

Anatomical models of joints with ligaments

LABOTRIX JOINT J1

PRODUCT PASSPORT

Kyiv

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1. General Information about the Product

- 1.1. **Product name** — Anatomical models of joints with ligaments.
- 1.2. **Trademark** — Labotrix.
- 1.3. **Model** — Joint J1; full trade designation — LABOTRIX JOINT J1.
- 1.4. **Manufacturer** — Labotrix Group Limited, China.
- 1.5. **Intended use:** the set of models demonstrates the structure of the main human joints and their functional capabilities. The product is intended for use in general secondary and higher education institutions when studying the anatomy of the musculoskeletal system, particularly the sections on joint types, movement axes and injury mechanisms. The models are also used in sports medicine and rehabilitation to demonstrate injury mechanisms and prevention methods.
- 1.6. **Design features:** the set consists of five life-size models: shoulder, hip, hand, knee joints and foot. Each model reproduces the bones forming the joint, and ligaments made of transparent flexible plastic. Transparency allows the location of the ligaments to be studied unambiguously, while flexibility provides mobility of the model. All models are mounted on stands for demonstration and are easily removed for hands-on work.

2. Technical Specifications

- Brand — Labotrix
- Model — Joint J1
- SKU — LTX-JOINT-J1
- Product type — set of anatomical models of human joints
- Number of models in the set (pcs) — 5
- Types of joints in the set — shoulder, hip, hand, knee, foot
- Model size — life-size (1:1)
- Bone material — polyvinyl chloride (PVC)
- Availability of demonstration stands — yes, as per the package contents
- Ability to perform movements — yes, within the natural range of motion
- Ligament material — transparent elastic polymer
- Additional learning materials — illustrated cards with the names of anatomical structures
- Power — not required
- Operating conditions — premises of an educational institution, air temperature from +5 to +40 °C, relative humidity from 40 to 60 % without condensate
- Relative humidity (percent) — up to 80 % at a temperature of +25 °C
- Language of marking and operating documentation — Ukrainian
- Product marking — trademark, model and a space for the inventory number
- Packaging — each model in a separate inner box, additionally placed into a common shipping package
- Documentation supplied — product passport with warranty card and operating manual
- Installation method — tabletop, on a separate stand for each model in the set

- Ready-to-use condition — supplied assembled, requires no additional assembly
- User requirements — the lesson is conducted by a teacher or laboratory assistant, students work with the models under supervision
- Service life (year) — 5
- Warranty period (month) — 12

3. Package Contents

- Shoulder joint model in an inner box — 1 pcs
- Hip joint model in an inner box — 1 pcs
- Hand model in an inner box — 1 pcs
- Knee joint model in an inner box — 1 pcs
- Foot model in flat packaging — 1 pcs
- Demonstration stands — matching the number of models
- Labeled diagrams of the main elements — separately for each model
- Product Passport and Warranty Card — 1 pcs
- Complex packaging — 1 pcs

The set also includes assembly instructions and stand drawings. The inner boxes are designed individually for each model and provide safe and convenient storage. All elements are packaged to ensure maximum protection from damage during transportation.

4. Safety Precautions

4.1. General requirements

- Before first use, read this passport and keep it together with the product and the proof of purchase.
- The models are used under the supervision of a teacher or a responsible person who has undergone occupational safety training.
- Younger students work with the models only under the direct supervision of an adult.
- Unpack all the models and check their completeness and integrity; models with damage must not be used.

4.2. Working with the models

- Sharp bone ends may require careful handling — keep them pointed downward while handling.
- Do not bend the models beyond the natural range of motion — this will cause the ligaments to tear.
- Do not lift or hold the model by sharp protrusions, transparent ligaments, fingers, or other thin elements.
- Move the model smoothly and gradually; sharp jerks may cause the flexible components to tear.

4.3. Mechanical safety

- Place the stand with the model on a level, stable surface, not on the edge of the table.
- Carry the model only after removing it from the stand, holding it by the massive bones with both hands.
- Do not leave the model unattended at a height from which it could fall and injure people below.

- If the model is dropped, check its integrity before further use.

4.4. It is strictly prohibited

- Heating the model's elements, drying them on radiators, or leaving them under sunlight — this will cause deformation.
- Immersing the model in water or other liquids; washing it under running water.
- Using organic solvents, alcohol, acetone or chlorine-containing agents — they damage the plastic.
- Disassembling the model without necessity; if the design does not allow disassembly, do not force it.
- Using the models as a pointer, ruler, lever or other tool.
- Throwing the models, subjecting them to force testing, or trying to straighten deformed elements by force.
- Coating the mounting axles with glue or trying to lubricate them.

5. Preparation for Use

- 5.1. Unpack the boxes on a covered table so as not to damage the models when taking them out.
- 5.2. Check the completeness against the packing list: five models, stands, diagrams and passport.
- 5.3. Inspect each model for cracks, chips, torn ligaments, or looseness in the connections.
- 5.4. Wipe the models with a soft dry cloth to remove dust.
- 5.5. Place the stands on the demonstration table so that the models are visible to all students.
- 5.6. Secure the models needed for the lesson on their stands, making sure the mount is secure.

6. Operating Procedure

6.1. Installing the model on the stand

- With one hand, hold the base of the stand so it does not tip over.
- With your other hand, hold the model by its most massive bone, closer to the mounting point.
- Align the hole in the model with the stand's rod and fit the model straight, without tilting.
- Tighten the mount by hand; do not overtighten, so as not to break the plastic.

6.2. Demonstration of joint structure

- Using the shoulder joint as an example, show the general structure: the articular surfaces of the bones, the location of the joint cavity, ligaments and supports.
- Compare the number of ligaments on different models and explain why some have more of them and others fewer.

6.3. Demonstration of movements

- Remove the model from the stand and, holding one bone, smoothly move the other.

- Show the movements one at a time within the natural range of motion, naming them: flexion, extension, abduction, adduction, rotation.
- Pay attention to where the ligaments become taut — that is exactly where the natural range of motion ends.

6.4. Research in groups

- Give each group a separate model and set tasks to find and name the bones, identify the ligaments, and determine the shape of the joint.
- Ask the students to compare the models and find out why joints of the same shape have different mobility.

6.5. Finishing the work

- Smoothly and carefully remove the model from the stand, pulling it along the axis of the rod.
- Lay the model on a soft surface so that the ligaments do not bend excessively.
- Gather all elements and pack the models into the original inner boxes.

7. Care, Maintenance and Troubleshooting

7.1. Cleaning

- Wipe the models with a soft dry cloth.
- For light contamination, use a damp (but not wet) soft cloth and immediately wipe dry.
- For transparent ligaments, use extremely careful wiping so as not to leave fingerprints.
- Do not use abrasive materials, metal brushes, alcohol or acetone.

7.2. Periodic inspection

- Every month, check the integrity of all models, especially the ligament mounting points.
- Make sure the stands are sturdy and free of cracks.
- Check the tightness of the screws and the stability of the mounts.
- Record all defects; withdraw damaged models from use.

7.3. Possible malfunctions and methods of their elimination

Symptom	Possible cause	User actions
Model wobbles on the stand	The mount is not tightened	Remove the model, clean the rod, reinstall it and tighten the mount
Ligament is torn or detached	Movement beyond the natural range of motion	Stop using it; order a replacement at an authorized center
Bone is deformed	Fall or prolonged exposure to heat	Continue using it if this does not affect the demonstration
Transparent ligaments have yellowed	Prolonged exposure to sunlight	Store in a shaded place; functionality has not changed

Symptom	Possible cause	User actions
Model does not come off the stand	The mount has not been fully loosened	Loosen the clamp and pull the model out evenly along the axis
Microcracks have appeared on the ligaments	Frequent assembly and disassembly	Carefully continue use; avoid extreme movements
The joint in the model has become stiff	Dust or contamination between the bones	Carefully clean the gaps with a soft brush

8. Storage and Transportation Conditions

- Store the models in a dry, enclosed room at a temperature of not below +5 °C and not above +40 °C, and humidity of up to 80% at +25 °C.
- Return the models to the original inner boxes after each use.
- Do not compress the packaging, do not place heavy objects on it, and do not stack it too high.
- Protect the models from direct sunlight — this may change the transparency of the ligaments.
- Keep the labeled diagrams together with the models in the corresponding boxes.
- When transporting, pack the models in the original container and use enclosed transport.
- The storage period before putting into use is not limited, provided the specified conditions are observed.

9. Warranty Obligations

- 9.1. The warranty period of operation of the product is 12 months from the date of sale specified in the warranty card.
- 9.2. The manufacturer guarantees that the product conforms to the declared technical specifications provided that the transportation, storage and operating rules set out in this passport are observed.
- 9.3. During the warranty period, defects of the product that have arisen through the fault of the manufacturer are remedied free of charge. The method of remedy (repair, replacement of a component or replacement of the product) is determined by the service center.
- 9.4. Warranty service is provided on presentation of a correctly and completely filled-in warranty card and of a document confirming the fact and the date of purchase.
- 9.5. The warranty does not cover cases where the malfunction is caused by:
 - mechanical damage, in particular cracks, chips and deformation of the housing and of the components of the product;
 - violation of the operating, storage or transportation rules set out in this passport;
 - ingress of liquid or foreign objects into the product, and also the action of insects and animals;
 - independent disassembly, repair or modification of the product, in particular repair at unauthorized workshops;

- use of the product other than for its intended purpose;
- force majeure circumstances (fire, flood, earthquake, etc.).

9.6. The warranty does not cover the natural wear of the coating and of the appearance of the product, nor consumables.

10. Product Disposal

- The product is not electrical or electronic equipment, therefore the marking in the form of a crossed-out container does not apply to it.
- After the end of the service life, the product is disposed of according to the rules established at the institution that operated it, with prior separation by materials.
- Hand over the packaging elements (cardboard, polymer materials) to the corresponding streams of recyclable materials.

Contacts

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Conditions of use and storage of the product

The product is intended for educational work in general secondary education institutions and is used only under the control and supervision of a teaching staff member; the recommended age of students — from 10 years, that is, students of grade 5 and of higher grades. Keep the product in a dry, clean and ventilated room at a temperature from +5 to +40 °C and relative air humidity up to 80 % without condensation, separately from heat sources and out of direct sunlight, moisture and dust. Use the product exclusively for its intended purpose and do not allow drops, impacts or other mechanical damage. If you notice damage, a crack or any malfunction, stop working with the product immediately and inform the teacher or the responsible person of the educational institution; repairing the product on your own is prohibited.

WARRANTY CARD

Name:	Anatomical models of joints with ligaments
Product model:	LABOTRIX JOINT J1
Serial number:	
Date of sale:	
Warranty period:	12 months from the date of sale
Trading organization:	
Signature of the seller:	

The goods have been received in working order, without visible damage, complete, and have been checked in my presence. I have no claims regarding the quality of the goods; I have read and agree to the operating and warranty service conditions.

Full name of the buyer _____

Telephone of the buyer _____ Signature of the buyer _____

Dear Customer!

Thank you for choosing Labotrix products. After-sales service of this product is provided in accordance with the regulations of the company and the legislation of the country of sale. So that we can serve you quickly and without unnecessary formalities, check that this warranty card is filled in correctly at the moment of purchase and keep it together with the payment document throughout the entire warranty period. When applying for repair, hand the product over to the seller or to the service center together with the filled-in card.

Procedure for applying

1. The right to free warranty service of the product is valid for 12 months from the date of sale specified in the warranty card. Within this period, components that have failed because of a manufacturing defect are repaired or replaced at no cost to the buyer.
2. Before applying, make sure that the malfunction is not caused by the reasons listed in section 9 of this passport and, if possible, use the table of possible malfunctions in subsection 7.3.
3. After the end of the 12-month warranty period, repairs are performed on a paid basis; the cost of the work and of the spare parts is determined depending on the nature of the malfunction.

Grounds for refusal of warranty service

The company reserves the right to refuse free service or to perform the work on a paid basis if at least one of the following circumstances is established:

- absence of the warranty card, its incomplete or corrected completion, and also the absence of a document confirming the purchase;
- non-conformity of the serial number of the product with the number specified in the card, or damage to the factory marking;
- traces of independent disassembly, repair or modification of the product;
- damage caused by violation of the operating rules, connection to an unsuitable power source or external mechanical impact;
- damage as a result of force majeure circumstances.

Service Records

Date of entry	Description of the malfunction	Work performed	Position, signature, full name of the responsible person