



## DATA SHEET // AQUALUBE

The Aqualube range of rubber sleeved bearings are designed for marine and industrial applications. The bearings feature a specially formulated rubber and are moulded into various shell materials. The rubber is an extremely tough, chemical and oil resistant nitrile which offers outstanding resistance to abrasion and wear, even in the most adverse conditions.

# MMP

MICHIGAN MARINE PROPULSION  
INTERNATIONAL

## THE PRODUCT

Aqualube bearings can be offered in either brass or non-metallic (phenolic) shells and are available to suit imperial diameter shafts from 3/4" up to 10" and metric 20mm up to 260mm. Whilst we manufacture a comprehensive range of standard bearings, bespoke sizes can be quoted for and manufactured upon request.

## PRINCIPLE OF OPERATION

Rubber and water make the perfect combination for a bearing material and a lubricant.

The natural resilience of rubber gives the bearing its shock, vibration and noise absorption properties. The shape of the Aqualube bearing is the main reason for its success. Unlike many other bearings in the market the Aqualube bearing strips are shaped in such a way that a hydrodynamic water wedge is formed between shaft and bearing, even at very low shaft speed.

Water is the perfect lubrication medium, particularly for marine craft, because of its natural abundance, non-compressibility, cooling properties, and low coefficient of friction when between bearing strip and shaft.

The water enters the bearing through the longitudinal grooves and moves radially between the propeller shaft and the bearing face in a thin film. Once this film, or wedge, has developed the shaft does not actually come into contact with the bearing.

## CONSTRUCTION

Aqualube bearings are moulded from a specially compounded oil and chemical resistant nitrile rubber. The nitrile rubber displays an excellent resistance to wear and abrasion and is also tough and durable. Bonding techniques developed by Michigan Wheel ensure that the strength of the bond to the shell is at least equal to the strength of the rubber itself.

Standard range bearings shells are manufactured in either phenolic (non-metallic) or marine bronze and can be supplied with integral cast flanges.

## LUBRICATION

### WEAR AND DURABILITY:

All types of water lubricated rubber bearings eventually experience wear in service. For bearings operating in clean water the wear down effect will be less rapid than when operating in shallow, heavily contaminated water. In any event it is recommended that bearings should be inspected for wear whenever the vessel is hauled out. In cases where the bearing is operating in shallow water an annual inspection is recommended.

Bearings fitted to struts and completely immersed bearings have adequate lubrication. When bearings are installed in a position where the water flow is not good they should be lubricated by a forced water flow system. This also applies to bearings which have to cope with low shaft speed and high loads.

## WHY CHOOSE THE MICHIGAN AQUALUBE?

- ▷ Consistent high quality
- ▷ High resistance to abrasion
- ▷ High grade materials
- ▷ Hydrodynamic wedge formation
- ▷ Engineering excellence
- ▷ Large warehouse inventory
- ▷ 100% inspection procedure

MICHIGAN WHEEL WAS ESTABLISHED OVER 100 YEARS AGO – THE BUSINESS WAS BUILT ON A FUNDAMENTAL PRINCIPLE OF ENGINEERING EXCELLENCE AND EXPERTISE.

TODAY, WE CONTINUE TO FOCUS ON THESE VALUES AND SUPPORTED BY OUTSTANDING DESIGN TECHNIQUES AND A DIVERSE PRODUCT RANGE, WE OFFER A PROPELLER AND PROPULSION SERVICE THAT IS GLOBALLY UNRIVALLED.

IMPERIAL SERIES		
BEARING SIZE		
ID	O/D	LENGTH
3/4"	1-1/4"	3"
1"	1-1/4"	4"
1"	1-1/2"	4"
1-1/8"	1-5/8"	4-1/2"
1-1/4"	1-3/4"	5"
1-1/4"	2"	5"
1-3/8"	1-7/8"	5-1/2"
1-1/2"	2"	6"
1-1/2"	2-3/8"	6"
1-3/4"	2-3/8"	7"
1-3/4"	2-5/8"	7"
2"	2-5/8"	8"
2"	3"	8"
2-1/4"	3"	9"
2-1/2"	3"	10"
2-1/2"	3-1/8"	10"
2-1/2"	3-1/4"	10"
2-1/2"	3-3/8"	10"
2-3/4"	3-1/2"	11"
3"	3-3/4"	12"
3"	4"	12"
3-1/2"	4-1/4"	14"
4"	5"	16"

METRIC SERIES		
BEARING SIZE		
ID	OD	LENGTH
22	35	88
25	40	100
30	40	120
30	45	120
35	50	140
38	55	152
40	55	160
40	56	160
45	65	180
50	66	200
50	70	200
55	75	220
60	80	240
60	85	240
65	85	260
70	90	280
75	95	300
80	100	320
85	105	340
90	110	360
90	115	360
95	115	380
100	125	400
110	135	440

METRIC SERIES		
BEARING SIZE		
ID	OD	LENGTH
22	1-1/4"	88
25	1-1/4"	100
25	1-1/2"	100
30	1-3/4"	120
35	1-7/8"	140
40	2-1/8"	160
45	2-3/8"	180
50	2-5/8"	200
55	3"	220
60	3"	240
60	3-1/4"	240
70	3-3/4"	11"

