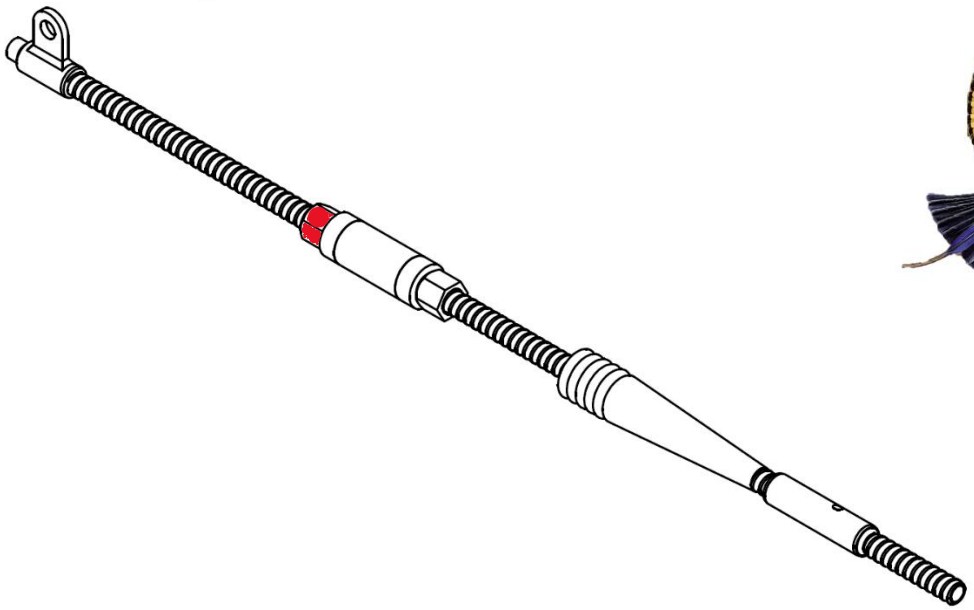

MINERIGHT PACKER SYSTEM (MPS)

Installation Manual

SWI-01-09

Revision 9 (14/10/2025)

MINRIGHT PACKER SYSTEM IS PATENT PROTECTED

PATENT NO: 2012216356

1 INTRODUCTION

The **Mineright Packer** is a mechanical packer for use in underground mining that can be installed into a predrilled hole with a Jumbo Drill to stop high temperature, high-pressure, high-volume water inflows. Once the packer has been installed, it can subsequently be used to grout through to seal the inflow permanently.

The system can also be used to seal intersected diamond drill holes producing water of unknown origin from a safe location.

The **Mineright Packer** is a quick, safe and easy to use product that removes the necessity for a traditional hands-on approach to stopping high pressure and volume inflows when encountered.

1.1 Manual Purpose

The following installation manual is a guide to assist with the correct installation of a **Mineright Packer.**

The manual serves the following purposes:

- Provides important technical information about the **Mineright Packer** and its associated components.
- Serves as a guide for **Mineright Packer** installation in a safe and efficient manner.

The **Mineright Packer** should only be assembled and installed by those deemed competent through training and qualification. Jumbo operators should also hold relevant licensing as required by local laws and site policies to operate these machines.

1.2 Manual Scope

The instructions contained within this installation manual are to be read and understood fully by those handling, assembling, and installing the **Mineright Packer.**
Mineright Packers are manufactured according to Mineright's strict Quality Management Systems and must not be modified in any way or utilised for alternate unspecified purposes. If in doubt, please contact Mineright directly at:

Mineright Australia www.mineright.com.au

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2 MINERIGHT PACKER SYSTEM INSTALLATION METHODOLOGY

2.1 PREPARATION

When drilling a probe hole where water of unknown pressure and volume may be present / intersected, the following steps should be undertaken prior to drilling:

1. Ensure drive / work area is levelled and ground conditions are ok to provide a safe platform to work from should there be an inflow of water and the drive floor is not clearly visible.
2. A water pump capable of dealing with the anticipated inflow is installed in a suitable location adjacent to the work area.
3. A "butt free" location for the probe hole collar located 1.5m from the floor is marked on the face.
4. If no ground support is already installed at the face, a split-set or resin bolt is required to be installed in such a way that it will not intersect the probe hole once drilled (approx. 300-400mm above / to one side of the probe hole). This then provides a means of anchoring the packer once installed to prevent blowing out of the hole.
5. A suitably sized packer is pre-assembled and readied with the appropriate dolly and couplings. This should be in close proximity in the event that it is required. Refer to supplied drawings for packer assembly instructions.
6. A suitably sized Kwikstop *Tapered Plug* is installed onto the development steel on the second jumbo boom (non-drilling). Orientate this boom close by and at the same angle of inclination of the drilling boom for quick plug installation. A second tapered plug should be made available if there is a machine malfunction / other installation issue.
7. The drilling jumbo boom is aligned with marked hole. Boom angle is inclined slightly (if water is intersected it will then discharge downwards and not directly at the operator). Hole dip angle and orientation is recorded (to aid packer installation as high-pressure water may mask operator vision).
8. Ensure correct packer size is chosen to match drill hole size. Packer rubbers and stabilisers are colour coded to match common drill bit sizes:

MINERIGHT PACKER SIZES					
Packer Name	Grommet Diameter (mm)	Stabiliser Diameter (mm)	Minimum Hole size (mm)	Maximum hole size(mm)	Colour
45mm Packer	43	46	**45**	48	BLACK
54mm Packer	51	n/a	**54**	57	ROYAL BLUE
64mm Packer	61	64	**64**	67	BLUE
76mm Packer **NQ**	72	77	**75.9**	79	YELLOW
89mm Packer	86.5	90	**89**	92	GREY
96mm Packer **HQ**	92	97	**95.8**	100	ORANGE
102mm Packers	97	103	**102**	104	GREEN
123mm Packer **PQ**	117	124	**122.3**	125	NATURAL
Tapered Plug Name	Lead diameter (mm)	Max Diameter (mm)	Minimum Hole size (mm)	Maximum hole size(mm)	
T38 30-112mm	30	112	35	96	RED
T38 30-150mm (RC)	30	150	35	140	TAN

Table 1: Colour Coding of different hole sizes

9. Drilling of hole commences as per approved drill plan.

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2.2 KWIKSTOP TAPERED PLUG-TEMPORARY WATER STOP

When the probe hole is drilled and water is intersected,

1. Retrieve the drilling boom as quickly as possible if drill depth is adequate to suit the overall length of the packer, stabiliser, and check valve assembly. Probe hole **must** be drilled to a **minimum** depth to accommodate the overall packer assembly length or until competent ground is encountered to collar the packer safely. When installing a 64mm packer, should the hole size be less than 64mm then the hole will need to be reamed to this diameter.
2. Once drilling boom is removed, the alternate boom with the Kwikstop *Tapered Plug* installed is utilised to stem the water flowing from the drill hole.
    i. **Do not use percussion or rotation when plugging the drill hole.**
    ii. **Using the feed lever of the Jumbo insert plug slowly and in a controlled manner into the hole. Minor water may leak from the collar. This is not concerning.**
3. IMPORTANT: ***Tapered plugs*** serve to stem water only, not completely stop it. The plugs are to ensure panic does not ensue and the installed pumping system is not overwhelmed by large volume inflows.
4. At this stage a supervisor can be contacted and informed decisions on plugging the hole can be undertaken.

2.3 MINERIGHT PACKER PREPARATION

Once the water flow is successfully restricted with the ***Tapered Plug***, the Mineright Packer preparation begins:

1. Drill steel (with bit) and centraliser bushes are removed from the drilling boom. This is now utilised for the Mineright packer installation.
2. Install the appropriate installation dolly onto the shank of the drifter. The socket end of the dolly is **painted RED**.
3. Place the pre-assembled Mineright packer on the boom slider ensuring one end is supported by the centraliser housing. Seat the packer nut, **painted RED**, into the socket on the end of the dolly, also **painted RED**.
4. Using the drifter, position the end of the packer out through the front of the centraliser 300-400mm in preparation for installation of the packer in the drill hole.
5. Retract the feed extension as far as possible and use the boom extension to get as close to face as possible. (once lined up the feed extension should only be used to get the packer close to the face and into the drilled hole making water)
6. Boom angle is orientated to match drill hole angle to ensure packer is not damaged during installation. (this angle is as per **step 2.1.7** and can be gauged from the quick stop plug installation angle)
7. Mineright packer is now ready for installation.

2.4 MINERIGHT PACKER INSTALLATION

The temporary ***Tapered Plug*** is withdrawn from the probe hole and the boom is moved from the direct vicinity of the hole collar area to enable packer installation.

1. The packer is positioned as close as possible to the hole. **Water may be obscuring vision at this point and care should be taken.** Use the feed extension to position the tip of the packer into the hole.
    - IMPORTANT: The buffer should try to get as close to the face **BUT** not rest against the face as the boom needs to remain flexible.
2. Once the leading end of the packer is successfully positioned into the hole, use the drifter feed to push the packer deeper into the hole in a controlled manner.
    - IMPORTANT: **Do not use percussion or rotation while inserting the packer in the hole.**
3. Push the packer into the hole to the required depth whilst ensuring an adequate length of the packer remains protruding from face to allow the grout injection connector to be screwed on fully.
4. The Installation Dolly is **painted RED** for 200mm. For 64mm holes and above, install the dolly into hole 200mm.
5. For 45mm packers the Dolly is bigger than the hole. In this case push the Dolly to the collar of the hole. (The 45mm packer has an extension nut and is designed to be set 350mm inside the hole.)

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6. **When the packer is installed at required depth, use forward rotation of the jumbo to seat / lock the packer in the hole.** When seated adequately, the jumbo rotation motor will stall. (Do not use reverse rotation at any time as this will loosen the packer in the hole)
7. Once motor is stalled and rotation is still on, use a quick touch of percussion to 'nip up' the packer. When packer is installed properly water flow from the drill hole will cease. Leave dolly and boom on packer and shut down power pack to that boom.
8. Remove the tapered plug on the alternate jumbo boom and replace it with a drill steel and bit.
9. If not already done, install a rock bolt within 300mm of the packer using site rock bolting procedures. (Ensuring rock bolt cannot intersect packer.)
10. Once bolt is installed, retract the dolly slightly from the packer and in the same instance place the drill steel & bit (on the other jumbo boom) across the path of the packer so it cannot be ejected from the hole.
11. Remove the right boom and dolly away from the face (whilst still covering the packer with the left boom)
12. Install a Grout injection nozzle with the rated restraint to the end of the packer. Using rated chain attach it to the installed rockbolt as a safety check.

2.5 GROUTING THROUGH MINERIGHT PACKER SYSTEM

The grout injection nozzle is manually installed and torqued appropriately to the end of the packer.

1. Grout injection nozzle is restrained to the local ground support with rated slinging equipment (chain, shackles etc.).
2. Derig the jumbo. In some cases, for extra safety, the packer is shotcreted into the face prior to grouting. (Care should be taken not to cover the nozzle with shotcrete in this case)
3. Install a suitable adaptor nipple onto the grout injection nozzle to connect the nozzle to the grouting equipment used on-site.
4. Drill hole is now ready to be grouted as per site recommendations and procedures.

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3 MINERIGHT KWIKSTOP TAPERED PLUG ASSEMBLY

Figure 1: KWIKSTOP TAPERED PLUG

4 MINERIGHT PACKER ASSEMBLY

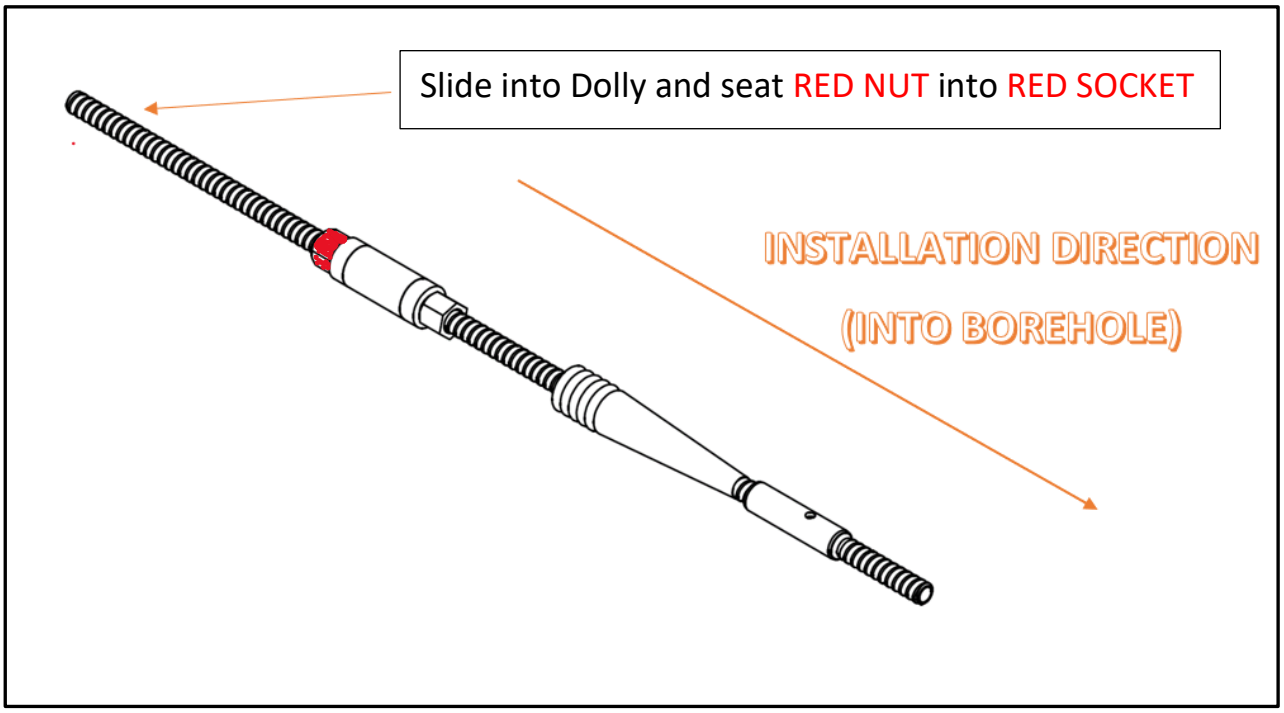

Figure 2: - MINERIGHT PACKER (ASSEMBLED)

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4.1 INSTALLATION DOLLIE ASSEMBLY

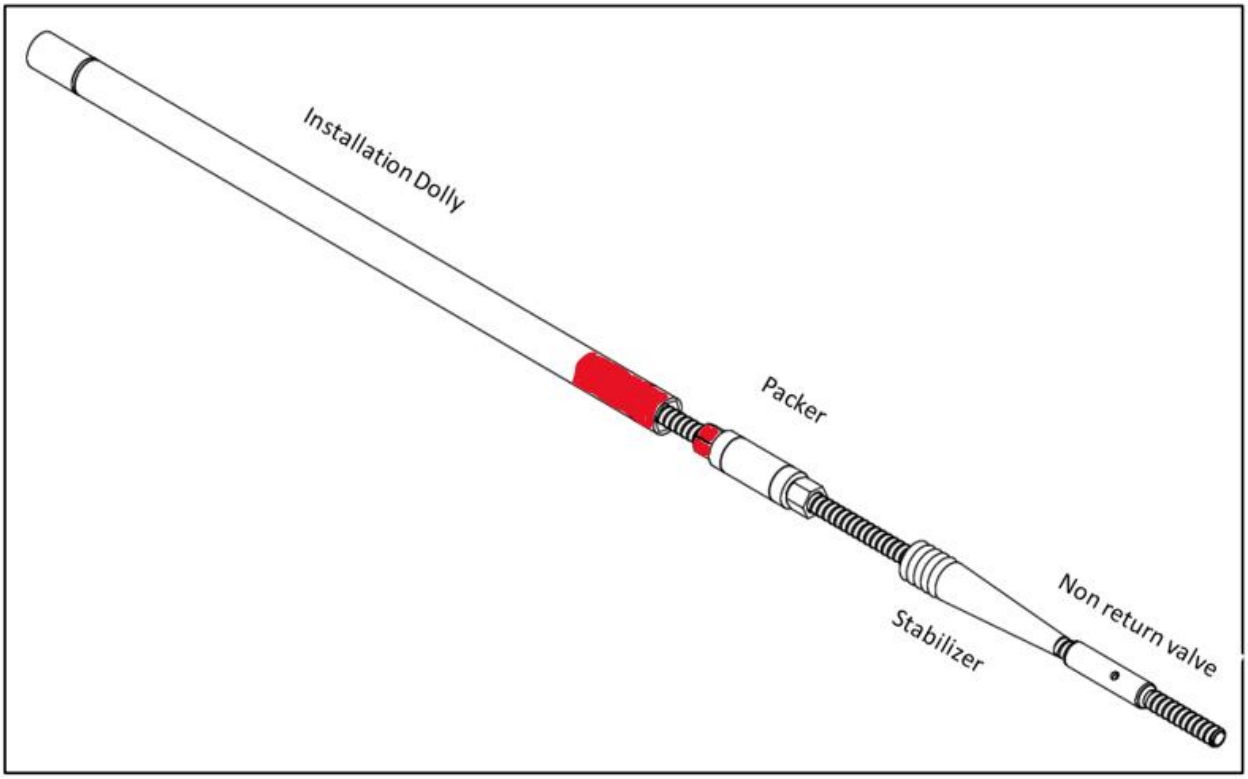

Figure 3: MINERIGHT PACKER INSTALLATION CONFIGURATION (WITH DOLLY)

4.2 GROUT INJECTION NOZZLE ASSEMBY

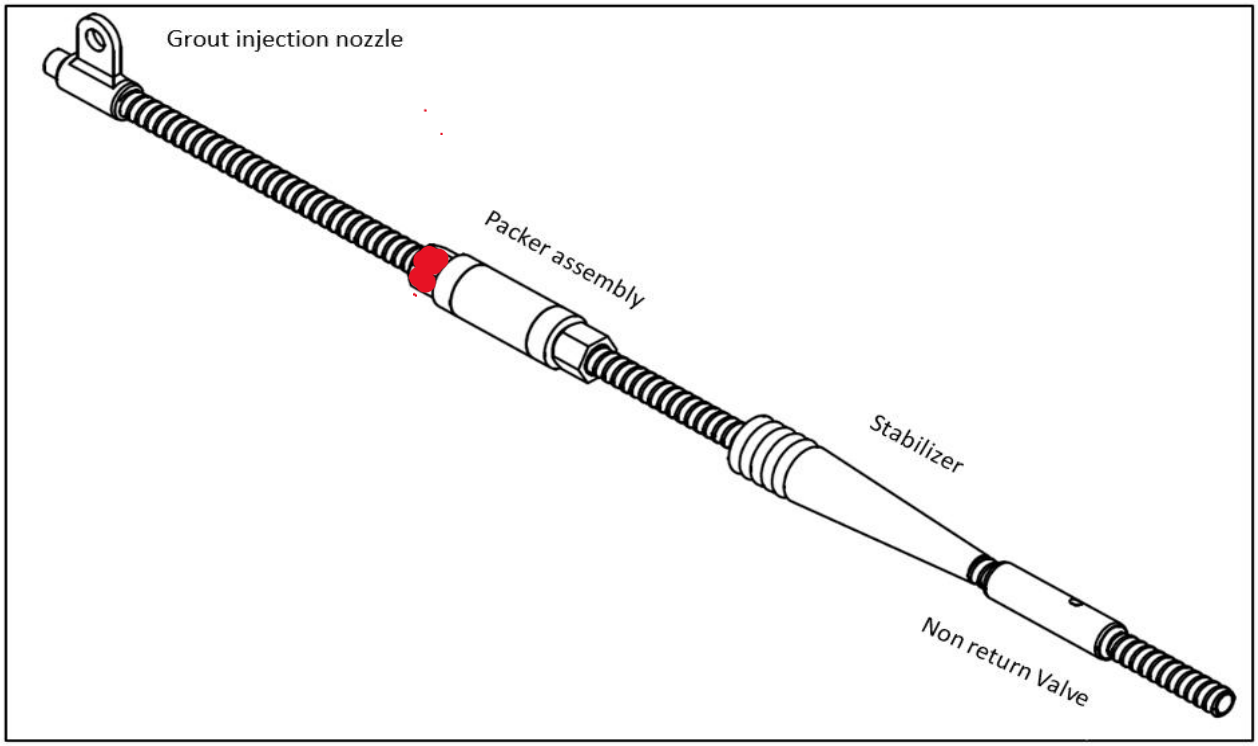

Figure 4: MINERIGHT PACKER GROUTING CONFIGURATION (WITH GROUT INJECTION NOZZLE)

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5 COLOUR CODE

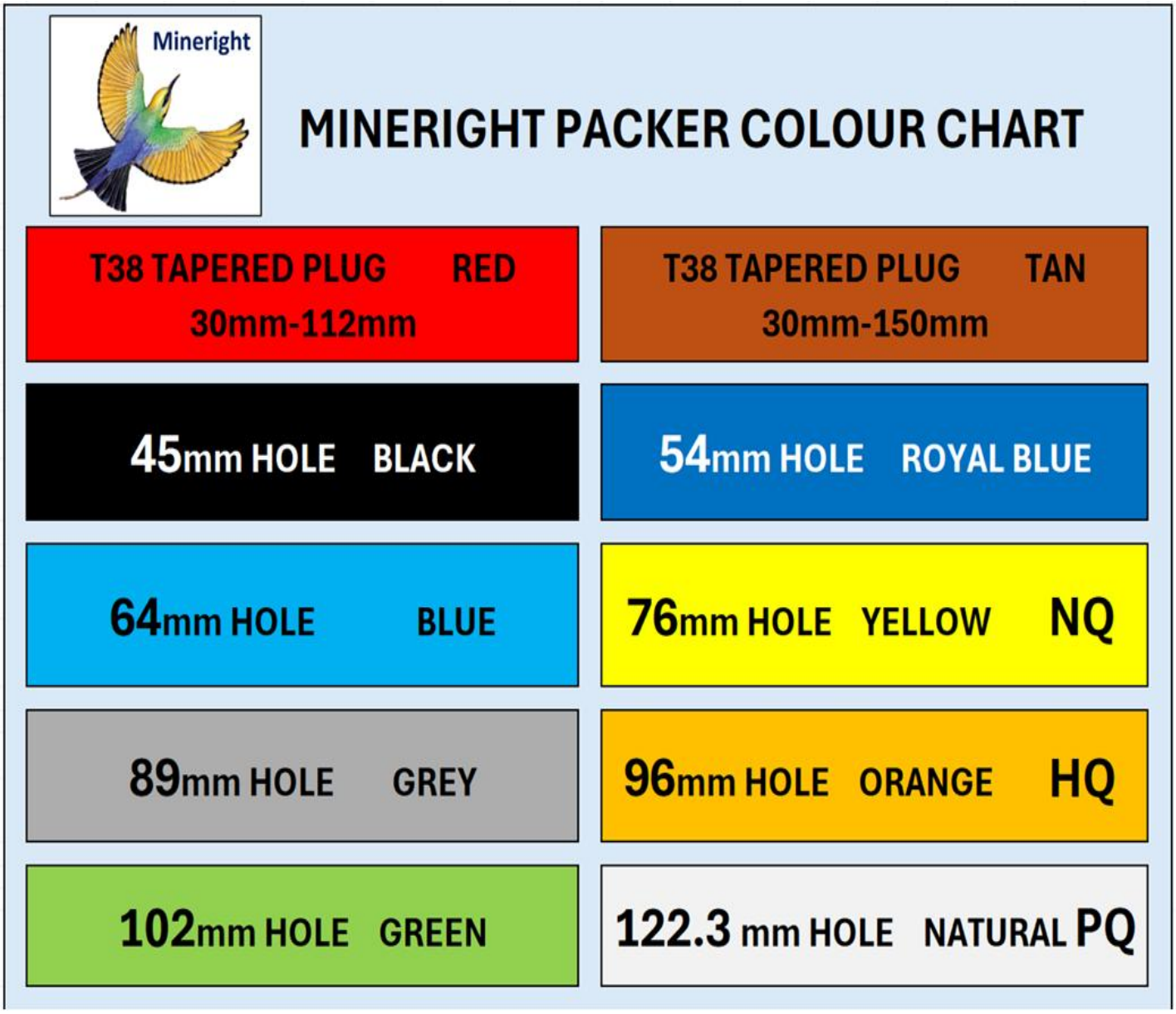

Figure 5

COLOUR CODE CHART

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6 TYPICAL PACKAGING

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