

i-TECH SERVICES TOOLING CATALOGUE



BOP INTERVENTION

- ASF Fluid Skid
- ISP 5000 fluid skid
- ISP 10000 (i-BOP)
- ISP 5000 Surface Test Pump
- Triple Pump Skid

CLEANING TOOLS

- Marine Growth Removal Tool (Flexi-Clean)
- Wellhead Cleaning Tool (Hydraulic)
- Wellhead Cleaning Tool (Manual)

CUTTING AND GRINDING

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- 55mm Softline Cutter
- Circumferential Pipe Cutter
- Diamond Disc Cutting Tool
- GR29 Grinder
- HCV270 Cutter & Frame
- Low Profile Disc Cutter
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- RCV115 HD Cutter
- RCV135 HD Cutter
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GASKET TOOLS

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- Gasket Tool Kit VX, VGX-2 and AX

HOT STABS

- 17H Type A Hot Stab, Dummy and Receptacle
- Single & Dual Port Hyd. Hotstab - Keyhole Type

INTELLIGENT CONTROL SYSTEMS

- 4 Digit Subsea Counter System
- Skid Control System
- Torque Tool Control System

PUMPING, DREDGING AND JETTING SYSTEMS

- Dynaset Hydraulic High Pressure Pump
- Fluid Reservoirs (Multi Fluids or Methanol)
- Glycol Injection Panel
- Hydraulic Intensifier Panel
- Hydraulic Power Unit & Reservoir
- Merlin Pump
- ROV 290L+ AP Fluid Skid
- Super Zipjet



SIMULATED AND SITE INTEGRATION TESTING

- Mock-Up ROV

SPECIALIST TOOLS

- Breaker
- Impact Wrench
- Intervention Control Skid
- Multi-Function Skid
- Pan / Tilt, Zoom PTZ Inspection Camera
- Regan Latch Release Tool
- Subsea Hydrocarbon Sampling Skid
- Variable Buoyancy Skid
- Water Sampler Assembly

SUCTION CANS / PIGGING AND TESTING

- 3" Low Pressure Hot Stab
- 3" Dummy Hot Stab
- 3" Low Pressure Receptacle
- 3" Low Pressure Receptacle Parking
- 24" Suction Pile Plug
- 24" Suction Pile Receptacle

TOOL DEPLOYMENT UNITS

- Dual Point Tool Deployment Unit
- Flying Lead Orientation Tool (FLOT) HD
- Single Point Tool Deployment Unit

VALVE MANIPULATION TOOLS

- 3:1 Torque Multiplier
- 5:1 Torque Multiplier
- Class 4 to 7 Torque Tool Adaptor
- Clutch Tool (Class 1 to 4 & Paddle Interface)
- Linear Actuator Override Tool (LAOT)
- Lock Out Tool (LOT)
- Multi Torque Tool
- Rotary Docking Class 1 to 4 Torque Tool
- Rotary Docking Low Torque Tool
- Rotary Docking Medium Torque Tool
- Rotary Docking High Torque Tool
- Subsea Torque Verification Class 1 to 4
- Surface Test Tree-Valve Position Ind. (VPIs)
- Torque Verification System-Class 1 to 4(5,6&7)
- Torque Verification System (Med/High)



ASF Fluid Skid

BOP INTERVENTION

Product Number:
ITH-0004-DR-1000-00



The (Automatic Selective Flow™) ASF™ Fluid Skid is designed to provide subsea control fluid or corrosion inhibitors for BOP intervention, via a hotstab. The skid incorporates two pumps to give both high flow and high closing pressure. The pumping system automatically switches between pumps, allowing the system to optimise the flow and pressure requirements to suit the BOP. The ASF™ can be used for regular BOP tests or emergency closure.

- Designed for emergency BOP intervention and routine testing
- Efficient use of ROV hp
- High flow up to 150 L/min (39.6 gpm)
- High pressure up to 350 bar (5,075 psi)
- Minimal operator input, plug and play
- Minimises time required for BOP operations
- Suitable for use with most workclass ROVs
- Minimised Interface time (efficient post and pin securing system to host ROV)
- Lift adaptors can be made to suit any ROV
- Multiple fluid capacities
- Suitable for fluid transfer
- Lightweight aluminium construction
- Automatically switches to seawater for emergency BOP closure

Product Number	ITH-0004-DR-1000-00
Materials	Lightweight aluminium (frame) PVC Coated Polyester (fluid bladders)
Reservoir Capacity	474 L, providing at least 350 L usable Capacity can be user defined
Fluid Compatibility	Glycol/Water Seawater Mineral Oils (optional) Control Fluids
Fluid Output	Flow up to 150 L/min (39.6 gpm) Pressure up to 350 bar (5,075 psi) Suction Head 3m (9.8ft) max Water Feed Pressure 0.3 - 10bar (4.3 - 145psi) Recommended Hot Stab ID 3/4" - 1" Fluid Connections 3/4" Pressure Line c/w 12 JIC can be reduced Fill Line 1/2"
Fluid Filtration	100 Micron
Depth Rating	3,000msw (9,842ft) - can be altered to suit requirements
Hydraulic Power Requirements	Flow 35 - 85 L/min 9.2-22.4 gpm Operating Pressure 150 - 210 bar (2,175-3,000 psi) Max Pressure 250 bar (3,600 psi)
Hydraulic Fluid Requirements	Viscosity 10 -200/optimal 25 -35cSt Temperature 70°C (158°F) max Filter Rating (rec) 25 µm min Cooling Capacity 4kW
Hydraulic Connections	Pressure Line 3/4" QC Return Line 3/4" QC Pilot Lines 1/4"
Weight in Air	635 kg (1,400 lbs)
Weight in Air with Full Reservoir	1,163 kg (2,563 lbs)
Weight in Seawater	-32.2 kg (-71 lbs)

Deeper Challenges, Wider Horizons.

Deployment

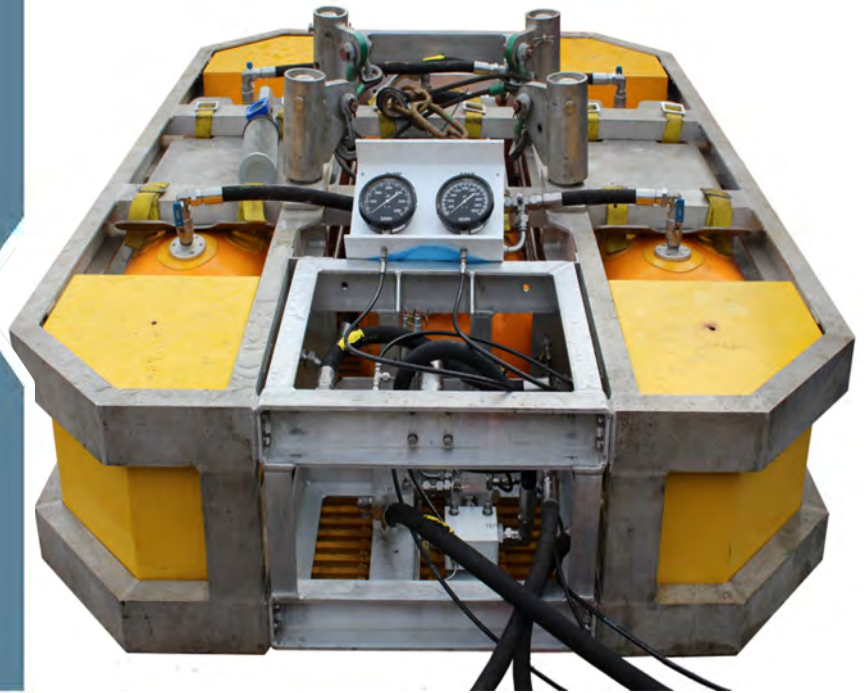
Workclass remotely operated vehicle (ROV) from 100 to 250hp



ISP 5000 fluid skid

BOP INTERVENTION

Product Number:
ITE-0027-DR-0010-00



The ISP-5000™ fluid skid is designed to provide subsea control fluid or corrosion inhibitors for BOP intervention, via a hotstab. The skid incorporates a single flow/high pressure pump to give as fast as possible closing speed under actual well conditions. The unit can be remotely switched between three pre-set outlet pressures up to a maximum of 5,000 psi.

Two modular subframes can be removed and easily fitted together to make a surface testing pump. This allows the skid to be maintained without removal from ROV.

- Designed for emergency BOP intervention and routine testing
- High flow approx 50 L/min (13.2 gpm)
- High pressure up to 350 bar (5,075 psi)
- Minimal operator input, plug and play
- Suitable for use with most work-class ROVs
- Minimised interface time (efficient, post and pin securing system to host ROV)
- Lift adaptors can be made to fit any ROV
- Multiple fluid capacities
- Suitable for fluid transfer
- Lightweight aluminium construction
- Can be configured for either manually selected or automatic switching to seawater for emergency BOP closure
- 3 remotely selectable output pressures

Product Number	ITE-0027-DR-0010-00
Materials	Lightweight aluminium (frame)PVC Coated Polyester (fluid bladders)
Reservoir Capacity	Standard capacity 474 L (125 US gal), providing at least 350 L (92 US gal) usableCapacity can be user defined
Fluid Compatibility	Glycol/WaterSeawaterMineral Oils (Optional)Control Fluids
Fluid Output	Flow approx 50 L/min (13.2 US gpm)Pressure up to 350 bar (5,075 psi)Suction Head 3m (9.8ft) maxWater Feed Pressure 0.3 - 10 bar (4.3 - 145 psi)Recommended Hot Stab ID 3/4"-1"
Fill Connections	3/4" Pressure Line c/w 12JIC (can be reduced)
Fluid Filtration	100 Micron
Depth Rating	3,000msw (9,842ft) - can be altered to suit requirements
Hydraulic Power Requirements	Flow 100-115 L/min (29-30 gpm)Operating Pressure 150-210 bar (2,175-3,000 psi)Max Pressure 250 bar (3,600 psi)
Hydraulic Fluid Requirements	Viscosity 10 - 200/optimal 25-35cStTemperature 70°C (158°F) maxFilter Radio (Rec) 25 ?m min
Hydraulic Connection Required	Pressure Line 3/4" QCReturn Line 3/4" QCPilot Lines 1/4"
Weight	Weight in Air 635 kg (1,400 lbs)Weight in Air with Full Reservoir 1,163 kg (2,563 lbs)Weight in Seawater -32.2 kg (-71 lbs)
Deployment	Workclass remotely operated vehicle (WROV)

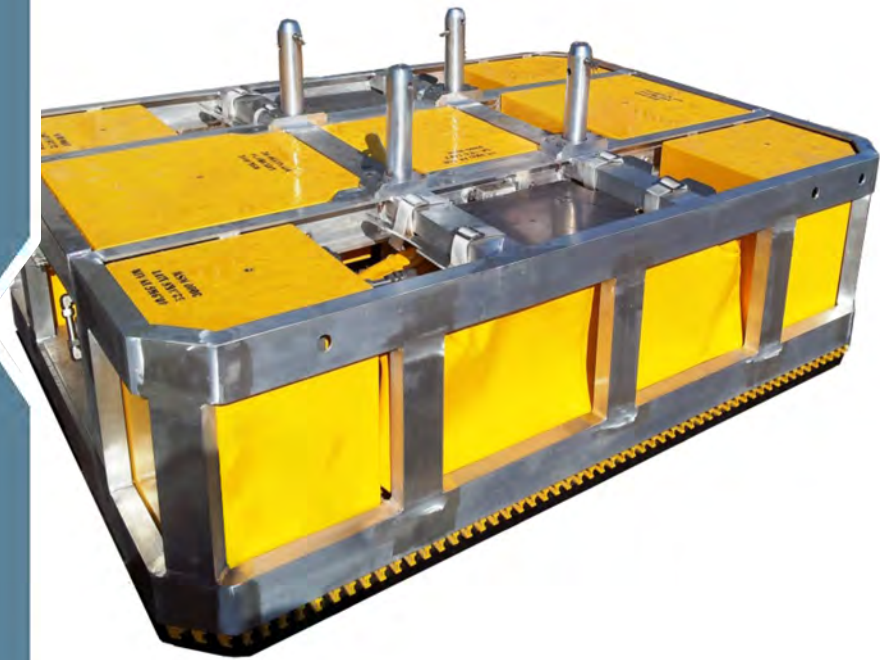


Deeper Challenges, Wider Horizons.

ISP 10000 (i-BOP)

BOP INTERVENTION

Product Number:
ITE-0027-DR-0001-00



The ISP 10,000 BOP Intervention Skid is designed to provide subsea control fluid or corrosion inhibitors for BOP intervention, via a hotstab. The skid incorporates two fluid pumping circuits high flow/low pressure and low flow/high pressure to give as fast as possible closing speed under actual well conditions. The unit can be remotely switched between three pre-set outlet pressures up to a maximum of 690 bar (10,000 psi). The skid is serviceable without removal from ROV.

- Efficient use of available ROV horse power
- High flow approx. 50 L/min (13.2 gpm)
- High pressure up to 690 bar (10,000 psi)
- Minimal operator input, plug and play
- Suitable for use with most workclass ROVs
- Minimised Interface time efficient, post and pin securing system to host ROV
- Lift adaptors can be made to fit any ROV
- Multiple fluid capacities
- Suitable for fluid transfer
- Lightweight aluminium construction
- Automatically switches to sea water for emergency BOP closure
- Can be configured for bespoke operations

Product Number	ITE-0027-DR-0001-00
Primary Materials	Lightweight aluminium (frame) PVC Coated Polyester (fluid bladders)
Reservoir Capacity	Standard capacity 410 L (108.3 US gal) providing at least 380 L (100.4 US gal) usable Capacity can be user defined
Hydraulic Power Requirements	Flow 100 – 115 L/min (29-30 gpm) Operating Pressure 150-210 bar (2,175-3,000 psi) Max Pressure 250 bar (3,600 psi)
Hydraulic Fluid Requirements	Viscosity 10-200 / optimal 25 - 35cSt Temperature 70°F (158°F) max Filter Ratio (Rec) 25µm min Cooling Capacity 4kW
Fluid Compatibility	Glycol / Water Seawater Mineral Oils (Optional) Control Fluids
Fluid Output	Low Pressure Circuit Flow - 50 L/min (13.2 gpm) Pressure - up to 350 bar (5,075 psi) High Pressure Circuit Flow - 15 L/min (3.9 gpm) Pressure - up to 690 bar (10,000 psi) Suction Head - 3m (9.8ft) max Water Feed Pressure 0.3 - 10bar (4.3 - 145psi) Recommended Hot Stab ID 3/4"-1"
Fluid Connections	1/2" Pressure Line c/w 8JIC (can be reduced) Fill Line - 3/4"
Fluid Filtration	10 Micron
Hydraulic Connections	Pressure Line 3/4" Return Line 3/4" Pilot Lines 1/4"

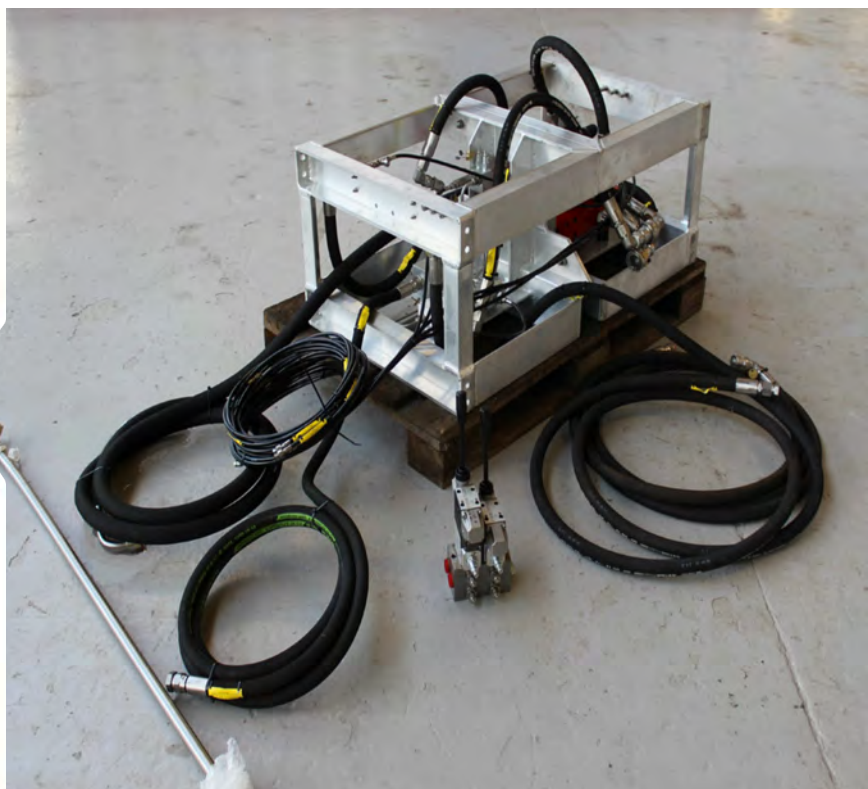
Weight in Air	1,320 kg (2,910 lbs)
Weight in Air with Flooded Tanks	1,730 kg (3,813 lbs)
Weight in Seawater	0 kg (0 lbs)
Depth Rating	3,000msw (9,842ft) - can be altered to suit requirements



ISP 5000 Surface Test Pump

BOP INTERVENTION

Product Number:
ITE-0027-DR-0040-00



The ISP-5000™ unit incorporates a single high flow/high pressure pump to give as fast as possible BOP closing speed under actual well conditions. The unit can be remotely switched between three pre-set outlet pressures up to a maximum of 5,000 psi. Two modular frames together make a surface testing pump. When supplied along with ISP-5000 fluid skid, it provides a modular spares system allowing rapid changeout of hydraulic components for servicing/repair.

- Designed for BOP routine testing
- High flow approx 50 L/min (13.2 gpm)
- High pressure up to 350 bar (5,075 psi)
- Minimal operator input, plug and play
- Minimises time required for BOP operations
- Multiple fluid capacities
- Lightweight aluminium construction
- 3 remotely selectable output pressure

Product Number	ITE-0027-DR-0040-00
Primary Materials	Lightweight aluminium (frame)
Hydraulic Power Requirements	Flow100-115 L/min (29-30 gpm)Operating Pressure150-210 bar (2,175 to 3,000 psi)Max Pressure250 bar (3,600 psi)Return Line Pressure max210bar
Hydraulic Fluid Requirements	Viscosity 10 - 200 / optimal 25 - 35cStTemperature 70°C (158°F) maxFilter Radio (Rec) 25µm minCooling Capacity 4kW
Fluid Compatibility	Glycol / WaterSeawaterMineral Oils (Optional)Control Fluids
Fluid Output	Flow - Approx. 50 L/min (13.2 gpm)Pressure - up to 350 bar (5,075 psi)Suction Head - 3m (9.8ft) maxWater Feed Pressure 0.3 – 10 bar (4.3 – 145 psi)Recommended Hot Stab 3/4" - 1"
Fluid Connections	3/4" Pressure Line c/w 12JIC (can be reduced)Fill Line - 1/2"
Depth Rating	N/A (surface unit)
Weight in Air	250 kg (550 lbs)

Triple Pump Skid

BOP INTERVENTION

Product Number:
AUS-10018-0001



This skid is designed to provide high flow/high pressure fluid that will allow the BOP Blind Shear Rams (BSR's) to meet the stipulated closure time laid out in API Std53. The skid utilises a triple pump configuration to provide high flow and high pressure fluid when required. The BOP fluid is delivered by high pressure lines to a 17H high flow hotstab. The total fluid carrying capacity of the skid is 700 L (184 US gal).

- Triple pump configuration providing max flow of 320 L/min (84.5 gpm) and max pressure of 520 bar (7,500 psi)
- Modular design allowing different bladder configurations
- Configurable to any WROV of opportunity that is capable of providing required flow and pressure

Product Number	AUS-10018-0001
Materials	Aluminium and Stainless Steel
Depth Rating	3000msw (9,842ft)
BOP Interface	17H type A High Flow Male Hotstab
Dimensions	2450mm x 1730mm x 500mm (8ft x 5.5ft x 2ft approx.)
Hydraulic Power Output	High Flow - 320 L/min @ 90 bar High Pressure - 30 L/min @ 520 bar
Weight in Air	200 kg (440.9 lbs)
Weight in Seawater	90 kg (198 lbs approx.)
Hydraulic Power Requirements	Operating Pressure 210 bar (3,000 psi) Flow 170 L/min (45 gpm)



Marine Growth Removal Tool (Flexi-Clean)

CLEANING TOOLS

Product Number:
AUS-11058-0000



The removal tool is designed to remove marine growth from tubular subsea sections. It attaches directly to the 5 function manipulator to improve the tools cleaning capability. The tool consists of two hydraulically driven contra rotating cleaning discs which, when fitted with appropriate flails or abrasive material will effectively remove marine growth.

- Robustly constructed from Aluminium and stainless steel
- Operating depth 3,000msw (9,842ft)
- Fits directly onto the 5F manipulator
- Different cleaning discs available depending on severity of marine growth

Product Number	AUS-11058-0000
Materials	Aluminium and Stainless Steel
Depth Rating	3,000msw (9,842ft)
Hydraulic Power Requirements	40 L/min @ 207 bar (11 gpm @ 3,000 psi)
Weight in Air	95 kg (210 lbs)
Weight in Seawater	65 kg (143 lbs)



Wellhead Cleaning Tool (Hydraulic)

CLEANING TOOLS

Product Number:
AUS-11086-0001



The Wellhead Cleaning Tool has been designed to remove any residual gasket coating or oxidised scale from the conical VX sealing face of a wellhead prior to the connection process or re-establishing of the tree assembly.

It can also be used in situations where the wellhead flange has an integral tubing hanger that precludes normal access to the conical face for cleaning

- Deployed by the ROV manipulator
- Robustly constructed for Hydraulic interface via 3 x 2-port hotstabs
- Operating depth 2,000msw (6,561ft)
- Aluminum frame, Acetal/nylon brush cleaning head
- Secondary surface cleaner options

Product Number	AUS-11086-0001
Primary Materials	Stainless Steel and Acetal
Depth Rating	3,000msw (9,842ft)
Supply Fluid	Mineral or Environmentally Friendly Fluids
Dimensions	688mm Dia. x 620mm (27" Dia. x 24.4")
Hydraulic Power Requirements	14 L/min @ 70 bar (4 gpm @ 1,015 psi)
Weight in Air	44.9 kg (99 lbs)
Weight in Seawater	26.4 kg (58 lbs)



Wellhead Cleaning Tool (Manual)

CLEANING TOOLS

Product Number:
ITE-0038-DR-0008-00 - 18 3/4"



This tool was designed to remove soft growth and debris from wellhead seal interfaces for 18-3/4", 16-3/4" or 13 5/8" AX/VX gaskets (seal rings). The plastic hub prevents damage to the seal interface. Each pad is keyed in place to prevent them from slipping out of position. They are also installed individually, making pad replacement simple to perform. The top plate is ported to prevent pressure differentials while cleaning. The tool comes in a rugged weather-proof case.

- Manipulator powered
- 2. Easy maintenance
- 3. D-Type handle
- 4. Low cost

Product Number	ITE-0038-DR-0008-00 - 18 ¾"
	ITE-0038-DR-0008-00 - 16 ¾"
	ITE-0038-DR-0008-00 - 13 5/8"
Materials	316/316L, 6061-T6, UHMW
Working Depth	4,000msw (13,123ft)
Dimensions	21-1/4" Dia x 16" (540mm x 406mm)
Weight in Air	8.75 kg (19.3 lbs)
Weight in Seawater	2.4 kg (5.3 lbs)



38mm Cutter

CUTTING AND GRINDING

Product Number:
ITE-1018-DR-0320-00



The 38mm (1.5") wire rope cutter is an ROV deployed tool which is used to cut 1770N/mm² grade wire rope of up to 38mm diameter.

The tool is also used for contingency operations to cut hydraulic lines relieving the pressure in the system

- Up to 38mm (1.5") Dia Wire Rope of 1770 N/mm²
- 700 bar (10,152 psi) max working pressure
- Manipulator deployable
- Spares included

Product Number:	ITE-1018-DR-0320-00
Materials	Stainless Steel
Depth Rating	Limited by ROV
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	308 mm x 150 mm x 251 mm (12" x 6" x 10") (incl. Handle)
Hydraulic Power Requirements	
Supply Pressure	220 bar (3,190 psi)
Flow	20 L/min (5 gpm)
Weight in Air	Approx. 23 kg (51 lbs)
Weight in Seawater	Approx. 19 kg (42 lbs)



55mm Softline Cutter

CUTTING AND GRINDING

Product Number:
ITE-1018-DR-0380-00



The 55mm (2") wire cutter is a compact and lightweight cutting tool designed to easily cut rope up to 55mm (2") in diameter. Its simple design provides the optimum protection from the subsea environment requiring only minimal maintenance.

- Designed to cut rope up to 55mm (2") in diameter
- Open sided to allow easy positioning of the cutter along a rope length - particularly useful when cutting in confined spaces
- Robust design requires minimal maintenance

Product Number ITE-1018-DR-0380-00

Dimensions Length 406mm (16")
Width 150mm (6")
Depth 55mm (2")

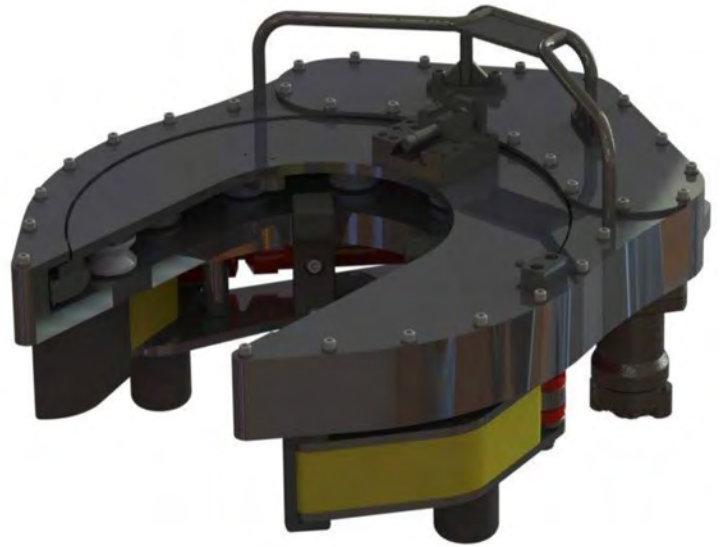
Weight 4.5kg (10 lbs)
Wire / Rope Capacity
55mm (2")



Circumferential Pipe Cutter

CUTTING AND GRINDING

Product Number:
AUS-11196-0001



The cutting tool is designed to cut pipe ranging in size from 8" to 12" OD. The tool consists of a standard lathe parting tool which is securely mounted to an indexing head. A hydraulic motor rotates the tool around the pipe, the parting tool is indexed inward with each rotation.

A clamping mechanism is incorporated which firmly holds the tool in position during cutting.

The tool was specifically designed to cut subsea guideposts without cutting the internal pull rod to ease removal

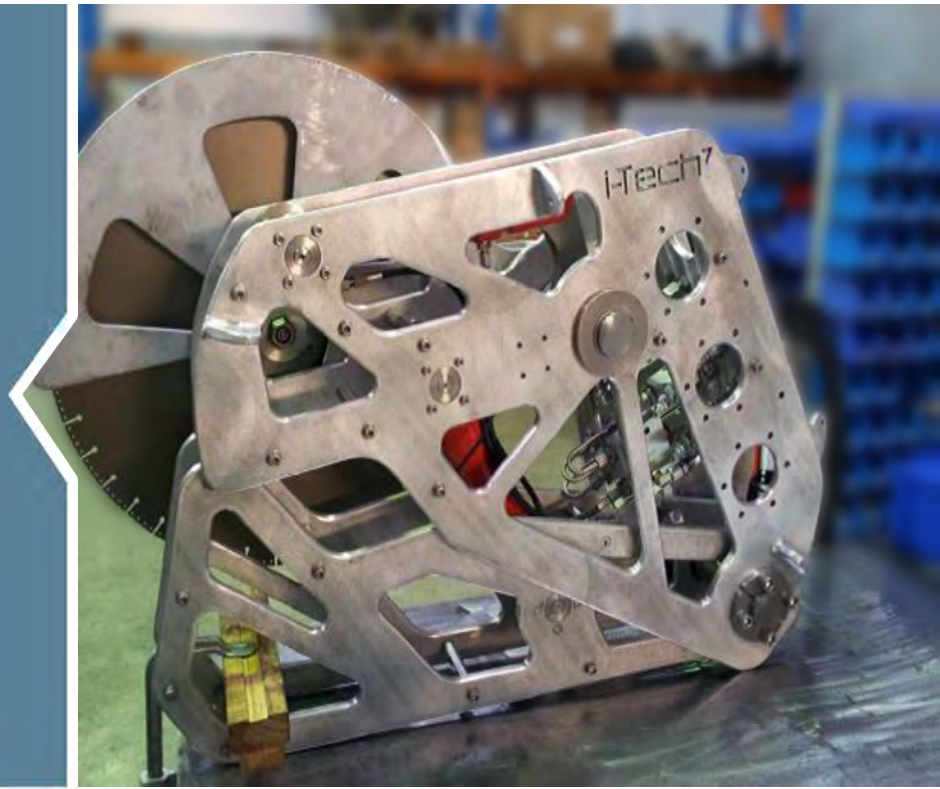
- Designed to cut pipe from 8" to 12" OD (203mm to 305mm).
- Cold Cutting (No Sparks)
- Self aligning for tool retrieval
- Clamping is independent from cutting
- Deployed by work-class ROV using its hydraulic supply
- Robustly constructed for ease of use
- Operating depth 3,000msw (9,842 ft)

Product Number	AUS-11196-0001
Primary Materials	Aluminium and Stainless Steel
Hydraulic Supply	35L/min @ 207 Bar (9 gpm 3000 psi)
Cutting Speed	Blade rotational speed - 20rpm
Cutting Capacity	OD 8" to 12" (203 - 305mm)
System Depth Rating	3,000msw (9,842 ft)
Weight in Air	122kg (269lbs)
Weight in Water	88kg (194lbs)

Diamond Disc Cutting Tool

CUTTING AND GRINDING

Product Number:
AUS-11012-0001



The Diamond Disc Cutting tool consists of a large disc which is directly mounted to a hydraulic motor. The disc is mounted on an arm which is hydraulically actuated and provides the correct force on the disc to allow ease of cutting. A clamping mechanism is incorporated which firmly holds the tool in position during cutting.

- Designed to cut materials from 125mm to 225mm (4" to 9") OD
- Designed to use either a 600mm (24") OD friction disc or diamond disc
- Deployed by work-class ROV using its hydraulic supply
- Robustly constructed for ease of use
- Operating depth 3,000msw (9,842 ft)
- Can be fitted with 17H Hotstab arrangement

Product Number	AUS-11012-0001
Primary Materials	Aluminium and stainless steel
Hydraulic Requirement	30L/min @ 210 bar (7.9gpm @3000psi)
Cutting Capacity	125mm to 225mm (4" to 9")
Weight in Air	109kg (240 lbs)
Weight in Seawater	85kg (187 lbs) (Optional Buoyancy can be fitted if required)



GR29 Grinder

CUTTING AND GRINDING

Product Number:
ITE-1018-DR-0310-00



The Underwater GR29 Grinder can be used for grinding and cleaning with either cup or standard grinding wheels, wire or nylon brushes. The integral gear motor is manufactured to exacting standards to deliver maximum efficiency.

- Adjustable wheel guard
- Flow range 15-38L/min 3.9 - 10gpm
- Max. RPM: 2,700
- 6.4kg (14 lbs) weight with guard

Product Number	ITE-1018-DR-0310-00
Capacity	9" Wheel on 5/8"-11 Arbor (228mm)
Maximum RPM	2,700
Weight (with guard)	6.4kg (14 lbs)
Length	280mm (11")
Capacity Width (with guard)	305mm (12")
Flow Range	15-38L/min (3.9 - 10gpm)
Optimum Flow	38L/min (10gpm)
Porting	-8 SAE O-ring
Motor	Stanley Hyrevz™ Gear
Pressure	70 to 176 bar (1015 to 2552 psi)



HCV270 Cutter & Frame

CUTTING AND GRINDING

Product Number:
ITE-1023-DR-0001-00



The HCV 270 cutter is suitable for the cutting of riser, flowlines, hoses and umbilical.

The cutter frame has been designed to allow handling and operation of the HCV 270 Cutter, the frame allows deployment in three possible orientations, vertical, horizontal and at 45°, using dedicated rigging and the vessel/installation crane.

- Built in intensifier to 690 bar (10,000 psi)
- Quad port hotstab for operation
- Lift/deployment frame supplied
- Spares included

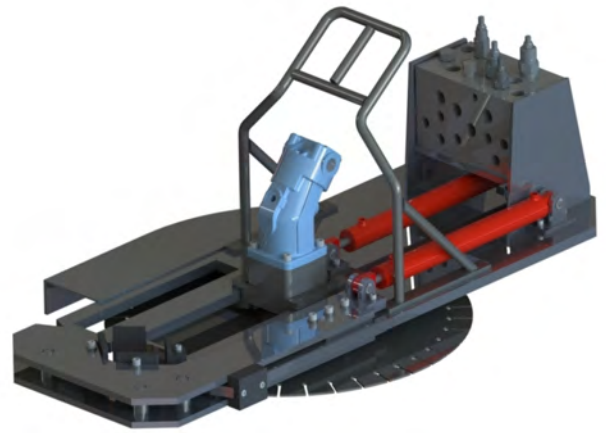
Product Number:	ITE-1023-DR-0001-00
Materials	Stainless Steel
Depth Rating	Limited by ROV
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	1310 mm x 970 mm x 390 mm (52" x 38" x 15 1/2")
Hydraulic Power Requirements	Supply Pressure 190 bar (2,755 psi)
Max Flow	14 L/min (3.7 gpm)
Weight in Air	Approx. 436 kg (961 lbs) incl. lift/deployment frame. Tool only - 375 kg.
Weight in Seawater	Approx. 420 kg (925 lbs.) incl. lift/deployment frame Tool only - 324 kg.



Low Profile Disc Cutter

CUTTING AND GRINDING

Product Number:
AUS-11171-0001



The low profile cutting tool consists of a large disc which is directly mounted to a hydraulic motor. The disc is mounted to a sliding housing which is hydraulically actuated in order to provide the correct force on the disc to allow ease of cutting. A reversible clamping mechanism is incorporated into the main body of the tool which firmly holds the tool in position during cutting.

The tool is primarily manufactured from Aluminium and stainless steel and will be deployed via the WROV manipulators

- Simple and cost effective design
- Designed to cut materials from 100mm to 225mm (4" to 9") OD
- Designed to use either a 600mm (24") OD friction disc or diamond disc.
- Deployed by workclass ROV using its hydraulic supply.
- Robustly constructed for ease of use
- Operating depth 3000msw (9,842 ft)
- Low profile and reversible design aids cutting in tight spaces

Product Number	AUS-11171-0001
Materials	Aluminium and Stainless Steel
Depth Rating	3000msw (3,482 ft)
Cutting Capacity	4 inch to 9 inch (100 - 225 mm)
Hydraulic Power Requirements	20 L/min @ 207 Bar (5.3 gpm @ 3,000 psi)
Weight in Air	51 kg (112 lbs)
Weight in Seawater	35 kg (77 lbs)



RCV75 HD Cutter

CUTTING AND GRINDING

Product Number:
ITE-0018-DR-0100-00



The RCV75HD wire rope cutter is an ROV deployed tool which is used to cut up to 1960N/mm² wire rope of up to 75mm (3") diameter.

The tool is also used for contingency operations to cut hydraulic lines relieving the pressure in the system.

- Manipulator handle and spares included
- Built in intensifier unit
- 10,000 psi (690 bar) Maximum Working Pressure
- FLOT mount available on request

Product Number:	ITE-0018-DR-0100-00
Materials	Stainless Steel
Depth Rating	Limited by ROV
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	517 mm x 390 mm x 176 mm (20" x 15" x 7") (Handle Not Included)
Hydraulic Power Requirements	Supply Pressure 210 bar (3,000 psi)
Flow	Max 14 L/min (3.7 gpm)
Weight in Air	Approx. 45 kg (99 lbs)
Weight in Seawater	Approx. 38 kg (84 lbs)



RCV115 HD Cutter

CUTTING AND GRINDING

Product Number:
ITE-0018-DR-0100-00



The RCV115 is a heavy duty wire rope cutter designed for subsea deployment in severe working conditions. The integrated hydraulic anvil removes the need for diver intervention and makes the tool easily deployed and operated by ROV. Corrosion resistant and durable coated steel and stainless steel construction. Genuine Webtool™ blades and anvils give optimum cutting performance and ensure that maintenance is kept to a minimum.

Hydraulically operated anvil makes capturing and severing of the wire rope simple. Mounting holes in the body allow for the fitting of standard handles.

- Intensifier unit required
- 10,000 psi (690 bar) Maximum Working Pressure
- Front and rear mounting ROV bracket available
- FLOT mount available on request
- Spares include

Product Number:	ITE-0018-DR-0100-00
Materials	Stainless Steel
Depth Rating	Limited by ROV
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	703 mm x 514 mm x 252 mm (28" x 20" x 10")
Hydraulic Power Requirements	Supply Pressure 210 bar (3,000 psi) Flow Max 0.8 L/min (3.7 gpm)
Weight in Air	Approx. 117 kg (258 lbs)
Weight in Seawater	Approx. 105 kg (231 lbs)
Ancillary Equipment	Intensifier panel required to provide 10,000 psi (690 bar)



RCV135 HD Cutter

CUTTING AND GRINDING

Product Number:
ITE-0018-DR-0120-00



The RCV135 is a heavy duty wire rope cutter designed for subsea deployment in severe working conditions. The integrated hydraulic anvil removes the need for diver intervention and makes the tool easily deployed and operated by ROV. Corrosion resistant and durable coated steel and stainless steel construction. Genuine Webtool™ blades and anvils give optimum cutting performance and ensure that maintenance is kept to a minimum. Hydraulically operated anvil makes capturing and severing of the wire rope simple. Mounting holes in the body allow for the fitting of standard handles.

Heavy duty wire rope cutter designed for use in severe working conditions, Hydraulically operated anvil for easy ROV deployment. Robust plated steel and stainless steel construction

All steel components are electroless nickel plated to resist corrosion. Long blade life ensures that tool maintenance is kept to a minimum. Optional intensifier panel is available, Can be used at any water depth. Cutting capacity – Maximum Ø135mm wire rope of 1770N/mm² grade. Suitable for cutting wire rope, cables and umbilicals. 690 bar maximum input pressure for main cylinder 210 bar max input pressure for anvil Swept volume cut stroke – 3 litres

- Spares included
- Intensifier panel required
- 10,000 psi (690 bar) Maximum Working Pressure

Product Number:	ITE-0018-DR-0120-00
Materials	Robust plated steel and stainless steel construction
Depth Rating	Limited by ROV
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	794 mm x 569 mm x 281 mm (32' x 22' x 11')
Hydraulic Power Requirements	Supply Pressure 210 bar (3,000 psi)
Flow	Max 11L/min (3 gpm)
Weight in Air	Approx. 176 kg (388 lbs)
Weight in Seawater	Approx. 152 kg (335 lbs)
Ancillary Equipment	Intensifier panel required to provide 10,000 psi (690 bar)



Super Cutter

CUTTING AND GRINDING

Product Number:
AUS-11065-0001



The super cutter is a versatile cutting tool that is manipulated by the ROV. The diamond encrusted blade is interchangeable with carbide tooth blades depending on the material being cut. The tool has a cutting depth of 114mm. The motor drives the blade via a pressure compensated bearing housing to ensure maximum life and protection for the drive motor.

- Robustly constructed for subsea use
- Cutting depth of 114mm (4 1/2")
- Interchangeable blades
- Pressure compensated bearing housing
- Operated off ROV hydraulic supply

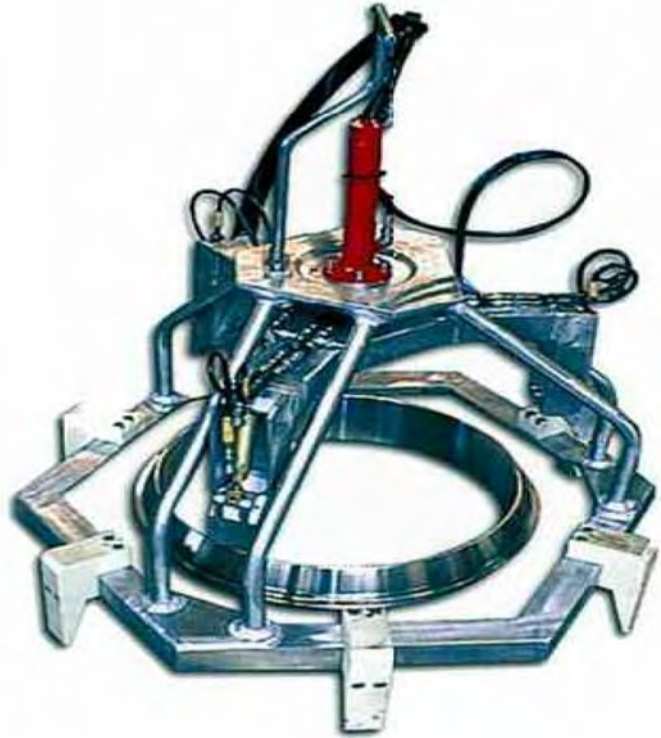
Product Number	AUS-111065-0001
Materials	Aluminium and Stainless Steel
Depth Rating	3000 msw (9842 ft)
Supply Fluid	Mineral or water based fluids
Cutting Capacity	114mm (4 1/2")
Hydraulic Power Requirements	35 L/min @ 207 bar (9 gpm @ 3,000 psi)
Weight in Air	11.8kg (26 lbs)
Weight in Seawater	9kg (20 lbs)
Ancillary Equipment	Carbide toothed blades Anti-kick finger plate



External AX/VX Gasket Install. & Removal Tool

GASKET TOOLS

Product Number:
SSA-0328-D-0001-00



The External gasket installation/removal tool has been developed to remove and install a gasket from or into its position in the wellhead, prior to the connection procedure or re-establishment of the tree assembly. It can also be used in instances where the wellhead flange has an integral hanger that precludes normal access to the seal face.

- 130 bar (1,880 psi) Maximum Working Pressure
- Depth rating aligned to ROV compression system
- Developed for ease of use & environmental protection
- Manipulator deployed by a workclass ROV

Product Number	SSA-0328-D-0001-00
Primary Materials	Aluminium frame, acetal landing seats
Working Pressure	Standard ROV operating pressure 130 bar (1,880 psi) (70 bar (1,015psi) max for gasket rams)
Supply Fluid	Mineral oils or water based fluids
Removal/Replacement Head Stroke	150mm (5.9")
System Depth Rating	Unlimited
Weight in Air	29 kg (64 lbs)
Weight in Seawater	18 kg (40 lbs)
Deployment	Manipulator
Ancillary Equipment	Hydraulic Control Panel (optional)



Gasket Tool Kit, 3"

GASKET TOOLS

Product Number:
ITH-0012-DR-0000-00



This Gasket Tool was designed to remove and install 3" (75mm) AX gaskets (seal rings) without metal-to-metal contact between the tool and the gasket. The Gasket Tool maintains a firm grip on the gasket in the event of hydraulic failure. The bolt-on T-handle shown is included as standard. Option handles such as fish tail (ITH-0012-DR-1300-00) and D (ITH-0012-DR-1400-00) handles are also available.

The Gasket Tool Holster is mounted to the front porch of the ROV and holds the gaskets without metal-to-metal contact. The Holster can also serve as a resting place for the Gasket Tool when the ROV's manipulator is needed for another task.

The Gasket Tool Kit includes the Gasket Tool, Gasket Tool Holster, two hoses, case, and manual.

- Lightweight compact design.
- Selection of ROV handles to suit any manipulator.
- Holster unit to allow the carriage/deployment of multiple gaskets and storage of tool when not in use.
- Composite components to prevent damage to gaskets through metal to metal contact

Product Number	ITH-0012-DR-0000-00
Materials	316/316L, Bronze, coated Steel spring
Working Pressure	138-207 bar (2,000 - 3,000 psi)
Weight in Air	5 kg (11.3 lbs)
Weight in Seawater	4.3 kg (9.4 lbs)
Overall Approx. Dimensions	19" x 4" x 4" (483mm x 102mm x 102mm)
Hydraulic Connections	1/4" x 2JIC
Gasket Tool Holster	
Materials	316, Anodized 6061 UHMW
Weight in Air	7.2kg (15.9lbs)
Weight in Seawater	2.6kg (5.8lbs)
Overall Approx. Dimensions	30" x 6" x 4" (762mm x 153mm x 102mm) Notes: Requires four 1/2-13 or M12 bolts to mount Notes and Disclaimers: Weight in air is calculated from computer models. Weight of water is calculated with conservative estimate of 61 lbs/ft3. Exact material specs may be withheld. All welding is performed pre AWS 1.6



Gasket Tool Kit, 13-5/8" to 18-3/4"

GASKET TOOLS

Product Number:
ITH-0016-DR-0000-00



This Gasket Tool was designed to remove and install AX/VX gaskets (seal rings) without metal-to-metal contact between the tool and the gasket. With over 200 pounds of mechanical force, the Gasket Tool maintains a firm grip on the gasket in the event of hydraulic failure. An adapter shoe system allows the tool to be configured for any gasket size between 13-5/8" and 18-3/4".

The Gasket Tool includes the 13-5/8" Gasket Tool, a set of adapter shoes for the 16-3/4" configuration, a set of adapter shoes for the 18-3/4" configuration, a Pressure Reducing/Relieving Valve, hoses, case, and manual. Optional handle types may also be provided.

- Lightweight design.
- Adjusts to interface with 13-5/8", 16-3/4" or 18-3/4" AX or VX gaskets.
- Strong holding force to retain a positive grip of the gasket.
- Plastic and rubber shoe material to remove any risk of damage to the gasket.

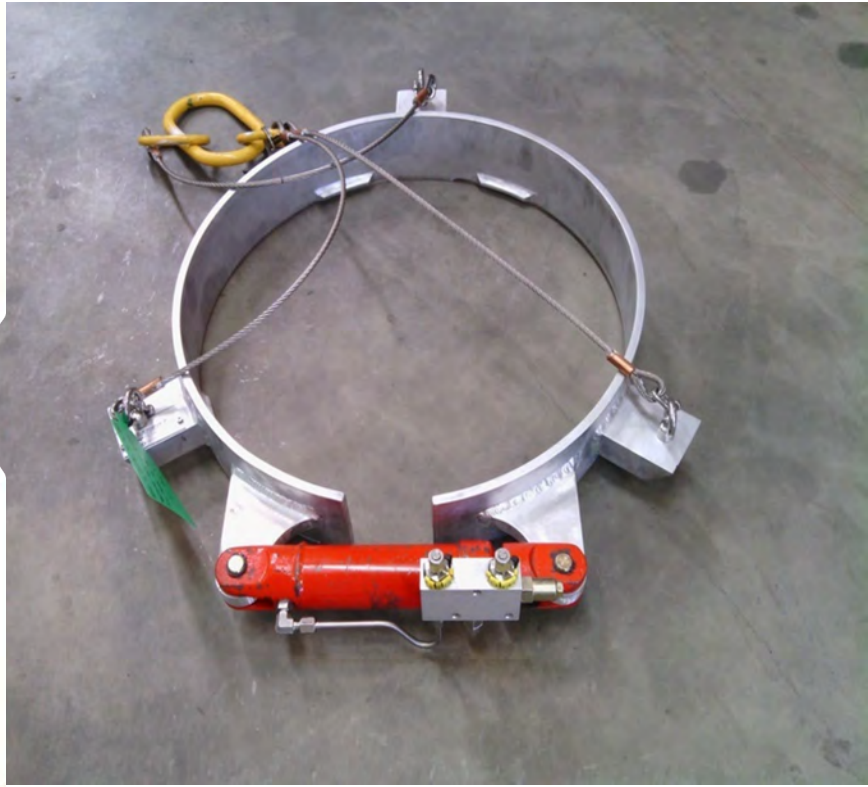
Product Number	ITH-0016-DR-0000-00
Materials	Anodized AL 6061-T6 or AL 6082-T6, coated stainless springs, marine cylinder, Buna-N, Acetal
Weight in Air	13.4 to 19.25 kg (29.5 to 42.4 lbs)
Weight in Seawater	9 to 12.2 kg (19.8 to 26.9 lbs)
Working Pressure	48-55 bar (700-800 psi)
13-5/8" Config Extended Dimensions	16.7 x 14.5 x 13.8" (423 x 368 x 350mm)
16-3/4" Config Extended Dimensions	19.8 x 17.0 x 14.3" (503 x 432 x 363mm)
18-3/4" Config Extended Dimensions	21.8 x 18.6 x 14.3" (553 x 473 x 363mm)
Hydraulic Connections	1/4" Swage x 2 Notes and Disclaimers: Weight in air is calculated from computer models. Weight of water is calculated with conservative estimate of 61 lbs/ft ³ . Exact material specs may be withheld. All welding is performed as per AWS 1.6.



Gasket Tool Kit VX, VGX-2 and AX

GASKET TOOLS

Product Number:
AUS-11013-0001



The gasket installation tool is a multi use tool that was developed to install the AX, VX-2 and the VGX-2 gaskets. It will position the gasket on the wellhead, prior to the connection procedure or re-establishment of the tree assembly. It can be used in situations where the wellhead flange has a integral tubing hanger.

- Maximum operating pressure 207 bar (3,000 psi)
- AX, VX-2 & VGX-2 compatible
- Powered by a single hydraulic actuator
- Deployed by manipulator on WROV
- Simple and robust design for ease of use
- Unlimited depth rating

Product Number	AUS-11013-0001
Primary Materials	Aluminium
Depth Rating	3000msw (9,842m)
Supply Fluid	Mineral oils or water based fluids
Hydraulic Power Requirement	10 L/min @ 207 bar (2.6 gpm @ 3,000 psi)
Weight in Air	16 kg (35 lbs)
Weight in Seawater	13 kg (29 lbs)



17H Type A Hot Stab, Dummy and Receptacle

HOT STABS

Product Number:
ITH-0023-DR-1000-00



Our dual port hot stab and receptacle conform to both ISO/API 17H and ISO 13628-8 Type A specifications. The hot stab's body is made of strong Nitronic 60 for longevity. The nose can be in bronze or nylon and replaced if it becomes damaged, yet it cannot be spun off accidentally. The standard handle for hot stab is a T-handle. D-style and fishtails are also available. Various seal configurations can be offered to suit specific operations.

- Type B also available
- Dummy hot stabs also available
- Spares included
- Multi-fluid compatibility

Product Numbers	ITH-0023-DR-1000-00
	ITH-0023-DR-2000-00
	ITH-0023-DR-3000-00
Materials	316/316L, Nitronic 60, Bronze, NBR, UHMW
Working Pressure	Hot Stab and Receptacle can be rated up to 10,000 psi (690 bar)
Length	Hot Stab: 583mm (23")
	Dummy: 559mm (22")
Weight in Air	Hot Stab: 6.6 kg (14.6 lbs)
Weight in Seawater	Hot Stab: 5.6 kg (12.3 lbs)
Connection	(NPT to JIC fittings available upon request)



Single & Dual Port Hyd. Hotstab - Keyhole Type

HOT STABS

Product Number:
ITE-0054-DR-0010-00



The single and dual port hydraulic hotstab systems, (Male and Female Dual Port shown) comprise of male and female mating halves, are used to provide hydraulic power from the remotely operated vehicle (ROV) to a subsea production system.

- Working pressure of 690 bar (10,000 psi)
- Available in single and dual port configuration
- Sealing systems available to withstand internal, external and bi-directional pressure
- Female receptacle manufactured from corrosion resistant materials
- Deployed using i-Tech's proprietary tooling package or by manipulator (male stab only)

Product Numbers	ITE-0054-DR-0010-00 Dual Port Male ITE-0054-DR-0020-00 Dual Port Female ITE-0054-DR-0030-00 Single Port Male ITE-0054-DR-0040-00 Single Port Female
Materials	Duplex stainless steel and aluminium alloy
Seals	Bi-directional - Elastomer energised lip seal Uni-directional - Hastelloy spring energised PTFE lip seal
Working Pressure	690 bar (10,000 psi)
Supply Fluid	Mineral oils or water based fluids
Types	Single or Dual Port
Bore	6mm (0.2")
Port Connections	Various NPT, JIC, Compression and Autoclave
Weight in Air	Female Single Port - 10 kg (22 lbs) Dual Port - 11.5kg (25 lbs) Male Single Port - 6 kg (13 lbs) Dual Port - 7 kg (15 lbs)
Weight in Seawater	Female Single Port - 8.5 kg (19 lbs) Dual Port - 9.5 kg (21 lbs) Male Single Port - 4.75 kg (10 lbs) Dual Port - 6 kg (13 lbs)
Deployment	Using i-Tech's Tool Deployment Unit (TDU) or by manipulator (male stab only). Deployment handles can be provided to suit manipulators or TDU gripper tools.



4 Digit Subsea Counter System

INTELLIGENT CONTROL SYSTEMS

Product Number:
ITE-0007-DR-0080-00



The turns counter is designed to display the total number of sensor actuations on subsea tools, modules and installations without the need for a complex control system or data link which allows a critical cyclic operations to be monitored at low cost. The turns counter can be set to count every actuator pulse at rates up to 10 pulses per second. The turns counter allows full quadrature up/down counting.

- Suitable for any volt free contact sensor or 3v-5v Proximity Sensor
- Battery life: 7 days (display on continuously), 7 months standby - wakened by ROV lighting
- 5 digit LED display up to +/- 9,999 counts
- User scaleable counter divide or multiply ratio
- Dual display also available

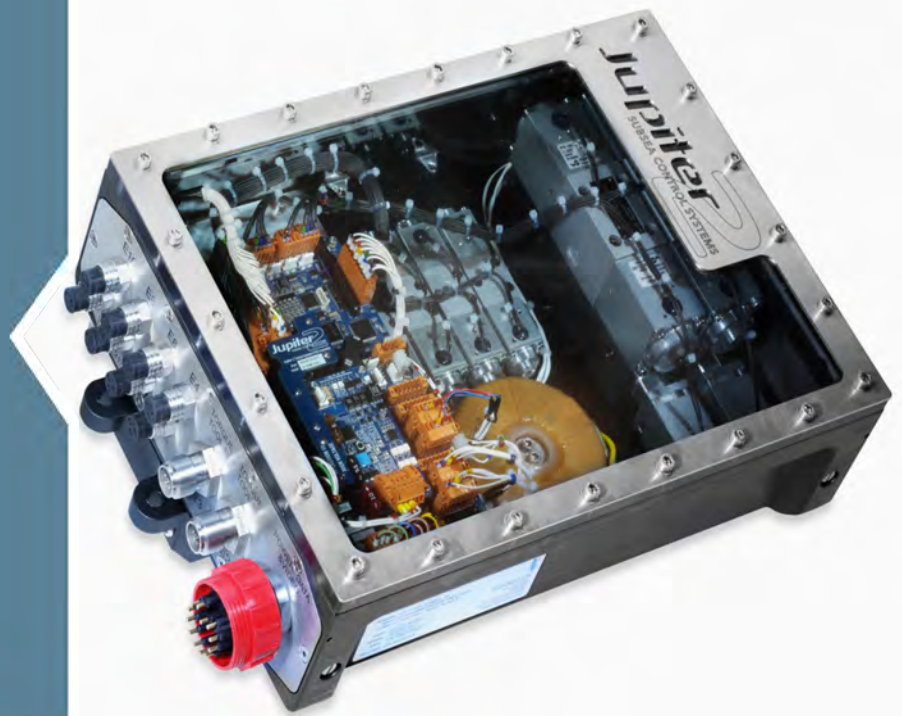
Product Number	ITE-0007-DR-0080-00
Materials	316 Stainless Steel Housing Size 200 x 80 x 40mm (L x W x Dia) (8" x 3" x 1.5")
Weight in Air	1.6 kg (3.5 lbs)
Weight in Seawater	1.1 kg (2.4 lbs)
Environmental	-10 to 45°C Operational -20 to 75°C Storage
Connectors	Subconn MCDC5M (Sensor & Charge) Subconn MCDC3M (Optional Control Output)



Skid Control System

INTELLIGENT CONTROL SYSTEMS

Product Number:
ITE-0056-DR-0010-000



The skid control system offers a powerful control system that integrates dual torque tool control and deployment or skid functions into a single unit with sensor inputs and powerful software control.

- Dual proportional pressure and flow control 0-210 bar (0-3,045psi), 0-32 L/min (0-8.4 gpm), torque and speed calibrated
- 8 x Bi-directional solenoid valves (11 L/min) (2.9gpm) adjustable pressure and flow on each valve, other options available
- Strain gauge interfaces accurate to 0.5% designed to handle large strain gauge offsets
- Simplify skid design, SIT and in field integration
- 'Closed-Box' configuration, no internal access required for links, fuses, datalink settings
- Fully secure calibration and setup
- Various external sensors available

Product Number	ITE-0056-DR-0010-000
Hydraulic Valve Fit	<p>2 x NG6 Pressure & Flow Control</p> <p>Proportional Valve drives use 12 bit</p> <p>Constant Current Drive preventing voltage & temperature variation from affecting Pressure & Flow settings</p> <p>2 x 8 NG3 Bi-directional solenoid valves with externally adjustable fully shrouded meter out throttles</p>
Optional Fit	Externally adjustable pressure reducing valves for each NG3 valve with corrosion resistant coating
Sensors	<p>8 x Sensors Inputs with software selectable mode:</p> <p>4-20mA or 0-10V analogue inputs or 24V Digital Sensors with high speed (8kHz) counters for TT turns count, etc (option)</p>
Analogue Sense	<p>4 x 16 bit Analogue Inputs 4-20mA, 0-10v, Strain Gauge etc</p> <p>12 bit measurement resolution</p> <p>Auto Zero available on all inputs</p> <p>Strain Gauge inputs feature Subsea auto zero to remove large scale offsets directly at the subsea level</p>
Pressure Sense	<p>2 x 250bar (3,620psi) Pressure Sensors (option)</p> <p>External ports can be piped to any line requiring accurate and differential pressure measurement</p>
Hydraulic	<p>System I/P Pressure 315 bar (4,570psi) max</p> <p>Tool Pressure 2-210bar (30-3,045psi)</p> <p>Tool Flow 0-32 L/min (8.4 gpm), (cw & ccw)</p> <p>Solenoid ports 0-11 L/min (0-2.9 gpm), 5-210 bar (70-3,045 psi)</p> <p>Externally adjustable flow and pressure</p>
Hydraulic Ports	<p>Pressure and tank - 3/8" BSP</p> <p>Torque Tool - 3/8" BSP</p> <p>Solenoid - 1/8" BSP</p> <p>Fill & Drain - 3/8" BSP</p> <p>Tool Case Drain - 1/8" BSP</p>
Material	6,082 Al Alloy Anodised to BS5599
Power	<p>90-125 Volts ac, 45-66Hz</p> <p>150 Watts (+ lights)</p>
Data	<p>RS485 /232 fully isolated to 1,500v</p> <p>Auto Baud rate detection</p> <p>QTP/STP copper link or integrated into ROV data hub if available</p> <p>Ethernet, fully isolated to 1,500v can be retrofitted if required (option)</p>

Diagnostics

Monitoring of
AC Input Volts
AC Input Current
Valve Volts and Current
Electronic Supplies Volts and Current
Internal Oil Temperature
Hours Run Meter
Communication Protocol
Alarm Data Logger
Insulation Resistance
4 x Water Detector Points

GUI

The GUI is completely under the users control with custom graphics, mathematics to suit tool requirements

Software

All calibration and settings fully password secured with security system that allows user to control which parts of the system are accessible to field technicians. System Software with comprehensive user settings for calibration, interlocks, semi-automatic control, Alarm Settings Default States, Datalogger, Survey Interface etc

Mathematics

Using the integrated maths pack, the user can quickly create new functions, interlocks or automatic procedures

Datalogger

Log job data to disk as required with job notes
All of the Datalogger fields are fully user definable

Survey Interface

Can be connected to external hardware or ROV using user-defined protocol over RS232 link to pass any data backwards or forwards (option)

Camera and Lights

Powers 2 x PAL/NTSC cameras for connection to ROV video suite. Lights options allows for the control of 2 x 250W 115V AC lights for additional skid lighting

Auto Calibrate

Using a Torque Analyser with a serial output, this feature allows rapid calibration of the Strain Gauge Sensor and Pressure Control valve. Fast calibration mode for rapid setup using ROV HPU (option)

Torque Tool Control System

INTELLIGENT CONTROL SYSTEMS

Product Number:
ITE-0056-DR-0010-00



The torque control system offers an accurate and repeatable solution for the control of torque tools in high integrity applications.

The system consists of a single valve pack with a fully integrated proportional control system. The compact unit is suitable for use with a variety of torque tools and other intervention tooling and installed on workclass ROV's

- Accurate and repeatable torque control
- Depth rating 4,000msw (13,123ft)
- Fully secure calibration and setup
- Datalogger system
- Control of latches and/or XYZ motion
- Easily portable between tools and ROVs
- Clear user interface and auto calibration
- Dual torque tool version available
- Various external sensors available

Product Number	ITE-0056-DR-0010-000
Hydraulic Valve Fit	1 x NG6 (2x NG6 optional) Pressure & Flow Control Proportional Valve drives use stable 12 bit Constant Current Drive Pressure Control Valve has 250 bar transducer to monitor tool pressure 4 x NG3 Bi-directional solenoid valves with externally adjustable fully shrouded meter out throttles
Optional Fit	Externally adjustable pressure reducing valves for each NG3 valve with corrosion resistant coating
Sensors	8 x Sensor Inputs with software selectable mode: 4-20mA or 0-10V analogue inputs or 24v Digital Sensors with High Speed (8kHz) Counters for TT turns count, etc (option)
Analogue Sense	4 x 16 bit Analogue Inputs 4-20mA, 0-10v, Strain Gauge etc. 12 bit measurement resolution Auto Zero available on all inputs Strain Gauge inputs feature Subsea auto zero to remove large scale offsets directly at the subsea input
Pressure Sense	250 bar (3,626 psi) Tool Pressure Transducer fitted as standard 2 x 250 bar (3,626 psi) Pressure Sensors (option) 400/690 bar (5,801/10,000 psi) sensors options
Hydraulic	System I/P Pressure 315 bar (4,568 psi) max. Tool Pressure 2-210 bar (29-3,045 psi) Tool Flow 0-32 L/min (cw & ccw) (0-8.4 gpm) Solenoid Ports 0-11 L/min, 5-210 bar (0-2.9 gpm, 72-3,045 psi) Externally adjustable flow & pressure
Hydraulic Ports	Pressure & Tank - 3/8" BSP Torque Tool - 3/8" BSP Solenoid - 1/8" BSP Fill & Drain - 3/8" BSP Tool Case Drain - 1/8" BSP
Material	6082 Al Alloy Anodised to BS5599
Power	90-125 Volts ac, 45-66 Hz 150 Watts (+ Lights) 24V Raw, unsmoothed DC (option)
Data	RS485/232 fully isolated to 1500v Auto Baud rate detection QTP/STP copper link or integrated into ROV data hub if available Ethernet, fully isolated to 1500v, available or retrofitted if required (option)

Diagnostics

Monitoring of:
AC Input Volts
AC Input Currents
Valve Volts & Current
Electronic Supplies Volts & Current
Internal Oil Temperature
Hours Run Meter
Communication Protocol
Alarm Data Logger
Insulation Resistance
4 x Water Detector Points

GUI

The GUI is completely under the users control with custom graphics, mathematics to suit tool requirements

Software

All calibration & settings fully password secured with security system that allows user to control which parts of the system are accessible to field technicians. System Software with comprehensive user settings for calibration, interlocks, semi-automatic control, Alarm Settings Default States, Datalogger, Survey Interface etc.

Mathematics

Using the integrated maths pack, the user can quickly create new functions, interlocks or automatic procedures.

Datalogger

Log job data to disk as required with job notes. All of the Datalogger fields are fully user definable

Survey Interface

Can be connected to external hardware of ROV system using user-defined protocol over RS232 link to pass any data backwards or forwards

Camera & Lights

Powers 2 x PAL/NTSC cameras for connection to ROV video suite. Lights options allows for the control of 2 x 250W 115 v AC lights for additional skid lighting

Auto Calibrate

Using a Torque Analyser with a serial output, this feature allows rapid calibration of the Strain Gauge Sensor & Pressure Control valve. Fast calibration mode for rapid setup using ROV HPU (option)

Compatible

Most spares are retro-fittable into original Jupiter Lite TTCS units



Dynaset Hydraulic High Pressure Pump

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:
ITE-1028-DR-0011-00



The Dynaset hydraulic high pressure pump transforms hydraulic power into pumping fluid flow and pressure. Patented construction of the pump is based on a hydraulic piston-to-piston principle.

- 520 bar (7,540 psi) maximum water pressure
- Pumped water or other fluid can be taken from a natural source, reservoir or low pressure supply
- Can be coupled with an Intelligent Control System for greater control & flexibility
- Skid, Back Pack and ROV mounted options available

Product Number	ITE-1028-DR-0011-00
Dimensions	Length 243mm (9.6") Width 150mm (5.9") Height 190mm (7.5") Weight 22 kg (48 lbs)
Pressure Ratio	Hydraulic / Water 2.62
Water Power	Flow 30 L/min (6.6 gpm) Pressure 520 bar (7,540 psi) Power 26kW Temperature 70°C (150°F) Suction Head 3m (9.8ft) max Water Feed Pressure 0.3 - 10 bar (4.3 - 145psi) Water Pistons Outer Diameter 30mm (1.2")
Water Connections	Pressure Output Line 6 Jic Suction/Feed Line 12 Jic Pressure Hose Recommendation - 3/8" Suction Hose Recommendation - 1"
Water Filter	80 Micron mesh
Hydraulic Power Requirements	Flow 85 L/min (22.4 gpm) Operating Pressure 190 bar (2,760 psi) Max Pressure 210 bar (3,050 psi) Idle Run Pressure 10 bar (145 psi) Return Line Pressure 210 bar max (3,050 psi)
Hydraulic Fluid Requirements	Viscosity 10-200/ optimal 25 - 35cSt Temperature 70°C (158°F) max Filter Ratio Recommendation 25 Micron min Cooling Capacity 4kW
Hydraulic Connections	Pressure Supply Line 8 Jic Return Line 8 Jic Pilot Line 4 Jic
Hydraulic Feature	Built in relief valve



Fluid Reservoirs (Multi Fluids or Methanol)

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:

Product Number RIT-0008-D-0001-00 (Multi-Fluid) Product Number
ITE-0019-DR-0008-00 (Methanol)



The Reservoirs have a 30 litre (8 US gal) capacity and can be used with a wide variety of fluids and incorporates a collapsible rubber bladder encased in a cylindrical plastic tube.

The Methanol reservoir is fitted with a bleed panel arrangement to allow closed loop filling and dry break quick connects to allow safe and easy integration to fill pump and ROV pumps.

Multi-Fluid reservoir shown

- Fluid Types:
 - Glycol
 - Various Oils
 - Methanol
 - Sea Water
 - MEG

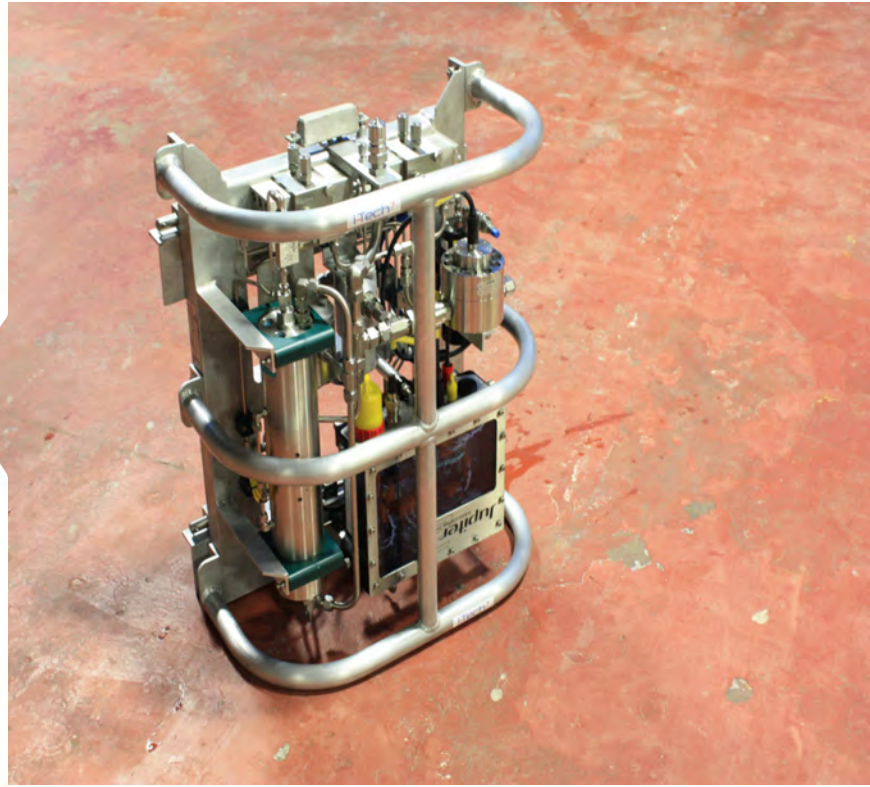
Product Numbers	RIT- 0008-D-0001-00 (Multi-Fluid) ITE- 0019-DR-0008-00 (Methanol)
Materials	Rubber Bladder Plastic Tube
Dimensions	1193 mm Long (47") 219 mm Diameter (9")
Weight in Air	Approx. 45 kg (99 lbs) when full
Weight in Seawater	Approx. 4 kg (8.8 lbs) when full
Ancillary Equipment	Various Pump



Glycol Injection Panel

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:
ITE-0019-DR-0021-00



In operation this system will be used to provide glycol (Multi-Fluid) at 690 bar (10,000 psi) via a quad port hotstab (stab is not supplied with the panel). A 16 Litre (4.2 US gal) glycol compensator is supplied with the panel to provide the fluid required. The panel is also supplied with its own control system which can proportionally control the pump pressure and flow, select which of the quad ports are in use and supply feedback about supply flow, return flow and compensator volume.

- Easy to use interfaces
- 16 litre compensator (4.2 US gal)
- Up to 690 bar output (10,000 psi)
- Back pack mounted
- Multi-Fluid pump
- Built in flow meter

Product Number	ITE-0019-DR-0021-00
Materials	Lightweight Aluminium Frame
Depth Rating	3,000m (9,842ft)
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	785 mm x 702 mm x 421 mm (31" x 27 1/2" x 16 1/2")
Hydraulic Power Requirements	Supply Pressure 207 bar (3,000 psi) Flow Max. 40 L/min (10.5 gpm)
Hydraulic output	Output pressure 690 bar (10,000 psi) Output flow 8.7 L/min (2.3 gpm)
Weight in Air	162 kg (357 lbs)
Weight in Seawater	137 kg (302 lbs)
Ancillary Equipment	N/A



Hydraulic Intensifier Panel

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:
ITE-0019-DR-0010-00



The hydraulic intensifier panel is a compact lightweight unit designed to fit easily to a host ROV used in conjunction with an intervention tooling system where high pressures hydraulics are required.

- Capable of supplying up to 690 bar (10,000 psi) hydraulic output
- Fittings and tubings are made from stainless steel
- Body constructed from light weight material
- Depth rating same as host ROV
- Small and compact
- Easily mounted to host ROV
- Other styles available

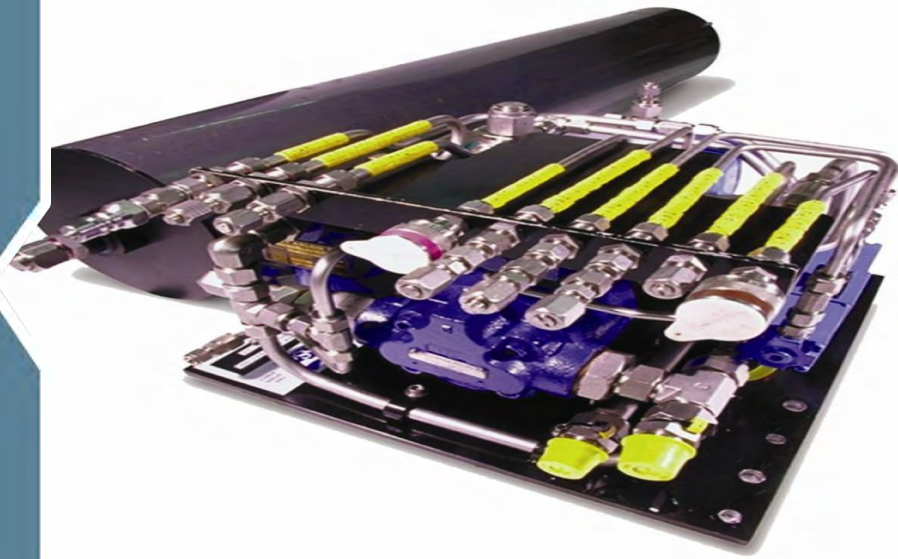
Product Number	ITE-0019-DR-0010-00
Materials	Panel body - UHMWPE Fittings & tubing - stainless steel
Hydraulic Supply	Up to 172 bar (2,494 psi) max, 14 L/min (3.7 gpm) max
Hydraulic Output	690 bar (10,007 psi) max, 2 l/min (0.5 gpm) Max
Supply Fluid	Mineral oil / HW540 control fluid or equivalent
Depth Rating	Same as host ROV
Weight in Air	10.5 kg (23 lbs)
Weight in Seawater	7.5 kg (16.5 lbs)



Hydraulic Power Unit & Reservoir

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:
SSA-0231-120-00



The ROV mounted hydraulic power unit is a low speed high torque motor driven by the ROV hydraulic supply close coupled to a fixed displacement piston type pump.

The system is suitable for injecting mineral oil, corrosion inhibitors, methanol and water glycol control fluid

- Three selectable pressure settings
- 140 bar (2,030 psi) minimum & 210 (3,050 psi) maximum hydraulic supply
- Depth rating ROV dependent
- Reservoir options of 24 litres (5.3 US gal) or multiples thereof

Product Number	SSA-0231-120-00
Materials	Various components
Hydraulic Supply	140 bar (2,030 psi) min 210 bar (3,050 psi) max
Flow	55 L/min (14.5 gpm) max
Supply Fluid	Mineral oil
Reservoir Options	24 litres (8 US gal) or multiples thereof Bespoke units on demand
Fluid Options	Mineral oil, HW540 control fluid, methanol, corrosion inhibitor
Depth Rating	Same depth rating as host ROV
Weight in Air	105.5 kg (230 lbs)
Weight in Seawater	48.5 kg (110 lbs)
Ancillary Equipment	ISO 13628-8 (API 17H) or i-Tech proprietary single, dual or triple port hotstabs for fluid delivery



Merlin Pump

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:
ITE-1028-DR-0040-00



The Merlin is an integrated eductor based excavation system which is designed to pump mud, sand, gravel, drill cuttings or shale without risk of blockage.

A heavy duty cylinder operates a valve to reverse the flow at the nozzle to eject any object which may be causing an obstruction. A second cylinder operates a bypass valve to provide a powerful direct jet to break up heavy and cohesive seabed mud and sand prior to excavation.

The pump may be configured to an intermediate position allowing combined use of suction and jettings. Both the impeller and eductor have been optimised for use on workclass ROV

- Jetting Nozzle Supplied
- Suction Nozzle Supplied
- Suction Strainer Supplied

Product Number	ITE-1028-DR-0040-00
Materials	Stainless Steel; Nylacast; UHMWPE
Depth Rating	Limited by ROV
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	550 mm x 499 mm x 282 mm (22" x 20" x 11")
Hydraulic Power Requirements	Supply Pressure 107 - 250 Bar (2,450 to 3,600 psi) Flow 65 - 110 L/min (17 to 29 gpm)
Weight in Air	Approx. 40 kg (88 lbs)
Weight in Seawater	Approx. 17 kg (37.5 lbs)
Typical Output Jetting	Up to 600 L/min @ 8 bar (160 gpm @ 115 psi)
Typical Output Suction	2,000 - 4,000 L/min (500 - 1,000 gpm)
Typical Solids Removal	10 - 40 tonnes/hour (350 - 1500 lbs/min)



ROV 290L+ AP Fluid Skid

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:
AUS-10015-0001



The AP Fluid Skid is designed to supply high pressure fluids subsea.

Various pumping configurations are available to meet pressure and flow requirements

- Lightweight aluminium construction
- Reservoir capacity up to 2x 145L (38 US gal)
- Hydraulic interfaces
- Standard Docking interface allows skid to be mounted to any i-Tech ROV

Product Number	AUS-10015-0001
Primary Materials	Aluminium
Interfaces	Time efficient 'post' and 'pin' securing system to host ROV Electrical and Hydraulic interfaces as per standard electrical and hydraulic interfaces
Weight in Seawater	Neutrally buoyant
Components	HPU System Reservoir capacity up to 2x 145L (38 US gal) Dual pump configuration available providing flows up to 150 L/min (40 gpm) and pressures to 520 bar (7,500 psi)



Super Zipjet

PUMPING, DREDGING AND JETTING SYSTEMS

Product Number:
ITE-1028-DR-0020-00



The Super ZipJet incorporates many technical advances over the previous generations of ROV suction and jetting systems. Considerable emphasis has been placed on increasing efficiency in both the suction and jetting modes. The Super ZipJet incorporates several design features that improve its reliability and substantially reduce its maintenance costs.

- 1,000 L/min (264 gpm) jetting performance at 2 bar (29 psi)
- Up to 1,000 L/min (264 gpm) suction flow performance
- Suction & jetting aligned for ease of hose management
- Modular pump core, readily removable for easier in-field maintenance
- Multiple mounting & handling configurations available

Product Number	ITE-1028-DR-0020-00
Dimensions & Materials	Weight in Air 25kg (55lbs)
Weight in Seawater	11kg (24lbs)
Materials	Nylacast, UHMWPE
Hydraulic Input	Pressure 150 - 220 bar (2,170 - 3,190 psi) Flow 45 - 60 L/min @ 2 bar (10 - 13 gpm @ 29 psi)
Jetting Performance	1000 L/min @ 2 bar (264 gpm @ 29 psi)
Suction Performance	Suction Flow 500 - 1000L/min (132 - 264gpm) Solids Removal Rate 5-10 tonnes/hour (184-368 lbs/min)
Nozzle & Hose Dimensions	Jetting Hose 1" BSP hose barb Jet Nozzle Diameter 20mm (0.8") Discharge Hose Diameter 100mm (3.9") Suction Hose Diameter 75mm (3.0")



Mock-Up ROV

SIMULATED AND SITE INTEGRATION TESTING

Product Number:
ITE-0046-DR-0001-00



The Mock Up ROV system is used for onshore integration trials to ensure all ROV serviceable areas of a subsea structure are accessible by the system.

The Mock Up ROV can perform manipulator, single point TDU and skid based tooling work.

Standard and job specific tooling can also be utilised

- Full sized Mock Up ROV system, various sizes of workclass ROVs available
- Hydraulic supply and control system with 11 function valve pack
- Camera power and control system
- 5 function and 7 function working manipulators
- Remote control console
- Jupiter controlled option

Product Number	ITE-0046-DR-0001-00 *Below specification is for Centurion Mock Up ROV
Hydraulic Features	Air cooled onboard HPU, 140 bar (2,030 psi), 20 L/min (5.3 gpm) Onboard valve chest, 11 bi-directional outputs Tool control panel for ISO 13628-8 torque tools
Electrical Features	Onboard control multiplexer pod for all skid functions Remote control console Supply for three remote tooling video cameras Torque and turns feedback systems for typical ROV tooling Jupiter control option
Supply Requirements	440 volt 16 amp three phase and earth 240 volt 25 amp single phase
Weight	1,300 kg (2,870 lbs) without tools / skids
Ancillary Equipment	Combined storage / workshop container Dedicated spares package



Breaker

SPECIALIST TOOLS

Product Number:
ITE-1018-DR-0360-00



The BR45 is a rugged, powerful and lightweight subsea breaker used for light to medium concrete, rock and coral breaking and removal.

- Various chisel sizes on request
- D type ROV handle

Product Number	ITE-1018-DR-0360-00
Materials	Mild Steel; Light Weight Aluminium
Depth Rating	3,000msw (9,842ft)
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	942mm x 349mm x 270mm (37" x 14" x 11")
Hydraulic Power Requirements	Supply Pressure - 140 bar (2,000 psi) Flow - 26-34 L/min (7-9 gpm)
Weight in Air	Approx. 38 kg (84 lbs)
Weight in Seawater	Approx. 33 kg (73 lbs)
Ancillary Equipment	Various chisel sizes



Impact Wrench

SPECIALIST TOOLS

Product Number:
ITE-1018-DR-0290-00



Powered by a Stanley integral Hyrevz motor, the IW12 has a durable swing hammer impact mechanism with adjustable impact intensity from 250 to 1,200 ft.lb (340 to 1,632 Nm) of torque. Designed to run from a wide range of hydraulic circuits, this wrench allows underwater bolting in the most extreme applications.

- 13 Piece Socket Set Supplied
- D Type ROV Handle
- Integrated Flow Regulator

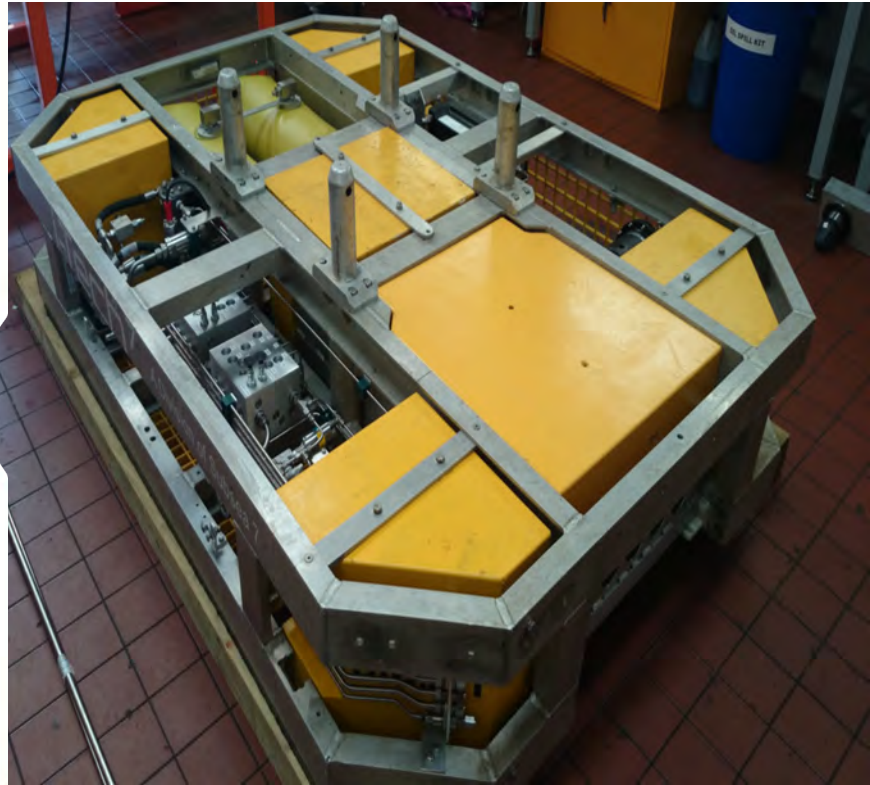
Product Number	ITE-1018-DR-0290-00
Materials	Handle Light Weight Aluminium
Depth Rating	Limited by ROV
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	446 mm (17 1/2") from Drive to Handle End 102 mm (4") Wide
Hydraulic Power Requirements	Supply Pressure - 140 bar (2,030 psi) Flow - 30 L/min (8 gpm)
Weight in Air	Approx. 15 kg (33 lbs)
Weight in Seawater	Approx. 12 kg (26.5 lbs)
Ancillary Equipment	Various Sockets



Intervention Control Skid

SPECIALIST TOOLS

Product Number:
SSA-0460-DR-0101-00



The Intervention Control Skid is an extremely versatile product designed to carry out a variety of control and test functions. The unit has an on-board control system capable of operating a torque tool and Flying Lead Orientation Tool (FLOT) when fitted, in addition to an auxiliary fluid pump which serves three A&B control line outputs and a 10,000 psi (690bar) intensifier test outlet. The auxiliary fluid system is fed by a self-contained reservoir system with the skid, which can be filled with most types of water based or oil based control fluids. When not being used with the FLOT Tool, the skid has an integral Tool Tray which can be deployed and retracted using a spare valve function from the host ROV. The bespoke control system graphics allow for monitoring and recording of pressure and flow readings of the control and test outputs.

- Designed for installation, functioning and testing of subsea infrastructure
- Dedicated on board control system
- Various camera and sensor inputs
- Flexible design offers multi function capability
- Simple plug and play operation

Product Number	SSA-0460-DR-0101-00
Materials	Lightweight Aluminium Frame PVC Coated Polyester Fluid Bladders
Depth Rating	2,000msw (6,600ft approx.) - can be altered to suit requirements
Supply Fluid	Mineral Oil AWS 22 – 32
Dimensions	2400mm x 1700mm x 430mm (8ft x 5.5ft x 1.5ft approx.)
Reservoir Capacity	2 x 30 litres (8 US gal)
Fluid Outputs	3 x A + B Control Lines @ 200 bar (2,900 psi) 1 x Test line @ 690 bar (10,000 psi)
Hydraulic Power Requirements	Operating Pressure 207 bar (3,000 psi) Flow - 30 L/min (8 gpm)
Weight in Air	706 kg approx. (1,560 lbs approx.)
Weight in Seawater	19 kg (42 lbs approx.)

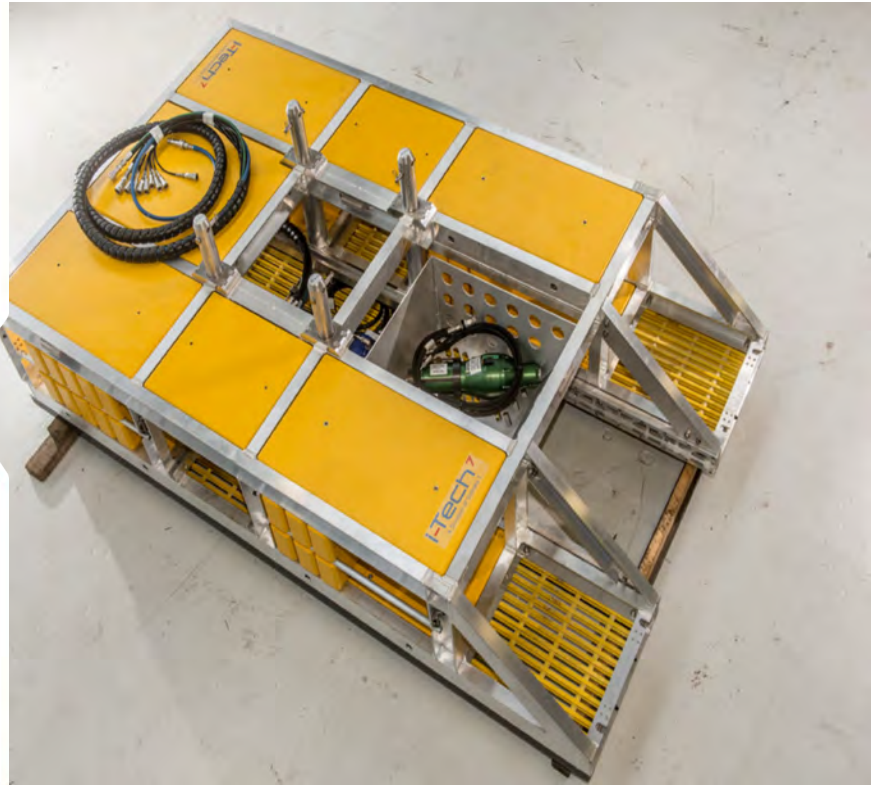


Deeper Challenges, Wider Horizons.

Multi-Function Skid

SIMULATED AND SITE INTEGRATION TESTING

Product Number:
ITE-0027-DR-1400-00



In operation the skid is used to increase handling capacity of an ROV. The skid can be set up in the following different configurations, variable buoyancy FLOT mount, tool tray and auxiliary tray. In the variable buoyancy FLOT mount configuration the trim of the ROV can be altered by filling the buoyancy tanks at the front of the skid with varying volumes of air. In this configuration the skid is fitted with two 12 litre (3 US gal) air cylinders which are rated for a max. working pressure (MWP) of 300 bar (4,350 psi). These tanks are used to fill the two buoyancy tanks at the front of the skid which are capable of producing up to 170 kg (375 lbs) of lift. The other two modes, tool tray and auxiliary tray allows additional equipment to be stored on the skid. This tray is then extended to allow the ROV manipulators to interface with the equipment.

Photo shows skid without front mounted variable buoyancy

- Variable buoyancy option
- Large tooling tray
- Easily configured buoyancy
- 3,000 msw (9,842ft) rates (without variable buoyancy tanks)
- Easy to set up
- Adaptable to Client specific requirements

Product Number	ITE-0027-DR-1400-00
Materials	Lightweight Aluminium Frame Syntactic Foam Buoyancy & GRP Tanks
Depth Rating	200msw (656ft) with Variable Buoyancy 3,000msw (9,842ft) without Variable Buoyancy
Supply Fluid	Mineral Oil AWS 22-32
Dimensions	3000 mm x 1800 mm x 874 mm (118" x 71" x 34 1/2")
Hydraulic Power Requirements	For extendable tray and basket: Supply Pressure - 207 bar (3,000 psi) Flow - 20 L/min (5.2 gpm) Other power requirements vary depending on configuration
Weight in Air	Est. Max Weight 1,016 kg (2,240 lbs)
Weight in Seawater	Est. Max Weight -2.8 kg (-6 lbs) Note: Weight varies depending on skid configuratio



Pan / Tilt, Zoom PTZ Inspection Camera

SPECIALIST TOOLS

Product Number:
AUS-11067-0000



The P.T.Z.I.C. offers a complete subsea viewing package. The camera utilises an ROV hydraulic pan and tilt unit providing 200° pan and 78° tilt movement. The zoom camera is a stainless steel unit with integrated LED lights and RS232 control.

The durable Tivar construction provides full protection for the camera as well reducing the risk of damage to critical sealing surfaces of the subsea structure being inspected

- Robustly constructed for subsea use
- Utilised standard ROV hydraulic pan and tilt unit
- ROV manipulator deployable

Product Number	AUS-11067-0000
Primary Materials	Tivar and Stainless Steel
Interfaces	Hydraulic - 7/16" JIC Electrical - 1504 burton connector
Camera Specification	Resolution - 470 TVL Sensitivity - 1.5 Lux Focus length - 10x Zoom (optical) Power - 24V/6W
Hydraulic Power	25 L/min @ 207 bar (6.6 gpm @ 3,000 psi)
Weight in Seawater	15kg (33 lbs)



Regan Latch Release Tool

SPECIALIST TOOLS

Product Number:
ITE-00R-DR-0100-00



The Regan latch release tool provides the means to disconnect a guidewire from a regan latch should the guidewire break. The tool is stabilised on the latch by gussets that allow the operation to be carried out regardless of the guidewire position and location of the break

- 8,000 kgf (17,640lbf) latch actuation force
- Manipulator deployed by workclass ROV
- Robustly made from corrosion resistant materials
- Unlimited depth rating
- Hydraulically powered by host ROV

Product Number	ITE-0012-DR-0100-00
Primary Materials	Aluminium
Working Pressure	ROV Working Pressure
Latch Type	Regan Type GL-4, 8-5/8" (219mm) diameter
Latch Actuation Force	8,000kgf (17,640lbf)
Stroke	79mm (3.1")
Supply Fluid	Mineral oils
System Depth Rating	Unlimited
Weight in Air	17 kg (37 lbs)
Weight in Seawater	10.7 kg (24 lbs)
Deployment	Manipulator
Hydraulic Connections	2 x 1/4" Swage

Subsea Hydrocarbon Sampling Skid

SPECIALIST TOOLS

Product Number:
SSA-0517-DR-0101-00



The Subsea Hydrocarbon Sampling Skid is Subsea 7 patented technology designed to hot stab into flowlines to allow Mono-phasic hydrocarbon sampling from live production wells for flow assurance, PVT and GOR studies. Production fluid chemistry analysis of oil condensate, formation water enabling Calibration of subsea flow meters Fiscal allocations.

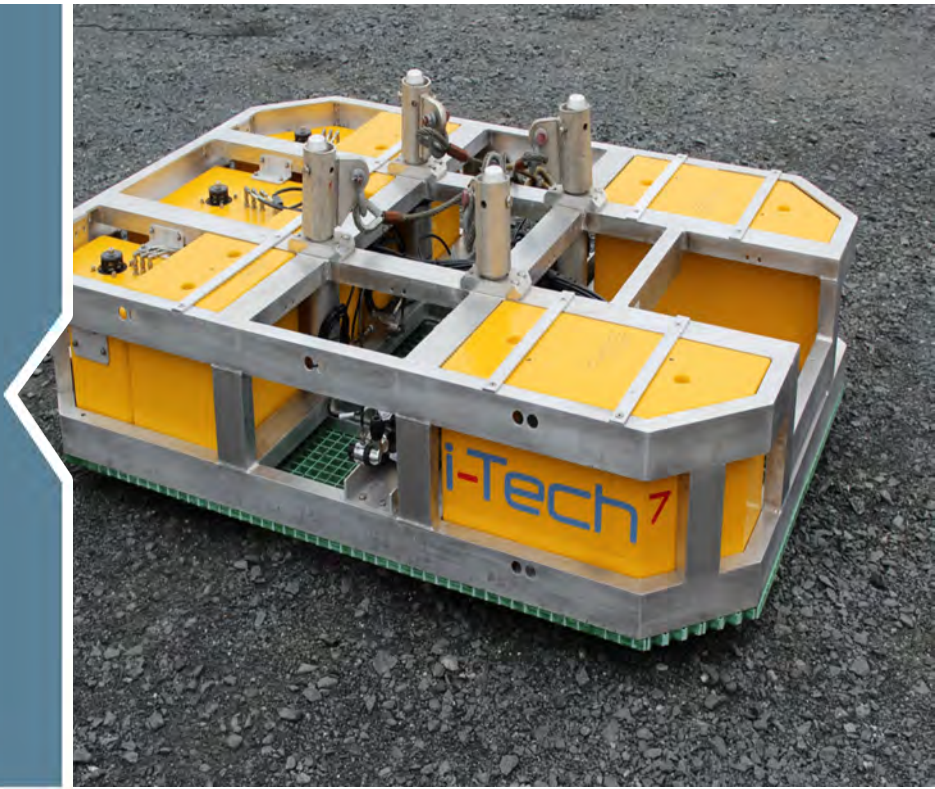
- Nitrogen supply (failsafe system pre-charge, N2)
- Protection frame
- Flushing pumps
- Bulk MEG storage and pumping
- Bulk solvent storage tank
- Bulk hydrocarbons slops storage
- Sample skid system includes a transportation container and topside equipment container
- Timed sequential failsafe/disconnect system

Product Number	SSA-0517-DR-0101-00
Deployment	Work-class remotely operated vehicle (ROV) 150hp minimum
Materials	Lightweight aluminium (frame) Stainless steel (cylinders & pipework)
Reservoir Capacity	8 off 700cc (0.18 US gal) DOT approved sample cylinders
Subsea Heating	>25°C Depth Rating 2,000m (6,562ft) - standard, deeper available
Applications	Fluid Sampling Gas sampling Calibration of flow meters Fiscal allocations
Weight in air	2,750 kg (6,063 lbs)
Weight in Seawater	Neutral Buoyant
Hydraulic Power Requirements	ROV Supply 210 bar @ 155L minimum (3,000 psi @ 41 US gal) (Pilot on/off by ROV) ROV Return 155 L/min @ 1 bar maximum (41 US gal @ 14.5psi) (Back Pressure) ROV Drain LPM @ 1 bar (14.5 psi) maximum (Back pressure) ROV Reservoir Capacity Additional 12L (3 US gal) required
Hydraulic Power Requirements	Pressure line - 3/4" QC Return line - 3/4" QC Pilot lines - 1/4"
Electrical Power Requirements	115VAC supplied by host ROV
Skid-mounted control system equipment:	2 x 12-station valve packs (master/slave) used to control and monitor all Sampling Skid Functions The skid is operated from a topside laptop PC and communicates with the master valve pack via the ROV RS232 link.

Variable Buoyancy Skid

SPECIALIST TOOLS

Product Number:
ITE-0027-DR-0020-00



The Variable Buoyancy Skid provides accurate controllable lift capability to an ROV when moving heavy items such as Hydraulic Flying Leads between locations. The skid is capable of operating depths down to 200 metres and the ability to provide around 200 kg of additional lift to the ROV with sensor feedback to tell the operator the amount of lift supplied and the remaining capacity in the gas supply cylinders. The unit is controlled remotely via a laptop computer with a simple 'user friendly' graphics interface page.

- High lift capacity, circa 200 kg (440 lbs)
- Operating depth down to 200 metres (656ft)
- Minimal operators input, plug and play
- Intelligent control system

Product Number	ITE-0027-DR-0020-00
Materials	Lightweight Aluminium Frame Syntactic Foam Buoyancy & GRP Tanks
Depth Rating	200 metres (656ft)
Supply Fluid	Mineral Oil AWS 22 – 32
Dimensions	2400mm x 1700mm x 500mm (95" x 67" x 20")
Compressed Air Cylinder Rates	300 Bar (4,351psi) Working Pressure
Hydraulic Power Requirements	Supply Pressure - 207 bar / (3000 psi) Flow - 20 litres/min (5.2 gpm)
Weight in Air	600 kg (1,322 lbs) approx.
Weight in Seawater	Neutrally Buoyant
Ancillary Equipment	Portable 240 volt compressor



Water Sampler Assembly

SPECIALIST TOOLS

Product Number:
ITH-0029-DR-1000-00



The i-Tech7 Water Sampler Kit (WSK) ITH-0029-DR-1000-00 has been designed to allow the fitment and activation of multiple (5) Niskin water sampling canisters. The cylinders are mounted to an ROV mounted frame and utilise a hydraulic drive to trigger the sample. The Canisters can be utilised to take multiple samples at the same depth or can be triggered at different depths to give comparison over the water column.

- 3,000msw depth (9,842ft)
- Rear Mountable to ROV

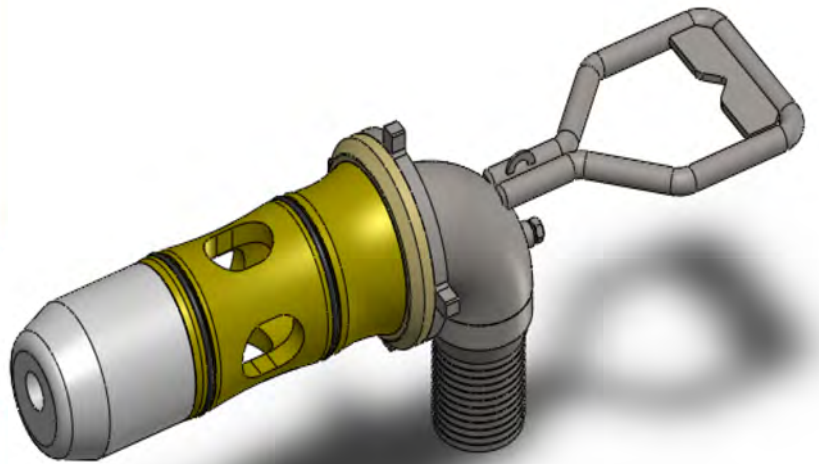
Product Number	ITE-1029-DR-1000-00
Materials	Frame, Rectangular tube 6061T6 :- 3"x4"x 1/4" Wall Canisters, plastic tube.
Depth Rating	3,000msw (9,842ft)
Supply Fluid	N/a
Dimensions	Water Sampler Assembly: 1269mm Dia. x 848mm x 203mm (49.96" x 33.39" x 26.73")
Hydraulic Power Requirements	Maximum input pressure 70Bar Flow 5Lpm
Weight in Air	Approx. 36 kg (85.09 lbs)
Weight in Seawater	Approx. 18 kg (40 lbs)



3" Low Pressure Hot Stab

SUCTION CANS / PIGGING AND TESTING

Product Number:
ITE-0001-DR-4500-00



This hot stab is typically used as the pumping tool for suction piles. It has a Delrin nose on the front end of the assembly which registers in the receptacle to reduce wear and impact damage to the stab's aluminium anodized body. This assembly comes 1/4 " port for installation of transducer or gauge sense line at the stab. The fitting is a 3" hose barb nipple for convenient hose attachment. Standard handle configuration D-handle with Fish Tail handle and T-handle available on request.

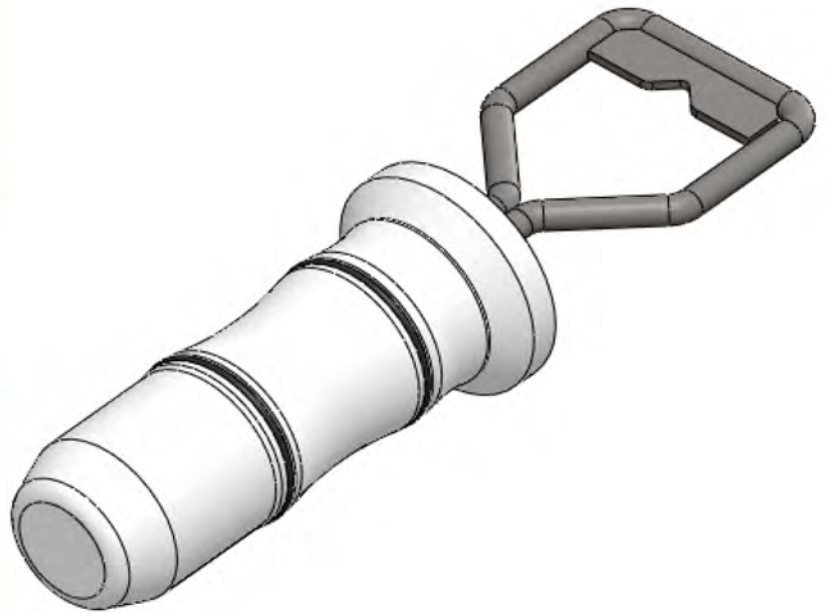
Product Number	ITE-0001-DR-4500-00
Primary Materials	316/316L, 6061-T6/651, Nitrile, UHMW, Bronze
Coating	Hard Anodized Aluminium
Length	27.75" (705mm)
Weight in Air	11 kg (24 lbs)
Weight in Seawater	8 kg (16lbs)
Test Pressure	10.3 bar (150 psi)



3" Dummy Hot Stab

SUCTION CANS / PIGGING AND TESTING

Product Number:
ITE-0001-DR-1500-00



This stab is used to protect the bore of i-Tech's 3" Low Pressure Receptacle against marine growth and physical damage. Standard handle configuration D-handle with Fish Tail handle and T-handle available on request.

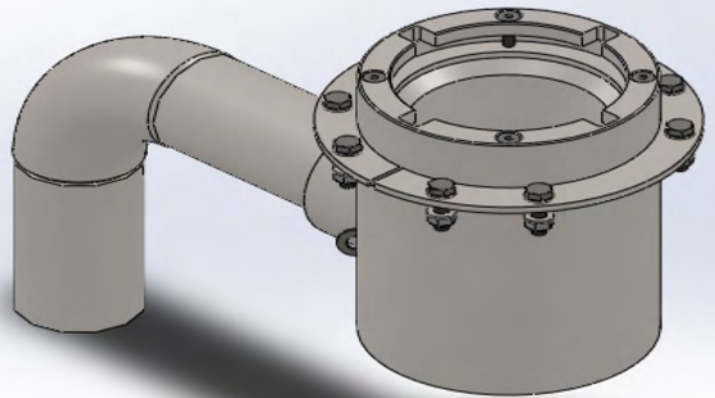
Product Number	ITE-0001-DR-1500-00
Primary Materials	316/316L, UHMW, Buna
Coating	None required
Length	23.125" (587mm)
Weight in Air	5.5kg (12lbs)
Weight in Seawater	0.7 kg (1.6 lbs)



3" Low Pressure Receptacle

SUCTION CANS / PIGGING AND TESTING

Product Number:
ITE-0001-DR-2000-00



This receptacle is typically used as the pumping port for suction piles. The 2- piece flange can be bolted to the table on top of the pile or welded to the table. The 3" NPT port makes this receptacle versatile.

The receptacle comes with a welded port that the pipe can either be welded or threaded. The port also allows the receptacle to be used as a pressure test vessel for 3" low pressure stabs. Hardware and pipe components can be provided upon request

3" Low Pressure Receptacle

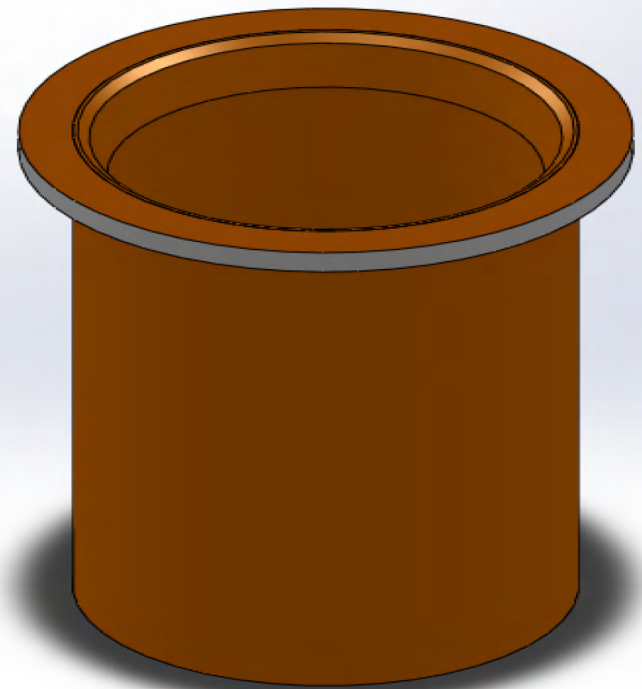
Product Number	ITE-0001-DR-2000-00
Primary Materials	316/316L
Coating	None required
Weight in Air	37 kg (82 lbs)
Weight in Seawater	32 kg (72 lbs)
Testing Pressure	10 bar (150 psi)



3" Low Pressure Receptacle Parking

SUCTION CANS / PIGGING AND TESTING

Product Number:
ITE-0001-DR-3000-00



This weld-on receptacle is used to park a 3" hot stab or 3" dummy stab during ROV operations on the top of the suction pile. It is provided with a RAL2004 orange three coat epoxy coating, but can be provided with a different color or no coating at all. The OD of the flange is non-coated to reduce weld prep time.

Product Number ITE-0001-DR-3000-00

Primary Materials Carbon Steel – Various

Coating Epoxy

Length 8.875" (225mm)

Weight in Air 7 kg (16 lbs)

Weight in Seawater 6 kg (14 lbs)

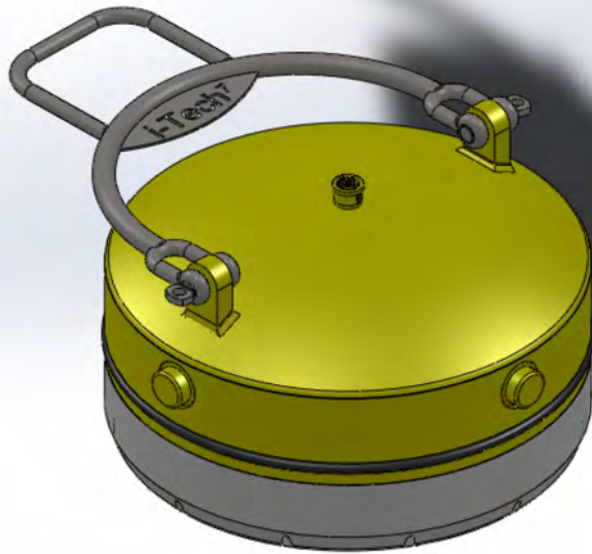
Notes and Disclaimers: Weight in air is calculated from computer models. Weight of water is calculated with conservative estimate of 61lbs/ft3. Exact material specs may be withheld. All welding is performed as per AWS 1.1.



24" Suction Pile Plug

SUCTION CANS / PIGGING AND TESTING

Product Number:
ITE-0006-DR-3000-00



Suction pile plugs are part of our suction pile installation/retrieval suite of tools and components. In addition to plugs, i-Tech offers the mating receptacles and parking receptacles. This system replaces butterfly valves and is available in a variety of sizes. This plug can be easily removed and recovered by the ROV for seal replacement.

This particular plug is a steel 4-lug design and all-stainless handle. The lugs remain in the envelope of the receptacle, reducing snag points. Once installed, the handle falls to an approximate horizontal position.

Product Number

ITE-0006-DR-3000-00

Materials

Steel, UHMW, 316 SS

Coating

Three Coat Epoxy paint and Xylan

Weight in Air

51 kg (114 lbs)

Weight in Seawater

48 kg (107lbs)

Test Pressure

10 bar (150psi)



24" Suction Pile Receptacle

SUCTION CANS / PIGGING AND TESTING

Product Number:
ITE-0006-DR-2000-00



Suction pile receptacles, also known as suction pile vents, are part of our suction pile installation/retrieval suite of tools and components. In addition to vents, i-Tech offers parking receptacles and plugs. All are offered in a variety of sizes.

This particular weld-on receptacle has a 4-slot design that not only captures the plug axially, but also assists in seating and unseating the plug's seal ring. Unlike some other suction pile receptacle designs, this one can be pressure tested without a welded-on cap.

Product overall height can be between 36" max. and 24" min.

24" Suction Pile Receptacle

Product Number	ITE-0006-DR-2000-00
Primary Materials	Carbon Steel - API 5L x 5L
Coating	Three Coat Epoxy and Xylan - sealing surface only
Weight in Air	304 kg (671 lbs)
Weight in Seawater	266 kg (587 lbs)
Test Pressure	10 bar (150 psi)



Dual Point Tool Deployment Unit

TOOL DEPLOYMENT UNITS

Product Number:
ITE-0017-DR-0000-00



Deployed from a workclass ROV, the tool deployment unit (TDU) ensures a safe and efficient intervention operation. Using two docking probes, rather than attaching with a grabber or suction pad, the system is able to locate and stabilise the ROV in a known position and precisely deploy a dedicated tool via an XYZ mechanism.

- Interfacing with ROV through mounting brackets, two hydraulic lines & one electrical cable
- Depth rating of 1,000msw (3,280ft) or optional 3,000msw (9,840ft)
- Neutrally buoyant
- ISO 13628-8
- System adaptable to a range of tools
- Intelligent Control System available on request

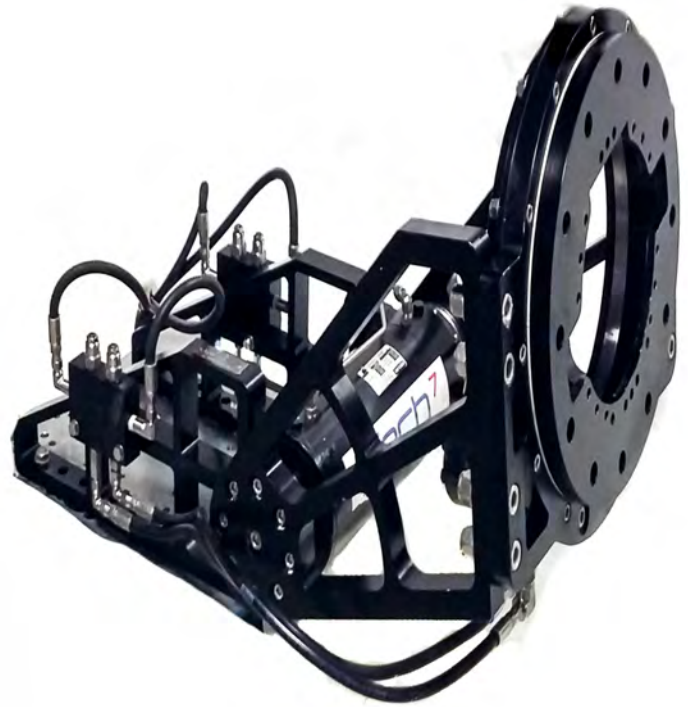
Product Numbers	Standard Duty: RIT-0002-D-0001-00 Heavy Duty: RTE-0002-D-1100-00
Materials	Frame - aluminium alloy Pressure vessels - aluminium alloy Buoyancy - syntactic foam
Hydraulic Supply	140 bar (2,030 psi) min continuous from ROV Flow - 30 L/min (8 gpm) max
Supply Fluid	Mineral oil
Tooling	The system is readily adaptable to a range of standard and non-standard tools
Additional Features	Compliant tool mounts Docking probes fitted with failsafe release mechanisms
Depth Rating	1,000msw (3,280ft) & 3,000msw (9,840ft) optional
Hydraulic Connections	Pressure & Return 1/2"
Weight in Air	320 kg (705 lbs) without tools
Weight in Seawater	Neutrally buoyant
Interfaces	ISO 13628-8
Deployment	Can be deployed by most work-class ROVs
Ancillary Equipment	Topside control console Combined storage and workshop container Dedicated spares packages HPU for testing and onshore trials
Electrical (Comms) and Power	RS-232/485 Power 110V @ 10 amps



Flying Lead Orientation Tool (FLOT) HD

TOOL DEPLOYMENT UNITS

Product Number:
ITE-0007-DR-0600-00



This ROV mounted Flying Lead Orientation Tool (FLOT) is designed for flying lead manipulation with the use of a class 4 torque tool. The pitch and roll that this tool offers exceeds those of the majority of other tools in its class. The distance between the torque tool and bottom of the interface plate was kept to a minimum to fit heavily braced and populated flying leads. These attributes combined with the tool's high load capacity, universal mounting, and ability to accept several popular torque tools in the industry, makes it incredibly versatile.

The tool comes with case, hoses and manual. It comes standard with an adapter for an i-Tech torque tool. Adapters for other torque tools are optional.

- Designed for i-Tech7 Class 1 to 4 Torque Tool but can be adapted for other Class 1 to 4 Torque Tools
- Can be adapted to mount Class 6 Torque Tool
- Can be adapted for RCV75 and RCV115 cutter
- Can be adapted for LAOT

Product Number	ITE-0007-DR-0600-00
Materials	Anodized AL 6061-T6 or AL 6082-T6, SS 17-4 PH
Weight in Air	154 lbs (70 kg)
Weight in Seawater	122 lbs (55 kg)
Pitch Angle	-120°/+170°
Roll Angle	-170°/+170°
Max Loading	1,000 lbs (450 kg)
Max Pitch Torque	2,645 Nm (1,951 ft.lb)
Operation Pressure	207 bar (3,000 psi)
Operating Fluid	Hydraulic oil
Pitch Actuator	SS shaft and coated carbon steel body
Hydraulic Motor	Coated Carbon Steel Body Max output torque (cont.): 240 Nm (177 ft.lb)
Roll Torque	1,817 Nm (1,340 ft.lb) (cont.)
Hydraulic Connections	1/4" x 4 Notes and Disclaimers: Weight in air is weighted real value. Weight of sea water is calculated with an estimate of 64.1 lbs/ft3 (1,027 kg/m3)



Single Point Tool Deployment Unit

TOOL DEPLOYMENT UNITS

Product Number:
ITE-0058-DR-0000-00



The single point tool deployment unit (TDU) is used to locate and stabilise the ROV during subsea intervention tasks. Using either standard or purpose-built tooling, the tool is light-weight and simple to interface with most work-class ROVs.

- Fail safe release system in event of power failure
- Readily adaptable to accept most intervention tooling
- Depth rating ROV dependent
- ISO 13628-8
- Frame made from aluminium alloy and carriage from stainless steel
- Deployed by Workclass ROV

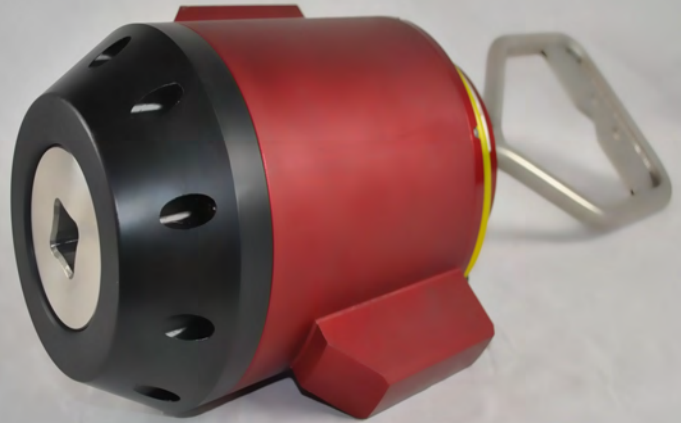
Product Numbers	ITE-0058-DR-0000-00 Extended Length Version ITE-0058-DR-0009-00
Materials	Frame - aluminium alloy Carriage - stainless steel
Reservoir Hydraulic Supply Fluid	Mineral Oil
Hydraulic Controls	From ROV valve pack via control panel
Tooling	The system is readily adaptable to accept a wide variety of intervention tooling
Additional Features	Docking probe is fitted with over-pull and failsafe release mechanisms
Hydraulic Connections	1/4" Tube
Depth Rating	ROV aligned to ROV compression system
Weight in Air	35 kg (80lbs) without tools
Weight in Seawater	22 kg (50lbs) without tools
Interfaces	ISO 13628-8
Deployment	Workclass ROV



3: 1 Torque Multiplier

VALVE MANIPULATION TOOLS

Product Number:
AUS-11168-0001



The 3:1 Torque Multiplier is designed to operate rotational valves on subsea structures through the use of an ROV. The tool provides a 3:1 torque multiplication ratio by which the torque is transmitted from the manipulator wrist of the ROV through to the end effector. The end effector shown is suited for ISO 13628:8 Class 1 & 2 interfaces. Other end effectors can be fitted if required.

- Designed to actuate ISO 13628:8 Class 1 & 2 interfaces on subsea structures
- Robustly constructed from stainless steel, acetal and anodized aluminium for strength and corrosion resistance
- Operating depth 3000msw (9,842ft)
- Max output torque 1353 Nm (998 ft.lb)

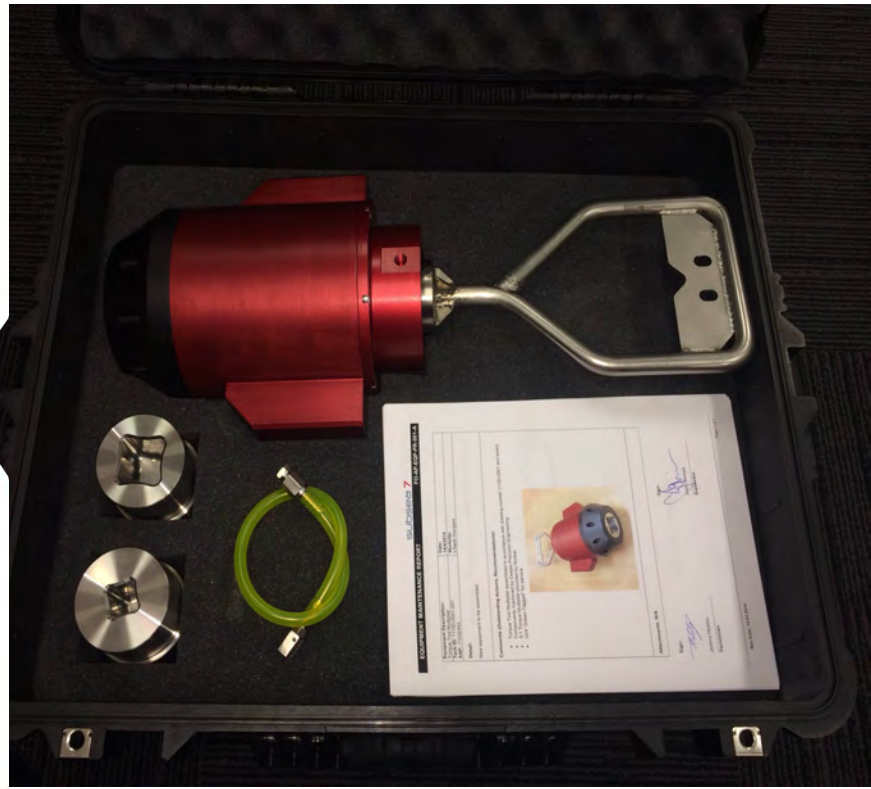
Product Number	AUS-11168-0001
Materials	Stainless Steel and Aluminium
Depth Rating	3000msw (9,842ft)
Weight in Air	14.8 kg (33 lbs)
Weight in Seawater	10.7 kg (23.5 lbs)
Ancillary Equipment	ISO 13628:8 Class 1 & 2 End Effector ISO 13628:8 Class 3 End Effector ISO 13628:8 Class 4 End Effector



5: 1 Torque Multiplier

VALVE MANIPULATION TOOLS

Product Number:
AUS-11150-0001



The 5:1 torque multiplier is designed to operate rotational valves on subsea structures through the use of the ROV manipulators or Torque tool. The multiplier can be used to open stuck valves as the input torque from the Torque Tool can be closely monitored so the output torque does not exceed the breaking torque of the valve.

The end effector of the tool is interchangeable with other ISO 13268:8 effectors.

- Designed to actuate ISO 13628:8 Class 4 interfaces on subsea structures
- Robustly constructed from stainless steel, acetal and anodized aluminium for strength and corrosion resistance
- Operating depth 3000msw (9,842ft)
- Max output torque 3440 Nm (2,537 ft.lbs)

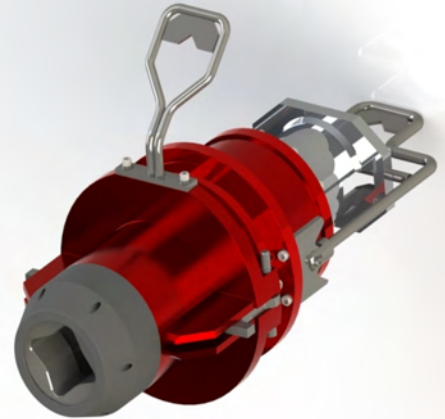
Product Number	AUS-11150-0001
Materials	Stainless Steel, Aluminium and Acetal
Depth Rating	3000msw (9,842 ft)
Max Output Torque	3440 Nm (2,537 ft.lb)
Weight in Air	17.8 kg (39 lbs)
Weight in Seawater	12.7 kg (28 lbs)
Ancillary Equipment	Supplied with 'D' handle for manipulator operation Can be supplied with Class 1 to 4 torque tool bucket for tool interface



Class 4 to 7 Torque Tool Adaptor

VALVE MANIPULATION TOOLS

Product Number:
AUS-11024-0001



The class 4 to 7 torque tool adaptor is designed to handle class 7 valves and connectors through a standard class 4 torque tool. The adaptor is pressure compensated and has a mechanical latch mechanism activated through the vertical grab handle.

- Constructed from aluminium and stainless steel
- Pressure compensated housing
- Mechanical latching mechanism
- Max output torque 34,000 Nm (25,077 ft.lb)
- Gear ratio 14.1:1

Product Number	AUS-11024-0001
Materials	Stainless Steel, Aluminium and Acetal
Depth Rating	3000msw (9,842ft)
Max Output Torque	34,000 Nm (25,077 ft.lb)
Hydraulic Power Requirement	N/A
Weight in Air	150 kg (330 lbs)
Weight in Seawater	120 kg (265 lbs)



Clutch Tool (Class 1 to 4 & Paddle Interface)

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-D-0050-00



The clutch tool has been designed to allow the function of subsea valves with manipulator. The clutch tool limits the amount of torque which can be applied to the valve thus preventing possible damage.

The tool is designed to interface with API 17D/ 17H and ISO 13628:8 Class 1-4 interfaces (commonly referred to as 17D) and low torque interfaces type A, B and C (3/4" (19mm) paddle valve)

- Clutch easy to set
- Manipulator deployable
- Supplied with calibrated torque wrench
- Spare clutch included

Product Number	ITE-0007-D-0050-00
Materials	Stainless Steel Acetal
Depth Rating	Limited by ROV
Supply Fluid	N/A
Dimensions	305 mm Dia. x 159 mm Long (12" x 6 1/4")
Hydraulic Power Requirements	N/A
Torque Output	10 Nm to 200 Nm (7.4 ft.lbs to 148ft.lbs)
Weight in Air	Approx. 12 kg (26.5 lbs)
Weight in Seawater	Approx. 9 kg (20 lbs)



Deeper Challenges, Wider Horizons.

Linear Actuator Override Tool (LAOT)

VALVE MANIPULATION TOOLS

Product Number:
ITE-0057-DR-0001-00



The linear actuator override tool (LAOT) is used to transmit axial force to the stem of hydraulically actuated gate valves. The tool consists of a bayonet or horse shoe profile end effector that locks the tool to the valve interface and reacts the axial override force generated by the tools piston.

- 742 kN (547,271 ft.lbs) output force with 190mm (7.5") maximum working stroke
- Made from titanium alloy and carrier aluminium alloy & plastic
- Depth rating limited to ROV compensation system
- ISO 13628-8 interface types A & B available; type C available on request
- TDU deployable

Product Numbers	Manipulator Deployed Option Type A: ITE-0057-DR-0001-00 LAOT Carrier Manipulator ITE-0057-DR-0050-00 Diver Deployed LAOT SSA-0360-D-0001-00 Type A: SSA-0134-547-00 Type B: SSA-0140-013-00 LAOT Carrier - SSA-0134-546-00
Hydraulic Supply	Max 690 bar (10,000 psi) Flow 1.5 L/min (0.3 gpm)
Supply Fluid	Mineral Oil
Materials	Tool - titanium alloy Carrier - aluminium alloy and plastic
Max Output Force	742 kN (547,271 ft.lbs)
Working Stroke	190mm (7.5") approx.
Depth rating	Limited to ROV compensation system
Weight In Air	37 kg (82 lbs)
Weight In Seawater	25 kg (55 lbs)
Interfaces	ISO 13628-8 (figures 14, 15 & 16) types A, B & C compatible available
Deployment	Using i-Tech's proprietary Tool Deployment Unit (TDU) or i-Tech7 FLOT and 7 Function Manipulator



Lock Out Tool (LOT)

VALVE MANIPULATION TOOLS

Product Number:
AUS-11132-0000



The Hydraulic Release Variable Stroke Lock Out Tool connects to the front of a Type A Linear Actuator Override Tool and is used to lock Linear Valves. Once locked the LAOT can return to the surface or be used on another valve.

The tool failsafes to the lock position. The shaft is unlocked with hydraulic pressure supplied with a small hotstab. The LOT can stroke up to 7" (178mm) and can lock in 5mm (0.19") increments along this stroke

- Working stroke of upto 7" (178mm) and can lock at 5mm increments
- Safe working 'locking load' of 745 kN (549k ft.lb) in the valve hold direction
- Robustly constructed from lightweight titanium alloy
- Type A rear interface
- Type A, B or C interface interchangeable front head

Product Number	AUS-11132-0000
Materials	Titanium Alloy, Stainless Steel and Aluminium
Depth Rating	Unlimited
Hydraulic Power Requirement	< 1 L/min (0.2 gpm)
Weight in Air	52 kg (115 lbs approx.)
Weight in Seawater	41 kg (90 lbs approx.)



Multi Torque Tool

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-DR-0901-00



The Multi-Torque Tool provides a means of developing torque for actuation of valves and lockdown clamps, throughout a subsea production system over a torque range of 27Nm to 2710Nm (20 to 2000 ft.lb).

The torque reaction lugs on each side of the tool interface into the ISO 13628-8 Figure 14 interface. This provides a means of stabilising the ROV during valve operations.

- Combines functions of torque tools in a single unit
- Single 5:1 torque multiplier
- Torque reacted locally within front single spring loaded multi end effectors for 35mm square, 35mm hex and paddle valve stems.
- Signals from torque transducer and turns counter relayed back to continuous surface readout via ROV umbilical
- Hydraulic control achieved from ROV through hydraulics manifold or separate Hydraulic Control Panel
- Torque control achieved through closed loop proportional control system or can be manually pre-set at surface and selected from topside control console
- Tool assembly contained in aluminium housing for corrosion and environmental protection.
- Quick release paddle valve socket can easily be removed if not required

Product Number	ITE-0007-DR-0901-00
Materials	Housing - aluminium alloy Spring loaded socket - stainless steel / aluminium bronze
Hydraulic Supply	175 bar (2,500 psi) for maximum tool output
Supply Fluid	Mineral Oil
Torque Output	27Nm to 2710Nm (20 to 2,000ft-lb)
Output Speed	8 rpm @ 24 L/min (6.3 g/min)
Turns Counter	Accurate to ± 0.125 turns
Torque Feed-Back	Continuous
Depth Rating	Limited to ROV hydraulic compensation system
Weight in Air	52kg (115lbs)
Weight in Water	40.1 kg (88.4 lbs)
Interfaces	ISO 13628-8 Figure 14 35mm square 35mm Hex and Paddle Valve compatible
Deployment	i-Tech 7's FLOT, Tool Deployment Unit (TDU) or by manipulator



Rotary Docking Class 1 to 4 Torque Tool

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-DR-0700-00



The Class 1 to 4 Rotary Docking Torque Tool provides a means of developing torque for actuation of valves and lockdown clamps, throughout a subsea production system over a torque range of 27Nm to 2710Nm (20 to 2000 ft.lb).

The torque reaction lugs on each side of the tool include an integral latching mechanism that anchors the tool into the ISO 13628-8 Figure 18 interface. This provides a means of stabilising the ROV during valve operations and allows for secure handling of fly-to-place electro-hydraulic flying leads

- Combines functions of class 1-4 torque tools in a single unit
- Single 5:1 torque multiplier
- Signals from torque transducer and turns counter relayed back to continuous surface readout via ROV umbilical
- Hydraulic control achieved from ROV through hydraulics manifold or separate Hydraulic Control Panel
- Torque control achieved through closed loop proportional control system or can be manually pre-set at surface and selected from topside control console
- Multi class end effector available
- Tool assembly contained in aluminium housing for corrosion and environmental protection

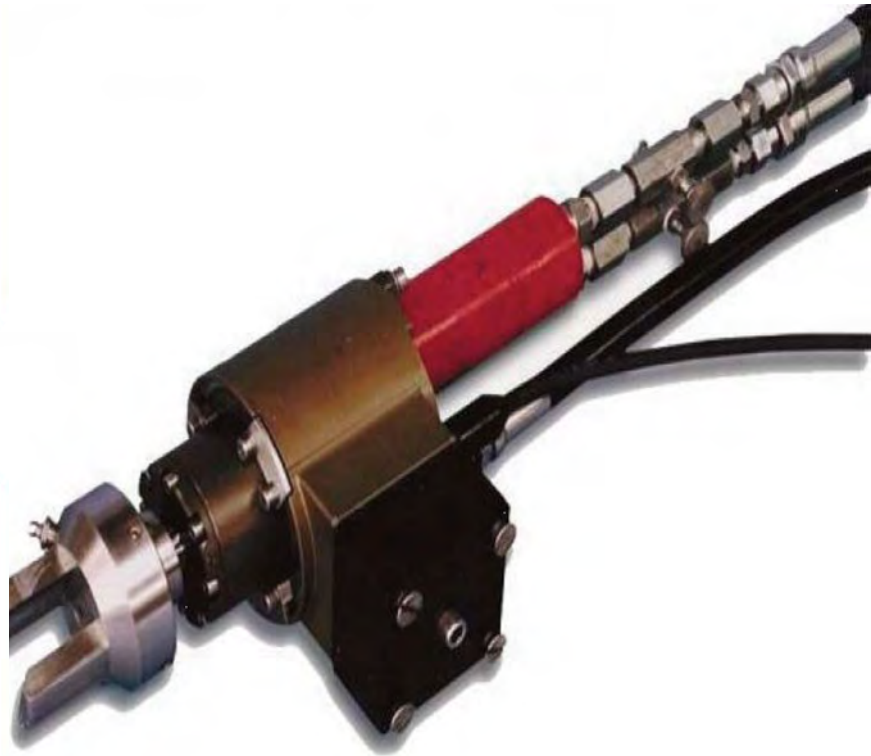
Product Number	ITE-0007-DR-0700-00
Materials	Housing - aluminium alloy Spring loaded sockets - stainless steel
Hydraulic Supply	Pressure: Max 207 bar (3,002 psi) & 80 bar (1,160 psi) for gear selector
Flow	Max 20 L/min (5.3 gpm)
Supply Fluid	Mineral Oil
Torque Output	27 Nm to 2710 Nm (20 to 2,000 ft.lb)
Output Speed	Variable up to 8 rpm @ 24 L/min (6.3 gpm)
Turns Counter	Accurate to ± 0.125 turns
Hydraulic Connections	Pressure + Return 3/8" Pilot Lines 1/4"
Depth Rating	3,000msw (9,842 ft)
Weight in Air	52 kg (115 lbs)
Weight in Water	40.1 kg (88.4 lbs)
Interfaces	ISO 13628-8 Figure 18 Rotary Docking Class 1-4 compatible API 17H Rev 2
Deployment	i-Tech7's FLOT or by manipulator



Rotary Docking Low Torque Tool

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-D-0530-00



The low torque tool develops up to 70 Nm (52 ft.lb) torque for actuation of ball and needle valves and clamps throughout a subsea production system.

The tool consists of a hydraulic motor coupled, via a gear box, to a profiled socket suitable for T-bar or paddle actuation. Due to the low torque figures, no local torque reaction is required. Signals from a turns counter are relayed to a surface readout

- 6 Nm (4 ft.lb) to 70 Nm (52 ft.lb) torque output
- 280 Nm (206 ft.lb) variant available
- Output speed upto 30 rpm @ 10 L/min (2.2 gpm)
- ISO 13628-8 (API 17H) compatible interface
- Gear unit in aluminium casing for corrosion & environmental protection
- Different levels of torque can be manually pre-set, or alternatively, torque control achieved through closed loop system
- Depth rating same as host ROV
- Deployed by Tool Deployment Unit or manipulator

Product Number	ITE-0007-D-0530-00
Materials	Housing - aluminium alloy Socket - super duplex stainless steel
Hydraulic Supply	100 bar (1,450 psi) continuous operation 125 bar (1,810 psi) intermittent operation Flow 10 L/min (2.2 gpm) Max
Supply Fluid	Mineral oil
Torque Output	6 to 70 Nm (4 to 52 ft.lb); optional 280 Nm (206 ft.lb)
Output Speed	Up to 30 rpm @ 10 L/min (2.2 gpm)
Turns Counter	Accurate to ± 0.25 turns
Hydraulic Connections	Pressure + Return 3/8"
Depth Rating	Oil filled tool housing compensated from host ROV giving the same depth rating as the ROV
Weight In Air	2.5 kg (5.5 lbs)
Weight In Seawater	1.8 kg (4lbs)
Interfaces	ISO 13628-8 (API 17H) compatible
Deployment	Tool Deployment Unit or by manipulator



Rotary Docking Medium Torque Tool

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-D-0510-00



The medium torque tool develops up to 900 Nm (664 ft.lb) of torque for actuation of valves, lockdown and clamps throughout a subsea production system.

The tool consists of a hydraulic motor close coupled to a gear unit that is in turn connected to a profiled 35mm AF square socket. Torque is reacted locally within the front end of the tool

- 50 Nm (36 ft.lb) to 500 Nm (369 ft.lb) Standard (Optional 900 Nm) (664 ft.lb) torque output with continuous torque feedback
- Output speed upto 8 rpm @ 4 L/min (0.9 gpm)
- ISO 13628-8 Fig. 14 (formerly API 17H rev 1) compatible interface
- Entire tool cased in aluminium for corrosion and environmental protection
- Different levels of torque can be manually pre-set, or alternatively, torque control achieved through a closed loop system
- Depth rating same as host ROV
- Deployed by Tool Deployment Unit or manipulator

Product Numbers	Short Nose 500 Nm : ITE-0007-D-0510-00 Short Nose 900 Nm : ITE-0007-D-0520-00 Long Nose 500 Nm : SSA-0134-527-00
Materials	Housing - aluminium alloy Socket - super duplex stainless steel
Hydraulic Supply	100 bar (1,450 psi) continuous operation 140 bar (2,030 psi) intermittent operation Flow: 30 L/min (6.6 gpm) max
Supply Fluid	Mineral oil
Torque Output	50 to 500 Nm (36 ft.lb to 369 ft.lb) standard 50 to 900 Nm (36 ft.lb to 664 ft.lb) optional
Output Speed	Up to 8 rpm @ 4 L/min (0.9 gpm)
Turns Counter	Accurate to +0.1 turn
Torque Feedback	Continuous
Hydraulic Connections	3/8" x 2 - Pressure + Return 1/4" x 1 - Case Draing
Depth Rating	Oil filled tool housing compensated from host ROV giving the same depth rating as the ROV
Weight in Air	25 kg (55 lbs)
Weight in Seawater	18 kg (40 lbs)
Interfaces	ISO 13628-8 (API 17H) compatible
Deployment	Using i-Tech's Tool Deployment Unit or by manipulator



Rotary Docking High Torque Tool

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-D-0500-00



The high torque tool develops up to 2000 Nm (1,475 ft.lbs) torque for actuation of valves, lockdown and clamps throughout a subsea production system.

The tool consists of a hydraulic motor, close coupled to a gear unit that is in turn connected to a profiled 35mm AF square socket

- 150 Nm (110 ft.lb) to 2000 Nm (1,475 ft.lb) torque output with continuous torque feedback
- Output speed of upto 4 rpm @ 15 L/min (3.3 gpm)
- ISO 13628-8 Fig 14 compatible interface
- Aluminium casing for corrosion & environmental protection
- Hydraulic control through ROV intervention system, a hydraulics manifold or a separate panel
- Conical nose option eases deployment by ROV manipulator
- Depth rating limited by ROV compensation system
- Deployed by Tool Deployment Unit or manipulator

Product Number	ITE-0007-D-0500-00
Materials	Housing - aluminium alloy Socket - super duplex stainless steel
Hydraulic Supply	100 bar (1,450 psi) continuous operation 140 bar (2,030 psi) intermittent operation Flow: 30 L/min (6.6 gpm) Max
Supply Fluid	Mineral oil
Torque Output	150 to 2000 Nm (110 to 1,475 ft.lb)
Output Speed	Up to 4 rpm @ 15 L/min (3.3 gpm)
Turns Counter	Accurate to ± 0.25 turns
Hydraulic Connections	Pressure and Return 3/8" 1/4" Case Drain
Torque Feedback	Continuous
Depth Rating	Oil filled tool housing compensated from host ROV giving unlimited depth rating
Weight In Air	25 kg (55 lbs)
Weight In Seawater	18 kg (40 lbs)
Interfaces	ISO 13628-8 fig 14
Deployment	i-Tech's Tool Deployment Unit (TDU) or by manipulator



Subsea Torque Verification Class 1 to 4

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-DR-0070-00



The subsea torque verification system allows the ROV operators to prove the accuracy of a torque tool immediately before operating a valve or subsea actuator.

The system interfaces with ISO 13628-8 Fig 18 class 1-4 torque tool interfaces with three different stem sizes

- 0 +/- 3000 Nm (0 +/- 2400 ft.lb), 1.5% accuracy
- 5 digit LED hi-visibility display
- Supplied with oil filled compensator, charger, cables and transit case
- Depth rating 3,000m (9,842ft)
- Ultra-low power with selectable dormant state can be subsea months before use
- Guard to protect electronics and connectors. Display system is separate for mounting in other locations
- ISO 13628-8 Fig 18

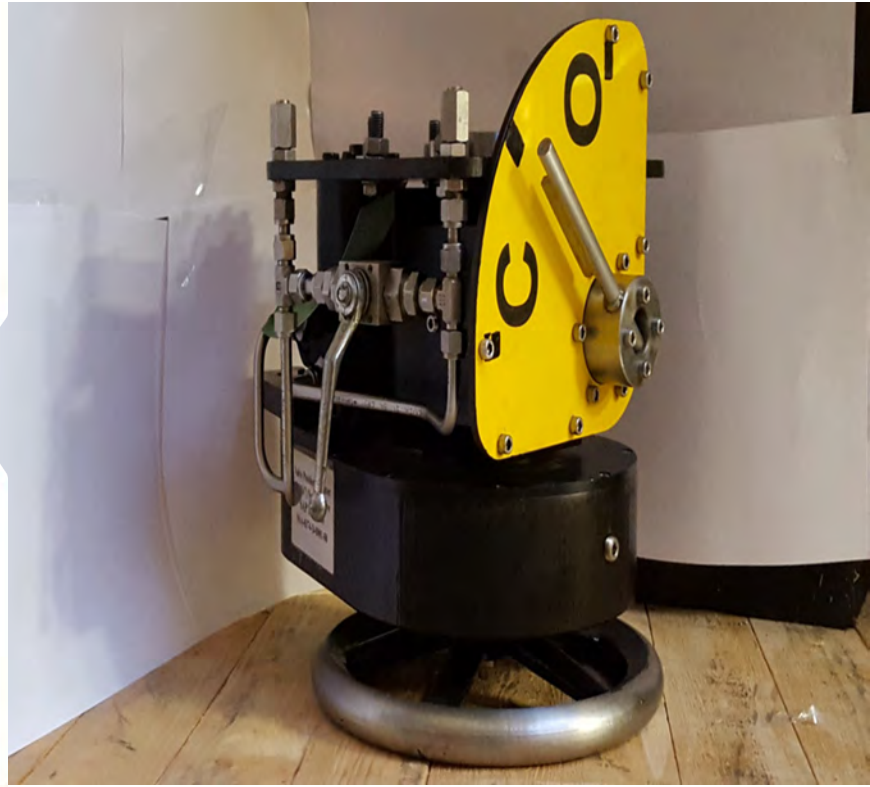
Product Number	ITE-0007-DR-0070-00
Dimensions	Size: Interface 460 x 260 x 214mm (18.1" x 10.2" x 8.4") Size: Display 312 x 350 x 158mm (12.3" x 13.8" x 6.2")
Accuracy	0+/-3000NM (0+/- 2400ft.lb)
Weight in Air	17 kg (37 lbs)
Weight in Seawater	11 kg (24 lbs)
Environmental	-100°C to 500°C (140°F to 1,220°F)
Duration	5 days (average display on continuously, 5 months standby)



Surface Test Tree-Valve Position Ind. (VPIs)

VALVE MANIPULATION TOOLS

Product Number:
ITE-0005-DR-0100-00



i-Tech's range of Valve Position Indicators provide a means of remotely operating and monitoring the status of gate valves on a surface test tree where access is difficult. The product range currently includes units capable of operating 2-1/16", 5-1/8" and 7-1/16" Valves and can be offered with a 'turns count' ratio to suit Client requirements.

A subsea version of this product is also available

- Designed for remote operation of valves where access is difficult
- Robust, low maintenance design
- Variable torque output to minimise risk of damage to valves
- Simple to install, utilising existing valve stem and fasteners
- High visibility indicator

Product Numbers	ITE-0005-DR-0100-00; ITE-0005-DR-0200-00; ITE-0005-DR-0300-00; ITE-0005-DR-0400-00; ITE-0005-DR-0500-00; ITE-0005-DR-0600-00;
Materials	Stainless Steel
Supply Fluid	Hydraulic Oil or Water Based Glycol
Dimensions	Various
Hydraulic Power Requirements	Supply Pressure Max. 150 bar (2,175 psi) Flow 10 L/min (2.6 gpm)
Weight in Air	2-1/16" Unit - 66 kg (145 lbs) 5-1/8" Unit - 94 kg (207 lbs) 7-1/16" Unit 106 kg (233 lbs)
Ancillary Equipment	VPI Hydraulic Control Panel - Details on Request



Torque Verification System-Class 1 to 4(5,6&7)

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-DR-0060



The torque verification unit is a hand-held stalling device used to determine/set the output static torque of suitable hydraulic torque tools during pre-dive checks.

- Torque displayed on a free-standing electronic display console in ft.lb or Nm
- Unit comprises of steel reaction housing
- ISO 13628-8 Figure 18 rotary docking or compatible tool interface
- Interchangeable shafts bolted to an annular strain gauge connected to portable display
- Steel components coated for corrosion protection
- Electrical cables and connections splash proof for offshore use
- Power for unit via an internal rechargeable battery pack

Product Number	ITE-0007-DR-0060
Materials	Carbon steel, coated Display unit housed in weatherproof case
Electrical Supply	240v/110v A.C. (for battery charging)
Torque Tool Interface Options	Class 1 to 4: 2710 Nm (2,000 ft.lb) Class 5: 6779 Nm (5,000 ft.lb) Class 6: 13558 Nm (10,000 ft.lb) Class 7: 33895 Nm (25,000 ft.lb)
Weight In Air	Class 1 to 4: 16.8 kg (37.26 lbs) approx. Class 5: 41 kg (90.39 lbs) approx. Class 6/7: 60 kg (132 lbs) approx
Weight In Seawater	N/A
Interfaces	ISO 13628-8 (API 17D) Rotary Docking class 1 to 4 interfaces available. Class 5, 6 and 7 available on request.
Deployment	Hand held stalling device connected to electronic display.



Torque Verification System (Med/High)

VALVE MANIPULATION TOOLS

Product Number:
ITE-0007-DR-0060-00



The torque verification unit is a hand-held stalling device used to determine/set the output static torque of suitable hydraulic torque tools during pre-dive checks.

- Torque displayed on a free-standing electronic display console in ft.lb or Nm
- Unit comprises of steel reaction housing
- ISO 13628-8 Fig. 14 rotary docking or high torque compatible tool interface
- Interchangeable shafts bolted to an annular strain gauge connected to portable display
- Steel components coated for corrosion protection
- Electrical cables and connections splash proof for offshore use
- Power for unit via an internal rechargeable battery pack

Product Number	ITE-00007-DR-0060-00
Materials	Carbon steel, coated Display unit housed in weatherproof case
Electrical Supply	240v/110v A.C. (for battery charging)
Torque Tool Interface Options	Rotary high torque up to 2000 Nm (1,475 ft.lb)
Weight In Air	6 kg (13.2 lbs) approximately
Weight In Seawater	N/A
Interfaces	ISO 13628-8 Fig. 14 Rotary Docking high torque interface
Deployment	Hand held stalling device connected to electronic display





www.i-Tech7.com

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