

SKWEZLOC® CONCENTRIC LOCKING COLLAR CLAMP FOR IMPROVED LOCK RELIABILITY

DESIGNED FOR COMMERCIAL (TURNED & POLISHED) SHAFTING





Sealmaster® Bearings

- Improved Lock Reliability on Turned Ground & Polished (TG&P) Shafting from Preceding Models
 - Designed for Commercial Turned & Polished (T&P) Shafting
 - Same Simple Single Screw Installation As Preceding Models





Originally designed and patented in 1966, the Sealmaster® SKWEZLOC® concentric lock has become the standard in concentric locking and has been redesigned* to accommodate "commercial" grade turned & polished (T&P) shaft tolerances. This new design also provides improved lock reliability on turned ground & polished (TG&P) shaft tolerances.

SKWEZLOC concentric locking collar clamp design results in near perfect concentricity of the shaft-to-bearing bore and maintains near perfect ball path roundness, while reducing fretting corrosion. This design eliminates the shaft damage of setscrew locking, and minimizes bearing induced vibration for smoother quieter operation. The collar has a TORX Plus® head cap screw that outlasts stripping 12 times longer than hex head cap screws.

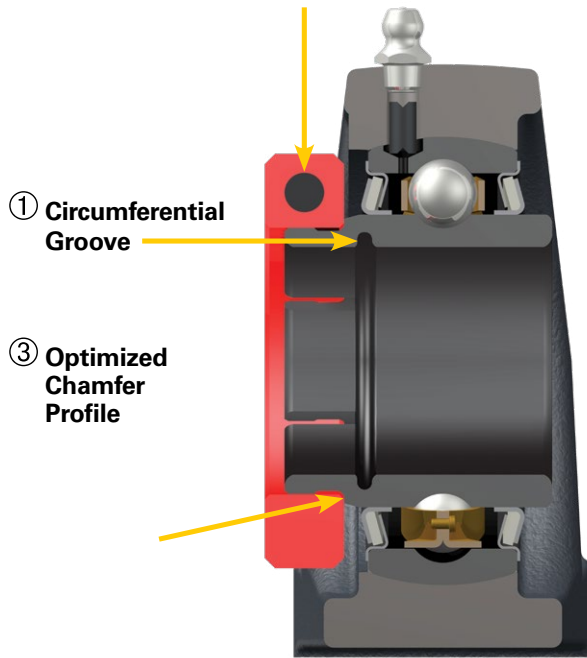
DESIGN FEATURES

- Innovative circumferential groove on the inner ring bore that improves shaftgrip and reduces raceway distortion for quieter smoother operation allowing for improved lock reliability.
- Larger cap screw and collar for improved clamping force to the shaft.
- Designed for use on "commercial" T&P shafting**, potential user cost reduction on shafting by specifying "commercial" tolerances.
- Same simple single screw installation, no axial movement during installation or risk of preloading the bearing which are concerns when using an adapter lock design.



SKWEZLOC®

② Increased Screw Size AND Larger Collar



① Circumferential Groove

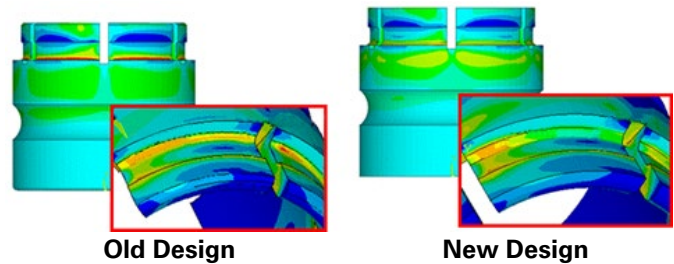
③ Optimized Chamfer Profile

① **Circumferential Groove** increases inner ring elasticity to improve grip (clamping force) on “undersized” commercial shafting without increasing deformation to inner ring ball path.

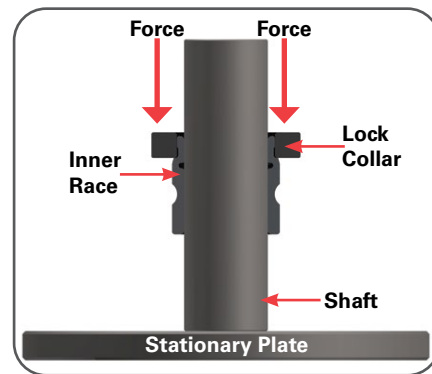
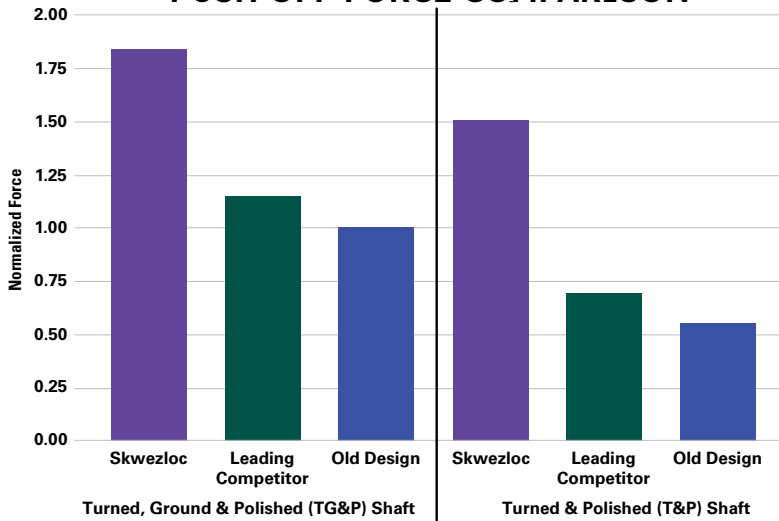
② **Larger Collar And Screw** Increase grip and holding power.

③ **Optimized Chamfer Profile** reduces stress concentrations when collar is tightened.

FEA MODELING OF INSTALLED INNER RING



PUSH OFF FORCE COMPARISON*



Note: all values exceed axial load capacity of the bearing

*In laboratory axial push off testing for 1 7/16”, the next generation design resulted in:

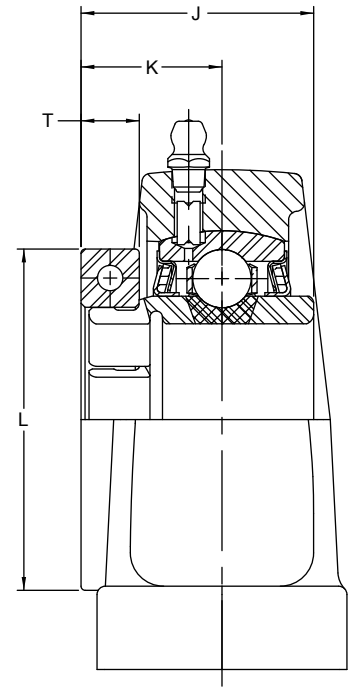
- 85% holding force improvement on turned, ground & polish Shafting vs old design;
- 59% holding force improvement on turned, ground & polish Shafting vs leading competitor; and
- 113% holding force improvement on turned & polish shafting vs leading competitor.

CONCENTRIC LOCKING

DIMENSIONAL CHANGES

NOTE: Inner Ring length has not changed; all changes are to collar OD and Width.

SERIES SIZE	SHAFT SIZE (in)	SHAFT SIZE (mm)	EXISTING COLLAR					NEW COLLAR					CHANGE	
			L (in)	T (in)	CAP SCREW SIZE	K (in)	J (in)	L (in)	T (in)	CAP SCREW SIZE	K (in)	J (in)	OD INCREASE (in)	WIDTH INCREASE (in)
12	3/4		1.750	0.375	#8-32	0.781	1.281	1.797	0.422	#10-24	0.828	1.328	0.047	0.047
204		20												
15	15/16		1.937	0.375	#8-32	0.875	1.438	1.984	0.422	#10-24	0.922	1.485	0.047	0.047
16	1													
205		25	2.187	0.375	#8-32	0.938	1.563	2.234	0.422	#10-24	0.985	1.610	0.047	0.047
18	1 1/8													
19	1 3/16													
20R	1 1/4R													
206		30	2.437	0.437	#10-24	1.063	1.750	2.497	0.500	1/4-20	1.126	1.813	0.060	0.063
20	1 1/4													
22	1 3/8													
23	1 7/16													
207		35	2.562	0.437	#10-24	1.063	1.750	2.622	0.500	1/4-20	1.126	1.813	0.060	0.063
24	1 1/2													
25	1 9/16													
208		40												
26	1 5/8		2.812	0.437	#10-24	1.250	2.000	2.875	0.500	1/4-20	1.313	2.063	0.063	0.063
27	1 11/16													
28	1 3/4													
209		45												
31	1 15/16		3.375	0.562	1/4-20	1.344	2.094	3.470	0.641	5/16-18	1.423	2.173	0.095	0.079
32R	2R													
210		50												
32	2													
34	2 1/8		3.500	0.562	1/4-20	1.375	2.250	3.595	0.641	5/16-18	1.454	2.329	0.095	0.079
35	2 3/16													
211		55												
36	2 1/4													
38	2 3/8		4.062	0.687	5/16-18	1.625	2.265	4.157	0.766	3/8-16	1.704	2.704	0.095	0.079
39	2 7/16													
212		60												



NEW TORX PLUS®* AND TORX®* SCREW TORQUE RATINGS

SCREW SIZE	TORX PLUS® SIZE	TORX® SIZE	NEW DESIGN TORQUE in-lbs	OLD DESIGN TORQUE in-lbs
#8-32	25IP	T-25	n/a	70
#10-24	27IP	T-27	85	100
1/4-20	30IP	T-30	160	240
5/16-18	45IP	T-45	350	495
3/8-16	50IP	T-50	650	n/a

Notes:

1. A notice of torque specification change will be included with the product for a short period of time.
2. Utilization of old torque specs will have no impact to performance on TG&P shafting.

SHAFT COST SAVING CALCULATION

For original equipment manufacturers and end users using turned, ground & polished shafts, a 25%-35% cost savings on shafting might be possible if the shafting specification is changed to commercial turned & polished per listed tolerances.

Note: Additional review may be required to verify potential impact to other components attached to shaft.

Shaft cost estimates based on 1" diameter shaft.

COST SAVING EXAMPLE

Cost TG&P Shafting:	\$ _____	Cost TG&P Shafting:	\$ <u>65.00</u>
- Cost of T&P Shafting:	- \$ _____	- Cost of T&P Shafting:	- \$ <u>45.50</u>
=	\$ _____	=	\$ <u>19.50</u>
x Total Number of Shafts:	x _____	x Total Number of Shafts:	x <u>400</u>
TOTAL COST SAVING:	\$ _____	TOTAL COST SAVING:	\$ <u>7,800</u>

SEALMASTER®

Regal Rexnord

Customer Service: 800-626-2120

Technical Service: 800-626-2093

CustomerService.PTSolutions@regalrexnord.com

regalrexnord.com/Sealmaster

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