SURFACE PREPARATION TECHNOLOGY
Mechanical Surface preparation is the cleaning of surfaces with high-speed mechanical impact. This impact may be by way of fast reciprocatory needles or chisels or rotating cutters. This rapid action has the effect of removing layers of paint or rust or other coatings from surfaces such as metal, wood, concrete etc. Some of the commonly used terms are scabbling, scaling, scarifying.

Such mechanical surface preparation on metals is generally done before application of a protective coating to make the coating adhere better and in doing so, become more durable.

Similar methods and equipment are also used in the civil contracting industry to scarify concrete, a procedure where the laitance layer of the concrete is effectively removed by mechanical rotary impacting cutters. Cutters may or may not have hardened tungsten carbide tips, depending on the type of finish required.

Teryair manufactures a growing programme of pneumatic equipment and tools. The equipment boasts of cutting-edge features, comparable with the worlds best technologies, and compete successfully, feature for feature, with the industry leading brands; at competitive pricing.

Prominent among the equipment is the lineup of Teryair surface preparation equipment. Teryair manufactures a large range of tools such as scrubbers, needle and chisel scalers, Floor preparation scarifiers, rotary flexible shaft descalers in both electric and pneumatic options. Accessories produced by teryair are often supplied to OEM. Thanks to the superior technology and in-house heat treatment facilities available at teryair.

These tools are being currently exported to over 25 countries, both as a teryair product and under private label arrangements.

**What is meant by mechanical surface preparation ?**

Mechanical Surface preparation is the cleaning of surfaces with high-speed mechanical impact. This impact may be by way of fast reciprocatory needles or chisels or rotating cutters. This rapid action has the effect of removing layers of paint or rust or other coatings from surfaces such as metal, wood, concrete etc. Some of the commonly used terms are scabbling, scaling, scarifying.

**Type of Surface Preparation**

**Scabbling**
A method where rapidly reciprocating pistons strike the surface and in doing so, break loose the adhering unwanted layer of paint or rust and expose the base surface. This is usually done to create a good surface to accept a new coating.

**Reciprocatory scaling**
In this method, a bunch of rapidly reciprocating needles is applied against the surface to be cleaned. The purpose is the same as above but this method is more detailed especially with complex shapes.

**Rotary scaling**
A rotating drum, holding a series of cutter wheels is held against the surface. The cutters impact against the surface, usually a horizontal area like the deck of a ship, and remove paint or rust at a fast rate.

**Rotary scarifying**
A rotary drum holding a series of tungsten tipped cutters is employed to work on a concrete surface. A small layer of concrete is removed. For levelling joints, for removal of laitance layers, for creating anti-skid patterns.

**Wire brushing**
Where the coating is easily removed, wire brushing is employed, it leaves a finely finished surface.
**Teryair Surface Preparation Applications**

**Marine, Offshore and Petrochemical:**

Hold cleaning, general deck, and surface cleaning, removal of heavy rust on tankers and dry dock applications. Tank descaling. Descaling of structures prior to painting.

**Coatings:**
- Paint removal
- Industrial coating removal from floors and other surfaces

**Construction:**
- Removal of concrete residue from re-bar
- Cleaning cement from plant and vehicles
- Weld cleaning

**Chemical Industries:**
- Re-Conditioning of equipment/working area by surface preparation.

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**Pallet Testing of Scalers & Scabblers.**
## Needle Scalers - Aluminum

<table>
<thead>
<tr>
<th>Model No</th>
<th>SN16PG</th>
<th>SN20ST</th>
<th>N24</th>
<th>N28</th>
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<tbody>
<tr>
<td>Reference Image</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
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<tr>
<td>Overall Length</td>
<td>158 mm</td>
<td>245 mm</td>
<td>237 mm</td>
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<td>Air Inlet</td>
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<td>M16.1.5P</td>
<td>M16.1.5P</td>
<td>M16.1.5P</td>
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<tr>
<td>Accessory</td>
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<td>3/8” PH</td>
<td>3/8” PH</td>
<td>3/8” PH</td>
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<tr>
<td>Air Consumption</td>
<td>3.5 cfm</td>
<td>3.5 cfm</td>
<td>3.5 cfm</td>
<td>3.5 cfm</td>
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<td>2mm x 29s</td>
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<td>Weight</td>
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## Needle Scalers - Steel

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<th>Model No</th>
<th>SN24ST</th>
<th>SN24PG</th>
<th>SN29PG</th>
<th>SN39STVL</th>
<th>SN39PGVL</th>
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<tbody>
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<tr>
<td>Overall Length</td>
<td>375 mm</td>
<td>315 mm</td>
<td>342 mm</td>
<td>370 mm</td>
<td>340 mm</td>
<td>370 mm</td>
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<tr>
<td>Air Inlet - NPT</td>
<td>1/4”</td>
<td>1/4”</td>
<td>3/8”</td>
<td>1/4”</td>
<td>1/4”</td>
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<tr>
<td>Air Consumption</td>
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<td>5.25 cfm</td>
<td>5.25 cfm</td>
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<td>2mm x 51s</td>
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<td>3mm x 19s</td>
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<td>2.60 Kgs</td>
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## Chisel Scalers - Steel

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<th>SC39STVL</th>
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<td>Air Inlet - NPT</td>
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<td>1/4”</td>
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<tr>
<td>Air Consumption</td>
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<td>5.25 cfm</td>
<td>5.25 cfm</td>
<td>4.0 cfm</td>
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<td>6.0 cfm</td>
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<td>JC0175F19</td>
<td>JC0175F19</td>
<td>JDO175F19</td>
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<td>2.60 Kgs</td>
<td>3.60 Kgs</td>
<td>3.00 Kgs</td>
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<td>4.00 Kgs</td>
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**Electric Needle Scalers**

<table>
<thead>
<tr>
<th>Model No</th>
<th>ENS100V</th>
<th>ENS200V</th>
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<td>Reference Image</td>
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<td><img src="ENS200V.png" alt="Image" /></td>
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<tr>
<td>Power Supply (AC)</td>
<td>110V-1Ph</td>
<td>220V-1Ph</td>
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<tr>
<td>Rated Power Watt</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Rated Current (A)</td>
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<td>3.0</td>
</tr>
<tr>
<td>Duty Cycle (Min)</td>
<td>10-12</td>
<td>10-12</td>
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<td>Weight</td>
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**Pneumatic Piston Scabblers**

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<thead>
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<th>Model No</th>
<th>1SC</th>
<th>X2</th>
<th>3SC</th>
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<td><img src="X2.png" alt="Image" /></td>
<td><img src="3SC.png" alt="Image" /></td>
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<tr>
<td>No. of Pistons</td>
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<td>1</td>
<td>3</td>
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<tr>
<td>Air Inlet - NPT</td>
<td>3/8”</td>
<td>3/8”</td>
<td>3/8”</td>
</tr>
<tr>
<td>Air Consumption</td>
<td>10.0 cfm</td>
<td>10.0 cfm</td>
<td>10.0 cfm</td>
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<tr>
<td>Piston Dia</td>
<td>22mm</td>
<td>30mm</td>
<td>22mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>15mm</td>
<td>15mm</td>
<td>10mm</td>
</tr>
<tr>
<td>Free Speed</td>
<td>3900bpm</td>
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<td>Weight</td>
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**Long Reach Scalers**

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<tr>
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<th>LR 116</th>
<th>LR 146</th>
<th>LR 176</th>
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<td>![Image](LR 116.png)</td>
<td>![Image](LR 146.png)</td>
<td>![Image](LR 176.png)</td>
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<tr>
<td>BPM</td>
<td>2200</td>
<td>2200</td>
<td>2200</td>
<td>2200</td>
</tr>
<tr>
<td>Air Inlet - NPT</td>
<td>1/4”</td>
<td>1/4”</td>
<td>1/4”</td>
<td>1/4”</td>
</tr>
<tr>
<td>Air Consumption</td>
<td>4.5 cfm</td>
<td>4.5 cfm</td>
<td>4.5 cfm</td>
<td>4.5 cfm</td>
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<tr>
<td>Length</td>
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<td>1100 mm</td>
<td>1400 mm</td>
<td>1710 mm</td>
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<td>Weight</td>
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<td>5.8 Kgs</td>
<td>6.3 Kgs</td>
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### Electric Scaling Machine

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<thead>
<tr>
<th>Model No</th>
<th>Reference Image</th>
<th>Image</th>
<th>Voltage</th>
<th>HP</th>
<th>kW</th>
<th>No. Load Speed R.P.M</th>
<th>Weight</th>
</tr>
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<tbody>
<tr>
<td>TEFD75-110V</td>
<td></td>
<td></td>
<td>110V</td>
<td>3/4&quot;</td>
<td>0.55</td>
<td>3700</td>
<td>48 Kgs</td>
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<tr>
<td>TEFD75-220V</td>
<td></td>
<td></td>
<td>220V</td>
<td>3/4&quot;</td>
<td>0.55</td>
<td>3700</td>
<td>48 Kgs</td>
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### Pneumatic Scaling Machine

<table>
<thead>
<tr>
<th>Model No</th>
<th>Reference Image</th>
<th>Image</th>
<th>Air Inlet - BSPP</th>
<th>Max. Air Consumption</th>
<th>No Load Speed R.P.M</th>
<th>Weight</th>
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<tbody>
<tr>
<td>TPFD-75</td>
<td></td>
<td></td>
<td>1/2&quot;</td>
<td>28.50 cfm</td>
<td>5000</td>
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### Electric Rotary Deck Scaler / Electric Floor Scarifier

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<tr>
<th>Model No</th>
<th>Reference Image</th>
<th>Image</th>
<th>Motor AC-220V - 1Ph</th>
<th>Motor AC-220V - 1Ph or 3Ph</th>
<th>Motor AC-440V - 3Ph</th>
<th>Motor AC-220V - 1Ph</th>
<th>Motor AC-440V - 3Ph</th>
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</thead>
<tbody>
<tr>
<td>ERDS 84-110V</td>
<td></td>
<td></td>
<td>2.2 kw</td>
<td>2.2 kw</td>
<td>2.2 kw</td>
<td>2.2 kw</td>
<td>2.2 kw</td>
</tr>
<tr>
<td>ERDS 84-220V</td>
<td></td>
<td></td>
<td>300 mm</td>
<td>300 mm</td>
<td>300 mm</td>
<td>300 mm</td>
<td>300 mm</td>
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<td>ERDS 84-440V</td>
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<td>260 mm</td>
</tr>
<tr>
<td>ERDSF-84-220V</td>
<td></td>
<td></td>
<td>3200 RPM</td>
<td>3200 RPM</td>
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<tr>
<td>ERDSF-84-440V</td>
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<td></td>
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<td>62.0 Kgs</td>
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# Pneumatic Floor Scaler - Light Duty & Heavy Duty

<table>
<thead>
<tr>
<th>Model No</th>
<th>PDS-11</th>
<th>FPLD-11</th>
<th>FPFD-11</th>
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<tbody>
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<td><img src="image2.jpg" alt="Reference Image" /></td>
<td><img src="image3.jpg" alt="Reference Image" /></td>
</tr>
<tr>
<td>No. of Pistons</td>
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<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Air Inlet</td>
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<td>3/4”</td>
<td>3/4”</td>
</tr>
<tr>
<td>Air consumption</td>
<td>38 cfm</td>
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<td>70 cfm</td>
</tr>
<tr>
<td>Free Speed</td>
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<td>3000bpm</td>
<td>2200bpm</td>
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<tr>
<td>Weight</td>
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<td>36.0 Kgs</td>
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