

FISH FARMING · INJECTION BRACKET

THOR-450 (2x) Injection Bracket.

HDPE injection-moulded fish cage bracket for two parallel Ø450 mm flotation pipes. The neck is single-shot injection moulded — no welding to the upright pipe; the body joins the neck by sleeve-and-pin, not fusion. The only weldless bracket geometry in offshore aquaculture.



VIEW IN 3D
Scan to launch
AR · 3D model
ASAKUA.COM/3D/THOR-450-2X

Ø450 mm

FLOTATION PIPE
COMPATIBILITY

0 welds

INJECTION NECK
WRAP-AND-PIN JOINT

44 kg

BRACKET SET
TOTAL WEIGHT

2x

FLOTATION PIPES
PER BRACKET

NS9415

COMPLIANT
OFFSHORE STANDARD

FIG. 01 · THOR-450 (2x) — ORTHOGRAPHIC + ISOMETRIC PROJECTION

SCALE: NTS · UNITS: MM · DWG-THOR-450-2X-MV

A · ISOMETRIC

B · TOP VIEW

HANDRAIL PIPE
Ø140 mm
HANDRAIL INTERFACE

MAIN PIPE
Ø450 mm
FLOTATION 2x

ENVELOPE
L · 1270 mm
W · 240 mm
H · 1460 mm

3D · WRAP-AND-PIN GEOMETRY

PLAN

C · SIDE

FRONT ELEVATION

D · BACK

REAR ELEVATION

TECHNICAL SPECIFICATION

Pin-locked. **Weldless.**

01 NECK — PRODUCTION

Industry standard	PE100 pipe + welded fitting
ASAKUA	Single-shot HDPE injection
Fusion welding	None
Material	HDPE PE100
Standard	EN 12201 certified

03 BODY

Material	HDPE PE100
Method	Single-shot injection moulding
Min. wall thickness	30 mm
Pipe interface	2× Ø450 mm flotation pipes
Welding	None

05 COMPATIBILITY

Flotation pipe	Ø450 mm HDPE only
Handrail interface	Ø140 mm pipe receptacle
Cage geometry	Double-ring (2×)
Variants	250 / 315 / 400 / 500 mm

07 PRODUCTION

Facility	5,000 m ² Menemen, İzmir
Method	Pressure injection moulded
Capacity	90 kg max single shot
Heritage	Since 2009 · 100,000+ deployed

02 NECK — BODY JOINT

Industry standard	Butt-fusion or extruder weld
ASAKUA	Wrap-and-pin sleeve
Fasteners	Ø25 mm HDPE pins
Pin points	2 (upper + lower)
Special tooling	None required

04 COMPLIANCE

Cage standard	NS 9415 compliant
Material standard	EN 12201 certified
Quality system	ISO 9001 certified
Design reference	DNV-OS-E403 compliant

06 GEOMETRY

Neck rotation	360° rotatable
Net hook	Integrated, moulded
Rope mounting holes	Hook + body inner / outer
Walkway surface	Integrated body top

08 SERVICE LIFE

UV protection	Carbon-black stabilised
Corrosion	None — full HDPE
Design life	20+ years
Replacement	Pin-out, no cutting

INSTALLATION

Wrap, pin, **deploy.**

STEP 01
 ≈10 min
 BODY FIT ON PIPES

STEP 02
 4 pin
 LOCK — NO WELDING

SERVICE
 20+ yr
 DESIGN LIFE

Weldless installation.

The body slides over the two flotation pipes; the upright pipe joins to the body with two pins (lower point), and the neck wraps over the upright pipe with two more pins (upper point). Total four pins, two pairs. No butt-fusion, no extruder weld, no special tooling — deployable by trained farm crew on-site.

SHIPPING & LOGISTICS

Container-optimised set packing.

Brackets ship as flat-pack 5-component sets (1 body, 1 upright pipe, 1 upright T, 2 stoppers, 4 pins). Bodies nest; uprights, stoppers and pins palletise compactly.

Per-set weight	≈ 44 kg
20 ft container capacity	100 sets
40 ft container capacity	220 sets
Welding consumables	None

USER NOTES

- **Compatibility:** Ø450 mm HDPE flotation pipe only. For other pipe diameters see THOR-250 / 315 / 400 / 500 mm variants.
- **Weldless geometry:** the neck is single-shot injection moulded (not welded onto a pipe), and joins the body by sleeve-and-pin (not by fusion). The only bracket design in the world using this approach — ASAKUA proprietary.
- **Cage architecture:** designed for NS 9415 compliant cage systems. Bracket spacing depends on cage diameter; consult the engineering team for project-specific layouts.
- **Set composition:** 1 body · 1 upright pipe · 1 upright T · 2 stoppers · 4 pins (5 distinct components, 9 pieces total).
- **Manufacturing:** single-shot injection moulded in 5,000 m² Menemen, İzmir facility. EN 12201 certified raw material, ISO 9001 quality system.