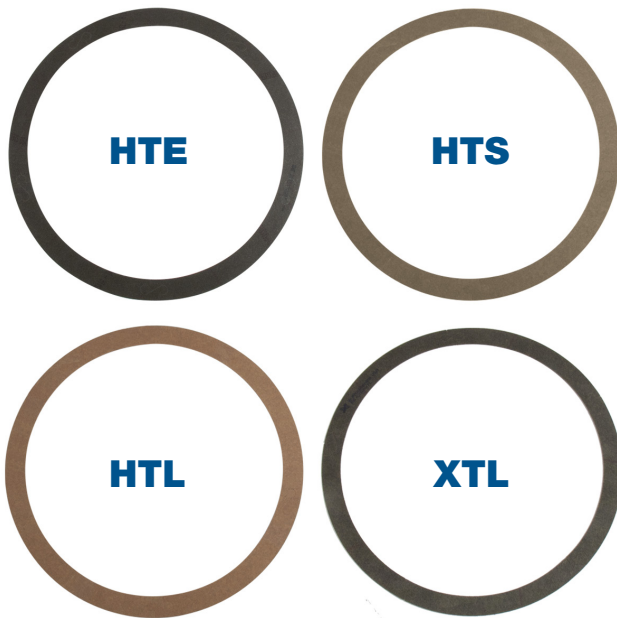


Friction Ring Details

Click above to see the details.

BorgWarner Friction Materials



BorgWarner adhesive-backed, friction ring material options include:

- **High Thermal Engaging (HTE)** Now found in many OE applications, HTE material has the thermal capacity of Kevlar®, with improved consistency and shudder resistance well suited to today's demanding applications. It is dark gray in color and available in .045" and .066" thicknesses as a replacement for Tan or Kevlar materials.
- **High Thermal Slipping (HTS)** One of the latest OE materials and the benchmark for consistency, durability and shudder resistance. HTS material is designed for slipping applications which require high thermal capacity. It is gray/green in color and available in .045" and .066" thicknesses as a replacement for spun-wound, woven or other carbon-based materials.
- **High Thermal Lock-Up (HTL)** A recent friction material development from BorgWarner, HTL is designed for the most demanding torque-holding applications. Offered in .066" thickness, its high thermal and exceptional torque capacity have already made it the new standard for torque capacity and durability in demanding "Lock-Up" applications.
- **Extreme Torque Lockup (XTL)** The latest friction material developed by BorgWarner, XTL provides 30% more torque holding capacity than HTL and is only for extreme duty lockup applications. Offered in .050" thickness, it is available in a few sizes for severe applications.

[Click Here to Return to Table of Contents](#)

Dimensions O.D. x I.D.	Thickness & Material	Part Number
6.815" x 6.438"	.045" HTE	B45170HTE
	.066" HTE	B66170HTE
7.500" x 6.685"	.045" HTE	B45420HTE
	.045" HTS	B45420HTS
7.930" x 7.100"	.045" HTS	B45620HTS
8.070" x 7.280"	.045" HTE	B45640HTE
8.250" x 7.125"	.045" HTE	B45160HTE
	.066" HTL	B66160HTL
	.066" HTE	B66160HTE
8.500" x 7.250"	.045" HTE	B45360HTE
	.066" HTL	B66360HTL
	.066" HTE	B66360HTE
8.750" x 7.750"	.045" HTS	B45150HTS
	.045" HTE	B45150HTE
	.066" HTL	B66150HTL
	.066" HTE	B66150HTE
8.843" x 8.062"	.045" HTE	B45140HTE
	.066" HTL	B66140HTL
	.066" HTE	B66140HTE
8.854" x 7.591"	.045" HTS	B45650HTS
8.875" x 8.000"	.045" HTE	B45130HTE
	.066" HTL	B66130HTL
	.066" HTE	B66130HTE
9.000" x 7.500"	.066" HTL	B66570HTL
9.000" x 7.750"	.045" HTS	B45320HTS
	.045" HTE	B45320HTE
	.066" HTL	B66320HTL
	.066" HTS	B66320HTS
	.066" HTE	B66320HTE
9.000" x 8.000"	.045" HTE	B45390HTE
	.066" HTL	B66390HTL
	.066" HTE	B66390HTE
9.000" x 8.250"	.045" HTE	B45310HTE
	.066" HTL	B66310HTL
	.066" HTE	B66310HTE
9.125" x 7.745"	.045" HTE	B45220HTE
	.066" HTL	B66220HTL
	.066" HTE	B66220HTE
9.125" x 7.945"	.045" HTE	B45225HTE
	.066" HTE	B66225HTE
9.125" x 8.125"	.045" HTS	B45540HTS
	.045" HTE	B45540HTE
9.134" x 7.874"	.045" HTS	B45740HTS
	.045" HTS	B45120HTS
9.250" x 8.125"	.045" HTE	B45120HTE
	.066" HTL	B66120HTL
	.066" HTS	B66120HTS
	.066" HTE	B66120HTE

Dimensions O.D. x I.D.	Thickness & Material	Part Number
9.250" x 8.312"	.045" HTE	B45110HTE
	.066" HTL	B66110HTL
9.312" x 7.875"	.066" HTE	B66110HTE
	.045" HTE	B45520HTE
	.066" HTE	B66520HTE
9.375" x 8.125"	.066" HTS	B66520HTS
	.045" HTE	B45100HTE
9.440" x 8.380"	.045" HTS	B45690HTS
	.066" HTS	B45300HTS
	.045" HTE	B45300HTE
	.066" HTL	B66300HTL
9.500" x 8.250"	.066" HTS	B66300HTS
	.066" HTE	B66300HTE
	.045" HTE	B45090HTE
	.066" HTL	B66090HTL
9.500" x 8.500"	.066" HTE	B66090HTE
	.045" HTS	B45044HTS
9.563" x 8.500"	.045" HTE	B45210HTE
	.066" HTL	B66210HTL
	.066" HTE	B66210HTE
9.625" x 7.625"	.045" HTE	B45290HTE
	.066" HTL	B66210HTL
	.066" HTE	B66210HTE
	.045" HTS	B45290HTS
9.625" x 8.375"	.045" HTS	B45290HTS
	.066" HTL	B66290HTL
	.066" HTE	B66290HTE
9.688" x 8.250"	.045" HTE	B45380HTE
9.725" x 8.250"	.045" HTS	B45070HTS
	.045" HTE	B45070HTE
	.066" HTL	B66070HTL
	.066" HTE	B66070HTE
9.750" x 8.125"	.045" HTE	B45080HTE
	.066" HTL	B66080HTL
	.066" HTE	B66080HTE
9.750" x 9.000"	.045" HTE	B45060HTE
	.066" HTL	B66060HTL
	.066" HTE	B66060HTE
9.813" x 8.562"	.045" HTS	B45680HTS
	.066" HTS	B66680HTS
9.813" x 9.060"	.045" HTE	B45340HTE
9.875" x 8.750"	.045" HTS	B45050HTS
	.045" HTE	B45050HTE
	.066" HTL	B66050HTL
9.875" x 8.750"	.066" HTS	B66050HTS
	.066" HTE	B66050HTE
	.045" HTE	B45205HTE
9.921" x 7.921"	.066" HTL	B66205HTL
	.066" HTE	B66205HTE

sonnax®

TIME TESTED • INDUSTRY TRUSTED®

Sonnax/BorgWarner®

Friction Rings

Dimensions in Inches

[Click Here to Return to Table of Contents](#)

Dimensions O.D. x I.D.	Thickness & Material	Part Number
9.938" x 8.875"	.045" HTE	B45450HTE
	.045" HTS	B45450HTS
	.066" HTL	B66450HTL
	.066" HTE	B66450HTE
9.938" x 8.938"	.045" HTS	B45064HTS
10.000" x 8.250"	.045" HTE	B45040HTE
	.066" HTL	B66040HTL
	.066" HTE	B66040HTE
10.000" x 8.750"	.045" HTS	B45200HTS
	.045" HTE	B45200HTE
	.050" XTL	B50200XTL
	.066" HTL	B66200HTL
	.066" HTS	B66200HTS
	.066" HTE	B66200HTE
10.000" x 9.000"	.045" HTE	B45370HTE
	.066" HTL	B66370HTL
	.066" HTE	B66370HTE
10.100" x 7.500"	.045" HTS	B45670HTS
10.135" x 9.350"	.045" HTE	B45330HTE
	.066" HTL	B66330HTL
	.066" HTE	B66330HTE
10.250" x 8.625"	.045" HTS	B45280HTS
	.045" HTE	B45280HTE
	.066" HTL	B66280HTL
	.066" HTS	B66280HTS
	.066" HTE	B66280HTE
10.375" x 9.375"	.045" HTS	B45270HTS
	.045" HTE	B45270HTE
	.066" HTL	B66270HTL
	.066" HTS	B66270HTS
	.066" HTE	B66270HTE
10.500" x 8.625"	.045" HTE	B45030HTE
	.066" HTL	B66030HTL
10.500" x 9.000"	.045" HTE	B45260HTE
	.066" HTL	B66260HTL
	.066" HTE	B66260HTE
10.500" x 9.188"	.066" HTS	B66500HTS
10.563" x 9.250"	.045" HTE	B45190HTE
	.066" HTL	B66190HTL
10.750" x 9.125"	.066" HTE	B66190HTE
	.045" HTE	B45180HTE
	.066" HTL	B66180HTL
10.750" x 9.500"	.066" HTE	B66180HTE
	.045" HTE	B45020HTE
	.066" HTL	B66020HTL
	.066" HTE	B66020HTE
11.000" x 9.560"	.045" HTE	B45440HTE
	.066" HTL	B66440HTL

Dimensions O.D. x I.D.	Thickness & Material	Part Number
11.120" x 9.840"	.045" HTS	B45750HTS
	.066" HTS	B66750HTS
11.125" x 10.000"	.045" HTS	B45250HTS
	.045" HTE	B45250HTE
	.066" HTL	B66250HTL
	.066" HTS	B66250HTS
11.250" x 9.700"	.066" HTE	B66250HTE
	.045" HTE	B45410HTE
	.045" HTE	B45551HTE
11.250" x 10.000"	.066" HTL	B66551HTL
	.066" HTE	B66551HTE
	.045" HTS	B45010HTS
11.500" x 10.000"	.045" HTE	B45010HTE
	.066" HTL	B66010HTL
	.066" HTS	B66010HTS
	.066" HTE	B66010HTE
11.500" x 10.250"	.045" HTS	B45240HTS
	.045" HTE	B45240HTE
	.066" HTL	B66240HTL
	.066" HTS	B66240HTS
11.500" x 10.250"	.066" HTE	B66240HTE
	.045" HTS	B45084HTS
	.066" HTL	B66084HTL
11.625" x 10.375"	.066" HTS	B66084HTS
	.066" HTS	B66084HTS
11.650" x 10.470"	.045" HTS	B45710HTS
11.800" x 10.200"	.045" HTE	B45510HTE
	.066" HTE	B66510HTE
12.340" x 10.250"	.045" HTE	B45350HTE
	.066" HTE	B66350HTE
	.045" HTS	B45350HTS
	.066" HTL	B66350HTL
12.500" x 10.750"	.066" HTS	B66350HTS
	.045" HTE	B45230HTE
	.045" HTS	B45230HTS
12.500" x 10.750"	.050" XTL	B50230XTL
	.066" HTE	B66230HTE
	.066" HTL	B66230HTL
	.066" HTS	B66230HTS
13.625" x 11.500"	.045" HTE	B45601HTE
	.045" HTS	B45601HTS
	.045" HTE	B45000HTE
14" x 14" Master Sheets	.045" HTS	B45000HTS
	.066" HTE	B66000HTE
	.066" HTL	B66000HTL
14" x 14" Master Sheets	.066" HTS	B66000HTS