



ITT

Z-Series Cylinders



Engineered for life

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Engineering Data

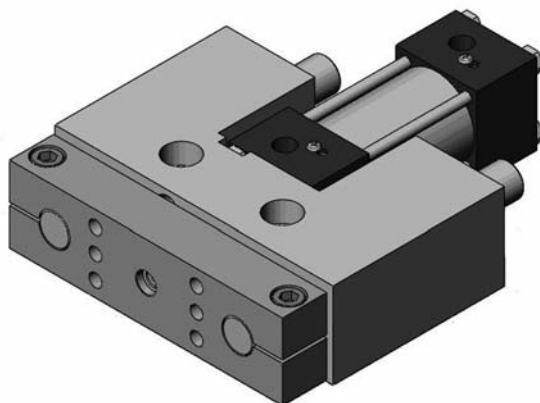
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Z Series Slide Features

ZD Series Slide



CYLINDER STYLE

- Tie Rod Cylinder

GUIDE ROD MATERIALS

- Standard Hardened Carbon Steel
- Hardened Stainless Steel
- Ceramic Coated Light Weight Aluminum
- Corrosion Resistant Coated Hardened

GUIDE ROD/BUSHING DIAMETERS

- Standard – solid performance with linear ball or composite bushings
- Oversize – greatest rigidity with minimal deflection

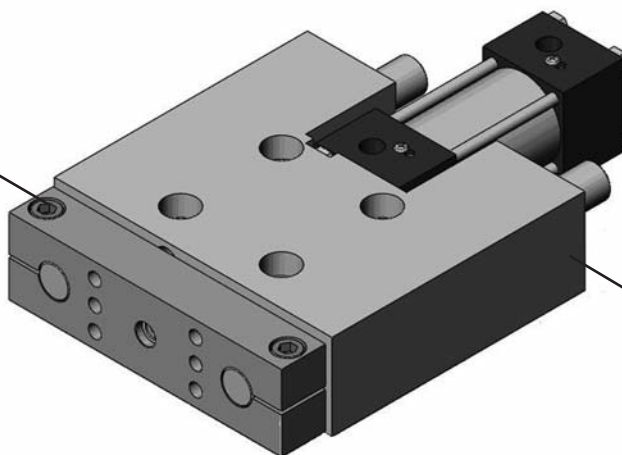
TOOLING PLATE

- Pinch type tooling plate connection improves rigidity providing a sturdy system ideal for precise movement and accurate location

ZE Series Slide

GUIDE BUSHINGS

Composite or Linear ball



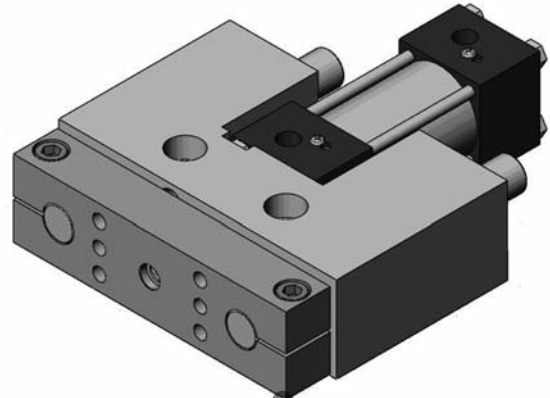
ZE Series (Long Body)

Offers greater distance between the bearings, longer travel and higher load

ZD and ZE Series

GUIDED SLIDES:

- **Cylinders - Tie Rod Cylinder**
 - Available Bores 1-1/8", 1-1/4", 1-1/2" and 2".
- **Slide Bodies - Anodized machined aluminum**
 - ZD (Short Body) perfect for tight space and shorter travel where size and weight are critical.
 - ZE (Long Body) the longer body spreads the distance between the guide bushings, contributes to rod rigidity, best for longer strokes and higher load applications.
- **Guide Bushings Types - (2 per Guide Rod)**
 - Linear Ball with shaft seals, high precision.
 - Composite (fluoropolymer) Internally lubricated, high performance and cost effective.
- **Guide Rod Types**
 - Hard precision ground shafts provide smooth tooling plate motion under load.
 - Oversize shafting utilized with composite bearing for greater rigidity with minimum rod deflection.
- **Guide Rod Materials (Precision Ground - Class 1)**
 - Standard hardened steel.
 - Hardened stainless steel.
 - Corrosion resistant coated hardened steel
 - Aluminum ceramic coated light weight



- **Tooling Plates**
 - Machined mounting face
 - Combination tapped and counterbored mounting holes
 - Close fit dowel pin holes
 - Pinch type tooling plate connection
- **Options**
 - Shock pads
 - Stop collars
 - Shock absorber mounting
 - Proximity switch ready
 - Reed & solid state switches available
 - Normal fit dowel pin holes available

Quick Reference

Piston Area (in ²)				
Size	Bore	Extend	Retract	Pist. Rod Diam.
23	1-1/8"	1.00	.80	5/16"
24	1-1/4"	1.23	1.12	3/8"
25	1-1/2"	1.77	1.62	5/8"
26	2"	3.14	2.95	5/8"

Port Size	
Slide Size	Standard Port Size
23	1/8 NPT
24	1/8 NPT
25	3/8 NPT
26	3/8 NPT

BEARING TYPE	GUIDE ROD DIAMETERS	CYLINDER BORE
Linear Ball	1/2"	1-1/8"
Std Composite	1/2"	
Oversize Composite	5/8"	
Linear Ball	5/8"	1-1/4"
Std Composite	5/8"	
Oversize Composite	3/4"	
Linear Ball	3/4"	1-1/2"
Std Composite	3/4"	
Oversize Composite	1"	
Linear Ball	1"	2"
Std Composite	1"	
Oversize Composite	1-3/8"	

How to Order: Z Series Slides

SERIES	BODY STYLE	BUSHING TYPE	SIZE	SLIDE TRAVEL	TOOLING PLATE GAP	OPTIONS	OPTIONS
Z	D	B	24	2.25	2	Q	AR
1	2	3	4	5	6	7	7

1 Series

Z	Slide
----------	-------

2 Body Style

D	Short Body
E	Long Body

3 Bushing Type

B	Linear Ball Bushings
C	Standard Composite Bushings
D	Oversize Composite Bushings

4 Size

Size	Guide Rod Diameter		
	Standard	Oversize	Bore
23	1/2"	5/8"	1-1/8"
24	5/8"	3/4"	1-1/4"
25	3/4"	1"	1-1/2"
26	1"	1-3/8"	2"

5 Slide Travel (Ex. 2-1/4" = 2.25")
Slide Type - Travel Range

Body Style 'D'	
23	.25 inch to 14.00 inches
24	.25 inch to 18.00 inches
25	.25 inch to 18.00 inches
26	.25 inch to 20.00 inches
Body Style 'E'	
23	.25 inch to 18.00 inches
24	.25 inch to 20.00 inches
25	.25 inch to 20.00 inches
26	.25 inch to 20.00 inches

Available in .25" increments.
CF for longer travel lengths.

6 Tooling Plate Gap

Additional distance between tooling plate and bearing block in 1" increments.

Example 2 = 2 inches
(specify only if needed)

7 Options
Cylinder Options

Z1	Nickel Plating (All Parts Except Rods and Fasteners ¹)
Q	Hardened Stainless Steel Guide Rods
Q1	Corrosion Resistant Coating- Guide Rods
M	Magnetic Piston ²
U7	Ports and Cushions- Position 3
V1	Flourelastomer Seals
DB	Cushions- Both Ends ²

NOTES:

- Requires "Q", "Q1" in addition. Piston Rod will be Stainless Steel.
- The selection of this option will affect the overall length of the slide.

7 Options
Mount Options

GX	Side Mount- Position 4
GV	Side Mount- Position 2
J2	Dowel Pin in Tooling Plate- Normal Fit
J6	Dowel Pins in Body- Normal Fit

Switches (Includes Mtg Brkt.) (for use with 1-1/8" Bore)		Switches (Includes Mtg Brkt.) (for use with 1-1/4" Thru 2" Bore)	
Part#	Description	Part#	Description
KL690	Reed	KL690-4	Reed
KL691	PNP	KL691-4	PNP
KL692	NPN	KL692-4	NPN
KL693*	Reed QD	KL693*-4	Reed QD
KL694*	PNP QD	KL694*-4	PNP QD
KL695*	NPN QD	KL695*-4	NPN QD
A201A	Cordset Only	A201A	Cordset Only

*Includes 5 meter cordset.

Options- Z Series

7 Options^{4,7}
Stop Collar Options

Std*	Quiet*	
AR	AT	Stop Collar w/ Bumper Retract only.
AE	AS	Stop Collar w/ Bumper Extend only.
GG	G22	Stop Collar w/ Bumper- Ext with Prox. Provision for Both Extend and Retract.
GH	G23	Stop Collar w/ Bumper- Ret. with Prox. Provision for Retract only.
GI	G24	Stop Collar w/ Bumper- Both with Prox. Provision for Both Extend and Retract.

NOTES:

4. "Quiet" Bumper end of stroke location may vary due to compression of the bumper material.

* The "Standard" Bumper is a 95a durometer urethane that significantly reduces noise.
The "Quiet" Bumper is a 50a durometer soft urethane, which will compress to absorb end of stroke impact.

7 Options^{5,6,7,8}
Shock and Sensing Options

GM	Provision for Shock- Extend
GN	Provision for Shock- Retract
GO	Provision for Shock- Both
G2	Shock and 8mm Prox. Ready- Both
G3	Shock and 8mm Prox. Ready- Ext.
G4	Shock and 8mm Prox. Ready- Ret.
G12	Shock and 12mm Prox. Ready-Both
G13	Shock and 12mm Prox. Ready-Ext.
G14	Shock and 12mm Prox. Ready-Ret.

NOTES:

5. Shock absorbers and proximity switches must be ordered separately for options GM, GN, GO, G2, G3, G4, G12, G13, and G14.
6. Options GM, GN and GO provide for the the mounting of shock absorbers. It includes guide rod mounted shock stop plates, a stop collar on the opposite guide rod, and slide body mounting holes for the shock absorbers brackets. (DOES NOT INCLUDE THE SHOCK ABSORBERS or MOUNTING BRACKETS).

7 Options^{4,9}
Bumper Options

Std*	Quiet*	
BR	BJ	Bumper Retract
BS	BK	Bumper Extend when combined with GM, GO, G2, G3, G12, G13 Options.
BT	BL	Bumper Retract when combined with GN, GO, G2, G4, G12, G14 Options.

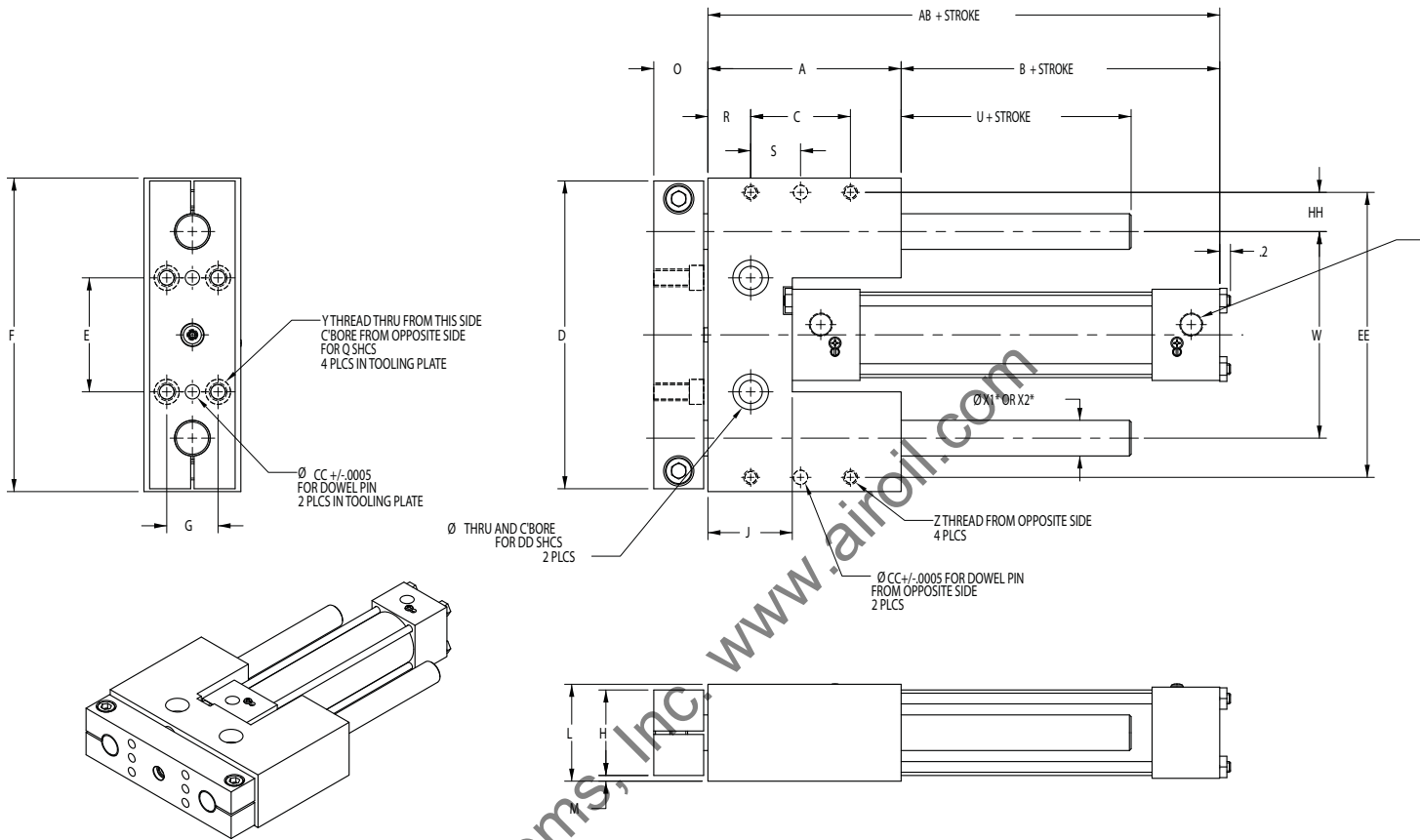
NOTES:

7. Travel Adjustment Options, Bumper Options, Shock Options, and Sensing Options affect the overall length of the slide.
8. G2, G3, G4, G12, G13, and G14 are Shock and Prox. Ready Options These include the mounting holes and shock bracket, guide rod mounted shock stop, stop collar mounted on the opposite guide rod, and mounted prox. bracket, and target. (DOES NOT INCLUDE THE SHOCK ABSORBER or PROX. SWITCH).
9. Tooling plate extension is not available with bumper option (BR & BJ).

Stop & Travel Adjustments Kits*						
	Bumper	Guide Rod	Slide Size			
			23	24	25	26
Travel Adjustment -AR or -AE	Standard	Standard	KARS23	KARS24	KARS25	KARS26
		Oversize	KARO23	KARO24	KARO25	KARO26
Travel Adjustment -AT or -AS	Quiet	Standard	KATS23	KATS24	KATS25	KATS26
		Oversize	KATO23	KATO24	KATO25	KATO26
Prox & Trav adj -GG or -GH	Standard	Standard	KAGS23	KAGS24	KAGS25	KAGS26
		Oversize	KAGO23	KAGO24	KAGO25	KAGO26
Travel Adjustment -G22 or -G23	Quiet	Standard	KG2S23	KG2S24	KG2S25	KG2S26
		Oversize	KG2O23	KG2O24	KG2O25	KG2O26
Shock Absorber Stop -GM or -GN	N/A	Standard	KGMS23	KGMS24	KGMS25	KGMS26
		Oversize	KGMO23	KGMO24	KGMO25	KGMO26

*For Models with "Z1" Option add "Z" to the end of the kit # (Ex: KARS22 becomes KARS22Z).

Dimensional Data- ZD Series



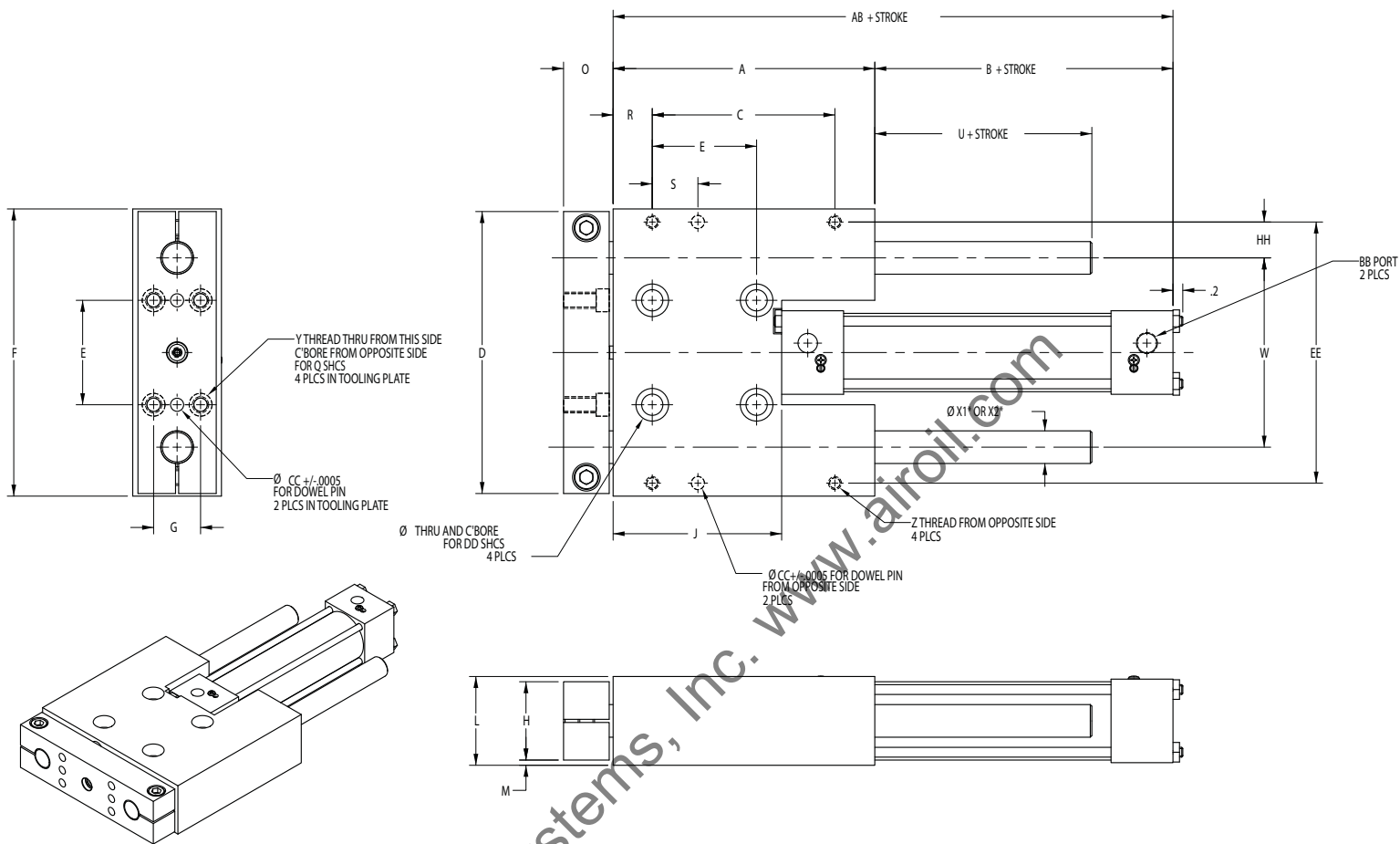
Dimensional Specifications ZD Slide

Bore	Size	A	B	C	D	E	F	G	H	J	L	M	O	Q	R
1-1/8	23	2.875	1.61	1.500	4.720	1.875	4.820	0.750	1.250	0.980	1.500	0.125	0.950	#10	0.625
1-1/4	24	3.390	1.59	1.750	5.400	2.000	5.500	0.900	1.500	1.480	1.700	0.100	0.950	1/4	0.750
1-1/2	25	3.650	1.48	1.750	6.450	2.375	6.550	1.300	2.000	1.500	2.200	0.100	1.200	5/16	0.875
2	26	5.000	.33	3.000	8.375	3.125	8.500	1.625	2.500	1.700	2.750	0.125	1.450	3/8	1.000

Dimensional Specifications ZD Slide

Bore	Size	S	U	V	W	X1	X2	Y	Z	AB	BB	CC	DD	EE	HH
1-1/8	23	0.750	0.000	1.125	3.250	0.500	0.625	1/4-20	1/4-20	4.48	1/8 NPT	1/4	5/16	4.330	0.540
1-1/4	24	0.875	0.035	1.312	3.625	0.625	0.750	5/16-18	1/4-20	4.98	1/8 NPT	1/4	3/8	5.000	0.688
1-1/2	25	0.875	0.025	1.562	4.250	0.750	1.000	3/8-16	3/8-16	5.13	3/8 NPT	3/8	3/8	5.875	0.813
2	26	1.500	0.175	2.062	5.750	1.000	1.375	1/2-13	3/8-16	5.33	1/4 NPT	3/8	1/2	7.750	1.000

Dimensional Data- ZE Series



Dimensional Specifications ZE Slide

Bore	Size	A	B	D	E	F	G	H	J	L	M	O	Q	R	
1-1/8	23	4.765	1.72	3.500	4.720	1.875	4.820	0.750	1.250	2.980	1.500	0.125	0.950	#10	0.625
1-1/4	24	5.015	1.72	3.500	5.400	2.000	5.500	0.900	1.500	3.230	1.700	0.100	0.950	1/4	0.750
1-1/2	25	5.765	1.61	4.000	6.450	2.375	6.550	1.300	2.000	3.750	2.200	0.100	1.200	5/16	0.875
2	26	8.000	.33	6.000	8.375	3.125	8.500	1.625	2.500	4.700	2.750	0.125	1.450	3/8	1.000

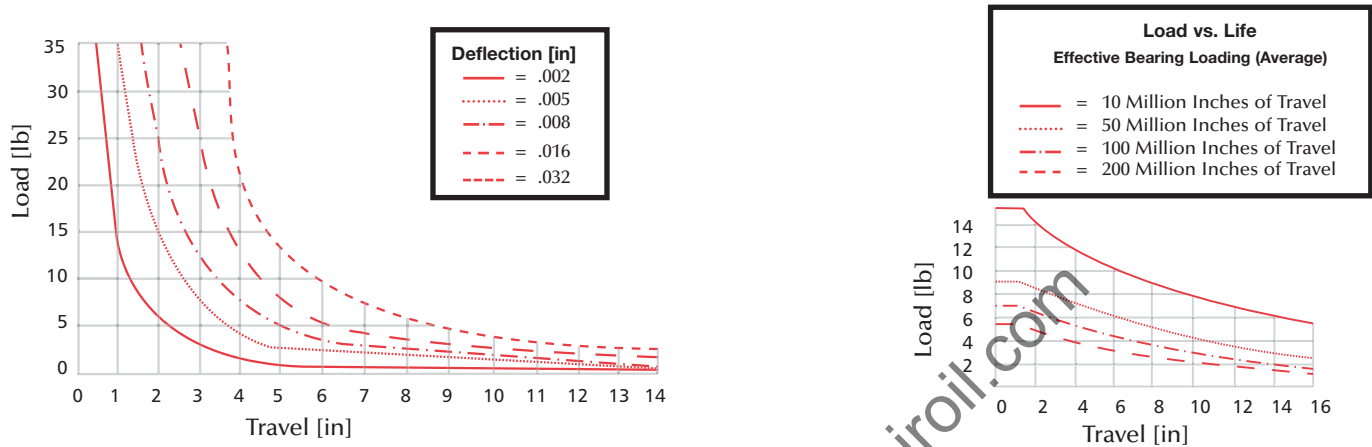
Dimensional Specifications ZE Slide

Bore	Size	S	U	V	W	X1	X2	Y	Z	AB	BB	CC	DD	EE	HH
1-1/8	23	0.750	0.160	1.125	3.250	0.500	0.625	1/4-20	1/4-20	6.48	1/8 NPT	1/4	5/16	4.330	0.540
1-1/4	24	0.875	0.160	1.312	3.625	0.625	0.750	5/16-18	1/4-20	6.43	1/8 NPT	1/4	3/8	5.000	0.688
1-1/2	25	0.875	0.160	1.562	4.250	0.750	1.000	3/8-16	3/8-16	7.38	1/8 NPT	3/8	3/8	5.875	0.813
2	26	1.500	0.175	2.062	5.750	1.000	1.375	1/2-13	3/8-16	8.33	1/4 NPT	3/8	1/2	7.750	1.000

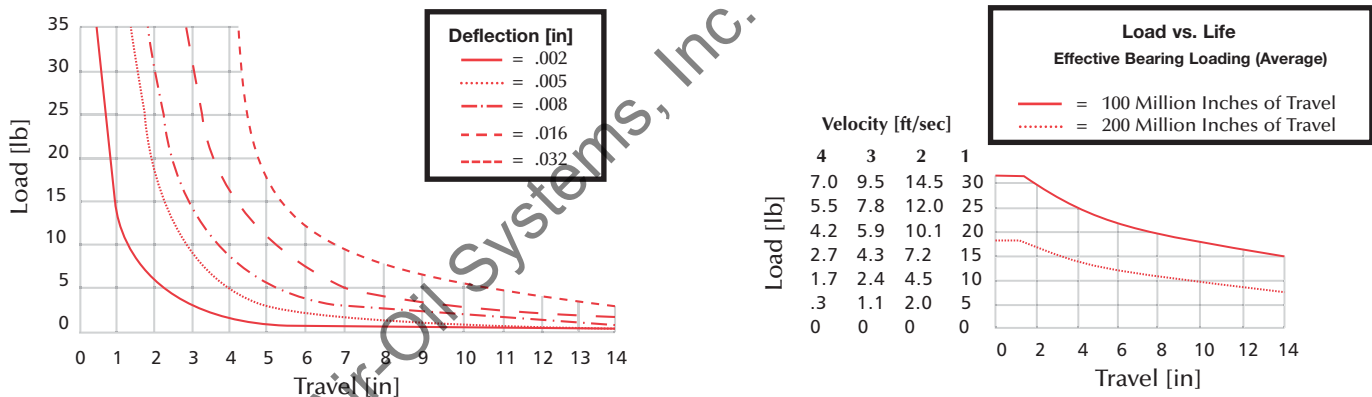
Engineering Data- ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

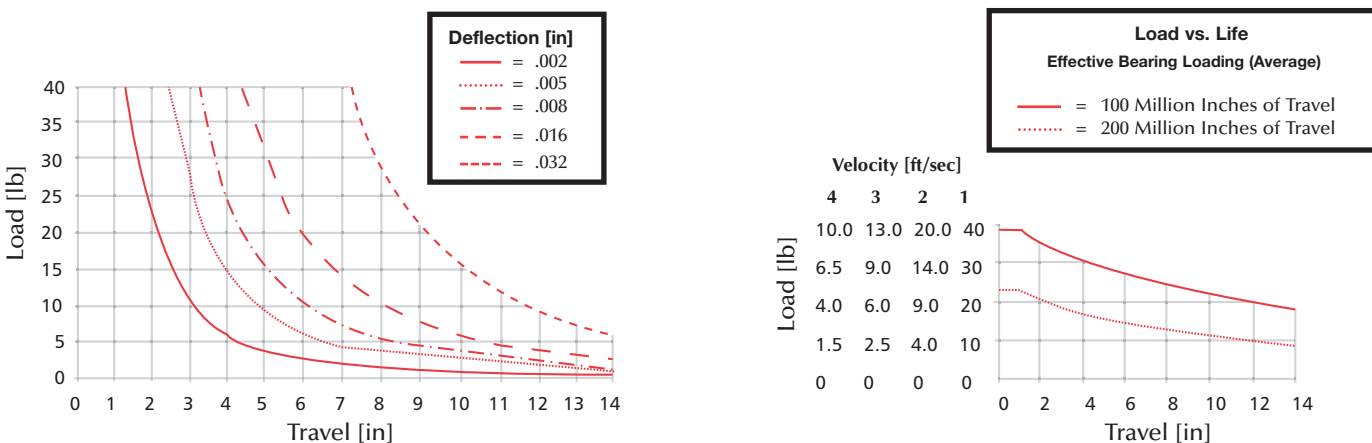
ZDB23 with 1/2" Shafts and Linear Ball Bushings



ZDC23 with 1/2" Shafts and Composite Bushings



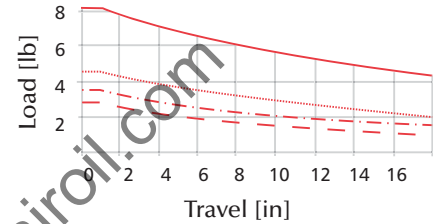
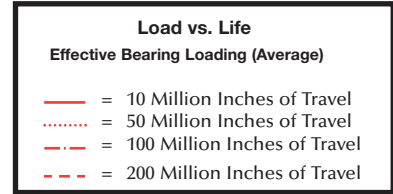
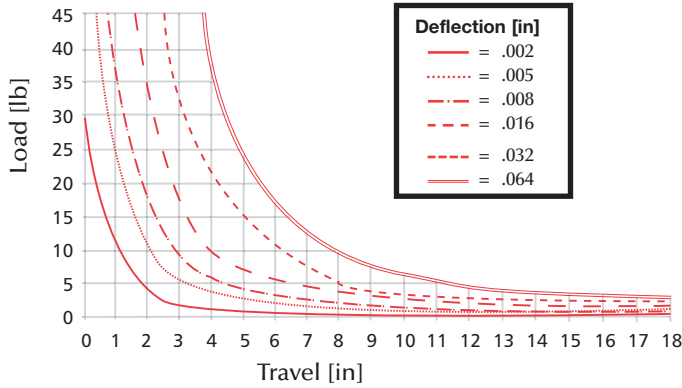
ZDD23 with 5/8" Shafts and Composite Bushings



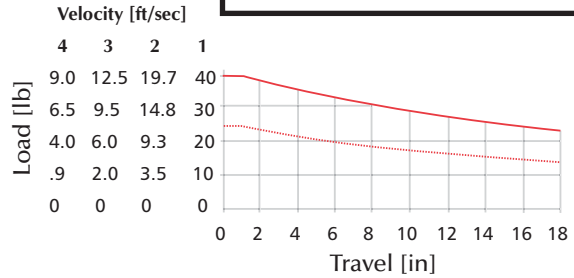
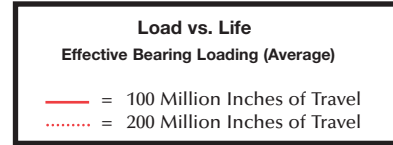
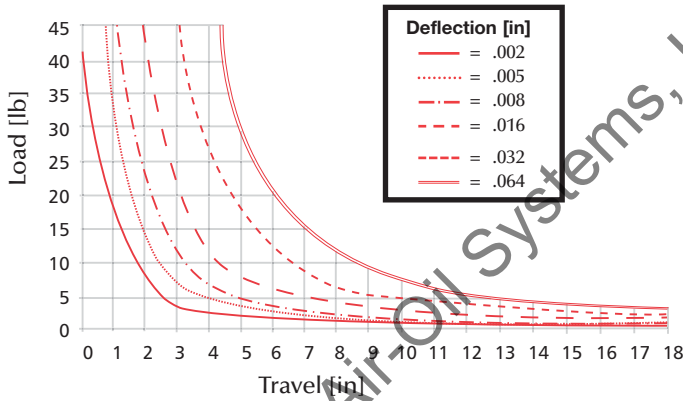
Engineering Data- ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

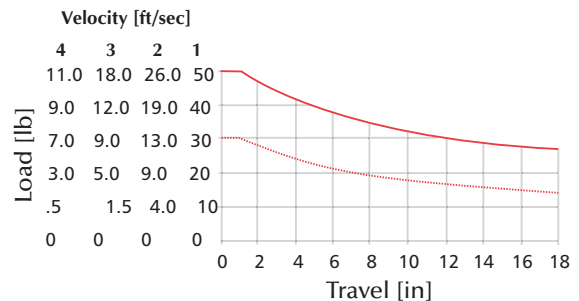
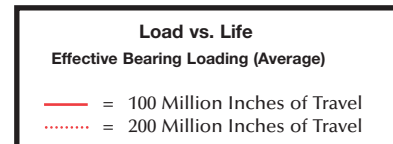
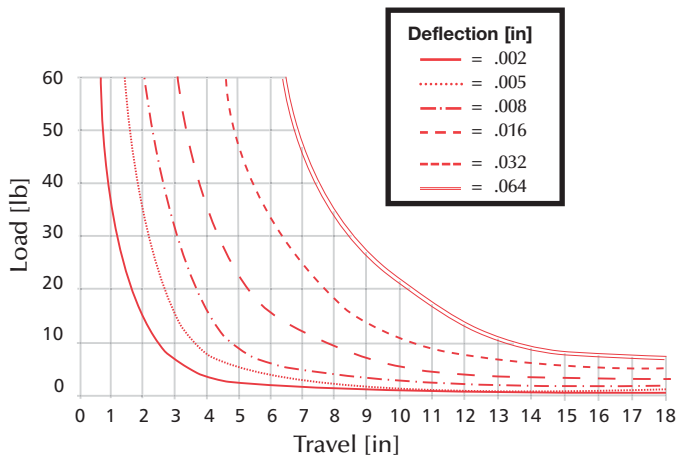
ZEB23 with 1/2" Shafts and Linear Ball Bushings



ZEC23 with 1/2" Shafts and Composite Bushings



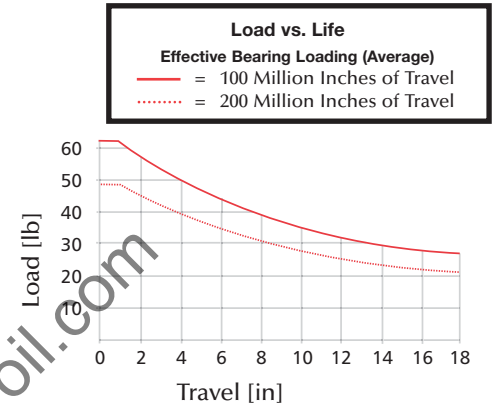
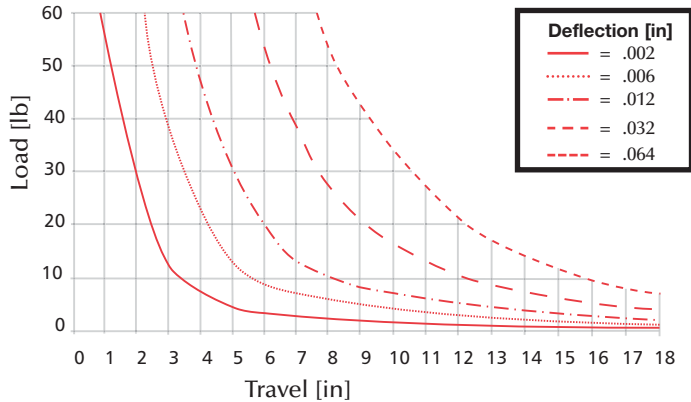
ZED23 with 5/8" Shafts and Composite Bushings



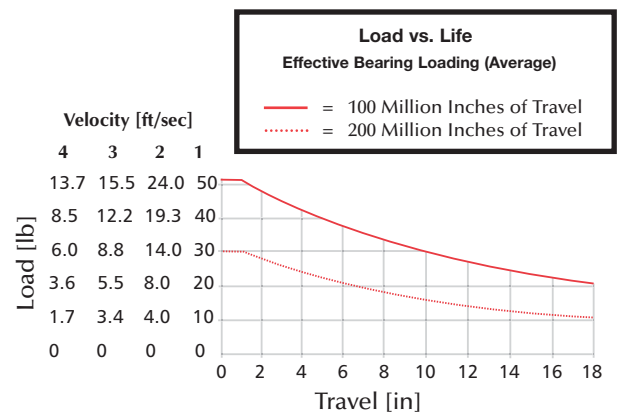
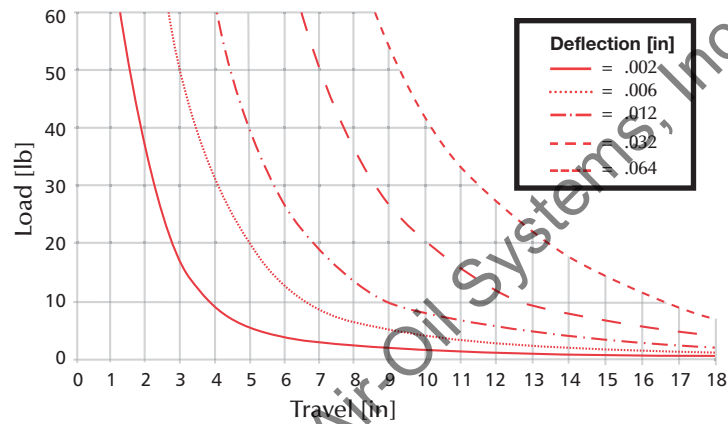
Engineering Data– ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

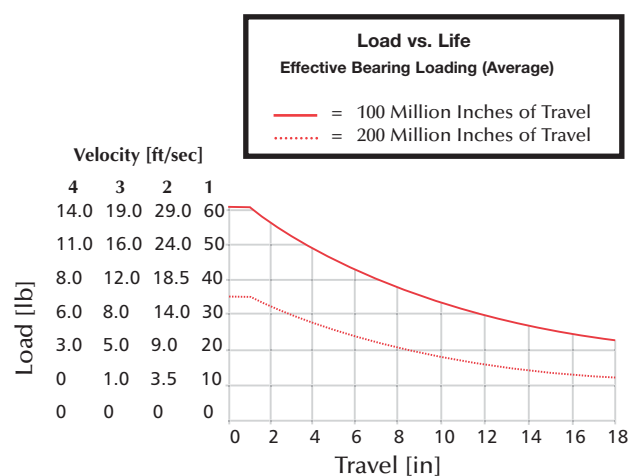
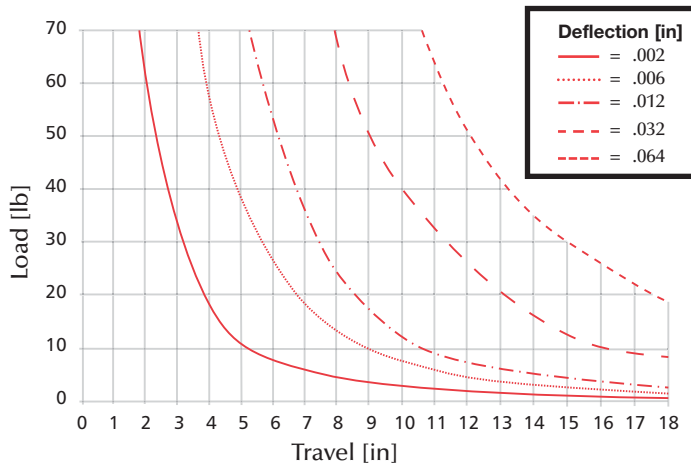
ZDB24 with 5/8" Shafts and Linear Ball Bushings



ZDC24 with 5/8" Shafts and Composite Bushings



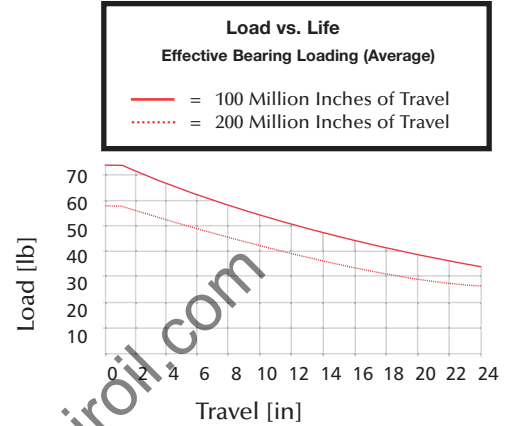
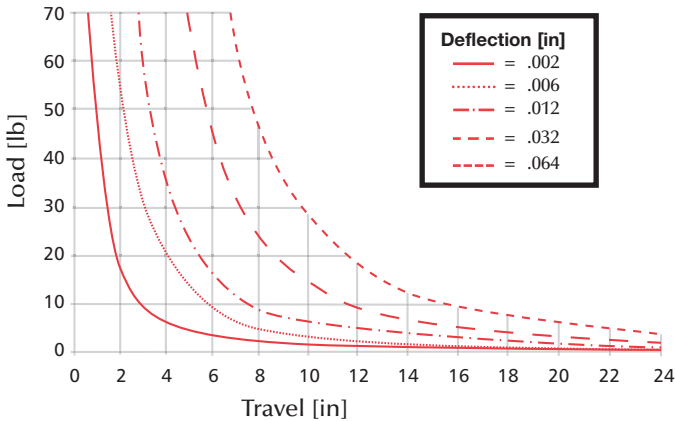
ZDD24 with 3/4" Shafts and Composite Bushings



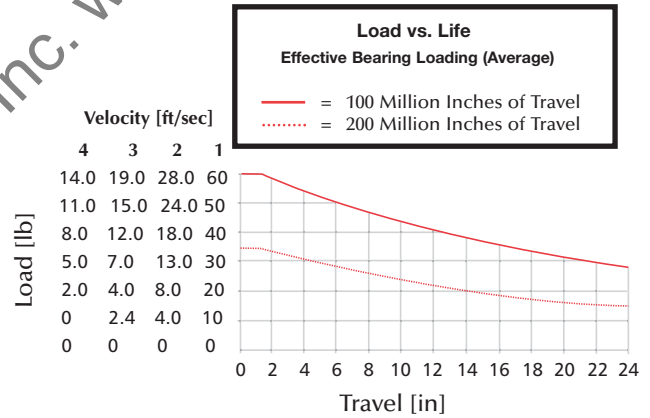
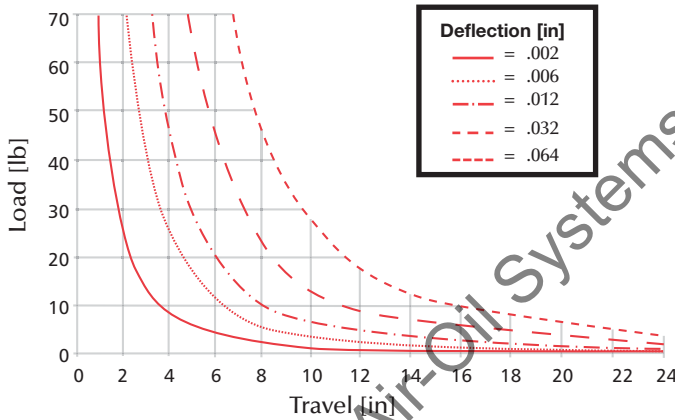
Engineering Data- ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

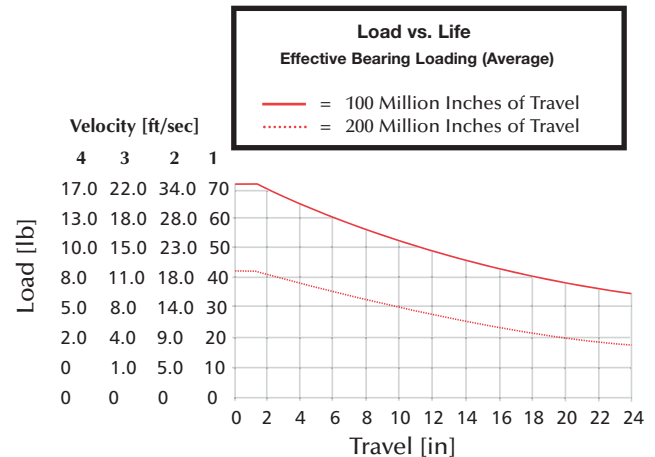
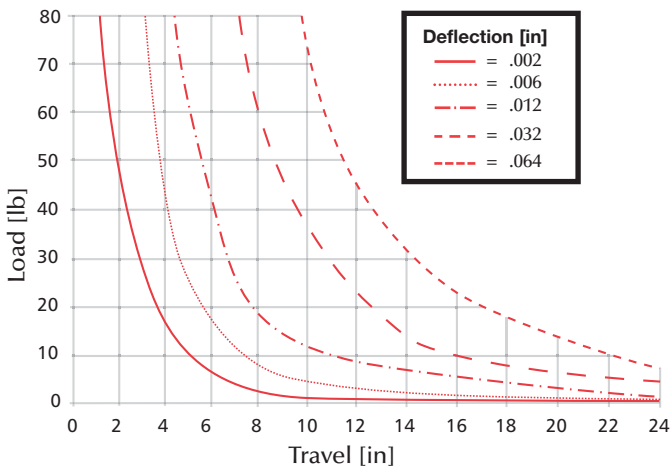
ZEB24 with 5/8" Shafts and Linear Ball Bushings



ZEC24 with 5/8" Shafts and Composite Bushings



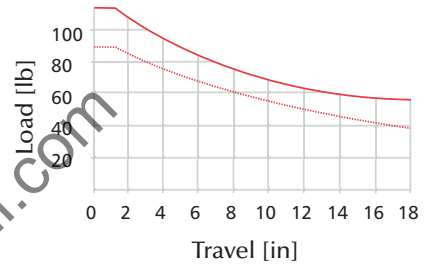
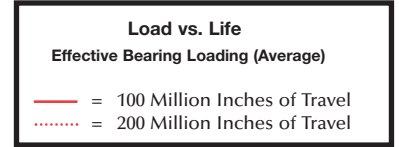
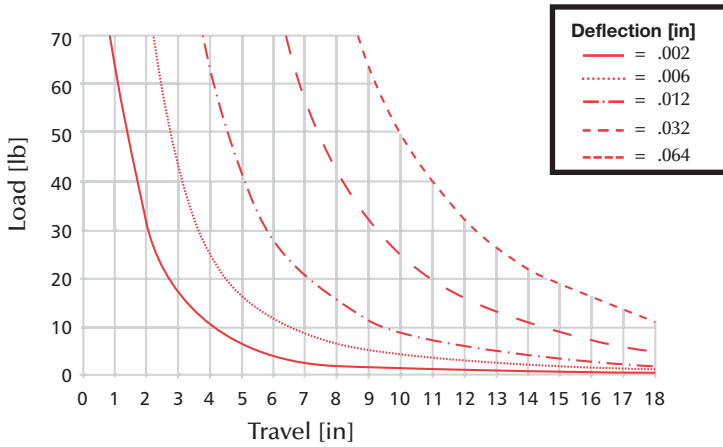
ZED24 with 3/4" Shafts and Composite Bushings



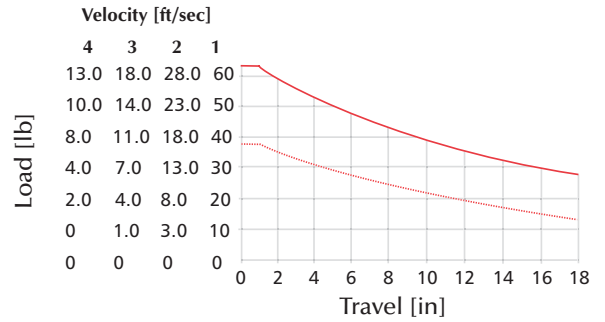
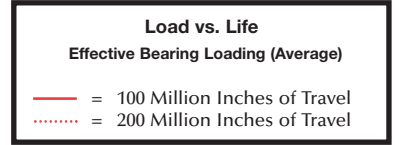
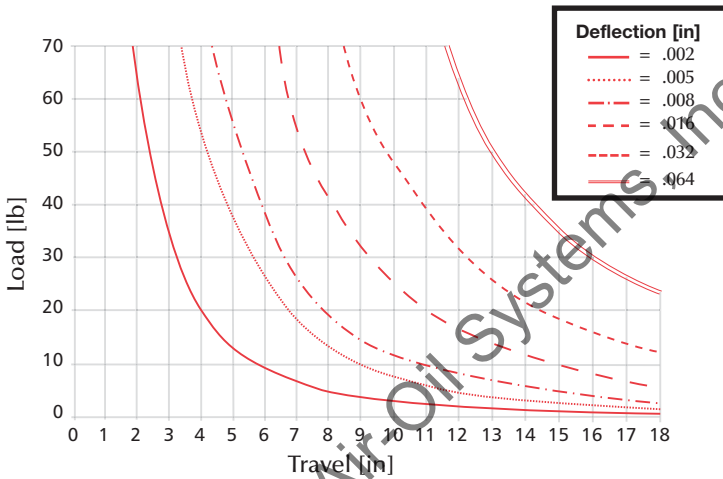
Engineering Data- ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

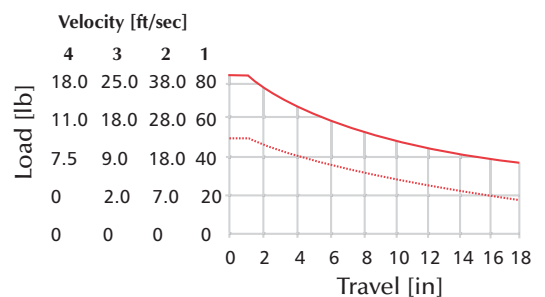
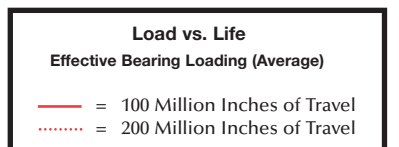
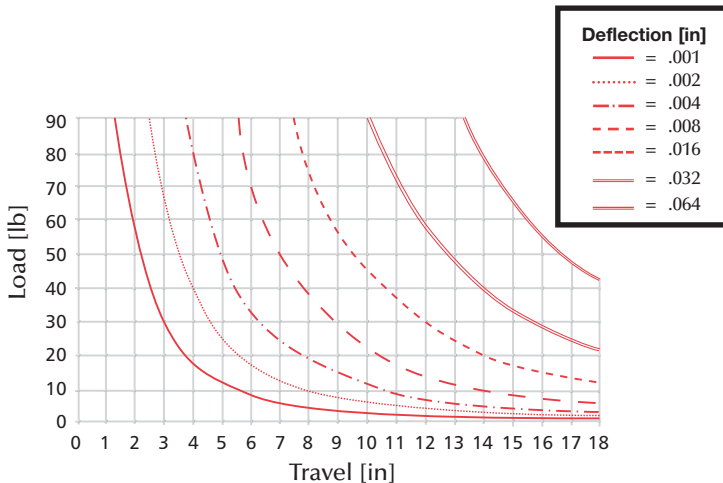
ZDB25 with 3/4" Shafts and Linear Ball Bushings



ZDC25 with 3/4" Shafts and Composite Bushings



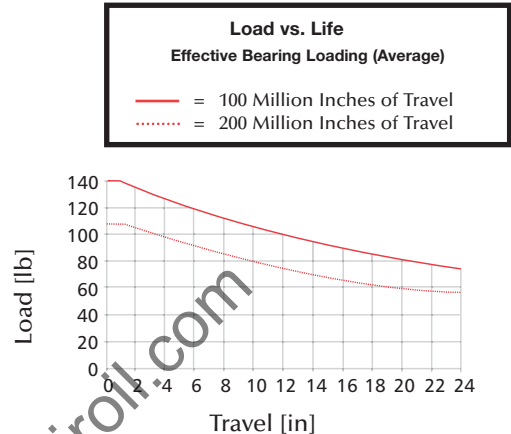
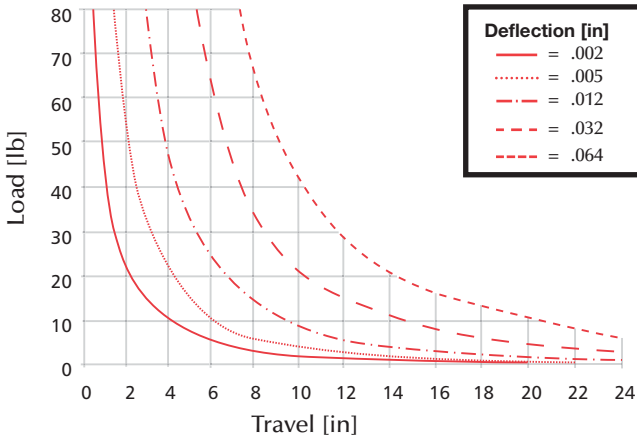
ZDD25 with 1" Shafts and Composite Bushings



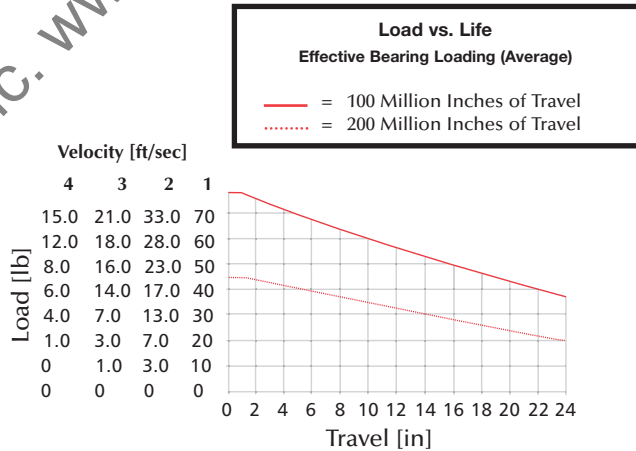
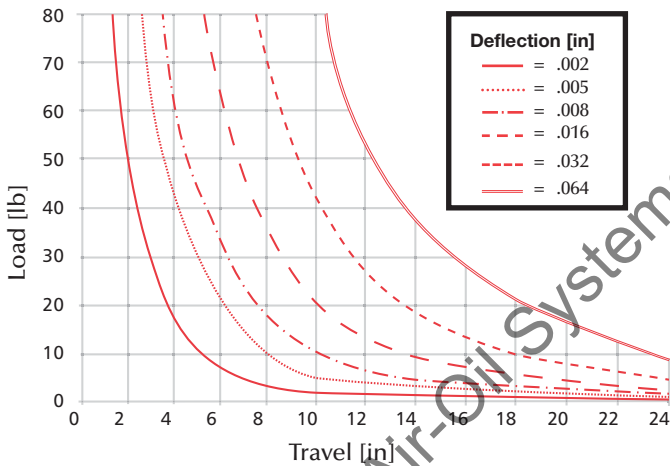
Engineering Data- ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

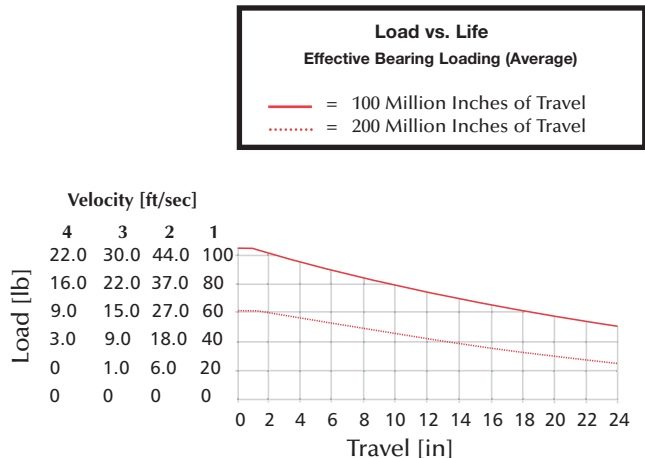
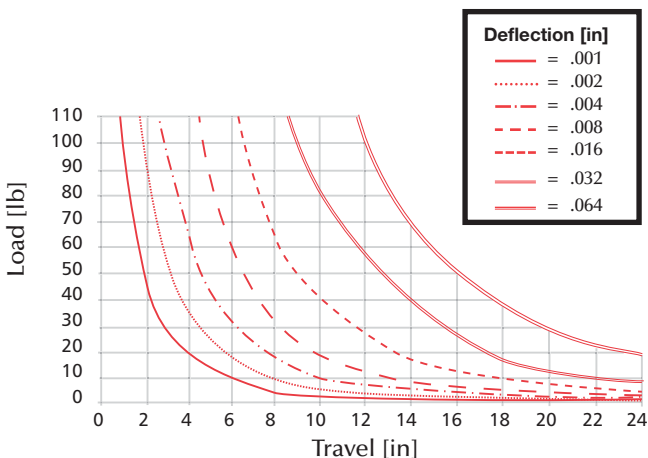
ZEB25 with 3/4" Shafts and Linear Ball Bushings



ZEC25 with 3/4" Shafts and Composite Bushings



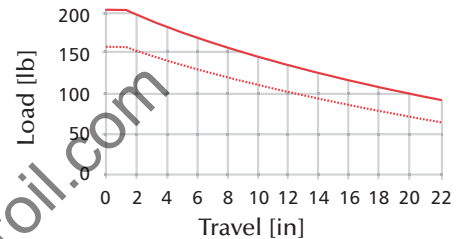
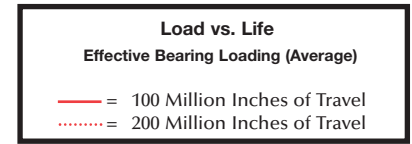
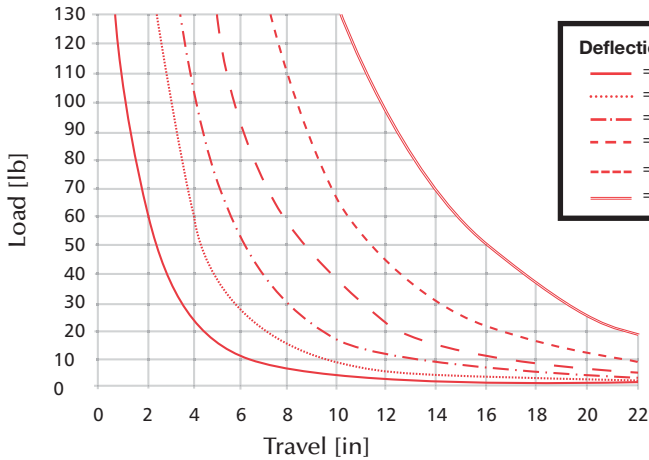
ZED25 with 1" Shafts and Composite Bushings



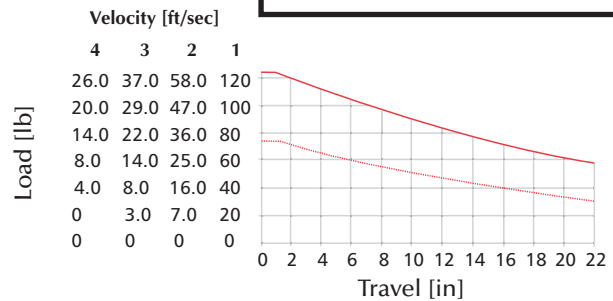
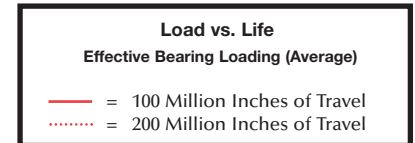
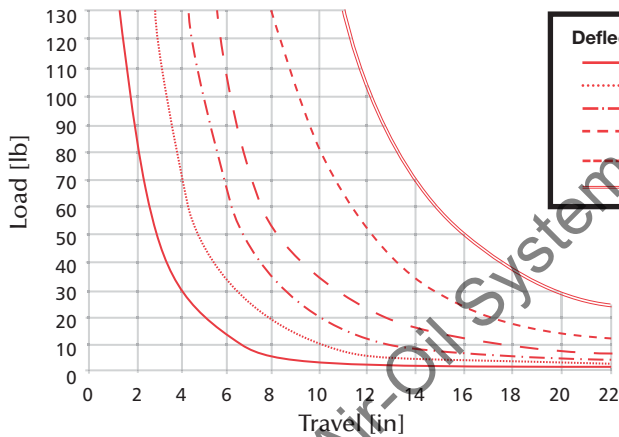
Engineering Data- ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

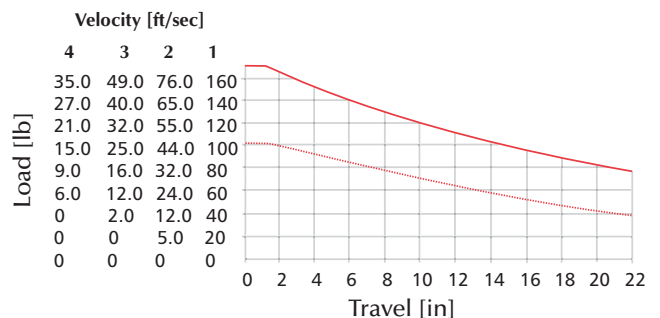
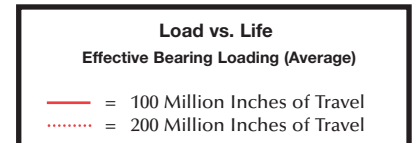
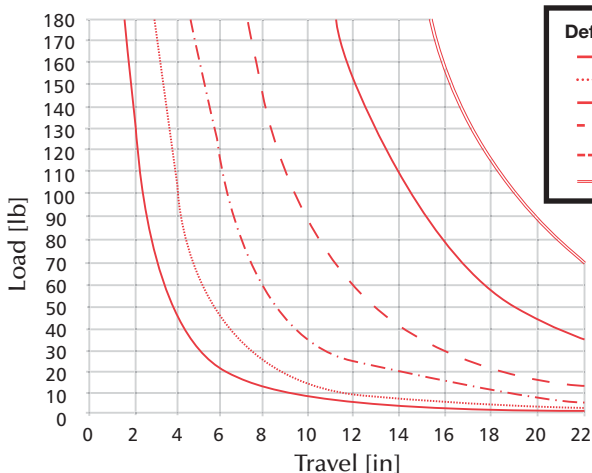
ZDB26 with 1" Shafts and Linear Ball Bushings



ZDC26 with 1" Shafts and Composite Bushings



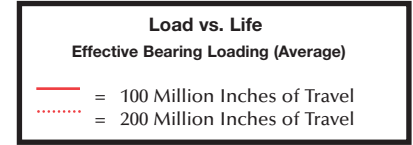
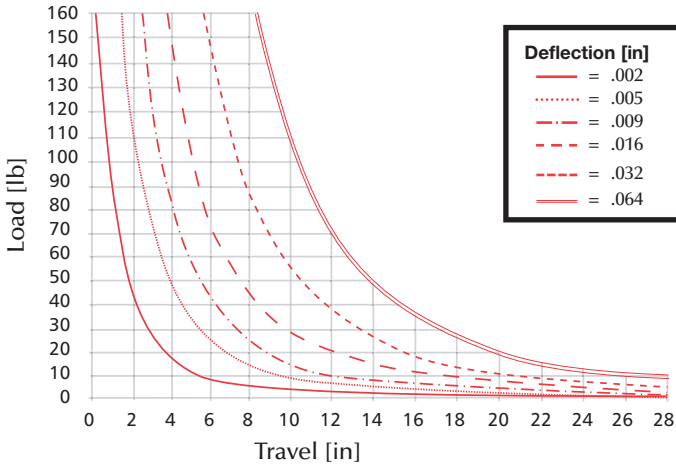
ZDD26 with 1 3/8" Shafts and Composite Bushings



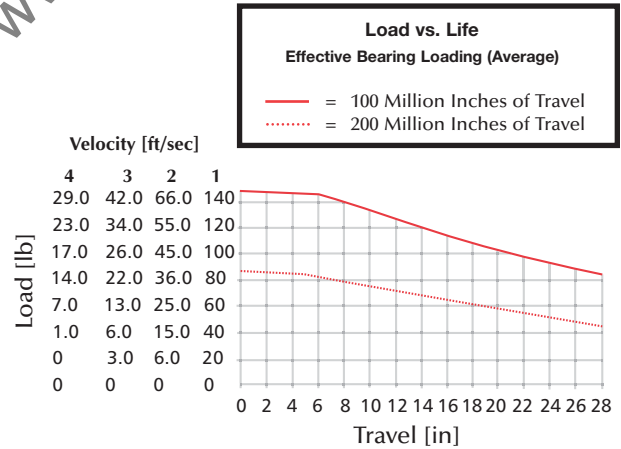
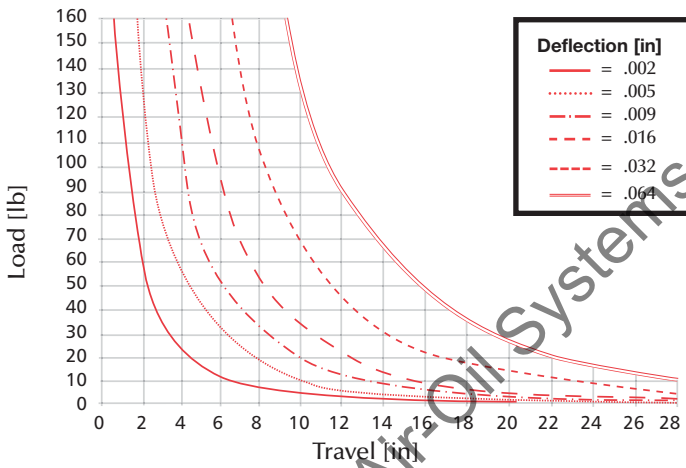
Engineering Data- ZD & ZE Series

Maximum Rolling Load & Deflection Graphs

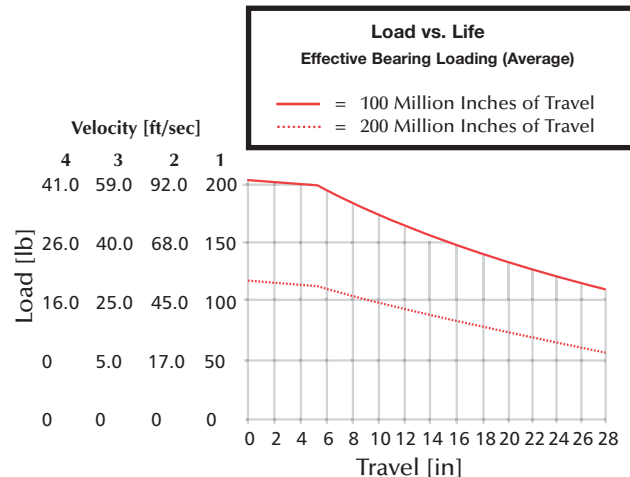
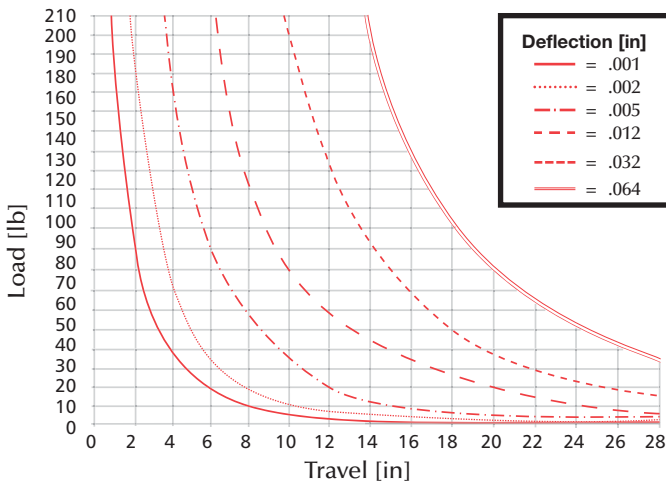
ZEB26 with 1" Shafts and Linear Ball Bushings



ZEC26 with 1" Shafts and Composite Bushings



ZED26 with 1-3/8" Shafts and Composite Bushings



Special Conditions and Limited Warranty

Determination of the suitability of any information or product for the application contemplated by any user or the manner of that use is the sole responsibility of the user.

Turn-Act Products, reserves the right to improve or change designs without notice.

All orders are subject to acceptance by the factory sales department.

Turn-Act Products agrees to repair or replace to the original purchaser any standard parts or products for a period of 12 months from date of shipment which Turn-Act Products determines upon inspection to be defective in workmanship or material. Wear components including but not limited to seals and bearings are excluded from this warranty.

Under no circumstance may merchandise be returned without written authorization from the factory.

This warranty is void in the event the product has been tampered with, altered, or serviced by unauthorized personnel.

Turn-Act Products total responsibility for any claims, damages, losses or liabilities related to the product covered thereunder shall not exceed the purchase price of such product. In no event shall Turn-Act Products be liable for any special, indirect, incidental or consequential damages of any character, including but not limited to loss of use of productive facilities or equipment, lost profit, property damage, transportation, installation or removal or lost production whether suffered by purchaser or third party. Turn-Act Products disclaims all liability for any and all cost, claims demands, charges, expenses, and other damages, either direct or indirect, incident to all property damage arising out of any cause of action based on strict liability. This warranty gives you specific legal rights and you may have other rights, which vary from state to state.

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