



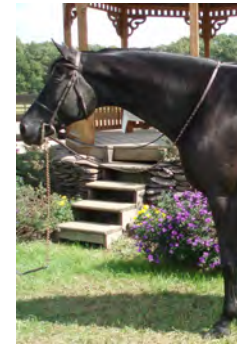
User Manual

FES 310™
Functional
Electrical Muscle
Stimulator



WE HAVE EQUINE IN OUR NAME™

N8139 900th Street River Falls, WI 54022 715.222.8279 www.EquiNew.com



The Equine
Therapy
Company

EquineNew™
LLC

N8139 900th Street
River Falls, WI 54022
715.222.8279

www.EquiNew.com

©Copyright 2013 EquiNew, LLC All Rights Reserved
"FES 310" the "EquiNew" Logo and "EquiNew.com"
are trademarks of EquiNew, LLC

GENERAL INSTRUCTIONS FOR USE

FES 310 is a microcontroller-based system with custom software that generates a unique therapeutic waveform. This instrument has been designed specifically for use with horses. Exacting specifications, through extensive research and clinical trials, has produced a modality that is extremely well accepted by the horse.

FES 310 will provide a treatment that feels like a deep muscle massage to the horse. Almost all horses accept the sensation of the stimulus in a relaxed manner. **However, care must be taken that the horse is introduced to the stimulus slowly and carefully to avoid startling the horse when the contractions begin.**

The first few treatments on every horse should be done with care to determine the level of acceptance of each individual horse. Young horses, any horse that has not been handled much, horses with muscle disorders, or horses in pain, can be more hesitant to relax during the treatments.

The FES 310 system is most frequently used in the treatment of:

- Sore or injured muscles
- Muscle spasms
- Pulled or strained tendons and ligaments
- Loss in range of motion of joints
- Edemas
- Disuse atrophy
- Asymmetrical muscle development

TABLE OF CONTENTS

GENERAL INSTRUCTIONS FOR USE	1
NOTICES/WARNINGS/DANGER	4
INDICATIONS/CONTRAINDICATIONS	5-6
DESIGN ELEMENTS OF THE FES 310	7-11
Front Panel	7
Cable Connection	7
Therapy Light	7
Mode Button	7
ON/OFF Switch	7
LCD Panel	7
Control Knob	7
LCD Display	8-10
Top Row of Display Panel	8
Electrode Conductivity (Contact)	8
Time of Therapy	8
Bottom Row of Display Panel	8
Battery Charge	8
Therapy Voltage	8
Time of Therapy Information	9
Battery Charge Information	9
Therapy Voltage Information	9
Therapy Light Information	10
Electrode Conductivity (Contact) Information	10
Side of Unit	11
Charging the Battery	11
Pad Descriptions and Self-Stick Electrodes	12-13
Back Pad	12
Leg Pad	13
Cable	13
Self-Stick Electrodes	13
Acupuncture and Long-Wire Harnesses	14
Acupuncture Harness	14
Long-Wire Harness	14
TREATING THE HORSE WITH THE FES 310	15-29
Where should the horse stand during therapy?	15
Where should the practitioner stand during therapy?	15
Where should the BACK PAD be placed?	15
Where should the LEG PAD be placed?	16

How to set up treatment for use of the BACK PAD	17
Placing surcingle on the horse	17
Connecting Back Pad to FES 310	17-18
Adjusting time of treatment for Back Pad	18
Adjusting intensity of treatment for Back Pad	19-20
Use of conductivity values for Back Pad	20-21
Removing Back Pad after treatment	21
How to set up treatment for use of the LEG PAD	22
Placing surcingle on the horse	22
Connecting Leg Pad to FES 310	22
Adjusting time of treatment for Leg Pad	22
Adjusting intensity of treatment for Leg Pad	23
Use of conductivity values for Leg Pad	23
Removing Leg Pad after treatment	23
How to set up treatment for use of the NECK HARNESS	24
Placing surcingle on the horse	24
The Neck Harness	24
Connecting Neck Harness to FES 310	24
Placement options for neck electrodes	25-26
Adjusting time of treatment for Neck Harness	26
Adjusting intensity of treatment for Neck Harness	26
Use of conductivity values for Neck Harness	27
Removing Neck Harness after treatment	27
What are approximate VOLTS USED FOR THERAPY?	28
How should pads be CLEANED?	29
How to REATTACH ELECTRODES after cleaning	29
LIMITED MANUFACTURER’S WARRANTY	30-32
APPENDIX 1 – EC DECLARATION OF CONFORMITY	33
APPENDIX 2 – FEDERAL DECLARATION	34
APPENDIX 3 – DISPOSAL INFORMATION	34
APPENDIX 4 – NOT FOR HUMAN USE WARNING	35
APPENDIX 5 – LABELING REQUIREMENTS	35
APPENDIX 6 – SPECIFICATIONS	35
FES 310 Technical Specifications	36

NOTICE

The unit is intended for use only with horses.

Federal law prohibits the use of this device for any other purpose than on horses.

Not intended for use on humans.

Opening the case voids the warranty.

Read the entire FES 310 Manual For Use before using the system.

The suggestions contained in this Manual For Use are based on general conditions and may not be directly applicable to your situation. Each horse will respond differently and **care must be used during treatments**. A possibility of exciting a horse during treatment exists and caution must be used during the administration of treatments.

Please read the indications and contraindications before using the unit. If you have any concerns on the appropriate use of this device, do not use it.

WARNINGS

Do not expose the system to extremes of cold or heat. Only the pads can be exposed to moisture. Protect the unit itself from wet conditions. Do not drop the unit. The electronics inside should be treated with care as any computer would be.

Do not use with or around any other electronic device.

Do not use if practitioner or horse is standing in very damp or wet areas, and never use when practitioner or horse is in standing water.

Treatment results in physical activity to the muscles being treated. During any physical activity there is a possibility of serious side effects, including but not exclusive of; tachycardia, hypertension, digestive upset, excitability, agitation, muscle, tendon and/or ligament spasms or damage and bone fractures.

If any concern exists about the overall health of the horse, do not use the system for treatment.

Although electrical stimulation has been used extensively in human medicine, the long-term effects of chronic electrical stimulation are unknown.

DANGER

Explosion hazard is possible if used in the presence of explosives, flammable materials or flammable anesthetics.

INDICATIONS

Movement of constricted muscle and tendon tissue and associated ligaments

Relief and management of acute or chronic pain, postoperative and posttraumatic pain

Reduce painful spasms and splintering of muscles as a result of injury

Induce muscle movement to increase the level of circulation of blood and lymph

Removal of edema

Stop the pain-spasm-pain cycle

Reduce pathological cross fiber development during healing

Increase range of motion

Re-education of muscle

Strengthening of muscle after injury

Reversal of muscle wasting (e.g. EPM rehabilitation)

May decrease healing time for bone fractures when used after acute phase

Assist in readjustment of dislocations

Pre and post to chiropractic and acupuncture treatments

Healing of wounds

CONTRAINDICATIONS

Cannot Be Used Over: Cardiac Pacemakers, Electrical Implants, Metal Implants, Carotid Sinus Nerves, Heart, Epiglottis, Mouth, Throat or Brain.

Stimulation may cause malfunction of pacemaker, increased intensity, cardiac arrhythmias, or spasms of the laryngeal and pharyngeal muscles

Do Not Use Over Boney Prominences

May produce a painful response due to the lack of muscle tissue

Acute Injury

Diagnosics must be performed before treatment, should not be used on acute surgical site

Active Bleeding

Hemorrhaging may increase with stimulation

Infections, Including Systemic or Skin Eruptions

Potential for spreading a localized infection because of increased blood flow

High Fever

A secondary problem may exist that needs treatment

High Blood Pressure

Therapy may increase blood pressure

Heart Problems or Disease

Therapy may increase stress on heart

High Heart Rate

Therapy may increase heart rate

Blood Clots or Varicose Veins

Therapy may dislodge clots due to increased circulation

Limited Range of Motion in Joint

Therapy may irritate structural problems that affect the normal range of motion

Dislocation

Strong muscle movement that could result in dislocation

Therapy may allow desirable readjustment if performed on adjacent sites

Abnormal Bone Formation

Therapy may irritate bone spurs, healed or healing fractures that are abnormally sensitive

Severe Muscle Spasticity

Unknown cause of severe spasticity needs to be determined

Severe Osteoporosis

Badly weakened bone may be damaged with muscle movement

Pregnancy

Therapy applied close to uterus may initiate contractions

Cancer

Therapy may break loose bits of cancer and increase spread throughout the body

Lower Motor Neuron Damage, including:

Polio, Amyotrophic lateral sclerosis (ALS), Peripheral nerve injuries (brachial plexus), Muscular dystrophies, due to unhealthy muscle tissue.

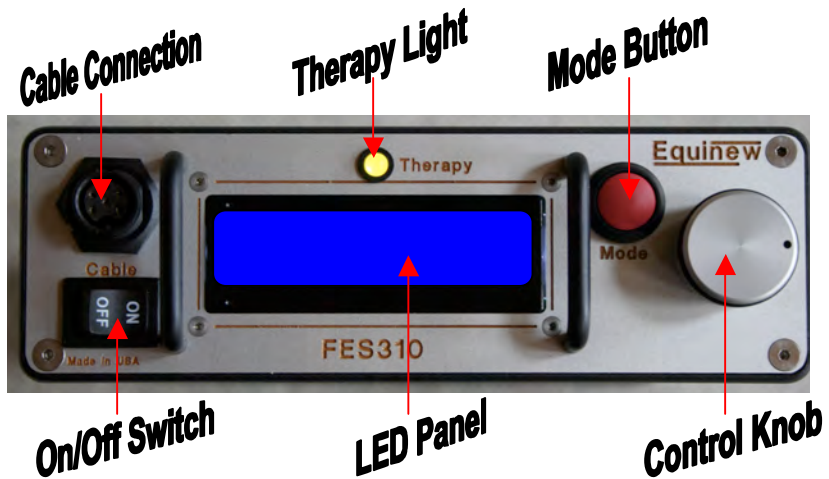
Nerve Damage

With denervated muscle, muscles cannot feel normal sensations and can react abnormally
Possible abnormal response to stimulation of autonomic nerves

Seizures

Therapy may trigger cause of seizure

Front Panel



Cable Connection

Where the connection plug for the cable is attached to the system.

Therapy Light

When the “Therapy” light is on, this indicates that the stimulus is active.

Increase the voltage when the therapy light is on, to obtain a smooth increase in contractions.

Mode Button

Pressing the **RED** Mode Button changes from Time Mode to Treatment Mode so that the Control Knob can be used to set the required values.

To STOP the therapy at any time, press the **RED** Mode Button or the ON/OFF switch.

ON/OFF Switch

Turns the power to the unit on and off.

Can also be pressed to OFF to stop the therapy.

LCD Panel

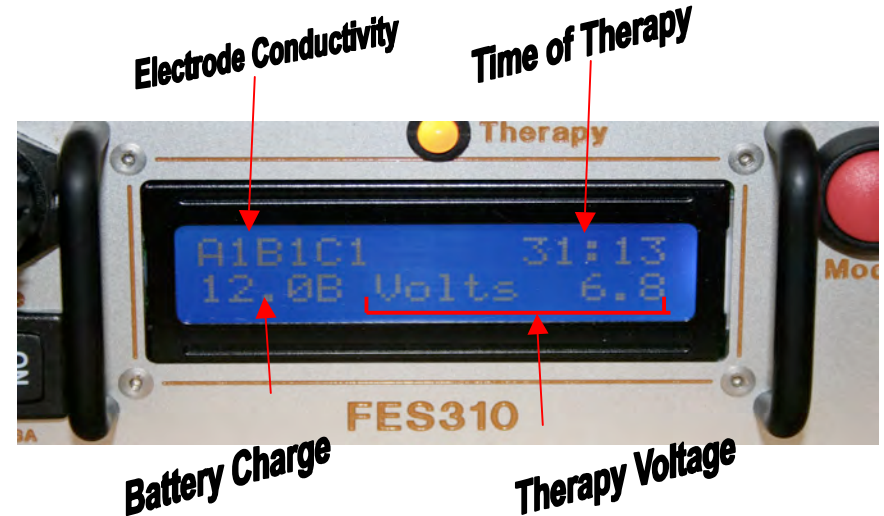
Blue LCD panel clearly displays the treatment variables.

Control Knob

High-quality rotary knob with tactile dial control.

Used to set the time for treatment and to change the intensity.

LED Display



TOP ROW OF DISPLAY PANEL

Electrode Conductivity (Contact)

Displays contact values of each electrode pair

The 3 electrode pairs are designated as A, B & C

Values should ideally be the same for equal electrode contact

Values will most often vary by one number value

Time of Therapy

Countdown of treatment time

BOTTOM ROW OF DISPLAY PANEL

Battery Charge

Voltage of the battery

Value will count down constantly displaying current battery charge

Therapy Voltage

Amplitude of the voltage during treatment

Time of Therapy Information



On power up, the system is in Time Mode with the current charge of the battery displayed. The LED panel will display the word “MINUTES” on the top line. Use the control knob to set the time for the therapy. The maximum therapy time is 60 minutes. The time will count down in seconds.

Battery Charge Information

The current voltage of the battery will be displayed on the bottom line with a letter “B” behind the value to indicate battery voltage. When the voltage is **under 11.7 Volts** the battery should be recharged to get the best possible service from your system. At least 8 hours of treatment time is available with a fully charged battery. Battery life is expected to be 1000 hours of use before replacement.

Therapy Voltage Information



Once the time is set, press the **RED** Mode button to enter the Treatment Mode, which will set the intensity of the therapy. “Volts 0.0” will appear on the bottom line. Turn the control knob slowly to administer the therapy, carefully observing the horse’s reaction as the amplitude is increased.

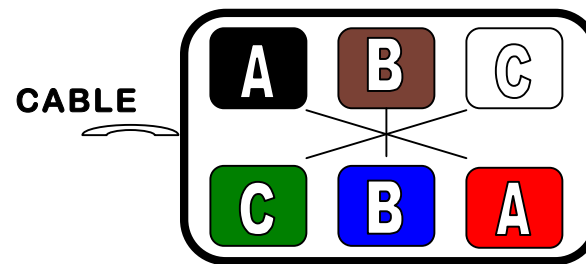
Therapy Light Information


The “Therapy” light changes indicating when the horse is feeling the treatment. At 5 volts, the LED changes from green to orange. At 10 volts or more, the LED changes from green to red.


Electrode Conductivity (Contact) Information

The top left of the LED panel indicates the level of the contact of the electrodes (conductivity). The letters, **A, B & C** designate the three pairs of electrodes. If the contact of all the electrodes is equal, all three numbers will be the same. As the voltage is increased, the numbers of the conductivity will also increase. It is advisable to have the conductivity values differ by only one number.

Viewing from the bottom of the pad, the electrode pairs are illustrated below:



 TURN the system ON
Use the rotary knob to set the TIME in minutes
Press the **RED** MODE button to see display of VOLTS
Use the rotary knob to set the AMPLITUDE of the voltage
To STOP the therapy, press the **RED** MODE or ON/OFF buttons

 Intensity should be INCREASED when the “Therapy” light is ON to obtain a smooth increase in stimulus

Side of Unit



Charger Connection



Charger hooked up to system

Charging the Battery

The connection for the battery charger is on the bottom, right side of the unit. It is advisable to turn the system off when charging the battery, but not necessary. During charging, the battery voltage may increase up to 14.7 Volts, this is normal. When the battery is fully charged, the LED panel will display 12.7-12.8 Volts. If the battery is not charged, the system can be plugged into a 110-240V outlet for use. Recharge the battery when the voltage is **below 11.7 Volts** for best performance. The charger will charge a low battery usually within 2 hours. A fully discharged battery will take about 4 hours to completely charge. Battery life is not shortened by frequent, short charges. To lengthen the life of the battery, **CHARGE THE BATTERY EVERY DAY** after use. The charger cannot over charge the battery. The system and charger are surge protected. When the system is plugged into an outlet, it is **NOT** protected from catastrophic surges such as lightening strikes.

Pad Descriptions and Self-Stick Electrodes

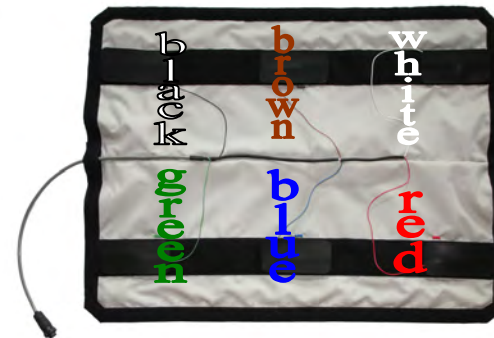
Two pads are included with the system, the BACK PAD and the LEG PAD. Contact the company if you would like custom pads or blankets.

BACK PAD

The back pad has a Cordura nylon cover with a removable nylon liner. Two nylon liners are included so the liners can be easily changed between horses. The liners can be quickly washed and disinfected between uses and will dry rapidly.



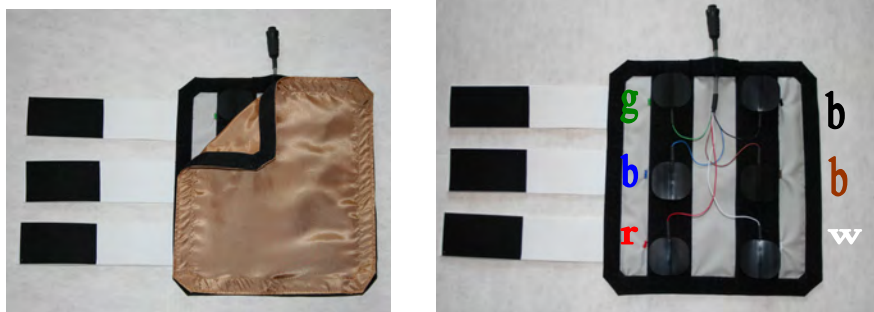
The electrodes are attached to Velcro strips on the inside of the pad. The electrode wires are color coded to specific positions on the pad. It is important that the electrodes are placed on the pad in the below order. Spacing between the electrodes is typically as far apart as possible but can be modified. The electrodes and wires (called the harness) can be completely removed for pad washing.



LEG PAD

The leg pad is constructed similar to the back pad, including the removable nylon liner and electrode harness.

The electrodes are positioned in the same manner for the leg pad as for the back pad.



CABLE

The Quick Disconnect Connectors on the cable improves the ease of cable attachment and aids in safety.



One of the Quick Disconnect Connections is at the attachment of the cable tail on the front panel, and the other one is at the pad.

SELF-STICK ELECTRODES



Self-stick electrodes can be ordered from EquiNew.

Typical sizes are 2" square and 2"x4" rectangular

Other sizes are also available.

These electrodes are used for applications where the pads are not appropriate.

The use of six electrodes for these applications are recommended.

If fewer electrodes are used, the correct wire pairs must be selected.

Channel A red and black **Channel B** blue and brown **Channel C** green and white

Acupuncture and Long-Wire Harnesses

BOTH OF THESE HARNESSES HAVE THE SAME COLOR OF WIRE FOR EACH CHANNEL

ACUPUNCTURE HARNESS

The harness has 6-foot long wires with attachments for acupuncture needles.

Two wires of the same color designate each of the 3 channels.

The signal is "dampened" so the voltage values are less than observed on the panel.

For example, a panel value of

5 Volts = 2.5 Volts

10 Volts = 5.0 Volts

15 Volts = 7.5 Volts

If fewer electrodes are used, the correct wire pairs must be selected.

Channel A both **Red** wires

Channel B both **Blue** wires

Channel C both **White** wires



LONG-WIRE HARNESS

The long-wire harness has 6-foot long wires with attachments for self-stick electrodes.

Two wires of the same color designate each of the 3 channels.

The use of six electrodes is recommended but fewer can be used.

If fewer electrodes are used, the correct wire pairs must be selected.



Channel A both **Black** wires

Channel B both **Brown** wires

Channel C both **Green** wires

Treating the Horse with the FES 310



WHERE SHOULD THE HORSE STAND DURING THERAPY?

1. Horses should be in a comfortable and secure area with good footing.
2. Tying securely is not advised, especially during the first few treatments.
3. Excessive movement by the horse during therapy should be discouraged.
4. The quieter the horse is, the easier it is to determine the response to therapy.
5. Horses can eat or drink during therapy.
6. If the horse defecates during top line treatments,



turn down the intensity so a strong contraction doesn't occur during defecation.



WHERE SHOULD THE PRACTITIONER STAND DURING THERAPY?

1. The practitioner should be close to the control knob for easy and quick adjustments.
2. A loud noise or sudden increase in activity could cause the horse to become startled, therefore influencing the horse's response to the treatment.
3. It is important to reduce any negative reactions to the therapy, especially in the early stages, so the therapy sensations are easily accepted.
4. Almost every horse will become accustomed to the treatment after one or two sessions and will enjoy the treatments in a relaxed manner.



WHERE SHOULD THE BACK PAD BE PLACED?

1. The back pad can be placed at any point on the top line from behind the withers to the base of the tail.
2. Do not place an electrode directly over a bony prominence, because an increase in voltage may produce an uncomfortable response.
3. Do not place the pad near the carotid artery, close to the poll, on the face or in the ventral thoracic area close to the heart.
4. Contact the company concerning additional placement options.



WHERE SHOULD THE LEG PAD BE PLACED?

1. The leg pad can be placed on the lower leg below the knee or hock or on the upper forearm or gaskin.
2. For FLEXOR TENDON and SUSPENSORY LIGAMENT therapy, typically place the leg pad so the center of the pad is on the **back** of the leg.
3. For EXTENSOR TENDON therapy, typically place the leg pad so the center of the pad is on the **front** of the leg
4. For EDEMA therapy, center the pad directly over the swelling.
5. To compliment the treatment of the lower legs, treat the associated muscles above the knee and hock.
6. Always treat **both legs** even if only one leg is injured.



Treat the non-injured leg first to obtain the voltage and conductivity parameters.

7. Do not place an electrode directly over a bony prominence, because an increase in voltage may produce an uncomfortable response.
8. Do not place the pad near the carotid artery, close to the poll, on the face or in the ventral thoracic area close to the heart.
9. Contact the company concerning additional placement options.



HOW TO SET UP THE EQUIPMENT FOR THERAPY

1. Determine treatment site
2. Place surcingle on the horse
3. Prepare and secure treatment pad on the horse
4. Clip the FES 310 system to the surcingle
5. Connect cable to the system and pad
6. Set time and then slowly increase amplitude



HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD

PLACING SURCINGLE ON THE HORSE

1. The surcingles are used to attach the FES 310 system to the horse.
2. Place the surcingles in the normal position for a girth.
3. On horses that are sensitive to pressure in the girth area, the surcingles can be placed further forward or further back from the normal position.
4. For most applications, use the girth provided that has elastic on both ends.
5. For use on very small horses, an alternative girth is included.
6. For extremely large horses, a girth extender can be used.
7. Tighten the surcingles securely so that it will not slip during therapy.
8. The rings on the surcingles are used to clip the system to the surcingles.
9. The surcingles can be placed directly over the treatment pad.
10. The surcingles can be easily wiped clean and disinfected between horses.
11. The surcingles can be laundered in a front load washer. Air dry.

CONNECTING BACK PAD TO FES 310

1. With clean water and a sponge, or small towel, wet and clean the area to be treated. The surface of the skin must be wet, not just the hair coat.
2. Wet only the area that will be under the pad. If the area around the pad is also wet and tape is used to secure the pad, the tape will not stick.
3. Wet the nylon liner of the pad only where the electrodes are located so that water does not run off the pad onto the hair coat.
4. DO NOT allow the cable connector ends to get wet.
5. Place the pad on the wet surface of the horse's hair coat.
6. Flip the edge of the pad up and place a liberal amount of conductive gel on the nylon liner where the electrodes are located. Do this on both sides of the pad.
7. As an option to keep the pad placed correctly, tear 12" strips of duct tape. Place one end of the tape on the pad where the electrodes are located, and the other end of the tape onto the hair coat of the horse. Tape down all 6 electrodes.



8. It is important to keep the pad flat and smooth against the horse. To flatten any wrinkles in the pad, use the Velcro tabs on the top of the pad.

9. Attach the cable tail to the FES 310 system.

Cable Tail



10. There are two quick release connectors, one at the connection to the cable tail, and the second at the connection to the pad.

11. Attach one of the quick release connectors to the back pad

and the other to the cable tail attached to the system.



12. All connection ends should be firmly seated to obtain a good connection.




ADJUSTING TIME OF TREATMENT FOR BACK PAD

1. Turn the FES 310 system ON using the ON/OFF toggle switch.

ON/OFF Switch



2. When the system is turned on, the top line will display "Minutes 0" and the bottom line will display the battery charge in volts on the left.
3. When the battery is fully charged it will read 12.6 volts.
4. Turn the knob to the right or clockwise to set the treatment time.
5. A typical treatment time for Top Line is 35 minutes and for Legs & Neck is 20 minutes.
6. If the horse is sensitive to the treatment, a slower, longer treatment time is suggested.



LENGTH OF TIME FOR TREATMENTS

1. TOP LINE	35 minutes
2. LEGS & NECK	20 minutes each

ADJUSTING INTENSITY OF TREATMENT FOR BACK PAD



1. After setting the treatment time, push the **RED** Mode button to change the display to the Treatment Mode. Use the knob to slowly increase the amplitude to begin treatment.
2. Initially, the intensity can be set to 2 volts, then slowly increase the amplitude until one of the channels shows a conductivity value of “1”
3. Typically a minor contraction is felt under one or more of the electrodes when all of the channels display “1”.
4. Each click of the control knob increases the intensity by 0.2 volts. This allows for a slow increase in intensity, which improves compliance.
5. Conductivity values should appear in the first 5-10 minutes.
6. If conductivity values have not appeared by 5 Volts, turn the volts down and check the connections. One of the quick releases may not be seated properly.
7. When the conductivity values increase, stop increasing the intensity for a minute or two, allowing the horse to accept the new sensation.
8. All electrodes will not have the same contraction strength, some may not contract at all.
9. Each time the strength of the contractions increases, or another electrode activates, wait a minute or two before increasing the intensity.
10. As the intensity is increased, place one hand on the pad, moving between each electrode to determine when a new contraction begins.
11. Please NOTE that if one electrode has poor contact, the pressure of your hand could result in an increase in intensity that may surprise the horse.
12. Rest one hand on the control knob so the intensity can be smoothly adjusted.
13. Ideally, all electrodes will have consistent and smooth contractions by session end.
14. The higher the voltage the deeper the contractions.
15. Typically, for muscle therapy it is beneficial to obtain the deepest contractions possible.
16. Functional movement is the goal of each treatment. However, when this functional movement occurs is individualized to each horse and each specific situation.

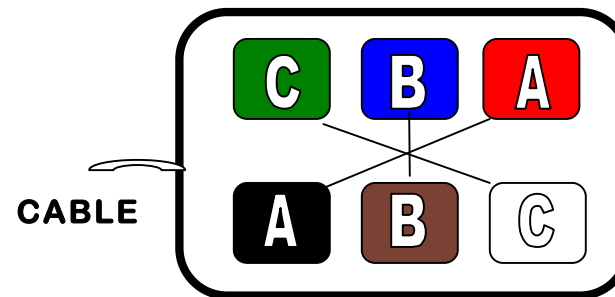


ADJUSTING THE INTENSITY OF THE FES 310

1. Increase the voltage until one of the channels registers a level of “1”.
2. When the intensity of the contractions increases, wait one or two minutes before increasing the intensity again.
3. Increase the intensity until contractions occur under all electrodes.
4. The higher the intensity, the deeper the therapy can reach.
5. For typical muscle rehabilitation, select an intensity that obtains the strongest contractions while maintaining acceptance by the horse.
6. For early, acute rehabilitation, select the intensity necessary to obtain the degree of mobilization desired by the practitioner.

USE OF CONDUCTIVITY VALUES FOR BACK PAD

1. Once the voltage is increased to between 3 and 5 volts, the electrode Conductivity Value numbers will typically begin to display on the LED panel.
2. When viewed from the bottom of the pad, the letters, **A, B & C** designate the three pairs of electrodes as illustrated below:



3. When the practitioner stands on the left side of the horse facing the logo on the pad, the “A” electrodes will be closest to the horse’s head and the “C” electrodes closest to the tail.
4. An easy way to remember the color sequence is all the “dull” colors are on one side and all “bright” colors are on the other side.

5. If the contact of all the electrodes is equal, all three conductivity numbers (located behind the channel designations of **A**, **B** & **C**) will be the same as in the below picture.



6. As the voltage is increased, the conductivity numbers will also increase.
7. If one, or more, electrodes have a poor contact, that conductivity number will be different than the other pairs.
8. In the below illustration, the **B** & **C** electrode pairs have a better contact (5) than the **A** electrode pair (3). In addition, the difference between the conductivity values is more than one, which is not desirable.



REMOVING BACK PAD AFTER TREATMENT

1. When the treatment is completed, only the time set for the treatment is displayed.
2. Disconnect the cable from the pad and system and turn the system OFF.
3. Remove the tape by pulling off the tape from top to bottom and remove pad.
4. Unclip the FES 310 system from the surcingle and remove the surcingle.
5. Wipe the excess gel from the horse and pad with a dry towel.
6. Remove the nylon liner from the pad to clean and disinfect.



HOW TO SET UP TREATMENT FOR USE OF THE LEG PAD

PLACING THE SURCINGLE ON THE HORSE

1. The surcingle is used to attach the FES 310 system to the horse.
2. For additional information see:

HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD PLACING THE SURCINGLE ON THE HORSE

CONNECTING LEG PAD TO FES 310

1. With clean water and a sponge or small towel, wet and clean the area to be treated. The surface of the skin must be wet, not just the hair coat.
2. Wet the nylon liner of the pad only where the electrodes are located to keep water from running off the pad and onto the hair coat.
3. Do not allow the cable connector ends to get wet.
4. Apply a liberal coating of conductive gel on the nylon liner over the electrodes.
5. Place the pad on the wet surface of the horse's leg. Tighten the Velcro straps to fit the pad as snugly as possible to the leg.
6. There are two quick release connectors, one should be located at the connection to the cable tail, and the second at the connection to the leg pad.
7. Attach the cable to the pad and to the cable tail, making sure the connections are seated.
8. If the horse lifts the leg constantly during treatment and the quick release will not stay attached, place a piece of duct tape over the connector to keep it from pulling away.
9. Turn the FES 310 system ON.

ADJUSTING TIME OF TREATMENT FOR LEG PAD

1. When the system is turned on, the word "Minutes 0" will be displayed.
2. Turn the knob to the right or clockwise to set the time.
3. A typical treatment time is 20 minutes for each leg. It is advisable to treat both legs, even if the injury is only to one leg.
4. For additional information see:

HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD ADJUSTING TIME FOR BACK PAD TREATMENT

ADJUSTING INTENSITY OF TREATMENT FOR LEG PAD

1. After setting the time for the treatment, push the **RED** Mode button to change the display to the Treatment Mode. Use the knob to slowly increase the amplitude to begin treatment.
2. Initially, the intensity can be set to 2 volts, then slowly increase the amplitude until one of the channels shows a conductivity value of “1”.
3. It may be difficult to constantly feel the leg pad for contractions. Observation of the leg can be used to determine when contractions first occur.
4. Higher voltages will be used for the leg when compared to treatments on larger muscles.
5. Most horses do not react in a negative way to the sensation of the leg therapy.
6. Some horses may lift their leg slowly or quickly when they initially feel the contractions.
7. As the intensity increases, the contractions will become more pronounced and more and more electrodes will become active.
8. Each time the contraction intensity increases, or another electrode becomes active, wait a minute or two before further increasing the intensity.
9. Rest one hand on the control knob so the intensity can be smoothly adjusted.
10. Ideally, all electrodes will have consistent and smooth contractions by the end of the session.
11. For more information see:
HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD
ADJUSTING INTENSITY OF BACK PAD TREATMENT

USE OF CONDUCTIVITY VALUES FOR LEG PAD

1. For information see:
HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD
USE OF CONDUCTIVITY VALUES FOR BACK PAD

REMOVING LEG PAD AFTER TREATMENT

1. When the treatment is finished, only the time and battery charge will be displayed.
2. Disconnect the cable from the leg pad and from the system, and turn the system OFF.
3. Remove the pad.
4. Unclip the FES 310 system from the surcingle and remove the surcingle.
5. Wipe the excess gel from the horse and pad with a dry towel.
6. Remove the nylon liner from the pad to clean and disinfect.



HOW TO SET UP TREATMENT FOR USE OF THE NECK HARNESS

PLACING THE SURCINGLE ON THE HORSE

1. The surcingle is used to attach the FES 310 system to the horse.
2. For additional information see:

HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD PLACING THE SURCINGLE ON THE HORSE

The NECK HARNESS

The neck harness is located in a separate labeled package. It has longer lead wires than the back harness. You will use self-stick electrodes on the neck harness rather than the black carbon electrodes used on the back and leg pads. You can purchase the self-stick electrodes from EquiNew.

If you did not purchase the neck harness, the back harness can be utilized on the neck.

To use the back harness for a neck harness you will have to:

1. Remove the harness from the back pad.
2. Replace black rubber electrodes with self-stick electrodes

CONNECTING NECK HARNESS TO FES 310

1. Do not wet the area to be treated. The self-stick electrodes will not adhere to wet surfaces.
2. To secure the neck harness on the horse, place the Velcro tie that is located on the neck harness around the mane approximately at the middle of the neck.
3. Organize the neck harness wires so that the white, brown and black wires are on one side of the neck; and the green, blue and red wires are on the other side of the neck.
4. Place the self-stick electrodes on the neck at the desired placement. Make sure that the electrodes are placed symmetrically on each side of the neck. See following pictures for suggestions of placements.
5. Apply duct tape to the bottom edge of the electrode to keep it in place and to keep the gel from running down the neck.
6. Attach each electrode to the appropriate harness wire. Make sure the correct pattern is used so that the electrode pairs are the same as on the back harness.
7. Lift up the top edge of the electrode and apply a ½” circle of conductive gel under the electrode. Lightly press the electrode back into place.

8. Attach the cable to the neck harness and to the cable tail, make sure the connections are seated.
9. Turn the FES 310 system ON.

PLACEMENT OPTIONS FOR NECK ELECTRODES

- A - Short length wires **Green & Black** typically placed ventral at base of neck
- B - Medium length wires **Blue & Brown** typically placed dorsal at base of neck
- C - Long length wires **Red & White** typically placed cranial

Note: Wires White - **Brown** - **Black** are on the same side of the neck
 Wires **Red** - **Blue** - **Green** are on the same side of the neck

Important: ALWAYS keep the electrodes AWAY FROM THE CAROTID ARTERY



1. Long Triangle



2. Short Triangle



3. Brachiocephalic

ADJUSTING TIME OF TREATMENT FOR NECK HARNESS

1. When the system is turned on, the word "Minutes 0" will be displayed.
2. Turn the knob to the right or clockwise to set the time.
3. A typical treatment time is 20 minutes for the neck.
4. For additional information see:

HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD
 ADJUSTING TIME FOR BACK PAD TREATMENT

ADJUSTING INTENSITY OF TREATMENT FOR NECK HARNESS

1. After setting the time for the treatment, push the **RED** Mode button to change the display to the Treatment Mode. Use the knob to slowly increase the amplitude to begin treatment.
2. Initially, the intensity can be set to 2 volts, then slowly increase the amplitude until you see or feel a contraction under one of the electrodes.
3. Unlike back treatments, **contractions will typically be seen several volts before a channel shows a conductivity value of "1"**. This is due to the calibration of the conductivity values to the larger muscles of the back.
4. Observe both sides of the neck because the first contraction will typically be on only one side of the neck.
5. Similar voltages will be used for the neck when compared to treatments on the back, but the conductivity numbers will be lower. However, as treatments continue the voltage and conductivity numbers for the neck will become similar to the back treatment values.

6. Most horses do not react in a negative way to the sensation of the neck therapy. However, it is not unusual for the horses to twist their necks excessively during the first few treatments.
7. As the intensity increases, the contractions will become more pronounced and more and more electrodes will become active.
8. Each time the contraction intensity increases, or another electrode becomes active, wait a minute or two before further increasing the intensity.
9. Rest one hand on the control knob so the intensity can be smoothly adjusted.
10. Ideally, all electrodes will have consistent and smooth contractions by the end of the session.

11. For more information see:

HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD
ADJUSTING INTENSITY OF BACK PAD TREATMENT

USE OF CONDUCTIVITY VALUES FOR NECK HARNESS

1. For information see:

HOW TO SET UP TREATMENT FOR USE OF THE BACK PAD
USE OF CONDUCTIVITY VALUES FOR BACK PAD

REMOVING NECK HARNESS AFTER TREATMENT

1. When the treatment is finished, only the time and battery charge will be displayed.
2. Disconnect the cable from the neck harness and from the system, and turn the system OFF.
3. Remove the neck harness from the mane. Remove the electrodes from the neck and place them on the plastic bag. Leave the electrodes to air dry, do not seal them back into the bag. This will help to keep the electrodes sticky and the top fabric dry so the duct tape will stick to the electrodes. The electrodes can be used on the same horse several times before being replaced. Do not use electrodes on different horses due to the possibility of disease transfer.
4. Unclip the FES 310 system from the surcingle and remove the surcingle.
5. Wipe the excess gel from the horse with a dry towel.



WHAT ARE APPROXIMATE VOLTS USED FOR THERAPY?

1. Horses can vary greatly in their response to the intensity of the voltage.
2. Adjust the intensity of the voltage gradually, always watching the reaction of the horse and the level of contraction so that the desired intensity is obtained.
3. For the first few treatments do not go above the following voltages:

TOPLINE TREATMENTS	10 VOLTS
LOWER LEG TREATMENTS	15 VOLTS
NECK TREATMENTS	7 VOLTS
4. The following are general guidelines for intensities.

INTENSITIES FOR TOP LINE & NECK TREATMENTS

The horse will feel warmth under the electrodes

Between an intensity of 2 and 4 Volts

The horse will feel minor contractions

Between an intensity of 4 and 6 Volts

The horse will feel distinct contractions

Between an intensity of 5 and 10 Volts

INTENSITIES FOR LOWER LEG TREATMENTS

The horse will feel warmth under the electrodes

Between an intensity of 5 and 7 Volts

The horse will feel minor contractions

Between an intensity of 7 and 15 Volts

The horse will feel distinct contractions

Between an intensity of 10 and 20 Volts

5. Ranges that can be seen on a minority of horses include:

FOR THE TOP LINE AND NECK TREATMENTS

First Minor contractions between 3 and 10 Volts

FOR THE LOWER LEG TREATMENTS

First Minor contractions between 7 to 25 Volts



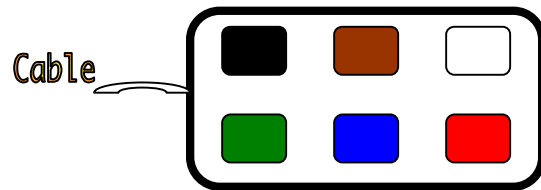
HOW SHOULD PADS BE CLEANED?

1. The pads are designed so they can be easily laundered.
2. Remove the nylon liner to expose the electrodes.
3. Grasp the Velcro on the electrodes where they are connected to the pad and **PULL ONLY ON THE VELCRO** not on the electrodes.
4. Remove the electrodes carefully from the Velcro strip on the pad. The electrodes can be ripped if excessive force is used.
5. **Do not pull on the wires** to remove the electrodes.
6. Remove the Velcro tab at the top of the pad that secures the cable.
7. Velcro the liner onto the pad, both the liner and pad top can be laundered and disinfected.
8. To clean the electrodes and cable, wipe with a damp cloth.



HOW TO REATTACH ELECTRODES AFTER CLEANING

1. The position of the electrodes in the pad is extremely important.
2. Each electrode must be positioned on the pad in a specific order.
3. The wires of the electrodes are color coded to match the colors on the inside of the pad.



4. Secure the electrodes onto the Velcro strip on the inside of the pad.
5. The electrodes can be spaced evenly on the Velcro strip or custom spaced to suit individual pad placements.
6. Attach the Velcro tab around the cable end at the top of the pad.
7. Replace the nylon cover over the electrodes and wires.

LIMITED MANUFACTURER'S WARRANTY FES 310

EquiNew is proud to produce only high-quality products with exceptional customer service. If you experience any difficulties with the performance of your product, please do not hesitate to contact the company and we will make every effort to promptly resolve your concerns.

A. The warranty provided by EquiNew, LLC (“Company”) under this Agreement applies to the first retail purchaser only, beginning on the date of purchase, and includes the following terms:

- i) 1-year warranty of the FES310 system (“Equipment”) to include all repairs due to general defects in materials and workmanship, including all materials and components used in the Equipment’s construction;
- ii) The company will repair or replace your Equipment free of charge in the event of a breakdown due to defective parts or software during the warranty period;
- iii) The Company reserves the right to replace the Equipment with Equipment of the same or similar make and specifications in lieu of repairing the defective Equipment;
- iv) Purchaser must notify EquiNew, LLC of any defects and obtain Return Authorization before shipping the Equipment to the company for resolution of the problem;
- v) Any repairs will be performed by the Company at the Company’s address;
- vi) Return shipping costs will be paid in full by the Company for any Equipment returned that is under warranty;
- vii) This warranty may not be transferred to a second or subsequent owner;
- viii) Any oral statements made by sales personnel or other employees of EquiNew, LLC do not constitute warranties and should not be relied upon by the purchaser and are not part of the contract of sale. No other warranties are given beyond those set forth herein.

B. The warranty provided by EquiNew, LLC under this Agreement does not apply to or include:

- i) Damage caused by failure to provide a suitable environment for the Equipment, including but not limited to the failure to provide a temperature above freezing and below 100 degrees;
- ii) Damage caused by use of the Equipment for other than the purpose for which it was designed;
- iii) Damage arising from failure to follow the Company’s instructions;
- iv) Damage caused by fire, heat, explosion, water, lightning, frost or other inclement weather conditions; electrical surges or brownouts; neglect or misuse; theft; or attempted theft;
- v) Damage due to alterations, which shall include but not be limited to any deviation from the Equipment’s physical, mechanical or electrical design; opening the case voids all warranties;
- vi) Cleaning or routine servicing;
- vii) Cosmetic damage such as damage to the paint work or dents or scratches to the Equipment;
- viii) Damage due to rust, corrosion or water;
- ix) Any guarantee whatsoever that a particular piece of Equipment will achieve a certain level of performance;

x) Costs arising from the Purchaser being unable to use the Equipment, damages caused by equipment failure, travel expenses, or loss of time or income due to equipment failure;

Due to a continuing program of product development and improvement, EquiNew, LLC reserves the right to change Equipment specifications, features and prices without notice.

LIMITATION OF LIABILITY

EquiNew's entire limitation of liability and the Purchaser's exclusive remedy shall be as follows:

In all situations when the Equipment has been returned to the Company due to performance or non-performance of the Equipment furnished under this Agreement, the Purchaser's remedy is limited to the adjustment or repair of the equipment, or replacement of its parts, or at the option of EquiNew, LLC, replacement of the equipment. In the event Equipment is returned within 30 days of purchase, EquiNew, LLC shall promptly refund to the Purchaser the total Purchase Price of the Equipment.

IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT, INDEMNITY, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE SHALL THE COMPANY'S LIABILITY TO PURCHASER OR ANY END USER OR THEIR INSURERS FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR PUNITIVE DAMAGES, INCLUDING, BUT NOT LIMITED TO LOSS OF PROFIT OR REVENUES, LOSS OF USE OF THE EQUIPMENT OR ANY ASSOCIATED EQUIPMENT, DAMAGE ASSOCIATED WITH USE OF THE EQUIPMENT, OR OTHER ITEMS PURCHASED FROM THE COMPANY, SERVICES OR CLAIMS OF PURCHASER'S CUSTOMERS FOR SUCH DAMAGE, EXCEED THE COST PAID FOR THE EQUIPMENT WHICH GIVES RISE TO THE CLAIM

In no event will EquiNew, LLC be liable to Purchaser for any incidental, consequential or special damages such as, but not limited to; damage to or loss of other property including animals, claims of customers of the Purchaser, any lost profits, cost of purchased or replacement goods, failure to warn and/or instruct others about the Equipment, or lack of usability of the Equipment, lost savings or other incidental or consequential damages arising out of the use or inability to use the equipment by the Purchaser or a customer of the Purchaser; even if EquiNew, LLC has been advised by the Purchaser of the possibility of such damages, or any claim by a customer of the Purchaser.

EquiNew does not endorse, represent or warrant the accuracy or reliability of any of the information, content, advertisements or other materials contained on, distributed through, or linked, downloaded or accessed from our service. EquiNew does not endorse, represent or warrant the quality of any products, information or other materials displayed, purchased, or obtained as a result of or in connection with the service, and we do not endorse, represent or warrant the service, security or practices of any of the vendors whose products or services are included on the service, other than as provided in the previously stated warranties. Any reliance upon any information, content, advertisements, materials, products, services or vendors included on or found through the service shall be at the user's sole risk.

GENERAL DISCLAIMER

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE APPEARING IN THIS AGREEMENT AND THERE ARE NO IMPLIED WARRANTIES, EITHER OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH EITHER THE PURCHASE OF THE EQUIPMENT OR ANY EXERCISE OF THE OPTION TO LEASE HEREUNDER.

In the event of the lease or purchase of the Equipment by Purchaser to a third party, Purchaser agrees to notify such party that he/she is limited to the Manufacturer's Limited Warranty, as its sole and exclusive warranty for the Equipment. In that event, Purchaser agrees to hold Company harmless for any claims by such third party, which exceed the scope of Manufacturer's Limited Warranty.

The warranty provided herein is in lieu of all other express warranties, whether written, oral, implied or statutory and may not be modified by anyone. No statutory warranty of merchantability or fitness for a particular purpose shall apply. The preceding paragraphs set forth the exclusive remedies for claims based on defect in, or failure of, products, whether the claim is in contract, indemnity, warranty, tort, negligence, strict liability or otherwise and however instituted. **To the extent allowed by law, any implied warranties, including any implied warranties of merchantability or fitness for a particular purpose are limited as set forth in this written warranty.** Correction of non-conformities, in the manner and for the periods of time as set forth above, shall constitute fulfillment of all liabilities of EquiNew, LLC to the purchaser whether based on contract, negligence or otherwise.

Some states do not allow limitations on how long an implied warranty lasts or the exclusions or limitations of incidental or consequential damages, so the above limitation or exclusions may not apply to you. This warranty gives you specific legal rights; you may have other legal rights, which vary from state to state.

Warranty Contact Information:
EquiNew, LLC
N8139 900th St
River Falls, WI 54022
715 222-8279

APPENDIX 1

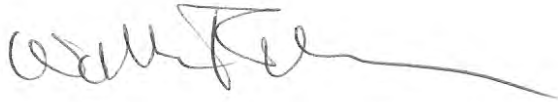
EC DECLARATION OF CONFORMITY

Equinew, LLC confirms that the FES310 functional electrical muscle stimulator, as specified in this operating manual complies with the EMC Directive 2004/108/EC and has been tested and classified to CISPR 11:2003 Class A.

Equinew, LLC confirms that the FES310 functional electrical muscle stimulator, as specified in this operating manual complies with the Low Voltage Directive 2006/95/EC.

Product Serial numbers from SN 1024 onwards comply with the RoHS Directive 2002/95/EC. These products do not contain Lead (Pb) (apart from traces in aluminium parts that are below the allowable maximum), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr), Polybrominated Biphenyl (PBB) or Polybrominated Diphenyl Ether (PBDE), with the exception of lead contained in the battery.

Equinew, LLC confirms that collection and recycling processes are in place to comply with the WEEE Directive 2002/96/EC, as amended by 2003/108/EC, and the Battery Directive 2006/66/EC.



William R. Eubank, MS
Director of Engineering
Equinew, LLC
November, 2008

APPENDIX 2

FEDERAL DECLARATION

Equinew, LLC confirms that the FES310 functional electrical muscle stimulator as specified in this operating manual, does not cause radio interference with other equipment and complies with Federal guidelines on Radio Interference and is tested to CISPR 11:2003 and is classified Class A.

APPENDIX 3 – DISPOSAL INFORMATION

DISPOSAL

All Equinew products contain small traces of Lead (Pb) and so should not be disposed of in landfill sites. If you have Equinew products that you wish to dispose of and you are not sure how to do it in a manner that is safe for the environment, return the equipment direct to Equinew, LLC or to your nearest Equinew dealer, who will arrange correct disposal/recycling of the equipment. This is a legal requirement in the European Union (EU) after July 2006 under the Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96/EC. Additional, the battery in the FES310 product contains lead and should not be disposed of. If you have a battery from this product that you wish to dispose of and you are not sure how to do it in a manner that is safe for the environment, return the equipment direct to Equinew, LLC or to your nearest Equinew dealer, who will arrange correct disposal/recycling of the battery.



APPENDIX 4 – NOT FOR HUMAN USE WARNING

**EQUINEW IS A VETERINARY DEVICE
INTENDED FOR USE ON ANIMALS ONLY**

DO NOT USE ON HUMANS

APPENDIX 5 - LABELLING REQUIREMENTS



**This product complies with 2004/108/EC,
2006/66/EC, 2006/95/EC, 2002/95/EC, &
2002/96/EC as amended by 2003/108/EC.**

APPENDIX 6 - SPECIFICATIONS

BATTERY CHARGER

Manufacturer	PowerStream
Type	PST-3P10-12V (3PA1015)
Approvals	CE, UL & RoHS compliant
Class	2
Input Voltage	90-264Vac
Output voltage	14.75V max
Rating	14W

NOTE: Changing the battery charger to a different type could compromise the safety and cause a battery charging or electrical safety hazard. Only use the above supplied battery charger.

**FES 310
Technical Specifications**

Dimensions	Height 9 inches Width 6.5 inches Depth 2.1 inches
Weight	4 pounds without carrying case
Power	12v 1.2Ah SLA battery
Battery Charger	1 amp, use only with 12-volt battery 50-60 Hz Energy conserving switching regulator Can be used to power system with 100-240 volts Surge protected
Display	16x2 blue backlit LCD with white characters
Case:	Extruded aluminum
Max Therapy Time	60 minutes
Max. Amplitude	49.6 volts
Control	Digital controller with a 16-bit microcontroller
Waveform:	Balanced biphasic, 0 net charge



The Equine
Therapy
Company

EquinewTM
LLC

N8139 900th Street
River Falls, WI 54022
715.222.8279

www.EquiNew.com