



Safety helmet & Bump cap



### Tanizawa industrial safety helmets & bump caps are all made in Japan.

Strict quality controls are conducted at TANIZAWA's Ibaraki Factory, which supplies safety products not only to Japan but also to customers around the world.

### Certification of ISO 9001: 2015 (quality management system)

The head office of the Tanizawa Seisakusho,Ltd.

and the Ibaraki Factory of the Joban Tanizawa Seisakusho, Ltd. (a manufacturing subsidiary) have obtained the quality management system "ISO 9001" certification.

### **Certification of ISO 14001: 2015 (environmental management system)**

The head office of the Tanizawa Seisakusho, Ltd. have obtained the environmental management system "ISO 14001" certification.

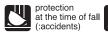
### **Safety Standard**

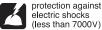
All of TANIZAWA's industrial safety helmets have passed the national examination of the Japanese Ministry of Health, Labor and Welfare standards. In addition, many models have acquired the JIS T 8131:2015 certification.(JIS standard certification is optional) The Ministry of Health, Labor and Welfare Ministry of Japan and JIS T 8131: 2015 have the following categories.

Classes(symbols)	Classification by use	Function
	For protection against flying or dropping objects	Prevents or reduces the danger caused by flying or dropping objects.
	For protection in the events of tumbling and falling down	To be for protection in the events of tumbling and falling down.
	For protection against flying or dropping objects For protection in the events of tumbling and falling down	Prevents or reduces the danger caused by flying or dropping objects and for protection in the events of tumbling and falling down.
	For protection against flying or dropping objects For electrical insulation at high voltage (service voltage: 7,000V or under)	Prevents or reduces the danger caused by flying or dropping objects, and protects the head against electric shocks.
	For protection against flying or dropping objects For protection in the events of tumbling and falling down For electrical insulation at high voltage (service voltage: 7,000V or under)	Prevents or reduces the danger caused by flying or dropping objects and for protection in the events of tumbling and falling down, and protects the head against electric shocks.

- For protection against flying or dropping objects
   This standard is a helmet standard commonly used around the world.
   Details of commonly used standards (such as ANSI, EN, JIS) are almost the same.
- For protection in the events of tumbling and falling down
   This standard is unique to Japan and corresponds to falls.
   By equipping a shock absorbing liner, the safety of the helmet was improved without the need to enlarge the shell.
- For electrical insulation at high voltage
   Voltage used is set by Japanese standards. This is different from the test voltage.
   High voltage : Test voltage = 20,000V / 1min. Service voltage: 7,000V or under
   Low voltage : Test voltage = 3,000V / 1min. Service voltage: 600V or under
- \* In this catalogue, the symbols shown in the table shows the protection range of each model..







### Standard test Impact absorption test





Impact absorption performance of safety helmets are measured by free-falling a 5kg semi-spherical iron ball or iron disk from a height of 1m.

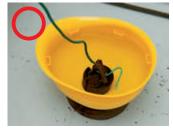
### Penetration resistance test





Resistance against pointed or sharp objects is measured by dropping a conical weight and checking the helmet for any deformations.

### Withstand voltage test of shell





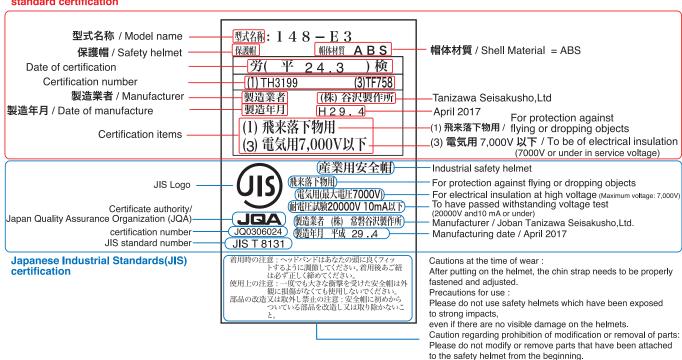
This is a test to measure resistance to electricity. Electrodes are placed inside and outside the shell in water, and the helmet has to withstand a voltage of 20,000V for high voltage models with working voltage of 7,000V or less, and 3,000V for low voltage models with working voltage of 600V or less, for a duration of 1 minute in order to pass the test. If the shell is damaged or cracked, leakage will occur, resulting in sparks forming.

### **Certification label**

On the inside of the shell, there is a certification label that indicates the helmet has passed Japanese standards.

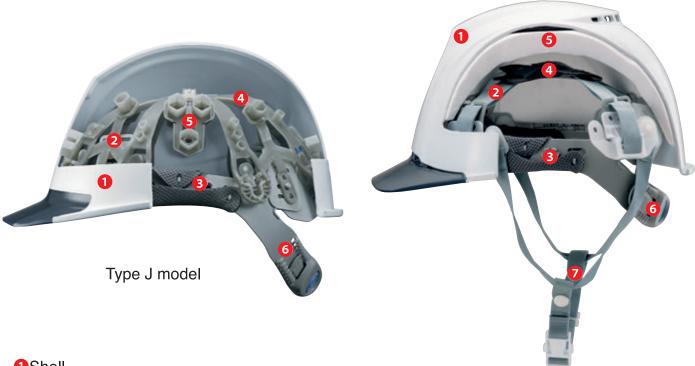
Most models only have the Ministry of Health, Labor and Welfare standards certification, while some models have JIS certification added to the label. They are all written in Japanese.

The Ministry of Health, Labour and Welfare standard certification





### **The Component Parts**



### Shell

The hard, smoothly finished material that provides the general outer form of helmet. It protects the head form direct impact and penetration from flying or falling objects. Holes inside the FRP shell fix the fittings (suspension) in place.

### 2Fittings (Suspension)

The fittings (suspension) are composed of a hammock, a headband, a chin strap etc.

These fittings are the parts other than the shock absorbing liner,

which are fitted to the inside of the shell in order to soften the impact acting on the head of the wearer.

Type J suspension is a fittings with the function of Impact absorption liner.

Type J suspension is an international patent product of TANIZAWA.

### BHeadband

The headband is fixed to the fitings (suspension). It helps soften impacts and absorbs moisture. Ensures helmet is fitted to users head securely.

### 4 Hammock

The hammock is fixed to the shell in two ways: hook-type and tack-type.

Made of impact absorbing material, it is able to reduce the force of impact on the user's head.

### 6 Impact absorption liner

Parts fitted to the inside of the shell.

The liner reduces the forces of impact from flying or falling objects. In the Type J model, the suspension is responsible for its function.

### 6 Easy push-release Adjuster (EPA)

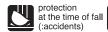
EPA (Easy Push Adjuster) is a proprietary product of Tanizawa. The EPA enables the user to adjust the fit of the helmet with one push of a button while wearing the helmet.

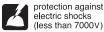


### Chin strap (4 point)

It secures the helmet to the user's head, and prevents it from falling off upon impact. It also ensures the helmet is fitted properly.







### **Materials**

Tanizawa uses the following materials in our safety helmets, to get the maximum possible functionality and comfort.

Material	Property	Flame resistance / heat resistance			Resistance to organic substances	Note
Thermosetting resin	FRP			* without ST#121-CZ	<b>○~</b> ◎	Excellent weather and heat resistance but cannot be used to protect against electric shock
Thermoplastic resin	ABS resin	△~○	△~○	<b>○~</b> ◎	×~△	Excellent protection against electric shock,but cannot be used in a high-temperature environment
	PC resin	O~©	O~O	0	X~△	Better weather resistance than ABS
	PE resin	X~△	0	O~©	O~©	Ideal for use in situations using organic chemicals

<sup>©</sup>particularly excellent ○excellent △slight weakness ×weak

# **EPA Easy Push-release Adjuster**

EPA allows you to adjust the fit of the helmet with one hand, while it is on your head.

- The headband and chinstrap prevent the helmet from slipping and falling off.
- A new, highly breathable material called 'Mawus ™ provides excellent sweat absorption abilities.
- OLarge ventilation holes in the headband ensure the wearer long-lasting comfort in the workplace.



Adjust the size by sliding the strap (3mm pitch, adjustable between 53-62cm) and lock in place.





Easy Push-release Adjuster

# Type J

Impact absorption liner

### Impact absorption liner

TANIZAWA'S internal test has shown that the impact absorption lining (equivalent to rider's grade)

can reduce the impact load of accidental falls by up to 1/3 compared to helmets without a lining.

### The explanation of the model number

S T # 0 1 2 3 0 - E P Z

Indicates a liner is incorporated Z

Type of rivet

Type of Suspension

Indicates the shell has the same shape in a different material

Product Code Name (a three-digit number) (last one-digit = 0)

\*1 Suspension: Please refer to page 21 of our catalog.

It consists of Hammock, Liner and Tape.

\*2 Material of Rivet: P stands for "PLASTIC"

M stands for "Metal"

\*3 Liner: The parts for shock absorption. Please refer to page 22 of our catalog.

<sup>\*</sup>Electricity conducted through rivet holes

The harness system that keep you cool, safe and comfortable.

### 1.Coolness

There are two Japanese safety standards for industrial safety helmets.

- 1)For protection against flying or dropping objects (Test impact point : only parietal area)
- 2) For protection in the events of tumbling and falling down

(Test impact point : For against flying or dropping objects + previous head, back of the head)

Helmets that are designed to protect the user from impact of falls are usually equipped with impact absorption liners to ensure better safety.

However, some customers dislike it as it traps heat.

The impact absorption liner disturbs the flow of internal air, trapping hot air in the helmet.

Type J suspension solved this problem.

As the Type J suspension passes the "protection in the events of tumbling and falling down" standard without the impact absorption liner,

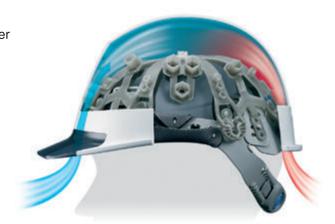
it enables helmets to have improved ventilation compared to conventional models.

### Conventional model

(For protection in the events of tumbling and falling down)

# Steamed warm air Impact absorption liner

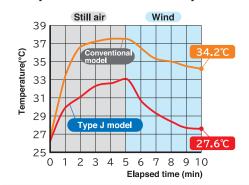
### Type J suspension model



The impact absorption liner disturbs the flow of internal air, trapping hot air in the helmet.

As there are no impact absorption liners, internal air is allowed to flow and expel hot air.

### Comparison of head temperature and the humidity.



Helmets with internal thermometry were placed on thermal mannequin heads set to 37°C.

Mannequins are placed in still air for the first 5 minutes to compare temperature rise.

Mannequins are then exposed to wind with a velocity of 1m/s (equivalent to walking speed) for the next 5 minutes to compare ventilation performance.



## 2.Safety

Conventional models without the impact absorption liner was only for helmets designed to protect the user from flying or falling objects. The Type J suspension passes the "protection in the events of tumbling and falling down" standard without the impact absorption liner by using a new impact absorption system.



New impact absorption system

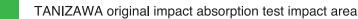


The pipes of this honeycomb form will be crushed to absorb impacts.

As a result of our original test, the Type J suspension model has shock absorption performance equal to or higher than that of conventional models (with impact absorption liner models).



Japanese standard / Impact absorption test (For protection in the events of tumbling and falling down) impact area



# Impact absorption test (For protection at time of fall)









# 3. Easy to disassemble

How to disassemble the suspension.

Type J1,2 (8 points)



Release button



1. Push the round button and unlock the pin from the shell.



The new disassembly system allows

the suspension to be changed easily.

2.Slide suspension to the upper part while pushing the button.



Grip point (Necked part)



1.Grasp the hammock along the grip point.



2.Pull upward.

### 4. Washable

Because there is no styrofoam liner, it can be washed easily. Use neutral detergent for cleaning.

**Warning**: Organic solvents, parts cleaners, etc. are prohibited. The shell will be damaged.

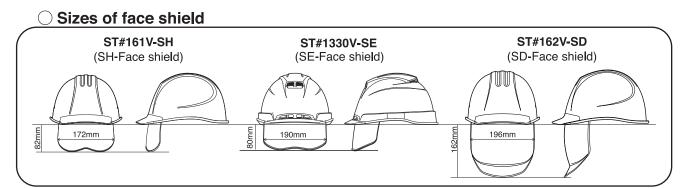




# **Built-in face shield model**



The face shield is stored in the shell, and can be pulled out when necessary.





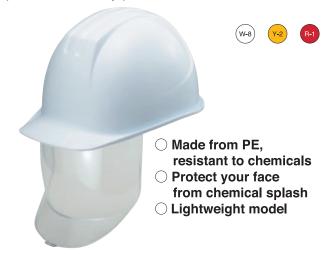


Half size. Hard coating on both sides (Scratch resistance) Replacement is possible with the guide sheet.



Full size. Hard coating on the surface (Scratch resistance), anti-fog coating on the inside. Replacement is only possible for shield.



































### **Excellent ventilation & wide face shield**

















- Olt adopts a two-layer structure and has excellent ventilation
- A transparent peak and a wide face shield ensure a large field of view.

### ST#1330V-SE







































○ Large sized

(56-65cm) ○ Wide full face shield









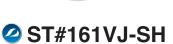






### Transparent peak & safety glasses replacing face shield











### Gray shield instead of sunglasses















# **Built-in face shield model**

### Transparent peak and ventilation holes















### Standard type with transparent peak















### Made from PC, MP style

PC S H EPA



### Standard type, made from ABS

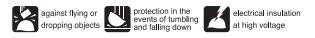


### Made from lightweight FRP, Standard type



### Made from lightweight FRP, MP style





### Made from lightweight FRP, Full brim type









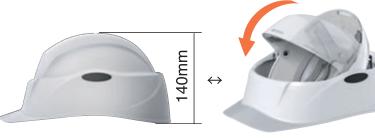


### Made from PC, Short peak type





For disaster prevention & portable use









### The upper part rotates, and the height becomes half (80mm)





A4 size box package



Nonwoven fabric storage bag

ST#130-EZ Crubo











Japanese PAT. No.5908929 / PAT.P: Thailand, Malaysia, Indonesia, Vietnam, China, Korea

 The following models have different specification models. Please check page 25 for details. ST#1610V,ST#141V,ST#101,ST#142



# ST#141 series

The ST#141 series boasting a sleek and functional form.

There are plenty of color variations.

Transparent peak secures clear & wide visibility.

This is useful for work that requires the user to look up or for working in areas with low ceiling height.

It also cuts ultraviolet rays to protect the user's eyes.



Transparent peak & rain guttering







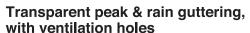


































### Standard type with peak



















Transparent peak & wide field of view









Large shell type with transparent peak















Standard type with peak & ventilation holes



















### **Excellent electrical resistance**











### Made from PE, lightweight & Chemical resistant



ST#0141-EZ P E EPA









### Special FRP made model, without rivet Can be used in low voltage environment



Low voltage (Less than 600V) **Heat-resistant** 

ST#121-CZ











### Made from lightweight FRP, with peak type













(w-3)

### Made from PC, large shell type with peak



Large sized (56-65cm)







### **Transparent peak**



ST#161/1610-JZV ST#141-JZV ST#161L-CZV

Rain guttering



ST#161/1610-JZV ST#0161/01610-JZ ST#161L-CZV ST#121-CZ

### Ventilation hole



ST#1610-JZV ST#01610-JZ

<sup>○</sup> The following models have different specification models. Please check page 25 for details. ST#161V, ST#1610V, ST#141/141V, ST#0161/01610, ST#101



# ST#109 series

### Secure visibility with a flat peak

The flat peak realised an elevation angle of 35 ° (ST # 0169-JZ), which ensures a wide field of vision over the MP type. Ensures upper visibility during work and increase safety.

### Abundant variations with various functions

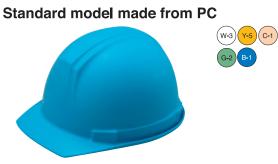
It has a variety of variations depending on the customer's needs, including a super lightweight model weighing only 310g, an "ID helmet" that allows ID cards to be equipped on the helmet, models with transparent peaks, vents and large sized models.

### **Transparent & flat peak**

























### Ventilation model made from ABS





ST#0169-JZ ST#0169-EZ



ABS Rain guttering EPA



ST#01690-JZ ST#01690-EZ











Large shell type with flat peak





### With ID card case





Large sized (56-65cm)







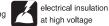
ST#169-ID











### Standard model made from FRP



### Ventilation model made from FRP



### Standard model with rain guttering made from lightweight FRP



### Ventilation model with rain guttering made from lightweight FRP



### Super lightweight model



(W-1) Paint color only



ST#169-JZV (W-3/V-1)





○ The following models have different specification models. Please check page 25 for details. ST#169/169V, ST#0169/01690, ST#109, ST#179



# MP style series

### Traditional MP style

Its round spherical shape effectively releases and disperses shocks, ensures upper visibility during work and increases safety.

### Short peak, wide field of view

The peak of the helmet is short and grants a wide field of view, allowing the user to notice obstacles and falling objects quickly. It is a compact design that will not collide even in narrow places.

### MP style model made from FRP



ST#118 (W-1) R-1 O-1 Y-2 C-3 G-1 B-1 (B-11) (GR-7) ST#108





**Heat-resistant** 

 Standard model ST#118-DMZ **ST#118-EMZ** FRP EPA ST#118-EM



ST#118-EP FRP EPA

Malaysia DOSH (JKKP SH 02/07)

**Heat-resistant** 

Lightweight model

FRP EPA





O Lightweight model ST#108-JPZ **ST#108-GPZ** FRP EPA



ST#108-EP ST#108-GP FRP EPA







Shell color (W-1) is painting. **Heat-resistant** 

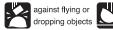
> ST#1080-EPZ ST#1080-EP

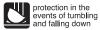


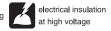
Super Lightweight model











### MP style model made from PC Lightweight model





# ST#180-FZK P C EPA



### MP style model made from ABS









### MP style with large shell (ABS)



Large sized (56-65cm)







### MP style with large shell (FRP)



Large sized (56-65cm)

**Heat-resistant** 

440a







### MP style model made from PC **Excellent electrical resistance**





ST#142-JZ ST#142-DZ ST#142-GZ P C EPA ST#142-E

P C EPA



### Made from PE. **Excellent electrical resistance** & chemical resistance





ST#147-JZ ST#147-DZ P E EPA ST#147-E EPA



### For women and children For disaster prevention and factory tours



Small size (47-57cm)



**Heat-resistant** 



ST#198-EP

FRP EPA-S













# Two layer structure series



- High ventilation is achieved by its large ventilation holes and two-layer structure.
- O Drainage of rainwater is enabled by the internal drainage structure. It also prevents penetrations by sharp objects.
- It secures a wide field of view with its transparent peak. (ST#1830/1330)

Japanese PAT No, 3503947

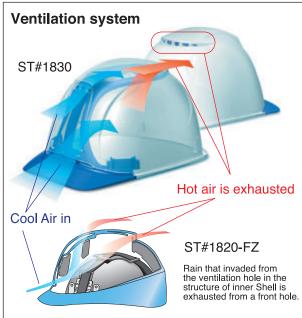
### **Excellent Ventilation**

The ST#1820/1830-FZ helmet is unique for its superior ventilation and excellent sweat absorption abilities. A total of 11 ventilation holes are situated in the front portion of the helmet permitting fresh air to pass through the helmet and cool the user's head.

In addition, ventilation holes are located on the top of the helmet (ST#1820 = 6 holes / ST#1830 = 3 holes) and ventilation holes are situated at the back allowing heat to be released effectively. (ST#1820 = 5 holes / ST#1830 = 6 holes)

In order to achieve this degree of ventilation, the helmet's original double layer structure was created. The inner shell acts to protect the user from falling objects.

A further unque feature is the inside absorption liner which unlike other helmets is positioned away from the shell to allow and heat or humidity within to be released easily and repidly.





ST#1820-FZ

ABS Two layer structure EPA

### Wide field of view with transparent peak





For use in narrow spaces





(w-8)

ST#1840-FZ











# **Baseball Cap style series**

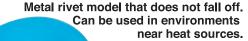


- O There is no collar on the side and the back, baseball cap style. The collar does not touch the headrest,
  - and it is popular with operators and drivers.
- O Its lightweight and compact structure is convenient for working in narrow spaces, such as inside vehicles. It is non-bulky, with a compact and simple design.

### For operators and drivers































ST#1040-EP FRP EPA





















ST#164-EZ ABS EPA ST#164-E ABS EPA









# **Other Type**



Front peak type: ST#185A-F/0185-FZ

O Same design, with utility slot / without utility slot

Full brim type : ST#177-EPZ

O For tunnel construction, offshore work

**European standard model: ST#0161-JEN** 

### Front peak, with utility slot



















Malaysia DOSH (JKKP SH 01/07)

Front peak, without utility slot





### Made from Lightweight FRP, Full brim type













EN 397:2012+A1:2012

### **European standard model**



Difference from Japanese standard model



- Emboss of shell (CE mark etc.)
- Label (for EN standard)
- Chin strap (T-15)

(ST#0161-JZ)











# **Bump cap**



### **<u>MARNING!</u>** This is not an industrial safety helmet.

For light work only. Bump cap cannot be used for work that requires an industrial safety helmet by law.

Ideal for assembly work of automobiles and electric products

Chinstrap is optional. (With out ST#143-EN)

ST#143 = VQ-T-16, ST#144 = VP-T-16(No,8)

### **⚠WARNING! THIS IS NOT AN INDUSTRIAL SAFETY HELMET.**











ST#143-EPA























(VP-T-16(No,8)













Install in the work cap.

**Inner liner** ST#1451



### **European standard model**

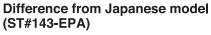
S H EPA





### EN 812:1995+A1:2001





- O Sponge pad at the top of the head
- Label (for EN standard)
- Chin strap (VQ-T-16EN/Standard equipment)
- O Plate to close the ventilation hole (Half of hole)













# Guidelines for safety helmet replacement

Below are the guidelines for normal use. If you receive a big impact even once, please replace your helmet with a new one.

This guideline is from the start of use of the helmet. It is not from the date of manufacture.

- 1) Shell Made from Plastic (PC,ABS,PE)
- 3 years

**Made from FRP** 

5 years

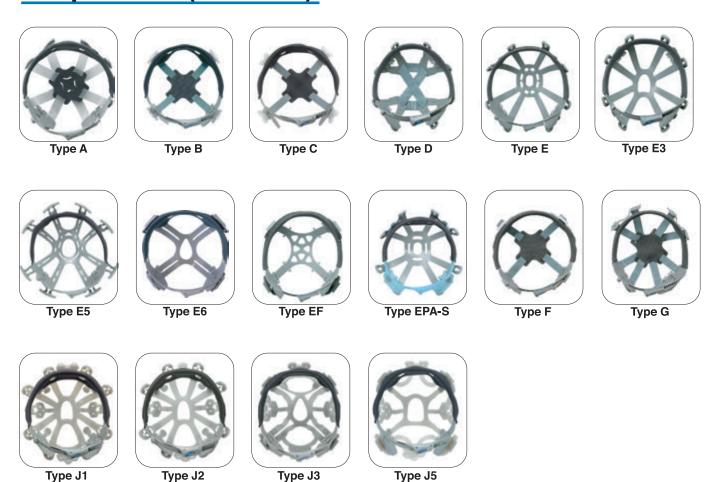
2) Suspension, chin strap, impact absorption liner

1 year

# Precautions when ordering replacement parts

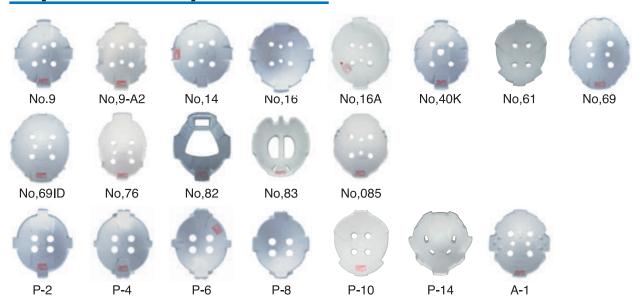
- 1) When changing the suspension, you cannot select a type different from the type described on the certification label. That is a violation of standards and will not be covered by our performance guarantee.
- 2) Even with the same type of suspension, the size varies depending on the shell. When ordering, please inform us of the model number.
- 3) ABS rivet depends on shell color. Please inform us of shell color when ordering.
- 4) The fitting part of chin strap varies depending on the model. When ordering please inform us the model number.

# **Suspension (Harness)**



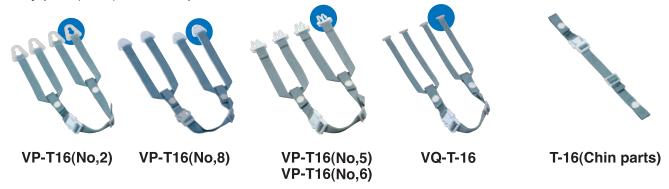
# Replacement parts

# Impact absorption liner



# **Chin strap**

Chin strap types are different depending on shell type. Please specify the type when you order. Only part (T-16), the chin portion, can be ordered.



# Rivet (For FRP shell)

# Sweat band



Please inform us of the shell color code



For EPA head band

For Standard head band

### **Exchanging built-in face shields**

- OPlease exchange the "face shield unit (lens + guide seat)" for SH face shield model. It is not possible to exchange only the lenses.
- $\bigcirc$ Only lenses can be exchanged for the SD & SE face shield models. (PAT.P)







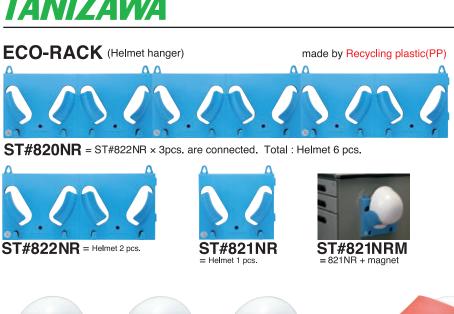
### **∆WARNING!**

This unit cannot be installed on models without built-in face shields.



# **Accessories**

Blue ( ) Ivory





helmets that are connected and installed.



Hood for heat protection



Welding mask ST#350-B



Face shield **NS-201** Aluminum frame Thickness of lens : 2mm (acrylic)







Protection against cold Cold protection hood

ST#1922



Additional sweat band **ST#1901** 







The helmet doesn't drop & shift to the impact from the back.



Whistle & Ear plug holder







Pen holder / U

ST#651

ST#1931 ID card holder

LED flasher

### Please inspect your helmet in accordance with the following checkpoints before use.

### Check list for safety helmet

### Check points for replacing the shell (If any of the following conditions are found)



- 1.if the rim of the shell is chipped or broken
- 2.if there are any marks or dents from impacts
- 3.if many scratches are visible
- 4.if extremely dirty
- 5.if there are additional holes which are not intended by the manufacturer
- 6.if glass fibers are visible on the surface of the shell
- 7.if there are any cracks on the rivets
- 8 if a noticeable change in color is visible
- 9.if the shape of the shell changes
- 10.if anything unusual is found within the fixing parts (tacks, brackets, hooks etc)



# Check points for replacing hammock, headband and chinstraps (If any of the following conditions are found)



- 1.if there has been any modification made by the user
- 2.if the hammock parts are damaged or extremely dirty
- 3.if the seam is fraying or fixed parts are stripped off
- 4.if the headband is damaged, ripped, or out of shape
- 5.if there is considerable dirt due to oil and perspiration
- 6.if the hammock is scratched or damaged

# Check points for replacing shock absorption lining (If any of the following conditions are found)







- 1.if the shape changes due to heat, solvents, etc
- 2.if it is extremely dirty
- 3.if there are numerous scratches or cracks

### Safety Helmet Instructions

For your own safety: Fully observe the following instructions.

- Obispose of the safety helmet once a strong impact has occurred and replace it even if no defect appears visible.
- The helmet may have suffered during the impact and its strength diminished.
- On not use or store the helmet for prolonged periods in a place where temperatures exceed 50°C (122°F).
- O Never use the safety helmet for riding motorbikes or any other vehicles.
- The standard of requirement and function differs from that of motorbikes and other vehicles.
- This helmet meets the standards used only in the industrial sector.
- $\bigcirc$  Wear the safety helmet correctly. Adjust the headband to fit your size and fasten the chinstrap securely.
- If the safety helmet leans or moves easily on your head, full absorption against impact may not be available.
- O Avoid contact with benzene, thinners or any other solvents. Such solvents might dissolve the material and the safety properties may be reduced.
- When replacing component parts make sure to replace them with the same model supplied by the same manufacturer to ensure compatibility of materials and maintenance of quality standards.
- When exchanging component parts please inform the supplier of the make and model of the safety helmet.
- $\bigcirc$  The suspension of the helmet (hammock and headband) should be replaced once every year.
- The condition of the suspension may deteriorate without any obvious change in appearance due to time and service conditions.
- OReplace the component parts of the suspension the hammock and headband at the same time. Also replace the chinstraps with them.
- Otherwise the quality of the safety helmet may be diminished.
- O Never use the safety helmet for storage or stand or sit on the helmet or use it to support weight. There may be a high deterioration in quality.
- O Do not paint or mark the helmet.
- $\bigcirc$  Refrain from using paint supplied by a company other than helmet manufacturer when coating is deemed necessary.
- On not affix labels, stickers or tape to the safety helmet unless they are specifically designed not to damage the integrity of the helmet.



Industrial safety helmet Warning: Yellow line models are integrated into Type J model and may be discontinued.

		•			e models	are min	y atou						
Page	Model	Shell material	Weight (g)	Suspension type	Liner type	Transparent peak	Ventilation hole	Rain guttering	Face shield				(IS)
7	ST#162V-SD	PC	615	С	P-14	0	_	0	SD	0	0	0	
′	ST#0162-SD	PE	535	С	P-14	_	_	0	SD		0	0	
8	ST#1330V-SE	ABS/PC	525	В	No,33	0	0	0	SE	0	0	_	
	ST#161VLII-SDC	PC	620	С	P-16	0	_	0	SDC	0	0	0	0
	ST#162VL-SD	PC	630	С	P-16	0	_	0	SD	0	0	0	0
	ST#161VJ-SH	PC	535	J 2	_		_	0	SH		0	0	
	ST#161V-SH	PC	535	E 5	P-10		_		SH		0	0	0
	ST#161VJ-SHGR	PC	535	J 2	_	0	_	0	SHGR	0	0	0	0
	ST#161V-SHGR	PC	535	E 5	P-10		_		SHGR				
	ST#1610VJ-SH	PC	535	J 2	_	0	0		SH	0		_	
	ST#1610V-SH	PC	535	E 5	P-10				SH		0	_	
	ST#1161J-SH	ABS	470	J 2	_	_	_	0	SH		0		
	ST#1161-SH	ABS	460	E 5	P-10	_	_	$\circ$	SH	0	0	0	
	ST#141VJ-SH	PC	535	J 2	_	0	_	_	SH	0	0	0	0
9	ST#141V-SH	PC	535	E 5	P-10	0	_	_	SH	<u>O</u>	0	0	0
	ST#101J-SH	FRP(LW)	460	J 2		_	_	_	SH	0	0	_	0
	ST#101-SH	FRP(LW)	460	E 5	P-10	—	_	_	SH	0	0	_	0
	ST#142J-SH	PC	495	J 2		_	_	_	SH	0	0	0	0
	ST#142-SH	PC	485	E 5	P-10	_	_	_	SH	0	0	0	0
	ST#108J-SH	FRP(LW)	455	J 2		_			SH		0		
4.0	ST#177-SH	FRP(LW)	485	E 3	P-10	_	_	_	SH		0	_	
10	ST#189-SH	PC	495	E 5	P-10	_	_	0	SH —	0	0	0	
	ST#130-EZ	ABS	420	130-E	No,30	_	_	_	_			_	_
	ST#161-JZV	PC	445	J1	No C1	0		0	_	0	0	0	
	ST#161-EZV	PC PC	430	E 3	No,61	0	<u> </u>			0	0	0	
	ST#141-JZV ST#141-EZV	PC	450 435	J1 E	P-6		_	_	_				
	ST#1610-JZV	PC	445	J 1		Ö	0	0	_	<u> </u>			Ŏ
11	ST#1610-52V	PC	430	E 3	No.61			Ŏ	_	Ŏ		_	
•••	ST#161L-CZV	PC	535	C	P-16	Ö		Ö	_	Ŏ		0	Ŏ
	ST#0161-JZ	ABS	390	J 3	_	_	_	ŏ	_	$\overline{}$	$\tilde{}$	l ŏ	Ŏ
	ST#0161-EZ	ABS	375	EF	No,61	_	_	Ŏ	_	Ŏ		Ŏ	Ŏ
	ST#01610-JZ	ABS	390	J 3		_	0	Ŏ	_	Ŏ	Ö	_	Ŏ
	ST#01610-EZ	ABS	375	EF	No,61	_	Ŏ	Ŏ	_	Ŏ	Ŏ	_	Ŏ
	ST#141-JZ	PC	450	J 1	_	_	_	_	_	Ŏ	Ŏ	0	Ŏ
	ST#141-GZ	PC	430	G	P-6	_	_	_	_	Ō	Ō	Ō	Ō
	ST#141-EZ	PC	435	Е	P-6	_	_	_	_	0		0	
	ST#101-JPZ	FRP(LW)	385	J 1	_	_	_	_	_	0	0	_	
12	ST#101-GPZ	FRP(LW)	370	G	P-4	_	_	_	_	0	0	_	
	ST#101-EPZ	FRP(LW)	375	Е	P-4	_	_	_	_			_	
	ST#0141-EZ	PE	370	E 3	No,6	_	_	_	_	0	0		_
	ST#141L-AZ	PC	460	Α	No,16	_	_	_	_	0	0	0	0
	ST#121-CZ	FRP(SMC)	395	С	No,61	_	_	0	_	0	0		
	ST#169-JZV	PC	425	J 5	_	0	_	0	_	0	0	0	_
	ST#169-EZV	PC	410	EF	No,69	0	_	0	_	0	0	0	
	ST#169-JZ	PC	425	J 5		_			_		0		
	ST#169-FZ	PC	405	F	No,69	_	_	0			0		
	ST#0169-JZ	ABS	380	J <u>5</u>	_	_	_	0			0		
	ST#0169-FZ	ABS	370	F	No,69	_	_	0	_	0	0	0	
13	ST#0169-EZ	ABS	380	E F	No,69	_			_	0	<u> </u>	0	0
13	ST#0169-E	ABS	355	E 6	_	_	<u> </u>	0	_	0	0	0	
	ST#01690-JZ	ABS	390	J 5 F		_	0	0	_			=	
	ST#01690-FZ ST#01690-EZ	ABS ABS	365 380	EF	A-1 A-1	_						_	
	ST#01690-EZ	ABS	355	E 6	——————————————————————————————————————	_		Ö	_	0		_	Ŏ
	ST#01690-E	ABS	415	F	No,16-A			Ŏ	_	<u> </u>		0	$\overline{}$
	ST#169-ID	PC	455	F	No,69ID		_	ŏ	_	ŏ	Ŏ	Ŏ	Ŏ
	ST#109-JPZ	FRP(LW)	380	J 1	— —	_	_		_	ŏ	Ŏ		Ŏ
	ST#109-GPZ	FRP(LW)	365	G	P-2	_	_	_	_	Ŏ	Ŏ	<del> </del>	Ŏ
	ST#109-EPZ	FRP(LW)	370	E	P-2	_	_	_	_	Ö		_	Ŏ
	ST#109-EP	FRP(LW)	345	E		_	_	_	_	Ŏ	Ŏ	_	_
14	ST#1090-GPZ	FRP(LW)	360	G	A-1	_			<u> </u>	Ŏ	Ŏ		
	ST#1090-GP	FRP(LW)	340	G	_	_	Ŏ	_	_	Ŏ	_	<b> </b>	_
	ST#179-JPZ	FRP(LW)	380	J 1	_	_	_	0	_	Ŏ	0	_	0
	ST#179-GPZ	FRP(LW)	365	G	P-2	_	_	0	_	0	0	_	
				-	•								

### Warning: \_\_\_\_ Yellow line models are integrated into Type J model and may be discontinued.

	Model	Shell material	Weight (g)	Suspension type		Transparent peak	Ventilation hole	Rain guttering	Face shield				(II)
	ST#179-EPZ	FRP(LW)	370	Е	P-2	_	_				0	—	
14	ST#1790-GPZ	FRP(LW)	365	G	A-1	_			_			_	_
	ST#159-EPZ	FRP(S-LW)	310	Е	P-2	_	_	_				_	
	ST#118-EPZ	FRP	425	Е	No,9	_	_	_	_			_	0
	ST#118-GPZ	FRP	420	G	No,9	_	_	_	_		0	_	
	ST#118-EP	FRP	395	Е	_	_	_	_	_		_	_	
	ST#108-JPZ	FRP(LW)	365	J 1	_	_	_	_	_	Ŏ	0	_	Ŏ
	ST#108-GPZ	FRP(LW)	360	G	No,9	_	_	_	_	Ŏ	Ŏ	_	Ŏ
	ST#108-EPZ	FRP(LW)	360	Е	No,9		_	_	_	Ŏ	Ŏ	_	Ŏ
	ST#108-EP	FRP(LW)	335	Е	_		_	_	_	Ŏ	_	_	Ŏ
	ST#108-GP	FRP(LW)	330	G	_	_	_	_	_	Ŏ	_	_	
_	ST#118-DMZ	FRP	425	D	No,9		_			Ĭ	0	_	
	ST#118-EMZ	FRP	425	E	No,9		_			Ĭŏ	Ŏ	_	$\tilde{}$
_	ST#118-EM	FRP	395	E	-	_		_	_	Ŏ	$\vdash$	_	$\tilde{}$
_	ST#108-JMZ	FRP(LW)	370	J 1	_					$\stackrel{\smile}{\sim}$		_	$\overline{}$
_	ST#108B-EPZ	FRP(S-LW)	320	E	No,9-A2					$\vdash$	$\stackrel{\smile}{\sim}$		$\stackrel{\smile}{\sim}$
_	ST#1080-EPZ	FRP(LW)	360	E	No,9-A2						0		$\stackrel{\smile}{\sim}$
	ST#1080-EF2	FRP(LW)	335	E	1NU,9*AZ						$\sim$		$\overline{}$
		PC		F	No cold		-			$\vdash$	_	_	$\sim$
	ST#180-FZK		370		No,80K		_					0	$\bigcirc$
	ST#142-JZ	PC	420	J 1	— N- 0		_				0	0	$\bigcirc$
	ST#142-DZ	PC	405	D	No,9		_	_				0	0
	ST#142-GZ	PC	405	G	No,9		_	_	_	0	0	0	0
	ST#142-EZ	PC	410	E 3	No,9		_			0	0	0	0
_	ST#142-E	PC	385	E 3	_		_	_	_	0	_	0	
_	ST#148-JZ	ABS	385	J 1	_	_	_	_	_	0	0	0	
	ST#148-EZ	ABS	380	E 3	No,9	_	—	_	_	0	0		
	ST#148-E	ABS	340	E 3	—	_	_	_	_				
	ST#147-JZ	PE	415	J 1	_	_	_	_	_		0		$\circ$
	ST#147-DZ	PE	395	D	No,9	_	_	_	_				
	ST#147-EZ	PE	395	Е	No,9		_	_	_		0		
	ST#147-E	PE	370	Е	_		_	_	_		_		
	ST#160-AZ	ABS	465	Α	No,16	_	_	_	_		0		0
	ST#150-AMZ	FRP(LW)	440	Α	No.16-C	_	_	_	_	Ŏ	Ŏ	_	Ŏ
	ST#198-EPZ	FRP(LW)	365	Е	P-6		_	_	_	Ŏ	Ŏ	_	Ŏ
	ST#198-EP	FRP(LW)	345	E	_					Ŏ	_	_	$\overline{}$
	ST#1830-JZ	ABS/PC	465	J 3	_	$\bigcirc$				Ĭŏ		_	Ŏ
	ST#1830-FZ	ABS/PC	445	F	No,83				_	Ŏ	Ŏ	_	
	ST#1820-FZ	ABS	445	F	No,82		Ö		_	Ŏ	Ŏ	_	Ŏ
	ST#1840-FZ	ABS	405	TF	No,84		$\vdash$			<u> </u>	ŏ		$\widetilde{}$
	ST#104-EPZ	FRP(LW)	360	E	No,14					Ö	Ö		$\vdash$
	ST#104-EP	FRP(LW)	335	E	110,14					<u> </u>	Ŏ		
. ⊢		FRP	405		No 14						-		
	ST#114-EPZ			E	No,14		_				0	_	
	ST#114-GPZ	FRP	405	G	No,14	_	_	_	_		0	_	
· -	ST#114-EP	FRP	385	E	_							_	
	ST#114-EMZ	FRP	410	E	No,14	_					0	_	
	ST#1040-EP	FRP(LW)	335	E	_		0	_	_	0	_	_	_
	ST#115-EP	FRP	385	Е	_	_	_	_	_	0		_	
	ST#164-EZ	ABS	390	Е	No,64	_	—	_		0	0	0	
	ST#164-E	ABS	375	Е	_	_	_	_	_	0	_	0	
	ST#154-EPZ	FRP	425	E 3	P-6	_	_	_	_	0	0	_	0
	ST#185A-F	ABS	380	F	_	_	_	_	_	0	_	_	
10	ST#0185-FZ	ABS	375	F	No,085	_	_	_		0	0	0	0
19	ST#177-EPZ	FRP(LW)	405	Е	P-2	_	_	_	_			_	0
	ST#0161-JEN	ABS	390	J 3	_	_	_	0	_	EN397	:2012+A	1:2012	Ŏ

### Bump cap

	ST#143-EPA	PE	235	N	_	_	0	_	_	
	ST#143-N	PE	210	N	_	_		_	_	
	ST#143-SH	PE	320	143-SH	_	_		_	SH	No standard
20	ST#144-EPA	PE	205	N	_	_		_	_	INO Staridard
	ST#144-N	PE	180	N	_	_		_	_	
	ST#1451	PE	80	_	_	_		_	_	
	ST#143-EN	PE	300	N	_	_		_	_	EN812:1995+A1:2001

 $<sup>\</sup>ast$  Weight is weight of EPA buckle model. For the pin lock (standard buckle) model, it is -15g.  $\ast$  The electrical resistance of ST#121 - CZ is 600V or less.



Manufacturer

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