M0069882-08 (en-us)
January 2025

Operation and Maintenance Manual

Autonomous Stop / All Stop (A-Stop)

RC4 1-UP (COMMAND CONSOLE)
RCS 1-UP (COMMAND CONSOLE)
YRC 1-UP (COMMAND CONSOLE)
CM4 1-UP (CMDFORHAULING)
R4S 1-UP (COMMAND STATION)
RCC 1-UP (COMMAND STATION)

Language: Original Instructions

Important Safety Information

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards, including human factors that can affect safety. This person should also have the necessary training, skills and tools to perform these functions properly.

Improper operation, lubrication, maintenance or repair of this product can be dangerous and could result in injury or death.

Do not operate or perform any lubrication, maintenance or repair on this product, until you verify that you are authorized to perform this work, and have read and understood the operation, lubrication, maintenance and repair information.

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

The hazards are identified by the “Safety Alert Symbol” and followed by a “Signal Word” such as “DANGER”, “WARNING” or “CAUTION”. The Safety Alert “WARNING” label is shown below.

The meaning of this safety alert symbol is as follows:

Attention! Become Alert! Your Safety is Involved.

The message that appears under the warning explains the hazard and can be either written or pictorially presented.

A non-exhaustive list of operations that may cause product damage are identified by “NOTICE” labels on the product and in this publication.

Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all inclusive. You must not use this product in any manner different from that considered by this manual without first satisfying yourself that you have considered all safety rules and precautions applicable to the operation of the product in the location of use, including site-specific rules and precautions applicable to the worksite. If a tool, procedure, work method or operating technique that is not specifically recommended by Caterpillar is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that you are authorized to perform this work, and that the product will not be damaged or become unsafe by the operation, lubrication, maintenance or repair procedures that you intend to use.

The information, specifications, and illustrations in this publication are on the basis of information that was available at the time that the publication was written. The specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. Cat dealers have the most current information available.

NOTICE

When replacement parts are required for this product Caterpillar recommends using original Caterpillar® replacement parts.

Other parts may not meet certain original equipment specifications.

When replacement parts are installed, the machine owner/user should ensure that the machine remains in compliance with all applicable requirements.

In the United States, the maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual of the owner's choosing.

Table of Contents

Foreword

Literature Information

This manual should be stored in the operator's compartment in the literature holder or seat back literature storage area.

This manual contains safety information, operation instructions, and maintenance recommendations.

Some photographs or illustrations in this publication show details or attachments that can be different from your product.

Continuing improvement and advancement of product design might have caused changes to your product which are not included in this publication. Read, study and keep this manual with the product.

Whenever a question arises regarding your product, or this publication, please consult your Cat dealer for the latest available information.

Safety

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning signs and labels used on the machine.

Operation

The operation section is a reference for the new operator and a refresher for the experienced operator. This section includes a discussion of gauges, switches, product controls, attachment controls, and programming information.

Photographs and illustrations guide the operator through correct procedures of checking, starting, operating and stopping the product.

Operating techniques outlined in this publication are basic. Skill and techniques develop as the operator gains knowledge of the product and its capabilities.

Maintenance

The maintenance section is a guide to equipment care.

Safety Section

i10138881

Safety

SMCS Code: 7000; 7605

⚠ WARNING

Failure to use appropriate caution while operating the machine in remote mode can result in a potential crushing hazard and serious injury or death may occur. Operate in an open area away from other equipment and personnel until you become familiar with the controls.

⚠ WARNING

Be sure all personnel are clear of the equipment while the equipment is being lowered.

Failure to stay clear of the equipment while the equipment is being lowered may result in personal injury.

⚠ WARNING

Do not service the machine while the machine is in remote mode. Failure to place the machine in manual mode for service can result in a crushing hazard. Death or injury may occur if the machine is in remote mode while servicing. Put the machine in manual mode. Verify that the machine is in manual mode prior to servicing the machine.

⚠ WARNING

Do not operate or work on this machine unless you have read and understand the instructions and warnings in the Operation and Maintenance Manual. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Caterpillar dealer for replacement manuals. Proper care is your responsibility.

⚠ WARNING

Personnel who are within the operation area of a remote control machine may be struck by the remote control machine. Being struck by a remote control machine may result in personal injury or death. Clearly mark the operation area for the remote control machine to warn personnel to stay clear of the operation area of the remote control machine. Ensure that personnel have an understanding of the mode indicators on the machine to know when safe to approach the machine.

⚠ WARNING

While operating under active remote control, the machine may move without warning which could result in serious personal injury or death. Maintain a safe distance from the machine when the machine is operated in remote control mode. Personnel who may need to work in the area of a remote control machine must know and understand the external remote control mode indicators, job site procedures, and approach the machine only when it is safe to do so.

⚠ WARNING

Do not enter the area where the remote control machine is operating. Entering the area of a remote control machine while the machine is in remote control may result in serious injury or death. Stay clear of the area where the remote control machine is operating.

⚠ WARNING

A wireless communication device is installed on the machine. Attempting to operate a machine equipped with a wireless communication device could result in an explosion hazard causing serious injury or death. Do not operate the machine less than the recommended distance from a blast zone.

⚠ WARNING

Do not operate or work on this machine in hazardous conditions without a hazardous conditions risk assessment and planned operation procedure. Personal injury or death may occur if the machine travels into or works in hazardous conditions without procedures for safe operation or avoiding the hazardous condition. Hazardous conditions may include and are not limited to high walls, water bodies, unstable terrain, high-voltage lines, chemicals, blasting, and/or falling debris. Prior to remote operation of machines in hazardous conditions, a risk assessment should be performed. Procedures must be in place for hazardous condition operations and avoidance including vehicle recovery.

Work safely. Most accidents that involve product operation are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs.

A person must be alert to potential hazards. This person should also have the necessary training, skills, and tools to perform these functions properly.

Safety precautions and warnings are provided in this publication and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons. Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard.

Therefore, the warnings in this publication and the warnings that are on the product are not all inclusive. Ensure that any operating technique used that is not recommended by Caterpillar is safe.

Ensure that the product will not be damaged or the product will not be made unsafe by the operation procedures used.

Note: Prior to operation of the machine read the Operation and Maintenance Manual.

Note: There may be local regulations and/or government regulations that govern the use of Remote Control (RC) machines. Obey all local and government regulations.

Note: Caterpillar recommends that each customer conducts a risk assessment for remote control operation and establish layers of protection in and around the area of the remote controlled machine and establish safe job site procedures. Examples may include personnel training, warning signs, and barricades.

The information that is contained in this manual only relates to the Autonomous / All Stop (A-Stop).

The information that is contained in this manual is an addition to the owners documentation and the Operation and Maintenance Manual that is provided with the machine.

The information that is contained in this manual is to be used in addition to previous owner documents.

The information that is contained in this manual should not be used as a replacement for any of the original documentations.

The machine should be equipped with the appropriate software. The operator should be fully trained and comfortable with this machine.

Do not attempt to make repairs on the A-Stop transmitter. For replacement options, contact your Cat ® dealer.

Only operate the remote control system when the system is free of faults or defects. Faults and defects could influence safety and must be repaired by specialists who have been trained and authorized before the system is put back into operation.

Refer to your host machine Operation and Maintenance Manual before operation.

Do Not Operate

This safety message can be found on the base machine, please refer to the specific machine Operation and Maintenance Manual for more information.

Illustration 1 g01370904

⚠ WARNING

Do not operate or work on this machine unless you have read and understand the instructions and warnings in the Operation and Maintenance Manual. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Caterpillar dealer for replacement manuals. Proper care is your responsibility.

The machine could be equipped with various software and hardware configurations. The operator should be fully trained and comfortable with the machine prior to operating the All Stop (A-Stop).

Crush Hazard

This safety message is on the left and right fender, and rear fuel tank of the machine.

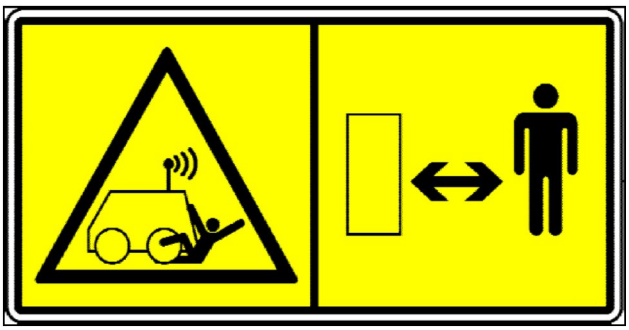

Illustration 2 g06474889

WARNING

Crush hazard. Machine operated by remote control. Stay clear of the machine. Could cause serious injury or death.

WARNING

Do not enter the area where the remote control machine is operating. Entering the area of a remote control machine while the machine is in remote control may result in serious injury or death. Stay clear of the area where the remote control machine is operating.

WARNING

Different frequency SKUs exists for the Autonomous Stop/All Stop (A-Stop) system pending on country of use. Verify the frequency identified on the transmitter and receiver are the same prior to installation or operation. Failure to ensure matching frequencies may result in the Autonomous Stop/All Stop (A-Stop) system not functioning, and the vehicle may not stop when the A-Stop system is activated. Potential crushing hazard and serious injury or death may occur. If the frequency label is missing, contact any Cat dealer for guidance.

Refer to your host machine Operation and Maintenance Manual before operation.

Regulatory Compliance Information

Radio Frequency Components

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Wireless Device
(ASTOP1B - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 1

Model	Cat Part Number
ASTOP1B	627-4191 Electronic Control As

⚠ WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 2

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP1B	9 - 32V	In Rush Current 250mA Operational Current 60mA @ 9V and 19mA @ 32V

Table 3

Receiver Specifications		
Model	**Frequency Range**	**Power**
ASTOP1B	922.6 MHz	0.02mW

Disclaimer Notice

NOTICE
The transmission of information from this radio frequency device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Markings

Japan – This device is approved for use in Japan. This device is granted pursuant to the Japanese Radio Law (電波法). This device should not be modified (otherwise the granted designation number will become invalid). Certificate No: 022-230049

i10180352

Wireless Device
(ASTOP2B - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 4

Model	Cat Part Number
ASTOP2B	627-4189 Transmitter Assembly

WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 5

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP2B	5V DC - Charging	600mA
	1.2V DC - Internal Battery	No External Current Draw

Table 6

Transmitter Specifications		
Model	**Frequency Range**	**Power**
ASTOP2B	922.6 MHz	0.16mW

Disclaimer Notice

NOTICE
This radio frequency device cannot be deactivated and the transmission of information from the device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Markings

Japan – This device is approved for use in Japan. This device is granted pursuant to the Japanese Radio Law (電波法). This device should not be modified (otherwise the granted designation number will become invalid). Certificate No: 022-230050

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Wireless Device
(ASTOP1 - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 7

Model	Cat Part Number
ASTOP1	373 - 8620 Electronic Control Gp (RECEIVER, A-STOP)

WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 8

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP1	9 - 32V	In Rush Current 250mA Operational Current 60mA @ 9V and 19mA @ 32V

Table 9

Receiver Specifications		
Model	**Frequency Range**	**Power**
ASTOP1	919MHz	0.02mW

Disclaimer Notice

NOTICE

The transmission of information from this radio frequency device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Notices

Canada Notice to Users

This device complies with Industry Canada license exempt RSSs. Operation is subject to the following two conditions:

- This device may not cause interference
- This device must accept any interference, including interference that may cause undesired operation of the device.

FCC Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/tv technician for help

Changes or modifications to this device without the express approval of Caterpillar may void the users authority to use this device.

Certification Markings

Australia – This device is approved for use in Australia.

Brazil – This device is approved for use in Brazil. Certificate No.: 03362-13-07855. CoC certificate No.: UL-BR 23.0999. The radio is designed for use in industrial and commercial installations by trained and qualified professionals, not for domestic use.

Canada – This device is approved for use in Canada. ISED ID: 4071-ASTOP1

Chile – This device is approved for use in Chile. Order No.: 7788/DO N° 56429/F60

New Zealand – This device is approved for use in New Zealand.

Peru – This device is approved for use in Peru. LoE: 1935-2018-MTC/29

United States – This device is approved for use in the United States. FCC ID: PQMASTOP1

i10181035

Wireless Device
(ASTOP2 - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 10

Model	Cat Part Number
ASTOP2	373-8617 Transmitter Assembly

WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 11

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP2	5V DC - Charging	600mA
	1.2V DC - Internal Battery	No External Current Draw

Table 12

Transmitter Specifications		
Model	**Frequency Range**	**Power**
ASTOP2	919MHz	16mW

Disclaimer Notice

NOTICE

This radio frequency device cannot be deactivated and the transmission of information from the device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Notices

Canada Notice to Users

This device complies with Industry Canada license exempt RSSs. Operation is subject to the following two conditions:

- This device may not cause interference
- This device must accept any interference, including interference that may cause undesired operation of the device.

FCC Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/tv technician for help

Changes or modifications to this device without the express approval of Caterpillar may void the users authority to use this device.

Certification Markings

Australia – This device is approved for use in Australia.

Brazil – This device is approved for use in Brazil. Certificate No.: 03361-13-07855. CoC certificate No.: UL-BR 23.0998. The radio is designed for use in industrial and commercial installations by trained and qualified professionals, not for domestic use.

Canada – This device is approved for use in Canada. ISED ID: 4071-ASTOP2

Chile – This device is approved for use in Chile. Order No.: 7789/DO N° 56428/F60

New Zealand – This device is approved for use in New Zealand.

Peru – This device is approved for use in Peru. Certificate: TRSS42412

United States – This device is approved for use in the United States. FCC ID: PQMASTOP2

i10181084

Wireless Device
(ASTOP2C - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 13

Model	Cat Part Number
ASTOP2C	644-4167 Transmitter Assembly

WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 14

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP2C	5V DC - Charging	600mA
	1.2V DC - Internal Battery	No External Current Draw

Table 15

Transmitter Specifications		
Model	**Frequency Range**	**Power**
ASTOP2C	866.5MHz	20mW

Disclaimer Notice

NOTICE

This radio frequency device cannot be deactivated and the transmission of information from the device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Markings

India – This device is approved for use in India.
Registration No: ETA-SD-20231009535

i10181100

Wireless Device
(ASTOP1C - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 16

Model	Cat Part Number
ASTOP1C	644-4169 Electronic Control As

⚠ WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 17

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP1C	9 - 32V	In Rush Current 250mA Operational Current 60mA @ 9V and 19mA @ 32V

Table 18

Receiver Specifications		
Model	**Frequency Range**	**Power**
ASTOP1C	866.5MHz	0.02mW

Disclaimer Notice

NOTICE

The transmission of information from this radio frequency device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Markings

India – This device is approved for use in India.
Registration No: ETA-SD-20231009536

i10353216

Wireless Device
(ASTOP1A - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 19

Model	Cat Part Number
ASTOP1A	627-4188 Electronic Control As

⚠ WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

sDoC

(Simplified Declaration of Conformity)

European Union

CE **Caterpillar Inc. 100 NE Adams Peoria, IL 61629 USA**

Hereby,Caterpillar Inc. declares this radio equipment is in compliance with directive “2014/53/EU” . The full text of the European Declaration of Conformity is available at the following web address:

https://www.cat.com/radio-compliance

Great Britain

UK CA **Caterpillar Inc. 100 NE Adams Peoria, IL 61629 USA**

Hereby,Caterpillar Inc. declares this radio equipment is in compliance with the relevant statutory requirements. The full text of the Great Britain Declaration of Conformity is available at the following web address:

https://www.cat.com/radio-compliance

Caterpillar suggests that the Declaration of Conformity is obtained shortly after purchase.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 20

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP1A	9 - 32V	In Rush Current 250mA Operational Current 60mA @ 9V and 19mA @ 32V

Table 21

Receiver Specifications		
Model	**Frequency Range**	**Power**
ASTOP1A	868.3MHz	0.01mW

Disclaimer Notice

NOTICE

The transmission of information from this radio frequency device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Notices

Certification Markings

Ukraine – This device is approved for use in Ukraine. Cert: UA.032.CT.0308-24

i10353219

Wireless Device
(ASTOP2A - If Equipped)

SMCS Code: 7008; 7338; 7600-ZM

Table 22

Model	Cat Part Number
ASTOP2A	627-4186 Electronic Control As

⚠ WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

⚠ WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

sDoC

(Simplified Declaration of Conformity)

European Union

Caterpillar Inc. 100 NE Adams Peoria, IL 61629 USA

Hereby,Caterpillar Inc. declares this radio equipment is in compliance with directive “2014/53/EU” . The full text of the European Declaration of Conformity is available at the following web address:

https://www.cat.com/radio-compliance

Great Britain

Caterpillar Inc. 100 NE Adams Peoria, IL 61629 USA

Hereby,Caterpillar Inc. declares this radio equipment is in compliance with the relevant statutory requirements. The full text of the Great Britain Declaration of Conformity is available at the following web address:

https://www.cat.com/radio-compliance

Caterpillar suggests that the Declaration of Conformity is obtained shortly after purchase.

Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 23

Operating Voltage and Current Draw		
Model	**Voltage Range**	**Maximum Current Draw Range**
ASTOP2A	5V DC - Charging	600mA
	1.2V DC - Internal Battery	No External Current Draw

Table 24

Transmitter Specifications		
Model	**Frequency Range**	**Power**
ASTOP2A	868.3MHz	16mW

Disclaimer Notice

NOTICE

This radio frequency device cannot be deactivated and the transmission of information from the device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Certification Notices

Certification Markings

UA.TR.032

Ukraine – This device is approved for use in Ukraine. Cert: UA.032.CT.0309-24

Operation Section

Operation

i10140339

General Information

SMCS Code: 7605

The Autonomous Stop / All Stop (A-Stop) system provides an independent means of stopping an A-Stop equipped machine remotely. A-Stop radio communication is accomplished by the use of an A-Stop receiver installed onboard the autonomous or remote control machine, and a handheld transmitter. The handheld A-Stop transmitter is carried by the personnel working in areas where A-Stop equipped machines are present. The A-Stop system is not required for use on remote controlled machines, but is required for autonomous machines. By activating an A-Stop on the transmitter, any machine that is in range and equipped with an A-Stop receiver system will come to a controlled stop.

Note: An active A-Stop system causes a complete halt of autonomous or remote control operation or job sites of A-Stop equipped machines. Follow site specific safety protocols to approach an autonomous or remote controlled machine.

The machine notifies the office software that it has stopped due to an A-Stop activation.

NOTICE
The A-Stop transmitters will cause any A-Stop machine with an A-Stop receiver system to come to a controlled stop. The A-Stop will stop any A-Stop equipped machine unless the machine is being operated in manual mode with an operator in the cab. Also, the red mode indicator light will flash on a machine that has been stopped by the A-Stop system.

The A-Stop transmitter sends a radio signal to all the A-Stop equipped machines with A-Stop receivers within the operating range of the handheld transmitter. The communications of the A-Stop system is by radio signal and operates independently from the normal autonomous, semi-autonomous or remote controlled system. The A-Stop system can be used even if Cat ® MineStar system cannot communicate with the machine.

Each person working in the area of autonomous operation shall be issued an A-Stop transmitter. People working in the area of autonomous operation are required to carry the transmitter whenever inside the autonomous operating zone.

People working in the area of remote control machines are recommended to carry the transmitter, but are not required to carry a transmitter.

Note: A log should be kept of all operators and contact information for all assigned A-Stop transmitters. It is also recommended that A-Stop transmitters are uniquely identified for operators such that resolving unknown A-Stop activations can be simplified.

The autonomous or remote control machine will remain at a stop until it receives both “Reset” and “Clear” signal from the A-Stop transmitter that originally signaled the stop and the user lock has been removed.

Effects on System Operation

Environmental

The effective range depends on several site environmental characteristics, including but not limited to technology, frequency, terrain, electromagnetic interference, and site structures. Different site terrain materials will affect the systems effective range. Some materials will absorb radio signals while others will reflect radio signals

Note: Caterpillar cannot anticipate all potential impacts to a network and the above is not an all inclusive list.

i10140058

System Components

SMCS Code: 7605

Autonomous Stop / All Stop (A-Stop) Transmitter

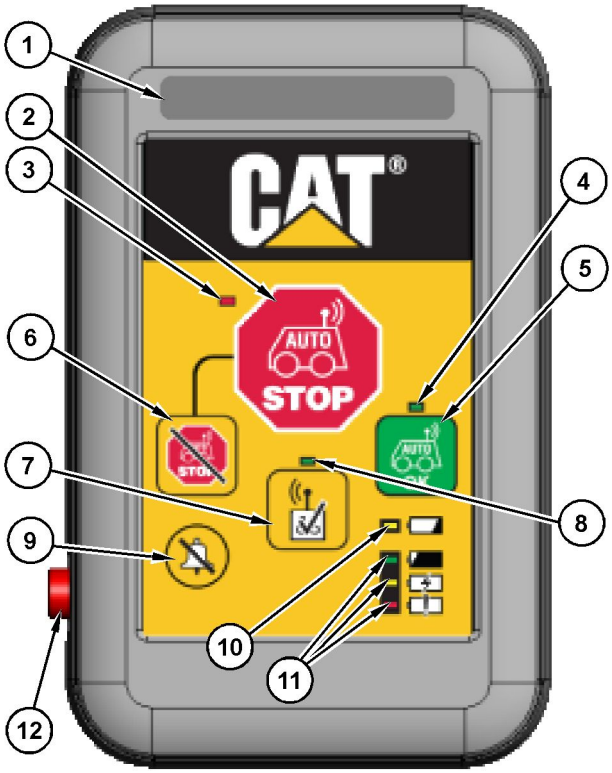

Illustration 3 g07763579

Typical example

A-Stop transmitter

(1) Frequency label area
(2) A-Stop button
(3) A-Stop Light Emitting Diode (LED) indicator
(4) Clear LED indicator
(5) Clear button
(6) A-Stop reset button
(7) Test button
(8) Test/Power LED indicator
(9) Alarm silence
(10) Low battery LED indicator
(11) Battery charge multiple LED indicator
(12) Charging port

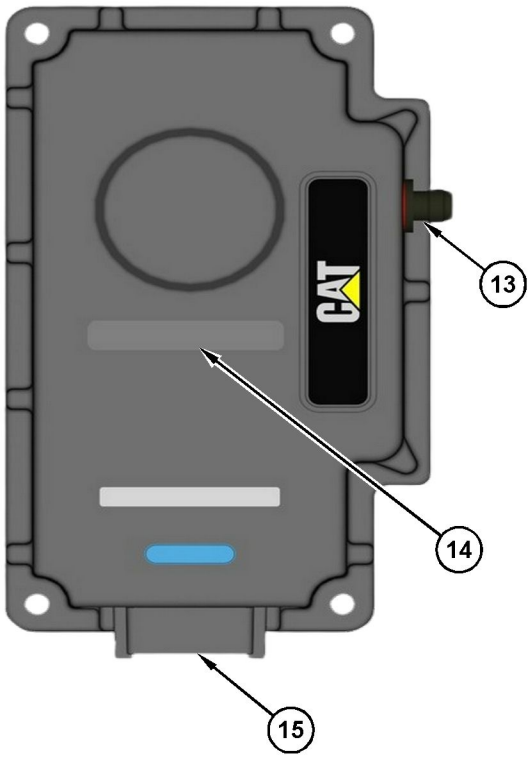

Illustration 4 g07763592

Typical example

A-Stop receiver

(13) Antenna port
(14) Frequency label area
(15) Power/Ground/CAN connection

Refer to Systems Operation, M0069884 for more information about the A-Stop receiver for connection details.

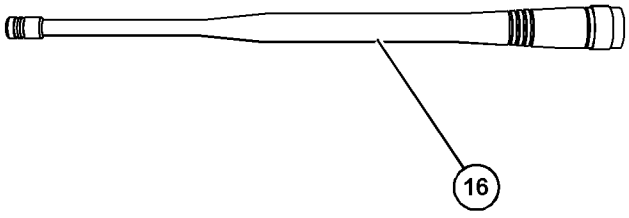

Illustration 5 g07763597

(16) Receiver antenna

Table 25

Item	Button	Description
1	Frequency label area	Used to identify operating frequency which varies by country certification. The frequency label and color must match between transmitter and receiver for the A-Stop to function. Refer to the table in “Specification“ for country-specific information
2	A-Stop button	Used to continuously transmit an A-Stop radio signal received by any machine equipped with the A-Stop system within range. The A-Stop signal will continue to transmit until A-Stop reset button (6) is pressed. (1)
3	A-Stop LED indicator	A-Stop LED indicator blinks and transmitter beeps about one time per second when A-Stop command is actively being transmitter.
4	Clear LED indicator	Blinks after an A-Stop clear message is transmitted. The transmitter beeps once and clear indicator LED blinks for 6 seconds at once per second, and turns off.
5	Clear button	Used to signal to all machines in the range to exit the A-Stop mode. Each transmitter that has signaled an A-Stop must be cleared before the affected machine can resume operation. (2)
6	A-Stop reset button	Used to stop transmitting continuous signal. Other machines that enter the transmitter range will not be stopped. A-Stop reset button (6) will only stop the transmission of the A-Stop signal, this button will not “Clear” an affected machine to resume operation.
7	Test button	Used to initiate an A-Stop system test between the transmitter and any A-Stop equipped machine in range of the transmitter. Test button (7) is a momentary button. (3)
8	Test/Power LED indicator	Blinks fast for 0.5 seconds when button is pressed. Blinks slower for 5 seconds after the button has been pressed and released.
9	Alarm silence	Used to silence the audible alarm during an A-Stop event.
10	Low battery LED indicator	When battery is low, LED blinks slowly every 5 seconds. Also a low battery audible beep every 6 LED cycles, approximately every 30 seconds.
11	Battery charge multiple LED indicators	Used to show the charging status of the battery. There is a cluster of three battery charge LED indicators.
12	Charging port	Used to charge the transmitter. (4)

(1) Only the transmitter that sent the A-Stop signal can “Clear” or “Reset” the A-Stop command.
(2) Pressing Clear button (5) does not allow the command machine to resume the task the autonomous or remote control machine was assigned before the A-Stop was initiated. Clear button (5) must be pressed before a machine can resume operation before the autonomous or remote control machine will resume its original assignment it had before the A-Stop was activated.
(3) Use with the A-Stop button when using Cat ® MineStar Test Station.
(4) Use only the supplied battery charger to charge the transmitters.

The transmitter has various modes of operation. Refer to Table 26 for more information.

Table 26

Transmitter Modes	
Mode	**Activation of Mode**
A-Stop	Press and hold A-Stop button (2) for 1 second to activate. A-Stop LED indicator (3) will start blinking while the A-Stop is active.
A-Stop reset	Press and hold A-Stop reset button (6) for more than 1 second but less than 6 seconds. The test/power indicator (8) will resume blinking. A-Stop LED indicator (3) will stop blinking.

(continued)

(Table 26, contd)

Transmitter Modes	
Mode	**Activation of Mode**
Test	Press and hold Test button for 2 or more seconds.
Clear	Press and hold clear button (5) for 2 or more seconds. Clear LED indicator (4) blinks and transmitter will beep 5 times.
Deep sleep	Press and hold A-Stop reset button (6) for more than 6 seconds. A-Stop LED indicator (3), clear LED indicator (4), and test/power LED indicator (8) will blink once when entering sleep mode. Test/power LED indicator (8) will not blink when in deep sleep mode. The transmitter will enter deep sleep automatically after 24 hours of inactivity.

Battery Charge Indicators

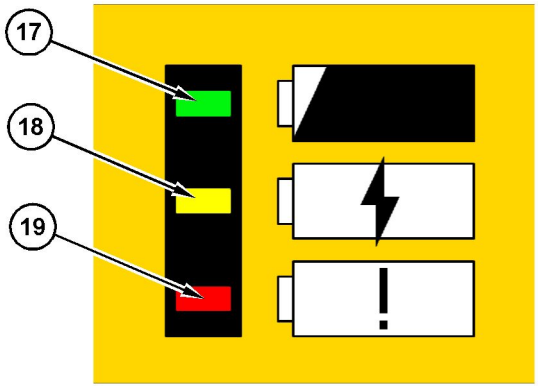

Illustration 6 g07763607

Battery charge multiple LED indicator

(17) Ready LED (Green)
(18) Charging LED (Yellow)
(19) Fault LED (Red)

Table 27

Battery Charge Indicator LEDs			
Ready LED (Green)	**Charging LED (Yellow)**	**Fault LED (Red)**	**Indicated Condition Description**
X			LED illuminates briefly after transmitter is attached to charger. LED will stay illuminated after charging is complete, until charger is disconnected.
X	X		LEDs illuminate when the transmitter is trickle charging from 1.22 V to full charge of 1.95 V.(1)
	X		LED illuminates when transmitter is being charged at fast rate (below 1.22 V), before trickle charge (to 1.95 V).

(continued)

(Table 27, contd)

Battery Charge Indicator LEDs			
Ready LED (Green)	**Charging LED (Yellow)**	**Fault LED (Red)**	**Indicated Condition Description**
X		X	LEDs will illuminate when the transmitter is ready for charging but the temperature of the transmitter is out of range(2). In a suitable environment, charging will begin after the transmitter reaches a temperature in the allowable range.
		X	LED will illuminate when a latched fault condition is present. This condition can be the result of a bad battery, circuit failure, chip over temperature or over charged (beyond 1.95 V).(3)

(1) The charging will begin at a high rate charge followed by a top off charge
(2) Transmitter will only be charged in temperatures defined in the “Specification“ section.
(3) If this condition is present, unplug the transmitter from the power supply and retry before troubleshooting further.

Note: If none of the LEDs illuminate after the transmitter is connected to the charger, remove the transmitter from service.

Transmitter Case

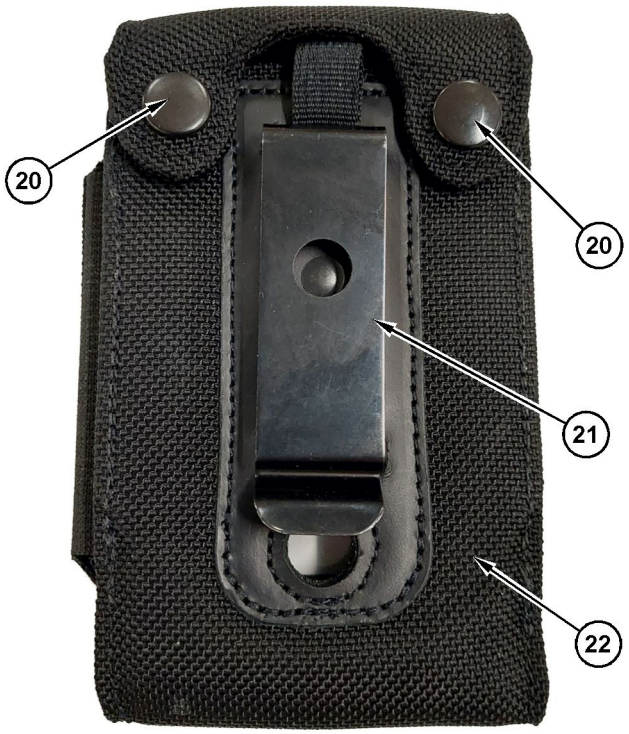

Illustration 7 g07763613

(20) Metal snap
(21) Belt clip
(22) Transmitter case

Illustration 8 g07763617

(23) Button cover

The Autonomous Stop / All Stop (A-Stop) Transmitter can be used/secured inside transmitter case (22) using metal snap (20). Transmitter case (22) has belt clip (21) and button cover (23).

i10139978

Using an A-Stop

SMCS Code: 7605; 79AU

NOTICE
Prior to attempting use of the A-stop system, ensure the transmitter frequency label and color matches between transmitter and receiver.

Single A-Stop Transmitter

Press and hold the A-Stop button for one second for an A-Stop to broadcast a stop signal.

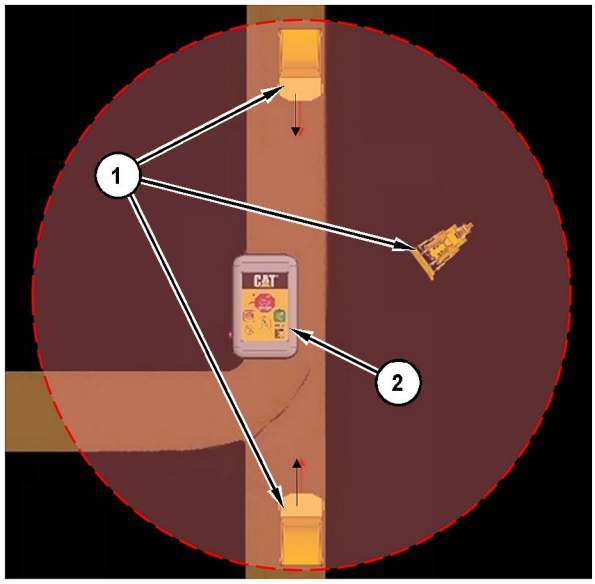

Illustration 9 g07513968

Single A-Stop transmitter sending an A-Stop signal, near three machines equipped with onboard A-Stop receivers (the illustrated range is representational, not literal)

(1) A-Stop receiver equipped machines
(2) A-Stop transmitter

Illustration 9 shows A-Stop equipped machines with installed A-Stop receivers. The A-Stop Light Emitting Diode (LED) Indicator light on A-Stop transmitter remote (2) indicates that an A-Stop has been activated. The circle in Illustration 9 indicates the range of the A-Stop. In Illustration 9 , A-Stop equipped machines (1) that are in range of A-Stop transmitter (2) are stopped due to A-Stop button that was pressed. Once an A-Stop event has occurred, any A-Stop equipped machines (1) within range or enter the range of A-Stop transmitter (2) will be stopped as long as it is continuously transmitting. A “Reset” and “Clear” signal is required for the affected A-Stop equipped machines (1) to resume normal operation.

Note: The range of the transmitter is defined in the specifications section.

Multiple A-Stop Transmitter

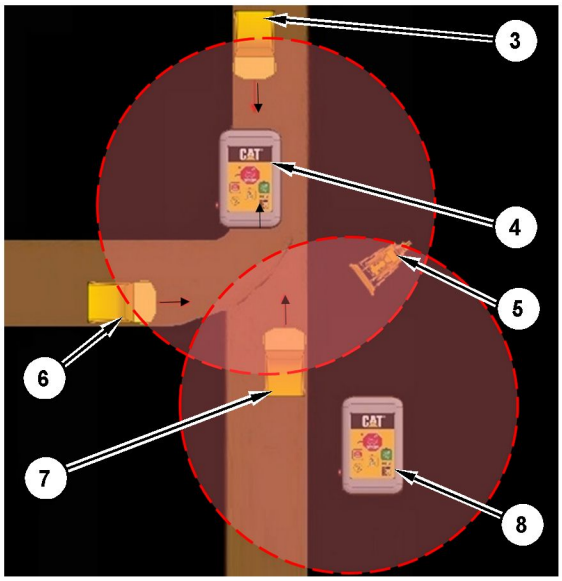

Illustration 10 g07513971

Multiple A-Stop transmitters sending an A-Stop signal, near four machines equipped with onboard A-Stop receivers (the illustrated range is representational, not literal)

(3) Machine A
(4) Transmitter A
(5) Machine B
(6) Machine C
(7) Machine D
(8) Transmitter B

A-Stop equipped machine A (3) and A-Stop equipped machine C (6) are only being stopped by A-Stop transmitter A (4), so the machines will only need to receive a “Reset” and “Clear” signal from the same A-Stop transmitter A (4) before it can continue operating.

When more than one A-Stop transmitter sends an A-Stop signal, all transmitters that sent an A-Stop command will need to send a “Reset” and “Clear” signal. In Illustration 10 , A-Stop equipped machine B (5) and A-Stop equipped machine D (7) are being stopped by A-Stop transmitter A (4) and A-Stop transmitter B (8), both of the A-Stop equipped machines will need to receive a “Reset” and “Clear” signal from both A-Stop transmitters before they can continue operating.

Note: After all the machines have stopped as shown in Illustration 10 , the operator in possession of transmitter B (8) moves to the same position as the operator in possession of transmitter A without pressing the “Reset” button on the A-Stop. In this case transmitter B has now sent a stop command to all four machines. In this case both transmitters will need to send the “Reset” and “Clear” signal to all machines.

i10139992

Mode Indicator Lights

SMCS Code: 7605; 79AU

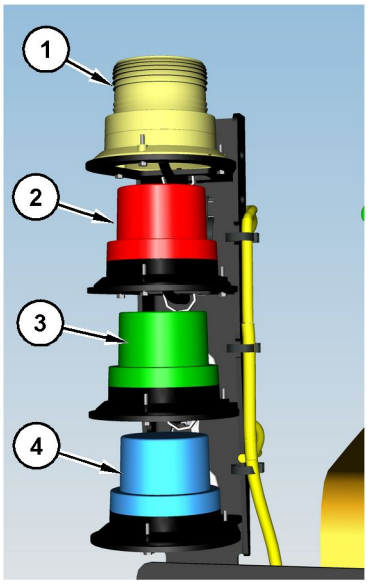

Illustration 11 g07524997

(1) Yellow mode indicator light
(2) Red mode indicator light
(3) Green mode indicator light
(4) Blue mode indicator light

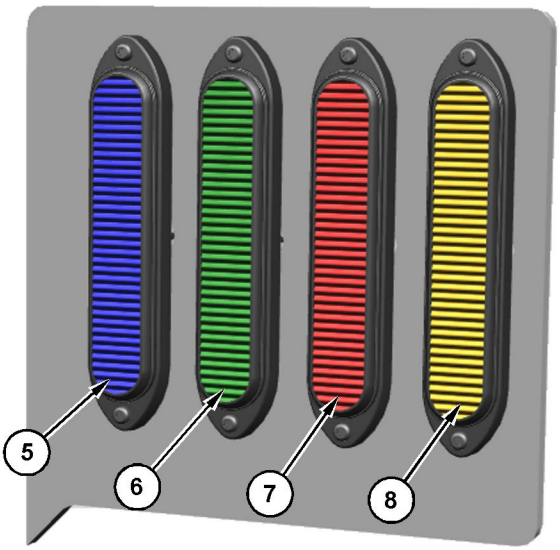

Illustration 12 g07525853

(5) Blue mode indicator light
(6) Green mode indicator light
(7) Red mode indicator light
(8) Yellow mode indicator light

The mode indicator lights of the machine as shown in Illustration 11 and Illustration 12 indicates the status of the A-Stop equipped machine. Refer to autonomous or remote control machine specific Operation and Maintenance Manual for more information on mode indicator light function.

i10139979

Activating an A-Stop (Autonomous Stop / All Stop (A-Stop))

SMCS Code: 7605; 79AU

NOTICE
Prior to attempting use of the A-stop system, ensure the transmitter frequency label and color matches between transmitter and receiver.

When an A-Stop equipped machine receives an A-Stop signal, the machine immediately initiates a controlled stop. The red mode indicator light will flash to indicate an A-Stop. Refer to autonomous or remote control machine specific Operation and Maintenance Manual on how the other mode indicator lights may be affected.

i10139965

Clearing an A-Stop (Autonomous Stop / All Stop (A-Stop))

SMCS Code: 7605; 79AU

NOTICE
Prior to attempting use of the A-stop system, ensure the transmitter frequency label and color matches between transmitter and receiver

Press the A-Stop reset button for more than 1 second but less than 6 seconds to discontinue sending the continuous A-Stop signal.

Press and hold the clear button for two or more seconds to clear an A-Stop.

The A-Stop equipped machine identifies and records each transmitter that has sent a stop signal. The A-Stop equipped machine can only resume operation when each transmitter that had sent a stop signal sends the “Reset” and “Clear” commands. Once all the A-Stops have been cleared, the red mode indicator will stop flashing. Once all the A-Stops have been cleared the A-Stop equipped machine can return to autonomous, semi-autonomous or remote control mode.

When clearing an A-Stop, verify that all affected A-Stop equipped machines (intended and unintended) receive the “Reset” and “Clear” signal. A-Stop equipped machines near the end of the range of the stop signal may not receive the signals immediately. When leaving the Autonomous Operating Zone (AOZ) or job site with an A-Stop transmitter, verify that a clear signal has been sent to all machines that are safe to operate. If there are A-Stop equipped machines that must remain stopped, send a new A-Stop signal to the relevant machines from an A-Stop transmitter that will remain in the AOZ or job site, and then send a “Clear” signal to all relevant machines from the A-Stop transmitter leaving the AOZ or job site. Failure to send a clear signal from an A-Stop transmitter leaving the AOZ or job site will require either retrieving the A-Stop transmitter, bringing back within range to send “Clear” signal, or cycle key-switch on the machine.

Note: Changing the mode will clear an A-Stop signal on an autonomous machine.

i09607934

Resuming Autonomous Operation

SMCS Code: 7605; 79AU

When Cat ® MineStar is used and the autonomous machine has received all the necessary “Clear” messages, a controller must remove the user lock automatically placed on the autonomous machine. Once the user lock is removed, the autonomous machine will resume the assignment the autonomous machine had before receiving an A-Stop signal.

i09643544

Resuming Autonomous Operation

SMCS Code: 7605; 79AU

When the Command Tractor has received all the necessary clear messages, the machine remains in the stopped mode. The Command Tractor will not return to the Remote Control Standby mode until the operator honks the horn on the operator station. Follow the normal operational procedures to transition from Remote Control Standby to either Remote Control Mode or Autonomous Run Mode.

i09699995

Resuming Remote Control Operation

SMCS Code: 7605; 79AU

When the Command machine has received all necessary clear messages, the machine remains in the stopped mode. The Command machine will not return to the Remote Control (RC) standby mode until the operator honks the horn on the operator station or operator console. Follow the normal operational procedures to transition from RC standby to RC mode.

i10138914

Testing the A-Stop System in the Field (For Cat® MineStar ™ and Remote Control Machines)

SMCS Code: 7605; 79AU

NOTICE
Prior to attempting use of the A-stop system, ensure the transmitter frequency label and color matches between transmitter and receiver.

An A-Stop transmitter can test the transmitter and autonomous or remote control machine system together by using the test button.

1. Press and hold the test button for two or more seconds while in range of one or more autonomous or remote control command machines.
2. The autonomous or remote control command machines that receive the test message will acknowledge the test by causing the work lights to flash and horn to sound.
3. If the horn or work lights do not turn ON, repair the horn or work lights before continuing autonomous or Remote Control (RC) operation. Refer to appropriate machine Troubleshooting Manual for further information on horn.

Note: If the machine is in RC pending or RC reserved and the test button is pressed, the machine work lights will not flash.

i10138920

Testing the A-Stop System in the Field
(For Cat® MineStar ™ Machines)

SMCS Code: 7605; 79AU

NOTICE
Prior to attempting use of the A-stop system, ensure the transmitter frequency label and color matches between transmitter and receiver.

An A-Stop transmitter can test the transmitter and autonomous machine system together by using the test button.

1. Press and hold the test button for two or more seconds while in range of one or more Command machines.
2. The Command machines with the A-Stop system installed that receive the test message will acknowledge the test in the following manner:

- When machine work lights are OFF - Machine work lights turn ON for 0.5 second and then turn OFF and horn is ON for one second.
- When machine work lights are ON - Machine work lights turn OFF for 0.5 second and then turn ON again and horn is ON for one second.

The horn response A-Stop test check can be used when working around Command machines to verify operation of the A-Stop system.

Note: If the machine is in RC Pending or RC Reserved and the test button is pressed, the machine work lights will not flash.

Note: If horn or work lights do not turn On, repair the horn or work lights before continuing autonomous or RC operation. Refer to appropriate machine Troubleshooting Manual for more information on horn.

i10138922

A-Stop Transmitter
(Autonomous Stop / All Stop (A-Stop))

SMCS Code: 7605; 79AU

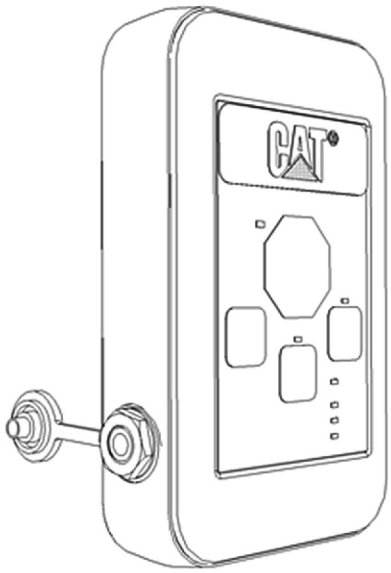

Illustration 13 g06061577
Typical example
A-Stop transmitter charging port

Power and charging

Note: The re-chargeable batteries are not a serviceable item. Do not replace.

- Use only the provided battery charger for charging the A-Stop remote transmitters.
- The transmitter should be charged as needed (recommended every 1-3 days with normal use). An audible sound can also be heard from the transmitter when the battery is low.

Note: The transmitters must be in use to hear or see the low battery indication, so care should be taken to charge the device regularly.

- The charging port can be found on the bottom left of the transmitter. Lift the rubber sealing plug and insert the charger plug into the bottom of the transmitter.
- When the ON LED stops blinking and remains a solid green color, the device is done charging and can be removed from the charger.
- Replace the sealing plug on the A-Stop transmitter when not charging.

A-Stop Test Station (919 MHz only)

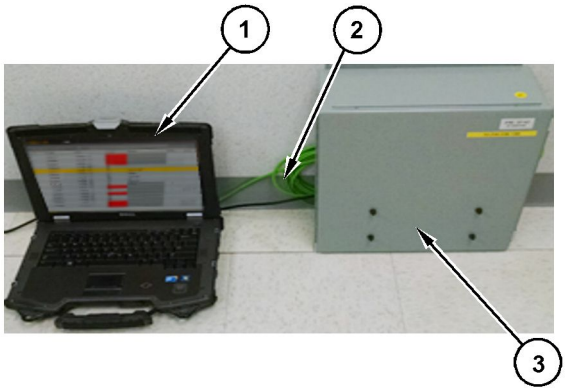

Illustration 14 g07608596

A-Stop test Station

(1) MineStar Personal Computer (PC)
(2) RJ-45 ethernet wire
(3) Test station

Note: The test station in Command for Hauling is only used in 919 MHz regions, so no further test boxes will be created.

The A-Stop Test Station (For MineStar 919 MHz systems only) is used to test the operation of individual A-Stop transmitters. Refer to the specification table in “Specification“ for more information. The test station allows the system to verify that the transmitter is working properly, and Cat ®MineStar ™ System which transmitters have been checked out and to whom.

- Transmitters (919 MHz) can be assigned to individuals using the Cat®MineStar ™ system software program.
- There may be multiple checkout stations at one mine site to facilitate sufficient access for personnel entering the autonomous operation zone.
- A transmitter may be retested after the transmitter has been allocated to a user, before the transmitter is returned.
- If a transmitter is allocated using a remote computer with the test station, the allocation will be displayed in the A-Stop page within the Cat®MineStar ™ System Client software.

Testing A-Stop Transmitters with a Cat® MineStar ™ System Remote PC

The A-Stop test functionality is built into the Cat ® MineStar ™ System software. A transmitter can be tested anytime a working test station is in range. A transmitter must be tested within 15 minutes prior to being allocated to a user.

Testing the Transmitter

1. Navigate to the A-Stop tab of the remote Cat ® MineStar ™ System computer.

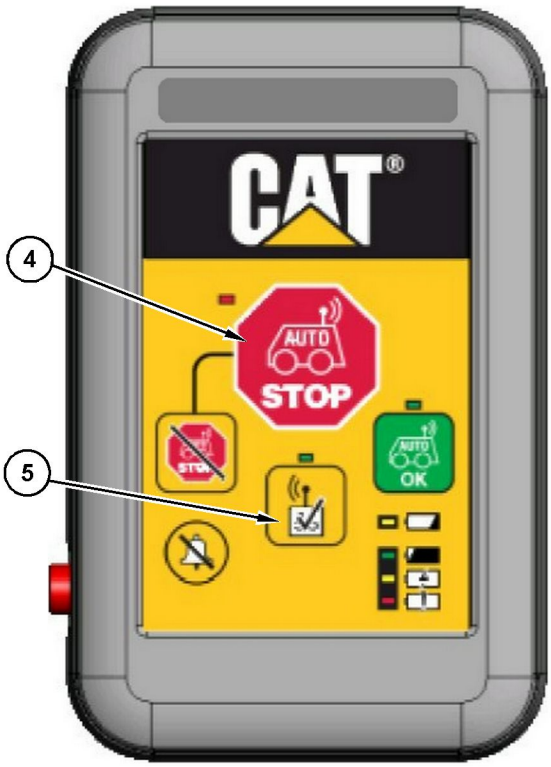

Illustration 15 g07763166

Typical example

(4) A-Stop button
(5) Test button

2. Verify that the transmitter has an adequate battery charge. Press and hold “Test” button (5), then press “A-Stop” button (4) immediately after to initiate the test. Release both the buttons.

The test station will check the transmission of the test signal. The MineStar personal computer will acknowledge the signal and display the test results on the “A-Stop Station” tab.

Note: Pressing the Stop button alone can trigger an A-Stop signal to be communicated. Follow the procedure to avoid triggering the A-Stop signal unintentionally.

Test Results

Device Id	Test Station	Test Time	Last Result	Allocated To	Re-Tested	Returned
29	Test Station 1	13:02:51 Dec 21 2011	FAIL			
26	Test Station 2	12:59:51 Dec 21 2011	FAIL			
23	Test Station 1	12:56:51 Dec 21 2011	FAIL			
21	Test Station 2	12:54:51 Dec 21 2011	PASS			
19	Test Station 1	12:52:51 Dec 21 2011	PASS	Andrew Cartwright		
18	Test Station 1	12:51:51 Dec 21 2011	PASS	Tina Poole		
16	Test Station 2	12:49:51 Dec 21 2011	PASS	Andrew Lingard		
15	Test Station 1	12:48:50 Dec 21 2011	PASS	Christian Larney		
13	Test Station 2	12:46:50 Dec 21 2011	PASS	Ben Burnett	✔	
12	Test Station 2	12:45:50 Dec 21 2011	FAIL			
10	Test Station 1	12:43:50 Dec 21 2011	PASS		✔	12:52:38 Dec 21 2011
6	Test Station 2	12:39:50 Dec 21 2011	FAIL			
5	Test Station 2	12:38:50 Dec 21 2011	PASS			
4	Test Station 2	12:37:50 Dec 21 2011	PASS			
1	Test Station 2	12:34:50 Dec 21 2011	FAIL		✔	12:38:21 Dec 21 2011
30	Test Station 2	16:52:45 Dec 19 2011	FAIL			12:52:24 Dec 21 2011

Illustration 16 g06061593
Test results in Web Version

The above image is the “MineStar Web Version” A-Stop test station results page.

1. Click “Tasks” tab on the top of the results page.

2. Select “Automation” in the drop-down.

3. Select “A-Stop” tab.

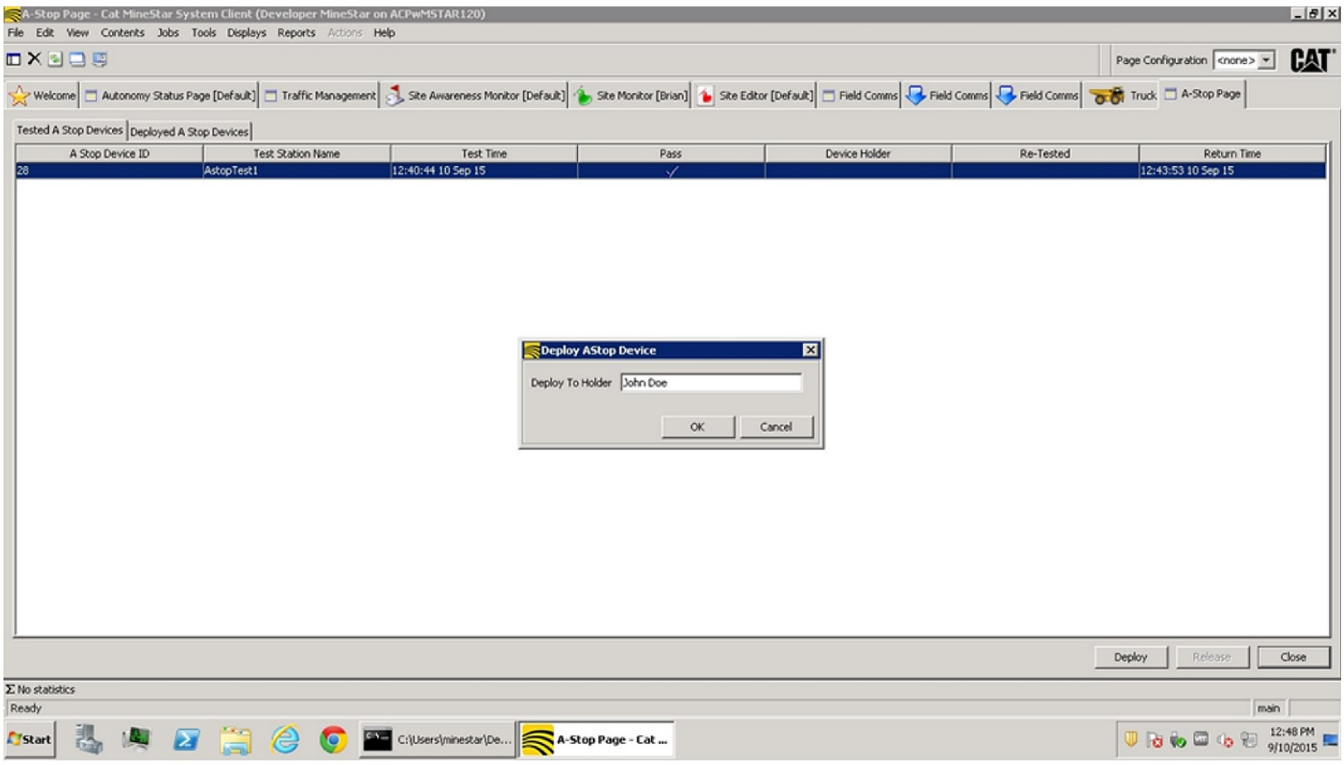

Illustration 17 g06061598

Test results view screen

The above image is the “MineStar System Client” test results page.

1. Click “Contents” on the top “Toolbar” .

2. Select “Autonomy” in the drop-down.

3. Select “A-Stop Page” tab.

After testing the transmitter, the results and information can be viewed on screen. If a result shows a failed test, the following condition is the possible cause for failure:

The transmitter does not have an adequate charge for operation and requires additional charging before use.

Note: If the transmitter continues to fail the test after two attempts, the transmitter should be taken out of service for further troubleshooting.

After the transmitter has passed the test, the transmitter can be allocated to a user.

Allocating a Transmitter to a User

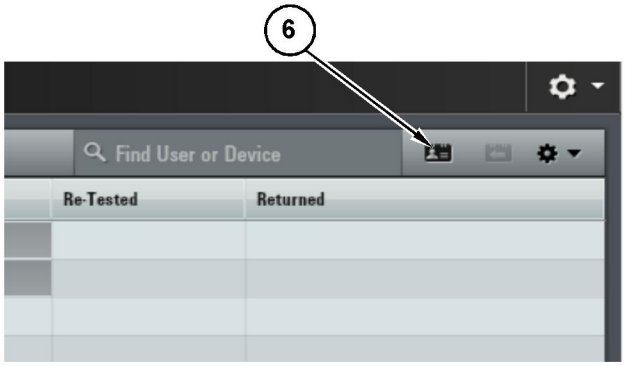

Illustration 18 g07763180

(6) Allocate button

1. Select the row of the transmitter that is to be allocated to a user.

2. Use “Allocate” button (6) located in the top right of the screen to allocate a transmitter to a user.

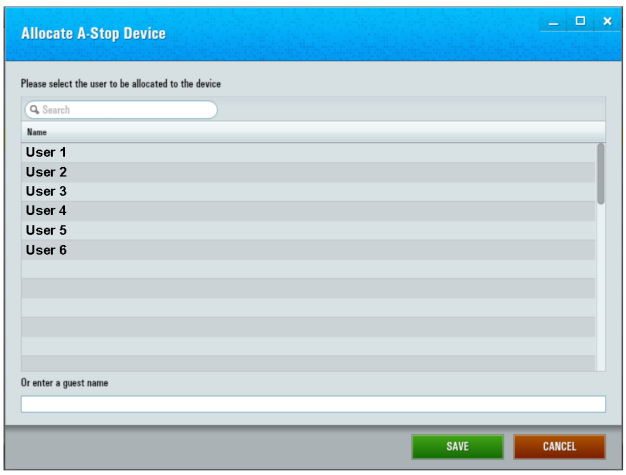

Illustration 19 g02881098

3. A pop-up window will appear and a name can be selected from the list of known users or the name of a guest user can be entered into the field at the bottom of the screen.

a. If a transmitter has already been allocated to another user and is selected to allocate to a new user, the test station will allocate the transmitter to the new user if the transmitter has been tested within the last 15 minute period.

If the transmitter has not been tested within the last 15 minute period, return the transmitter back into the system and follow the normal test and allocation procedure. Refer to Section “Returning a Transmitter” for more information on returning a transmitter.

Note: An A-Stop transmitter that has not been tested using the A-Stop test station or checked out is still capable of stopping an autonomous machine providing the transmitter is in proper working condition and has the same frequency as machine receiver.

After a user is selected from the list or given a guest user name, the transmitter is allocated and the test results screen will be updated to show to whom the transmitter is allocated. The transmitter can also be retested and a check box will appear in the test results window under the “Re-Tested” column to show a successful retest. This retest feature can also be utilized for users returning to work after a break or period of activity to verify proper operation of the transmitter without allocating a new user.

Returning a Transmitter

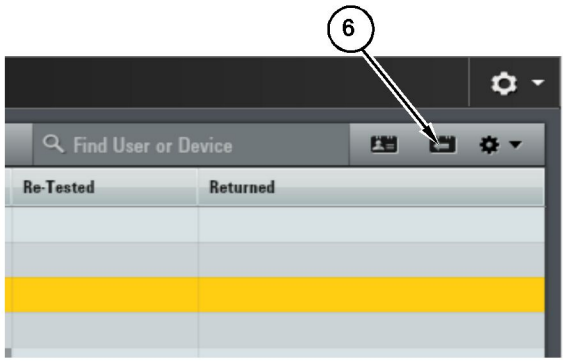

Illustration 20 g07763183

(6) Allocate button

After the transmitter is returned to the test station area and no longer needed for use, open the Cat ® MineStar ™ web version, then select “Allocate” button (6) to return the transmitter. The test results window will be updated to show that the transmitter is returned.

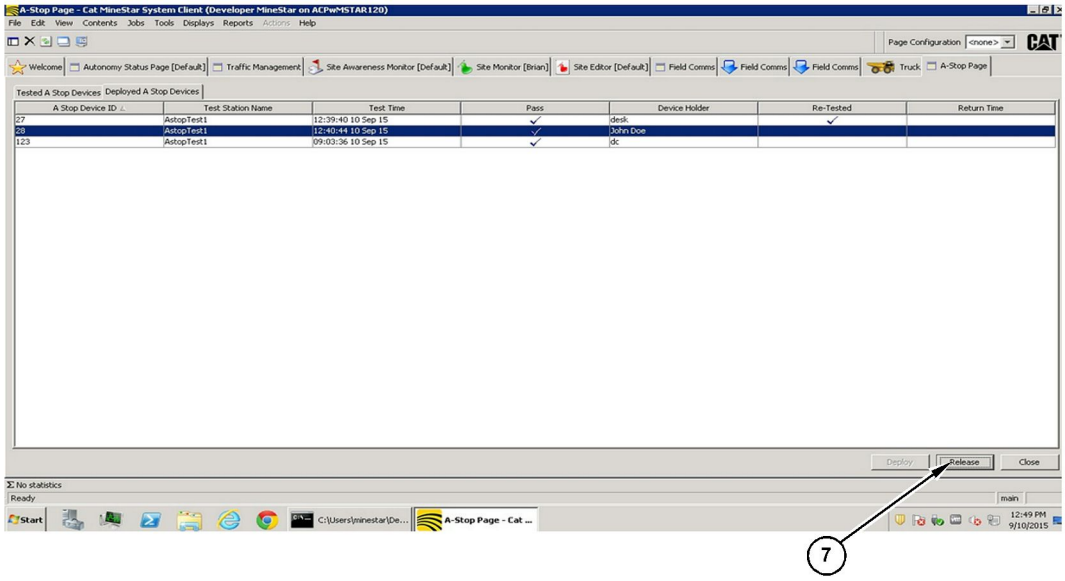

Illustration 21 g07763068

(7) Release button

In the MineStar System Client, select the row and release the row by clicking “Release” button (7).

Maintenance Section

Maintenance Support

i10429503

Specification

SMCS Code: 7605

Specification

Table 28

A-Stop Regulation					
Item	**Criteria**	**Frequency**			
		866.5 MHz	**868.3 MHz**	**919 MHz**	**922.6 MHz**
Transmitter	Model	ASTOP 2C	ASTOP 2A	ASTOP 2	ASTOP 2B
	Frequency text background color	Green	Red	Black	Blue
	Frequency text color	White			
Receiver	Model	ASTOP 1C	ASTOP 1A	ASTOP 1	ASTOP 1B
	Frequency text background color	Green	Red	Black	Blue
	Frequency text color	White			
Receiver Antenna	Background color	Black			
	Stripe color (dual stripes)	Green			

Note: Prior to worldwide use, the 919 MHz frequency transmitters and receiver did not have a specific frequency label. If label is missing, review the model and consult your local Cat ® dealer to ensure the correct transmitter/receiver are matched.

Note: Refer Illustration 22 through Illustration 29 for four transmitters and four receivers.

Illustration 22 g07763253
866.5 MHz Transmitter

Illustration 23 g07763257
868.3 MHz Transmitter

Illustration 24 g07763261

919 MHz Transmitter

Illustration 25 g07763251

922.6 MHz Transmitter

Illustration 26 g07763266

866.5 MHz Receiver

Illustration 27 g07763263

868.3 MHz Receiver

Illustration 28 g07763262
919 MHz Receiver

Illustration 29 g07763264
922.6 MHz Receiver

Illustration 30 g07559934
Receiver antenna with green stripes on tip

Table 29

Country	866.5 MHz	868.3 MHz	919 MHz	922.6 MHz
Japan	- (1)	-	-	X (2)
India	X	-	-	-
United States of America	-	-	X	-
Canada	-	-	X	-

(continued)

(Table 29, contd)

Country	866.5 MHz	868.3 MHz	919 MHz	922.6 MHz
Australia	-	-	X	-
New Zealand	-	-	X	-
Brazil	-	-	X	-
Peru	-	-	X	-
Chile	-	-	X	-
Austria	-	X	-	-
Belgium	-	X	-	-
Bulgaria	-	X	-	-
Croatia	-	X	-	-
Cyprus	-	X	-	-
Czech Republic	-	X	-	-
Denmark	-	X	-	-
Estonia	-	X	-	-
Finland	-	X	-	-
France	-	X	-	-
Germany	-	X	-	-
Greece	-	X	-	-
Hungary	-	X	-	-
Ireland	-	X	-	-
Italy	-	X	-	-
Latvia	-	X	-	-
Lithuania	-	X	-	-
Luxembourg	-	X	-	-
Malta	-	X	-	-
Netherlands	-	X	-	-
Poland	-	X	-	-
Portugal	-	X	-	-
Romania	-	X	-	-
Slovakia	-	X	-	-
Slovenia	-	X	-	-
Spain	-	X	-	-
Sweden	-	X	-	-
United Kingdom	-	X	-	-
Iceland	-	X	-	-
Israel	-	X	-	-
Liechtenstein	-	X	-	-
Norway	-	X	-	-

(continued)

(Table 29, contd)

Country	866.5 MHz	868.3 MHz	919 MHz	922.6 MHz
Switzerland	-	X	-	-
South Africa	-	X	-	-
Ukraine	-	X	-	-

(1) Not Applicable
(2) Applicable

Note: Prior to worldwide use, the 919 MHz frequency transmitters and receiver did not have a specific frequency label. If label is missing, review the model and consult your local Cat ® dealer to ensure the correct transmitter/receiver are matched.

Refer to the “General Information“ for more information about the effects on system operation for receiver and transmitter.

Receiver

Table 30

Criteria	Description
Height	45.2 mm (1.80 inch)
Width	126 mm (5.0 inch)
Length	213.9 mm (8.40 inch)
Weight	0.512 kg (1.130 lb)
Operational temperature rating	−40 °C to 85 °C (−40 °F to 153 °F)
Storage temperature rating	–50 °C to 95 °C (−58 °F to 171 °F)
Frequency management	Single channel
Radio power (maximum)	Rx - 0.02 mW
Maximum operating range	Up to 20 m (65 ft) receiver to receiver
Input Voltage	9 V to 32 V

Transmitter

Table 31

Criteria	Description
Height	27.4 mm (1.07 inch)
Width	75.8 mm (2.98 inch)
Length	119.8 mm (4.71 inch)
Weight	0.182 kg (0.401 lb)

(continued)

(Table 31, contd)

Criteria		Description
Operational temperature rating		−18 °C to 65 °C (−0.4 °F to 149 °F)
Storage temperature rating		−28 °C to 65 °C (−18.4 °F to 149 ° F)
Frequency management		Single channel
Radio power	866.5 MHz	20 mW
	868.3 MHz	16 mW
	919 MHz	16 mW
	922.6 MHz	0.16 mW
Maximum operating range	For Japan	Up to 100 m (328 ft) hand held to receiver
	For all Other Countries	Up to 300 m (984 ft) hand held to receiver
Supply voltage		1.2 V
Battery capacity		2300 mAh
Charging time		4 hours or less
Allowed ambient charging temperature		−5 °C to 45 °C (23 °F to 113 °F)
Battery type		Ni-MH

Transmitter Charger

Table 32

Criteria	Description	
Cat Part Number	373-8621	647-7116
Associated Model	ASTOP 2 ASTOP 2A	ASTOP 2B ASTOP 2C
Weight	< 1.0 kg (2.2 lb)	< 1.0 kg (2.2 lb)
Charging Temperature Rating	0 °C to 40 °C (32 °F to 104 °F)	-20 °C to 40 °C (-4 °F to 104 °F)
Storage Temperature Rating	−40 °C to 85 °C (−40 °F to 153 °F)	−30 °C to 80 °C (−22 °F to 144 °F)

(continued)

(Table 32, contd)

Criteria	Description	
AC Adapter - Input Voltage	100 V to 240 V	100 V to 240 V
AC Adapter - Input Frequency	50/60 Hz	50/60 Hz
AC Adapter - Output Connector	Barrel Plug, 2.5mm I.D. x 5.5mm O.D. x 9.5mm	Barrel Plug, 2.5mm I.D. x 5.5mm O.D. x 11mm
AC Adapter - Output DC Voltage	5V	5V
AC Adapter - Output Current (Maximum)	2A	3.6A
Maximum Output Power	10W	18W

i09819552

General Maintenance Information

SMCS Code: 7605

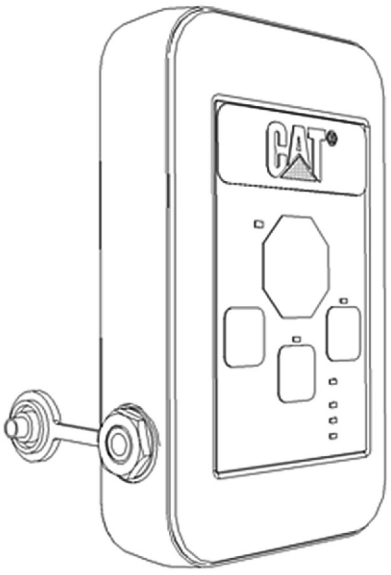

Illustration 31 g06061577

Typical view of All Stop (A-Stop) transmitter

This section provides instructions for basic maintenance of machines with Cat ® A-Stop transmitter for construction industries equipment for remote machine operation. Specifically this maintenance is regarding the additional components needed for A-Stop transmitter beyond the base machine.

Care

Clean the A-Stop transmitter after operation (each shift). Remove any mud, dirt, and concrete, from the A-Stop transmitter to prevent clogging of buttons, or ports by using a clean, dry cloth.

After operation, place the A-Stop transmitter, associated equipment, and the Operation and Maintenance Manual in a locked compartment. This helps to prevent unwanted damage, unauthorized use and theft.

Transportation

Care should be taken when transporting the A-Stop transmitter, ensure the buttons are protected from contact to avoid unwanted A-Stop activation. Refer to “Transporting the Machine” title in your host machine Operation and Maintenance Manual.

i10429509

Maintenance Interval Schedule

SMCS Code: 7605

Ensure that all safety information, warnings, and instructions are read and understood before any operation or any maintenance procedures are performed.

The user is responsible for the performance of maintenance, including all adjustments, and the replacement of components due to normal wear and aging. Failure to adhere to proper maintenance intervals and procedures may result in diminished performance of the product and/or accelerated wear of components.

Note: Before each consecutive interval is performed, all maintenance from the previous interval must be performed.

Note: Before each consecutive interval is performed, all maintenance from the previous interval must be performed.

The following guidelines should be followed if the service hours are not met:

Items listed between 10 and 100 service hours should be performed at least every 3 months.

Items listed between 250 and 500 service hours should be performed at least every 6 months.

Items listed between 1000 service hours and 2500 service hours should be performed at least every year.

When Required

Every 10 Service Hours or Daily

Every 250 Service Hours

i09702766

Cab Mounted Components - Check

SMCS Code: 7008-535

Manual Override Switch

- Check that the manual override switch is secure. Refer to your host machine Operation and Maintenance Manual.
- Check that the manual override switch has no external damage.
- Check the wiring for the manual override switch. Refer to your host machine Operation and Maintenance Manual

i09650361

Components - Check

SMCS Code: 7003-535; 7008-535

Remote Control (RC) / Manual Switch

1. Check if the Remote Control (RC)/Manual switch is free of damage, debris, mud, cement, etc.
2. Check that the RC/Manual switch is mounted securely and rotates properly.

i09699959

Horn - Test

SMCS Code: 7402-081

Refer to “Prepare the Machine for Maintenance” title in your host machine Operation and Maintenance Manual before starting the maintenance procedure.

Inspect the horn on each machine equipped with Onboard Autonomous / All Stop (A-Stop) receiver and ensure that the horn functions correctly. Refer to you host machine Operation and Maintenance Manual.

If the horn is not working, repair the horn before continuing autonomous or Remote Control (RC) operation. Refer to your host machine Troubleshooting Manual.

i10140080

Mode Indicator Lights - Clean

SMCS Code: 1429-070

⚠ WARNING

Personal injury can result from improper handling of chemicals.

Make sure you use all the necessary protective equipment required to do the job.

Make sure that you read and understand all directions and hazards described on the labels and material safety data sheet of any chemical that is used.

Observe all safety precautions recommended by the chemical manufacturer for handling, storage, and disposal of chemicals.

NOTICE

Do not use any of the following chemicals or any solutions that contain the following:

- Acetone
- Ethyl alcohol
- Toluene
- Ethyl acid
- Ammonia
- Methyl chloride

If you have a different chemical or solution and are not sure whether the chemical or solution is suitable, do not use the chemical or solution. Using any of the chemicals in the previous list may cause permanent damage to the mode indicator lights. Some commercial window cleaners contain ammonia and are, therefore, unacceptable.

Refer to “Prepare the Machine for Maintenance” title in your host machine Operation and Maintenance Manual.

1. Check that the mode indicator lights on All Stop (A-Stop) equipped machines are not covered with material that may block visibility of the lights.
2. If necessary, use a damp cloth or water spray to clean the lights.

Note: The mode indicator lights can also be cleaned from ground level by using spray wash or a damp rag on a wand.

i09699927

Remote Control Mode Indicator Lights - Test

SMCS Code: 1429-081

1. Park the machine in a convenient and safe location to start Remote Control (RC) operation.

2. Engage the parking brake on the machine. Refer to your host machine Operation and Maintenance Manual.

3. Lower the implements to the ground and engage the hydraulic lockout switch on the machine. Refer to your host machine Operation and Maintenance Manual.

4. Turn the machine key switch to OFF. Allow the machine extended engine cool down sequence to proceed uninterrupted, then turn the master battery disconnect switch to OFF. Refer to your host machine Operation and Maintenance Manual.

5. Place the manual/remote mode switch in the remote position. Refer to your host machine Operation and Maintenance Manual.

6. Turn the master battery disconnect switch to ON. Refer to your host machine Operation and Maintenance Manual.

7. The remote control indicator lights should flash for approximately 30 seconds, inspect all indicators, and ensure that all indicators will function correctly.

If one or more indicators do not flash, then turn the master battery disconnect switch to OFF. The indicators must be repaired before continuing. Failed indicators will misguide the operators around the machine or be unaware of remote control operations, which could lead to injury or death.

i09650367

Roof Mounted Components - Check

SMCS Code: 7008-535; 7278-535

WARNING

Failure to use an appropriate external ladder, or an appropriate platform, for direct access to the components when performing required maintenance could result in slipping and falling which could result in personal injury or death. Be sure to use an appropriate external ladder, or an appropriate platform, for direct access to the components when performing maintenance.

WARNING

Improper operation of an access platform could result in injury or death. Operators must carry out their duties properly and follow all instructions and guidelines given for the machine and access platform.

WARNING

Be sure all personnel are clear of the equipment while the equipment is being lowered.

Failure to stay clear of the equipment while the equipment is being lowered may result in personal injury.

Note: When you access the roof-mounted components, be sure to observe safe procedures for access. Maintain a three-point contact and/or use a body harness.

Receiver - Inspect

Note: Refer to the Operation Section of this Operation and Maintenance Manual for more information on radio antennas and antenna connections.

Refer to “Prepare the Machine for Maintenance” title in your host machine Operation and Maintenance Manual.

- Check that the Autonomous / All Stop (A-Stop) receiver is free of cracks or damage.
- Check the A-Stop connectors are tight and free of damage.
- Check that the coaxial cable connections are clean and tight.

- Check that the mounting of the antennas is secure and not damaged.
- Check that the coaxial cables are not damaged.

i10217327

Roof Mounted Components - Check

SMCS Code: 7008-535; 7278-535

WARNING

Failure to use an appropriate external ladder, or an appropriate platform, for direct access to the components when performing required maintenance could result in slipping and falling which could result in personal injury or death. Be sure to use an appropriate external ladder, or an appropriate platform, for direct access to the components when performing maintenance.

WARNING

Improper operation of an access platform could result in injury or death. Operators must carry out their duties properly and follow all instructions and guidelines given for the machine and access platform.

WARNING

Be sure all personnel are clear of the equipment while the equipment is being lowered.

Failure to stay clear of the equipment while the equipment is being lowered may result in personal injury.

Refer to “Mounting and Dismounting” title in your host machine Operation and Maintenance Manual.

Refer to “Prepare the Machine for Maintenance” title in your host machine Operation and Maintenance Manual.

Note: When you access the roof-mounted components, be sure to observe safe procedures for access. Maintain a three-point contact and/or use a body harness.

Note: Refer to the Operation Section of this Operation and Maintenance Manual for more information on radio antennas and antenna connections.

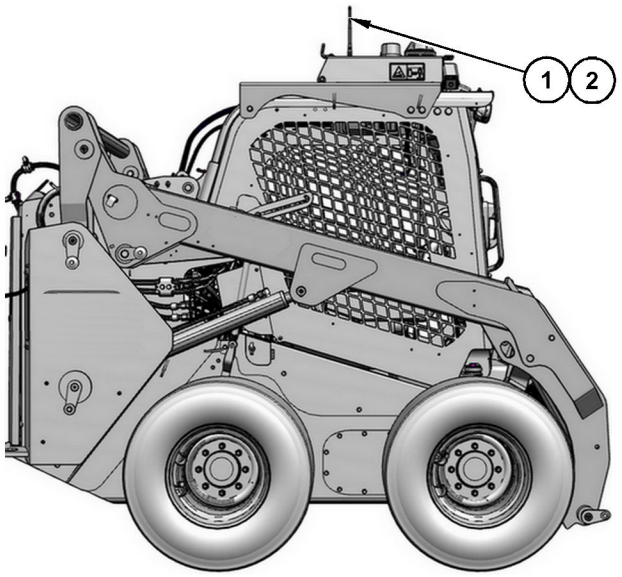

Illustration 32 g07569167

Typical example

(1) Antenna
(2) Coaxial cable

1. Check that coaxial cable (2) connections are clean and tight.
2. Check that the mounting of antennas (1) is secure and not damaged.
3. Check that coaxial cables (2) are not damaged.

Contact your Cat ® dealer if wear or damage is found in antenna and coaxial cable.

i10140117

Transmitter - Clean

SMCS Code: 7490-070

WARNING

Personal injury can result from improper handling of chemicals.

Make sure you use all the necessary protective equipment required to do the job.

Make sure that you read and understand all directions and hazards described on the labels and material safety data sheet of any chemical that is used.

Observe all safety precautions recommended by the chemical manufacturer for handling, storage, and disposal of chemicals.

NOTICE
Do not use any of the following chemicals or any solutions that contain the following:

- Acetone
- Ethyl alcohol
- Toluene
- Ethyl acid
- Ammonia
- Methyl chloride

If you have a different chemical or solution and are not sure whether the chemical or solution is suitable, do not use the chemical or solution. Using any of the chemicals in the previous list may cause permanent damage to the status display screen. Some commercial window cleaners contain ammonia and are, therefore, unacceptable.

Refer to “Prepare the Machine for Maintenance” title in your host machine Operation and Maintenance Manual.

Ensure that the transmitter buttons. indicators are clean and are free of cracks or wear and are legible. If any sign of crack, tear or visibility issue is observed in the buttons, the transmitter should be replaced.

i09650368

Work Lights - Test

SMCS Code: 1434-081

Inspect the work lights on each machine with on-board A-Stops receiver and ensure that all work lights function correctly per individual machine Operation and Maintenance Manual. If work lights do not turn ON, repair the work lights before continuing autonomous or Remote Control (RC) operation. Refer to appropriate machine Troubleshooting Manual for more information on work lights.

Reference Information Section

Reference Materials

i08292374

Reference Material

SMCS Code: 1000; 1054; 108K; 1261; 1263; 1300; 1308; 1926; 3030; 4450; 4469; 4480; 4490; 4491; 5068; 5070; 5927; 6282; 6319; 6320; 6461; 6700; 7000; 7342; 7451; 7605; 7615; E100; E200

Additional literature regarding your product may be purchased from your local Cat dealer or by visiting publications.cat.com. Use the product name, sales model, and serial number to obtain the correct information for your product.

publications.cat.com

i08292382

Decommissioning and Disposal

SMCS Code: 1000; 1021; 4450; 4480; 5927; 6319; 6320; 6700; 7000; 7002; 7541; E100; E200

When the product is removed from service, local regulations for the product decommissioning will vary. Disposal of the product will vary with local regulations.

Improperly disposing of waste can threaten the environment. Obey all local regulations for the decommissioning and disposal of materials.

Utilize appropriate personal protective equipment when decommissioning and disposing product.

Consult the nearest Cat dealer for additional information. Including information for component remanufacturing and recycling options.

Index

U

W

Product and Dealer Information

Note: For product identification plate locations, see the section “Product Identification Information” in the Operation and Maintenance Manual.

Delivery Date: _____

Product Information

Model: _____

Product Identification Number: _____

Engine Serial Number: _____

Transmission Serial Number: _____

Generator Serial Number: _____

Attachment Serial Numbers: _____

Attachment Information: _____

Customer Equipment Number: _____

Dealer Equipment Number: _____

Dealer Information

Name: _____ Branch: _____

Address: _____

_____

_____

	Dealer Contact	Phone Number	Hours
Sales:	_____	_____	_____
Parts:	_____	_____	_____
Service:	_____	_____	_____