

NF T47-501 O-Ring Standard

French metric O-ring sizes for hydraulic, pneumatic and industrial sealing applications.

Overview

NF T47-501 is the French national standard for metric O-ring dimensions, used extensively in France, Belgium, North Africa and francophone markets for hydraulic systems, automotive assemblies, pneumatic equipment and general machinery.

The standard is closely aligned with ISO 3601 and DIN 3771, making it interchangeable for most European applications. NF T47-501 specifies inside diameters and cross sections in millimetres, and is frequently referenced in French OEM drawings, public works contracts and aerospace ground equipment specifications.

Cross-Section Reference

Cs Mm	Notes
1.00	Precision instruments, small pneumatic fittings
1.50	Miniature hydraulic and medical devices
1.60	European small-bore sensors and valves
1.78	Compatible with AS568 imperial cross section
1.80	Equivalent to ISO 3601 A-series
2.00	General purpose static and dynamic seals
2.40	Medium-pressure hydraulic applications
2.50	Pumps and fluid handling equipment
2.62	Compatible with AS568-1xx cross section
2.65	Equivalent to ISO 3601 B-series
3.00	Heavy-duty static seals
3.53	Compatible with AS568-2xx cross section
3.55	Equivalent to ISO 3601 C-series
4.00	Large bore flanges, industrial valves
5.00	High-pressure hydraulic cylinders
5.30	Equivalent to ISO 3601 D-series
5.33	Compatible with AS568-3xx cross section
6.00	Marine and large industrial equipment
6.99	Compatible with AS568-4xx cross section
7.00	Equivalent to ISO 3601 E-series
8.00	Specialised heavy static sealing

Tolerance Reference

Cs Mm	Cs Tolerance	Id Range	Id Tolerance
1.00 - 1.60	+/-0.08	<= 10	+/-0.14
1.00 - 1.60	+/-0.08	10 - 20	+/-0.17

Cs Mm	Cs Tolerance	Id Range	Id Tolerance
1.78 - 2.65	+/-0.09	<= 13	+/-0.17
1.78 - 2.65	+/-0.09	13 - 30	+/-0.22
1.78 - 2.65	+/-0.09	30 - 50	+/-0.28
3.00 - 3.55	+/-0.10	<= 20	+/-0.20
3.00 - 3.55	+/-0.10	20 - 40	+/-0.28
3.00 - 3.55	+/-0.10	40 - 85	+/-0.36
4.00 - 5.33	+/-0.13	<= 40	+/-0.28
4.00 - 5.33	+/-0.13	40 - 80	+/-0.36
4.00 - 5.33	+/-0.13	80 - 140	+/-0.45
6.00 - 7.00	+/-0.15	<= 80	+/-0.36
6.00 - 7.00	+/-0.15	80 - 160	+/-0.45
8.00	+/-0.18	<= 120	+/-0.45
8.00	+/-0.18	120 - 250	+/-0.56

Example Sizes

ID mm	CS mm	Typical Use
3.00	1.00	Precision instruments
5.00	1.50	Small pneumatic fittings
7.00	1.80	Compact hydraulic fittings
10.00	2.00	General machinery seals
15.00	2.50	Pump and valve housings
20.00	2.65	Hydraulic cylinders
25.00	3.00	Medium-pressure systems
30.00	3.55	Industrial flange seals
40.00	4.00	Large static seals
50.00	5.00	Heavy equipment hydraulics
80.00	5.30	Large bore hydraulics
100.00	6.00	Marine and offshore
150.00	7.00	Large industrial tanks
200.00	8.00	Specialised static sealing

Cross References

Standard	Region	Designation
ISO 3601	International	A/B/C/D/E series map directly to NF T47-501 dimensions
DIN 3771	Germany/EU	German metric sizes are functionally equivalent to NF T47-501
SMS 1588	Sweden	Swedish metric sizes share the same cross sections and ID ranges
JIS B 2401	Japan	P/G/S/V series are metric-compatible with NF T47-501
AS568	USA	Imperial cross sections convert to nearest metric NF sizes

Groove Design Notes

Condition	Guidance
Static	Groove width $\approx 1.15 \times CS$ with 15-25% compression depending on face or radial orientation.
Dynamic	Groove width $\approx 1.2-1.3 \times CS$. Target 10-15% compression for reciprocating motion to minimise friction.
Rotary	Limit groove fill to 75-80% max. Use harder grades (80-90 Shore A) and materials with good heat resistance such as FKM or HNBR.

FAQ

Is NF T47-501 the same as ISO 3601?

They are closely aligned but not identical. NF T47-501 is the French national standard, while ISO 3601 is international. Most cross sections and size ranges overlap, making them interchangeable in practice.

What industries use NF T47-501 O-rings?

NF T47-501 is widely used in French automotive, aerospace ground support, agriculture machinery, public works, hydraulics, and marine equipment throughout France, Belgium and North Africa.

Can you supply NF T47-501 O-rings with material certifications?

Yes. We provide batch certificates, material test reports, and full traceability for NBR, FKM, EPDM, HNBR and silicone NF T47-501 O-rings.

Do you stock NF T47-501 sizes or manufacture to order?

We manufacture NF T47-501 O-rings to order with no tooling charge for standard cross sections. Custom sizes and special compounds are available with MOQ starting at 1 piece.