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The control system used on all Stewart-Amos Sweepers utilizes simple automotive type relays, breakers and rocker switches. There is even uniformity in the layout of the switches to make it easier for multi-unit customers to learn the system.



Engine Control

The key switch turns on all engine and sweeper functions. The engine is protected by a Murphy Shut down System for water temperature and oil pressure. If the engine is not started within 30 seconds the shutdown system will disable the fuel solenoid on the engine. To reset the shutdown system, turn the key to the off position and then back to on. This resets the shutdown and the engine can be started.

When the engine is operating, if the shutdown system senses a high temperature or low oil pressure condition it will shut the engine off in 30 seconds from when the condition was sensed. If the engine has been shut down by the murphy system there will be a clicking sound as the engine start is being attempted without turning the key back to the off position and then restarting.

If the engine is restarted the engine gauges must be checked immediately upon restart to determine the cause of shutdown.

Glow Plugs

The engine control system does provide a pre-heat (glow plugs) system on the engine for cold starts. To activate the glow plugs turn the key to the run position and then slowly continue turning the key towards the start. When the red light on the panel lights the glow plugs are activated. The glow plugs will only operate for 30 seconds and then shut off. The glow plugs should only be run for 15 seconds and then start the engine.

Once the engine has started do not let the key go. The key has a very strong return spring and will sometimes turn all the way back to off. Once the engine starts slowly return the key to the run position.

Switch Lights

All the switches on the control panel have an LED light in the center of the switch. The purpose of the light is to tell the operator when a particular function is available. All switch lights are red except the throttle control which is green.

GB LIGHTS ON/GB/MB LIGHTS ON

This is a three-position switch which controls both gutter broom lights and main broom lights. When switch is in the "GB LIGHTS ON" positions both gutter broom working lights will be on. When the switch is in the "GB/MB LIGHTS ON" positions both gutter broom lights as well as the rear main broom work light will be on. When the switch is in the middle position all working lights will be off.

SWEEP FORWARD/SWEEP REVERSE

This switch controls the direction of rotation of all brooms and the elevator. The switch is interlocked through a proximity switch with the BROOMS UP/DOWN function to prevent the brooms from rotating without being lowered and will not function unless the light in the center of the switch is on. When the switch is in the "SWEEP FORWARD" position the gutter brooms, if they are activated (see: LH / RH GUTTER BROOM UP / DOWN SWITCHES), will rotate vertically so that the leading edge of the brooms move material to the center of the machine, the rear main broom will rotate horizontally against the direction of travel which throws the material into the elevator. The elevator rotates dragging the material up the



floor and depositing it in the hopper. When the switch is in the "SWEEP REVERSE" position all brooms and elevator will rotate in the opposite directions. The "SWEEP REVERSE" function dislodges any material that may have obstructed the elevator and sweep large objects out of the sweeping path that may be too large to sweep. This switch will not function unless the light in the center of the switch is on.

HOPPER UP/DOWN

This switch controls the hopper up and down function. To raise the hopper, press and hold the spring-loaded switch to the "HOPPER UP" position. To lower the hopper, press the switch to the "HOPPER DOWN" position. If the switch is not being depressed it will automatically return to the center or hold position. The hopper will maintain its current position if the switch is not depressed in either direction. This switch will not function unless the light in the center of the switch is on. The switch is interlocked through a proximity switch with the BROOMS UP/DOWN function to prevent the hopper from raising without having the brooms up and will not function unless the light in the center of the switch is on. This is to protect the hopper from interfering with the elevator.

WATER

This switch controls the water used for dust control. When the switch is in the up position, the water pump will go on and off with the sweep forward function this extends water supply. When the switch is in the down position the water pump will be on continuous.

HOPPER DUMP/RETRACT

This switch controls the hopper dumping function. The hopper can be dumped at any height in the lift cycle. When the hopper has been raised to the desired height press and holds the switch in the "HOPPER DUMP" position until the hopper is fully tipped with the door open. To return the hopper to the retracted position press and hold the switch in the "HOPPER RETRACT" position until the hopper is fully retracted. At any time in the dumping cycle the switch can be released and the hopper will hold that position. The switch is interlocked through a proximity switch with the brooms up/down function so that the elevator and hopper do not collide.

BROOMS UP/DOWN

This function raises and lowers the main broom and gutter brooms if they are activated. To prevent the hopper from interfering with the elevator function this switch will not function unless the light in the center of the switch is on. When the light is on it means the hopper is down with the hopper door closed and the broom function can be used now. If the light is not on then this function is not available.

LH GUTTER BROOM UP/DOWN

This switch controls the independent operation of the left hand gutter broom only. When the switch is in the center position the gutter broom will stay up when the rear main broom is lowered. When the switch is in the "LH GUTTER BROOM DOWN" position the gutter broom will go up/down and turn on/off with the rear main broom. When the rear main broom is down and the gutter broom is operating in the

lowered position and you wish to turn off the left gutter broom only, push and hold the switch to the “LH GUTTER BROOM UP” position until the gutter broom is fully up then release the switch. When the switch is released the gutter broom rotation will stop and the switch will automatically return to the center position.

RH GUTTER BROOM UP/DOWN

This switch controls the independent operation of the right hand gutter broom only. When the switch is in the center position the gutter broom will stay up when the rear main broom is lowered. When the switch is in the “RH GUTTER BROOM DOWN” position the gutter broom will go up/down and turn on/off with the rear main broom. When the rear main broom is down and the gutter broom is operating in the lowered position and you wish to turn off the right gutter broom only, push and hold the switch to the “RH GUTTER BROOM UP” position until the gutter broom is fully up then release the switch. When the switch is released the gutter broom rotation will stop and the switch will automatically return to the center position.

ELECTRIC THROTTLE

Push switch up to increase auxiliary engine rpm and down to reduce rpm.