Handling
Oxy-fuel gas
Welding and cutting
4-22-13

(7) 437-003-3350 Handling of Oxygen and Fuel Gas Cylinders

(a) When handling or moving cylinders you must:

(A) Move cylinders using a suitable hand truck, cart or cylinder pallet. 1926.350(a)(7)

NOTE: This rule does not apply to acetylene manufacturers, cylinder fill plants and distributors of compressed gases and acetylene.

(B) Provide adequate access for cylinder handling.

(C) Remove regulators and ensure any required valve protection is in place before moving cylinders not secured on a special truck or cylinder hand truck,

(D) Leave the valve protection cap and valve seal outlet in place until the cylinder has been secured in place and is ready to be connected to a regulator or manifold. 350(a)(1)

NOTE: This does not apply to manufacturers and distributors of compressed gases and acetylene plants where cylinder are connected and disconnected to cylinder manifolds.

(E) Use warm, not boiling, water to thaw frozen cylinders loose from the ground or if otherwise fixed. 253(b)(5)(ii)(C) & 350(a)(6)

(b) When moving cylinders by a crane or derrick you must:

(A) Use a cradle, boat, or suitable platform that secures cylinders. 350(a)(2) & 253(b)(5)(ii)(A)

(B) Install valve-protection caps on cylinders, including those cylinders with a water weight capacity of over 30 lbs., designed to accept a cap. 350(a)(6) & 253(b)(5)(ii)(A) 253(6)(1)(iv)

(C) Not use slings or electric magnets for this purpose. 350(a)(2)

(c) Before moving a portable bank (P-bank, cylinder cradles) you must:

(A) Close all individual oxygen and flammable gas cylinder valves on portable banks when in storage.

(B) Restrict manual movement of portable banks to clean, smooth, level stationary surfaces.

(C) Stay out of the bank's travel path when manually moved.

(d) When moving a portable bank (P-bank, cylinder cradles) with a forklift you must secure the cradle to the forklift.

(e) When moving a portable bank (P-bank, cylinder cradles) with a crane you must use the lifting hook attached to the cradle or other appropriate moving equipment.

(f) When lifting liquid cylinders you must:

(A) Lift by using the cylinder lift eyes.

(B) Use a lifting device designed for the lift and rated for the weight.

(g) Before moving cylinders to storage you must:

(A) Close the cylinder valve. 253(b)(2)(iii)

(B) Replace and secure any valve outlet seals.

(C) Properly install the cylinder cap.

(h) When handling or moving cylinders you must not:

(A) Repair or alter cylinders or valves. 253(b)(5)(ii)(R)(1) & (2)

(B) Place bars under valves or valve protection caps to pry frozen cylinders loose. *253(b)(5)(ii)(c)*

(C) Use valve protection caps for lifting or lowering cylinders manually or with a crane from one position or location to another.

(D) Drag or slide cylinders. 350(a)(3) & 253(b)(5)(iii)(B)

(E) Lift liquid cylinders by the cylinder grab ring.

(F) Drop cylinders or permit them to strike each other violently. 350(a)(3) & 253(b)(5)(ii)(B)

(G) Subject any cylinder to mechanical shocks that may damage the valve.

(H) Use cylinders as rollers for moving material or other equipment. 253(b)(5)(ii)(K)

(I) Permit oil, grease or other combustible substances to contact cylinders, valves, or other apparatus.

(J) Attempt to catch a falling cylinder.

(K) Place cylinders where they can become part of an electrical circuit. 253(b)(5)(ii)(J)

NOTE: All high and low pressure cylinders in contact with or secured to a conductive table or column without being isolated from electrical current can become part of an electrical circuit.

(i) When connecting cylinders for use you must: 253(b)(5)(ii)(P)& 437-002-0293

(A) Use a pressure-reducing regulator or separate control valve to discharge gas from a cylinder. 253(b)(5)(ii)(P)

(B) Use regulators approved for the specific gas.

(C) Loosen the valve outlet seal slowly when preparing to connect a cylinder. 253(b)(5)(ii)(P)

(D) Back out the regulator adjusting screws before opening cylinder valves.

(E) Open oxygen cylinder valves slowly and slightly (called cracking) for an instant and then close before attaching a regulator. 253(b)(5)(ii)(P)

(F) Open acetylene cylinder valves no more than one and one half turns. 253(b)(5)(iii)(K)

NOTE: It is preferable to open the acetylene valve no more than three-fourths of a turn.

(G) Return cylinders with contaminated valves (mud, oil, grease, and similar material) to the supplier.

(H) Use acetylene tank keys or wrenches designed to open acetylene stem type valves. 253(b)(5)(iii)(L)

(I) Notify the supplier if cylinder valves cannot be opened by hand.

(J) Stand with the cylinder valve between you and the regulator so your body, the cylinder valve and regulator form a straight line when opening the cylinder valve. 253(b)(5)(ii)(P)

(K) Open cylinder valves slowly and carefully after the cylinder has been connected to the process.

(L) Ensure that cylinder valves, pressure reducing regulators, hoses, torches and all connections do not leak.

(i) Perform a drop test

(ii) If the pressure drops during the drop test, perform a leak test to identify all leaks.

(iii) Use industry approved oil free leak detection solution.

(iv) Perform a leak test on cylinder pressure relief and safety devices, valves and regulator connections after the cylinder valve is open and connected to the pressure reducing regulator.

(v) Remove from service any cylinder that has a leaky valve or fittings that cannot be stopped by closing the valve and isolate the cylinder away from ignition sources. 253(b)(5)(iii)(F)

NOTE: Remove leaking cylinders to a safe outside location whenever possible. A warning should be placed near cylinders with leaking fuse plugs or other leaking safety devices not to approach them with a lighted cigarette or other source of ignition.

(vi) Promptly notify the supplier of any leaking cylinder or trouble with any cylinder valve and follow their instructions. 253(b)(5)(ii)(R)(1) & 253(b)(5)(iii)(G)

(vii) Tag cylinders having leaking fuse plugs or other leaking safety devices. 253(b)(5)(iii)(G)

(M) Keep the cylinder key used for opening stem type cylinder valves on the valve spindle.

(N) Allow each gas to flow through its respective hose for a few seconds to purge the hose of any mixture of gases:

(i) After connecting welding, cutting or heating apparatus to oxygen and fuel-gas cylinders.

(ii) When starting to reuse the apparatus after an interval of a half hour or more.

(j) When connecting cylinders you must not:

(A) Open cylinder valves (other than cracking oxygen) until a regulator has been attached.

(B) Stand or have any body part in front or behind the pressure reducing regulator when opening cylinder valves.

(C) Use a hammer or wrench to open hand wheel cylinder valves.

(k) When removing regulators from cylinders you must:

(A) Ensure that oxygen and fuel gas cylinder valves are closed. 253(b)(5)(iii)(D)

(B) Visually check the low pressure delivery gauges and high pressure supply gauge to ensure there is no pressure remaining in the system. 437-002-0290(3)

(C) Use the appropriate wrench to disconnect the regulator.

(D) Place disconnected regulators, hoses, and torches where they will not come into contact with dust and oily or grease substances.