



NUNA Humeral Nail *Technical Data Sheet*

Claw Technology

Dunitech leads innovational systems, and aims to supply options for the surgeons to excel at their expertise. Claws are a novelty solution on distal locking systems designed to support the orthopedic trauma community.

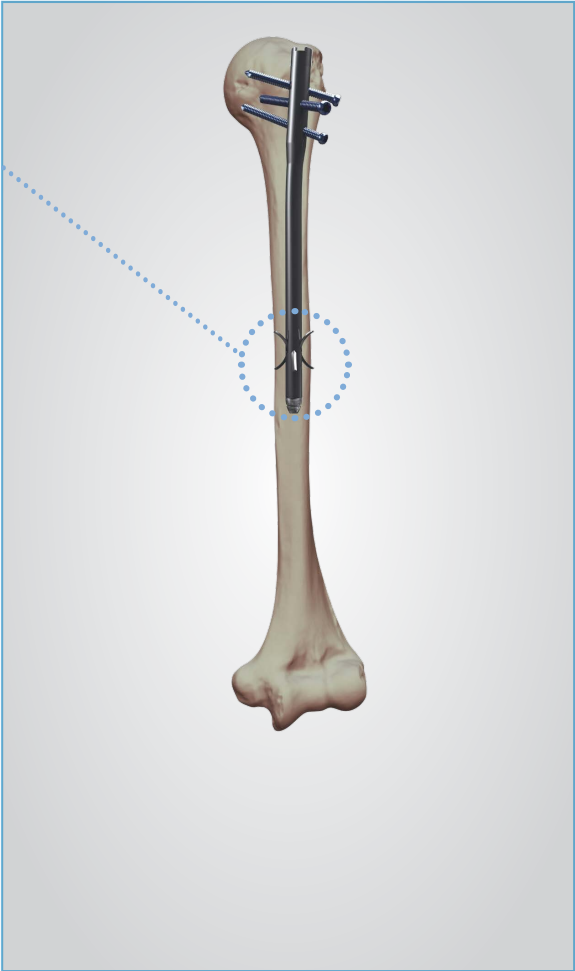
Claws are titanium pins that act as anchors to provide a stable fixation, as well as other superior operative parameters.

- ✓ *Claws are made from titanium, and mechanically deploy from within the nail.*
- ✓ *Claws penetrate through the cancellous bone, and anchor in the cortical bone.*

We focus on operative parameters that are vital for the success of the fracture treatment.

Dunitech's innovative devices allow healthcare professionals to reduce surgical time as well as the risk of pre- and postoperative complications.

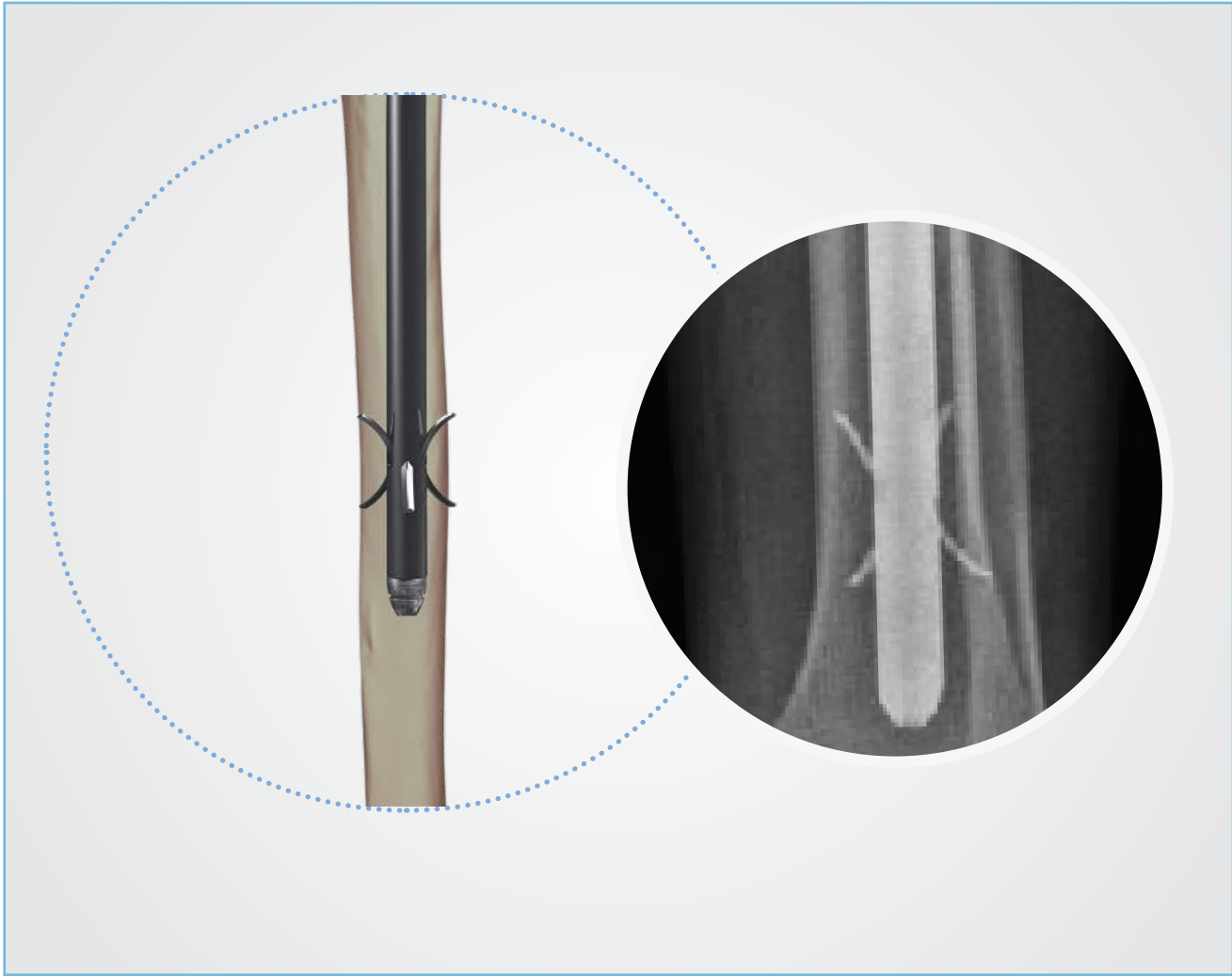
By eliminating the distal incisions, the Claws significantly reduce the radiation exposure and blood loss.



- ✓ *Increased stability*
- ✓ *Shorter operative time*
- ✓ *Lower radiation exposure*
- ✓ *Fewer incisions*
- ✓ *Easy revision*
- ✓ *No free-hand locking*
- ✓ *Less bone removal*

Get Better Stability!

Six retractable Claws are designed to penetrate the cortex, and provide exceptional axial and rotational stability.



Less Radiation Exposure

Claws significantly reduce the radiation exposure of the team in the operating room by avoiding the need of targeting the distal hole, reaming and inserting a screw for distal locking.^{1,2}

Fewer Incisions

The nail is anchored by the Claws deployed from within the medullary canal. By avoiding extra incision, there will be fewer surgical scars, lower blood loss and shorter operative time while lowering the risk of infection.²

1. Çamurcu Y, Sofu H, Issin A, Koçkara N, Genç E, Çetinkaya M. Is talon tibial intramedullary nailing clinically superior compared to conventional locked nailing? Eklem Hastalık Cerrahisi. 2017 Dec;28(3):152-7.
2. Zehir S, Şahin E, Zehir R. Comparison of clinical outcomes with three different intramedullary nailing devices in the treatment of unstable trochanteric fractures. Ulus Travma Acil Cerrahi Derg 2015, Vol. 21, No. 6.

Nuna Humerus Nail Indications

INDICATIONS

- Diaphyseal fractures of the humeral shaft
- Proximal humeral fractures with diaphyseal extension
- Impending pathologic fractures

CONTRAINDICATIONS

- Active local infection
- Material sensitivity
- Loss of bone stock/insufficient bone quality to support the device

The following conditions may present an increased risk of implant failure. This list is not meant to be comprehensive. Physicians should use their clinical judgement when determining the appropriate implant and approach for a given patient.

- Infection
- Incomplete fusion of the epiphysis
- Cognitive and/or physical impairment that would lead to unacceptable risk of fixation failure
- Metal sensitivity or allergic reaction to foreign bodies
- Loss of bone stock or insufficient bone quality to support the device
- Obliterated or narrow medullary canal
- Obese patients
- In the same region as a pre-implanted screw plate
- In comminuted and/or intraarticular fractures
- In open fractures with inadequate soft tissue cover and/or with associated arterial injury

PRECAUTIONS

Nuna Humerus Nail and accessories were not evaluated for safety and compatibility in the magnetic resonance (MR) environment and no tests for heating or migration were conducted for those products in MR environment.



Nuna Humerus Nail Specifications

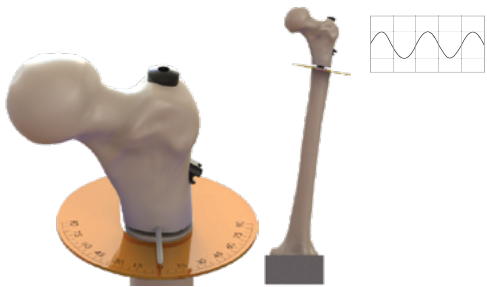
Material	Ti6Al4V ELI
Manufacturing Process	Machined from stock Material
Packaging	Double Package
Sterilization	Ethylene Oxide
Shelf Life	5 Years

Claws in Action

Claws are reliably retractable!

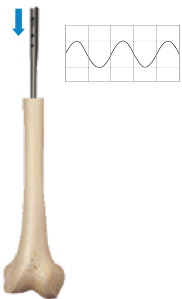
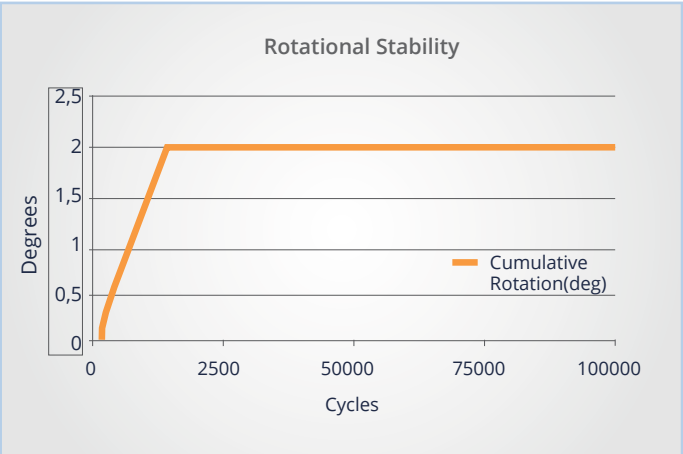
All Claws were **successfully retracted** after every test.

Conventional systems are subjected to screw breakage, screw head wear and drill bit breakage that may prevent the nail to be removed. Dunitech Claws are deployed within the nails from precise holes in a tight fit, preventing empty spaces for bone ingrowth.



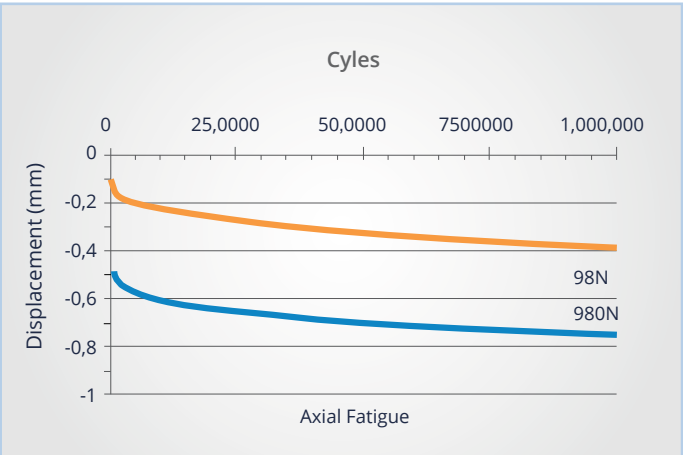
Rotational Stability

In unstable subtrochanteric fractures Claws provide superior rotational stability. After 10,000 cycles, the nail settled in and remained fixed until 100,000 cycles.



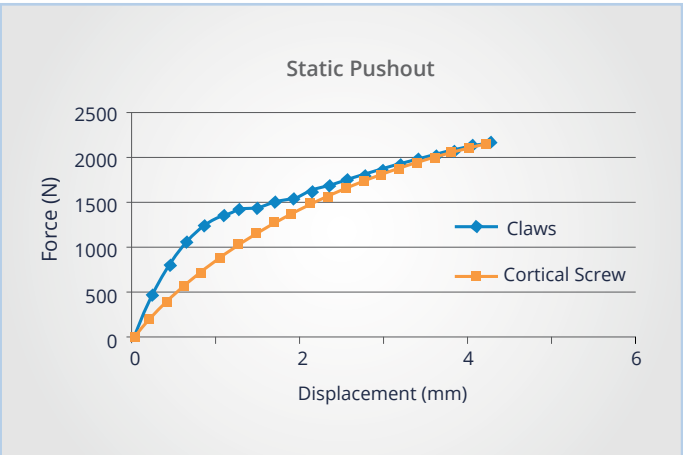
Claw's Axial Fatigue Strength

The average displacement observed at 1 million cycles was 0.74 mm.



Claw's Axial Static Strength

Claws resists to a higher force for a given displacement, compared to conventional stainless steel screws.



Nuna Humerus Nail Specifications

NITE KEY FIGURES

- Nail Length: 165 mm to 315 mm in 15 mm increment
- Proximal Diameter: 10 mm
- Distal Diameter: 8 mm to 10 mm in 1 mm increment
- Distal Claw Maximum Span: 22 mm
- Compression Range: 8 mm
- End Cap Length: 0 mm to 15 mm in 5 mm increments Internal thread to secure the cap to the 5 mm Hex driver



CORTICAL SCREWS' KEY FIGURES

- Length: 18 mm to 60 mm in 2 mm increment & 60 mm to 80 mm in 5 mm increment
- Diameter: 4 mm

Internal thread to secure the screw to the 5 mm Hex Driver.

Catalogue Information

Nuna Humerus Nail

Distal Diameter	Lenght (mm)	Catalogue Code
8	165	NUNA-08-165
8	180	NUNA-08-180
8	195	NUNA-08-195
8	210	NUNA-08-210
8	225	NUNA-08-225
8	240	NUNA-08-240
8	255	NUNA-08-255
8	270	NUNA-08-270
8	285	NUNA-08-285
8	300	NUNA-08-300
8	315	NUNA-08-315
9	165	NUNA-09-165
9	180	NUNA-09-180
9	195	NUNA-09-195
9	210	NUNA-09-210
9	225	NUNA-09-225
9	240	NUNA-09-240
9	255	NUNA-09-255
9	270	NUNA-09-270
9	285	NUNA-09-285
9	300	NUNA-09-300
9	315	NUNA-09-315
10	165	NUNA-10-165
10	180	NUNA-10-180
10	195	NUNA-10-195
10	210	NUNA-10-210
10	225	NUNA-10-225
10	240	NUNA-10-240
10	255	NUNA-10-255
10	270	NUNA-10-270
10	285	NUNA-10-285
10	300	NUNA-10-300
10	315	NUNA-10-315



End Caps

Extension (mm)	Catalogue Code
0 (flush)	NUNA-10-000
5	NUNA-10-005
10	NUNA-10-010
15	NUNA-10-015



Cortical Screws

Diameter (mm)	Length (mm)	Catalogue Code
4	18	CORS-04-018
4	20	CORS-04-020
4	22	CORS-04-022
4	24	CORS-04-024
4	26	CORS-04-026
4	28	CORS-04-028
4	30	CORS-04-030
4	32	CORS-04-032
4	34	CORS-04-034
4	36	CORS-04-036
4	38	CORS-04-038
4	40	CORS-04-040
4	42	CORS-04-042
4	44	CORS-04-044
4	46	CORS-04-046
4	48	CORS-04-048
4	50	CORS-04-050
4	52	CORS-04-052
4	54	CORS-04-054
4	56	CORS-04-056
4	58	CORS-04-058
4	60	CORS-04-060
4	65	CORS-04-065
4	70	CORS-04-070
4	75	CORS-04-075
4	80	CORS-04-080

