TENUTE - TR/GC *sealing rings*

The model **TENUTE TR/GC**, *is employed in special static or low speed applications, where shaft misalignments and a reduced housing are the characterizing factors of the sealing ring.*

TENUTE srl has ever cared for these issues, rather frequent in applications such as adapters, shaft couplings, etc.

The large range of existing applications decisively influences the seal configuration. In fact, applications that seem similar to a first analysis, then require different solutions, thus determining the selection of elastomers and their features.

Figure 1

A prerogative of the TR/GC model is first of all the reduced section of the seal and the absence of the retaining spring thanks to an adequate study of the lip geometry.

We remind that the TR/GC is originally a grease retainer.

TR/GC can be manufactured – as endless form – up to a 2500 mm diameter.

The standard production is in Nitril elastomer NBR added with Ptfe, but for particular condition of employ, it can be produced in: HNBR hydrogenated nitril elastomer, MQ silicon elastomer, FKM (fluoro carbon elastomer).

In the table 1 there are the admissible working temperature (minimum, maximum and maximum point) for this kind of material.

MATERIAL	TEMPERATURE C°
NBR	-30° +100°(120°)
HNBR	-40° +150°(175°)
MQ	-50° +200°(250°)
FKM	-20° +200°(250°)

table 1

Assembly of TR/GC sealing rings

The drawing shown in figure 2 details the size of housings and the assembly of the above mentioned model. Peculiar applications or requirements different from those detailed are to be agreed with our Technical Departmen..

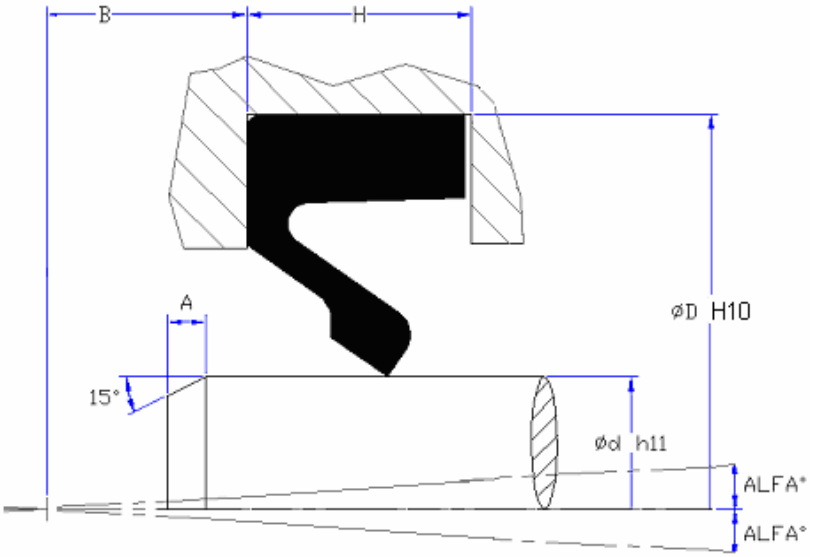

Figure 2

Tolerance and roughness of the metallic parts

Housing Height tolerance		Shaft chamfers			Housing chamfer	
H (mm)	(mm)	Ød(mm)		**A minimum**	**H**(mm)	**B**(mm)
UP TO 15	+0,2 / 0	OVER	UP TO	(mm)	10	1
OVER	+0,3 / 0	3	50	5	15	1.5
		50	250	10	20	2
		250	800	15	30	3
		800	1500	20	40	4
		1500	2500	25		

SURFACES FINISHING

A roughness of Ra 0.2/0.6 µm is recommended for the shaft, in normal applications, while in case of high speeds, a finishing of 0.2/0.4 µm is recommended.
Furthermore, in case of water, it is advisable to perform chromium plating of the shaft/sealing lip contact surfaces, in order to avoid a rapid wear due to iron oxides that are removed by the sealing lip. A finish turning is enough for housings.

We suggest to ask our Technical Department for more information, for the assembling and the applications.

Tooling List Up-To Date on 04_05_2005

Ød	ØD	H	PROFILE
200	212	8	*TR/GC*
208	230	12	*TR/GC*
210	222	8	*TR/GC*
230	250	14	*TR/GC*
250	280	15	*TR/GC*
265	285	14	*TR/GC*
275	295	14	*TR/GC*
290	310	13	*TR/GC*
310	330	12	*TR/GC*
310	338	18	*TR/GC*
311	331	14	*TR/GC*
315	338	20	*TR/GC*
320	340	11	*TR/GC*
330	362	20	*TR/GC*
360	390	15	*TR/GC*
380	410	15	*TR/GC*
385	405	11	*TR/GC*
385	418	20	*TR/GC*
450	480	15	*TR/GC*
460	496	22	*TR/GC*
470	506	22	*TR/GC*
530	566	22	*TR/GC*
615	655	27	*TR/GC*
990,6	1016	12,7	*TR/GC*

TENUTE TR/GL sealing ring

The initials TR/GL *identify a seal purposely studied to withstand large misalignments of some millimeters in static conditions.*

However, it can be used for dynamic seals with limited radial speeds.

The figure shows a reference section of this particular seal.

Figure 1

In the case of the TR/GL *model, a standard section cannot identify all the peculiar features these seals have to comply with.*

Indeed, housing size and application particular movements determine the final section of this product.

Generally speaking, these sealing rings are produced from NBR nitrilic compounds. The body is made of differentiated compounds.

They have a semi-rigid back (sometimes also made of rubberized fabric), and a particularly flexible sealing lip. The spring inserted in the lip ensures the constant load operation, able to preserve the sealing over time.

TR/GL *requires a housing provided with retaining plate for a good operation.*

This seal can be manufactured – as endless form – up to a 2500 mm diameter. .

The standard production is in Nitril elastomer NBR added with Ptfe, but for particular condition of employ, it can be produced in: HNBR hydrogenated nitril elastomer, MQ silicon elastomer, FKM (fluoro carbon elastomer). In the table 1 there are the admissible working temperature (minimum, maximum and maximum point) for this kind of material.

MATERIAL	TEMPERATURE C°
NBR	-30° +100°(120°)
HNBR	-40° +150°(175°)
MQ	-50° +200°(250°)
FKM	-20° +200°(250°)

table 1

Assembly of TR/GL sealing rings

The drawing shown in figure 2 details the size of housings and the assembly of the above mentioned model. Peculiar applications or requirements different from those detailed are to be agreed with our Technical Departmen..

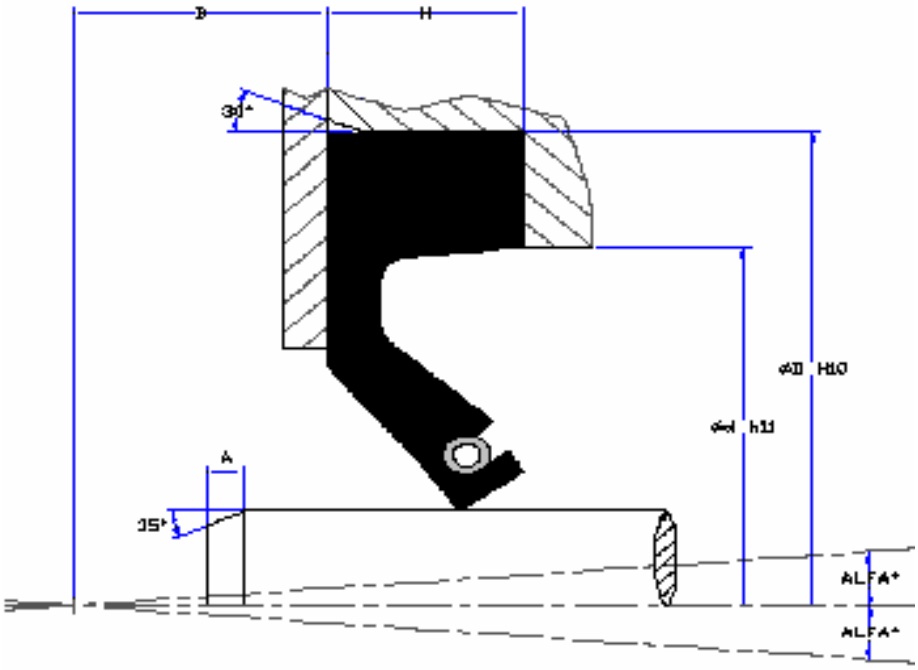

Figura 2

Tolerance and roughness of the metallic parts

Housing Height tolerance		Shaft chamfers			Housing chamfer	
H (mm)	(mm)	Ød(mm)		A minimum	H(mm)	B(mm)
UP TO 15	+0,2 / 0	OVER	UP TO	(mm)	10	1
OVER	+0,3 / 0	3	50	5	15	1.5
		50	250	10	20	2
		250	800	15	30	3
		800	1500	20	40	4
		1500	2500	25		

SURFACES FINISHING

A roughness of Ra 0.2/0.6 µm is recommended for the shaft, in normal applications, while in case of high speeds, a finishing of 0.2/0.4 µm is recommended.
Furthermore, in case of water, it is advisable to perform chromium plating of the shaft/sealing lip contact surfaces, in order to avoid a rapid wear due to iron oxides that are removed by the sealing lip. A finish turning is enough for housings.

We suggest to ask our Technical Department for more information, for the assembling and the applications.

Tooling List Up-To Date on 04_05_2005

Ø d	Ø D	H	PROFILES
45	60	4	TR/GL
58	87	5	TR/GL
73	107	6	TR/GL
93,6	123,82	6	TR/GL
94	122	6	TR/GL
105	145	16	TR/GL
106,4	161,9	15,9	TR/GL
112	146	8	TR/GL
127	160	14	TR/GL
127	172	8	TR/GL
130	170	16	TR/GL
140	203	10	TR/GL
142,88	190,5	11,5	TR/GL
145	195	20	TR/GL
164	222	10	TR/GL
165	200	14	TR/M-GL
172	214	20	TR/GL
180	220	22	TR/GL-AP
185	235	20	TR/GL
190	250	10	TR/GL
205	250	20	TR/GL
212	266	22	TR/GL
220	290	24	TR/GL
225	270	20	TR/GL
235	295	20	TR/GL
240	290	20	TR/GL
250	295	20	TR/GL
260	310	20	TR/GL
262	315	22	TR/GL
262	320	25	TR/GL
265	300	16	TR/M-GL
272	318	18	TR/GL
274	330	28	TR/GL
290	370	18	TR/GL
310	360	25	TR/GL
317,5	420	18	TR/GL
320	400	20	TR/GL

Ø d	Ø D	H	PROFILES
330	390	20	TR/GL
343	400	25,4	TR/GL
362	469,9	19,05	TR/GL
370	440	25	TR/GL
390	460	25	TR/GL
400	460	25	TR/GL
400	480	25	TR/GL
410	490	25	TR/GL
420	500	20	TR/GL
450	510	25	TR/GL
450	530	20	TR/GL
457,2	571,5	25,4	TR/GL
460	550	30	TR/GL-CS
480	544	18	TR/GL
480	544	20,5	TR/GL
480	560	30	TR/GL
485	565	20	TR/GL-CS
485	565	40	TR/GL
500	580	30	TR/GL
508	609,2	25,4	TR/GL
535	620	20	TR/GL
565,15	666,75	25,4	TR/GL
590	675	20	TR/GL
590	675	40	TR/GL
620	700	20	TR/GL