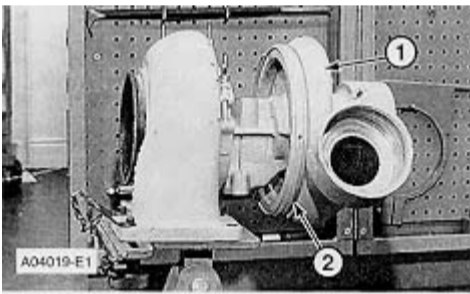


Disassemble Turbocharger (F452, F552 and F555)

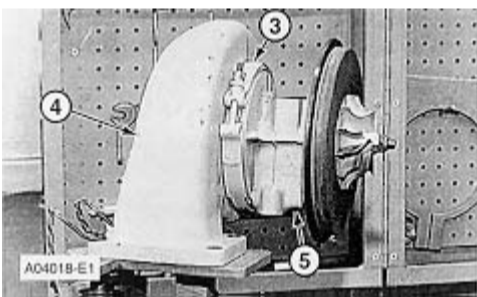
Tools Needed		A	B	C	D	E	F	G
9S6363	Fixture Group	1						
9S6343	Cartridge Fixture		1					
5S9566	Sliding T-Wrench			1				
1P1861	Retaining Ring Pliers				1			
1P0074	Slide Hammer Puller					1		
2P2312	Leg					3		
FT0745	Modified Pliers						1	
1P1859	Retaining Ring Pliers							1

Start By:

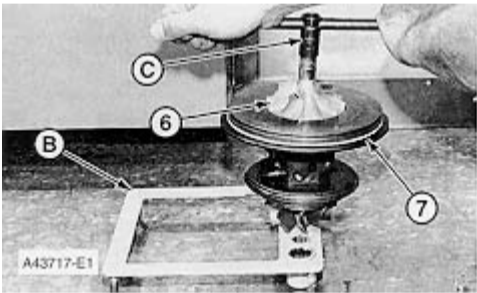
- a. remove turbocharger (F452, F552 and F555)



1. Install the turbocharger in Tool (A). Put alignment marks on the three housings of the turbocharger for correct installation and alignment at assembly. Remove "V" clamp (2) and compress housing (1).



2. Remove "V" clamp (3). Remove cartridge housing (5) from turbine housing (4).

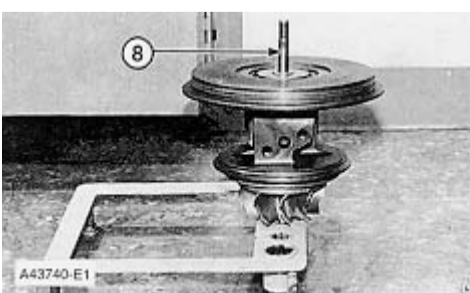


3. Put the cartridge assembly in Tool (B) as shown.

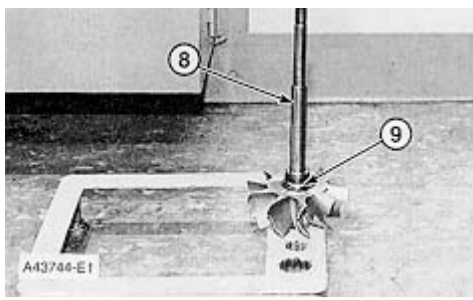
NOTICE

When the nut is loosened, do not put a side force on the shaft.

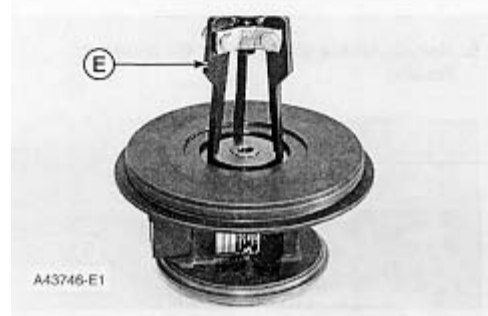
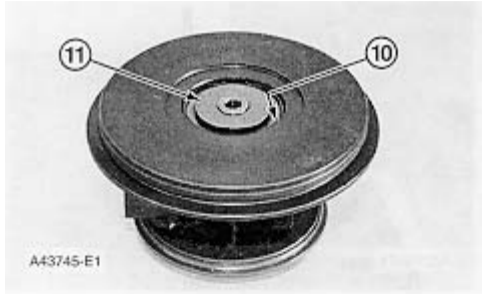
4. Use Tool (C), and remove the nut that holds compressor wheel (6). Remove compressor wheel (6) and O-ring seal (7).



5. Remove turbine shaft (8) from the cartridge housing.

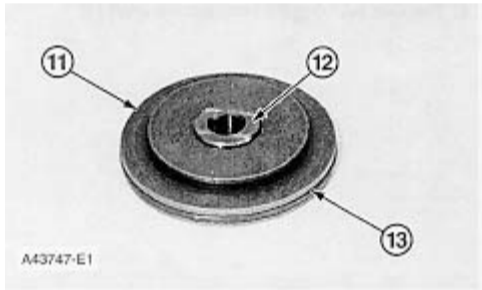


6. Remove seal ring (9) from turbine shaft (8).

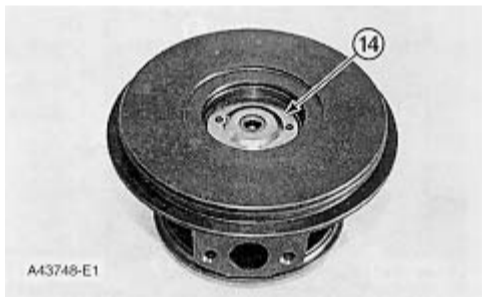


7. Remove ring (10) that holds insert (11) in position.

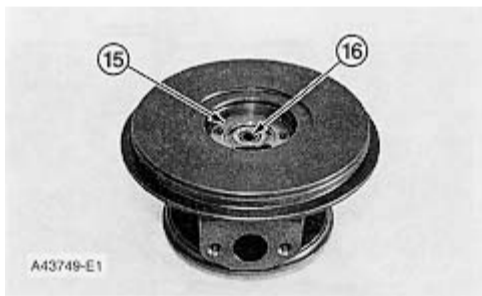
8. Remove insert (11) with Tool (E).



9. Remove O-ring seal (13) and sleeve (12) from insert (11). Remove the seal rings from sleeve (12).



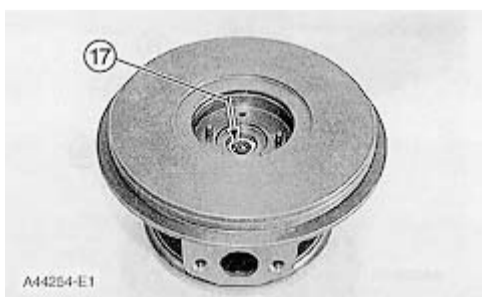
10. Remove deflector (14) and the ring from the cartridge housing.



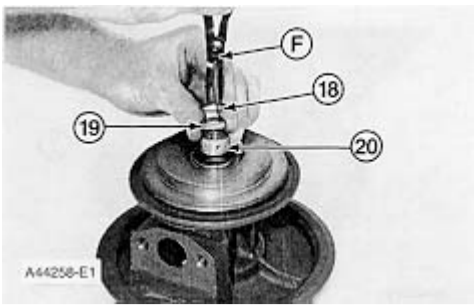
11. Remove bearing (15), sleeve (16) and the ring from the cartridge housing.

NOTICE

The oil hole in bearing (15) must be open or a bearing failure will be the result.

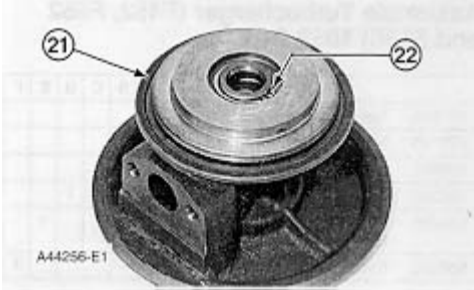


12. Use Tool (F), and remove the ring that holds bearing (17) in position. Remove bearing (17), and put a long dye mark on the top face of the bearing.



13. Turn the cartridge assembly over. Use Tool (F), and remove ring (18). Remove sleeve (19) and bearing (20) from the cartridge housing. Put a short dye mark on the top face of bearing (20).

NOTE: The dye marks are used for identification of the bearings when they are installed.



14. Use Tool (G) to remove ring (22). Remove shroud (21) from the cartridge housing.

15. If necessary, remove the two rings that hold the bearings in position from the cartridge housing with Tool (F).

16. Check all the parts of the turbocharger for damage. If the parts have damage, use new parts for replacement. See Special Instruction, Form No. SMHS6854, for Turbocharger Reconditioning. Also see Guideline for Reusable Parts, Form No. SEBF8018.

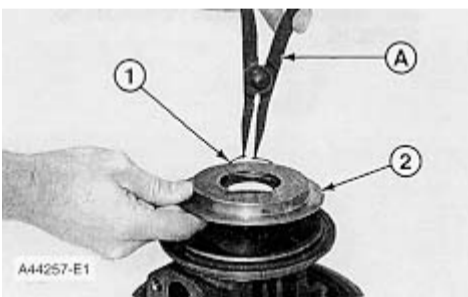
Assemble Turbocharger (F452, F552 and F555)

Tools Needed		A	B	C	D	E	F
1P1859	Retaining Ring Pliers	1					
FT0745	Modified Pliers		1				
1P1861	Retaining Ring Pliers			1			
9S6343	Cartridge Fixture				1		
8T5096	Dial Indicator Test Group					1	
9S6363	Fixture Group						1

1. Make sure all of the oil passages in the turbocharger cartridge housing are clean and free of dirt and foreign material.

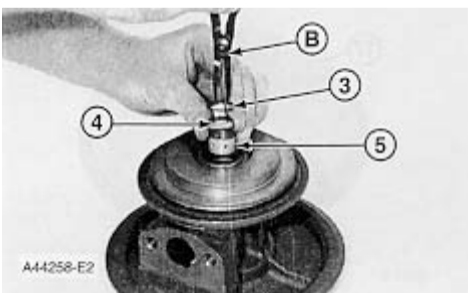
2. Put clean engine oil on all parts of the cartridge assembly.

3. Make a replacement of the two inside rings that hold the bearings in position in the cartridge if necessary.



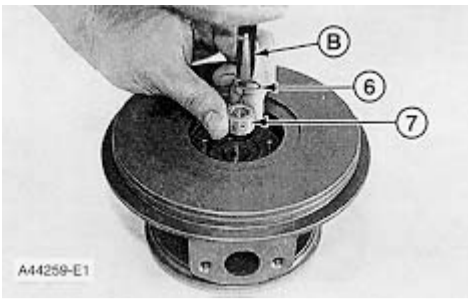
4. Put shroud (2) in position on the cartridge housing, and install ring (1) to hold the shroud.

NOTE: The ring must be installed with the round edge of the outside diameter toward the inside.



5. Install bearing (5) in the cartridge housing with the short dye mark up. Install sleeve (4).

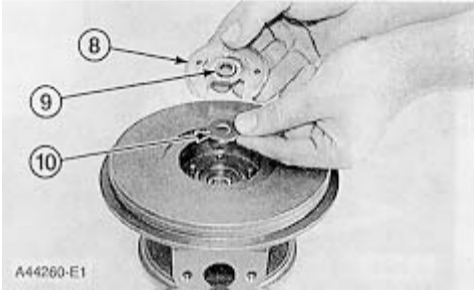
6. Use Tool (B) to install ring (3) in the cartridge housing.



7. Turn the cartridge assembly over, and install bearing (7) with the long dye mark up. Use Tool (B), and install ring (6) to hold the bearing in position.

NOTICE

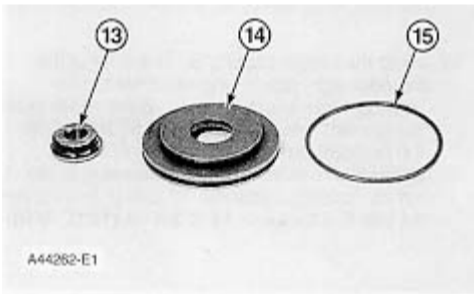
Make sure the oil hole in bearing (8) is open and clean to prevent a bearing failure.



8. Install ring (10), sleeve (9) and bearing (8) in the cartridge housing.



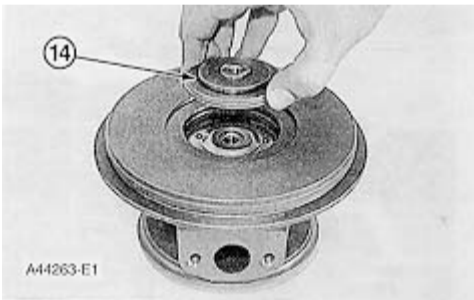
9. Install ring (12) and deflector (11) in the cartridge housing.



10. Install O-ring seal (15) around insert (14).

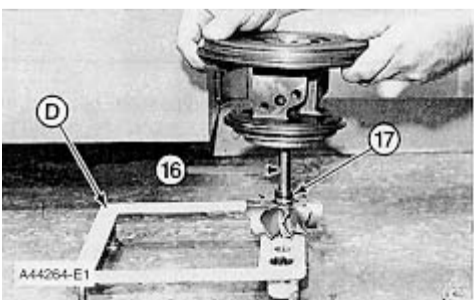
11. Install the seal rings on sleeve (13).

12. Install sleeve (13) in insert (14) from the bottom side.



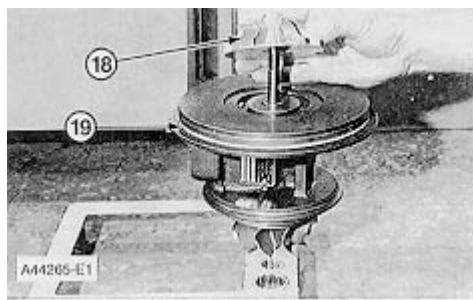
13. Install insert (14) in the cartridge housing. Use Tool (C), and install the ring to hold the insert in position.

NOTE: Put **4L7464 Silicone Grease** in the groove for seal ring (17) at assembly to one half or more of the depth of the groove all the way around.



14. Install seal ring (17) on turbine shaft (16).

15. Put the turbine shaft in Tool (D), and install the cartridge housing turbine shaft (16). Make sure seal ring (17) is fitted correctly in the cartridge housing.



16. Install O-ring seal (19) on cartridge housing.

17. Use the following procedure to install compressor wheel 918 on the turbine shaft.

a. Put **6V1541 Quick Cure Primer** on the nut and the shaft threads to clean them if necessary.

b. Put a small amount of **9S3265 Retaining Compound** on the nut and shaft threads.

NOTICE

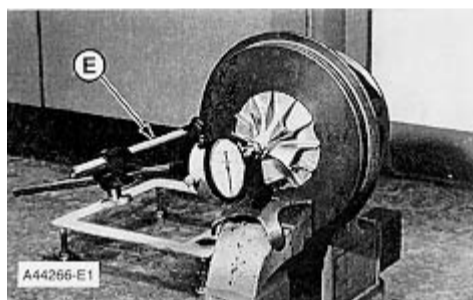
Do not let the retaining compound get into the compressor wheel bore or on the shaft because it can make removal of the compressor wheel difficult during future turbocharger disassembly.

c. Put a small amount of lubricant such as Lubriplate on the nut seat area on the compressor. Do not put lubricant on the threads.

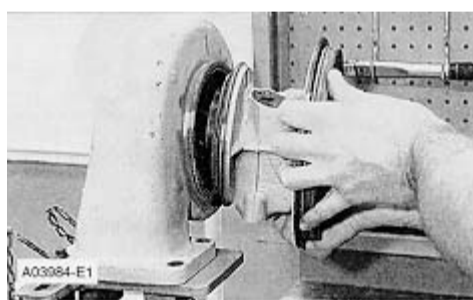
NOTICE

Do not bend or add stress to the shaft when the nut is tightened.

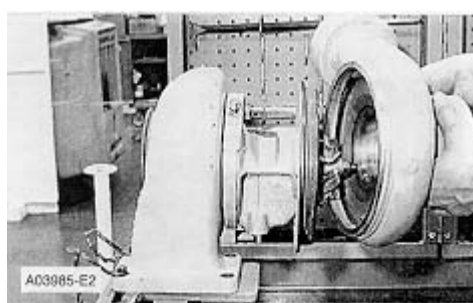
d. Tighten the compressor wheel retainer nut to a torque of **30 ± 3 N·m (22 ± 2 lb ft)**.



18. Put the cartridge housing in a vise as shown. Check the shaft end play with Tool (E). The end play must be **0.114 ± 0.038 mm ($.0045 \pm .0015$ in)**. If the shaft end play is not the correct dimension, the inside parts of the cartridge housing must be checked for too much wear. See Turbocharger (F452, F552 and F555) in Specifications section.



19. Install the turbine housing on Tool (F). Put the cartridge assembly in position in the turbine housing. Make sure the marks on the housings are in alignment with each other. Put **5P3931 Anti-Seize Compound** on the threads of the "V" clamp that holds the cartridge assembly to the turbine housing. Install the "V" clamp, and tighten the bolt to a torque of **14 ± 3 N·m (10 ± 2 lb ft)**.



20. Install the compressor housing to the cartridge assembly. Install the "V" clamp that holds the compressor housing to the cartridge housing and tighten the bolt to a torque of **14 ± 3 N·m (10 ± 2 lb ft)**.

End By:

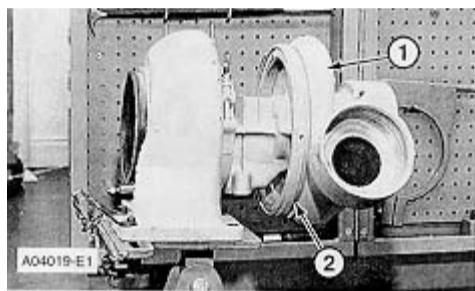
a. install turbocharger (F452, F552 and F555)

Disassemble Turbocharger (SCHWITZER 4MF AND 4MFW)

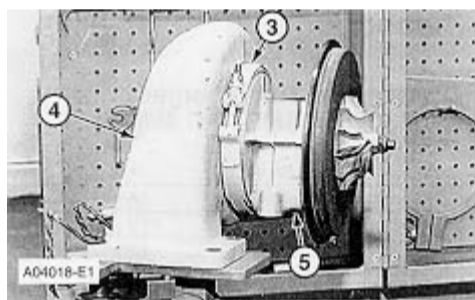
Tools Needed		A	B	C	D	E	F
9S6363	Turbocharger Fixture Group	1					
9S6343	Fixture Assembly		1				
5S9566	T-Wrench			1			
1P1861	Retaining Ring Pliers				1		
1P0074	Slide Hammer Puller					1	
2P2312	Leg					3	
FT0745	Modified Pliers						1

Start By:

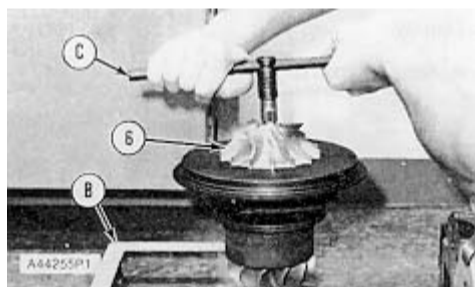
a. remove turbocharger



1. Install turbocharger in Tool (A). Put marks on the three housings of the turbocharger for correct installation and alignment at assembly. Remove "V" clamp (2) and compressor housing (1).



2. Remove "V" clamp (3). Remove the cartridge housing (5) from the turbine housing (4).

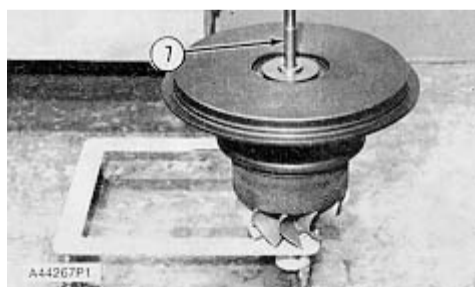


3. Put the cartridge assembly in Tool (B) as shown.

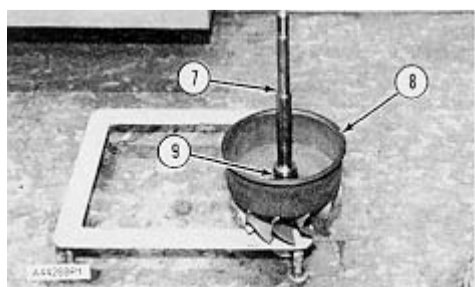
4. Use Tool (C) and remove the nut that holds compressor wheel (6). Remove compressor wheel (6).

NOTICE

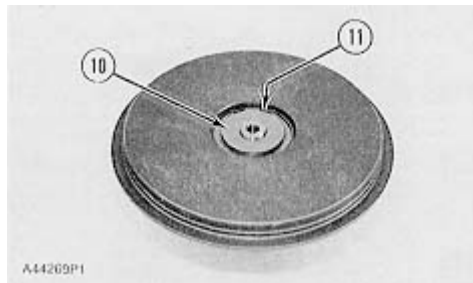
When the nut is loosened, do not put a side force on the shaft.



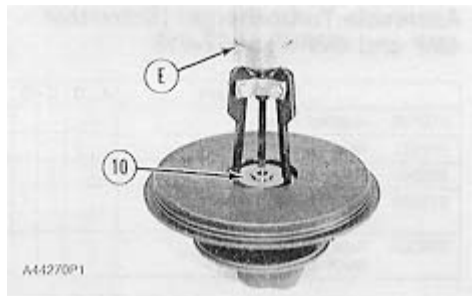
5. Remove the turbine shaft (7) from the cartridge housing.



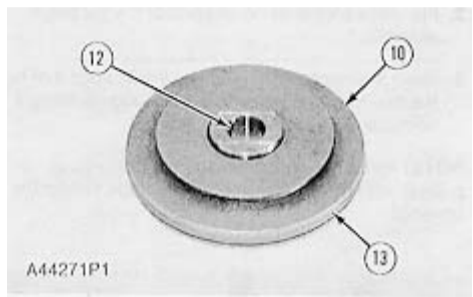
6. Remove seal rings (9) and shroud (8) from turbine shaft (7).



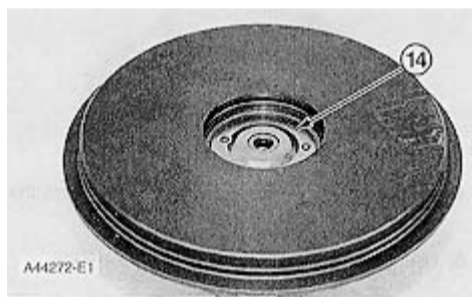
7. Use Tool (D) and remove ring (11) that holds insert (10) in the cartridge housing.



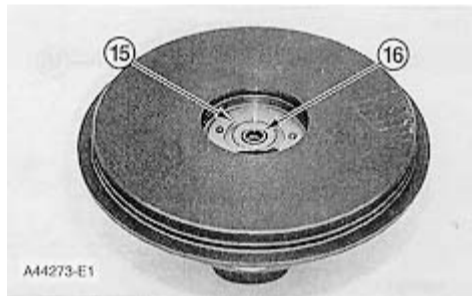
8. Remove insert (10) with Tool (E).



9. Remove O-ring seal (13) and sleeve (12) from insert (10). Remove the seal rings from sleeve (12).



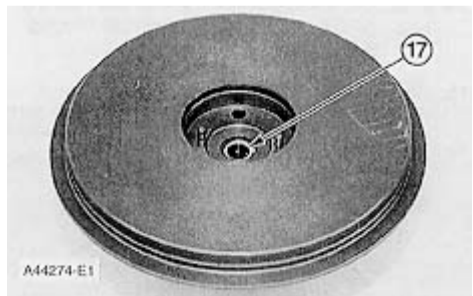
10. Remove deflector (14) and the ring from the cartridge housing.



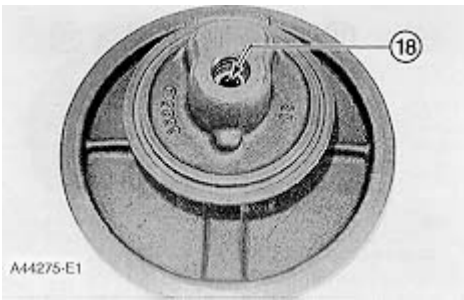
11. Remove bearing (15), sleeve (16) and the ring from the cartridge housing.

NOTICE

The oil hole in bearing (15) must be open or a bearing failure will be the result.



12. Use Tool (F) and remove the ring that holds bearings (17) in position. Remove bearing (17) and put a long dye mark on the top face of the bearing.



13. Turn the cartridge assembly over. Use Tool (F) and remove the ring that holds bearing (18) in position. Remove bearing (18) from the cartridge housing. Put a short dye mark on the top face of bearing (18).

NOTE: The dye marks are used for identification of the bearings when they are installed.

14. If necessary, remove the two rings that hold the bearings in position from the cartridge housing with Tool (F).

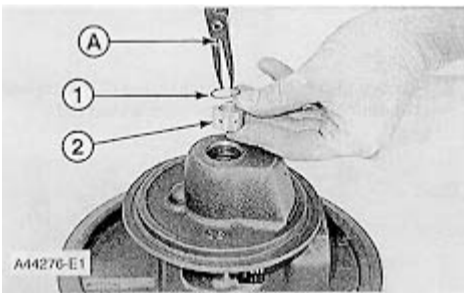
15. Check all the parts of the turbocharger for damage. If the parts have damage, use new parts for replacement. See Special Instruction Form No. SMHS6854 for Turbocharger Reconditioning. Also see Guideline For Reusable Parts Form No. SEBF8018.

Assemble Turbocharger (Schwitzer 4MF and 4MFW)

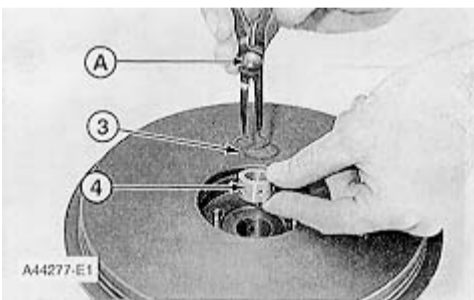
Tools Needed		A	B	C	D	E
FT0745	Modified Pliers	1				
1P1861	Retaining Ring Pliers		1			
9S6343	Fixture Assembly			1		
8T5096	Dial Test Indicator Group				1	
9S6363	Turbocharger Fixture Group					1

1. Make sure all of the oil passages in the turbocharger cartridge housing are clean and free of dirt and foreign material.
2. Put clean engine oil on all parts of the cartridge assembly.
3. Make a replacement of the two inside rings that hold the bearings in position in the cartridge housing if necessary.

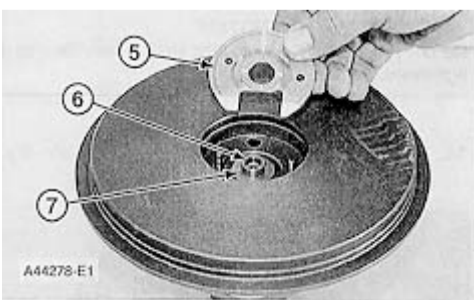
NOTE: Install the rings that hold the bearings in position with the round edges of the rings toward the bearings.



4. Install bearing (2) in the cartridge housing with the short dye mark up.
5. Use Tool (A) to install ring (1) in the cartridge housing.



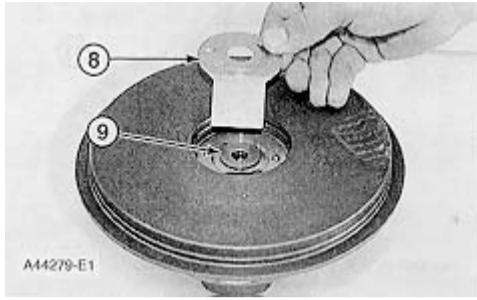
6. Turn the cartridge assembly over and install bearing (4) with the long dye mark up. Use Tool (A) and install ring (3) to hold the bearing in position.



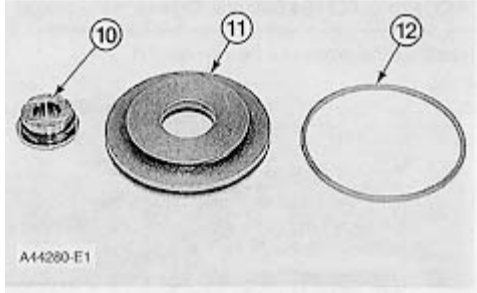
7. Install ring (7), sleeve (6) and bearing (5) in the cartridge housing.

NOTICE

Make sure the oil hole in bearing (5) is open and clean to prevent a bearing failure.



8. Install ring (9) and deflector (8) in the cartridge housing.



9. Install O-ring seal (12) around insert (11).

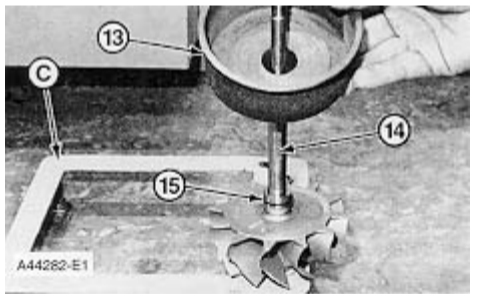
10. Install the seal rings on sleeve (10).

11. Install sleeve (10) in insert (11) from the bottom side.

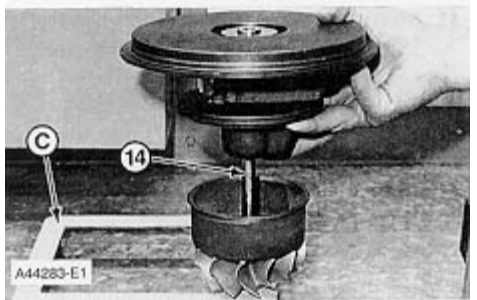


12. Install insert (11) in the cartridge housing. Use Tool (B) and install the ring to hold the insert in position.

NOTE: Put **4L7464 Silicone Grease** in the groove for seal ring (15) at assembly to one half or more of the depth of the groove all the way around.



13. Install seal ring (15) and shroud (13) on turbine shaft (14).



14. Put the turbine shaft in Tool (C) and install the cartridge housing on turbine shaft (14). Make sure seal ring (15) is fitted correctly in the cartridge housing.

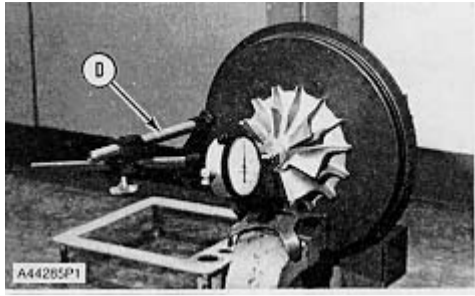


15. To install compressor wheel (16) on the turbine shaft, make reference to Turbocharger Impeller Installation, Schwitzer only in Specifications.

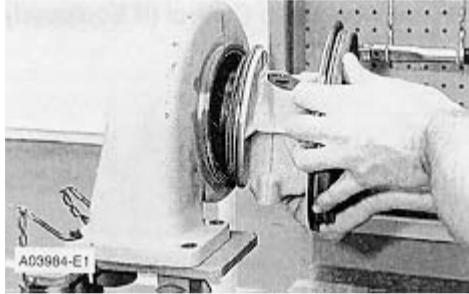
NOTICE

Do not put a side force on the shaft when the nut is tightened.

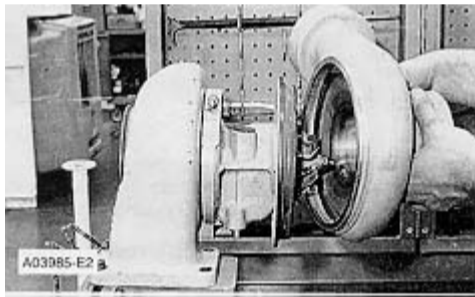
16. Make sure the compressor wheel is clean and dry.



17. Put cartridge housing in a vise as shown. Check the shaft end play with Tool (D). The end play must be 0.114 ± 0.038 mm ($.0045 \pm .0015$ in). If the shaft end play is not the correct dimension, the inside parts of the cartridge housing must be checked for too much wear. See Turbocharger (Schwitzer 4MF AND 4MFW) in Specifications.



18. Install the turbine housing on Tool (E). Put the cartridge assembly in position in the turbine housing. Make sure the marks on the housings are in alignment with each other. Put **5P3931 Anti-Seize Compound** on the threads of the "V" clamp that holds the cartridge assembly to the turbine housing. Install the "V" clamp and tighten the bolt to a torque of 13.6 ± 1.1 N·m (120 ± 10 lb in).



19. Install the compressor housing to the cartridge assembly. Install the "V" clamp that holds the compressor housing to the cartridge housing and tighten bolt to a torque of 13.6 ± 1.1 N·m (120 ± 10 lb in).

End By:

a. install turbocharger

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2022/11/30

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