

RITSUHA

**ENGINEERED
WITH EXCELLENCE**



BRAKE & BODY PARTS



HIGH GRADE
RAW MATERIAL



LIGHT WEIGHT &
CORROSION RESISTANT



PRECISE DIMENSION
& SMOOTH FINISH

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About the company

Eastman Auto and Power Ltd is the company behind the brand –“Ritsuka”.

We are one of the top manufacturers and exporters. We engineer a massive capacity of approx. 10 lakh units of different motorcycle and automotive products every month and at the same time; master a wide range of around 100-120 different models.

The promise of quality and an unmatched product mix defines us. we can proudly say that we are one of the finest companies in the automotive industry to provide complete value to our customers.

We also strive to assure our customers that the in-house quality control team constantly monitors every aspect of business, from production to our valued customers. Our expert team ensures that each product supplied is of the highest standards. Each product is tested in our specialized testing centers to ensure that our product suits market conditions. With a focus on value in each phase, we lay emphasis on product quality, packaging as well as distribution.

We also manufacture motorcycle complete units, automotive batteries, tyres and tubes.

Know more about us and our business at

www.eastmanautogroup.com

Ritsuka - Our Brand

Our brand redefines premium for masses when it comes to motorcycle spare parts. Ritsuka is all about precision based engineering and consummate craftsmanship inspired by the Japanese philosophy of "Monozukuri". With the aim to delight a worldwide customer base. The brand is focused on offering premium quality experience and highly durable spare parts to masses. To this end, we strive for continuous innovation and thus, introduce the world of motorcycle spare parts to a new paradigm of excellence. Every part adheres to a design language reflecting superior form, function, ruggedness and value for everyone.

Ritsuka is precision

Innovation is only a beginning. What really makes Ritsuka spare parts extraordinary is an obsession with precision and the pursuit of perfection.

Ritsuka is quality

When it comes to quality, we believe in perfection. Ritsuka spare parts promise durability, longevity and top-notch quality.

Ritsuka is focused engineering

Engineering may be just another word for the world, but for us it is the world. The foundation for everything we do under our brand - Ritsuka is in-depth knowledge, at every stage.

Explore Ritsuka at www.ritsukaparts.com

Brake Shoe



Product

At our state of the art design and manufacturing facility, we make wide range of non- asbestos brake linings. Our brake lining gives optimal braking in all temperature, weather & terrain condition. Engineered to eliminate noise, vibration and harshness, our brake shoe provides the ultimate braking experience.

Our quality begins at the surface and runs to the depths. In brake shoe we offer two types of finish - sand blasting and regular shine finish. Apart from giving the spare part the perfect appearance, a good finishing helps to create a smoother surface for higher overall functioning of a motorcycle.

Features:

- High and stable friction levels
- Very good fade resistance
- Highest bond integrity
- Best performance and service life
- Reduced noise and vibration
- Ensures safe operation and adequate durability
- ECE-R90 certified formulation
- Facilitates correct shoe to drum contact for best performance
- Stable and balanced braking
- Delivers highest shear strength
- Reduced noise and vibration

Raw Material

We use lining without asbestos as they are environment friendly and also it has an ability to operate in all conditions at constant wear rate. For manufacturing brake shoes, we use ADC 12 that has high copper percentage of 1.65% that means exceptional mechanical properties like durability, comfort and longevity.

ADC 12 increases the resistance of a material which can break under tension or load if any other material is used. It also improves tensile strength of a material and enables it to bear maximum amount of tensile stress before giving up to failure i.e. breaking.

We trust aluminum alloys because:

- Lightweight & structural material.
- Resistant to corrosion.
- Endures high temperatures.

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
Raw Material	Aluminium Body	High grade ADC12 with copper content of 1.65%	Substandard ADC12 with copper content of 0.5-0.8% which is below international standards	We offer ECE-R90 certified formulation with High Copper content means exceptional mechanical properties like durability, comfort and longevity along with safe ride.
	Friction Lining	Non-asbestos formation with special Fibre material	With asbestos formation	1. We offer environment friendly non-asbestos friction material as asbestos material has been banned in most of the countries. 2. Results in smooth braking effect.
	Spring	Spring material 65# MN steel	Low grade steel	1. Robust function and less wear & tear 2. Durable standards 3. Corrosion resistant finish

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
BOP (Bought out Parts)	Brake lining	In-house	BOP	1. More the BOP's, higher are the chances of rejection.
	Spring	BOP	BOP	2. Consistent quality and best performance in service life.





Manufacturing

Our state of the art manufacturing facilities give us an edge over other Chinese products. With fully automated line with minimal manual intervention, we are one of the top manufacturers of these products.

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
Manufacturing	Production Technology	Automated casting machines	Semi Automated Casting machines	By using fully automated CNC machines, we offer min. tolerance level products with negligible rejection at final stage.
	Design centre, Tool room and R&D facilities.	In-house design centre, tool room and R&D centre	Not available with normal chinese factories	We have an an extra ordinary aptitude in eveloping customized formulations for friction products. For di- casted products, we have in-house tool room with an integrated facilities for die design & die manufacturing enabling quick lead time to customers.
	Gluing process	Automated gluing process	Manual gluing process	Proper gluing results in better shear strength and brake grip
	Sandblasting	In-house facility	Not available	We offer sandblast brake shoe with smoother surface finish and edges as compared to other brake shoes available in the market
	Heat Treatment	In-house heat treatment process	Outsourced in most of the factories	Grain alignment is done to give better raw material strength and to reduce internal stress



Testing

During new product development, each and every product undergoes complete physical & chemical properties tests before going for functional and endurance testing. The finished brake shoes are made to undergo various checks and tests to ensure precision. Each brake shoe is evaluated on the following parameters, before they make way to the market.

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
Testing Standards	Incoming Technology	100% Inspection & Testing	Random / No Testing	Committed to offer same quality/specifications product with every lot
	In-process	In-house facility includes 1. Material composition test 2. Random Dimensional check with Three axis coordinate measuring machine 3. Coefficient of Friction test 4. Shear Strength Test 5. Crushing Strength Test	1. Visual testing 2. On demand testing from external agencies	1. Controlled standard parameters at every Process 2. Product has crushing strength of <13.23KN. 3. Through three axis coordinate measuring machine, we maintain 0.002 mm ~ 0.003 mm tolerance range. 4. Product has shear strength of <11.20KN.
	Final Inspection	Fitment check using pneumatic guage, Hydraulic / Electronic Universal testing	Manual inspection	Ensures safe operation and adequate durability, We have both electronic and hydraulic universal testing machine (UTM) for testing the tensile strength and compressive strength of materials used in manufacturing

S.No.	Test items and Specifications	Unit	Chinese Product	Ritsuka Product
1.	Crushing Strength Test	kN	11.89	13.23
2.	Shear Strength Test	kN	10.77	10.23
3.	Shear Strength	Mpa	4.10	3.8

S.No.	Chemical Composition	STD	Chinese Product	Ritsuka Product
1.	Cu	1.5~3.5	0.81	1.60
2.	Mg	≤0.3	0.72	0.19
3.	Zn	≤0.1	1.51	0.94
4.	Si	9.6~12	10.89	10.73
5.	Fe	≤1.3	1.20	0.77
6.	Mn	≤0.5	0.02	0.17
7.	Sn	≤0.2	0.47	0.02
8.	Ni	≤0.5	0.02	0.05
9.	Pn	≤0.2	0.06	0.05
10.	Ti	≤0.3	0.03	0.03



Brake Pad

Product

Designed and tested for predominantly performance-oriented use, Ritsuka brake pads are the principal upgrade level for any braking mechanism. Our frictional material lends excellent quality to our brake pads making them superior than the rest in market.

Our brake pads ensure the ideal balance between safety and performance alongside minimizing the wear of the pads and discs of the vehicle.

Features:

- Enhanced initial effectiveness (no break-in required)
- High resistance to fade
- Stable and balanced braking
- Delivers highest shear strength
- Reduced noise and vibration
- Premium dipped coating – provides corrosion resistance for superior durability
- High and stable friction levels
- Consistent brake lever feel
- Made to perform in extreme temperature ranges

Raw Material

Our brake pads are manufactured using raw material variant Q-235 B. The lining of all these brake pads are of high metal content, non-asbestos, and environment friendly in nature, along with smoother edges as compared to others in market. Semi-metallic material leads to smoother braking performance, superior fade resistance, minimal brake disc wear rate, better solid brake pedal feel with low noise. These function efficiently over wet, dry, hot or cold surfaces.



Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
Raw Material	Metal Base	High grade Steel Base with chemical composition as per International standards	Low grade steel base with chemical composition below international standards as it increases cost	Exceptional mechanical properties like durability, comfort and longevity along with safe ride.
	Friction Lining	Non-Asbestos formation with special Fibre material	With asbestos formation	Our frictional material lends excellent quality to our brake pads making them superior than the rest in market

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
BOP (Bought out Parts)	Friction Lining	In-house	BOP	Consistent wear rate
	Metal Base	In-house	BOP	Consistent Quality and and best performance in service life.



BRAKE PAD



Manufacturing

We manufacture single quality of brake pad lining by using synthetics mixed with some proportion of flaked metals like steel, iron, copper and glass fiber. Different pads use steel, iron and copper, glass fibre. Our exquisite workmanship allows the product to endure a temperature of 300°C with less wears rate, high longevity, good performance of thermal recession and water recession.

Details	Ritsuka	Chinese Product	Ritsuka Advantage
Production Technology	Automated/Semi-automated Press shop	Semi Automated / Manual Press shop	By using fully automated press machines, we offer min. tolerance level products with negligible rejection at final stage.
Design centre, Tool room and R&D facilities.	In-house Design centre, tool room and R&D centre	Not available with normal chinese factories	We have an extra ordinary aptitude in developing customized formulations for friction products. for die casted products, the company has in-house tool room with integrated facilities for die design & die manufacturing enabling quick lead time to customers.
Moulding	Automated moulding process	Manual Moulding process	Automated moulding results in relatively poor wear under heavy duty conditions and high friction levels
Powder coating	In-house facility	Not available	We offer powder coated brake pads with smoother surface finish and edges as compared to other branded brake shoes in the market
Heat Treatment	In-house Heat treatment process	Outsourced in most of the factories	Grain alignment is done to give better raw material strength and is also reduces internal stress

Testing

Our brake pads ensure:

- Safety** - Adhesive ensures good bonding between friction materials and back plate under roughest driving conditions
- Steadiness** - Advanced friction engineering to ensure stable performance across wide range of temperatures.
- Resistance** - Good load capacity and stopping power for longer period of time in different environment and conditions.
- Comfort** - Better materials ensure reduced noise and vibration making it easy to control and comfortable to stop.



The finished brake pads are thoroughly checked and tested to ensure 100% accurate fitting before dispatching.

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
Testing Standards	Incoming Parts	100% Inspection & Testing	Random / No Testing	Committed to offer same quality/specifications product with every lot
	In-process	In-house facility includes 1. Material composition test 2. Random Dimensional check with Three axis coordinate measuring Machine 3. Coefficient of Friction test 4. Wear Rate Test	1. Visual testing 2. On demand testing from external agencies	1. Controlled standard parameters at every process 2. Product has crushing strength of <13.23KN. 3. High coefficient of friction ~0.33 - 0.40 4. Excellent wear at lower temps. < 200C.
	Final Inspection	Fitment check using pneumatic guage, Hydraulic / Electronic Universal	Manual inspection	We ensure safe operation and adequate durability. We have both electronic and hydraulic universal testing machines. UTM for testing tensile strength and compressive strength of materials used in manufacturing

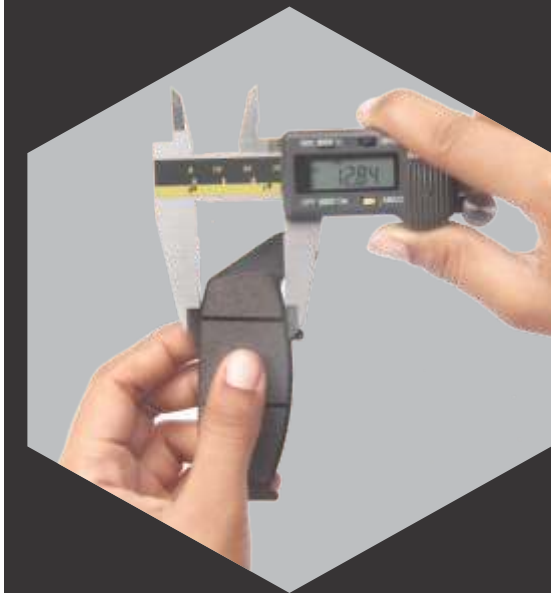
Friction Performance Test Report

Metal		Standard		Wheel Rotation Speed				Indoor Temperature		Pressure	
M8500		GB5763-1998		480r/min				15 degree C		1225N	
Temperature	Coefficient of Friction		Sample Thickness					Average Thickness Difference	Wear rate	Friction Force	Result
	Increase	Decrease	1	2	3	4	5			Average	
100	0.42	0.4	6.84	6.60	6.85	6.98	6.85	43	0.23	504.32	OK
			6.78	6.52	6.81	6.98	6.78				
			0.06	0.08	0.04	-	0.07				
200	0.39	0.4	6.70	6.47	6.76	6.97	6.74	33	0.18	482.57	OK
			6.65	6.45	6.37	6.95	6.68				
			6.70	6.47	6.76	6.97	6.74				
300	0.38	0.44	6.65	6.45	6.73	6.95	6.68	40	0.22	479.16	OK
			6.63	6.39	6.68	6.91	6.63				
			0.02	0.06	0.05	0.04	0.05				
200	0.42	---	6.63	6.39	6.68	6.91	6.63	71	0.38	490.23	OK
			6.52	6.34	6.59	6.85	6.57				
			0.11	0.05	0.09	0.06	0.07				

Importance of test:

Wear test is carried out to predict the wear performance and to investigate the wear mechanism. Two specific reasons are as follows:

- From a material point of view, the test is performed to evaluate the wear property of a material, so as to determine whether the material is adequate for a specific wear application or not.
- Coefficient of friction is a value that shows the relationship between the force of friction between brake pad and brake disc. It is also carried out to determine the normal reaction between the objects that are involved.



Shock Absorber

Product

Shock absorbers, at our company, undergo various international grade inspections at each stage of production that helps us in maintaining our superior quality. Along with that kind of benchmark, we manufacture around 100,000 units per month and a wide range of around 100 different models. Good production lead time ensuring quick delivery of products and our streamlined production processes aids us to attain 100% customer satisfaction and unmatched quality.

Features

- Wide range (traditional and mono) suitable for a number of motorcycle models
- High endurance
- Hard/nickel chrome plated piston rod for smooth functioning
- Use of high grade material for suspension springs to enhance durability
- Optimized design of suspension systems to withstand high working loads
- Gas charged hydraulics for better ride comfort
- Anti dive suspensions for different types of roads
- High dampening for improved shock absorbing capability
- Cavitation graph not distorted at 500 cycles.

Raw Material

We owe our superiority to the SGS approved factories where products derive their perfection using innumerable quality parameters. We use minimum BOP (Bought out Parts) to have a complete control of quality.



Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
(BOP Bought out Parts)	Upper Bracket	BOP	BOP	In-house parts ensures better process control, therefore ensuring better quality and delivery
	Lower Bracket	BOP	BOP	
	Spring	In-house	BOP	
	Internal Tube	In-house	BOP	
	Inner Piston	In-house	BOP	



Manufacturing

Our manufacturing facilities gives us an edge over other Chinese products. With fully automated line and minimal manual intervention, we are the top manufacturers of shock absorbers. The core part of shock absorber i.e. spring is also manufactured In-house to control the quality at every point of time.

Details	Ritsuka	Chinese Product	Ritsuka Advantage
Automated line	Fully Automated Line	Semi Automatic or Manual Line	By using fully automated Line, we offer min. tolerance level with negligible rejection at final stage
Spring Manufacturing	In-house	Outsourced	In-house manufacturing enhances better production control
Oil Filling	Oil Filling through Automated Oil Filling Machine	Oil Filling is Manual	Standard filling ensures consistent damping feel and no spilling
Electroplating	100% Plating by Automated Plant	Semi Automatic or Manual Facility	Minimal chance of In-house rejection levels, prefinished / finished product



SHOCK ABSORBER





Testing

Cavitation test: Cavitation is presence of air or other contaminated particles inside the shock absorber. Presence of air results in more friction between the cylinder piston and the cylinder wall. In this test, the temperature is kept 20° C and velocity is permitted ± 5% and the cavitation is checked at different cycles. 5,100,200,300,400,500

Temperature

20 ± 3

 °C Velocity

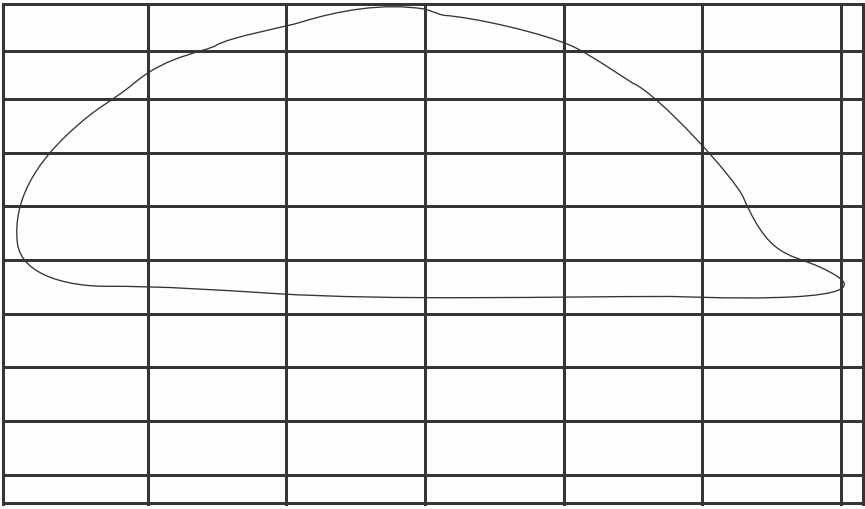
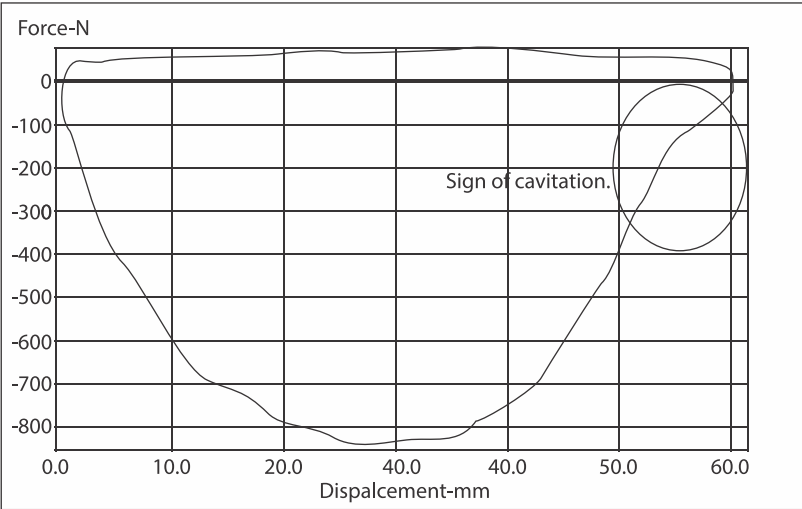
0.523

 m/s

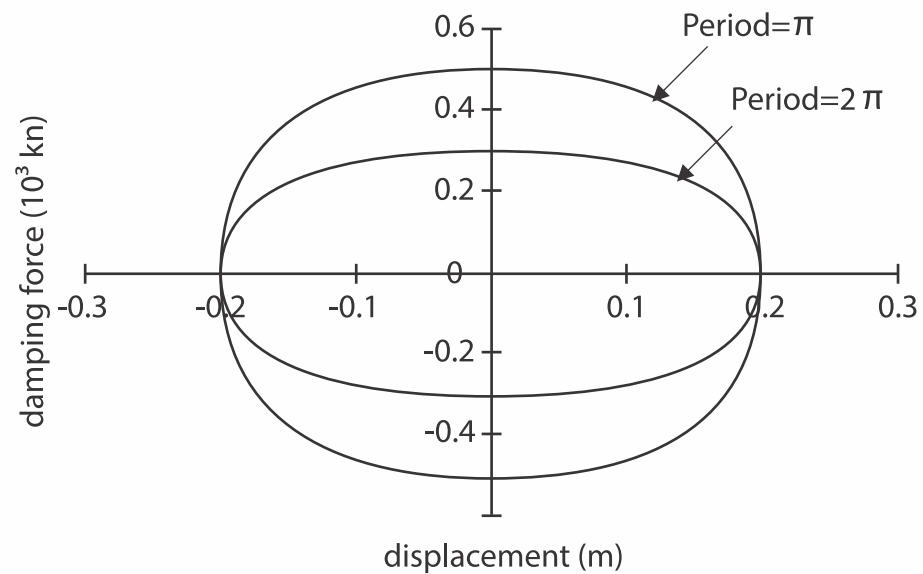
50

 mm

Cycle	Specification	Found			
	Visual <i>(graphic)</i>	Sample # 1 <i>(OK or NOK)</i>	Sample # 2 <i>(OK or NOK)</i>	Sample # 3 <i>(OK or NOK)</i>	Status <i>(OK or NOK)</i>
5th	The hydraulic lag shall not be higher than 50% of stroke test.	OK	OK	OK	OK
100th		OK	OK	OK	OK
200th		OK	OK	OK	OK
300th		OK	OK	OK	OK
400th		OK	OK	OK	OK
500th		OK	OK	OK	OK



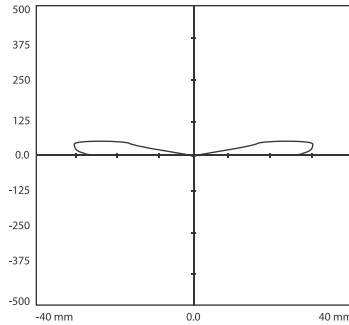
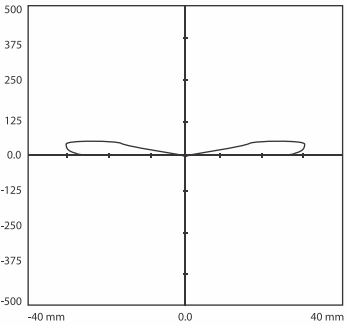
Damping test: In this test, the internal forces of a shock absorber are measured using hydraulics in motion. Load, displacement, and velocity measurements are recorded to create hysteresis curves to accurately display the affects frequency, displacement, and temperature have on a shock absorber. Test samples can be soaked at temperature and humidity prior to cycling, or the test can be performed in an environmental chamber. If the damping force graph is symmetrical about the origin, that means damping and compression are same and the shocker is OK.



Friction force test: Friction force is the sum of unwanted forces in shock absorber. These forces include forces between the oil and the contaminated particles, viscous forces in the oil, piston and cylinder wall force. Lesser are the friction forces; more good is the quality of the shocker. Practically there cannot be zero friction at all.

Temperature °C Velocity m/s mm

Cycle	Specification				Found					
	Force (Fat)	Unit	Tolerance		Sample # 1	Sample # 2	Sample # 3	Min	Max	Status
			-	+						
4th	0.00	KN	0.00	70.00	23.00	21.00	20.00	20.00	37.00	OK





Corrosion test: In this Test, the shock absorber parts are kept under the controlled environmental conditions for different hours as per material.

- Ni-Cr = 16 Hours
- Zn = 48 Hours
- Hard Cr = 24 Hours
- Painting = 48 Hours

Item	Specification				Found			
	Duration	Unit	Tolerance		Sample # 1 (OK or NOK)	Sample # 2 (OK or NOK)	Sample # 3 (OK or NOK)	Status (OK or NOK)
			-	+				
Ni-Cr (CASS)	16	h	0	0	OK	OK	OK	OK
Zi (NSS)	48	h	0	0	OK	OK	OK	OK
Hard Cr (NSS)	24	h	0	0	OK	OK	OK	OK
Painting (NSS)	48	h	0	0	OK	OK	OK	OK

Rubber bush testing: In this the rubber bushes are checked visually after 2,00,000 cycles of shocker movement.

Temperature °C Velocity m/s mm

Cycle	Specification			Found			
	Visual	Tolerance		Sample # 1 (OK or NOK)	Sample # 2 (OK or NOK)	Sample # 3 (OK or NOK)	Status (OK or NOK)
		–	+				
200,000th	No deformations and cracks	0	0	OK	OK	OK	OK

Dimensional test: In this test around 15-20 dimensions are checked after final assembly of the shock absorber as per the drawing.

Instruments that are used are:

- Ruler
- Vernier caliper
- Spring gauge

Dimensional Test Reports

Specification					Found				
Item	Dimension	Unit	Tolerance		Sample # 1	Sample # 2	Min	Max	Status
			-	+					
1	21.00	mm	0.20	0.20	21.20	21.16	21.16	21.20	OK
2	14.50	mm	0.20	0.20	14.70	14.66	14.66	14.70	OK
3	32.00	mm	1.00	1.00	31.90	31.80	31.80	31.90	OK
4	7.20	mm	0.10	0.20	7.40	7.30	7.30	7.40	OK
5	28.00	mm	0.20	0.20	28.00	27.93	27.93	28.00	OK
6	12.10	mm	0.00	0.20	12.24	12.20	12.20	12.24	OK
7	88.00	mm	1.00	1.00	87.20	87.00	87.00	87.20	OK
8	21.00	mm	0.20	0.00	20.86	20.90	20.86	20.90	OK
9	343.00	mm	3.00	3.00	344.00	343.00	343.00	344.00	OK
10	273.00	mm	3.00	3.00	274.00	273.00	273.00	274.00	OK
11	18.00	mm	0.00	0.25	18.20	18.23	18.20	18.23	OK
12	70.00	mm	Ref	Ref	70.00	70.00	70.00	70.00	OK
13	10.00	mm	0.05	0.05	9.97	9.97	9.97	9.97	OK
14	50.60	mm	0.10	0.35	50.88	50.94	50.88	50.94	OK
15	208.50	mm	5.00	5.00	206.50	206.90	206.50	206.90	OK
16	45.00	mm	2.00	2.00	45.00	45.00	45.00	45.00	OK
17	35.00	mm	2.00	2.00	35.00	35.00	35.00	35.00	OK
18	6.00	mm	1.00	1.00	6.00	6.00	6.00	6.00	OK
19	4.50	mm	1.00	1.00	4.50	4.50	4.50	4.50	OK



SHOCK ABSORBER

Cables



Product

We use the most modern technology coupled with almost a decade of hard work and dedication. We have superiority in quality with our high-end technology, usage of virgin PVC and superior thickness of inner cable.

Features:

- Thorough quality control and use of high quality materials guarantee the perfect fitment.
- Black PVC outer jacket for maximum flexibility and durability.
- Steel inner casing that is tightly coiled for low compression.
- A pre-lubricated nylon inner sleeve guarantees smooth operation and long life.
- All wire ends are bird caged prior to terminal casting for superior pull-out resistance.
- Completely tested parts.
- Single piece flow manufacturing.
- Friction free movement.
- Advanced material usage.
- Outstanding Heat resistance.
- Ruggedness and compact design.
- High Flexibility.
- Abrasion resistance.
- Tight bending radii.
- Small overall diameter.
- Breaking load 5KN.



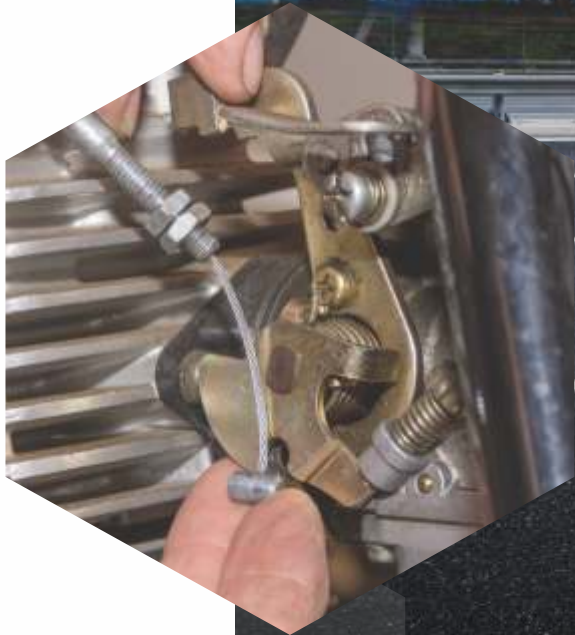
Raw Material

Apart from utilization of high quality virgin PVC material, we manufacture our cables with more copper strands to ensure enhanced and improved conductivity. All our products have ISO 9001 certification that augments our reliability factor further. Our modernized and streamlined production process help us to achieve unparalleled quality that in turn make us the most sought-after brand in the spare parts industry.

Raw Material strengths:-

- High quality virgin PVC
- Copper and zinc plated terminals

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
(BOP Bought out Parts)	Inner Cable Wire	In-house	BOP	In-house manufacturing ensures better process control, thereby ensuring better quality and delivery
	Inner PVC Pipe	In-house	BOP	
	Outer Sleeve Steel Casing	BOP	BOP	
	Outer PVC	In-house	BOP	
	Cable End Attachment	BOP	BOP	

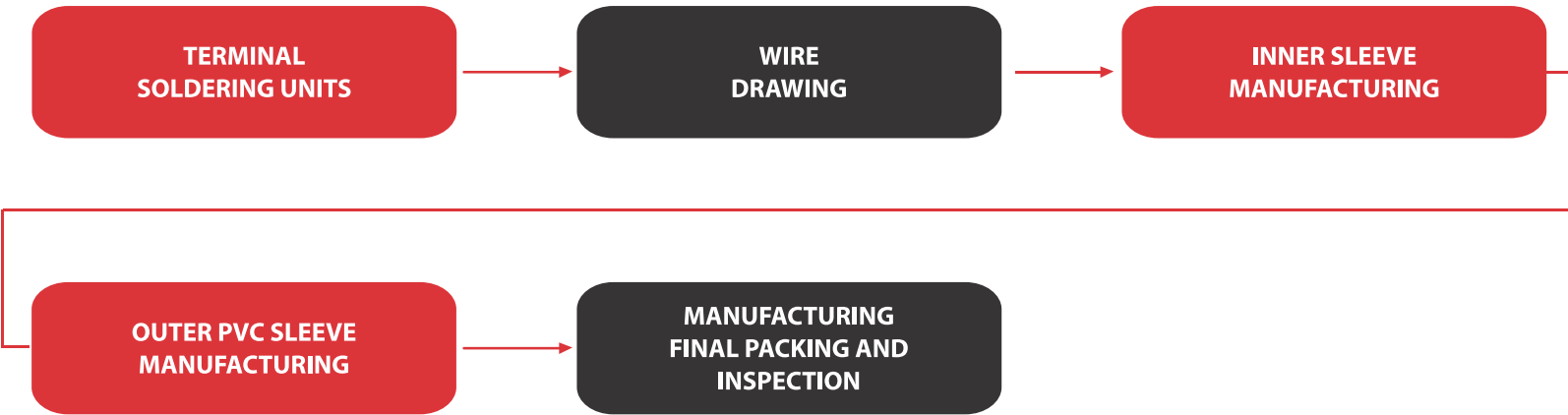




Manufacturing

We believe in controlling manufacturing process effectively. The core components of a cable is manufactured on an automated line.

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
Manufacturing	Outer Sleeve	Automated Line for Outer Sleeve Manufacturing	Outsourced	We have more control on process control, leading to better quality and delivery.
	Wire Drawing	Automated Line for Outer Sleeve Manufacturing	Outsourced	
	Inner PVC	Automated Line for Outer Sleeve Manufacturing	Outsourced	



S. No.	Product	Inner wire thickness	Outer material
1.	Clutch cable	2.0 mm	Fresh PVC
2.	Accelerator cable	1.4 mm	Fresh PVC
3.	Speedometer cable	3.1 mm	Fresh PVC
4.	Brake cable	2.5 mm	Fresh PVC
5.	Choke cable	1.4 mm	Fresh PVC
6.	Tachometer cablwe	3.1 mm	Fresh PVC





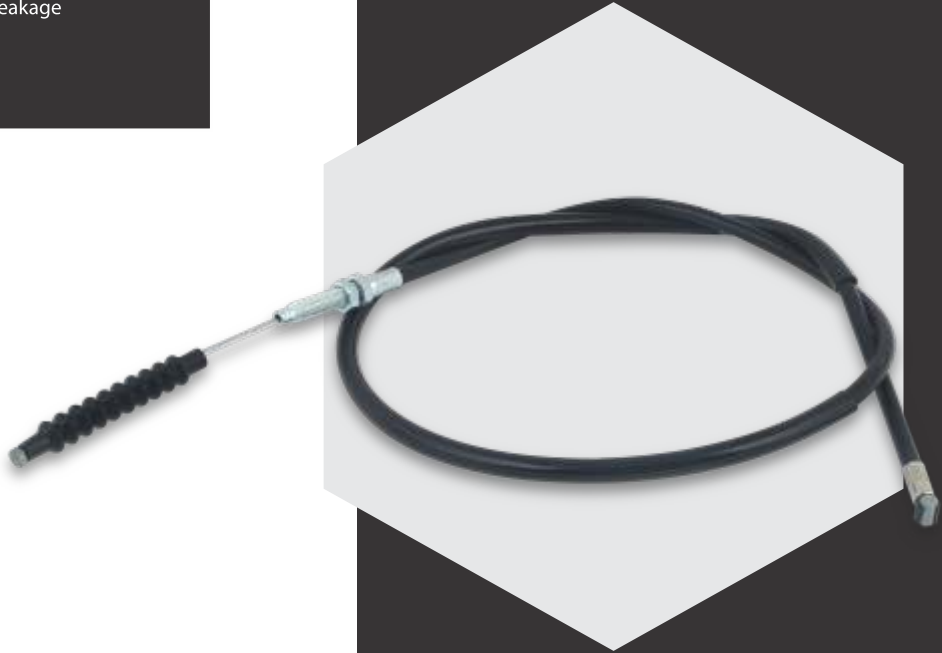
Testing

Each unit is subjected to stringent tests and checks before they are considered safe and perfect to be part of your motorcycle. Following are the tests and their resultant technical aspects that demonstrate the perfection and superiority of our parts.

Details	Ritsuka	Chinese Product	Ritsuka Advantage
Functional Test (Horizontal Force Test)	For Connectors Throttle Cable: > 60kgf Brake Cable : >300 kgf Clutch Cable : >240 kgf	No such Testing	We ensure higher tensile strength, ensuring lesser chances of breakage
	For Cable Throttle Cable: > 240kgf Brake Cable : >600 kgf Clutch Cable : >440 kgf	No such Testing	

Horizontal force test:

This test is done to check the force at which the connector and cable breaks.



Pedals



Product

We manufacture pedal sets for a wide range of models and our spare parts compliments top global brands of motorcycles.

Features:-

- Corrosion resistance
- Smooth surface finish
- Durable
- Precise dimension
- High welding strength
- Six grade plating

Raw Material

Our pedals are manufactured using high-grade steel –Q235.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Steel	High grade Q235	Substandard grade steel	1. Increased wear resistance 2. Long term dimensional stability

Ritsuka Advantage	%	Test Method
Carbon	0.131	ASTM E-415-2014
Silicon	0.1404	--do--
Manganese	0.400	--do--
Sulphur	0.022	--do--
Phosphorus	0.0180	SPO/CHE/00-LAS
chromium	0.048	ASTM E-415-2014
Molybdenum	<0.01	SPO/CHE/00-LAS
Nickel	<0.020	--do--
Aluminum	<0.017	--do--
Copper	0.021	--do--
Niobium	<0.008	--do--
Cobalt	<0.008	--do--
Nitrogen	<0.006	ASTM E-415-2014
Boron	<0.001	SPO/CHE/00-LAS
Lead	<0.001	--do--
Vanadium	<0.005	--do--
Tungsten	<0.008	--do--

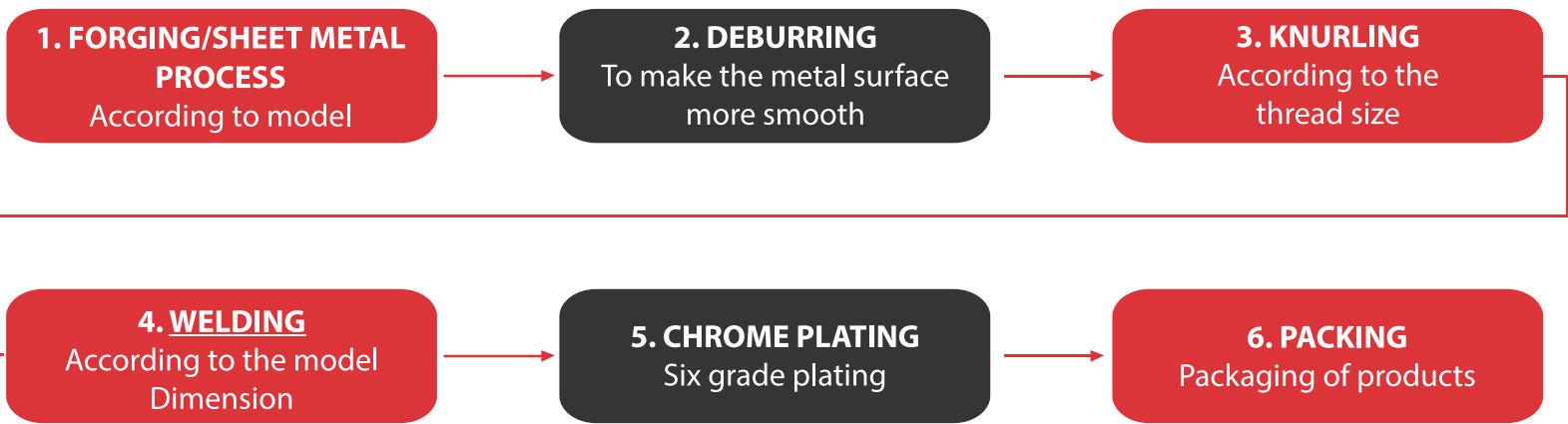
Manufacturing

We manufacture 200 thousand units of pedals a month. Our streamlined production processes and adequate production lead time allows us to deliver unmatched quality along with a strong hold over timely delivery, leading to utmost customer satisfaction at every given point. We believe in transparency in our approach and hence we have a warehouse web portal for customers to check the status of the goods.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Manufacturing as per GB Standard	Forging	In-house forging with controlled parameters	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Sheet metal process	In-house press shop with all the die produced inhouse	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Plating	6-grade plating with inhouse facility	4-grade plating	Advantages of 6 grade plating : 1) Smooth finish 2) Avoid rust 3) Better aesthetics.
		Welding	In-house welding	In-house welding	-



PEDALS



Testing

Each of our part is carefully manufactured and tested as per international standards. Our 100% quality inspection of products during production ensures quality product.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Incoming Quality Inspection	100% inspection of incoming raw material	No testing	This ensures that incoming parts are within tolerance levels
		In-process	100% quality check at different processes to check the dimension and shape	No quality check,since it requires extra manpower/extra cost	
		Final inspection	All the products are checked before dispatch to ensure good quality	No quality check,since it requires extra manpower/extra cost	Defect free product

Salt spray test: This test is performed to check the corrosion resistance.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Salt spray test	To check the corrosion resistance	No testing	1. Better quality assurance 2. Corrosion resistant

Welding strength test: This test is performed to check the strength of weld parts.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Welding strength test	To check the strength of weld parts	No testing	Better quality assurance

Chrome plating test: This test is performed to check the chrome plating thickness.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Chrome plating test	To check the thickness of chrome plating	No testing	1. Better quality assurance 2. Corrosion resistant



Fuel Tank Cap and Ignition Key Set



Product

The ignition key set consists of 8 different parts - fuel tank cap, plug, helmet lock, lock pin, side cover lock, keys, ignition switch and seat lock.

We use ADC12 that has high copper percentage. In simple words it means exceptional durability and longevity. ADC 12 increases the resistance of a material to breaking under tension or load. It also improves tensile strength of a material and enables it to bear maximum amount of tensile stress before giving up to failure i.e. breaking. Aluminum-copper alloys generally with other additions, form important families of alloys. Both cast and wrought aluminium-copper alloys respond to solution heat treatment and subsequent aging with an increase in strength as well as hardness and decrease in elongation.

Strength:

- High grade raw material usage
- High grade copper key used to avoid rust
- High durability
- Stringent quality control

Raw Material

Products are manufactured using high grade raw material: ABS - acrylonitrile butadiene styrene (ABS), polypropylene (PP), aluminium (ADC-12) and zinc.

We trust aluminum alloys as they are:

- Lightweight & structural material
- Resistance to corrosion
- Endure high temperatures

Composition of ADC 12

Metal	Si	Fe	Cu	Mn	Mg	Ni	Zn	Sn	Al
%	9.6~12	1.3 max	1.5~3.5	0.5 max	0.3 max	0.5 max	max	0.3 max	Balance

Composition of Zinc

Another most important raw material used is zinc. Zinc alloy that is used for making this product is known as zamak 3. It is the first choice when considering zinc for die casting for a number of reasons:

- Excellent balance of desirable physical and mechanical properties.
- Superb castability and long-term dimensional stability.
- Excellent finishing characteristics for plating, painting, and chromate treatments.
- Helps in achieving high levels of accuracy
- It exhibits increased wear resistance.

Metal	Ai	Cu	Mg	Fe	Pb	Cd	Sn	Zn
%	3.5~4.3	0.25	0.02~0.05	0.1 max	0.005 max	0.004 max	0.003 max	Balance





Acrylonitrile Butadiene Styrene (ABS)

ABS combines the strength and rigidity of acrylonitrile and styrene polymers with the toughness of polybutadiene rubber. While the cost of producing ABS is roughly twice the cost of producing polystyrene, it is considered superior for its hardness, gloss, toughness and electrical insulation properties. ABS also has a strong resistance to corrosive chemicals and /or physical impacts. It is very easy to machine, lightweight and has a low melting temperature making it particularly simple to use in injection molding processes. Metal coating has excellent adhesion to ABS.

Propylene (PP)

We also utilize another very beneficial raw material of polypropylene (PP). Polypropylene is a very useful plastic for injection molding. Polypropylene is easy to mold despite its semi-crystalline nature, and it flows very well because of its low melt viscosity. This property significantly enhances the rate at which you can fill up a mold with the material. Shrinkage in polypropylene is about 1-2% but can vary based on a number of factors, including holding pressure, holding time, melt temperature, mold wall thickness, mold temperature, and the percentage and type of additives. Our superior key sets play off the great advantages of PP and prove to be perfect spare parts that your perfect ride deserves.

We use PP because of the following advantages:-

- Easy availability and relatively inexpensive
- High flexural strength with its semi-crystalline nature
- High resistance to moisture
- Better chemical resistance over a wide range of bases and acids.
- Good fatigue resistance and impact strength
- Great electrical insulator

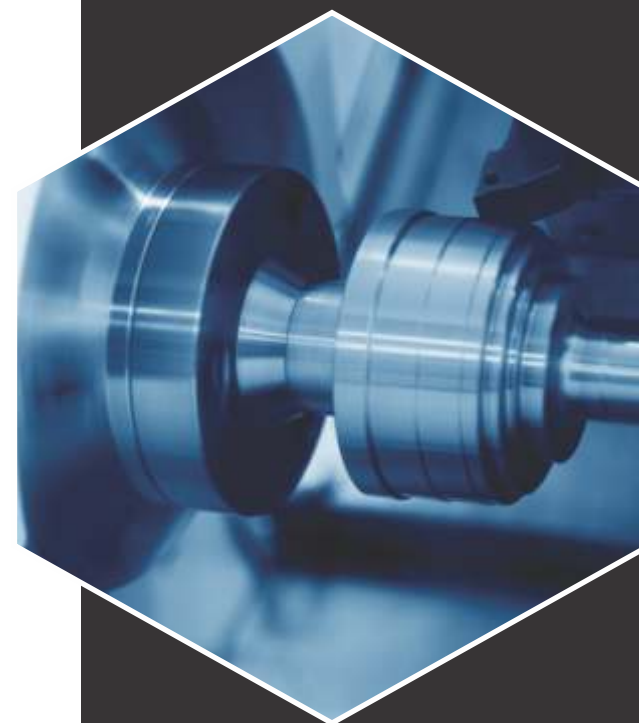
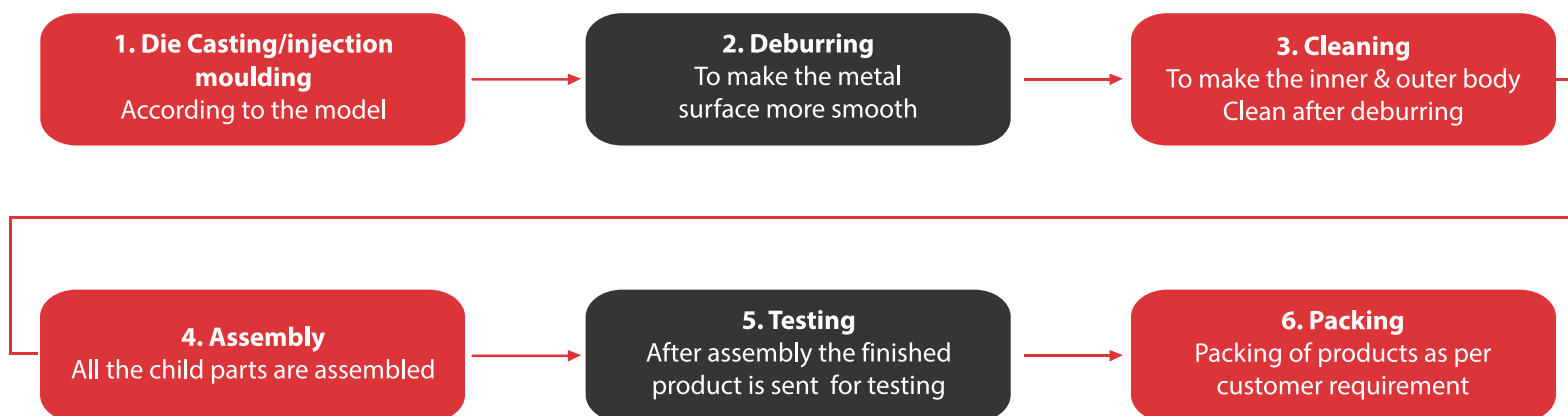
S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Raw Material	Outer body	High grade ADC12 with copper content of 1.65%/High grade Zinc	Substandard ADC12 with copper content of 0.5-0.8% which is below international standards	1. Increased wear resistance 2. Long term dimensional stability
		Child Part	Brass alloy	Alloy mix	1. Reduce wear and tear
		Key	Copper/iron as per customer requirement	Iron	1. Better strength 2. Resistant to rust



Manufacturing

We manufacture 200 thousand units of fuel caps and ignition key sets a month. We manufacture these sets for a wide range of models and our spare parts compliments the top global brands of motorcycles.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Manufacturing Process	Injection moulding	In-house automatic machine	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Die-Casting	In-house automatic machine	Outsourced	
		Key manufacturing	In-house	Outsourced	
		Assembly	In-house	In-house	





Testing

Each of our carefully crafted ignition key set is further tested on international standards. Life cycle assessment is conducted by testing each ignition switch over minimum 20,000 cycles. The aluminium and zinc raw material inspection is conducted by spectrometer, which is most superior for checking the material composition of all the sub- ingredients to ensure quality. We are passionate about creating the spare parts in the most brilliant way possible and our 100% quality inspection of products during production ensures quality product.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Incoming Quality Inspection	100% inspection of incoming parts	No testing	This ensures that incoming parts are within tolernace limit as per acceptance quality limit (AQL)
		In process	100% quality check at different processes	No quality check,since it requires extra manpower/ extra cost	
		Final inspection	All the products are checked before dispatch to ensure good quality	No quality check, since it requires extra manpower/ extra cost	Defect free product



Material Test :

Spectrometer is used to check the material composition of the die casting part.

S.no.	Parameter	Details	At Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Material composition test	In-house testing though spectrograph	No testing	All tests are performed as per GB standard to ensure defect free product



Dimension Test:

Co-ordinates of die casting parts are tested to measure dimension.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Dimension Test	In-house testing	No testing	Better precision

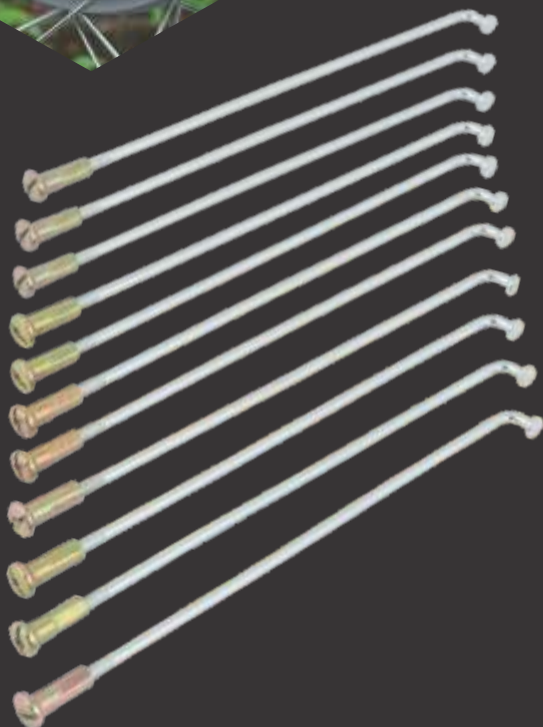
ON-OFF test:

Ignition key is tested to check the number of ON-OFF cycle it can sustain.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	On-Off test	In-house testing	No testing	All tests are performed as per GB standard to ensure defect free product



Spokes And Nipples



Product

We specialize in making high performance spokes and nipples for both amateur and professional use. With fatigue testing regularly giving them the highest possible marks, their unique strength and flexibility make them ubiquitous in high-end road wheels.

Features

- Manufactured from high tensile, fatigue resistant stainless steel
- Light weight
- Corrosion resistant
- Ultra light
- Good residual strength
- High load carrying capacity
- Torsion free spoke
- Four grade plating

Raw Material

Our spokes are manufactured of high-grade steel-C1045. C1045 steel can withstand tremendous amount of weights and pressure. They have qualities like:

- High grade raw material
- Precise dimension
- Smooth surface finish
- High durability and strength



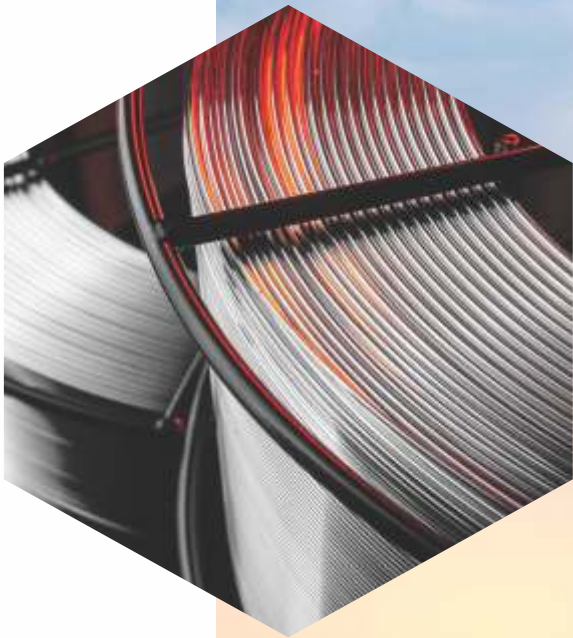
S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Raw Material	C-1045 steel	High grade C-1045 Steel	Substandard C-1045 steel	1. Resistance to corrosion 2. High strength

Chemical Composition

Grade	C (%) min.-max.	Si (%) min.-max.	Mn (%) min.-max.	P (%) max.	P (%) max.
C1045	0.43~0.50	0.10~0.35	0.6~0.9	0.040	0.050

Salient features C1045 include:

- Robust construction
 - Resistance to corrosion
- High strength
 - Good weld ability

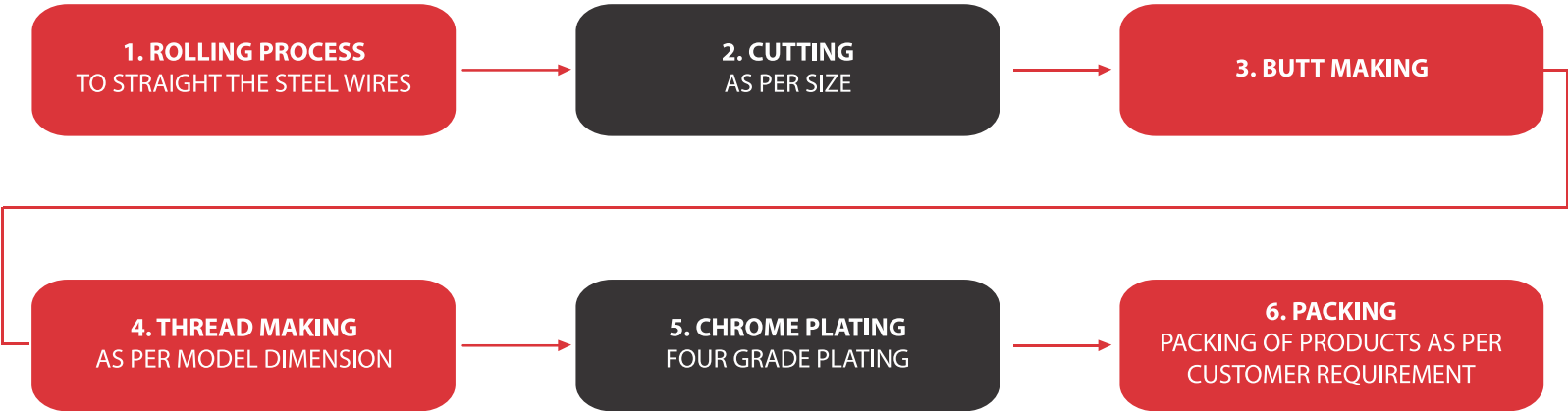




Manufacturing

Each product is manufactured with extreme perfection.

Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
Manufacturing as per GB Standard	Rolling Process	In-house steel wire Straightening machine	Outsourced	In-house manufacturing ensures better quality control on produced parts
	Cutting process	In-house steel wire cutting machine	In-house	
	Butt making	In-house butt making machine	Outsourced	
	Thread making	In-house	In-house	
	Chrome plating	4-grade plating with inhouse facility	Outsourced	



Testing

Each of our spokes is further tested on international standards.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Incoming Quality Inspection	100% inspection of incoming raw material	No testing	This ensures that incoming parts are with in tolerance limit
		In-process	100% quality check at different processes to check the dimension and shape	No quality check, since it requires extra manpower/extra cost	
		Final inspection	All the products are checked before dispatch to ensure good quality	No quality check,since it requires extra manpower/extra cost	Defect free product

Salt spray test: This test is performed to check the corrosion resistance.

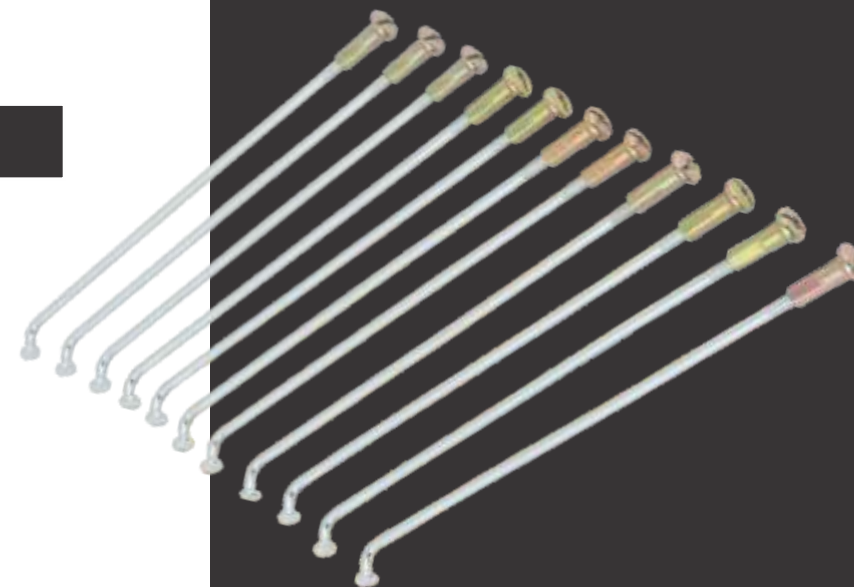
S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Salt spray test	To check the corrosion resistance	No testing	1. Better quality assurance 2. Corrosion resistant

Dimensional test: This test is performed to check the dimension stability.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Dimensional test	In-house dimension checking by QC deptt.	Random checking	Assured dimension stability



SPOKES AND NIPPLES



Lever



Product

We produce the best quality levers. Our levers are manufactured of high-grade aluminium ZL-104.

Strengths

- High grade raw material
- Precise dimension
- Smooth surface finish
- High durability and strength
- Stringent quality control

Features

- High tensile strength
- Corrosion resistance
- Precision engineering
- Tool room certified
- Leak tested
- X-Ray tested
- Sleek design
- Humidity monitored
- Excellent surface finish
- Homogenous composition
- Burr free casting
- Flash-free castings
- Rapid cycle speeds regulated part
- Raw material ADC 12

Raw Material

Our levers are made of high quality ZL104 and 4 Grade Plating Finish. This material has high copper percentage which means product manufactured has exceptional durability, better performance and longevity. ZL 104 increases the resistance of a material to avoid breakage under tension or load. It also improves tensile strength of a material and enables it to bear maximum amount of tensile stress before giving up to failure i.e. breaking. Wrought aluminum-copper alloys respond to solution heat treatment and subsequent aging with an increase in strength as well as hardness and decrease in elongation.

Aluminium alloys offers :

- Light weight material
- Resistance to Corrosion
- High temperature endurance



S.no.	Parameter	Details	At Ritsuka	Chinese Product	Ritsuka Advantage
1	BOP	Paint	Outsourced	Outsourced	Outsourced from standard paint manufacturers
2	Raw material	Aluminium alloy ZL-104	High grade ZL-104 aluminium ingots	Substandard ZL-104	Excellent castability



LEVER



Chemical composition

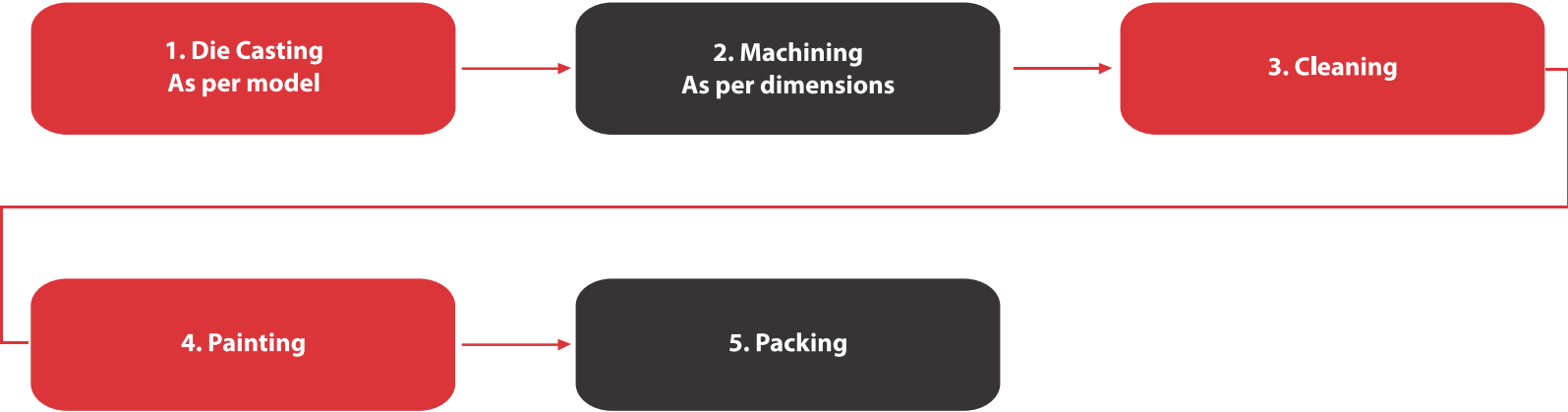
S.No.	Component	% age
1	Cu	0.2
2	Fe	0.6
3	Zn	0.1
4	Ti	0.2
5	Mg	0.2~0.6
6	Mn	0.3~0.7

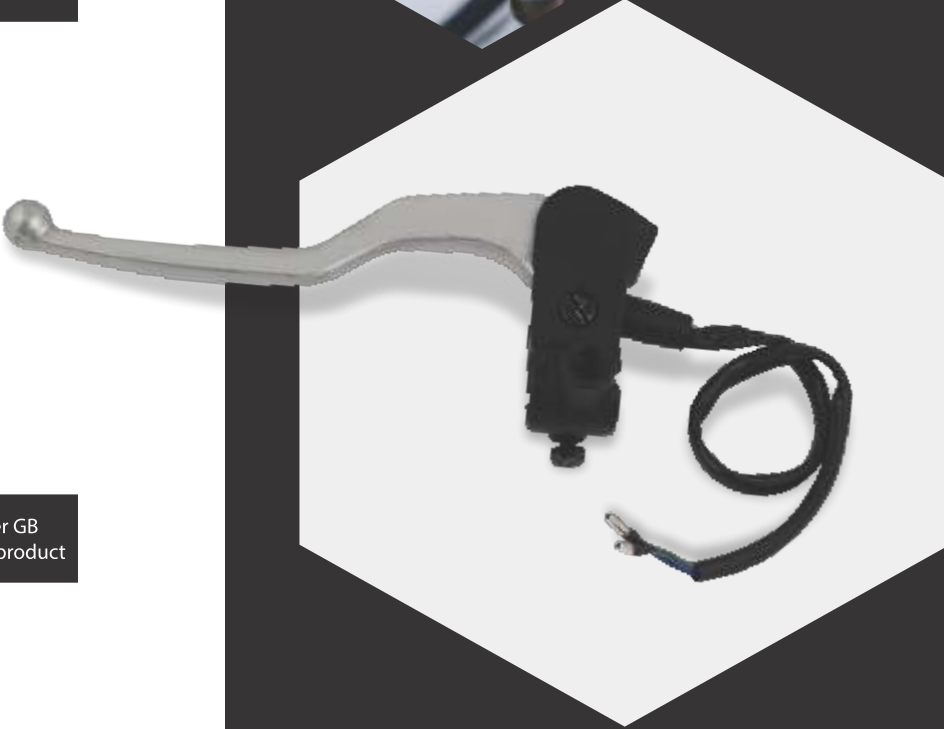
S.No.	Component	% age
7	Pb	0.1 max.
8	Si	10~13
9	Ni	0.1 max.
10	Sn	0.05 max.
11	Al	Balance
12	others	0.05 max

Manufacturing

All our product manufacturing is done as per GB standards. Here's a comparison of our product from the chinese product.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Manufacturing as per GB standard	Die casting	In-house aluminium die casting	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Machining	In-house	Outsourced	
		Painting	In-house	Outsourced	





Testing

We have a dedicated product quality team who takes care of all the testing of the product and raw material at the pre and final stage.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Incoming Quality Inspection	100% inspection of incoming raw material	No testing	This ensures that incoming parts are within tolerance limit
		In-process	100% quality check at different processes to check the dimension and shape	No quality check,since it requires extra manpower/extra cost	
		Final inspection	All the products are checked before dispatch to ensure good quality	No quality check,since it requires extra manpower/extra cost	Defect free product

Material Composition test:

Spectrograph is used to check the material composition of the die casting part.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Material composition test	Testing though spectrograph	No testing	All the test are performed as per GB standard to ensure defect free product

Seam Welded Rim



Product

We manufacture high performance rims that offer optimum quality. Our strong zeal to continue as a quality driven organization coupled with innovative initiatives in product development ensures products are recognized and accepted by our customers across the globe.

Features

- Uniform shape
- Light Weight
- Universal applicability
- Smooth surface finish
- High Load Carrying capacity
- Easy tyre application

Raw Material

Our seam welded rims are manufactured of high grade steel-Q195. Salient features of Q195 are:

- Excellent welding strength
- Excellent toughness
- Good pressure processing

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Raw Material	Q-195 steel	High grade Q-195 steel	Substandard Q-195 steel	Excellent welding strength

Chemical Composition :

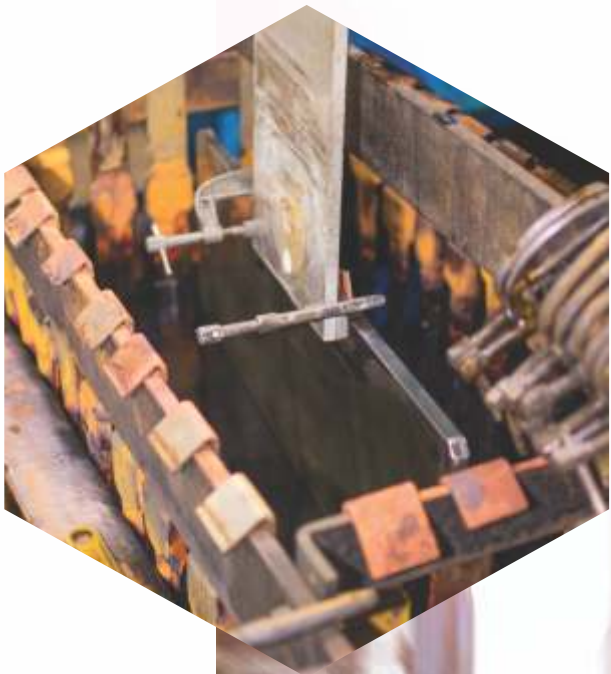
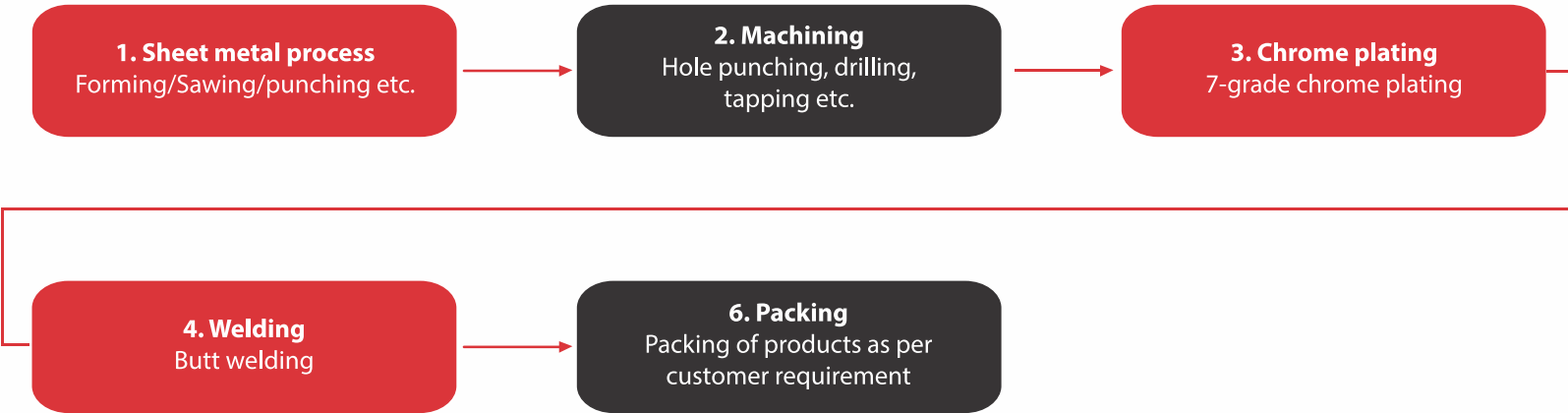
Grade	C (%) min.-max.	Si (%)≤	Mn (%) min.-max.	P (%) ≤	S (%) ≤
Q-195	0.06~0.12	0.3	0.2~0.5	0.050	0.045

Manufacturing

We are the top manufactures of welded rims with fully automated line and minimal manual intervention. The core parts of our products are manufactured In-house to control the quality at every point of time.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Manufacturing as per GB standard	Sheet metal process	In-house press shop with all the die produced inhouse	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Machining	In-house	Outsourced	
		Chrome plating	7-grade plating with inhouse facility	4-grade plating	Advantages of 7 grade plating: 1) Smooth finish 2) Avoid rust 3) Better aesthetics.
		Butt welding	In-house welding shop	In-house	Excellent weld strength





SEAM WELDED RIM

Testing

We focus quality and competitive price. We have world-class standards of checking the finished product and raw material at pre and final stage to deliver error free product to our customer.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Incoming Quality Inspection	100% inspection of incoming raw material	No testing	This ensures that incoming parts are within tolerance limit
		In-process	100% quality check at different processes to check the dimension and shape	No quality check,since it requires extra manpower /extra cost	
		Final inspection	All the products are checked before dispatch to ensure good quality	No quality check,since it requires extra manpower /extra cost	Defect free product

Salt spray test: This test is performed to check the corrosion resistance.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Salt spray test	To check the corrosion resistance	No testing	1. Better Quality assurance 2. Corrosion resistant

Radial strengthTest: This test is performed to check the strength.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Radial strength	Testing of rim strength	No testing	High strength

Bearings



Product

We manufacture high performance motorcycle bearings that offer optimum quality and are best suited to meet unique customer demands. Our strong zeal to continue as a quality driven organization coupled with innovative initiatives in product development ensures products are recognized and accepted by our customers across the globe. Our team of experts adheres to the highest standards of quality and safety to deliver the best.

Features:

- Simple lube system.
- Self-aligning capability.
- Medium to high level of thrust load capability.
- Medium dynamic load capability at all angles.
- Good high-speed performance in deep groove and angular contacts.
- Low running friction.
- Low start friction.
- High tolerance to misalignment.
- High dirt tolerance.
- Z1 quality.

Raw Material

Our bearings use high quality steel grade-GCr15

S.no.	Parameter	Details	At Ritsuka	Chinese Product	Ritsuka Advantage
1	BOP	Seal	In-house	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Grease	Outsourced	Outsourced	Outsourced from tier 1 supplier
		Spherical balls	Outsourced	Outsourced	Outsourced from tier 1 supplier
2	Raw material	Steel-G Cr.15	High grade GCr.15 steel	Substandard raw material	1. High wear resistance 2. High fatigue resistance 3. Corrosion resistance



Grade	C (%) min.-max.	Si (%) min.-max.	Mn (%) min.-max.	P (%) min.-max.	S (%) min.-max.	Ni (%) min.-max.	Cu (%) min.-max.	Cr (%) min.-max.
GCr15	0.95~1.05	0.15~0.35	0.2~0.4	0.027	0.02	0.3	0.25	1.30~1.65

Salient features of Gcr15:

- High wear resistance
- High fatigue resistance
- Corrosion resistance

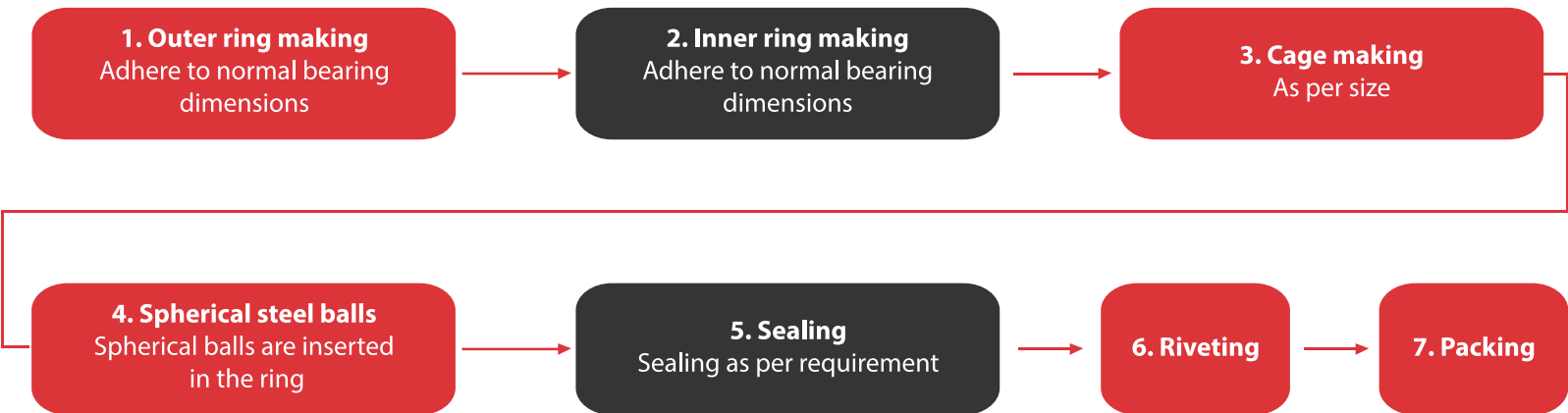




Manufacturing

We manufacture each part with utmost passion and care.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Manufacturing as per GB standard	Outer ring making	In-house CNC machines to make precise outer ring	Outsourced/Lathe used to make the outer ring	Precise dimension
		Inner ring making	In-house CNC machines to make precise outer ring	Outsourced/Lathe used to make the outer ring	
		Cage making	In-house cage making machine	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Spherical Steel balls insertion	In-house	In-house	Precise dimension
		Sealing	In-house	Outsourced	In-house manufacturing ensures better quality control on produced parts
		Riveting	In-house	In-house	



Testing

Each of our bearings is further tested on international standards:

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Incoming Quality inspection	100% inception of incoming raw material	No testing	This ensures that incoming parts are within tolerance limit
		In-process	100% quality check at different processes to check the dimension and shape	No quality check, since it requires extra manpower/extra cost	
		Final inspection	All the products are checked before dispatch to ensure good quality	No quality check, since it requires extra manpower/extra cost	Defect free product

Vibration test: This test is performed to check the vibration in the bearing.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Vibration Testing	Inhouse vibration testing	No testing	Mandatory test to check bearing quality

Fatigue test: This test is performed to check the life cycle of bearing.

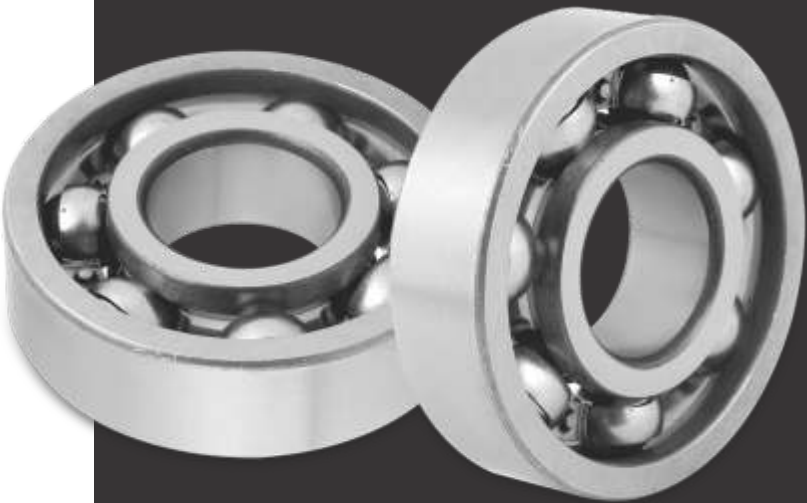
S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Fatigue Test	Inhouse vibration testing	No testing	High longevity

Roundness tests: This test is performed to check the dimensions of bearing.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Roundness tester	Checking the dimension by automatic test equipment	No testing	Precise dimension

Hardness tests: This test is performed to check the hardness of material.

S.no.	Parameter	Details	Ritsuka	Chinese Product	Ritsuka Advantage
1	Testing Standard	Hardness Testing	Checking the hardness by inhouse hardness tester	No testing	Hardness is between 60~65



NOTES

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RITSUKA

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