



**NITEHAWK<sup>®</sup>**  
**SWEEPERS**



**OSPREY II TRAINING**

# OSPREYII TRAINING

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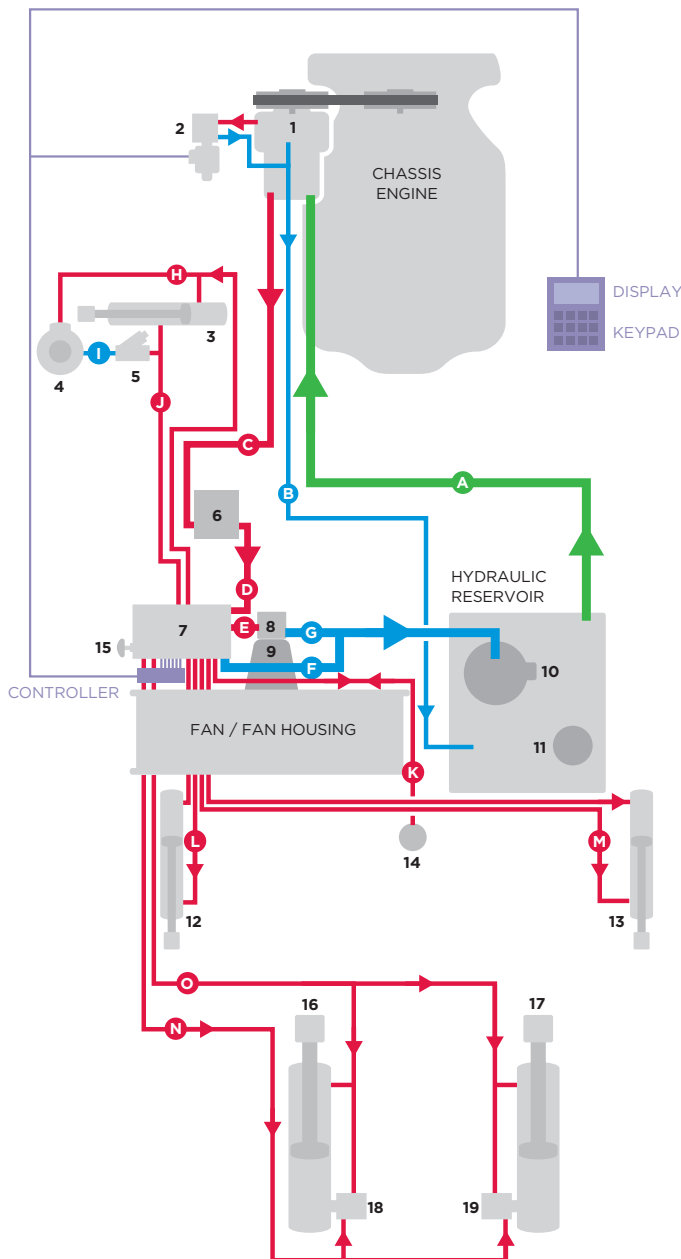
## TABLE OF CONTENTS

- 1** Hydraulic System: Identification and Functionality
- 2** Sweeper System: Identification and Functionality
- 3** Controls
- 4** Best Practices

# 1 Hydraulic System: Identification and Functionality

## GENERAL SPECIFICATIONS

- Recommended Fluid – AW 46
- Capacity – 30 Gallon
- System PSI – 3500



1. Main Hydraulic Pump
2. Proportioning Valve
3. Curb Broom Cylinder
4. Curb Broom Motor
5. Curb Broom Check Valve
6. Pressure Filter
7. Manifold
8. Fan Motor
9. Fan / Motor Coupling
10. Suction Filter
11. Breather Filter
12. Pickup Head Cylinders
13. Pickup Head Cylinders
14. Curb Broom Accumulator
15. Curb Broom Accumulator Dump Valve
16. Dump Cylinder
17. Dump Cylinder
18. Counter Balance Valve
19. Counter Balance Valve

- A. Reservoir To Pump Supply Line
- B. Pump To Reservoir - Case Drain
- C. Pump To Pressure Filter Line
- D. Pressure Filter To Manifold Line
- E. Manifold To Fan Motor Pressure Line
- F. Manifold Return To Reservoir Line
- G. Fan Motor Return To Reservoir Line
- H. Curb Broom Cylinder Down/Motor Line
- I. Curb Broom Motor Return Line
- J. Curb Broom Cylinder Up Line
- K. Curb Broom Accumulator Line
- L. Pickup Head Cylinder Lines (Pair)
- M. Pickup Head Cylinder Lines (Pair)
- N. Raise Dump Cylinder Line
- O. Lower Dump Cylinder Line

# 1 Hydraulic System: Identification and Functionality

## ENGINE COMPARTMENT

### Hydraulic Components

- Main Pump (1)
  - Compensator (1)
  - Suction Line (A)
  - Case Line (B)
  - Pressure Line (C)
- Proportioning Valve (2)

### Hard Parts

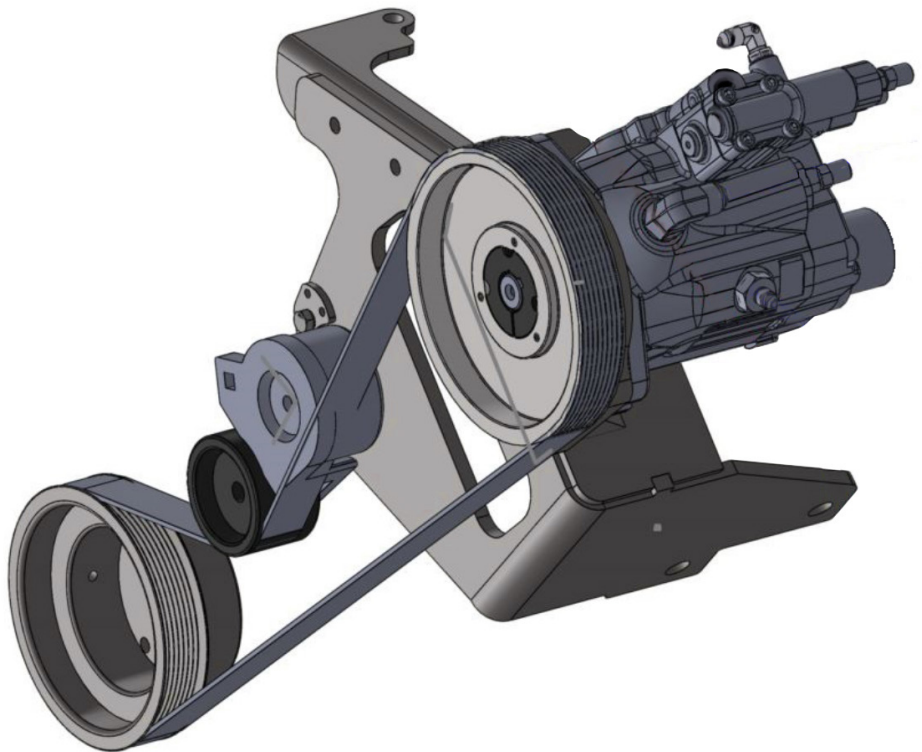
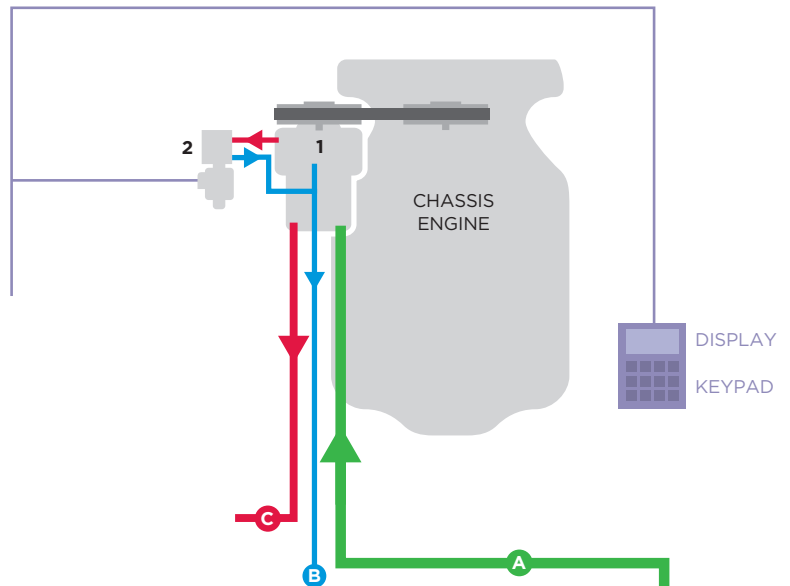
- Pump Mount

### Moving Parts

- Pump Belt
- Tensioner
- Crankshaft Pulley

### Electrical

- Circuit Breaker

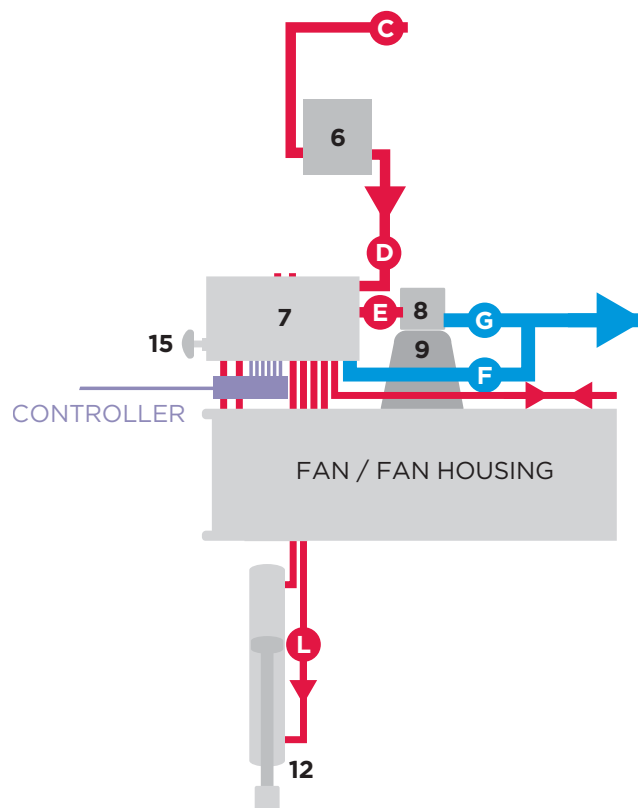


# 1 Hydraulic System: Identification and Functionality

## MID CHASSIS (DriverSide)

### Hydraulic Components

- Pressure Filter
- Manifold (7)
- Fan Motor (8)
- Pickup Head Cylinder (12)
- Pressure Line (C)
- Fan Motor to Reservoir Line (G)
- Manifold to Reservoir Line (F)
- Pickup Head Cylinder Lines - Pair

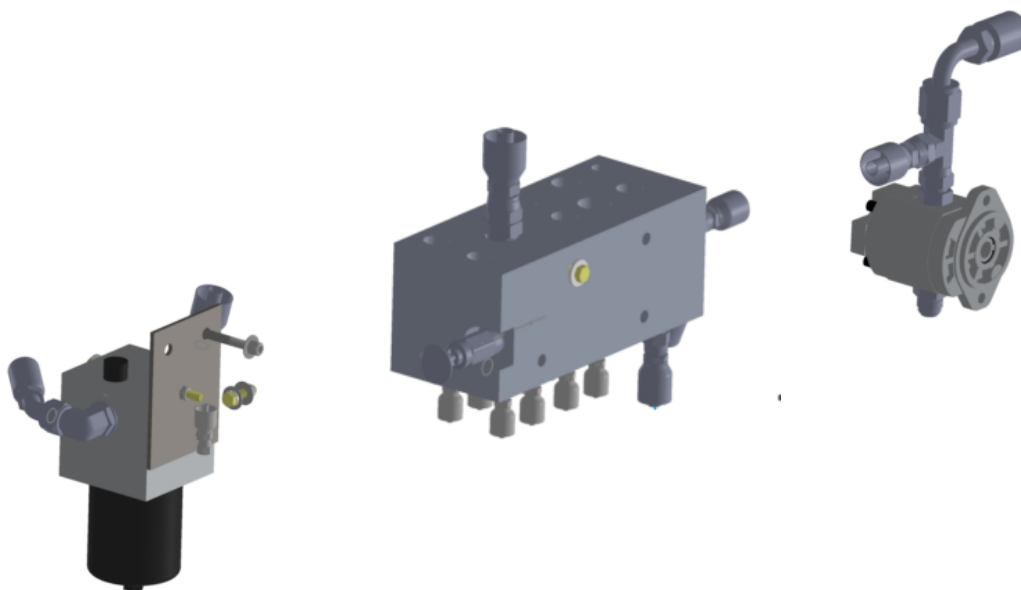


### Hard Parts

- Fan Adapter Housing (9)
- Fan / Fan Housing

### Electrical

- Controller / ECU (15)



# 1 Hydraulic System: Identification and Functionality

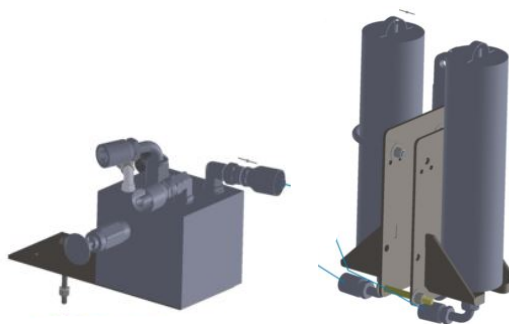
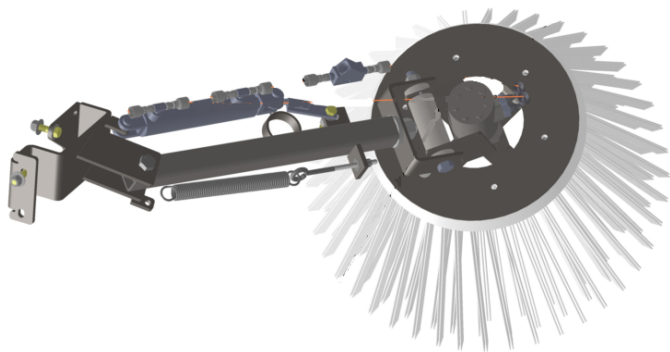
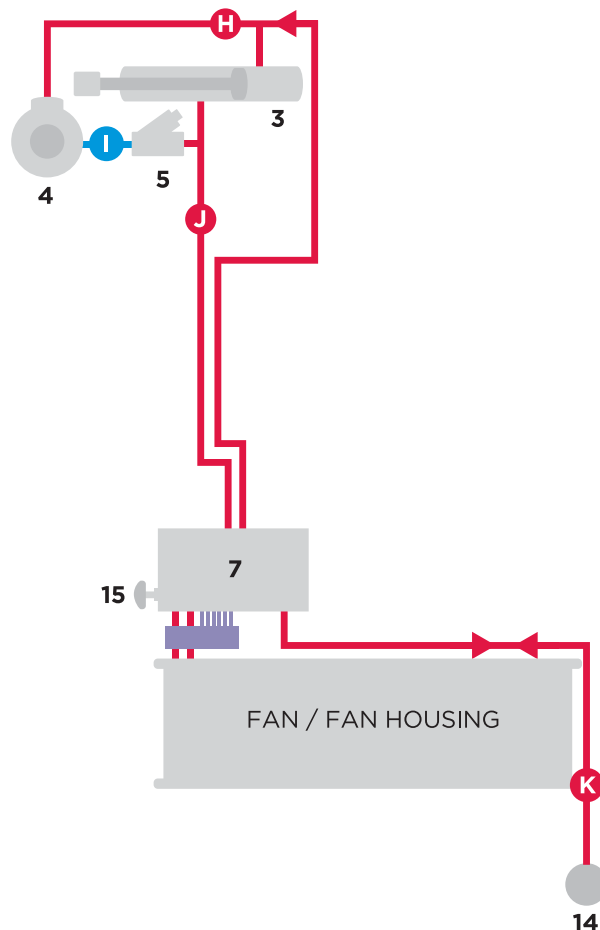
## CURB BROOM (DriverSide)

### Hydraulic Components

- Curb Broom Motor (4)
- InLine Check Valve (5)
- Manifold (7)
- Accumulator (14)
- Accumulator Dump Valve (15)
- Curb Broom Cyl Down / Motor Line (H)
- Curb Broom Motor Return Line (I)
- Curb Broom Cylinder Up Line (J)

### Hard Parts

- CB Mount
- CB Arm
- CB Motor Mount
- CB Dish
- CB Turn Buckle



# 1 Hydraulic System: Identification and Functionality

## HOPPER

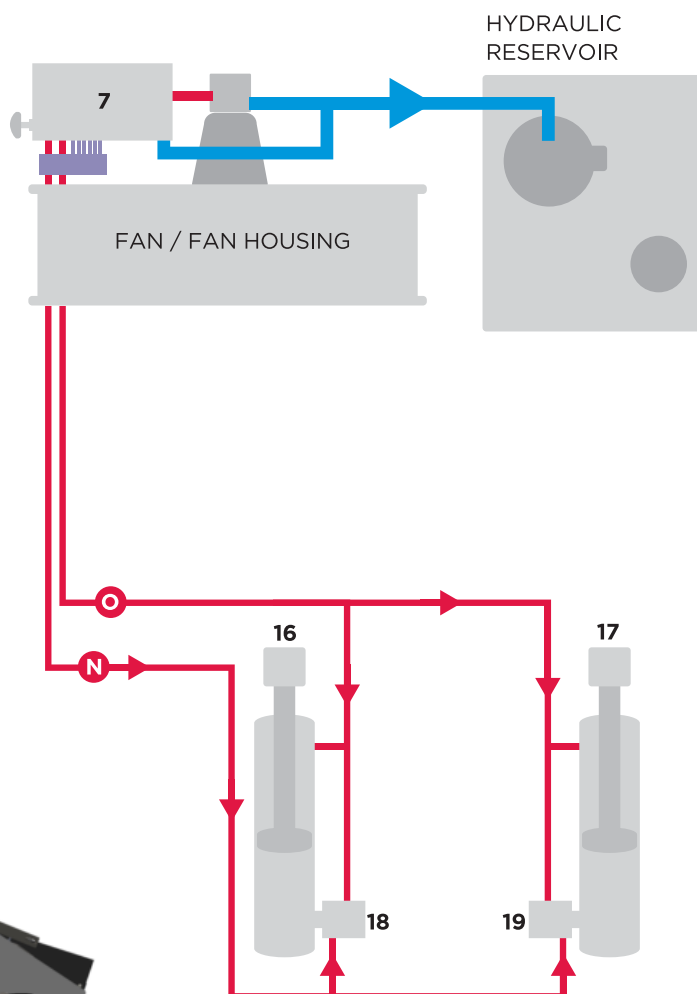
### Hydraulic Components

- Manifold (7)
- Dump Cylinders (16/17)
- Counterbalance Valves (18/19)

- Raise Dump Cylinder Line (O)
- Lower Dump Cylinder Line (N)

### Hard Parts

- Hopper
- Dump Frame

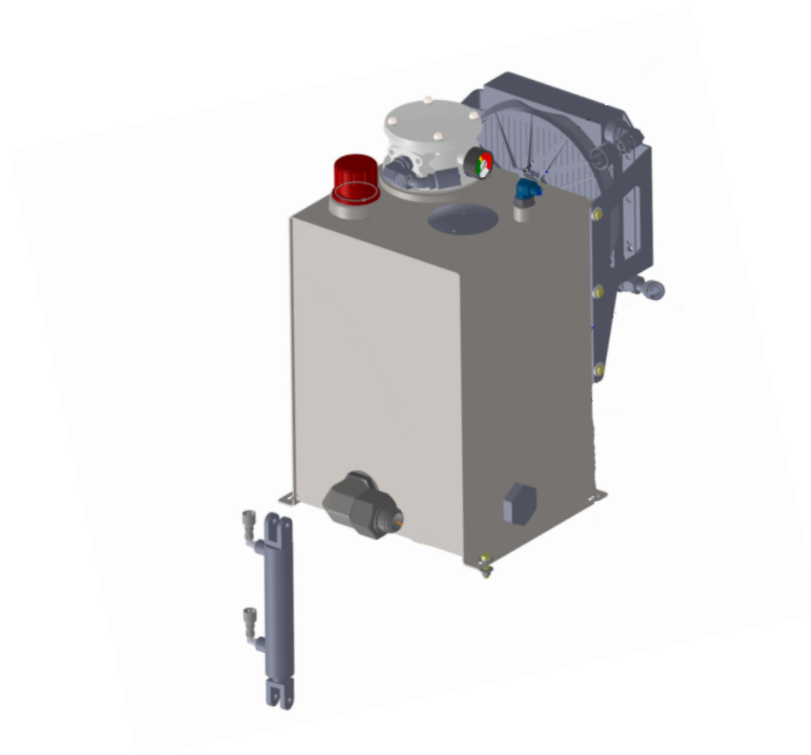
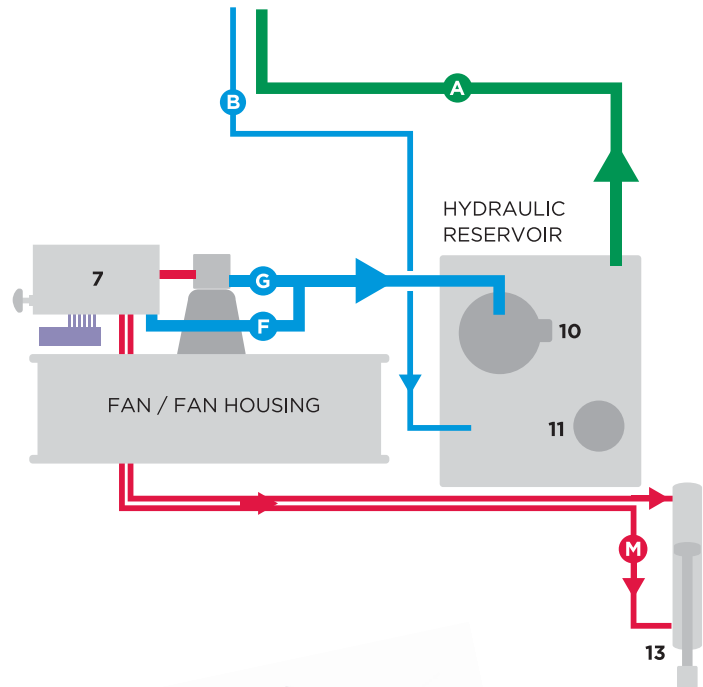


# 1 Hydraulic System: Identification and Functionality

## MID CHASSIS (Passenger Side)

### Hydraulic Components

- Manifold (7)
- Hydraulic Reservoir
- Low Pressure Filter (10)
- Breather Filter (11)
- Pickup Head Cylinder
- Suction Line (A)
- Case Line (B)
- Fan Motor to Reservoir Line (G)
- Manifold to Reservoir Line (F)
- Pickup Head Cylinder Lines – Pair (M)





## 2 Sweeper System: Identification and Functionality

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### **SWEEPER**

*\* Indicates Optional Equipment*

#### **Front**

- HD Front Bumper\*
- Front LED Work Light\*
- LED Bumper Flashers\*
- Dust Suppression Spray Bar

#### **Cab**

- Controls

#### **Mid Chassis**

- Driver Side Curb Broom
- Alt Fuel System\*
- Toolbox (Low Profile or XL)\*
- Dust Suppression System / Pump / Spray Nozzles\*
- Pickup Head / Drag Bars / Skids / Springs
- Pickup Head Magnets\*
- Intake and Exhaust Tubes
- Fan Housing / Fan / Bearings
- Fire Extinguisher\*
- Work Lights

## 2 Sweeper System: Identification and Functionality

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### **SWEEPER**

*\* Indicates Optional Equipment*

#### **Rear**

- Hopper, Hopper Safety Stand
- Hopper Drain
- Hopper Up Indicator Switch
- Side Inspection Doors / Dump Door / Dump Door Prop
- Toolboxes / Lights / Light Control
- Rear Door / Fuel Fill / Backup Camera

#### **Hydraulic Filters**

- High Pressure
- Low Pressure
- Breather Filter

# SWEEPER CONTROL SYSTEM



### Contols Overview

- RAM Mount has 360 Adjustability to fit operator preference
- Touchpad is Sealed
- System has “Power Setting Memory”, it will remember the last power setting when switching between Road Mode and Sweep Mode
- Heads Up Display shows icons related to the sweeper function selected on the keypad

### SWEEPER OPERATIONS



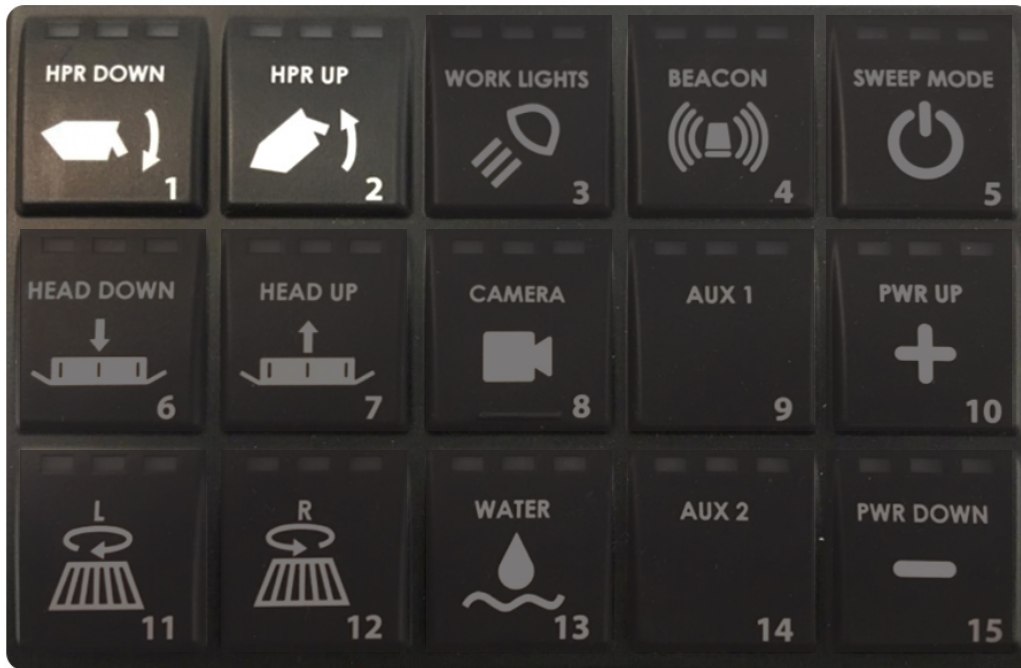
#### To Start Sweeping Operations

- Press "SWEEP MODE" Button (#5) to engage the sweeper power system
- Press "PWR UP" Button (#10) to raise sweeping power to appropriate setting
- Press **and hold** "HEAD DOWN" Button (#6) for 3 secs to lower sweeping head to ground

#### To Conclude Sweeping Operations

- Press **and hold** "HEAD UP" Button (#7) for 3 secs to retract sweeping head
- Press "PWR DOWN" Button (#15) to lower sweeping power to appropriate setting
- Press "SWEEP MODE" Button (#5) to disengage the sweeper power system

### HOPPER



#### Raising and Dumping the Hopper

- Ensure Sweeper is powered up to 70% Power
- Press **and hold** "HPR UP" Button (#2) until hopper reaches desired height.
- If dumping debris out of hopper, hold button down until cylinders reach full extension

#### Lowering the Hopper

- **ENSURE NO PERSON OR OBJECT IS IN THE PATH OF THE HOPPER BEFORE LOWERING!**
- Press **and hold** "HPR DOWN" Button (#1) until hopper lowers completely and the "Hopper Up Warning Light" disappears.

### CURB BROOM AND LIGHTING



#### Extending and Retracting the Curb Broom (s)

- Ensure Sweeper is powered up to 100% Power
- Press “L” or “R” Curb Broom Button (#11) once. Curb broom will extend and start spinning.
- Press and hold “L” or “R” Curb Broom Button (#11/12) until broom arm is fully retracted.

#### Lighting

- Press “Work Lights” Button (#3) to activate or turn off Side Work Lights
- Press “Beacon” Button (#4) to active or turn off Center Beacon and Bumper Strobes
- Press “Aux 1” or “Aux 2” Button (#9 and #14) to active Front and Rear LED Light Bars

# DUST SUPPRESSION SYSTEM, CAMERA AND RETRACT ALL



## Turning on Dust Suppression System

- Press “Water” Button (#13) to active or turn off the Dust Suppression

## Camera

- The Camera will automatically display anytime “R” is selected on the gear shifter
- Press the “Camera” Button (#8) to manually activate the camera to view area behind the sweeper. All control functions will still work, display will show camera feed for situational awareness.

## Retract All Function

- Press **and hold** “Aux 2” Button (#14) to Retract all Sweeper Functions in preparation to move to next job site. (Lower Hopper, Retract Curb Broom(s), Raise Sweeper Head)

# SWEEPING

## Sweeping Head

- Hold Head Down Button for at least 3 seconds to make sure cylinders fully extend and head is on ground under own weight

## Sweeping Operation

- Try to always sweep in Right Hand Circles – helps move debris to Intake Side of Sweeper

## Operating in Reverse

- NEVER back up with Curb Broom Extended
- Avoid backing up with Sweep Head Deployed

## Curb Broom

- Intended design is for moving debris from Buildings and Curb Lines into path of sweeper, not for sweeping Open Areas

## Power Settings – Light Debris

- 40 – 70% Power (dust, litter, dry leaves, small trash)

## Power Settings – Heavy Debris

- 80 - 100% Power (wet leaves, dirt, gravel, rock)

## Power Settings – Curb Broom

- ALWAYS set power at 100% when operating with Curb Broom

## Camera

- Turn Rear Camera on during operation for better view of area behind sweeper



### DAILY INSPECTION

Recommended Daily Inspection	Looking For
Tires	Flats, punctures, abnormal wear
Mirrors	Proper adjustment and Visibility
Lights	Proper Operation
Hydraulic Pump	Belt and pulleys aligned, no leaks
Hydraulic Reservoir	Fluid full in Sight Gauge, Fluid Clean
Hydraulic Hoses, Manifold, Cylinders	No evidence of Leaks
Skids, Plates, Bolts	Aligned properly and no damage
Head and Drag Bars	Flaps less than ¼" Gap, Aligned, no damage
Hopper and Dump Frame	No Visible Cracks, warping or damage
Broom Wear	Proper length of bristles, smooth operation
10" Hoses	No holes or tears, clamps secured