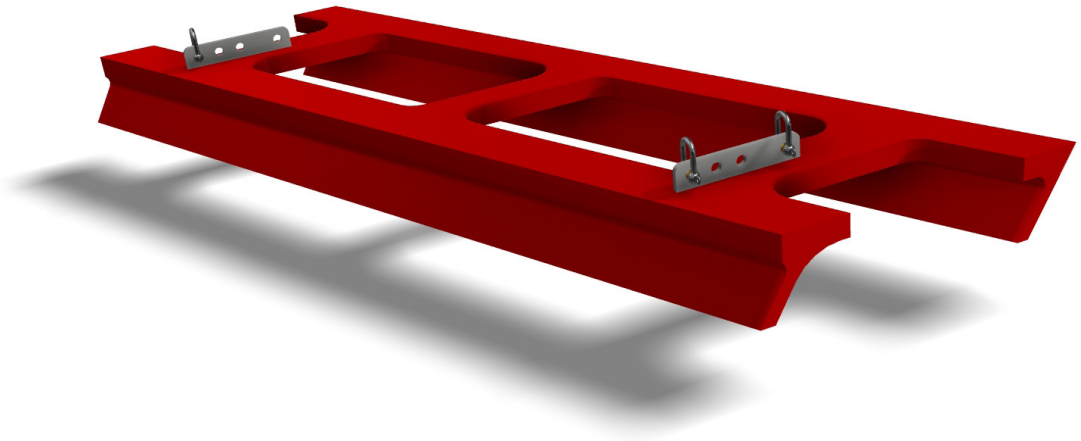
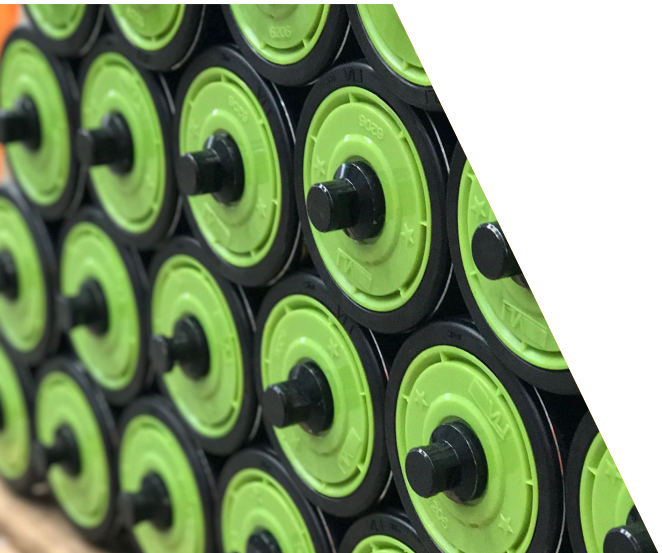
VLI

A MEMBER OF THE TAIYUAN HEAVY MACHINERY GROUP (太重集团)





DIAGONAL PLOUGH
INSTALLATION & MAINTENANCE MANUAL

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1. PRODUCT OVERVEIW

Fully cast FRAS Polyurethane Side Plough

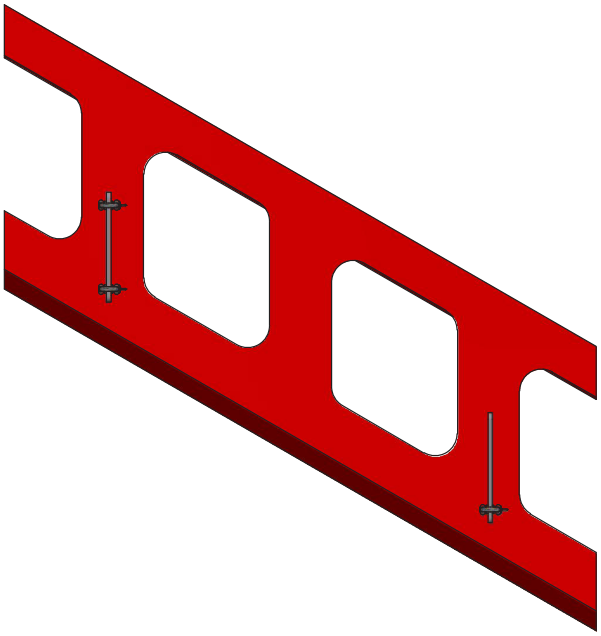
Due to wider conveyor belts and narrower development headings in the Underground Coal Industry, it is now common practice to install conveyor systems within close proximity to either the right or left rib to gain maximum access around the conveyor whilst still ensuring the conveyor is serviceable.

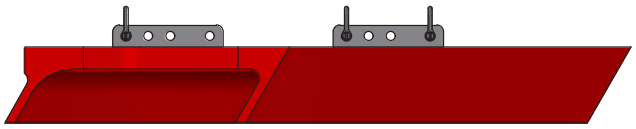
With this in mind VLI have utilised the proven design features of fully cast vee-ploughs to introduce the same performance characteristics into a side plough configuration that would allow for refuse materials to be deposited onto the walkway side of the belt.

A service life in excess of 24 months has been achieved with these units with little to no maintenance required. We have configurations to suit belt widths from 900mm to 2400mm with options to discharge either to the left or right hand sides.

The hand required is determined by facing the direction of the return belt and deciding if the waste is deposited on the right or left hand side.

Full fitment kits can be supplied with these units.





2. INSTALLATION INSTRUCTIONS

2.1 COMPONENTS REQUIRED

- VLI Side Plough
- VLI Side Plough Mounting Kit

2.2 TOOLS REQUIRED

The following tools may be required to install the plough, depending upon the installation location.

- Tape measure
- Adjustable spanner
- Screw driver
- Drill/oxy-acetylene
- Pliers
- Tie Wire

2.3 BEFORE YOU BEGIN

1. Ensure the task has been assessed, including rewiew of work area access, and determining the total weight of the unit to be installed.
2. Ensure that all applicable risk management processes are completed prior to commencing installation. this may include conducting a risk assessment, conducting a Job Safety Analysis (JSA), completing a work permit/site approval
3. Ensure the belt is tracked correctly and is situated central to the conveyor structure.
4. Follow the site rules and/or guidelines to isolate the conveyor to prevent any movement of the conveyor belt and any equipment which may put you in harm's way.
5. Ideally the plough should be positioned in a flat area on the inside of the belt and as close as possible to the tail pulley where the discharge material can easily be cleaned up.
6. For optimum cleaning and stability the leading point of the plough should be located approximately 150mm behind a flat return roller.

2.4 INSTALLATION

STEP 1

Measure the distance between the carry and return runs of the belt. A minimum of 250mm is required.

STEP 2

Place the VLI Side Plough on the belt to check for any clearance or obstruction issues and position it on the belt line as depicted in Figure 1.

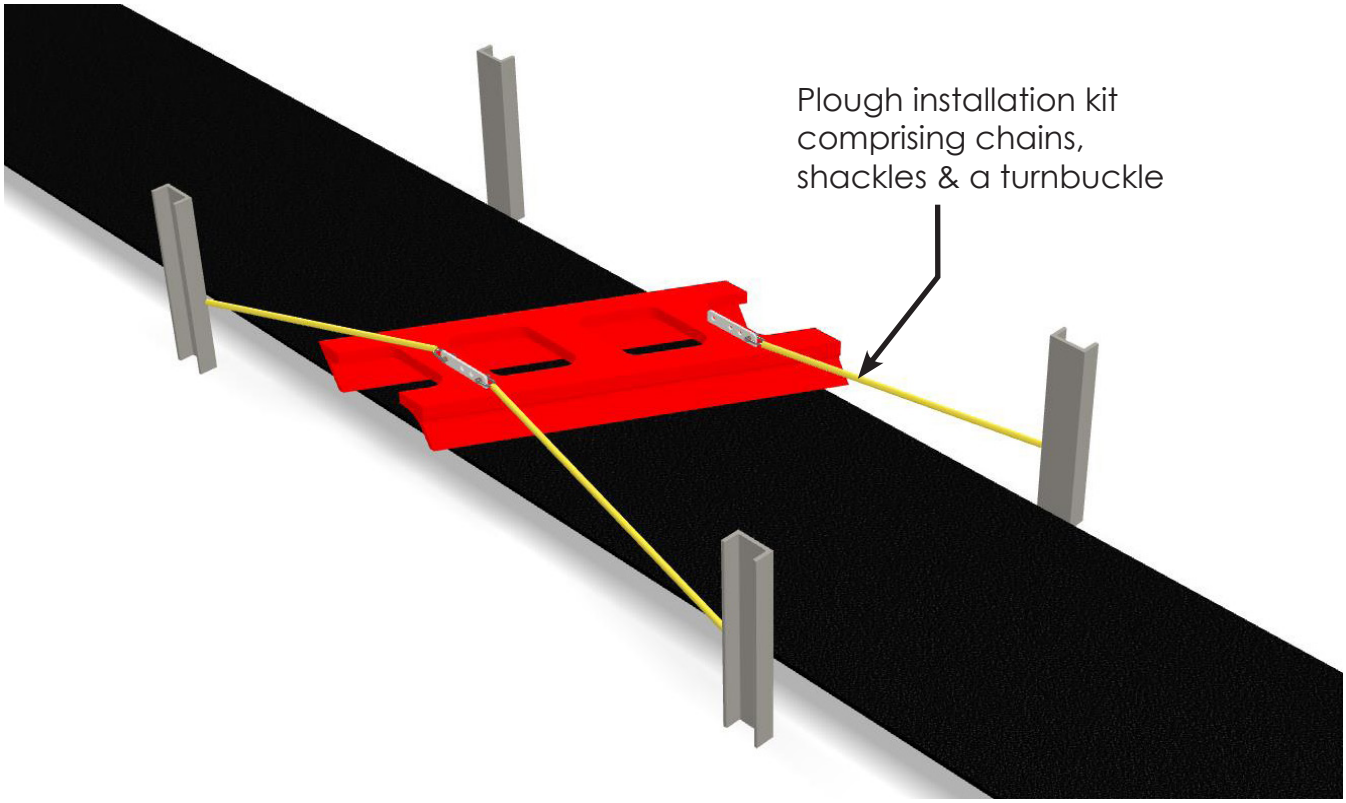


Figure 1

STEP 3

Measure the amount of overhang of the plough off the edge of belt at each end to ensure it is centrally located and the plough is positioned at 30° to the edge of the belt. Refer to Figure 2 below.

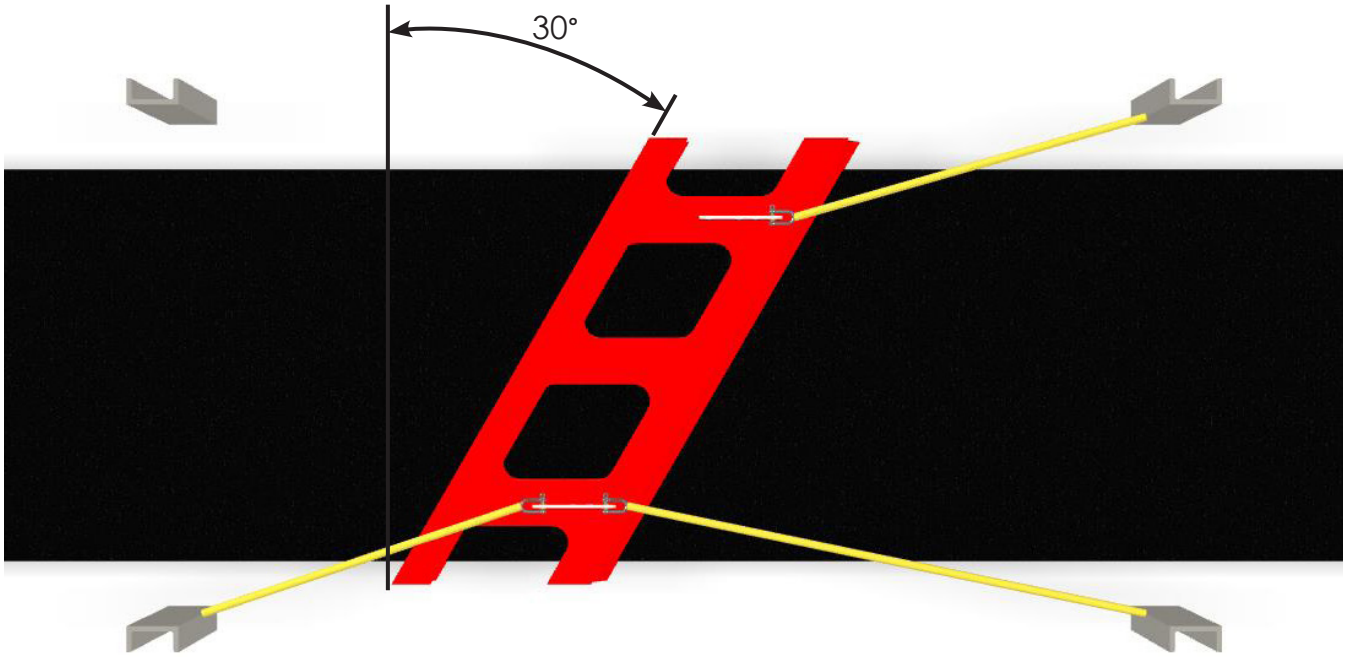


Figure 2

STEP 4

Attach one shackle from the VLI Side Plough Mounting Kit to each of the leading holes (A) on the plough mount brackets and one to the rear most bracket hole (B) of the trailing side of the plough. Refer to Figure 3. When mounted this allows the plough to float across the belt and find its position.

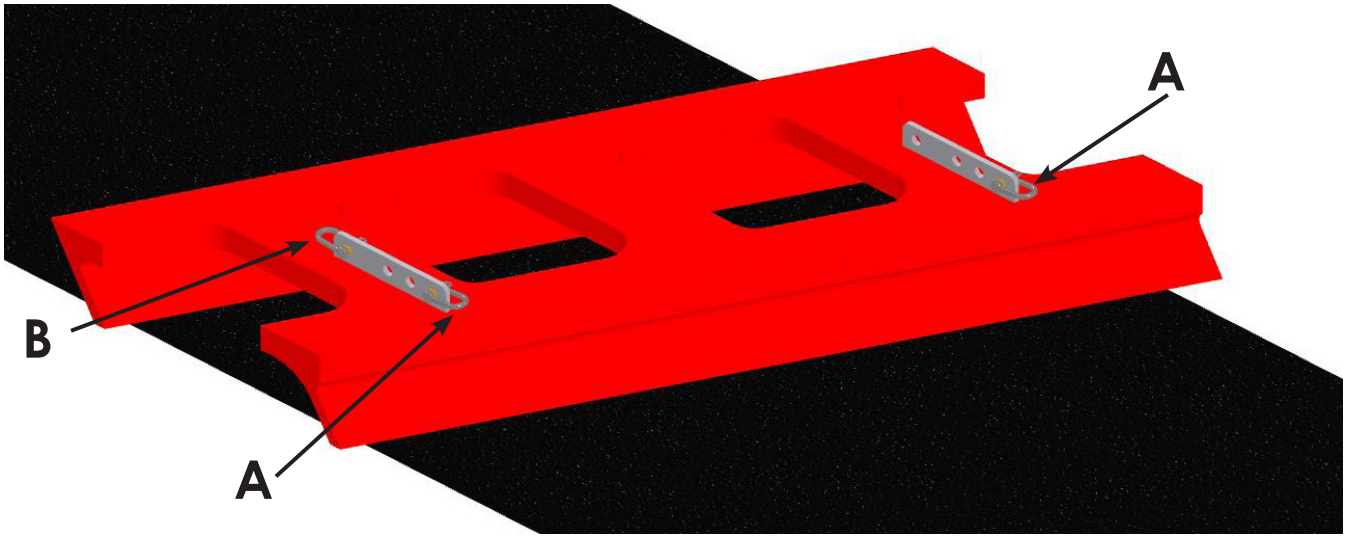


Figure 3

STEP 5

Attach chains to the shackles and either:

- Wrap the chain around the stinger supports and shackle back onto the chain

OR

- Drill or oxy-cut holes in the structure to attach the additional shackles supplied in the fitment kit.

Ensure the mounting point is approximately 75mm lower than the top of the plough to allow for wear and keep downward tension on the plough. Refer to Figure 4.

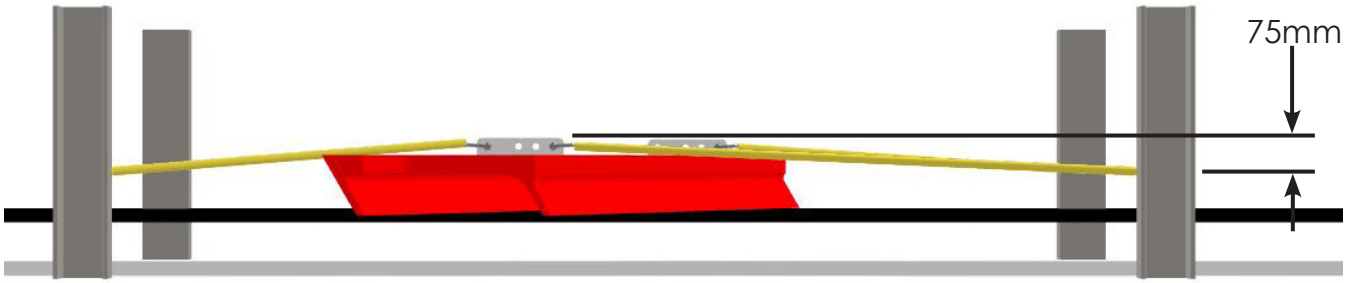


Figure 4

STEP 6

Tie-wire all shackles used to prevent vibration loosening the shackle bolts.

STEP 7

Reactivate the conveyor following site procedures and ensure all personnel are clear of the conveyor. Test run the belt. Check that the plough runs smoothly across the belt and has an effective cleaning action. If vibration occurs:

- Check the closet return rollers for wear, and
- Chain anchor points are positioned 75mm lower than the top plough, and
- Mounting points are secure and solid.

3. MAINTENANCE

The VLI Side Plough should not need to be inspected any more often than regular conveyor inspections.

Inspect the plough blade for wear. A new VLI Side Plough should be ordered when only 50mm of the blade remains through you closest VLI Office.

Inspect the shackles are secure and the tie wire is still in place. Replace any damaged, worn or missing components. Rewire the tie-wire as needed.

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