Chicken Hawk Racing
Motorcycle Tire Warmers

Instruction Manual & Warranty Card

CHICKEN HAWK Racing

Contact Information

Chicken Hawk Racing
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Chickenhawkracing.com

Table of Contents

Cautions and Warnings

Read it!

DO NOT expose the tire warmer to water, as with all electrical devices there is a risk of electric shock which can result in injury or death.

DO NOT leave the tire warmer unattended.

DO NOT use the warmer if there are any visible signs of damage.

This product is intended for the heating of race tires, no other use is approved.

Bunching, folding or over-lapping heated areas of the tire warmer will result in over-heating. This can result in damage to the tire warmer AND the tire. Read the section on How to Install for specific information.

ONLY use the proper sized warmer on tire-heated area should NOT over-lap.

Be sure to use the proper electrical voltage as your power supply.

How to Install

1. Most tire warmers come with a strap on the end that does NOT have the power cord.

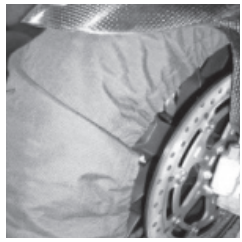
2. Pass the strap through the wheel and attach to the Velcro on the back of the warmer. Be sure to center the warmer one the tire.

3. Place your foot or knee on the tire to prevent the wheel from spinning and stretch a section of the warmer over the tire, not using excessive force.

4. Rotate the wheel and repeat until the entire tire is covered; attach the two ends of the warmer with the Velcro.

5. Plug in!

It is important to have the warmer flat and smooth (not bunched or folded) as you place the warmer on the tire.



NO!

How to Remove

When it is time to take the warmers off ...

1. Remove from power – **UNPLUG** first! Warmers not mounted on tires that are left energized can be severely damaged.

2. Simply take the end with the Power Cord, separate the Velcro and gently pull the warmer. The wheel should spin and allow the warmer to come off.

3. Undo the Velcro strap and remove.

4. Place the warmer in a safe place where it will not be stepped on or tripped over.

*** Once disconnected from power the warmer need not be laid flat, but it should be put in some place safe from harm.

How to Store

CHR Tire Warmers are built tough to handle life in the paddock, however if they are cared for many will last longer. We suggest the life expectancy of the product to be 5 seasons, but have seen them last even longer!

DO roll up the warmers after use. Begin rolling the end that does NOT have the power cord.

Do NOT crush the warmers, placing something on top of them.

Do NOT store the warmers in a wet or damp environment.

Do NOT leave them in freezing conditions for extended periods of time.

DO store the warmers in the provided bag or carrying case.

General Use Instructions

ALL MODELS

Normal usage: It is recommended to use the tire warmer for 45 minutes prior to the race. This is to ensure that the entire carcass is "Heat Soaked", meaning it is heated all the way through. (See article in the back of the Instructions for more detailed information)

If it is especially windy or cold it may take longer to get the tire up to temperature, so an extra 15 minutes can be added to the heat up time. If windy, it is recommended to try and keep the vehicle in a garage, trailer or simply to cover the entire vehicle to stop wind from robbing heat.

STANDARD MODEL

Neon Light: The Neon light indicates that the warmer is energized and making heat. When the warmer reaches the desired temperature (174 F / 79 C) the warmer will shut off for a short period of time and the red light will go out and the green light will light up. This process will repeat itself as the warmer maintains the target temperature. Usually this happens after 20-30 minutes, the tire is not yet heat soaked. 45-55 minutes is recommended. Do not be alarmed if in certain cases the light appears to blink on/off quickly, this is part of normal operation

3-TEMP POLE-POSITION & DIGITAL PRO-LINE MODEL

Pole Position model is equipped with 3 temperature settings: 132, 155 & 175 degrees F. (55, 67 & 79 Celsius) – The 175 (H) setting is to be used prior to a race or practice session when the warmers will be removed and the bike will enter the track right after.

The lowest setting of 135 degrees (L) is to be used when:

1. Rain compound tires are to be used. These should be heated for about 20-30 minutes.

2. There is down-time between track sessions and saving "heat cycles" is desired. In this situation, place the warmers back on the tires right after the vehicle returns from the track and the tires are hot. The warmer will only maintain a temperature of 132 degrees preventing the tire from cooling all the way down, hardening up, and

(continued on next page)

going through the “heat cycle”. With the tire “warm” already at 132 degrees, change the Temperature Controller to the 174 setting 20 minutes prior to the race to heat up completely.

3. It is possible to use only the low setting on a Practice day. This is for a situation where you will not be pushing hard on the first lap. The tire is still heat soaked and warm enough to prevent a “cold tire” incident. The tire should always be warm during the time of the track sessions either from usage on the track or on the warmer. Once done for the day, the warmers can be placed back on the tires and NOT plugged in or energized. In this way they can cool down slowly and be ready for the next day’s action.

Medium Setting:

There are tire brands or compounds that may work better at lower temperatures. If you are using a very soft compound or tire vendor recommends a lower temperature setting this provides you with an additional option. This is the middle temperature on the 3-position switch model model or selected on the Digital Pro-Line model and is an option for the quick disconnect model (call for more info).

Changing the Temperature – Pole Position

The Switch can be moved to change temperature whenever you desire – being energized or unplugged will not matter.

This Switch is supplied with 3 Temperature Positions Low, Med & High.

Low –	**55** Celsius	or	**131** Fahrenheit
Med –	**67** Celsius	or	**152** Fahrenheit
High –	**79** Celsius	or	**175** Fahrenheit

– Be careful of Track Power Sources, Long Extension Cords or over-taxing a generator.

– You can check the voltage by checking the end of your extension cord with an electrical meter. If you have questions on this, please call our tech line.

DIGITAL PRO-LINE MODEL

The range of temperatures available are from 100F - 212F, in one degree increments (See detailed instructions for operation of the Digital Temperature Controller).

The concepts of changing temperature for different compound tires and different situations during practice and racing are the same as the Pole Position model described above and outlined below.

For most tire brands/compounds, settings of 175 and above are to be used prior to a race or practice session when the warmers will be removed and the vehicle will enter the track right after. The lower settings from 120 -135 degrees is to be used when:

1. Rain compound tires are to be used. These should be heated for about 30 minutes.

2. There is going to be down-time between track sessions and saving "heat cycles" is desired. In this situation place the warmers back on the tires right after the vehicle returns from the track and the tires are hot. The warmer will only maintain the tires temperature when it drops to the set point, preventing the tire from cooling all the way down and hardening up from going through the "heat cycle". With the tire "warm" already at 135 degrees, change the Temperature Controller to the 175 or higher, about 20 minutes prior to the race.

3. It is possible to use only the low settings on a Practice day. This is for situations where you will not be pushing hard on the first lap. The tire is still heat soaked and warm enough to prevent a "cold tire" incident. The tire should always be warm during the time of the track sessions either from usage on the track or on the warmer. Once done for the day, the warmers can be placed back on the tires and NOT plugged in or energized. In this way they can cool down slowly and be ready for the next day's action.

PRO LINE Digital Control Box Instructions

The DTC 1 control has a NEMA1 (not water tight) high-impact plastic enclosure, equipped with a 4-pin female AMP terminal and a Power Supply Cord on the side. The DTC1 control is not position sensitive and does not require any additional internal wiring.

High voltages may be present at AMP electrical terminals and other exposed internal metal surfaces. DO NOT open the DTC1 Controller for any reason, high voltage is present inside the case. Being a Solid State design no repairs will be possible outside the Factory. Should a malfunction occur, the entire unit needs to be returned to be evaluated/repaired.

OPERATION

The Tire Warmer has a 6' cord with a 4 pin AMP male plug mounted on it.

1. Attach the Tire Warmer into its counterpart mounted on the controller.

2. Secure correct position by screwing it on until snug (do not over-tighten).

3. Plug the Power Supply Cord into a wall outlet (120V Single Phase Household current)

4. Follow instructions for setting the desired temperature (set point).

SETTING THE DESIRED TEMPERATURE (SET POINT)

To view and adjust the set point, follow these steps:

1. Press and hold the MENU button until the display changes to flashing SP.

2. Press the MENU button again. The current set-point is displayed.

3. Press the Up or Down button to adjust the set-point temperature (max. 212 Fahrenheit or 100 Celsius).

4. Press the MENU button to save. The display then returns to the sensor temperature

5. The DTC 1 control is set at the factory in Fahrenheit temperature. To convert to Celsius, press the Up and Down buttons simultaneously. Press them again simultaneously to return to Fahrenheit.

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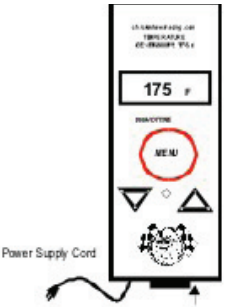
PRO LINE Digital Control Box Instructions (cont.)

SETTING ADDITIONAL FUNCTIONS

It is **NOT RECOMMENDED** to change Factory Settings of other functions since it will cause significantly lesser accuracy of controlling of a given set-point.

Additional functions are:



Differential
– displayed on the LCD as diF (factory setting “1”)
Anti-short Cycle Delay
– displayed on the LCD as ASd (factory setting “0”)
Temperature Offset
– displayed on the LCD as OFS (factory setting “0”)
Sensor Failure Operation
– displayed on the LCD as SF (factory setting “0”)

1. Press and hold the MENU button until the display changes to flashing SP. This will take about 2 seconds.
2. Press the Up or Down button repeatedly until the desired function is displayed. (SP, dIF, Asd, OFS, SF)
3. Press the MENU button to display the function’s current value.
4. Press Up or Down button until desired value is displayed.
5. Press the MENU button to save the new value. The display then returns to the sensor temperature

Fault Codes for PRO-LINE Digital Control Boxes

Fault Code	Definition	Solution
SF flashing alternately With OP/212F	Open temperature sensor or sensor wiring	Cycle power to reset the control
SF flashing alternately with SH	Shorted temperature sensor or sensor wiring	Cycle power to reset the control
EE	Program failure	Reset the control by pressing MENU. If problems persist, replace the control

*__DO NOT__ attempt to repair the temperature controller yourself.

Troubleshooting

SIZING PROBLEMS

TOO SHORT: Should the warmer not reach all the way around – remove completely and re-install making sure that the warmer is flat and smooth.

TOO LONG: Check to see if the heated areas of the warmer overlap each other; if the heated areas overlap, it is not the proper size for the tire. Should the warmer be too long it should NOT be used.

ELECTRICAL / HEATING PROBLEMS

NOT HOT ENOUGH: If the warmer seems not be getting hot enough, check it with a tire pyrometer, probe type pyrometers are recommended for greater accuracy. If it is determined to be operating low, try to ensure that the adequate Amps or Watts are available and that voltage is correct. If less than proper Voltage is (i.e.: 120 or 240 depending on model) the warmers will operate at less than their potential. Extra long extension cords should not be used, whereas voltage will drop over the length of the cord. A proper heavy duty extension cord should be used.

TOO HOT: If it is thought the warmer is too hot check with a tire pyrometer. If it is determined that it is actually running too hot send the warmer in to us for repair .

AMBER DISCOLORATION ON LINER: If the black inner liner turns an amber color, this is an indication of excessive heat in that area. If the warmer was bunched folded or over-lapped to cause the problem, this will NOT be a problem for future use as long as the tire warmer is installed correctly in the future. If the warmer was installed properly and this rust color is on the liner you should not use the warmer at all until it can be checked by a technician at Chicken Hawk Racing.

Troubleshooting (cont.)

DOES NOT GET HOT AT ALL: Check power supply source, make sure power and voltage are correct.

– If Pole Position models using a 3 Position Switch make sure the switch is secure in one of the three positions.

– If Pro-Line mode, make sure the LCD display shows there is power and that the cable to the warmer is properly connected.

NEON LIGHT DOES NOT LIGHT: If this occurs and the warmer is heating the tire, the problem is only with the light. This can be ignored in the moment until the unit can be repaired by our Service Center.

BUNGEE CORD SNAPPED: It is very hard to use a tire warmer with out tension on the sides and is not recommended. Use may result in bunching and damage to tire or warmer. If warmer MUST be used, wire can be used to carefully run a suitable drawstring through the outside channel. Return to CHR after the event for quick repair.

POWER CORD PULLED OUT: This should ONLY be done by a CHR technician. More damage is usually done by someone trying to make a "quick-fix".

MELTED THROUGH: If the warmer is melted, this is a sign of either improper installation or a malfunction with the warmer and should be taken seriously.

**If the heater coils are not in the original pattern, this can lead to over-heating. This can damage your tire by blistering it and can have serious consequences.

You should not use the warmer at all until it can be checked by a technician at Chicken Hawk Racing.

MICRO PROCESSOR MALFUNCTION: Pro-Line control box is not functioning- see Page for Micro-Processor.

What Are Tire Warmers Supposed To Do Anyway?

By David Podolsky

The idea behind using a tire warmer is a little more complex than meets the eye. Not so much because the warmer is a confusing piece of equipment, but because the tires they heat are. Obviously, a tire warmer is beneficial to have so the surface rubber of the tire is hot (160-205 degrees F depending on tire brand and compound) so that the rubber can fill the little crevices of the track better, providing better grip in the early stages of the race. Having the surface rubber hot increases the co-efficient of friction of the rubber, adding to its ability to grip the track surface.

More subtle issues become apparent with time and usage of the tire warmers.

"Heat Soaking" the carcass is almost an equally important a concept as getactually touching the tire.

A tire's carcass will be more flexible when heated to race temperature. During actual use a tire is severely deformed under heavy braking, hard-cornering and accelerating due to the high forces being applied. Of course, the tire is also part of the suspension of the motorcycle and having the tire work at the beginning of the race as it will during the middle is an advantage so you can go fast and avoid a "cold tire" incident. Realize that we motorcycle racers always check "Cold Pressures" on our tires; car guys only care about "Hot Pressures." In fact, your pressure will definitely rise when the tire gets hot from use on the track or in the pits with the use of a warmer. This pressure rise is also getting the tire into the condition of mid-race *before* the race the best we can. The issue of heat-soaking is why the quality of insulation a warmer uses is important; you want to drive the heat into the tire—not heat up your garage.

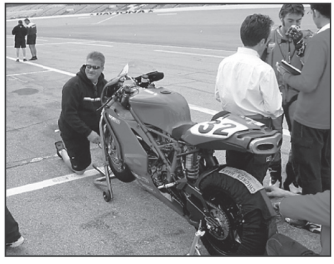
Ducati Austin crew members install Chickenhawk tire warmers as Ducati men debrief Eric Bostrom during testing at Daytona. ▼

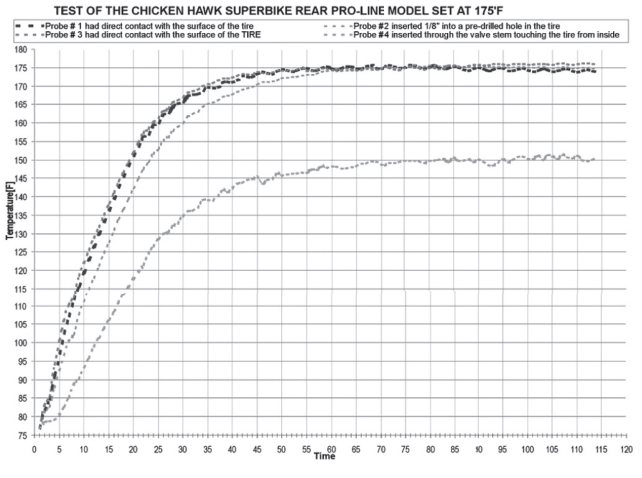
The "Cold Tire" accident is certainly more common on those sub-50-degree days, but an over-zealous throttle hand can illustrate that an 80-degree tire is still "cold." The cost of a single low-side can more than pay for a set of warmers even if you're not destined to be the class Champion. Having a consistent tire on all days in all conditions takes one more variable out of the program. In the words of one famous tuner on the use of tire warmers during the summer, "Hey, 90 isn't 190." Have you ever seen the sweltering hot races in Sugo Japan? The crew is applying dry ice to the gas tanks to keep fuel cool, blowers are cooling off sweaty rider's leathers and the warmers are always on the tires. In other words, just because you're sweating doesn't mean your tires are hot.

Saving Heat Cycles: Each time a tire is heated and then cooled, it hardens up. One racer used to better in different temperature ranges. These are all good brands, each with their own personalities and strong points, but they do work better in a specific range of temperature. Our team runs Michelins and we feel they give more side grip than the others, but they must be hot to get it, or you can end up on your head. Some other tires won't put you on your butt as easily when they're cold, however, they will "cold tear." This results in shredded little tears usually on the edges of the tires that run almost parallel to the rotation of the tire. Cold-tearing definitely takes away the longevity of a tire due to its being physically destroyed sooner.

Dry-compound tires need much more heat than rain-compound tires, but rain tires definitely benefit from heat. It is typical to see 115-125 degrees on a rain tire after use. Before temperature-adjustable tire warmers, many crew chiefs were in the practice of putting a warmer on a rain tire for a few minutes. "Just to get a little heat in it," I would hear from them. This is an example of where the goal is to get heat into the carcass, not so much for the surface, so it is better to heat for a longer time at a lower temperature rather than a short time at a high temperature. We typically recommend heating rain tires for 20-30 minutes at 130 degrees.

ting heat into the surface rubber. This means the tire is hot and stable throughout the carcass and inside the tire. Through the use of Data Acquisition equipment we have found that a tire which has 175 degrees of surface temperature has about 150 degrees of heat inside the tire's air-space. This is measured by a Thermo-Couple passed through the rim and measuring the inside surface of the tire,





This chart plots temperature on the surface of the tire tread, 1/8-inch into the tread, and on the casing liner inside the tire using Chickenhawk warmers set at 175 degrees F. It took 50 minutes for the tread surface to reach 175 degrees and 60 minutes for a point 1/8-inch into the tread to reach 175 degrees. Chart courtesy David Podolsky.

say "tires harden up when they cool off, just like cookies that come out of the oven and get placed on the counter." A warmer can help avoid this by keeping the tire warm between sessions on the track. A single-temperature-setting warmer can be used, but only if the time between track sessions isn't too great, perhaps 45 minutes (this is and can be widely debated so take my opinion as exactly that, my opinion). A temperature-adjustable warmer works better here because you can turn the heat down to about 130 F and just keep the tire warm enough to prevent it from going through a heat cycle without overheating it. For example, my own team turns the Friday practice days into one heat cycle—the tire goes from warmer to track and right back to the warmer on a low setting. In this way, six track sessions still only put the tire through one heat cycle. We also keep the tire "warm" between the two races we run on Sunday, which normally has about 2 ½ hours between them. This really does help get the most life out of a tire.

Tuning the tires with the warmers: This is another situation where Temperature Adjustability is used. Different tire brands and different compounds work best at different temperature settings. For example, Pirelli vs. Dunlop vs. Michelin work

It should be mentioned that a slow heat-up of all tires is desired. Imagine taking a 200-degree clothing iron to your tire, that doesn't sound good for it. The tire has moisture in it (I'm not speaking of the air space, but the tire itself) and by heating it too rapidly, the moisture is drawn out of the tire. This is similar to when the tire "blues" over after a hot track session. The tire will not work well right away, but will come back after the bluing has been scrubbed off.

We realize this may seen like a lot to think about. If you're a new club racer, it is better to pay attention to your bike's suspension set-up, tires and your ability to ride it, rather than extracting extra horsepower from the engine. If you're a seasoned racer, getting the last bit of performance from your tires is just about the best place you can put attention. After that you've got a lot of the other bases covered. **RW**

David Podolsky is the founder of Chicken Hawk Racing Tire Warmers. The company's tire warmers can be found on machines sponsored by every tire manufacturer. Podolsky has also won four National Championships in the AHRMA Battle of Twins Series.

Warranty Information

All **CHR** tire warmers come with one year warranty from date of purchase.

Warranty cards MUST be filled out and sent in to our physical address within 30 days of purchase.

CHR will, at their option, repair or replace defective warmers free of charge during the warranty period, including standard UPS shipping to the customer. This includes ANY flaw during the manufacturing process including normal heat-up, temperature accuracy or failure.

The warranty only excludes mis-use or abuse to the product, such as:

– Leaving the warmer plugged in or energized while NOT mounted on a tire.
– Bunching or folding the warmer over during operation.
– Using on the incorrect tire size, over-lapping the warmer.
– Stepping on, driving over or crushing the warmer.
– Driving away with the warmers still mounted.

REPAIRS AND WARRANTY CLAIMS

The physical address of CHR is:

54 Elizabeth Street, #16
Red Hook, NY 12571

Warmers should be sent via UPS or Federal Express and have the following information included in the box:

Name:
Date:
Mailing Address:
Day-time telephone:
Problem or symptom:
Date warmer is needed back:
Method of payment: Credit Card or COD

Warranty Card

Fill both out and return the bottom one to our office:
54 Elizabeth Street, #16 Red Hook, NY 12571

Retain the top one for your records. Please print legibly or type.

NAME: _____

ADDRESS: _____

DATE OF PURCHASE: _____ MODEL: _____

SERIAL NUMBER: (located on power-cord) _____

RACE VEHICLE: _____

RACING ORG: _____

PURCHASED FROM: _____

Warranty Card

You MUST RETURN FOR WARRANTY TO BE IN EFFECT* 54 Elizabeth Street, #16 Red Hook, NY 12571 Chicken Hawk Racing LIMITED WARRANTY: I have read and understand the instructions, cautions and warranty for Chicken Hawk Racing™ tire warmers. I acknowledge that high performance motorcycle riding and racing is dangerous and accept these dangers; I and all my heirs hold CHICKEN HAWK RACING INC. and it's employees harmless for any and all claims that might result regardless of cause.

NAME: _____

ADDRESS: _____

DATE OF PURCHASE: _____ MODEL: _____

SERIAL NUMBER: (located on power-cord) _____

RACE VEHICLE: _____

RACING ORG: _____

PURCHASED FROM: _____

Contact Information

Chicken Hawk Racing
54 Elizabeth St, Suite 16
Red Hook NY 12571

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Visit us online at:
Chickenhawkracing.com