



HAND SAFETY FIRST® · FIELD APPLICATION GUIDE

Hand Exposure in Mining

*Engineering the Hand Out of Lifting, Handling,
Positioning & Maintenance Tasks*

Why This Guide Exists

A deliberate and limited scope

Mining operations contain many serious hazards. This guide addresses only one specific category of them.

SCOPE OF THIS GUIDE

"We focus exclusively on tasks where an engineered interface can meaningfully change the position of the worker's hand."

Mining sites involve blasting, dust, noise, electrical systems, ground movement, heat, vehicle proximity and dozens of other hazard categories. This guide does not address any of them.

What this guide does address is a specific and recurring pattern: the moment when a worker's hand becomes the primary interface between a person and a load, component, tool or struck surface — because no engineered alternative exists or has been provided.

WHAT YOU WILL FIND HERE

This Guide Covers	This Guide Does Not Cover
Suspended-load guiding and control	Rigging theory or crane operation
Heavy component handling and positioning	Structural or mechanical engineering
Mine workshop maintenance tasks	General workshop safety management
Mobile equipment maintenance handling	Haul truck or excavator operation safety
Fixed plant component positioning	Process plant design or guarding
Strike/pin/punch tool holding	Electrical, chemical or dust hazards
Specialised handling interfaces	PPE selection or glove programmes

THE HONEST BOUNDARY

Where the PSC/HSF product range does not have a credible intervention, this guide says so. Including a mining hazard in this book does not guarantee that we have an appropriate solution for it. The final chapter of the applications section makes this explicit.

PSC / HSF Architecture

The brands and philosophy behind this guide

PSC HAND SAFETY INDIA

PSC Hand Safety India Pvt. Ltd. engineers, manufactures and distributes a range of hand-exposure elimination tools for industrial applications globally. Founded in Visakhapatnam, India, PSC has over two decades of experience in industrial safety supply and specialised equipment for the mining, steel, oil & gas, and construction sectors.

PSC products are designed around a single engineering principle: wherever a worker's hand can be removed from a hazard zone without reducing control of the task, it should be.

HAND SAFETY FIRST®

Hand Safety First® is a PSC Hand Safety brand focused on the doctrine of engineered hand separation. The HSF philosophy holds that hand injuries in industrial settings are primarily an engineering problem — not a behaviour problem — and that the correct response is to design or provide an interface that makes hand contact unnecessary.

Brand note: Hand Safety First® is a PSC Hand Safety brand. Published by PSC Hand Safety India Private Limited. handsafetyfirst.in

THE PSC/HSF PRODUCT FAMILIES REFERENCED IN THIS GUIDE

LOAD CONTROL

HSF RiggerSafe®
PSC LoadGuider®
PSC Guide-It®
HSF LoadGrab®

Stand-off push/pull and remote load engagement tools for suspended and moving loads.

STRIKE PROTECTION

PSC FingerSaver®
StrikeSafe®
(TechMRO)
PSC Chisel & Punch Holder

Remote holding tools that remove the holder's hand from the strike zone.

MAGNETIC HANDLING

PSC Load-It®
PSC MagHead Family

Magnetic handling interfaces for suitable ferrous surfaces — not a lifting-rating claim.

TAGLINE SYSTEMS

PSC LoadGuider®
Anti-Tangle Tagline
PSC Tagline Retriever

Remote load orientation and tagline retrieval tools for crane lifts.

MANUAL HANDLING

PSC Lift Assist
PSC Ezy-Lift
PSC Handle-Tech Pipe Lifter
PSC Tubular Guider
PSC GasGrab®

Engineered handling interfaces for awkward, tubular and cylindrical objects.

THE CORE DOCTRINE

Engineer the Hand Out of the Hazard®

The engineering principle that drives every product, every application and every page of this guide.

Find the Hand

The diagnostic question behind every application in this guide

THE CORE QUESTION

"Where is the hand — and why does it need to be there?"

Before any product is considered, before any solution is proposed, the correct starting point is observation. Walk the task. Watch the worker. Find the hand.

In most mining maintenance, handling and rigging tasks, the hand is present for a reason. It is providing a function. It is pushing, steadying, guiding, holding, retrieving, aligning or positioning something. That function is real and necessary. The question is not whether the hand should be doing something — it is whether the hand is the only available way to do it.

THE EXPOSURE MOMENT

Hand in the Hazard Zone

The worker reaches toward a suspended load, a landing component, a struck tool or an awkward assembly. The hand enters a zone of crush, impact or strike energy.

THE INTERVENTION OPPORTUNITY

If the hand is providing a specific function — guiding, pushing, holding — an engineered tool may be able to provide that same function from a safer position. The hand moves. The function remains.

THE THREE DIAGNOSTIC QUESTIONS

Question	What It Reveals
1. Where is the hand?	The physical location — what hazard zone the hand occupies during the task
2. Why is the hand there?	The function the hand is providing — the reason no one has removed it
3. Can that function be preserved while moving the hand away?	Whether an engineered interface can replicate the function from a stand-off position

Important: Not every hand exposure has an engineered solution. The third question may sometimes be answered "No" — or "Not yet." This guide is honest about those boundaries.

The Hand Becomes the Interface

Understanding why it happens — before proposing a solution

Many hand exposures during suspended-load work arise because the worker's hand was the only available tool for the task at that moment. There was no engineered interface to provide the guidance or control function. The hand filled the gap.

THE PATTERN



This pattern recurs across suspended-load rigging, heavy-component reinstallation, strike work, pipe handling and many other tasks throughout a mine site. Many hand exposures in mining arise not simply from behaviour, but because the worker's hand is performing a necessary task function for which no practical engineered interface has been provided.

WITHOUT AN ENGINEERED INTERFACE

The load swings. The worker reaches out to steady it. The hand is between a moving mass and a fixed structure. The worker has no other way to control the load's position.

The hand is the interface. The exposure is real. The injury is predictable.

WITH AN ENGINEERED INTERFACE

A stand-off push/pull tool provides the same steadying function from a position that keeps the worker's body and hands clear of the crush zone.

The function is preserved. The hand moves away. The exposure is reduced.

HSF DOCTRINE

"The hand exposure is an engineering gap, not a behaviour problem. Close the engineering gap."

This distinction matters for how we approach every application in this guide. We are not asking workers to be more careful — we are asking what tool should have been provided so that careful was no longer the only protection available.

The Eight Functions of the Hand

The taxonomy that organises every application in this guide

Every hand exposure addressed in this guide can be classified by the function the hand is performing when it enters the hazard zone. There are eight. Understanding the function is the first step toward finding an engineered alternative. Note that *positioning* is treated as a task outcome — achieved through one or more of these functions — rather than a separate function in its own right.



Push

The hand applies directional force to move a load or component away from the worker or toward its destination.



Pull

The hand draws a load, line or component toward the worker or toward a required position.



Hold

The hand maintains the position of an object — a chisel, a pin, a component — while force is applied from another direction.



Guide

The hand directs the path of a moving load or component. Without guidance, the object would drift, rotate or travel to an uncontrolled position.



Retrieve

The hand reaches toward a load, line or component to collect, re-engage or recover it — often after a lift is complete.



Align

The hand places a component so that it mates correctly with a receiving surface, bore, flange or structure.



Lift

The hand provides the grip and force to raise a component from rest — where geometry or surface creates an exposed grip position.



Stabilise

The hand prevents unwanted movement or rotation of a load or component that is otherwise prone to shift, swing or tip.

HOW TO USE THIS TAXONOMY

When you observe a hand exposure on site, identify which function the hand is performing. That function determines what kind of engineered interface can replace it. Part VIII of this guide maps each function to the relevant PSC/HSF tool families. In many tasks, the hand performs more than one function in sequence — identify and address each one separately.

PART II

Suspended Loads & Rigging

The moment the load leaves the ground, the hand should not be on it. This section examines why workers approach suspended loads, how that exposure can be reduced, and which PSC/HSF tools may apply — and when.

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The Hand Around a Suspended Load

Why workers approach suspended loads — and what happens when they do

A suspended load is a load in motion. Even a load that appears stationary is subject to swing, rotation, drift and sudden movement from crane correction, line stretch or environmental forces. On active mine sites, workers approach suspended loads regularly — during crane lifts in workshops, truck bays, fixed-plant maintenance and shutdown activities.

They do not approach out of recklessness. They approach because the load needs to be steadied, oriented, guided to a precise position, or slowed as it travels toward its landing point. In the absence of any tool that can perform that function from a safe distance, the hand is the only available option.

THE THREE REASONS WORKERS TOUCH SUSPENDED LOADS

Reason 1	GUIDE	Reason 2	STABILISE	Reason 3	ALIGN
To steer the load. The load is travelling in the wrong direction, rotating, or approaching an obstruction. The worker reaches out to correct its path.		To stop unwanted movement. The load is swinging or rotating and the worker applies hand pressure to arrest that motion before it causes a strike or collision.		To place it precisely. As the load approaches its landing zone, the worker reaches in to make fine alignment corrections — the Last 300 mm moment.	

THE EXPOSURE MECHANISM

Moving Mass + Fixed Structure + Worker's Hand

The classic crush scenario. A suspended load swings or shifts. The worker's hand is between the load and a fixed surface — a trailer, a structure, a piece of equipment. The load's momentum is sufficient to cause serious injury even at low travel speeds.

The remaining pages in this section examine each of these three interaction types and identify where PSC/HSF tools can provide a credible stand-off alternative. The goal in every case is the same: preserve the function the hand was providing while moving the hand away from the load.

How Suspended Loads Move

Understanding the physics that creates the exposure

You do not need rigging theory to understand why suspended loads are dangerous to approach. You need to understand four movement types — and what triggers them in a mining environment.

MOVEMENT 1

Swing

Pendulum motion in any direction. Triggered by crane travel, sudden stops, wind or an off-centre pick point. A load that appears stable can begin swinging from a small disturbance.

MOVEMENT 2

Rotation

Spinning around the vertical axis. Triggered by off-centre rigging, asymmetric load, or wind. A rotating load will continue rotating until a force arrests it — often a worker's hand.

MOVEMENT 3

Drift

Lateral movement during crane travel. Even slow crane speeds create significant momentum in heavy loads. Drift is predictable but frequently underestimated.

MOVEMENT 4

Sudden Shift

An unexpected movement caused by crane correction, line slack release, load instability or operator input. Often occurs when the load is close to workers — including during final positioning.

WHY THESE MOVEMENTS MATTER FOR HAND SAFETY

Each of these movement types creates a scenario where a worker who has approached the load to stabilise, guide or align it is suddenly exposed to a mass moving toward their hands with significant force.

A heavy suspended component does not need to be moving quickly to create a severe crush exposure. Where a hand is trapped between the moving load and a fixed surface, even relatively small uncontrolled movement can have serious consequences.

THE KEY INSIGHT

"The load does not need to be moving fast to cause serious injury. It needs only to be moving, and the hand to be between it and something solid."

Stand-off tools — push/pull poles, taglines, remote engagement tools — allow the worker to apply corrective force from a position that is not between the load and a fixed object. That is the entire purpose of the tools described in the pages that follow.

Guiding the Load by Hand

The classic exposure — and why it persists

A familiar lifting scenario across many mine sites: a worker standing alongside or beneath a suspended load, both hands on it, guiding it toward a landing point. The load may be a fabricated steel component, a heavy machine assembly, a pump, a gearbox or a section of pipe. The worker is doing exactly what they have been trained to do — control the load.

The problem is not the intention. The problem is the position.

THREE HAND EXPOSURE MECHANISMS DURING MANUAL LOAD GUIDANCE

MECHANISM 1

Crush — Hand Between Load and Structure

Worker's hand is on the face of the load as it approaches a fixed surface. Load shifts or accelerates. Hand is trapped between moving load and fixed object.

MECHANISM 2

Struck-By — Load Swings Toward Worker

Load swings or rotates unexpectedly. Worker in close proximity is struck. Hands and forearms — already in contact with the load — receive direct impact.

MECHANISM 3

Line-of-Fire — Load Moves, Worker Cannot

Worker is positioned directly in the line of load travel. Cannot withdraw hands quickly enough when load accelerates toward fixed landing point. Pinch/crush at landing moment.

WHY WORKERS DO THIS — AND WHY TRAINING ALONE DOESN'T STOP IT

Workers guide loads by hand because it is the most effective way to do so with no alternative tool available. Instructions not to touch the load — without providing a tool that replaces the guidance function — simply ask the worker to accept a worse outcome for the same task. The load still needs to be guided.

THE CORRECT RESPONSE

"Provide a tool that guides the load from a stand-off position. Then the instruction not to touch the load has a practical alternative behind it."

Push/Pull Intervention

HSF RiggerSafe® · PSC LoadGuider® · PSC Guide-It® — stand-off control of suspended loads

The push/pull tool is the primary PSC/HSF intervention for suspended-load guidance. It replaces the worker's hands on the load with a rigid or semi-rigid pole that allows the same guiding and stabilising functions to be performed from a stand-off position.

HSF RIGGERSAFE®

Designed specifically for rigging and lifting applications. Provides a stand-off push/pull interface for suspended load guidance, load positioning and load steadying during crane lifts. The rigid pole allows directional control without hand contact with the load.

Primary mining application: Crane lifts in workshops, open areas, shutdown maintenance, truck loading/unloading and fixed-plant maintenance bays.

PSC LOADGUIDER® & PSC GUIDE-IT®

Complementary load-guidance tools for different load geometries and task configurations. Where the load profile or the available stand-off distance requires a different interface from the RiggerSafe®, LoadGuider® and Guide-It® provide alternatives within the same push/pull discipline.

Application review required to determine which tool best suits the specific load, geometry and task in each mining context.

WITHOUT PUSH/PULL TOOL

Worker's hands are on the surface of a 2-tonne suspended assembly during the final approach to a workshop crane bay. The load begins to rotate. The worker's hands are between the load and a fixed beam.

WITH RIGGERSAFE®

Worker applies corrective force via the RiggerSafe® pole. The load's rotation is arrested. The worker's hands are on the pole, not on the load. Body position is clear of the primary crush zone.

WHAT PUSH/PULL TOOLS CAN AND CANNOT DO

Can do: Guide, steer, stabilise and position loads from a stand-off distance. Maintain directional control without hand contact. Provide an engineered alternative to touching the load.

Cannot do: Arrest large-momentum load swings independently. Replace proper rigging, slinging or crane operation. Be used without appropriate training and an application review.

Tagline Control

Remote load orientation — Anti-Tangle Tagline family

Where a push/pull pole provides direct contact-free control close to the load, a tagline provides remote orientation from a greater distance. In mining lifts — particularly long crane travels, outdoor lifts and large component movements — the tagline allows workers to maintain rotational and directional control while remaining well clear of the load's path.

WHEN TAGLINES ARE APPROPRIATE

Taglines are particularly effective when:

- The load must travel a significant horizontal distance before landing
- Rotational control is the primary requirement rather than fine positional guidance
- The lift is conducted in an area where workers cannot safely walk close to the load path
- Multiple workers need to manage the load simultaneously from different positions
- Wind or environmental forces create a persistent rotational tendency

PSC LOADGUIDER® ANTI-TANGLE TAGLINE DESIGN

A conventional tagline creates its own hazard: if the line becomes tangled, snagged or looped, the worker holding it can be pulled toward the load or into its path. The PSC LoadGuider® Anti-Tangle Tagline design reduces this risk by managing line behaviour during pay-out, travel and recovery.

The PSC LoadGuider® Anti-Tangle Tagline does not eliminate all tagline hazards. Workers must remain aware of their position relative to the load's path throughout the lift. Line entanglement and tripping hazards require a separate assessment.

TAGLINE VS PUSH/PULL — THE PRIMARY DISTINCTION

Tagline (PSC LoadGuider® Anti-Tangle Tagline)	Push/Pull (HSF RiggerSafe® / PSC LoadGuider® / PSC Guide-It®)
Flexible — allows greater worker-to-load distance	Rigid or semi-rigid — works at moderate stand-off distances
Better for rotational/directional control over distance	Better for fine positional guidance during final approach
Less precise for last-metre positioning	More precise for final placement and landing
Suited to long-travel crane lifts	Suited to short-travel, final-approach and workshop lifts

These tools are not interchangeable. Page 14 maps the selection criteria in detail.

Retrieving the Tagline

A secondary exposure that is frequently overlooked — Tagline Retriever

A load has been landed. The lift is complete. The rigging crew begins to release the load and prepare for the next task. At this point, a specific and easily overlooked exposure occurs: the tagline must be retrieved.

When a tagline becomes draped over or around a recently landed load, or when the line is pinned under the load at landing, the worker who was standing at a safe distance during the lift now walks toward the load — and often toward the crane's travel path — to free and retrieve the line.

THE SECONDARY EXPOSURE

Walking Into the Hazard Zone to Retrieve the Line

The load is down — but the crane hook is still live, the rigging is still attached, and the load has not been secured. The worker enters the zone directly beneath or adjacent to the load to retrieve a tagline that could have been retrieved from a safe distance.

WHY THIS HAPPENS

Without a retrieval tool, the only way to recover a tagline that has fallen across or behind a landed load is to walk to it. There is no alternative — so workers approach.

This secondary approach often happens after the crew has relaxed from the discipline of the lift itself. The load is down; the perceived danger has passed. The retrieval approach feels routine — and is therefore often not risk-assessed.

TAGLINE RETRIEVER

The Tagline Retriever allows the worker to recover and control a fallen or pinned tagline from a stand-off distance, without approaching the load or entering the zone below or adjacent to it.

It addresses a specific and discrete task — tagline retrieval after landing — and does not replace the tagline itself. Both tools may be required in the same lift sequence.

APPLICATION NOTE

Suitability depends on the tagline configuration, load geometry and site conditions. An application review is required before specifying.

LoadGrab® — Remote Engagement

Where remote engagement is different from push/pull

Push/pull tools guide loads by applying directional force to the load's surface. Taglines control orientation by line tension. LoadGrab® addresses a different task: remote engagement at a specific point on a load or structure — a handle, a lift point, a control surface — without requiring the worker to reach into the hazard zone to make that engagement.

THE SPECIFIC EXPOSURE LOADGRAB® ADDRESSES

There are tasks where the worker must not simply push or pull on the load's general surface, but must engage a specific point: grab a handle, hook a fitting, catch a line, redirect a control point. Without a remote engagement tool, the worker must reach directly to that point — often at the face of a suspended or recently landed load.

LoadGrab® allows that engagement to be made from a stand-off position, keeping the worker's hands and body clear of the load's immediate proximity during the engagement action.

MINING APPLICATION CONTEXTS

- Engaging a lift handle or control point on a large suspended component
- Redirecting a line, strap or fitting on a load that has landed awkwardly
- Making contact with a specific point on a load that is rotating or moving
- Recovering or redirecting a load control point after crane correction

Application review required. LoadGrab® is suited to specific engagement geometries. Not all load handle configurations are compatible. Confirm suitability before trial.

PUSH/PULL VS TAGLINE VS RETRIEVER VS REMOTE ENGAGEMENT

Tool	Primary Function	Typical Mining Scenario
RiggerSafe®/LoadGuider®/Guide-It®	Push/pull load surface from stand-off	Final approach, workshop lifts, positioning
Anti-Tangle Tagline	Remote rotational/directional control	Long-travel crane lifts, outdoor lifts
Tagline Retriever	Retrieve fallen tagline from stand-off	After landing — line recovery without approach
LoadGrab®	Remote engagement at a specific load point	Engaging handles/fittings on suspended or landed loads

These tools address different tasks. See page 15 for the selection matrix.

Which Method?

A practical guide to selecting the right stand-off tool for each suspended-load task

The four suspended-load tool families in the PSC/HSF range address different tasks. The decision between them depends on the type of control required, not simply which tool is available.

SUSPENDED-LOAD TOOL SELECTION MATRIX

Task / Requirement	RiggerSafe® LoadGuider® Guide-It®	Anti-Tangle Tagline	Tagline Retriever	LoadGrab®
Guide load during final approach / landing	●	◐	—	—
Stabilise load against swing/rotation during travel	◐	●	—	—
Control load orientation over long crane travel	—	●	—	—
Fine positional correction in last 300 mm	●	—	—	—
Retrieve tagline after load landing	—	—	●	—
Engage specific point on load (handle/fitting)	—	—	—	●
Multiple workers controlling load simultaneously	●	●	—	—

● Primary application · ◐ Secondary / partial application · — Not this tool's role

APPLICATION REVIEW REQUIRED IN ALL CASES

This matrix is a guide for thinking, not a specification. Every mine site, load configuration and task sequence requires an application review before a tool is selected and trialled. Load weight, geometry, crane configuration, available stand-off distance and site conditions all affect which tool is appropriate.

PART III

Loading, Unloading & Heavy Load Positioning

From the moment a load is picked to the moment it is secured, there are multiple points where a worker's hands are at risk. This section follows the complete load journey — and identifies where stand-off tools change the outcome.

Pages 16 – 21



The Load Journey

Mapping where hands are most at risk across the full movement sequence

Every heavy-component movement in a mine site follows a sequence. Understanding that sequence is the first step to identifying where the hand-exposure moments occur — and which of them can be addressed with an engineered intervention.

THE NINE-STAGE LOAD JOURNEY



Highlighted stages = primary hand-exposure moments during loading, unloading and component positioning

HAND EXPOSURE BY STAGE

Stage	What Happens	Hand Exposure	Potential Intervention
Pick	Load lifted from resting position	Low — workers typically clear before pick	—
Lift / Clear	Load rises above obstructions	Low if area is clear	—
Travel	Load moves horizontally	Moderate — rotation/drift control	Tagline
Rotate	Load orientation corrected	High — worker applies rotational correction	Tagline / RiggerSafe®
Lower	Load descends toward landing zone	High — worker guides descent path	HSF RiggerSafe® / PSC LoadGuider®
Land	Load contacts receiving surface	Very high — pinch zone at contact moment	Guide-It® / RiggerSafe®
Position	Fine adjustments to final location	Very high — Last 300 mm	Guide-It® / LoadGuider®
Release	Rigging freed from load	Moderate — worker approaches to de-rig	Application review

Loading & Unloading Heavy Components

Mine equipment, structures, skids and fabrications — the truck bay exposure

Mine sites receive and dispatch large, heavy components continuously — replacement parts for mobile equipment, fabricated structures, pump and motor assemblies, skids, steel sections and service units. Each arrival or despatch creates a truck or trailer loading/unloading sequence. It is one of the most consistent hand-exposure environments on a mine site.

THE EXPOSURE SCENARIO

A crane lowers a heavy component onto a flatbed trailer or receives one being unloaded from it. Workers stand alongside the trailer, hands on the descending component, guiding it toward the correct position on the trailer deck.

The trailer bed is a fixed structure. The component is moving. The worker's hands are between them. As the component approaches the trailer deck, the gap closes — and the hand is in it.

PRIMARY EXPOSURE

Pinch/Crush at Trailer Deck

Component descends toward trailer bed. Worker's hand remains on component face to guide final positioning. Component contacts deck — hand is caught between component and trailer bed or between component and a trailer support structure.

STAND-OFF INTERVENTION

At a truck/trailer loading bay, a push/pull stand-off tool allows the worker to maintain directional control of the descending component without placing their hands between the component and the receiving surface.

APPLICABLE TOOLS

HSF RiggerSafe® / PSC LoadGuider® / PSC Guide-It®

Applied from the trailer's working side, the stand-off pole maintains directional control of the component's lateral position while keeping the worker's hands above and away from the pinch zone at the deck level.

WHERE TAGLINES ALSO APPLY

Anti-Tangle Tagline

For larger component lifts where rotational control during crane travel to the trailer is required before the final approach.

Controlling the Load During Approach

The final metres — where load momentum and hand position converge

The final metres of a load's travel before landing can be a particularly critical hand-exposure phase. The load is slowing. The crane operator is making fine corrections. Workers are at their closest to the load. And the space between the load and the receiving surface is narrowing.

This is the approach phase: the load is above its landing point, descending, and still subject to lateral drift, rotation and pendulum movement from any disturbance. It is the phase where workers most commonly place their hands on the load — and where hand exposure can become particularly concentrated.

THREE THINGS THAT HAPPEN IN THE APPROACH PHASE

Lateral Correction	GUIDE	Rotation Arrest	STABILISE	Drift Control	GUIDE
The load is slightly off its intended landing point. A worker applies lateral force to shift it to the correct position before it descends further. RiggerSafe® or LoadGuider® provides this correction from stand-off.		The load has developed a slow rotation during travel. As it approaches the landing zone, the worker stops the rotation. Tagline or push/pull pole arrests rotation without hand contact.		The load is drifting toward an obstruction or away from its landing mark. The worker redirects it. RiggerSafe® or LoadGuider® provides directional correction at stand-off.	

THE KEY PRINCIPLE

"Control must be maintained. The question is whether a stand-off tool can provide that control from a position that keeps the hand out of the closing gap between load and landing surface."

In most approach-phase scenarios, a push/pull stand-off tool can provide the required directional correction. The tool's rigid contact with the load allows the worker to feel and correct load movement without placing any part of their body in the path of the descending component.

Landing the Load

Moving load + fixed object + hand = concentrated crush exposure

THE MOST CRITICAL MOMENT

"Moving load + fixed surface + worker's hand = a critical pinch/crush exposure during the load journey."

The moment a suspended load contacts its receiving surface — a trailer bed, a foundation, a rack, a workshop floor — is a critical crush-risk moment. The gap that the worker's hand was occupying to guide the load closes to zero. If the hand is still in that space, the energy of the descending load concentrates onto it.

WHY HANDS ARE STILL PRESENT AT LANDING

Workers guide the load during the approach. Their hands remain on the load to maintain directional control. At the last moment — as the load contacts the surface — there is no instinctive withdrawal fast enough to remove the hand from the closing pinch zone.

The answer is not faster reflexes. The answer is a tool that places the worker's control point outside the pinch zone before the landing moment occurs.

THE STAND-OFF PRINCIPLE AT LANDING

When a push/pull stand-off tool is used for approach control, the worker's hands remain on the pole — not on the load surface. The landing contact point is the load face against the receiving surface. The worker's hands are on the pole, above and away from that contact zone.

PRIMARY TOOLS FOR LANDING CONTROL

Guide-It® / RiggerSafe®

Maintain directional control through the landing moment. The tool's contact point with the load is above the receiving surface. Worker hands remain at the pole — outside the pinch zone.

Important: No stand-off tool eliminates all risk at the landing moment. The worker must still maintain a position and body stance that keeps them clear of the load's motion path. Application review and site-specific safe work procedure required.

The Last 300 mm

The moment where precision instinct creates the greatest exposure

"Just put your hand there and move it slightly."

This is the thought — a familiar instinct in precision positioning work — that places a worker's hand in the particularly hazardous position in the task. The load is almost there. A centimetre of adjustment is all that's needed. The instinct is to use the most precise instrument available: the hand.

The Last 300 mm Rule™ is HSF doctrine identifying the final approach and positioning phase as a particularly critical hand-exposure zone. As a load approaches its landing or mating position, the need for precision increases and workers may be drawn closer to the load to guide, align or position it.

WHY THE LAST 300 MM IS DIFFERENT

In the earlier stages of a lift, workers can maintain a reasonable distance from the load. In the last 300 mm, the load is at working height, close to the receiving surface, and demanding precision. The natural response is to move closer — and to use the hand for that precision guidance.

The pinch gap is now less than 300 mm wide. The load is heavy. Its movement is controlled by a crane operator who cannot see the hand. The exposure can become particularly significant precisely when the worker's attention is most focused on the task outcome — not on their hand position.

THE ENGINEERED RESPONSE

The Last 300 mm is where engineered positioning tools have their greatest value. A stand-off guide tool provides the precision feedback the worker needs — load movement, directional correction, contact moment — from a pole that keeps the hand 600 mm or more from the pinch zone.

LAST 300 MM TOOLS

Guide-It® / LoadGuider®

Designed to provide precision feedback and directional control in the final approach phase. Application review required for specific load geometry and landing configuration.

THE LAST 300 MM RULE™ — HSF DOCTRINE

"The last 300 mm of load travel is not the moment to rely on instinct. It is the moment where the engineering must be most reliable."

Application Selection — Load Positioning

Different load geometries require different interventions

The correct stand-off tool for a positioning task depends on the load's geometry, the control required and the available access. Not every load suits every tool. The table below maps common mine-site load types to the appropriate PSC/HSF intervention.

Load Type / Geometry	RiggerSafe® LoadGuider®	Guide-It®	Tagline	LoadGrab®	Magnetic (Load-It®)	Application Review
Fabricated steel structure / skid	●	●	●	—	●	●
Pump / motor assembly	●	●	●	●	—	●
Flat plate / steel panel (ferrous)	●	●	—	—	●	●
Cylindrical component / drum	●	●	●	—	—	●
Long pipe / tubular section	●	●	●	—	—	●
Large gearbox / transmission	●	●	●	●	—	●

● Primary fit · ● Conditional / geometry-dependent · — Not applicable

APPLICATION REVIEW — ALWAYS REQUIRED

This matrix provides a starting point for thinking, not a final selection. Every mine-site load positioning task has specific parameters — weight, centre of gravity, available access, crane configuration, landing geometry — that affect tool selection. An application review is required before any trial.

Magnetic intervention (PSC Load-It®) requires ferrous material, suitable contact surface, compatible geometry and temperature. Suitability must be confirmed before any magnetic handling application. Magnetic attraction is not a lifting-rating claim.

PART IV

Mine Maintenance Workshops

The mining workshop combines large mobile equipment, heavy components, repetitive maintenance cycles and high-energy impact work. It is one of the most concentrated hand-exposure environments on any mine site.

Pages 23 – 30

The Mining Workshop

Why the workshop is a priority application environment

A mining maintenance workshop is unlike a general industrial workshop in one important respect: the components being maintained are very large, very heavy, and very frequently replaced. Each maintenance cycle involves component removal, handling, repair or replacement, and reinstallation — tasks that repeat across the maintenance schedule and accumulate hand-exposure opportunities over time.

WHAT MAKES THE WORKSHOP DIFFERENT

- Components are heavier than in most industrial workshops — often hundreds of kilograms
- The same tasks are repeated many times — exposure is cumulative
- Workshop cranes are in constant use — suspended-load exposure is continuous
- Impact work (pins, punches, chisels) is routine — strike exposure is high
- Awkward component geometries require workers to get close to manoeuvre
- Time pressure during shutdowns increases risk tolerance

THE PSC/HSF WORKSHOP APPLICATION ZONES

The mining workshop can be divided into application zones, each with a characteristic hand exposure:

Zone	Primary Exposure
Crane bay	Suspended-load guidance
Component bench	Strike/punch/pin work
Reinstallation area	Alignment and pinch at mating surface
Pipe/cylinder area	Tubular component handling
Awkward handling	Grip instability on large/heavy components

Pages 24–29 address each zone in sequence.

THE WORKSHOP PRINCIPLE

"Repetitive heavy maintenance is where the cost of hand exposure accumulates fastest. One engineered change, applied to a task performed many times a week, produces proportionally large safety gains."

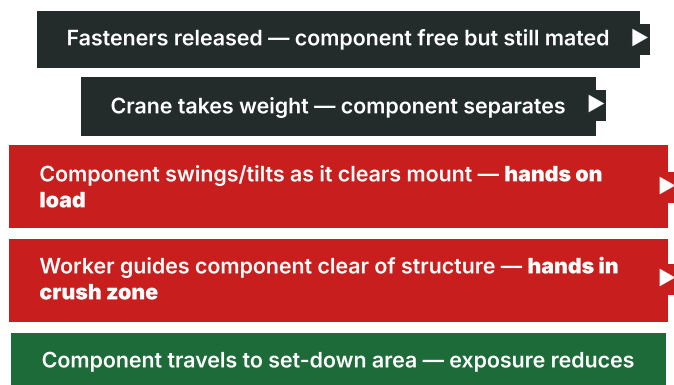
Component Removal

Where hands steady, pull and receive during extraction

Component removal in a mining workshop follows a consistent pattern: the component is freed from its fasteners, a crane or hoist takes the weight, and then — as the component begins to separate from its mount — a worker reaches in to steady it, guide its path, and receive it as it clears the structure.

That final phase — separating a heavy component from its mount while managing its swing, tilt and travel path — is where the hand exposure concentrates.

THE REMOVAL SEQUENCE



APPLICABLE PSC/HSF TOOLS

STAND-OFF GUIDANCE

HSF RiggerSafe® / PSC LoadGuider®

Guides the component clear of the structure during extraction without requiring hand contact with the load face. Maintains directional control as component swings free.

FOR AWKWARD / UNBALANCED COMPONENTS

PSC Lift Assist

Where the component's geometry makes crane-only extraction difficult and a worker would otherwise grip the component directly to assist the extraction movement.

Application review required. Component geometry, crane access and mount configuration determine which tool applies.

Component Reinstallation

The reverse task — more alignment-intensive, more hand exposure

Reinstallation is the reverse of removal — but it is more hazardous. During removal, the component moves away from its mount. During reinstallation, it moves toward a fixed structure, and the worker must guide it into alignment with bores, flanges or keyways while the crane holds the load above the mating surface.

The alignment requirement — which does not exist during removal — is what brings the hand into a particularly hazardous position: between the descending component and the fixed structure it is approaching.

THE FOUR REINSTALLATION PHASES



WHERE HANDS ENTER

Orientation: Worker rotates or repositions the suspended component to face its receiving mount. Hand on load surface to apply rotational force.

Alignment: Worker guides component toward bore, flange or keyway. Hand between descending component and fixed structure — the critical exposure moment.

Seating: Final centimetres as component enters its mount. Hand is at a particularly hazardous position — adjacent to the closing gap between component and structure.

APPLICABLE PSC/HSF TOOLS

ALIGNMENT & SEATING CONTROL

Guide-It® / LoadGuider®

Provides fine positional feedback and directional correction during the alignment and seating phases. Worker's hands remain on the pole — not between the component and the mount.

ORIENTATION CONTROL

HSF RiggerSafe®

Applied during the orientation phase to rotate or reposition the suspended component without hand contact with the load face.

THE REINSTALLATION PRINCIPLE

"Reinstallation is alignment work. Alignment work brings the hand closest to the closing gap. That is precisely where the stand-off tool must be working."

Pins, Punches & Chisels

The strike-zone exposure — one hand on the tool, one hand in danger

Mining workshop maintenance regularly involves drift-pin driving, punch work and chisel operations. Bucket teeth, track pins, bearing housings, wear parts and fabrication work all create strike tasks. These tasks typically involve one worker holding the struck tool while another delivers the hammer blow.

The holder's hand is in the strike zone. Each hammer blow creates the opportunity for a miss. On large mining components, the hammers are heavy and the strike energy is substantial — and strike tasks can recur frequently across a maintenance shift.

THE CLASSIC STRIKE EXPOSURE

Holder's Hand in the Impact Path

A worker holds a drift pin, punch or chisel against the work piece while a second worker delivers hammer blows. A miss, a deflection or a slip places the full hammer energy onto the holder's hand, wrist or fingers. In heavy mining maintenance, this can cause permanent injury with a single event.

WHY THIS HAPPENS REPEATEDLY

The holder must keep the tool aligned — particularly on difficult pins, tight-fitting punches and inclined chisel work. The alignment function requires the hand to be close to the tool face. There is no conventional alternative: someone has to hold it.

Strike-holding tasks recur throughout mining maintenance cycles — in workshops, during shutdowns and in field maintenance — making the cumulative exposure significant on any active site.

THE RISK PROFILE

Factor	Mining Context
Hammer weight	Often 2–5 kg or more
Strike energy	High — large components require significant force
Task frequency	Multiple times per shift, same workers
Fatigue factor	Striker fatigue increases miss probability
Access	Often awkward — below vehicle, in confined space

THE ENGINEERING QUESTION

Can the holding function be provided by a tool — rather than by a person's hand — so that the strike can proceed without a hand in the strike zone? Pages 28 shows the PSC/HSF answer.

Engineer the Holder Out of the Strike Zone

PSC FingerSaver® · StrikeSafe® · PSC Chisel & Punch Holder

CONVENTIONAL METHOD — HOLDER'S HAND IN ZONE

Worker A holds the drift pin, punch or chisel against the work piece. Worker A's hand grips the tool within 50–100 mm of the strike face. Worker B delivers hammer blows. A missed or deflected blow strikes Worker A's hand.

This method has no defence against striker error, fatigue or unexpected tool movement. The holder has no warning of a missed blow and no safe withdrawal path.

ENGINEERED METHOD — REMOTE HOLDING TOOL

A remote holding tool grips and aligns the drift pin, punch or chisel against the work piece. No person holds the struck tool. The striker works alone. If the blow misses, no hand is in the strike zone.

The holding function is preserved. The hand is removed from the hazard zone entirely. The task continues with no reduction in effectiveness.

THE PSC/HSF STRIKE-PROTECTION RANGE

PSC PRODUCT

PSC FingerSaver®

Holds punches, chisels, pins and similar struck tools at a safe remove from the user's hand. Designed for repetitive workshop punch and pin work. Suitable for the scale of struck tools common in mining workshop maintenance.

PSC PRODUCT

StrikeSafe®

An alternative remote holding interface for struck-tool applications. Provides grip and alignment of the struck tool while keeping the worker's hand at a safe distance from the strike face.

PSC PRODUCT

PSC Chisel & Punch Holder

Specifically designed for chisel and punch configurations. Maintains alignment of the tool during strike sequences. Application review confirms compatibility with specific tool geometry and task.

Application review required. Struck-tool geometry, pin diameter, work-piece configuration and access must be assessed before selecting a tool. Not all drift-pin and punch configurations are compatible with all holder types.

Awkward Component Handling

When geometry, not weight, is the problem — PSC Lift Assist · PSC Ezy-Lift

Not all workshop hand exposure involves suspended loads or strike work. Some components create hand exposure because their geometry makes them difficult to grip, balance or manoeuvre — regardless of weight. A component that is bulky, unbalanced, smooth-surfaced or awkwardly shaped forces the worker's hands into positions that are exposed to drop, pinch or crush risk during handling.

THE AWKWARD-HANDLING EXPOSURE

The worker attempts to grip a component that doesn't offer a natural hand hold. The grip is insecure. The component shifts. The worker repositions their hands — often into a worse position — to compensate. The instability creates multiple exposure moments across the handling sequence.

THE EXPOSURE PATTERN

Grip Instability → Repositioning → Worse Position

Each repositioning attempt to restore grip control may move the hand toward a more hazardous position than the original grip. The component's geometry drives the hand's position — not the worker's choice.

APPLICABLE PSC/HSF TOOLS

PSC PRODUCT

PSC Lift Assist

Provides an engineered handle or grip point on components that lack a natural hand hold. Reduces the instability that creates repeated repositioning — and the exposure that comes with it.

PSC PRODUCT

PSC Ezy-Lift

A complementary lifting interface for components where the geometry requires a specific approach to achieve a secure, controlled lift without forced hand positions.

Application review required. Component dimensions, weight, material and surface condition determine which lift-assist interface applies.

THE KEY DIAGNOSTIC QUESTION

Is the hand exposure in this task caused by the weight of the component — or by its geometry? If geometry is the primary driver, the correct intervention is an engineered grip interface, not a crane or hoist alone.

Pipe & Tubular Handling

PSC Handle-Tech Pipe Lifter · PSC Tubular Guider — the geometry-specific interface

Pipe sections, hydraulic cylinders, cylinder bodies, shaft sections and similar tubular components are common in mining workshop maintenance. They share a geometry that creates a specific handling hazard: round, smooth surfaces that roll, slip or swing unpredictably when lifted, moved or set down.

THE TUBULAR GEOMETRY PROBLEM

A worker gripping a cylindrical component cannot achieve the same hand stability as with a flat or profiled surface. The round surface offers no natural resistance to rotation. If the component shifts in the grip, the hand may roll or slide — into the path of the rolling component, or into an adjacent structure.

For longer tubular sections, the balance point shifts as the component is moved. A pipe lifted at one point becomes a lever. The worker adjusts grip repeatedly to compensate — each adjustment a potential exposure moment.

PRIMARY TUBULAR EXPOSURE

Roll, Slip & Crush on Cylindrical Surfaces

Component rotates in grip. Hand slides onto roll path. Component rolls onto fixed surface with hand underneath. Or: grip lost, component drops onto foot/hand below.

THE ENGINEERED INTERFACE

PSC PRODUCT

PSC Handle-Tech Pipe Lifter

Provides a designed interface for lifting and moving pipe and tubular components. The tool's geometry is matched to the component's profile — replacing a friction hand-grip with a positive mechanical interface. Suitable for workshop and field maintenance handling of pipe sections and cylindrical components.

PSC PRODUCT

PSC Tubular Guider

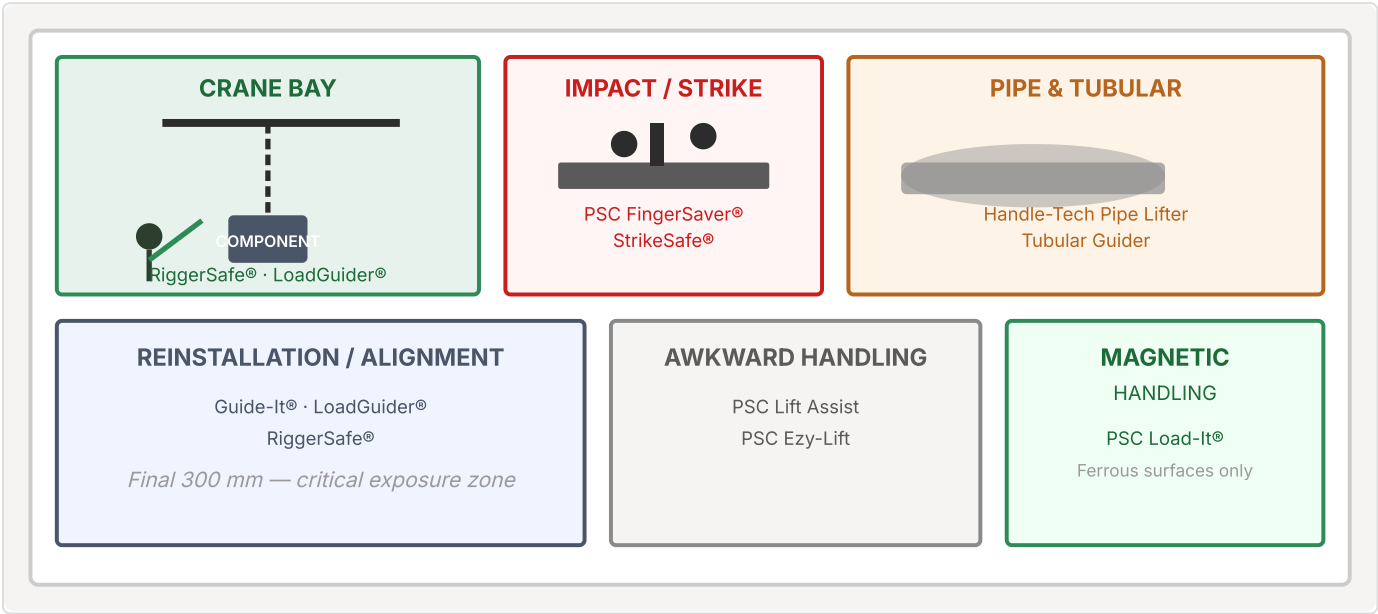
Where guidance and directional control of a tubular component is required during movement or positioning — rather than the primary lift — the Tubular Guider provides the control interface. Application review confirms compatibility with the specific tubular geometry.

These tools address workshop and maintenance handling of pipe and tubular components. They are not intended to replace specialised pipe-industry handling equipment where that exists. Application review required for diameter range, weight and surface condition.

Workshop Exposure Map

One mine workshop — the hand exposure zones and applicable PSC/HSF families

A single mining maintenance workshop contains multiple distinct hand-exposure zones. This map summarises the zones, their primary exposure types, and the PSC/HSF tool families that may apply.



Workshop exposure zones are illustrative — actual layout varies by site. Application review maps zone-specific tool selection to confirmed task and load parameters.

PART V

Mobile Equipment Maintenance

Haul trucks, excavators, loaders and dozers create maintenance demands at a scale that amplifies every hand-exposure risk. This section addresses only those tasks where the PSC/HSF range has a credible intervention.

Pages 32 – 36



Working Around Mining Equipment

Scale, access and component weight — the mobile-equipment maintenance context

A 300-tonne haul truck contains hundreds of maintenance points. Its components are large, heavy and expensive. Access is often awkward — below decks, inside wheel arches, beneath undercarriages, around engine bays. The combination of component scale, difficult access and repetitive maintenance cycles creates a hand-exposure environment that is more demanding than a general workshop.

WHAT MAKES MOBILE EQUIPMENT DIFFERENT

- **Component scale:** Wheel assemblies, axles, bucket attachments and undercarriage components may weigh hundreds of kilograms
- **Access geometry:** Workers must often reach into confined or overhead positions to handle components
- **Height:** Many maintenance points are at height — requiring working from platforms or scaffolding
- **Shutdown pressure:** Mobile equipment downtime has high financial cost — maintenance is often time-pressured
- **Large pins:** Track pins, bucket pins and GET pins are larger and heavier than typical workshop struck tools

THE SCOPE OF THIS CHAPTER

This chapter does not address all mobile-equipment maintenance hazards. It addresses only the tasks where the PSC/HSF range has a credible potential intervention:

- Handling and guiding heavy component removal and reinstallation
- Large-scale pin and impact work
- Hose, pipe and cylindrical component handling during maintenance

Where PSC/HSF does not have an appropriate intervention for a specific mobile-equipment maintenance task, this guide does not claim otherwise. See also Part VI, page 39.

THE MOBILE-EQUIPMENT PRINCIPLE

"The same hand-exposure mechanisms that exist in the workshop exist in the field — at greater scale, under more time pressure, with more difficult access."

Heavy Parts & Assemblies

Wheel assemblies, GET, undercarriage — stand-off control at scale

The heaviest recurring component-handling tasks in mobile equipment maintenance involve wheel assemblies, ground-engaging tools (GET), bucket components and undercarriage parts. For the larger assemblies considered here, mechanical lifting assistance would normally be involved. The exposure is not the weight itself; it is what the worker does with their hands while the crane or hoist holds the component.

THREE HIGH-EXPOSURE SCENARIOS

Wheel Assembly RemovalGUIDE	GET / Bucket ComponentsALIGN	Undercarriage ComponentsALIGN
A crane supports the wheel assembly as it separates from the hub. The assembly is large and heavy. Workers guide it clear of the hub and surrounding structure. Intervention: HSF RiggerSafe® or PSC LoadGuider® provides stand-off guidance as the assembly swings free.	Bucket teeth, adapters and side cutters must be positioned and aligned during installation. Workers place their hands to guide these heavy ferrous components into their mating points. Intervention: PSC Guide-It® for alignment. PSC Load-It® where ferrous geometry permits magnetic engagement (application review required).	Track shoes, rollers and idlers during removal/installation. Access is from below. Workers reach under the machine or into the undercarriage to guide heavy components. Intervention: Stand-off guidance where access geometry permits. Application review essential — many undercarriage positions may not be compatible.

THE ACCESS CONSTRAINT

Mobile-equipment maintenance often involves very constrained access — below the machine, inside the wheel arch, against the frame. Not all access geometries are compatible with a stand-off pole. Application review must confirm whether the required stand-off distance is achievable in the specific location before any tool is selected.

Pin & Impact Work — Heavy Scale

Track pins, bucket pins and GET pins — PSC FingerSaver® · StrikeSafe®

The pin and impact work described in Part IV (workshop scale) is replicated in mobile equipment maintenance — at larger scale, in more difficult access positions, and with heavier hammers and larger pins.

Track pins, bucket pins and GET attachment pins are among the heaviest struck-tool applications in the mining industry. Large mining equipment pins — track pins, bucket pins and GET attachment pins — are substantially larger and heavier than typical workshop struck tools. Driving them requires multiple workers and substantial hammer energy. The holder's position — hand near the face of the pin as blows are delivered — carries significant injury risk.

WORKSHOP VS LARGE MOBILE EQUIPMENT — QUALITATIVE COMPARISON

Factor	Workshop Scale	Large Mobile Equipment Scale
Pin and struck-tool format	Smaller-format pins and struck tools	Larger-format pins and struck tools
Strike energy	Moderate to high	Potentially higher — heavier-duty application
Working position	Generally more accessible	Frequently more constrained access
Tool sizing requirement	Task-specific holding tool required	Application-specific tool sizing required — standard configurations may not suit

PSC/HSF INTERVENTION

PSC PRODUCTS — STRIKE PROTECTION

PSC FingerSaver® / StrikeSafe®

The remote holding principle from Part IV applies directly to mobile-equipment pin work. An application review confirms compatibility with the specific pin geometry, access position and hammer configuration in use.

Note: Large-format mining pins may require specific tool sizing that differs from standard workshop applications. Application review must confirm compatibility before any trial.

THE PRINCIPLE IS CONSTANT — THE APPLICATION VARIES

The fundamental exposure remains the worker holding a struck object within the strike zone. Scale changes the application and tool-selection requirements; it does not change the engineering principle of separating the hand from the strike zone. Do not assume that standard PSC FingerSaver® or StrikeSafe® configurations automatically suit every large mining pin. Application review required.

Mobile Maintenance Application Matrix

Task → hand function → exposure → potential PSC/HSF intervention

Task	Hand Function	Exposure Type	Potential Intervention	Note
Wheel assembly removal / installation	Guide · Align	Crush / pinch at hub	HSF RiggerSafe® / PSC LoadGuider®	Access geometry must permit stand-off
GET / bucket tooth positioning	Align · Guide	Pinch at mating surface	Guide-It® / Load-It® (if ferrous)	Magnetic: application review required
Track pin removal / installation	Hold (struck)	Strike / crush at pin face	PSC FingerSaver® / StrikeSafe®	Confirm compatibility with pin diameter
Bucket pin driving	Hold (struck)	Strike — high energy	PSC FingerSaver® / StrikeSafe®	Large-format review essential
Hydraulic hose handling / routing	Guide · Align	Pinch at fittings / structure	PSC Tubular Guider / PSC Handle-Tech Pipe Lifter	Hose diameter and routing access
Undercarriage component handling	Guide · Align	Crush — confined access	Application review — access dependent	Many positions not compatible
Engine / transmission component removal	Guide · Stabilise	Crush / swing during extraction	HSF RiggerSafe® / PSC LoadGuider®	Access and swing path must be assessed

This matrix maps tasks to potential interventions only. Application review is required for every row before a tool is selected or trialled. Access geometry, component configuration and site conditions determine feasibility.

Important limitation: Mobile equipment maintenance frequently involves access geometries that do not permit the use of stand-off poles. Where stand-off distance is not achievable, the PSC/HSF range may not have an appropriate intervention. This guide does not claim otherwise.

PART VI

Fixed Plant & Process Maintenance

Crushers, screens, conveyors and feeders contain many hazards. This section addresses only those component-handling and positioning tasks within fixed-plant maintenance where the PSC/HSF range offers a credible intervention.

Pages 37 – 41

Where PSC/HSF Fits in Fixed Plant

A deliberately scoped view — not a fixed-plant safety guide

Fixed process plant — crushers, screens, feeders, conveyors, cyclones, thickeners, pumping systems — contains hundreds of hazard categories. Energy isolation, nip points, rotating parts, falling material, structural collapse, chemical exposure: these are the dominant fixed-plant safety concerns.

This guide addresses none of them. PSC/HSF is not a fixed-plant safety system. It is a set of hand-exposure elimination tools for specific manual handling and positioning tasks.

THE DEFENSIBLE TERRITORY IN FIXED PLANT

Within fixed-plant maintenance, there is a subset of tasks that share the characteristics of the tasks addressed throughout this guide: a worker's hand becomes the primary interface between a person and a component during a manual handling or positioning activity.

Guards & Panels POSITION Heavy steel guards, access covers and grating removed and reinstalled during maintenance. Large flat ferrous panels handled by hand grip — drop/pinch risk during placement.	Maintenance Components ALIGN Components being reinstalled during crane maintenance of crushers, screens and other fixed equipment — alignment and seating exposure identical to workshop scenarios.	Conveyor Components GUIDE Component handling tasks during conveyor maintenance — not conveyor safety broadly, but the manual handling of components within that maintenance context.
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THE EDITORIAL RULE FOR THIS CHAPTER

Each page in this section addresses only a specific manual-handling or positioning task within fixed-plant maintenance. Where a page cannot identify a credible PSC/HSF intervention for a stated task, the task is not included. Page 41 explicitly identifies fixed-plant exposures that fall outside the PSC/HSF intervention range.

Guards, Covers & Ferrous Components

PSC Load-It® · PSC MagHead — magnetic handling of suitable ferrous surfaces

Fixed-plant maintenance involves the routine removal and reinstallation of heavy steel guards, access covers, grating panels and wear liners. These are typically flat or near-flat ferrous steel components — sometimes weighing 50–200 kg — that must be lifted, moved and positioned during each maintenance cycle.

The conventional handling method is a hand grip on the panel edge — fingers curled under a steel plate, or palm on a flat surface with no positive attachment. The panel can slip, tilt or rotate, concentrating the drop/crush risk at the worker's grip points.

THE MAGNETIC INTERFACE ALTERNATIVE

Where a steel panel is ferrous, flat and accessible, a magnetic handling tool provides an alternative interface. The magnetic tool attaches to the panel face, providing a positive grip point that replaces the edge-grip or palm-grip hand position.

The worker's hands are on the tool handle — not on the panel edge. If the panel tilts or shifts, the worker's hands are not at the panel's edge where drop-crush risk concentrates.

PSC PRODUCTS

PSC Load-It® / PSC MagHead Family

Magnetic handling tools for suitable ferrous surfaces. Multiple configurations available for different panel sizes and weights. Application review confirms suitability.

SUITABILITY REQUIREMENTS

- ▣ **Ferrous material:** Steel panels — not aluminium, stainless, or coated surfaces where the coating prevents magnetic contact
- ▣ **Contact surface:** Reasonably flat and clean — paint, scale, debris affect magnetic grip
- ▣ **Temperature:** High-temperature panels (crusher wear liners removed hot) may affect magnetic performance
- ▣ **Geometry:** Panel size and shape must be compatible with tool configuration
- ▣ **Weight:** Tool's load capacity must be confirmed against panel weight with appropriate safety factor

Critical note: Magnetic attraction is not a lifting-rating claim. PSC Load-It® and MagHead tools are handling interfaces — they are not rated lifting devices. All lifts require appropriate rigging and a rated lifting system.

Component Positioning & Alignment

Crane reinstallation in fixed plant — Guide-It® · LoadGuider®

Fixed-plant maintenance regularly involves crane-assisted reinstallation of components — crusher mantles, screen decks, pump casings, bearing housings and similar. The alignment and seating requirements for these components are often precise. The exposure pattern is identical to the workshop reinstallation tasks described in Part IV: the hand guides the component into its mating surface.

THE FIXED-PLANT REINSTALLATION CONTEXT

Fixed-plant components are often installed in positions that limit access: above conveyor levels, inside crusher housings, within structural steelwork. The crane approach path may be congested. Landing surfaces may have alignment features — pins, keys, flanges — that require precise positioning.

Workers guide these components from the crane hook position to the seating point, maintaining alignment as the component descends. The Last 300 mm exposure applies here exactly as it does in the workshop.

THE CONSISTENT PRINCIPLE

"Fixed-plant reinstallation is workshop reinstallation — with more confined access and more complex approach geometry."

APPLICABLE PSC/HSF TOOLS

ALIGNMENT CONTROL

Guide-It® / LoadGuider®

Provides stand-off positional feedback and directional correction during the final approach and seating of fixed-plant components. Worker's hands remain on the pole throughout — not between the component and its mating surface.

APPROACH & ROTATION CONTROL

HSF RiggerSafe®

For the earlier stages of component positioning — orienting and directing the component toward its installation point before alignment begins.

Confined access may limit pole-tool operation in some fixed-plant locations. Access geometry must be confirmed during application review before tool selection.

Know When We Don't Have the Solution

Identifying a hand exposure does not mean PSC/HSF has the answer

"Identifying a hand exposure does not automatically mean that a PSC/HSF product is the appropriate control."

This page exists because credibility requires it. A guide that claims to have an intervention for every mining hand exposure is a product brochure, not a technical reference. There are exposures throughout fixed-plant and mining maintenance where the PSC/HSF range does not have a suitable answer.

EXAMPLES OF MINING EXPOSURES OUTSIDE THE PSC/HSF RANGE

Exposure	Why PSC/HSF Does Not Apply
Hand in conveyor nip point during cleaning/clearing	Energy isolation and guarding are the correct controls — not a handling tool
Hand injuries from rotating equipment contact	Guarding, LOTO and exclusion zones — outside our tool range
Hand burns from hot process material or surfaces	Temperature protection — PPE and process controls are the correct response
Hand injuries from explosive/blast proximity	Entirely outside our scope — specialist blast management controls
Chemical contact with reagents and process fluids	PPE and chemical handling controls — not a handling-tool application
Hand in confined-space access where no stand-off is possible	Geometry does not permit stand-off — engineering of access is the correct response
Repetitive strain from sustained manual operation	Ergonomic redesign and job rotation — beyond handling-tool scope

WHAT THIS MEANS IN PRACTICE

When conducting a site exposure assessment, the correct response to many hand-exposure findings will be: "PSC/HSF does not have the right tool for this." That is the correct response. Honesty about the scope of our tools makes the interventions we do have more credible — and more likely to be adopted where they genuinely apply.

PART VII

Specialised Handling

Magnetic handling of ferrous components, gas cylinder management, manual lifting interfaces and specialised remote-grip tools — each addressing a specific geometry and a specific exposure.

Pages 42 – 45

Magnetic Handling of Ferrous Components

PSC Load-It® · PSC MagHead — interface, suitability and limitations

Magnetic handling tools replace a friction hand-grip with a positive magnetic interface on suitable ferrous surfaces. They are applicable to a specific and well-defined set of mining tasks — and inappropriate for a similarly specific set of tasks where ferrous material, surface condition, geometry or temperature make magnetic contact unreliable or unsafe.

WHAT MAGNETIC HANDLING ACHIEVES

The magnetic interface allows the worker to handle a flat ferrous component — a plate, panel, cover, guard — with their hands on the tool handle rather than on the component edge or surface. The grip is positive and does not depend on friction. If the component tilts, the magnetic contact maintains the connection.

This specifically removes the hand from the component edge — where drop-crush exposure concentrates during conventional hand-grip handling.

PSC PRODUCTS

PSC Load-It® · PSC MagHead Family

Multiple configurations for different component sizes, weights and access geometries. Application review selects the appropriate configuration.

FULL SUITABILITY ASSESSMENT CHECKLIST

- **Material:** Must be ferrous steel — not aluminium, stainless, brass, plastic or coated surfaces where coating interrupts magnetic contact
- **Surface condition:** Clean, reasonably flat, free of scale or thick paint that would reduce magnetic contact
- **Geometry:** Tool footprint must be compatible with component surface area and profile
- **Temperature:** Magnetic performance degrades above Curie temperature — do not use on recently heated components without assessment
- **Weight:** Tool magnetic rating must exceed component weight with appropriate safety margin
- **Required control:** Confirm that magnetic interface provides the needed directional control for the task
- **Application review:** Mandatory before any trial

Magnetic attraction is not a lifting-rating claim. These are handling interfaces, not rated lifting devices.

Gas Cylinder Handling

PSC GasGrab® — a geometry-specific interface for a specific exposure

Gas cylinders are present throughout mine sites — in workshops, surface facilities, maintenance areas, laboratories and stores. The geometry of a gas cylinder creates a specific handling hazard: a smooth, round, heavy vessel with no natural hand grip, that rolls unpredictably if laid on its side and can tip without warning if standing.

The conventional method of moving a cylinder — tilting it onto its bottom edge and rolling it — places the worker's hands on the cylinder body, directly in the roll path, and creates repeated tipping and roll-away risk.

THE GAS CYLINDER EXPOSURE PATTERN

PRIMARY EXPOSURE 1

Roll-Over / Crush

Cylinder tilted for rolling loses balance. Falls onto worker's foot, leg or hand. Even a partially filled cylinder carries sufficient weight to cause serious injury from this mechanism.

PRIMARY EXPOSURE 2

Valve Strike

Cylinder falls or tips. Valve head strikes fixed structure. In certain circumstances, valve failure can cause rapid cylinder movement. Worker in close proximity — hand, arm or body in the potential strike zone.

PSC GASGRAB® — THE SPECIFIC INTERFACE

PSC GasGrab® provides an engineered grip interface for gas cylinder handling. The tool is designed around the cylinder's geometry — round, smooth, heavy — and provides a positive grip that replaces the bare-hand-on-cylinder approach.

PSC PRODUCT

PSC GasGrab®

Engineered cylinder-handling interface. Designed for the specific geometry of gas cylinders. Removes bare-hand contact from the cylinder surface during movement. Application review confirms compatibility with specific cylinder sizes in use on site.

PSC GasGrab® addresses handling-movement exposure. It does not replace cylinder securing, restraint or storage requirements. Standard cylinder safety protocols remain applicable.

Manual Lifting & Lift Assist

PSC Lift Assist · PSC Ezy-Lift — engineered interfaces for the actual lift

This page is not about ergonomics or manual handling weight limits. It is about the specific hand-exposure moment that occurs when a worker lifts a component that lacks a natural hand hold — or where the available grip points place the hand in a compromised position during the lift.

WHEN LIFT ASSIST APPLIES

Lift assist tools apply where:

- The component's geometry provides no natural hand hold — requiring grip on a sharp edge, a smooth surface or in a position that compromises hand stability during the lift
- The lift requires the hand to be positioned near the bottom of the component — directly in the crush zone if the component is set down or dropped
- The component's weight, combined with awkward geometry, creates instability during the lift that requires repeated hand repositioning
- The task is repetitive — the exposure accumulates across many identical lifts

THE APPLICABLE PSC/HSF TOOLS

PSC PRODUCT

PSC Lift Assist

Provides an engineered grip point on components that lack one. The tool interface replaces the improvised grip on an unsuitable surface. Worker's hands are on the tool handles — in a position designed for the task.

PSC PRODUCT

PSC Ezy-Lift

A complementary lift interface for specific component configurations where PSC Lift Assist geometry does not match the component profile. Application review determines which tool applies.

THE DIAGNOSTIC QUESTION

The correct question is not "Is this component too heavy to lift?" — it is "Does the component's geometry force the worker's hands into a position that creates exposure during the lift?" If yes, a lift-assist interface may be the appropriate engineering response.

Application review required. Component dimensions, weight, material, surface condition and lift geometry all determine compatibility. Manual handling weight guidelines remain applicable regardless of lift-assist tool use.

PART VIII

Choosing the Intervention

This section stops being an application guide and becomes an engineering methodology. How to diagnose, select, assess and validate a hand-exposure intervention — without starting with the product.

Pages 47 – 51

Don't Start With the Product

The diagnostic method that precedes every selection

Start with what the hand is doing.

The most common error in hand-safety intervention is selecting a product before fully understanding the task. A tool is selected because it seems similar to the task, or because it was used elsewhere on site, or because it was the first one shown in a catalogue. The result is frequently a product that does not match the actual function the hand was performing — and a "trial" that fails not because the engineering principle is wrong, but because the wrong tool was chosen.

THE CORRECT SEQUENCE



THE EIGHT HAND FUNCTIONS — AND WHAT EACH NEEDS

The Hand Is...	The Required Engineering Function
Pushing	Remote push — a rigid interface that transmits directional force to the load from a stand-off position
Pulling	Remote pull or engagement — a tool that hooks, grips or attaches to the load and pulls from stand-off
Holding	Remote holding — a tool that maintains the position of the held object while no hand is in the strike or crush zone
Guiding	Stand-off guidance — an interface that transmits directional feedback and correction from away from the load surface
Retrieving	Remote retrieval — a tool that reaches or extends to recover a line, load or object without the worker approaching
Aligning	Remote positioning — an interface that provides positional feedback and fine correction from stand-off during mating/seating
Lifting	Engineered grip interface — a tool that provides a designed grip point in place of an improvised or geometry-forced hand position
Stabilising	Stand-off stabilisation — a pole or tool that arrests unwanted movement without placing the hand between the load and a fixed surface

Tool Family Decision Tree

A logic path from task observation to tool family — not to a specific product SKU

This decision tree guides you toward a tool *family* for an application review. It does not make a final selection — that requires confirming load geometry, weight, access and site conditions.

Is the object suspended from a crane or hoist?

YES

Is rotational/directional control over long travel required?

YES

→ Anti-Tangle Tagline · Application review

NO

Is fine positional guidance in final approach required?

YES

→ HSF RiggerSafe® / PSC LoadGuider® / PSC Guide-It® · Application review

NO

→ Tagline or LoadGrab® · Identify specific engagement requirement

NO

Is a worker holding a struck tool (pin, punch, chisel)?

YES

→ PSC FingerSaver® / StrikeSafe® / Chisel & Punch Holder · Application review

NO

Is the component ferrous and does the surface allow magnetic contact?

YES

→ PSC Load-It® / MagHead · Full suitability assessment required

NO

Is it a tubular / cylindrical component?

YES

→ PSC Handle-Tech Pipe Lifter / PSC Tubular Guider / PSC GasGrab® (if cylinder) · Application review

NO

→ PSC Lift Assist / PSC Ezy-Lift for awkward geometry · OR · Application review — may be outside PSC/HSF range

Application Review Checklist

The twelve parameters to confirm before any trial

Before a PSC/HSF tool is trialled in any mining application, these twelve parameters should be confirmed. They determine whether the selected tool is appropriate for the specific task — and what conditions or limitations apply.

- **Object / load:** What is being handled, guided or held? Component identity, dimensions, weight.
- **Geometry:** Shape profile — flat, cylindrical, asymmetric, elongated. Does the tool interface match?
- **Weight:** Confirmed weight, centre of gravity, load distribution.
- **Material:** Ferrous, non-ferrous, coated, painted — relevant for magnetic tools.
- **Movement type:** Suspended, rolling, sliding, static hold, struck — determines tool family.
- **Control required:** Push, pull, hold, guide, retrieve, align, stabilise — maps to tool function.
- **Access:** Can the required stand-off distance be achieved in the actual work position?
- **Stand-off required:** What distance between worker and load is needed? Does the tool reach?
- **Surrounding structures:** Any obstructions that affect tool operation or worker position?
- **Temperature / environment:** Heat, moisture, contamination — affects magnetic and grip tools.
- **Operator position:** Where does the worker stand? Is it a safe position during tool use?
- **Task frequency:** How often is this task performed? High frequency amplifies the value of an effective intervention.

AFTER THE CHECKLIST

If all twelve parameters confirm compatibility — proceed to a controlled trial. If any parameter raises a concern, the concern must be resolved or the tool selection revisited before trial. A confirmed incompatibility is a valid result: it narrows the selection correctly and prevents a failed trial from discrediting a valid engineering approach.

The application review is not a bureaucratic requirement. It is the engineering step that determines whether the selected tool can actually perform the required function in the actual task environment.

Exposure-to-Intervention Master Matrix

Mining application → hand function → exposure → potential intervention family

This matrix maps the principal mining applications in this guide to PSC/HSF tool families. It is a starting point for application review — not a final specification. Use the legend at the foot of each page.

SUSPENDED LOADS, RIGGING & LOAD POSITIONING

Mining Application	Hand Function	Exposure	Potential Intervention	Rating
Suspended load guidance — workshop crane bay	Push · Guide · Stabilise	Crush / struck-by adjacent to moving load	HSF RiggerSafe® / PSC LoadGuider®	●
Long-travel crane lift — rotational control	Push · Pull · Stabilise	Rotation / drift during travel	PSC LoadGuider® Anti-Tangle Tagline · HSF RiggerSafe® (conditional)	●
Tagline retrieval after load landing	Retrieve	Worker approaches recently landed load to recover line	PSC Tagline Retriever	●
Remote engagement at specific load point	Pull · Retrieve	Hand reaches to specific point on suspended / landed load	HSF LoadGrab®	●
Truck / trailer load landing — pinch zone	Guide · Align	Pinch / crush as load contacts trailer deck	HSF RiggerSafe® / PSC LoadGuider® / PSC Guide-It®	●
Last 300 mm — final approach and alignment	Guide · Align	Critical crush-risk zone as load closes on receiving surface	PSC Guide-It® / PSC LoadGuider®	●

WORKSHOP MAINTENANCE — COMPONENT HANDLING & STRIKE WORK

Mining Application	Hand Function	Exposure	Potential Intervention	Rating
Workshop component removal — crane guidance	Guide · Stabilise	Component swings free from mount	HSF RiggerSafe® / PSC LoadGuider®	●
Component reinstallation — alignment and seating	Guide · Align	Hand between descending component and fixed mount	PSC Guide-It® / PSC LoadGuider®	●

Exposure-to-Intervention Master Matrix

Specialised handling, magnetic, tubular, lift assist and fixed plant

SPECIALISED HANDLING — LIFT / GUIDE / POSITION

Mining Application	Hand Function	Exposure	Potential Intervention	Rating
Awkward component — geometry-driven grip exposure	Lift	Grip instability from profile → hand repositions into hazard zone	PSC Lift Assist / PSC Ezy-Lift	●
Pipe / tubular / cylinder body handling	Lift · Guide	Roll, slip and crush on smooth cylindrical surface	PSC Handle-Tech Pipe Lifter / PSC Tubular Guider	●
Gas cylinder movement and relocation	Lift · Guide	Roll / tip / drop from smooth cylindrical vessel without natural grip	PSC GasGrab®	●

MAGNETIC HANDLING — FERROUS SURFACES (SUITABILITY CONDITIONAL)

Mining Application	Hand Function	Exposure	Potential Intervention	Rating
Steel guard / cover / panel — removal and reinstallation	Lift · Guide	Drop / edge-crush from bare-hand grip on heavy ferrous panel	PSC Load-It® / PSC MagHead — ferrous, clean surface, compatible geometry required	●
Flat ferrous component alignment and positioning	Guide · Align	Hand between ferrous component and receiving surface	PSC Load-It® / PSC MagHead (conditional) · PSC Guide-It® / PSC LoadGuider®	●

FIXED PLANT MAINTENANCE

Mining Application	Hand Function	Exposure	Potential Intervention	Rating
Fixed plant component reinstallation — crane assisted	Guide · Align	Hand between component and fixed mating surface	PSC Guide-It® / PSC LoadGuider® — access geometry must permit stand-off	●
Conveyor / screen component	Guide · Lift	Component	HSE PiggerSafe® / PSC	●

PART IX

From Exposure to Site Standard

Finding an exposure is the beginning. Trialling a tool is the middle. Documenting the result and finding the next application is how a single intervention becomes a site standard — and a site standard becomes a culture.

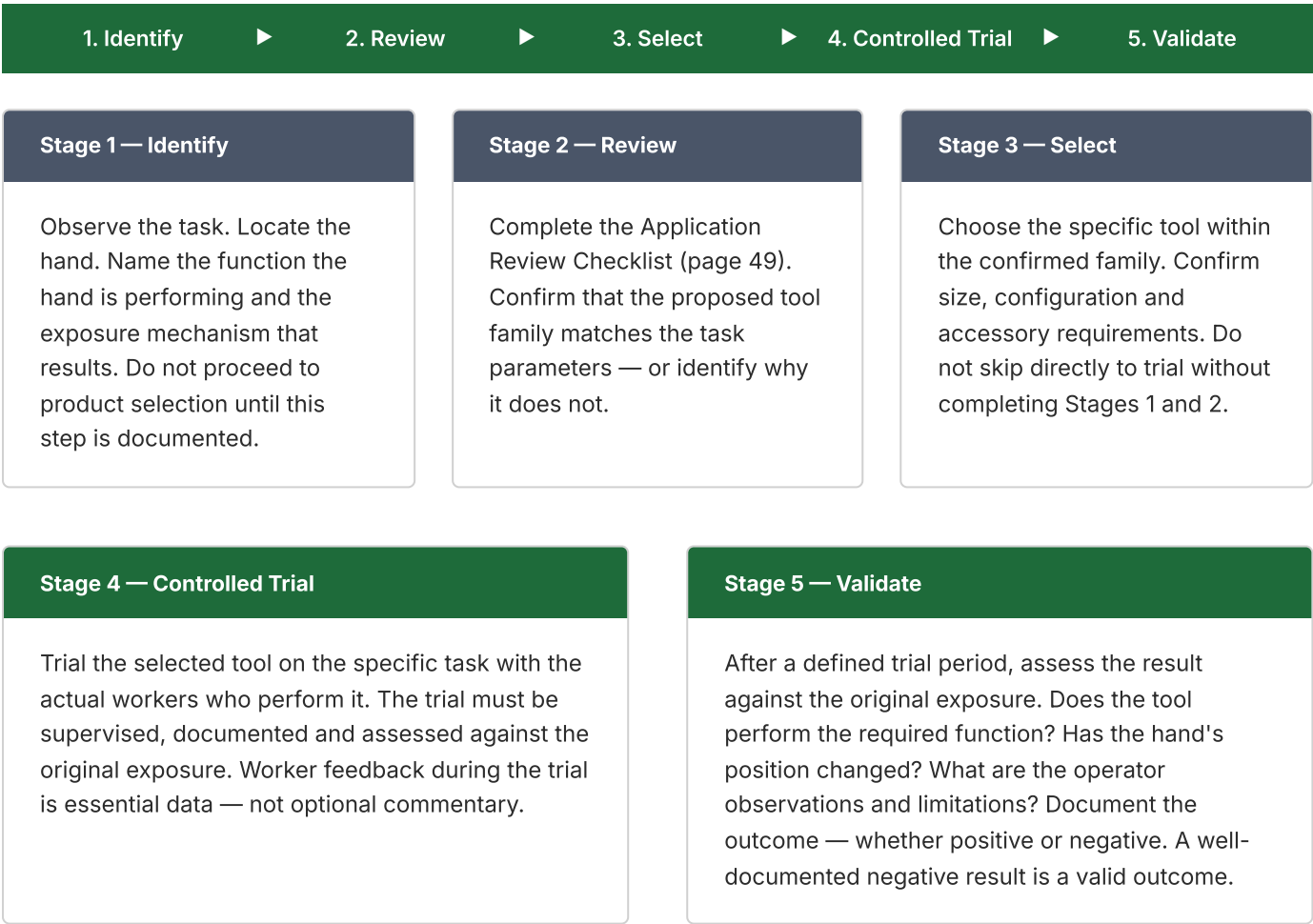
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Trial, Don't Assume

The five-stage process from identification to validated application

A tool that matches an application on paper must still be validated in the field. The conditions of an actual mine site — access geometry, load characteristics, operator familiarity, environmental factors, task pace — always differ from a generic description. The controlled trial bridges that gap.

THE FIVE-STAGE PROCESS



Document the Application

A one-page template for recording a hand-exposure intervention trial

Documentation converts a single successful trial into a repeatable site standard. Without documentation, the knowledge that a particular tool works in a particular task lives only in the memory of the workers who were present. With documentation, it becomes an instruction.

APPLICATION STUDY TEMPLATE

Field	Content
Task description	What the task involves — the operation, the equipment, the location
Where was the hand?	The physical location of the worker's hand during the exposure moment
Why was the hand there?	The function the hand was providing — the reason it was in that position
Previous method	How the task was performed before the trial — conventional approach
Tool trialled	Specific PSC/HSF tool, model, size and configuration used
Trial conditions	Number of repetitions, duration, supervising person, date
Trial result	Did the tool perform the required function? What changed in the hand's position?
Operator feedback	What the workers who used the tool observed — positive and negative
Limitations identified	Any task configurations, load geometries or conditions where the tool was less effective
EHS review	Site EHS assessment of the trial outcome and recommendation for site-standard adoption
Next step	Adopt as standard / extend trial / modify selection / not suitable — with reason

WHY DOCUMENTATION MATTERS FOR THE NEXT APPLICATION

A documented application study becomes the evidence base for the next intervention on the same site. It demonstrates that the methodology works, that operator feedback was collected, and that the result was assessed honestly. That evidence builds the credibility that makes the next adoption faster.

One Mine, Many Applications

The cumulative opportunity across a single mine site

A single mine site contains the full range of applications described in this guide — and often many within the same working shift. Rigging in the crane bay, pin work in the workshop, load positioning on the truck bay, conveyor component handling in the fixed plant, cylinder movement in the store. Each is a separate exposure. Each requires its own application review.

THE MINE SITE APPLICATION MAP

Mine Area	Typical Application	PSC/HSF Family
Workshop — crane bay	Suspended load guidance, component removal/reinstallation	HSF RiggerSafe® / PSC LoadGuider® / PSC Guide-It®
Workshop — impact bench	Pin driving, punch, chisel, drift work	PSC FingerSaver® / StrikeSafe®
Workshop — pipe area	Pipe section and cylinder body handling	PSC Handle-Tech Pipe Lifter / PSC Tubular Guider
Truck bay / laydown	Heavy component landing and positioning	HSF RiggerSafe® / PSC LoadGuider® / PSC Guide-It®
Mobile equipment field	Track pin, bucket pin, wheel assembly maintenance	PSC FingerSaver® / RiggerSafe® (access-dependent)
Fixed plant — crusher	Wear liner and guard handling, component reinstallation	PSC Load-It® / LoadGuider® / Guide-It®
Fixed plant — conveyor	Component handling during maintenance	RiggerSafe® / PSC Load-It® (ferrous-dependent)
Stores / gas area	Gas cylinder movement	PSC GasGrab®
Any area — shutdown	Intensive maintenance of all types under time pressure	Full PSC/HSF range — pre-shutdown review recommended

THE CUMULATIVE PRINCIPLE

"Find one exposure. Solve it. Document it. Find the next. The mine site that addresses one application well has already demonstrated the methodology that makes every subsequent application faster to adopt."

HAND SAFETY FIRST® · ENGINEERING DOCTRINE

THE THREE QUESTIONS

**Where is
the hand?**

Why is it there?

**Can that function be preserved while moving the
hand away?**

**ENGINEER THE HAND
OUT OF THE HAZARD®**

Product Family Quick Reference

Load control and rigging tools — not a product catalogue

This reference maps each tool family to its principal control function and typical mining application. Application review is required before any tool is selected or trialled on site.

LOAD CONTROL — PUSH / PULL / GUIDE / ALIGN / RETRIEVE

Product	Brand	Principal Control Function	Typical Mining Application
HSF RiggerSafe®	HSF	Stand-off push/pull — suspended load guidance and stabilisation	Crane lifts in workshops, truck bays, shutdown maintenance, fixed-plant reinstallation
PSC LoadGuider®	PSC	Stand-off load guidance and directional control	Component approach and guidance during crane lifts; reinstallation alignment
PSC Guide-It®	PSC	Fine positional guidance — final approach and seating (Last 300 mm)	Last 300 mm alignment, reinstallation seating, fixed-plant component positioning
HSF LoadGrab®	HSF	Remote engagement at a specific load point — pull / retrieve	Engaging handles or fittings on suspended or landed loads where push/pull does not apply

TAGLINE & LINE RETRIEVAL SYSTEMS

Product	Brand	Principal Control Function	Typical Mining Application
PSC LoadGuider® Anti-Tangle Tagline	PSC	Remote rotational and directional load control during crane travel	Long-travel crane lifts, outdoor lifts, multi-worker load management
PSC Tagline Retriever	PSC	Stand-off tagline retrieval after load landing — retrieve function	Recovering taglines from around landed loads without approaching the load

Product Family Quick Reference

Strike protection tools — not a product catalogue

STRIKE PROTECTION — HOLD FUNCTION

Product	Brand	Principal Control Function	Typical Mining Application
PSC FingerSaver®	PSC	Remote holding of struck tool — holder's hand out of strike zone	Drift pin, punch and chisel work across workshops and mobile-equipment maintenance
StrikeSafe®	TechMRO	Remote holding interface for struck-tool applications	Alternative remote-holding configuration for specific struck-tool geometries — application review required
PSC Chisel & Punch Holder	PSC	Alignment and remote holding of chisels and punches during strike	Chisel and punch operations in workshop and field maintenance

Product Family Quick Reference

Magnetic handling and tubular tools — not a product catalogue

MAGNETIC HANDLING — FERROUS SURFACES ONLY

Product	Brand	Principal Control Function	Typical Mining Application
PSC Load-It®	PSC	Magnetic interface — ferrous surface handling and positioning (not a rated lift)	Steel guards, panels, wear liners and flat ferrous components in fixed plant and workshops
PSC MagHead	PSC	Magnetic handling interface for varying ferrous component geometries	Ferrous component handling where PSC Load-It® footprint does not suit the surface profile

Magnetic attraction is not a lifting-rating claim. Suitability requires ferrous material, compatible surface, appropriate geometry and temperature. Application review mandatory.

TUBULAR & PIPE HANDLING — LIFT / GUIDE FUNCTIONS

Product	Brand	Principal Control Function	Typical Mining Application
PSC Handle-Tech Pipe Lifter	PSC	Engineered lift interface matched to tubular component geometry	Pipe sections, hydraulic cylinder bodies and shaft sections in workshops and field maintenance
PSC Tubular Guider	PSC	Directional guidance of tubular components during movement and positioning	Controlling and directing pipe and tubular components during handling tasks

Product Family Quick Reference

Lift assist, specialised handling and trademark acknowledgements

LIFT ASSIST & AWKWARD HANDLING — LIFT FUNCTION

Product	Brand	Principal Control Function	Typical Mining Application
PSC Lift Assist	PSC	Engineered grip interface for components lacking a natural hand hold	Awkward components — across workshops, stores and maintenance areas where geometry drives exposure
PSC Ezy-Lift	PSC	Lift interface for specific component profiles where standard grip does not apply	Complementary to PSC Lift Assist where component profile requires a different approach

SPECIALISED HANDLING

Product	Brand	Principal Control Function	Typical Mining Application
PSC GasGrab®*	PSC	Geometry-specific handling interface for gas cylinders — replaces bare-hand grip on smooth cylindrical vessel	Gas cylinder movement and relocation in workshops, stores and surface facilities

Trademark Acknowledgements: GasGrab® is a trademark of Arrow Castings. PSC GasGrab® is the PSC product identity under which this tool is presented in this publication. StrikeSafe® is a product of TechMRO. All other trademarks and registered trademarks referenced in this publication are the property of their respective owners. Application review required for all tools before selection and trial. This reference is a thinking tool, not a product specification.

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