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### MIS OSTEOTOMY GUIDE

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#### Abstract

A surgical guide includes a body defining a first access port and a second access port. The first access port extends on a first longitudinal access parallel with a first edge of the body and the second access port extends on a second longitudinal access positioned non-parallel with respect to each edge of the body. At least one coupling arm extends from the body. The at least one coupling arm defines at least one fixation aperture sized and configured to receive a fixation element through.

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## **Background/Summary**

CROSS-REFERENCE TO RELATED APPLICATION [0001] Any and all applications for which a foreign or domestic priority claim is identified in the Application Data Sheet as filed with the present application are hereby incorporated by reference in accordance with 37 C.F.R. §§ 1.57; 1.97; and 1.98.

### **BACKGROUND**

[0002] Hallux valgus deformities in the human foot relate to a condition in which the first (great) toe has a deviated position leaning in towards the second toe. The first metatarsal deviates towards the mid-sagittal plane, and the great toe deviates away from the mid-sagittal plane. This is often accompanied by a bump due to a swollen bursal sac or a bony anomaly on the metatarsophalangeal joint.

[0003] A variety of non-surgical methods are used to treat hallux valgus, but in cases of continued pain or visible deformity, the patient may seek a surgical correction of the condition. Surgical methods may include removing the bony enlargement of the first metatarsal, realigning the first metatarsal bone relative to the adjacent metatarsal bone, and/or straightening the great toe relative to the first metatarsal and adjacent toes.

[0004] One such method of treating hallux valgus deformities is known as a Lapidus procedure. In a Lapidus procedure the first tarsal-metatarsal joint is fused to decrease the movement of the joint. This straightens the first metatarsal and toe to reduce or eliminate the hallux valgus deformity.

### **SUMMARY**

[0005] In various embodiments, a surgical guide is disclosed. The surgical guide includes a body defining a first access port and a second access port. The first access port extends on a first longitudinal axis parallel with a first edge of the body and the second access port extends on a second longitudinal axis positioned non-parallel with respect to each edge of the body. At least one coupling arm extends from the body and defines at least one fixation aperture sized and configured to receive a fixation element through.

[0006] In various embodiments, a system is disclosed. The system includes a surgical guide, at least one fixation element, and a cutting instrument. The surgical guide includes a body defining a first access port and a second access port. The first access port extends on a first longitudinal access parallel with a first edge of the body and the second access port extends on a second longitudinal access positioned non-parallel with respect to each edge of the body. At least one coupling arm extends from the body and defines at least one fixation aperture. The at least one fixation element sized and configured to be received within the at least one fixation aperture. The cutting instrument is sized and configured for insertion through at least one of the first access port and the second access port.

[0007] In various embodiments, a surgical method is disclosed. The method includes a step of coupling a surgical guide to a first bone. The surgical guide includes a body defining a first access port and a second access port. The first access port extends on a first longitudinal access parallel with a first edge of the body and the second access port extends on a second longitudinal access positioned non-parallel with respect to each edge of the body. At least one coupling arm extends from the body and defines at least one fixation aperture. A cutting instrument is inserted through the first access port of the body to debride a joint and the surgical guide is coupled to a second

bone. A cutting instrument is inserted through the second access port of the body to form an osteotomy in the second bone.

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## Description

### BRIEF DESCRIPTION OF THE FIGURES

[0008] The features and advantages of the present invention will be more fully disclosed in, or rendered obvious by the following detailed description of the preferred embodiments, which are to be considered together with the accompanying drawings wherein like numbers refer to like parts and further wherein:

[0009] FIG. 1 illustrates a surgical guide configured for use in an osteotomy or arthrodesis procedure, in accordance with some embodiments.

[0010] FIG. 2 illustrates a side view of the surgical guide of FIG. 1, in accordance with some embodiments.

[0011] FIG. 3 illustrates a surgical guide having a plurality of tapered access ports, in accordance with some embodiments.

[0012] FIG. 4 illustrates a surgical guide having a plurality of tapered access ports in the body and lateral wing, in accordance with some embodiments.

[0013] FIG. 5 is a flowchart illustrating a method of forming an osteotomy in a first bone, in accordance with some embodiments.

[0014] FIG. 6 illustrates the surgical guide of FIG. 1 coupled to a surgical site, in accordance with some embodiments.

[0015] FIG. 7 illustrates a lateral view of the surgical site illustrated in FIG. 6, in accordance with some embodiments.

[0016] FIG. 8 illustrates a cutting instrument inserted through a slot defined in a lateral wing of the surgical guide, in accordance with some embodiments.

[0017] FIG. 9 illustrates a dorsal and plantar (D-P) view of the surgical site having the burr inserted through a first slot defined in the body of the surgical guide, in accordance with some embodiments.

[0018] FIG. 10 illustrates a D-P view of the surgical site after rotation and compression of the second bone, in accordance with some embodiments.

[0019] FIG. 11 illustrates a lateral view of the surgical site having the burr inserted through a second slot defined in the body of the surgical guide to remove a portion of the first bone, in accordance with some embodiments.

[0020] FIG. 12 illustrates a lateral view of the surgical site having a mini-rail device coupled to the first bone and the second bone, in accordance with some embodiments.

[0021] FIG. 13 illustrates the surgical site of FIG. 12 after removal of the surgical guide, in accordance with some embodiments.

### DETAILED DESCRIPTION

[0022] The description of the exemplary embodiments is intended to be read in connection with the accompanying drawings, which are to be considered part of the entire written description. In the description, relative terms such as “lower,” “upper,” “horizontal,” “vertical,” “proximal,” “distal,” “above,” “below,” “up,” “down,” “top” and “bottom,” as well as derivatives thereof (e.g., “horizontally,” “downwardly,” “upwardly,” etc.) should be construed to refer to the orientation as then described or as shown in the drawing under discussion. These relative terms are for convenience of description and do not require that the apparatus be constructed or operated in a particular orientation. Terms concerning attachments, coupling and the like, such as “connected” and “interconnected,” refer to a relationship wherein structures are secured or attached to one another either directly or indirectly through intervening structures, as well as both movable or rigid

attachments or relationships, unless expressly described otherwise.

[0023] As used herein, the term “substantially” denotes elements having a recited relationship (e.g., parallel, perpendicular, aligned, etc.) within acceptable manufacturing tolerances. For example, as used herein, the term “substantially parallel” is used to denote elements that are parallel or that vary from a parallel arrangement within an acceptable margin of error, such as  $\pm 5^\circ$ , although it will be recognized that greater and/or lesser deviations can exist based on manufacturing processes and/or other manufacturing requirements.

[0024] FIG. 1 illustrates a surgical guide **10**, in accordance with some embodiments. The surgical guide **10** is configured for use in a corrective procedure, such as, for example, a Lapidus procedure. The surgical guide **10** is configured to be coupled to one or more bones and guide insertion of one or more cutting instruments to form one or more osteotomies in the one or more bones. A method of using the surgical guide **10** to perform an osteotomy for a Lapidus procedure is described in greater detail with respect to FIGS. 4-12.

[0025] The surgical guide **10** includes a body **12** having a thickness extending between a first side **14a** and a second side **14b**. A perimeter wall **16** extends between the first side **14a** and the second side **14b**. In the illustrated embodiment, the perimeter wall **16** defines a generally rectangular shape having a front wall **18a**, a back wall **18b**, a first side wall **18c**, and a second side wall **18d** (collectively “perimeter walls **18**”). The front wall **18a** and the back wall **18b** are substantially parallel. Similarly, the first side wall **18c** and the second side wall **18d** are substantially parallel and are each substantially perpendicular to the front wall **18a** and the back wall **18b**. Although specific embodiments are illustrated herein, it will be appreciated that the surgical guide can include “left” and “right” versions of the surgical guide, a “universal” version of the surgical guide, surgical guides omitting certain discussed features, and/or surgical guides having different shapes as those illustrated herein. All such variations are within the scope of this disclosure.

[0026] The body **12** defines at least access port **22a**, **22b**, extending from the first side **14a** to the second side **14b**. In the illustrated embodiment, the body includes a first access port **22a** and a second access port **22b**, although it will be appreciated that a greater and/or lesser number of slots may be defined by the body **12**. The first access port **22a** defines a slot extending along a first longitudinal axis **24a** that is generally parallel to the side walls **18c**, **18d** of the body **12** and perpendicular to the front wall **18a** and the back wall **18b**. The second access port **22b** defines a slot extending along a second longitudinal axis **24b** that is set at an angle with respect to each of the walls **18** of the body **12**. For example, in the illustrated embodiment, the second access port **22b** is set at an angle between  $15-75^\circ$  with respect to each of the walls **18**, although it will be appreciated that the first access port **22a** and/or the second access port **22b** may be defined at any suitable angle with respect to any of the walls **18**.

[0027] In some embodiments, each of the access ports **22a**, **22b** are sized and configured to receive a cutting instrument, such as a burr, saw blade, drill bit, etc., therein. The access ports **22a**, **22b** are configured to guide the cutting instrument along a predetermined path when the surgical guide **10** is coupled to one or more bones. For example, as discussed in greater detail below, in some embodiments when the surgical guide **10** is coupled to a first bone and a second bone, the first access port **22a** is configured to guide a cutting instrument to prepare a joint between the first bone and the second bone and the second access port **22b** is configured to guide a cutting instrument to cut the second bone. Although specific embodiments are discussed herein, it will be appreciated that the access ports **22a**, **22b** may be arranged to guide any suitable cutting or other surgical operation.

[0028] In some embodiments, the surgical guide **10** includes a first coupling arm **30a** and a second coupling arm **30b**. The first coupling arm **30a** extends from the first side wall **18c** of the body **12**. Similarly, the second coupling arm **30b** extends from the second side wall **18d** of the body **12**. In the illustrated embodiment, each of the first coupling arm **30a** and the second coupling arm **30b** extend substantially along a longitudinal axis **32** extending substantially perpendicular to the first

side wall **18c** and the second side wall **18d**. Although specific embodiments are illustrated, it will be appreciated that the coupling arms **30a**, **30b** may extend at any suitable angle with respect to the one or more walls **18** of the body **12**.

[0029] Each of the coupling arms **30a**, **30b** include a body **34** extending between a first surface **36a** and a second surface **36b**. Each coupling arm **30a**, **30b** includes a perimeter wall **36**. In the illustrated embodiment, each coupling arm **30a**, **30b** defines a substantially rounded rectangular shape, although it will be appreciated that each coupling arm **30a**, **30b** may have any suitable shape. The coupling arms **30a**, **30b** may be formed integrally with the body **12** and/or may be coupled to the body **12** using any suitable coupling mechanism.

[0030] In some embodiments, each of the coupling arms **30a**, **30b** define a plurality of fixation apertures **38a-38d** (collectively “fixation apertures **38**”) extending from the first surface **36a** to the second surface **36b**. Each of the fixation apertures **38** is sized and configured to receive a fixation element therethrough. For example, in various embodiments, the fixation apertures **38** may be sized and configured to receive a k-wire, fixation wire, olive wire, screw, and/or other fixation element therethrough. In the illustrated embodiment, the fixation apertures **38** are substantially positioned along a single longitudinal line, although it will be appreciated that one or more of the fixation apertures **38** may be staggered with respect to a central longitudinal axis **32** of the coupling arms.

[0031] In some embodiments, a lateral wing **40** extends from the body **12**. In the illustrated embodiment, the lateral wing **40** extends from the back wall **18b** of the body, although it will be appreciated that the lateral wing **40** may extend from any suitable portion of the body **12**, such as, for example, any of the walls **18**. In some embodiments, the lateral wing **40** extends at an angle with respect to the body **12**. For example, in the illustrated embodiment, the lateral wing **40** is substantially perpendicular to the body **12** (e.g., extends at an angle of about 90° with respect to the first surface **14a** of the body **12**). Although specific embodiments are discussed herein, it will be appreciated that the lateral wing **40** can extend at any suitable angle with respect to the body **12**, such as, for example, 15-165°, 30-150°, 45-135°, 60-120°, and/or any other suitable range.

[0032] The lateral wing **40** includes a body **42** extending between a first surface **44a** and a second surface **44b**. The lateral wing **40** includes a perimeter wall **46** defining an outer perimeter of the body **42**. In the illustrated embodiment, the lateral wing **40** includes a substantially rounded rectangular shape, although it will be appreciated that the lateral wing **40** may define any suitable shape.

[0033] In some embodiments, the lateral wing **40** defines an access port **22c** (e.g., a third access port) extending from the first surface **44a** to the second surface **44b** (collectively with the access ports **22a**, **22b** “the access ports **22**”). The access port **22c** generally extends longitudinally along a longitudinal axis **50** and is sized and configured to receive a cutting instrument, such as a burr, saw blade, drill bit, etc., therethrough. The access port **22c** guides the cutting instrument to form one or more cuts in a bone, joint space, and/or other anatomic structure when the surgical guide **10** is coupled to one or more bones. In some embodiments, the access port **22c** is aligned with the access port **22a** formed in the body **12** such that cuts made through the access port **22c** are formed in the same plane as cuts made through the access port **22a**. In some embodiments, the longitudinal axis **24a** and the longitudinal axis **50** define the shared plane.

[0034] In some embodiments, the lateral wing **40** defines one or more fixation apertures **52a-52d** (collectively “fixation apertures **52**”). Each of the fixation apertures **52** are sized and configured to receive a fixation element therethrough, such as, for example, a fixation wire (e.g., k-wire, olive wire, etc.), screw, and/or other suitable fixation element. In some embodiments, each of the fixation apertures **52** define a hole axis extending through the lateral wing **40** that is perpendicular to a hole axis defined by the fixation apertures **38**, although it will be appreciated that one or more of the hole axes can be angled with respect to any one or more of the other hole axes.

[0035] In some embodiments, one or more of the access ports **22** may be replaced with one or more holes, a plurality of slots, and/or other openings allowing access to a surgical site. For example,

FIGS. 3 and 4 (discussed below) disclose embodiments including a tapered slot and an access port configured to provide access to a surgical site. As another example, in some embodiments, one or more of the access ports **22** may be replaced with a plurality of slots. The plurality of slots may be aligned on a common longitudinal axis.

[0036] In some embodiments, a guide element (not shown), such as a guide carriage, may be inserted into one of the access ports **22** prior to insertion of a cutting instrument, such as a burr. The guide element may be configured to limit motion of the cutting instrument in one or more directions (or planes). For example, in some embodiments, a guide carriage may be coupled to one of the access ports **22** to limit out-of-plane motion of a burr during debridement of a joint space and/or during formation of an osteotomy.

[0037] In some embodiments, the surgical guide **10** may include one or more radiolucent sections (or portions) and/or one or more radiopaque sections (or portions). The radiolucent and radiopaque sections are configured to allow imaging of the surgical guide **10** during and/or after positioning and fixation of the surgical guide with respect to at least one bone. For example, in some embodiments, the surgical guide **10** may be positioned adjacent to a first bone and a second bone (e.g., in contact with skin positioned adjacent to the first bone and the second bone). Radioscopic imaging may be performed to verify the position and alignment of the surgical guide **10** prior to insertion of fixation elements to fix the surgical guide **10** in place. As another example, radioscopic imaging may be performed after fixation of the surgical guide **10** but prior to and/or simultaneous with insertion of a cutting instrument to verify positioning and alignment of the surgical guide **10** for use in a cutting operation.

[0038] FIG. 3 illustrates an embodiment of a surgical guide **10a** including tapered slots **60a-60c** defined in the body **12a** and the lateral wing **40a**, in accordance with some embodiments. The surgical guide **10a** is similar to the surgical guide **10** described above in conjunction with FIGS. 1-2, and similar description is not repeated herein. The surgical guide **10a** includes a plurality of tapered access ports **60a-60c** (collectively “tapered access ports **60**”). Each of the tapered access ports **60** defines a tapered surface **62a-62c** extending from a first end **64a** of the tapered access port **60a-60c** to an opening **66a-66c** adjacent to a second end **64b** of the access port **60a-60c**. Each tapered surface **62a-62c** is sized and configured to guide a cutting instrument, such as a burr, saw blade, drill bit, etc., into the opening **66a-66c**. Each of the access ports **60** is sized and configured to allow pivoting of the cutting instrument within at least one plane. In some embodiments, the tapered surface **62a-62c** and the opening **66a-66c** cooperatively define the cutting range of a cutting instrument positioned within the access port **60**.

[0039] FIG. 4 illustrates an embodiment of a surgical guide **10b** without a lateral wing, in accordance with some embodiments. The surgical guide **10b** is similar to the surgical guide **10a** described in conjunction with FIG. 3 and similar description is not repeated herein. The surgical guide **10b** omits the lateral wing **40**, relying solely on the access ports **60a, 60b** defined in the body **12b** to perform one or more cutting operations in a bone coupled to the surgical guide **10b**. In some embodiments, omitting the lateral wing **40** allows the surgical guide **10b** to be positioned using a smaller incision, displacing less internal tissue, and/or allowing additional manipulation of the surgical guide **10b**.

[0040] FIG. 5 is a flowchart illustrating a method **200** of forming an osteotomy using a surgical guide as disclosed and described herein. FIGS. 6-11 illustrate various steps of the method **200** using the surgical guide **10** described in conjunction with FIGS. 1-2. Although FIGS. 6-13 are illustrated using the surgical guide **10**, it will be appreciated that the method **200** of forming an osteotomy may be implemented using any of the surgical guides **10, 10a, 10b** and/or variations of the surgical guides **10, 10a, 10b** described herein. Further, although the method of forming an osteotomy is shown with respect to foot **102**, specifically a first metatarsal **104** and a medial cuneiform **106**, it will be appreciated that the surgical guide **10** may be used to form an osteotomy in any suitable bone or bones. It will further be appreciated that the illustrated surgical guides may be used for

other surgical procedures, such as, for example, a bunion procedure.

[0041] At step **202**, as illustrated in FIGS. **6-7**, a surgical guide **10** is coupled to a surgical site **100** such that the surgical guide **10** extends across a joint between a first bone and a second bone, such as, for example, a first metatarsal **104** and a medial cuneiform **106**. The surgical guide **10** may be positioned such that the first access port **22a** defined in the body **12** and/or the access port **22c** defined in a lateral wing **40** is aligned with a joint **108** between the first metatarsal **104** and the medial cuneiform **106**. The surgical guide **10** may be coupled to at least one of the bones, such as the first metatarsal **104**, using any suitable fixation element. For example, in the illustrated embodiment, the surgical guide **10** is coupled to the first metatarsal **104** by a first k-wire **110a** and a second k-wire **110b**, although it will be appreciated that any suitable fixation element, such as a k-wire, olive wire, screw, nail, etc., may be used. The k-wires **110a**, **110b** are inserted through a respective fixation aperture **34** defined in a first coupling arm **30a** of the surgical guide **10**.

[0042] At step **204**, as illustrated in FIGS. **8-9**, the joint **108** is prepared for formation of an osteotomy by inserting a cutting instrument, such as a burr **112**, through one or more of the access ports **22** formed in the surgical guide **10**. As illustrated in FIG. **8**, the burr **112** is inserted through a first access port **22a** formed in the body **12** of the surgical guide **10** (see FIG. **1**). The burr **112** is inserted into the joint **108** to remove portions of the first metatarsal **104**, the medial cuneiform **106**, and/or tissue within the joint **108**. As illustrated in FIG. **9**, the burr **112** may also be inserted through the access port **22c** formed in the lateral wing **40** to perform additional cutting and/or removal within the joint **108**. In some embodiments, the first access port **22a** and the third access port **22c** are aligned such that cuts formed through either of the access ports **22a**, **22c** are formed in a single plane (e.g., a plane containing the joint **108**).

[0043] The burr **112** may be inserted into a slot, such as access ports **22a** or access port **22c**, and manipulated to form one or more cuts. For example, in the illustrated embodiment, the burr **112** may be laterally translated along a longitudinal axis **24**, **50** of the respective access port **22a**, **22c** and/or pivoted within the respective access port **22a**, **22c** to form respective cuts. In other embodiments, the burr **112** may be limited to a single form of movement. For example, the surgical guide **10a** (as illustrated in FIG. **3**) includes tapered access ports **60** configured to limit movement of a burr **112** during insertion and cutting operations. Although embodiments are discussed herein including burr **112**, it will be appreciated that any suitable cutting instrument may be used to form cuts in the respective bones **104**, **106**.

[0044] At step **206**, as illustrated in FIG. **10**, the first metatarsal **104** is rotated and compressed with respect to the medial cuneiform **106**. The first metatarsal **104** may be rotated manually and/or using a clamp or other device. The first metatarsal **104** is fixed at the rotated alignment using a fixation element, such as a third k-wire **110c**, a fourth k-wire **110d**, and a fifth k-wire **110e**, as illustrated in FIG. **10**. In some embodiments, the third k-wire **110c** and the fourth k-wire **110d** are inserted through respective fixation apertures **34** formed in a second coupling arm **30b** of the surgical guide **10** and the fifth k-wire **110e** is inserted through one of the fixation apertures **52** defined in the lateral wing **40**. The fifth k-wire **110e** (or other fixation element) may be inserted through the first metatarsal **104** and into a third bone, such as, for example, a second metatarsal **114**.

[0045] At step **208**, as illustrated in FIG. **11**, a portion of the medial cuneiform **106** is removed by inserting a cutting instrument, such as the burr **112**, through a second slot **24b** defined in the body **12**. The second slot **24b** is configured to guide the burr **112** on a predetermined path configured to form an osteotomy cut in the medial cuneiform **106**. At step **210**, a bone deformation is corrected and the medial cuneiform **106** is fixed using any suitable mechanism, such as, for example, an osteotomy plate.

[0046] In some embodiments, a mini rail external fixation device may be used in conjunction with a surgical guide **10** to form and/or maintain an osteotomy in one or more bones. As illustrated in FIG. **12**, in some embodiments, a mini rail external fixation device **150** is coupled to the first metatarsal **104** and the medial cuneiform **106** to position and/or maintain the first metatarsal **104** in

a rotated position as established in step **206** of the method **200**. The mini rail external fixation device **150** may be coupled to the first metatarsal **104** and/or the medial cuneiform **106** by one or more fixation elements, such as, for example, a plurality of half-pins **110f-110i**. After coupling, the mini rail external fixation device **150** may be used to adjust, compress, and/or maintain the first metatarsal in a fixed position with respect to the medial cuneiform using one or more methods known in the art. FIG. **13** illustrates the mini rail **150** after removal of the surgical guide **10** from the surgical site **100**.

[0047] Although the subject matter has been described in terms of exemplary embodiments, it is not limited thereto. Rather, the appended claims should be construed broadly, to include other variants and embodiments, which may be made by those skilled in the art.

## Claims

1. A system comprising: a body defining a first access port and a second access port wherein the first access port extends parallel to a first edge of the body and the second access port is positioned in non-parallel relation to the first edge of the body; a coupling arm projecting from the body defining a fixation aperture suitable for receiving a fixation element; a lateral wing projecting from the body substantially perpendicular to the coupling arm and defining an access port and a plurality of fixation apertures defined in spaced relation to one another along the lateral wing; and a bone cutting instrument suitable for insertion through at least one of the first access port and the second access port.
2. The system of claim 1, the surgical guide comprising two lateral wings extending from opposing sides of the body wherein each lateral wing extends substantially perpendicular to the coupling arm.
3. The system of claim 2, wherein each lateral wing defines an access port that is arranged in parallel relation with the first edge.
4. The system of claim 3, wherein the coupling arm comprises a first coupling arm extending from the first edge of the body and a second coupling arm extending from a second edge of the body, and wherein the first edge and the second edge are parallel.
5. The system of claim 4, wherein the body includes at least one radiopaque section.
6. A surgical guide comprising: a body defining a first access port and a second access port wherein the first access port extends parallel to a first edge of the body and the second access port is positioned in non-parallel relation to the first edge of the body; a coupling arm projecting from the body defining a fixation aperture suitable for receiving a fixation element; and a lateral wing projecting from the body substantially perpendicular to the coupling arm and defining a tapered access port and a plurality of fixation apertures defined in spaced relation to one another along the lateral wing.
7. The surgical guide of claim 6, wherein the coupling arm comprises a first coupling arm extending from the first edge of the body and a second coupling arm extending from a second edge of the body, wherein the first edge and the second edge are parallel.
8. The surgical guide of claim 6, wherein the body comprises at least one radiopaque section.
9. A method of forming in osteotomy, comprising: coupling a guide to a first bone, the surgical guide comprising a body defining a first access port and a second access port, wherein the first access port extends parallel to a first edge of the body and the second access port is positioned in non-parallel relation to the first edge of the body, a coupling arm projecting from the body defining a fixation aperture suitable for receiving a fixation element, and a lateral wing projecting from the body substantially perpendicular to the coupling arm and defining an access port and a plurality of fixation apertures defined in spaced relation to one another along the lateral wing; inserting a cutting instrument through the first access port to debride a joint; coupling the guide to a second bone; and inserting a cutting instrument through the second access port to form an osteotomy in the



second bone.

- 10.** The method of claim 9, comprising: inserting a cutting instrument through a third access port defined in a lateral wing coupled to the body of the guide to debride the joint, wherein the lateral wing extends from the body substantially perpendicular to the at least one coupling arm.
  - 11.** The method of claim 9, wherein the first access port and the third access port define a plane that substantially intersects the joint.
  - 12.** The method of claim 9, wherein coupling the guide to the first bone comprises inserting a fixation element through a fixation aperture defined by the lateral wing.
  - 13.** The method of claim 9, comprising radioscopically imaging the guide prior to insertion of the cutting instrument.
  - 14.** The method of claim 9, wherein coupling the guide to the first bone comprises inserting a first fixation element through a first fixation aperture formed in the at least one coupling arm.
  - 15.** The method of claim 14, wherein the coupling arm comprises a first coupling arm extending from the first edge of the body and a second coupling arm extending from a second edge of the body, wherein the first edge and the second edge are parallel with one another, wherein the first fixation apertures is defined by the first coupling arm, and wherein coupling the guide to the second bone comprises inserting a second fixation element through a second fixation aperture formed in the second coupling arm.
  - 16.** The method of claim 9, comprising coupling a mini rail device to the first bone and the second bone.
  - 17.** A guide suitable for directing cutting instruments toward one or more bones associated with a joint comprising: a body defining a first tapered access port and a second tapered access port wherein the first tapered access port extends parallel to a first edge of the body and the second tapered access port is positioned in non-parallel relation to the first edge of the body; a coupling arm projecting from the body defining a fixation aperture suitable for receiving a fixation element; and a lateral wing projecting from the body substantially perpendicular to the coupling arm and defining a tapered access port and a plurality of fixation apertures defined in spaced relation to one another along the lateral wing.
  - 18.** The guide of claim 17, wherein the coupling arm comprises a first coupling arm extending from the first edge of the body and a second coupling arm extending from a second edge of the body, wherein the first edge and the second edge are parallel.
  - 19.** The guide of claim 18, wherein the body comprises at least one radiopaque section.
  - 20.** The guide of claim 17, wherein the coupling arm comprises a first coupling arm extending from the first edge of the body and a second coupling arm extending from a second edge of the body, wherein the first edge and the second edge are parallel and further wherein the body comprises at least one radiopaque section.
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