Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # i-8513, Full Mortise

Rated for thrust loads or doors weighing up to 2000 pounds. They feature anti-friction needle roller bearings to transfer the higher radial and thrust loads and a hardened, precision ground, alloy steel pin. The hinge pin is also Armoloy® coated for additional corrosion protection.



Specifications -	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill
	Standard Single Cut

Leaf	Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	2000 lbs.
Radial Capacity	800 lbs.
Operating Torque *	5 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	3/8" dia. flat head socket, 160,000 psi; 320 lb-in bolt preload(1018) 1/2" dia. flat head socket, 160,000 psi; 625 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Item # i-8510, Full Surface

Rated for thrust loads or doors weighing up to 2000 pounds. They feature anti-friction needle roller bearings to transfer the higher radial and thrust loads and a hardened, precision ground, alloy steel pin. The hinge pin is also Armoloy® coated for additional corrosion protection.



Specifications	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill

Leaf	Standard Single Cut Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	2000 lbs.
Radial Capacity	800 lbs.
Operating Torque *	5 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	1/2" dia. Grade 5 Hex Head, 120,000 psi., 625 lb-in bolt preload(1018) 3/8" dia. Socket Head, 160,000 psi., 320 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Item # i-8512, Gap Mounted

Rated for thrust loads or doors weighing up to 2000 pounds. They feature anti-friction needle roller bearings to transfer the higher radial and thrust loads and a hardened, precision ground, alloy steel pin. The hinge pin is also Armoloy® coated for additional corrosion protection.



Specifications -	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill

Leaf	Standard Single Cut Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	2000 lbs.
Radial Capacity	800 lbs.
Operating Torque *	5 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	1/2" dia. Grade 5 Hex Head, 120,000 psi., 625 lb-in bolt preload(1018) 3/8" dia. Socket Head, 160,000 psi., 320 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Item # i-8511, Half Surface/Mortise

Rated for thrust loads or doors weighing up to 2000 pounds. They feature anti-friction needle roller bearings to transfer the higher radial and thrust loads and a hardened, precision ground, alloy steel pin. The hinge pin is also Armoloy® coated for additional corrosion protection.



Specifications -	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill
	Standard Single Cut

Leaf	Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	2000 lbs.
Radial Capacity	800 lbs.
Operating Torque *	5 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	1/2" dia. Grade 5 Hex Head, 120,000 psi., 625 lb-in bolt preload(1018) 3/8" dia. Socket Head, 160,000 psi., 320 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Item # i-8508, Full Mortise

Designed and tested to support thrust loads or doors weighing up to 800 pounds. For those detention grade applications, they meet or exceed ASTM F1758 Grade 1 and are FBOP approved. They feature self-lubricating, maintenance free, radial and thrust bearings which have PV ratings as high as 28000 psi x fpm. A precision, ground stainless steel, maximum security hinge pin is welded in place.



Specifications -	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill
	Standard

Leaf	Single Cut Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	800 lbs.
Radial Capacity	320 lbs.
Operating Torque *	50 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	3/8" dia. flat head socket, 160,000 psi; 320 lb-in bolt preload(1018) 1/2" dia. flat head socket, 160,000 psi; 625 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST) 3/8" dia. flat head socket, 70,000 psi; 300 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # i-8505, Full Surface

Designed and tested to support thrust loads or doors weighing up to 800 pounds. For those detention grade applications, they meet or exceed ASTM F1758 Grade 1 and are FBOP approved. They feature self-lubricating, maintenance free, radial and thrust bearings which have PV ratings as high as 28000 psi x fpm. A precision, ground stainless steel, maximum security hinge pin is welded in place.



Specifications | i-8500 Installation Guidelines

Specifications -	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill

Leaf	Standard Single Cut Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	800 lbs.
Radial Capacity	320 lbs.
Operating Torque *	50 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	1/2" dia. Grade 5 Hex Head, 120,000 psi., 625 lb-in bolt preload(1018) 3/8" dia. Socket Head, 160,000 psi., 320 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST) 3/8" dia. flat head socket, 70,000 psi; 300 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Email: info@bfimfg.com

Item # i-8507, Gap Mounted

Designed and tested to support thrust loads or doors weighing up to 800 pounds. For those detention grade applications, they meet or exceed ASTM F1758 Grade 1 and are FBOP approved. They feature self-lubricating, maintenance free, radial and thrust bearings which have PV ratings as high as 28000 psi x fpm. A precision, ground stainless steel, maximum security hinge pin is welded in place.



Specifications -	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill

Leaf	Standard Single Cut Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	800 lbs.
Radial Capacity	320 lbs.
Operating Torque *	50 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	1/2" dia. Grade 5 Hex Head, 120,000 psi., 625 lb-in bolt preload(1018) 3/8" dia. Socket Head, 160,000 psi., 320 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST) 3/8" dia. flat head socket, 70,000 psi; 300 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Item # i-8506, Half Mortise/Half Surface

Designed and tested to support thrust loads or doors weighing up to 800 pounds. For those detention grade applications, they meet or exceed ASTM F1758 Grade 1 and are FBOP approved. They feature self-lubricating, maintenance free, radial and thrust bearings which have PV ratings as high as 28000 psi x fpm. A precision, ground stainless steel, maximum security hinge pin is welded in place.



Specifications | i-8500 Installation Guidelines

Specifications -	
Application	Institutional, Security, Detention, Lead, Blast, Gate Non- Handed
Hinge Size	5 in.
Material	1018 CRS 304 Stainless Steel
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Mounting Holes	None Drill
	Standard

Leaf	Single Cut Single Long Double Cut Double Long
Thrust Capacity (Door Weight)	800 lbs.
Radial Capacity	320 lbs.
Operating Torque *	50 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Bolt Description (for 1018 Hinge)	1/2" dia. Grade 5 Hex Head, 120,000 psi., 625 lb-in bolt preload(1018) 3/8" dia. Socket Head, 160,000 psi., 320 lb-in bolt preload(1018)
Bolt Description (for SST Hinge)	1/2" dia. flat head socket, 70,000 psi; 625 lb-in bolt preload(SST) 3/8" dia. flat head socket, 70,000 psi; 300 lb-in bolt preload(SST)
Hinge Weight (approx.)	7 lbs.

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be 1/4", and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings.

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Series i-8500-DPS and ETH

0 Items Available

Optional Door Position Switch and Electric Transfer hinges are also available and shown below.

Series i-8500-DPS

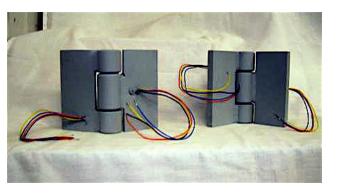
Available in i-8508-DPS or i-8513-DPS.



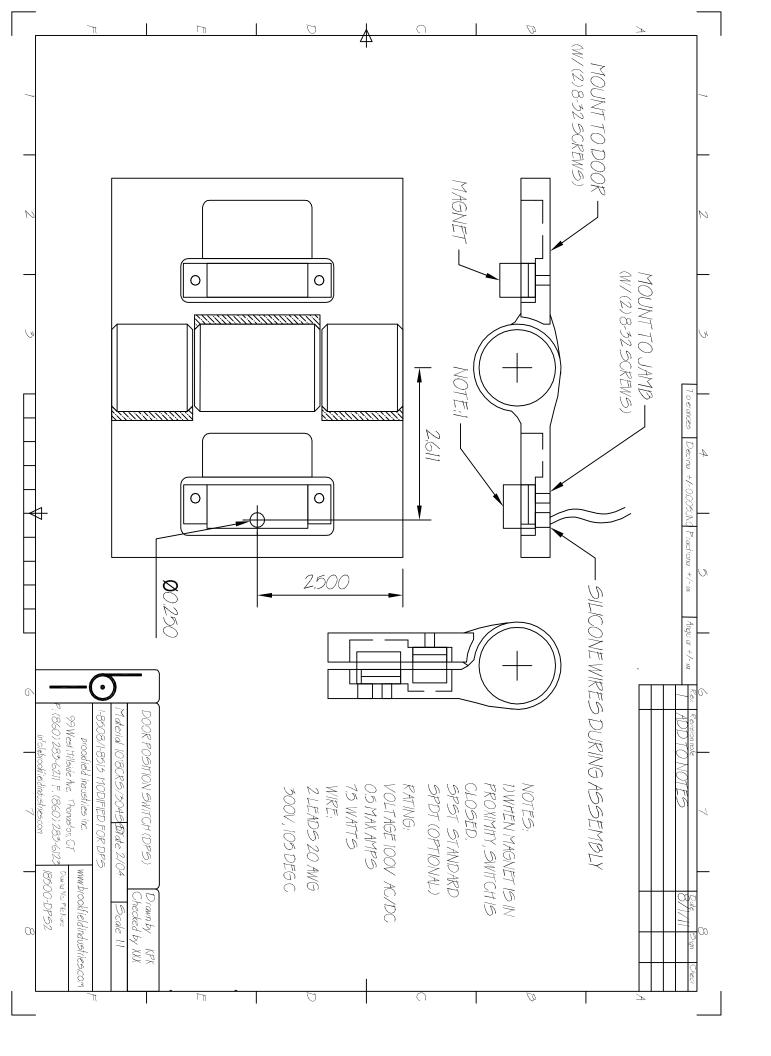
Series i-8500-ETH

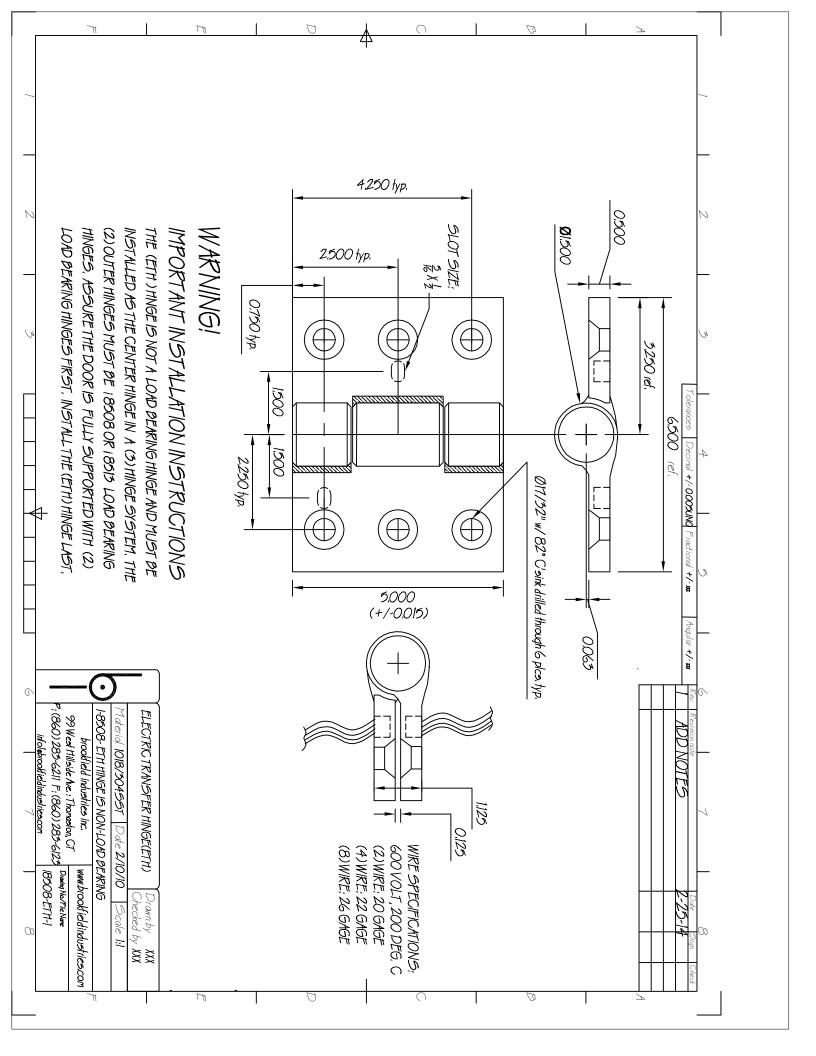
Available in 2,4, or 8 wires in model i-8508-ETH only.

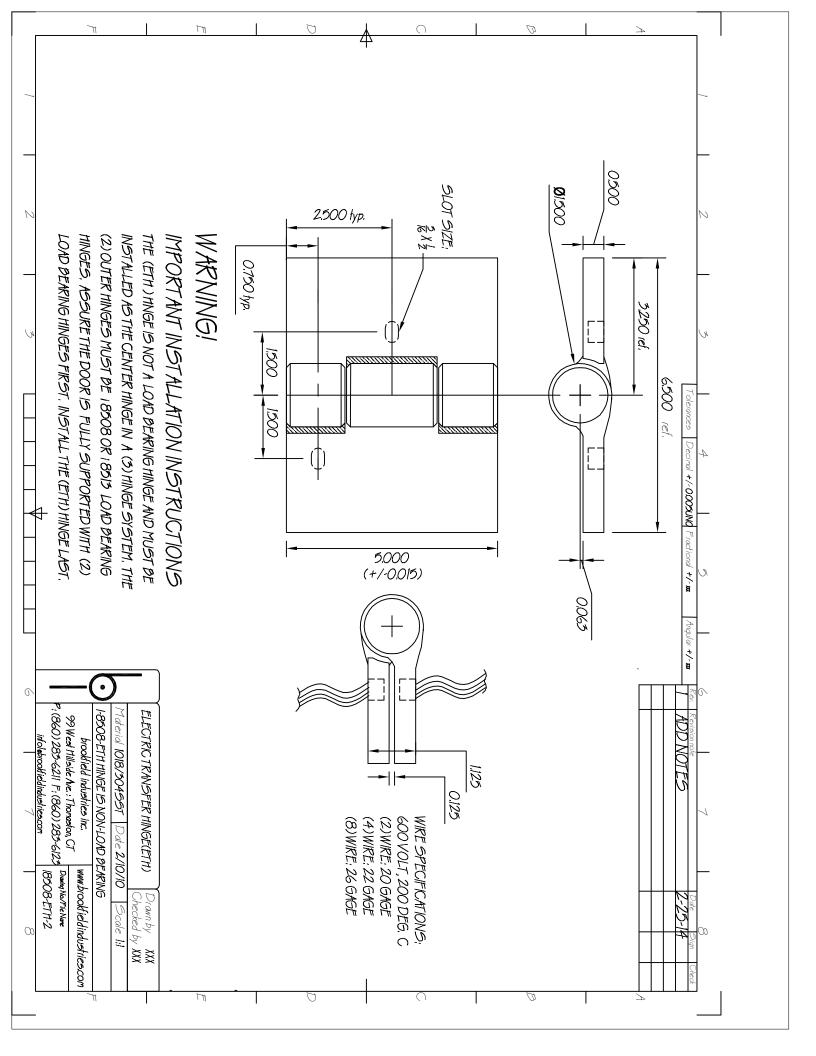
Must be installed as a center hinge, i.e., non load bearing.











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Item # W500-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	5.00 in.
Dimension B	4.25 in.
Dimension C	1.375 in.
Dimension D	1.750 in.
Dimension E	0.750 in.
Dimension F	0.750 in.
Dimension G	3/16 in.

Dimension H	3/8 in.
Dimension I	1.0 in.
Dimension J	13/32 in.
Dimension K	0.735 in.
Drawing	Click Here
Material	1018 CRS (Standard) 304 SST(Dimensional changes may apply)
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1/4 in.
Thrust Capacity (Door Weight)	1000 lbs.
Radial Capacity	400 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	3/8"dia. GR 5
Bolt - Fu (for 1018 Hinge)	120,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	250 lbs. in.
Mounting Bolts (for SST Hinge)	-
Bolt Description (for SST Hinge)	3/8" dia. (SST)
Bolt - Fu (for SST Hinge)	70,000 psi
Bolt Torque (based on note 5) (for SST Hinge)	250 lbs. in.

Torque to Operate Door *	3 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	3 lbs.

Series-W Installation Guidelines

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

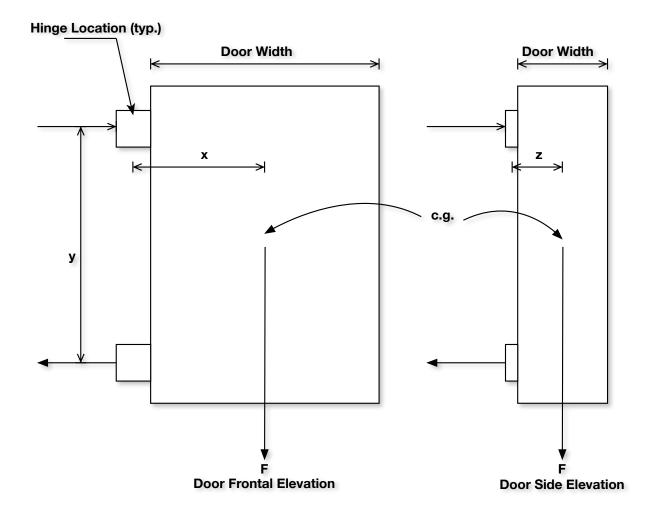


Fig. 1

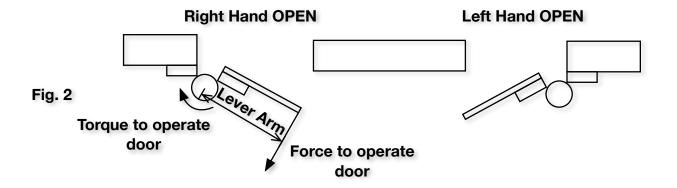
Step 2:

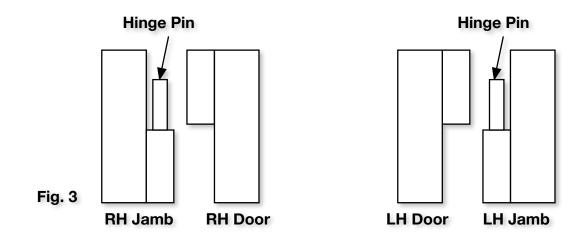
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

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Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # W875-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	5.00 in.
Dimension B	6.53 in.
Dimension C	2.250 in.
Dimension D	1.750 in.
Dimension E	0.750 in.
Dimension F	1.00 in.
Dimension G	1/4 in.

Dimension H	1/2 (1018) in. 3/4 (SST) in.
Dimension I	1.75 in.
Dimension J	17/32 (1018) in. 21/32 (SST) in.
Dimension K	0.926 (1018) in. 1.25 (SST) in.
Drawing	Click Here
Material	1018 CRS (Standard) 304 SST(Dimensional changes may apply)
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1/4 in.
Thrust Capacity (Door Weight)	3000 lbs.
Radial Capacity	1200 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	1/2" dia. GR 5
Bolt - Fu (for 1018 Hinge)	120,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	625 lbs. in.
Mounting Bolts (for SST Hinge)	-
Bolt Description (for SST Hinge)	5/8" dia. (SST)
Bolt - Fu (for SST Hinge)	70,000 (SST) psi

Bolt Torque (based on note 5) (for SST Hinge)	800 lbs. in.
Torque to Operate Door *	13 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	6 lbs.

Series-W Installation Guidelines

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

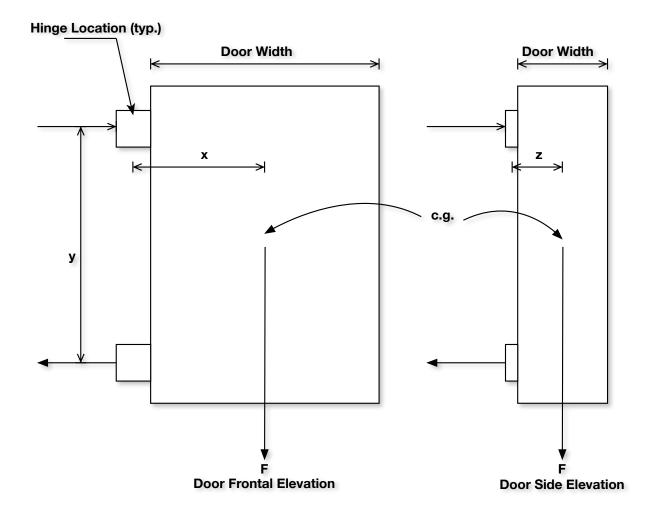


Fig. 1

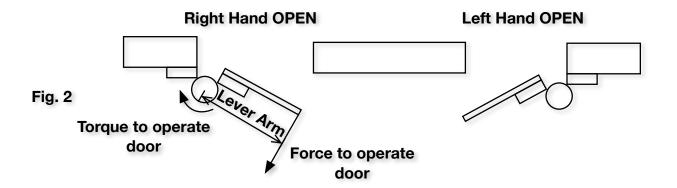
Step 2:

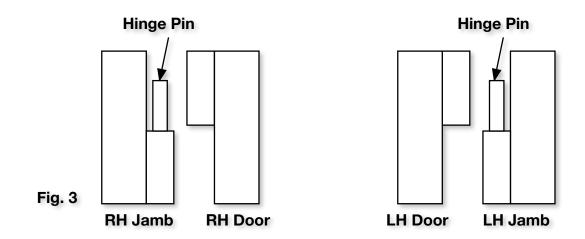
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

brookfield industries, inc.

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # W100-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	6.00 in.
Dimension B	7.58 in.
Dimension C	2.875 in.
Dimension D	2.250 in.
Dimension E	0.750 in.
Dimension F	0.914 in.
Dimension G	1/4 in.

Dimension H	1/2 (1018) in. 1.0 (SST) in.
Dimension I	2.00 in.
Dimension J	21/32 (SST) in. 21/32 (1018) in.
Dimension K	1.115 (1018) in. 1.688 (SST) in.
Drawing	Click Here
Material	1018 CRS (Standard) 304 SST(Dimensional changes may apply)
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1/4 in.
Thrust Capacity (Door Weight)	4000 lbs.
Radial Capacity	1630 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	5/8" dia. GR 5
Bolt - Fu (for 1018 Hinge)	120,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	1200 lbs. in.
Mounting Bolts (for SST Hinge)	-
Bolt Description (for SST Hinge)	5/8" dia. (SST)
Bolt - Fu (for SST Hinge)	70,000 (SST) psi

Bolt Torque (based on note 5) (for SST Hinge)	1200 lbs. in.
Torque to Operate Door *	20 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	10 lbs.

Series-W Installation Guidelines

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

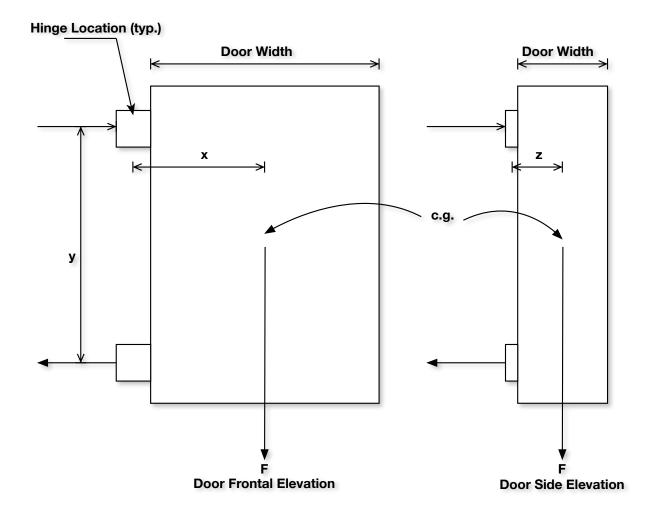


Fig. 1

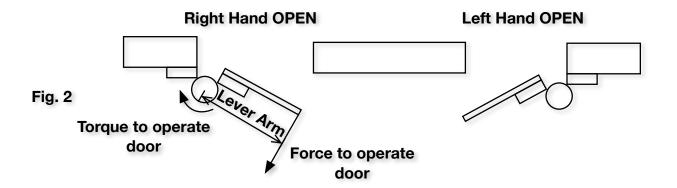
Step 2:

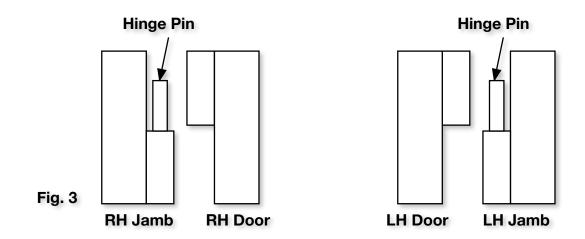
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

brookfield industries, inc.

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # W125-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



<u>Specifications</u> | <u>Series-W Installation Guidelines</u>

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	8.00 in.
Dimension B	8.00 in.
Dimension C	2.875 in.
Dimension D	2.750 in.
Dimension E	1.250 in.
Dimension F	1.125 in.

Dimension G	3/8 in.
Dimension H	3/4 in.
Dimension I	2.50 in.
Dimension J	25/32 in.
Dimension K	1.563 in.
Drawing	<u>Click Here</u>
Material	1018 CRS (Standard) 304 SST
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1/2 in.
Thrust Capacity (Door Weight)	8000 lbs.
Radial Capacity	3300 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	3/4" dia. Socket Head
Bolt - Fu (for 1018 Hinge)	170,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	2600 lbs. in.
Torque to Operate Door *	48 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	23 lbs.

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

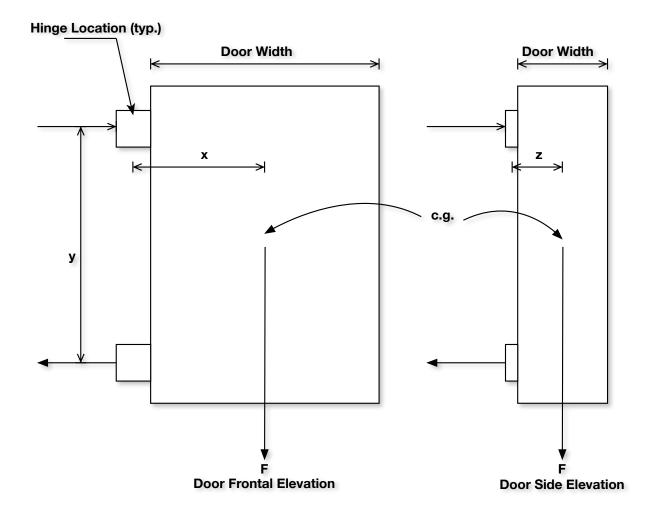


Fig. 1

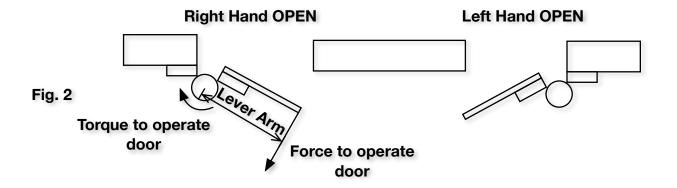
Step 2:

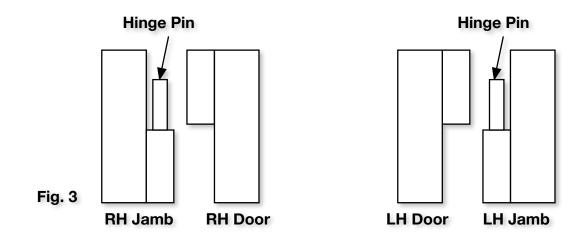
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

brookfield industries, inc.

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # W150-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	9.00 in.
Dimension B	9.50 in.
Dimension C	3.500 in.
Dimension D	3.250 in.
Dimension E	1.250 in.
Dimension F	1.250 in.
Dimension G	9/16 in.

Dimension H	1 in.
Dimension I	3.25 in.
Dimension J	29/32 in.
Dimension K	2.033 in.
Drawing	<u>Click Here</u>
Material	1018 CRS (Standard) 304 SST
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1/2 in.
Thrust Capacity (Door Weight)	13000 lbs.
Radial Capacity	6280 lbs.
Radial Capacity (SST)	5200 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	7/8" dia. Socket Head
Bolt - Fu (for 1018 Hinge)	170,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	5400 lbs. in.
Torque to Operate Door *	111 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	37 lbs.

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

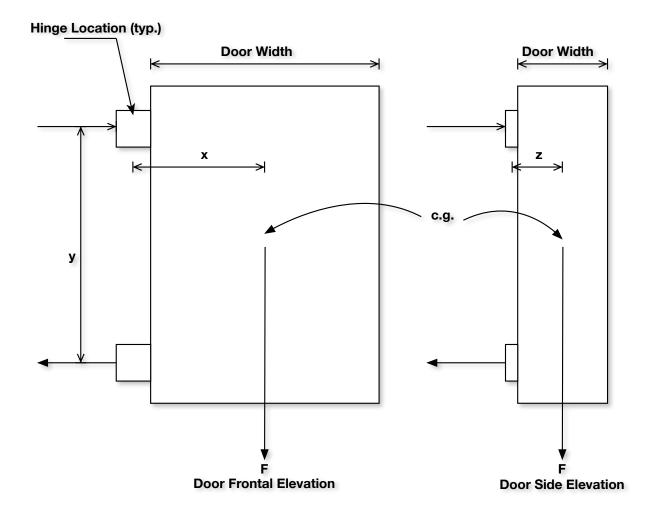


Fig. 1

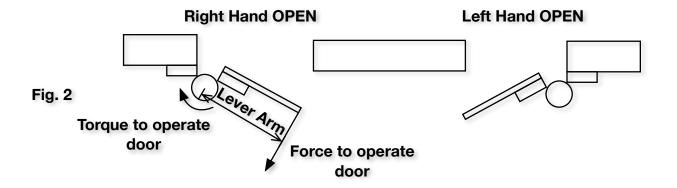
Step 2:

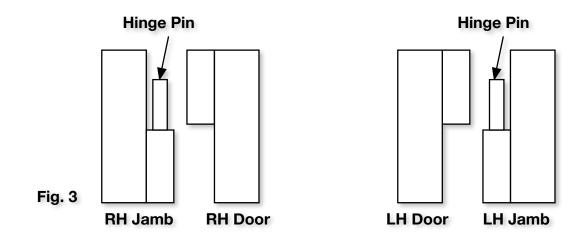
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

brookfield industries, inc.

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # W200-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	12.00 in.
Dimension B	10.75 in.
Dimension C	4.125 in.
Dimension D	3.50 in.
Dimension E	2.50 in.
Dimension F	1.250 in.
Dimension G	3/4 in.

Dimension H	1 in.
Dimension I	3.75 in.
Dimension J	1.03 in.
Dimension K	2.282 in.
Drawing	<u>Click Here</u>
Material	1018 CRS (Standard) 304 SST
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1/2 in.
Thrust Capacity (Door Weight)	20000 lbs.
Radial Capacity	8800 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	1" dia. Socket Head
Bolt - Fu (for 1018 Hinge)	170,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	7500 lbs. in.
Torque to Operate Door *	173 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	66 lbs.

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

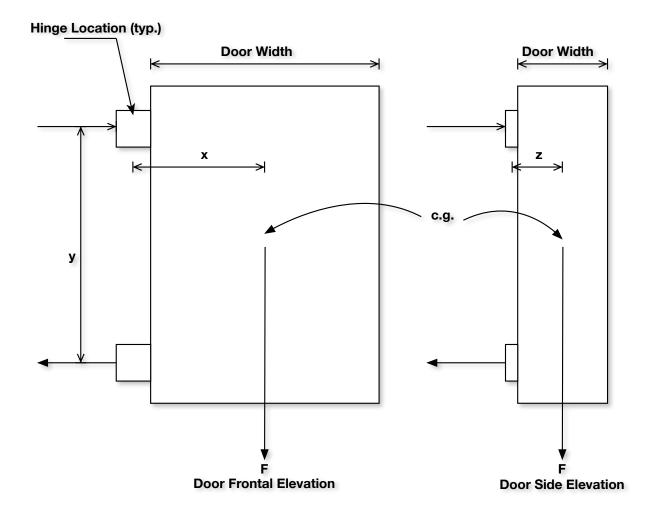


Fig. 1

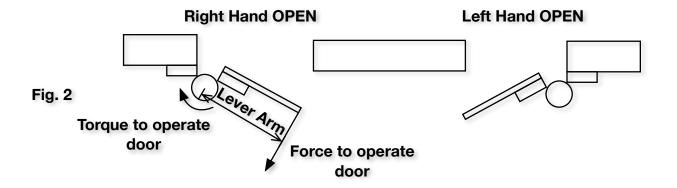
Step 2:

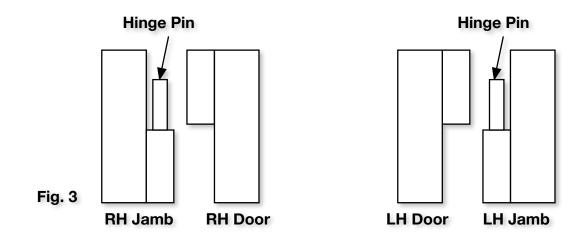
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

brookfield industries, inc.

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # W250-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	14.00 in.
Dimension B	12.50 in.
Dimension C	4.625 in.
Dimension D	3.75 in.
Dimension E	1.375 in.
Dimension F	1.625 in.
Dimension G	3/4 in.

Dimension H	1-1/4 in.
Dimension I	4 in.
Dimension J	1.03 (typ. 8 places) in.
Dimension K	2.75 in.
Drawing	Template Detail
Material	1018 CRS(Standard) 304 SST
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1-1/4 in.
Thrust Capacity (Door Weight)	25000 lbs.
Radial Capacity	14000 lbs.
Radial Capacity (SST)	11000 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	1" dia. Socket Head
Bolt - Fu (for 1018 Hinge)	170,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	7500 lbs. in.
Torque to Operate Door *	315 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	102 lbs.

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

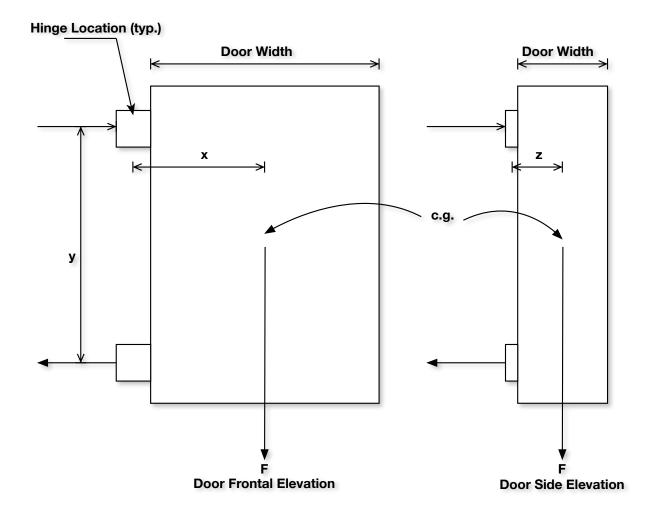


Fig. 1

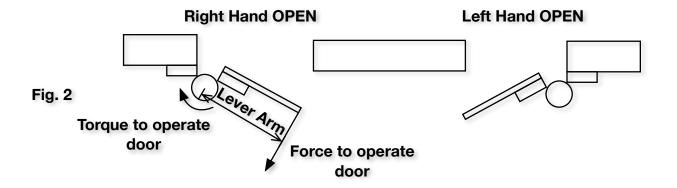
Step 2:

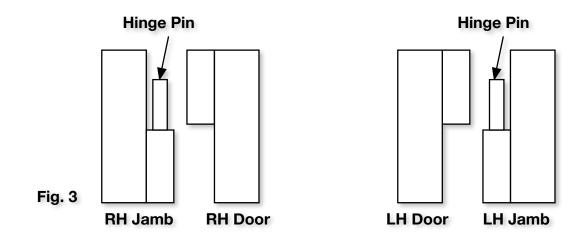
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # W300-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	16.00 in.
Dimension B	20.25 in.
Dimension C	7.5 in.
Dimension D	4.25 in.
Dimension E	1.625 in.
Dimension F	2.50 in.
Dimension G	3/4 in.

Dimension H	3 in.
Dimension I	6 in.
Dimension J	1.531 (typ. 8 places) in.
Dimension K	5.121 in.
Drawing	Template Detail
Material	1018 CRS(Standard) 304 SST
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1-1/4 in.
Thrust Capacity (Door Weight)	40000 lbs.
Radial Capacity	25000 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	1.5" dia. Socket Head
Bolt - Fu (for 1018 Hinge)	170,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	16000 lbs. in.
Torque to Operate Door *	500 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	475 lbs.

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

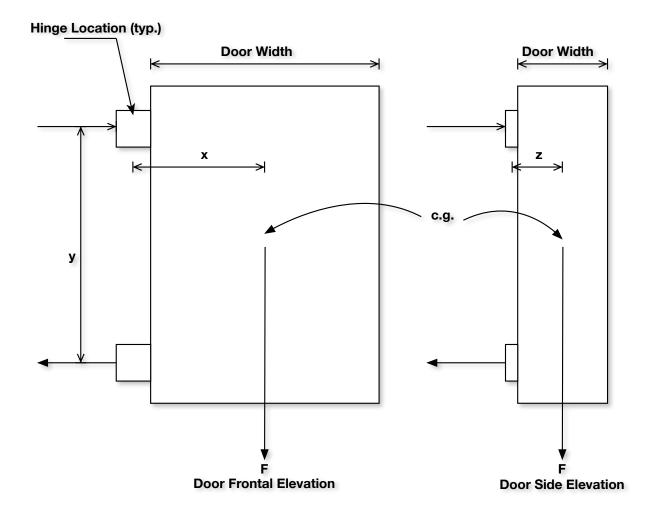


Fig. 1

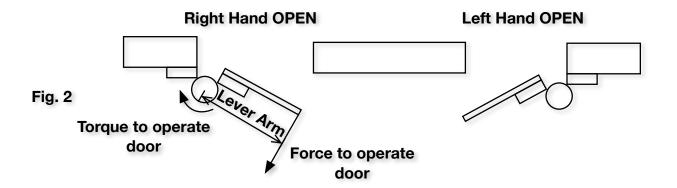
Step 2:

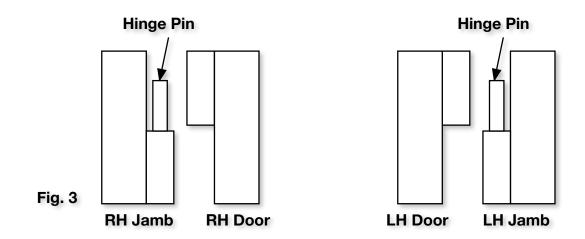
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # W400-HD, Standard Series-W Precision Engineered High Capacity Full Surface Adjustable Hinges (Weld or Bolt on)

With capacities up to 100,000 lbs; handed left/right with vertical adjustment. For use on lead filled radiation doors, vault doors and heavy architectural gates. Also any door application where the hinges will be subjected to severe loads from a blast pressure, seismic event, or high wind velocities.



Specifications | Series-W Installation Guidelines

Specifications -	
Application	Heavy Duty Precision Engineered High Capacity Full Surface Adjustable Hinges
Dimension A	20.00 in.
Dimension B	25.656 in.
Dimension C	9.375 in.
Dimension D	5.375 in.
Dimension E	1.937 in.
Dimension F	3.45 in.
Dimension G	3/4 in.

Dimension H	4 in.
Dimension I	8 in.
Dimension J	2-1/32 (typ. 8 places) in.
Dimension K	6.828 in.
Drawing	Template Detail
Material	1018 CRS (Standard) 304 SST
Finish	Prime Painted (1018 Only standard finish) Plain Mill (304 SST Only Standard Finish) 26D Satin Chrome Plated (1018 Only) 32D Satin Stainless (304 SST Only) Zinc Plated (1018 Only)
Fillet Weld Size	1-5/8 in.
Thrust Capacity (Door Weight)	75000 lbs.
Radial Capacity	45000 lbs.
Mounting Bolts (for 1018 Hinge)	-
Bolt Description (for 1018 Hinge)	2.0" dia. Socket Head
Bolt - Fu (for 1018 Hinge)	170,000 psi
Bolt Torque (based on note 5) (for 1018 Hinge)	29000 lbs. in.
Torque to Operate Door *	1550 lbs. in.
Torque Note	* Theoretical value based on maximum loads. Actual values are dependent upon installation variables.
Hinge Weight (approx.)	738 lbs.

Series W hinges will function at the rated capacities providing the following specifications are met:

- 1. The hinges are installed without inducing "hinge bind".
- 2. A minimum of 2 hinges (1 pair) are used per door.
- 3. Door weight or thrust load shall never exceed the thrust capacity of one hinge.
- 4. Compliance with bolting specification.
- 5. Minimum Thread engagement into reinforcing member shall be equal to bolt diameter.
- 6. For weld on applications, the minimum fillet weld size shall be as specified for that model number, and be full length on the top, bottom, and vertical edges of the mounting surface of each hinge leaf. There shall be no welding on the backside, adjacent to the hinge barrel. Assure the weld interpass temperature at the hinge barrel does not exceed 225 deg. F.
- 7. For certain high frequency applications, adequate load distribution between hinges maybe necessary to obtain the highest margin of safety with respect to load-life on bearings. This can be accomplished using a torque wrench to equalize the load on the set screw of each hinge. The closer the torque value between each set screw, the closer the load distribution between hinges. In order to perform this task on very heavy doors, it may be necessary to temporarily lift some of the weight off the hinges.
- 8. Maximum (+) adjustment is 1/8" over nominal.

During installation, we recommend pre-loading the hinges to remove any clearances that may develop from a tolerance "stack-up".

This section should assist the designer in choosing the correct hinge for the application.

How To Determine Applied Loads:

Nomenclature:

F = Thrust load or maximum door weight

 P_{1A} = In plane radial load caused by moment arm of the door width

 $\sum P_{1B}$ = Sum of any other in plane radial loads (such as those caused by a seismic event)

 P_{2A} = Out of plane radial load caused by moment arm of very thick doors

 $\sum P_{2B}$ = Sum of any other out of plane radial loads (such as those caused by wind, seismic or blast)

Ptot = Resultant radial load

Formulae:

$$P_{IA} = Fx/y$$

$$P_{2A} = Fz/y$$

$$P_{tot} = \sqrt{(P_{1A} + \sum P_{1B})^2 + (P_{2A} + \sum P_{2B})^2}$$

(general equation for resultant radial load applied to a single hinge)

Application:

A heavy duty industrial door weighs 2,300 lbs, is 22' high, 10' wide and is subjected to a 20 lb/ft2 wind load.

$$x = 5'$$

 $y = 20'$
 $z = 3.063''$

Step 1:

Calculate Ptot and choose a hinge with a radial capacity greater than or equal to Ptot.

$$P_{1A} = (2,300 \text{ lbs})(5') / 20' = 575 \text{ lbs}$$

 $P_{2B} = 1,100 \text{ lbs}$
 $P_{2A} = (2,300 \text{ lbs})(3.063'' / 12) / 20' = 29 \text{ lbs}$
 $P_{2b} = 1,100 \text{ lbs}$
(one hinge's share of the wind load)

$$P_{tot} = \sqrt{(575 + 0)^2 + (29 + 1,100)^2} = 1,270 \text{ lbs}$$

Choose a W100HD since the radial capacity of a W100HD (1,630 lbs) is greater than 1,270 lbs.

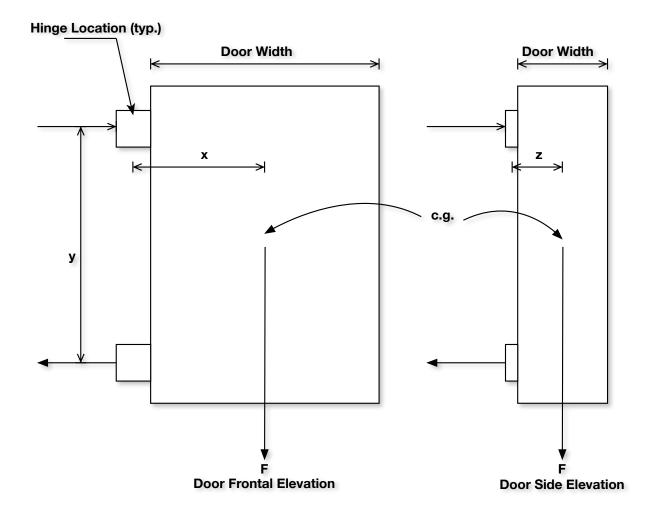


Fig. 1

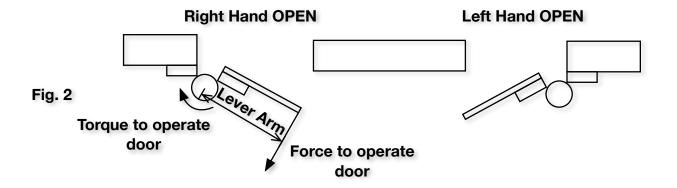
Step 2:

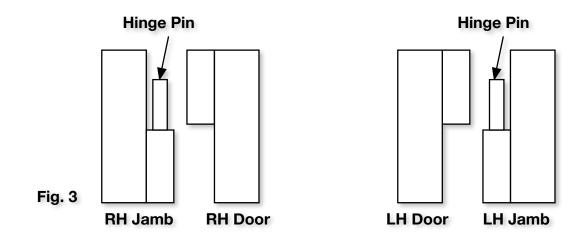
Check applied thrust load or door weight and choose a thrust capacity equal to or greater than the applied load.

Thrust capacity of W100 is 4,000 lbs.

Since 4,000 lbs is greater than 2,300 lbs, (2) W100HD hinges are acceptable for this application.

How to Determine Hand of Hinge:





How to Determine Door Operating Force:

Door Operating Force = Torque to Operate Door in (lb-inch) / Lever Arm in (inches)

Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # Modified HD, Series W Modified

Modified with custom leaf



Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # Double Pivot, Series W Modified

Stainless Steel Double Pivot



Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # Short Leaf (Prime Finish), Series W Modified

Series W with one short / cut leaf



Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # Half Mortise (Prime Finish), Series W Modified

Half-Mortise Series-W



Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

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Item # Satin Chrome Finish, Series W Modified

Series-W with Satin Chrome Finish



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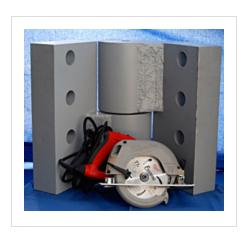
Thomaston, CT 06787

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Email: info@bfimfg.com

Item # W-400-HD, Series W Modified

For Thurst loads up to 75,000 lbs.



Brookfield Industries, Inc.

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Phone: 860-283-6211 • Fax: 860-283-6123

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Item # Double-Pivot Hinge

Caution! In order to assure that the door pivots about the vertical axis only, it may be necessary for the door manufacturer to attach a stiffener between the top and bottom door leaves if any door "sag" occurs. The stiffener shall be of adequate strength and rigidity for that particular application.





Specifications	-
Application	RF - EMI gaskets, RF - MI knife edges

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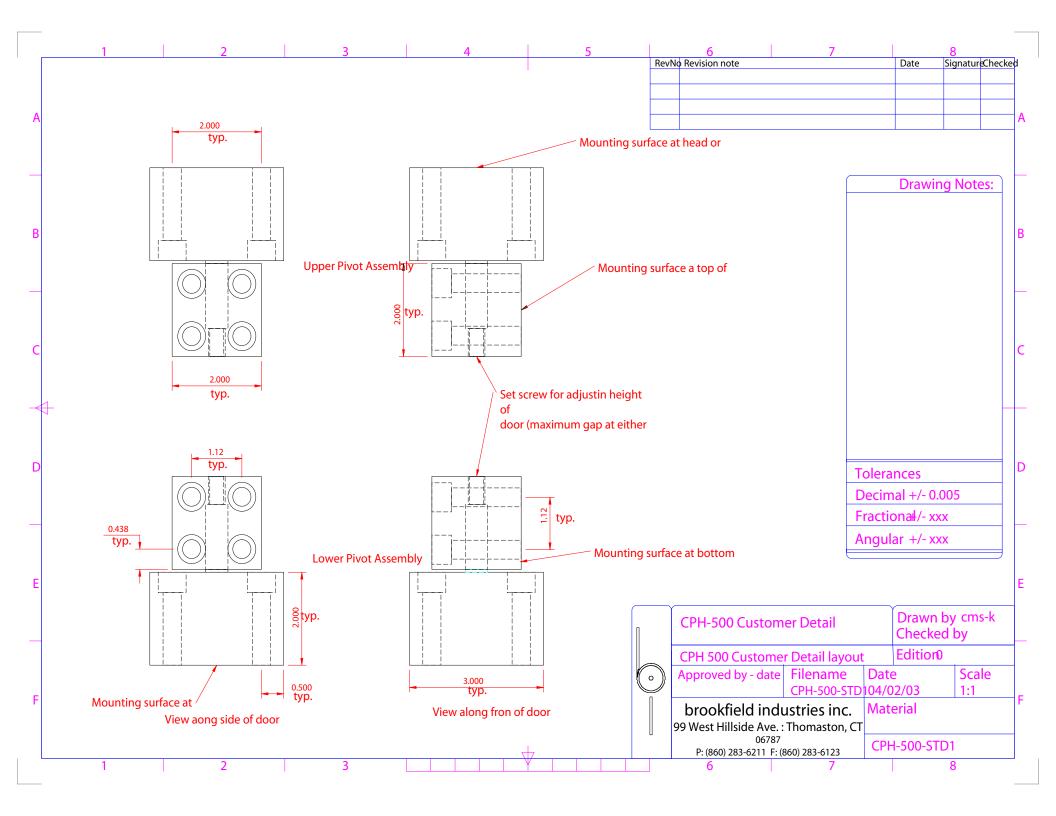
Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # CPH-500, Series CPH Heavy Duty Upper & Lower Center Pivot



Specifications -	
Finish	Prime Painted (Standard) Zinc Plated
Material	1018 CRS (Standard) 304 SST
Horizontal Capacity	400 lbs.
Vertical Capacity	1000 lbs.
Pivot Weight	8 lbs.
Fastener Diameter (GR5)	3/8 in.



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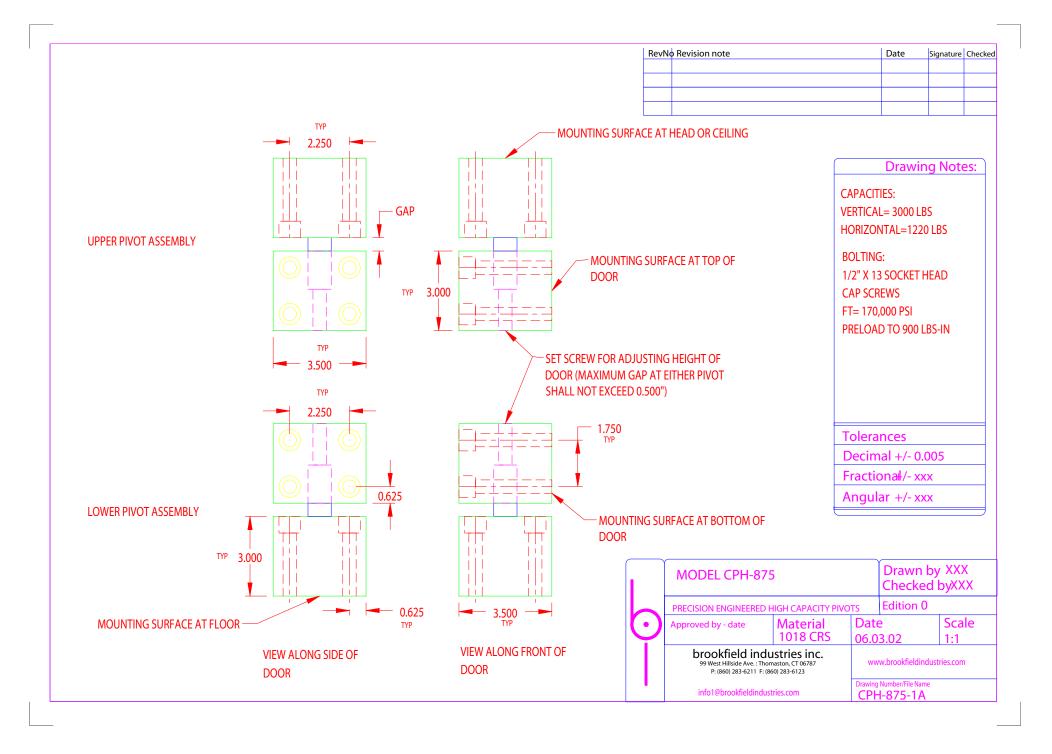
Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # CPH-875, Series CPH Heavy Duty Upper & Lower Center Pivot



Specifications -	
Finish	Prime Painted (Standard) Zinc Plated
Material	1018 CRS (Standard) 304 SST
Horizontal Capacity	1220 lbs.
Vertical Capacity	3000 lbs.
Pivot Weight	21 lbs.
Fastener Diameter (GR5)	1/2 in.



Brookfield Industries, Inc.

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Email: info@bfimfg.com

Item # CPH-100, Series CPH Heavy Duty Upper & Lower Center Pivot



Specifications -	
Finish	Prime Painted (Standard) Zinc Plated
Material	1018 CRS (Standard) 304 SST
Horizontal Capacity	1630 lbs.
Vertical Capacity	4000 lbs.
Pivot Weight	36 lbs.
Fastener Diameter (GR5)	1/2 in.

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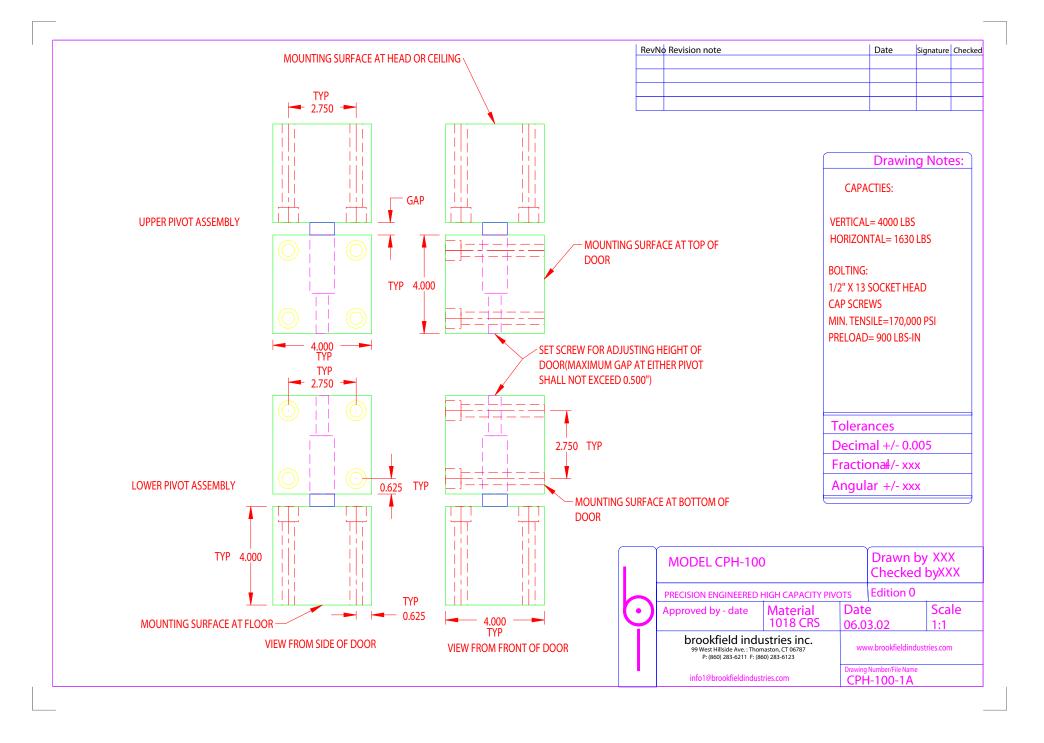
Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # CPH-125, Series CPH Heavy Duty Upper & Lower Center Pivot



Specifications	
Finish	Prime Painted (Standard) Zinc Plated
Material	1018 CRS (Standard) 304 SST
Horizontal Capacity	3300 lbs.
Vertical Capacity	8000 lbs.
Pivot Weight	36 lbs.
Fastener Diameter (GR5)	3/4 in.



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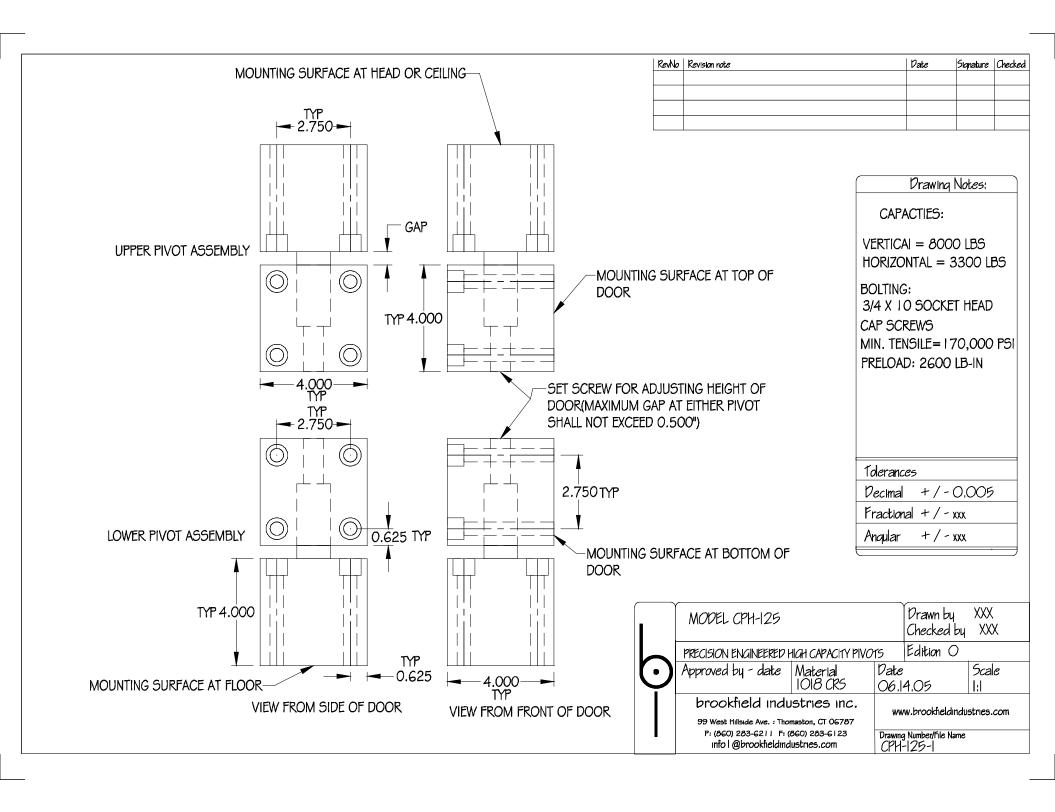
Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # CPH-125, Series CPH Heavy Duty Upper & Lower Center Pivot



Specifications	
Finish	Prime Painted (Standard) Zinc Plated
Material	1018 CRS (Standard) 304 SST
Horizontal Capacity	3300 lbs.
Vertical Capacity	8000 lbs.
Pivot Weight	36 lbs.
Fastener Diameter (GR5)	3/4 in.



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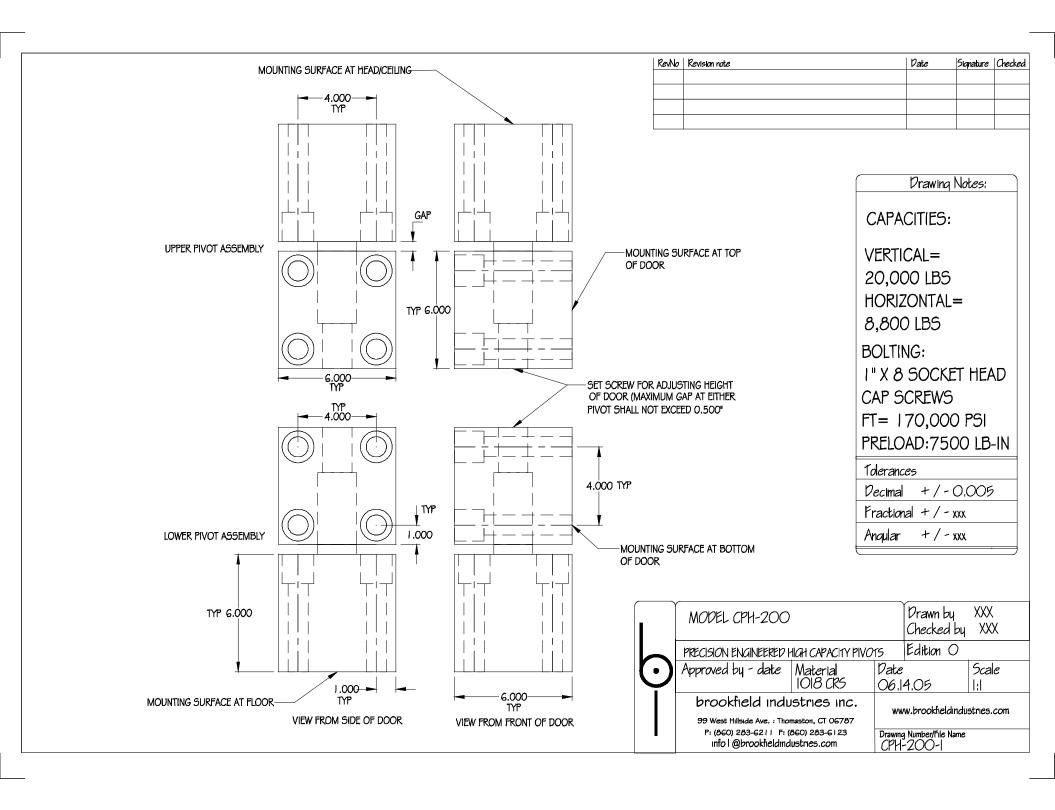
Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # CPH-200, Series CPH Heavy Duty Upper & Lower Center Pivot



Specifications -	
Finish	Prime Painted (Standard) Zinc Plated
Material	1018 CRS (Standard) 304 SST
Horizontal Capacity	8800 lbs.
Vertical Capacity	20000 lbs.
Pivot Weight	125 lbs.
Fastener Diameter (GR5)	1 in.



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Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Item # Series K, Standard Series-K Surface Mounted Adjustable Hinges

SURFACE MOUNTED ADJUSTABLE HINGES LEFT OR RIGHT HAND Designed with the same internal features and capacities as the SERIES W, the SERIES K provide special hinge pin offsets which allow the door's cover plate to overlap the door frame. This security feature is often employed in vault type doors. Can also be designed for swing clear applications. Concealing the mounting hardware after installation, can further enhance the contemporary appearance of the SERIES K. Please call for detail drawings.



Specifications	-
Application	Surface Mounted Adjustable Hinges

Brookfield Industries, Inc. 99 West Hillside Ave.

Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # Series K-400



Specifications -	
Application	Surface Mounted Adjustable Hinges

Brookfield Industries, Inc.

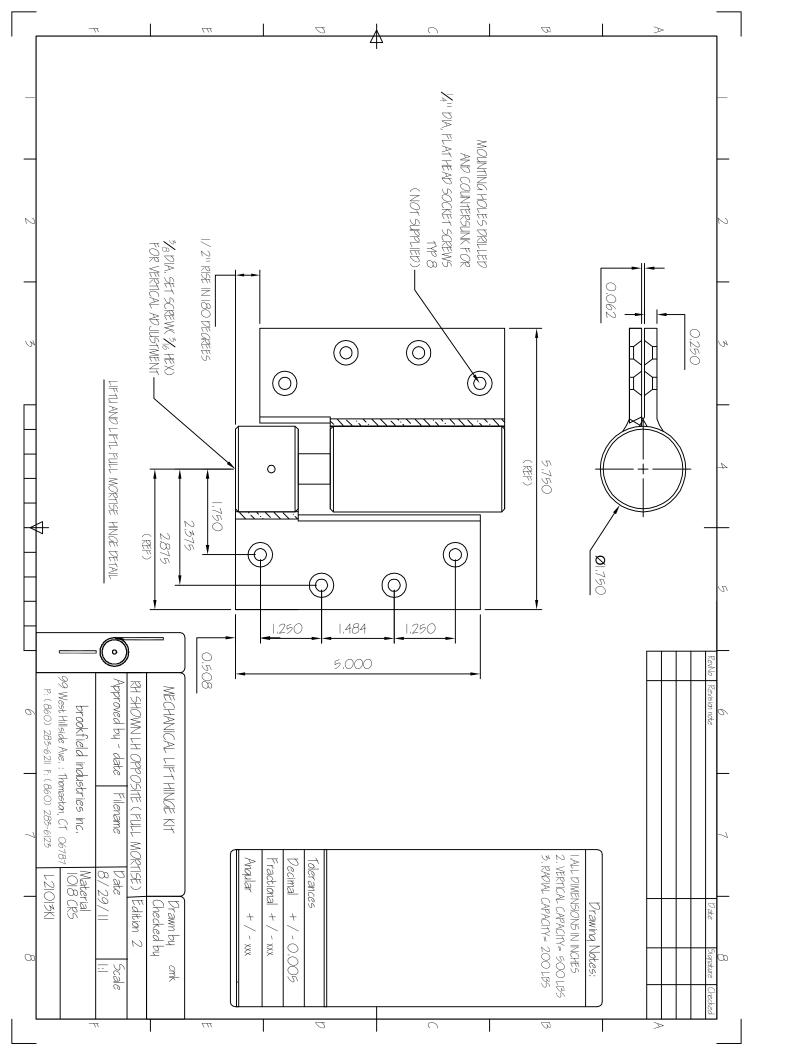
99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # LIFT-URHP/LIFT-LRHP, Series Lift Right Hand Kit

Specifications -	
Hinge Size	5 x 5.75 in.
Material	Cold Rolled Steel, Prime Painted (Standard)
Thrust Capacity (Door Weight)	500 lbs.
Radial Capacity	200 lbs.
Torque to raise door	.23 lbin./lb.
Kit Weight	10 lbs.



Description:

For use on personnel size acoustical doors that require enhanced sealing characteristics by compressing the seal against the frame and threshold. The Lifting action provides ½" rise in 180 degrees of door rotation via a unique high lead power screw and nut design that will take higher loads, wear less and operate easier than conventional cam-lift hinges. All wear surfaces are lubricated and sealed from the environment. Can also be used in self-closing applications where the minimum door weight is 150 lbs.

A full mortise (2) hinge kit comprised of: (1) LIFTU-(LH/RH)P hinge designed to support the full door weight and provides the lifting action; (1) LIFTL-(LH/RH)P radial support hinge. The (2) hinges shall be properly spaced to assure the radial load does not exceed the radial capacity. Refer to the Engineering Section on how to calculate radial load based on hinge spacing or contact the Engineering Department.

Specifications:

Hinge Size: 5.00" high x 5.75"(Ref.) wide

Vertical Capacity: 500 lbs
Radial Capacities: 200 lbs
Vertical adjustment: (+/-) 1/8"
Approximate torque to move door: 0.23 lb-in/lb

Bolted connection: 1/4" diameter flat head socket screw (not supplied),

Fu= 150,000 min

ANSI 156.7 standard pattern

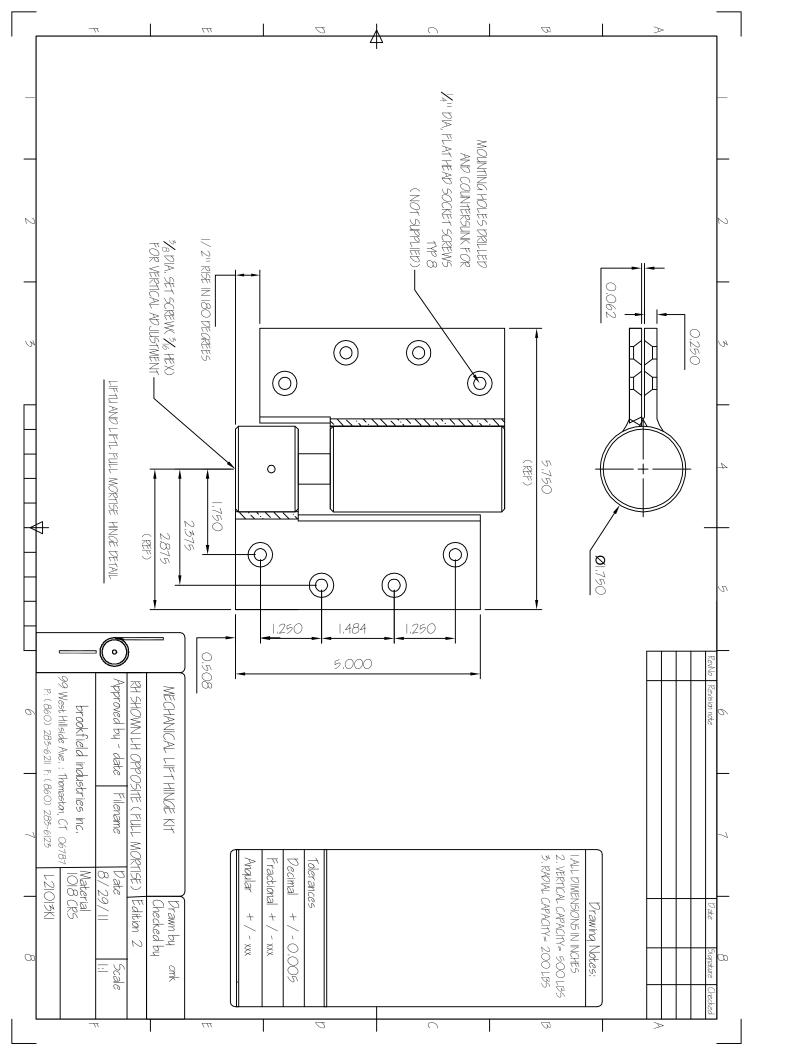
Base Material: 1018 Cold rolled steel, options: 304 SST, 316 SST

Finish: USP(primed), options: zinc clear, US32D

Drawing: L21013K1







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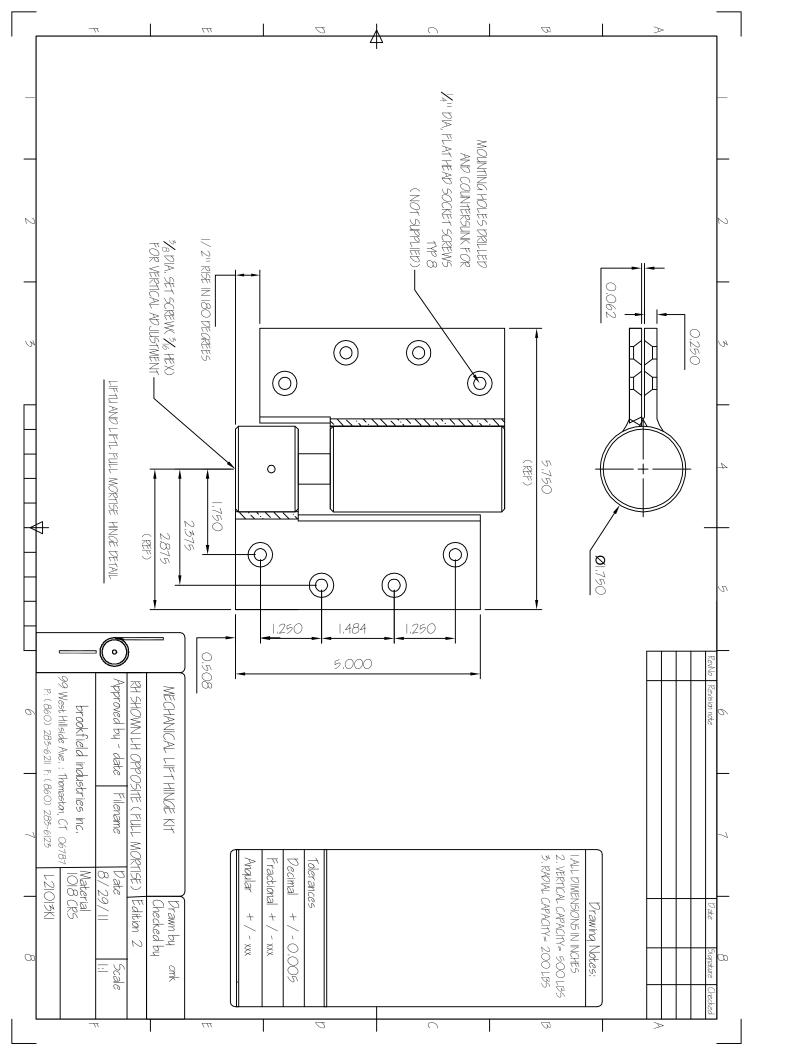
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Email: info@bfimfg.com

Item # LIFT-ULHP/LIFT-LLHP, Series Lift Left Hand Kit

Specifications –	
Hinge Size	5 x 5.75 in.
Material	Cold Rolled Steel, Prime Painted (Standard)
Thrust Capacity (Door Weight)	500 lbs.
Radial Capacity	200 lbs.
Torque to raise door	.23 lbin./lb.
Kit Weight	10 lbs.



Description:

For use on personnel size acoustical doors that require enhanced sealing characteristics by compressing the seal against the frame and threshold. The Lifting action provides ½" rise in 180 degrees of door rotation via a unique high lead power screw and nut design that will take higher loads, wear less and operate easier than conventional cam-lift hinges. All wear surfaces are lubricated and sealed from the environment. Can also be used in self-closing applications where the minimum door weight is 150 lbs.

A full mortise (2) hinge kit comprised of: (1) LIFTU-(LH/RH)P hinge designed to support the full door weight and provides the lifting action; (1) LIFTL-(LH/RH)P radial support hinge. The (2) hinges shall be properly spaced to assure the radial load does not exceed the radial capacity. Refer to the Engineering Section on how to calculate radial load based on hinge spacing or contact the Engineering Department.

Specifications:

Hinge Size: 5.00" high x 5.75"(Ref.) wide

Vertical Capacity: 500 lbs
Radial Capacities: 200 lbs
Vertical adjustment: (+/-) 1/8"
Approximate torque to move door: 0.23 lb-in/lb

Bolted connection: 1/4" diameter flat head socket screw (not supplied),

Fu= 150,000 min

ANSI 156.7 standard pattern

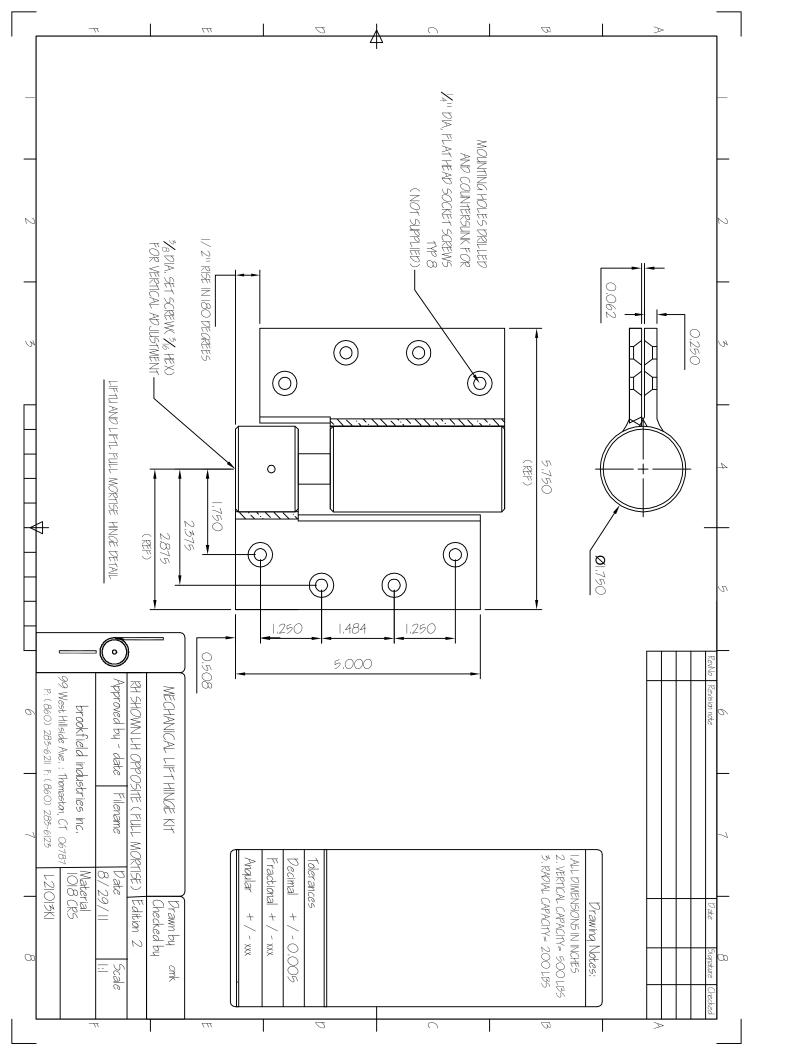
Base Material: 1018 Cold rolled steel, options: 304 SST, 316 SST

Finish: USP(primed), options: zinc clear, US32D

Drawing: L21013K1







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Item # LIFTU MOD-5133, Lift High Capacity Surface Mount

Specifications -	
Hinge Size	5 x 6.53 in.
Material	Cold Rolled Steel, Prime Painted (Standard)
Thrust Capacity (Door Weight)	3000 lbs.
Torque to raise door	.23 lbin./lb.

Description:

For use on large acoustical doors that require enhanced sealing characteristics by compressing the seal against the frame and threshold. The Lifting action provides ½" rise in 180 degrees of door rotation via a unique high lead power screw and nut design that will take higher loads, wear less and operate easier than conventional cam-lift hinges. All wear surfaces are lubricated and sealed from the environment. Can also be used in self-closing applications where the minimum door weight is 150 lbs.

A (3)* hinge kit comprised of: (1) LIFTU hinge located at the center of the door that supports the weight and provides the lifting action; (2) Series W radial support hinges, properly spaced take the radial load. Refer to the Engineering Section on how to calculate radial load based on hinge spacing or contact the Engineering Department.

Specifications:

Hinge Size: 5.00" high x 6.53"(Ref.) Full Surface 5.00" high x 6.75"(Ref.) Full Mortise

Vertical Capacity: 2000 lbs

Radial Capacities: 400 lbs, 1200 lbs

Vertical adjustment: (+/-) 1/8"
Approximate torque to move door: 0.23 lb-in/lb

Bolted connection: ½" diameter hex head(not supplied), Fu= 120,000 min;

preload = 625 lb-in

Welded connection: ½" fillet weld, (3) sides each leaf, 225° F weld interpass

temperature at barrel

Base Material: 1018 Cold rolled steel, options: 304 SST, 316 SST

Finish: USP (primed), options: zinc clear, US32D

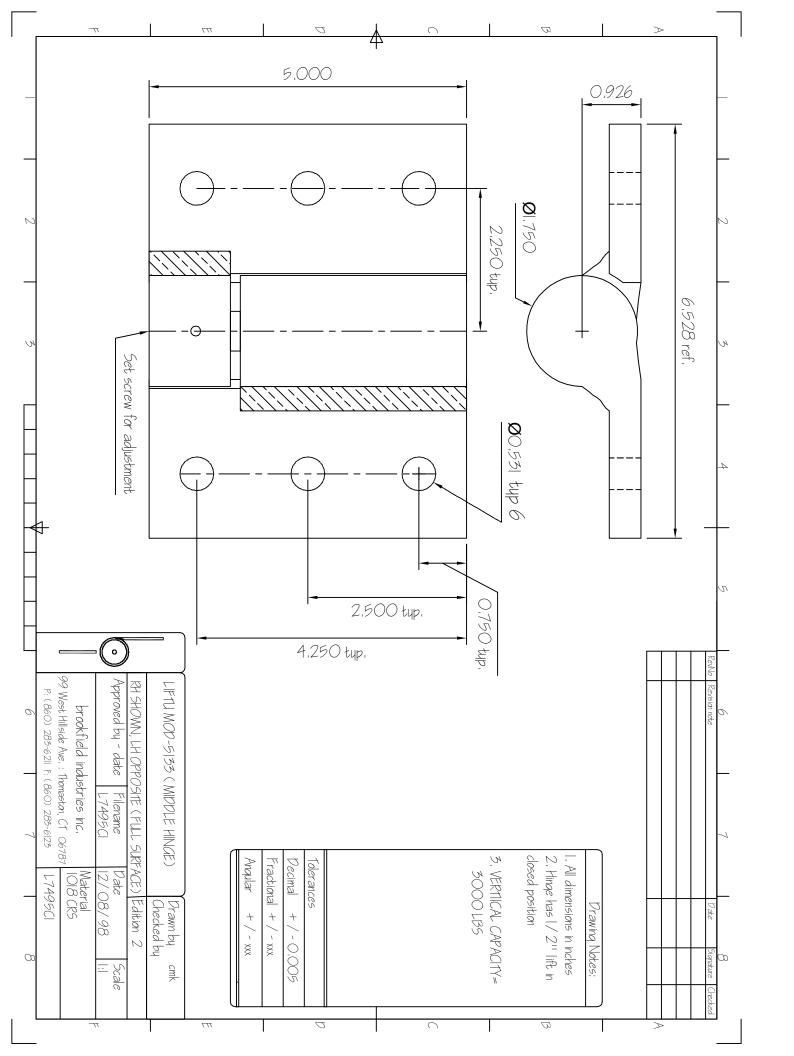
*a (2) hinge kit consisting of (1) LIFTU and (1) Series W radial support hinge can be used as long as the applied radial load is less than or equal to 200 lbs.

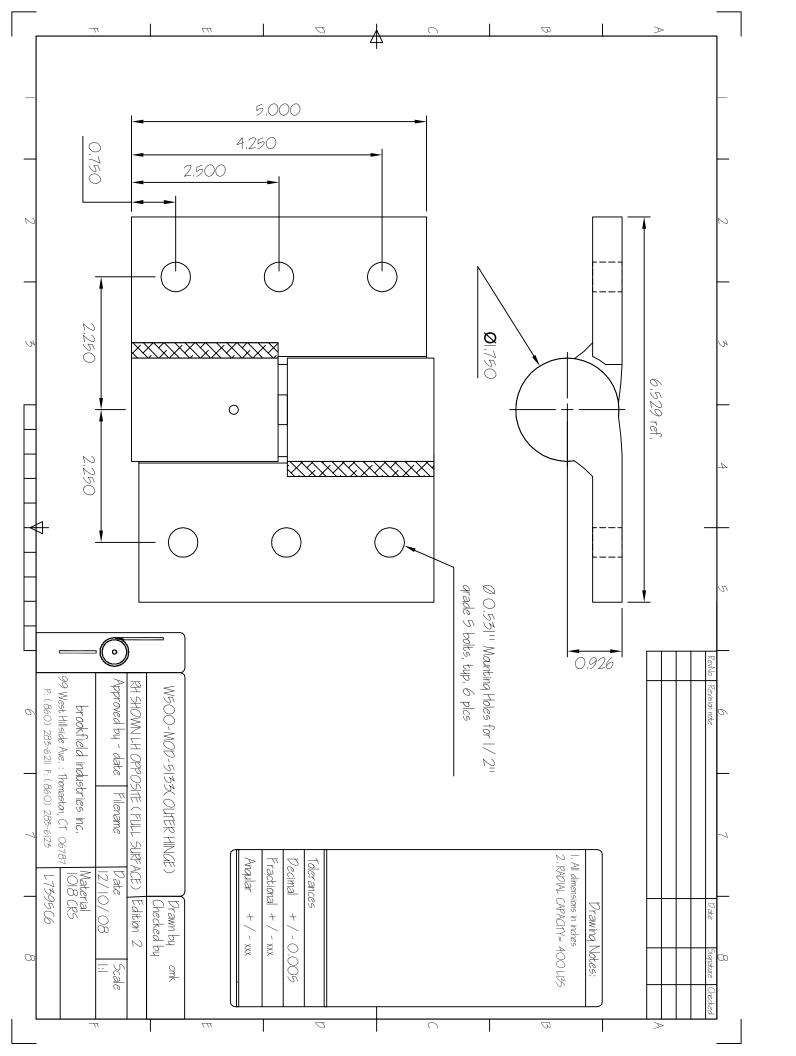


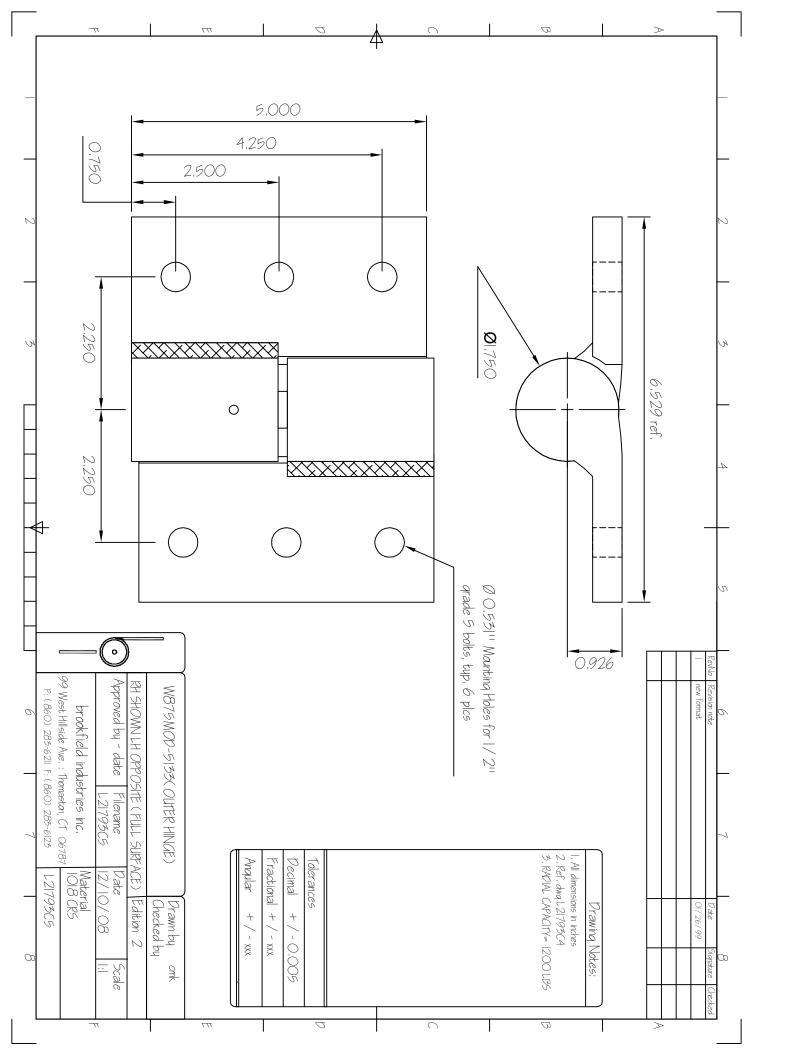
- (1) LIFTU MOD-5133 Installed at the center of door (3000 lb maximum weight) (drawing L7495C1)
- (2) W500-MOD-5133 properly spaced for 400 lb maximum radial load (drawing L7395C6)
- (2) W875-MOD-5133 properly spaced for 1200 lb maximum radial load (drawing L21793C5)

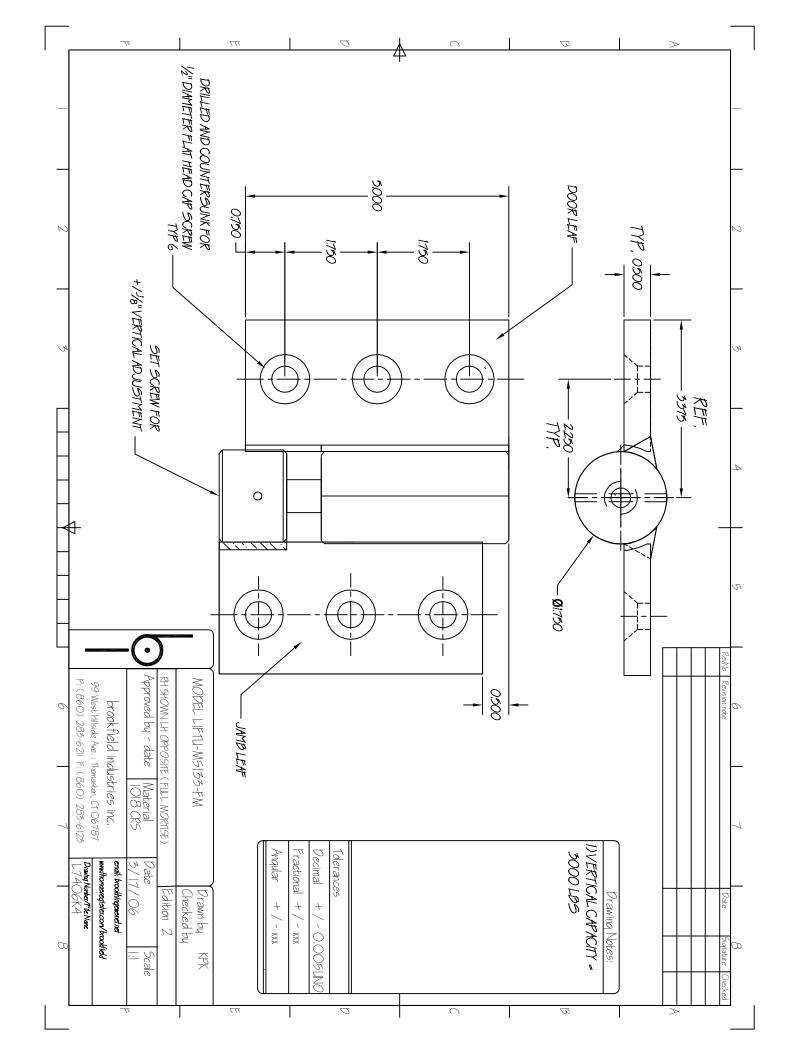


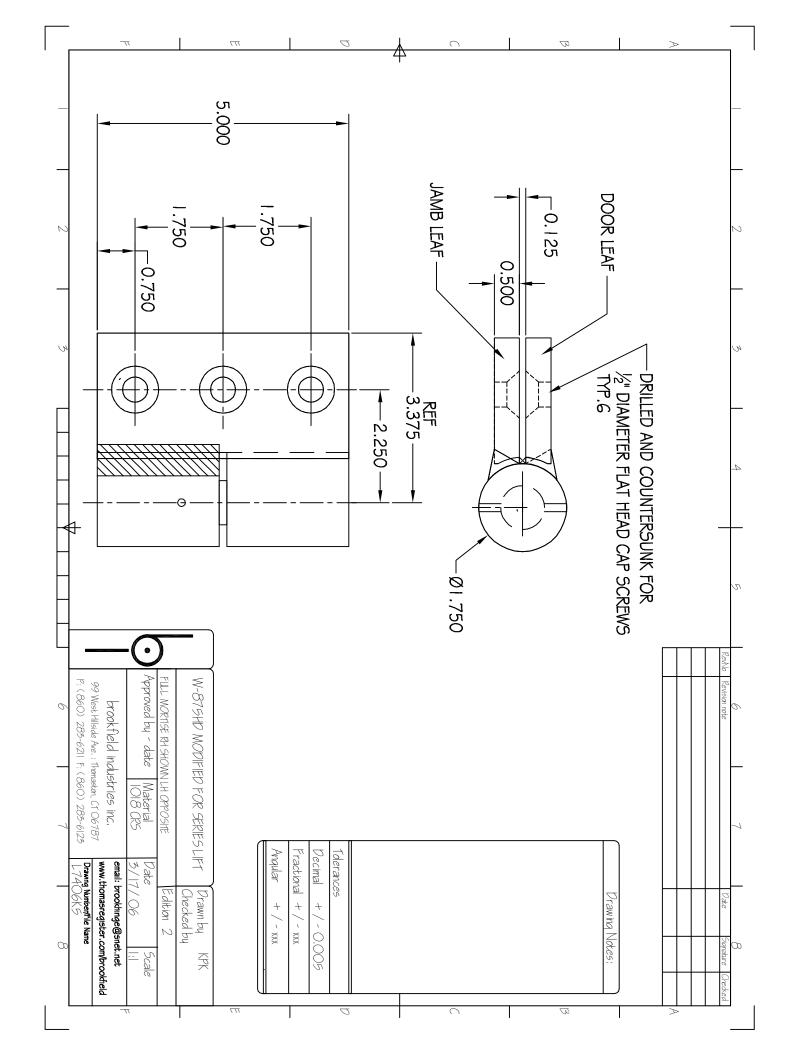
- (1) LIFTU M-5133-FM Installed at the center of door (3000 lb maximum weight) (drawing L7406K4) (2) W875-MOD-5133-FM properly spaced for 1200 lb maximum radial load (drawing L7406K5)

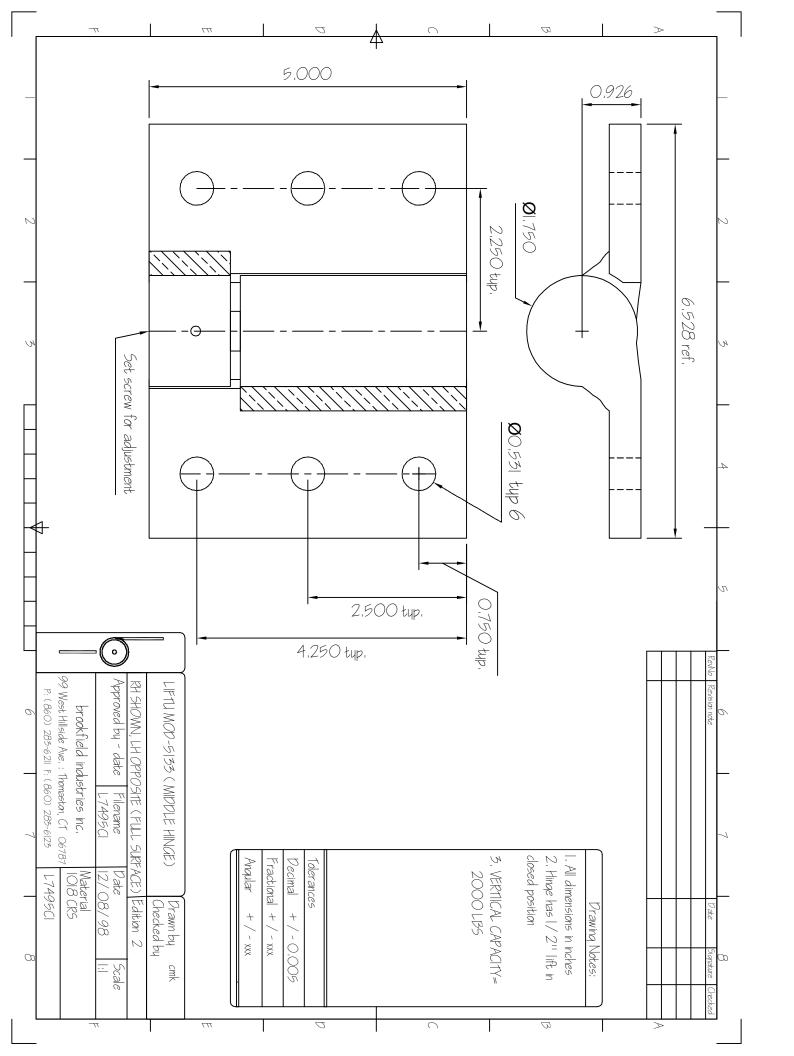












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Email: info@bfimfg.com

Item # W500-MOD-5133, High Capacity Surface Mount Radial Support

Specifications -		
Hinge Size	5 x 6.53 in.	
Material	Cold Rolled Steel, Prime Painted (Standard)	
Radial Capacity	400 lbs.	
Torque to raise door	.23 lbin./lb.	

Description:

For use on large acoustical doors that require enhanced sealing characteristics by compressing the seal against the frame and threshold. The Lifting action provides ½" rise in 180 degrees of door rotation via a unique high lead power screw and nut design that will take higher loads, wear less and operate easier than conventional cam-lift hinges. All wear surfaces are lubricated and sealed from the environment. Can also be used in self-closing applications where the minimum door weight is 150 lbs.

A (3)* hinge kit comprised of: (1) LIFTU hinge located at the center of the door that supports the weight and provides the lifting action; (2) Series W radial support hinges, properly spaced take the radial load. Refer to the Engineering Section on how to calculate radial load based on hinge spacing or contact the Engineering Department.

Specifications:

Hinge Size: 5.00" high x 6.53"(Ref.) Full Surface 5.00" high x 6.75"(Ref.) Full Mortise

Vertical Capacity: 2000 lbs

Radial Capacities: 400 lbs, 1200 lbs

Vertical adjustment: (+/-) 1/8"
Approximate torque to move door: 0.23 lb-in/lb

Bolted connection: ½" diameter hex head(not supplied), Fu= 120,000 min;

preload = 625 lb-in

Welded connection: ½" fillet weld, (3) sides each leaf, 225° F weld interpass

temperature at barrel

Base Material: 1018 Cold rolled steel, options: 304 SST, 316 SST

Finish: USP (primed), options: zinc clear, US32D

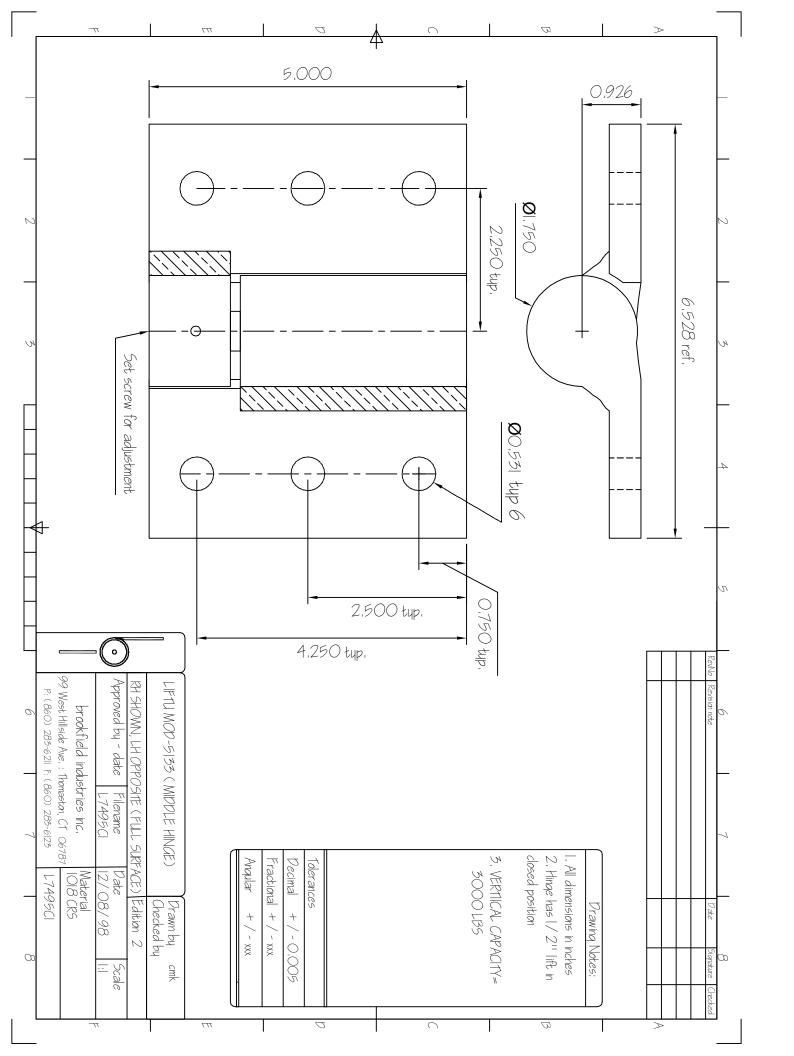
*a (2) hinge kit consisting of (1) LIFTU and (1) Series W radial support hinge can be used as long as the applied radial load is less than or equal to 200 lbs.

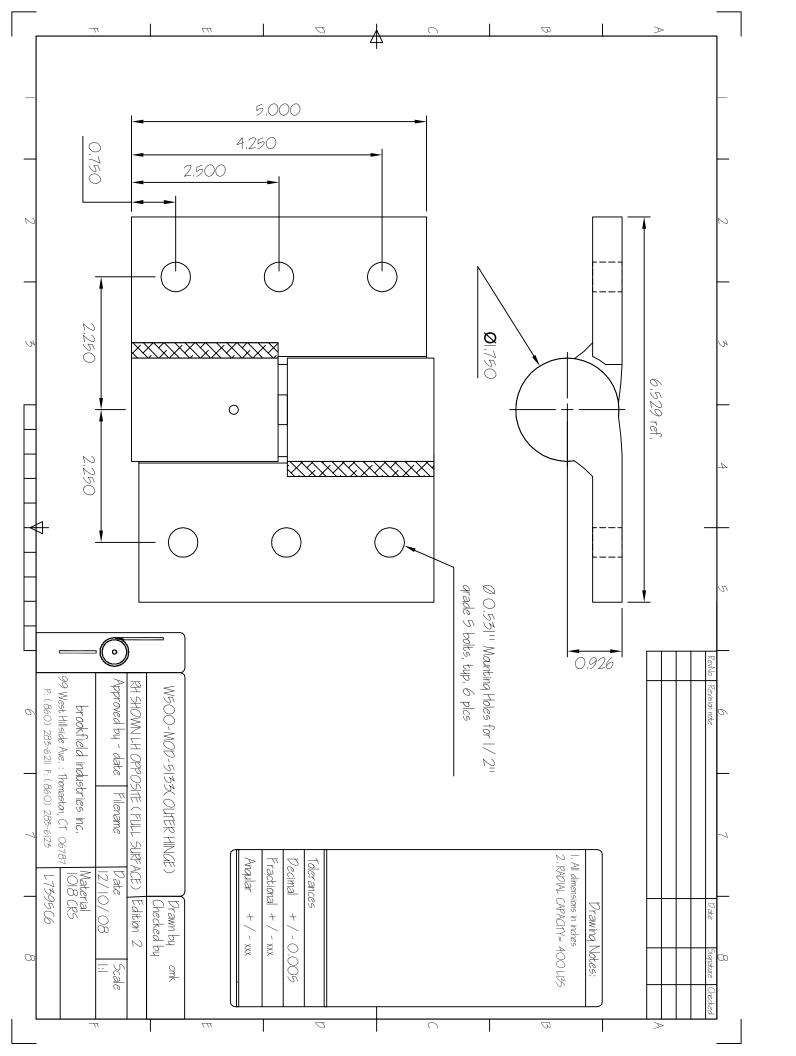


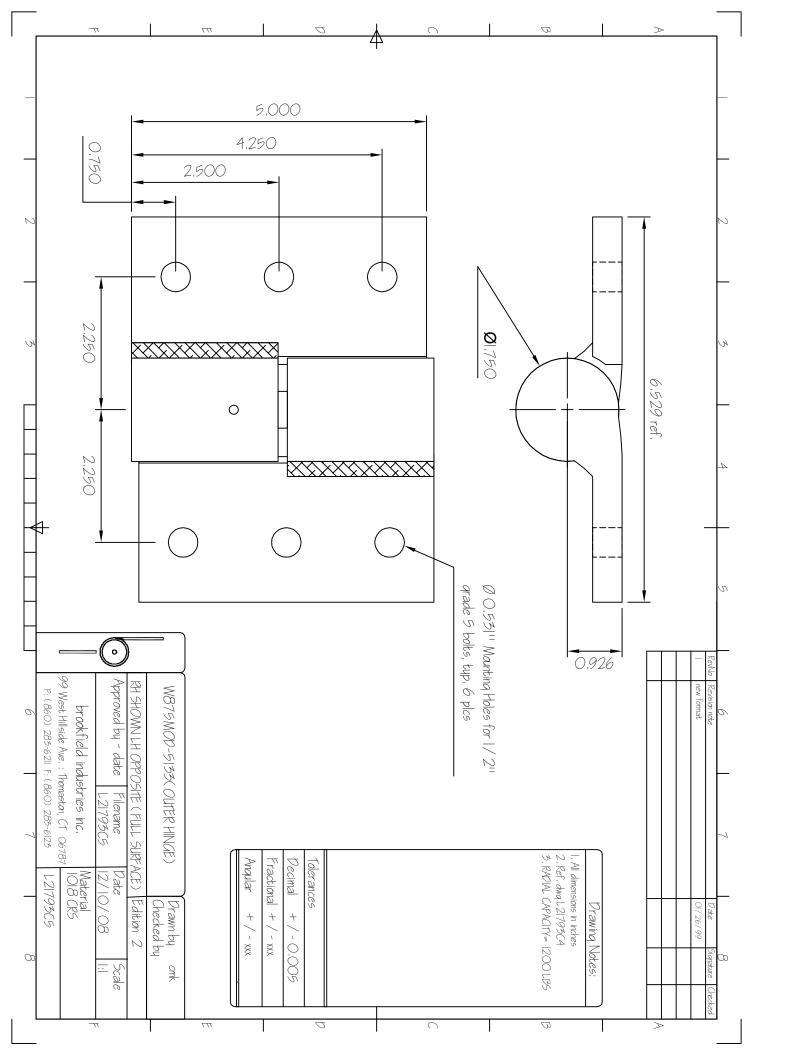
- (1) LIFTU MOD-5133 Installed at the center of door (3000 lb maximum weight) (drawing L7495C1)
- (2) W500-MOD-5133 properly spaced for 400 lb maximum radial load (drawing L7395C6)
- (2) W875-MOD-5133 properly spaced for 1200 lb maximum radial load (drawing L21793C5)

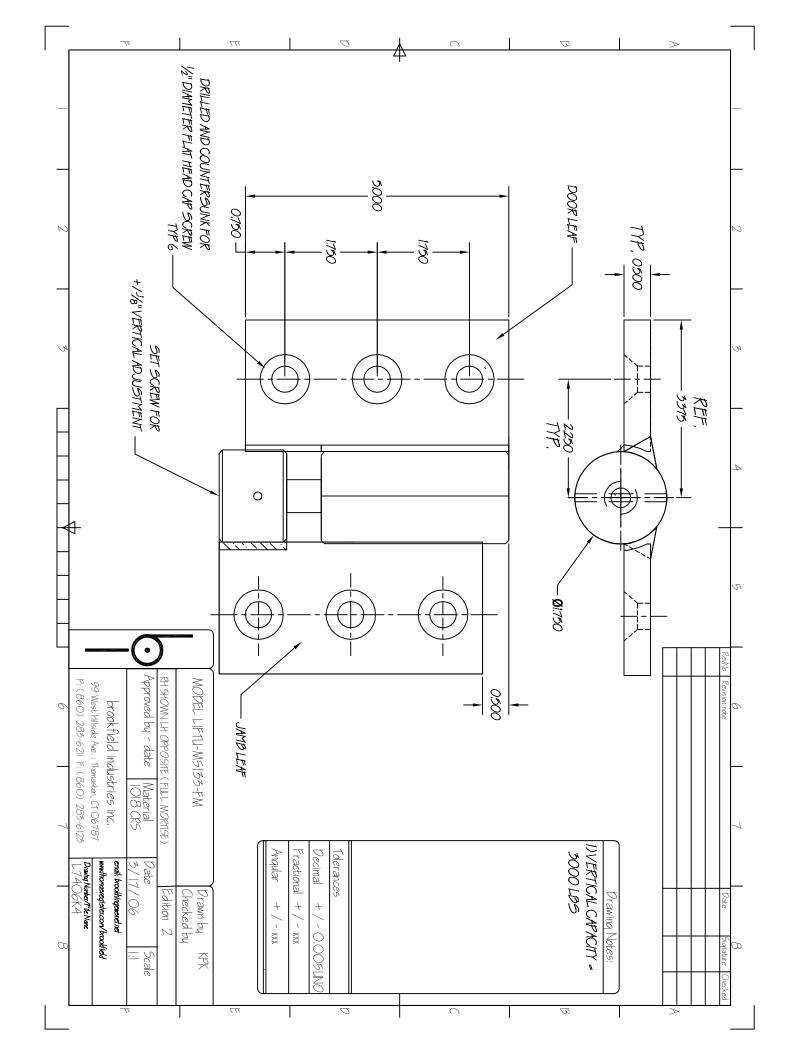


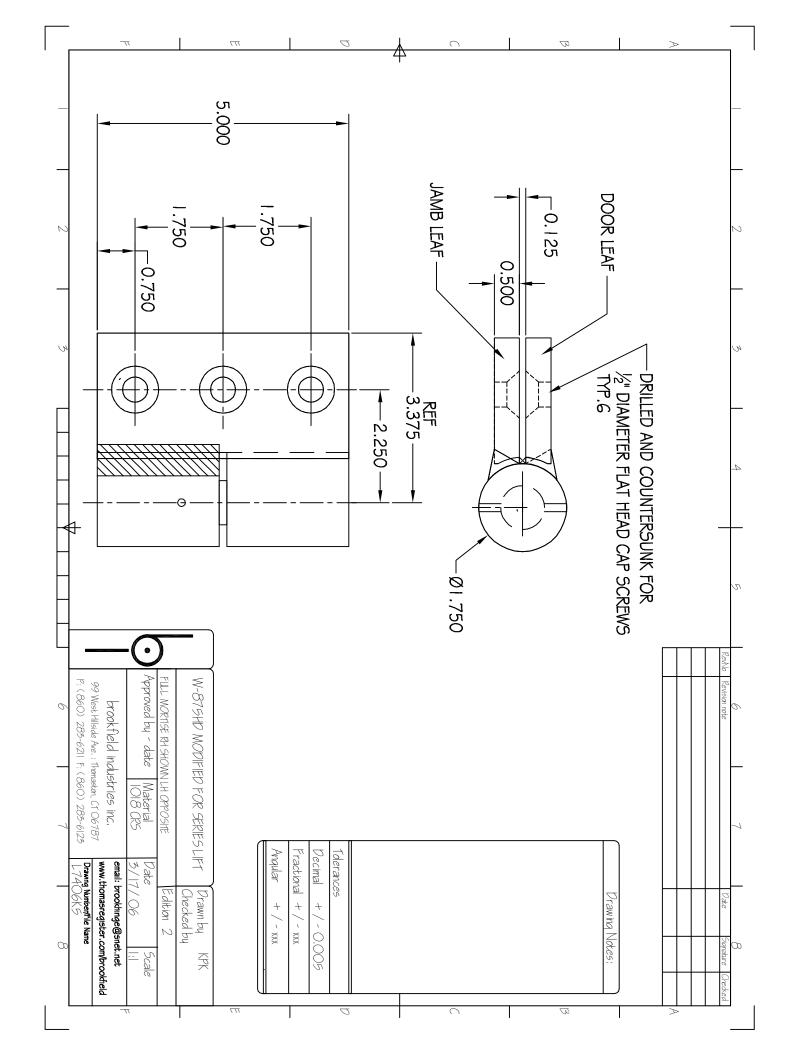
- (1) LIFTU M-5133-FM Installed at the center of door (3000 lb maximum weight) (drawing L7406K4) (2) W875-MOD-5133-FM properly spaced for 1200 lb maximum radial load (drawing L7406K5)

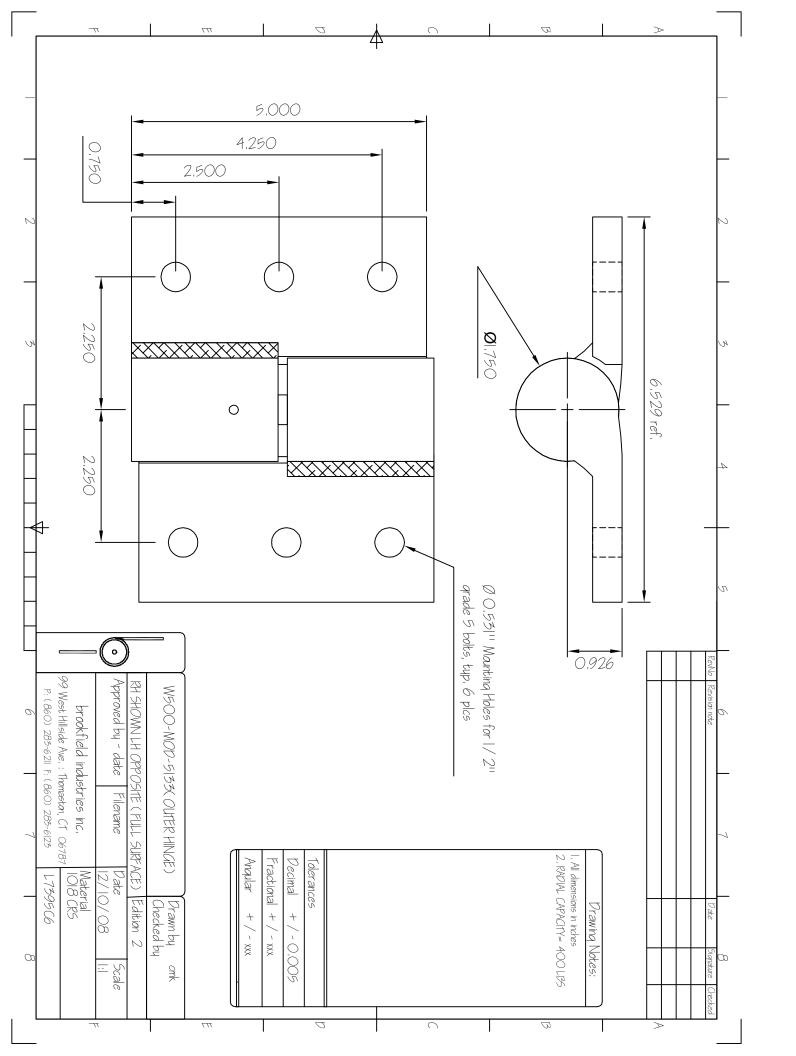












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99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # W875-MOD-5133, High Capacity Surface Mount Radial Support

Specifications -	
Hinge Size	5 x 6.53 in.
Material	Cold Rolled Steel, Prime Painted (Standard)
Radial Capacity	1200 lbs.
Torque to raise door	.23 lbin./lb.

Description:

For use on large acoustical doors that require enhanced sealing characteristics by compressing the seal against the frame and threshold. The Lifting action provides ½" rise in 180 degrees of door rotation via a unique high lead power screw and nut design that will take higher loads, wear less and operate easier than conventional cam-lift hinges. All wear surfaces are lubricated and sealed from the environment. Can also be used in self-closing applications where the minimum door weight is 150 lbs.

A (3)* hinge kit comprised of: (1) LIFTU hinge located at the center of the door that supports the weight and provides the lifting action; (2) Series W radial support hinges, properly spaced take the radial load. Refer to the Engineering Section on how to calculate radial load based on hinge spacing or contact the Engineering Department.

Specifications:

Hinge Size: 5.00" high x 6.53"(Ref.) Full Surface 5.00" high x 6.75"(Ref.) Full Mortise

Vertical Capacity: 2000 lbs

Radial Capacities: 400 lbs, 1200 lbs

Vertical adjustment: (+/-) 1/8"
Approximate torque to move door: 0.23 lb-in/lb

Bolted connection: ½" diameter hex head(not supplied), Fu= 120,000 min;

preload = 625 lb-in

Welded connection: ½" fillet weld, (3) sides each leaf, 225° F weld interpass

temperature at barrel

Base Material: 1018 Cold rolled steel, options: 304 SST, 316 SST

Finish: USP (primed), options: zinc clear, US32D

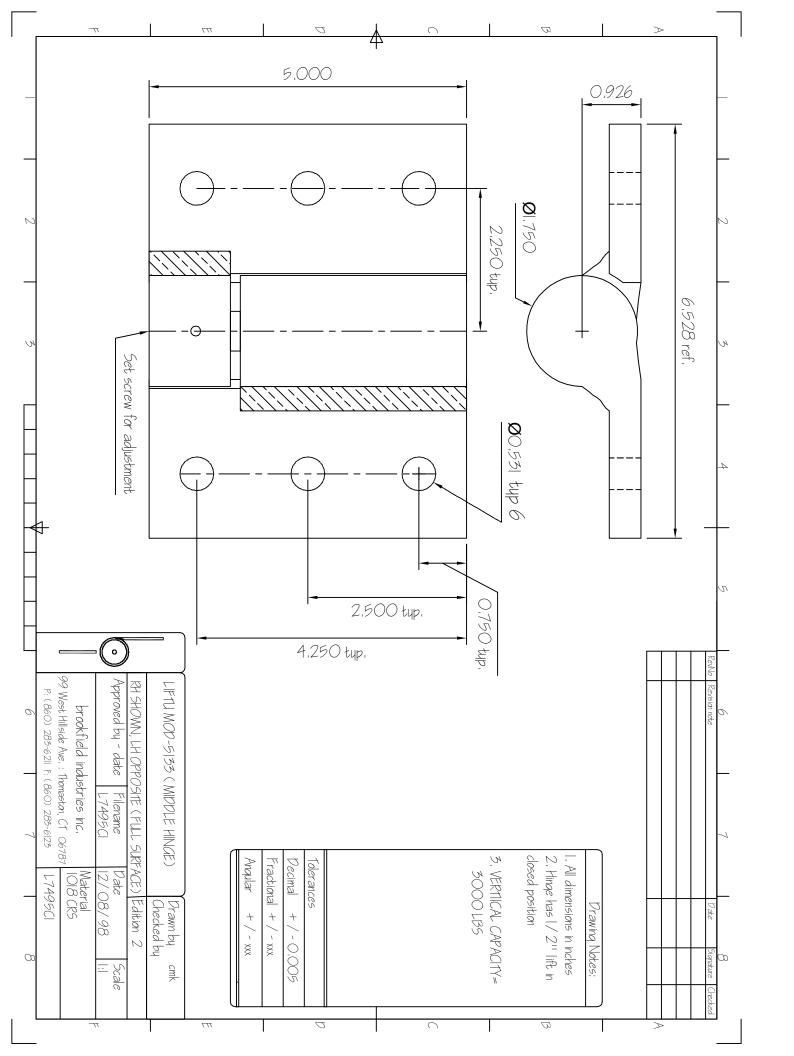
*a (2) hinge kit consisting of (1) LIFTU and (1) Series W radial support hinge can be used as long as the applied radial load is less than or equal to 200 lbs.

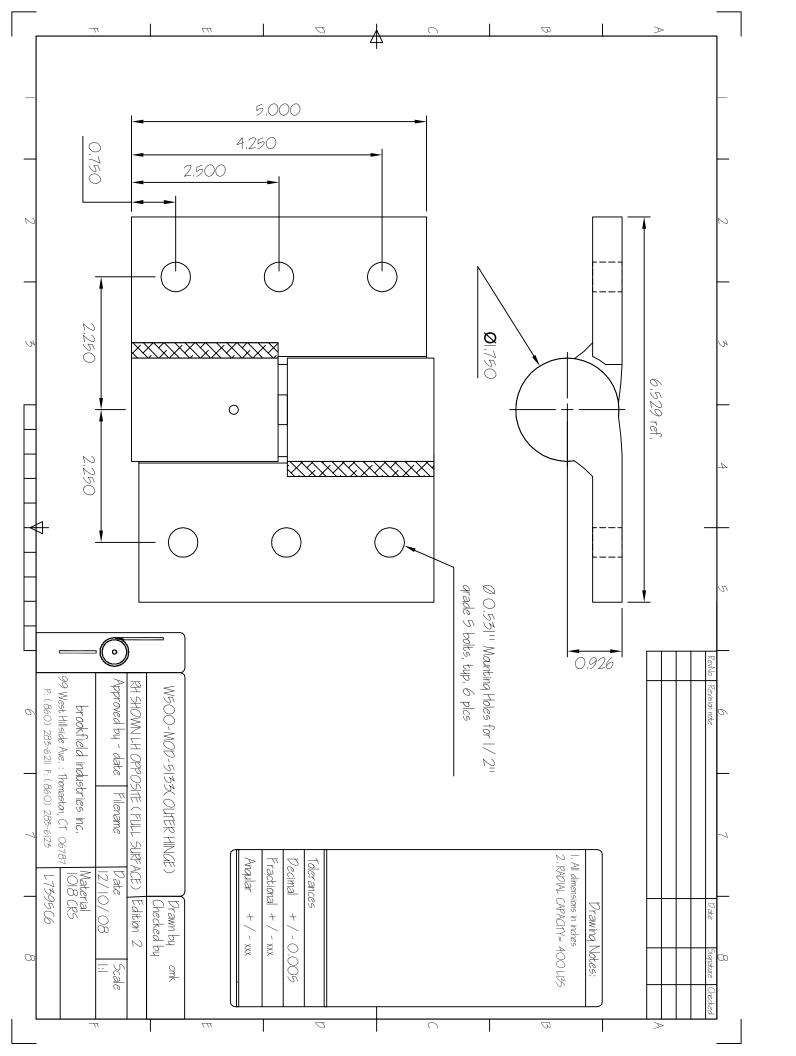


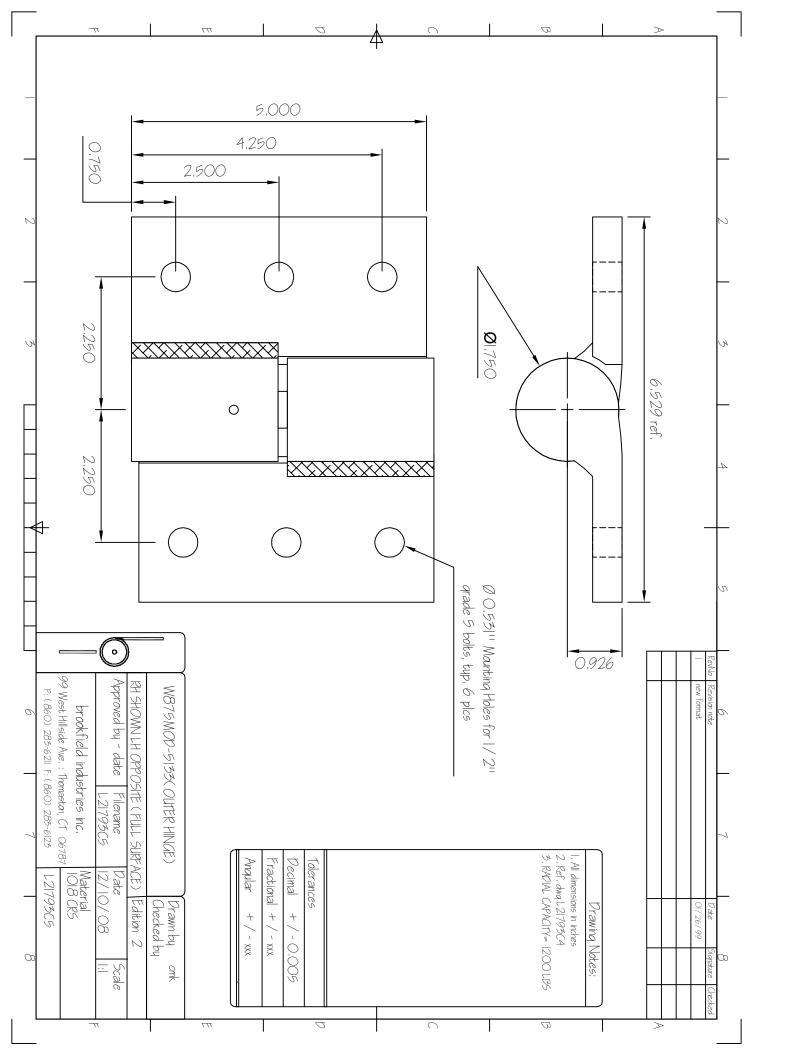
- (1) LIFTU MOD-5133 Installed at the center of door (3000 lb maximum weight) (drawing L7495C1)
- (2) W500-MOD-5133 properly spaced for 400 lb maximum radial load (drawing L7395C6)
- (2) W875-MOD-5133 properly spaced for 1200 lb maximum radial load (drawing L21793C5)

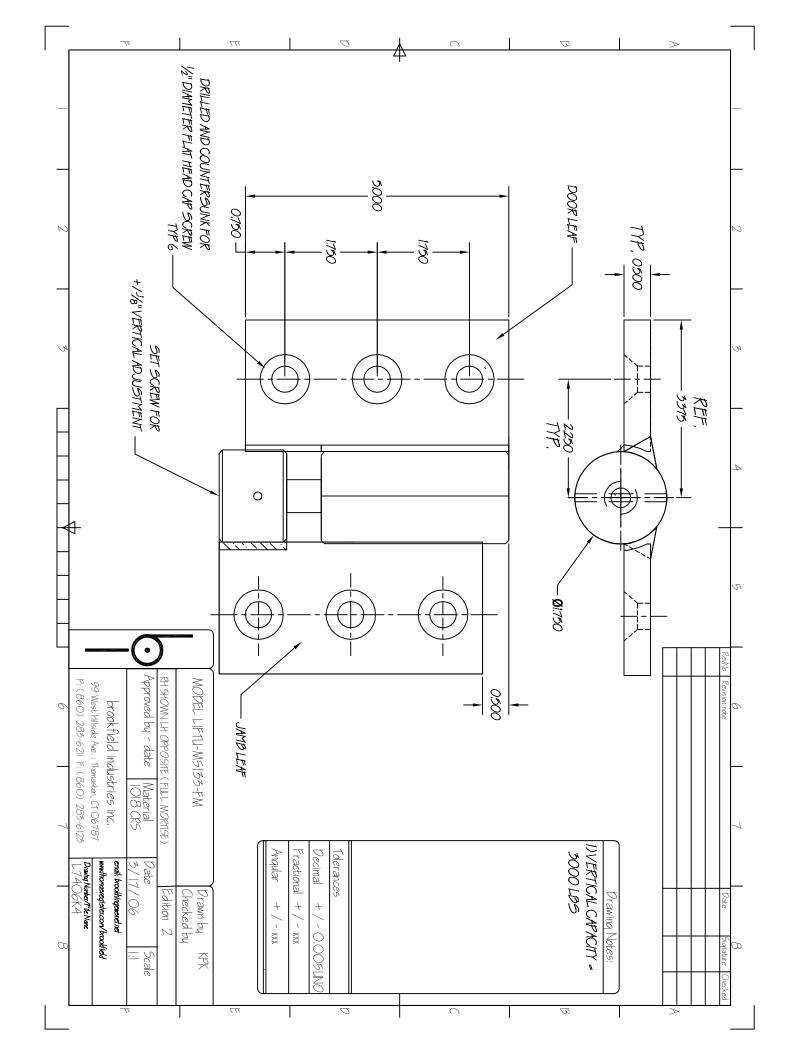


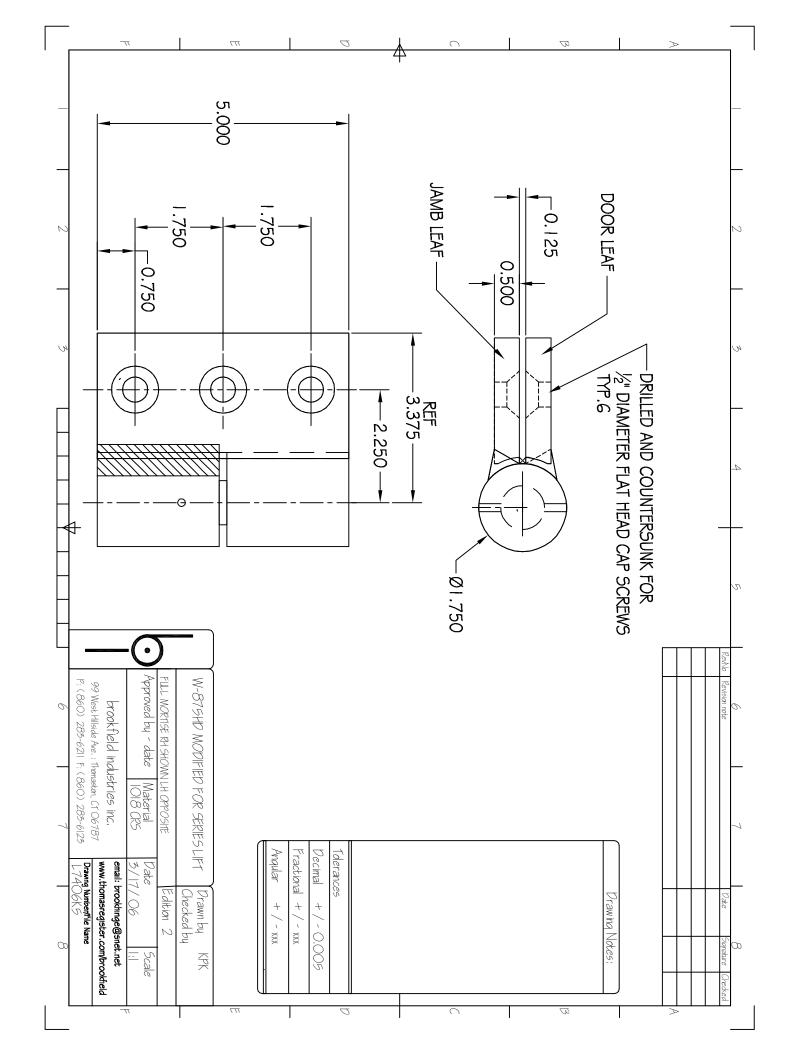
- (1) LIFTU M-5133-FM Installed at the center of door (3000 lb maximum weight) (drawing L7406K4) (2) W875-MOD-5133-FM properly spaced for 1200 lb maximum radial load (drawing L7406K5)

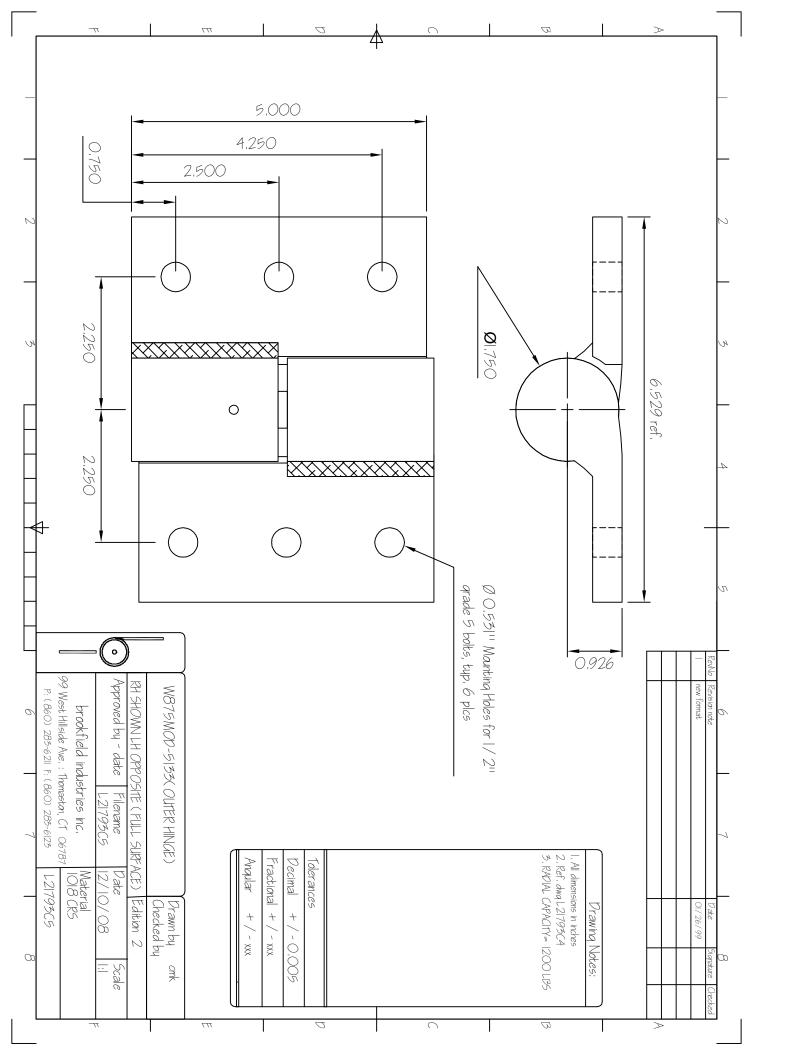












Brookfield Industries, Inc.

99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfg.com

Item # LIFTU M-5133-FM, Lift High Capacity Full Mortise Mount

Specifications -	
Hinge Size	5 x 6.75 in.
Material	Cold Rolled Steel, Prime Painted (Standard)
Thrust Capacity (Door Weight)	3000 lbs.
Torque to raise door	.23 lbin./lb.

Description:

For use on large acoustical doors that require enhanced sealing characteristics by compressing the seal against the frame and threshold. The Lifting action provides ½" rise in 180 degrees of door rotation via a unique high lead power screw and nut design that will take higher loads, wear less and operate easier than conventional cam-lift hinges. All wear surfaces are lubricated and sealed from the environment. Can also be used in self-closing applications where the minimum door weight is 150 lbs.

A (3)* hinge kit comprised of: (1) LIFTU hinge located at the center of the door that supports the weight and provides the lifting action; (2) Series W radial support hinges, properly spaced take the radial load. Refer to the Engineering Section on how to calculate radial load based on hinge spacing or contact the Engineering Department.

Specifications:

Hinge Size: 5.00" high x 6.53"(Ref.) Full Surface 5.00" high x 6.75"(Ref.) Full Mortise

Vertical Capacity: 2000 lbs

Radial Capacities: 400 lbs, 1200 lbs

Vertical adjustment: (+/-) 1/8"
Approximate torque to move door: 0.23 lb-in/lb

Bolted connection: ½" diameter hex head(not supplied), Fu= 120,000 min;

preload = 625 lb-in

Welded connection: ½" fillet weld, (3) sides each leaf, 225° F weld interpass

temperature at barrel

Base Material: 1018 Cold rolled steel, options: 304 SST, 316 SST

Finish: USP (primed), options: zinc clear, US32D

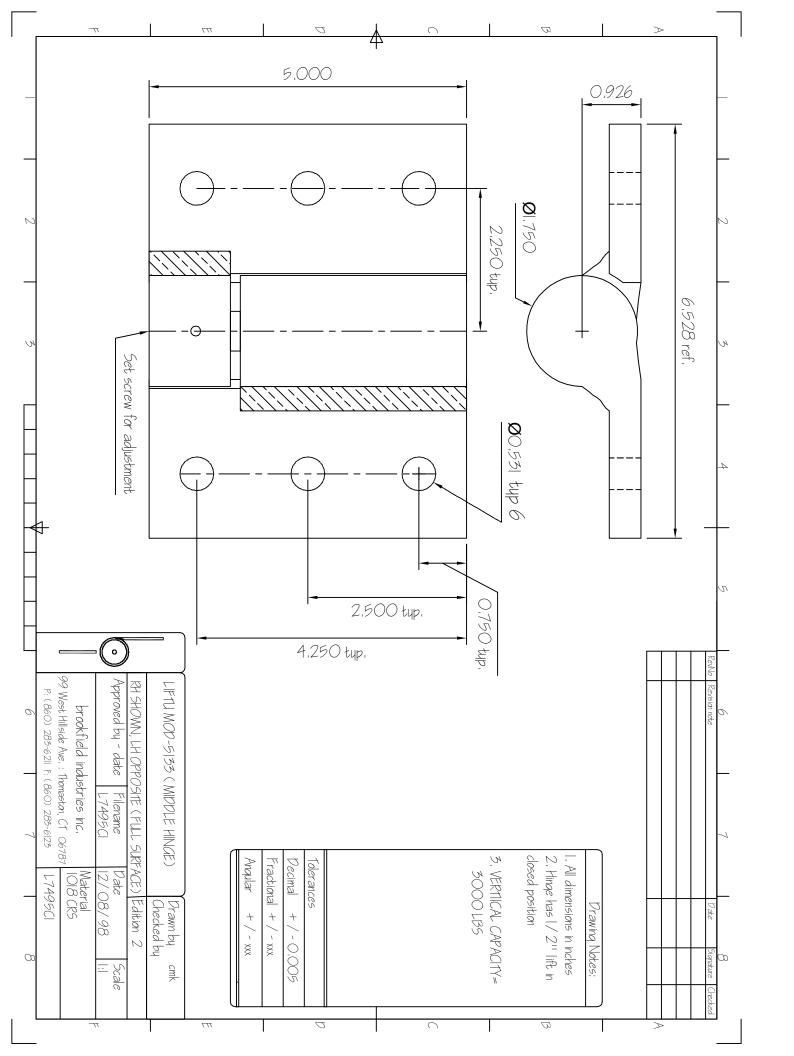
*a (2) hinge kit consisting of (1) LIFTU and (1) Series W radial support hinge can be used as long as the applied radial load is less than or equal to 200 lbs.

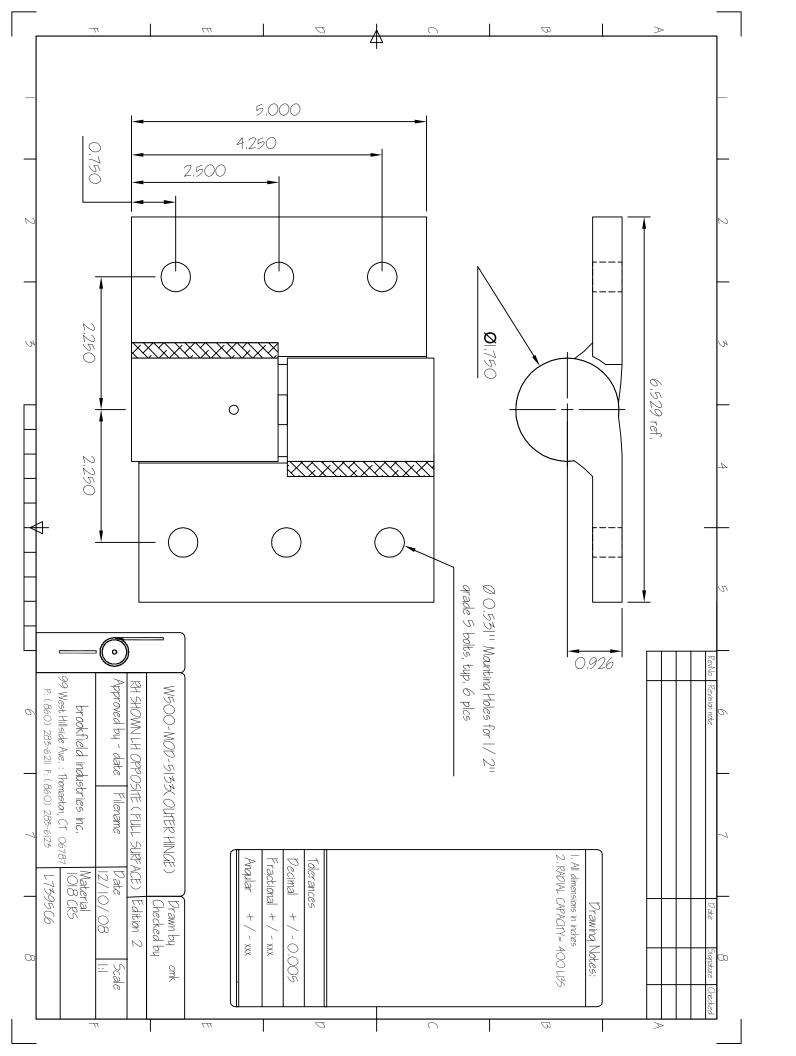


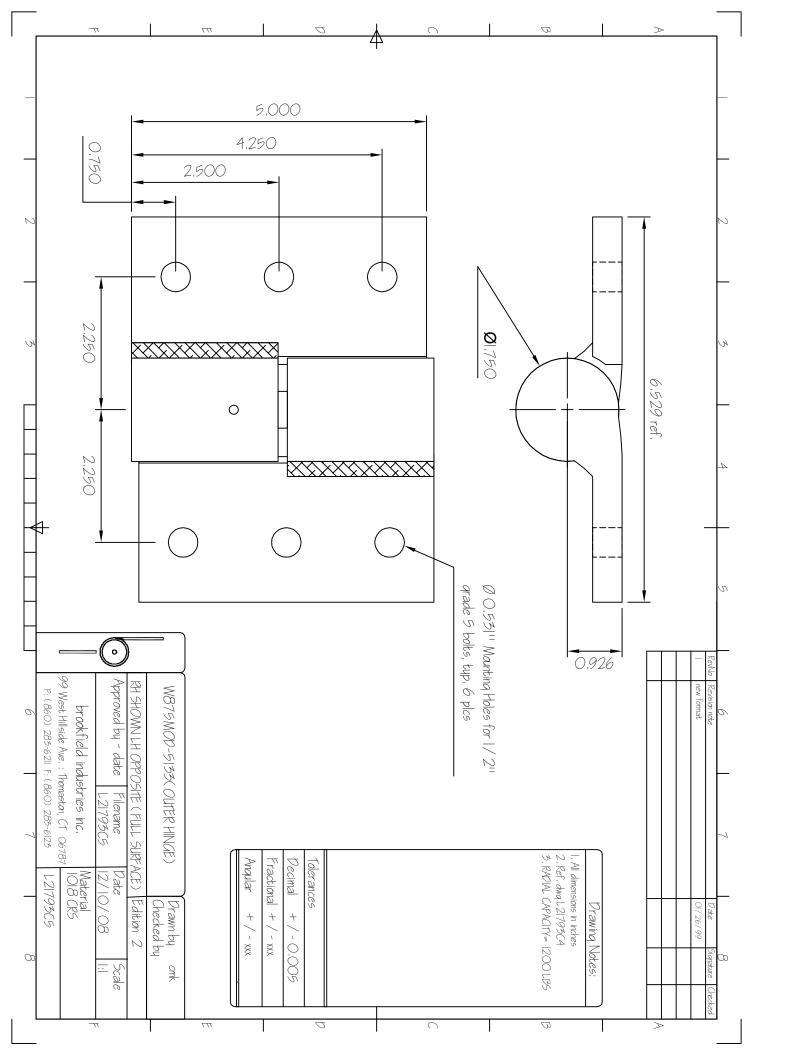
- (1) LIFTU MOD-5133 Installed at the center of door (3000 lb maximum weight) (drawing L7495C1)
- (2) W500-MOD-5133 properly spaced for 400 lb maximum radial load (drawing L7395C6)
- (2) W875-MOD-5133 properly spaced for 1200 lb maximum radial load (drawing L21793C5)

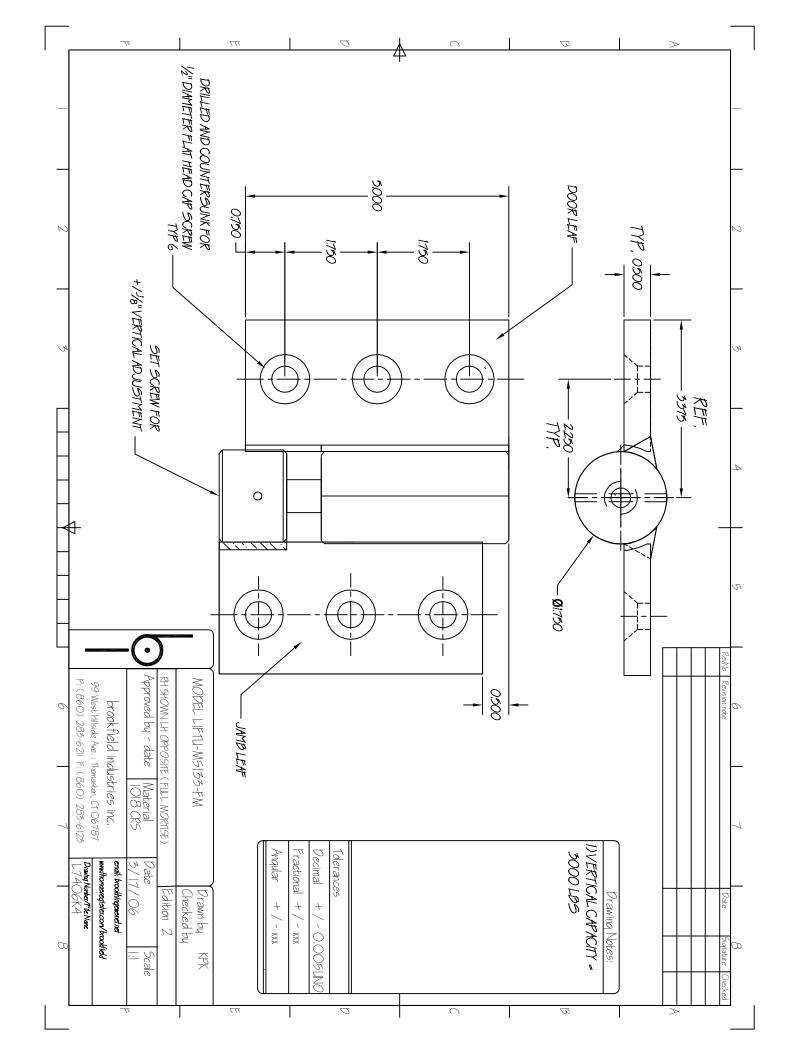


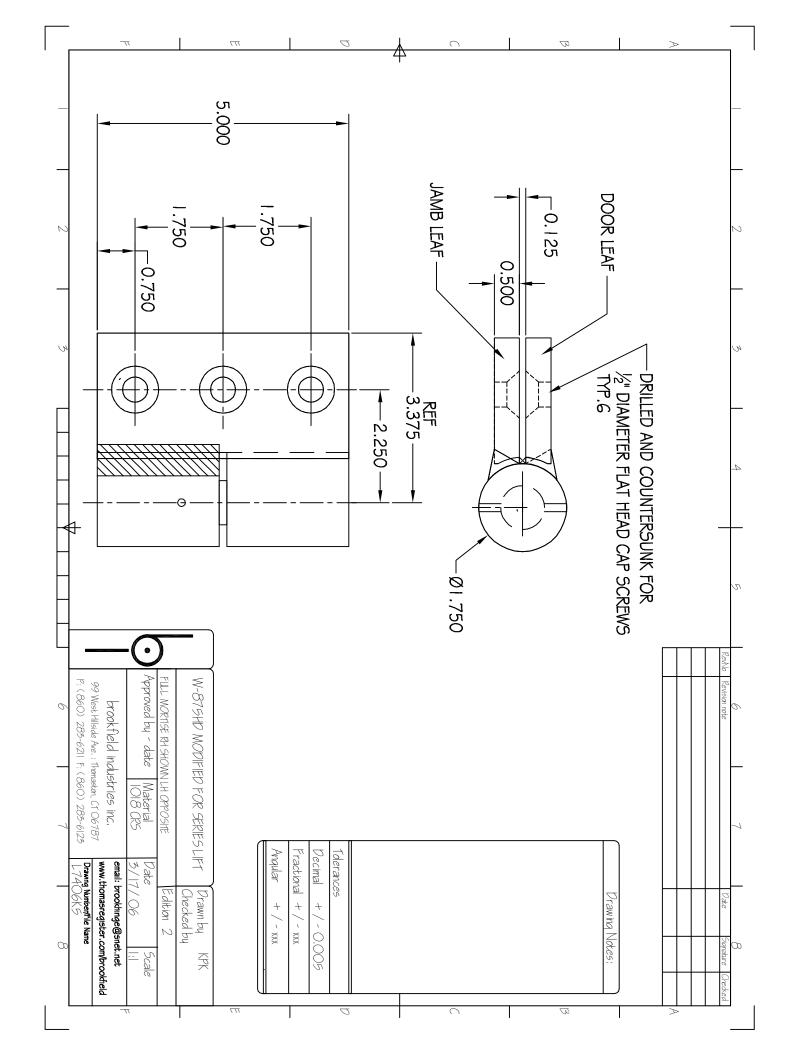
- (1) LIFTU M-5133-FM Installed at the center of door (3000 lb maximum weight) (drawing L7406K4) (2) W875-MOD-5133-FM properly spaced for 1200 lb maximum radial load (drawing L7406K5)

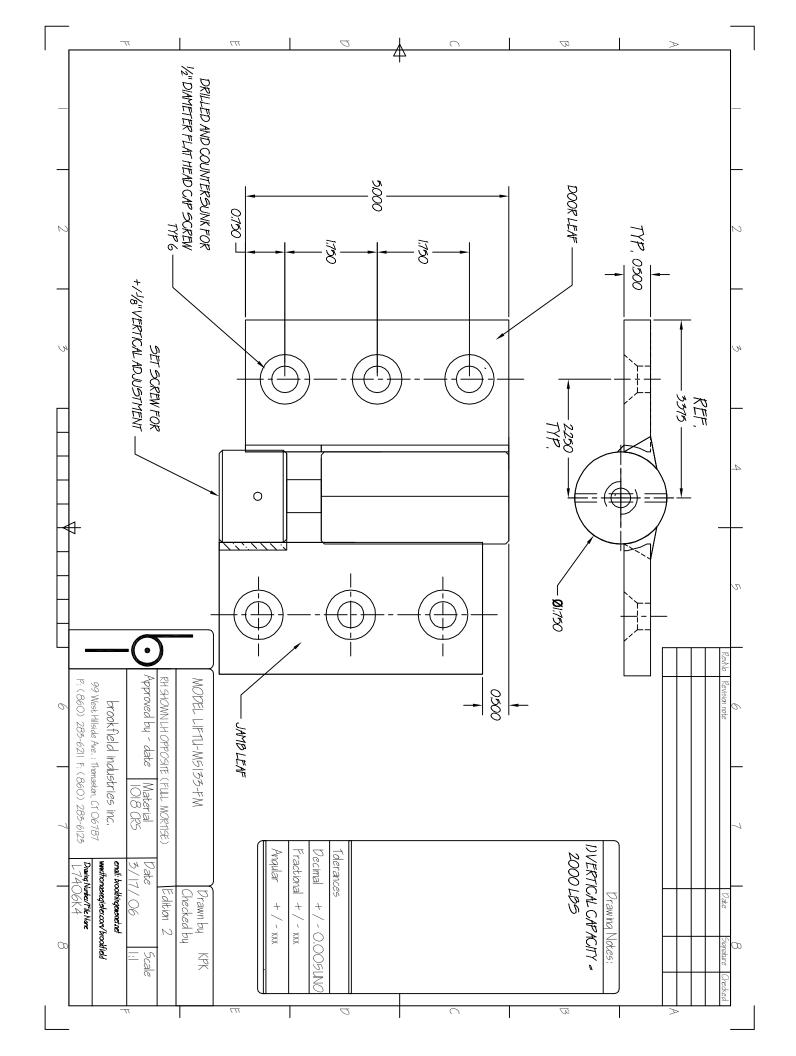












brookfield industries, inc.

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99 West Hillside Ave. Thomaston, CT 06787

Phone: 860-283-6211 • **Fax:** 860-283-6123

Email: info@bfimfg.com

Item # W875-MOD-5133-FM, High Capacity Full Mortise Mount Radial Support

Specifications -	
Hinge Size	5 x 6.75 in.
Material	Cold Rolled Steel, Prime Painted (Standard)
Radial Capacity	1200 lbs.
Torque to raise door	.23 lbin./lb.

Mechanical Lift Hinge Kits for doors weighing up to 3000 lbs

Description:

For use on large acoustical doors that require enhanced sealing characteristics by compressing the seal against the frame and threshold. The Lifting action provides ½" rise in 180 degrees of door rotation via a unique high lead power screw and nut design that will take higher loads, wear less and operate easier than conventional cam-lift hinges. All wear surfaces are lubricated and sealed from the environment. Can also be used in self-closing applications where the minimum door weight is 150 lbs.

A (3)* hinge kit comprised of: (1) LIFTU hinge located at the center of the door that supports the weight and provides the lifting action; (2) Series W radial support hinges, properly spaced take the radial load. Refer to the Engineering Section on how to calculate radial load based on hinge spacing or contact the Engineering Department.

Specifications:

Hinge Size: 5.00" high x 6.53"(Ref.) Full Surface 5.00" high x 6.75"(Ref.) Full Mortise

Vertical Capacity: 2000 lbs

Radial Capacities: 400 lbs, 1200 lbs

Vertical adjustment: (+/-) 1/8" Approximate torque to move door: 0.23 lb-in/lb

Bolted connection: ½" diameter hex head(not supplied), Fu= 120,000 min;

preload = 625 lb-in

Welded connection: \(\frac{1}{4}\)" fillet weld, (3) sides each leaf, 225° F weld interpass

temperature at barrel

Base Material: 1018 Cold rolled steel, options: 304 SST, 316 SST

Finish: USP (primed), options: zinc clear, US32D

*a (2) hinge kit consisting of (1) LIFTU and (1) Series W radial support hinge can be used as long as the applied radial load is less than or equal to 200 lbs.



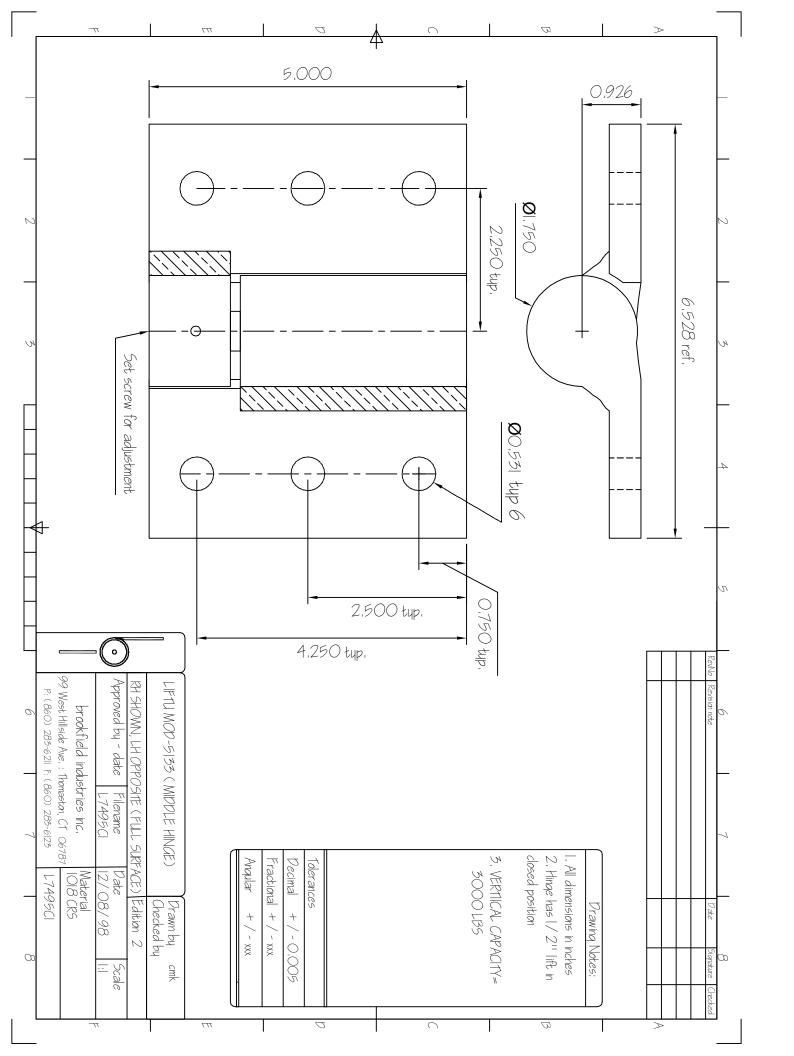
Full Surface Kits:

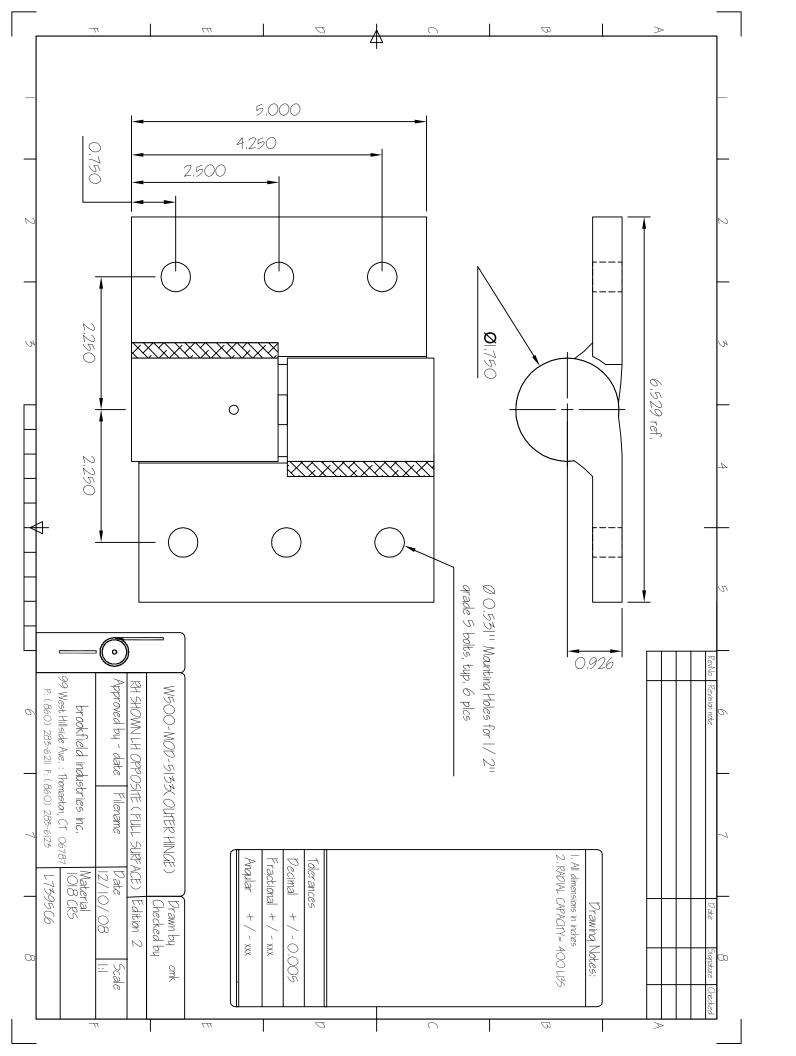
- (1) LIFTU MOD-5133 Installed at the center of door (3000 lb maximum weight) (drawing L7495C1)
- (2) W500-MOD-5133 properly spaced for 400 lb maximum radial load (drawing L7395C6)
- (2) W875-MOD-5133 properly spaced for 1200 lb maximum radial load (drawing L21793C5)

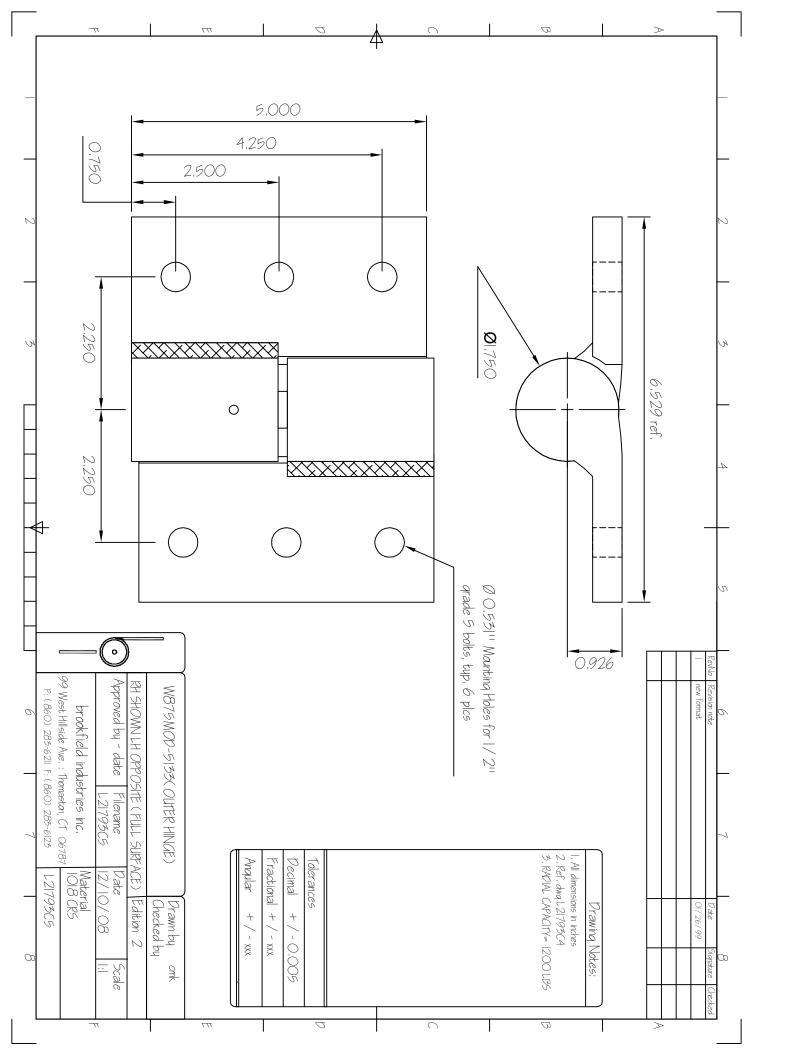


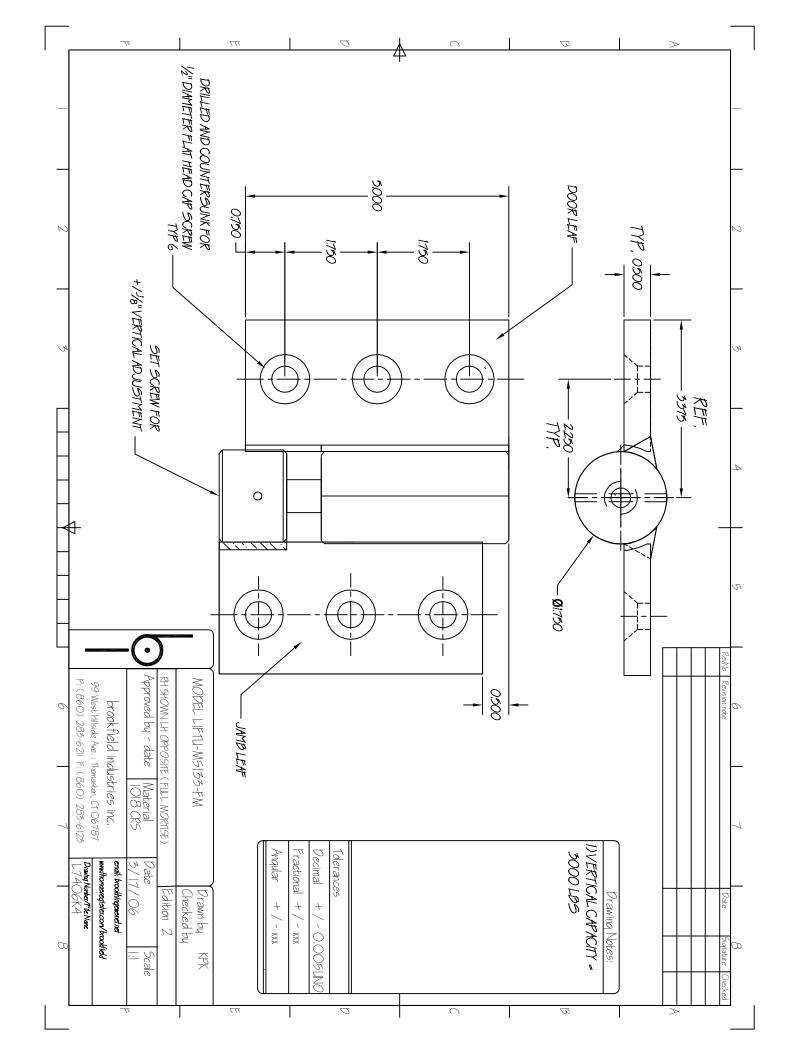
Full Mortise Kits:

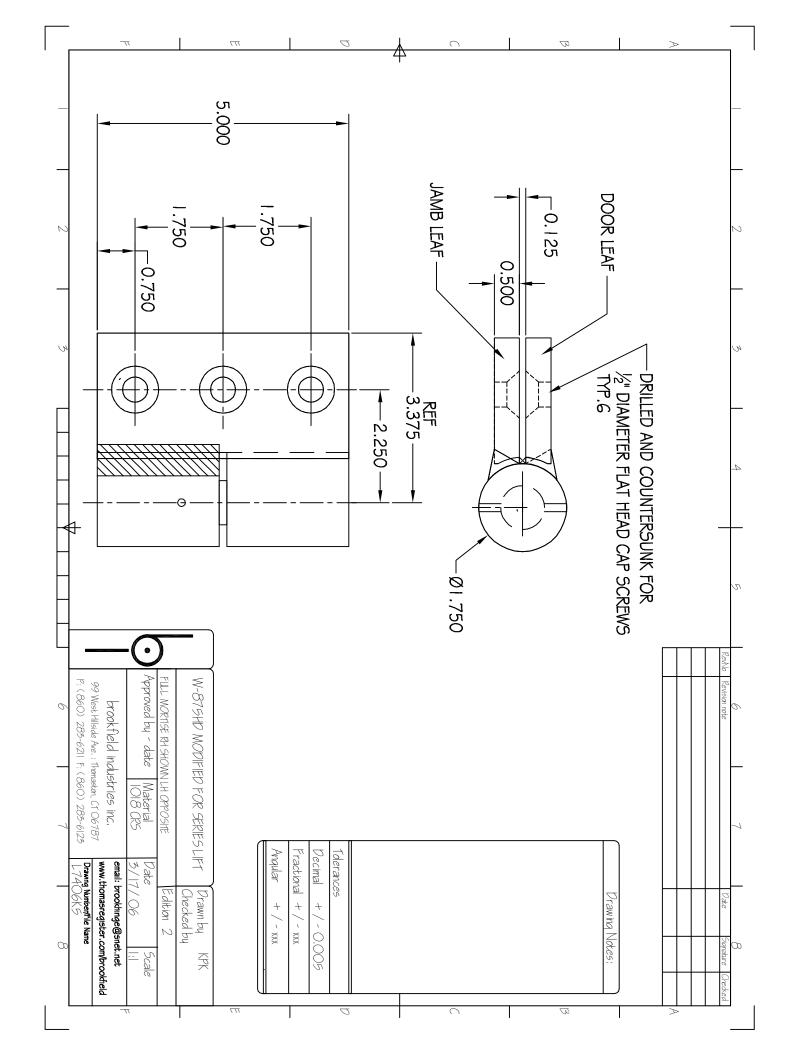
- (1) LIFTU M-5133-FM Installed at the center of door (3000 lb maximum weight) (drawing L7406K4) (2) W875-MOD-5133-FM properly spaced for 1200 lb maximum radial load (drawing L7406K5)

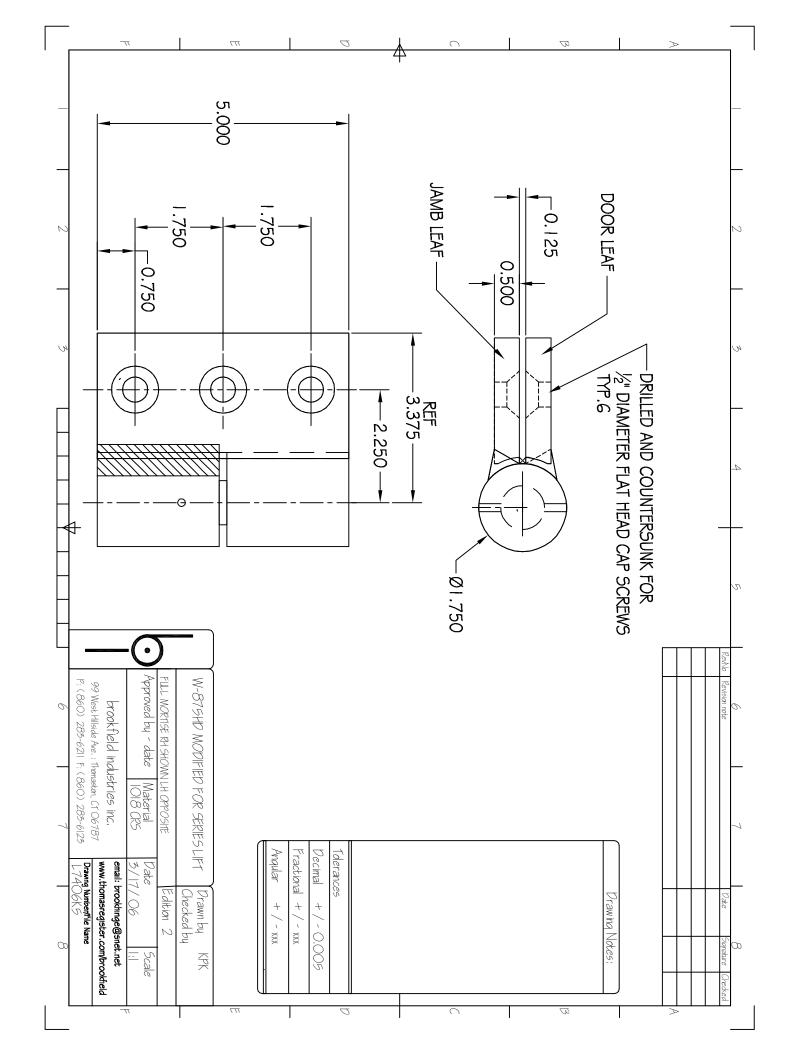












brookfield industries, inc.

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Phone: 860-283-6211 • Fax: 860-283-6123

Email: info@bfimfq.com

Spring Lift Hinges

0 Items Available

One Kit is comprised of a single Spring-Lift 100 Hinge installed as the center hinge that raises the door while opening. In addition, this hinge is furnished with a set screw for adjusting the spring closing force. Two W-100HD modified hinges installed at the top and bottom of the door support the radial (horizontal) loads generated by the moment arm of any wide door or gate.

Description:

The center Spring-Lift 100 Hinge supports the full door weight and will raise the door ½" in 180 degrees.





+ more

