PILER JET SYSTEM

PILER JET / System Equipment

**Jet Lock & Jet Nozzle**
Jet Lock is welded onto the sheet pile toe to fix a Jet Nozzle in place with a Lock Pin.

**PILER ECO Hose (for Jet)**
1st Layer: Anti-abrasive rubber to prevent external damage
2nd Layer: External Rubber Layer
3rd Layer: Metallic Wire Mesh Belts
4th Layer: Aramid Fiber Layer
5th Layer: Metallic Wire Mesh Belts
6th Layer: Internal Rubber Layer

The above specifications are subject to alteration without prior notice.

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**PJ4**
- Water Flow: 60-600 L/min (adjustable via rpm)
- Pressure: 0.1-10 MPa (adjustable via rpm)
- Power Source: Silent Piler Power Unit (EU300 J4 / A4 / G3 / I3)

**Buffer Water Tank Capacity:** 2100 L

**Generator for Water Pump (optional):** 25KVA

**Moving Speed:** 1.4 km/h (Remote Control)

**Mass:** 4500 kg (including generator)
3800 kg (excluding generator)

*Piler Jet power supply must be from Silent Piler Power Unit.
**When generator is not installed, another water pump power source is required. Panel mounted socket for screw terminals (6A/10A, UF, W, SH-60Hz) is equipped.

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**PILER JET SYSTEM**

**Piler Jet**

**Jet Lock & Jet Nozzle**
Jet Lock is welded onto the sheet pile toe to fix a Jet Nozzle in place with a Lock Pin.

**Jet Nozzle**
- Water Flow: Max. 700 L/min
- Water Pressure: Max. 14.7 MPa
- Mass: 820 kg

**Lock Pin**
- Jet Lock is welded onto the sheet pile toe to fix a Jet Nozzle in place with a Lock Pin.

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**Piler Jet Reel**

**Piler Jet Reel**
The Jet Reel is mounted atop the Silent Piler to feed the Jet Hose to the sheet pile.

**Water Flow:** Max. 700 L/min
**Water Pressure:** Max. 14.7 MPa
**Mass:** 1250 kg

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**PILER ECO Hose (for Jet)**
1st Layer: Anti-abrasive rubber to prevent external damage
2nd Layer: External Rubber Layer
3rd Layer: Metallic Wire Mesh Belts
4th Layer: Aramid Fiber Layer
5th Layer: Metallic Wire Mesh Belts
6th Layer: Internal Rubber Layer

The above specifications are subject to alteration without prior notice.
Main Components of Piler Jet System

- Power Unit (common power source)
- PILER ECO Hose (for Jet)
- Silent Piler
- Piler Jet Reel
- Jet Nozzle and Jet Lock
- Piler Stage
- Water Pump
- Piler Jet (including a buffer water tank)

Press-in with Water Jetting

When the pile is statically loaded during pile installation into granular soil, distribution of the soil stresses forms stress isobars called "pressure bulbs" at the pile base area. As the base stiffness of a jacked pile increases with magnitude of the static loading, it may negatively affects the pile installation. Leading interlocks contain soil particles from previous installation, which are compacted during subsequent pile installation resulting in greater interlock resistance.

Water jetting lubricates the pile surface and temporarily and locally loosens and softens the surrounding ground by increasing pore water pressure. Thus, the base resistance, skin friction and interlock resistance are reduced during pile installation. Water jetting is an effective driving assistance method to overcome dense soil conditions.

Characteristics of Piler Jet System

The Silent Piler and Piler Jet are integrated to form a system with a common power unit to optimize the jetting parameters with minimum environmental impact.

- Safety
  1. Jet Nozzles and Jet Locks are designed with a safety function which allows reverse water flushes in case of detachment from the pile. This fail-safe system prevents the PILER ECO Hose from spiraling out of control even if the jet nozzle or Jet Lock detaches from the pile.
  2. The PILER ECO Hose (for Jet) is developed exclusively as a water hose inserted into the ground with a pile. Therefore, it is extremely durable with high anti-abrasivity and tensile strength.

- Environmental Protection
  1. The automated system minimizes water usage and disturbance to the surrounding soil.
  2. With a particulate matter separator, the water pump allows untreated freshwater for jetting purposes.
  3. As the Piler Jet is powered by the Silent Piler Power Unit, it does not require an independent power source. Therefore, environmental burden can be minimized.

Functions of Piler Jet

Piler Jet water jetter is simultaneously operated and powered with the Silent Piler and is controlled by the radio controller unit.

Water discharge pressure and water flow of the Piler Jet can be automatically controlled in accordance with the Silent Piler needs. Thus, the pile installation can be optimized with minimum water usage and disturbance to the surrounding soil.

1. End Flush