ORTHOFIX AW-43-9902 Unity Lumbosacral Fixation System Instruction Manual

Contents

ORTHOFIX AW-43-9902 Unity Lumbosacral Fixation System

Description:
The Unity Lumbosacral Fixation System is a supplemental fixation construct that consists of two implantable titanium alloy plates – the Unity LX Lumbar Fixation Plate and the Unity 51 Lumbosacral Fixation Plate – and

screws that are provided non-sterile.

Indications for Use:
The Orthofix Unity 51 Lumbosacral Fixation Plate is indicated for use as an anteriorly placed supplemental fixation device for the lumbosacral (L5-S1) level below the bifurcation of the vascular structures. The Orthofix Unity LX Lumbar Fixation Plate is indicated for use as an anteriorly or anterolaterally placed supplemental fixation device for the lumbar region of the spine above the bifurcation of the vascular structures. When properly used, this system will help provide temporary stabilization until a solid spinal fusion develops. Specific indications include:

1. Degenerative disc disease (defined as back pain of discogenic origin with degenerative disc confirmed by history and radiographic studies).2.
2. Pseudarthrosis.
3. Spondylolysis.
4. Spondylolisthesis.
5. Fracture.
6. Neoplastic disease.
7. Unsuccessful previous fusion surgery.
8. Lordotic deformities of the spine.
9. Idiopathic thoracolumbar or lumbar scoliosis.
10. Deformities (i.e., scoliosis, kyphosis, and/or lordosis) associated with deficient posterior elements such as that resulting from laminectomy, spina bifida, or myelomeningocele.
11. Neuromuscular deformity (i.e., scoliosis, lordosis, and/or kyphosis) associated with pelvic obliquity.

Contraindications:
The Orthofix Unity Lumbosacral Fixation System is contraindicated in patients with a systemic infection, with a local inflammation at the bone site, or with rapidly progressive joint disease or bone absorption syndromes such as Paget's disease, osteopenia, osteoporosis, or osteomyelitis. Do not use this system in patients with known or suspected metal allergies. Use of the system is also contraindicated in patients with any other medical, surgical or psychological condition that would preclude potential benefits of internal fixation surgery such as the presence of tumors, congenital abnormalities, elevation of sedimentation rate unexplained by other disease, elevation of white blood cells or a marked shift in white blood cell differential count.

Potential Adverse Events:
All of the possible adverse events associated with spinal fusion surgery without instrumentation are possible. With instrumentation, a listing of possible adverse events includes, but is not limited to:

1. Early or late loosening of any or all of the components.
2. Disassembly, bending, and/or breakage of any or all of the components.
3. Foreign body (allergic) reaction to implants, debris, corrosion products and graft material, including metallosis, straining, tumor formation, and/or auto-immune disease.
4. Pressure on the skin from component parts in patients with inadequate tissue coverage over the implant possibly causing skin penetration, irritation, and/or pain.
5. Post-operative change in spinal curvature, loss of correction, height, and/or reduction.
6. Infection.
7. Vertebral body fracture at, above, or below the level of surgery.
8. Loss of neurological function, including paralysis (complete or incomplete).
9. Non-union, delayed union.
10. Pain, discomfort, or abnormal sensations due to the presence of the device.

11. Hemorrhage.
12. Cessation of any potential growth of the operated portion of the spine.
13. Death.

Note: Additional surgery may be necessary to correct some of these anticipated adverse events.

Warnings and Precautions:

1. Single use only. Reuse of devices labeled as single-use (e.g. implants, drills, tacks, trial rods) could result in injury or reoperation due to breakage or infection.
2. The Unity Lumbosacral Fixation System is not approved for screw attachment or fixation to the posterior elements (pedicles) of the cervical, thoracic, or lumbar spine.
3. Non-sterile; the plates, screws and instruments are sold non-sterile, and therefore, must be sterilized before each use.
4. When using the plate anteriorly, always orient the plate along the midline of the spine.
5. To optimize bony union, perform an anterior microdiscectomy or corpectomy as indicated.
6. To facilitate fusion, a sufficient quantity of autologous bone or other appropriate material should be used.
7. Excessive torque applied to the screws when seating the plate may strip the threads in the bone.
8. Failure to achieve arthrodesis will result in eventual loosening and failure of the device construct.
9. All implants are intended for SINGLE USE ONLY. Any used implant should be discarded. Even though the device may appear undamaged, it may have small defects and internal stress patterns that may lead to fatigue failure.
10. When choosing a metallic implant system, the physician/surgeon should consider factors such as: levels of implantation, patient weight, patient activity level, and other patient-specific conditions which may impact the performance of the system as it relates to fatigue of the implants.
11. Do not re-sterilize single-use implants that come in contact with body fluids.

MRI SAFETY INFORMATION
Non-clinical testing and electromagnetic/thermal simulations were performed to evaluate the entire family of implants from the Orthofix Plate Systems. An implant from the Plate System is MR Conditional. A patient with an implant or implants from the Plate System may be safely scanned under the following conditions. Failure to follow these conditions may result in injury to the patient.

MR CONDITIONAL

- PARAMETER CONDITION
- NOMINAL VALUES OF STATIC MAGNETIC FIELD (T) 1.5-T AND 3-T
- MAXIMUM SPATIAL FIELD GRADIENT (T/M AND GAUSS/CM) 30-T/M (3,000-GAUSS/CM)
- TYPE OF RF EXCITATION CIRCULARLY POLARIZED (CP)
- TRANSMIT RF COIL INFORMATION VOLUME BODY TRANSMIT RF COIL
- OPERATING MODE OF MR SYSTEM NORMAL OPERATING MODE
- MAXIMUM WHOLE BODY AVERAGED SAR: 2-W/KG (NORMAL OPERATING MODE)
- LIMITS ON SCAN DURATION: Whole body averaged SAR of 2-W/kg for 60 minutes of continuous RF exposure.
- MR IMAGE ARTIFACT: THE PRESENCE OF THIS IMPLANT PRODUCES AN IMAGING ARTIFACT

APPROXIMATELY 4 MM FROM THIS DEVICE. THEREFORE, CAREFULLY SELECT PULSE SEQUENCE PARAMETERS TO MINIMIZE ARTIFACTS IF THE IMPLANT IS LOCATED IN THE AREA OF INTEREST.

Cleaning:
Unity Lumbosacral Fixation System instruments and implants are provided clean but not sterile. Once an implant comes in contact with any human tissue or bodily fluid it should not be re-sterilized or used. Please discard all contaminated implants.

All instruments must be thoroughly cleaned after each use. Cleaning may be done using validated hospital methods or following the validated cleaning processes described below.

None of the instruments in the system require disassembly prior to cleaning

From Point of Use:
Whenever possible, do not allow blood, debris or body fluids to dry on instruments. For best results and to prolong the life of the surgical instrument reprocess immediately after use.

1. Remove excess body fluids and tissue from instruments with a disposable, non-shedding wipe. Place instruments in a basin of purified water or in a tray covered with damp towels. Do not allow saline, blood, body fluids, tissue, bone fragments or other organic debris to dry on instruments prior to cleaning.
2. For optimal results, instruments should be cleaned within 30 minutes of use or after removal from solution to minimize the potential for drying prior to cleaning.
3. Used instruments must be transported to the central supply in closed or covered containers to prevent unnecessary contamination risk.

Note: Soaking in proteolytic enzymatic detergents or other pre-cleaning solutions facilitates cleaning, especially in instruments with complex features and hard-to-reach areas (e.g. cannulated and tubular designs, etc.). These enzymatic detergents as well as enzymatic foam sprays break down protein matter and prevent blood and protein based materials from drying on instruments. Manufacturer's instructions for preparation and use of these solutions should
be explicitly followed.

Preparation for Cleaning:

1. All instruments with moving parts (e.g., knobs, triggers, hinges) should be placed in the open position to allow access of the cleaning fluid to areas that are difficult to clean.
2. Soak the instruments for a minimum of 10 minutes in purified water prior to the manual or automated cleaning process.
3. Use a soft cloth or a soft plastic bristle brush to remove any visible soil from the instruments prior to manual or automated cleaning. Use a soft plastic bristle brush or a pipe cleaner to remove soil from any inner lumens. You can also use a syringe (if appropriate) for hard to reach areas.
4. Enzymatic detergent should be used for manual and automated cleaning. All enzymatic detergents should be prepared at the use dilution and temperature recommended by the manufacturer. Softened tap water may be used to prepare the enzymatic detergents. Use of recommended temperatures is important for optimal performance of enzymatic detergent.

Manual Cleaning:

1. Completely submerge instruments in an enzymatic detergent and allow to soak for 20 minutes. Use a soft-bristled, nylon brush to gently scrub the device until all visible soil has been removed. Particular attention must be given to crevices, lumens, mated surfaces, connectors and other hard-to-clean areas. Lumens should be cleaned with a long, narrow, soft-bristled brush (i.e. pipe cleaner brush).
2. Remove the instruments from the enzymatic detergent and rinse in tap water for a minimum of 3 minutes. Thoroughly and aggressively flush lumens, holes and other difficult to reach areas.
3. Place prepared cleaning solution in a sonication unit. Completely submerge device in cleaning solution and sonicate for 10 minutes.
4. Rinse instrument in purified water for at least 3 minutes or until there is no sign of blood or soil on the device or in the rinse stream. Thoroughly and aggressively flush lumens, holes and other difficult to reach areas.
5. Repeat the sonication and rinse steps above.
6. Remove excess moisture from the instrument with a clean, absorbent and non-shedding wipe.
7. Inspect the instruments for visible soil.
8. If visible soil is noted, repeat the steps listed above.

Automated Cleaning:

1. Completely submerge the instruments in an enzymatic detergent and allow to soak and sonicate for 10 minutes each. Use a soft nylon bristled brush to gently scrub the device until all visible soil has been removed. Particular attention must be given to crevices, lumens, mated surfaces, connectors and other hard to clean areas. Lumens should be cleaned with a long, narrow, soft nylon bristled brush (i.e. pipe cleaner). Use of a syringe or water jet will improve flushing of difficult to reach areas and closely mated surfaces.
2. Remove instruments from the cleaning solution and rinse in purified water for a minimum of 1 minute. Thoroughly and aggressively flush lumens, blind holes and other difficult to reach areas.
3. Place instruments in a suitable washer/disinfector basket and process through a standard instrument washer/disinfector cleaning cycle.
4. Orient instruments into the automated washer's carriers as recommended by the washer manufacturer.
5. The following minimum parameters are essential for thorough cleaning.
    - 2 minute prewash with cold tap water
    - 1 minute prewash with hot tap water
    - 2 minute detergent wash with hot tap water (64-66°C/146-150°F)
    - 1 minute hot tap water rinse
    - 2 minute thermal rinse with purified water (80-93°C/176-200°F)
    - 1 minute purified water rinse (64-66°C/146-150°F)
    - 7 to 30 minute hot air dry (116°C/240°F)
6. Inspect the instruments for visible soil.
7. If visible soil is noted, repeat the above listed steps until no visible soil is noted.

Note: Certain cleaning solutions such as those containing caustic soda, formalin, glutaraldehyde, bleach, and/or other alkaline cleaners may damage instruments. These solutions should not be used.
Note: Visually inspect instruments after cleaning and prior to each use. Discard or return to Orthofix any instruments that are broken, discolored, corroded, have cracked components, pits, gouges, or are otherwise found defective. Do not use defective instruments.

Instrument Use:

- Never use torque limiting drivers in the counter-clockwise (CCW) direction to loosen a fastener
- Only use torque limiting handle as intended per the operative technique
- Never impact on torque limiting handles or use as an impacting device on other devices
- Never use a torque limiting handle as a prying tool

Torque Limiting Instrument Maintenance:

- If a torque-limiting handle has been dropped, impacted or used incorrectly, return to Orthofix.
- Torque-limiting handles require maintenance at minimum, every three years or per your service agreement. Please return your torque limiting handles to Orthofix for required maintenance.

Instrument End of Life Determination:
Do not reuse Single Use instruments. Visually inspect the reusable instruments to determine if the instrument has reached end of life. Orthofix reusable instruments have reached End of Life when:

1. Instruments show signs of damage such as binding, bending, breakage, overt signs of wear and/or any other conditions which may impact the devices safe and effective use.
2. Instruments intended for cutting bone and/or tissue (e.g. tap, rasp, curette, rongeur) – when any of the cutting surfaces show signs of wear such as nicks, abrasions or otherwise dulled cutting surfaces.
3. Instruments that interface with other devices (e.g. implants, instruments, handles) – when the mating feature binds, fails to attach or fails to hold the device securely. The instrument function should be verified prior to each use.
4. Do not use instruments which reached End of Life. Discard End of Life instruments per your hospital procedure or return to Orthofix for disposal.

Sterilization:
The Unity Lumbosacral Fixation System should be sterilized by the hospital using the recommended cycle:

Method: Steam

- Cycle: Gravity
- Cycle: Prevac
- Temperature: 250°F (121°C
- Temperature: 270°F (132°C)
- Exposure time: 30 minutes
- Exposure time: 8 minutes

Physician Information:

Patient Selection:
Patient selection is an extremely important factor in the success of implant procedures. It is important that the candidates be carefully screened and the optimal therapy selected.

Preoperative:

1. Carefully screen the patient, choosing only those that fit the indications described above.

2. Care should be exercised in the handling and storage of the implant components. The implants should not be scratched or otherwise damaged. Store away from corrosive environments.
3. An adequate inventory of implants should be available at surgery of the sizes expected to be used.
4. All components and instruments should be cleaned and sterilized prior to each use. Additional sterile components should be available in case of an unexpected need.

Intraoperative:

1. Instructions should be carefully followed.
2. Extreme caution should be used around the spinal cord and nerve roots.
3. The implant surface should not be scratched or notched since such actions may reduce the functional strength of the construct.
4. Bone grafts must be placed in the area to be fused such that the graft fits snugly against the upper and lower vertebral bodies.
5. Bone cement should not be used as it will make removal of the components difficult or impossible.
6. Before closing soft tissue, check each screw to make sure that none have loosened.

Postoperative:

1. Detailed instructions should be given to the patient regarding care and limitations, if any.
2. To achieve maximum results, the patient should not be exposed to excessive mechanical vibrations. The patient should not smoke or consume alcohol during the healing process.
3. The patient should be advised of their limitations and taught to compensate for this permanent physical restriction in body motion.
4. If a non-union develops or if the components loosen, the devices should be revised or removed before serious injury occurs. Failure to immobilize the non-union, or a delay in such, will result in excessive and repeated stresses on the implant. It is important that immobilization of the spinal segment be maintained until fusion has occurred.
5. The implants are temporary internal fixation devices. Internal fixation devices are designed to stabilize the spine during the normal healing process. After the spine is fused, the devices serve no functional purpose and should be removed.

Patient Information:
The temporary internal fixation devices used in your recent spinal surgery are metallic implants that attach to the bone and aid in the healing of bone grafts. These implants have been shown to be valuable aids to surgeons in the treatment of bony fusions. These devices do not have the capabilities of living bone. Intact living bone is self-repairing, flexible and occasionally breaks and/or degrades. The anatomy of the human body places a size limitation on any artificial fixation device used in surgery. The maximum size limitation increases the chances of the mechanical complications of loosening, bending, or breaking of the devices. Any of these complications could result in the need for additional surgery. Accordingly, it is very important that you follow the recommendations of your physician. Use braces as instructed. By following these instructions, you can increase your chances of a successful result and reduce your risk of injury and/or additional surgery.

Packaging:
Packages for each of the components should be intact upon receipt. If a consignment system is used, all sets should be carefully checked for completeness and all components should be carefully checked for damage prior to use. Damaged packages or products should not be used and should be returned to Orthofix.

The Unity Lumbosacral Fixation System instruments and implants are provided in modular cases specifically intended to contain and organize the system's components. The system's instruments are organized into trays within each modular case for easy retrieval during surgery. These trays also provide protection to the system components during shipping. Additionally, individual instruments and implants are provided in sealed poly bags with individual product labels.

Product Complaints:
Any Healthcare Professional (e.g., customer or user of this system of products) who has any complaints or who has experienced any dissatisfaction in the product quality, identity, durability, reliability, safety, effectiveness and/or performance, should notify Orthofix Inc., 3451 Plano Parkway, Lewisville, TX 75056, USA, by telephone at 1-214-937-3199 or 1-888-298-5700 or by e-mail at **complaints@orthofix.com**.

Further Information:
A recommended operative technique for the use of this system is available upon request from Orthofix at the phone numbers provided above.

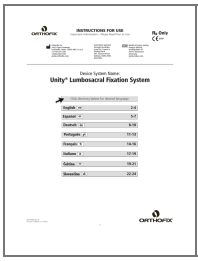
Latex Information:
The implants, instruments and/or packaging material for the Unity Lumbosacral Fixation System are not formulated with and do not contain natural rubber. The term "natural rubber" includes natural rubber latex, dry natural rubber, and synthetic latex or synthetic rubber that contains natural rubber in its formulation.

Caution: Federal law (USA) restricts these devices to sale by or on the order of a physician.

RX ONLY.
Federal (U.S.A.) law restricts this device to sale by or on the order of a physician

- See Instructions for Use
- **Orthofix.com/IFU**
- Single Use Only Do Not Reuse
- Catalogue Number
- Provided Non-Sterile Serial
- Manufacturer
- Serial Number
- Authorized Representative
- Lot Number

Documents / Resources

	**ORTHOFIX AW-43-9902 Unity Lumbosacral Fixation System** [pdf] Instruction Manual AW-43-9902, Unity Lumbosacral Fixation System, AW-43-9902 Unity Lumbosacral Fixation System, Lumbosacral Fixation System, Fixation System

References

- **EU Authorized Representative Services For Medical Devices**
- **Medical Devices & Solutions - Orthofix**