CANADIAN DEGAUSS

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IDMAG SYSTEM

INSTRUCTION MANUAL

WARNINGS

In the interests of operator safety as well as those working nearby, the following points should be noted:

- Read the instructions provided prior to powering on and operating the equipment.

- Inspect the Equipment prior to energizing and operating the equipment. Look for damaged cable jackets, exposed wires and other damage that could cause electric shock or other dangerous situations. If damage is found, contact Industrial Degauss immediately.

- Strong magnetic fields can affect pacemakers, ICDs and other implanted medical devices. Care must be taken to avoid affecting such devices.

- Attraction forces can cause serious injury. Fingers and other body parts can be pinched between two workpieces. Be aware of pinch points and secure the workpiece when possible.

- Strong magnetic fields can damage magnetic media such as cell phones, hard drives, credit cards, magnetic I.D. cards or other such devices.

- Magnetic fields can influence compasses or magnetometers used in air transport. They can also affect internal compasses of smartphone and GPS devices.

- Electric shock Hazard. Risk of electric shock could result in serious injury or death. Only qualified personnel should service the equipment.

EQUIPMENT

POWER BOX

The Power Box is operated on either 120VAC or 240VAC, 50/60Hz, single phase power. It supplies a DC current to the Degauss Cable, in order to create a magnetic field.

It is housed in a weather and crush resistant case. When the case is opened, the equipment is protected by weather-resistant seals and gaskets.

Power is supplied to the Power Box by connecting the supplied Power Cord to the Power Input Inlet located on the left side of the Power Box.

Power is outputted to the Degauss cable by connecting the Degauss Cable Plug to the Power Output receptacle located on the right side of the Power box.

The Power Box is protected by a resettable circuit breaker that is built into the ON/OFF Toggle Switch and an inline fuse which is located on the Power Cord.

There are no user operable parts under the control panel. The Power Box and other equipment should only be operated by following the instructions included in this manual.

Inspect the seals around the switches and the mounting screws for cracks or holes prior to use.

EQUIPMENT

POWER SOURCES

Use known working power sources in good operating condition. This includes wall outlets, temporary power panels and portable generators.

Avoid using Welder Generators or dated portable generators. The AC power is dirty/noisy and can damage the electronics in the Equipment. If possible, use generators with modified sinewave output (also known as low THD generators).

POWER CORDS

Two (2) power cords are included with the Power Box and must be used to ensure safety and proper operation of the equipment. Each power cord consists of an In-Line Receptacle for connection to the Power Box, an In-Line GFCI (120VAC and 240VAC), an In-Line fuse and a plug to connect to a power source.

GFCI

The GFCIs included with the Equipment are Manual Reset GFCIs. To operate, press the RESET button on the GFCI. The green Power LED will light. In case of a fault, the red LED will light.

FUSE

An in-line fuse is located in a conduit body along the Power Cord.

The fuse Type and Class are listed on the enclosure.

DO NOT service the fuse while the Power Cord is energized.

EQUIPMENT

PLUG

A 120VAC and 240VAC plug will be supplied with the equipment to plug into a power source. The plug ends can be changed dependent on the power panel being used. Please contact Industrial Degauss for wiring instructions.

DEGAUSS CABLE

The Degauss Cable is used to form a coil. When DC current is passed through the coil, a DC magnetic field is created and can be used to Degauss ferrous objects.

The Degauss Cable has a four (4) pin plug that connects to the Power Output receptacle on the Power Box.

The Degauss Cable has two (2) multipin connectors that mate to form a coil. To mate the multipin connectors, line up the key of the receptacle and the keyway of the male plug and push on the plug. Then align the 3 bayonet rivets on the collar of the male plug to the slots on the receptacle, and twist clockwise to tighten the connection. Only tighten the collar by hand. DO NOT use hand tools or the connectors will be damaged.

The Degauss Cable also features dustcaps for the multipin connectors. Use the dustcaps whenever the cable is being installed or transported to protect from damage or debris.

If the multipin connectors become filled with dirt or debris, they can be rinsed off with water. Allow connectors to dry before energizing.

INSTRUCTIONS

PIPE WELD DEGAUSS

Use this process when a prepared and fitted joint exhibits troublesome levels of magnetism (typically greater than 30 gauss). Typical applications for this process are pipeline repairs and tie-ins, where residual magnetism levels are often high.

GENERAL PROCESS:

The level of the residual magnetism at the joint is reduced by applying a magnetic field to the joint. This allows welding to proceed without any arc blow or other magnetic related issue. A general guideline to follow, as well as Step by Step instructions are included herein.

To begin, the equipment must be set up, which involves powering on the Power Box, installing the Degauss cable on the pipe and powering on the Gaussmeter.

Next the user must determine which Output Polarity reduces the residual magnetism towards zero. The user places the Gaussmeter probe in the joint and adjusts the output current knob.

If the Gaussmeter value increases, stop and select the opposite Output Polarity.

If the Gaussmeter value decreases, adjust the Output Current knob until the value reads Zero and begin welding.

NOTES:

The Degauss Cable should be snug around the pipe.

To avoid damage to the Degauss Cable, take care when installing on the pipe. The Cable can be installed 3 to 5 feet away from the joint to avoid sparks, slag and other welding debris from damaging the outer jacket. On preheated pipes, wrap the Cable over insulation to avoid damaging the outer jacket.

Once the Power Box output current is adjusted, the lid of the Power Box can be closed to avoid welding debris from damaging the equipment faceplate and seals.

The Degauss equipment can generally be turned off and removed after the root and hot passes are completed.

> The Power Box and Degauss cable setup is typically suitable for degaussing pipe from 4” to 30” with a pipe thickness up to 1”. For larger pipe or those that are heavily magnetized, a second cable can be employed to increase the degaussing capability of the Equipment.

Please contact Industrial Degauss for support with the Equipment or with your application.

INSTRUCTIONS

PIPE WELD DEGAUSS

STEP BY STEP INSTRUCTIONS:

1. SET UP THE POWER BOX

    a. CONNECT POWER CORD INTO THE POWER IN INLET ON THE POWER BOX.
    b. PLUG THE POWER CORD INTO A POWER SOURCE.
    c. PRESS THE RESET BUTTON ON THE INLINE GFCI ON THE POWER CORD.
    d. OPEN THE LID AND TURN THE POWER BOX ON BY USING THE TOGGLE SWITCH.

2. SET UP THE DEGAUSS CABLE

    a. WRAP DEGAUSS CABLE AROUND THE PIPE END AND CONNECT MULTIPIN ENDS TOGETHER.
    b. PLUG DEGAUSS CABLE INTO THE POWER OUT RECEPTACLE ON THE POWER BOX.

3. SET UP THE GAUSSMETER

    a. TURN THE GAUSSMETER ON AND PRESS THE AUTO ZERO BUTTON.
    b. PLACE GAUSSMETER PROBE AT A POINT ALONG THE JOINT.

4. REDUCE MAGNETIC FIELD AT JOINT

    a. TURN THE OUTPUT CURRENT DIAL TO ZERO
    b. PRESS THE NEGATIVE POLARITY PUSH BUTTON ON THE POWER BOX.
    c. TURN THE OUTPUT DIAL CLOCKWISE AND MONITOR THE GAUSSMETER.
    d. IF GAUSSMETER VALUE INCREASES
        i. PRESS STOP
        ii. RETURN DIAL TO ZERO
        iii. SELECT OPPOSITE OUTPUT POLARITY
        iv. REPEAT STEP 4c.

    e. IF GAUSSMETER VALUE DECREASES
        i. ADJUST DIAL UNTIL GAUSSMETER READS ZERO

5. BEGIN WELDING

INSTRUCTIONS

PIPE END DEGAUSS

Use this process to degauss a beveled pipe end when it has residual magnetism that is greater than desired. Typical applications include mainlining or at a pipe yard, where process time is critical.

GENERAL PROCESS:

The level of residual magnetism is reduced by applying a series of reversing and decreasing steps. The number of degauss steps can be increased or decreased depending on the diameter, wall thickness or permeability of the pipe. Experience will determine the optimum number of reversing steps. A general guideline to follow, as well as Step by Step instructions are included herein.

To begin, the equipment must be set up, which involves powering on the Power Box, installing the Degauss cable on the pipe end and powering on the Gaussmeter.

Next the user must determine which Output Polarity to apply to the pipe end in the first step. This is accomplished by testing which Output Polarity causes the Gaussmeter to read Zero.

The first Pipe End Degauss step is performed by turning the Output Current to 100% and selecting the Output Polarity determined above for a duration of 2 seconds.

After 2 seconds, the Stop button is pressed and the Output Current is reduced by 20%.

The next step is performed by selecting the Opposite Output Polarity for a duration of 2 seconds.

After 2 seconds, the Stop button is pressed and the Output Current is reduced by 20%.

The reversing and decreasing steps are repeated until the Output Current is reduced to 0%.

Notes:

The Degauss cable can be fashioned into a fixed diameter coil and slid on and off the pipe end. The coil should be slightly larger (1”-2” larger) than the outer diameter of the pipe being degaussed. This is the preferred method when working with multiple pieces of the same diameter pipe.

Degaussed pipe ends should remain degaussed for a period of time, as long as the pipe is not subjected to anything that could cause a magnetic field to reappear (power lines, machining, welding, etc).

For troublesome pipes or other applications, contact Industrial Degauss for assistance.

INSTRUCTIONS

PIPE END DEGAUSS

STEP BY STEP INSTRUCTIONS:

1. SET UP THE POWER BOX

    a. CONNECT POWER CORD INTO THE POWER IN INLET ON THE POWER BOX.
    b. PLUG THE POWER CORD INTO A POWER SOURCE.
    c. PRESS THE RESET BUTTON ON THE INLINE GFCI ON THE POWER CORD.
    d. OPEN THE LID AND TURN THE POWER BOX ON BY USING THE TOGGLE SWITCH.

2. SET UP THE DEGAUSS CABLE

    a. WRAP DEGAUSS CABLE AROUND THE PIPE END AND CONNECT MULTIPIN ENDS TOGETHER.
    b. PLUG DEGAUSS CABLE INTO THE POWER OUT RECEPTACLE ON THE POWER BOX.

3. SET UP THE GAUSSMETER

    a. TURN THE GAUSSMETER ON AND PRESS THE AUTO ZERO BUTTON.
    b. PLACE GAUSSMETER PROBE AT A POINT ON THE PIPE BEVEL.

4. DETERMINE STARTING POLARITY

    a. TURN THE OUTPUT CURRENT DIAL TO ZERO
    b. PRESS THE NEGATIVE POLARITY PUSH BUTTON ON THE POWER BOX.
    c. TURN THE OUTPUT DIAL CLOCKWISE AND MONITOR THE GAUSSMETER.
    d. IF GAUSSMETER VALUE INCREASES
        i. PRESS STOP
        ii. SELECT OPPOSITE OUTPUT POLARITY
    e. IF GAUSSMETER VALUE DECREASES
        i. NOTE OUTPUT POLARITY
        ii. PRESS STOP

PIPE END DEGAUSS

STEP BY STEP INSTRUCTIONS CONTINUED:

5. BEGIN REVERSING STEPS

   a. STEP 1

      i. SET OUTPUT CURRENT TO 100%
      ii. SELECT OUTPUT POLARITY FROM STEP 4e.
      iii. AFTER 2 SECONDS, PRESS STOP.

   b. STEP 2

      iv. SET OUTPUT CURRENT TO 80%
      v. SELECT OPPOSITE OUTPUT POLARITY.
      vi. AFTER 2 SECONDS, PRESS STOP.

   c. STEP 3

      vii. SET OUTPUT CURRENT TO 60%
      viii. SELECT OPPOSITE OUTPUT POLARITY.
      ix. AFTER 2 SECONDS, PRESS STOP.

   d. STEP 4

      x. SET OUTPUT CURRENT TO 40%
      xi. SELECT OPPOSITE OUTPUT POLARITY.
      xii. AFTER 2 SECONDS, PRESS STOP.

   e. STEP 5

      xiii. SET OUTPUT CURRENT TO 20%
      xiv. SELECT OPPOSITE OUTPUT POLARITY.
      xv. AFTER 2 SECONDS, PRESS STOP.

6. RESIDUAL MAGNETISM IS REDUCED TO AN ACCEPTABLE LEVEL

Note: If level of residual magnetism is not reduced to an acceptable level, please contact Industrial Degauss for support.

INSTRUCTIONS

USING A SECOND DEGAUSS CABLE

The Power Box and Degauss Cable is typically suitable for degaussing pipe from 4” to 36” and pipe thickness up to 1”. For larger pipe or those that are heavily magnetized, a second cable can be employed to increase the degaussing capability of the Equipment.

1. SET UP THE SPLITTER BOX

    a. CONNECT SPLITTER BOX TO POWER OUTPUT OF THE POWERBOX

2. SET UP THE FIRST DEGAUSS CABLE

    a. WRAP DEGAUSS CABLE AROUND THE PIPE AND CONNECT MULTIPIN ENDS TOGETHER.
    b. PLUG DEGAUSS CABLE INTO A POWER OUT RECEPTACLE ON THE SPLITTER.

3. SET UP THE SECOND DEGAUSS CABLE

    a. WRAP DEGAUSS CABLE AROUND THE PIPE **IN THE SAME DIRECTION** AS THE FIRST CABLE.
    b. CONNECT MULTIPIN ENDS TOGETHER
    c. PLUG DEGAUSS CABLE INTO A POWER OUT RECEPTACLE ON THE SPLITTER.

NOTE: The Degauss cables can either be wrapped on each side of the joint, or both can be wrapped on the same side of the joint.