

## Design

The Hallite 512 is a standard profile loaded U cup utilising a polyurethane or polyester shell energised by a high specification O ring.

At zero or low pressure, the O ring helps to increase the sealing force, preventing any by-pass. As pressure rises, so the sealing force increases, with the O ring ensuring complete lip actuation under most conditions.

The deep profile of this seal provides extra stability needed to resist rolling in the groove and together with the knife trimmed precision sealing lips, the results are improved life and sealing. The 512 can be used for single acting applications or fitted back to back for double acting applications. Although it can also be used as a rod seal, Other profiles like 513, 605 or 621 are a better option.

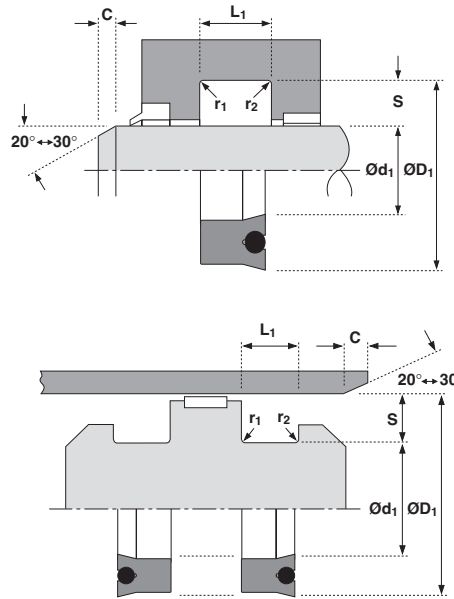
### Features

- Flexible for easy installation
- Excellent resistance to abrasion
- Positive lip actuation
- Deep profile for stability
- Wide range of size and material options

### Material

Face Material - O Ring  
**Standard material**  
 Polyurethane – NBR ----- 10

**Material options:**  
 Polyester - NBR ----- 11  
 Hallite 361 – NBR ----- 16



## Technical details

### Operating conditions

Maximum Speed  
 Temperature Range  
 Maximum Pressure

### Metric

0.5 m/sec  
 -40°C + 110°C  
 350 bar

### Inch

1.5 ft/sec  
 -40°F + 230°F  
 5000 p.s.i.

### Maximum extrusion gap

Figures show the maximum permissible gap all on one side, for rod seals using minimum rod  $\emptyset$  and maximum clearance  $\emptyset$  and for piston seals using the minimum clearance  $\emptyset$  and maximum bore  $\emptyset$ . Refer to Housing Design section.

### (1/4" section and above)

Pressure bar  
 Pressure p.s.i.  
 Maximum Gap in

160	250	350
2400	3750	5000
0.024	0.020	0.016

### Surface roughness

Dynamic Sealing Face  $\emptyset d_1$   
 Static Sealing Face  $\emptyset D_1$   
 Static Housing Faces  $L_1$

$\mu mRa$	$\mu mRt$	$\mu inCLA$	$\mu inRMS$
0.1 < > 0.4	4 max	4 < > 16	5 < > 18
1.6 max	10 max	63 max	70 max
3.2 max	16 max	125 max	140 max

### Chamfers & Radii

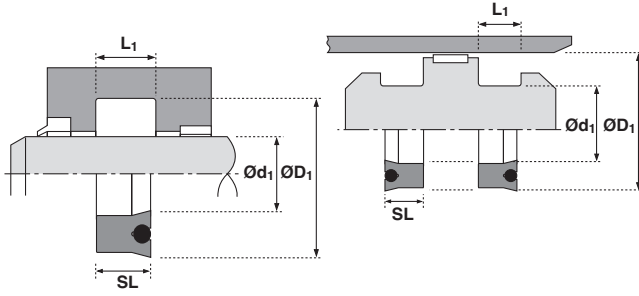
Groove Section  $\leq S$  in  
 Min Chamfer C in  
 Max Fillet Rad  $r_1$  in  
 Max Fillet Rad  $r_2$  in

0.125	0.187	0.250	0.312	0.375	0.500
0.093	0.093	0.125	0.156	0.187	0.187
0.008	0.008	0.016	0.032	0.032	0.032
0.016	0.016	0.032	0.047	0.047	0.047

### Tolerances

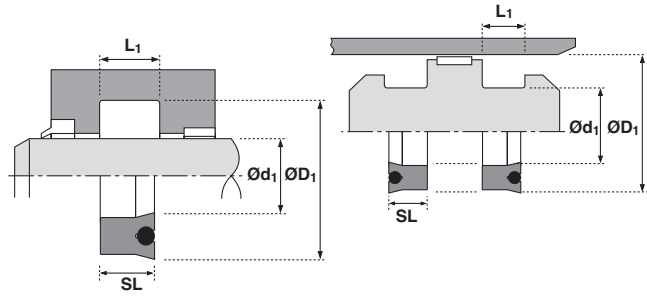
Please refer to specified tolerances in the introduction page - Hallite 500 Series





Ød <sub>1</sub>	ØD <sub>1</sub>	SL	L <sub>1</sub>	STD. REF.	PART No.
1/8 CROSS SECTION					
.250	.500	.250	.275	12500250-250	8820210
.500	.750	.250	.275	12500500-250	8870510
.625	.875	.250	.275	12500625-250	8820510
.750	1.000	.250	.275	12500750-250	8820710
1.000	1.250	.250	.275	12501000-250	8821210
1.125	1.375	.250	.275	12501125-250	8854910
1.188	1.438	.188	.207	12501187-187	8858010
1.250	1.500	.250	.275	12501250-250	8821810
1.375	1.625	.250	.275	12501375-250	8822110
1.500	1.750	.250	.275	12501500-250	8822310
1.625	1.875	.250	.275	12501625-250	8870610
1.750	2.000	.250	.275	12501750-250	8822810
2.000	2.250	.250	.275	12502000-250	8823110
3/16 CROSS SECTION					
.750	1.125	.313	.344	18700750-312	8820810
1.000	1.375	.313	.344	18701000-312	8821310
1.125	1.500	.250	.275	18701125-250	8820610
1.125	1.500	.313	.344	18701125-312	8821710
1.250	1.625	.313	.344	18701250-312	8821910
1.375	1.750	.313	.344	18701375-312	8822210
1.375	1.750	.375	.413	18701375-375	8870710
1.500	1.875	.375	.413	18701500-375	8822510
1.625	2.000	.250	.275	18701625-250	8908210
1.625	2.000	.313	.344	18701625-312	8858110
1.625	2.000	.375	.413	18701625-375	8822710
1.750	2.125	.375	.413	18701750-375	8822910
1.875	2.250	.375	.413	18701875-375	8870810
2.000	2.375	.375	.413	18702000-375	8823210
2.125	2.500	.250	.275	18702125-250	8865510
2.125	2.500	.375	.413	18702125-375	8870910
2.188	2.563	.375	.413	18702187-375	8858210
2.250	2.625	.313	.344	18702250-312	8858310
2.250	2.625	.375	.413	18702250-375	8823410
2.375	2.750	.375	.413	18702375-375	8858410
2.500	2.875	.375	.413	18702500-375	8871010
2.625	3.000	.313	.344	18702625-312	8858510
2.625	3.000	.375	.413	18702625-375	8823710
2.750	3.125	.375	.413	18702750-375	8871110

Ød <sub>1</sub>	ØD <sub>1</sub>	SL	L <sub>1</sub>	STD. REF.	PART No.
2.875	3.250	.250	.275	18702825-250	8865610
3.000	3.375	.375	.413	18703000-375	8823910
3.125	3.500	.250	.275	18703125-250	8867310
3.125	3.500	.375	.413	18703125-375	8871210
3.188	3.563	.375	.413	18703187-375	8858610
3.250	3.625	.313	.344	18703250-312	8858710
3.250	3.625	.375	.413	18703250-375	8824010
3.375	3.750	.375	.413	18703375-375	8858810
3.500	3.875	.375	.413	18703500-375	8824110
3.625	4.000	.313	.344	18703625-312	8864010
3.625	4.000	.375	.413	18703625-375	8824210
3.750	4.125	.375	.413	18703750-375	8855010
3.875	4.250	.250	.275	18703875-250	8820910
4.000	4.375	.375	.413	18704000-375	8824310
4.125	4.500	.313	.344	18704125-312	8867210
4.125	4.500	.375	.413	18704125-375	8871310
4.188	4.563	.375	.413	18704187-375	8859010
4.250	4.625	.313	.344	18704250-312	8859110
4.250	4.625	.375	.413	18704250-375	8824410
4.375	4.750	.375	.413	18704375-375	8859210
4.500	4.875	.375	.413	18704500-375	8824510
4.625	5.000	.313	.344	18704625-312	8859310
4.625	5.000	.375	.413	18704625-375	8855410
4.875	5.250	.250	.275	18704875-250	8821510
1/4 CROSS SECTION					
.687	1.187	.375	.413	25000687-375	8906110
.750	1.250	.375	.413	25000750-375	8825010
.875	1.375	.312	.344	25000875-312	8906810
1.000	1.500	.312	.344	25001000-312	8906910
1.000	1.500	.375	.413	25001000-375	8825210
1.000	1.500	.437	.480	25001000-437	8907210
1.125	1.625	.375	.413	25001125-375	8847610
1.250	1.750	.375	.413	25001250-375	8825410
1.375	1.875	.375	.413	25001375-375	8825610
1.500	2.000	.313	.344	25001500-312	8821010
1.500	2.000	.375	.413	25001500-375	8825710
1.750	2.250	.375	.413	25001750-375	8825910
2.000	2.500	.375	.413	25002000-375	8826210
2.125	2.625	.375	.413	25002125-375	8826410



Ød <sub>1</sub>	ØD <sub>1</sub>	SL	L <sub>1</sub>	STD. REF.	PART No.
2.250	2.750	.375	.413	25002250-375	8826510
2.250	2.750	.563	.619	25002250-562	8864110
2.375	2.875	.375	.413	25002375-375	8826610
2.500	3.000	.313	.344	25002500-312	8821110
2.500	3.000	.375	.413	25002500-375	8826810
2.750	3.250	.375	.413	25002750-375	8826910
3.000	3.500	.375	.413	25003000-375	8827010
3.000	3.500	.563	.619	25003000-562	8850610
3.125	3.625	.375	.413	25003125-375	8859510
3.250	3.750	.375	.413	25003250-375	8827310
3.500	4.000	.313	.344	25003500-312	8865710
3.500	4.000	.375	.413	25003500-375	8827510
3.750	4.250	.375	.413	25003750-375	8827810
4.000	4.500	.375	.413	25004000-375	8827910
4.000	4.500	.563	.619	25004000-562	8828010
4.125	4.625	.375	.413	25004125-375	8859610
4.250	4.750	.375	.413	25004250-375	8828210
4.250	4.750	.563	.619	25004250-562	8833710
4.500	5.000	.313	.344	25004500-312	8821410
4.500	5.000	.375	.413	25004500-375	8828610
4.500	5.000	.563	.619	25004500-562	8828710
5.000	5.500	.375	.413	25005000-375	8871510
5.000	5.500	.563	.619	25005000-562	8828810
5.500	6.000	.375	.413	25005500-375	8829110
5.500	6.000	.563	.619	25005500-562	8829210
5.750	6.250	.563	.619	25005750-563	8905510
6.000	6.500	.563	.619	25006000-562	8829310
6.500	7.000	.375	.413	25006500-375	8829510
6.500	7.000	.563	.619	25006500-562	8829710
7.000	7.500	.375	.413	25007000-375	8822610
7.000	7.500	.563	.619	25007000-562	8877210
7.500	8.000	.375	.413	25007500-375	8829610
7.500	8.000	.563	.619	25007500-562	8877310
8.500	9.000	.375	.413	25008500-375	8829810
8.500	9.000	.563	.619	25008500-562	8855110

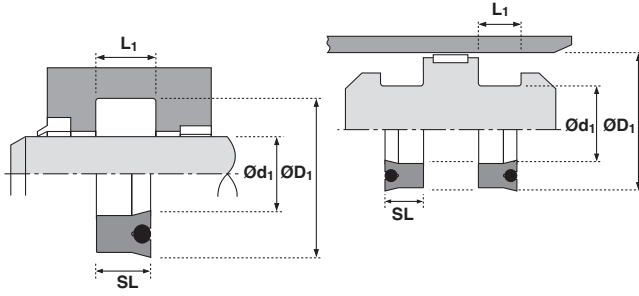
5/16 CROSS SECTION

1.000	1.625	.500	.550	31201000-500	88225310
1.375	2.000	.500	.550	31201375-500	8871610
1.500	2.125	.500	.550	31201500-500	8825810

Ød <sub>1</sub>	ØD <sub>1</sub>	SL	L <sub>1</sub>	STD. REF.	PART No.
1.750	2.375	.500	.550	31201750-500	8826010
1.875	2.500	.500	.550	31201875-500	8826110
2.000	2.625	.500	.550	31202000-500	8826310
2.375	3.000	.500	.550	31202375-500	8826710
2.500	3.125	.500	.550	31202500-500	8871810
2.750	3.375	.500	.550	31202750-500	8871910
2.875	3.500	.500	.550	31202875-500	8872010
3.000	3.625	.500	.550	31203000-500	8827110
3.375	4.000	.500	.550	31203375-500	8872110
3.500	4.125	.500	.550	31203500-500	8827710
3.750	4.375	.500	.550	31203750-500	8872210
3.875	4.500	.500	.550	31203875-500	8872310
4.375	5.000	.500	.550	31204375-500	8828410
4.375	5.000	.625	.688	31204375-625	8872410
4.500	5.125	.625	.688	31204500-625	8872510
5.375	6.000	.625	.688	31205375-625	8872610
6.375	7.000	.625	.688	31206375-625	8829410
7.000	7.625	.625	.688	31207000-625	8859710
7.375	8.000	.625	.688	31207375-625	8855310

3/8 CROSS SECTION

1.500	2.250	.500	.550	37501500-500	8872710
1.500	2.250	.625	.688	37501500-625	8872810
1.750	2.500	.500	.550	37501750-500	8830010
2.000	2.750	.500	.550	37502000-500	8830310
2.000	2.750	.625	.688	37502000-625	8830410
2.250	3.000	.500	.550	37502250-500	8872910
2.250	3.000	.625	.688	37502250-625	8873010
2.500	3.250	.500	.550	37502500-500	8879210
2.500	3.250	.625	.688	37502500-625	8830510
2.750	3.500	.500	.550	37502750-500	8830710
2.750	3.500	.625	.688	37502750-625	8830810
3.000	3.750	.500	.550	37503000-500	8831010
3.000	3.750	.625	.688	37503000-625	8878710
3.250	4.000	.500	.550	37503250-500	8831110
3.250	4.000	.625	.688	37503250-625	8831210
3.375	4.125	.625	.688	37503375-625	8855910
3.500	4.250	.500	.550	37503500-500	8878810
3.500	4.250	.625	.688	37503500-625	8831310
3.750	4.500	.500	.550	37503750-500	8831410



Ød <sub>1</sub>	ØD <sub>1</sub>	SL	L <sub>1</sub>	STD. REF.	PART No.
4.000	4.750	.500	.550	37504000-500	8878910
4.000	4.750	.625	.688	37504000-625	8831610
4.250	5.000	.500	.550	37504250-500	8831810
4.250	5.000	.625	.688	37504250-625	8831910
4.500	5.250	.500	.550	37504500-500	8832010
4.500	5.250	.625	.688	37504500-625	8832110
4.750	5.500	.625	.688	37504750-625	8832210
5.000	5.750	.500	.550	37505000-500	8879110
5.000	5.750	.625	.688	37505000-625	8832310
5.250	6.000	.500	.550	37505250-500	8905910
5.250	6.000	.625	.688	37505250-625	8832610
5.750	6.500	.500	.550	37505750-500	8829010
5.750	6.500	.625	.688	37505750-625	8832810
6.000	6.750	.625	.688	37506000-625	8833010
6.250	7.000	.500	.550	37506250-500	8833210
6.250	7.000	.625	.688	37506250-625	8833310
6.500	7.250	.625	.688	37506500-625	8833410
6.750	7.500	.625	.688	37506750-625	8850810
7.000	7.750	.500	.550	37507000-500	8859810
7.000	7.750	.625	.688	37507000-625	8877610
7.250	8.000	.625	.688	37507250-625	8833510
7.750	8.500	.625	.688	37507750-625	8859910
8.250	9.000	.500	.550	37508250-500	8860010
8.250	9.000	.625	.688	37508250-625	8853710

Ød <sub>1</sub>	ØD <sub>1</sub>	SL	L <sub>1</sub>	STD. REF.	PART No.
1/2 CROSS SECTION					
1.500	2.500	.750	.825	50001500-750	8820310
2.000	3.000	.750	.825	50002000-750	8853410
3.000	4.000	.750	.825	50003000-750	8850510
3.500	4.500	.625	.688	50003500-625	8907810
3.500	4.500	.750	.825	50003500-750	8823010
4.000	5.000	.750	.825	50004000-750	8853510
5.000	6.000	.750	.825	50005000-750	8832410
5.500	6.500	.750	.825	50005500-750	8823310
6.000	7.000	.750	.825	50006000-750	8833110
7.000	8.000	.750	.825	50007000-750	8851910
7.500	8.500	.750	.825	50007500-750	8820410
8.000	9.000	.750	.825	50008000-750	8855210
8.250	9.250	.750	.825	50008250-750	8904710

**Seal & Design  
Able Division**

5533 Steeles Avenue West Unit 11  
Toronto, Ontario M9L 1S7  
Ph: (416) 741-0750  
Gasket@AbleSealAndDesign.com

**Seal & Design  
Corporate Headquarters**

4015 Casilio Parkway  
Clarence, NY 14031  
Ph: (716) 759-2222  
Info@SealAndDesign.com  
www.SealAndDesign.com

**Seal & Design  
Higbee Division**

6741 Thompson Rd N  
Syracuse, NY 13221  
Ph: (315) 432-8021  
Sales@Higbee-Inc.com