPECIALTY GAS EQUIPMENT CORP. AND IS PROVIDED
TO THE PURCHASER SOLELY FOR USE IN CONJUNCTION
WITH MODEL CS-200 CYLINDER SCALES.



IMPORTANT

These instructions are for experienced operators who know the general principles and safety precautions to be observed in handling specialty gases and operating specialty gas equipment. If you are not certain you fully understand the safety precautions for handling gases, we urge you to obtain and read the Material Safety Data Sheet (MSDS) for each gas being used.

Do not permit untrained persons to install, operate, or maintain this equipment. Do not attempt to install or operate this equipment until you have read and fully understand these instructions. If you do not fully understand these instructions, contact your Advanced Specialty Gas Equipment Distributor.

Be sure this information reaches the operator. Your supplier has extra copies.



SAFETY PRECAUTIONS

Protect yourself and others. Read and understand the following instructions before attempting to use this equipment. Failure to understand and follow these instructions could result in serious personal injury and/or damage to equipment.

- Know and understand the physical and chemical properties of the gas being used.
- Observe general precautions for the use of gases.
- Observe safety precautions for the gas being used.
- Read and follow precautions on cylinder labels.
- If flammable gases are used with this equipment do not locate it near open flames or any other source of ignition.
- If toxic or flammable gases are used with this equipment, emergency equipment applicable to the gases in use should be available in the operating area.
- Many gases can cause asphyxiation by displacing oxygen in the atmosphere. Make certain the area where this equipment is operated is well ventilated. Provide a device to warn personnel of oxygen depletion in the work area.
- Do not release toxic or flammable gases in the vicinity of personnel. Use this equipment only in well ventilated areas. Vent gases to the outside atmosphere, and in an area away from personnel. Be sure that venting and disposal methods are in accordance with Federal, State and local requirements. Locate and construct vent lines to prevent condensation or gas accumulation. Be sure the vent outlet cannot be obstructed by rain, snow, ice, insects, birds, etc. Do not interconnect vent lines; if more than one vent is needed, use separate lines.
- Use only compressed gas cylinders with outside diameters of 7" to 16" and gross weights of up to 300 lbs. Refer to Product Specifications (page 14) for additional weight capacities.

MANUFACTURER STATEMENT

The information contained in this instruction booklet has been compiled by Advanced Specialty Gas Equipment Corp., (the Company), from what it believes are authoritative sources and is offered solely as a convenience to its customers. While the Company believes that this information is accurate and factual as of the date printed, the information including design specifications is subject to change without prior notice.

DESCRIPTION

The Model CS-200 Cylinder Scale is designed to accurately weigh product usage from a liquefied gas cylinder in plant and laboratory applications. It prevents the user from running out of gas in the middle of a process, or from returning partially full cylinders containing valuable product to the gas supplier.

The design of the scale allows the user to subtract the tare weight (i.e. empty cylinder weight) by rotating the tare adjustment knob until the dial indicates the net contents of the cylinder. The scale's overall capacity of 300 pounds gross and 200 pounds tare will accommodate most liquefied compressed gas cylinders.

Each scale is supplied with a chaining bracket with integral tool rack to provide for safe installation by securing a cylinder to a wall while providing spare hooks to serve as a tool rack for storing cylinder change-out tools.

CONTENTS

Your Model CS-200 Cylinder Scale consists of 3 basic assemblies:

1. Load Cell System (Dial, PVC Coated Nylon Tubing and Load Cell)
2. PVC Platform (Backstop, Slotted Platform and Hinge and Leveling Shims)
3. Chaining Device (Bracket with Tool Hooks, Chain and Spring Loaded Bolt Snap)

ITEMS REQUIRED FOR INSTALLATION

- Power Drill and Drill Bits
- Hammer Drill and Masonry Bit ($\frac{5}{16}$ ")
- Two $\frac{1}{4}$ " Diameter Anchors (Platform)
- Two Properly Chosen Anchors (Chaining Bracket)
- Three Properly Chosen Anchors (Dial)
- Two Adjustable Wrenches
- Screw Driver and Tape Measure
- Hammer (for pounding in anchor bolts)
- Compressed Gas Cylinder (for aligning platform)

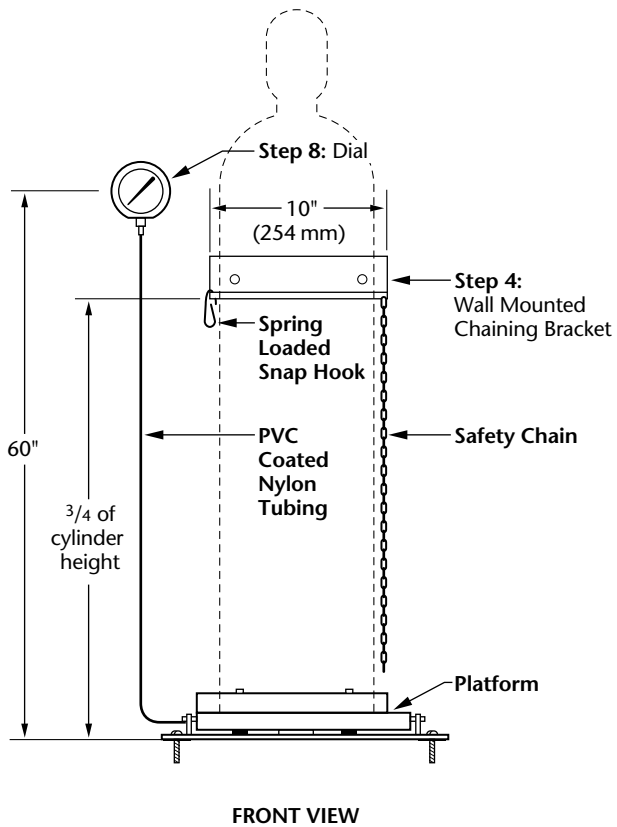
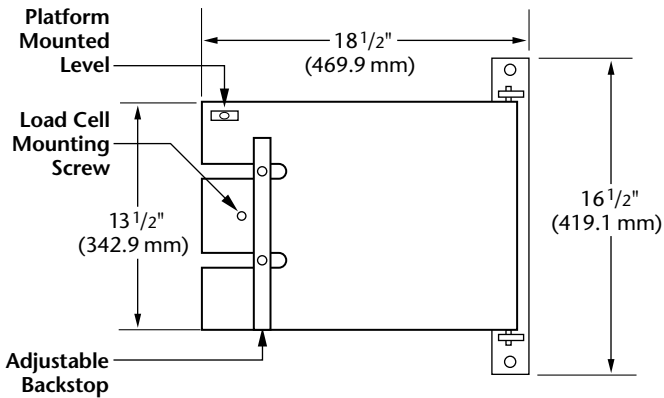
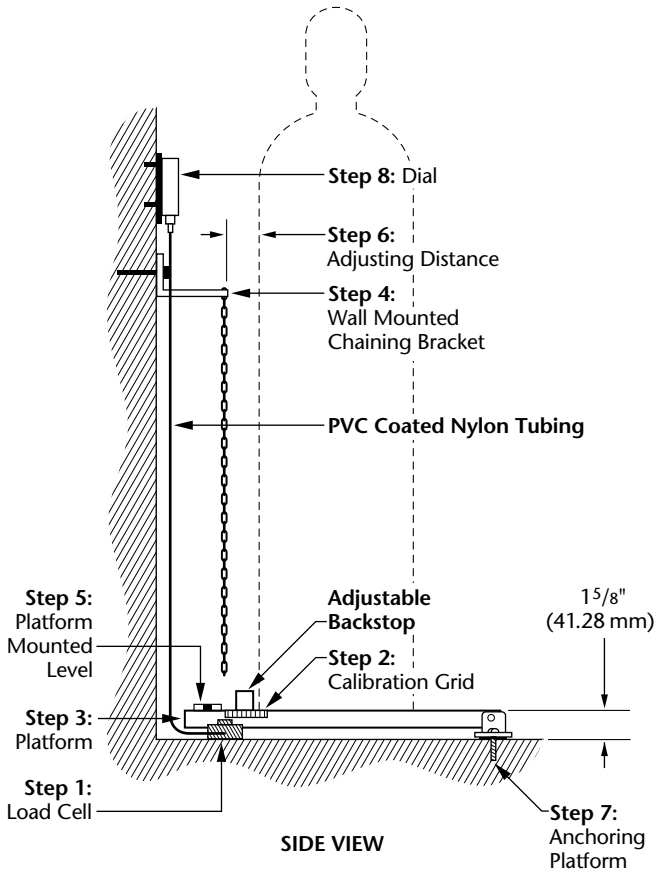


Figure 1 – Typical Installation of Model CS-200 Cylinder Scale



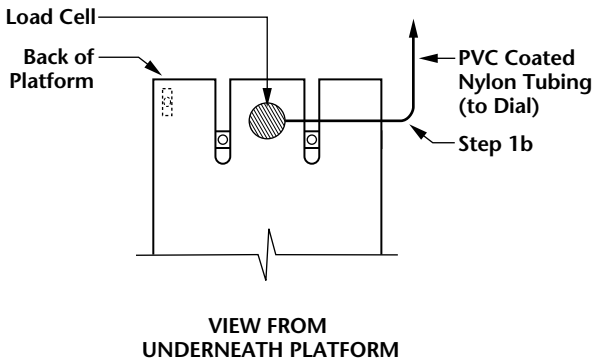
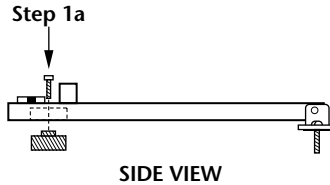
INSTALLATION

WARNING: Before attempting to install and operate this scale, read and fully understand the safety precautions on page 2 in this booklet. Failure to follow the safety precautions may result in serious personal injury and/or damage to equipment.

CAUTION: Install the scale in close proximity to a wall or other upright structure.

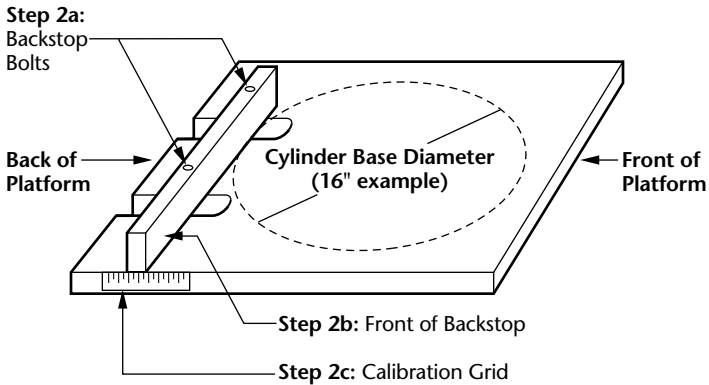
Step 1 – Mounting the Load Cell

- Remove the flathead screw from the load cell and attach the load cell under the back of the platform with this screw.
- Position the tubing such that it is running out from the left (or right) underside of the platform and does not obstruct the platform movement.



Step 2 – Calibrating Platform

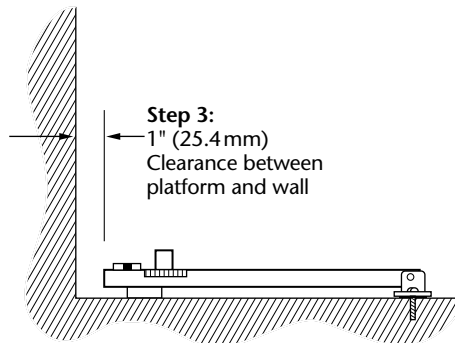
Loosen the two bolts securing platform backstop (a) to platform and slide backstop to position where the front edge (b) lines up to the “number” calibration grid (c) that corresponds to the base diameter of the cylinder that will be used on the scale. Tighten back-stop bolts.



Step 3 – Place Platform on Floor

Place the platform on the floor with the backstop side of the platform closest to the wall.

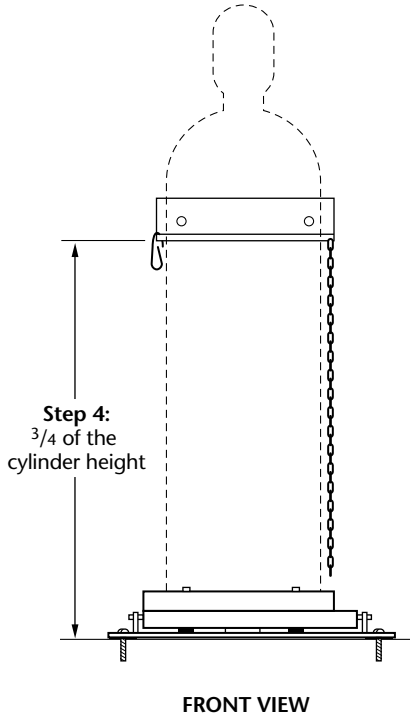
Note: Allow at least 1" clearance between wall and platform.



SIDE VIEW

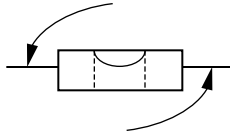
Step 4 – Aligning and Mounting the Chaining Bracket

- a. For most cylinders, the chaining bracket should be at approximately $\frac{3}{4}$ the height of the cylinder.
- b. Align the chaining bracket with the platform by adjusting bracket until the hanging chain aligns with the right-hand side of the backstop. Be sure the bracket is level, mark holes and anchor the bracket to the wall. Ensure that the anchor bolts used are properly sized and are compatible with the wall material.

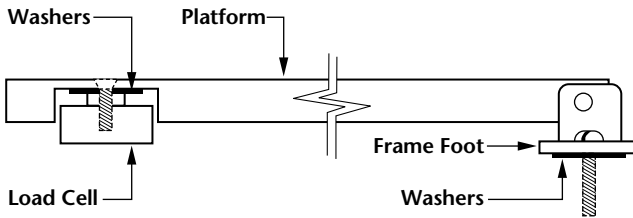


Step 5 – Level Platform

Check the mounted level installed on the platform to assure that the scale is level from front to rear. If the platform is not level, either shim platform by placing washers (provided with scale) on top of load cell piston or underneath the hinge at the anchor bolts.



Step 5: Platform Mounted Level

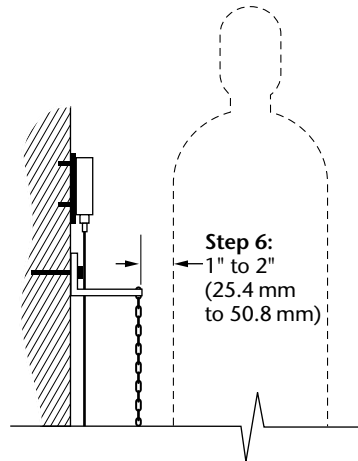


SIDE VIEW

Step 6 – Adjusting Cylinder Distance from Chaining Bracket

Adjust the platform distance so that with a cylinder against the platform backstop, the cylinder is approximately 1" to 2" from the front edge of the chaining bracket.

Note: the cylinder must not touch chaining bracket or scale will not operate properly.



SIDE VIEW

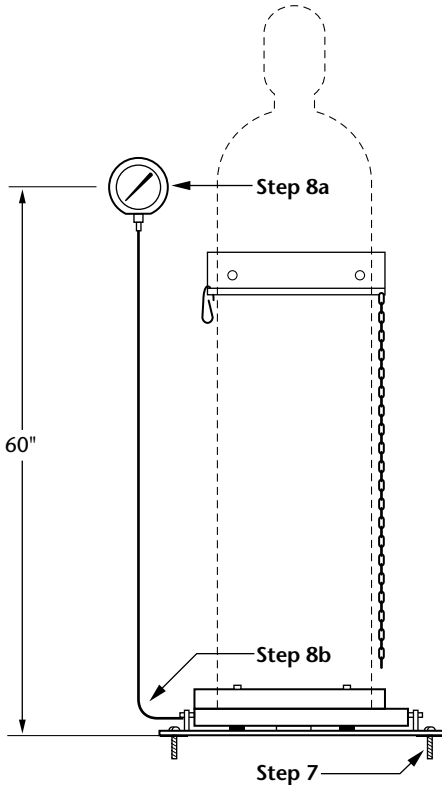
Step 7 – Anchoring Platform

Note: the platform must not touch the wall or scale will not function properly.

Mark mounting holes on the floor. Drill holes with proper sized bit and bolt scale to the floor using two 1/4" diameter bolts. Ensure that the anchor bolts used are properly sized and are compatible with the floor material.

Step 8 – Mounting the Dial

- Carefully unroll tubing and mount dial at a convenient height (approximately 60" above floor) using three properly chosen bolts. Make sure your bolts are properly sized and compatible with your wall material.
- Be careful not to restrain the platform with the tubing when mounting the dial.



FRONT VIEW

OPERATION

WARNING: To avoid possible injury to personal or damage to equipment from falling cylinders or gas release, do not use the scale until platform is bolted to floor and cylinder is properly secured with chaining bracket.

1. With cylinder valve cap in place, move cylinder onto the platform until the base of the cylinder touches the platform backstop.

Note: The cylinder must be positioned against the backstop for accurate measurement.

2. Secure cylinder with chaining bracket.
3. Once the cylinder is properly secured in place, remove the cylinder cap by hand.
4. Connect process connection to cylinder valve.
5. Rotate tare adjust knob until dial indicates the net contents (product weight) of the cylinder.

MAINTENANCE AND REPAIRS

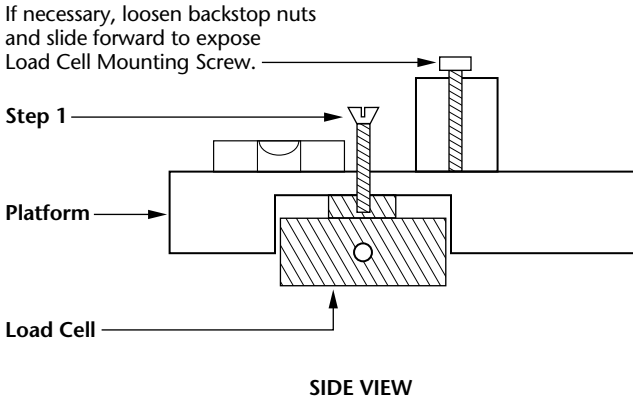
The Model CS-200 Cylinder Scale requires minimal maintenance. If the platform mounted level is "out of level", this may indicate a loss of hydraulic fluid. Occasionally (approximately every 6 months) the load cell should be removed from the platform and checked to assure a full charge of oil. The top of the piston should sit approximately $\frac{1}{4}$ " above the cylinder of the load cell. If this distance is less than $\frac{1}{4}$ ", or if you experience inaccurate or fluctuating readings, refilling the cell with oil may be required. Refer to Load Cell Refilling Instructions (page 12) for more information.

Warranty Repairs are only available through Advanced Specialty Gas Equipment Corp., and will be performed at no charge for parts and labor. For information on warranty, see the last page of this instruction booklet.

Non-Warranty Repairs are available through your distributor. Upon receipt at the factory, the scale will be inspected and you will be contacted by your distributor with a repair cost estimate. No item will be repaired until approval is received. There will be an evaluation charge assessed for equipment not repaired.

LOAD CELL REFILLING INSTRUCTIONS

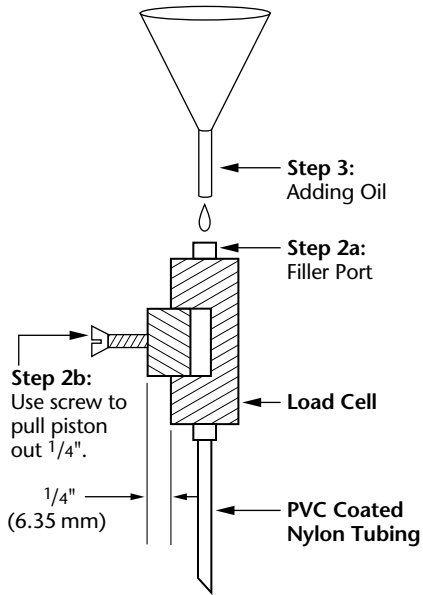
Step 1 – Remove cylinder from platform. Tilt platform and remove load cell, then replace flathead screw in top of piston (screw will be used to pull out piston).



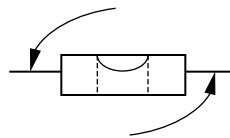
Step 2 – At a convenient work height, place cell on its side (a) with filler port up. Remove plug. Pull piston back with the flathead screw.
Note: (b) do not exceed $\frac{1}{4}$ " to avoid damaging internal diaphragm.

Step 3 – Fill with RO-5 Oil, or use SAE-5 or -10 weight non-detergent machine oil. Consult factory for compatibility. Fill to top of neck.

Step 4 – Jiggle tubing and load cell to release trapped air. Swirl an allen key in filler port to release any trapped air bubbles. Inspect O-Ring and reinsert $\frac{1}{4}$ " plug. Re-attach load cell to underside of platform and dial to wall.



Step 5 – Make sure platform is level from front to rear before using Model CS-200.



Step 5: Platform Mounted Level

SPECIFICATIONS

Maximum Capacity	
Gross (Total) Weight	300 lbs.
Net (Product) Weight	200 lbs.
Tare (Empty Cyl.) Weight	200 lbs.
Standard Cylinder Sizes	7" to 16" diameter
Accuracy	±2 lbs.
Dial Size	4 ½"
Dial Increments	1 lb.
Tubing Length	6 ft.
Platform Size	18½" x 13½" x 1 ⅝"
Weight	25 lbs.

MATERIALS OF CONSTRUCTION

Platform	PVC (Type I, Class 1)
Load Cell	Aluminum and Stainless Steel
Tubing	PVC Coated Nylon
Dial Indicator	Cast Aluminum
Bracket	Aluminum
Chain	Galvanized Steel

WARRANTY

Advanced Specialty Gas Equipment Corp., (the Company), warrants to the initial purchaser of each scale described herein, that such equipment will be free from defects in material and workmanship which result in breakdown or failure under normal use during a period of 12 months from date of shipment by the Company if used and maintained according to Advanced Specialty Gas Equipment written instructions. This warranty does not cover damage or malfunction due to corrosion. Purchaser is aware that this equipment is designed for specific applications and that using this equipment for the wrong application may damage or corrode the unit and cause personal injury. If there is any doubt about application, consult your Advanced Specialty Gas Equipment Corp. distributor.

The Company's liability under this warranty shall be limited to the repair, or at its option, replacement or refund of the purchase price, of such equipment which proves to be defective, provided; however, that this warranty shall only apply if the purchaser (1) gives the Company written notice within (10) days after discovery of such defect, (2) immediately on discovery of the claimed defect, discontinues all use of such equipment, and (3) returns such equipment freight prepaid to plant of manufacture.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SPECIFIED HEREIN. NO WARRANTIES BY ADVANCED SPECIALTY GAS EQUIPMENT CORP. (OTHER THAN WARRANTY OF TITLE AS PROVIDED IN THE UNIFORM COMMERCIAL CODE) SHALL BE IMPLIED OR OTHERWISE CREATED UNDER ANY APPLICABLE LAW, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

No claim against the Company of any kind, whether as to equipment delivery or for nondelivery of equipment and whether or not based on contract, warranty, negligence, strict liability in tort or otherwise, shall be greater in amount than the purchase price of the equipment in respect of which such claim is made. Without limiting the generality of the foregoing, Advanced Specialty Gas Equipment Corp. shall not be liable for any special, indirect, or consequential damage, such as failure of parts resulting from corrosion.

If it is determined by Advanced Specialty Gas Equipment Corp. that the equipment is to be repaired or replaced under the terms of this warranty, the cost of returning said equipment to the initial purchaser will be paid by the Company. If, however, equipment returned to the Company in connection with a claim under this warranty is found by the Company not to be defective hereunder, then such equipment will be returned to the initial purchaser, shipping charges collect, and additionally, a service charge will be paid by the purchaser to the Company to cover the cost of handling and testing such equipment.



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