

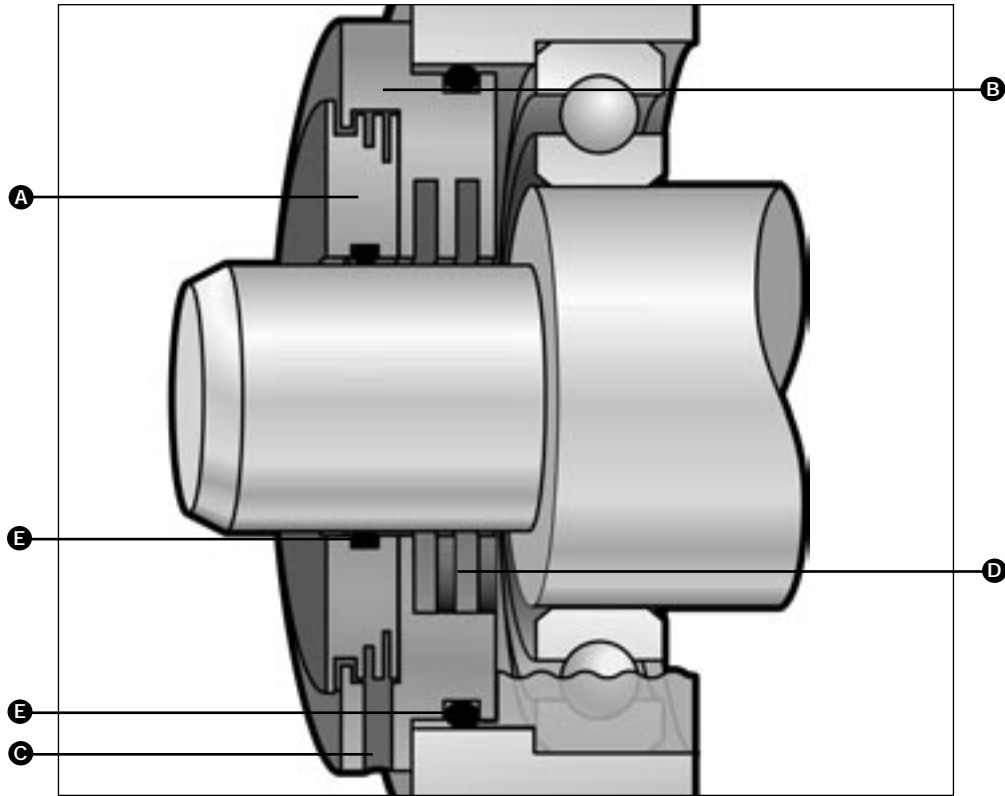


ProTech™

Bearing Isolators

ProTech™

- A – ProTech Rotor
- B – ProTech Stator
- C – Contaminant Discharge Slot
- D – Oil Drain Slot
- E – O-Rings



Product Description

The ProTech bearing isolators have been uniquely designed to protect bearings by eliminating lubricant leakage and excluding all contaminants from entering the bearing housing. It is based on a simple, unitized, two-piece design with just two o-rings.

- ProTech bearing isolators are available in several designs and material combinations to meet rotating equipment application requirements.
- Can be supplied split for ease of installation.
- Can be supplied to operate on flooded, oil mist, force-fed applications, and hermetically sealed bearing housings.

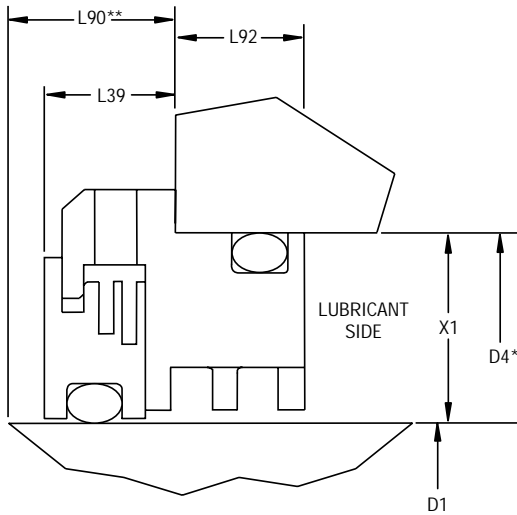
Design Features

- Non-contacting design
- Manufactured in nonsparking and chemically resistant PTFE.
- Can accommodate a large amount of initial shaft misalignment and eccentricity.
- Requires no installation tools.
- Can be used to retrofit lip seals in existing housings without modifications.

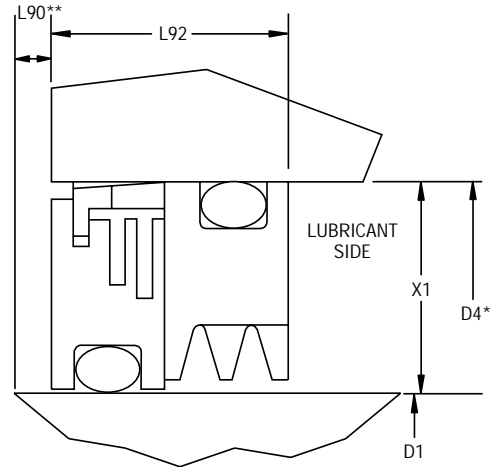
Applications

- Chemical Processing
- Food and Beverage Processing
- Mining
- Oil and Gas Processing
- Pharmaceuticals
- Power Generation
- Pulp and Paper
- Steel and Aluminum Manufacturing
- Utilities

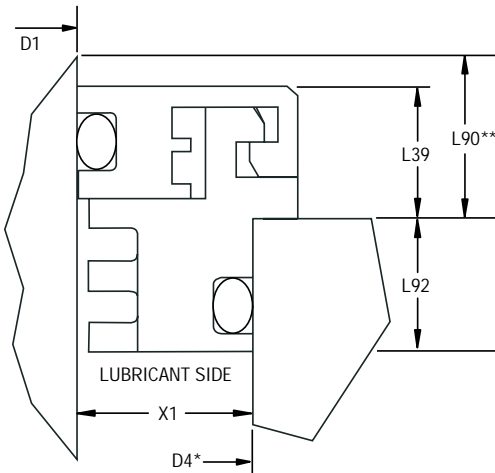
ProTech Typical Arrangement/Dimensional Data



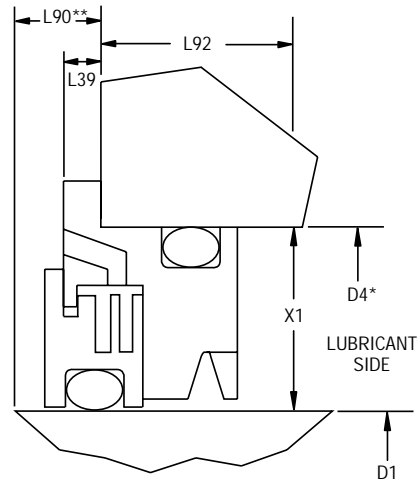
Type LS — Flange Design



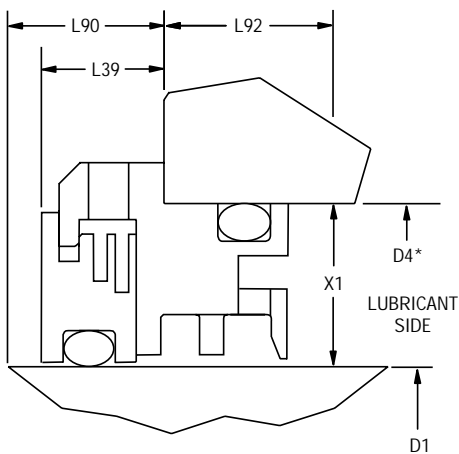
Type LN — Nonflange Design



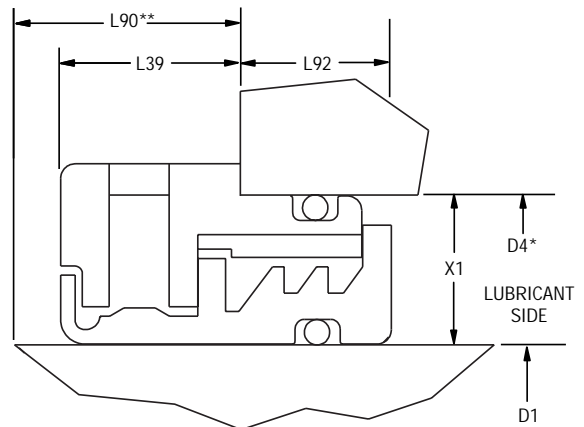
Type LX (Vertical Shaft Top Bearing)



Type LD (Multipoint)



Type SS
(Severe Duty Applications)



Type Millennium
(High Speed and Temperature Applications)

*D4 = D1 + 2(X1)

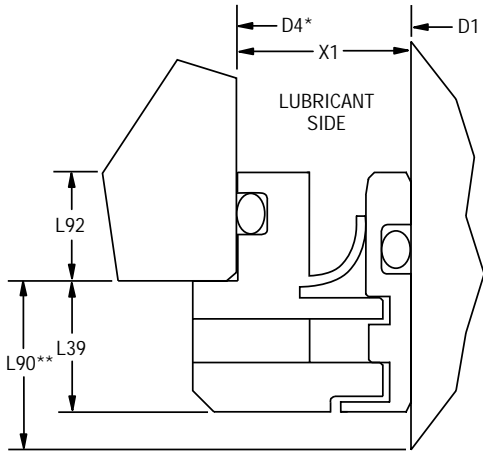
**L90 = Nearest Obstruction



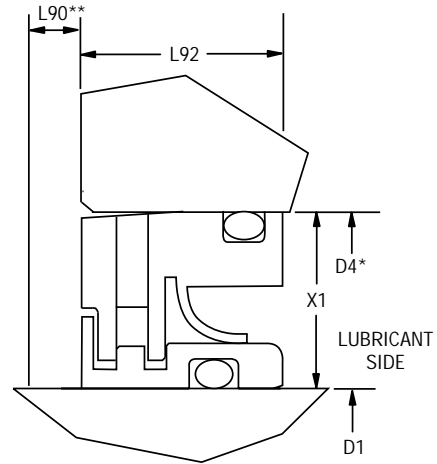
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Bearing Isolators

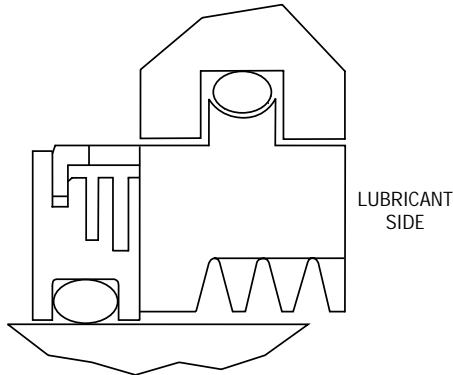
ProTech Typical Arrangement/Dimensional Data



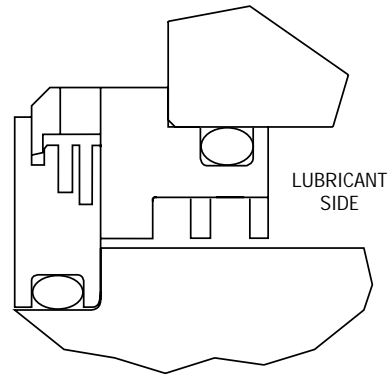
Type FS* — Flange Design**
 (Vertical Shaft Bottom Bearing, Oil Mist, Force-Fed, Flooded Applications and Hermetically Sealed Bearing Housings)



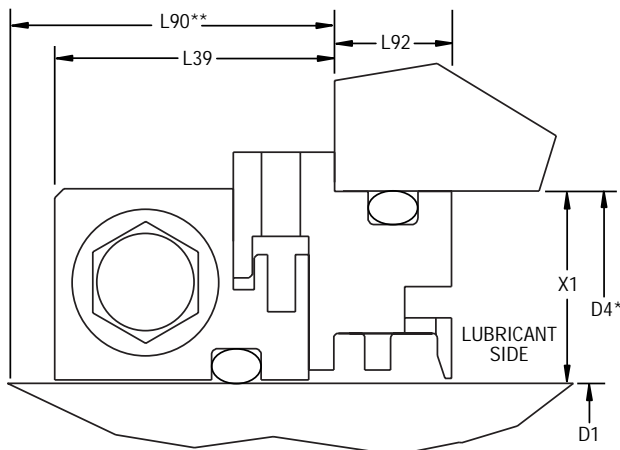
Type FN* — Nonflange Design**
 (Vertical Shaft Bottom Bearing, Oil Mist, Force-Fed, Flooded Applications and Hermetically Sealed Bearing Housings)



Type LB
 (Designed to Suit Individual Bearing Plummer/Pillow Blocks)



Type LM — Electric Motors
 (Designed to Suit Particular Applications)



Type SL
 (Split Applications)

*D4 = D1 + 2(X1)

**L90 = Nearest Obstruction

***Types FS and FN can be installed on horizontal, vertical, and angled shafts.



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Bearing Isolators

ProTech Dimensional Data (mm)

Isolator Type	Isolator Size/D1	D4	L39	X1		L90	L92
				Min.	Max.		
LS	12.0 - 40.0	*	9.0	5.0	20	10.5	7.0
LS	40.1 - 60.0	*	9.0	6.0	20	10.5	8.0
LS	60.1 - 80.0	*	9.0	7.5	20	10.5	9.0
LS	80.1 - 130.0	*	9.0	10.0	20	12.0	9.0
LS	130.1 - 250.0	*	9.0	12.0	20	15.0	11.0
LN	12.0 - 80.0	*	0.0	7.0	20	1.5	10.0
LN	80.1 - 130.0	*	0.0	8.0	20	3.0	12.0
LN	130.1 - 250.0	*	0.0	9.0	20	6.0	15.0
LX	12.0 - 40.0	*	9.0	5.0	20	10.5	7.0
LX	40.1 - 60.0	*	9.0	6.0	20	10.5	8.0
LX	60.1 - 80.0	*	9.0	7.5	20	10.5	9.0
LX	80.1 - 130.0	*	9.0	10.0	20	12.0	9.0
LX	130.1 - 250.0	*	9.0	12.0	20	15.0	11.0
LD	13.0 - 35.0	*	8.0	9.5	20	9.5	8.0
LD	35.1 - 36.0	*	8.0	9.5	20	9.5	10.0
LD	56.1 - 76.0	*	8.0	9.5	20	9.5	11.0
LD	76.1 - 127.0	*	8.0	12.7	20	11.0	11.0
LD	127.1 - 250.0	*	8.0	12.7	20	14.0	11.0
MILLENNIUM	13.0 - 76.0	*	10.0	8.0	20	9.5	8.0
MILLENNIUM	76.1 - 100.0	*	8.0	8.0	20	11.0	11.0
MILLENNIUM	100.1 - 250.0	*	8.0	11.0	20	17.0	11.0
FS	13.0 - 76.0	*	9.0	9.0	20	10.5	8.0
FS	76.1 - 152.0	*	9.0	9.0	20	12.0	9.0
FS	152.1 - 250.0	*	9.0	12.0	20	15.0	11.0
FN	13.0 - 152.0	*	0.0	9.0	20	3.0	14.0
FN	152.1 - 250.0	*	0.0	12.0	20	6.0	15.0
SS	40.0 - 60.0	*	9.0	12.0	20	10.5	8.0
SS	60.1 - 130.0	*	9.0	12.0	20	12.0	9.0
SS	130.1 - 250.0	*	9.0	12.0	20	15.0	11.0
SL	12.0 - 40.0	*	20.0	5.0	20	40.0	7.0
SL	40.1 - 60.0	*	20.0	6.0	20	40.0	8.0
SL	60.1 - 80.0	*	20.0	7.5	20	40.0	9.0
SL	80.1 - 130.0	*	24.0	10.0	20	45.0	9.0
SL	130.1 - 250.0	*	24.0	12.0	20	55.0	11.0

*D4 = D1 + 2(X1) For other sizes, contact John Crane Engineering.

ProTech Dimensional Data (inches)

Isolator Type	Isolator Size/D1	D4	L39	X1		L90	L92
				Min.	Max.		
LS	0.500 - 3.000	*	0.375	0.313	0.750	0.435	0.313
LS	3.001 - 4.000	*	0.375	0.313	0.750	0.500	0.375
LS	4.001 - 6.000	*	0.375	0.437	0.750	0.500	0.375
LS	6.001 - 10.000	*	0.377	0.437	0.750	0.625	0.438
LN	0.500 - 4.000	*	0.000	0.357	0.750	0.060	0.562
LN	4.001 - 10.000	*	0.000	0.437	0.750	0.250	0.625
LX	0.500 - 3.000	*	0.375	0.375	0.750	0.435	0.313
LX	3.001 - 6.000	*	0.375	0.437	0.750	0.500	0.375
LX	6.001 - 10.000	*	0.377	0.437	0.750	0.625	0.438
LD	0.500 - 1.375	*	0.088	0.375	0.750	0.150	0.375
LD	1.376 - 2.200	*	0.151	0.375	0.750	0.210	0.375
LD	2.201 - 3.000	*	0.151	0.375	0.750	0.210	0.438
LD	3.001 - 5.000	*	0.151	0.500	0.750	0.275	0.438
LD	5.001 - 10.000	*	0.186	0.500	0.750	0.435	0.438
MILLENNIUM	0.500 - 3.000	*	0.375	0.312	0.750	0.435	0.313
MILLENNIUM	3.001 - 4.000	*	0.375	0.312	0.750	0.500	0.375
MILLENNIUM	4.001 - 10.000	*	0.375	0.375	0.750	0.625	0.375
FS	0.500 - 3.000	*	0.375	0.375	0.750	0.435	0.313
FS	3.001 - 6.000	*	0.375	0.375	0.750	0.500	0.375
FS	6.001 - 10.000	*	0.377	0.438	0.750	0.625	0.438
FN	0.500 - 6.000	*	0.000	0.375	0.750	0.500	0.562
FN	6.001 - 10.000	*	0.000	0.437	0.750	0.625	0.625
SS	0.750 - 3.000	*	0.375	0.500	0.750	0.435	0.313
SS	3.001 - 6.000	*	0.375	0.500	0.750	0.500	0.375
SS	6.001 - 10.000	*	0.377	0.500	0.750	0.625	0.438
SL	0.500 - 3.000	*	0.800	0.312	0.750	1.625	0.313
SL	3.001 - 6.000	*	0.900	0.312	0.750	1.750	0.375
SL	6.001 - 10.000	*	1.000	0.437	0.750	2.500	0.438

*D4 = D1 + 2(X1) For other sizes, contact John Crane Engineering.



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Bearing Isolators

Operating Parameters

ISOLATOR TYPE	TEMPERATURE °C/°F		PRESSURE bar g/psig		SPEED m/s / fpm (max.)		ALLOWABLE TIR mm/inch (max.)		AXIAL MOVEMENT mm/inch (max. initial)	
LS	-40° to 120°C	-40° to 250°F	0.0	0.0	25	5,000	0.50mm	0.020"	±0.8mm	±0.032"
LN	-40° to 120°C	-40° to 250°F	0.0	0.0	25	5,000	0.50mm	0.020"	±0.8mm	±0.032"
LX	-40° to 120°C	-40° to 250°F	0.0	0.0	25	5,000	0.50mm	0.020"	±0.8mm	±0.032"
LD	-40° to 120°C	-40° to 250°F	0.0	0.0	25	5,000	0.50mm	0.020"	±0.8mm	±0.032"
MILLENNIUM	-40° to 200°C	-40° to 400°F	0.0	0.0	50	10,000	0.50mm	0.020"	±0.8mm	±0.032"
LM	-40° to 120°C	-40° to 250°F	0.0	0.0	25	5,000	0.50mm	0.020"	±0.8mm	±0.032"
FS	-40° to 120°C	-40° to 250°F	0.7	10.0	25	5,000	0.13mm	0.050"	±0.5mm	±0.020"
FN	-40° to 120°C	-40° to 250°F	0.7	10.0	25	5,000	0.13mm	0.050"	±0.5mm	±0.020"
SL	-40° to 120°C	-40° to 250°F	0.0	0.0	25	5,000	0.50mm	0.020"	±0.4mm	±0.015"
LB	-40° to 120°C	-40° to 250°F	0.0	0.0	25	5,000	0.50mm	0.020"	±0.8mm	±0.032"

For applications outside these limits, contact John Crane Engineering.

Materials of Construction

ISOLATOR COMPONENTS	MATERIALS	
	Standard	Options
Stator	Graphite-Filled PTFE	High-Temperature Graphite-Filled PTFE Mineral-Filled PTFE* Bronze
Rotor	Graphite-Filled PTFE	High-Temperature Graphite-Filled PTFE Mineral-Filled PTFE* Bronze
O-Rings	Fluoroelastomer	Silicon*

Other materials are available if required. Contact John Crane Engineering.
Types FS and FN have a stainless steel rotor as standard.

*Food and FDA approved materials.

International Specifications

- ProTech bearing isolator meets and exceeds Severe Duty Electric Motor Specification IEEE 841 for IP 55 and IP 56.
- ProTech bearing isolator complies with API 610 8th edition.

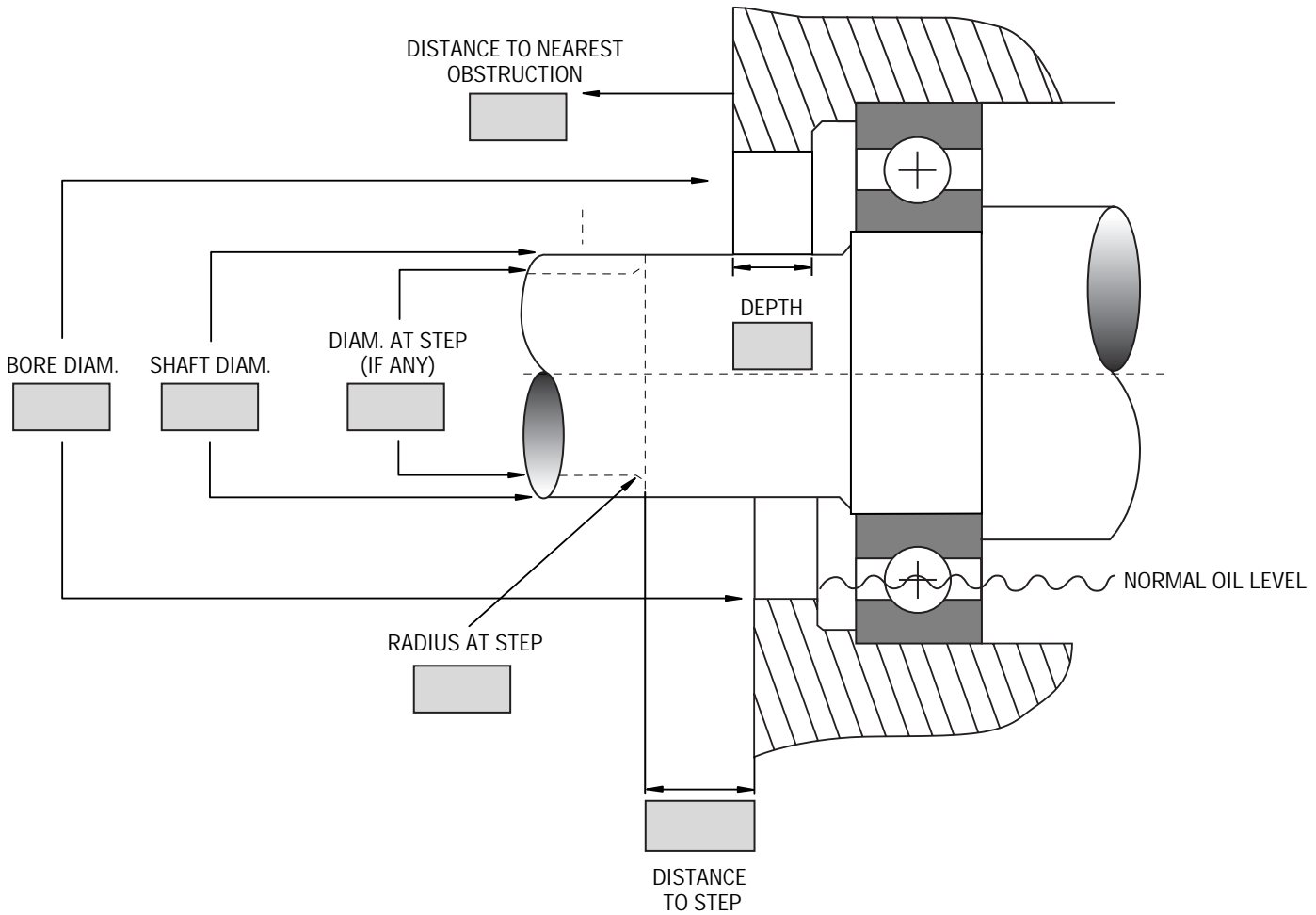


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Bearing Isolators

Ordering Information

- Measure shaft, bore, bore depth, and distance outside the housing.
- Note any deviations from these dimensions outside the housing (i.e., shaft step down or housing counter bore).
- Provide dimensional descriptions and distance from the end of the housing.



Europe
Slough, UK

Tel: 44-1753-224000
Fax: 44-1753-224224

Latin America
São Paulo, Brazil

Tel: 55-11-3371-2500
Fax: 55-11-3371-2599

Middle East, Africa, Asia
Dubai, United Arab Emirates

Tel: 971-4-3438940
Fax: 971-4-3438970

North America
Morton Grove, Illinois USA

1-800-SEALING
Tel: 1-847-967-2400
Fax: 1-847-967-3915

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For your nearest John Crane facility, please contact one of the locations above.

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