CLAIMS

We claim:

1. A system of instruments for installing a fusion implant into a sacroiliac joint, the system of instruments comprising:

a working channel having an insertion end and a working end connected by a channel, the insertion end of the working channel comprising a first iliac contour and a first sacral contour, the working channel further comprising a first keying means;

a joint locator having a penetration tip at an insertion end, a handle at a proximal end, and an alignment means for mating engagement with the keying means, the penetration tip of the joint locator comprising a second iliac contour and a second sacral contour, wherein the first and second iliac contours and the first and second sacral contours are disposed in mating alignment when the joint locator is fully inserted into the working channel;

an abrading device having an abrading head at a distal end and a slide hammer assembly at a proximal end, the abrading device further comprising a second keying means for mating engagement with the alignment means; and

an implant inserter having an insertion end with a pair of tines for releasably receiving a joint fusion implant, the implant inserter further comprising a third keying means for mating engagement with the alignment means.

2. The system of instruments in claim 1, wherein the slide hammer assembly of the abrading device comprises a base connected to a shaft, and a releasing means that releasably connects a hammer sleeve to the base, the released hammer sleeve configured for sliding engagement along the shaft.

3. The system of instruments in claim 1, wherein the working channel further comprises a channel collar and the abrading device further comprises an abrading stop, the channel collar abutting the abrading stop to prevent over penetration of the abrading head.

4. The system of instruments in claim 2, wherein the working channel further comprises a channel collar and the abrading device further comprises an abrading stop, the channel collar abutting the abrading stop to prevent over penetration of the abrading head.

5. The system of instruments in claim 1, wherein the abrading head further comprises an open tip having a cutting edge.

6. The system of instruments in claim 2, wherein the abrading head further comprises an open tip having a cutting edge.

7. The system of instruments in claim 3, wherein the abrading head further comprises an open tip having a cutting edge.

8. A system of instruments for installing a fusion implant into a sacroiliac joint, the system of instruments comprising:

a working channel having an insertion end and a working end connected by a channel, the insertion end of the working channel comprising a first iliac contour and a first sacral contour, the working channel further comprising a first keying means;

a joint locator having a penetration tip, a handle, and an alignment means for mating engagement with the first keying means, the penetration tip of the joint locator comprising a second iliac contour and a second sacral contour, wherein the first and second iliac contours and the first and second sacral contours are disposed in mating alignment when the joint locator is fully inserted into the working channel;

an abrading device having an abrading head at a distal end and a slide hammer assembly at a proximal end, the abrading device further comprising a second keying means for mating engagement with the alignment means, and the slide hammer assembly comprising:

a collar on the abrading device, the collar having internal threads and external threads;

a slide hammer shaft having a threaded end for mating with the internal threads of the collar on the abrading device, and having a slide stop end;

a hammer sleeve having a hollow, cylindrical bore comprising an internal diaphragm and a threaded connector configured for mating with the external threads of the collar, the diaphragm having a diaphragm opening sized to permit sliding passage of the slide hammer shaft and block passage of the slide stop end; and

an implant inserter having an insertion end with a pair of tines for releasably receiving a joint fusion implant, the implant inserter further comprising a third keying means for mating engagement with the alignment means.

9. The system of instruments in claim 8, wherein the working channel further comprises a channel collar and the abrading device further comprises an abrading stop, the channel collar abutting the abrading stop to prevent over penetration of the abrading head.

13. The system of instruments in claim 8, wherein the abrading head further comprises an open tip having a cutting edge.

14. The system of instruments in claim 9, wherein the abrading head further comprises an open tip having a cutting edge.

15. The system of instruments in claim 8, wherein the joint locator has an elongate body between the penetration tip and the handle, and a K-wire channel extending through the elongate body from the handle to the penetration tip of the joint locator.

16. A set of instruments for installing a fusion implant into a sacroiliac joint, the set of instruments comprising:

a working channel having an insertion end comprising a first iliac contour and a first sacral contour, a working end having a collar and a first keying means; and

a joint locator having an insertion end with a penetration tip that comprises a second iliac contour and a second sacral contour, a proximal end having a handle comprising a stop for abutting against the collar on the working channel, and an alignment means for mating engagement with the first keying means when the joint locator is inserted into the working channel;

wherein the first and second iliac contours and the first and second sacral contours are disposed in mating alignment when the joint locator is fully inserted into the working channel.