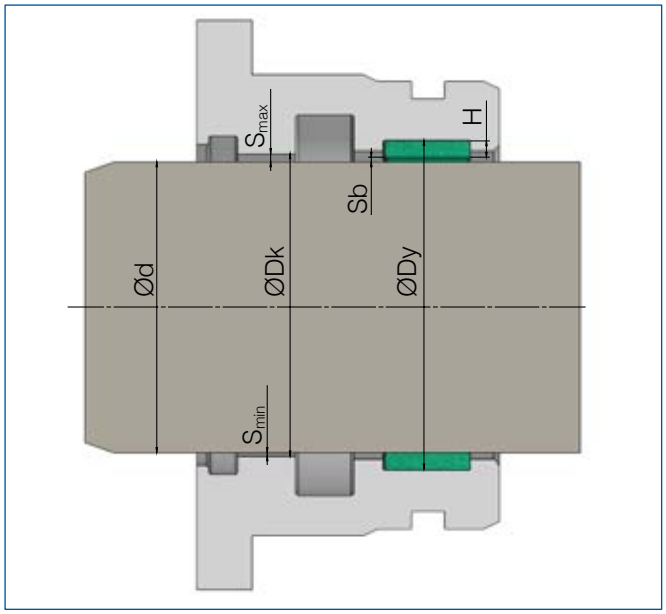
Calculation of Rod and Piston Extrusion Gap Values

Guide ring grooves, guide ring cross section tolerances should be considered while calculating S_{max} and S_{min} values as stated below. S_{max} and S_{min} are critical values; while S_{max} directly affects the extrusion of material, S_{min} value indicates the risk of metal to metal contact. Please contact our sales department if the Smin value is lower than 0.15 mm.

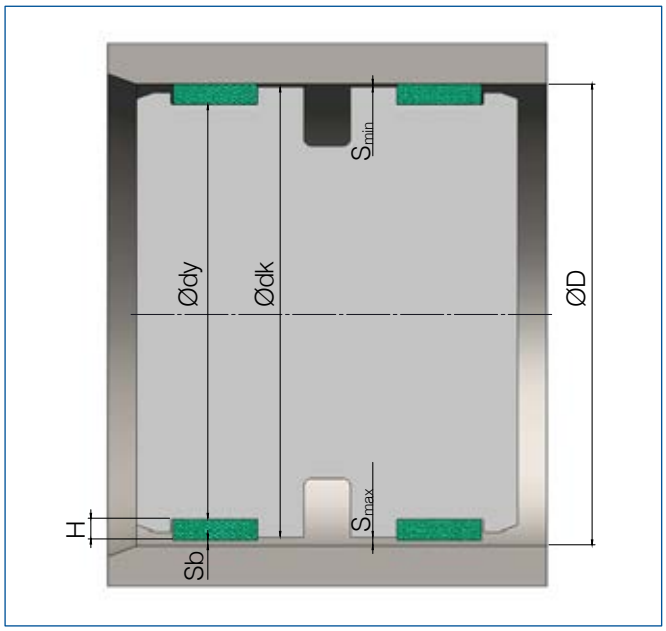


Picture 3.64 *Gland - Rod Extrusion Gap*

Gland - Rod Extrusion Gap Values

S_{max}	Maximum extrusion gap
S_{min}	Minimum extrusion gap
Sb	Guiding Gap
Ød	Rod diameter
ØDy	Guide ring groove diameter
ØDk	Diameter of sealing element extrusion gap
H	Cross section thickness of guide ring
S_{max}	$[(Dk_{max}-Ød_{min})/2]+[Sb_{max}/2]$
S_{min}	$[ØDk-(ØDy_{max}-(2*H_{min}))]/2$
Sb_{max}	$[ØDy_{max}-(2*H_{min})]-Ød_{min}$

Table 3.6



Picture 3.65 *Piston Head - Bore Extrusion Gap*

Piston Head - Bore Extrusion Gap Values

S_{max}	Maximum extrusion gap
S_{min}	Minimum extrusion gap
Sb	Guiding Gap
ØD	Bore diameter
Ødy	Guide ring groove diameter
Ødk	Diameter of sealing element extrusion gap
H	Cross section thickness of guide ring
S_{max}	$[(ØD_{max}-Ødk_{min})/2]+[Sb_{max}/2]$
S_{min}	$[(Ødy_{min}+(2*H_{min}))] - (Ødk_{max}/2)$
Sb_{max}	$ØD_{max}-[Ødy_{min}+(2*H_{min})]$

Table 3.7