



# Actuator Running Tool

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**The Actuator Running Tool (ART) is designed and tested for retrieval and installation operation of subsea hydraulic actuators up to 10.500 kg.**

The tool is landed on subsea structure using configurable guideposts and mini-guideposts for fine guiding. Integrated soft-landing cylinders ensure controlled landing speed.

The lifting operation within ART is hydraulically operated through a standard API 17H Hot Stab receptacle. Connection to actuator is done by clamping, and is operated by a API 17H Class 4 Torque Tool. Interlocks are mechanical and operated by ROV.

## Key features

- DNV 2.7-3 Lifting frame
- Up to 5° landing angle
- Adjustment mechanism integrated

ART has successfully been tested with 5° offset on landing base, and integrated adjustment cylinders (pitch, roll, x- and y-plane movement) can be used for alignment with valve.

## SIZE AND WEIGHT

Size (W x L x H):	2900 x 2300 x 4600 mm
Size w / skid (W x L x H):	2900 x 2300 x 5000 mm
Weight in air:	6200 kg
Weight in water:	5200 kg
Weight w / skid:	8500 kg

## INTERFACES

Actuator:	Ø1440 flange
Clamp:	API 17H Class 4 Torque Tool
Hydraulic:	API 17H 2L Hot stab female
Guide funnel:	2 off ID 247.8 mm, c-c 2400 mm (configurable)
Mini guideposts:	4 off
ROV:	D-handles, Grabber bar

## MECHANICAL

Lifting certificate:	DNV 2.7-3 R60 Subsea
Max. payload:	10.500 kg
Max. gross weight:	19.000 kg
Depth rating:	3000 meter
Transportation:	Dedicated transport skid
Soft-landing:	2 off, closed loop, water based
Misalignment:	Flex joint, adjustment cylinders

## HYDRAULIC

System pressure:	207 bar
Elevator stroke:	1450 mm
Stroke, Pitch / Roll:	30 mm
Stroke, x- / y- plane:	70 mm
Elevator max force:	320 kN
Force, Pitch / Roll:	50 kN
Force, x- / y- plane:	91 kN
Load holding valves:	On all cylinders
Contingency:	Cutting loops on all lines

## MATERIAL

Frame:	Carbon Steel, System 7 coating
Brackets:	316L, S165M
Shafts / nuts:	S165M, OM7-20
Bearings:	Nylon, carbon reinforced
Protection brackets:	POM-C

