Thursday, 05 May 2005

TENUTE TR/AE pressure sealing ring

Special designed seals have to be used when the sealing concerns a fluid which undergoes a certain pressure.

Normal oil retainers do not withstand pressure higher than 0,5 bar.

The lip overturn, its early wear are among the commonest causes.

The use of common oil retainers for bearings is not adequate for such applications.

TENUTE srl offers different solutions, namely the model TR/AE.

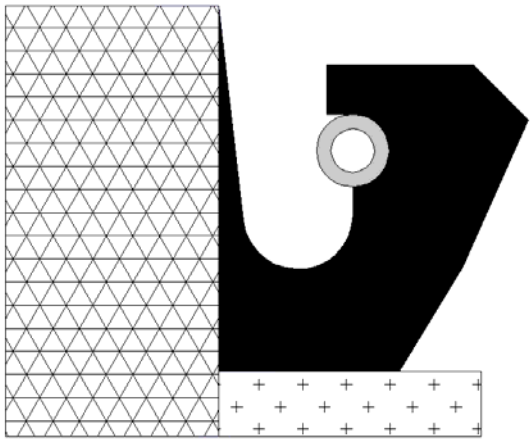

Figure 1

This profile is used for pressures up to 5 bar at approx. 10 m/s.

TR/AE has a particularly tough lip, provided with plastic support.

The high resistance rubberized fabric employed in the back makes it rigid enough to ensure the seal locking through the retaining plate.

TR/AE has to be used in applications without misalignments in order to properly work.

Figure 2 shows the pressure sealing chart with respect to the shaft rotation speed.

v(p) chart for the TR/AE model, relating to NBR elastomer.

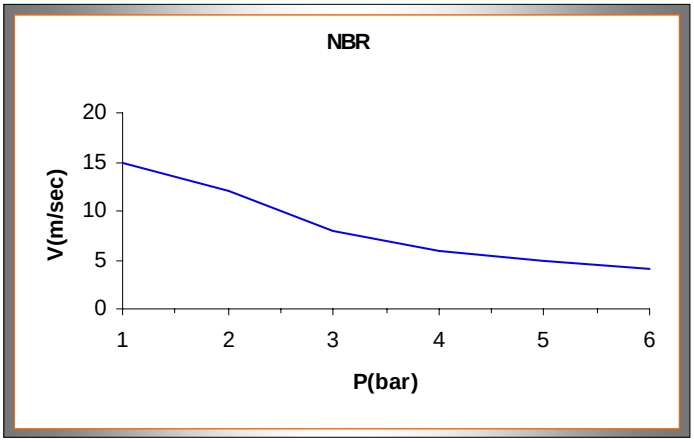

Figure 2

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/AE 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..

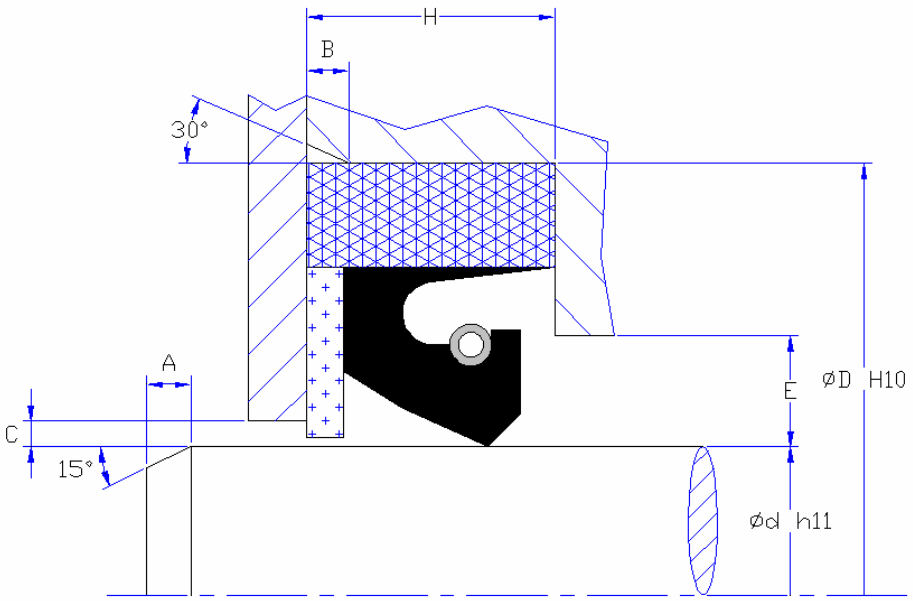

Figure 3

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 / -0,1	OVER	UP TO	(mm)	10	1
OVER	+ / -0,1	3	50	5	15	1.5
		50	250	10	20	2
		250	800	15	30	3
		800	1500	20	40	4
		1500	2500	25		
C maximum =0,2F				**E maximum =0,5F**		

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	PROFILES
15	30	7	TR/AE
20	35	10	TR/AE
24	36	10	TR/AE
24	40	10	TR/AE
30	50	10	TR/AE
31	50	10	TR/AE
33	52	10	TR/AE
33	55	10	TR/AE
35	52	7	TR/M-AE
35	55	10	TR/AE
38	55	9	TR/AE
40	55	8	TR/AE
40	58	10	TR/AE
40	62	12	TR/AE
42	60	8	TR/AE
45	60	9	TR/AE
45	60	9	TR/AE
45	65	10	TR/AE
50	70	10	TR/AE
50	72	10	TR/AE
55	75	10	TR/AE
58	80	10	TR/AE
58,8	80	10	TR/AE
60	80	10	TR/AE
60	80	12	TR/AE
63,4	82,55	9,52	TR/ML-AP
64	85	12	TR/AE
65	80	12	TR/AE
65	85	12	TR/AE
70	90	10	TR/AE
70	100	12	TR/AE
75	95	10	TR/AE
75	95	12,5	TR/AE
75	100	12	TR/AE
75	107	12,5	TR/AE
76	107	12,5	TR/AE
80	100	10	TR/AE
80	100	12,5	TR/AE

Ød	ØD	H	PROFILES
80	100	13	TR/AE
80	105	12	TR/AE
80	112	12,5	TR/AE
80	115	13	TR/AE
85	105	12,5	TR/AE
85	110	13	TR/AE
85	117	12,5	TR/AE
90	115	12	TR/AE
90	120	12	TR/AE
90	122	12,5	TR/AE
95	120	12,5	TR/AE
95	120	13	TR/AE
95	125	12	TR/AE
95	127	12,5	TR/AE
96	127	12,5	TR/AE
100	120	12	TR/AE
100	130	12,5	TR/AE
100	130	13	TR/AE
100	132	12,5	TR/AE
100	140	16	TR/AE
105	130	13	TR/AE
105	133	12,7	TR/AE
105	135	13	TR/AE
110	130	13	TR/AE
110	130	9	TR/AE
110	140	13	TR/AE
110	142	12	TR/AE
110	150	16	TR/AE
115	135	10	TR/AE
115	140	10	TR/AE
115	140	13	TR/AE
115	145	15	TR/AE
115	150	12	TR/AE
120	142	12	TR/AE
120	150	12	TR/AE
120	150	13	TR/AE
120	150	15	TR/AE
120	160	16	TR/AE

Ød	ØD	H	PROFILES
120,65	150,01	11,9	TR/AE
123	155	15	TR/AE
125	140	10	TR/AE
125	145	10	TR/AE
125	165	16	TR/AE
130	170	10	TR/AE
130	170	12	TR/AE
130	170	16	TR/AE
130,17	169,85	15,875	TR/AE
135	170	12	TR/AE
140	155	10	TR/AE
140	170	15	TR/AE
140	180	16	TR/AE
141	170	15	TR/AE
145	180	12	TR/AE
150	178	12	TR/AE
150	190	16	TR/AE
160	190	15	TR/AE
160	200	16	TR/AE
163	190	12	TR/AE
165	195	15	TR/AE
170	192	10,7	TR/AE
170	200	15	TR/AE
174,6	212,9	15,875	TR/AE
175	215	15	TR/AE
180	210	15	TR/AE
180	215	15	TR/AE
180	220	16	TR/AE
190	220	15	TR/AE
190	230	16	TR/AE
200	230	15	TR/AE
200	240	18	TR/AE
200	250	18	TR/AE
213	235	12	TR/AE
215	248	15	TR/AE
215,8	247,6	19	TR/AE
220	250	15	TR/AE
227	254	12	TR/ML-AP
227	254	16	TR/ML-AP
230	270	16	TR/AE

Ød	ØD	H	PROFILES
235	265	12	TR/AE
240	270	13,5	TR/AE
240	280	16	TR/AE
243	263	10	TR/AE
250	280	15	TR/AE
250	290	14	TR/AE
260	290	16	TR/AE
260	300	14	TR/AE
260	300	18	TR/AE
270	300	15	TR/AE
270	310	16	TR/AE
270	314	20	TR/AE
273	317	19	TR/AE
275	320	18	TR/AE
280	310	14	TR/AE
280	320	16	TR/AE
300	330	14	TR/AE
300	330	20	TR/AE
300	344	20	TR/AE
300	360	20	TR/AE
305	349	20	TR/AE
315	359	20	TR/AE
320	344	12,5	TR/AE
320	346	15	TR/AE
320	350	15	TR/AE
325	350	15	TR/AE
330	370	14	TR/AE
330	370	20	TR/AE
340	380	18	TR/AE
350	380	16	TR/AE
355	394	20	TR/AE
360	400	20	TR/AE
370	410	15	TR/AE
375	420	16	TR/AE
380	424	22	TR/AE
380	430	19	TR/AE
390	420	15	TR/AE
400	440	15	TR/AE
410	440	15	TR/AE
430	470	15	TR/AE

Ød	ØD	H	PROFILES
460	510	22	*TR/AE*
500	540	20	*TR/AE*
512	542	15	*TR/AE*
514,34	554,02	19,84	*TR/AE*
515	555	20	*TR/AE*
586	626	15	*TR/AE*
630	680	25	*TR/AE*

Ød	ØD	H	PROFILES
660,4	711,2	25,4	*TR/AE*
700	740	20	*TR/AE*
723,9	774,7	22,22	*TR/AE*
850	890	20	*TR/AE*
860	910	25	*TR/AE*
1575	1635	30	*TR/AE*