

**Primary Clutch, Pin Drive
Armature, Spline Drive Armature
PC-825, PC-1000, PC-1225, PC-1525
Primary Clutch Coupling, Spline Drive Armature
PCC-825, PCC-1000, PCC-1225, PCC-1525**

P-206
819-0519

Installation Instructions



An Altra Industrial Motion Company

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⚠ WARNING Follow the installation instructions in this manual carefully to ensure safe, reliable operation. All stated or implied manufacturer warranties are voided if this product is not installed in accordance with these instructions.

⚠ WARNING Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.



PC-825
Pin Drive



PC-825
Spline Drive



PCC-825
Spline Drive

PC-825, PC-1000, PC-1225, PC-1525 Clutch Pin Drive Armature

Installation Instructions

The illustration drawings, parts lists, and exploded views for these units can be found beginning on page 14.

Either the magnet half of the clutch unit or the armature half of the unit may be mounted on the shaft first, depending on the characteristics of each application.



Figure 2

A. Assembling the Magnet and Magnet Hub

1. Insert the lead wires through the rubber terminal caps and into the collector ring. The shorter wire goes into the hole in the front of the ring (the side that will be mounted to the magnet.) The longer wire goes through the ring and into the hole in the back.

Press the bullet-type connectors firmly into place. (See Figure 1)

2. Mount the magnet to the magnet hub using capscrews and lockwashers. (See Figure 2)

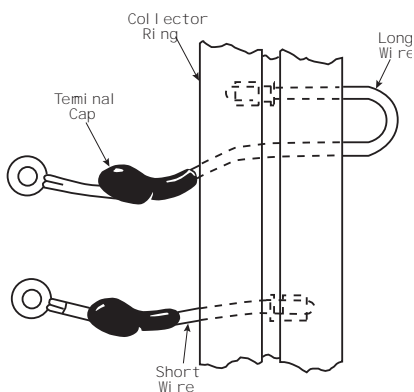


Figure 1

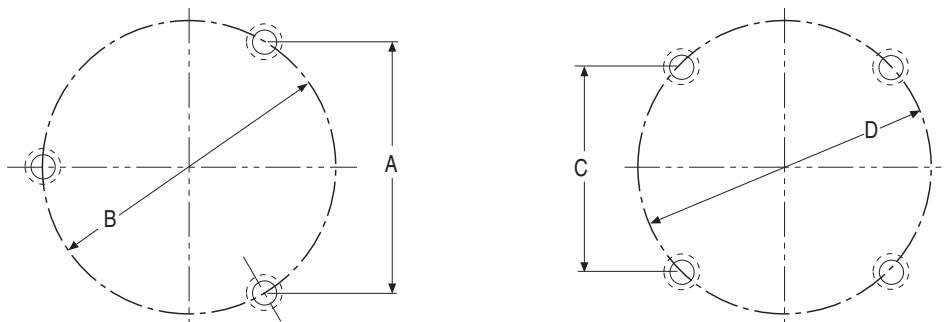
3. Secure the lead wires to the magnet terminals with screws and lockwashers.
4. Pull the rubber caps over the terminals.

B. Mounting the Magnet and Magnet Hub

The magnet and magnet hub are mounted on the shaft with a taperlock bushing. All parts must be clean and free from burrs and chips before assembling.

1. Place the bushing into the hub and insert the key. The key is a side-to-side fit and should not contact the top of the keyway.
2. Insert the locking setscrews loosely into the bushing and slide the assembly onto the shaft.
3. If the armature has been secured to the shaft first, then adjust the magnet's position to allow approximately 1/32-inch between the two faces. (See Figure 10.)
4. Secure the magnet's position on the shaft by alternately tightening each setscrew with a torque wrench to 175 in.lbs. torque. During the tightening process the bushing should be tapped lightly to make certain it seats-in properly.

Machining Instructions for Gear, Sprocket, or Pulley



Unit Size	A	B	C	D
825	3.085 ± .001	3.563 ± .001		
1000	4.548 ± .002	5.252 ± .002		
1225			4.155 ± .002	5.877 ± .002
1525			6.010 ± .002	8.500 ± .002

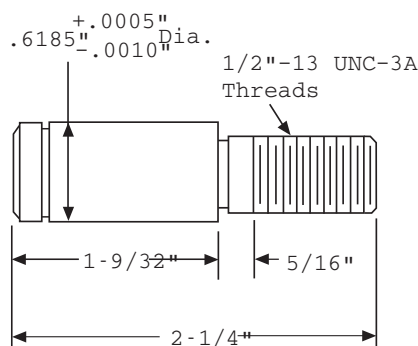
Figure 3

C. Assembling the Armature

1. A customer may wish to use the autogap accessory to mount a clutch armature to his own pulley, hub, gear, etc. Follow the illustrated dimensions (See Figures 3 & 4) to properly adapt these parts to the armature.

- Chordal dimensions "A" and "C" must be held for all chords between pin holes.
- Drill $27/64$ -inch diameter holes to a sufficient depth, and tap for 1/2-13 NC-3 one-inch minimum full threads. Pin holes must be square with plane of mounting surface and magnet mounting.
- Ream $.500/.501$ to a $3/8$ -inch depth and to be concentric with tapped holes.

2. Once the pulley, gear, etc. has been adapted to the armature according to the above directions, it may be mounted to the armature using the autogap accessory.



(Figure 4)

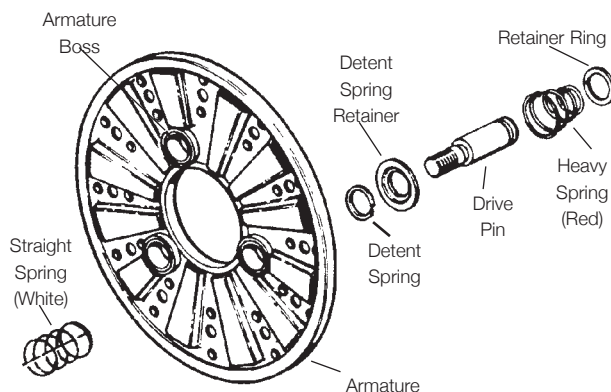


Figure 5

- The autogap assembly is a double spring device which allows for automatic armature clearance and adjustment for wear. The smaller or conical spring pushes the armature from the rotor face, leaving a gap of about 1/32-inch, while the straight spring automatically follows up for wear. This combination maintains maximum performance efficiency throughout the life of the unit. (See Figure 5)

The assembly procedure for the autogap accessory is as follows:

Note The 1225 and 1525 units are mounted with four drive pins instead of three as shown in the pictures; however the assembly procedure is the same for either case.

- Step 1** Place the straight (white) springs over the armature bosses on the back (unsegmented) side of the armature. (See Figure 6)



Figure 6

- Step 2** Compress the heavy (red) spring against the retainer ring by sliding the detent spring towards the head of the pin. (See Figure 7)



Figure 7

- Step 3** Insert the assembled drive pins through the armature (entering from the segmented side), through the straight (white) springs, and into the armature hub or customer-supplied pulley, sprocket or hub.

Note Apply Grade "AA" Loctite® Sealant on the pin threads (See Figure 8).



Figure 8

- Step 4** Tighten the pins until the shoulders of the pins are against the face of the hub or customer-supplied part.

CAUTION The straight springs must not get caught under the shoulders of the drive pins.

- Step 5** Check to see that the armature is completely compressed against the face of the hub or customer-supplied part.
- Step 6** To get the autogap, slide the detent spring retainers against the armature face.

Note This portion must not be disturbed during completion of the assembly. (See Figure 9)



Figure 9

D. Mounting the Armature Assembly

1. Slide the armature assembly and customer supplied pulley, sprocket or hub onto the shaft.

If the magnet and magnet hub assembly has been secured to the shaft first, then adjust the magnet's position to allow approximately 1/32-inch between the two faces.

Once this 1/32" gap has been set, it will be automatically maintained throughout the life of the unit. (See Figure 10)

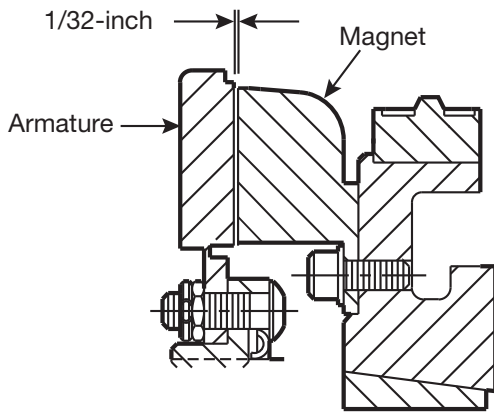


Figure 10

2. Secure the armature assembly and customer supplied pulley, sprocket and hub in this position by a) retainer rings, b) set collars, c) shoulder on the shaft, or d) any combination of these. The best method will depend on the characteristics of each application.

E. Mounting the Brushholder

1. The brushholder is mounted on a bracket which must be furnished by the customer. The bracket must be firmly secured to prevent vibration which could cause improper contact between the brushes and collector ring.
2. The distance from the centerline of the shaft to the top of the brushholder should be 5-3/4". Maintaining this distance will assure proper spring tension on the brushes and maximum wear follow-up. A detailed dimensional drawing is included with each brushholder.

PC-825, PC-1000, PC-1225, PC-1525 Clutch Spline Drive Armature

Installation Instructions

The illustration drawings, parts lists, and exploded views for these units can be found beginning on page 22.

Either the magnet half of the clutch unit or the armature half of the unit may be mounted on the shaft first, depending on the characteristics of each application.

A. Assembling the Magnet and Magnet Hub

1. Insert the lead wires through the rubber terminal caps and into the collector ring. The shorter wire goes into the hole in the front of the ring (the side that will be mounted to the magnet). The longer wire goes through the ring and into the hole in the back.

Press the bullet-type connectors firmly into place. (See Figure 1)

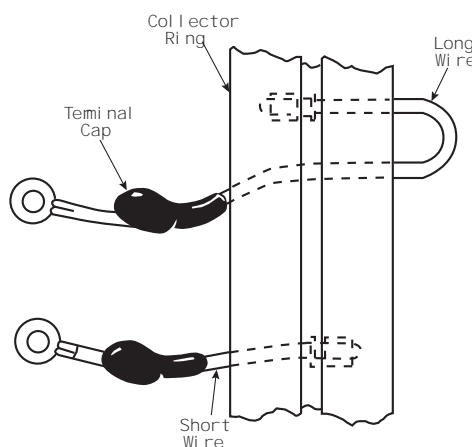


Figure 1

2. Mount the magnet to the magnet hub using capscrews and lockwashers. (See Figure 2)
3. Secure the lead wires to the magnet terminals with screws and lockwashers.
4. Pull the rubber caps over the terminals.



Figure 2

B. Mounting the Magnet and Magnet Hub

The magnet and magnet hub are mounted on the shaft with a taperlock bushing. All parts must be clean and free from burrs and chips before assembling.

1. Place the bushing into the hub and insert the key. The key is a side-to-side fit and should not contact the top of the keyway.
2. Insert the locking setscrews loosely into the bushing and slide the assembly onto the shaft.
3. If the armature assembly has been secured to the shaft first, then adjust the magnet's position to allow approximately 1/32-inch between the two faces when the outer side of the splined adapter is flush with the pilot end of the hub.

Once this 1/32-inch gap has been set, it will be automatically maintained throughout the life of the unit. (See Figure 3)

4. Secure the magnet's position on the shaft by alternately tightening each setscrew with a torque wrench to 175 in.lbs. torque. During the tightening process, the bushing should be tapped lightly to make certain it seats-in properly.

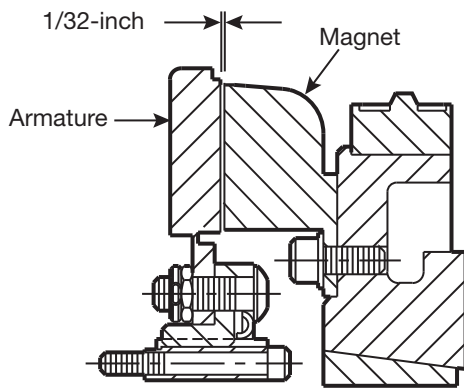


Figure 3

C. Assembling the Armature

1. The spline drive armature unit is shipped with the armature, splined armature adapter, and autogap already assembled. The splined hub and capscrew accessory are shipped as separate parts.

Follow these instructions to assemble the splined armature assembly and hub:

- a. Place the armature-splined adapter assembly on a flat surface with the segmented side up.
- b. Push the splined hub, with the pilot diameter down (refer to illustration drawings) through the autogap spring and splined armature adapter. (See Figure 4)



Figure 4

2. A customer may mount the clutch armature hub to his own pulley, hub, gear, etc. Refer to the illustration drawings, "Armature View," for the dimensional information needed to drill and tap holes in the customer part.

The splined hub pilot diameter must be concentric with the splined armature center of rotation within .020 T.I.R.

3. Mount the armature hub to the customer supplied pulley, sprocket or hub, using the capscrew accessory provided. Maintain a 1/32-inch clearance between the armature adapter and the customer part after the parts have been assembled.

D. Mounting the Armature Assembly

1. Slide the armature assembly on to the shaft.
2. If the magnet and magnet hub assembly have been secured to the shaft first, then adjust the armature's position to allow approximately 1/32-inch between the two faces.

Once this 1/32-inch gap has been set, it will automatically be maintained throughout the life of the unit. (See Figure 3)

E. Mounting the Brushholder

1. The brushholder is mounted on a bracket which must be furnished by the customer. The bracket must be firmly secured to prevent vibration which could cause improper contact between the brushes and collector ring.
2. The distance from the centerline of the shaft to the top of the brushholder should be 5-3/4". Maintaining this distance will assure proper spring tension on the brushes and maximum wear follow-up. A detailed dimensional drawing is included with each brushholder.

PCC-825, PCC-1000, PCC-1225, PCC-1525 Clutch-Coupling Spline Drive Armature

Installation Instructions

The illustration drawings, parts lists, and exploded views for these units can be found beginning on page 30.

Either the magnet half of the clutch unit or the armature half of the unit may be mounted on the shaft first, depending on the characteristics of each application.

A. Assembling the Magnet and Magnet Hub

1. Insert the lead wires through the rubber terminal caps and into the collector ring. The shorter wire goes into the hole in the front of the ring (the side that will be mounted to the magnet). The longer wire goes through the ring and into the hole in the back.

Press the bullet-type connectors firmly into place. (See Figure 1)

2. Mount the magnet to the magnet hub using capscrews and lockwashers. (See Figure 2)

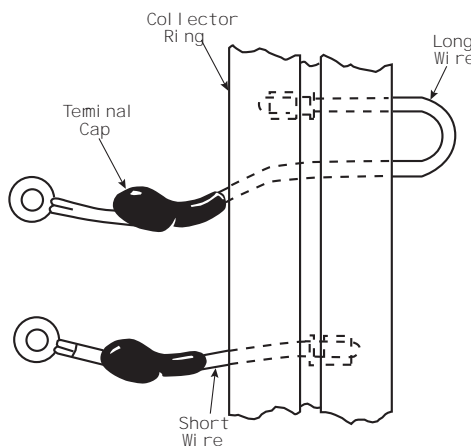


Figure 1

3. Secure the lead wires to the magnet terminals with screws and lockwashers.
4. Pull the rubber caps over the terminals.



Figure 2

B. Mounting the Magnet and Magnet Hub

1. Place the bushing into the hub and insert the key. The key is a side-to-side fit and should not contact the top of the keyway.
2. Insert the locking setscrews loosely into the bushing and slide the assembly onto the shaft.
3. If the armature has been secured to the shaft first, then adjust the magnet's position to allow approximately 1/32-inch between the two faces. (See Figure 3)

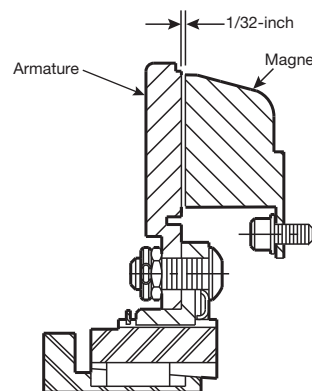


Figure 3

4. Secure the magnet's position on the shaft by alternately tightening each setscrew with a torque wrench to 175 in. lbs. maximum torque. During the tightening process, the bushing should be tapped lightly to make certain it seats-in properly.

C. Assembling the Armature and Hub

The clutch-coupling units contain spline drive armatures and hubs. The armatures are shipped with a built-in autogap spring accessory. This device automatically maintains a gap of about 1/32" between the armature and magnet faces for the life of the unit.

These units are shipped with the armature, splined armature adapter, and autogap already assembled. The splined hub, retainer ring, and bushing are shipped as separate parts.

Follow these instructions to assemble the splined armature assembly and hub:

- Step 1** Place the armature-splined adapter assembly on a flat surface with the segmented side up.
- Step 2** Push the splined hub, with the retainer ring groove down, through the autogap spring and splined armature adapter. (See Figure 4)

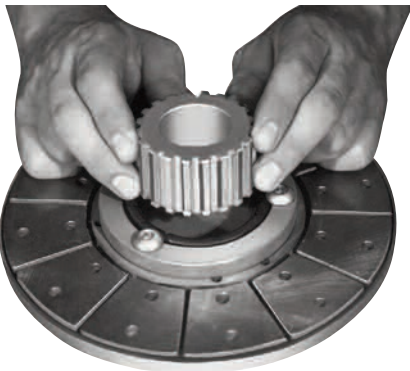


Figure 4

- Step 3** Turn the armature-adapter assembly over, and insert the retainer ring in the groove. (See Figure 5)



Figure 5

- Step 4** Slide the armature-adapter assembly up against the retainer ring.
- Step 5** Insert the bushing into the retainer ring side of the splined hub. The clearance holes in the bushing flange should line up with the tapped holes in the splined hub. (See Figure 6)



Figure 6

D. Mounting the Armature and Hub Assembly

- 1. Slide the complete armature and hub assembly onto the shaft until the armature face touches the magnet face. (See Figure 7)



Figure 7

2. Tighten the bushing capscrews, taking a few turns at a time on each capscrew. As the capscrews are tightened, the armature will back away slightly from the magnet. There should be a clearance of $1/16$ " between the armature and magnet when the capscrews are completely tight. (See Figure 8)



Figure 8

3. When the bushing is secure on the shaft, push the armature against the magnet face (See Figure 9). When the armature is released, it will spring back about $1/32$ -inch. This gap will be automatically maintained for the life of the unit. (See Figure 3)



Figure 9

E. Mounting the Brushholder

1. The brushholder is mounted on a bracket which must be furnished by the customer. The bracket must be firmly secured to prevent vibration which could cause improper contact between the brushes and collector ring.
2. The distance from the centerline of the shaft to the top of the brushholder should be $5-3/4$ ". Maintaining this distance will assure proper spring tension on the brushes and maximum wear follow-up. A detailed dimensional drawing is included with each brushholder.

Coil Data

Unit Size	825			1000			1225			1525		
Voltage — DC	6	24	90	6	24	90	6	24	90	6	24	90
Resistance @ 20°C — Ohms	1.27	20.4	223.3	1.23	19.7	248.7	1.33	22.3	261.7	1.45	19.8	258.4
Current — Amperes	4.74	1.18	.4	4.87	1.22	.36	4.5	1.08	.34	4.13	1.21	.35
Watts	28	28	36	29	29	33	27	26	31	25	29	31
Coil Build-up — Milliseconds	170	170	170	205	220	235	300	320	350	470	490	512
Coil Decay — Milliseconds	70	75	80	70	75	80	190	190	190	200	170	140

Notes: Build-up time equals current to approximately* 90% of steady state value and flux to 90%.

Decay time equals current to approximately* 10% of steady state value and flux to 10%.

* Approximately because current leads or lags flux by a small amount.

Burnishing and Maintenance

Burnishing

Intimate metal to metal contact is essential between the armature and the metal rings (poles) of the magnet or rotor. Warner Electric clutches and brakes leave the factory with the friction material slightly undercut to assure good initial contact.

Normally, the desired wearing-in process occurs naturally as the surfaces slip upon engagement. The time for wear-in, which is necessary to obtain the ultimate torque of the unit, will vary depending on speed, load, or cycle duty.

If maximum torque is required immediately after installation, the unit should be burnished by slipping the friction surfaces together at reduced voltage. It is recommended that the burnishings be done right on the application, if at all possible.

Burnishing at high speed will result in a smoother wear-in pattern and reduce the time for burnishing. The voltage should be set at approximately 30% or 40% of the rated value.

The unit should be cycled on and off to allow sufficient time between slip cycles to prevent overheating.

When a Warner Electric brake or clutch is properly assembled and installed, no further servicing, lubrication, or maintenance should be required throughout the life of the unit.

Maintenance

Wear Pattern: Wear grooves appear on the armature and magnet surfaces. This is a normal wear condition, and does not impair functioning of the unit. Normally, the magnet and armature, as a mating pair, will wear at the same rate. It is the usual recommendation that both components be replaced at the same time.

Remachining the face of a worn armature is not recommended. If a replacement armature is to be used with a used magnet, it is necessary to remachine the worn magnet face. In refacing a magnet: (1) machine only enough material to clean up the complete face of the magnet; (2) hold the face within .005" of parallel with the mounting plate; and (3) undercut the molded facing material .002" - .004" below the metal poles.

Heat: Excessive heat and high operating temperatures are causes of rapid wear. Units, therefore, should be ventilated as efficiently as possible, especially if the application requires fast, repetitive cycle operation.

Foreign Materials: **If units are used on machinery** where fine, abrasive dust, chips or grit are dispelled into the atmosphere, shielding of the brake may be necessary if maximum life is to be obtained.

Where units are used near gear boxes or transmissions requiring frequent lubrication, means should be provided to protect the friction surfaces from oil and grease to prevent serious loss of torque.

Oil and grease accidentally reaching the friction surfaces may be removed by wiping with a rag dampened with a suitable cleaner, which leaves no residue. In performing this operation, do not drench the friction material.

If the friction materials have been saturated with oil or grease, no amount of cleaning will be completely effective. Once such a unit has been placed back in service, heat will cause the oil to boil to the surface, resulting in further torque loss.

Torque Loss: If a brake or clutch slips or loses torque completely, the initial check should be the input voltage to the magnet as follows:

90-Volt Series: Connect a DC voltmeter with a range of 0-100 or more directly across the magnet terminals. With the power on and the potentiometer turned up, a normal reading is 90 volts, although 85 to 95 is satisfactory. The reading should drop as the potentiometer control is adjusted counterclockwise.

24-Volt Series: Use a DC voltmeter with a range of 0-30 volts or more. A normal reading is approximately 22-26 volts.

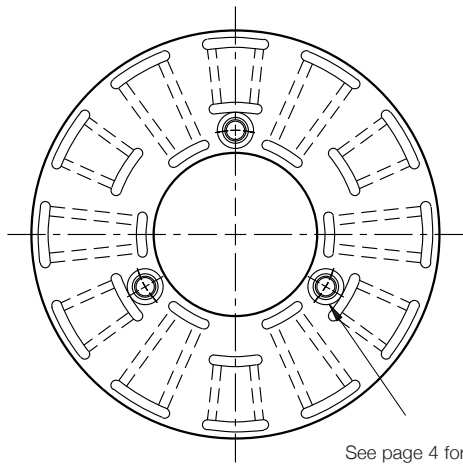
6-Volt Series: Use a DC voltmeter of approximately 0-15 volt range. A normal reading is from 5.5 to 6.5 volts.

The above checks normally are sufficient. Further checks may be made as follows: a low range ammeter, when connected in series with one magnet lead, will normally indicate approximately .40 amperes for the 90 volt units, 1.0 ampere for the 24 volt, and 3.5 amperes for the 6 volt series. These readings are with the power on and the potentiometer control in the maximum position.

Ohmmeter checks should be made with the power off and the circuit open (to be certain, disconnect one lead to the magnet). Average resistance for the 90 volt series is 220 ohms; for the 24 volt, 20 ohms; and for the 6 volt series, 1.5 ohms. A very high or infinite resistance reading would indicate an open coil.

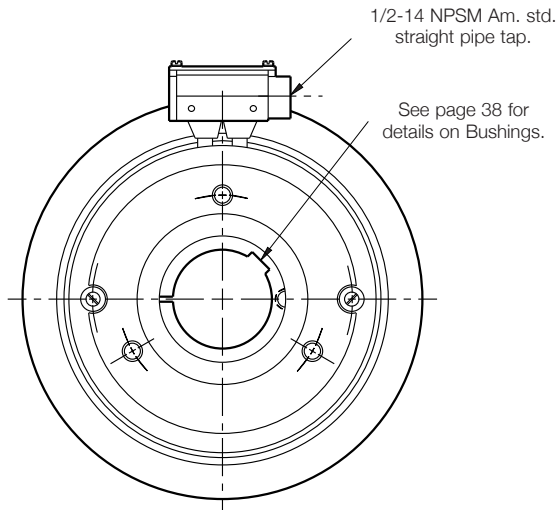
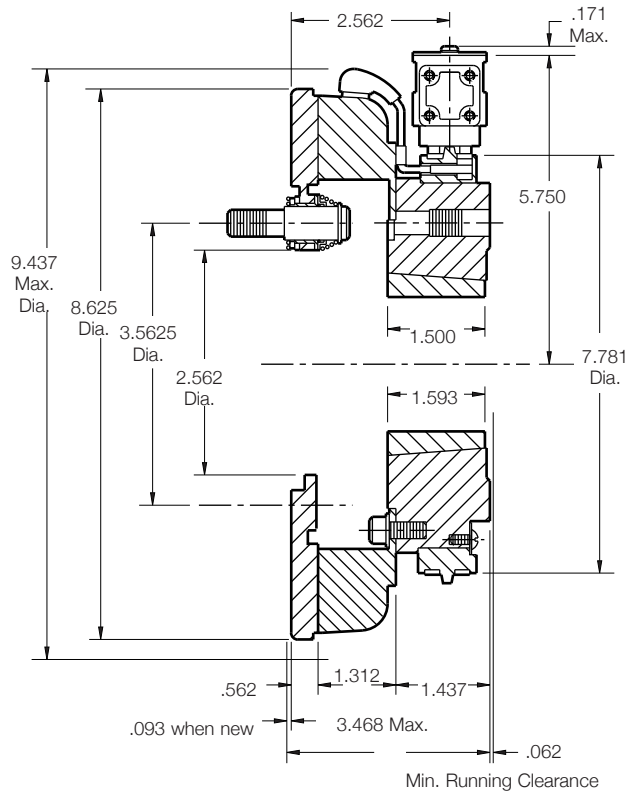
If the above checks indicate that the proper voltage and current is being supplied to the magnet, mechanical parts should be checked to assure that they are in good operating condition and properly installed.

PC-825 Clutch Normal Duty



See page 4 for details on Drive Pin mountings.

Armature View



1/2-14 NPSM Am. std. straight pipe tap.

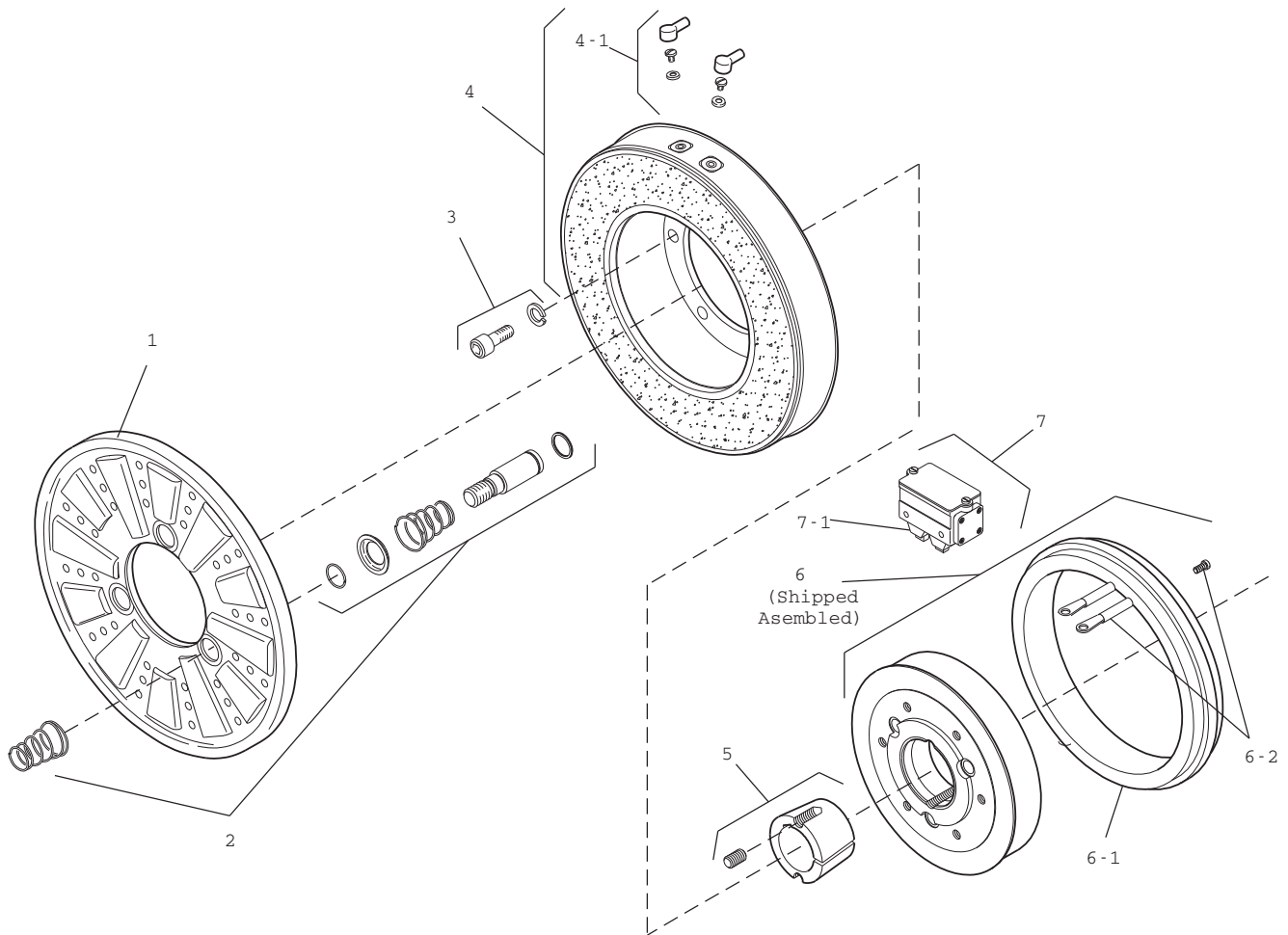
See page 38 for details on Bushings.

Collector Ring View

Shaft Size	.500 – 1.625
Static Torque	125 lb.ft.
Maximum Speed	4,000 RPM
Standard Voltage	DC 6, 24, 90

PC-825 Clutch Normal Duty-Flange Mounted

Drawing I-25562



Item	Description	PC-825 Part Number	Qty.
1	Armature	5301-111-018	1
2	Autogap Accessory	5201-101-008	3
3	Mounting Accessory	5321-101-001	1
4	Magnet		1
	6 Volt	5301-631-002	
	24 Volt	5301-631-004	
	90 Volt	5301-631-005	
	†90 Volt LK Facing	5301-631-011	
4-1	Terminal Accessory	5311-101-001	1
5	Bushing*		
	1/2" to 1-5/8" Bore	180-0131 to 180-0149	1
6	Magnet Hub		1
	Left Hand	5301-541-001	
	Right Hand	5301-541-002	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5301-101-002	1
7	Brushholder	5300-178-001	1
7-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

1. Specify Voltage for Item 4.
2. Specify Bore Size for Item 5.
3. Specify left hand or right hand hub for Item 6.
(Bushing enters from magnet side for L.H. hub and from hub side for R.H.)

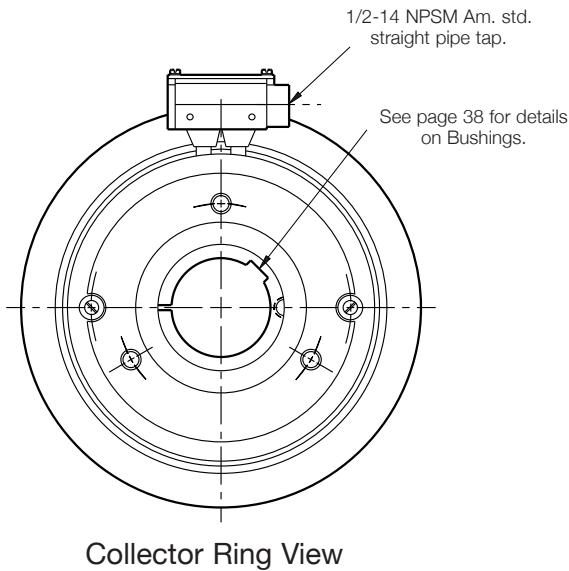
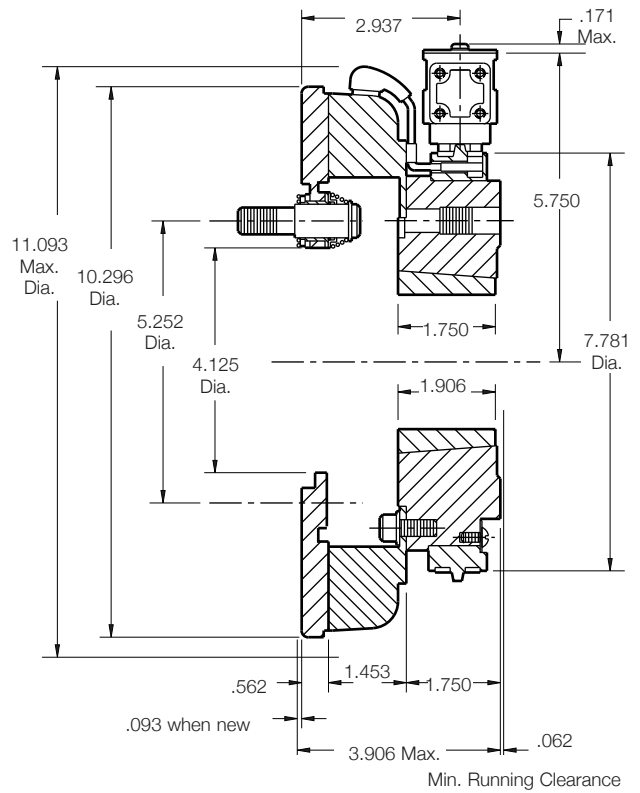
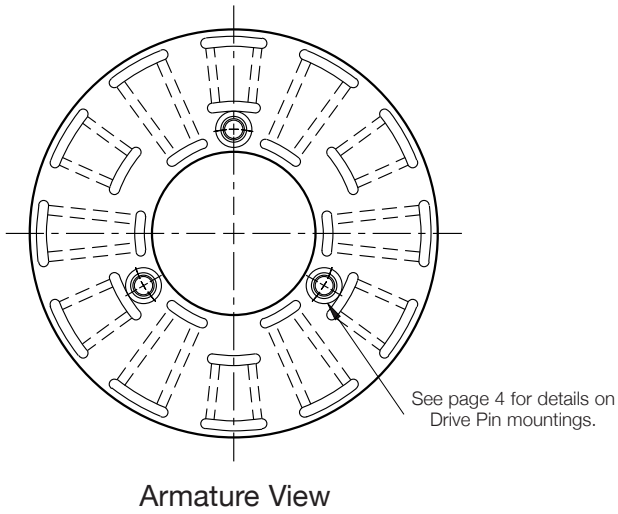
Example:

PC-825 Clutch per I-25562 - 90 Volt, L.H. hub, 1" Bore

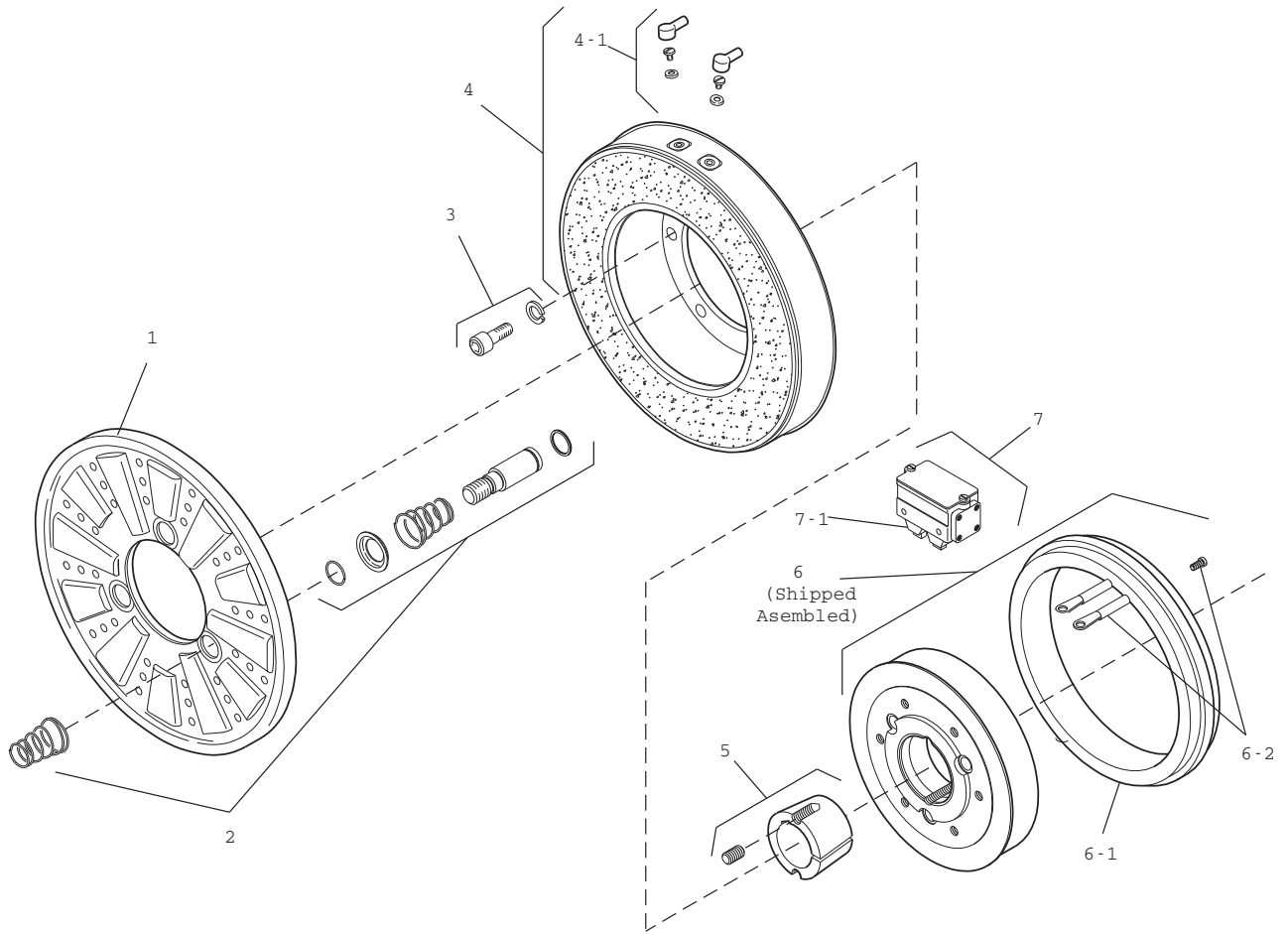
These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

PC-1000 Clutch Normal Duty



Shaft Size	.500 – 2.000
Static Torque	240 lb.ft.
Maximum Speed	3,600 RPM
Standard Voltage	DC 6, 24, 90



PC-1000			
Item	Description	Part Number	Qty.
1	Armature	5302-111-013	1
2	Autogap Accessory	5201-101-008	3
3	Mounting Accessory	5321-101-001	1
4	Magnet		1
	6 Volt	5302-631-003	
	24 Volt	5302-631-004	
	90 Volt	5302-631-005	
	†90 Volt LK Facing	5302-631-001	
4-1	Terminal Accessory	5311-101-001	1
5	Bushing*		
	1/2" to 2-1/2" Bore	180-0186 to 180-0217	
6	Magnet Hub		1
	Left Hand	5302-541-001	
	Right Hand	5302-541-002	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5302-101-002	1
7	Brushholder	5300-178-001	1
7-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

1. Specify Voltage for Item 4.
2. Specify Bore Size for Item 5.
3. Specify left hand or right hand hub for Item 6.
(Bushing enters from magnet side for L.H. hub and from hub side for R.H.)

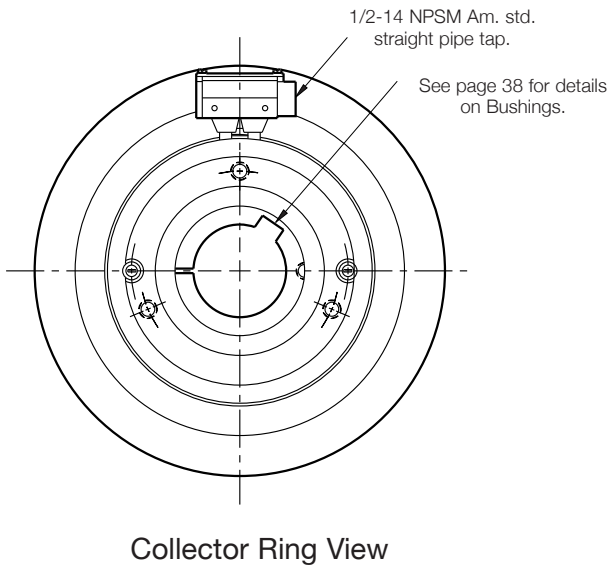
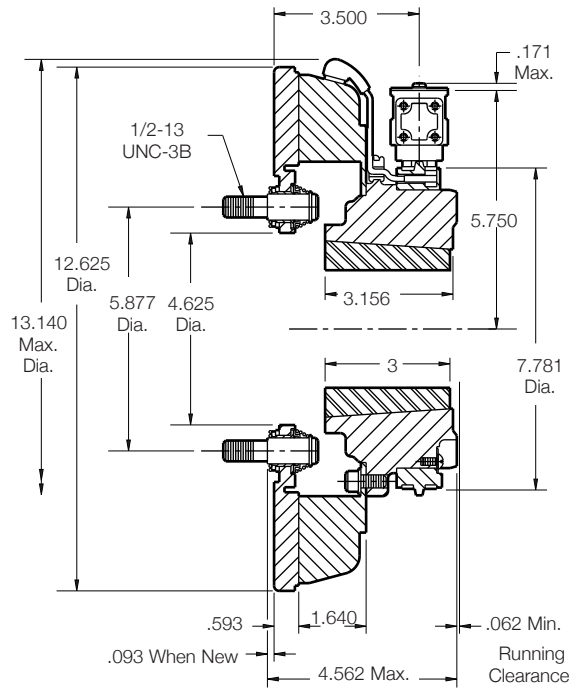
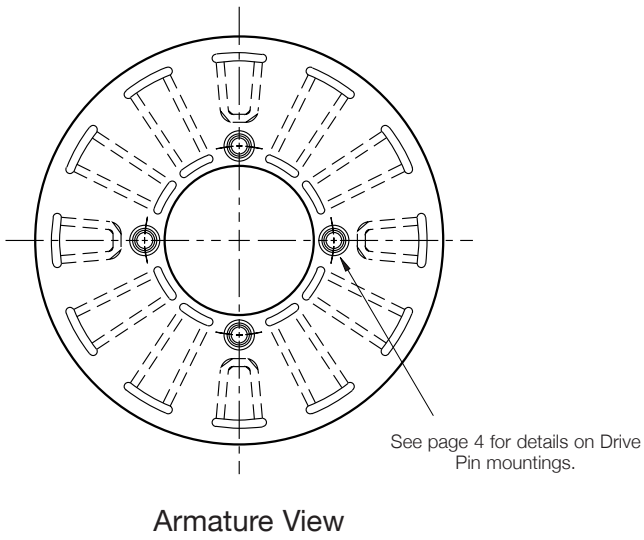
Example:

PC-1000 Clutch per I-25582 - 90 Volt, L.H. hub, 1" Bore

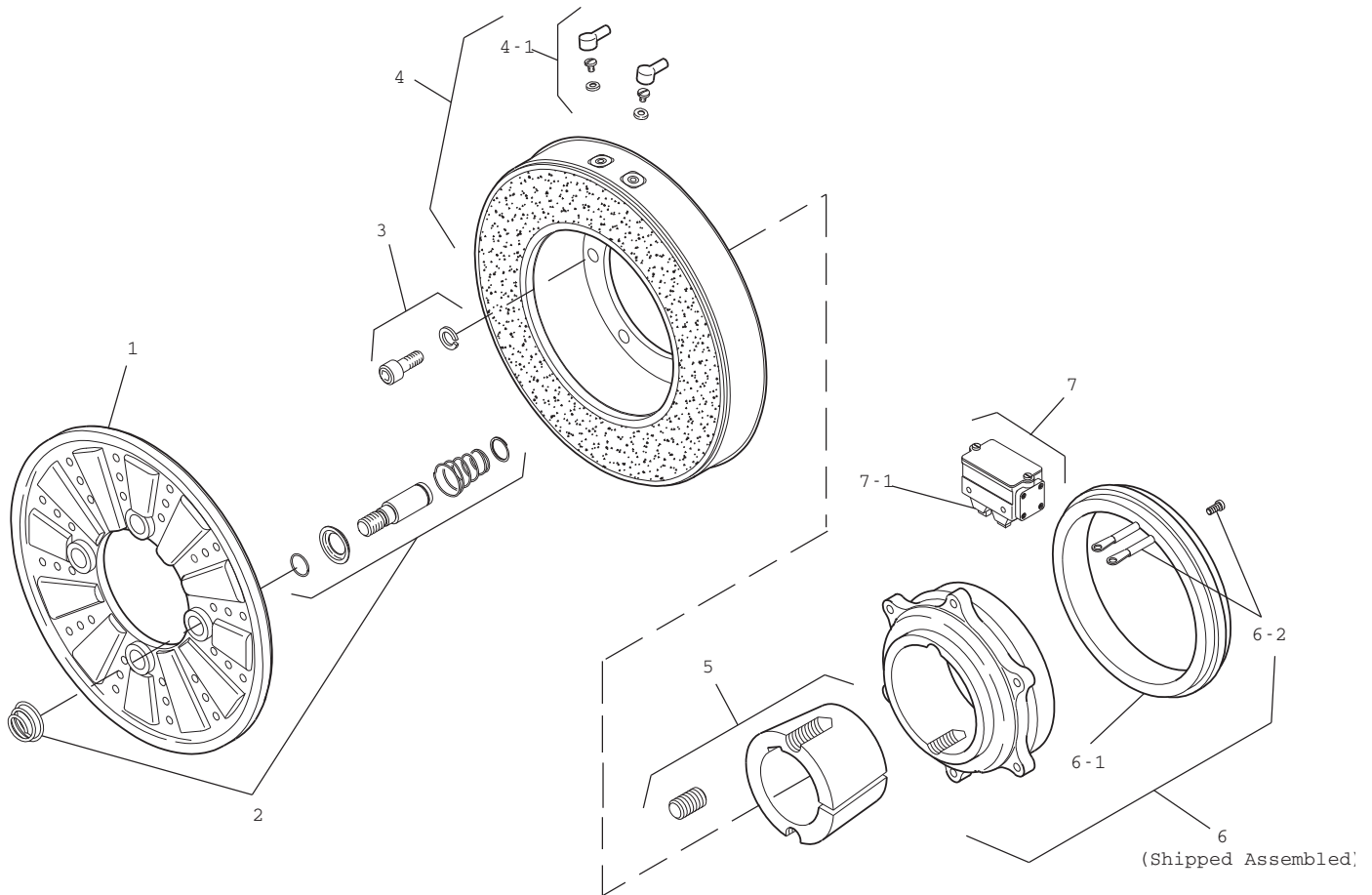
These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

PC-1225 Clutch Normal Duty



Shaft Size	.937 – 3.00
Static Torque	465 lb.ft.
Maximum Speed	3,000 RPM
Standard Voltage	DC 6, 24, 90



PC-1225			
Item	Description	Part Number	Qty.
1	Armature	5301-111-009	1
2	Autogap Accessory	5201-101-008	4
3	Mounting Accessory	5321-101-001	1
4	Magnet		1
	6 Volt	5303-631-005	
	24 Volt	5303-631-007	
	90 Volt	5303-631-008	
	†90 Volt LK Facing	5303-631-001	
4-1	Terminal Accessory	5311-101-001	1
5	Bushing*		
	15/16" to 3" Bore	180-0262 to 180-0295	1
6	Magnet Hub		1
	Left Hand	5303-541-001	
	†Optional LK Facing	5303-541-001	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5303-101-004	1
7	Brushholder	5300-178-001	1
7-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

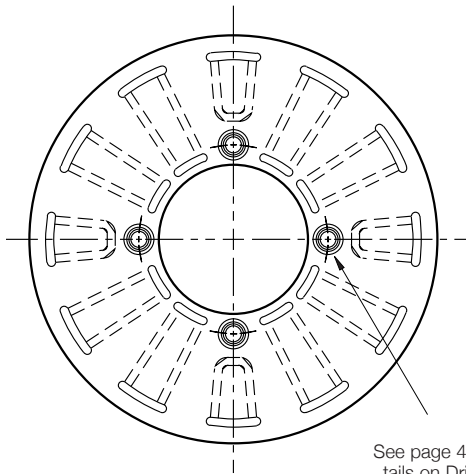
1. Specify Voltage for Item 4.
2. Specify Bore Size for Item 5.
3. Specify left hand or right hand hub for Item 6.
(Bushing enters from magnet side for L.H. hub and from hub side for R.H.)

Example:

PC-1225 Clutch per I-25602 - 90 Volt, L.H. hub, 1" Bore

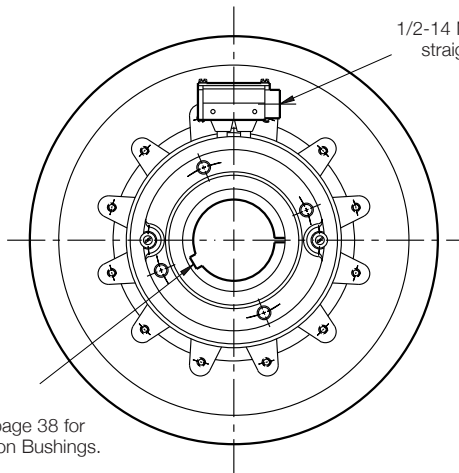
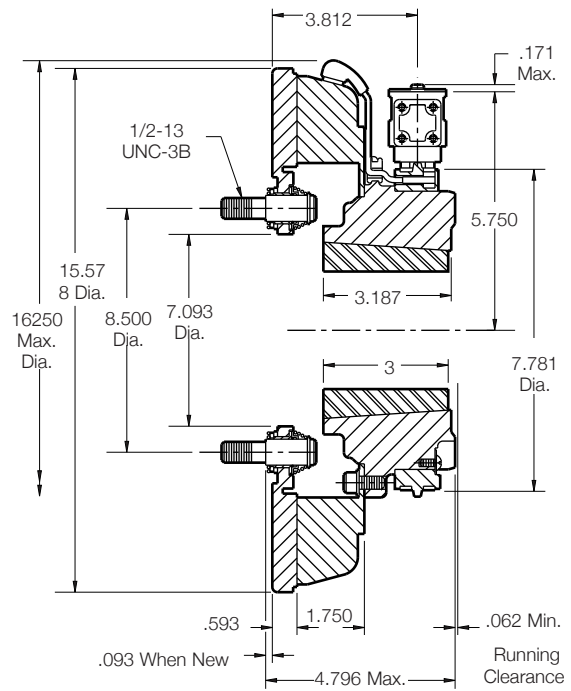
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164. These units are CSA certified under file #LR11543.

PC-1525 Clutch Normal Duty



See page 4 for details on Drive Pin mountings.

Armature View

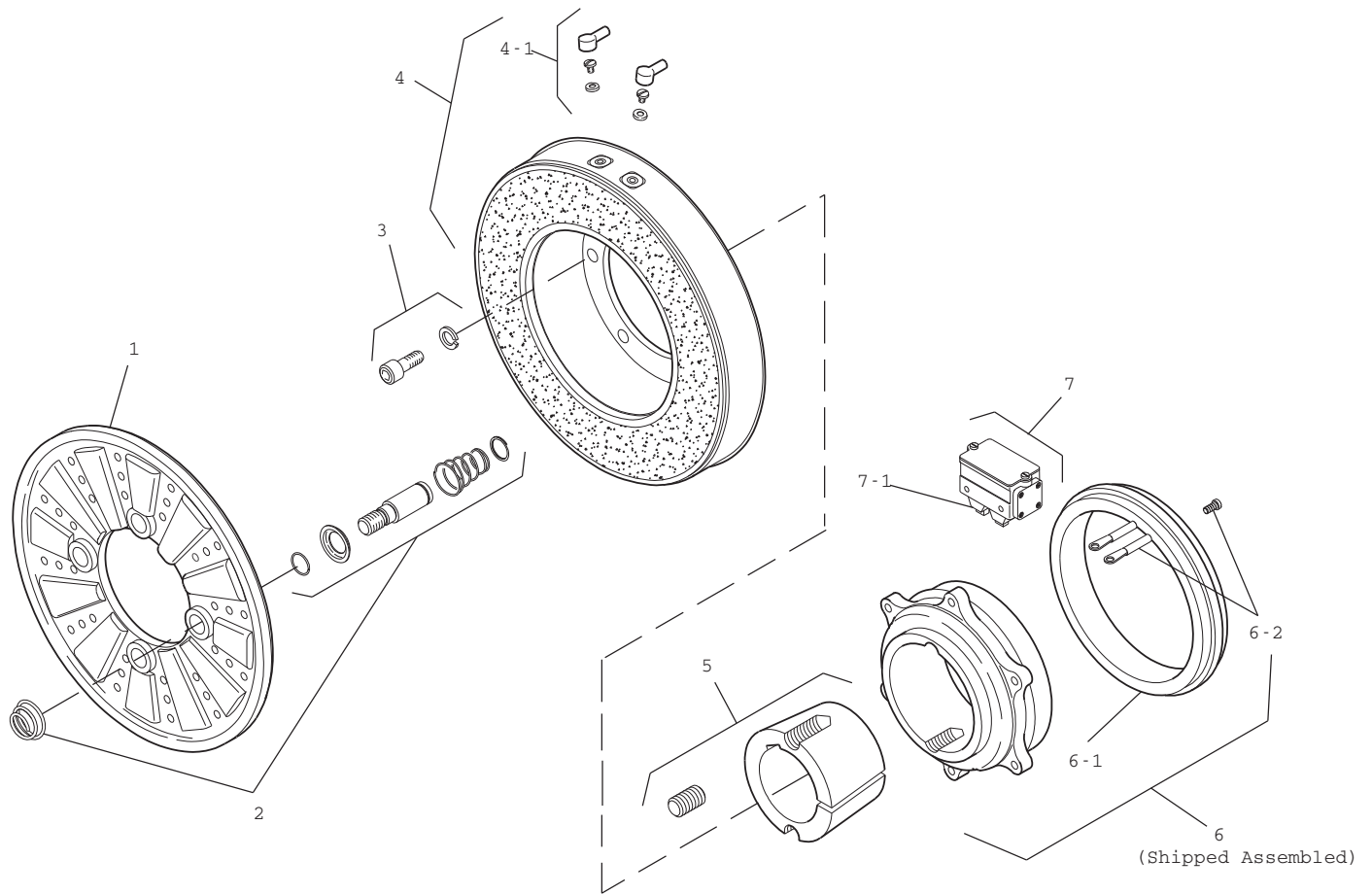


1/2-14 NPSM Am. std. straight pipe tap.

See page 38 for details on Bushings.

Collector Ring View

Shaft Size	.937 – 3.000
Static Torque	700 lb.ft.
Maximum Speed	2,000 RPM
Standard Voltage	DC 6, 24, 90



PC-1525			
Item	Description	Part Number	Qty.
1	Armature	5304-111-004	1
2	Autogap Accessory	5201-101-008	4
3	Mounting Accessory	5321-101-001	2
4	Magnet		1
	6 Volt	5304-631-009	
	24 Volt	5304-631-011	
	90 Volt	5304-631-010	
	†90 Volt LK Facing	5304-631-002	
4-1	Terminal Accessory	5311-101-001	1
5	Bushing*		
	15/16" to 3" Bore	180-0262 to 180-0295	1
6	Magnet Hub		1
	Left Hand	5304-541-001	
	†Optional LK Facing	5304-541-002	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5304-101-004	1
7	Brushholder	5300-178-001	1
7-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

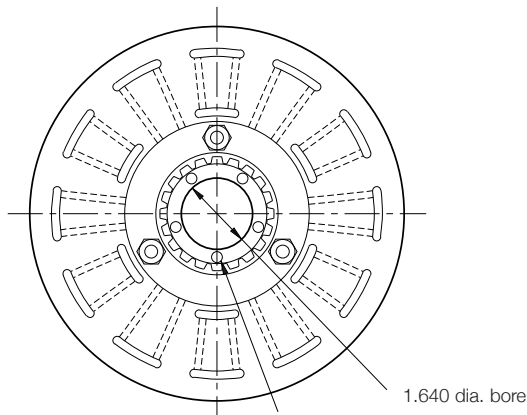
1. Specify Voltage for Item 4.
2. Specify Bore Size for Item 5.
3. Specify left hand or right hand hub for Item 6. (Bushing enters from magnet side for L.H. hub and from hub side for R.H.)

Example:

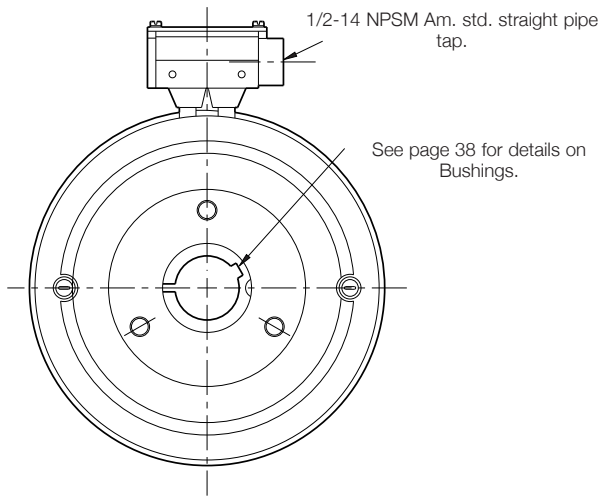
PC-1525 Clutch per I-25628 - 90 Volt, L.H. hub, 1" Bore

These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164. These units are CSA certified under file #LR11543.

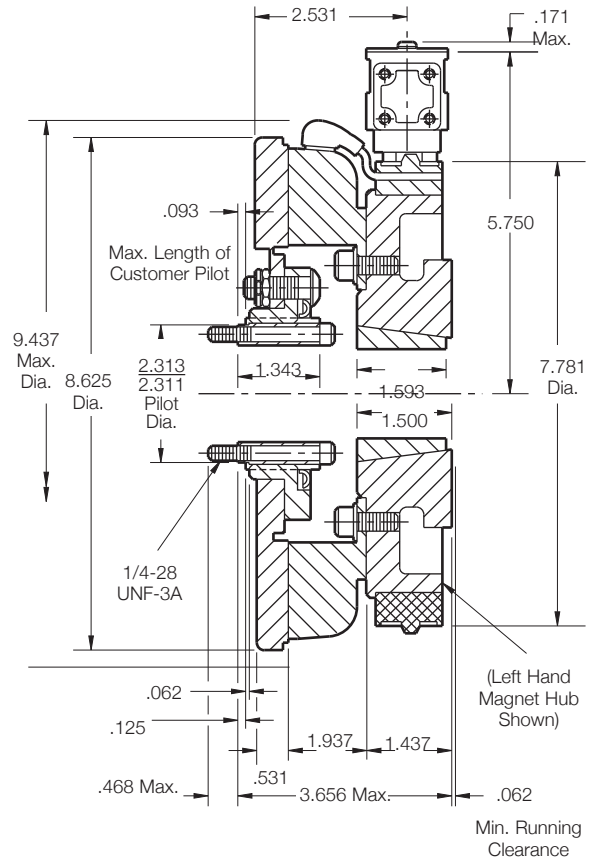
PC-825 Clutch Heavy Duty



Armature View



Collector Ring View



Shaft Size	.500 – 1.625
Static Torque	125 lb.ft.
Maximum Speed	4,000 RPM
Standard Voltage	DC 6, 24, 90

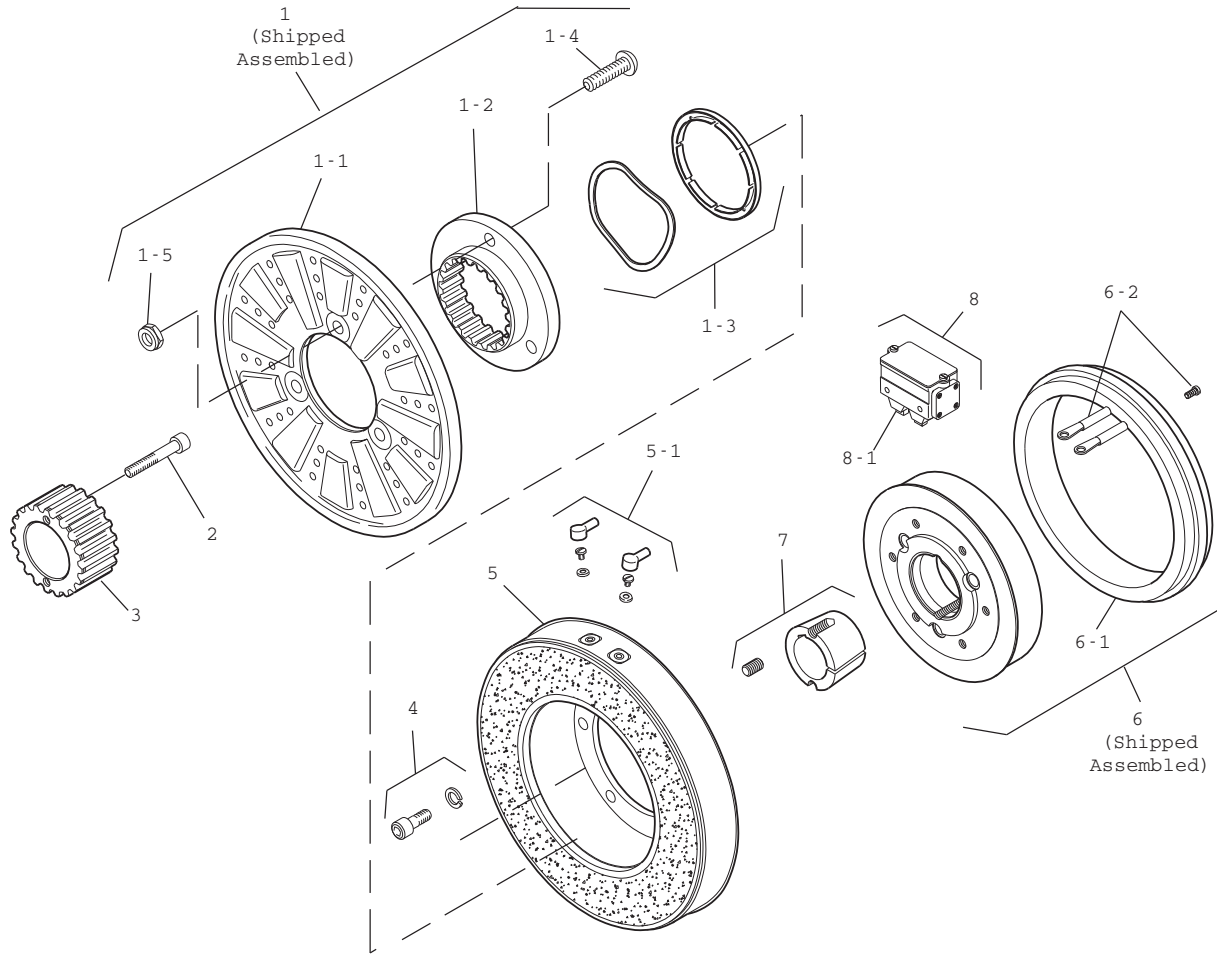
Customer Shall Maintain:

1. Splined hub pilot diameter to be concentric with splined armature center of rotation within .010 T.I.R.
2. Magnet hub shaft to be concentric with splined armature center of rotation within .006 T.I.R.



PC-825 Clutch Heavy Duty

Drawing I-25563



Item	Description	PC-825 Part Number	Qty.
1	Armature & Splined Adapter Assembly	5321-111-001	1
1-1	Armature	5321-111-022	1
1-2	Splined Armature Adapter	104-0008	1
1-3	Autogap Accessory	5321-101-006	1
	Autogap Spring	808-0054	1
	Retainer Ring	748-0373	1
1-4	Button Head Screw	797-0272	3
1-5	Locknut	661-0004	3
2	Mounting Accessory	5201-101-001	1
3	Splined Hub	540-0146	1
4	Mounting Accessory	5321-101-001	1
5	Magnet		1
	6 Volt	5301-631-002	
	24 Volt	5301-631-004	
	90 Volt	5301-631-005	
	†90 Volt LK Facing	5301-631-011	
5-1	Terminal Accessory	5311-101-001	1
6	Magnet Hub Assembly		1
	R.H. (shown)	5301-541-002	
	L.H.	5301-541-001	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5301-101-002	1

Item	Description	PC-825 Part Number	Qty.
7	Bushing, Taperlock*	180-0131 to 180-0149	1
8	Brushholder	5300-178-001	1
8-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

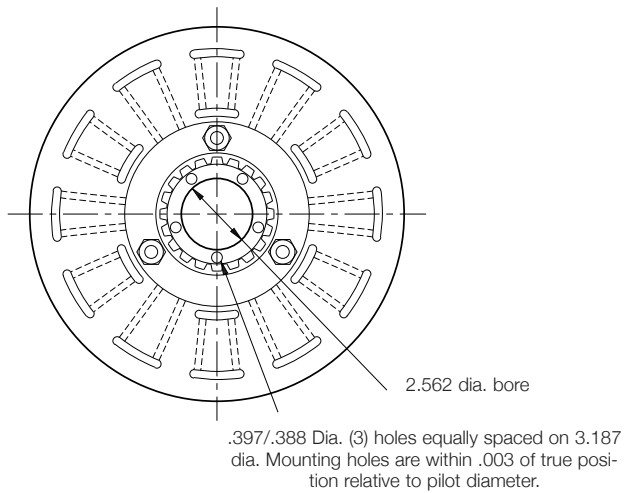
1. Specify Voltage for Item 5.
2. Specify Bore Size for Item 7.
3. Specify left hand or right hand hub for Item 6.

Example:

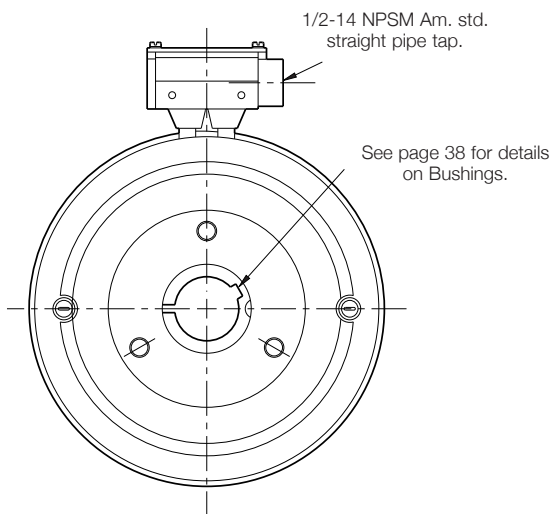
PC-825 Clutch per I-25563 - 90 Volt, L.H. hub, 1" Bore

These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164. These units are CSA certified under file #LR11543.

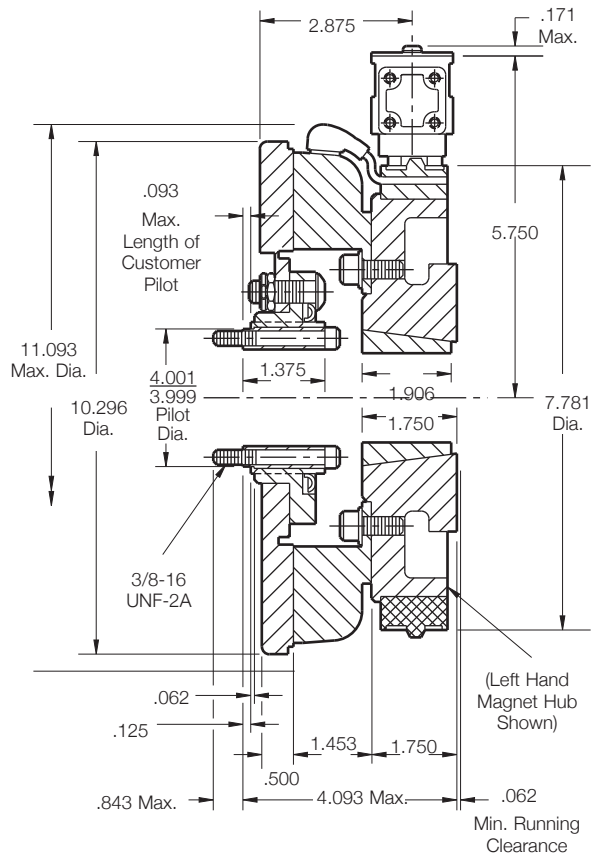
PC-1000 Clutch Heavy Duty



Armature View



Collector Ring View

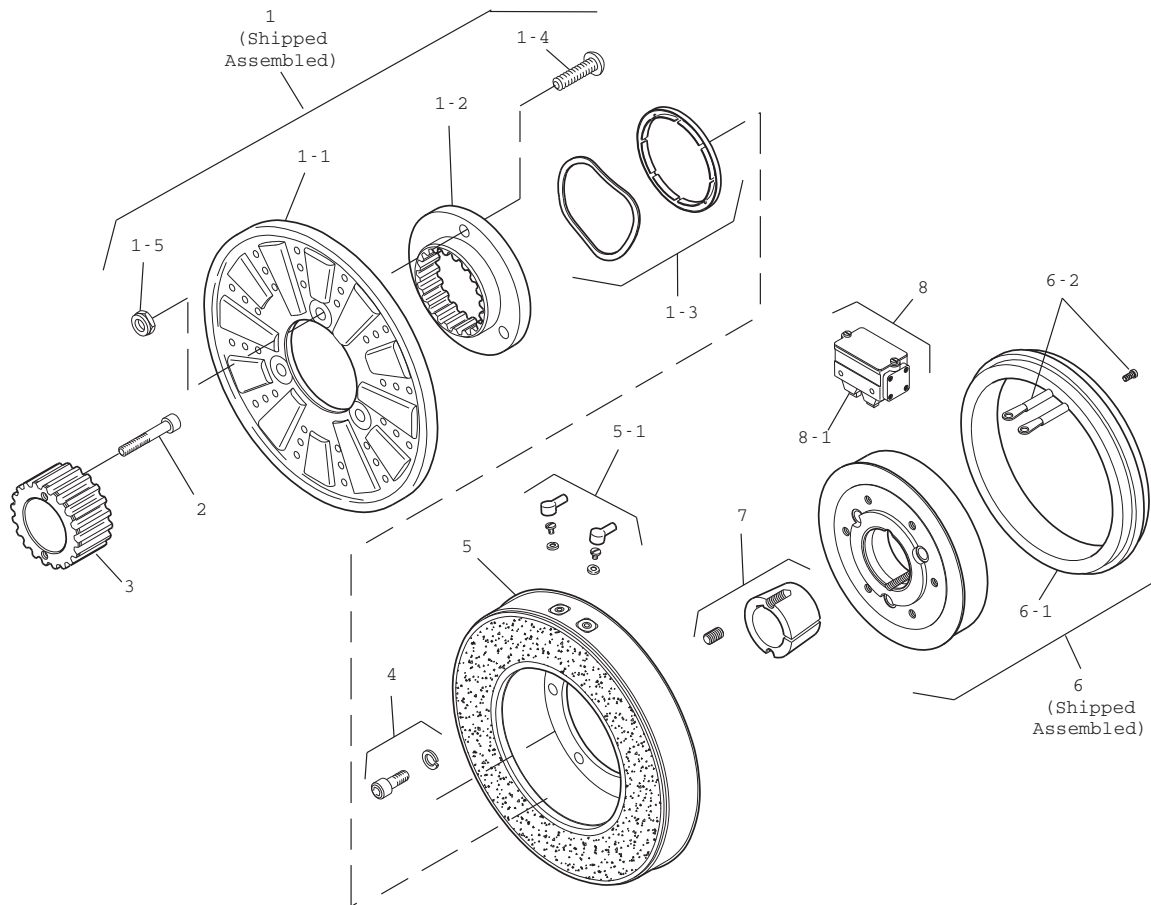


Shaft Size	.500 – 2.500
Static Torque	240 lb.ft.
Maximum Speed	3,600 RPM
Standard Voltage	DC 6, 24, 90

Customer Shall Maintain:

1. Splined hub pilot diameter to be concentric with splined armature center of rotation within .010 T.I.R.
2. Magnet hub shaft to be concentric with splined armature center of rotation within .006 T.I.R.





Item	Description	PC-1000 Part Number	Qty.
1	Armature & Splined Adapter Assembly	5322-111-002	1
1-1	Armature	5322-111-036	1
1-2	Splined Armature Adapter	104-009	1
1-3	Autogap Accessory	5322-101-004	1
	Autogap Spring	808-0061	1
	Retainer Ring	748-0374	1
1-4	Button Head Screw	797-0272	3
1-5	Locknut	661-0004	3
2	Mounting Accessory	5321-101-001	1
3	Splined Hub	540-0147	1
4	Mounting Accessory	5321-101-001	1
5	Magnet		1
	6 Volt	5302-631-003	
	24 Volt	5302-631-014	
	90 Volt	5302-631-005	
	†90 Volt LK Facing	5302-631-001	
5-1	Terminal Accessory	5311-101-001	1
6	Magnet Hub Assembly		1
	R.H. (shown)	5302-541-002	
	L.H.	5302-541-001	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5302-101-002	1

Item	Description	PC-1000 Part Number	Qty.
7	Bushing, Taperlock*	180-0185 to 180-0217	1
8	Brushholder	5300-178-001	1
8-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

1. Specify Voltage for Item 5.
2. Specify Bore Size for Item 7.
3. Specify left hand or right hand hub for Item 6.

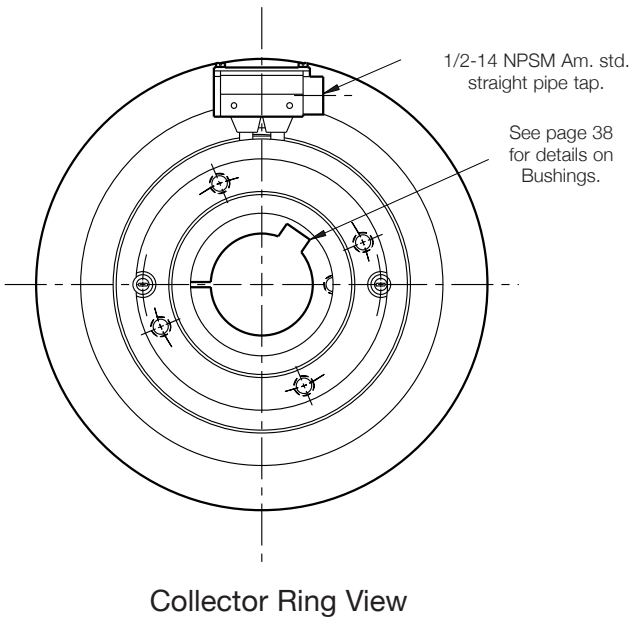
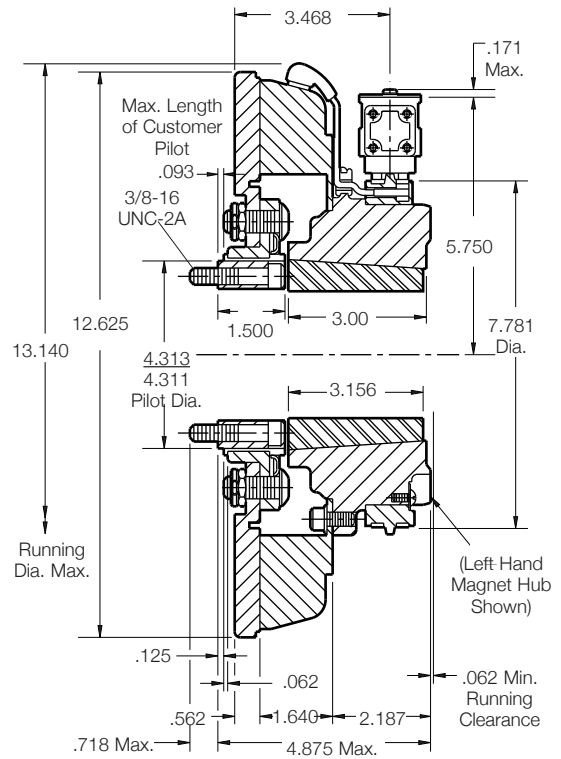
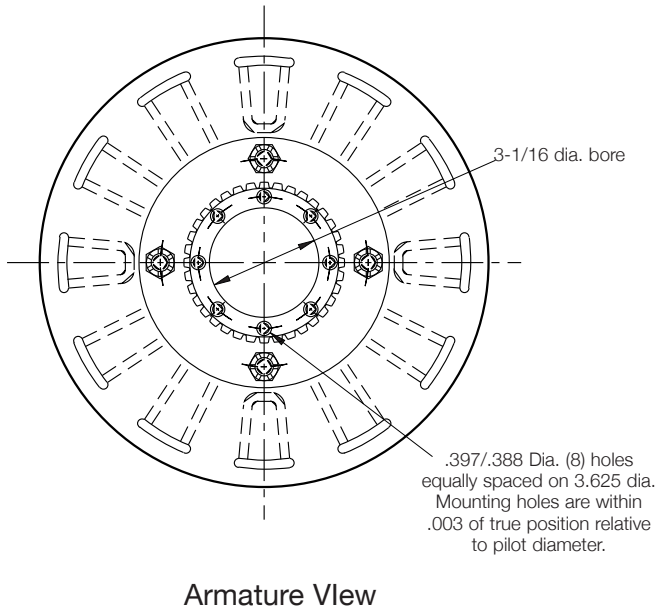
Example:

PC-1000 Clutch per I-25583 - 90 Volt, L.H. hub, 1" Bore

These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

PC-1225 Clutch Heavy Duty

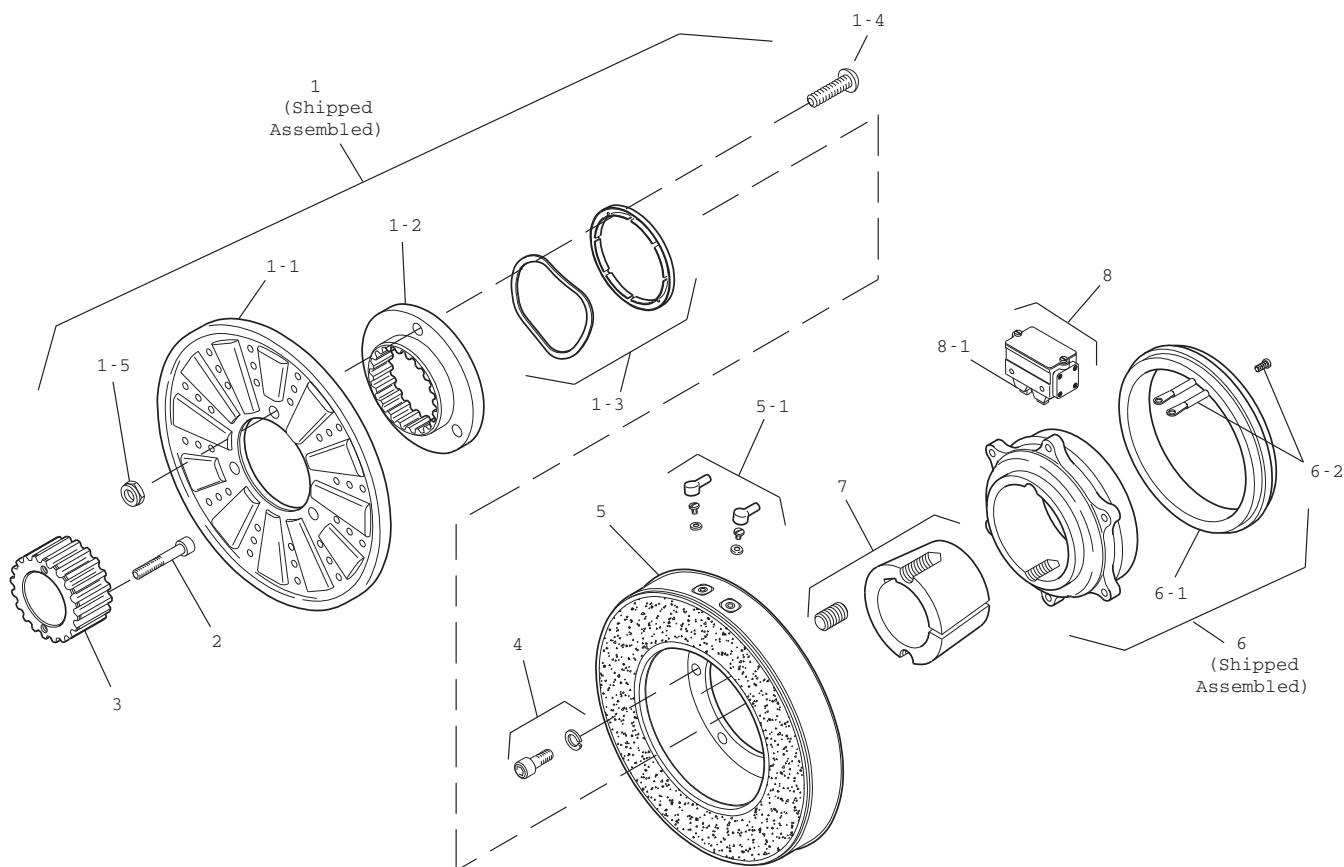


Shaft Size	.937 – 3.00
Static Torque	465 lb.ft.
Maximum Speed	3,000 RPM
Standard Voltage	DC 6, 24, 90

Customer Shall Maintain:

1. Splined hub pilot diameter to be concentric with splined armature center of rotation within .010 T.I.R.





Item	Description	PC-1225 Part Number	Qty.
1	Armature & Splined Adapter Assembly	5323-111-001	1
1-1	Armature	5323-111-034	1
1-2	Splined Armature Adapter	104-0010	1
1-3	Autogap Accessory	5323-101-002	1
	Autogap Spring	808-0044	1
	Retainer Ring	748-0370	1
1-4	Button Head Screw	797-0281	4
1-5	Locknut	661-0005	4
2	Mounting Accessory	5202-101-001	1
3	Splined Hub	540-0148	1
4	Mounting Accessory	5321-101-001	1
5	Magnet		1
	6 Volt	5303-631-005	
	24 Volt	5303-631-007	
	90 Volt	5303-631-008	
	†90 Volt LK Facing	5303-631-001	
5-1	Terminal Accessory	5311-101-001	
6	Magnet Hub Assembly		1
	R.H. (shown)	5303-541-002	
	L.H.	5303-541-001	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5303-101-004	1

Item	Description	PC-1225 Part Number	Qty.
7	Bushing, Taperlock*	180-0262 to 180-0295*	1
8	Brushholder	5300-178-001	1
8-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

1. Specify Voltage for Item 5.
2. Specify Bore Size for Item 7.
3. Specify left hand or right hand hub for Item 6.

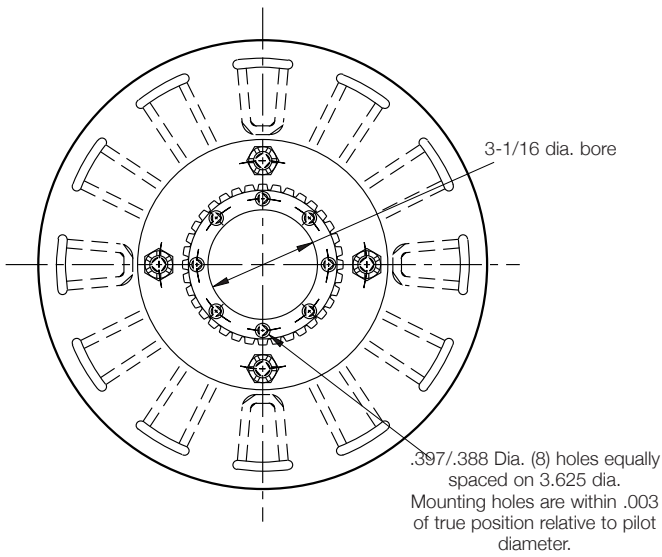
Example:

PC-1225 Clutch per I-25603 - 90 Volt, L.H. hub, 1" Bore

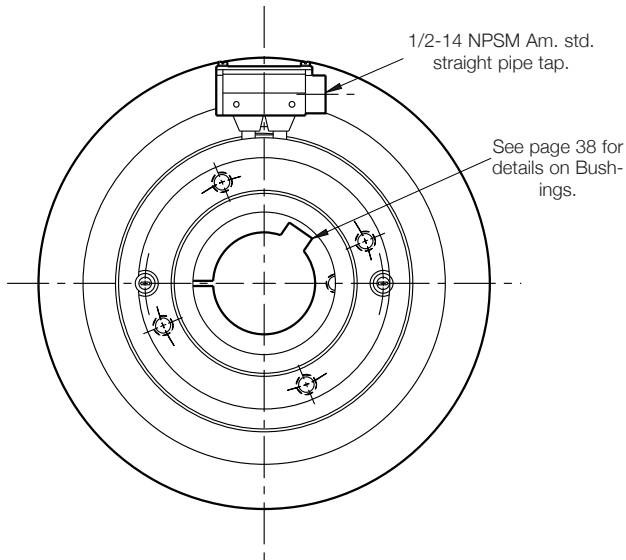
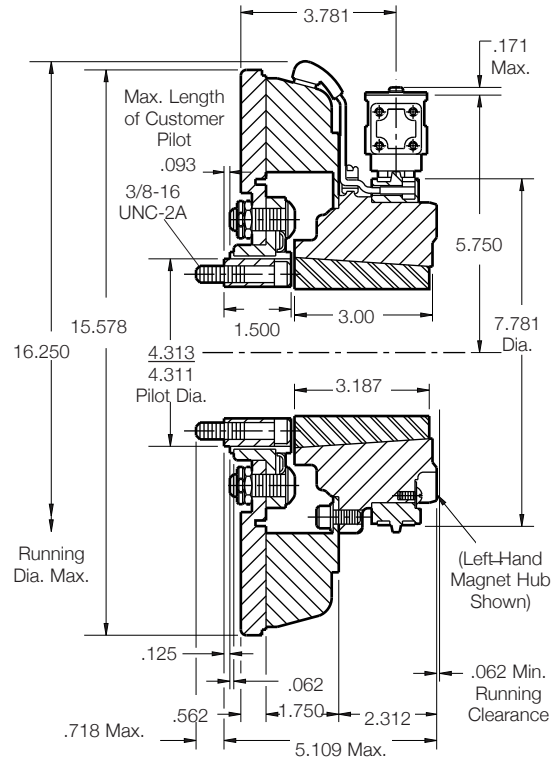
These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

PC-1525 Clutch Heavy Duty



Armature View



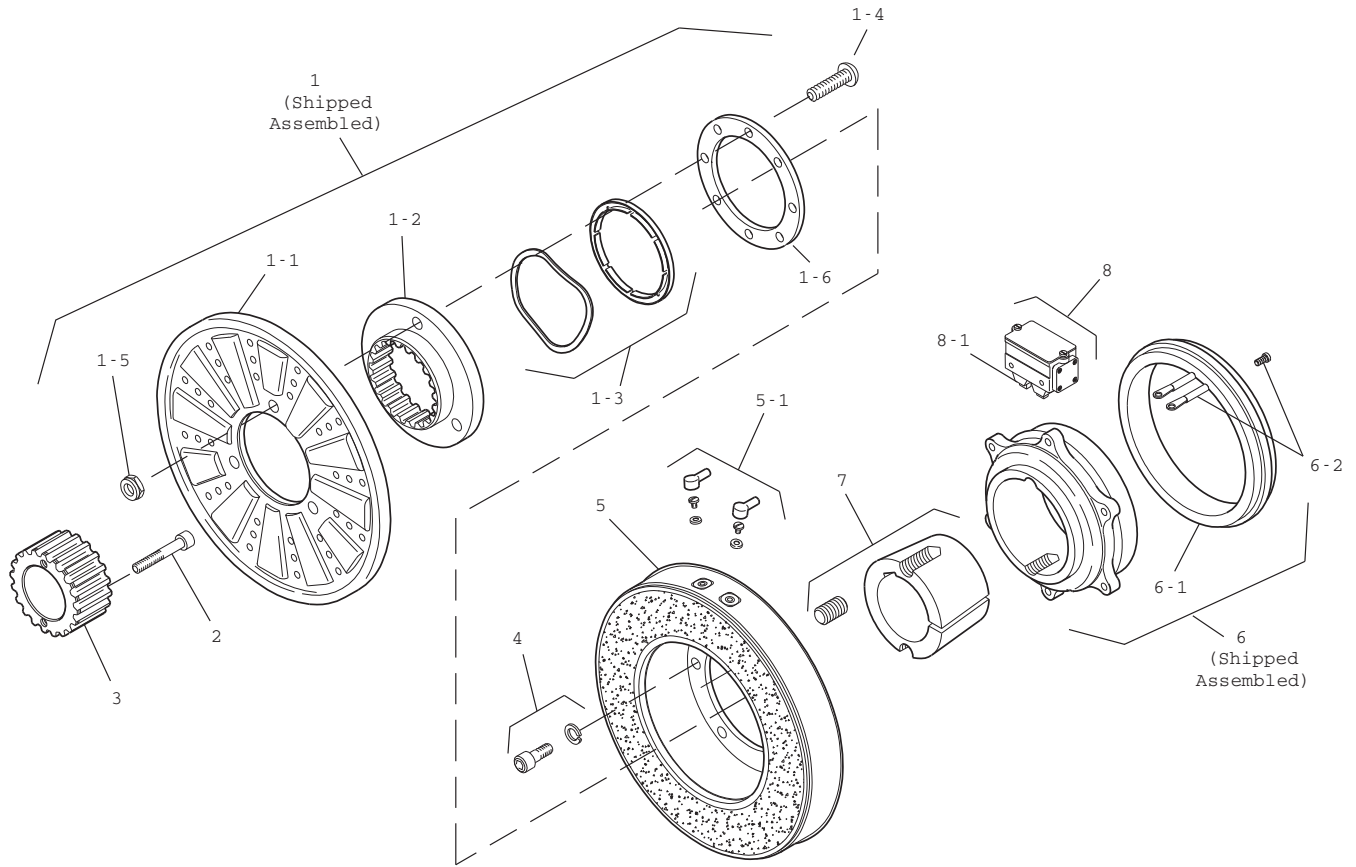
Collector Ring View

Shaft Size	.937 – 3.000
Static Torque	700 lb.ft.
Maximum Speed	2,000 RPM
Standard Voltage	DC 6, 24, 90

Customer Shall Maintain:

1. Splined hub pilot diameter to be concentric with splined armature center of rotation within .010 T.I.R.





Item	Description	PC-1525 Part Number	Qty.
1	Armature & Splined Adapter Assembly	5324-111-001	1
1-1	Armature	5324-111-034	1
1-2	Splined Armature Adapter	104-0011	1
1-3	Autogap Accessory	5323-101-002	1
	Autogap Spring	808-0044	1
	Retainer Ring	748-0370	1
1-4	Button Head Screw	797-0272	8
1-5	Locknut	661-0004	8
1-6	Retainer Plate	686-0003	1
2	Mounting Accessory	5202-101-001	1
3	Splined Hub	540-0148	1
4	Mounting Accessory	5321-101-001	2
5	Magnet		1
	6 Volt	5304-631-009	
	24 Volt	5304-631-011	
	90 Volt	5304-631-010	
	†90 Volt LK Facing	5304-631-002	
5-1	Terminal Accessory	5311-101-001	1
6	Magnet Hub Assembly		1
	R.H. (shown)	5304-541-002	
	L.H.	5304-541-001	
6-1	Collector Ring	5301-749-001	1
6-2	Collector Ring Accessory	5304-101-004	1

Item	Description	PC-1525 Part Number	Qty.
7	Bushing, Taperlock*	180-0262 to 180-0295*	1
8	Brushholder	5300-178-001	1
8-1	Brush	176-0001	4

*See page 38 for specific part numbers.

†Optional LK facing available.

How to Order:

1. Specify Voltage for Item 5.
2. Specify Bore Size for Item 7.
3. Specify left hand or right hand hub for Item 6.

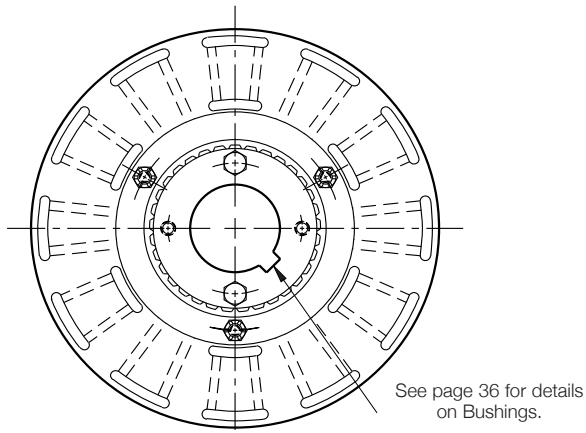
Example:

PC-1525 Clutch per I-25629 - 90 Volt, L.H. hub, 1" Bore

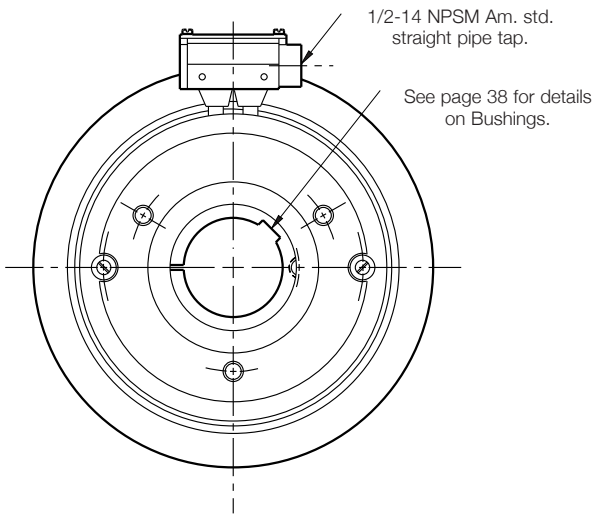
These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

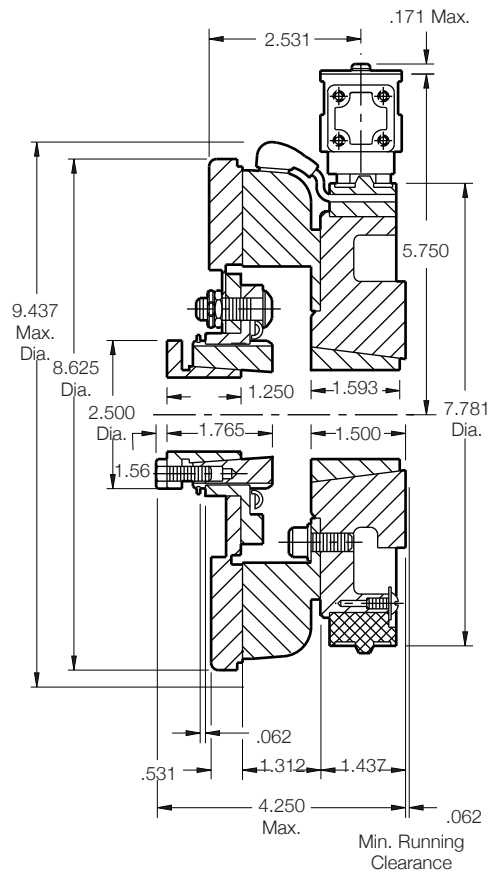
PCC-825 Clutch Coupling



Armature View



Collector Ring View



Armature Shaft	.500 – 1.500
Rotor Shaft	.500 – 1.625
Static Torque	125 lb.ft.
Maximum Speed	4,000 RPM
Standard Voltage	DC 6, 24, 90

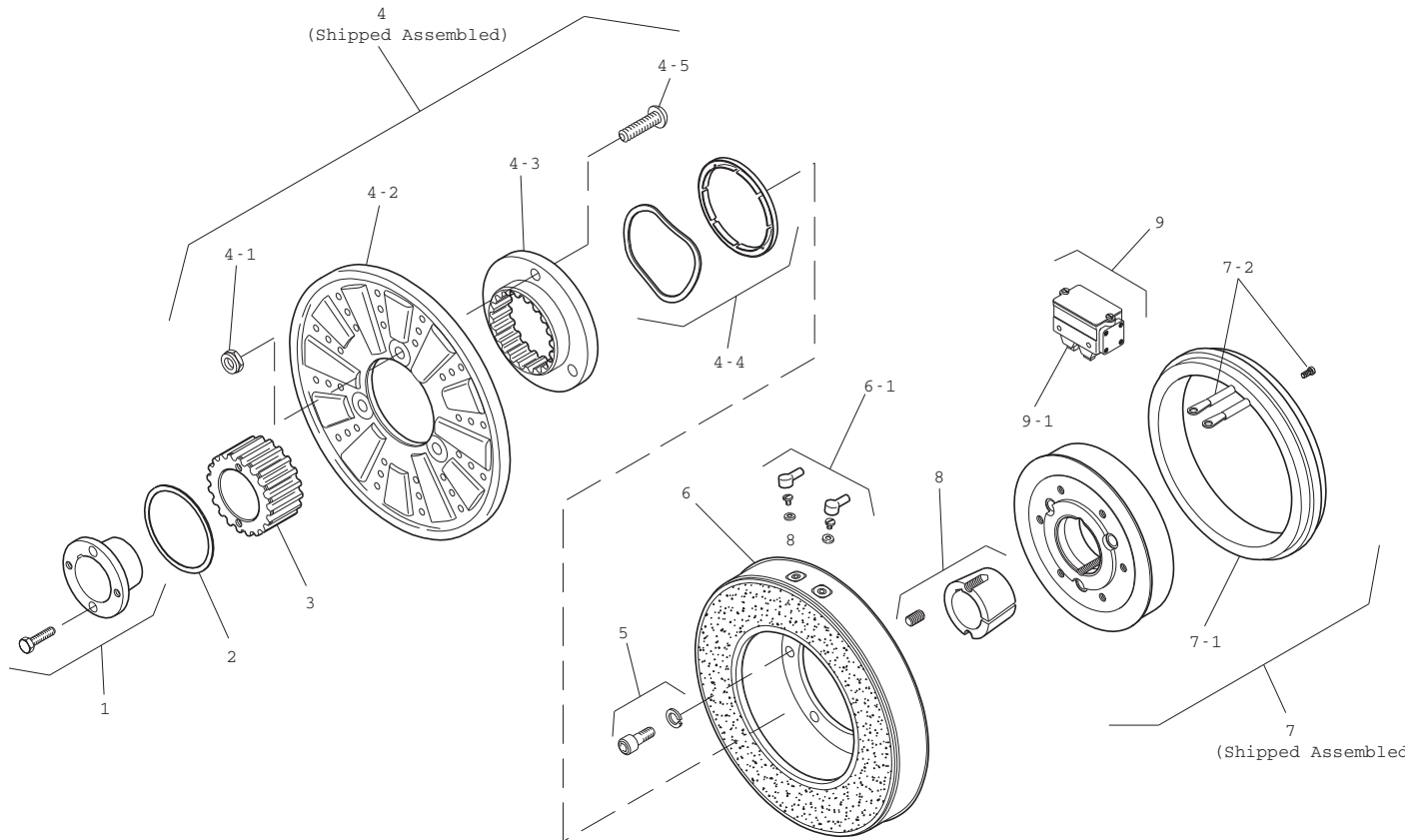
Customer Shall Maintain:

1. Armature mounting shaft concentric with magnet mounting shaft within .006 T.I.R.
2. Angular alignment of shafts within 1/2 degree.



PCC-825 Clutch Coupling

Drawing I-25565



Item	Description	PCC-825 Part Number	Qty.
1	Bushing*		
	1/2" to 1-1/2" Bore	180-0002 to 180-0018	1
	3/4" to 2-11/16" Bore		
2	Retainer Ring	748-0006	1
3	Splined Hub	540-0057	1
4	Armature & Splined Adapter	5321-111-001	1
4-1	Locknut	661-0004	3
4-2	Armature	5321-111-022	1
4-3	Splined Adapter	104-0008	1
4-4	Autogap Accessory	5321-101-006	1
4-5	Screw	797-0272	3
5	Mounting Accessory	5321-101-001	1
6	Magnet		1
	6 Volt	5301-631-002	
	24 Volt	5301-631-004	
	90 Volt	5301-631-005	
6-1	Terminal Accessory	5311-101-001	1
7	Magnet Hub		1
	Left Hand	5301-541-001	1
	Right Hand	5301-541-002	1
7-1	Collector Ring	5301-749-001	1
7-2	Collector Ring Accessory	5301-101-002	1
8	Bushing*		
	1/2" to 1-5/8" Bore	180-0131 to 180-0149	1
	1/2" to 2-1/2" Bore		
9	Brushholder	5300-178-001	1
9-1	Brush	176-0001	4

*See page 38 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Voltage for Item 6.
3. Specify left hand or right hand hub for Item 7. (Bushing enters from magnet side for L.H. hub and from hub side for R.H.)
4. Specify Bore Size for Item 8.

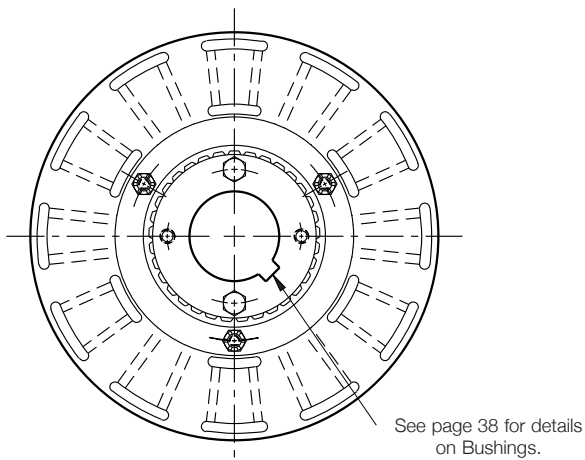
Example:

PCC-825 Clutch Coupling per I-25565 - 90 Volt, L.H. hub, 1" Bore (Item 1), 1-1/2" Bore (Item 8)

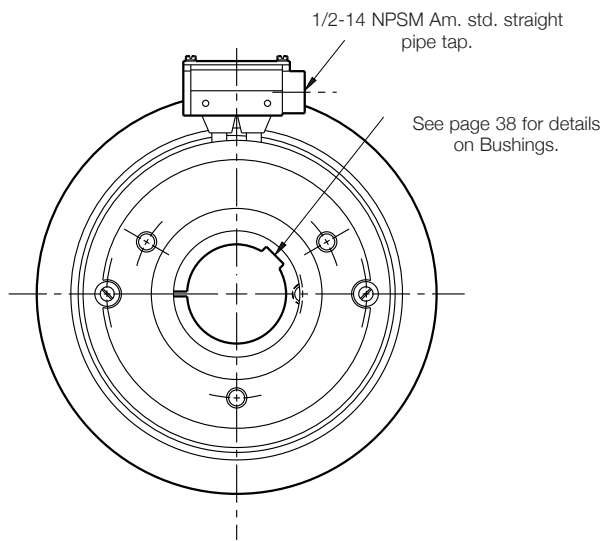
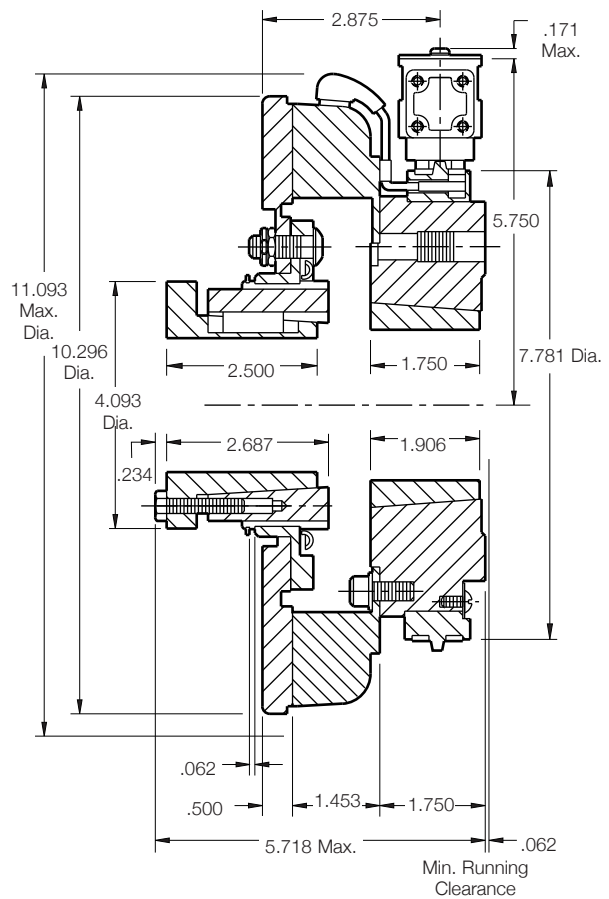
These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

PCC-1000 Clutch Coupling



Armature View



Collector Ring View

Armature Shaft	.750 – 2.687
Rotor Shaft	.500 – 2.500
Static Torque	240 lb.ft.
Maximum Speed	3,600 RPM
Standard Voltage	DC 6, 24, 90

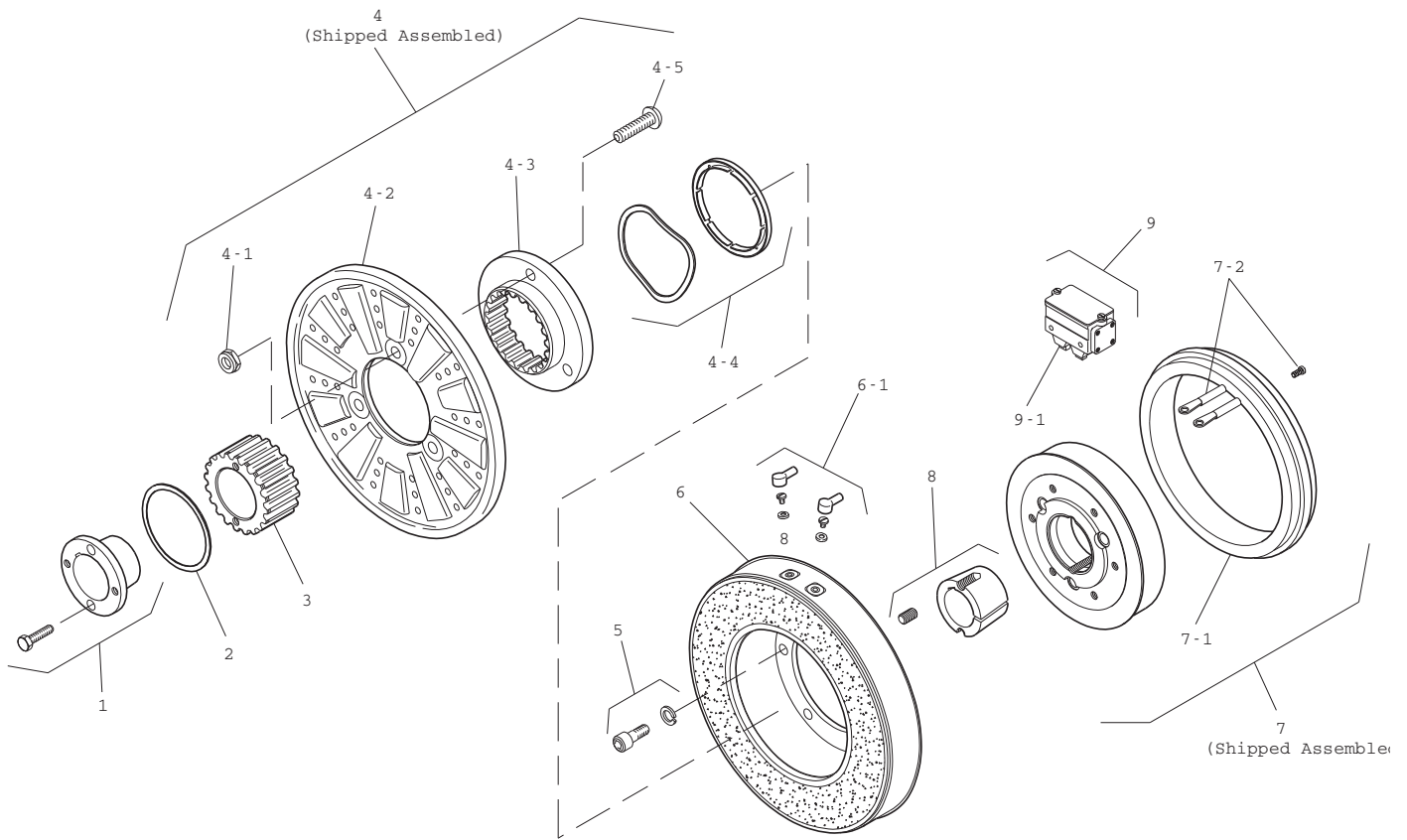
Customer Shall Maintain:

1. Armature mounting shaft concentric with magnet mounting shaft within .006 T.I.R.
2. Angular alignment of shafts within 1/2 degree.



PCC-1000 Clutch Coupling

Drawing I-25585



Item	Description	PC-1000 Part Number	Qty.
1	Bushing*		
	1/2" to 1-1/2" Bore		
	3/4" to 2-11/16" Bore	180-0026 to 180-0056	1
2	Retainer Ring	748-0007	1
3	Splined Hub	540-0062	1
4	Armature & Splined Adapter	5322-111-002	1
4-1	Locknut	661-0004	3
4-2	Armature	5322-111-036	1
4-3	Splined Adapter	104-0009	1
4-4	Autogap Accessory	5322-101-004	1
4-5	Screw	797-0272	3
5	Mounting Accessory	5321-101-001	1
6	Magnet		1
	6 Volt	5302-631-003	
	24 Volt	5302-631-014	
	90 Volt	5302-631-005	
6-1	Terminal Accessory	5311-101-001	1
7	Magnet Hub		1
	Left Hand	5302-541-001	
	Right Hand	5302-541-002	
7-1	Collector Ring	5301-749-001	1
7-2	Collector Ring Accessory	5302-101-002	1
8	Bushing*		
	1/2" to 1-5/8" Bore		
	1/2" to 2-1/2" Bore	180-0185 to 180-0217	1

Item	Description	PC-1000 Part Number	Qty.
9	Brushholder	5300-178-001	1
9-1	Brush	176-0001	4

*See page 38 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Voltage for Item 6.
3. Specify left hand or right hand hub for Item 7.
(Bushing enters from magnet side for L.H. hub and from hub side for R.H.)
4. Specify Bore Size for Item 8.

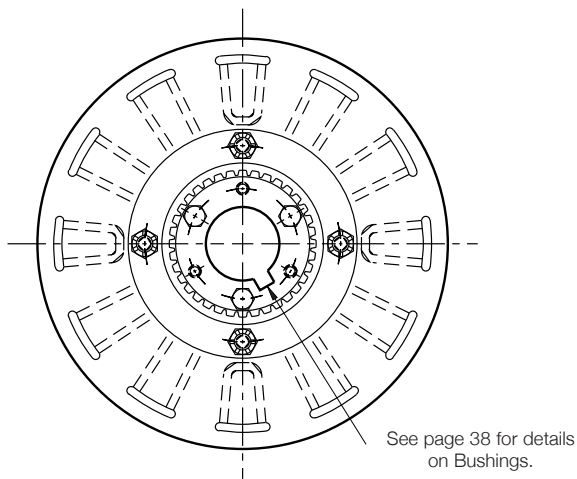
Example:

PCC-1000 Clutch Coupling per I-25585 - 90 Volt, L.H. hub, 1-1/2" Bore (Item 1), 2" Bore (Item 8)

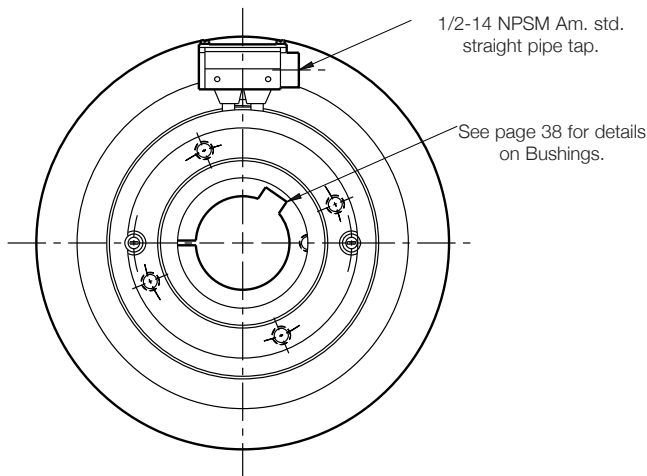
These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

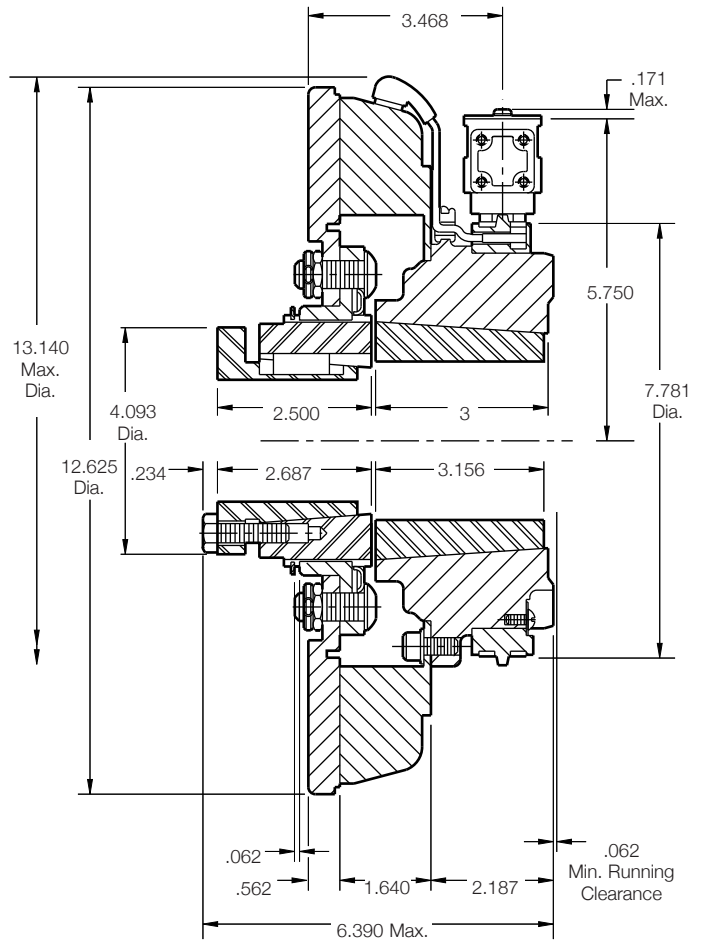
PCC-1225 Clutch Coupling



Armature View



PCC-1225
Collector Ring View

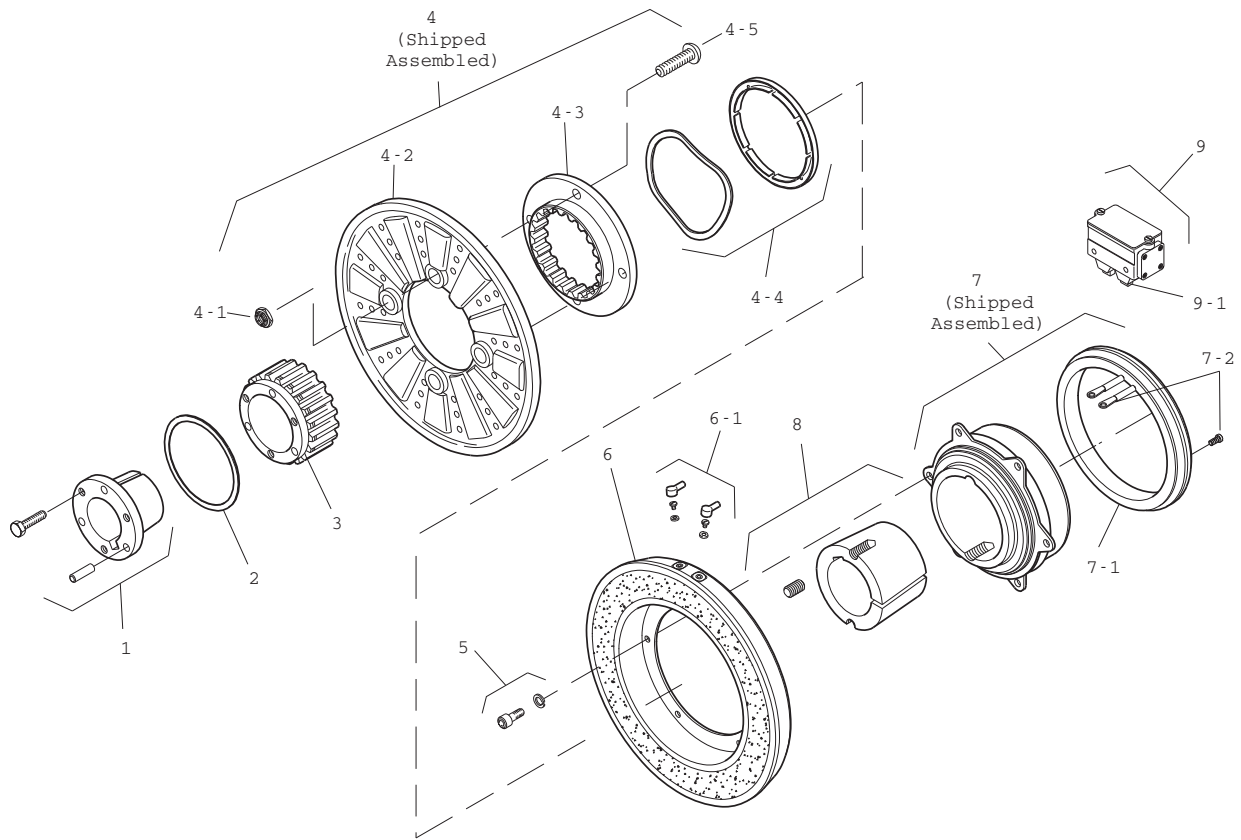


Armature Shaft	.750 – 2.687
Rotor Shaft	.937 – 3.00
Static Torque	465 lb.ft.
Maximum Speed	3,000 RPM
Standard Voltage	DC 6, 24, 90

Customer Shall Maintain:

1. Armature mounting shaft concentric with magnet mounting shaft within .006 T.I.R.
2. Angular alignment of shafts within 1/2 degree.





Item	Description	PCC-1225 Part Number	Qty.
1	Bushing*		
	3/4" to 2-11/16" Bore	180-0026 to 180-0057	1
2	Retainer Ring	748-0005	1
3	Splined Hub	540-0064	1
4	Armature & Splined Adapter	5323-111-001	1
4-1	Locknut	661-0005	4
4-2	Armature	5323-111-034	1
4-3	Splined Adapter	104-0010	1
4-4	Autogap Accessory	5323-101-002	1
4-5	Retainer Plate		
4-6	Screw	797-0281	4
5	Mounting Accessory	5321-101-001	1
6	Magnet		1
	6 Volt	5303-631-005	
	24 Volt	5303-631-007	
	90 Volt	5303-631-008	
6-1	Terminal Accessory	5311-101-001	1
7	Magnet Hub		1
	Left Hand	5303-541-001	
	Right Hand	5303-541-002	
7-1	Collector Ring	5301-749-001	
7-2	Collector Ring Accessory	5303-101-004	1
8	Bushing*		
	1/16" to 3" Bore	180-0262 to 180-0295	1
9	Brushholder	5300-178-001	1
9-1	Brush	176-0001	4

*See page 38 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Voltage for Item 6.
3. Specify left hand or right hand hub for Item 7.
(Bushing enters from magnet side for L.H. hub and from hub side for R.H.)
4. Specify Bore Size for Item 8.

Example:

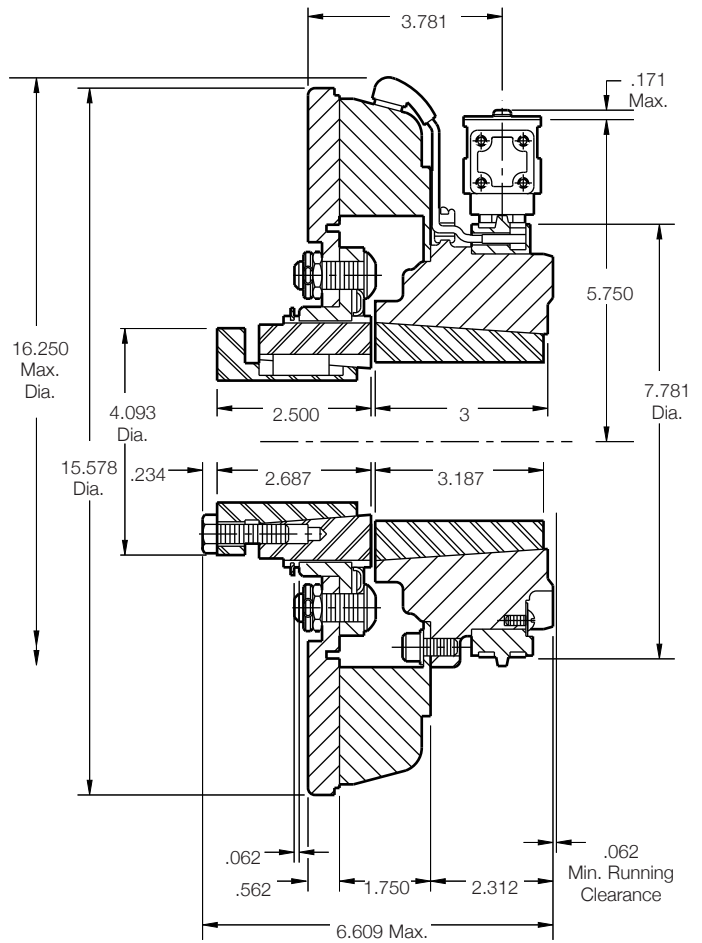
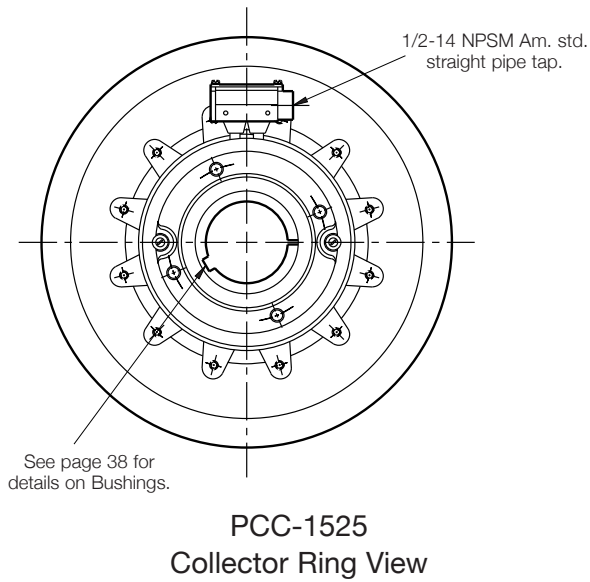
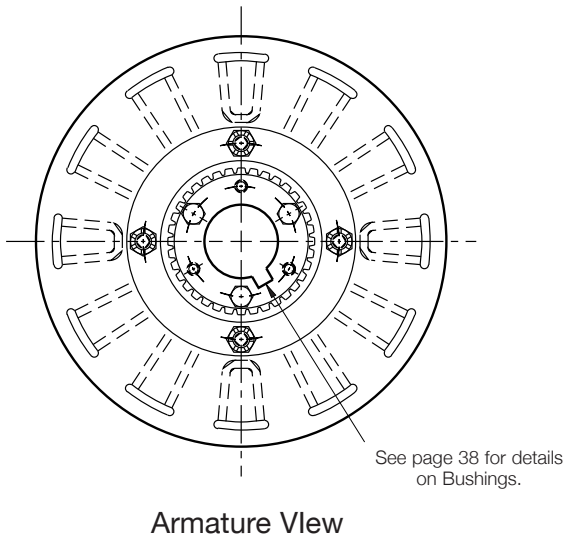
PCC-1225 Clutch Coupling per

I-25605 - 90 Volt, L.H. hub, 1-1/2" Bore (Item 1), 2" Bore (Item 8)

These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

PCC-1525 Clutch Coupling

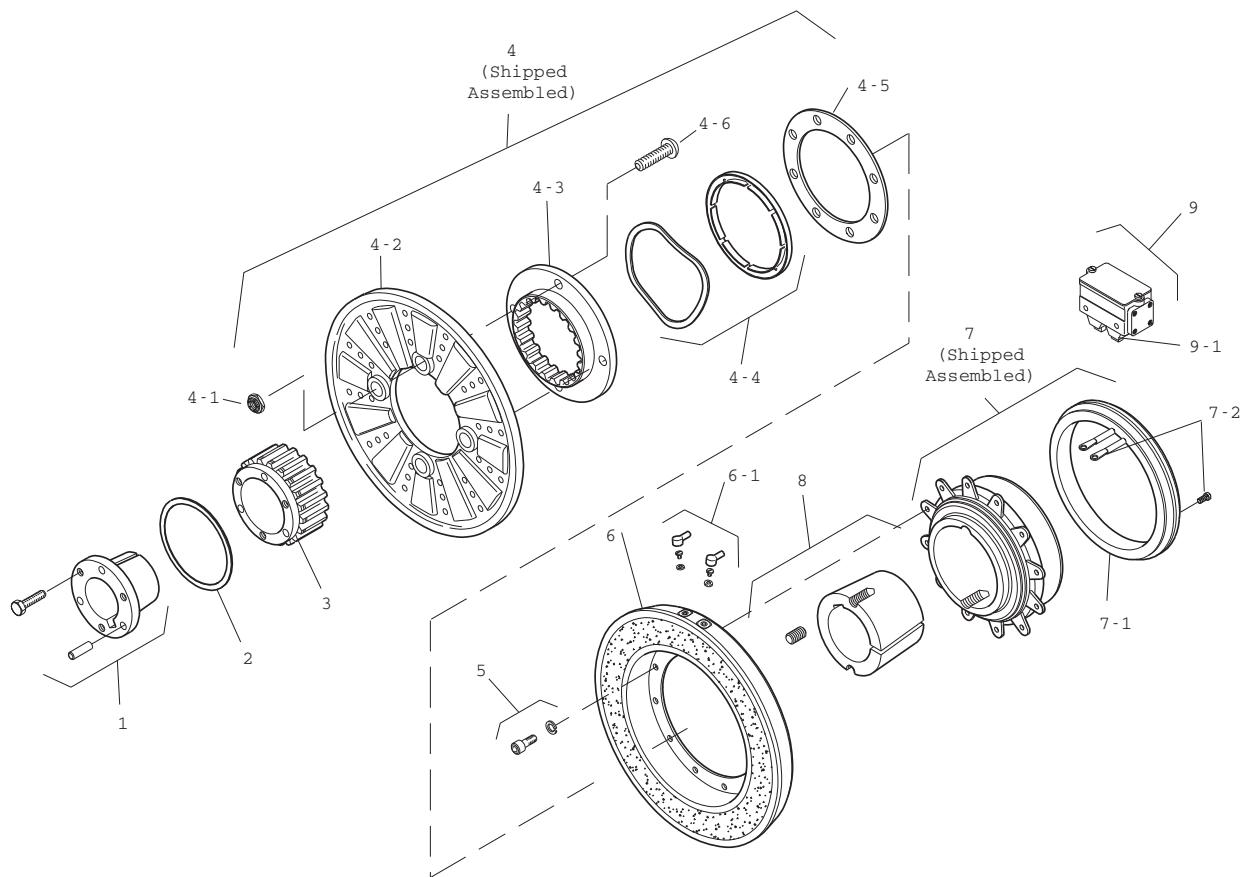


Armature Shaft	.750 – 2.687
Rotor Shaft	.937 – 3.00
Static Torque	700 lb.ft.
Maximum Speed	2,000 RPM
Standard Voltage	DC 6, 24, 90

Customer Shall Maintain:

1. Armature mounting shaft concentric with magnet mounting shaft within .006 T.I.R.
2. Angular alignment of shafts within 1/2 degree.





Item	Description	PCC-1525 Part Number	Qty.
1	Bushing*		
	3/4" to 2-11/16" Bore	180-0026 to 180-0057	1
2	Retainer Ring	748-0005	1
3	Splined Hub	540-0064	1
4	Armature & Splined Adapter	5324-111-001	1
4-1	Locknut	661-0004	8
4-2	Armature	5324-111-034	1
4-3	Splined Adapter	104-0011	1
4-4	Autogap Accessory	5323-101-002	1
4-5	Retainer Plate	686-0003	1
4-6	Screw	797-0272	8
5	Mounting Accessory	5321-101-001	2
6	Magnet		1
	6 Volt	5304-631-009	
	24 Volt	5304-631-011	
	90 Volt	5304-631-010	
6-1	Terminal Accessory	5311-101-001	1
7	Magnet Hub		1
	Left Hand	5304-541-001	
	Right Hand	5304-541-002	
7-1	Collector Ring	5301-749-001	1
7-2	Collector Ring Accessory	5304-101-004	1
8	Bushing*		
	15/16" to 3" Bore	180-0262 to 180-0295	1
9	Brushholder	5300-178-001	1
9-1	Brush	176-0001	4

*See page 38 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Voltage for Item 6.
3. Specify left hand or right hand hub for Item 7.
(Bushing enters from magnet side for L.H. hub and from hub side for R.H.)
4. Specify Bore Size for Item 8.

Example:

PCC-1525 Clutch Coupling per I-25632 - 90 Volt, L.H. hub, 1-1/2" Bore (Item 1), 2" Bore (Item 8)

These units meet the standards of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

Bushing Part Numbers

Browning Bushing

Shaft Size	Keyway Size	Bushing Number		
		Warner Electric	Browning	
1/2	1/8 x 1/16	180-0002	H-1	
9/16	1/8 x 1/16	180-0003		
5/8	3/16 x 3/32	180-0004		
11/16	3/16 x 3/32	180-0005		
3/4	3/16 x 3/32	180-0006		
13/16	3/16 x 3/32	180-0007		
7/8	3/16 x 3/32	180-0008		
15/16	1/4 x 1/8	180-0009		
1	1/4 x 1/8	180-0010		
1-1/6	1/4 x 1/8	180-0011		
1-1/8	1/4 x 1/8	180-0012		
1-3/16	1/4 x 1/8	180-0013		
1-1/4	1/4 x 3/16	180-0014		
1-5/16	5/16 x 7/32	180-0015		
1-3/8	5/16 x 7/32	180-0016		
1-7/16	3/8 x 1/4	180-0017		H-2
1-1/2	3/8 x 7/32	180-0018		
3/4	1/2 x 3/8	180-0026	QI-1	
13/16	1/2 x 3/8	180-0027		
7/8	1/2 x 3/8	180-0028		
15/16	1/2 x 3/8	180-0029		
1	1/2 x 3/8	180-0030		
1-1/16	1/2 x 3/8	180-0031		
1-1/8	1/2 x 3/8	180-0032		
1-3/16	1/2 x 3/8	180-0033		
1-1/4	1/2 x 3/8	180-0034		
1-5/16	1/2 x 3/8	180-0035		
1-3/8	1/2 x 3/8	180-0036		
1-7/16	1/2 x 3/8	180-0037		
1-1/2	1/2 x 3/8	180-0038		
1-9/16	1/2 x 3/8	180-0039		
1-5/8	1/2 x 3/8	180-0040		
1-11/16	1/2 x 3/8	180-0041		
1-3/4	1/2 x 3/8	180-0042		
1-13/16	1/2 x 3/8	180-0043		
1-7/8	1/2 x 3/8	180-0044		
1-15/16	1/2 x 3/8	180-0045		
2	1/2 x 3/8	180-0046	QI-2	
2-1/16	1/2 x 3/8	180-0047		
2-1/8	1/2 x 3/4	180-0048		
2-3/16	1/2 x 23/32	180-0049		
2-1/4	1/2 x 11/16	180-0050		
2-5/16	5/8 x 5/16	180-0051		
2-3/8	5/8 x 5/16	180-0052		
2-7/16	5/8 x 5/16	180-0053		
2-1/2	5/8 x 5/16	180-0054		
2-9/16	5/8 x 5/16	180-0055		
2-5/8	5/8 x 5/16	180-0056		
2-11/16	5/8 x 5/16	180-0057		

Dodge Bushing

Shaft Size	Keyway Size	Bushing Number		
		Warner Electric	Dodge	
1/2	1/8 x 1/16	180-0101	1210	
9/16	1/8 x 1/16	180-0102		
5/8	3/16 x 3/32	180-0103		
11/16	3/16 x 3/32	180-0104		
3/4	3/16 x 3/32	180-0105		
13/16	3/16 x 3/32	180-0106		
7/8	3/16 x 3/32	180-0107		
5/16	1/4 x 1/8	180-0108		
1	1/4 x 1/8	180-0109		
1-1/16	1/4 x 1/8	180-0110		
1-1/8	1/4 x 1/8	180-0111		
1-3/16	1/4 x 1/8	180-0112		
1-1/4	1/4 x 1/8	180-0113		
1/2	1/8 x 1/16	180-0116		1215
9/16	1/8 x 1/16	180-0117		
5/8	3/16 x 3/32	180-0118		
11/16	3/16 x 3/32	180-0119		
3/4	3/16 x 3/32	180-0120		
13/16	3/16 x 3/32	180-0121		
7/8	3/16 x 3/32	180-0122		
15/16	1/4 x 1/8	180-0123		
1	1/4 x 1/8	180-0124		
1-1/16	1/4 x 1/8	180-0125		
1-1/8	1/4 x 1/8	180-0126		
1-3/16	1/4 x 1/8	180-0127		
1-1/4	1/4 x 1/8	180-0128		
1/2	1/8 x 1/16	180-0131	1615	
9/16	1/8 x 1/16	180-0132		
5/8	3/16 x 3/32	180-0133		
11/16	3/16 x 3/32	180-0134		
3/4	3/16 x 3/32	180-0135		
13/16	3/16 x 3/32	180-0136		
7/8	3/16 x 3/32	180-0137		
15/16	1/4 x 1/8	180-0138		
1	1/4 x 1/8	180-0139		
1-1/16	1/4 x 1/8	180-0140		
1-1/8	1/4 x 1/8	180-0141		
1-3/16	1/4 x 1/8	180-0142		
1-1/4	1/4 x 1/8	180-0143		
1-5/16	5/16 x 5/32	180-0144		
1-3/8	5/16 x 5/32	180-0145		
1-7/16	3/8 x 3/16	180-0146		
1-1/2	3/8 x 3/16	180-0147		
1-9/16	3/8 x 3/16	180-0148		
1-5/8	3/8 x 3/16	180-0149		
1/2	1/8 x 1/16	180-0155	2012	
9/16	1/8 x 1/16	180-0156		
5/8	3/16 x 3/32	180-0157		
11/16	3/16 x 3/32	180-0158		
3/4	3/16 x 3/32	180-0159		
13/16	3/16 x 3/32	180-0160		
7/8	3/16 x 3/32	180-0161		
15/16	1/4 x 1/8	180-0162		
1	1/4 x 1/8	180-0163		
1-1/16	1/4 x 1/8	180-0164		
1-1/8	1/4 x 1/8	180-0165		
1-3/16	1/4 x 1/8	180-0166		
1-1/4	1/4 x 1/8	180-0167		

Bushing Part Numbers

Dodge Bushing

Shaft Size	Keyway Size	Bushing Number		
		Warner Electric	Dodge	
1-5/16	5/16 x 5/32	180-0168	2012	
1-3/8	5/16 x 5/32	180-0169		
1-7/16	3/8 x 3/16	180-0170		
1-1/12	3/8 x 3/16	180-0171		
1-9/16	3/8 x 3/16	180-0172		
1-5/8	3/8 x 3/16	180-0173		
1-11/16	3/8 x 3/16	180-0174		
1-3/4	3/8 x 3/16	180-0175		
1-13/16	1/2 x 1/4	180-0176		
1-7/8	1/2 x 1/4	180-0177		
1-15/16	1/2 x 1/4	180-0178		
2	1/2 x 1/4	180-0179		
1/2	1/8 x 1/16	180-0185		2517
9/16	1/8 x 1/16	180-0186		
5/8	3/16 x 3/32	180-0187		
11/16	3/16 x 3/32	180-0188		
3/4	3/16 x 3/32	180-0189		
13/16	3/16 x 3/32	180-0190		
7/8	3/16 x 3/32	180-0191		
15/16	1/4 x 1/8	180-0192		
1	1/4 x 1/8	180-0193		
1-1/16	1/4 x 1/8	180-0194		
1-1/8	1/4 x 1/8	180-0195		
1-3/16	1/4 x 1/8	180-0196		
1-1/4	1/4 x 1/8	180-0197		
1-5/16	5/16 x 5/32	180-0198		
1-3/8	5/16 x 5/32	180-0199		
1-7/16	3/8 x 3/16	180-0200		
1-1/2	3/8 x 3/16	180-0201		
1-9/16	3/8 x 3/16	180-0202		
1-5/8	3/8 x 3/16	180-0203		
1-11/16	3/8 x 3/16	180-0204		
1-3/4	3/8 x 3/16	180-0205		
1-13/16	1/2 x 1/4	180-0206		
1-7/8	1/2 x 1/4	180-0207		
1-15/16	1/2 x 1/4	180-0208		
2	1/2 x 1/4	180-0209		
2-1/16	1/2 x 1/4	180-0210		
2-1/8	1/2 x 1/4	180-0211		
2-3/16	1/2 x 1/4	180-0212		
2-1/4	1/2 x 1/4	180-0213		
2-5/16	5/8 x 5/16	180-0214		
2-3/8	5/8 x 5/16	180-0215		
2-7/16	5/8 x 5/16	180-0216		
2-1/2	5/8 x 5/16	180-0217		
15/16	1/4 x 1/8	180-0223	3020	
1	1/4 x 1/8	180-0224		
1-1/16	1/4 x 1/8	180-0225		
1-1/8	1/4 x 1/8	180-0226		
1-3/16	1/4 x 1/8	180-0227		
1-1/4	1/4 x 1/8	180-0228		
1-5/16	5/16 x 5/32	180-0229		
1-3/8	5/16 x 5/32	180-0230		
1-7/16	3/8 x 3/16	180-0231		
1-1/2	3/8 x 3/16	180-0232		
1-9/16	3/8 x 3/16	180-0233		
1-5/8	3/8 x 3/16	180-0234		

Shaft Size	Keyway Size	Bushing Number	
		Warner Electric	Dodge
1-11/16	3/8 x 3/16	180-0235	3020
1-3/4	3/8 x 3/16	180-0236	
1-13/16	1/2 x 1/4	180-0237	
1-7/8	1/2 x 1/4	180-0238	
1-15/16	1/2 x 1/4	180-0239	
2	1/2 x 1/4	180-0240	
2-1/16	1/2 x 1/4	180-0241	
2-1/8	1/2 x 1/4	180-0242	
2-3/16	1/2 x 1/4	180-0243	
2-1/4	1/2 x 1/4	180-0244	
2-5/16	5/8 x 5/16	180-0245	
2-3/8	5/8 x 5/16	180-0246	
2-7/16	5/8 x 5/16	180-0247	
2-1/2	5/8 x 5/16	180-0248	
2-9/16	5/8 x 5/16	180-0249	
2-5/8	5/8 x 5/16	180-0250	
2-11/16	5/8 x 5/16	180-0251	
2-3/4	5/8 x 5/16	180-0252	
2-13/16	3/4 x 3/8	180-0253	
2-7/8	3/4 x 3/8	180-0254	
2-15/16	3/4 x 3/8	180-0255	
3	3/4 x 3/8	180-0256	
15/16	1/4 x 1/8	180-0262	
1	1/4 x 1/8	180-0263	
1-1/16	1/4 x 1/8	180-0264	
1-1/8	1/4 x 1/8	180-0265	
1-3/16	1/4 x 1/8	180-0266	
1-1/4	1/4 x 1/8	180-0267	
1-5/16	5/16 x 5/32	180-0268	
1-3/8	5/16 x 5/32	180-0269	
1-7/16	3/8 x 3/16	180-0270	
1-1/2	3/8 x 3/16	180-0271	
1-9/16	3/8 x 3/16	180-0272	
1-5/8	3/8 x 3/16	180-0273	
1-11/16	3/8 x 3/16	180-0274	
1-3/4	3/8 x 3/16	180-0275	
1-13/16	1/2 x 1/4	180-0276	
1-7/8	1/2 x 1/4	180-0277	
1-15/16	1/2 x 1/4	180-0278	
2	1/2 x 1/4	180-0279	
2-1/16	1/2 x 1/4	180-0280	
2-1/8	1/2 x 1/4	180-0281	
2-3/16	1/2 x 1/4	180-0282	
2-1/4	1/2 x 1/4	180-0283	
2-5/16	5/8 x 5/16	180-0284	
2-3/8	5/8 x 5/16	180-0285	
2-7/16	5/8 x 5/16	180-0286	
2-1/2	5/8 x 5/16	180-0287	
2-9/16	5/8 x 5/16	180-0288	
2-5/8	5/8 x 5/16	180-0289	
2-11/16	5/8 x 5/16	180-0290	
2-3/4	5/8 x 5/16	180-0291	
2-13/16	3/4 x 3/8	180-0292	
2-7/8	3/4 x 3/8	180-0293	
2-15/16	3/4 x 3/8	180-0294	
3	3/4 x 3/8	180-0295	

Bushing Part Numbers

Dodge Bushing

Shaft Size	Keyway Size	Bushing Number	
		Warner Electric	Dodge
1/2	1/8 x 1/16	180-0326	1610
9/16	1/8 x 1/16	180-0327	
5/8	3/16 x 3/32	180-0328	
11/16	3/16 x 3/32	180-0329	
3/4	3/16 x 3/32	180-0330	
13/16	3/16 x 3/32	180-0331	
7/8	3/16 x 3/32	180-0332	
15/16	1/4 x 1/8	180-0333	
1	1/4 x 1/8	180-0334	
1-1/16	1/4 x 1/8	180-0335	
1-1/8	1/4 x 1/8	180-0336	
1-3/16	1/4 x 1/8	180-0337	
1-1/4	1/4 x 1/8	180-0338	
1-5/16	5/16 x 5/32	180-0339	
1-3/8	5/16 x 5/32	180-0340	
1-7/16	3/8 x 3/16	180-0341	
1-1/2	3/8 x 3/16	180-0342	
1-9/16	3/8 x 3/16	180-0343	
1-5/8	3/8 x 3/16	180-0344	
1/2	1/8 x 1/16	180-0410	
9/16	1/18 x 1/16	180-0411	
5/8	3/16 x 3/32	180-0412	
11/16	3/16 x 3/32	180-0413	
3/4	3/16 x 3/32	180-0414	
13/16	3/16 x 3/32	180-0415	
7/8	3/16 x 3/32	180-0416	
15/16	1/4 x 1/16	180-0417	
1	1/4 x 1/16	180-0418	
1/2	1/8 x 1/16	180-0421	1310
9/16	1/8 x 1/16	180-0422	
5/8	3/16 x 3/32	180-0423	
11/16	3/16 x 3/32	180-0424	
3/4	3/16 x 3/32	180-0425	
13/16	3/16 x 3/32	180-0426	
7/8	3/16 x 3/32	180-0427	
15/16	1/4 x 1/16	180-0428	
1	1/4 x 1/16	180-0429	
1-1/16	1/4 x 1/8	180-0430	
1-1/8	1/4 x 1/8	180-0431	
1-3/16	1/4 x 1/8	180-0432	
1-1/4	1/4 x 1/8	180-0433	
1-5/16	15/16 x 5/32	180-0434	
1-3/8	15/16 x 5/32	180-0435	

Warranty

Warner Electric LLC warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of one (1) year from the date of original purchase for consumer, commercial or industrial use.

This warranty extends only to the original purchaser and is not transferable or assignable without Warner Electric LLC's prior consent.

Warranty service can be obtained in the U.S.A. by returning any defective product, transportation charges prepaid, to the appropriate Warner Electric LLC factory. Additional warranty information may be obtained by writing the Customer Satisfaction Department, Warner Electric LLC, 449 Gardner Street, South Beloit, Illinois 61080, or by calling 815-389-3771.

A purchase receipt or other proof of original purchase will be required before warranty service is rendered. If found defective under the terms of this warranty, repair or replacement will be made, without charge, together with a refund for transportation costs. If found not to be defective, you will be notified and, with your consent, the item will be repaired or replaced and returned to you at your expense.

This warranty covers normal use and does not cover damage or defect which results from alteration, accident, neglect, or improper installation, operation, or maintenance.

Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

Warner Electric LLC's obligation under this warranty is limited to the repair or replacement of the defective product and in no event shall Warner Electric LLC be liable for consequential, indirect, or incidental damages of any kind incurred by reason of the manufacture, sale or use of any defective product. Warner Electric LLC neither assumes nor authorizes any other person to give any other warranty or to assume any other obligation or liability on its behalf.

WITH RESPECT TO CONSUMER USE OF THE PRODUCT, ANY IMPLIED WARRANTIES WHICH THE CONSUMER MAY HAVE ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL CONSUMER PURCHASE. WITH RESPECT TO COMMERCIAL AND INDUSTRIAL USES OF THE PRODUCT, THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Changes in Dimensions and Specifications

All dimensions and specifications shown in Warner Electric catalogs are subject to change without notice. Weights do not include weight of boxing for shipment. Certified prints will be furnished without charge on request to Warner Electric.



Warner Electric LLC
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