

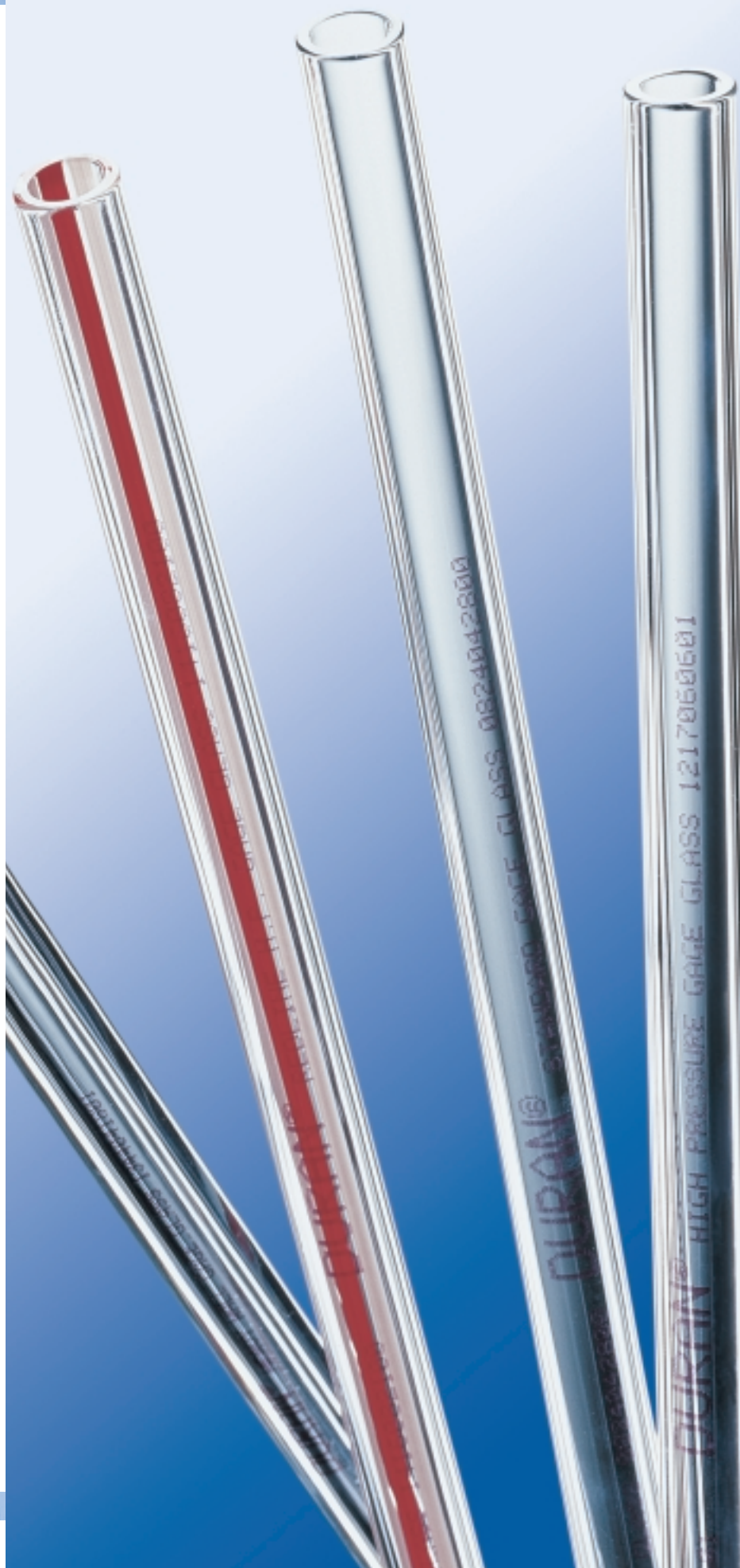
Tubular Gage Glasses SCHOTT DURAN®

Tubular Gage Glasses SCHOTT DURAN®

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Tubular Gage Glasses SCHOTT DURAN®

Product Information ◀

Many years of experience allow Schott to provide Duran 8340 tubular gage glasses that are preferred in a wide variety of industrial and commercial applications.

Duran tubular gage glass is offered as Red Line, Standard, Heavy Wall, High Pressure, and Heavy Wall Red Line.

Diameters range from 1/2" OD to 1 1/2" OD. End finishes may be cut, ground, or fire polished depending on application. Pressure ratings range from 90 psi to 600 psi depending on end finish, diameter, and length required.

In all cases, before placing a Schott Duran product into your process, read the Use and Care section of this product catalog and the Use and Care sheet provided with the product. Pay strict attention to installation and maintenance instructions, maximum use criteria, cautionary messages, and WARNINGS.

To ensure the quality and performance of Schott Scientific Glass tubular gage glasses, look for the DURAN® symbol.

The borosilicate glass used to manufacture these products is outstanding for chemical services. Certain limitations, however, must be recognized.

Corrosives ◀

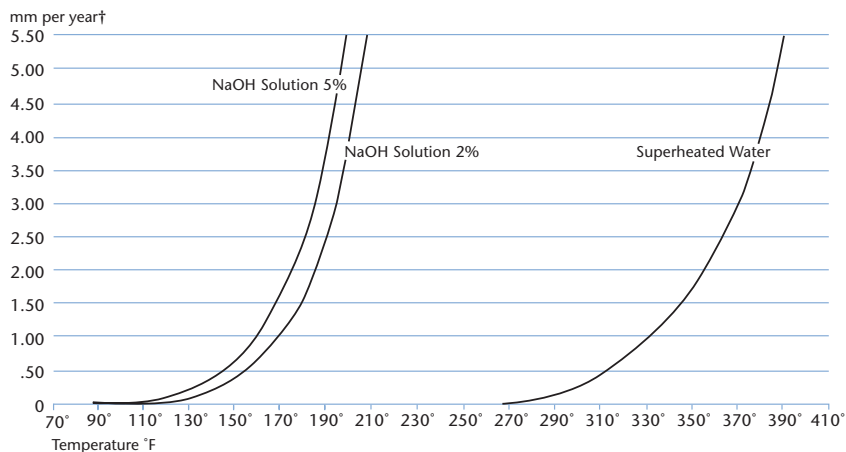
Some materials reduce the useful life of the gage glass by chemical action: e.g. hydrofluoric acid (HF); hot concentrated phosphoric acid; sodium and potassium hydroxides above 125°F; steam or superheated water above 250°F (see graph below).

Alkaline solutions attack glass very slowly at room temperatures, but as temperature is increased over 100°F, the corrosion rate rises rapidly.

Effects of Water and Alkaline Solutions,
With Temperature Increase ◀

The accompanying graph illustrates how the rate of attack increases with temperature and concentration.

Depth of Attack vs. Solution Temperature ◀



† Calculated from weight loss over a 24 hour period

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Tubular Gage Glasses

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► SCHOTT DURAN® Red Line

Applications: Tanks, reservoirs, low pressure boilers.

Benefits: The red line shaded with white lines make it easier to read the liquid level.

End Finish: Firepolish

SCHOTT DURAN® Red Line			Maximum Recommended Working Pressure, psi		
Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
1/2" OD +0, -1/32"	8	624010	12	390	300
	10	624030	12	370	295
	12	624050	12	360	295
	14	624070	12	345	290
	16	624090	12	335	285
	18	624110	12	325	280
	20	624130	12	310	280
5/64" Wall ± 1/64"	24	624170	12	280	270
	30	624180	12	250	***
	36	624190	12	215	***
	48	624210	12	175	***
	60	624211	12	135	***
	72 (Max.)	624212	12	100	***
5/8" OD +0, -1/32"	8	624310	12	370	285
	10	624330	12	345	280
	12	624350	12	335	280
	14	624370	12	325	275
	16	624390	12	315	270
	18	624410	12	305	265
	20	624430	12	290	265
3/32" Wall ± 1/64"	24	624470	12	265	255
	30	624480	12	235	***
	36	624490	12	205	***
	48	624510	12	165	***
	60	624220	12	125	***
	72 (Max.)	624221	12	90	***

* Intermediate lengths are available upon request.

** See *Corrosives*, page 3.

*** Maximum recommended length in this service is 24".

Tubular Gage Glasses SCHOTT DURAN®

SCHOTT DURAN® Red Line ◀

SCHOTT DURAN® Red Line			Maximum Recommended Working Pressure, psi		
Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
3/4" OD +0, -1/32"	8	624610	12	360	280
	10	624630	12	340	275
	12	624650	12	330	275
	14	624670	12	320	270
	16	624690	12	310	265
	18	624710	12	300	260
	20	624730	12	285	260
	22	624750	12	270	250
7/64" Wall ± 1/64"	24	624770	12	260	250
	30	624780	12	230	***
	36	624790	12	200	***
	48	624810	12	160	***
	60	624600	12	125	***
	72 (Max.)	624601	12	90	***
7/8" OD +0, -1/32"	30	620559	12	240	This Size Not Recommended In This Service
	36	620344	12	225	
	48	620343	12	185	
1/8" Wall ± 1/32"	72 (Max.)	624915	12	100	
1" OD +0, -1/32"	24	620231	12	230	This Size Not Recommended In This Service
	30	620515	12	210	
	36	624960	12	195	
	48	624961	12	160	
	60	620224	12	125	
	72 (Max.)	624962	12	90	

* Intermediate lengths are available upon request.

** See *Corrosives*, page 3.

*** Maximum recommended length in this service is 24".

Tubular Gage Glasses

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► SCHOTT DURAN® Standard

Applications: Low pressure boilers, restaurant equipment, closed tanks, liquid level gages, sight flow, film rolls, hydraulic equipment.

Benefits: Economical, low pressure applications, long service life.

End Finish: Saw cut, no firepolish.

SCHOTT DURAN® Standard			Maximum Recommended Working Pressure, psi		
Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
5/8" OD +0, -3/64"	8	620310	12	210	100
	10	620330	12	210	100
	12	620350	12	205	100
	14	620370	12	200	100
	16	620390	12	195	100
	18	620410	12	190	100
	20	620430	12	185	100
5/64" Wall ± 1/64"	24	620470	12	180	100
	30	620480	12	175	***
	36	620490	12	165	***
	48	620510	12	140	***
	60	620530	12	120	***
	72 (Max.)	620550	12	100	***
3/4" OD +0, -3/64"	8	620610	12	210	100
	10	620630	12	210	100
	12	620650	12	205	100
	14	620670	12	200	100
	16	620690	12	195	100
	17	620700	12	190	100
	18	620710	12	190	100
	20	620730	12	185	100
3/32" Wall ± 1/64"	24	620770	12	180	***
	30	620780	12	175	***
	36	620790	12	165	***
	48	620810	12	140	***
	60	620830	12	120	**
	72 (Max.)	620850*	12	100	***

* Intermediate lengths are available upon request.

** See *Corrosives*, page 3.

*** Maximum recommended length in this service is 24".

Tubular Gage Glasses SCHOTT DURAN®

SCHOTT DURAN® Heavy Wall ◀

Applications: Crude oil, water or gas flowmeter.

Benefits: Permit stable and reliable operation while viewing oil, water or gas flow rates.

End Finish: Carborundum saw cut.

SCHOTT DURAN® Heavy Wall			Maximum Recommended Working Pressure, psi		
Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
5/8" OD	10	620174	12	600	345
+1/64", -3/64"	12	621243	12	600	340
	14	621245	12	600	335
	16	623320	12	600	325
	18	623330	12	600	320
	20	620537	12	600	315
3/16" Wall	24	620212	12	580	300
+3/64", -0	30	620232	12	550	***
	36	623240	12	500	***
	48 (Max.)	623260	12	340	***
3/4" OD	10	620175	12	600	345
+1/64", -3/64"	12	623340	12	600	340
	14	620000	12	600	335
	16	623360	12	600	325
	18	623380	12	600	320
	20	620549	12	600	315
7/32" Wall	24	620304	12	580	300
+1/16", -0	30	623270	12	550	***
	36	623280	12	500	***
	48 (Max.)	623290	12	340	***
7/8" OD	36	620303	12	500	***
+ 1/64", -3/64"	48 (Max.)	620246	12	340	***
1/4" Wall					
+1/16" -0					
1" OD	36	620377	12	500	***
+ 1/64", -3/64"	48 (Max.)	620281	12	340	***
5/16" Wall					
+1/16" -0					

* Intermediate lengths are available upon request.

** See Corrosives, page 3.

*** Maximum recommended length in this service is 24".

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► SCHOTT DURAN® High Pressure

Applications: sight , flow indicators.

Benefits: Visual indication of liquid flow, contamination or discoloration of liquid, metering a constant rate of flow through a fixed port.

End finish: Saw cut and firepolish.

SCHOTT DURAN® High Pressure			Maximum Recommended Working Pressure, psi		
Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
1/2" OD +0, -1/32"	8	622010	12	460	340
	10	622030	12	445	335
	12	622050	12	435	325
	14	622070	12	415	315
	16	622090	12	400	300
	18	622110	12	385	295
5/64" Wall ± 1/64"	20	622130	12	375	285
	24	622170	12	340	270
	30	622180	12	295	***
	36	622190	12	260	***
	48	622210	12	205	***
	60	622230	12	155	***
5/8" O.D. +0, -1/32"	72	622250	12	110	***
	8	622310	12	435	320
	10	622330	12	420	315
	12	622350	12	410	305
	14	622370	12	390	295
	16	622390	12	375	285
3/32" Wall +/- 1/64"	18	622410	12	360	280
	20	622430	12	350	270
	24	622470	12	320	255
	30	622480	12	280	***
	36	622490	12	245	***
	48	622510	12	195	***
	60	622530	12	150	***
	72	622550	12	100	***

* Intermediate lengths are available upon request.
Maximum Length — 150".

** See *Corrosives*, page 3.

*** Maximum recommended length in this service is 24".

Tubular Gage Glasses SCHOTT DURAN®

SCHOTT DURAN® High Pressure ◀

SCHOTT DURAN® High Pressure			Maximum Recommended Working Pressure, psi		
Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
3/4" OD	8	622610	12	425	280
+0, -1/32"	10	622630	12	410	275
	12	622650	12	400	275
	14	622670	12	385	270
	16	622690	12	370	265
	18	622710	12	355	260
	20	622730	12	345	260
7/64" Wall	24	622770	12	315	250
± 1/64"	30	622780	12	275	***
	36	622790	12	240	***
	48	622810	12	190	***
	60	622830	12	145	***
	72	622850	12	100	***
7/8" OD	30	620173	12	285	This Size Not Recommended In This Service
+0, -1/32"	48	622980	12	210	
1/8" Wall	60	620349	12	160	
± 1/32"	72	623090	12	110	
1" OD	8	620268	12	345	This Size Not Recommended In This Service
+0, -1/32"	10	620130	12	335	
1/8" Wall	12	623200	12	325	
± 1/32"	24	623300	12	285	
	36	624250	12	240	
	48	623160	12	190	
	60	623180	12	145	
	72	623220	12	100	

* Intermediate lengths are available upon request.
Maximum Length — 150".

** See *Corrosives*, page 3.

*** Maximum recommended length in this service is 24".

Tubular Gage Glasses SCHOTT DURAN®

► SCHOTT DURAN® High Pressure

SCHOTT DURAN® High Pressure				Maximum Recommended Working Pressure, psi	
Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
1 1/8" OD +0, -3/64"	24	620289	12	235	This Size Not Recommended In This Service
	36	623002	12	200	
	48	620256	12	180	
	60	623003	12	150	
1/8" Wall ± 1/32"	72	620245	12	130	
	8	623400	12	240	
	10	620014	12	235	
	24	620165	12	210	
	30	623520	12	200	
1 1/4" OD +0, -3/64"	36	620156	12	180	This Size Not Recommended In This Service
	48	623450	12	160	
	60	623550	12	135	
	72	623500	12	115	
1 1/2" OD +0, -3/64"	8	623600	12	210	This Size Not Recommended In This Service
	12	623700	12	200	
	24	620237	12	185	
	36	623770	12	160	
	48	623650	12	140	
	60	620028	12	120	
72	620029	12	100		

* Intermediate lengths are available upon request.
Maximum Length-150".

** See *Corrosives*, page 3.

Tubular Gage Glasses SCHOTT DURAN®

SCHOTT DURAN® Heavy Wall Tubular Gage Glass ◀

SCHOTT DURAN® Heavy Wall Tubular Gage Glass
(Red Line – Ends Carb. Saw Cut):

Maximum Recommended
Working Pressure, psi

Size	Length* In.	Code No.	Pcs. Per Case	Temperatures Up To 150°F No Corrosion**	Steam Boiler Service Up To 425°F
5/8"	12	620079	12	600	340
	16	620011	12	600	325
	20	620446	12	600	315
	24	620447	12	580	300
	30	620448	12	550	Not Recommended
	36	620354	12	500	Not Recommended
	48	620428	12	340	Not Recommended
3/4"	12	620449	12	600	340
	16	620451	12	600	325
	20	620013	12	600	315
	24	620024	12	580	300
	30	620453	12	550	Not Recommended
	36	620211	12	500	Not Recommended
	48	620373	12	340	Not Recommended

* Intermediate lengths are available upon request.

** See *Corrosives*, page 3.

Tubular Gage Glasses

SCHOTT DURAN®

► Warnings / Do's and Do Not's / Use and Care

NOTICE: Read these warnings & instructions before installing or replacing gage glass.

Warnings

- Improper installation or maintenance of tubular glass can cause immediate or delayed glass breakage resulting in bodily injury. To avoid breakage observe the following Do's and Do Not's and Use and Care Instructions, as well as tubular gage manufacturer's instructions.
- If a gage glass breaks, contained substances can be released and glass can be blown out of the unit with great force. Always wear safety glasses when looking toward a gage or working on a gage glass assembly. Guard against the possibility of fire and explosion.
- Protect glass from impact, scratches, other surface damage and sudden temperature changes. These can weaken or stress the glass and lead to breakage.

Do's and Do Not's

FAILURE TO OBSERVE THE FOLLOWING DO's and DO NOT's CAN RESULT IN GLASS BREAKAGE AND ITS EXPLOSIVE RELEASE OF PRESSURIZED SYSTEM CONTENTS AND FLYING GLASS PARTICLES.

DO NOT work on any gage until you have carefully read these warnings & instructions.

DO NOT reuse any tubular glass, packing, or seals.

DO NOT use glass that is scratched, chipped, or otherwise damaged. Used glasses may contain damage and are poor safety risks.

DO NOT exceed the glass or gage manufacturer's recommended working pressures or maximum recommended gage glass length.

DO NOT bump, impact or scratch the glass.

DO NOT tighten gland nut and packing beyond gage manufacturer's recommendations.

Use and Care

DO NOT operate gages unless gage valve sets are equipped with drain vent and safety ball check.

DO NOT attempt to clean glass while the unit is in operation. Cleaning should be done without removing the gage glass.

DO NOT attempt to inspect the glass, to adjust tie rods, packing nuts or glands, to inspect or tighten other fittings without isolating the gage from the pressure vessel and opening the drain vent.

DO NOT weld, impact, or sandblast in the gage glass area without protecting the glass.

DO NOT have glass-to-metal contact.

DO NOT subject gage glass to bending or twisting stresses.

DO NOT allow the gage glass to contact the bottom of the packing gland.

DO inspect the gage glass daily, keep maintenance records, and conduct routine replacements.

DO install protective guards where necessary to protect personnel.

DO protect the outside of the gage glass from sudden temperature changes, such as drafts, water spray, etc.

DO remove all deposits from the seal areas, the gland nuts, glands (where used) and use new packing before installing a tubular gage glass.

DO examine gage glass for damage and seals for hard deposits and tears.

DO verify that the tubular gage glass, gland, nuts, packing, etc. are the correct size and type before installing.

DO ensure that system is protected by safety shut-off system (e.g. safety ball, check).

Tubular Gage Glasses

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Use and Care ◀

Maintenance

Examine the gage glass regularly for any signs of clouding, scratching, erosion, or corrosion. In new processes, the glass should be inspected daily until the need for replacement becomes apparent. This will help establish the routine inspection and routine replacement cycles.

Cleaning

Keep gage glass clean using non-abrasive commercial glass cleaners. Where regular cleaners do not seem to work, use dilute acids such as Hydrochloric (muriatic) acid. Always observe safety rules when handling hazardous cleaning solutions. Never use wire brushes, metal scrapers, or harsh abrasives which could scratch the glass.

Inspection

Scratches, corrosion, chips, surface flaws, or nicks on the surface or edges weaken the gage glass. To examine for these, shine a very bright concentrated light ("Burton Lite" or powerful flashlight) at about 45° angle. Anything which glistens and catches the fingernail or any star-shaped or crescent-shaped mark which glistens, is cause for replacement. Any gage glass which appears cloudy or roughened and will not respond to cleaning procedures, should be replaced.

Storing

Keep gage glasses in original packaging until ready to install.

Handling

Avoid bumping, chipping, or scratching gage glass. Any glass-to-glass contact can cause scratches and must be avoided.

Installation

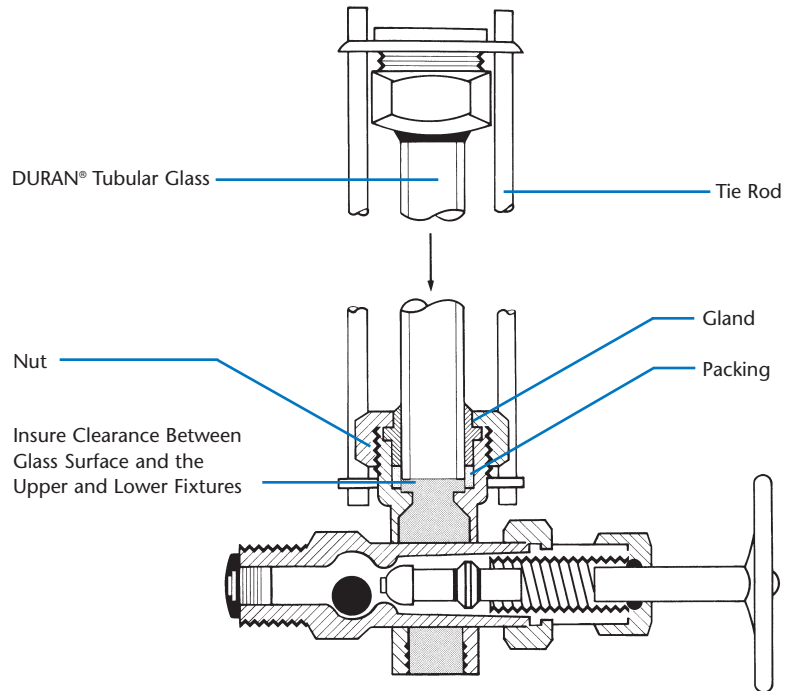
Always follow tubular gage manufacturer's recommended procedures for glass replacement.

Before installing a gage glass, remove all deposits from the seal contact surfaces of the gland nut and the gland (where used). Check sealing surfaces for cleanliness and smoothness. Once a gage glass has been removed from its mounting, regardless of the reason for its removal, discard the glass and replace with a new piece.

Always use new packing, seals, and/or O-rings (if required) when replacing a tubular gage glass. Used packing, seals, and O-rings will not properly support the gage glass or Provide the Proper pressure seal without stressing the glass.

Tubular Gage Glasses SCHOTT DURAN®

► Installation View



1. Hold fittings rigidly to prevent misalignment, which can cause severe bending stresses in the glass, when packing nuts are tightened.
2. Provide metal washers so nuts can be tightened without twisting packing or tube.
3. Provide positive, but not excessive, clearance between glass, packing nuts, and bearing washers.
4. Keep glass short enough to allow for expansion.
5. Provide positive clearance between the ends of the gage glass and the metal fittings. Glass-to-metal contact will keep the gage glass from expanding and cause breakage.
6. Tighten packing nuts enough to prevent leakage, but not so much that you hinder expansion and contraction. Follow gage manufacturer's recommendations.
7. Generally, you can use cylindrical or conical rubber packings for LOW and MEDIUM pressures. HIGHER pressures and HIGH temperatures may require specialized packings. In all cases you should follow the recommendations of the gage manufacturer.

Tubular Gage Glasses SCHOTT DURAN®

Warranty ◀

Schott Scientific Glass (SSG) warrants that its Tubular Gage Glasses conform to its specifications and are free from defects in material and workmanship. This warranty does not apply to glass that has been annealed, tempered, cut, ground or altered by others.

This warranty is in lieu of all other warranties, and Schott specifically excludes any implied warranty of merchantability or fitness for a particular purpose. Schott's sole obligation under this warranty shall be to provide replacement glasses, and in no event shall Schott be responsible for incidental or consequential damage.

At Schott Scientific Glass, skilled engineers and designers work with you to develop component parts or complete products from glass. As with all Schott products, we offer the experience that comes with over a century of making glass more useful.

To ensure the quality and performance of Schott Scientific Glass tubular gage glasses, look for the DURAN® symbol.

Many of Schott's Industrial Supplies Distributors are equipped to fabricate special shapes, drill holes, cut tubing, grind and polish, or finish glass to tolerances other than those shown in this catalog. For additional information and quotations on special requirements, contact your local Schott Industrial Supplies Distributor or:

Schott Scientific Glass Inc.
Manufacturing Plant
1624 Staunton Avenue
Parkersburg, WV 26101

Schott Scientific Glass Inc.
Sales/Marketing
3 Odell Plaza
Yonkers, NY 10701
(914) 968-8900

Services

Special Finishing and Fabrication

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