

X-Lube® Bushes



- Cost-effective
- Maintenance-free
- Non-conductive
- Self-lubricating
- Lightweight
- Corrosion-resistant

X-Lube® specification

The extensive range of plastic bushes are manufactured and marketed under the trade-name X-Lube®. These bushes are designed to provide an extremely cost-effective alternative to traditional metal bearings, and are injection-moulded using specialised precision tooling. X-Lube® bushes are available throughout Australasia.

X-Lube® bushes use a superior polyamide material (nylon 6) impregnated with molybdenum disulphide (MoS₂). This additive lowers friction which helps to reduce the need for lubrication, improves wear resistance and increases the life of the bush.

These bushes have generally been designed with an interference fit on the OD to allow for a good push-fit into the housing. An additional clearance has also been allowed in the ID so that, when the bush is installed, it will have the correct running clearance.

It is important to access www.xlube.info if in doubt about the correct fitting and clearances of X-Lube® bushes. Factors such as material type, temperature variation, working environment and humidity may mean additional clearance is necessary.

X-Lube® bushes are available in plain (P) or shouldered (S) configuration. Items marked * have a heavy-wall thickness and need to be machined to finished dimensions. Well-equipped machine shops offer efficient, fast production of these specialised bushes before delivery.

Where a standard X-Lube® bush is not available or loads, speeds and higher temperatures are outside its capabilities, a specialised bush can be custom-made to suit that application.

Visit www.xlube.info for more details.

Benefits and Properties

- Economical and very cost-effective
- Lightweight compared to metal
- Easy to install and maintain
- Superior chemical resistance
- Self-lubricating
- Low friction
- Non-corrosive and resistant to a large range of chemicals and fluids
- Excellent noise and vibration resistance
- Good insulation properties

Unsuitable Applications

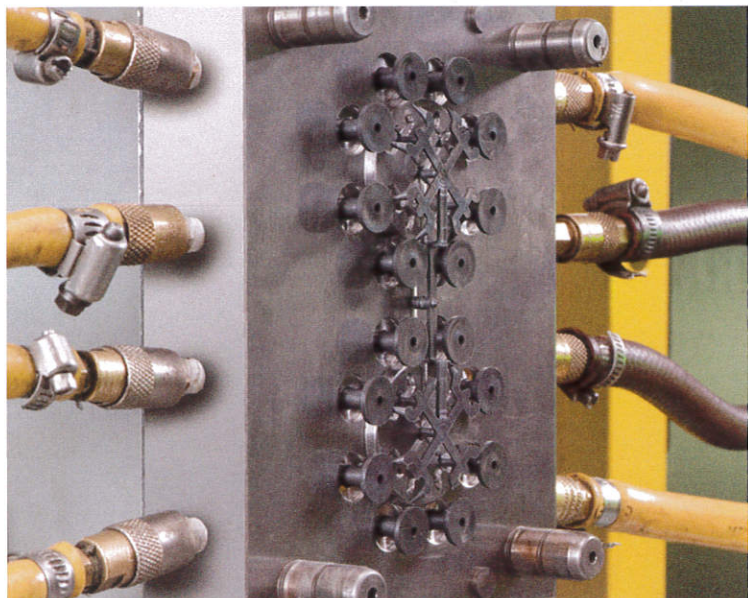
- Operating temperatures above 100°C
- Surface speed exceeds 8m/sec
- Total load exceeds 10N/mm²

Additional Lubrication

- Grease or lubricants will lessen friction and heat generation and increase load bearing capabilities. MoS₂ grease should not be used.

Non-standard Sizing

- If the X-Lube® bush is not in the standard size range, small quantities are able to be machined from available rod stock. For larger quantities (500 +), it may be economical to injection-mould custom sizes.



X-Lube® suitability

Pressure x Velocity (PV) Values

The life of an X-Lube® bush is determined by both pressure and velocity, as well as other environmental factors. This PV value relates to the maximum pressure and velocity that an X-Lube® bush can sustain in a normal working environment. The higher the velocity, the lower the pressure; the higher the pressure, the lower the velocity, as can be seen in the accompanying graph. PV values are intended as a guide only, when determining whether an application is suitable for the use of an X-Lube® bush.

Frictional heating, ambient operating temperature and material conductivity influence the performance of an X-Lube® bush. The maximum permissible PV for a material may need to take these factors into account in order to determine the PV that will give a satisfactory performance.

Maximum PV Values

The maximum PV values for an X-Lube® bush are given in the graph at right for lubricated and unlubricated conditions. The values shown are for operation at 20°C room temperature and a relative humidity of 50%. For operation in other conditions, eg. elevated temperature or intermittent operation, correction factors will need to be applied to the PV value obtained from the graph.

X-Lube® bushes made from other plastic materials will have a different PV value.

Visit www.xlube.info for more information.



PV Calculation

Pressure is assumed to be uniformly distributed over the projected area of the bearing and in the illustration below is equal to:-

$$P = \frac{W \times 10}{L \times d} \text{ N/mm}^2$$

where:

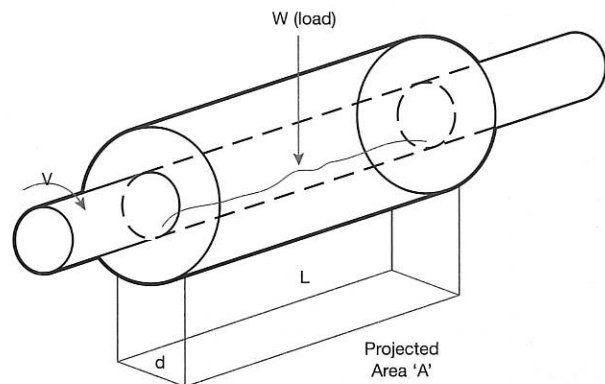
$$\begin{aligned} W &= \text{kg} \\ L &= \text{mm} \\ d &= \text{mm} \end{aligned}$$

Velocity is the peripheral surface velocity of the rotating shaft equal to:-

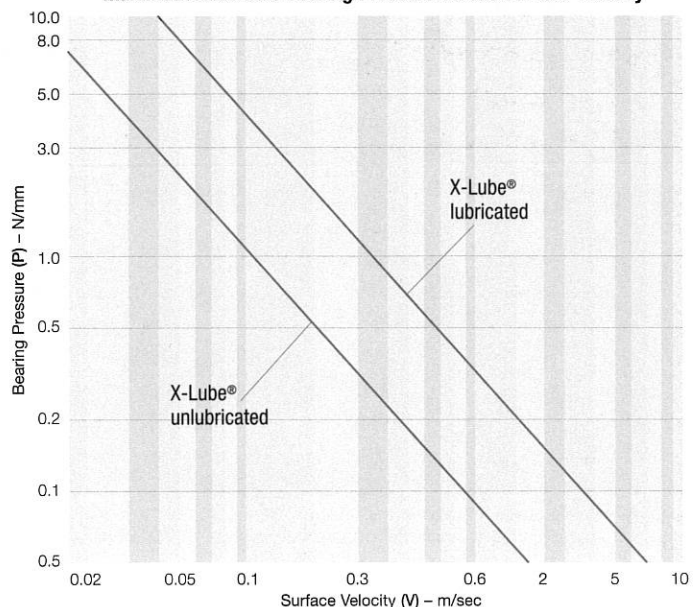
$$V = \pi \times d \times \frac{n}{60000} \text{ m/sec}$$

where:

$$\begin{aligned} d &= \text{mm} \\ n &= \text{rpm} \end{aligned}$$



Maximum Allowable Bearing Pressure versus Surface Velocity



X-Lube® shouldered

Shouldered: Imperial

Part No.	Code	I/D	O/D	Overall Length	Flange Diameter	Flange Thickness	Stocked
S1B/32	741010B	1/8	7/32	3/8	1/4	1/16	Y
S1A	741020B		1/2	1 1/8	3/4	1/8	Y
S1A	741020N						N
S1	741030B	3/16	5/16	1/2	9/16	1/8	Y
S244	741040B		3/8				Y
S71	741080B	1/4	3/8	7/16	3/4	3/16	Y
S2A/6	741050B			9/16		1/16	Y
S217	741060B			1 1/16			Y
S218	741070B			1 9/16			Y
S2A/43	741090B		1/2	9/32		1/8	Y
S785	741095B			3/8			N
S63	741100B			13/16			Y
S2	741110B			1 1/8			Y
S3	741130B	5/16	7/16	7/8	11/16	1/8	Y
S56	741140B		5/8	5/8	7/8		Y
S175B	741145B	3/8	1/2	1/4	3/4	1/8	Y
S175A	741180B			3/8			Y
S340	741150B			1/2	7/8		Y
S4	741170B			7/8	3/4		Y
S219	741160B			1 9/16	1	1/16	Y
S256	741200B		5/8	9/16		1/8	Y
S5	741190B			1 1/8	7/8		Y
S360	741210B		3/4	1	1	1/16	Y
S230	741220B	10mm	1/2	7/8	3/4	1/8	Y
S648	741240B	7/16	9/16	9/16		3/16	Y
S6	741230B			7/8	13/16	1/8	Y
S512	741250B		5/8	1	7/8	3/32	Y
S7B/47	741330B	1/2	5/8	5/8	1	1/16	Y
S394	741366B			3/4		1/8	Y
S474	741280B			3/4		1/16	Y
S7	741320B			7/8		1/8	Y
S7A/31	741340B			1 1/4	7/8		Y
S220	741300B			1 9/16	1 1/4	1/16	Y
S643	741310B			2	7/8	1/8	Y
S786A	741362B		3/4	9/16		1/16	Y
S8	741350B			1 1/8	1	1/8	Y
S104	741360B		1	1	1 1/2		Y
S9	741370B	9/16	11/16	7/8	13/16	1/8	Y
S672	741440B	5/8	3/4	5/8	1 3/16	1/8	Y
S10B	741400B			7/8	1		Y
S10	741420B			1 1/8			Y
S10H/40	741390B			1 1/2	1 1/16	1/16	Y
S222	741410B			1 9/16	1 1/2		Y
S10G/39	741430B			3 1/2	1 1/16		Y
S10J/42	741470B		7/8	3/8	1 1/8	1/8	Y
S10E/1	741500B			5/8			Y
S10F/7	741490B			3/4		1/16	Y
S75	741450B			7/8	1	1/8	Y
S10A	741480B			1 1/8	1 1/8		Y
S10D/3	741460B			1 1/4		1/16	N
S11C	741510B		1	1 1/2	1 1/2	1/8	Y
S365	741530B		1 1/8	21mm		3/16	Y
S11	741520B			1 1/2		1/8	Y
S447	741580B	3/4	7/8	3/4	1 1/8	1/8	Y
S101	741550B			7/8	1 1/2	3/16	N
S12	741560B			1 1/8	1 1/8	1/8	Y
S223	741570B			1 9/16	1 3/8	1/16	Y
S859acetal	800859		1	5/8	1 1/8	1/8	Y
S606	741590B			3/4	1 1/2		Y
S13	741600B			1 3/8	1 1/4		Y
S13acetal	800731						Y

Product code suffix denotes material type: B: X-Lube® N: natural nylon A: acetal

Non-stocked products may be subject to minimum order quantities * Denotes heavy-walled items that need to be machined to finished dimensions

X-Lube® shouldered

Shouldered: Imperial (cont'd)

Part No.	Code	I/D	O/D	Overall Length	Flange Diameter	Flange Thickness	Stocked
S513	741650B	7/8	1	1	1 1/4	1/16	Y
S14	741640B			1 3/8		1/8	Y
S224	741630B			1 9/16	1 3/4	1/16	Y
S15	741620B		1 1/8	1 5/8	1 3/8	1/8	Y
S16	741710B	1		1 1/8			Y
S225	741720B			1 9/16	1 3/4	1/16	Y
S76	741660B		31mm	3	1 5/8	3/16	N
S588	741603B		1 1/4	1 3/16	1 1/2	1/8	Y
S17	741680B			1 5/8			Y
S17B	741700B			2 1/8	1 3/4		Y
S17B	741700A						Y
S17C/54	741670B		1 27/32		2		N
S18	741610B	1 1/8	1 3/8	2 1/8	1 5/8	1/8	Y
S19	741540B	1 1/4	1 1/2	2 1/8	1 3/4	1/8	Y
S20	741380B	1 3/8	1 5/8	2 1/8	1 7/8	1/8	Y
S21	741260B	1 1/2	1 3/4	1 5/8	2	1/8	Y
S21/35	741270B				2 3/8		Y
S21/35	741270A						Y
S310	741735B	2	2 3/8	3 1/8	3 3/8	5/16	*Y
S649	741730B	2	2 1/2	2 7/16	2 3/4	3/16	*N

Shouldered: Metric

S200M	742010B	4	8	22	10	2	Y
S80M	742030B	5		5	15	2	Y
S201M	742050B		10	22	13		Y
S202M	742070B	6	10	22	13	2	Y
S48M	742110B	8	12	12	16	2	Y
S205M	742090B			37	15		Y
S272M	742130B		12.5	12	18		Y
S55M	742150B		16	16	22	3	Y
S458M	742170B	10	14	28	28	2	Y
S260M	742190B		16	17	24	3	Y
S206M	742200B			22	20	2	Y
S207M	742180B			37			Y
S338M	742210B	12	16	9	20	3	Y
S452M	742228B			16	26	1.5	Y
S208M	742220B			22	20	2	Y
S209M	742230B			37			Y
S178M	741441B		19	16	30	3	Y
S179M	742238B		20	23	40		Y
S299M	742221B		22	29	26	15	Y
S210M	742260B	16	20	22		2	Y
S211M	742250B			37			Y
S312M	742270B	20	23	25	28	2	Y
S212M	742290B		25	22	32		Y
S213M	742280B			37			Y
S62M	742300B			90	35		Y
S366M	742330B	23	29	22	38	5	Y
S313M	742350B	25	28	25	35	2	Y
S214M	742370B		30	27	40		Y
S215M	742360B			37			Y
S58AM	742380B		40	52	50	3.5	*Y
S58M	742390B		42			3	Y
S527M	742395B		44	50	55		N
S249M	742400B	28	52	89	76	4	*N
S216M	742410B	30	35	37	45	2	Y
S58DM	742420B		40	52	50	3.5	*N

Product code suffix denotes material type: B: X-Lube® N: natural nylon A: acetal

Non-stocked products may be subject to minimum order quantities * Denotes heavy-walled items that need to be machined to finished dimensions

X-Lube® plain

Plain: Imperial

Part No.	Code	I/D	O/D	Overall Length	Stocked		
P132A	744005B	3/32	5/16	1/2	N		
P132	744010B			5/8	N		
P1A	744020B	1/8	1/2	1	N		
P1	744030B	3/16	5/16	3/8	N		
P2A/6	744050B	1/4	3/8	1/2	Y		
P166	744040B			3/4	Y		
P659	744045B			7/8	N		
P217	744060B			1	Y		
P218	744070B			1 1/2	Y		
P2	744080B			1/2	1	Y	
P2	744080N					N	
P126	744090B			5/8		Y	
P2B/8	744100B			3/4	11/16	Y	
P3	744120B			5/16	7/16	3/4	Y
P406	744160B	3/8	1/2	3/8	Y		
P4	744140B			3/4	Y		
P219	744150B			1 1/2	Y		
P5	744170B			5/8	1	Y	
P59	744176B			1 1/4		Y	
P165	744240B			1/2	5/8	1/2	Y
P7	744210B	3/4	Y				
P7A/31	744220B	1 1/8	Y				
P220	744200B	1 1/2	Y				
P681	744225B	1 19/32	Y				
P288	744230B	2	Y				
P60	744280B	3/4	1/2			Y	
P8	744250B	1	Y				
P444	744270B	1 3/4	N				
P476	744260B	2	Y				
P104	744290B	1	1			Y	
P9	744300B	9/16	11/16			3/4	N
P10B	744350B	5/8	3/4			3/4	Y
P10	744340B			1	Y		
P222	744330B			1 1/2	Y		
P10A	744370B			7/8	1	Y	
P10K/49	744360B			1 1/2	Y		
P10C/4	744380B			2	Y		
P11	744390B			1 1/8	1 3/8	N	
P12	744440B			3/4	7/8	1	Y
P223	744450B	1 1/2	Y				
P116	744460B	1	7/8			Y	
P13	744480B	1 1/4	Y				
P266	744470B	2	Y				
P198	744430B	1 1/4	1 3/4			Y	
P13A/45	744420B	1 1/2	3 3/16			*N	
P84	744490B	2 5/8	3/4			N	
P14	744530B	7/8	1			1 1/4	Y
P224	744540B					1 1/2	N
P480	744505B			1 1/8	5/8	Y	
P15	744520B			1 1/2	Y		
P15	744520N				N		
P16	744600B			1	1 1/8	1	Y
P16	744600N	N					
P225	744590B	1 1/2	Y				
P76	744595B	31 mm	2 13/16			N	
P17	744580B	1 1/4	1 1/2			Y	
P17	744580A					N	

Product code suffix denotes material type: B: X-Lube® N: natural nylon A: acetal

Non-stocked products may be subject to minimum order quantities * Denotes heavy-walled items that need to be machined to finished dimensions

X-Lube® plain

Plain: Imperial (cont'd)

Part No.	Code	I/D	O/D	Overall Length	Stocked
P596	744493B	1	1 ¹ / ₄	2 ¹³ / ₁₆	Y
P17B	744570B			2	Y
P17C/21	744560B		1 ¹ / ₂	5/8	Y
P18	744650B	1 ¹ / ₈	1 ³ / ₈	2	N
P19	744410B	1 ¹ / ₄	1 ¹ / ₂		Y
P20/37	744168B	1 ⁵ / ₈	1 ⁵ / ₈	3/4	N
P20	744320B	1 ³ / ₈		2	N
P21	744190B	1 ¹ / ₂	1 ³ / ₄		Y
P649	744760B	2	2 ¹ / ₂	2 ¹ / ₄	N

Plain: Metric

P200M	745010B	4	8	20	Y
P201M	745030B	5	10	20	Y
P202M	745070B	6	10	20	Y
P203M	745050B			35	Y
P784M	745076B	8		34	Y
P204M	745110B		12	20	Y
P205M	745130B		12	35	Y
P392M	745090B		1/2"	1/2"	Y
P566M	745135B		16	10	Y
P458M	745150B	10	14	26	Y
P206M	745170B		16	20	Y
P207M	745190B			35	Y
P492M	745197B		38	15	*N
P208M	745230B	12	16	20	Y
P209M	745210B			35	Y
P70M	745245B	13	16	19	Y
P86M	745250B		20	27	Y
P127M	745270B	15	18	19	Y
P210M	745290B	16	20	20	Y
P211M	745310B			35	Y
P491M	745315B		48	25	*N
P370M	745330B	18	25	19	Y
P212M	745350B	20	25	20	Y
P213M	745370B			35	Y
P61M	745380B			90	Y
P333M	745390B		27	20	Y
P722M	745342B		40	21	Y
P542M	745395B		42	12	*N
P289M	745410B	25	28	57	N
P664M	745415B		30	20	Y
P214M	745450B			25	Y
P215M	745430B			35	Y
P58M	745470B		42	50	*N
P29M	745490B	28	53	85	*N
P216M	745510B	30	35	35	Y
P419M	745530B		40	50	*N
P694M	745845B	60	70	50	*N
P693M	745885B	70	80	42	*N

Product code suffix denotes material type: B: X-Lube® N: natural nylon A: acetal

Non-stocked products may be subject to minimum order quantities * Denotes heavy-walled items that need to be machined to finished dimensions

X-Lube® applications

X-Lube® bushes are designed for use in a wide range of domestic, commercial and industrial applications:-

- Agricultural equipment
- Air/hydraulic cylinders
- Automatic door openers
- Automotive springs
- Boat roller bushes
- Cable drums
- Caravans
- Conveyor roller bushes
- Electrical insulators
- Electrolytic isolators
- Evaporators/condensers
- Fertiliser spreaders
- Fish processing equipment
- Gate hinges
- Golf carts
- Greenhouses
- Gravity roller bushes
- Gymnasium equipment
- Display cabinets
- Horticultural equipment
- Hospital beds
- Irrigation equipment
- Jet boats
- Leaf spring bushes
- Materials handling
- Measuring equipment
- Meat processing
- Playground equipment
- Pivot bushes
- Potato graders
- Railway rolling stock
- Reclining chairs
- Refrigeration cabinets
- Roller bushes
- Semi-trailers
- Stanchion isolators
- Stock handling equipment
- Theatre seating
- Tractor cabs
- Travelling irrigators
- Wooden spinning wheels
- Wool scour equipment

Custom Injection Moulding

A very wide cross-section of thermoplastics are capable of being custom injection moulded. These range from complex formulations through to the more traditional moulding resins. Visit www.xlube.info for more information.

Available from:

WAIKATO BEARINGS

11 Northway Street, PO Box 20388
Te Rapa, Hamilton 3241
P: 07 850 6155
F: 07 850 6144
E: sales@waikatobearings.co.nz

waikatobearings.co.nz



Authorised
Distributor

