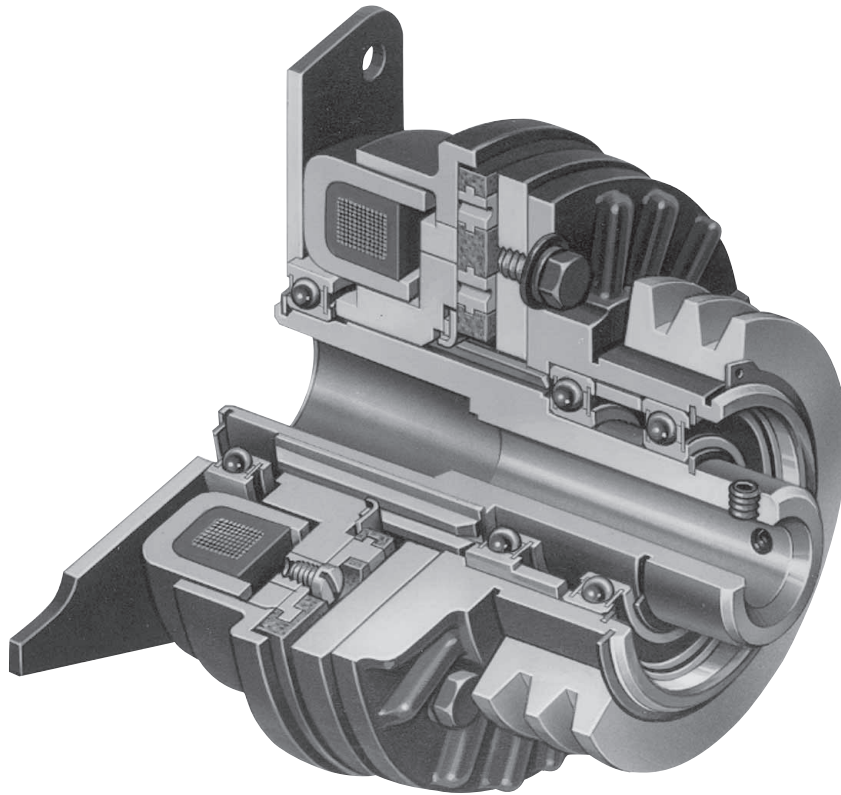


AT Clutch – Major Service Sizes 25, 55, 115

P-1404
819-0324

Installation Instructions



An Altra Industrial Motion Company

Contents

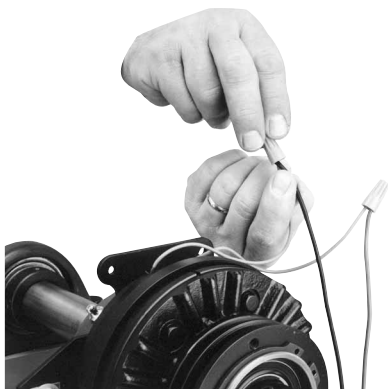
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⚠ WARNING Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

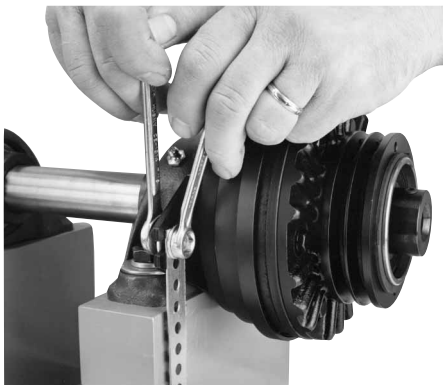
AT Clutch – Major Service

A major rebuild of an AT clutch can be accomplished by following these instructions to replace the parts furnished in the appropriate Warner Electric clutch rebuild kit. Part numbers and component descriptions for these kits are found on page 11 of this manual. Item numbers in these instructions refer to clutch components shown on page 10, exploded view. Proceed as follows:

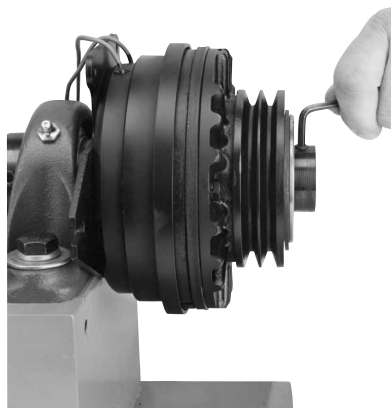
1. Turn off all power to the clutch.
2. Disconnect the coil wires from the incoming control unit wires.



3. Disconnect the field anti-rotation pin or field restraining arm (Item 16).



4. Loosen the setscrews (Item 6) which hold the clutch to its shaft.



5. Remove the clutch from its shaft by pulling and/or gently tapping the hub with a hammer and drift.

Note: Do not hit the outer portion of the clutch outboard of the hub as this may severely damage it.



6. Remove the retainer ring (Item 11).

⚠ CAUTION When removing this or other retaining rings, be sure to hold the retaining ring with one hand so it will not spring away and endanger personnel and property should the pliers lose their grip on the ring. Safety glasses should always be worn when installing or removing retaining rings.

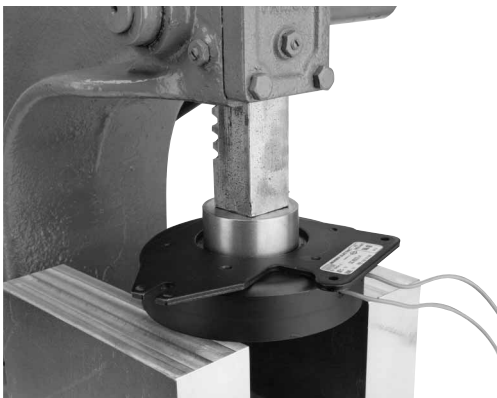


7. Remove the field assembly (Item 10) and bearing (Item 9) by locating and supporting on the rotor outer diameter (Item 8) and pressing on the hub (Item 6).



8. Remove the bearing (Item 9) from the field assembly (Item 10) by pressing on the inner race while supporting the field assembly on its face.

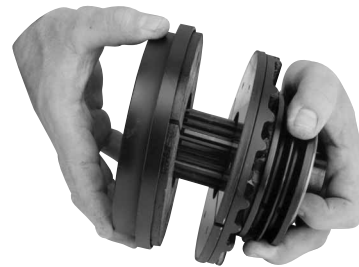
Note: Use caution to avoid damaging the epoxy covering the coil.



9. Press the new bearing (Item 9) into the field assembly by pressing on the bearing outer race. **Do not press on the bearing inner race or damage to the bearing will result, making it unusable.**



10. Remove the rotor assembly (Item 8) from the hub (Item 6).



11. Remove the screws (item 8-5) which retain the friction disc segments (item 8-1).



12. Lift the friction disc segments (item 8-1) off the rotor, exposing the Autogap assembly.



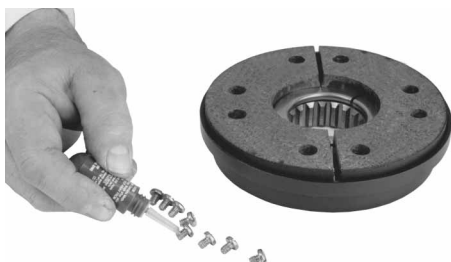
13. Install replacement Autogap components as follows: Remove plate (item 8-2-size 115 only), and detent ring (item 8-3) to expose wave spring (item 8-4). Remove and replace wave spring (item 8-4). Reinstall the detent ring and plate (items 8-3 and 8-2). **Note:** The detent ring lip must point away from the friction disc. Install the wave spring with its split 180° from the split in the detent ring.



14. Clean all foreign matter from rotor mounting surface. Install the new friction disc segments (Item 8-1) with new screws (Item 8-5) included with the kit. **Note:** Use only the screws included with the kit as any others may damage the clutch.



Apply a drop of Loctite grade AA or equivalent to each screw prior to installation.
Tighten each screw to 18-22 in. lb. torque.



15. Remove the snap ring (Item 3) from the armature hub assembly.

CAUTION When installing or removing this or other retaining rings, be sure to hold the ring with one hand so it will not spring away, endangering personnel and property should the pliers lose their grip on the ring. Safety glasses should always be worn when installing or removing retaining rings.



Remove the pulley, sheave, or sprocket if it interferes with removing the cap screws (Item 7-2).



16. Disassemble the armature hub assembly by removing cap screws (Item 7-2), lock washers (Item 7-3) and armature segment (Item 7-1).



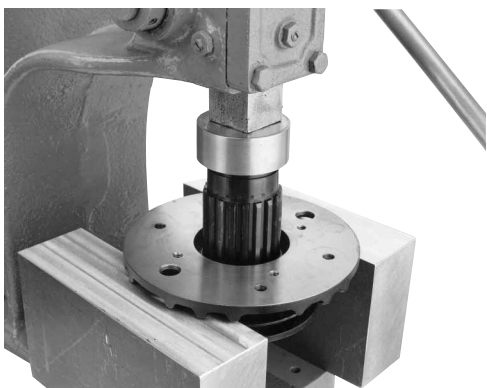
Remove the set screws.



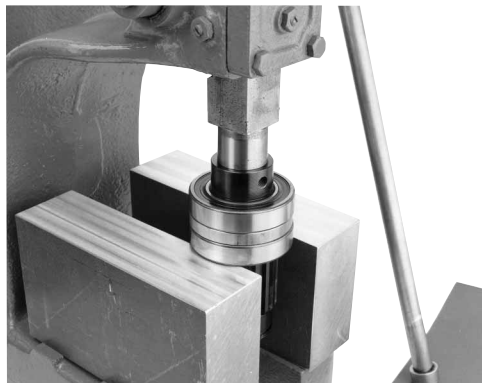
Remove the external and internal retaining rings (Items 2 and 3) from the splined hub (Item 6) and the armature hub (Item 1).



17. Locate and support on the sheave end of the assembly near the fins and press on the field end of the splined hub (Item 6).



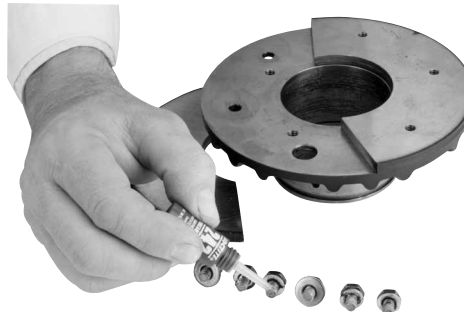
To remove the hub and bearing assembly, remove the bearings (Item 4) and spacer (Item 5) from the hub (Item 6) by pressing them off.



Proceed with reassembly per the following instructions:

Note: It is imperative that all bearings be installed exactly as instructed to avoid damage to the bearings.

Apply one drop of Loctite grade AA or equivalent to each cap screw thread prior to installation.



Install the new armature segments (Item 7-1) supplied in the kit onto the armature hub, (Item 1) using cap screws and washers (Items 7-2, 7-3 and 7-4).



Tighten the cap screws to the appropriate torque for your size unit:

Size	Torque
25	29-35 in.-lbs.
55-115	60-84 in.-lbs.



18. Install the inner adapter bearing (Item 4) onto the hub, (Item 6) **by pressing on the inner race of the bearing**. With the end of the hub supported as shown in Figure 1, press the bearing until its inner race locates against the hub shoulder.

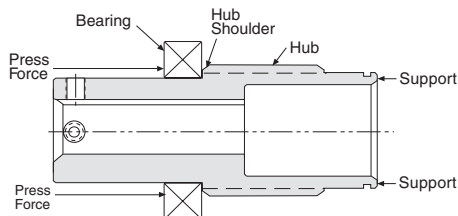


Figure 1

19. Press the hub and bearing into the Adapter Assembly until the outer race of the bearing locates against the shoulder of the adapter hub. Note that the **force is to be exerted on the outer race**. Support the armature face as shown in Figure 2.

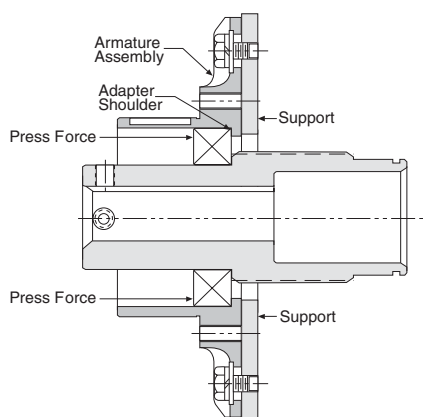


Figure 2

20. Install the spacer (Item 5) as shown in Figure 3.

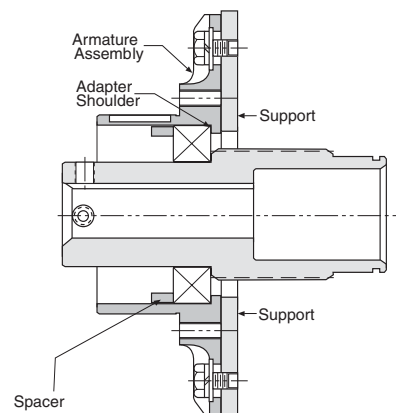


Figure 3

21. Press the outer bearing (Item 4) into place by applying force evenly against the bearing outer and inner races simultaneously while supporting the armature face. Continue pressing until the outer race firmly locates against the spacer. See Figure 4.

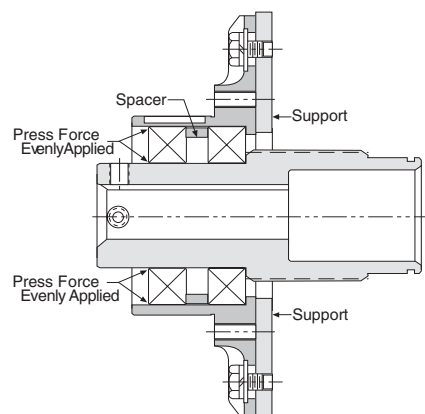


Figure 4

22. Install the external and internal retaining rings (Items 2 and 3) adjacent to the outer bearing. (See Figure 5)



Figure 5

Note: The Armature Assembly must rotate freely on the hub. Inspect to insure that the inner bearing is still firmly located against the hub shoulder as previously shown in (Figure 1). When inspecting, place unit firmly on flat surface with exposed hub end up.

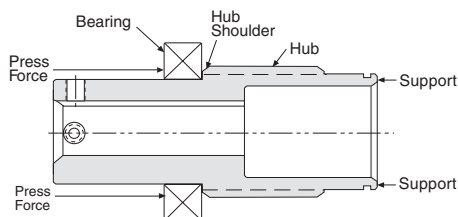


Figure 1

23. Install the rotor assembly onto the hub (Item 6) making sure that the spline teeth are aligned. When the Autogap detent ring (item 8-3) contacts the spline outside diameter, press **by hand** evenly on the rotor until the friction disc contacts the armature. Release pressure. Support as shown. The rotor will spring back approximately .050". The Autogap is now set. When the hub is rotated by hand, the armature and the friction disc must not touch. (See Figure 6)

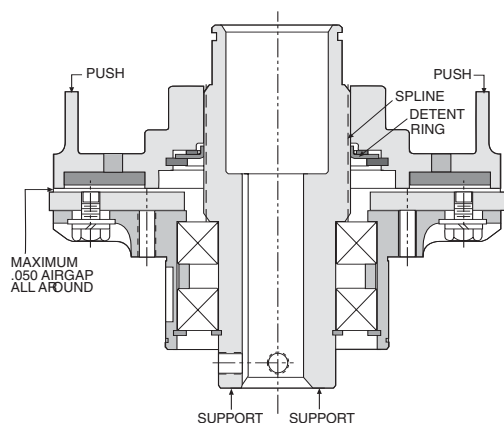


Figure 6

24. Press the field assembly onto the hub by **pushing the inner race of the bearing** while supporting on the hub. Apply force until the inner race of the bearing is located flush against the shoulder adjacent to the spline. (See Figure 7)

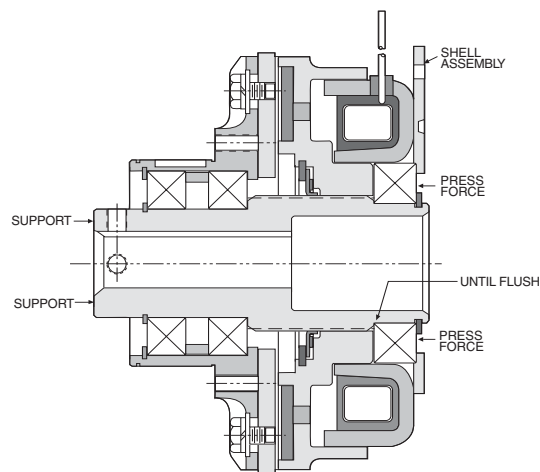


Figure 7

Install the retaining ring (Item 11) on the hub with snap ring pliers.

Rotate the hub. No interference between the shell and rotor is allowable.

⚠CAUTION When installing or removing this or other retaining rings, be sure to hold the ring with one hand so it will not spring away, endangering personnel and property, should the pliers lose their grip on the ring. Safety glasses should always be worn when installing or removing retaining rings.



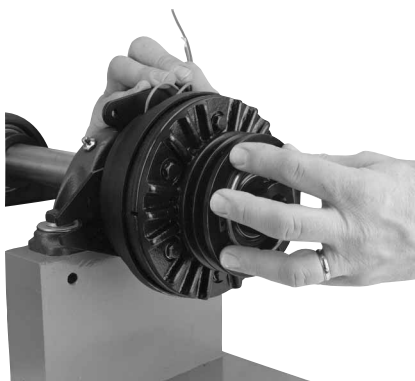
25. Reinstall the sheave, pulley, or sprocket, and key.



Reinstall the sheave retainer ring and conduit box, if used. Refer to the conduit box installation instructions.



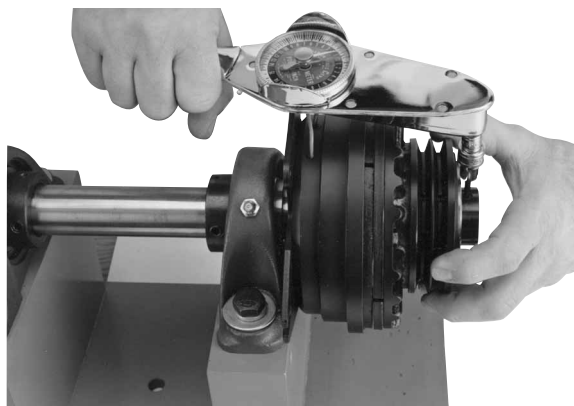
26. Reinstall the clutch assembly on the shaft, placing the key in its keyway.



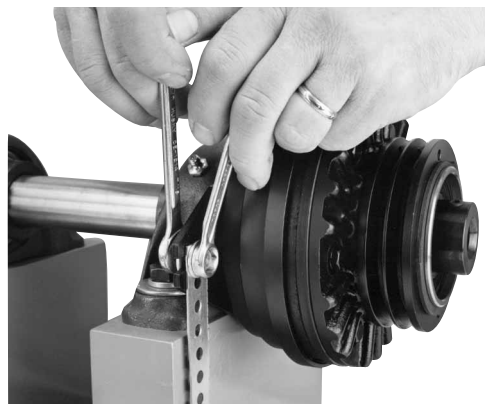
27. Tighten the hub set screws onto the key to the appropriate torque for your size unit:

Size	Torque
25	80 in.-lbs.
55	160 in.-lbs.
115	275 in.-lbs.
205	275 in.-lbs.
305	670 in.-lbs.

Assure proper alignment of driving and driven sheave, pulley, or sprocket before tightening set screws.



28. Secure the field by its pin or restraining arm accessory to avoid rotation.



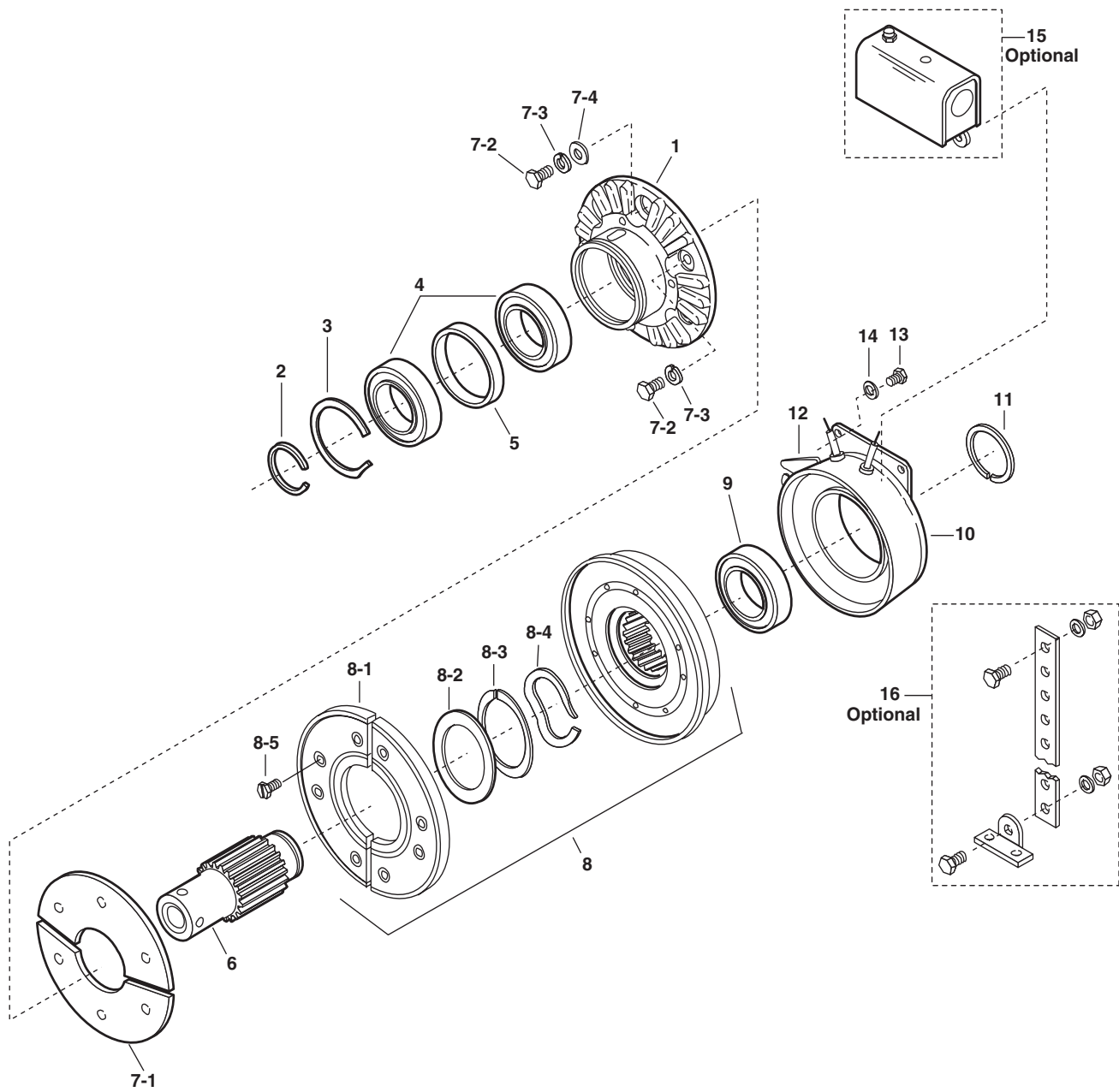
29. Reconnect the wires.



30. Your AT clutch is now ready for its static test. Apply DC voltage to the clutch coil through the clutch control. The armature should pull against the friction material face with an audible "click".

31. Install the drive belt or chain.
32. Run the clutch under its operating load.
33. Your AT clutch may not achieve its full torque until after a short “break-in” period. To break in the clutch, cycle it on and off under full load at operating speed a minimum of ten times in quick succession.

Your AT clutch is now ready to run.



Component Parts

Item	Description	ATC-25		ATC-55		ATC-115		Part No.	Qty.
		Part No.	Qty.	Part No.	Qty.	Part No.	Qty.		
1	Armature Hub	540-0907	1	540-0852	1	540-0863	1		
2	Retaining Ring	748-0732	1	748-0726	1	748-0737	1		
3	Retaining Ring	748-0731	1	748-0728	1	748-0736	1		
4	Bearing	166-0278	2	166-0277	2	166-0279	2		
5	Spacer	807-0119	1	807-1061	1	807-1063	1		
6	Splined Hub		1		1				1
	1/2" Bore	540-0910							
	5/8" Bore	540-0911							
	3/4" Bore	540-0912		540-1501					
	7/8" Bore	540-0913		540-1502					
	1" Bore			540-1503					
	1-1/8" Bore			540-1504		540-0857			
	1-1/4" Bore					540-0858			
	1-3/8" Bore					540-0859			
	1-1/2" Bore					540-0860			
*7-1	Armature	110-0220	1	110-0218	1	110-0223	1		
*7-2	Screw	797-1519	4	797-1462	6	797-1463	6		
*7-3	Lockwasher	950-0436	4	950-0355	6	950-0355	6		
*7-4	Flatwasher			950-0023	2	950-0023	2		
*8	Rotor	5161-751-001	1	5162-751-001	1	5163-751-001	1		
8-1	Facing Assembly	5161-445-003	1	5162-445-003	1	5163-445-003	1		
8-2	Retainer Plate					686-0108	1		
8-3	Detent Ring	748-2031	1	748-2038	1	748-2020	1		
8-4	Wave Spring	808-0404	1	808-0401	1	808-0384	2		
8-5	Machine Screw	797-1389	8	797-1389	8	797-1389	8		
*9	Bearing	166-0283	1	166-0284	1	166-0279	1		
10	Field Assembly		1		1				1
	6 volts DC	5161-451-002		5162-451-002		5163-451-002			
	90 volts DC	5161-451-003		5162-451-003		5163-451-003			
	24 volts DC	5161-451-004		5162-451-004		5163-451-004			
*11	Retainer Ring	748-0018	1	748-0727	1	748-0737	1		
12	Adapter					104-0300	2		
13	Screw					797-1396	4		
14	Lockwasher					950-0102	4		
Optional Accessory Items									
15	Conduit box 100-1	5162-101-002	1	5162-101-002	1	5162-101-002	1		
16	Restraining Arm Assembly	5162-101-004	1	5162-101-004	1	5163-101-004	1		
Kit Items									
	* Clutch Rebuild Kit	5161-101-011	1	5162-101-011	1	5163-101-011	1		
	(includes items 7-1, 7-2, 7-3, 7-4, 8, 9, 11)								
	Note: In some versions of this product, item 8 consists of a one (1) piece rotor.								
	Friction Face Replacement Kit	5161-101-007		5162-101-007		5163-101-007			
	For Clutches with Replaceable Friction Face Only								
Mounting Accessory Kits (not shown)									
1	1/2" Bore - 3/4" Bore	5161-101-001							
1-1	Ring Retainer Ext.	748-0734	1						
1-2	Wire Retainer	742-0027	1						
1-3	Key	590-0104	1						
1-4	Setscrew	797-1393	2						
1	7/8" Bore	5161-101-002							
1-1	Ring Retainer Ext.	748-0734	1						
1-2	Wire Retainer	742-0027	1						
1-3	Key	590-0104	1						
1-4	Collar and Setscrew	266-0031	1						
1	3/4" Bore - 1" Bore			5162-101-001					
1-1	Ring Retainer Ext.			748-0725	1				
1-2	Wire Retainer			742-0026	1				
1-3	Key			590-0103	1				
1-4	Setscrew			797-1386	2				
1	1-1/8" Bore			5162-101-010					
1-1	Ring Retainer Ext.			748-0725	1				
1-2	Wire Retainer			742-0026	1				
1-3	Key			590-0103	1				
1-4	Setscrew			797-1077	2				
1-5	Collar			266-0032	1				
1	All bore sizes					5163-101-001			
1-1	Ring Retainer Ext.					748-0738	1		
1-2	Wire Retainer					742-0026	1		
1-3	Key					590-0105	1		
1-4	Setscrew					797-1395			

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.

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Changes in Dimensions and Specifications

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