



Digital Tractor Performance Monitor

System Manual

Digital Tractor Performance Monitor

AE330000

Notice: This product is designed for aftermarket use, and thus, Ag Express does not control user setup or accuracy of machinery hours when placed into use by the end-user or equipment service provider/dealer. By purchasing this product and following the instructions contained in this procedure, the end-user or equipment service provider/dealer does expressly agree to hold Ag Express free from liability for any direct, indirect, incidental or consequential damages arising out of the alteration of hours as described above. The end-user or equipment service provider/dealer further agrees to indemnify Ag Express for all claims and causes of action brought against the end user, equipment service provider/dealer or Ag Express as a result of the alteration of hours, including attorney fees and associated costs.

Introduction

The enclosed Info Center is a universal replacement tach for the following tractor and picker/stripper models: 186H, 886, 986, 986H, 1086, 1086H, 1486, 1586, 3388, 3588, 3788, 4386, 4586, 4786, 782 and 1400. The new Info Center will read out the same functions as the original equipment when properly set up. The setup requires programming the model type, adjusting the correct tire radius, and setting the EGT alarm point. There also is a one-time opportunity to program the old engine hours into the Info Center. There are some differences on the replacement unit regarding operation and function switch locations. These differences are highlighted below:

1. **Model Selection** - Plug-in modules are not required for model selection. Instead, 5 dipswitches are used behind a rubber grommet on the back of the unit. English or metric operation can also be selected with the switches. (See set-up section below).
2. **Function Switch Location and Operation** - The function switches operate in the same manner except that some of the locations have been changed. On models that read out the PTO and EGT functions, a single function switch is used instead of individual switches. On the first selection of the “1000/540 PTO” function switch, the 1000 PTO function will be activated along with its respective LED. On the second selection of the same switch, the 540 PTO function will be activated along with its respective LED.
 - a. Subsequent selection of the same function switch will cause the display to alternate between 1000 PTO and 540 PTO. Similar operation occurs for the “EGT” and “EGT Set” function switch.
3. **Test Mode** - The unit automatically enters the test mode when the key switch is turned on, but the engine has not been started. This mode lights in sequence all the segments of the display and the function switch LEDs. After this sequence, the loaded tire radius is displayed and can be changed by programming.
 - a. Selecting the “RPM” function switch in the test mode will display the program number relating to the vehicle model. Program numbers for each model are shown above the dipswitch images in the model selection setup procedure.
 - b. Selecting the “1000/540 PTO” function switch once will display the software version installed. Selecting it again will light all segments and LEDs on the Info Center.
4. **Normal Operating Mode** - The unit automatically enters this mode and selects the RPM function when the engine is started. In this mode, any of the switch functions can be selected if the vehicle model supports it.

Digital Tractor Performance Monitor

AE330000

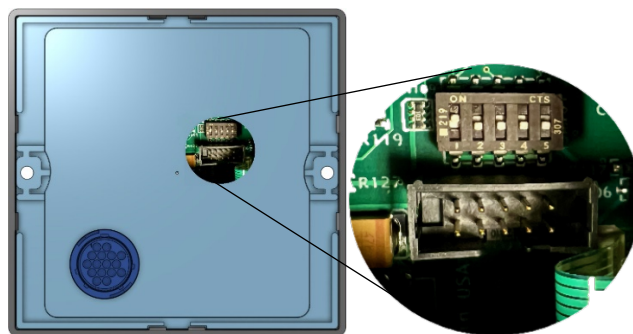
5. **Open or Shorted EGT Sensor (Tractors Only)** - The EGT sensor is continuously monitored and flashes the EGT LED when either a short or open circuit is detected. With the selection of the EGT function switch, an “Err” will be displayed on the digital readout and the light will stay on.
6. **Programming** - Setting the loaded tire radius, EGT temperature alarm point, and setting the one-time opportunity old engine hours into the Info Center are completed using the function switches on the front of the Info Center.
7. **Engine Hours** - The engine hours are now stored electronically and no longer use a mechanical hour meter. Engine hours are displayed when the ignition key is turned on and by pressing the “Engine Hours/Adjust” function switch on the front of the Info Center. Matching and storing original engine hours into the Info Center can also be accomplished.

Setup Procedure

Model Selection - Remove the rubber grommet on the back of the unit to expose the programming dipswitches. See figure 1. Position the unit as shown in figure 1 and set the switches to the position shown for the model of the tractor or picker/stripper below. The first switch from the left programs it for English or Metric operation. All units are shipped with switch 1 in the “on” position for English operation.

Note: The units are initially set up for the models shown for program number 2.

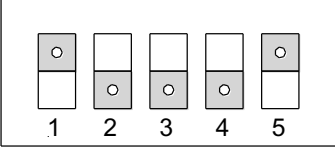
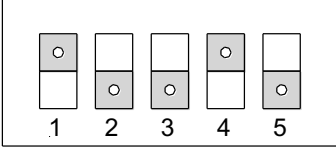
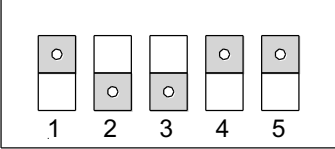
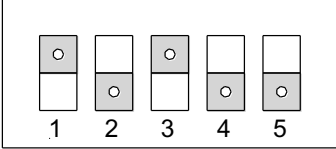
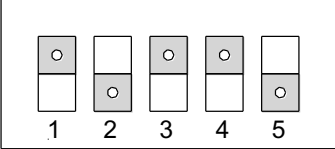
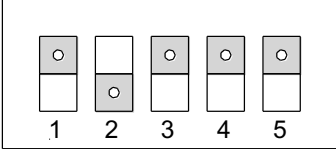
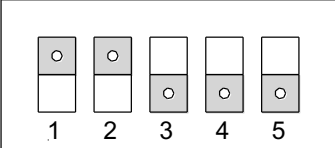
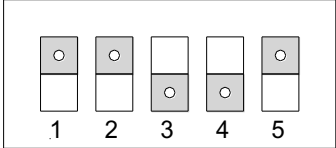
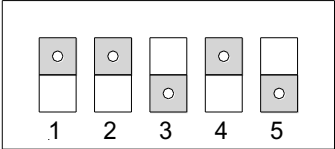
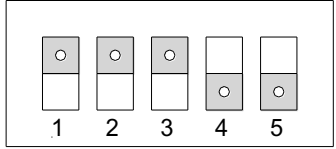
Figure 1.



Model Number Dipswitch Settings On =

Digital Tractor Performance Monitor

AE330000

| | |
|--|---|
| <p>Program Number 2 (P2)</p>  <p>Model #s H186, 886, 986, 1086, 3388 & 3788</p> | <p>Program Number 3 (P3)</p>  <p>Model # 4386</p> |
| <p>Program Number 4 (P4)</p>  <p>Model # 4586</p> | <p>Program Number 5 (P5)</p>  <p>Model # 4786</p> |
| <p>Program Number 7 (P7)</p>  <p>Model # 782</p> | <p>Program Number 8 (P8)</p>  <p>Model # 1400</p> |
| <p>Program Number 9 (P9)</p>  <p>Model #s 986(H), 1086(H) & H186(H)</p> | <p>Program Number 10 (P10)</p>  <p>Model # 1486</p> |
| <p>Program Number 11 (P11)</p>  <p>Model # 1586</p> | <p>Program Number 13 (P13)</p>  <p>Model # 3588</p> |

Digital Tractor Performance Monitor

AE330000

1. Connect the Info Center to the vehicle harness and tighten the connector securely. Note: If your locking ring on the harness is damaged, a new one can be installed by cutting off the old one and twisting on a new one. Ag Express Electronics Part # is AE1204.
2. **Model Program Verification** - Turn the key switch on and with the engine not running, select the “RPM” function switch. If properly set up, the number displayed should match the program numbers shown in the model selection. For example, the displayed programming number of model number 886 would be P2, 4386 is P3, etc.
3. Replace the rubber grommet on the back of unit.
4. Fasten the unit into the console with the existing mounting screws.
5. **Set the Loaded Tire Radius** - The loaded tire radius can only be set at the end of the test sequence and before the engine is started. The loaded tire radius for a given rim and tread type is given in Table I (English) or 1A (Metric) or use Table II for model 3788.
 - a. Press and hold the “Engine Hours/Adjust” switch for a minimum of three seconds. “ADJ” will appear on the display for one second and the far right up and down arrow switch LEDs will be alternating on and off. Use the “1000/540 PTO/Up” and “EGT EGT Set/Down” arrow function switches to increase or decrease the tire radius setting on the display to match the number found in the table below. (Note: the longer either arrow function switch is held down, the faster the number count will roll.)
 - b. Once the display is set to the desired tire size, press the “Engine Hours/Adjust” function switch once to store the value into memory. The numerical display will read “Stor” for an instant and the right switch LEDs will stop alternating on and off and only the MPH LED will be lit. The display will read the newly stored tire radius size. Example r34.5.
6. **To Set the EGT Alarm Point** - Note the EGT alarm point can be set with the engine running or not running.
 - a. Select the EGT Set by pressing the “EGT EGT Set/Down” switch twice. The EGT Set LED will light, and the currently stored alarm set point is now displayed on the 4-digit numerical display.
 - b. The EGT alarm set point can be adjusted by pressing and holding the “Engine Hours/Adjust” switch down for a minimum of 3 seconds. “ADJ” will appear on the display for one second and the far right up and down arrow switch LEDs will be alternating on and off. Use the “1000/540 PTO/Up” and “EGT EGT Set/Down” arrow function switches to increase or decrease the EGT alarm set point. (Note: the longer either arrow function switch is held down, the faster the number count will roll.) The alarm point can be set in the range of 900°F (480°C) to 1500°F (810°C). Once a desired reading is reached, press the “Engine Hours/Adjust” function switch once to store the new alarm point. The numerical display will read “Stor” for an instant and the right switch LEDs

will stop alternating on and off and only the EGT Set LED will be lit. The display will read the desired alarm set point. Example: 1280.

7. **To Set Old Engine Hours - Important Note:** This is a one-time opportunity to match up the engine hours with the old tachometer. (If the new Info Center reads 25.0 hours or more, it will not be user adjustable). Read this section thoroughly before attempting to adjust the engine hours. Returning any unit to adjust the engine hours will not be covered by warranty and a minimum bench fee will be charged. A signed release of liability statement will also be required.
 - a. The old engine hours can be set only at the end of the Test Mode sequence and before the engine is started. See **Test Mode** in the Introduction.
 - i. Select the “RPM” function switch on the front panel. The program number will be displayed (Example: P2), and the RPM LED will be lit. If the program number is not displayed, be sure the engine is not running, turn the key switch off and back on. Select the “RPM” function switch after the Test Mode sequence finishes.
 - b. Press and hold the “Engine Hours/Adjust” switch for a minimum of three seconds. “ADJH” will appear on the display for one second and the far right up and down arrow switch LEDs will begin to alternate on and off. (**Note:** To exit this mode, turn the ignition key off.)
 - c. Use the “1000/540 PTO/Up” or “EGT EGT Set/Down” arrow function switches to increase or decrease the hour reading on the display. (**Note:** the longer either arrow function switch is held down, the faster the number count will roll.)
 - i. Format examples: Note: the decimal(s) position(s) represents 10k, 20k 30k 40k and 50k hours.
 - ii. Hours between 0.0 through 9999, set 0 through 9999
 - iii. Hours between 10,000 through 19,999, set 0.000 through 9.999
 - iv. Hours between 20,000 through 29,999, set 0.0.00 through 9.9.99
 - v. Hours between 30,000 through 39,999, set 0.0.0.0 through 9.9.9.9
 - vi. Hours between 40,000 through 49,999, set 0.0.0.0. through 9.9.9.9.
 - vii. Hours between 50,000 through 59,999, set 0.000. through 9.999.
 - viii. maximum is 59,999 hours.

Once the desired engine hours are displayed, press and hold the “Engine Hours/Adjust” switch. The numerical display will read “S_ _ _” and add letters to the display as the switch is held down. When the display reads “Stor”, it has stored the value into memory and the right switch LEDs will stop alternating on and off. Releasing the switch before the word “Stor” is complete, will return it to the adjustment mode. To exit the adjustment mode without saving it to memory, turn the ignition key off. If any value of 25.0 and over is stored into memory, it will no longer allow the user to adjust the engine hours.

Finding Tire Load Radius

Table I (To find tire load radius, English)

| Item | Tire Size Section width in Inches | Tire Load Radius is given below by Rim size and Tread type | | | | | | | | | | | |
|------|-----------------------------------|--|----|---------|------|---------|------|---------|------|---------|------|---------|----|
| | | 26" Rim | | 30" Rim | | 32" Rim | | 34" Rim | | 38" Rim | | 42" Rim | |
| | | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 |
| 1 | | | | | | | | | | | | | |
| 2 | 12.4 | | | | | | | | | | | 29.8 | |
| 3 | | | | | | | | | | | | | |
| 4 | 13.6 | | | | | | | | | 28.5 | | | |
| 5 | | | | | | | | | | | | | |
| 6 | 13.9 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | 14.9 | | | 25.5 | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | 15.5 | | | | | | | | | 28.5 | 30.0 | | |
| 11 | | | | | | | | | | | | | |
| 12 | 16.9 | | | 26.5 | | | | 28.5 | | 30.4 | | | |
| 13 | | | | | | | | | | | | | |
| 14 | 18.4 | 25.6 | | 27.4 | 28.3 | | | 29.4 | 30.3 | 31.5 | 32.0 | 33.6 | |
| 15 | | | | | | | | | | | | | |
| 16 | 20.8 | | | | | | | 30.3 | 31.4 | 32.6 | 33.4 | | |
| 17 | | | | | | | | | | | | | |
| 18 | 23.1 | | | 29.8 | 31.2 | | | 31.8 | 33.1 | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | 24.0 | 25.8 | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
| 22 | 24.5 | | | | | 31.5 | 32.8 | | | | | | |
| 23 | | | | | | | | | | | | | |
| 24 | 28.1 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | |
| 26 | 30.5 | | | | | 32.0 | 32.6 | | | | | | |
| 27 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | |

Digital Tractor Performance Monitor

AE330000

Table IA (To find tire load radius, Metric)

| Item | Tire Size Section width in Inches | Tire Load Radius is given below by Rim size and Tread type | | | | | | | | | | | |
|------|-----------------------------------|--|----|------------|------|------------|------|------------|------|------------|------|-------------|----|
| | | 66.0cm Rim | | 76.2cm Rim | | 81.3cm Rim | | 86.4cm Rim | | 96.5cm Rim | | 106.7cm Rim | |
| | | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 |
| 1 | | | | | | | | | | | | | |
| 2 | 31.5 | | | | | | | | | | | 75.7 | |
| 3 | | | | | | | | | | | | | |
| 4 | 34.5 | | | | | | | | | 72.4 | | | |
| 5 | | | | | | | | | | | | | |
| 6 | 35.3 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | 37.8 | | | 64.8 | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | 39.4 | | | | | | | | | 72.4 | 76.2 | | |
| 11 | | | | | | | | | | | | | |
| 12 | 42.9 | | | 67.3 | | | | 72.4 | | 77.2 | | | |
| 13 | | | | | | | | | | | | | |
| 14 | 46.7 | 65.5 | | 69.6 | 71.9 | | | 74.7 | 77.0 | 80.0 | 81.3 | 83.3 | |
| 15 | | | | | | | | | | | | | |
| 16 | 52.8 | | | | | | | 77.0 | 79.8 | 82.8 | 84.8 | | |
| 17 | | | | | | | | | | | | | |
| 18 | 58.7 | | | 75.7 | 79.2 | | | 80.8 | 84.1 | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | 61.0 | 65.5 | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
| 22 | 62.2 | | | | | 80.0 | 83.3 | | | | | | |
| 23 | | | | | | | | | | | | | |
| 24 | 71.4 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | |
| 26 | 77.25 | | | | | 81.3 | 82.8 | | | | | | |
| 27 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | |

Digital Tractor Performance Monitor

AE330000

Table II for 3788 Only (To find tire load radius, English)

| Item | Tire Size Section width in Inches | Tire Load Radius is given below by Rim size and Tread type | | | | | | | | | |
|------|--|--|------|---------|------|---------|------|---------|------|---------|----|
| | | 30" Rim | | 32" Rim | | 34" Rim | | 38" Rim | | 42" Rim | |
| | | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 | R1 | R2 |
| 1 | | | | | | | | | | | |
| 2 | 12.4 | | | | | | | | | 29.8 | |
| 3 | | | | | | | | | | | |
| 4 | 13.6 | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | 13.9 | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | 14.9 | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | 15.5 | | | | | | | 25.0 | 25.0 | | |
| 11 | | | | | | | | | | | |
| 12 | 16.9 | | | | | | | 25.2 | | | |
| 13 | | | | | | | | | | | |
| 14 | 18.4 | | | | | 25.0 | 25.0 | 26.1 | 26.5 | 27.8 | |
| 15 | | | | | | | | | | | |
| 16 | 20.8 | | | | | 25.1 | 26.0 | 27.0 | 27.7 | | |
| 17 | | | | | | | | | | | |
| 18 | 23.1 | 25.0 | 25.8 | | | 26.3 | 27.4 | | | | |
| 19 | | | | | | | | | | | |
| 20 | 24.5 | | | 26.1 | 27.2 | | | | | | |
| 21 | | | | | | | | | | | |
| 22 | 28.1 | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | 30.5L | | | 26.5 | 27.0 | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | | | | | | | | | |



6280 NE 14th Street, Des Moines IA, 50313

AGEXPRESS.COM

SALES@AGEXPRESS.COM

SUPPORT@AGEXPRESS.COM

855-334-3400