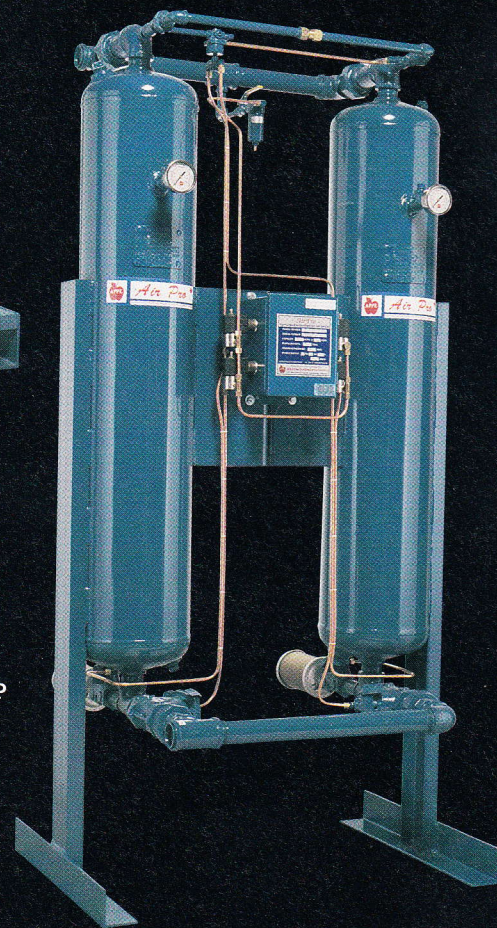


TWINTOWER, HEATLESS, REGENERATIVE, COMPRESSED AIR DRYERS



AP-630-SP
Complete with Purge
Economizer Controls



AP-150-FP

A

P P L



Air Drying Principle and Considerations

AIR PRO dryers operate on the heatless pressure swing principle, during which one tower is on line drying while the other tower is being purged of accumulated water. This function is referred to as regeneration. Regeneration, or purging, requires a portion of the dried outlet air. The percentage of outlet air used will vary based on system operating pressure. Refer to the capacity table on the back page for purge requirements based on standard operation conditions at various operating pressures. Operating at higher pressures is more efficient than operation at lower pressures, and therefore, pressure regulators should never be placed in line before the air dryer. The standard dryer yields pressure dewpoints of minus 40°C and lower, based on standard purge flow and a 10 minute operating time cycle. The outlet pressure dewpoint may be altered

by changing either of these two conditions. The dryer is designed to remove water vapour from the compressed air, and any free liquid or condensate must be removed from the air stream prior to the air entering the dryer by means of separator/drain traps, or filters. The purge exhaust from the dryer is to atmosphere, and all water purged from the regenerating tower is in vapour form, so no drains are required for the dryer. Required in line before the dryer, will be an oil coalescing filter to remove any oil aerosols which would contaminate the dryer desiccant bed. The filter should include an automatic drain trap. Required at the outlet of the dryer is a particulate afterfilter to remove any desiccant fines. These are standard options which are available from Air Power Products Limited.

Quality Construction Features

- 200 PSIG Pressure towers, ASME compliant and TSSA registered
- Removable Stainless Steel Wedge-Wire style Desiccant Retainers
- Stainless Steel Control Solenoid Valves
- Diaphragm Operated Inlet Switching and Purge Exhaust Valves
- 5 Micron Control Air Filter
- Repressurization Valve to allow full tower repressurizing prior to on-line switching — even at reduced purge flow levels
- Up-flow Drying and Downflow Purging ensure desiccant remains stable during Tower Depressurization and Purging
- Liquid Filled Pressure Gauges
- Oil-Dust Tight EEMAC-12 Control Panel

Two Models To Choose From

AIR PRO dryers are now available in two versions for models up to 850 SCFM — each offering advantages to users having specific operating requirements. The standard model, featuring an adjustable purge flow, is available for users whose air demand, and/or dewpoint requirements may change frequently, allowing them to change purge air consumption without the use of tools. The more recently introduced version to our product line, is the "Fixed Purge" model, which offers a more economical solution to air drying. Although this option may be at reduced cost, the advantages of this design should not be overlooked. Advantages offered by each dryer version are as follows:

Standard Adjustable Purge Models

- Adjustable time cycle allows dewpoint to -minus 70°C by means of a repeat cycle timer.
- Adjustable purge flow using a flow regulating valve allows flexibility in altering dewpoint, and compensating for air demand changes.
- Purge flow pressure gauge provides visual indication of purge flow.
- Tower safety relief valves.

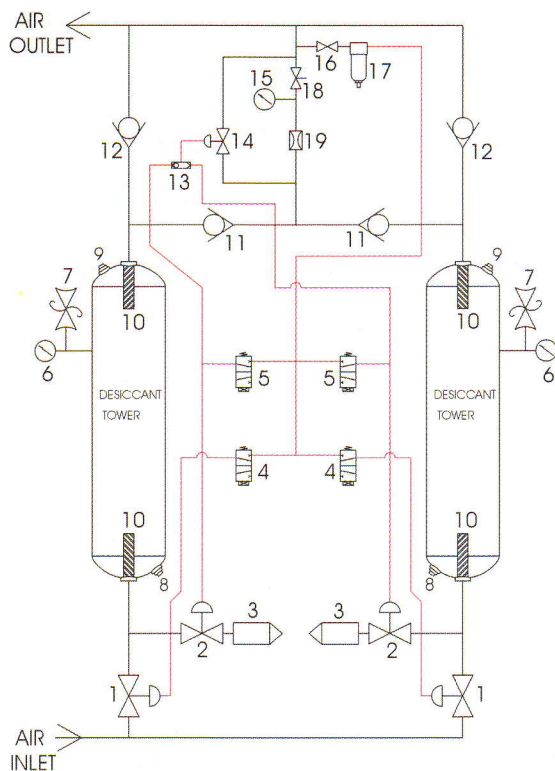
Fixed Purge Models

- Reduced maintenance due to elimination of purge check valves.
- Tamper-proof purge flow eliminates, inadvertent or unauthorized purge flow changes. Purge orifice may be easily changed if required.
- Fixed 10 minute time cycle using an epoxy encapsulated micro processor is tamper-proof.
- Reduced initial capital expenditure

Both models offer both the same reliable inlet switching valve arrangement, tower design, desiccant fill, and capacities. The fixed purge models use rugged inline, silent outlet check valves which may be removed at union connection. Air flow schematics for each dryer version are shown at right.

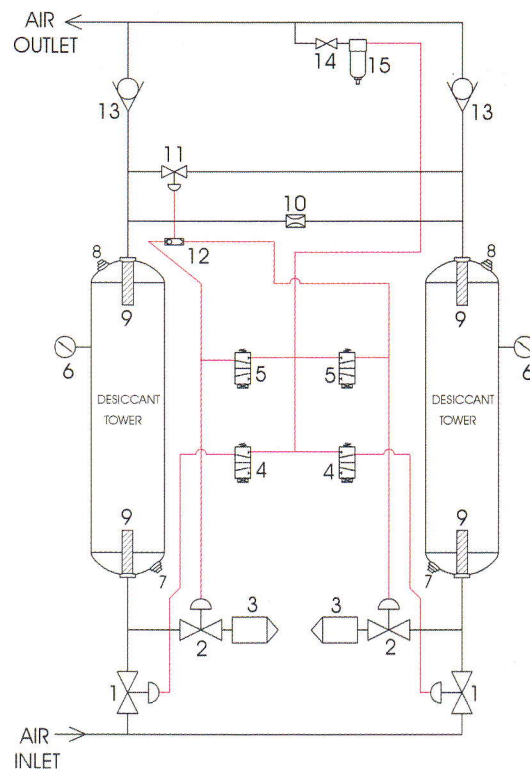
Air Flow Schematics

Standard Adjustable Purge Model



Note: Broken lines represent control air lines.

Fixed Purge Models



Component Reference Table

Adjustable Purge Air Flow Schematic

- 1 INLET SWITCHING VALVES
- 2 PURGE EXHAUST VALVES
- 3 PURGE EXHAUST MUFFLERS
- 4 INLET CONTROL SOLENOID VALVES
- 5 PURGE CONTROL SOLENOID VALVES
- 6 TOWER PRESSURE GAUGES
- 7 TOWER SAFETY RELIEF VALVES
- 8 DESICCANT DRAIN PORTS
- 9 DESICCANT FILL PORTS
- 10 STAINLESS STEEL DESICCANT RETAINERS
- 11 PURGE CHECK VALVES
- 12 OUTLET CHECK VALVES
- 13 REPRESSURIZATION SHUTTLE CONTROL VALVE
- 14 REPRESSURIZATION VALVE
- 15 PURGE FLOW PRESSURE GAUGE
- 16 CONTROL AIR SHUTOFF VALVE
- 17 CONTROL AIR FILTER
- 18 PURGE ADJUSTING VALVE
- 19 PURGE ORIFICE ASSEMBLY

Fixed Purge Air Flow Schematic

- 1 INLET SWITCHING VALVES
- 2 PURGE EXHAUST VALVES
- 3 PURGE EXHAUST MUFFLERS
- 4 INLET CONTROL SOLENOID VALVES
- 5 PURGE CONTROL SOLENOID VALVES
- 6 TOWER PRESSURE GAUGES
- 7 DESICCANT DRAIN PORTS
- 8 DESICCANT FILL PORTS
- 9 STAINLESS STEEL DESICCANT RETAINERS
- 10 PURGE ORIFICE ASSEMBLY
- 11 REPRESSURIZATION VALVE
- 12 REPRESSURIZATION SHUTTLE CONTROL VALVE
- 13 OUTLET CHECK VALVE
- 14 CONTROL AIR SHUTOFF VALVE
- 15 CONTROL AIR FILTER

NOTE: Fixed Purge models are available from models AP-100FP to AP-850-FP only.

NOTE: Models AP-1600 and larger use additional valves. Schematic available upon request.

Capacity – SCFM @ Operating Pressure

From the table below, read across the top to the pressure at which the dryer will be operating. From this pressure, follow the vertical column downward until the first SCFM figure exceeding your capacity requirement is found. From this figure, follow the horizontal column to the far left, where the **AIR PRO** model number suitable for your requirement will be shown.

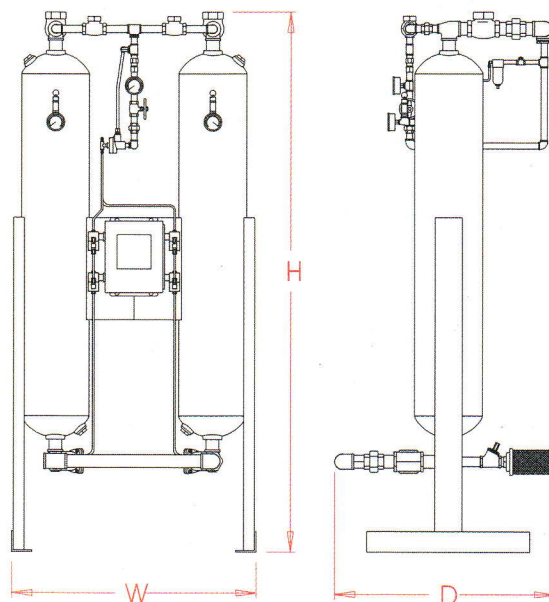
Model	Operating Pressure – PSIG							Overall Dimensions (Inches)			Inlet & Outlet Size	Weight (Lbs.)
	80	90	100	110	120	130	140	Height	Width	Depth		
AP-100	83	91	100	109	117	126	135	71	32	28	1" NPT	250
AP-150	124	137	150	163	176	189	202	74	37	31	1.5" NPT	375
AP-200	165	183	200	217	235	252	270	80	36	32	1.5" NPT	450
AP-280	231	256	280	304	329	353	378	86	41	33	2" NPT	650
AP-380	314	347	380	413	446	479	513	85	45	42	2" NPT	900
AP-630	520	575	630	685	740	795	850	85	57	46	2" NPT	1300
AP-850	702	776	850	924	998	1072	1146	87	60	49	2.5" NPT	1800
AP-1200	991	1095	1200	1305	1409	1514	1618	99	69	60	3" R.F. FL.	2500
AP-1600	1321	1461	1600	1739	1879	2018	2158	101	88	62	3" R.F. FL.	4200
AP-2000	1651	1826	2000	2174	2349	2523	2697	120	82	62	4" R.F. FL.	5000
AP-2800	2312	2556	2800	3044	3288	3532	3776	118	104	48	4" R.F. FL.	6500
AP-3800	3137	3469	3800	4131	4463	4794	5125	120	141	62	6" R.F. FL.	9000
PURGE AIR CONSUMPTION	18.8%	16.7%	15%	13.8%	11.9%	11.1%	10.4%					
FIGURE SHOWN REPRESENTS THE PORTION OF THE DRYER INLET VOLUME CONSUMED												

Note: Specification are subject to change without notice.

Optional Equipment and Features

Dimensional Layout

- 1 Oil coalescing prefilters.
- 2 Particulate and activated carbon afterfilters.
- 3 Mounting and pre-piping of filters.
- 4 3-valve bypass system.
- 5 "Purge Economizer Controls" with digital dewpoint display, and text display of operating functions optimizes operating efficiency. Ask for descriptive brochure.
- 6 Alarms for "Tower Switching Failure", "High Humidity", "Low Inlet or Outlet Pressure", "Low Purge", "High Differential Pressure" and others.
- 7 Visual Colour Change Moisture Indicator.
- 8 Prefilter Filter Drain Solenoid Valve(s) mounted and operated from dryer control panel.
- 9 Central Pressure Gauge Panel.
- 10 Copper-free construction.
- 11 High Pressure Operation Models.
- 12 Explosion Proof Controls.
- 13 Programmable Controllers available from various popular manufacturers.



Dimensional Notes:

- 1) Dimensions and weights are subject to change without notice.
- 2) Connections up to 2.5" are F. NPT.
- 3) 3" and larger connections are 150 lb. raised face flanges.
- 4) Above layout is typical for model AP-100 through AP-2000.
- 5) Request general arrangements drawing for detailed layout.

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