



How can we help you get more from your current tractor?

Do you have a 10, 20, 30 or “R” Series Tractor?

We can help you. The following is an overview of controls, features and helpful hints. Please allow us to come help you further and take your efficiency to the next level.

Contact your Horizon Equipment Account Manager today.

IVT Transmission User Guide

Want to capture a 10 - 40% fuel savings?

IVT can do just that, but must be used properly. IVT must be properly utilized in order to obtain the efficiency and drivability that it was designed to provide.

Are you using IVT properly? Are you satisfied with IVT?

If not, the following few tips can completely change your IVT experience and ultimately, cut your cost of tractor operation.

The Key Factors with IVT Operator and Usage

1. Never use the black “scroll wheel” to change speed while moving. It is used only to set the maximum speed in the desired range. Speed changes should be commanded with the slide lever.

Always set target speed (with scroll wheel) to be the actual field speed that you desire. (Not faster than what you are actually operating) This can be set in F1 or F2. Push the stick up to your desired speed, and pull back to slow down for turns and other maneuvers.

2. While operating in the field, the engine speed control should always be “wide open” and the IVT “slide” should always be adjusted fore and aft to vary desired speed. (DON'T USE THE THROTTLE OR SCROLL WHEEL)

During transport operations the IVT “slide” lever should be completely forward to top of range 2, the set speed should be “scrolled” to the maximum, (26 or 31 mph) and speed should be controlled with the throttle. (DO NOT USE THE SLIDE STICK OR SCHOLL WHEEL - USE THE THROTTLE)



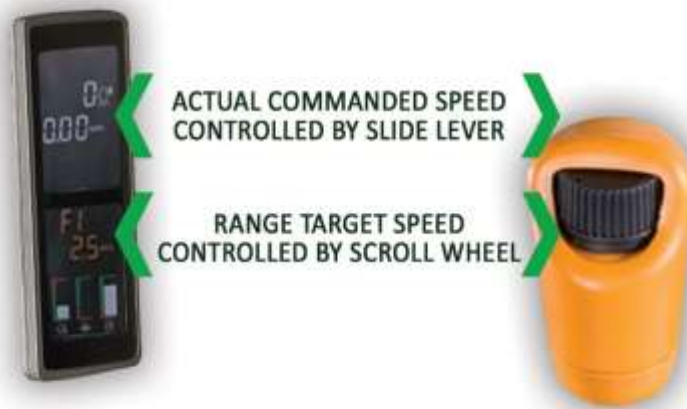
The “Scroll” Wheel or Set-Speed Adjusting Wheel

- Turn scroll wheel to adjust set speed (maximum speed) for the top of each range. The “top of each range” means the stick is slid forward to the most forward sector of the range (F1 or F2)
- DO NOT ADJUST SCROLL WHILE MOVING. Only adjust when a maximum speed change for the top of the slide range is desired.



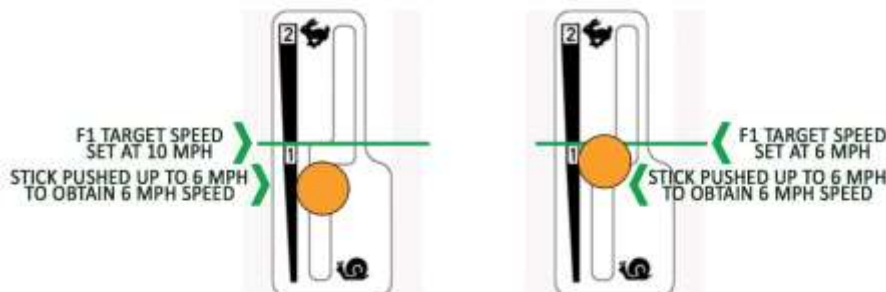
Setting Target Speed for Range

- If your desired field speed is 6 mph, set the target speed for F1 or F2 at 6 mph. For smoothness of operation, use the scroll wheel to set the target speed that matches your desired field speed. If you want to operate at 6 mph, set the range target speed at 6 mph (not faster)
- Target speed for the given range is shown on the command center or A post display.



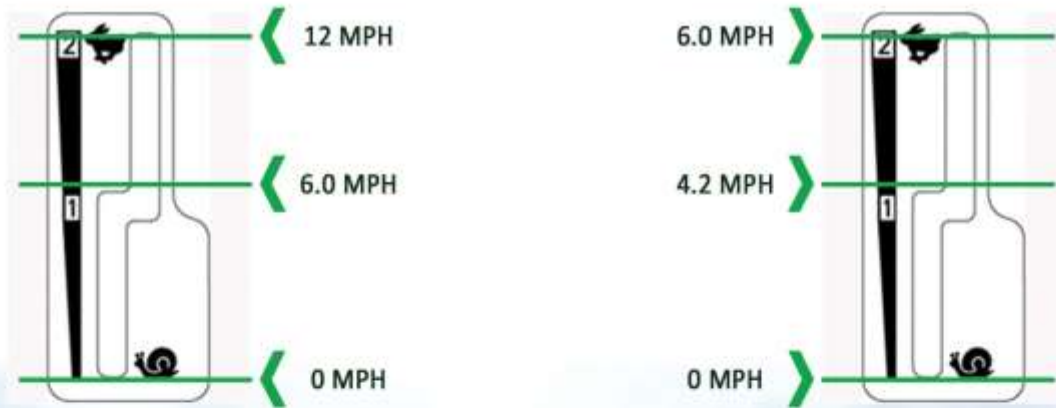
If desired speed is 6 mph, the target speed for the range you are operating in should be 6 mph, not faster. This affords the transmission to be more efficient and allows for better driveability. An example would be headland turns or slows down. You may pull the lever back to slow down, then push back to the top of the range to obtain your 6 mph working speed, not needing to “hunt” for your desired speed.

The example on the right is correct for a working speed of 6 mph:



Utilizing both Forward Ranges for Field Work

You may also utilize both F1 and F2 while performing field work. If you do so, movement of the slide lever will command a smaller change in speed and deliver a smoother speed adjustment and better drivability. Please note the example below. The left side illustrates a 0 to 12 mph setup. While the right hand side is setup for a 0 to 6 mph speed range. The right hand setup will be much smoother in the field and provide a nice turning speed range. (very handy when seeking a consistent turning speed for utilization of implement section control.) To adjust the target speed for each range just scroll the scroll wheel while in that range.



Review of Field vs. Transport :

FIELD OPERATION

1

Set throttle at 100% and do not adjust in the field.

2

Use stick to change speed.

3

Utilize scroll wheel to set target speed only. Do not adjust under load.

TRANSPORT OPERATION

1

Use the throttle to control speed and adjust on road.

2

Do not use stick to change speed.

Slide stick to the top of "F2."

3

Utilize scroll wheel to set target speed at maximum before transporting.

FIELD OPERATION IVT

1

Always set throttle at 100% and do not adjust. IVT cannot operate in auto mode if the throttle is not at 100%. (high idle or wide open). If you pull the throttle back the tractor will not operate in the manner it should.

2

DO NOT SLOW DOWN USING THE THROTTLE. Use the slide stick to slow down or speed up.

TRANSPORT OPERATION IVT

1

Pull to the field or driveway gate and depress both brakes to stop.

2

Pull the throttle back all the way to low idle.

3

Slide IVT lever to the top of F2 and "Scroll" the scroll wheel to max speed.

(26 or 31 mph depending on tractor option)

4

Release foot brakes to begin moving at 1.5 mph. **USE THROTTLE TO CHANGE SPEED**

(Not the slide lever.)

To increase speed, increase throttle position. To decrease speed decrease throttle position.

Wide open throttle is 26 mph (or 31mph).

Idle position is 1.5 mph.

To stop at any speed, depress both brakes.

Additional IVT User Settings Vary by Model

Depending on the model year of your tractor, there are more customizable settings to afford you more efficiency in varying conditions. We will provide a basic understanding of each example here. However please feel welcome to contact your account manager and request an in-cab training session in order to provide you with the most value.



20 & 30 Series IVT

Position 1 : PTO Operations

Choose this position when performing PTO application such as mowing and bailing

Position 2 : Heavy Draft

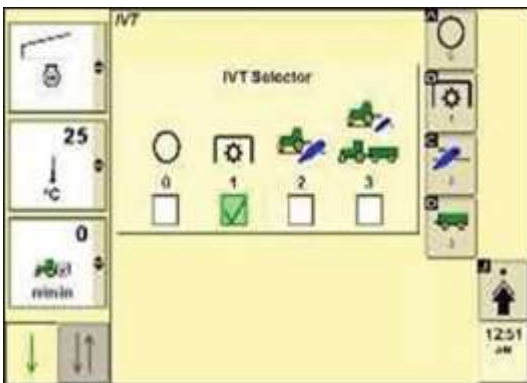
Choose this position when performing heavy draft applications such as deep ripping

Position 3 : Light/Medium Draft and Transport

Choose this position when performing most applications and transporting

“OFF” Position : IVT OFF

Only utilize this position when operating on slick roads or when you are experiencing high wheel slip due to mud etc.



2010“R”Series IVT (very similar to 20 and 30 series, but controlled on command center screen)

Position 1 : PTO Operations

Choose this position when performing PTO application such as mowing and bailing

Position 2 : Heavy Draft

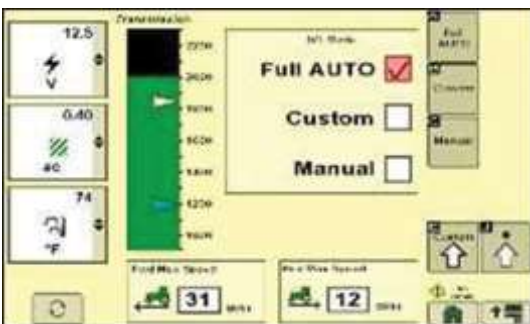
Choose this position when performing heavy draft applications such as deep ripping

Position 3 : Light/Medium Draft and Transport

Choose this position when performing most applications and transporting

“OFF” Position : IVT OFF

Only utilize this position when operating on slick roads or when you are experiencing high wheel slip due to mud etc.



2011, 2012, 2013“R”Series with “Full Auto” Feature

“Full Auto” mode does an outstanding job of controlling engine speed and transmission shifting in varying conditions. However it still affords custom settings that will accommodate any condition you might encounter.

For more info contact us today.

Have a Power Shift Transmission?

Tractors have an automatic PowerShift or APS performance-enhancing feature. Automatic PowerShift or APS relieves the operator from shifting during significant load changes in the field and transport. This feature can be used in both field and transport gears. With APS activated, the operator will notice an improvement in fuel efficiency, productivity, and feel less fatigued. For these reasons, APS should be used whenever the application permits.



Auto Power Shift : How does it work?

The operator selects the maximum gear by shifting to the gear they wish to operate in, and presses the APS Set switch on the right-hand console. The tractor will not "auto-shift" above the selected maximum gear. When the tractor encounters a significant load, it will automatically downshift from the maximum set gear and then up-shift back to that set gear as soon as conditions allow.

The transmission controller will decide what gear provides maximum performance based on three inputs: throttle position, engine speed and power required based on fuel flow.

When the maximum gear is set in transport, the operator can simply pull back on the engine throttle and control up to three shifts.

If APS is cancelled for any reason, the operator can simply resume with the touch of a button conveniently located on the Command Arm.

Customizable Settings for Auto Power Shift :

If necessary, the auto-shift sensitivity can be changed through the transmission setting in Command Center. However, the factory preset medium rpm setting should satisfy most field requirements.

Low rpm – This is the tightest engine speed control setting for APS load mode allowing for minimal engine speed drop before initiating transmission speed shifts. The tractor automatically selects the low setting when the PTO is on.

Medium rpm – This is a moderate engine speed control setting for APS load mode. It is the factory default and is intended to be used for most field applications where moderate load changes will be encountered and balanced sensitivity is desired.

High rpm – This is the widest engine speed control setting for APS load mode and allows more load changes before initiating automatic shifts. It's useful in applications where highly-variable load conditions will be encountered.



Field Cruise Engine Control (for use with Power Shift Trans)

Tractors feature “FieldCruise” for excellent control of working speeds below full engine load or full throttle position. With the throttle control fully forward, FieldCruise can be set in the CommandCenter™ and allows setting an upper limit to engine speed. It is adjustable from 1100 rpm to 2210 rpm. When FieldCruise is used, the engine responds to small variations in load.

FieldCruise maintains a constant engine speed, thus constant ground speed as the load on the tractor varies. This is especially useful during lighter load operations, such as chemical incorporation, fertilizer applications, and seeding when maintaining a constant speed is critical to application rates. Operating with FieldCruise in these applications also improves fuel economy by keeping the engine speed at a lower level.

Engine Power Bulge and Field Cruise

When operating with FieldCruise enabled, the tractor only has an available power bulge amount for the actual engine speed setting. If the setting were at 1950 rpm down to 1100 rpm, the engine would have a declining amount of power bulge available. Therefore, in heavy tillage applications or other operations that require maximum engine speed or power, FieldCruise should be disabled or reset to the maximum engine speed.



Don't hesitate to contact us to discuss one on one training. Regardless of which tractor, transmission or condition you currently have, new or old, we can help you get more out of your machine. We are here to help you!





9R/9RT Efficiency Manager

What is it?

Efficiency Manager (EM) allows for IVT-like operation on the 18-speed PowerShift transmission. With EM engaged, the operator no longer has to manage the engine revolutions per minutes (rpm) and gear selection for the most efficient level of operation possible. Efficiency Manager does that automatically by shifting up and throttling back depending on the load on the tractor.

How does it work?

With the tractor sitting still, in neutral, or once the tractor is in motion, the operator simply pushes either the F1 or F2 switch on the CommandARM™ to activate the feature. Once EM is activated, the operator can set and adjust the desired ground

speed by using the thumbwheel on the shift lever. An icon and the desired ground speed will appear on the corner post display once EM is activated.

The operator can program two ground speeds by pushing either the F1 or F2 switch. The F1 setting will typically be set for field work while the F2 setting will be used for field/road transport. F1 can be set at any speed from 2 mph (3.2 km/h) to 12.6 (20.3 km/h) mph, and F2 can be set at any speed from 2 mph (3.2 km/h) to 25 mph (40 km/h).

Can it be managed by the operator?

By navigating through the Command Center™, the operator can adjust the rpm shift points while operating in custom mode. The operator can set it to automatic or custom. In automatic mode, the tractor will predict the optimum shift points under load to maintain the highest level of performance and operation. Custom mode allows the operator to adjust how high or low he/she would like the engine rpm to pull down before shifting under load. See the operator's manual for more information.

Operation example: When operating a 9R, equipped with the 18-speed PowerShift transmission, on a grain cart he/she could set F1 to the same speed as the combine for an unload-on-the-go scenario. Once the combine is empty and the 9R operator is ready to unload the grain from the cart onto the truck, he/she could push the F2 switch (already set at a higher transport speed) to get them to the truck quicker.

Don't hesitate to contact us to discuss one on one training. Regardless of which tractor, transmission or condition you currently have, new or old, we can help you get more out of your machine. We are here to help you!

Horizon Equipment Support Team

Your Account Manager is armed with the knowledge and the team members to support you and your operation.

PLEASE ALLOW US TO HELP YOU GET MORE OUT OF YOUR EQUIPMENT.

Give us a call today! ...or mention it when we stop by to check on you.

