



## Metal O.D. Radial Shaft Seals

Your Technology Specialist

**simrit**<sup>®</sup>

# Metal O.D. Series Seals

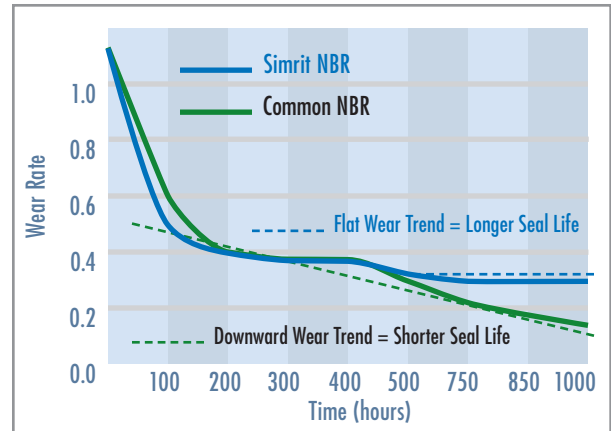
Simrit metal O.D. shaft seals provide reliability, durability, and value. We feature field-proven NOK trim-lip design standards and materials that the industry has trusted for decades.

## Metal O.D. Series seals feature a trimmed main lip

- The precision trim provides immediate seal-pumping action at the outset, which prevents infantile leakage during seal break-in phase. Pumping action does not decrease with wear.
- Lower overall radial loads in the Simrit seal result in reduced wear rates and longer service life than other designs.
- Materials developed specifically for shaft seals combined with a proven lip design mean the system will “balance” and the wear rate will flatten, which in turn equates to extended sealing life.

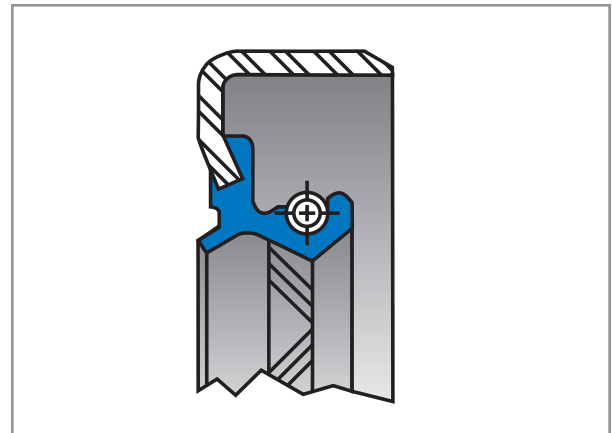
## A benefit of the molded, bidirectional helix is increased pumping ability

- **Metal O.D. Series** seals pump oil in either shaft direction.
- Our seals provide a higher pump rate than is produced with sine wave designs.
- The unique combination of rubber material and this seal’s pumping feature transfers substantially more lubricant than other designs.
- The bidirectional helix can accommodate some minor imperfections and/or machine lead in the shaft sealing surface.



Main Lip Interference (1-inch shaft)

## Metal O.D. Seal Cross Section



*Simrit’s extensive bench testing translates to real-world performance for our customers. Test machines provide information on seal lip interference, shaft force, wear band width, and pumping ability to optimize seal performance.*



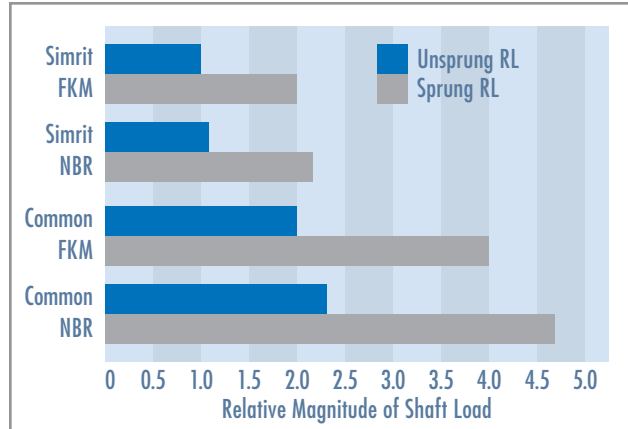
# Outstanding Dynamic Lab Test Results for Simrit Metal O.D. Seals

Superior performance is demonstrated for our Metal O.D. Series in several important parameters.

## Parameter 1

### Seal force on the shaft

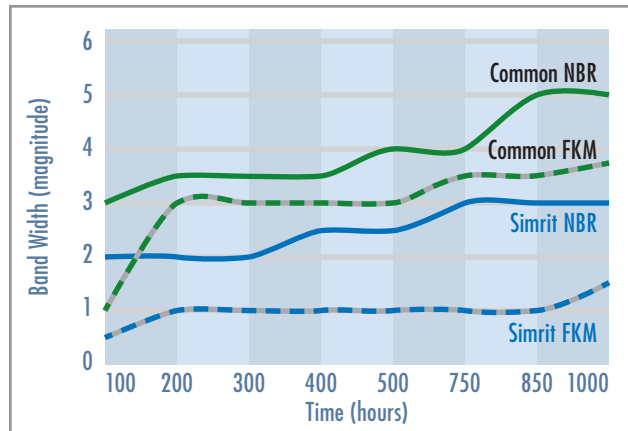
Higher forces generally equate to seal shaft wear and reduced seal life. The average radial load for the Simrit seal was about 50% lower than the force level for common industry seals. Many commercially available seals rely heavily on the squeeze of the spring to create a seal, rather than balancing load, lip design, and material, which are key elements of the NOK lip design.



## Parameter 2

### The seal's wear band width during the running period

Smaller and consistent wear band widths correlate to reliable performance over time due to less heat generation. Our **Metal O.D. Series** operates with a contact band that is half the width of other commercially available seals. A flat-trending wear band width is also an indication of a balanced sealing system.

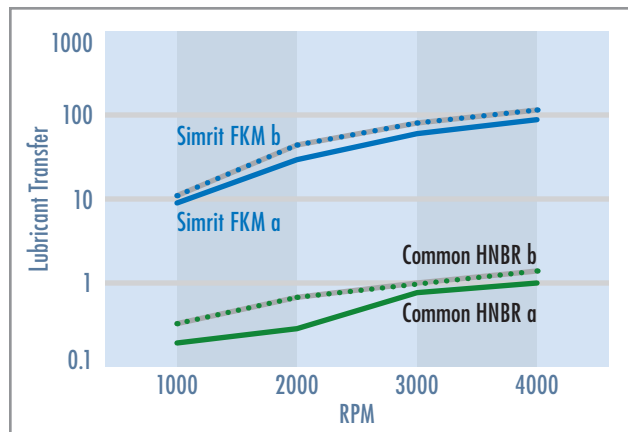


## Parameter 3

### A seal's pumping ability

This parameter is an indication of a seal's ability to control oil under the lip and prevent leakage while excluding contamination from the system.

When tested with a commonly used mineral oil, the pumping-feature design of the **Metal O.D. Series** seal transferred substantially more lubricant than standard configurations. This proved true even when Simrit tested a separate compound with less comparable pumping properties.



## Simrit Metal O.D. Radial Shaft Seals—Dimensions

Shaft	Inch Sizes		Mater'l	Type	Metric Sizes			Part Number
	Bore	Width			Shaft	Bore	Width	
0.591	1.498	0.250	FKM	HTB2	15.01	38.05	6.4	BHS 1575-YO
0.750	1.250	0.250	NBR	HTB2	19.05	31.75	6.4	BHS 1458-ZO
0.750	1.250	0.250	FKM	HTB2	19.05	31.75	6.4	BHS 1458-YO
0.750	1.375	0.250	FKM	HTB2	19.05	34.93	6.4	BHS 1471-YO
0.750	1.375	0.310	NBR	HTB2	19.05	34.93	7.9	BHS 1463-ZO
0.750	1.379	0.406	NBR	HTB2	19.05	35.03	10.3	BHS 1464-ZO
0.750	1.499	0.370	NBR	HTB2	19.05	38.07	9.4	BHS 1465-ZO
0.750	1.499	0.370	FKM	HTB2	19.05	38.07	9.4	BHS 1465-YO
0.750	1.575	0.311	NBR	HTB2	19.05	40.01	7.9	BHS 1466-ZO
0.750	1.624	0.250	NBR	HTB2	19.05	41.25	6.4	BHS 1467-ZO
0.750	1.851	0.375	NBR	HTB2	19.05	47.02	9.5	BHS 1468-ZO
0.750	1.874	0.250	NBR	HTB2	19.05	47.60	6.4	BHS 1469-ZO
0.750	2.047	0.313	NBR	HTB2	19.05	51.99	8.0	BHS 1470-ZO
0.788	1.498	0.250	FKM	HTB2	20.02	38.05	6.4	BHS 1576-YO
0.965	1.751	0.250	FKM	HTB2	24.51	44.48	6.4	BHS 1577-YO
0.968	2.047	0.375	NBR	HTB2	24.59	52.00	9.5	BHS 1477-ZO
1.000	1.499	0.240	NBR	HTB2	25.40	38.07	6.1	BHS 1483-ZO
1.000	1.499	0.240	FKM	HTB2	25.40	38.07	6.1	BHS 1483-YO
1.000	1.624	0.250	NBR	HTB2	25.40	41.25	6.4	AHS 802-ZO
1.000	1.625	0.310	NBR	HTB2	25.40	41.28	7.9	BHS 1484-ZO
1.000	1.752	0.250	NBR	HTB2	25.40	44.50	6.4	AHS 831-ZO
1.000	1.756	0.250	NBR	HTB2	25.40	44.60	6.4	BHS 1485-ZO
1.000	1.983	0.313	NBR	HTB2	25.40	50.37	8.0	BHS 1517-ZO
1.000	2.000	0.250	FKM	HTB2	25.40	50.80	6.4	AHS 787-YO
1.000	2.000	0.500	NBR	HTB2	25.40	50.80	12.7	BHS 1486-ZO
1.125	1.624	0.250	NBR	HTB2	28.58	41.25	6.4	AHS 769-ZO
1.125	1.624	0.250	FKM	HTB2	28.58	41.25	6.4	AHS 769-YO
1.125	1.828	0.250	NBR	HTB2	28.58	46.43	6.4	BHS 1488-ZO
1.125	1.874	0.250	NBR	HTB2	28.58	47.60	6.4	AHS 832-ZO
1.125	1.874	0.370	NBR	HTB2	28.58	47.60	9.4	BHS 1489-ZO
1.125	1.996	0.250	NBR	HTB2	28.58	50.70	6.4	BHS 1490-ZO
1.125	2.000	0.430	NBR	HTB2	28.58	50.80	10.9	BHS 1491-ZO
1.125	2.125	0.500	NBR	HTB2	28.58	53.98	12.7	BHS 1492-ZO
1.125	2.441	0.250	NBR	HTB2	28.58	62.00	6.4	BHS 1495-ZO
1.125	2.441	0.281	NBR	HTB2	28.58	62.00	7.1	BHS 1494-ZO
1.125	2.441	0.375	NBR	HTB2	28.58	62.00	9.5	BHS 1493-ZO
1.144	2.061	0.250	FKM	HTB2	29.06	52.35	6.4	BHS 1578-YO
1.250	1.686	0.250	NBR	HTB2	31.75	42.82	6.4	*
1.250	1.687	0.250	NBR	HTB2	31.75	42.85	6.4	AHS 900-ZO
1.250	1.687	0.313	NBR	HTB2	31.75	42.85	8.0	BHS 1382-ZO
1.250	1.740	0.250	NBR	HTB2	31.75	44.20	6.4	BHS 1519-ZO
1.250	1.750	0.250	NBR	HTB2	31.75	44.45	6.4	AHS 345-ZO
1.250	1.752	0.250	NBR	HTB2	31.75	44.50	6.4	AHS 804-ZO
1.250	1.874	0.250	NBR	HTB2	31.75	47.60	6.4	AHS 894-ZO

\* Indicates planned addition. Contact Simrit at 1 866 274 6748 for price, availability, and lead time for all listings and for sizes not shown.

**Simrit Metal O.D. Radial Shaft Seals—Dimensions**

Shaft	Inch Sizes		Mater'l	Type	Metric Sizes			Part Number
	Bore	Width			Shaft	Bore	Width	
1.250	1.875	0.310	NBR	HTB2	31.75	47.63	7.9	BHS 1520-Z0
1.250	2.000	0.250	NBR	HTB2	31.75	50.80	6.4	AHS 788-Z0
1.250	2.000	0.250	FKM	HTB2	31.75	50.80	6.4	AHS 788-Y0
1.250	2.250	0.375	NBR	HTB2	31.75	57.15	9.5	BHS 1518-Z0
1.250	2.374	0.313	NBR	HTB2	31.75	60.30	8.0	BHS 1521-Z0
1.250	2.440	0.375	NBR	HTB2	31.75	61.98	9.5	BHS 1522-Z0
1.250	2.835	0.375	NBR	HTB2	31.75	72.01	9.5	AHS 897-Z0
1.375	1.874	0.313	NBR	HTB2	34.93	47.60	8.0	BHS 1616-Z0
1.375	1.874	0.313	FKM	HTB2	34.93	47.60	8.0	BHS 1616-Y0
1.375	1.938	0.250	NBR	HTB2	34.93	49.23	6.4	BHS 1617-Z0
1.375	1.983	0.300	NBR	HTB2	34.93	50.37	7.6	*
1.375	2.000	0.313	NBR	HTB2	34.93	50.80	8.0	BHS 1619-Z0
1.375	2.110	0.312	NBR	HTB2	34.93	53.59	7.9	BHS 1620-Z0
1.375	2.125	0.370	NBR	HTB2	34.93	53.98	9.4	BHS 1621-Z0
1.375	2.125	0.370	FKM	HTB2	34.93	53.98	9.4	BHS 1621-Y0
1.375	2.250	0.313	NBR	HTB2	34.93	57.15	8.0	BHS 1624-Z0
1.375	2.437	0.250	NBR	HTB2	34.93	61.90	6.4	BHS 1622-Z0
1.375	2.500	0.500	NBR	HTB2	34.93	63.50	12.7	BHS 1623-Z0
1.375	2.562	0.375	NBR	HTB2	34.93	65.07	9.5	BHS 1625-Z0
1.375	2.562	0.375	FKM	HTB2	34.93	65.07	9.5	BHS 1625-Y0
1.375	2.623	0.313	FKM	HTB2	34.93	66.62	8.0	BHS 1626-Y0
1.436	2.125	0.311	NBR	HTB2	36.47	53.98	7.9	BHS1570-Z0
1.436	2.245	0.250	NBR	HTB2	36.47	57.02	6.4	BHS 1568-Z0
1.436	2.249	0.313	NBR	HTB2	36.47	57.12	8.0	BHS 1567-Z0
1.436	3.150	0.250	NBR	HTB2	36.47	80.01	6.4	BHS 1569-Z0
1.511	2.436	0.315	FKM	HTB2	38.38	61.87	8.0	BHS 1579-Y0
1.563	2.250	0.313	NBR	HTB2	39.70	57.15	8.0	*
1.563	2.374	0.313	NBR	HTB2	39.70	60.30	8.0	*
1.563	2.500	0.311	NBR	HTB2	39.70	63.50	7.9	*
1.563	2.686	0.313	NBR	HTB2	39.70	68.22	8.0	*
1.625	2.000	0.250	NBR	HTB2	41.28	50.80	6.4	*
1.625	2.250	0.312	NBR	HTB2	41.28	57.15	7.9	AHS 0845-Z0
1.625	2.502	0.313	NBR	HTB2	41.28	63.55	8.0	BHS 1627-Z0
1.625	2.623	0.490	NBR	HTB2	41.28	66.62	12.4	BHS 1628-Z0
1.625	2.876	0.313	NBR	HTB2	41.28	73.05	8.0	BHS 1629-Z0
1.750	2.374	0.310	NBR	HTB2	44.45	60.30	7.9	AHS 781-Z0
1.750	2.502	0.313	NBR	HTB2	44.45	63.55	8.0	BHS 1558-Z0
1.750	2.506	0.312	NBR	HTB2	44.45	63.65	7.9	BHS 1559-Z0
1.750	2.622	0.315	NBR	HTB2	44.45	66.60	8.0	BHS 1566-Z0
1.750	2.627	0.312	NBR	HTB2	44.45	66.73	7.9	BHS 1560-Z0
1.750	2.650	0.313	NBR	HTB2	44.45	67.31	8.0	BHS 1561-Z0
1.750	2.686	0.460	NBR	HTB2	44.45	68.22	11.7	BHS 1562-Z0
1.750	2.750	0.500	NBR	HTB2	44.45	69.85	12.7	AHS 353-Z0
1.750	2.810	0.313	NBR	HTB2	44.45	71.37	8.0	BHS 1563-Z0

\* Indicates planned addition. Contact Simrit at 1 866 274 6748 for price, availability, and lead time for all listings and for sizes not shown.

## Simrit Metal O.D. Radial Shaft Seals—Dimensions

Shaft	Inch Sizes		Mater'l	Type	Metric Sizes			Part Number
	Bore	Width			Shaft	Bore	Width	
1.750	2.875	0.375	NBR	HTB2	44.45	73.03	9.5	BHS 1564-Z0
1.750	3.061	0.500	NBR	HTB2	44.45	77.75	12.7	BHS 1565-Z0
1.781	2.624	0.375	NBR	HTB2	45.24	66.65	9.5	*
1.894	3.000	0.315	FKM	HTB2	48.11	76.20	8.0	BHS 1580-Y0
1.937	2.502	0.375	NBR	HTB2	49.20	63.55	9.5	*
1.937	2.623	0.311	NBR	HTB2	49.20	66.62	7.9	*
1.937	2.686	0.313	NBR	HTB2	49.20	68.22	8.0	*
1.937	2.686	0.370	NBR	HTB2	49.20	68.22	9.4	*
1.937	2.690	0.304	NBR	HTB2	49.20	68.33	7.7	*
1.937	2.875	0.313	NBR	HTB2	49.20	73.03	8.0	*
1.937	2.999	0.375	NBR	HTB2	49.20	76.17	9.5	*
1.937	3.355	0.468	NBR	HTB2	49.20	85.22	11.9	*
1.937	3.544	0.375	NBR	HTB2	49.20	90.02	9.5	*
2.125	2.875	0.370	NBR	HTB2	53.98	73.03	9.4	BHS 1631-Z0
2.125	2.875	0.437	NBR	HTB2	53.98	73.03	11.1	BHS 1630-Z0
2.125	2.879	0.437	NBR	HTB2	53.98	73.13	11.1	BHS 1632-Z0
2.125	3.000	0.313	FKM	HTB2	53.98	76.20	8.0	BHS 1633-Y0
2.125	3.189	0.500	NBR	HTB2	53.98	81.00	12.7	BHS 1634-Z0
2.152	3.251	0.438	FKM	HTB2	54.66	82.58	11.1	BHS 1581-Y0
2.165	3.071	0.453	NBR	HTB2	54.99	78.00	11.5	*
2.165	3.544	0.375	NBR	HTB2	54.99	90.02	9.5	*
2.187	3.000	0.375	FKM	HTB2	55.55	76.20	9.5	*
2.187	3.000	0.375	NBR	HTB2	55.55	76.20	9.5	*
2.187	3.000	0.400	NBR	HTB2	55.55	76.20	10.2	*
2.187	3.251	0.375	NBR	HTB2	55.55	82.58	9.5	*
2.187	4.331	0.375	NBR	HTB2	55.55	110.01	9.5	*
2.187	5.118	0.375	NBR	HTB2	55.55	130.00	9.5	*
2.218	3.937	0.500	NBR	HTB2	56.34	100.00	12.7	*
2.250	2.875	0.313	NBR	HTB2	57.15	73.03	8.0	*
2.250	3.000	0.375	NBR	HTB2	57.15	76.20	9.5	*
2.250	3.000	0.437	NBR	HTB2	57.15	76.20	11.1	*
2.250	3.125	0.375	NBR	HTB2	57.15	79.38	9.5	*
2.500	3.251	0.370	NBR	HTB2	63.50	82.58	9.4	*
2.500	3.256	0.375	NBR	HTB2	63.50	82.70	9.5	*
2.500	3.372	0.375	NBR	HTB2	63.50	85.65	9.5	*
2.500	3.500	0.438	NBR	HTB2	63.50	88.90	11.1	*
2.500	3.500	0.438	FKM	HTB2	63.50	88.90	11.1	*
2.559	3.937	0.375	NBR	HTB2	65.00	100.00	9.5	*
2.586	3.750	0.374	FKM	HTB2	65.68	95.25	9.5	BHS 1582-Y0
2.625	3.356	0.468	NBR	HTB2	66.68	85.24	11.9	*
2.625	3.371	0.370	NBR	HTB2	66.68	85.62	9.4	*
2.625	3.371	0.437	NBR	HTB2	66.68	85.62	11.1	*
2.625	3.501	0.375	NBR	HTB2	66.68	88.93	9.5	*
2.625	3.623	0.490	NBR	HTB2	66.68	92.02	12.4	*

\* Indicates planned addition. Contact Simrit at 1 866 274 6748 for price, availability, and lead time for all listings and for sizes not shown.

## Simrit Metal O.D. Radial Shaft Seals—Dimensions

Shaft	Inch Sizes		Mater'l	Type	Metric Sizes			Part Number
	Bore	Width			Shaft	Bore	Width	
2.625	3.756	0.375	NBR	HTB2	66.68	95.40	9.5	*
2.687	3.999	0.375	NBR	HTB2	68.25	101.57	9.5	*
2.750	3.500	0.375	NBR	HTB2	69.85	88.90	9.5	AHS 358-Z0
2.750	3.543	0.390	NBR	HTB2	69.85	89.99	9.9	*
2.750	3.751	0.438	NBR	HTB2	69.85	95.28	11.1	*
2.750	3.751	0.500	NBR	HTB2	69.85	95.28	12.7	BHS 1525-Z0
2.750	3.876	0.500	NBR	HTB2	69.85	98.45	12.7	BHS 1526-Z0
2.750	4.000	0.375	NBR	HTB2	69.85	101.60	9.5	BHS 1514-Z0
2.750	4.249	0.375	NBR	HTB2	69.85	107.92	9.5	BHS 1527-Z0
2.875	3.623	0.437	NBR	HTB2	73.03	92.02	11.1	*
2.875	3.753	0.375	NBR	HTB2	73.03	95.33	9.5	*
2.953	3.397	0.511	NBR	HTB2	75.00	86.28	13.0	*
2.953	3.937	0.492	NBR	HTB2	75.01	100.00	12.5	*
2.953	3.937	0.402	FKM	HTB2	75.00	100.00	10.2	BHS 1513-Y0
2.953	4.528	0.375	NBR	HTB2	75.01	115.01	9.5	*
2.960	4.003	0.374	FKM	HTB2	75.18	101.68	9.5	BHS 1583-Y0
3.250	4.003	0.375	NBR	HTB2	82.55	101.68	9.5	*
3.250	4.249	0.437	NBR	HTB2	82.55	107.92	11.1	*
3.250	4.249	0.490	NBR	HTB2	82.55	107.92	12.4	*
3.250	4.254	0.375	NBR	HTB2	82.55	108.05	9.5	*
3.250	4.254	0.500	FKM	HTB2	82.55	108.05	12.7	*
3.250	4.376	0.560	NBR	HTB2	82.55	111.15	14.2	*
3.250	4.500	0.620	NBR	HTB2	82.55	114.30	15.7	*
3.250	4.626	0.437	NBR	HTB2	82.55	117.50	11.1	*
3.250	4.751	0.375	NBR	HTB2	82.55	120.68	9.5	*
3.347	5.118	0.500	NBR	HTB2	85.01	130.00	12.7	*
3.375	4.376	0.375	NBR	HTB2	85.73	111.15	9.5	*
3.375	4.376	0.500	NBR	HTB2	85.73	111.15	12.7	*
3.375	4.500	0.500	NBR	HTB2	85.73	114.30	12.7	*
3.500	4.377	0.375	NBR	HTB2	88.90	111.18	9.5	*
3.500	4.381	0.500	NBR	HTB2	88.90	111.28	12.7	*
3.698	4.751	0.374	FKM	HTB2	93.93	120.68	9.5	*
3.750	4.751	0.375	NBR	HTB2	95.25	120.68	9.5	*
3.874	4.876	0.375	NBR	HTB2	98.40	123.85	9.5	*
3.874	5.250	0.680	NBR	HTB2	98.40	133.35	17.3	*
3.937	5.906	0.500	NBR	HTB2	100.00	150.01	12.7	*
4.000	4.999	0.490	NBR	HTB2	101.60	126.97	12.4	*
4.000	5.002	0.468	NBR	HTB2	101.60	127.05	11.9	*
4.000	5.252	0.437	NBR	HTB2	101.60	133.40	11.1	*
4.000	5.375	0.680	NBR	HTB2	101.60	136.53	17.3	*
4.125	5.257	0.438	NBR	HTB2	104.78	133.53	11.1	*
4.250	5.250	0.500	NBR	HTB2	107.95	133.35	12.7	*
4.250	5.687	0.500	NBR	HTB2	107.95	144.45	12.7	*

\* Indicates planned addition. Contact Simrit at 1 866 274 6748 for price, availability, and lead time for all listings and for sizes not shown.

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