

MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF

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MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF HAS LONG BEEN REGARDED AS A CORNERSTONE REFERENCE FOR ORTHOPEDIC SURGEONS WORLDWIDE. DEVELOPED THROUGH METICULOUS RESEARCH AND CLINICAL EXPERIENCE, THIS MANUAL OFFERS DETAILED GUIDANCE ON THE PRINCIPLES AND PRACTICES OF INTERNAL FIXATION—A SURGICAL METHOD ESSENTIAL IN TREATING FRACTURES TO RESTORE BONE ANATOMY AND FUNCTION. WHETHER YOU ARE A SEASONED SURGEON OR A TRAINEE IN ORTHOPEDIC SURGERY, UNDERSTANDING THE NUANCES OF THIS MANUAL CAN SIGNIFICANTLY ENHANCE PATIENT OUTCOMES AND SURGICAL PRECISION.

THE ORIGINS AND SIGNIFICANCE OF THE AO GROUP AND ASIF MANUAL

THE AO FOUNDATION, INITIALLY KNOWN AS THE ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION (ASIF), WAS FOUNDED IN SWITZERLAND IN THE MID-20TH CENTURY. ITS MISSION WAS CLEAR: TO IMPROVE THE CARE OF PATIENTS WITH MUSCULOSKELETAL INJURIES THROUGH EDUCATION, RESEARCH, AND THE DEVELOPMENT OF INNOVATIVE FIXATION TECHNIQUES. THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF EMBODIES THIS MISSION BY PROVIDING STANDARDIZED PROTOCOLS AND TECHNICAL DETAILS NEEDED FOR EFFECTIVE FRACTURE MANAGEMENT.

THIS MANUAL IS MORE THAN JUST A TEXTBOOK; IT IS A COMPREHENSIVE GUIDE THAT BRIDGES THEORY AND PRACTICE. IT INTRODUCES SURGEONS TO THE BIOMECHANICAL PRINCIPLES BEHIND INTERNAL FIXATION, HIGHLIGHTS THE IMPORTANCE OF BIOLOGICAL CONSIDERATIONS DURING SURGERY, AND OFFERS STEP-BY-STEP SURGICAL TECHNIQUES TO OPTIMIZE HEALING. BECAUSE OF ITS EVIDENCE-BASED APPROACH, THIS MANUAL HAS SET INTERNATIONAL STANDARDS AND IS FREQUENTLY UPDATED TO INCORPORATE ADVANCES IN ORTHOPEDIC TRAUMA CARE.

CORE PRINCIPLES OF THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF

WHEN DIVING INTO THE MANUAL, ONE QUICKLY REALIZES THAT IT REVOLVES AROUND SEVERAL CORE PRINCIPLES THAT ARE ESSENTIAL FOR SUCCESSFUL INTERNAL FIXATION:

1. ANATOMICAL REDUCTION

ACHIEVING PRECISE ANATOMICAL REDUCTION OF THE FRACTURE IS FUNDAMENTAL. THE MANUAL EMPHASIZES THAT RESTORING THE BONE'S ORIGINAL ALIGNMENT IS CRUCIAL TO REGAIN FUNCTION AND PREVENT COMPLICATIONS SUCH AS MALUNION OR JOINT DYSFUNCTION.

2. STABLE FIXATION

THE AO/ASIF SYSTEM ADVOCATES FOR STABLE FIXATION THAT ALLOWS EARLY MOBILIZATION. THIS PRINCIPLE REDUCES THE RISK OF JOINT STIFFNESS AND MUSCLE ATROPHY AND PROMOTES BIOLOGICAL HEALING.

3. PRESERVATION OF BLOOD SUPPLY

ONE OF THE UNIQUE ASPECTS OF THE AO MANUAL IS ITS FOCUS ON MINIMIZING SOFT TISSUE DAMAGE DURING SURGERY. PRESERVING THE PERIOSTEAL AND ENDOSTEAL BLOOD SUPPLY IS CRITICAL FOR FRACTURE HEALING AND REDUCES INFECTION RISK.

4. EARLY MOBILIZATION

ENCOURAGING EARLY FUNCTIONAL USE OF THE INJURED LIMB IS A HALLMARK OF THE AO PHILOSOPHY. STABILITY PROVIDED BY INTERNAL FIXATION ENABLES PATIENTS TO BEGIN REHABILITATION SOONER, WHICH CONTRIBUTES TO BETTER LONG-TERM OUTCOMES.

TECHNIQUES AND FIXATION DEVICES HIGHLIGHTED IN THE MANUAL

THE MANUAL DETAILS VARIOUS FIXATION TECHNIQUES AND THE APPROPRIATE USAGE OF IMPLANTS TAILORED TO DIFFERENT TYPES OF FRACTURES. UNDERSTANDING THESE OPTIONS HELPS SURGEONS SELECT THE BEST APPROACH FOR EACH PATIENT.

PLATE AND SCREW FIXATION

THIS IS PERHAPS THE MOST WIDELY RECOGNIZED INTERNAL FIXATION TECHNIQUE DETAILED IN THE MANUAL. IT INCLUDES:

- **COMPRESSION PLATING:** DESIGNED TO PRESS FRACTURE FRAGMENTS TOGETHER TO STIMULATE HEALING.
- **NEUTRALIZATION PLATING:** PROTECTS THE FRACTURE FROM MECHANICAL STRESSES WITHOUT COMPRESSING FRAGMENTS.
- **BUTTRESS PLATING:** SUPPORTS BONE FRAGMENTS TO RESIST AXIAL FORCES, ESPECIALLY IN METAPHYSEAL FRACTURES.

EACH PLATING TECHNIQUE IS EXPLAINED WITH SURGICAL STEPS, IMPLANT SELECTION, AND BIOMECHANICAL RATIONALE.

INTRAMEDULLARY NAILING

THE MANUAL ALSO COVERS INTRAMEDULLARY FIXATION, WHERE RODS ARE INSERTED INTO THE MARROW CANAL OF LONG BONES. THIS METHOD IS ESPECIALLY EFFECTIVE FOR DIAPHYSEAL FRACTURES OF THE FEMUR AND TIBIA DUE TO ITS MINIMALLY INVASIVE NATURE AND LOAD-SHARING CAPABILITIES.

EXTERNAL FIXATION

ALTHOUGH PRIMARILY FOCUSED ON INTERNAL FIXATION, THE AO MANUAL ACKNOWLEDGES THE ROLE OF EXTERNAL FIXATORS IN MANAGING COMPLEX, OPEN, OR INFECTED FRACTURES. IT PROVIDES GUIDANCE ON WHEN TO USE EXTERNAL FIXATION VERSUS INTERNAL METHODS.

BIOMECHANICAL AND BIOLOGICAL CONSIDERATIONS EXPLAINED

A DISTINGUISHING FEATURE OF THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF IS ITS COMPREHENSIVE TREATMENT OF BIOMECHANICAL AND BIOLOGICAL FACTORS INFLUENCING FRACTURE HEALING.

BIOMECHANICAL STABILITY

THE MANUAL EXPLAINS HOW DIFFERENT FIXATION DEVICES AFFECT THE MECHANICAL ENVIRONMENT OF THE FRACTURE SITE. CONCEPTS LIKE ABSOLUTE STABILITY (LEADING TO DIRECT BONE HEALING) AND RELATIVE STABILITY (WHICH ALLOWS CALLUS FORMATION) ARE CLEARLY ELUCIDATED. SURGEONS LEARN TO CHOOSE FIXATION METHODS BASED ON THE FRACTURE TYPE AND DESIRED HEALING PATTERN.

BIOLOGICAL ENVIRONMENT

BEYOND HARDWARE, THE MANUAL STRESSES THE IMPORTANCE OF RESPECTING THE BIOLOGICAL MILIEU. IT ADVISES CAREFUL SOFT TISSUE HANDLING, MINIMAL PERIOSTEAL STRIPPING, AND PRESERVATION OF HEMATOMA TO FOSTER NATURAL HEALING PROCESSES.

PRACTICAL SURGICAL TIPS AND TECHNIQUES

THE MANUAL IS KNOWN FOR ITS PRACTICAL, SURGEON-FRIENDLY ADVICE. SOME TIPS INCLUDE:

- **PREOPERATIVE PLANNING:** DETAILED IMAGING AND TEMPLATING ENSURE CORRECT IMPLANT SIZE AND POSITIONING.
- **MINIMALLY INVASIVE APPROACHES:** WHENEVER POSSIBLE, THE MANUAL ENCOURAGES TECHNIQUES THAT REDUCE SURGICAL TRAUMA.
- **STEPWISE REDUCTION TECHNIQUES:** USING CLAMPS, WIRES, AND TEMPORARY FIXATION DEVICES TO ACHIEVE OPTIMAL ALIGNMENT BEFORE DEFINITIVE FIXATION.
- **POSTOPERATIVE CARE:** GUIDELINES ON WEIGHT-BEARING, REHABILITATION PROTOCOLS, AND MONITORING FOR COMPLICATIONS.

THESE INSIGHTS MAKE IT EASIER FOR SURGEONS TO APPLY THE MANUAL'S PRINCIPLES IN DIVERSE CLINICAL SCENARIOS.

THE ROLE OF EDUCATION AND TRAINING IN AO/ASIF TECHNIQUES

THE AO GROUP IS NOT JUST A PUBLISHER OF MANUALS BUT ALSO A LEADER IN EDUCATION AND TRAINING. SURGEONS WORLDWIDE ATTEND AO COURSES THAT PROVIDE HANDS-ON EXPERIENCE WITH INTERNAL FIXATION TECHNIQUES DESCRIBED IN THE MANUAL. THIS EMPHASIS ON PRACTICAL LEARNING ENSURES THAT THE PRINCIPLES OF THE MANUAL ARE EFFECTIVELY TRANSLATED INTO SURGICAL EXCELLENCE.

SIMULATION AND WORKSHOPS

WORKSHOPS INVOLVING BONE MODELS, CADAVERIC DISSECTIONS, AND VIRTUAL SIMULATIONS COMPLEMENT THE MANUAL'S THEORETICAL KNOWLEDGE. THESE OPPORTUNITIES ALLOW SURGEONS TO MASTER COMPLEX PROCEDURES LIKE FRACTURE REDUCTION AND IMPLANT PLACEMENT UNDER EXPERT SUPERVISION.

CONTINUOUS UPDATES AND RESEARCH

THE AO FOUNDATION CONTINUOUSLY UPDATES ITS MANUAL AND GUIDELINES BASED ON NEW RESEARCH FINDINGS AND TECHNOLOGICAL ADVANCEMENTS. THIS DYNAMIC APPROACH KEEPS SURGEONS EQUIPPED WITH THE LATEST INNOVATIONS IN ORTHOPEDIC TRAUMA CARE.

IMPACT ON GLOBAL ORTHOPEDIC PRACTICE

THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF HAS HAD A PROFOUND INFLUENCE ON GLOBAL ORTHOPEDIC STANDARDS. ITS SYSTEMATIC APPROACH TO FRACTURE CARE HAS IMPROVED SURGICAL OUTCOMES, REDUCED COMPLICATIONS, AND FOSTERED A CULTURE OF EVIDENCE-BASED PRACTICE. HOSPITALS AND TRAUMA CENTERS AROUND THE WORLD RELY ON THIS MANUAL AS A GO-TO RESOURCE FOR MANAGING COMPLEX FRACTURES.

THE AO/ASIF METHODS HAVE ALSO INSPIRED THE DEVELOPMENT OF A WIDE RANGE OF IMPLANTS AND INSTRUMENTS, MANY OF WHICH ARE DESIGNED IN COLLABORATION WITH THE FOUNDATION. THIS SYNERGY BETWEEN CLINICAL EXPERTISE AND MEDICAL DEVICE INNOVATION CONTINUES TO ELEVATE PATIENT CARE.

FOR ANYONE INVOLVED IN ORTHOPEDIC TRAUMA SURGERY, MASTERING THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF IS A CRITICAL STEP TOWARD DELIVERING HIGH-QUALITY CARE. ITS CLEAR PRINCIPLES, PRACTICAL TECHNIQUES, AND EMPHASIS ON BIOLOGICAL AND MECHANICAL HARMONY PROVIDE A ROADMAP FOR SUCCESSFUL FRACTURE MANAGEMENT IN TODAY'S COMPLEX CLINICAL ENVIRONMENT.

FREQUENTLY ASKED QUESTIONS

WHAT IS THE 'MANUAL OF INTERNAL FIXATION' BY THE AO GROUP?

THE 'MANUAL OF INTERNAL FIXATION' IS A COMPREHENSIVE GUIDE PUBLISHED BY THE AO GROUP, A SWISS ASSOCIATION FOCUSED ON THE STUDY AND ADVANCEMENT OF INTERNAL FIXATION TECHNIQUES FOR BONE FRACTURES. IT PROVIDES DETAILED INSTRUCTIONS ON SURGICAL PROCEDURES, IMPLANT SELECTION, AND FIXATION METHODS TO ENSURE OPTIMAL FRACTURE HEALING.

WHO DEVELOPED THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP?

THE TECHNIQUE AND MANUAL WERE DEVELOPED BY THE AO FOUNDATION, A SWISS-BASED ORGANIZATION SPECIALIZING IN ORTHOPEDIC TRAUMA CARE. THE AO GROUP CONSISTS OF EXPERT SURGEONS AND RESEARCHERS DEDICATED TO IMPROVING FRACTURE TREATMENT THROUGH STANDARDIZED INTERNAL FIXATION METHODS.

WHAT ARE THE KEY PRINCIPLES EMPHASIZED IN THE AO GROUP'S MANUAL OF INTERNAL FIXATION?

THE MANUAL EMPHASIZES PRINCIPLES SUCH AS ANATOMICAL REDUCTION, STABLE FIXATION, PRESERVATION OF BLOOD SUPPLY, AND EARLY MOBILIZATION. THESE PRINCIPLES AIM TO PROMOTE OPTIMAL BONE HEALING AND FUNCTIONAL RECOVERY FOLLOWING FRACTURE SURGERY.

HOW DOES THE AO MANUAL OF INTERNAL FIXATION CONTRIBUTE TO SURGICAL EDUCATION?

THE MANUAL SERVES AS AN ESSENTIAL EDUCATIONAL RESOURCE FOR ORTHOPEDIC SURGEONS WORLDWIDE, OFFERING STEP-BY-STEP SURGICAL TECHNIQUES, ILLUSTRATIONS, AND GUIDELINES. IT HELPS STANDARDIZE INTERNAL FIXATION PROCEDURES AND IMPROVES SURGICAL OUTCOMES THROUGH EVIDENCE-BASED RECOMMENDATIONS.

WHAT TYPES OF FRACTURES ARE ADDRESSED IN THE AO GROUP'S MANUAL OF INTERNAL FIXATION?

THE MANUAL COVERS A WIDE RANGE OF FRACTURES INCLUDING LONG BONE FRACTURES (SUCH AS FEMUR, TIBIA, HUMERUS), PERIARTICULAR FRACTURES, PELVIC FRACTURES, AND COMPLEX MULTI-FRAGMENTARY FRACTURES. IT PROVIDES TAILORED FIXATION TECHNIQUES SUITABLE FOR DIFFERENT FRACTURE PATTERNS AND ANATOMICAL LOCATIONS.

HOW HAS THE AO GROUP'S MANUAL OF INTERNAL FIXATION INFLUENCED MODERN ORTHOPEDIC TRAUMA CARE?

THE AO MANUAL HAS SIGNIFICANTLY INFLUENCED MODERN ORTHOPEDIC TRAUMA CARE BY ESTABLISHING STANDARDIZED PROTOCOLS FOR INTERNAL FIXATION. ITS TECHNIQUES HAVE IMPROVED FRACTURE HEALING RATES, REDUCED COMPLICATIONS, AND ENHANCED PATIENT OUTCOMES GLOBALLY, MAKING IT A CORNERSTONE REFERENCE IN ORTHOPEDIC SURGERY.

ADDITIONAL RESOURCES

****MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF: AN IN-DEPTH REVIEW****

MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF SERVES AS A CORNERSTONE REFERENCE FOR ORTHOPEDIC SURGEONS WORLDWIDE. THIS AUTHORITATIVE MANUAL METICULOUSLY OUTLINES STANDARDIZED PROTOCOLS FOR INTERNAL FIXATION, A SURGICAL METHOD CRITICAL IN THE STABILIZATION AND HEALING OF BONE FRACTURES. DEVELOPED BY THE AO GROUP, A SWISS-BASED ORGANIZATION RENOWNED FOR PIONEERING ADVANCES IN TRAUMA AND ORTHOPEDIC SURGERY, THE MANUAL REFLECTS DECADES OF CLINICAL RESEARCH, INNOVATION, AND GLOBAL COLLABORATION. ITS INFLUENCE EXTENDS BEYOND SURGICAL THEATRES, SHAPING TRAINING CURRICULA AND GUIDING EVIDENCE-BASED PRACTICES INTERNATIONALLY.

THE AO GROUP, ORIGINALLY KNOWN AS THE ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION (ASIF), EMERGED IN THE MID-20TH CENTURY WITH THE MISSION TO ENHANCE FRACTURE TREATMENT OUTCOMES THROUGH REFINED INTERNAL FIXATION TECHNIQUES. THE MANUAL IN QUESTION EMBODIES THE ORGANIZATION'S PHILOSOPHY, PROMOTING BIOMECHANICALLY SOUND PRINCIPLES, PRECISION IN APPLICATION, AND PATIENT-CENTERED CARE. GIVEN THE INCREASING COMPLEXITY OF ORTHOPEDIC TRAUMA CASES AND EVOLVING IMPLANT TECHNOLOGY, A COMPREHENSIVE UNDERSTANDING OF THIS MANUAL REMAINS INDISPENSABLE FOR SURGEONS, RESIDENTS, AND ALLIED HEALTH PROFESSIONALS.

HISTORICAL CONTEXT AND EVOLUTION OF THE MANUAL

THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF TRACES ITS ORIGINS TO THE 1950S WHEN TRADITIONAL FRACTURE MANAGEMENT RELIED HEAVILY ON CONSERVATIVE METHODS LIKE CASTING AND TRACTION. RECOGNIZING LIMITATIONS SUCH AS PROLONGED IMMOBILIZATION AND SUBOPTIMAL FUNCTIONAL RECOVERY, THE AO GROUP INITIATED RESEARCH INTO RIGID INTERNAL FIXATION METHODS. THIS LED TO THE DEVELOPMENT OF SURGICAL TOOLS, IMPLANTS, AND STANDARDIZED TECHNIQUES THAT THE MANUAL SYSTEMATICALLY DOCUMENTS.

OVER THE DECADES, THE MANUAL HAS UNDERGONE NUMEROUS REVISIONS TO INCORPORATE ADVANCES IN BIOMATERIALS, IMPLANT DESIGN, AND MINIMALLY INVASIVE SURGICAL APPROACHES. EARLY EDITIONS EMPHASIZED PLATE AND SCREW FIXATION, WHILE CONTEMPORARY VERSIONS INTEGRATE LOCKING PLATES, INTRAMEDULLARY NAILS, AND HYBRID FIXATION STRATEGIES. THE ITERATIVE UPDATES ENSURE THAT THE MANUAL REMAINS ALIGNED WITH CURRENT SCIENTIFIC EVIDENCE AND TECHNOLOGICAL PROGRESS.

CORE PRINCIPLES EMPHASIZED IN THE MANUAL

AT THE HEART OF THE MANUAL LIE FUNDAMENTAL BIOMECHANICAL AND BIOLOGICAL PRINCIPLES THAT UNDERPIN SUCCESSFUL

FRACTURE HEALING THROUGH INTERNAL FIXATION:

- **ANATOMIC REDUCTION:** ACHIEVING PRECISE REALIGNMENT OF FRACTURE FRAGMENTS TO RESTORE NORMAL BONE ANATOMY.
- **STABLE FIXATION:** USING IMPLANTS TO PROVIDE MECHANICAL STABILITY THAT PERMITS EARLY MOBILIZATION WITHOUT COMPROMISING HEALING.
- **PRESERVATION OF BLOOD SUPPLY:** MINIMIZING SOFT TISSUE DISRUPTION TO MAINTAIN VASCULARITY CRUCIAL FOR BONE REGENERATION.
- **EARLY MOBILIZATION:** ENCOURAGING FUNCTIONAL RECOVERY THROUGH CONTROLLED MOVEMENT POST-SURGERY.

THESE PRINCIPLES ARE INTERWOVEN THROUGHOUT THE MANUAL'S SURGICAL TECHNIQUES, IMPLANT SELECTION GUIDANCE, AND POST-OPERATIVE PROTOCOLS.

TECHNICAL CONTENT AND SURGICAL GUIDANCE

THE MANUAL OFFERS A COMPREHENSIVE FRAMEWORK FOR THE MANAGEMENT OF FRACTURES ACROSS VARIOUS ANATOMICAL REGIONS, INCLUDING THE UPPER AND LOWER EXTREMITIES, PELVIS, AND SPINE. IT COMBINES DETAILED DESCRIPTIONS, STEP-BY-STEP PROCEDURAL INSTRUCTIONS, ILLUSTRATIVE DIAGRAMS, AND CLINICAL PEARLS THAT ENHANCE UNDERSTANDING AND REPRODUCIBILITY.

IMPLANT SELECTION AND BIOMECHANICS

ONE OF THE MANUAL'S STRENGTHS LIES IN ITS RIGOROUS APPROACH TO IMPLANT SELECTION BASED ON FRACTURE TYPE, LOCATION, AND PATIENT FACTORS. THE AO GROUP CLASSIFIES FRACTURES ACCORDING TO MORPHOLOGICAL PATTERNS AND STABILITY CRITERIA, GUIDING SURGEONS IN CHOOSING BETWEEN COMPRESSION PLATES, LOCKING PLATES, DYNAMIC COMPRESSION SCREWS, OR INTRAMEDULLARY NAILS.

BIOMECHANICAL CONSIDERATIONS ARE EXTENSIVELY ADDRESSED, HIGHLIGHTING LOAD-SHARING VERSUS LOAD-BEARING CONSTRUCTS, THE ROLE OF SCREW CONFIGURATION, AND THE IMPORTANCE OF IMPLANT POSITIONING. FOR EXAMPLE, IN COMMINUTED FRACTURES WHERE DIRECT COMPRESSION IS UNFEASIBLE, BRIDGING TECHNIQUES USING LOCKING PLATES ARE RECOMMENDED TO MAINTAIN LENGTH AND ALIGNMENT WHILE PRESERVING BIOLOGY.

MINIMALLY INVASIVE AND MODERN TECHNIQUES

RESPONDING TO THE TREND TOWARDS MINIMALLY INVASIVE SURGERY (MIS), THE MANUAL INCORPORATES TECHNIQUES SUCH AS PERCUTANEOUS PLATE OSTEOSYNTHESIS AND LIMITED OPEN REDUCTION. THESE METHODS AIM TO REDUCE SOFT TISSUE TRAUMA AND INFECTION RISK, ACCELERATING RECOVERY. THE MANUAL DETAILS INSTRUMENTATION SPECIALIZED FOR MIS, INCLUDING TARGETING DEVICES AND SPECIFIC SCREW TYPES COMPATIBLE WITH LESS INVASIVE APPROACHES.

FURTHERMORE, THE MANUAL DISCUSSES ADJUNCT TECHNOLOGIES LIKE COMPUTER-ASSISTED SURGERY AND INTRAOPERATIVE IMAGING, HIGHLIGHTING THEIR ROLES IN IMPROVING ACCURACY AND REDUCING RADIATION EXPOSURE.

EDUCATIONAL IMPACT AND GLOBAL ADOPTION

THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF IS MORE THAN A SURGICAL GUIDE; IT IS A FOUNDATIONAL EDUCATIONAL RESOURCE. THE AO GROUP'S GLOBAL TRAINING COURSES, WORKSHOPS, AND CERTIFICATION PROGRAMS RELY HEAVILY ON THIS MANUAL. ITS STRUCTURED CONTENT ENABLES STANDARDIZED TEACHING ACROSS DIFFERENT HEALTHCARE SYSTEMS, CONTRIBUTING TO THE HOMOGENIZATION OF FRACTURE CARE STANDARDS WORLDWIDE.

INSTITUTIONS AND ORTHOPEDIC RESIDENCY PROGRAMS CITE THE MANUAL AS A PRIMARY REFERENCE, AND ITS METHODOLOGIES ARE OFTEN INCORPORATED INTO NATIONAL AND INTERNATIONAL GUIDELINES. THIS WIDESPREAD ACCEPTANCE UNDERSCORES THE MANUAL'S ROLE IN ELEVATING THE QUALITY OF TRAUMA CARE, ESPECIALLY IN COMPLEX CASES WHERE MULTIDISCIPLINARY DECISION-MAKING IS REQUIRED.

COMPARATIVE PERSPECTIVES WITH OTHER FIXATION MANUALS

WHILE OTHER ORTHOPEDIC TEXTS AND MANUALS EXIST, THE AO GROUP'S MANUAL DISTINGUISHES ITSELF THROUGH ITS EVIDENCE-BASED APPROACH AND CONTINUOUS UPDATES. COMPARED TO EARLIER FRACTURE MANAGEMENT LITERATURE, IT OFFERS A MORE PRAGMATIC, CLINICALLY APPLICABLE FRAMEWORK. ITS INTEGRATION OF BIOMECHANICAL PRINCIPLES WITH SURGICAL TECHNIQUES PROVIDES A BALANCED PERSPECTIVE THAT IS SOMETIMES LACKING IN PURELY THEORETICAL TEXTS.

MOREOVER, THE MANUAL'S EMPHASIS ON SOFT TISSUE PRESERVATION AND BIOLOGICAL HEALING MECHANISMS SETS IT APART FROM EARLIER FIXATION PHILOSOPHIES THAT PRIORITIZED RIGID MECHANICAL STABILITY OFTEN AT THE EXPENSE OF VASCULAR INTEGRITY. THIS HOLISTIC APPROACH HAS BEEN VALIDATED BY NUMEROUS CLINICAL STUDIES DEMONSTRATING IMPROVED OUTCOMES.

ADVANTAGES AND CONSIDERATIONS IN CLINICAL PRACTICE

SURGEONS ADOPTING THE MANUAL'S RECOMMENDED TECHNIQUES BENEFIT FROM:

- **REDUCED COMPLICATION RATES:** STANDARDIZED PROTOCOLS LEAD TO FEWER MALUNIONS, INFECTIONS, AND IMPLANT FAILURES.
- **ENHANCED FUNCTIONAL RECOVERY:** EMPHASIS ON EARLY MOBILIZATION IMPROVES PATIENT QUALITY OF LIFE AND DECREASES HOSPITALIZATION TIME.
- **VERSATILITY:** APPLICABLE TO A WIDE RANGE OF FRACTURE TYPES AND PATIENT DEMOGRAPHICS.

HOWEVER, CHALLENGES REMAIN. THE RELIANCE ON SPECIALIZED IMPLANTS AND INSTRUMENTATION CAN INCUR HIGHER COSTS AND REQUIRE INSTITUTIONAL INVESTMENT. ADDITIONALLY, THE MANUAL'S DETAILED TECHNICAL REQUIREMENTS NECESSITATE ADEQUATE SURGEON TRAINING AND EXPERIENCE TO AVOID SUBOPTIMAL OUTCOMES. IN RESOURCE-LIMITED SETTINGS, ADAPTATION OF THE PRINCIPLES RATHER THAN DIRECT APPLICATION MAY BE NECESSARY.

FUTURE DIRECTIONS AND ONGOING DEVELOPMENTS

THE AO GROUP CONTINUES TO INNOVATE, WITH THE MANUAL EVOLVING TO INCLUDE EMERGING TECHNOLOGIES SUCH AS BIOACTIVE IMPLANTS, AUGMENTED REALITY-ASSISTED SURGERY, AND PATIENT-SPECIFIC FIXATION DEVICES. RESEARCH INTO BIOLOGICS AND BONE REGENERATION TECHNIQUES IS ALSO INFLUENCING FUTURE EDITIONS.

THE MANUAL'S ADAPTABILITY TO INCORPORATE SUCH ADVANCEMENTS ENSURES ITS ENDURING RELEVANCE. ITS ROLE AS A LIVING DOCUMENT REFLECTS THE DYNAMIC NATURE OF ORTHOPEDIC TRAUMA CARE, WHERE CONTINUOUS LEARNING AND IMPROVEMENT ARE PARAMOUNT.

IN SUMMARY, THE MANUAL OF INTERNAL FIXATION TECHNIQUE RECOMMENDED BY THE AO GROUP SWISS ASSOCIATION FOR THE STUDY OF INTERNAL FIXATION ASIF REMAINS A PIVOTAL RESOURCE IN ORTHOPEDIC SURGERY. ITS COMPREHENSIVE, BIOMECHANICALLY GROUNDED, AND BIOLOGICALLY SENSITIVE APPROACH OFFERS SURGEONS A RELIABLE FRAMEWORK TO OPTIMIZE FRACTURE MANAGEMENT. AS THE FIELD PROGRESSES, THE MANUAL'S ONGOING REFINEMENT PROMISES TO SUSTAIN ITS STATUS AS A GLOBAL GOLD STANDARD IN INTERNAL FIXATION TECHNIQUES.

Manual Of Internal Fixation Technique Recommended By The Ao Group Swiss Association For The Study Of Internal Fixation Asif

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Manual of INTERNAL FIXATION Martin Allgöwer, Maurice E. Müller, Robert Schneider, Hans Willenegger, 2013-03-09 The Manual of INTERNAL FIXATION is well known internationally as a standard work for every specialist dealing with osteosynthesis. Due to the many changes that have taken place, an international faculty of orthopaedic surgeons and traumatologists completely revised and expanded the manual. In its third edition the manual reflects the state of the art and is the necessary reference for every AO specialist.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Manual of Internal Fixation M. E. Müller, M. Allgöwer, H. Willenegger, 2012-12-06 The German edition of our book entitled Operative Frakturen behandlung by M. E. MÜLLER, M. ALLGÖWER and H. WILLENEGGER (Springer, Berlin . Göttingen . Heidelberg, 1963) has been out of print now for more than three years. We are planning a new edition which will deal with the collective experience of 14,000 new cases, all treated by internal fixation, and will include the newest developments in the field of internal fixation. However, it will be some time before this new edition can be published. Increasing demands for a description of the AO technique of internal fixation has stimulated us to publish this manual. In it we shall describe in a comprehensive but somewhat apodictic manner the principles and techniques of the AO methods of fracture treatment and reconstructive surgery, which in our hands, have stood the test of time. The book is written in a somewhat abbreviated style. It corresponds in subject matter to the teaching given at the AO courses in Davos, but deals with each subject more thoroughly. We have dispensed with pictures of the instruments, as these may be found in the Synthes Catalogue *. This manual should be regarded as the product of collective experience, containing new thoughts and new discoveries from basic research. In considering the risks of mistakes and dangers, we can only reiterate what we have already stated in Technique of Internal Fixation of Fractures: Open treatment of fractures is a valuable but difficult method which involves much responsibility.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Osteoarthritis of the Hip R. Bombelli, 2012-12-06 Osteoarthritis of the hip is one of the most incapacitating diseases of the locomotor system and in the last forty years it has been a source of continuous interest to research workers and to the general public. In spite of numerous studies, however, the pathogenesis of the disease is still uncertain, and in particular the aetiology of primary osteoarthritis is unknown. Over the last 10 years the treatment of osteoarthritis by joint replacement has become steadily more widespread, and the operations of osteotomy and arthrodesis have gone more and more out of favour. On the other hand, hip replacement is certainly not indicated in young adults, especially those engaged in sport, because of the twin dangers of late infection and of loosening. Professor BOMBELLI has been a friend of Professor PAUWELS for 13 years. At first he accepted both Professor PAUWELS' theory

and technique and with these he has had remarkable clinical successes leading to regeneration of the hip. On the other hand, Professor BOMBELLI has also had failures.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Manual of Internal Fixation M. E. Müller, M. Allgöwer, H. Willenegger, 2012-02-29 The German edition of our book entitled Operative Frakturen behandlung by M. E. MÜLLER, M. ALLGÖWER and H. WILLENEGGER (Springer, Berlin . Göttingen . Heidelberg, 1963) has been out of print now for more than three years. We are planning a new edition which will deal with the collective experience of 14,000 new cases, all treated by internal fixation, and will include the newest developments in the field of internal fixation. However, it will be some time before this new edition can be published. Increasing demands for a description of the AO technique of internal fixation has stimulated us to publish this manual. In it we shall describe in a comprehensive but somewhat apodictic manner the principles and techniques of the AO methods of fracture treatment and reconstructive surgery, which in our hands, have stood the test of time. The book is written in a somewhat abbreviated style. It corresponds in subject matter to the teaching given at the AO courses in Davos, but deals with each subject more thoroughly. We have dispensed with pictures of the instruments, as these may be found in the Synthes Catalogue *. This manual should be regarded as the product of collective experience, containing new thoughts and new discoveries from basic research. In considering the risks of mistakes and dangers, we can only reiterate what we have already stated in Technique of Internal Fixation of Fractures: Open treatment of fractures is a valuable but difficult method which involves much responsibility.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Manual of Internal Fixation in the Cranio-Facial Skeleton Joachim Prein, 2012-12-06 This manual provides comprehensive information on the surgical techniques in internal fixation of fractures, in restoring tumour defects, and osteotomies in the craniofacial skeleton. Through detailed and instructive drawings together with clinical situations shown on x-rays it offers important guidelines for the surgeon in the operating room. The techniques are based on the general principles developed and continuously refined by the AO/ASIF group. This manual constitutes the written guideline of the surgical techniques as taught in the AO/ASIF courses and workshops throughout the world.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: *Current Concepts of External Fixation of Fractures* Elvira Stahl, Hans K. Uhthoff, 2012-12-06 External fixation is now being used widely to maintain fractures, osteotomies, and arthrodeses in a desired position during consolidation. Whereas external fixation has been readily accepted in European countries, its use has weathered a rather stormy course in North America, especially in the treatment of fractures. Only recently has external fixation found its rightful place on this continent as well. Many different models are on the market today, and the practitioner is faced with a difficult decision in selecting a model. Should he buy a system where the fracture has to be reduced first, or should he work with a device permitting a reduction after insertion of the pins? To enable surgeons to study the different systems, to discuss their advantages and disadvantages, and to permit them to put their hands on these devices and inspect them personally, the Division of Orthopedic Surgery, University of Ottawa organized an applied basic science course in May 1981, External Fixation of Fractures. During this course, all major systems were presented to the participants. As happened during the course Internal Fixation of Fractures held two years ago, the rigidity of internal fixation was frequently and intensively debated. Whereas the rigidity of internal fixation cannot be altered during the course of healing, the rigidity of external fixation can be changed. In fact, with progression of union, rods of increasing elasticity can be used.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: **Manual of Internal Fixation: Technique Recommended by the Ao-group, Swiss Association for the Study of Internal Fixation: Asif** M. E. Muller, 1970

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for the study of internal fixation asif: *Manual of Internal Fixation in Small Animals* Wade O. Brinker, Marvin L. Olmstead, Geoffrey Sumner-Smith, W.Dieter Prieur, 2013-12-20 This second revised and enlarged edition addresses current techniques concerned with the implementation of the AO/ASIF System in small animal orthopaedic surgery. Surgeons who have used the system over the years have now considerable knowledge and experience which they have made available in this text. The same individuals have designed and modified special implants which are now available to the Small Animal Orthopaedic Surgeon. Sections have been added or modified concerned with severe trauma, implant removal and a system for recording fracture type and treatment. The book will serve to inform the experienced surgeon of the current situation, and at the same time it is still a basic text for the newcomer to veterinary small animal orthopaedics in general and the AO/ASIF system in particular.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Low Friction Arthroplasty of the Hip J. Charnley, 2012-12-06 The theme of this work is the application of the engineering theory of frictional torque to total hip replacement. The author adhered tenaciously to this theory, involving the use of a small-diameter femoral head, throughout the epoch when the large-diameter, metal-to-metal design dominated the field. During that considerable period general satisfaction with the early results rendered criticisms of the large-diameter head unwelcome. There was a formidable array of counter criticism: the small head would pierce a film of synovial fluid; the small head would wear the socket too rapidly; the small head would always have a high risk of dislocation; detachment of the trochanter, to achieve precise orientation for the small head, was unacceptable. But all these objections have now been largely overcome. Lubrication of high molecular weight polyethylene (HMWP) on metal is now accepted as being mainly by the boundary regime with thick fluid films playing no part. We now know that HMWP can indeed tolerate the very high stresses imposed by the small head and in tribological theory there may even be some advantage in high stress. Dislocation is now known not to be an automatic sequel to the small head.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: *Minimally Invasive Plate Osteosynthesis* Suthorn Bavonratanavech, Reto Babst, Chang-Wug Oh, 2023-01-11 A practical hands-on manual for surgeons of all levels, the Minimally Invasive Plate Osteosynthesis, Third Edition is a crucial guide to managing fractures using the minimally invasive plate osteosynthesis technique. Expanding on the foundations set by the previous editions, this new issue will be of substantial value to any surgeon, boosting excellent fracture healing and functional outcomes, while minimizing complications. The minimally invasive surgical techniques are presented in a systematic, case-based format covering fractures of the upper and lower extremity and pelvic/acetabular injuries. This new third edition provides step-by-step coverage on managing a broad spectrum of injuries from acute fractures to nonunion/malunion. While a single case can be approached through various methods, this new book seeks to impart fundamental guidelines and indications for applying minimally invasive procedures. New third edition focuses on: General principles in minimally invasive plate osteosynthesis Clinical and radiographic evaluation Decision-making and options Preoperative planning Surgical approaches Tips and pitfalls to avoid complications Postoperative rehabilitation Key features include: Contributions from 68 expert surgeons from 14 countries More than 50 cases on a comprehensive range of fractures More than 487 high-quality illustrations and 2647 images www.aotrauma.org

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: *Operative Treatment of Elbow Injuries* Champ L. Jr. Baker, Kevin D. Plancher, 2006-06-01 Operative Treatment of Elbow Injuries is a complete presentation of all surgical approaches to repair of the elbow, demonstrating the most effective management of elbow injuries and problems. Drs. Plancher and Baker have assembled a group of well-known experts to write on the various procedures. Each contributor for each chapter discusses clinical anatomy, physical exam, nonoperative treatment, indications, contraindications, operative

techniques and preferred author technique, results and expectations, and complications. Unique features are a separate section on sports medicine, overuse syndromes, arthroscopy of the elbow, soft tissue injuries, compression syndromes and the hot new techniques of distraction arthroplasty, and distraction devices for contracture release. With over 450 illustrations, half in full color, this volume will be extremely useful to the orthopaedic surgeon and the sports medicine specialist.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Handbook of Orthopaedic Trauma Implantology Arindam

Banerjee, Peter Biberthaler, Saseendar Shanmugasundaram, 2023-10-31 This reference work comprehensively covers essential orthopedic trauma implants and their application in both upper and lower limbs. It offers insights into the invention, advantages, and disadvantages of various implants, along with the rationale behind their current designs, biomechanics, and materials. Additionally, the book addresses fracture fixation and general considerations when comparing different subgroups of implants, such as nails versus plates or ORIF versus external fixation. The book is divided into several sections, such as upper and lower limbs, spine, and pelvis. It also includes unique sections dedicated to pediatric implants, implant removal, metallurgy and bone grafts. It is written and edited by experienced surgeons from around the world. This book fills the gap as currently, there are no specific reference books on this topic but only operative manuals and inventory lists of various commercial companies detailing their own products. This highly informative and meticulously presented book serves as both a practical and a theoretical guide for practicing orthopedic surgeons, scientists/researchers, academicians, students as well as orthopedic technicians and nurses.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Manual of Internal Fixation in the Horse G. E.

Fackelman, D. M. Nunamaker, 2012-12-06 It is with pleasure that we offer these introductory remarks for the Manual of Internal Fixation in the Horse, a book describing a further application of AO or ASIF techniques. The letters A-O stand for the Arbeitsgemeinschaft fUr Osteosynthesefragen and have been translated into the Association for the Study of Internal Fixation. The organization is truly a study group, created in Switzerland, that met for the first time in 1958. The major goal was to establish a task of fracture treatment by force committed to the improvement osteosynthesis. The group's motivation arose out of the then prevailing unsound or inconsistently successful attempts at fracture treatment. According to statistics obtained from the Swiss National Health Insurance Program at the time, the so-called conservative treatment of fractures had resulted in a high rate of persistent morbidity. The problems encountered included: irreparable damage due to long-term immobilization; delayed union or pseudoarthrosis; malalignment; and, inadequate reduction of intraarticular fractures with resultant osteoarthritis. Accurate, stable osteosynthesis seemed the only practical way to address those various shortcomings. However, many of the osteosyntheses performed at that time had led to new problems, since most were not stable and, in some cases, actually worked to prevent healing.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Internal Fixation of Small Fractures Urs Heim, Karl M.

Pfeiffer, 2012-12-06 The second English-language edition of the Small Fragment Set Manual was enthusiastically received and quickly went into a second printing. In preparing a third edition, we found it necessary to revise the text extensively and partly restructure it. The reasons for this are numerous. Experience of recent years has brought technical refinements in the operative treatment of many types of small fracture. Many of these changes stem from the small-fragment-set training programs conducted in Switzerland since 1980, and also from courses and symposia that have been held in other European countries and the United States. These events were occasions for a fruitful exchange of experience with surgeons who were critical of our methods. As a result of this exchange, we perceived a need both to revise our indications and to give greater attention to alternative techniques. We also felt it necessary to respond to criticisms of the first two editions concerning the catalog-like instrument lists and illustrations, and the attention given to fundamental

techniques. Many surgeons who work or would like to work with small implants, especially those practicing abroad, are inexperienced in operations on the larger bones. It is imperative that these colleagues be given a basic introduction to the biomechanical thinking of the Swiss Association for the Study of Internal Fixation (ASIF).

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Surgery of the Spine R. Louis, 2012-12-06 In this comprehensive and original monograph, Professor Rene Louis presents in minute detail in one volume the gross anatomy, nerve supply, biomechanics, and microcirculation of the spine. He also presents the surgical approaches to the vertebral bodies and their contents. Professor Louis is a great anatomist and this book has been prepared from his personal observations, both anatomical and surgical. His studies have been meticulously conducted and contain much original research, for instance his work on the motion of the neural elements within the lumbar vertebral canal. The illustrations are nearly all original and very often a photograph of the neural or vascular elements is presented alongside a drawing of a given important anatomical area. For all these reasons, this inspiring treatise makes a valuable contribution to our knowledge of the spine and forms a basis for an understanding of the intricacies of surgical anatomy and approaches. It will be especially valuable to the spinal surgeon, but the medical student, the orthopedic resident (or registrar), and the anatomist will also find it extremely useful. Leon L. Wiltse, M.D.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Osteoarthritis of the Hip Renato Bombelli, 2012-12-06 In the first edition, published in 1976, Professor BOMBELLI demonstrated a clear alternative to total hip replacement that is also useful in cases of advanced osteoarthritis. Since then the number of osteotomies performed has reached 2500, which together with the longer follow-up of the original cases means that the author has significantly more experience with his new techniques. He has refined his previous concepts of the pathogenesis and treatment of osteoarthritis, and with the benefit of his experience has further clarified the indications and contra-indications of valgus-extension and varus osteotomy. Valgus-extension osteotomy has been proven to be particularly effective in cases with well-formed osteophytes and elliptical femoral heads. On the other hand, the indication for varus osteotomy has mostly been restricted to cases in which the femoral head is spherical. The role of CHIARI and SALTER pelvic osteotomies in those cases in which the coverage of the femoral head is insufficient is not neglected. Osteotomy is capable of complementing and accelerating the healing process, particularly in young patients in whom hip function is still well preserved and in whom there is early radiological evidence of spontaneous, osteophyte-dependent repair. Whenever feasible, pre-existing or anticipated leg length inequalities are adjusted intra-operatively, but when this is technically impossible a postoperative lift may be required.

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: A Comparative Study of Fracture Healing in the Canine Femur Following Fixation by Several Different Methods Carl Gordon Grant, 1971

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: Manual of Internal Fixation Martin Allgöwer, Maurice Edmond Müller, Hans Willenegger, 1970

manual of internal fixation technique recommended by the ao group swiss association for the study of internal fixation asif: AO/ASIF Instrumentation F. Sequin, R. Texhammar, 2012-12-06 During their 20 years of activity members of the Association for the Study of Internal Fixation (AO - ASIF) have made authoritative contributions to the development of internal and external fixation. The close collaboration of surgeons, basic researchers, metallurgists, engineers and the establishment of clinical documentation has made it possible to achieve a solid scientific basis for internal fixation. Clear definitions for the standardization of different types of osteosynthesis were possible: interfragmentary compression, splintage and buttressing as well as combinations of these three techniques. At the same time a scientific and workmanlike instrumentation was developed. The idea was to keep diversification within limits but, however, to

assemble a comprehensive collection of implants and instruments to answer all the problems presented by the complexity of bone operations. Osteosynthesis is a difficult and demanding operative method. Its claims on the surgeon and the theatre staff are high. Therefore plans have existed for a long time to supplement the Manual of Internal Fixation with a detailed description of the AO Instrumentation, its use and maintenance. Our collaborator FRIDOLIN SEQUIN, graduate engineer, has accomplished this task with expert knowledge. He has organized over many years courses for theatre nurses and has been able from the resulting experience to provide helpful suggestions. When RIGMOR TEXHAMMAR R. N. joined AO-International four years ago, it was natural to include her as a co-author.

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