

Chains for Water treatment facilities



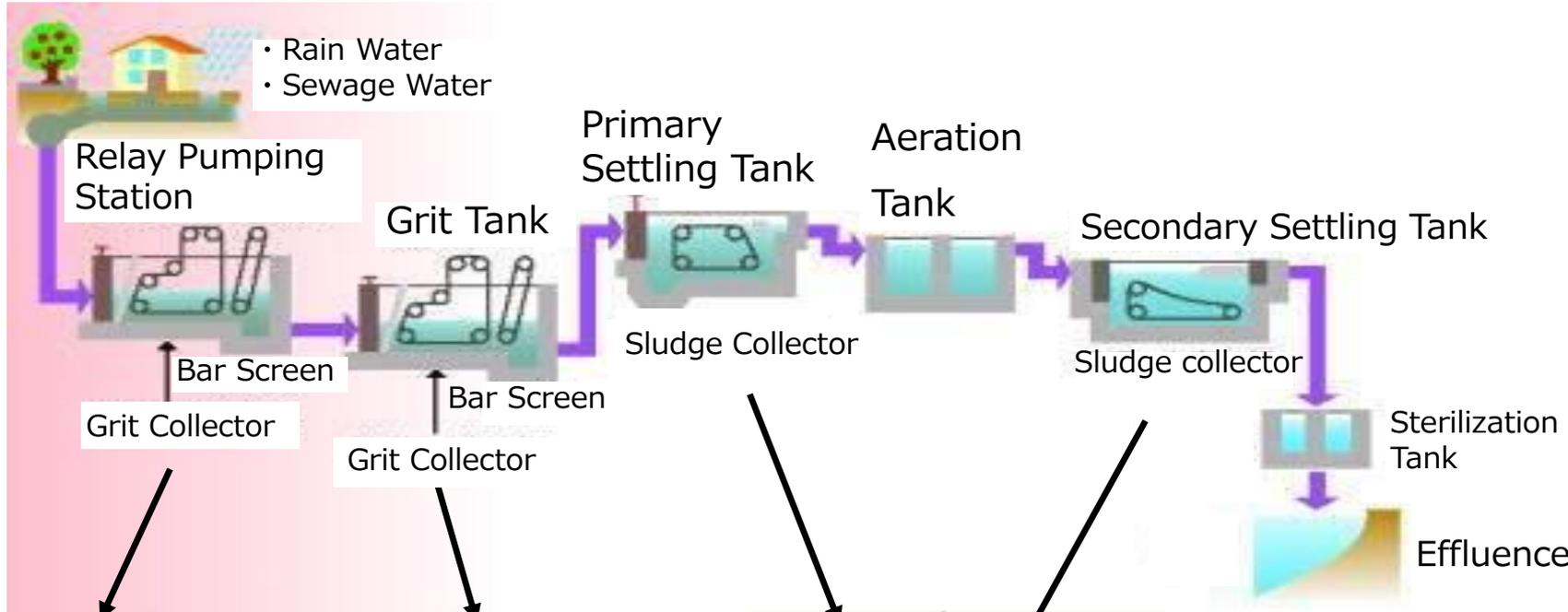
1. Flow Diagram for Sewage Treatment Facilities
2. Kinds of Water Treatment chain
3. Structure of Sludge Collector
4. The history of development for Sludge collector chain
5. Comparison of Sludge collector chain
6. Delivery Record
7. Concept of SAV706
8. SAV706's Performance comparison
9. SAV706 Supply Area in Japan
10. Development concept of SAV705
11. Feature of SAV705
12. Investigation of Plastic chain
13. SAV706,SAV705 – Performance comparison for plastic chain

<Reference>

Kanto works

センクシア株式会社

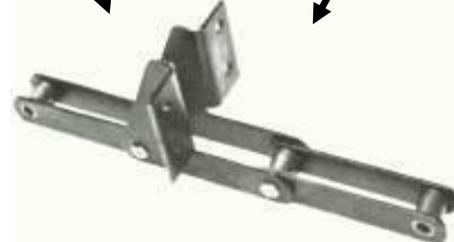
1. Flow Diagram for Sewage Treatment Facilities



Bar Screen Chain



Grit Collector chain



Sludge Collector Chain



Drive Chain

2. Kinds of water treatment chain

Grit Collector chain & Bar Screen Chains



HSC Type; Pin & Bushing's material is Stainless steel 400

Plate's material is Alloy steel.

HSS Type; Plate, Pin & Bushing's material is Stainless steel 400

HSU Type; Plate, Pin & Bushing's material is Stainless steel 300

Sludge Collector Chains for setting Tank



TAW Pintle type
(Casting)



HSS type



OSV type
(Offset type)



720s type
(Plastic)



notch type
(Plastic)



SAV type

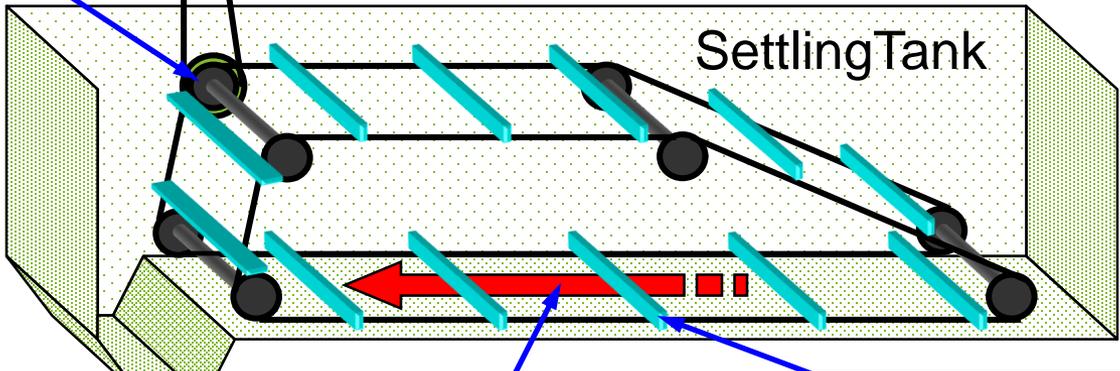
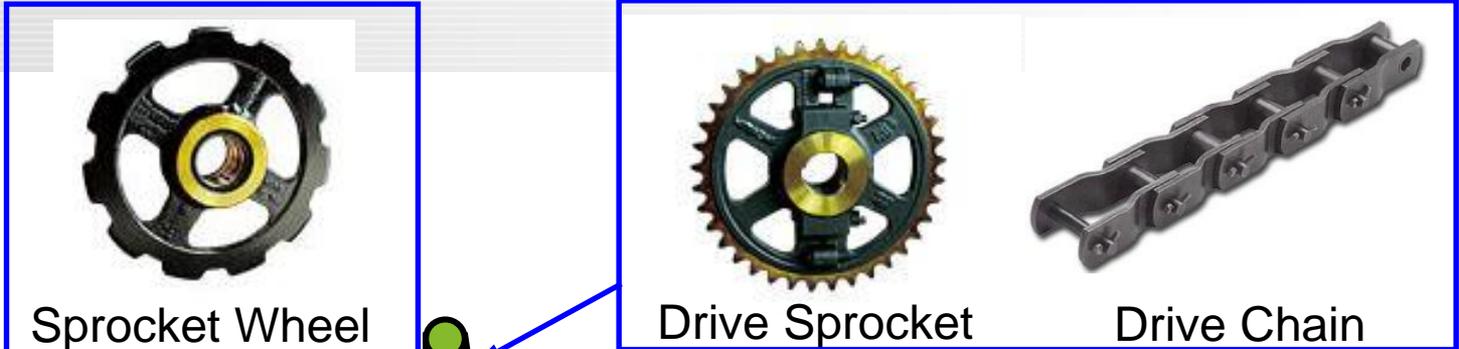
Drive chain



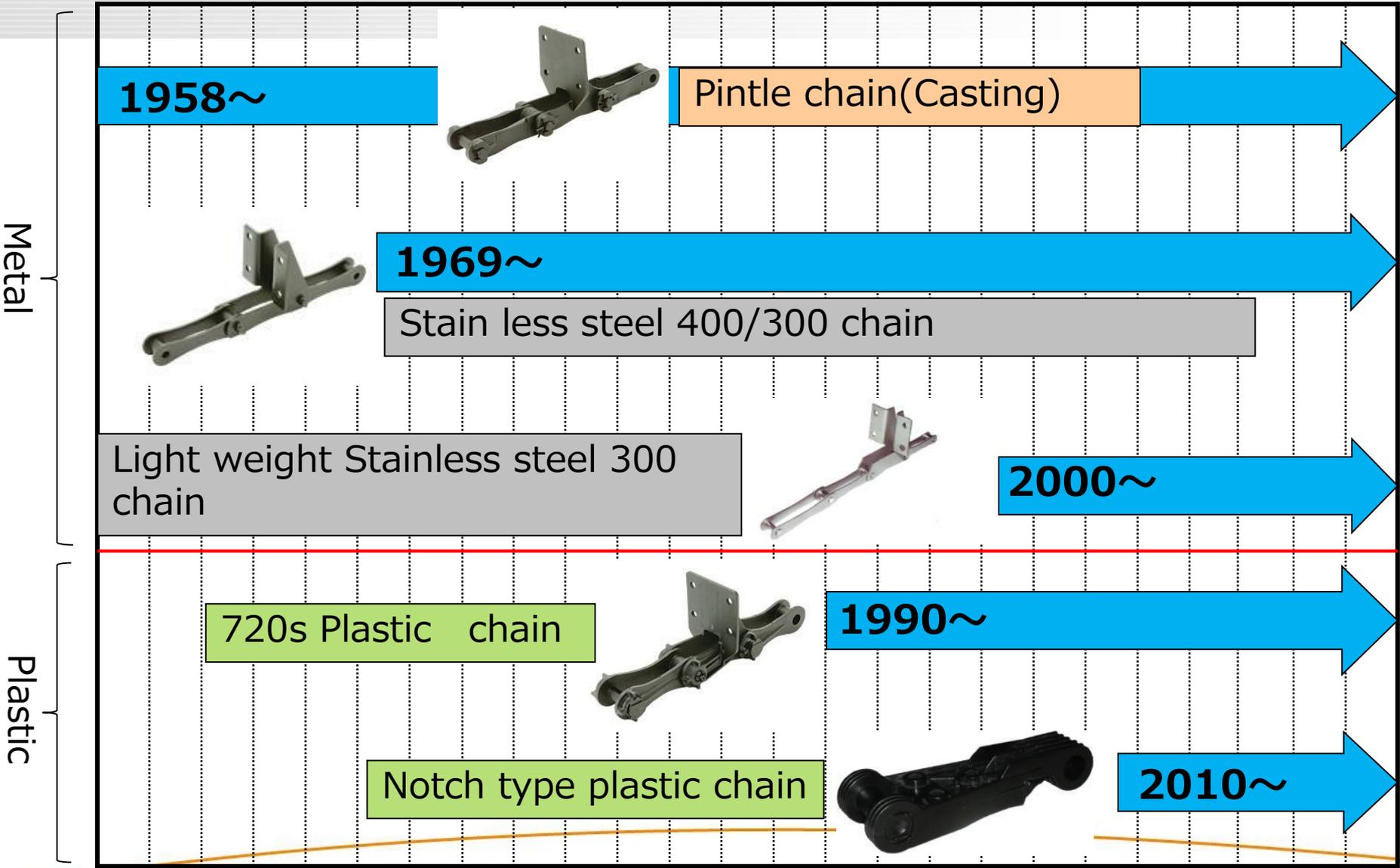
HB type
Stainless steel

SENQCIA can offer chains for all applications

3. Structure of Sludge Collector



4.The history of development for sludge collector chain



5.Comparison of Sludge collector chain

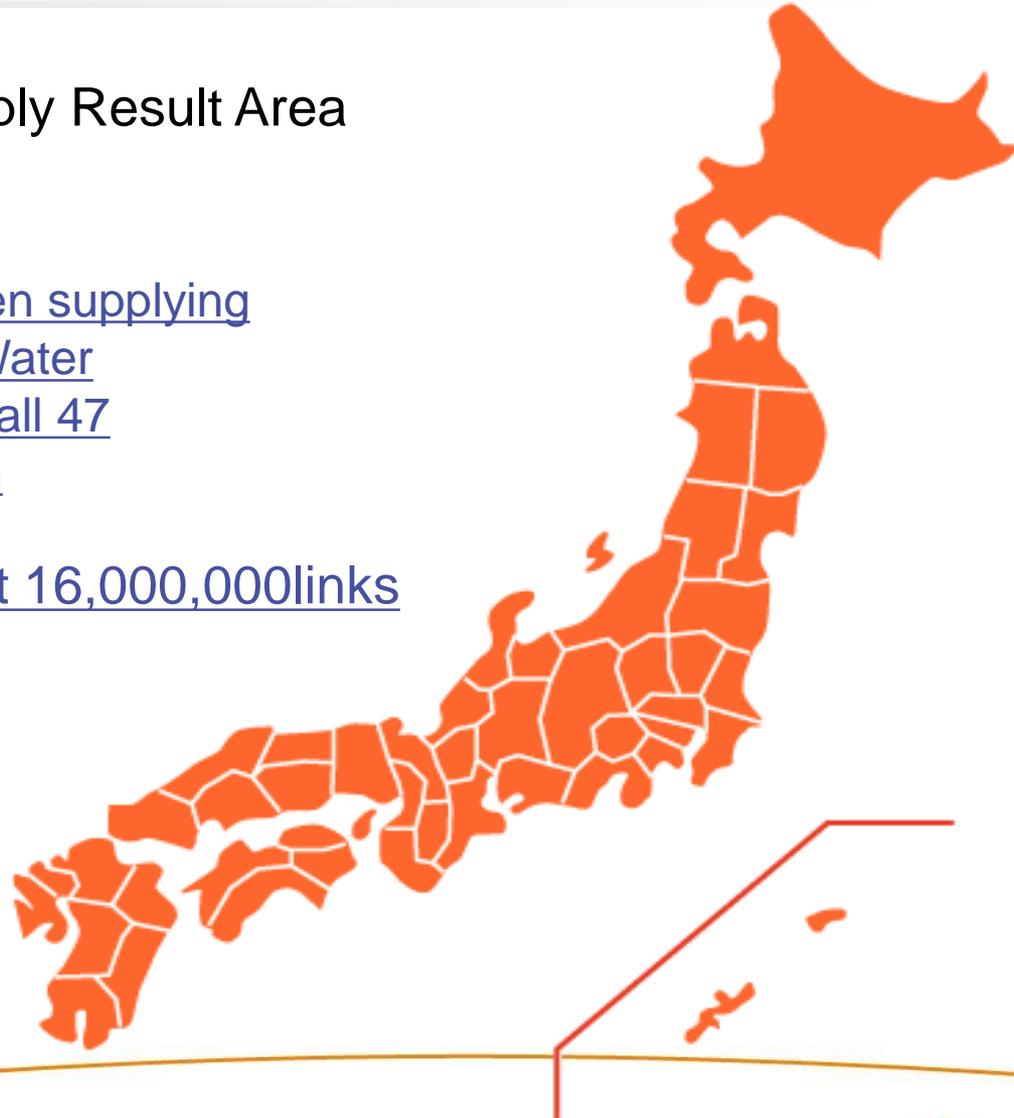
Kinds of chain		SAV715	SAV706	SAV705	Plastic chain
Comparison point					
Manufacturing process		Press			Injection molding
Measure (mm)	Pitch	152.4		147.9	152.4
	Pin' s diameter	14.5	11.6	10.0	23.5
	Bush's diameter	26	22.2	20	36.5
Chain inner width		30	27.4	30.0	32
Sprocket's teeth thickness		25	23	25.4	25.4
Material		Stainless steel 400	Stainless steel 300	Stainless steel 400	Plastic
Weight	plain weight (kg/m)	5.1	2.5	1.9	2.2
	attachment weight	+1.6 kg	+1.0 kg	+1.0kg	+0.28 kg
Strength	AUS (kN)	147	58.8	44.1	29.4
Features	Pitch elongation	◎	○	◎	× (Creep elongation)
	Corrosion resistance	○	◎	○	○
	Strong acid resistance	○	◎	○	×
	Wear resistance	(Primary) ◎ (Secondary) ◎	(Primary) ◎ (Secondary) ◎	(Primary) ◎ (Secondary) ◎	(Primary) × (Secondary) ○
Recycle		OK	OK	OK	OK(hard)
Long life		15 years	Over 15 years	15years	15 years
Maintenance		1 time /year			1 time /year (2 or 3 times /first year) ※by the Creep elongation
Comprehensive evaluation		○	◎	○	△

1) SENQCIA Chain Supply in Japanese Market

 : SENQCIA Supply Result Area

SENQCIA has been supplying chains with Waste Water Treatment Plants in all 47 prefectures in Japan

Quantity; about 16,000,000 links



2) SENQCIA Chain Supply with Major Cities in USA



SENCIA has been supplying chains with another Major cities In USA. Boston, Philadelphia, Chicago, Los Angeles, Sacramento, Baton Rouge, Dallas, Camden etc...

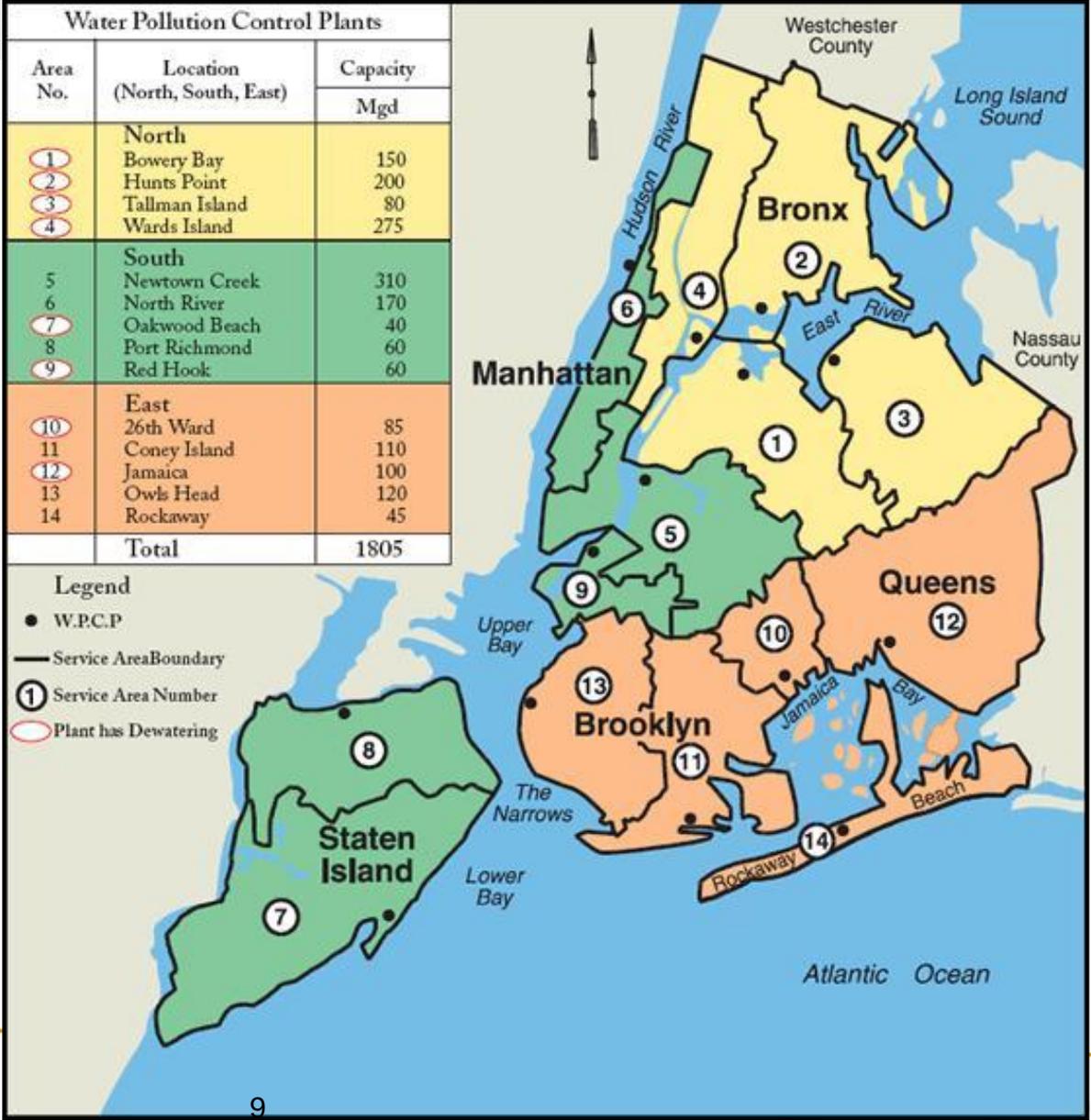
3) Waste Pollution Control Plants at City of New York-1

City of New York has 14 Waste Pollution Control Plants.

All plants adopt SENQCIA Sludge Collector Chains for their Collector Tanks.

The reason are as follows,

- 1) Long life performance
- 2) Corrosion resistance & Wear resistance
- 3) High-Reliability



3)Waste Pollution Control Plants at City of New York-2



26th Ward WWTP



Bowery Bay WWTP



Coney Island WWTP



Jamaica WWTP



Hunts Point WWTP

SENQCIA has been contributing to City of N.Y for more than 25 years
* For 7.8 million people in N.Y
* Total capacity of all plants is 1805MGD



Owls Head WWTP



Newtown Creek WWTP



Red Hook WWTP



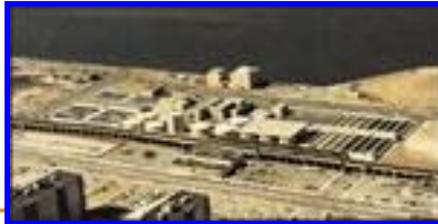
Wards Island WWTP



North River WWTP



Oakwood Beach WWTP

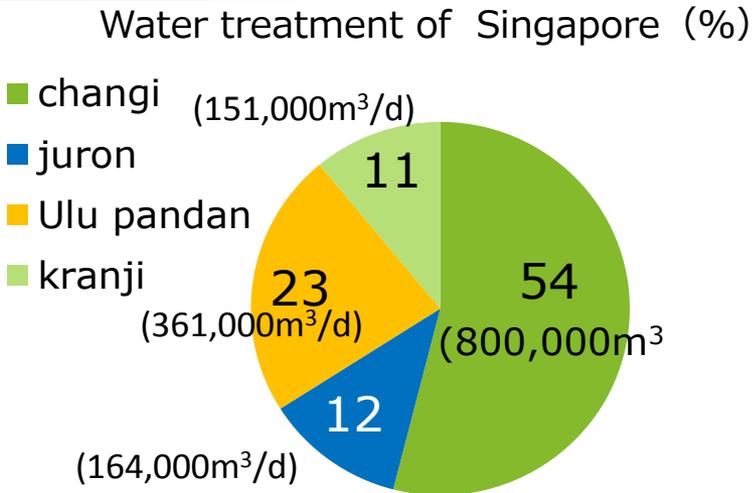


Rockaway WWTP



Port Richmond WWTP

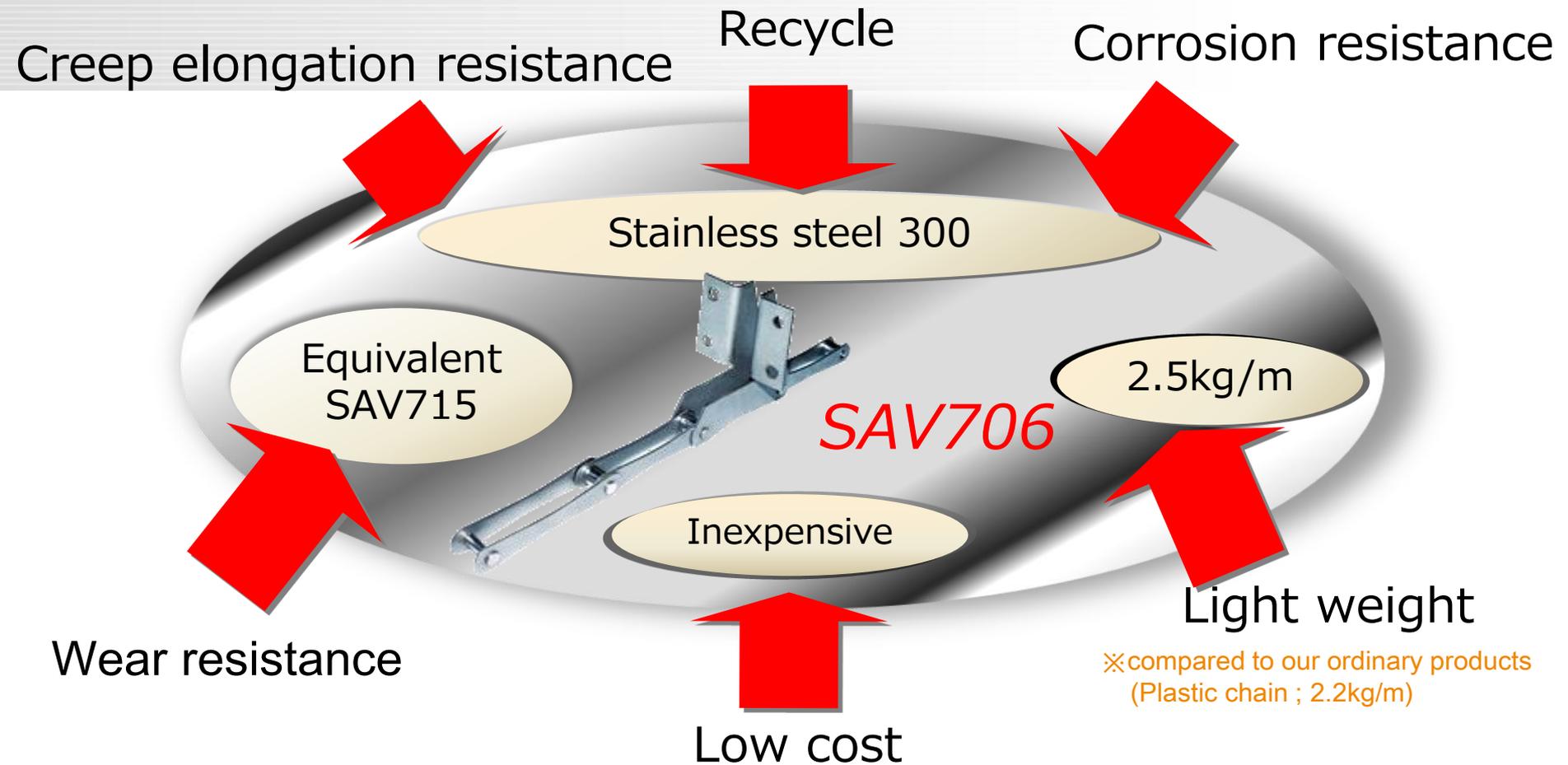
4) SENQCIA Chain Supply in Singapore Market



Breakdown on volume of used water treated by various WRPs in year 2012

- 1. Changi-DTSS SAV: 200,000Ft
- 2. Seletar S.T.W SAV: 46,000Ft
- 3. Ulpandan SAV: 21,000Ft

7. Development concept of SAV706



※compared to our ordinary products
(Plastic chain ; 2.2kg/m)

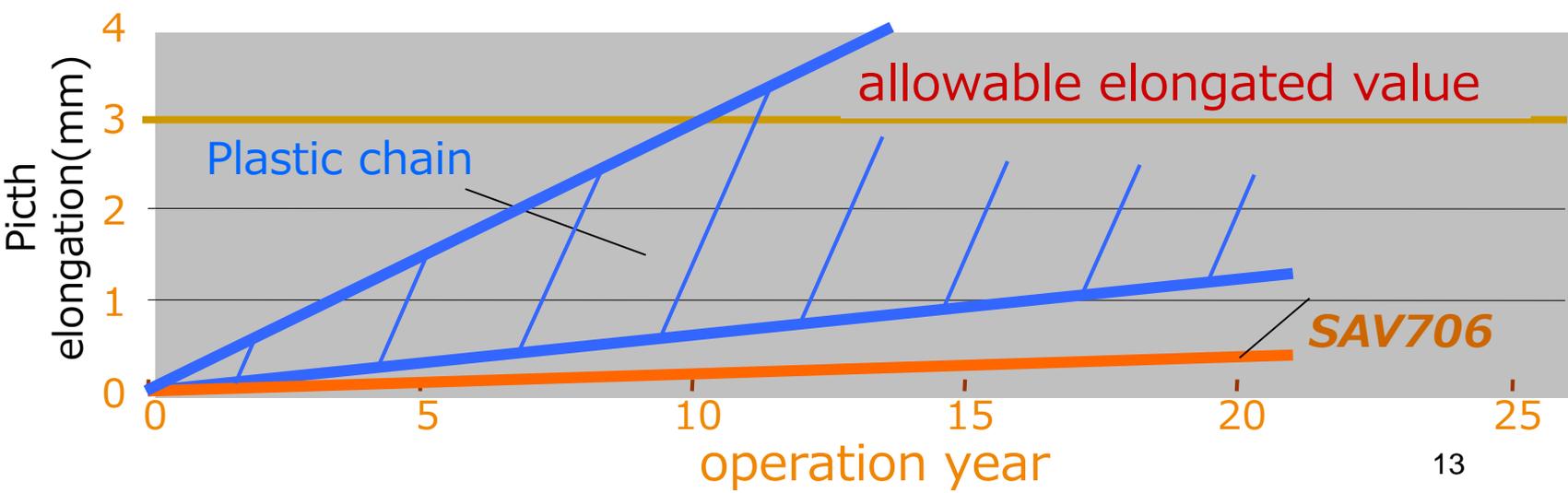
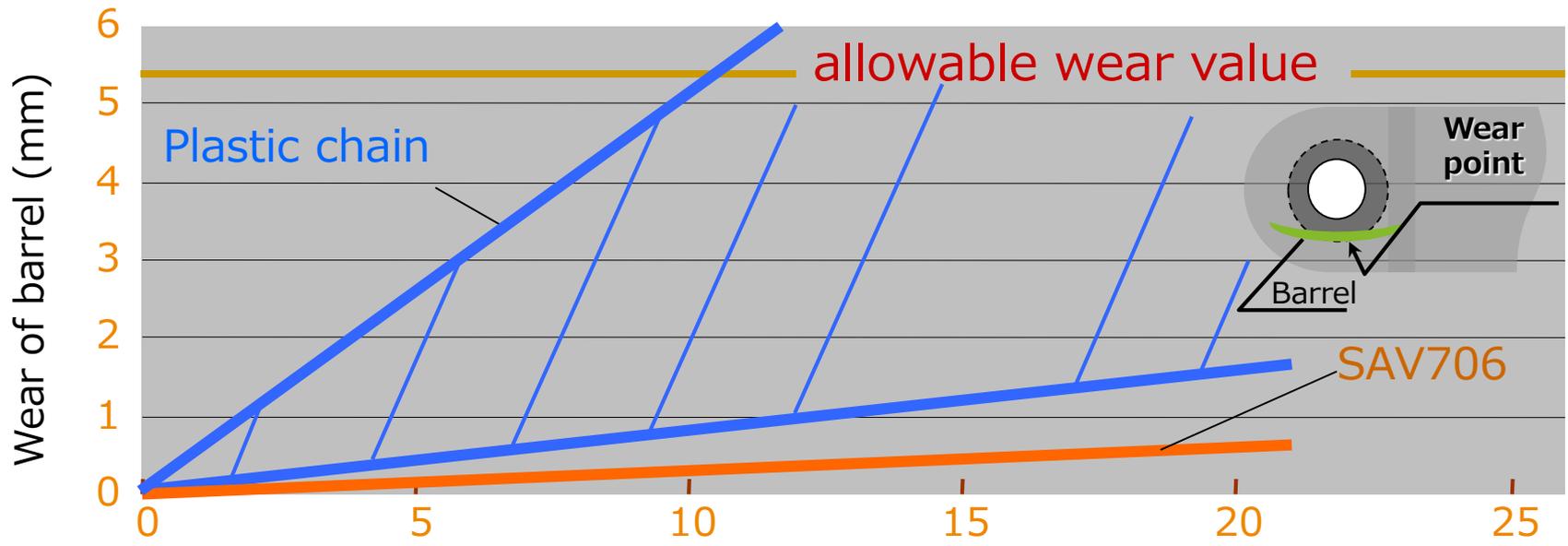
※compared to our ordinary
products(SAV713)

- SAV706 is most suitable for the WWTP near by sea
(and highly corrosive)
- SAV706 is effective as countermeasure of microbial corrosion

8.SAV706 Performance comparison

※compared to our ordinary products
Value of the graph is not a guaranteed value,
it is the experimental value.

1)Wear resitance



2) Corrosion resistance(Stainless steel)

	Stainless steel 300 (SAV713)	Stainless steel 400 (SAV715)
T-WWTP in Fukuoka (after 5 years)		
S-WWTP in Tokyo (after 1.35 years)		
S-WWTP in Nagoya-city (after 4.7 years)		

3).SAV706 performance

Chains Pitch Elongation and Wear on Bushings are small and Chains keep good condition.

Appearance after washing are the same conditions as new and

Chains are observed no progress of corrosion and have an excellent corrosion resistance.

<p>GS WTP (Primary Sedimentation)</p> <p>Tank Long:13.7m Working Time:7 years and 5 months Chains Pitch Elongation:0.066% Wear on Bushings:0~0.2mm Sprockets:SCS2(HT) Wear 1~1.5mm</p>	 The image shows three metal links and four bushings for the GS WTP. The links are arranged vertically, and the bushings are arranged horizontally below them. They are set against a green background.
<p>YK WRP (Secondary Sedimentation)</p> <p>Tank Long:34.55m Working Time:8 years and 11 months Chains Pitch Elongation:0.131% Wear on Bushings:0.1mm Sprockets:SCS13、 Wear:0~1mm</p>	 The image shows a sprocket and four bushings for the YK WRP. The sprocket is shown in a close-up view, and the bushings are arranged horizontally below it. They are set against a green background.

9.SAV706 supply area

SENQCIA has been supplying SAV706 chains with Waste Water Treatment Plants in 7 prefectures in Japan
 SAV706 is no problem for below WWTP.

Supply place	Quantity	Supply place	Quantity
Y-WWTP in Kanagawa (14 years)	49,552links (24,776ft)	G-WWTP in Gifu	4,140links (2,070ft)
N-WWTP in Aichi (8years)	28,094links (14,047ft)	H-WWTP in Oita	1,584 links (792ft)
H-WWTP in Aomori	13,180links (6,590ft)	K-WWTP in Tokyo	1,240 links (620ft)
Y-WWTP in Aomori	8,062 links (4,031ft)	K-WWTP in Kagawa	808 links (404ft)
		Total	106,660 links (53,330ft)

Trend of Japan's WWTP

- longer life time(wear resistance, corrosion resistance)
- Earthquake resistance

10. Development concept of SAV705

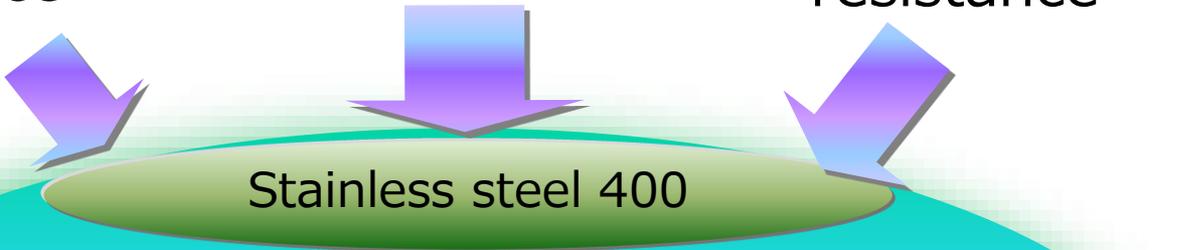
Compatibility . . . compatible with plastic chain made by other manufacture

Light weight . . . be downsized from the conventional stainless steel 400 chain.

Creep elongation resistance

Recycle

Strong acid resistance



Equivalent SAV715

SAV705

1.9kg/mr

Inexpensive

Compatibility

Wear resistance

Light weight

compared to our ordinary products (Plastic chain ; 2.2kg/m)

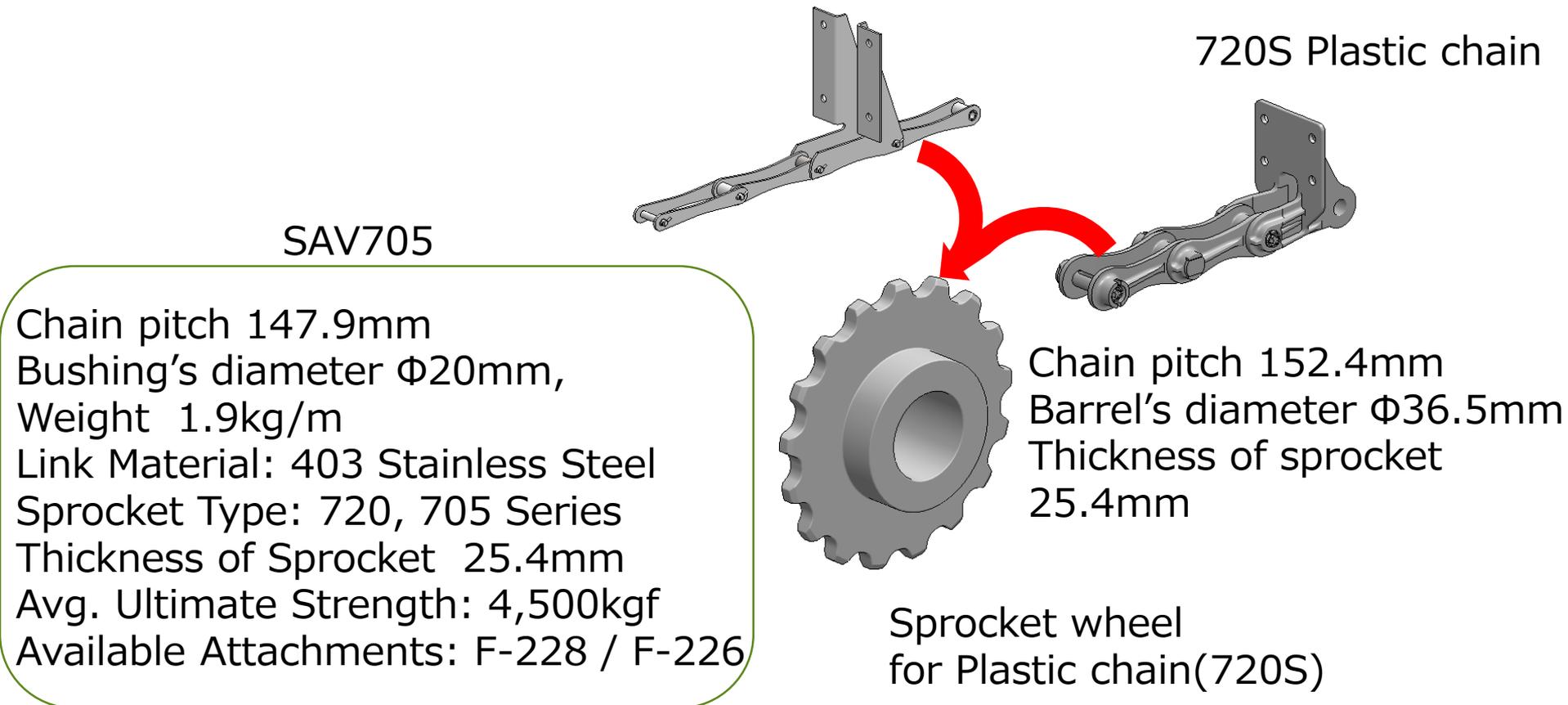
Low cost
※compared to our ordinary Products(SAV715)

Direct interchange for 720s plastic chain

11.Features for SAV705

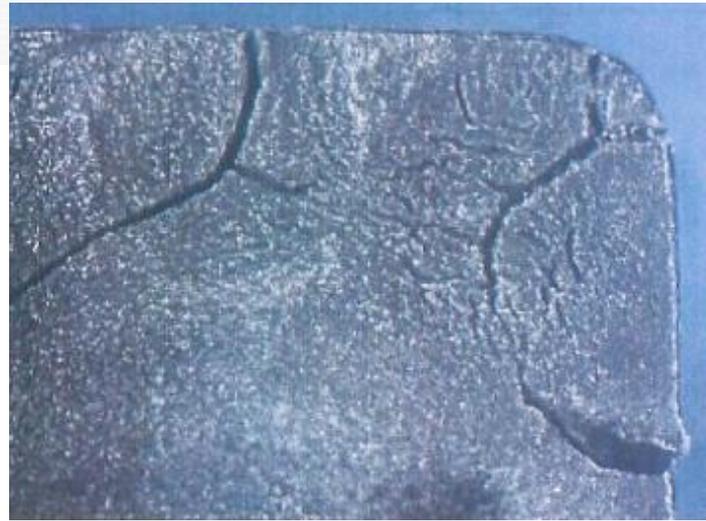
Direct replacement . . . It is compatible with 720s plastic chain.

SAV705 is able to use usual sprocket wheel for plastic chain, the chain is useful to reduce cost of replacement without removal of shaft.

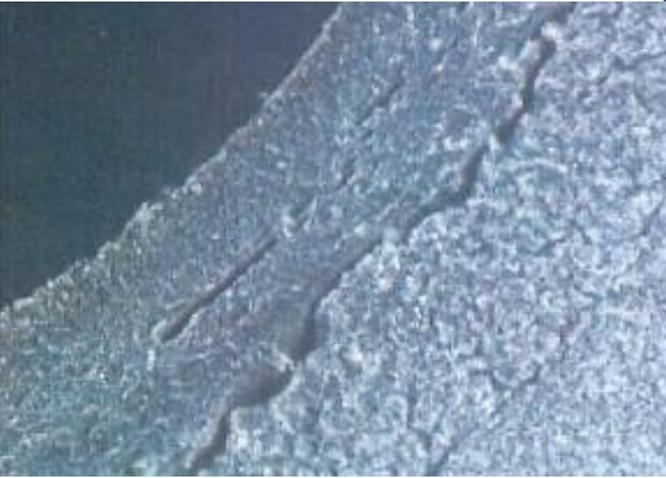
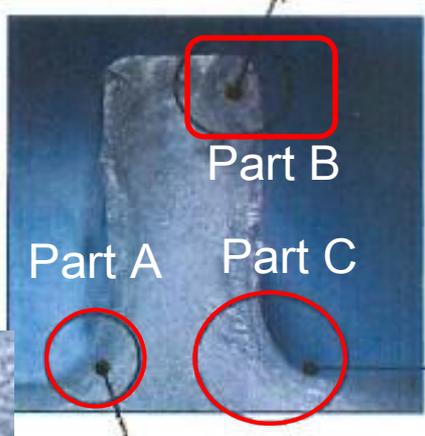


12. Investigation of Plastic chain

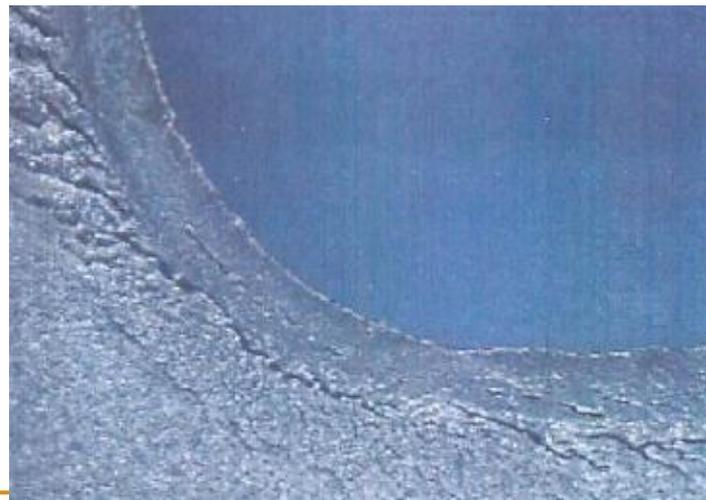
The crack penetrated on surface of plastic chain.



Part B (Enlarged)



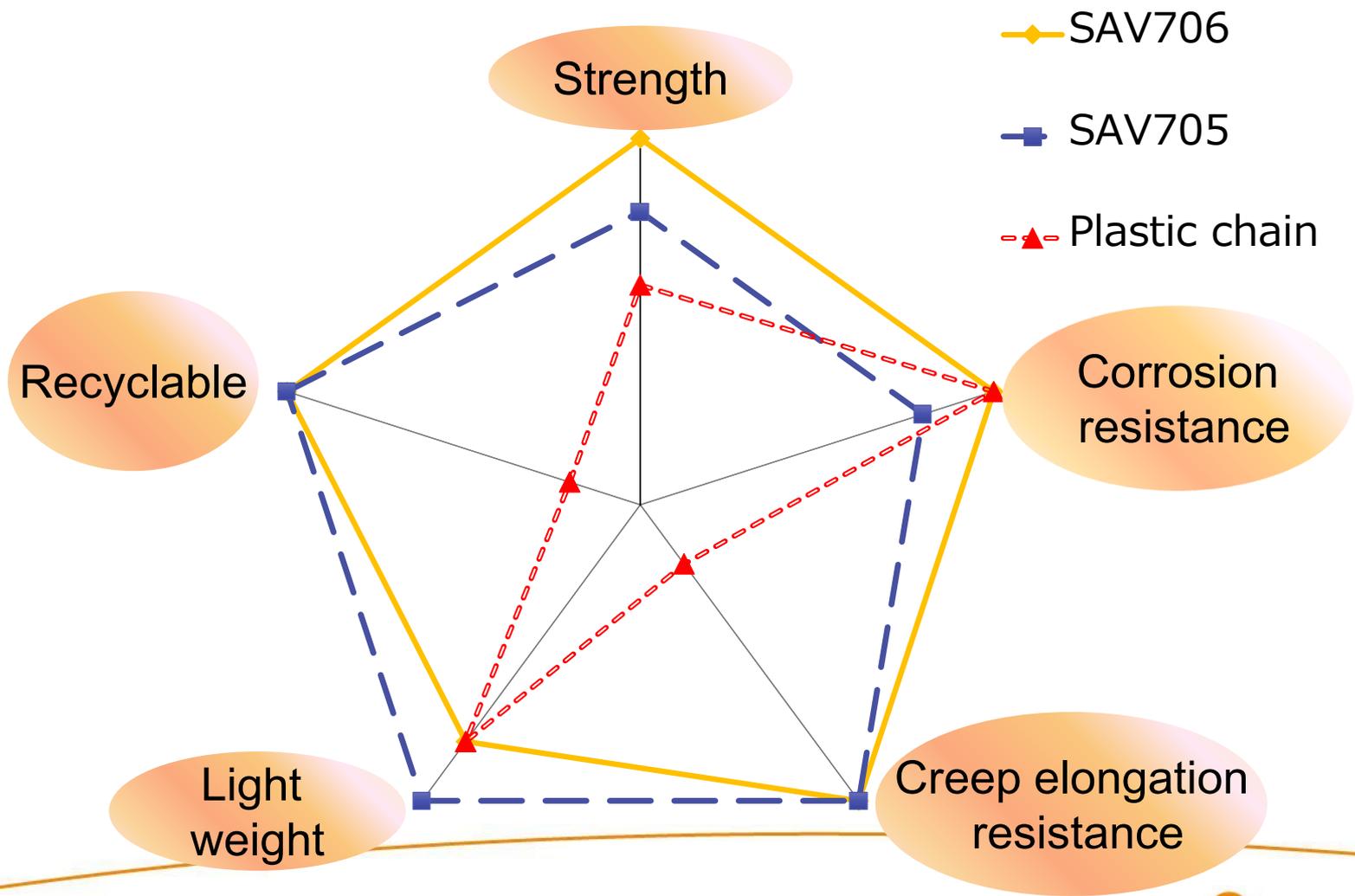
Part A (Enlarged)



Part C (Enlarged)

13.SAV706,SAV705

Performance comparison for plastic chain



Kanto Works



- Established in 1960
- Located in Saitama prefecture (60km away from Tokyo)
- 40,000 square meter
- ISO 9001 & 14001 certified



Thus, SENQCIA makes World Best Engineering Chain and provides Technical service to many world industrial leaders.