



Navy A/R Femoral 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.

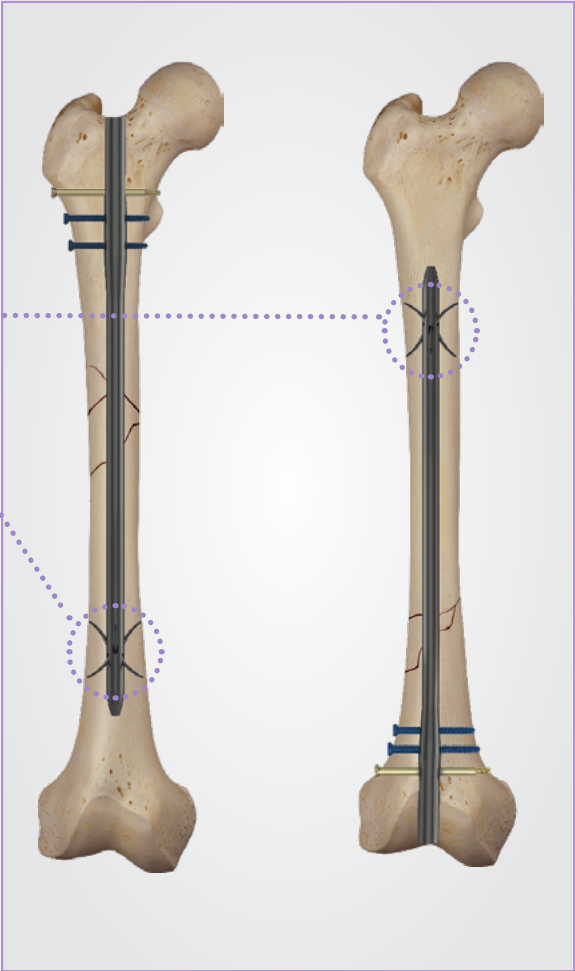
Claws are titanium pins that act as anchors to provide a stable fixation, as well as other superior operative parameters.

- ✓ *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.

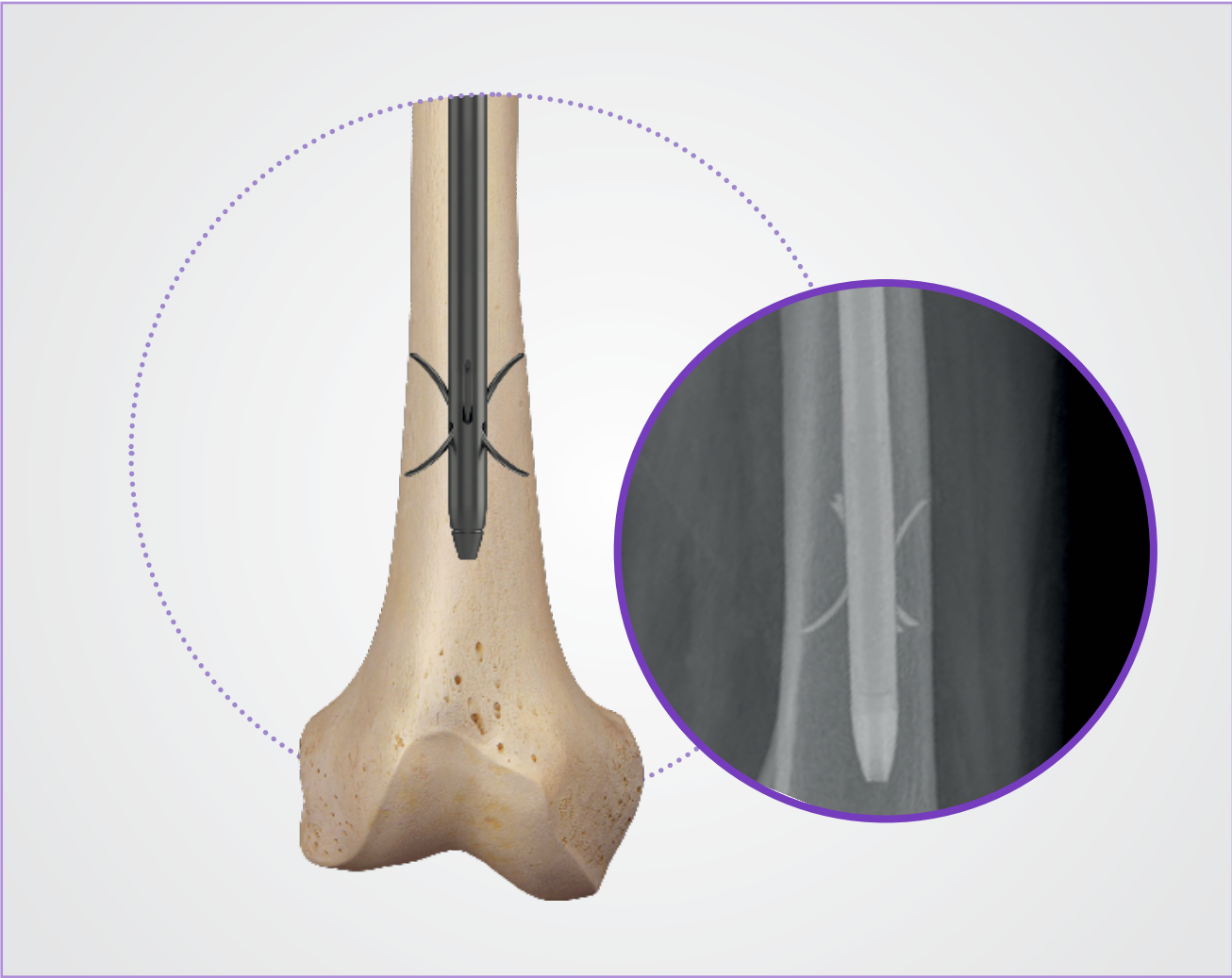
By eliminating the distal incisions, Claws significantly reduce the radiation exposure and blood loss.



- ✓ *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.

Navy A/R Femoral Nail Indications

INDICATIONS

- Femoral Shaft Fractures
- Ipsilateral hip / shaft fractures
- Ipsilateral femur / tibia fractures (floating knee)
- Supracondylar fractures including those with intraarticular extension
- Fractures proximal to a knee implant
- Osteoporotic fractures
- Pathologic / impending pathologic fractures
- Malunions / nonunions

PRECAUTIONS

Navy A/R Femoral nails and accessories were not evaluated for safety and compatibility in magnetic resonance (MR) environment and no tests for heating or migration were conducted for this product in MR environment.

CONTRAINDICATIONS

- In a leg with a total knee implant (for retrograde technique)
- Fractures of the distal third (for antegrade technique)
- Femoral neck fractures

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



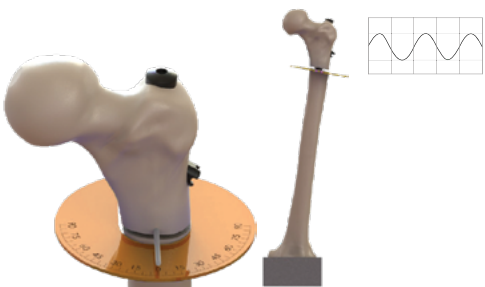
Material	Ti6Al4V ELI
Manufacturing Process	Machined from stock Material
Packaging	Double Package
Sterilization	Ethylene Oxide
Shelf Life	5 Years

Claws in Action

Claws are reliably retractable!

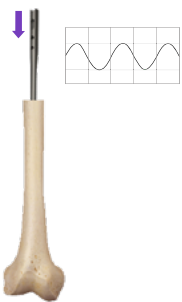
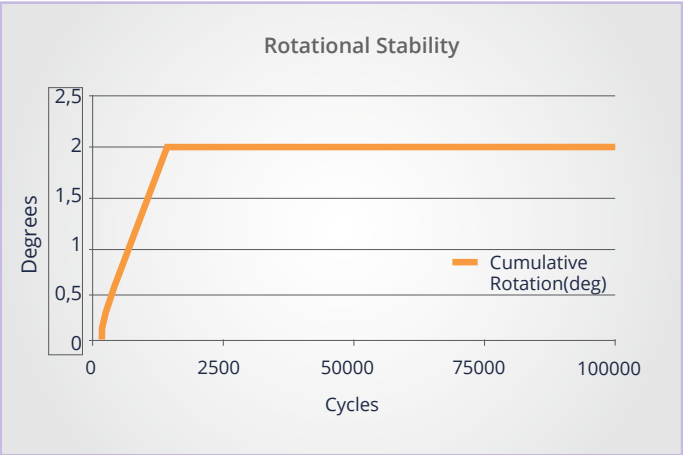
All Claws were **successfully retracted** after every test.

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.



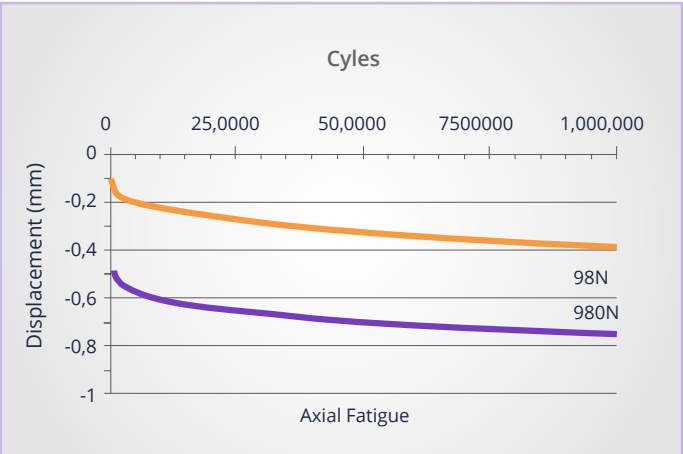
Rotational Stability

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



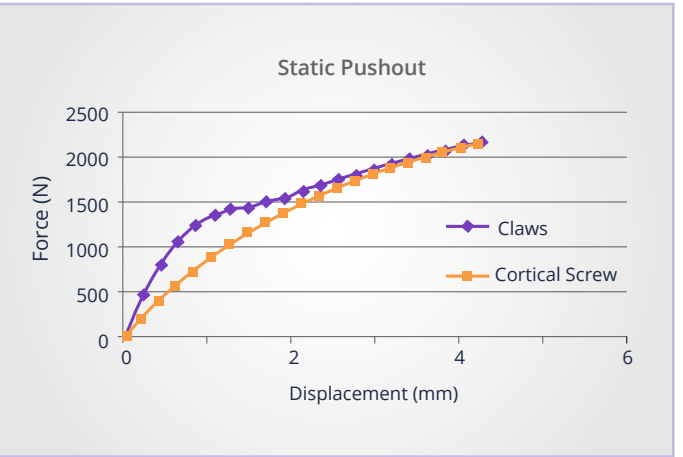
Claw's Axial Fatigue Strength

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



Claw's Axial Static Strength

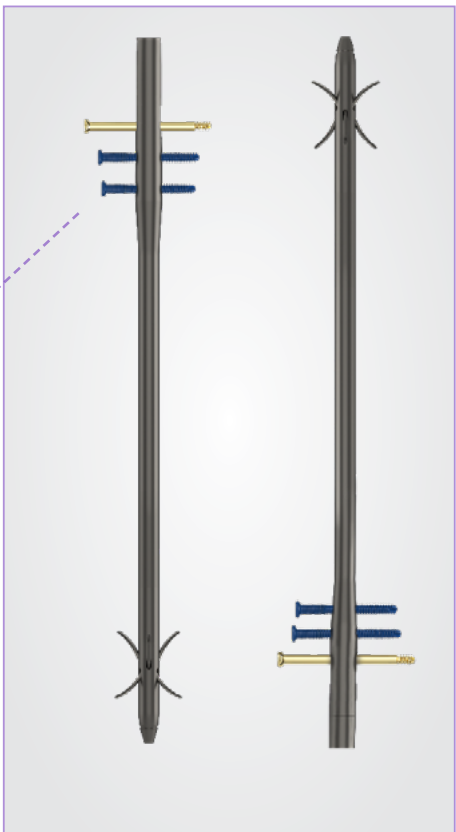
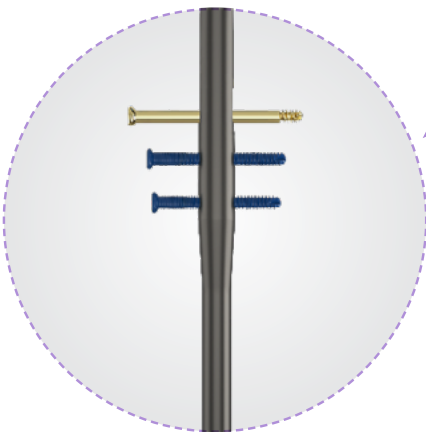
Claws resists to a higher force for a given displacement, compared to conventional stainless steel screws.



Navy A/R Femoral Nail Specifications

NAVY KEY FIGURES

- Nail length: 280 mm to 460 mm in 20 mm increment
- Proximal Diameter: 13 mm
- Distal Diameter: 10 mm to 13 mm in 1 mm increment
- Distal Claw Maximum Span: 38 mm (11-12-13 mm)
26 mm (10 mm)
- Compression Range: 10 mm
- End Cap Length: 0 mm to 15 mm in 5 mm increments



COMPRESSION AND CORTICAL SCREWS' KEY FIGURES

- Length: 30 mm to 120 mm in 5 mm increment
- Diameter: 5 mm

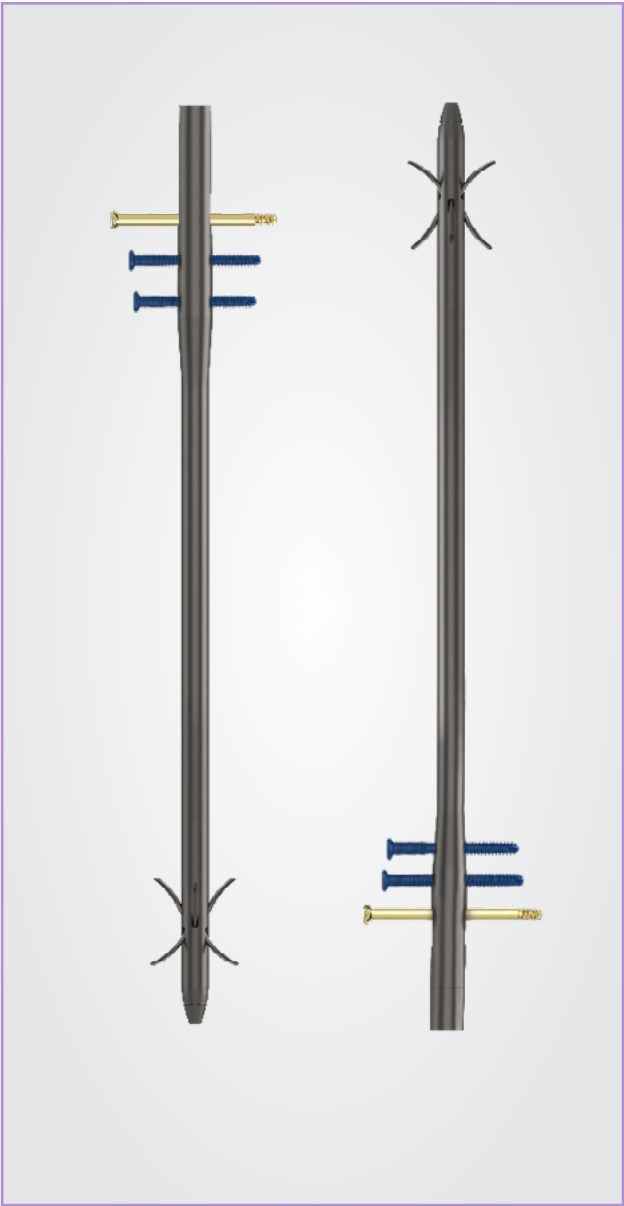
Internal thread to secure the screw to the 5 mm Hex Driver

Compression Screw with threaded tip and 5 mm shaft to withstand compression load

Catalogue Information

Navy A/R Femoral Nail

Distal Diameter	Lenght (mm)	Catalogue Code
10	280	NAVY-10-280
10	300	NAVY-10-300
10	320	NAVY-10-320
10	340	NAVY-10-340
10	360	NAVY-10-360
10	380	NAVY-10-380
10	400	NAVY-10-400
10	420	NAVY-10-420
10	440	NAVY-10-440
10	460	NAVY-10-460
11	280	NAVY-11-280
11	300	NAVY-11-300
11	320	NAVY-11-320
11	340	NAVY-11-340
11	360	NAVY-11-360
11	380	NAVY-11-380
11	400	NAVY-11-400
11	420	NAVY-11-420
11	440	NAVY-11-440
11	460	NAVY-11-460
12	280	NAVY-12-280
12	300	NAVY-12-300
12	320	NAVY-12-320
12	340	NAVY-12-340
12	360	NAVY-12-360
12	380	NAVY-12-380
12	400	NAVY-12-400
12	420	NAVY-12-420
12	440	NAVY-12-440
12	460	NAVY-12-460
13	280	NAVY-13-280
13	300	NAVY-13-300
13	320	NAVY-13-320
13	340	NAVY-13-340
13	360	NAVY-13-360
13	380	NAVY-13-380
13	400	NAVY-13-400
13	420	NAVY-13-420
13	440	NAVY-13-440
13	460	NAVY-13-460



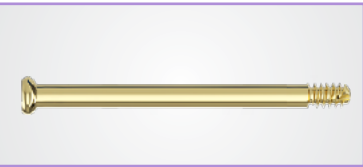
End Caps

Extension (mm)	Catalogue Code
0 (flush)	NAVY-13-000
5	NAVY-13-005
10	NAVY-13-010
15	NAVY-13-015
20	NAVY-13-020
25	NAVY-13-025
30	NAVY-13-030
35	NAVY-13-035



Cortical Screws

Diameter (mm)	Length (mm)	Catalogue Code
5	30	CORS-05-030
5	35	CORS-05-035
5	40	CORS-05-040
5	45	CORS-05-045
5	50	CORS-05-050
5	55	CORS-05-055
5	60	CORS-05-060
5	65	CORS-05-065
5	70	CORS-05-070
5	75	CORS-05-075
5	80	CORS-05-080
5	85	CORS-05-085
5	90	CORS-05-090
5	95	CORS-05-095
5	100	CORS-05-100
5	105	CORS-05-105
5	110	CORS-05-110
5	115	CORS-05-115
5	120	CORS-05-120



Compression Cortical Screws

Diameter (mm)	Length (mm)	Catalogue Code
5	30	COMS-05-030
5	35	COMS-05-035
5	40	COMS-05-040
5	45	COMS-05-045
5	50	COMS-05-050
5	55	COMS-05-055
5	60	COMS-05-060
5	65	COMS-05-065
5	70	COMS-05-070
5	75	COMS-05-075
5	80	COMS-05-080
5	85	COMS-05-085
5	90	COMS-05-090
5	95	COMS-05-095
5	100	COMS-05-100
5	105	COMS-05-105
5	110	COMS-05-110
5	115	COMS-05-115
5	120	COMS-05-120

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