



LAMBDA CHAIN

LUBE FREE OPERATION



REVEAL THE BENEFITS

the advantages

LAMBDA chain delivers the ultimate in power transmission technology... long-term operation without additional lubrication. Any application that must be lube-free needs LAMBDA chain to improve performance. It saves you time and money, as it reduces down time as well as maintenance costs. LAMBDA chain is now available to all customers to support them in their operations whether they are currently lubricating or not.

TSUBAKI, the pioneer in lube-free roller chain products since 1988, has recently developed and released a new series of lube-free chains, engineered on the basis of years of experience in the automotive industry and world-wide applications.

TSUBAKI's goal is to achieve 'customer's delight' by supporting and contributing to YOUR operations.



- **OWNERSHIP PERFORMANCE**
- **EASY OPERATION**

Calculate your savings now...



LOWER PURCHASING COSTS

Lower frequency of ordering due to high quality and long economic life of the chain
No purchasing of lubricants or lubrication systems



HIGHER PRODUCTION PERFORMANCE

No unforeseen down time due to chain breakdown
Less time for maintenance and therefore more time for production



PROACTIVE (REDUCED) MAINTENANCE

No expensive labour costs due to lubrication (manual)
Chain life calculation allows you to reorder in time



CLEANER HANDLING

Keep applications running clean (products, machines, floor)



CAREFREE LIFE

No unexpected handling due to chain performance
More time to spend on critical areas in the production field

Application

KEEPS YOUR
APPLICATION
RUNNING CLEAN

NO PRODUCT
CONTAMINATION

REDUCES
DOWN TIME AND
MAINTENANCE
COSTS



FOOD & BEVERAGE



PACKAGING



PRINTING



BAKERY



ELECTRONIC APPLIANCES



AUTOMOTIVE



LUMBER



TEXTILE



LIGHTING

This is just a summary of application areas

Technical Evolution

As the pioneer in the lube-free chain market, TSUBAKI will reveal some of the key elements behind LAMBDA's outstanding performance:

A special oil-impregnated sintered bush in combination with a special coated pin for long-term internal lubrication is the secret of TSUBAKI LAMBDA's LONG ECONOMIC LIFE AND WEAR RESISTANCE.

In addition, TSUBAKI provides you with some well-known features that are applied on related products from the world's leading chain manufacturer to ensure maximum benefit for you.

Easy cutting: you have the option to disassemble LAMBDA chain easily without sacrificing any performance.

Ring coining: breakage of chain at connecting links is no issue at TSUBAKI thanks to this unique feature.

The combination of all chain parts forms the ideal TSUBAKI DNA for this unique product.

TSUBAKI LAMBDA has outstanding performance in temperature up to 150°C, by using Heat Resistant LAMBDA Chain up to 230°C.

Easy cutting

Oil-impregnated sintered bush

Special coated pin

Ring coining



X-LAMBDA

Ultra long life series

DUAL PROTECTION FOR ULTRA-LONG LIFE

X-LAMBDA chain is a quantum leap for power transmission technology. We start with a special coated pin and oil-impregnated sintered bush for long-term internal lubrication. Then we extend the protection with special felt seals (patent pending) that lock in lube while keeping dirt and abrasives out. The result? X-LAMBDA chain lasts up to ten times longer than any other lube-free chain.

X-LAMBDA CHAIN FOR YOUR OPERATION

When your operation needs to run clean, when machines and conveyed materials must be free from contact with oil, or when lubrication is difficult, X-LAMBDA chain can extend the life of YOUR operation drastically.

GET UP AND RUNNING RIGHT AWAY

Maximize the efficiency of your existing system without costly design changes

- Available in BS/DIN and ANSI standard to meet more application needs
- Outstanding performance in temperatures up to 150° C

‘Lock out dirt,
lock in lube’



Test the product that
will exceed your expectations

→ Felt Seal

LAMBDA N.E.P.

Corrosion-Protected lube-free series
(with the strength of carbon steel)

CORROSION RESISTANCE THAT PERFORMS BETTER THAN EVER BEFORE

This chain is suitable for use in environments exposed to seawater, acid-rain and other adverse weather conditions.

The kilowatt ratings are the same as those of the corresponding BS LAMBDA chain with a working temperature up to +150°C.



THE BEST PERFORMANCE 'COMPONENT BY COMPONENT'

Through TSUBAKI's research & development program we are able to design & manufacture a roller chain that combines the best performance.

The link plates have a special three stage layer applied in order to provide the maximum protection from the operating or environmental conditions. (Spring clips are SUS301). N.E.P. Rollers have a special coating designed to resist the corrosive conditions as well as the severe dynamic contact between roller and sprocket. The bearing pins for LAMBDA chains are already corrosion resistant.

ENVIRONMENTAL FRIENDLY

Tsubaki is conscious of the effects industry can have on the environment and so LAMBDA N.E.P. chain does not contain any chemically hazardous substances such as Hexavalent Chromium, Lead, Cadmium and Mercury as regulated by RoHS.



LAMBDA Product line-up

DRIVE CHAIN

△ BS/DIN Drive Chain

△ ANSI Drive Chain

Available in simplex and duplex sizes

△ N.E.P. Chain

Corrosion-protected Chain

X-LAMBDA

Ultra-long life through felt seal

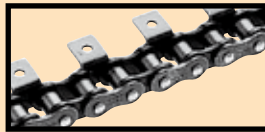
△ Curved Chain

Side-flexing type

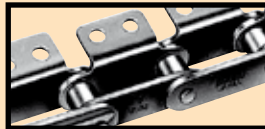


CONVEYOR CHAIN

△ Attachment Chain
Standard and special attachment available



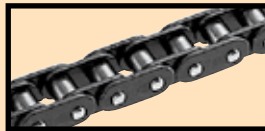
△ RF Double Pitch Chain
Standard and special attachment available



△ Hollow Pin Chain
Pins with hollow centres



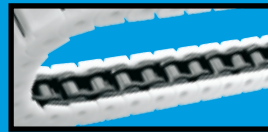
△ RF Roller Chain
For conveying items directly on chain



X-LAMBDA
Ultra-long life through felt seal



△ Snap Cover Chain
For conveying items directly on chain



△ Plastic Outboard Roller Chain
Free Flow Chain with accumulation function



△ Plastic Top Roller Chain
Free Flow Chain with accumulation function
High-speed conveyance and low noise



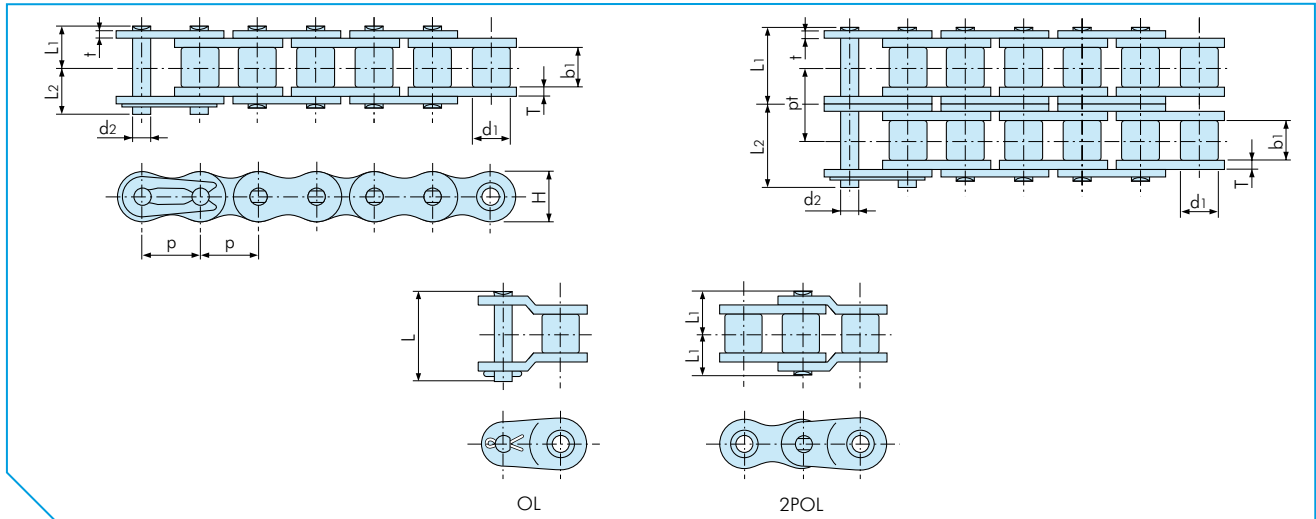
△ Double Plus Chain
Free Flow Chain with accumulation function,
high-speed conveyance and low noise



△ TS Top Chain
For conveying items directly on chain



BS LAMBDA LUBE FREE ROLLER CHAIN



BS LAMBDA Chain

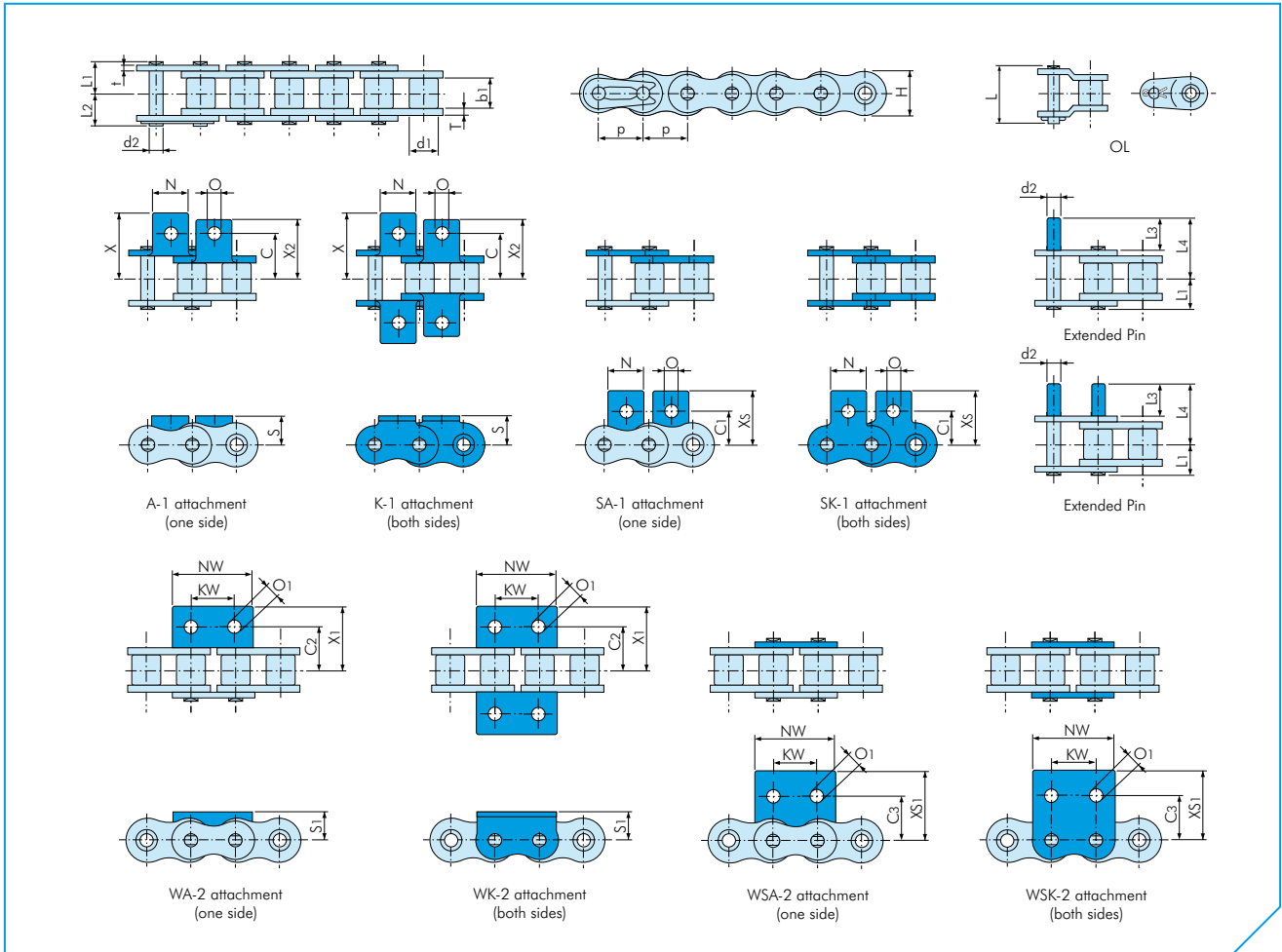
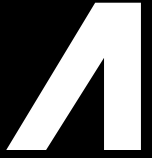
Dimensions in mm

TSUBAKI Chain No.	Pitch p	Roller Diameter d1	Inner Width b1	Pin			Link Plate			Transverse Pitch pt	Min. Tensile Strength acc. to ISO 606 kN	Approx. Mass kg/m	
				Diameter d2	Length L1	Length L2	Length L	Thickness T	Thickness t				Height H (max)
RF06B-LM-1	9.525 (3/8")	6.35	5.72	3.28	6.10	7.70	15.10	1.30	1.00	8.20	-	8.9	0.39
RF06B-LM-2					11.20	12.80	25.90				10.24	16.9	0.75
RS08B-LM-1	12.70 (1/2")	8.51	7.75	4.45	8.40	10.00	18.60	1.60	1.60	12.00	-	17.8	0.70
RS08B-LM-2					15.30	16.90	34.50				13.92	31.1	1.35
RS10B-LM-1	15.875 (5/8")	10.16	9.65	5.08	9.55	11.25	20.80	1.50	1.50	14.70	-	22.2	0.95
RS10B-LM-2					17.85	19.55	39.40				16.59	44.5	1.85
RS12B-LM-1	19.05 (3/4")	12.07	11.68	5.72	11.10	13.00	24.40	1.80	1.80	16.10	-	28.9	1.25
RS12B-LM-2					20.85	22.75	45.90				19.46	57.8	2.50
RS16B-LM-1	25.40 (1")	15.88	17.02	8.28	17.75	19.95	39.30	4.00	3.20	21.00	-	60.0	2.70
RS16B-LM-2					33.55	35.75	73.40				31.88	106.0	5.40
RS20B-LM-1	31.75 (1 1/4")	19.05	19.56	10.19	19.90	23.10	46.60	4.40	3.40	26.40	-	95.0	3.85
RS20B-LM-2					38.25	41.45	84.60				36.45	170.0	7.65
RS24B-LM-1	38.10 (1 1/2")	25.40	25.40	14.63	26.65	31.85	61.70	6.00	5.60	33.40	-	160.0	7.45
RS24B-LM-2					50.80	56.00	112.80				48.36	280.0	14.65

Note:

1. Connecting links are clip type for sizes up to RS16B-LM, and cotter type for sizes RS20B-LM to RS24B-LM.
2. RF06B-LM chain has flat shaped link plates.
3. Intermediate plate of RF06B-LM-2 and RS08B-LM-2 is a solid plate.
4. Centre sink riveting is applied for RS08B-LM-1 to RS16B-LM-1. Double stake riveting is applied to all other sizes including multi-strand chain.
5. Warning: previous generations of Lambda chain can not be connected with the above chains due to different dimensions.
6. When a single pitch offset link is used, please calculate a 35% reduction of the fatigue strength.
7. Also available in N.E.P. specification.

BS LAMBDA LUBE FREE ATTACHMENT CHAIN



BS Single Pitch LAMBDA Chain

Dimensions in mm

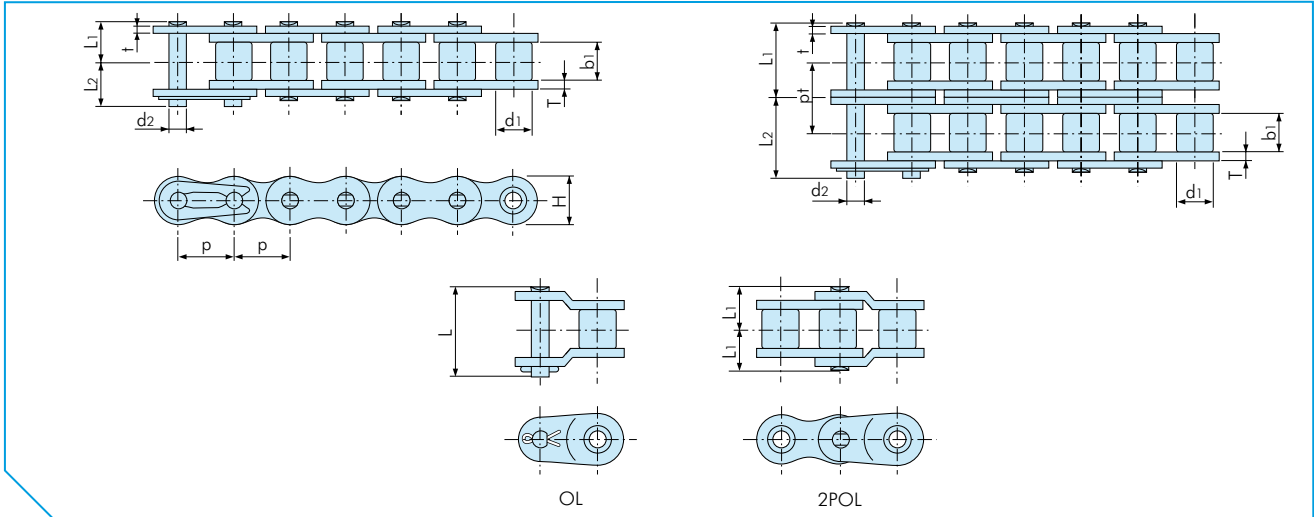
TSUBAKI Chain No.	Pitch p	Roller Diameter d1	Inner Width b1	Pin							Link Plate			Approx. Mass kg/m
				Diameter d2	Length L1	Length L2	Length L3	Length L4	Length L	Thickness T	Thickness t	Height H (max.)		
RS08B-LM	12.70 (1/2")	8.51	7.75	4.45	8.40	10.00	14.70	22.20	18.60	1.60	1.60	12.00	0.70	
RS10B-LM	15.875 (5/8")	10.16	9.65	5.08	9.55	11.25	17.80	26.15	20.80	1.50	1.50	14.70	0.95	
RS12B-LM	19.05 (3/4")	12.07	11.68	5.72	11.10	13.00	20.80	30.60	24.40	1.80	1.80	16.10	1.25	
RS16B-LM	25.40 (1")	15.88	17.02	8.28	17.75	19.95	33.20	49.35	39.30	4.00	3.20	21.00	2.70	

TSUBAKI Chain No.	Attachment Dimensions															Attachment Mass					
	C	C1	C2	C3	KW	N	NW	O	O1	S	S1	X	X1	X2	XS	XS1	A SA kg/att.	K SK kg/att.	WA WSA kg/att.	WK WSK kg/att.	Ext. Pin kg/att.
RS08B-LM	11.90	12.70	12.70	13.10	12.70	11.40	24.60	4.20	4.90	8.90	8.90	19.05	20.30	17.15	19.30	20.70	0.002	0.004	0.005	0.010	0.001
RS10B-LM	15.90	15.90	15.90	16.60	15.90	12.70	30.00	5.00	10.20	10.20	22.25	22.85	20.60	22.90	23.60	23.60	0.003	0.006	0.006	0.012	0.002
RS12B-LM	19.05	22.20	17.45	17.60	19.10	16.50	34.80	7.10	5.50	13.50	11.40	29.85	25.65	27.80	32.05	25.75	0.006	0.012	0.009	0.018	0.003
RS16B-LM	23.80	23.90	28.60	26.00	25.40	24.30	46.00	6.70	8.10	15.20	15.90	37.35	39.25	34.40	34.10	36.70	0.014	0.028	0.030	0.060	0.008

Note:

1. Connecting links are clip type.
2. Warning: previous generations of Lambda chain cannot be connected with the above chains due to different dimensions.
3. The listed sizes are stock items, other chain sizes are available on request.

ANSI LAMBDA LUBE FREE ROLLER CHAIN



ANSI LAMBDA Chain

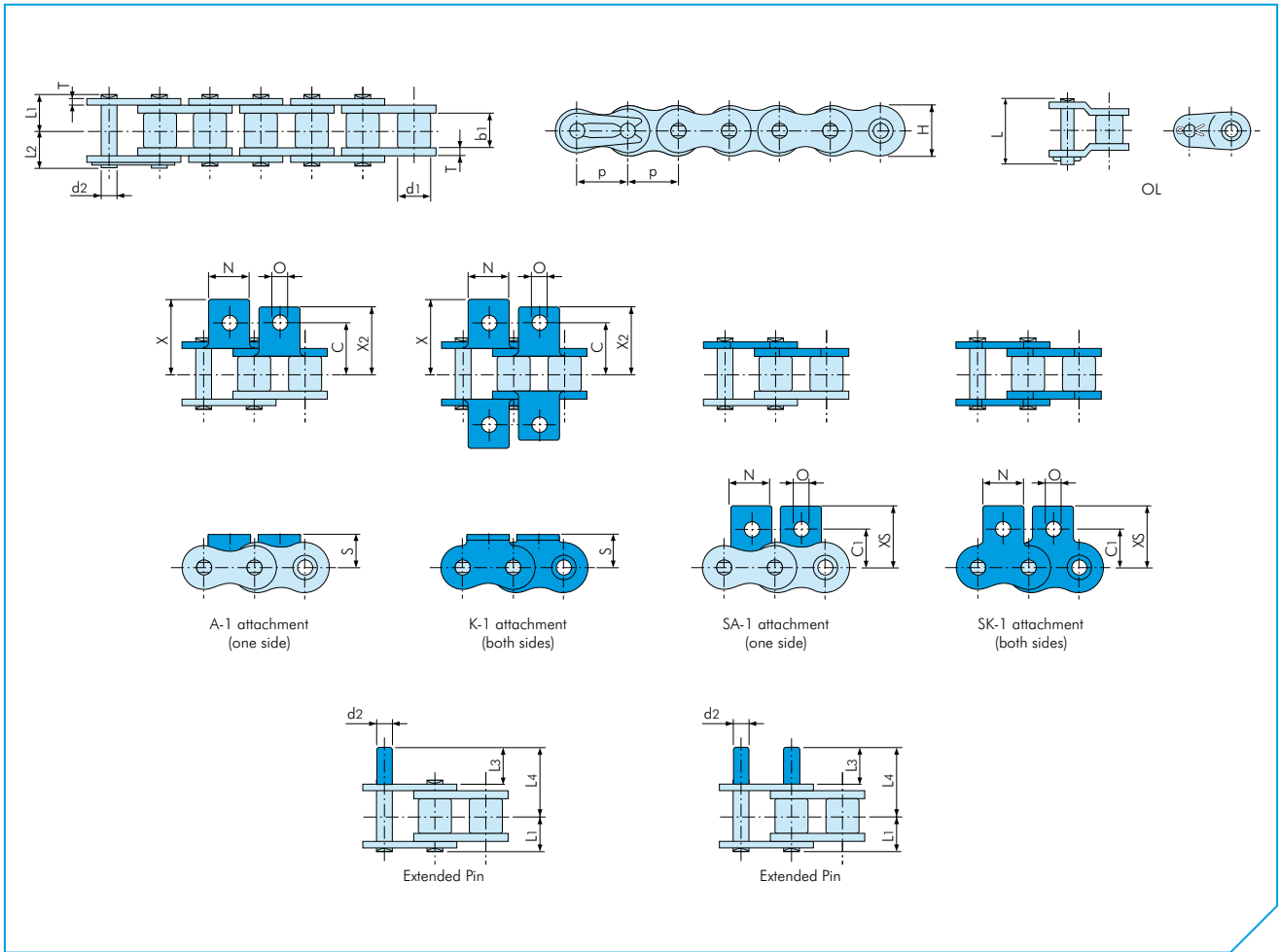
Dimensions in mm

TSUBAKI Chain No.	Pitch p	Roller Diameter d1	Inner Width b1	Pin			Link Plate			Transverse Pitch pt	Min. Tensile Strength acc. to ANSI kN	Av. Tensile Strength acc. to Tsubaki kN	Approx. Mass kg/m	
				Diameter d2	Length L1	Length L2	Length L	Thickness T	Thickness t					Height H (max)
RS40-LMD-1	12.70 (1/2")	7.95	7.55	3.97	8.78	10.45	20.00	2.00	1.50	12.00	-	15.2	19.1	0.70
RS40-LMD-2					16.50	18.10	-				15.40	30.4	38.2	1.40
RS50-LMD-1	15.875 (5/8")	10.16	9.26	5.09	10.75	12.45	24.00	2.40	2.00	15.00	-	24.0	31.4	1.11
RS50-LMD-2					20.20	22.00	-				19.00	48.0	62.8	2.20
RS60-LMD-1	19.05 (3/4")	11.91	12.28	5.96	13.75	15.65	32.00	3.20	2.40	18.10	-	34.2	44.1	1.72
RS60-LMD-2					26.05	28.05	-				24.52	68.4	88.3	3.40
RS80-LMD-1	25.40 (1")	15.88	15.48	7.94	17.15	20.25	39.90	4.00	3.20	24.10	-	61.2	78.5	2.77
RS80-LMD-2					32.70	35.90	-				31.10	122.4	157.0	5.50
RS100-LMD-1	31.75 (1 1/4")	19.05	18.70	9.54	20.65	23.85	47.50	4.80	4.00	30.10	-	95.4	118.0	4.30
RS100-LMD-2					39.50	42.50	-				37.60	190.8	235.0	8.60
RS120-LMD-1	38.10 (1 1/2")	22.23	24.75	11.11	25.75	29.95	59.00	5.60	4.80	36.20	-	137.1	167.0	6.40
RS140-LMD-1	44.45 (1 3/4")	25.40	24.75	12.71	27.70	32.20	63.70	6.40	5.60	42.20	-	185.9	216.0	8.10

Note:

1. Connecting links are clip type for sizes RS40-LMD to RS60-LMD, and cotter type for sizes RS80-LMD to RS140-LMD.
2. Drive and Conveyor series LAMBDA chain cannot be intercoupled or interchanged.
3. Due to increased roller link plate thickness, Drive LAMBDA connecting links are required.
4. Due to increased roller link plate thickness, LAMBDA double strand chains require special sprockets.
5. Due to increased roller link plate thickness, the pins are longer. Check for machine interference.
6. Offset links for LAMBDA double strand chains are not available.
7. When a single pitch offset link is used, please calculate a 35% reduction in fatigue strength.
8. Also available in N.E.P. specification.

ANSI LAMBDA LUBE FREE ATTACHMENT CHAIN



ANSI Single Pitch LAMBDA Chain

Dimensions in mm

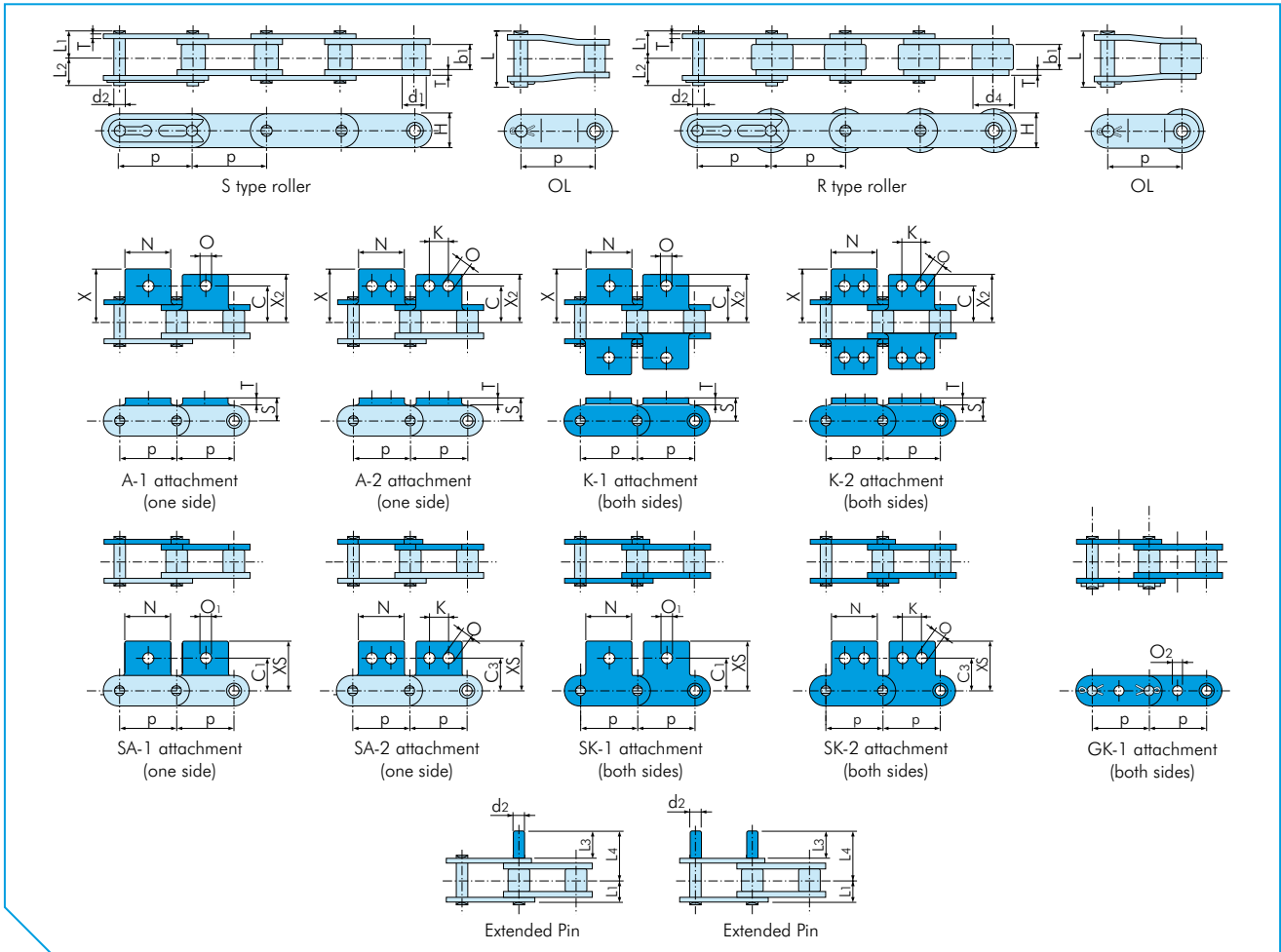
TSUBAKI Chain No.	Pitch p	Roller Diameter d_1	Inner Width b_1	Pin						Link Plate		Approx. Mass kg/m
				Diameter d_2	Length L_1	Length L_2	Length L_3	Length L_4	Length L	Thickness T	Height H (max.)	
RS35-LMC	9.525 (3/8")	5.08	4.78	3.00	5.85	6.85	9.50	14.60	13.50	1.25	9.00	0.33
RS40-LMC	12.70 (1/2")	7.92	7.95	3.97	8.25	9.95	9.50	16.75	18.20	1.50	12.00	0.64
RS50-LMC	15.875 (5/8")	10.16	9.53	5.09	10.30	12.00	11.90	21.00	22.60	2.00	15.00	1.04
RS60-LMC	19.05 (3/4")	11.91	12.70	5.96	12.85	14.75	14.30	25.75	28.20	2.40	18.10	1.53
RS80-LMC	25.40 (1")	15.88	15.88	7.94	16.25	19.25	19.10	33.85	36.60	3.20	24.10	2.66
RS100-LMC	31.75 (1 1/4")	19.05	19.05	9.54	19.75	22.85	23.80	41.75	43.70	4.00	30.10	3.99

TSUBAKI Chain No.	Attachment Dimensions									Attachment Mass		
	C	C_1	N	O	S	X	X_2	X_S	A SA	K SK	Ext. Pin	
RS35-LMC	9.50	9.50	7.90	3.40	6.35	14.30	14.30	14.55	0.0008	0.0016	0.0008	
RS40-LMC	12.70	12.70	9.50	3.60	8.00	17.80	17.80	17.40	0.002	0.004	0.001	
RS50-LMC	15.90	15.90	12.70	5.20	10.30	23.40	23.40	23.05	0.003	0.006	0.002	
RS60-LMC	19.05	18.30	15.90	5.20	11.90	28.20	28.20	26.85	0.007	0.014	0.003	
RS80-LMC	25.40	24.60	19.10	6.80	15.90	36.60	36.60	35.45	0.013	0.026	0.007	
RS100-LMC	31.75	31.80	25.40	8.70	19.80	44.90	44.90	44.00	0.026	0.052	0.012	

Note:

1. Connecting links are clip type for sizes up to RS60-LMC, and cotter type for size RS80-LMC to RS100-LMC.
2. Drive and Conveyor series LAMBDA chains cannot be intercoupled or interchanged.
3. Standard ANSI sprockets can be used.
4. LAMBDA Conveyor Chain can not be used as a drive chain. This chain is designed for conveyor applications where speeds are lower and center distances are larger than drive chain applications.
5. Special attachments are available on request.

ANSI LAMBDA LUBE FREE ATTACHMENT CHAIN



ANSI Double Pitch LAMBDA Chain

Dimensions in mm

TSUBAKI Chain No.	Pitch		Inner Width	Roller		Pin					Link Plate		Approx. Mass		
				S Roller	R Roller	Diameter	Length	Length	Length	Length	Length	Thickness	Height	S Roller	R Roller
	p	(in)	b1	d1	d4	d2	L1	L2	L3	L4	L	T	H	kg/m	kg/m
RF2040-LMC	25.40	(1")	7.95	7.92	15.88	3.97	8.25	9.95	9.50	16.75	18.20	1.50	12.00	0.51	0.87
RF2050-LMC	31.75	(1 1/4")	9.53	10.16	19.05	5.09	10.30	12.00	11.90	21.00	22.60	2.00	15.00	0.84	1.30
RF2060-LMC	38.10	(1 1/2")	12.70	11.91	22.23	5.96	14.55	16.55	14.30	27.45	31.50	3.20	17.20	1.51	2.19
RF2080-LMC	50.80	(1 3/4")	15.88	15.88	28.58	7.94	18.30	20.90	19.10	35.50	39.90	4.00	23.00	2.41	3.52
RF2100-LMC	63.50	(1 1/2")	19.05	19.05	39.69	9.54	21.80	24.50	23.80	43.40	47.50	4.80	28.60	3.54	5.80

TSUBAKI Chain No.	Attachment Dimensions												Attachment Mass		
	C	C1	C3	K	N	O	O1	O2	S	X	X2	XS	A SA	K SK	Ext. Pin
	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.	kg/att.
RF2040-LMC	12.70	11.10	13.60	9.50	19.10	3.60	5.20	4.10	9.10	19.30	17.60	19.80	0.003	0.006	0.001
RF2050-LMC	15.90	14.30	15.90	11.90	23.80	5.20	6.80	5.10	11.10	24.20	22.00	24.60	0.006	0.012	0.002
RF2060-LMC	21.45	17.50	19.10	14.30	28.60	5.20	8.70	6.10	14.70	31.50	28.20	30.60	0.017	0.034	0.003
RF2080-LMC	27.80	22.20	25.40	19.10	38.10	6.80	10.30	8.10	19.10	40.70	36.60	40.50	0.032	0.064	0.007
RF2100-LMC	33.35	28.60	31.80	23.80	47.60	8.70	14.30	10.10	23.40	49.90	44.90	50.40	0.060	0.120	0.012

Note:

1. Connecting links are clip type for sizes up to RF2060-LMC, and cotter type for size RF2080-LMC to RF2100-LMC.
2. LAMBDA Conveyor Chain can not be used as a drive chain. This chain is designed for conveyor applications where speeds are lower and center distances are larger than drive chain applications.
3. Special attachments are available on request.
4. Chain with S type roller is indicated as RF2040S-LMC.
5. Chain with R type roller is indicated as RF2040R-LMC.

Reveal the Benefits

Heat Resistant
LAMBDA Chain

TSUBAKI'S HEAT RESISTANT LAMBDA CHAIN OFFERS OUTSTANDING PERFORMANCE AT HIGH TEMPERATURES. AMBIENT TEMPERATURES OF UP TO 230°C ARE NO MATCH FOR TSUBAKI'S HEAT RESISTANT LAMBDA CHAIN.

FEATURES

- Outstanding performance at high temperatures
- Ambient temperature range from 150°C up to 230°C.
- No degradation at high temperature levels
- Unsurpassed anti-wear properties within this temperature range
- NSF H-1 food grade certified and environmentally friendly lubrication used
- Lambda has undergone LCA (Lifecycle Assessment)

YOUR BENEFITS

- No need to lubricate
- No need to derate chain due to higher temperature
- Lower maintenance costs
- Cleaner working environment
- Increased productivity
- Increased equipment reliability

HEAT RESISTANT LAMBDA APPLICATION EXAMPLES

- Automotive component industry
- Heat sealing for packaging industry
- Small pitch conveyor chain for baking process in food industry
- Drive chain for furnace conveyors in steel industry
- Small pitch conveyor chain for furnace conveyor in semiconductor industry
- Many other suitable applications





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