



## HANDLING & SHIPPING PROCEDURE

### 1. PURPOSE

- 1.1 The purpose of this procedure is to provide instructions for preparing, loading, securing, shipping, and protecting the unit(s) for transit.

### 2. GENERAL DEFINITIONS

- 2.1 BOL – The “Bill of Lading” is a required document to move a freight shipment. The BOL works as a receipt of freight services, a contract between a freight carrier and shipper and a document of title.
- 2.2 Packing slip – A packing slip is a list of what is included in a shipment.

### 3. HANDLING & UNLOADING



**WARNING:** Heavy Equipment. Improper handling can cause severe injury, death, or damage to transformer. Before moving the transformer, read the handling instructions provided in this manual.



**CAUTION:** The transformer weight is shown on the transformer nameplate. Most of the weight is in the tank that holds the core and coil assembly and the insulating liquid. Do not use hoists, cranes, jacks, or forklifts with a load capacity less than the transformer weight.



**WARNING:** Transformer accessories such as bushings, leads, arrestors, etc. Should never be used as a handle to move the transformer.

#### 3.1 Moving transformers shipped on pallets

- 3.1.1 Transformers on pallets may be lifted or moved by forklift, crane, or hoist of proper capacity.
- 3.1.2 When using a forklift, lift with the transformer tank closest to the mast of the forklift due to most of the weight of the transformer being in the tank.

#### 3.2 Moving transformers by crane or hoist

- 3.2.1 Lifting lugs are welded to all transformer tanks and are designed and provided for lifting the complete unit as shipped. VanTran recommends lifting by the lifting lugs as the primary means of movement.
- 3.2.2 The use of spreader bars is recommended to have better stability and control of the transformer when unloading or moving.



- 3.2.3 Care should be taken to ensure straps, chains, and cables used to lift the transformer are inspected prior to use. All straps, chains, cables, and lifting devices should be in good working order, and enough capacity, to perform the job intended.
  - 3.2.4 Straps, chains, or cables should NEVER be looped from one lug to another to form a continuous loop around the unit. Each chain, strap, and cable should be run to only one lifting lug at a time to prevent loss of control of the unit.
  - 3.2.5 Cable pull angles should NEVER exceed 30° from vertical or damage to the lifting lugs may occur. Spreader beams/bars should be used to hold the cables apart, and as close to vertical as possible, to minimize the forces on the lifting lugs and lifting devices.
- 3.3 Moving transformers by skidding or rolling
- 3.3.1 VanTran transformers are designed to be rolled or skidded into place where accessibility to a crane or other overhead lifting device is limited or unavailable. If the VanTran transformers are designed to be rolled or skidded into place where accessibility to a crane or other overhead lifting device is limited or unavailable.
  - 3.3.2 If the transformer must be rolled, ensure the area is level, free from obstructions/debris, and is capable to support the load.
  - 3.3.3 When rollers are used, use as many as necessary to distribute the weight uniformly.
- 3.4 Moving transformers using jacks
- 3.4.1 Place jacks under the tank base on the open ends of the transformer tank.
  - 3.4.2 DO NOT place jacks under radiators, valves, cabinets, or sheet metal components.
  - 3.4.3 ALWAYS use at least jacks per side and raise evenly to prevent warping of the base.