

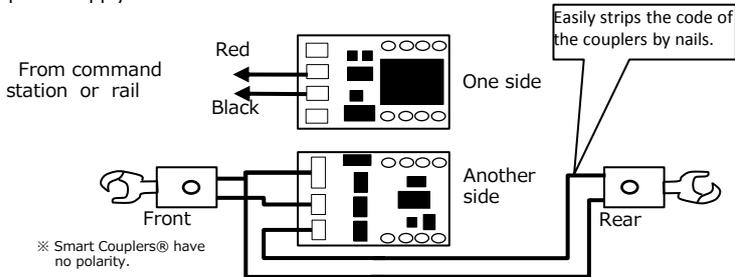
**CONTENTS: one DCC decoder Board one Transparent heat tube**

### Thank you for purchasing our Smart Coupler®.

Before use, read this manual through for your safety and proper function of the product.

We have developed Smart Coupler® based on the Kadee® **Scale Head Whisker® Coupler**; so, Smart Coupler®'s realistic shape and function is the same as that of Kadee® couplers. In addition, Smart Coupler® has Anywhere Uncoupling function too. Of course, you can use Smart Coupler® in the same way as you use a magnet coupling system. Smart Coupler® is a product partly licensed from Kadee® Quality Products Company.

- Check the contents of the package. If you find any defect of the coupler (i.e. an opened coupler pocket, a coupler head that does not swing rightward), contact us by email [contact@subarashi-models.com](mailto:contact@subarashi-models.com).
- Do's and Don'ts
  - Handle with care: Smart Couplers® are a precision product!
  - Do not open the Smart Coupler® pocket: opening the pocket will damage the product.
  - Do not twist the Smart Coupler® head: twisting the head will damage the pocket.
  - Connect wire with correct polarity.
  - Check functions of the Smart Couplers® before mounting them to your model cars.
  - In the case of a metal body, care should be taken since the side of the Smart Coupler may touch and short-circuit.**
- How to connect  
Refer to the figure below to connect Smart Couplers® with the decoder and the rail power supply. Cover the Board with the heat tube.



### 4. Test Methods

- Check function by using factory preset CV value.
  - Factory preset value is Decoder address=03 and Function mapping=Fn5
- Turn on power of the DCC command station.
- Set the direction to forward or reverse.
- Be sure that either of the coupler head open by turning the function (No.5) ON.
- Be sure that the coupler head AUTOMATICALLY close at 5 seconds. (The coupler head automatically closes at 5 seconds after function-ON to avoid heat-up.)
- Turn the function (No.5) OFF. Turn the function ON again to open the coupler head
- Change the direction and turn the function (NO.5) ON. Then, the other coupler head open as well.
- Turn the function off.

#### <TIPS>

- ※Please decide the function number and set it to CV9.
- ※If you are using a sound decoder, mapping CV9 to a function that sounds when turned on and dose not sound when turned off. That makes you easier to understand the state of the coupler.
- ※**You can uncouple well if you use the "Scale Head Coupler" for a car.**

### 5. Mounting to Locomotive

After checking operation, mount the couplers to the locomotive.

- According to the direction confirmed in 4 above, mount the coupler to the car body on the centerline of car with an attached screw.
- Double check if there is no short circuit or wiring errors.

#### <Caution>

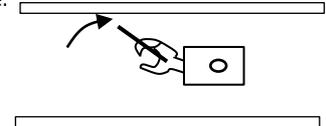
- ※ **Please mount the coupler that operates when the direction of the locomotive forward and the function button is turned 'ON' on the opposite side (rear end).**
- ※ **Please cut the trip pin because it cause the short circuit when it touch the rail.**



### 6. Adjustment of the coupler heads.

The motions of couplers are already adjusted when shipped from the factory, but if you need further adjustments, please refer to CV9. Making it too tight shorten the product life.

The gap between the trip pin and the rail should be 2~3mm when you turn the function on.



## 7. CV Value

This is CV value of the special decoder for Smart Couplers®,.

CV	Description	Range	Default
CV1	Short address	1-127	3
CV9	Bit7-5 Motion level of the head	0-7	101
	Bit4-0 Function mapping	0-28	
CV17, CV18	Extended Address	0001-9999	
CV29	Configuration Data1	0-255	

### CV9 detail

bit7				bit0			
D2	D1	D0	F4	F3	F2	F1	F0

#### Bit 4-0 (F4~F0) Function Mapping table

$F_n 0 = 00000 \sim F_n 28 = 11100$

Default :  $F_n 5 = 00101$

#### Bit 7-5 (D2~D0) Motion level of the head of coupler

Value = 000~111

Weak = 000

Normal = 011

Strong = 111

#### <example>

Motion level of the head is "Normal" and  
Function mapping is "FN=3"

CV9 (Bit 01100011) = 63 (HEX) = 99 (DEC)

※You can mount this decoder with the decoder of the locomotive .  
Even if you change CV value of the locomotive, this decoder will not be affected.

Also, The values of CV1 and CV9 are the same as the values of the locomotive, but the decoder of the locomotive is not affected.

## 8. Uncoupling Operation

Even if you set the acceleration to be slow, please learn how to start the locomotive within 5 seconds.

- Stop the locomotive and cars at the desired location of uncoupling.
- Back the locomotive up to push the cars a little, creating Slack between the couplers.
- Change direction of the locomotive to forward.
- Turn the Uncoupling function ON to open the couplers.
- Pull the locomotive forward until the cars get uncoupled, within 5 seconds, then stop the locomotive.
- Turn the function OFF . (Please do not forget it)

Please see the video at our website for detailed information.

<https://www.smart-coupler.com/home-eng>

## 9. Delayed Uncoupling Operation

- Stop the locomotive at the front of the car .
- Change the direction of the locomotive reverse.
- Turn the Uncoupling function ON and open the coupler head.
- Hold the coupler head open and reverse the locomotive in 5 seconds to engage the couplers .
- Further push the cars in and release the car at the desired location.
- Turn the function OFF. (Please do not forget it)

## 10. Other Usage

A Smart Coupler® can be used as a Kadee® coupler too for Magne-Matic® Uncoupling and Delayed Magnetic Uncoupling®. If Magne-Matic® Uncoupling and or Delayed Magnetic® Uncoupling is not desired, you can cut the trip pin of the Smart Coupler® off.

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All information provided here is subject to change without notice.

## SUBARASHI MODELS

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