



Single-acting

With Metal Case

For open Groove Assembly

Material:

NBR and Metal







■ Scraper WSA



■ Description

The scraper WSA is a mold-vulcanised single-acting elastomer scraper, with integral metal reinforcement for open groove assembly. In conjunction with the scraper oversize, an exact fit is obtained in the housing.

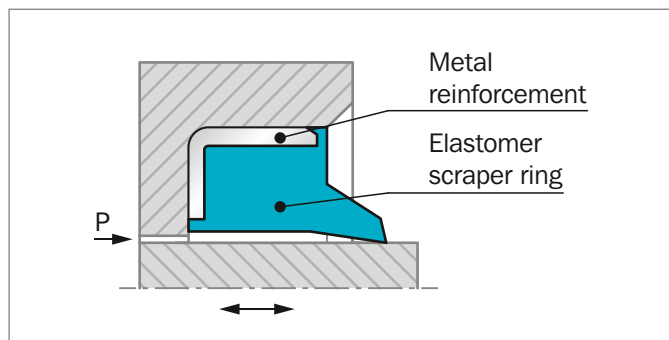


Figure 211: Scraper WSA

ADVANTAGES

- Space-saving construction
- Low cost, economical solution
- Simple, easy-construction groove
- Firm fit in the groove due to metallic press fit

APPLICATION EXAMPLES

- Hydraulic cylinders
- Agriculture machinery
- Construction machinery
- Lift trucks
- Mobile hydraulic

OPERATING CONDITIONS

Speed:	Up to 1 m/s
Temperature:	-30 °C to +110 °C
Media:	Mineral oil based hydraulic fluids. polyglycol-water emulsions, water-oil emulsions
Groove Type:	Open

IMPORTANT NOTE

The above data are maximum values and cannot be used at the same time, e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. Temperature range also depends on media.

MATERIALS

Standard application:

Material: NBR 90 Shore A + Metal

TSS code: N9MN



■ Installation Recommendation

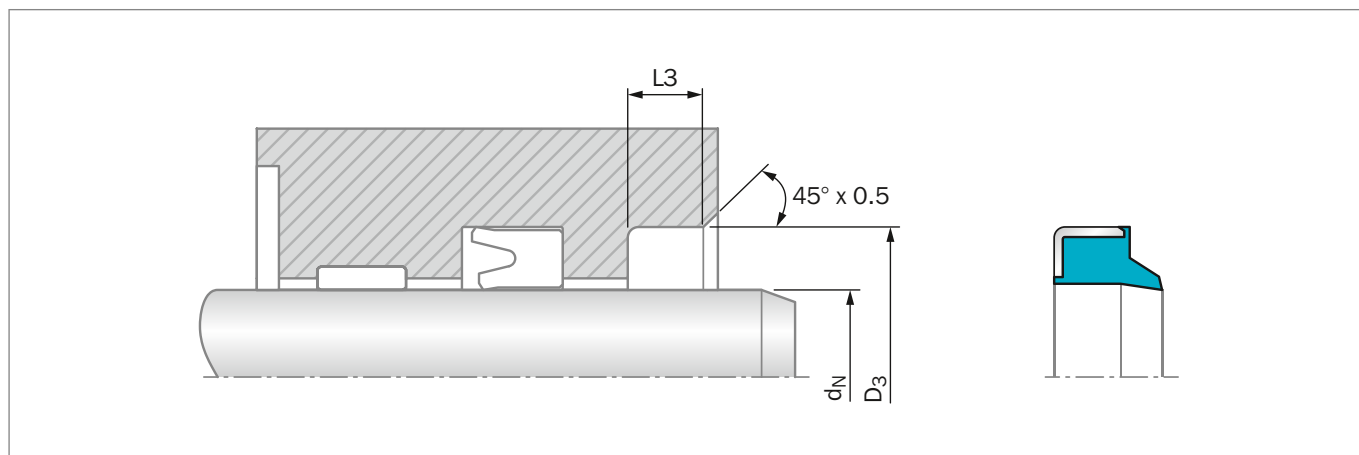


Figure 212: Installation Drawing

ORDERING EXAMPLE

Rod Diameter:	$d_N = 35 \text{ mm}$
Groove Diameter:	$D_3 = 45 \text{ mm}$
TSS Part No.:	WSA000350 from Table 192
Material Set-Code TSS:	N9MN

TSS Article No.	WSA0 0 0350 - N9MN
TSS Series No.	WSA0
Type (Standard)	0
Rod Diameter x 10	0350
Quality Index (Standard)	-
Material Set-Code	N9MN

Table 192: Installation Dimensions / TSS Part No.

Rod Diameter	Groove Diameter	Groove Width	TSS Part No.
d_N h9	D_3 H8	L_3 +0.2	
6.0	13.0	3.0	WSA000060
8.0	15.0	3.0	WSA000080
10.0	16.0	3.0	WSA000100
10.0	18.0	5.0	WSA100100
12.0	18.0	5.0	WSA200120
12.0	20.0	4.0	WSA000120
12.0	22.0	5.0	WSA100120
13.0	18.0	3.0	WSA000130
14.0	20.0	4.0	WSA100140
14.0	22.0	3.0	WSA000140
16.0	22.0	4.0	WSA000160
16.0	26.0	5.0	WSA200160
16.0	28.0	5.0	WSA300160
18.0	26.0	5.0	WSA000180



Rod Diameter	Groove Diameter	Groove Width	TSS Part No.
d_N h9	D_3 H8	L_3 +0.2	
18.0	28.0	5.0	WSA300180
18.0	28.0	7.0	WSA100180
20.0	26.0	4.0	WSA000200
20.0	28.0	3.5	WSA200200
20.0	28.0	5.0	WSA300200
20.0	30.0	4.0	WSA400200
20.0	30.0	5.0	WSA500200
20.0	30.0	7.0	WSA600200
22.0	28.0	5.0	WSA000220
22.0	32.0	5.0	WSA200220
22.0	32.0	7.0	WSA100220
24.0	35.0	5.0	WSA000240
25.0	36.5	5.0	WSA200250
25.0	35.0	5.0	WSA000250
25.0	35.0	7.0	WSA100250
28.0	38.0	5.0	WSA000280
28.0	40.0	7.0	WSA100280
30.0	40.0	5.0	WSA000300
30.0	40.0	7.0	WSA100300
30.0	45.0	5.0	WSA200300
32.0	42.0	5.0	WSA000320
32.0	42.0	7.0	WSA400320
32.0	44.0	4.0	WSA300320
32.0	45.0	4.0	WSA100320
32.0	45.0	7.0	WSA200320
35.0	45.0	7.0	WSA000350
36.0	45.0	7.0	WSA000360
38.0	48.0	7.0	WSA000380
40.0	50.0	5.0	WSA100400
40.0	50.0	5.0	WSA000400
40.0	50.0	7.0	WSA200400
42.0	52.0	7.0	WSA000420
45.0	55.0	5.0	WSA100450
45.0	55.0	7.0	WSA000450
50.0	56.0	5.0	WSA000500
50.0	60.0	5.0	WSA200500
50.0	60.0	5.0	WSA500500
50.0	60.0	7.0	WSA300500
50.0	65.0	7.0	WSA400500
52.0	62.0	7.0	WSA000520
55.0	63.0	7.0	WSA000550
55.0	65.0	5.0	WSA200550



Rod Diameter	Groove Diameter	Groove Width	TSS Part No.
d_N h9	D_3 H8	L_3 +0.2	
55.0	65.0	7.0	WSA100550
55.0	70.0	7.0	WSA300550
56.0	66.0	7.0	WSA000560
60.0	70.0	5.0	WSA200600
60.0	70.0	7.0	WSA000600
60.0	74.0	5.0	WSA100600
63.0	75.0	7.0	WSA000630
65.0	75.0	5.0	WSA100650
65.0	75.0	7.0	WSA000650
70.0	80.0	5.0	WSA100700
70.0	80.0	7.0	WSA000700
75.0	83.0	7.0	WSA100750
75.0	85.0	7.0	WSA000750
80.0	88.0	7.0	WSA100800
80.0	90.0	7.0	WSA000800
85.0	95.0	7.0	WSA000850
90.0	100.0	7.0	WSA000900
95.0	105.0	7.0	WSA000950
100.0	110.0	7.0	WSA001000
105.0	115.0	7.0	WSA001050
110.0	120.0	7.0	WSA001100
115.0	125.0	7.0	WSA001150
120.0	130.0	7.0	WSA001200
120.0	135.0	7.0	WSA101200
125.0	140.0	9.0	WSA001250
130.0	145.0	9.0	WSA001300
135.0	145.0	7.0	WSA001350
140.0	155.0	9.0	WSA001400
140.0	160.0	10.0	WSA101400
150.0	165.0	9.0	WSA001500
160.0	175.0	9.0	WSA001600
170.0	185.0	10.0	WSA001700
175.0	190.0	9.0	WSA001750
180.0	195.0	10.0	WSA001800
200.0	220.0	12.0	WSA002000
220.0	235.0	10.0	WSA002200
270.0	295.0	12.0	WSA002700

The sizes in **bold** type comply with ISO 6195, installation groove Type B. Other sizes on request.
The listed products are technically equivalent but availability and pricing may vary.