

MAP Application Solutions

Background

Aluminum Extrusion is a process in which the metal is heat-treated and pushed through a die to create a form with design parameters desired by the manufacturer. This manufacturing requires tight tolerances to ensure accurate interfacing with other parts. Along with this quality, the shape can be engineered to distribute material at optimal locations along the piece in order to produce stronger parts. The manufacturing of an aluminum product using the extrusion process helps produce the most cost-effective and accurate shapes needed by manufacturers.



Application

During production, aluminum oxide can form on the surface of the dies due to high temperatures. These formations can cause irregularities along the newly formed piece. The damage results in tooling costs, downtime, maintenance costs, and lost productivity. These pieces can not be used due to weaknesses

created within the material or non-compliance to original design specifications. By degassing the aluminum with nitrogen from a Parker Balston Nitrogen Generator, the dies are cooled and oxygen is removed. This ensures more consistent extrusions, less scrap, and high quality finished products.

Case Study

During the production sequence, many customers use compressed air to cool off the dies when extruding aluminum parts. However, the compressed air that is used contains oxygen and can cause damage to the part. While the parts are produced using compressed air as a coolant, bubbled oxidized metal or "dross," can form and decrease die life. These areas of deposits can increase friction with the extrudate, resulting in "die lines" or scratches on the newly formed metal surface. Gordon Aluminum in Wisconsin, a full service aluminum extruder, dealt with this exact problem. After suspecting they had increased die friction, Gordon Aluminum called Parker Balston to install Nitrogen Generators to create 98%-99.5% pure nitrogen gas blanket over the dies. The result was a better finish and longer run times. Decreasing their run resets improved overall

efficiency, helping them meet their customer lot demands. With Parker Balston Nitrogen Generators, Gordon Aluminum solved their surface finish problems, increased die life, and increased run times.



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Features and Benefits

- Improves part quality by eliminating oxidation on dyes
- Lower cost by eliminating costly gas cylinders
- Compact - frees up floor space
- Hassle-free, easy to install, easy to operate
- Safe and reliable
- Maintains consistent nitrogen production
- Eliminates defects
- Increases die life
- Reduces change outs

Principal Specifications

All Models		
Model Number	DB-5, DB-10	DB-15, DB-20
Nominal Conditions		
Feed Pressure	110 psig	110 psig
Temperature	80°F	80°F
Ambient Pressure	1 Atm.	1 Atm.
Compressed Air Specifications		
Maximum Pressure	140 PSIG	140 PSIG
Temperature Range	60°F - 105°F	60°F - 105°F
Dewpoint	-40°F pressure dewpoint or better	
Residual Oil Content	Trace	
Particles	<.01 micron	
Ambient Conditions		
Temperature	45°F - 950°F	45°F - 95°F
Ambient Pressure	Atmospheric	
Air Quality	Clean air without contaminants	
Dimensions, Weight and Connections		
Dimensions	28.5"L 32.25"D 78"H	28.5"L 50"D 78"H
Weight (with tank)	620 lbs [DB-5] 830 lbs [DB-10]	1240 lbs [DB-15] 1450 lbs [DB-20]
Inlet	1/2" NPT	
Outlet	1/2" NPT	

Performance Data - Nitrogen Flow (SCFH)				
% Nitrogen	DB-5	DB-10	DB-15	DB-20
99.99	43	86	130	173
99.95	118	236	354	472
99.9	155	310	465	620
99.5	250	500	750	1000
99	315	630	945	1260
98	400	800	1200	1600
97	453	906	1358	1810
96	513	1026	1539	2050
95	563	1126	1689	2250
Ordering Information for assistance, call 1-800-343-4048				
Balston Dual Bed Generator with Oxygen Analyzer	DB0-5	DB0-10	DB0-15	DB0-20N2
Balston Dual Bed N2 Generator	DB-5	DB-10	DB-15	DB-20
Maintenance Kit for N2 Generator with Oxygen Analyzer	MKDB0-5	MKDB0-5	MKDB0-5	MKDB0-5
Maintenance Kit for N2 Generator	MKDB5	MKDB5	MKDB5	MKDB5
Oxygen Sensor	72730	72730	72730	72730

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