John Deere SmartGrade™ Crawler Dozer (MC-X1)

OPERATOR'S MANUAL

John Deere SmartGrade™ Crawler Dozer (MC-X1)

OMT443021 ISSUE I4 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Worldwide Construction And Forestry Division
PRINTED IN U.S.A.

Introduction

Foreword

READ THIS MANUAL carefully to learn how to operate and service the attachment correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on the attachment may also be available in other languages. See an authorized John Deere dealer to order.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of the attachment and should remain with the attachment.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBER (PIN) in the Miscellaneous—Machine Numbers section.

Accurately record all the numbers to help in tracing the attachment should the attachment be stolen. An authorized John Deere dealer also needs these numbers when parts are ordered. File the identification numbers in a secure place off the attachment.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate, which should have been received from the dealer.

This warranty provides the assurance that John Deere will back John Deere products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change the attachment's performance beyond the original factory specifications, the warranty will become void and field improvements may be denied.

JB3888,0001125 -19-23AUG24-1/1

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JB3888,0001127 -19-25JAN16-1/1

To the Customer

This supplementary operator's manual applies to crawlers equipped with the SmartGrade™ option and is to be used with the original machine operator's manual. This operator's manual includes additional information not included in the basic operator's manual.

NOTE: This machine has not been approved for travel on public roads.

Operator's Manual Reference Guide			
	English	French	Spanish
650K Crawler Dozer (PIN: 1T0650KK_ _F429661—)	OMT378072X19	OMT378072X28	OMT378072X63
700L Crawler Dozer (PIN: 1T0700LX_ _F383562—)	OMT409550X19	OMT409550X28	OMT409550X63
750L Crawler Dozer (PIN: 1T0750LX_ _F383562—)	OMT409551X19	OMT409551X28	OMT409551X63
850L Crawler Dozer (PIN: 1T0850LX_ _F411254—)	OMT398803X19	OMT398803X28	OMT398803X63

SmartGrade is a trademark of Deere & Company

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TX,TM,FAX -19-03JUL01-1/2

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TX,TM,FAX -19-03JUL01-2/2

Contents

Continued on next page

Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Page

Recognize Safety Information

This is the safety alert symbol. When you see this symbol on your machine or in this manual, be alert for the potential of personal injury.

Follow the precautions and safe operating practices highlighted by this symbol.

A signal word — DANGER, WARNING, or CAUTION — is used with the safety alert symbol. DANGER identifies the most serious hazards.

On your machine, DANGER signs are red in color, WARNING signs are orange, and CAUTION signs are yellow. DANGER and WARNING signs are located near specific hazards. General precautions are on CAUTION labels.

T133555 —UN—15APR13

T133588 —19—28AUG00

TX,RECOGNIZE -19-28JUN10-1/1

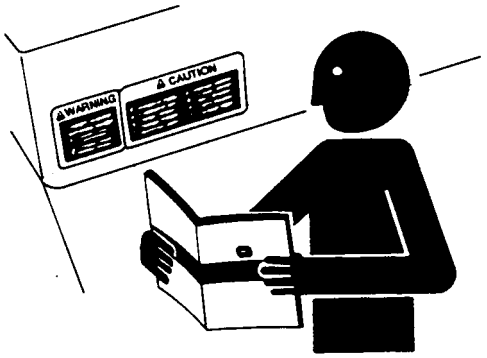
Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement. Be sure that new equipment components and repair parts include the current safety signs. Replacement safety signs are available at your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine could impair the function or safety and affect machine life.



TS201 —UN—15APR13

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

TX,FOLLOW -19-30JAN24-1/1

Operate Only If Qualified

Do not operate this machine unless the operator's manual has been read carefully, and you have been qualified by supervised training and instruction.

Operator should be familiar with the job site and surroundings before operating. Try all controls and machine functions with the machine in an open area before starting to work.

Know and observe all safety rules that may apply to every work situation and work site.

TX,QUALIFIED -19-18JAN11-1/1

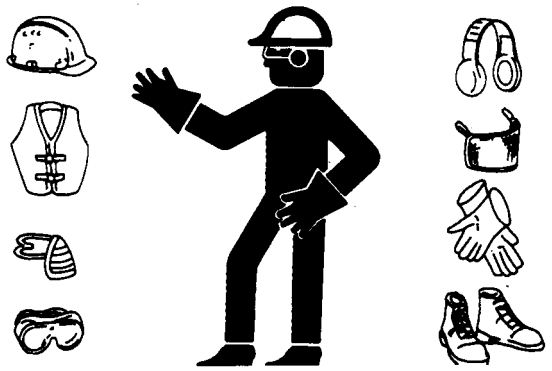
Wear Protective Equipment

Guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.

Wear close fitting clothing and safety equipment appropriate to the job.

Operating equipment safety requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protection such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises. Radio or music headphones are not suitable to use for hearing protection.



TS206 —UN—15APR13

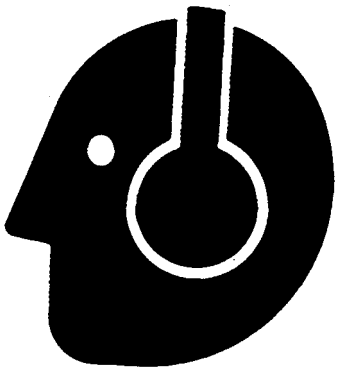
TX,WEAR,PE -19-28AUG23-1/1

Protect Against Noise

There are many variables that affect the sound level range, including machine configuration, condition and maintenance level of the machine, ground surface, operating environmental, duty cycles, ambient noise, and attachments.

Exposure to loud noise can cause impairment or loss of hearing.

Always wear hearing protection. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



TS207 —UN—23AUG88

DX,NOISE -19-03OCT17-1/1

Avoid Unauthorized Machine Modifications

John Deere recommends using only genuine John Deere replacement parts to ensure machine performance. Never substitute genuine John Deere parts with alternate parts not intended for the application as these can create hazardous situations or hazardous performance. Non-John Deere parts, or any damage or malfunctions resulting from their use, are not covered by any John Deere warranty.

Modifications to this machine or addition of unapproved products or attachments may affect machine stability or reliability and may create a hazard for the operator or others near the machine. The installer of any modification that may affect the electronic controls of this machine is responsible for establishing that the modification does not adversely affect the machine or its performance.

Always contact an authorized dealer before making machine modifications that change the intended use, weight, or balance of the machine or that alter machine controls, performance, or reliability.

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Prevent Fires

Handle Fluids Safely: All fuels, most lubricants, and some coolant mixtures are flammable. Store flammable fluids away from fire hazards. Never refuel machine while smoking or when near sparks or flame.

Clean Machine Regularly: Keep flammable debris (trash, leaves, twigs, straw, and other debris) and grease and oil from accumulating in engine compartment and away from fuel lines, hydraulic lines, exhaust components, and electrical wiring. Never store oily rags or flammable materials inside a machine compartment.

Maintain Hoses, Tubes, and Wiring: Replace hoses and tubes immediately if they begin to leak. Clean up any oil spills. Examine electrical wiring and connectors frequently for damage.

Keep a Fire Extinguisher Available: Always keep a multipurpose fire extinguisher on or near the machine. Know how to use an extinguisher properly.

Be Aware of the Operating Environment: Airborne debris may contain sparks or embers. Do not operate near any flame.

Lithium-Ion Battery Safety:

• To reduce the risk of fire or burns, do not attempt to open, disassemble, or service the display unit. Servicing of this unit is to be performed only by an authorized dealer. There are no user-serviceable parts inside the display unit. Accessing the inside of the equipment will void the warranty.

• Do not remove or handle a damaged or leaking Lithium-Ion Polymer battery.

• Do not crush or puncture battery, short battery contacts, or dispose of battery in fire or water.

• Do not expose to temperatures above 60°C (140°F).

T133552 —UN—15APR13

Handle Fuel Safely

T133553 —UN—07SEP00

Clean Machine Regularly

T133554 —UN—07SEP00

Carry a Fire Extinguisher

T133555 —UN—15APR13

Caution

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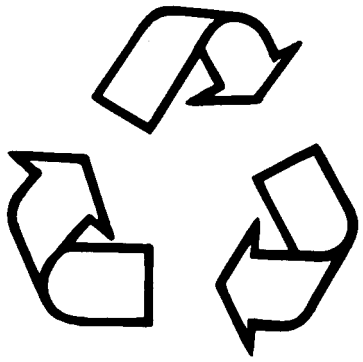
Decommissioning — Proper Recycling and Disposal of Fluids and Components

Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as fertilizers and pesticides. Handle and dispose of these components appropriately.
- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.
- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid);



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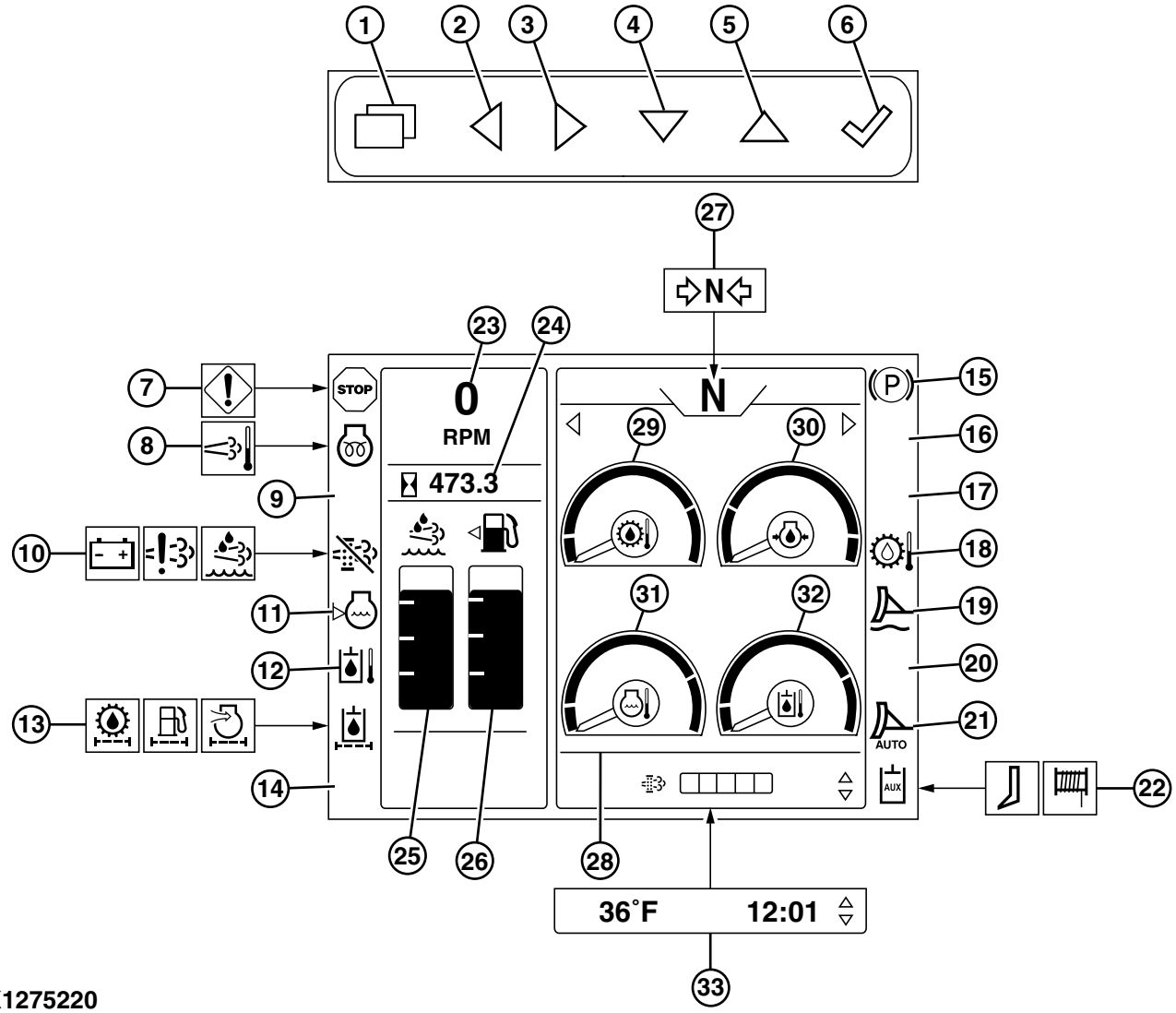
filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.

- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN -19-01JUN15-1/1

Primary Display Unit (PDU) Functions

Primary Display Unit (PDU) Functions 650K



TX1275220

Primary Display Unit (PDU) (650K)

1— Menu Button
2— Back Button
3— Forward Button
4— Down Button
5— Up Button
6— Select Button
7a— STOP Indicator
7b— Caution Indicator
8a— Wait-to-Start Indicator
8b— Exhaust Filter Cleaning Indicator
9— Not Used
10a— Exhaust Filter Auto Cleaning Disabled Indicator
10b— Low Battery Voltage Indicator
10c— Engine Emissions Systems Malfunction Indicator
10d— Diesel Exhaust Fluid (DEF) Contaminated Indicator
11— Low Coolant Level Indicator
12— Hydraulic Oil High Temperature Indicator
13a— Hydraulic Oil Filter Restriction Indicator
13b— Transmission Oil Filter Restriction Indicator
13c— Fuel Filter Restriction Indicator
13d— Engine Air Filter Restriction Indicator
14— Not Used
15— Park Brake Indicator
16— Not Used
17— Not Used
18— Transmission Warm-Up Mode Indicator
19— Blade Float Indicator
20— Not Used
21— Auto Blade Control Mode Indicator (if equipped)
22a— Rear Auxiliary Mode Indicator (if equipped)
22b— Rear Auxiliary Mode Ripper Indicator (if equipped)
22c— Rear Auxiliary Mode Winch Indicator (if equipped)
23— Tachometer
24— Hour Meter
25— Diesel Exhaust Fluid (DEF) Level Gauge
26— Fuel Level Gauge
27— Current Gear Display
28a— Main Gauge Runtime Screen
28b— Slope Control Runtime Screen (if equipped)
28c— Active Codes Display
29— Transmission Oil Temperature Gauge
30— Engine Oil Pressure Gauge
31— Engine Coolant Temperature Gauge
32— Hydraulic Oil Temperature Gauge
33a— Exhaust Filter Status Display
33b— Ambient Air Temperature With Clock Display

Continued on next page

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NOTE: Battery disconnect switch must be in the ON position for monitor to operate.

1—Menu Button

Press menu button to view main menu applications.

Press menu button from main menu or within an application to view home screen.

2—Back Button

Press back button from home screen to toggle left between main gauge display, active codes display, and fuel consumption average.

Press back button from main menu mode to toggle left to highlight an individual application.

Press back button within an application to change to the previous menu displayed.

3—Forward Button

Press forward button from home screen to toggle right between main gauge display, and active codes display.

Press forward button from main menu mode to toggle right to highlight an individual application.

4—Down Button

Press down button from home screen to toggle down between exhaust filter status display (33a) and ambient air temperature with clock display (33b).

Press down button from main menu mode to scroll down through available applications.

Press down button to change to the next selection within a menu or mode.

5—Up Button

Press up button from home screen to toggle up between ambient air temperature with clock display and exhaust filter status display.

Press up button from main menu mode to scroll up through available applications.

Press up button to change to the previous selection within a menu or mode.

6—Select Button

Press select button to activate the application function currently highlighted in main menu mode. Press button to make selections on individual submenu displays, such as monitor settings, machine setup, and storing settings.

7a—STOP Indicator

CAUTION: Prevent possible injury or machine damage. If STOP indicator illuminates and alarm sounds, stop machine immediately and investigate cause.

Red indicator illuminates when a problem has developed. Stop machine immediately and determine cause of problem.

7b—Caution Indicator

Amber indicator illuminates when a problem is developing. It is not necessary to stop engine immediately, but the cause must be investigated as soon as possible. See Main Menu—Diagnostics. (Section 2-3.)

8a—Wait-to-Start Indicator

Amber indicator illuminates when engine is cold and switched power is ON. When indicator turns off, engine can be started. See Starting the Engine. (Section 2-2.)

8b—Exhaust Filter Cleaning Indicator

Indicator illuminates when exhaust gas temperature is high, elevated idle is active, or exhaust filter cleaning is in process. Machine can be operated as normal. If operator determines that machine is not in a safe location for high exhaust temperatures, operator can disable auto cleaning. When exhaust gas temperature is higher than expected, the exhaust filter cleaning indicator is combined with the caution indicator or STOP indicator and the engine control unit (ECU) reduces engine performance. See an authorized John Deere dealer.

9—Not Used

10a—Exhaust Filter Auto Cleaning Disabled Indicator

Green indicator illuminates when operator has disabled exhaust filter auto cleaning. For more information, see Main Menu—Exhaust Filter Auto Cleaning. (Section 2-3.)

10b—Low Battery Voltage Indicator

Red indicator illuminates when battery power supply is limited. Check battery connections.

10c—Engine Emissions Systems Malfunction Indicator

Amber indicator illuminates when engine emissions are outside of normal operating range or there is an engine emissions system malfunction. See an authorized John Deere dealer.

10d—Diesel Exhaust Fluid (DEF) Contaminated Indicator

Amber indicator illuminates when the diesel exhaust fluid (DEF) is contaminated. See an authorized John Deere dealer.

11—Low Coolant Level Indicator

Amber indicator illuminates if the coolant level drops below recommended operating levels.

12—Hydraulic Oil High Temperature Indicator

Amber indicator illuminates if the hydraulic oil temperature rises above recommended operating levels.

Continued on next page

13a—Hydraulic Oil Filter Restriction Indicator

IMPORTANT: Prevent possible engine damage. Change hydraulic oil filter as soon as possible if a problem occurs.

Amber indicator illuminates when engine is running with restricted oil filter elements.

13b—Transmission Oil Filter Restriction Indicator

IMPORTANT: Prevent possible machine damage. Change transmission oil filter as soon as possible if a problem occurs.

Amber indicator illuminates when machine is running with restricted transmission oil filter elements.

13c—Fuel Filter Restriction Indicator

IMPORTANT: Prevent possible engine damage. Change fuel filters as soon as possible if a problem occurs.

Amber indicator illuminates when engine is running with restricted fuel filter elements.

13d—Engine Air Filter Restriction Indicator

IMPORTANT: Prevent possible engine damage. Change engine air filters as soon as possible if a problem occurs.

Amber indicator illuminates and STOP indicator illuminates when engine is running with restricted engine air filter elements.

14—Not Used

15—Park Brake Indicator

Red indicator illuminates when park brake is engaged.

16—Not Used

17—Not Used

18—Transmission Warm-Up Mode Indicator

Amber indicator illuminates during machine warm-up and remains illuminated when transmission oil temperature is too low.

19—Blade Float Indicator

Green indicator illuminates when blade float is enabled.

20—Not Used

21—Auto Blade Control Mode Indicator (if equipped)

Indicator illuminates green when grade control mode is enabled. Indicator illuminates white when slope control or SmartGrade™ is enabled.

22a—Rear Auxiliary Mode Indicator (if equipped)

Green indicator illuminates rear element function as rear auxiliary mode.

22b—Rear Auxiliary Mode Ripper Indicator (if equipped)

Green indicator illuminates rear element function as ripper mode.

22c—Rear Auxiliary Mode Winch Indicator (if equipped)

Green indicator illuminates rear element function as winch mode.

23—Tachometer

Tachometer shows engine speed in revolutions per minute (rpm). If an engine control unit (ECU) malfunction occurs, "— — —" is displayed.

24—Hour Meter

Hour meter shows accumulated machine hours to the nearest 1/10 of an hour. Hours are accumulated only when engine is running. Display defaults to show hour meter when ignition is first energized.

25—Diesel Exhaust Fluid (DEF) Level Gauge

Diesel exhaust fluid (DEF) level gauge shows approximate level of DEF remaining in the tank. If DEF level falls below 1/8 full, gauge turns amber. Always fill tank at the end of the day to prevent condensation.

26—Fuel Level Gauge

Fuel level gauge shows approximate level of fuel remaining in the tank. If fuel level falls below 1/8 full, gauge turns amber. Always fill tank at the end of the day to prevent condensation.

27—Current Gear Display

Current gear displays in the upper center of the screen above the gauge display.

- "F" is displayed for forward direction, along with the gear value.
- "N" is displayed for neutral.
- "R" is displayed for reverse direction, along with the gear value.
- "P" is displayed for park.

28a—Main Gauge Runtime Screen

Displays the transmission oil temperature gauge, engine oil pressure gauge, engine coolant temperature gauge, and hydraulic oil temperature gauge.

28b—Slope Control Runtime Screen (if equipped)

Displays the current slope control mode, indicators, options, and settings. For more information, see Operating Slope Control System (Factory Installation)—If Equipped. (Section 2-2.)

28c—Active Codes Display

Displays active machine warning codes.

29—Transmission Oil Temperature Gauge

Continued on next page

Gauge indicates current transmission oil temperature.

- GREEN zone: Normal operating temperature.
- RED zone: Transmission oil temperature is too high. Needle points to RED zone, gauge turns red, transmission oil pressure indicator illuminates, STOP indicator illuminates, and an audible alarm sounds. Stop machine and operate engine at fast idle under no load until transmission cools.
  If gauge remains RED after several minutes, stop engine and see an authorized John Deere dealer.

30—Engine Oil Pressure Gauge

Gauge indicates current engine oil pressure when engine is running.

- GREEN zone: Normal operating pressure.
- RED zone: Engine oil pressure has dropped below recommended pressure. Needle points to RED zone, gauge turns red, STOP indicator illuminates, and an audible alarm sounds. Immediately park machine in a safe area and stop engine.

31—Engine Coolant Temperature Gauge

IMPORTANT: Prevent machine damage. DO NOT operate machine when engine coolant temperature is high.

Gauge indicates engine coolant temperature.

- GREEN zone: Normal operating temperature.
- RED zone: Engine coolant temperature is too high. Needle points to RED zone, gauge turns red, engine coolant temperature indicator illuminates, and an audible alarm sounds. Stop machine and operate engine at fast idle under no load until engine cools.
  If gauge remains RED after several minutes, stop engine and see an authorized John Deere dealer.

32—Hydraulic Oil Temperature Gauge

Gauge indicates hydraulic oil temperature.

- GREEN zone: Normal operating temperature.
- RED zone: Hydraulic oil temperature is too high. Needle points to RED zone, gauge turns red, hydraulic oil temperature indicator illuminates, and an audible alarm sounds. Immediately park machine in a safe area and stop engine.

33a—Exhaust Filter Status Display

Exhaust filter status display shows soot level restriction in the exhaust filter. Indicator starts to turn gray as the filter begins to restrict and continues to fill the whole indicator depending on the soot level restriction.

- **LOW** soot level restriction: Indicator shows no gray.
- **MODERATE** soot level restriction: Half of indicator displays gray.
- **HIGH** soot level restriction: Entire indicator is gray. If auto cleaning is disabled, exhaust filter auto cleaning disabled indicator appears and a pop-up stating that engine power is limited and to contact a service representative for service filter cleaning appears on the monitor. For more information, see Main Menu—Exhaust Filter Auto Cleaning. (Section 2-3.)
- **VERY HIGH** soot level restriction: Indicator remains 100% but all sections turn yellow. Caution indicator appears and a pop-up stating that engine power is limited and to begin a parked filter cleaning appears on the monitor. See Main Menu—Exhaust Filter Parked Cleaning. (Section 2-3.)
- **SERVICE** soot level restriction: Indicator remains 100% but all sections turn red. STOP indicator begins flashing on monitor and audible alarm sounds. A pop-up stating that engine power is limited and to contact a service representative for service filter cleaning appears on the monitor.

33b—Ambient Air Temperature With Clock Display

Ambient temperature indicator with clock display shows outside air temperature in °C or °F to the nearest degree on the left side of display area.

NOTE: Upon start-up, clock momentarily displays "— — —" until the time is acquired from the modular telematics gateway (MTG).

Clock displays on the right side of display area and displays current local time value in either 12-hour format (without AM/PM) or 24-hour format.

SmartGrade is a trademark of Deere & Company

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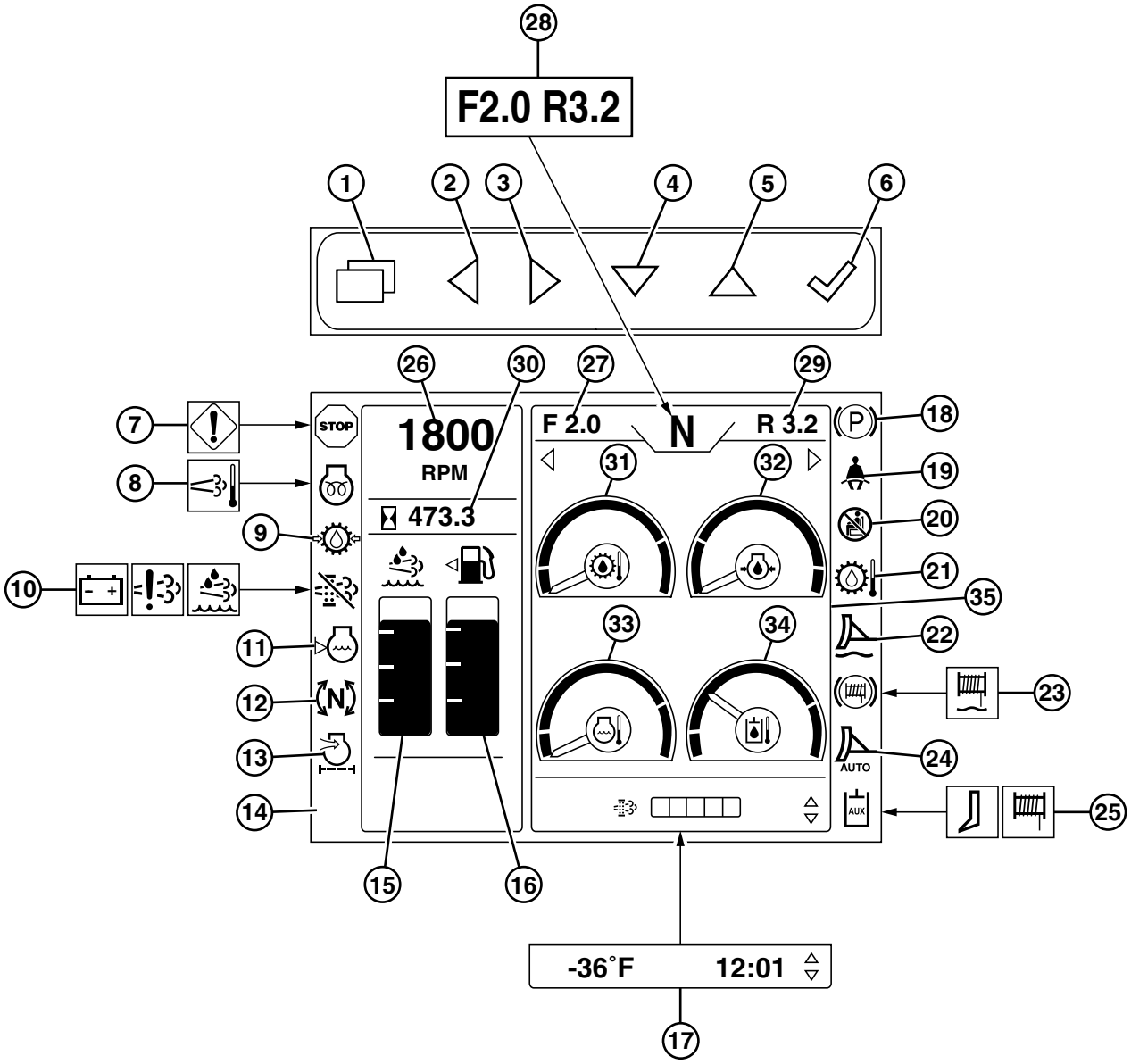
Primary Display Unit (PDU) Functions 700L, 750L, and 850L



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TX1270934

Primary Display Unit (PDU) (700L, 750L, and 850L)

Continued on next page

1— Menu Button
2— Back Button
3— Forward Button
4— Down Button
5— Up Button
6— Select Button
7a— Stop Indicator
7b— Caution Indicator
8a— Engine Wait-to-Start Indicator
8b— Exhaust Filter Cleaning Indicator
9— Transmission Oil Pressure Indicator
10a— Exhaust Filter Auto Cleaning Disabled Indicator
10b— Engine Alternator Voltage Indicator
10c— Engine Emissions Systems Malfunction Indicator
10d— Diesel Exhaust Fluid (DEF) Contaminated Indicator
11— Low Coolant Level Indicator
12— Neutral Rotate Mode Indicator
13— Engine Air Filter Restriction Indicator
14— Not Used
15— Diesel Exhaust Fluid (DEF) Level Gauge
16— Fuel Level Gauge
17a— Exhaust Filter Status Display
17b— Ambient Air Temperature With Clock Display
18— Park Brake Indicator
19— Fasten Seat Belt Indicator
20— Operator Not Present Indicator
21— Transmission Oil Temperature Indicator
22— Blade Float Indicator
23a— Winch Brake Off Indicator
23b— Winch Free Spool Indicator
24— Auto Blade Control Indicator
25a— Rear Auxiliary Mode Indicator
25b— Rear Auxiliary Mode Ripper Indicator
25c— Rear Auxiliary Mode Winch Indicator
26— Tachometer
27— Transmission Forward Gear Setting
28— Current Forward, Neutral, and Reverse (FNR) Gear Display
29— Transmission Reverse Gear Setting
30— Hour Meter
31— Transmission Oil Temperature Gauge
32— Engine Oil Pressure Gauge
33— Engine Coolant Temperature Gauge
34— Hydraulic Oil Temperature Gauge
35a— Main Gauge Display
35b— Average Fuel Consumption Display
35c— Active Codes Display

NOTE: Battery disconnect switch must be in the ON position for monitor to operate.

1—Menu Button

Press menu button to view main menu applications.

Press menu button from main menu or within an application to view home screen.

2—Back Button

Press back button from home screen to toggle left between main gauge display, active codes display, and fuel consumption average.

Press back button from main menu mode to toggle left to highlight an individual application.

Press back button within an application to change to the previous menu displayed.

3—Forward Button

Press forward button from home screen to toggle right between main gauge display, fuel consumption average, and active codes display.

Press forward button from main menu mode to toggle right to highlight an individual application.

4—Down Button

Press down button from home screen to toggle down between exhaust filter status display (17a) and ambient air temperature with clock display (17b).

Press down button from main menu mode to scroll down through available applications.

Press down button to change to the next selection within a menu or mode.

5—Up Button

Press up button from home screen to toggle up between ambient air temperature with clock display and exhaust filter status display.

Press up button from main menu mode to scroll up through available applications.

Press up button to change to the previous selection within a menu or mode.

6—Select Button

Press select button to activate application function currently highlighted in main menu mode. Press button to make selections on individual submenu displays, such as monitor settings, machine setup, and storing settings.

7a—Stop Indicator

CAUTION: Prevent possible injury or machine damage. If stop indicator illuminates and alarm sounds, stop machine immediately and investigate cause.

Red indicator illuminates when a problem has developed. Stop machine immediately and determine cause of problem.

7b—Caution Indicator

Amber indicator illuminates when a problem is developing. It is not necessary to stop engine immediately, but the cause must be investigated as soon as possible.

8a—Engine Wait-to-Start Indicator

Amber indicator illuminates when engine is cold and switched power is on. When indicator turns off, engine can be started.

8b—Exhaust Filter Cleaning Indicator

Continued on next page

Indicator illuminates when exhaust gas temperature is high, elevated idle is active, or exhaust filter cleaning is in process. Machine can be operated as normal. If operator determines that machine is not in a safe location for high exhaust temperatures, operator can disable auto cleaning. When exhaust gas temperature is higher than expected, the exhaust filter cleaning indicator is combined with the caution indicator or stop indicator and the engine control unit (ECU) reduces engine performance. See an authorized John Deere dealer.

9—Transmission Oil Pressure Indicator

Red indicator illuminates when transmission oil pressure has dropped below recommended pressure. Immediately park machine in a safe area and stop engine.

10a—Exhaust Filter Auto Cleaning Disabled Indicator

Green indicator illuminates when operator has disabled exhaust filter auto cleaning.

10b—Engine Alternator Voltage Indicator

Red indicator illuminates when battery power supply is limited. Check battery connections.

10c—Engine Emissions Systems Malfunction Indicator

Amber indicator illuminates when engine emissions are outside of normal operating range or there is an engine emissions system malfunction. See an authorized John Deere dealer.

10d—Diesel Exhaust Fluid (DEF) Contaminated Indicator

Amber indicator illuminates when the diesel exhaust fluid (DEF) is contaminated. See an authorized John Deere dealer.

11—Low Coolant Level Indicator

Amber indicator illuminates if the coolant level drops below recommended operating levels.

12—Neutral Rotate Mode Indicator

Green indicator illuminates when neutral rotate mode is enabled, allowing the operator to turn in place without machine moving in forward or reverse.

13—Engine Air Filter Restriction Indicator

Indicator illuminates and stop indicator illuminates when engine is running with restricted engine air filter elements.

14—Not Used

15—Diesel Exhaust Fluid (DEF) Level Gauge

Diesel exhaust fluid (DEF) level gauge shows approximate level of DEF remaining in the tank. If DEF level falls below 1/8 full, gauge turns amber. Always fill tank at end of day to prevent condensation.

16—Fuel Level Gauge

Fuel level gauge shows approximate level of fuel remaining in the tank. If fuel level falls below 1/8 full, gauge turns amber. Always fill tank at end of day to prevent condensation.

17a—Exhaust Filter Status Display

Exhaust filter status display shows soot level restriction in the exhaust filter. Indicator starts to turn gray as the filter begins to restrict and continues to fill the whole indicator depending on the soot level restriction.

- **LOW** soot level restriction: Indicator shows no gray.
- **MODERATE** soot level restriction: Half of indicator displays gray.
- **HIGH** soot level restriction: Entire indicator is gray. If auto cleaning is disabled, exhaust filter auto cleaning disabled indicator appears and a pop-up stating that engine power is limited and to contact a service representative for service filter cleaning appears on the monitor.
- **VERY HIGH** soot level restriction: Indicator remains 100% but all sections turn yellow. Caution indicator appears and a pop-up stating that engine power is limited and to begin a parked filter cleaning appears on the monitor.
- **SERVICE** soot level restriction: Indicator remains 100% but all sections turn red. Stop indicator begins flashing on monitor and audible alarm sounds. A pop-up stating that engine power is limited and to contact a service representative for service filter cleaning appears on the monitor.

17b—Ambient Air Temperature With Clock Display

Ambient temperature indicator with clock displays outside air temperature in °C or °F to the nearest degree on the left side of display area.

NOTE: Upon start-up, clock momentarily displays "— — —" until the time is acquired from modular telematics gateway (MTG).

Clock displays on the right side of display area and displays current local time value in either 12-hour format (without AM/PM) or 24-hour format.

18—Park Brake Indicator

Red indicator illuminates when park brake is engaged.

19—Fasten Seat Belt Indicator

Red indicator illuminates when seat belt is not fastened.

Secure seat belt before starting machine.

20—Operator Not Present Indicator

Red indicator illuminates when operator seat sensor indicates that no operator is present.

21—Transmission Oil Temperature Indicator

Amber indicator illuminates transmission oil temperature is too low or too high.

Continued on next page

During engine warm-up, indicator remains illuminated when temperature is too low.

Stop indicator illuminates and an audible alarm sounds when temperature is too high. Stop machine and operate engine at fast idle under no load until transmission cools. If indicator remains illuminated after several minutes, stop engine and see an authorized John Deere dealer.

22—Blade Float Indicator

Green indicator illuminates when blade float is enabled.

23a—Winch Brake Off Indicator

Indicator illuminates when winch brake is off and winch is activated.

23b—Winch Free Spool Indicator

Indicator illuminates when winch free spool is activated.

Indicator illuminates when blade float is enabled. For more information, see machine specific operator's manual.

24—Auto Blade Control Indicator

The indicator illuminates green when grade control is active following the jab function. For more information, see Enable Auto SmartGrade™. (Section 2-2.)

25a—Rear Auxiliary Mode Indicator

Indicator illuminates rear element function as rear auxiliary mode.

25b—Rear Auxiliary Mode Ripper Indicator

Indicator illuminates rear element function as ripper mode.

25c—Rear Auxiliary Mode Winch Indicator

Indicator illuminates rear element function as winch mode.

26—Tachometer

Tachometer shows engine speed in revolutions per minute (rpm). If an engine control unit (ECU) malfunction occurs, "— — —" is displayed.

27—Transmission Forward Gear Setting

Displays the current forward gear setting.

28—Current Forward, Neutral, and Reverse (FNR) Gear Display

Current gear displays in the upper center of the screen above the gauge display.

- "F" is displayed for forward direction along with the gear value.
- "N" is displayed for neutral.
- "R" is displayed for reverse direction along with the gear value.

29—Transmission Reverse Gear Setting

Displays the current reverse gear setting.

30—Hour Meter

Hour meter shows accumulated machine hours to nearest 1/10 of an hour. Hours are accumulated only when engine is running. Display defaults to show hour meter when ignition is first energized.

31—Transmission Oil Temperature Gauge

Gauge indicates current transmission oil temperature.

- Green zone: Normal operating temperature.
- Red zone: Transmission oil temperature is too high. Needle points to RED zone, gauge turns red, transmission oil pressure indicator illuminates, stop indicator illuminates, and an audible alarm sounds. Stop machine and operate engine at fast idle under no load until transmission cools.
  If gauge remains red after several minutes, stop engine and see an authorized John Deere dealer.

32—Engine Oil Pressure Gauge

Gauge indicates current engine oil pressure when engine is running.

- Green zone: Normal operating pressure.
- Red zone: Engine oil pressure has dropped below recommended pressure. Needle points to red zone, gauge turns red, stop indicator illuminates, and an audible alarm sounds. Immediately park machine in a safe area and stop engine.

33—Engine Coolant Temperature Gauge

IMPORTANT: Prevent machine damage. DO NOT operate machine when engine coolant temperature is high.

Gauge indicates engine coolant temperature.

- Green zone: Normal operating temperature.
- Red zone: Engine coolant temperature is too high. Needle points to RED zone, gauge turns red, engine coolant temperature indicator illuminates, and an audible alarm sounds. Stop machine and operate engine at fast idle under no load until engine cools.
  If gauge remains red after several minutes, stop engine and see an authorized John Deere dealer.

34—Hydraulic Oil Temperature Gauge

Gauge indicates hydraulic oil temperature.

- Green zone: Normal operating temperature.
- Red zone: Hydraulic oil temperature is too high. Needle points to RED zone, gauge turns red, hydraulic oil temperature indicator illuminates, and an audible alarm sounds. Immediately park machine in a safe area and stop engine.

35a—Main Gauge Display

Displays the transmission oil temperature gauge, engine oil pressure gauge, engine coolant gauge, and hydraulic oil temperature gauge.

35b—Average Fuel Consumption Display

IDR2EHK,0000327 -19-13FEB20-8/8

Displays the average fuel consumption in either gallons per hour or liters per hour.

Displays active machine warning codes.

35c—Active Codes Display

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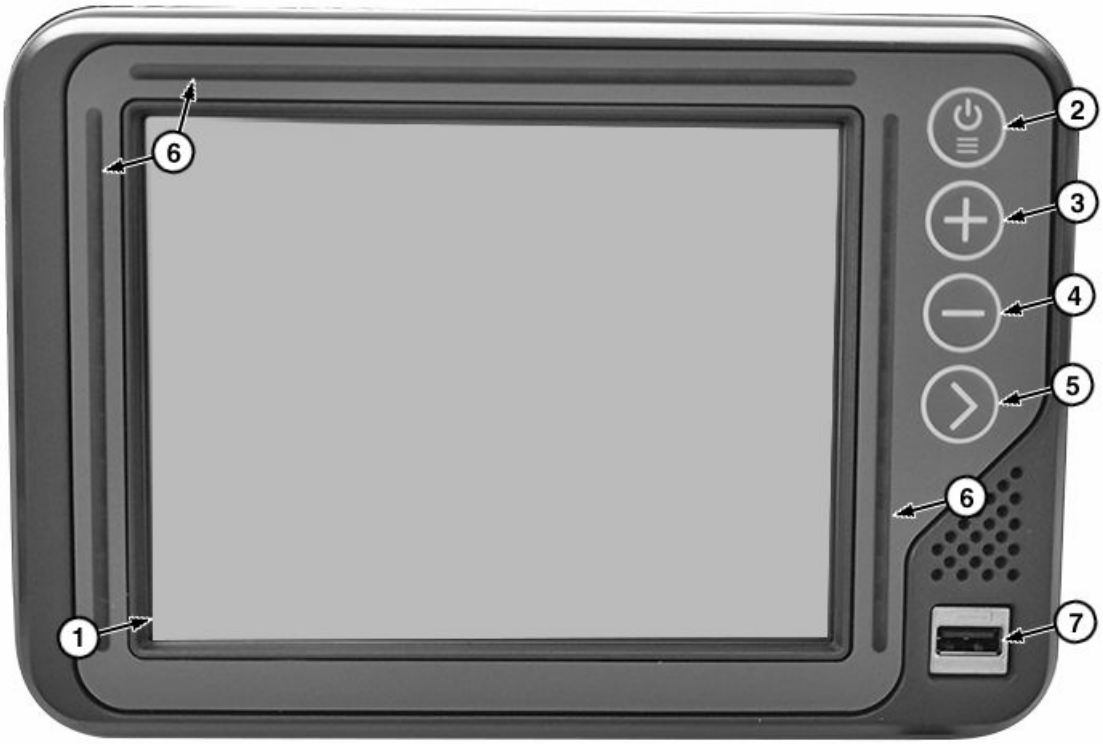
IDR2EHK,0000327 -19-13FEB20-9/8

SmartGrade™ Display Unit Functions



TX1241390 —UN—19JUL17

Display

1— Touch Screen
2— Power/Menu Button
3— Zoom In Button
4— Zoom Out Button
5— Next View Button
6— Grade Indicator LEDs
7— USB Port

CAUTION: Prevent possible injury or transmitter damage. Do not use in temperatures below -30°C (-22°F) or temperatures above 60°C (140°F). For more information, see the Safety Section of this manual.

IMPORTANT: Prevent possible monitor damage. Never use chemicals to clean display screen. To ensure proper functionality of monitor, clean regularly. Lightly wipe display screen with a damp, clean cloth.

Contact with sharp edges or hard materials can cause scratches and possible monitor malfunction. Avoid contacting display screen with sharp edges or hard materials.

NOTE: This display unit is equipped with an internal lithium ion polymer 3.7 volt, 7.4 Wh battery.

The SmartGrade™ display unit is equipped with a touch screen (1) with touch functionality.

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Topcon is a trademark of Topcon Positioning Systems, Inc.

To turn on display, press and hold the power/menu button (2) for two seconds. The grade indicator LEDs (6) will illuminate, indicating the unit is starting up. The display will turn on and display a John Deere SmartGrade™ Powered by Topcon® splash screen during the boot-up process. To turn off display, press and hold power/main screen button.

To select an action, tap the touch screen..

Pressing and holding on the screen provides additional options.

To navigate or move to other areas of the map, use the touch screen and pan to desired area.

Use the zoom in button (3) and zoom out button (4) to zoom in and out of map views as desired.

The next view button (5) cycles between available map views.

A single press of the power/menu button while on the main screen shows the menu options.

IDR2EHK,0000328 -19-14FEB20-1/1

Right-Hand Joystick

Right-Hand Joystick 650K

IMPORTANT: To avoid overheating hydraulic oil, allow blade control lever (1) to return to the neutral position when cylinders reach end of stroke.

NOTE: Increment (up) switch (4), decrement (down) switch (5), and grade control on/off switch (if equipped) (2) are available when machine is equipped with a grade control system.

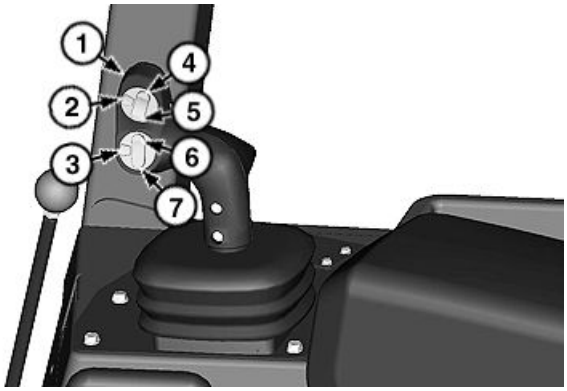
Blade control lever (1) is used for all hydraulic functions.

Blade float detent position is used for back blading.

When blade control lever is put into the float position, blade control lever will return to neutral on its own.

To disable blade float, push lever forward or rearward after lever has returned to neutral. Moving lever to the left or right will not disable blade float.

- Push lever fully forward to blade float detent position for blade float.
- Push lever forward one position for blade lower.
- Pull lever rearward for blade lift.
- Push lever to the left for blade tilt left.



TX1175999 —UN—30OCT14

Blade Control Lever (650K)

1— Blade Control Lever
2— Grade Control On/Off Switch (if equipped)
3— Blade Shake Switch
4— Increment (up) Switch
5— Decrement (down) Switch
6— Blade Angle Right Switch
7— Blade Angle Left Switch

- Push lever to the right for blade tilt right.
- Press blade shake switch (3) to activate blade shake.
- Press blade angle right switch (6) to angle blade right.
- Press blade angle left switch (7) to angle blade left.

Continued on next page

IDR2EHK,0000329 -19-16APR20-1/2

Right-Hand Joystick 700L, 750L, and 850L

IMPORTANT: To avoid overheating hydraulic oil, allow right-hand joystick (1) to return to neutral position when cylinders reach end of stroke.

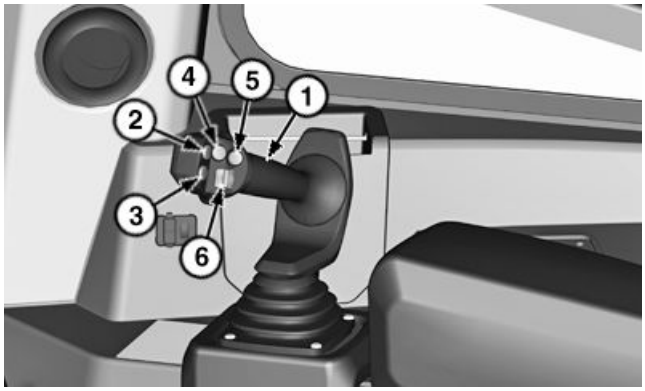
NOTE: Increment (up) switch (2), decrement (down) switch (3), and automatic blade control on/off switch (4) are available when machine is equipped with SmartGrade™ system.

Right-hand joystick (1) is used for all hydraulic blade control functions.

- Push joystick forward one position for blade lower (8).
- Pull joystick rearward for blade lift (9).
- Move joystick to the left for blade tilt left (10).
- Move joystick to the right for blade tilt right (11).
- Press blade control switch (5) to activate blade shake.
- Press power pitch roller switch (6) forward to pitch blade forward.
- Press power pitch roller switch rearward to pitch blade rearward.

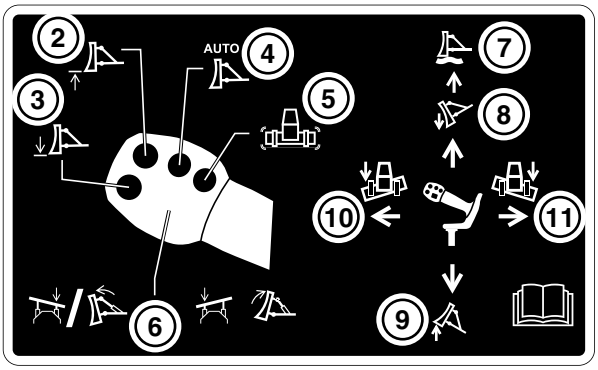
Blade float function is used for back blading.

1. Push right-hand joystick fully forward to blade float detent position (7) for blade float.
2. When right-hand joystick is put into float position, right-hand joystick returns to neutral on its own.
3. Disable blade float by pushing joystick forward or pulling joystick rearward. Moving joystick to the left or right does not disable blade float.



TX1268226A —UN—13NOV18

Right-Hand Joystick (700L, 750L, and 850L)



TX1268328 —UN—27NOV18

Right-Hand Joystick Label (700L, 750L, and 850L)

1— Right-Hand Joystick
2— Increment (up) Switch
3— Decrement (down) Switch
4— Automatic Blade Control On/Off Switch
5— Blade Control Switch
6— Power Pitch Roller Switch
7— Blade Float Detent Position
8— Blade Lower
9— Blade Lift
10— Blade Tilt Left
11— Blade Tilt Right

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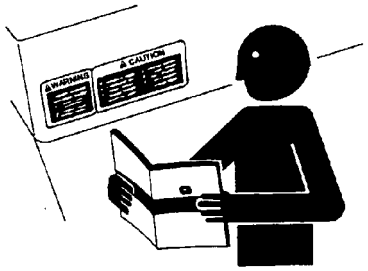
IDR2EHK,0000329 -19-16APR20-2/2

Before Starting Work

Review the operating precautions in the Safety Section of this manual.

Use seat belt when operating machine. Remember to fasten seat belt even during brief periods of use.

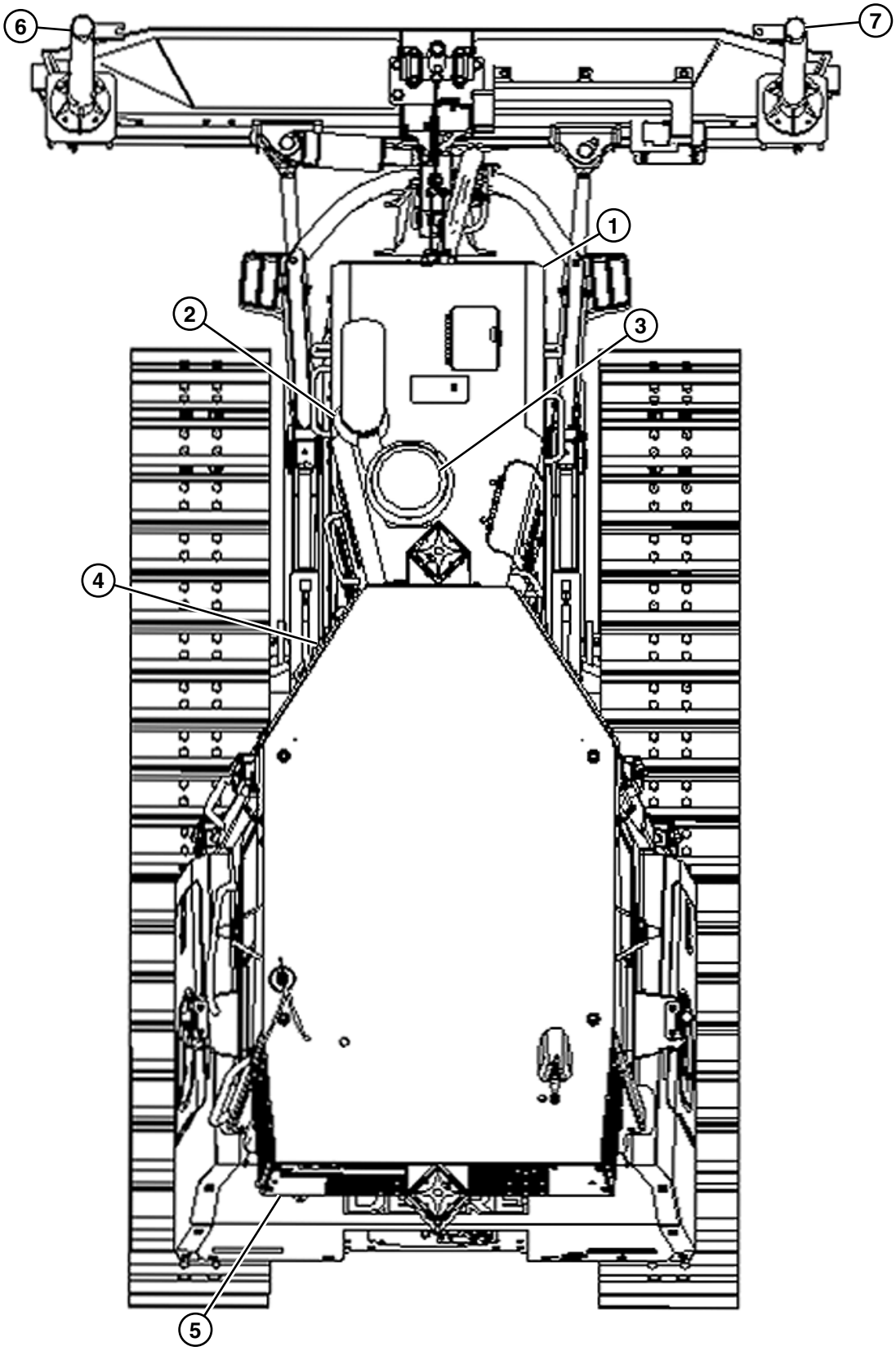


T133556 —UN—24AUG00

Reading Operator's Manual

CN93077,000029B -19-05MAY14-1/1

Inspect Machine Daily Before Starting



TX1323043

TX1323043 —UN—19APR22

Machine Inspection

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IDR2EHK,000032A -19-19APR22-1/2

1— Grille and Radiator Screen
2— Engine Shield (2 used)
3— Precleaner
4— Operator's Station
5— Fuel Tank Cap
6— Left Mast
7— Right Mast

Perform daily maintenance checks. See machine operator's manual for more information.

- Inspect grille and radiator screen (1) for obstructions.
- Clean engine shields (2) on each side of machine.
- Inspect precleaner (3) and clean as necessary.
- Clean operator's station (4), check pedals for freedom of movement, and check fire extinguisher charge (if equipped).
- Check fuel level. Remove fuel tank cap (5) and fill with proper fuel if necessary.
- Inspect masts (6 and 7) for damage.
- Ensure masts are properly positioned and secure.

Inspect the following before starting:

ELECTRICAL SYSTEM: Check for worn or frayed wires and loose or corroded connections.

HYDRAULIC SYSTEM: Check for leaks, missing or loose clamps, kinked hoses, and lines or hoses that are making contact with each other or other machine parts.

FUEL SYSTEM: Check for leaks, missing or loose clamps, kinked hoses, drain water and sediment from primary and auxiliary fuel filters, and check for lines and hoses that are making contact with each other or other machine parts.

HARDWARE: Check for loose or missing parts.

LUBRICATION: Check lubrication points on Periodic Maintenance Chart. See machine operator's manual for more information.

SHEET METAL AND TRACKS: Check for bent, broken, loose, or missing parts.

PROTECTIVE DEVICES: Inspect guards, shields, roll-over protective structure (ROPS), and seat belt.

SAFETY: Walk around machine to be sure all persons are away from machine area.

IDR2EHK,000032A -19-19APR22-2/2

Check Instruments Before Starting

650K

Standard Display Monitor (SDM)

Press and release engine start switch (1). The alarm sounds briefly, a gray screen is displayed momentarily, and all indicators on display monitor illuminate.

If security system has been enabled by owner, operator logon screen appears on display window. Operator must enter valid personal identification number (PIN) to access monitor screens.

Display (2) window then populates with normal display items with gauge pointers positioned to current input values.

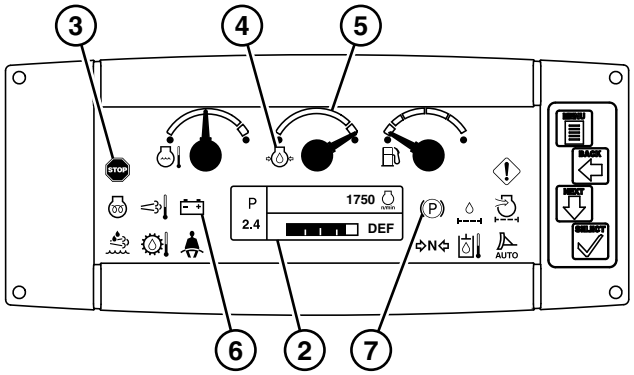
After the indicator check, the STOP indicator (3) and park brake indicator (7) remain illuminated (the STOP indicator flashes). The engine oil pressure gauge (5) and engine oil warning indicator (4) are highlighted in red and flash until engine is started. The engine alternator voltage indicator (6) will also remain on until engine is running and alternator is charging.

Primary Display Unit (PDU)

1— Engine Start Switch
2— Display
3— STOP Indicator
4— Engine Oil Warning Indicator
5— Engine Oil Pressure Gauge
6— Engine Alternator Voltage Indicator
7— Park Brake Indicator

TX1176288 —UN—03NOV14

Sealed Switch Module (SSM)



TX1176293 —UN—07NOV14

Standard Display Monitor (SDM)

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IDR2EHK,000032C -19-14FEB20-1/4

Press and release engine start switch (1). The alarm sounds briefly, a gray screen is displayed momentarily, and all indicators on display monitor illuminate.

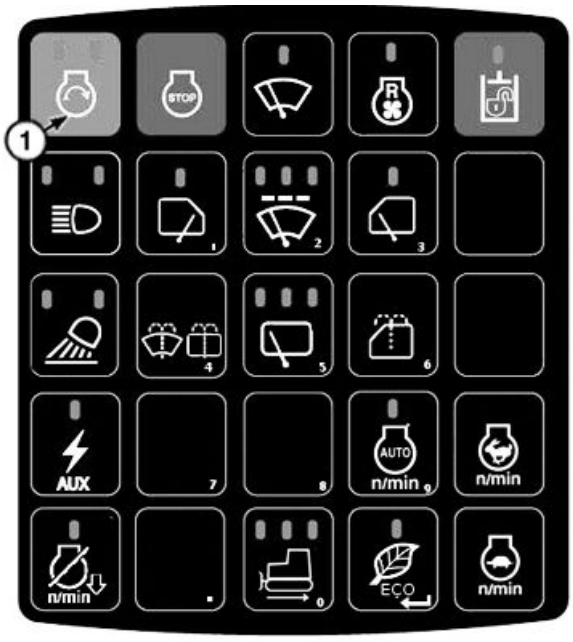
If security system has been enabled by owner, operator logon screen appears on display (2) window. Operator must enter a valid personal identification number (PIN) to access monitor screens.

Display window then populates with normal display items with gauge pointers positioned to current input values. The low battery voltage indicator (3) will also remain illuminated until engine is running and alternator is charging.

If an auxiliary device is installed, the rear auxiliary mode indicator (4) illuminates with the selected device.

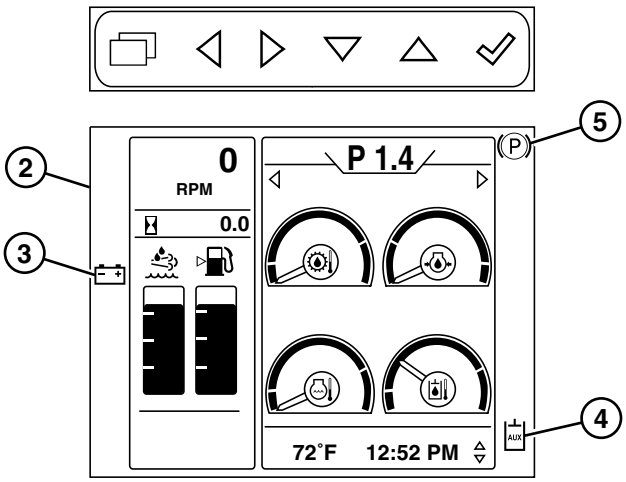
After the indicator check, the park brake indicator (5) remains illuminated.

1— Engine Start Switch
2— Display
3— Low Battery Voltage Indicator
4— Rear Auxiliary Mode Indicator
5— Park Brake Indicator



TX1176288 —UN—03NOV14

Sealed Switch Module (SSM)



TX1275024 —UN—21MAR19

Primary Display Unit (PDU)

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IDR2EHK,000032C -19-14FEB20-2/4

700L, 750L, and 850L

Press and release engine start switch (1). The alarm sounds briefly, a gray screen is displayed momentarily, and all indicators on display monitor illuminate.

If the security system has been enabled by owner, operator logon screen appears on display window. Operator must enter a valid personal identification number (PIN) to access monitor screens.

Display window then populates with normal display items with gauge pointers positioned to current input values.

1— Engine Start Switch

TX1269372 —UN—15JAN19

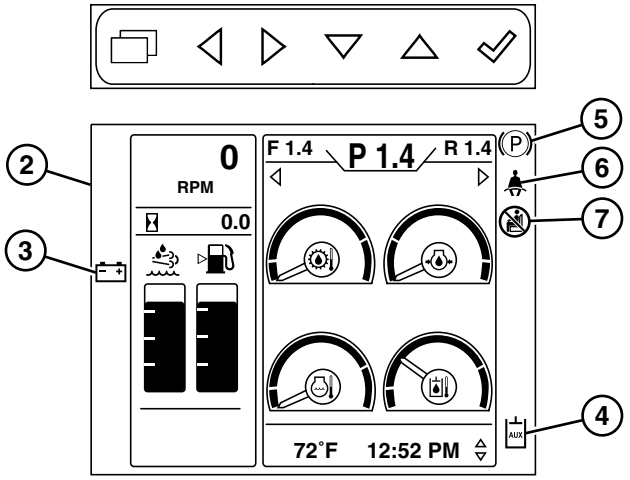
Sealed Switch Module (SSM)

IDR2EHK,000032C -19-14FEB20-3/4

Primary Display Unit (PDU)

Fasten seat belt indicator (3) will stay illuminated until operator fastens seat belt. The low battery voltage indicator (4) will also remain on until engine is running and alternator is charging. Rear auxiliary mode (5) illuminates with the selected device.

2— Display
3— Low Battery Voltage Indicator
4— Rear Auxiliary Mode
5— Park Brake Indicator
6— Fasten Seat Belt Indicator
7— STOP Indicator



TX1269968 —UN—22JAN19

Primary Display Unit (PDU)

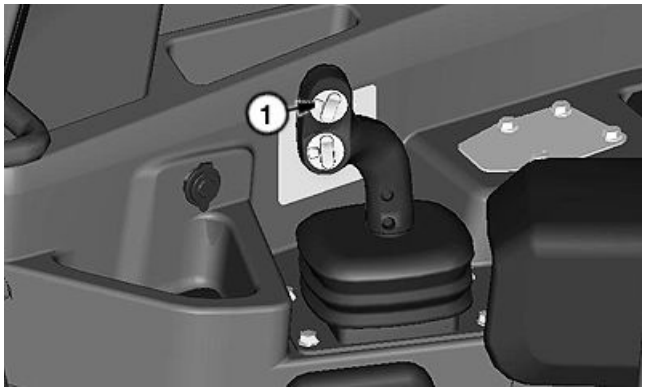
IDR2EHK,000032C -19-14FEB20-4/4

Enable Auto SmartGrade™

To enable auto SmartGrade™, press the automatic blade control on/off switch (1) on the right-hand joystick. Operator can then activate auto SmartGrade™ by performing the following functions:

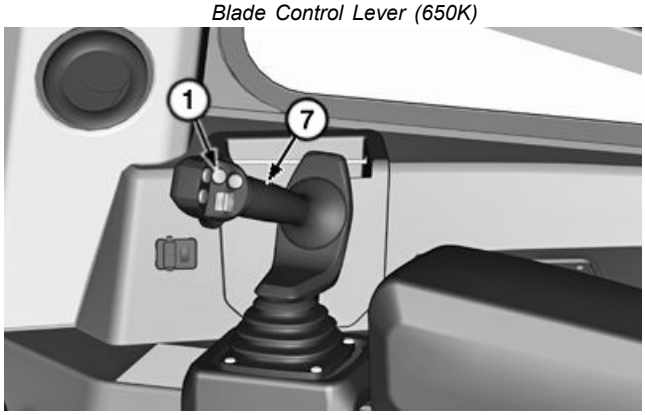
1— Automatic Blade Control On/Off Switch

7— Right-Hand Joystick



TX1161234 —UN—20MAY14

Blade Control Lever (650K)



TX1271617A —UN—24JAN19

Right-Hand Joystick (700L, 750L, and 850L)

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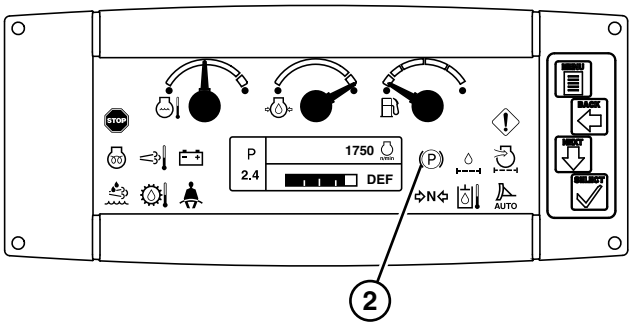
IDR2EHK,000032E -19-23MAR20-1/7

Raise and Lower Jab Function (650K)

The jab feature allows an operator to lower the blade to the design surface, which enables the automatic grading. When the park lock levers (1) are in the park position and the operator jabs the joystick to activate auto blade, the park brake indicator (2) light on the monitor flashes for 5 seconds, indicating that auto blade functionality is being restricted.

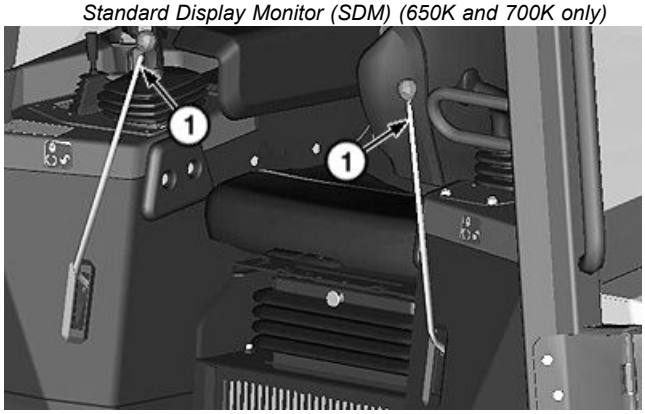
NOTE: When performing a jab, only slightly move the joystick forward or backward.

1— Park Lock Lever (2 used) **2— Park Brake Indicator**



TX1215555 —UN—11MAY16

Standard Display Monitor (SDM) (650K and 700K only)



TX1168922 —UN—12AUG14

Park Lock Levers (locked position)

IDR2EHK,000032E -19-23MAR20-2/7

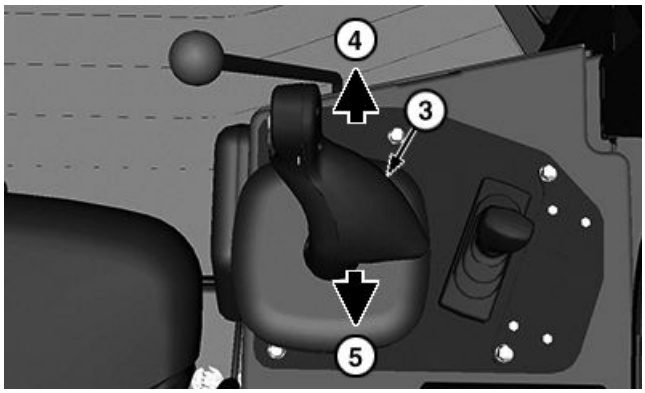
To use the raise and lower jab function, press the automatic blade control on/off switch on the blade control lever (3) to enable the SmartGrade™ system.

Lower Jab

A lower jab (4) occurs when the blade control lever is pressed forward from the neutral position. If automatic grading has been deactivated by manual movement of blade control lever, the lower jab feature can be used to reactivate automatic grading.

Raise Jab

A raise jab (5) occurs when the blade control lever is pressed backward from the neutral position. A raise jab is used to deactivate automatic grading and raise blade to the parked position. The raise jab feature can be enabled or disabled in the monitor. For more information, see machine specific operator's manual.



TX1207061 —UN—12JAN16

Blade Control Lever

3— Blade Control Lever
4— Lower Jab
5— Raise Jab

Continued on next page

IDR2EHK,000032E -19-23MAR20-3/7

Raise and Lower Jab Function (700L, 750L, and 850L)

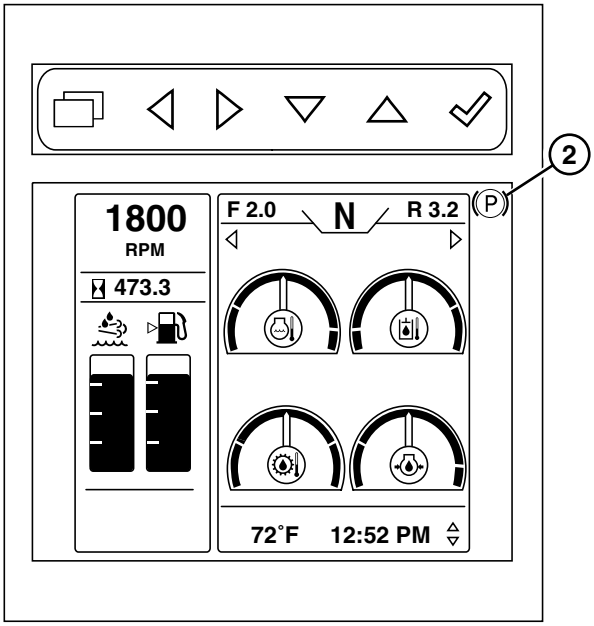
The jab feature allows an operator to lower the blade to the design surface, which enables the automatic grading. When the park brake switch (6) is engaged, the operator jabs the joystick to activate auto blade and the park brake indicator (2) light on the monitor flashes for 5 seconds, indicating that auto blade functionality is being restricted.

NOTE: When performing a jab, only slightly move the joystick forward or backward.

2— Park Brake Indicator **6— Park Brake Switch**

TX1271619 —UN—22JAN19

Sealed Switch Module (SSM)



TX1269451 —UN—02JAN19

Primary Display Unit (PDU)

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IDR2EHK,000032E -19-23MAR20-4/7

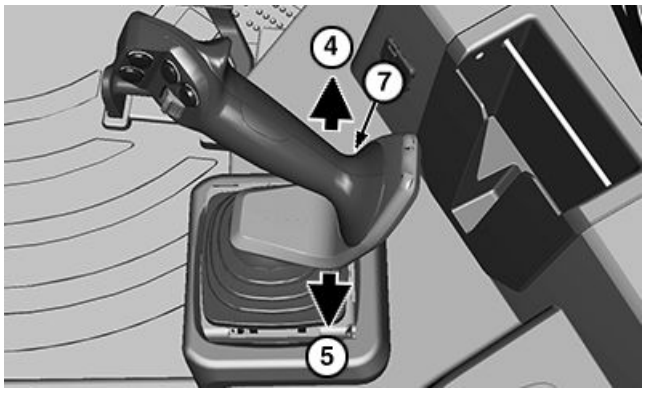
To use the raise and lower jab function, press the automatic blade control on/off switch on the right-hand joystick (7) to enable the SmartGrade™ system.

Lower Jab

A lower jab (4) occurs when the right-hand joystick is pressed forward from the neutral position. If automatic grading has been deactivated by manual movement of blade control lever, the lower jab feature can be used to reactivate automatic grading.

Raise Jab

A raise jab (5) occurs when the right-hand joystick is pressed backward from the neutral position. A raise jab is used to deactivate automatic grading and raise blade to the parked position. The raise jab feature can be enabled or disabled in the monitor. For more information, see machine specific operator's manual.



TX1270958A —UN—24JAN19

Right-Hand Joystick

4— Lower Jab
5— Raise Jab
7— Right-Hand Joystick

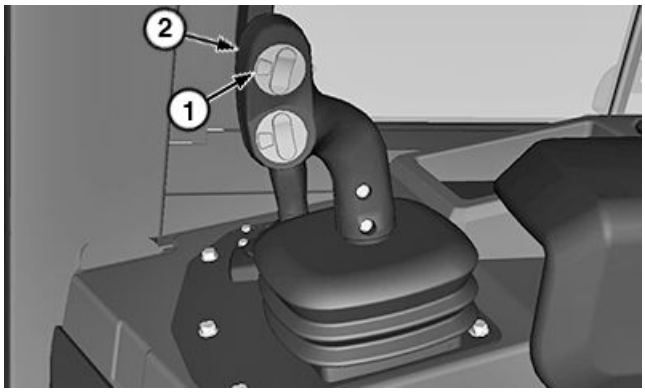
IDR2EHK,000032E -19-23MAR20-5/7

Window Enable Function (650K)

The window enable function works in addition to the lower jab and raise jab features.

CAUTION: Prevent possible injury from unexpected machine movement. If automatic grade control is enabled and the blade is between 152 mm (6 in) above and 127 mm (5 in) below either grade level or the plane is in line with the bottom of the track grousers, the blade moves to grade level when the park brake is applied.

NOTE: When in reverse, the window enable function is disabled. To enable auto SmartGrade™, use the jab feature. Additionally, if auto SmartGrade™ is enabled when shifting to reverse, the machine will stay in auto mode.



TX1215199 —UN—04MAY16

Blade Control Lever (650K)

1— Automatic Blade Control On/Off Switch
2— Blade Control Lever

To use the window enable function, press the automatic blade control on/off switch (1) on the blade control lever (2) to enable the SmartGrade™ system.

To activate automatic grading using the window enable function, move the blade to a specific height. When the blade is between 152 mm (6 in) above and 127 mm (5 in) below either grade level or the plane is in line with the bottom of the track grousers, automatic grading is activated and the blade starts moving to grade level.

When manually using the blade control lever to move the blade out of both of these windows, automatic grading is deactivated. To reactivate, the blade needs to be positioned into one of these windows or a lower jab needs to be performed.

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Continued on next page

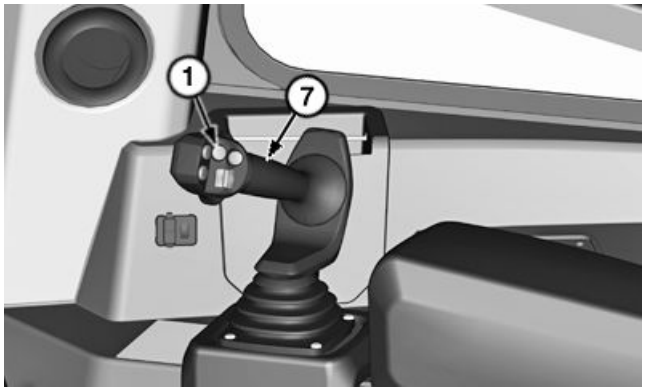
IDR2EHK,000032E -19-23MAR20-6/7

Window Enable Function (700L, 750L, and 850L)

The window enable function works in addition to the lower jab and raise jab features.

CAUTION: Prevent possible injury from unexpected machine movement. If automatic grade control is enabled and the blade is between 152 mm (6 in) above and 127 mm (5 in) below either grade level or the plane is in line with the bottom of the track grousers, the blade moves to grade level when the park brake is applied.

NOTE: When in reverse, the window enable function is disabled. To enable auto SmartGrade™, use the jab feature. Additionally, if auto SmartGrade™ is enabled when shifting to reverse, the machine will stay in auto mode.



TX1271617A —UN—24JAN19

Right-Hand Joystick

1— Automatic Blade Control On/Off Switch

7— Right-Hand Joystick

To use the window enable function, press the automatic blade control on/off switch (1) on the right-hand joystick (7) to enable the SmartGrade™ system.

To activate automatic grading using the window enable function, move the blade to a specific height. When the blade is between 152 mm (6 in) above and 127 mm (5 in) below either grade level or the plane is in line with the bottom of the track grousers, automatic grading is activated and the blade starts moving to grade level.

When manually using the right-hand joystick to move the blade out of both of these windows, automatic grading is deactivated. To reactivate, the blade needs to be positioned into one of these windows or a lower jab needs to be performed.

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IDR2EHK,000032E -19-23MAR20-7/7

Parking the Machine

650K

IMPORTANT: Avoid engine damage. Before stopping an engine that has been operating at working load, idle engine at 1/2 speed for 2 minutes to cool hot engine parts. If engine stalls while operating under load, restart engine immediately and idle at 1/2 speed for 2 minutes before stopping to allow coolant to continue circulating through engine.

IMPORTANT: To avoid damage to turbocharger, run engine at slow idle with no load for 2 minutes.

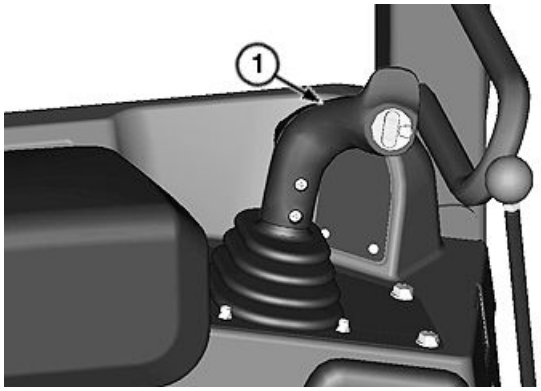
If engine stop switch (4) is pressed and the turbocharger needs to cool down, a pop-up displays on the monitor. The engine will run until the turbocharger is cool enough to shut down.

1. Park machine on a level surface.
2. Lower all equipment to ground.
3. Move transmission control lever (TCL) (1) to the neutral (N) position.

CAUTION: Prevent possible injury from unexpected machine movement. Never rely on transmission control lever (TCL) alone to keep machine from moving. Machine can unexpectedly roll or move under power, resulting in death or serious injury. Always engage park lock levers (2) to hold machine.

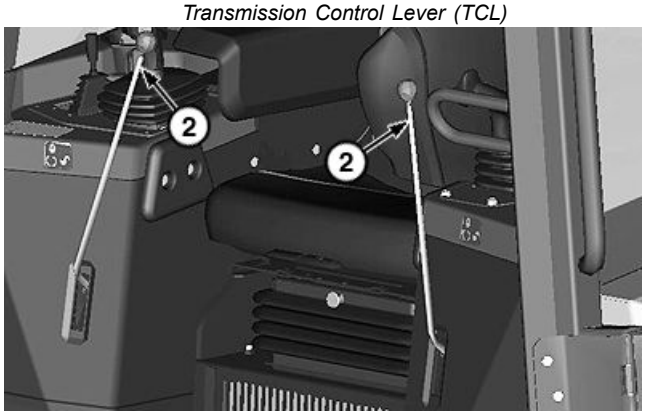
4. Move park lock levers (2) to the up (locked) position.
5. Run engine at 1/2 speed without load for 2 minutes.
6. Press engine speed decrease switch (3) on sealed switch module (SSM) to slow idle.
7. Press engine stop switch (4) to stop engine.

1— Transmission Control Lever (TCL)
2— Park Lock Lever (2 used)
3— Engine Speed Decrease Switch
4— Engine Stop Switch
5— Engine Start Switch
6— Hydraulic Enable Switch



Transmission Control Lever (TCL)

TX1176507 —UN—04NOV14



Park Lock Levers

TX1169521 —UN—19AUG14

Sealed Switch Module (SSM) (950K shown)

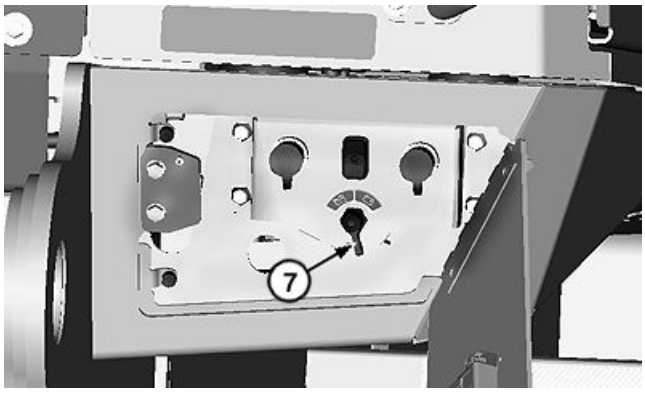
TX1223093 —UN—09SEP16

Continued on next page

IDR2EHK,000032F -19-17FEB20-1/3

8. Relieve pressure within the hydraulic system:
   a. Press and release engine start switch (5) once. DO NOT START engine.
   b. Press and hold the hydraulic enable switch (6) while moving the control levers to release hydraulic pressure.
   c. Press engine stop switch (4).
9. Turn battery disconnect switch (7) to the OFF position.

7— Battery Disconnect Switch



TX1163126 —UN—12JUN14

Battery Disconnect Switch

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IDR2EHK,000032F -19-17FEB20-2/3

700L, 750L, and 850L

IMPORTANT: Avoid engine damage. Before stopping an engine that has been operating at working load, idle engine at 1/2 speed for 2 minutes to cool hot engine parts. If engine stalls while operating under load, restart engine immediately and idle at 1/2 speed for 2 minutes before stopping to allow coolant to continue circulating through engine.

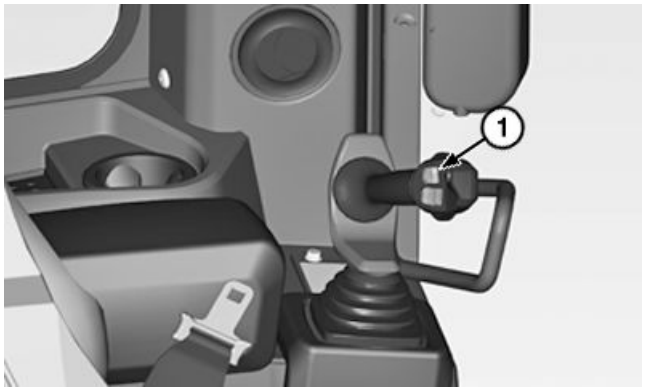
IMPORTANT: To avoid damage to turbocharger, run engine at slow idle with no load for 2 minutes.

1. Park machine on a level surface.
2. Lower all equipment to ground.
3. Set forward, neutral, and reverse (FNR) switch (1) on the left-hand joystick to neutral (N).

CAUTION: Prevent possible injury from unexpected machine movement. Never rely on FNR switch alone to keep machine from moving. Machine can unexpectedly roll or move under power, resulting in death or serious injury. Always engage the park brake to hold machine.

4. Press the park brake switch (2) on sealed switch module (SSM) to engage park brake.
5. Run engine at 1/2 speed without load for 2 minutes.
6. Press engine speed decrease switch (3) on SSM to slow idle.
7. Press engine stop switch (4) to stop engine.
8. Press and release engine start switch (5) once. DO NOT START engine.
9. Press and hold the hydraulic enable switch (6) while moving the control levers to release hydraulic pressure.
10. Press engine stop switch.
11. Turn battery disconnect switch (7) to the OFF position. For more information, see machine specific operator's manual.

1— Forward, Neutral, and Reverse (FNR) Switch
2— Park Brake Switch
3— Engine Speed Decrease Switch
4— Engine Stop Switch
5— Engine Start Switch
6— Hydraulic Enable Switch
7— Battery Disconnect Switch

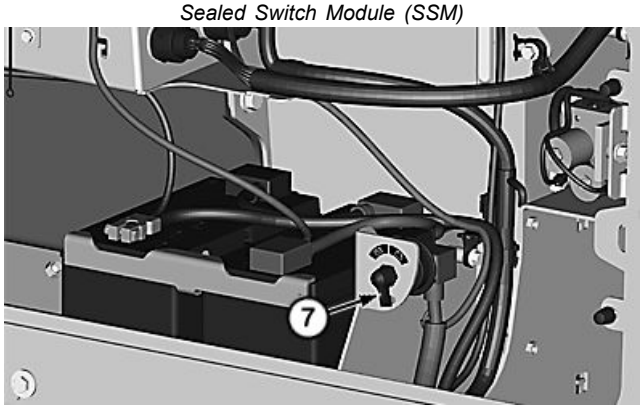


TX1268643A —UN—14JAN19

Left-Hand Joystick

TX1268656 —UN—15JAN19

Sealed Switch Module (SSM)



TX1268657A —UN—20NOV18

Battery Disconnect Switch (crawler machine shown)

IDR2EHK,000032F -19-17FEB20-3/3

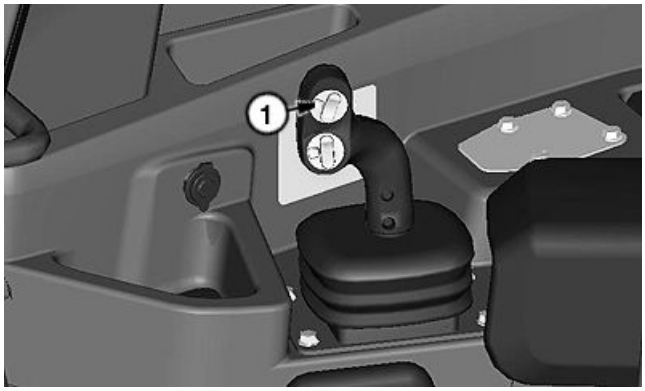
Operating SmartGrade™ System

When the SmartGrade™ system is enabled, the machine will direct the blade based on commands received from the 3DMC system.

Enabling SmartGrade™ System

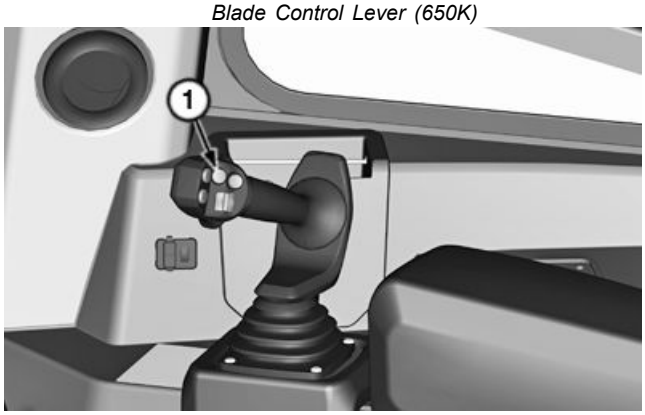
1. Enable hydraulics.
2. Activate the SmartGrade™ system display unit.

1— Automatic Blade Control On/Off Switch



TX1161234 —UN—20MAY14

Blade Control Lever (650K)



TX1269767A —UN—11DEC18

Right-Hand Joystick (700L, 750L. 850L)

SmartGrade is a trademark of Deere & Company

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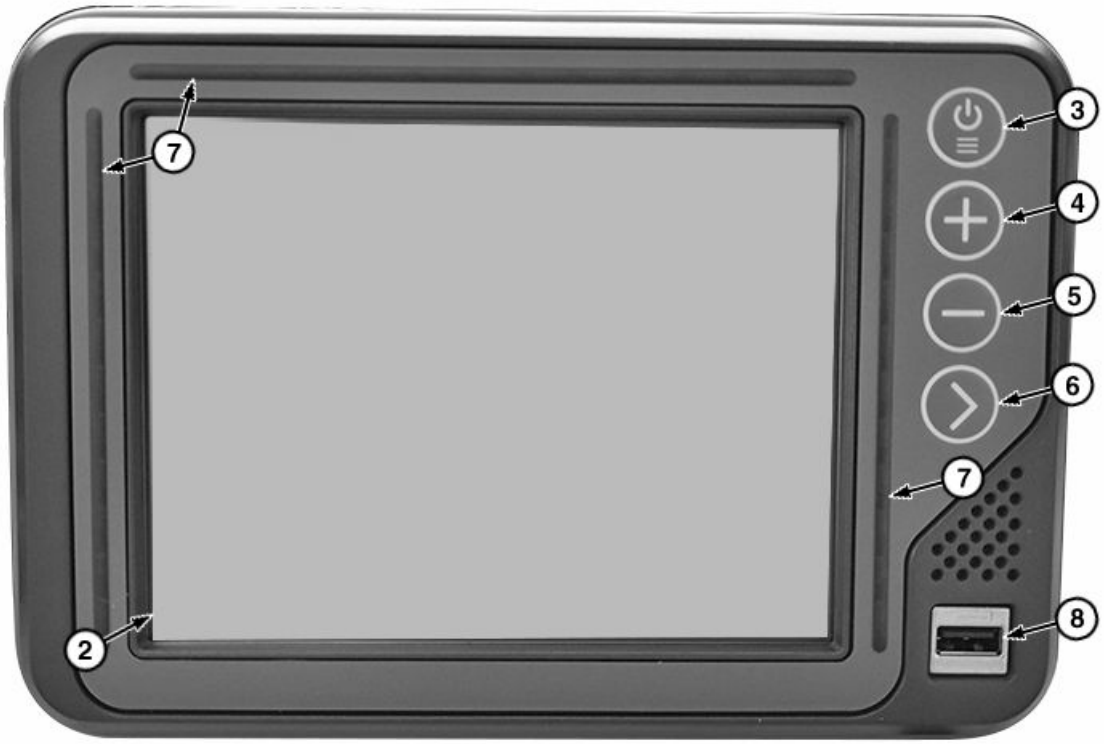
IDR2EHK,0000330 -19-24MAY23-1/3



TX1241907 —UN—19JUL17

Display

2— Touch Screen
3— Power/Menu Button
4— Zoom In Button
5— Zoom Out Button
6— Next View Button
7— Grade Indicator LED (3 used)
8— USB Port

3. Press and release the SmartGrade™ display unit power/menu button (3) for approximately 2 seconds until grade indicator LEDs (7) are illuminated on the monitor.

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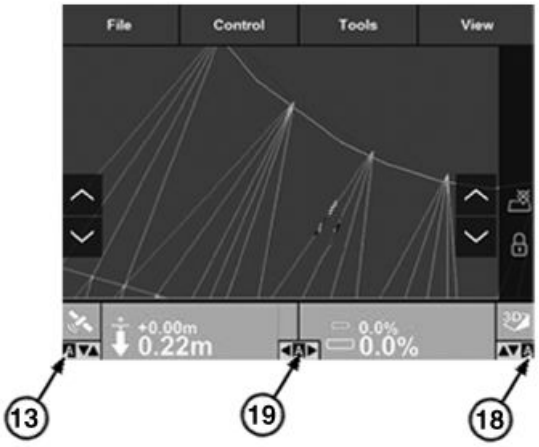
IDR2EHK,0000330 -19-24MAY23-2/3

Enabling SmartGrade™ Auto System—If equipped

1. **Left Blade Auto Indicator (13)**: Indicates whether automatic is on or off. Background color displays yellow when automatic is engaged. The feature is unavailable if a red warning is active.
2. **Right Blade Auto Indicator (18)**: Indicates whether automatic is on or off. Background color displays yellow when automatic is engaged. The feature is unavailable if a red warning is active.
3. **Side Shift Auto Indicator (19)**: Indicates whether automatic is on or off. Background color displays yellow when automatic is engaged. The feature is unavailable if a red warning is active.

13— Left Blade Auto Indicator
19— Side Shift Auto Indicator
18— Right Blade Auto Indicator



XJ1343688A —UN—18MAY23

Main Screen Auto System— (if equipped)

IDR2EHK,0000330 -19-24MAY23-3/3

Main Display and Functions

Main Screen Display

The software interface between the operator and the machine components uses 3DMC, which is only equipped on a SmartGrade™ system.

Main Screen (1): Display screen varies according to the selected file and display options.

FILE Menu (2): Displays FILE submenu options.

CONTROL Menu (3): Displays CONTROL submenu options.

TOOLS Menu (4): Displays TOOLS submenu options.

VIEW Menu (5): Displays VIEW submenu options.

Shortcut Icons (6): Shortcut icons allow operator to enable, disable, or change functionality of an option. For more information, see Enable/Disable Shortcut Buttons. (Section 2-3.)

GNSS Info Button (7): The global navigation satellite system (GNSS) info button displays GNSS status. Background color indicates GNSS status:

- Green indicates that satellites are currently tracked.
- Red indicates that satellites are unable to be tracked.

Select the GNSS button to display the GNSS INFO screen. For more information, see GNSS Information. (Section 4-1.)

Type of Control Indicator (8): Displays the current control mode.

Elevation Control Button (9): Displays the cut/fill readings and the cut/fill offsets for the elevation of the blade or implement. The elevation control button also indicates the status of the connected sensor and blade elevation with graphics and colors. The information displayed is different depending on the control application.

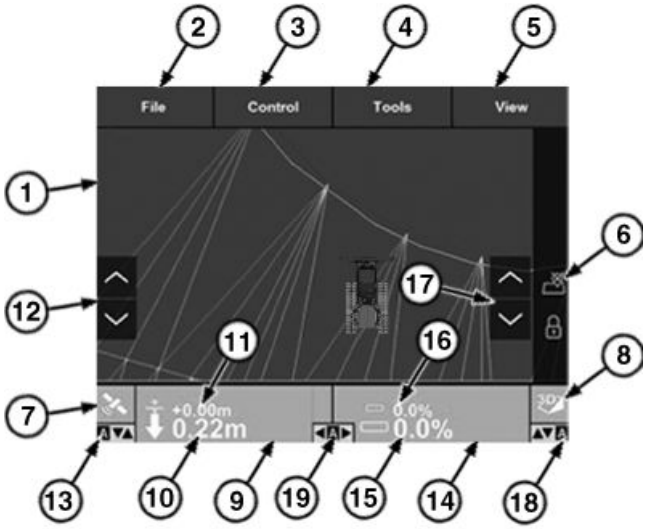
Elevation control button background color indicates sensor status:

- Green indicates sensor status suitable for grading.
- Red indicates an error status and that automatic control is disabled.

Select the elevation control button to display the ADJUST ELEVATION screen. For more information, see Elevation Control Button. (Section 4-1.)

Cut/Fill Reading (10): Displays the current cut/fill reading or distance from the blade control point to the currently selected set point. The number continuously updates according to the elevation difference between the cutting edge and the design surface.

Cut/Fill Set Point (11): Displays the current set point or vertical offset to the design surface. The operator can change this setting at any time using the increment and decrement buttons on each of the hand controls or using the optional left and right set point control buttons (12 and 17) on the main screen.



TX1293433A —UN—06MAR20

Main Screen

1— Main Screen
2— FILE Menu
3— CONTROL Menu
4— TOOLS Menu
5— VIEW Menu
6— Shortcut Icon (number varies)
7— GNSS Info Button
8— Type of Control Indicator
9— Elevation Control Button
10— Cut/Fill Reading
11— Cut/Fill Set Point
12— Left Set Point Control Button
13— Left Blade Auto Indicator
14— Slope Control Button
15— Design Cross Slope
16— Current Cross Slope
17— Right Set Point Control Button
18— Right Blade Auto Indicator
19— Side Shift Auto Indicator

Left Set Point Control Button (12): Used to manually adjust the left offset.

Left Blade Auto Indicator (13): Indicates whether automatic is on or off. Background color displays yellow when automatic is engaged. The feature is unavailable if a red warning is active.

Slope Control Button (14): Displays the slope of the blade or implement. The slope control button also indicates the status of the connected sensor and blade slope with graphics and colors. The information that displays is different depending on the control application.

Slope control button background color indicates sensor status:

- Green indicates sensor status suitable for grading.
- Red indicates an error status and that automatic control is disabled.

Select the slope control button to display the ADJUST SLOPE screen. For more information, see Slope Control Button. (Section 4-1).

Design Cross Slope (15): Displays the current slope of the design surface perpendicular to the heading of the machine. The design cross slope blade icon tilts to represent the direction of the design surface.

Continued on next page

Current Cross Slope (16): Displays the current blade cross slope. The blade slope icon tilts to represent the direction of the slope of the blade.

Right Set Point Control Button (17): Used to adjust the right control offset manually. The operator can change this setting at any time using the increment and decrement buttons on each of the hand controls or using the optional left and right set point control buttons (12 and 17) on the main screen.

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Right Blade Auto Indicator (18): Indicates whether automatic is on or off. Background color displays yellow when automatic is engaged. The feature is unavailable if a red warning is active.

Side Shift Auto Indicator (19): Indicates whether automatic is on or off. Background color displays yellow when automatic is engaged. The feature is unavailable if a red warning is active.

PN36905,000A035 -19-27MAR20-2/2

Keyboard Functions

When entering text or numbers, one of the following two pop-up keyboards display:

- Alphanumeric keyboard: Used to enter both letters and numbers.
- Numeric keyboard: Used to enter numbers only.

To access the alphanumeric or numeric keyboard from any text entry field, select desired field to enter the letters or numbers on the keyboard. Select OK on keyboard for entered information to become valid and keyboard will disappear.

IDR2EHK,0000338 -19-15DEC20-1/1

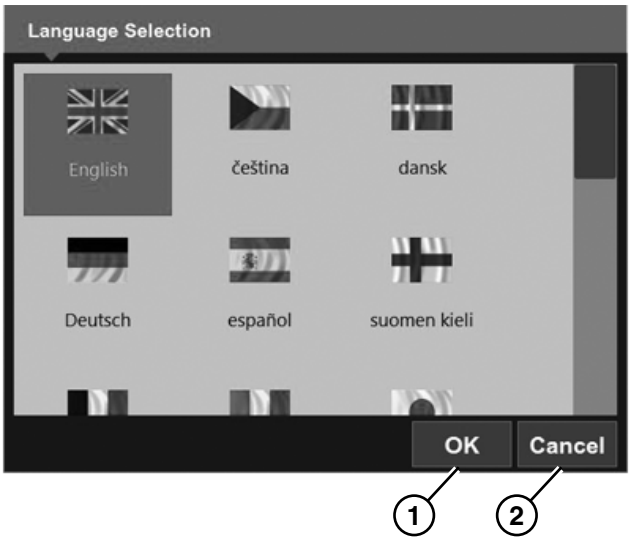
Changing Language

Navigate through menu: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> LANGUAGE SELECTION**.

Select desired language represented by flag icons and select OK (1). Selecting CANCEL (2) will exit LANGUAGE SELECTION screen without changing language.

1— OK

2— CANCEL



TX1265191 —UN—02OCT18

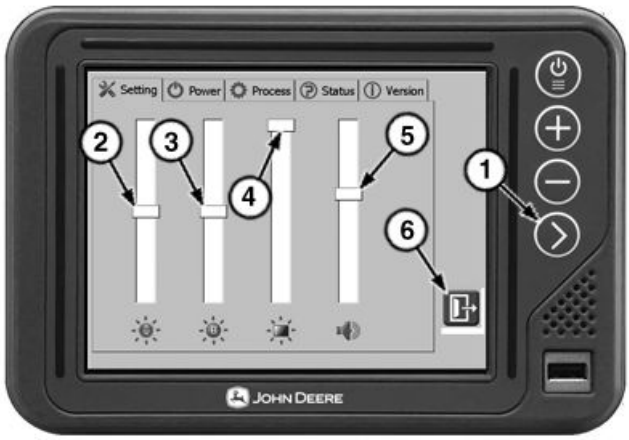
LANGUAGE SELECTION Screen

PN36905,000A036 -19-15DEC20-1/1

Changing Screen Brightness and Speaker Volume

NOTE: The screen brightness and speaker volume configuration screen appears in front of the 3DMC application when activated. However, any active 3DMC menus or pop-up screens receive priority placement and remain in front of the configuration screen. Active 3DMC menus and pop-up screens must be cleared before screen brightness and volume settings can be adjusted.

1. Press and hold the next view button (1) for 3 seconds to activate the configuration screen.
2. Adjust the LED brightness slider (2), button brightness slider (3), and screen brightness slider (4) to the desired level.
3. Use the volume slider (5) to adjust the volume of the internal speaker.
4. Select the exit button (6) to return to the main screen.



TX1263991 —UN—11SEP18

Screen Brightness and Speaker Volume Configuration Screen

1— Next View Button
2— LED Brightness Slider
3— Button Brightness Slider
4— Screen Brightness Slider
5— Volume Slider
6— Exit Button

PN36905,000A00B -19-28FEB20-1/1

Changing the Grade Indicator Scale

NOTE: Grade indicators can be added and removed in the layout menu. See View Menu—Layout. (Section 2-3.)

Change the Grade Display

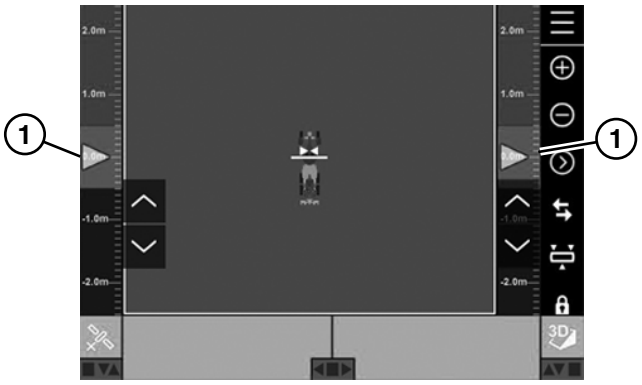
1. From the main screen, select the left or right grade indicator (1). The grade indicator context menu appears.
2. Select GRADE DISPLAY (2). Select the desired option.
   - **AT LEFT EDGE** (3) or AT RIGHT EDGE: The grade tape follows the left (or right) edge position of the blade.
   - **IN FROM EDGE** (4): The grade tape follows a position on the blade, which is an entered distance from the left (or right) edge. Select to display the numeric pop-up keyboard and enter a distance from the left (or right) edge. Select the OK button to return to the main screen.

Change the On-Grade or Extent Deadband

On the main screen, select a grade indicator and then select the desired GRADE DISPLAY menu option.

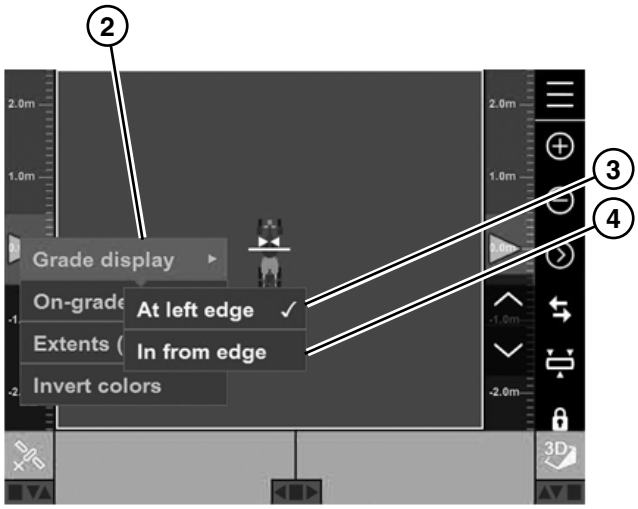
- **ON-GRADE**: Displays the current on-grade (green zone) width. Select to change the on-grade width.
- **EXTENTS**: Displays the current scale (unit spacing) for the grade indicator. Select to change the unit spacing.
- **INVERT COLORS**: Reverses colors of the grade indicator.

1— Grade Indicator (2 used)
2— GRADE DISPLAY
3— AT LEFT EDGE
4— IN FROM EDGE



TX1264949 —UN—25SEP18

Grade Indicator Screen



TX1264950 —UN—25SEP18

Grade Indicator Content Menu Screen

PN36905,000A067 -19-27MAR20-1/1

File Menu

The FILE menu contains information needed to accurately grade a work site.

FILE Menu Option Items	
Menu Items	**Description**
PROJECTS	Allows operator to create, export, and edit project files.
CONTROL	Allows operator to add or edit control point files.
LAYERS	Allows operator to add or edit layer files.
POINTS	Allows operator to add or edit points files.
SURFACES	Allows operator to add or edit surface files.
ACTIVE	Allows operator to select desired active surface or alignment files.
IMPORT/EXPORT	Allows operator to import or export various file types.
EXIT	Allows operator to exit 3DMC.

PN36905,000A02B -19-06MAR20-1/1

File Menu—Projects

A design project file for the job site is required when operating in three-dimensional (3D) mode. The correct file must be imported into the display unit and selected as the project for the job site.

Creating a Project File

1. Navigate from main screen: **MAIN MENU >> FILE >> PROJECTS >> NEW**.
2. Using the alphanumeric keyboard, enter the name of the project.

NOTE: Project will only contain information being copied from an active project. If no data is selected, the project will not contain any data.

3. Select the optional check boxes for the type of data to be preloaded from the current active project.
4. Select the OK button.

Copying Project Files From USB

1. Insert the USB key into the display unit USB port.
2. Navigate from main screen: **MAIN MENU >> FILE >> PROJECTS**. The PROJECT FILES screen appears.
3. Select the COPY button. The COPY FILES screen appears.
4. Select USBHARDDISK to 3DMC folder of the USB key in the FROM drop-down list.
5. Select the file to copy from the PROJECT FILES list and select the COPY button.

Exporting and Renaming Files in a Project

1. Navigate from main screen: **MAIN MENU >> FILE >> PROJECTS**. The PROJECT FILES screen appears.
2. Select the EXPORT button. The EXPORT PROJECT FILES screen appears.
3. Choose the export destination for the file by selecting the location from the WHERE drop-down list.
4. Select the ALL button to select or deselect all files. The status under the EXPORT column changes.
5. To select individual files for export, choose an individual file and select the SELECT button. The status under the EXPORT column for the selected file changes.
6. To rename a file, choose an individual file and select the RENAME button. Enter the new file name and select OK to return to the EXPORT PROJECT FILES screen.
7. Select OK to export the files and return to the PROJECT FILES screen.
8. Select OK to return to the main screen.

PN36905,000A00F -19-06MAR20-1/1

File Menu—Control

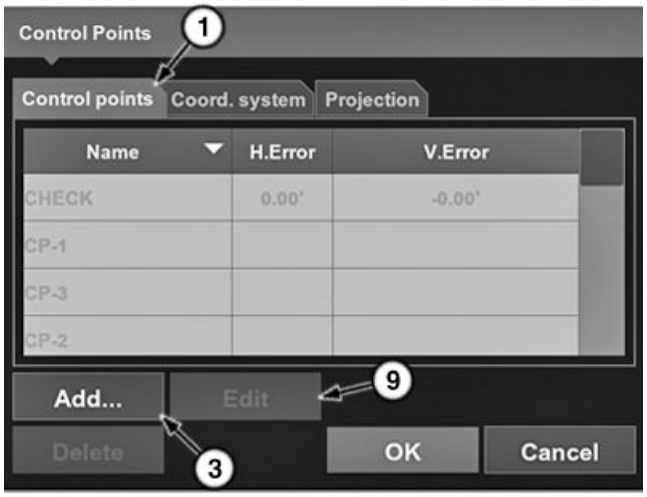
Control points are typically created from known reference points that have been obtained from a surveyor to define the legal extents of a property. Control points localize a design to the specific plot or point-of-interest (POI) in which it is being used.

Importing Control Point Files

For more information on importing control point files, see File Menu—Import/Export. (Section 2-3.)

Adding a New Control Point

1. Navigate from main screen: **MAIN MENU >> FILE >> CONTROL**. The CONTROL POINTS screen appears and the CONTROL POINTS tab (1) is active.
2. Select the ADD button (3). The CONTROL POINT editing screen appears.
3. Enter a name for the new control point.



TX1293712A —UN—09MAR20

Control Points Screen

1— CONTROL POINTS Tab
3— ADD Button
9— EDIT Button

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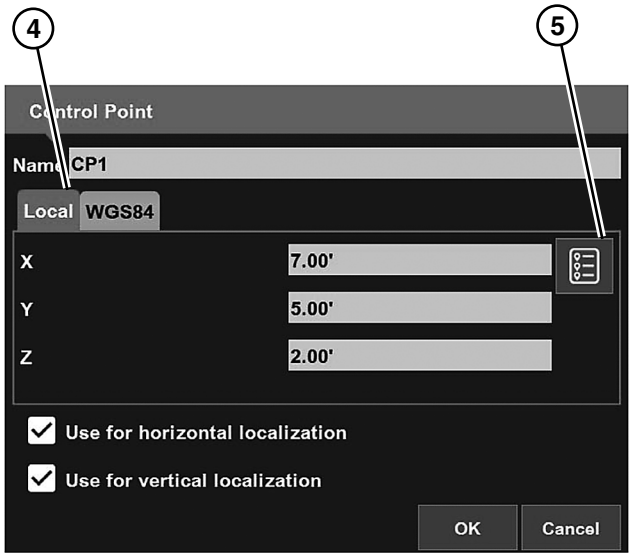
PN36905,000A037 -19-16MAR20-1/3

4. If adding a control point from an existing project file or a single known point, select the LOCAL tab (4). If known, enter the values for X, Y, and Z. If unknown, select the control point button (5) to pick from a list of points in the active project.

4— LOCAL Tab

5— Control Point Button



TX1264038 —UN—11SEP18

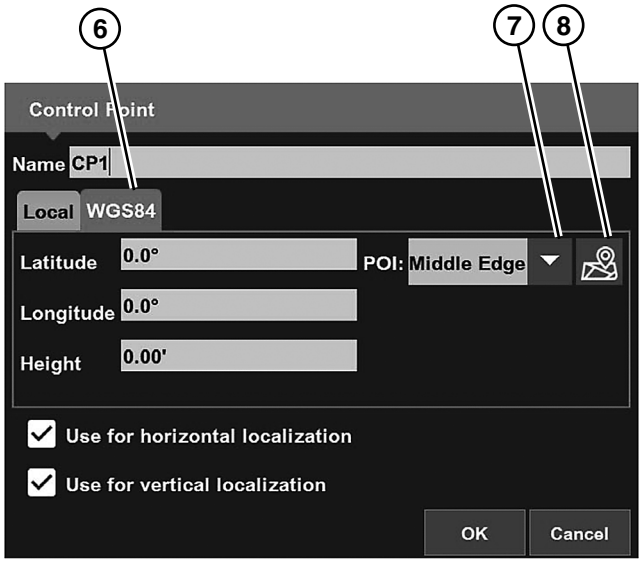
Control Point Editing Screen With Local Tab Selected

PN36905,000A037 -19-16MAR20-2/3

5. If a single-point global navigation satellite system (GNSS) measurement is needed to add a control point, select the WGS84 tab (6). On the POI drop-down list (7), choose the location on the blade for a measurement and select the measure point button (8). The system takes a single GNSS measurement and automatically populates the values for LATITUDE, LONGITUDE, and HEIGHT.
6. Select the USE FOR HORIZONTAL LOCALIZATION check box and the USE FOR VERTICAL LOCALIZATION check box if the new control point is to be used for GNSS localization.
7. Select OK to return to the CONTROL POINTS screen.
8. Select OK again to return to the main screen.

Editing a Control Point

1. Navigate from main screen: **MAIN MENU >> FILE >> CONTROL**. The CONTROL POINTS screen appears and the CONTROL POINTS tab is active.
2. Select a control point from the list and then select the EDIT button (9). The CONTROL POINT editing screen appears.
3. Edit the control point name, site coordinates, or global positioning system (GPS) coordinates.
4. Select OK to return to CONTROL POINTS screen.
5. Select OK again to return to the main screen.



TX1264039 —UN—11SEP18

Control Point Editing Screen With WGS84 Tab Selected

6— WGS84 Tab

7— POI Drop-Down List

8— Measure Point Button

PN36905,000A037 -19-16MAR20-3/3

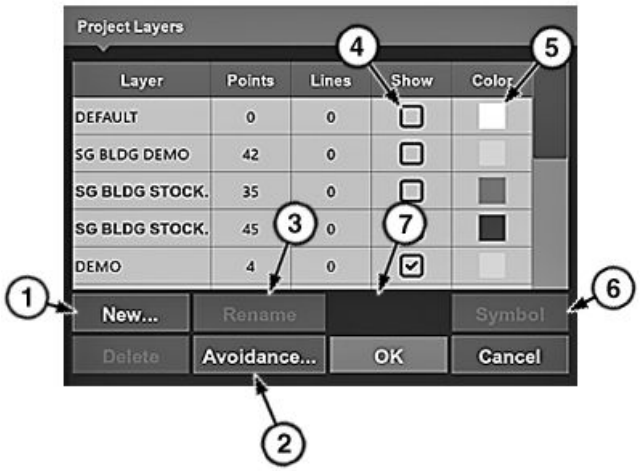
File Menu—Layers

Adding a New Layer

1. Navigate from main screen: **MAIN MENU >> FILE >> LAYERS**. The PROJECT LAYERS screen appears.
2. Select the NEW button (1). Enter a name for the new layer.
3. Select OK. The layer appears in the PROJECT LAYERS screen.

Editing Layer Properties

1. Navigate from main screen: **MAIN MENU >> FILE >> LAYERS**. The PROJECT LAYERS screen appears.
2. Select the layer to be edited from the list to modify the desired settings.
   a. To rename a layer, select the RENAME button (3) and enter the new layer name.
   b. To show or hide a layer on the main screen, select the layer visibility check box (4).
   c. To change the color of layer objects on the main screen, select the layer color swatch (5) next to the layer. The COLOR SELECTION screen appears. Select the desired color and select the OK button to return to the PROJECT LAYERS screen.
   d. To change the symbol for the points within a layer, select the SYMBOL button (6) to cycle through the symbol options. The current layer symbol (7) appears above the OK button. Continue selecting the SYMBOL button until the desired symbol is shown. The symbol color will match the layer color.



TX1293714A —UN—09MAR20

Project Layers Screen

1— NEW Button
2— AVOIDANCE Button
3— RENAME Button
4— Layer Visibility Check Box
5— Layer Color Swatch
6— SYMBOL Button
7— Current Layer Symbol

   e. To set up an avoidance area within your layer, select the AVOIDANCE button (2).

3. Select OK to return to the main screen.

Importing Layers

For more information on importing layer files, see File Menu—Import/Export. (Section 2-3.)

PN36905,000A038 -19-16MAR20-1/1

File Menu—Points

Create a New Point

1. Navigate from main screen: **MAIN MENU >> FILE >> POINTS**. The POINTS screen appears.
2. Select the NEW button (1). The POINT screen appears.
3. Select the NAME data field (5). Enter a name using the alphanumeric keyboard. Select the OK button to return to the POINT screen.
4. Select the DESCRIPTION data field (6). Enter a description using the alphanumeric keyboard. Select the OK button to return to the POINT screen.
5. Select the LAYER drop-down menu (7) and choose an existing layer to which to assign the new point.

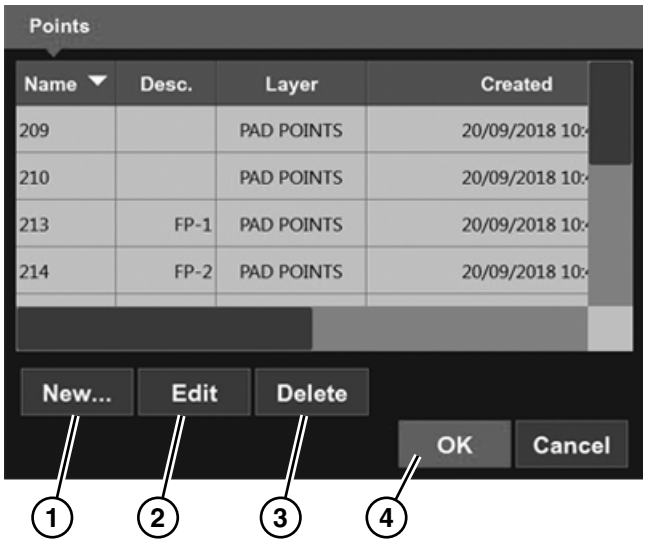
   If a new layer is desired, select <NEW LAYER> and enter a name using the alphanumeric keyboard.
6. Enter known values in the X, Y, and Z data fields (8—10) or measure a new point with 3DMC by navigating to **TOOLS MENU >> POSITION CHECK** or **TOOLS MENU >> TOPO SURVEY**. Select the OK button (11) to add the new point and return to the POINTS screen. The new point appears in the list.
7. Select the OK button (4) to return to the main screen.

Editing a Point

1. Navigate from main screen: **MAIN MENU >> FILE >> POINTS**. The POINTS screen appears.
2. Select an existing point from the list. Only points on visible layers are shown on the POINTS screen.
3. Select the EDIT button (2). The POINT screen appears.
4. Update the desired information. Select the OK button to save the changes and return to the POINTS screen.

Deleting a Point

1. Navigate from main screen: **MAIN MENU >> FILE >> POINTS**. The POINTS screen appears.
2. Select an existing point from the list. Only points on visible layers are shown on the POINTS screen.
3. Select the DELETE button (3). A delete confirmation pop-up window appears.
4. Select YES to delete the point and return to the POINTS screen or select NO to retain the point and return to the POINTS screen.
5. Select the OK button (11) to return to the main screen.



TX1265607 —UN—03OCT18

Points Screen

TX1293716A —UN—09MAR20

Point Screen

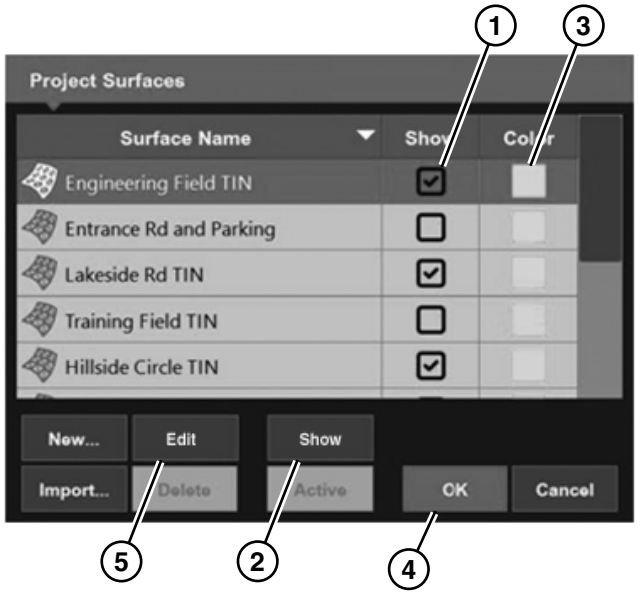
1— NEW Button
2— EDIT Button
3— DELETE Button
4— OK Button
5— NAME Data Field
6— DESCRIPTION Data Field
7— LAYER Drop-Down Menu
8— X Data Field
9— Y Data Field
10— Z Data Field
11— OK Button

Importing a Point

For more information on importing point files, see File Menu—Import/Export. (Section 2-3.)

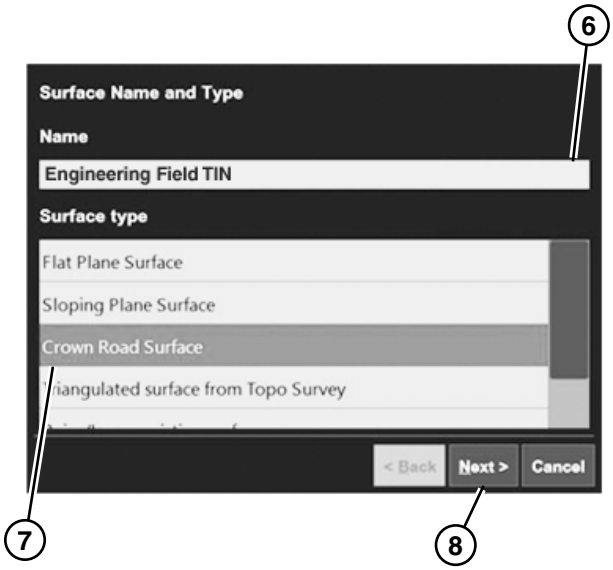
PN36905,000A039 -19-06MAR20-1/1

File Menu—Surfaces



TX1266540 —UN—11OCT18

Project Surfaces Screen



TX1266541 —UN—11OCT18

Surface Name and Type Screen

1— Surface Visibility Check Box
2— SHOW Button
3— Surface File Color Swatch
4— OK Button
5— EDIT Button
6— NAME Data Field
7— SURFACE TYPE List
8— NEXT Button

Displaying Surface or Alignment Files

NOTE: Alignment files are a type of surface file. When modifying display options or editing these files, surface files and alignment files are treated the same.

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.

NOTE: Files shown in the SURFACE NAME list include surface files and alignment files.

2. Select a surface or alignment file to modify the visibility settings. The selected file is highlighted.
3. To change visibility of the selected file on the main screen, select the surface visibility check box (1) or select the SHOW button (2). A visibility check box displayed with a check mark designates that the file is visible.
4. To change the color of the selected file on the main screen, select the surface file color swatch (3) next to the name of the file. The COLOR SELECTION screen appears.
5. Select the desired color and select the OK button to return to the PROJECT SURFACES screen. The surface file color swatch appears with the selected color.
6. Select the OK button (4) to return to the main screen.

Editing Surface or Alignment Files

To rename or edit the settings of a surface or alignment file, see the following:

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.

NOTE: Files shown in the SURFACE NAME list include surface files and alignment files.

2. Select a surface or alignment file from the SURFACE NAME list. The selected file is highlighted.
3. Select the EDIT button (5). The SURFACE NAME and TYPE screen appears.
4. To change the file name, select the NAME data field (6).
   a. Enter a new name using the alphanumeric keyboard.
   b. Select the OK button to return to the SURFACE NAME AND TYPE screen.
5. In the SURFACE TYPE list (7), note the highlighted file type. Reference the following list for detailed information about modifying settings for each type of surface file:
   a. Flat Plane Surface. (See Creating Flat or Sloping Surface Files in this section.)
   b. Sloping Plane Surface. (See Creating Flat or Sloping Surface Files in this section.)

Continued on next page

c. Crown Road Surface. (See Creating Crown Road Surface Files in this section.)

d. Triangulated Surface From Topo Survey. (See Creating Triangulated Surface From a Topo Survey File in this section.)

e. Raise/Lower Existing Surface. (See Raising or Lowering an Existing Surface in this section.)

6. Select the NEXT button (8). A settings screen that corresponds to the surface file type appears.
7. Modify settings and select the FINISH button. Settings are saved and the PROJECT SURFACES screen appears.
8. Select the OK button to return to the main screen.

Importing Surface or Alignment Files

For more information on importing surface files, see File Menu—Import/Export. (Section 2-3.)

PN36905,000A03C -19-06MAR20-2/2

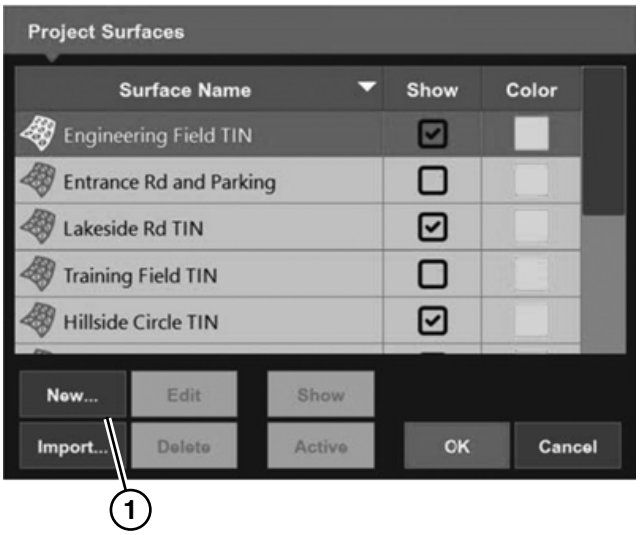
Surface File Types

SURFACE FILE Types	
Menu Items	**Description**
FLAT PLANE SURFACE/SLOPE PLANE SURFACE (PL3)	A planar (flat) surface with a 0% cross slope and mainfall, primarily used for building pads. A sloping surface with cross slope and mainfall based on a reference elevation.
CROWN SURFACE FILE (RD3)	A crown surface file enables the user to define a center line and to add a simple cross section, including width and cross slope.
TIN SURFACE FROM TOPO SURVEY FILE (TN3)	A triangulated irregular network (TIN) surface represents a surface as a network of non-overlapping triangles. Within each triangle, the surface is represented by a plane. The triangles are made from a set of points called mass points.
AS-BUILT SURFACE FILE	A color map of the graded surface.

PN36905,000A03B -19-15DEC20-1/1

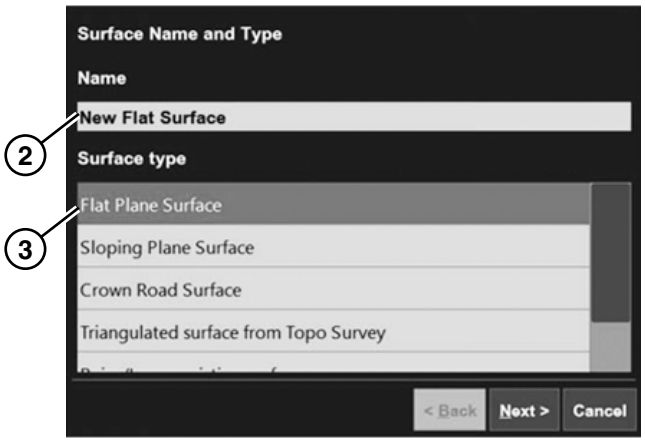
Creating Flat or Sloping Surface Files

Create a Flat Surface With Known Points



TX1264117 —UN—12SEP18

Project Surfaces Screen



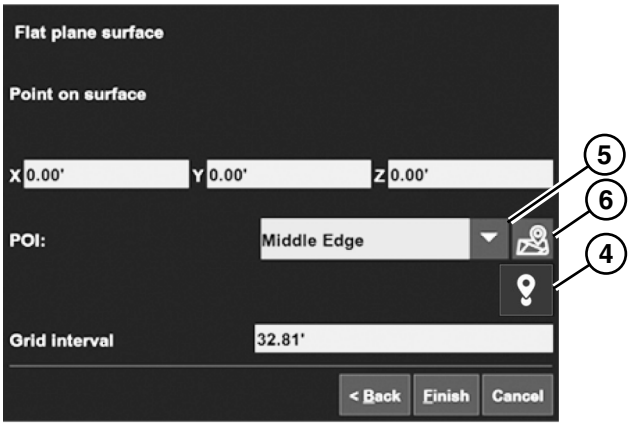
TX1264118 —UN—12SEP18

Surface Name and Type Screen

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button (1). The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field (2) using the alphanumeric keyboard.
4. Select FLAT PLANE SURFACE from SURFACE TYPE menu (3).
5. Select the NEXT button. The FLAT PLANE SURFACE screen appears.
6. If adding POINT ON SURFACE reference points manually, enter the values for X, Y, and Z.
7. If adding a saved point, select the point button (4) and then select the corresponding surface reference point. The POINT ON SURFACE values for X, Y, and Z appear after the point is selected.

NOTE: When adding saved points with the point button (4), only the reference points on visible layers are available.

8. Select the FINISH button.
9. At the prompt, select YES to set the new surface as active or select NO to return to the PROJECT SURFACES screen and make new surface inactive.
10. Select OK to return to the main screen.



TX1264119 —UN—10OCT18

Flat Plane Surface Screen

1— NEW Button
2— NAME Field
3— SURFACE TYPE Menu
4— Point Button
5— Point of Interest (POI) Drop-Down List
6— Measure Point Button

Create a Flat Surface by Measuring Points

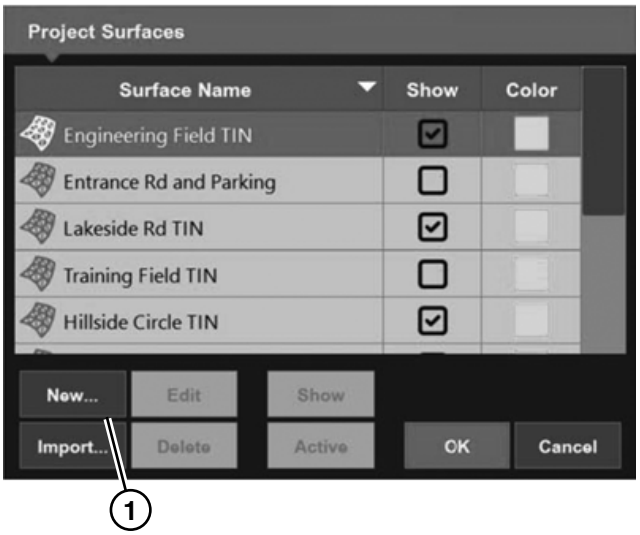
1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.

Continued on next page

2. Select the NEW button. The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field using the alphanumeric keyboard.
4. Select FLAT PLANE SURFACE from SURFACE TYPE menu.
5. Select the NEXT button. The FLAT PLANE SURFACE screen appears.
6. Move the machine and position the cutting edge on the reference point.
7. On the point of interest (POI) drop-down list (5), choose the location of the reference point on the blade for a measurement.
8. Select the measure point button (6). The POINT ON SURFACE values for X, Y, and Z appear when measuring is finished.
9. Select the FINISH button.
10. At the prompt, select YES to set the new surface as active or select NO to return to the PROJECT SURFACES screen and make new surface inactive.
11. Select OK to return to the main screen.

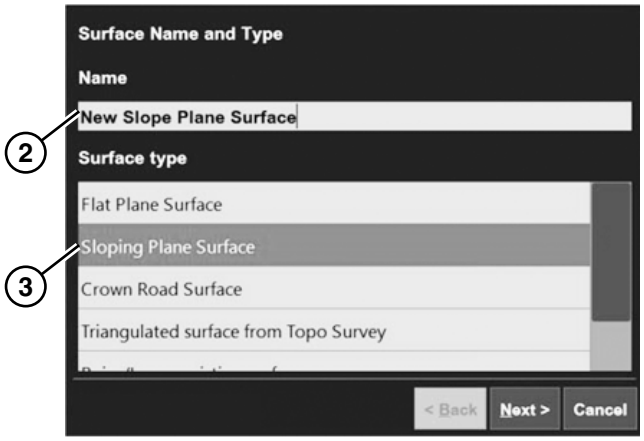
Continued on next page

Create a Sloping Plane Surface With Known Points



TX1264131 —UN—12SEP18

Project Surfaces Screen



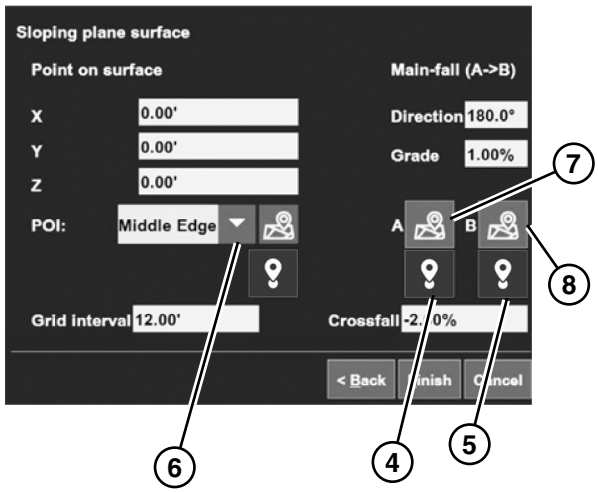
TX1264134 —UN—12SEP18

Surface Name and Type Screen

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button (1). The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field (2) using the alphanumeric keyboard.
4. Select SLOPING PLANE SURFACE from SURFACE TYPE menu (3).
5. Select the NEXT button. The SLOPING PLANE SURFACE screen appears.
6. If adding POINT ON SURFACE reference points manually, enter the values for X, Y, and Z. Enter the MAIN-FALL (A->B) values for DIRECTION and GRADE.
7. If adding saved points, select the point A button (4) and then select the corresponding surface reference point. The POINT ON SURFACE values for X, Y, and Z appear after selecting point A. Repeat by selecting the point B button (5) and then selecting the corresponding surface reference point. The MAIN-FALL (A->B) values for DIRECTION and GRADE appear after selecting point B.
8. Enter desired GRID INTERVAL measurement.

NOTE: Setting the GRID INTERVAL measurement to the same length as the cutting edge helps keep passes straight.

9. Enter desired CROSSFALL percentage.



TX1264135 —UN—10OCT18

Sloping Plane Surface Screen

1— NEW Button
2— NAME Field
3— SURFACE TYPE Menu
4— Point A Button
5— Point B Button
6— Point of Interest (POI) Drop-Down List
7— Measure Point A Button
8— Measure Point B Button

10. Select the FINISH button.
11. At the prompt, select YES to set the new surface as active or select NO to return to the PROJECT SURFACES screen and make new surface inactive.

Continued on next page

12. Select OK to return to the main screen.

Create a Sloping Plane Surface by Measuring Points

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button. The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field using the alphanumeric keyboard.
4. Select SLOPING PLANE SURFACE from SURFACE TYPE menu.
5. Select the NEXT button. The SLOPING PLANE SURFACE screen appears.
6. Move the machine and position the cutting edge on reference point A.
7. On the point of interest (POI) drop-down list (6), choose the location of the reference point on the blade for a measurement.
8. Select the measure point A button (7). The POINT ON SURFACE values for X, Y, and Z appear when measuring is finished.
9. Move the machine and position the cutting edge on reference point B.
10. On the POI drop-down list, choose the location of the reference point on the blade for a measurement.
11. Select the measure point B button (8). The POINT ON SURFACE values for X, Y, and Z appear when finished measuring. Additionally, the MAIN-FALL (A->B) comparison values for DIRECTION and GRADE appear.
12. Enter desired GRID INTERVAL measurement.

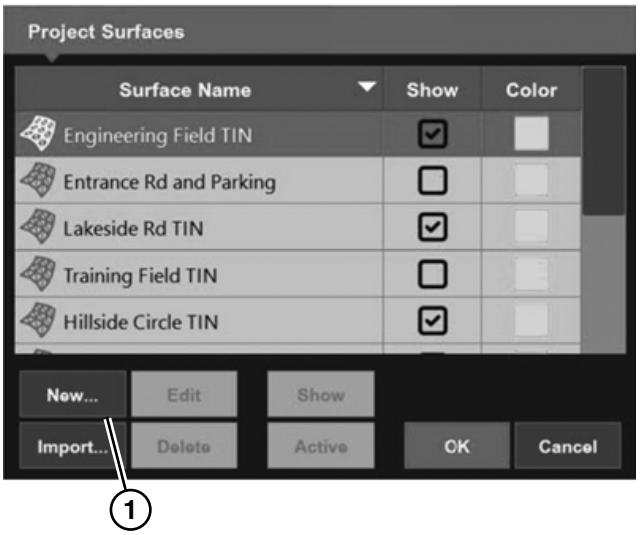
NOTE: Setting the GRID INTERVAL measurement to the same length as the cutting edge helps keep passes straight.

13. Enter desired CROSSFALL percentage.
14. Select the FINISH button.
15. At the prompt, select YES to set the new surface as active or select NO to return to the PROJECT SURFACES screen and make new surface inactive.
16. Select OK to return to the main screen.

PN36905,000A03D -19-09MAR20-4/4

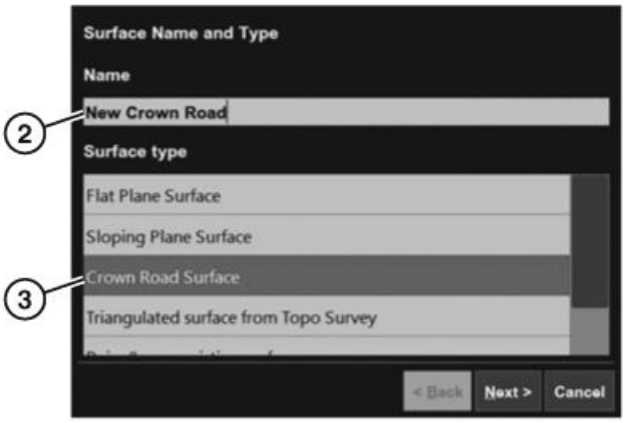
Creating Crown Road Surface Files

Create a Crown Road Surface With Known Points



TX1264204 —UN—13SEP18

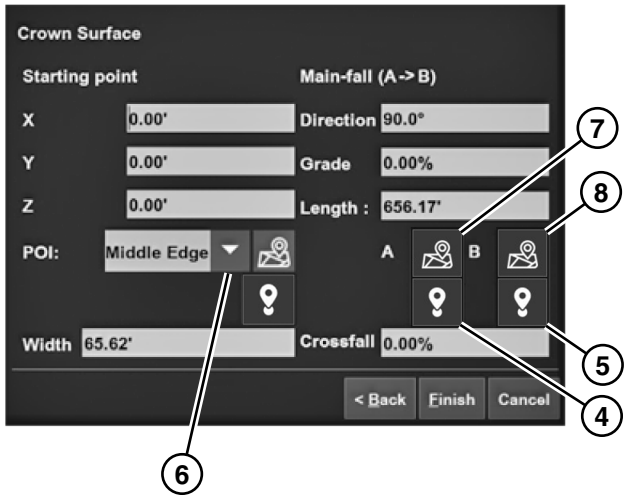
Project Surfaces Screen



TX1264205 —UN—13SEP18

Surface Name and Type Screen

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button (1). The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field (2) using the alphanumeric keyboard.
4. Select CROWN ROAD SURFACE from SURFACE TYPE menu (3).
5. Select the NEXT button. The CROWN SURFACE screen appears.
6. Enter the STARTING POINT reference values for X, Y, and Z.
7. Manually enter the MAIN-FALL (A->B) values for DIRECTION, GRADE, and LENGTH.
8. Enter desired WIDTH of the road.
9. Enter desired CROSSFALL percentage.
10. Select the FINISH button.
11. At the prompt, select YES to set the new surface as active or select NO to make new surface inactive. The main screen appears.



TX1264207 —UN—10OCT18

Crown Surface Screen

1— NEW Button
2— NAME Field
3— SURFACE TYPE Menu
4— Point A Button
5— Point B Button
6— Point of Interest (POI) Drop-Down Menu
7— Measure Point A Button
8— Measure Point B Button

Create a Crown Road Surface With Saved Points

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button. The SURFACE NAME AND TYPE screen appears.

Continued on next page

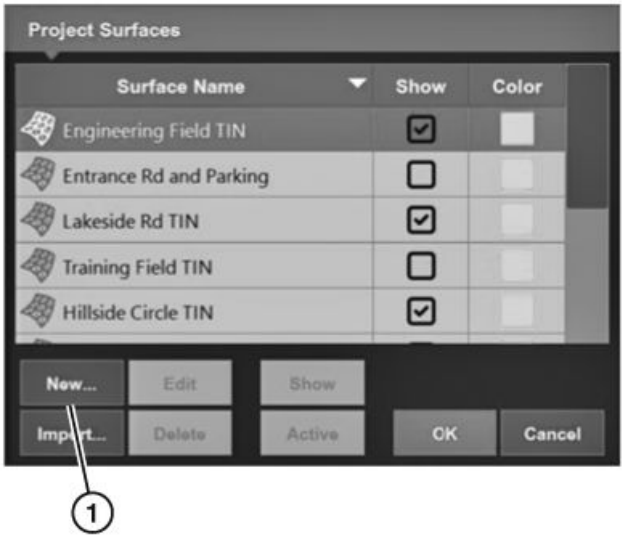
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field using the alphanumeric keyboard.
4. Select CROWN ROAD SURFACE from SURFACE TYPE menu.
5. Select the NEXT button. The CROWN SURFACE screen appears.
6. To add saved points, select the point A button (4) and select the corresponding surface reference point. The STARTING POINT values for X, Y, and Z appear.
7. To add a second saved point, select the point B button (5) and select the corresponding surface reference point. The STARTING POINT values for X, Y, and Z appear. Additionally, the MAIN-FALL (A->B) comparison values for DIRECTION, GRADE, and LENGTH appear.
8. Enter desired WIDTH of the road.
9. Enter desired CROSSFALL percentage.
10. Select the FINISH button.
11. At the prompt, select YES to set the new surface as active or select NO to make new surface inactive. The main screen appears.

Create a Crown Road Surface By Measuring Points

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button. The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field using the alphanumeric keyboard.
4. Select CROWN ROAD SURFACE from SURFACE TYPE menu.
5. Select the NEXT button. The CROWN SURFACE screen appears.
6. Move the machine and position the cutting edge on reference point A.
7. From the point of interest (POI) drop-down menu (6), choose the location of the reference point on the blade for a measurement.
8. Select the measure point A button (7). The STARTING POINT reference point values for X, Y, and Z appear when finished measuring.
9. Move the machine and position the cutting edge on reference point B.
10. From the POI drop-down menu, choose the location of the reference point on the blade for a measurement.
11. Select the measure point B button (8). The STARTING POINT reference point values for X, Y, and Z appear when finished measuring. Additionally, the MAIN-FALL (A->B) comparison values for DIRECTION, GRADE, and LENGTH appear.
12. Enter desired WIDTH of the road.
13. Enter desired CROSSFALL percentage.
14. Select the FINISH button.
15. At the prompt, select YES to set the new surface as active or select NO to make new surface inactive. The main screen appears.

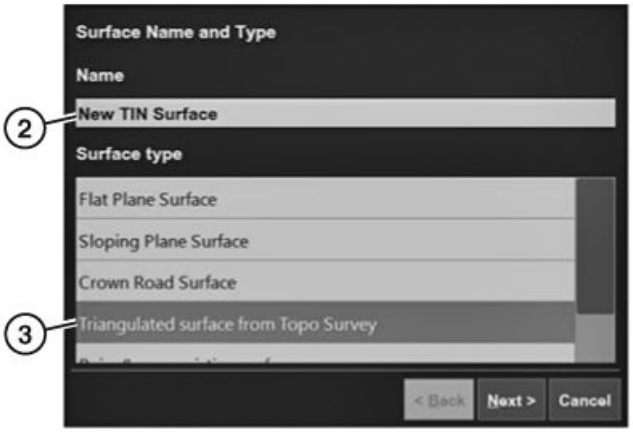
PN36905,000A03E -19-09MAR20-2/2

Creating Triangulated Surfaces From a Topo Survey File



TX1264231 —UN—13SEP18

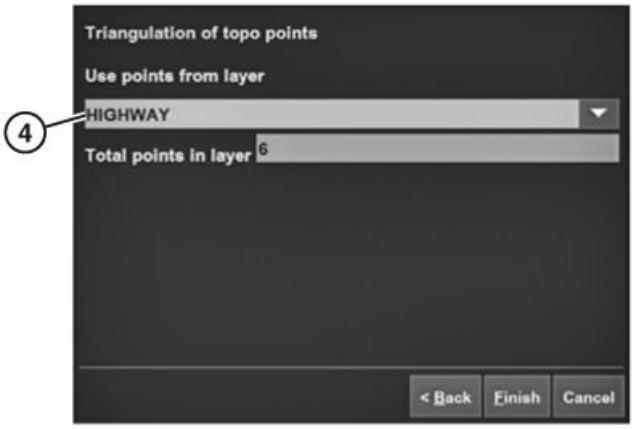
Project Surfaces Screen



TX1264232 —UN—13SEP18

Surface Name and Type Screen

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button (1). The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field (2) using the alphanumeric keyboard.
4. Select TRIANGULATED SURFACE FROM TOPO SURVEY from SURFACE TYPE menu (3).
5. Select the NEXT button. The TRIANGULATION OF TOPO POINTS screen appears.
6. From the USE POINTS FROM LAYER drop-down list (4), select a layer containing the desired points.
7. Select the FINISH button.
8. At the prompt, select YES to set the new surface as active or select NO to set the new surface as inactive. The main screen appears.



TX1264233 —UN—13SEP18

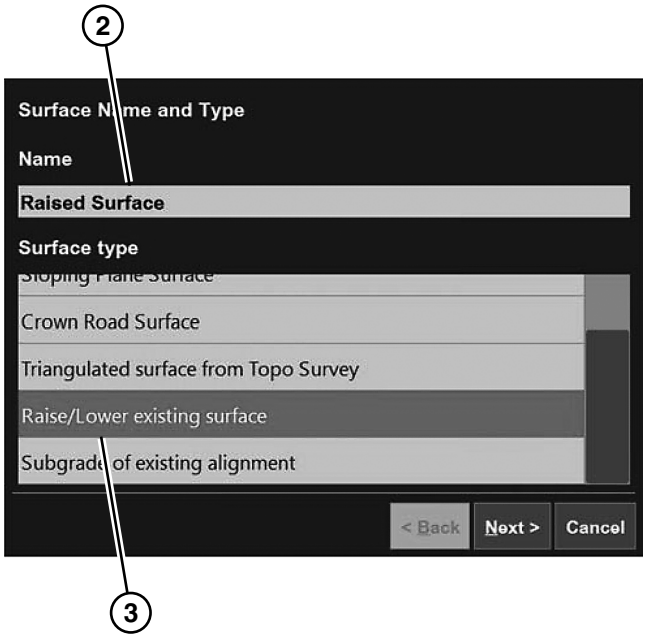
Triangulation of Topo Points Screen

1— NEW Button
2— NAME Field
3— SURFACE TYPE Menu
4— USE POINTS FROM LAYER Drop-Down List

PN36905,000A03F -19-09MAR20-1/1

Raising or Lowering an Existing Surface

Project Surfaces Screen

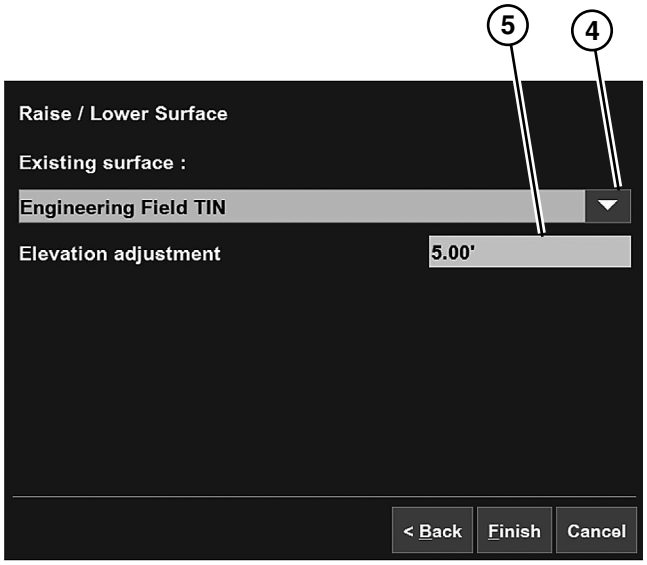


Surface Name and Type Screen

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACES**. The PROJECT SURFACES screen appears.
2. Select the NEW button (1). The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field (2) using the alphanumeric keyboard.
4. Select RAISE/LOWER EXISTING SURFACE from SURFACE TYPE menu (3).
5. Select the NEXT button. The RAISE/LOWER SURFACE screen appears.
6. From the EXISTING SURFACE drop-down list (4), select an existing surface file.
7. Enter a value in the ELEVATION ADJUSTMENT field (5).

NOTE: Relative to the working/reference surface, positive elevation adjustment values raise the grade and negative elevation adjustment values lower the subgrade.

8. Select the FINISH button.
9. At the prompt, select YES to set the new surface as active or select NO to set the new surface as inactive. The PROJECT SURFACES screen appears.
10. Select the OK button. The main screen appears.



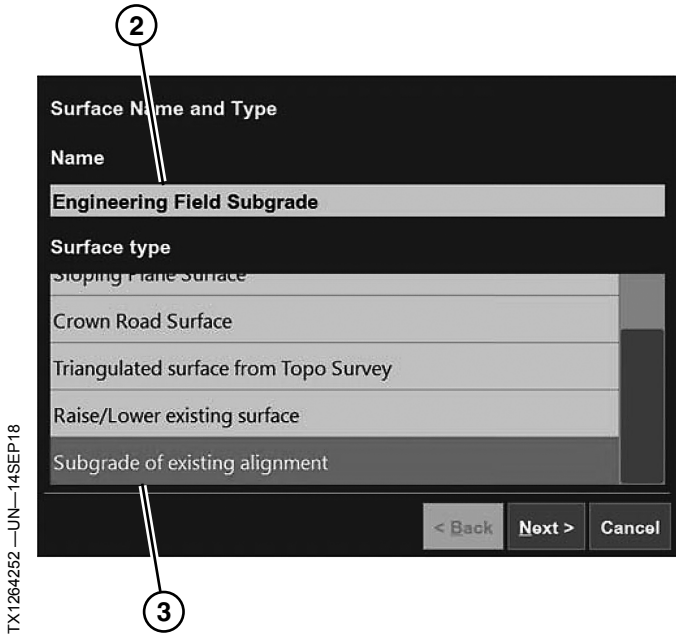
Raise/Lower Surface Screen

1— NEW Button
2— NAME Field
3— SURFACE TYPE Menu
4— EXISTING SURFACE Drop-Down List
5— ELEVATION ADJUSTMENT Field

PN36905,000A040 -19-06MAR20-1/1

Subgrade an Existing Alignment

Project Surfaces Screen

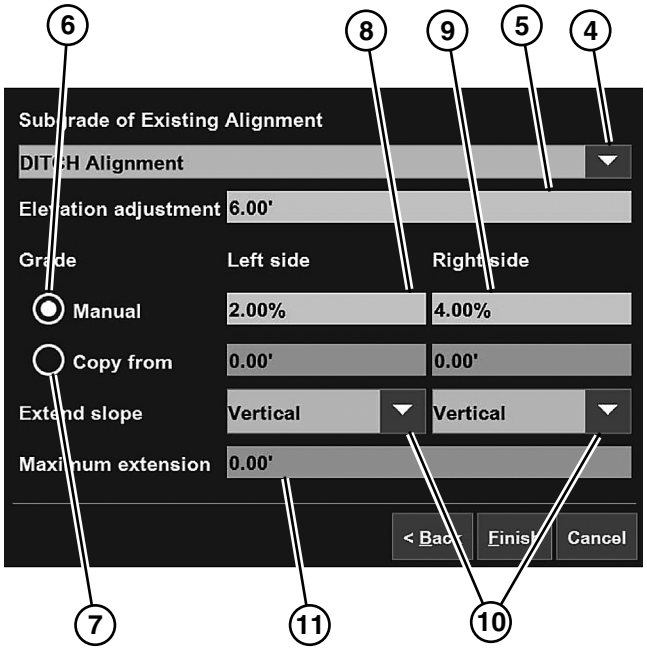


Surface Name and Type Screen

1. Navigate from main screen: **MAIN MENU >> FILE >> SURFACE**. The PROJECT SURFACES screen appears.
2. Select the NEW button (1). The SURFACE NAME AND TYPE screen appears.
3. From the SURFACE NAME AND TYPE screen, enter a name for the surface file in the NAME field (2) using the alphanumeric keyboard.
4. Select SUBGRADE OF EXISTING ALIGNMENT from SURFACE TYPE menu (3).
5. Select the NEXT button. The SUBGRADE OF EXISTING ALIGNMENT screen appears.
6. Select a reference road surface file from the SUBGRADE OF EXISTING ALIGNMENT drop-down list (4).
7. Enter a value in the ELEVATION ADJUSTMENT field (5).

NOTE: Relative to the working reference alignment, positive elevation adjustment values raise the grade, and negative elevation adjustment values lower the subgrade.

8. Select a GRADE type.
   - MANUAL (6): When enabled, enter the percentage of the Left side grade (8) and Right side grade (9) of the new alignment, which determines the slope for the left and right sides of the new alignment.
   - COPY FROM (7): When enabled, use the grade of the reference cross section element that matches the entered offset value (lateral offset from center line). The left or right grade is copied from the existing alignment.



Subgrade of Existing Alignment Screen

1— NEW Button
2— NAME Field
3— SURFACE TYPE Menu
4— SUBGRADE OF EXISTING ALIGNMENT Drop-Down List
5— ELEVATION ADJUSTMENT Field
6— MANUAL
7— COPY FROM
8— LEFT SIDE Grade
9— RIGHT SIDE Grade
10— EXTEND SLOPE Drop-Down List (2 used)
11— MAXIMUM EXTENSION Field

Continued on next page

9. Select an option from the EXTEND SLOPE drop-down lists (10).
   - VERTICAL: When selected, the cross section of the subgrade stops at the same horizontal offset as the cross section of the reference surface.
   - CONTINUE: When selected, the value entered in the MAXIMUM EXTENSION field (11) defines the distance, lateral from centerline, to which the right and left grades extend past the reference alignment.
10. Select the FINISH button.
11. At the prompt, select YES to set the new surface as active or select NO to set the new surface as inactive. The PROJECT SURFACES screen appears.
12. Select the OK button. The main screen appears.

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File Menu—Active

Selecting an Active Surface File

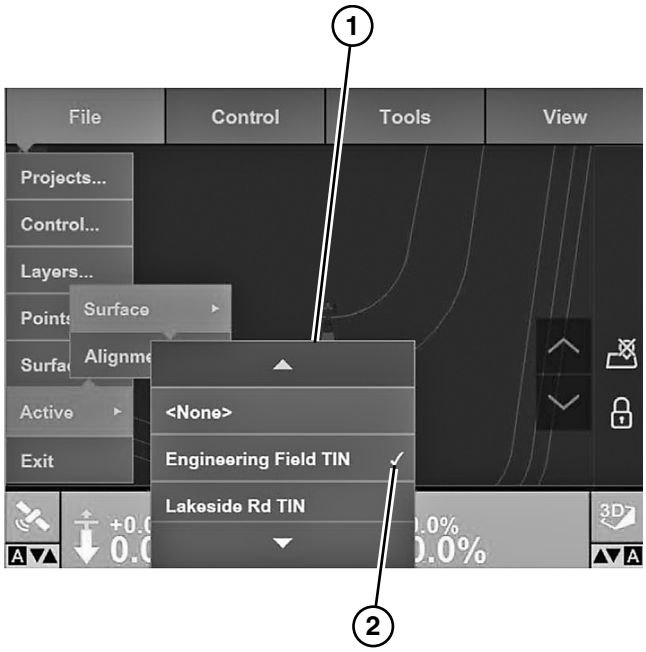
1. Navigate from main screen: **MAIN MENU >> FILE >> ACTIVE >> SURFACE**.

NOTE: A check mark (2) in the list indicates the current active surface file.

NOTE: Only visible surfaces are shown in the SURFACE file list (1). (See File Menu—Surfaces in this section.)

2. Select the name of the surface file to make active on the main screen from the SURFACE file list.

1— SURFACE File List **2— Check Mark**



TX1264539 —UN—19SEP18

Active Surface File Menu Screen

Continued on next page

PN36905,000A042 -19-06MAR20-1/2

Selecting an Active Alignment File

1. Navigate from main screen: **MAIN MENU >> FILE >> ACTIVE >> ALIGNMENT**.

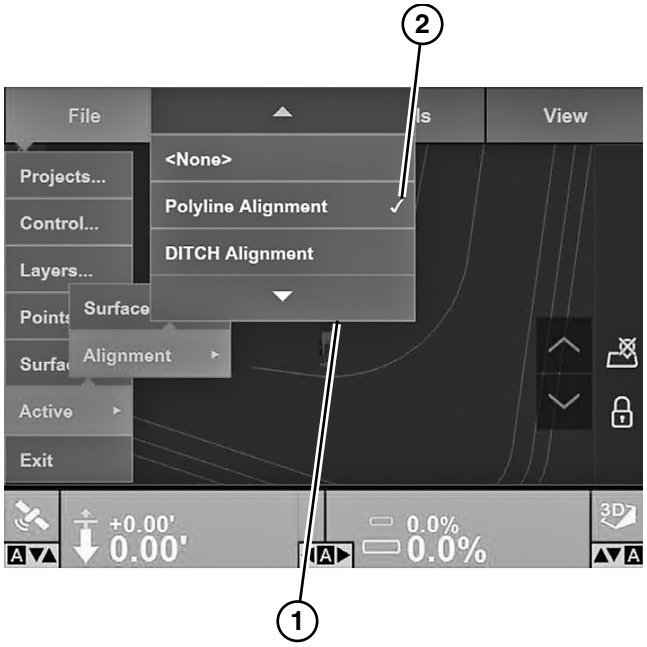
NOTE: Only visible alignment files are shown in the ALIGNMENT file list (1). (See File Menu—Surfaces in this section.)

NOTE: A check mark (2) in the list indicates the current active alignment file.

NOTE: If an alignment file is set as the active surface, the active alignment menu is not selectable.

2. Select the name of the alignment file to make active on the main screen from the ALIGNMENT file list.

1— ALIGNMENT File List **2— Check Mark**



Active Alignment File Menu List

PN36905,000A042 -19-06MAR20-2/2

File Menu—Import/Export

Importing Files From a USB Key

1. Insert USB key into the USB port on the display.
2. Navigate from the main screen: **MAIN MENU >> FILE >> IMPORT/EXPORT**.
3. Select IMPORT. The IMPORT screen appears.
4. Choose the item type to import from the IMPORT drop-down list. The available item types are:
   - PROJECT
   - LOCALIZATION
   - CONTROL POINTS ONLY
   - LINEWORKS
   - POINTS
   - SURFACES
5. Choose the file format in the FROM drop-down list.
6. Choose the desired folder to import from in the FOLDER drop-down list.
7. Choose the desired file to import from and then select the NEXT button.
8. On the next screen choose the the desired items to import, and select the NEXT button.
9. The SUMMARY screen appears. Select the IMPORT button to complete the import task.

Exporting Files to a USB Key

1. Insert USB key into the USB port on the display.
2. Navigate from the main screen: **MAIN MENU >> FILE >> IMPORT/EXPORT**.
3. Select EXPORT. The EXPORT screen appears.
4. Choose the item type to export from the EXPORT drop-down list. The available item types are:
   - PROJECT
   - LOCALIZATION
   - CONTROL POINTS ONLY
   - LINEWORKS
   - POINTS
   - SURFACES
5. Choose the desired file type to save export data in the TO drop-down list.
6. Choose any additional options desired on the EXPORT screen, if applicable. Select the NEXT button.
7. The SUMMARY screen appears. Select the EXPORT button to complete the export task.

PN36905,000A049 -19-09MAR20-1/1

Control Menu

The CONTROL menu allows operator or John Deere SmartGrade™ dealer to change how a SmartGrade™ system is configured.

CONTROL Menu Options	
Menu Items	**Description**
MACHINE SETUP	Allows operator or John Deere SmartGrade™ dealer to configure machine for use with 3DMC.
BLADE CONTROL	Allows operator or John Deere SmartGrade™ dealer to choose the blade control mode and related settings.
SMARTGRADE	Allows operator to change between various John Deere SmartGrade™ system modes.
IMU CALIBRATION	Allows operator to perform various IMU calibrations.
CONTROL SETTINGS	Allows operator to set valve offsets and modify the working window values.
BLADE WEAR	Allows operator to set the parameters for the measured blade wear.
RESTART CONNECTION	Allows operator to restart connection between the display unit and the controller.

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Control Menu—Machine Setup

Contact an authorized John Deere dealer.

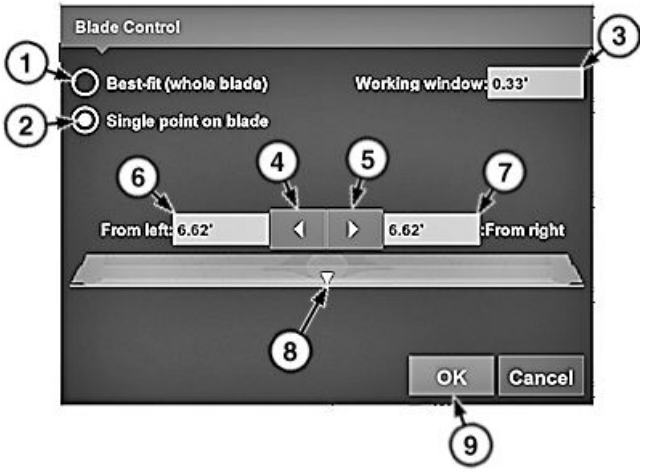
PN36905,000A07A -19-15MAY20-1/1

Control Menu—Blade Control

Automatic Best-Fit or Single Point Blade Control

Navigate from main screen: **MAIN MENU >> CONTROL >> BLADE CONTROL**.

1. Select BEST-FIT (WHOLE BLADE) (1) control option to compare the whole blade to the design surface when calculating automatic control commands.
2. Enter a value in the WORKING WINDOW data field (3) to define the maximum error to grade for automatic control.
3. Select SINGLE POINT ON BLADE (2) control option to compare a single selected point on the blade to the design surface when calculating automatic control commands.
4. With SINGLE POINT ON BLADE control option selected, adjust the blade control point by completing any of the following:
   - Use left and right arrows (4 and 5) to select a point at a distance from left and right side of the blade.
   - Use FROM LEFT data field (6) to enter an offset from the left blade tip directly.
   - Use FROM RIGHT data field (7) to enter an offset from the right blade tip directly.
   - Touch a point on the blade image to set the single point indicator (8).



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Blade Control Screen

1— BEST-FIT (WHOLE BLADE)
2— SINGLE POINT ON BLADE
3— WORKING WINDOW Data Field
4— Left Arrow
5— Right Arrow
6— FROM LEFT Data Field
7— FROM RIGHT Data Field
8— Single Point Indicator
9— OK Button

5. Select the OK button (9) to return to the main screen.

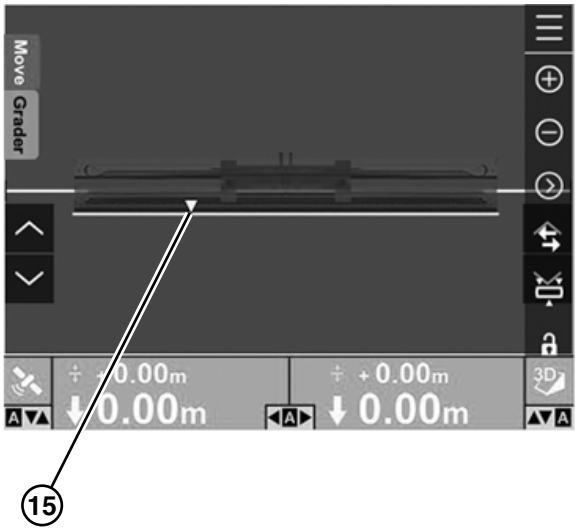
Continued on next page

PN36905,000A04C -19-13MAR20-1/2

Change the Blade Control Point in 3DMC Section View

1. To move the blade control point (15) to any location on the blade, press and hold on the desired blade control point of the blade image. The blade control pop-up menu appears.
2. Select MOVE CONTROL. The blade control point indicator moves to the selected position.

15— Blade Control Point



TX1264364 —UN—17OCT18

Main Screen Section View Display

PN36905,000A04C -19-13MAR20-2/2

Control Menu—SmartGrade™

The auto SmartGrade™ functions allow an operator to choose what activity to perform, the density and amount of material, and whether the machine will gradually engage these functions. The auto SmartGrade™ feature will raise and lower the blade above the design surface in response to possible machine work overload.

NOTE: If auto SmartGrade™ is enabled and blade control joystick is moved, a lower jab is required to re-enable auto SmartGrade™.

NOTE: With grade control enabled, blade raised, park brake off, and machine in neutral or decelerator pedal depressed, some blade movement is considered normal operation. No correction is necessary.

ACTIVITY

Navigate from the main screen: **MAIN MENU >> CONTROL >> SMARTGRADE >> ACTIVITY.**

Depending on the application, the operator can select the following three activities on the SmartGrade™ display unit.

GRADING Mode—Intended for final grading when there is a small amount of material above the design surface. The auto SmartGrade™ feature is not active in grading mode; the blade does not raise and lower in response to machine loading in this mode.

CUTTING Mode—Intended for removing material from an area above the final grade. After the majority of the material is removed from the surface, cutting mode can continue to be used for final grading.

SPREADING Mode—Intended to spread material above a surface or to backfill material. After material has been moved to fill an area, spreading mode can also be used for final grading.

MATERIAL

Navigate from the main screen: **MAIN MENU >> CONTROL >> SMARTGRADE >> MATERIAL.**

The hard, packed, and loose material type settings determine the speed at which the blade is raised and lowered above the design surface when the auto SmartGrade™ feature is active. The blade will raise the fastest when the material setting is loose and slowest when the material setting is hard.

LOAD LEVEL

Navigate from the main screen: **MAIN MENU >> CONTROL >> SMARTGRADE >> LOAD LEVEL.**

The small, moderate, and large load settings determine when the machine will raise and lower the blade in response to the material through which the crawler is cutting or spreading. The machine will raise the blade sooner if the load setting is set to medium instead of large, and sooner than medium if set to low.

SOFT START

Navigate from the main screen: **MAIN MENU >> CONTROL >> SMARTGRADE >> SOFT START.**

ENABLED—When gradual start is enabled and the design surface is below the surface of the ground, the blade will gradually cut through the ground at a fixed slope.

DISABLED—When gradual start is disabled and the design surface is below the surface of the ground, the blade will cut through the ground at a faster rate than when gradual start is enabled.

PN36905,000A051 -19-16MAR20-1/1

Control Menu—IMU Calibration

The inertial management unit (IMU) calibration consists of six procedures: BODY SLOPE CALIBRATION, BLADE SLOPE CALIBRATION, BLADE HEADING CALIBRATION, BLADE ROTATION CALIBRATION, BLADE PITCH COMPENSATION CALIBRATION, and BODY HEADING CALIBRATION. Each procedure must be done individually.

Calibration Preparation

The concrete planar surface should be as close to 0% cross slope and 0% mainfall slope as possible, not exceeding 4%. There should be no twists, peaks, or valleys. Maintain even consistency throughout the concrete planar surface. The blade cutting edge should be on the same plane as the grouser tips when the machine is parked on a concrete planar surface.

Body Slope Calibration

1. Navigate from main screen: **MAIN MENU >> CONTROL >> IMU CALIBRATION >> BODY SLOPE CALIBRATION**.
2. Follow the on-screen instructions and then press the NEXT button. The CALIBRATE BODY RIGHT IMU MAINFALL screen appears.
3. Follow the on-screen instructions. Enter the measured value in the MAIN RIGHT SLOPE data field.
4. Press the NEXT button. The CALIBRATE BODY IMU CROSS SLOPE screen appears.
5. Follow the on-screen instructions. Enter the measured value in the CROSS SLOPE data field.
6. Press the FINISH button to save the calibration.

Blade Slope Calibration

1. Navigate from main screen: **MAIN MENU >> CONTROL >> IMU CALIBRATION >> BLADE SLOPE CALIBRATION**.
2. Follow the on-screen instructions. Enter the measured value in the CROSS SLOPE data field.
3. Press the NEXT button. The BLADE PLACEMENT screen appears.
4. Follow the on-screen instructions and press the NEXT button. The CALIBRATE BLADE LEFT IMU MAINFALL screen appears.
5. Follow the on-screen instructions. Enter the measured value in the MAIN LEFT SLOPE data field.
6. Press the NEXT button. The CALIBRATE BLADE RIGHT IMU MAINFALL screen appears.
7. Follow the on-screen instructions. Enter the measured value in the MAIN RIGHT SLOPE data field.
8. Press the FINISH button to save the calibration.

Blade Heading Calibration

1. Navigate from main screen: **MAIN MENU >> CONTROL >> IMU CALIBRATION >> BLADE HEADING CALIBRATION**.
2. Follow the on-screen instructions. Press the FINISH button.

Blade Rotation Calibration

1. Navigate from main screen: **MAIN MENU >> CONTROL >> IMU CALIBRATION >> BLADE ROTATION CALIBRATION**.
2. Raise the blade slights to allow clearance while rotating. Press the NEXT button.
3. Rotate the blade fully clockwise and do not allow the blade to contact the ground. Press the NEXT button.
4. Rotate the blade fully counterclockwise and do not allow the blade to contact the ground. Press the FINISH button.

Blade Pitch Compensation Calibration

1. Navigate from main screen: **MAIN MENU >> CONTROL >> IMU CALIBRATION >> BLADE PITCH COMPENSATION CALIBRATION**.
2. Follow the on-screen instructions. Press the NEXT button.
3. Rotate the blade fully clockwise and do not allow the blade to contact the ground. Using a smart level, set the slope of the blade's bolts to the same value as the body cross slope. Press the NEXT button.
4. Rotate the blade fully counterclockwise and do not allow the blade to contact the ground. Using a smart level, set the slope of the blade's bolts to the same value as the body cross slope. Press the FINISH button.

Body Heading Calibration

1. Navigate from main screen: **MAIN MENU >> CONTROL >> IMU CALIBRATION >> BODY HEADING CALIBRATION**.
2. Follow the on-screen instructions. Press the FINISH button.

PN36905,000A078 -19-31MAR20-1/1

Control Menu—Control Settings

IMPORTANT: Improper blade calibration can negatively affect SmartGrade™ performance. For more information, see an authorized John Deere SmartGrade™ dealer.

1. Navigate through menu: **MAIN MENU >> CONTROL >> CONTROL SETTINGS >> VALVE OFFSETS**.
2. Enter valve offset values for RAISE ELEVATION, LOWER ELEVATION, COUNTERCLOCKWISE SLOPE, and CLOCKWISE SLOPE. Valve offsets should be set to the value that allows the cylinder to move at its minimum velocity.
3. Select OK to save any changes and return to the main screen.

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PN36905,000A058 -19-17DEC20-1/1

Control Menu—Blade Wear

1. Navigate from the main screen: **MAIN MENU >> CONTROL >> BLADE WEAR**. The BLADE WEAR screen appears.
2. Manually perform blade edge measurements for right wear measurement and left wear measurement. Enter the values in the RIGHT WEAR (1) data field (1) and the LEFT WEAR (2) data field (2).
3. Select OK. The main screen appears. The SmartGrade™ system will adjust control calculations based on the new cutting edge measurements.

1— RIGHT WEAR (1) Data Field 2— LEFT WEAR (2) Data Field

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Blade Wear Screen

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PN36905,000A04F -19-13MAR20-1/1

Control Menu—Restart Connection

Navigate through menu: **MAIN MENU >> CONTROL >> RESTART CONNECTION**. Selecting this option restarts the connection between 3DMC and the grade control controller. The system start-up activities, including connecting to the global navigation satellite system (GNSS) and loading the project begin again.

PN36905,000A059 -19-15DEC20-1/1

Tools Menu

The TOOLS menu contains options for configuring the radio, collecting and navigating to topographic points, checking the position of the blade, data logging, and supervisor mode.

TOOLS MENU Items

Menu Items	Description
CONFIGURE RADIOS	Allows operator to perform system radio configurations.
POSITION CHECK	Allows operator to perform adjustments to the blade's position.
NAVIGATE	Allows operator to add/remove points and navigate to a point.
TOPO SURVEY	Allows operator to select an existing point file, create a new point file, and perform the topo survey.
SUPERVISOR	Allows operator to disable supervisor menus, buttons, and screen items from the user.
DIAGNOSTICS	Allows operator to view various SmartGrade™ system diagnostic information.

PN36905,000A054 -19-16MAR20-1/1

Tools Menu—Configure Radios

To set up the global navigation satellite system (GNSS) radio configurations, the operator must select a radio type that matches the (real time kinematic) RTK source.

Set Up Either UHF or FH915 Radio Types:

1. Navigate from main screen: **MAIN MENU >> TOOLS >> CONFIGURE RADIOS**. The GNSS RADIO SETUP screen appears.
2. The RADIO TYPE drop-down menu (1) has 3 options. Select a (UHF) or (FH915) Radio type option.

   a. DIRECT NETWORK CONNECTION

   b. TOPCON UR1(FH915)

   c. TOPCON UR1(UHF)

Do not select the option for DIRECT NETWORK CONNECTION when RTK corrections are being received from a local base station.

3. Select a format option from the FORMAT drop-down menu (2).

NOTE: Radio configuration settings in 3DMC must exactly match the RTK base settings.

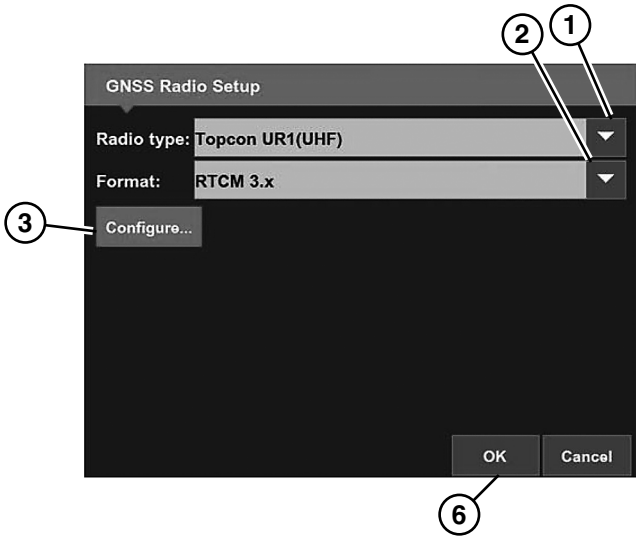
4. Select the CONFIGURE button (3). The RADIO PARAMETERS screen appears.
5. From the CHANNEL LIST drop-down menu (4) select the channel number that matches the channel of the base station.

   If the desired radio channel is not listed, see Adding and Editing Radio Channels. (Section 4-1.)

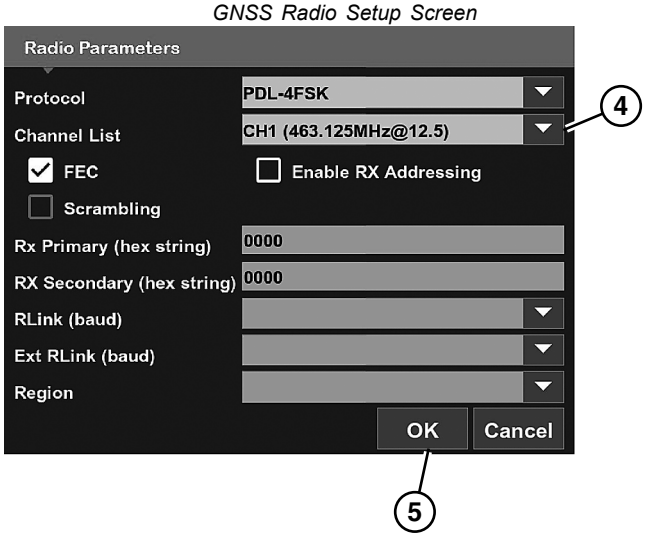
6. Set the other radio parameters using the options from the available drop-down menus and enter information in the available data fields.

NOTE: Depending on the radio type selected on the GNSS RADIO SETUP screen, the appropriate check boxes may be selected automatically.

7. Select the OK button (5) to return to the GNSS RADIO SETUP screen.
8. Select the OK button (6) to save the radio configuration settings and return to the main screen.



GNSS Radio Setup Screen



Radio Parameters Screen

1— RADIO TYPE Drop-Down Menu
2— FORMAT Drop-Down Menu
3— CONFIGURE Button
4— CHANNEL LIST Drop-Down Menu
5— OK Button
6— OK Button

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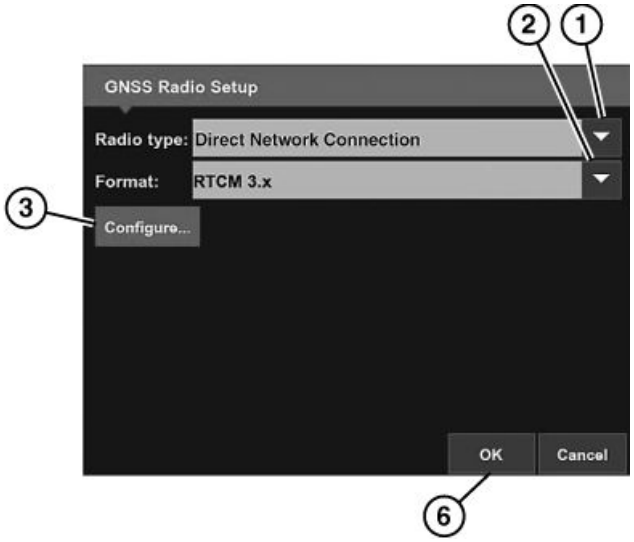
Set Up a Direct Network Connection Correction Type:

NOTE: To receive direct network-based corrections, an additional cellular modem (available from Topcon) is required.

1. Navigate from main screen: **MAIN MENU >> TOOLS >> CONFIGURE RADIOS**. The GNSS RADIO SETUP screen appears.
2. The RADIO TYPE drop-down menu (1) has 3 options. Select DIRECT NETWORK CONNECTION.
3. Select a format option from the FORMAT drop-down menu (2).
4. Select the CONFIGURE button (3). The NETWORK CORRECTIONS window appears.
5. Enter the network information in the data fields.
6. Select the OK button (7) to return to the GNSS RADIO SETUP screen.
7. Select the OK button (6) to save the radio configuration settings and return to the main screen.

1— RADIO TYPE Drop-Down Menu
2— FORMAT Drop-Down Menu
3— CONFIGURE Button
6— OK Button
7— OK Button



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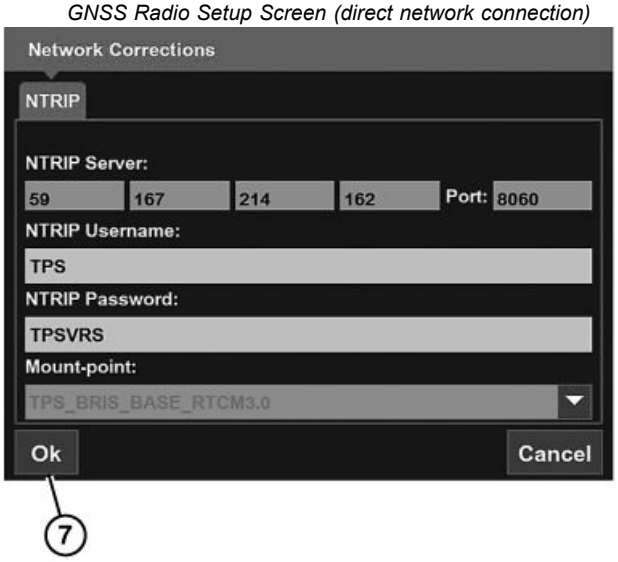
GNSS Radio Setup Screen (direct network connection)



TX1265747 —UN—04OCT18

Network Corrections Screen

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Adding or Editing Radio Channels

1. Close the 3DMC application on SmartGrade™ display unit by navigating through menu: **MAIN MENU >> FILE >> EXIT**.
2. Open **MCXCONFIG** by selecting the MCXCONFIG icon (6).
3. If requested at login screen, enter “admin” for username and password.

6— MCXCONFIG Icon

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MCXConfig

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4. Select UHF or FH915 RADIO (1) from left hand navigation bar.

1— UHF or FH915 Radio

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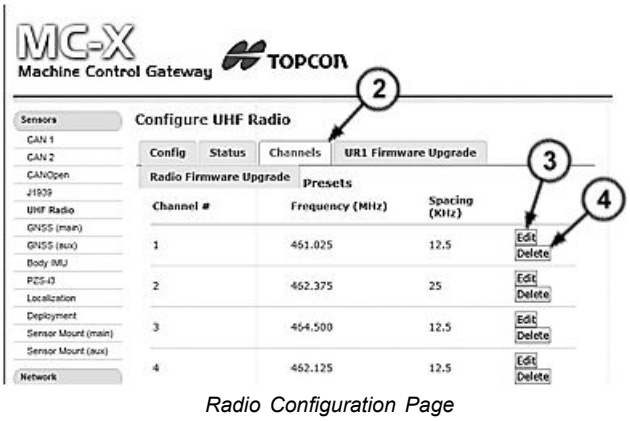
MCXConfig Navigation Menu

PN36905,000A055 -19-16MAR20-4/6

5. Select CHANNELS tab (2) from top of radio configuration page.

   The channel tab lists existing and preset radio channels with EDIT and DELETE buttons (3 and 4).

2— CHANNELS Tab
3— EDIT Button
4— DELETE Button



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Radio Configuration Page

Continued on next page

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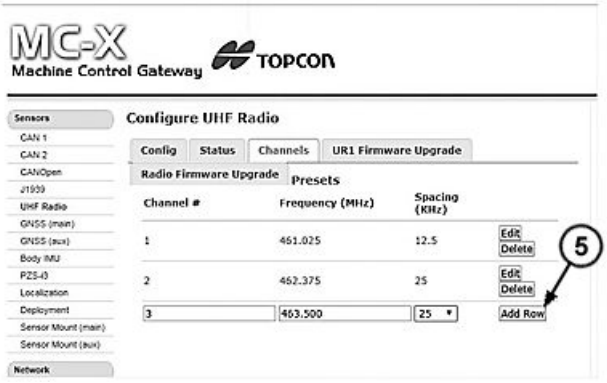
6. To add additional channels, scroll to the bottom of the list and enter information for desired channel and select ADD ROW button (5).
7. Close MCXCONFIG.
8. Select desired radio channel from list in the 3DMC application.

5— ADD ROW Button



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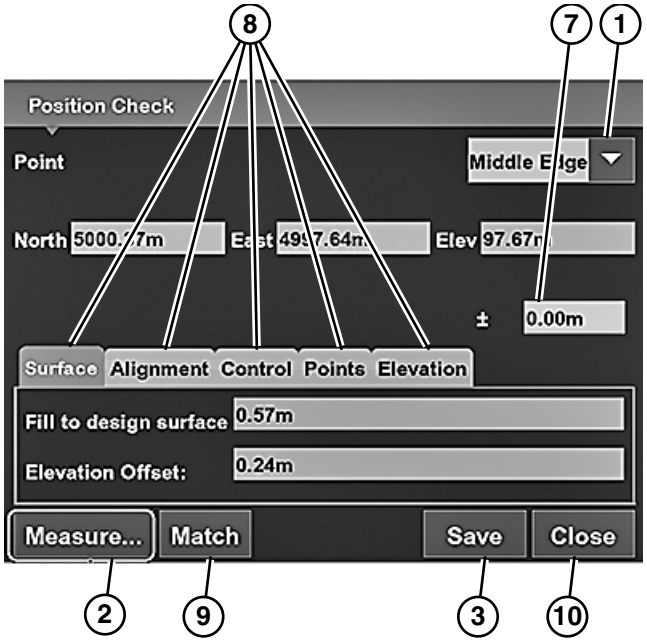
Add or Edit Radio Channels

PN36905,000A055 -19-16MAR20-6/6

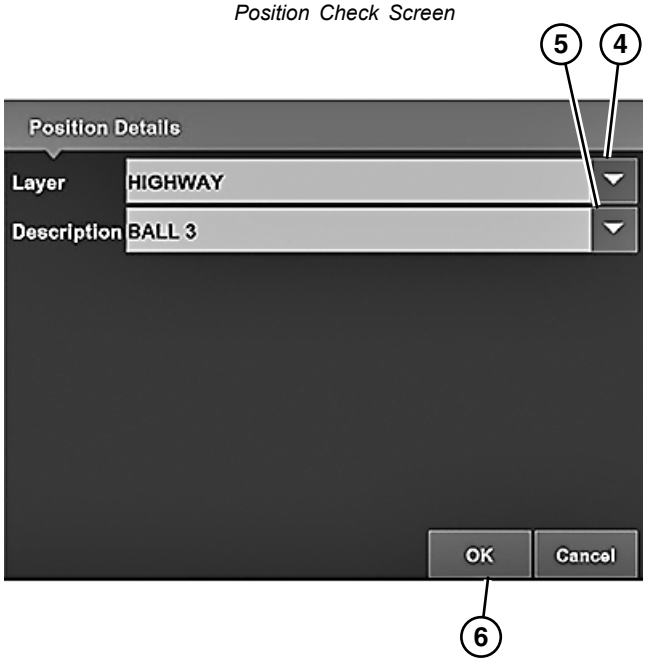
Tools Menu—Position Check

1. Navigate from main screen: **MAIN MENU >> TOOLS >> POSITION CHECK**. The POSITION CHECK screen appears.
2. Select the desired blade point to use for measurement from the POINT drop-down list (1).
3. Select the MEASURE button (2). 3DMC checks the blade position and selected blade point and displays a point on the job.
4. To save a measured point:
   a. Select the SAVE button (3). The POSITION DETAILS screen appears.
   b. Select a layer from the LAYER drop-down list (4) and select a description from the DESCRIPTION drop-down list (5).
   c. Select the OK button (6) to return to the POSITION CHECK screen. The measured point is saved to the selected layer.
5. Enter a number in the temporary elevation bias data field (7) to offset the elevation of the grade control system temporarily. This setting is reset to 0.00 on system start-up.
6. The tab menus (8) contain data values used to compare the current measured position to the design feature of the selected tab menu.
7. The MATCH button (9) is used to set the temporary elevation bias offset to the measured offset at the current blade position.
8. On the POSITION CHECK screen, select the CLOSE button (10) to return to the main screen.

1— POINT Drop-Down List
2— MEASURE Button
3— SAVE Button
4— LAYER Drop-Down List
5— DESCRIPTION Drop-Down List
6— OK Button
7— Temporary Elevation Bias Data Field
8— Tab Menu (5 used)
9— MATCH Button
10— CLOSE Button



Position Check Screen



Position Details Screen

PN36905,000A05A -19-16MAR20-1/1

Tools Menu—Navigate

Add/Remove Points

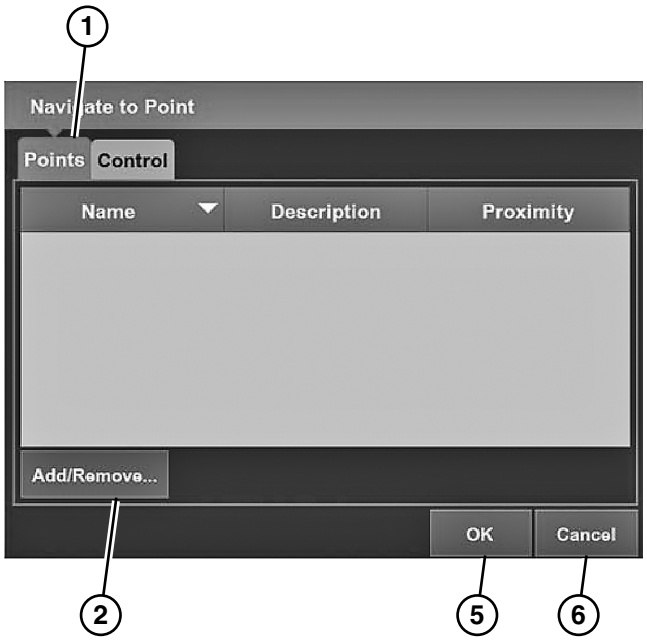
A list of points can be created for navigation purposes. The list of navigation points can be created by selecting points from any layer in the project file.

Add a Navigation Point:

1. Navigate from main screen: **MAIN MENU >> TOOLS >> NAVIGATE**. The NAVIGATE TO POINT screen appears.
2. Select the POINTS tab (1) to make the POINTS tab active. Select the ADD/REMOVE button (2). The POINTS screen appears. Only points on visible layers are populated in the list on the POINTS screen.
3. Locate the desired navigation point (3) from the list and select it to highlight. Multiple navigation points can be selected and added at the same time.
4. Select the OK button (4). The NAVIGATE TO POINT screen appears with the added navigation point.
5. Select the CANCEL button (6) to return to the main screen without starting navigation.

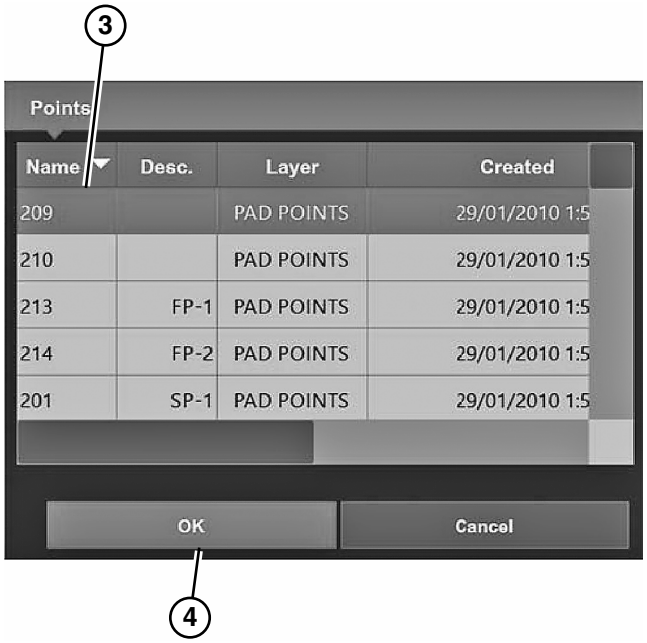
Remove a Navigation Point:

1. Navigate from main screen: **MAIN MENU >> TOOLS >> NAVIGATE**. The NAVIGATE TO POINT screen appears.
2. Select the POINTS tab to make the POINTS tab active. Select the ADD/REMOVE button. The POINTS screen appears. Only points on visible layers are populated in the list on the POINTS screen.
3. Locate the highlighted navigation point to be removed. Select the point to remove the highlight.
4. Select the OK button. The NAVIGATE TO POINT screen appears without the removed navigation point.
5. Select the CANCEL button to return to the main screen without starting navigation.



TX1264634 —UN—17OCT18

Navigate to Point Screen (Points tab)



TX1264635 —UN—20SEP18

Points Screen

1— POINTS Tab
2— ADD/REMOVE Button
3— Desired Navigation Point
4— OK Button
5— OK Button
6— CANCEL Button

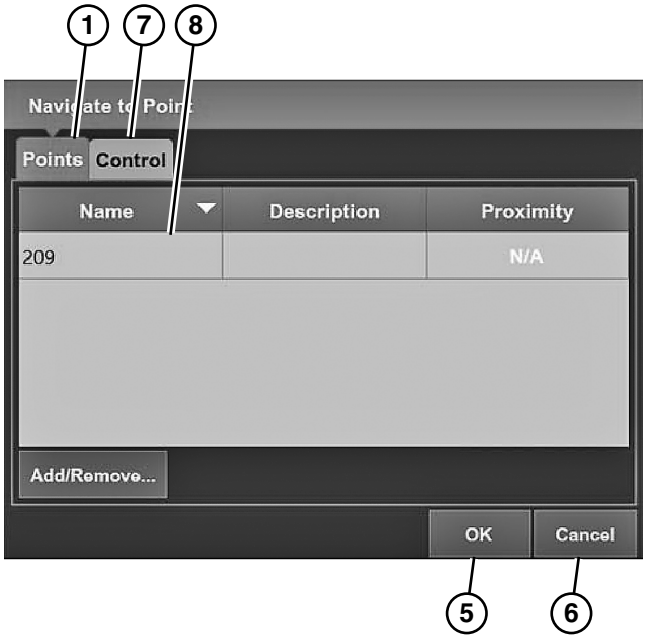
Continued on next page

Navigate to a Point:

1. Navigate from main screen: **MAIN MENU >> TOOLS >> NAVIGATE**. The NAVIGATE TO POINT screen appears.
2. Select the POINTS tab (1) to choose an added point for navigation or select the CONTROL tab (7) to choose a control point for navigation.
3. Select an available point from the list to use as a navigation point (8).
4. Select the OK button (5) to start navigation and return to the main screen. The machine icon is drawn with an additional crosshair to indicate point of reference.
5. To stop navigation, navigate through menu: **MAIN MENU >> TOOLS >> STOP NAVIGATION**. The navigation information disappears from the main screen.

Navigating to Points Using the Navigate to Point Context Menu

1. From the main screen, select and hold on a displayed point. The context pop-up menu appears.
2. Navigate through the context pop-up menu: **POINTS >> NAVIGATE TO POINT**. The main screen appears with navigation results displayed.
3. To stop the navigation, navigate through menu: **MAIN MENU >> TOOLS >> STOP NAVIGATION**. The main screen appears with navigation results removed.



TX1264647 —UN—23OCT18

Navigate to Point Screen (Points tab with navigation point)

1— POINTS Tab
5— OK Button
6— CANCEL Button
7— CONTROL Tab
8— Navigation Point

PN36905,000A060 -19-23MAR20-2/2

Tools Menu—Topo Survey

Perform an Auto-Topo Survey

1. Navigate from main screen: **MAIN MENU >> TOOLS >> TOPO SURVEY**. The TOPO SURVEY screen appears.
2. From the PROJECT LAYER FOR TOPO drop-down menu, select an existing layer or create a layer. To create a layer, select <NEW LAYER>, enter a new layer name in the pop-up screen, and select OK to return to the TOPO SURVEY screen.
3. From the LOG AT drop-down menu, choose an edge or edges to record survey points.
4. From the AUTO-TOPO drop-down menu, select one of the following options:
   - **MINIMUM HORZ. DISTANCE**: Enter parameters in the MINIMUM HORZ. DISTANCE data field and the LOWER ELEVATIONS BY data field. The 3DMC software logs a point each time the machine position changes by the specified minimum distance.
   - **FIXED TIME INTERVAL**: Enter parameters in the FIXED TIME INTERVAL data field and the LOWER ELEVATIONS BY data field. The 3DMC software logs a point after each time interval.

NOTE: Value entered in the LOWER ELEVATIONS BY data field adds or reduces elevation from the measured points.

   The survey mode is set as an automatic topographic survey.
5. Select the SHOW TOPO BUTTON check box to enable the selected topo button shortcut on the main screen.
6. Select the OK button to begin the automatic topographic survey and return to the main screen.
7. Press the desired topo survey shortcut button on the main screen to pause/resume the auto-topo function.

Perform a Manual Single Point Topo Survey

1. Navigate from main screen: **MAIN MENU >> TOOLS >> TOPO SURVEY**. The TOPO SURVEY screen appears.
2. From the PROJECT LAYER FOR TOPO drop-down menu, select an existing layer or create a layer. To create a layer, select <NEW LAYER>, enter a new layer name in the pop-up screen, and select OK to return to the TOPO SURVEY screen.
3. From the LOG AT drop-down menu, choose an edge or edges to record survey points.
4. From the AUTO-TOPO drop-down, select NOT ACTIVE. The survey mode is set as a manual single point topographic survey.
5. Select a function for the topo survey shortcut button in the TOPO BUTTON drop-down menu from the following options:
   - **TOPO SHOT (PROMPT FOR DETAILS)**: As a point is measured, the POSITION DETAILS screen appears, allowing the operator to change the layer and description of the new point.
   - **TOPO SHOT (NO PROMPT)**: As a point is measured, no notification is given. A new point is recorded with the settings specified in the TOPO SURVEY screen.
6. Select the SHOW TOPO BUTTON check box to enable the selected topo button shortcut on the main screen.
7. Select the OK button (5) to save the manual single point topographic survey settings and return to the main screen.
8. Perform the manual single point topographic survey by moving the machine to a desired site location. On the main screen, press the topo survey shortcut button to initiate a topo shot of the current location. Repeat until the manual topographic survey is completed.

PN36905,000A05F -19-23MAR20-1/1

Tools Menu—Supervisor Mode

Supervisor mode allows menus, buttons, and screen items to be disabled during normal operation. A password is required to access supervisor mode. Passwords are case-sensitive. Default password: topcon.

1. Navigate from main screen: **MAIN MENU >> TOOLS >> SUPERVISOR**. The alphanumeric keyboard appears.
2. Enter the password using the alphanumeric keyboard and select OK.

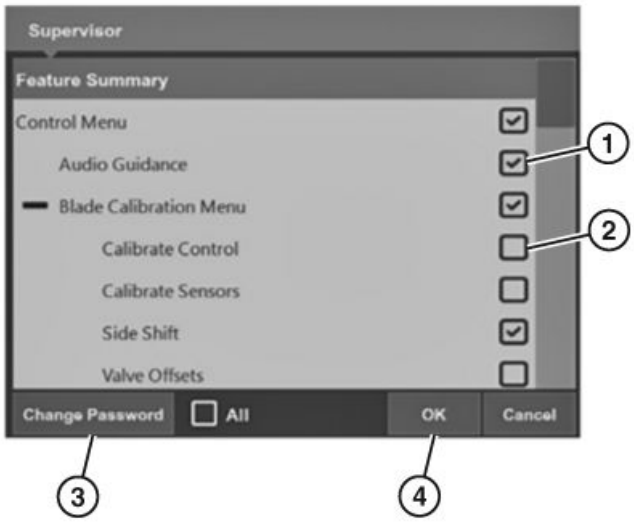
Locking and Unlocking Menus, Buttons, and Screen Items

1. Navigate from main screen: **MAIN MENU >> TOOLS >> SUPERVISOR >> SETTINGS**. The Supervisor screen appears.
2. To lock one or more desired items, select the check box next to each item. The locked item check box (1) contains a check mark.
3. To unlock one or more desired items, select the check box next to each item. The unlocked item check box (2) is empty.
4. Select the OK button (4) to return to the main screen.
5. Navigate from main screen: **MAIN MENU >> TOOLS >> SUPERVISOR >> EXIT SUPERVISOR MODE**.

From the main menu, review the different submenu options that are available. Locked items are removed from their submenu locations and unlocked items are visible in their submenu locations.

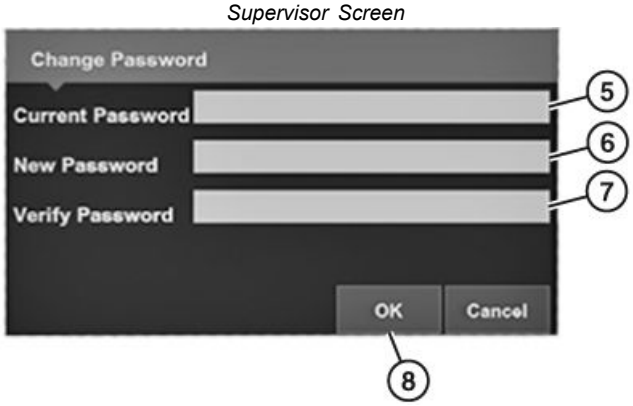
Changing the Password

1. Navigate from main screen: **MAIN MENU >> TOOLS >> SUPERVISOR**. The Supervisor screen appears.
2. Select the Change Password button (3). The Change Password pop-up window appears.
3. Select the Current Password data field (5). Enter current password using the alphanumeric keyboard and select the OK button (8).
4. Select the New Password data field (6). Enter the new password using the alphanumeric keyboard and select the OK button.
5. Select the Verify Password data field (7). Enter the new password using the alphanumeric keyboard and select the OK button.
6. Select the OK button (8) from the Change Password pop-up window. The password saved pop-up window appears.
7. Select the OK button (9) to return to the Supervisor screen.



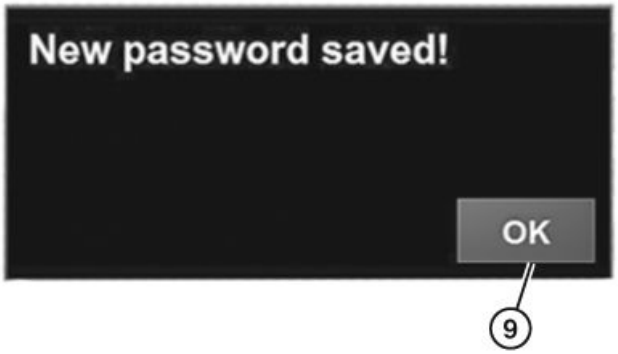
TX1264852 —UN—26SEP18

Supervisor Screen



TX1264853 —UN—26SEP18

Change Password Pop-Up Window



TX1264854 —UN—26SEP18

Password Saved Pop-Up Window

1— Locked Item Check Box
2— Unlocked Item Check Box
3— Change Password Button
4— OK Button
5— Current Password Data Field
6— New Password Data Field
7— Verify Password Data Field
8— OK Button
9— OK Button

PN36905,000A02A -19-04MAR20-1/1

View Menu

VIEW MENU OPTIONS Items	
Menu Items	**Description**
LAYOUT	Allows the operator to select and change the screen configuration of the main screen.
DISPLAY OPTIONS	Allows the operator to select available display options.
ABOUT	Allows the operator to access information about system registration status, software version, firmware version, and controller serial number.

PN36905,000A02E -19-05MAR20-1/1

View Menu—Layout

The main screen can display the following view options:

VIEW OPTIONS Items	
Menu Items	**Description**
PLAN VIEW	Top down view of the machine, project file, and layers.
PROFILE VIEW	Side view of the machine in relation to the surface.
SECTION VIEW	Rear view of the blade in relation to the surface.
3D VIEW	Full three-dimensional (3D) view of the machine and the surface.

Layout Menu Options

Navigate through menu: **MAIN MENU >> VIEW >> LAYOUT**. Select from the following options:

- **NEW**: Add a screen configuration.
- **EDIT**: Change the current screen configuration.
- **RESET**: Set the system to the default layout.
- **DELETE**: Remove the current configuration.

NOTE: When there is only one layout remaining, the Delete option is disabled.

Changing Screen Configurations

The main screen can be set to several different configurations and options.

1. Navigate through menu: **MAIN MENU >> VIEW >> LAYOUT**. Select **NEW** or **EDIT**. The NEW LAYOUT screen appears.
2. Choose the desired layout for the main screen.
   - Single-view display
   - Two-view display
   - Three-view display
   - Four-view display
3. Each display must be assigned a view option. Select each display view to open view option dialog box.
4. Choose a view option and select the OK button to return to the configuration screen.
5. Choose which virtual grade indicators are to be displayed along the left and right edges of the main screen:
   a. Select the grade indicator icon for either left grade indicator or right grade indicator. The SELECT A WIDGET at the left side screen or the SELECT A WIDGET at the right side screen appears.
   b. Select the menu item for LEFT GRADE INDICATOR or RIGHT GRADE INDICATOR.
   c. Select the OK button to return to the screen layout options view.
   d. To display both grade indicators on the main screen, repeat steps for the opposite grade indicator.
6. Choose location of virtual steering indicators to be displayed at the top or bottom edge of the main screen:
   a. Select steering indicator icon for either steering indicator top position or steering indicator bottom position. The SELECT A WIDGET at the top side screen or the SELECT A WIDGET at the bottom side screen appears.
   b. Select the STEERING LIGHTBAR menu item.
   c. Select the OK button to return to the screen layout options view.
7. Select the OK button to return to the main screen.

NOTE: The OK button remains shaded until all view displays have been assigned a view option.

PN36905,000A050 -19-15DEC20-1/1

View Menu—Display Options

Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS**.

DISPLAY OPTIONS Items	
Menu Items	**Description**
WORKING SURFACE	Allows operator to select display options for the active surface type.
ALIGNMENT	Allows operator to change display options for alignments.
POINTS	Allows operator to select point options.
DIRECTION OF TRAVEL	Allows operator to choose, on main screen, orientation in which machine moves.
LANGUAGE SELECTION	Allows operator to choose the desired system language.
MACHINE IMAGE	Allows operator to choose options for machine icon on main screen.
SHORTCUTS	Allows operator to choose shortcut icons that appear on main screen.
BACKGROUND COLOR	Allows operator to select the desired background color of the main screen.
DISPLAY UNITS	Allows operator to select display unit options.

PN36905,000A04A -19-16MAR20-1/1

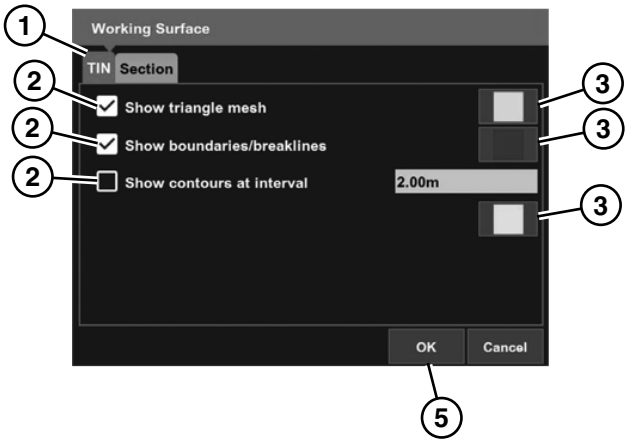
Working Surface Display Options

1. Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> WORKING SURFACE**. The WORKING SURFACE screen appears.

NOTE: Depending on the type of the current active surface, the surface type tab (1) will change to display the working surface options available to the current surface.

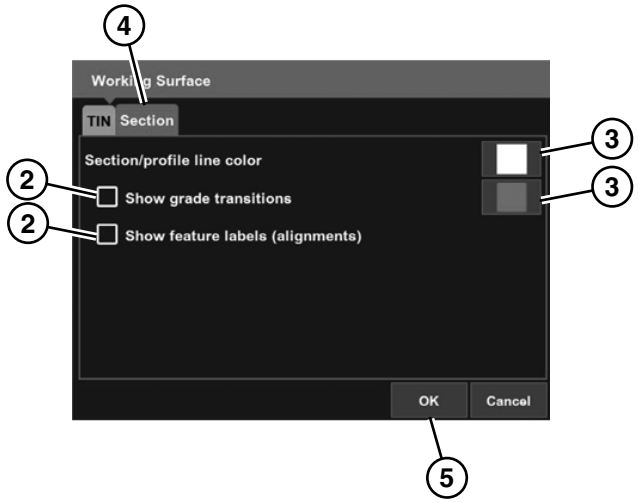
2. Select the SURFACE TYPE tab (1). Select the check box (2) to display the desired feature or parameter. A check mark next to a feature or parameter means it is active.
3. Select the color icon (3) next to a desired feature or parameter. The COLOR SELECTION screen appears.
4. Select the desired color and then select OK to apply the color and return to the WORKING SURFACE screen.
5. Select the SECTION tab (4). Select the check box to display the desired feature or parameter. A check mark next to a feature or parameter means it is active.
6. Select the color icon next to a feature or parameter. The COLOR SELECTION screen appears.
7. Select the desired color and then select OK to apply the color and return to the SECTION tab of the WORKING SURFACE screen.
8. Select the OK button (5) to apply changes and return to the main screen.

1— SURFACE TYPE Tab
2— Check Box
3— Color Icon
4— SECTION Tab
5— OK Button



TX1264996 —UN—26SEP18

Working Surface Screen (TIN surface type tab)



TX1264997 —UN—26SEP18

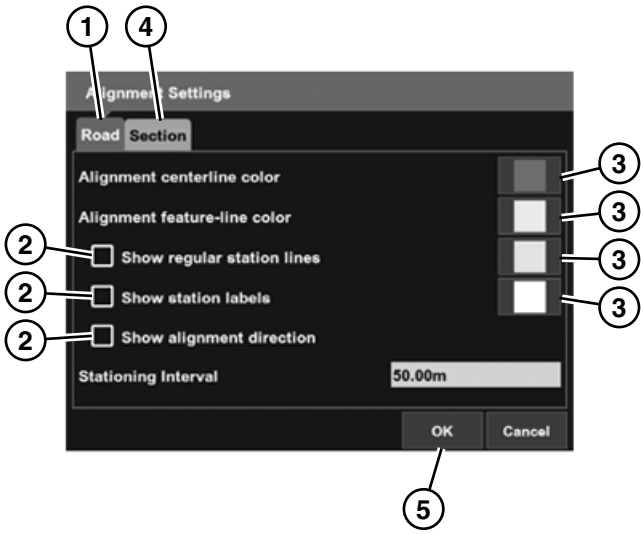
Working Surface Screen (Section tab)

PN36905,000A068 -19-27MAR20-1/1

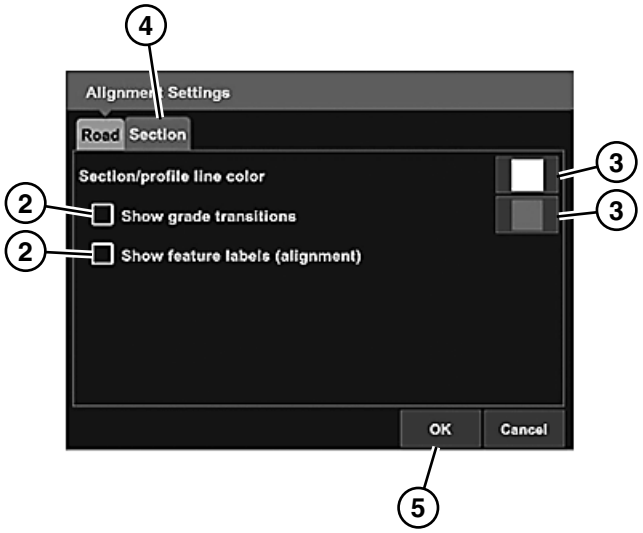
Alignment Display Options

1. Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> ALIGNMENT**. The ALIGNMENT SETTINGS screen appears.
2. Select the ROAD tab (1). Select the check box (2) to display the desired feature or parameter. A check mark next to a feature or parameter means it is active.
3. Select the color icon (3) next to a desired feature or parameter. The COLOR SELECTION screen appears.
4. Select the desired color and then select OK to apply the color and return to the ROAD tab of the ALIGNMENT SETTINGS screen.
5. Select the SECTION tab (4). Select the check box to display the desired feature or parameter. A check mark next to a feature or parameter means it is active.
6. Select the color icon next to a feature or parameter. The COLOR SELECTION screen appears.
7. Select the desired color and then select OK to apply the color and return to the SECTION tab of the ALIGNMENT SETTINGS screen.
8. Select the OK button (5) to apply changes and return to the main screen.

1— ROAD Tab
2— Check Box
3— Color Icon
4— SECTION Tab
5— OK Button



Alignment Settings Screen (Road tab)

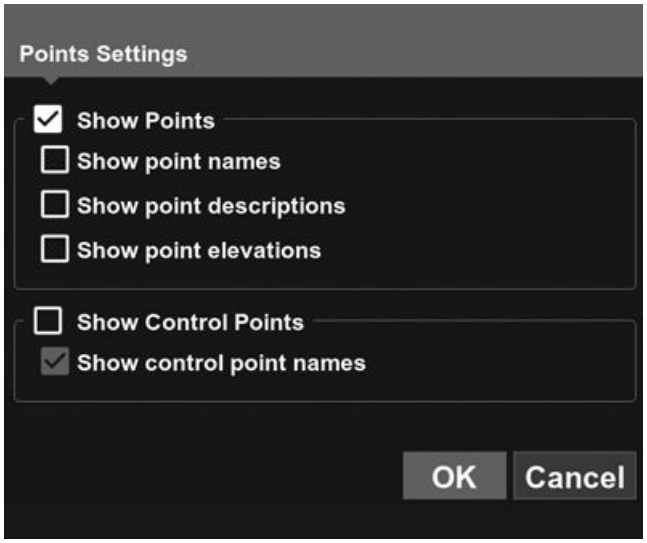


Alignment Settings Screen (Section tab)

PN36905,000A066 -19-27MAR20-1/1

Point Display Options

1. Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> POINTS**.
2. Select the desired items to be shown on the main screen. A check mark appears next to items are enabled.
3. Select OK. Main screen will display the selected items.



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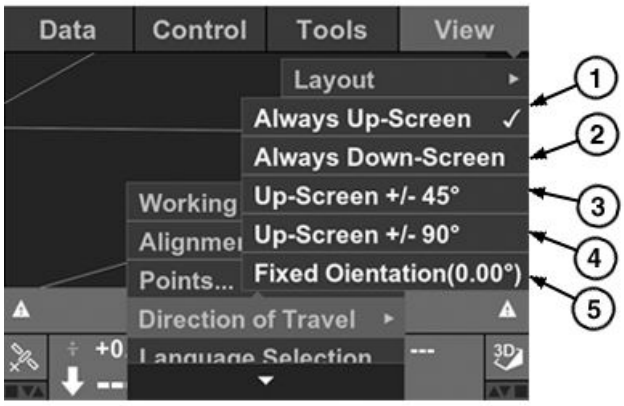
Points Settings Screen

PN36905,000A064 -19-24MAR20-1/1

Direction of Travel Options

1. Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> DIRECTION OF TRAVEL**. The DIRECTION OF TRAVEL context menu appears.
2. Select the desired orientation (1—5) for the main screen from the context menu. The main screen appears.

1— ALWAYS UP-SCREEN
2— ALWAYS DOWN-SCREEN
3— UP-SCREEN +/- 45°
4— UP-SCREEN +/- 90°
5— FIXED ORIENTATION (0.00°)



TX1294563A —UN—26MAR20

Direction of Travel Context Menu

PN36905,000A069 -19-25MAR20-1/1

Machine Image Options

1. Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> MACHINE IMAGE**. The MACHINE IMAGE context menu appears.
2. Select the desired machine image style (1—3) for the main screen from the context menu. The main screen appears with the selected machine image style.

1— 3D
2— WIREFRAME
3— SEMI-TRANSPARENT

TX1294564A —UN—26MAR20

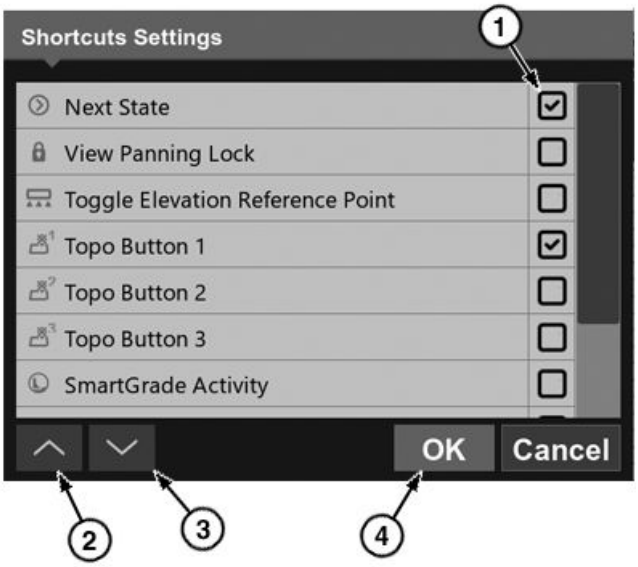
Machine Image Context Menu

PN36905,000A06A -19-25MAR20-1/1

Enable/Disable Shortcut Buttons

1. Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> SHORTCUTS**. The SHORTCUT SETTINGS menu screen appears.
2. Click the check box (1) next to the desired shortcuts. A displayed check mark means that the shortcut is active.
3. Use the up and down arrow buttons (2 and 3) to change the order of the shortcut buttons on the main screen.
4. Select the OK button (4) to apply the changes and return to the main screen. The active shortcut buttons appear on the right side of the main screen.

1— Check Box
2— Up Arrow Button
3— Down Arrow Button
4— OK Button



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Shortcuts Settings Screen

PN36905,000A065 -19-25MAR20-1/1

Changing Background Color

1. Navigate from main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> BACKGROUND COLOR**.
2. Select a color from the COLOR SELECTION screen and select OK. The background color of the main screen changes to the newly selected color.

PN36905,000A062 -19-27MAR20-1/1

Display Units Options

1. Navigate through main screen: **MAIN MENU >> VIEW >> DISPLAY OPTIONS >> DISPLAY UNITS**. The DISPLAY UNITS screen appears.
2. Select the desired unit of measure and display point (d.p.) for each unit.
3. Select the OK button to save settings and return to the main screen.

PN36905,000A079 -19-08APR20-1/1

View Menu—About

The About screen provides information about the 3DMC and SmartGrade™ system, which includes 3DMC software version, firmware version, and monitor controller serial number. This screen also displays authorization status of the 3DMC software. If the system reports an unauthorized message, contact an authorized John Deere dealer.

SmartGrade is a trademark of Deere & Company

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SmartGrade™ Remote Support Website

At a Glance (Support Desk)

This section provides the user a reference guide for using the John Deere SmartGrade™ remote support website.

The following support desk topics are covered in this section:

- Logging in to MyJohnDeere at https://www.myjohndeere.com
- Accessing the support desk via the MyJohnDeere site
- Managing pair requests
- Managing support requests
- Initiating unsolicited support
- Configuring the support desk
- Viewing client device connection history

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Accessing the Remote Support Website

The SmartGrade™ remote support website is accessed via the MyJohnDeere website or by visiting https://smartgraderemotesupport.deere.com.

To log into MyJohnDeere:

NOTE: Using Chrome™ or Firefox® to access MyJohnDeere is required.

1. Navigate a web browser to https://www.myjohndeere.com.
2. Enter username and password to access the applications list.
3. Select the SmartGrade™ remote support application.
4. Select the desired support desk from the organization list.

SmartGrade is a trademark of Deere & Company
Chrome is a trademark of Google Inc.
Firefox is a trademark of the Mozilla Foundation

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Managing Remote Support Account Access

User access and permissions are managed by an administrator via the JDLink™ Dashboard Team Manager tool. Access the tool at https://www.teammanager.deere.com.

JDLink is a trademark of Deere & Company

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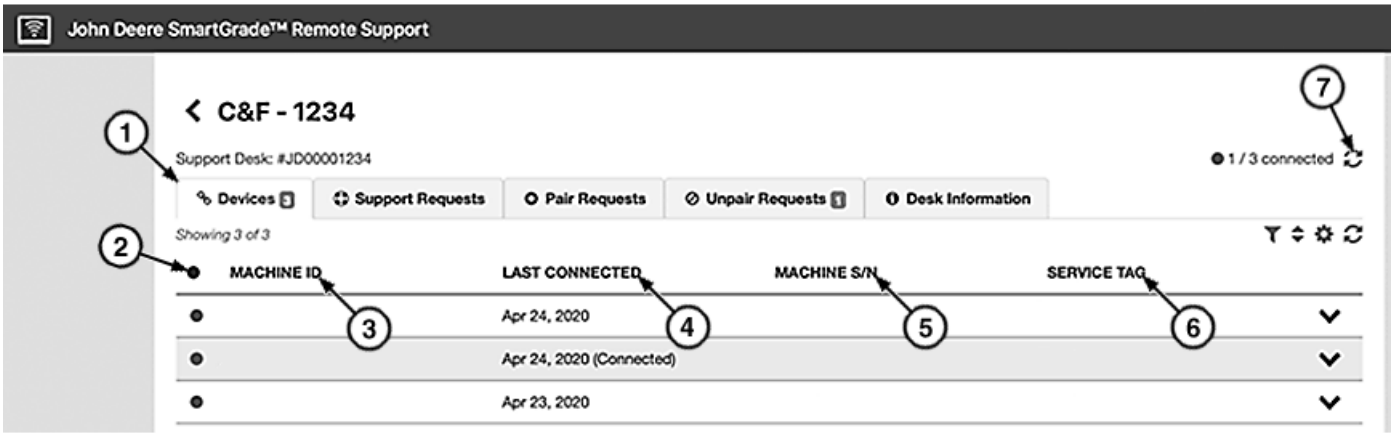
Viewing, Filtering, and Sorting Paired Client Devices



TX1308391A —UN—18JAN21

TX1308391A

Support Desk

1— DEVICES Tab
2— Client Device Online Status
3— MACHINE ID
4— LAST CONNECTED
5— MACHINE S/N
6— SERVICE TAG
7— Refresh Button

Viewing Client Devices Paired With a Support Desk

Paired client devices can be viewed and sorted on the DEVICES tab (1). The DEVICES tab displays a list of paired devices and the following information:

- **Client Device Online Status (2)—**Shows the online status of the client devices connected to the support desk. A green icon indicates that the client device is online. A grey icon indicates that the client device is offline.
- **MACHINE ID (3)—**Unique identifier provided by the client device application. For more information, see Opening Client Device Menu. (Section 2-5).
- **LAST CONNECTED (4)—**Shows the date of the most recent client device and support desk interaction.
- **MACHINE S/N (5)—**Paring tag for serial number of the paired machine.
- **SERVICE TAG (6)—**Unique identifier provided by user.
- **Refresh Button (7)—**Reloads the support desk to check for new pair requests, added client devices, or unpair requests.

The columns displayed when viewing client devices can be configured as shown. The following process describes how column configuration is achieved:

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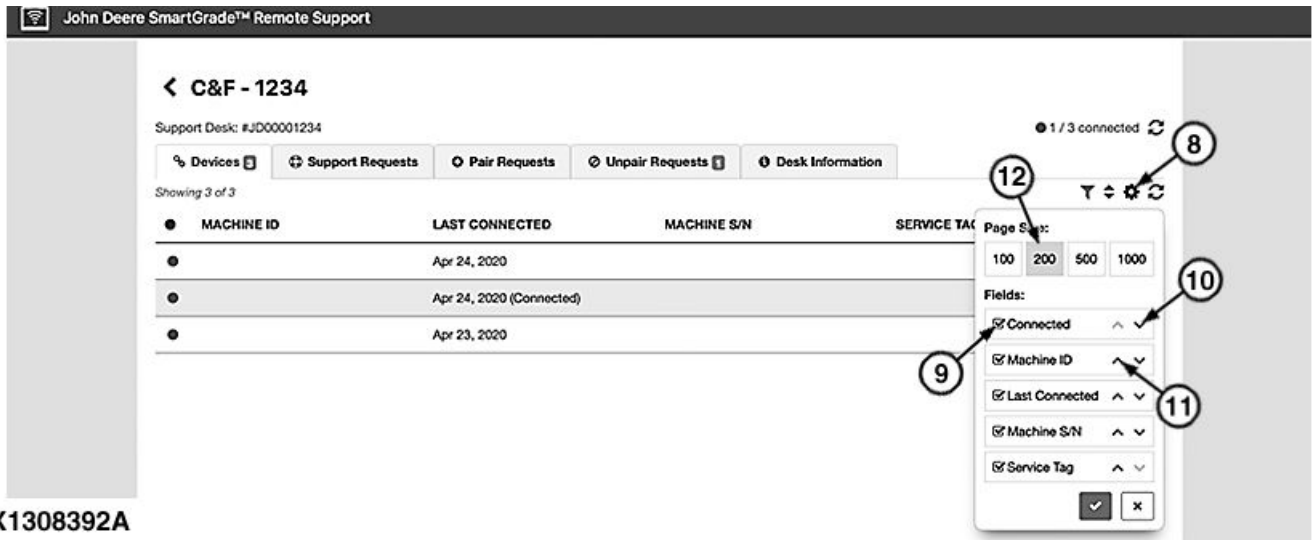

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Support Desk Configuration Window

8— Settings Icon
9— Check Box
10— Down Arrow
11— Up Arrow
12— PAGE SIZE

1. Select the settings icon (8) to access the support desk configuration window. This allows the user to customize the following:
   a. Select the check box (9) to enable or disable the desired column.
   b. Select the down arrow (10) or up arrow (11) to reorder columns.
   c. Select the appropriate PAGE SIZE (12).
2. Select the OK button to save the configuration.

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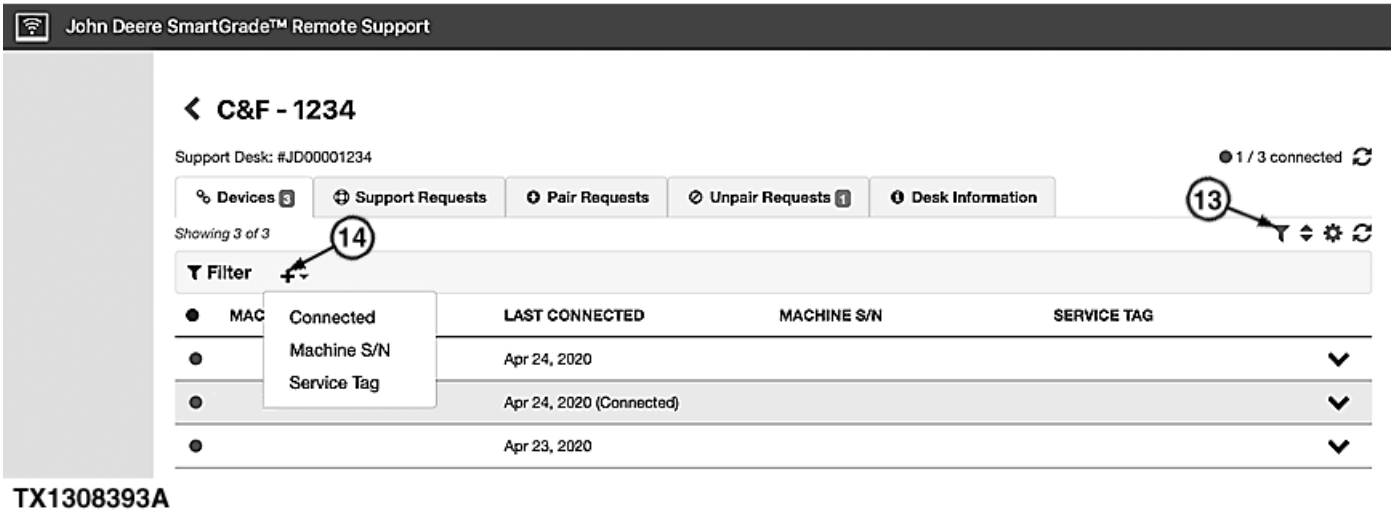
Using Filters to Narrow Client Device Lists



Filtering Client Devices

13— Filter Icon **14— Add Filter Button**

Filters can be used to narrow down the client devices by relevance. To enable and use filters:

1. Select the filter icon (13).
2. Select the add filter button (14).
3. Select the item to filter by and enter desired filter term.
4. Select the OK button to save and enable filter.

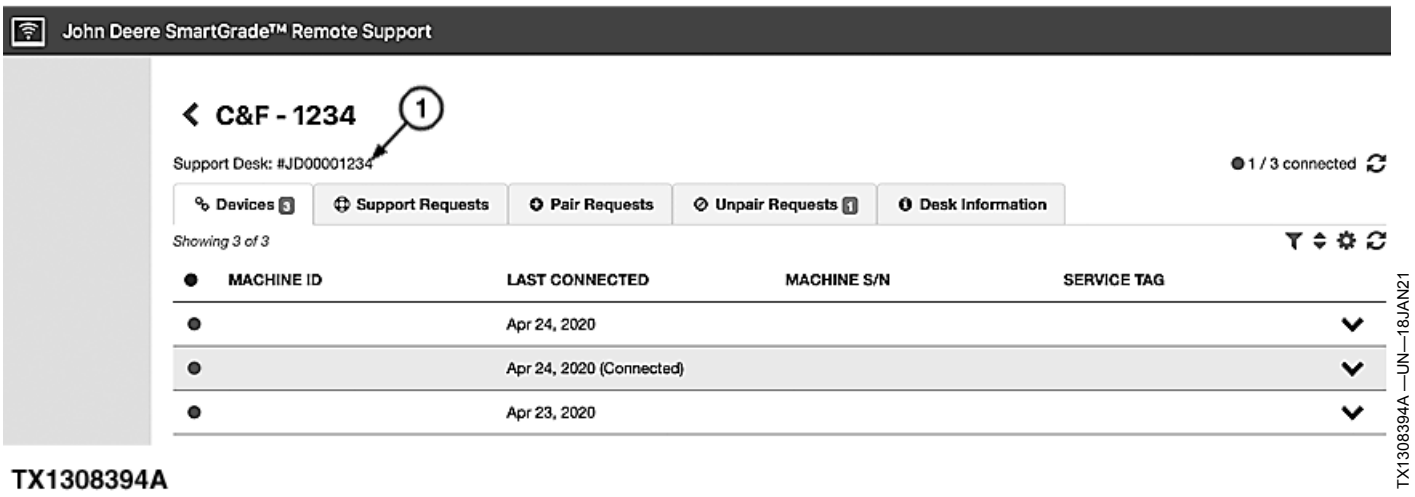
Sorting Client Device Lists

Client device lists can be sorted by column. To sort client devices:

1. Select the column title matching the desired field to sort.
2. Select column title again to switch between ascending and descending sort order. The arrow icon next to the column title indicates order of sort.

PN36905,000A0E8 -19-01JUN20-3/3

Finding the Remote Support Desk Number



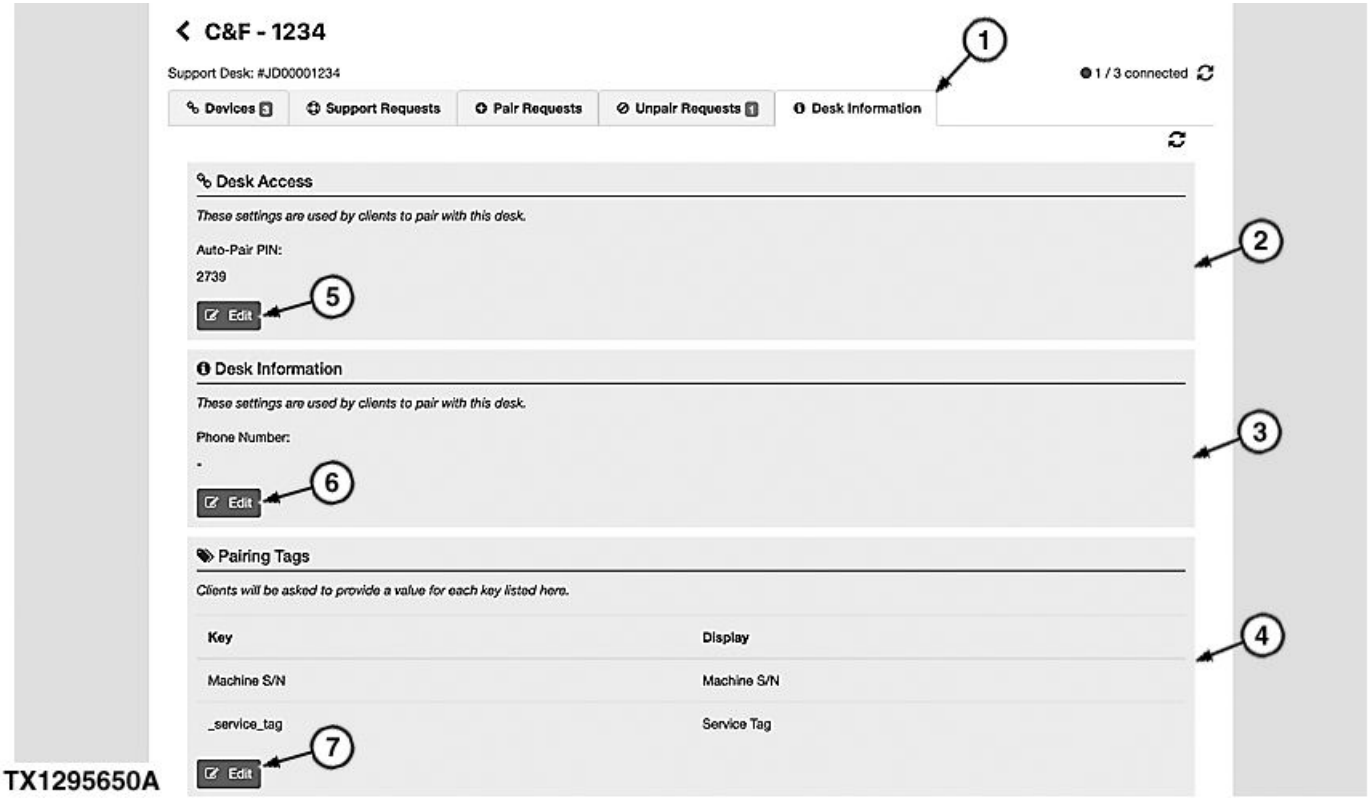
Support Desk Number

1— Support Desk Number

The support desk number (1) is required when pairing a client device to the support desk. The support desk number is located near the top left of the main page of the remote support website.

PN36905,000A0E9 -19-01JUN20-1/1

Configuring the Remote Support Desk



Desk Information Tab

1— DESK INFORMATION
2— DESK ACCESS
3— DESK INFORMATION
4— PAIRING TAGS
5— EDIT
6— EDIT
7— EDIT

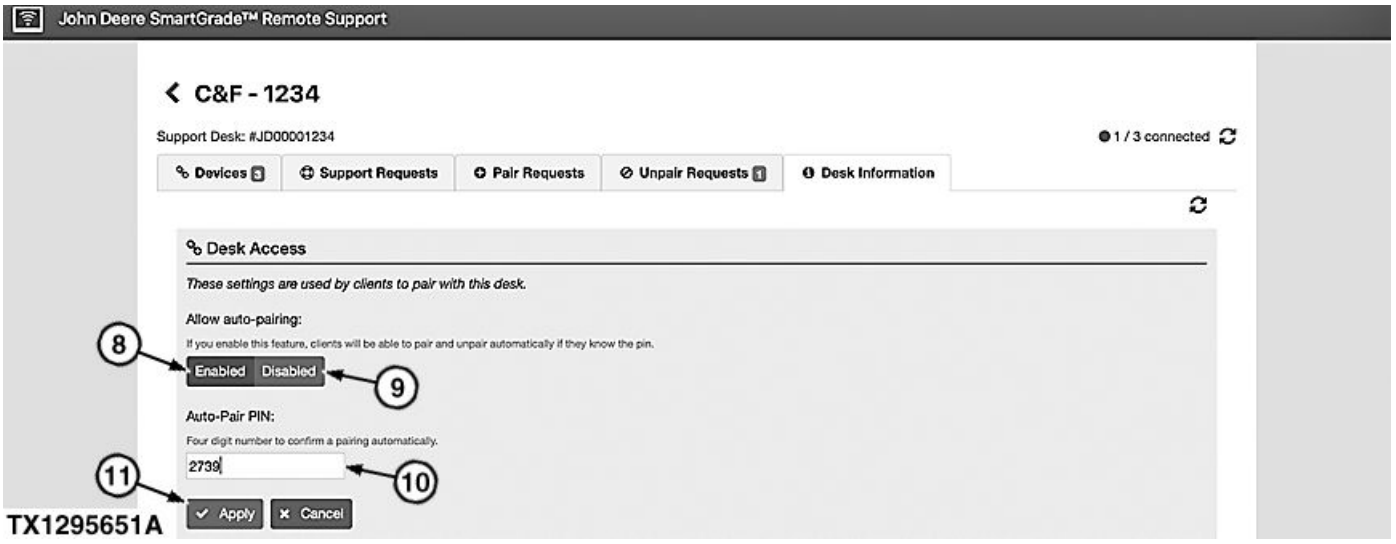
Access DESK INFORMATION (1) tab to perform remote support desk configuration. Use the following configurable parameters::

- **DESK ACCESS (2)—**Allows the user to change the AUTO-PAIRING functionality between the support desk and the client device.
- **DESK INFORMATION (3)—**Provides information to help identify the service desk that displays during the pairing process on the client device.
- **PAIRING TAGS (4)—**Define the prompts that display on the client device during the pairing process. The tags can be used to help the support desk user to identify specific client devices.

To modify any of these parameters, select the appropriate EDIT button (5—7).

Continued on next page

Modifying DESK ACCESS Parameters



DESK ACCESS Section

8— ENABLED Button
9— DISABLED Button
10— AUTO-PAIR PIN Data Field
11— APPLY Button

NOTE: The AUTO-PAIRING function automatically allows anyone with both the SUPPORT DESK NUMBER and the AUTO-PAIRING PIN to automatically pair the client device with the SUPPORT DESK.

The DESK ACCESS section allows the user to enable or disable the AUTO-PAIRING function and to set the AUTO-PAIR PIN.

Enable AUTO-PAIRING as follows:

1. Select DESK ACCESS EDIT.
2. Enable AUTO-PAIRING function by selecting the ENABLED button (8).

NOTE: AUTO-PAIR PIN must be at least four digits in length.

3. Enter a value in the AUTO-PAIR PIN data field (10).
4. Select the APPLY button (11) to save settings and exit.

To disable AUTO-PAIRING:

1. Disable AUTO-PAIRING function by selecting the DISABLED button (9).
2. Select the APPLY button to save changes and exit.

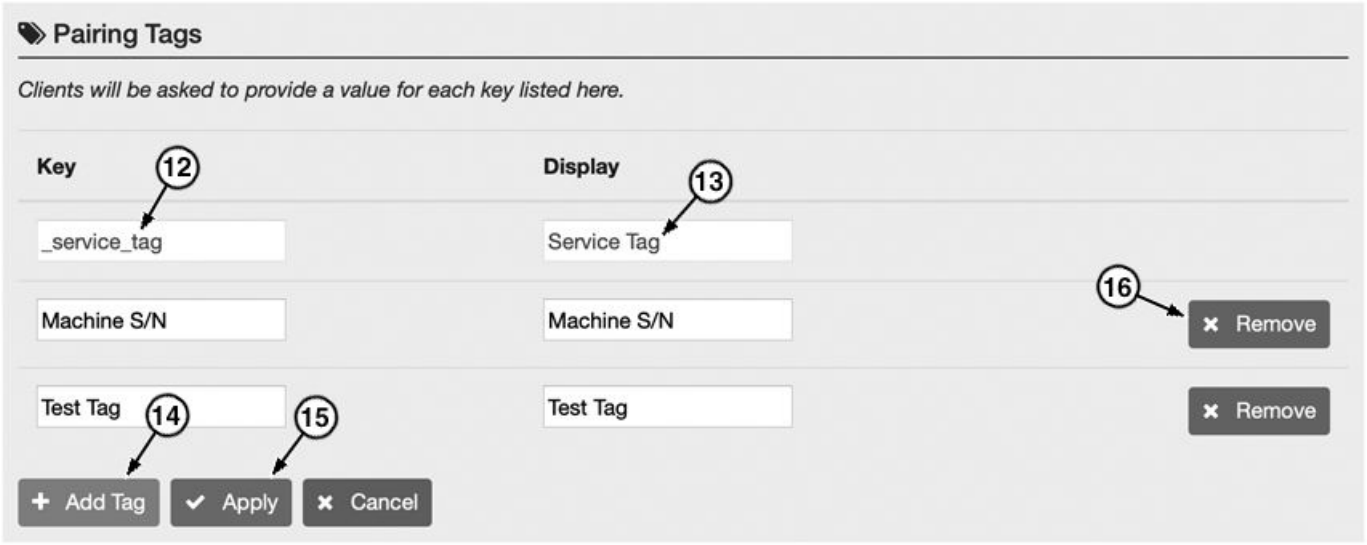
Modifying DESK INFORMATION Parameters

The DESK INFORMATION section allows the user to add the support desk phone number. The phone number can be referenced on the client device if further assistance is necessary. To modify the phone number:

1. Select the DESK INFORMATION EDIT button.
2. Enter the desired phone number.
3. Select the APPLY button to save settings and exit.

Continued on next page

Modifying PAIRING TAGS



TX1295846A —UN—23APR20

TX1295846A

PAIRING TAGS Section

12— KEY Data Field
13— DISPLAY Data Field
14— ADD TAG Button
15— APPLY Button
16— REMOVE Button

PAIRING TAGS can be used to provide additional contact or reference information for both client devices and support desks. PAIRING TAGS are composed of the following:

- **KEY—**An identifier label for the value in the DISPLAY field.
- **DISPLAY—**The value that is displayed on the client device paired with this support desk.

To add PAIRING TAGS:

1. Select the EDIT button on the PAIRING TAGS section.
2. Select the ADD TAG button (14).
3. Enter the appropriate values in the data fields (12 and 13).
4. Select the APPLY button (15) to save the pairing tag.

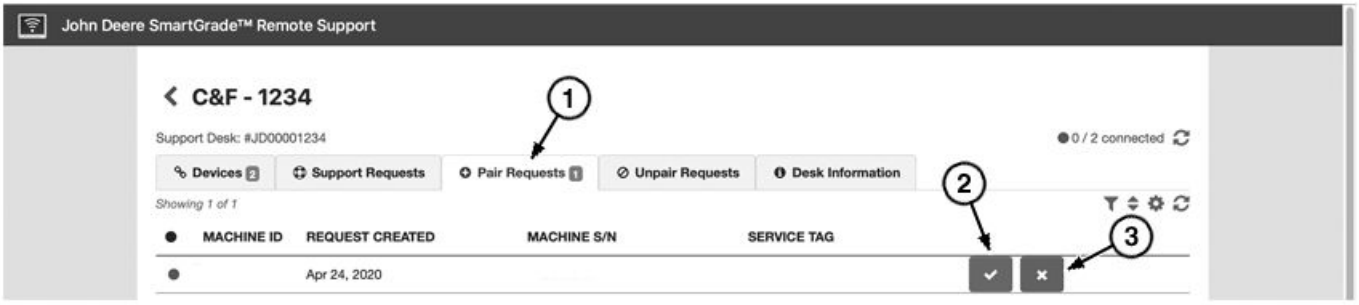
To remove a pairing tag, select the REMOVE button (16) next to the appropriate tag.

PN36905,000A0EA -19-01JUN20-3/3

Managing Pairings

This section details the management of pairings on the web portal.

Approving and Denying Pair Requests



TX1308395A —UN—18JAN21

TX1308395A

Approving and Denying Pair Requests

1— PAIR REQUESTS Tab **2— Accept Button** **3— Cancel Button**

Pair requests can be approved automatically or manually. When no auto-pair personal identification number (PIN) has been set, manual pairing approval is required. For more information on auto-pairing, see Configuring Remote Support Desk. (Section 2-4.)

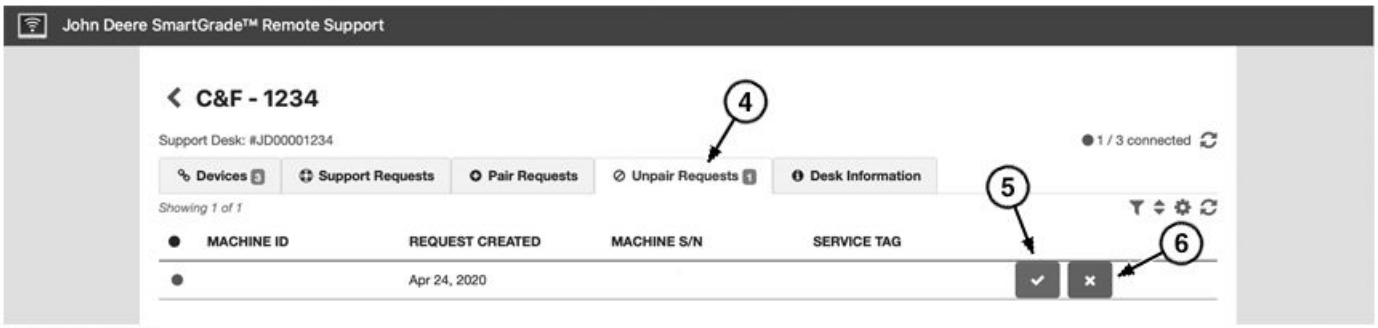
To manually pair a client device to a service desk, perform the following:

1. Complete the pairing process on the client device. See Pairing to a Support Desk. (Section 2-5.)
2. Select the PAIR REQUESTS tab (1) to view pending requests.
3. Select the accept button (2) to accept the pair request and add the client device to the DEVICES tab.

Select the cancel button (3) to deny the pair request.

PN36905,000A0EB -19-01JUN20-1/2

Approving and Denying Unpair Requests



TX1308396A —UN—18JAN21

TX1308396A

Approving and Denying Unpair Requests

6— UNPAIR REQUESTS Tab **7— Accept Button** **8— Cancel Button**

Unpair requests can be approved automatically or manually. When no auto-pair personal identification number (PIN) has been set, manual unpairing approval is required. For more information on auto-pairing, see Configuring Remote Support Desk. (Section 2-4.)

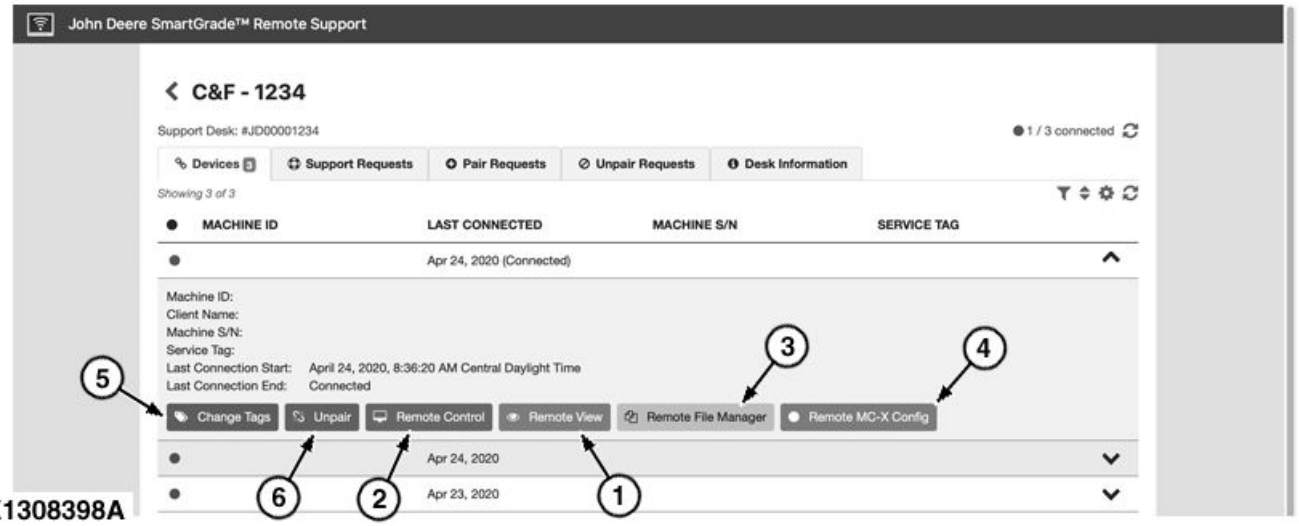
To manually unpair a client device to a service desk, perform the following:

1. Complete the pairing process on the client device. See Unpairing to a Support Desk. (Section 2-5.)
2. Select the UNPAIR REQUESTS tab (4) to view pending requests.
3. Select the accept button (5) to accept the unpair request and remove the client device from the DEVICES tab.

Select the cancel button (6) to deny the unpair request.

PN36905,000A0EB -19-01JUN20-2/2

Providing Support



TX1308398A —UN—19JAN21

Remote Support Types

1— REMOTE VIEW Button
2— REMOTE CONTROL Button
3— REMOTE FILE MANAGER Button
4— REMOTE MC-X CONFIG Button
5— CHANGE TAGS Button
6— UNPAIR Button

Once a remote support client device has been paired with a support desk, the following remote support types are available:

- **REMOTE VIEW Button (1)—**Views the client device display. The support desk cannot make changes to the client device. For more information, see Remote View. (Section 2-4.)
- **REMOTE CONTROL Button (2)—**Accesses the client device. The support desk can remotely operate the client device. For more information, see Remote Control. (Section 2-4.)
- **REMOTE FILE MANAGER Button (3)—**Establishes a file transfer connection with the client device. Files can be transferred between the support desk and the client device. For more information, see Remote File Management. (Section 2-4.)
- **REMOTE MC-X CONFIG Button (4)—**Accesses the MC-X machine control gateway on the client device. Various networking and configuration settings can be viewed and modified. For more information, see Remote MC-X Configuration. (Section 2-4.)
- **CHANGE TAGS Button (5)—**Change the pairing tags associated with the paired client device. Service tags created by one support desk cannot be viewed by another. For more information, see Configuring Remote Support Desk. (Section 2-4.)
- **UNPAIR Button (6)—**Remove the client device pairing from the support desk. For more information, see Managing Pairings. (Section 2-4.)

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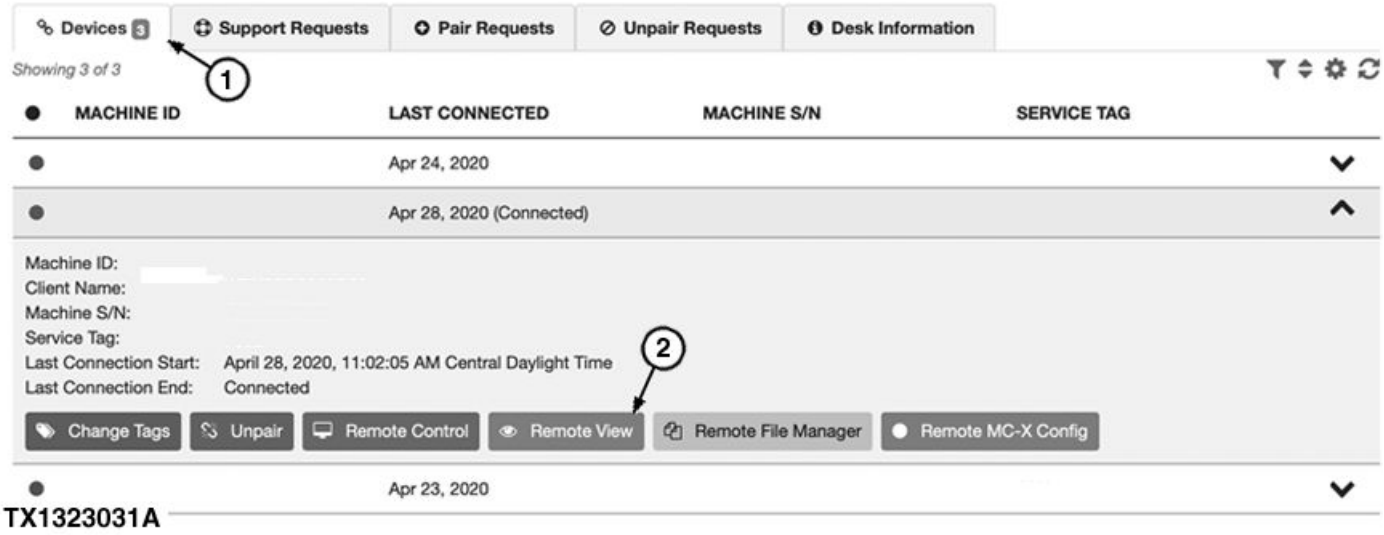
Remote View

REMOTE VIEW, the least invasive type of support, does not permit any modification of the client device state and, therefore, can be used at any time without interrupting the operator or machine.

To start a REMOTE VIEW session, complete the following steps:



Starting a Remote View Session

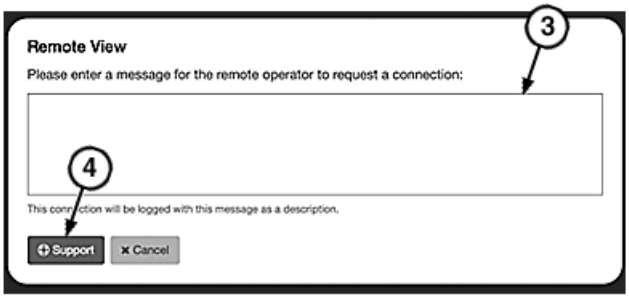
1— DEVICES Tab **2— REMOTE VIEW Button**

1. Select the DEVICES tab (1).
2. Select the REMOTE VIEW button (2) for the desired client device. The REMOTE VIEW session dialog box appears.

PN36905,000A0ED -19-19APR22-1/2

3. Enter a message for the operator in the message data field (3) if desired.
4. Select the SUPPORT button (4) to connect to and view the screen of the client device.

3— Message Data Field **4— SUPPORT Button**

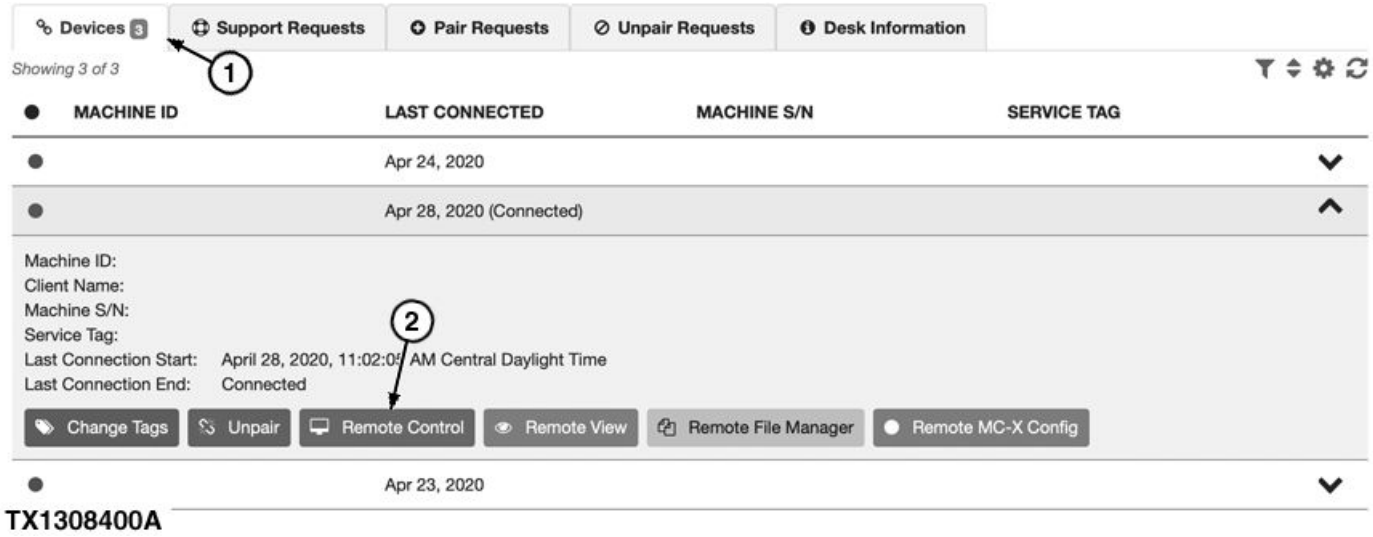


Remote View Dialog Box

PN36905,000A0ED -19-19APR22-2/2

Remote Control

REMOTE CONTROL allows a user to view and interact with the client device. To start a REMOTE VIEW session, complete the following steps:



TX1308400A —UN—19JAN21

Starting a Remote Control Session

1— DEVICES Tab **2— REMOTE CONTROL Button**

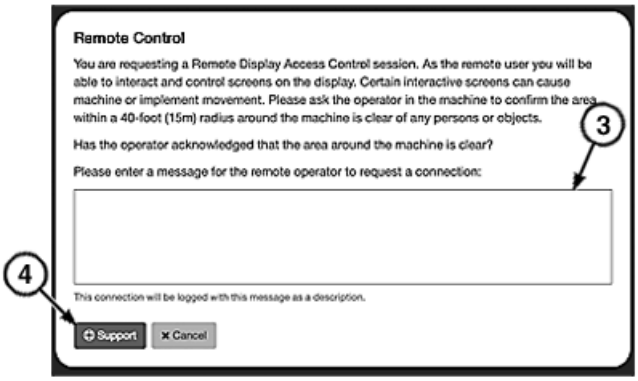
1. Select the DEVICES tab (1).
2. Select the REMOTE CONTROL button (2) for the desired client device. The remote control session dialog box appears.

⚠ CAUTION: Prevent possible injury from unexpected machine movement. A remote control session allows a user to interact with change parameters on the client device. Certain interaction may cause machine movement. Ask the operator to ensure that the machine is clear of people or objects before proceeding.

PN36905,000A0EE -19-01JUN20-1/2

3. Enter a message for the operator in the message data field (3) if desired.
4. Select the SUPPORT button (4).
5. On the machine, the client device prompts the operator to accept the remote control session. Operator must select ACCEPT to continue.
6. On the support desk, the client device screen appears. User now has control over the client device.

3— Message Data Field **4— SUPPORT Button**



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Support Desk Remote Control Dialog Box

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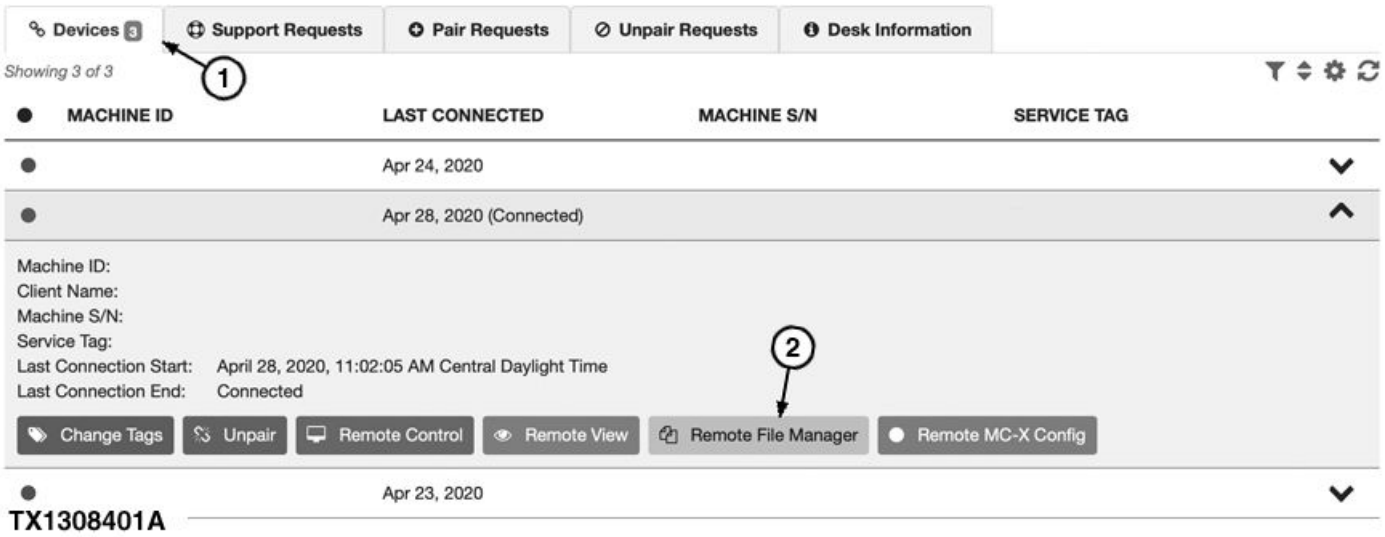
Remote File Management



Starting a Remote File Management Session

1— DEVICES Tab

2— REMOTE FILE MANAGER Button

Remote file management allows a support desk user to initiate a file transfer session with the client device. Remote file management does not provide any interaction with the client device display or operation. Remote file management can be used without operator interruption.

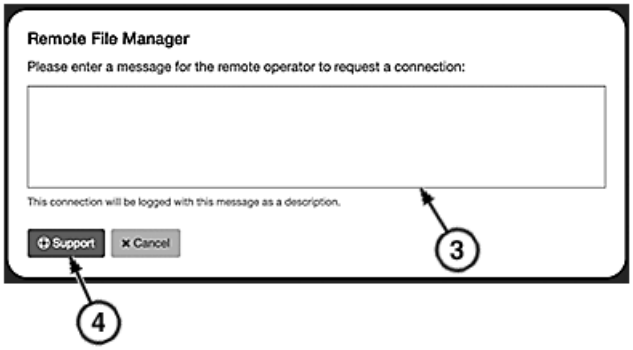
This Table can be referenced while import or export files.

File Type	File Location
Machine Builder File	Topcon/3DMC
Calibration Deployment File	Not in file structure. You will need to go into MCXConfig
Topcon Project (.TP3)	Topcon/3DMC
Topcon Surface (.TN3, .PL3, .RD3)	Topcon/3DMC OR Emended in .TP3 file
Topcon Localization (.GC3)	Topcon/3DMC OR Emended in .TP3 file
Topcon Point File (.PT3)	Topcon/3DMC OR Emended in .TP3 file
Topcon Line File (.LN3)	Topcon/3DMC OR Emended in .TP3 file
Log files DTAC may request	Topcon/3DMC

PN36905,000A0EF -19-21FEB23-1/5

Starting a Remote File Management Session

1. Select the DEVICES tab (1).
2. Select the REMOTE FILE MANAGER button (2) for the desired client device. The REMOTE FILE MANAGER dialog box appears.
3. Enter a message for the operator in the message data field (3) if desired.
4. Select the SUPPORT button (4). The REMOTE FILE MANAGER window appears.



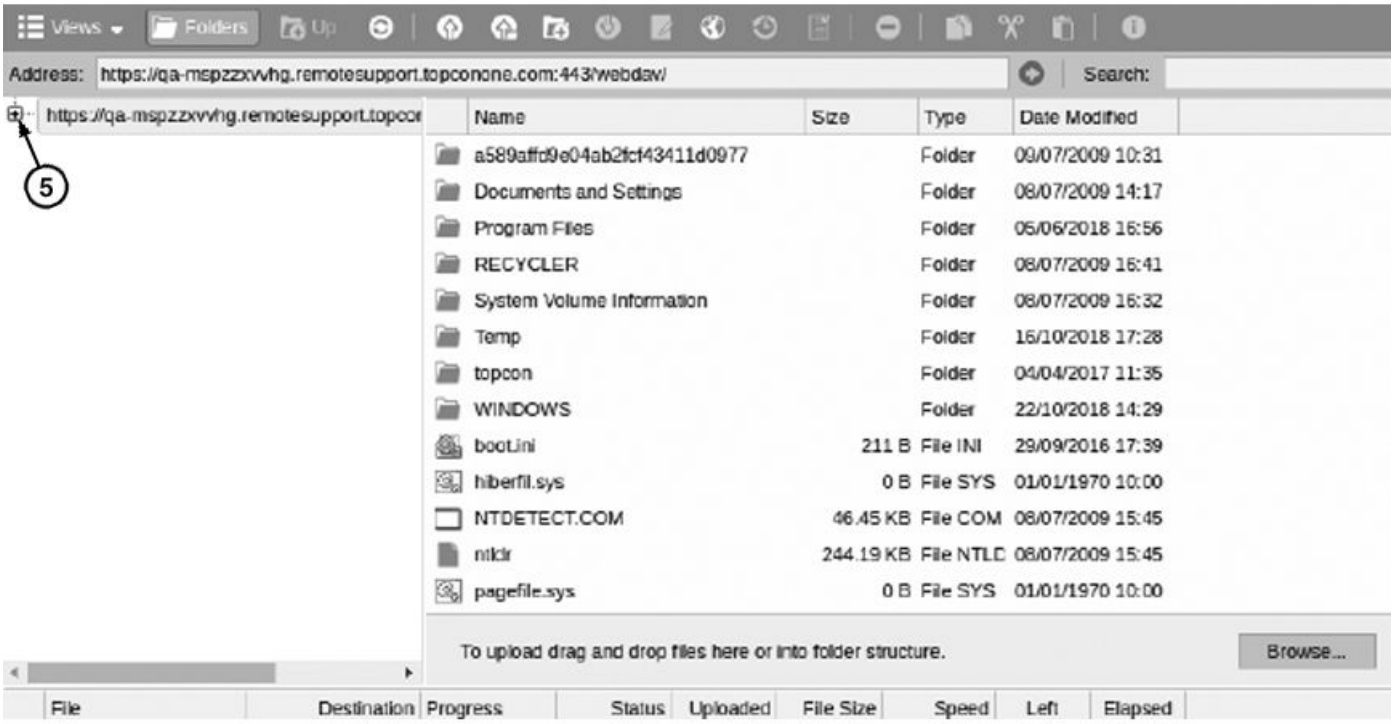
3— Message Data Field

4— SUPPORT Button

Remote File Manager Dialog Box

Continued on next page

PN36905,000A0EF -19-21FEB23-2/5



Remote File Manager

5— Plus Button

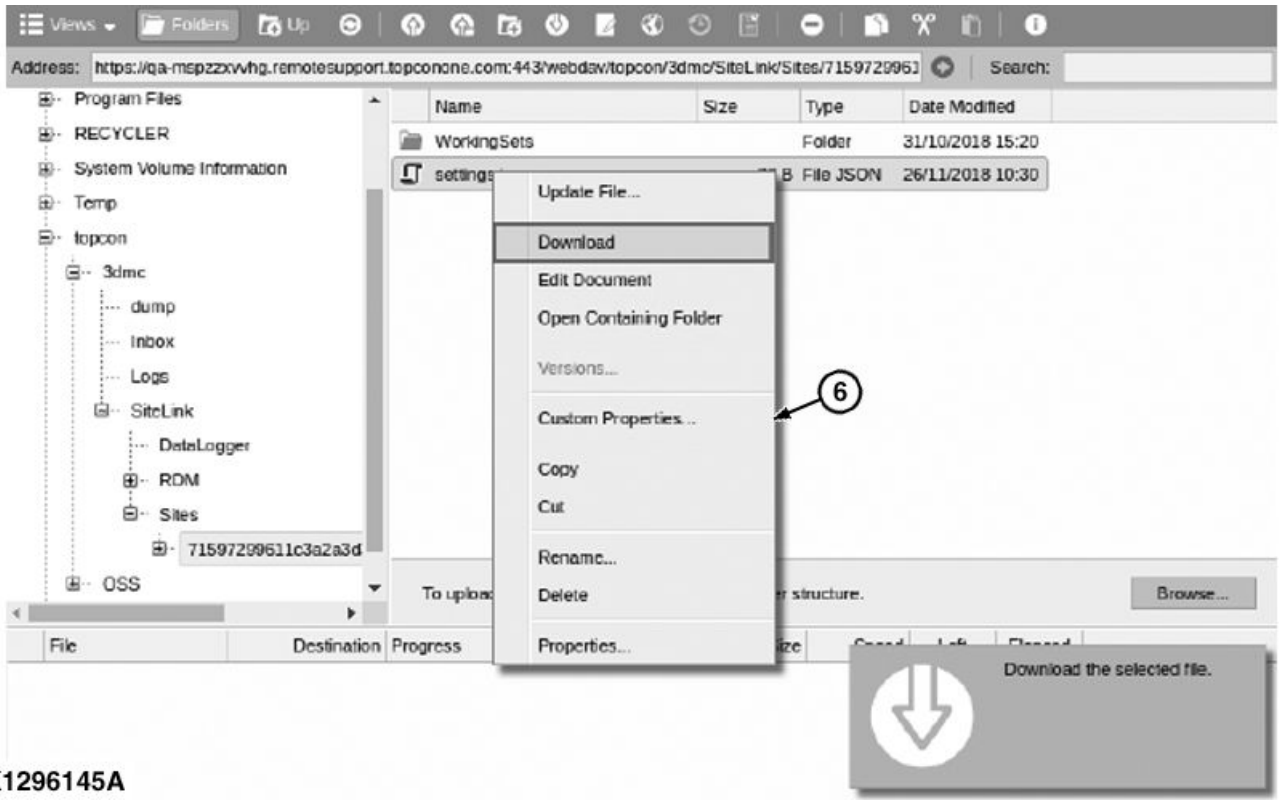
5. Select the plus button (5) to expand the directory tree.
6. Select a folder to reveal the contents in the right pane of the REMOTE FILE MANAGER.

Modifying, Deleting, or Downloading Files on the Client Device

Files on the client device can be modified, deleted, or downloaded to the remote support computer. To modify files on the client device, complete the following steps:

1. Start a remote file management session.

Continued on next page



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Remote File Manager

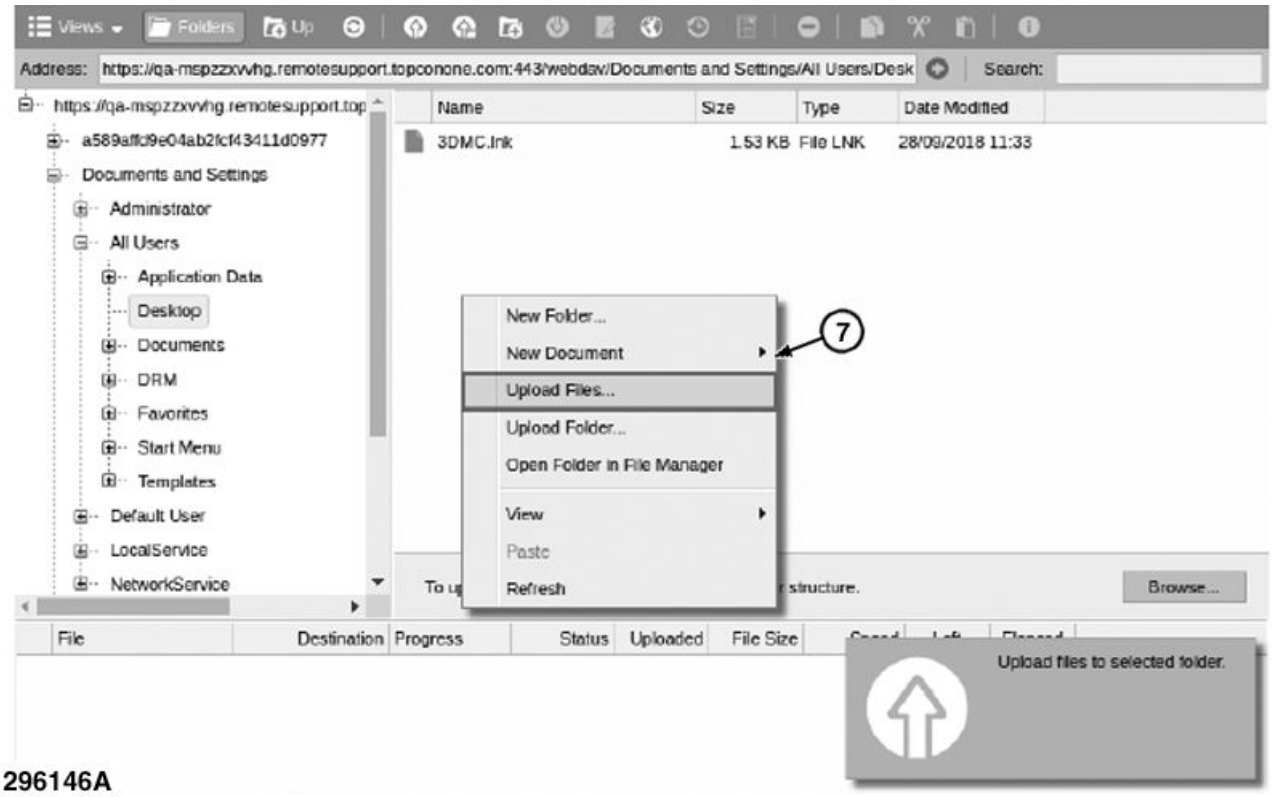
6— Context Menu

2. Select a file and right-click. The context menu (6) appears.
3. Select to download, modify, or delete the selected file.

Continued on next page

Uploading Files and Folders to the Client Device

1. Start a remote file management session.



Remote File Manager

7— Context Menu

2. Select blank space in the right pane and right-click. The context menu (7) appears.
3. Select to upload files or a folder to the client device.

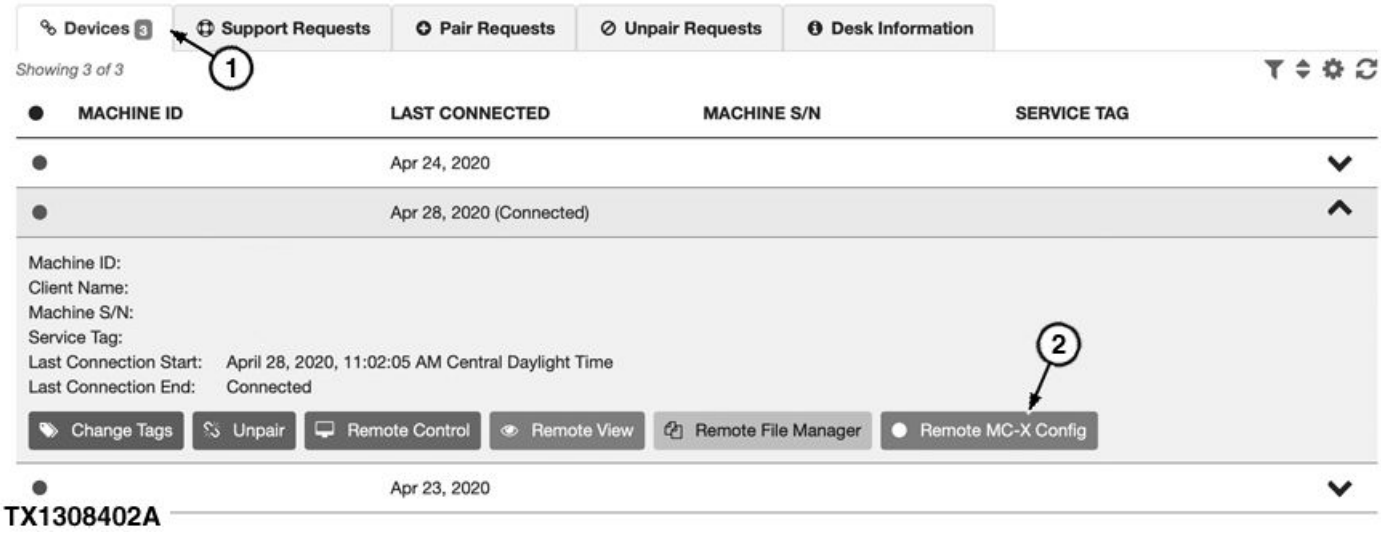
PN36905,000A0EF -19-21FEB23-5/5

TX1296146A —UN—01MAY20

Remote MC-X Configuration

Remote MC-X configuration enables the support desk to view and modify MC-X controller settings. Remote MC-X configuration is potentially disruptive to the machine operator and the client device. Ensure that an operator and user have communicated before accessing and modifying settings in the remote MC-X configuration environment.

To access the remote MC-X configuration settings:



Accessing Remote MC-X Configuration

1— DEVICES Tab

2— REMOTE MC-X CONFIG Button

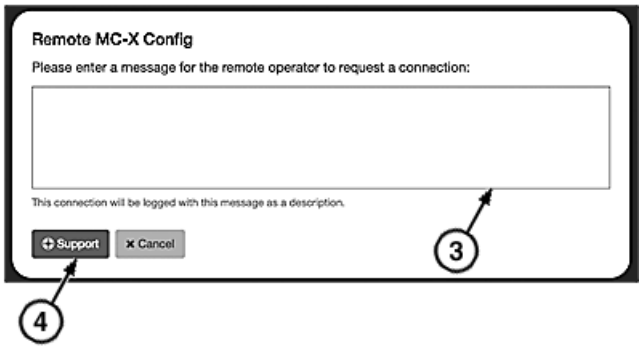
1. Select the DEVICES tab (1).
2. Select REMOTE MC-X CONFIG button (2) for the desired client device. The REMOTE MC-X CONFIG dialog box appears.

PN36905,000A0F0 -19-01JUN20-1/2

3. Enter a message for the operator in the message data field (3) if desired.
4. Select the SUPPORT button (4). The MC-X configuration screen appears.

3— Message Data Field

4— SUPPORT Button



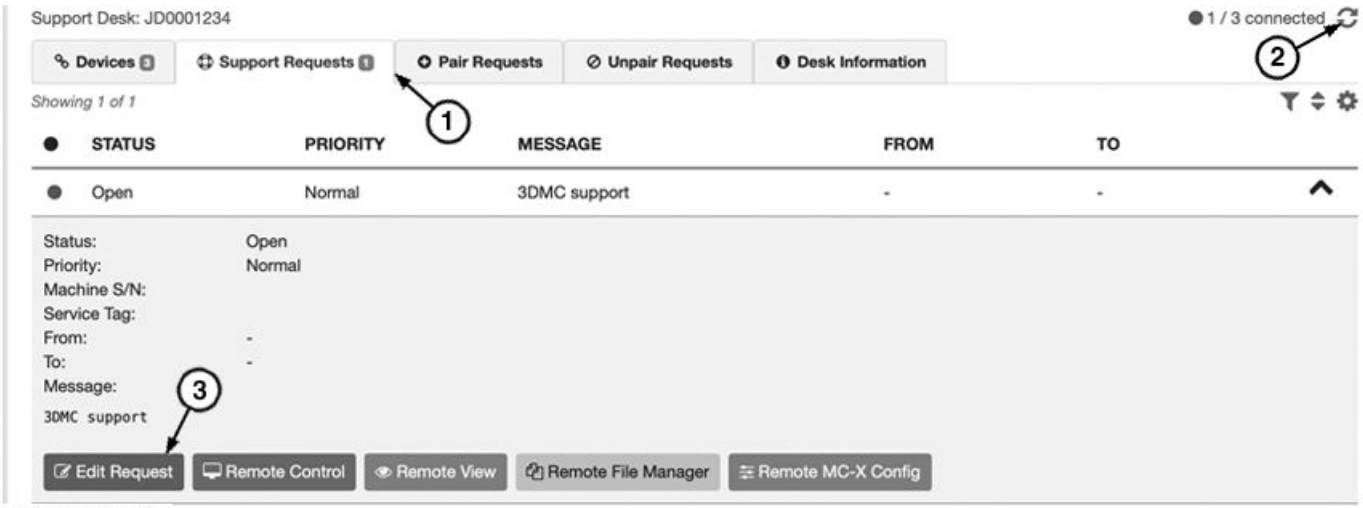
Remote MC-X Config Dialog Box

PN36905,000A0F0 -19-01JUN20-2/2

Responding to Support Requests

Remote support can be provided when the support desk receives a support request. Support requests are initiated on the client device. For more information on creating a support request, see Submitting Support Requests and Viewing Status. (Section 2-5.)

Responding to a Support Request



TX1308403A

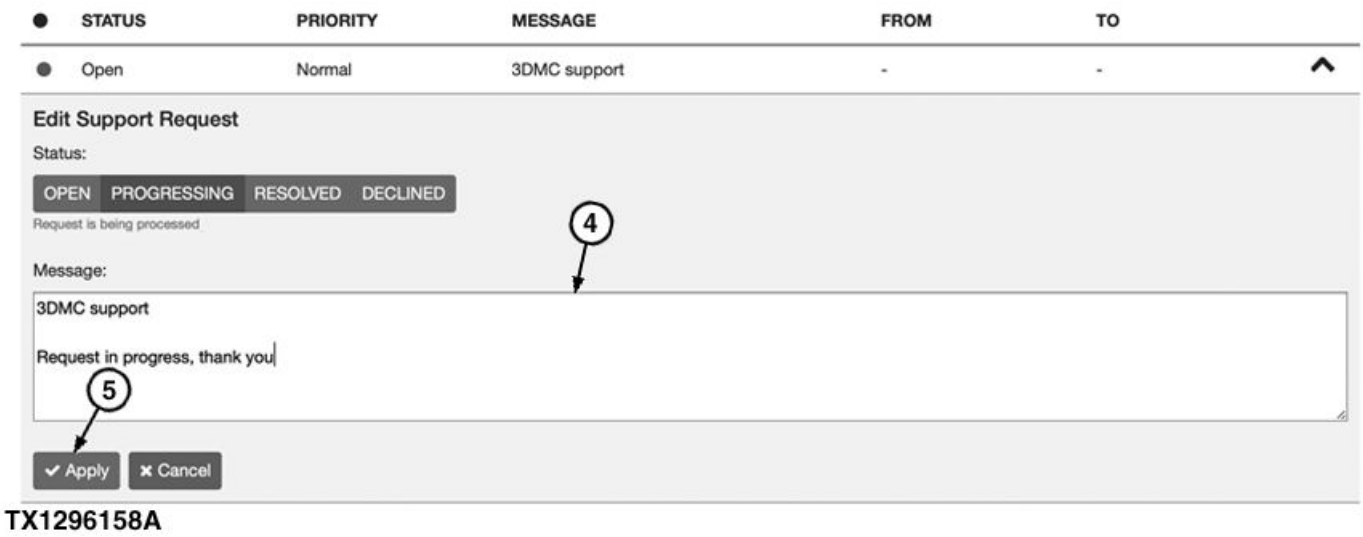
TX1308403A —UN—18JAN21

Viewing Support Requests

1— SUPPORT REQUESTS Tab **2— Refresh Button** **3— EDIT REQUEST Button**

1. Select the SUPPORT REQUESTS tab (1).
2. Select the desired support request to see the details of the request. Provide requested support if necessary.
3. Select the EDIT REQUEST button (3) to update the status of the request. The EDIT SUPPORT REQUEST dialog box appears.

PN36905,000A0F1 -19-01JUN20-1/4



TX1296158A

TX1296158A —UN—01MAY20

Editing a Support Request

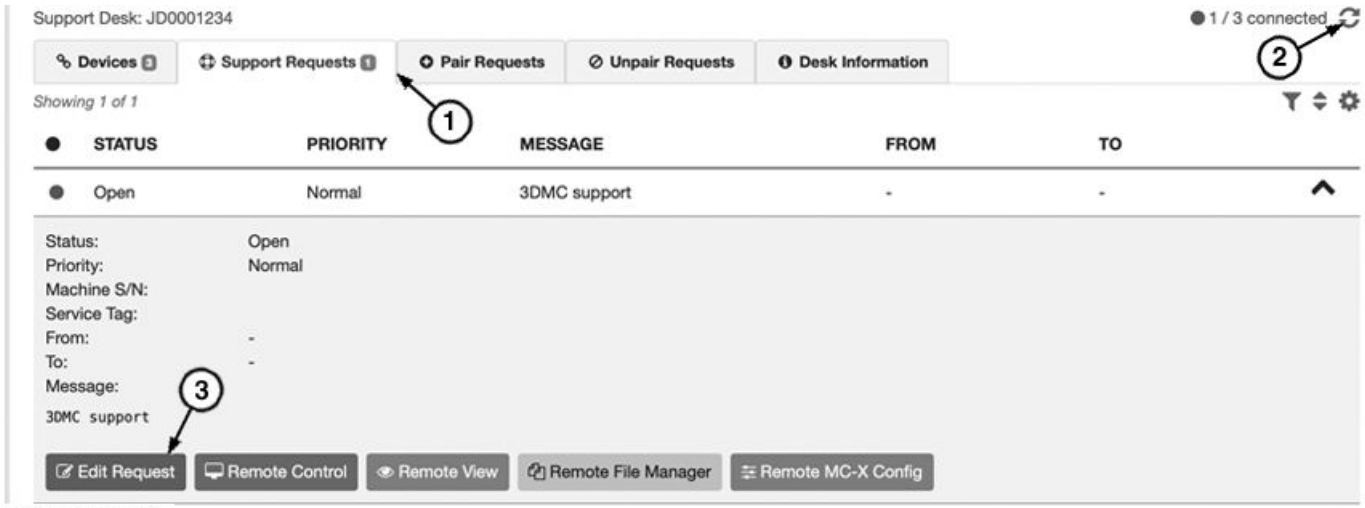
4— Message Data Field **5— APPLY Button**

4. Select the status of the request based on the current progress of the service desk.
5. Enter the desired message in the message data field (4). Messages provide details of the support request to the operator on the client device.
6. Select the APPLY button (5) to save changes and update the request.

Continued on next page

PN36905,000A0F1 -19-01JUN20-2/4

Declining a Support Request



TX1308403A

TX1308403A —UN—18JAN21

Viewing Support Requests

1— SUPPORT REQUESTS Tab **2— Refresh Button** **3— EDIT REQUEST BUTTON**

1. Select the SUPPORT REQUESTS tab (1).
2. Select the desired support request to see the details of the request.
3. Select the EDIT REQUEST button (3).

PN36905,000A0F1 -19-01JUN20-3/4

TX1296159A

TX1296159A —UN—01MAY20

Declining the Support Request

4— DECLINED Button **5— APPLY Button**

4. Select the DECLINED button (4).
5. Select the APPLY button (5) to save changes and decline the request.

PN36905,000A0F1 -19-01JUN20-4/4

Providing Unsolicited Support

Any type of remote support can be provided to a client device unprompted by a support request. For more information, see Providing Support. (Section 2-4.)

PN36905,000A0F2 -19-01JUN20-1/1

SmartGrade™ Remote Support On-Machine Client

At a Glance (Client Device)

This section provides the user a reference guide for using the John Deere SmartGrade™ client device utility.

The following client device topics are covered in this section:

- Pairing to a support desk
- Modifying parameters for a paired support desk
- Requesting support
- Unpairing from a support desk

Remote support may not be available in all regions.

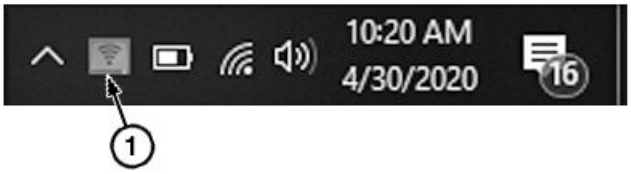
SmartGrade is a trademark of Deere & Company

PN36905,000A09B -19-18JAN21-1/1

Opening Client Device Menu

All Remote Support client device features are available on a single menu. This menu is accessed in the system tray by a right-click or a long press of the SmartGrade™ Remote Support icon (1).

1— SmartGrade™ Remote Support Icon



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System Tray

SmartGrade is a trademark of Deere & Company

PN36905,000A09C -19-30MAY24-1/1

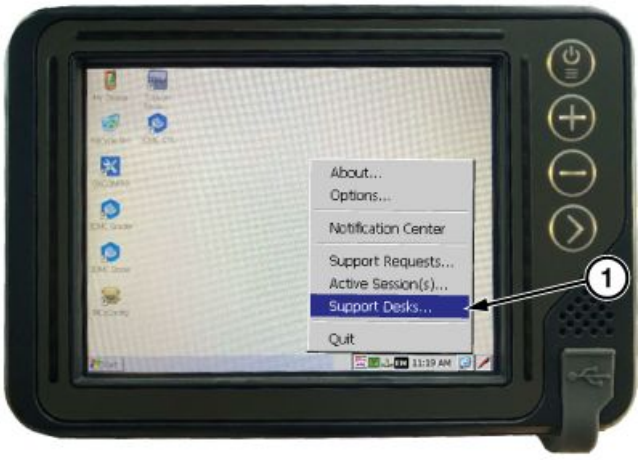
Pairing To A Support Desk

NOTE: Client device is shown for crawler, client device can vary as per product line.

Before receiving support, the client device must be paired with a support desk. A client device can be paired with multiple support desks, allowing operators to choose where to obtain support. To pair to a support desk using the client device:

1. Open the client menu. See Opening Client Menu (2-5).
2. Select SUPPORT DESKS (1) option from the client menu. The SUPPORT DESKS dialog box appears.

1— SUPPORT DESKS Option



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Client Device Menu

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PN36905,000A098 -19-13APR23-1/4

3. Select the ADD button (2). The ADD A SUPPORT DESK dialog box appears.

2— ADD Button

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Support Desks Dialog Box

PN36905,000A098 -19-13APR23-2/4

NOTE: Auto-pair pin is not required. When enabled, the support desk request will automatically be added to the remote desk. The remote desk user will not have to accept the pair request.

IMPORTANT: The Support Desk Number is case sensitive.

4. Enter the desired SUPPORT DESK NUMBER and AUTO-PAIR PIN if applicable.
5. Select the NEXT button (3). The SUPPORT DESK DETAIL CONFIRMATION dialog box appears.

3— NEXT Button

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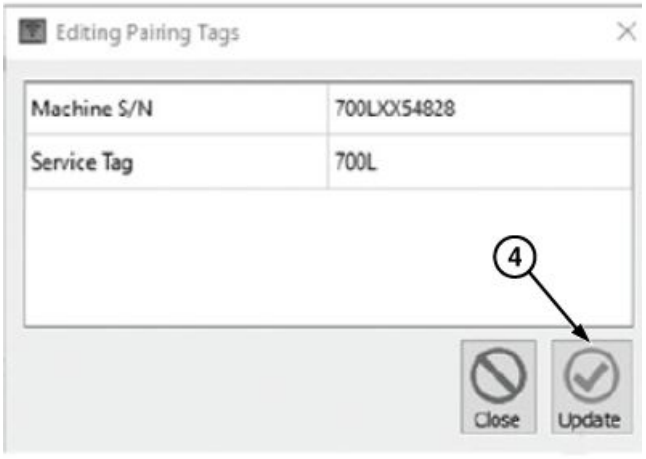
Add a Support Desk Dialog Box

PN36905,000A098 -19-13APR23-3/4

6. Enter MACHINE SERIAL NUMBER and SERVICE TAG necessary to ensure the machine can be identified properly in the Remote Support Online Portal.
7. Select the UPDATE button (4).
8. Accept the remote support request, see <u>Managing Pairings</u> (2-4).

4— UPDATE Button



XJ1341256A —UN—05APR23

Editing Pairings Tags Dialog Box

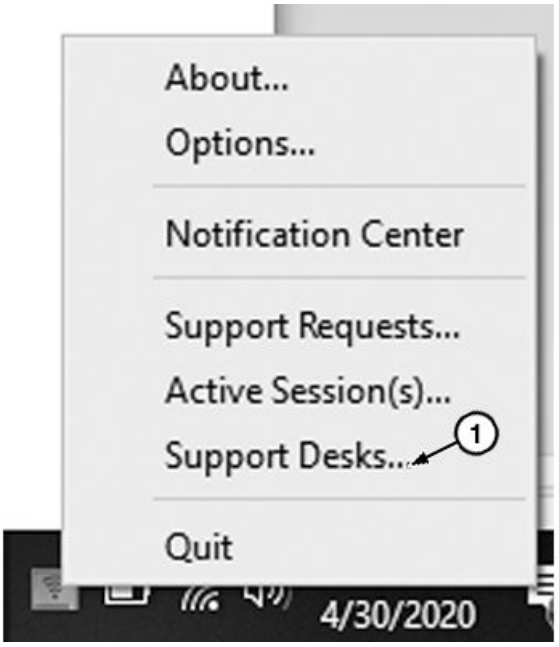
PN36905,000A098 -19-13APR23-4/4

Editing Pairing Tags

Upon pairing approval, pairing tags can be edited to help identify the client device. Pairing tags can be edited by the user on the support desk or by the operator on the client device. To edit pairing tags on the client device:

1. Open the client menu. See Opening Client Menu. (Section 2-5.)
2. Select SUPPORT DESKS (1) option from the client menu. The SUPPORT DESKS dialog box appears.

1— SUPPORT DESKS Option



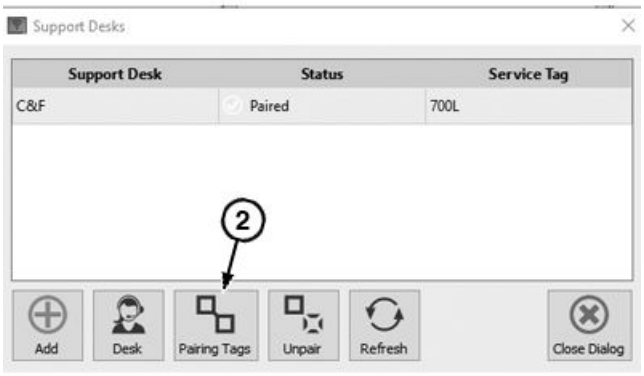
TX1296218A —UN—04MAY20

Client Device Menu

PN36905,000A099 -19-19APR22-1/3

3. Select the PAIRING TAGS button (2). The EDITING PAIRING TAGS dialog box appears.

2— PAIRING TAGS Button



TX1296222A —UN—04MAY20

Support Desks Dialog Box

Continued on next page

PN36905,000A099 -19-19APR22-2/3

4. Select a pairing tag to edit. Select the UPDATE button (3) to save the changes.

3— UPDATE Button

TX1323027A —UN—19APR22

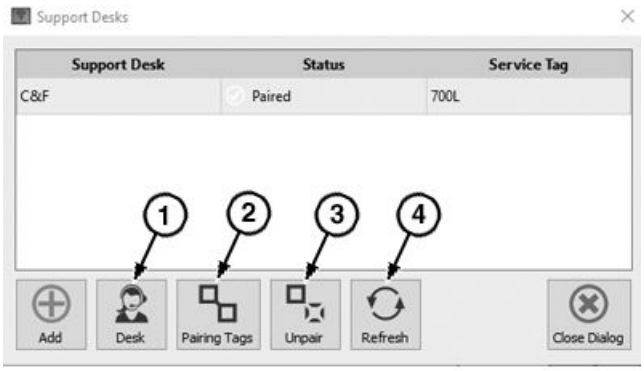
Editing Pairing Tags Dialog Box

PN36905,000A099 -19-19APR22-3/3

Reviewing and Modifying Support Desk Pairing

A support desk can be reviewed or modified at any time. When a support desk is selected in the SUPPORT DESKS dialog box, the following functions are available:

- **DESK Button (1)—** The DESK button opens the DESK INFORMATION dialog box which shows details of the selected support desk.
- **PAIRING TAGS Button (2)—** The PAIRING TAGS button allows an operator to view and modify the pairing tags for the selected support desk.
- **UNPAIR Button (3)—** The UNPAIR button unpairs the selected support desk from the client device. For more information, see Unpairing From a Support Desk. (Section 2-5.)
- **REFRESH Button (4)—** The REFRESH button refreshes the SUPPORT DESKS dialog box.



TX1296265A —UN—04MAY20

Support Desks Dialog Box

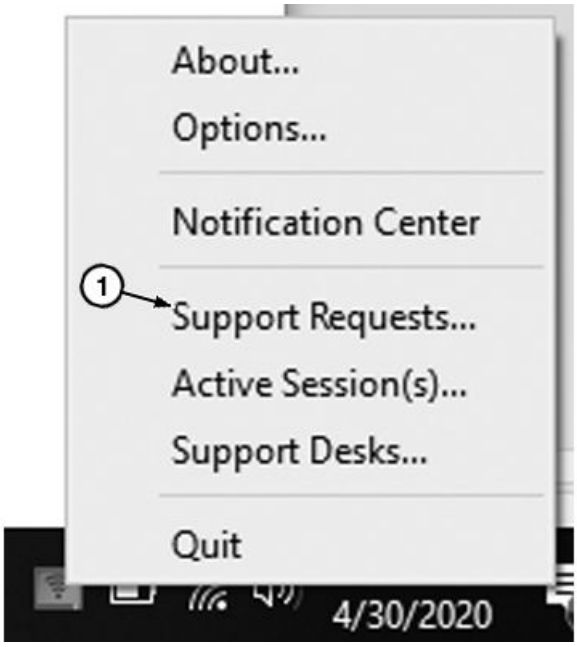
1— DESK Button
2— PAIRING TAGS Button
3— UNPAIR Button
4— REFRESH Button

PN36905,000A09A -19-06MAY20-1/1

Request Support

1. Open the client menu. See Opening Client Device Menu. (Section 2-5.)
2. Select SUPPORT REQUESTS (1) option from the client device menu. The SUPPORT REQUESTS dialog box appears.

1— SUPPORT REQUESTS Option



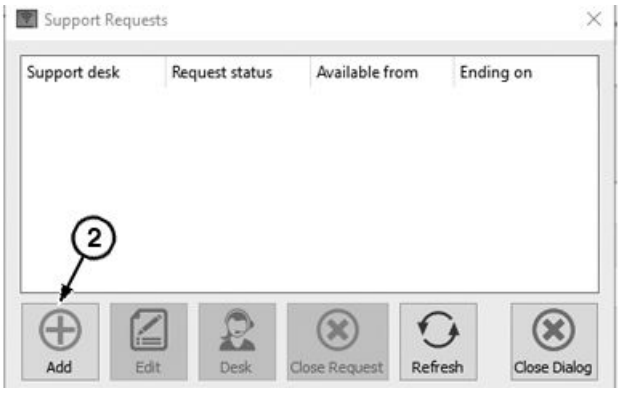
TX1296319A —UN—04MAY20

Client Device Menu

PN36905,000A09D -19-06MAY20-1/3

3. Select the ADD button (2) to create a support request. The ADD A SUPPORT REQUEST dialog box appears.

2— ADD Button



TX1296320A —UN—04MAY20

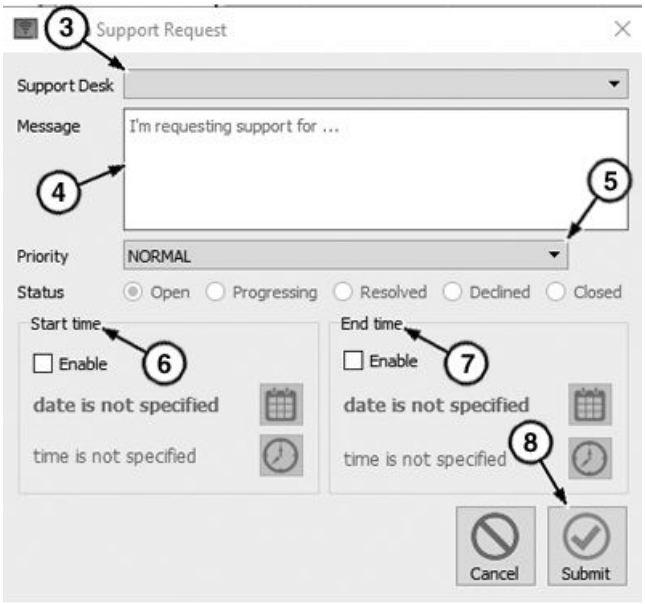
Support Requests Dialog Box

Continued on next page

PN36905,000A09D -19-06MAY20-2/3

4. Select where to send the support request to from the SUPPORT DESK drop-down list (3).
5. Enter a message for the support desk in the MESSAGE data field (4).
6. Select the request priority from the PRIORITY drop-down list (5).
7. Select a time to start and end the support request if applicable. For more information, see Specifying Optional Dates and Times to Receive Support. (Section 2-5.)
8. Select the SUBMIT button to send the support request to the support desk. The SUPPORT REQUESTS dialog box appears with the new support request added.

Once submitted, an operator can check the status of or edit an existing support request using the SUPPORT REQUESTS dialog box.



TX1296323A —UN—04MAY20

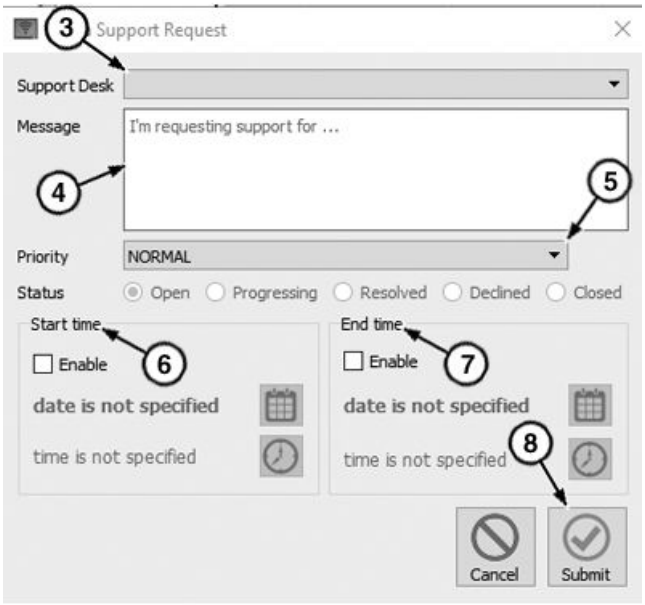
3— SUPPORT DESK Drop-Down List
4— MESSAGE Data Field
5— PRIORITY Drop-Down List
6— START TIME
7— END TIME
8— SUBMIT Button

Add a Support Request Dialog Box

PN36905,000A09D -19-06MAY20-3/3

Specifying Optional Dates and Times to Receive Support

Support requests may be submitted with an optional date and time window. Using the START TIME (6) and END TIME (7) functions on the ADD A SUPPORT REQUEST dialog box, enter the time and date for the support desk to act upon the support request.



TX1296323A —UN—04MAY20

3— SUPPORT DESK Drop-Down List
4— MESSAGE Data Field
5— PRIORITY Drop-Down List
6— START TIME
7— END TIME
8— SUBMIT Button

Add a Support Request Dialog Box

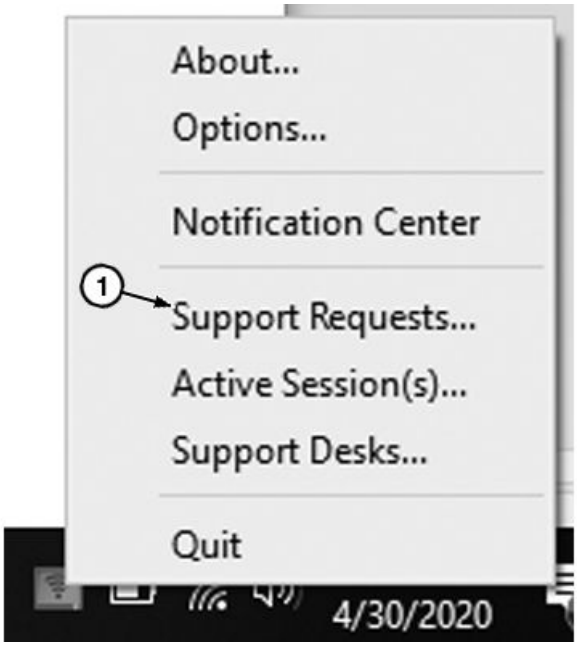
PN36905,000A09F -19-16MAR21-1/1

Closing Support Requests

When the operator is satisfied that a support request is complete, the support request can be closed. To close a support request:

1. Open the client menu. See Opening Client Device Menu. (Section 2-5.)
2. Select SUPPORT REQUESTS (1) option from the client device menu. The SUPPORT REQUESTS dialog box appears.

1— SUPPORT REQUESTS Option



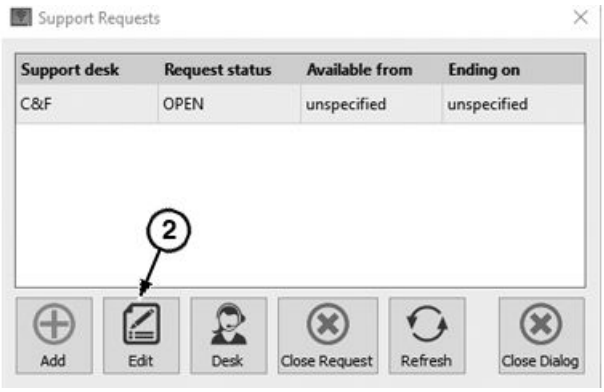
TX1296319A —UN—04MAY20

Client Device Menu

PN36905,000A0A1 -19-06MAY20-1/3

3. Select the support request to edit.
4. Select the EDIT button (2). The EDIT A SUPPORT REQUEST dialog box appears.

2— EDIT Button



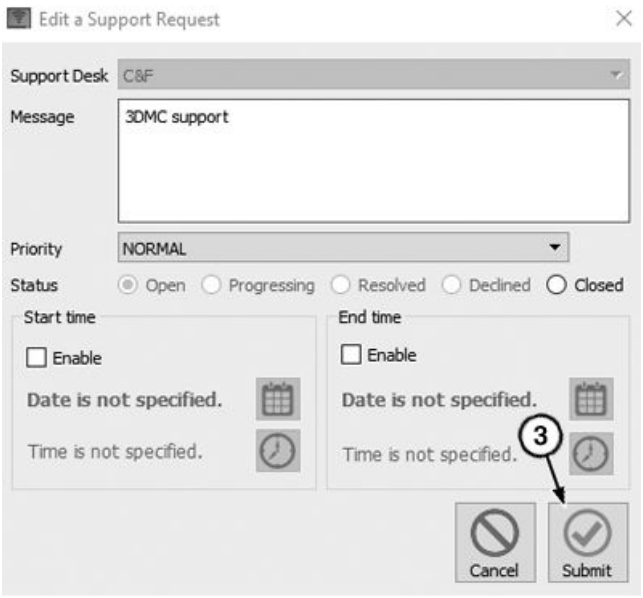
TX1296335A —UN—04MAY20

Continued on next page

PN36905,000A0A1 -19-06MAY20-2/3

5. Make changes to the support request. When complete, select the SUBMIT button (3) to save the changes.

3— SUBMIT Button



TX1296338A —UN—04MAY20

Edit a Support Request Dialog Box

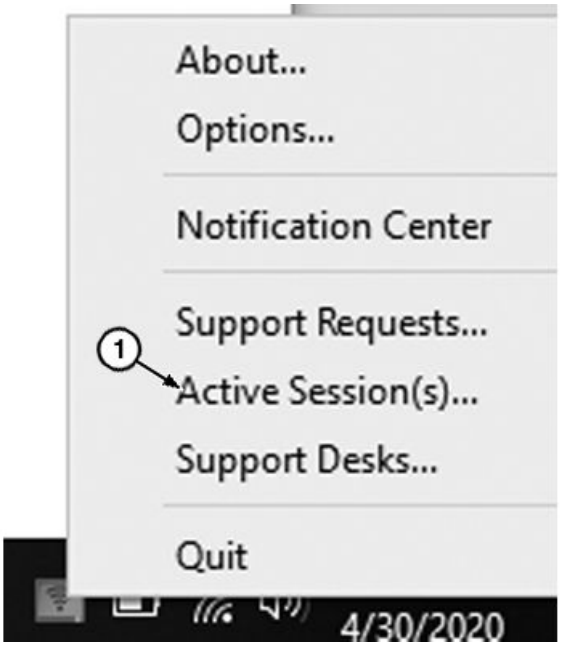
PN36905,000A0A1 -19-06MAY20-3/3

Viewing and Terminating Active Support Sessions

Remote Support sessions may interrupt an operator during machine operation. To view or terminate an active support session:

1. Open the client menu. See Opening Client Device Menu. (Section 2-5.)
2. Select ACTIVE SESSION(S) (1) option from the client device menu. The ACTIVE SUPPORT SESSIONS dialog box appears.

1— ACTIVE SESSION(S) Option



TX1296340A —UN—04MAY20

Client Device Menu

Continued on next page

PN36905,000A0A2 -19-06MAY20-1/2

3. Select an active support session.
4. Select the DISCONNECT button (2) to terminate the session.

2— DISCONNECT Button

TX1296341A —UN—04MAY20

Active Support Sessions Dialog Box

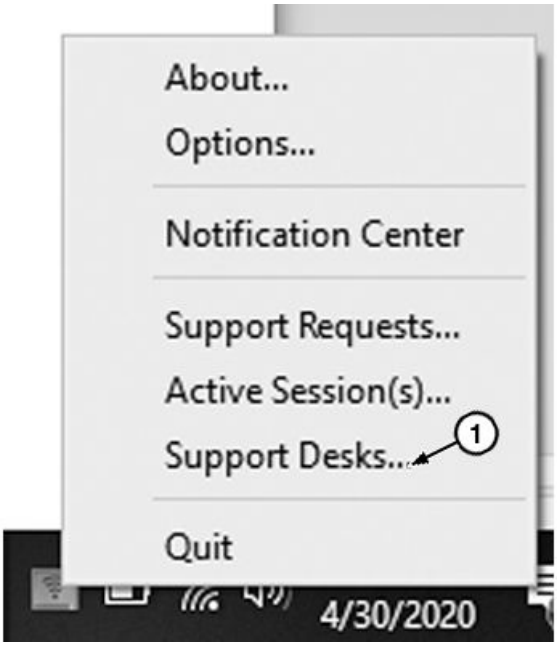
PN36905,000A0A2 -19-06MAY20-2/2

Unpairing From a Support Desk

Before receiving support, the client device must be paired with a support desk. A client device can be paired with multiple support desks, allowing operators to choose where to obtain support. To unpair to a support desk using the client device:

1. Open the client menu. See Opening Client Menu. (Section 2-5.)
2. Select SUPPORT DESKS (1) option from the client menu. The SUPPORT DESKS dialog box appears.

1— SUPPORT DESKS Option



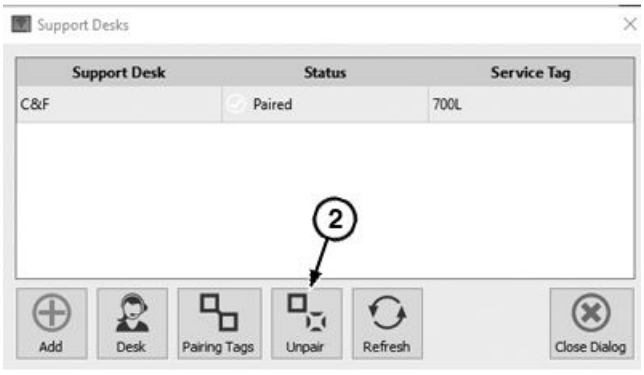
TX1296218A —UN—04MAY20

Client Device Menu

PN36905,000A0A3 -19-06MAY20-1/3

3. Select the support desk to unpair.
4. Select the UNPAIR button (2). The REMOVE SUPPORT DESK dialog box appears.

2— UNPAIR Button



TX1296342A —UN—04MAY20

Support Desks Dialog Box

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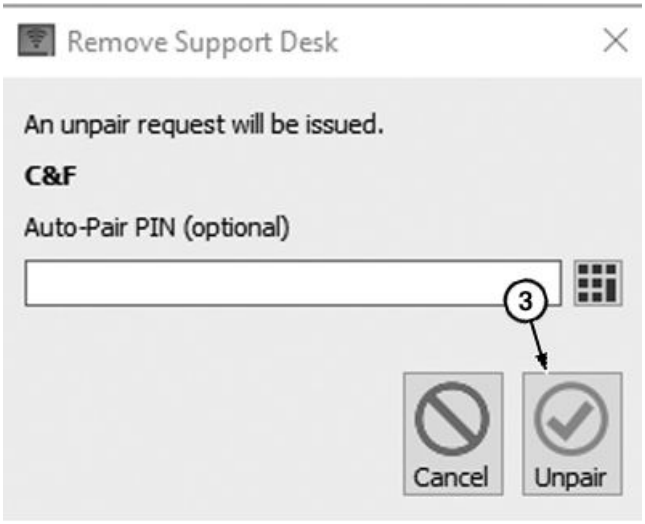
PN36905,000A0A3 -19-06MAY20-2/3

NOTE: Auto-pair pins are supplied by the support desk. If an auto-pair pin is not provided, the support desk needs to manually approve the unpair request. For more information, see Managing Pairings. (Section 2-4.)

5. Enter the AUTO-PAIR PIN if applicable.
6. Select the UNPAIR button (3).

3— UNPAIR Button



TX1296343A —UN—04MAY20

Remove Support Desk Dialog Box

PN36905,000A0A3 -19-06MAY20-3/3

Usage of Remote Support

John Deere SmartGrade™ Remote Support is included with the purchase of an eligible John Deere SmartGrade™ system. An active JDLink™ subscription is required to use Remote Support features. For more information, contact an authorized John Deere dealer.

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JDLink is a trademark of Deere & Company

PN36905,000A0A4 -19-06MAY20-1/1

Basic Remote Support Troubleshooting

Symptom	Problem	Solution
Support Desk Cannot Pair	Invalid support desk number	Check support desk number and try again. See Pairing to a Support Desk. (Section 2-5.)
	Inactive JDLink™ subscription	Contact an authorized John Deere dealer.
Paired Support Desk Cannot Connect	JDLink radio does not have cellular connectivity	Move machine to a different area and try again.
	Operator did not accept remote control request on client device	Accept control request from support desk on client device.
	Inactive JDLink™ subscription	Contact an authorized John Deere dealer.
	Network cable is disconnected or damaged	Contact an authorized John Deere dealer.

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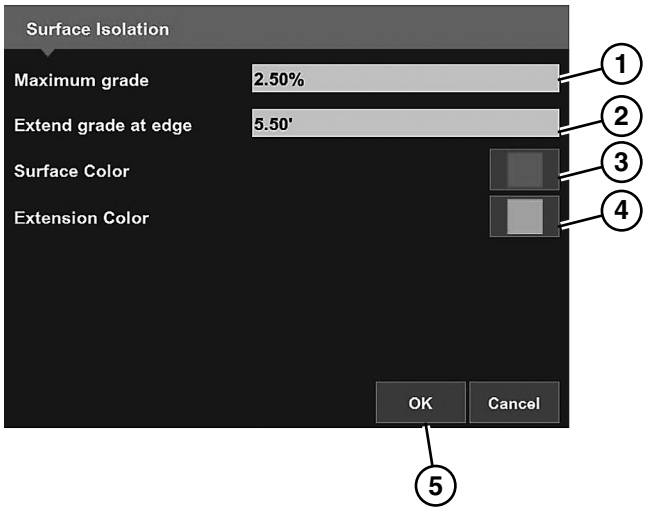
PN36905,000A0A5 -19-06MAY20-1/1

Isolating a Surface

The isolating a surface feature allows an operator to isolate a small piece of the active triangular irregular networks (TIN) surface and ignore any triangles outside of the isolated region.

1. Press and hold on the main screen to display the context pop-up menu.
2. Select ISOLATE SURFACE. The SURFACE ISOLATION screen appears.
3. Enter information in the MAXIMUM GRADE data field (1) and the EXTEND GRADE AT EDGE data field (2).
   a. MAXIMUM GRADE—Operator can set a maximum deflection value between adjacent triangles in the TIN surface.
   b. EXTEND GRADE AT EDGE—Operator can set a distance value to extend the grade of the isolated region.
4. Select the SURFACE COLOR SWATCH (3) to change the color of the isolated surface.
5. Select the EXTENSION COLOR SWATCH (4) to change the color of the extended surface.
6. Select OK (5) to save the settings and return to the main screen.



TX1265907 —UN—04OCT18

SURFACE ISOLATION Screen

1— MAXIMUM GRADE Data Field
2— EXTEND GRADE AT EDGE Data Field
3— SURFACE COLOR SWATCH
4— EXTENSION COLOR SWATCH
5— OK

PN36905,000A032 -19-02DEC20-1/1

Steering/Grading to Polyline

Steering to Polyline

1. On the main screen, press and hold the polyline to use for steering. The POLYLINE context pop-up menu appears.
2. Select the STEER TO POLYLINE option. The main screen appears with steering to polyline navigation active.
3. To stop steering to the polyline, navigate through menu: **MAIN MENU >> FILE >> ACTIVE >> ALIGNMENT >> <NONE>**. The main screen appears.

Grading to Polyline

1. On the main screen, press and hold the polyline to use for grading. The POLYLINE context pop-up menu appears.
2. Select the STEER TO OFFSET menu option. A pop-up screen appears.
3. Enter a value in the pop-up screen and select the OK button. The main screen appears with graphical cross lines displayed along the polyline.

PN36905,000A033 -19-06MAR20-1/1

GNSS Information

The global navigation satellite system (GNSS) information screen allows the operator to view and configure GNSS related information on the SmartGrade™ display unit.

- Fix: GNSS status and quality.
- Position: GNSS receiver position.
- Satellites: Monitor visible and used satellites.
- Info: View receiver information, RTK radio information, reset receiver, or reset RTK radio.
- Planning: Satellite estimated accuracy information. The red vertical line marks the current time.
- Advanced: GNSS options to enable/disable the tracking of satellite constellations and other receiver options.

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PN36905,000A031 -19-06MAR20-1/1

Slope Control Button

The slope control button on the main screen displays the ADJUST SLOPE screen. The only values that can be modified are the values for RIGHT GAIN (LOWER) and RIGHT GAIN (RAISE). To modify these values:

1. Select the input field next to desired value.
2. Enter a value using the numeric keyboard.
3. Select the corresponding SET button to lock the value.
4. Select the OK button to return to the main screen.

PN36905,000A077 -19-02APR20-1/1

Elevation Control Button

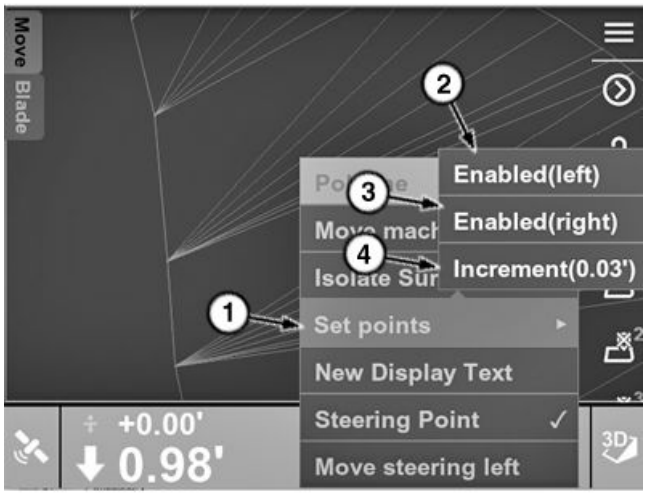
Adjust Cut/Fill Offsets Using Optional On-Screen Grade Control Buttons

NOTE: Optional on-screen grade control increment and grade decrement buttons, referenced as the elevation control button (5) and slope set point control button (6), are available through a context menu. By default, these on-screen grade control buttons are not displayed. Using the physical grade control buttons on the joystick controls is recommended. See Right-Hand Joystick. (Section 2-1.)

1. Press and hold on the main screen to access the context pop-up menu.

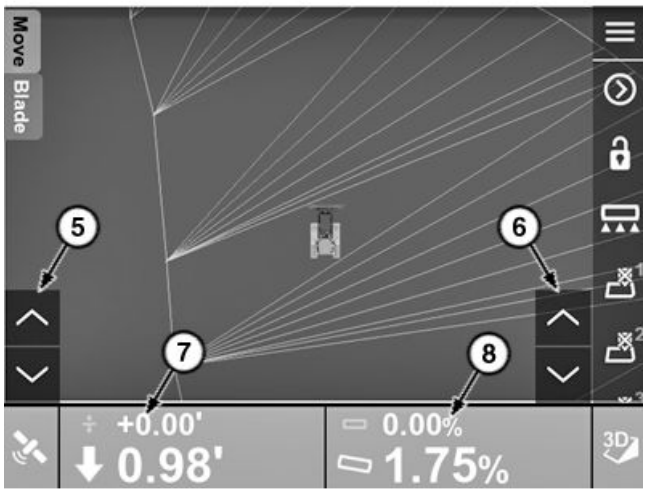
NOTE: A check mark next to a menu item indicates that the option is active.

2. Navigate through the context pop-up menu: **SET POINTS >> ENABLED (LEFT)** or **SET POINTS >> ENABLED (RIGHT)**. Select the desired set point control button.
3. Main menu appears with the desired set point control button enabled.
4. Use the set point control buttons (5 and 6) to adjust the cut/fill offsets.
5. Select increment (4) to adjust the set points increment rate.
6. Repeat step 2 to enable or disable desired set point buttons.



TX1293409A —UN—02MAR20

Set Points Pop-Up Menu Screen



TX1293407A —UN—02MAR20

On-Screen Set Point Control Buttons

1— Set points
2— Enabled (left)
3— Enabled (right)
4— Increment
5— Elevation Set Point Control Button
6— Slope Set Point Control Button
7— Elevation Control Button
8— Slope Control Button

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PN36905,000A00E -19-02MAR20-1/2

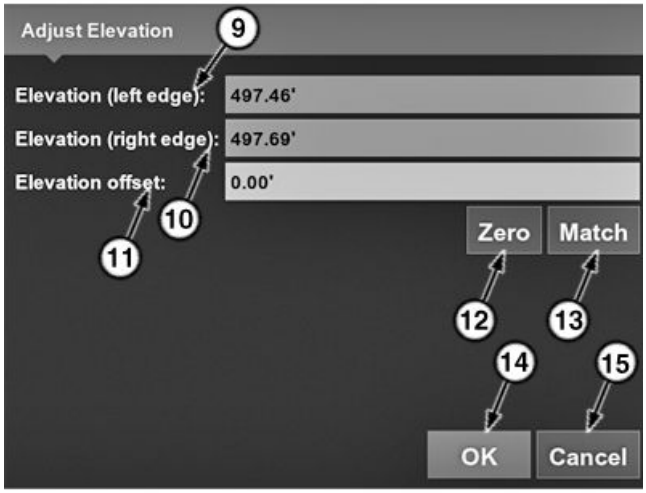
Adjusting Cut/Fill Offsets Using the Elevation Control Button

Pressing the elevation control button on the main screen displays the adjust elevation screen. The only value that can be modified is the value for elevation offset (11).

1. On the main screen, press the elevation control button.
2. Select the input field next to elevation offset.
3. Using the numerical keypad, enter the desired elevation offset and press OK.
   a. Select the zero button (12) to return the value in the elevation offset input field to zero.
   b. Select the match button (13) to make the current elevation become the new on-grade elevation.

NOTE: The cancel button (15) will return user to the main screen without saving settings.

4. Select the OK button (14) to save settings and return to the main screen.



TX1293412A —UN—02MAR20

Adjust Elevation Screen

9— Elevation (left edge)
10— Elevation (right edge)
11— Elevation offset
12— Zero Button
13— Match Button
14— OK Button
15— Cancel Button

PN36905,000A00E -19-02MAR20-2/2

RTK Communication Problems

Symptom	Problem	Solution
Receiver Does Not Power On	Grade control controller malfunction	Check if grade control controller is powered and functional. If not functioning, contact an authorized John Deere dealer.
	The cable is incorrectly connected or damaged	Check that the cable from the controller is properly connected to the receiver. If the cable is damaged, contact an authorized John Deere dealer.
RTK Corrections Lost Error Displayed on Screen	Radio settings do not match base station	See base station manufacturer's manual.
Radio Modem Does Not Power On	Grade control controller malfunction	Check if grade control controller is powered and functional. If not functioning, contact an authorized John Deere dealer.
	The cable is incorrectly connected or damaged	Check that the cable from the controller is properly connected to the radio. If the cable is damaged, contact an authorized John Deere dealer.
Radio Modem Light is Not Flashing	The cable is incorrectly connected or damaged	Check that the cable from the controller is properly connected to the radio. If the cable is damaged, contact an authorized John Deere dealer.

PN36905,000A06C -19-27MAR20-1/1

SmartGrade™ Display Unit Problems

Symptom	Problem	Solution
Display Does Not Power On	Cable is damaged	Check that the cable is securely connected. If the cable is damaged, contact an authorized John Deere dealer.
	Vehicle power is not on	Turn on machine ignition power.
Screen Display Turns Off by Itself	Cable is damaged	Check that the cable is securely connected. If the cable is damaged, contact an authorized John Deere dealer.
	Machine ignition power is off more than 10 seconds	Turn on machine ignition power.
Screen Display Goes Dim	Display has the self-adjusting ability of screen brightness	Brightness may be dimmed when the display gets overheated with high temperatures around the cab.
Screen Transferred to Operating System	Exit 3DMC function may have been pressed unexpectedly or incorrectly	Screen displays the desktop. Double tap on the 3DMC icon to open the application program and return to the main screen.
Display Message States Control File Has No GNSS Localization	No global navigation satellite system (GNSS) localization has been performed	Perform GNSS localization.
Display Message Stating Loading or Building	Display program currently loading or making graphics	Wait a few minutes for display program to complete processing.
Elevation/Slope Control Pad Displays GNSS Receiver Not Connected	GNSS signal is invalid or GNSS receiver is not powered	Check cable connections along the GNSS cable from the SmartGrade™ controller to the receiver. Check cable connections at the SmartGrade™ controller and the receiver.
	GNSS receiver has malfunction	Check for status lights on the receiver. If no lights are present, contact an authorized John Deere dealer.
Elevation Control Key Displays Waiting for Radio Link	Radio transmission, radio antenna, and lights status on the receiver may have a problem	Check that the base station is working correctly. Check that the radio antenna on the machine and the cable connections are properly connected. Make sure that the radio channel is identical between the base station and machine and that the radio is correctly configured on the display.

Continued on next page

Symptom	Problem	Solution
GNSS Info Screen Displays Waiting for Initialization	GNSS receiver has not been successfully tracking enough valid satellites	Check that the antenna has a clear view of the sky. Check for obstructions, such as trees, buildings, and machines that can block or reflect satellite signals.
	System is still determining a solid position	If this is the first time in operation, this message may persist for several minutes while the receiver obtains a new almanac.
GNSS Info Screen Displays Out of Design Area	Machine is out of the design surface area	Make sure that the correct project file is selected and the surface file is made active.
GNSS Info Screen Displays No GNSS Localization	Project surface did not load correctly	Switch active project or surface. Restart 3DMC.
	Communication malfunction between controller and display	Restart connection. Navigate to: **MAIN SCREEN >> CONTROL >> RESTART CONNECTION**.
	Layer currently selected has not been localized properly	Make sure that the correct layer is selected.

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PN36905,000A06D -19-27MAR20-2/2

SmartGrade™ Inertial Measurement Unit (IMU) Problems

Symptom	Problem	Solution
LED is Off	Cable may be incorrectly connected	Check that the cable is properly connected and not damaged.
	Wiring between controller and IMU may be damaged	Check wiring. Do not unbolt IMU mounting. System will require full calibration. Contact an authorized John Deere dealer.
	Grade control controller malfunction	Check if grade control controller is powered and functional. If not functioning, contact an authorized John Deere dealer.

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PN36905,000A06E -19-27MAR20-1/1

Blade Response Problems

NOTE: With grade control enabled, blade raised, park brake off, and machine in neutral or decelerator pedal depressed, some blade movement is considered normal operation. No correction is necessary.

Symptom	Problem	Solution
Blade is Moving Too Slow	The valve gain setting is too low	Increase valve gain setting, which will cause the hydraulics to respond more quickly.
Blade is Moving Too Fast	The valve gain setting is too high	Decrease valve gain setting, which will cause the hydraulics to respond more slowly.
Blade Reacts but Does Not Reach on Grade	Valve offsets are too small	Adjust valve offsets. See Control Menu—IMU Calibration. (Section 2-3.)
	Vehicle hydraulic response has changed (vehicle hydraulic calibration, component wear, and component replacement)	Perform control calibration. See Control Menu—Blade Calibration. (Section 2-3.)
Blade Reacts but Overshoots Around on Grade	Valve offsets are too large	Adjust valve offsets. See Control Menu—IMU Calibration. (Section 2-3.)
	Vehicle hydraulic response has changed (vehicle hydraulic calibration, component wear, and component replacement)	Perform control calibration. See Control Menu—IMU Calibration. (Section 2-3.)

PN36905,000A06F -19-27MAR20-1/1

Radio Channel Not Available in 3DMC

For information on adding radio channels, see Tools Menu—Configure Radios (Section 2-3.).

PN36905,000A070 -19-27MAR20-1/1

Blade Does Not Go Into Automatic Control When Auto Buttons are Pressed

PN36905,000A071 -19-27MAR20-1/7

❶ Blade Does Not Go Into Automatic Control When Auto Buttons are Pressed Diagnostic Procedure

Continued on next page

PN36905,000A071 -19-27MAR20-2/7

Auto Blade Control Switch Check	Check the state of the auto blade control switch on the sealed switch module (SSM). Is the right LED illuminated?	**YES:** Go to SmartGrade™ Display Unit Error Check. **NO:** Press the auto blade control switch on SSM so right LED is illuminated.

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PN36905,000A071 -19-27MAR20-3/7

SmartGrade™ Display Unit Error Check	Check if the SmartGrade™ display unit is reporting any errors. Are there any errors reported on the SmartGrade™ display unit.	**YES:** Troubleshoot and correct error or see an authorized John Deere Dealer. **NO:** Go to Machine Diagnostic Trouble Code (DTC) Check.

PN36905,000A071 -19-27MAR20-4/7

Machine Diagnostic Trouble Code (DTC) Check	Check for active or stored DTCs. Does machine have any active or stored DTCs?	**YES:** Correct active or stored DTCs. **NO:** Go to Blade Control Settings Check.

PN36905,000A071 -19-27MAR20-5/7

Blade Control Settings Check	Press the auto button on only one joystick. Does the blade auto indicator on the respective side of SmartGrade™ display unit turn yellow?	**YES:** Go to next step in check. **NO:** See authorized John Deere dealer.
	Check opposite side blade auto indicator on SmartGrade™ display unit. Did the blade auto indicator on the opposite side of SmartGrade™ display unit also turn yellow?	**YES:** Independent auto feature has been turned off. Select Independent Auto check box in Blade Control menu. See Control Menu—Blade Control. (Section 2-3.) **NO:** Go to Working Window Check.

PN36905,000A071 -19-27MAR20-6/7

Working Window Check	Verify that the blade is within the working window. Is the blade within the working window?	**YES:** See authorized John Deere dealer. **NO:** Move blade into working window or configure working window setting. See Control Menu—Blade Control. (Section 2-3.)

PN36905,000A071 -19-27MAR20-7/7

Increment/Decrement Buttons on Joystick Don’t Change Settings

Continued on next page

PN36905,000A072 -19-27MAR20-1/5

❶ Increment/Decrement Buttons on Joystick Don't Change Settings

PN36905,000A072 -19-27MAR20-2/5

Grade Control Mode and Display Unit Check	Verify grade control mode and display unit being used. Is the auto blade control switch on sealed switch module (SSM) set to cross slope (left LED illuminated)?	**YES:** View machine display unit for increment/decrement position. **NO:** Go to next step in check.
	Check blade control switch setting. Is the auto blade control switch on sealed switch module (SSM) set to SmartGrade™ blade control (right LED illuminated)?	**YES:** View SmartGrade™ display unit for increment/decrement position. **NO:** Go to Elevation Side and Slope Side Check.

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PN36905,000A072 -19-27MAR20-3/5

Elevation Side and Slope Side Check	When running 3D Elevation and 3D Slope, only the increment/decrement buttons on the side running elevation adjust the vertical offset to grade. Does the side running elevation adjust the vertical offset to grade?	**YES:** Checks complete. **NO:** Go to Out of Design Check.

PN36905,000A072 -19-27MAR20-4/5

Out of Design Check	Check to for an Out of Design error on the SmartGrade™ display unit. Is there an Out of Design error displayed on the SmartGrade™ display unit?	**YES:** Move blade into the working design surface. **NO:** See an authorized John Deere dealer.

PN36905,000A072 -19-27MAR20-5/5

Surface is Not Available Under File >> Active >> Surface Menu

Project files frequently contain multiple surfaces the operator can choose to work from (e.g. final grade, subgrade, curbs, ditches, etc.). The **FILE >> ACTIVE >> SURFACE** list is a quick way for the operator to switch between surfaces, yet the list is only populated with surfaces the operator selects in the **FILE >> SURFACES** menu

PN36905,000A074 -19-27MAR20-1/3

❶ Active Surface Not Available Diagnostic Procedure

Continued on next page

PN36905,000A074 -19-27MAR20-2/3

Show Surface File Check	Navigate through menu **FILE >> SURFACES** to verify the “Show” check box is selected. Is the “Show” check box selected?	**YES:** If surface is still not visible in the **FILE >> ACTIVE >> SURFACE** menu, see an authorized John Deere dealer. **NO:** Select “Show” check box to add to the **FILE >> SURFACES** menu.

PN36905,000A074 -19-27MAR20-3/3

System Keeps Coming Out of Auto When the Blade is Moved Manually

PN36905,000A075 -19-27MAR20-1/3

❶ System Keeps Coming Out of Auto When the Blade is Moved Manually Diagnostic Procedure

PN36905,000A075 -19-27MAR20-2/3

Blade Moved Outside of Working Window Check	If blade is moved outside the set working window, blade will not automatically move back to grade. Check cut/fill reading against set working window. Has blade moved outside the set working window?	**YES:** Move blade into working window or increase working window distance from design surface. Navigate to **CONTROL >> BLADE CONTROL** to view and adjust working window. **NO:** See an authorized John Deere Dealer.

PN36905,000A075 -19-27MAR20-3/3

Machine is Off by About 0.01ft (3 mm) Vertically

PN36905,000A076 -19-27MAR20-1/3

❶ Machine is Off by About 0.01 ft (3 mm) Vertically

PN36905,000A076 -19-27MAR20-2/3

Machine and Base Station Phase Offset Check	Navigate to GNSS Info, then under the Advanced tab remove check from the “Relative Phase Offset” box. See GNSS Information. (Section 4-1.) Does change phase offset configuration correct vertical grade?	**YES:** Checks complete. **NO:** See an authorized John Deere dealer.

PN36905,000A076 -19-27MAR20-3/3

Record SmartGrade™ Display Unit Serial Number

SmartGrade™ Display Unit Serial Number:

The SmartGrade™ display unit serial number label (1) is located on the back of the unit.

1— SmartGrade™ Display Unit Serial Number Label

TX1241642 —UN—13JUL17

SmartGrade™ Display Unit

SmartGrade is a trademark of Deere & Company

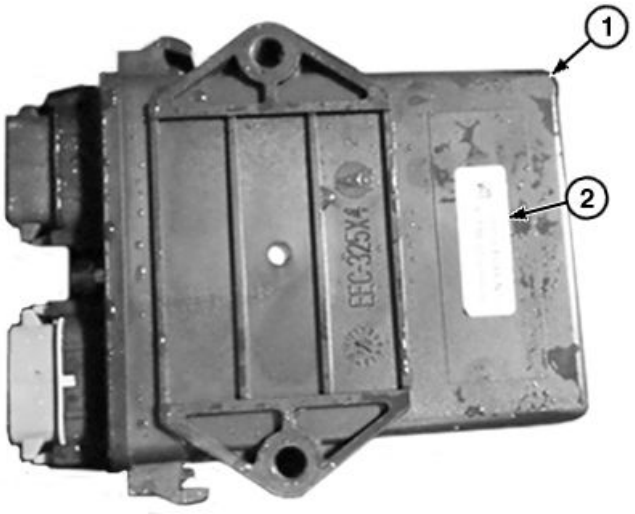
PN36905,0009FF7 -19-18FEB20-1/1

Record SmartGrade™ Controller Serial Number

SmartGrade™ Controller Serial Number:

The SmartGrade™ controller (1) is located under a console inside the operator's station. The SmartGrade™ controller serial number label (2) is located on the back of the unit. The serial number can be accessed electronically through a program on the monitor.

1. Close 3DMC. Navigate to: **MAIN SCREEN >> FILE >> EXIT**. On the exit confirmation pop-up screen, select OK. The desktop will display.
2. Double tap on the icon labeled MCX Config.
3. In the left toolbar, locate **General**.
4. Select the Configuration tab. The serial number is displayed along with other information.



TX1257126A —UN—22MAY18

SmartGrade™ Controller

1— SmartGrade™ Controller

2— SmartGrade™ Controller Serial Number Label

SmartGrade is a trademark of Deere & Company

PN36905,0009FF8 -19-18FEB20-1/1

Record Radio Receiver Serial Number

Radio Receiver Serial Number:

The radio receiver (1) is located under a console inside the operator's station. The radio receiver serial number label (2) is located on the side of the unit. The serial number can be accessed electronically through a program on the monitor.

1. Close 3DMC. Navigate to: **MAIN SCREEN >> FILE >> EXIT**. On the exit confirmation pop-up screen, select OK. The desktop will display.
2. Double tap on the icon labeled MCX Config.
3. In the left toolbar, locate **UHF Radio** or **FH915 Radio**, depending on how the radio was last configured in 3DMC.
4. Select the available radio and then select the Status tab. The serial number is displayed along with other information.

1— Radio Receiver

2— Radio Receiver Serial Number Label

TX1267007A —UN—19OCT18

Radio Receiver

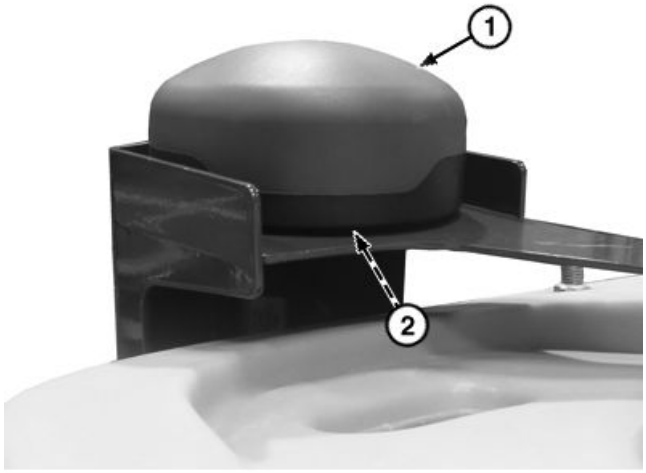
PN36905,0009FF9 -19-18FEB20-1/1

Record Global Navigation Satellite System (GNSS) Receiver Serial Numbers

Global Navigation Satellite System (GNSS) Receiver 1 Serial Number:
Global Navigation Satellite System (GNSS) Receiver 2 Serial Number:

The global navigation satellite system (GNSS) receiver serial number labels (2) are located on the bottom of each unit. The serial numbers are not visible when mounted and can be accessed electronically through a program on the monitor.

1. Close 3DMC. Navigate to: **MAIN SCREEN >> FILE >> EXIT**. On the exit confirmation pop-up screen, select OK. The desktop will display.
2. Double tap on the icon labeled MCX Config.
3. In the left toolbar, locate **GPS1** and **GPS2**.
   - **GPS1**: Main/Front
   - **GPS2**: Auxiliary/Rear
4. Select GPS1 and then select the Status tab. The serial number is displayed along with other information.
5. Repeat for GPS2.



TX1267008A —UN—19OCT18

Global Navigation Satellite System (GNSS) Receiver

1— Global Navigation Satellite System (GNSS) Receiver (2 used)

2— Global Navigation Satellite System (GNSS) Receiver Serial Number Label (2 used)

PN36905,0009FFA -19-18FEB20-1/1

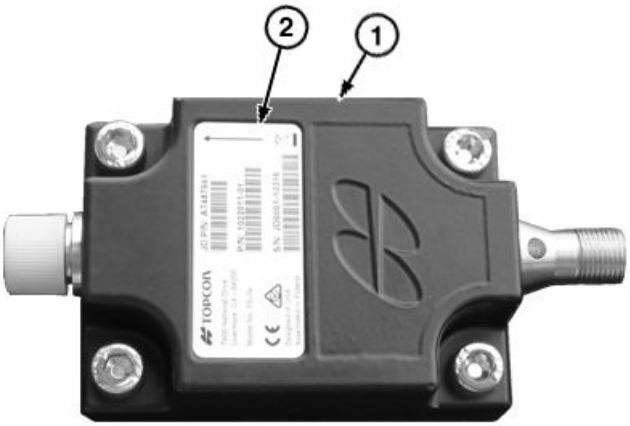
Record SmartGrade™ Inertial Measurement Unit (IMU) Serial Numbers

Body Inertial Measurement Unit (IMU) Serial Number:
Blade Inertial Measurement Unit (IMU) Serial Number:

IMPORTANT: Do not unbolt or remove the IMU mounting plate from the machine. A full system calibration is required after removing the IMU.

The inertial measurement unit (IMU) serial number label (2) is located on the top of the unit and not accessible when installed on the machine. The serial number can be accessed electronically through a program on the monitor.

1. Close 3DMC. Navigate to: **MAIN SCREEN >> FILE >> EXIT**. On the exit confirmation pop-up screen, select OK. The desktop will display.
2. Double tap on the icon labeled MCX Config.
3. In the left toolbar, locate **Body IMU**.
4. Select the Status tab. The serial number is displayed along with other information.
5. Repeat for blade IMU.



TX1269688A —UN—16JUL18

Inertial Measurement Unit (IMU)

1— Inertial Measurement Unit (IMU)

2— Inertial Measurement Unit (IMU) Serial Number Label

PN36905,0009FFB -19-18FEB20-1/1

Keep Proof of Ownership

1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps that can be taken:
   - Mark machine with unique numbering system.
   - Take color photographs from several angles of each machine.

OUT4001,000063E -19-17JAN19-1/1

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