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SF-120, SF-170, SF-250, SF-400 Bearing Mounted, Flange Mounted, SFC-120, SFC-170, SFC-250, SFC-400 Bearing Mounted, Flange Mounted

Installation Instructions

P-0200-WE
819-0481

Warner® Electric

An **Altra Industrial Motion** Company

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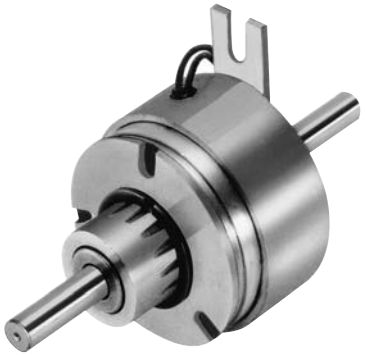
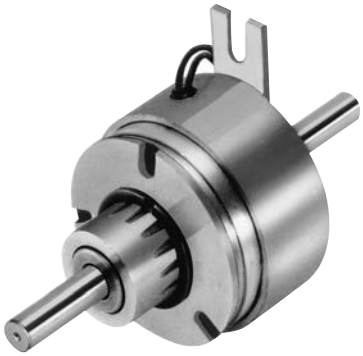
Warranty. . . . . Back Cover

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.



SF-120



SF-170

SF-250

SF-400

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Mounting Examples and Options

Warner Electric clutches are simple to install. They consist of components which must be assembled on the shaft and properly attached to the machine frame.

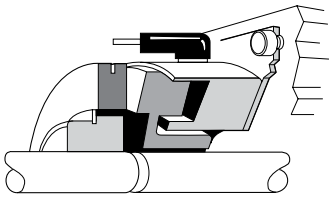
Various customer furnished drive components must be assembled with the clutch. Pulleys, sprockets and bearings/pillow blocks for shafting may be essential elements of a complete drive system. Squareness and concentricity tolerances are specified where critical to proper clutch/brake functioning.

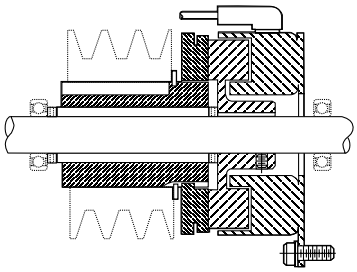
The illustrations show SF, and SFC Flange Mounted and Bearing Mounted units mounted with customer supplied bearing mounted pulley. In each illustration the drive pin for a normal duty clutch is shown. In this manner the pulley will support the armature.

SF Clutches and SFC Clutch Couplings

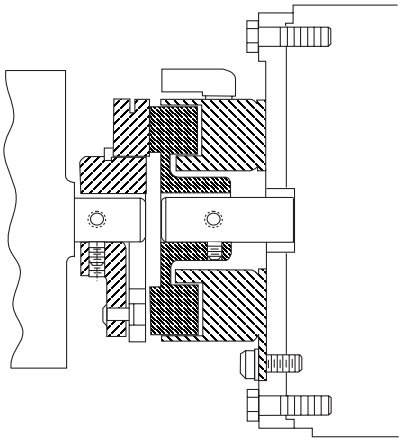
Flange Mounting

Concentricity tolerances, held by customer, are critical. Pilot surface required on machine member. Eliminates bearings. Good design for high speed applications.





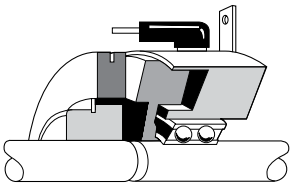
SF Clutch
Typical Installation

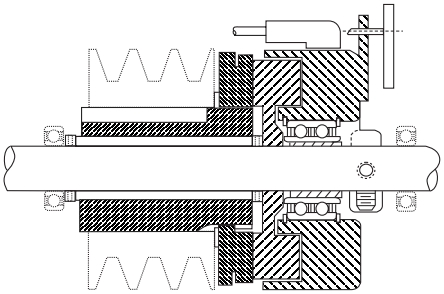


SFC
Clutch Coupling
Typical Installation

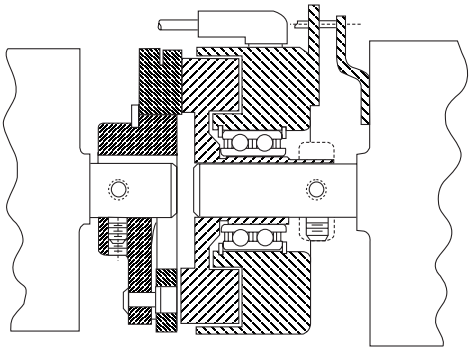
Bearing Mounting

Bearing supports field and holds close tolerances required between rotor and field. Easy to install and priced about the same as the flange mounted design.





SF Clutch
Typical Installation



SFC Clutch Coupling
Typical Installation

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Clutch SF-120, SF-170, SF-250, SF-400 Installation Instructions

A. Installing the Conduit Box

To install the conduit box on the size 400 units, refer to the instructions supplied with conduit box.

B. Mounting the Field-and-Rotor Assembly

Flange-Mounted Units

The fields and rotors are shipped separately for flange-mounted units. On some applications it may be necessary to mount the rotor first, and then bring the field into position. In other instances the field may be mounted first, and then the rotor (mounted on a shaft) will be inserted into place.

1. Care must be taken in selecting the location for mounting the field assembly. Pilot diameters are machined on the field mounting flange to aid in holding the field in the proper position.

2. An appropriate pilot diameter must be provided on the mounting surface as well. (Figure 1)

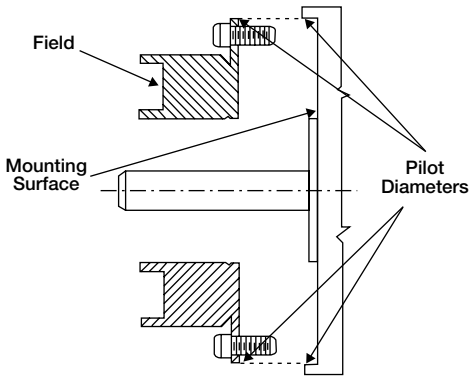

Figure 1

3. The field assembly is then fastened in place with capscrews and lockwashers. (Figure 2)

4. After the unit is in place, the mounting face and pilot must be square and concentric with the shaft in accordance with the tolerances listed on the drawings.

5. Insert a key into the shaft keyway.

6. Slide the rotor assembly onto the shaft over the key.

Figure 2

7. Secure the assembly in this position by alternately tightening the two setscrews.

8. Position the field and rotor in accordance with the overall axial dimension shown on the illustration drawings for correct size unit. Holding this dimension will assure the proper clearance between the field and rotor.

Bearing-Mounted Units

In bearing-mounted units, the field and rotor are shipped as an assembly. Either this assembly or the armature and hub assembly can be mounted on the shaft first, depending on the characteristics on each application.

1. Insert the key into the shaft keyway.

2. Slide the rotor assembly over the key and on to the shaft.

3. Secure the field-and-rotor assembly in place by alternately tightening the two set screws.

   Note: The field-and-rotor assemblies for **120 units** and **250 units, 1/2 inch bore,** are held in place by set screws inserted into a set collar on the end of the rotor hub extension. Secure these assemblies in place by alternately tightening the screws.

4. A tab or torque arm on the field is used to prevent rotation of the field caused by normal bearing drag. Insert either a pin in the U-slot or a fork around the torque arm to prevent this rotation. Under no circumstances, however, should the field be so tightly restrained as to preload the bearing.

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C. Assembling the Armature and Hub

The clutch units contain an extended armature hub mounted on sleeve bearings. These hubs may be adapted to a customer-supplied sheave, sprocket, or gear for transmitting power to a parallel shaft.

1. The antibacklash armatures are shipped assembled and ready to be installed. See Section D.

2. The standard armature and hub must be assembled before it can be installed. Assemble the armatures so that the shiny surfaces size (120 and 170) or backing plate sides size (250 and 400) are against the hub retainer ring (Figure 3).

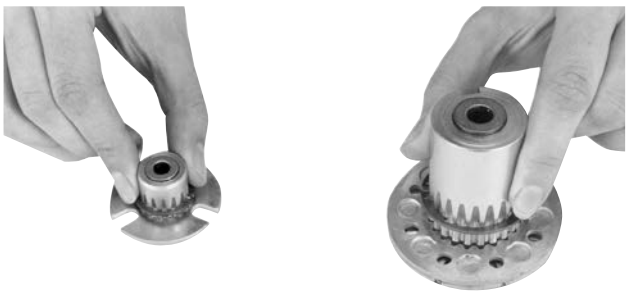

Figure 3

3. An optional release spring may be used with the standard armatures and hubs. The release spring forces the armature back against the hub retainer ring when the magnet coil is de-energized.

   Follow these instructions to assemble the armature and hub when the optional release springs are being used.

   SF-170
   Assemble the splined armature to the hub. The shiny side of the armature should be against the hub retainer ring.

   Assemble the release spring into the groove in the hub spline. The curved portion of the spring should be against the armature (Figure 4).

   SF-250

   Insert the hub, with snap ring intact, into the armature from the backing plate side. (See Figure 5)

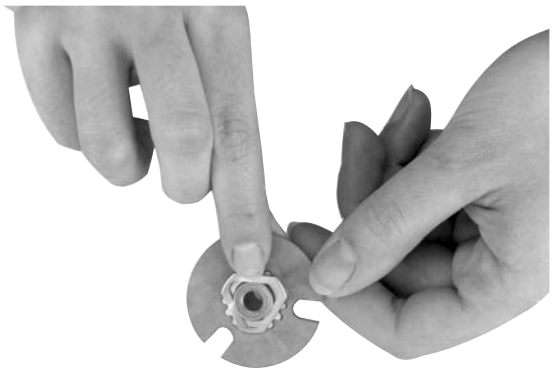

Figure 4

Insert both release springs into the holes of the backing plate. Bow the springs as necessary to insert them into the armature. (See Figure 6)

Figure 5

Figure 6

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SF-400

Insert the release springs into the backing plate holes of the armature. Bow the springs as necessary to insert them into the armature. (See Figure 7)

Figure 7

Remove the snap ring from the hub.

Insert the hub, with the setscrew end first, into the armature from the segmented side. Slide the hub into the armature until the release springs engage the snap ring groove. (See Figure 8)

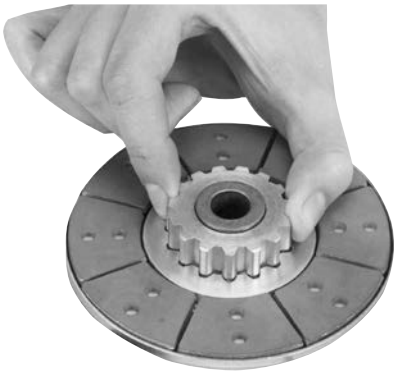

Figure 8

Assemble the snap ring into the groove in the hub, clamping the release spring against the end of the spline. (See Figure 9)

Figure 6

D. Mounting the Armature Assembly

1. Slide the armature assembly onto the shaft. Position the assembly in accordance with the overall axial dimensions given on the illustration drawings.

2. The armature-hub assembly can be held in this position with retainer rings, a set collar, a shoulder on the shaft, or any combination of these. The hub may need to be repositioned as wear occurs with time.

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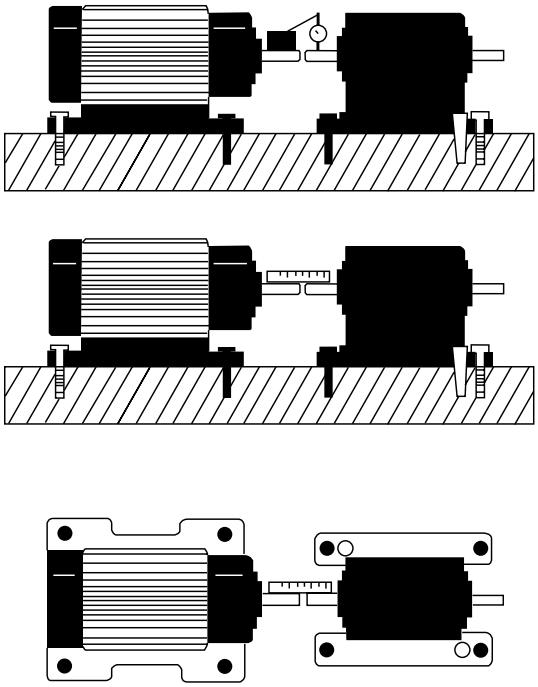
Clutch-Coupling SFC-120, SFC-170, SFC-250, SFC-400 Installation Instructions

A. Aligning the Shafts

In order for the clutch-coupling unit to operate properly, the mounting shafts of the motor and reducer or other hardware must be aligned with respect to each other before the unit is installed. The two shafts should be concentric with each other within .004 T.I.R., and angular alignment should be within 1/2 degree.



1. Use a straight-edge to check if the shafts are aligned with each other. For a more precise indication of alignment, use a dial indicator. (Figure 10)

2. Adjust the position of the motor, reducer, or other hardware as required to achieve the correct alignment.

3. To be sure the shafts stay in alignment, drill holes for tapered dowel pins through the mounting bases of the motor, reducer, or other hardware and into the mounting surfaces. This procedure will ensure that, after the clutch-coupling has been installed, the shafts can easily be placed in proper alignment again by lining up the holes and secured by inserting the dowel pins.

B. Installing the Conduit Box

To install the conduit box on the size 400 units, refer to the instructions supplied with conduit box.

C. Mounting the Field-and-Rotor Assembly Flange-Mounted Units

The fields and rotors are shipped separately for flange-mounted units. On some applications it will be necessary to mount the rotor first, and then bring the field into position. In other instances the field will be mounted first, and then the rotor (mounted on a shaft) will be inserted into place.

1. Care must be taken in selecting the location for mounting the field assembly. Pilot diameters are machined on the field mounting flange to aid in holding the field in the proper position. (Figure 1)

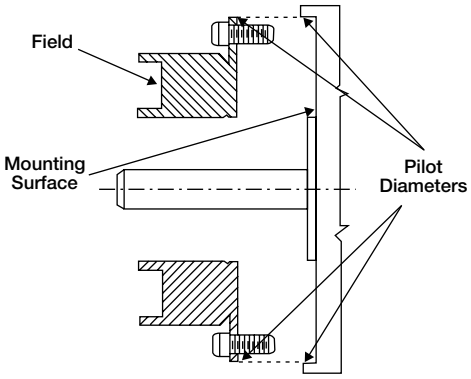


Figure 1

2. An appropriate pilot diameter must be provided on the mounting surface as well.

3. The field assembly is then fastened in place with capscrews and lockwashers. (Figure 2)

Figure 2

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4. After the unit is in place, the mounting face and pilot diameter must be square and concentric with the shaft in accordance with the tolerances listed on the drawings.
5. Insert a key into the shaft keyway.
6. Slide the rotor assembly onto the shaft over the key.
7. Secure the assembly in this position by alternately tightening the two setscrews.
8. Position the field and rotor in accordance with the overall axial dimension shown on the illustration drawings. Holding this dimension will assure the proper clearance between the field and rotor.

Bearing-Mounted Units

In bearing-mounted units, the field and rotor are shipped as an assembly. Either this assembly or the armature and hub assembly can be mounted on the shaft first, depending on the characteristics of each application.

1. Insert the key into the shaft keyway.
2. Slide the rotor assembly over the key and on to the shaft.
3. Secure the field-and-rotor assembly in place by alternately tightening the two set screws.

   Note: The field-and-rotor assemblies for **120 units** and **250 units, 1/2 inch bore,** are held in place by set screws inserted into a set collar on the end of the rotor hub extension. Secure the assembly in place by alternately tightening the screws.

4. A tab or torque arm on the field is used to prevent rotation of the field caused by normal bearing drag. Insert either a pin in the U-slot or a fork around the torque arm to prevent this rotation. Under no circumstances, however, should the field be so tightly restrained as to preload the bearing.

C. Assembling the Armature and Hub

1. The antibacklash armatures are shipped assembled and ready to be installed. See Section D.
2. The standard armature and hub must be assembled before it can be installed. Assemble the armatures so that the shiny surfaces size (120 and 170) or backing plate sides size (250 and 400) are against the hub retainer ring (Figure 3).

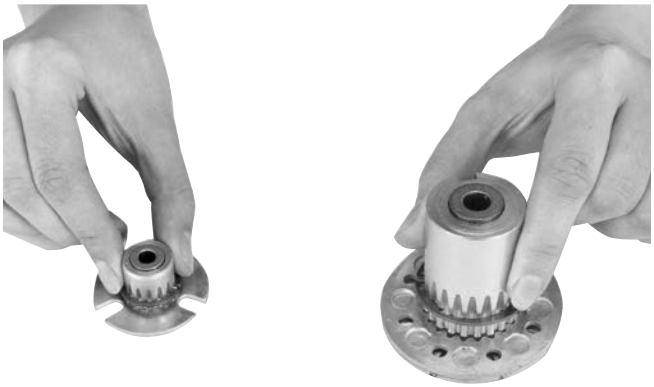

Figure 3

3. An optional release spring may be used with the standard armatures and hubs. The release spring forces the armature back against the hub retainer ring when the magnet coil is de-energized.

   Follow these instructions to assemble the armature and hub when the optional release springs are being used.

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SFC-170

Assemble the splined armature to the hub. The shiny side of the armature should be against the hub retainer ring.

Assemble the release spring into the groove in the hub spline. The curved portion of the spring should be against the armature (Figure 4).

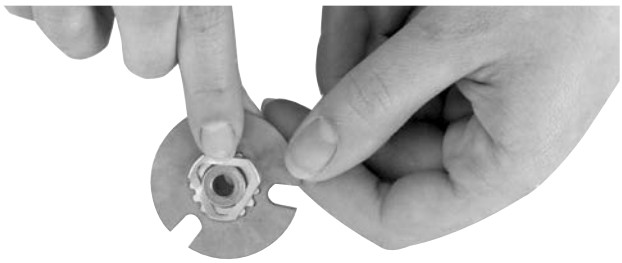
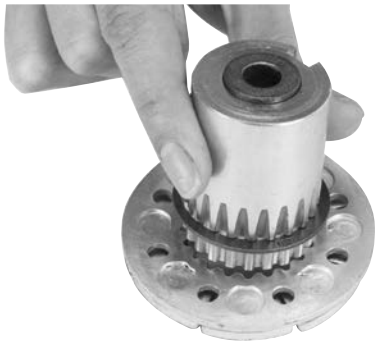


Figure 4

SFC-250

Insert the hub, with snap ring intact, into the armature from the backing plate side. (See Figure 5)

Figure 5



Insert both release springs into the holes of the backing plate. Bow the springs as necessary to insert them into the armature. (See Figure 6)

Figure 6

SFC-400

Insert the release springs into the backing plate holes of the armature. Bow the springs as necessary to insert them into the armature. (See Figure 7)

Figure 7

Remove the snap ring from the hub.

Insert the hub, with the setscrew end first, into the armature from the segmented side. Slide the hub into the armature until the release springs engage the snap ring groove. (See Figure 8.)

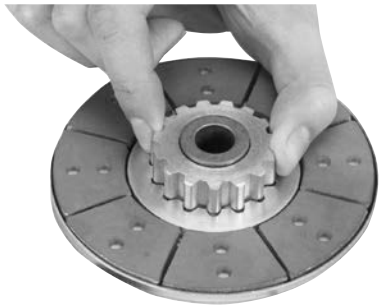


Figure 8

Assemble the snap ring into the groove in the hub, clamping the release spring against the end of the spline. (See Figure 9.)

Figure 9

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D. Mounting the Armature Assembly

1. SFC 250 and 400 size units.

   Insert a key in the keyslot of the shaft and slide the armature assembly onto the shaft.

2. (SFC120 do not use keyway)

   Position the assembly to allow a gap of about 1/64 inch between the faces of the armature and magnet. The overall axial dimension should be in accordance with the dimensions specified on the illustration drawings.

3. Secure the assembly in this position by alternately tightening the two setscrews in the hub.

4. The hub may need to be repositioned as wear occurs with time.

Electrical Coil Data

Unit Size	SF/SFC 120			SF/SFC 170		
Voltage – DC	6	24	90	6	24	90
Resistance @ 20°C — Ohms	6.32	104	1386	6.96	111.2	1506
Current — Amperes	.949	.230	.065	.861	.215	.060
Watts	5.69	5.52	5.85	5.85	5.16	5.37
Coil Build-up — Milliseconds	12	12	11	17	17	16
Coil Decay — Milliseconds	8	8	7	8	7	6
Unit Size	**SF/SFC 250**			**SF/SFC 400**		
Voltage – DC	6	24	90	6	24	90
Resistance @ 20°C — Ohms	5	76.4	1079	4.88	73	1087
Current — Amperes	1.2	.314	.084	1.23	.322	.083
Watts	7.2	7.5	7.51	7.39	7.96	7.45
Coil Build-up — Milliseconds	48	48	44	154	154	154
Coil Decay — Milliseconds	15	15	13	62	60	55

Scan to Watch Clutch & Brake Electrical Troubleshooting Video
https://p.widencdn.net/byvbde

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.

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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 .001" - .003" below the metal poles.

Scan to Watch Normal Wear Patterns for Warner Electric Friction Clutches and Brakes Video
https://p.widencdn.net/glqyk6

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.

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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.

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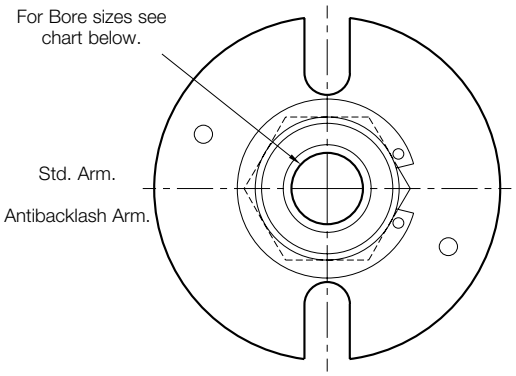
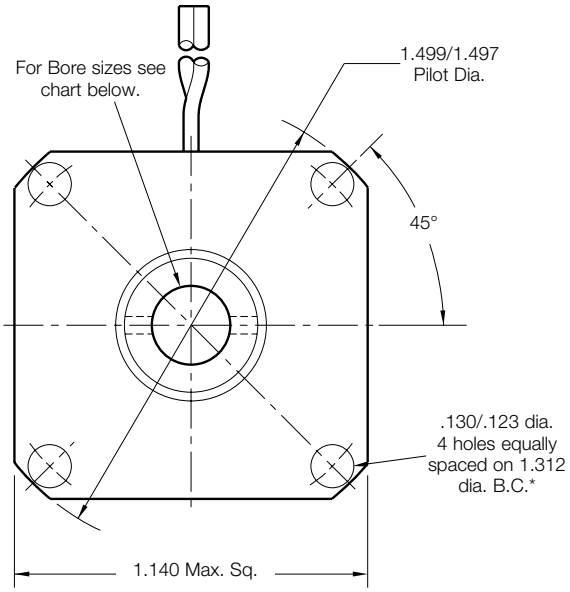
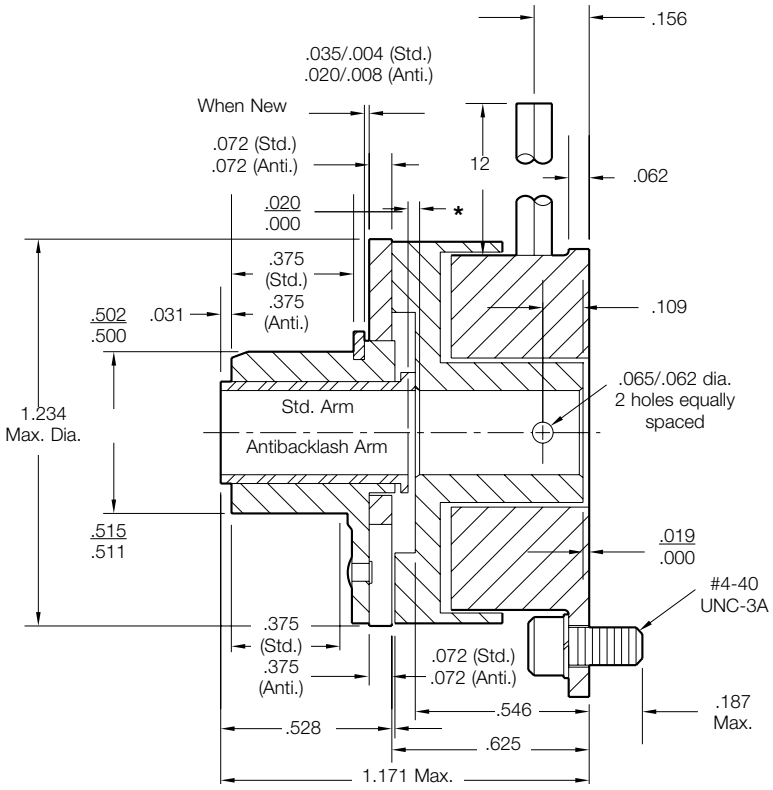
SF-120 Clutch Flange Mounted



Armature View



Field View



* Mounting holes are within .006 of true position relative to pilot diameter.

Bore Dimensions

Rotor Bore Dia.	Armature Bore Dia.
.188/.187	.195/.190
.251/.250	.257/.252
.313/.312	—

Customer Shall Maintain:

1. Squareness of field mounting face with shaft with .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.

Armature Shaft	.187 – .250
Rotor Shaft	.187 – .312
Static Torque	5 lb. in.
Maximum Speed	3,600 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

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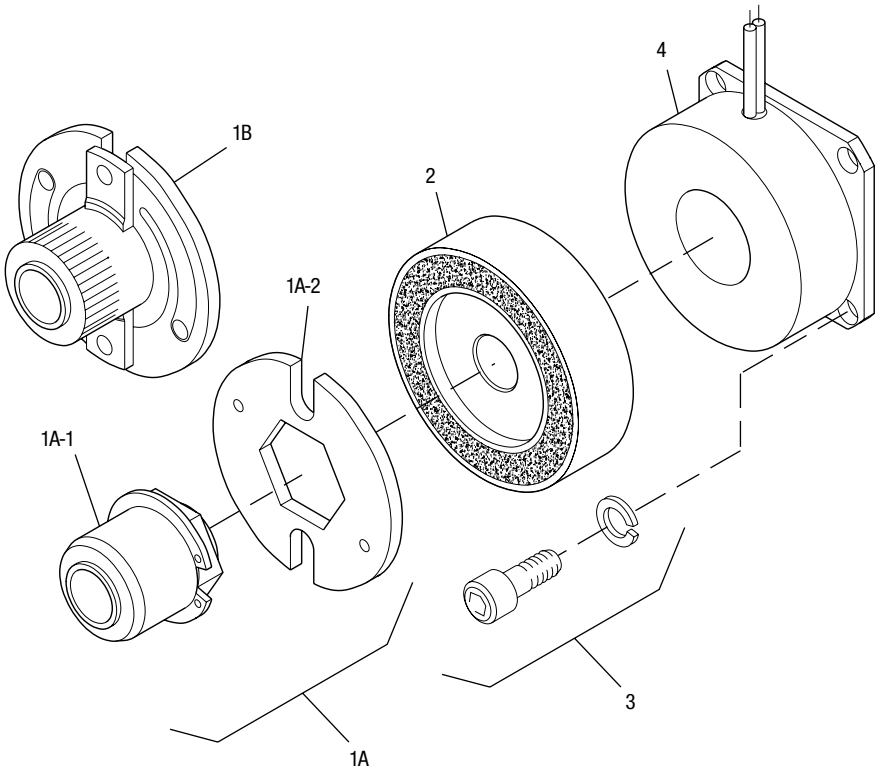
SF-120 Clutch Flange Mounted – Outside Mounted

Drawing I-25508



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	3/16” Bore	5602-541-009	
	1/4” Bore	5602-541-008	
1A-2	Armature	110-0110	1
1B	Antibacklash Armature		1
	3/16” Bore	5602-111-002	
	1/4” Bore	5602-111-003	
	5/16” Bore	5602-111-007	
2	Rotor		1
	3/16” Bore	5602-751-004	
	1/4” Bore	5602-751-002	
	5/16” Bore	5602-751-003	
3	Mounting Accessory	5101-101-001	1
4	Field		1
	6 Volt	5602-451-003	
	24 Volt	5602-451-005	
	90 Volt	5602-451-007	

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 4.

Example:

SF-120 Clutch per I-25508 - 90 Volt
Standard Armature
1/4” Armature Hub Bore
1/4” Rotor 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.

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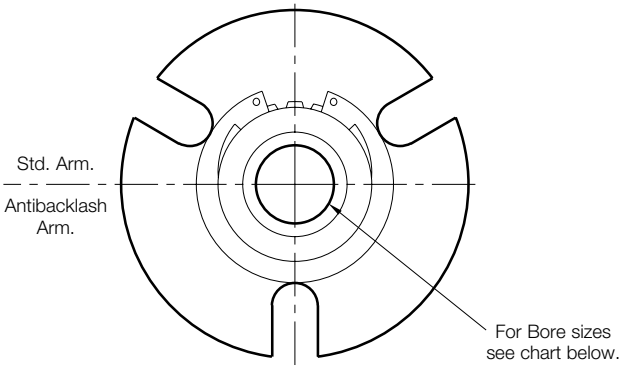
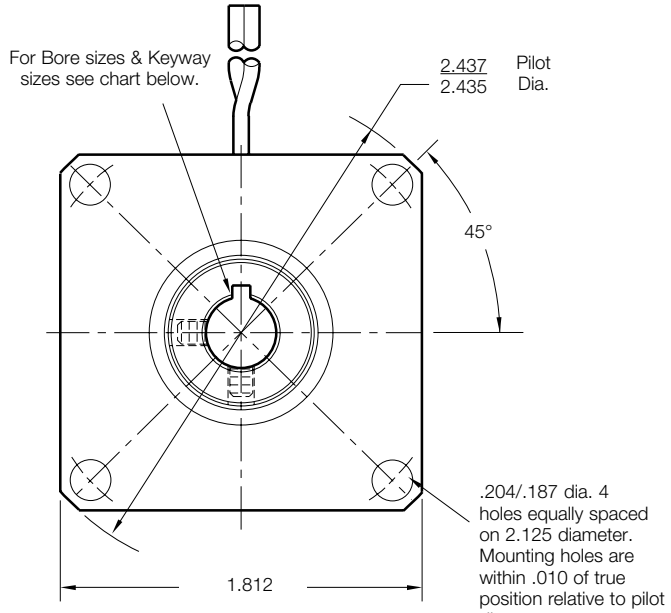
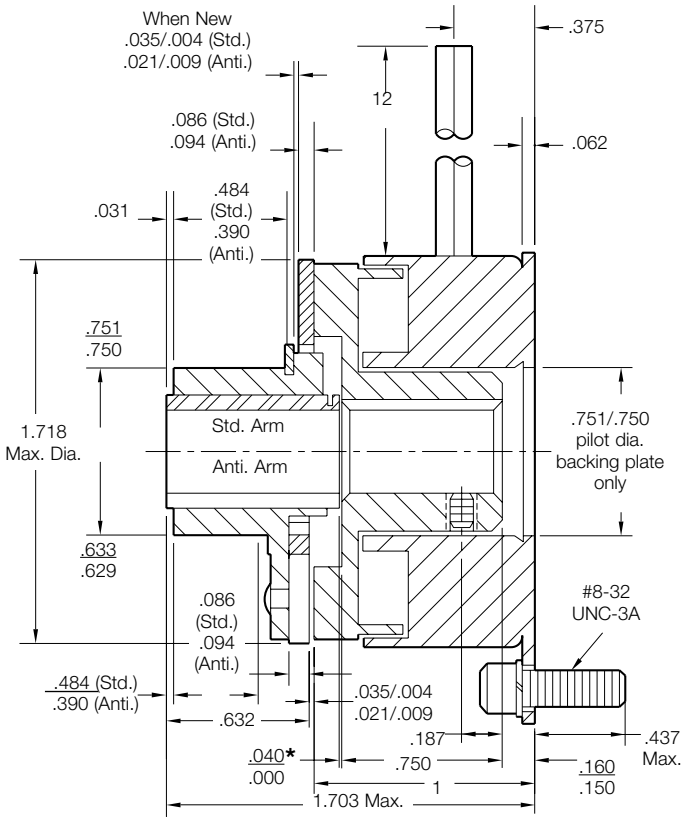
SF-170 Clutch Flange Mounted



Armature View



Field View



*Diameter over knurl.

Rotor Bore Dimensions

Rotor Bore Dia.	Keyway	Armature Bore Dia.
.251/.250	.062/.031	.2522/.2507
.313/.312	.062/.031	.3145/.3130
.376/.375	.093/.047	.3773/.3755

Armature Shaft	.250 – .375
Rotor Shaft	.250 – .375
Static Torque	15 lb.in.
Maximum Speed	5,000 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Squareness of field mounting face with shaft with .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.

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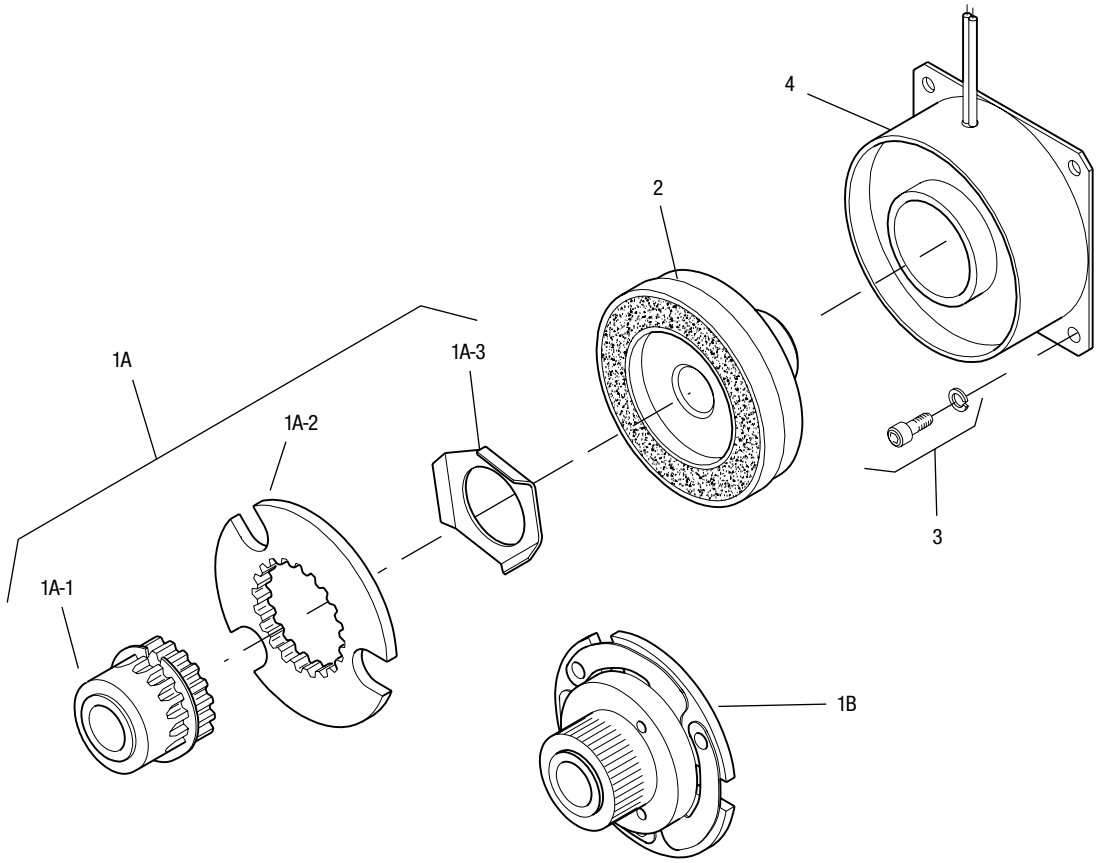
SF-170 Clutch Flange Mounted – Outside Mounted

Drawing I-25754



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	1/4” Bore	5123-541-002	
	5/16” Bore	5123-541-003	
	3/8” Bore	5123-541-004	
1A-2	Armature	110-0111	1
1A-3	Release Spring	808-0019	1
1B	Antibacklash Armature		1
	1/4” Bore	5603-111-033	
	5/16” Bore	5603-111-034	
	3/8” Bore	5603-111-035	
2	Rotor		1
	1/4” Bore	5603-751-028	
	5/16” Bore	5603-751-029	
	3/8” Bore	5603-751-030	
3	Mounting Accessory	5102-101-001	1
4	Field		1
	6 Volt	5603-451-047	
	24 Volt	5603-451-049	
	90 Volt	5603-451-051	

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 4.

Example:

SF-170 Clutch per I-25754 - 90 Volt
Antibacklash Armature
1/4” Armature Hub Bore
1/4” Rotor 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.

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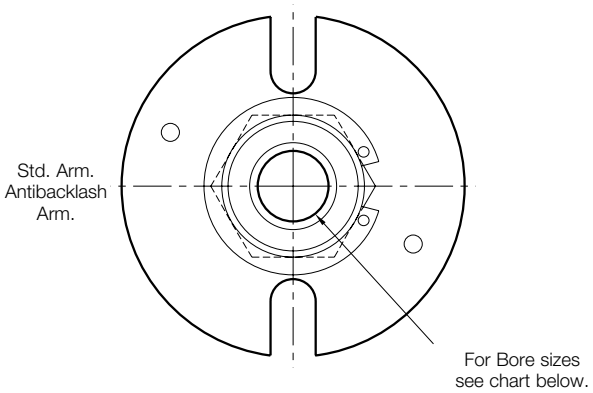
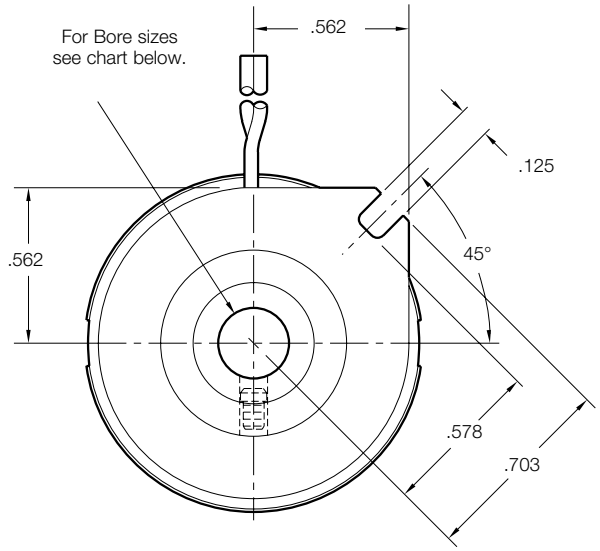
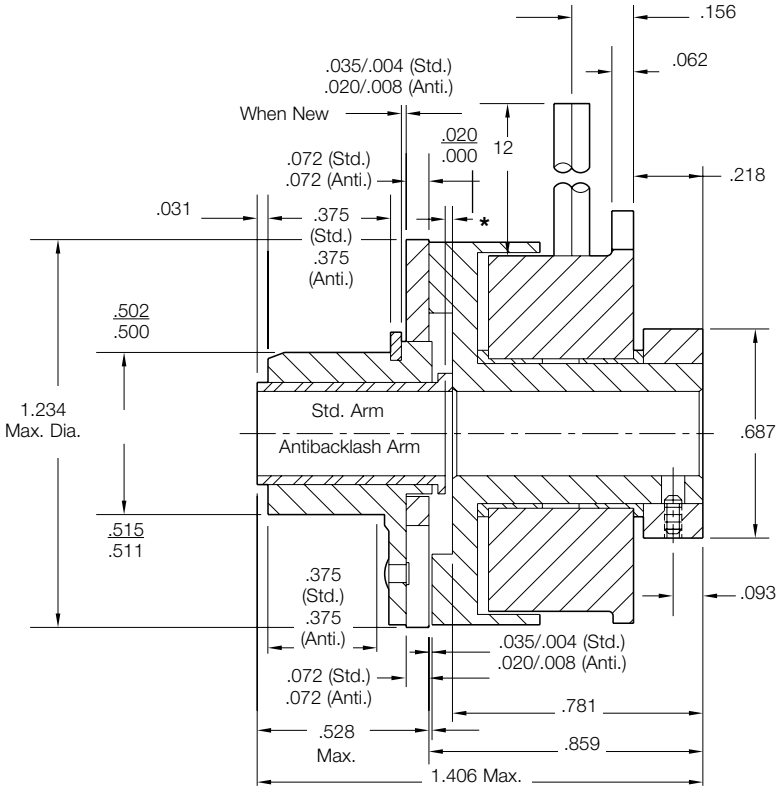
SF-120 Clutch Bearing Mounted



Armature View



Field View



*Customer shall maintain dimension as noted.

Bore Dimensions

Rotor Bore Dia.	Armature Bore Dia.
.188/.187	.195/.190
.251/.250	.257/.252
.313/.312	—

Armature Shaft	.187 – .250
Rotor Shaft	.187 – .250
Static Torque	5 lb.in.
Maximum Speed	3,600 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

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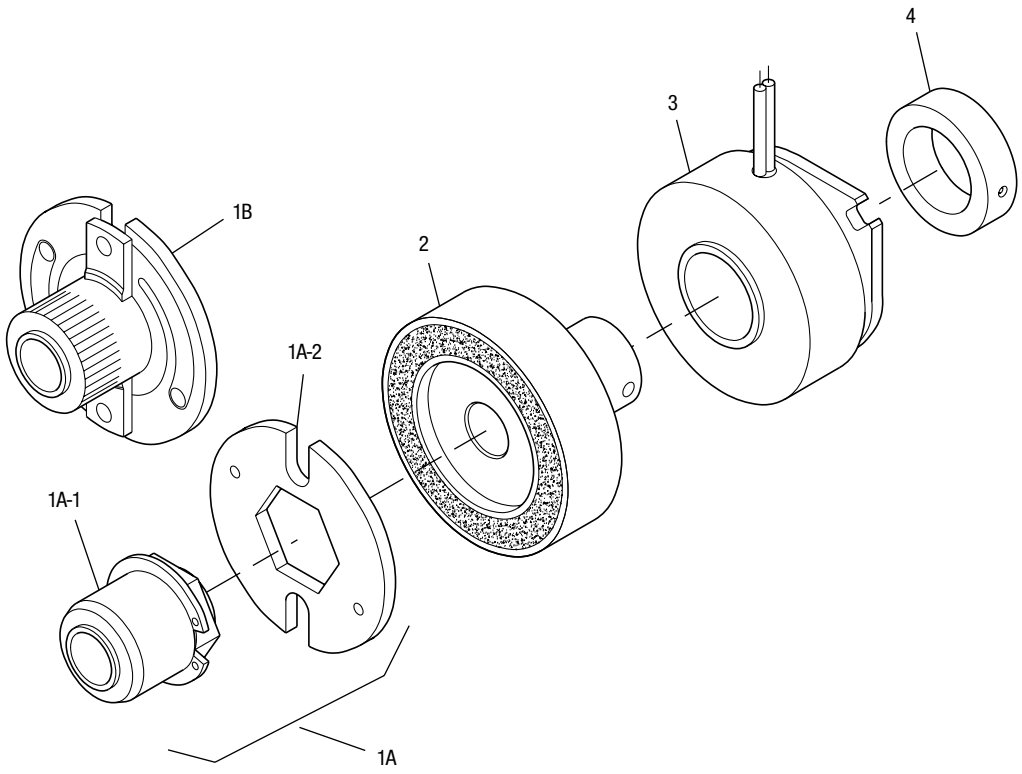
SF-120 Clutch Bearing Mounted

Drawing I-25509



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	3/16” Bore	5602-541-009	
	1/4” Bore	5602-541-008	
1A-2	Armature	110-0110	1
1B	Antibacklash Armature		1
	3/16” Bore	5602-111-002	
	1/4” Bore	5602-111-003	
	5/16” Bore	5602-111-007	
2	Rotor		1
	3/16” Bore	5602-751-008	
	1/4” Bore	5602-751-006	
	5/16” Bore	5602-751-007	
3	Field		1
	6 Volt	5602-451-021	
	24 Volt	5602-451-023	
	90 Volt	5602-451-025	
4	Set Collar	5602-266-001	1

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 3.

Example:

SF-120 Clutch per I-25509 - 90 Volt
Standard Armature
1/4” Armature Hub 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.

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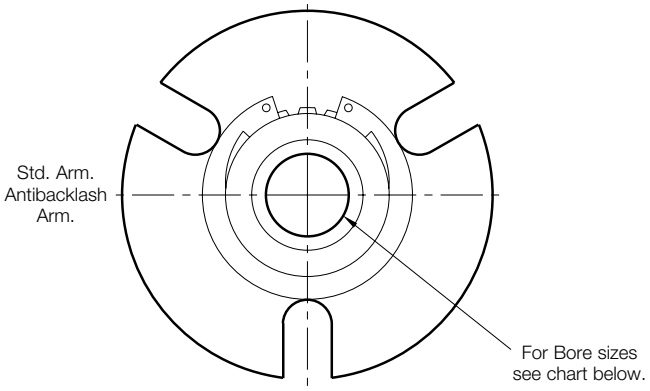
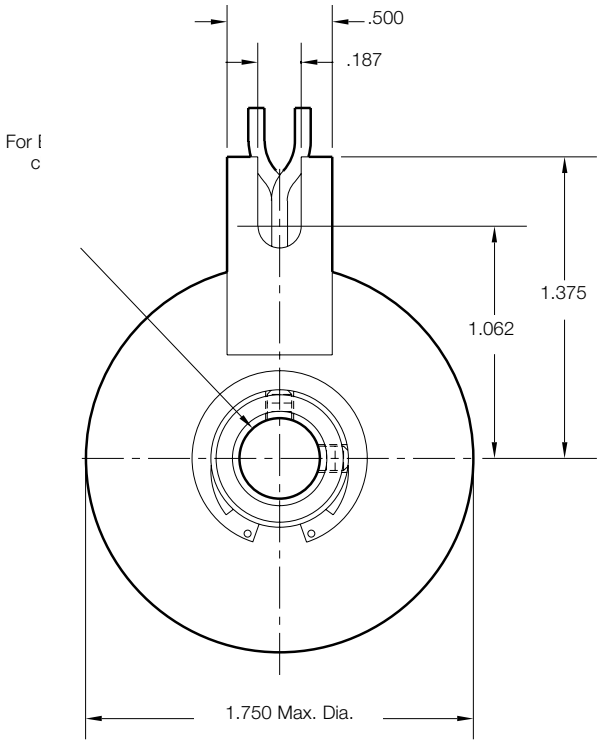
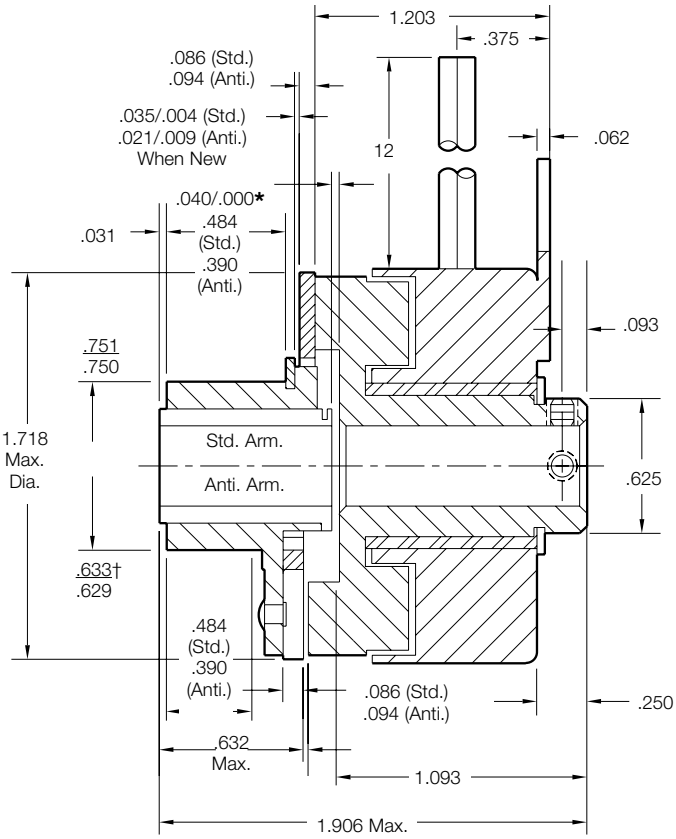
SF-170 Clutch Bearing Mounted



Armature View



Field View



Bore Dimensions

Rotor Bore Dia.	Armature Bore Dia.
.251/.250	.2522/.2507
.313/.312	.3145/.3130
.376/.375	.3773/.3755

Armature Shaft	.187 – .250
Rotor Shaft	.250 – .375
Static Torque	15 lb.in.
Maximum Speed	5,000 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:
*Customer shall maintain dimension as noted.

† over knurl

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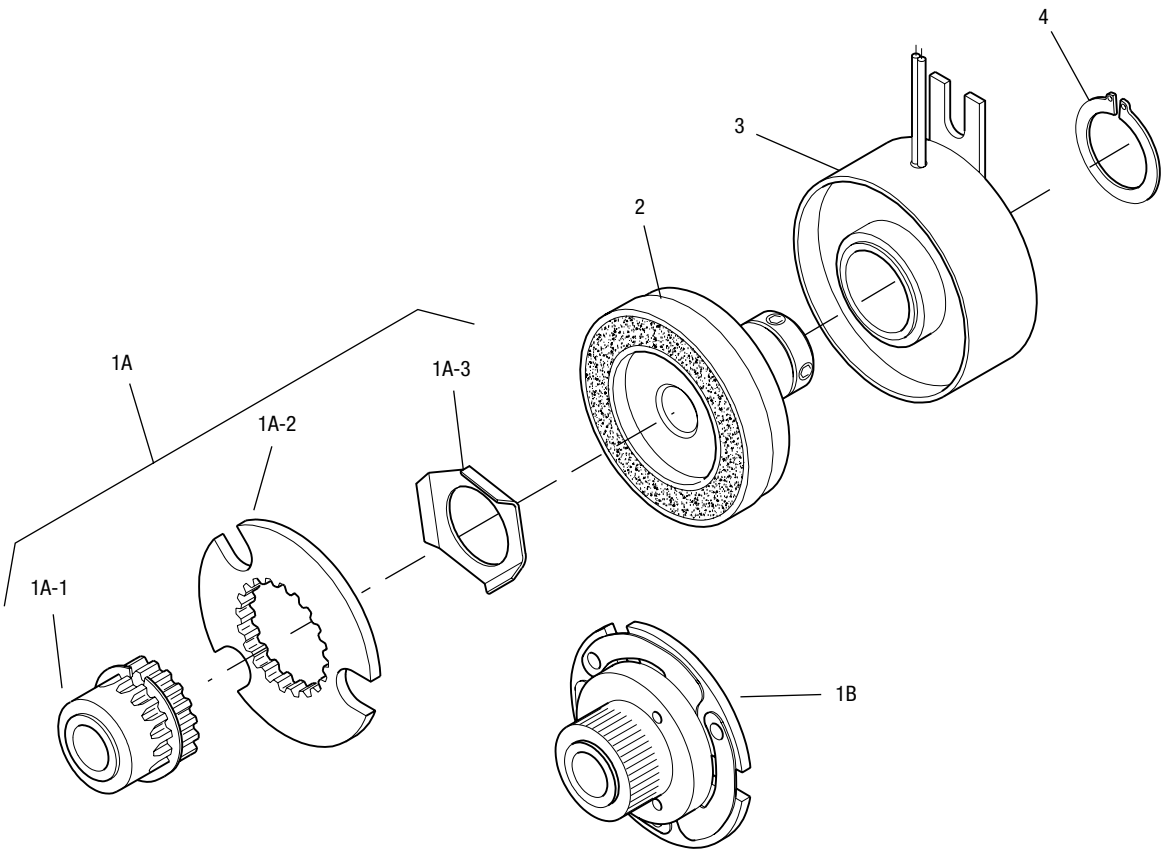
SF-170 Clutch Bearing Mounted

Drawing I-25755



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	1/4” Bore	5123-541-002	
	5/16” Bore	5123-541-003	
	3/8” Bore	5123-541-004	
1A-2	Armature	110-0111	1
1A-3	Release Spring	`808-0019	1
1B	Antibacklash Armature		1
	1/4” Bore	5603-111-033	
	5/16” Bore	5603-111-034	
	3/8” Bore	5603-111-035	
2	Rotor		1
	1/4” Bore	5603-751-019	
	5/16” Bore	5603-751-021	
	3/8” Bore	5603-751-020	
3	Field		1
	6 Volt	5603-451-039	
	24 Volt	5603-451-041	
	90 Volt	5603-451-043	
4	Retainer Ring	748-0024	1

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 3.

Example:

SF-170 Clutch per I-25755 - 90 Volt
Antibacklash Armature
1/4” Armature Hub 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.

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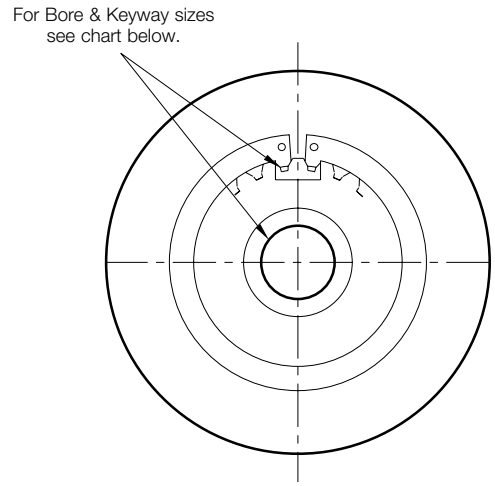
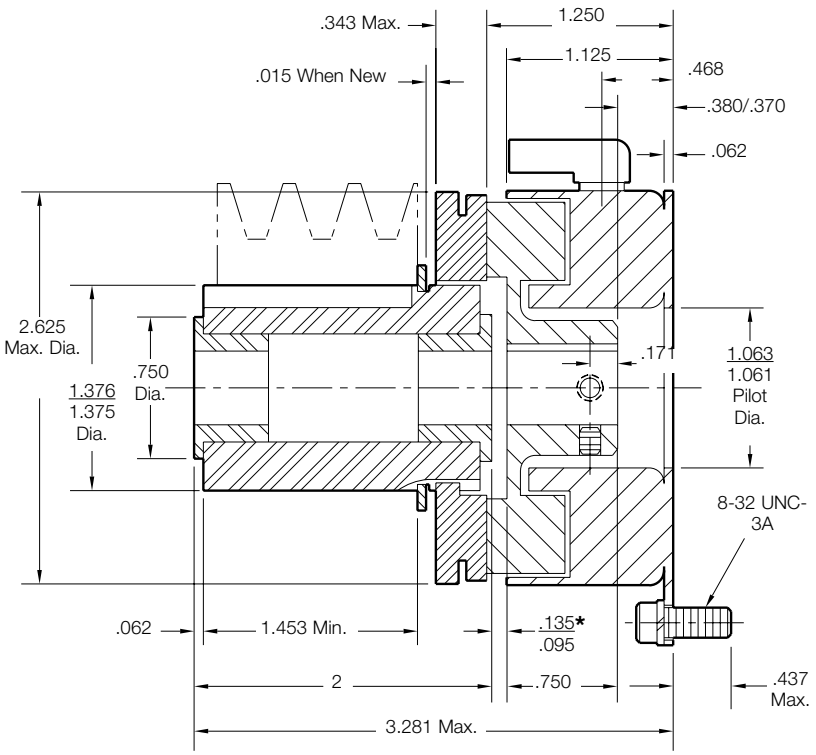
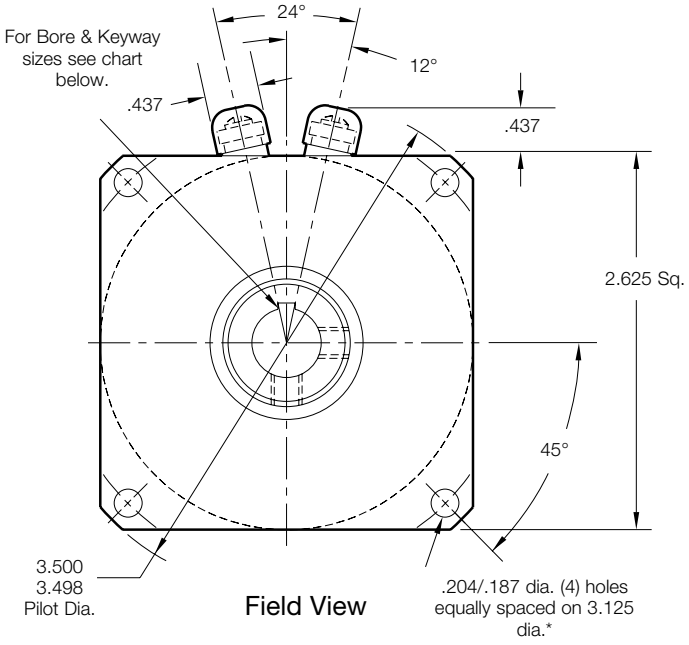
SF-250 Clutch Flange Mounted



Armature View



*Customer shall maintain dimension as noted.



Field View

* Mounting holes are within .010 of true position relative to pilot diameter.

Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.3750/.3745		.376/.375	.093 x .046
.5000/.4995	.312 x .156	*.438/.437	.125 x .031
*.5625/.5620	x 1.250	.501/.500	.125 x .031
.6250/.6245			

*Available on special order only.

Armature Shaft	.375 – .625
Rotor Shaft	.375 – .500
Static Torque	70 lb.in.
Maximum Speed	7,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Squareness of field mounting face with shaft within .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.

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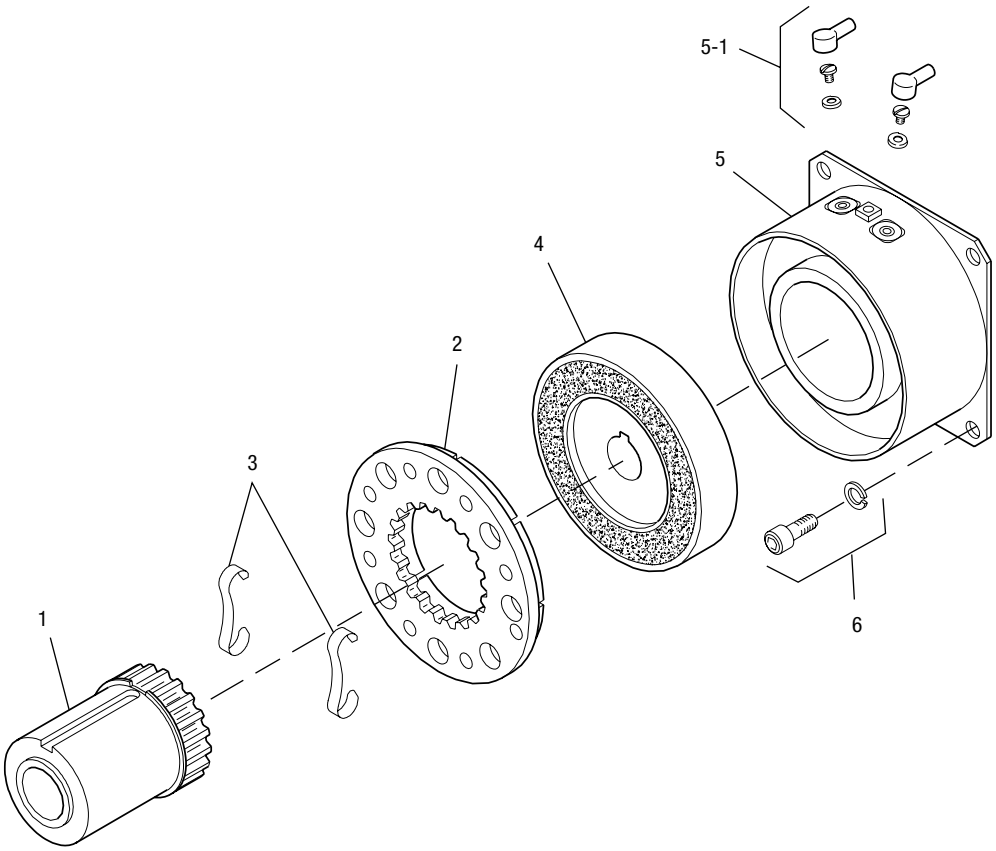
SF-250 Clutch Flange Mounted – Outside Mounted

Drawing I-25520



Item	Description	Part Number	Qty.
1	Armature Hub		1
	3/8” Bore	5124-541-002	
	1/2” Bore	5124-541-003	
	5/8” Bore	5124-541-005	
2	Armature	5124-111-001	1
3	Release Spring	5103-101-003	1
4	Rotor		1
	3/8” Bore	5103-751-008	
	1/2” Bore	5103-751-010	
5	Field		1
	6 Volt	5103-451-002	
	24 Volt	5103-451-004	
	90 Volt	5103-451-007	
5-1	Terminal Accessory	5103-101-002	1
6	Mounting Accessory	5102-101-001	1

How to Order:

1. Specify Bore Size for Item 1 and Item 4.
2. Specify Voltage for Item 5.

Example:

SF-250 Clutch per I-25520 - 90 Volt
3/8” Armature Hub Bore
3/8” Rotor 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.

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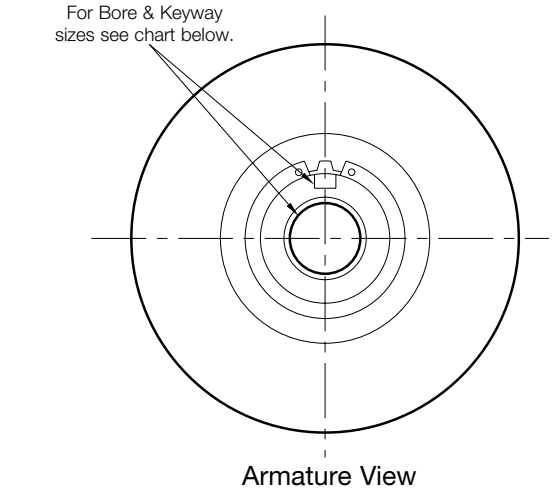
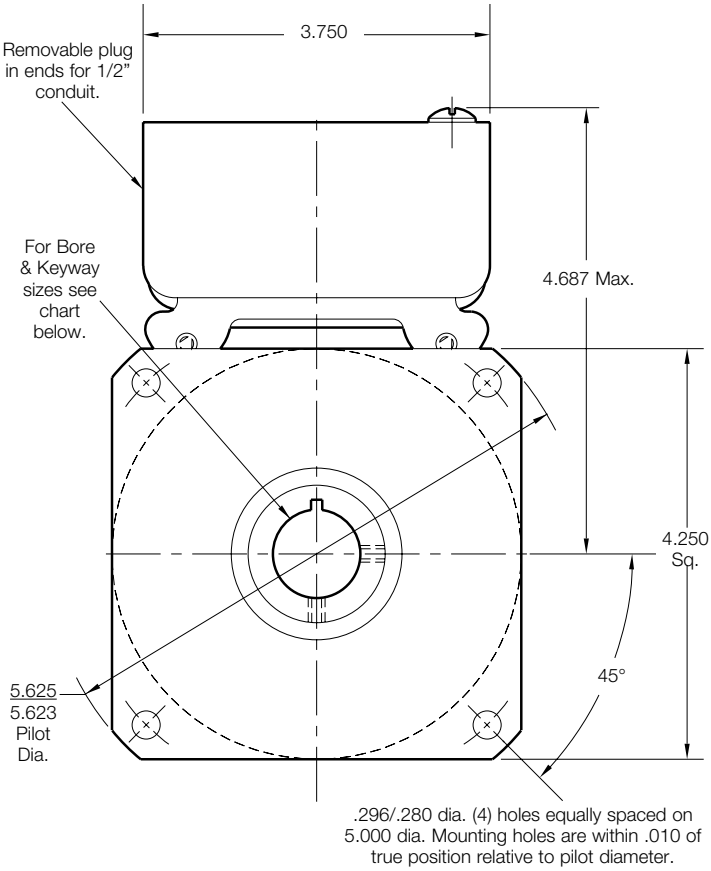
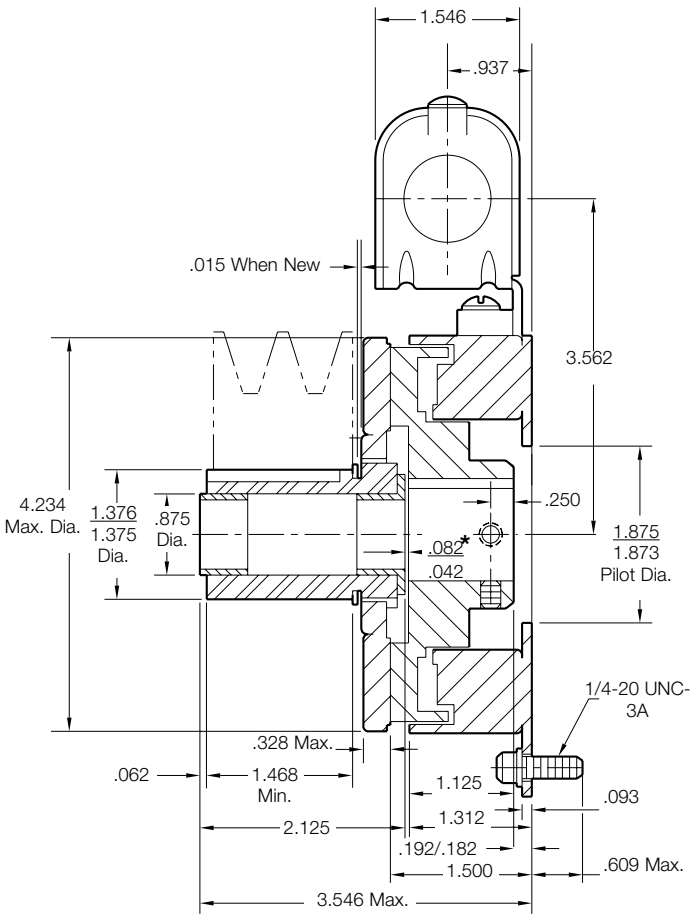
SF-400 Clutch Flange Mounted



Armature View



Field View



Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.5000/.4995	.312 x .156	.501/.500	.125 x.062
.6250/.6245	x 1.25	.626/.625	
.7500/.7495		.751/.750	.187 x .093

Armature Shaft	.500 – .750
Rotor Shaft	.500 – 1
Static Torque	270 lb.in.
Maximum Speed	4,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Squareness of field mounting face with shaft within .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.

*3. Customer shall maintain dimension as noted.

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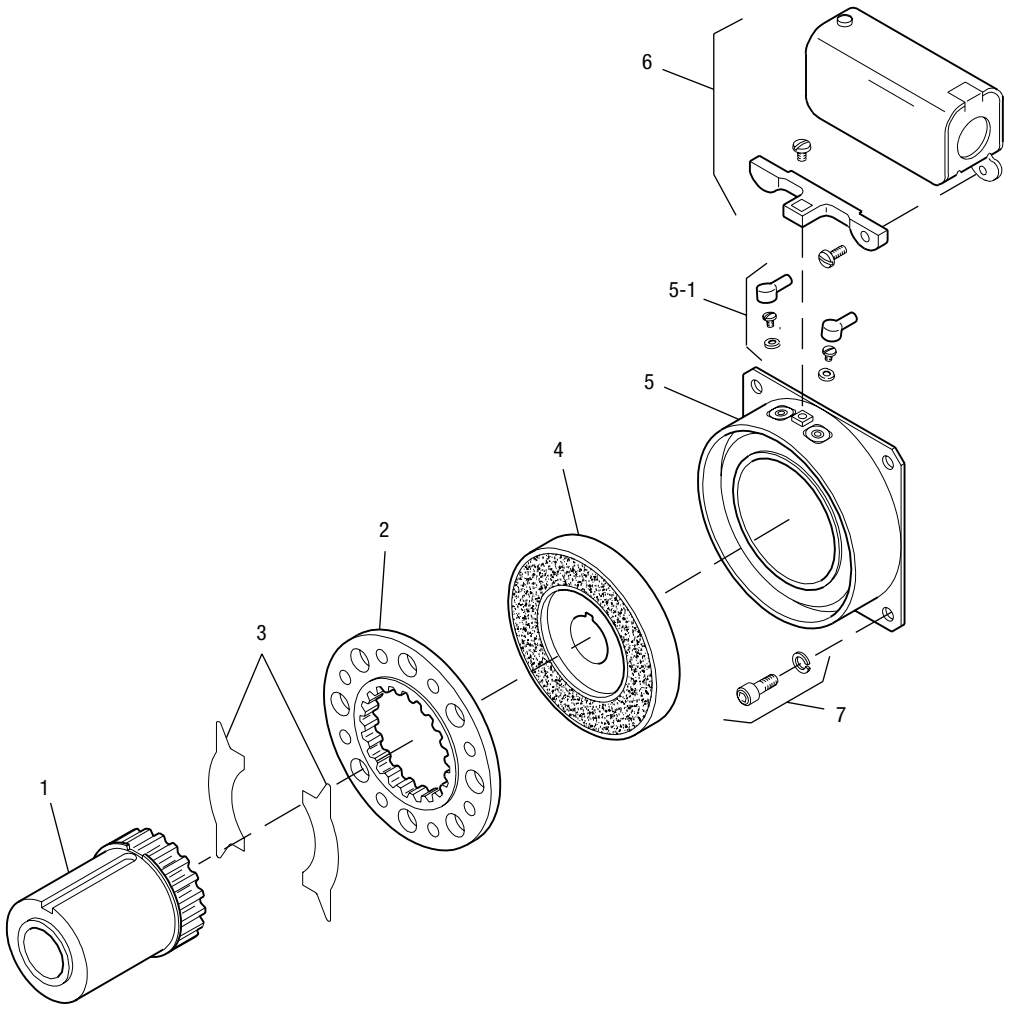
SF-400 Clutch Flange Mounted – Outside Mounted

Drawing I-25695



Item	Description	Part Number	Qty.
1	Armature Hub		1
	1/2” Bore	5125-541-002	
	5/8” Bore	5125-541-003	
	3/4” Bore	5125-541-004	
2	Armature	5125-111-001	1
3	Release Spring	5104-101-003	1
4	Rotor		1
	1/2” Bore	5104-751-033	
	5/8” Bore	5104-751-034	
	3/4” Bore	5104-751-035	
	7/8” Bore	5104-751-036	
	1” Bore	5104-751-037	
5	Field		1
	6 Volt	5104-451-032	
	24 Volt	5104-451-033	
	90 Volt	5104-451-034	
5-1	Terminal Accessory	5103-101-002	1
6	Conduit Box	5200-101-010	1
7	Mounting Accessory	5104-101-002	1

How to Order:

1. Specify Bore Size for Items 1 and 4.
2. Specify Voltage for Item 5.

Example:

SF-400 Clutch per I-25695 - 90 Volt
3/4” Armature Hub Bore
3/4” Rotor Bore

These units, when used in conjunction with the correct Warner Electric conduit box, meet the standards set of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543

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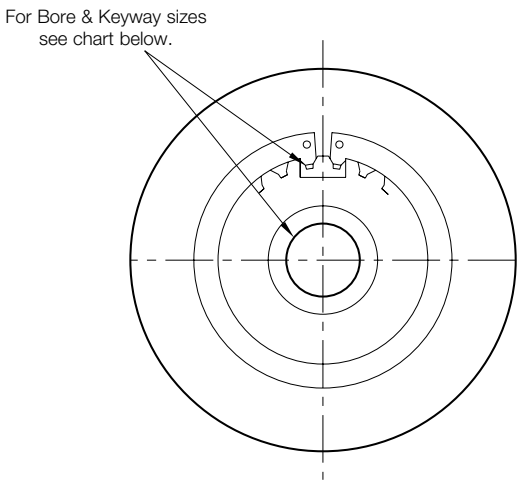
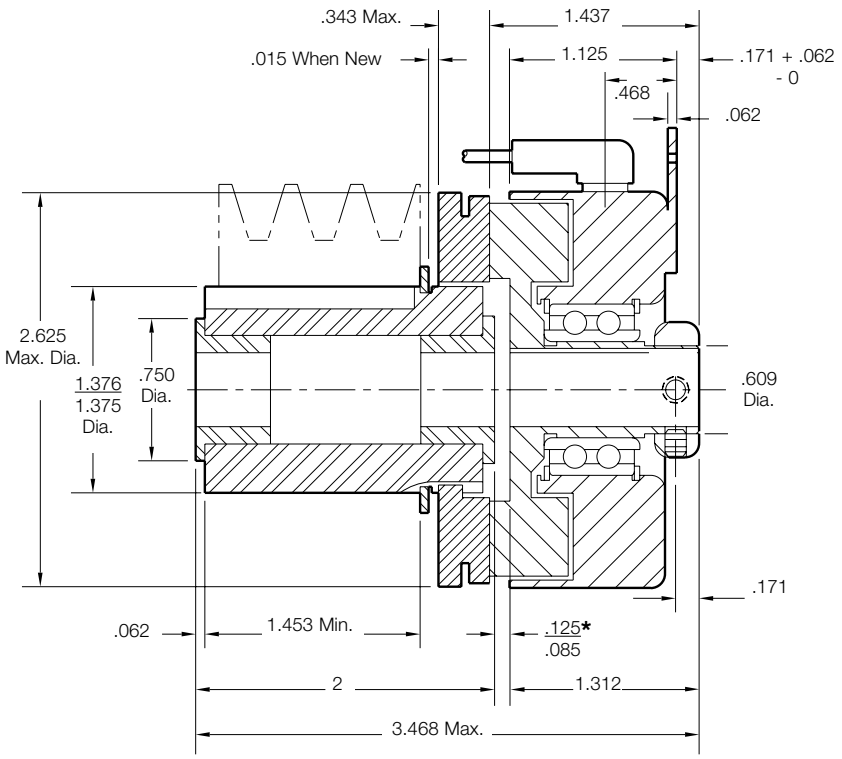
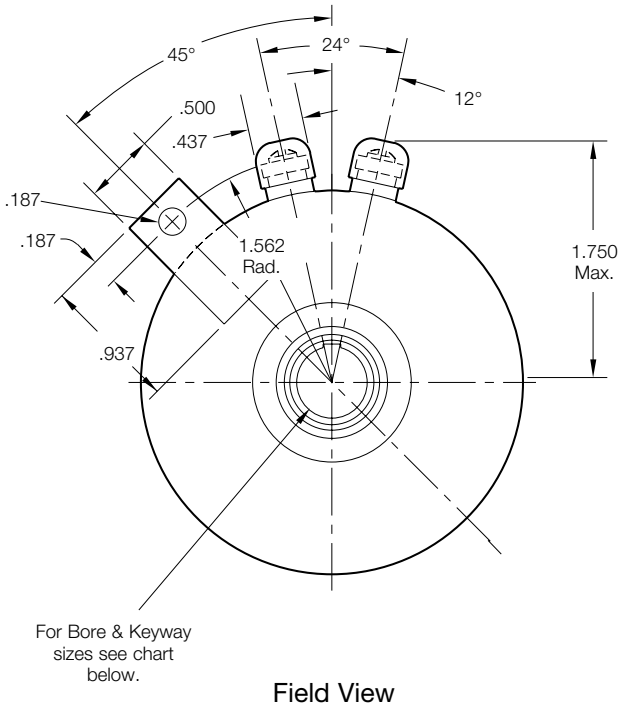
SF-250 Clutch Bearing Mounted



Armature View



*Customer shall maintain dimension as noted.



Field View

Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.3750/.3745		.376/.375	.093 x .046
.5000/.4995	.312 x .156	.438/.437*	.125 x .062
.5625/.5620*	x 1.25	.501/.500	.125 x .062
.6250/.6245			

* Available on special order only.

Armature Shaft	.375 – .625
Rotor Shaft	.375 – .500
Static Torque	70 lb.in.
Maximum Speed	7,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

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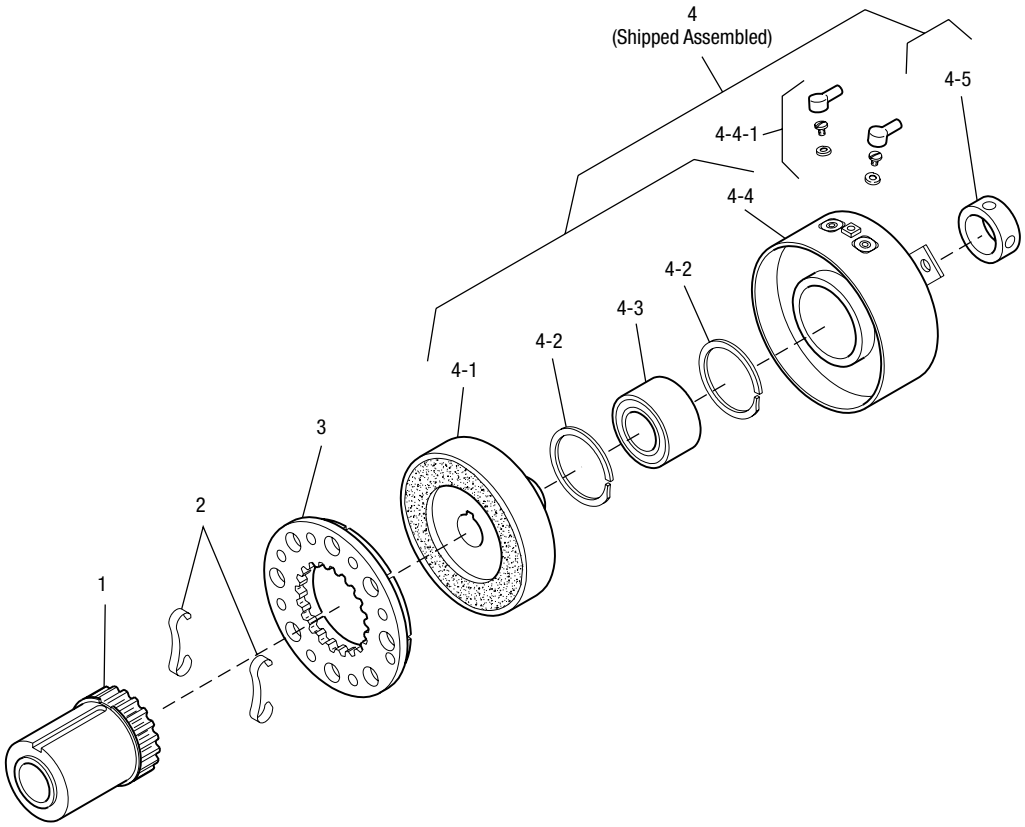
SF-250 Clutch Bearing Mounted

Drawing I-25521



Item	Description	Part Number	Qty.
1	Armature Hub		1
	3/8” Bore	5124-541-002	
	1/2” Bore	5124-541-003	
	5/8” Bore	5124-541-005	
2	Release Spring	5103-101-003	1
3	Armature	5124-111-001	1
4	Field and Rotor Assembly		1
	6 Volt – 3/8” Bore	5103-452-002	
	24 Volt – 3/8” Bore	5103-452-004	
	90 Volt – 3/8” Bore	5103-452-007	
	6 Volt – 1/2” Bore	5103-452-016	
	24 Volt – 1/2” Bore	5103-452-018	
	90 Volt – 1/2” Bore	5103-452-021	
4-1	Rotor		1
	3/8” Bore	5103-751-014	
	1/2” Bore	5103-751-016	
4-2	Retainer Ring	748-0371	2
4-3	Ball Bearing	166-0108	1
4-4	Field		1
	6 Volt	5103-451-018	
	24 Volt	5103-451-020	
	90 Volt	5103-451-023	
4-4-1	Terminal Accessory	5103-101-002	1
4-5*	Set Collar	266-0005	1

*Used with 1/2” Bore only.

How to Order:

1. Specify Bore Size for Item 1 and Item 4.
2. Specify Voltage for Item 4.

Example:

SF-250 Clutch per I-25521 - 90 Volt
1/2” Armature Hub Bore
1/2” Rotor 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.

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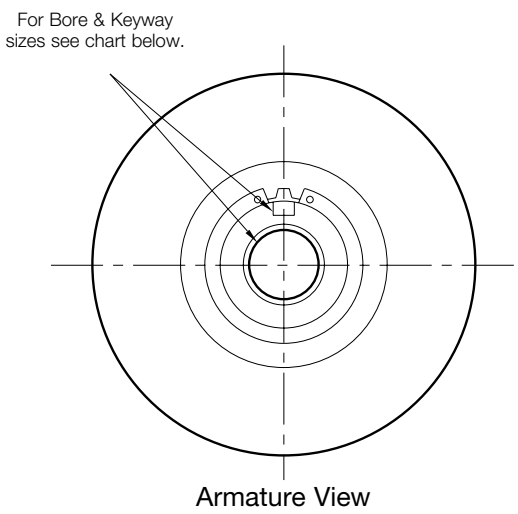
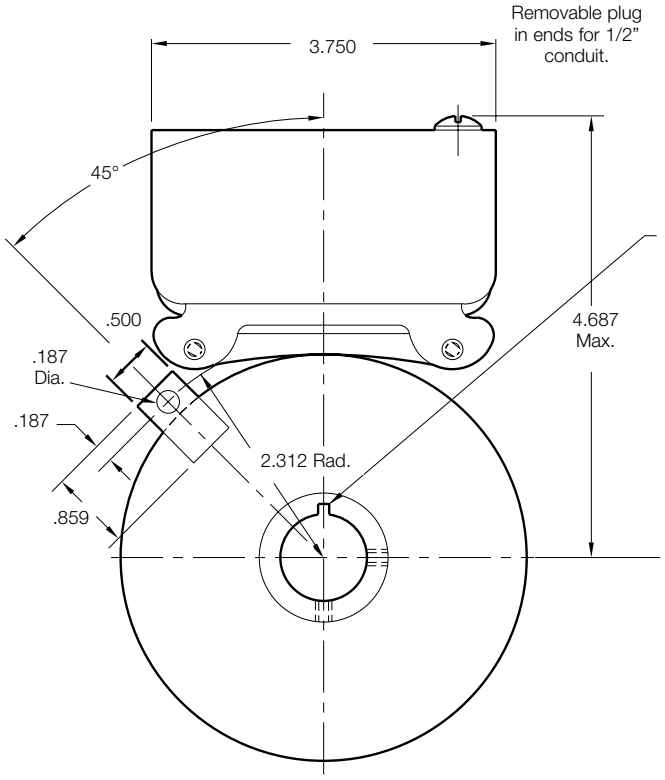
SF-400 Clutch Bearing Mounted

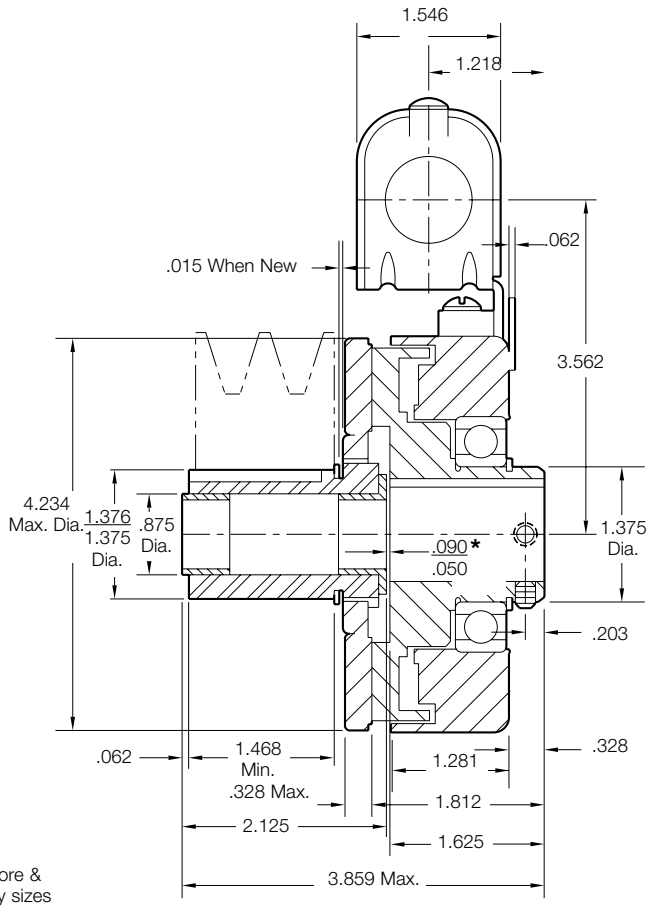


Armature View



Field View

*Customer shall maintain dimension as noted.



Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
		.501/.500	.125 x.062
.5000/.4995	.312 x .156	.626/.625	
.6250/.6245	x 1.25	.751/.750	.187 x .093
.7500/.7495		.876/.875	
		1.001/1.000	

Armature	.500 – .750
Rotor Shaft	.500 – 1
Static Torque	270 lb.in.
Maximum Speed	4,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

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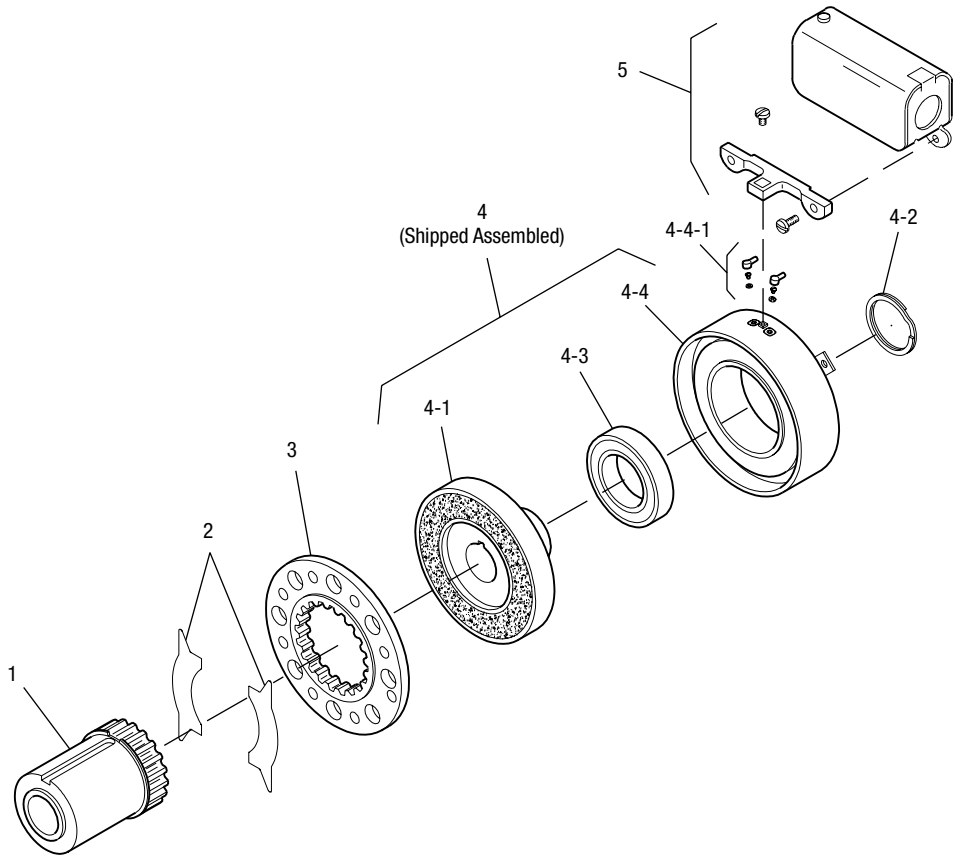
SF-400 Clutch Bearing Mounted

Drawing I-25696



Item	Description	Part Number	Qty.
1	Armature Hub		1
	1/2” Bore	5125-541-002	
	5/8” Bore	5125-541-003	
	3/4” Bore	5125-541-004	
2	Release Spring 5104-101-003	1	
3	Armature	5125-111-001	1
4	Field and Rotor Assembly		1
	6 Volt – 1/2” Bore	5104-452-052	
	24 Volt – 1/2” Bore	5104-452-053	
	90 Volt – 1/2” Bore	5104-452-054	
	6 Volt – 5/8” Bore	5104-452-055	
	24 Volt – 5/8” Bore	5104-452-056	
	90 Volt – 5/8” Bore	5104-452-057	
	6 Volt – 3/4” Bore	5104-452-058	
	24 Volt – 3/4” Bore	5104-452-059	
	90 Volt – 3/4” Bore	5104-452-060	
4-1	Rotor		1
	1/2” Bore	5104-751-043	
	5/8” Bore	5104-751-044	
	3/4” Bore	5104-751-045	
4-2	Retainer Ring	748-0018	1
4-3	Ball Bearing	166-0150	1
4-4	Field		1
	6 Volt	5104-451-038	
	24 Volt	5104-451-039	
	90 Volt	5104-451-040	
4-4-1	Terminal Accessory	5103-101-002	1
5	Conduit Box	5200-101-010	1

How to Order:

1. Specify Bore Size for Items 1 and 4.
2. Specify Voltage for Item 4.

Example:

SF-400 Clutch per I-25696 - 90 Volt
3/4” Armature Hub Bore
3/4” Rotor Bore

These units, when used in conjunction with the correct Warner Electric conduit box, meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543

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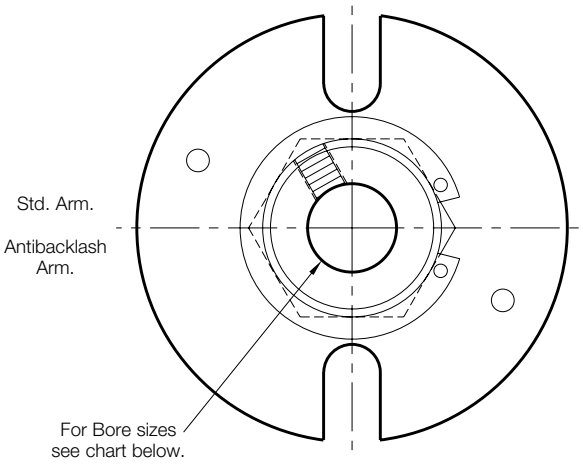
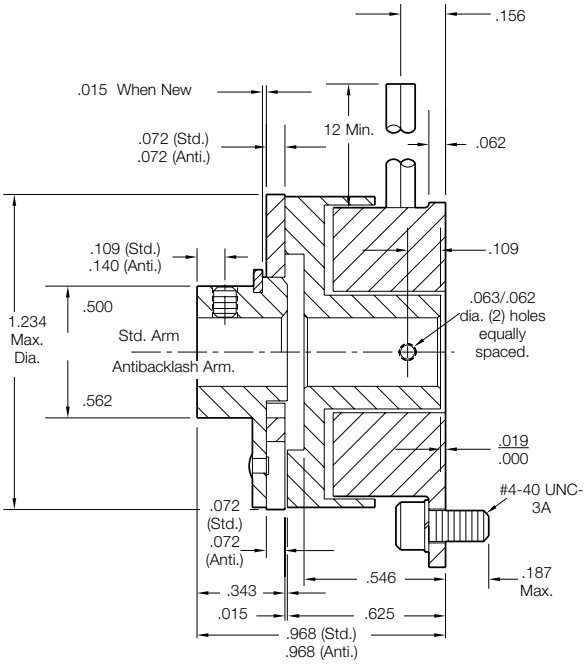
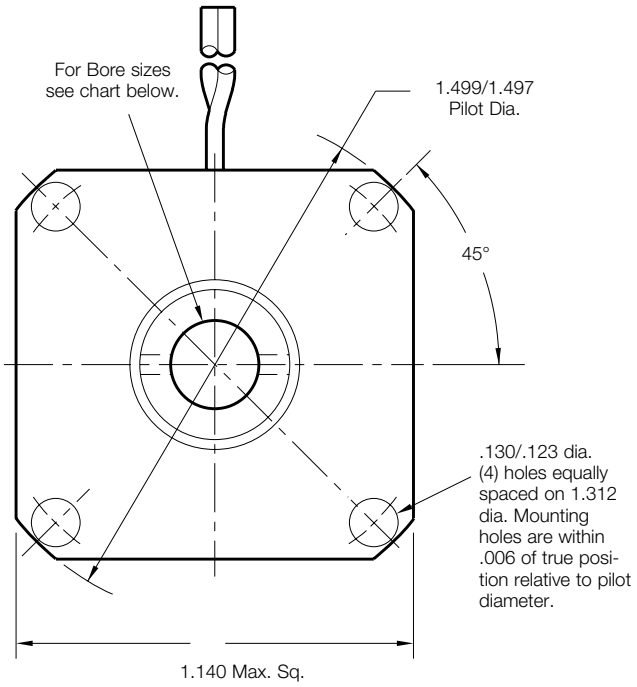
SFC-120 Clutch Coupling Flange Mounted



Armature View





Field View

Bore Dimensions

Rotor Bore Dia.	Armature Bore Dia.
.188/.187	.188/.187
.251/.250	.251/.250
.313/.312	(.313/.312)*

*(Antibacklash Armatures)

Armature Shaft	.187 – .250
Rotor Shaft	.187 – .312
Static Torque	5 lb. in.
Maximum Speed	3,600 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Squareness of field mounting face with rotor shaft within .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.
3. Rotor and armature shafts in line within .003 T.I.R.

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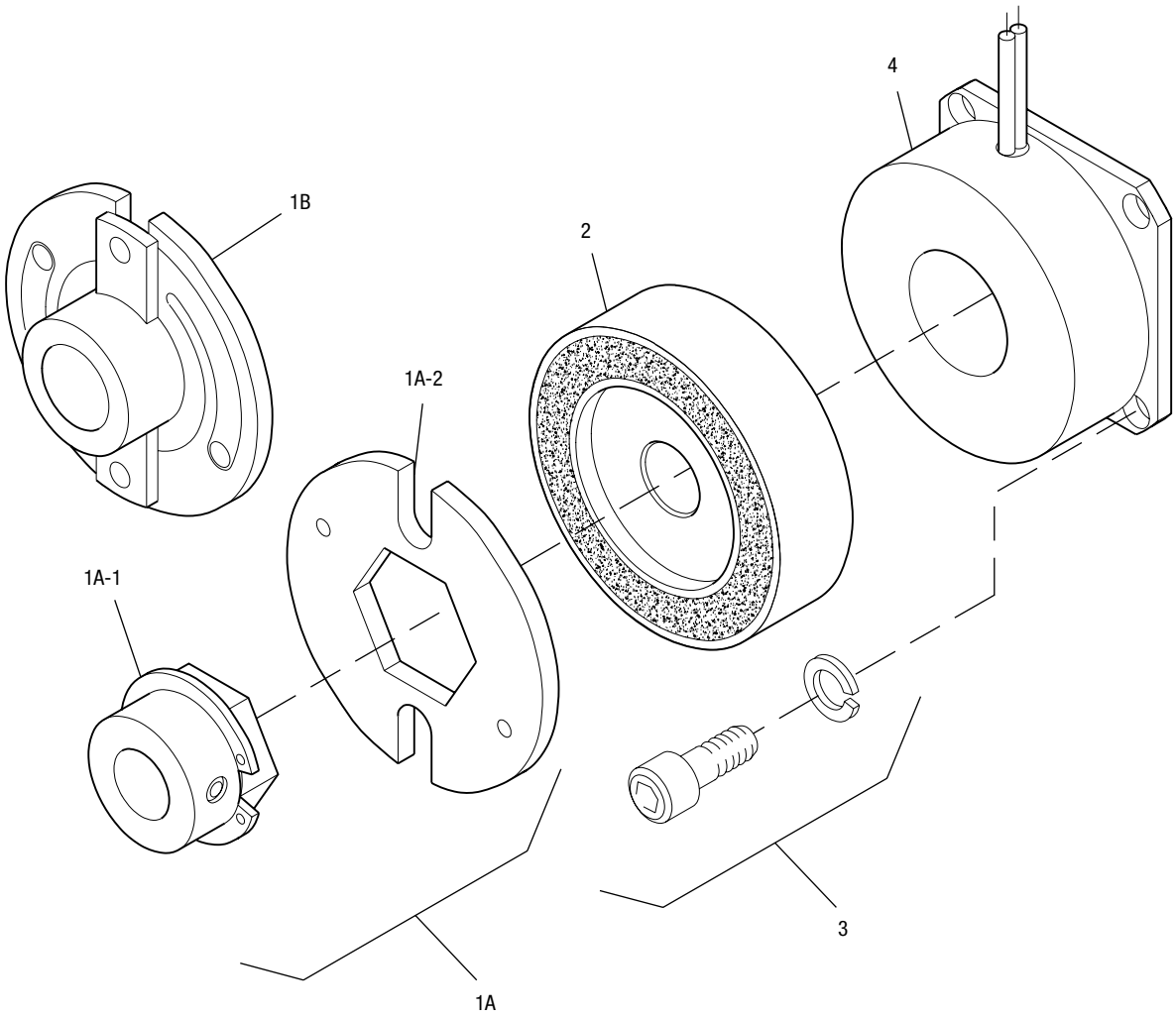
SFC-120 Clutch Coupling Flange Mounted – Outside Mounted Drawing I-25503



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	3/16" Bore	5622-541-009	
	1/4" Bore	5622-541-008	
1A-2	Armature	110-0110	1
1B	Antibacklash Armature		1
	3/16" Bore	5622-111-004	
	1/4" Bore	5622-111-002	
	5/16" Bore	5622-111-003	
2	Rotor		1
	3/16" Bore	5602-751-004	
	1/4" Bore	5602-751-002	
	5/16" Bore	5602-751-003	
3	Mounting Accessory	5101-101-001	1
4	Field		1
	6 Volt	5602-451-003	
	24 Volt	5602-451-005	
	90 Volt	5602-451-007	

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 4.

Example:

SFC-120 Clutch per I-25503 - 90 Volt
Standard Armature
1/4" Armature Hub Bore
1/4" Rotor 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.

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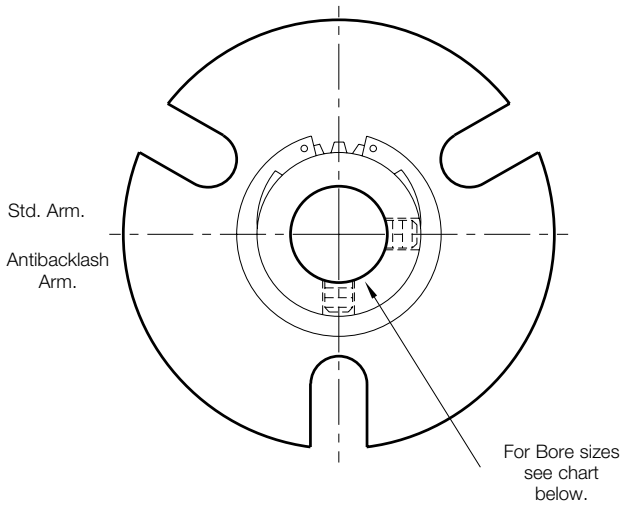
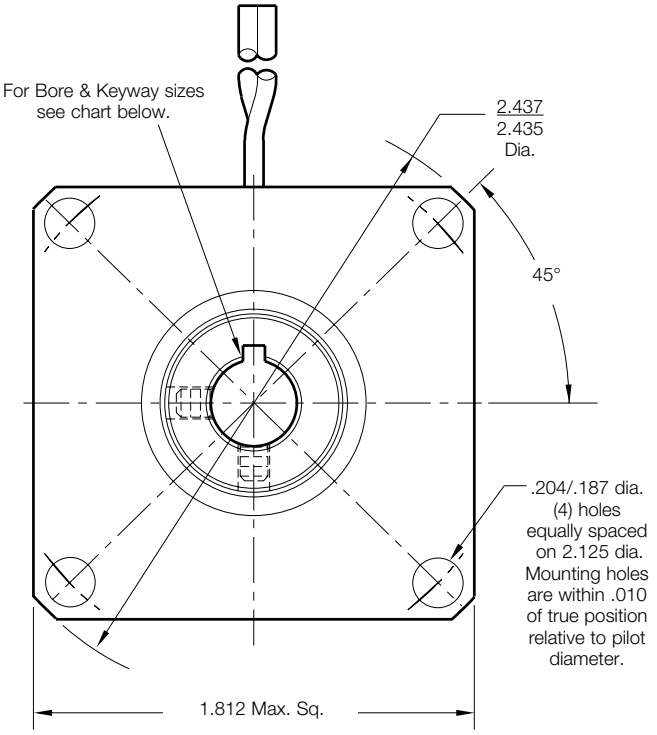
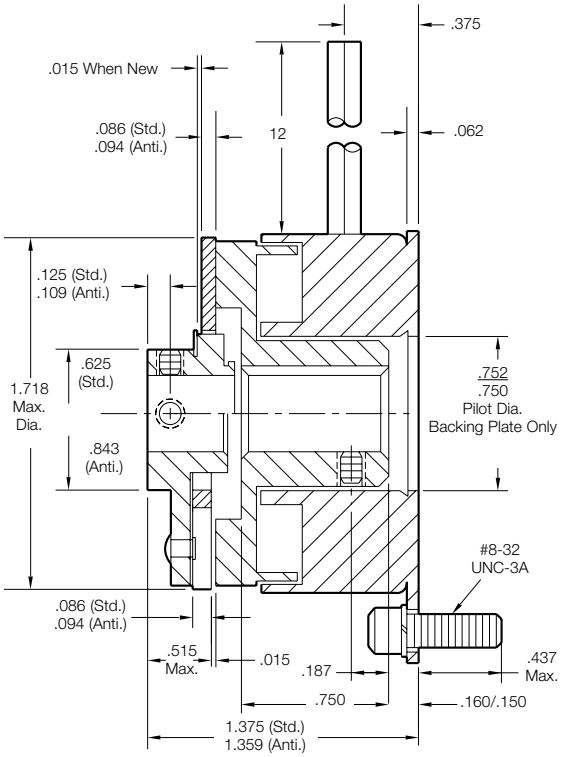
SFC-170 Clutch Coupling Flange Mounted



Armature View



Field View



Bore Dimensions

Rotor Bore Dia.	Keyway	Armature Bore Dia.
.251/.250	.062 x .031	.251/.250
.313/.312	.062 x .031	.313/.312
.376/.375	.093 x .046	.376/.375

Armature Shaft	.250 – .375
Rotor Shaft	.250 – .375
Static Torque	15 lb. in.
Maximum Speed	5,000 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Squareness of field mounting face with rotor shaft within .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.
3. Rotor and armature shafts in line within .003 T.I.R.

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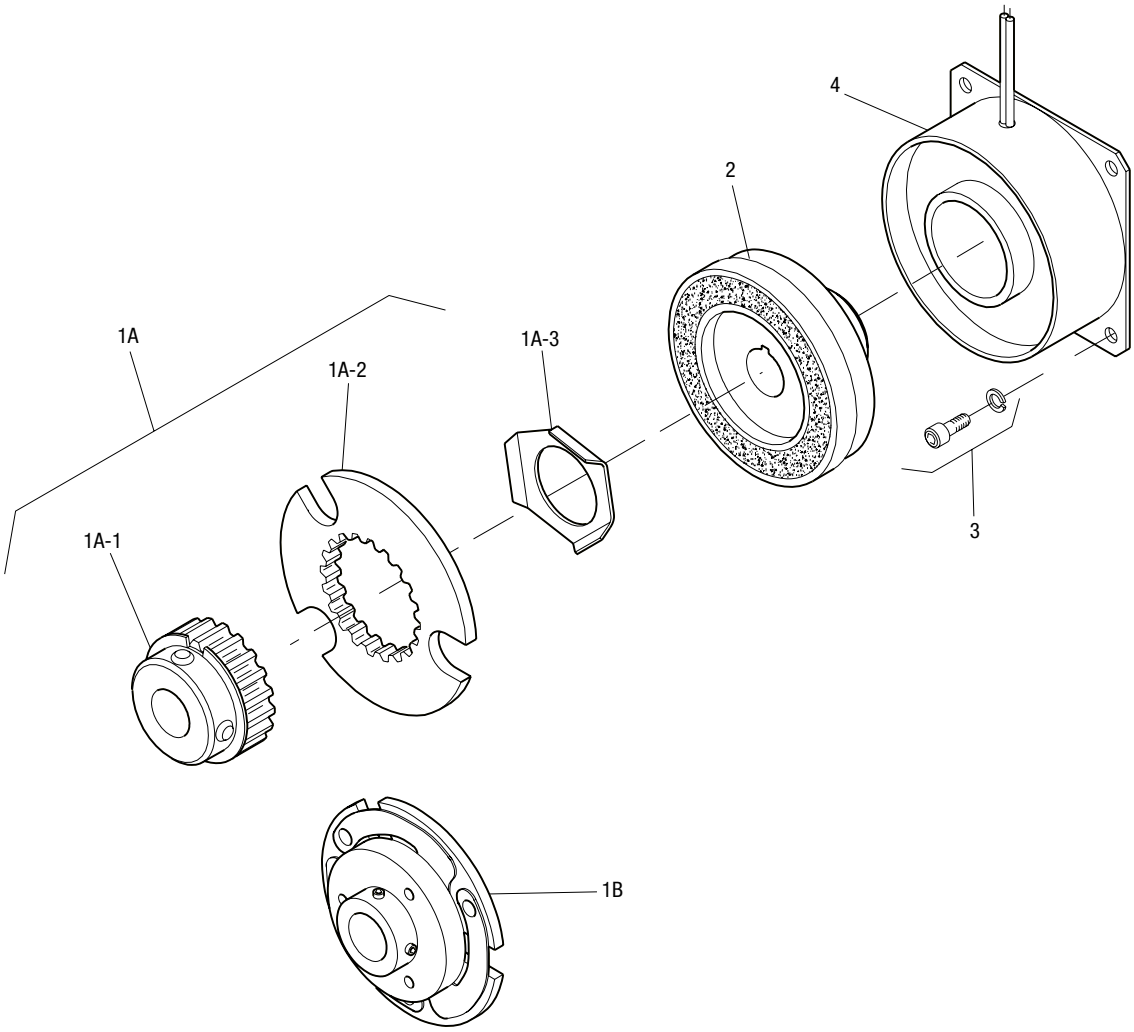
SFC-170 Clutch Coupling Flange Mounted – Outside Mounted Drawing I-25756



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	1/4” Bore	5102-541-002	
	5/16” Bore	5102-541-003	
	3/8” Bore	5102-541-004	
1A-2	Armature	110-0111	1
1A-3	Release Spring	808-0019	1
1B	Antibacklash Armature		1
	1/4” Bore	5623-111-008	
	5/16” Bore	5623-111-009	
	3/8” Bore	5623-111-010	
2	Rotor		1
	1/4” Bore	5603-751-028	
	5/16” Bore	5603-751-029	
	3/8” Bore	5603-751-030	
3	Mounting Accessory	5102-101-001	1
4	Field		1
	6 Volt	5603-451-047	
	24 Volt	5603-451-049	
	90 Volt	5603-451-051	

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 4.

Example:

SFC-170 Clutch per I-25756 - 90 Volt
Antibacklash Armature
1/4” Armature Hub Bore
1/4” Rotor 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.

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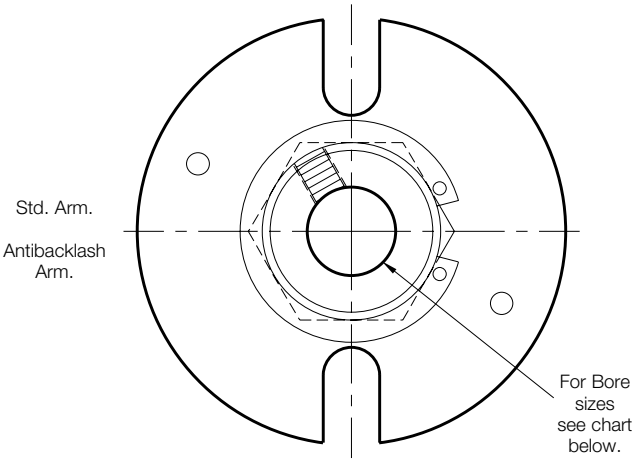
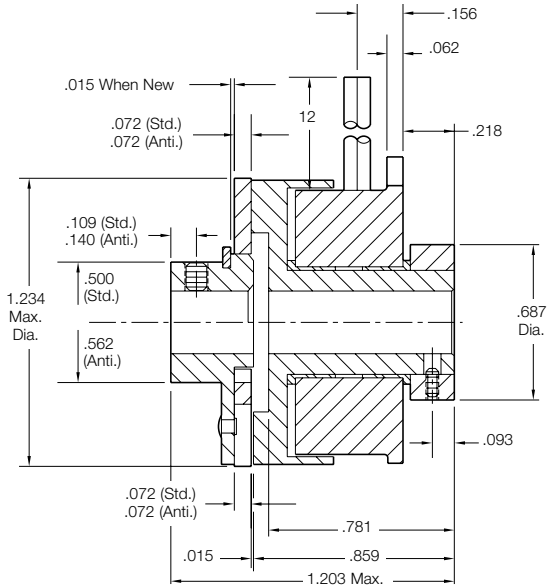
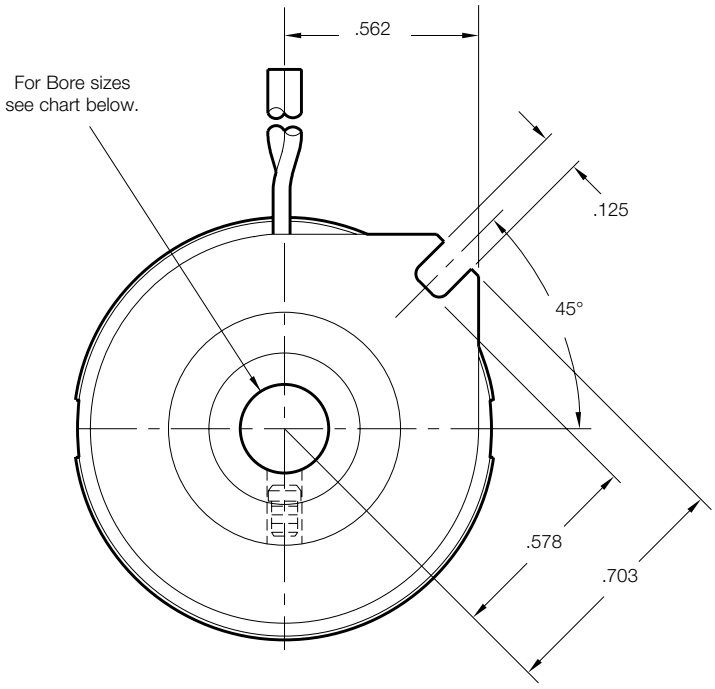
SFC-120 Clutch Coupling Bearing Mounted



Armature View





Field View

Bore Dimensions

Rotor Bore Dia.	Armature Bore Dia.
.188/.187	.188/.187
.251/.250	.251/.250
.313/.312	(.313/.312)*

*(Antibacklash Armatures)

Armature Shaft	.187 – .250
Rotor Shaft	.187 – .312
Static Torque	5 lb. in.
Maximum Speed	3,600 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Alignment between rotor and armature shafts to be .003 T.I.R.

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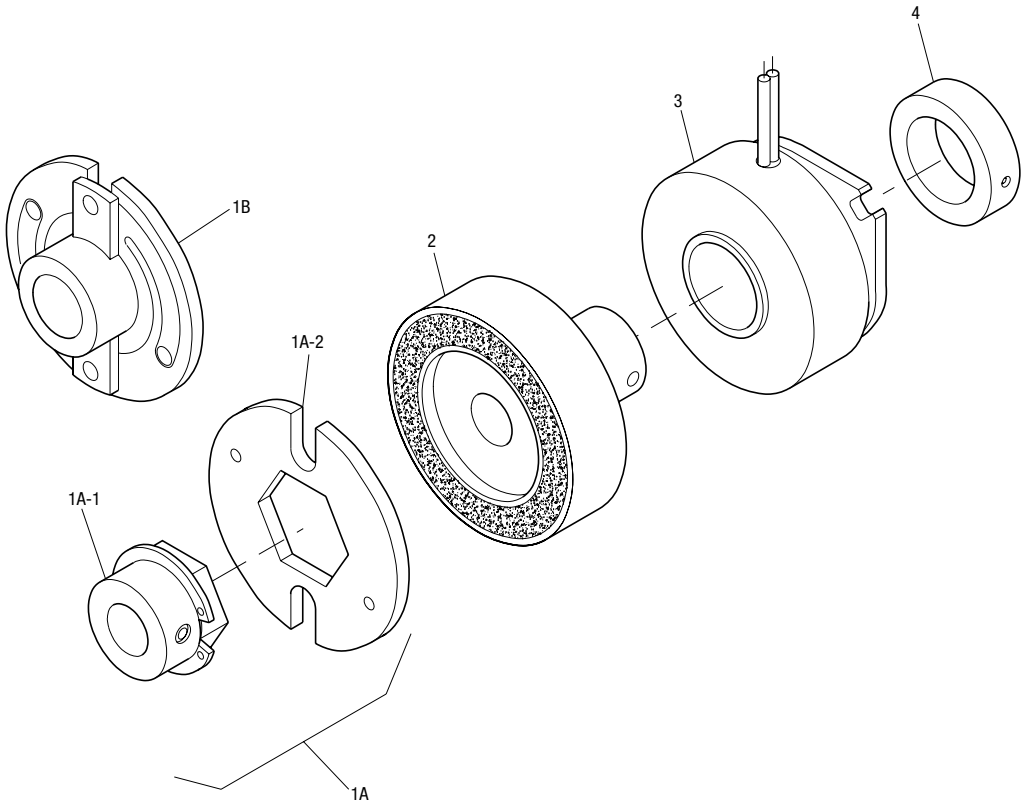
SFC-120 Clutch Coupling Bearing Mounted

Drawing I-25504



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	3/16" Bore	5622-541-009	
	1/4" Bore	5622-541-008	
1A-2	Armature	110-0110	1
1B	Antibacklash Armature		1
	3/16" Bore	5622-111-004	
	1/4" Bore	5622-111-002	
	5/16" Bore	5622-111-003	
2	Rotor		1
	3/16" Bore	5602-751-008	
	1/4" Bore	5602-751-006	
	5/16" Bore	5602-751-007	
3	Field		1
	6 Volt	5602-451-021	
	24 Volt	5602-451-023	
	90 Volt	5602-451-025	
4	Set Collar	5602-266-001	1

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 3.

Example:

SFC-120 Clutch per I-25504 - 90 Volt
Standard Armature
1/4" Armature Hub 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.

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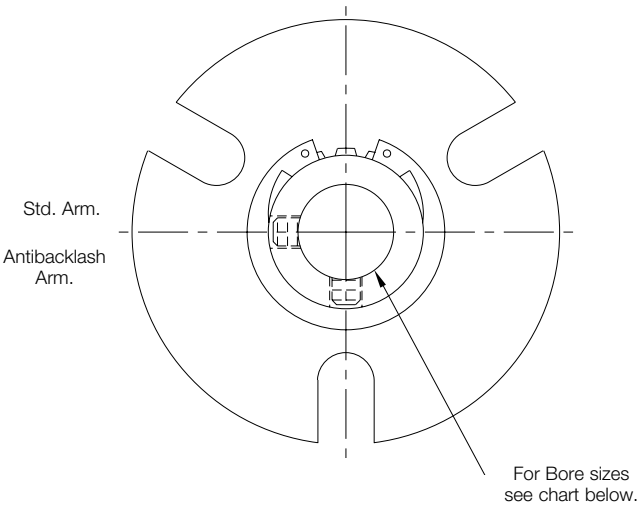
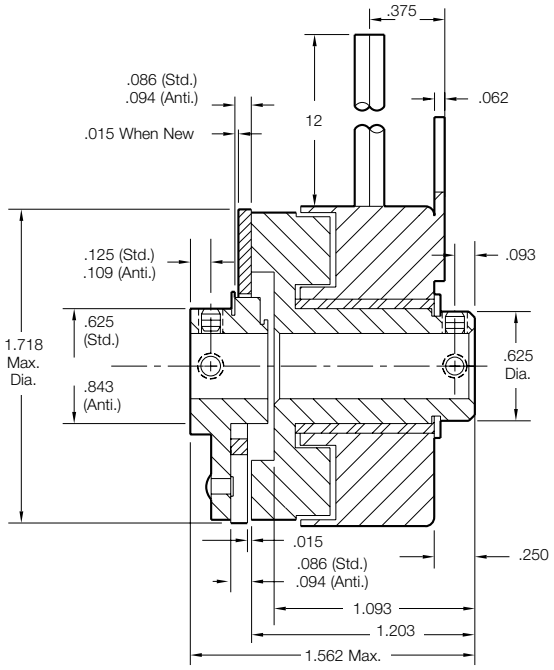
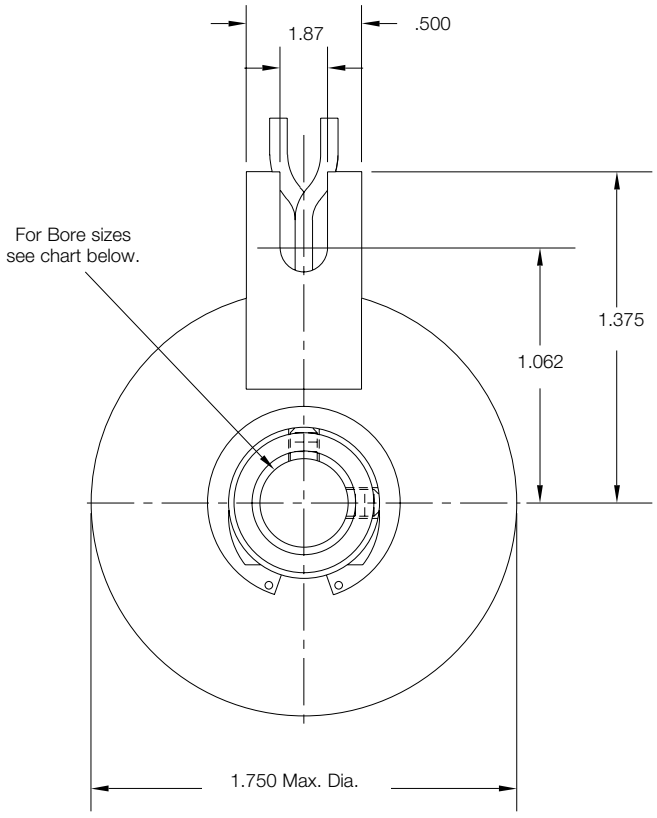
SFC-170 Clutch Coupling Bearing Mounted



Armature View





Field View

Bore Dimensions

Rotor Bore Dia.	Armature Bore Dia.
.251/.250	.251/.250
.313/.312	.313/.312
.376/.375	.376/.375

Armature Shaft	.250 – .375
Rotor Shaft	.250 – .375
Static Torque	15 lb. in.
Maximum Speed	5,000 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Alignment between rotor and armature shafts to be .003 T.I.R.

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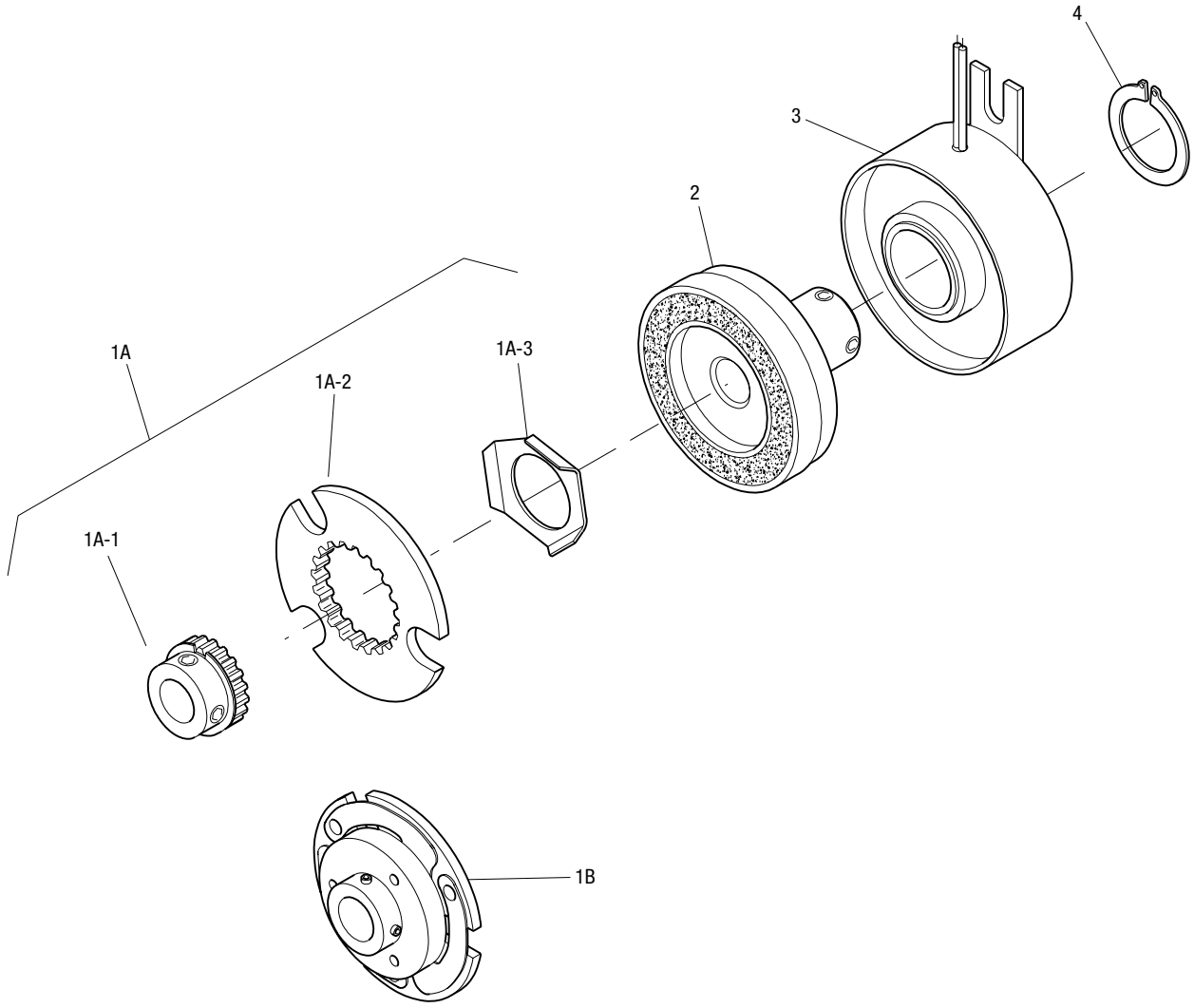
SFC-170 Clutch Coupling Bearing Mounted

Drawing I-25757



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	1/4” Bore	5102-541-002	
	5/16” Bore	5102-541-003	
	3/8” Bore	5102-541-004	
1A-2	Armature	110-0111	1
1A-3	Release Spring	808-0019	1
1B	Antibacklash Armature		1
	1/4” Bore	5623-111-008	
	5/16” Bore	5623-111-009	
	3/8” Bore	5623-111-010	
2	Rotor		1
	1/4” Bore	5603-751-019	
	5/16” Bore	5603-751-021	
	3/8” Bore	5603-751-020	
3	Field		1
	6 Volt	5603-451-039	
	24 Volt	5603-451-041	
	90 Volt	5603-451-043	
4	Retainer Ring	748-0024	1

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 3.

Example:

SFC-170 Clutch per I-25757 - 90 Volt
Antibacklash Armature
1/4” Armature Hub 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.

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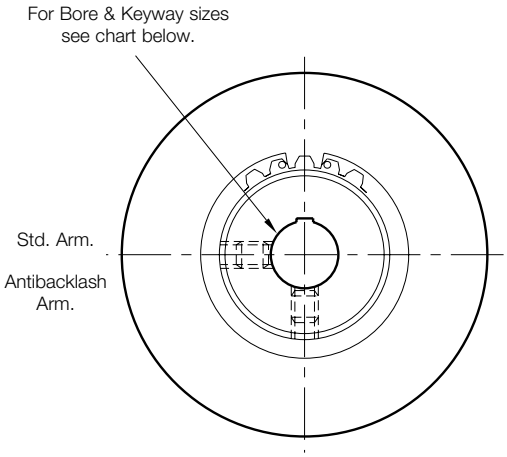
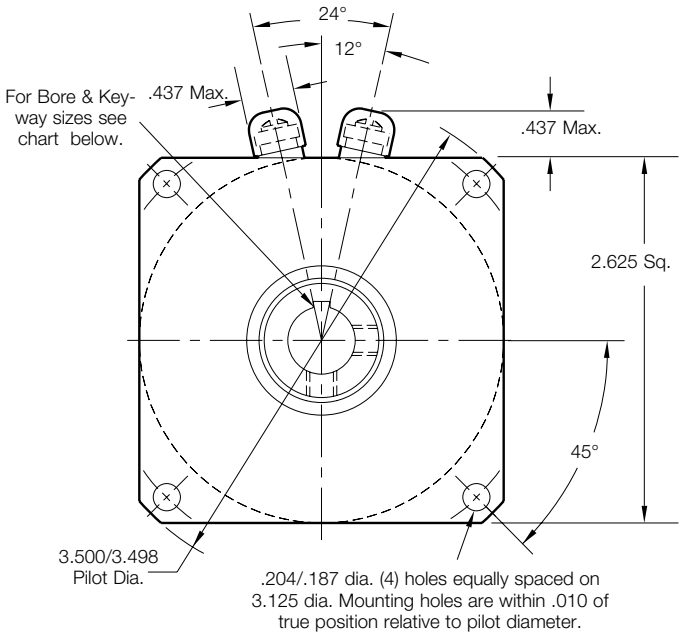
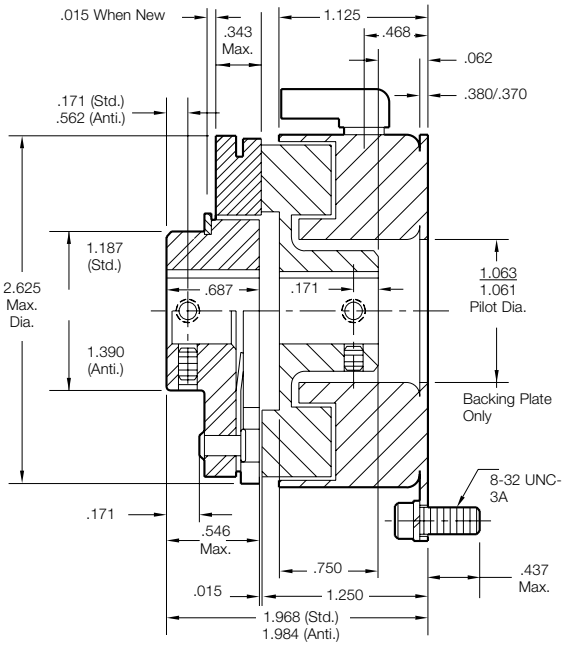
SFC-250 Clutch Coupling Flange Mounted



Armature View



Field View



Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.376/.375	.093 x .046		
*.438/.437		.376/.375	.093 x .046
.501/.500	.125 x .062	*.438/.437	.125x .062
*.563/.562		.501/.500	
.626/.625			
*.688/.687	.187 x .093		
.751/.750			

* Available on special order only.

Customer Shall Maintain:

1. Squareness of field mounting face with rotor shaft within .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.
3. Rotor and armature shafts in line within .003 T.I.R.

Armature Shaft	.375 – .750
Rotor Shaft	.375 – .500
Static Torque	70 lb. in.
Maximum Speed	7,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

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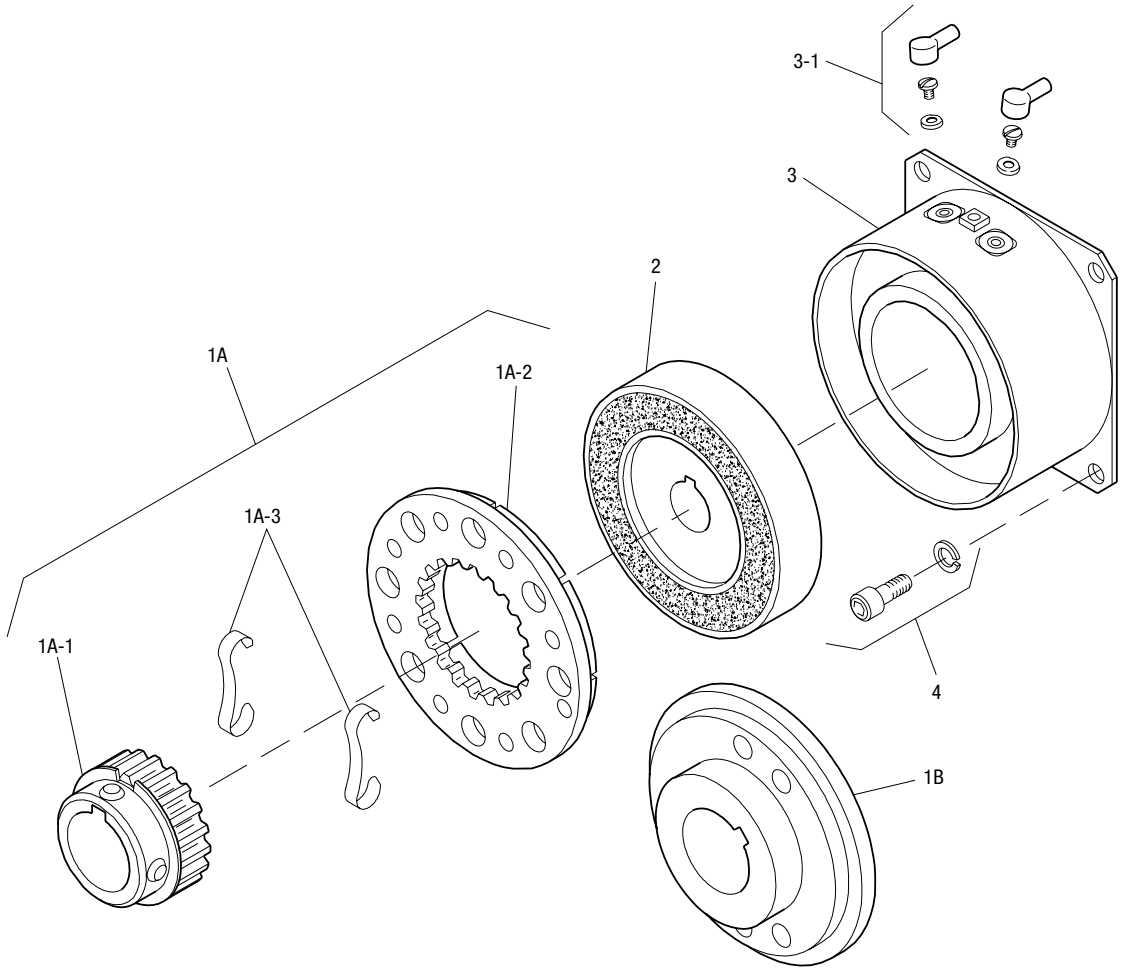
SFC-250 Clutch Coupling Flange Mounted Outside Mounted Drawing I-25522



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	3/8” Bore	5103-541-002	
	1/2” Bore	5103-541-004	
	5/8” Bore	5103-541-006	
	3/4” Bore	5103-541-008	
1A-2	Armature	5124-111-001	1
1A-3	Release Spring	5103-101-003	1
1B	Antibacklash Armature		1
	3/8” Bore	5365-111-003	
	1/2” Bore	5365-111-005	
	5/8” Bore	5365-111-007	
	3/4” Bore	5365-111-009	
2	Rotor		1
	3/8” Bore	5103-751-008	
	1/2” Bore	5103-751-010	
3	Field		1
	6 Volt	5103-451-002	
	24 Volt	5103-451-004	
	90 Volt	5103-451-007	
3-1	Terminal Accessory	5103-101-002	1
4	Mounting Accessory	5102-101-001	1

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1-B and Item 2.
3. Specify Voltage for Item 3.

Example:

SFC-250 Clutch Coupling per I-25522 - 90 Volt
Standard Armature
1/2” Armature Hub Bore
1/2” Rotor 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.

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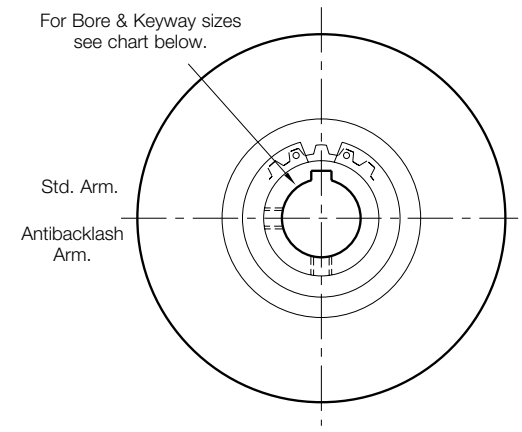
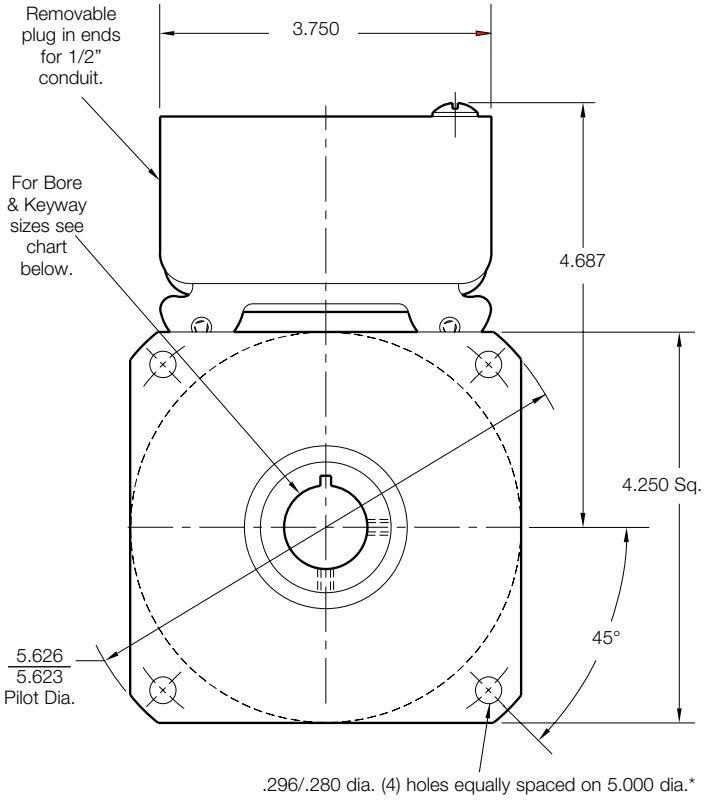
SFC-400 Clutch Coupling Flange Mounted



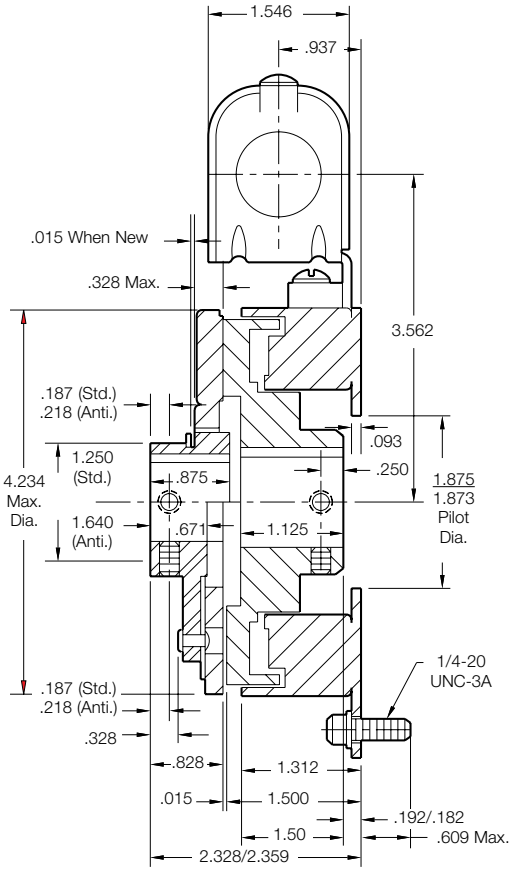
Armature View



Field View

Customer Shall Maintain:

1. Squareness of field mounting face with rotor shaft within .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.
3. Rotor and armature shafts in line within .003 T.I.R.



*Mounting holes are within .010 of true position relative to pilot diameter.

Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.501/.500	.125 x .062	.501/.500	.125 x.062
*.563/.562			
.626/.625		.626/.625	
*.688/.687	.187 x .093	.751/.750	.187 x .093
.751/.750		.876/.875	
.876/.875		1.001/1.000	

*Available on special order only

Armature Shaft	.500 – .875
Rotor Shaft	.500 – 1
Static Torque	270 lb. in.
Maximum Speed	4,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

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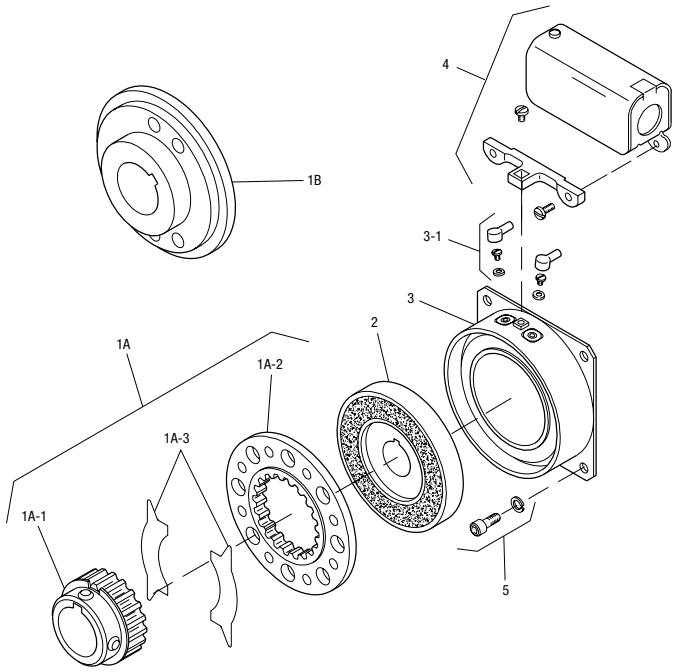
SFC-400 Clutch Coupling Flange Mounted – Outside Mounted Drawing I-25697



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	1/2” Bore	5104-541-002	
	5/8” Bore	5104-541-004	
	3/4” Bore	5104-541-006	
	7/8” Bore	5104-541-007	
1A-2	Armature	5125-111-001	1
1A-3	Release Spring	5104-101-003	1
1B	Antibacklash Armature		1
	1/2” Bore	5367-111-003	
	5/8” Bore	5367-111-005	
	3/4” Bore	5367-111-007	
	7/8” Bore	5367-111-008	
2	Rotor		1
	1/2” Bore	5104-751-033	
	5/8” Bore	5104-751-034	
	3/4” Bore	5104-751-035	
	7/8” Bore	5104-751-036	
	1” Bore	5104-751-037	
3	Field		1
	6 Volt	5104-451-032	
	24 Volt	5104-451-033	
	90 Volt	5104-451-034	
3-1	Terminal Accessory	5103-101-002	1
4	Conduit Box	5200-101-010	1
5	Mounting Accessory	5104-101-002	1

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 3.

Example:

SFC-400 Clutch Coupling per I-25697 - 90 Volt
3/4” Armature Hub Bore
3/4” Rotor Bore

These units, when used in conjunction with the correct Warner Electric conduit box, meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

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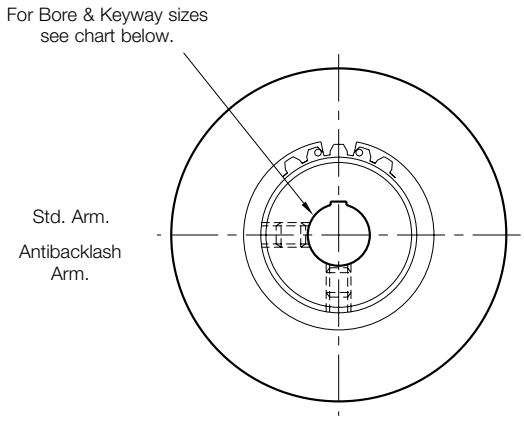
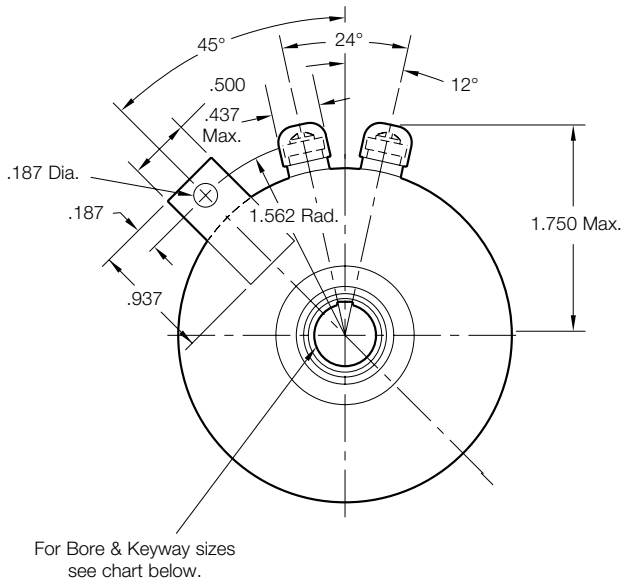
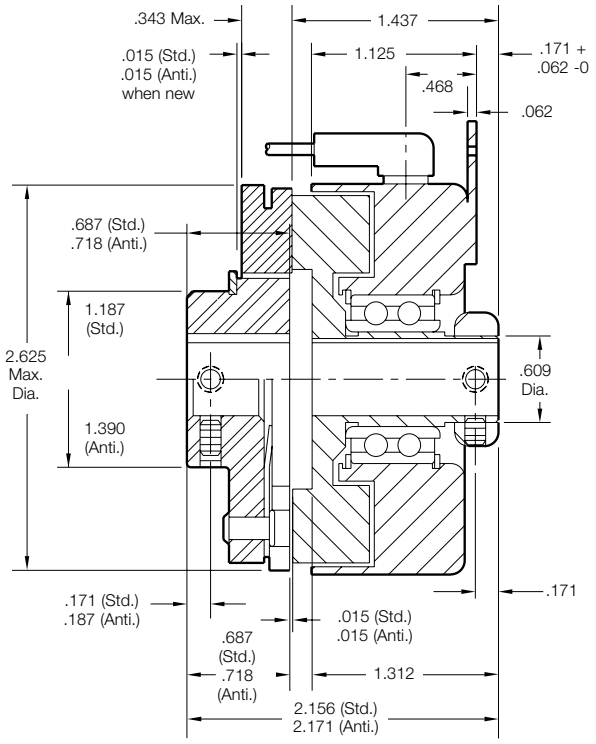
SFC-250 Clutch Coupling Bearing Mounted



Armature View



Field View



Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.375/.376 .046	.093 x .046	.376/.375	.093 x
*.438/.437 .501/.500 *.563/.562 .626/.625	.125 x .062	*.438/.437 .501/.500	.125 x .062
*.688/.687 .751/.750	.187 x .093		

* Available on special order only.

Armature Shaft	.375 – .750
Rotor Shaft	.375 – .500
Static Torque	70 lb. in.
Maximum Speed	7,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Armature shaft to be concentric with rotor shaft within .003 T.I.R.

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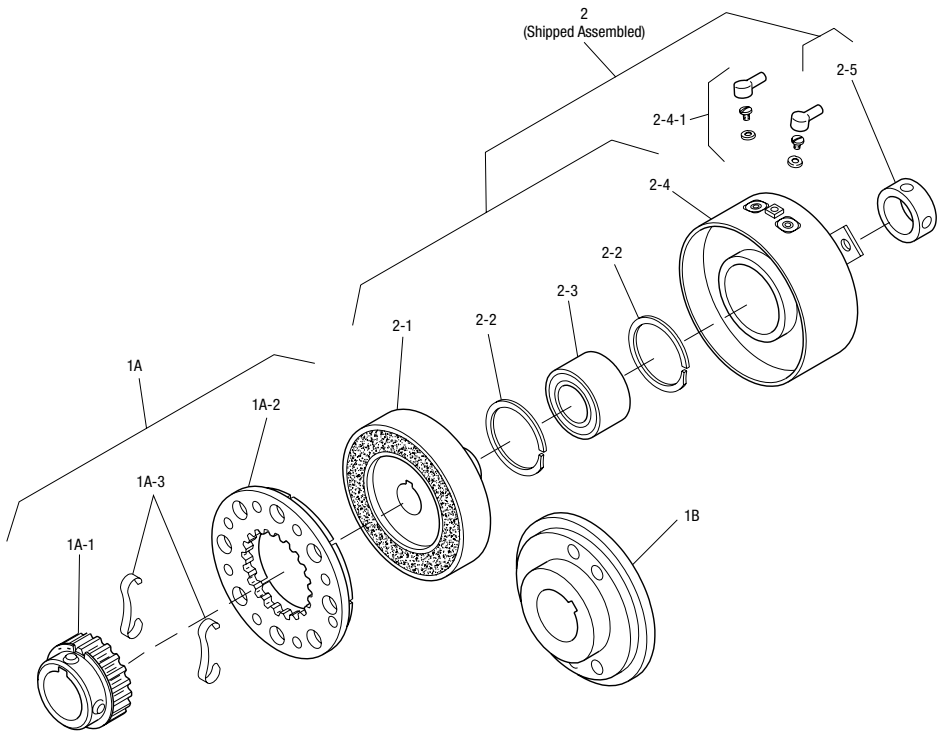
SFC-250 Clutch Coupling Bearing Mounted

Drawing I-25523



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	3/8” Bore	5103-541-002	
	1/2” Bore	5103-541-004	
	5/8” Bore	5103-541-006	
	3/4” Bore	5103-541-008	
1A-2	Armature	5124-111-001	1
1A-3	Release Spring	5103-101-003	1
1B	Antibacklash Armature		1
	3/8” Bore	5365-111-003	
	1/2” Bore	5365-111-005	
	5/8” Bore	5365-111-007	
	3/4” Bore	5365-111-009	
2	Field and Rotor Assembly		1
	6 Volt – 3/8” Bore	5103-452-002	
	24 Volt – 3/8” Bore	5103-452-004	
	90 Volt – 3/8” Bore	5103-452-007	
	6 Volt – 1/2” Bore	5103-452-016	
	24 Volt – 1/2” Bore	5103-452-018	
	90 Volt – 1/2” Bore	5103-452-021	
2-1	Rotor		1
	3/8” Bore	5103-751-014	
	1/2” Bore	5103-751-016	
2-2	Retainer Ring	748-0371	2
2-3	Ball Bearing	166-0108	1
2-4	Field		1
	6 Volt	5103-451-018	
	24 Volt	5103-451-020	
	90 Volt	5103-451-023	
2-4-1	Terminal Accessory	5103-101-002	1
2-5	Set Collar*	266-0005	1

*Used with 1/2” Bore only.

How to Order:

1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 2.

Example:

SFC-250 Clutch Coupling per I-25523 - 90 Volt
Standard Armature
1/2” Armature Hub Bore
1/2” Rotor 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.

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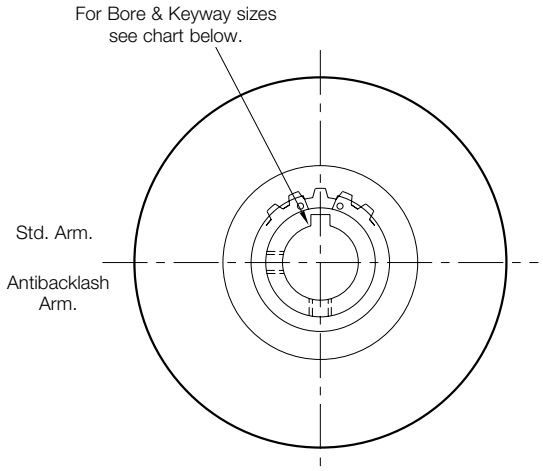
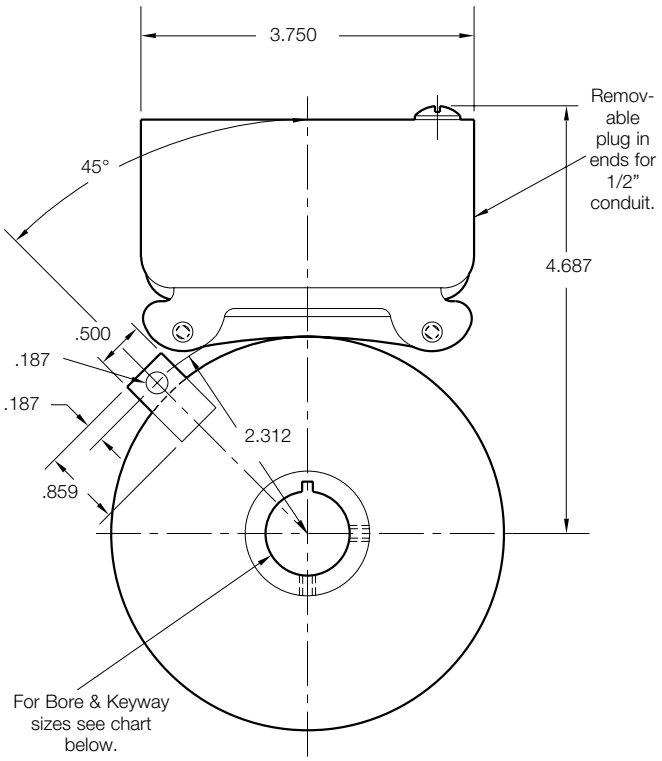
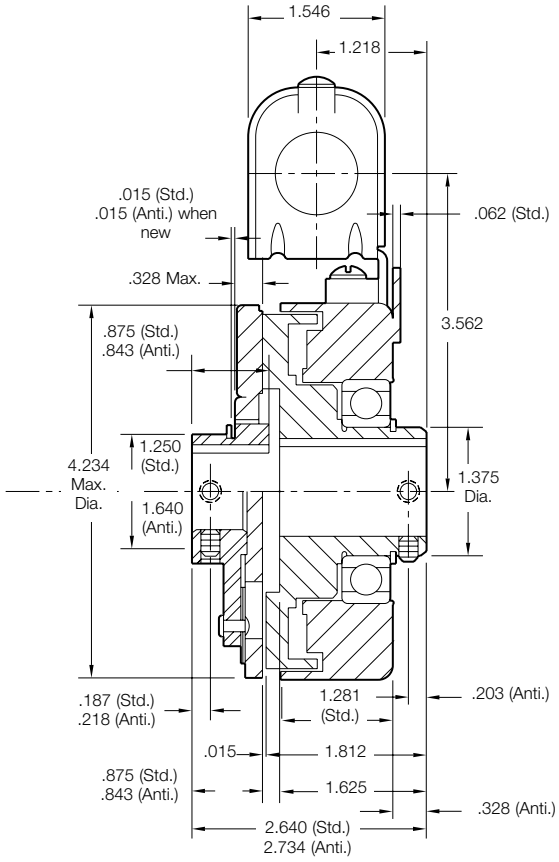
SFC-400 Clutch Coupling Bearing Mounted



Armature View



Field View



Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.501/.500 *.563/.562	.125 x .062	.501/.500	.125 x.062
.626/.625 *.688/.687 .751/.750 .876/.875	.187 x .093	.626/.625 .751/.750 .876/.875 1.001/1.000	.187 x .093

* Available on special order only.

Armature Shaft	.500 – .875
Rotor Shaft	.500 – 1
Static Torque	270 lb. in.
Maximum Speed	4,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Armature shaft to be concentric with rotor shaft within .003 T.I.R.

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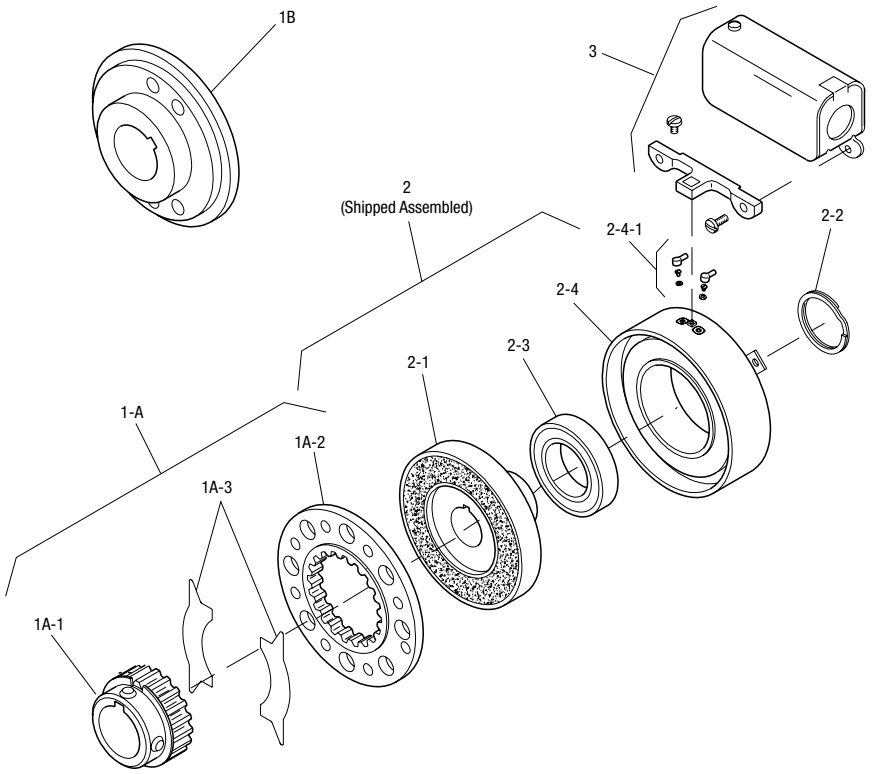
SFC-400 Clutch Coupling Bearing Mounted

Drawing I-25698



Item	Description	Part Number	Qty.
1A	Armature and Hub		
1A-1	Armature Hub		1
	1/2” Bore	5104-541-002	
	5/8” Bore	5104-541-004	
	3/4” Bore	5104-541-006	
	7/8” Bore	5104-541-007	
1A-2	Armature	5125-111-001	1
1A-3	Release Spring	5104-101-003	1
1B	Antibacklash Armature		1
	1/2” Bore	5367-111-003	
	5/8” Bore	5367-111-005	
	3/4” Bore	5367-111-007	
	7/8” Bore	5367-111-008	
2	Field and Rotor Assembly		1
	6 Volt – 1/2” Bore	5104-452-052	
	24 Volt – 1/2” Bore	5104-452-053	
	90 Volt – 1/2” Bore	5104-452-054	
	6 Volt – 5/8” Bore	5104-452-055	
	24 Volt – 5/8” Bore	5104-452-056	
	90 Volt – 5/8” Bore	5104-452-057	
	6 Volt – 3/4” Bore	5104-452-058	
	24 Volt – 3/4” Bore	5104-452-059	
	90 Volt – 3/4” Bore	5104-452-060	
	6 Volt – 7/8” Bore	5104-452-061	
	24 Volt – 7/8” Bore	5104-452-062	
	90 Volt – 7/8” Bore	5104-452-063	
	6 Volt – 1” Bore	5104-452-064	
	24 Volt – 1” Bore	5104-452-065	
	90 Volt – 1” Bore	5104-452-066	
2-1	Rotor		1
	1/2” Bore	5104-751-043	
	5/8” Bore	5104-751-044	
	3/4” Bore	5104-751-045	
	7/8” Bore	5104-751-046	
	1” Bore	5104-751-047	
2-2	Retainer Ring	748-0018	1
2-3	Ball Bearing	166-0150	1
2-4	Field		1
	6 Volt	5104-451-038	
	24 Volt	5104-451-039	
	90 Volt	5104-451-040	
2-4-1	Terminal Accessory	5103-101-002	1
3	Conduit Box	5200-101-010	1

How to Order:

1. Specify Type of Armature Desired.
2 Specify Bore Size for Item 1A-1 or 1-B and Item 2.
3. Specify Voltage for Item 2.

Example:

SFC-400 Clutch Coupling per I-25698 - 90 Volt Antibacklash Armature
3/4” Armature Hub Bore
3/4” Rotor 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.

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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.

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