

# Trans Mandibular Distractor - TMD

## Step-by-step procedure

- 1 A horizontal labial sulcus incision of 15 mm width exposes the symphyseal surface (Fig. 1). Subperiosteal dissection is performed in the midline, between the mentalis muscles. The mentalis muscles are not transected (Fig. 2).



Fig 1

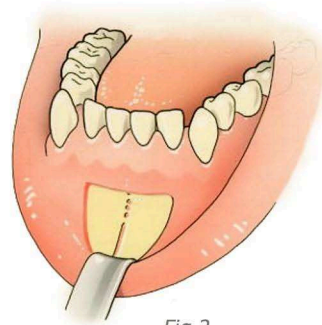


Fig 2

- 2 The Trans Mandibular Distractor with the fixing plate is adjusted on the exposed area and positioned close to the fixed gingiva but not to touch it.

**Attention:** Do not remove the fixation plate attaching the holes 1 and 4 (Fig 3).

Start first to drill bi-cortical through the middle hole 5 of the base plate and insert the 9 mm screw and tighten sufficient. Adjust correct the device on a level with the occlusion (Fig 4).

Perform drilling bi-cortical through the holes 2, 3 and 6 of the base plate.

Remove the 9mm screw, and take away the Trans Mandibular Distraction device.

**Attention:** While drilling, the handpiece should be directed perpendicular to the beveled surface of the base plate.

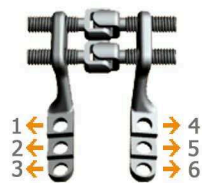


Fig 3

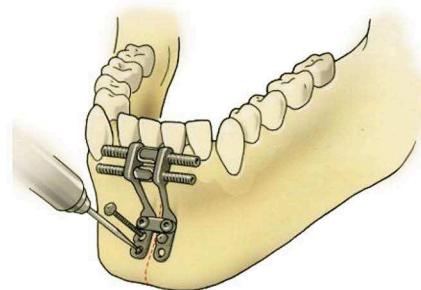


Fig 4

- 3 The splitting is then performed with a reciprocating saw in the chin region. (A Piezzo machine is recommended). In the apical region, cortical perforations are performed with a small round bur (Fig.2). An osteotome connects them with gentle tapping and is wedged between the roots. The lingual cortex is transected with the reciprocating saw, that can be entered safely now in the interdental osteotomy gap. Care is taken not to tear or even to dissect the fixed gingiva.

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**4** Once the mandible is splitted, the TMD device is placed faced to the previously drilled holes 2, 3 and 5 still with the fixing plate on place. Insert the 13 mm screws in the middle holes 2 and 5, followed by insertion of 11 mm screws into the lower holes 3 and 6. Control the correct leveling and tighten firmly the screws. Unscrew 1 and 4, remove the fixation plate on the base plate of the device. Drill mono-cortically through the holes 1 and 4, insert firmly the 9 mm screws. (Fig. 5).

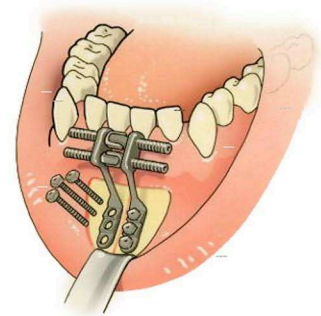


Fig 5

**5** The incision is closed with resorbable sutures (Fig. 6).

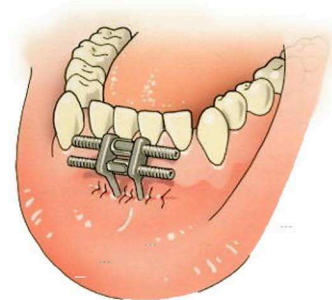


Fig 6

**6** The activation rods are covered with the supplied silicon cover.

**7** Do not start to activate the distractor device before the latency period of one week.

### **8** Activation

Activation starts by the surgeon one week later and continues daily by the patient himself. By young children it is recommended to start the activation after 5 days. The recommended rate is only half a turn (0.5 mm) on the upper screw and half a turn on the lower screw each day with the supplied activating key (1 full turn = 1mm) (Fig 7). The activating key can be used at both sides. Both distraction cardan screws need to be activated in the same direction: counter clockwise if activate on the left side of the patient, and clockwise if activate on the right side of the patient. Towards the end of the distraction, malocclusion or angulated mandible can be corrected by rotating the lower screw more than the upper one (or vice-versa). This procedure is enabled by the cardan joints in the screws.

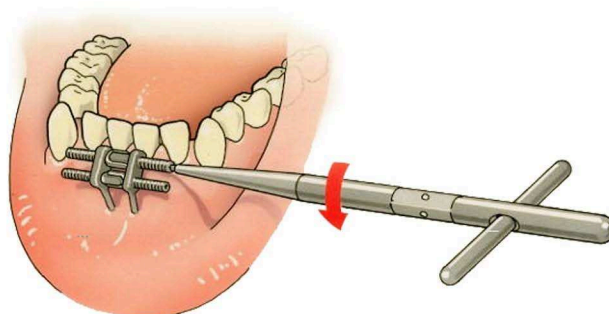


Fig 7

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### 9 Achieved expansion period

Towards the end of the activation, check carefully the occlusion. The occlusion can be corrected by activating or deactivating the lower distractor screw of the device more than the upper distractor screw. Pay attention by making use of the Trans Mandibular Distractor, that during the widening, there also will occur an advancement of the mandible, ranging from 2 to 3mm.

10 The consolidation period should be at least 4 months.

### 11 Orthodontic treatment

Placing the brackets before the surgery is recommended, to activate distalisation effect obtaining a diastema of 1 – 2 mm between the centrals prior to the operation. This will prevent hiaotrogenic damage to the central teeth or sockets during the splitting of the mandible.  
Legating 31 and 32, and also the 41 and the 42 to avoid a drifting phenomena.  
Orthodontic alignment can start 6 weeks or longer after the end of activation.

### 12 Removal of the Trans Mandibular Device

For patients comfort the removal of the Trans Mandibular Distractor can be performed 3 to 4 weeks after activation is stopped, **only** if a miniplate is placed immediately at the same place of the TMD base plates. This procedure is done under local anesthesia. This miniplate can either be left or removed after consolidation, between 6 to 8 months.