

MATERIAL

The 132 series rod seal features a robust profiled seal ring available in abrasion resistant polyurethane and two backup rings in high-strength thermoplastic. Standard materials are MP30, MN30, MN34, and MN31 available up to 3000 mm in diameter.

Material	Code
Polyurethane H-PU/POM	MP30
HNBR/POM	MN30
HNBR/PEEK	MN34
HNBR/Polyamide	MN31

OPERATING PARAMETERS

Temperature	MN34	
	°C	°F
Hydraulic oil	-20...+152	-5...+305
Water oil emulsions (HFA)	-20...+55	-5...+130
Water-glycol fluids (HFC)	-20...+55	-5...+130
Polyol esters (HFD)	-20...+37	-5...+100
Speed	0.5 m/s (1.6 ft./sec)	
Pressure	400 bar (6,000 psi)	

Note: for other materials or fluids please contact our engineering department.

DESCRIPTION

The 132 series is a robust three-piece rod seal that consists of a profiled seal ring and two active anti-extrusion backup rings. It is designed for double-acting cylinders in heavy-duty applications subject to severe pressure spikes coupled with high running clearance.

PRODUCT BENEFITS

- Long service life under the harshest conditions
- Compatible with water-based fluids
- Optimized for high running clearance
- Easy installation

APPLICATIONS

The 132 series, three-piece rod seal is ideal in heavy duty sealing applications where pressure spiking can occur.

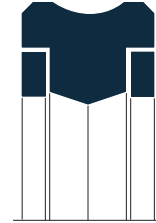
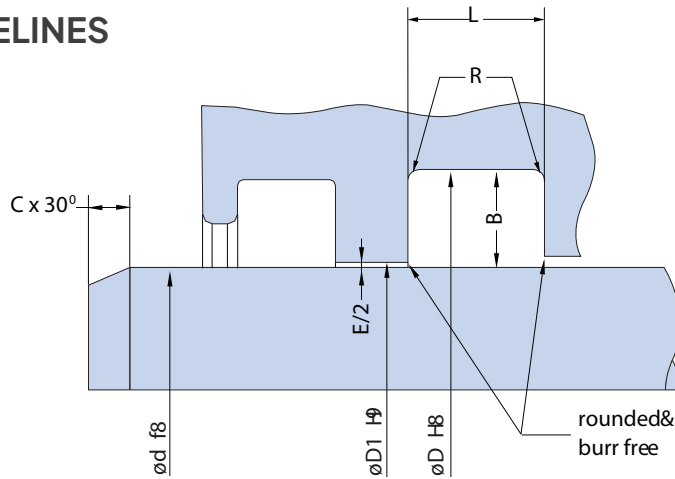
Typical applications include:

- Mining
- Heavy duty clamp cylinders
- Specialty high-pressure cylinders
- Hydraulic rams
- Various advancing and secondary cylinders
- Blow out preventers (BOP)
- Wellhead connectors



Above: Installation Drawing

DESIGN GUIDELINES



METRIC SERIES

	B	L ^{+0.20}	ØD	ØD1	R	C
Series 1	7.50 mm	13.50	d + 15.00	d + E	0.40	6.00
Series 2	10.00 mm	18.00	d + 20.00	d + E	0.40	8.00
Series 3	12.50 mm	22.50	d + 25.00	d + E	0.40	9.00
Series 4	15.00 mm	27.00	d + 30.00	d + E	0.40	11.00

Pressure	E
≤100 bar	1.00
≤250 bar	0.85
≤400 bar	0.70

Extrusion Gap

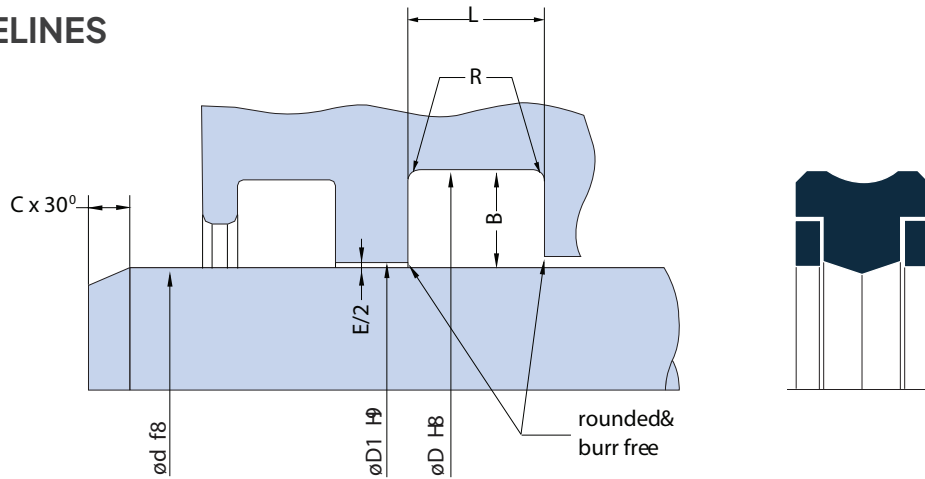
Pressure	E
≤1,450 psi	0.040
≤3,625 psi	0.035
≤6,000 psi	0.030

Extrusion Gaps

SURFACE FINISH

Surface roughness	Ra	Rt	RMS
Sliding surface	≤0.3 µm	≤3 µm	6-12 RMS
Surface of groove I.D.	≤1.8 µm	≤10 µm	32 RMS
Sides of groove	≤3 µm	≤16 µm	64 RMS

DESIGN GUIDELINES

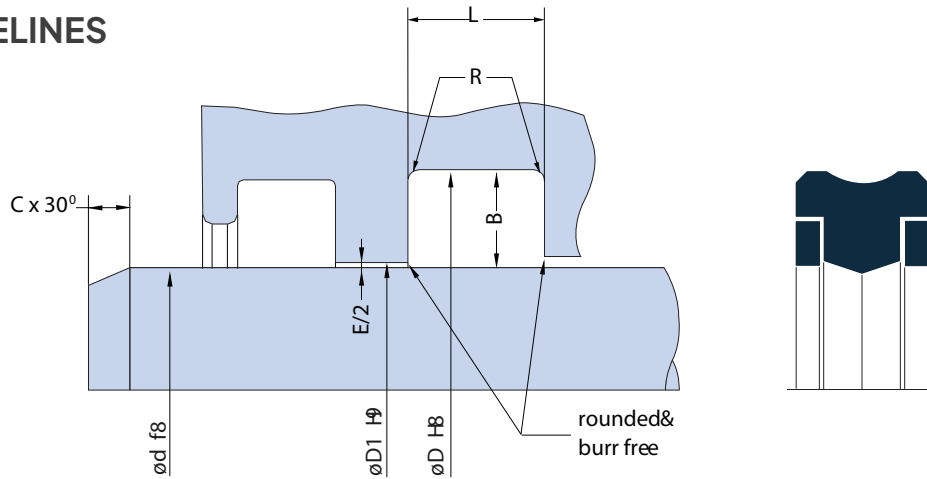


INCH SERIES

PART #	Ød	ØD	B	L
132.170035	0.500	0.678	0.089	0.140
132.170502	0.688	0.865	0.089	0.140
132.170493	0.875	1.117	0.121	0.208
132.170039	1.000	1.244	0.122	0.140
132.170505	1.625	1.869	0.122	0.187
132.158683	1.750	2.096	0.173	0.410
132.158707	1.750	2.250	0.250	0.410
132.170492	2.250	2.620	0.185	0.281
132.144469	4.000	4.500	0.250	0.619
132.144502	4.000	4.625	0.313	0.688
132.144546	4.000	4.750	0.375	0.688
132.152776	4.000	4.375	0.188	0.421
132.144470	4.125	4.625	0.250	0.619
132.144547	4.125	4.875	0.375	0.688
132.144471	4.250	4.750	0.250	0.619
132.144548	4.250	5.000	0.375	0.688
132.144472	4.375	4.875	0.250	0.619
132.144549	4.375	5.125	0.375	0.688
132.144473	4.500	5.000	0.250	0.619
132.144503	4.500	5.125	0.313	0.688
132.144550	4.500	5.250	0.375	0.688
132.144474	4.625	5.125	0.250	0.619
132.144504	4.625	5.250	0.313	0.688
132.144551	4.625	5.375	0.375	0.688
132.144475	4.750	5.250	0.250	0.619

PART #	Ød	ØD	B	L
132.144505	4.750	5.375	0.313	0.688
132.144552	4.750	5.500	0.375	0.688
132.144476	4.875	5.375	0.250	0.619
132.144506	4.875	5.500	0.313	0.688
132.144553	4.875	5.625	0.375	0.688
132.144477	5.000	5.500	0.250	0.619
132.144507	5.000	5.625	0.313	0.688
132.144554	5.000	5.750	0.375	0.688
132.144478	5.125	5.625	0.250	0.619
132.144508	5.125	5.750	0.313	0.688
132.144555	5.125	5.875	0.375	0.688
132.144479	5.250	5.750	0.250	0.619
132.144509	5.250	5.875	0.313	0.688
132.144556	5.250	6.000	0.375	0.688
132.144480	5.375	5.875	0.250	0.619
132.144510	5.375	6.000	0.313	0.688
132.144557	5.375	6.125	0.375	0.688
132.144481	5.500	6.000	0.250	0.619
132.144511	5.500	6.125	0.313	0.688
132.144558	5.500	6.250	0.375	0.688
132.144482	5.625	6.125	0.250	0.619
132.144512	5.625	6.250	0.313	0.688
132.144559	5.625	6.375	0.375	0.688
132.144483	5.750	6.250	0.250	0.619
132.144513	5.750	6.375	0.313	0.688

DESIGN GUIDELINES

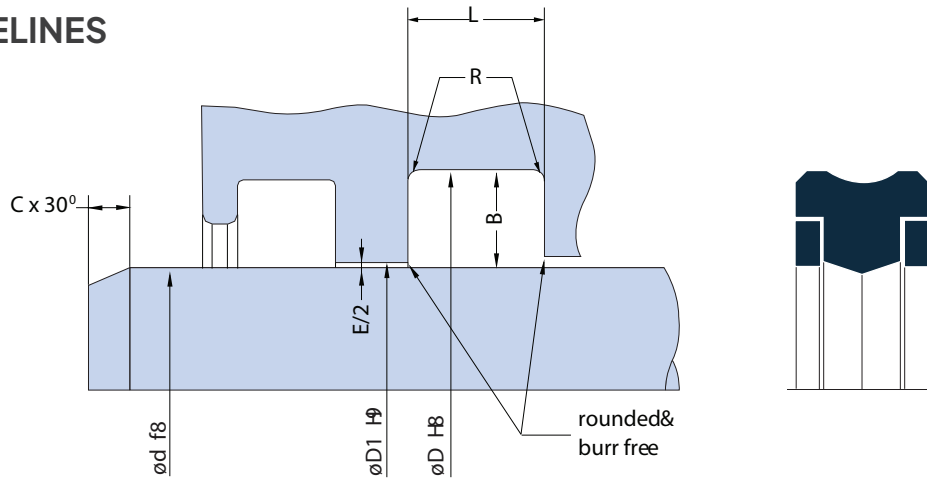


INCH SERIES

PART #	$\varnothing d$	$\varnothing D$	B	L
132.144560	5.750	6.500	0.375	0.688
132.144484	5.875	6.375	0.250	0.619
132.144514	5.875	6.500	0.313	0.688
132.144561	5.875	6.625	0.375	0.688
132.144485	6.000	6.500	0.250	0.619
132.144515	6.000	6.625	0.313	0.688
132.144562	6.000	6.750	0.375	0.688
132.144603	6.000	7.000	0.500	0.825
132.144516	6.125	6.750	0.313	0.688
132.144486	6.250	6.750	0.250	0.619
132.144517	6.250	6.875	0.313	0.688
132.144563	6.250	7.000	0.375	0.688
132.144604	6.250	7.250	0.500	0.825
132.144518	6.375	7.000	0.313	0.688
132.144487	6.500	7.000	0.250	0.619
132.144519	6.500	7.125	0.313	0.688
132.144564	6.500	7.250	0.375	0.688
132.144605	6.500	7.500	0.500	0.825
132.144520	6.625	7.250	0.313	0.688
132.144488	6.750	7.250	0.250	0.619
132.144521	6.750	7.375	0.313	0.688
132.144565	6.750	7.500	0.375	0.688
132.144606	6.750	7.750	0.500	0.825
132.144522	6.875	7.500	0.313	0.688
132.144489	7.000	7.500	0.250	0.619

PART #	$\varnothing d$	$\varnothing D$	B	L
132.144523	7.000	7.625	0.313	0.688
132.144566	7.000	7.750	0.375	0.688
132.144607	7.000	8.000	0.500	0.825
132.144524	7.125	7.750	0.313	0.688
132.144490	7.250	7.750	0.250	0.619
132.144525	7.250	7.875	0.313	0.688
132.144567	7.250	8.000	0.375	0.688
132.144608	7.250	8.250	0.500	0.825
132.144526	7.375	8.000	0.313	0.688
132.144491	7.500	8.000	0.250	0.619
132.144527	7.500	8.125	0.313	0.688
132.144568	7.500	8.250	0.375	0.688
132.144609	7.500	8.500	0.500	0.825
132.144492	7.750	8.250	0.250	0.619
132.144528	7.750	8.375	0.313	0.688
132.144569	7.750	8.500	0.375	0.688
132.144610	7.750	8.750	0.500	0.825
132.144493	8.000	8.500	0.250	0.619
132.144529	8.000	8.625	0.313	0.688
132.144570	8.000	8.750	0.375	0.688
132.144611	8.000	9.000	0.500	0.825
132.144494	8.250	8.750	0.250	0.619
132.144530	8.250	8.875	0.313	0.688
132.144571	8.250	9.000	0.375	0.688
132.144612	8.250	9.250	0.500	0.825

DESIGN GUIDELINES

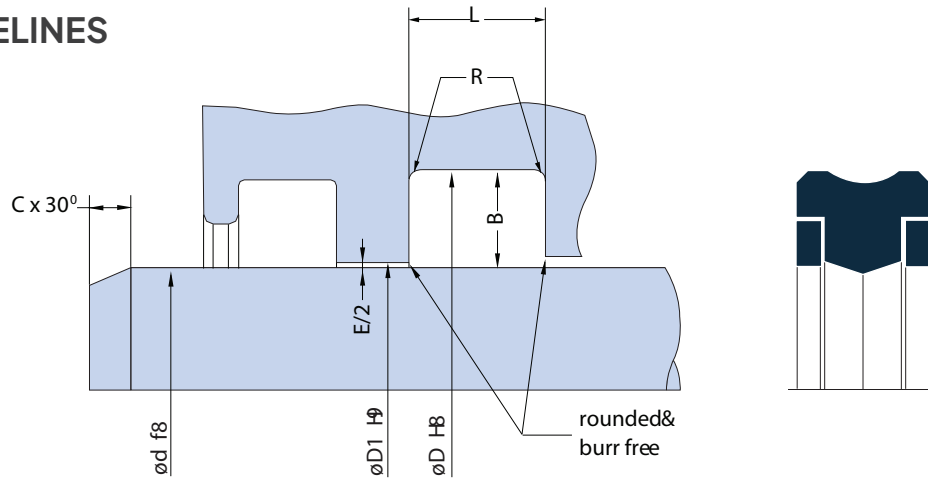


INCH SERIES

PART #	Ød	ØD	B	L
132.144495	8.500	9.000	0.250	0.619
132.144531	8.500	9.125	0.313	0.688
132.144572	8.500	9.250	0.375	0.688
132.144613	8.500	9.500	0.500	0.825
132.144496	8.750	9.250	0.250	0.619
132.144532	8.750	9.375	0.313	0.688
132.144573	8.750	9.500	0.375	0.688
132.144614	8.750	9.750	0.500	0.825
132.144497	9.000	9.500	0.250	0.619
132.144533	9.000	9.625	0.313	0.688
132.144574	9.000	9.750	0.375	0.688
132.144615	9.000	10.000	0.500	0.825
132.144498	9.250	9.750	0.250	0.619
132.144534	9.250	9.875	0.313	0.688
132.144575	9.250	10.000	0.375	0.688
132.144616	9.250	10.250	0.500	0.825
132.144499	9.500	10.000	0.250	0.619
132.144535	9.500	10.125	0.313	0.688
132.144576	9.500	10.250	0.375	0.688
132.144617	9.500	10.500	0.500	0.825
132.144500	9.750	10.250	0.250	0.619
132.144536	9.750	10.375	0.313	0.688
132.144577	9.750	10.500	0.375	0.688
132.144618	9.750	10.750	0.500	0.825
132.144501	10.000	10.500	0.250	0.619

PART #	Ød	ØD	B	L
132.144537	10.000	10.625	0.313	0.688
132.144578	10.000	10.750	0.375	0.688
132.144619	10.000	11.000	0.500	0.825
132.144538	10.250	10.875	0.313	0.688
132.144579	10.250	11.000	0.375	0.688
132.144539	10.500	11.125	0.313	0.688
132.144580	10.500	11.250	0.375	0.688
132.144620	10.500	11.500	0.500	0.825
132.144540	10.750	11.375	0.313	0.688
132.144581	10.750	11.500	0.375	0.688
132.144541	11.000	11.625	0.313	0.688
132.144582	11.000	11.750	0.375	0.688
132.144621	11.000	12.000	0.500	0.825
132.144542	11.250	11.875	0.313	0.688
132.144583	11.250	12.000	0.375	0.688
132.144543	11.500	12.125	0.313	0.688
132.144584	11.500	12.250	0.375	0.688
132.144622	11.500	12.500	0.500	0.825
132.144544	11.750	12.375	0.313	0.688
132.144585	11.750	12.500	0.375	0.688
132.144545	12.000	12.625	0.313	0.688
132.144586	12.000	12.750	0.375	0.688
132.144623	12.000	13.000	0.500	0.825
132.144720	12.000	13.500	0.750	1.100
132.172192	12.000	12.750	0.375	0.688

DESIGN GUIDELINES

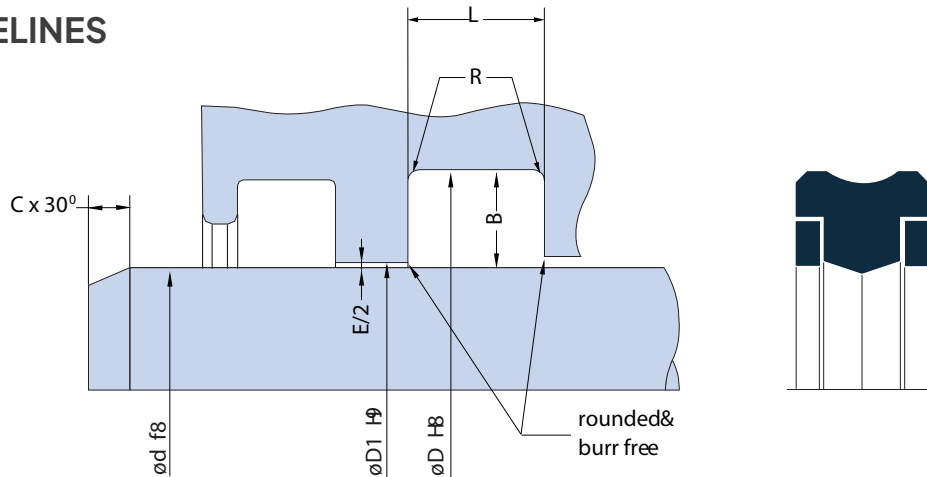


INCH SERIES

PART #	Ød	ØD	B	L
R32.172192	12.000	12.750	0.375	0.688
132.144587	12.500	13.250	0.375	0.688
132.144624	12.500	13.500	0.500	0.825
132.144721	12.500	14.000	0.750	1.100
132.144588	13.000	13.750	0.375	0.688
132.144625	13.000	14.000	0.500	0.825
132.144722	13.000	14.500	0.750	1.100
132.161655	13.000	13.750	0.375	0.688
132.191629	13.000	13.550	0.275	0.500
132.144589	13.500	14.250	0.375	0.688
132.144626	13.500	14.500	0.500	0.825
132.144723	13.500	15.000	0.750	1.100
132.144590	14.000	14.750	0.375	0.688
132.144627	14.000	15.000	0.500	0.825
132.144724	14.000	15.500	0.750	1.100
132.144591	14.500	15.250	0.375	0.688
132.144628	14.500	15.500	0.500	0.825
132.144725	14.500	16.000	0.750	1.100
132.144592	15.000	15.750	0.375	0.688
132.144629	15.000	16.000	0.500	0.825
132.144726	15.000	16.500	0.750	1.100
132.144593	15.500	16.250	0.375	0.688
132.144630	15.500	16.500	0.500	0.825
132.144727	15.500	17.000	0.750	1.100
132.144594	16.000	16.750	0.375	0.688

PART #	Ød	ØD	B	L
132.144631	16.000	17.000	0.500	0.825
132.144728	16.000	17.500	0.750	1.100
132.144595	16.500	17.250	0.375	0.688
132.144632	16.500	17.500	0.500	0.825
132.144729	16.500	18.000	0.750	1.100
132.144596	17.000	17.750	0.375	0.688
132.144633	17.000	18.000	0.500	0.825
132.144730	17.000	18.500	0.750	1.100
132.144597	17.500	18.250	0.375	0.688
132.144634	17.500	18.500	0.500	0.825
132.144731	17.500	19.000	0.750	1.100
132.144598	18.000	18.750	0.375	0.688
132.144635	18.000	19.000	0.500	0.825
132.144732	18.000	19.500	0.750	1.100
132.144599	18.500	19.250	0.375	0.688
132.144636	18.500	19.500	0.500	0.825
132.144733	18.500	20.000	0.750	1.100
132.144600	19.000	19.750	0.375	0.688
132.144637	19.000	20.000	0.500	0.825
132.144734	19.000	20.500	0.750	1.100
132.144601	19.500	20.250	0.375	0.688
132.144638	19.500	20.500	0.500	0.825
132.144735	19.500	21.000	0.750	1.100
132.144602	20.000	20.750	0.375	0.688
132.144639	20.000	21.000	0.500	0.825

DESIGN GUIDELINES

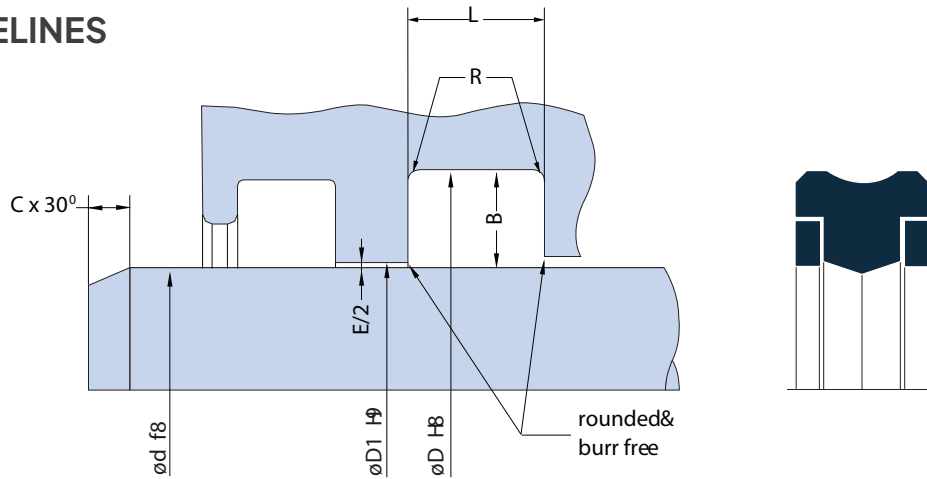


INCH SERIES

PART #	$\text{ø}d$	$\text{ø}D$	B	L
132.144736	20.000	21.500	0.750	1.100
132.144640	20.500	21.500	0.500	0.825
132.144737	20.500	22.000	0.750	1.100
132.144641	21.000	22.000	0.500	0.825
132.144738	21.000	22.500	0.750	1.100
132.144642	21.500	22.500	0.500	0.825
132.144739	21.500	23.000	0.750	1.100
132.144643	22.000	23.000	0.500	0.825
132.144740	22.000	23.500	0.750	1.100
132.144644	22.500	23.500	0.500	0.825
132.144741	22.500	24.000	0.750	1.100
132.144645	23.000	24.000	0.500	0.825
132.144742	23.000	24.500	0.750	1.100
132.144646	23.500	24.500	0.500	0.825
132.144743	23.500	25.000	0.750	1.100
132.144647	24.000	25.000	0.500	0.825
132.144744	24.000	25.500	0.750	1.100
132.144648	24.500	25.500	0.500	0.825
132.144745	24.500	26.000	0.750	1.100
132.99939	24.500	25.520	0.510	0.827
132.144649	25.000	26.000	0.500	0.825
132.144746	25.000	26.500	0.750	1.100
132.144650	25.500	26.500	0.500	0.825
132.144747	25.500	27.000	0.750	1.100

PART #	$\text{ø}d$	$\text{ø}D$	B	L
132.144651	26.000	27.000	0.500	0.825
132.144748	26.000	27.500	0.750	1.100
132.144652	26.500	27.500	0.500	0.825
132.144749	26.500	28.000	0.750	1.100
132.99940	26.500	27.266	0.383	0.557
132.144653	27.000	28.000	0.500	0.825
132.144750	27.000	28.500	0.750	1.100
132.144654	27.500	28.500	0.500	0.825
132.144751	27.500	29.000	0.750	1.100
132.144655	27.940	28.960	0.510	0.827
132.195152	28.000	29.000	0.500	0.825
132.144752	28.000	29.500	0.750	1.100
132.99941	28.000	29.020	0.510	0.827
132.144656	28.500	29.500	0.500	0.825
132.144753	28.500	30.000	0.750	1.100
132.189689	28.630	29.640	0.505	0.820
132.144657	29.000	30.000	0.500	0.825
132.144754	29.000	30.500	0.750	1.100
132.144658	29.500	30.500	0.500	0.825
132.144755	29.500	31.000	0.750	1.100
132.144659	30.000	31.000	0.500	0.825
132.144756	30.000	31.500	0.750	1.100
132.159077	30.440	31.206	0.383	0.557
132.144660	30.500	31.500	0.500	0.825
132.144757	30.500	32.000	0.750	1.100

DESIGN GUIDELINES

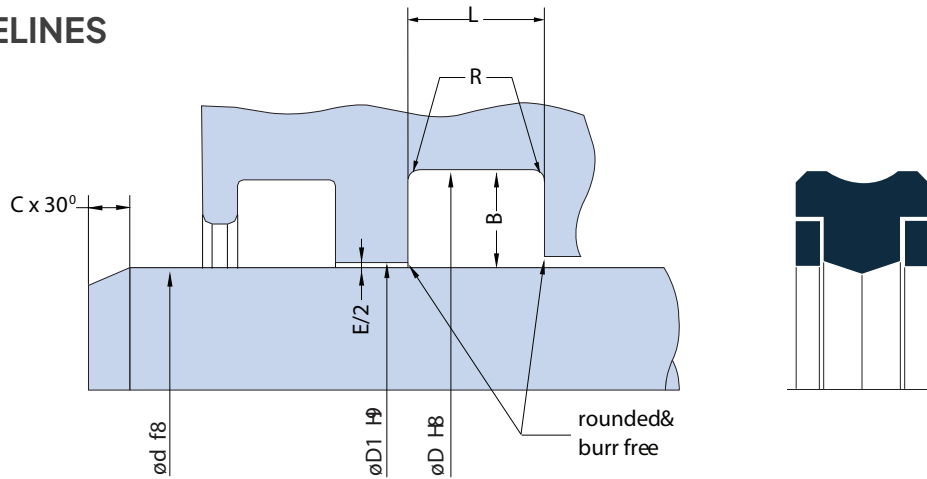


INCH SERIES

PART #	Ød	ØD	B	L
132.141352	31.000	32.500	0.750	1.100
132.144661	31.000	32.000	0.500	0.825
132.144758	31.000	32.500	0.750	1.100
132.144662	31.500	32.500	0.500	0.825
132.144759	31.500	33.000	0.750	1.100
132.109759	31.976	33.476	0.750	1.564
132.144663	32.000	33.000	0.500	0.825
132.144760	32.000	33.500	0.750	1.100
132.189691	32.255	33.265	0.505	0.550
132.159073	32.440	33.460	0.510	0.827
132.138167	32.500	33.460	0.480	0.827
132.144664	32.500	33.500	0.500	0.825
132.144761	32.500	34.000	0.750	1.100
132.144665	33.000	34.000	0.500	0.825
132.144762	33.000	34.500	0.750	1.100
132.144666	33.500	34.500	0.500	0.825
132.144763	33.500	35.000	0.750	1.100
132.144667	34.000	35.000	0.500	0.825
132.144764	34.000	35.500	0.750	1.100
132.144668	34.500	35.500	0.500	0.825
132.144765	34.500	36.000	0.750	1.100
132.189694	34.755	35.765	0.505	0.550
132.144669	35.000	36.000	0.500	0.825
132.144766	35.000	36.500	0.750	1.100
132.144670	35.500	36.500	0.500	0.825

PART #	Ød	ØD	B	L
132.144767	35.500	37.000	0.750	1.100
132.144671	36.000	37.000	0.500	0.825
132.144768	36.000	37.500	0.750	1.100
132.141350	36.500	38.000	0.750	1.100
132.144672	36.500	37.500	0.500	0.825
132.144769	36.500	38.000	0.750	1.100
132.144673	37.000	38.000	0.500	0.825
132.144770	37.000	38.500	0.750	1.100
132.144674	37.500	38.500	0.500	0.825
132.144771	37.500	39.000	0.750	1.100
132.144675	38.000	39.000	0.500	0.825
132.144772	38.000	39.500	0.750	1.100
132.144676	38.500	39.500	0.500	0.825
132.144773	38.500	40.000	0.750	1.100
132.144677	39.000	40.000	0.500	0.825
132.144774	39.000	40.500	0.750	1.100
132.144678	39.500	40.500	0.500	0.825
132.144775	39.500	41.000	0.750	1.100
132.99942	39.500	40.520	0.510	0.827
132.155754	39.750	40.770	0.510	0.822
132.144679	40.000	41.000	0.500	0.825
132.144776	40.000	41.500	0.750	1.100
132.144680	40.500	41.500	0.500	0.825
132.144777	40.500	42.000	0.750	1.100
132.144681	41.000	42.000	0.500	0.825

DESIGN GUIDELINES

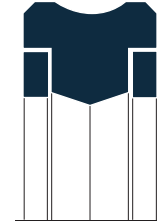
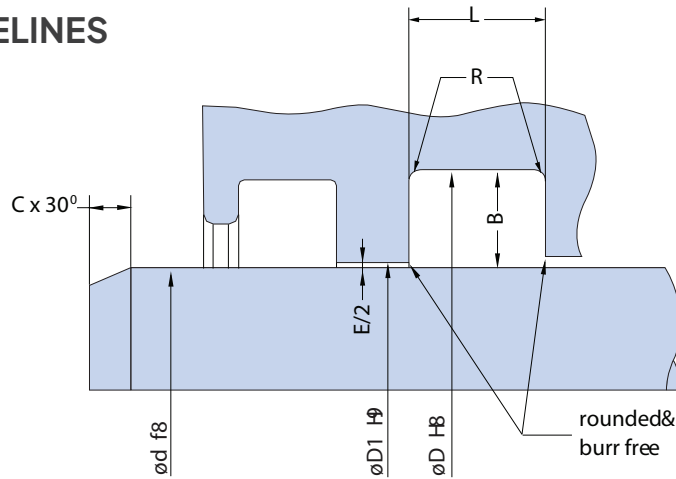


INCH SERIES

PART #	ød	øD	B	L
132.144778	41.000	42.500	0.750	1.100
132.144682	41.440	42.460	0.510	0.827
132.195153	41.500	42.500	0.500	0.825
132.144779	41.500	43.000	0.750	1.100
132.189696	41.817	42.827	0.505	0.550
132.144683	42.000	43.000	0.500	0.825
132.144780	42.000	43.500	0.750	1.100
132.144684	42.500	43.500	0.500	0.825
132.144781	42.500	44.000	0.750	1.100
132.144685	43.000	44.000	0.500	0.825
132.144782	43.000	44.500	0.750	1.100
132.144686	43.500	44.500	0.500	0.825
132.144783	43.500	45.000	0.750	1.100
132.189697	43.871	44.861	0.495	0.550
132.144687	44.000	45.000	0.500	0.825
132.144784	44.000	45.500	0.750	1.100
132.144688	44.500	45.500	0.500	0.825
132.144785	44.500	46.000	0.750	1.100
132.144689	45.000	46.000	0.500	0.825
132.144786	45.000	46.500	0.750	1.100
132.159075	45.250	46.270	0.510	0.828
132.99943	45.250	46.270	0.510	0.762
132.144690	45.500	46.500	0.500	0.825
132.144787	45.500	47.000	0.750	1.100
132.172045	45.984	46.976	0.496	1.116

PART #	ød	øD	B	L
132.144691	46.000	47.000	0.500	0.825
132.144788	46.000	47.500	0.750	1.100
132.144692	46.500	47.500	0.500	0.825
132.144789	46.500	48.000	0.750	1.100
132.144693	47.000	48.000	0.500	0.825
132.144790	47.000	48.500	0.750	1.100
132.144694	47.500	48.500	0.500	0.825
132.144791	47.500	49.000	0.750	1.100
132.144695	48.000	49.000	0.500	0.825
132.144792	48.000	49.500	0.750	1.100
132.144696	48.500	49.500	0.500	0.825
132.144793	48.500	50.000	0.750	1.100
132.149629	48.630	49.630	0.500	0.825
132.144697	49.000	50.000	0.500	0.825
132.144794	49.000	50.500	0.750	1.100
132.144698	49.500	50.500	0.500	0.825
132.144795	49.500	51.000	0.750	1.100
132.144699	50.000	51.000	0.500	0.825
132.144796	50.000	51.500	0.750	1.100
132.144700	50.500	51.500	0.500	0.825
132.144797	50.500	52.000	0.750	1.100
132.144701	51.000	52.000	0.500	0.825
132.144798	51.000	52.500	0.750	1.100
132.144702	51.500	52.500	0.500	0.825
132.144799	51.500	53.000	0.750	1.100

DESIGN GUIDELINES



INCH SERIES

PART #	$\varnothing d$	$\varnothing D$	B	L
132.144703	52.000	53.000	0.500	0.825
132.144800	52.000	53.500	0.750	1.100
132.144704	52.500	53.500	0.500	0.825
132.144801	52.500	54.000	0.750	1.100
132.144705	53.000	54.000	0.500	0.825
132.144802	53.000	54.500	0.750	1.100
132.144706	53.500	54.500	0.500	0.825
132.144803	53.500	55.000	0.750	1.100
132.144707	54.000	55.000	0.500	0.825
132.144804	54.000	55.500	0.750	1.100
132.144708	54.500	55.500	0.500	0.825
132.144805	54.500	56.000	0.750	1.100
132.144709	55.000	56.000	0.500	0.825
132.144806	55.000	56.500	0.750	1.100
132.144710	55.500	56.500	0.500	0.825
132.144807	55.500	57.000	0.750	1.100
132.144711	56.000	57.000	0.500	0.825
132.144808	56.000	57.500	0.750	1.100
132.144712	56.500	57.500	0.500	0.825
132.144809	56.500	58.000	0.750	1.100
132.144713	57.000	58.000	0.500	0.825
132.144810	57.000	58.500	0.750	1.100
132.195154	57.500	58.500	0.500	0.825
132.144811	57.500	59.000	0.750	1.100
132.144715	58.000	59.000	0.500	0.825