



Pipe Handling

STATS provide a range of pipe handling equipment for the safe and controlled handling of piles, pipelines and caissons. Internal and External Lifting Tools cover a range of sizes for pile handling and caisson removal. STATS Pipeline Retrieval Tools (PRTs) provide subsea pipeline recovery.

Caisson Securing & Recovery

Due to their harsh environment, caissons can experience severe external corrosion at the waterline and galvanic corrosion / erosion at the pump string location. This can result in a lack of integrity, and occasionally result in part, or all of the caisson becoming detached and lost to the seabed. Should a caisson become detached this would pose a serious safety concern for a platform and risk damage to subsea pipelines and equipment, impacting on production and reputation.

STATS range of ILTs & ELTs are used to safely secure damaged or corroded caissons in position, until a planned retrieval back to the platform can be performed using the same tool. ILTs and ELTs are available in common pipe sizes from 24" to 48", with a safe working load up to 55 tonnes.

External Lifting Tool (ELT)

STATS External Lifting Tools (ELTs) are mounted to the outside of the caisson to provide secure lifting when internal access is obstructed or restricted due to pump strings / liners etc. The split section design allows easy installation, particularly in areas with restricted access or height.

External gripping locks are hydraulically activated applying vertical load to the ELT which is set against the caisson. The array of hydraulic cylinders are piped with two independently actuated hydraulic circuits. This arrangement has been engineered to allow four of the locks to be actuated via one hydraulic circuit and the remaining four locks to be actuated via the second hydraulic circuit. If the integrity of a hydraulic circuit was lost this contingency system would ensure 50% of the locks remained in their fully set condition with full communication. The tool was designed and tested to prove 50% lock engagement is sufficient for the tool to take its design load of 55 Tonne. The taper lock design provides a fail-safe locking system independent of hydraulic pressure, once pre-tension is applied to the ELT the hydraulic actuation circuit becomes redundant. ELT lock range allows tools to be simply modified for use with a range of caisson sizes.



24" Riser Removal



40 - 42" External Lifting Tool



ELT Section Manoeuvred Into Position



Internal Lifting Tool (ILT)

STATS range of Internal Lifting Tools (ILTs) have been designed for the safe and controlled handling of caissons. The ILT features a twin module design, with each module containing its own set of independently controlled locks allowing operation in caissons with varying wall thicknesses. The taper lock design provides a fail-safe locking system independent of hydraulic pressure, both locks provide axial and lateral stabilisation within the caisson.

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The modular design of the ILT allows the length between lock modules to be configured to client requirements, this also allows for easy installation particularly in areas of restricted access.

ILT / ELT Key Features

- Available in common pipe sizes from 24" to 48"
- Safe Working Load up to 55 Tonnes
- ILTs / ELTs retain caissons securely until scheduled repair or replacement
- Safe and controlled system for removing damaged or redundant caissons
- Hydraulically actuated locks grip wall of caisson
- Tension cable supplies self-energisation effect when pre-tension is applied
- Once pre-tension is applied to support rigging, hydraulic actuation circuit is redundant
- Tool removed by releasing tension and hydraulically de-activating locks



24" Internal Lifting Tool - Caisson Removal



42" Internal Lifting Tool - Lock Section



Internal Lifting Tool - Modular Design



Internal Lifting Tool (ILT) - Pile Handling

STATS Internal Lifting Tools (ILT) from 8" to 102" are used for the safe lifting and upending of tubular piles for insertion into the seabed. ILTs can be inserted either horizontally, using the centre of gravity bracket as a lifting arm, or lowered vertically into the pile. The ILT is then hydraulically actuated in order to set the locks, gripping the pile internally. The ILT is then raised using its lifting eye at the end of the central shaft. The pile can then be lowered into a socket on the seabed. The ILT is unset and retracted in order for the pile to be driven into the seabed by a hydraulic hammer.

ILT bodies can be resized using various upsizing kits allowing one tool to cover a wide range of pile sizes, each resizing setup can handle a 6" ID variation – covering all pile wall thicknesses with just one setup. Tool resizing is fast and simple due to the transport and handling frame with in-built lifting apparatus, allowing easy component change-out. The ILTs benefit from optional sealing units which provide suction and pressurisation functionality to greatly improve the handling of tubular piles and aid with pile removal.

Pile Diameter Range (OD)	Wall Thickness Range (to API 2B tolerance)
24	0.25" - 2"
30	0.375" - 2"
36	0.375" - 2"
42	0.375" - 2"
48	0.75" - 3"
54	0.75" - 4"
60	0.75" - 4"
66	0.75" - 4"
72	0.75" - 4"
78	0.75" - 4"
84	0.75" - 4"
90	3" - 4"



84" Internal Lifting Tool



72" Internal Lifting Tool

Specification - 48" to 90"

Design Code:	DNV Standard for Certification No. 2.22 Lifting Appliances
SWL Vertical:	600T
Proof Load Test:	800T
Horizontal Pile Upending:	Capable of upending a 220T pile from horizontal position
Maximum Water Depth:	3500m
Maximum Pile True Batter (600T lift):	11.77 deg (from vertical)
Operation:	Via umbilical to 200m 200-3500m with optional ROV operated package
Possible Upgrade with Sealing Module:	To aid suction assisted pile installation or pressure assisted pile removal
Resizing and Transport Frame:	In-built lifting apparatus for fast component-changeout and resizing



Internal Lifting Tool (ILT) - Pile Handling

ILT Size	Pile Size (in)	Pile OD (mm)	WT (in)	Pile ID (mm)	Tool OD (mm)	Lock OD (mm)	Min ID (mm)	Max ID (mm)
24"	24	609.6	2	508.0	490	475	520	640
	24	609.6	1	558.8				
	24	609.6	0.75	571.5				
	24	609.6	0.5	584.2				
	24	609.6	0.25	596.9				
30"	30	762.0	2	660.4	650	635	680	800
	30	762.0	1	711.2				
	30	762.0	0.5	736.6				
	30	762.0	0.375	742.9				
	30	762.0	0.25	759.2				
36"	36	914.4	2	812.8	800	785	830	950
	36	914.4	1	863.6				
	36	914.4	0.5	889.0				
	36	914.4	0.375	895.3				
	36	914.4	0.25	911.6				
42"	42	1066.8	2	965.2	950	935	980	1100
	42	1066.8	1	1016.0				
	42	1066.8	0.5	1041.4				
	42	1066.8	0.375	1047.8				
	42	1066.8	0.25	1064.1				
48"	48	1219.2	3	1066.8	1030	1015	1060	1285
	48	1219.2	2.5	1092.2				
	48	1219.2	2	1117.6				
	48	1219.2	1.5	1143.0				
	48	1219.2	1	1168.4				
	48	1219.2	0.75	1181.1				
	48	1219.2	0.5	1193.8				
	48	1219.2	0.375	1206.5				
	48	1219.2	0.25	1219.2				
	48	1219.2	0.125	1231.9				
54"	54	1371.6	4	1168.4	1180	1165	1210	1435
	54	1371.6	3	1219.2				
	54	1371.6	2.5	1244.6				
	54	1371.6	2	1270.0				
	54	1371.6	1.5	1295.4				
	54	1371.6	1	1320.8				
	54	1371.6	0.75	1333.5				
	54	1371.6	0.5	1346.2				
	54	1371.6	0.375	1358.9				
	54	1371.6	0.25	1371.6				
60"	60	1524.0	4	1320.8	1330	1315	1360	1585
	60	1524.0	3	1371.6				
	60	1524.0	2.5	1397.0				
	60	1524.0	2	1422.4				
	60	1524.0	1.5	1447.8				
	60	1524.0	1	1473.2				
	60	1524.0	0.75	1485.9				
	60	1524.0	0.5	1501.2				
	60	1524.0	0.375	1513.9				
	60	1524.0	0.25	1526.6				
66"	66	1676.4	4	1473.2	1480	1465	1510	1735
	66	1676.4	3	1524.0				
	66	1676.4	2.5	1549.4				
	66	1676.4	2	1574.8				
	66	1676.4	1.5	1600.2				
	66	1676.4	1	1625.6				
	66	1676.4	0.75	1638.3				
	66	1676.4	0.5	1651.0				
	66	1676.4	0.375	1663.7				
	66	1676.4	0.25	1676.4				
72"	72	1828.8	3	1676.4	1630	1615	1660	1885
	72	1828.8	2.5	1701.8				
	72	1828.8	2	1727.2				
	72	1828.8	1.5	1752.6				
	72	1828.8	1	1778.0				
	72	1828.8	0.75	1790.7				
	72	1828.8	0.5	1803.4				
	72	1828.8	0.375	1816.1				
	72	1828.8	0.25	1828.8				
	72	1828.8	0.125	1841.5				
78"	78	1981.2	4	1778.0	1780	1765	1810	2035
	78	1981.2	3	1828.8				
	78	1981.2	2.5	1854.2				
	78	1981.2	2	1879.6				
	78	1981.2	1.5	1905.0				
	78	1981.2	1	1930.4				
	78	1981.2	0.75	1943.1				
	78	1981.2	0.5	1955.8				
	78	1981.2	0.375	1968.5				
	78	1981.2	0.25	1981.2				
84"	84	2133.6	4	1930.4	1930	1915	1960	2185
	84	2133.6	3	1981.2				
	84	2133.6	2.5	2006.6				
	84	2133.6	2	2032.0				
	84	2133.6	1.5	2057.4				
	84	2133.6	1	2082.8				
	84	2133.6	0.75	2095.5				
	84	2133.6	0.5	2108.2				
90"	90	2286.0	4	2082.8	1930	1915	1960	2185
	90	2286.0	3	2133.6				



Pipeline Retrieval Tool (PRT)

The laying of sub-sea pipelines involves the placement of large diameter tubulars in an environment where extreme forces or motions may result in buckling and flooding the pipe. In this event, the damaged pipe section must be removed and a repair process implemented. The replacement pipe may be tied-in using hyperbaric welding facilities, or the pipeline end may be recovered to the pipe lay vessel for surface repairs.

A Pipeline Retrieval Tool provides the connection between the pipeline and the recovery cable required to handle or manoeuvre the pipeline end. The Retrieval Tool engages in the pipeline bore to provide a secure but controllable facility for the connection of the retrieval cable.

Tapered locks featuring the Diamondlock™ tooth profile operate on a wedge principle, improving the connection efficiency as the load increases. Once set, this fail-safe mode of operation enables the mechanical connection with the pipeline to remain secure independent of the tool hydraulic activation system. A seal and vent system within the retrieval tool assembly enables the pipe to be de-watered prior to the lifting operation.

The acquisition and development of Tecnomarine technologies, has enabled STATS to develop a comprehensive range of Pipeline Retrieval Tools. The combined track record in this highly specialised engineering and manufacturing sector includes tools in a range of 16" to 44" diameter.



42" Pipeline Retrieval Tool



36" ROV Deployed PRT - Shown With De-watering Pig Attached & Detachable ROV Operated Control Panel

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