Proton

HUSKY *FM*

2 Channel FM Radio Control System

USER MANUAL

Proton Control Systems Inc.

Revision 2.0x
S/W Version 2.0

Table of Contents

Thank you for purchasing a Proton Control Systems' product. Before operating your Husky transmitter or Ken receiver, please read this manual carefully and retain it for future reference.

Safety Precaution

Transmitter and Receiver

- Do not operate two or more models on the same frequency at any given time. This will cause interference and loss of control of models. Although there can be different methods of modulation (AM, FM(PPM),PCM, etc.) being used, the same frequency must not be used at the same time, regardless of the signal format.
- Extend the transmitter antenna to its full length. If the transmitter antenna is not fully extended the operating range of the radio will be reduced.
- Always perform an operating range check prior to use. Do not operate the model if you notice any abnormality. Problems with the radio control system or improper installation in a model could cause loss of control.
- Check the transmitter antenna to be sure it is not loose. If the transmitter antenna works itself loose, or is disconnected while the model is running, signal transmission will be lost. This will cause you to lose control of your model.
- Be sure to turn on the power switches in the proper sequence. At startup, turn on transmitter first, then the receiver. At shutdown, turn off the receiver first, then the transmitter.

IMPORTANT Before powering on your unit, always check the throttle trigger on the transmitter to be sure it is at the neutral position. When turning off the system power switches, always make sure the engine is not running. If the power switches are turned off in reverse order, your model may unexpectedly run out of control.
The transmission of signal can take upto 5 seconds after the power switch is turned on. 5 seconds are needed for synthesizing the frequency. So the power to your receiver should be turned on at least 5 seconds after the transmitter is powered on.

Operating R/C

- Use this product for surface models only. (Cars, trucks, boats, etc.)
- Do not operate in rain, snow, or if there are puddles of water present. Should any type of moisture (water or snow) come in contact with any components of the system, erratic operation and loss of control may occur.
- Operate only when you are fully alert to your surroundings. Do not operate if you are under the influence of alcohol, drug, or medication. Your impaired judgement can result in serious injury to yourself as well as others.
- Do not operate in the following places: sites where you may interfere with other radio control activities, where the general public can be found, on public roads and near high-tension power lines or communication broadcasting antennas.
- Always perform an operating range check and do not lose sight of you model.
- Do not leave your R/C system or model within the reach of children. A child may accidentally operate the system and injuries may result.

Battery

Although the batteries are not included in the product, customers should take precautionary measures when using and handling batteries.

- Ni-Cd batteries can be very dangerous when mishandled. The acidic fluid from a Ni-Cd battery, if leaked, can cause serious injuries and chemical damages.
- In the event that battery fluid leaks onto your skin, immediately wash with soap and plenty of water. Seek medical attention as necessary. In the event that battery fluid comes in contact with your eyes, do not rub and immediately wash with plenty of water. Seek medical attention immediately.
- When your R/C system is not being used, always remove or disconnect the batteries. Should the batteries be left connected, a leakage may result or if someone accidentally turns on either the receiver or transmitter, a dangerous situation may be created where models operate without control.
- Always follow your battery manufacturer's directions and guidelines. Do not attempt to disassemble, short circuit, or subject the batteries to high temperature or fire.
- Your transmitter has been designed to operate using AA-size batteries. These include 1.5 volt alkaline and rechargeable 1.2 volt Nickel Cadmium (Ni-Cd) batteries. Do not attempt to operate the product with incompatible batteries.
- Replace all batteries of a set at the same time. New batteries should not be mixed with used ones. Do not mix rechargeable and non-rechargeable batteries. Do not mix alkaline and Ni-Cd types of batteries. Do not mix different grades or brands of batteries. Failure to observe this precaution may result in some batteries in a set being driven beyond their normal exhaust point and increase their possibility of leakage.
- Always check to be sure your batteries have been charged prior to operating the model. Should the battery go dead while the model is operating loss of control will occur and create a very dangerous situation.
- When disposing of batteries, follow the manufacturer's instructions and the guidelines of all federal, state, and local regulations. We recommend customers to participate in any community battery-recycling programs that may exist in your area. Contact your local waste remover or recycler for details.

Maintenance

- To keep from damaging your transmitter or receiver, avoid exposing it to moisture, extreme temperatures, direct sunlight, vibration and dust.
- Clean the outside of the transmitter and receiver by wiping with a clean, dry cloth. Never use harsh or abrasive cleaners or organic solvents on the transmitter or the receiver.
- Do not expose plastic parts to fuel, motor spray, waste oil or exhaust. These will penetrate and damage the plastic.
- Never disassemble or touch the inside of the transmitter. This could result in electrical shock.

Features

Crystal-Free Operation - No crystals needed to change frequencies

The frequencies of most transmitters and receivers are adjusted by replacing the crystals. Enthusiasts who want to change frequencies must purchase extra crystal sets to prevent interference between the same frequencies. To complicate matters further there are so many types of crystals based on modulation (FM/AM, PPM/PCM), conversion type (Single/Dual) and Radio makers. To solve this problem, Proton Control Systems adapted PLL (Phase-Locked Loop) technology to your Husky transmitter and Ken receiver. The preferred frequencies are digitally selectable from the menu simply by pressing buttons.

Works with all popular FM transmitters & receivers

Your Husky transmitter and Ken receiver are each compatible with all popular FM transmitters and receivers. These include A class (*Futaba*™, *Hitec*™) and B class (*JR*™, *Sanwa*™, *KO*™). This flexibility allows you to use different brand transmitters and receivers.

USB port for PC game control

Your Husky is more than a transmitter for your R/C models. Use your Husky transmitter to control your PC games too! Husky comes with a built-in USB port for connecting to your personal computer. Now you can practice at home before the big race. Better still, your race will never be rained out.

Easy to change grip direction for left or right-hander

Husky's symmetrical design allows you to quickly change format from right- to left-hand grip. Just unscrew 4 screws and rotate the body 180º degrees.

Comprehensive programming features

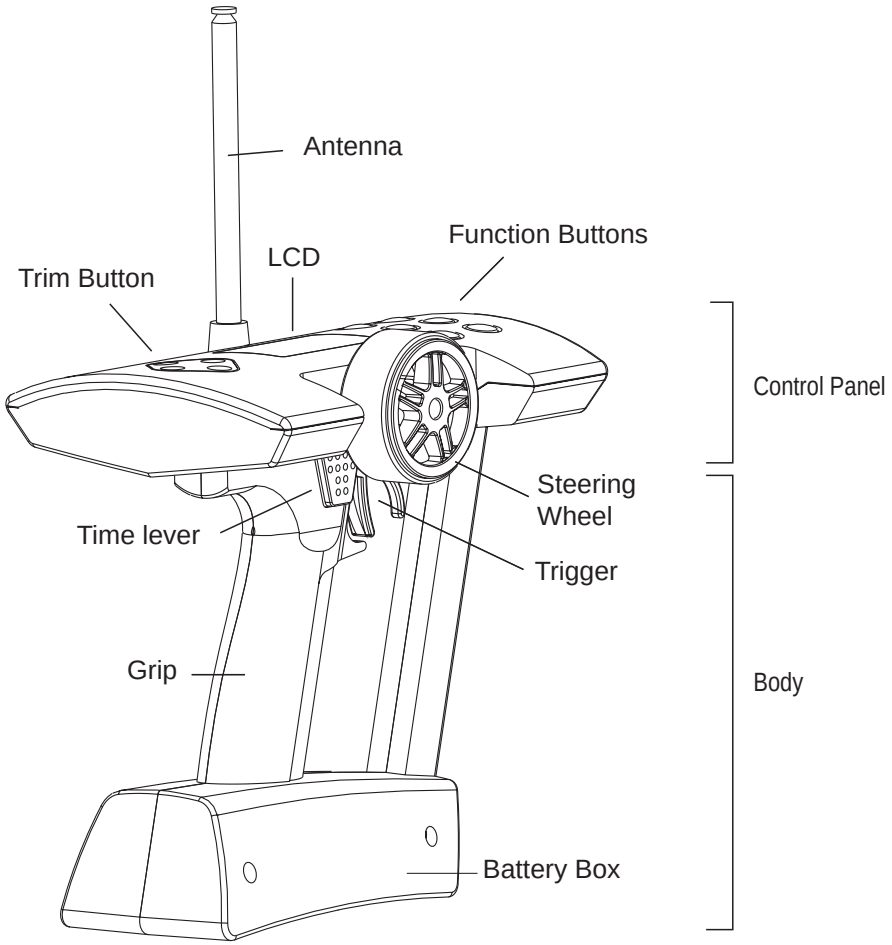
Husky provides 3 levels (Basic, Imtermediate, Advanced) of programing and 3 modes (System, Pit, and Circuit) of setup fields to make its wide range of features available for customization. The programs are simple to set, but offer many powerful and sofisticated functions.

Other features include:

- LCD menu-driven setup and programming with non-volatile memory saving
- Stopwatch with lap timer funtion
- Quick access Digital Trim & Dual Rate buttons
- 10 model memory with upto 8 characters of model name entry
- Adjustable Trim Rate, Frequency, LCD Contrast and Data Copy functions under the System Mode
- Servo Reverse direction, Sub-Trim, Model select, Prgramming Level & Data Reset functions under the Pit Mode
- End Point Adjustment (EPA), Response Sensitivity, Dual Rate, Steering Speed, 2-Step Steering Speed, Throttle Speed, 2-Step Throttle Speed, Preset Start, Anti-lock Braking System, 3 Preset ABS (slow, medium, fast), Auto-adjusted Steering Control, EDB (Eliminated Dead Band) and Idle Up features under the Circuit Mode
- Direct Servo Control (using optional cable)
- Low battery alarm
- Charging jack receptacle (charger & rechargable batteries not included)

Preparation & Getting Started

HUSKY 2Channel FM TRANSMITTER



Adaptation for Left-hander

Your Husky is factory assembled for right-handers. However the grip direction can be changed for left-handers by following the directions below.

1. Make sure that the Power switch is set to OFF.
2. Carefully remove the 4 screws from the bottom section of the control panel.
3. Separate the control panel and the body by slowly pulling apart.
4. Rotate the head 180 degrees and carefully re-insert the control panel into the body. Be carefully not to bend the pin connectors inside.
5. Reinstall the 4 screws. Be careful not to over-tighten the screws.

Antenna Installation

The antenna included with your Husky is safely stored in a slot underneath the control panel. To remove the antenna, pull out the plastic retainer cap located at the front of your Husky transmitter, then slide the antenna out. Insert the base of the antenna into the antenna receptacle at the top of the control panel. Then screw the antenna clockwise until it is firmly attached. Be careful not to over tighten the antenna.

NOTE The antenna should be fully extended while transmitting. Otherwise the operating range of the system will be reduced, causing a loss of control.

Loading the batteries

Your Husky transmitter requires 8 AA batteries (not included). Alkaline batteries will provide power for approximately 7 hours of use. The battery compartment is located at the bottom of the transmitter body.

1. Make sure the Power switch is set to OFF position.
2. Release the hook and the battery cover will pop up.
3. Pull out the battery holder slowly and carefully unplug the connector from the battery compartment. Install 8 AA batteries into the battery holder.
4. Plug the connector back in and place the battery holder back into the battery case. Press down the battery cover until it locks in place.

Charging

The changing jack is located on the back side of control panel and marked "12V ⎓ ". Before start charging, make sure the rechargeable NiCd batteries are installed and power switch is set to OFF position. For charging the transmitter, the charger must have the below specification. Otherwise it may damage the transmitter or not be charged.

Input voltage : 110V 60 Hz for USA, 230V 50 Hz for Europe
Output voltage : DC 10.8V 150 mAh
Charging jack polarity

Typical slow charging rate with DC 10.8V, 150mA is approximately 12 hours, while most Sanyo brand AAs can be charged at up to 1 Amp.

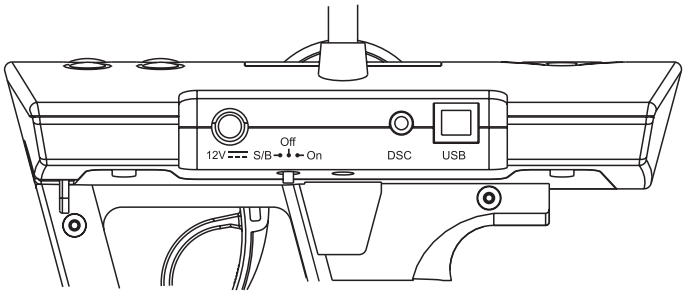
NOTE Never attempt to charge a dry cell type (Non-NiCd) battery. Charging a non NiCd battery can damage the transmitter, and could also cause the battery electrolyte to leak and cause injuries and additional damages.

Power Switch (ON, OFF, S/B)

The Power switch is the small toggle switch located back of the Control Panel. It can be set to On, Off or Standby (S/B) mode. Power On and Off is the same as any other electronic devices. Standby (S/B) mode allows you to program all functions without transmitting a radio signal. This is useful for making adjustments while not affecting others that may be on your frequency. Standby (S/B) mode also uses about 2/3 less power. If you plan to work in a programming mode for any length of time or use your Husky as a PC game controller, using Standby will extend your battery life. "STB" appears on the LCD display in Standby (S/B) mode.

Battery Voltage is displayed both numerically and graphically on the LCD display. The graphical depiction is a horizontal bar on the top right conner of the display. The length of the power level bar is gradually reduced according to current consumption. When voltage drops below 8.7 volts, the bar flashes and an alarm will sound to alert the low voltage condition.

NOTE At low voltage, immediately stop the model and replace the batteries. Otherwise loss of control of model may result.



Direct Servo Control (using optional cable)

DSC allows you to operate the servos and speed controllers without propagating the radio frequency (RF). This is ideal for pit checking your radio setup while others are operating on the same frequency.

To operate, plug the radio connector end of the DSC cable into the DSC jack located behind the control panel of your Husky. The other male end of the DSC cable is inserted into the battery slot (Slot B) on your Ken receiver. Set the power switch to ON position.

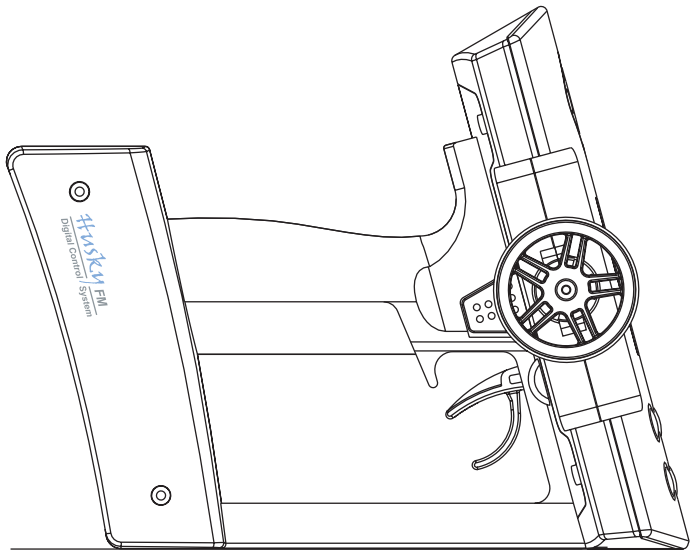
USB Connection for PC Game Control (using optional cable)

Your Husky has a USB port located behind the control panel. By connecting a USB cable between your Husky and a PC, your Husky can function as a PC game controller or a joystic. With the Power Switch set to Standby position (S/B), plug the "B" type end of the USB cable into your Husky and the "A" type end of the USB cable into the USB port on your PC.

NOTE USB cables are available in a variety of lengths at your local computer store. Look for a USB Printer Cable.

Standing

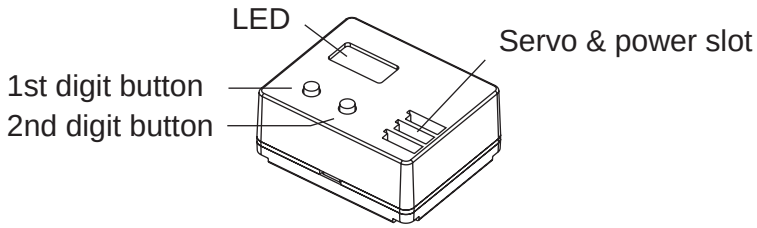
The large Control Panel at top portion of your Husky makes somewhat top-heavy. We recommend your Husky stands as illustrated below. This allows better stability, better grip approach and ease of pick-up.



Specifications

Number of Channels	:	2 (steering & throttle)
Modulation	:	FM, PPM
Size	:	190 X 185 X 118 mm (7.48" X 7.28" X 4.65")
Weight	:	500 g (17.64 oz) w/o batteries
Output power	:	less than 0.75 W
Current drain	:	Approx. 250 mA
Power requirements	:	DC 12V (1.5V X 8, "AA" Size Alkaline batteries) DC 9.6V (1.2V X 8, "AA" Size NiCd batteries)
Operating temperature	:	0^{o} C ~ 40^{o} C

KEN 2Channel FM RECEIVER



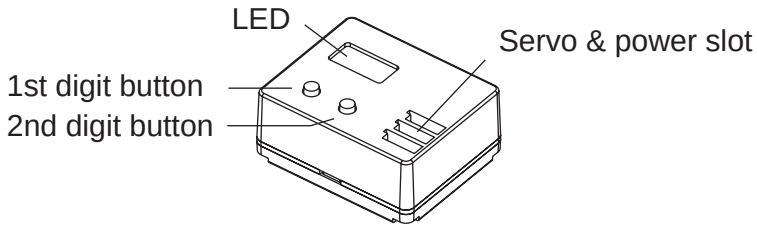
Installation

For best performance, your Ken receiver should be firmly affixed and connected to your surface model according to the procedure below.

1. Locate and decide the mounting position of Ken. Ken and the antenna mast should be positioned closely to each other, but they should be mounted as far away as possible from the speed controller, motor, servo, power wires and the power source in order to minimize the pickup of electrical noise which reduces the radio range.
2. Clean the surface where Ken is to be mounted.
3. Mount the Ken with double-sided adhesive tape (included). If installed in an engine powered model, it is recommended that the Ken receiver be mounted with foam rubber wrapped around to dampen the vibration or shock and to protect from dirt or oil.
4. Run the antenna wire up through the antenna mast. Do not cut or coil the excess wire, or radio range will be reduced.
5. For gas powered models, plug the steering servo connector into Slot 1, throttle servo connector into Slot 2, and power connector into Slot B.
   For electric powered models, plug the steering servo connector into Slot 1, speed controller connector into Slot 2. Be sure the connectors are firmly inserted into the slots to avoid connections becoming loose due to vibration from the model. Ken receiver accepts Futaba™, JR™, new KO™ and Sanwa™ Z connectors.

NOTE Do not cut or coil the excess antenna wire. Cutting, bundling or routing the receiver antenna wire near any devices that produce noise (RF) will reduce the operating range of the radio system and result in loss of control.
Do not remove the housing case of Ken receiver in an attempt to reduce weight. This can cause serious damage to the internal circuitry from dirt or moisture. Removing the case will void Proton Control Systems' product warranty.

KEN 2Channel FM RECEIVER (continued)



Frequency /Channel Selection

Ken is a crystal-free receiver. You do not need crystals to change frequencies. Each available frequency is assigned with a two-digit channel number which can be referenced in the [Frequency Chart] located in the Appendix section of this manual. A two-digit LED display on your Ken shows the channel number of your chosen frequency. To change the channel number, follow the steps below:

1. Switch on the power to the Ken receiver. The current set channel is displayed on the LED for about 3 seconds.
2. Press left (1st digit button) or right button (2nd digit button) repeatedly until your desired channel number is reached. That's it! Your Ken is now tuned to that channel and ready to receive signal.

At anytime, by pressing either button momentarily will bring your last set channel number to the LED display. Susequent press of either button while the LED is lit will change the channel number.

Your Ken receiver uses non-volatile memory technology to store its settings. This means your set channel will not be lost even after the power is disconnected.

NOTE Your Ken receiver's frequency should always be set to match your transmitter's frequency. Otherwise the receiver may receive unwanted signals from other sources, causing an unexpected accident and damage your model. Make sure to turn the power off when not in use.

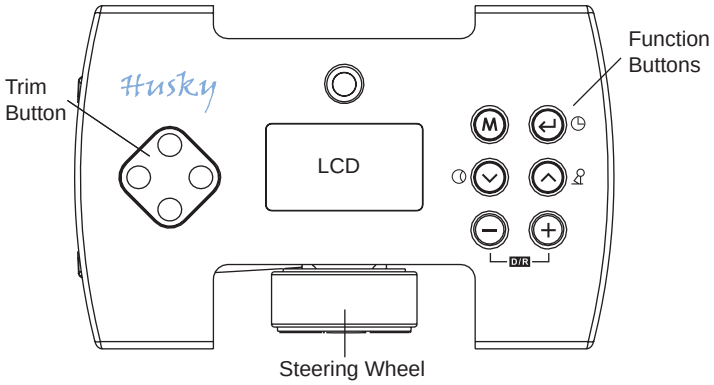
Specification

Number of Channels	:	2 (steering & throttle)
Modulation	:	FM, PPM
Voltage range	:	3.5 ~ 10.0 V
Size	:	38.1 X 30.5 X 16.5 mm (1.5" X 1.2" X .65")
Weight	:	18.70 g (0.66 oz)
Antenna length	:	450 mm (17.75")

Data Setting & Programming

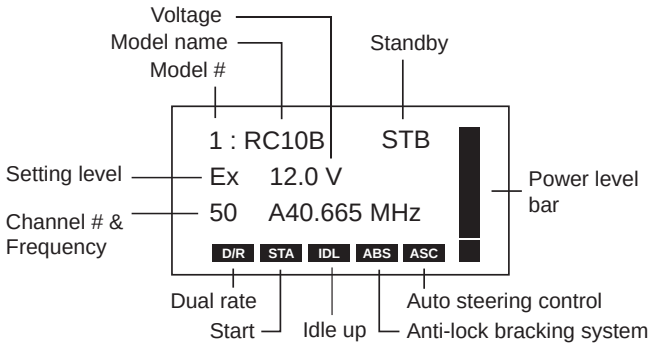
Husky provides 3 levels (Basic, Imtermediate (Standard), Advanced (Expert)) of programing and 3 modes (System, Pit, and Circuit) of setup fields. This chapter explains how individual parameter can be adjusted.

Names of Parts on Control Panel



Display

When the power switch is set to ON or STANDBY the normal display appears as shown below.



Programing Map

Mode	Function		
System	Model name Trim rate LCD contrast Frequency Data copy		
Pit	Model select Setting level Servo reverse Sub trim Data reset		
Circuit	***Basic***	***Intermediate (Standard)***	***Advanced (Expert)***
	EPA Response Dual rate	EPA Response Steering speed Throttle speed Start 3-Step ABS Dual rate Punch Idle up	EPA Response 2- Step steering speed 2- Step throttle speed Start ABS Auto steering control Punch Idle up

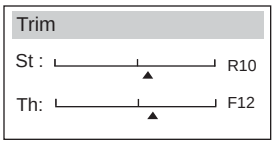
Direct Access Functions

Direct set programming lets you program quickly using easily accessible buttons on the control panel. Make instant fine adjustments without moving through the main menu.

Digital Trim

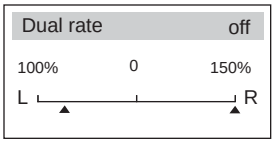
The digital trim button is located on the left side of the control panel. Steering and Throttle trim adjustments can be made by pressing the trim button in one of the 4 available directions. Up and down are for Throttle trim and right and left are for Steering trim.
You will hear a beep with each increment of trim adjustment. Digital trim position is displayed both numerically and graphically on the LCD.

NOTE Throttle trim changes only the center (neutral) point and not the end points. This is done to maintain your maximum speed and braking points.



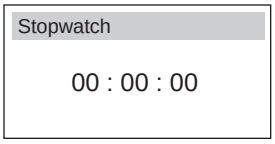
Dual Rate

Dual rate affects the total steering servo throw (both sides, right and left) simultaneously, so reducing the dual rate value makes the steering less sensitive and also reduces the maximum amount of steering available.
Dual rate values are adjusted and displayed on the LCD by pressing the ⊖ or ⊕ buttons on the control panel.
Pressing dual rate buttons on the control panel, "D/R" will appear on the lower side of the Normal LCD display.



Stopwatch

Pressing the start button "◷ " on the control panel can activate the stopwatch and display timer on the LCD. The timer can be started when the throttle is triggered and the stop is available by pressing the start lever behind the steering wheel. Pressing the start button again resets the stopwatch.



System Mode Functions

This mode contains programming features, model name, trim rate, LCD contrast, frequency, data copy and data reset. These basic settings manage the transmitter system regardless of the pit and circuit mode setting. The System Mode menu is accessible as below.

1. Press Ⓜ button at normal display.
2. Press ⌄ button 2 times until the cursor is at System Mode.
3. Press ↵ button for displaying System Mode menu.
   (Display automatically reverts back to Normal mode if there is no activity in System Mode for a period of 5 seconds).

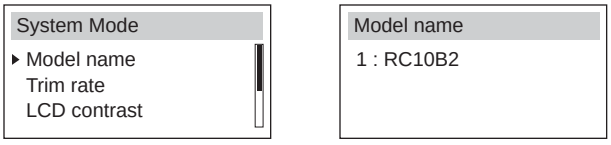
Model Name

For ease of identification, the model name function allows you to assign names up to 8 characters in length for each of your models
In System Mode, press ↵ button to display Model Name screen.

1. Press ⊖ or ⊕ button until desired letter appears.
2. Press ↵ button and press ⊖/⊕ button to select next letter.

(To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)

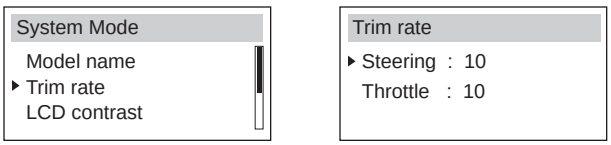
3. After model name is completed, press the Ⓜ button to return to the System menu.



Trim Rate

The trim rate function allows the trim authority (the amount of trim available) to be adjusted. It allows trim control with fine or rough adjustment.

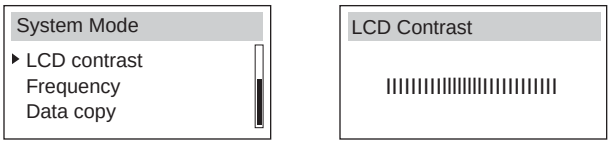
1. Press ⌄ button until the cursor is at Trim Rate.
2. Press ↵ button to display Trim Rate screen.
3. Press ⊕ or ⊖ button to adjust steering trim rate.
4. Press ⌄ button to select throttle trim rate.
5. Press ⊕ or ⊖ button to adjust throttle trim rate.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
6. After setting is completed, press Ⓜ button to return to the System menu.



LCD Contrast

This function allows an eight-step contrast adjustment of the LCD screen.

1. Press ⊙ button until the cursor is at LCD contrast.
2. Press ↵ button to display LCD contrast screen.
3. Press ⊕ or ⊖ button until the desired contrast is achieved.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
4. Press Ⓜ button return to the System menu.

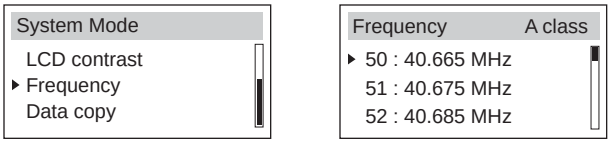


Frequency

The frequency feature allows selecting not only frequencies but also classes. There are 2 classes-A class for *Futaba™, KO™, Hitec™* type receivers and B class is for *JR™, Sanwa™ (Airtronics™)* receivers. BY selecting frequencies and classes, Husky can control all FM receivers of other manufacturers.

Note Band change is not possible (for example: 27MHz to 75Mhz or 75MHz to 27MHz). To control a 27MHz FM receiver, you must purchase a 27MHz transmitter. Frequencies can be changed, but only within a specific band.

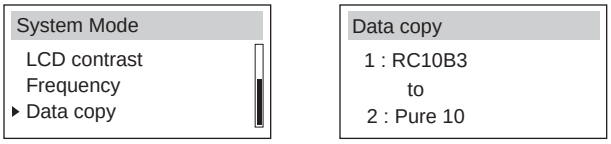
1. Press ⊙ button until the cursor is at Frequency.
2. Press ↵ button to display Frequency screen.
3. Press ⊕ / ⊖ and ↵ button to select the class A or B.
4. Press ⌃ or ⊙ button until the cursor is on the desired frequency.
5. Pressing Ⓜ button return to the System menu.



Data Copy

This function copies the entire contents of the currently stored model memory to another model memory.

1. Press ⊙ button until the cursor is at Data Copy.
2. Press ↵ button to display Data Copy screen.
3. Press ⊕ / ⊖ until the desired target model number appears.
4. Press ↵ button to copy.
   "Complete" is displayed, and then the Data copy menu screen reappears.

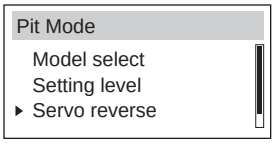


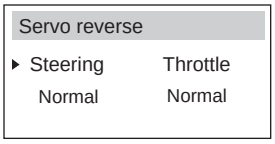
Servo Reverse

This function allows you to change the direction a servo rotates, clockwise or counter clockwise.

NOTE When the trim position deviates from the center, the deviation will be on the opposite side when the servo is reversed.

1. Press ⌄ button until the cursor is at Servo Reverse.
2. Press ↵ button to display Servo Reverse screen.
3. Press ⊕ / ⊖ button to change steering servo rotation direction.
4. Press ⌄ and ⊕ / ⊖ button to change throttle servo rotation direction.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
5. Press Ⓜ button to return to the Pit menu.



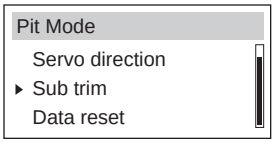


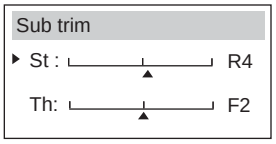
Sub Trim

Use this function to adjust the neutral position of the steering and throttle.

NOTE Sub trim changes both the center and the end point servo positions. You may want to recheck your end point positions if you adjust the Sub trim.
Do not use excessive Sub trim, as it's possible to over-run the servo's travel. Instead reposition the servo horn or servo saver on the servo and inspect your linkage installation.

1. Press ⌄ button until the cursor is at the Sub Trim.
2. Press ↵ button to display the Sub Trim screen.
3. Press ⊕ / ⊖ button to change the sub trim steering value.
4. Press ⌄ and ⊕ / ⊖ button to change sub trim value of throttle.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
5. Press Ⓜ button return to the Pit menu.



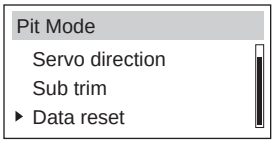


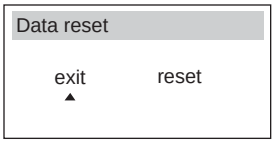
Data Reset

The data reset function resets all the memory (in the current model only) back to the factory default setting except data in System mode.

1. Press ⌄ button until the cursor is at Data Reset.
2. Press ↵ button to display the Data Reset screen.
3. Press ⊕ button to move cursor from EXIT to RESET.
4. Press button to reset all data to default values.
   "Complete" is then displayed.

NOTE To keep the present data instead of re-setting, press button with the cursor at





Circuit Mode Functions

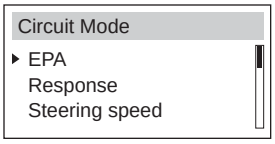
Circuit Mode contains the most commonly used programming features that you'll likely be changing on the circuit. Circuit Mode programming is laid out in 3 levels that are accessed in user's capability and the kind of race.
The Circuit Mode menu is accessible as shown below.

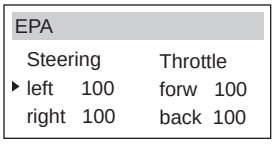
1. Press Ⓜ button at normal display
2. Press ↵ button for displaying Circuit Mode menu.
   (Display automatically reverts back to Normal Mode if there is no activity in Circuit Mode for a period of 5 seconds).

End Point Adjustment (EPA)

End Point Adjustment, also referred to as travel adjust or travel volume, allows the precise maximum servo throw in either direction to be independently adjusted. The travel adjust range is from 0 - 150% (0 to 60^{o} servo travel). This is used to set the maximum right/left steering and forward/brake position independently. Remember, dual rate and brake trimmers work in unison with travel adjusts.
Note: Be sure that steering and throttle operation does not apply unreasonable force to the servo horn. Unreasonable force applied to the servo horn may result in damage to the servo and loss of control.

1. Press ⌄ button until the cursor is at EPA.
2. Press ↵ button to display EPA screen.
3. Press ⊕ / ⊖ button until desired EPA value appears on steering left.
4. Press ⌄ and ⊕/ ⊖ button until desired EPA value appears on steering right.
5. Press ⌄ and ⊕/ ⊖ button until desired EPA value appears on throttle forward.
6. Press ⌄ and ⊕/ ⊖ button until desired EPA value appears on throttle back.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
7. Press Ⓜ button to return to the Circuit menu.

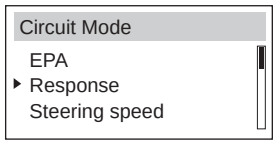


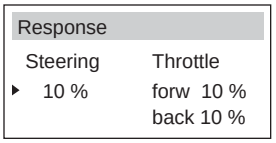


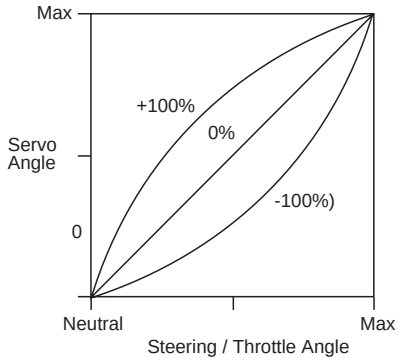
Response

This function is used to change the sensitivity of the steering and throttle servos around the neutral position. It has no effect on the maximum servo travel.
For the throttle servo, the function changes the sensitivity of the throttle servo in the throttle trigger forward side and brake side directions independently.

1. Press ⌄ button until the cursor is at Response.
2. Press ↵ button to display the Response screen.
3. Press ⊕ / ⊖ button until the desired response value appears on steering.
4. Press ⌄ and ⊕ / ⊖ button until desired response value appears on throttle forward.
5. Press ⌄ and ⊕ / ⊖ button until desired response value appears on throttle back. (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
6. Press Ⓜ button return to the Circuit menu.



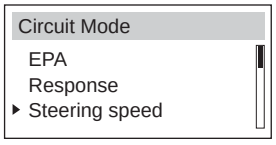


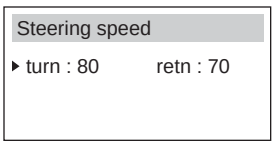


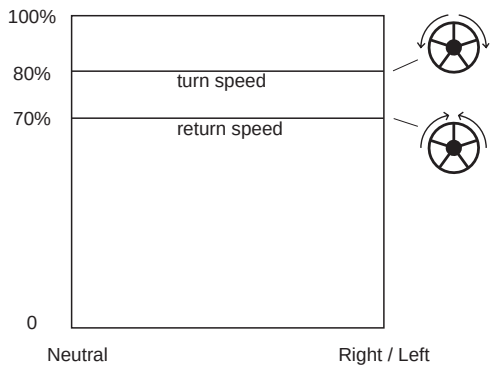
Steering Speed

Steering speed allows you to adjust the steering servo's speed away from center (turning), and back to center (return) independently.

1. Press ⌄ button until the cursor is at Steering Speed.
2. Press ↵ button to display the Steering Speed screen.
3. Press ⊕ / ⊖ button until desired value appears on turning.
4. Press ⌄ and ⊕ / ⊖ button until desired value appears on returning.
   (To return to the default setting, press ⊕ , ⊖ buttons simultaneously for 3 seconds)
5. Press Ⓜ button return to the Circuit menu.



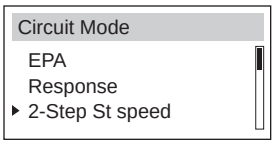


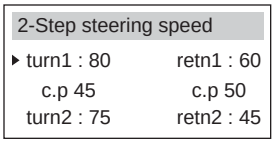


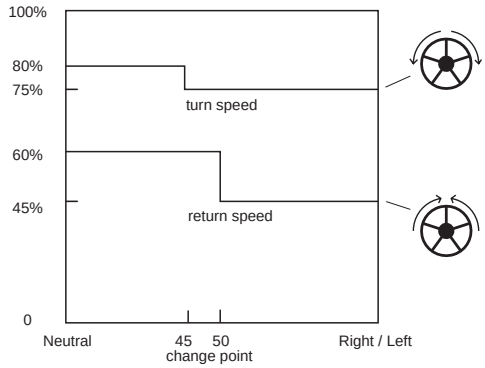
2-Step Steering Speed

This function is similar to Steering Speed, but it has speed change points. You adjust the steering servo's speed independently away from center (turning), and back to center (return), as above. You can also select points in both turn and return, and the speed between each point can be independently selected.

1. Press ⊙ button until the cursor is at 2-Step Steering Speed.
2. Press ↵ button to display the 2-Step Steering Speed screen.
3. Press ⊕ / ⊖ button until the desired value appears on turning 1.
4. Press ⊙ and ⊕ / ⊖ button until the desired value appears on turning change point.
5. Press ⊙ and ⊕ / ⊖ button until the desired value appears on turning 2.
6. Press ⊙ and ⊕ / ⊖ button until the desired value appears on returning 1.
7. Press ⊙ and ⊕ / ⊖ button until the desired value appears on returning change point.
8. Press ⊙ and ⊕ / ⊖ button until the desired value appears on returning 2. (To return to default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
9. Press Ⓜ button to return to the Circuit menu.



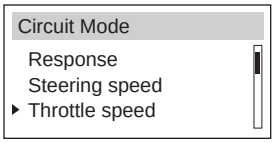


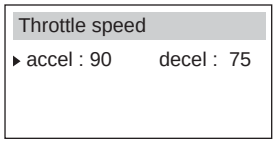


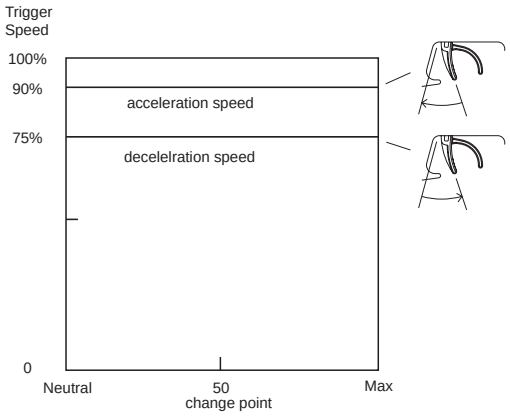
Throttle Speed

This function allows you to adjust the throttle servo's speed independently away from neutral (at acceleration), and back to neutral (at deceleration).

1. Press ⊙ button until the cursor is at Throttle Speed.
2. Press ↵ button to display the Throttle Speed screen.
3. Press ⊕ / ⊖ button until desired value appears on throttle speed forward.
4. Press ⊙ and ⊕ / ⊖ button until desired value appears on throttle speed back. (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
5. Press the Ⓜ button to the return to the Circuit menu.



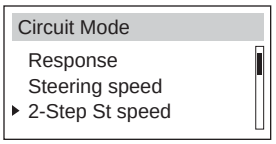


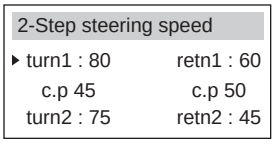


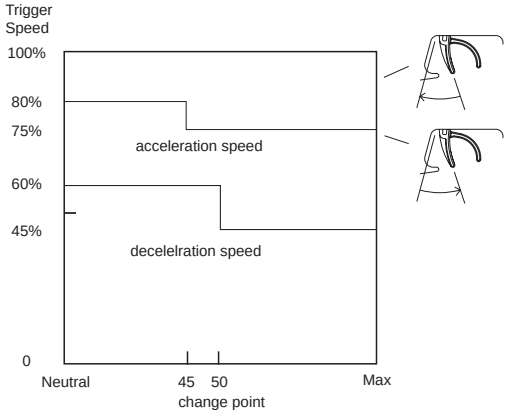
2-Step Throttle Speed

This function is similar with Throttle speed but it has speed change points. You adjust the throttle servo's speed independently away from neutral (at acceleration), and back to neutral (at deceleration), as above. You can also select points in both acceleration and deceleration, and the speed between each point can be independently selected.

1. Press ⊙ button until the cursor is at 2-Step Throttle Speed.
2. Press ↵ button to display 2-Step the Throttle Speed screen.
3. Press ⊕ / ⊖ button until the desired value appears on acceleration low.
4. Press ⊙ and ⊕ / ⊖ button until the desired value appears on acceleration change point.
5. Press ⊙ and ⊕ / ⊖ button until the desired value appears on acceleration high.
6. Press ⊙ and ⊕ / ⊖ button until the desired value appears on deceleration low.
7. Press ⊙ and ⊕ / ⊖ button until the desired value appears on deceleration change point.
8. Press ⊙ and ⊕ / ⊖ button until desired value appears on deceleration high. (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
9. Press Ⓜ button return to the Circuit menu.



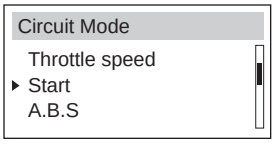


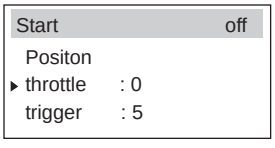


Start

This feature allows for smooth and even acceleration under adverse conditions, such as a wet circuit. When the start function is activated, merely operating the throttle trigger slowly causes the throttle servo to automatically switch from the set trigger position to a preset point so that the tires do no loose their grip and the car accelerates smoothly. By pressing the start button " 🏁 " on control panel, "STA" will appear on the lower side of the Normal LCD display. The Start function is only available at the first triggering. For activating again, press the start button on the control panel.

1. Press ⊙ button until the cursor is at Start.
2. Press ↵ button to display the Start screen.
3. Press ⊕ / ⊖ button until desired value appears on throttle position.
4. Press ⊙ and ⊕ / ⊖ button until desired value appears on trigger position. (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
5. Press Ⓜ button return to the Circuit menu.

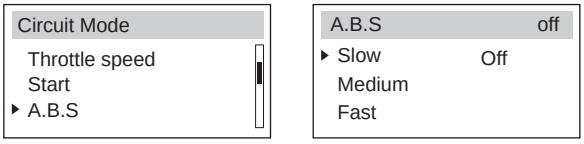




3-Step A.B.S.

This function allows you to select 1 of 3 A.B.S. settings based on circuit and race conditions.

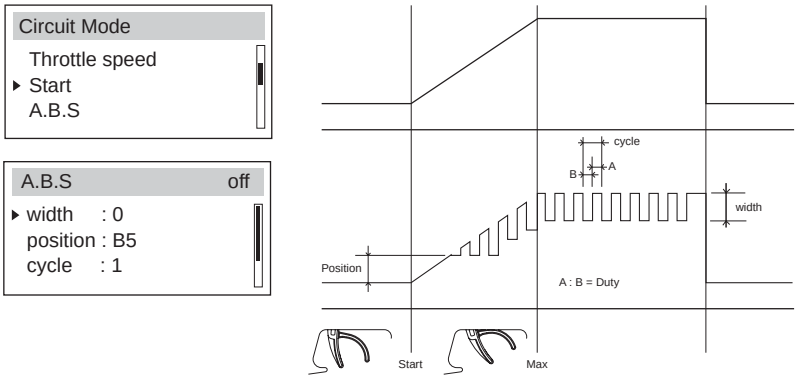
1. Press ⊙ button until the cursor is at 3-Step ABS.
2. Press ↵ button to display the 3-Step ABS screen.
3. Press ⊙ /⊙ button until the cursor is at the desired level.
   (To return to the default setting, press ⊕ , ⊖ buttons simultaneously for 3 seconds)
4. Press Ⓜ button return to the Circuit menu.



Anti-lock Braking System (A.B.S.)

Your Husky features an advanced anti-lock braking system! A.B.S works as a pulse brake, allowing greater stability and control during hard braking. The pulse width ("on" time versus "off" time) is called duty, the pulse height (how hard the brakes pulse) is called width, and the braking point where ABS actually begins is called position. A delay can be programmed so that regular braking occurs first, then at a pre-set delay ABS braking begins.

1. Press ⊙ button until the cursor is at ABS.
2. Press ↵ button to display the ABS screen.
3. Press ⊕ /⊖ button until desired value appears on width.
4. Press ⊙ and ⊕/⊖ button until desired value appears on position.
5. Press ⊙ and ⊕/⊖ button until desired value appears on cycle.
6. Press ⊙ and ⊕/⊖ button until desired value appears on delay.
7. Press ⊙ and ⊕/⊖ button until desired value appears on duty.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
8. Press Ⓜ button return to the Circuit menu.

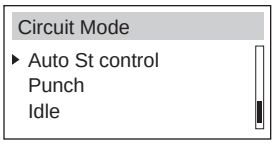


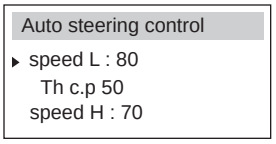
Auto Steering Control

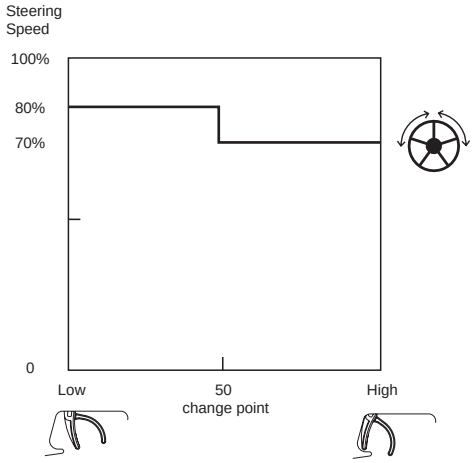
This function allows two steering servo speeds, automatically adjusted at high- and low-speed range of throttle. When it is activated, "ASC" appears on the lower side of the Normal LCD display.
If you want sensitive steering at corners and less sensitive steering on the straight-away, reduce the auto steering speed value at high-speed range and increase the value at low-speed range. The reverse is also available.

NOTE 2-Step steering speed is deactivated on Auto steering control.

1. Press ⊙ button until the cursor is at Auto Steering Control.
2. Press ↵ button to display the Auto Steering Control screen.
3. Press ⊕ /⊖ button until the desired value appears on speed low.
4. Press ⊙ and ⊕ /⊖ button until the desired value appears on change point.
5. Press ⊙ and ⊕ /⊖ button until the desired value appears on speed high.
   (To return to the default setting, press ⊕ , ⊖ buttons simultaneously for 3 seconds)
6. Press Ⓜ button to return to the Circuit menu.



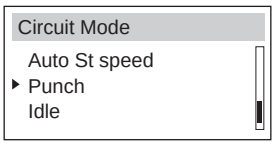


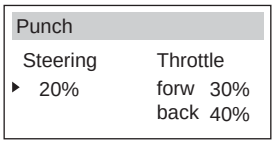


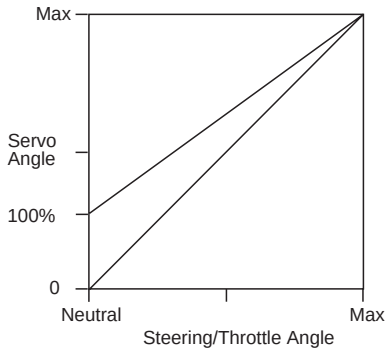
Punch

The Punch throttle feature is used to reduce or eliminate the dead throttle area that exists from neutral to the starting point of throttle and from neutral to the starting point of braking.
This area is sometimes known as dead band. As more throttle trim (also known as static brake) is applied, more of the dead trigger area right off neutral exists. Adjust a forward value such that your vehicle's wheels just start to turn when the trigger is slightly squeezed. This gives the most accurate feel and eliminates this dead area.
This feature is also available for steering. Steering Punch can eliminate dead band around neutral.

1. Press ⊻ button until the cursor is at Punch.
2. Press ↵ button to display the Punch screen.
3. Press ⊕ / ⊖ button until the desired value appears on steering position.
4. Press ⊻ and ⊕ / ⊖ button until the desired value appears on throttle forward position.
5. Press ⊻ and ⊕ / ⊖ button until the desired value appears on throttle back position.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
6. Press Ⓜ button return to the Circuit menu.





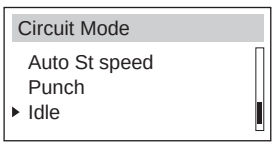


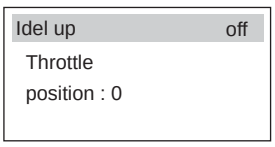
Idle Up

The Idle up function is normally used to advance the throttle position slightly, making it easier to start gas cars. Pressing the Idle up button " ◷ " on the control panel can activate this function, the throttle servo will offset to the pre-programmed position, and "IDL" will appear on the lower side of the Normal LCD display.

NOTE Idle up is available only at first triggering. For activating, press Idle up button on the control panel again.

1. Press ⊻ button until the cursor is at Idle Up.
2. Press ↵ button to display the Idle Up screen.
3. Press ⊕ / ⊖ button until the desired value appears on throttle position.
   (To return to the default setting, press ⊕, ⊖ buttons simultaneously for 3 seconds)
4. Press Ⓜ button return to the Circuit menu.





Approvals

The Husky is certified under FCC Part 95 and Industry Canada RSS-119.
FCC ID: R2R04HUSKY75
IC ID:

Modification Warning

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The Following Statement Applies to the Ken Receiver (for U.S.A)

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesirable operation.

- CE

The R&TTE (Radio Equipment & Telecommunications Terminal Equipment) directive is the new European directive relating to radio equipment and telecommunications transmission equipment. It also covers the collective recognition of the conformity of such equipment. One part of the R&TTE directive regulates the introduction and operation of radio systems in the European Community.
An important change is the abolition of approval. The manufacturer or importer must subject radio equipment to a conformity appraisal process before that equipment is introduced.
The CE symbol is attached to the device to indicate that it conforms with the valid European norms.

CE 0197 ⓘ

An exclamation mark is also to be attached to radio transmitting equipment, to indicate that the permissible frequencies are not yet uniform throughout Europe. This requirement applies to all the countries included in the list attached.
It is essential to note that these radio control systems may only be operated on the approved frequencies, as listed in the table.

Please note that the user bears the responsibility for compliance with this requirement, and for ensureing that the radio system complies with the directives.
In Germany the requirement to purchase a licence for the operation of 35 MHz systems remains in effect; please refer to the operating instructions, or the separate sheet included with them.

Limited Warranty

Proton Control Systems Inc. (”Proton”) warrants that its product purchased from Proton or a Proton authorized reseller will conform to factory specification and be free from defects in material or workmanship for a period of 120 days from the date of purchase. If the product is determined to be defective in material or workmanship during this warranty period, Proton, at its sole discretion, will repair or replace the product with new or refurbished product. This limited warranty does not apply to any unit which has been improperly installed, improperly connected or wired, mishandled, abused, altered, modified or serviced by unauthorized individual or enity. This limited warranty also does not cover damage due to external causes including crash, vibration, shock, improper voltage, moisture or extreme temperatures.
IN NO EVENT SHALL PROTON CONTROL SYSTEMS' LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, ITS ACCOMPANYING SOFTWARE, OR ITS DOCUMENTATION. Proton Control Systems offers no refunds for its products. Proton Control Systems makes no warranty or representation, expressed, implied, or statutory, with respect to its products or the contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose. Proton Control Systems reserves the right to revise or update its products, software, or documentation without obligation to notify any individual or entity.

Warranty Service & RMA Procedure

If your Proton Control Systems' product is defective and requires a repair, please first contact the place of purchase. Normally they will be able to assist you with a warranty service procedure in a quicker time frame. If your place of purchase is unable to help you, then please contact Proton Control Systems via email (support@protoncontrol.com) with detailed description of your technical difficulty, description of how you installed and setup, your name, address, contact number, date of purchase, and place of purchase (a copy of your original proof-of-purchase will be required later with the shipment.) If it is determined that the product may be defective, a Warranty RMA number and shipping instruction will be provided to you via email. Depending on the type of repair required, the shipping address of repair facility may vary so please refer to the shipping instruction. Return for product repair is to be shipped prepaid and insured by the customer. No product may be returned for repair without the Warranty RMA number and a copy of your original dated proof-of-purchase. Please do not ship your unit to the corporate offices. An Out of Warranty RMA request (i.e., expired warranty period, lost receipt, product from an unauthorized third party, problem caused by out of warranty acts, etc.) will be determined on a case by case basis by our support technician and if deemed repairable a cost estimate will be provided to you via email.

Frequency Chart

75 MHz, U.S.A. & Canada

Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
61	75.410	71	75.610	81	75.810
62	75.430	72	75.630	82	75.830
63	75.450	73	75.650	83	75.850
64	75.470	74	75.670	84	75.870
65	75.490	75	75.690	85	75.890
66	75.510	76	75.710	86	75.910
67	75.530	77	75.730	87	75.930
68	75.550	78	75.750	88	75.950
69	75.570	79	75.770	89	75.970
70	75.590	80	75.790	90	75.990

Europe

50	40.665	58	40.775	87	40.915
51	40.675	59	40.785	88	40.925
52	40.685	81	40.815	89	40.935
53	40.695	82	40.825	90	40.965
54	40.715	83	40.835	91	40.975
55	40.725	84	40.865	92	40.985
56	40.735	85	40.875		
57	40.765	86	40.885		

Europe (by country)

D	50 ~ 92	40.665 ~ 40.985
B	50 ~ 53	40.665 ~ 40.695
DK	50 ~ 53	40.665 ~ 40.695
GB	50 ~ 92	40.665 ~ 40.985
SF	50 ~ 57, 59	40.665 ~ 40.765, 40.785
GR	50 ~ 92	40.665 ~ 40.985
IRL	51 ~ 91	40.665 ~ 40.975
IS	50 ~ 91	40.665 ~ 40.975
I	50 ~ 84	40.665 ~ 40.865
L	50 ~ 54	40.665 ~ 40.695
NL	50 ~ 53	40.665 ~ 40.715
N	50 ~ 59	40.665 ~ 40.785
A	50 ~ 53	40.665 ~ 40.695
P	50 ~ 54	40.665 ~ 40.695
S	50 ~ 56	40.665 ~ 40.735
E	50 ~ 53	40.665 ~ 40.695
CH	50 ~ 92	40.665 ~ 40.985