PLAINTIFF'S EXHIBIT
DOW-2368

ST0404678

OXYGEN
150 Psig Max.
-20°F to Ambient

Notes:

1. CAUTION: Every precaution must be taken to see that the entire piping system for O_2 is installed completely free of all traces of hydrocarbons (grease, oil, etc.) and that it be kept free of contamination after installation to prevent internal fire hazards. Workmen must wear clean gloves at all times. Even oil from the skin may contaminate the system. Tools must be thoroughly degreased before use.

2. Cleaning of pipe, fittings, gaskets, etc.

   2.1 All pipe, fittings, etc. shall be degreased by internal swabbing and immersion in an agitated solution of trisodium phosphate or "Diversey 909" (Diversey Chemical Co.), flushed with clean, hot water, dried, and then immersed in a halogen saturated solvent such as Chlorothene, Perchloroethlyene, or Trichloroethylene. After cleaning, each piece shall be thoroughly dried (all solvent must be removed) and have openings plugged, capped or flanged immediately to prevent contamination. Plugs, caps, etc. shall be cleaned as above before use. As much prefabrication shall be done proir to cleaning as possible. When field welds are required, they shall be done by inert gas shielded arc welding, and the system must be cleaned by Dow Industrial Service after installation.

3. Cleaning of valves for oxygen service.

   3.1 Whenever practical, it is preferable that valves and relief valves be used which have been especially processed, labeled for oxygen service, and sealed by the manufacturer or qualified cleaning firm.

   3.2 Valves other than above shall be processed as follows:

      3.2.1 All valves shall be completely dismantled and degreased by immersion in a saturated solvent such as Chlorothene, Perchloroethylene or Trichloroethylene. All parts, including packing, gaskets, and seals, must be degreased. Cleaned valves shall be plugged or sealed in air tight packages.

      3.2.2 Valve packing shall be of Teflon or asbestos impregnated with Teflon:

Johns-Manville	2024 or 2004 or equal
Garlock	5780 or 5898 or equal

Acceptable valve gaskets are:

Johns-Manville	61 or equal
Garlock	900 or equal

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Packing and gaskets installed in valves require special cleaning, handling, and storage. See 3.2.1 above.

3.2.3 Following cleaning, valves must be either heated to 150°F ± for 10 minutes or blown with oil free air or nitrogen. Inspection must be made to insure that all contamination and solvent has been removed. Consider ultra violet light. Valves must be kept plugged until installed. Permanent metal tag stating "For Oxygen Service" shall be attached to each clean valve.

4. Instruments, pressure gages, and regulators.

All above items shall either be received sealed and certified for oxygen service (preferred) or have all parts in contact with oxygen processed in accordance with the above procedure for valves, sealed, and tagged "For Oxygen Service."

5. Piping shall be installed in accordance with Engr. Spec. 47-110 and instructions above.

Pipe

Note: Use no galvanized pipe. Use extra strong pipe when threaded, Schedule 40 when welded or socket welded.

1/4" thru 3/8"	P-102	Copper single tube, tubing to be soft anneal copper, ASTM B-68, 1/4 OD by 0.030 wall or 3/8 OD by 0/032 wall, as specified. (Note: -325 to +500°F.)
1/2" thru 3/4"	P-207	Seamless soft annealed copper tubing, ASTM B-75 minimum ultimate tensile strength 30,000 psi, 0.035 wall. (Note: -325 to 500°F.)
1½" and Under	P-27B	ASTM A-106 Grade B, standard weight seamless steel pipe. (Note: -20 to +750°F.)
	P-28B	ASTM A-106 Grade B, extra strong seamless steel pipe. (Note: -20 to +750°F.)
2" thru 6"	P-3B	ASTM A-53 or API-5L, Grade B standard weight seamless steel pipe, open hearth or electric furnace steel. (Note: -20 to +750°F.)

Fittings

3/4" and Under	ELTR-100A	Brass swagelok fittings. (For copper tubing.)
1½" and Under	ELTR-64	3000-lb. forged steel socket welding fittings, ASTM A-105-71, ANSI B16.11. (Note: Table 35, -20 to +750°F.)

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Fittings (Continued)

1½" and Under	ELTR-66	2000-lb. screwed forged steel fittings, ASTM A-105-71, ANSI B16.11. (Note: Table 34, -20 to +750°F.)
	C-3	3000-lb. forged steel screwed coupling, ANSI B16.11, or 3000-lb. Thredolet, ASTM A-105-71, for welding in. (Note: Table 35, -20 to +750°F.)
	C-14	3000-lb. forged steel socket welding coupling, ANSI B16.11, or 3000-lb. Sockolet, ASTM A-105-71, for welding in. (Note: Table 35, -20 to +750°F.)
	R-22	Extra strong steel swaged nipple, ASTM A-106 or A-53 Grade B, or AISI C-1025 Barstock, threaded beveled, plain or any combination of ends. (Note: P/T rating same as Grade B seamless pipe.)
	PC-2	Solid steel hex head screwed plug, ASTM A-105-71, ANSI B16.11. (Note: Table 36, -20 to +750°F.)
	PC-26	3000-lb. screwed forged steel cap, ASTM A-105-71, ANSI B16.11. (Note: Table 35, -20 to +750°F.)
	PC-27	3000-lb. socket weld forged steel cap, ASTM A-105-71. (Note: Table 35, -20 to +750°F.)
	U-5	3000-lb. screwed FS union, ASTM A-105-71, Rockwood 603. (Note: Table 35, -20 to +750°F.)
6" and Under	ELTR-15B	Standard weight seamless steel welding fittings, ASTM A-234 Grade WPB, ANSI B16.9. (Note: P/T same as Grade B pipe, -20 to +750°F.)
	PC-4	Welding cap, wall thickness and material to conform with welding fittings. (Note: Same P/T as welding fittings.)
Flanges	F-3-RF	150-lb. raised face blind flange, ASTM A-181 Grade I or II, ANSI B16.5. (Note: Table 1, -20 to +750°F.)
	F-24-RF	150-lb. raised face welding neck flange, ASTM A-181 Grade I or II, ANSI B16.5, bore to match welding fittings. (Note: Table 1, -20 to +750°F.)

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FOR REFERENCE ONLY

Branch Connections	BC-18W	For welded piping, branch lines shall be welded in without reinforcement regardless of size combination. For threaded branch connection, use Thredolet or 3000-lb. full coupling welded to header. For socket welding branch connections, use Sockolet or socket welding coupling welded to header.
Gaskets	G-4	Standard flat ring gasket, 1/16" thick asbestos, Garlock 900 or equal.
Joint Compound	JC-15	Teflon tape 1/2" by 3 mil thickness, Scotch Brand 547.
Flange Bolts	B-3	ASTM A-193, Grade B-7, alloy steel bolt studs with ASTM A-194, Grade 2H, heavy hex nuts. (Note: For temperature range from -50°F to +1000°F inclusive.)
Valves	(CAUTION: All valves shall be processed and tagged "For Oxygen Service" by the vendor or shall be processed per general notes above.)	
1½" and Under	V-474 (Gate)	800-lb. socket weld, OS/Y solid wedge gate valve, carbon steel body, 13 chrome alloy steel trim with hard-faced seat rings. (Note: Table 34, -20 to +750°F.)
	V-367 (Gate)	800-lb. screwed OS/Y solid wedge gate valve, carbon steel body, 13 chrome alloy steel trim with hard-faced seat rings. (Note: Table 34, -20 to +750°F.)
	V-617 (Gate)	150-lb. flanged OS/Y gate valve, carbon steel body, 13 chrome alloy steel trim with hard-faced seats. (Note: Table 1, -20 to +750°F.)
2" and Over	V-51 (Gate)	150-lb. flanged OS/Y wedge gate valve, carbon steel body, 13 chrome alloy steel trim. (Note: Table 1, -20 to +750°F, use N-202 for valves 26" and larger.)
1½" and Under	V-472 (Globe)	600-lb. socket welding OS/Y flocontrol type globe valve, carbon steel body, chrome stainless trim. (Note: Table 34, -20 to +750°F.)
	V-103 (Globe)	600-lb. screwed OS/Y globe valve, carbon steel body, carbon steel body, 13 chrome alloy steel trim, plug type disc, bolted bonnet. (Note: Table 34, -20 to +750°F.)
	V-595 (Globe)	600-lb. socket welding OS/Y globe valve, carbon steel body, 13 chrome alloy steel trim, with hard-faced seat, bolted bonnet. (Note: Table 34, -20 to +750°F.)

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Valves (Continued)

6" and Under	V-36 (Globe)	150-lb. flanged OS/Y globe valve, carbon steel body, 13 chrome alloy steel trim. (Note: Table 1, -20 to +750°F.)
1½" and Under	V-594 (Check)	600-lb. socket welding horizontal lift check valve, carbon steel body, 13 chrome alloy steel trim, bolted cap. (Note: Table 34, -20 to +750°F.)
	V-836 (Check)	1500-lb. screwed check valve, brass body, Buna-N seal and seat ring, 302 stainless steel spring, female ends. (Note: -40 to +250°F.)
6" and Under	V-46 (Check)	150-lb. flanged horizontal swing check valve, carbon steel body, 13 chrome alloy steel trim, bolted cap. (Note: Table 1, -20 to +750°F, use N-202 for valves 26" and larger.)
1½" and Under	V-744 (Ball)	300-lb. screwed bronze ball valve, Teflon seats, and seals, 1" and under shall have round or oval handle, 1¼" and over lever operator. (Note: Table 90, -20 to +300°F.)
	V-665SW (Ball)	500-lb. socket welding carbon steel ball valve, Teflon seats and seals, 1" and under shall have round or oval handle, 1¼" and over lever operator. (Note: Table 91, -20 to 300°F.)
4" and Under	V-737B (Ball)	150-lb. flanged steel ball valve with 316 stainless steel ball, Teflon seats and seals, 1" and under shall have round or oval handle, 1¼" and over lever operator. (Note: Table 1, -20 to +300°F.)
6"	V-737BG (Ball)	150-lb. flanged steel ball valve with 316 stainless steel ball, Teflon seats and seals, weatherproof gear operator. (Note: Table 1, -20 to +300°F.)
1/4"	V-698 (Needle)	3000-lb. forged brass needle valve, asbestos packing, 1/4" swagelok ends.
	V-702 (Needle)	3000-lb. brass needle valve, Teflon packing, 1/4" male pipe thread ends.
1/2" X 3/4"	V-654 (Gauge)	6000-lb. screwed, male and female, 316 stainless pressure gauge valve, KEL-F seat, Teflon packing.
3/4" and Under	V-709 (Needle)	5000-lb. screwed, 316 stainless steel bar stock needle valve, Teflon packing.

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