

## RETENES DE ACEITE

**LIDER****ING**

## GENERALIDADES

Los retenes de aceite son juntas de estanqueidad para ejes rotativos. Se fabrican en una gran variedad de formas y materiales, según las condiciones de trabajo.

En este catálogo se encuentra nuestra gama standard de retenes de aceite, si bien según la cantidad pueden suministrarse otras medidas, diseños o materiales.

El diseño básico del retén actual (fig.1) se compone de un armazón metálico A que le da consistencia y que permite su montaje y fijación. Un labio de cierre B que es la única parte que estará sometida a movimiento relativo, y por tanto, sujeta a desgaste. Un muelle C que será el encargado de aportar un constante apriete entre el labio y el eje. Y finalmente, una membrana D, que es el elemento de más responsabilidad del conjunto, ya que todo eje rotativo está sometido a pequeñas pero constantes vibraciones. Una vez obtenida la precisa tensión de contacto entre labio y eje, por medio del muelle que permite la formación de la película lubricante, estas vibraciones pueden, en momentos puntuales, incrementar el espesor de esta película hasta valores suficientes para permitir la fuga de aceite. La única alternativa

para evitar dicha fuga es que el espesor de la película se mantenga más o menos constante, por lo que la membrana debe tener la suficiente sensibilidad para "acompañar" al eje en sus vibraciones.

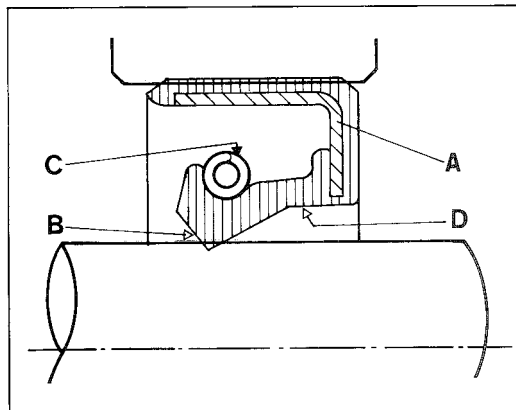


Figura 1

## LA FORMACION DE LA PELICULA LUBRICANTE

Se forma a los pocos instantes de iniciarse el funcionamiento del retén, por efecto de la capilaridad, pero puede no producirse si el estado superficial del eje no es satisfactorio, o si el apriete del retén no es el adecuado.

## INCREMENTO DE TEMPERATURA BAJO EL LABIO

Por efecto de la fricción, existe un incremento de temperatura en la zona inferior del labio.

Este incremento puede resultar negativo en la vida funcional del retén, pues podrá degradar rápidamente el material que lo compone. El aceite en este caso, actúa como agente disipador de calor, disminuyendo el salto térmico existente entre la zona bajo el labio y la temperatura del resto del aceite.

Por este motivo son muy importantes tanto las características propias del fluido, como la cantidad del mismo que esté en contacto con el retén.

En el gráfico A se pueden observar los incrementos de temperatura bajo el labio en relación a la temperatura del conjunto, en función del diámetro del eje a 3.000 rpm.

Asimismo, se puede ver como afecta el tipo de lubricante y su volumen en dicho incremento.

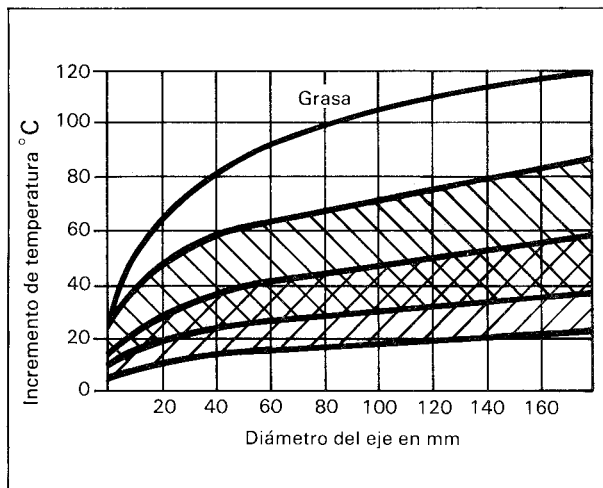




Gráfico A: Incremento de temperatura en el labio.

- Zona rayada  es con aceite de transmisión tipo SAE 90.

- Zona rayada  es con aceite de motor tipo SAE 20.

En ambas zonas la línea superior indica los valores en el caso de que el nivel del aceite apenas llegue a tocar el eje, y la línea inferior es cuando el retén está totalmente sumergido. También puede establecerse el incremento de la temperatura en función del diámetro del eje y de la velocidad de rotación (gráfico B).

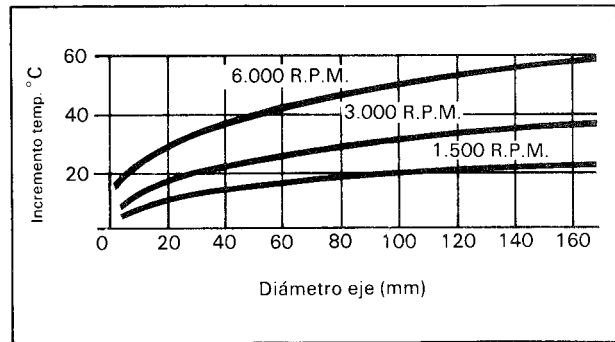


Gráfico B: Incremento de temperatura

## EL EJE

### Material, acabados y tolerancias

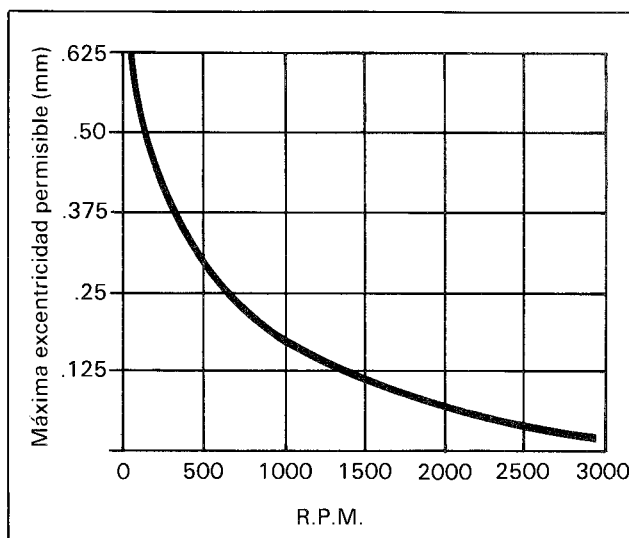
El material adecuado para la fabricación del eje es acero o fundición, con una dureza superficial igual o mayor a 50 HRC. En el caso de aplicaciones especiales puede utilizarse el cromado duro o los casquillos de cerámica. La mecanización debe realizarse con herramientas de avance frontal y el acabado superficial Ra debe ser 0,2 - 0,8  $\mu\text{m}$ .

Se recomienda una tolerancia de medida del eje de ISO h11 (ver tabla)

Diámetro eje (mm)	Tolerancia h 11 (mm)	Diámetro eje (mm)	Tolerancia h11 (mm)
6 ÷ 10	+ 0 - 0,09	80 ÷ 120	+ 0 - 0,22
10 ÷ 18	+ 0 - 0,11	120 ÷ 180	+ 0 - 0,25
18 ÷ 30	+ 0 - 0,13	180 ÷ 250	+ 0 - 0,29
30 ÷ 50	+ 0 - 0,16	250 ÷ 315	+ 0 - 0,32
50 ÷ 80	+ 0 - 0,19	315 ÷ 400	+ 0 - 0,36

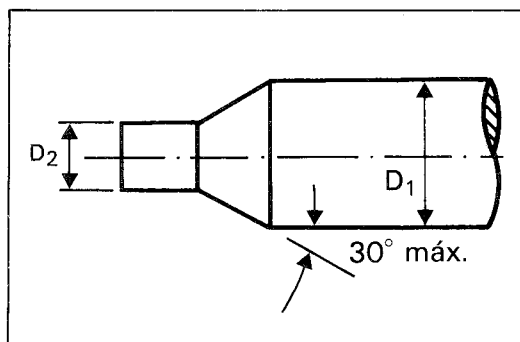
### Excentricidad y vibraciones

Es recomendable que el eje gire de forma concéntrica respecto al alojamiento del retén. El siguiente gráfico indica el valor máximo de excentricidad que pueden absorber los retenes a diferentes velocidades.



### Chaflanes

Para facilitar el montaje y prevenir el deterioro del retén es conveniente que el eje disponga de un chaflán de entrada como se indica en la siguiente tabla.



D <sub>1</sub> (mm)	D <sub>1</sub> - D <sub>2</sub> (mm)	D <sub>1</sub> (mm)	D <sub>1</sub> - D <sub>2</sub> (mm)
hasta 10	1,5	50 : 70	4
10 ÷ 20	2	70 : 95	4,5
20 ÷ 30	2,5	95 : 130	5,5
30 ÷ 40	3	130 : 240	7
40 ÷ 50	3,5	240 : 400	11

Figura 2

### ALOJAMIENTO

El alojamiento dónde debe instalarse el retén ha de mecanizarse con una tolerancia ISO H8 según tabla adjunta, cuidando de que no existan marcas longitudinales en la dirección del eje.

MILIMETROS				PULGADAS	
Diámetro Alojamiento	Tolerancia H8 mm	Diámetro Alojamiento	Tolerancia H8 mm	Diámetro Alojamiento	Tolerancia (+ -)
6 ÷ 10	+0,022	50 ÷ 80	+0,046	Hasta 4"	0,001
10 ÷ 18	+0,027	80 ÷ 120	+0,054	Desde 4,001 a 7"	0,001
18 ÷ 30	+0,033	120 ÷ 180	+0,063	Desde 4,001 a 7"	0,001
30 ÷ 50	+0,039	180 ÷ 250	+0,072	Desde 7,001"	0,002

Es imprescindible prever un chaflán de entrada para facilitar el montaje del retén.

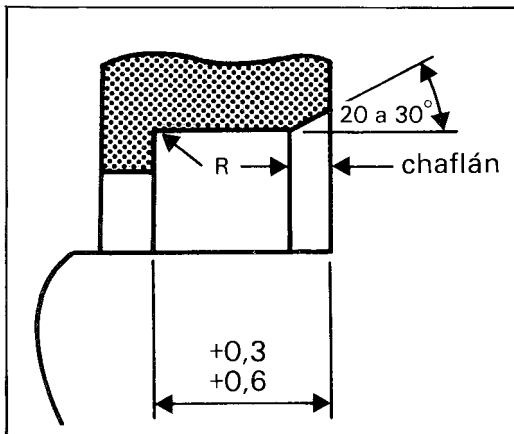


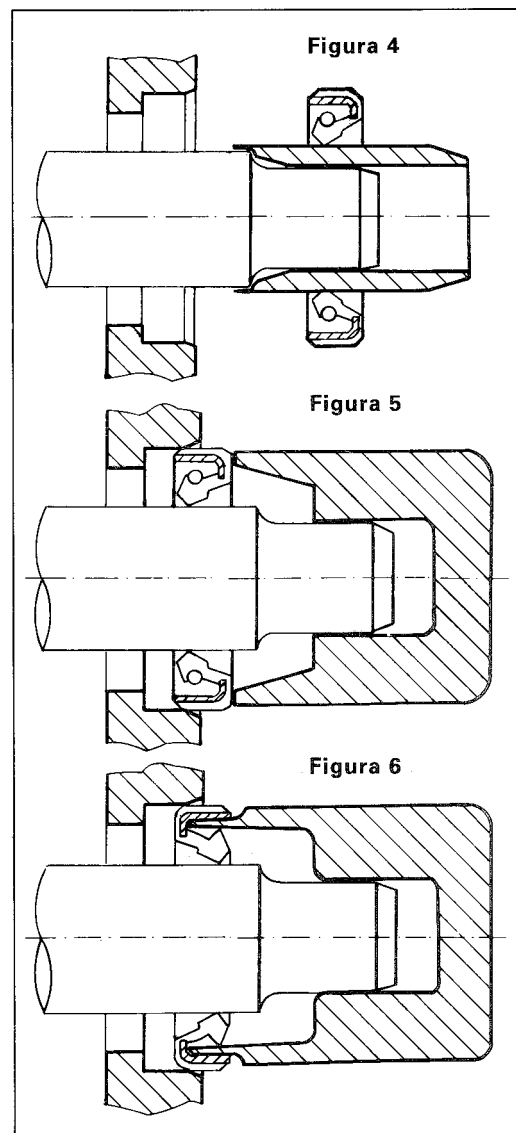
Figura 3

Ø Aloj.	Chaflán	R máx.
Hasta 100	0,7 a 1	0,75
Desde 100	1,2 a 1,5	1

## MONTAJE

Para obtener un buen funcionamiento del retén, conviene prestar la máxima atención a los siguientes puntos:

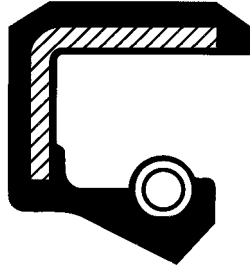
1. Antes de instalar, examinar el retén para asegurarse de su estado de limpieza y que no presente ninguna irregularidad.
2. Aplicar grasa al labio del retén. Si tiene labio guardapolvo, poner grasa entre los dos labios.
3. Comprobar que el muelle esté bien asentado en su alojamiento.
4. Normalmente, el lado del muelle es el que debe estar encarado al aceite a retener.
5. Examinar el eje y eliminar cualquier rugosidad, restos de mecanizado, y en general cualquier impureza de su superficie. Los cantos deben ser redondeados o achaflanados. Caso de no ser posible, debe preverse un casquillo de montaje con bordes redondeados, y un diámetro exterior ligeramente superior al del eje (fig.4). Cualquier pequeño corte producido en el labio del retén en el momento de su montaje, será una fuga segura en el momento de funcionamiento.
6. Cuando se instala el retén en su alojamiento, debe realizarse con una presión uniforme en toda su circunferencia, cuidando además que su introducción sea totalmente perpendicular al eje.
7. Se recomienda la utilización de útiles de montaje del tipo reflejado en las figuras 5 y 6. El diámetro exterior del útil de montaje debe ser ligeramente inferior al del alojamiento (0,1 a 0,4 mm. más pequeño).
8. El diámetro exterior del retén debe haber sido engrasado previamente al montaje.



## PROGRAMA DE FABRICACION

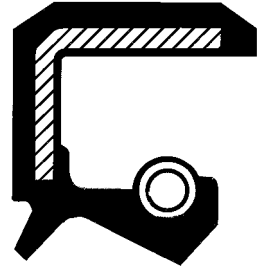
### A

Fabricado según norma DIN 3760 forma A. Alma metálica recubierta de goma.



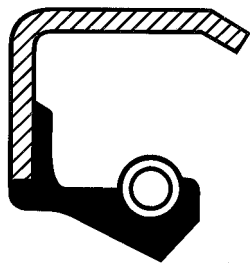
### AS

Igual al tipo A pero con la incorporación de un labio guardapolvo.



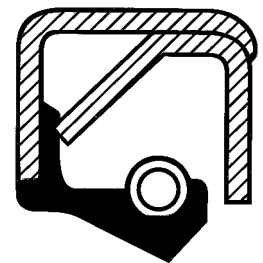
### B

Fabricado según norma DIN 3760 forma B. Carcasa exterior metálica.



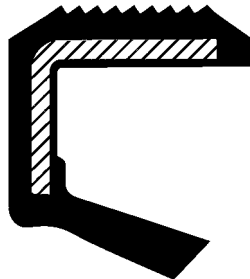
### C

Fabricado según norma DIN 3760 forma C. Carcasa exterior metálica reforzada.



### DINA

Retén sin muelle de pared estrecha, especial para rodamientos.



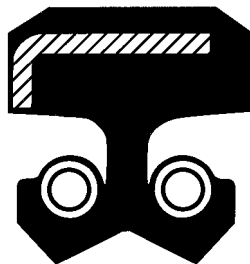
### D5

Retén sin alma metálica para puntos de aplicación en los que el montaje de retenes de una sola pieza sea problemático.



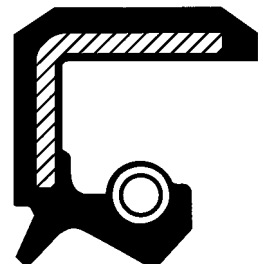
### A DUO

Retén de dos labios para estanqueizar dos fluidos diferentes.



### AS P

Igual al tipo AS, preparado para soportar mayor presión.



Otros diseños bajo pedido.

## **MATERIALES DE FABRICACION**

### **Nitrilo**

El caucho Nitrilo (NBR) tiene unas buenas propiedades mecánicas y una alta resistencia al desgaste. Es el material más utilizado para la fabricación de juntas. Compatible químicamente con aceites, grasas vegetales y minerales, agua, fluidos HFA, HFB y HFC, etc.

Su resistencia a la temperatura es de -30° a 100°C.

### **FPM**

El FPM tiene una excelente resistencia a altas temperaturas, aceites minerales, combustibles, fluidos hidráulicos sintéticos, oxígeno, ozono, etc. Resiste la mayoría de fluidos y lubricantes que destruyen el nitrilo o la silicona.

Adecuado para temperaturas de -15° a 200°C.

### **Silicona**

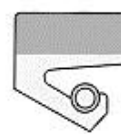
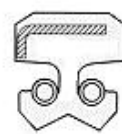
La Silicona (MVQ) tiene una muy buena resistencia a las altas y bajas temperaturas. Buen aislante, resistente a la intemperie y atóxica.

Adecuada para temperaturas de -60° a 200°C.

### **PTFE**

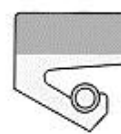
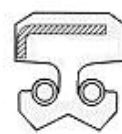
El PTFE tiene unas propiedades mecánicas y una resistencia química excepcionales. Dispone de un coeficiente de rozamiento muy bajo y permite altas velocidades.

Adecuado para temperaturas de -50° a 270°C.

**A****AS****B****C****DINA****D5****A DUO****AS P**

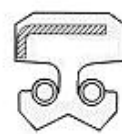
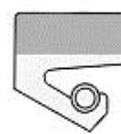
Referencia	Ø int.	Ø ext.	Altura	Material
DINA	4	8	2	NBR
A	4	11	6	FKM
A	4	16	4	NBR
A	5	15	6	NBR
A	5	16	6	NBR
A	5	16	7	FKM
DINA	6	10	2	NBR
B	6	11	4,5	NBR
DINA	6	12	1	NBR
A	6	14	6	NBR
A	6	14	6	FKM
A	6	15	4	NBR
A	6	15	4	FKM
A	6	16	6	FKM
A	6	16	7	NBR
A	6	16	7	FKM
A	6	19	6	NBR
A	6	19	6	FKM
A	6	19	7	NBR
A	6	20	6	FKM
A	6	21	7	NBR
A	6	22	7	NBR
A	6	22	7	FKM
A	6,35	19,05	6,35	FKM
A	7	16	7	NBR
A	7	16	7	FKM
A	7	22	7	NBR
A	7	22	7	FKM
DINA	8	12	3	NBR
DINA	8	15	3	NBR
A	8	16	7	NBR
A	8	16	7	FKM
A	8	18	5	FKM
A	8	22	7	NBR
AS	8	22	7	NBR
A	8	22	7	FKM
AS	8	22	7	FKM
A	8	24	7	NBR
A	8	24	7	FKM
A	9	16	4	NBR
AS P	9	20	6	NBR
A	9	22	7	NBR
A	9	22	7	FKM
A	9	24	7	NBR
A	9	24	7	FKM
A	9	26	7	NBR
A	9,52	22,22	6,35	NBR
DINA	10	14	3	NBR
DINA	10	17	3	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
AS	10	18	4	NBR
A	10	19	7	NBR
A	10	19	7	FKM
A	10	22	6	NBR
AS P	10	22	6	NBR
A	10	22	7	NBR
A	10	22	7	FKM
A	10	24	7	NBR
A	10	24	7	FKM
A	10	26	7	NBR
A	10	28	7	FKM
A	10	28	8	FKM
A	10	30	7	NBR
A	10	30	7	FKM
A	11	22	7	NBR
A	11	22	7	FKM
A	11	26	7	NBR
AS	11	30	7	NBR
DINA	12	16	3	NBR
DINA	12	18	3	NBR
DINA	12	19	3	NBR
A	12	19	5	NBR
A	12	19	5	FKM
AS	12	20	5	NBR
A	12	22	4	FKM
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A	12	22	7	NBR
A	12	22	7	FKM
AS	12	22	7	FKM
A	12	24	6,5	FKM
A	12	24	7	NBR
AS	12	24	7	NBR
A	12	24	7	FKM
A	12	26	8	NBR
A	12	28	7	NBR
A	12	28	7	FKM
A	12	30	7	NBR
A	12	30	7	FKM
A	12	32	7	NBR
A	12,45	26,97	6,35	NBR
A	12,5	20	5	NBR
A	12,5	20	6	NBR
AS	12,7	22,23	6,35	NBR
A	12,7	25,4	4,76	FKM
A	12,7	26	6	NBR
A	12,7	31,75	9,52	FKM
A	13	22	5	NBR
A	13	30	7	FKM

**A****AS****B****C****DINA****D5****A DUO****AS P**

Referencia	Ø int.	Ø ext.	Altura	Material
AS	13	30	7	NBR
A	13	35	10	NBR
DINA	14	20	3	NBR
DINA	14	21	3	NBR
A	14	22	4	NBR
A	14	22	4	FKM
A	14	24	7	NBR
AS	14	24	7	NBR
A	14	24	7	FKM
AS	14	25	7	NBR
A	14	27	7	FKM
A	14	28	7	NBR
A	14	30	7	NBR
A	14	30	7	FKM
A	14	35	7	NBR
DINA	15	21	3	NBR
DINA	15	23	3	NBR
A	15	24	5	NBR
A	15	24	5	FKM
A	15	24	7	NBR
AS	15	24	7	NBR
A	15	24	7	FKM
AS	15	24	7	FKM
A	15	25	5	NBR
AS	15	25	7	NBR
A	15	26	7	NBR
AS	15	26	7	NBR
A	15	27	7	NBR
A	15	28	7	FKM
A DUO	15	28	7	NBR
A	15	30	4,5	NBR
A	15	30	4,5	FKM
A	15	30	7	NBR
A	15	30	7	FKM
A	15	30	10	FKM
A	15	32	7	NBR
A	15	32	7	FKM
A	15	35	5	NBR
AS P	15	35	6	NBR
A	15	35	7	NBR
AS	15	35	7	NBR
A	15	35	7	FKM
A	15	35	8	NBR
A	15	35	10	NBR
A	15	37	7	FKM
A	15	40	10	NBR
A	15	42	7	NBR
A	15	42	7	FKM
A DUO	15	42	10	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
A	15,88	28,58	6,35	FKM
DINA	16	22	3	NBR
A	16	22	4	NBR
DINA	16	24	3	NBR
A	16	24	4	FKM
A	16	24	5	NBR
A	16	26	7	NBR
A	16	26	7	FKM
A	16	28	7	NBR
AS	16	28	7	NBR
A	16	28	7	FKM
AS	16	28	7	FKM
A	16	30	7	NBR
A	16	30	7	FKM
A	16	32	7	NBR
A	16	35	7	NBR
DINA	17	23	3	NBR
A	17	26	6	NBR
A	17	26	6	FKM
A	17	28	6	NBR
AS	17	28	6	FKM
A	17	28	7	NBR
AS	17	28	7	NBR
A	17	28	7	FKM
AS	17	28	7	FKM
A	17	28	8	NBR
A	17	28	8	FKM
A DUO	17	28	8	FKM
A	17	30	7	NBR
A	17	30	7	FKM
A	17	32	7	NBR
A	17	32	7	FKM
A	17	32	10	FKM
A	17	35	7	NBR
A	17	35	7	FKM
A	17	35	8	NBR
A	17	35	10	NBR
A	17	35	10	FKM
A	17	40	7	NBR
AS	17	40	7	NBR
A	17	40	7	FKM
A	17	40	8,5	NBR
A	17	40	10	NBR
A	17	47	7	FKM
AS	17	47	10	NBR
A	17,27	28,44	9,52	FKM
DINA	18	24	4	NBR
DINA	18	26	4	NBR
A	18	28	6	FKM



**A**

**AS**

**B**

**C**

**DINA**

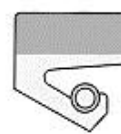
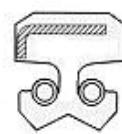
**D5**

**A DUO**

**AS P**

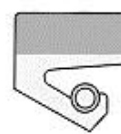
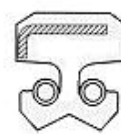
Referencia	Ø int.	Ø ext.	Altura	Material
A	18	28	7	NBR
AS	18	28	7	NBR
A	18	28	7	FKM
A	18	28	8	FKM
A	18	30	5	NBR
AS	18	30	6	NBR
A	18	30	7	NBR
A	18	30	7	FKM
AS	18	30	7	FKM
A	18	32	5	FKM
A	18	32	7	NBR
A	18	32	7	FKM
A	18	35	7	NBR
A P	18	35	10	NBR
A	18	40	7	NBR
A	18	40	7	FKM
AS P	19	27,2	5	NBR
AS	19	28	6	NBR
AS	19	32	7	NBR
A	19	47	10	NBR
AS	19,05	31,75	6,3	FKM
AS	19,05	31,75	6,3	NBR
DINA	20	26	4	NBR
DINA	20	28	4	NBR
AS	20	28	7	NBR
A	20	30	5	NBR
A	20	30	5	FKM
A	20	30	7	NBR
AS	20	30	7	NBR
A	20	30	7	FKM
AS	20	30	7	FKM
A	20	32	7	NBR
AS	20	32	7	NBR
A	20	32	7	FKM
A	20	33	10	FKM
AS P	20	35	6	NBR
AS P	20	35	6	FKM
A	20	35	7	NBR
AS	20	35	7	NBR
A	20	35	7	FKM
AS	20	35	8	NBR
A	20	35	10	NBR
A	20	35	10	FKM
A	20	38	7	NBR
A	20	38	8	FKM
A	20	40	7	NBR
A	20	40	7	FKM
AS	20	40	7	FKM
A	20	40	10	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
A	20	40	10	FKM
A	20	42	7	NBR
AS	20	42	7	NBR
A	20	42	7	FKM
AS	20	42	7	FKM
A	20	42	10	NBR
A	20	42	10	FKM
AS	20	45	7	NBR
A	20	47	7	NBR
A	20	47	7	FKM
A	20	47	10	NBR
A	20	47	10	FKM
A	20	48,4	7	NBR
A	20	52	7	FKM
B	20	55	10	FKM
AS	20,63	30,16	4,6	NBR
A	21	28	4	NBR
DINA	21	29	4	NBR
AS	21	40	7	NBR
B	21,3	55	10	FKM
DINA	22	28	4	NBR
DINA	22	30	4	NBR
A	22	32	5,5	NBR
A P	22	32	5,6	FKM
A	22	32	7	NBR
A	22	32	7	FKM
A	22	35	4,2	FKM
AS	22	35	4,2	FKM
A	22	35	7	NBR
AS	22	35	7	NBR
A	22	35	7	FKM
AS	22	35	7	FKM
A	22	35	8	FKM
A	22	35	10	NBR
A	22	36	7	NBR
A	22	38	7	FKM
A	22	38	7	NBR
AS	22	38	10	NBR
A	22	40	7	NBR
AS	22	40	7	NBR
A	22	40	7	FKM
AS	22	40	7	FKM
A	22	40	10	FKM
A	22	47	7	NBR
A	22	47	7	FKM
AS	22	47	10	NBR
A	22,23	35,15	9,5	FKM
AS	22,23	35,15	9,5	FKM
A	23,81	36,51	6,35	NBR

**A****AS****B****C****DINA****D5****A DUO****AS P**

Referencia	Ø int.	Ø ext.	Altura	Material
A	23,81	36,51	6,35	FKM
DINA	24	32	4	NBR
A	24	35	6	FKM
A	24	35	7	NBR
A	24	35	7	FKM
AS	24	36	7	NBR
A	24	36	7	FKM
AS	24	36	7	FKM
A	24	37	7	NBR
A	24	38,5	10	FKM
A	24	40	7	NBR
AS	24	40	7	NBR
A	24	40	7	FKM
A	24	40	10	NBR
AS	24	42	7	NBR
AS	24	45	7	NBR
A	24	47	7	NBR
AS	24	47	10	NBR
A	24,5	40	8,5	NBR
A	24,5	40	8,5	FKM
DINA	25	32	4	NBR
DINA	25	32	4	FKM
A	25	32	6	FKM
A	25	32	7	NBR
DINA	25	33	4	NBR
A	25	33	6	NBR
A	25	33	6	FKM
DINA	25	35	4	NBR
AS	25	35	5	NBR
AS P	25	35	6	NBR
AS	25	35	6	NBR
AS P	25	35	6	FKM
A	25	35	7	NBR
AS	25	35	7	NBR
A	25	35	7	FKM
AS	25	35	7	FKM
A DUO	25	35	8	NBR
A	25	37	5	NBR
A	25	37	5	FKM
AS	25	37	7	NBR
AS	25	37	8	NBR
A	25	38	7	NBR
A	25	38	7	FKM
A	25	40	5	FKM
A	25	40	7	NBR
AS	25	40	7	NBR
A	25	40	7	FKM
AS	25	40	7	FKM
A	25	40	8	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
AS	25	40	8	NBR
A DUO	25	40	8	FKM
A	25	40	10	NBR
A	25	40	10	FKM
A	25	42	7	NBR
AS	25	42	7	NBR
A	25	42	7	FKM
AS	25	42	7	FKM
A	25	42	8,5	NBR
A	25	42	10	NBR
A	25	42	10	FKM
A	25	45	7	NBR
A	25	45	10	NBR
A	25	45	10	FKM
A	25	46	7	NBR
A	25	47	7	NBR
A	25	47	8	FKM
A	25	47	10	NBR
A	25	47	10	FKM
A DUO	25	47	12	NBR
A	25	50	7	FKM
A	25	50	8	NBR
AS	25	50	10	NBR
A	25	50	10	FKM
A	25	52	7	NBR
AS	25	52	7	NBR
A	25	52	7	FKM
AS	25	52	7	FKM
A	25	52	8	NBR
A	25	52	10	NBR
A	25	52	10	FKM
B	25	54	10	NBR
A	25	62	7	FKM
A	25	62	10	NBR
A	25	62	10	FKM
AS	25,4	44,45	9,52	FKM
A	25,4	44,45	9,52	NBR
B	25,4	55	10	FKM
A	26	35	4	NBR
A	26	35	7	NBR
A	26	36	7	FKM
A	26	37	7	NBR
AS	26	37	7	NBR
A	26	42	7	NBR
AS	26	42	7	FKM
A	26	47	7	NBR
A	26	47	7	FKM
A	26	52	10	NBR
AS	26	52	10	NBR

**A****AS****B****C****DINA****D5****A DUO****AS P**

Referencia	Ø int.	Ø ext.	Altura	Material
AS	26	52	10	FKM
A	26,99	47,63	9,53	FKM
A	27	37	7	NBR
A	27	37	7	FKM
A	27	41	10	FKM
DINA	28	35	4	NBR
DINA	28	37	4	NBR
A	28	38	7	NBR
AS	28	38	7	NBR
A	28	38	7	FKM
A	28	40	7	NBR
A	28	40	7	FKM
A	28	40	10	FKM
A	28	42	7	NBR
A	28	42	10	NBR
A	28	42	10	FKM
A	28	45	7	FKM
AS	28	45	8	NBR
A	28	45	9	FKM
A	28	47	7	NBR
A	28	47	7	FKM
AS	28	47	7	FKM
A	28	47	10	NBR
A	28	47	10	FKM
AS	28	47	10	FKM
A	28	50	10	NBR
AS	28	50	10	NBR
A	28	50	10	FKM
A	28	52	7	NBR
A	28	52	7	FKM
AS	28	52	7	FKM
A	28	52	10	NBR
AS	28	70	10	NBR
A	28,57	41,27	9,52	FKM
AS	28,57	41,27	9,52	NBR
B	28,57	47	7	FKM
A	28,57	50,8	11,11	FKM
A	29	40	7	NBR
AS	29	46	10	NBR
DINA	30	37	4	NBR
A	30	40	4	NBR
DINA	30	40	4	NBR
A	30	40	5	NBR
A	30	40	5	FKM
A	30	40	7	NBR
AS	30	40	7	NBR
A	30	40	7	FKM
A	30	40	8	NBR
A DUO	30	40	8	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
AS P	30	42	6	NBR
A	30	42	7	NBR
AS	30	42	7	NBR
A	30	42	7	FKM
AS	30	42	7	FKM
AS	30	42	8	NBR
A	30	44	10	NBR
A	30	45	7	FKM
A	30	45	8	NBR
A	30	45	8	FKM
A	30	45	10	NBR
A	30	45	10	FKM
AS	30	46	7	NBR
A	30	47	6	NBR
A	30	47	7	NBR
AS P	30	47	7	NBR
A	30	47	7	FKM
AS	30	47	7	FKM
A	30	47	8	FKM
A	30	47	10	NBR
A	30	47	10	FKM
A	30	48	8	NBR
A	30	50	7	NBR
A	30	50	10	NBR
AS	30	50	10	NBR
A	30	50	10	FKM
A	30	52	5	FKM
A	30	52	7	NBR
AS	30	52	7	NBR
A	30	52	7	FKM
A	30	52	10	NBR
AS	30	52	10	NBR
A	30	52	10	FKM
A	30	55	7	NBR
A	30	55	10	NBR
AS	30	55	10	NBR
A	30	55	10	FKM
AS	30	55	10	FKM
A	30	56	10	FKM
A	30	60	10	NBR
A	30	62	7	NBR
AS	30	62	7	NBR
A	30	62	7	FKM
A	30	62	10	NBR
A	30	62	10	FKM
AS	30	72	8	FKM
A	30	72	10	NBR
A	30	85	10	NBR



A



AS



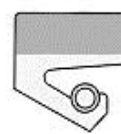
B



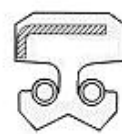
C



DINA



D5



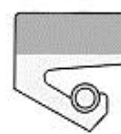
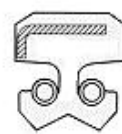
A DUO



AS P

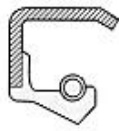
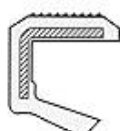
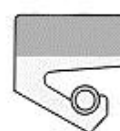
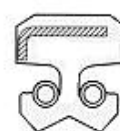
Referencia	Ø int.	Ø ext.	Altura	Material
A	30,16	44,45	6,35	FKM
A	31	47	7	FKM
AS	31,75	41,27	6,35	FKM
A	31,75	44,45	9,52	FKM
A DUO	31,75	44,45	9,52	FKM
DINA	32	42	4	NBR
A	32	42	7	NBR
AS	32	44	8	NBR
DINA	32	45	4	NBR
A	32	45	7	NBR
A	32	45	7	FKM
A	32	45	10	FKM
A	32	47	6	FKM
A	32	47	7	NBR
A	32	47	7	FKM
AS	32	47	10	NBR
A	32	48	8	FKM
A	32	50	8	NBR
A	32	50	10	NBR
A	32	50	10	FKM
A	32	52	7	NBR
AS	32	52	7	NBR
A	32	52	7	FKM
A	32	52	10	NBR
A	32	52	10	FKM
AS	32	54	10	NBR
AS	32	56	10	NBR
A	32	57	9,5	FKM
A	32	62	10	NBR
A	32	70	8	NBR
A	32	70	8	FKM
A	33	45	7	NBR
A	33	45	7	FKM
A	33	50	8	NBR
B	33,4	55	10	FKM
A	34	44	7	FKM
AS	34	48	7	NBR
A	34	49	8	FKM
A	34	50	10	NBR
A	34	52	7,5	FKM
A	34	52	8	NBR
A	34	52	10	NBR
A	34	55	10	FKM
A	34,92	60,32	12,7	NBR
DINA	35	42	4	NBR
DINA	35	42	4	FKM
A	35	44	7	FKM
DINA	35	45	4	NBR
A	35	45	7	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
AS	35	45	7	NBR
A	35	45	7	FKM
A	35	45	10	NBR
A	35	47	4,5	NBR
A	35	47	6	FKM
A	35	47	7	NBR
AS	35	47	7	NBR
A	35	47	7	FKM
AS	35	47	7	FKM
AS P	35	47	10	NBR
A	35	50	7	NBR
A	35	50	7	FKM
A	35	50	8	FKM
A	35	50	10	NBR
A	35	50	10	FKM
AS	35	52	5,5	FKM
AS	35	52	6	NBR
AS	35	52	6	FKM
A	35	52	7	NBR
AS	35	52	7	NBR
A	35	52	7	FKM
A	35	52	10	NBR
A	35	52	10	FKM
AS	35	52	10	FKM
A	35	53	8	NBR
A	35	54	10	FKM
A	35	54	10	NBR
AS	35	55	8	NBR
A	35	55	10	NBR
AS	35	55	10	NBR
A	35	55	10	FKM
AS	35	55	10	FKM
A	35	55,5	9	NBR
A	35	56	10	NBR
AS	35	56	10	NBR
A	35	56	10	FKM
A	35	60	10	NBR
A	35	62	7	NBR
AS P	35	62	7	NBR
A	35	62	7	FKM
A	35	62	10	NBR
AS	35	62	10	NBR
A	35	62	10	FKM
A	35	62	10	FKM
A	35	67	7	NBR
A	35	68	6	FKM
AS	35	68	10	NBR
A	35	68	10	FKM
A	35	72	10	NBR
AS	35	72	10	NBR

**A****AS****B****C****DINA****D5****A DUO****AS P**

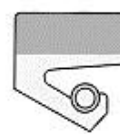
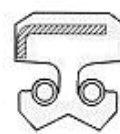
Referencia	Ø int.	Ø ext.	Altura	Material
A	35	72	10	FKM
AS	35	80	10	NBR
A	36	47	7	NBR
A	36	48	10	FKM
A	36	50	7	NBR
A	36	50	7	FKM
A	36	50	10	NBR
A	36	50	10	FKM
AS	36	52	6	FKM
A	36	52	7	NBR
AS	36	52	7	FKM
A	36	54	7,5	FKM
A	36	54	8	NBR
A	36	62	7	NBR
AS	36	62	7	FKM
DINA	37	47	4	NBR
A	37	52	10	FKM
DINA	38	48	4	NBR
A	38	50	7	NBR
A	38	50	7	FKM
A	38	52	7	NBR
AS	38	52	7	NBR
A	38	52	7	FKM
AS	38	52	7	FKM
AS	38	52	10	NBR
A	38	54	6,5	FKM
A	38	55	7	NBR
A	38	55	10	NBR
B	38	55	10	FKM
A	38	56	10	FKM
A	38	60	10	FKM
A	38	62	7	NBR
AS	38	62	7	NBR
AS	38	62	7	FKM
A	38	62	10	NBR
A	38	62	10	FKM
AS	38	62	10	FKM
A	38	65	8	FKM
A	38	72	10	NBR
A	38,1	50,29	12,7	NBR
DINA	40	47	4	NBR
A	40	50	4	NBR
DINA	40	50	4	NBR
AS	40	50	7	NBR
DINA	40	52	5	NBR
A	40	52	6	FKM
A	40	52	7	NBR
AS	40	52	7	NBR
A	40	52	7	FKM

Referencia	Ø int.	Ø ext.	Altura	Material
AS	40	52	7	FKM
AS	40	55	6	FKM
A	40	55	7	NBR
AS	40	55	7	NBR
A	40	55	7	FKM
AS P	40	55	7	FKM
A	40	55	8	NBR
AS	40	55	8	NBR
A	40	55	8	FKM
AS	40	55	8	FKM
B	40	55	8	NBR
A	40	55	10	NBR
A	40	56	8	NBR
AS	40	56	8	NBR
A	40	56	8	FKM
A	40	56	10	FKM
A	40	58	8	NBR
A	40	58	10	NBR
A	40	58	10	FKM
A	40	60	10	NBR
AS	40	60	10	NBR
A	40	60	10	FKM
AS	40	60	12	NBR
AS P	40	62	6	NBR
A	40	62	7	NBR
AS	40	62	7	NBR
A	40	62	7	FKM
AS	40	62	7	FKM
A	40	62	10	NBR
AS	40	62	10	NBR
A	40	62	10	FKM
A	40	62	10	FKM
A	40	63	10	NBR
A	40	65	10	NBR
A	40	65	10	FKM
AS	40	65	12	NBR
A	40	68	8	NBR
A	40	68	10	NBR
A	40	68	10	FKM
AS	40	68	10	FKM
A	40	70	10	NBR
A	40	72	7	NBR
A	40	72	7	FKM
A	40	72	10	NBR
A	40	72	10	FKM
AS	40	72	10	FKM
A	40	80	10	NBR
AS	40	80	10	NBR
A	40	80	10	FKM
AS	40	80	10	FKM

**A****AS****B****C****DINA****D5****A DUO****AS P**

Referencia	Ø int.	Ø ext.	Altura	Material
AS	40	80	12	NBR
A	40	85	10	FKM
A	40	90	10	NBR
AS	40	90	12	FKM
A	40,08	50,85	4,1	NBR
AS	41,28	63,5	12,7	NBR
DINA	42	52	4	NBR
A	42	55	7	NBR
AS	42	55	7	FKM
A	42	55	8	NBR
A	42	55	8	FKM
B	42	55	8	NBR
A	42	56	7	NBR
AS	42	56	7	NBR
A	42	56	7	FKM
A	42	58	7	NBR
A	42	58	10	NBR
A	42	60	10	NBR
A	42	60	12	FKM
A	42	62	7	NBR
A	42	62	7	FKM
A	42	62	8	NBR
A	42	62	8	FKM
AS	42	62	8	FKM
A	42	62	10	NBR
A	42	62	10	FKM
A	42	65	10	NBR
A	42	65	10	FKM
AS	42	66	8	NBR
A	42	72	7	NBR
A	42	72	8	NBR
A	42	72	10	NBR
A	42	72	10	FKM
A	42	80	10	NBR
B	42,8	80	10	FKM
DINA	43	53	4	NBR
A	43	70	12	FKM
AS	44	62	10	NBR
A	44	65	10	FKM
B	44	80	10	FKM
A	44,45	63,5	9,52	FKM
DINA	45	52	4	NBR
A	45	55	4	NBR
DINA	45	55	4	NBR
A	45	55	7	NBR
A	45	55	7	FKM
AS	45	57	9	NBR
AS	45	58	7	NBR
A	45	60	7	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
A	45	60	7	FKM
A	45	60	8	NBR
A	45	60	8	FKM
A	45	60	10	NBR
A	45	60	10	FKM
AS P	45	62	7	NBR
A	45	62	7	FKM
AS	45	62	7	FKM
A	45	62	8	NBR
A	45	62	8	FKM
AS	45	62	8	FKM
A	45	62	10	NBR
A	45	62	10	FKM
A	45	62	12	FKM
A	45	65	8	NBR
AS	45	65	8	NBR
A	45	65	8	FKM
A	45	65	10	NBR
AS	45	65	10	NBR
A	45	65	10	FKM
A	45	66	6	FKM
A	45	66	10	NBR
A	45	68	10	NBR
A	45	68	10	FKM
A	45	70	12	FKM
A	45	72	7	NBR
A	45	72	8	NBR
AS	45	72	8	NBR
A	45	72	8	FKM
AS	45	72	8	FKM
A	45	72	10	NBR
A	45	72	10	FKM
A	45	72	12	NBR
A	45	75	8	NBR
AS	45	75	8	NBR
A	45	75	10	FKM
AS	45	75	10	FKM
A	45	80	10	NBR
AS	45	80	10	NBR
A	45	80	10	FKM
AS	45	80	10	FKM
A	45	80	13	NBR
A	45	85	10	NBR
AS	45	85	10	NBR
AS	45	85	10	FKM
AS	46	60	10	NBR
A	46	64	8	NBR
AS	46	64	14	NBR
A	47	58	6	NBR

**A****AS****B****C****DINA****D5****A DUO****AS P**

Referencia	Ø int.	Ø ext.	Altura	Material
A	47	58	6	FKM
A	47	80	10	FKM
A	47,63	69,85	12,7	FKM
AS	48	58	4	NBR
A	48	62	8	NBR
A	48	62	8	FKM
A	48	65	10	NBR
AS	48	65	10	NBR
A	48	65	10	FKM
AS	48	65	10	FKM
AS	48	68	10	NBR
B	48	68	10	FKM
AS	48	70	10	NBR
A	48	72	8	NBR
A	48	72	8	FKM
AS	48	72	8	FKM
A	48	72	10	NBR
A	48	72	10	FKM
AS	48	72	12	NBR
A	48	80	10	NBR
A	48	80	10	FKM
A	49	65	10	NBR
AS	49,2	76,2	12,7	NBR
B	49,22	69,85	9,52	NBR
DINA	50	58	4	NBR
A	50	60	7	FKM
A	50	62	5	NBR
DINA	50	62	5	NBR
A	50	62	7	FKM
A	50	62	10	NBR
A	50	65	8	NBR
AS	50	65	8	NBR
A	50	65	8	FKM
AS	50	65	8	FKM
A	50	65	10	NBR
A	50	68	8	NBR
AS	50	68	8	NBR
A	50	68	8	FKM
AS	50	68	8	FKM
A	50	68	10	NBR
AS	50	68	10	NBR
A	50	68	10	FKM
A	50	70	10	NBR
AS	50	70	10	NBR
A	50	70	10	FKM
A	50	70	12	FKM
AS P	50	72	7	NBR
AS	50	72	7	FKM
A	50	72	8	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
A	50	72	8	FKM
AS	50	72	8	FKM
A	50	72	10	NBR
AS	50	72	10	NBR
A	50	72	10	FKM
AS	50	72	10	FKM
AS	50	72	12	NBR
A	50	72	12	FKM
A DUO	50	72	14	NBR
B	50	75	10	FKM
AS	50	75	12	NBR
A	50	80	8	NBR
AS	50	80	8	NBR
A	50	80	8	FKM
AS	50	80	8	FKM
A	50	80	10	NBR
A	50	80	10	FKM
AS	50	80	13	FKM
AS	50	80	13	NBR
A	50	90	10	NBR
AS	50	90	10	NBR
A	50	90	10	FKM
A	50,8	63,5	6,35	FKM
A	50,8	69,85	9,52	FKM
A	52	62	8	NBR
A	52	62	8	FKM
A	52	68	8	NBR
A	52	68	8	FKM
A	52	69	10	FKM
A	52	72	8	NBR
A	52	72	8	FKM
AS	52	72	8	FKM
A	52	72	10	FKM
AS	52	72	12	NBR
A	52	75	12	NBR
A	52	75	12	FKM
A	52	85	10	NBR
A	53,97	79,37	12,7	FKM
A	54	70	12	FKM
A	54	72	12	FKM
A	54	74	8	NBR
AS	54	81	10	NBR
AS	54	85	10	NBR
A	54	85	10	FKM
A	54	90	10	FKM
A	54	90	13	NBR
A	54	90	13	FKM
DINA	55	63	5	NBR
A	55	68	8	FKM



A



AS



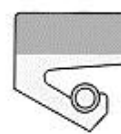
B



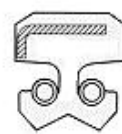
C



DINA



D5



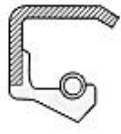
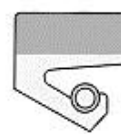
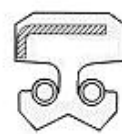
A DUO



AS P

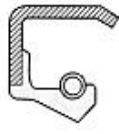
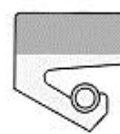
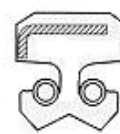
Referencia	Ø int.	Ø ext.	Altura	Material
A	55	70	8	NBR
A	55	70	8	FKM
AS	55	70	8	FKM
A	55	70	10	NBR
A	55	70	10	FKM
A	55	72	8	NBR
AS	55	72	8	NBR
A	55	72	8	FKM
AS	55	72	8	FKM
A	55	72	10	NBR
A	55	72	10	FKM
AS	55	72	10	FKM
A	55	75	10	NBR
A	55	75	10	FKM
A	55	75	12	NBR
A	55	75	12	FKM
AS	55	78	12	FKM
A	55	80	6	NBR
A	55	80	8	NBR
A	55	80	8	FKM
A	55	80	10	NBR
A	55	80	10	FKM
AS	55	80	10	FKM
A	55	85	8	NBR
AS	55	85	10	NBR
A	55	90	8	NBR
AS	55	90	8	NBR
A	55	90	10	NBR
A	55	90	10	FKM
A	55	100	12	NBR
A	55	100	13	NBR
AS	56	69	10	NBR
A	56	70	8	NBR
A	56	70	8	FKM
A	56	72	8	NBR
A	56	80	8	NBR
A	56	80	12	FKM
A	56	85	8	NBR
A	56	85	8	FKM
A	56	90	10	NBR
B	57	80	10	FKM
A	57,15	82,55	12,7	FKM
A	57,94	84,93	7,93	NBR
A	58	72	8	NBR
A	58	72	8	FKM
A	58	72	10	FKM
A	58	72	10	NBR
A	58	75	8	FKM
A	58	75	10	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
A	58	78	13	FKM
A	58	80	8	NBR
A	58	80	8	FKM
AS	58	80	9	FKM
A	58	80	10	NBR
AS	58	80	10	NBR
A	58	80	10	FKM
AS P	58	80	10	FKM
A	58	90	10	NBR
A	60	70	7	NBR
A	60	72	8	FKM
A	60	75	8	NBR
AS	60	75	8	NBR
A	60	75	8	FKM
AS	60	75	8	FKM
A	60	75	10	FKM
A	60	78	10	FKM
A	60	80	5	NBR
AS	60	80	7	NBR
AS P	60	80	7	FKM
A	60	80	8	NBR
A	60	80	8	FKM
AS	60	80	8	FKM
A	60	80	10	NBR
AS	60	80	10	NBR
A	60	80	10	FKM
AS	60	80	10	FKM
A DUO	60	80	10	NBR
A	60	80	12	NBR
A	60	80	12	FKM
AS	60	80	12	FKM
A	60	80	13	NBR
A	60	82	12	NBR
A	60	85	8	NBR
A	60	85	8	FKM
A	60	85	10	NBR
AS	60	85	10	NBR
A	60	85	10	FKM
AS	60	85	10	FKM
AS	60	85	12	NBR
A	60	90	8	NBR
A	60	90	8	FKM
A	60	90	10	NBR
A	60	90	10	FKM
AS	60	90	10	FKM
A	60	90	13	FKM
A	60	95	10	FKM
A	60	95	12	FKM
A	60	110	13	NBR

**A****AS****B****C****DINA****D5****A DUO****AS P**

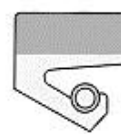
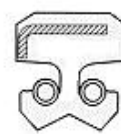
Referencia	Ø int.	Ø ext.	Altura	Material
A	60	110	13	FKM
A	61,91	95,73	12,7	FKM
A	62	76	10	FKM
AS	62	80	10	NBR
A	62	80	10	FKM
A	62	85	10	NBR
A	62	85	10	FKM
AS	62	85	12	NBR
A	62	85	12	FKM
A	62	90	10	NBR
A	62	95	10	NBR
A	62	100	12	NBR
A	62	110	13	NBR
AS	63	80	9	NBR
A	63	85	10	NBR
A	63	85	10	FKM
AS	63	85	10	FKM
A	63	90	10	NBR
A	63,5	73,03	6,35	FKM
A	63,5	82,55	9,52	FKM
A	63,5	88,9	11,11	FKM
A	64	80	8	NBR
A	65	80	8	NBR
A	65	80	8	FKM
AS	65	80	8	FKM
AS	65	80	10	NBR
AS	65	80	10	FKM
A	65	85	5	NBR
A	65	85	8	FKM
A	65	85	10	NBR
AS	65	85	10	NBR
A	65	85	10	FKM
A	65	85	12	NBR
AS	65	85	13	FKM
A	65	90	10	NBR
AS	65	90	10	NBR
A	65	90	10	FKM
AS	65	90	10	FKM
AS	65	90	12	NBR
A	65	95	10	NBR
A	65	95	10	FKM
AS	65	95	13	NBR
A	65	100	10	NBR
AS	65	100	10	NBR
A	65	100	10	FKM
A	65	125	12	NBR
A	65,08	85,72	9,5	NBR
A	66,68	85,73	9,53	FKM
A	66,68	92,02	11,9	FKM

Referencia	Ø int.	Ø ext.	Altura	Material
A	68	90	10	NBR
AS	68	90	10	NBR
A	68	90	10	FKM
AS	68	90	10	FKM
A	68	100	10	NBR
A	68	100	10	FKM
A	69,85	88,9	9,53	FKM
DINA	70	78	5	NBR
A	70	85	7	FKM
A	70	85	8	NBR
A	70	85	8	FKM
A	70	85	10	NBR
A	70	88	9	FKM
A	70	90	5	NBR
AS P	70	90	7	NBR
AS	70	90	7	NBR
A	70	90	10	NBR
AS	70	90	10	NBR
A	70	90	10	FKM
AS	70	90	10	FKM
A DUO	70	90	10	FKM
A	70	90	12	NBR
A	70	90	12	FKM
A	70	90	13	FKM
A DUO	70	90	13	FKM
A	70	92	12	NBR
A	70	95	10	NBR
A	70	95	10	FKM
A	70	95	13	NBR
AS	70	100	8	FKM
A	70	100	10	NBR
AS	70	100	10	NBR
A	70	100	10	FKM
AS	70	100	10	FKM
A	70	100	12	FKM
A	70	100	13	FKM
AS	70	110	10	NBR
A	70	110	10	FKM
A	70	110	12	NBR
A	70	120	12	NBR
AS	71	88	8	NBR
A	72	85	10	NBR
A	72	85	10	FKM
A	72	90	10	NBR
A	72	90	10	FKM
A	72	95	10	NBR
A	72	95	10	FKM
A	72	95	12	NBR
AS	72	95	13	NBR

**A****AS****B****C****DINA****D5****A DUO****AS P**

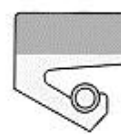
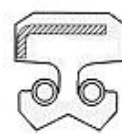
Referencia	Ø int.	Ø ext.	Altura	Material
AS	72	96	9	NBR
A	72	100	10	NBR
A	72	110	12	NBR
B	73	95	10	FKM
A	75	90	8	NBR
AS	75	90	8	NBR
A	75	90	8	FKM
A	75	90	10	NBR
A	75	90	10	FKM
A	75	95	5	NBR
AS	75	95	9	NBR
A	75	95	10	NBR
A	75	95	10	FKM
AS	75	95	10	FKM
A	75	95	12	NBR
A	75	95	12	FKM
A	75	95	13	NBR
A	75	100	10	NBR
AS	75	100	10	NBR
A	75	100	10	FKM
AS	75	100	10	FKM
A	75	100	12	FKM
A	75	100	13	NBR
A	75	105	12	NBR
A	75	110	12	NBR
AS	75	110	12	NBR
A	75	110	12	FKM
A	75	110	13	FKM
A	75	120	12	NBR
A	76,2	107,95	12,7	FKM
A	77,78	114,3	12,7	FKM
A	78	100	10	NBR
A	78	100	10	FKM
A	78	110	12	NBR
A	78	110	12	FKM
A	80	95	8	NBR
A	80	100	7	NBR
AS P	80	100	7	NBR
AS	80	100	7	NBR
A	80	100	10	NBR
AS	80	100	10	NBR
A	80	100	10	FKM
AS	80	100	10	FKM
D5	80	100	10	NBR
A DUO	80	100	12	NBR
AS	80	100	13	NBR
AS	80	100	13	FKM
A DUO	80	100	14	FKM
A	80	105	10	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
A	80	105	12	FKM
B	80	105	13	NBR
A	80	110	10	NBR
AS	80	110	10	NBR
AS	80	110	10	FKM
A	80	110	12	FKM
A	80	115	12	FKM
A	80	140	12	NBR
AS	80,96	120,65	12,7	NBR
A	82	105	12	NBR
A	85	95	8	NBR
A	85	105	10	NBR
A	85	105	13	NBR
A	85	110	7	NBR
A	85	110	12	NBR
AS	85	110	12	NBR
A	85	110	12	FKM
AS	85	110	12	FKM
B	85	110	13	NBR
BS	85	110	13	FKM
AS P	85	120	7,5	NBR
AS P	85	120	7,5	FKM
A	85	120	12	NBR
A	85	120	12	FKM
AS	85	120	12	FKM
AS	85	125	13	NBR
A	85	126	12	NBR
A	85	130	12	NBR
AS	85	130	12	NBR
AS	85	130	13	FKM
A	85	140	12	NBR
A	86	100	7	FKM
A	88	110	12	NBR
A	88,9	127	12,7	NBR
A	90	105	10	NBR
A	90	110	7	NBR
A	90	110	10	NBR
A	90	110	12	NBR
AS	90	110	12	NBR
A	90	110	12	FKM
AS	90	110	12	FKM
A	90	110	13	NBR
AS	90	110	13	FKM
A	90	115	9	NBR
A	90	115	9	FKM
A	90	115	13	NBR
AS	90	117,5	12,5	FKM
A	90	120	12	NBR
A	90	120	12	FKM

**A****AS****B****C****DINA****D5****A DUO****AS P**

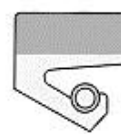
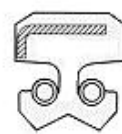
Referencia	Ø int.	Ø ext.	Altura	Material
A	90	120	13	NBR
A	90	120	13	FKM
A	90	130	12	NBR
A	92	120	13	NBR
A	92	120	13	FKM
D5	92,07	117,47	12,7	NBR
A	93	115	13	FKM
B	95	110	9	FKM
A	95	110	10	NBR
A	95	110	10	FKM
A	95	115	12	NBR
AS	95	115	13	FKM
A	95	120	7	NBR
A	95	120	12	NBR
A	95	120	12	FKM
AS	95	120	13	FKM
AS	95	120	15	NBR
A	95	125	12	NBR
AS	95	125	12	NBR
A	95	125	12	FKM
AS	95	125	12	FKM
AS	95	125	13	FKM
A	96	112	10	NBR
AS	100	115	9	FKM
A	100	120	12	NBR
AS	100	120	12	NBR
A	100	120	12	FKM
AS	100	120	12	FKM
A	100	120	13	FKM
A DUO	100	120	13	FKM
A	100	125	12	NBR
A	100	125	12	FKM
A	100	125	13	FKM
A	100	130	12	NBR
AS	100	130	12	NBR
A	100	130	12	FKM
AS	100	130	12	FKM
A DUO	100	130	13	NBR
A DUO	100	130	13	FKM
A	100	130	14	NBR
A	100	130	14	FKM
A	100	135	13	NBR
A	104	120	13	FKM
A	104,77	136,39	12,7	FKM
A	105	125	13	NBR
AS	105	125	13	NBR
A	105	125	13	FKM
AS	105	125	13	FKM
A	105	130	12	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
AS	105	130	12	NBR
A	105	130	12	FKM
AS	105	130	13	FKM
A	105	130	15	NBR
A	105	130	15	FKM
A	105	140	12	NBR
A	105	140	12	FKM
D5	105	140	12	NBR
A	110	130	8	NBR
A	110	130	8	FKM
A	110	130	12	NBR
A	110	130	12	FKM
AS	110	130	12	FKM
A	110	130	13	NBR
A	110	130	13	FKM
A	110	130	14,5	NBR
A	110	130	14,5	FKM
A	110	140	10	NBR
A	110	140	12	NBR
A	110	140	12	FKM
AS	110	140	12	FKM
A	110	140	13	NBR
A	110	140	13	FKM
AS	110	145	13	FKM
B	110	145	15	FKM
D5	110	150	16	NBR
A	112	140	13	NBR
A	115	135	9	FKM
A	115	140	10	NBR
A	115	140	10	FKM
A	115	140	12	NBR
AS	115	140	12	NBR
A	115	140	12	FKM
AS	115	140	12	FKM
AS	115	140	16	NBR
A	115	150	12	NBR
A	115	150	12	FKM
AS	118	148	15	NBR
A DUO	118	150	15	FKM
A	120	140	10	FKM
A	120	140	13	NBR
AS P	120	140	13	NBR
A	120	140	13	FKM
AS P	120	140	13	FKM
A	120	150	12	NBR
AS	120	150	12	NBR
A	120	150	12	FKM
AS	120	150	12	FKM
D5	120	150	12,5	NBR

**A****AS****B****C****DINA****D5****A DUO****AS P**

Referencia	Ø int.	Ø ext.	Altura	Material
A	120	150	13	NBR
A	120	150	13	FKM
AS	120	150	15	NBR
AS	120	150	15	FKM
A	120	160	12	NBR
A	120	160	12	FKM
A	120	160	15	NBR
A	120	160	15	FKM
A	125	140	10	NBR
A	125	140	10	FKM
A	125	150	12	NBR
AS	125	150	12	NBR
A	125	150	12	FKM
AS	125	150	12	FKM
A	125	155	12	NBR
AS	125	155	12	NBR
A	125	155	12	FKM
AS	125	155	12	FKM
A	125	160	12	NBR
A	125	160	12	FKM
AS	126	146	10	NBR
A	127	152,4	12,7	NBR
A	127	152,4	12,7	FKM
A	128	150	13	NBR
A	128	150	13	FKM
A	128	158	20	FKM
A	130	150	10	NBR
A	130	150	10	FKM
AS	130	150	12	NBR
AS	130	150	12	FKM
AS	130	150	15	NBR
AS	130	155	12	NBR
A	130	160	12	NBR
A	130	160	12	FKM
AS	130	160	12	FKM
A	130	160	13	NBR
A	130	160	13	FKM
A	130	160	15	NBR
AS	130	160	15	NBR
A	130	160	15	FKM
AS	130	160	15	FKM
A	130	165	15	NBR
A	130	170	12	NBR
A	130	170	12	FKM
A	130	170	13	NBR
A	130	170	13	FKM
A	132,5	155,6	13	NBR
B	134,54	155,57	9,52	NBR
A	135	160	12	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
A	135	160	12	FKM
AS	135	160	15	FKM
A	135	170	12	NBR
A	135	170	12	FKM
A	138	160	15	NBR
A	138	160	15	FKM
B	140	160	13	NBR
A	140	165	12	NBR
A	140	165	15	NBR
A	140	170	12	NBR
AS	140	170	12	NBR
A	140	170	12	FKM
AS	140	170	12	FKM
A	140	170	15	NBR
A	140	170	15	FKM
D5	140	175	16	NBR
A	140	180	12	NBR
A	140	180	12	FKM
A	140	180	13	NBR
A	140	180	13	FKM
A	140	180	15	NBR
A	140	180	15	FKM
A	144	160	12	NBR
B	144	160	12	NBR
A	145	175	15	NBR
A	145	175	15	FKM
A	145	180	12	NBR
A	145	180	12	FKM
A	145	180	13	NBR
A	145	180	13	FKM
A	145	180	14	NBR
A	145	180	14	FKM
A	148	170	14,5	NBR
A	148	170	14,5	FKM
A	150	170	12	NBR
A	150	170	12	FKM
A	150	180	12	NBR
A	150	180	12	FKM
A	150	180	13	NBR
AS	150	180	13	NBR
A	150	180	13	FKM
D5	150	180	13	NBR
A	150	180	15	NBR
A	150	180	15	FKM
AS	150	180	18	NBR
AS	152,4	187,32	19	NBR
AS	155	174	12	NBR
A	155	175	12	NBR
AS	155	185	15	FKM

**A****AS****B****C****DINA****D5****A DUO****AS P**

Referencia	Ø int.	Ø ext.	Altura	Material
D5	155	195	16	NBR
D5	155	195	16	FKM
A	160	185	10	NBR
A	160	185	10	FKM
AS P	160	190	8	FKM
A	160	190	15	NBR
AS	160	190	15	NBR
A	160	190	15	FKM
AS	160	190	15	FKM
A	160	200	12	NBR
B	160	200	15	FKM
A	165	190	13	NBR
A	165	190	13	FKM
A	165	200	15	NBR
A	170	190	15	NBR
A	170	190	15	FKM
A	170	200	12	NBR
A	170	200	12	FKM
A	170	200	15	NBR
AS	170	200	15	NBR
A	170	200	15	FKM
AS	170	200	15	FKM
D5	170	200	15	NBR
D5	170	210	16	NBR
A	175	200	15	NBR
A	175	200	15	FKM
A	175	210	14	NBR
A	175	210	14	FKM
A	180	200	13	NBR
A	180	200	13	FKM
AS	180	200	16	FKM
A	180	210	15	NBR
AS	180	210	15	NBR
A	180	210	15	FKM
AS	180	210	15	FKM
A	180	215	16	NBR
A	180	215	16	FKM
A	180	220	15	NBR
A	180	220	15	FKM
A	184,15	222,25	14,2	FKM
A	184,15	222,25	14,5	NBR
A	185	210	13	FKM
A	185	215	16	NBR
D5	185	216,8	15,9	NBR
AS	190	215	16	NBR
A	190	220	15	NBR
A	190	220	15	FKM
A	190	225	16	NBR
AS	190	225	16	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
AS	190	225	16	FKM
AS	190	230	16	NBR
D5	190	230	16	NBR
B	199	241,3	14	NBR
A	200	225	15	NBR
A	200	225	15	FKM
A	200	230	13	NBR
A	200	230	13	FKM
A	200	230	15	NBR
AS	200	230	15	NBR
A	200	230	15	FKM
AS	200	230	15	FKM
D5	200	240	16	NBR
D5	200	240	16	FKM
A	200	250	15	NBR
A	200	250	15	FKM
A	205	230	16	NBR
A	205	230	16	FKM
A	210	240	15	NBR
A	210	240	15	FKM
A	210	250	15	NBR
A	210	250	15	FKM
A	210	290	20	NBR
AS	210	290	20	NBR
A	210	290	20	FKM
AS	210	290	20	FKM
A	220	250	15	NBR
AS	220	250	15	NBR
A	220	250	15	FKM
A	220	255	16	NBR
A	220	260	16	NBR
A	220	260	16	FKM
D5	220	260	16	NBR
D5	220	270	16	FKM
D5	227	277,81	25,4	NBR
A	230	260	15	NBR
AS	230	260	15	NBR
A	230	260	15	FKM
AS	230	260	15	FKM
D5	230	270	16	NBR
A	230	280	15	NBR
A	230	280	15	FKM
A	240	270	15	NBR
A	240	270	15	FKM
D5	240	270	15	FKM
A	240	275	16	NBR
A	240	280	15	NBR
A	240	280	15	FKM
A	250	280	15	NBR



A



AS



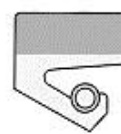
B



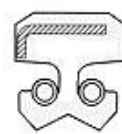
C



DINA



D5



A DUO



AS P

Referencia	Ø int.	Ø ext.	Altura	Material
A	250	280	15	FKM
A	260	300	20	NBR
A	260	300	20	FKM
D5	260	300	20	NBR
A	265	290	16	NBR
A	265	290	16	FKM
D5	265	315	18	NBR
D5	270	310	20	NBR
A	280	310	15	NBR
A	280	310	15	FKM
A	280	320	20	NBR
A	280	320	20	FKM
AS	280	320	20	FKM
D5	280	320	20	NBR
A	280	350	16	FKM
A	300	340	18	NBR
A	300	340	18	FKM
D5	300	340	18	NBR
C	310	350	18	FKM
D5	315	360	16	NBR
A	320	360	20	NBR
A	320	360	20	FKM
C	320	360	20	NBR
D5	330	374	20	FKM
A	340	380	18	NBR
A	340	380	18	FKM
A	350	390	18	NBR
A	350	390	18	FKM
A	370	410	15	NBR
A	370	410	15	FKM
D5	370	410	20	NBR
A	380	420	20	NBR
AS	380	420	20	NBR
A	380	420	20	FKM
AS	380	420	20	FKM
D5	380	440	25	NBR
A	390	430	20	NBR
A	390	430	20	FKM
A	394	420	16	NBR
AS	394	420	16	NBR
A	394	420	16	FKM
A	400	440	20	NBR
A	400	440	20	FKM
A P	400	450	25	NBR
D5	406,4	457,2	22,2	NBR
A	420	460	20	NBR
A	420	460	20	FKM
C	420	460	20	NBR
AS	420	470	20	NBR

Referencia	Ø int.	Ø ext.	Altura	Material
AS	420	470	20	FKM
A	440	480	20	NBR
A	440	480	20	FKM
A	450	500	22	NBR
A	450	500	22	FKM
A	480	520	20	NBR
A	480	520	20	FKM
A	500	540	20	NBR
AS	500	540	20	NBR
A	500	540	20	FKM
AS	500	540	20	FKM
D5	510	560	22	NBR
D5	560	610	22	FKM

**LIDERING**



**LIDERING, S.A.**

Pg. Ferrocarrils Catalans, 106 - 108  
08940 Cornellà de Llobregat BARCELONA  
Tel: 93 480 44 00 Fax: 93 480 44 04

Cyesa,11  
28017 MADRID  
Tel: 91 724 13 83 Fax: 91 361 40 20

**LIDERING, S.A.R.L.**

Parc des Aqueducs, Lot E  
Chemin du Favier RD 42  
69230 Saint-Genis-Laval FRANCE  
Tél: 04 72 67 02 67 Fax: 04 78 56 04 08

**S.A. CONTINENTAL SEALS NEW N.V.**  
(LIDERING GROUP)

Ch. de Louvain 270 - Leuvensestwg  
1410 Waterloo BELGIQUE-BELGIË  
Tél: 02 357 06 30 Fax: 02 354 29 86