CR Seals®

Axial clamp seals product listings

Understanding key table elements

Designed to be user-friendly, CR Seals and product listings convey a good deal of information on every line. As you familiarize yourself with the tables, keep these need-to-know basics in mind:

Seal and product sizes

All size listings for all CR Seals products are arranged by ascending shaft diameters, segregated as inch sizes (green bars) and metric sizes (blue bars). All bore and width sizes listed under the green bars are in inches, while all sizes listed under blue bars are in mm.

Bore / width

Once you have selected the right shaft size, you will need to identify the seals with a matching bore size. The recommended tolerance ranges for shaft and bore can be found on **pages 46-49**. While it is important to choose a seal with a close match to shaft and bore, it is less important to choose a seal with a predetermined width. As long as the seal is short enough not to protrude out of the bore, it will work just fine.

Preferred designs

Highlighted in bold in the "Part Number" and "Seal Type" columns, preferred seal design listings represent the highest performing or otherwise best suited sealing solution for a given shaft diameter.

Lip Material

R = NBR (nitrile rubber)

RG = NBR with advanced oil resistance and pumping ability

D = XNBR (carboxylated nitrile)

H = HNBR (hydrogenated nitrile)

V = FKM (fluorocarbon rubber)

P = ACM (polyacrylate elastomer)

T = PTFE (polytetrafluoroethylene)

Seal technologies

W = SKF Wave: Featuring the patented SKF Wave lip design, these are the most robust standard seals ever made.

E = SKF Edge: SKF Edge shaft seals HMS5 and HMSA10 combine an SKF-developed NBR compound with a rubber outside diameter according to ISO/DIN global design standards – primarily available in metric sizes.

F = SKF Flex: SKF Flex seals deliver heavy-duty performance in fully customizable sizes and features to fit and perform in the application.

S = Standard oil seal: SKF carries some older designs that do not have the modern advancements of the SKF Edge or SKF Wave lips, but may be adequate for some applications. Use these when SKF Edge or SKF Wave seals are not available in the size needed.

G = Grease seal: Oil seals can handle oil or grease applications, but grease seals do not have the garter spring needed for oil retention, so they are for grease only. Normally you point the lip away from grease if the main concern is water/dirt ingression, which also allows the grease to purge if needed.

Key features

▲ **WasteWatcher:** Indicates that the product is most likely to be in stock at our distributors and our own SKF warehouses. The CR Seals WasteWatcher program helps distributors optimize seal inventories.

■ **Bore-Tite:** Indicates the seal uses SKF Bore-Tite, a green, water-based acrylic sealant used as a coating on the outside diameter of the seal.

◤ **SS Case:** Indicates the seal has a stainless steel seal case.

◎ **SS Spring:** Indicates the seal has a stainless steel seal lip spring.

◆ **Pressure seal up to 50 psi:** Suitable for higher-pressure sealing applications; typical industrial shaft seals can handle only up to 5 or 10 psi.

◇ **Cover plate required:** Proper seal installation and operation requires a cover plate, which clamps down axially on an all-rubber seal to hold it in place in many large diameter seal applications.

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SKF®

Axial clamp seals

SKF axial clamp seals are designed for large and very large shaft diameters. They are suitable for use as primary seals, or as secondary seals in applications where the primary seals are subjected to excessive solid or fluid contaminants. Axial clamp seals do not rotate but seal axially against a rotating counterface.

SKF axial clamp seals are made of profiled strips of non-reinforced nitrile rubber and are held firmly in position by stainless steel band clamps. They are available for shaft diameters ranging from 5.9 to 181 in. (*50* to *4,600 mm*).

The standard range of SKF axial clamp seals is intended for inch-size shaft diameters. Because axial clamp seals are typically installed with an approximate 0.984 in. (*25 mm*) gap between the ends, they may also be used for metric shaft diameters.

Figure 1

Axial clamp seal designs

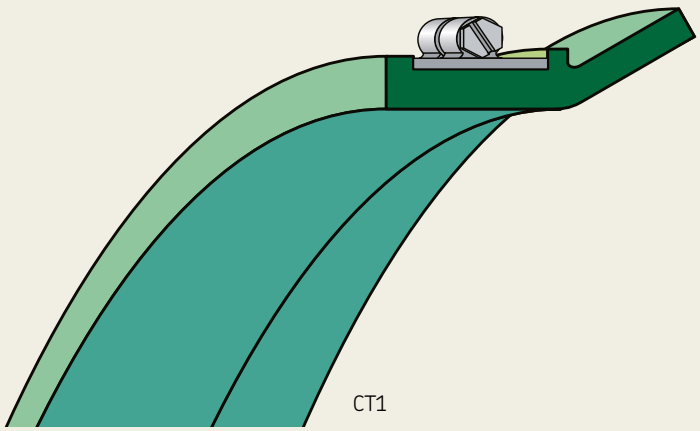
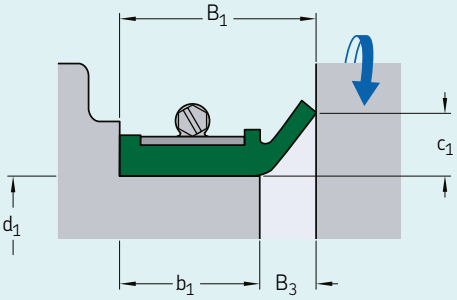


Table 1

Application tolerances



Dimension		Tolerance	Axial clamp seals
			CT1
Seal seat diameter, d_1	in. *mm*	± 0.063 *±1.6*	6.000 – 180.000 *152.40 – 4,572*
Seal fitted width, B_1	in. *mm*	± 0.031 *±0.8*	1.125 – 1.500 *28.60 – 38.10*
Seal seat width, b_1	in. *mm*	± 0.125 *±3.2*	0.688 – 1.063 *17.50 – 27*
Lip height, c_1	in. *mm*	± 0.031 *±0.8*	0.500 *12.70*
Gap width, B_3	in. *mm*		0.437 *11.10*

Basic design features

CT1 seals (→ **fig. 1**) have the basic design and are held in position by a band clamp.

The maximum permissible axial displacement relative to the bore is 0.094 in. (*+2.4 mm*).

Sealing arrangement design

To obtain reliable sealing performance, the seal seat diameter (d_1), seal seat width (b_1) and the seal fitted width (B_1) should meet the requirements listed in **Table 1**. To simplify alignment, the seal should abut a shoulder.

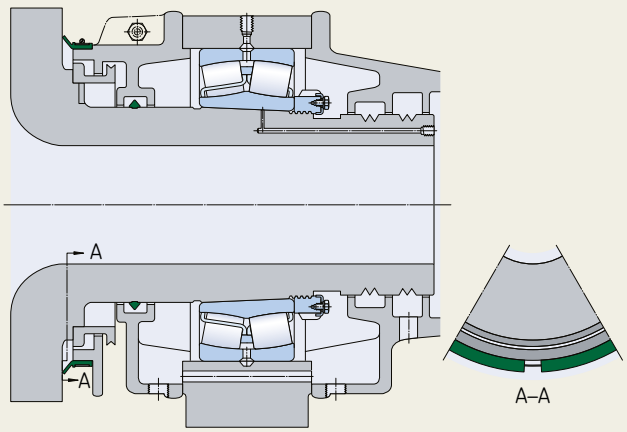
Finely turned bores are adequate for axial clamp seals. The appropriate surface roughness values are 115 µin (*Ra 2.5 µm*) and 480 µin (*Rt 12 µm*).

Typically, after installation, CT axial clamp seals have an approximate 1 in. (*25 mm*) gap between the ends. This should be arranged at the 6 o'clock position (→ **fig. 2**) to facilitate installation and drainage of contaminants.

Butt-joint seals are also available for certain applications.

Figure 2

Sealing arrangement and installation

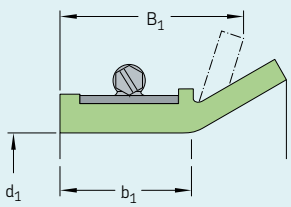


Installation instructions

Axial clamp seals are supplied as rolled-up coils. During installation they are placed in position on their seat in the housing and bolted lightly together. They are then pushed forward toward the counterface and the gap (or joint) between the two ends is arranged at the 6 o'clock position (→ **fig. 2**). The clamps are finally tightened.

The torque applied to the clamp screws should not exceed 7 Nm.

SKF Part Number	Seal type	Lip mat'l	Butt Joint	Seal Seat Ø d1	Face/heel offset* B1	Seal seat width b1
Inch						
594334	CT1	R		6.625	1.125	0.688
529489	CT1	R	✓	6.625	1.125	0.688
523586	CT1	R		7.000	1.500	1.063
594648	CT1	R	✓	7.000	1.500	1.063
565636	CT1	R		7.500	1.125	0.688
528745	CT1	R		8.000	0.875	0.688
527820	CT1	R	✓	8.250	1.125	0.688
529490	CT1	R	✓	8.625	1.125	0.688
531635	CT1	R		8.938	1.125	0.688
524204	CT1	R		9.000	1.125	0.688
527819	CT1	R	✓	9.000	1.125	0.688
524205	CT1	R		10.000	1.125	0.688
527806	CT1	R	✓	10.000	1.125	0.688
528780	CT1	R		10.000	1.000	0.813
524206	CT1	R		11.000	1.125	0.688
524928	CT1	R		11.000	1.250	0.813
597447	CT1	R		11.250	1.125	0.688
593629	CT1	R	✓	11.750	1.125	0.688
524208	CT1	R		12.000	1.250	0.813
525582	CT1	R		12.000	1.500	1.063
524209	CT1	R		13.000	1.125	1
523587	CT1	R		13.000	1.500	1
594110	CT1	R	✓	13.813	1.500	1
593037	CT1	R	✓	14.000	1.375	1
530733	CT1	R	✓	14.000	1.500	1
594025	CT1	R		15.000	1.125	0.750
594954	CT1	R	✓	15.250	1.125	0.688
523826	CT1	R		16.750	1.250	0.813
524815	CT1	R		16.750	1.313	0.875
528535	CT1	R		17.000	1.500	1.063
522679	CT1	R		17.500	1.250	0.813
525737	CT1	R	✓	17.500	1.375	0.938
597489	CT1	R	✓	18.000	1.250	0.813
525708	CT1	R		18.500	1.125	0.688
526192	CT1	R		18.500	1.250	0.813
557678	CT1	R	✓	18.500	1.250	0.813
594181	CT1	R		19.500	1.125	0.688
524587	CT1	R		20.000	1.250	0.875
524599	CT1	R		21.500	1.250	0.813
565834	CT1	R	✓	21.750	1.187	0.750
565603	CT1	R	✓	21.750	1.000	1.437
524210	CT1	R		21.813	1.250	0.813
524211	CT1	R		21.938	1.125	0.688
524347	CT1	R		22.000	1.250	0.813
524212	CT1	R		22.500	1.250	0.813
524657	CT1	R		22.750	1.375	0.938
525627	CT1	R		23.375	1.375	0.938
525031	CT1	R		23.438	1.125	0.688
524364	CT1	R		23.500	1.375	0.938
524365	CT1	R		23.750	1.250	0.813
597448	CT1	R		24.500	1.125	1
524213	CT1	R		24.750	1.250	1
524214	CT1	R		25.125	1.375	1
524591	CT1	R		26.000	1.375	1
524215	CT1	R		26.938	1.125	1
524592	CT1	R		27.250	1.375	1
524216	CT1	R		27.750	1.375	1
527232	CT1	R		28.000	1.250	1
525032	CT1	R	✓	28.813	1.125	1
565833	CT1	R	✓	29.250	1.062	0.750
565602	CT1	R	✓	29.250	1.187	0.750
524218	CT1	R		29.750	1.500	1.063
525033	CT1	R		30.063	1.125	0.688
525212	CT1	R		31.000	1.250	0.813
525034	CT1	R		32.188	1.250	0.813
524294	CT1	R		32.250	1.250	0.813
565601	CT1	R	✓	32.250	1.063	1.500
524367	CT1	R		32.500	1.250	0.813
526867	CT1	R		33.063	1.250	0.813
565931	CT1	R	✓	33.063	1.250	0.813
524219	CT1	R		33.688	1.250	0.813
523063	CT1	R		34.500	1.500	1.063
524221	CT1	R		35.438	1.250	0.813
528416	CT1	R		36.000	1.125	0.688
525320	CT1	R		37.000	1.500	1.063
524368	CT1	R		37.250	1.250	0.813
524226	CT1	R		38.000	1.250	0.813
556379	CT1	R	✓	38.000	1.250	0.813
529452	CT1	R		39.500	1.125	0.688
526806	CT1	R		39.500	1.250	0.813
525035	CT1	R		40.000	1.438	1.000
527903	CT1	R		40.000	1.500	1.063
524227	CT1	R		41.000	1.500	1.063
525036	CT1	R		41.125	1.500	1.063
527474	CT1	R		41.500	1.250	0.813
597308	CT1	R	✓	42.500	1.125	0.784
524909	CT1	R		43.375	1.250	0.813
522676	CT1	R		44.875	1.500	1.063
529086	CT1	R		46.500	1.250	0.813
527211	CT1	R	✓	47.000	1.500	1.063
525091	CT1	R		47.500	1.250	0.813
522677	CT1	R		47.625	1.500	1.063
524232	CT1	R		51.500	1.500	1.063
528927	CT1	R		52.000	1.299	1.063
528526	CT1	R		53.000	1.250	0.813
528525	CT1	R		57.000	1.250	0.813
557318	CT1	R		61.438	1.125	0.688
526809	CT1	R		70.000	1.250	0.813
531456	CT1	R		73.000	1.500	1.063
566079	CT1	R		83.950	1.252	0.815
522856	CT1	R		100.000	1.500	1.063
Metric (mm)						
593637	CT1	R	✓	185	30	25
528631	CT1	R		229	29.21	18.11
557587	CT1	R		320	34.80	30
593171	CT1	R	✓	380	38.10	27
557458	CT1	R		385	35.71	24.46
595110	CT1	R	✓	410	23.83	12.50
565531	CT1	R	✓	470	31.75	20.65
594241	CT1	R		533	31.75	20.65
594431	CT1	R		600	30	18.90
557571	CT1	R	✓	612	33	30
557966	CT1	R	✓	660	28	20
557965	CT1	R	✓	740	28	20
594785	CT1	R	✓	825	28.58	17.48
526021	CT1	R		1206	34.93	23.83
556550	CT1	R	✓	2320	31.80	20.70
557682	CT1	R		3164	28	20.65
557683	CT1	R		3566	28	20.65



* fitted width