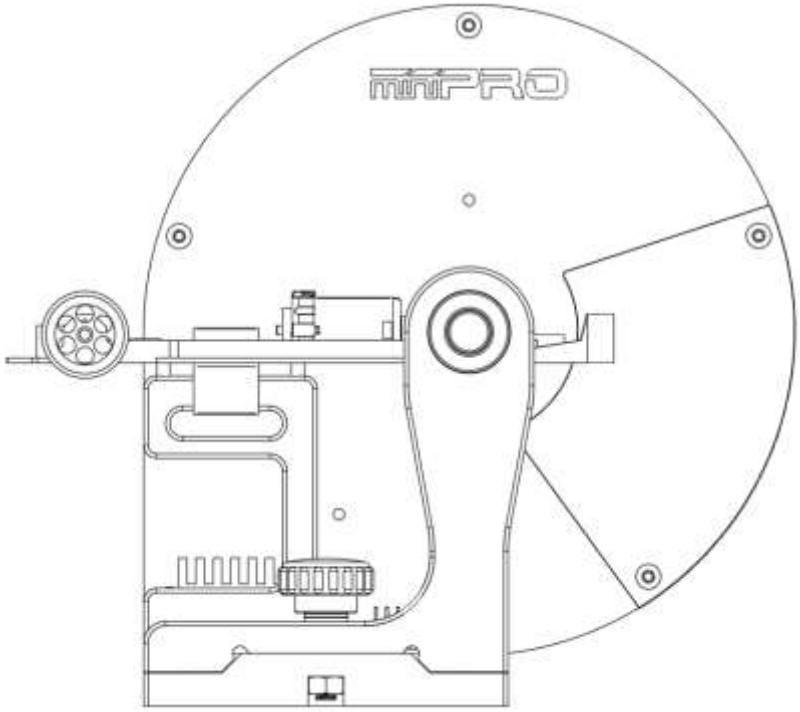
# MINIPRO® SLOT CAR DYNO

## QUICK START GUIDE

REVISION 2.0

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## SAFETY PRECAUTIONS

1. This is not a toy. This product is intended for people aged 18 years and older with previous experience building and operating Radio Control (R/C) equipment.
2. Make sure that dynamometers and motors under test are equipped with appropriate safety guards.
3. Make sure that all electronic products are earth grounded.
4. Do not exceed dynamometer and sensor specifications.

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# SLOT CAR DYNO DIAGRAM

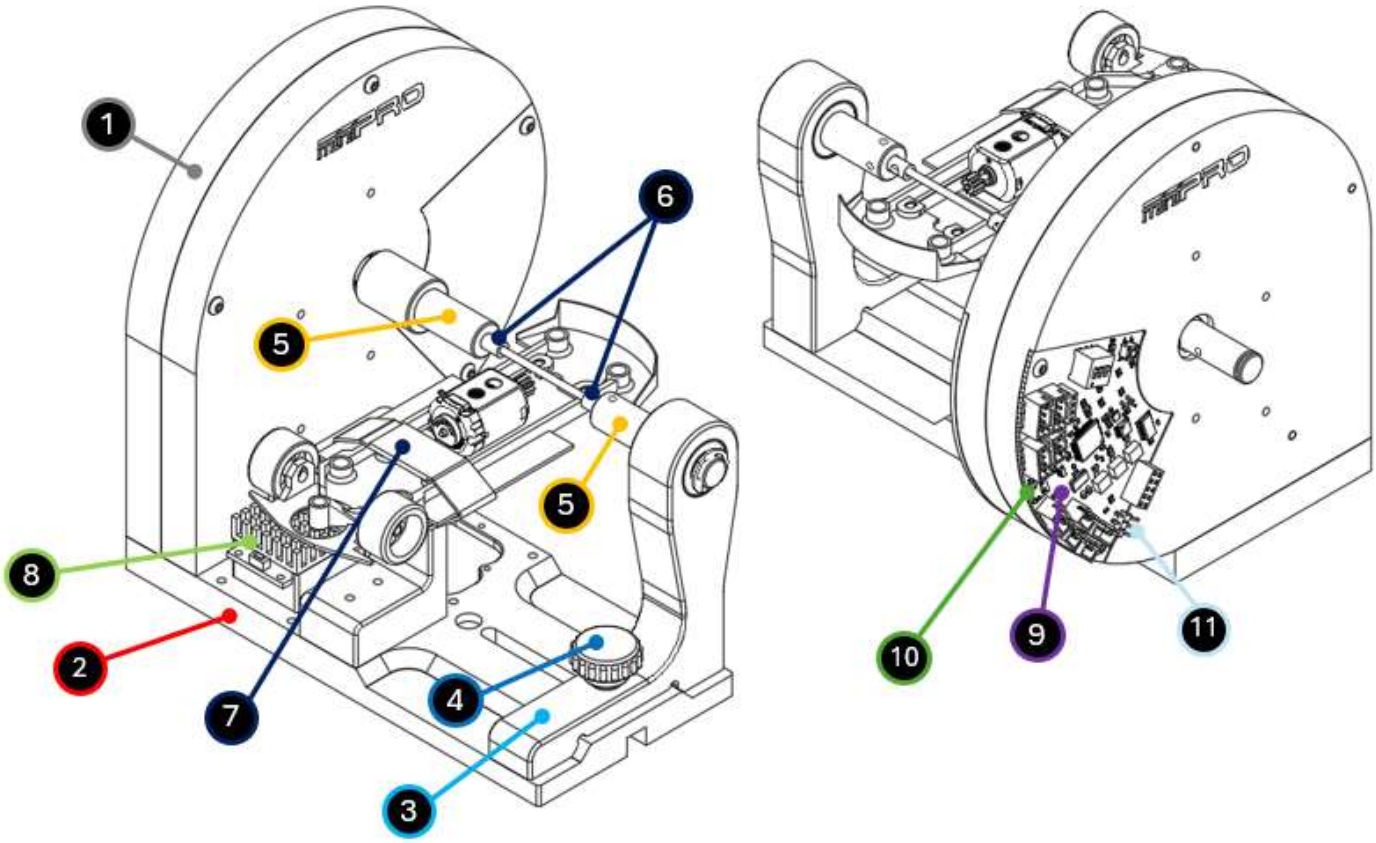
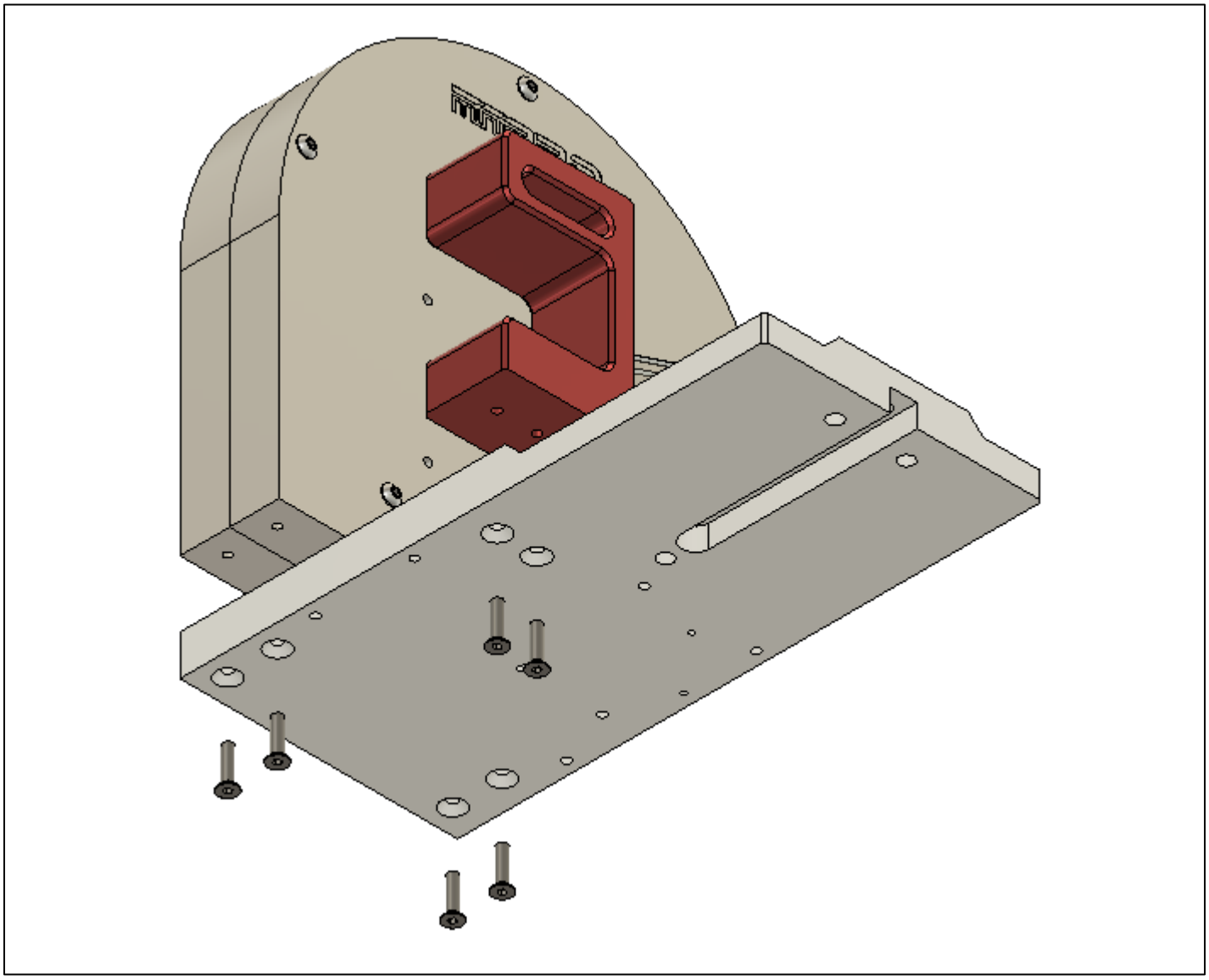



*Figure 1: Dyno Controller Board V3.0 Ports Diagram*

| ITEM | FUNCTION |
|---|---|
| 1 | Flywheel unit. |
| 2 | Flywheel base |
| 3 | Drive Shaft Slider |
| 4 | Thumb screw to tight the drive shaft slider |
| 5 | Shaft Holder |
| 6 | Shaft Adapters/Spacers (3/32in standard) |
| 7 | Chassis Strap |
| 8 | Electronic Speed Control (ESC) (not included) |
| 9 | Dyno Controller Board V3.0 and later. |
| 10 | Micro USB Connection for Windows PC. |
| 11 | ESC Throttle Connection – (License required) |

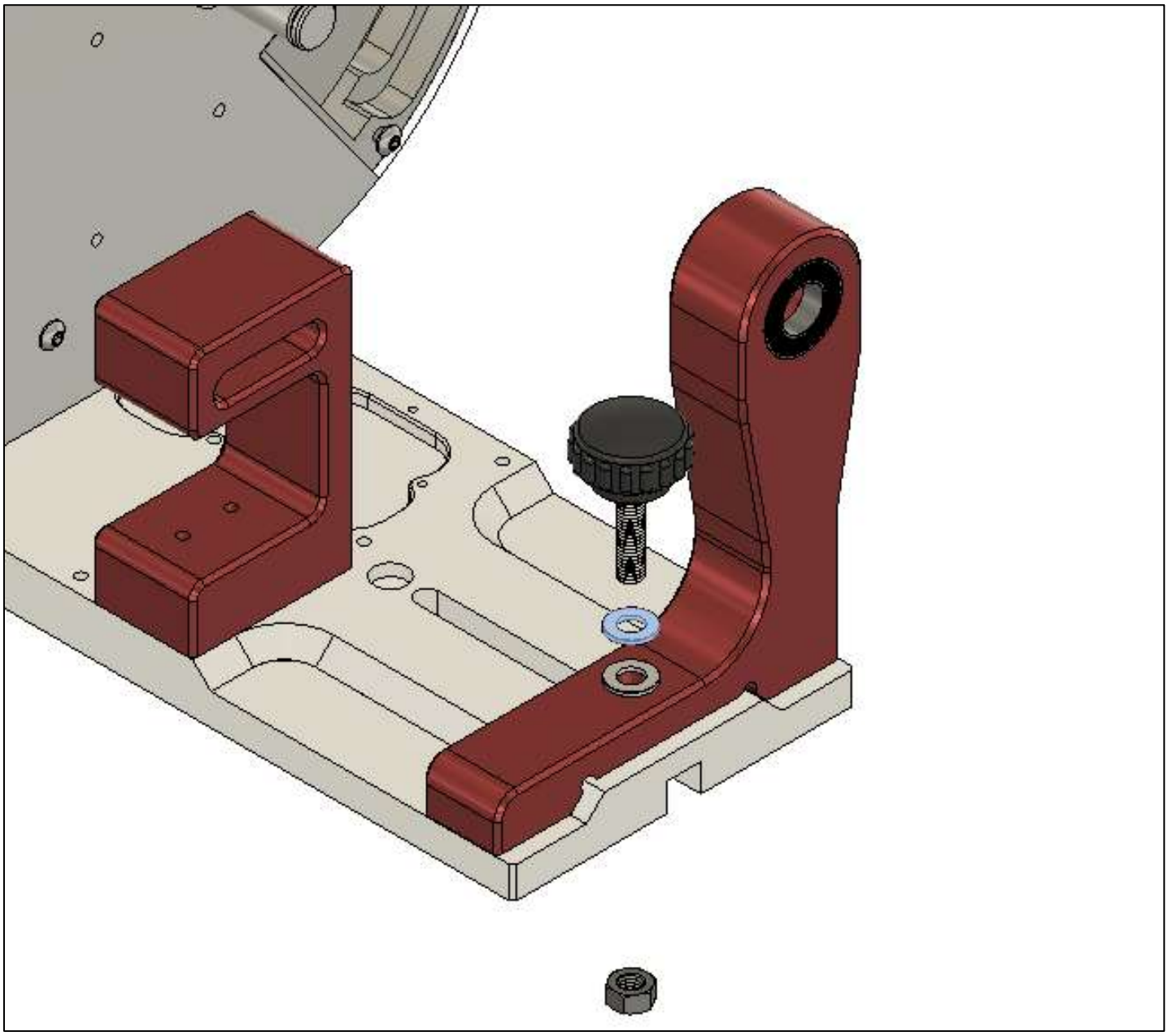
# SLOT CAR DYNO ASSEMBLY

# 1.



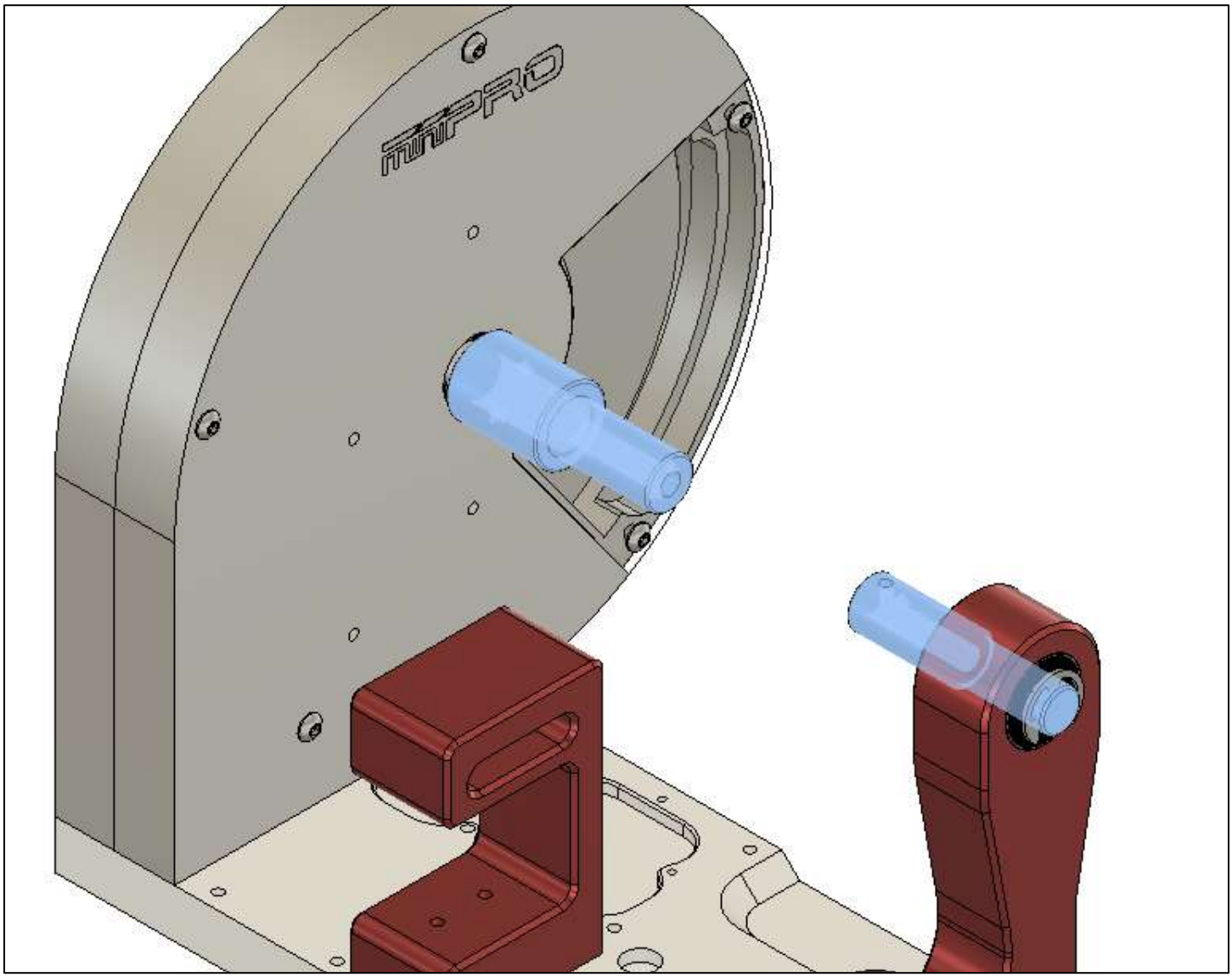
Using a 2.0mm hex tool, install (6) flat hex screw(s) underneath the base, flywheel unit and car holder.

# 2.



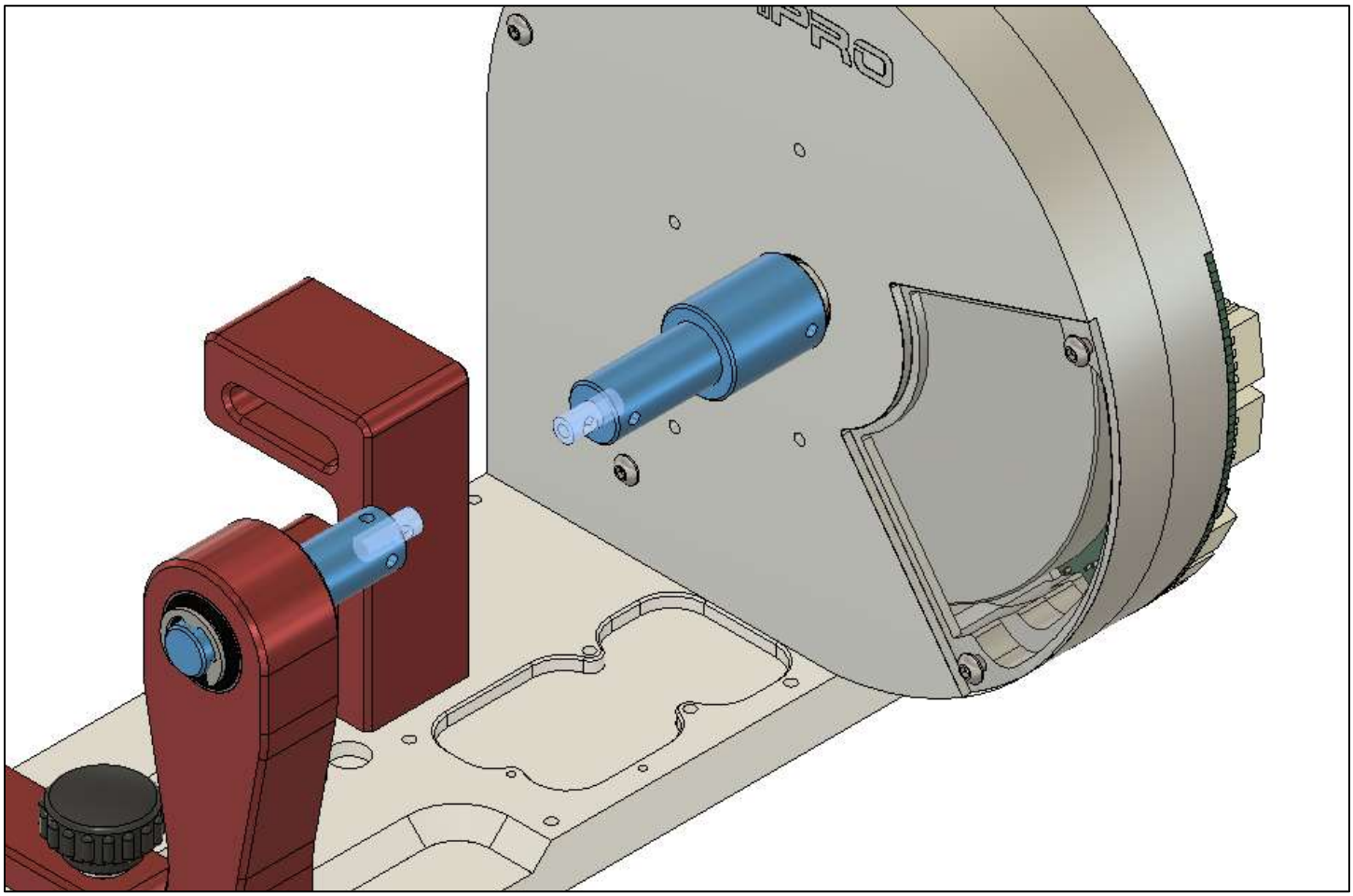
Install the slider with M5 Thumb screw and nut. *Optional washers included for older version dynamometers.*

# 3.




Remove older version tire holders and install the Shaft holders with set screws and E-Clip.

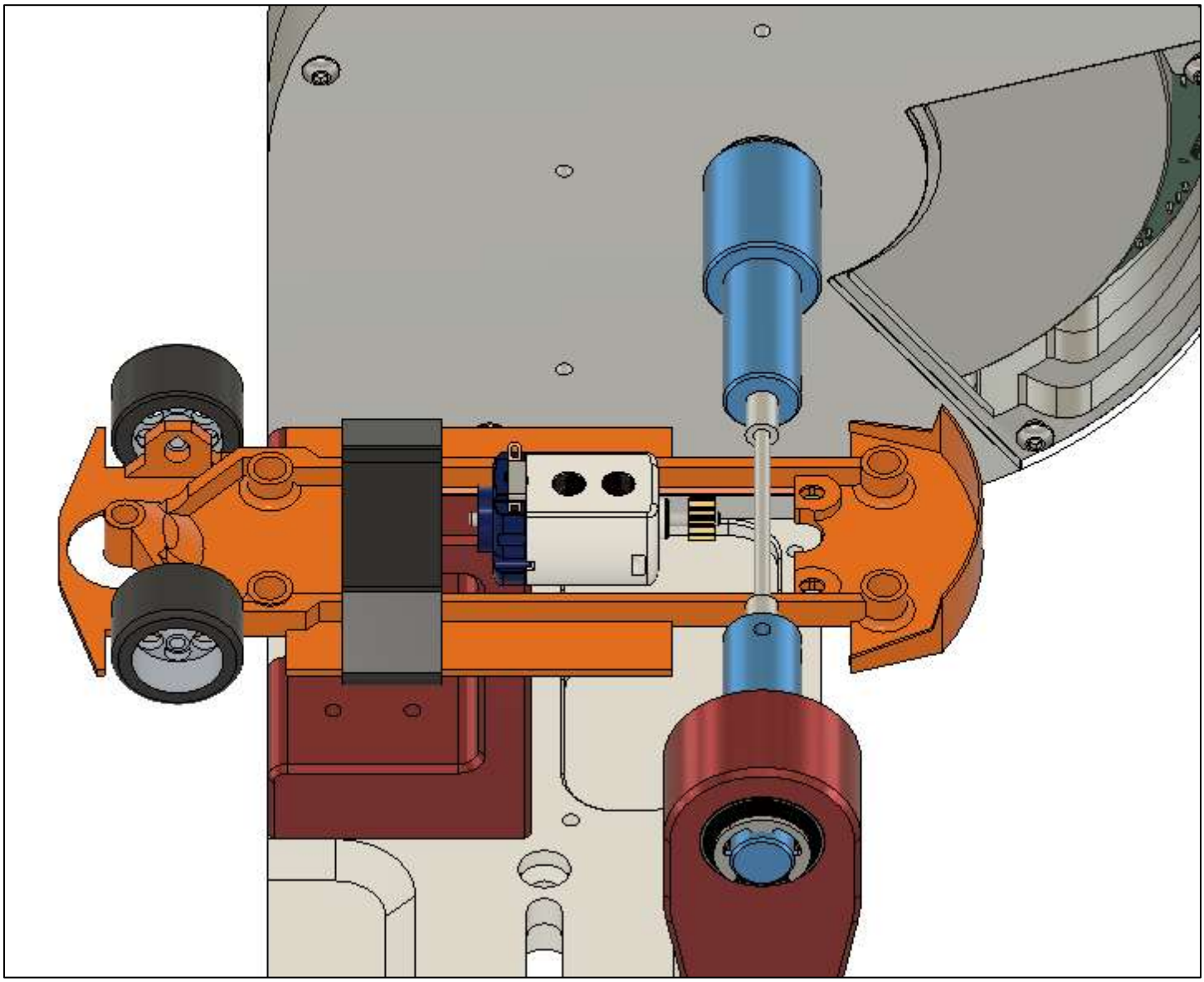
# 4.



Install the shaft adapter/spacers to the shaft adapters. Make sure the spacers hole align with the shaft adapter set screw to secure your car shaft.

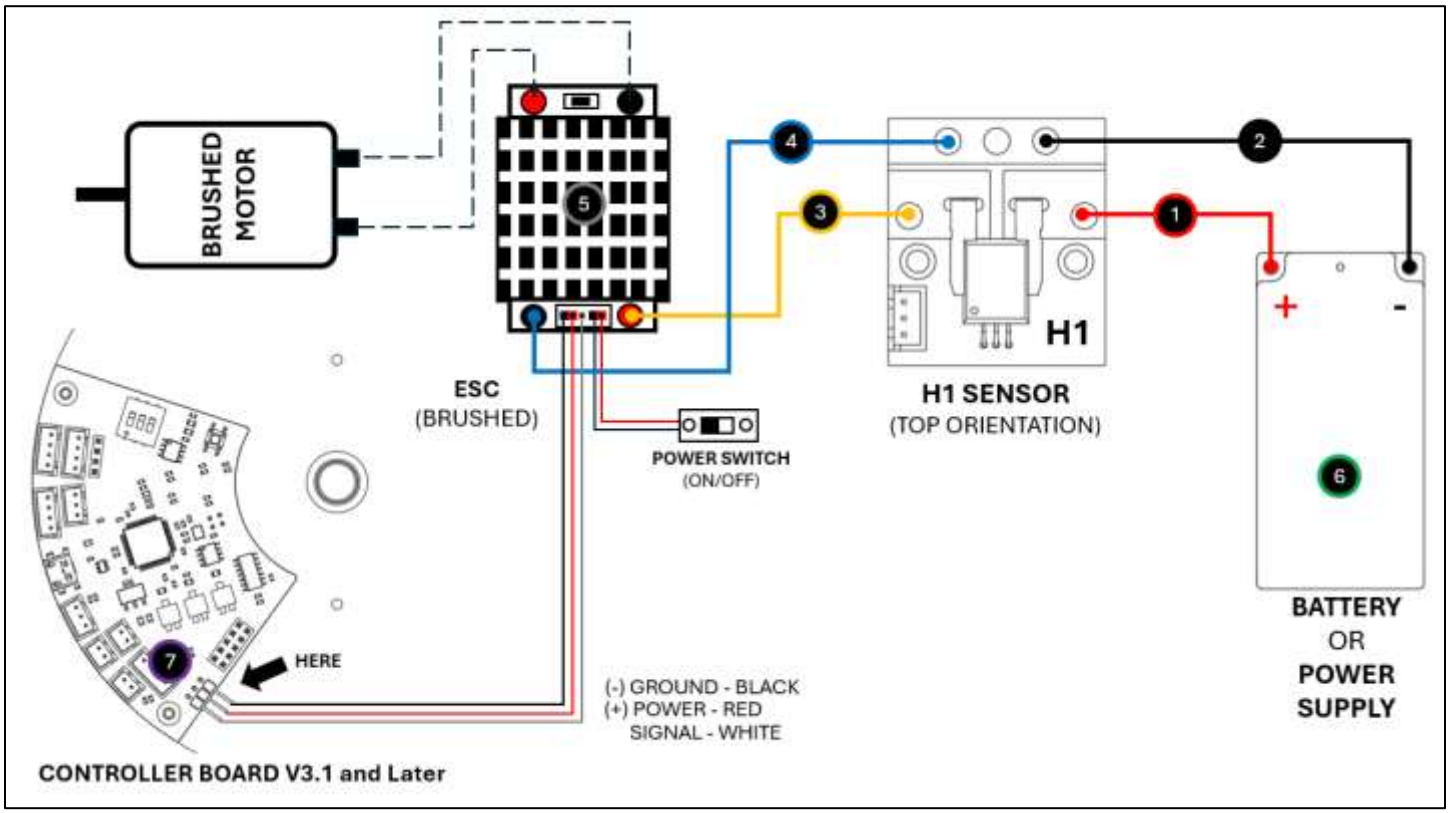
***Note:*** Standard spacers are 3/32″ for most Slot Cars. If you need custom shaft spacers please contact customer support.

# 5.



Install the Car and tight the set screws. Adjust the slider and slowly rotate the flywheel to reduce concentricity between the dyno. Once the car is set, install the velcro strap to secure the car.

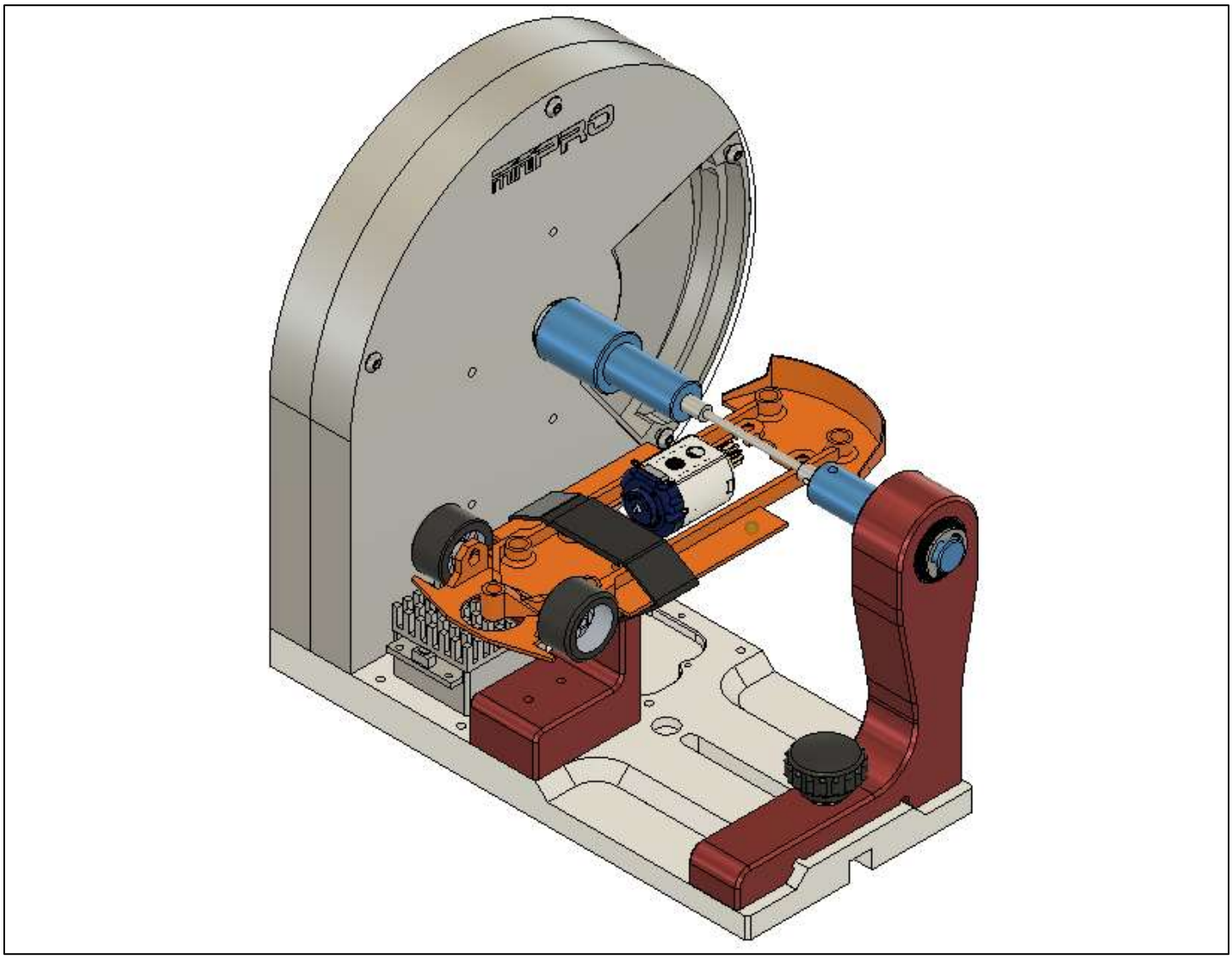
# 6.




If your dyno is equipted with optional sensors; use above wiring diagram as reference to connect the slot motor to an ESC, Voltage Sensor, Throttle Cable and Power supply/Battery.

**Note:** *These sensor is sold separately and a Throttle Control License is required.*
*- Please use MINIPRO's H1 Voltage and Current Manual for more information.*
*- Please use MINIPRO's Dyno Controller Manual for more information.*
*- Please follow ESC's manufacturer manual for connection information.*

# 7.




Install your Electronic Speed Control (ESC) and H1 Sensor to your bace and place and your dyno is ready for testing.

# DYNO BOARD V3.0 - PORTS DIAGRAM

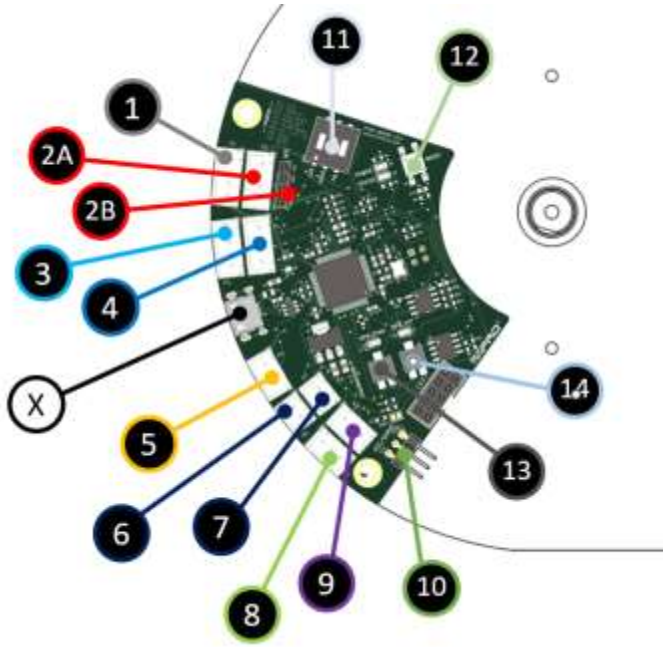



*Figure 1: Dyno Controller Board V3.0 Ports Diagram*

| ITEM | FUNCTION |
|---|---|
| 1 | Port #1 used for LCD Screen. |
| 2A | Port #2A used for I.R. Temp. sensor.<br>IMPORTANT: Only one sensor in Port #2 can be used at the time. |
| 2B | Port #2B used for All-Weather Temp. sensor.<br>IMPORTANT: Only one sensor in Port #2 can be used at the time. |
| 3 | Port #3 connects to the H1 or A1 Voltage and Current sensor. The Dyno controller board might be equipped with a 3 pin or 4 Pin connector. |
| 4 | Port #4 connects to External RPM sensor. |
| 5 | Port #5 connects to Flow sensor. |
| 6 | Port #6 connects to Motor Loop. Temp. sensor. |
| 7 | Port #7 connects to Motor Loop. Temp. sensor. |
| 8 | Port #8 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 9 | Port #9 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 10 | Internal Servo/ESC Throttle Controller port. This feature is not enabled and is subject to license fee. |
| 11 | Programable Switches.<br>Pin #1 is to enable LCD Screen; Pin #2 is for custom programing; Pin #3 is for Firmware Update. |
| 12 | Reset Button. Only used during Firmware Update |
| 13 | Dyno RPM Signal tuning. |
| 14 | External RPM Signal tuning. |
| X | Micro USB Cable connects to a Windows PC. |

# DYNO BOARD V3.0 – SENSORS WIRING DIAGRAM

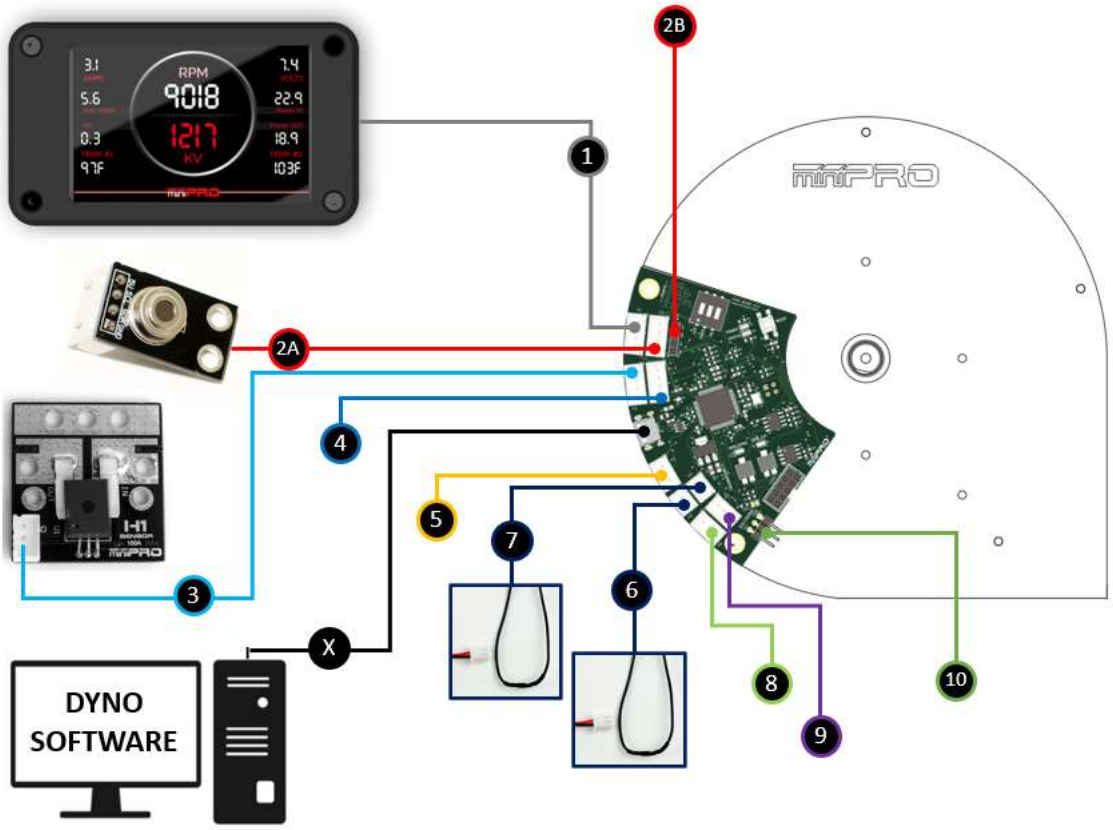



*Figure 2: Dyno Controller Board V3.0 – Sensors Connection Diagram*

| ITEM | FUNCTION |
|---|---|
| 1 | Port #1 connects to LCD Screen. |
| 2A | Port #2 connects to I.R. Temp. sensor *or* All-Weather Temp. sensor. |
| 2B | |
| 3 | Port #3 connects to the H1 or A1 Voltage and Current sensor. The Dyno controller board might be equipped with a 3 pin or 4 pin connectors. |
| 4 | Port #4 connects to External RPM sensor. The Dyno controller board might be equipped with a 3 pin or 4 pin connectors. |
| 5 | Port #5 connects to Flow sensor. |
| 6 | Port #6 connects to Motor Loop. Temp. sensor. |
| 7 | Port #7 connects to Motor Loop. Temp. sensor. |
| 8 | Port #8 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 9 | Port #9 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 10 | Servo or ESC connection. This feature is not enabled and is subject to license fee. |
| X | Micro USB Cable connects to a Windows PC. |

**Warranty voided if it's not installed according to Figure 2.**

# DYNO BOARD V3.1 - PORTS DIAGRAM

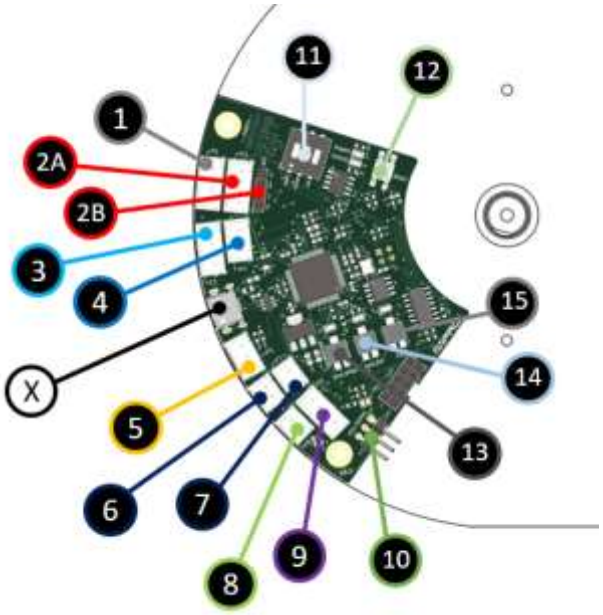



*Figure 3: Dyno Controller Board V3.1 Ports Diagram*

| ITEM | FUNCTION |
|---|---|
| 1 | Port #1 used for LCD Screen. |
| 2A | Port #2A used for I.R. Temp. sensor.<br>IMPORTANT: Only one sensor in Port #2 can be used at the time. |
| 2B | Port #2B used for All-Weather Temp. sensor.<br>IMPORTANT: Only one sensor in Port #2 can be used at the time. |
| 3 | Port #3 8 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 4 | Port #4 connects to External RPM sensor. |
| 5 | Port #5 connects to Flow sensor. |
| 6 | Port #6 connects to Motor Loop. Temp. sensor. |
| 7 | Port #7 connects to Motor Loop. Temp. sensor. |
| 8 | Port #8 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 9 | Port #9 connects to the H1 or A1 Voltage and Current sensor. The Dyno controller board might be equipped with a 3 pin or 4 Pin connector. |
| 10 | Internal Servo/ESC Throttle Controller port. This feature is not enabled and is subject to license fee. |
| 11 | Programable Switches.<br>Pin #1 is to enable LCD Screen; Pin #2 is for custom programing; Pin #3 is for Firmware Update. |
| 12 | Reset Button. Only used during Firmware Update |
| 13 | Dyno RPM Signal tuning. |
| 14 | External RPM Signal tuning. |
| 15 | Flow Sensor Signal tuning |
| X | Micro USB Cable connects to a Windows PC. |

# DYNO BOARD V3.1 – SENSORS WIRING DIAGRAM

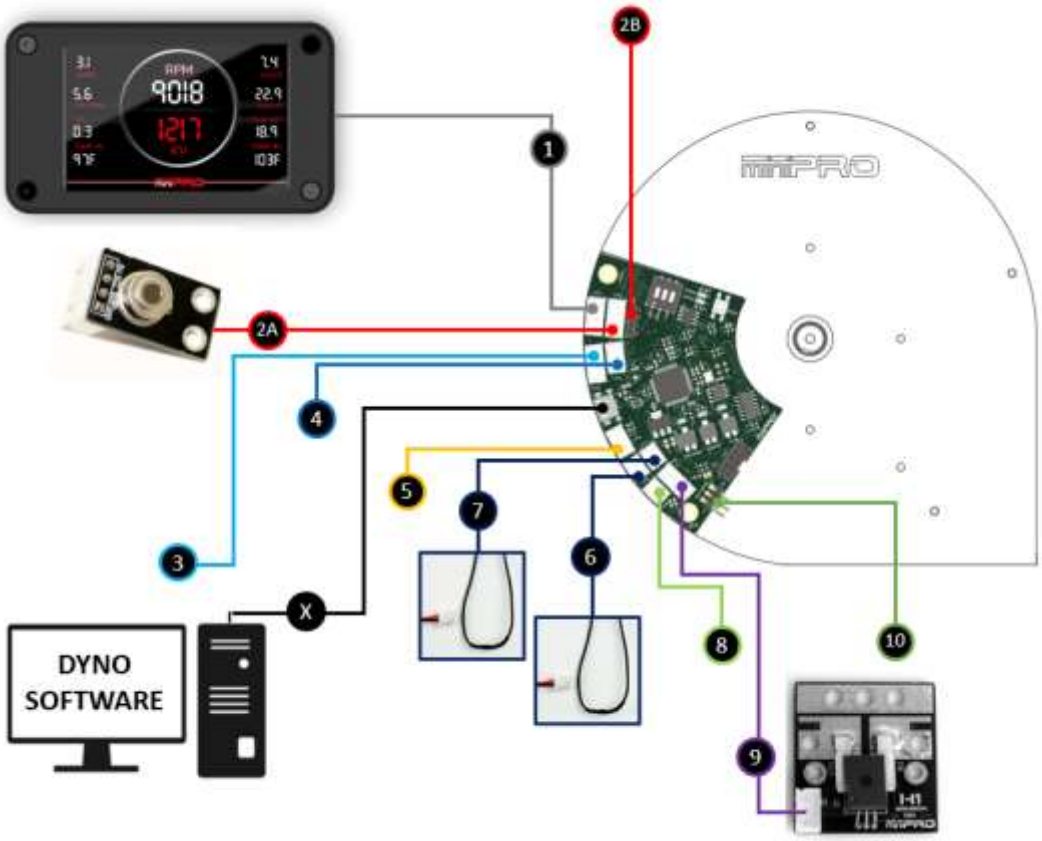



*Figure 4: Dyno Controller Board V3.1 – Sensors Connection Diagram*

| ITEM | FUNCTION |
|---|---|
| 1 | Port #1 connects to LCD Screen. |
| 2A | Port #2 connects to I.R. Temp. sensor *or* All-Weather Temp. sensor. |
| 2B | |
| 3 | Port #3 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 4 | Port #4 connects to External RPM sensor. The Dyno controller board might be equipped with a 3 pin or 4 pin connectors. |
| 5 | Port #5 connects to Flow sensor. |
| 6 | Port #6 connects to Motor Loop. Temp. sensor. |
| 7 | Port #7 connects to Motor Loop. Temp. sensor. |
| 8 | Port #8 is Auxiliary port used for custom sensor designed by MINIPRO. |
| 9 | Port #9 connects to the H1 or A1 Voltage and Current sensor. The Dyno controller board might be equipped with a 3 pin or 4 pin connectors |
| 10 | Servo or ESC connection. This feature is not enabled and is subject to license fee. |
| X | Micro USB Cable connects to a Windows PC. |

**Warranty voided if it's not installed according to Figure 4.**

# SOFTWARE INSTALLATION – V5.0 and later

**** Please refer to the software manual for more information.***

Download the software from the provided link and double click the file to begin the installation.
Press Next >> to continue.


*Figure 5: Software Installation Welcome Screen*

Add the Name, Organization and Serial Number.
Press Next >> to continue.
**NOTE:** Only one license can be used per PC. Additional licenses are available for purchase.

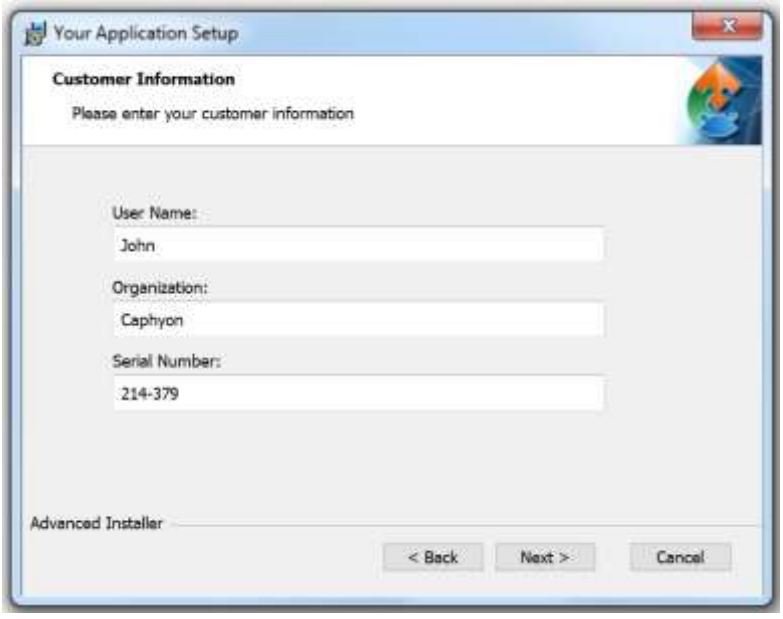



*Figure 6: Software License Screen*

Select the location where the software will be installed.
Press Next >> to continue.

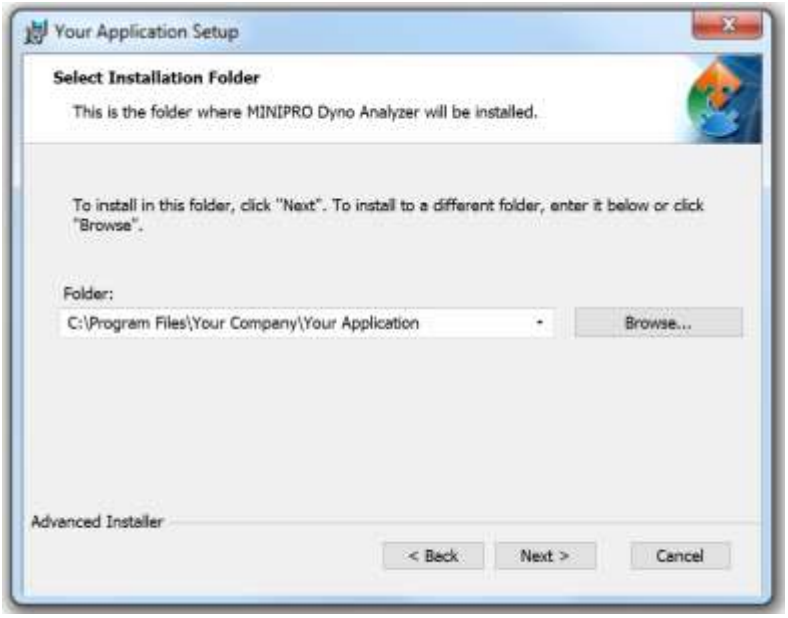



*Figure 7: Folder Installation Screen*

The software is ready to install.
Press Install to continue.

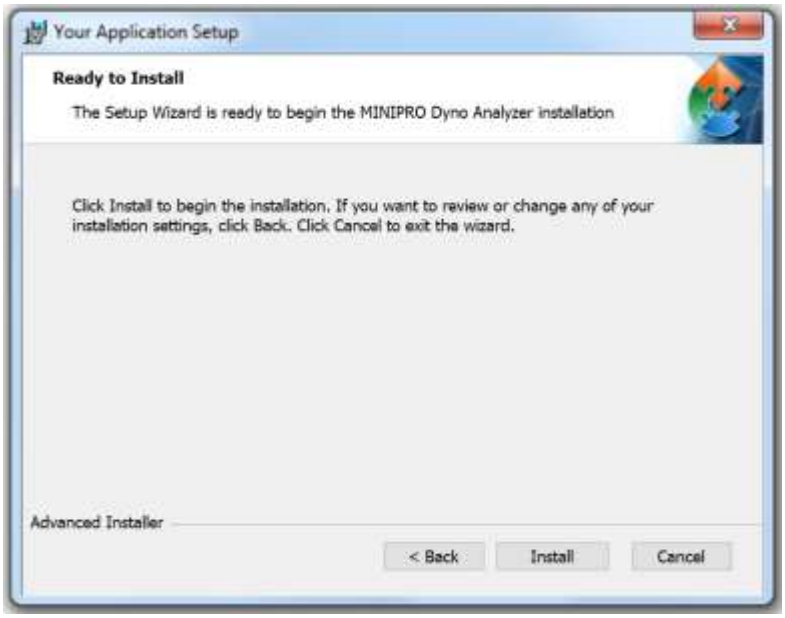



*Figure 8: Ready to Install Screen*

The software will begin installation. Please wait until the setup finishes. This may take several minutes.

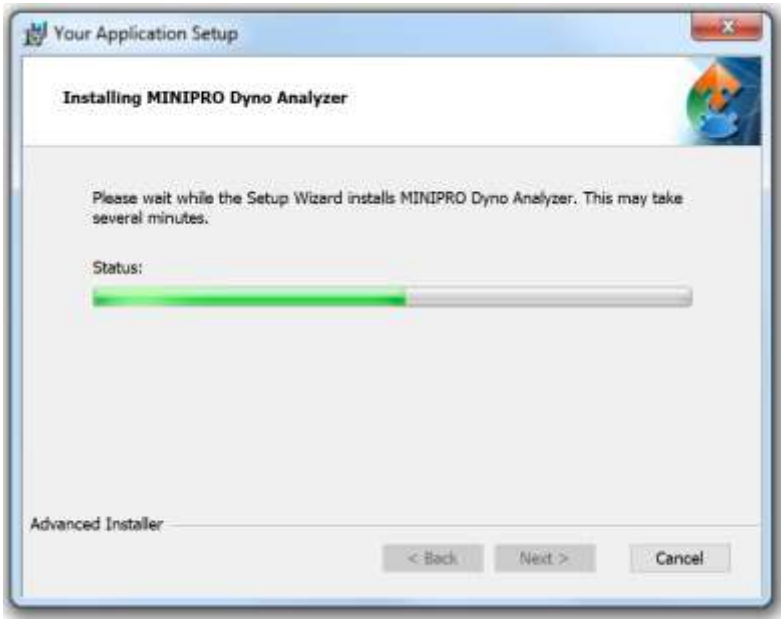



*Figure 9: Installation Screen*

The software finished installing.
Press Finish to complete the installation.

# SOFTWARE CONFIGURATION

## I/O PORTS - SENSORS:

**INSTRUCTIONS:**

1. Open the MINIPRO Testing Software and Connect the dynamometer to the program.
2. Go-to *Configure Hardware -> I/O Hobby Grade* tab.
3. Connect all necessary sensors.
4. Select the installed sensors from the drop-down (i.e. for voltage and current sensor see *Figure 5*).
5. Press the Apply Settings button. If the software cursor stays busy for longer than 1 min; press Apply again.
6. Press the Save Setup button, and your configuration is completed.

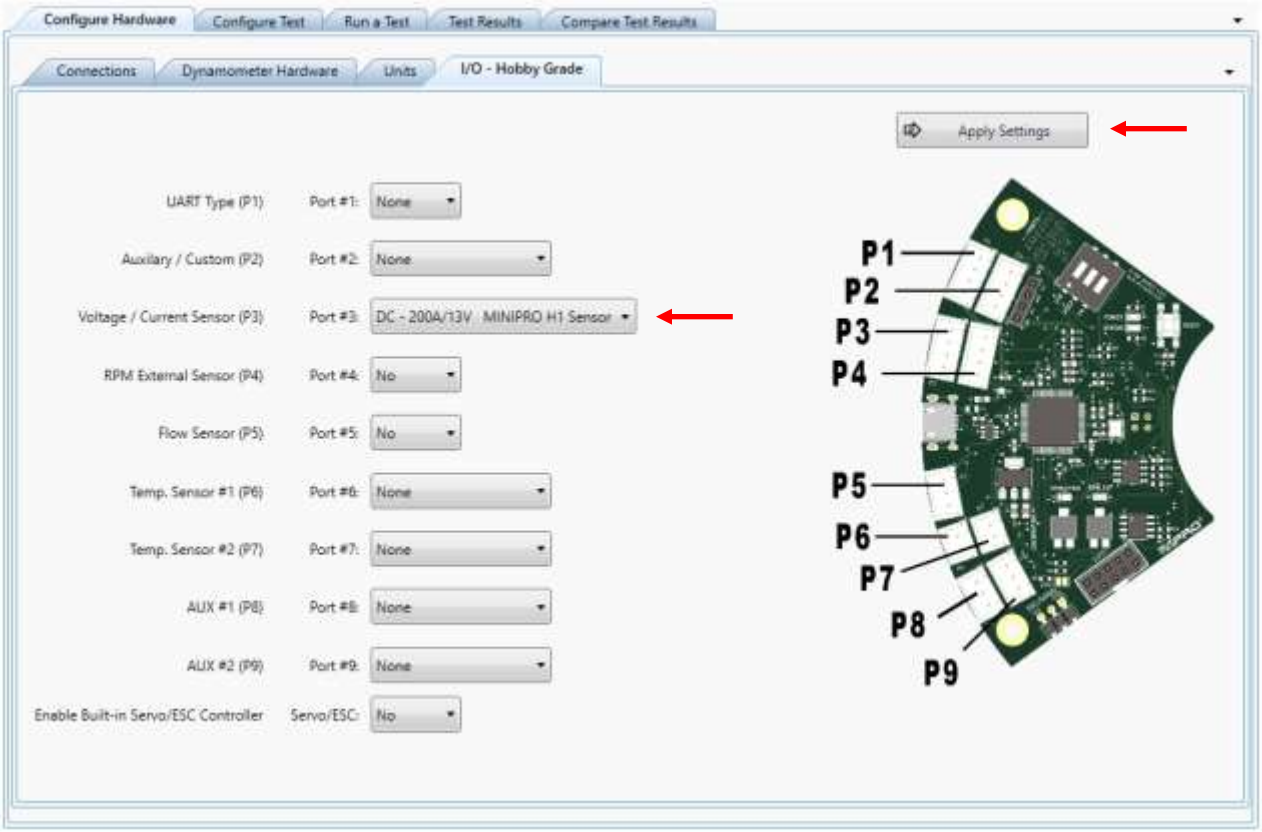



*Figure 10: I/O Configuration for V3.X boards*