MANIFOLDS
TURBOS
ENGINE PIPES
MUFFLERS

BLANKETS

INSTALLATION & USER GUIDE

- THERMAL BLANKET INSTALLATION
- SERVICING & MAINTENANCE
- WORKSHOP GUIDE: GOOD FITMENT
- WORKSHOP GUIDE: CONDITON TIPS
- PRODUCT WARRANTY

Contents

1.0 Introduction

FIRE MITIGATION STRATEGY

Congratulations on choosing premium-quality Aletek thermal insulation blankets! Aletek blankets consist of high-grade raw materials backed by Australian-made design and manufacturing. Our blankets provide a safer, smarter and snug-fitting lagging solution. A quick-fit 'lobster-back' spring design ensures a flexible and super snug fit. You are one step closer to a winning fire mitigation strategy with reduced exhaust surface temperatures, and less risk of burns and engine fires.

PURPOSE OF THIS HANDBOOK

This User Handbook should be read and understood by any personnel using, maintaining and managing thermal insulation blankets.

Aletek strongly recommends that thermal blankets are fitted by experienced personnel. It is essential that the install order is followed and correct fitment is critical to effective fire mitigation.

This User Handbook is a general guide to cover popular machines and models. However, the underlying principles are typically universal and should be read and translated to suit your specific equipment and application.

2

THERMAL BLANKET INSTALLATION

2.1 Pre-Fitment

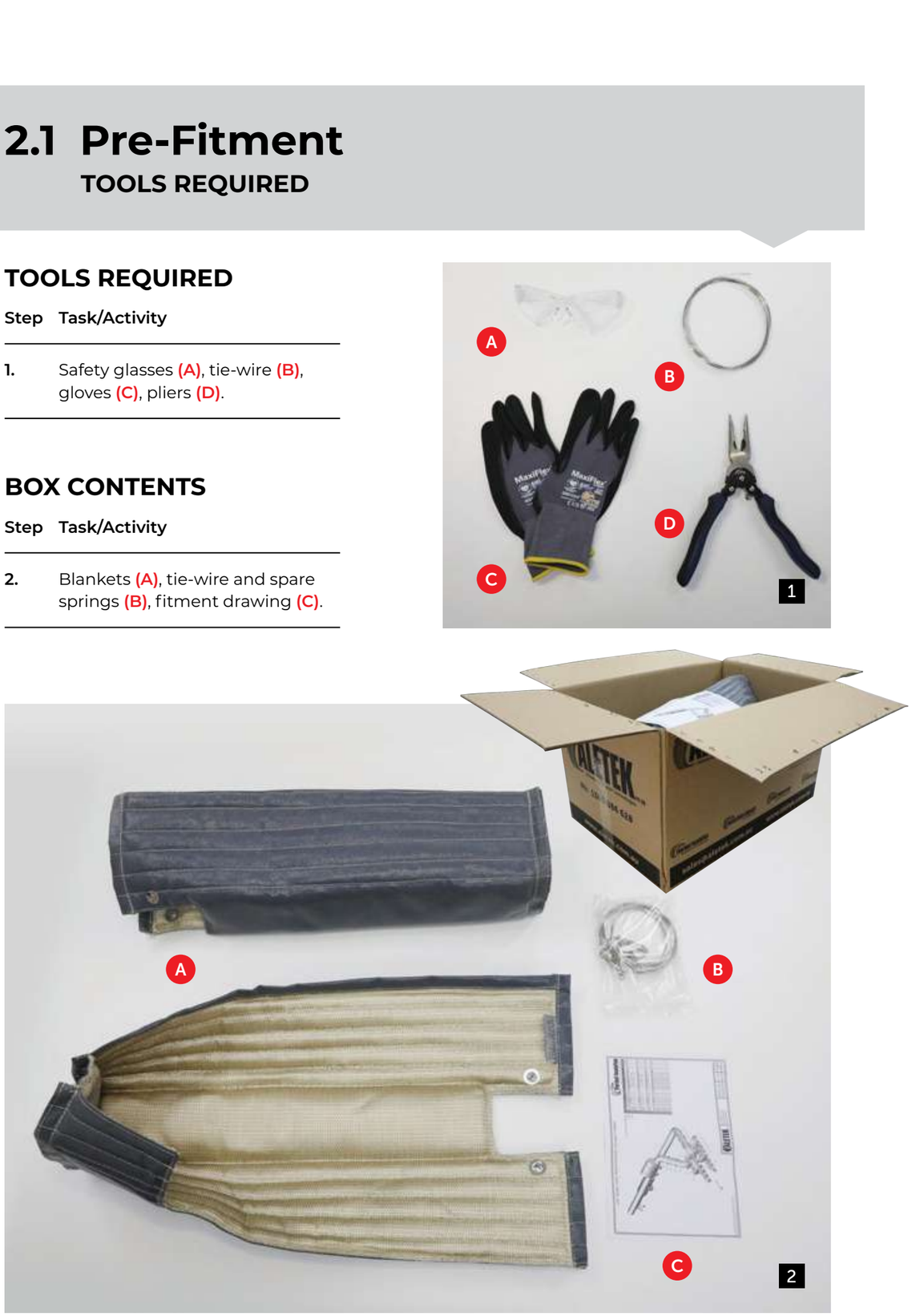
TOOLS REQUIRED

TOOLS REQUIRED

Step	Task/Activity
1.	Safety glasses (A), tie-wire (B), gloves (C), pliers (D).

BOX CONTENTS

Step	Task/Activity
2.	Blankets (A), tie-wire and spare springs (B), fitment drawing (C).



2.1 Pre-Fitment
PLANNING

PARTS & FITMENT DRAWINGS

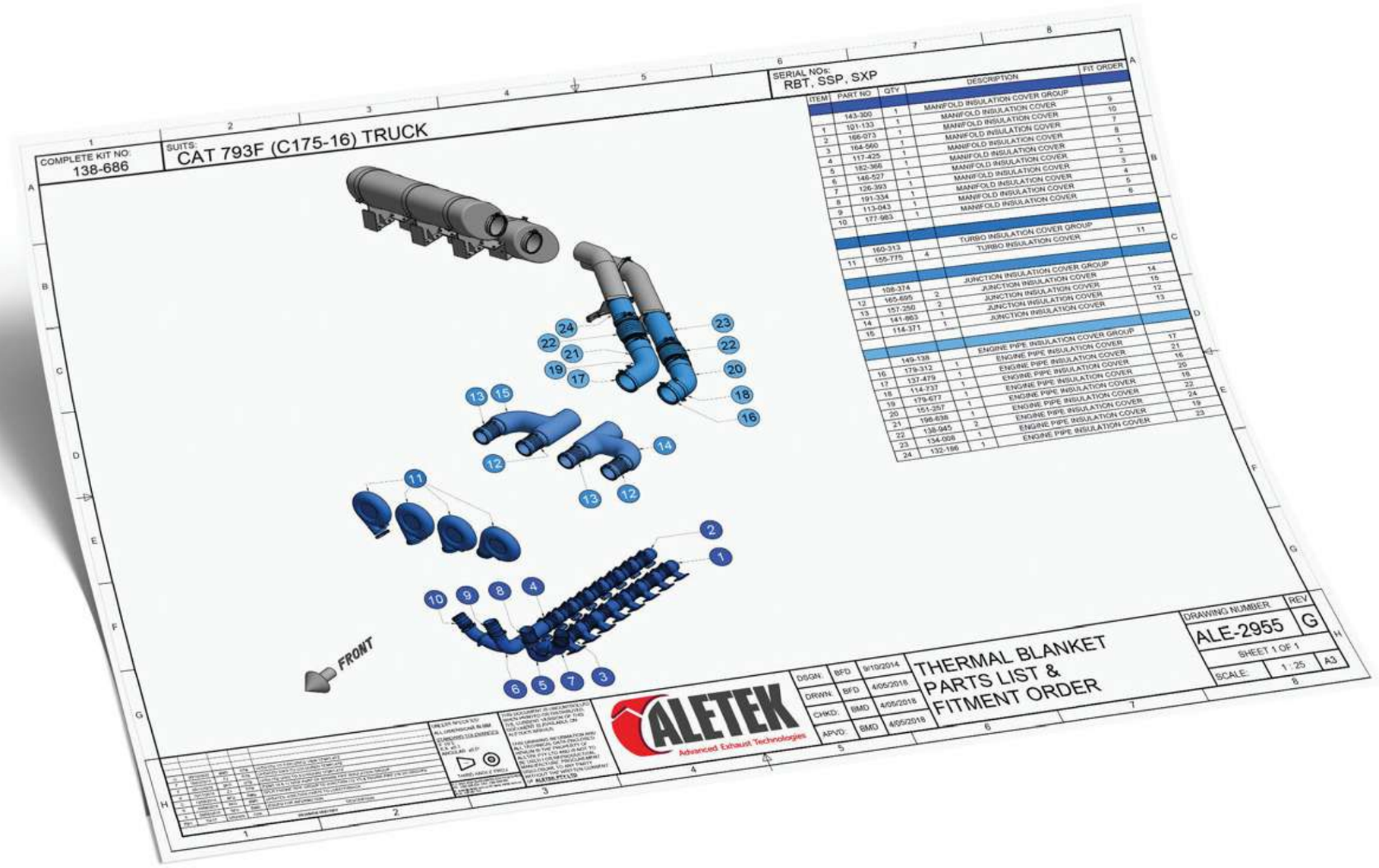
Aletek parts drawings are supplied with thermal blanket kits. The table on the drawing contains fitment order (see below). This information is essential for a successful thermal blankets installation.

ITEM	PART NO	QTY	DESCRIPTION	FIT ORDER
	143-300	1	MANIFOLD INSULATION COVER GROUP	
1	101-133	1	MANIFOLD INSULATION COVER	9
2	166-073	1	MANIFOLD INSULATION COVER	10
3	164-560	1	MANIFOLD INSULATION COVER	7
4	117-425	1	MANIFOLD INSULATION COVER	8
5	182-366	1	MANIFOLD INSULATION COVER	1
6	146-527	1	MANIFOLD INSULATION COVER	2
7	126-393	1	MANIFOLD INSULATION COVER	3
8	191-334	1	MANIFOLD INSULATION COVER	4
9	113-043	1	MANIFOLD INSULATION COVER	5
10	177-983	1	MANIFOLD INSULATION COVER	6

Above: Parts drawing detail with fitment order

PRE-FITMENT PLANNING

1. Ensure machine is isolated and locked out before work begins.
2. Ensure correct PPE is worn (gloves, safety glasses)
3. Complete a 'Take 5' safety check prior to starting.
4. Inspect engine and pipes for holes or leaks before fitting blankets.
5. Open box and lay all parts out.
6. Examine the enclosed drawing showing blanket fitment.
7. Identify parts and place in working order (including springs).
8. Follow parts drawing fitment order on the drawing supplied.



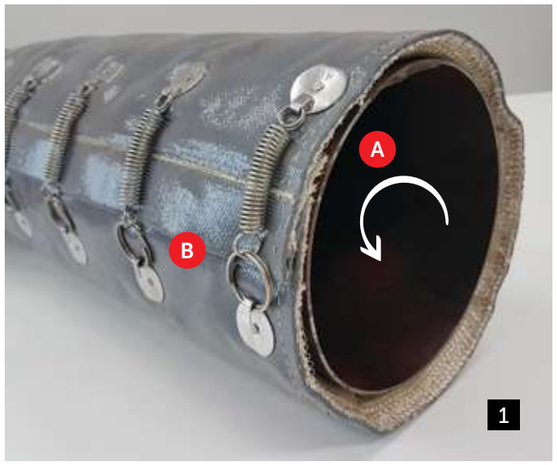
2.1 Pre-Fitment
PLANNING

2.2 Techniques

BLANKET FITMENT

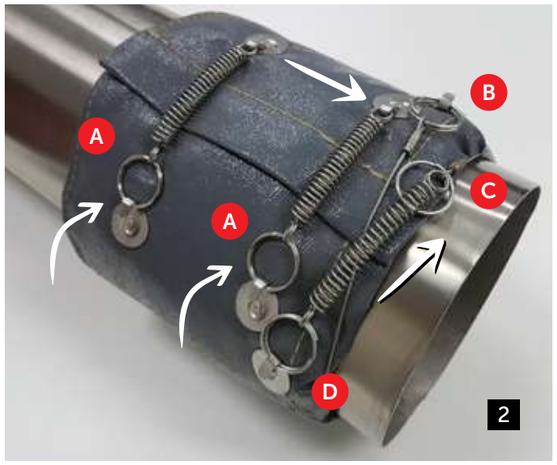
BLANKET FITMENT

Step	Task/Activity
1.	Pull the blanket flap vertically downwards **(A)**. Where possible, orientate the flap to face vertically downwards **(B)** to eliminate potential fluid ingress.



SPRING ATTACHMENT

Step	Task/Activity
2.	Spring the blanket together prior to fastening the wire ends **(A)**. Attach the un-sprung end of the wire cable **(B)**. Pull the cable tight using the attached keyring **(C)**. Attach the sprung end of the wire cable **(D)**.



FITMENT DETAILS

Closeup of quick-fit springs with keyrings secured in place.

2.2 Techniques

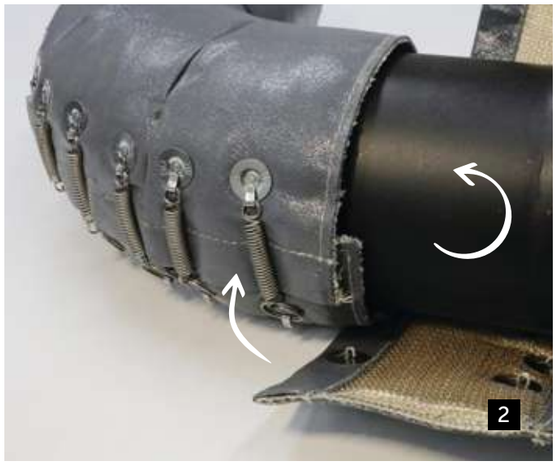
FITTING ORDER

OVERLAPPING SECTIONS

Step	Task/Activity
1.	Blanket pieces should be fitted to overlap those in a position prone to effects from gravity. This ensures liquids/fluid/debris runs off product removing seepage and potential ignition.

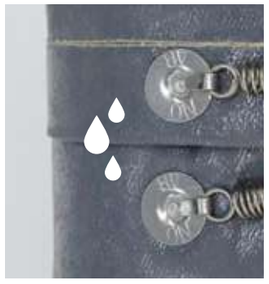
EASE OF FITMENT

Step	Task/Activity
2.	The lobster-back blanket design uses less blanket pieces. This eliminates fitment error (parts fit one way) and reduces overall fitment/removal times.



FITMENT DETAILS

Closeup of overlapping pieces that account for fluid runoff due to gravity.



2.3 Installation

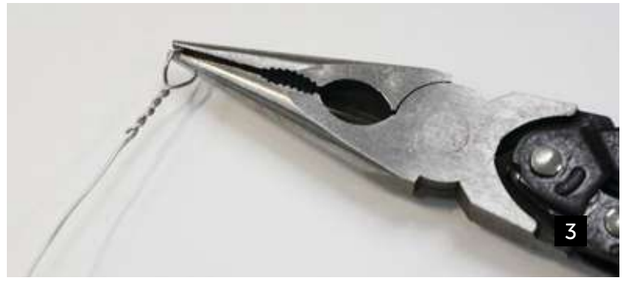
TIE-WIRE PREPARATION

TIE-WIRE LOOPS

Step	Task/Activity
1.	Twist the wire to make a loop.

Step	Task/Activity
2.	Twirl the wire around itself.

Step	Task/Activity
3.	Trim excess wire and ensure no sharp edges protrude.



WIRE THREADING

Step	Task/Activity
4.	Poke the wire through the blanket and connect to the anchor **(A)**. The wire should thread through the manifold blanket as pictured **(B)**.

2.3 Installation

MANIFOLD BLANKETS

BLANKET FITMENT

Step	Task/Activity
	Consult fitment drawing to ensure the blankets are fitted in the correct order and location.
1.	Attach tie wire end to the anchor as outlined in Section 2.2 **(A)**.

Step	Task/Activity
2.	Hold the blanket up against manifold.
3.	Feed the wire behind manifold cylinder runners.
4.	Massage the blanket to its final shape by patting to ensure maximum blanket coverage and a firm fit.

Step	Task/Activity
5.	Loop the tie-wire around the anchor and connect springs to anchors. Trim excess tie wire to ensure sharp ends are not exposed.

2.3 Installation
TURBO BLANKETS

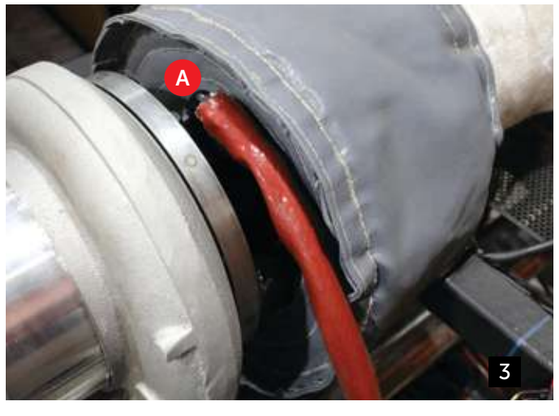
PRE-FIT PREPARATION

Step	Task/Activity
	Consult fitment drawing to ensure the blankets are fitted in the correct order and location.
1.	Feed the wire through the spring keyring to assist with the install as a pull-wire **(A)**. Open the blanket in preparation for fitting **(B)**.

BLANKET FITMENT

Step	Task/Activity
2.	Slide the turbo blanket over the turbo into the correct position. Pat the blanket to mould to the turbo shape.

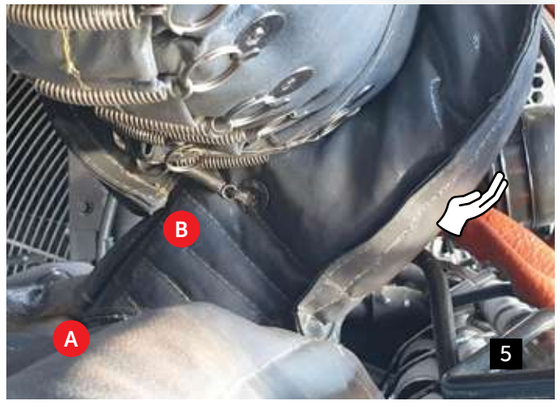
Step	Task/Activity
3.	**Important:** Ensure the oil line is outside of the turbo blanket to prevent overheating and damage to the oil line **(A)**.



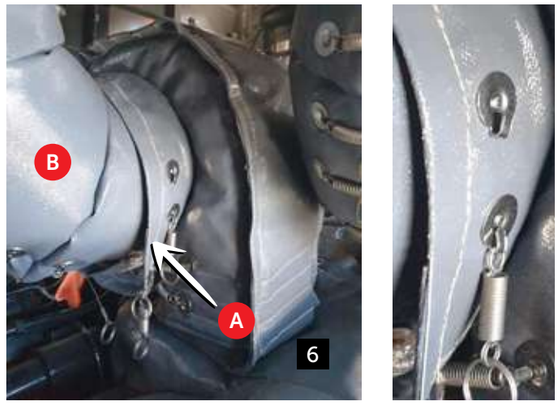
2.3 Installation
TURBO BLANKETS

Step	Task/Activity
4.	Connect all of the springs on the turbo blanket to the corresponding anchor. Remove the pull-wire from the keyring.

Step	Task/Activity
5.	Ensure the turbo blanket mates to the manifold blanket and maximise blanket coverage. If required, pat the turbo blanket into position **(A)**. Inspect for gaps and maximise blanket coverage. Adjust if necessary **(B)**.



Step	Task/Activity
6.	If the blanket is fitted with an outlet flange cover **(A)**, ensure this section is on the outside of the engine pipe blankets **(B)**.



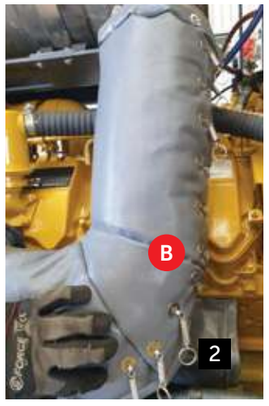
2.3 Installation

ENGINE PIPE BLANKETS

BLANKET FITMENT

Step	Task/Activity
	Consult fitment drawing to ensure the blankets are fitted in the correct order and location.
1.	Open the blanket **(A)** in preparation for fitting and wrap the blanket around the pipe **(B)**.

Step	Task/Activity
2.	Connect the centre spring to hold the blanket in place **(A)**. Connect the springs from the centre outwards to eliminate bunching of the material **(B)**.



Step	Task/Activity
3.	Massage the blanket to its final shape by patting to ensure maximum blanket coverage and a firm fit.

2.3 Installation

JUNCTION BLANKETS

BLANKET FITMENT

Step	Task/Activity
	Consult fitment drawing to ensure the blankets are fitted in the correct order and location.
1.	Open the blanket in preparation for fitment and wrap the blanket around the junction.

Step	Task/Activity
2.	Connect the centre spring and work outwards connecting the springs to the corresponding anchors.

Step	Task/Activity
3.	Massage the blanket to its final shape by patting to ensure maximum blanket coverage and a firm fit.

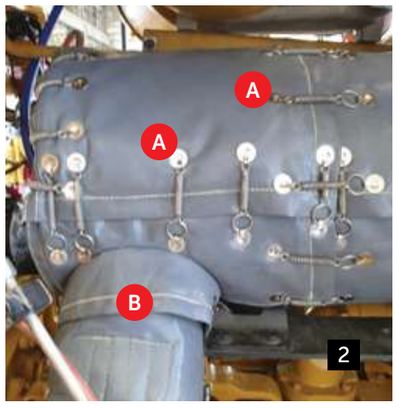
2.3 Installation

MUFFLER BLANKETS

BLANKET FITMENT

Step	Task/Activity
	Consult fitment drawing to ensure the blankets are fitted in the correct order and location.
1.	Open the blanket in preparation for fitment and wrap around muffler.

Step	Task/Activity
2.	Connect all the springs using the techniques pictured **(A)**. Ensure the inlet flange is installed over the engine pipe cover **(B)**.



Step	Task/Activity
3.	Massage the blanket to its final shape by patting to ensure maximum blanket coverage and a firm fit. Ensure the springs are connected to the corresponding anchor.

2.3 Installation

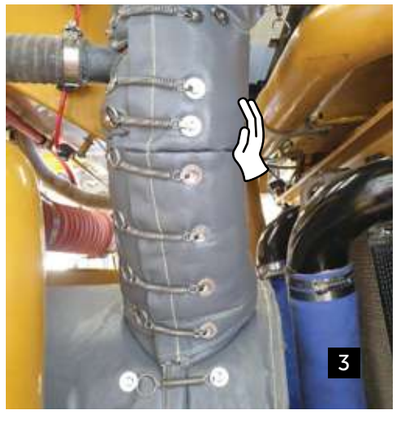
TAILPIPE BLANKETS

BLANKET FITMENT

Step	Task/Activity
	Consult fitment drawing to ensure the blankets are fitted in the correct order and location.
1.	Open the blanket in preparation for fitment and wrap the blanket around the tailpipe **(A)**. Ensure the muffler outlet flange is installed underneath the tailpipe blanket **(B)**.

Step	Task/Activity
2.	Connect the centre spring to hold the blanket in place **(A)**. Connect the springs from the centre outwards to eliminate bunching of the material.

Step	Task/Activity
3.	Massage the blanket to its final shape by patting to ensure maximum blanket coverage and a firm fit. Ensure the springs are connected to the corresponding anchor.



2.4 Finalising Installation

FINAL INSPECTION

It is vital to conduct a final thermal blanket inspection and sign-off before allowing the machine to return to work.

- ☐ Ensure all blankets are fitted in the correct order
- ☐ Ensure a snug fitment is in place and maximise coverage of blankets between sections
- ☐ Check blanket sections overlap to minimise fluids leaking into lower section (consider gravity, upper sections should overlap lower sections)
- ☐ Ensure all springs are connected and tie-wires secured
- ☐ Check for sharp tie-wire tails and trim as required
- ☐ Take photos of the installed blankets

SCHEDULED SERVICING

Thermal blankets when fitted and maintained correctly will provide years of service. Mistreatment and third-party product exposure may shorten the product lifespan.

Blankets should be inspected and adjusted on a systematic basis to ensure maximum service life is attained. Aletek recommend a monthly visual condition inspection for effective fire mitigation. See Section 3 for more information.

Aletek can provide you with detailed audit reports ranging from an individual machine through to a full fleet analysis. We will highlight products and solutions that can offer improvements for machine aspects such as safety, efficiency, and durability. Contact Aletek for more information on fleet audit services.

FITTING PROBLEMS?

Should your team experience blanket fitting problems phone your Aletek Account Manager for assistance. To receive the best advice email or SMS photos first to sales@aletek.com.au then phone Aletek to discuss.

3

SERVICING & MAINTENANCE

3.1 Proactive Maintenance

SERVICE CHECKLIST – MONTHLY

A visual condition inspection is recommended monthly as part of your ongoing fire mitigation strategy.

- ☐ Examine blankets for damage
- ☐ Inspect blankets for flammable fluids
- ☐ Check blanket sections overlap to prevent fluids leaking into lower section (consider gravity, overlap upper sections)
- ☐ Ensure a snug fitment is in place and maximise coverage of blankets
- ☐ Check springs and tie-wires connected
- ☐ Take blanket condition report photos

Service Actions

- ☐ Replace damaged/missing sections
- ☐ Assess contaminated sections (by flammable fluids) – clean or replace
- ☐ Refit loose blankets, maximise coverage
- ☐ Connect disconnected springs, replace broken or missing springs

⚠ Safety notice

- ☐ Protect staff against hexavalent chromium Cr(VI) yellow/white dust, wear suitable PPE
- ☐ If Cr(VI) is identified safely dispose of contaminated blankets, clean* and replace

Aletek recommend an annual fleet audit report to assess blanket condition and heat critical engine and exhaust components. Make a booking with your Account Manager.

MAINTENANCE BEST PRACTISES

- Avoid walking on or applying excess pressure to fitted blankets, as sharp points underneath may pierce through
- Ensure adequate clearance around fitted blankets to avoid premature wear (e.g. engine bay doors closing on blankets, hoses rubbing on blankets)
- High pressure cleaners may cause surface damage to thermal blankets
- Report any spillages of oil or grease during servicing and maintenance
- Caution: Avoid starting machines with wet thermal blankets as excessive steam may appear and create the illusion of an engine fire
- Avoid cleaning blankets with degreasers as some may have flammable properties
- Some chemicals may damage blankets and could pose a fire hazard

THERMAL BLANKET REPLACEMENT

When replacing thermal blankets wear required PPE including gloves, safety glasses and a dust mask. If blankets are soaked in oil, diesel or coolant it is next to impossible to remove all traces of contaminants. Aletek recommends replacement as best practise.

- Damaged and excessively worn thermal blankets should be replaced
- When a blanket can no longer serve its intended purpose it should be replaced
- If oil, diesel or coolant pipes leak or burst and contaminate the blankets a thorough inspection should be conducted before clearing the machine for work

* Clean infected areas (ie wet methods or HEPA vacuuming), replace with new Cr(VI) free blankets

3.1 Proactive Maintenance

CHEAT SHEET – FITTING TIPS

Aletek's Fitting Tips cheat sheet will take your maintenance crew one step closer to a winning fire mitigation strategy. We can provide your team with this resource for job packs, training and quick reference to essential blanket fitting techniques.

4

WORKSHOP GUIDE: GOOD FITMENT

4.1 Good Fitment Examples

CHEAT SHEET AVAILABLE

Aletek's Fitting Tips cheat sheet will take your maintenance crew one step closer to a winning fire mitigation strategy. We can provide your team with this resource for job packs, training and quick reference to essential blanket fitting techniques.

WORKSHOP GUIDE

BLANKETS CHEAT SHEET – GOOD FITMENT

DIGGERS

HELP YOUR SITE ACHIEVE MDG 15 COMPLIANCE*

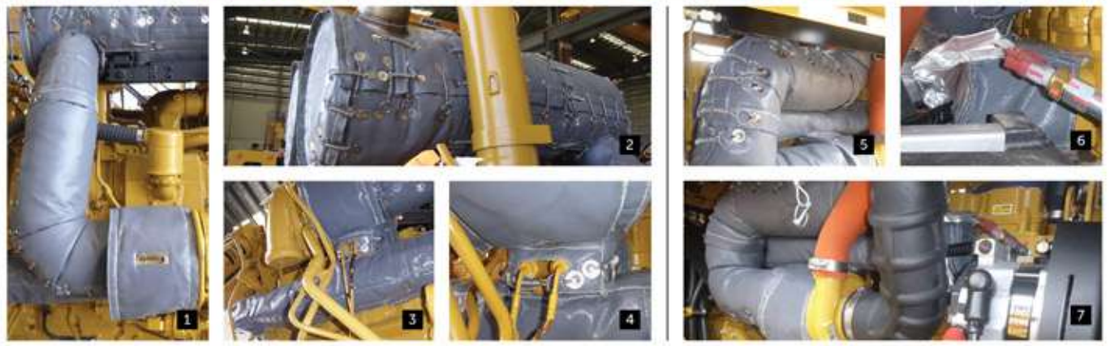
Manifold needs tie-wire added

*150°C exhaust surface temp. (NSW Guideline)

PHOTOS 1-3 Cat 336 manifold, turbo and e/pipe blankets **PHOTOS 4-7** Hitachi 5600-6 manifold, turbo, e/pipe and firewall blankets

DOZERS & SOIL COMPACTORS

FITTER FRIENDLY WITH NON-ITCH SILICA MATERIAL



PHOTOS 1-4 Cat D11T manifold, turbo, e/pipe and muffler blankets **PHOTOS 5-7** Cat 815K manifold, turbo and e/pipe blankets

DRILL RIGS

DON'T LET YOUR CREW 'GET BIT' BY A HOT EXHAUST

PHOTOS 1-5 Atlas Copco PV275 turbo, engine pipe, muffler and tailpipe blankets. Manifold blankets available (not pictured).

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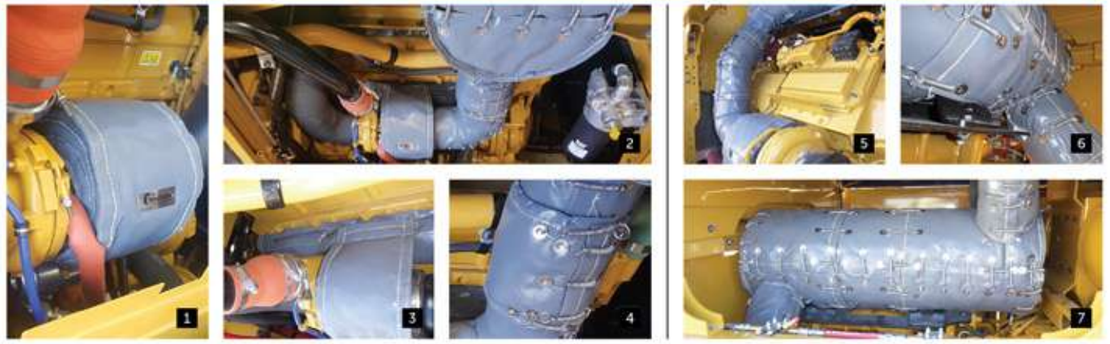
WORKSHOP GUIDE

BLANKETS CHEAT SHEET – GOOD FITMENT

GRADERS

REDUCE THE RISK OF EXPENSIVE ENGINE FIRES AND SHUTDOWNS

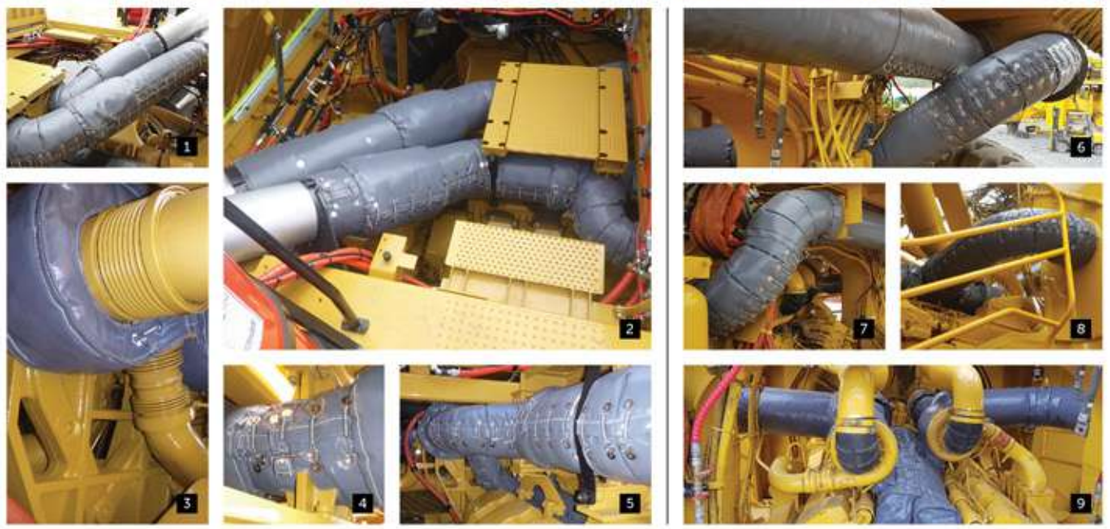
Tailpipe blankets not pictured



PHOTOS 1-4 **PHOTOS 5-7** Cat 24 manifold, turbo, e/pipe, muffler, t/pipe blankets

TRUCKS

QUICK-FIT SPRINGS FOR REDUCED FITTING TIMES AND PERFECT TENSION



PHOTOS 1-5 Cat 793F manifold, turbo, junction, e/pipe blankets **PHOTOS 6-9** Komatsu 830E manifold, turbo, junction, e/pipe blankets

WHEEL LOADERS

EASY TO REMOVE AND REINSTALL FOR MAINTENANCE CREWS

PHOTOS 1-4 Cat 966M turbo, engine pipe, muffler and tailpipe blankets. Manifold blankets available (not pictured).

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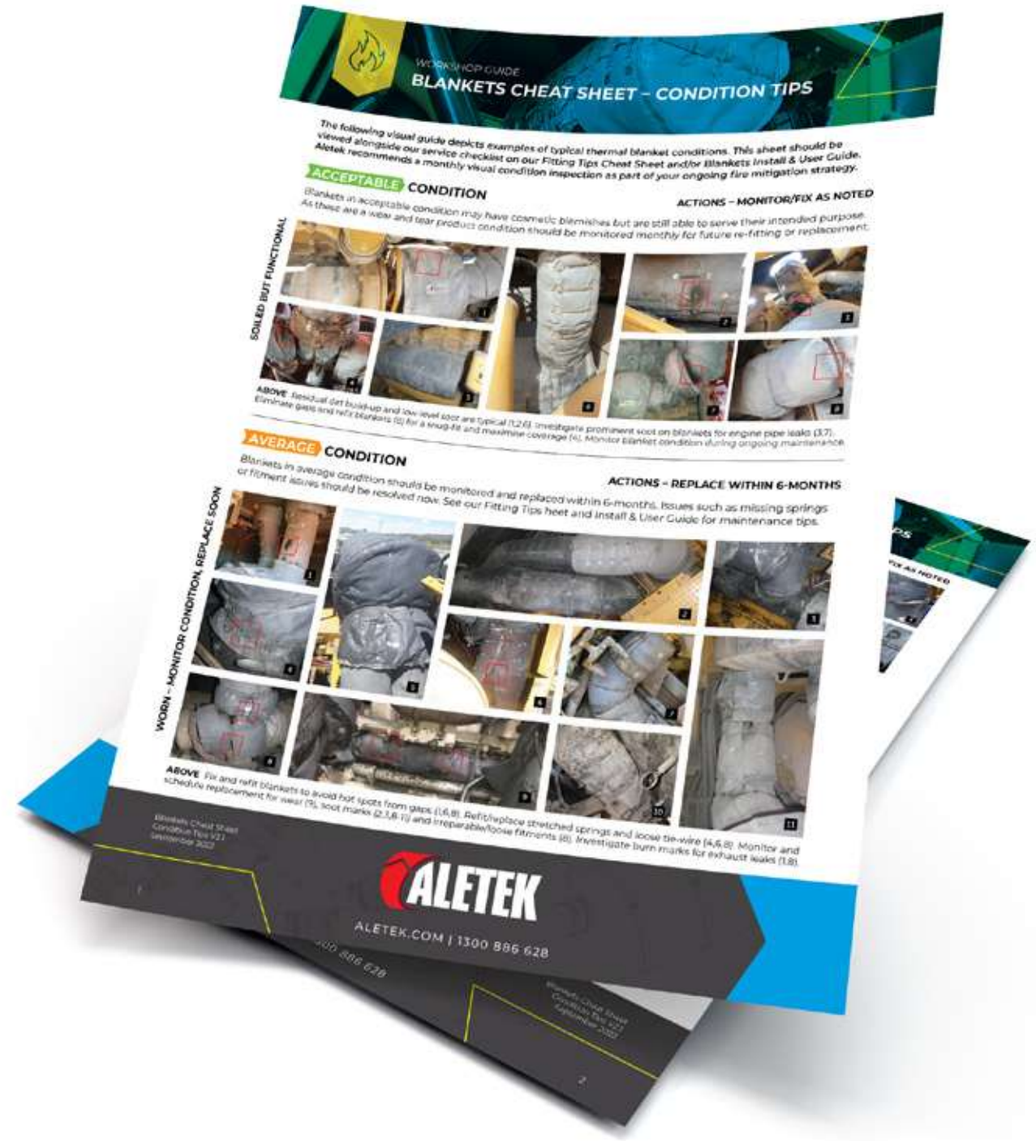
5

WORKSHOP GUIDE: CONDITION TIPS

5.1 Blanket Condition Guide

CHEAT SHEET AVAILABLE

Aletek's Condition Tips cheat sheet will equip your maintenance crew to assess blanket condition and make informed decisions to rectify. We can provide your team with this resource for job packs, training and quick reference.



BLANKETS CHEAT SHEET – CONDITION TIPS

The following visual guide depicts examples of typical thermal blanket conditions. This sheet should be viewed alongside our service checklist on our Fitting Tips Cheat Sheet and/or Blankets Install & User Guide. Aletek recommends a monthly visual condition inspection as part of your ongoing fire mitigation strategy.

ACCEPTABLE CONDITION

ACTIONS – MONITOR/FIX AS NOTED

Blankets in acceptable condition may have cosmetic blemishes but are still able to serve their intended purpose. As these are a wear and tear product condition should be monitored monthly for future re-fitting or replacement.

SOILED BUT FUNCTIONAL

ABOVE Residual dirt build-up and low-level soot are typical (1,2,6). Investigate prominent soot on blankets for engine pipe leaks (3,7). Eliminate gaps and refit blankets (8) for a snug-fit and maximise coverage (4). Monitor blanket condition during ongoing maintenance.

AVERAGE CONDITION

ACTIONS – REPLACE WITHIN 6-MONTHS

Blankets in average condition should be monitored and replaced within 6-months. Issues such as missing springs or fitment issues should be resolved now. See our Fitting Tips heet and Install & User Guide for maintenance tips.

WORN – MONITOR CONDITION, REPLACE SOON

ABOVE Fix and refit blankets to avoid hot spots from gaps (1,6,8). Refit/replace stretched springs and loose tie-wire (4,6,8). Monitor and schedule replacement for wear (9), soot marks (2,3,8-11) and irreparable/loose fitments (8). Investigate burn marks for exhaust leaks (1,8).

WORKSHOP GUIDE

BLANKETS CHEAT SHEET – CONDITION TIPS

GOOD CONDITION – FITMENT ISSUES

ACTIONS – FIX AS NOTED

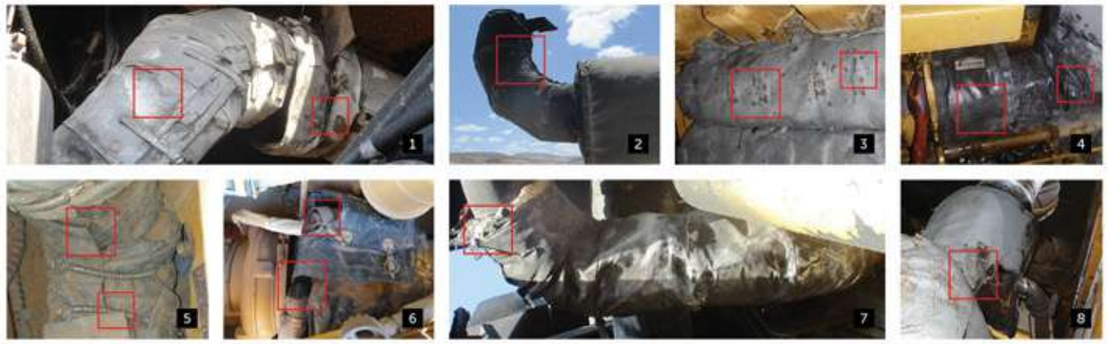
PHOTOS 1-8 Poor fitment (1,3,8), excessive gaps (2-5,7), and poor install techniques (8) create hot spots. Eliminate gaps and ensure blankets are snug-fitting and maximise coverage. Check springs are connected, tie-wires secured, and replace missing springs.

POOR CONDITION

ACTIONS – REPLACE/FIX NOW

Blankets in poor condition should be fixed/replaced now. Rectify poor fitments immediately. If blankets are soaked in oil, diesel or coolant it is almost impossible to remove all traces of contaminants – replace now.

DAMAGED – REPLACE NOW



PHOTOS 1-8 Replace blankets that are damaged (1,7), oil/fuel contaminated (4,7), excessively worn (7,8) and poor fitting (5). Replace damaged sections and contaminated sections (by flammable fluids) that can't be sufficiently cleaned.

POOR FIT/DAMAGED – FIX NOW

PHOTOS 1-9 Assess poor fitment alongside blanket condition. Fix gaps (5,7) and assess if fit-for-purpose. Replace overworn and baggy-fit blankets (2,4,8). Replace damaged blankets and missing sections (3,6,9). Consider upgrading tie-wire to springs for a snug fit (1,2).

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6

PRODUCT WARRANTY

6.1 Product Warranty

WARRANTY FORM

Aletek thermal blankets are covered by a 12-month warranty against manufacturing defects, and our direct-fit replacement guarantee. For warranty claims fill in and submit the form on the Aletek website at **www.aletek.com.au/about-us/warranty-form**