

Section 4.2



Machine Operation - Operator's Machine Controls

Engine Throttle Control	4.2.2	Hydraulic Motor Shift Switch (630).....	4.2.4
System Arm Switch	4.2.2	Gearbox Shift Switch.....	4.2.4
Charge Heater Switch	4.2.3	Reverse Steer Switch.....	4.2.5
Parking Brake Switch	4.2.3	Steer Joystick Switch (optional)	4.2.5
Max Throttle Switch.....	4.2.3	Axle Differential Lock Switch.....	4.2.5
Spare or Disc Saw Switch.....	4.2.3	Swing Detent Switch	4.2.5
Wheel Drive Speed Control.....	4.2.4	Joysticks, Handles, and Foot Pedals	4.2.6
Hydraulic Motor Shift Switch (830).....	4.2.4		

Machine Control System Layout

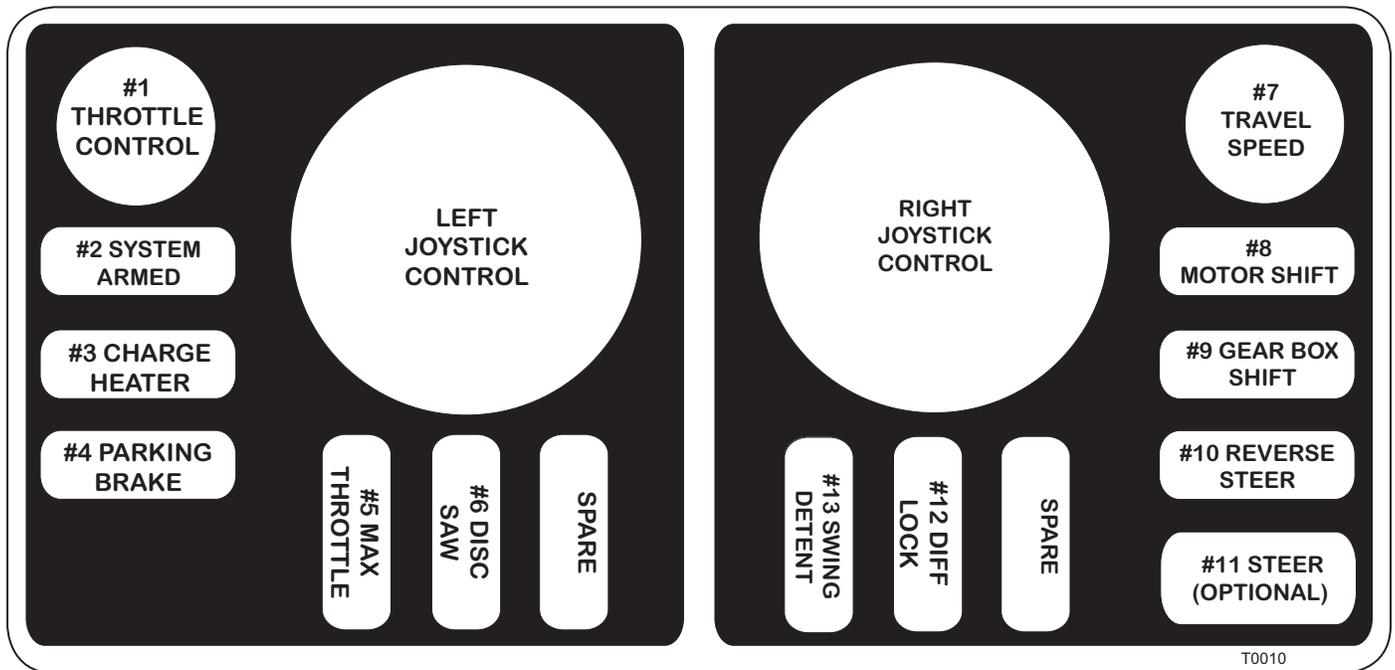


Figure 1: Machine Control Panels

Engine Throttle Control

(See Figure 1)

! WARNING

Operating the engine above an idle when cold can damage the piston rings and increase wear on all engine parts. Allow the engine to warm-up before operating above an idle.

The engine throttle control can be turned clockwise to increase the engine throttle. If the throttle control is rotated counter-clockwise it will return the engine to idle.

When operating machine never run the engine at a higher RPM than what is needed. Running the engine at high RPM's when not need can waste fuel and cause unnecessary wear on the engine and components.

System Arm Switch

(See Figure 1)

The System Arm switch is a momentary switch that signals the IQAN digital control system to activate the system controls. After making sure both the engine door and cab door are closed,



Figure 2: System Armed and Park Brake Light
pressing down on the arming switch will activate the system controls. At this time the System Armed message should be displayed on the MDL screen. (See Figure 2.)

The system arm switch is part of the safety door interlock circuit. If the cab door or engine door is open the IQAN system will stop any output to control valves or the track drive pump.

Charge Heater Switch

(See Figure 1)

A wheel drive charge oil heater block is available as an option for helping to speed-up hydraulic system warming in colder climates. The Charge Heater uses track drive system charge oil and forces it across a relief warming the oil and recirculating it back to the hydraulic tank. The Charge Heater is set to shut off automatically at 70° F.

Press down on the “Charge Heater” switch to activate the charge oil heater. A message for the charge heater should now be displayed on the MDL screen. Push down on the charge heater switch again to de-activate the charge heater system.

NOTICE

NOTE: The IQAN digital control system is equipped with an interlock to prevent operation of the machine while the charge oil heater is ON. This must be done to prevent damage to the hydraulic system.

Parking Brake Switch

(See Figure 1)

The Parking Brake switch is used to activate the “auto parking brake feature”. When the parking brake switch is pressed this will activate the auto parking brake and the parking brake indicator on the MDL should now be off. When the parking brake indicator is off anytime the track drive pedals are pressed the parking brake will be released, allowing the machine to move. (See Figure 2.)

RED colored switch used to engage the auto parking brake. Push down on left side of switch to engage the auto parking brake. Push down on right side of switch to release the parking brake.

With the switch in the “on” position the Auto Parking Brake is active and when the travel pedal is pressed the parking brake will automatically be released. When the travel pedal is released a internal adjustable timer counts down and then the Parking Brake will be engaged. This timer is adjustable from the IQAN MDL screen.

WARNING

Always turn auto parking brake switch “on” before exiting the operator’s cab.

With the switch in the “off” position the Parking Brake is turned off. With the switch “off” the parking brakes are released and the machine can free-wheel. **Always turn auto parking brake switch “on” when exiting the operator’s cab.**

Max (Auto) Throttle Switch

(See Figure 1)

With the switch in the “on” position, (the Green LED should now be illuminated) When the drive pedal is depressed the engine will automatically increase the engine RPM from the current throttle control setting to full throttle. When anyone of the implement functions are used the throttle will only rise to the intermediate setting. This can be set by selecting F5 on the main screen. When the functions are left alone for a few seconds the engine will drop to idle or where ever the throttle speed control is set. When the Auto Throttle switch is placed in the “off” position this feature is disabled.

This feature is important when using the loader function on a forwarder and then moving the machine to a different location to resume loading. The wheel drive system requires the engine to be at full RPM for max horsepower. While the loader function works best at about 1300 RPM. Reducing RPM when not needed can save fuel and wear on the engine.

Disc Saw Switch (optional)

(See Figure 1)

The Disc Saw Switch is an option that can be used to activate many different attachments. The most common use is for a Disc Saw attachment.

Push down on the switch to activate the disc saw circuit. The Green LED should now be illuminated. Push down again on the switch to turn the disc saw “OFF”. The disc saw will also be disabled anytime the operator’s door is opened.

NOTICE

Always turn “Off” the Disc Saw switch and make sure the Disc Saw has come to a complete stop before exiting the machine. Read attachment operator’s manual for safety information and proper operation.

Wheel Drive Speed Control

(See Figure 1)

The Wheel Drive Speed Control is used to fine tune the current output to the wheel drive pump. This feature is used to increase or decrease the speed of the machine.

If the control is rotated counter-clockwise the machines top speed will be slower. If the control is rotated clockwise the machines top speed will increase. This is very useful when traveling in harsh environments and maintaining a constant speed is difficult. Press the travel speed pedal down and then adjust the wheel drive speed control to the desired travel speed.

Hydraulic Motor Shift Switch

(See Figure 1)

The Hydraulic Motor Shift Switch used to shift the wheel drive motors between high, medium and low displacement.

Push down on the switch once to select the "MEDIUM" position. Push down the switch again to select "LOW" speed. Push the switch down a third time and this will select "HI" speed.

LOW - This setting locks both drive motors on the 8 wheel machine into MAX displacement giving the most power and top speed of about 2 M.P.H.

MEDIUM (Down Hill) - This setting locks one of the two motors on the 8 wheel machine into max displacement and will allow a top speed of about 4 M.P.H. This **MUST** be used in a down hill / over running load condition.

NOTICE

Always use "Medium" setting when working in severe conditions. This can prevent an "over-speed" condition when traveling down steep grades.

HIGH - This setting allows both motors to flex in displacement automatically depending on power required and is the normal setting for average working conditions. Top Speed will be about 7 M.P.H in the low gear box position.

On the 6-wheeled machine there is just one motor and the shift switch will just have 2 positions. One for locking the motor into MAX displacement (low) and the other position for normal machine operation.

Gearbox Shift Switch

(See Figure 1)

The Gearbox Shift Switch used to shift the gearbox or transference between high and low gear.

Push down on the switch once. The MDL Screen should now display a "shift message" On the MDL select the gear you wish to be in. If you don't want to change select cancel.

NOTICE

The default working position for the gear box is "LOW GEAR". If the machine is working "Unloaded" in flat terrain, the operator may select "HIGH GEAR".

DANGER

High Gear should only be used for traveling long distances on flat ground. Never attempt to use High Gear when in the forest, in severe terrain or while machine is loaded.

WHEN SHIFTING THE MACHINE ALWAYS STOP THE MACHINE FIRST. Make sure to turn off the parking brake and then make a gear change selection. After making a gear change the IQAN MDL screen may instruct you to steer the machine. This will need to be done to help the gears mesh inside the gearbox. A small gear symbol with the number "1 for Low" or Number "2 for High" will be visible on the MDL screen to let you know what gear the transfer case is currently in.

DANGER

Never attempt to shift gearbox when machine is on an incline. Shifting of the gearbox should only be attempted on flat ground.

Reverse Steer Switch

(Reference #10, Figure 1)

Push down on the switch to select the "ON" position and reverse the steering controls for reverse machine travel. Push down on the switch again to select the "OFF" position and return the steering controls to

normal for forward travel.

NOTICE

Always be aware of the present configuration of the steering controls and steer reverse switch before moving the machine. Serious personal injury or death could result if the machine makes an unexpected movement because of reversed control settings.

The Steer Reverse switch used to swap or “reverse” the steering control inputs to make operating the machine in reverse travel easier. Reverse travel is with the operator facing the clam bunk or forwarder bunks. See Figure 3. This allows the actual operator steering control inputs to remain the same regardless of machine travel direction.

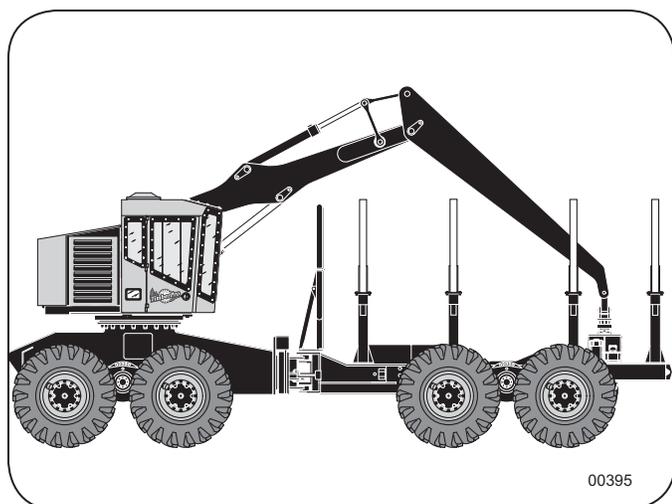


Figure 3: Forwarder in Reverse Travel

Steer Joystick (optional)

(See Figure 1)

The optional Steer Joystick is used for most machines with cutting attachments. The steer joystick is a single axis joystick that can be moved left and right to steer the machine. When the reverse steer switch is activated on the control panel the steer joystick will be reversed.

Axle Differential Lock Switch

(See Figure 1)

YELLOW colored switch used engage the axle differential lock. Locking the axle differentials allows all wheels to drive forward and reverse. This feature should only be used when necessary. Always turn off the differential lock when not needed.

Push down the switch to engage the differential lock. The green LED should now be illuminated. Push down on the switch again to turn the function “OFF” and dis-engage the axle differential lock.

The Axle Lock switch is controlled by the IQAN system and should only be activated and de-activated when the machine is stopped. It will also will stay activated “even after the switch has been turned off” until the machine again has come to a stop. This is necessary to prevent damage to the axle differential.

! DANGER

DO NOT ENGAGE THE AXLE DIFFERENTIAL LOCK WHILE THE MACHINE IS IN MOTION OR THE WHEELS ARE SPINNING. This is a positive locking system and major damage will be done if the differential lock is engaged while the wheels are turning.

Swing Detent Switch

(See Figure 1)

Push down on the switch to select the “ON” position and activate the swing detent “float”. Push down on the switch again to select the “OFF” position.

The Swing Detent is used mostly on Forwarders when traveling in reverse (see figure 3). When traveling in reverse the operator can grab the rear of the frame with the grapple and activate the swing detent. This allows the swing to move freely and follow the rear frame when steering the machine.

Joystick Controls

TimberPro prides itself on being able to provide custom machines with a variety of different attachments and controls handles. The following is just a brief view of some of the control layouts that TimberPro provides. **Your machine controls may be setup different than the following diagrams.**

Changes to boom controls can be done by simply pressing the F4 control information button on the main screen of the MDL. (see figure 4) The next screen will give you three options. Just select one of the three layouts (US, US-Mod, and SAE) that work best for you. (see figure 5)



Figure 4: Boom Control Selection

Foot Pedal Controls

TimberPro prides itself on being able to provide custom machines with a variety of different attachments and controls handles. The following is just a brief view of some of the control layouts that TimberPro provides. **Your machine controls may be setup different than the following diagrams.**

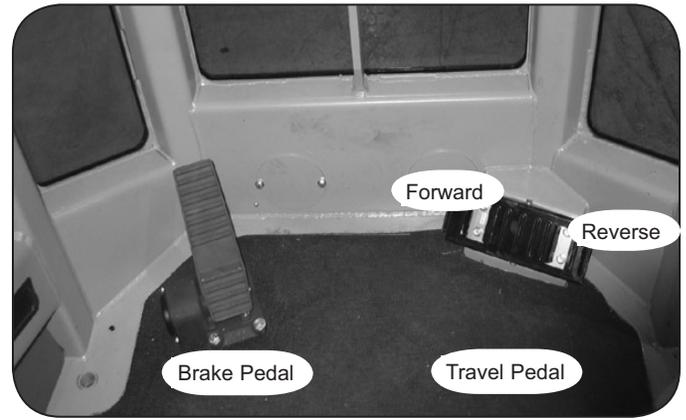


Figure 6: Cab Pedal Control Layout

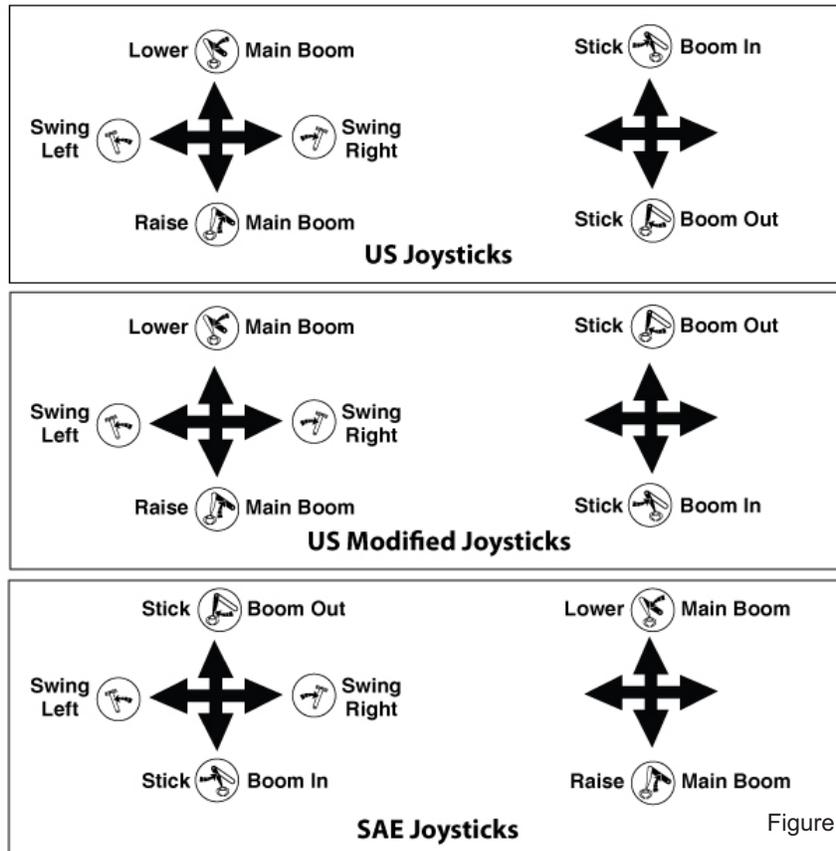


Figure 5: Boom Controls

Handle Controls

Because TimberPro offers so many different attachment options. It is not possible to have a specific layout for every situation. The next couple pages offer a sample of some of the most common handle layouts we offer.

If the controls you require are different than what is show, you will need to contact your authorized TimberPro dealer for assistance.

Never attempt to change controls by re-wiring handles or valve connections.

⚠ DANGER

Any alterations of the controls or wiring can cause severe electrical damage and will become the sole responsibility of the machine owner. Machine controls can only be changed by an authorized TimberPro Technician with special instruction to do so from the factory.

Standard Forwarder Sure Grip handles

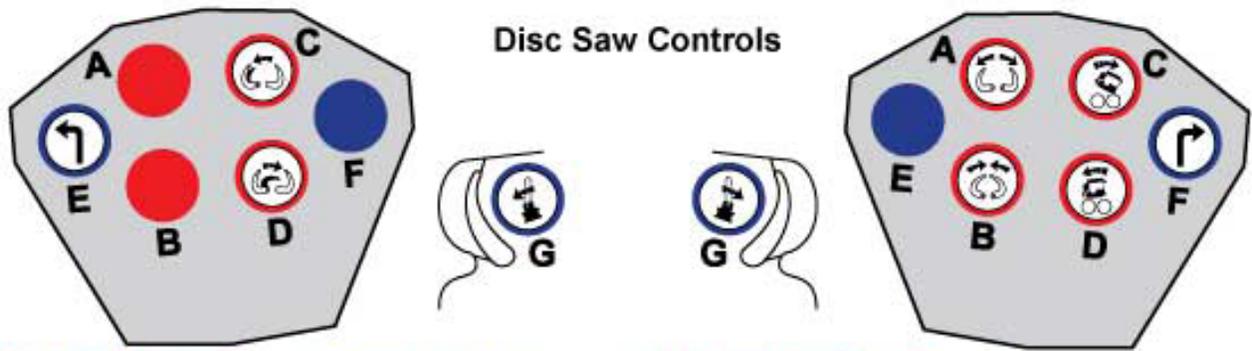
A) _____	E) Grapple Open	A) _____	E) Grapple Rotate Left
B) _____	F) Grapple Close	B) _____	F) Grapple Rotate Right
C) _____	G) Squirt Boom Out	C) _____	G) Squirt Boom In
D) _____	_____	D) _____	_____

Forwarder - Joystick Rotate Sure Grip handles

A) _____	E) Steer Left	A) _____	E) Grapple Close
B) _____	F) Grapple Open	B) _____	F) Steer Right
C) _____	G) Squirt Boom Out	C) _____	G) Squirt Boom In
D) _____	_____	D) _____	_____

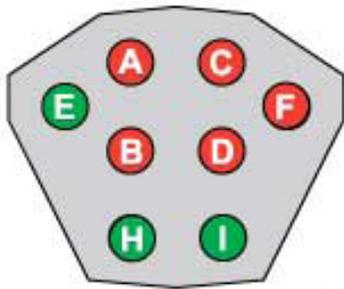
Australian Forwarder Penny and Giles Handles

A) Tele Boom	B) Tele Boom	A) Grapple	B) Grapple
1) Load Gate	2) Load Gate	1) Steer / Rotate	2) _____
3) _____	4) _____	3) _____	4) _____

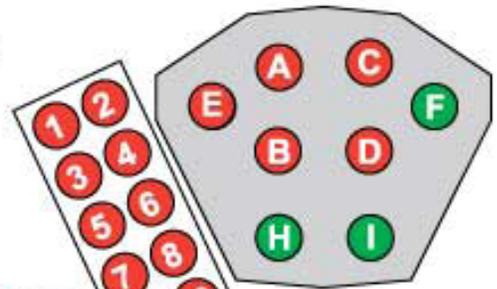


Disc Saw Controls

- | | | | |
|-----------------------------|-----------------------------|----------------------------|------------------------------|
| <u>A) Cab Level Forward</u> | <u>E) Bump Steer Left</u> | <u>A) Clamp Arms Open</u> | <u>E)</u> |
| <u>B)</u> | <u>F)</u> | <u>B) Clamp Arms Close</u> | <u>F) Bump Steer Right</u> |
| <u>C) Accumulator Open</u> | <u>G) Lateral Tilt Left</u> | <u>C) Cab Level Back</u> | <u>G) Lateral Tilt Right</u> |
| <u>D) Accumulator Close</u> | | <u>D)</u> | |



Log Max Style Controls



E) Steer Left



E) Steer Right

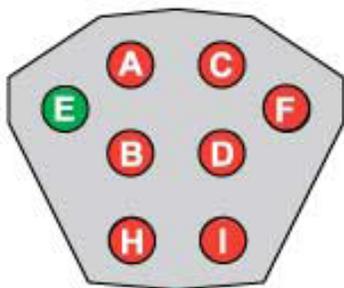


H) Squirt Boom

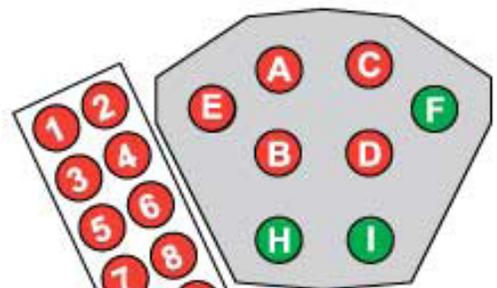
I) Squirt Boom

H) Cab Level

I) Cab Level



Euro Style Controls



E) Steer Left



E) Steer Right



J) Squirt Boom

G) Squirt Boom

H) Cab Level

I) Cab Level