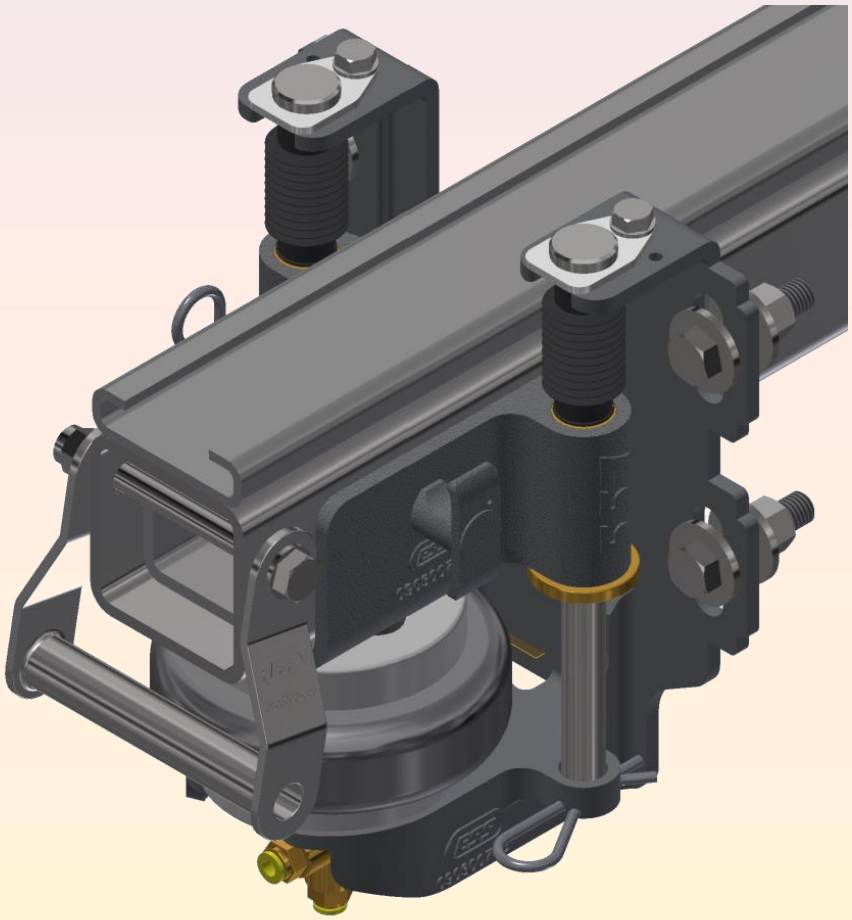
ENGINEERING SERVICES & SUPPLIES PTY LTD
Ph: 1800 074 446 www.esseng.com.au

Inline Premium Secondary Belt Cleaner (IPS)

Installation, Operation & Maintenance Manual



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WARRANTY

ESS warrants the **Inline Premium Secondary Cleaner** 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 is also 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.

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

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

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.

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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 **IPS Secondary Cleaner** 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.**

The mainframe and blade assembly can be heavy and can require installation in awkward positions. Ensure that adequate personnel are available to safely lift the cleaner during installation, or use appropriate lifting gear.

The cleaner may be inspected or the tension adjusted with the belt running as long as suitable visual access is available, but the service person should never reach into or enter the conveyor enclosure. No other service work is able to 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:

Table 1 - Hazard Checklist

	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		Other:

Once hazards have been identified, the installer should undertake and document a comprehensive Job Hazard Analysis (JHA) 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 IPS Belt Cleaner is a conveyor belt secondary cleaner, and is usually used in conjunction with a head pulley primary cleaner such as the *ESS* XHD, DT or TM DOCTOR BLADE Primary Cleaners.

The IPS is normally mounted such that the cleaning blades contact the belt as it leaves the head pulley or other accessible position on the return belt. The blades of the IPS, when tensioned, lay in the direction of belt travel, contacting at a negative angle and presenting no snag or danger to the belt or splices.

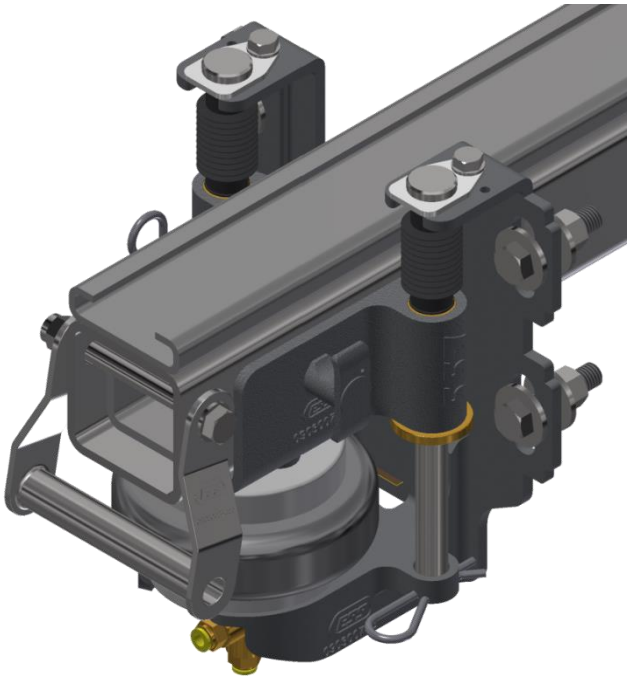


Figure 1 - IPS Assembly

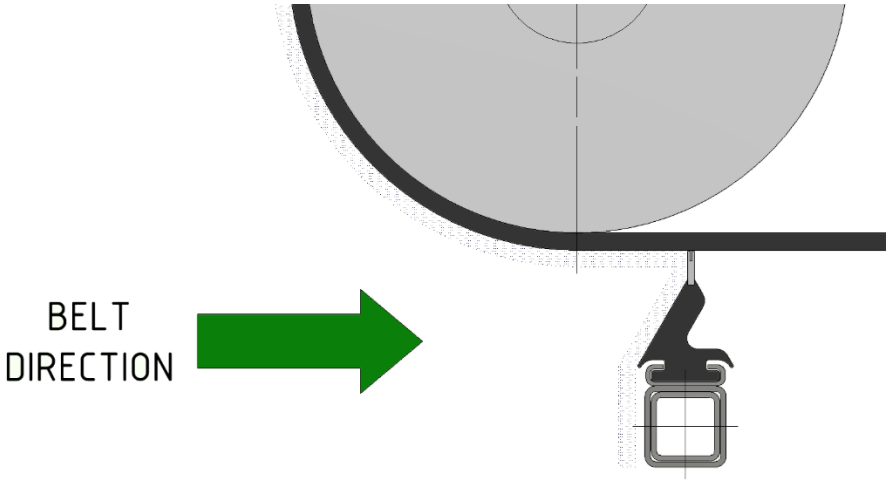


Figure 2 - IPS Cleaner Belt Direction

The IPS Cleaner is an upgraded version of the *ESS* InLine 20-Ten Premium Cleaner & the original *ESS* InLine cleaner, which set the standard for cleaning performance combined with safety and ease of servicing.

Features of the IPS that the user should be aware of include:

- Improved slide design and materials to resist wear and prevent jamming under heavy loading.
- Full stainless steel construction.
- Tensioner support landing reduced in size to eliminate material accumulation on mount bracket.
- Redesigned Spring Tensioner unit, fully modular and interchangeable with Air Tensioner.
- Improved action and more consistent tensioning from the Spring Tensioner unit.
- Air and Spring Tensioned models have identical installation dimensions.
- Installation dimensions identical to *ESS* InLine 20-Ten Premium Cleaner.

The *ESS* IPS Cleaner can be supplied or retrofitted with a variety of cleaning blades. These include:

- **ABR Tool Steel blades** – General purpose blade, suitable for mechanically spliced belts.
- **Tungsten Carbide Blades** – For very abrasive materials and high speed belts. Also available in Clip Type for mechanically spliced belts.
- **Urethane Blades** – For damaged belts and special applications.
- **Reversing Blades** – All above options in reversing form for belts that drive in both directions.

Note

When mounted slightly away from the head pulley or pressure roller, the standard In-Line blade will handle small amounts of belt reversal or roll-back with no adverse effects. When fitted with Reversing Blades, the In-Line becomes a fully operational reversing belt cleaner.

3.0 PREPARATION FOR INSTALLATION

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

2. **Pre-assemble the cleaner(s) and mounts**
   Do this in your workshop or similar free area, rather than at the conveyor. This will enable you to:

   - ✓ Verify all required equipment is present.
   - ✓ Familiarise yourself with the cleaner assembly.
   - ✓ Plan the installation and reduce installation time.

3. **Assemble the necessary tools & safety equipment required**
   For the installation

4. **Observe the conveyor while running and conveying material**

   - ✓ Observe the material trajectory.
   - ✓ Observe the belt direction - does it reverse or roll back?
   - ✓ Observe the belt splice condition.
   - ✓ Does the belt run true, or track off to one side?
   - ✓ Is the head pulley out-of-round?

Consult *ESS* if any UNUSUAL conditions are observed in the above. These conditions may result in recommendation of a different installation position or even a different cleaner.

4.0 INSTALLATION

CONVEYORS MUST BE SHUT DOWN AND LOCKED OUT BEFORE ANY INSTALLATION OR SERVICE WORK IS PERFORMED.

IF INSTALLATION IS TO BE DONE IN AN ENCLOSED AREA, TEST ATMOSPHERE FOR GAS LEVEL OR DUST CONTENT. FOLLOW ALL WELDING AND SAFETY GUIDELINES.

For original equipment installation, where cleaner cutouts and brackets have been fabricated into the chute during construction, ignore Steps 1, 2 and 3.

Solid backing of the blades is essential to ensure proper operation and efficient cleaning. Install the cleaner adjacent to the head pulley or a flat pressure roller to obtain best cleaning results.

For installation on enclosed head pulley chutework, draw all dimension lines on chute wall. In applications where head pulley is not enclosed, use the best available field resources and/or methods to ensure that these critical dimensions are followed for a proper installation.

Step 1 **Locating mainframe's centreline**

On the return side of the belt locate the tangent point at which the belt leaves the head pulley. Measure a distance 100 mm and scribe a line perpendicular to the belt at this point.

Note

For installation below pressure rollers mark the vertical line 100 mm from the centreline of the roller.

This line represents the centre line of the In-Line Cleaner and the cleaner mount brackets.

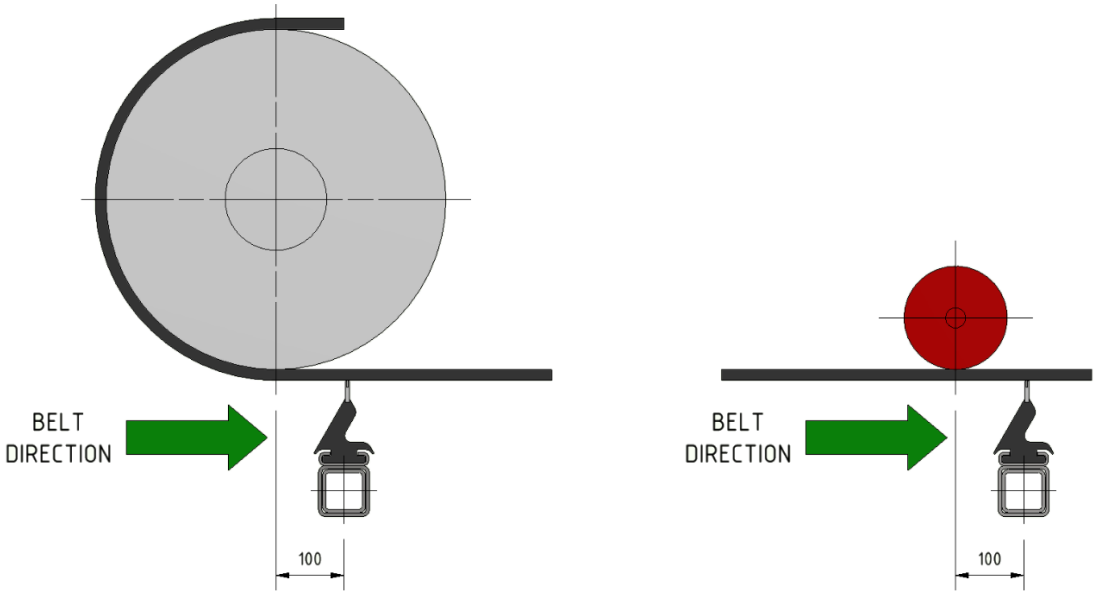


Figure 3 - Installation of Horizontal Belts

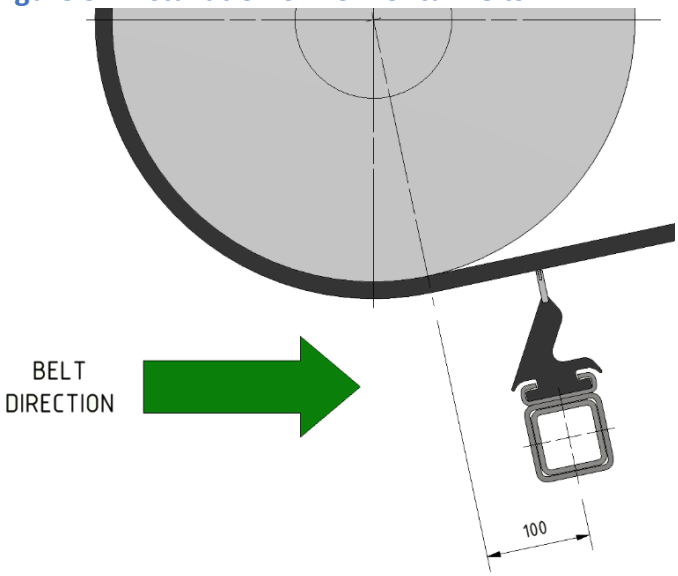


Figure 4 - Installation on Angled Belts

Step 2 **Marking/cutting the mounting holes**

Using the previously marked line as the centre line, mark the chute cut-out and bolt hole locations as shown in below. Repeat on both sides of chute, ensuring that the cut-outs are accurately aligned with each other.

Note

If replacing a 20-Ten series cleaner with the IPS cleaner, mount hole and cut-out configuration is exactly the same.

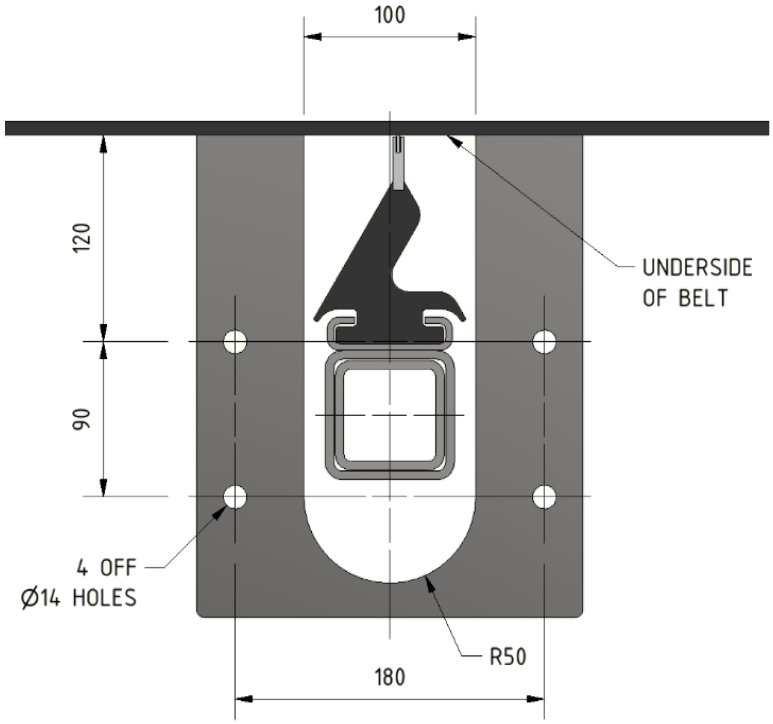


Figure 5 - Chute Cut-out for all Models

Step 3 **Verify Clearner position before proceeding**

If not already done, disassemble the cleaner mount / tensioner assemblies from the cleaner mainframe. To do this, simply remove the retaining pin in the operator side mount, and slide the blade cartridge from the mainframe. Then remove the retaining pin in the far side mount to remove the mainframe.

Position the mount / tensioner assembly over the marked hole centres, ensuring that the hole centres are located approximately in the middle of the slots in the mount bracket. Verify that the mounts fit, and that adequate room is available to tension the cleaner.

Once mounting position is confirmed, proceed.

Step 4 **Cut access slots/mount holes**

At the selected mounting positions, cut the cleaner access slots, and drill the mount holes in each side of the chute. Dress and de-burr the holes and cut-outs. Repair the paintwork to prevent corrosion.

Step 5 **Fit mount brackets**

Fit the Operator Side mount bracket to the chute wall. Position the mount so that the drilled holes in the chute wall are approximately centred in the slots of the mount. Bolt the mount to the chute wall using 4 x M12 bolts. Repeat for the Far Side mount bracket.

Step 6 **Fit the cleaner Mainframe to the mounts**

Note

The mainframe has a mechanical stop at one end (bolt and nyloc nut). This is the end that fits to the far side mount. Orientate so mechanical stop is on the underside of the mainframe.

Fix the mainframe using a securing pin and the mainframe saddle to the far side mount. Select an appropriate hole where the mainframe sits on the operator side mount.

Step 7 **Install blades**

Slide the Blade Cartridge onto the mainframe from the Operator Side. If not already done, fit the cleaning blades to the cartridge. If using metal cleaning blades (ABR or Tungsten Carbide), a Urethane End Blade must be installed at each end of the blade set. End Blades support the belt and prevent scoring of the belt by the outer edge of the metal blade.

Step 8 **Secure mainframe**

Secure cartridge and mainframe on operator side using a retaining pin in operator side mount, secure mainframe spacer on far side mount with fasteners.

Note

The mainframe in most cases will have excess length. If required, this excess can be trimmed from the Far Side end.

Step 9 **Centre the blades**

Centre the blades to the belt by loosening and re-positioning the blade locks. Fit the blade cartridge retaining pin.

Note

If the cartridge is too long and cannot be installed without hitting the opposite end structure, contact ESS for instruction.

Step 10 **Adjust Clearence**

With the cleaner tensioner in the fully retracted position, the cleaning blades should be approximately 15-20mm clear of the underside of the belt for Air Tensioned models and 5-10mm clear for Spring Tensioned models. This distance should be equal across the width of the belt.

If necessary loosen the bolts and adjust the mounts up or down in the slots to achieve this clearance. Once all clearances are correct, thoroughly check all

mounting and locking screws to ensure they are tight, and the cleaner is secured.

Step 11 **Air Tensioning (where applicable)**

For the Air Tensioned model only, connect the air tube to the fittings in the Far Side airbag, on the underside of the mount bracket. Pass the tube through the mainframe to the Operator End. Connect the tube to the Tee air fitting in the Operator Side airbag, adjusting the tube length to suit by cutting.

Connect the other side of the Tee fitting to the incoming regulated compressed air supply from the *ESS* Air Tensioner Control Box. Connect the plant air supply to the inlet side of the Control Box. Refer to the installation manual for the *ESS* Control Box for further set-up instructions.

Installation is now complete, and the cleaner is ready to be adjusted against the belt.

5.0 TENSIONER SYSTEMS

Inline Premium Standard Cleaners can be operated via a compression spring or pneumatic tensioning system.

5.1 SPRING TENSIONER

The Spring Tensioner on the IPS differs from previous models in the following areas:

- The tensioner is not rigidly attached to the slide bracket. The adjusting screw simply pushes against the base of the spring jacking plate
- Spring height indicator removed
- Two slide rods are used to control the vertical movement of the slide bracket

The Spring Tensioner consists of a central threaded adjuster screw (jacking bolt), a spring jacking plate, two compression springs, nut and locknut. The adjusting screw pushes against the spring jacking plate to adjust the cleaner mainframe and blade assembly against the belt. The end of the adjusting screw locates in a recess in the centre of the spring jacking plate. The springs allow storage of force to take up blade wear, and to absorb belt irregularities or impact from splices.

The amount of force required to be applied is dependent on the belt width, and is gauged by the amount of spring compression. The reduction in spring length multiplied by the spring rate will equal the force applied. Because the spring rate and free length are known, the easiest measure is of the amount of spring compression after adjustment, and this is easily read by using a ruler on either side of the slide bracket, measuring between the top face of the spring jacking plate and the underside of the slide bracket.

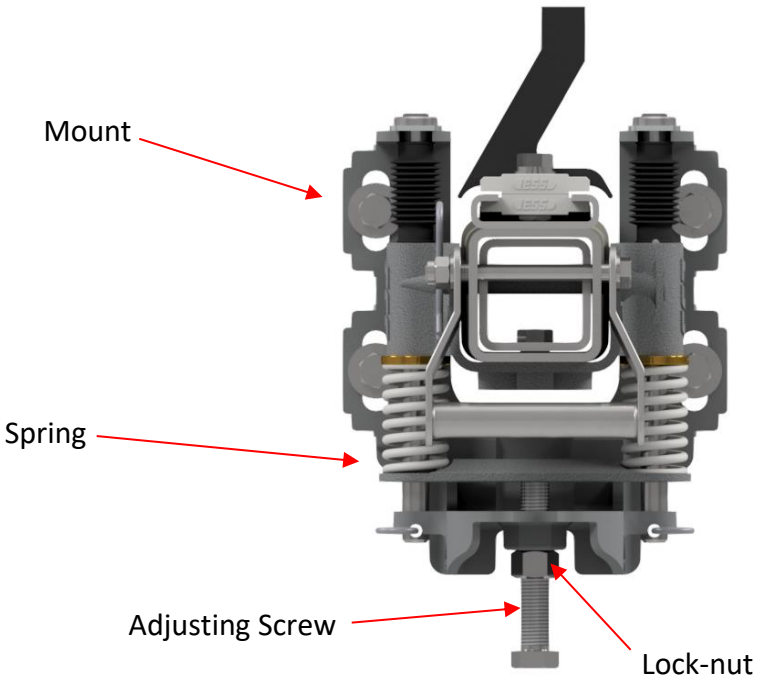


Figure 6 - Tensioner Mounting Arrangement

Figure 7 - Spring Tensioner Adjuster

5.1.1 ADJUSTMENT PROCEDURE

Step 1 Loosen the locking nut situated under the mount bracket. Repeat for both sides.

Step 2 Turn the adjusting screw (equally on both sides) until the cleaner blades are just touching the belt. You might need to further release the locking nut during adjustment.

Step 3 Ensure that the blade position is equal across the belt – that is, the blades are just touching across the belt width.

Step 4 Continue turning the adjusting screw equally on both sides until the spring compression setting is measured to be equal to what is indicated in the table below. Measure the spring compressed length using a rule or measuring tape.

Step 5 Tighten the locking nuts against the mount bracket.

Step 6 Start the conveyor and observe the cleaning action of the blades. Ensure that the blades ride smoothly on the belt with no vibration.

Step 7 ESS offers stronger springs for wider belts or heavy-duty applications. These springs are supplied with cleaners for belts 2600 or wider. The tensioner adjustment will differ when these springs are used. Contact ESS Engineering Department for more information.

Table 2 - Recommended Spring Settings

Belt Width	Spring Measurement STD (09030354s)		Spring Measurement HD (09030354sHD)		Spring Measurement HD (09030354sUHD)	
mm	mm		mm		mm	
450	4	(57)				
600	4	(57)				
750	6	(55)				
900	7	(54)				
1050	8	(53)				
1200	8	(53)				
1350	10	(51)	7	(54)		
1500	10	(51)	7	(54)		
1600	11	(50)	8	(53)		
1800	13	(48)	8	(53)		
2000			9	(52)		
2200			10	(51)		
2400			11	(50)		
2500			12	(49)	6	55
2600			12	(49)	6	55
2800			13	(48)	7	54
3000			14	(47)	7	54
3200			15	(46)	8	53

Note

Figures show spring compression indicator reading and (spring compressed length). UHD (ultra heavy duty) springs have been made redundant. Values are shown only for existing cleaners still utilising these springs.

5.1.2 MAINTENANCE PROCEDURE

To access the blade cartridge for maintenance, first de-adjust the cleaner by reversing the above procedure. Loosen the locking nuts and turn the adjusting screws to release the blades from the belt.

Alternate sides every 2 turns (or use an assistant) to ensure that the cleaner is backed off the belt evenly.

When fully retracted, simply remove the retaining pin securing the blade cartridge to the operator end of the mainframe. Grasp the handle and pull the blade cartridge off the mainframe and away from the mount bracket. Completely remove the blade cartridge from the mainframe and place it in a suitable position for maintenance work to be carried out.

Re-assembly is the reverse of the above procedure. Re-adjust the cleaner as described in the previous section.

5.2 AIR TENSIONER

The Air Tensioner utilises an inflatable air bag on each cleaner mount to provide the force to adjust the blades against the belt. Cleaner adjustments and correct force are automatically applied by controlling the air supply pressure.

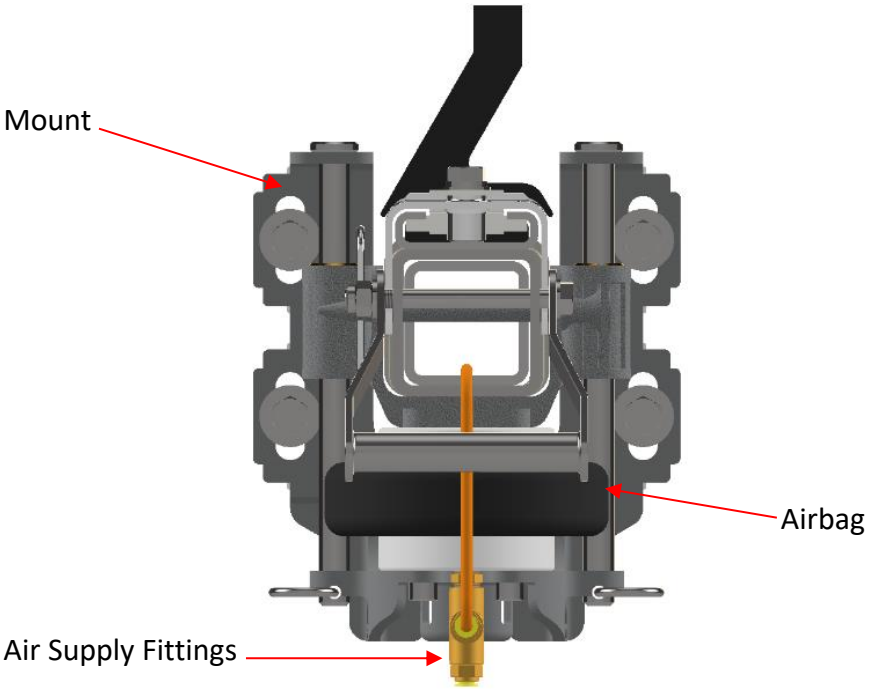


Figure 8 - Air Tensioner and Mount Arrangement

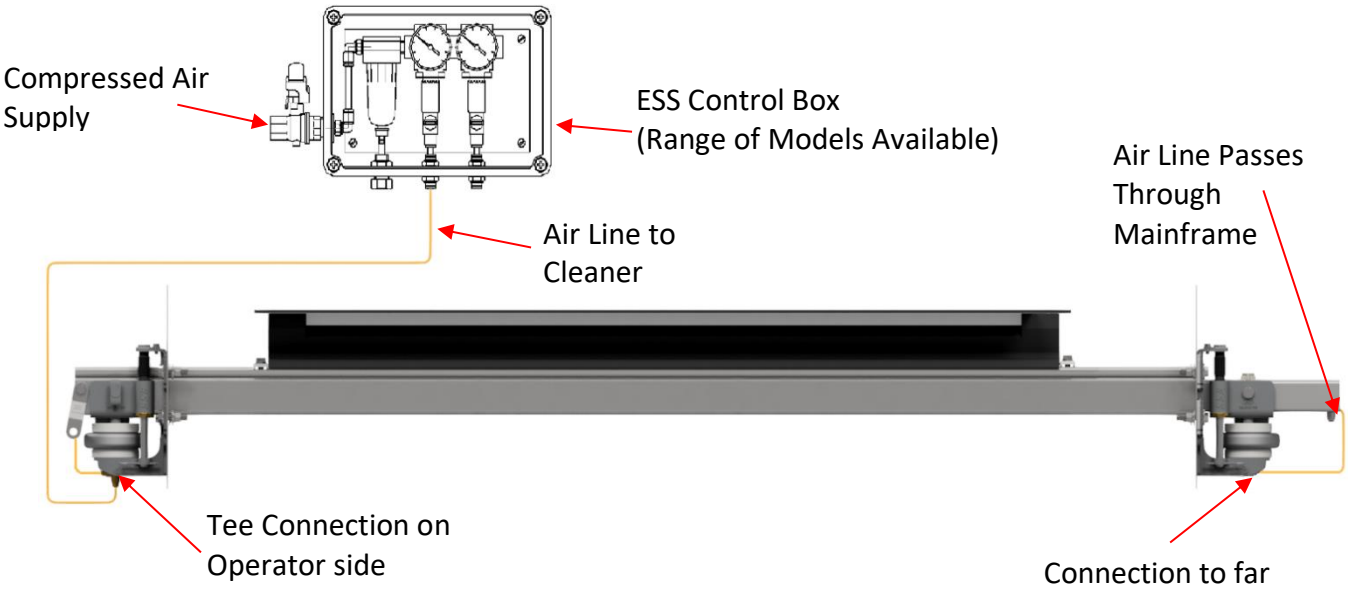


Figure 9 - Air Supply Connections

5.2.1 ADJUSTMENT PROCEDURE

Adjusting the Air Tensioned In-Line cleaner is simply a matter of supplying air at the appropriate pressure to the tensioner air bags. Refer to the table below for recommended air pressures.

If using an *ESS* Air Tensioner Control Box, connect the plant air line to the lockable ball valve on the outside of the enclosure, and check that all air connections are in place as per section 4 of this manual and the *ESS* Control Box manual. Turn on the air supply and open the lockable ball valve. Open the individual isolation valve for this cleaner in the *ESS* Control Box to pressurise the tensioner. The cleaner will automatically raise, and the blades will contact the belt.

Adjust the pressure to the required level via the regulator unit inside the Control Unit. The regulator is self-relieving, so the pressure will stabilise, but it is advisable to wait a short while after each adjustment to allow excess pressure to bleed.

Once the correct pressure has been achieved, lock the regulator adjustor, and replace the lid on the enclosure.

Table 3 - Recommended Air Pressure

Belt Width	kPa	PSI
450	34	5
600	41	6
750	55	8
900	62	9
1050	76	11
1200	83	12
1350	97	14
1500	103	15
1600	110	16
1800	124	18
2000	138	20
2200	152	22
2400	159	23
2500	165	24
2600	172	25
2800	186	27
3000	200	29
3200	214	31

5.2.2 MAINTENANCE PROCEDURE

To access the blade cartridge for maintenance, first de-adjust the cleaner by shutting off the air supply at the individual isolation valve for the cleaner in the Air Tensioner Control Box.

The cleaner will automatically retract from the belt. When fully retracted, close or re-fit the Control Box lid. This will prevent re-pressurising of the Air tensioners during maintenance.

Next remove the retaining pin securing the blade cartridge to the operator end of the mainframe. Grasp the handle and pull the blade cartridge off the mainframe and away from the mount bracket. Completely remove the blade cartridge from the mainframe and place it in a suitable position for maintenance work to be carried out (refer to the Routine Maintenance Section).

Re-assembly is the reverse of the above procedure. Once the blade cartridge has been re-fitted and secured, open the isolation valve in the Control Box to pressurise and automatically adjust the cleaner to the belt. Check that the air pressure is to specification and adjust if necessary.

6.0 RETROFITTING EXISTING CLEANERS

6.1 20-TEN MAINFRAME TO IPS BRACKETS

	20Ten Mainframe	IPS Mandrel Mainframe
20Ten Tensioners	Superseded product offering that will be found on-site	existing 20Ten slide brackets will require machining
IPS Tensioners	Direct swap. Mainframe retrofit kit required (P/N 09030079S)	New product offering

20-Ten style mainframes can be retrofitted to the New ESS Inline IPS Mount Brackets. The optional ESS IPS Retrofit Kit can be utilised to install the mounts to an existing 20-Ten mainframe. Utilizing this kit will allow the customer to have the newest IPS Brackets without the expense of purchasing a complete new cleaner.

Figure 10 - IPS Retrofit Kit for existing 20Ten installations

6.2 IPS MAINFRAME TO 20-TEN BRACKETS

The IPS Mainframe can be retrofitted to 20-Ten slide brackets using the ESS 20-TEN SLIDE BRACKET – TO SUIT IPS KIT. Utilizing this kit will allow the customer to have the easy sliding IPS Mainframe if new mounts are not required.

7.0 COMMISSIONING

Step 1 Ensure that the cleaners are correctly adjusted against the belt as described in the previous sections.

Step 2 Ensure that all foreign materials, tools and rubbish have been removed from the belt and the immediate area.

Step 3 Start the conveyor, following all appropriate safety start-up procedures.

Step 4 Observe the action of the cleaner blades. Ensure that there is no vibration in the blades or mainframe. Ensure that all blades are contacting the belt evenly. Ensure that there is no marking of the belt surface from the cleaner blades. Refer to the Trouble Shooting section or contact *ESS* if any problems are observed.

Step 5 If possible, observe the operation of the cleaner once the belt is loaded. Observe the cleaning action of the blades. Is the belt clean after the cleaner? If not, check the cleaner adjustment again, referring to the appropriate tensioner section. If problems persist, contact *ESS*.

Step 6 Shut down the conveyor. Correct any problems observed. Re-test if necessary. The cleaner is now ready for production.

8.0 OPERATOR TRAINING

The decision to purchase *ESS* cleaning equipment has put within easy reach the reality of a clean plant. The last step is the correct training of personnel to maintain and service the equipment or employ *ESS* on a contract basis to maintain the cleaners so that they remain at optimum efficiency.

The benefits of efficient cleaners outweigh the cost of maintaining the cleaners many times.

If you wish to have your cleaning system maintained on a regular contract basis, contact *ESS*. If not, train your own personnel as follows:

1. **Ensure that personnel working around conveyors are thoroughly trained to recognise existing and potential hazards involved, and that a Job Safety Analysis is conducted to identify and control those hazards.**
2. **Ensure personnel are trained in correct equipment isolation and lock-out procedures.**
3. **Ensure that personnel have all required safety equipment and are thoroughly trained in the use of that equipment.**
4. **Ensure that all appropriate permits are in place, and that personnel involved are qualified to undertake the required work.**
5. Provide the trainee with a copy of this manual and ensure that they read and understand the contents.
6. Provide the trainee with all relevant conveyor data, such as belt speed, width and material handled, and ensure that they understand the required belt cleaner settings and adjustments that pertain to the conveyor.
7. Instruct the trainee to look for problems existing or developing in the belt cleaning system, such as increasing carryback, irregular or excessive blade wear, blade vibration and the like. Encourage them to **safely** observe and try to determine the cause of the problem.
8. Ensure that the trainee is given hands-on instruction in maintenance procedures during down-time, in the company of an experienced service technician.
9. Ensure that the trainee is provided additional support and instruction at regular future intervals to ensure that all information has been understood and retained.
10. Encourage the trainee to look for and report other problems developing on the conveyor system such as excessive belt tracking, belt damage, seized idlers, missing bolts and the like.

9.0 MAINTENANCE

Regular inspection and servicing is the key to effective conveyor belt cleaning. It is recommended that the cleaner be inspected once per week. Actual service intervals will vary considerably from plant to plant.

DO NOT REACH INSIDE THE CONVEYOR CHUTE UNDER ANY CIRCUMSTANCES WHILST THE CONVEYOR IS RUNNING

9.1 INSPECTION & TENSIONING

Step 1 **Inspect the condition of the cleaner**

Open the inspection door (if fitted) and observe the condition and action of the blades and cleaner.

Step 2 **Clean blades and mainframe**

If necessary (and if plant rules allow it), hose any material build-up from the blades or mainframe - DO NOT REACH INTO THE CHUTE WHILST CONVEYOR IS RUNNING.

Step 3 **Re-tension**

If necessary, re-tension the cleaner - refer to Section 5.

9.2 BLADE SERVICING

Step 1 **Shut down and lock out the conveyor**

Shut down and lock out the conveyor if deemed necessary by site safety officer, or site regulations. The In-Line Premium Cleaner is safe to service with the belt running, but this may contradict site rules.

Step 2 **Release blades**

De-adjust the cleaner as described in Section 5, Spring Tensioner or Air Tensioner.

Visually inspect the blades.

- If blades are clean, and not excessively worn, re-tension the cleaner.
- If material build-up is still present or blades are excessively worn, proceed.

Step 3 **Remove blade locks**

When fully retracted, simply remove the retaining pin securing the blade cartridge to the operator end of the mainframe. Grasp the handle and pull

the blade cartridge off the mainframe and away from the mount bracket. Completely remove the blade cartridge from the mainframe, and place it in a suitable position for maintenance work to be carried out.

Step 4 **Clean and inspect the blades**

Clean and inspect the blades. If blades are excessively worn replace with new blades. Remove the blades from the cartridge by first removing one of the Blade Locks. Slide the blades out of the cartridge, and replace by sliding in new blades. Ensure that the blades face in the correct direction. Re-fit the Blade Lock. When replacing metal tipped (ABR or Tungsten Carbide) blades, ensure that the urethane end blades are also replaced. End Blades prevent belt damage by supporting the belt at the edge of the cleaning blades. If removing both Blade Locks, first mark their position in the cartridge to ensure correct positioning of blades on re-assembly.

Step 5 **Re-install**

Re-install blade cartridge onto the cleaner mainframe, and re-fit the securing pin at the operator side. Re-tension the cleaner as described previously.

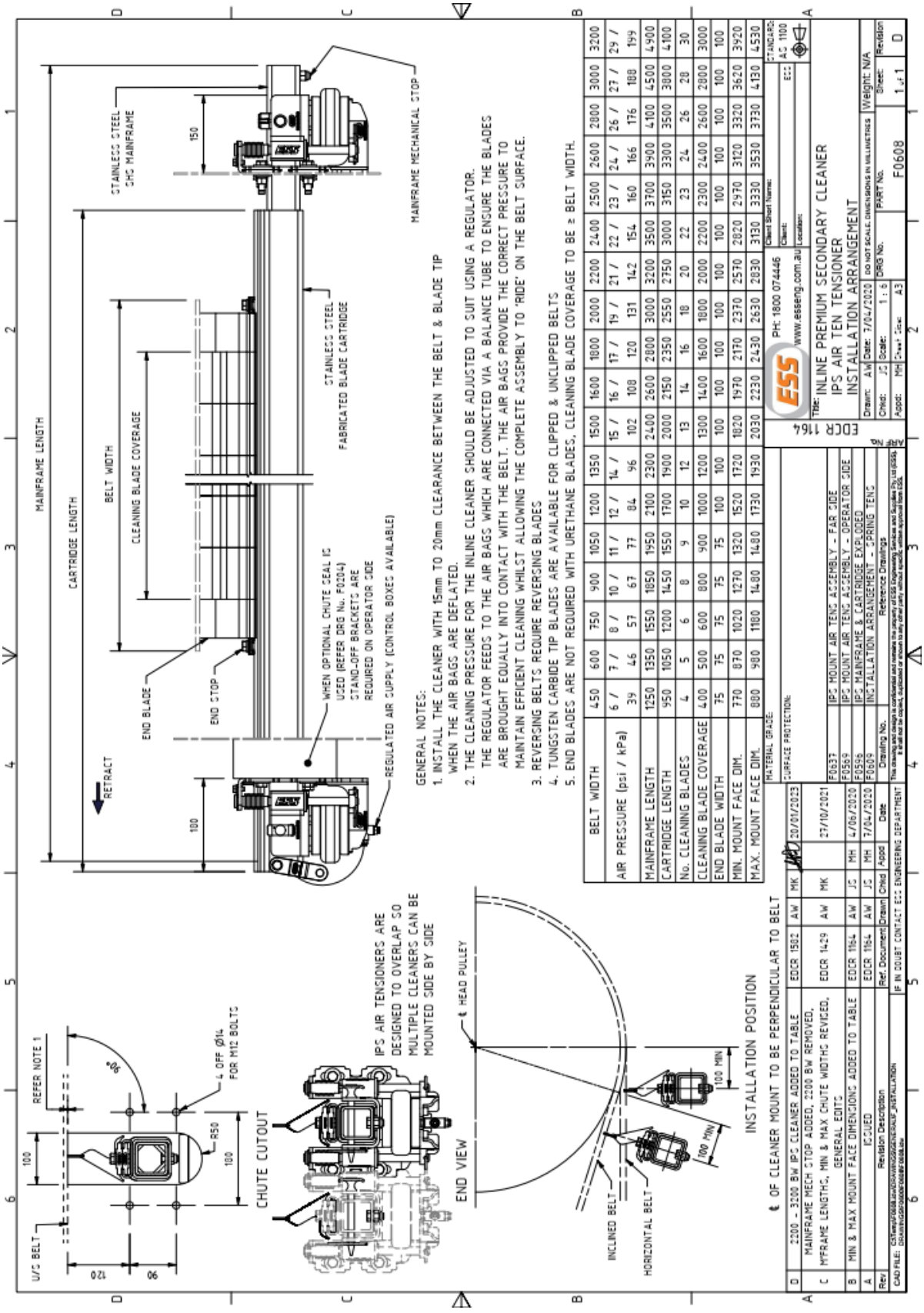
Step 6 **Remove locks or tags and restart belt**

Observe cleaner action and blade effectiveness. Replace cover (where applicable). Clean up work area.

10.0 TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Blades Vibrate	Incorrect installation angle	Check installation, ensuring cleaner mount is perpendicular to belt
	Belt deflected upward on tensioning of cleaner	Install an idler roller over the belt near the belt contact point
	Belt vibration being transferred to cleaner	Install an idler roller over the belt near the blade contact point
Mainframe bent	Mainframe undersized	Stiffened mainframe required. Contact *ESS* for assistance
	Excessive tension	Relax blade tension to maximum tension recommended in installation instructions
	Material build-up between blades/ mainframe and belt	Increase frequency of inspection and service once a week
	Normal deflection	A small amount of deflection is considered normal. Contact *ESS* if excessive deflection occurs
Poor blade life	Cleaner over-tensioned	Tension cleaner enough to clean the belt only
	Incorrect blade material	Contact *ESS* for re-appraisal
Insufficient cleaning (excessive carryback)	Cleaner under-tensioned	Re-tension cleaner
	Build-up on blade	Remove blades and clean. Increase service frequency
	Primary Cleaner not functioning correctly	Service the Primary Cleaner
	Blade vibration	See start of this section
	Cleaner overloaded	Add additional cleaner

11.0 INSTALLATION ARRANGEMENT DRAWINGS

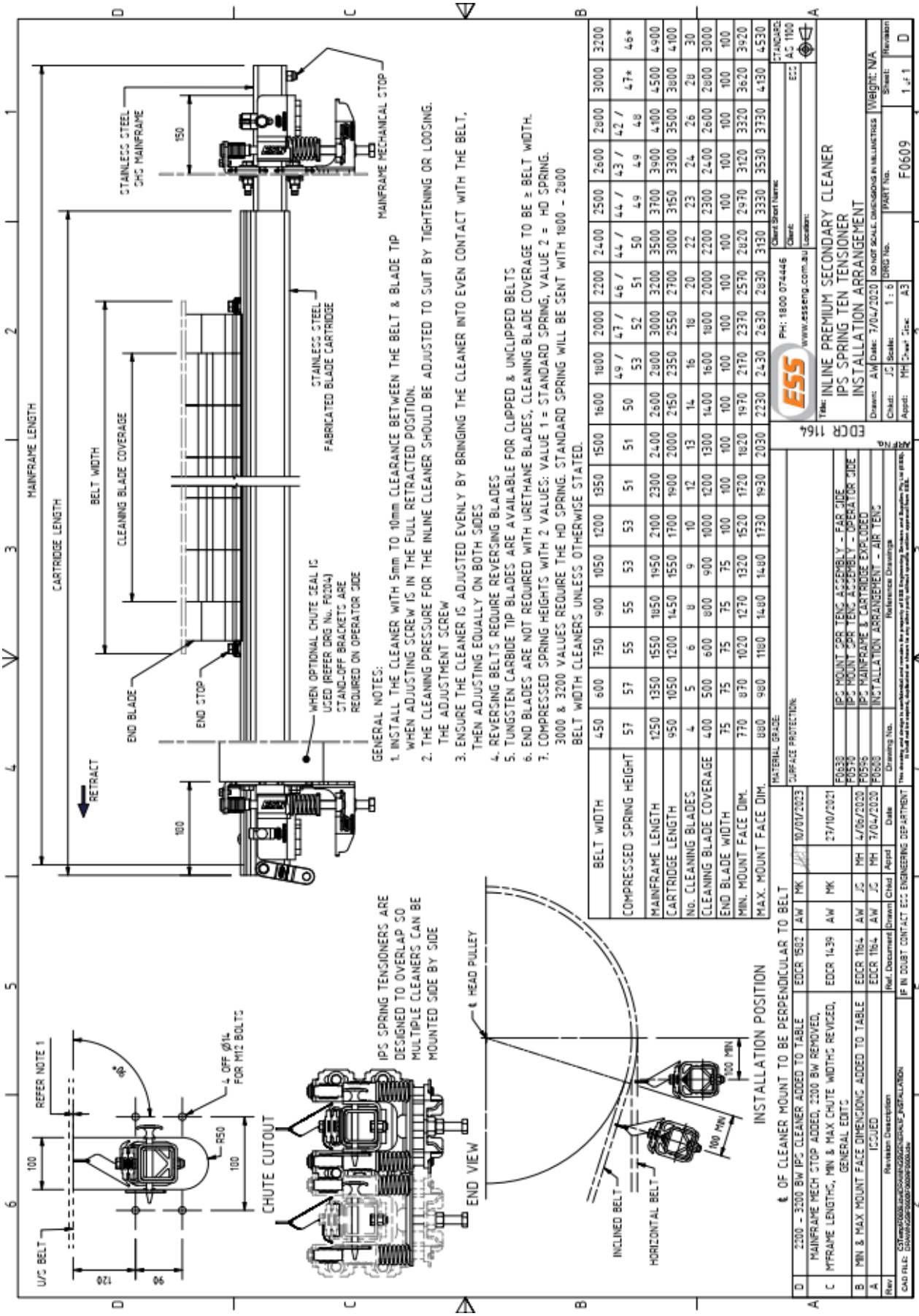


BELT WIDTH	450	600	750	900	1050	1200	1350	1500	1600	1800	2000	2200	2400	2500	2600	2800	3000	3200
AIR PRESSURE (psi / kPa)	6 / 39	7 / 46	8 / 57	10 / 67	11 / 77	12 / 84	14 / 96	15 / 102	16 / 108	17 / 120	19 / 131	21 / 142	22 / 154	23 / 160	24 / 166	26 / 176	27 / 188	29 / 199
MAINFRAME LENGTH	1250	1350	1550	1850	1950	2100	2300	2400	2600	2800	3000	3200	3500	3700	3900	4100	4500	4900
CARTRIDGE LENGTH	950	1050	1200	1450	1550	1700	1900	2000	2150	2350	2550	2750	3000	3150	3300	3500	3800	4100
No. CLEANING BLADES	4	5	6	8	9	10	12	13	14	16	18	20	22	23	24	26	28	30
CLEANING BLADE COVERAGE	400	500	600	800	900	1000	1200	1300	1400	1600	1800	2000	2200	2300	2400	2600	2800	3000
END BLADE WIDTH	75	75	75	75	75	100	100	100	100	100	100	100	100	100	100	100	100	100
MIN. MOUNT FACE DIM.	770	870	1020	1270	1320	1520	1720	1820	1970	2170	2370	2570	2820	2970	3120	3320	3620	3920
MAX. MOUNT FACE DIM.	800	900	1100	1400	1480	1730	1930	2030	2230	2430	2630	2830	3130	3330	3530	3730	4130	4530

MATERIAL GRADE:
SURFACE PROTECTION:

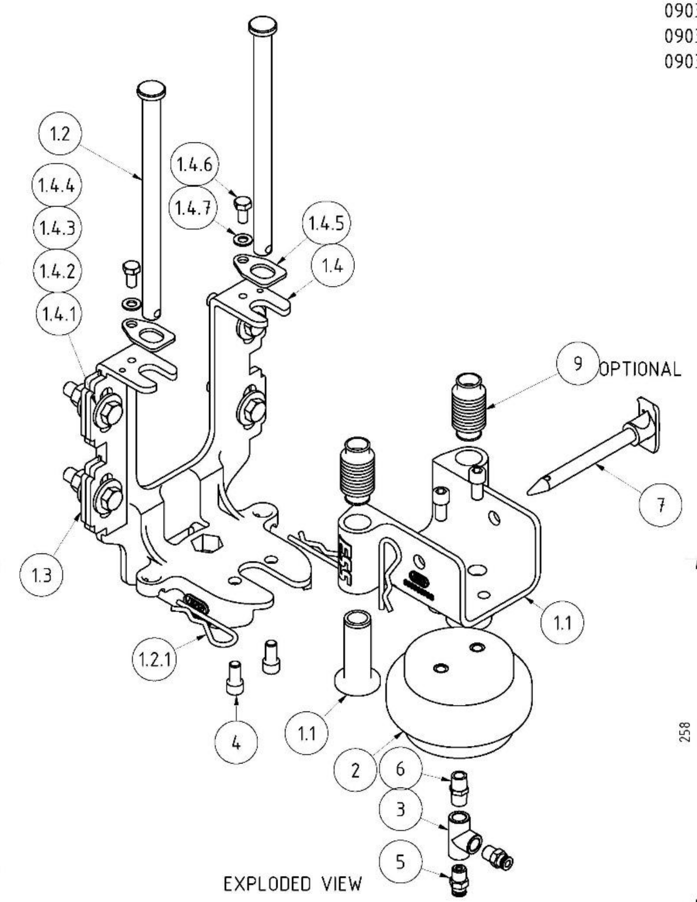
Rev	Revision Description	Drawn	Chkd	Appd	Date
D	2200 - 3200 BW IPS CLEANER ADDED TO TABLE	EDCR 1582	AW	MK	30/01/2023
C	MAINFRAME MECH STOP ADDED, 2200 BW REMOVED, MFRAME LENGTHS, MIN & MAX CHUTE WIDTHS REVISED, GENERAL EDITS	EDCR 1429	AW	MK	23/10/2021
B	MIN & MAX MOUNT FACE DIMENSIONS ADDED TO TABLE	EDCR 1164	AW	JG	MH 4/06/2020
A	ISSUED	EDCR 1164	AW	JG	MH 7/04/2020
Ref. Document	Drawing No.	F0637	IPS MOUNT AIR TENS ASSEMBLY - FAR SIDE		
		F0569	IPS MOUNT AIR TENS ASSEMBLY - OPERATOR SIDE		
		F0595	IPS MAINFRAME & CARTRIDGE EXPLODED		
		F0609	INSTALLATION ARRANGEMENT - SPRING TENS		

Reference Drawings

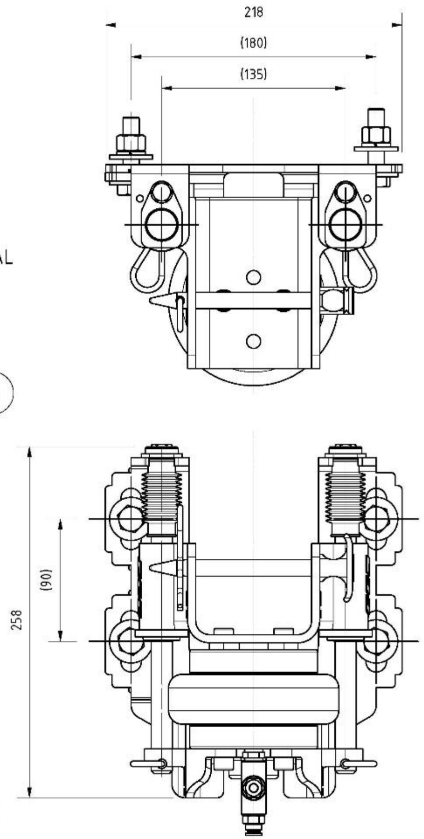


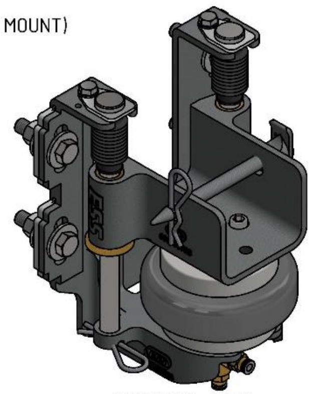
BELT WIDTH	450	600	750	900	1050	1200	1350	1500	1600	1800	2000	2200	2400	2500	2600	2800	3000	3200
COMPRESSED SPRING HEIGHT	57	57	55	55	53	53	51	51	50	49 / 53	47 / 52	46 / 51	44 / 50	44 / 49	43 / 49	42 / 48	47+	46+
MAINFRAME LENGTH	1250	1350	1550	1650	1950	2100	2300	2400	2600	2800	3000	3200	3500	3700	3900	4100	4500	4900
CARTRIDGE LENGTH	950	1050	1200	1450	1550	1700	1900	2000	2150	2350	2550	2700	3000	3150	3300	3500	3800	4100
No. CLEANING BLADES	4	5	6	8	9	10	12	13	14	16	18	20	22	23	24	26	28	30
CLEANING BLADE COVERAGE	400	500	600	800	900	1000	1200	1300	1400	1600	1800	2000	2200	2300	2400	2600	2800	3000
END BLADE WIDTH	75	75	75	75	75	100	100	100	100	100	100	100	100	100	100	100	100	100
MIN. MOUNT FACE DIM.	770	870	1020	1270	1320	1520	1720	1820	1970	2170	2370	2570	2820	2970	3120	3320	3620	3920
MAX. MOUNT FACE DIM.	880	980	1180	1480	1480	1730	1930	2030	2230	2430	2630	2830	3130	3330	3530	3730	4130	4530

09030800S – IPS MOUNT AIR ASSEMBLIES (INCLUDES OPER & FAR SIDE MOUNT)
09030801S – IPS MOUNT AIR ASSY – OPERATOR SIDE
09030802S – IPS MOUNT AIR ASSY – FAR SIDE



EXPLODED VIEW





PICTORIAL VIEW

NOTE:
1. IF RETROFITTING TO 20TEN MAINFRAME REFER DRG: F0606

ITEM	QTY	DESCRIPTION	DRG. No.	PART No.
9	2	IPS MOUNT ROD COVER Ø18 ID		09030080
8	5M	TUBE 6MM ANTI-STATIC NYLON UV		02570105P_UV
7	1	M/FRAME PIN, CABLE & R CLIP		09030036
6	1	NIPPLE 1/4" HEX BRASS		02404105b
5	2	CONNECTOR 1/4"M-6MM P/FIT BR/BRASS TIP		02366135b
4	4	SCREW 3/8"UNC X 3/4" SOC CAP 304SS		02316269s
3	1	TEE 1/4" F/F BRASS		02410105B
2	1	AIRBAG GOODYEAR 1B5-510 FRAS		09000131F
1.4.7	2	WASHER M8 304SS		02319308s
1.4.6	2	SCREW M8X16 HEX SET 304SS		02315311s
1.4.5	2	IPS MOUNT ROD KEEPER PLATE SS	D2039	09030083s
1.4.4	4	SCREW M12X50 HEX SET 304SS		02315550s
1.4.3	4	NUT M12 HEX 304SS		02311512s
1.4.2	4	WASHER M12 SPRING 304SS		02319514s
1.4.1	8	WASHER 1/2" X 1 1/4" DIA 14G HD 304SS		02320312s
1.4	1	IPS MOUNT BRACKET	D1955	09030075S
1.3	1	IPS MOUNT BRACKET PACKER	D1948	09030078S
1.2.1	2	CLIP 'R' GRIP 4MM SS		02308005s
1.2	1	IPS MOUNT ROD ASSY	D1956	09030077S
1.1	1	IPS MOUNT SLIDE BRACKET ASSY CW BUSH	D1944	09030076S
1	1	IPS MOUNT ASSEMBLY NO TENSIONER	D1942	09030005S

Rev	Revision Description	Ref. Document	Drawn	Chkd	Appd	Date
K	ITEM 8 WAS P/No. 02570105P	EDCR 1686	AW	JF	JF	20/11/2023
J	ITEM 5 WAS 02366137B	EDCR 1630	AW	JF		16/08/2023
H	BOM REVISED	EDCR1508	JF	AW		08/05/2023
G	PIN ADDED,DWG NOW OP SIDE ONLY,OP SPACER REMOVED		AW	MK		26/10/2021
F	RETROFIT ITEMS REMOVED	EDCR 1164	AW	JS	MH	3/04/2020
E	DRG NUMBER ADDED TO ITEM 9 IN BOM	EDCR 1164	AW	JS	MH	5/12/2019
D	ROD COVER ADDED, M8 FASTENERS WERE M6	EDCR 1164	AW	JS	MH	26/11/2019
C	REDESIGNED	EDCR 1164	AW	JS	MH	26/09/2019
B	MULTIPLE REVISIONS	EDCR 1164	AW	JS	MH	22/07/2019
A	ISSUED		AW	JS	MH	23/01/2019

CAD FILE: C:\Temp\09030801S.idw\DRAWINGS\PART NOs\09 Mounts Tens & Parts\0903\09030801S.idw
IF IN DOUBT CONTACT ESS ENGINEERING DEPARTMENT

MATERIAL GRADE:
SURFACE PROTECTION:

Drawing No.	Reference Drawings
F0637	IPS MOUNT ASSY AIR TENSION FAR SIDE
F0607	IPS MOUNT ASSY -SPRING TENSION 20TEN RETROFIT
F0606	IPS MOUNT ASSY - AIR TENSIONED 20TEN RETROFIT
F0570	IPS MOUNT ASSY - SPRING TENSIONED OPER SIDE

ARF No. EDCR 1164

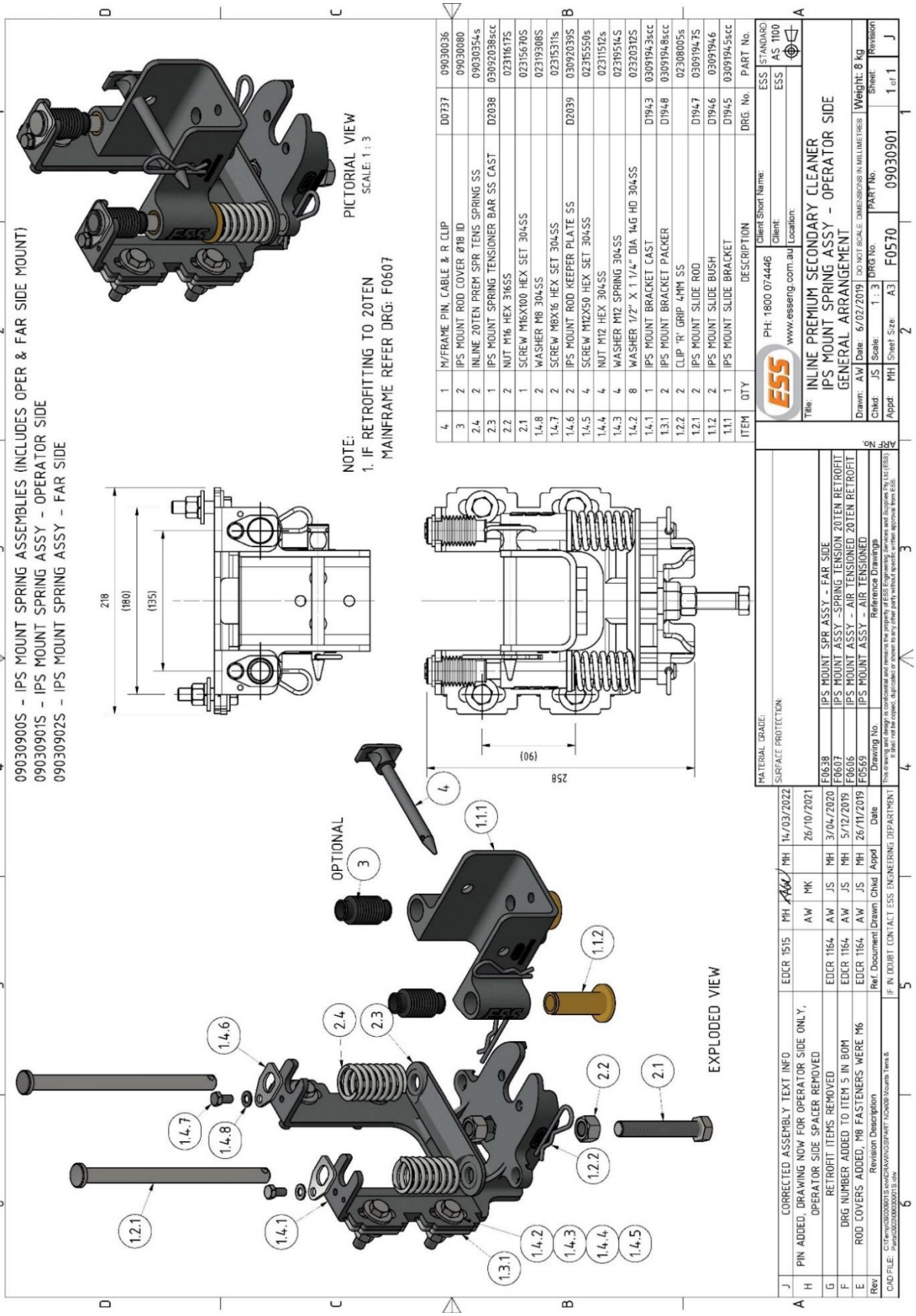
PH: 1800 074446
www.esseng.com.au

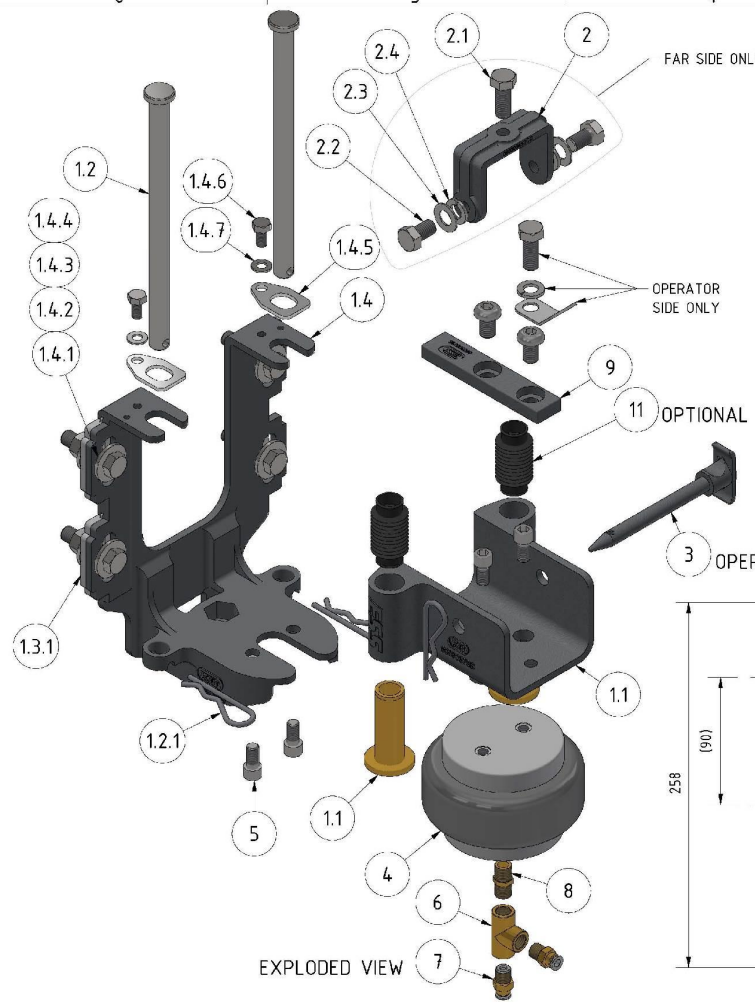
Client Short Name: ESS
Client: ESS
Location:
STANDARD: AS 1100

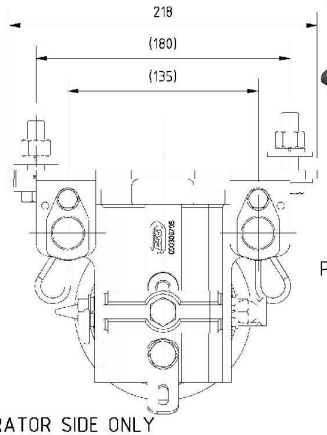
Title: INLINE PREMIUM SECONDARY CLEANER
IPS MOUNT AIR ASSY – OPERATOR SIDE
GENERAL ARRANGEMENT

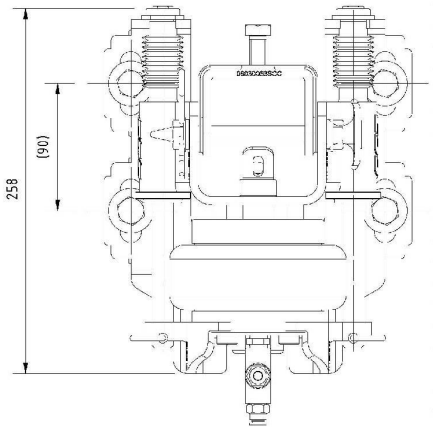
Drawn: AW | Date: 23/01/2019 | DO NOT SCALE. DIMENSIONS IN MILLIMETRES | Weight: 8 kg
Chkd: | Scale: 1 : 3.25 | DRG No. F0569 | PART No. 09030801S | Sheet: 1 of 1 | Revision K
Appd: | Sheet Size: A3

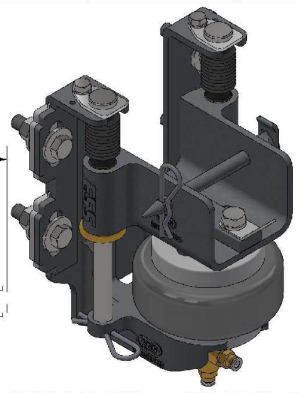
12.0 EXPLODED PARTS DRAWING



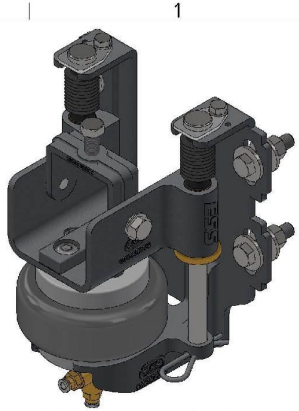








PICTORIAL VIEW - OPERATOR SIDE



PICTORIAL VIEW - FAR SIDE

ITEM	OS QTY	FS QTY	DESCRIPTION	DRG. No.	PART No.
11	2	2	IPS MOUNT ROD COVER Ø18 ID		09030080
10	5M	0M	TUBE 6MM ORANGE		02570105p
9	1	1	IPS MOUNT MAINFRAME RETROFIT KIT	D1958	09030079S
8	1	0	NIPPLE 1/4" HEX BRASS		02404105b
7	1	2	CONNECTOR 1/4"M-6MM P/FIT BR/BRASS TIP		02366135b
6	1	0	TEE 1/4" F/F BRASS		02410105B
5	4	4	SCREW 3/8"UNC X 3/4" SOC CAP 304SS		02316269s
4	1	1	AIRBAG GOODYEAR 1B5-510 FRAS		09000131F
3	1	0	M/FRAME PIN, CABLE & R CLIP	D0737	09030036
2.4	0	2	WASHER M12 SPRING 304SS		02319514s
2.3	0	2	WASHER M12 304SS		02319512S
2.2	0	2	SCREW M12X20 HEX SET 304SS		02315520s
2.1	0	1	SCREW M12X30 HEX SET 304SS		02315530s
2	0	1	INLINE 20TEN PREM CLAMP BRKT SS	D1547	09030063SCC
1.4.7	2	2	WASHER M8 304SS		02319308s
1.4.6	2	2	SCREW M8X16 HEX SET 304SS		02315311s
1.4.5	2	2	IPS MOUNT ROD KEEPER PLATE SS	D2039	09030083s
1.4.4	4	4	SCREW M12X50 HEX SET 304SS		02315550s
1.4.3	4	4	NUT M12 HEX 304SS		02311512s
1.4.2	4	4	WASHER M12 SPRING 304SS		02319514s
1.4.1	8	8	WASHER 1/2" X 1 1/4" DIA 14G HD 304SS		02320312s
1.4	1	1	IPS MOUNT BRACKET	D1955	09030075S
1.3	2	2	IPS MOUNT BRACKET PACKER	D1948	09030078S
1.2.1	2	2	CLIP 'R' GRIP 4MM SS		02308005s
1.2	1	1	IPS MOUNT ROD ASSY	D1956	09030077S
1.1	1	1	IPS MOUNT SLIDE BRACKET ASSY CW BUSH	D1944	09030076S
1	1	1	IPS MOUNT ASSEMBLY NO TENSIONER	D1942	09030005S

09030810S - IPS MOUNT AIR ASSEMBLIES 20TEN RETROFIT
09030811S - IPS MOUNT AIR ASSY - OPERATOR SIDE - 20TEN RETROFIT
09030812S - IPS MOUNT AIR ASSY - FAR SIDE - 20TEN RETROFIT

Rev	Revision Description	Ref. Document	Drawn	Chkd	Appd	Date
E	ITEM 7 WAS 02366137B	EDCR 1631	AW	JF	JF	16/08/2023
D	BOM REVISED	EDCR 1508	JF	AW		08/05/2023
C	INLINE PIN ADDED TO OPERATOR SIDE		AW	MK		27/10/2021
B	ITEM 8.1 - 8.5 ADDED TO BOM	EDCR 1374	AW	JS	MH	28/09/2020
A	ISSUED	EDCR 1164	AW	JS	MH	3/04/2020

CAD FILE: C:\Vault ESSENG\DRAWINGS\GENERALVF_INSTALLATION DRAWINGS\F0600\F0606.idw

IF IN DOUBT CONTACT ESS ENGINEERING DEPARTMENT

MATERIAL GRADE:

SURFACE PROTECTION:

Drawing No.	Reference Drawings
F0570	IPS MOUNT ASSY - SPRING TENSIONED
F0569	IPS MOUNT ASSY - AIR TENSIONED
F0607	IPS MOUNT ASSY - SPRING TENSION 20TEN RETROFIT

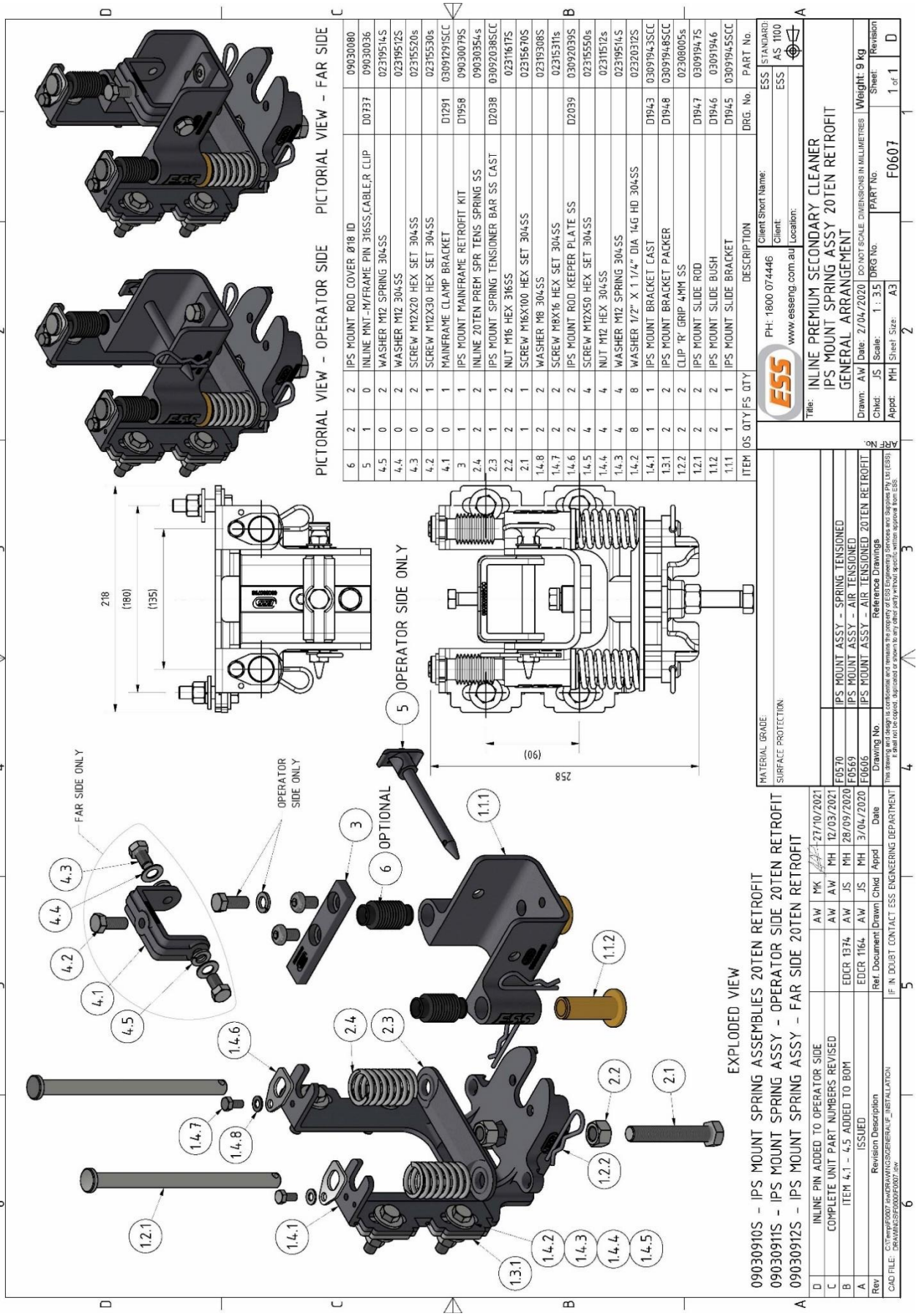
ARF No. EDCR 1164

ESS
PH: 1800 074446
www.esseng.com.au

Client Short Name: ESS
Client: ESS
Location:
STANDARD: AS 1100

Title: INLINE PREMIUM SECONDARY CLEANER
IPS MOUNT AIR ASSY 20TEN RETROFIT
GENERAL ARRANGEMENT

Drawn: AW | Date: 1/04/2020 | DO NOT SCALE. DIMENSIONS IN MILLIMETRES | Weight: 9 kg
Chkd: JS | Scale: 1 : 3.5 | DRG No. | PART No. | Sheet: | Revision
Appd: MH | Sheet Size: A3 | F0606 | 1 of 1 | E



ITEM	QTY	DESCRIPTION	DRG. No.	PART No.
6	2	IPS MOUNT ROD COVER Ø18 ID		09030080
5	1	INLINE MNT-M/FRAME PIN 316SS,CABLE,R CLIP	D0737	09030036
4.5	2	WASHER M12 SPRING 304SS		02319514S
4.4	2	WASHER M12 304SS		02319512S
4.3	2	SCREW M12X20 HEX SET 304SS		02315520s
4.2	1	SCREW M12X30 HEX SET 304SS		02315530s
4.1	1	MAINFRAME CLAMP BRACKET	D1291	03091291SCC
3	1	IPS MOUNT MAINFRAME RETROFIT KIT	D1958	09030079S
2.4	2	INLINE 20TEN PREM SPR TENS SPRING SS		09030354s
2.3	1	IPS MOUNT SPRING TENSIONER BAR SS CAST	D2038	03092038SCC
2.2	2	NUT M16 HEX 316SS		02311617S
2.1	1	SCREW M16X100 HEX SET 304SS		02315670S
1.4.8	2	WASHER M8 304SS		02319308S
1.4.7	2	SCREW M8X16 HEX SET 304SS		02315311s
1.4.6	2	IPS MOUNT ROD KEEPER PLATE SS	D2039	03092039S
1.4.5	4	SCREW M12X50 HEX SET 304SS		02315550s
1.4.4	4	NUT M12 HEX 304SS		02311512s
1.4.3	4	WASHER M12 SPRING 304SS		02319514S
1.4.2	8	WASHER 1/2" X 1 1/4" DIA 14G HD 304SS		02320312S
1.4.1	1	IPS MOUNT BRACKET CAST	D1943	03091943SCC
1.3.1	2	IPS MOUNT BRACKET PACKER	D1948	03091948SCC
1.2.2	2	CLIP 'R' GRIP 4MM SS		02308005s
1.2.1	2	IPS MOUNT SLIDE ROD	D1947	03091947S
1.1.2	2	IPS MOUNT SLIDE BUSH	D1946	03091946
1.1.1	1	IPS MOUNT SLIDE BRACKET	D1945	03091945SCC

Rev	Revision Description	Ref. Document	Drawn	Chkd	Appd	Date
D	INLINE PIN ADDED TO OPERATOR SIDE		AW	AW	MK	27/10/2021
C	COMPLETE UNIT PART NUMBERS REVISED		AW	AW	MH	12/03/2021
B	ITEM 4.1 - 4.5 ADDED TO BOM	EDCR 1374	AW	JS	MH	28/09/2020
A	ISSUED	EDCR 1164	AW	JS	MH	3/04/2020

DRAWING No.	DESCRIPTION
F0570	IPS MOUNT ASSY - SPRING TENSIONED
F0569	IPS MOUNT ASSY - AIR TENSIONED
F0606	IPS MOUNT ASSY - AIR TENSIONED 20TEN RETROFIT

Reference Drawings

MATERIAL GRADE:
SURFACE PROTECTION:

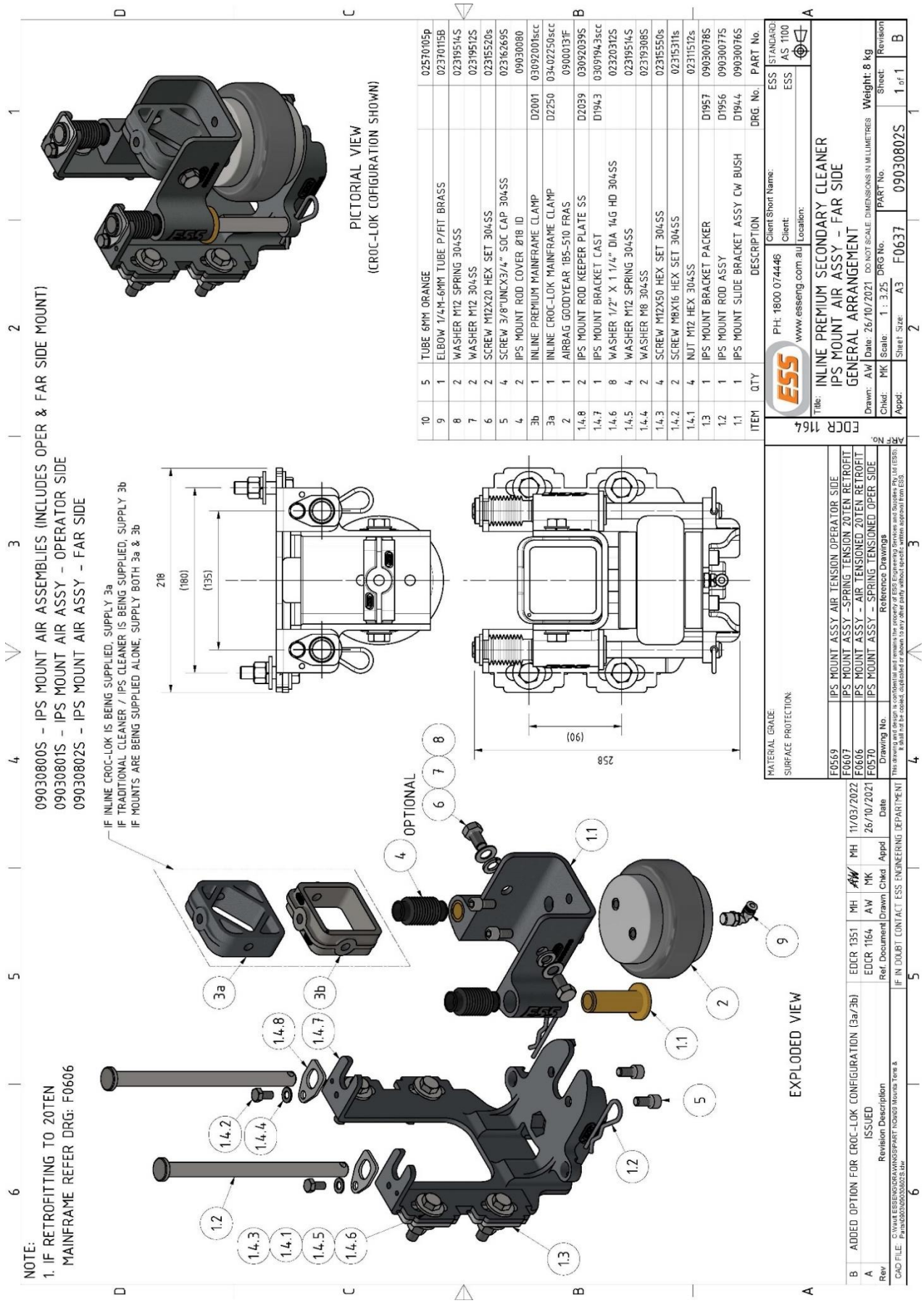
Client Short Name: ESS STANDARD
Client: ESS AS 1100
Location:

Title: INLINE PREMIUM SECONDARY CLEANER
IPS MOUNT SPRING ASSY 20TEN RETROFIT
GENERAL ARRANGEMENT

Drawn: AW Date: 2/04/2020 DO NOT SCALE. DIMENSIONS IN MILLIMETRES Weight: 9 kg
Chkd: JS Scale: 1 : 3.5 DRG No. PART No. Sheet: Revision
Appd: MH Sheet Size: A3 F0607 1 of 1 D

CAD FILE: C:\Temp\F0007.dwg\DRAWINGS\GENERAL\F_INSTALLATION DRAWINGS\F0000\F0007.idw

IF IN DOUBT CONTACT ESS ENGINEERING DEPARTMENT


NOTE:
1. IF RETROFITTING TO 20TEN
MAINFRAME REFER DRG: F0606
09030800S - IPS MOUNT AIR ASSEMBLIES (INCLUDES OPER & FAR SIDE MOUNT)
09030801S - IPS MOUNT AIR ASSY - OPERATOR SIDE
09030802S - IPS MOUNT AIR ASSY - FAR SIDE
IF INLINE CROC-LOK IS BEING SUPPLIED, SUPPLY 3a
IF TRADITIONAL CLEANER / IPS CLEANER IS BEING SUPPLIED, SUPPLY 3b
IF MOUNTS ARE BEING SUPPLIED ALONE, SUPPLY BOTH 3a & 3b
PICTORIAL VIEW
(CROC-LOK COFIGURATION SHOWN)
EXPLODED VIEW
OPTIONAL
218
(180)
(135)
258
(90)
10 5 TUBE 6MM ORANGE 02570105p
9 1 ELBOW 1/4M-6MM TUBE P/FIT BRASS 02370115B
8 2 WASHER M12 SPRING 304SS 02319514S
7 2 WASHER M12 304SS 02319512S
6 2 SCREW M12X20 HEX SET 304SS 02315520s
5 4 SCREW 3/8"UNCX3/4" SOC CAP 304SS 02316269S
4 2 IPS MOUNT ROD COVER Ø18 ID 09030080
3b 1 INLINE PREMIUM MAINFRAME CLAMP D2001 03092001scc
3a 1 INLINE CROC-LOK MAINFRAME CLAMP D2250 03402250scc
2 1 AIRBAG GOODYEAR 185-510 FRAS 09000131F
1.4.8 2 IPS MOUNT ROD KEEPER PLATE SS D2039 03092039S
1.4.7 1 IPS MOUNT BRACKET CAST D1943 03091943scc
1.4.6 8 WASHER 1/2" X 1 1/4" DIA 14G HD 304SS 02320312S
1.4.5 4 WASHER M12 SPRING 304SS 02319514S
1.4.4 2 WASHER M8 304SS 02319308S
1.4.3 4 SCREW M12X50 HEX SET 304SS 02315550s
1.4.2 2 SCREW M8X16 HEX SET 304SS 02315311s
1.4.1 4 NUT M12 HEX 304SS 02311512s
1.3 1 IPS MOUNT BRACKET PACKER D1957 09030078S
1.2 1 IPS MOUNT ROD ASSY D1956 09030077S
1.1 1 IPS MOUNT SLIDE BRACKET ASSY CW BUSH D1944 09030076S
ITEM QTY DESCRIPTION DRG. No. PART No.
MATERIAL GRADE:
SURFACE PROTECTION:
EDCR 1164
PH: 1800 074446
www.esseng.com.au
Client Short Name: ESS
Client: ESS
Location:
STANDARD: AS 1100
Title: INLINE PREMIUM SECONDARY CLEANER
IPS MOUNT AIR ASSY - FAR SIDE
GENERAL ARRANGEMENT
Drawn: AW Date: 26/10/2021 DO NOT SCALE DIMENSIONS IN MILLIMETRES Weight: 8 kg
Chkd: MK Scale: 1 : 3.25 DRG No. PART No. Sheet:
Appd: Sheet Size: A3 F0637 09030802S 1 of 1 B
F0569 IPS MOUNT ASSY AIR TENSION OPERATOR SIDE
F0607 IPS MOUNT ASSY -SPRING TENSION 20TEN RETROFIT
F0606 IPS MOUNT ASSY - AIR TENSIONED 20TEN RETROFIT
F0570 IPS MOUNT ASSY - SPRING TENSIONED OPER SIDE
Drawing No. Reference Drawings
B ADDED OPTION FOR CROC-LOK CONFIGURATION (3a/3b) EDCR 1351 MH 11/03/2022
A ISSUED EDCR 1164 AW MK 26/10/2021
Rev Revision Description Ref. Document Drawn Chkd Appd Date
CAD FILE: C:\Vault ESSENGINGDRAWINGS\PART NOs\09 Mounts Tens & Parts\09030800S\09030802S.slw
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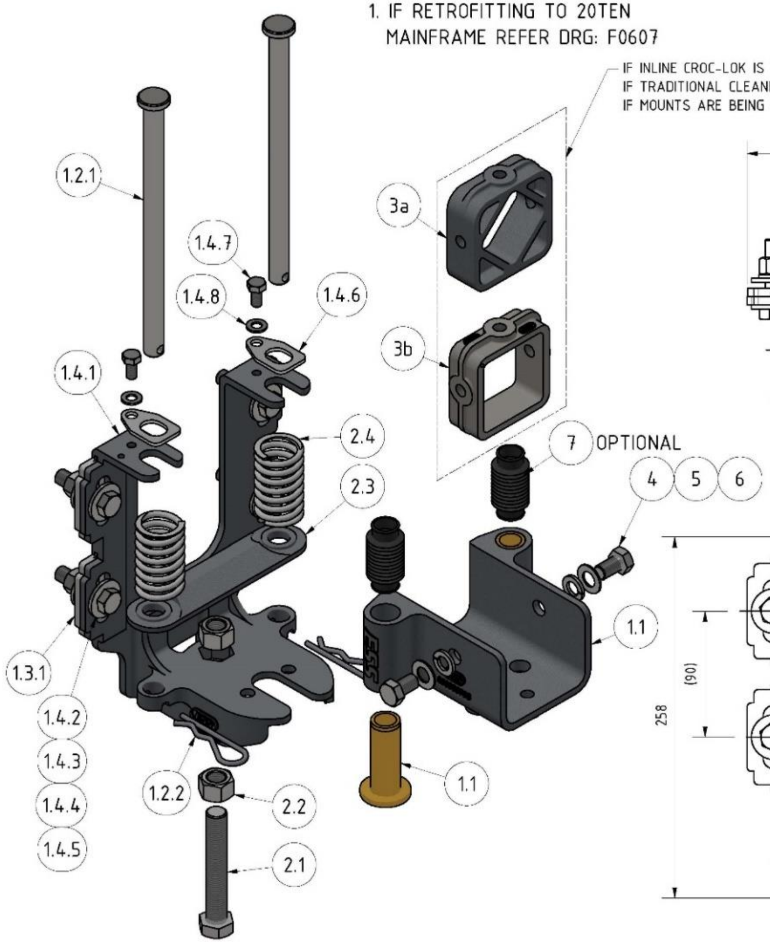
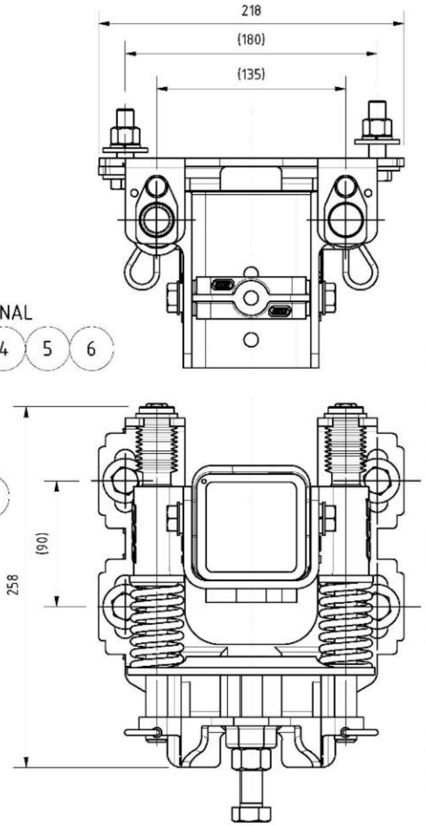
NOTE:
1. IF RETROFITTING TO 20TEN MAINFRAME REFER DRG: F0607

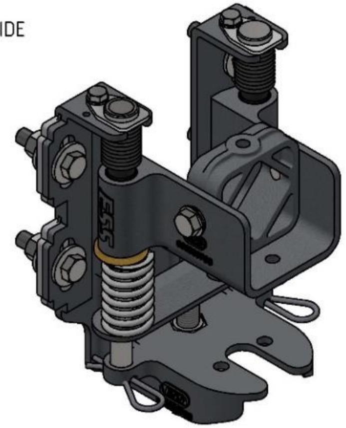
09030900S - IPS MOUNT SPRING ASSEMBLIES
09030901S - IPS MOUNT SPRING ASSY - OPERATOR SIDE
09030902S - IPS MOUNT SPRING ASSY - FAR SIDE

IF INLINE CROC-LOK IS BEING SUPPLIED, SUPPLY 3a
IF TRADITIONAL CLEANER / IPS CLEANER IS BEING SUPPLIED, SUPPLY 3b
IF MOUNTS ARE BEING SUPPLIED ALONE, SUPPLY BOTH 3a & 3b



EXPLODED VIEW





PICTORIAL VIEW
(CROK-LOK CONFIGURATION SHOWN)

ITEM	OS QTY	FS QTY	DESCRIPTION	DRG. No.	PART No.
7	2	2	IPS MOUNT ROD COVER Ø18 ID		09030080
6	2	2	WASHER M12 SPRING 304SS		02319514S
5	2	2	WASHER M12 304SS		02319512S
4	2	2	SCREW M12X20 HEX SET 304SS		02315520s
3b	–	1	INLINE PREMIUM MAINFRAME CLAMP	D2001	03092001scc
3a	–	1	INLINE CROC-LOK MAINFRAME CLAMP	D2250	03402250scc
2.4	2	2	INLINE 20TEN PREM SPR TENS SPRING SS		09030354s
2.3	1	1	IPS MOUNT SPRING TENSIONER BAR SS CAST	D2038	03092038scc
2.2	2	2	NUT M16 HEX 316SS		02311617S
2.1	1	1	SCREW M16X100 HEX SET 304SS		02315670S
1.4.8	2	2	WASHER M8 304SS		02319308S
1.4.7	2	2	SCREW M8X16 HEX SET 304SS		02315311s
1.4.6	2	2	IPS MOUNT ROD KEEPER PLATE SS	D2039	03092039S
1.4.5	4	4	SCREW M12X50 HEX SET 304SS		02315550s
1.4.4	4	4	NUT M12 HEX 304SS		02311512s
1.4.3	4	4	WASHER M12 SPRING 304SS		02319514S
1.4.2	8	8	WASHER 1/2" X 1 1/4" DIA 14G HD 304SS		02320312S
1.4.1	1	1	IPS MOUNT BRACKET CAST	D1943	03091943scc
1.3.1	2	2	IPS MOUNT BRACKET PACKER	D1948	03091948scc
1.2.2	2	2	CLIP 'R' GRIP 4MM SS		02308005s
1.2.1	2	2	IPS MOUNT SLIDE ROD	D1947	03091947S
1.1	1	1	IPS MOUNT SLIDE BRACKET ASSY CW BUSH	D1944	09030076S

MATERIAL GRADE:
SURFACE PROTECTION:

Drawing No.	Reference Drawings
F0570	IPS MOUNT SPRING ASSY - OPERATOR SIDE
F0607	IPS MOUNT ASSY -SPRING TENSION 20TEN RETROFIT
F0606	IPS MOUNT ASSY - AIR TENSIONED 20TEN RETROFIT
F0569	IPS MOUNT ASSY - AIR TENSIONED

Rev	Revision Description	Ref. Document	Drawn	Chkd	Appd	Date
B	ADDED CROC-LOK OPTION (3a/3b)	EDCR 1351	MH	AW	MH	11/03/2022
A	ISSUED	EDCR 1164	AW	MK		26/10/2021

CAD FILE: C:\Vault ESSENG\DRAWINGS\PART NOs\09 Mounts Tens & Parts\0903\09030902S.idw

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ARF No.

ESS PH: 1800 074446 www.esseng.com.au

Client Short Name: ESS
Client: ESS
Location:
STANDARD: AS 1100

Title: INLINE PREMIUM SECONDARY CLEANER
IPS MOUNT SPRING ASSY - FAR SIDE
GENERAL ARRANGEMENT

Drawn: AW | Date: 26/10/2021 | DO NOT SCALE. DIMENSIONS IN MILLIMETRES | Weight: 8 kg
Chkd: MK | Scale: 1 : 3 | DRG No. F0638 | PART No. 09030902S | Sheet: 1 of 1 | Revision: B
Appd: | Sheet Size: A3

13.0 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: _____

14.0 NOTES