

START-UP PROCEDURE for the System after Key Switch 1st Turned to “ON” Position:**Indicator Lamps – Initial Status**

Overload (A1) – Off	Power (G1) – ON	Lockout (R1) – Off
Water On (B1) – Off	Ready (G2) – Off	Low Water (R2) – Off
	Drill Active (G3) – Off	

Condition: The system’s water supply must be on and have adequate pressure (>10 psi).

If not, the **Low Water Pressure (R2)** will be illuminated, notifying the operator that the water problem must be solved before the system can be activated.

Step 1: Press **ENABLE/DISABLE (PB-3)** to activate the system.

G2 (Ready) – ON

Step 2: Press **WATER (PB-4)** to open the water valve / initiate the water spray.

B1 (Water On) – ON

Step 3: Press **ENGAGE (PB-6)** to start the drill motor / activate the drill.

G3 (Drill Active) – ON

Indicator Lamps – Final Status

Overload (A1) – Off	Power (G1) – ON	Lockout (R1) – Off
Water On (B1) – ON	Ready (G2) – ON	Low Water (R2) – Off
	Drill Active (G3) – ON	

SHUT-DOWN PROCEDURE for the System once the Drill is Active:**Indicator Lamps – Initial Status**

Overload (A1) – Off	Power (G1) – ON	Lockout (R1) – Off
Water On (B1) – ON	Ready (G2) – ON	Low Water (R2) – Off
	Drill Active (G3) – ON	

Step 1: Press **STOP/RESET (PB-5)** to stop the drill motor.

G3 (Drill Active) – Off

Condition: After drilling, the water spray must remain on long enough to lower the drill bit temperature below 120°F. There is no indicator to show the temperature, so if the next step doesn’t work, wait a minute and then try again.

Step 2: Press **ENABLE/DISABLE (PB-3)** to close the water valve / stop the water spray.

B1 (Water On) – Off

Step 3: Press **SHUTDOWN (PB-2)** to de-activate the system.

G2 (Ready) – Off

Indicator Lamps – Final Status

Overload (A1) – Off	Power (G1) – ON	Lockout (R1) – Off
Water On (B1) – Off	Ready (G2) – Off	Low Water (R2) – Off
	Drill Active (G3) – Off	

EMERGENCY STOP

Pressing **EMERGENCY STOP** (PB-1) will immediately de-activate the system, in-turn causing both the drill motor and the water spray to stop (regardless of the drill bit temperature). Additionally, the “*System Lockout*” will be activated, causing **Lockout (R1)** to be illuminated and *preventing re-activation of the system until the lockout is removed*.

Indicator Lamps – After “Emergency Stop” is Pressed:

Overload (A1) – Off	Power (G1) – ON	Lockout (R1) – ON
Water On (B1) – Off	Ready (G2) – Off	Low Water (R2) – Off
	Drill Active (G3) – Off	

To Remove the “System Lockout” Condition:

- 1) Insert key (if necessary) and **Turn key to “RESET” position and then back to “ON”**

The **Lockout (R1)** indicator will now be **off** and the system can be re-started normally.

SYSTEM FAULTS

Motor Overload – a “motor overload” occurs if the drill motor draws more than rated current for too long of a time. When an overload condition is detected, the **Overload (A1)** indicator will illuminate and the drill motor will immediately stop. Additionally, the system will *prevent the drill motor from being restarted until the overload condition is reset*.

Indicator Lamps – After a “Motor Overload” Occurs:

Overload (A1) – ON	Power (G1) – ON	Lockout (R1) – Off
Water On (B1) – ON	Ready (G2) – Off	Low Water (R2) – Off
	Drill Active (G3) – Off	

To Reset the Overload Condition:

- 1) Wait long enough for the system’s overload relay to cool-down and automatically reset. This also allows the drill motor time to cool down.
- 2) **Press STOP/RESET (PB-5) to reset the overload condition** → **Overload (A1) – Off**
- 3) Either **Press ENGAGE (PB-6) to restart the drill motor**, or follow the normal shutdown procedure to shutdown the system if desired.

Improper Water Pressure – if the water pressure falls below 10 psi while the system is in-use, the system will immediately de-activate, in-turn causing both the drill motor and the water spray to stop (regardless of the drill bit temperature). Additionally, the **Low Water (R2)** indicator will illuminate.

Indicator Lamps – After a “Motor Overload” Occurs:

Overload (A1) – Off	Power (G1) – ON	Lockout (R1) – Off
Water ON (B1) – Off	Ready (G2) – Off	Low Water (R2) – ON
	Drill Active (G3) – Off	

- To Restart the System:**
- 1) Restore proper water pressure
 - 2) Follow the normal Start-Up Procedure.

Improper Temperature – If the drill bit temperature rises above 120°F, an improper temperature condition exists. This is not actually a fault, but this condition will prevent the system from being completely shutdown. (*See “Shut-Down Procedure” for instructions*)

