Key Feature Identification

A: Lever Steer/Auto Articulation

B: Machine Preset Switch

C: Autoshift Switch

D: Auto Differential Lock Switch

E: Auto Blade Control Switch

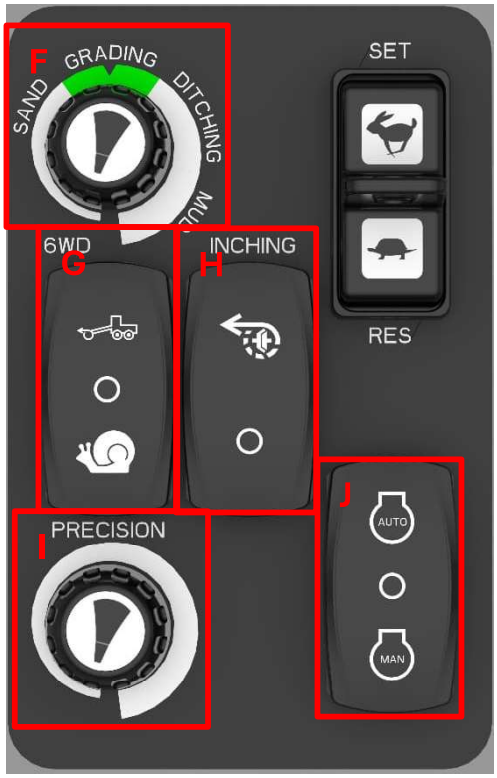
F: Aggressiveness Mode Dial

G: 6WD/Precision Switch

H: Inching Mode Switch

I: Precision Mode Speed Dial

J: Engine Speed Control Mode Switch



A: Lever Steer (Standard on GP Units)/Auto-Articulate (Optional Automation Upgrade):

Function State by Number of Lights

i. No LED Lights – Disable lever steering and auto articulation (Steering Wheel only)
ii. Left LED Light – Enable lever/joystick steering
iii. Middle LED Light – Enable lever/joystick steering and auto articulation in F and R
iv. Right LED Light – Enable lever/joystick steering and auto articulation in forward only

Recommendation

Typically, the steering wheel (No LED Lights) is most needed for roading applications, snowplow applications and backing/working next to fresh concrete, like a curb or sidewalk. Lever Steering (Left LED) is favored for most other applications. Auto Articulation Forward and Reverse (Middle LED) improves efficiency in snowplow applications, navigating winding roads with tight corners, and working in cul-de-sacs. Auto Articulation Forward only (Right LED) is best utilized for the operator who wants to control reverse steering manually.

B: Machine Preset (Optional Automation Upgrade):

Function State by Number of Lights

i. No LED Lights – Preset Machine Settings Turned Off
ii. Left LED Light – Setting #1 for Operator Specified Machine Settings
iii. Middle LED Light – Setting #2 for Operator Specified Machine Settings
iv. Right LED Light – Setting #3 for Operator Specified Machine Settings

Recommendation

The monitor allows three unique machine setting configurations by selecting; "Automation→Presets." These become the pre-defined settings for each LED light state. All presets have the same configuration options to choose from. For example, if a "roading feature" is desired as a preset, you can assign all roading features to Setting # 1. (ie. driving lights, autoshift, flashers, stow the blade, etc.) If a "working feature" is desired as a preset, you can assign those settings to Setting # 2. (Auto diff lock, working lights, blade to home, grade control etc.) Push and hold the SSM button to active a preset configuration, an audible beep will sound, and those predefined settings will enable as the operator had previously set them to be. This quick switch of settings improves efficiency and production.

C: Autoshift (Optional Automation Upgrade):

Function State by Number of Lights

i. LED Lights Off – Autoshift OFF

ii. 1 LED Light – Autoshift ON or Autoshift Plus ON

Recommendation

Autoshift is often most appreciated by newer operators. Autoshift allows the transmission to automatically shift gears 4th - 8th when the gear shift lever is in 5th or higher. Autoshift uses inputs of engine speed, gear shift lever position, and inching pedal position. Autoshift uses machine inputs of percent throttle and percent engine load at current speed. Autoshift will only shift as high as the gear selected by the operator. If 6th gear is selected, autoshift will shift through gears 4th—6th. The lowest gear available in autoshift mode is 4th, unless otherwise commanded by the gear shift lever (lever manually moved below 4th gear). Autoshift is not available in gears 1st—3rd.

Autoshift Plus enables all gears for autoshifting. Autoshift Plus also allows the operator to use only the brake and throttle pedal to initiate movement or stop movement. This makes it easier for an operator to work around obstacles when the blade needs to be repositioned multiple times in tight areas. By having Autoshift Plus enabled, an operator can also press the brake pedal while the transmission is in any gear other than neutral, and the machine will “hill hold”, if the unit is on a slope greater than 4%. The transmission locks, preventing the machine from moving forward or reverse. Once the throttle is pressed again, the machine will start in the previously selected gear. Your most experienced operators that understand engine pull down and very precise response (fine grading) may prefer to have Autoshift and Autoshift Plus turned off.

D: Auto Differential Lock (Standard):

***Differential lock is activated any time the manual differential lock switch is ON regardless of whether the automatic differential lock system is enabled or not.**

Function State by Number of Lights

i. No LED Light – Automatic Differential Lock OFF
ii. 1 LED Light – Automatic Differential Lock ON. Automatic differential lock system locks the rear axle, making left and right wheels turn together when machine travels straight while in 1st—4th gear.

Recommendation

Auto Differential Lock should be used for most dirt and snow applications. All four rear wheels work together to increase traction, even in dry working conditions. If the application is slick and the machine is working through corners, Manual Diff Lock should be selected to override the auto feature. The operator needs to unlock or disengage the manual differential lock to return to the automatic feature. The automatic differential lock continues to be locked until a machine turn is made.

E: Auto Blade Control (Optional)

***Cross slope is not functional if the saddle locking pin is unlocked or assigned outside of center position.**

Function State by Number of Lights

i. No LED Light – Automatic Blade Control OFF
ii. 1 LED Light – Enables the cross slope system
iii. 2 LED Lights – Enables aftermarket electronic grade control system or SmartGrade

Recommendation

Cross Slope is used for simple pads or sloping surfaces like roads. It allows the operator to move one side of the blade manually and one automatically to maintain blade elevation with one hand. The second LED light allows the operator to engage grade control systems and work in automatic blade control or grade control mode.

F: Aggressiveness Mode Dial (Standard)

***When the Motor Grader Icon is selected on switch G, the Aggressiveness Mode Dial is activated.**

Function State by Dial Position

i. Counterclockwise from Center– Front wheel speed is less than rear wheel speed
ii. Center – Front and rear wheel speeds are matched
iii. Clockwise from center– Front wheel speed is more than rear wheel speed

Recommendation

Turn the dial counterclockwise from center when high traction conditions exist, like grading road base or sand to prevent front wheel slippage (hop). Turn the dial clockwise from center when low traction conditions exist (slopes, mud, snow) or when the load on machine blade is greatest. To prevent machine damage, do not drive the machine on pavement or high traction areas with the aggressiveness dial in full clockwise position. Overheating of hydraulic oil and tire scrub can occur.

G: 6WD/Precision Switch (Standard)

***Switch G is used to enable/disable switches F and I.**

To engage 6WD, the following must occur; Transmission in gear 1-7 forward or reverse and 6WD/Precision switch in the 6WD position. (620-622 Models: Gears 1-4 Forward or Reverse)

Function State by Switch Position

i. Off – 6WD operation disabled
ii. 6WD – 6WD operation enabled
iii. Precision – Precision mode is enabled

Recommendation

Six-wheel drive should be used in soft underfoot, slopes, or normal conditions as it gives the operator 30% more tractive effort. It helps hold the machine in a straight line and reduces rear wheel slippage even in normal grading conditions. Six-wheel drive can be enabled on the fly to adjust tractive aggressiveness as needed. 6WD is recommended to be turned off while roading the machine (6WD automatically disengages in 8th gear (622 disengagement occurs at 5th gear). Precision Mode is recommended to be turned on when completing finishing grade, especially when an operator is on and off the inching pedal. This is essentially making the machine act like a hydrostatic transmission and front wheel drive only.

H: Inching Mode (Standard)

***To engage inching mode; the transmission must be in gears 1—3. The 6WD/Precision switch is in the forward (6WD mode) position. 6WD inching mode switch is in the forward (ON) position.**

Function State by Switch Position

i. Off – Front wheel drive engagement occurs at the top of inching pedal travel
ii. Inching – Front wheel drive engagement is controlled throughout entire inching pedal travel

Recommendation

Inching Mode Off is recommended for most working situations except for snow and mud. When working around obstacles like valve boxes or manholes the machine requires a lot of blade angle change, and the Inching Mode should be OFF. This reduces the potential chatter on the front wheels as the inching pedal is used to slowly initiate start and stop machine movement when working in tight areas. Inching mode ON should be reserved for applications when the operator needs all six wheels for traction as soon as movement of the machine is initiated. A good example of Inching Mode ON is snowplow applications, when the machine is pushing heavy snow and requires all six wheels to move the load of snow.

I: Precision Mode Speed Dial (Standard)

***When the Snail Icon is selected on switch G, the Precision Mode Speed Dial is activated.**

Allows the machine to operate at slower speeds than can be achieved by using the transmission by using only the front wheels to move the machine. To initiate precision mode, ensure that the transmission is in a gear 1—3 forward and push 6WD/Precision switch to the precision mode position. The precision mode light will display on the monitor when engaged.

Function State by Switch Position

i. Full Counterclockwise– Slowest ground speed for selected gear and engine speed
ii. Full Clockwise– Greatest ground speed for selected gear and engine speed

Recommendation

Precision mode should be used when an operator only wants the front wheels driving for slow grading applications. An example is finishing a cul-de-sac, where the rear wheels could spin, and the site would need to be regraded. By using precision mode, spinning and scuffing is reduced for overall improved grade behind the moldboard. This also allows the machine to be hydrostatic drive and reduce the need for using the inching pedal. The machine ground speed is also reduced for precision grading when very little material is left to cut or finish.

J: Engine Speed Control Mode Switch (Standard)

Function State by Switch Position

i. Off – Only accelerator pedal can be used to control engine speed

ii. Auto – Automatic engine speed control enabled: pushing the accelerator pedal past the 85% position or pushing the brake pedal reduces engine speed to slow idle. Push and release engine speed control set switch to RES (turtle) position to resume previously set engine speed.

iii. Manual – Manual engine speed control enabled: pushing the brake pedal or accelerator pedal past the 85% position has no effect on the set speed.

Recommendation

Auto is recommended for nearly all applications and is best for roading, working on gravel roads, or snow plowing. This allows the operator to set a comfortable engine speed for the application and allow them to use the brake or accelerator pedal much like cruise control in a car. The manual feature holds the engine at the desired speed no matter if the pedals are depressed. Both Auto and Manual features can benefit an operator that is making long grading passes or roading the machine.