

SCOTT™ Gas Handling Equipment

For all types of high-powered CO₂ industrial laser applications



Adding **SCOTT brand equipment** to our portfolio of products greatly broadens our offering to the industrial lasing industry. Team SCOTT has been the sole-source producer of candidate gaseous standard reference materials (SRMs) for the National Institute of Standards and Technology (NIST) and maintains the world's largest inventory of NIST-traceable reference materials (NTRMs). SCOTT brand EPA protocol gases are easily the world's best known and largest selling CEM calibration gases. This leadership in developing innovative specialty gas technology uniquely qualifies SCOTT as an authority in the safe handling and efficient distribution of specialty gases for demanding process applications.

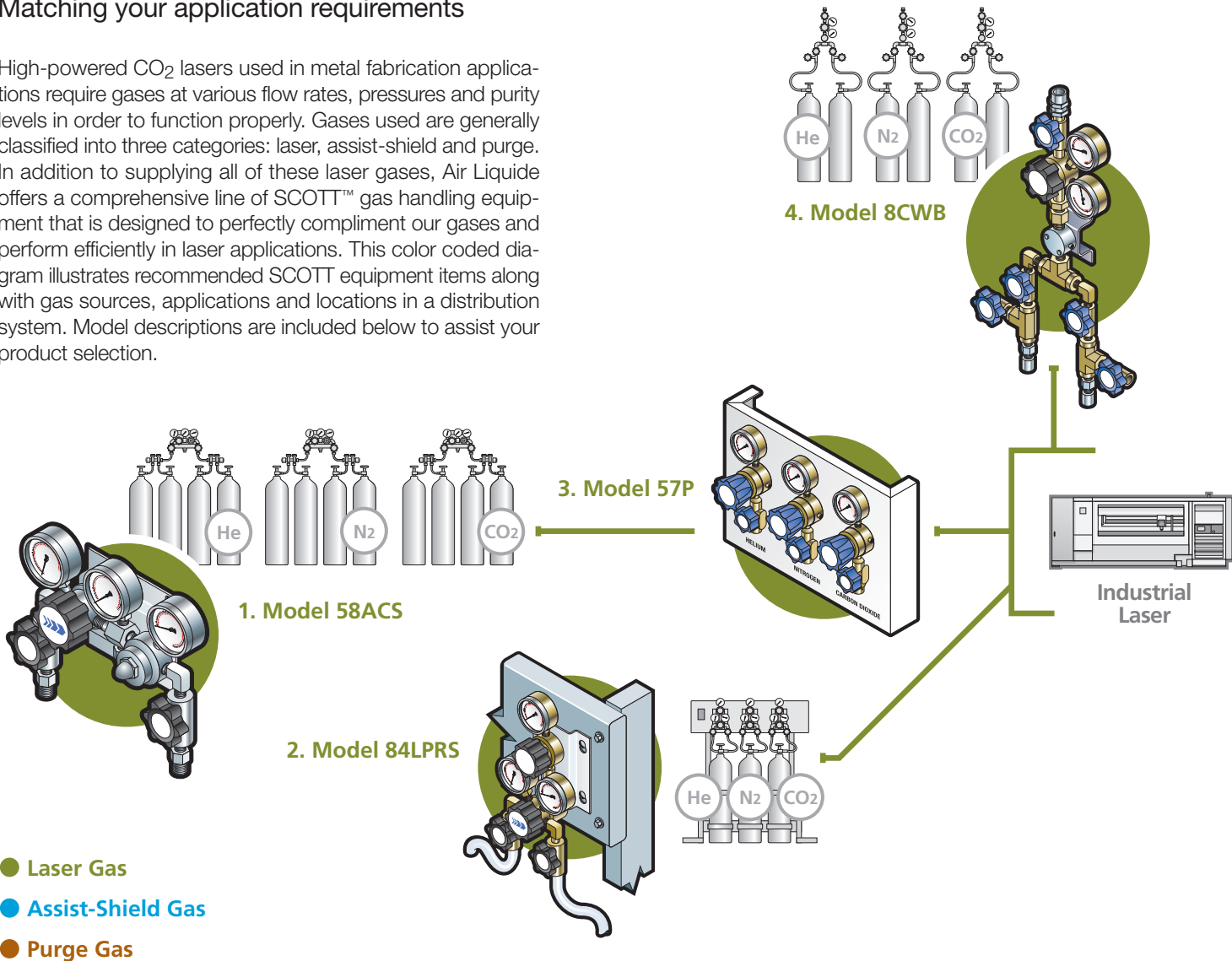
Benefits and Features

- Experience supplying laser gases assures reliable performance and eliminates downtime due to equipment failure
- One-stop shopping of equipment and gases from one supplier reduces administrative costs
- Top quality materials of construction prevent contamination of gases that can affect laser performance
- Guaranteed to deliver gas flow at specified rates for uninterrupted, problem-free lasing
- Low maintenance and long service life assure trouble-free service
- Most equipment items are in stock for fast, same-day shipping
- Convenient online ordering at scottgas.com saves time and minimizes administrative costs
- Custom gas distribution systems are available

Gas Equipment Solutions

Matching your application requirements

High-powered CO₂ lasers used in metal fabrication applications require gases at various flow rates, pressures and purity levels in order to function properly. Gases used are generally classified into three categories: laser, assist-shield and purge. In addition to supplying all of these laser gases, Air Liquide offers a comprehensive line of SCOTT™ gas handling equipment that is designed to perfectly compliment our gases and perform efficiently in laser applications. This color coded diagram illustrates recommended SCOTT equipment items along with gas sources, applications and locations in a distribution system. Model descriptions are included below to assist your product selection.



1. Models 58ACS, 58RCS Automatic ChangeOver Systems

Designed to provide a continuous supply of laser gas from two or more cylinders, these systems allow the user to deplete gas in a cylinder without gas outages and wasting unused gas as a result of premature change-outs. The Model 58ACS primary changeover provides single-stage pressure regulation and is designed for systems incorporating downstream line regulation. The Model 58RCS changeover provides two-stage constant delivery pressure control to the laser by incorporating an adjustable outlet line regulator. Downstream line regulation is not necessary unless various distribution point pressures are required.

2. Model 84LPRS Laser Gas Process Rack System

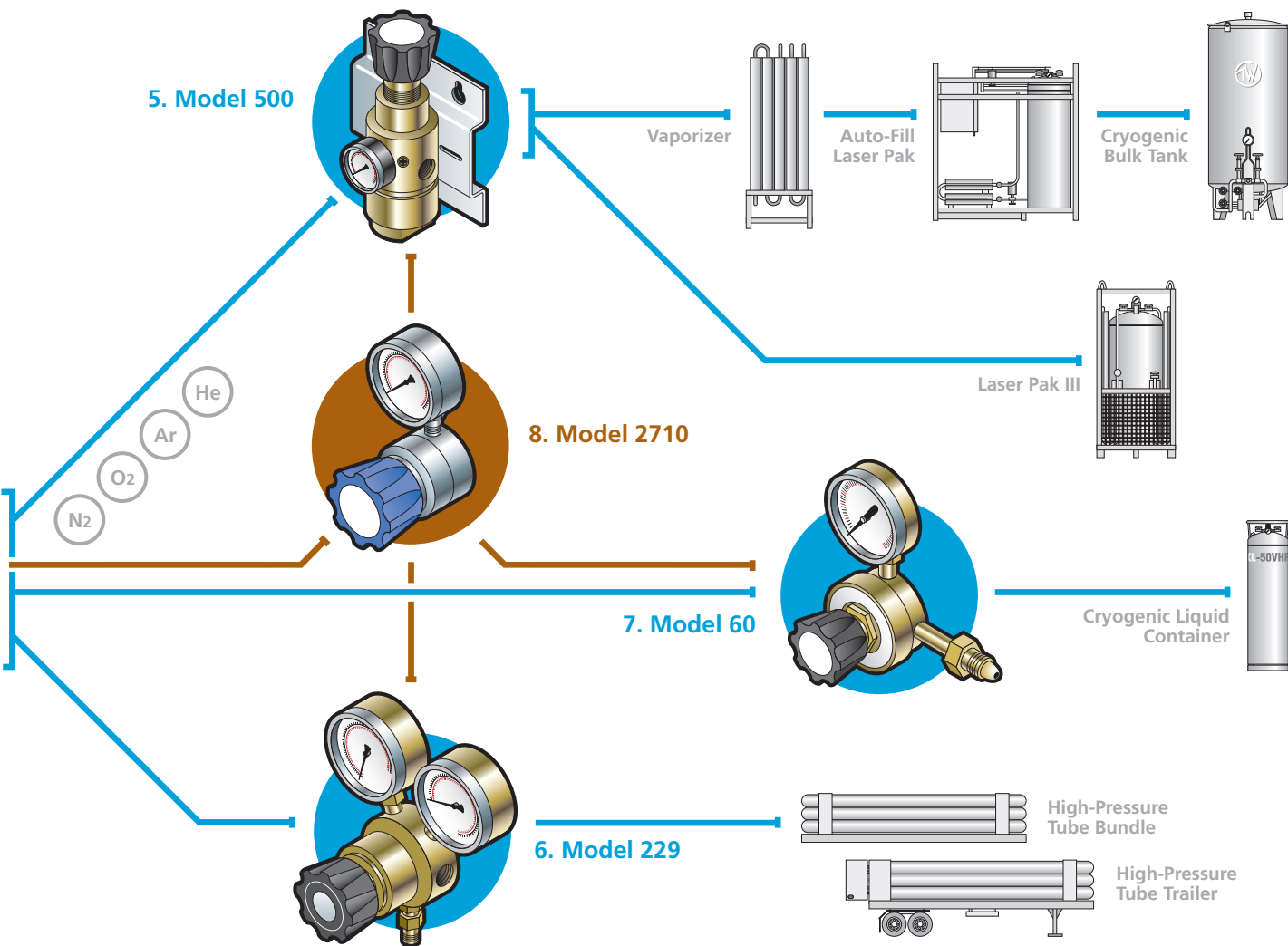
Our free-standing rack system provides a solution for installations having minimal wall space for laser gas supply, and provides a safe, efficient and uninterrupted supply of high-purity laser gas. Each system integrates a stationary cylinder process rack, and a changeover system with an audible and visual alarm to alert the user of gas depletion. These made-to-order systems can be configured for use with 2, 4 or 6 premix or pure component laser gas cylinders. By choosing the number of cylinders and type of changeover, a control station can be configured to perfectly satisfy any lasing requirement.

3. Model 57P Point-of-Use Panel

Our point-of-use panel provides a convenient way to regulate pressure and control helium, nitrogen and carbon dioxide at the laser. Each panel features three separate high-purity rear entry line regulators and on/off shutoff valves. The Model 57P panel can be modified to include a fourth regulator for beam purge gas control. The panels are labeled for each gas with the appropriate NFPA hazard diamond, CAS registry number, and UN and DOT classifications.

4. Model 8CWB Manual ChangeOver System

This economical high-purity laser gas delivery system is ideal for installations that do not require automatic changeover. The Model 8CWB system is designed with a two-stage brass bar stock regulator for use with two cylinder banks and can be manually switched from one bank to the other. When the in-service bank is exhausted, it can be shut off and the reserve bank can be opened to continue the supply of gas. Isolation and vent valves allow the exhausted bank to be replaced and purged without any interruption of gas supply to the laser.



5. Model 500 Ultra-High Flow, Pilot-Dome Loaded Regulator

Install this regulator directly into a cryogenic vaporizer system to provide ultra-high downstream flow while maintaining constant delivery pressure control up to 500 psig to the laser head. Unique unibody construction with integral porting eliminates external tubing and connections common in other regulator designs. The Model 500 regulator is supplied on a stainless steel panel that allows for convenient, wall mounted installation.

6. Model 229 High Flow, High-Pressure Regulator

This piston-sensed regulator is ideal for controlling the pressure of laser assist gases supplied from high pressure (up to 3750 psig) manifold or tube trailer sources. High flow design with 1/2" NPT inlet and outlet porting allows flows in excess of 6000 SCFH. A large piston sensor gives excellent sensitivity while the balanced stem design minimizes effect of changes in inlet pressure on delivery pressure settings.

7. Model 60 Gas Withdrawal Regulator for Cryogenic Containers

This regulator is designed for use on the gaseous withdrawal port of cryogenic liquid containers. These stainless steel diaphragm, single-stage regulators are ideal for applications requiring both medium flow (up to 1500 SCFH) and diffusion resistant pressure regulation. Model 60 regulators accept a maximum inlet pressure of 3000 psig, allowing them to be used on high-pressure compressed gas cylinders as well. In addition to the high inlet pressure feature, delivery pressure ranges of 350 psig and 500 psig are available for special laser cutting applications.

8. Model 2710 Line Regulators for Beam Purging

Use this regulator to control pressure of purge gases commonly used to ventilate the beam path of the laser. These regulators can be installed to tap off an assist-shield gas supply to provide a convenient and economical purge gas to the laser. An optional diaphragm seal outlet valve can be installed to provide flow shut-off while maintaining gas purity.

Additional Equipment

The SCOTT Team at Air Liquide stocks many other equipment items such as: cylinder cabinets, racks and carts, valves, filters, traps, purge assemblies, fittings and many other gas handling accessories.

SCOTT Gas Handling Equipment

Recommendations when choosing gas handling equipment to support industrial laser applications

Laser Gases

Laser gases are used to generate the laser beam within the resonator. High-purity grades of carbon dioxide, nitrogen and helium are the most commonly used. They can be delivered in premixed or component form. Maintaining a high level of purity while providing constant pressure and uninterrupted supply are critical when selecting equipment for a lasing gas delivery system. Manual changeover systems are suitable where gas consumption is low. Laser gas process racks with automatic changeovers are recommended when gas consumption is moderate. For high gas consumption applications, distribution systems that include automatic changeovers mounted in the cylinder storage area, with remote line regulators and control panels at the point-of-use, provide the most efficient gas delivery.

Assist-Shield Gases

Assist-shield gases are supplied to the laser nozzles to assist with cutting or shield in welding, cladding or marking applications. Nitrogen and oxygen supplied by cryogenic sources or compressed gas cylinders are commonly used for cutting applications. Shielding gases such as argon and helium are used in welding applications. Selecting equipment that can provide high flow capacity and constant pressure with varying flow demands is the most important criteria when selecting equipment for assist-shield gas delivery systems. Gas withdrawal regulators are recommended for liquid cylinders. High flow, high-pressure regulators are recommended for tube trailers. For liquid bulk delivery systems, a dome loaded regulator is recommended.

Purge Gases

Purge gases are commonly used to ventilate the beam path of the laser. The nitrogen supplied to the assist gas delivery system often meets the required purity levels and can be a convenient source for a purge gas. A line regulator linked to the assist gas delivery system is an economical way to provide purge gas to the laser. This line regulator should be piped between any of the assist-shield gas pressure control regulators and the industrial laser itself.



Measurable Value

The true measure of the value we deliver begins with the performance of our gases and the equipment we supply to distribute them. However, Air Liquide is also committed to providing measurable value by leveraging our resources to help customers improve efficiency and raise product quality while enhancing safety and environmental preservation.

Air Liquide is at the forefront of the high-tech business of industrial and specialty gases for more than 100 years. Our global presence empowers us to combine the resources and expertise of a worldwide enterprise with powerful, personalized service from local, customer-focused teams.



Founded in 1902, Air Liquide is the world leader in industrial and medical specialty gases and related services, providing innovative solutions for the manufacture of everyday products and for the protection of life.

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