

ARO EXP Air Operated Diaphragm Pump

Technical Specification

April 23, 2004

General:

Pumps should be pneumatically powered, double diaphragm type with diaphragms, ball check valves and air distribution valve. Design should allow for variable flow rates over the performance range without the need for relief valves or other external adjusting devices and shall be self-priming. Pump shall be backed by five year manufacturers warranty.

Wet Ends:

Pressure containing parts should be positively bolted together (wing bolts, set screws, etc. shall not be used) to assure the safe handling of fluids and ease of assembly / disassembly. Fasteners should not require thread locking compounds and shall conform to ANSI 18.2.1-1992 and/or DIN 931 - 1987 specifications. Diaphragms shall be of convoluted construction for ease of orientation during assembly. Pumps fitted with Teflon diaphragms shall use Santoprene back-up diaphragm.

Air Motor:

Air Motor shall consist of an unbalanced major air valve to drive the diaphragms, an unbalanced mechanically actuated -pneumatically driven pilot valve and quick dump exhaust valves.

The major air valve shall be of unbalanced design and be pneumatically actuated to prevent valve centering and assure reliable operation. Use of magnets, springs, reset buttons or other non proportional actuators are not permissible. Air valve construction shall not use lapped, matched sets or other close fitting components. The major air valve shall incorporate a ceramic "D" valve insert and valve plate.

The pilot valve shall be an unbalanced to provide a positive signal to the major valve. It shall be mechanically actuated by push pins extending into the air chambers. Pneumatic assist will shift and hold the valve in position to provide a positive signal to the major air valve.

Air motor exhaust shall not be directed back through main valve before exiting pump, but shall be diverted by quick dump valves through unrestricted exhaust porting to prevent ice build up in air motor.

Pump shall not consume compressed air at idle condition.

Construction:

Non-metallic Wet Ends

Wetted parts shall be of Material. Elastomers shall be of type diaphragms, ball checks of type, and check seats of type.

Air motor material options: Polypropylene/ Vinyl Ester or Polypropylene.

Fasteners & all hardware shall be stainless steel.

Pump shall be capable of being fitted with cycle sensing, remote actuation and Diaphragm Failure Detection (DFD) devices.

Metallic Wet Ends:

Wetted parts shall be of Material. Elastomers shall be of type diaphragms, ball checks of type, and check seats of type.

Air motor material options: Polypropylene, Aluminum or Stainless Steel.

Pump shall be capable of being fitted with cycle sensing, remote actuation and Diaphragm Failure Detection (DFD) devices.

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Performance Requirements:

PD30R- __ S - ___

Metallic

Pump shall be capable of a free flow rate of 275 GPM using 120 PSI inlet air pressure. Pump shall be capable of delivering ____ gallons per minute at ____ feet of discharge, using no more than ____ PSI and ____ SCFM of compressed air.

Airborne noise emissions:

Pump shall not exceed 83dbA @70 PSI inlet and 60 cycles/min. Equivalent Continuous Sound Level (LAeq) to meet intent of ANSI S1.13-1971.

Inlet/Outlet connection: Pump shall be available with the following port configuration: center suction/discharge ports, 3 inch NPT or BSP female pipe thread.

Pump to be manufactured by IR/ARO, Bryan, Ohio. Their model PD30R - ___ - ___.

PD20P- __ S - ___

Non-Metallic

Pump shall be capable of a free flow rate of 184 GPM using 120 PSI inlet air pressure. Pump shall be capable of delivering ____ gallons per minute at ____ feet of discharge, using no more than ____ PSI and ____ SCFM of compressed air.

Airborne noise emissions:

Pump shall not exceed 85dbA @70 PSI inlet and 60 cycles/min. Equivalent Continuous Sound Level (LAeq) to meet intent of ANSI S1.13-1971.

Inlet/Outlet connection: Pump shall use 2 inch (50mm) flanged end suction/discharge ports. Flange dimensions to accommodate both ANSI and DIN mating flanges.

Pump to be manufactured by IR/ARO, Bryan, Ohio. Their model PD20P - __ S - ___.

PD20_ - ___ - ___

Metallic

Pump shall be capable of a free flow rate of 175 GPM using 120 PSI inlet air pressure. Pump shall be capable of delivering ____ gallons per minute at ____ feet of discharge, using no more than ____ PSI and ____ SCFM of compressed air.

Airborne noise emissions:

Pump shall not exceed 85dbA @70 PSI inlet and 60 cycles/min. Equivalent Continuous Sound Level (LAeq) to meet intent of ANSI S1.13-1971.

Inlet/Outlet connection: Pump shall use 2 inch (50mm) flanged center suction/discharge ports. Flange dimensions to accommodate both ANSI and DIN mating flanges or 2 inch center suction/discharge ports, 2 inch NPT or BSP female pipe thread.

Pump to be manufactured by IR/ARO, Bryan, Ohio. Their model PD20R - ___ - ___.

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PD15P - __S_ - ____ Non-Metallic

Pump shall be capable of a free flow rate of 123 GPM using 120 PSI inlet air pressure. Pump shall be capable of delivering ____ gallons per minute at ____ feet of discharge, using no more than ____ PSI and ____ SCFM of compressed air.

Airborne noise emissions: Pump shall not exceed 85dbA @70 PSI inlet and 60 cycles/min. Equivalent Continuous Sound Level (LAeq) to meet intent of ANSI S1.13-1971.

Inlet/Outlet connection: Pump shall use combination ANSI/DIN 1-1/2 inch (40mm) flanged end suction/discharge or center suction/discharge ports.

Pump to be manufactured by IR/ARO, Bryan, Ohio. Their model PD15P - __S_ - ____.

PD15 _ - ____ - ____ Metallic

Pump shall be capable of a free flow rate of 123 GPM using 120 PSI inlet air pressure. Pump shall be capable of delivering ____ gallons per minute at ____ feet of discharge, using no more than ____ PSI and ____ SCFM of compressed air.

Airborne noise emissions: Pump shall not exceed 85dbA @70 PSI inlet and 60 cycles/min. Equivalent Continuous Sound Level (LAeq) to meet intent of ANSI S1.13-1971.

Inlet/Outlet connection: Pump shall be available with the following port configuration: Combination ANSI/DIN 1-1/2 inch (40mm) flanged suction/discharge ports, 1-1/2 inch NPT and BSP female pipe thread.

Pump to be manufactured by IR/ARO, Bryan, Ohio. Their model PD15 _ - ____ - ____.

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PD10P - __S_ - ____ Non-Metallic

Pump shall be capable of a free flow rate of 53 GPM using 120 PSI inlet air pressure. Pump shall be capable of delivering ____ gallons per minute at ____ feet of discharge, using no more than ____ PSI and ____ SCFM of compressed air.

Airborne noise emissions: Pump shall not exceed 79.7dbA @70 PSI inlet and 60 cycles/min. Equivalent Continuous Sound Level (LAeq) to meet intent of ANSI S1.13-1971.

Inlet/Outlet connection: Pump shall be available with the following port configuration: Combination ANSI/DIN 1 inch (25.4mm) flanged end suction/discharge or center suction/discharge ports or center ported 1inch NPT and BSP female pipe thread.

Pump to be manufactured by IR/ARO, Bryan, Ohio. Their model PD15P - __S_ - ____.

PD10 _ - ____ - ____ Metallic

Pump shall be capable of a free flow rate of 52 GPM using 120 PSI inlet air pressure. Pump shall be capable of delivering ____ gallons per minute at ____ feet of discharge, using no more than ____ PSI and ____ SCFM of compressed air.

Airborne noise emissions: Pump shall not exceed 80.8dbA @70 PSI inlet and 60 cycles/min. Equivalent Continuous Sound Level (LAeq) to meet intent of ANSI S1.13-1971.

Inlet/Outlet connection: Pump shall be available with the following port configuration: Combination 1 inch center and side suction/discharge ports, 1 inch NPT or BSP female pipe thread.

Pump to be manufactured by IR/ARO, Bryan, Ohio. Their model PD10 _ - ____ - ____.