

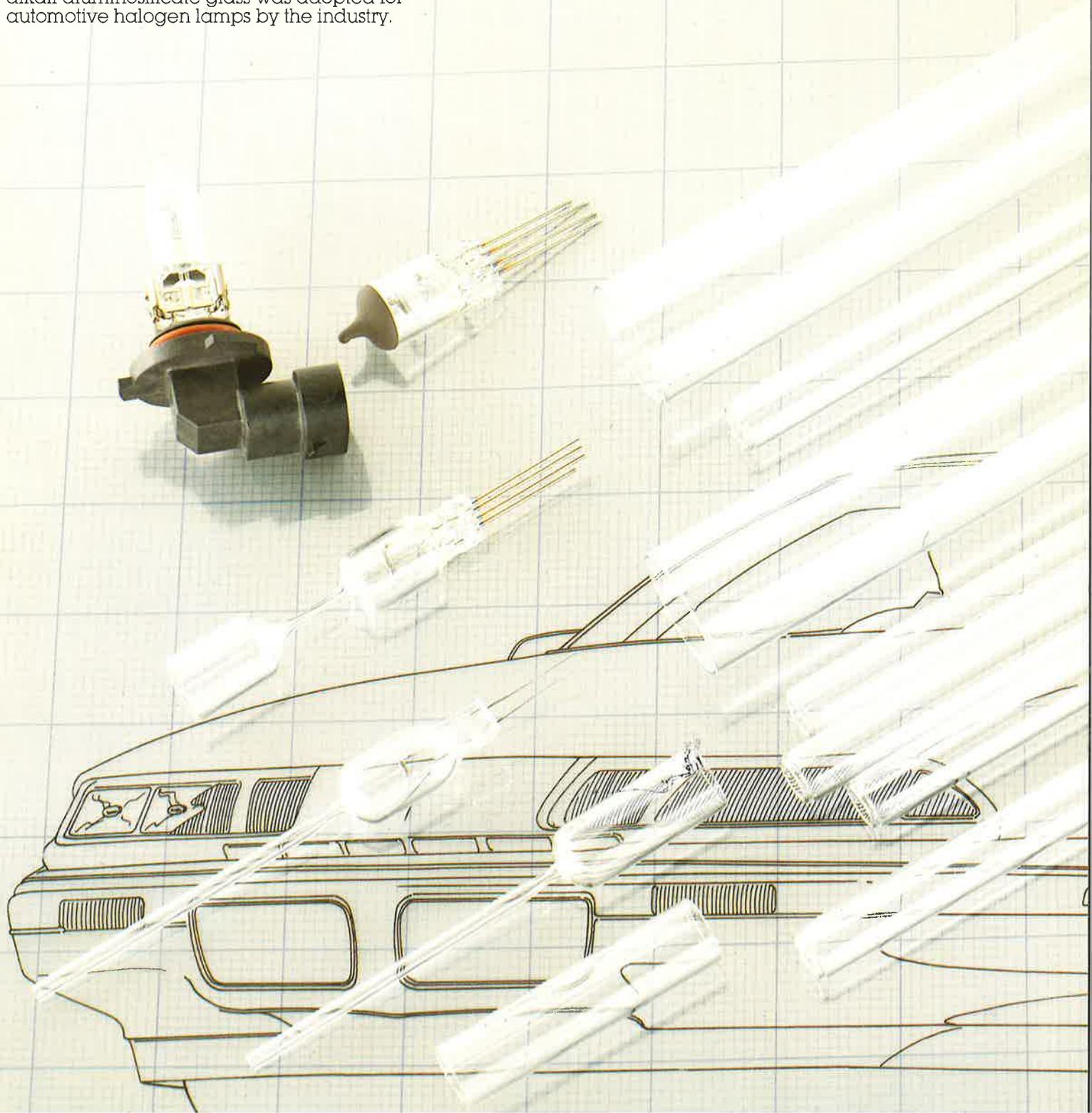
# CORNING

Corning's family of halogen cycle glass tubing allows the automotive lamp manufacturer to select the specific glass for the required performance of existing lamp types, as well as for new lighting designs and production processes.

For over 25 years Corning has been manufacturing high-temperature, high-precision, optical-quality tubing for halogen cycle lamps. VYCOR® tubing was adopted as the standard product in Europe in the late 1960's, based on its excellent optical quality, dimensional control and thermal and chemical properties. In 1977, Corning's low-alkali aluminosilicate glass was adopted for automotive halogen lamps by the industry.

## Automotive Halogen Lighting Tubing

- Corning offers glass compositions to meet a range of specifications and applications.
- Excellent optical, thermal and chemical properties.
- Corning can supply tubing to meet your exacting dimensional specifications.



# Automotive Halogen Lighting Tubing

## VYCOR® Tubing

Made of 96% silica glass, Corning's VYCOR brand glass tubing is a material ideally suited for high-wattage applications. Due to its high-temperature properties, VYCOR tubing can be used at continuous temperatures up to 900°C and at intermittent temperatures up to 1200°C.

VYCOR glass tubing possesses superior optical qualities applicable to tungsten-halogen lighting. The favorable workability and the ease of converting from fused quartz make VYCOR tubing an exciting prospect for your halogen cycle lamp manufacturing.

VYCOR tubing can be machine-formed at higher speeds because it can be held to a tighter tolerance and has a lower softening point compared to fused quartz. SPC (Statistical Process Control) is a technique used to control the VYCOR tubing manufacturing process. It stabilizes the product and ensures uniformity in critical dimensions.

VYCOR tubing reduces exhaust cycle shrinkages. The absence of striations in the glass reduces leaks in the exhaust rubber-glass interface.

The lack of striations and air lines also results in better projection quality for VYCOR tubing.

- Superior optical quality
- Manufactured under SPC
- Tight dimensional control
- Thermal and chemical properties for high-wattage lamps
- VYCOR reduces exhaust cycle shrinkages

- Machine-forming at higher speeds
- Easy conversion from fused quartz to VYCOR tubing

## VYCOR Tubing (Glass Code 7913)

Softening Point °C	1530
Annealing Point °C	1020
Strain Point °C	890
Thermal Expansion x 10 <sup>-7</sup> /°C	7.5
Soda %	<300 ppm
Density gm/cc	2.18
BETA <sub>OH</sub>	<0.4

## Aluminosilicate Tubing

Corning's aluminosilicate glass tubing has expansion characteristics suitable for direct sealing with molybdenum lead wires used in regenerative cycle lamps. The direct sealing process is a relatively new technology for halogen lighting which can result in higher-speed, lower-cost production.

Corning's code 1724 tubing has a very low alkali content. This prevents problems with alkalis reacting with halides in the lamp fill, ensuring optimum lamp life. Outstanding optical and dimensional qualities, coupled with the low alkali content, make code 1724 the best material to meet today's technical high-speed manufacturing requirements. In fact, code 1724 has become the industry standard.

Code 1725 is Corning's newest low-alkali glass, and was developed to meet the requirements of the future higher-wattage, compact halogen lamps.

SPC procedures are used to control the manufacturing processes for Corning's aluminosilicate tubing. They stabilize the product, from tube to tube, providing very low variability in dimension and ensuring that each piece is consistent.

The tight tolerances under which code 1724 and 1725 tubing is manufactured lead to faster processing, lower lampmaking cost, less shrinkage, and elimination of the need for sorting by size. The more uniform inside diameter produces more uniform vacuums and fill pressures, resulting in more uniform lamp quality.

## Imagine What We Can Do Together

Corning's applications engineers can work in concert with your engineers to meet unusual specifications or requirements.

- Direct seal with molybdenum lead wires
- Very low alkali content ensures optimum lamp life
- Manufactured under Statistical Process Control
- Tight tolerances for faster processing, lower lampmaking costs
- No sorting by size necessary
- Uniform ID for uniform lamp quality

## Aluminosilicate Tubing

	Code 1724	Code 1725*
Softening Point °C	926	993
Annealing Point °C	726	773
Strain Point °C	674	719
Thermal Expansion x 10 <sup>-7</sup> /°C	44	49.7
Total Alkali %	<0.15	<0.15
Soda %	<0.10	<0.10
Density gm/cc	2.64	2.72
*Target properties		

# CORNING

VYCOR is a registered trademark of Corning Glass Works, Corning, NY 14831