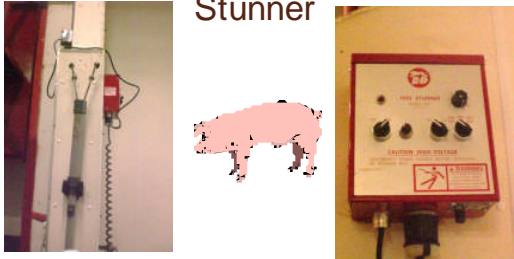



Stunning Pigs with a B&D Stunner



**Erika L. Voogd
Voogd Consulting, Inc.
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For pigs larger than 200 pounds, extend wand tips to assure correct stun wand contact




Extended tips with extra star wheels. Stainless steel star wheels (spurs) conduct better than carbon steel

Wand extensions and star wheels (spurs) are now available from Best and Donovan



Wand extensions, Part # 9600017 and additional stainless steel star wheels (spurs) Part # 9603900 are available from Best and Donovan


The extended wand tips and extra star wheels (spurs) assure correct stun wand contact with brain



Locate wand as close to the ear as possible, in the thin crevice. Note that this wand has two sets of star wheels for small and large pigs

Longer, wider wand tips help to facilitate secure contact on the head of larger pigs

It is best to restrain the pig, during stunning to prevent stun wand slips or pig falling



Insulated swing gate and wall to restrain the animal during stun

Restraining the pig during stun can assure an effective stun. Wooden gate is non-conductive

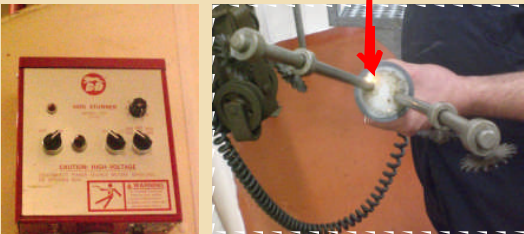
Truck rubber mats on floor and wall. Coated metal gate.

Plastic lining in stun box area to insulate electrical current



Insulate the stun box to prevent grounding during stun


Turn on the stunner. Press the stunner button to test wand



Observe wand for electrical shorts. Service if necessary

At startup: Inspect and test the wand, prior to use

Select the Correct Voltage for the size and weight of the pig




Hog Weight (lbs)	Voltage
100 to 250	360
250 to 350	400
350 to 500	420
500 to 650	460
650 to 800	520
800 to 1200	580

Model 'ES' Stunner settings

Best and Donovan recommended voltages

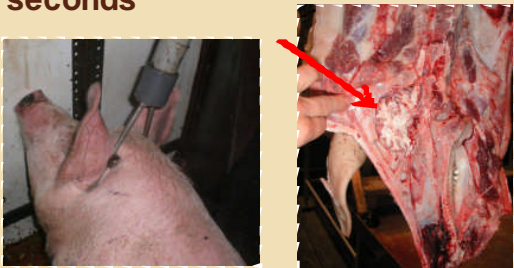
Prior to stunning, be sure the head and heart of each pig is wet



Automatic shower in holding pen

It is best to wet hogs prior to entry in the stun box area

Stun the head for a minimum of 3 seconds



Place wand as close to the ear as possible

Target the pocket of the ear to assure that the brain is stunned

Check the eye to assure that the pig is insensible before stunning the heart



Inspect the eye of the pig, but do not touch it. There should be no natural blinking

If the pig is still sensible, re-stun the head before stunning the heart

Stun the heart for a minimum of 3 seconds



Stun the heart of the pig

Target placement of the wand contacts behind the arm pit and on the chest

Check the eye to assure that the pig is insensible before hoisting and before bleeding



Inspect the eye of the pig, there should be no natural blinking. You can wave a hand in front of the eye and look for "tracking or movement".



Do not touch the eye, as corneal reflex may still be present in an electrically stunned pig

In electrically stunned pigs, gasping is a sign of a dying brain



Agonal gasping occurs when the pig's mouth opens and closes and the head jerks slightly (like a fish out of water)

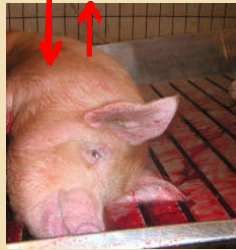


Rapid seizure blinking and nystagmus (eye vibration) can also occur in electrically stunned animals

Signs of Return to Sensibility (Beginning to regain consciousness)



Eye is focused and pig is blinking naturally



Rhythmic breathing: Sides are moving up and down

Signs of Sensibility (Fully Conscious)



Vocalization



Righting Reflex: The pig tries to lift its head and right itself

Order of Events During Return to Sensibility in CO₂ Stunned Pigs

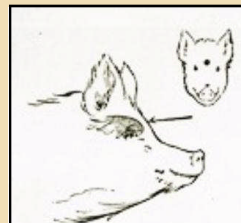
	Average Time
Corneal reflex (touch eye)	42 sec
Rhythmic breathing	68 sec
Excitation	76 sec
Nystagmus (vibrating eye)	86 sec
Spontaneous natural blinking (don't touch)	93 sec
Conscious movement (Righting Reflex)	171 sec
Attempt to stand up	387 sec

These events are very variable.

Danish Meat Research Institute, Holst (2001)

CO₂ return to sensibility sequence.

Re-stun (if necessary) before bleeding (captive bolt)



Correct location for captive bolt or free bullet stunning of a pig



Correct bolt location and angle to show brain destruction

Re-stun if necessary, before bleeding (electrical)



If the pig is still sensible, re-stun the head first

Then re-stun the heart

Bleeding should be rapid with a large volume

For head/heart stun, target to bleed the pig within 30 seconds, with a maximum of 60 seconds between stun and bleed



Good Bleed

If a large volume of blood does not appear, re-stick the pig

Weak bleed (small stick wound)

Routinely clean the stun wand, approximately every 5 pigs



Unplug the stun wand prior to cleaning

Use a steel brush or a green pad to clean the wand

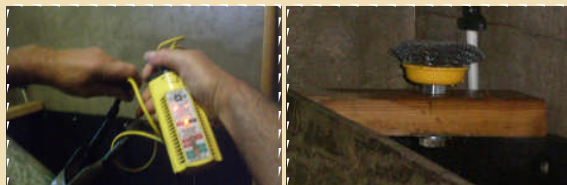
Smoking indicates poor stun wand conductivity, immediately clean the stun wand contacts



Smoking indicates poor conductivity

Use a steel brush or a green pad to clean the wand

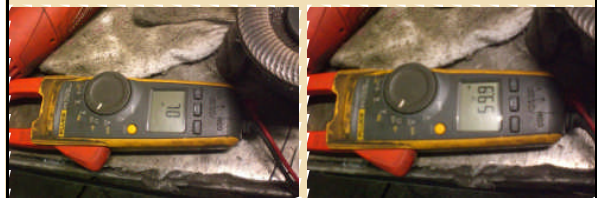
Routinely test wand voltage, using a voltage tester



Voltage should be sufficient to meet manufacturer's recommendations

Clean wand contacts and retest until reading is correct (Mounted wire brush)

Wand conductivity can be tested using an Ohm meter



OL (Open Line) indicates poor conductivity

Clean wand contacts and retest until reading is high

After production, clean the stun wand and store the stunner and wand in a clean, dry location away from the plant floor

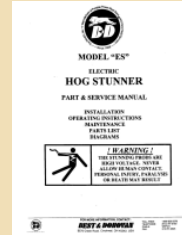


Do not store the stunner on the plant floor



Store equipment in a dry location when not in use

Follow manufacturer's recommendations for equipment maintenance



Manufacturer's recommendations



Document equipment cleaning and maintenance

For more information

[www.bestanddonovan.com/
stunner/stunner.htm](http://www.bestanddonovan.com/stunner/stunner.htm)

1-800-553-BEST (2378) Ext. 3737

Best and Donovan Webpage

www.voogdconsulting.com

www.grandin.com

Dr. Temple Grandin's Webpage

Voogd Consulting, Inc. Webpage contains information about head/heart stunning of pigs