Marine Thai Shipyard & Engineering
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Sleeve and Flanged Bearings

ABS TYPE APPROVED PRODUCT

LLOYD'S REGISTER
TYPE APPROVED PRODUCT

PRODUCT INFORMATION AND SELECTION GUIDE

Duramax Marine® is an ISO 9001:2015 Certified Company

DURAMAX MARINE®

Johnson® CUTLESS® BEARINGS

The Water-Lubricated Bearing That Has Nothing More To Prove.

It's proven itself for years at sea. No other water-lubricated bearing is used in more vessels worldwide than a Johnson Cutless® Rubber Bearing. It has set industry standards for decades in the harshest working environments, earning the trust of more marine professionals than any other bearing. The performance and operating characteristics of our resilient bearings are unique when compared to other water-lubricated bearings. 90% of the U.S. Navy surface ships and submarines run with the same water-lubricated bearing technology.

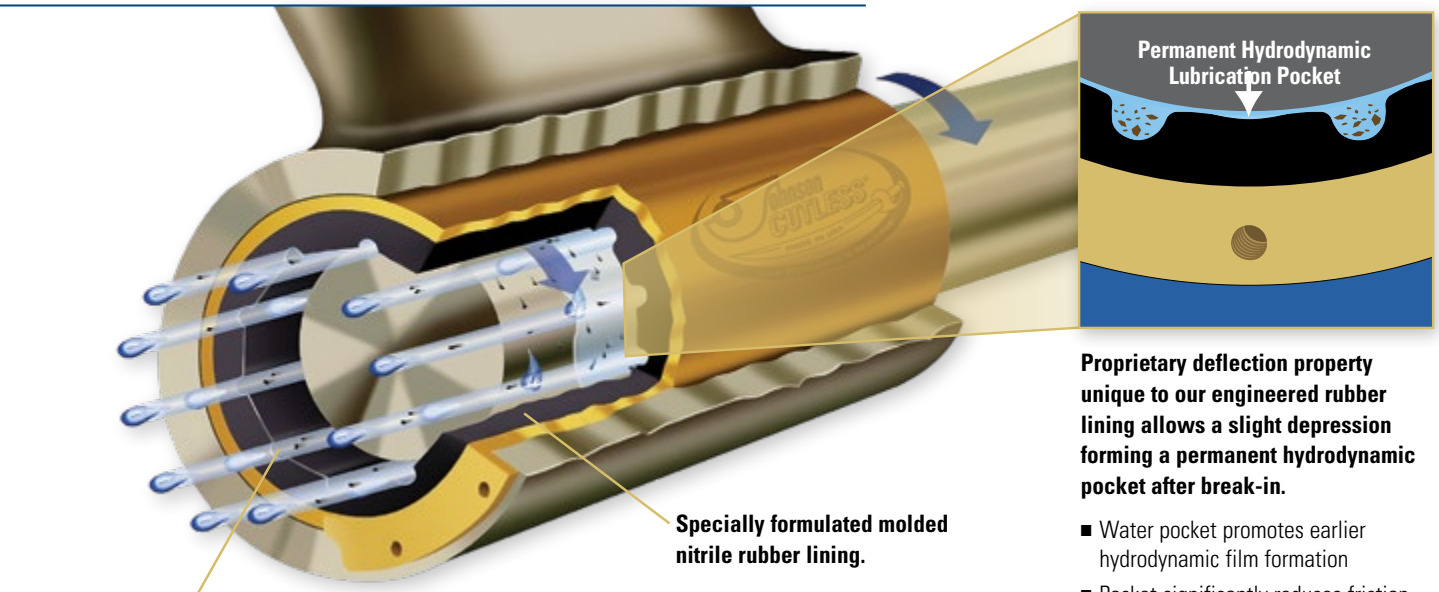
Johnson Cutless® is Designed for Unmatched Performance and Long Life.

High Quality Materials & Design.

Johnson Cutless® Sleeve and Flanged Bearings for heavy-duty commercial, government and pleasure craft applications, feature a specially formulated nitrile molded rubber lining firmly bonded to a shell material. Shells for sleeve bearings are seamless naval brass and are also available with a rugged non-metallic shell. Shells for flanged bearings are one-piece centrifugally cast naval bronze with an integral flange.

Other types of shells, such as stainless steel, Monel, or aluminum can be furnished to order. All bearings are precision machined to close tolerances and fully inspected.

The rubber, a proprietary formulation of extremely tough chemical and oil-resistant nitrile, is molded to fit the shaft in accordance with U.S. Navy BuShips approved clearances for efficient water lubrication.



Engineered geometry optimized for superior performance.

- Prevents shaft whip and absorbs vibration
- Assures maximum water lubrication
- Flushes abrasives away, preventing scoring of shaft

Specially formulated molded nitrile rubber lining.

- Permanently bonded to a precision-machined naval brass outer shell
- Resists oil, grease and chemicals

Proprietary deflection property unique to our engineered rubber lining allows a slight depression forming a permanent hydrodynamic pocket after break-in.

- Water pocket promotes earlier hydrodynamic film formation
- Pocket significantly reduces friction and wear
- The longer a Cutless® runs the better it gets

Water -The Ideal lubricant.

Water is the ideal lubricant because of its non-compressibility, cooling properties and abundant availability. When contained between sliding surfaces it forms a lubricating film with low coefficient of friction. And water is, of course, non-polluting. In rubber-lined bearings for metal shafts, water as a lubricant is at its most efficient -owing to its affinity for metal, but not for rubber. With Johnson Cutless® rubber bearings, the water enters the grooves and moves radially between the propeller shaft and the rubber. Contaminants and abrasives are flushed away through the grooves.

Better Concentricity.

Some bearings are manufactured using centerless grinding techniques to finish the outside diameter. Centerless grinding the shell on a sleeve bearing provides a fine finish, but it may not be an indication of a high quality bearing. Since the centerless grinding process does not take the inside diameter of the bearing into account, the centers of the outside diameter and inside diameter may not be the same. When you install a bearing like this into a housing, the shaft may be off-center in the bearing. Johnson Cutless® Bearings are machined on the inside diameter. Once the inside diameter is bored to the correct dimension, a mandrel is inserted and the outside diameter is turned to the correct dimension. This results in good bearing concentricity and provides you with a quality product you can trust.

Class II Bearing on US Navy Qualified Products List.

Duramax® Marine LLC has gone to great lengths to provide you with one of the best quality and highest-performing bearings available. Johnson Cutless® Bearings meet all requirements of MIL-DTL-17901C (SH) Class II. This United States military specification is more than just a classification approval; it is a stringent set of performance tests that a bearing must pass to become approved.

Quality Inspection.

After machining the bearings, Duramax® Marine LLC inspects them to verify the accuracy of dimensions. Plug gages, one of the most accurate ways to measure a rubber bearing, are used on bearings for shaft sizes under 6-inches (152.40mm) in diameter. For larger sizes, Duramax® Marine LLC inspectors use ID micrometers. The bearings are also inspected for blemishes, imperfections and delamination in both the rubber and shell material. The bond between the rubber and shell material is also checked.

Research & Development Program.

When a company is dedicated to producing the highest quality bearings, research and development becomes a critical aspect of creating technology for the industry. Duramax® Marine LLC has over 50 years of experience in the bearing business and operates a bearing test laboratory for the development of new bearing materials and performance testing of competitive materials. As a result, Duramax® Marine LLC is looked to as a leader in water-lubricated bearing technology and will continue to innovate and to provide you with longer lasting, better-performing bearings.

Excellent Distribution & Availability.

In addition to high quality bearings, Duramax® Marine LLC is committed to having the bearings available for you when you need them. This is accomplished with field warehouses around the world. Duramax® Marine LLC has one of the largest distribution networks in the industry. The answer to your bearing needs is only a telephone call, fax or email away. If the bearing is not available locally, chances are it can be shipped from another location from stock.

Non-Metallic Sleeve Bearings

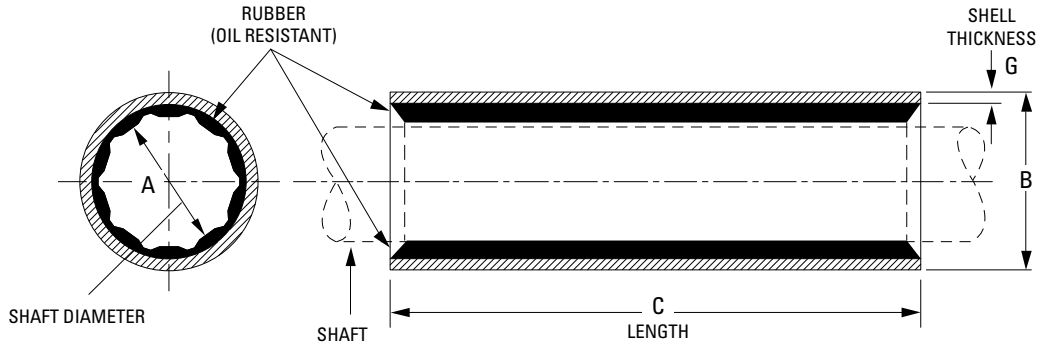
METRIC SIZE SERIES

Johnson Cutless® Non-Metallic Sleeve Bearings feature a dense structure of engineered reinforced thermoset plastic. The specially compounded Nitrile Rubber is securely bonded to the shell with all tolerances maintained for proper lubrication. Being non-corrosive and inherently resistant to all known chemicals, oil and grease, as well as being anti-electrolytic, the Johnson Cutless® Non-Metallic Sleeve Bearings are ideally suited for installations wherever corrosion or electrolysis is a problem.

PRECAUTION:

When shrink fitting of the bearing is required, chilling must be achieved by gradual cooling to not more than minus 20˚F(-28˚C) using freezer or regular ice **(DO NOT DRY ICE)**. NOTE: Pounding or shocking the bearing while in the chilled state could cause the rubber to separate from the shell.

Approved Bearings: Johnson Cutless Non-Metallic Sleeve Bearings have full type approval from The American Bureau of Shipping.



Part Number	A Shaft Diameter mm	B Outside Diameter mm	C Length mm	G Shell Thickness mm	Gross Wt. lb.	Gross Wt. kg.
870255700	25	40	100	2.54	0.3	0.1
870285700	28	42	112	2.35	0.4	0.2
870305700	30	45	120	3.07	0.4	0.2
870325700	32	45	128	3.07	0.5	0.2
870355700	35	50	140	3.07	0.5	0.2
870385700	38	55	152	3.07	0.6	0.3
870405700	40	55	160	3.07	0.6	0.3
870455700	45	65	180	3.30	0.9	0.4
870505700	50	70	200	3.25	1.1	0.5
870555700	55	75	220	2.58	1.3	0.6
870605700	60	80	240	3.25	1.6	0.7
870655700	65	85	260	2.81	1.8	0.8
870705700	70	90	280	4.75	2.0	0.9
870755700	75	95	300	3.05	2.5	1.1
870805700	80	100	320	3.16	2.6	1.2
870855700	85	105	340	3.17	3.0	1.4
870905700	90	110	360	4.76	3.4	1.5
870955700	95	115	380	4.50	4.0	1.8
871005700	100	125	400	3.76	4.6	2.1
871055700	105	130	420	4.51	5.2	2.4
871105700	110	135	440	4.51	6.0	2.7
871155700	115	145	460	4.24	7.6	3.4
871205700	120	155	480	6.06	8.6	3.9
871305700	130	170	520	5.63	13.0	5.9

Non-Metallic Sleeve Bearings

INCH SIZE SERIES

Johnson Cutless® Non-Metallic Sleeve Bearings feature a dense structure of engineered reinforced thermoset plastic. The specially compounded Nitrile Rubber is securely bonded to the shell with all tolerances maintained for proper lubrication. Being non-corrosive and inherently resistant to all known chemicals, oil and grease, as well as being anti-electrolytic, the Johnson Cutless® Non-Metallic Sleeve Bearings are ideally suited for installations wherever corrosion or electrolysis is a problem.

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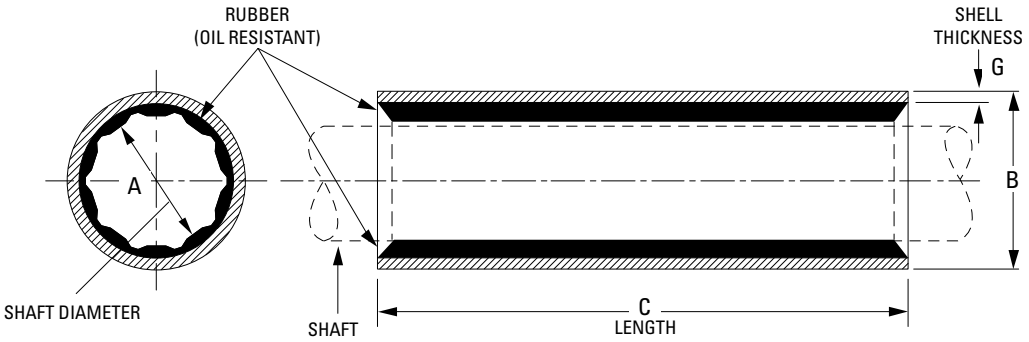

Part Number	Code	A Shaft Diameter inches	A Shaft Diameter mm	B Outside Diameter inches	B Outside Diameter mm	C Length inches	C Length mm	G Shell Thickness inches	G Shell Thickness mm	Gross Wt. lb.	Gross Wt. kg.
870193700	ALDA	3/4	19.05	1 1/4	31.75	3	76.20	1/8	3.18	0.2	0.1
870223700	ALICE	7/8	22.23	1 1/4	31.75	3 1/2	88.90	1/16	1.59	0.2	0.1
870223701	ANNE	7/8	22.23	1 3/8	34.93	3 1/2	88.90	1/8	3.18	0.2	0.1
870223702	ARDELE	7/8	22.23	1 1/2	38.10	3 1/2	88.90	1/8	3.18	0.3	0.1
870253700	BABE	1	25.40	1 1/4	31.75	4	101.60	1/16	1.59	0.2	0.1
870253701	BECKY	1	25.40	1 3/8	34.93	4	101.60	1/16	1.59	0.2	0.1
870253702	BETTY	1	25.40	1 1/2	38.10	4	101.60	1/8	3.18	0.3	0.1
870253703	CANDY	1	25.40	1 5/8	41.28	4	101.60	1/8	3.18	0.3	0.1
870253704	CARLA	1	25.40	2	50.80	4	101.60	1/8	3.18	0.5	0.2
870293700	CEIL	1 1/8	28.58	1 1/2	38.10	4 1/2	114.30	1/16	1.59	0.3	0.1
870293701	CINDY	1 1/8	28.58	1 5/8	41.28	4 1/2	114.30	1/8	3.18	0.3	0.1
870293702	CONNIE	1 1/8	28.58	1 3/4	44.45	4 1/2	114.30	1/8	3.18	0.4	0.2
870293703	CORA	1 1/8	28.58	2	50.80	4 1/2	114.30	1/16	1.59	0.5	0.2
870323700	DEENA	1 1/4	31.75	1 1/2	38.10	5	127.00	3/64	1.19	0.2	0.1
870323701	DELLA	1 1/4	31.75	1 3/4	44.45	5	127.00	1/8	3.18	0.4	0.2
870323702	DORIS	1 1/4	31.75	2	50.80	5	127.00	1/8	3.18	0.6	0.3
870323703	DOTTY	1 1/4	31.75	2 1/8	53.98	5	127.00	1/8	3.18	0.6	0.3
870353700	EDNA	1 3/8	34.93	1 7/8	47.63	5 1/2	139.70	1/8	3.18	0.4	0.2
870353701	ELLEN	1 3/8	34.93	2	50.80	5 1/2	139.70	1/8	3.18	0.5	0.2
870353702	ELSA	1 3/8	34.93	2 1/8	53.98	5 1/2	139.70	1/8	3.18	0.6	0.3
870353703	ERMA	1 3/8	34.93	2 3/8	60.33	5 1/2	139.70	1/8	3.18	0.9	0.4
870383700	EVA	1 1/2	38.10	2	50.80	6	152.40	1/8	3.18	0.5	0.2
870383701	FANNY	1 1/2	38.10	2 3/8	60.33	6	152.40	1/8	3.18	0.9	0.4
870413700	FLO	1 5/8	41.28	2 1/8	53.98	6 1/2	165.10	1/8	3.18	0.6	0.3
870413701	FRAN	1 5/8	41.28	2 5/8	66.68	6 1/2	165.10	1/8	3.18	1.1	0.5

All Bearings Shown Are Carried in Stock

Part Number	Code	A Shaft Diameter		B Outside Diameter		C Length		G Shell Thickness		Gross Wt.	
		inches	mm	inches	mm	inches	mm	inches	mm	lb.	kg.
870453700	GLENDA	1 3/4	44.45	2 3/8	60.33	7	177.80	1/8	3.18	0.7	0.3
870453702	GLENNIS	1 3/4	44.45	2 1/2	63.50	7	177.80	3/32	2.38	0.8	0.4
870453701	GLORIA	1 3/4	44.45	2 5/8	66.68	7	177.80	1/8	3.18	0.9	0.4
870483700	GWEN	1 7/8	47.63	2 5/8	66.68	7 1/2	190.50	1/8	3.18	0.8	0.4
870483701	HANNA	1 7/8	47.63	2 15/16	74.61	7 1/2	190.50	3/32	2.38	1.5	0.7
870513700	HAZEL	2	50.80	2 5/8	66.68	8	203.20	1/8	3.18	0.8	0.4
870513701	HELEN	2	50.80	3	76.20	8	203.20	1/8	3.18	1.5	0.7
870543700	HILDA	2 1/8	53.98	2 15/16	74.61	8 1/2	215.90	1/8	3.18	1.3	0.6
870543701	ILA	2 1/8	53.98	3 1/8	79.38	8 1/2	215.90	1/8	3.18	1.6	0.7
870573700	INEZ	2 1/4	57.15	2 15/16	74.61	9	228.60	3/32	2.38	1.2	0.5
870573701	INGRID	2 1/4	57.15	3 1/8	79.38	9	228.60	1/8	3.18	1.4	0.6
870573702	IRENE	2 1/4	57.15	3 3/8	85.73	9	228.60	1/8	3.18	1.6	0.7
870573735	IRIS	2 1/4	57.15	3	76.20	9	228.60	1/8	3.18	3.9	1.8
870603700	JENNY	2 3/8	60.33	3 3/8	85.73	9 1/2	241.30	1/8	3.18	1.7	0.8
870643700	JOAN	2 1/2	63.50	3 1/8	79.38	10	254.00	1/8	3.18	1.4	0.6
870643701	JOSIE	2 1/2	63.50	3 3/8	85.73	10	254.00	1/8	3.18	2.0	0.9
870673700	JOYCE	2 5/8	66.68	3 3/8	85.73	10 1/2	266.70	1/8	3.18	1.8	0.8
870703700	JUNE	2 3/4	69.85	3 3/8	85.73	11	279.40	1/8	3.18	1.6	0.7
870703701	KATHY	2 3/4	69.85	3 3/4	95.25	11	279.40	1/8	3.18	2.6	1.2
870733700	KELLY	2 7/8	73.03	3 3/4	95.25	11 1/2	292.10	1/8	3.18	2.5	1.1
870763700	KIM	3	76.20	3 3/4	95.25	12	304.80	1/8	3.18	2.4	1.1
870763701	LAURA	3	76.20	4	101.60	12	304.80	1/8	3.18	3.1	1.4
870803700	LENA	3 1/8	79.38	4 1/4	107.95	12 1/2	317.50	1/8	3.18	3.8	1.7
870833700	LINDA	3 1/4	82.55	4	101.60	13	330.20	1/8	3.18	2.7	1.2
870833701	LISA	3 1/4	82.55	4 1/4	107.95	13	330.20	1/8	3.18	3.5	1.6
870863700	LOIS	3 3/8	85.73	4 1/2	114.30	13 1/2	342.90	1/8	3.18	4.3	2.0
870893700	MANDY	3 1/2	88.90	4 1/4	107.95	14	355.60	1/8	3.18	3.1	1.4
870893701	MARIE	3 1/2	88.90	4 1/2	114.30	14	355.60	1/8	3.18	4.1	1.9
870923700	MARTHA	3 5/8	92.08	4 1/2	114.30	14 1/2	368.30	1/8	3.18	3.7	1.7
870953700	MARY	3 3/4	95.25	4 1/2	114.30	15	381.00	1/8	3.18	3.5	1.6
870953701	NANCY	3 3/4	95.25	5	127.00	15	381.00	3/16	4.76	5.9	2.7
870953702	NEVA	3 3/4	95.25	5 1/4	133.35	15	381.00	3/16	4.76	7.4	3.4
870993700	NORA	3 7/8	98.43	5 1/4	133.35	15 1/2	393.70	3/16	4.76	6.4	2.9
871023700	OLGA	4	101.60	5	127.00	16	406.40	3/16	4.76	5.3	2.4
871023701	OLIVE	4	101.60	5 1/4	133.35	16	406.40	3/16	4.76	6.4	2.9
871053700	OPAL	4 1/8	104.78	5 1/4	133.35	16 1/2	419.10	3/16	4.76	6.3	2.9
871083700	PAM	4 1/4	107.95	5 1/2	139.70	17	431.80	3/16	4.76	8.3	3.8
871113700	PANSY	4 3/8	111.13	5 3/4	146.05	17 1/2	444.50	3/16	4.76	8.8	4.0
871153700	PAULA	4 1/2	114.30	5 1/2	139.70	18	457.20	3/16	4.76	7.3	3.3
871153701	PENNY	4 1/2	114.30	5 3/4	146.05	18	457.20	3/16	4.76	8.8	4.0
871183700	RHODA	4 5/8	117.48	6 1/8	155.58	18 1/2	469.90	1/4	6.35	11.3	5.1
871213700	RINA	4 3/4	120.65	6 1/8	155.58	19	482.60	1/4	6.35	11.0	5.0
871243700	ROSE	4 7/8	123.83	6 1/8	155.58	19 1/2	495.30	1/4	6.35	10.3	4.7
871273700	RUTH	5	127.00	6 1/8	155.58	20	508.00	1/4	6.35	9.5	4.3
871273701	SALLY	5	127.00	6 1/2	165.10	20	508.00	1/4	6.35	13.0	5.9
871343700	SANDRA	5 1/4	133.35	6 3/4	171.45	21	533.40	1/4	6.35	14.0	6.4
871343701	SARAN	5 1/4	133.35	7	177.80	21	533.40	1/4	6.35	16.0	7.3
871373700	SUSAN	5 3/8	136.53	6 3/4	171.45	21 1/2	546.10	1/4	6.35	12.8	5.8
871373701	TONI	5 3/8	136.53	7	177.80	21 1/2	546.10	1/4	6.35	15.8	7.2
871403700	TRICIA	5 1/2	139.70	7	177.80	22	558.80	1/4	6.35	14.8	6.7
871433700	VERA	5 5/8	142.88	7	177.80	22 1/2	571.50	1/4	6.35	14.0	6.4
871463700	WANDA	5 3/4	146.05	7	177.80	23	584.20	1/4	6.35	14.8	6.7
871503700	WINNIE	5 7/8	149.23	7 1/2	190.50	24	609.60	1/4	6.35	18.0	8.2
871533700	ZELDA	6	152.40	7 1/2	190.50	24	609.60	1/4	6.35	18.8	8.5

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