

SEALMASTER®



NEXT GENERATION SKWEZLOC® CONCENTRIC LOCKING FOR IMPROVED LOCK RELIABILITY

DESIGNED FOR COMMERCIAL
(TURNED & POLISHED) SHAFTING

REGAL®

SKW F710C®

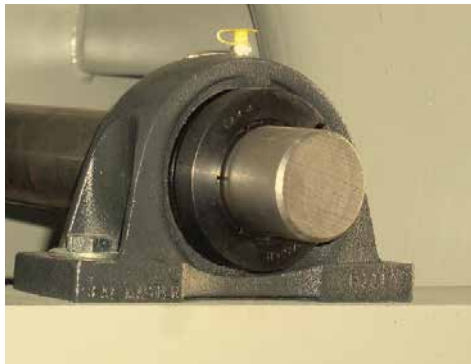


SEALMASTER®

Improved Lock Reliability on Turned Ground & Polished (TG&P) Shafting

Designed for Commercial (Turned & Polished) Shafting

Same Simple Single Screw Installation



NEXT GENERATION



Originally designed and patented in 1966, Sealmaster® SKWEZLOC® concentric lock has become synonymous with concentric locking and has been redesigned* to accommodate "Commercial" grade Turned & Polished (T&P) shaft tolerances with 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.

NEW DESIGN FEATURES

- Innovative circumferential groove on the inner ring bore that improves shaft grip 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.
- Patent Pending Design.

SHAFT DIAMETER	OLD TOLERANCE RANGE TURNED, GROUND & POLISHED (TG&P)	NEW TOLERANCE RANGE** COMMERCIAL SHAFTING / TURNED & POLISHED (T&P)
1/2" to 2"	+.0000 / -.0005"	+.000 / -.003"
2 1/8" to 2 7/16"	+.0000 / -.0010"	+.000 / -.004"

Notes:

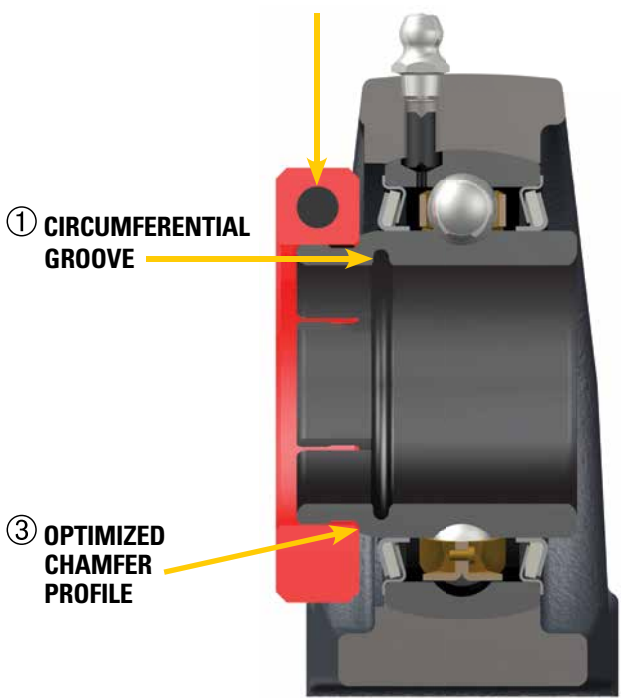
* No change to part numbers, this will be a rolling implementation.

**Maximum speed rating on Commercial (T&P) shafting equal to setscrew locking, consult bearing catalog.



SKWEZLOC®

② **INCREASED SCREW SIZE & LARGER COLLAR**

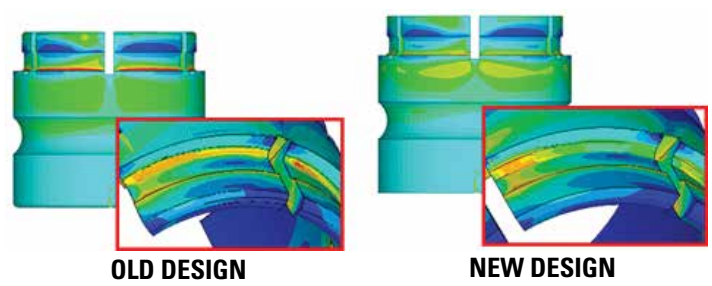


① **CIRCUMFERENTIAL GROOVE** increases inner ring elasticity to improve grip (clamping force) on “undersized” commercial shafting without increasing deformation to inner ring ball path.

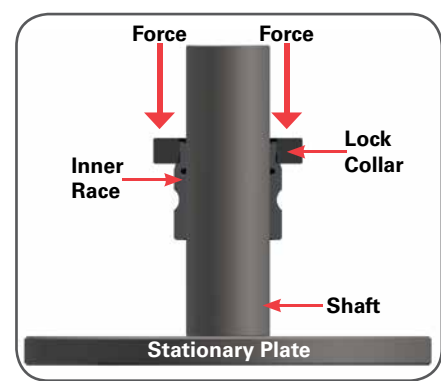
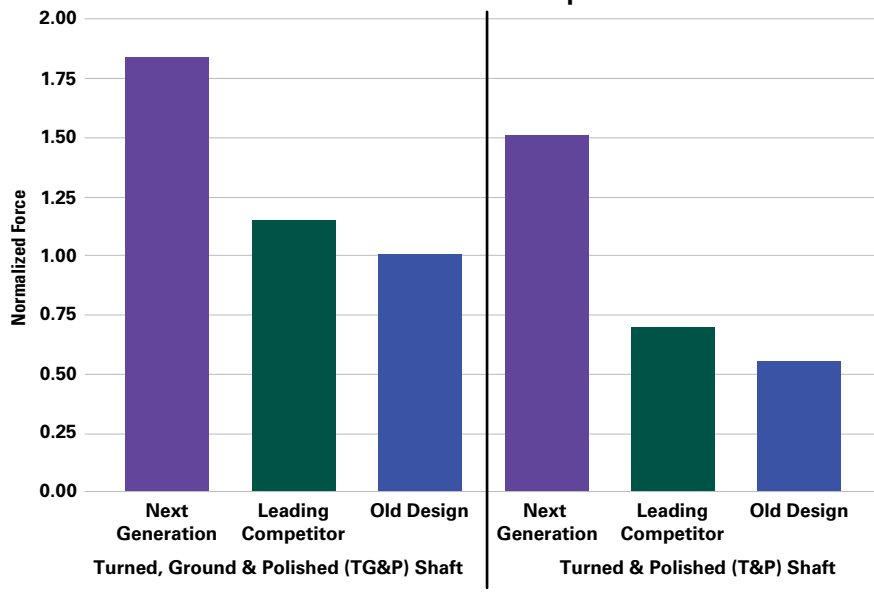
② **LARGER COLLAR & SCREW** increase grip and holding power.

③ **OPTIMIZED CHAMFER PROFILE** reduces stress concentrations when collar is tightened.

FEA Modeling of Installed Inner Ring



Push Off Hold Force Comparison*



Note: all values exceed axial load capacity of the bearing

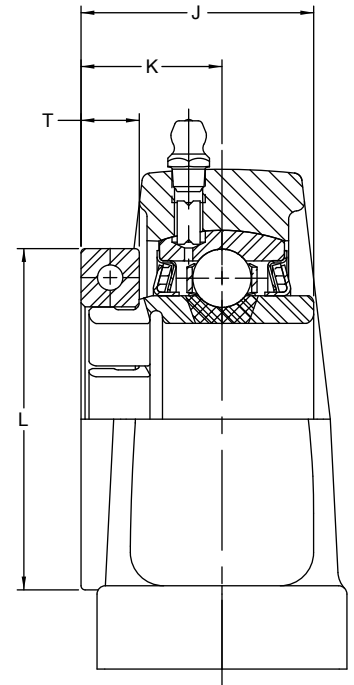
*In laboratory axial push off testing for 1 7/16" the next generation design resulted in:
 85% holding force improvement on Turned, Ground & Polish Shafting vs old design
 59% holding force improvement on Turned, Ground & Polish Shafting vs leading competitor
 113% holding force improvement on Turned & 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	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
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												
18	1 1/8	2.187	0.375	#8-32	0.938	1.563	2.234	0.422	#10-24	0.985	1.610	0.047	0.047
19	1 3/16												
20R	1 1/4R												
20	1 1/4												
22	1 3/8	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
23	1 7/16												
24	1 1/2	2.687	0.437	#10-24	1.250	2.000	2.750	0.500	1/4-20	1.313	2.063	0.063	0.063
25	1 9/16												
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	2.937	0.437	#10-24	1.250	2.000	3.000	0.500	1/4-20	1.313	2.063	0.063	0.063
31	1 15/16												
32R	2R	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
32	2	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
34	2 1/8	3.625	0.562	1/4-20	1.375	2.250	3.720	0.641	5/16-18	1.454	2.329	0.095	0.079
35	2 3/16												
36	2 1/4	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
38	2 3/8	4.125	0.687	5/16-18	1.625	2.265	4.220	0.766	3/8-16	1.704	2.704	0.095	0.079
39	2 7/16												



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 of T&P Shafting: - \$ _____
 = \$ _____
 x Total Number of Shafts: x _____
 TOTAL COST SAVING: \$ _____

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



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APPLICATION CONSIDERATIONS

The proper selection and application of power transmission products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, lubrication requirements, loading supports, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Regal Beloit America, Inc. and/or its affiliates ("Regal") with respect to the use of products and components is given in good faith and without charge, and Regal assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

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