

TSUBAKI Surface Treated NEPTUNE™

Patent Pending



NEPTUNE



Philosophy

One hundred years of fundamental technology, and the endless pursuit of new value.

Tsubakimoto Chain has worked tirelessly on improving chain performance since our founding in 1917. We were the first Japanese factory to be accredited by Japan Industrial Standards (JIS) for roller chain in 1953. We dubbed that roller chain our first generation chain, and every decade since we have made major leaps in performance up to the 2006 launch of our G7 Series, the world's highest quality roller chain. To celebrate our 100th anniversary, we will be launching our next generation G8 Series, the next evolution of our chain line.

History of RS Roller Chain

- 1917 • Founding
- 1953 • 612 Series JIS accredited
- 1964 • NA Series 2x kW ratings
- 1969 • 53 Series 15% higher tensile strength, global quality
- 1976 • 60 Series 7% higher tensile strength, 25% higher kW ratings, world's top quality
- 1985 • 70 Series 2x wear life, less initial elongation
- 1995 • 80 Series M-type connecting link provides 25% higher kW ratings, 30% increased wear life
- 2006 • G7 Series 33% increased kW ratings, 2x wear life
- 2009 • G7-EX Series Expanded G7 size range
- 2016 • **G8 Series Centennial model**

As a manufacturing company, Tsubakimoto Chain continues to develop products that adapt to global needs with a century of chain manufacturing know-how and contribute to energy savings, labor savings, and better efficiency around the world.

Leonardo da Vinci, founder of the roller chain (1452-1519)

Leonardo da Vinci, the genius of the Renaissance, devised the prototype of a roller chain that today is widely used as a drive chain. His foresight and advanced ideas are revealed in his notebooks, which contain sketches of an object that looks remarkably like a modern chain. The photo shows a portrait of da Vinci, made entirely out of link plates, on display in the main lobby of Tsubakimoto Chain's Kyotanabe Plant.

The Start of a New Era



100th Anniversary Model

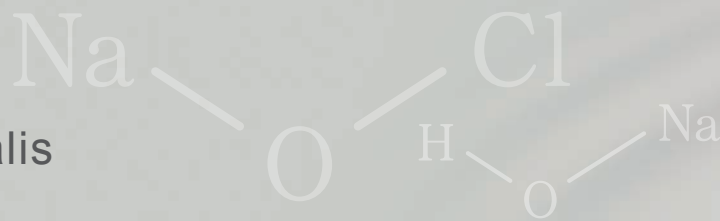
TSUBAKI G8 SERIES



The rebirth of the drive chain,
with improved quality and performance.

PRODUCT MAP

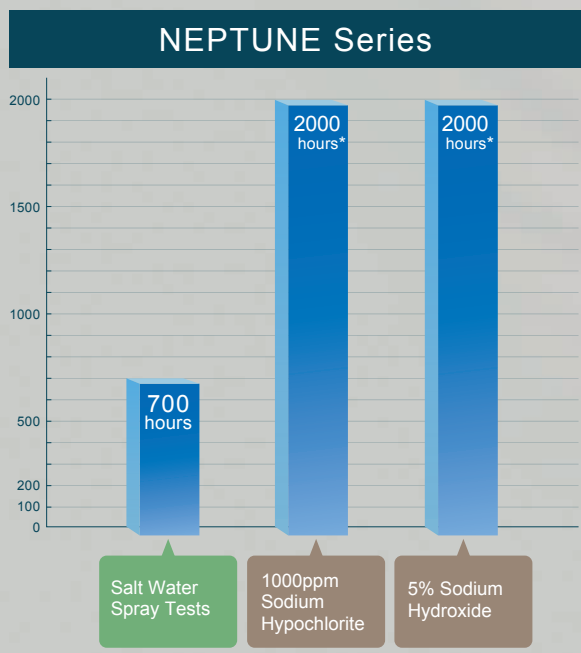
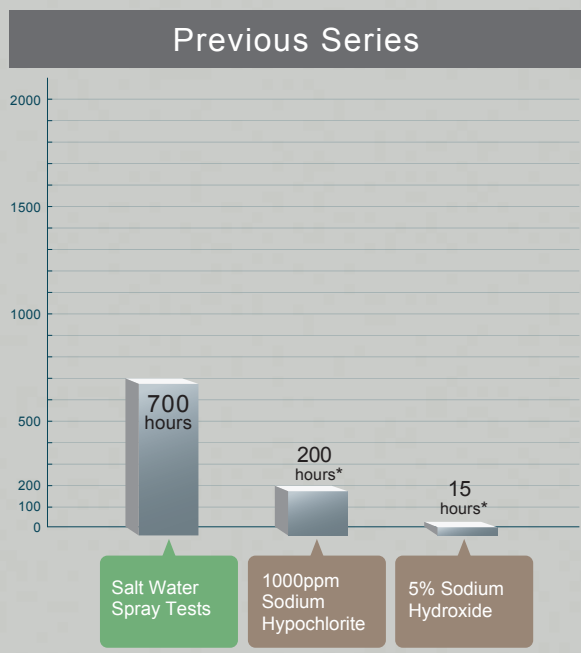




Tough against water and alkalis







Corrosion Resistant Chain

NEPTUNE™



*In-house test comparison

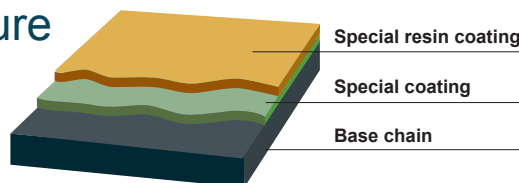
Superb Corrosion Resistance

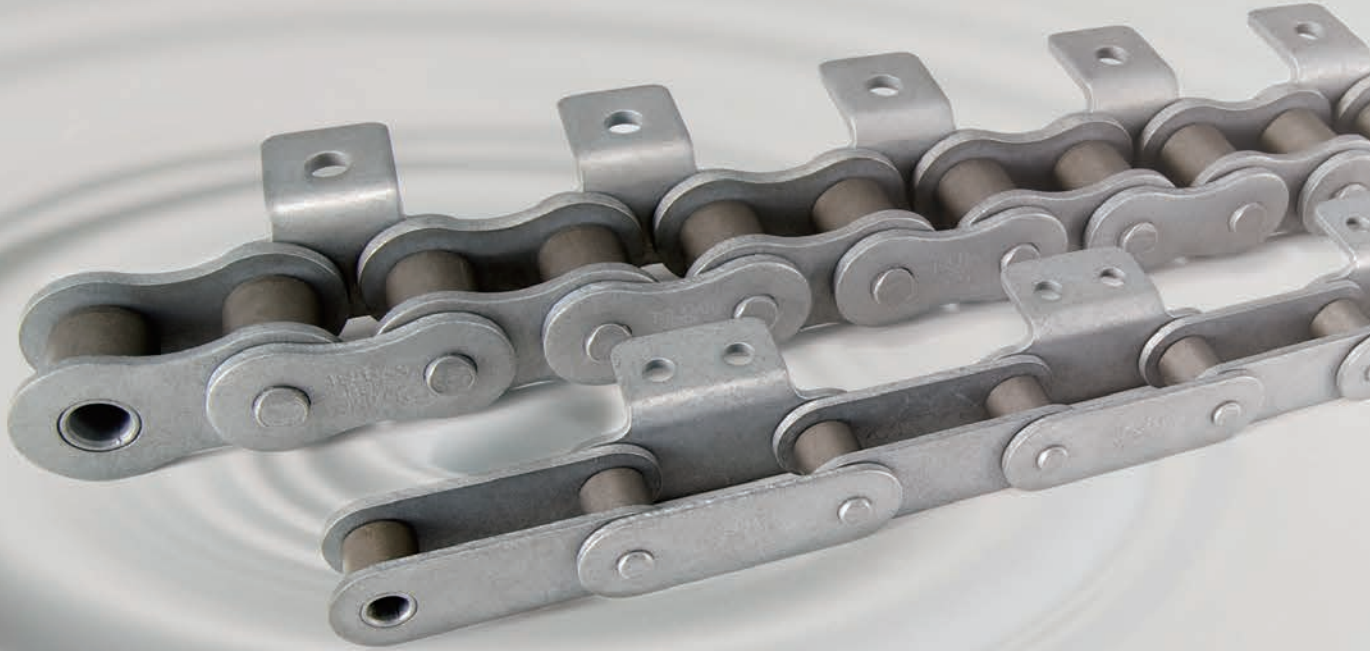
	Corrosion Resistance	Chemical Resistance	
	Salt water spray tests*	1000ppm sodium hypochlorite	5% sodium hydroxide
NEPTUNE	700 hours 	2000 hours 	2000 hours 
Previous series	700 hours 	200 hours 	15 hours 

*Salt water spray tests in accordance with JIS-Z-2371.

New Surface Treatment Structure

Combines Tsubaki's uniquely developed special coating and special resin coating for superb corrosion (rust) and chemical resistance.





Lower Environmental Load

NEPTUNE use no harmful hexavalent chromium in their corrosion resistant surface treatment, nor any other hazardous substances such as lead, cadmium, mercury, or arsenic. NEPTUNE are RoHS compliant.



RoHS

RoHS is a directive issued by the European Union limiting the use of specified hazardous substances in electronics or electrical equipment.

No Strength Reduction

Uses a special treatment process that does not affect chain strength (part hardness). NEPTUNE have the same tensile strength and allowable load as our standard roller chains.

Unit: kN{kgf}

	Standard	NEPTUNE Series	With Hexavalent Chromium	NP Series	SS Series Stainless Steel
Min. tensile strength	17.7 {1800}	17.7 {1800}	16.6* {1690}	17.7 {1800}	—
Max. allowable load	3.63 {370}	3.63 {370}	—	3.04 {310}	0.44 {45}

Ref.: For RS40 size drive chain
*Ave. competitor tensile strength

And Much, Much More

Contact a Tsubaki representative regarding:

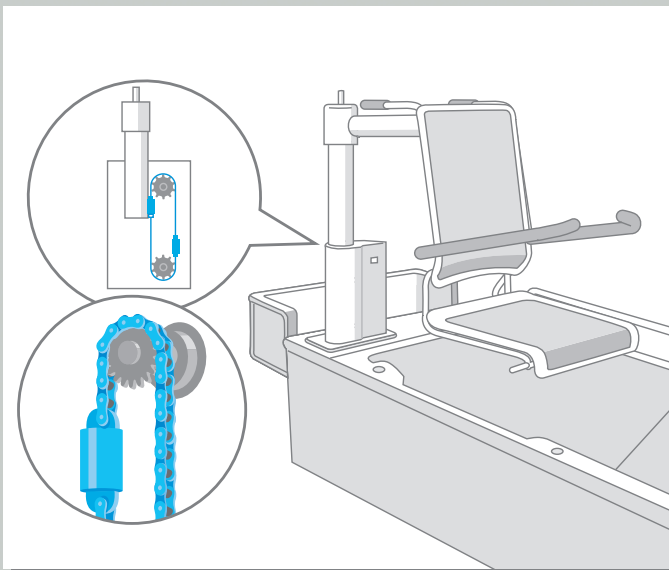
- Corrosion resistance to other chemicals besides alkalis.
- Surface treatments providing corrosion resistance for sizes not covered by NEPTUNE. (Please note that these surface treatments will not have chemical resistance.)
(See pgs. 7 – 11 for NEPTUNE sizes.)

Notes from the Developer



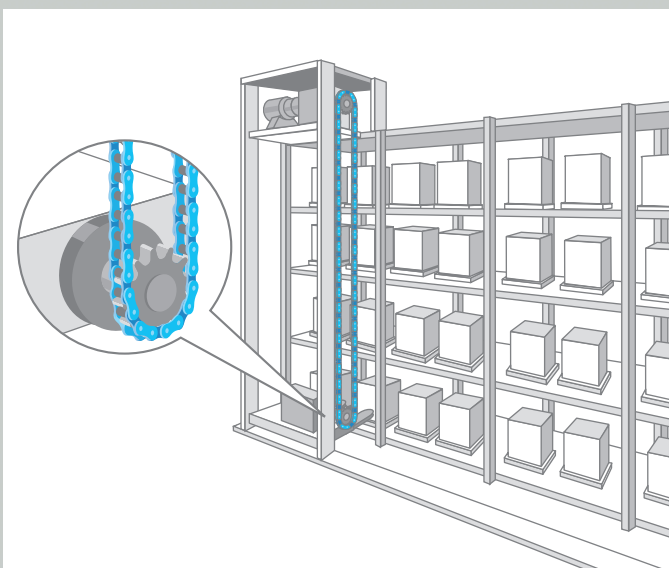
It was extremely difficult developing both the corrosion (rust) resistance and chemical resistance that NEPTUNE required. Increasing the chemical resistance would decrease the corrosion resistance, and vice versa. I had to first select different materials and evaluate different combinations and surface treatment structures countless times. Then I evaluated 230 different combinations before finally developing a unique resin coating that gives NEPTUNE Series vastly improved resistance to alkaline chemicals often used in food processing equipment and wash-down processes.

Applications



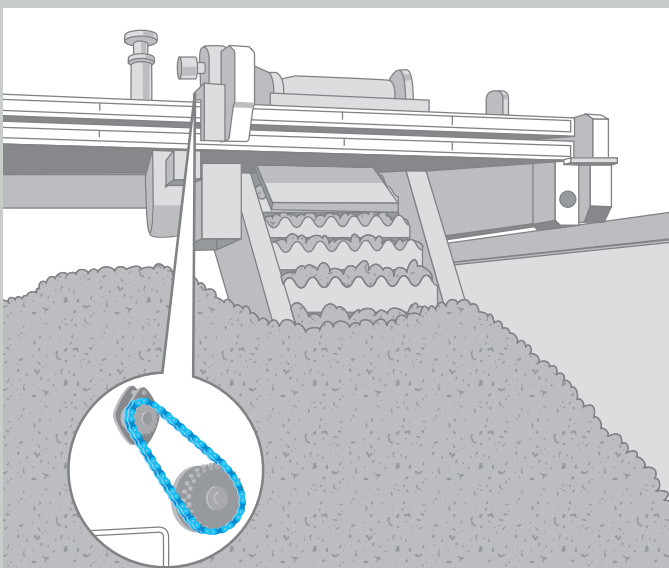
Nursing Bath

A stainless steel chain that would satisfy the required performance would be too big to fit in the space provided, so the user chose a NEPTUNE, which has the same strength as steel chain. Slight amounts of detergent and other chemicals are used in the bath, so NEPTUNE provided a much longer service life than steel chains.



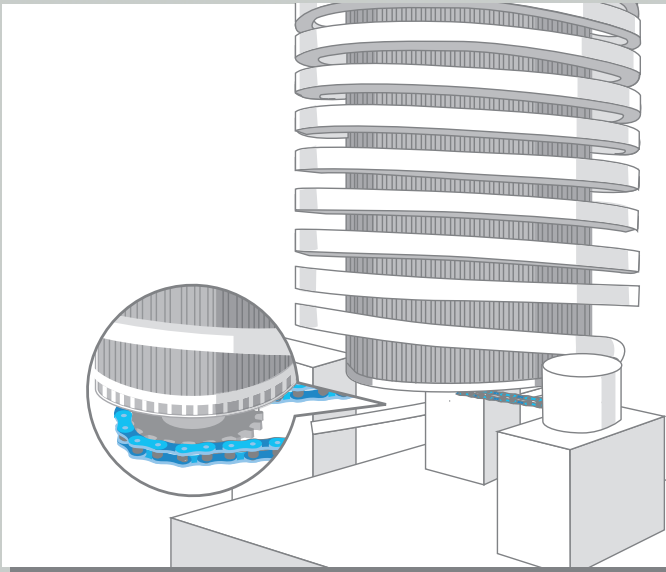
Automated Warehouse

Used on a stacker crane for mushroom cultivation in a high temperature, high humidity environment. Standard chain quickly corroded and suffered wear, while the required stainless steel chain would be too big, so the user chose NEPTUNE.



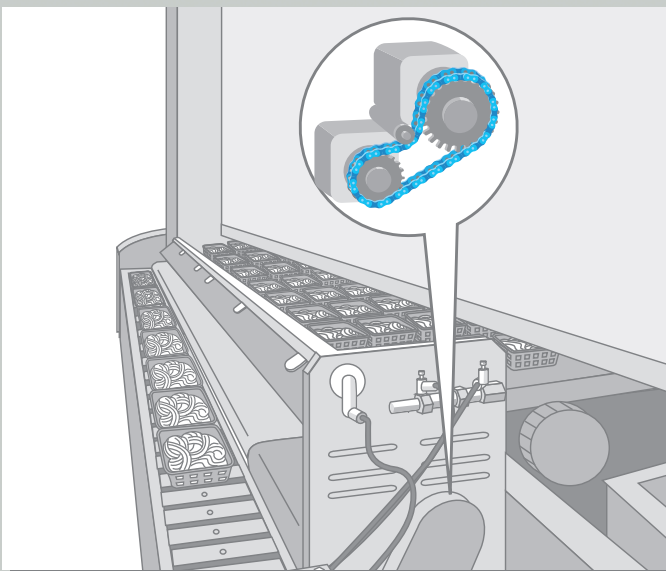
Raw Garbage Agitator

This equipment turns raw garbage into compost. The agitator, travel section, and drive of the equipment all use chain, but the corrosive environment (ammonia gas, etc.) degrades steel chain and shortens its service life. Switching to NEPTUNE has doubled the wear life.



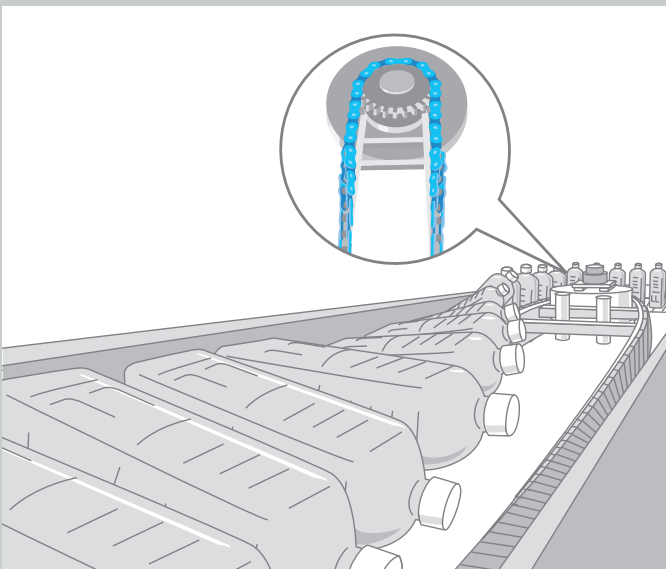
Spiral Conveyor

The center of the spiral conveyor rotates and lifts or lowers the conveyed goods. These conveyors are used in high and low temperatures, in contact with water or steam, in contact with chemicals, and many other environments. The drive requires a high tensile strength that stainless steel chains cannot provide. NEPTUNE, with its corrosion and chemical resistance, solves this problem.



Frozen Noodle Conveyor

This conveyor conveys food, so there is always a wash-down when different products are conveyed or at the end of operations. Chemicals are used during this wash-down, so we proposed NEPTUNE with its corrosion and chemical resistance. The chain in the drive section is covered, but cleaning water and chemicals sometimes splash on the cover – with NEPTUNE, the user can use their chain worry free.



PET Bottle Sterilizer

Sterilizes PET bottles. The conveying area uses a special chain that is regularly in contact with water. The customer uses NEPTUNE to prevent rusting.

Specifications and Drawings

NEPTUNE™ Drive Chain

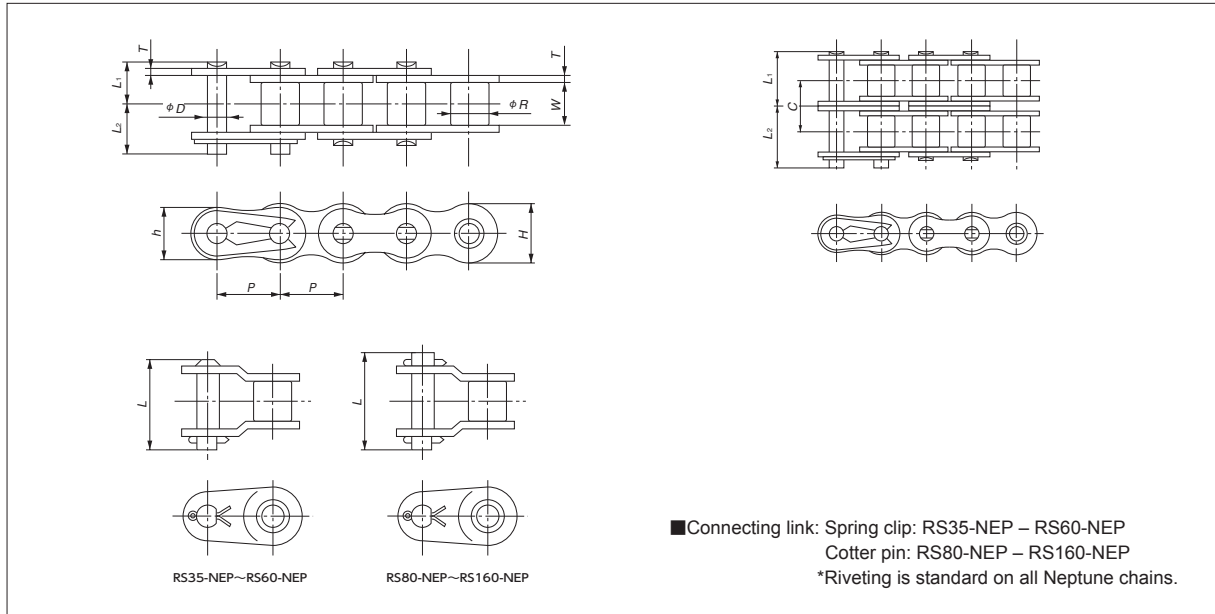
■ Chain Numbering Example

RS50-NEP-1

Chain no.

NEPTUNE code

No. of strands



TSUBAKI Chain Number	Pitch P	Roller Dia. (Bushing Dia.) R	Inner Width of Inner Link W	Plate			Pin Diameter D	Pin			Transverse Pitch C	
				Thickness T	Height H	Height h		L ₁ +L ₂	L ₁	L ₂		Offset Pin Length L
RS35-NEP-1	9.525	(5.08)	4.78	1.25	9.0	7.8	3.59	12.7	5.85	6.85	13.5	-
RS40-NEP-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	18.2	8.25	9.95	18.2	-
RS40-NEP-2								32.6	15.45	17.15	33.5	14.4
RS50-NEP-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	22.3	10.3	12.0	22.6	-
RS50-NEP-2								40.5	19.35	21.15	41.8	18.1
RS60-NEP-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	27.6	12.85	14.75	28.2	-
RS60-NEP-2								50.5	24.25	26.25	52.6	22.8
RS80-NEP-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	35.5	16.25	19.25	38.2	-
RS80-NEP-2								64.8	30.9	33.9	67.5	29.3
RS100-NEP-1	31.75	19.05	19.05	4.0	30.1	26.0	9.54	42.6	19.75	22.85	45.7	-
RS100-NEP-2								78.5	37.7	40.8	81.5	35.8
RS120-NEP-1	38.10	22.23	25.40	4.8	36.2	31.2	11.11	53.8	24.9	28.9	57.8	-
RS140-NEP-1	44.45	25.40	25.40	5.6	42.2	36.4	12.71	58.6	26.9	31.7	63.4	-
RS160-NEP-1	50.80	28.58	31.75	6.4	48.2	41.6	14.29	68.7	31.85	36.85	73.6	-

TSUBAKI Chain Number	Minimum Tensile Strength kN[kgf]	Maximum Allowable Load kN[kgf]	Approximate Mass kg/m	Links per Unit
RS35-NEP-1	9.81 { 1000 }	2.16 { 220 }	0.33	320
RS40-NEP-1	17.7 { 1800 }	3.63 { 370 }	0.64	240
RS40-NEP-2	35.3 { 3600 }	6.18 { 630 }	1.27	
RS50-NEP-1	28.4 { 2900 }	6.37 { 650 }	1.04	192
RS50-NEP-2	56.9 { 5800 }	10.7 { 1100 }	2.07	
RS60-NEP-1	40.2 { 4100 }	8.83 { 900 }	1.53	160
RS60-NEP-2	80.4 { 8200 }	15.0 { 1530 }	3.04	
RS80-NEP-1	71.6 { 7300 }	14.7 { 1500 }	2.66	120
RS80-NEP-2	143 { 14600 }	25.0 { 2550 }	5.27	
RS100-NEP-1	107 { 10900 }	22.6 { 2300 }	3.99	96
RS100-NEP-2	214 { 21800 }	38.3 { 3910 }	7.85	
RS120-NEP-1	148 { 15100 }	30.4 { 3100 }	5.93	80
RS140-NEP-1	193 { 19700 }	40.2 { 4100 }	7.49	68
RS160-NEP-1	255 { 26000 }	53.0 { 5400 }	10.10	60

- Maximum allowable load is 65% of the above values when using a one-pitch offset link.
- RS35-NEP is a bushed chain.
- Multi-strand RS35-NEP is not available.
- Models in bold are stock items. All other models are made-to-order.
- 2-pitch offset links are not available.
- The dimensions given above are nominal dimensions and may differ from actual dimensions.

■ Operating Temperature Range:

-10°C - 150°C (Use a high temperature lubricant when using above 60°C. Contact a Tsubaki representative when using in temperatures beyond the ranges given.)

■ Selection/Handling

Refer to the Tsubaki Drive Chains & Sprockets catalog for information on selection and handling.

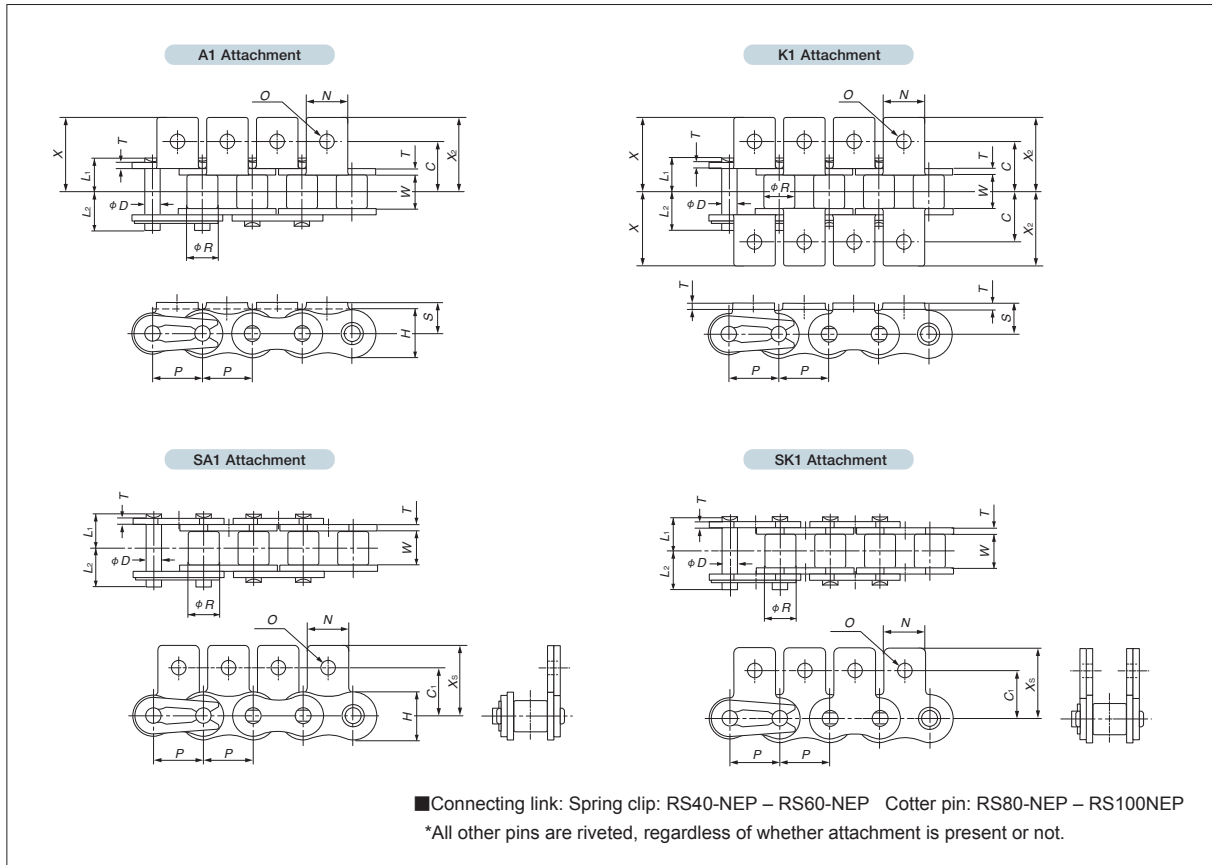
■ Precautions in Use

- Galvanic corrosion may occur when steel chains are used with stainless steel sprockets, promoting premature wear. Avoid mutual contact as much as possible. In-house tests have shown that the middle links of multi-strand chains have slightly less corrosion resistance than with single-strand chains.
- Uses a different surface treatment than other parts in order to reduce the size of film flakes during roller engagement or sliding.
- Do not use if there is a risk that the chain will come into direct contact with food, or if film flakes or wear debris will mix in with food. Install a cover when using in non-food environments where film flakes and wear dust will be problems, or contact a Tsubaki representative regarding chain selection.

NEPTUNE™ RS Attachment Chain

■ Chain Numbering Example
RS50-NEP-1L A1

Chain size: RS50-NEP
NEPTUNE code: RS50-NEP-1L
Att. type: A1
Att. spacing: 1L



TSUBAKI Chain Number	Pitch <i>P</i>	Roller Diameter <i>R</i>	Inner Width of Inner Link <i>W</i>	Plate		Pin			Minimum Tensile Strength kN[kgf]	Maximum Allowable Load kN[kgf]	Approximate Mass kg/m
				Thickness <i>T</i>	Height <i>H</i>	Diameter <i>D</i>	<i>L</i> ₁	<i>L</i> ₂			
RS40-NEP	12.70	7.92	7.95	1.5	12.0	3.97	8.25	9.95	14.7 {1500}	2.65 { 270}	0.64
RS50-NEP	15.875	10.16	9.53	2.0	15.0	5.09	10.3	12.0	23.5 {2400}	4.31 { 440}	1.04
RS60-NEP	19.05	11.91	12.70	2.4	18.1	5.96	12.85	14.75	35.3 {3600}	6.28 { 640}	1.53
RS80-NEP	25.40	15.88	15.88	3.2	24.1	7.94	16.25	19.25	60.8 {6200}	10.7 {1090}	2.66
RS100-NEP	31.75	19.05	19.05	4.0	30.1	9.54	19.75	22.85	93.2 {9500}	17.1 {1740}	3.99

TSUBAKI Chain Number	Attachments								Mass per Attachment kg		Links per Unit
	<i>C</i>	<i>C</i> ₁	<i>N</i>	<i>O</i>	<i>S</i>	<i>X</i>	<i>X</i> ₂	<i>X</i> ₂	A/SA Attachments	K/SK Attachments	
RS40-NEP	12.7	12.7	9.5	3.6	8.0	17.8	17.8	17.40	0.002	0.004	240
RS50-NEP	15.9	15.9	12.7	5.2	10.3	23.4	23.4	23.05	0.003	0.006	192
RS60-NEP	19.05	18.3	15.9	5.2	11.9	28.2	28.2	26.85	0.007	0.014	160
RS80-NEP	25.4	24.6	19.1	6.8	15.9	36.6	36.6	35.45	0.013	0.026	120
RS100-NEP	31.75	31.8	25.4	8.7	19.8	44.9	44.9	44.00	0.026	0.052	96

- All models made-to-order.
- O* is marginally smaller.
- The dimensions given above are nominal dimensions and may differ from actual dimensions.

■ Operating Temperature Range:

-10°C - 150°C (Use a high temperature lubricant when using above 60°C. Contact a Tsubaki representative when using in temperatures beyond the ranges given.)

■ Selection/Handling

Refer to the Tsubaki Small Size Conveyor Chain catalog for information on selection and handling.

■ Precautions in Use

- Galvanic corrosion may occur when steel chains are used with stainless steel sprockets, promoting premature wear. Avoid mutual contact as much as possible. In-house tests have shown that the middle links of multi-strand chains have slightly less corrosion resistance than with single-strand chains.
- Uses a different surface treatment than other parts in order to reduce the size of film flakes during roller engagement or sliding.
- Do not use if there is a risk that the chain will come into direct contact with food, or if film flakes or wear debris will mix in with food. Install a cover when using in non-food environments where film flakes and wear dust will be problems, or contact a Tsubaki representative regarding chain selection.

Specifications and Drawings

NEPTUNE™ Double Pitch Chain

Chain Numbering Example

RF2050R-NEP-1L A2

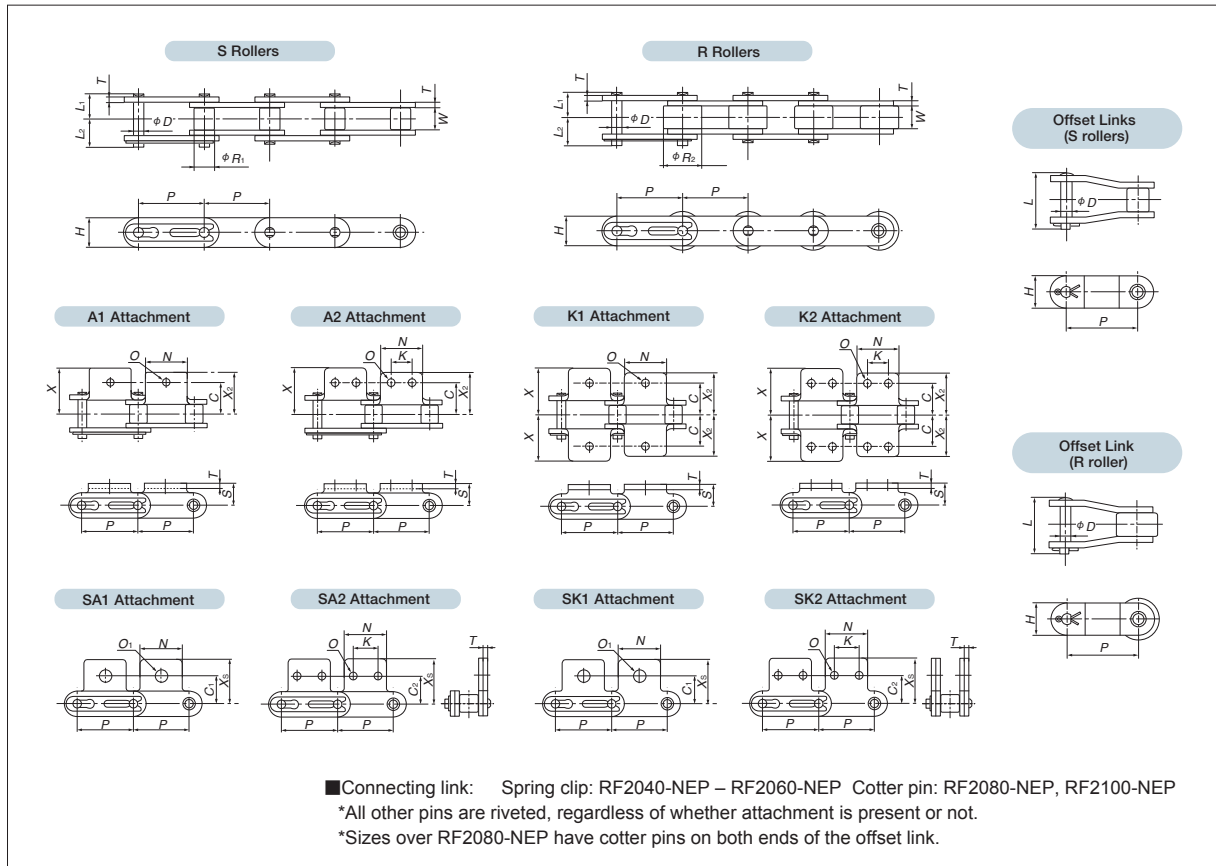
Chain size

Roller type S-R

NEPTUNE code

Att. type

Att. spacing



TSUBAKI Chain Number	Roller Type	Pitch P	Roller Dia.		Inner Width of Inner Link W	Plate		Pin				Approximate Mass kg/m		Minimum Tensile Strength kN[kgf]	Maximum Allowable Load kN[kgf]
			S Roller R ₁	R Roller R ₂		Thickness T	Height H	Dia. D	L ₁	L ₂	Offset Pin Length L	S Roller	R Roller		
RF2040-NEP	S, R	25.40	7.92	15.88	7.95	1.5	12.0	3.97	8.25	9.95	18.2	0.51	0.87	14.7 {1500}	2.65 { 270}
RF2050-NEP		31.75	10.16	19.05	9.53	2.0	15.0	5.09	10.30	12.0	22.6	0.84	1.30	23.5 {2400}	4.31 { 440}
RF2060-NEP		38.10	11.91	22.23	12.70	3.2	17.2	5.96	14.55	16.55	31.5	1.51	2.19	35.3 {3600}	6.28 { 640}
RF2080-NEP		50.80	15.88	28.58	15.88	4.0	23.0	7.94	18.30	20.90	41.9	2.41	3.52	60.8 {6200}	10.7 {1090}
RF2100-NEP		63.50	19.05	39.69	19.05	4.8	28.6	9.54	21.80	24.50	49.0	3.54	5.80	93.2 {9500}	17.1 {1740}

TSUBAKI Chain Number	Attachments													Mass per Attachment kg		Links per Unit
	C	C ₁	C ₂	K	N	O	O ₁	S	T	X	X ₂	X _s	A/SA Attachment	K/SK Attachment		
RF2040-NEP	12.7	11.1	13.6	9.5	19.1	3.6	5.2	9.1	1.5	19.3	17.6	19.8	0.003	0.006	120	
RF2050-NEP	15.9	14.3	15.9	11.9	23.8	5.2	6.8	11.1	2.0	24.2	22.0	24.6	0.006	0.012	96	
RF2060-NEP	21.45	17.5	19.1	14.3	28.6	5.2	8.7	14.7	3.2	31.5	28.2	30.6	0.017	0.034	80	
RF2080-NEP	27.8	22.2	25.4	19.1	38.1	6.8	10.3	19.1	4.0	40.7	36.6	40.5	0.032	0.064	60	
RF2100-NEP	33.35	28.6	31.8	23.8	47.6	8.7	14.3	23.4	4.8	49.9	44.9	50.4	0.060	0.120	48	

- All models made-to-order.
- O, O₁ dimensions are marginally smaller.
- The dimensions given above are nominal dimensions and may differ from actual dimensions.

Operating Temperature Range:

-10°C - 150°C (Use a high temperature lubricant when using above 60°C. Contact a Tsubaki representative when using in temperatures beyond the ranges given.)

Selection/Handling

Refer to the Tsubaki Small Size Conveyor Chain catalog for information on selection and handling.

Precautions in Use

- Galvanic corrosion may occur when steel chains are used with stainless steel sprockets, promoting premature wear. Avoid mutual contact as much as possible. In-house tests have shown that the middle links of multi-strand chains have slightly less corrosion resistance than with single-strand chains.
- Uses a different surface treatment than other parts in order to reduce the size of film flakes during roller engagement or sliding.
- Do not use if there is a risk that the chain will come into direct contact with food, or if film flakes or wear debris will mix in with food. Install a cover when using in non-food environments where film flakes and wear dust will be problems, or contact a Tsubaki representative regarding chain selection.

NEPTUNE™ BS/DIN Drive Chain

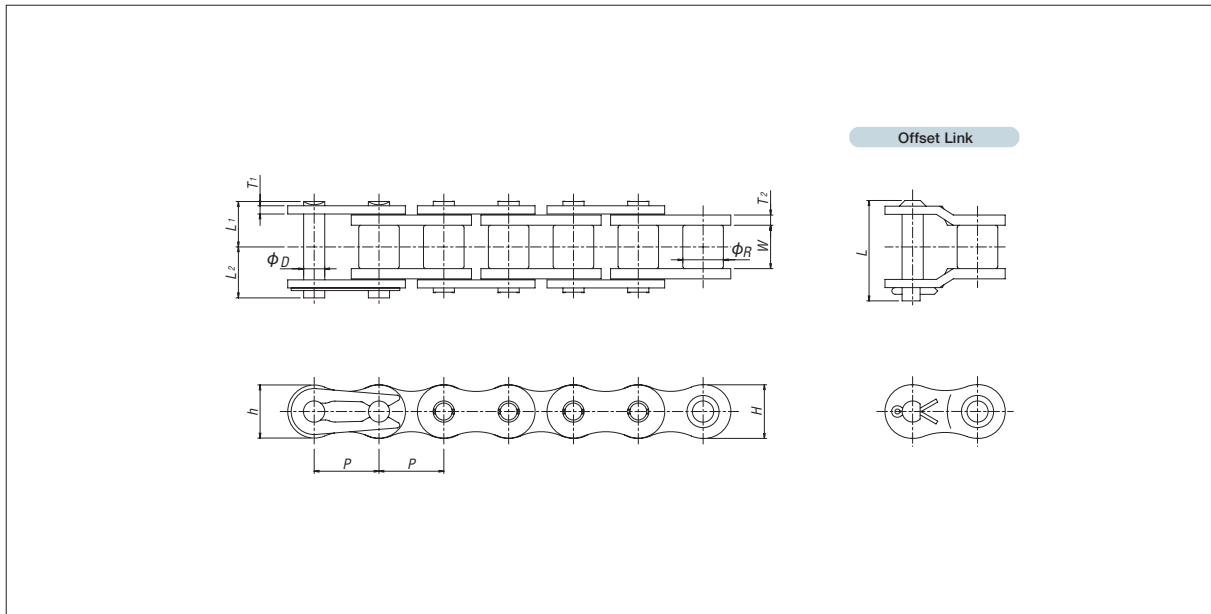
■ Chain Numbering Example

RS08B-NEP-1

Chain size

No. of strands

NEPTUNE code



TSUBAKI Chain Number	Pitch P	Roller Dia. (Bushing Dia.) R	Inner Width of Inner Link W	Plate				Diameter D	Pin				Transverse Pitch C
				Thickness T ₁	Thickness T ₂	Height H	Height h		L ₁ +L ₂	L ₁	L ₂	Offset Pin Length L	
RF06B-NEP-1	9.525	6.35	5.72	1.0	1.3	8.2	8.2	3.27	13.8	6.1	7.7	15.1	-
RS08B-NEP-1	12.70	8.51	7.75	1.6	1.6	11.8	10.4	4.45	18.4	8.4	10.0	18.6	-
RS08B-NEP-2									32.2	15.3	16.9	34.5	13.92
RS10B-NEP-1	15.875	10.16	9.65	1.5	1.5	14.7	13.7	5.08	20.8	9.55	11.25	20.8	-
RS10B-NEP-2									37.4	17.85	19.55	39.4	16.59
RS12B-NEP-1	19.05	12.07	11.68	1.8	1.8	16.1	16.1	5.72	24.1	11.1	13.0	24.4	-
RS12B-NEP-2									43.6	20.85	22.75	45.9	19.46
RS16B-NEP-1	25.40	15.88	17.02	3.2	4.0	21.0	21.0	8.28	37.7	17.75	19.95	41.1	-
RS16B-NEP-2									69.3	33.55	35.75	75.2	31.88
RS20B-NEP-1	31.75	19.05	19.56	3.4	4.4	26.0	26.0	10.19	43.0	19.9	23.1	46.6	-
RS20B-NEP-2									79.7	38.25	41.45	84.6	36.45
RS24B-NEP-1	38.10	25.40	25.4	5.6	6.0	33.4	31.2	14.63	58.5	26.65	31.85	61.7	-
RS28B-NEP-1	44.45	27.94	30.99	6.3	7.5	36.4	36.4	15.90	69.9	32.45	37.45	74.4	-
RS32B-NEP-1	50.80	29.21	30.99	6.3	7.0	42.2	41.6	17.81	69.8	32.1	37.7	73.3	-

TSUBAKI Chain Number	Minimum Tensile Strength kN{kgf}	Maximum Allowable Load kN{kgf}	Approximate Mass kg/m	Links per Unit
RF06B-NEP-1	9.0 { 920 }	1.95 { 199 }	0.39	320
RS08B-NEP-1	19.0 { 1930 }	3.80 { 387 }	0.70	240
RS08B-NEP-2	32.0 { 3260 }	6.46 { 659 }	1.35	
RS10B-NEP-1	23.0 { 2340 }	4.52 { 461 }	0.95	192
RS10B-NEP-2	44.5 { 4540 }	7.68 { 783 }	1.85	
RS12B-NEP-1	31.0 { 3160 }	5.28 { 538 }	1.25	160
RS12B-NEP-2	61.0 { 6220 }	8.98 { 916 }	2.50	
RS16B-NEP-1	70.0 { 7100 }	13.1 { 1340 }	2.70	120
RS16B-NEP-2	128 { 13000 }	22.3 { 2270 }	5.40	
RS20B-NEP-1	98.1 { 10000 }	18.4 { 1880 }	3.85	96
RS20B-NEP-2	197 { 20100 }	31.3 { 3190 }	7.65	
RS24B-NEP-1	167 { 17000 }	27.1 { 2760 }	7.45	80
RS28B-NEP-1	200 { 20400 }	37.5 { 3820 }	9.45	68
RS32B-NEP-1	255 { 26000 }	41.0 { 4180 }	10.25	60

1. Maximum allowable load is 65% of the above values when using a one-pitch offset link.

2. 2POL is not available.

3. The dimensions given above are nominal dimensions and may differ from actual dimensions.

■ Operating Temperature Range:

-10°C - 150°C (Use a high temperature lubricant when using above 60°C. Contact a Tsubaki representative when using in temperatures beyond the ranges given.)

■ Selection/Handling

Refer to the Tsubaki Drive Chains & Sprockets catalog for information on selection and handling.

■ Precautions in Use

- Galvanic corrosion may occur when steel chains are used with stainless steel sprockets, promoting premature wear. Avoid mutual contact as much as possible. In-house tests have shown that the middle links of multi-strand chains have slightly less corrosion resistance than with single-strand chains.
- Uses a different surface treatment than other parts in order to reduce the size of film flakes during roller engagement or sliding.
- Do not use if there is a risk that the chain will come into direct contact with food, or if film flakes or wear debris will mix in with food. Install a cover when using in non-food environments where film flakes and wear dust will be problems, or contact a Tsubaki representative regarding chain selection.

Specifications and Drawings

NEPTUNE™ BS/DIN Attachment Chain

Chain Numbering Example

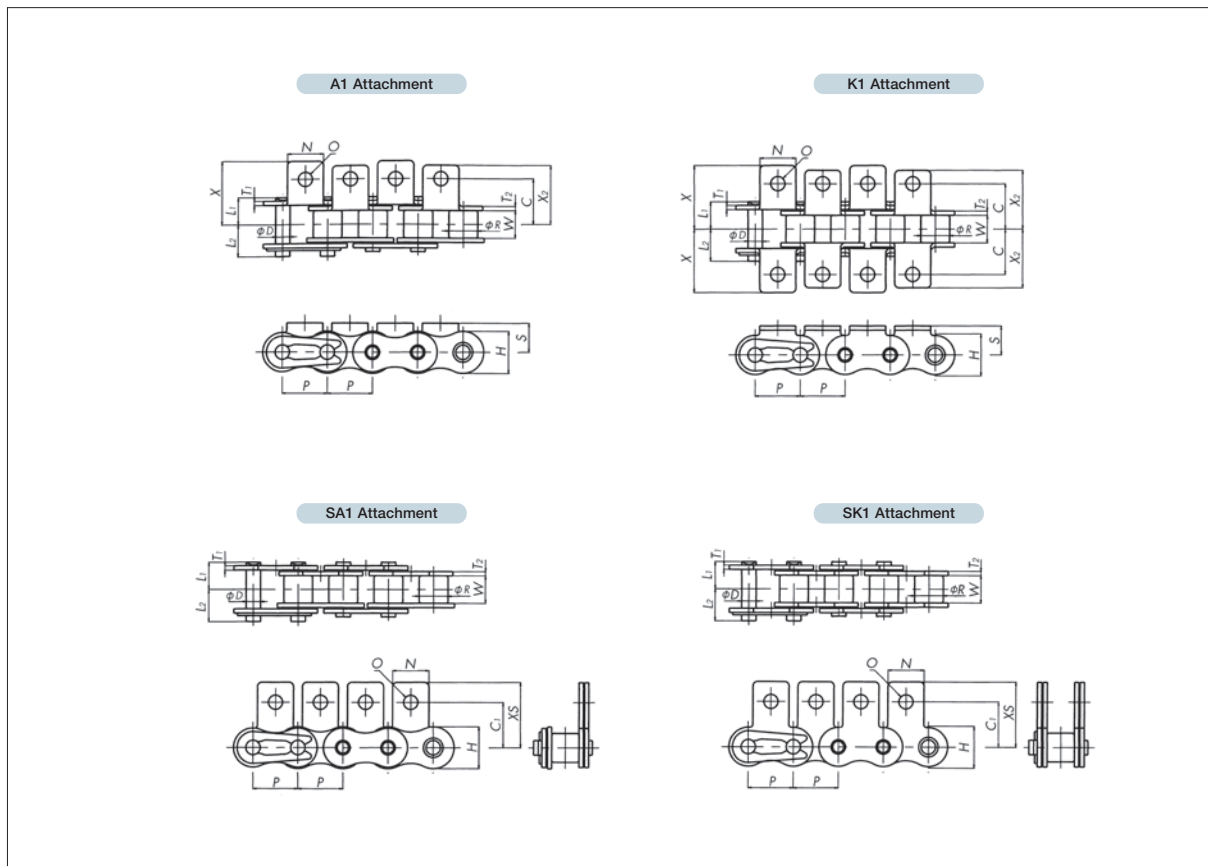
RS08B-NEP-1LA1

Chain size

NEPTUNE code

Attachment type

Attachment spacing



TSUBAKI Chain Number	Pitch <i>P</i>	Roller Diameter <i>R</i>	Inner Width of Inner Link <i>W</i>	Plate				Pin			Minimum Tensile Strength kN{kgf}	Approximate Mass kg/m
				Thickness <i>T</i> ₁	Thickness <i>T</i> ₂	Height <i>H</i>	Height <i>h</i>	Diameter <i>D</i>	<i>L</i> ₁	<i>L</i> ₂		
RS08B-NEP	12.70	8.51	7.75	1.6	1.6	11.8	10.4	4.45	8.4	10.0	12.9 {1320}	0.70
RS10B-NEP	15.875	10.16	9.65	1.5	1.5	14.7	13.7	5.08	9.55	11.25	15.7 {1600}	0.95
RS12B-NEP	19.05	12.07	11.68	1.8	1.8	16.1	16.1	5.72	11.1	13.0	22.1 {2250}	1.25
RS16B-NEP	25.40	15.88	17.02	4.0	3.2	21.0	21.0	8.28	17.75	19.95	56.2 {5730}	2.70

TSUBAKI Chain Number	Attachments									Mass per Attachment kg		Links per Unit
	<i>C</i>	<i>C</i> ₁	<i>N</i>	<i>O</i>	<i>S</i>	<i>X</i>	<i>X</i> ₂	<i>X</i> _S	A/SA Attachments	K/KA Attachments		
RS08B-NEP	11.9	12.7	11.4	4.2	8.9	19.05	17.15	19.3	0.002	0.004	240	
RS10B-NEP	15.9	15.9	12.7	5.0	10.2	22.25	20.6	22.9	0.003	0.006	192	
RS12B-NEP	19.05	22.2	16.5	7.1	13.5	29.85	27.8	32.05	0.006	0.012	160	
RS16B-NEP	23.8	23.9	24.3	6.7	15.2	37.35	34.4	34.1	0.014	0.028	120	

1. All models made-to-order.
2. *O* is marginally smaller.
3. The dimensions given above are nominal dimensions and may differ from actual dimensions.

Operating Temperature Range:

-10°C - 150°C (Use a high temperature lubricant when using above 60°C. Contact a Tsubaki representative when using in temperatures beyond the ranges given.)

Selection/Handling

Refer to the Tsubaki Small Size Conveyor Chain catalog for information on selection and handling.

Precautions in Use

- Galvanic corrosion may occur when steel chains are used with stainless steel sprockets, promoting premature wear. Avoid mutual contact as much as possible. In-house tests have shown that the middle links of multi-strand chains have slightly less corrosion resistance than with single-strand chains.
- Uses a different surface treatment than other parts in order to reduce the size of film flakes during roller engagement or sliding.
- Do not use if there is a risk that the chain will come into direct contact with food, or if film flakes or wear debris will mix in with food. Install a cover when using in non-food environments where film flakes and wear dust will be problems, or contact a Tsubaki representative regarding chain selection.

Chain Inquiry Form

Company name: _____	
Your name: _____	Date: _____
Tel: _____	Fax: _____
*Fill in 1 – 3 if you have already determined this information.	
1 Chain no:	2 Sprocket no. of teeth:
3 No. of links:	4 New Replacement (circle one)
5 Application: (drive hanging conveyance)	6 Equipment:
7 Layout diagram (use a separate sheet if necessary)	
8 Atmosphere: Temperature: Abrasive dust present? Yes No	
9 Corrosive liquids or gases present? Yes No *If "Yes," fill in the following.	
Chemical name: Concentration: pH	
Frequency liquid or gas will contact chain (Always Sometimes Rarely) times / day / week / month	

For Safe Use



Warning

Observe the following points to prevent hazardous situations.

- Do not use chains or accessories (peripheral devices and parts) for anything other than their original purpose.
- Never perform additional work on the chain.
- Do not anneal the various parts of the chain.
- Do not clean the chain with acids or alkalis, as they may cause cracking.
- Never electroplate the chain or its parts, as this may cause cracking due to hydrogen embrittlement.
- Do not weld the chain, as the heat may cause cracking or a reduction in strength.
- When heating or cutting the chain with a torch, remove the links immediately adjacent and do not use them again.
- When there is a need to replace a damaged (fractured) portion of a chain, always replace the whole chain with a new product rather than replacing only the damaged or fractured portion.
- When using a chain and sprocket on suspension equipment, establish a safety fence and strictly prevent entry to the area directly below the suspended object.
- Always install hazard protection devices (safety covers, etc.) for the chain and sprocket.
- Immediately stop using the chain if it comes into contact with a substance that can cause embrittlement cracking (acid, strong alkali, battery fluid, etc.) and replace with a new chain.
- When installing, removing, inspecting, maintaining, and lubricating the chain:
- Perform the work according to the instruction manual or this catalog.
- Always turn off the power switch to the equipment beforehand and make sure that it cannot be turned on accidentally.
- Secure the chain and sprocket so that they cannot move freely.
- Use a press or other special tool to cut and connect chain, and cut and connect using the proper procedures.
- Wear clothing and protective gear (safety glasses, gloves, safety shoes, etc.) that are appropriate for the work.
- Only experienced personnel should replace chains and sprockets.
- Install hazard protection devices (safety equipment, etc.) on suspension equipment using Leaf Chain to prevent hazard or injury in the event of chain failure.
- Install protection equipment for safety on the equipment side when using chain on personnel transport devices or lifting equipment.



Caution

Observe the following points to prevent accidents.

- Only handle chains and sprockets after thoroughly understanding their structure and specifications.
- When installing chains and sprockets, inspect them in advance to confirm that they have not been damaged in transport.
- Always regularly inspect and maintain your chains and sprockets.
- Chain strength varies according to manufacturer. When selecting a chain based on a Tsubaki catalog always use the corresponding Tsubaki product.
- Minimum tensile strength refers to the failure point when a load is applied to the chain once and does not refer to the allowable operational load.
- Lubricate connecting links (CL/OL) before assembling onto the base chain.
- Always ensure that the final customer receives the instruction manual.
- If you do not have the instruction manual, contact a Tsubaki representative with the product name, series name, and chain/model number to receive the appropriate manual.
- The product information given in this catalog is mainly for selection purposes. Thoroughly read the instruction manual before actually using this product, and use the product properly.

Warranty

1. Warranty Period

Products manufactured by Tsubakimoto Chain Co. ("Products") are warranted against defects in materials and workmanship for eighteen (18) months from the date of shipment from the factory or twelve (12) months from the date the Products are first placed into operation (calculated from the date the Products have been installed on the customer's equipment), whichever comes first.

2. Scope of Warranty

During the warranty period, if defects arise in the Products when installed, used, and maintained correctly in accordance to Tsubakimoto Chain's catalogs, installation manuals (including any documents specially prepared and provided to the customer) and the like, Tsubakimoto Chain will repair or replace such defective Products thereof free of charge upon confirmation of said defect by Tsubakimoto Chain. This warranty shall only apply to Products received, and Tsubakimoto Chain shall not be liable for the following costs and/or damages (including installation manuals or other documents specially prepared and provided to the customer):

- (1) Costs required for removing the defective Products from or re-installing the replacement Products on the customer's equipment for replacement or repair of the defective Product, as well as any associated installation costs.
- (2) Costs required to transport the customer's equipment, if needed, to a repair shop or the like.
- (3) Any consequential or indirect damages or loss of profits or benefits the customer may incur due to the defects or repair of the Products.

3. Out of Warranty Service and Repair

Regardless of the warranty period, Tsubakimoto Chain will provide investigation, repair, and/or manufacture of the Products for a fee should the Products experience problems or anomalies under the following situations.

- (1) Placement, installation (including connecting and disconnecting), lubrication, or maintenance of the Products not in accordance with Tsubakimoto Chain's catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
- (2) Use of the Products (including operating conditions, environment, and allowances) not in accordance with Tsubakimoto Chain's catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
- (3) Inappropriate disassembly, modification, or processing of the Products by the customer.
- (4) Use of the Products with damaged or worn products.
(Example: Use of the Products with a worn sprocket, drum, rail, or the like.)
- (5) When the operating conditions exceed the performance of the Products as selected using the Tsubakimoto Chain selection method.
- (6) Use of the Products in conditions other than what have been discussed.
- (7) When consumables such as bearings, oil seals, and lubricant in the Products deplete, wear, or degrade.
- (8) When secondary damage occurs to the Products due to initial or primary damage or failure to the customer's equipment.
- (9) Damage or failure of the Products due to forces majeure such as natural disasters.
- (10) Damage or failure of the Products due to unlawful conduct by third parties.
- (11) Damage or failure of the Products due to causes not attributable to Tsubakimoto Chain

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The Tsubaki Eco Link logo is used only on products that satisfy the standards for environmental friendliness set by the Tsubaki Group.