BRANDABULL

Fast & Portable
Instant Freeze Branding system

Made in New Zealand
Supplied Worldwide by

SHOOF INTERNATIONAL LTD

www.brand-a-bull.com

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The Brandabull System

Brandabull is the revolutionary, fully portable freeze branding system that can be used instantly and does not require pre-delivery of dry ice or liquid nitrogen. This means branding can be carried out at any time without notice. Brandabull uses a standard bottle of carbon dioxide (CO2). Everything you need is included in the Brandabull kit.

The Brandabull Kit

The Brandabull system is supplied either as a complete kit, or as separate components.

The complete kit contains:

Set of ten-digit moulds, '0 to 9' digits either in 3" (7.5cm), or 4" (10cm) size. Brandabull dry ice gun, nozzle and hose, a small plastic bottle for applying the meths or alcohol, spare O-Ring for jet, spare seals for CO2 hose fitting & this information manual.

(Note: The plastic bottle is suitable for small-scale branding jobs only & should be replaced with a larger bottle for bigger jobs.)

Brandabull Kit

Separate components available include:

- Custom brand mould - 4" size with your own design
- 0-9 digits 3" set
- 0-9 digits 4" set
- 0-9 single digits in 3" & 4" size
- A-Z digits 3" set
- A-Z digits 4" set
- A-Z single digits in 3" & 4" size
- Gun kit only

*** Check with your Brandabull supplier.*

Note: 0-9 digits & A-Z digits are also available in 2" (5cm) size on indent order

Tips for Successful Brands

Loading the brand mould

- Fill digit-mould cavities completely with well-packed ice. Over-filling is preferable. Under-filling can cause failures.
- Apply immediately after filling (pre-preparing the animal is essential).
- Liberally use a wetting agent (methylated spirits or alcohol) direct from a sealed container and immediately prior to branding. Do not apply with a rag or brush from an open container. Open containers will absorb atmosphere moisture which will reduce the effectiveness of the brand. A small plastic bottle is included in the kit for the methylated spirits or alcohol.
- Pressure must be applied to the animal with the brand handle from the start to the end of the application time but increasing towards the end to ensure constant contact of the reducing-thickness ice with the hide.

NOTE: If the dry-ice is light and fluffy and falls out of the mould, or if the gun does not shut-off completely or cleanly, there is very likely a partial block of the jet. This condition will produce unsatisfactory ice and consequent poor-quality brands. Remove and reverse the nozzle jet as described below in 'How to clear a blocked jet' and in the manual.

Freeze Branding of Cattle

Freeze branding is an ideal way of marking animals for easy and convenient identification. It involves the relatively painless process of altering the pigment-producing cells in the hair follicles by applying intense cold to an animal's hide. This process causes the hair to grow white, thereby providing an effective identification mark on animals with darker hair. For light-coloured animals, applying the freeze brand for extra time kills the hair follicle completely, leaving a bald brand, which is still quite visible.

Freeze branding is of particular benefit to those needing to identify their stock permanently for herd recording or ownership purposes.

Advantages of Freeze Branding

- Freeze brands are permanent and unalterable.
- Freeze brands are highly visible.
- There is little discomfort to the animal.
- There is no damage to the hide.

Physiology of Freeze Branding

- Upon application of the brand, the skin is indented and frozen in the shape applied.
- Within two to three minutes the skin thaws, possibly leaving a reddening of the area.
- This is followed by a marked edema (fluid-filled swelling) which may persist for several days.
- The edema and reddening then recede and the brand area becomes dry and scurfy.

Varying amounts of skin and hair are lost from the brand area over the next two to four weeks. Subsequent hair re-growth occurs at various times dependent on the seasonal hair growth pattern but is usually eight to twelve weeks after branding. The white hair grows much more rapidly than hair in the unbranded area. This is particularly in the first year after freeze branding. Brands may not be at all visible until eight to ten weeks after application. The brand becomes a permanent means of identification.

Traditionally freeze branding has involved the process of using dry ice pellets or liquid nitrogen as the cold medium. Branding irons, usually cast from copper or bronze with a handle attached, are immersed in a solution of alcohol and dry ice, or into the liquid nitrogen. When an iron is cooled to the correct temperature, it is applied to the animal's hide for the required period.

There is a large amount of information available on the internet giving advice about branding on a wide variety of animal species.

For further information & assistance directly relating freeze branding with Brandabull, refer to **www.brand-a-bull.com**

Brandabull - Simple and Convenient

The simplicity of using the Brandabull freeze branding system is due to the unique gun that produces dry ice directly from liquid carbon dioxide gas (CO2). It is the fastest, most convenient way to freeze brand.

There is no wastage as you only make enough ice to fill each brand digit as you require it.

Brandabull freeze branding can be carried out anywhere, anytime, on any number of animals.

The gun is connected directly to the CO2 cylinder with a high-pressure reinforced hose that carries the liquid to the special barrel and nozzle assembly that will produce the dry ice.

The ice is directed into the Brandabull digit mould until it is full (this takes only a few seconds) and then the mould is applied to the hide for the correct duration, according to the animal's type, breed, age, & size.

Correct preparation of the animal's hide is vital to ensure a reliable and visible brand mark.

Procedure for Branding

There are seven key steps to successful branding:

1. The animal should be restrained to minimize its movement, as movement may affect the clarity and quality of the brand. This is ideally achieved by using a head-bail in cattle yards. However perfectly satisfactory results have been achieved using the veterinary race or chute in the dairy shed or working on the platform of a rotary dairy shed or even in the milking area of a herringbone type dairy (if the animals are relatively docile)
2. Decide on the brand position required. Preferably this is where the hair is dark. Dark hair turns white. Brands on white hair are less highly visible.
3. The animal's hide must be clipped closely, to remove as much hair as possible from the branding site. The maximum amount of cold will not be transferred if hair is present, as the hair will act as insulation. It is

best to use an electric clipper with a surgical-cut blade.

The brand area must be closely clipped before branding.

4. Load the digit mould with dry ice directly from the Brandabull gun by holding the barrel just above the face of the mould so that the stream of ice is directed into the mould when the trigger is operated. The barrel is then moved slowly and smoothly along the cavity allowing the ice to completely fill to well above the surrounding surface. Overlapping ice will not affect the brand clarity. With a little practice, accurate and smooth filling of the mould becomes very easy. It is important that the ice is well packed in the entire mould to ensure that a complete brand is created. Uneven or incomplete filling will affect the clarity of the finished brand. Practice filling completely in one continuous run, rather than going back and forth over the mould.

5. Immediately prior to applying the brand, liberally soak the area to be branded with the wetting agent 'methylated spirits or alcohol'. This should be squirted directly from a suitable plastic bottle as supplied in the kit. (Do not apply the wetting agent with a rag or brush from an open container. Open containers will absorb atmosphere moisture which will reduce the effectiveness of the brand on the animal).

***The wetting agent assists in the transfer of the cold to the skin, and to help remove any moisture and dirt, which may act as a barrier to the effective freezing of the hide.*

6. Immediately after wetting apply the brand with firm and continuous pressure. This is important to ensure the dry ice is in full contact with the animal's hide. Brand pressure should increase as the ice melts, to ensure compression of the rubber mould and continuous contact of frozen ice with the hide.

7. The length of time that the brand is applied to the animal's hide is also very important. Typically branding times will vary from 20 seconds for young animals to 90 seconds for mature heavy-skinned animals (see more on Brand Timing below).

The digit mould is held firmly in place for the required time.

Brand Timing

How long should you hold the brand on the animal?

If the brand digit is held on the animal too long a bald brand may result, and if held too little then the brand will not be clear or as visible as is desired.

Over-branded or bald brands can become difficult to read as the surrounding hair tends to grow over them reducing their readability. Clipping the area periodically should readily restore readability.

Typically branding times will vary from 20 seconds for young animals to 90 seconds for mature heavy-skinned animals.

The times detailed below are intended as a guide only as there are many variables that will affect the brand result.

- Calves 20 to 30 seconds
- Yearlings 30 to 60 seconds (typically 40 seconds)
- Slightly longer for white animals (60+ seconds)
- Mature cattle 60 to 90 seconds, as their skins are thicker

Trouble Shooting

The dry ice is fluffy and falls out of the mould

If the dry ice produced is light and fluffy and sometimes falls out of the mould, or if the gun nozzle does not shut-off completely or cleanly, there is very likely a partial block of the jet or the CO2 cylinder is nearly empty. This will produce unsatisfactory ice and consequent poor-quality brands.

Make sure you have the right liquid withdrawal CO2 cylinder and that it is standing upright and not lying flat. Dry ice production is dependent on drawing liquid from the bottom of the cylinder.

The gun has stopped operating completely

Should the gun stop operating completely, either the cylinder is empty, or the jet is blocked. Blockage can be caused by small pieces of debris in the cylinder being carried through the hose to the jet. See the next section on how to clear a blocked jet.

How to clear a blocked jet

1. Turn the CO2 cylinder off.
2. Unscrew the gun barrel. Be careful to vent the remaining gas in the hose in a safe manner before unscrewing the barrel completely.
3. Unscrew the jet, reverse, and reinsert. The jet is exactly the same at both ends so reversing it will blow out any debris.
4. Reattach the barrel.
5. Resuming operation should immediately clear any blockage.

DO NOT POKE ANYTHING METAL INTO THE JET as it may damage the aperture, affecting the performance of the gun. Occasionally a cylinder of CO2 can have accumulated debris at the bottom causing partial or complete blockages. If this happens, we recommend contacting your gas supplier and having the cylinder replaced.

Safety

- Brandabull is safer than other methods of branding using cryogenic liquid mixtures.
- The risk of accidental spillage or splashes is eliminated.
- The difficult sourcing and transport of dry ice pellets or liquid nitrogen, and the associated losses and wastage, are eliminated.
- CO2 cylinders are inherently safe to transport if secured correctly, and there are no losses as the cylinders are sealed when not in use

Safety Precautions

- Under normal conditions Brandabull freeze branding equipment is very safe, but as CO2 is heavier than air, care should be taken to disperse CO2 in low lying and confined spaces as it displaces the air and is an asphyxiant.
- CO2 in snow form as dry ice is intensely cold (-75°C) & can cause serious freeze- burns to bare skin. DO NOT put your hand in the gas stream. Always use protective gloves and goggles & keep children away.
- CO2 cylinder valves are protected by a bursting disc to guard against over pressurization of the cylinder due to excessive filling or temperature. Operate the cylinder valve with it facing away from you. Always store the cylinder out of direct sunlight and keep away from sources of excessive heat. (You will get more brands from a cool cylinder than you will from one that has heated up in the sun).
- Check the condition of your Brandabull equipment prior to use; check the hose and the gun for damage etc. Do not use if damage is suspected.
- Remember the hose will have cylinder pressure in it when operating. If the hose is damaged & it ruptured there would be cryogenic liquid CO2 escaping at very high pressure, which could cause serious injury.
- CO2 cylinders should be carried on the outside of a vehicle, however if they must be carried inside then they must be well secured with the valve facing away from the driver and the cylinder must not be overfilled.
- CO2 cylinders change weight, not pressure as they empty. The gross weight and the tare (empty) weight are stamped on the neck of the cylinder. There will always be a small amount of gas left in the cylinder

that is not available to use for branding.

- Finally, when you stop branding for the day, turn off the cylinder valve and operate the gun trigger to drain the hose. Do not leave the hose pressurized for any extended length of time.

Care of your Branding Equipment

When you stop branding for the day:

- Turn off the cylinder valve.
- Operate the gun trigger to drain the hose. Do not leave the hose pressurised for any extended length of time.
- It is also recommended that you rinse the brand digits in warm water with a little mild dish washing detergent. This will remove any dirt, hair or other contaminants. Allow the brand digits to dry thoroughly.
- Store in a dry, safe place until needed again.

Type of Gas

- The correct gas is Carbon Dioxide (CO2) which is readily available in cylinders from any industrial gas suppliers.
- The correct cylinder to use is the liquid withdrawal type. This has an inductor tube fitted inside the cylinder so that the gas can be drawn off as a liquid, rather than as gas.
- There are a variety of different sizes of cylinders available from 6.8kg capacity up to 33kg. The smaller cylinder typically will fill approximately 70 brand digits. The larger cylinder will typically fill approximately 330 brand digits.

NOTE: Due to a policy of continuous improvement, details and specifications are subject to change without notice.

Brandabull Awards

New Zealand National Fieldays Invention Awards 1995

New Zealand National Fieldays New Equipment Award 1998

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