HILLIARD BRAKE SYSTEMS















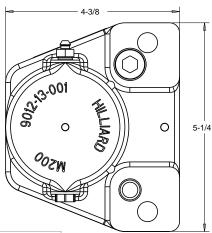


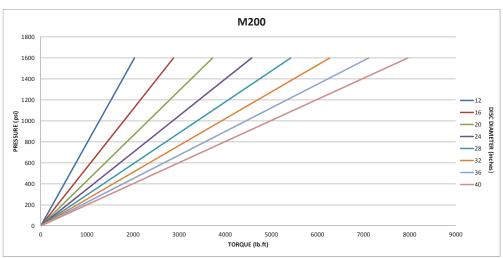
SAFETY. RELIABILITY. PERFORMANCE.

BRAKE TYPE: M200 HYDRAULIC



The **Hilliard M200** brake caliper is a hydraulic applied, spring retracted brake caliper for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M200 brake caliper is capable of producing a maximum 5,000 lbf of braking force at 1600 psi. Positive retraction mechanism maintains consistent air gap throughout the life of the brake pads.





INDUSTRIES/APPLICATIONS:

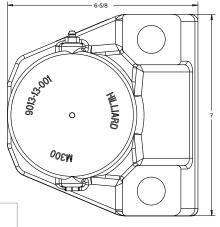
HYDRO TURBINES
ELECTRIC GENERATORS
MARINE PROPULSION
WINCHES
DYNOMOMETERS
NUCLEAR COOLING PUMPS

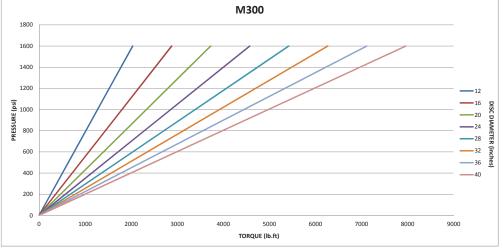
BRAKE TYPE:

M300
HYDRAULIC



The **Hilliard M300** brake caliper is a hydraulic applied, spring retracted brake caliper for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M300 brake caliper is capable of producing a maximum 10,600 lbf of braking force at 1600 psi. Positive retraction mechanism maintains consistent air gap throughout the life of the brake pads.





All dimensions are nominal in inches.

INDUSTRIES/APPLICATIONS:

HYDRO TURBINES
ELECTRIC GENERATORS
MARINE PROPULSION
WINCHES
DYNOMOMETERS
FRICTION WELDERS

BRAKE TYPE:

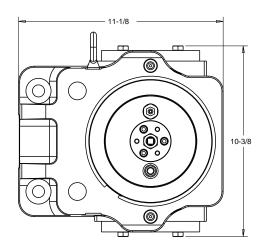
M400 HS

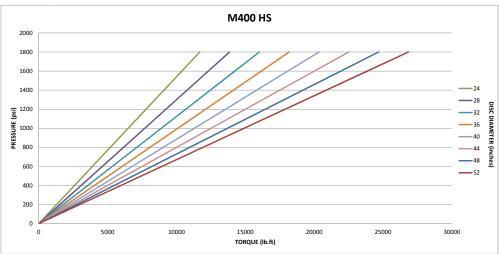
HYDRAULIC APPLIED/

HYDRAULIC APPLIED/ SPRING RELEASED



The **Hilliard M400HS** brake caliper is a hydraulic applied, spring retracted brake caliper for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M400HS brake caliper is capable of producing a maximum 12,960 lbf of braking force at 1800 psi. Positive retraction mechanism maintains consistent air gap throughout the life of the brake pads.





■ INDUSTRIES/APPLICATIONS:

CRANE BRIDGE DRIVES
WINCHES
THEATRICAL/STAGE EQUIPMENT
MARINE PROPULSION

INDUSTRIES/APPLICATIONS:

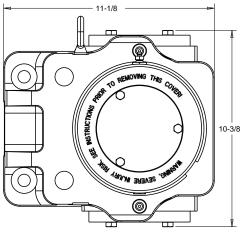
CRANE HOISTS
MINE HOISTS
ELEVATORS
ESCALATORS
MARINE PROPULSION
MINING CONVEYORS
THEATRICAL/STAGE EQUIPMENT

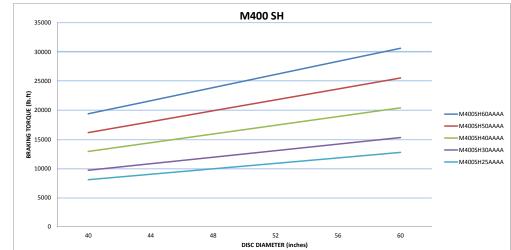
BRAKE TYPE:

M400 SH

SPRING-APPLIED/ HYDRAULIC RELEASED







Max Torque Values at Zero PSI Pressure

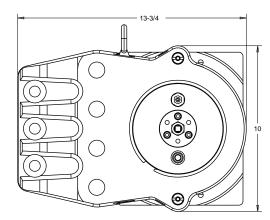
The **Hilliard M400SH** brake caliper is a spring applied, hydraulically released brake for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M400SH is available with standard force ratings which when paired with the correct disc size produces an exact braking torque for the application. The caliper features "Maintenance Mode" which removes all stored spring energy within the cylinder assembly. This allows for brake pad replacement, monitor unit adjustment and seal replacement without the need to remove the brake from service.

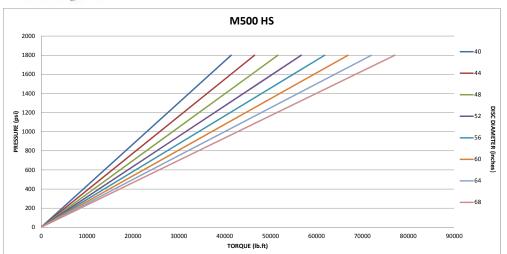
BRAKE TYPE:

M500 HS HYDRAULIC APPLIED/ SPRING RELEASED



The **Hilliard M500HS** brake caliper is a hydraulic applied, spring retracted brake caliper for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M500HS brake caliper is capable of producing a maximum 27,000 lbf of braking force at 1600 psi on the M500HS. Positive retraction mechanism maintains consistent air gap throughout the life of the brake pads.





INDUSTRIES/APPLICATIONS:

STAGE EQUIPMENT WINCHES MARINE PROPULSION

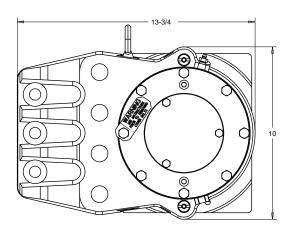
BRAKE TYPE:

M500 SH

SPRING-APPLIED/ HYDRAULIC RELEASED



The **Hilliard M500SH** brake caliper is a spring applied, hydraulically released brake for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M500SH is available with standard force ratings which when paired with the correct disc size produces an exact braking torque for the application. The caliper features "Maintenance Mode" which removes all stored spring energy within the cylinder assembly.



M500 SH

60000
50000
40000
40 44 48 52

DISC DIAMETER (inches)

This allows for brake pad replacement, monitor unit adjustment and seal replacement without the need to remove the brake from service.

INDUSTRIES/APPLICATIONS:

CONVEYORS
MINE HOISTS
STAGE EQUIPMENT
CRANES
CAR SHREDDERS
THEATRICAL/STAGE EQUIPMENT

BRAKE TYPE:

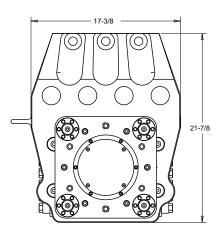
M700 SH

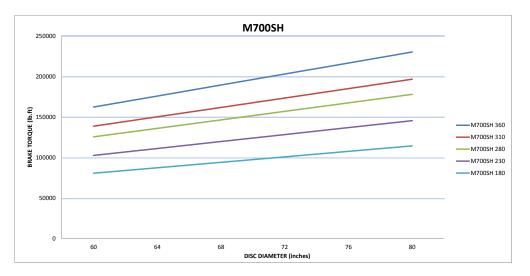
SPRING-APPLIED/
HYDRAULIC RELEASED

The **Hilliard M700SH** brake caliper is a spring applied, hydraulically released brake for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M700SH is available with standard force ratings which when paired with the correct disc size produces an exact braking torque for the application. The caliper features "Maintenance Mode" which removes all stored spring energy within the cylinder assembly. This allows for brake pad replacement, monitor unit adjustment and seal replacement without the need to remove the brake from service. Engineered fasteners eliminate the need for special tools such as torque multipliers or hydraulic tensioners.

INDUSTRIES/APPLICATIONS:

CONVEYORS
MINE HOISTS
THEATRICAL/STAGE EQUIPMENT
CRANES





BRAKE TYPE:

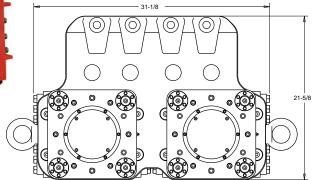
M900 SH

SPRING-APPLIED/ HYDRAULIC RELEASED

The **Hilliard M900SH** brake caliper is a floating spring applied, hydraulically released brake for use in heavy duty industrial applications. The brake comes standard with marine grade epoxy paint suitable for extreme environments. The M900SH is capable of producing 162,000 lbf of braking force. The floating design can accommodate up to 3/4 inch of axial movement due to thermal expansion of large equipment such as grinding mills and kilns. The caliper features "Maintenance Mode" which removes all stored spring energy within the cylinder assembly. This allows for brake pad replacement, monitor unit adjustment and seal replacement without the need to remove the brake from service. Engineered fasteners eliminate the need for special tools such as torque multipliers or hydraulic tensioners.

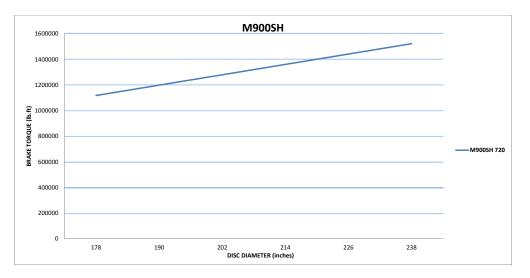


All dimensions are nominal in inches.



INDUSTRIES/APPLICATIONS:

GRINDING MILLS MINE HOISTS KILNS THEATRICAL/STAGE EQUIPMENT



PNEUMATIC APPLIED/SPRING RELEASED

The **A300** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A300 requires a minimum disc diameter of 12" and is offered in 4 sizes to accommodate a ½", 1", 1-3/16", and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.

BRAKE TYPE:

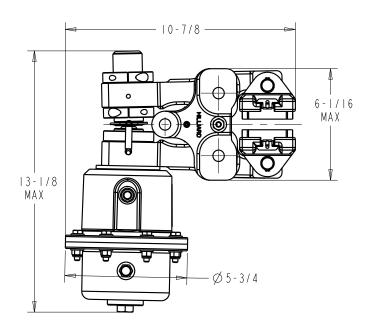
A300-T200 AS

INDUSTRIES/APPLICATIONS:

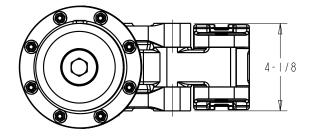
GENERAL MACHINERY
PAPER MILLS
TEXTILE MACHINERY



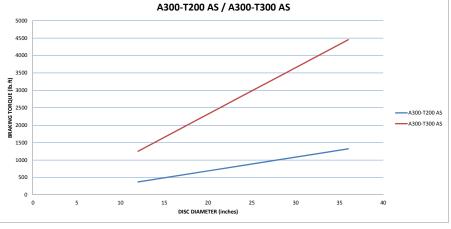
Max Braking Force 950 lbf @ 80 psi



A300-T200 AS



All dimensions are nominal in inches.



BRAKE TYPE:

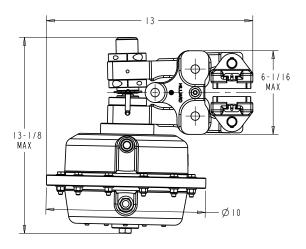
A300-T300 AS

INDUSTRIES/APPLICATIONS:

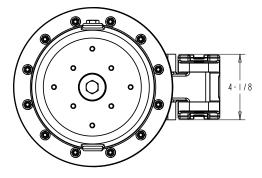
GENERAL MACHINERY
PACKAGING MACHINERY
PAPER MILLS
TEXTILE MACHINERY



Max Braking Force 3200 lbf @ 66 psi



A300-T300 AS



PNEUMATIC APPLIED/SPRING RELEASED

The **A400** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The 400 requires a minimum disc diameter of 24" and is offered in 2 sizes to accommodate a 1" and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.

BRAKE TYPE:

A400-T400 AS

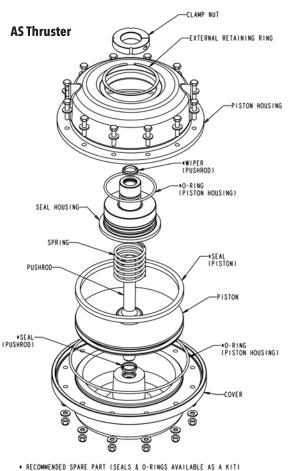
INDUSTRIES/APPLICATIONS:

MARINE GENERAL MACHINERY POWER PLANT FANS

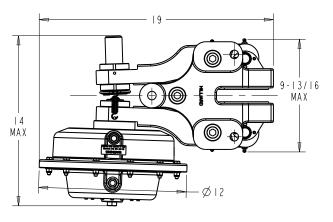


Max Braking Force 8400 lbf @ 67 psi

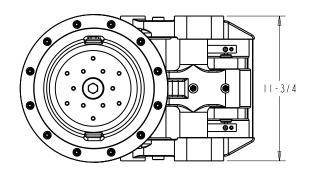
(This thruster is only to be used on the A400 caliper)



All dimensions are nominal in inches.



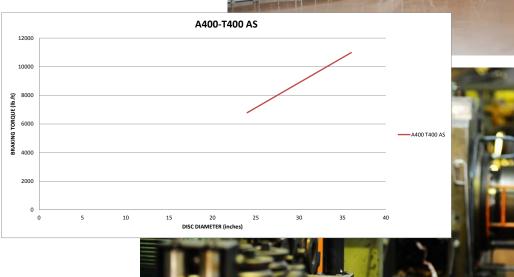
A400-T400 AS



AS Thrusters

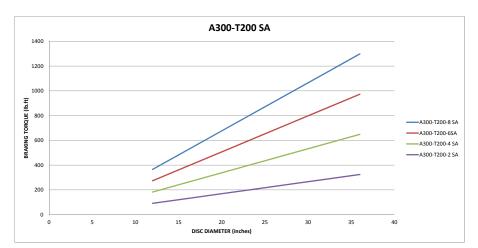
The AS thruster is a direct applied thruster that is pneumatically applied spring released. The Pneumatic applied thrusters are offered in multiple sizes to meet the needs of our customers.





SPRING-APPLIED/PNEUMATIC RELEASED

The **A300** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A300 requires a minimum disc diameter of 12" and is offered in 4 sizes to accommodate a ½", 1", 1-3/16", and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.



BRAKE TYPE:

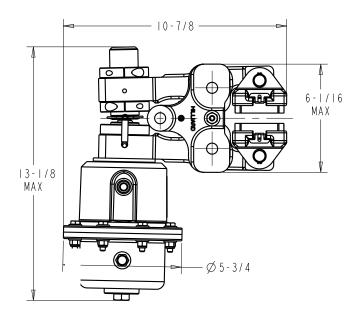
A300-T200 SA

INDUSTRIES/APPLICATIONS:

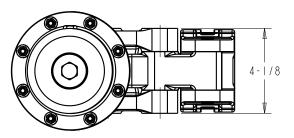
GENERAL MACHINERY
PAPER CONVERTING
WIRE PAYOFFS
STEEL PROCESSING LINES
AMUSEMENT RIDES



Max Braking Force 930 lbf @ Ø psi



A300-T200 SA



BRAKE TYPE:

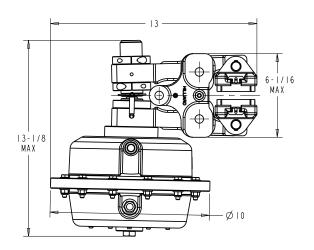
A300-T300 SA

INDUSTRIES/APPLICATIONS:

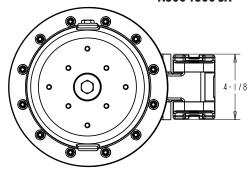
GENERAL MACHINERY
MATERIAL HANDLING
STEEL PROCESSING LINES



Max Braking Force 3180 lbf @ Ø psi



A300-T300 SA



SPRING-APPLIED/PNEUMATIC RELEASED

The **A400** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A400 requires a minimum disc diameter of 24" and is offered in 2 sizes to accommodate a 1" and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.

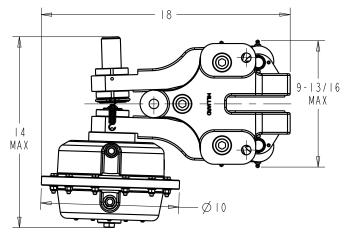
BRAKE TYPE:

A400-T300 SA

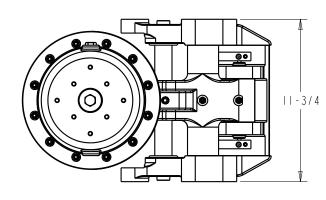
INDUSTRIES/APPLICATIONS:

DRAGLINES
MINING CONVEYORS
MARINE
GENERAL MACHINERY
AMUSEMENT RIDES

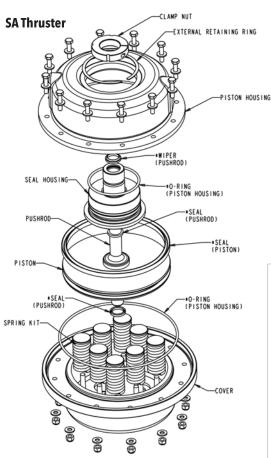




A400-T300 SA



Max Braking Force 5580 lbf @ Ø psi

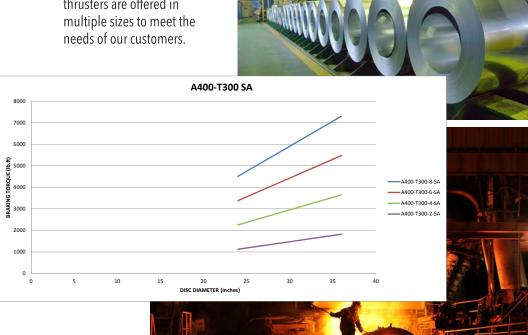


• RECOMMENDED SPARE PART (SEALS & O-RINGS AVAILABLE AS A KIT)

All dimensions are nominal in inches.

SA Thrusters

The SA thruster is a failsafe thruster that is spring applied pneumatically released. The spring applied thrusters are offered in multiple sizes to meet the needs of our customers.



SPRING-APPLIED/PNEUMATIC RELEASED

-A400-T400-10-SA

A400-T400 SA

The **A400** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A400 requires a minimum disc diameter of 24" and is offered in 2 sizes to accommodate a 1" and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.



A400-T400 SA

INDUSTRIES/APPLICATIONS:

DRAGLINES
MINING CONVEYORS
MARINE
GENERAL MACHINERY
BUCKET ELEVATORS
SKIP HOISTS



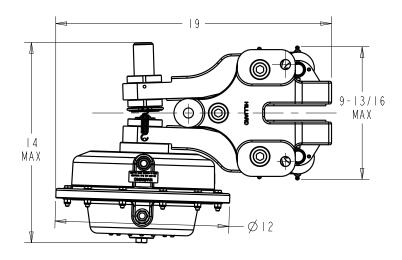
4000

SA Thruster CLAMP NUT EXTERNAL RETAINING RING PISTON HOUSING PUSHROD PISTON HOUSING PUSHROD SEAL (PISTON) SEAL (PISTON HOUSING) SPRING KIT O-RING (PISTON HOUSING) SPRING KIT

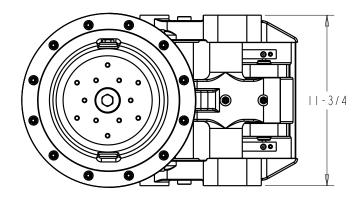
• RECOMMENDED SPARE PART (SEALS & O-RINGS AVAILABLE AS A KIT)

Max Braking Force 8366 lbf @ 85 psi

(This thruster is only to be used on the A400 caliper)



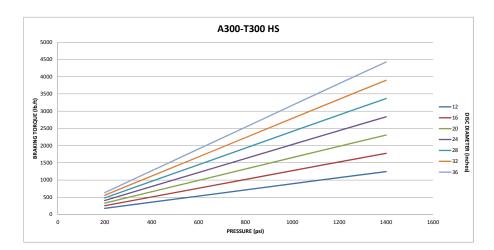
A400-T400 SA



All dimensions are nominal in inches.

HYDRAULIC APPLIED/SPRING RELEASED

The **A300** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A300 requires a minimum disc diameter of 12" and is offered in 4 sizes to accommodate a $\frac{1}{2}$ ", 1", 1-3/16", and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.



BRAKE TYPE:

A300-T300 HS

INDUSTRIES/APPLICATIONS:

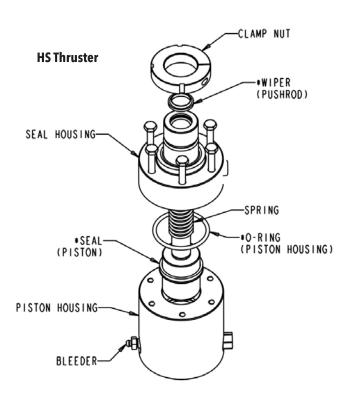
GENERAL MACHINERY CRANE BRIDGE DRIVES MARINE PROPULSION



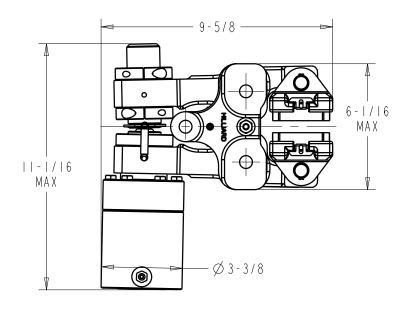
HS Thrusters

The HS thruster is a direct applied thruster that is hydraulically applied spring released.

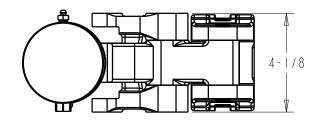
Max Braking Force 3200 lbf @ 1400 psi



* RECOMMENDED SPARE PART (SEALS & O-RINGS AVAILABLE AS A KIT)

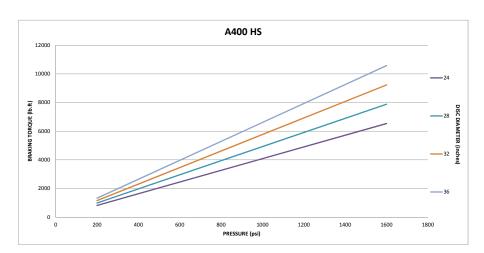


A300-T300 HS



HYDRAULIC APPLIED/SPRING RELEASED

The **A400** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A400 requires a minimum disc diameter of 24" and is offered in 2 sizes to accommodate a 1" and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.



BRAKE TYPE:

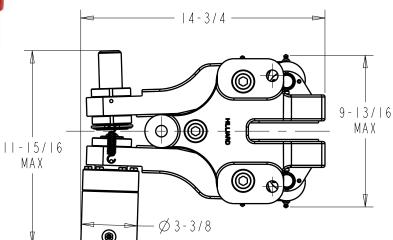
A400-T400 HS

INDUSTRIES/APPLICATIONS:

MARINE PROPULSION GENERAL MACHINERY CRANE BRIDGE DRIVES



A400-T400 HS

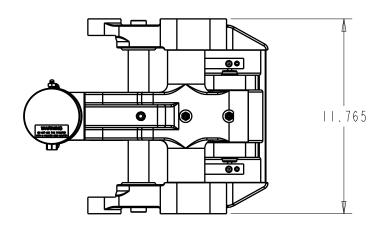


Max Braking Force 8081 lbf @ 1600 psi

(This thruster is only to be used on the A400 caliper)

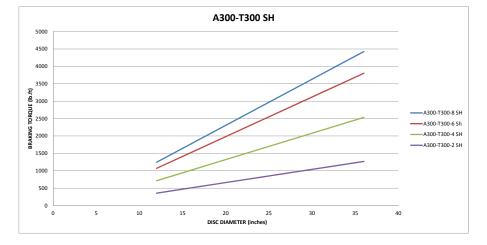






SPRING-APPLIED/HYDRAULIC RELEASED

The **A300** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A300 requires a minimum disc diameter of 12" and is offered in 4 sizes to accommodate a $\frac{1}{2}$ ", 1", 1-3/16", and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.



BRAKE TYPE:

A300-T300 SH

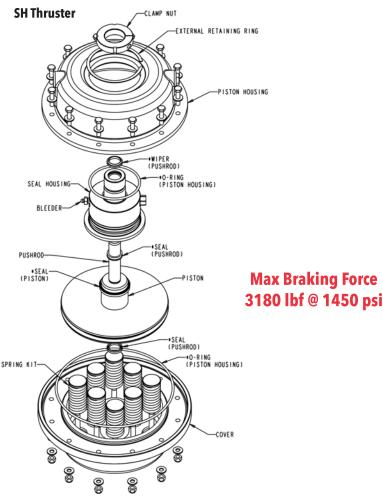
INDUSTRIES/APPLICATIONS:

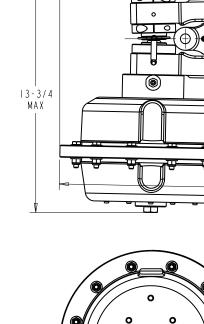
GENERAL MACHINERY BARGE UNLOADERS RAIL CAR DUMPERS RAIL CAR POSITIONERS

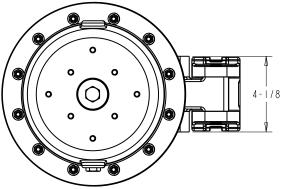


SH Thrusters

The SH thruster is a failsafe thruster that is spring applied hydraulically released. The spring applied thrusters are offered in multiple sizes to meet the needs of our customers.







A300-T300 SH

• RECOMMENDED SPARE PART (SEALS & O-RINGS AVAILABLE AS A KIT)

SPRING-APPLIED/HYDRAULIC RELEASED

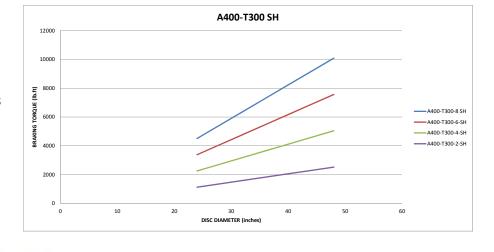
The **A400** is an arm style caliper brake designed to accept a large selection of Hilliard thrusters. The A400 requires a minimum disc diameter of 24" and is offered in 2 sizes to accommodate a 1" and 1-1/2" thick disc. The design of the caliper allows the user to quickly convert between right and left handed designs eliminating the need for multiple part numbers.



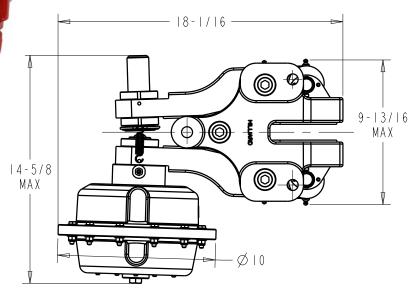
A400-T300 SH

INDUSTRIES/APPLICATIONS:

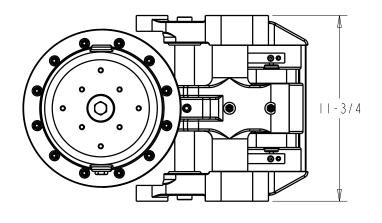
DRAGLINES
MINING CONVEYORS
MARINE WINCHES
GENERAL MACHINERY



Max Braking Force 5580 lbf @ 1720 psi



A400-T300 SH



All dimensions are nominal in inches.





SPRING-APPLIED/HYDRAULIC RELEASED

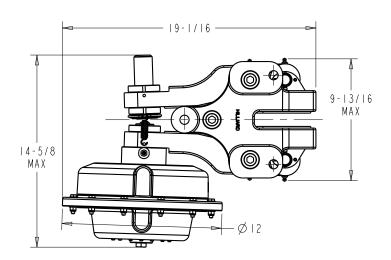
BRAKE TYPE:

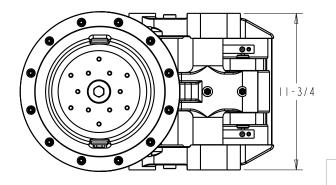
A400-T400 SH

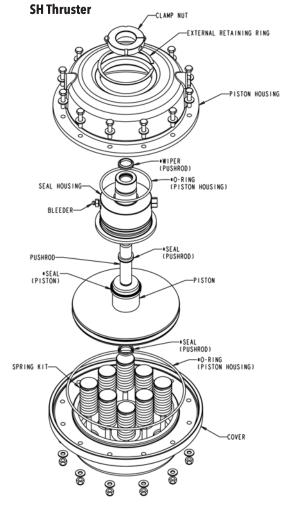
INDUSTRIES/APPLICATIONS:

DRAGLINES
MINING CONVEYORS
MARINE WINCHES
GENERAL MACHINERY









• RECOMMENDED SPARE PART (SEALS & O-RINGS AVAILABLE AS A KIT)

Max Braking Force 8366 lbf @ 1875 psi

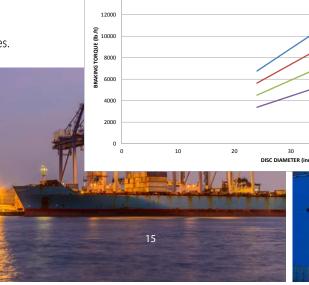
(This thruster is only to be used on the A400 caliper)

A400-T400 SH

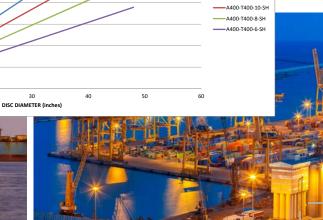


All dimensions are nominal in inches.





16000



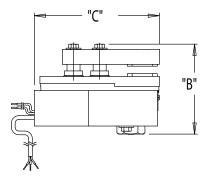
Electric Brakes

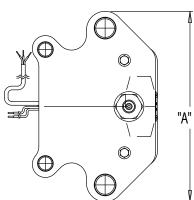
BRAKE TYPE:

MK GUIDE RAIL BRAKE

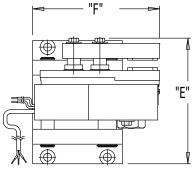
The Hilliard **MK Guide Rail Brake** is designed for use on elevators, conveyors, cranes, or other devices requiring a spring-applied electromagnetically released brake. The patented MK brake can be applied to a guide rail or a brake disc. It is unique in that it is direct acting with only one moving part. The brake incorporates an electromagnetic coil that uses a voltage dropping circuit to minimize current draw and heat when the brake is released. Shipped with manual release bolts for easy assembly to the rail or disc, it can also be equipped with a manual release mechanism for a momentary release of the brake with a standard open-end or socket wrench.

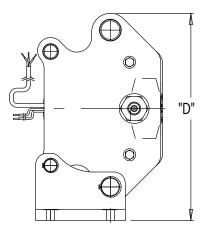




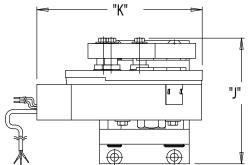


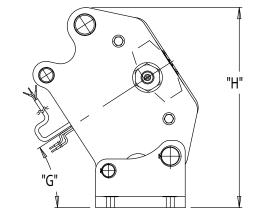
Pin Mounting





Base Mounting Horizontal





Base Mounting Angle

APPROXIMATE ENVELOPE DIMENSIONS (INCHES):

Brake Type	Α	В*	С	D	E*	F	G	Н	J*	К	Weight
MK-350	7.50	4.95	5.44	8.31	6.82	5.44	30	8.13	6.82	6.94	25 lb
MK-750	10.13	6.00	7.25	11.31	9.00	7.25	32	11.25	9.00	9.63	50 lb
MK-1400	13.50	6.82	8.75	14.63	8.94	8.75	33	14.00	8.94	11.56	80 lb
MK-4800	21.50	10.18	16.50	23.00	13.69	16.50	28	22.56	13.69	18.88	325 lb



BENEFITS:

- Designed for holding duty and emergency stopping
- Manual release mechanism automatically reapplies the brake when force is removed
- Equipped with a microswitch for monitoring brake status
- Can be configured for various rail or disc thickness
- Easy to install equipped with manual release bolts
- Can be adjusted for wear by adding shims behind the brake pads
- Mounted on pins allowing for axial movement



DATA:

Brake Type	Braking Force (lb)	Release Voltage (vdc)	Holding Voltage (vdc)	Min Disc Diameter (in)	Min Rail Depth (in)
MK-350	350	210	100	6	1.50
MK-350	250	100	100	6	1.50
MK-350	150	100	100	6	1.50
MK-750	750	210	100	10	2.50
MK-750	525	100	100	10	2.50
MK-750	400	100	100	10	2.50
MK-1400	1400	210	100	12	3.00
MK-1400	1025	100	100	12	3.00
MK-1400	865	100	100	12	3.00
MK-4800	4800	210	100	20	4.75
MK-4800	3600	100	100	20	4.75
MK-4800	2400	100	100	20	4.75

BRAKE TYPE:

ELECTRIC BRAKE

SPRING-APPLIED/ELECTRIC RELEASED



Hilliard **Electric Brakes** provide positive stopping and reliable holding of rotating devices on demand — every time.

Spring engaged when current is interrupted and electromagnetically released when voltage is applied, these brakes are designed for maximum flexibility and long, dependable service.

Each brake has an easy-to-adjust wear bolt to compensate for friction surface wear, and extend the life of the brake.

The ideal complement to Hilliard's full line of motion control products, they are available in a variety of sizes, voltages, and torque ratings.

INDUSTRIES/APPLICATIONS:

ELEVATORS
ESCALATORS



Power Units: Brake Boss™

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





ENERGY/WIND CRANES/HOISTS STEEL/METAL

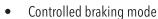


BBH2 POWER UNIT

The Hilliard **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.

INDUSTRIES/APPLICATIONS:

LIFTS/ELEVATORS **ENERGY/WIND** RAIL/CONVEYORS



- 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

BRAKEBOSS



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.







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
- 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



GRINDING MILLS

Brake Discs & Hubs Mounting Brackets

Hilliard offers a comprehensive range of standard **Brake Discs**, manufactured from either ductile iron castings or carbon steel. Stainless steel and other special materials are also available. Standard disc diameters range from 6 inches to 54 inches, with other sizes supplied to order. Discs are bored and drilled to fit Hilliard standard Hubs, meeting customer specifications.

Hilliard standard **Disc Hubs** are supplied with parallel or tapered bores and keywayed to accommodate customer requirements. Hubs are manufactured from either iron or steel. Special hubs with keyless locking devices are also offered.

Standard and custom **Mounting Brackets** are offered for use with all Hilliard brake models.









SINCE

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CYLINDER GRINDING

EW PISTONS AND RINGS FITTED

RING GEARS FLY-WHEELS

REPAIR WORK

HISTORY EXCELLENCE

IARD CLUTCH & MACHI

The Hilliard Corporation solves problems. Based on extensive knowledge of motion control and filtration technologies, we make thousands of unique products, reaching markets globally.

Serving the needs of both small businesses and Fortune 500 companies, Hilliard products are found all over the world. We offer a broad line of motion control products, oil-filtration and reclaiming equipment, and plate and frame filter presses used in the food industry. We also manufacture starters for industrial gas and diesel engines and gas turbines. Our filtration systems are sold under the trade names of HILCO* and Star* Filters.

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

With over 500,000 square feet and more than 500 highly skilled employees, we are able to meet desired requirements costcompetitively, even for short runs. Our experienced technical staff values craftsmanship, manufacturing efficiency, and responsiveness.

In order to meet customer requirements, improve quality, and increase efficiency, Hilliard is continuously investing in new equipment and technologies.

In fact, we measure Hilliard's success based on our customers' ongoing satisfaction with our product and associated services. We are proud of our product reliability and durability. We often collaborate with customers in developing solutions that are integral to their product's profitable niche in the market place.

Built in America... Made for the World









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