ENGINEERING SERVICES & SUPPLIES PTY LTD
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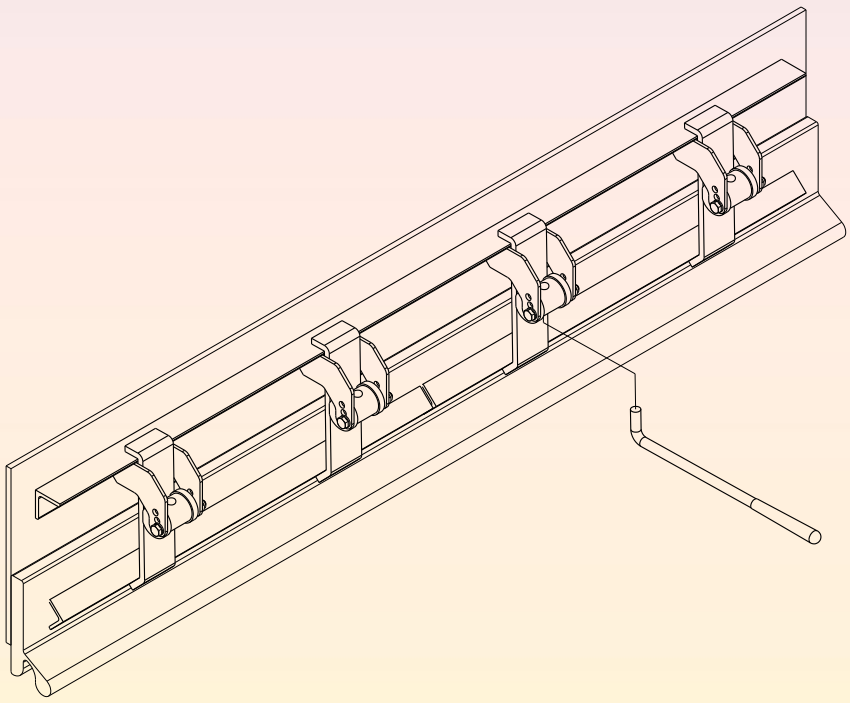
ESS Quiklok®

Skirt Clamp System

Installation, Operation & Maintenance Manual



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TOLL FREE 1800 074 446 FROM ANYWHERE IN AUSTRALIA		

WARRANTY

ESS WARRANTS the ESS Quiklok Skirt Clamp System to be free of defects both in materials and workmanship for a period of 12 months from the date of despatch of the product from the ESS factory. The warranty given by ESS in this regard will extend only to replacing or repairing product shown to be defective.

The warranty also is subject to the following restrictions:

a) Installation of the product contrary to the instructions contained in the supplied manual will void such warranty absolutely.

b) The warranty will not extend to any liability for injuries incurred and which result from the use of the product contrary to the instructions in the manual.

c) Save as prescribed by law, ESS will not be liable for any damage sustained by a purchaser or a third party by way of consequential loss arising out of defects in the product.

d) You are asked to note that ESS offers purchasers a service whereby either:

e) It will install the product and certify the correctness of such installation, or

f) Certify the correctness or otherwise of the installation of the product by third parties.

This certification service is designed to ensure that you obtain the full benefit of the ESS warranty hereby provided. If you would like to take advantage of the installation certification service provided, please contact ESS regarding the service.

Refer to the Final Checklist at the back of this manual.

Visit the ESS website www.esseng.com.au to register your product warranty.

CONTENTS

1.0 SAFETY

All equipment installed on or around a conveyor belt must comply with AS 1755 – 2000 Conveyors – Safety requirements.

Ensure that only suitably qualified and trained personnel install and service this product, and that all site and statutory safety procedures are followed.

The **ESS Quiklok Skirt Clamp System** is designed to be quickly and easily serviced by appropriate personnel, however under no circumstances should any personnel attempt installation or service of this equipment whilst the conveyor belt is running.

The conveyor belt drive and any associated equipment must be shut down and locked out according to plant safety procedures before attempting work requiring access to or opening of the chute or conveyor enclosure.

Contact with a moving conveyor belt and its drive components can result in serious injury or death.

Where appropriate and site access rules allow, the **ESS Quiklok Skirt Clamp System** may be inspected with the belt running if safe visual access is available, but the service person should never reach into or enter the conveyor enclosure. No service or adjustment work can be carried out with the conveyor running. Shut down and lock out the conveyor for any work requiring any part of the body to enter the conveyor enclosure, or be exposed to moving components.

The following are some of the hazards that may be present when installing this equipment. The installer should identify all hazards, including any not mentioned below.

	Hazard		Hazard
X	Moving Conveyor - ISOLATE		Other:
	Hot Work		Other:
	Working at Heights		Other:
	Heavy Lift		Other:
	Persons Working Overhead		Other:
	Persons Working Below		Other:
	Electrical & Cabling		Other:
	Pinch Points		Other:
	Trip Hazards		

Once hazards have been identified, the installer should undertake and document a comprehensive Job Hazard Analysis according to site requirements and good safe-working practice.

The installer must identify all hazards and apply appropriate controls before proceeding with the installation or servicing of this equipment.

1.1. SAFETY LABELS

Pictograph labels are used to show graphically where potential safety hazards exist around this product. These labels do not represent every possible hazard. They are not intended to be a substitute for safe work practices and good judgment. These labels and *ESS* technical manuals use specific words to identify the severity of the hazard. They are described below. Take time to read and understand the meaning of these words and symbols.

Danger labels call attention to imminently hazardous situations that will result in serious personal injury or death if not avoided. Injury from these hazards is immediate in nature and has a high probability of resulting in a serious or fatal accident if proper precautions are not followed.

Warning labels call attention to potentially hazardous situations that could result in serious personal injury or death if not avoided. Injury from these hazards is usually serious in nature, and a severe or fatal accident can occur if proper precautions are not followed.

Caution labels call attention to potentially hazardous situations that may result in minor or moderate personal injury if not avoided. Injury from these hazards is normally less serious than those from Danger or Warning hazards. However, there is still the potential for an accident resulting in serious injury if proper precautions are not followed.

2.0 INTRODUCTION

The **ESS Quiklok Skirt Clamp System** is a conveyor belt skirt clamp assembly. It is designed to firmly hold a rubber or similar skirt seal in place to reduce or eliminate loss of material fines and dust from the conveyor loading enclosure.

The **ESS Quiklok Skirt Clamp System** attaches to the outside of the conveyor belt load skirts. The mounting bracket assembly, which comes in a standard-length of 1220 mm, welds to the chute wall. Two clamping brackets of 605 mm length fit to the mounting brackets and are adjusted against the skirt seals using rotating cam adjusters.

The **ESS Quiklok Skirt Clamp System** can be site modified or specially manufactured to different lengths for specific applications. Each 1220 mounting bracket can be simply cut in half and used with one clamping bracket where required. In this way, any multiple of 610 mm can be easily handled at site during installation.

Important: Never use a clamping bracket with only one cam adjuster. This creates the potential for the clamp bracket to twist and present a danger to the belt surface. Contact ESS for assistance when using the **ESS Quiklok Skirt Clamp System** on non-standard lengths.

See drawings at the back of this manual for installation and part number details.

3.0 PREPARATION FOR INSTALLATION

1. CHECK INSTALLATION DRAWINGS -

Ensure that you have the correct drawings and equipment for your conveyor(s).

2. ASSEMBLE THE NECESSARY TOOLS & SAFETY EQUIPMENT REQUIRED FOR THE INSTALLATION

3. OBSERVE THE CONVEYOR WHILE RUNNING AND CONVEYING MATERIAL -

a. Determine loading point.

b. Note direction of conveyor belt travel.

c. Observe conveyor belt tracking. **Conveyor belt must track straight.**

d. Observe Idlers.

Ensure conveyor belt does not raise from Idlers.

Ensure idlers are spaced correctly so conveyor belt does not sag. If conveyor belt does sag, additional idlers or ***ESS*** GUARDABELT Impact Cradle or GUARDASEAL Belt Support System must be installed.

a. Observe Material on conveyor belt. Material should be loaded on centre of belt.

4. INSPECT WEAR LINERS AND CHUTE WALL -

➢ Ensure wear liners and chute wall are in good condition (no cracks, holes, slits or grooves).

a. Ensure wear liners and chute wall are in good contact along bottom edge or material will build up between wear liner and the skirting system.

b. Ensure wear liners increase in height from the belt toward the load area exit so that material will not accumulate between the belt and the wear liner.

IF ANY OF THE ABOVE PROBLEMS EXIST, CORRECT BEFORE INSTALLATION

5. UNUSUAL CONDITIONS -

CONTACT *ESS* ON 1800 074 446 before installation if any of the following conditions exist:

a. concave or convex curves in chute wall or belt.

b. extreme side pressures

c. fast (>4.6 m/sec) conveyor belt

d. temperature extremes - below -20° C or above 65° C

e. corrosive atmosphere

4.0 INSTALLATION

⚠ WARNING BEFORE PROCEEDING WITH INSTALLATION, ENSURE THAT THE CONVEYOR BELT DRIVE IS FULLY ISOLATED AND LOCKED OUT.

4.1 INSTALLATION PROCEDURE

Before commencing installation or any work around the conveyor belt ensure that the belt is isolated and tagged.

a. Take steps to protect the belt from damage due to welding and cutting.

b. If existing skirt clamps are present, remove and clean up the chute wall.

Using dimension 'H' from the table, scribe a line this height above the belt on the outside of the load skirts. (Refer to drawing at rear of manual or graphic below)

Trough Angle	20°	30°/35°	45°
Typical Dimension 'H'	225	230	235
Heavy Duty Apron Seal Dimension 'H'	280	280	280

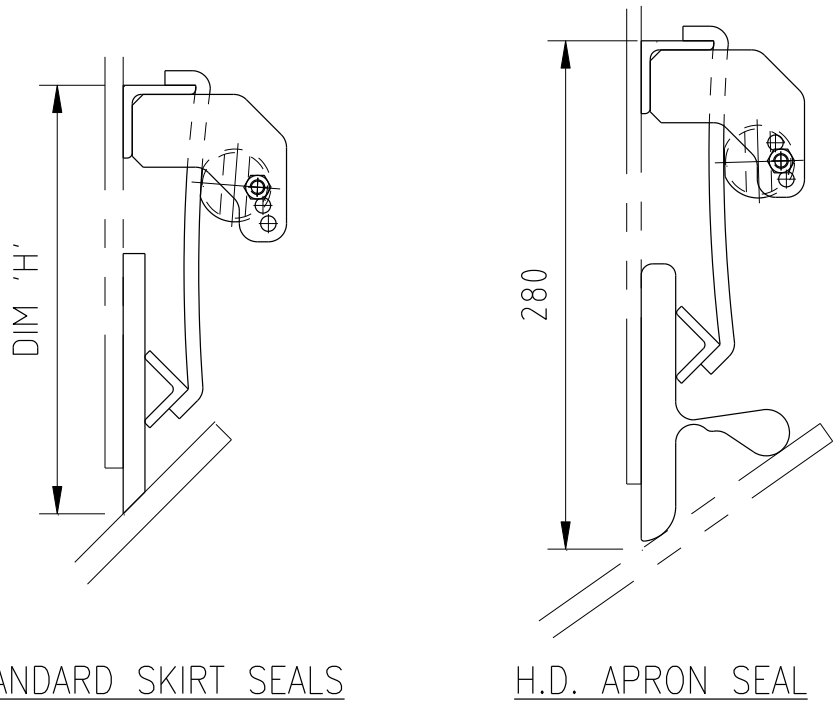


Figure 1 - Standard Skirt / HD Seal

As a check, remove a clamp from a Quiklok skirt clamp assembly and, using a sample piece of skirting rubber, confirm that the installation line is correct. The underside of the top return of the clamp bracket should be on the line. If the bracket is clamping the rubber in the appropriate position, proceed.

Take a Quiklok skirt clamp assembly and position it such that the top edge of the angle rail is on the scribed line. Weld the angle rail to the steel skirt wall, using a 4mm fillet weld x 50mm long on the top and bottom edge of the angle rail at each cam assembly. Extra welding may be added for neatness and to align ends of the mounting bracket, but excessive welding should be avoided.

Repeat step 3 for the full skirt length, simply butting consecutive angle rails against each other.

From the graphic below, ensure that all cams are attached via the correct holes in the mounting brackets. Different holes are used for various skirt seal thicknesses. Once the cams are in the correct position, fit the clamp brackets.

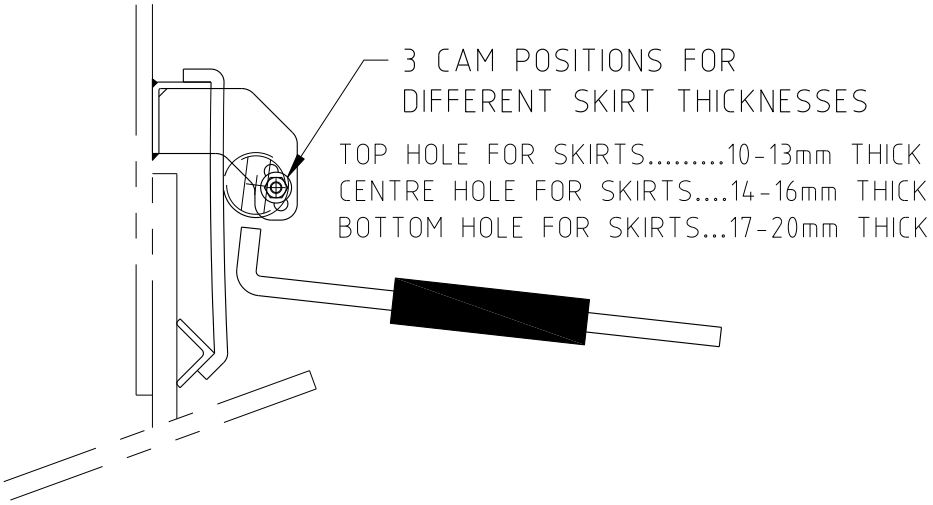


Figure 2 - Fitting Clamp Brackets

Ensure all cams are disengaged and that the clamps are free and loose. Insert the rubber from one end. Check that the rubber seal is in continuous light contact with the belt. Do not force the rubber against the belt.

Secure the rubber by utilising the Quiklok adjusting tool to rotate the cams into the clamping position.

Remove danger tags and return conveyor to service, following plant procedures.

NOTE: IF YOU HAVE ANY PROBLEMS, OR ARE UNCLEAR ON ANY INSTALLATION STEP, CONTACT ESS ON CUSTOMER SERVICE NUMBER 1800 074 446.

5.0 COMMISSIONING

Do not attempt to install, maintain, or disassemble any part of a conveyor belt or conveyor belt accessory without first isolating and tagging the conveyor drive. Contact with a moving conveyor belt can result in serious injury or death.

Following site safety and start-up procedures, start conveyor belt and run under normal conditions. Observe the skirt seals and look for material leakage.

At the next opportunity, isolate and tag the conveyor to site safety procedures:

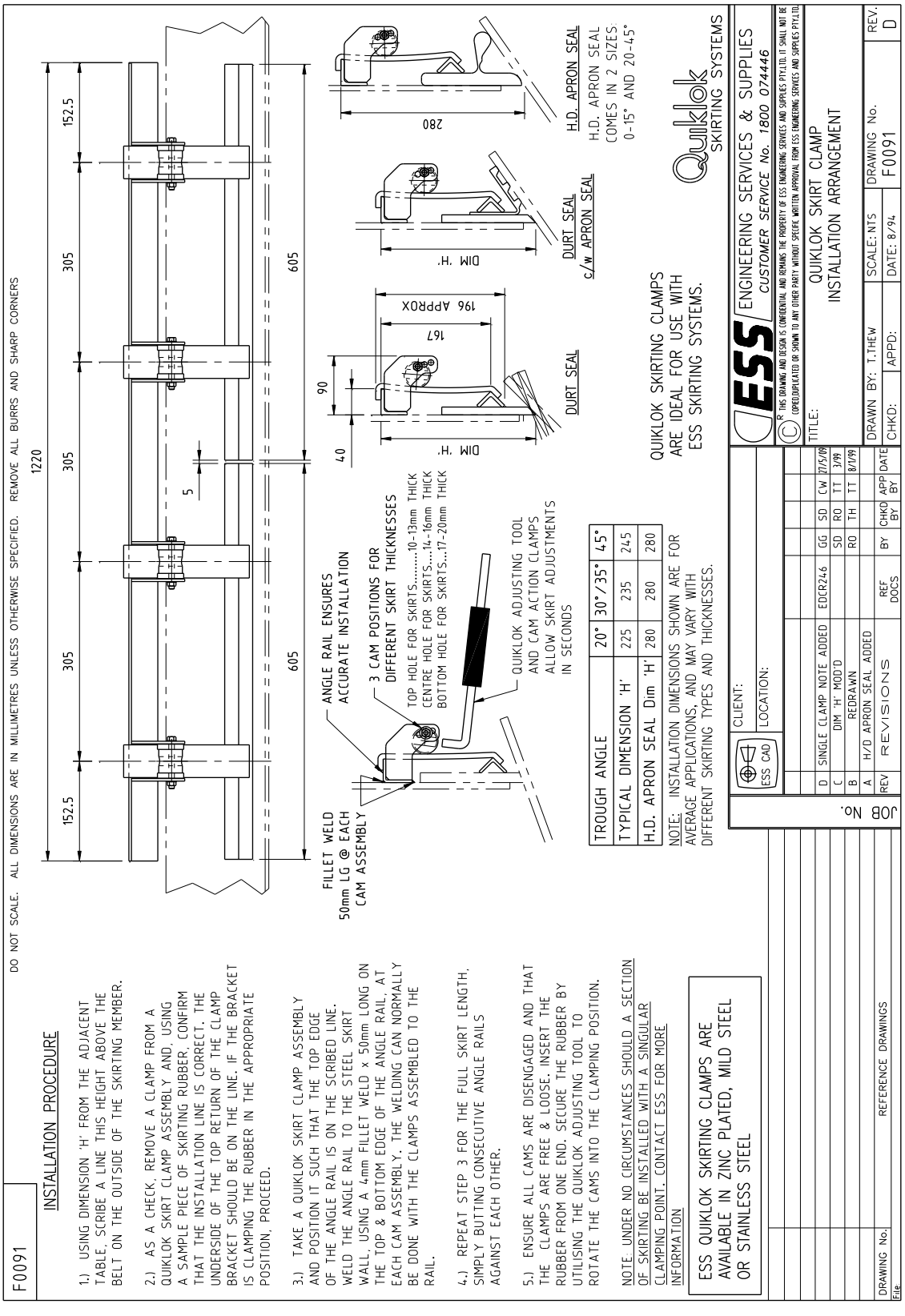
1. Adjust skirting rubber by following steps in previous section.
2 Remove danger tags and return conveyor to service, following plant procedures.
3 Start conveyor and run under normal conditions for one week.

5.1 TROUBLESHOOTING

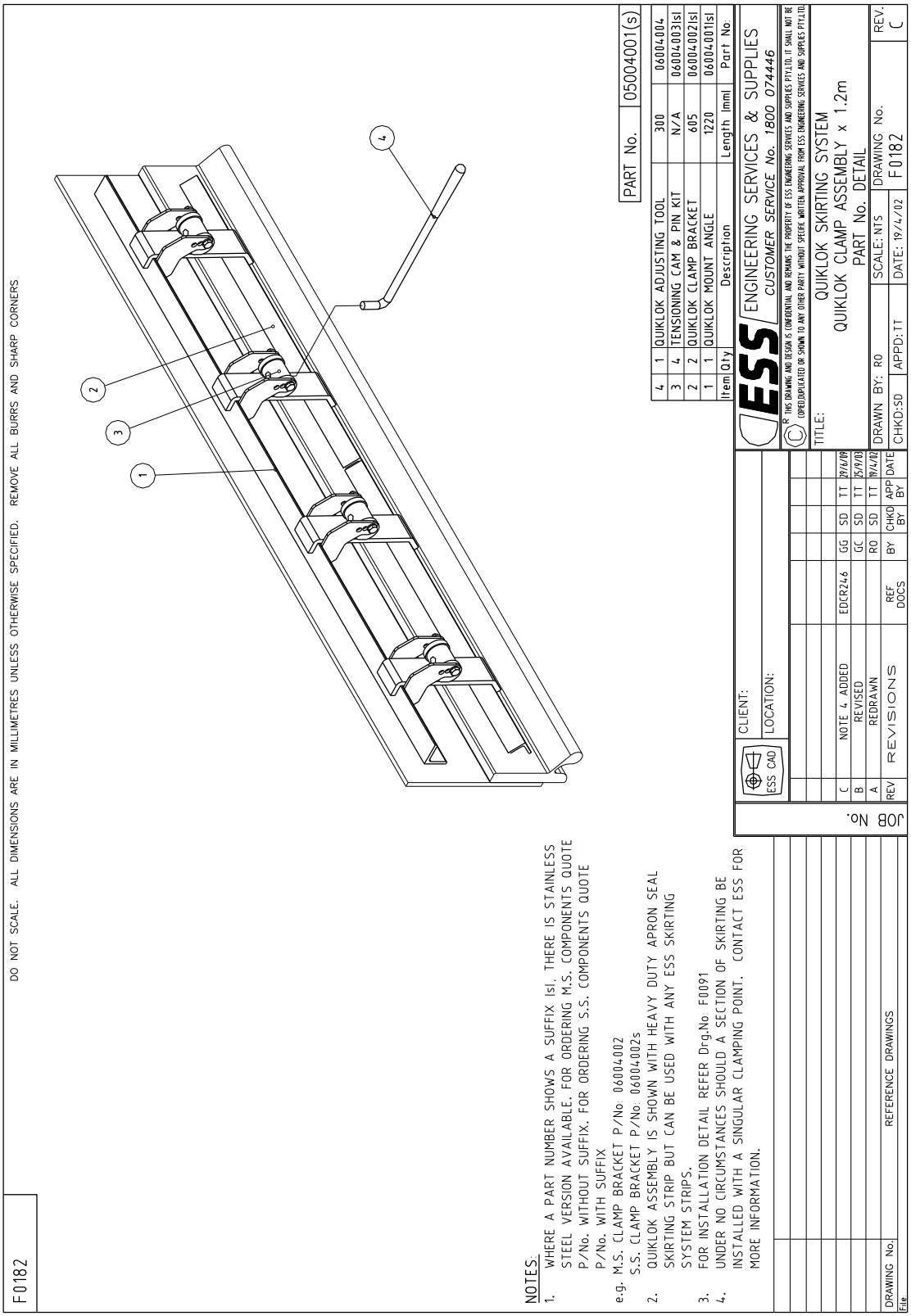
	PROBLEM	SOLUTION
1.	Conveyor belt won't run after installation.	Skirting Rubber is installed too tightly against conveyor belt.
2.	Excessive Skirting Rubber wear.	Skirting Rubber is installed too tightly against conveyor belt.
3.	Product leaking from under skirting.	Skirting rubber is not installed uniformly against belt. Belt is deflecting under load – add extra idler sets or ESS belt support systems.

6.0 INSTALLATION & PARTS LISTINGS

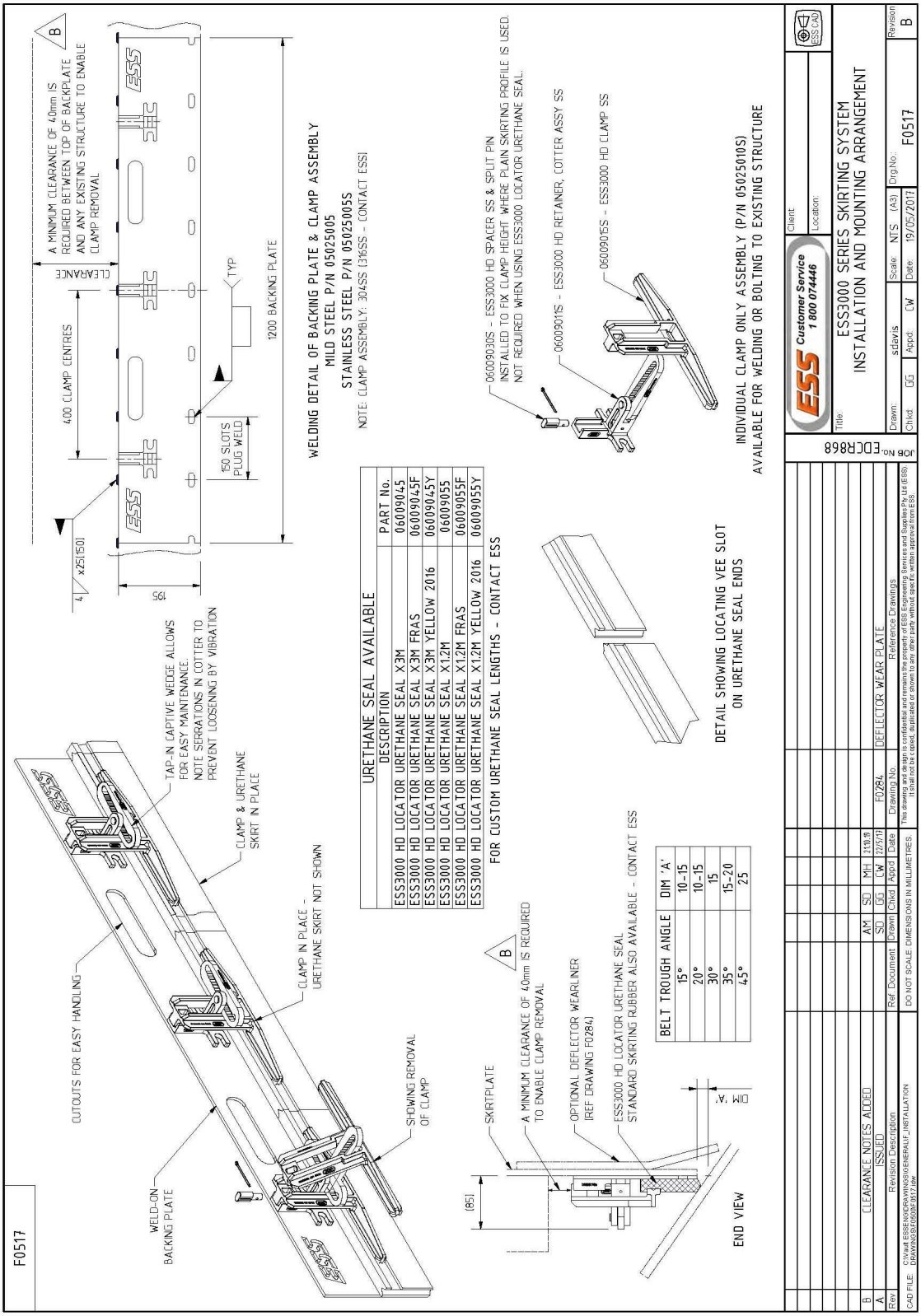
F0091 – QUIKLOK SKIRT CLAMP



F0182 QUIKLOK CLAMP ASSEMBLY X 1.2M



F0517 ESS3000 INSTALLATION & MOUNTING ARRANGEMENT



7.0 FINAL CHECKLIST

Site: _____ Number: _____ Date: _____

Site Equipment No./Location: _____ Site Contact: _____

Completed By: _____ **(Circle Yes or No Below)**

1. **Was equipment to ESS Specification?** _____ **Yes/No**

   Drawing No. Ref: _____**Attached? Yes/No**

   If No, WHY_____

   _____

   Will this affect performance? Yes/No

   If Yes, WHY _____

   _____

2. **Was this a standard ☐ service ☐ inspection ☐ installation? Yes/No**

   If No, WHY_____

   _____

3. **Was work carried out as per procedure and JSA? Yes/No**

   If No, WHY_____

   _____

4. **Is equipment fit for commissioning? Yes/No**

   If No, WHY_____

   _____

5. **Was a final inspection carried out while plant was running? Yes/No**

   If No, WHY_____

   _____

6. **Has anything changed from previous service / inspection / installation? Yes/No**

   If Yes, WHAT _____

   _____

7. **Is equipment performance to Client expectations? Yes/No**

   If No, WHY_____

   _____

ESS Signature: _____ **Client Signature:** _____

8.0 NOTES