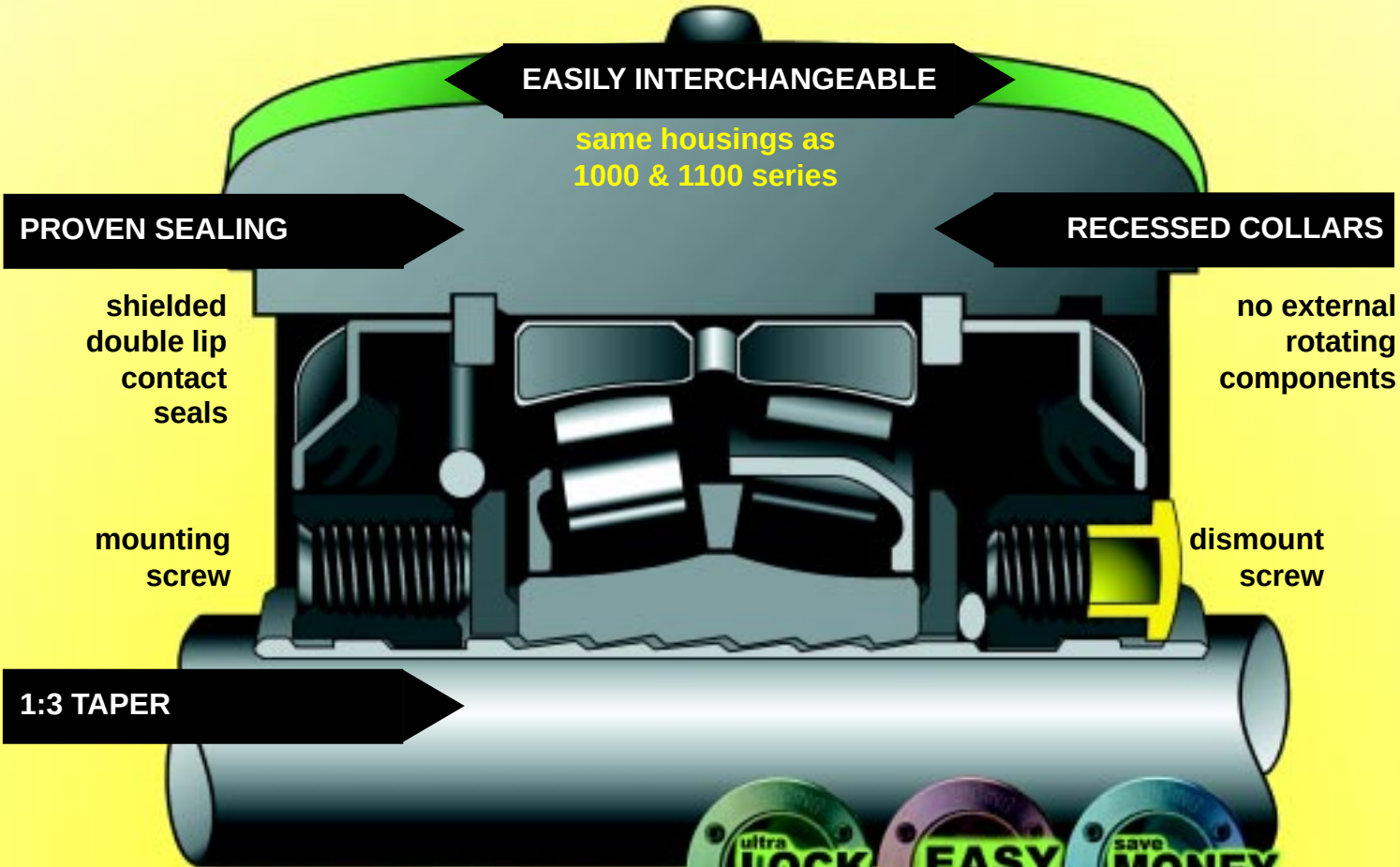
SLEEVLOC™ Spherical Roller Bearings from SEALMASTER® incorporate an advanced multi-tapered sleeve arrangement with distinct advantages over collar mounted and other types of adapter locking styles.

The heart of the unit is the 1:3 tapered sleeve arrangement. This innovative design utilizes axial set screws that force the inner race up a series of inclined planes compressing the sleeve around the shaft.

SLEEVLOC™ spherical roller bearings combine the features of adapter locking in the same housings as unit collar mounted units thus making replacement easy and quick. SLEEVLOC™ spherical roller bearings are a totally self contained locking mechanism.

SEALMASTER® SLEEVLOC™ SPHERICAL ROLLER BEARINGS

CONTENTS



ultra LOCK reliability

EASY installation procedure

save MONEY on shafting

SEALMASTER® SLEEVLOC™
SPHERICAL ROLLER BEARINGS

CONCENTRICITY

The SEALMASTER® SLEEVLOC™ spherical roller bearing system is a reliable mounted spherical roller slip-fit shaft locking system. The multi-tapered sleeves provide concentricity by centering the shaft in the center of the inner race to help prevent slipping and fretting.

Set screw & eccentric locks push the shaft to one side of the inner race inducing vibrations which may cause loss of shaft lock.

And, SLEEVLOC™ spherical roller bearings won't leave set screw burrs on the shaft.

Set Screw Lock
Shaft Displacement

SLEEVLOC™ Spherical Roller Bearing
Shaft Centering

LITTLE FRETTING

SEALMASTER® SLEEVLOC™ spherical roller bearings do not create as much metal fretting as other locking designs. The SLEEVLOC™ spherical roller bearing's multi-tapered sleeve provides a 360° "sleeve-length" shaft contact. This massive amount of surface support limits metal fretting and produces a positive grip.

Additionally, SLEEVLOC™ spherical roller bearings have no back-and-forth set screw rubbing that wears down the screws like in traditional set screw locks.

EASY INSTALLATION PROCEDURE

The Easy installation procedure significantly improves lock reliability. Installation problems account for loss of shaft lock in many instances.

COMMERCIAL SHAFT TOLERANCES

Meeting shafting requirements is easy because SLEEVLOC™ spherical roller bearings better accommodate this type of shafting. Other designs often lead to performance problems because shafts are undersized.

SEALMASTER® SLEEVLOC™
SPHERICAL ROLLER BEARINGS

EASY INSTALLATION PROCEDURE

A SLEEVLOC™ spherical roller bearing is the easiest and quickest spherical roller bearing to install. It is designed for Easy Installation.

A SLEEVLOC™ Spherical Roller Bearing Easy Installation Tool and a Wrench are supplied with every unit. This is all that is needed to install a SLEEVLOC™ spherical roller bearing.

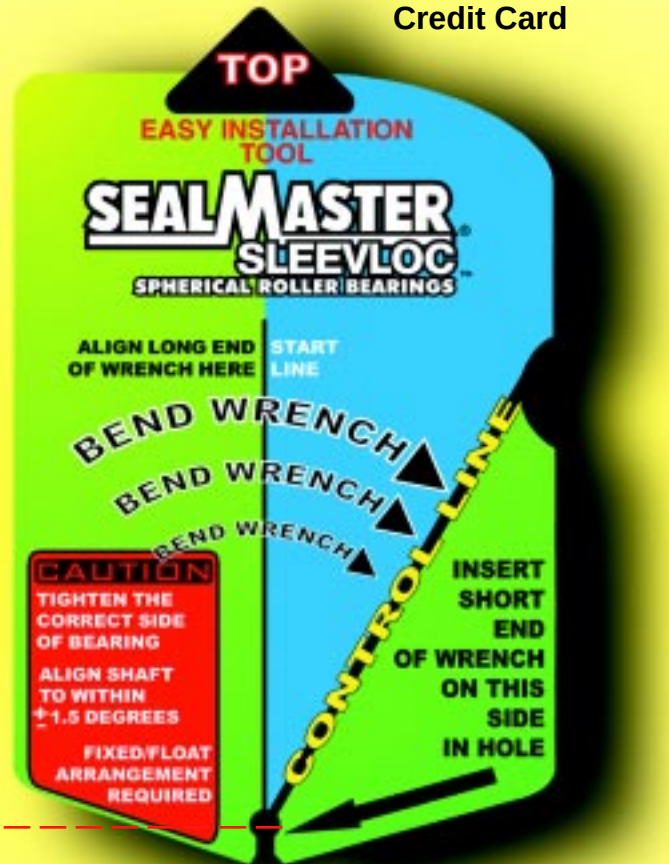
Easy Installation Tool Is The Size of a Credit Card

HOW IS AN EASY INSTALLATION PROCEDURE POSSIBLE?

The Easy Installation Tool, supplied with every unit, facilitates the tightening of the set screws to the correct torque every time.

The internal clearances are tightly controlled by design. Whereas with press-fit bearings, the clearances are dependent on actual shaft tolerances; with this unpredictable variation, feeler gauges are often required for installation.

Furthermore, commercial grade shafting can be used because SLEEVLOC™ spherical roller bearings better accommodate this type of shafting. And, all the components are self contained within the SLEEVLOC™ spherical roller bearing assembly.



FASTER INSTALLATION

Easy installation procedure is key to achieving long bearing life. The SLEEVLOC™ spherical roller bearings 1:3 taper expedites installation. Tapered adapter systems naturally require axial movement to achieve lock. More axial movement is required as the ratio is increased. And more axial movement means that it takes longer to install. Imagine how much time a 1:12 or 1:30 taper (which is typically used for tapered adapter bearings) requires to achieve lock.

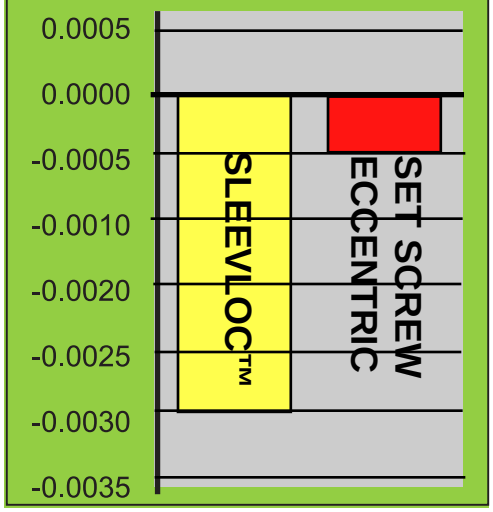
SEALMASTER® SLEEVLOC™
SPHERICAL ROLLER BEARINGS

SHAFT TOLERANCES

The savings from eliminating the need for turned, ground, and polished shafting can result up to 25%. The unique 1:3 multi-tapered sleeve accomodates larger shaft tolerances which means commercial grade shafting can be used.

Bore	Shaft Tolerance (Inches)	
	Min	Max
Up to 1 15/16"	-0.003	+0.000
2 3/16" and Up	-0.004	+0.000

UNDERSIZED SHAFT ALLOWANCE COMPARISON-INCHES
(for 1 15/16" Shafting)



End users and original equipment manufacturers can realize additional labor savings attributed to the easier, quicker installation.

SPB2000

TWO BOLT PILLOW BLOCKS

Seal: Double Lip Contact
Housing: Cast Iron
Temperature: -20°F to 200°F
Self Alignment: 1.5°
Fitting: 1/8" NPT

Load Rating Tables: Page 19

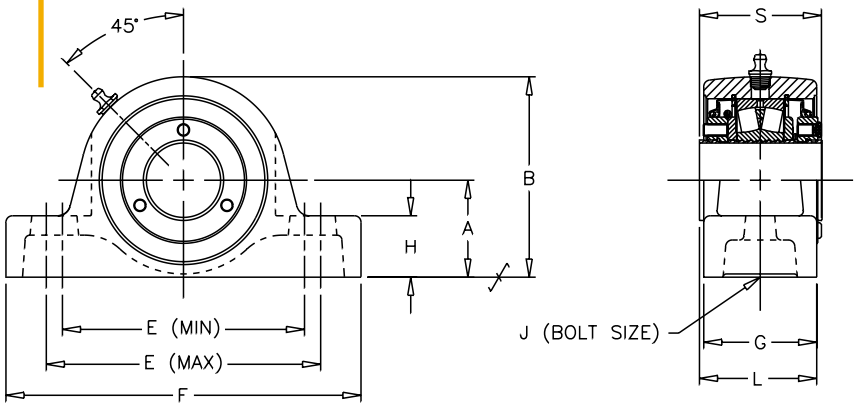
Expansion & non-expansion
Non-expansion = SPB2207-C2
Expansion = ESPB2207-C2

S SPHERICAL ROLLER
P PILLOW
B BLOCK

2 2000 SERIES
0 CAST IRON HOUSING
0 SLEEVLOC
0 BEARING
C CONTACT SEAL
2 TWO BOLT BASE

PRODUCT COMPARISON

ZA2000	**ZA3000**
P-B22400H	**P-B22600H**
S2000	**Imperial**



SPB2000C2

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimensions In Inches A	B	E MIN	E MAX	F	G	H	J	L*	S	UNIT WT.
1 7/16	SPB2107-C2											
1 1/2	SPB2108-C2	1 7/8	3 7/8	4 11/16	5 5/16	6 7/8	2 3/16	1 3/16	1/2	2 17/64	2 3/8	6.3
1 11/16	SPB2111-C2											
1 3/4	SPB2112-C2	2 1/8	4 1/4	5 3/16	5 13/16	7 3/8	2 3/16	1 5/16	1/2	2 13/64	2 11/32	7.8
1 15/16	SPB2115-C2											
2	SPB2200-C2	2 1/4	4 9/16	5 15/16	6 9/16	8 3/8	2 3/16	1 3/8	5/8	2 15/64	2 11/32	8.7
2 3/16	SPB2203-C2	2 1/2	5	6 9/16	7 1/16	8 7/8	2 7/16	1 5/8	5/8	2 29/64	2 23/64	10.9
2 7/16	SPB2207-C2											
2 1/2	SPB2208-C2	2 3/4	5 11/16	6 13/16	7 7/16	9 1/4	2 11/16	1 3/4	5/8	2 23/64	2 19/32	14.3
2 11/16	SPB2211-C2											
2 3/4	SPB2212-C2											
2 15/16	SPB2215-C2	3 1/4	6 7/16	7 13/16	8 7/16	10 7/16	2 13/16	2 1/4	3/4	2 11/16	2 5/8	18.0
3	SPB2300-C2											
3 7/16	SPB2307-C2											
3 1/2	SPB2308-C2	3 3/4	7 1/2	9 1/4	10 3/4	13	3 3/16	2 1/4	7/8	2 63/64	3 1/8	29.0
3 15/16	SPB2315-C2											
4	SPB2400-C2	4 1/8	8 7/16	10	11 3/4	14 1/4	3 9/16	2 1/2	1	3 7/16	3 25/64	41.0

REV 0

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Pillow Blocks are specified by ESPB: Example, **ESPB2107-C2**

SPB2000

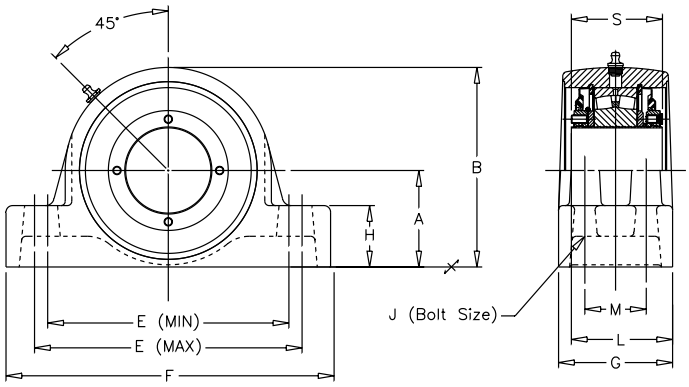
FOUR BOLT PILLOW BLOCKS

SPHERICAL ROLLER	**S**
PILLOW	**P**
BLOCK	**B**
2000 SERIES	**2**
CAST IRON HOUSING	**0**
SLEEVLOC	**0**
BEARING	**0**
CONTACT SEAL	**C**
FOUR BOLT BASE	**4**

Seal:	Double Lip Contact
Housing:	Cast Iron
Temperature:	-20°F to 200°F
Self Alignment:	1.5°
Fitting:	1/8" NPT

Load Rating Tables: Page 19

Expansion & non-expansion
Non-expansion = SPB2207-C4
Expansion = ESPB2207-C4



PRODUCT COMPARISON

ZA2000F	**ZA3000F**
P-B22400FH	**P-B22600FH**
S2000	**Imperial**

SPB2000C4

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimensions In Inches A	B	E MIN	E MAX	F	G	J	L*	M	S	UNIT WT.
2 7/16	SPB2207-C4											
2 1/2	SPB2208-C4	2 3/4	5 11/16	6 7/8	7 5/8	9 1/4	3 1/4	1/2	2 57/64	1 3/4	2 19/32	14.6
2 11/16	SPB2211-C4											
2 3/4	SPB2212-C4											
2 15/16	SPB2215-C4	3 1/4	6 7/16	7 7/8	8 3/8	10 7/16	3 3/4	5/8	3 5/32	1 7/8	2 5/8	21.9
3	SPB2300-C4											
3 7/16	SPB2307-C4											
3 1/2	SPB2308-C4	3 3/4	7 1/2	9 1/4	10 3/4	13	3 7/8	3/4	3 29/64	2	3 1/8	34.9
3 15/16	SPB2315-C4											
4	SPB2400-C4	4 1/4	8 9/16	11	13	15 1/4	4 1/2	3/4	3 29/32	2 1/4	3 25/64	46.4

REV 0

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Pillow Blocks are specified by ESPB: Example, **ESPB2207-C4**

SFB2000

FLANGE BLOCKS

Seal: Double Lip Contact
Housing: Cast Iron
Temperature: -20°F to 200°F
Self Alignment: 1.5°
Fitting: 1/8" NPT

Load Rating Tables: Page 19

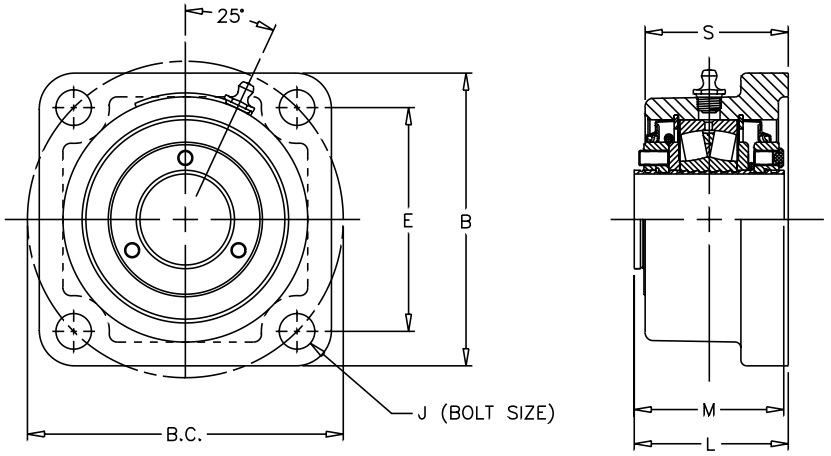
Expansion & non-expansion
Non-expansion = SFB2207-C2
Expansion = ESFB2207-C2

PRODUCT COMPARISON

ZB2000	**ZB3000**
F-B22400H	**F-B22600H**
S2000	**Imperial**

S SPHERICAL ROLLER
F FLANGE
B BLOCK

2 2000 SERIES
0 CAST IRON HOUSING
0 SLEEVLOC
0 BEARING
2 TWO BOLT BASE



SFB2000C

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimensions in Inches B	B.C.	E	J	L	M	S	UNIT WT.
1 7/16	SFB2107-C								
1 1/2	SFB2108-C	4 5/8	5	3 35/64	1/2	2 7/16	2.3/8	2 17/64	6.5
1 11/16	SFB2111-C								
1 3/4	SFB2112-C	5	5 1/2	3 57/64	1/2	2 25/64	2 11/32	2 3/8	9.8
1 15/16	SFB2115-C								
2	SFB2200-C	5 3/16	5 3/4	4 3/64	1/2	2 7/16	2 11/32	2 3/8	10.2
2 3/16	SFB2203-C	5 7/8	6 3/8	4 1/2	5/8	2 25/64	2 11/32	2 7/16	11.3
2 7/16	SFB2207-C								
2 1/2	SFB2208-C	6 1/8	6 3/4	4 49/64	5/8	2 11/16	2 19/32	2 21/32	14.3
2 11/16	SFB2211-C								
2 3/4	SFB2212-C								
2 15/16	SFB2215-C	7 3/16	7 7/8	5 9/16	3/4	2 53/64	2 5/8	2 7/8	21.0
3	SFB2300-C								
3 7/16	SFB2307-C								
3 1/2	SFB2308-C	8 3/8	9 1/2	6 23/32	3/4	3 1/4	3 1/8	3 9/32	32.4
3 15/16	SFB2315-C								
4	SFB2400-C	9 1/2	10 3/4	7 39/64	7/8	3 33/64	3 25/64	3 1/2	44.4

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Flange Blocks are specified by ESFB: Example, **ESFB2107-C**

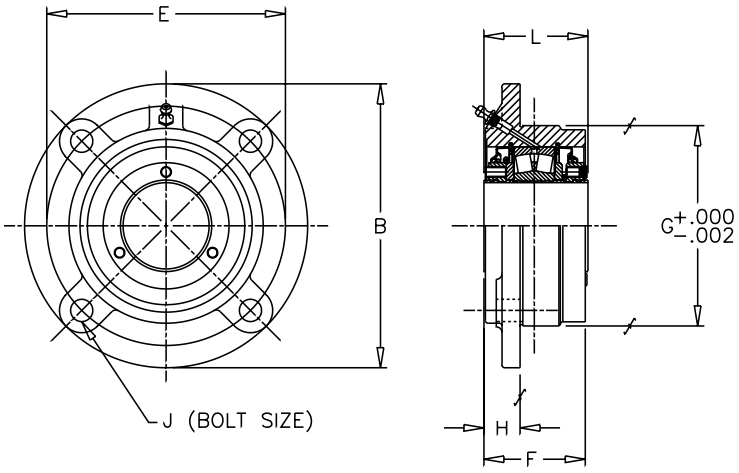
REV 0

SPHERICAL ROLLER	**S**
FLANGE	**F**
CARTRIDGE	**C**
2000 SERIES	**2**
CAST IRON HOUSING	**0**
SLEEVLOC	**0**
BEARING	**0**
CONTACT SEAL	**C**

Seal:	Double Lip Contact
Housing:	Cast Iron
Temperature:	-20°F to 200°F
Self Alignment:	1.5°
Fitting:	1/8" NPT

Load Rating Tables: Page 19

Expansion & non-expansion
Non-expansion = SFC2207-C
Expansion = ESFC2207-C



PRODUCT COMPARISON

ZBR2000	**ZBR3000**
FC-22400H	**FC-22600H**
S2000	

SFC2000C

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimensions In Inches B	E	F*	G	H	J	L*	UNIT WT.
1 7/16	SFC2107-C								
1 1/2	SFC2108-C	5 1/4	4 3/8	2 15/64	3 5/8	61/64	7/16	2 3/8	6.0
1 11/16	SFC2111-C								
1 3/4	SFC2112-C	6 1/8	5 1/8	2 17/64	4 1/4	53/64	1/2	2 11/32	7.9
1 15/16	SFC2115-C								
2	SFC2200-C	6 3/8	5 3/8	2 9/16	4 1/2	13/16	1/2	2 11/32	10.0
2 3/16	SFC2203-C	7 1/8	6	2 5/16	5	27/32	9/16	2 23/64	13.6
2 7/16	SFC2207-C								
2 1/2	SFC2208-C	7 5/8	6 1/2	2 9/16	5 1/2	15/16	9/16	2 19/32	14.1
2 11/16	SFC2211-C								
2 3/4	SFC2212-C								
2 15/16	SFC2215-C	8 3/4	7 1/2	2 3/4	6 3/8	29/32	11/16	2 5/8	17.9
3	SFC2300-C								
3 7/16	SFC2307-C								
3 1/2	SFC2308-C	10 1/4	8 5/8	3 1/16	7 3/8	1 7/32	13/16	3 1/8	30.4
3 15/16	SFC2315-C								
4	SFC2400-C	10 7/8	9 3/8	3 7/16	8 1/8	1 23/64	13/16	3 25/64	41.4

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Flange Cartridges are specified by ESFC: Example, **ESFC2107-C**

REV 0

STU2000

TAKE-UPS

Seal: Double Lip Contact
Housing: Cast Iron
Temperature: -20°F to 200°F
Self Alignment: 1.5°
Fitting: 1/8" NPT

Load Rating Tables: Page 19

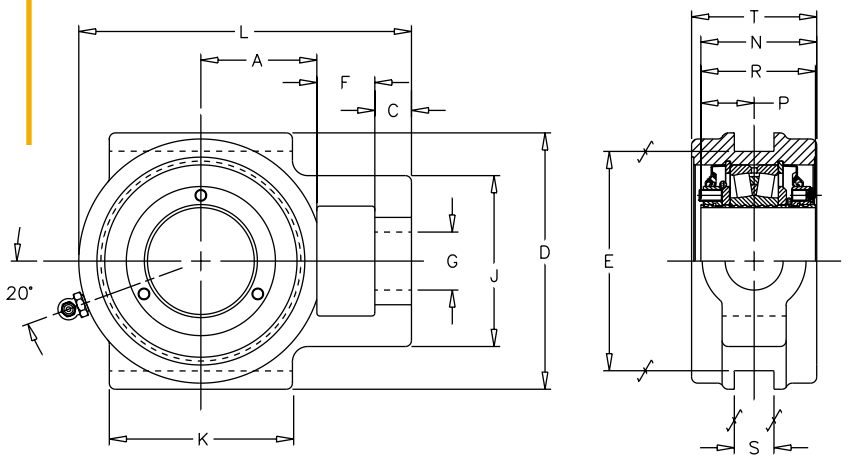
Non-expansion = STU2207-C

S SPHERICAL ROLLER
T TAKE
U UP

2 2000 SERIES
0 CAST IRON HOUSING
0 SLEEVLOC
0 BEARING
C CONTACT SEAL

PRODUCT COMPARISON

ZT2000	**ZT3000**
T-B22400H	**T-B22600H**
S2000	



STU2000C

SHAFT DIA. IN.	UNIT N	A	C	D	E	F	G	J	K	L	N	P	R	S	T	UNIT WT.
		Dimensions In Inches														
1 15/16	STU2115-C															
2	STU2200-C	2 1/8	3/4	4 3/4	4	1 1/16	1 1/16	2 7/8	3 1/2	6 3/16	2 23/64	1 1/8	2 11/32	11/16	2 7/16	14.6
2 3/16	STU2203-C	2 3/8	3/4	5 1/4	4 1/2	1 3/16	1 3/16	3 1/2	3 3/4	6 13/16	2 3/8	1 3/32	2 11/32	13/16	2 9/16	17.1
2 7/16	STU2207-C															
2 1/2	STU2208-C	2 3/4	7/8	5 7/8	5 1/8	1 5/16	1 5/16	3 3/4	4 3/4	7 15/16	2 39/64	1 17/64	2 19/32	1 1/16	2 11/16	22.1
2 11/16	STU2111-C															
2 3/4	STU2212-C															
2 15/16	STU2215-C	3	1	6 3/4	5 15/16	1 9/16	1 9/6	4 1/4	4 3/4	8 3/4	2 25/32	1 9/32	2 5/8	1 13/16	3	25.9
3	STU2300-C															
3 7/16	STU2307-C															
3 1/2	STU2308-C	3 5/8	1	7 5/8	6 13/16	1 13/16	1 13/16	4 7/8	6 1/4	10 7/16	3 21/64	1 1/2	3 1/8	1 13/16	3 5/8	35.4
3 15/16	STU2315-C															
4	STU2400-C	4 1/8	1 1/8	9 7/16	8 5/8	2 1/8	2 3/16	5 5/8	7	11 13/16	3 29/32	1 5/8	3 25/64	2 1/16	4 1/2	44.4

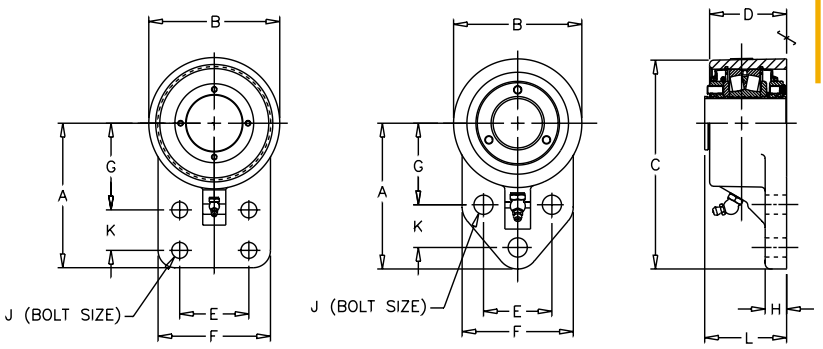
REV 0

SPHERICAL ROLLER	**S**
BRACKET	**B**
FLANGE	**F**
2000 SERIES	**2**
DUCTILE HOUSING	**0**
SLEEVLOC	**0**
BEARING	**0**
CONTACT SEAL	**C**

Seal:	Double Lip Contact
Housing:	Ductile Iron
Temperature:	-20°F to 200°F
Self Alignment:	1.5°
Fitting:	1/8” NPT

Load Rating Tables: Page 19

Expansion & non-expansion
Non-expansion = SBF2207-C4
Expansion = ESBF2207-C4



PRODUCT COMPARISON

FB-B22400H **FB-B22600H**

SBF2000C

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimensions In Inches											UNIT WT.
		A	B	C	D	E	F	G	H	J	K	L*	
					THREE BOLT								
1 7/16	SBF2107-C	4 1/4	3 3/4	6 1/8	2 1/4	2	3 1/4	2 3/8	5/8	1/2	1 1/4	2 27/64	6.8
1 15/16	SBF2115-C	5 3/16	4 1/4	7 5/16	2 3/8	2 3/4	4	2 15/16	11/16	1/2	1 5/8	2 7/16	8.3
					FOUR BOLT								
2 7/16	SBF2207-C	6 1/4	5 11/16	9 3/32	2 21/32	3	4 7/8	3 3/4	3/4	5/8	1 3/4	2 19/32	13.5

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Flange Brackets are specified by ESBF: Example, **ESBF2107-C**

REV 0

SLEEVLOC™ SPHERICAL ROLLER BEARINGS NOMENCLATURE

SPB 2000 C2

Spherical Roller Bearing

2 - Two Bolt Base
4 - Four Bolt Base

C-Contact Seal

Bore Size
(1/16” Increments)
207 = 2 7/16”

2000 Series - Cast Iron Housing
3000 Series - Ductile Iron Housing

see page 20

PB - Pillow Block
FB - Flange Block
FC - Flange Cartridge (Piloted)
TU - Take Up
BF - Flange Bracket

3000 series DUCTILE IRON advantage

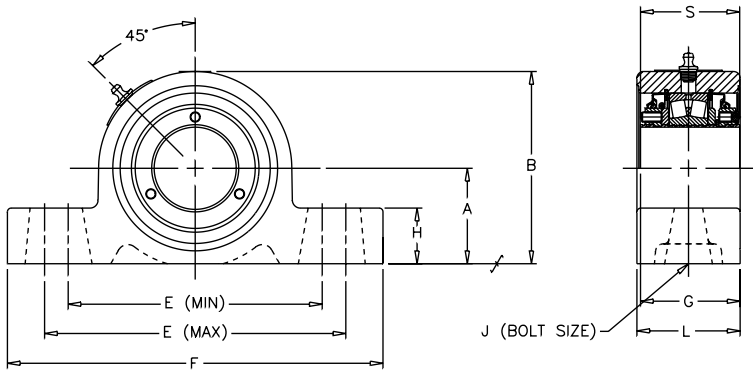
SPHERICAL ROLLER	**S**
PILLOW	**P**
BLOCK	**B**
3000 SERIES	**3**
DUCTILE HOUSING	**0**
SLEEVLOC	**0**
BEARING	**0**
CONTACT SEAL	**C**
TWO BOLT BASE	**2**

Seal:	Double Lip Contact
Housing:	Ductile Iron
Temperature:	-20°F to 200°F
Self Alignment:	1.5°
Fitting:	1/8" NPT

Load Rating Tables: Page 19

Expansion & non-expansion
Non-expansion = SPB3207-C2
Expansion = ESPB3207-C2

see page 20



PRODUCT COMPARISON

ZEP2000	**ZEP3000**
EP-B22400H	**P-B22600H**
S2000	**Imperial**
Type E	

SPB3000C2

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimensions In Inches A	B	E MIN	E MAX	F	G*	H	J	L	S	UNIT WT.
1 15/16	SPB3115-C2											
2	SPB3200-C2	2 1/4	4 17/32	6	7 1/8	8 7/8	2 23/64	1 5/16	5/8	2 7/16	2 11/32	11.7
2 3/16	SPB3203-C2	2 1/2	4 31/32	6 1/2	7 7/8	9 5/8	2 11/32	1 7/16	5/8	2 1/2	2 23/64	15.0
2 7/16	SPB3207-C2											
2 1/2	SPB3208-C2	2 3/4	5 5/8	6 7/8	8 5/8	10 3/8	2 43/64	1 9/16	5/8	2 13/16	2 19/32	19.2
2 11/16	SPB3211-C2											
2 3/4	SPB3212-C2											
2 15/16	SPB3215-C2	3 1/8	6 1/16	7 7/8	9 5/8	11 5/8	2 17/32	1 5/8	3/4	2 5/8	2 5/8	29.1
3	SPB3300-C2											
3 7/16	SPB3307-C2											
3 1/2	SPB3308-C2	3 3/4	7 3/8	9 3/8	11 1/4	13 1/2	3 5/64	2 1/16	7/8	3 1/8	3 1/8	32.2
3 15/16	SPB3315-C2											
4	SPB3400-C2	4 1/8	8 1/2	10	11 3/4	14 1/4	3 7/16	2 1/4	1	3 9/16	3 25/64	41.5

REV 0

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Pillow Blocks are specified by ESPB: Example, **ESPB3115-C2**

ultra LOCK reliability | EASY installation procedure | save MONEY on shafting

SFB3000

FLANGE BLOCKS

Seal: Double Lip Contact
Housing: Ductile Iron
Temperature: -20°F to 200°F
Self Alignment: 1.5°
Fitting: 1/8" NPT

Load Rating Tables: Page 19

Expansion & non-expansion
Non-expansion = SFB3207-C
Expansion = ESFB3207-C

S SPHERICAL ROLLER
F FLANGE
B BLOCK

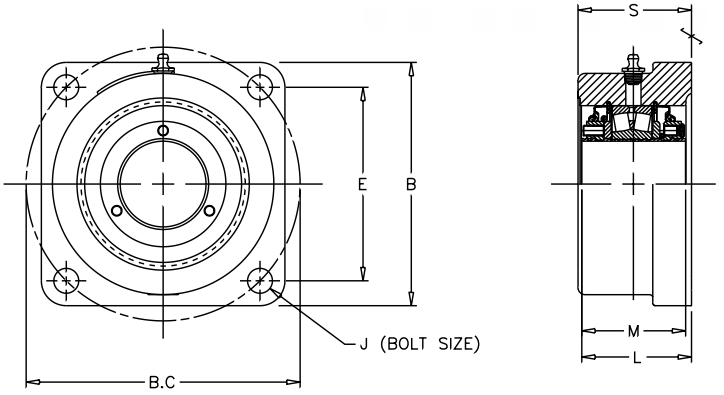
3 3000 SERIES
0 DUCTILE HOUSING
0 SLEEVLOC
0 BEARING
C CONTACT SEAL

3000 series DUCTILE IRON advantage

see page 20

PRODUCT COMPARISON

ZEF2000	ZEF3000
EFR-B22400H	F-B22600H
Type E	Imperial



SFB3000C

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimension In Inches B	B.C.	E	J	L	M	S	UNIT WT.
1 15/16	SFB3115-C								
2	SFB3200-C	5 1/2	6 3/16	4 3/8	1/2	2 31/64	2 11/32	2 9/16	13.4
2 3/16	SFB3203-C	6 3/16	6 57/64	4 7/8	5/8	2 15/32	2 23/64	2 5/8	15.3
2 7/16	SFB3207-C								
2 1/2	SFB3208-C	6 3/4	7 39/64	5 3/8	5/8	2 5/8	2 19/32	2 11/16	19.2
2 11/16	SFB3211-C								
2 3/4	SFB3212-C								
2 15/16	SFB3215-C	7 5/8	8 31/64	6	3/4	2 21/32	2 5/8	2 3/4	20.5
3	SFB3300-C								
3 7/16	SFB3307-C								
3 1/2	SFB3308-C	8 5/8	9 29/32	7	3/4	3 9/64	3 1/8	3 1/4	28.0
3 15/16	SFB3315-C								
4	SFB3400-C	9 1/2	10 3/4	7 39/64	7/8	3 11/16	3 25/64	3 11/16	35.0

REV 0

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Flange Blocks are specified by ESFB: Example, **ESFB3115-C**

ultra LOCK reliability
EASY installation procedure
save MONEY on shafting

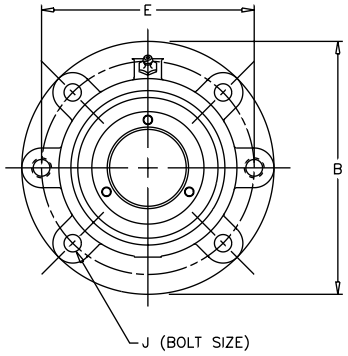
SPHERICAL ROLLER	**S**
FLANGE	**F**
CARTRIDGE	**C**
3000 SERIES	**3**
DUCTILE HOUSING	**0**
SLEEVLOC	**0**
BEARING	**0**
CONTACT SEAL	**C**

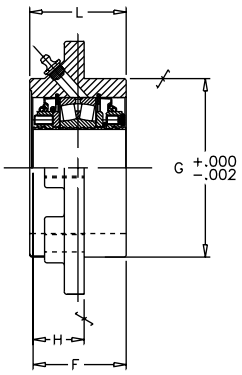
Seal: Double Lip Contact
Housing: Ductile Iron
Temperature: -20°F to 200°F
Self Alignment: 1.5°
Fitting: 1/8" NPT

Load Rating Tables: Page 19

Expansion & non-expansion
Non-expansion = SPC3207-C
Expansion = ESFC3207-C2

see page 20





PRODUCT COMPARISON

ZBR2000	**ZBR3000**
FC-B22400F	**FC-B22600H**
S2000	**Type E**

SFC3000C

SHAFT DIA. IN.	UNIT DESCRIPTION	Dimensions In Inches B	E	F*	G	H*	J	L	UNIT WT.
1 15/16	SFC3115-C								
2	SFC3200-C	6 3/8	5 3/8	2 23/64	4 1/2	1 19/64	3/8	2 7/16	10.5
2 3/16	SFC3203-C	7 1/8	6	2 23/64	5	1 7/32	1/2	2 1/2	13.2
2 7/16	SFC3207-C								
2 1/2	SFC3208-C	7 5/8	6 1/2	2 35/64	5 1/2	1 13/32	1/2	2 9/16	15.4
2 11/16	SFC3111-C								
2 3/4	SFC3212-C								
2 15/16	SFC3215-C	8 3/4	7 1/2	2 19/32	6 3/8	1 11/32	5/8	2 9/16	21.0
3	SFC3300-C								
3 7/16	SFC3307-C								
3 1/2	SFC3308-C	10 1/4	8 5/8	3 1/16	7 3/8	1 3/4	3/4	3 1/8	32.1
3 15/16	SFC3315-C								
4	SFC3400-C	10 7/8	9 3/8	3 7/16	8 1/8	1 23/64	3/4	3 1/2	41.0

* These dimensions are for Non-Expansion units. For expansion type, adjust ±.040.
Expansion Flange Cartridges are specified by ESFC: Example, **ESFC3115-C**

REV 0

APPLICATIONS
Unit Material Handling

Unit handling systems that sort and route packages around the world operate 24 hours per day with minimal downtime. Some systems transport up to three million packages a day. Computerized control techniques are utilized to sort and route packages via conveyors at tremendous speeds.

SLEEVLOC™ spherical roller bearings perform well in unit material handling applications because…

Speeds, Vibration & Reversing
Transporting three million packages per day often requires bearings to operate within the faster end of their normal speed range. SLEEVLOC™ spherical roller bearings are naturally a higher speed/higher load bearing. Moving packages collide with uneven rolls creating vibration. The SLEEVLOC™ spherical roller bearing's concentricity helps align rolls and minimize vibration. Sorters push packages this or that way by reversing controls. SLEEVLOC™ spherical roller bearings are designed to operate on reversing applications.

Misalignment
These conveyors are fabricated from light weight metal frames and constructed from many components. Shafts don't always remain in alignment upon installation i.e. metal slightly deforming, tolerance inconsistencies. Also, misalignment occurs when belts create undue forces from being out of position along rolls. SEALMASTER® SLEEVLOC™ spherical roller bearings have a misalignment capability of ± 1 ½° that helps overcome dynamic alignment problems associated with unit handling conveyors.

Benefits of the Flange Bracket Housing
Unit package conveyors mount rolls close together and therefore require affixing bearings close together. Spacing is particularly important at belt-to-belt conveyor joints. When space is at a premium, three and four bolt flange brackets can be mounted within close proximity to one another.

SEALMASTER® SLEEVLOC™ SPHERICAL ROLLER BEARINGS

APPLICATIONS
Lumber

Lumber mills process raw logs into two-by-fours, floor joists, ceiling rafters, plywood, shingles, etc. At the beginning of the process, cut trees are pulled from rivers to be debranched and debarked. Machinery carries heavy logs from one process to the next. Saws and abraders pound into the logs cutting and sizing finished boards.

SLEEVLOC™ spherical roller bearings perform well in lumber applications because…

Vibration & Shock Loading

As you can imagine, moving trees around is not easy. Bearings must be able to withstand vibration and shock loading from falling logs and boards. The 3000 series SLEEVLOC™ spherical roller bearings have ductile iron housings that contain more material in the critical areas to help withstand shock loads. Ductile iron was selected as a high strength alternative to cast iron because it has material properties that even exceed those of cast steel. Also, SLEEVLOC™ spherical roller bearing pillow blocks have solid bases beneath the bolt holes and thicker mounting feet.

The SLEEVLOC™ spherical roller bearing's multi-tapered sleeve provides a 360° "sleeve-length" shaft contact. Shock loads are distributed over a large area, creating ultra lock reliability.

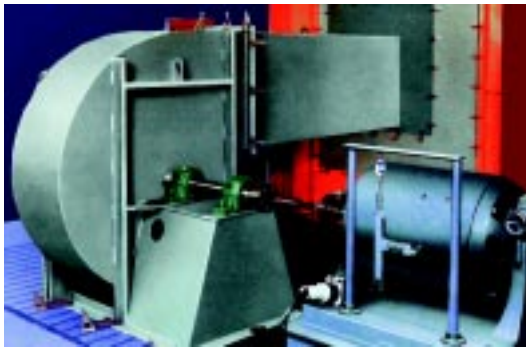
Proven Sealing

Saw dust, wood chips, and moisture constantly bombard machinery components. SEALMASTERS' double lip contact seals provide triple tier defense against bearing contamination. A metal shield guards the double lips from abrasion and wear. Behind the shield, two rows of elastic lips help seal the bearing against moisture and particles.

Misalignment

Sawmill equipment is fabricated from many components. Shafts don't always remain in alignment upon installation i.e. metal slightly deforming, tolerance inconsistencies. In addition, the heavy shock loading deforms the equipment's frame over time creating misalignment. SEALMASTER® SLEEVLOC™ spherical roller bearings have a misalignment capability of ± 1 ½° that helps overcome dynamic alignment problems associated with lumber applications.

APPLICATIONS
HVAC Fans & Blowers



Companies everywhere rely on huge blowers to ventilate and control the climates of sky scrapers and immense manufacturing plants. Ductwork, miles long, amplifies noise from the HVAC equipment through entire buildings. In other air moving applications, equipment is used in manufacturing processes to quickly heat and cool gases or liquids. Giant propeller blades accelerate from rest, producing momentary shock loading.

SLEEVLOC™ spherical roller bearings perform well in HVAC fan & blower applications because…

Quiet & Balancing Out Noise
During fan and blower maintenance and production, balancing is required to remove excess vibrations and noise. SLEEVLOC™ spherical roller bearing's concentricity aids in the balancing process and lowers noise.

Ultra Lock Reliability
There is little tolerance for equipment breakdown during the 24 hour, year-round operation of HVAC systems. The SLEEVLOC™ spherical roller bearing's multi-tapered sleeve provides a 360° "sleeve-length" shaft contact. This massive amount of surface support limits metal fretting and produces a positive grip. Also, it is designed to hold on during quick start-up shock loading. Additionally, SLEEVLOC™ spherical roller bearings have no back-and-forth set screw rubbing that wears down the screws like in traditional set screw locks.

The easy installation procedure facilitates quick and correct installation. The use of commercial grade shafting shouldn't create a performance issue.

And, the 3000 series SLEEVLOC™ spherical roller bearings have ductile iron housings that contain more material in the critical areas to help withstand shock loads created from fast start-ups and stopping.

Misalignment
Air handling equipment is fabricated from light weight metal frames and constructed from many components. Shafts don't always remain in alignment upon installation i.e. metal slightly deforming, tolerance inconsistencies. SEALMASTER® SLEEVLOC™ spherical roller bearings have a misalignment capability of ± 1 ½° that helps overcome static alignment problems associated with HVAC Fans & Blowers.

Proven Sealing
The double lip contact seal standard with SLEEVOC™ spherical roller bearings provides barriers to moisture and dust. In the future, felt seals from SEALMASTER® will be optional.

SEALMASTER® SLEEVLOC™ SPHERICAL ROLLER BEARINGS

APPLICATIONS
Bulk Material Handling

Aggregate conveyors move stone and rock between the primary, secondary, and tertiary crushers and transport finished product into trucks for construction projects. Grain handling equipment carries rice, soybeans, wheat, corn, or alfalfa to storage bins via bucket elevators or screw conveyors.

SLEEVLOC™ spherical roller bearings perform well in bulk material handling applications because…

Heavy Loading & Vibration

Screw conveyors extend hundreds of feet vertically pushing grains to storage bins. The aggregate weight can sum to thousands of pounds of thrust and radial loading. Properly selected SLEEVLOC™ spherical roller bearings can accommodate these conditions. Stone and rocks drop onto conveyors producing shock loads and vibrations. The SLEEVLOC™ spherical roller bearing's multi-tapered sleeve provides a 360° "sleeve-length" shaft contact. Shock loads are distributed over a large area, creating ultra lock reliability.

The 3000 series SLEEVLOC™ spherical roller bearings have ductile iron housings that contain more material in the critical areas to help withstand shock loads. Ductile iron was selected as a high strength alternative to cast iron because it has material properties that even exceed those of cast steel. SLEEVLOC™ spherical roller bearing pillow blocks have solid bases beneath the bolt holes and thicker mounting feet.

Proven Sealing

Bulk applications often involve outdoor environmental factors such as temperature, humidity and abrasion. Rock debris, dust, and dirt constantly build up on bearing seals. SEALMASTER double lip contact seals provide triple tier defense against bearing contamination. A metal shield guards the double lips from abrasion and wear. Behind the shield, two rows of elastic lips help seal the bearing against moisture and particles.

Misalignment

Bulk equipment is manufactured from welded structural steel components. Shafts don't always remain in alignment upon installation i.e. metal slightly deforming, tolerance inconsistencies. SEALMASTER® SLEEVLOC™ spherical roller bearings have a misalignment capability of ± 1 ½° that helps overcome static alignment problems associated with bulk material handling conveyors.

RATINGS

SLEEVLOC™ Spherical Roller Bearing's Life Calculations

This section outlines the formula used to select bearing size or calculate expected bearing life for SEALMASTER® spherical roller bearings.

SLEEVLOC™ Spherical Roller Bearings

SLEEVLOC™ spherical roller bearings are excellent for applications where radial loads exceed the capabilities of a ball bearing or the speed limits of a tapered roller bearing.

Bearing Symbols for Spherical Life Calculations

C = Basic Dynamic Rating (lbs) 1,000,000 revolutions
P = Equivalent Radial Load (lbs)
L10 = Rated Life (hrs)
Fa = Applied Thrust Load
Fr = Applied Radial Load
n = Speed RPM
X = Radial Factor
Y = Thrust Factor
e = Geometry Ratio

TABLE 1.0 Shock/Vibration Factor

Steady Loading	1.0
Moderate Shock/Vibration	0.5
Heavy Shock/Vibration	0.3

Multiply the theoretical life by the above factors to determine derated theoretical life.

SLEEVLOC™ Spherical Roller Bearing Life Equation

$$L_{10} = \left(\frac{C}{P}\right)^{10/3} \times \frac{16{,}667}{n}$$

Combined Load Calculation

1. Select an initial spherical roller type and bore size.
2. Calculate Fa/Fr and compare the value to the "e" value found in Table 2.0. Fa/Fr must be less than 1.0.
3. Choose values for "X" and "Y" based on Step1 above from the appropriate Table 2.0 based on the spherical bearing type selected.
4. Calculate equivalent load using the following equation:

   P = XFr + YFa

5. Calculate the expected L10 life using the life equation above.
6. Determine if the calculated L10 meets application requirements.
7. If L10 is not acceptable, select another bearing size as appropriate and recalculate the L10 life. Continue this iterative process until an acceptable L10 is obtained.

NOTES:
1) Always use (1) fixed and (1) floating spherical roller bearing.
2) Max Thrust Load for all sizes is C/30 lbs.

TABLE 2.0 Combined Load X & Y Values

SLEEVLOC™ Bearings							
Shaft Size	Basic Dynamic Capacity	Static Capacity		Fa/Fr ≤ e		Fa/Fr > e	
	C	CO	e	X	Y	X	Y
1 7/16	20200	22000	0.28	1.0	2.4	0.67	2.5
1 1/2	20200	22000	0.28	1.0	2.4	0.67	2.5
1 11/16	17300	19800	0.26	1.0	2.6	0.67	2.5
1 3/4	17300	19800	0.26	1.0	2.6	0.67	2.5
1 15/16	19000	22500	0.24	1.0	2.8	0.67	2.8
2	19000	22500	0.24	1.0	2.8	0.67	2.8
2 3/16	25900	30800	0.24	1.0	2.8	0.67	2.8
2 7/16	33300	41100	0.24	1.0	2.8	0.67	2.8
2 1/2	33300	41100	0.24	1.0	2.8	0.67	2.8
2 11/16	41400	54000	0.22	1.0	3	0.67	2.8
2 3/4	41400	54000	0.22	1.0	3	0.67	2.8
2 15/16	41400	54000	0.22	1.0	3	0.67	2.8
3	41400	54000	0.22	1.0	3	0.67	2.8
3 7/16	56900	76400	0.23	1.0	2.9	0.67	2.8
3 1/2	56900	76400	0.23	1.0	2.9	0.67	2.8
3 11/16	69900	93300	0.24	1.0	2.8	0.67	2.8
3 15/16	69900	93300	0.24	1.0	2.8	0.67	2.8
4	69900	93300	0.24	1.0	2.8	0.67	2.8

SLEEVLOC™ SPHERICAL ROLLER BEARINGS

SLEEVLOC™ Spherical Roller Bearing's load capacity for a given L10 life, speed and shaft size. Values in the table represent loads at ideal conditions. The shaded areas indicate the maximum speed for the Double Lip Contact Seal.

TABLE 3.0 Load Ratings

Size	Rating		L10 Hours	50	100	150	250	500	750	1000	1500	1750	2000	2500	Max. Speed
1 7/16 1 1/2	20200		5000	6447	6447	6447	5531	4493	3978	3649	3231	3085	2964	2772	2500
			10000	6447	5914	5237	4493	3649	3231	2964	2625	2506	2408	2252	
			30000	5237	4254	3767	3231	2625	2324	2132	1888	1802	1732	1620	
			50000	4493	3649	3231	2772	2252	1994	1829	1620	1546	1486	1389	
			100000	3649	2964	2625	2252	1829	1620	1486	1315	1256	1207	1129	
1 11/16 1 3/4	17300		5000	5522	5522	5522	4737	3848	3407	3125	2767	2642	2539		2300
			10000	5522	5065	4485	3848	3125	2767	2539	2248	2146	2062		
			30000	4485	3643	3226	2767	2248	1990	1826	1617	1544	1483		
			50000	3848	3125	2767	2374	1929	1708	1566	1387	1324	1272		
			100000	3125	2539	2248	1929	1566	1387	1272	1127	1076	1033		
1 15/16 2	19000		5000	6064	6064	6064	5203	4226	3742	3433	3039	2902	2788		2150
			10000	6064	5563	4926	4226	3433	3039	2788	2469	2357	2265		
			30000	4926	4001	3543	3039	2469	2186	2005	1776	1695	1629		
			50000	4226	3433	3039	2608	2118	1875	1720	1523	1454	1397		
			100000	3433	2788	2469	2118	1720	1523	1397	1237	1181	1135		
2 3/16	25900		5000	8267	8267	8267	7092	5761	5101	4679	4143	3956	3801		2000
			10000	8267	7583	6715	5761	4679	4143	3801	3365	3213	3087		
			30000	6715	5454	4829	4143	3365	2980	2734	2420	2311	2220		
			50000	5761	4679	4143	3555	2887	2557	2345	2077	1983	1905		
			100000	4679	3801	3365	2887	2345	2077	1905	1687	1610	1547		
2 7/16 2 1/2	33300		5000	10629	10629	10629	9119	7407	6558	6016	5327	5086			1800
			10000	10629	9750	8633	7407	6016	5327	4887	4327	4131			
			30000	8633	7012	6209	5327	4327	3831	3515	3112	2971			
			50000	7407	6016	5327	4570	3712	3287	3015	2670	2549			
			100000	6016	4887	4327	3712	3015	2670	2449	2169	2071			
2 11/16 2 3/4 2 15/16 3	41400	41400	5000	13214	13214	13214	11337	9208	8154	7479	6623				1600
			10000	13214	12122	10733	9208	7479	6623	6075	5379				
			30000	10733	8718	7720	6623	5379	4763	4369	3869				
			50000	9208	7479	6623	5682	4615	4086	3749	3319				
			100000	7479	6075	5379	4615	3749	3319	3045	2696				
3 7/16 3 1/2	56900		5000	18161	18161	18161	15581	12656	11206	10280					1400
			10000	18161	16660	14752	12656	10280	9102	8350					
			30000	14752	11982	10610	9102	7393	6547	6005					
			50000	12656	10280	9102	7809	6343	5616	5152					
			100000	10280	8350	7393	6343	5152	4562	4185					
3 11/16 3 15/16	69900		5000	22311	22311	22311	19141	15547	13767	12628					1250
			10000	22311	20466	18122	15547	12628	11182	10257					
			30000	18122	14720	13034	11182	9083	8042	7377					
			50000	15547	12628	11182	9593	7792	6900	6329					
			100000	12628	10257	9083	7792	6329	5604	5141					
4	69900		5000	22311	22311	22311	19141	15547	13767	12628					1250
			10000	22311	20466	18122	15547	12628	11182	10257					
			30000	18122	14720	13034	11182	9083	8042	7377					
			50000	15547	12628	11182	9593	7792	6900	6329					
			100000	12628	10257	9083	7792	6329	5604	5141					

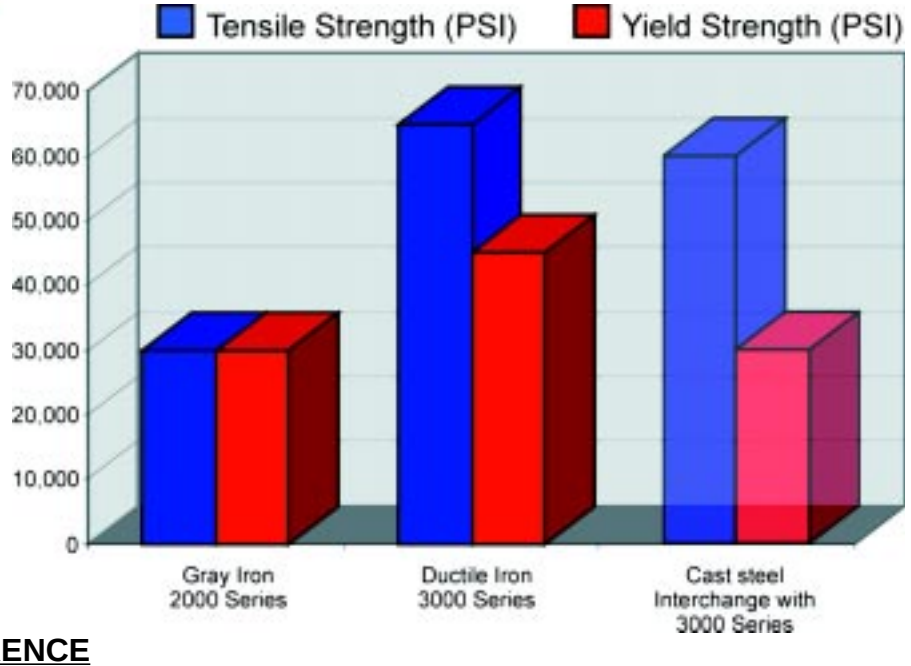
HIGH STRENGTH HOUSINGS

SEALMASTER® SLEEVLOC™ spherical roller bearings are available in two housing materials

(See chart below for strength comparison)

1) 2000 Series Cast Iron - Recommended for general industrial applications with low to moderate shock loading.
2) 3000 Series Ductile Iron - Recommended for demanding applications that experience frequent shock loading. Performs well in lumber and saw mill applications.

3000 SERIES SLEEVLOC™ SPHERICAL ROLLER BEARINGS DUCTILE IRON ADVANTAGE



THE DUCTILE IRON DIFFERENCE

Ductile iron was selected as a high strength alternative to cast iron for demanding applications because ductile iron has material properties that even exceed those of cast steel. As shown above, ductile iron has higher tensile and yield strengths than commonly used cast steel. The advantage in plain terms is that the 3000 series SEALMASTER® SLEEVLOC™ spherical roller bearings have the strength and ductility to perform in demanding applications.

SLEEVLOC™ Spherical Roller Bearing Lubrication

Table 5.0 Lubrication Specifications

Thickener	Lithium 12 Hydroxy Stearate
Oil	Petroleum
Thickness	NLGI 2
Operating Temp	-20° F to 200° F Intermittent to 250° F
EP Addtive	Yes

Consult EPT® Mounted Bearing Tech Support at 630-898-9620 for current grease specifications.
Grease compatibility is critical. Relubricate with a grease that is compatible with grease supplied from the factory. Consult your grease supplier for compatibility.

Table 6.0 Recommended Lubrication Schedule

Speed	Temperature	Cleanliness	Greasing Interval
100 rpm	-20° F to 125° F	Clean	1-4 months
500 rpm	-20° F to 150° F	Clean	1 week to 1 month
1000 rpm	-20° F to 210° F	Clean	1-2 weeks
1500 to Maximum Catalog Rating	-20° F to 150° F 150° F to 200° F -20° F to 200° F -20° F to 200° F	Dirty Dirty Very Dirty Extreme Conditions	Daily to 1 week Daily to 1 week Daily to 1 week Daily to 1 week

Table 7.0 Lubrication Quantity

Shaft Size (Inches)	Grease Charge Fl Oz
1 7/16,1 1/2	.22
1 11/16, 1 3/4	.32
1 15/16, 2	.5
2 3/16	.55
2 7/16, 2 1/2	.65
2 11/16 to 3	.85
3 7/16, 3 1/2	1.25
3 11/16, 3 15/16, 4	2.5

These charts are general recommendations. Experience and testing is required for specific applications. For speeds, temperatures, and conditions not listed in these tables, please contact EPT® Mounted Bearing Tech Support at 630-898-9620.

INSTALLATION

SEALMASTER® SLEEVLOC™ SPHERICAL ROLLER BEARINGS

1 Check shaft Tolerance. Shaft should be within Tolerance range shown in Table 8.0.

2 Shaft must be in Alignment within ±1.5˚.

3 Fixed and Float bearing systems are recommended. Fixed (Non-Expansion) bearings fix the shaft's position axially. Float (Expansion) bearings allow for mounting variables & normal heat-growth of the shaft. Ideally, the expansion bearing should be located on the shaft end furthest from a drive. Two non-expansion bearings may be used where shaft growth and deflection are minimal. For application review consult SEALMASTER® Technical Customer Service (630-898-9620).

4 Snug down all set screws on mounting side of bearing until wrench can be bent.

5 Insert short end of wrench on front of Easy Installation Tool and align wrench with start line as shown.

6 Tighten set screws by bending wrench to control line while holding card in place or to 65 in-lbs. Tighten set screws down in order shown on corresponding patterns.

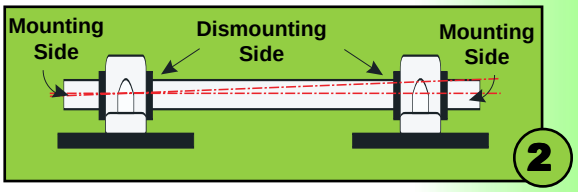
7 Repeat Step 6 until all set screws are tightened.

8 Securely tighten housing mounting bolts in place at final assembly. Monitor for excessive heat or vibration during operation.

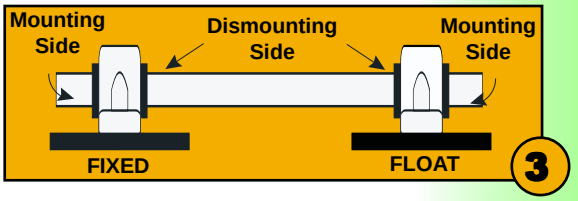
Table 8.0 Shaft Tolerance

Bore	Shaft Tolerance (Inches)	
	Min	Max
Up to 1 15/16"	-0.003	+0.000
2 3/16" and Up	-0.004	+0.000

1

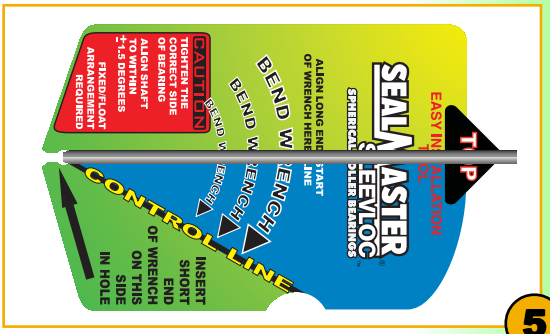


2



3


4



5

6

TIGHTEN SET SCREWS USING THE CORRESPONDING PATTERN

Bore Sizes 1 7/16"- 2 3/16"

Bore Sizes 2 7/16"- 3"

Bore Sizes 2 15/16" - 3"

Bore Sizes 3 7/16" - 4"

REMOVAL

CAUTION

Be careful not to strike the bearing or any of its components. Doing so will increase the possibility of internal bearing damage or fracture of one or more of the bearing components.

PILLOW BLOCKS

1. Make sure the exposed shaft extension is free from rust and burrs.
2. Loosen the housing attachment bolts on one of the two bearing units on the shaft.
3. Switch location to the other bearing on the shaft. Loosen the small installation hex screws on the side marked “MOUNTING”, 3-4 turns.
4. Strike the end of the shaft (where the loosened hex screw bearing is) with a sharp blow. This should free the bearing lock.
5. Remove the housing attachment bolts and slide the unit off the shaft. Switch location. Loosen the small hex installation (MOUNTING SIDE) set screws 3-4 turns and tighten the housing attachment bolts.
6. Repeat the sharp blow to the end of the shaft.

FLANGE UNITS

1. Make sure the shaft extension is free from rust and burrs.
2. Loosen the housing attachment bolts on one unit.
3. Switch location to the other bearing on the shaft. Loosen the housing attachment bolts and small hex installation set screws.
4. Pull the bearing housing away from the mounting surface until the bearing frees.
5. Switch location. Loosen the small hex installation set screws.
6. Strike the end of the shaft with a sharp blow. This should free the bearing lock.
7. Remove the housing attachment bolts and slide the unit off the shaft.

USING DISMOUNTING SCREWS

Note: This procedure will only work with units where the dismounting screws are accessible, namely pillow blocks and take-ups.

Follow steps 1-3 as above.

A. Using a screw driver or other suitable tool, remove the 2 plastic protection plugs.
B. Alternately tighten the dismounting hex set screws in 1/4 turn increments until the bearing is released from the shaft.
C. Loosen the dismounting hex set screws, unbolt the unit and remove.

VIBRATION ANALYSIS

SLEEVLOC™ Spherical Roller Bearings - Vibration Analysis

The following is the procedure to be followed in calculating the fundamental frequencies for SLEEVLOC™ spherical roller bearings.

1. Select the vibration geometry information (O, I, B, F) from Table based on shaft size
2. Use this information to calculate the fundamental bearing frequencies by multiplying the factor in table below by the shaft speed (in RPM).

Outer Ball Pass Freq. (Hz)	=	O x RPM
Inner Ball Pass Freq. (Hz)	=	I x RPM
Ball Spin Freq. (Hz)	=	B x RPM
Fundamental Train Freq. (Hz)	=	F x RPM

Shaft Size (Inches)	Unit No 2XXX or 3XXX	Factor for Roller Spin O	Factor for Inner Roller Pass I	Factor for Outer Pass B	Factor for Fundamental Train (Shaft Rot.) F
1 7/16	107	0.091	0.1566	0.1101	0.0069
1 1/2	108	0.091	0.1566	0.1101	0.0069
1 11/16	111	0.1075	0.1628	0.1205	0.0071
1 3/4	112	0.1075	0.1628	0.1205	0.0071
1 15/16	115	0.1162	0.1803	0.1363	0.0072
2	200	0.1162	0.1803	0.1363	0.0072
2 3/16	203	0.1114	0.1717	0.1283	0.0071
2 7/16	207	0.114	0.1807	0.136	0.0072
2 1/2	208	0.114	0.1807	0.136	0.0072
2 11/16	211	0.117	0.1992	0.1508	0.0072
2 3/4	212	0.117	0.1992	0.1508	0.0072
2 15/16	215	0.117	0.1992	0.1508	0.0072
3	300	0.117	0.1992	0.1508	0.0072
3 7/16	307	0.1213	0.1889	0.1444	0.0072
3 1/2	308	0.1213	0.1889	0.1444	0.0072
3 15/16	315	0.1185	0.1799	0.1367	0.0072
4	400	0.1185	0.1799	0.1367	0.0072

All sales are made on our STANDARD TERMS AND CONDITIONS OF SALE in effect at the time a customer's order is accepted. The current Terms and Conditions are set forth below:

STANDARD TERMS AND CONDITIONS OF SALE (March 19, 1999)

These Terms and Conditions, the attendant quotation or acknowledgment and all documents incorporated by specific reference therein, will be the complete and exclusive statement of the terms of the agreement governing the sale of goods ("Goods") by **Emerson Power Transmission Corporation** and its divisions and subsidiaries ("Seller") to Customer ("Buyer"). Buyer's acceptance of the Goods will manifest Buyer's assent to these Terms and Conditions. If these Terms and Conditions differ in any way from the terms and conditions of Buyer's order, or other documentation, this document will be construed as a counteroffer and will not be deemed an acceptance of Buyer's terms and conditions which conflict herewith.

1. PRICES: Unless otherwise specified in writing by Seller, Seller's price for the goods shall remain in effect for thirty (30) days after the date of Seller's quotation or acknowledgment of Buyer's order for the Goods, whichever occurs first, provided an unconditional, complete authorization for the immediate shipment of the Goods is received and accepted by Seller within such time period. If such authorization is not received by Seller within such thirty (30) day period, Seller shall have the right to change the price for the Good to Seller's price for the Goods at the time of shipment.

2. TAXES: Any tax or governmental charge or increase in same hereafter becoming effective increasing the cost to Seller of producing, selling or delivering the Goods or of procuring material used therein, and any tax now in effect or increase in same payable by the Seller because of the manufacture, sale or delivery of the Goods, may at Seller's option, be added to the price.

3. TERMS OF PAYMENT: Subject to the approval of Seller's Credit Department, terms are net thirty (30) days from date of Seller's invoice in U.S. currency. If any payment owed to Seller is not paid when due, it shall bear interest, at a rate to be determined by Seller, which shall not exceed the maximum rate permitted by law, from the date on which it is due until it is paid. Seller shall have the right, among other remedies, either to terminate the Agreement or to suspend further performance under this and/or other agreements with Buyer in the event Buyer fails to make any payment when due. Buyer shall be liable for all expenses, including attorneys' fees, relating to the collection of past due amounts.

4. SHIPMENT AND DELIVERY: Shipments are made F.O.B. Seller's shipping point. Any claims for shortages or damages suffered in transit shall be submitted by the Buyer directly to the carrier. While Seller will use all reasonable commercial efforts to maintain the delivery date acknowledged or quoted by Seller, all shipping dates are approximate. Seller reserves the right to make partial shipments and to segregate "specials" and made-to-order Goods from normal stock Goods. Seller shall not be bound to tender delivery of any Goods for which Buyer has not provided shipping instructions.

5. QUANTITY: Buyer agrees to accept overruns of up to ten percent (10%) of the order on "made-to-order" Goods, including parts. Any such additional items shall be priced at the price per item charged for the specific quantity ordered.

6. LIMITED WARRANTY: Subject to the limitations of Section 7, Seller warrants that the Goods will be free from defects in material and workmanship under normal use, service and maintenance for a period of one year (unless otherwise specified by Seller in writing) from the date of shipment of the Goods by Seller. **THIS IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY SELLER WITH RESPECT TO THE GOODS AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHETHER OR NOT THE PURPOSE OR USE HAS BEEN DISCLOSED TO SELLER IN SPECIFICATIONS, DRAWINGS OR OTHERWISE, AND WHETHER OR NOT SELLER'S PRODUCTS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY SELLER FOR BUYER'S USE OR PURPOSE.**
This warranty does not extend to any losses or damages due to misuse, accident, abuse, neglect, normal wear and tear, unauthorized modification or alteration, use beyond rated capacity, or improper installation, maintenance or application. To the extent that Buyer or its agents has supplied specifications, information, representation of operating conditions or other data to Seller in the selection or design of the Goods and the preparation of Seller's quotation, and in the event that actual operating conditions or other conditions differ from those represented by Buyer, any warranties or other provisions contained herein which are affected by such conditions shall be null and void. If within thirty (30) days after Buyer's discovery of any warranty defects within the warranty period, Buyer notifies Seller thereof in writing, Seller shall, at its option, repair or replace F.O.B. point of manufacture, or refund the purchase price for, that portion of the goods found by Seller to be defective. Failure by Buyer to give such written notice within the applicable time period shall be deemed an absolute and unconditional waiver of Buyer's claim for such defects. Goods repaired or replaced during the warranty period shall be covered by the foregoing warranty for the remainder of the original warranty period or ninety (90) days, whichever is longer. Buyer assumes all other responsibility for any loss, damage, or injury to persons or property arising out of, connected with, or resulting from the use of Goods, either alone or in combination with other products/components.

SECTIONS 6 AND 7 APPLY TO ANY ENTITY OR PERSON WHO MAY BUY, ACQUIRE OR USE SELLER'S GOODS, INCLUDING ANY ENTITY OR PERSON WHO BUYS THE GOODS FROM SELLER'S DISTRIBUTOR AND SUCH ENTITY OR PERSON SHALL BE BOUND BY THE LIMITATIONS THEREIN.

7. LIMITATION OF REMEDY AND LIABILITY: **THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY WARRANTY HEREUNDER (OTHER THAN THE WARRANTY PROVIDED UNDER SECTION 13) SHALL BE LIMITED TO REPAIR, REPLACEMENT OR REFUND OF THE PURCHASE PRICE UNDER SECTION 6. SELLER SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE AND IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL SELLER'S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXCEED THE PRICE TO BUYER OF THE SPECIFIC GOODS PROVIDED BY SELLER GIVING RISE TO THE CLAIM OR CAUSE OF ACTION. BUYER AGREES THAT IN NO EVENT SHALL SELLER'S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXTEND TO INCLUDE INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES. THE TERM "CONSEQUENTIAL DAMAGES" SHALL INCLUDE, BUT NOT BE LIMITED TO, LOSS OF ANTICIPATED PROFITS, LOSS OF USE, LOSS OF REVENUE, COST OF CAPITAL AND DAMAGE OR LOSS OF OTHER PROPERTY OR EQUIPMENT.**
It is expressly understood that any technical advice furnished by Seller with respect to the use of the Goods is given without charge, and Seller assumes no obligation or liability for the advice given, or results obtained, all such advice being given and accepted at Buyer's risk.

GOODS AND/OR SERVICES SOLD HEREUNDER ARE NOT FOR USE IN ANY NUCLEAR AND RELATED APPLICATIONS. Buyer accepts goods and/or services with the foregoing understanding, agrees to communicate the same in writing to any subsequent purchaser or users and to defend, indemnify and hold harmless Seller from any claims, losses, suits, judgments and damages, including incidental and consequential damages, arising from such use, whether the cause of action be based in tort, contract or otherwise, including allegations that the Seller's liability is based on negligence or strict liability.

8. EXCUSE OF PERFORMANCE: Seller shall not be liable for delays in performance or for non-performance due to acts of God, acts of Buyer, war, riot, fire, flood, other severe weather, sabotage, or epidemics; strikes or labor disturbances; governmental requests, restrictions, laws, regulations, orders or actions; unavailability of or delays in transportation; default of suppliers; or unforeseen circumstances or any events or causes beyond Seller's reasonable control. Deliveries may be suspended for an appropriate period of time as a result of the foregoing. If Seller determines that its ability to supply the total demand for the Goods, or to obtain material used directly or indirectly in the manufacture of the Goods, is hindered, limited or made impracticable due to causes addressed in this Section 8, Seller may allocate its available supply of the Goods or such material (without obligation to acquire other supplies of any such Goods or material) among itself and its purchasers on such basis as Seller determines to be equitable without liability for any failure of performance which may result therefrom. Deliveries suspended or not made by reason of this section may be canceled by Seller upon notice to Buyer without liability, but the balance of the agreement shall otherwise remain unaffected.

9. CANCELLATION: The Buyer may cancel orders only upon written notice and upon payment to Seller of cancellation charges which include, among other things, all costs and expenses incurred and commitments made by the Seller and a reasonable profit thereon.

10. CHANGES: Buyer may request changes or additions to the Goods consistent with Seller's specifications and criteria. In the event such changes or additions are accepted by Seller, Seller may revise the price and delivery schedule. Seller reserves the right to change designs and specifications for the Goods without prior notice to Buyer, except with respect to Goods being made-to-order for Buyer.

11. TOOLING: Tool, die, and pattern charges, if any, are in addition to the price of the Goods and are due and payable upon completion of the tooling. All such tools, dies and patterns shall be and remain the property of Seller. Charges for tools, dies, and patterns do not convey to Buyer, title, ownership interests in, or rights to possession or removal, nor prevent their use by Seller for other purchasers, except as otherwise expressly provided by Seller and Buyer in writing with reference to this provision.

12. ASSIGNMENT: Buyer shall not assign its rights or delegate its duties hereunder or any interest therein or any rights hereunder without the prior written consent of the Seller, and any such assignment, without such consent, shall be void.

13. PATENTS AND COPYRIGHTS: Subject to Section 7, Seller warrants that the Goods sold, except as are made specifically for Buyer according to Buyer's specifications, do not infringe any valid U.S. patent or copyright in existence as of the date of delivery. This warranty is given upon the condition that Buyer promptly notify Seller of any claim or suit involving Buyer in which such infringement is alleged, and, that Buyer cooperate fully with Seller and permit Seller to control completely the defense or compromise of any such allegation of infringement. Seller's warranty as to use only applies to infringements arising solely out of the inherent operation (i) of such Goods, or (ii) of any combination of Goods in a system designed by Seller. In the event such Goods, singularly or in combination, are held to infringe a U.S. patent or copyright in such suit, and the use of such Goods is enjoined, or in the case of a compromise by Seller, Seller shall have the right, at its option and expense, to procure for Buyer the right to continue using such Goods, or replace them with non-infringing Goods; or modify same to become non-infringing; or grant Buyer a credit for the depreciated value of such Goods and accept return of them.

14. MISCELLANEOUS: These terms and conditions set forth the entire understanding and agreement between Seller and Buyer, and supersede all other communications, negotiations and prior oral or written statements regarding the subject matter of these terms and conditions. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions of Sale shall be binding upon the Seller unless made in writing and signed on its behalf by an officer of the Seller. No conditions, usage or trade, course of dealing or performance, understanding or agreement purporting to modify, vary, explain, or supplement these Terms and Conditions shall be binding unless hereafter made in writing and signed by the party to be bound, and no modification shall be affected by the acceptance of purchase orders or shipping instruction forms containing terms at variance with or in addition to those set forth herein. No waiver by Seller with respect to any breach or default or any right or remedy and no course of dealing, shall be deemed to constitute a continuing waiver of any other breach or default or of any other right or remedy, unless such waiver be expressed in writing and signed by the party to be bound. Seller is not responsible for typographical or clerical errors made in any quotation, orders or publications. All such errors are subject to correction. The validity, performance, and all other matters relating to the interpretation and effect of this contract shall be governed by the law of the state of New York.

EMERSON POWER TRANSMISSION

Browning®
Helical Speed
Reducers & Gearmotors

SEALMASTER®
Mounted Ball Bearings

Morse™
Clutches

Browning®
Shaft Mount Reducers

SEALMASTER®
Mounted Roller Bearings

ROLLWAY®
Roller Bearings

Browning®
V-Belt Drives

Morse™
Chain

KOP-FLEX®
Couplings

Van Gorp®
Conveyor Pulleys

Morse™
Worm Gearing

McGILL®
Precision Bearings

**FOR ORDERING INFORMATION,
CONTACT YOUR AUTHORIZED
SEALMASTER DISTRIBUTOR OR
CONTACT SEALMASTER CUSTOMER SERVICE**

MORSE & SEALMASTER
7120 Buffington Rd.
P.O. Box 728
Florence, KY 41022
Telephone 606-342-7900
1-800-354-9825
Fax 606-342-5652
606-342-5654

OTHER EPT CUSTOMER SERVICE CENTERS

BROWNING, KOP-FLEX & VAN GORP
Maysville, KY 41056
Telephone 606-564-2011
1-800-626-2120
Fax 606-564-2052
1-800-262-3292

McGILL MANUFACTURING CO., INC.
909 North Lafayette St.
Valparaiso, IN 46383
Telephone 219-465-2200
Fax 219-465-2290

EMERSON POWER TRANSMISSION – WEST
3553 Placentia Ct.
Chino, CA 91710
Telephone 909-591-9561
1-800-468-3751
Other 1-800-421-6047
Fax 909-465-1955
1-800-261-6516

KOP-FLEX, INC.
P.O. Box 1696
Baltimore, MD 21203
Telephone 410-768-2000
Fax 410-787-8433

LIPE-ROLLWAY CORPORATION
P.O. Box 4827
Syracuse, NY 13221
Telephone 315-457-6211
Fax 315-451-8596
1-800-448-2260

EMERSON POWER TRANSMISSION – CANADA
9999 Highway 48
Markham, ONT L3P 3J3
Telephone 905-294-9330
1-800-268-4149
Fax 1-800-668-9005

EMERSON POWER TRANSMISSION – EXPORT
7120 Buffington Rd.
Florence, KY 41042
Telephone 606-727-5273
Fax 606-727-0721

Form #8661 8/99 25M
Printed in U.S.A.

www.emerson-ept.com