



BRAKEBOSS

Brake Control Systems



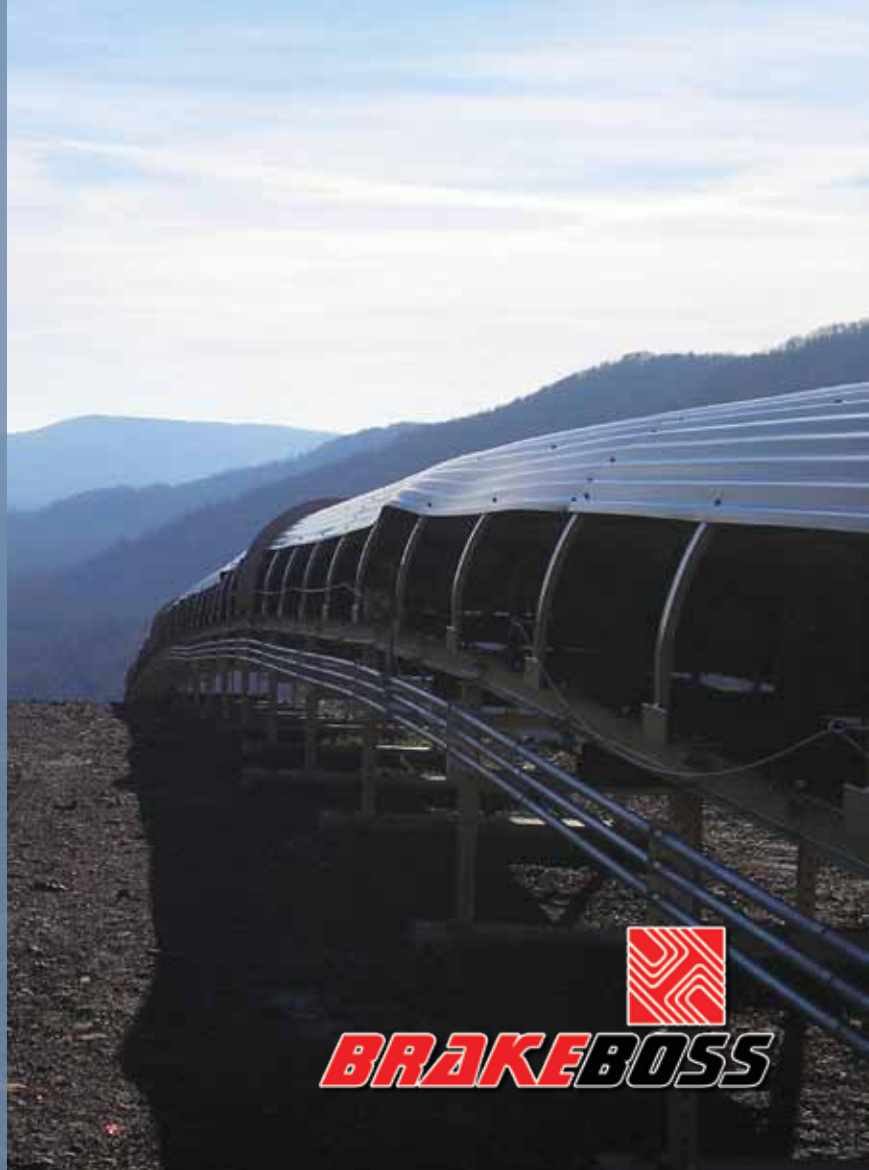
Hilliard

As bulk material handling machinery designs become more powerful and increasingly efficient, braking system designs must also progress to satisfy the demand to control speed and stop machines in routine and, most importantly, during emergency stopping events.

Brakes are no longer straightforward on or off mechanical devices. Sophisticated Smart Brake deceleration controls with system status monitoring, fault acknowledgement, and feedback are required to maintain system integrity under all stopping conditions. This is particularly crucial on belt conveyor systems, where tension management and personnel safety are of paramount importance.

With these considerations in mind, Hilliard has developed a line of power units capable of controlling braking systems for a multitude of scenarios and applications. Hilliard's power units are designed and assembled in Elmira, N.Y. with only top quality components to ensure the integrity and longevity of each braking system.

The Hilliard Corporation takes pride in meeting and exceeding our customers' expectations. If you don't see a power unit that fits your need or application, we can develop a custom unit for you. Contact your Hilliard representative today for more information.



Applications

BBH1: Clamshell Unloaders, Overland Conveyors, Wind Turbines, Rotary Rail Car Dumpers, Crane Hoists, Steel Mill Processing Lines

BBH2: Railcar Positioners, Wind Turbines, Cable Winders, Escalators, Overland/Underground Conveyors

BBH3: Overland/Underground Conveyors, Conveyor Tension Winches, Marine Towing Winches

BBH4: Grinding Mills such as AG, SAG, and Ball Mills.

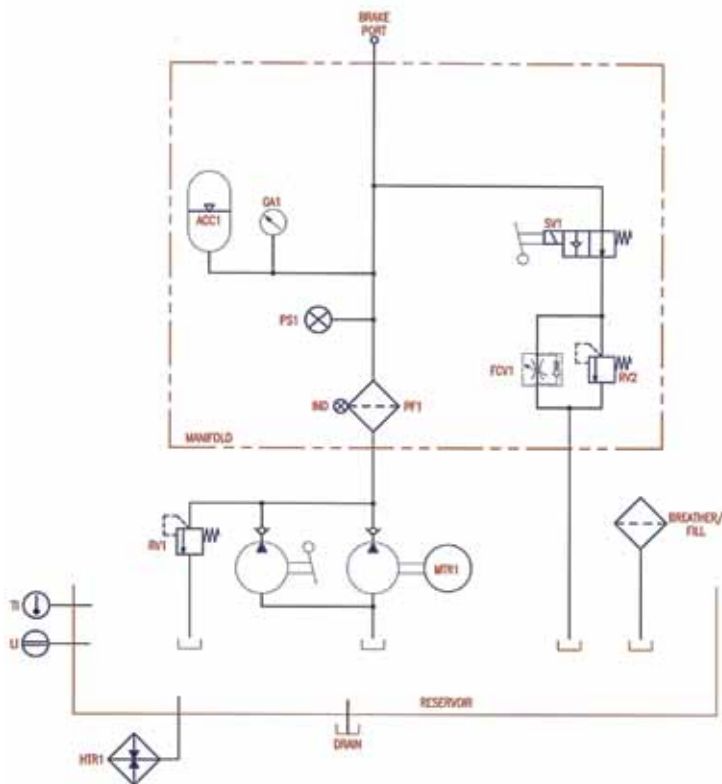




BBH1 Power Unit

The H1 Power Unit is Hilliard's base model that includes on/off and ramped braking modes. There are many options available to customize the system to the specific needs of the application.

- Low cost alternative
- Integral manifold mounting
- Heavy duty pump with failsafe design



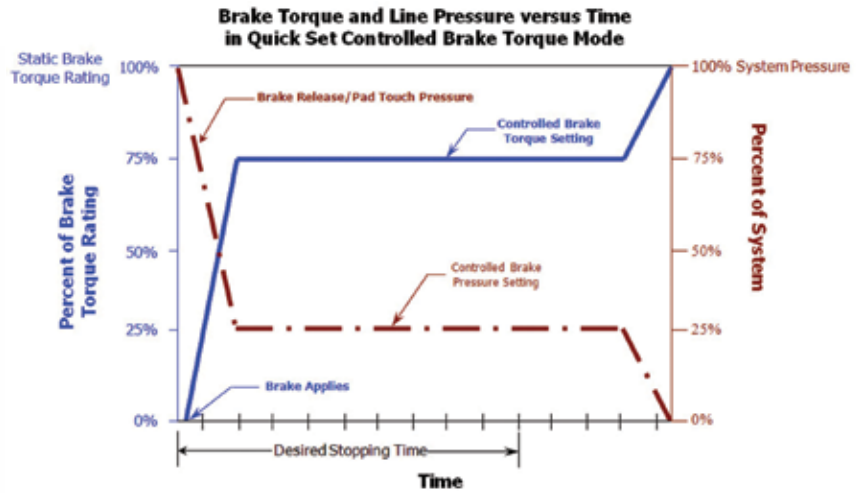
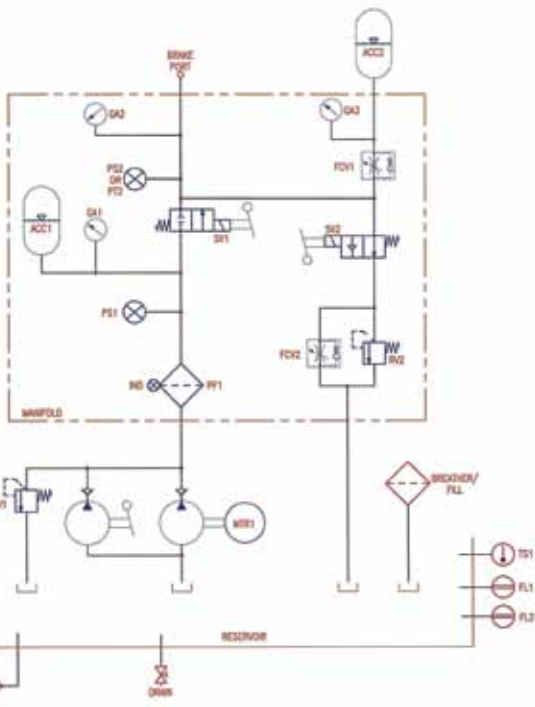
BBH2

The Hilliard Model H2 Power Unit incorporates an engineered hydraulic circuit to control the brake torque during a typical stop. Large capacity hydraulic accumulators provide additional volume for precise control of brake pressure.

- Controlled Braking Mode
- Fully Enclosed in NEMA 4 Cabinet
- High Pressure Filtration Ensures Trouble Free Operation
- Equipped with Manual Overrides and a Hand Pump for Brake Operation During Power Outage
- Each power unit is tested before it leaves The Hilliard Corporation's Facility.



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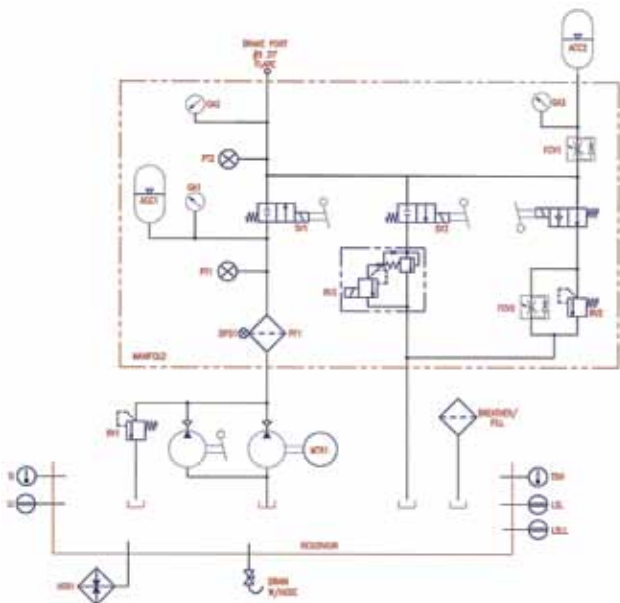




BBH3 Power Unit

The H3 Power Unit is Hilliard's most advanced Brake Control System. PID Loop Control monitors speed and continuously adjusts brake pressure to follow a preselected Start/Stop profile for typical applications. However, this power unit can be configured to accept other signals based on the application. For instance, the H3 can be configured to accept a 4-20 mA signal to control tension in a cable.

- Controls Start Time on applications with high overhauling load conditions.
- Controls stop time, independent of load and speed.
- UPS battery backup to make a controlled stop during power failure.
- Superior belt tension management for long conveyors or conveyors with horizontal and vertical curves.
- On-board 5.5" color display for fault diagnostics with alarms that interface with the customer's PLC.
- Adjustments can be made by the user to achieve the desired stopping sequence.
- Each power unit incorporates customized settings based on the customer's requirements for torque and is tested for functionality before it leaves Hilliard's facility.



Alarms	
Brake Apply Fault	Out Of Alarm
Brake Release Fault	Out Of Alarm
Speed Sensor Fault	Out Of Alarm
Brake Pressure Fault	Out Of Alarm
Low Oil Level	Out Of Alarm
Low-Low Oil Level	Out Of Alarm
High Oil Temp	Out Of Alarm
Clogged Filter	Out Of Alarm
Brake Pad Adjustment	Out Of Alarm
Brake Pad Change Fault	Out Of Alarm
Brake Sensor Fault	Out Of Alarm



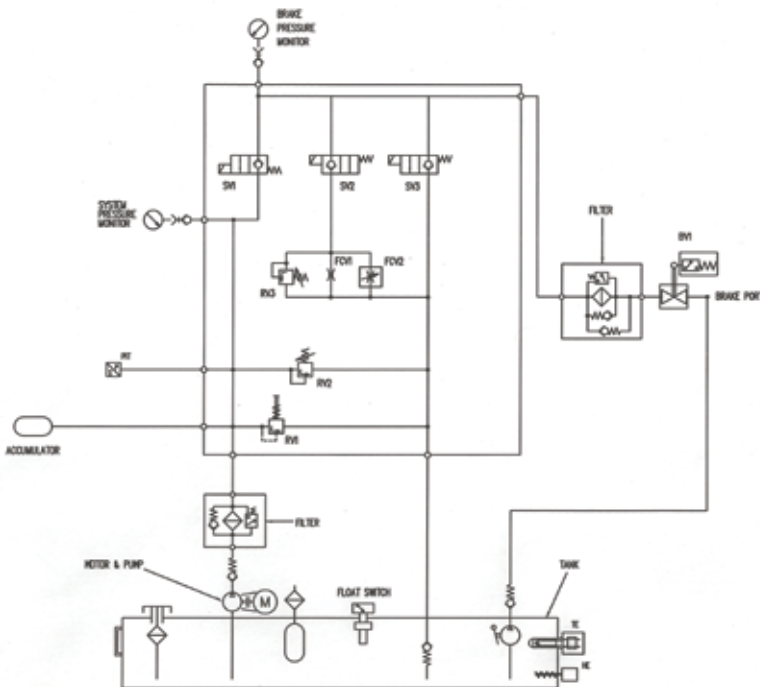
Brake System Status	
Control	Local
System Status	Not Ready
Customer Status	Brake Apply
Brake Status	Brakes Applied



BBH4 Power Unit

The H4 power unit is designed for use with brakes that require pressures over 3,000 PSI. These power units are highly customizable, allowing the customer to specify what type of component is used for many of the items in the system.

- On/Off and Ramped Braking.
- Customizable components include but are not limited to the Motor, Electrical Panel, RTD, and Pressure Transmitter.
- Bilingual labels as required.
- An isolated hand pump is installed for use during power outages.
- High pressure filters work on the supply and return side to ensure system integrity.
- Every system is tested before it ships to verify the functionality of all equipment supplied.
- Hydraulic manifold and valving are contained in a lockable enclosure for protection against environmental contamination and tampering from untrained employees.
- Operator interface included on the electrical panel for local control, brake status monitoring and visual alarm status.



Features & Options

FEATURES	BBH1	BBH2	BBH3	BBH4
On/Off	S	S	S	S
Ramped Braking Mode	S	S	S	S
Controlled Braking		S	S	C
Closed Loop Controlled Braking (PID Loop)			S	
Free Standing Floor Mount	S	S	S	S
Steel Reservoir	S	S	S	S
Hand Pump	O	S	S	S
480 VAC Pump Motor Voltage	S	S	S	C
24 VDC, 120, 220, 380, 575 VAC Pump Motor Voltage	O	O	O	O
Manual Locking Overrides	S	S	S	O
24 VDC Solenoid Coils	O	O	S	C
120 VAC Solenoid Coils	S	S		C
Oil Level Sight Glass with Temp Indicator	S	S	S	S
Nema 4 Enclosure	O	S	S	C
Motor Contactor With Enclosure	O	S	S	
Imersion Oil Tank Heater	O	S	S	S
Brake Apply/Release Pressure Switch		S		
Brake Apply/Release Pressure Transmitter'		O	S	
Low Oil, Low-Low Oil, High Oil Temp Switch		O	S	C
Cabinet Heater and Fan		O	O	
High Pressure Filter		S	S	S
Electronic Filter Clogging Indicator		O	S	S
Allen Bradley Control PLC			S	
Ethernet Communication to Customer's PLC			S	
A-B Panel View Plus Color Operator Interface			S	
UPS Battery Backup			S	
RPM Encoder			S	
Proportional Relief Valve			S	
Fault and Alarm Log with History			S	
External Visual Brake Status Indicator			O	
On Board Stop/Start Data Collection			S	
On Board Brake Fault Diagnosis			S	

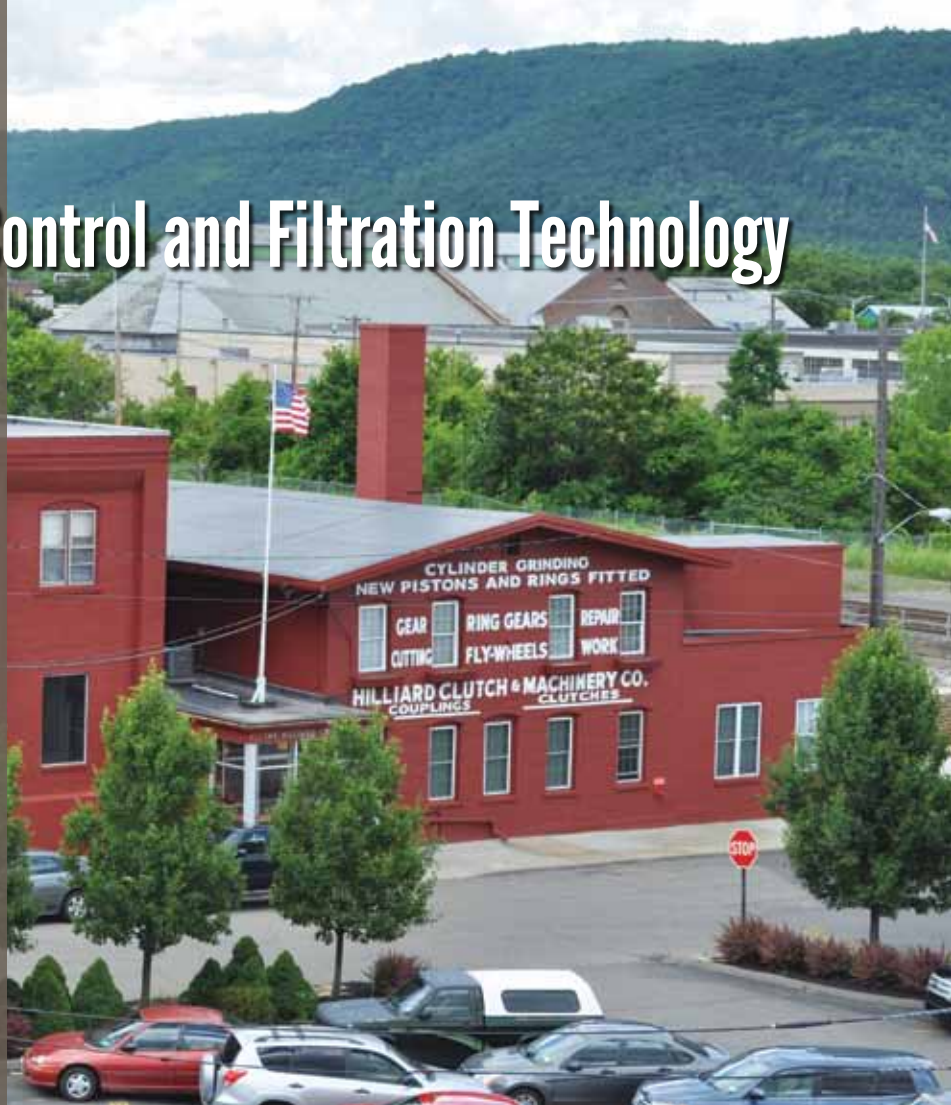
S = Standard
 O = Optional
 C = Customizable
 Blank = Not Available on this Model

A World Leader in Motion Control and Filtration Technology

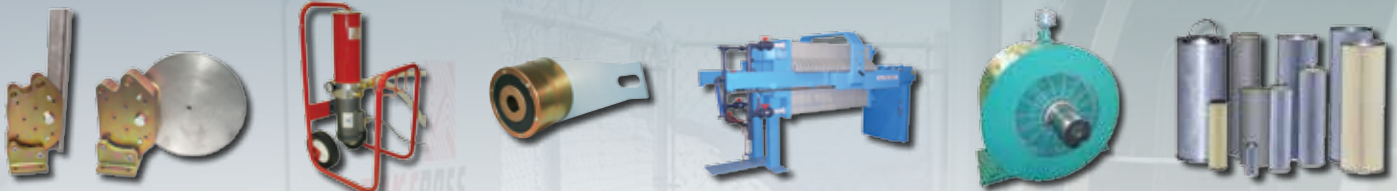
The Hilliard Corporation offers a broad line of motion control products, oil filtration and reclaiming equipment, starters for industrial gas, diesel engines and gas turbines, and plate and frame filter presses used in the food and beverage industry.

Hilliard products are designed, manufactured and sold according to our customers' applications. As a result, we have a large portfolio of custom engineered products that can be modified to meet new applications. At Hilliard we welcome the challenge of product development.

All Hilliard products are manufactured in our facility, located in Elmira, New York. Since 1905, our high standards of excellence have helped us grow to become a world leader in motion control and filtration technology.



Contact your Hilliard representative today for more information on our complete line of products.



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