

# 肱骨近端 I 接骨板

操作手册

Proximal Humerus Plate I

Operation Manual





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## Why choose Fule?

### Our strengths

- The company is a national high-tech enterprise integrating research and development, production and sales of medical devices, with a full intelligent processing equipment production line.
- The establishment of the Academician Expert Studio helps to enhance the R&D capabilities of Fule and further deepen the cooperation between industry, academia, and research; Approved postdoctoral research workstation.
- The hardware facilities are complete, the R&D team is excellent, and we work closely with clinical experts, obtaining more than 100 domestic and foreign patents.
- Based on the agent cooperation model, establish a nationwide sales and service network, supply products to nearly a thousand tertiary hospitals nationwide, and export to more than 20 overseas countries.

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## Product Advantages

- Better nerve protection
- No additional aiming instruments required
- Allows percutaneous insertion and locking of screws
- Aiming arm does not interfere with fluoroscopy



## Indications for Use

- **【 Indications 】**
  1. Proximal humeral fractures (2-4 part fractures, with displacement), particularly suitable for osteoporotic patients.
  2. Pseudarthrosis, osteotomy. The long version is also suitable for fractures extending to the diaphysis or for patients lacking medial support.

## Surgical Procedures

### 【Step 1】 Incision

- Make an incision at the surgical site.
- Dissect the periosteal soft tissues, retract, and expose the fracture.

## Surgical Procedures

### 【Step 2】 Subperiosteal Dissection

- Perform subperiosteal dissection.
- Clearly expose the fracture site.



## Surgical Procedures

### 【Step 3】 Reduction

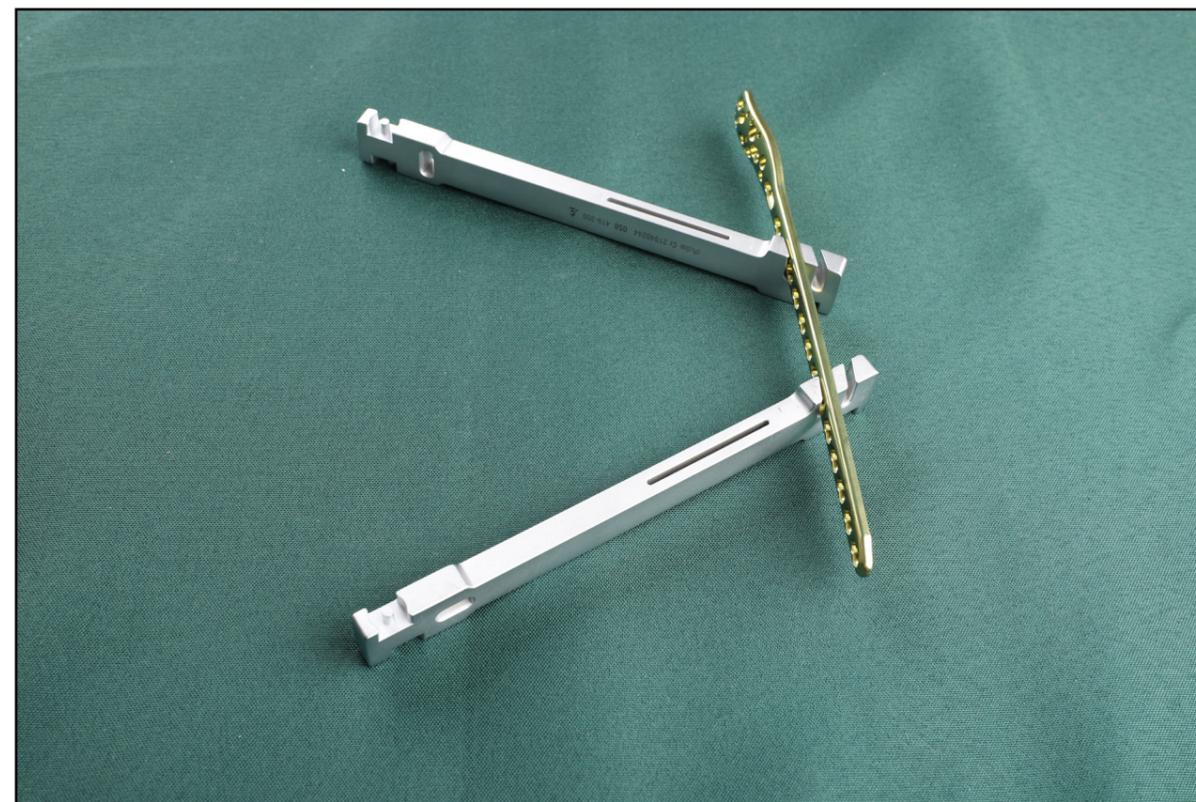
- Use bone levers, reduction forceps, and other instruments to reduce the fracture fragments.



## Surgical Procedures

### 【Step 4】 Plate Preparation

- Select an appropriate plate.
- If necessary, contour the plate using bending tools to better fit the bone surface.



## Surgical Procedures

### 【Step 5】 Temporary Fixation

- Use positioning needle for temporary fixation of the plate to the bone.



## Surgical Procedures

### 【Step 6】 Drilling

- Drill holes using a bone drill.



## Surgical Procedures

### 【Step 7】 Tapping

- Tap the drill holes using a tap.



## Surgical Procedures

### 【Step 8】 Depth Measurement

- Use a depth gauge to measure screw length.

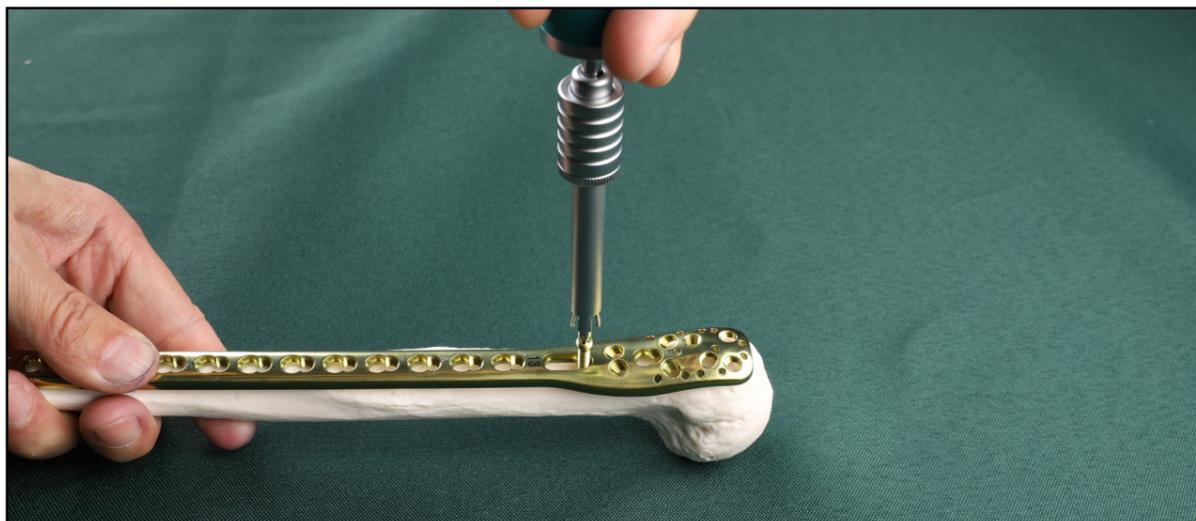


## Surgical Procedures

【Step 9】

### Screw Insertion

- Insert screws using the matching driver.



## Surgical Procedures

【Step 10】

### Final Tightening

- After all screws are inserted, use a torque-limiting driver for final tightening.



## Surgical Procedures

【Step 11】

### Suturing

- Remove positioning needle.
- Confirm fixation quality under fluoroscopy.
- If satisfactory, irrigate and close the wound.

## Product Information

● 肱骨近端 I 接骨板 Proximal Humeral Plate I

| 钢板头部厚度<br>head thickness | 钢板干部厚度<br>stem thickness | 钢板头部宽度<br>head width | 钢板干部宽度<br>stem width |
|--------------------------|--------------------------|----------------------|----------------------|
| 1.6                      | 3                        | 20.3                 | 12.3                 |

配用 3.5 锁定钉 / 3.5/4.0 普通钉，适用于肱骨近端骨折  
Used with  $\Phi 3.5/\Phi 4.0$ mm Ti-Screw,  $\Phi 3.5$ mm locking screw,  
Used for proximal humeral fracture.



| 规格 Description | 长度 Length (mm) | 产品编码 Product Code |
|----------------|----------------|-------------------|
| 2 孔 holes      | 90             | 4484602090        |
| 3 孔 holes      | 102            | 4484603102        |
| 4 孔 holes      | 114            | 4484604114        |
| 5 孔 5 holes    | 126            | 4807005126        |
| 6 孔 6 holes    | 138            | 4807006138        |
| 7 孔 7 holes    | 150            | 4807007150        |
| 8 孔 8 holes    | 162            | 4807008162        |
| 9 孔 9 holes    | 174            | 4807009174        |
| 10 孔 10 holes  | 186            | 4807010186        |
| 11 孔 11 holes  | 198            | 4807011198        |
| 12 孔 12 holes  | 210            | 4807012210        |
| 13 孔 13 holes  | 222            | 4807013222        |
| 14 孔 14 holes  | 234            | 4807014234        |

● 锁定螺钉 (LCP 3.5)  
Locking Screw (LCP  $\Phi 3.5$ )



● 钛质接骨螺钉 ( $\Phi 3.5$ )  
Ti-Screw( $\Phi 3.5$ )



# Surgical Instruments

| 2.4/2.7 System Instrument Set (411-602) |                         |             |         |     |         |   |
|---|-------------------------|-------------|---------|-----|---------|---|
| No.                                     | Name                    | Description | Code    | Qty | Diagram | Remarks   |
| 1                                       | Orthopedic Drill ( )    | φ1.8        | 430-380 | 2   |         | <br>2.4锁定钉<br>(39306240XX)<br><br>2.4 Locking screw<br><br><br>2.4万向钉<br>(39336240XX)<br><br>2.4polyaxial screw |
| 2                                       | Tap (IV)                | LCP2.4      | 430-420 | 1   |         |   |
| 3                                       | Guider (LCP IV)         | φ1.8        | 430-530 | 2   |         |   |
| 4                                       | Nail Holder (LCP II)    | LCP2.4      | 411-215 |     |         |   |
| 5                                       | Guider (VA-LCP II)      | φ1.8        | 430-550 | 2   |         |   |
| 6                                       | Guider ( Polyaxial )    | φ1.8        | 430-011 | 1   |         |   |
| 7                                       | Torque limit adapter    | 0.8N·m      | 430-440 | 1   |         |   |
| 8                                       | Torque wrench (TroxxII) | 0.8N·m      | 411-671 |     |         |   |

| 2.4/2.7 System Instrument Set (411-602) |                         |             |         |     |         |  |
|---|-------------------------|-------------|---------|-----|---------|--|
| No.                                     | Name                    | Description | Code    | Qty | Diagram | Remarks  |
| 9                                       | Drill (III)             | φ2.0        | 430-321 | 2   |         | <br>2.7锁定螺钉<br>(39316270XX)<br>2.7 Locking screw<br><br><br>2.7普通钉<br>(39256270XX)<br>2.7 Common screw |
| 10                                      | Tap (IV)                | HA2.7       | 430-430 | 1   |         |  |
| 11                                      | Tap (IV)                | LCP2.7      | 430-421 | 1   |         |  |
| 12                                      | Guider (LCPIV)          | φ2.0        | 430-540 | 2   |         |  |
| 13                                      | Guider (LC-DCP)         | φ2.0/φ2.7   | 411-313 | 1   |         |  |
| 14                                      | Torque limit adapter    | 1.2N·m      | 430-450 | 1   |         |  |
| 15                                      | Screw holder(HA II)     | HA2.7       | 411-217 | 1   |         |  |
| 16                                      | Torque wrench (TroxxII) | 1.2N·m      | 411-672 |     |         |  |

# Surgical Instruments

| 2.4/2.7 System Instrument Set (411-602) |                                 |             |         |     |         |                             |
|---|---------------------------------|-------------|---------|-----|---------|-----------------------------|
| No.                                     | Name                            | Description | Code    | Qty | Diagram | Remarks                     |
| 25                                      | Adapter (II)                    | /           | 411-680 | 1   |         | 2.4/2.7 General Instruments |
| 26                                      | Positioning Needle ( Thread I ) | Φ1.2×150    | 411-650 | 3   |         |                             |
| 27                                      | Positioning Needle ( Thread I ) | φ1.5×150    | 411-651 | 3   |         |                             |
| 28                                      | Positioning Needle ( Thread I ) |             | 411-652 | 3   |         |                             |
| 29                                      | Positioning Needle ( polish I ) | Φ1.2×150    | 411-653 | 3   |         |                             |
| 30                                      | Positioning Needle ( polish I ) | φ1.5×150    | 411-654 | 3   |         |                             |
|   | Positioning Needle ( polish I ) | Φ2.0×150    | 411-655 | 3   |         |                             |
| 32                                      | Depth gauge                     | /           | 430-051 | 1   |         |                             |
| 33                                      | Countersunk drill               | Φ4.0        | 430-491 | 1   |         |                             |
| 34                                      | Screw hole cleaning device      | /           | 411-610 | 1   |         |                             |

| 2.4/2.7 System Instrument Set (411-602) |                                     |             |         |     |         |                             |
|---|-------------------------------------|-------------|---------|-----|---------|-----------------------------|
| No.                                     | Name                                | Description | Code    | Qty | Diagram | Remarks                     |
| 17                                      | Screw holder(HA II)                 | HA2.7       | 411-216 |     |         | <br>2.7小儿钉<br>(35376270XX)  |
| 18                                      | Guider ( Polyaxial )                | φ2.0        | 430-021 | 1   |         | <br>2.7万向钉<br>(39320270XX)  |
| 19                                      | Guider ( VA-LCPII )                 | φ2.0        | 430-551 | 2   |         | 2.4/2.7 General Instruments |
| 20                                      | Screwdriver ( Trox )                | T8          | 430-400 | 2   |         |                             |
| 21                                      | Screwdriver ( Trox )                | T8          | 430-650 | 1   |         |                             |
| 22                                      | Quick change handle ( T typeII )    | /           | 411-660 | 1   |         |                             |
| 23                                      | Quick change handle ( Straight IV ) | 小           | 411-661 | 1   |         |                             |
| 24                                      | Quick change handle ( Straight )    | /           | 411-172 | 1   |         |                             |

# Surgical Instruments

## 2.4/2.7 System Instrument Set (411-602)

| No. | Name                       | Description | Code    | Qty | Diagram | Remarks                           |
|-----|----------------------------|-------------|---------|-----|---------|-----------------------------------|
| 35  | Reduction Forceps (IV)     | small       | 430-700 | 2   |         | 2.4/2.7 General purpose equipment |
| 36  | Reduction pliers (Elbow I) | /           | 411-690 | 2   |         |                                   |
| 37  | Bending Pliers (I)         | /           | 411-700 | 2   |         |                                   |
| 38  | Bone retractor (universal) | /           | 411-730 | 2   |         |                                   |
| 39  | Periostealstripper (I)     | 3.0         | 411-074 | 1   |         |                                   |
| 40  | Periostealstripper (II)    | 6.5         | 430-261 | 1   |         |                                   |
| 41  | Bone pry                   | 6.5         | 411-640 | 2   |         |                                   |
|     |                            | 8.5         | 411-641 | 2   |         |                                   |
|     |                            | 15.5        | 411-644 | 2   |         |                                   |
| 42  | Nail holding tweezer       | small       | 411-131 | 1   |         |                                   |

## 2.4/2.7 System Instrument Set (411-602)

| No. | Name   | Description | Code    | Qty | Diagram | Remarks                        |
|-----|--|-------------|---------|-----|---------|--------------------------------|
| 43  | Bone positioning needle (ball head)            | Φ1.6×150-10 | 411-710 | 4   |         |                                |
|     |  | Φ1.6×150-15 | 411-711 | 4   |         |                                |
|     |  | Φ1.6×150-20 | 411-712 | 4   |         |                                |
|     |  | Φ1.6×150-25 | 411-713 | 4   |         |                                |
|     |  | Φ1.6×150-30 | 411-714 | 4   |         |                                |
|     |  | Φ1.6×150-35 | 411-715 | 4   |         |                                |
|     |  | Φ1.6×150-40 | 411-716 | 4   |         |                                |
| 44  | Casing (I)                                     | /           | 430-660 | 1   |         | 2.7 Special for foot and ankle |
| 45  | Pressure pliers (ball needle)                  | /           | 411-720 | 1   |         |                                |
| 46  | Orthopedic Distraction Forceps (Measurement I) | /           | 430-131 | 1   |         |                                |

## 2.4/2.7 System Instrument Set (411-602)

| No. | Name                       | Description | Code    | Qty | Diagram | Remarks                 |
|-----|----------------------------|-------------|---------|-----|---------|-------------------------|
| 47  | Container (2.4/2.7 system) |             | 411-750 | 1   |         | 2.4/2.7 General purpose |
| 48  | 2.4/ 2.7 Screw box         |             | 430-691 | 1   |         |                         |

# Surgical Instruments

## 3.5/4.0 System Instrument Set (419-302)

| No. | Name                               | Description | Code    | Qty | Diagram | Remarks                           |                                     |
|-----|------------------------------------|-------------|---------|-----|---------|-----------------------------------|-------------------------------------|
| 1   | Orthopedic Drill (III)             | Φ2.8×200    | 430-341 | 2   |         | 3.5 Locking screw<br>(39346350XX) |                                     |
| 2   | Orthopedic locator                 | Φ2.8        | 419-135 | 2   |         |                                   |                                     |
| 3   | Orthopedic wrench (L-type hexagon) | S=2.5       | 419-281 | 1   |         |                                   |                                     |
| 4   | Tape thread (Type IV)              | LCP3.5      | 430-460 | 1   |         |                                   |                                     |
| 5   | Guider (LCPI)                      | Φ2.8        | 430-560 | 2   |         |                                   |                                     |
| 6   | Screw Holder (LCPII)               | LCP3.5      | 419-500 |     |         |                                   |                                     |
| 7   | Guider (Universal)                 | φ2.8        | 430-101 | 1   |         |                                   | 3.5 Universal screw<br>(39240350XX) |
| 8   | Guider (VA-LCP II)                 | φ2.8        | 430-552 | 2   |         |                                   |                                     |

## 3.5/4.0 System Instrument Set (419-302)

| No. | Name                    | Description | Code    | Qty | Diagram | Remarks                          |
|-----|-------------------------|-------------|---------|-----|---------|----------------------------------|
| 9   | Orthopedic Drill (I)    | Φ2.5        | 430-331 | 2   |         | 3.5 Common screw<br>(35386350XX) |
| 10  | Orthopedic Drill (I)    | Φ3.5        | 430-390 | 1   |         |                                  |
| 11  | Tap (IV)                | HA3.5       | 430-470 | 1   |         |                                  |
| 12  | Tap (IV)                | HB4.0       | 430-480 | 1   |         |                                  |
| 13  | Countersunk drill       | Φ6.0        | 430-490 | 1   |         |                                  |
| 14  | Guider (LC-DCP general) | φ2.5-φ3.5   | 419-330 | 1   |         |                                  |
| 15  | Guider (Double head)    | φ2.5-φ3.5   | 419-331 | 1   |         |                                  |
| 16  | Guider (LC-DCP basic)   | Φ2.5        | 419-332 | 1   |         |                                  |
| 17  | Screw holder (HA II)    | HA3.5       | 419-490 |     |         | 4.0 Common screw<br>(35406400XX) |

## 3.5/4.0 System Instrument Set (419-302)

| No. | Name                           | Description | Code    | Qty | Diagram | Remarks  |
|-----|--------------------------------|-------------|---------|-----|---------|--|
| 18  | Wrench for rthopedics (Torx)   | T10         | 419-540 | 1   |         | 3.5 低切迹普通钉<br>(35466350XX)<br>3.5 Low notch common screw |
| 19  | Orthopedic wrench (torx)       | T10         | 419-550 | 2   |         |  |
| 20  | Bone Locator Needle (thread I) | Φ1.0×150    | 419-510 | 3   |         |  |
| 21  | Guider (LCP I)                 | Φ2.5        | 419-520 | 2   |         | 3.5 平头锁定钉<br>(39380350XX)<br>3.5 Flat head locking screw |
| 22  | Reduction forceps (Type C)     | 小           | 430-600 | 1   |         |  |

## Surgical Instruments

### 3.5/4.0 System Instrument Set (419-302)

| No. | Name                                | Specification | Code    | Qty | Diagram | Remarks                     |
|-----|-------------------------------------|---------------|---------|-----|---------|-----------------------------|
| 23  | Depth gauge ( )                     | /             | 430-680 | 1   |         | 3.5/4.0 General instruments |
| 24  | Wrench for orthopedics(Torx)        | T15           | 430-211 | 1   |         |                             |
| 25  | screwdriver ( Trox )                | T15           | 430-410 | 2   |         |                             |
| 26  | Limit torque wrench (Trox II)       | 1.5N·m        | 430-570 | 1   |         |                             |
| 27  | Positioning needle ( Thread I )     | φ1.5×150      | 411-651 | 3   |         |                             |
|     |                                     | Φ2.0×150      | 411-652 | 3   |         |                             |
|     |                                     | Φ2.5×250      | 419-016 | 3   |         |                             |
| 28  | Positioning needle ( polish rod I ) | φ1.5×150      | 411-654 | 3   |         |                             |
|     |                                     | Φ2.0×150      | 411-655 | 3   |         |                             |
|     |                                     | Φ2.5×250      | 419-019 | 3   |         |                             |

### 3.5/4.0 System Instrument Set (419-302)

| No. | Name                                 | Specification | Code    | Qty | Diagram | Remarks                     |
|-----|--------------------------------------|---------------|---------|-----|---------|-----------------------------|
| 29  | Adapter (II)                         | /             | 411-680 | 1   |         | 3.5/4.0 general instruments |
| 30  | Quick change handle ( Straight V )   | small         | 419-470 | 1   |         |                             |
| 31  | Quick change handle ( T type II )    | /             | 411-660 | 1   |         |                             |
| 32  | Steel plate molding sheet            | 3.5A          | 430-670 | 1   |         |                             |
|     |                                      | 3.5B          | 430-671 | 1   |         |                             |
| 33  | Steel plate molding sheet (straight) | /             | 419-072 | 1   |         |                             |
| 34  | Plate bender                         | left          | 419-350 | 1   |         |                             |
|     |                                      | right         | 419-351 | 1   |         |                             |
| 35  | Plate bender (IV)                    | /             | 430-091 | 2   |         |                             |

## Surgical Instruments

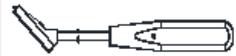
### 3.5/4.0 System Instrument Set (419-302)

| No. | Name                         | Specification | Code    | Qty | Diagram | Remarks                     |
|-----|------------------------------|---------------|---------|-----|---------|-----------------------------|
| 36  | Periosteal stripper (II)     | 6.0(circle)   | 419-420 | 1   |         | 3.5/4.0 general instruments |
| 37  | Periosteal stripper (II)     | 6.0 (level)   | 430-261 | 1   |         |                             |
| 38  | Elevator                     | 6.5           | 411-640 | 2   |         |                             |
|     |                              | 8.5           | 411-641 | 2   |         |                             |
|     |                              | 15.5          | 411-644 | 2   |         |                             |
| 39  | Screw holder ( tweezers )    | small         | 411-131 | 1   |         |                             |
| 40  | Reduction forceps ( IV )     | small         | 430-700 | 2   |         |                             |
| 41  | Bone-holding forceps ( II )  | /             | 430-702 | 2   |         |                             |
| 42  | Reduction forceps ( Bent I ) | /             | 411-690 | 2   |         |                             |

### 3.5/4.0 System Instrument Set (419-302)

| No. | Name                        | Specification | Code    | Qty | Diagram | Remarks   |
|-----|-----------------------------|---------------|---------|-----|---------|---|
| 43  | Broken nail remover (I)     | 3.5/4         | 419-126 | 1   |         | 3.5/4.0 general instruments                     |
| 44  | Screw remover (Slip I)      | Φ2.5          | 419-360 | 1   |         |   |
| 45  | 3.5/ 4.0 screw box          |               | 419-310 | 1   |         |   |
| 46  | 2.7/ 3.5screw box           |               | 430-690 | 1   |         |   |
| 47  | Container (3.5/4 .0 system) |               | 419-560 | 1   |         |   |
| 1   | Depth gauge (III)           | Φ2.0          | 419-370 |     |         | 3.5 Special instruments for pediatric osteotomy |
| 2   | Goniometer (I)              | 20°/60°/100°  | 419-380 |     |         |   |
|     |                             | 30°/70°/80°   | 419-390 |     |         |   |
|     |                             | 40°/50°/90°   | 419-400 |     |         |   |

# Surgical Instruments

| 3.5/4.0 System Instrument Set (419-302) |                   |               |         |     |  |                                   |
|---|-------------------|---------------|---------|-----|--|-----------------------------------|
| No.                                     | Name              | Specification | Code    | Qty | Diagram  | Remarks                           |
| 3                                       | Measurer(I)       | S=6           | 419-440 |     |  | 3.5/4.0<br>general<br>instruments |
| 4                                       | Depth gauge (VII) | LCP3.5/LCP5.0 | 419-450 |     |  |                                   |
| 5                                       | Guider (VIII)     | LCP3.5        | 419-460 |     |  |                                   |
| 6                                       | Goniometer ( )    | /             | 419-530 |     |  |                                   |
| 7                                       | Wrench (Hex)      | S=2.0         | 410-052 |     |  |                                   |