TENUTE TR/3-M sealing rings

The TR/3-M model comes directly from TR/3, but the main difference it's that the TR/3/M are installed on open housing, then without employing the retaining plate.
The International norms that we cite to describe this kind of seals are the same of model TR/3.
What distinguishes the seal TR/3/M is a metal band completely drowned in the shoulder.
The exclusive characteristics of section, as resistance and elasticity, are the same in both models.
In particular the seal TR/3/M, offer to users remarkable advantages of installation where it would be difficultto use the normal rotary shaft seals with stiff metallic insert.
This kind of seal doesn't bear pressure more than 0.5 Bar.

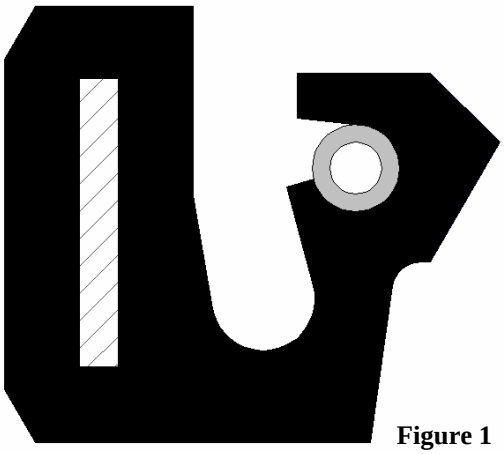

Figure 1

The exclusive characteristics of the TR/3-M seal can be summary in:

- possibility of assemblage in open housing
- better resistance for possible misalignments
- a notable reduction of radial force on the shaft
- a remarkable reduction of the temperature generated by friction
- protected spring to avoid the slipping out from its housing
- reduced pre-loading of the energizing spring
- absence of external metallic parts and consequently absence of the risk of damaging the seal housings.

The seal TR/3/M can be produce till a Ø 2500mm in end less.

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/3/M 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..

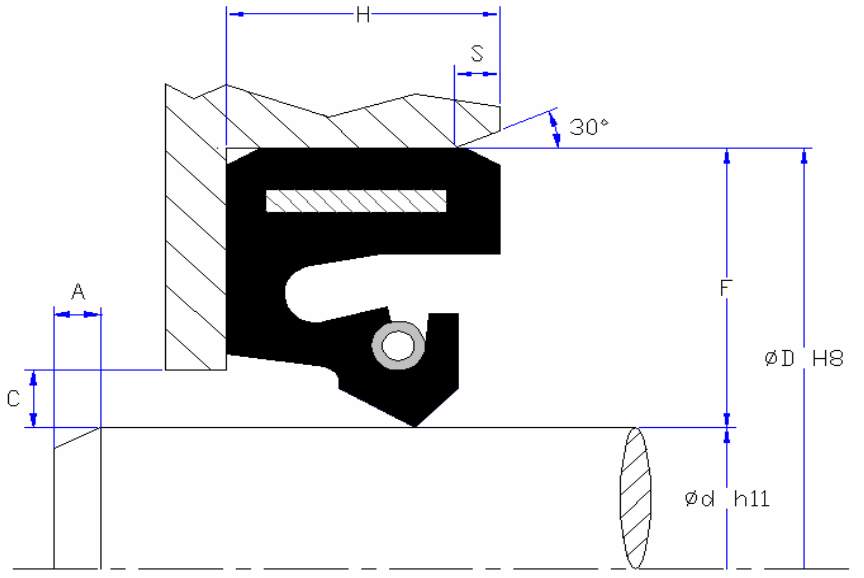

Figure 2

Tolerance and roughness of the metallic parts

Housing Height tolerance		Shaft chamfers			Housing chamfer	
H (mm)	(mm)	Ød(mm)		A minimum	H(mm)	S(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						

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

P.S. the model TR/3/M-P it's with dust lip.

Ø d	Ø D	H	PROFILE
50	70	10	TR/3-M
55	80	10	TR/3-M
60	80	8	TR/3-M
65	90	12	TR/3-M
65	100	13	TR/3-M
70	95	12	TR/3-M
75	95	10	TR/3-M
75	95	12,5	TR/3-M
76	102	10	TR/3-M
80	100	10	TR/3-M
85	110	12	TR/3-M
85	110	12,5	TR/3-M
88,9	114,3	13	TR/3-M
88,9	127	11,9	TR/3-M
90	115	15	TR/3-M
90	120	12	TR/3-M
90	122	12,5	TR/3-M
90	140	11	TR/3-M
95,25	120,65	12,7	TR/3-M
100	120	13	TR/3-M
100	120	13	TR/3-M
100	130	12	TR/3-M
105	130	12	TR/3-M
105	130	13	TR/3-M
110	130	13	TR/3-M
110	140	12	TR/3-M
112,72	139,7	14,28	TR/3-M
115	140	12	TR/3-M
120	150	13	TR/3-M
120	160	16	TR/3-M
120,65	146,05	9,92	TR/3-M
125	150	12	TR/3-M
130,1	158,75	14,29	TR/3-M
133,3	158,9	12,7	TR/3-M
140	170	15	TR/3-M
146	177,8	15,8	TR/3-M

Ø d	Ø D	H	PROFILE
146	190,5	15	TR/3-M
148	170	16	TR/3-M
150	180	14	TR/3-M
150	180	15	TR/3-M
150	190	15	TR/3-M
160	200	16	TR/3-M
162	190	12	TR/3-M
165	190	15	TR/3-M
165	195	15	TR/3-M
175	200	15	TR/3-M
175	215	15	TR/3-M
180	210	15	TR/3-M
180,97	209,55	19,05	TR/3-M
182	215	16	TR/3-M
190	220	16	TR/3-M
200	230	15	TR/3-M
200	240	15	TR/3-M
200	240	16	TR/3-M
200,02	238,12	19,05	TR/3-M
210	240	15	TR/3-M
215	240	12	TR/3-M
215	248	15	TR/3-M
215	260	16	TR/3-M
230	260	15	TR/3-M
230	260	16	TR/3-M
240	270	15	TR/3-M
240	270	17	TR/3-M
240	280	16	TR/3-M
250	281,74	15,875	TR/3-M
260	290	16	TR/3-M
260	290	19	TR/3/M-P
270	300	15	TR/3-M
270	314	20	TR/3-M
275	310	15	TR/3-M
275	315	20	TR/3-M
280	320	20	TR/3-M

Ø d	Ø D	H	PROFILE
290	425	23	*TR/3-M*
292,09	342,89	23,01	*TR/3-M*
300	344	20	*TR/3-M*
310	350	18	*TR/3-M*
310	350	20	*TR/3-M*
310	354	20	*TR/3-M*
325	365	18	*TR/3-M*
330	370	20	*TR/3-M*
350	390	16	*TR/3-M*
350	390	18	*TR/3-M*
350	394	20	*TR/3-M*
355	395	20	*TR/3-M*
370	410	15	*TR/3/M-P*
380	420	20	*TR/3-M*
392	448	18	*TR/3-M*
400	440	18	*TR/3-M*
400	450	22	*TR/3-M*
420	460	20	*TR/3/M-P*
440	469	12,5	*TR/3-M*
440	480	20	*TR/3-M*

Ø d	Ø D	H	PROFILE
460	510	22	*TR/3-M*
460	510	22	*TR/3/M-P*
470	520	22	*TR/3-M*
480	530	22	*TR/3-M*
485	535	22	*TR/3-M*
515	555	20	*TR/M-P*
528	666,75	25,4	*TR/3-M*
540	590	22	*TR/3-M*
550	600	22	*TR/3-M*
550	600	25	*TR/3/M-P*
565	601	16	*TR/M-P*
580	616	17	*TR/3-M*
600	632	12,5	*TR/3-M*
600	650	25	*TR/3-M*
645	695	22	*TR/3-M*
650	700	20	*TR/3-M*
685,8	736,6	22,22	*TR/3-M*
700	750	20	*TR/3-M*
816	866,8	22,5	*TR/3-M*
1320	1384	25	*TR/3-M*