TENUTE TR/3/ML sealing rings

The TR/ML model comes directly from TR/3/M, but the main difference it 's that the TR/ML has a rigid metal case inside in the shoulder, instead of a flexible metal band.
As the other model, TR/ML can be installed on open housing, without employing the retaining plate.
The International norms that we cite to describe this kind of seals can be DIN 3760.
The exclusive characteristics of section, as resistance and elasticity, are the same in both models.
This kind of seal doesn't bear pressure more than 0.5 Bar.
The exclusive characteristics of the TR/ML seal can be summary in:

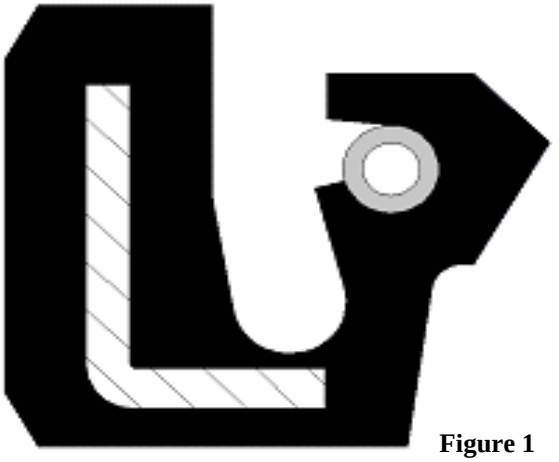

Figure 1

- possibility of assembling 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/ML can be produce till a Ø 2500mm in endless.

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/ML 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..

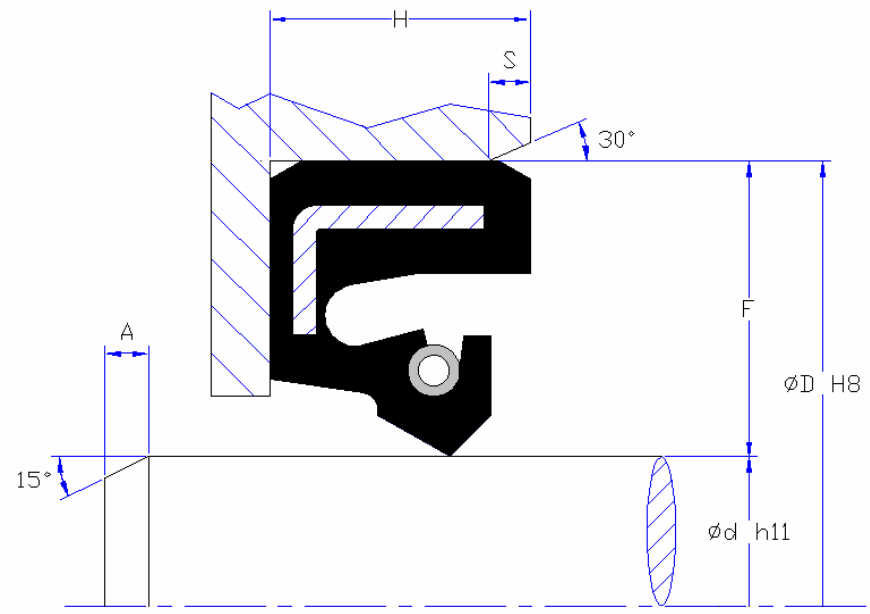

Figure 2

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

Ø d	Ø D	H	PROFILE
32	42	4	*TR/ML-WS-P*
35	52	7	*TR/M-AE*
38,1	57,15	9,5	*TR/ML*
40	55	10	*TR/ML-P*
40	60	10	*TR/ML*
50	65	8	*TR/ML*
55	72	10	*TR/3-ML*
60	75	8	*TR/ML*
63,4	82,55	9,52	*TR/ML-AP*
88,9	114,3	12,7	*TR/ML*
145	160	15	*TR/ML*
155,27	180,97	15,875	*TR/ML*
200	230	16	*TR/ML*
210	240	15	*TR/ML*
227	254	12	*TR/ML-AP*
227	254	16	*TR/ML-AP*
300	340	15	*TR/ML*
335	375	22	*TR/ML*
370	414	17	*TR/ML*
400	440	18	*TR/ML*
460	500	20	*TR/ML*