SYMBOL OF SW EXCELLENCE

INSTALLATION INSTRUCTIONS

0 - 120 MPH SPEEDOMETERS

SYMBOL OF SW EXCELLENCE

DESCRIPTION

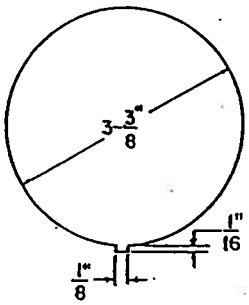
These models are programmable electric truck speedometers with 12 VDC negative ground electrical systems. They are designed to replace the mechanical speedometers by using the 82623B sender (995J Hall Effect) or 990K magnetic pick-up. A 16 lever switch, located at the rear of the instrument, programs the unit and can be used with rear drive axle or transmission mounted tone wheels providing that the pulses/mile are within the 16,000 to 81,600 range. The speedometer must be programmed for each individual truck. **Note** - Due to the bi-torque meter movement design of this instrument, the pointer may come to rest in any position when the ignition is switched off.

MOUNTING SPEEDOMETER IN PANEL

Note - Speedometer requires approxiamately 3 3/4" clearance behind instrument panel.

1. Cut a 3 3/8" diameter hole with a 1/8" wide x 1/16" deep notch pointing down or remove existing speedometer.
2. Connect wires from the sender as described in the "Wiring" section.
3. Insert speedometer into hole aligning location key with notch and secure with mounting bracket, lockwashers, and nuts. Do not distort mounting bracket by overtightening.

Note - If panel thickness exceeds 1", trim bracket ends to obtain a snug fit.

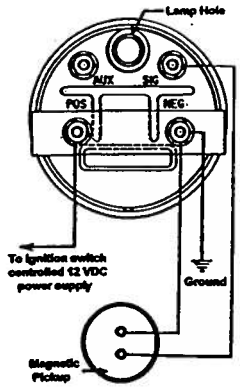


WIRING - MAGNETIC PICK-UP

Note - The pick-up mounted over the rear wheel tone wheel is compatable with this speedometer and should work properly without readjustment of the sender.

1. Disconnect negative battery cable.
2. Connect a magnetic pick-up lead to (SIG) terminal of speedometer.
3. Connect another lead to (NEG) terminal of speedometer.
4. Connect a wire from (POS) terminal of speedometer to a 12 VDC ignition switch controlled power source.
5. Remove cover from lamp hole and plug in lamp and socket assembly.
6. Reconnect negative battery cable.

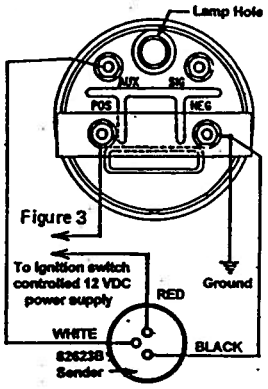
IMPORTANT - Use 18 AWG wire and insulated shank eyelet terminals to make wiring connections to speedometer.



WIRING - 82623B SENDER

1. Disconnect the negative battery cable.
2. Connect the black sender lead and the speedometer (NEG) stud to ground.
3. Connect the red sender lead and the speedometer (POS) stud to a 12 VDC ignition switch controlled power source.
4. Connect the white sender lead to the speedometer (AUX) stud.
5. Connect the lead from the lamp socket to a light dimmer controlled power source.

IMPORTANT - Use 18AWG wire and insulated shank eyelet type terminals to make wiring connections to speedometer.



STEWART WARNER INSTRUMENT CORORATION
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PART NO. 434942
REV. 8-96

PROGRAMMING FOR MAGNETIC PICK-UP

1. Determine if tone wheel is transmission or rear drive axle mount.
2. Calculate vehicle's pulses per mile:
   A. For transmission mounted tone wheel - Pulses per mile = (16 teeth on drive gear in transmission) X (axle ratio) X (tire revolutions per mile)*
   B. For rear drive axle tone wheel - Pulses per mile = (number of teeth or slots on tone wheel)** X (tire revolutions per mile)*
   * Information available from tire manufacturer.
   ** For Peterbilt trucks, 60 teeth typically, may possibly be 120 teeth.
3. Determine switch coding from Table 1 by locating vehicle's pulses per mile or closest value in left column and it's correlating switch code in right column.
4. Locate and remove switch cover at rear of speedometer.
5. Viewing speedometer in upright position from rear, slide switch levers into positions coded in Table 1 using a small straight-blade screwdriver. Follow left to right sequence as in Table 1. '1' is up position and '0' is down position.

EXAMPLE PROGRAMMING -

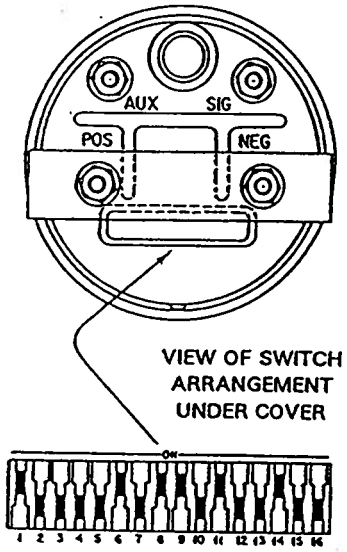
1. Tone wheel is transmission mounted.
2. 16 (teeth on worm drive gear in transmission) X 3.70 (axle ratio) X 471 (tire revolutions per mile) = 27,883.2 pulses per mile.
3. Locate vehicle's pulses/mile or closest value and its correlating switch code.

pulse/mile	speed/odo - Dual switch code 111 1111 1234 5678 9012 3456
27520	0100 0100 0101 1010
27840*	0100 0100 0111 0110
28160	0100 0101 0010 1010

*closest for this example

4. Slide switch levers into positions coded in Table 1. '1' is up and '0' is down.

Note - Wheel mounted tone wheel is calculated as above except number of teeth in tone wheel is multiplied by the tire revolutions/mile (obtained from tire manufacturer) to get pulses per mile.



PROGRAMMING FOR 82623B SENDER

Programming is accomplished by means of a 16 lever switch on the rear of the instrument. The setting for 32,000 pulses/mile is the standard setting. The switches should be set as follows: 0101 1000 0110 0010 - '1' is the up position and '0' is the down position.

When there is a change in tire size, axle ratio, transmission, or any combination thereof or this information is unknown, the speedometer must be recalibrated. This can be done using the odometer.

Set the coding switches for 32,000 pulses/mile (0101 1000 0110 0010). Record the starting odometer reading. Drive the vehicle over a measured 5 mile distance. Record the ending odometer reading. Subtract the starting reading from the end reading. This difference is the Indicated Odometer Reading (IOR).

If the IOR is exactly 5.0 miles, the sender is producing 32,000 pulses per mile and the speedometer is in calibration. If the IOR is other than 5.0 miles, check Table 1. Find the IOR on the chart and reset the switches as shown.

EXAMPLE: If your IOR is 6, the actual pulses per mile were 38,400 and the switch setting should be 0111 0101 1000 0010.

TABLE 1 PLS/MILE AND SWITCH CODES

IOR	PLS/ Mile	SPEED /ODO DUAL SWITCH CODE 1234 5678 9012 3456
2.5	16000	0011 0100 1011 1000
	16320	0011 0110 0011 1100
2.6	16640	0011 1100 0100 0000
	16960	0011 1100 0110 1100
2.7	17280	0011 1100 1111 1000
	17600	0011 1110 0111 1100
2.8	17920	0011 1111 1010 0000
	18240	1001 0101 0000 1100
2.9	18560	1001 0101 1001 1000
	18880	1001 0111 0001 0100
3.0	19200	1001 0111 0110 1000
	19520	1001 0111 1110 0100
3.1	19840	1001 1101 0101 1000
	20160	1001 1101 0111 1100
3.2	20480	1100 1000 1010 0000
	20800	1100 1010 0000 1100
3.3	21120	1100 1010 0011 1000
	21440	1100 1010 1001 1100
3.4	21760	1110 0000 0100 0000
	22080	1110 0000 0110 0100
3.5	22400	1110 0000 1101 0000
	22720	1110 0000 1111 1100
3.6	23040	1110 0011 0000 1000
	23360	1110 0011 0010 1100
3.7	23680	1110 0011 1001 1000
	24000	1110 0011 1011 1100
3.8	24320	1110 1001 0100 1000
	24640	1110 1001 0110 0100
3.9	24960	1110 1001 1101 0000
	25280	1110 1001 1111 0100
4.0	25600	1110 1110 0000 0000
	25920	1110 1110 0000 1100
4.1	26240	1110 1110 0011 1000
	26560	1110 1110 1001 0100
4.2	26880	1110 1110 1110 0000
	27200	1110 1110 1110 1100
4.3	27520	0100 0100 0101 1010
	27840	0100 0100 0111 0110
4.4	28160	0100 0101 0010 1010
	28480	0100 0101 1000 1110
4.5	28800	0100 0101 1011 0010
	29120	0100 0101 1011 1110
4.6	29440	0100 0111 0100 1010
	29760	0100 0111 0110 0110
4.7	30080	0100 0111 0111 1010
	30400	0100 0111 1101 0110
4.8	30720	0101 0010 1000 1010
	31040	0101 0010 1010 1110
4.9	31360	0101 1000 0001 0010
	31680	0101 1000 0001 1110
5.0	32000	0101 1000 0110 0010
	32320	0101 1000 0110 1110
5.1	32640	0101 1000 1101 0010
	32960	0101 1000 1101 1110
5.2	33280	0101 1001 1010 0010
	33600	0101 1001 1010 1110
5.3	33920	0101 1011 0001 0010
	34240	0101 1011 0001 1110
5.4	34560	0101 1011 0110 0010
	34880	0101 1011 0110 1110
5.5	35200	0101 1011 1101 0010
	35520	0101 1011 1101 1110
5.6	35840	0101 1110 1000 1010
	36160	0101 1110 1010 0110
5.7	36480	0101 1110 1011 1010
	36800	0111 0100 0001 0110
5.8	37120	0111 0100 0100 1010
	37440	0111 0100 0110 0110
5.9	37760	0111 0100 0111 0010
	38080	0111 0100 0111 1110
6.0	38400	0111 0101 1000 0010
	38720	0111 0101 1000 1110
6.1	39040	0111 0101 1001 1010
	39360	0111 0101 1011 0110
6.2	39680	0111 0101 1110 1010
	40000	0111 0111 0100 0110
6.3	40320	0111 0111 0101 0010
	40640	0111 0111 0101 1110
6.4	40960	0010 0010 0010 0011
	41280	0010 0010 0010 0111
6.5	41600	0010 0010 0011 1011
	41920	0010 0010 0011 1111
6.6	42240	0010 0010 1100 0011
	42560	0010 0010 1100 1111
6.7	42880	0010 0010 1101 1011
	43200	0010 0010 1111 0111
6.8	43520	0010 0011 1010 0011
	43840	0010 0011 1010 1111
6.9	44160	0010 1001 0001 0011
	44480	0010 1001 0001 0111
7.0	44800	0010 1001 0100 1011
	45120	0010 1001 0100 1111
7.1	45440	0010 1001 0111 0011
	45760	0010 1001 0111 0111
7.2	46080	0010 1100 0010 1011
	46400	0010 1100 0010 1111
7.3	46720	0010 1100 1001 0011
	47040	0010 1100 1001 0111
7.4	47360	0010 1100 1100 1011
	47680	0010 1100 1100 1111
7.5	48000	0010 1100 1111 0011
	48320	0010 1100 1111 0111
7.6	48640	0010 1101 1010 1011
	48960	0010 1101 1010 1111
7.7	49280	0010 1111 0001 0011
	49600	0010 1111 0001 0111
7.8	49920	0010 1111 0100 1011
	50240	0010 1111 0100 1111
7.9	50560	0010 1111 0101 1011
	50880	0010 1111 0111 0111
8.0	51200	0011 1010 0010 0011
	51520	0011 1010 0010 1111
8.1	51840	0011 1010 0011 1011
	52160	0011 1010 1001 0111
8.2	52480	0011 1010 1100 0011
	52800	0011 1010 1100 0111
8.3	53120	0011 1010 1101 1011
	53440	0011 1010 1101 1111
8.4	53760	0011 1011 1000 1011
	54080	0011 1011 1010 0111
8.5	54400	0011 1011 1011 0011
	54720	0011 1011 1011 1111
8.6	55040	0011 1011 1110 1011
	55360	0011 1011 1110 1111
8.7	55680	1001 0001 0101 0011
	56000	1001 0001 0101 0111
8.8	56320	1001 0100 0000 0011
	56640	1001 0100 0000 1111
8.9	56960	1001 0100 0001 1011
	57280	1001 0100 0001 1111
9.0	57600	1001 0100 0110 0011
	57920	1001 0100 0110 0111
9.1	58240	1001 0100 0111 0011
	58560	1001 0100 0111 1111
9.2	58880	1001 0101 0010 1011
	59200	1001 0101 0010 1111
9.3	59520	1001 0101 1001 0011
	59840	1001 0101 1001 0111
9.4	60160	1001 0101 1100 0011
	60480	1001 0101 1100 0111
9.5	60800	1001 0101 1101 1011
	61120	1001 0101 1101 1111
9.6	61440	1100 0000 1000 1011
	61760	1100 0000 1010 0111
9.7	62080	1100 0000 1011 0011
	62400	1100 0000 1011 0111
9.8	62720	1100 0000 1110 0011
	63040	1100 0000 1110 1111
9.9	63360	1100 0000 1111 1011
	63680	1100 0000 1111 1111
10.0	64000	1100 0011 0000 0011
	64320	1100 0011 0000 0111
10.1	64640	1100 0011 0001 0011
	64960	1100 0011 0001 0111
10.2	65280	1100 0011 0100 1011
	65600	1100 0011 0100 1111
10.3	65920	1100 0011 0101 1011
	66240	1100 0011 0101 1111
10.4	66560	1100 0110 0010 0011
	66880	1100 0110 0010 0111
10.5	67200	1100 0110 0011 0011
	67520	1100 0110 0011 0111
10.6	67840	1100 0110 0110 1011
	68160	1100 0110 0110 1111
10.7	68480	1100 0110 0111 1011
	68800	1100 0110 0111 1111
10.8	69120	1100 0111 0010 1011
	69440	1100 0111 1000 0111
10.9	69760	1100 0111 1001 0011
	70080	1100 0111 1001 0111
11.0	70400	1100 0111 1100 0011
	70720	1100 0111 1100 1111
11.1	71040	1100 0111 1101 1011
	71360	1100 0111 1101 1111
11.2	71680	1101 0010 1000 1011
	72000	1101 0010 1000 1111
11.3	72320	1101 0010 1011 0011
	72640	1101 0010 1011 0111
11.4	72960	1101 0010 1110 0011
	73280	1101 0010 1110 0111
11.5	73600	1101 0010 1111 0011
	73920	1101 0010 1111 1111
11.6	74240	1101 0011 1010 1011
	74560	1101 0011 1010 1111
11.7	74880	1101 0011 1011 1011
	75200	1101 1001 0001 0111
11.8	75520	1101 1001 0100 0011
	75840	1101 1001 0100 0111
11.9	76160	1101 1001 0101 0011
	76480	1101 1001 0101 0111
12.0	76800	1101 1100 0000 1011
	77120	1101 1100 0000 1111
12.1	77440	1101 1100 0001 1011
	77760	1101 1100 0001 1111
12.2	78080	1101 1100 0100 1011
	78400	1101 1100 0100 1111
12.3	78720	1101 1100 0111 0011
	79040	1101 1100 0111 0111
12.4	79360	1101 1101 0010 0011
	79680	1101 1101 0010 0111
12.5	80000	1101 1101 0011 0011
	80320	1101 1101 0011 1111
12.6	80640	1101 1101 0110 1011
	80960	1101 1101 0110 1111
12.7	81280	1101 1101 0111 1011
	81600	1101 1101 0111 1111

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