SFC-825, SFC-1000, SFC-1225, SFC-1525 Heavy Duty Clutch Coupling and SFC-1525 High Torque Heavy Duty Clutch Coupling

P-207
819-0516

Installation Instructions

Warner® Electric

An Altra Industrial Motion Company

Contents

SFC-825
Bearing Mounted

SFC-825
Flange Mounted

⚠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.

Clutch-Coupling Spline Drive Armatures SFC-825 SFC-1000 SFC-1225 SFC-1525 SFC-1525 Hi-Torque

The illustration drawings, parts lists, and exploded views for these units can be found beginning on page 8.

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 .006 T.I.R., and angular alignment should be within 1/2 degree. (See to Figure 1)

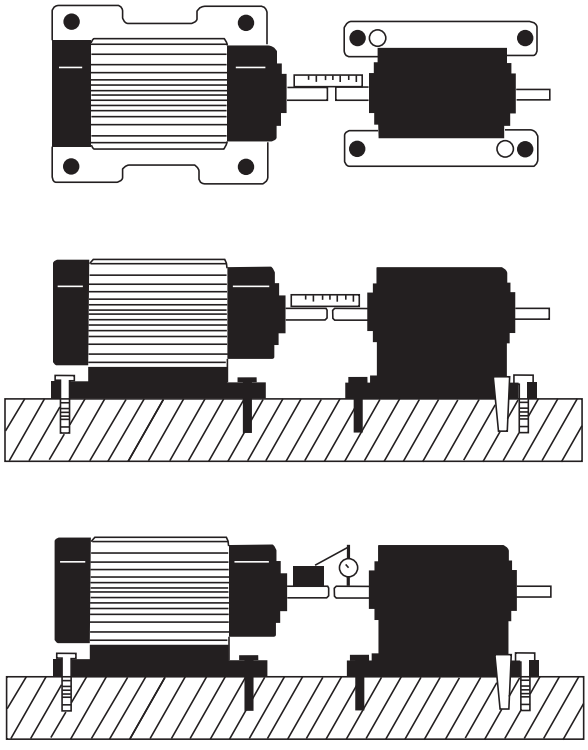


Figure 1

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.
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

Install the conduit box on the field. Instructions for this procedure can be found with conduit box. Installation Manual P-1393 • 819-0200.

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. Mounting the Field

a. 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.

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

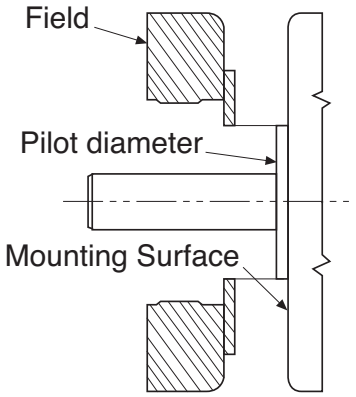


Figure 2

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

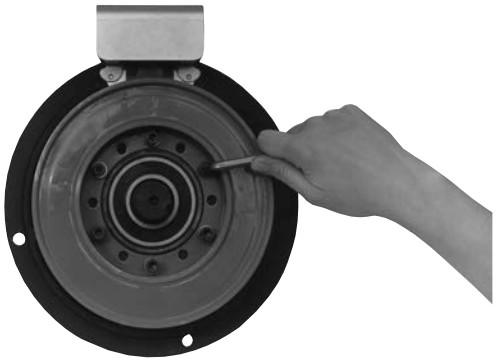


Figure 3

d. 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. (Figure 4)

Figure 4

2. Mounting the Rotor

a. Assemble the rotor to the rotor hub with capscrews and lockwashers. The rotor is reversible depending on the side from which the taperlock bushing must enter. A pilot diameter is machined on the rotor hub to assure a proper fit.

b. The rotor hub is mounted on the shaft with a taperlock bushing. Be sure all parts are clean and free of dirt, chips, and burrs before assembling.

c. Insert the bushing into the taper bore.

d. Loosely assemble the two locking screws between the bushing and rotor.

e. Insert the key into the shaft keyway. Prick punch the end of the keyway to ensure that the key cannot slide out.

f. Slide the rotor assembly over the key and onto the shaft.

g. Place the edge of the rotor 1/16" - 1/8" before the line that is inscribed into the O.D. of the field.

h. Lock the rotor into place by alternately tightening the two locking screws in the bushing. As the screws are tightened, the rotor normally is pulled 1/16" - 1/8" **further onto the bushing (towards the field). When the rotor is secured tightly on the bushing, the edge of the rotor must be approximately even with the line inscribed in the field.** The overall axial dimension from the face of the rotor to the back of the field flange is shown on the illustration drawings. Squareness and concentricity tolerances must also be held as specified on the drawings to assure that the unit functions correctly.

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. Field and rotor assemblies are mounted on the shaft a taperlock bushing. Insert the bushing into the tapered bore.
2. Loosely assemble the two locking screws between the taperlock bushing and the rotor.
3. Insert the key into the shaft keyway. Prick punch the end of the keyway to ensure that the key cannot slide out.
4. Slide the rotor assembly onto the shaft over the key.
5. If the armature has been secured to the shaft first, adjust the rotor's position to allow a 1/32-inch gap between the two faces. (See Figure 8.)
6. Lock the assembly into place by alternately tightening the two locking screws.
7. 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. (For more information on torque tabs, see page 5.)

D. Assembling the Armature and Hub

These units contain a spline drive armature and hub. 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 rotor faces for the life of the units.

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:

1. Place the armature assembly on a flat surface with the segmented side up.
2. Push the splined hub, with the retainer ring groove down, through the autogap spring and splined armature adapter (Figure 5). (Considerable force is required to start the hub through the armature.)

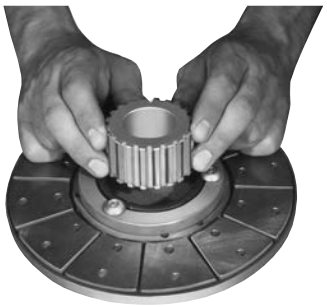


Figure 5

3. Turn the armature assembly over, and insert the retainer ring in the groove. (Figure 6)

Figure 6

4. Slide the armature assembly up against the retainer ring.

E. Mounting the Armature-Hub Assembly

1. 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. (Figure 7)

Figure 7

2. Slide the complete assembly on the shaft and place it in contact with the rotor.
3. 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 rotor. There should be a clearance of 1/16" between the armature and rotor when the capscrews are completely tight.
4. When the assembly has been secured on the shaft, push the armature against the rotor face. When the armature is released, it will spring back about 1/32". (Figure 8)

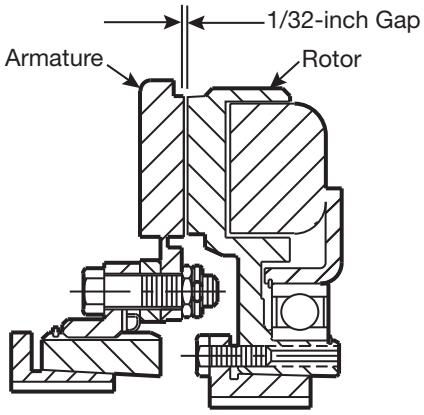


Figure 8

Once this gap is set, it will be automatically maintained for the life of the unit.

Torque Tabs

Clutches

Many Warner Electric clutch assemblies have a bearing mounted stationery field. By design the bearing maintains its proper position between the field and rotor making it easy for the customer to mount the field-rotor assembly. However, the bearing has a slight drag which tends to make the field rotate with the rotor if not restrained. And, since the field has lead wires attached, it must be restrained to prevent rotation and pulling of these wires. To counteract this rotational force, the field has a “torque tab” to which the customer must attach an appropriate anti-rotational restraint.

A few hints regarding proper torque tab restraints are in order. First and foremost, it is important to recognize that the force to be overcome is very small and the tab should not be restrained any manner which will preload the bearing. For example, if the clutch is mounted with the back of the field adjacent to a rigid machine member the customer should not attach a capscrew tightly between the tab and the machine member. This may pull the tab back against the rigid member as shown in Figure 1 and preload the bearing. The recommended methods are illustrated in Illustrations 2, 3, and 4. The method selected is primarily a matter of customer preference or convenience.

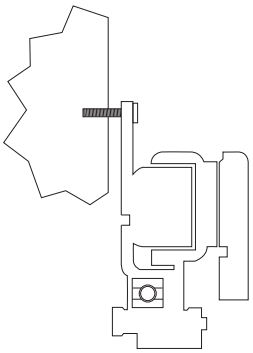


Illustration 1
Rigid Member

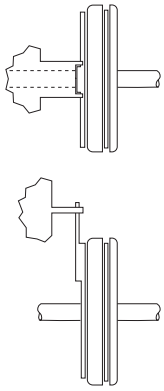


Illustration 2
Rigid Member
Straddling Tab

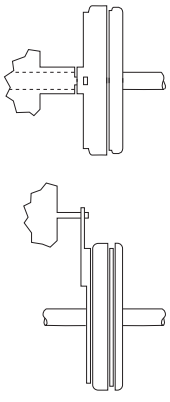


Illustration 3
Pin In Hole Loosely

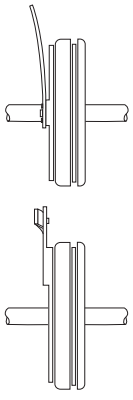


Illustration 4
Flexible Strap

Electrical Coil Data

Unit Size	SF-825			SF-825 Brg.			SF-1000		
Voltage–DC	6	24	90	6	24	90	6	24	90
Resistance @ 20°C–Ohms	1.23	20.9	267.0	1.098	14.6	221	1.07	14.4	214.4
Current–Amperes	4.9	1.15	.34	5.464	1.65	.407	5.61	1.67	.42
Watts	29	28	30	33	40	37	34	40	38
Coil Build-Up–Milliseconds	222	200	245	180	200	225	256	275	283
Coil decay–Milliseconds	105	120	100	115	120	130	123	105	90

Unit Size	SF-1225			SF-1525			SF-1525 HT		
Voltage – DC	6	24	90	6	24	90	6	24	90
Resistance @ 20°C–Ohms	1.21	19.5	268.3	1.11	15.5	239.1	.55	7.63	113.4
Current – Amperes	4.97	1.23	.34	5.41	1.55	.38	10.83	3.14	.794
Watts	30	30	30	32	37	34	65	75	72
Coil Build-Up – Milliseconds	475	440	510	505	535	575	480	535	560
Coil decay–Milliseconds	240	230	220	230	237	215	210	183	160

Notes: Build-up time equals current to approx.* 90% of steady state value and flux to 90%
Decay time equals current to approx.* 10% of steady state value and flux to 10%.
*Approx. 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 burnishing 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 rotor surfaces. This is a normal wear condition, and does not impair functioning of the unit. Normally, the rotor 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 rotor, it is necessary to remachine the worn rotorface. In refacing a rotor: (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 or clutch 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 field as follows:

90-Volt Series: Connect a DC voltmeter with a range of 0-100 or more directly across the field 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.

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

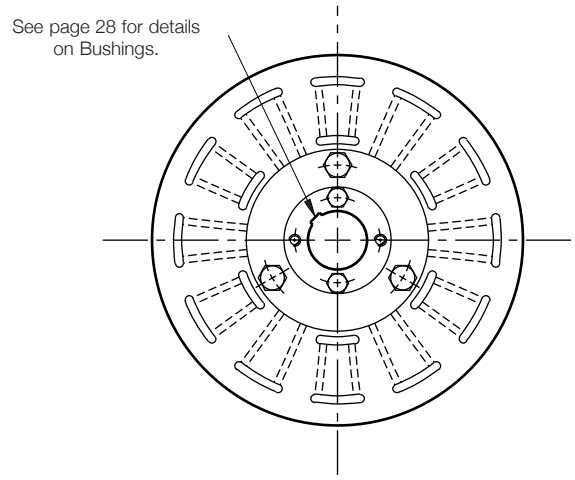
The above checks normally are sufficient. Further checks may be made as follows: a low range ammeter, when connected in series with one field lead, will normally indicate approximately .40 amperes for the 90 volt units, 1.0 ampere for the 24 volt, and 3.5 amperes for the 6 volt series. These readings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

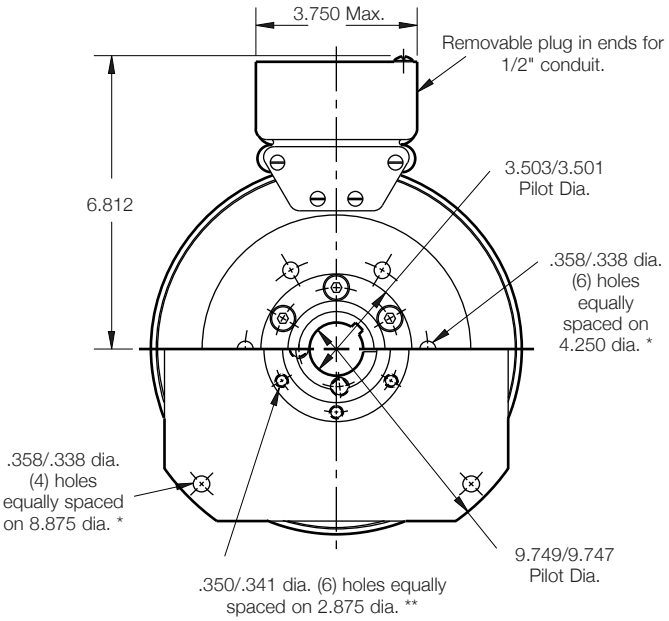
If the above checks indicate that the proper voltage and current is being supplied to the magnet, mechanical parts should be checked to assure that they are in good operating condition and properly installed.

SFC-825 Clutch Coupling Flange Mounted

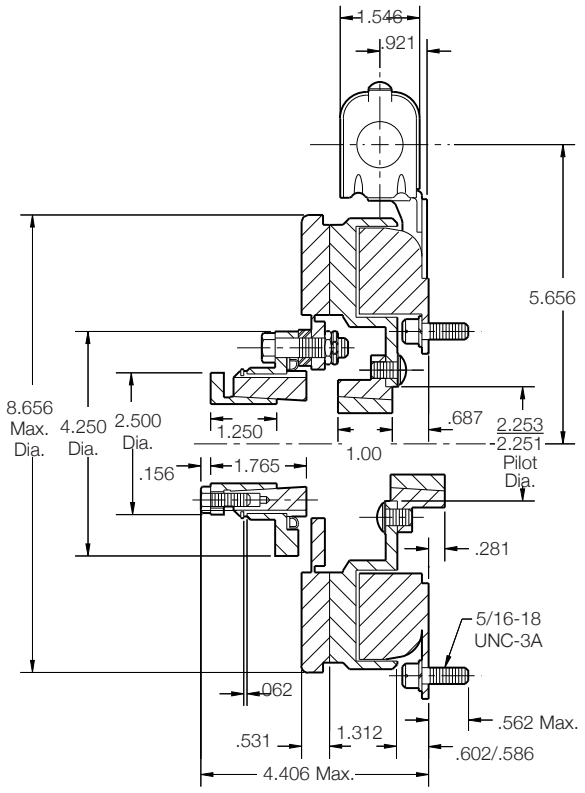
Drawing I-25564



Armature View



Field View
(Inside & Outside Mounted)



* Mounting holes are within .010 of true position relative to pilot diameter.
** Mounting holes are within .008 of true position relative to pilot diameter.

Arm Shaft	.500 – 1.500
Rotor Shaft	.500 – 1.250
Static Torque	125 lb. ft.
Maximum Speed	4,000 rpm
Standard Voltage	D.C. 6, 24, 90

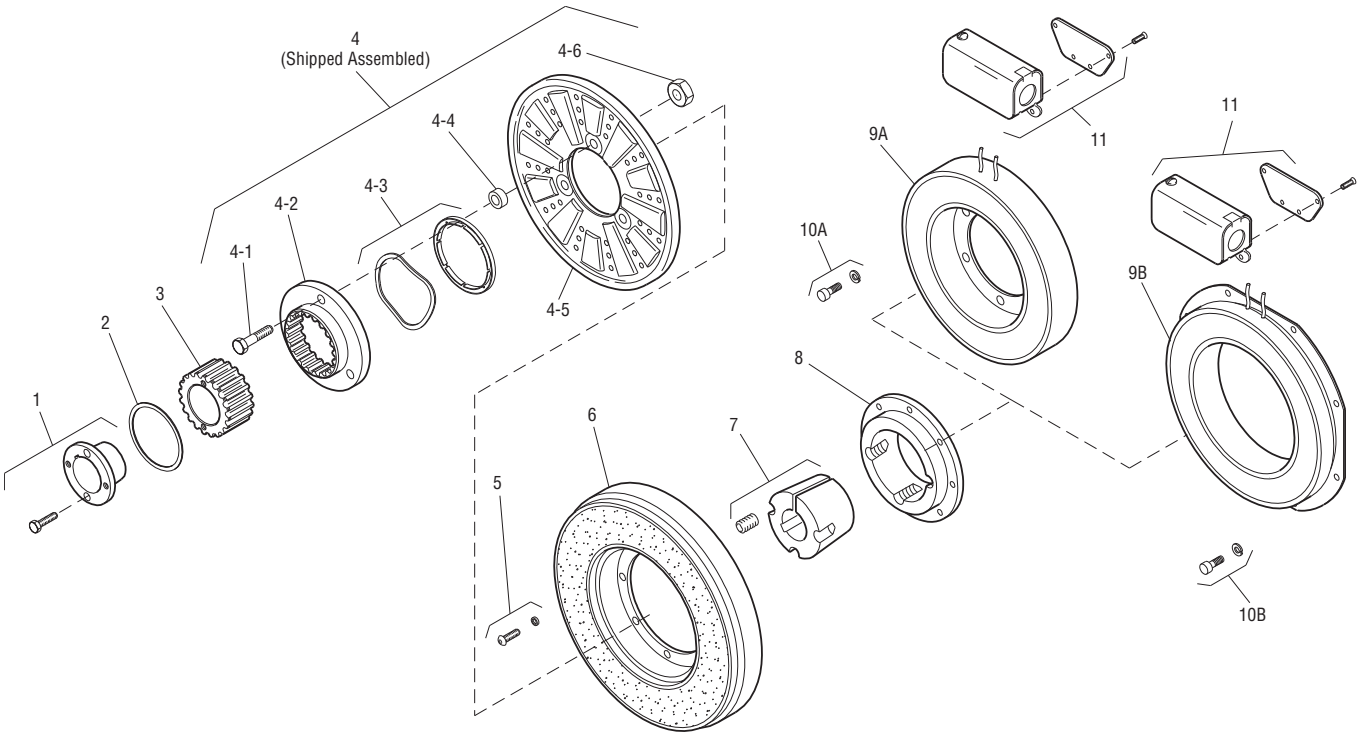
All dimensions are nominal unless otherwise noted.

Note: The two mating shafts on which the clutch is mounted must be mounted rigidly to prevent flexing during engagement. Any flexing will cause vibration and rapid clutchwear. The drive motor should not be mounted on the reducer "scoop" mount or other flexible mounts.

Customer Shall Maintain:

1. Concentricity of field mounting pilot diameter with rotor mounting shaft within .006 T.I.R.
2. Squareness of field mounting face with rotor shaft within .006 T.I.R. measured at field mounting bolt circle.
3. Rotor mounting shaft concentric with armature mounting shaft within .006 T.I.R.
4. Angular alignment of shafts wtihin 1/2 degree.

SFC-825 Clutch Coupling Flange Mounted Inside Mtd. Outside Mtd.



Item	Description	SFC-825, F.M. Part Number	Qty.
1	Bushing*		
	1/2" to 1-1/2" Bore	180-0002 to 180-0018	1
2	Retainer Ring	748-0006	1
3	Splined Hub	540-0057	1
4	Armature & Splined Adapter	5201-111-001	1
4-1	Capscrew	797-0341	3
4-2	Splined Adapter	104-0008	1
4-3	Autogap Accessory	5321-101-006	1
4-4	Spacer	748-0333	3
4-5	Armature	5321-111-022	1
4-6	Locknut	661-0004	3
5	Mounting Accessory	5201-101-007	1
6	Rotor		1
	Standard Friction Material	5201-751-003	
	Optional LK Facing	5201-751-007	
7	Bushing*		
	1/2" to 1-1/4" Bore	180-0101 to 180-0013	1
8	Rotor Hub	540-0013	1
9A	Field - Inside Mounted		1
	6 Volt	5201-451-006	
	24 Volt	5201-451-008	
	90 Volt	5201-451-010	
9B	Field - Outside Mounted		1
	6 Volt	5201-451-014	
	24 Volt	5201-451-016	
	90 Volt	5201-451-018	

Item	Description	SFC-825, F.M. Part Number	Qty.
10A	Mounting Accessory - I.M.	5321-101-001	1
10B	Mounting Accessory - O.M.	5321-101-002	1
11	Conduit Box	5200-101-012	1

*See page 28 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 7.
3. Specify Voltage for Item 9A or 9B.
4. Specify Inside Mounted for Items 9A and 10A or Outside Mounted for Items 9B and 10B.

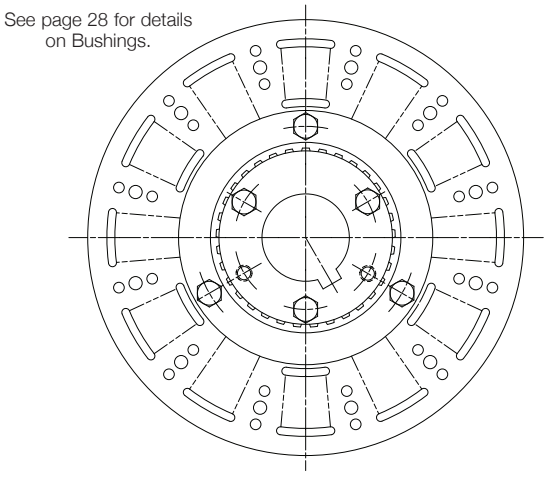
Example:

SFC-825 Clutch Coupling per I-25564 - 90 Volt, Inside Mounted, 1" Bore (Item 1), 1" Bore (Item 7)

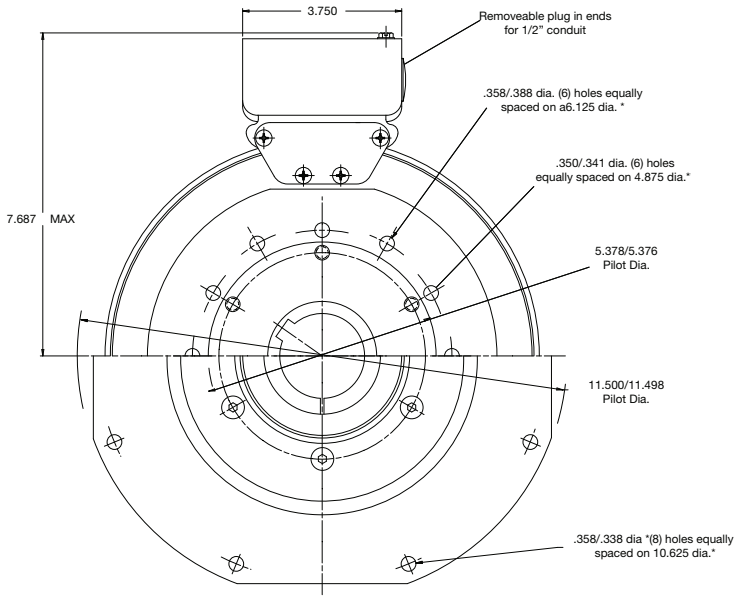
These units, when used in conjunction with the correct Warner Electric conduit box, meet standards of UL508 and are listed under guide card #NMTR, file #59164.

SFC-1000 Clutch Coupling Flange Mounted

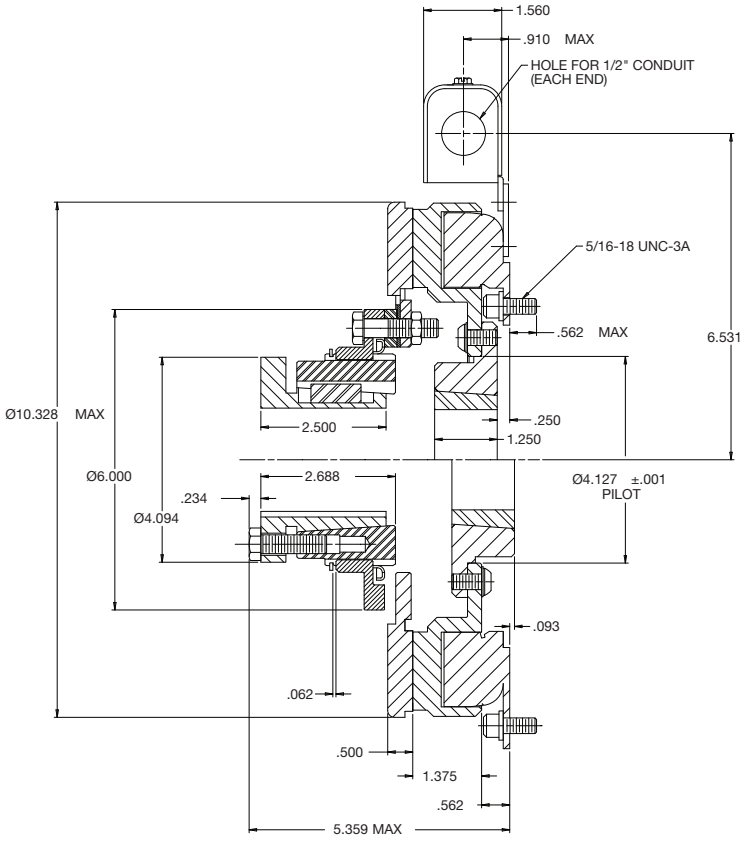
Drawing I-25584



Armature View



Field View
(Inside & Outside Mounted)



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

** Mounting holes are within .008 of true position relative to pilot diameter.

Arm Shaft	.750 – 2.687
Rotor Shaft	.500 – 2.000
Static Torque	240 lb. ft.
Maximum Speed	3,600 rpm
Standard Voltage	D.C. 6, 24, 90

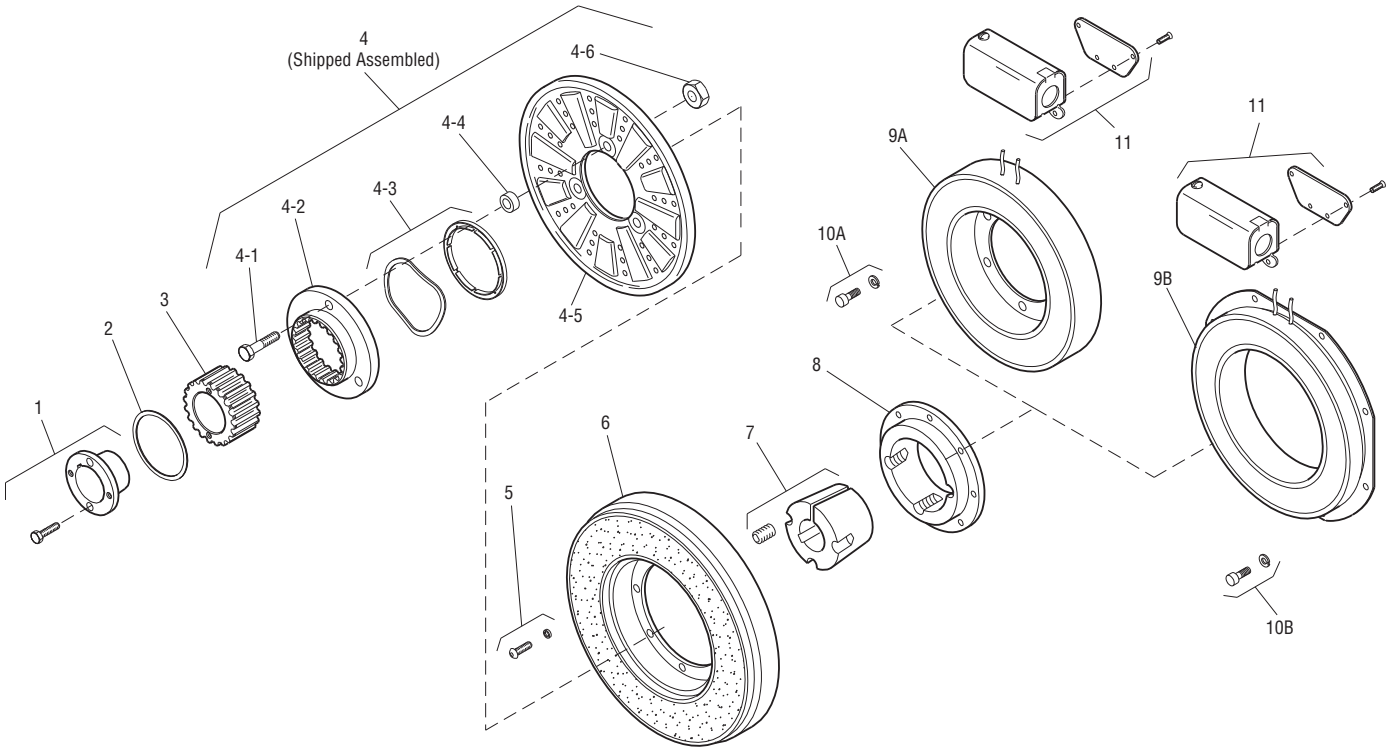
All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

1. Concentricity of field mounting pilot diameter with rotor mounting shaft within .006 T.I.R.
2. Squareness of field mounting face with rotor shaft within .006 T.I.R. measured at field mounting bolt circle.
3. Rotor mounting shaft concentric with armature mounting shaft within .006 T.I.R.
4. Angular alignment of shafts within 1/2 degree.

Note: The two mating shafts on which the clutch is mounted must be mounted rigidly to prevent flexing during engagement. Any flexing will cause vibration and rapid clutchwear. The drive motor should not be mounted on the reducer "scoop" mount or other flexible mounts.

SFC-1000 Clutch Coupling Flange Mounted Inside Mtd. Outside Mtd.



Item	Description	SFC-1000, F.M. Part Number	Qty.
1	Bushing*		
	3/4" to 2-11/16" Bore	180-0026 to 180-0057	1
2	Retainer Ring	748-0007	1
3	Splined Hub	540-0062	1
4	Armature & Splined Adapter	5202-111-001	1
4-1	Capscrew	797-0341	3
4-2	Splined Adapter	104-0009	1
4-3	Autogap Accessory	5322-101-004	1
4-4	Spacer	748-0333	3
4-5	Armature	5322-111-036	1
4-6	Locknut	661-0004	3
5	Mounting Accessory	5201-101-007	1
6	Rotor		1
	Standard Friction Material	5202-751-003	
	Optional LK Facing	5202-751-007	
7	Bushing*		
	1/2" to 2" Bore	180-0155 to 180-0179	1
8	Rotor Hub	540-0315	1
9A	Field - Inside Mounted		1
	6 Volt	5202-451-004	
	24 Volt	5202-451-006	
	90 Volt	5202-451-007	
9B	Field - Outside Mounted		1
	6 Volt	5202-451-011	
	24 Volt	5202-451-013	
	90 Volt	5202-451-014	

Item	Description	SFC-1000, F.M. Part Number	Qty.
10A	Mounting Accessory - I.M.	5321-101-001	1
10B	Mounting Accessory - O.M.	5321-101-002	2
11	Conduit Box	5200-101-012	1

*See page 28 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 7.
3. Specify Voltage for Item 9A or 9B.
4. Specify Inside Mounted for Items 9A and 10A or Outside Mounted for Items 9B and 10B.

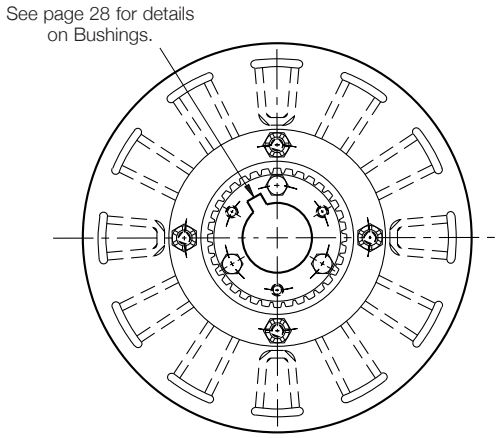
Example:

SFC-1000 Clutch Coupling per I-25584 - 90 Volt, Inside Mounted, 1-1/4" Bore (Item 1), 1-1/2" Bore (Item 7)

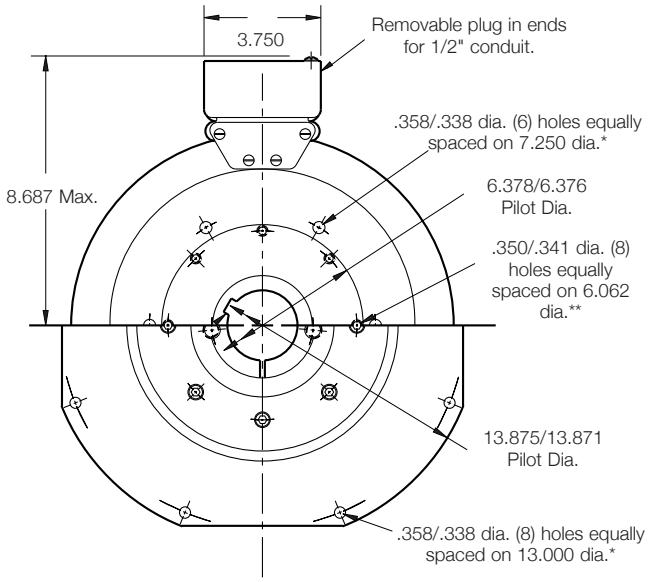
These units, when used in conjunction with the correct Warner Electric conduit box, meet standards of UL508 and are listed under guide card #NMTR, file #59164.

SFC-1225 Clutch Coupling Flange Mounted

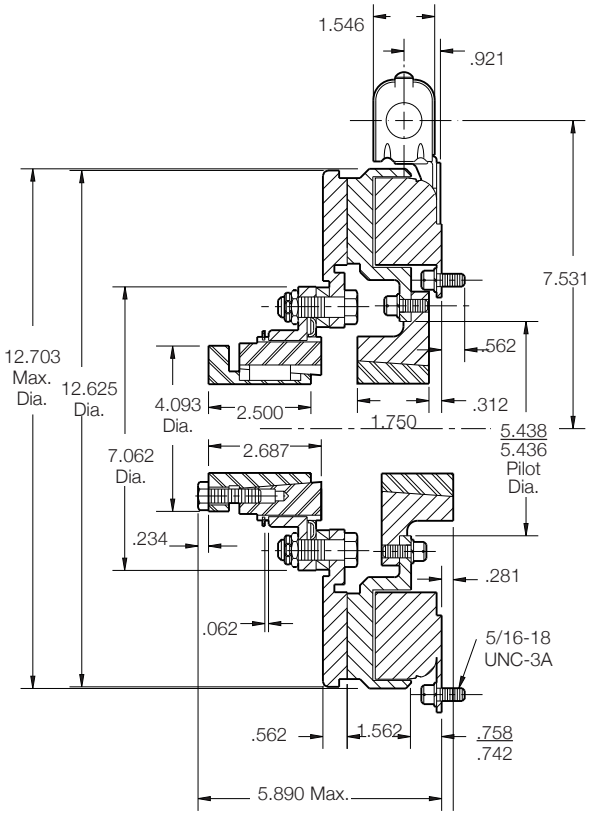
Drawing I-25604



Armature View



Field View
(Inside & Outside Mounted)



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

** Mounting holes are within .008 of true position relative to pilot diameter.

Arm Shaft	.750 – 2.687
Rotor Shaft	.500 – 2.500
Static Torque	465 lb. ft.
Maximum Speed	3,000 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

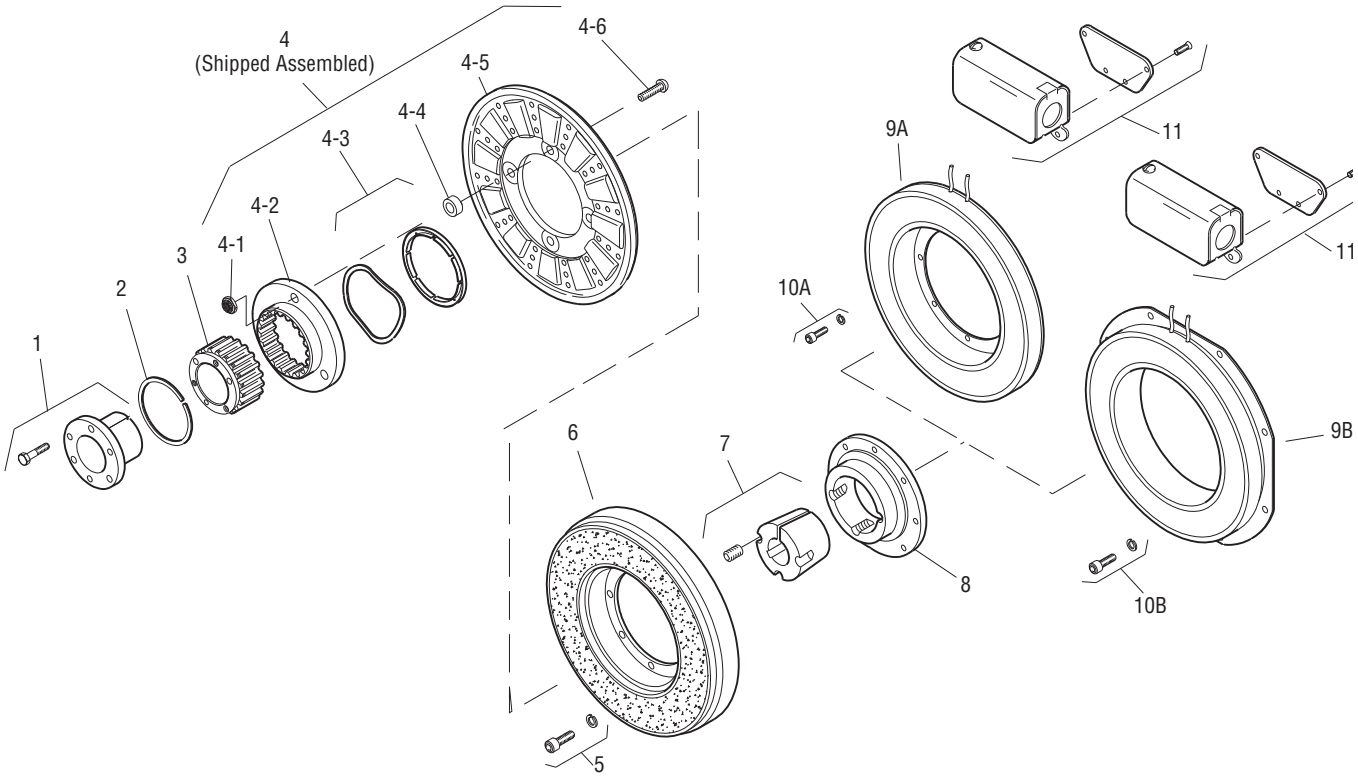
Customer Shall Maintain:

1. Concentricity of field mounting pilot diameter with rotor mounting shaft within .006 T.I.R.
2. Squareness of field mounting face with rotor mounting shaft within .006 T.I.R. measured at field mounting bolt circle.
3. mounting shaft concentric with armature mounting shaft within .006 T.I.R.
4. Angular alignment of shafts within 1/2 degree.

When Hub is Furnished by Customer:

Rotor mounting pilot diameter must be concentric with rotor mounting shaft within .006 T.I.R.

SFC-1225 Clutch Coupling Flange Mounted Inside Mtd. Outside Mtd.



Item	Description	SFC-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	5203-111-001	1
4-1	Locknut	661-0005	4
4-2	Splined Adapter	104-0010	1
4-3	Autogap Accessory	5323-101-002	1
4-4	Spacer	266-0004	4
4-5	Armature	5323-111-034	1
4-6	Screw	797-0356	4
5	Mounting Accessory	5321-101-002	2
6	Rotor		1
	Standard Friction Material	5203-751-001	
	Optional LK Facing	5203-751-004	
7	Bushing*		
	1/2" to 2-1/2" Bore	180-0185 to 180-0217	1
8	Rotor Hub	540-0318	1
9A	Field - Inside Mounted		1
	6 Volt	5203-451-002	
	24 Volt	5203-451-006	
	90 Volt	5203-451-005	
9B	Field - Outside Mounted		1
	6 Volt	5203-451-010	
	24 Volt	5203-451-013	
	90 Volt	5203-451-011	

Item	Description	SFC-1225 Part Number	Qty.
10A	Mounting Accessory - I.M.	5321-101-001	1
10B	Mounting Accessory - O.M.	5321-101-002	2
11	Conduit Box	5200-101-012	1

*See page 28 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 7.
3. Specify Voltage for Item 9A or 9B.
4. Specify Inside or Outside Mounted for Item 5.
5. Specify Inside Mounted for Items 9A and 10A or Outside Mounted for Items 9B and 10B.

Example:

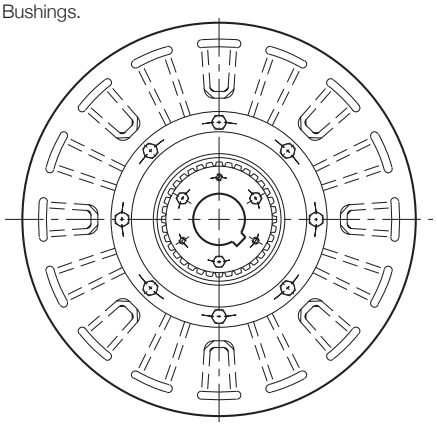
SFC-1225 Clutch Coupling per
I-25604 - 90 Volt, Inside Mounted,
1-1/2" Bore (Item 1), 1-3/4" Bore (Item 7).

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

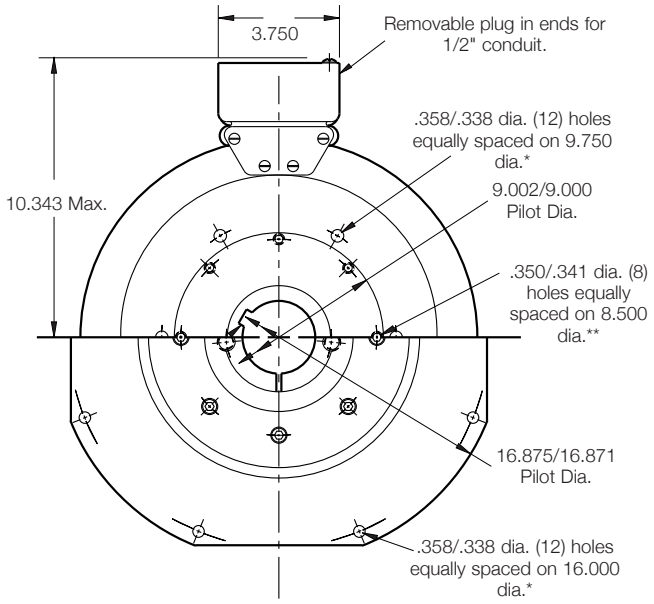
SFC-1525 Clutch Coupling Flange Mounted

Drawing I-25630

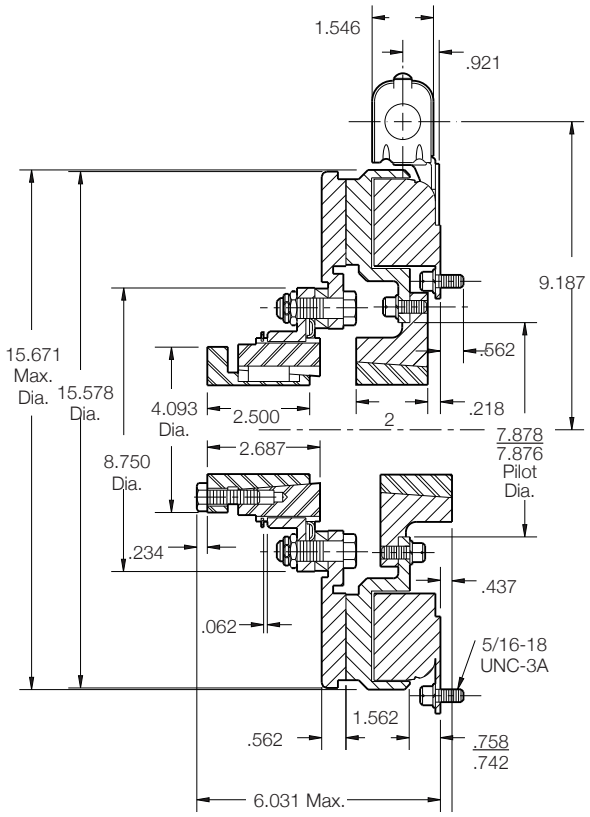
See page 28 for details on Bushings.



Armature View



Field View
(Inside & Outside Mounted)



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

** Mounting holes are within .008 of true position relative to pilot diameter.

Arm Shaft	.750 – 2.687
Rotor Shaft	.937 – 3.000
Static Torque	700 lb. ft.
Maximum Speed	2,000 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

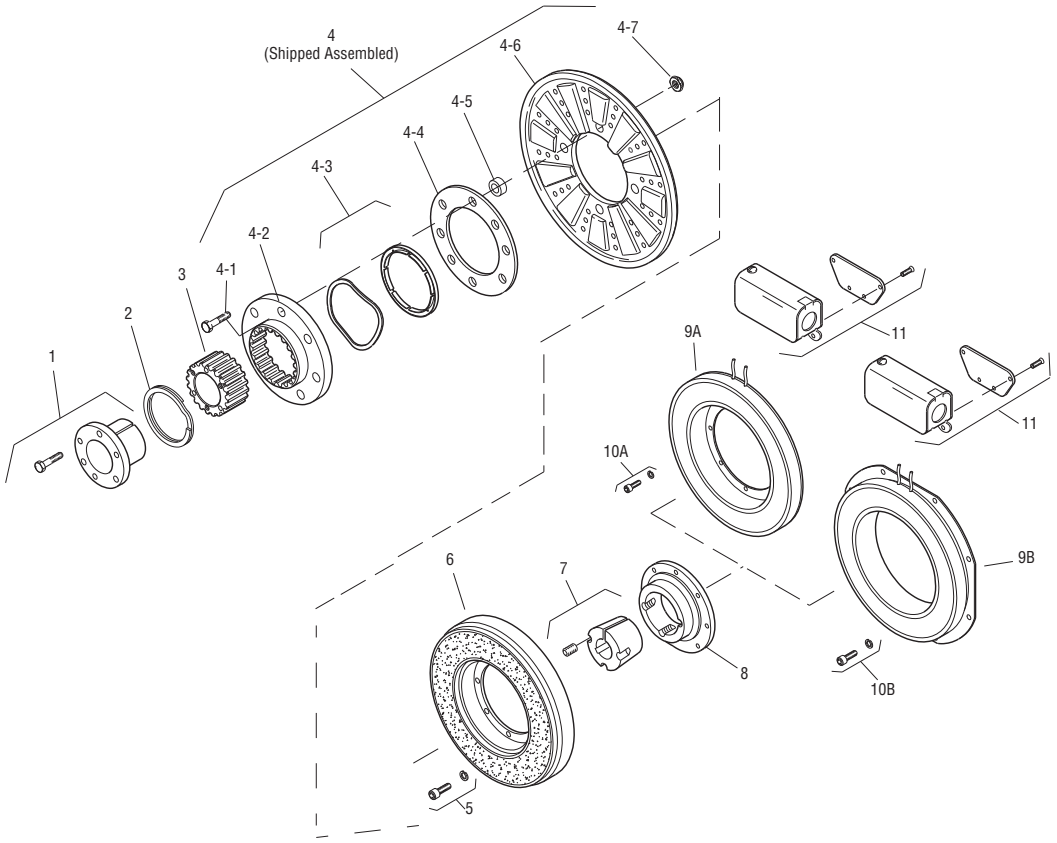
Customer Shall Maintain:

1. Concentricity of field mounting pilot diameter with rotor mounting shaft within .006 T.I.R.
2. Squareness of field mounting face with rotor mounting shaft within .006 T.I.R. measured at field mounting bolt circle.
3. Rotor mounting shaft concentric with armature mounting shaft within .006 T.I.R.
4. Angular alignment of shafts within 1/2 degree.

When Hub is Furnished by Customer:

Rotor mounting pilot diameter must be concentric with rotor mounting shaft within .006 T.I.R.

SFC-1525 Clutch Coupling Flange Mounted Inside Mtd. Outside Mtd.



Item	Description	SFC-1525 Part Number	Qty.
1	Bushing*		
	3/4" to 2-11/16" Bore	180-0026 to180-0057*	1
2	Retainer Ring	748-0005	1
3	Splined Hub	540-0064	1
4	Armature & Splined Adapter	5204-111-004	1
4-1	Capscrew	797-0342	8
4-2	Splined Adapter	104-0011	1
4-3	Autogap Accessory	5323-101-002	1
4-4	Retainer Plate	686-0003	1
4-5	Spacer	748-0333	8
4-6	Armature	5324-111-034	1
4-7	Locknut	661-0004	8
5	Mounting Accessory	5321-101-002	2
6	Rotor		1
	Standard Friction Material	5204-751-002	
	Optional LK Facing	5204-751-004	
7	Bushing*		
	15/16" to 3" Bore	180-0223 to 180-0256	1
8	Rotor Hub	540-0004	1
9A	Field - Inside Mounted		1
	6 Volt	5204-451-013	
	24 Volt	5204-451-015	
	90 Volt	5204-451-016	
9B	Field - Outside Mounted		1
	6 Volt	5204-451-055	
	24 Volt	5204-451-056	
	90 Volt	5204-451-057	

Item	Description	SFC-1525 Part Number	Qty.
10A	Mounting Accessory - I.M.	5321-101-001	2
10B	Mounting Accessory - O.M.	5321-101-001	2
11	Conduit Box	5200-101-012	1

*See page 28 for specific part numbers.

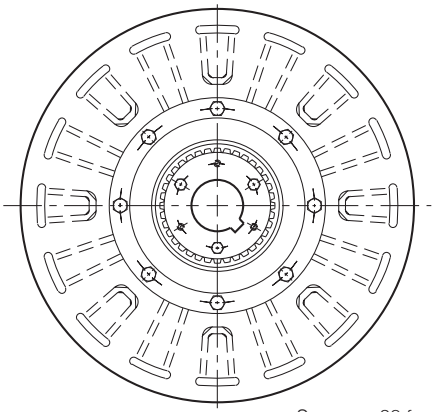
How to Order:

1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 7.
3. Specify Voltage for Item 9A or 9B.
4. Specify Inside Mounted for Items 9A and 10A or Outside Mounted for Items 9B and 10B.

Example:

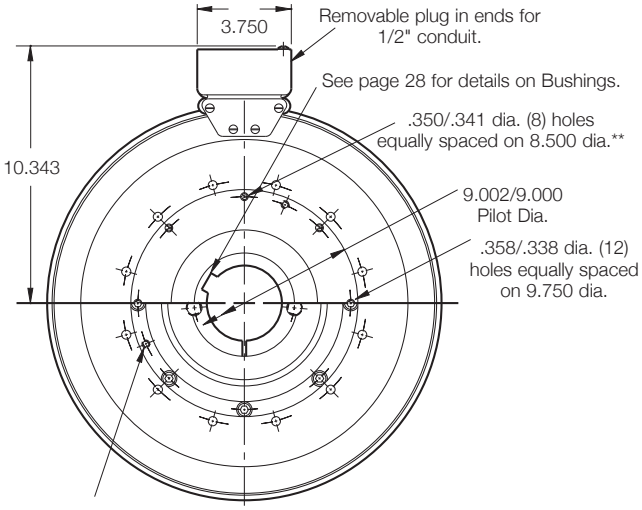
SFC-1525 Clutch Coupling per
I-25630 - 90 Volt, Inside Mounted,
1-1/2" Bore (Item 1), 1-3/4" Bore (Item 7).

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

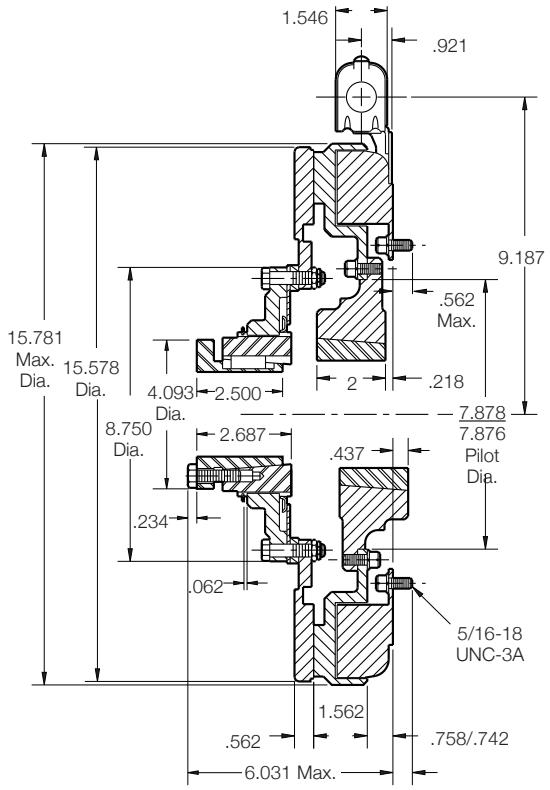


See page 28 for details on Bushing.

Armature View



Field View



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

** Mounting holes are within .008 of true position relative to pilot diameter.

Arm Shaft	.750 – 2.687
Rotor Shaft	.937 – 3.000
Static Torque	1,350 lb. ft.
Maximum Speed	2,000 rpm
Standard Voltage	D.C. 6, 90

All dimensions are nominal unless otherwise noted.

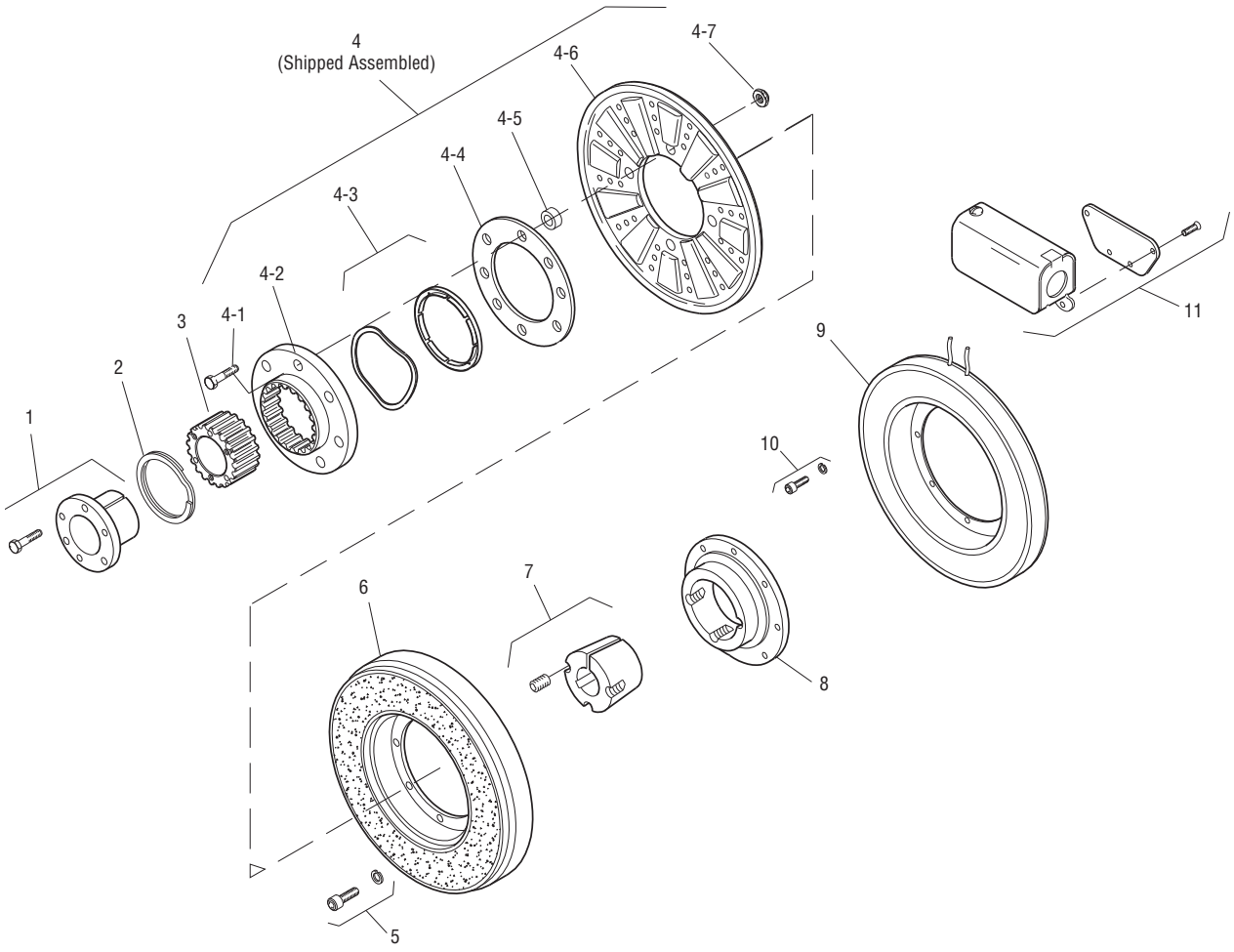
Customer Shall Maintain:

1. Concentricity of field mounting pilot diameter with rotor mounting shaft within .006 T.I.R.
2. Squareness of field mounting face with rotor mounting shaft within .006 T.I.R. measured at field mounting bolt circle.
3. Rotor mounting shaft concentric with armature mounting shaft within .006 T.I.R.
4. Angular alignment of shafts within 1/2 degree.

When Hub is Furnished by Customer:

Rotor mounting pilot diameter must be concentric with rotor mounting shaft within .006 T.I.R.

SFC-1525 H.T. Clutch Coupling, Hi-Torque Flange Mounted Inside Mtd.



Item	Description	SFC-1525, H.T. 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	5204-111-004	1
4-1	Capscrew	797-0342	8
4-2	Splined Adapter	104-0011	1
4-3	Autogap Accessory	5323-101-002	1
4-4	Retainer Plate	686-0003	1
4-5	Spacer	748-0333	8
4-6	Armature	5324-111-034	1
4-7	Locknut	661-0004	8
5	Mounting Accessory	5321-101-002	2
6	Rotor	5204-751-001	1
7	Bushing*		
	15/16" to 3" Bore	180-0223 to 180-0256	1
8	Rotor Hub	540-0004	1
9	Field - Inside Mounted		1
	6 Volt	5204-451-005	
	24 Volt	5204-451-066	
	90 Volt	5204-451-006	
10	Mounting Accessory - I.M.	5321-101-001	2
11	Conduit Box	5200-101-012	1

*See page 28 for specific part numbers.

How to Order:

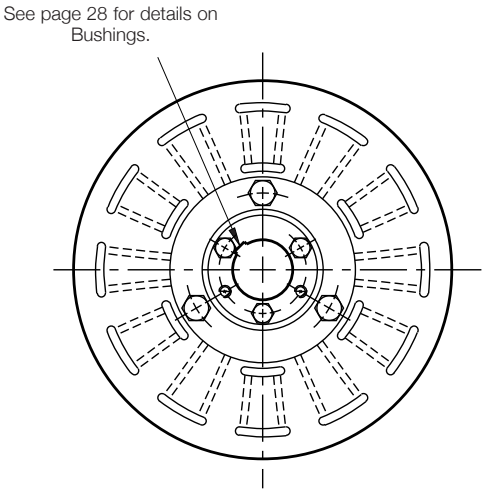
1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 7.

Example:

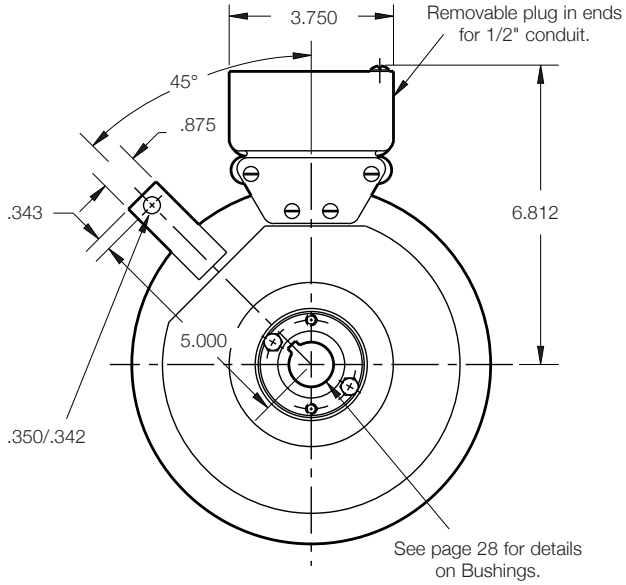
SFC-1525 Clutch Coupling, Hi-Torque,
per I-25631 - 90 Volt

2" Bore (Item 1), 2-1/2" Bore (Item 7)

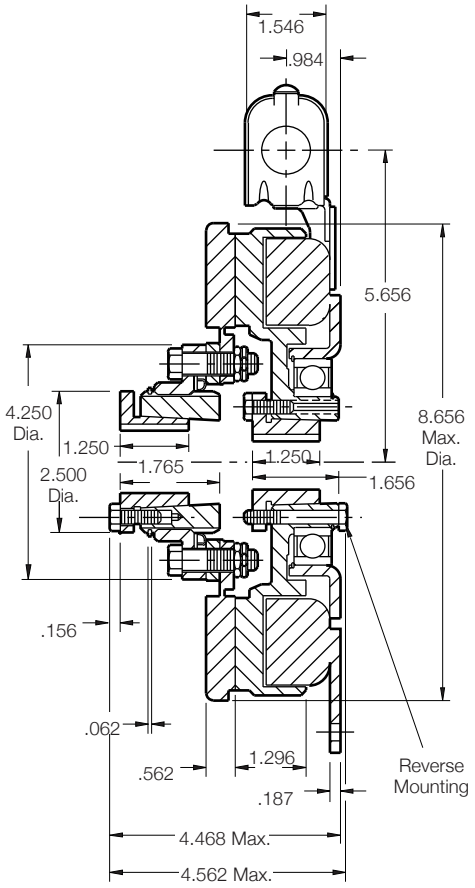
These units, when used in conjunction with the correct Warner Electric conduit box, meet the standards of UL508 and are listed under guide card #NMTR, file #59164.



Armature View



Field View



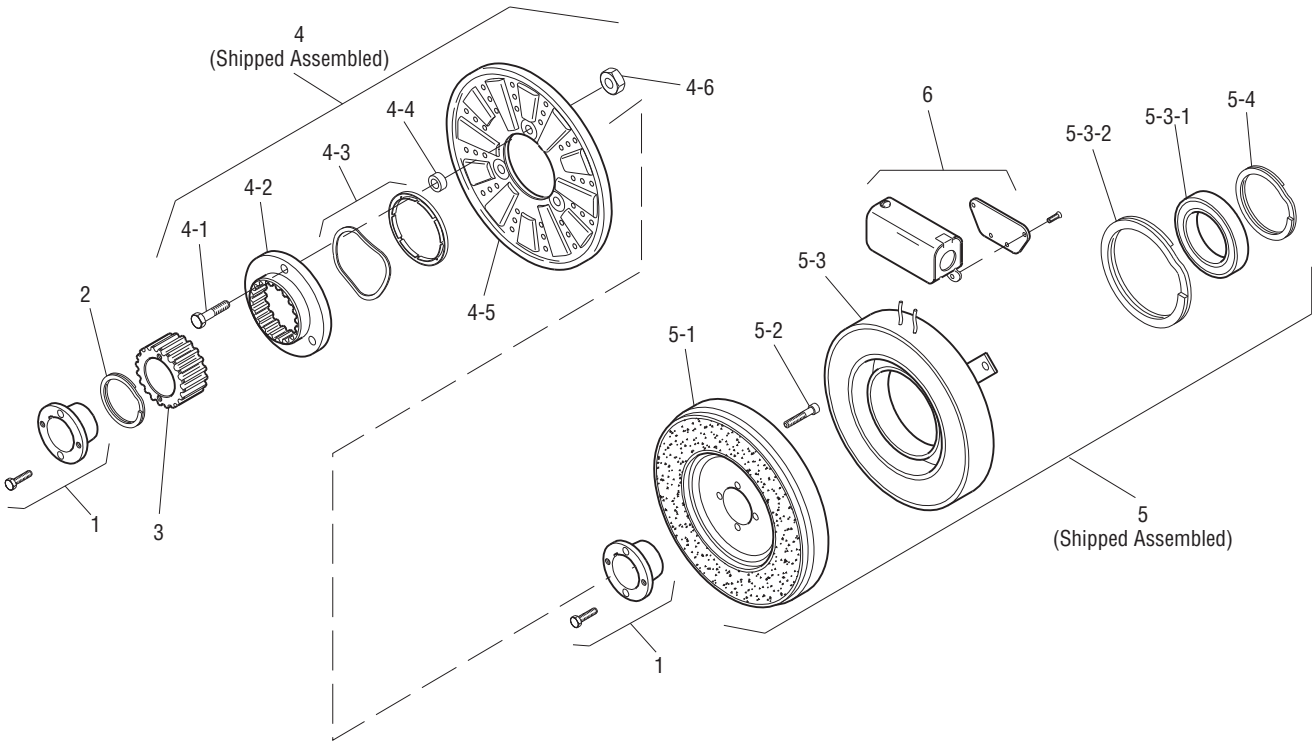
Arm Shaft	.500 – 1.500
Rotor Shaft	.500 – 1.500
Static Torque	150 lb. ft.
Maximum Speed	3,600 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

SFC-825 Clutch Coupling Bearing Mounted



Item	Description	SF-825, B.M. Part Number	Qty.
1	Bushing*		2
	1/2" to 1-1/2" Bore	180-0002 to 180-0018	
2	Retainer Ring	748-0006	1
3	Splined Hub	540-0057	1
4	Armature & Splined Adapter	5201-111-001	1
4-1	Capscrew	797-0341	3
4-2	Splined Adapter	104-0008	1
4-3	Autogap Accessory	5321-101-006	1
4-4	Spacer	748-0333	3
4-5	Armature	5321-111-022	1
4-6	Locknut	661-0004	3
5	Field & Rotor Assembly		1
	6 Volt	5201-452-002	
	24 Volt	5201-452-004	
	90 Volt	5201-452-006	
5-1	Rotor		1
	Standard Friction Material	5201-751-008	
	Optional LK Facing	5201-751-014	
5-2	Mounting Accessory	5201-101-005	1
5-3	Field and Bearing Assembly		1
	6 Volt	5201-451-054	
	24 Volt	5201-451-056	
	90 Volt	5201-451-057	
5-3-1	Bearing	166-0412	
5-3-2	Retainer Ring	748-0111	
5-4	Retainer Ring	748-0016	1
6	Conduit Box	5200-101-012	1

*See page 28 for specific part numbers.

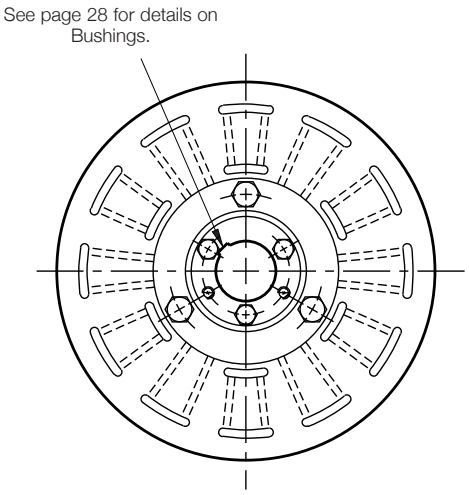
How to Order:

1. Specify Bore Size for Item 1 (both shafts).
2. Specify Voltage for Item 5.

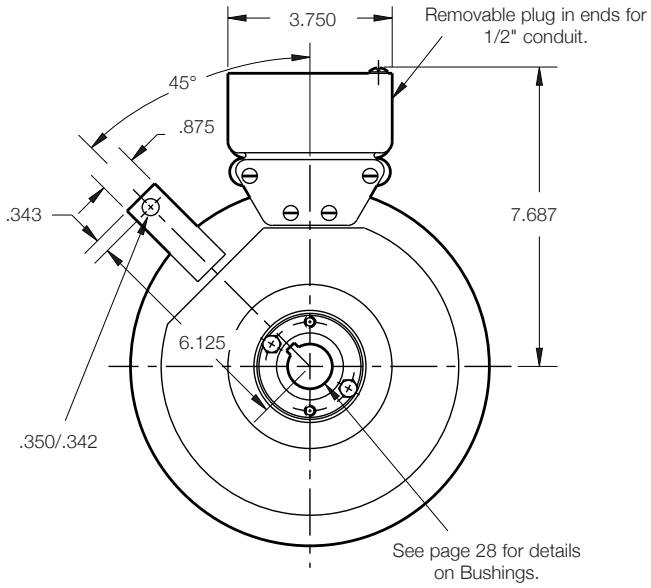
Example:

SFC-825 Clutch Coupling per I-25574 - 90 Volt, 1" Bore

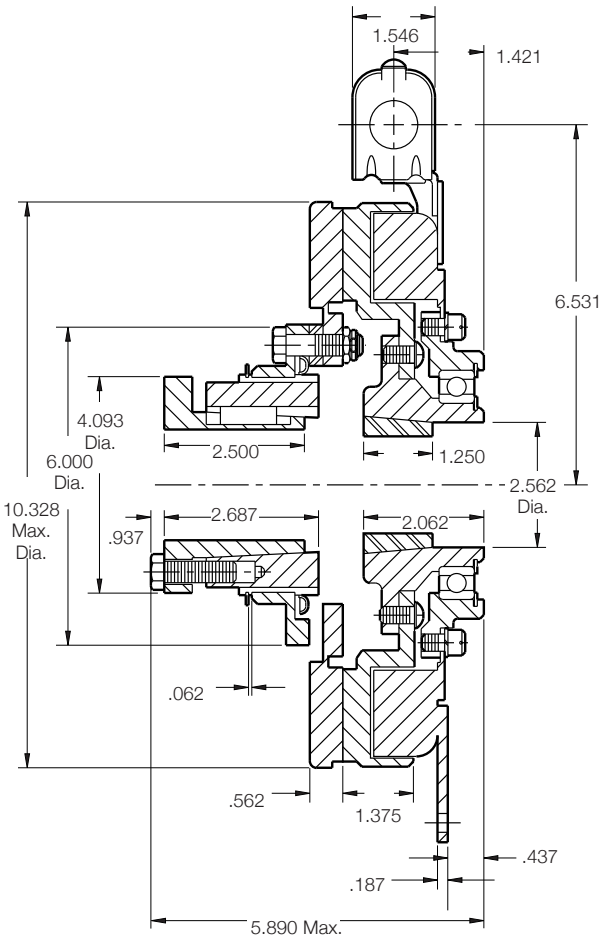
These units, when used in conjunction with the correct Warner Electric conduit box, meet the standards of UL508 and are listed under guide card #NMTR, file #59164.



Armature View



Field View



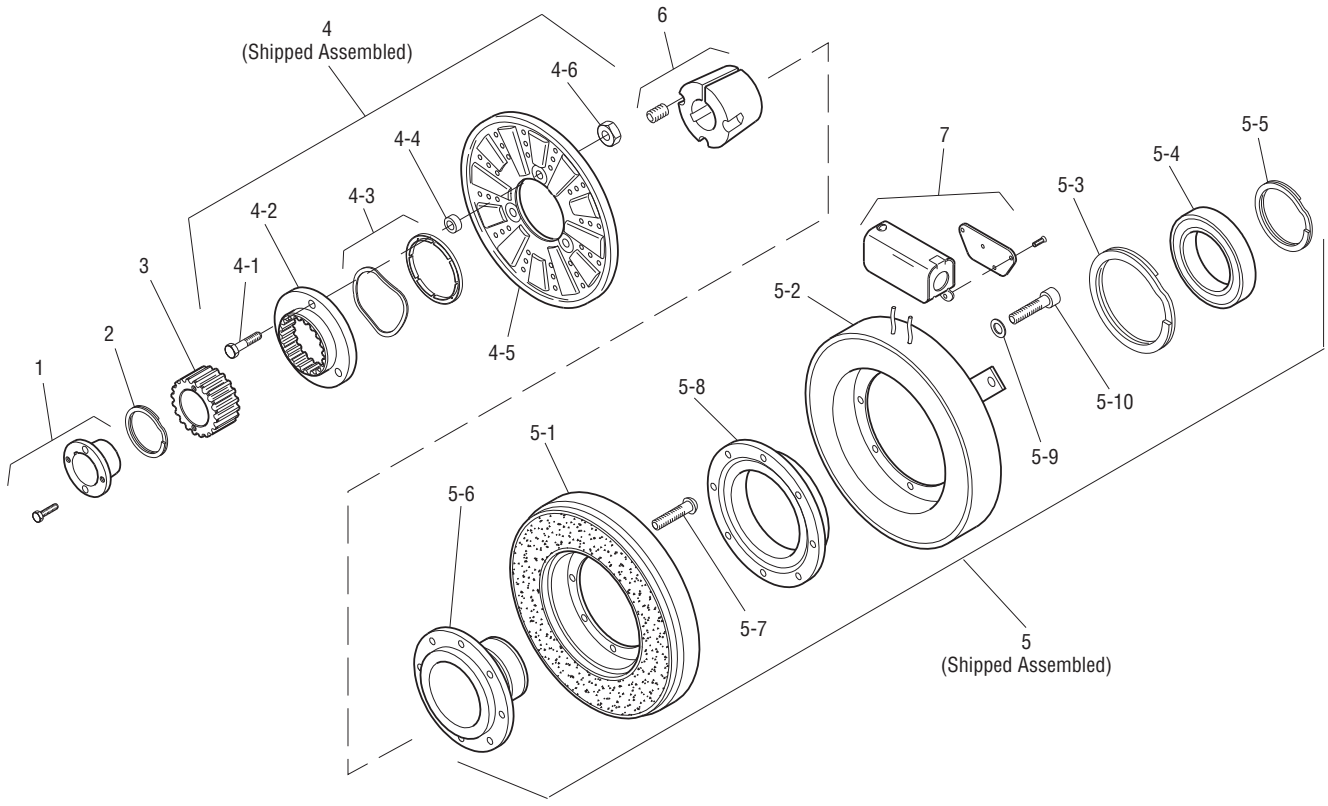
Arm Shaft	.750 – 2.687
Rotor Shaft	.500 – 2.000
Static Torque	240 lb. ft.
Maximum Speed	2,500 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

SFC-1000 Clutch Coupling Bearing Mounted



Item	Description	Part Number	Qty.
1	Bushing*		1
	3/4" to 2-11/16" Bore	180-0026 to 180-0057	
2	Retainer Ring	748-0007	1
3	Splined Hub	540-0062	1
4	Armature & Splined Adapter	5202-111-001	1
4-1	Capscrew	797-0341	3
4-2	Splined Adapter	104-0009	1
4-3	Autogap Accessory	5322-101-004	1
4-4	Spacer	748-0333	3
4-5	Armature	5322-111-036	1
4-6	Locknut	661-0004	3
5	Field & Rotor Assembly		1
	6 Volt	5202-452-012	
	24 Volt	5202-452-014	
	90 Volt	5202-452-015	
5-1	Rotor		1
	Standard Friction Material	5202-751-003	
	Optional LK Facing	5202-751-007	
5-2	Field		1
	6 Volt	5202-451-040	
	24 Volt	5202-451-042	
	90 Volt	5202-451-043	
5-3	Retainer Ring	748-0116	1
5-4	Ball Bearing	166-1046	1
5-5	Retainer Ring	748-0582	1
5-6	Rotor Hub	540-1300	1
5-7	Buttonhead Capscrew	797-1261	6

Item	Description	Part Number	Qty.
5-8	Ring Adapter	748-1047	1
5-9	Lockwasher	950-0359	6
5-10	Socket Head Capscrew	797-0422	6
6	Bushing*		1
	1/2" to 2" Bore	180-0155 to 180-0179	
7	Conduit Box	5200-101-012	1

*For specific part numbers see page 28.

How to Order:

1. Specify Bore Size for Items 1 and 6.
2. Specify Voltage for Item 5.

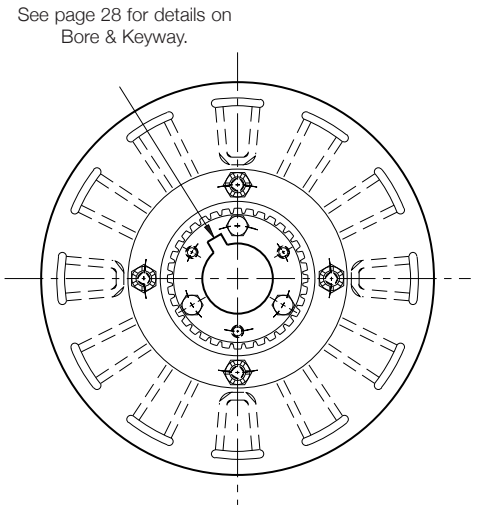
Example:

SFC-1000 Clutch Coupling per I-25598 - 90 Volt, 1" Bore

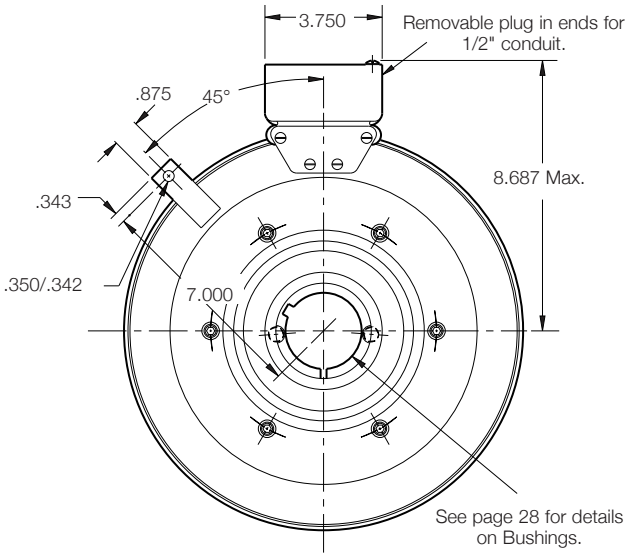
These units, when used in conjunction with the correct Warner Electric conduit box, meet the standards of UL508 and are listed under guide card #NMTR, file #59164.

SFC-1225 Clutch Coupling Bearing Mounted

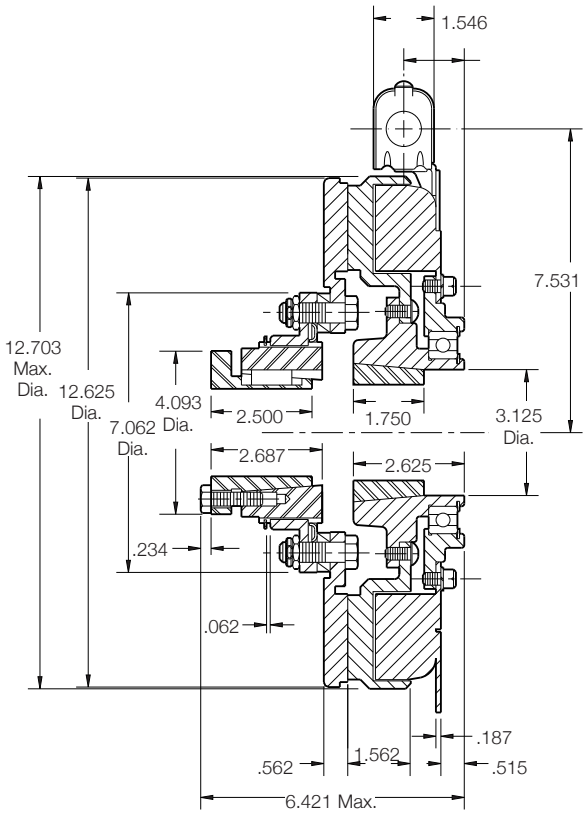
Drawing I-25623



Armature View



Field View



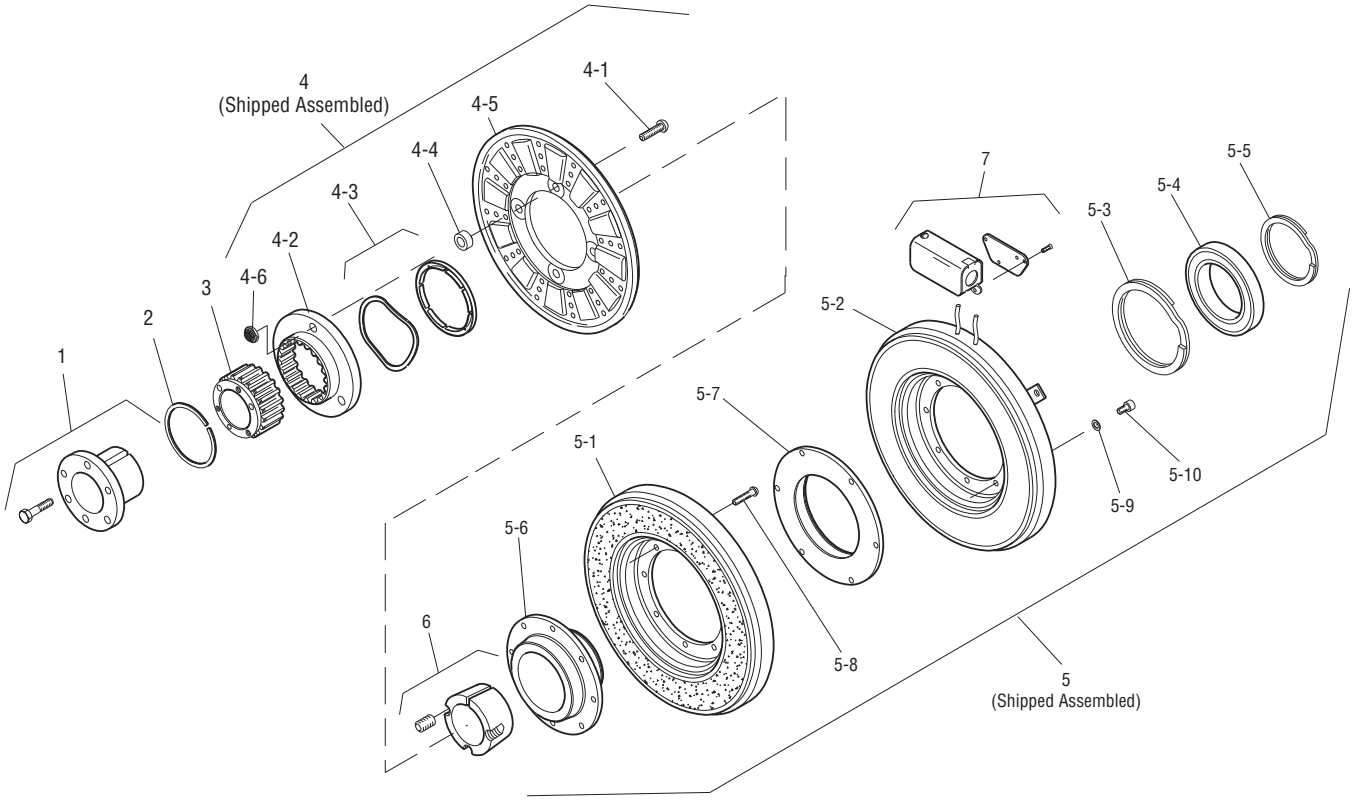
Arm Shaft	.750 – 2.687
Rotor Shaft	.500 – 2.500
Static Torque	465 lb. ft.
Maximum Speed	2,200 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

SFC-1225 Clutch Coupling Bearing Mounted



Item	Description	SFC-1225, B.M. 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	5203-111-001	1
4-1	Capscrew	797-0356	4
4-2	Splined Adapter	104-0010	1
4-3	Autogap Accessory	5323-101-002	1
4-4	Spacer	266-0004	4
4-5	Armature	5323-111-034	1
4-6	Locknut	661-0005	4
5	Field & Rotor Assembly		1
	6 Volt	5203-452-009	
	24 Volt	5203-452-011	
	90 Volt	5203-452-012	
5-1	Rotor		1
	Standard Friction Material	5203-751-001	
	Optional LK Facing	5203-751-004	
5-2	Field		1
	6 Volt	5203-451-034	
	24 Volt	5203-451-036	
	90 Volt	5203-451-037	
5-3	Retainer Ring	748-0019	1
5-4	Ball Bearing	166-1047	1
5-5	Retainer Ring	748-0011	1
5-6	Rotor Hub	540-1304	1
5-7	Ring Adapter	748-0591	1

Item	Description	SFC-1225, B.M. Part Number	Qty.
5-8	Buttonhead Capscrew	797-1261	6
5-9	Lockwasher	950-0359	6
5-10	Sockethead Capscrew	797-0424	6
6	Bushing*		
	1/2" to 2-1/2" Bore	180-0185 to 180-0217*	1
7	Conduit Box	5200-101-012	1

* See page 28 for specific part numbers.

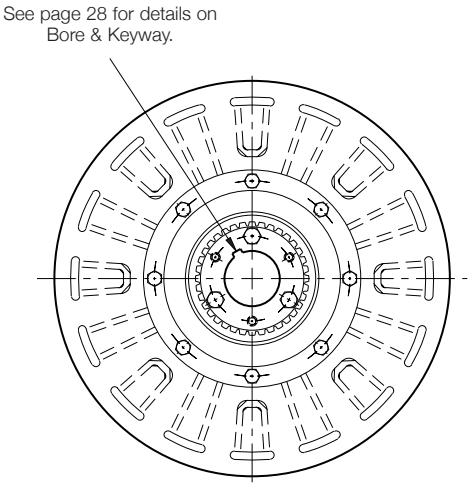
How to Order:

1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 6.
3. Specify Voltage for Item 5.

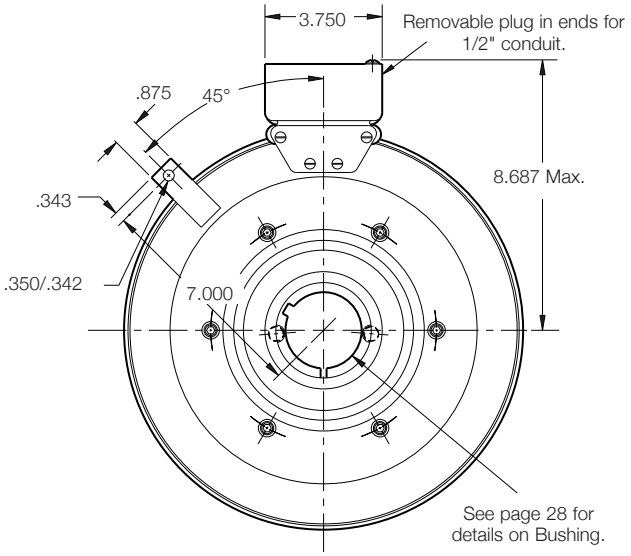
Example:

SFC-1225 Clutch Coupling per I-25623 - 90 Volt, 1" Bore

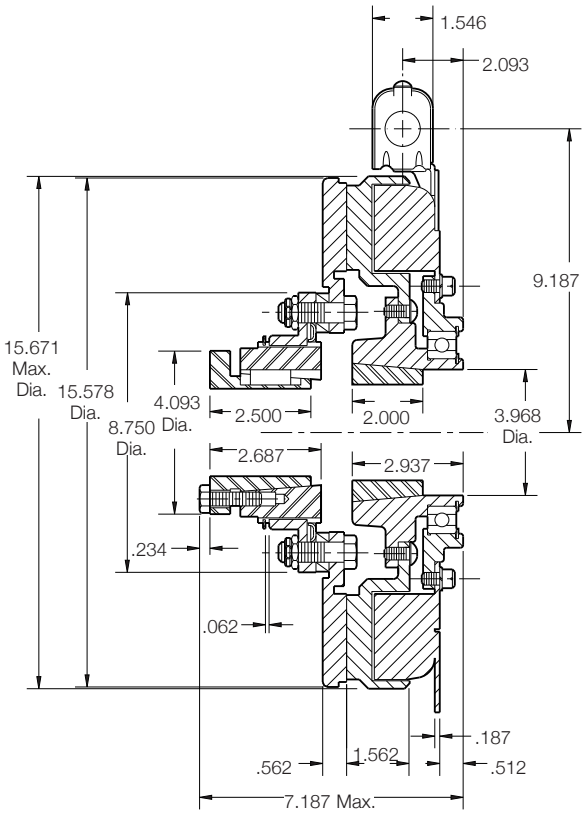
These units, when used in conjunction with the correct Warner Electric conduit box, meet the standards of UL508 and are listed under guide card #NMTR, file #59164.



Armature View



Field View



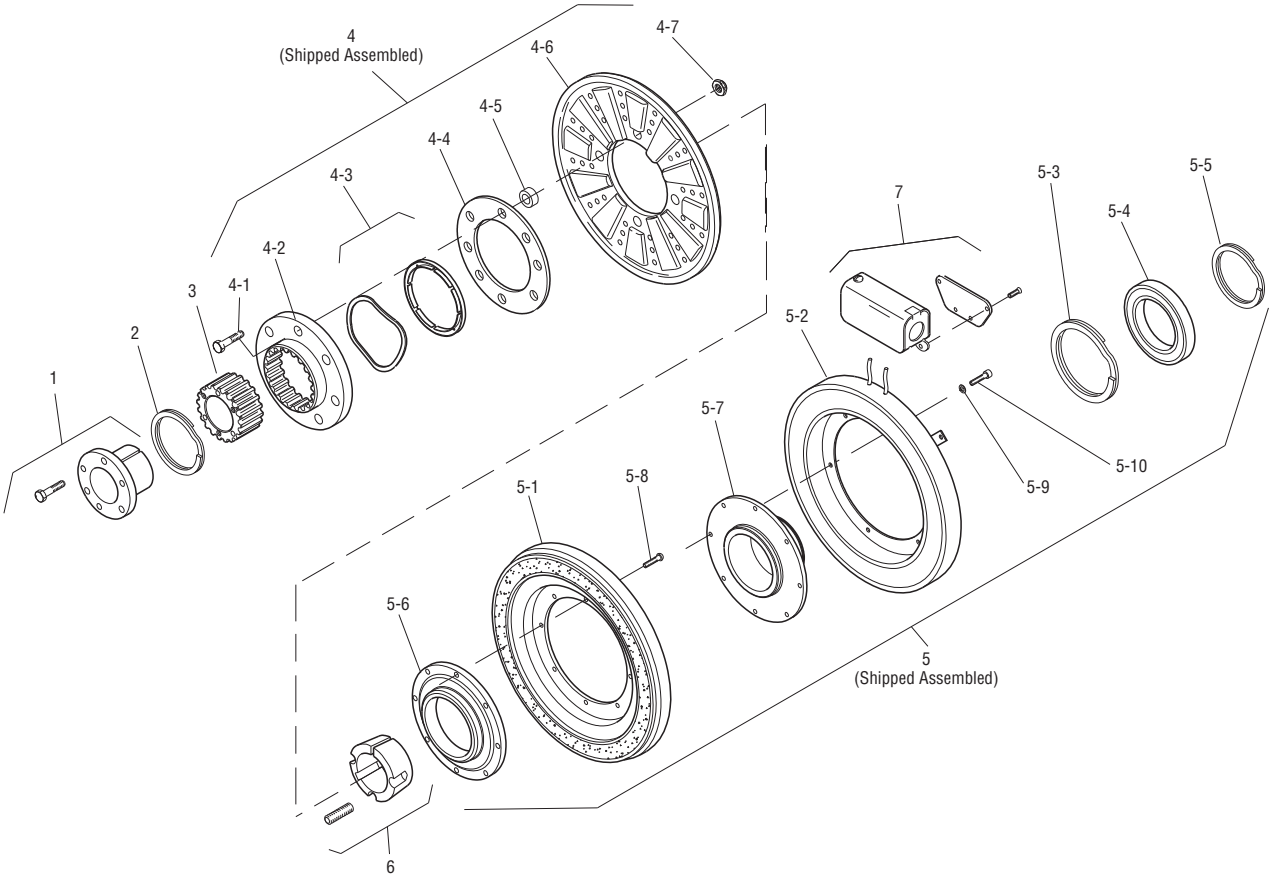
Arm Shaft	.750 – 2.687
Rotor Shaft	.500 – 3.000
Static Torque	700 lb. ft.
Maximum Speed	1,800 rpm
Standard Voltage	D.C. 6, 24, 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

SFC-1525 Clutch Coupling Bearing Mounted



Item	Description	SFC-1525, B.M. 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	5204-111-004	1
4-1	Capscrew	797-0342	8
4-2	Splined Adapter	104-0011	1
4-3	Autogap Accessory	5323-101-002	1
4-4	Retainer Plate	686-0003	1
4-5	Spacer	748-0333	8
4-6	Armature	5324-111-034	1
4-7	Locknut	661-0004	8
5	Field & Rotor Assembly		1
	6 Volt	5204-452-009	
	24 Volt	5204-452-011	
	90 Volt	5204-452-012	
5-1	Rotor		1
	Standard Friction Material	5204-751-002	
	Optional LK Facing	5204-751-004	
5-2	Field		1
	6 Volt	5204-451-084	
	24 Volt	5204-451-086	
	90 Volt	5204-451-087	
5-3	Retainer Ring	748-0014	1
5-4	Ball Bearing	166-0163	1
5-5	Retainer Ring	748-0583	1
5-6	Rotor Hub	540-1306	1
5-7	Ring Adapter	748-1048	1

Item	Description	SFC-1525, B.M. Part Number	Qty.
5-8	Buttonhead Capscrew	797-1261	8
5-9	Lockwasher	950-0359	6
5-10	Sockethead Capscrew	797-0424	6
6	Bushing*		
	15/16" to 3" Bore	180-0223 to 180-0256	
7	Conduit Box	5200-101-012	1

* See page 28 for specific part numbers.

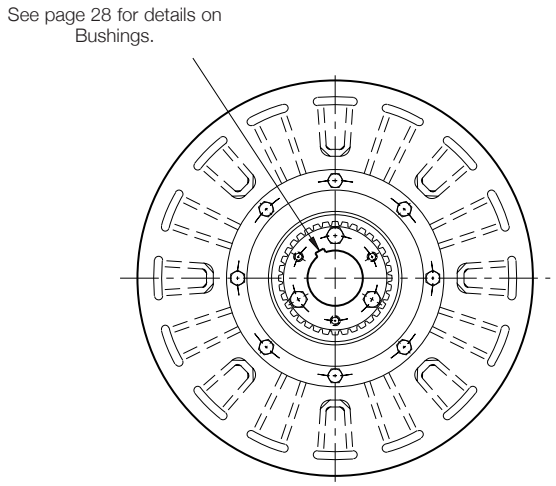
How to Order:

1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 6.
3. Specify Voltage for Item 5.

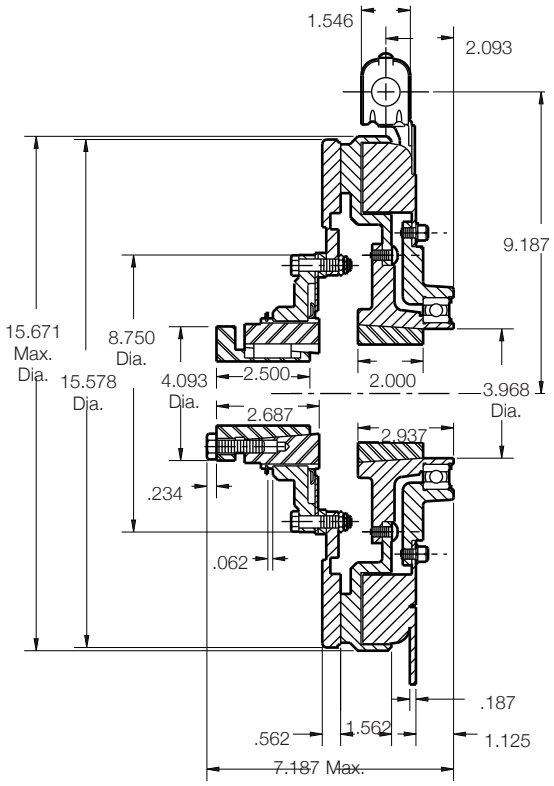
Example:

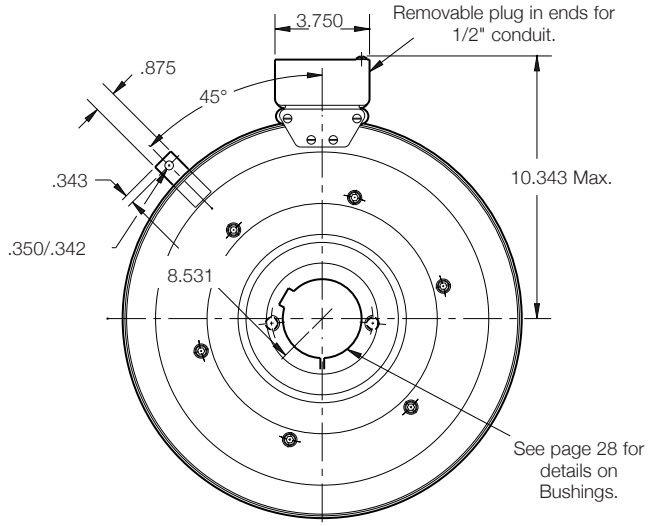
SFC-1525 Clutch Coupling per I-25641 - 90 Volt, 1" Bore

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



Armature View





Field View

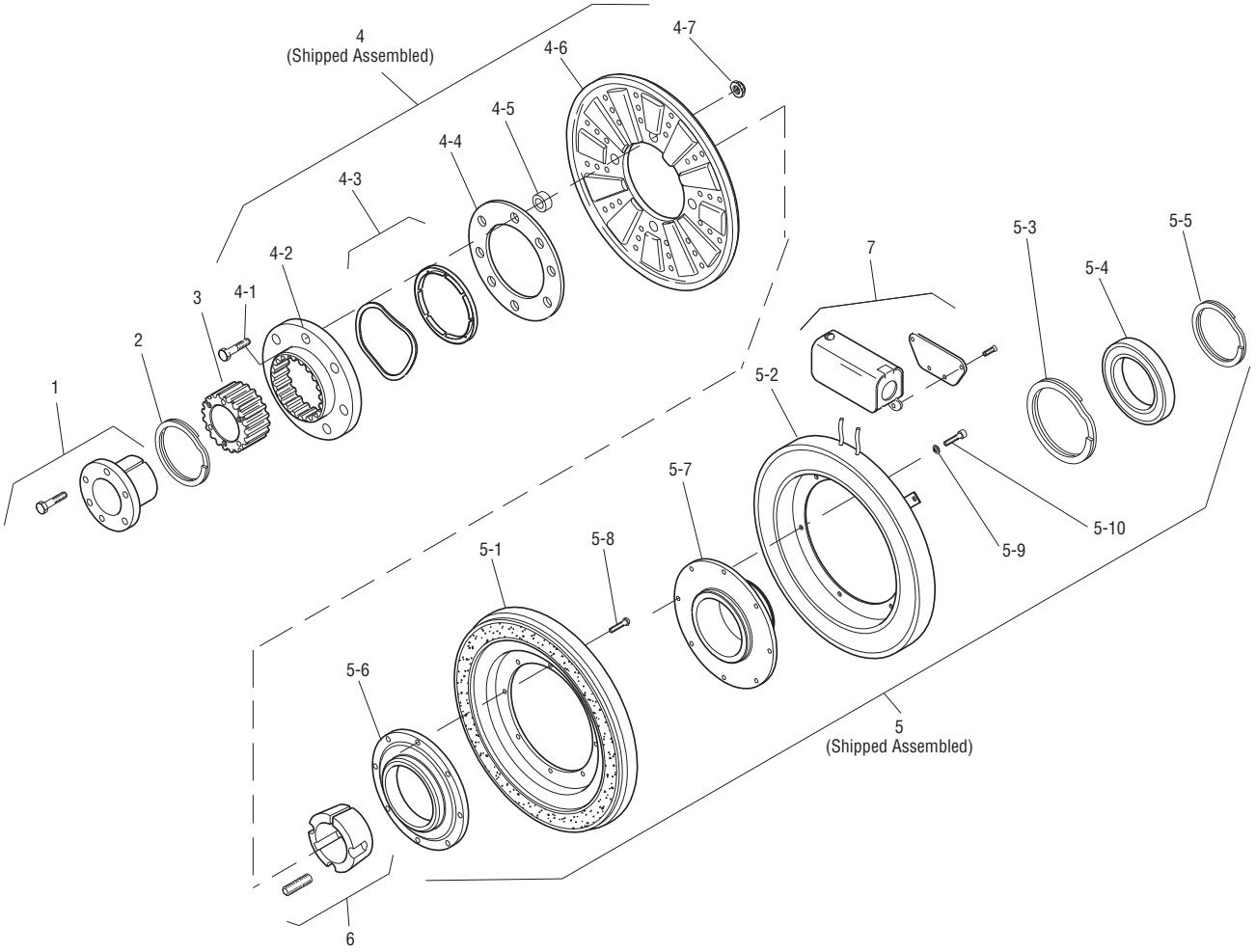
Arm Shaft	.937 – 3.000
Rotor Shaft	.750 – 2.687
Static Torque	1,350 lb. ft.
Maximum Speed	1,800 rpm
Standard Voltage	D.C. 90

All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

SFC-1525 H.T. Clutch Coupling, Bearing Mounted



Item	Description	SFC-1525 H.T. 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	5204-111-004	1
4-1	Capscrew	797-0342	8
4-2	Splined Adapter	104-0011	1
4-3	Autogap Accessory	5323-101-002	1
4-4	Spacer	686-0003	1
4-5	Spacer	748-0333	8
4-6	Armature	5324-111-034	1
4-7	Locknut	661-0004	8
5	Field & Rotor Assembly		1
	90 Volt	5204-452-015	
5-1	Rotor	5204-751-001	1
5-2	Field		1
	90 Volt	5204-451-090	
5-3	Retainer Ring	748-0114	1
5-4	Ball Bearing	166-0163	1
5-5	Retainer Ring	748-0583	1
5-6	Rotor Hub	540-1306	1
5-7	Ring Adapter	748-1048	1
5-8	Buttonhead Capscrew	797-1261	8
5-9	Lockwasher	950-0359	6

Item	Description	SFC-1525 H.T. Part Number	Qty.
5-10	Sockethead Capscrew	797-0424	6
6	Bushing*		
	15/16" to 3" Bore	180-0223 to 180-0256	1
7	Conduit Box	5200-101-012	1

*See page 28 for specific part numbers.

How to Order:

1. Specify Bore Size for Item 1.
2. Specify Bore Size for Item 6.
3. Specify Voltage for Item 5.

Example:

SFC-1525 Clutch Coupling Hi-Torque per I-25644 - 90 Volt, 1" Bore

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

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	
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	3030
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	
2-1/18	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	
2-15/16	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	1008
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
31 Industrial Park Road • New Hartford, CT 06057
815-389-3771 • Fax: 815-389-2582
www.warnerelectric.com
An Altra Industrial Motion Company

P-207 819-0516 11/11

Printed in USA

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

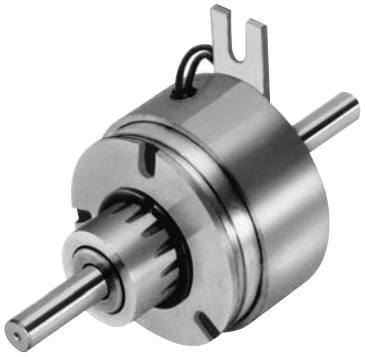
Warner® Electric

An **Altra Industrial Motion** Company

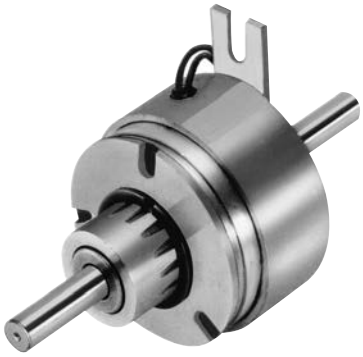
Contents

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

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.

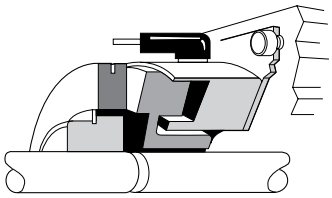
Various customer furnished drive components must be assembled with the clutch. Pulleys, sprockets and bearings/pillow blocks for shafting may be essential elements of a complete drive system. Squareness and concentricity tolerances are specified where critical to proper clutch/brake functioning.

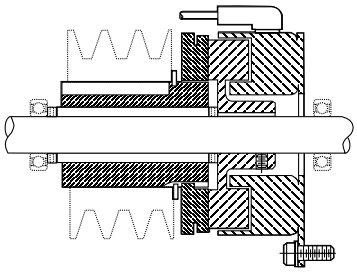
The illustrations show SF, and SFC Flange Mounted and Bearing Mounted units mounted with customer supplied bearing mounted pulley. In each illustration the drive pin for a normal duty clutch is shown. In this manner the pulley will support the armature.

SF Clutches and SFC Clutch Couplings

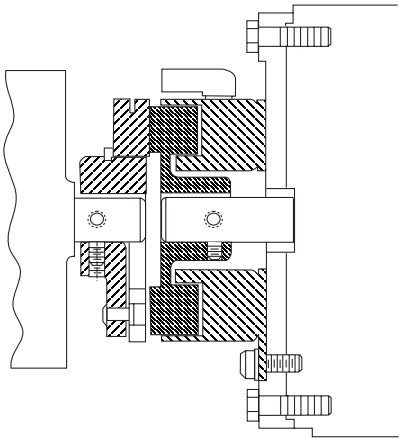
Flange Mounting

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





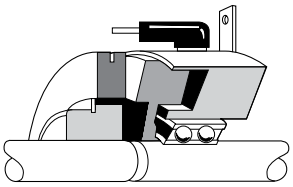
SF Clutch
Typical Installation

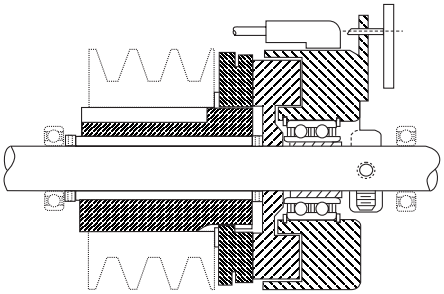


SFC
Clutch Coupling
Typical Installation

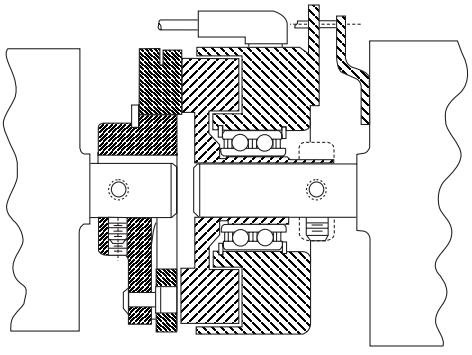
Bearing Mounting

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

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)

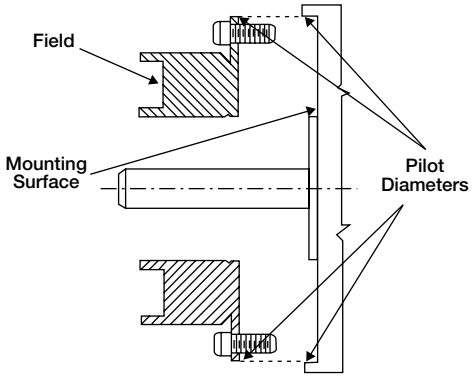


Figure 1

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.

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).

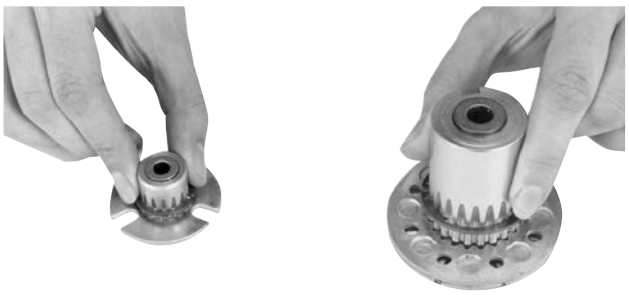


Figure 3

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)

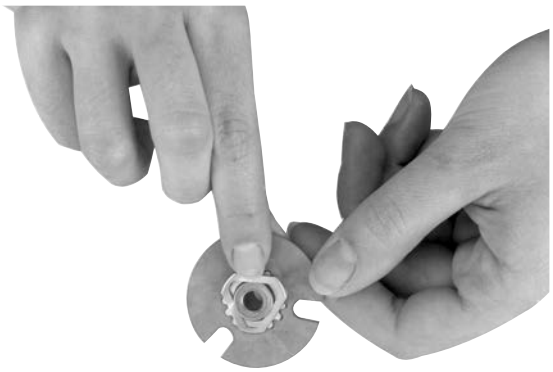


Figure 4

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

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)

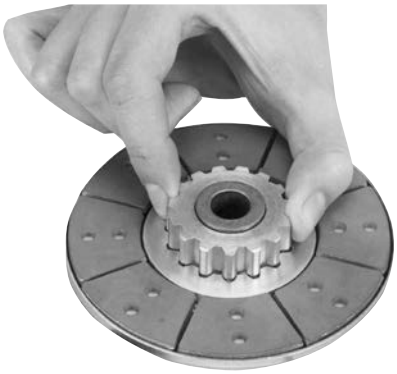


Figure 8

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

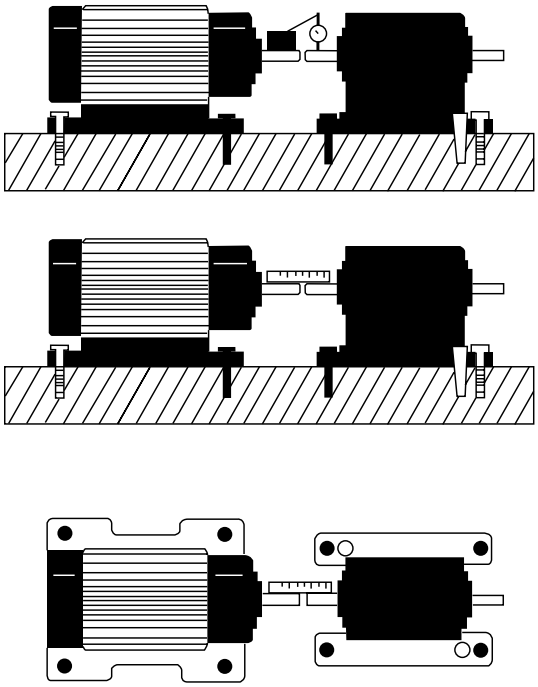
D. Mounting the Armature Assembly

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.

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)

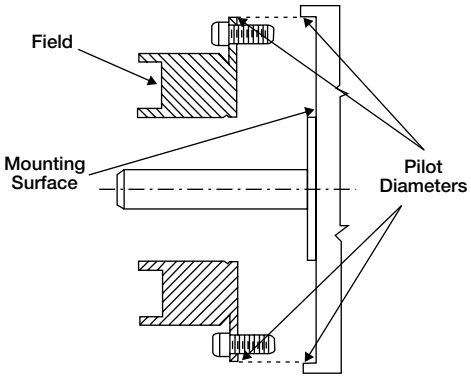


Figure 1

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

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).

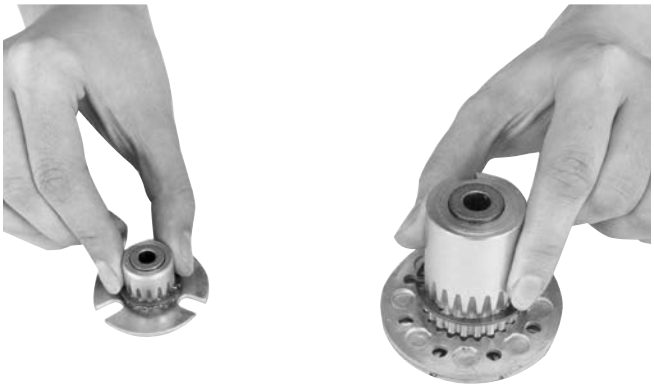


Figure 3

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.

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).

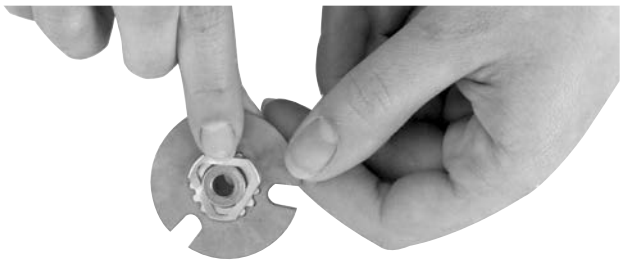
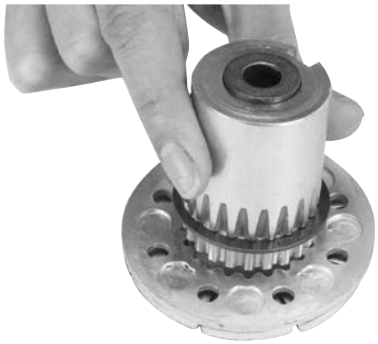


Figure 4

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.)

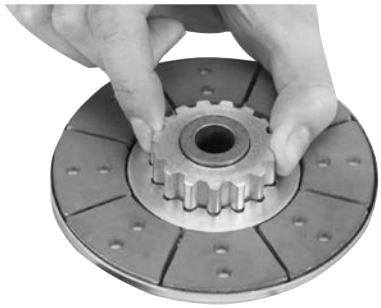


Figure 8

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

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.

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.

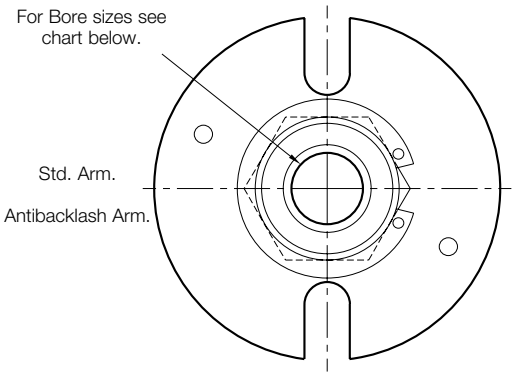
The above checks normally are sufficient. Further checks may be made as follows: a low range ammeter, when connected in series with one magnet lead, will normally indicate approximately .40 amperes for the 90 volt units, 1.0 ampere for the 24 volt, and 3.5 amperes for the 6 volt series. These readings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

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.

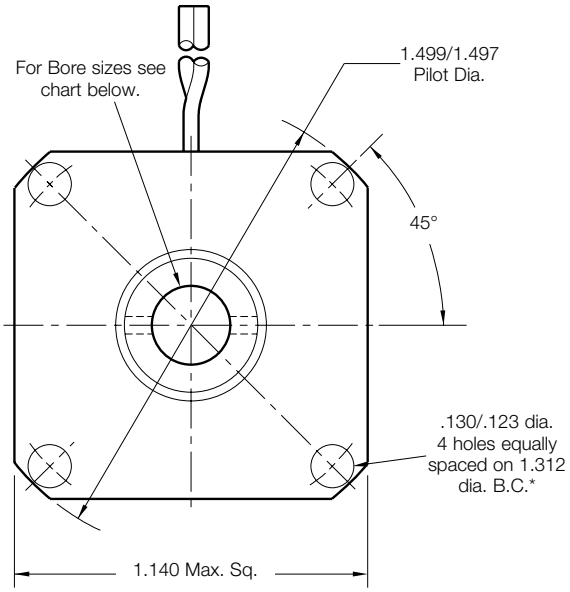
If the above checks indicate that the proper voltage and current is being supplied to the magnet, mechanical parts should be checked to assure that they are in good operating condition and properly installed.

NOTES

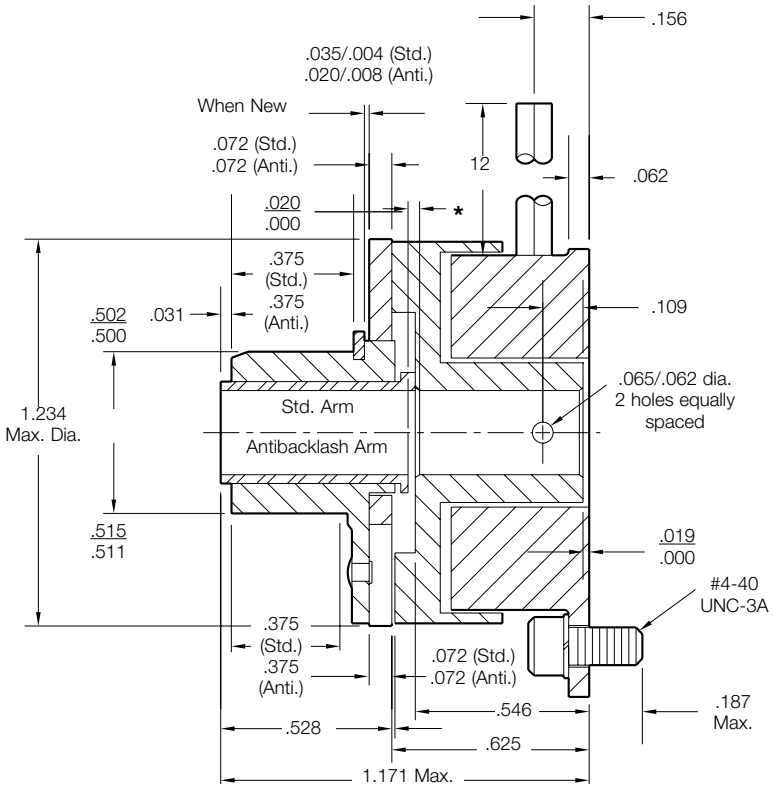
SF-120 Clutch Flange Mounted



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:

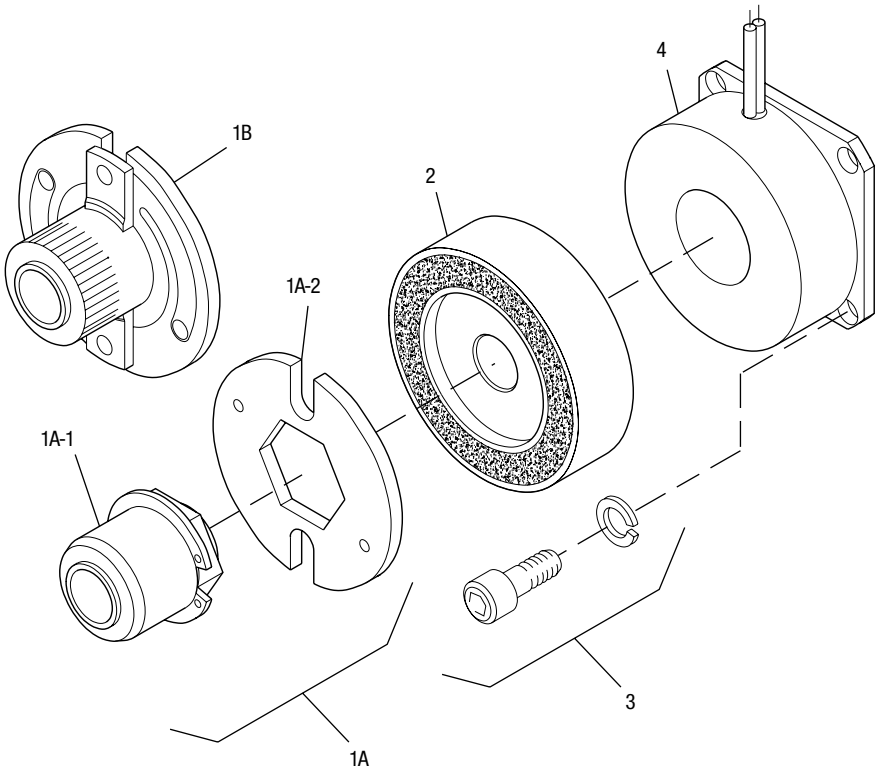
1. Squareness of field mounting face with shaft with .003 T.I.R. measured at pilot diameter.
2. Concentricity of field mounting pilot diameter with rotor mounting shaft within .003 T.I.R.

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.

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.

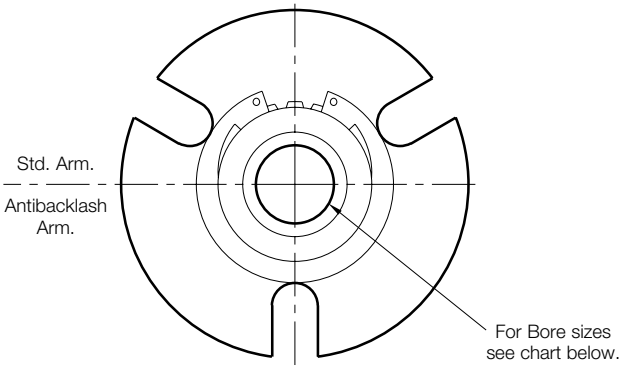
Example:

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

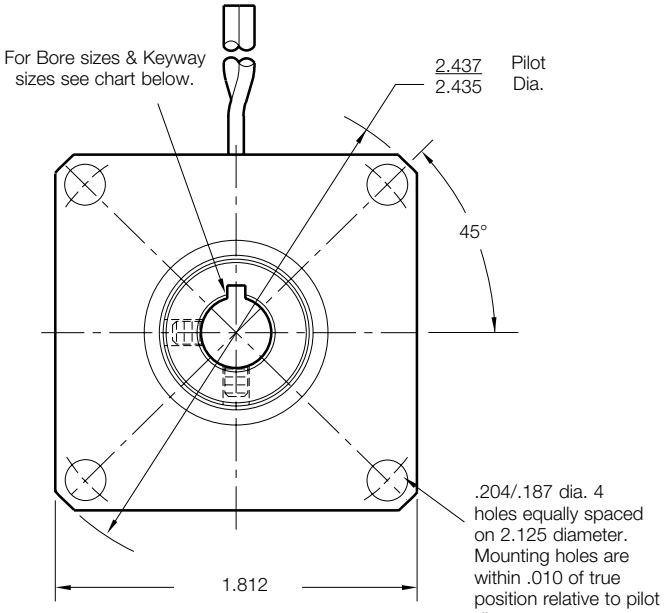
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

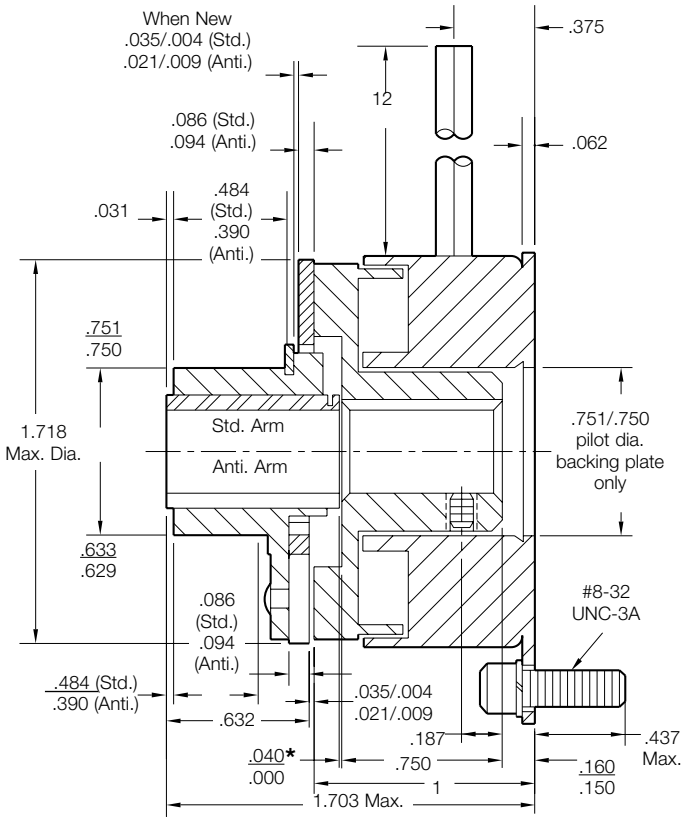
SF-170 Clutch Flange Mounted



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

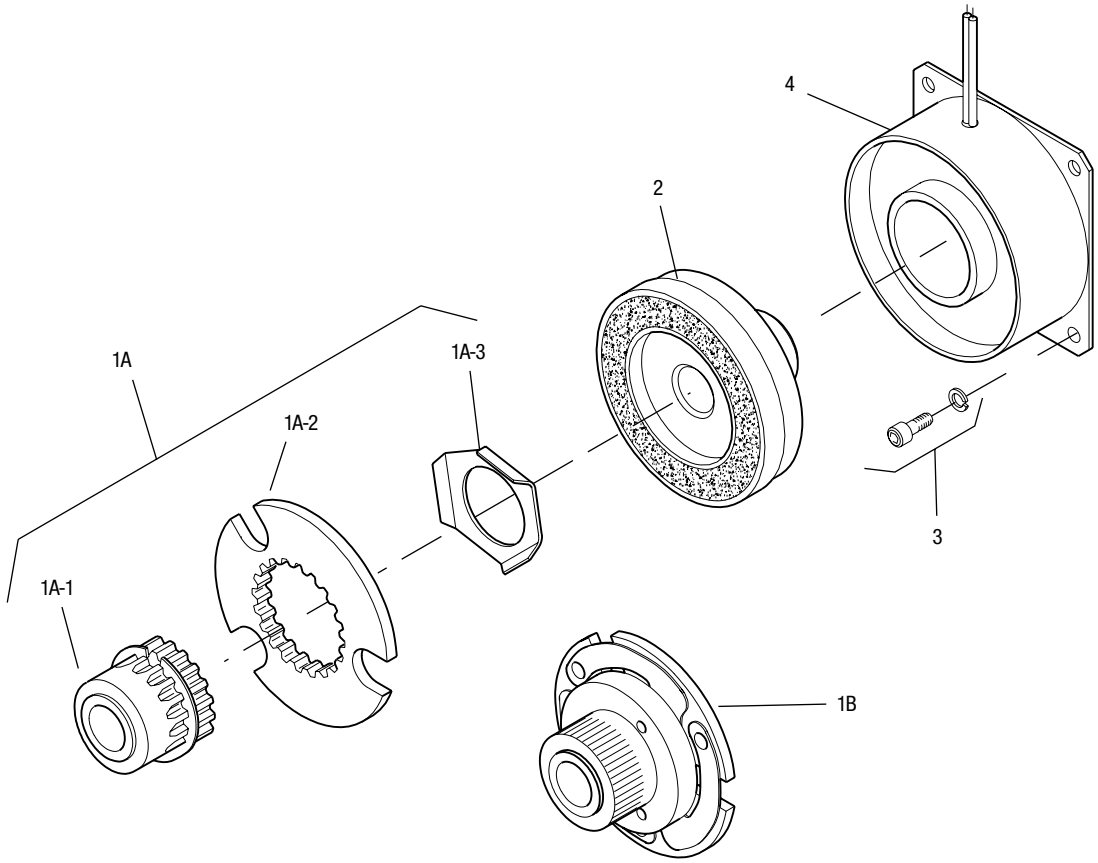
All dimensions are nominal unless otherwise noted.

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.

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.

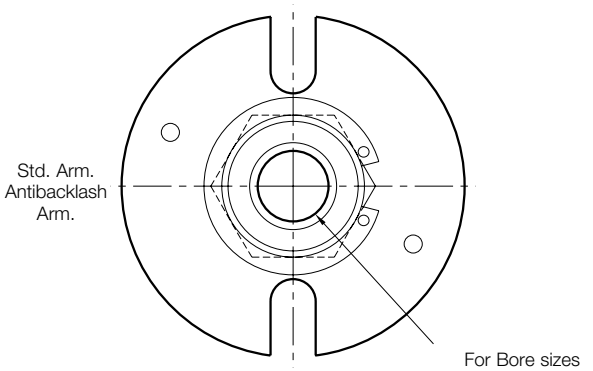
Example:

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

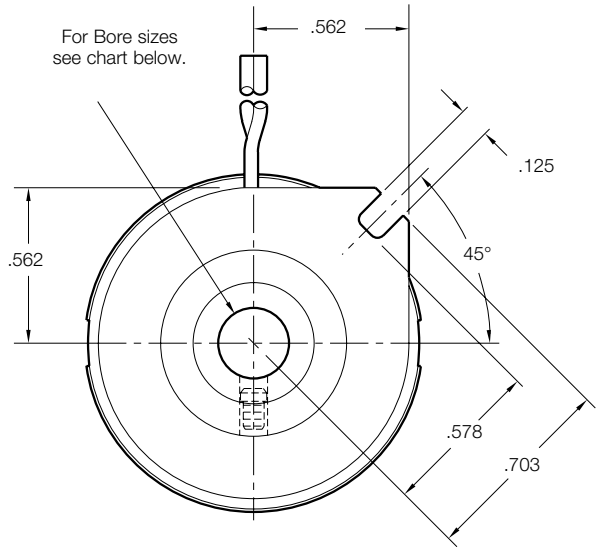
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

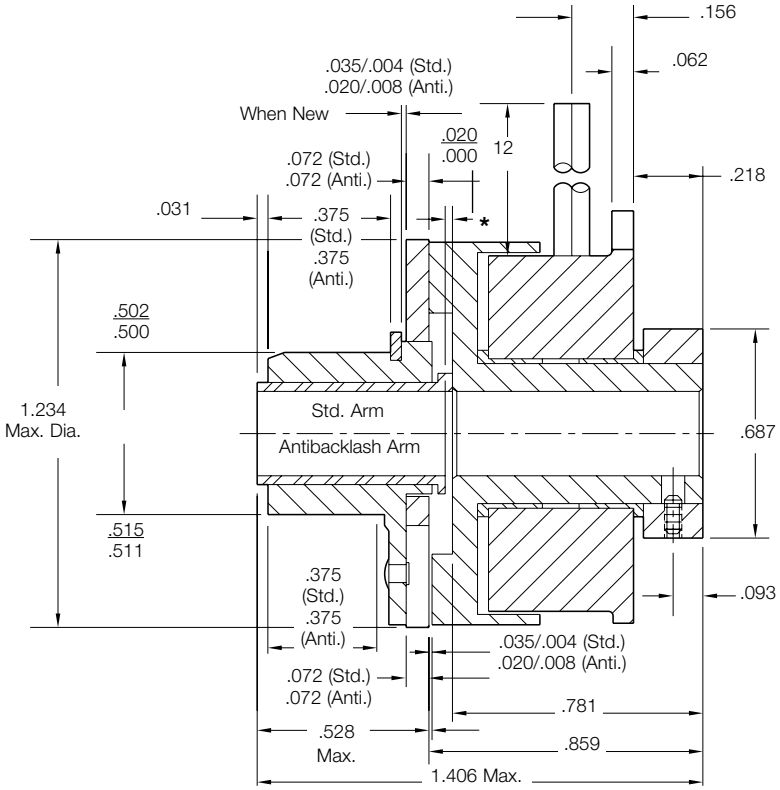
SF-120 Clutch Bearing Mounted



Armature View



Field View



*Customer shall maintain dimension as noted.

Bore Dimensions

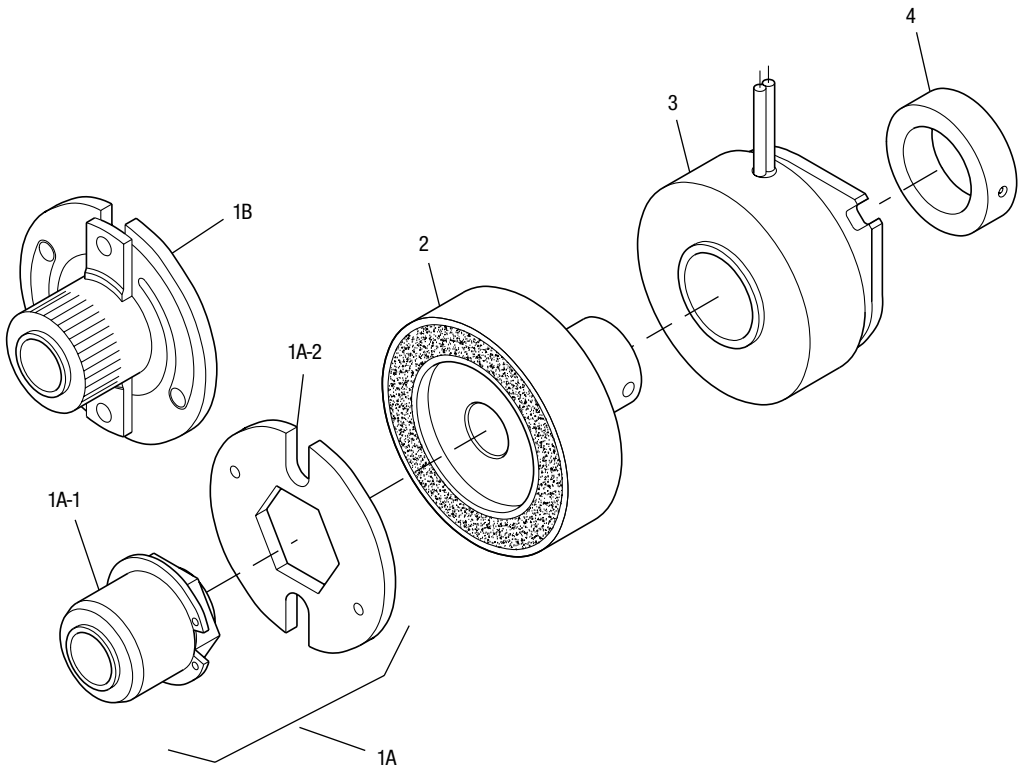
Rotor Bore Dia.	Armature Bore Dia.
.188/.187	.195/.190
.251/.250	.257/.252
.313/.312	—

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.

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.

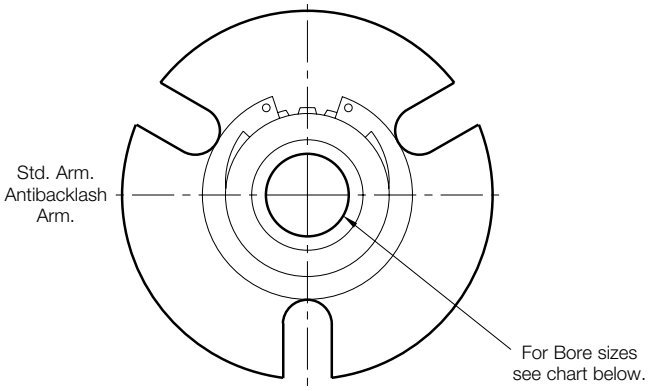
Example:

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

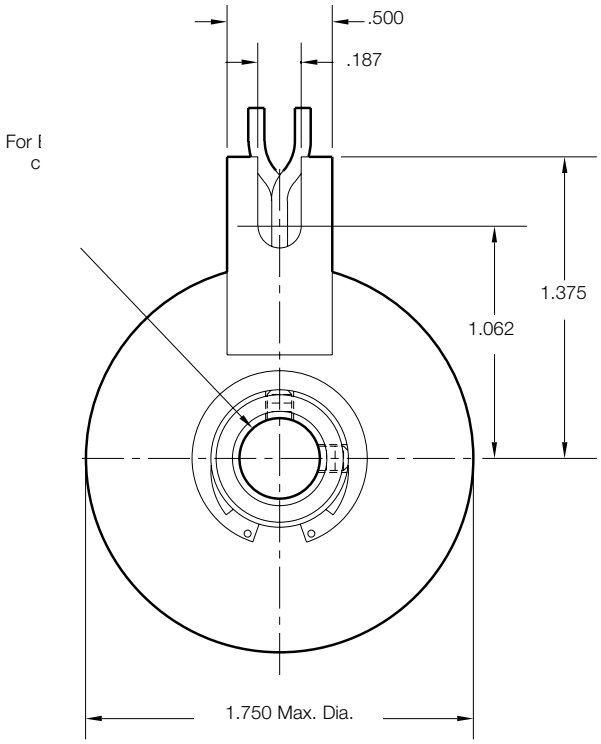
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

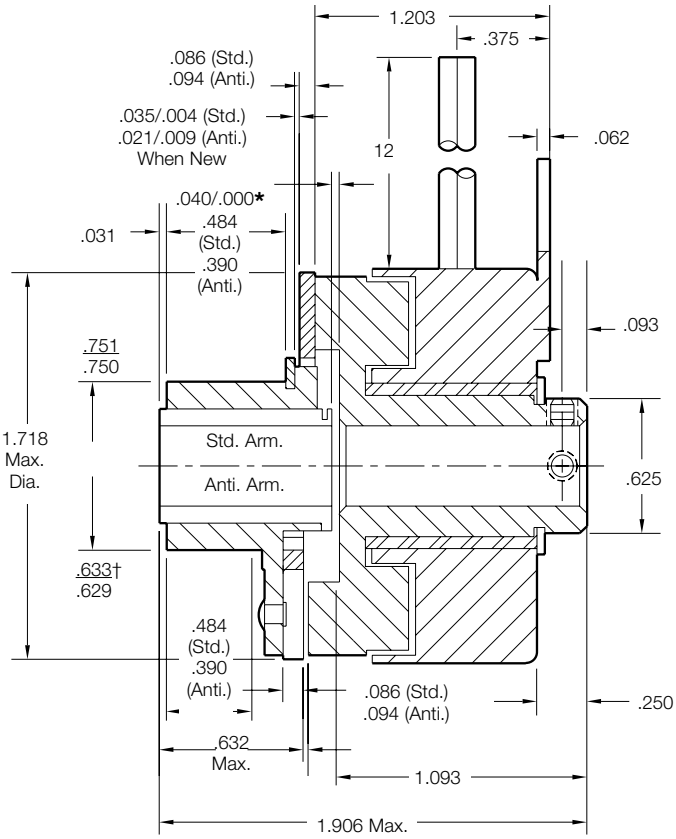
SF-170 Clutch Bearing Mounted



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

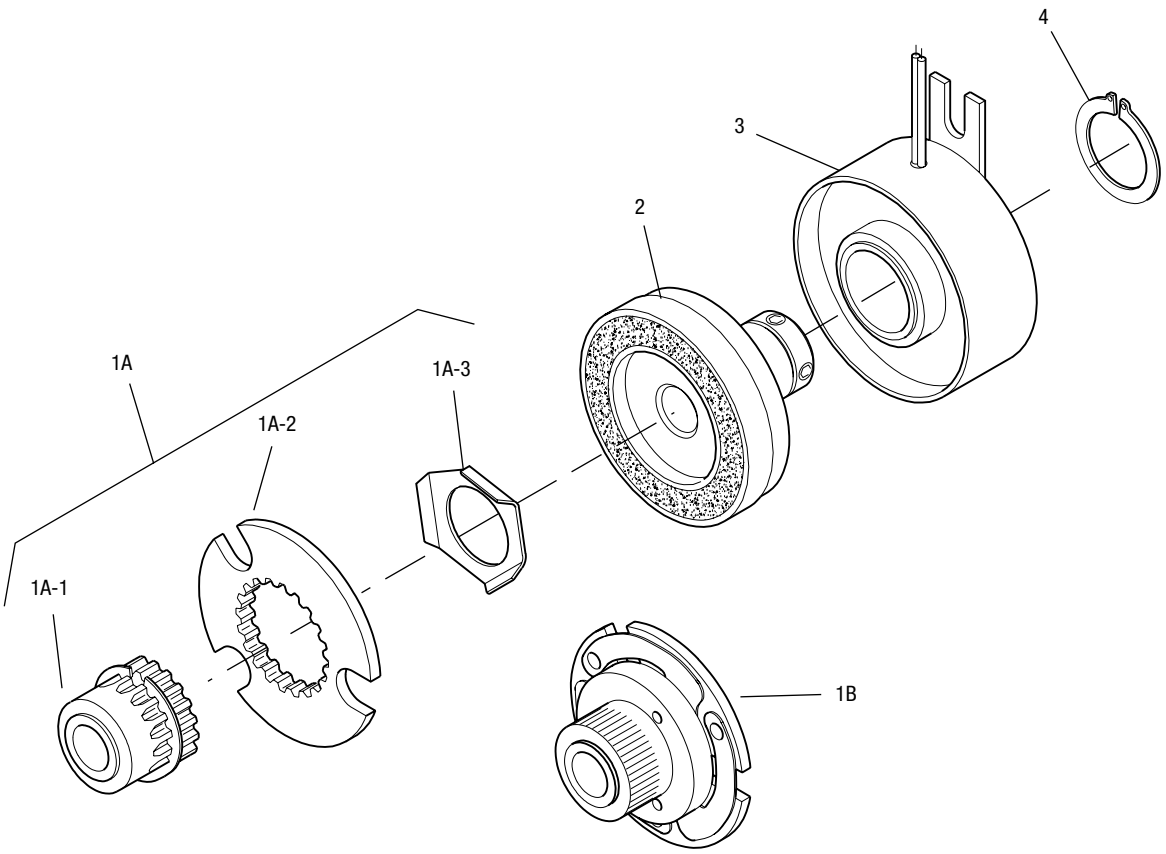
All dimensions are nominal unless otherwise noted.

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

† over knurl

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.

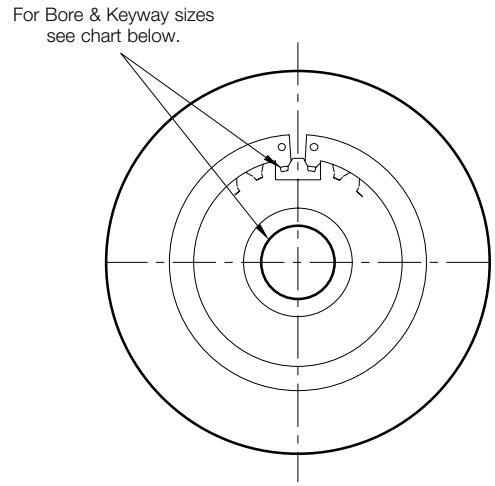
Example:

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

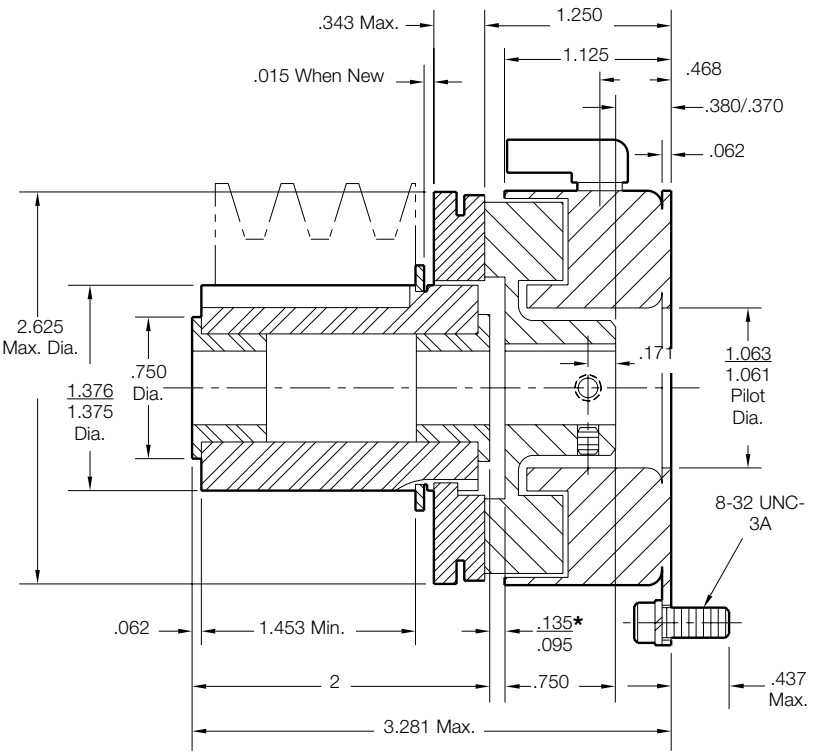
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

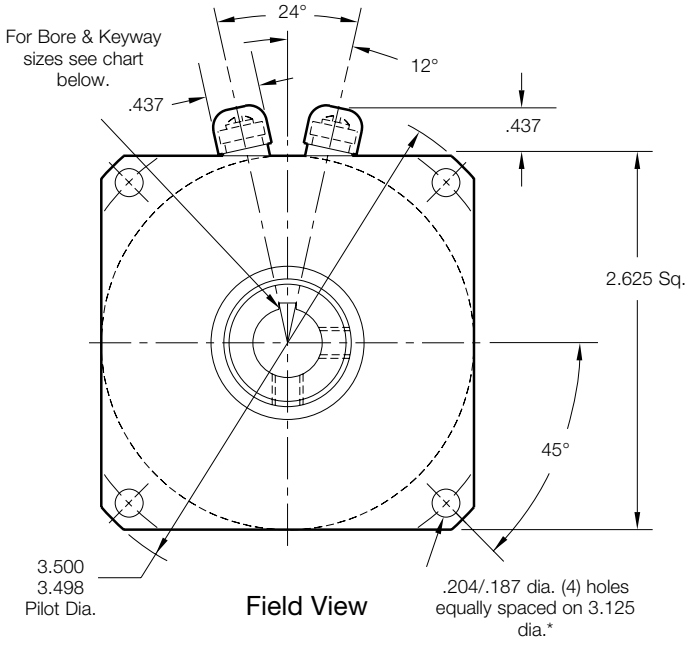
SF-250 Clutch Flange Mounted



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			

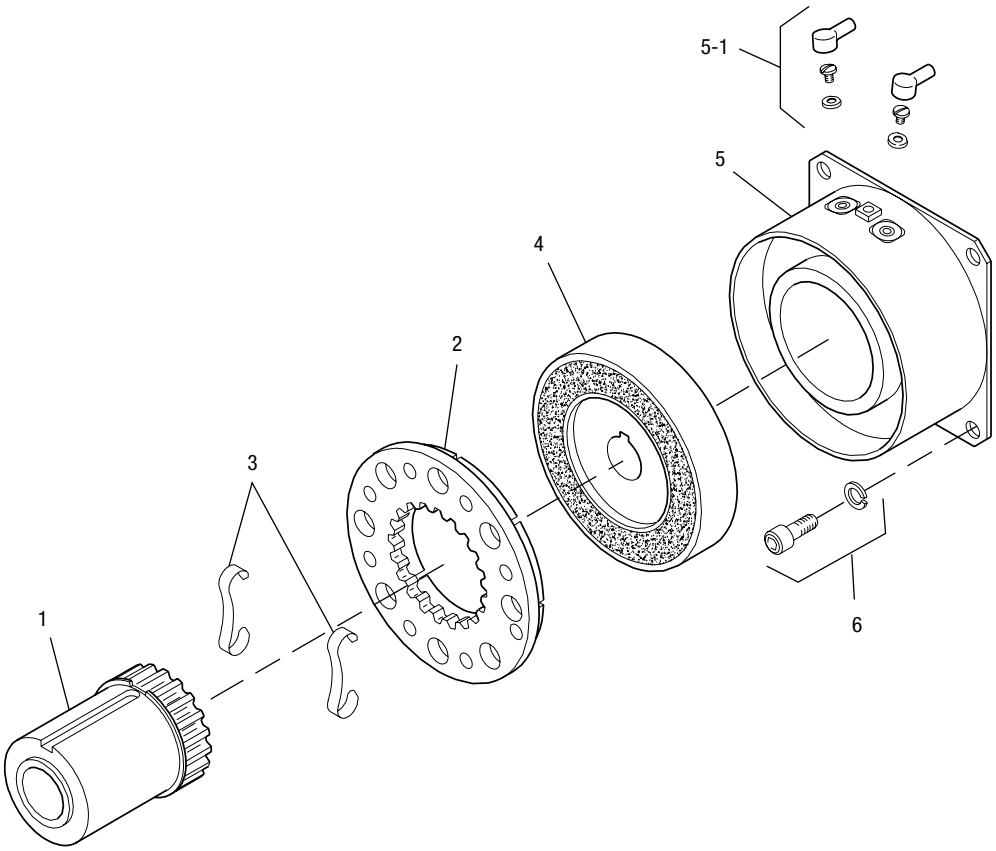
*Available on special order only.

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.



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.

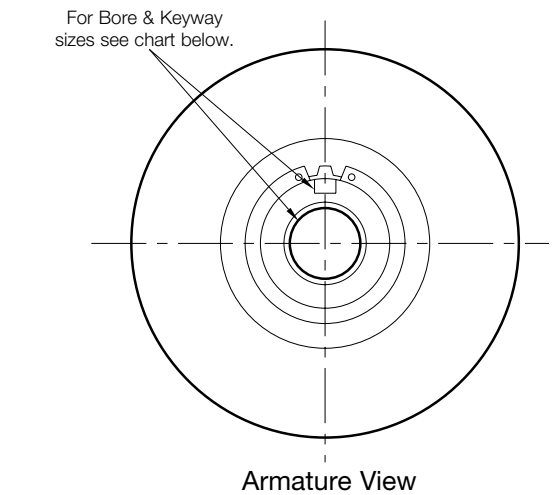
Example:

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

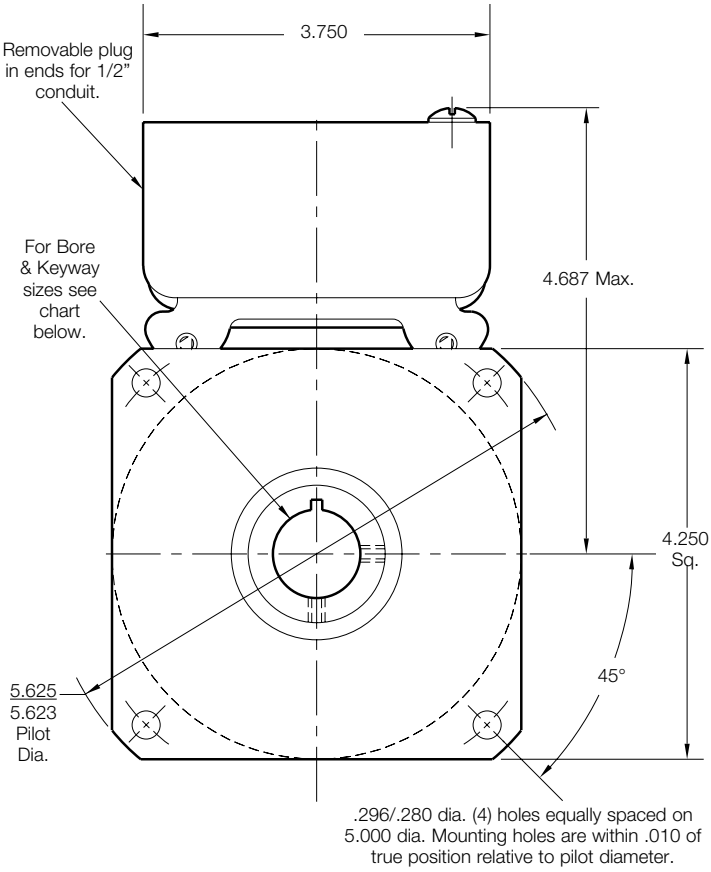
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

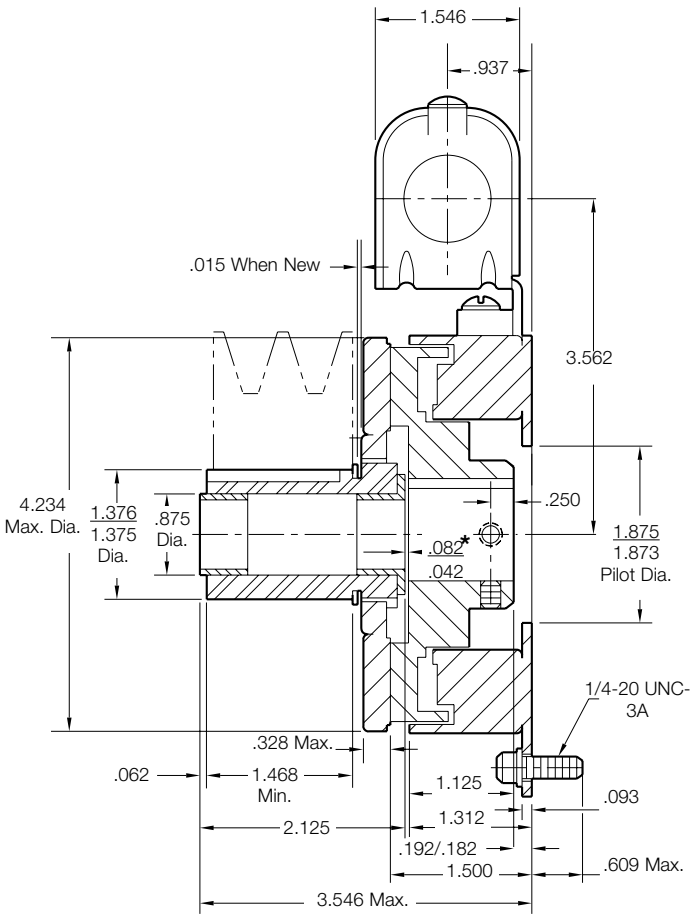
SF-400 Clutch Flange Mounted



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

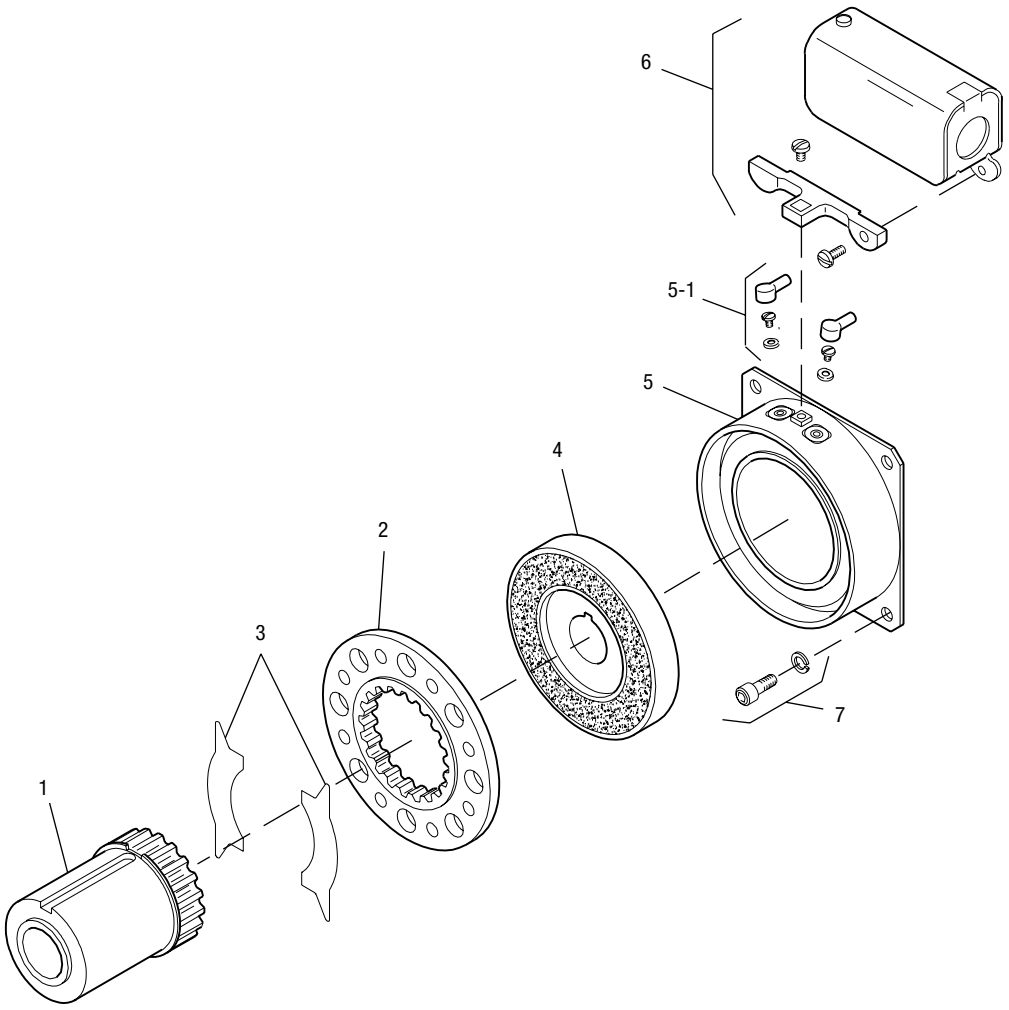
Armature Shaft	.500 – .750
Rotor Shaft	.500 – 1
Static Torque	270 lb.in.
Maximum Speed	4,500 rpm
Standard Voltage	D.C. 6, 24, 90

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.



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.

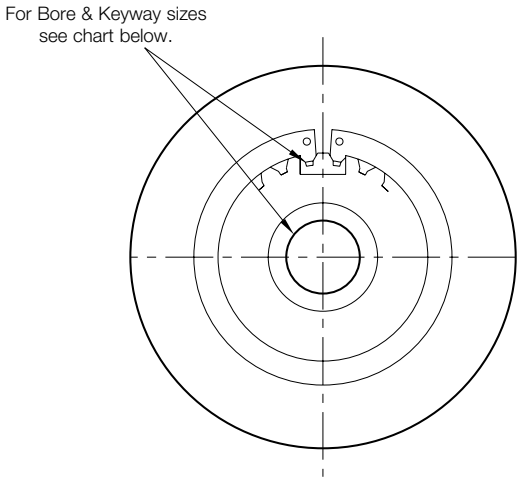
Example:

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

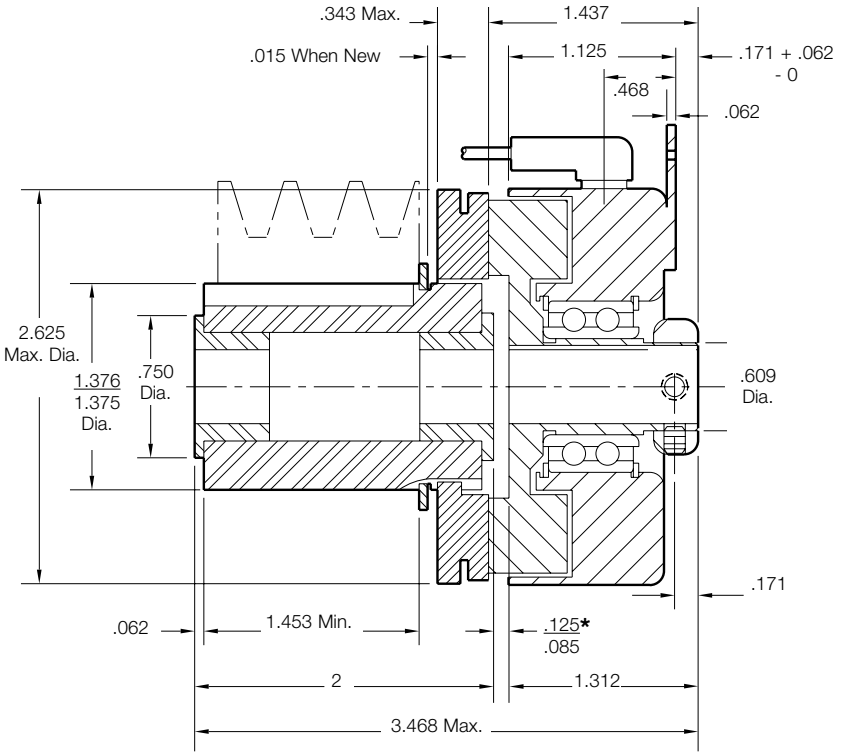
These units, when used in conjunction with the correct Warner Electric conduit box, meet the standards set of UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543

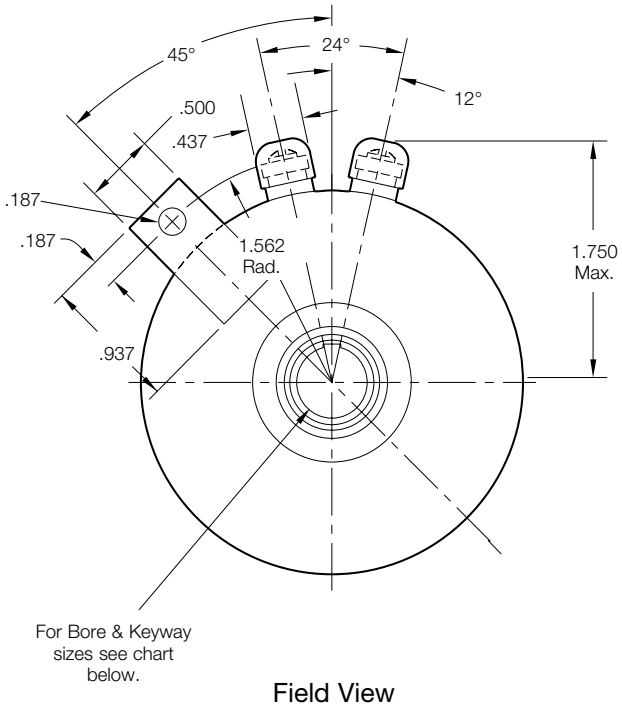
SF-250 Clutch Bearing Mounted



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			

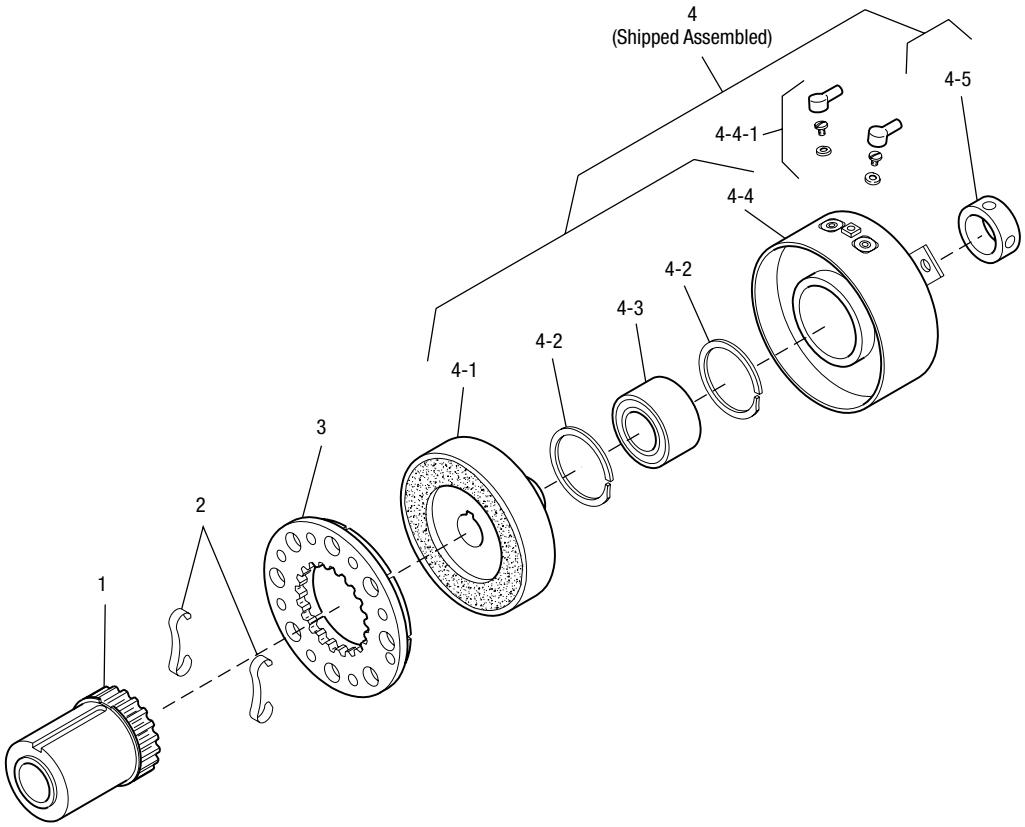
* Available on special order only.

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.

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.

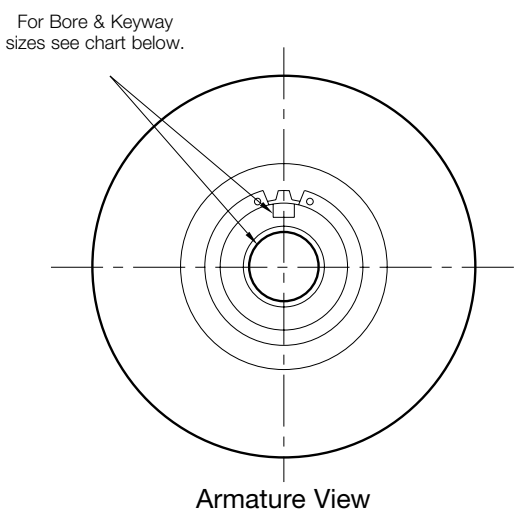
Example:

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

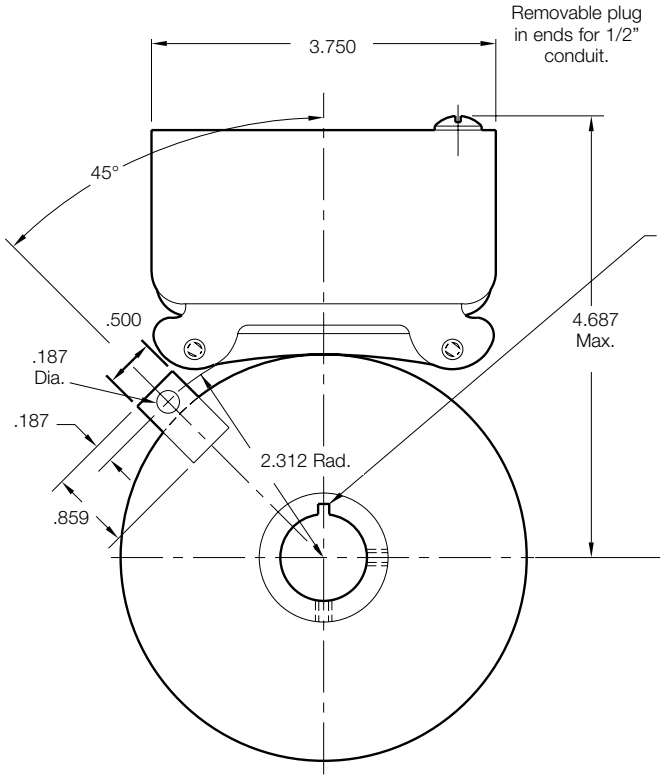
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

SF-400 Clutch Bearing Mounted

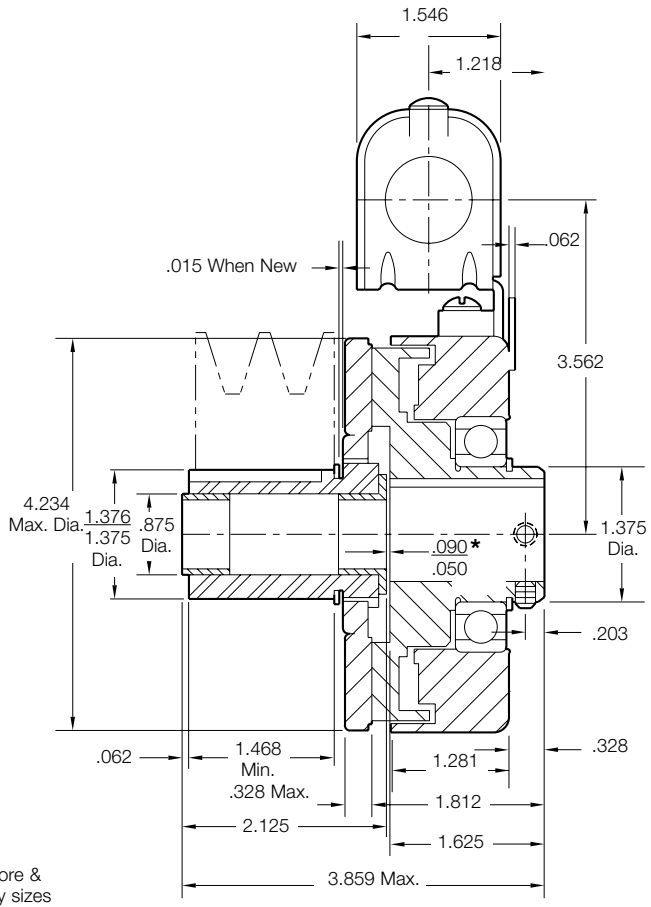


Armature View



Field View

*Customer shall maintain dimension as noted.



Bore and Keyway Dimensions

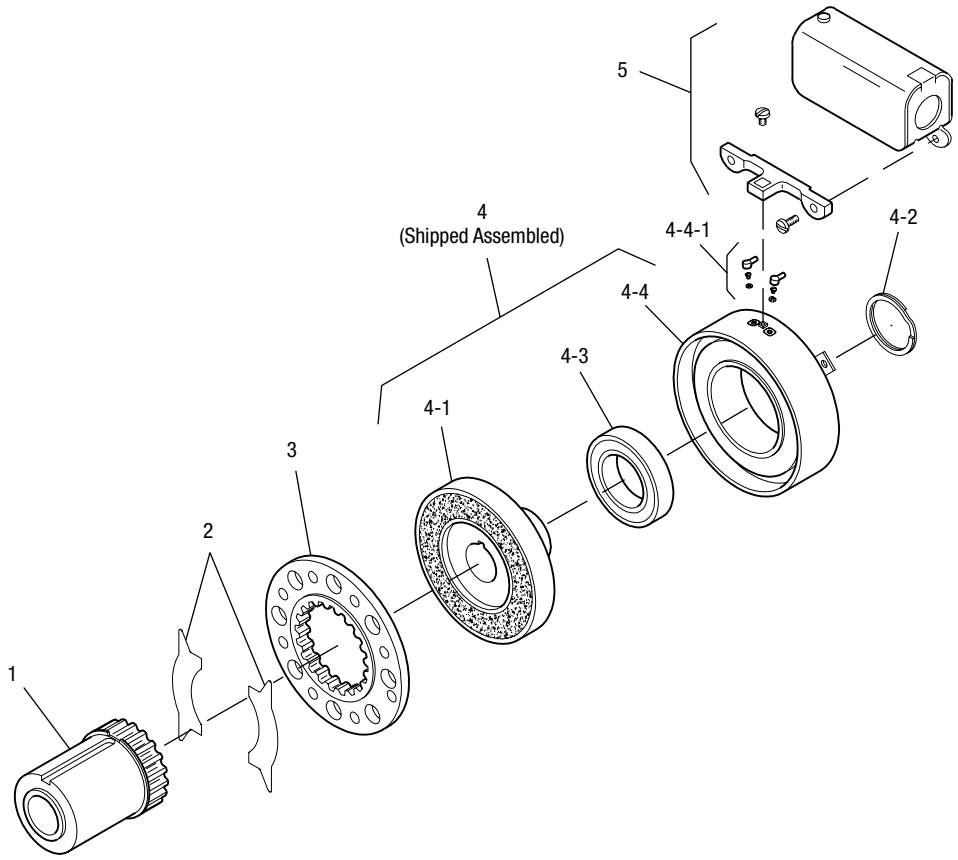
Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
		.501/.500	.125 x.062
.5000/.4995	.312 x .156	.626/.625	
.6250/.6245	x 1.25	.751/.750	.187 x .093
.7500/.7495		.876/.875	
		1.001/1.000	

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.

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.

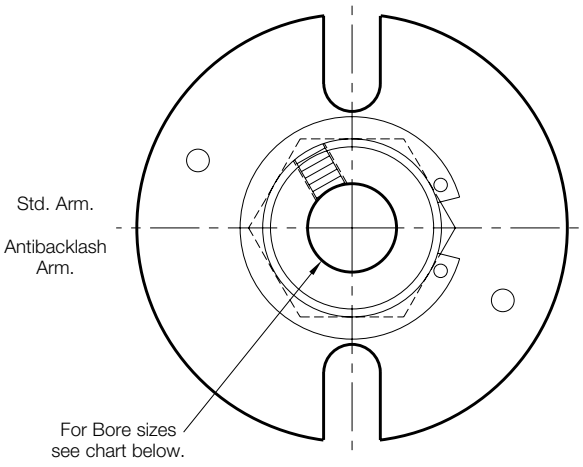
Example:

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

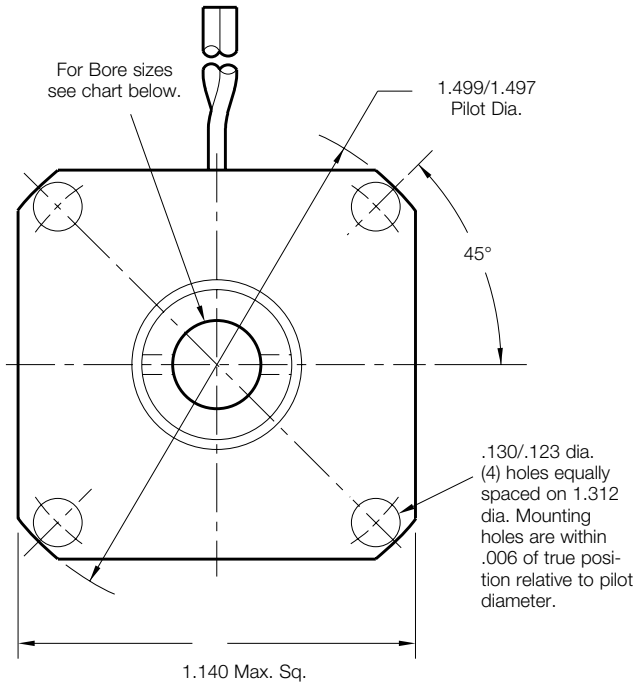
These units, when used in conjunction with the correct Warner Electric conduit box, meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543

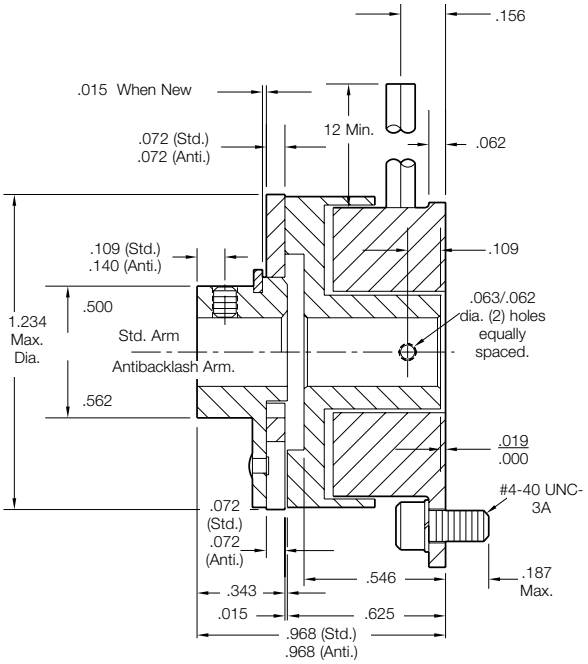
SFC-120 Clutch Coupling Flange Mounted



Armature View



Field View



Bore Dimensions

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

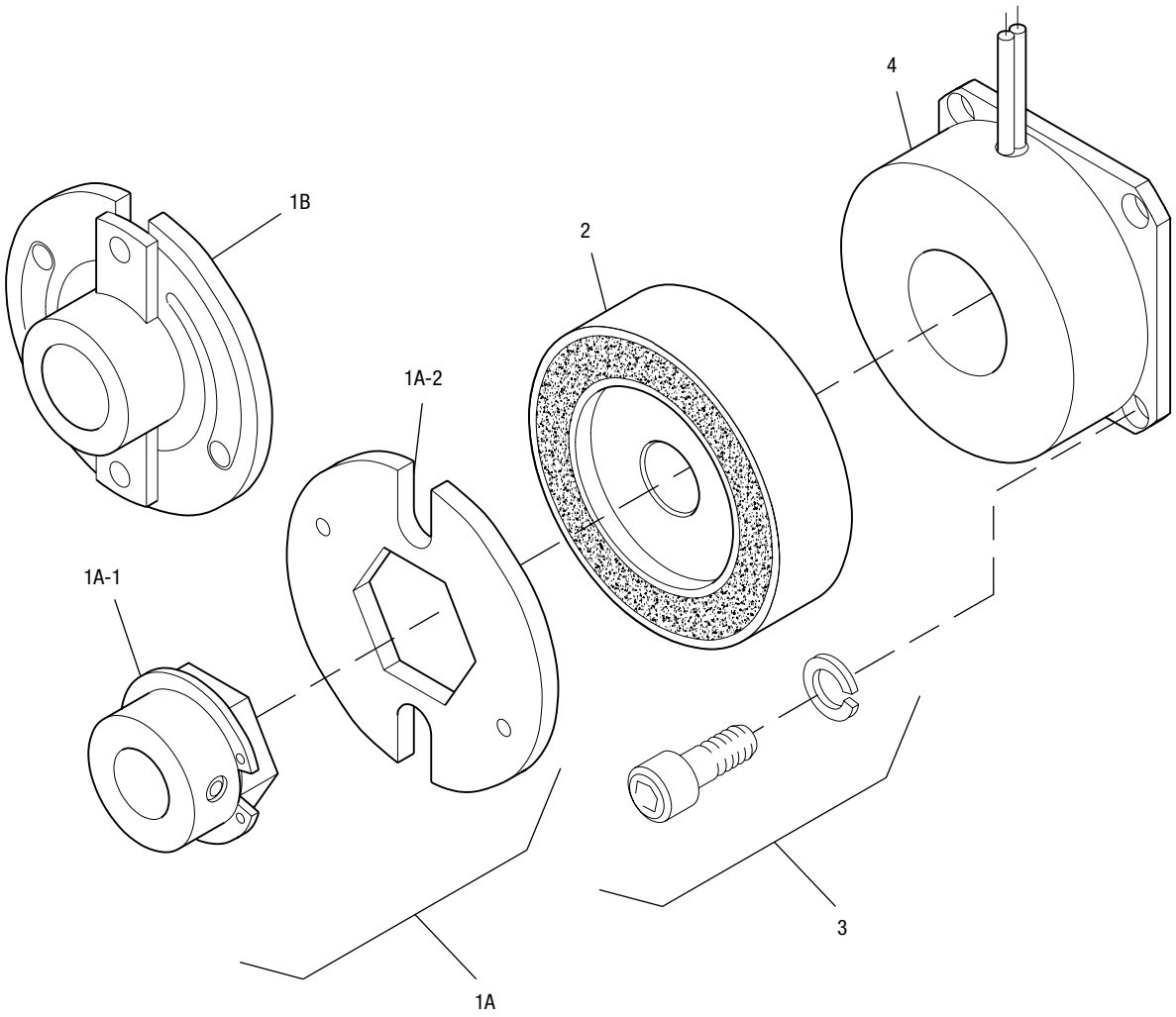
*(Antibacklash Armatures)

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.



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.

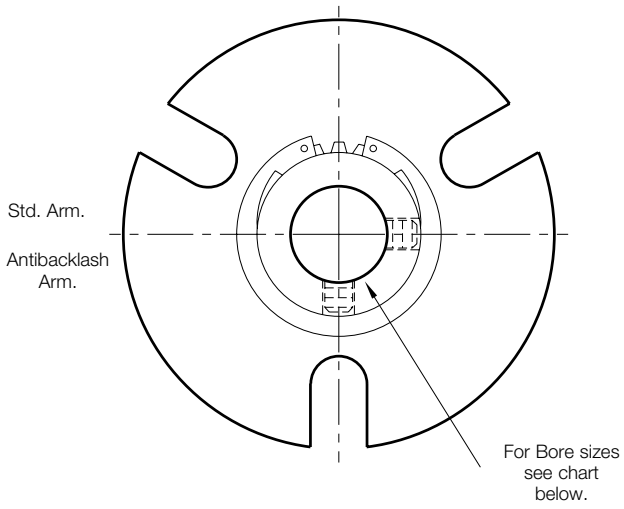
Example:

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

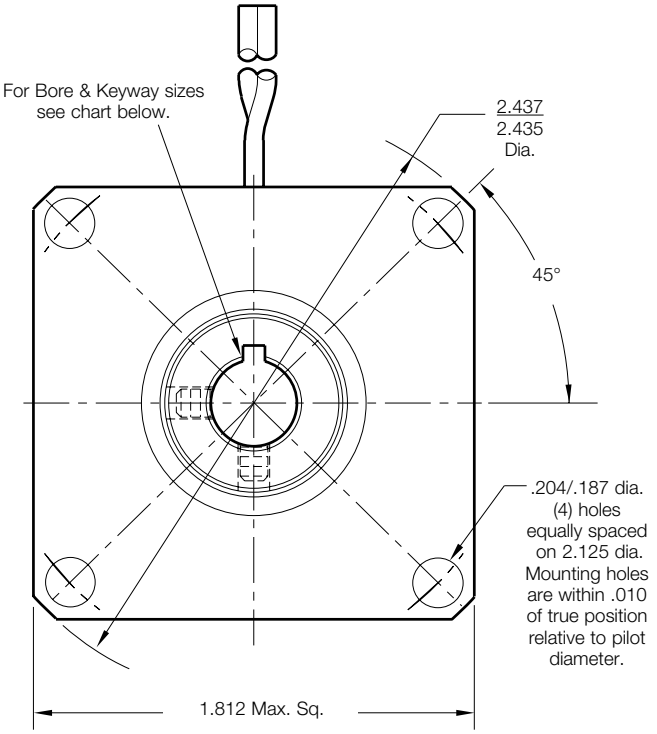
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

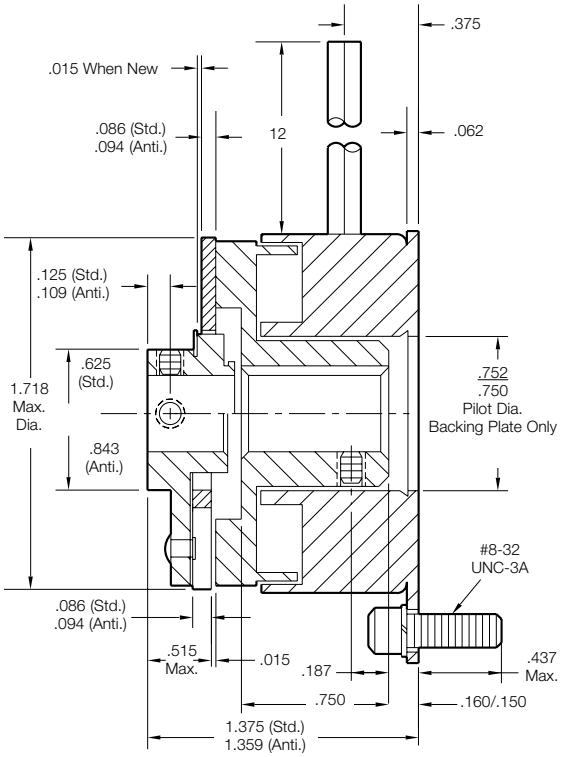
SFC-170 Clutch Coupling Flange Mounted



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

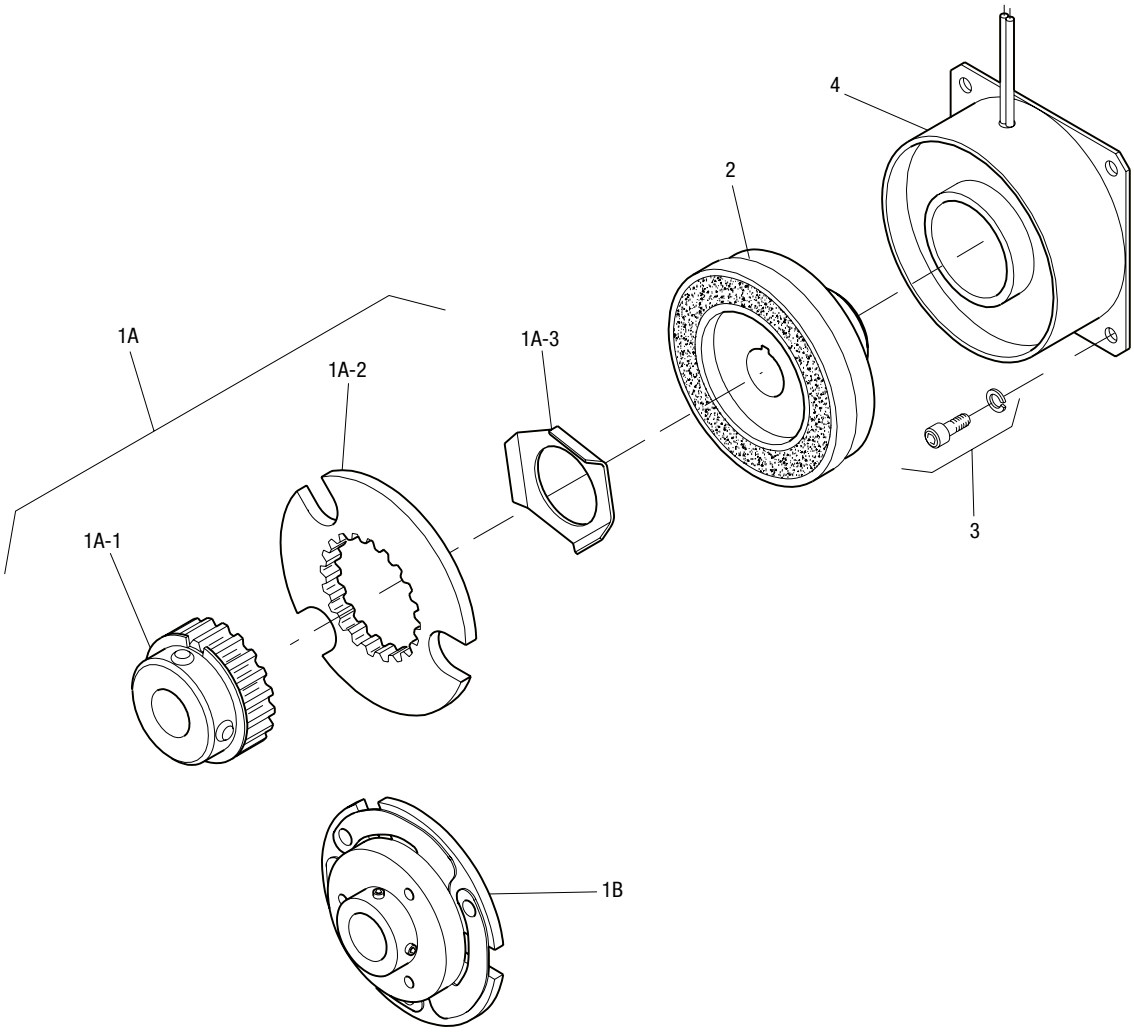
Customer Shall Maintain:

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	.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.

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.

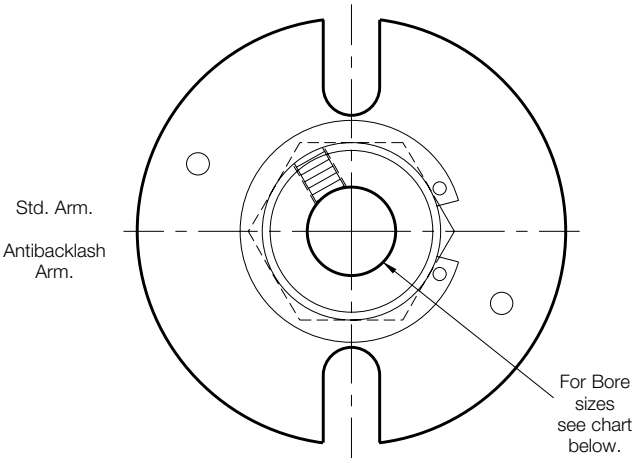
Example:

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

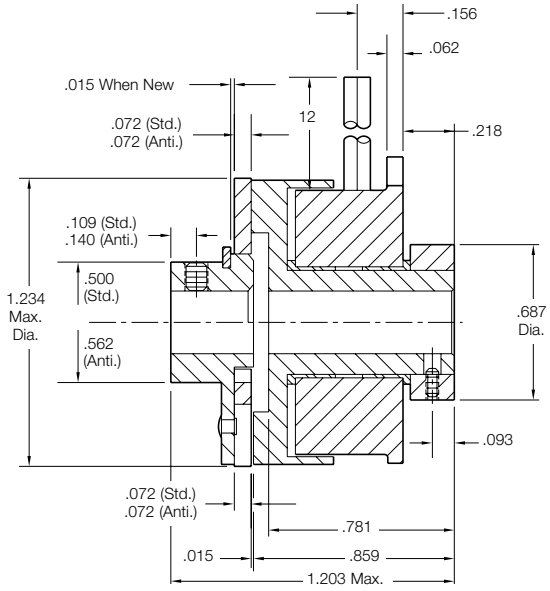
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

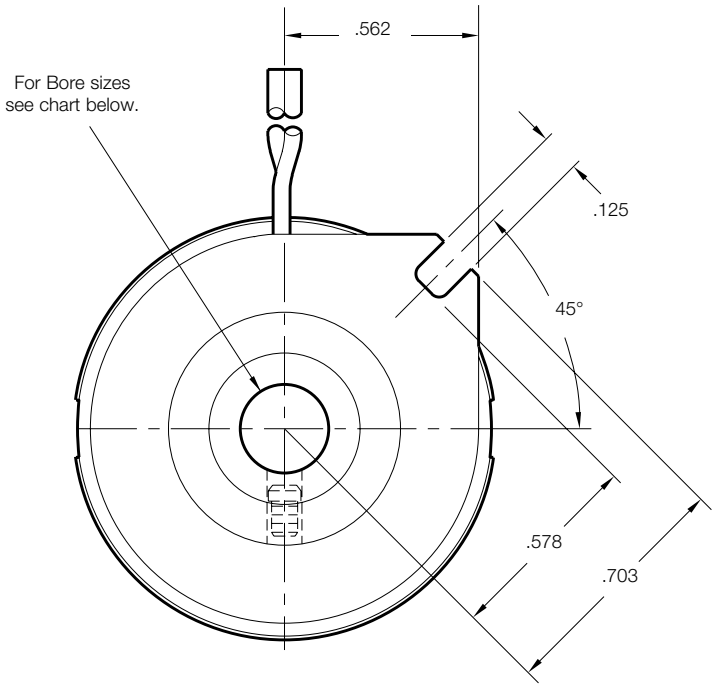
These units are CSA certified under file #LR11543.

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

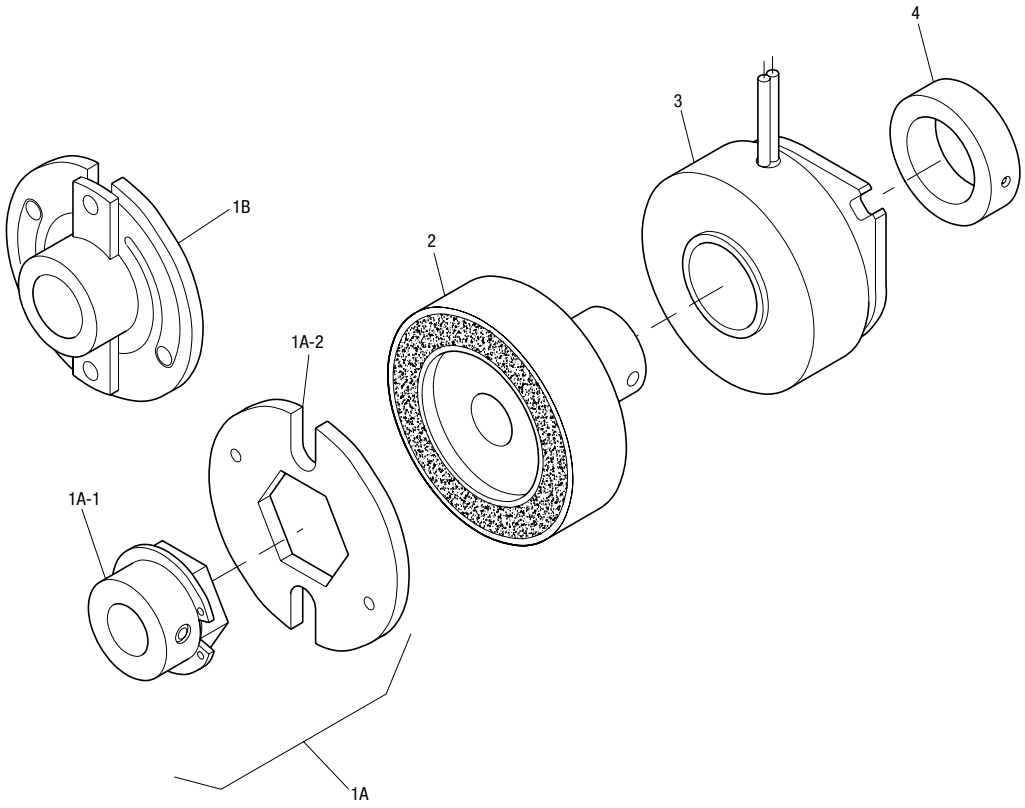
All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

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.

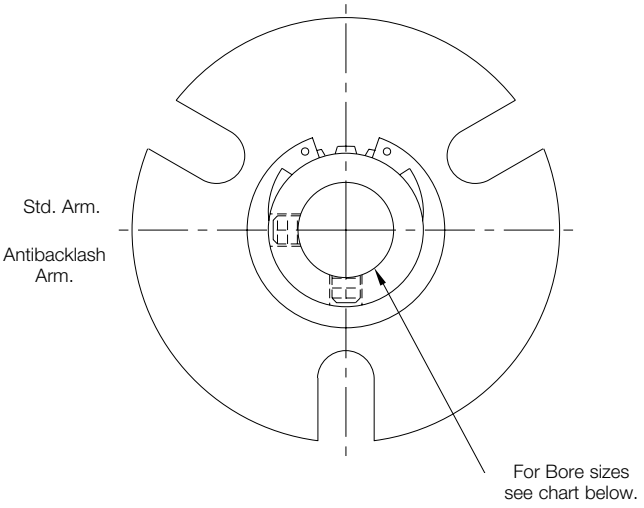
Example:

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

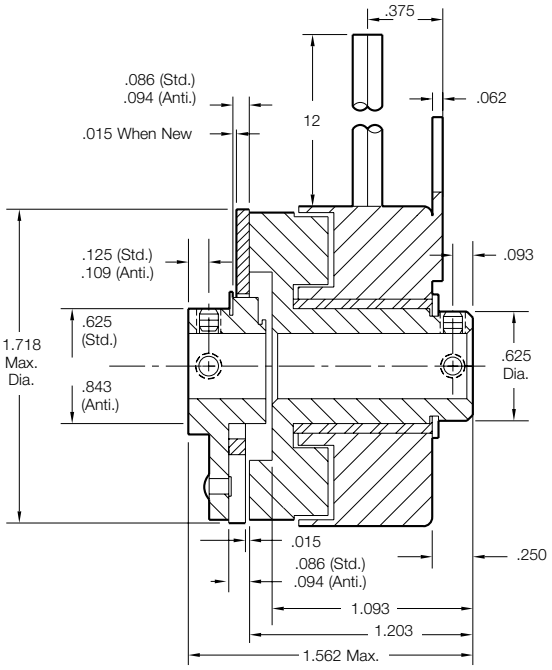
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

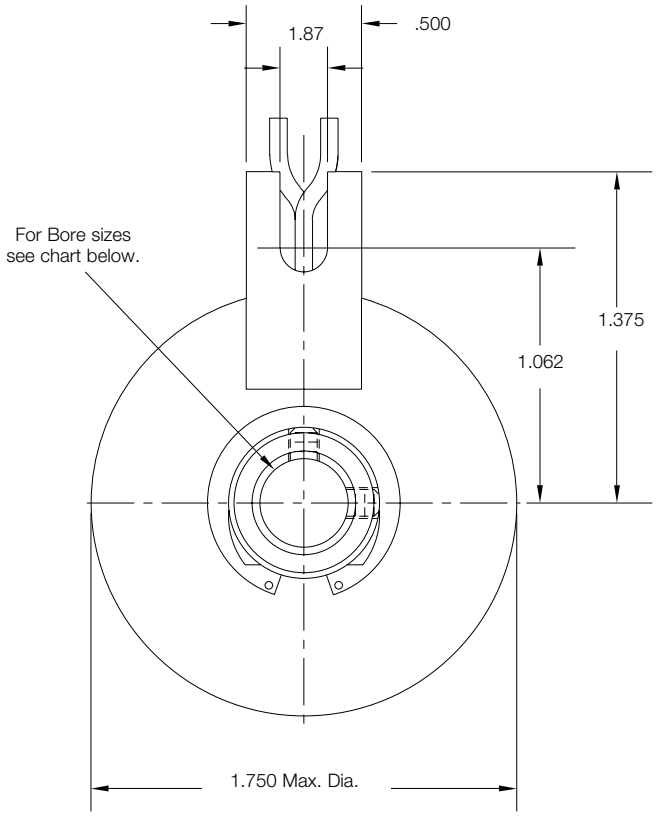
These units are CSA certified under file #LR11543.

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

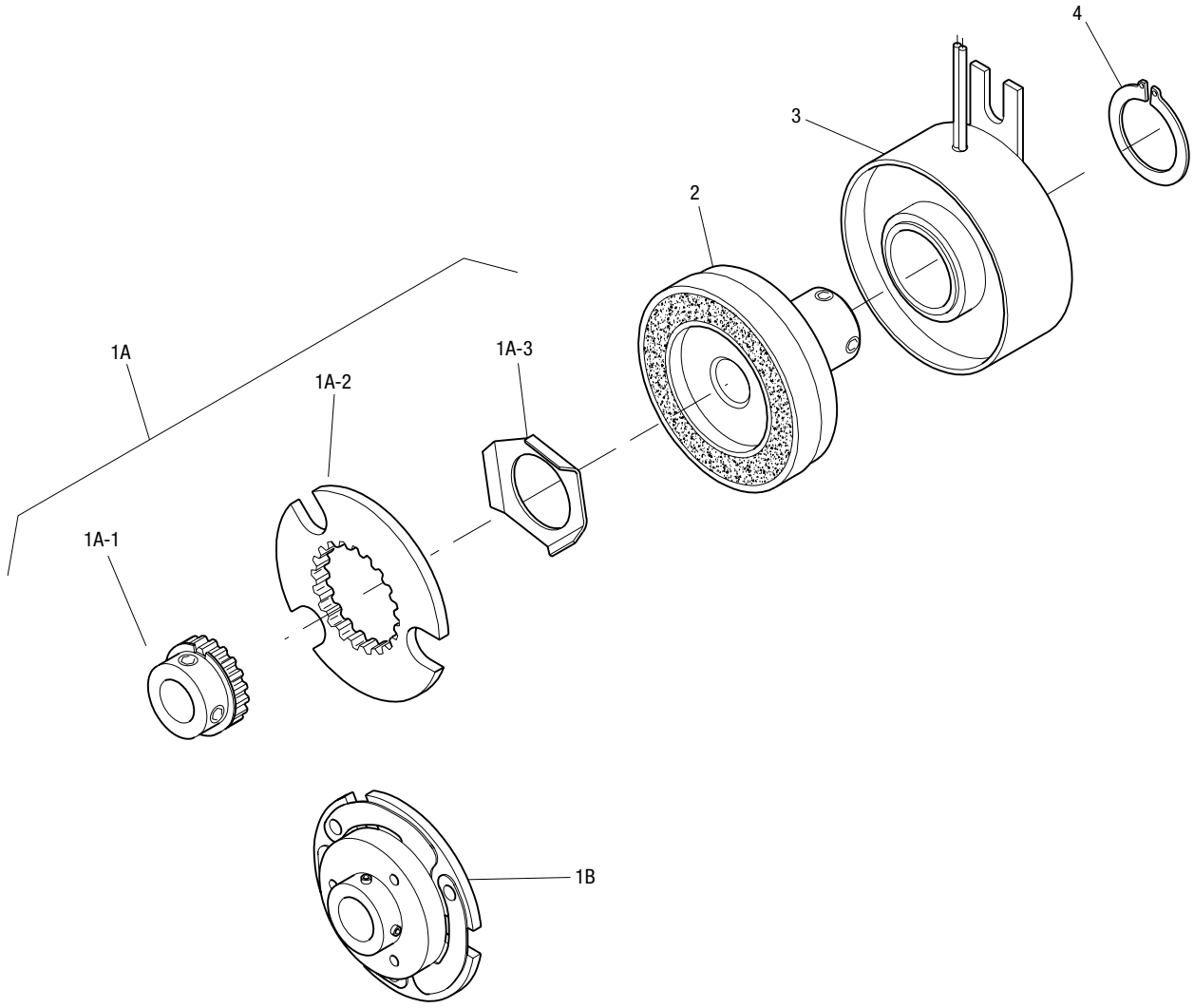
All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

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.

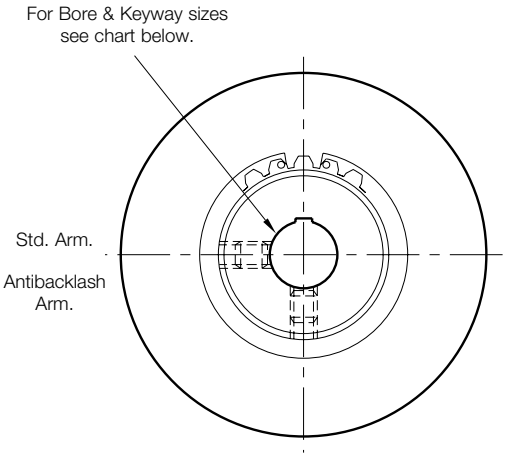
Example:

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

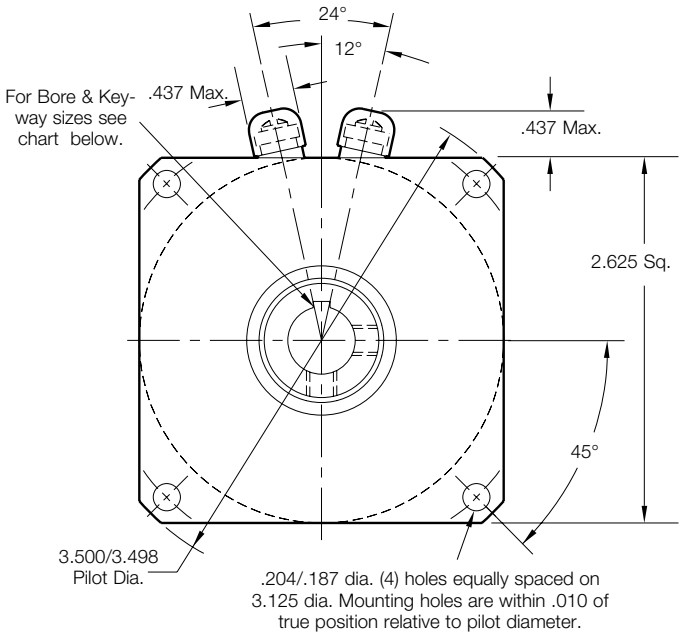
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

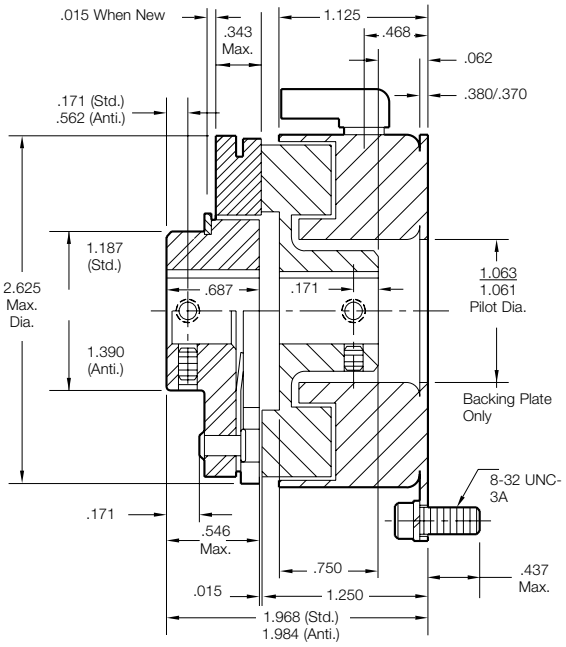
SFC-250 Clutch Coupling Flange Mounted



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			

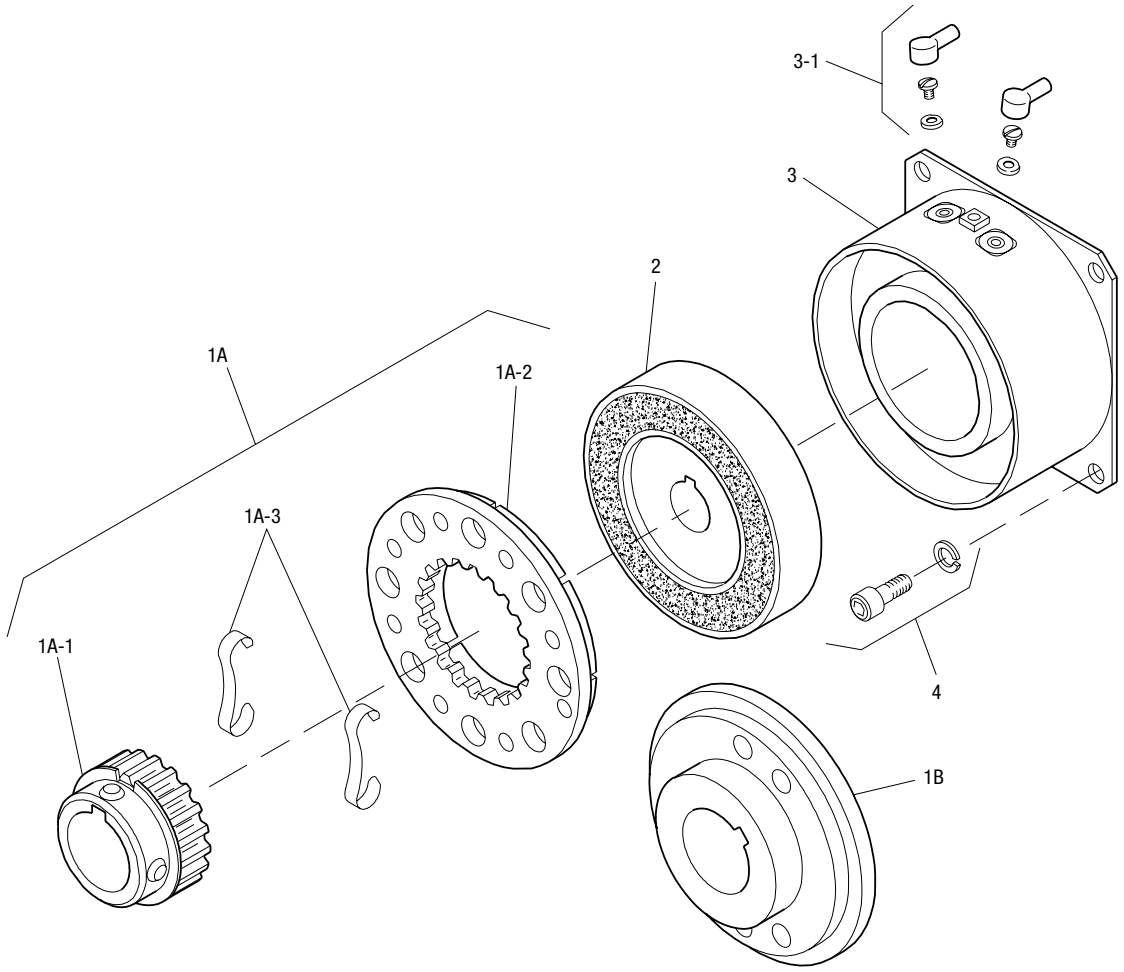
* Available on special order only.

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.



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.

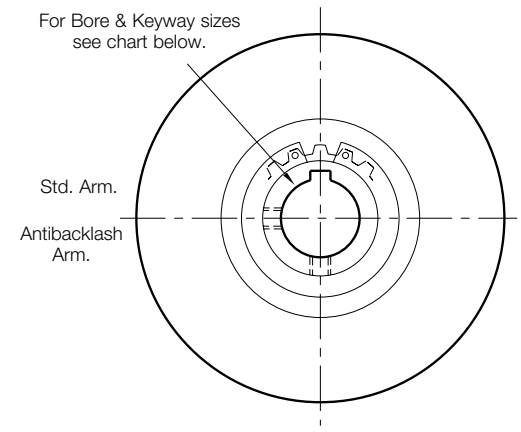
Example:

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

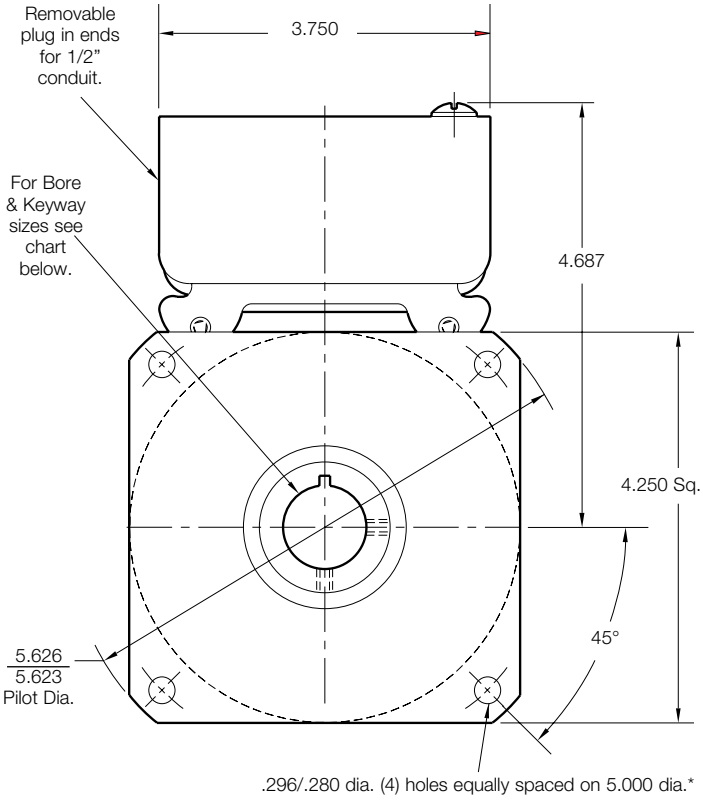
These units meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

SFC-400 Clutch Coupling Flange Mounted



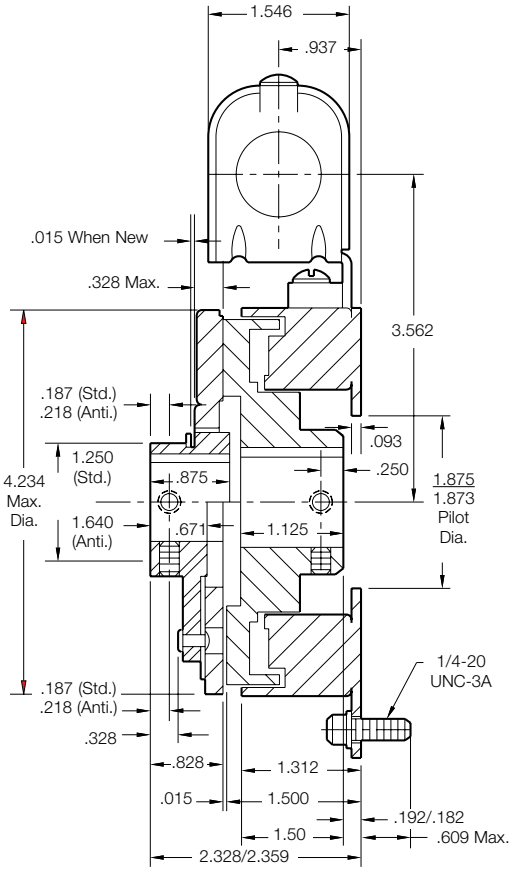
Armature View



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

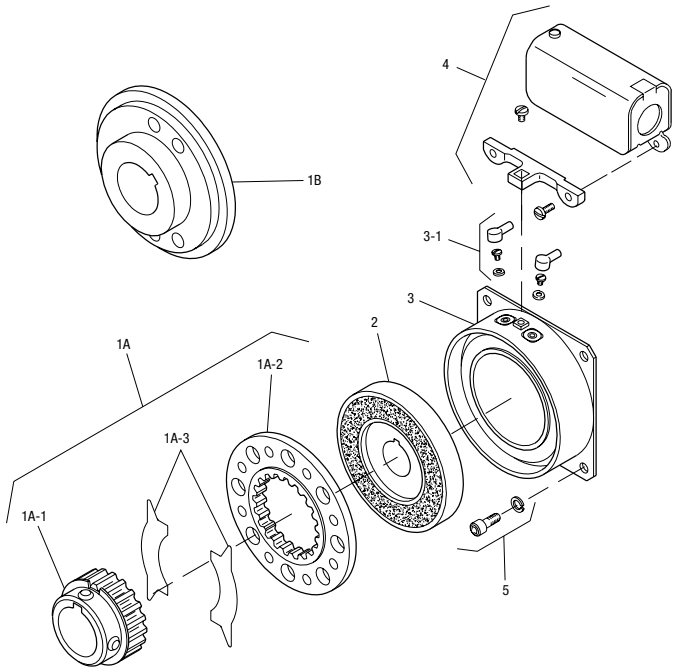
Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.501/.500	.125 x .062	.501/.500	.125 x.062
*.563/.562			
.626/.625		.626/.625	
*.688/.687	.187 x .093	.751/.750	.187 x .093
.751/.750		.876/.875	
.876/.875		1.001/1.000	

*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.

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.

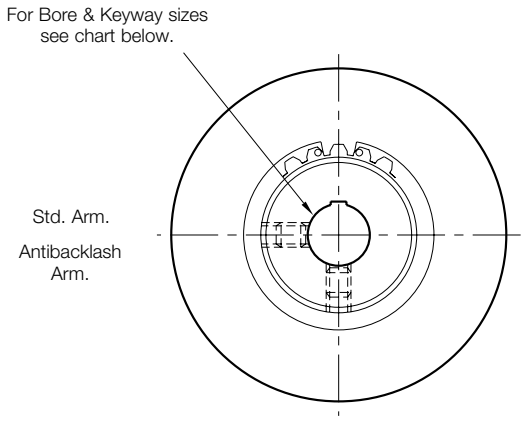
Example:

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

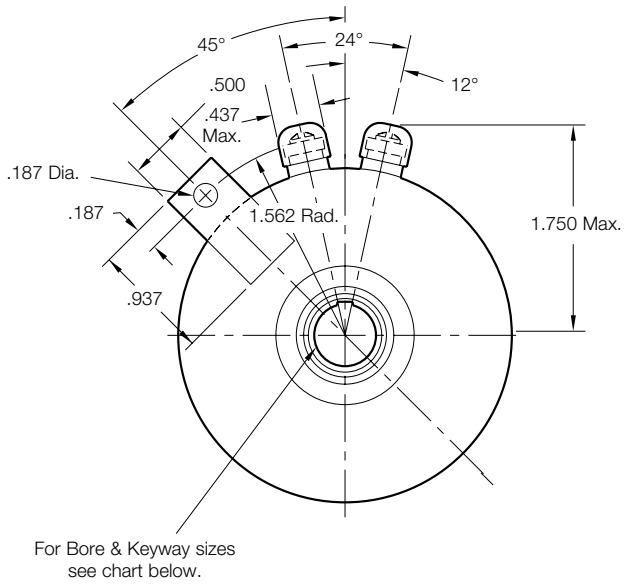
These units, when used in conjunction with the correct Warner Electric conduit box, meet standards set forth in UL508 and are listed under guide card #NMTR2, file #59164.

These units are CSA certified under file #LR11543.

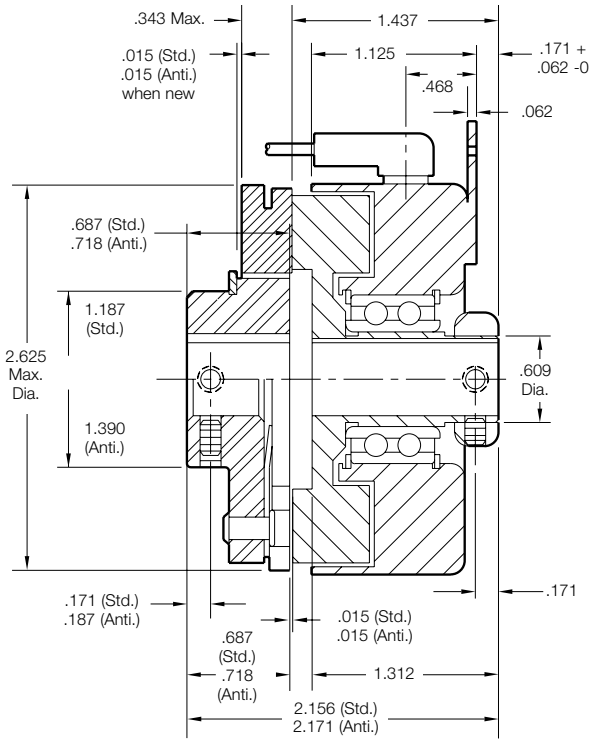
SFC-250 Clutch Coupling Bearing Mounted



Armature View



Field View



Bore and Keyway Dimensions

Armature Bore Dia.	Keyway	Rotor Bore Dia.	Keyway
.375/.376	.093 x .046	.376/.375	.093 x .046
*.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		

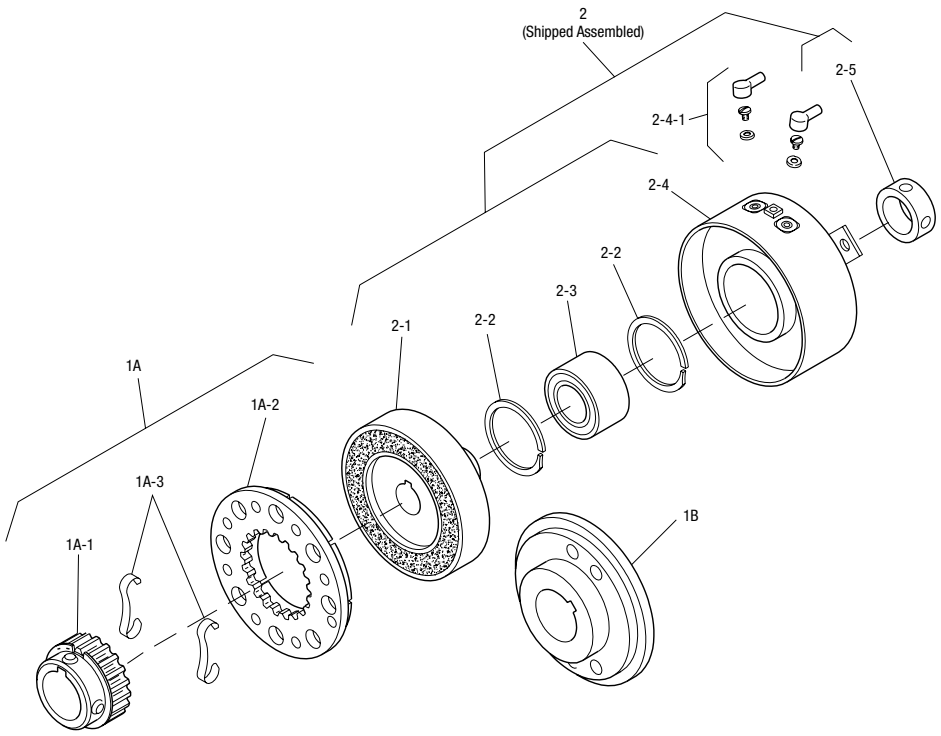
* Available on special order only.

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.



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:

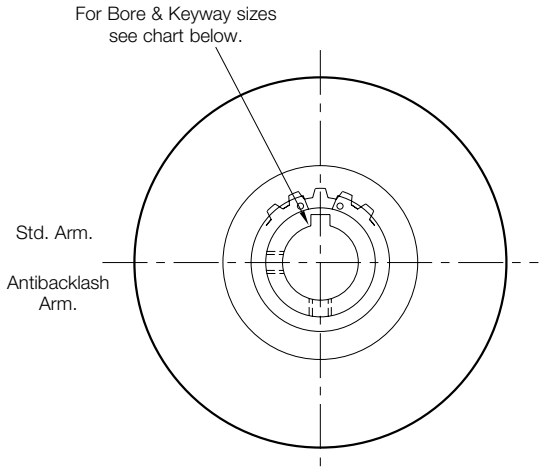
1. Specify Type of Armature Desired.
2. Specify Bore Size for Item 1A-1 or 1B and Item 2.
3. Specify Voltage for Item 2.

Example:

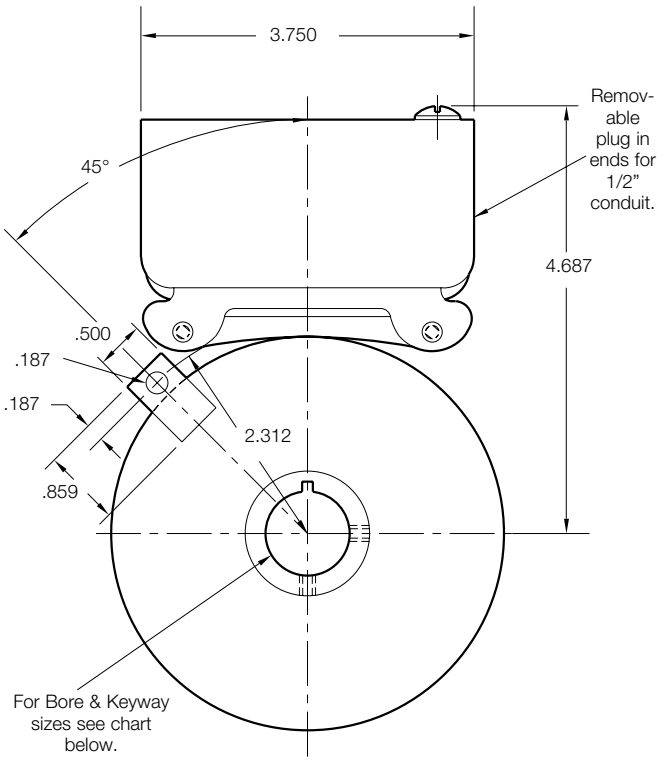
SFC-250 Clutch Coupling per I-25523 - 90 Volt
Standard Armature
1/2” Armature Hub Bore
1/2” Rotor Bore

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.

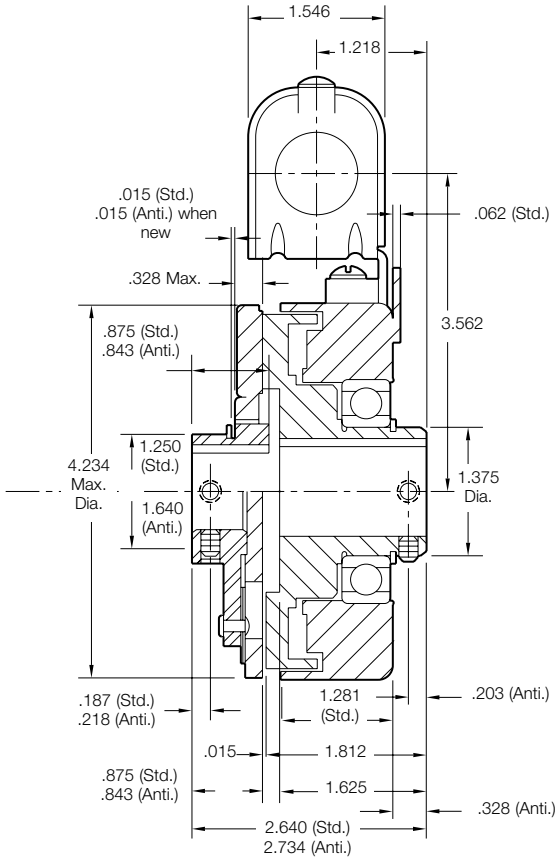
SFC-400 Clutch Coupling Bearing Mounted



Armature View



Field View



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

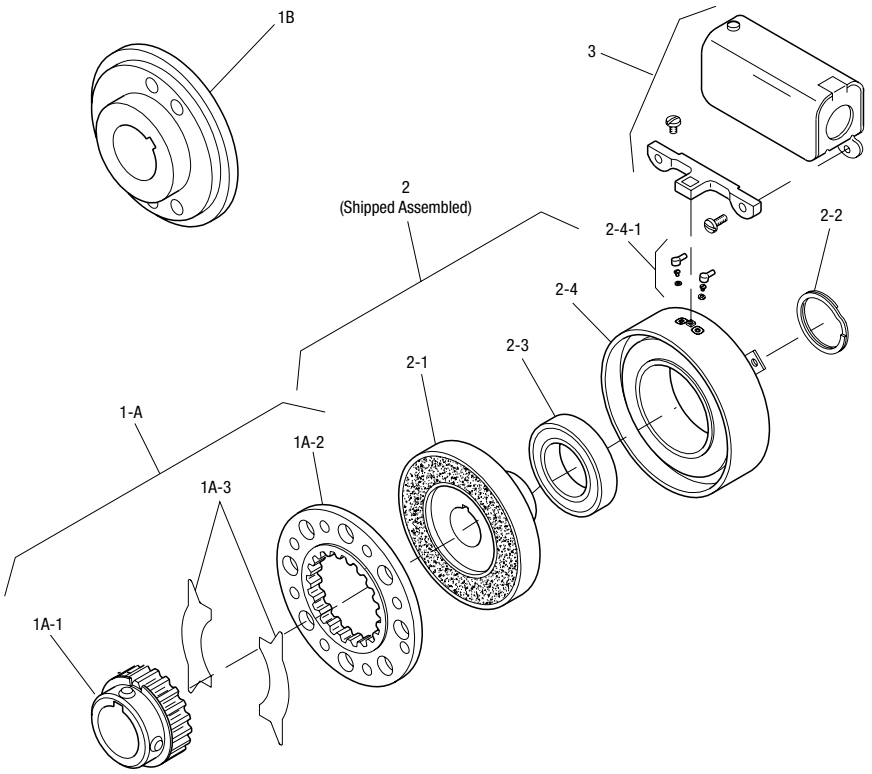
All dimensions are nominal unless otherwise noted.

Customer Shall Maintain:

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

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.

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

*An **Altra Industrial Motion** Company*

www.warnerelectric.com

31 Industrial Park Road
New Hartford, CT 06057
815-389-3771
Fax: 815-389-2582

Altra® Industrial Motion
www.altramotion.com

P-0200-WE • 819-0481 9/15 Printed in USA