



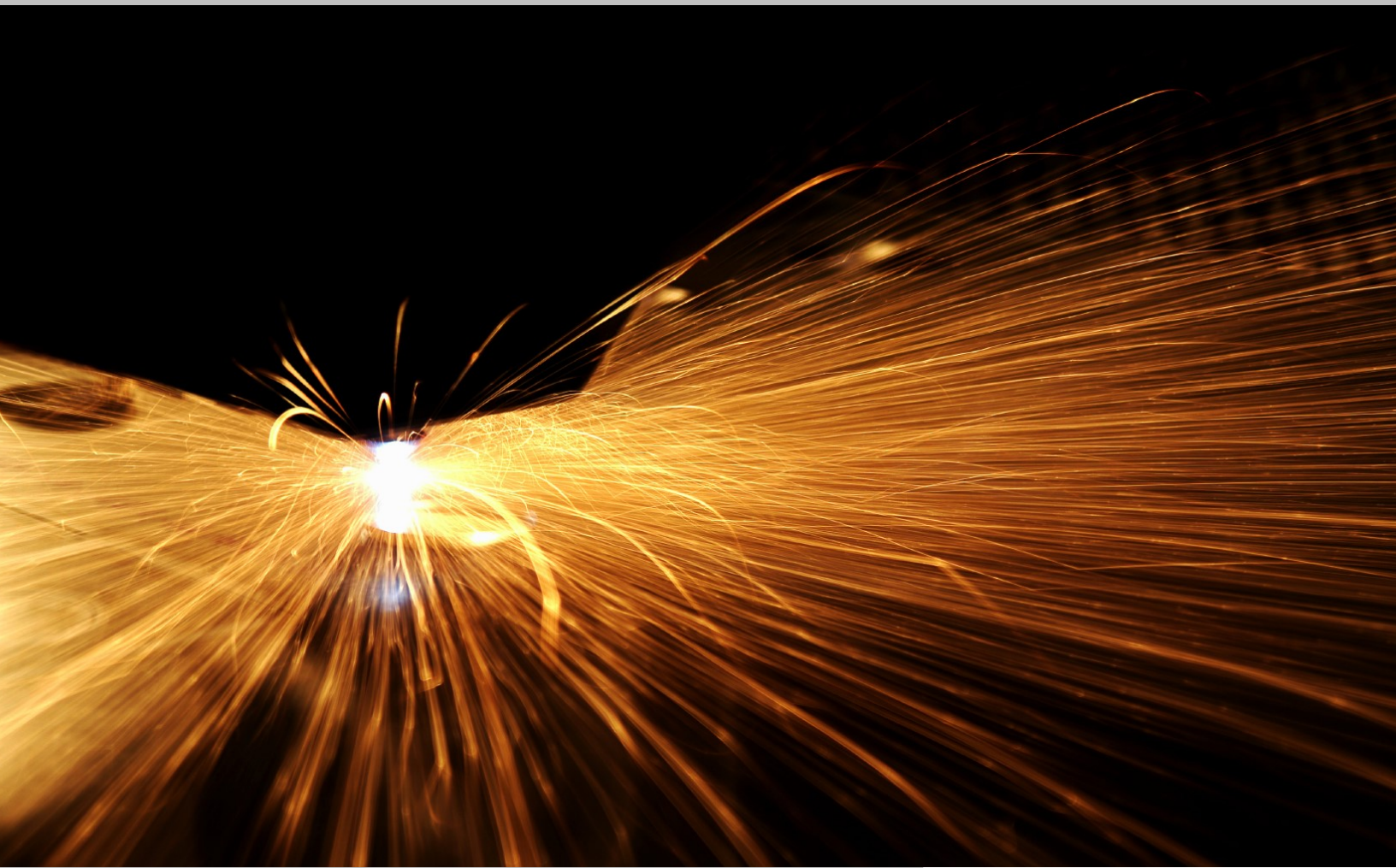
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**Series D Solutions**

**LSN2.com**

## The Most Reliable, Bullet-Proof High-Performance Air Systems in North America...PERIOD.

A big claim? Yes, but backed up and proved by more than 6 million hours of installed machine usage, with 99.9+% uptime, and further backstopped by Liberty Systems 24/7, customer-delighting field support...all made transparently real to you by our many "happy customer" references from tough-to-please general managers, engineers, maintenance techs, and business owners, and available to you in our proposals.

We like to make your inner bean-counter happy, with a laser focus on delivering you maximum cost savings versus purchased nitrogen gas to make your High-Performance Air System investment pay-back quickly to the bottom line, plus we fulfill on the inherent promise of High-Performance Air, which is always available, never run out of gas convenience and a much safer work environment versus the cost, hassle, and contract headaches associated with buying nitrogen via traditional tank and cylinder suppliers

Your typical High-Performance Air System desktop engineer hasn't lived the life of the maintenance and support mechanic, we have and you benefit from this know how. To top off our machine reliability crusade, our founders insisted that their machines be built under rigid ISO 9001 quality standards, in place and certified since 2008.

### Dry Air Assist

We offer dry air assist systems. These systems should not be confused with shop air cutting. Shop air cutting works for thinner gauge material. We offer flow rates of up to 200 scfm and extremely low pressure dew points using a proprietary blend of dehydration media.

Cutting with compressed air yields the same weld and paint friendly surface as cutting with nitrogen, often at increased cutting feed rates.

To process the upper ranges of Stainless Steel and Aluminum, you will need a compressor capable outputting elevated pressures, in other words the 125 psig shop compressor just won't cut it (no pun intended).

Pressure requirements are typically higher than the standard shop compressors and require a dedicated system for cutting. We couple our Series D units with a rotary screw air compressor and provide delivery pressures up to 14 barg (204 psig) for thinner gauge material and up to 30 barg (440 psig) for the thicker ranges when a booster compressor is included.

### Series D7

Our Series D High-Performance Air systems are based on creating extremely dry air. Series D7 High-Performance Air systems have the ability to produce higher pressures and greater flow rates than our Series D5 High-Performance Air Systems. With typical delivery pressures of 27 barg (400 psig) up to 30 barg (440 psig) utilizing a gas booster.

With proper preventive maintenance, quality supply air and our proprietary media blend that is part of the pre-filtration and dehydration system, series D7 High-Performance Air Systems are expected to have a life of more than 10 years.

### Standard 3 Year Warranty

Our after sales support group has had it pretty easy over the years. The systems are so strong and dependable we took our industry leading two year warranty and made it three years.

### 5 Year Warranty

3 year warranty not good enough for you? Do you want a 5 year warranty? Simply ask and we will configure the system with a few additional features to get you there.

### Silver, Gold, Platinum

Liberty offers three package tiers, Silver, Gold and Platinum. Each tier has it's benefits. Want to keep it simple? Choose the Silver package. Interested in a variable frequency drive compressor? Request a quote for our Gold package. Want a system with some of the best service technicians in the world? Choose our Platinum package.



### Platinum Package-D5 / D7

Our Platinum packages come standard with fixed speed load / unload Kaeser rotary screw air compressors and gas boosters.

#### **Kaeser Rotary Screw Air Compressors**

Kaeser compressors have been designed from the ground up with the user in mind. Fewer wearing parts and premium materials ensure reduced maintenance requirements, longer service intervals and extended service life.

Each component from the inlet air filter to the discharge flange have been carefully selected with performance in mind. Kaeser compressors are up to 30% more efficient than the competition.

Variable frequency drive air compressors are offered as an option.

#### **Kaeser Gas Boosters**

Kaeser utilizes premium efficiency TEFC motors on all their nitrogen boosters offering energy savings and long equipment life.

Automatic belt tightening systems and low rotation speeds promote that efficiency and extend operation life.

Kaeser employs more than 5500 people in over 100 nations and they continually add to the service and distribution network.

### Gold Package-D50 / D70

Our Gold package is supplied with an Ozen variable frequency drive rotary screw air compressor and an oil injected load unload booster compressor. For systems greater than 6000 scfh (100 scfm), a market leading variable frequency drive rotary screw booster compressor is standard.

#### **Ozen Rotary Screw Air Compressors**

Ozen is a packager. They source the finest components for their air compressors and booster compressors. They are assembled in Konya, Turkey and the US corporate headquarters are located in Charlotte, NC.

Their variable frequency drive is manufactured by Danfoss, the airend is produced by Rotorcomp, the electrical contactors and starters are Siemens and the motors are manufactured by WEG.

#### **Ozen Gas Boosters**

Ozen produces the only rotary screw, direct coupled variable frequency drive gas boosters in the market. These boosters are standard offering on our Gold package with flow rates greater than 6000 scfh (100 scfm).

Ozen is one of the leading producers in Eastern Europe and the Middle East. It has sales and service activities in 20 countries, through 100 distributors. Exports made to 45 countries constitute 30% of all sales.

### Silver Package-D7H

Our Silver packages come standard with fixed speed load / unload Hertz rotary screw air compressors and gas boosters.

#### **Hertz Rotary Screw Air Compressors**

Hertz Kompressoren was founded in Germany with aim of manufacturing air compressors with high level of German engineering. Hertz is a premium brand of Dalgakiran Group Company, one of the leading air compressor producers in the world.

Hertz rotary screw air compressors are standard with a IP55 electric motor and IE3 efficiency class. The air compressors are designed to be serviced easily.

#### **Hertz Gas Boosters**

Hertz gas boosters have a cast iron cylinder with an aluminum alloy cylinder head. Stainless steel is used for the high capacity suction and discharge valve.

Hertz Kompressoren is an international company with global presence engaged in designing, manufacturing and sales of air compressors and compressed air equipment.

Typical Fast Cut Speeds (ipm)

6 kW			
Material Thickness	Aluminum	Stainless Steel	Mild Steel
0.060	1300-1500	1100-1200	1500-1800
0.080	1150-1250	700-900	1000-1250
0.120	600-700	350-450	650-850
0.180	240-350	150-200	240-340
0.250	125-150	100-130	95-105
0.375	75-100	105-115	-
0.500	35-50	55-75	-
0.625	20-30	32-42	-
0.750	-	22-32	-
8 kW			
Material Thickness	Aluminum	Stainless Steel	Mild Steel
0.060	2350-3150	2450-2650	2300-2700
0.080	2350-2800	1350-1500	1700-1900
0.120	1550-1700	1150-1300	950-1050
0.180	700-780	650-725	550-600
0.250	310-370	370-410	350-385
0.312	140-155	160-175	220-235
0.500	70-78	106-116	-
0.625	45-50	60-68	-
0.750	32-36	45-50	-
1.000	15-17	11-12	-
10 kW			
Material Thickness	Aluminum	Stainless Steel	Mild Steel
0.060	2900-3150	2500-2700	2500-2800
0.080	2800-3150	1850-2050	2100-2400
0.120	2000-2300	1300-1450	1350-1450
0.180	1000-1150	800-900	800-900
0.250	450-550	500-550	475-525
0.312	350-450	320-350	320-350
0.500	90-110	140-155	-
0.625	54-60	85-95	-
0.750	42-44	50-55	-
1.000	15-17	13-14	-

### High-Performance Dry Air Assist

With the introduction of fiber lasers came the rise of high-performance air cutting. The higher the wattage, the thicker materials you can cut.

In the table below you will see typical capacities based on laser wattage. Please always confirm with your laser manufacturer their capabilities.

All of Liberty's D5 High-Performance Air Systems deliver at 14 barg (204 psig) for thinner gauge material and up to 30 barg (440 psig) for the thicker ranges when a booster compressor is included.

Series D5 / D7					
	Flow scfm (scfh)	Max Pressure barg (psig)	Air Comp kW (HP)	Booster kW (HP)	Dims (L x W x H)
<b>D5-F30</b>	30 (1800)	14 (204)	15 (20)	NA	10' x 4' x 5'
<b>D5-F50</b>	50 (3000)	14 (204)	22 (30)	NA	10' x 4' x 5'
<b>D50-V30</b>	30 (1800)	14 (204)	15 (20)	NA	10' x 4' x 5'
<b>D50-V50</b>	50 (3000)	14 (204)	22 (30)	NA	10' x 4' x 5'
<b>D7-F50</b>	50 (3000)	30 (440)	15	15 (20)	11' x 8' x 8'
<b>D7-F75</b>	75 (4500)	30 (440)	18	15 (20)	11' x 8' x 8'
<b>D7-F100</b>	100 (6000)	30 (440)	22	15 (20)	11' x 8' x 8'
<b>D70-V50</b>	50 (3000)	30 (440)	18 (25)	15 (20)	11' x 8' x 8'
<b>D70-V75</b>	75 (4500)	30 (440)	22 (30)	15 (20)	11' x 8' x 8'
<b>D70-V100</b>	100 (6000)	30 (440)	30 (40)	15 (20)	11' x 8' x 8'
<b>D7H-F50</b>	50 (3000)	30 (440)	18 (25)	15 (20)	11' x 8' x 8'
<b>D7H-F75</b>	75 (4500)	30 (440)	22 (30)	15 (20)	11' x 8' x 8'
<b>D7H-F100</b>	100 (6000)	30 (440)	30 (40)	18 (25)	11' x 8' x 8'
<b>*Larger Systems Available Upon Request</b>					

## Series D

Series D membrane air dryers were developed to accommodate customers who need source of clean, dry point of use of air (CDA).

Dirt, water vapor and other impurities enter the air compressor with the atmospheric air. During the compression process, oil (liquid and vapor) is commonly introduced. If not removed, these contaminants may cause costly production problems such as contamination of equipment, accelerated tool wear and product rejection.

Ambient air temperature, quality and humidity will directly affect the effectiveness of air treatment equipment. Your application and environment will determine what level of air quality you need. Higher quality air can cost more to produce, more frequent maintenance and higher energy consumption. The economic advantages of reducing or eliminating moisture build a strong case for installing a Series D air dryer.

Series D air dehydration systems are environmentally sound and eliminate the need for desiccant replacements. Flow rates are available between 6 and 100 scfm at pressure dew points of -40°F and below. Complete systems including the compressor are also available.

### Membrane Type Dryers

Membrane-type dryers are gas-separation devices. They consist of miniature membrane tubes made of plastic materials compounded to allow water vapor to pass through when there is a vapor pressure differential. They work as your lungs do, venting water vapor each time you exhale.

The inlet flow rate and pressure determine the outlet dew point suppression. In other words, membrane air dryers deliver a consistent level of drying protection that follows the rise or fall of the inlet dew point temperature. and can easily be sized to follow the ISA recommended 20° F pressure dew point suppression below ambient.

They make no noise. They are inherently vibration-resistant. Because they are static, inert devices, the membrane never needs service or adjustment and does not require monitoring devices. Made of aluminum, they do not rust or corrode and don't need painting. They have almost no pressurized volume, so most pressure code restrictions do not apply.

Series D						
Inlet Pressure (psig)	D6NU Flow scfm (Feed scfm)	D13NU Flow scfm (Feed scfm)	D18NU Flow scfm (Feed scfm)	D26NU Flow scfm (Feed scfm)	D33NU Flow scfm (Feed scfm)	D40NU Flow scfm (Feed scfm)
100	6 (8)	13 (16)	18 (22)	26 (32)	33 (42)	39 (48)
125	8 (11)	17 (22)	23 (30)	31 (38)	36 (44)	46 (56)
150	10 (13)	20 (25)	27 (34)	37 (44)	44 (54)	54 (68)
200	12 (16)	26 (23)	36 (44)	52 (64)	66 (84)	78 (96)
<b>Dims (ins) (L x W x H)</b>	30 x 6 x 36	48 x 6 x 36	48 x 6 x 36	48 x 6 x 36	48 x 6 x 36	48 x 6 x 36
<b>Weight (lbs)</b>	19	23	35	44	52	60
<b>Filter Kit</b>	FMKND070	FMKND070	FMKND070	FMKND070	FMKND070	FMKND175
<b>*Larger Systems Available Upon Request</b>						

### Plasma Cutting

Plasma may be the meanest method of cutting, but sometimes the biggest dude on the block has a glass jaw. Plasma cutting's kryptonite is water. Obviously, you would think twice before using anything electronic around water, but what we are talking about is water / moisture in the compressed air.

Most facilities employ a standard air compressor to generate the air needed in the plasma cutting operation. When water enters the high temperatures (as much as 20,000 degrees F.) in the plenum of the torch, they immediately break down into oxygen and hydrogen, which alters the normal chemical content of air in the torch. These elements dramatically change the plasma arc which causes the torch consumables parts to wear very quickly, altering the shape of the nozzle orifice and dramatically affecting cut quality in terms of edge square-ness, dross formation, and edge smoothness.

### Consumables on the Plasma

Each time you need to replace your consumables your cutting equipment may be down for 15 minutes and you are out \$25.00 in parts. Implementing a Series D solution from Liberty Systems can save you as much as \$700.00 per month or \$8400.00 annually and have an ROI of less than 6 months.



D7-F75



D13NU



D70-V100



D7H-F100

For more information about opportunities regarding your application, please contact us or visit our website.

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