



Surgical Procedure

Trauma shoulder hemiarthroplasty



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■ Introduction

Trauma shoulder hemiarthroplasty was developed using the most recent expertise and experience with cemented endoprosthetic implants, the manufacture of which makes use of the most sophisticated technologies. By using the instruments provided by the manufacturer, simple implantation and perfect fixation of the implant are secured. Available sizes enable the surgeon to select the best fit with respect to the size of implant. This publication is intended as a surgical manual for the given implant and for the instruments. For the purposes of brevity, it focuses only on the issue of implanting the given type of endoprosthesis, and expects the surgeon and other personnel to be perfectly acquainted with general rules of surgical replacement of the shoulder joint. The aim of this booklet is to provide surgeons and scrub nurses with quick orientation and correct use of individual instruments so that optimal result is achieved and last but not least, unnecessary damage and misuse of instruments or implant may be avoided. This is by no means a textbook of surgical procedure.

Shoulder Stem

Trauma shoulder hemiarthroplasty is manufactured from ISO 5832-1 stainless steel. The head of the endoprosthesis is polished to a mirror shine, while the stem of the endoprosthesis has a matte finish. The implant is distributed in four head sizes and two stem lengths. The endoprostheses with head sizes of 38 and 40mm have an identical stem length of 155mm, while those with head sizes of 42 and 44mm have a stem length of 165mm.

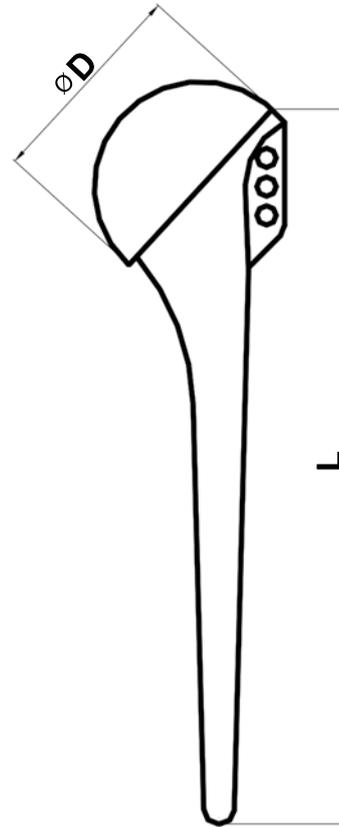


Fig. 1: Trauma shoulder arthroplasty

D	L	Order number
38	155	342500
40		342550
42	165	342600
44		342650

■ Instruments for Implants of traumatic arthroplasty of shoulder

Instruments are very simple, as the endoprosthesis replaces only the head of the shoulder joint (without the glenoid component). These include just two reamers that prep the bed in the medullary cavity of the humerus for the stem of the endoprosthesis. The reamers are shaped corresponding to the stem of the endoprosthesis. They have 0.5mm tall struts that guarantee that the thickness of the bone cement will be at least 0.5mm.

The 146mm (order number 304350) long reamers are intended for endoprotheses with head sizes of 38 and 40mm and stem length of 155mm, while the 156mm (order number 304360) long reamers are intended for endoprotheses with head sizes of 42 and 44mm and stem length of 165mm.

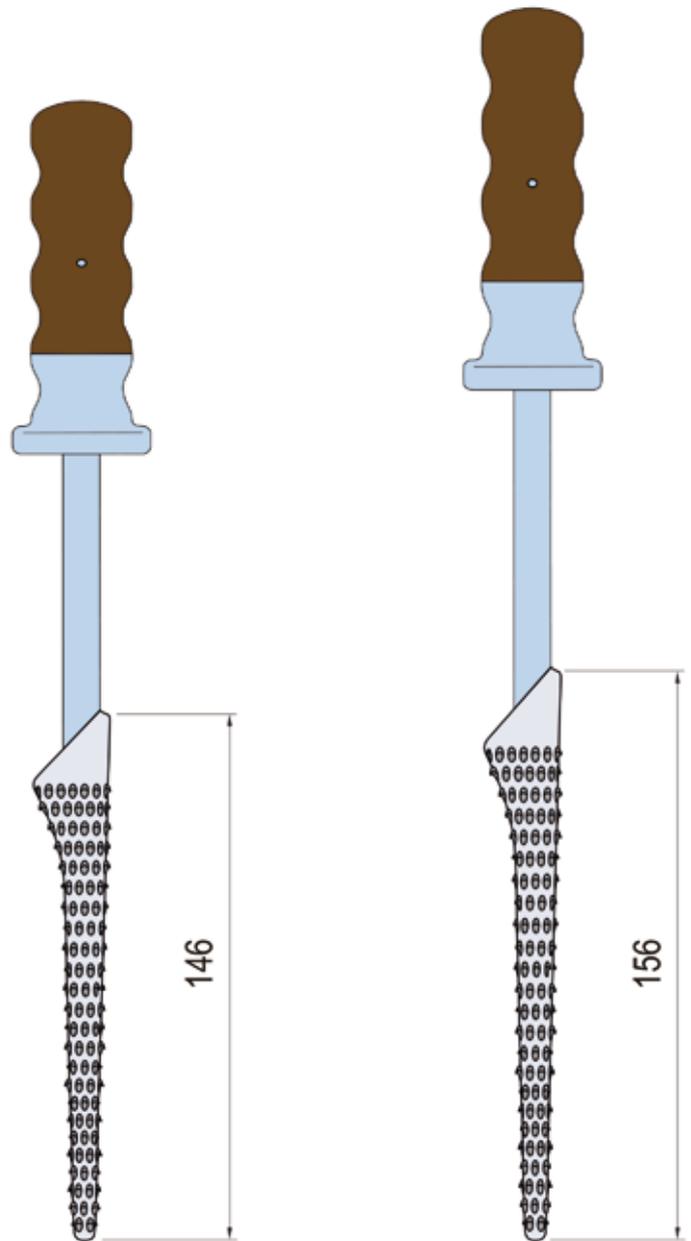


Fig. 2

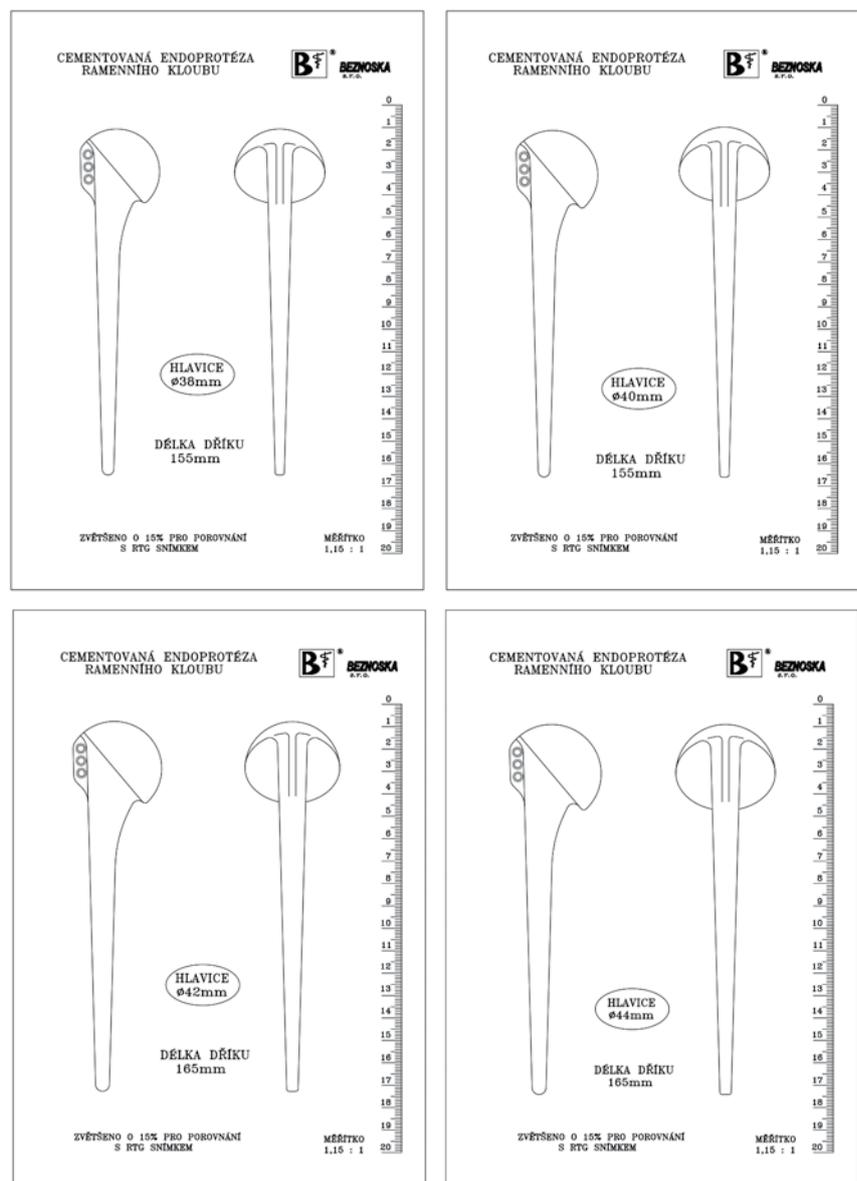


■ Surgical Procedure

General guidance while implanting endoprosthesis of shoulder

Prior to any surgery of the shoulder joint, preoperative planning must be conducted in order to determine the size of the stem and head. The preoperative planning must utilize the x-ray of the humerus in A/P view. The planning of the size of implant is performed using templates provided by manufacturer. These templates are compared with the x-ray film of the same resolution and thus the size of the component is determined.

Fig. 3: Transparent templates for determining size of component



1. Resection of head

In a traumatic shoulder, we try to preserve small and large tubercles, including the muscle origins. Once they are prepped as to their size, the tubercles are sutured to the rim of the implanted endoprosthesis. The rest of the fractured head is removed and spongy bone is used as a plug in the medullar cavity.



Fig. 4



2. Pre-drilling of medullar cavity

Pre-drilling is done using a 6mm bore drill to the depth corresponding to the length of the planned implant to enable the insertion of the reamer.



Fig. 5

3. Prepping of medullar cavity

Reaming is finished when the upper oblique edge of reamer matches the plane of resection surface.

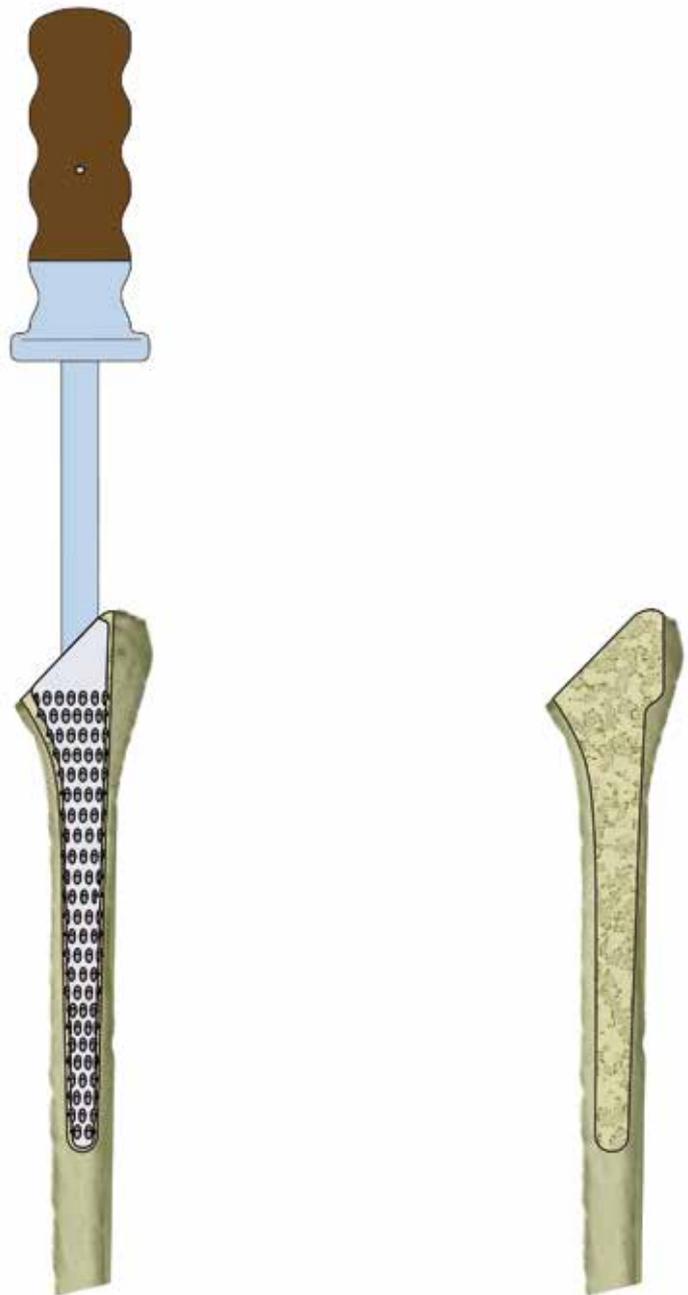


Fig. 6



4. Prepping of medullar cavity for cementing and cementing

This is followed by the careful drying of the cavity and insertion of a thin drain for drainage of the hematoma, and for easier impaction of the bone cement.

5. Insertion of endoprosthetic stem

After filling the medullar cavity with bone cement, stem is inserted while maintaining the required head retroversion of 30 - 40°. This is followed by the reconstruction of periarticular tissues (muscles, joint capsule).



Fig. 7



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