

Instructions for Use

Orthodontic Metal Brackets



- Please read these instructions carefully before using this product.
- Keep these instructions for reference.
- In case of any serious incident please report it to the manufacturer and your competent authority.
- These instructions for use are based on experience from physicians and/or their published literature. It is intended to assist in using this device. It is not a reference to surgical techniques.

1. PRODUCT NAME

Orthodontic Metal Brackets

2. DESCRIPTION/INDICATIONS

Orthodontic brackets are devices used in orthodontics that align and straighten teeth and help position them with regard to a person's bite, while also aiming to improve dental health. Orthodontic metal bracket is a time-tested part of major and minor orthodontic treatment. These brackets are fabricated from durable stainless steel in order to provide the strength required to move teeth. The brackets are placed on the patient's teeth with an adhesive and then connected to each other via wires and bands in order to provide the precise teeth movements the patients require.

Orthodontic metal bracket generally consists of bracket body and base plate. Due to the locking equipment of the device, they are divided into: standard bracket and self-ligating bracket. Self-ligating brackets have an in-built metal face, which can be opened and closed. Acc. to the cover shape, two cover types are available: slide type (with built-in fixing rod) and lock plate type (without built-in fixing rod). Self-ligating brackets do not need additional rubber or metal ligatures for merging the wires.

According to clinical treatment techniques, standard orthodontic metal brackets have three variants: ROTH, Edgewise and MBT. These three brackets differ in the torque angle (θ) and the angulation (α) of the bracket design. During the use, three series of bending are bent on the archwire; the types Edgewise and MBT have pre-formed slots in the bracket. For these types, three series of bending are used to the pre-formed slots in the bracket. Edgewise brackets have rectangular slots, which are deeper in the horizontal as opposed to vertical plane. The Roth brackets give more torque in the upper molars to prevent dropping of the palatal cusps. Self-ligating brackets have ROTH, MBT and H20 variants.

According to the width of product slot, it can be divided into: 18 (0.018" or 0.46mm), 22 (0.022" or 0.56mm) and 20 (0.020" or 0.5mm, only self-ligating bracket) variants. According to the availability of hook on the tooth position #3/4/5 the devices can be divided into 3 groups: hook on tooth #3 and hook on tooth #345. Orthodontic Metal Brackets are compliant to EN ISO 27020.

Intended Purpose

Orthodontic metal bracket is intended for orthodontic movement of teeth.

The device is intended to be bonded to teeth, upon which an orthodontic wire is placed to move the teeth to desired positions. They are indicated for orthodontic treatment in patients of all ages when prescribed by an orthodontist.

This is a single-use device. A re-use of the device is not allowed.

3. SPECIFICATION

Table 1 Dimensions of Standard Orthodontic Metal Brackets, Type Edgewise

Tooth Position	Bracket in-out l_i (mm)	Slot depth d (mm)	(0.018") Slot width h (mm)	(0.022") Slot width h (mm)	Slot length l_s (mm)	Angle of torque θ (°)	Angulation α (°)
(1-1)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	3.30±0.3	0±1°	0±1°
(2-2)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	3.30±0.3	0±1°	0±1°
(3-3)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	3.30±0.3	0±1°	0±1°
(54-45)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	3.30±0.3	0±1°	0±1°
(21-12)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	2.70±0.3	0±1°	0±1°
(3-3)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	3.30±0.3	0±1°	0±1°
(4-4)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	3.30±0.3	0±1°	0±1°
(5-5)	0.80±0.2	0.70 ⁻³ _{+0.0}	0.46 ⁻⁰⁵ _{+0.0}	0.56 ⁻⁰⁵ _{+0.0}	3.30±0.3	0±1°	0±1°

Table 2 Dimensions of Standard Orthodontic Metal Brackets, Type ROTH

Tooth Position	Bracket in-out l_i (mm)	Slot depth d (mm)	(0.018") Slot width h (mm)	(0.022") Slot width h (mm)	Slot length l_s (mm)	Angle of torque θ (°)	Angulation α (°)
(1 \perp 1)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.30±0.3	12±1°	5±1°
(2 \perp 2)	1.20±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	8±1°	9±1°
(3 \perp 3)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.10±0.3	-2±1°	10±1°
(54 \perp 45)	0.70±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	-7±1°	0±1°
(21 \perp 12)	1.20±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.40±0.3	-1±1°	0±1°
(3 \perp 3)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.10±0.3	-11±1°	7±1°
(4 \perp 4)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	-17±1°	0±1°
(5 \perp 5)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	-22±1°	0±1°

Table 3 Dimensions of Standard Orthodontic Metal Brackets, Type MBT

Tooth Position	Bracket in-out l_i (mm)	Slot depth d (mm)	(0.018") Slot width h (mm)	(0.022") Slot width h (mm)	Slot length l_s (mm)	Angle of torque θ (°)	Angulation α (°)
(1 \perp 1)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.30±0.3	17±1°	4±1°
(2 \perp 2)	1.20±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	10±1°	8±1°
(3 \perp 3)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.10±0.3	-7±1°	8±1°
(54 \perp 45)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	-7±1°	0±1°
(21 \perp 12)	1.20±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.40±0.3	-6±1°	0±1°
(3 \perp 3)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.10±0.3	-6±1°	3±1°
(4 \perp 4)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	-12±1°	2±1°
(5 \perp 5)	0.80±0.2	0.70 ^{+0.3} _{-0.0}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	3.00±0.3	-17±1°	2±1°

Table 4 Dimensions of Self-Ligating Orthodontic Metal Brackets, Type ROTH

Tooth Position	Bracket in-out l_i (mm)	Slot depth d (mm)	(0.018") Slot width h (mm)	(0.022") Slot width h (mm)	Slot length l_s (mm)	Angle of torque θ (°)	Angulation α (°)
(1 \perp 1)	1.10±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.80±0.3	12±2°	5±2°
(2 \perp 2)	1.40±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.60±0.3	8±2°	9±2°
(3 \perp 3)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.90±0.3	-2±2°	10±2°
(54 \perp 45)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.95±0.3	-7±2°	0±2°
(21 \perp 12)	1.40±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.50±0.3	-1±2°	0±2°
(3 \perp 3)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.90±0.3	-11±2°	7±2°
(4 \perp 4)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.95±0.3	-20±2°	0±2°
(5 \perp 5)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.95±0.3	-20±2°	0±2°

Table 5 Dimensions of Self-Ligating Orthodontic Metal Brackets, Type MBT

Tooth Position	Bracket in-out l_i (mm)	Slot depth d (mm)	(0.018") Slot width h (mm)	(0.022") Slot width h (mm)	Slot length l_s (mm)	Angle of torque θ (°)	Angulation α (°)
(1 \perp 1)	1.10±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.80±0.3	17±2°	4±2°
(2 \perp 2)	1.40±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.60±0.3	10±2°	8±2°
(3 \perp 3)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.90±0.3	-7±2°	8±2°
(54 \perp 45)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.95±0.3	-7±2°	0±2°
(21 \perp 12)	1.40±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.50±0.3	-6±2°	0±2°
(3 \perp 3)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.90±0.3	-6±2°	3±2°
(4 \perp 4)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.95±0.3	-12±2°	2±2°
(5 \perp 5)	1.00±0.2	0.70 ^{+0.2} _{-0.05}	0.46 ^{-0.05} _{-0.0}	0.56 ^{-0.05} _{-0.0}	2.95±0.3	-17±2°	2±2°

Table 6 Dimensions of Self-Ligating Orthodontic Metal Brackets, Type H20

Tooth Position	Bracket in-out l_i (mm)	Slot depth d (mm)	(0.020") Slot width h (mm)	Slot length l_s (mm)	Angle of torque θ (°)	Angulation α (°)
(1 \perp 1)	0.90±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	3.00±0.3	14±2°	4±2°
(2 \perp 2)	1.10±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	2.80±0.3	12±2°	6±2°
(3 \perp 3)	0.90±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	3.00±0.3	-3±2°	7±2°
(54 \perp 45)	0.85±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	3.00±0.3	-6±2°	2±2°
(21 \top 12)	1.10±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	2.80±0.3	-5±2°	0±2°
(3 \top 3)	0.90±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	3.00±0.3	-3±2°	3±2°
(4 \top 4)	0.90±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	3.00±0.3	-16±2°	6±2°
(5 \top 5)	0.90±0.2	0.70 $^{+0.25}_{-0.05}$	0.50 $^{+0.07}_{-0}$	3.00±0.3	-21±2°	6±2°

4. CONTRAINDICATIONS

Orthodontic metal brackets are contraindicated for those who are allergic to chromium and nickel. The device should not be used for patients with periodontitis.

5. CAUTIONS and WARNINGS

- Select correct size of orthodontic metal brackets according to the orthodontic method used;
- Prior to use, soaking the device with 75% alcohol for 20 to 30 minutes;
- Pay attention to keep the mouth hygiene. During use, use a soft toothbrush to gently brush up and down under the guidance of a dentist;
- Do not bite hard or sticky food, do not chew gum;
- Do not use such devices after exceeding the shelf life;
- This is single-use device. A re-use is not allowed. An infection or transmission of diseases could occur, if the device were to be re-used.
- After use this device may be a potential biohazard. Handle and dispose of in accordance with acceptable medical practices and with applicable local, state and federal laws and regulations.

6. POTENTIAL COMPLICATIONS

Complications of orthodontic metal brackets are documented. These complications may include:

- Allergic reactions
- Pain during the orthodontic treatment
- Tooth discolorations
- Decalcification
- Root resorption
- Periodontal complications

7. DIRECTIONS FOR USE

- 1) Clean the tooth surface: use a cup-shaped rubber wheel to finely grind the tooth surface to remove the tartar, color stains, then rinse the surface with water and dry it with alcohol. Blow the tooth for drying. Using mouth opener and pad cotton and sucking saliva to facilitate acid etching by separating the operation area from the wet. Those with enamel dysplasia should properly erase the tooth surface.
- 2) Tooth surface etching treatment: directly coat the acid etchant on the tooth surface, on which the bracket should be placed, the area is slightly larger than the area of the bracket base plate. the acid treatment time is 60-90 seconds, and for the dental fluorosis the time is 2-3 minutes.
- 3) Rinsing and drying: After acid etching, the tooth surface must be thoroughly rinsed with water. Rinse off the acid and debris, and then dry the tooth surface with warm air or compressed air. At this time, the tooth surface is dull and white etched. Strictly prevent re-contamination of the treated tooth surface by saliva.
- 4) Positioning: Draw the positioning reference line of the bracket attachment position on the tooth surface by using a bracket locator.
- 5) Affixing bracket: modulate the adhesive material as required. Firstly, apply the primer to the surface of the etched tooth, then use the air pistol to gently blow the primer to form a thin layer on the tooth surface. Apply an appropriate amount of adhesive onto the base plate. Put the bracket on the respective tooth surface and press it slightly. Remove the residual adhesive in time and keep the tooth surface around the bracket smooth.
- 6) Curing: After placing the bracket in the correct position, cure the adhesive by a light curing machine, so that the bracket is firmly attached to the crown surface.

8. EXPLANATION OF SYMBOLS USED ON LABELS AND INSTRUCTIONS FOR USE:



Catalogue number



Caution



Batch code



Consult instructions for use



Do not re-use



Keep away from sunlight



Use-by date



Keep dry



Do not use if package is damaged



Fragile, handle with care



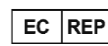
UDI code



Manufacturer



Medical device



Authorized representative in the European Community



Importer



CREATIVE DENTAL

No. 99 Ganxi Road, Industrial Park, Jinhua City, 321000 Zhejiang, P.R. China



Prolinx GmbH

Brehmstr. 56, D-40239 Duesseldorf, Germany

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