

Important Instructions

Seal Replacement Instructions Models 060, 075, and 150 Turbine Pumps



Warning: (1) Periodic inspection and maintenance of Corken products is essential. (2) Inspection, maintenance and installation of Corken products must be made only by experienced, trained and qualified personnel. (3) Maintenance, use and installation of Corken products must comply with Corken instructions, applicable laws and safety standards. (4) Transfer of toxic, dangerous, flammable or explosive substances using Corken products is at user's risk and equipment should be operated only by qualified personnel according to applicable laws and safety standards.



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CORKEN[®]

Seal Replacement Instructions (NOTE: Models Beginning with Serial Number Prefix YU)



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Caution

Bleed all pressure from the pump and piping before installing a new seal assembly.

Cleanliness

The smallest amount of dirt on a new seal can cause premature seal failure. Keep all parts, tools, and hands clean while handling the seal. Avoid touching the smooth lapped faces of the carbon rotor or seal seat. When pumping LP-gas, anhydrous ammonia, and similar light liquids, the fluid is five to ten times thinner than water so the new seal needs to be as clean as possible.

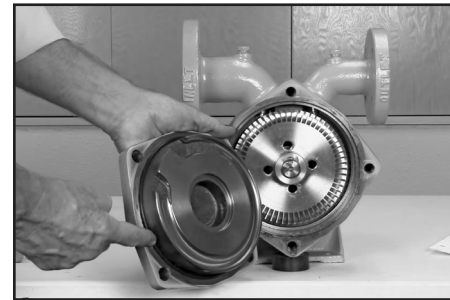
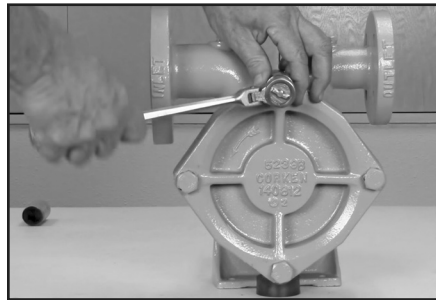
Workmanship

This pump is a precision piece of equipment with very close tolerances so treat it with care and never use excessive force during disassembly and re-assembly.

DISASSEMBLY:

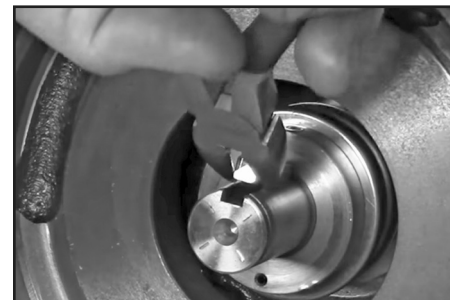
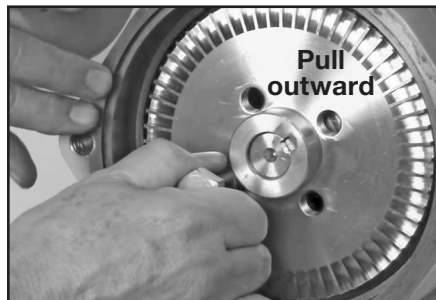
STEP 1

Remove the pump cover: Remove the bolts and pull the pump cover and O-ring from the pump case. NOTE: On older models there is a clearance shim as well. This is a close tolerance fit so if the cover does not slide out easily, use two flathead screwdrivers to carefully pry the cover from the pump casing.



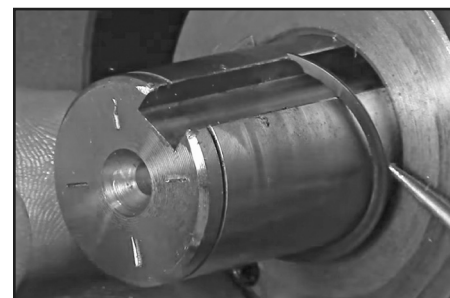
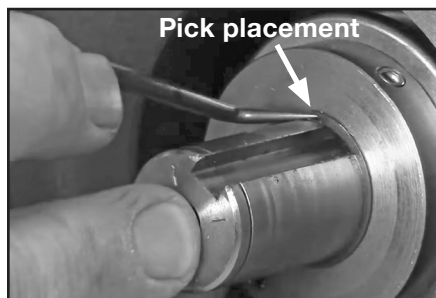
STEP 2

Remove the retainer ring, impeller, and impeller key: Using a pick or small flathead screwdriver, carefully remove the retainer ring from the pump shaft. NOTE: A retainer ring is not used on older models prior to serial number 226858AG. If the impeller does not slide off the shaft freely, insert two cover bolts in the threaded holes and gently pull outward as shown. Forceful removal can warp the impeller or damage the case O-ring groove so use care during this step. Lastly, remove the impeller key. If the impeller key does not slide off the shaft freely, use a pair of side cutters, pick, or small screwdriver to pry the key out of the key way at the end of the pump shaft.



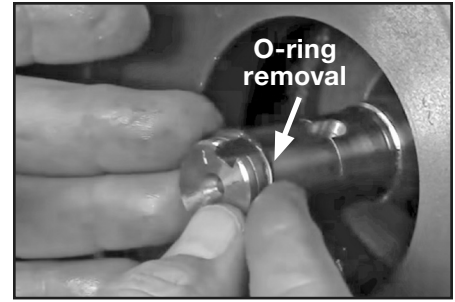
STEP 3

Remove retainer ring: Using a flathead screwdriver or pick, pry up the rear retainer ring from the groove and slide off the shaft. Do not damage the shaft while removing the retainer ring.



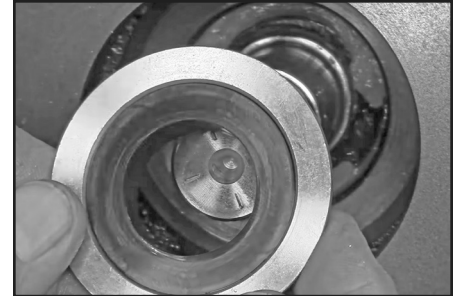
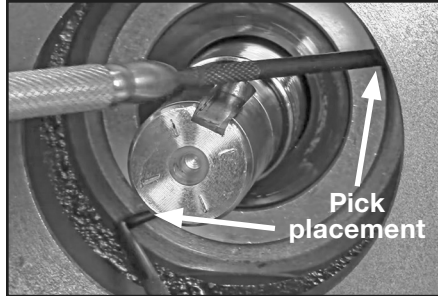
STEP 4

Remove seal sub assembly: Slide the seal sub assembly (seal and seal sleeve) off the shaft and remove the seal sleeve O-ring from the shaft.



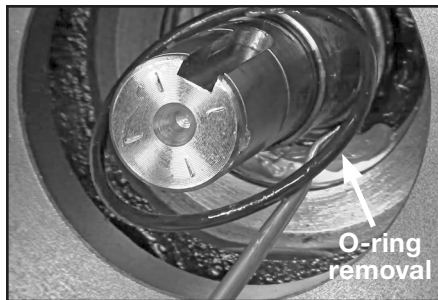
STEP 5

Remove seal housing: Using a 90° pick or hook tool inserted behind the face of the seal housing, slowly pull out around the circumference of the seal housing until it can be removed from the pump casing.



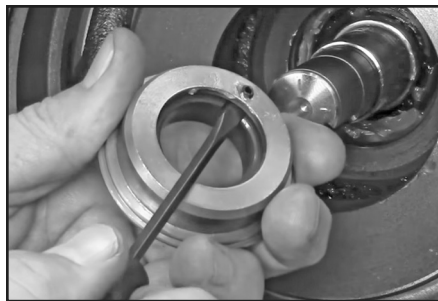
STEP 6

Remove seal housing O-ring and inspect the bearings: Use a pick to remove the old seal housing O-ring inside the pump casing. Clean the O-ring groove and shaft and remove any burrs around the keyway. Inspect the pump shaft bearings for wear by applying up and down and in and out movement. Since the seal assembly resides on the pump shaft, excess movement can cause a seal leak. Lastly, turn the shaft and check the bearings for any roughness. Change the bearings if roughness or movement is present.



STEP 7

Remove seal seat: The seal seat is located inside of the seal housing and is removed using a pick or small screwdriver. Enter the inner circumference on the back side of the seal housing assembly and gently pry out the seal seat evenly as shown. NOTE: Clean the seal housing assembly before inserting the new seal seat.

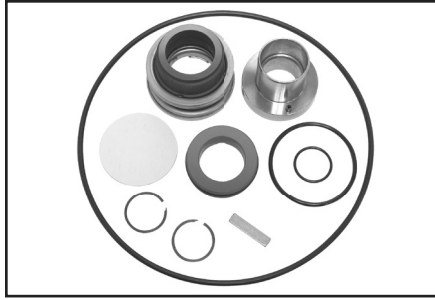


ASSEMBLY

STEP 8

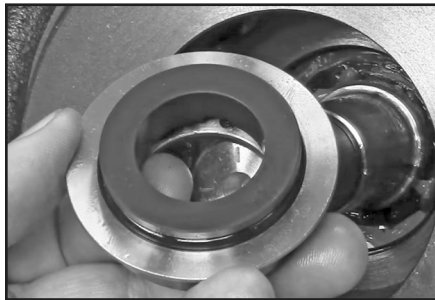
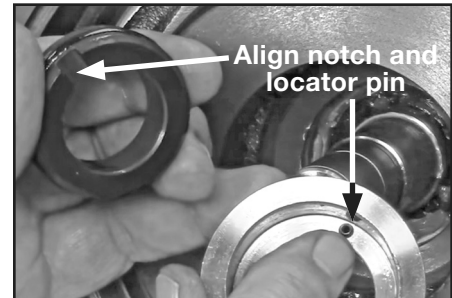
Verify the contents of the new 3189-1X_6 seal assembly and clean pump shaft before installation.

NOTE: Install the two locator pins before proceeding to STEP 9. One goes into the seal sleeve and one goes into the seal housing. Use the old seal assembly for reference.



STEP 9

Assemble the seal housing and seal seat: Make certain the locator pin is installed inside the hole on the seal housing. Clean the seal housing inside and out before inserting the new seal seat. Place a light coat of oil on the seal seat O-ring. Insert the seal seat with the notch pointing down and in line with the locator pin inside the seal housing as shown. To protect the seal seat during installation, cover the seal seat with the small cardboard disk that came with the new seal assembly. Make sure the cardboard disk is clean. Gently push on the cardboard disc to install the seal seat. NOTE: Make sure the locator pin is aligned with the notch in the seal seat.



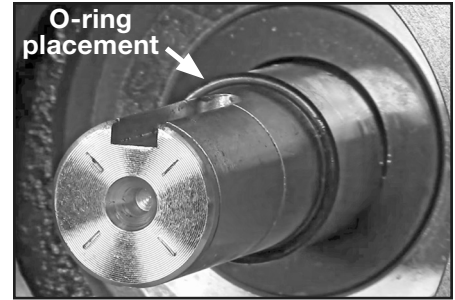
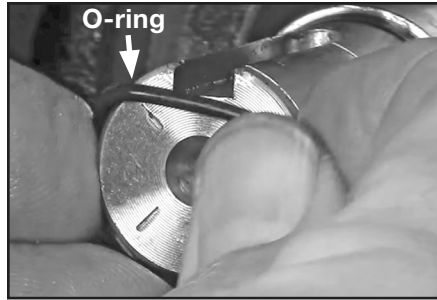
STEP 10

Install the seal housing O-ring and seal housing: Apply a thin coat of oil to the new seal housing O-ring before installation. NOTE: Insert the O-ring into the groove of the pump casing and hold in place with one finger. With a pick or small screwdriver in one hand, use the other hand to seat the O-ring using a circular motion. Apply a thin coat of oil to the seal housing and press evenly into the pump casing until it snaps into the groove.



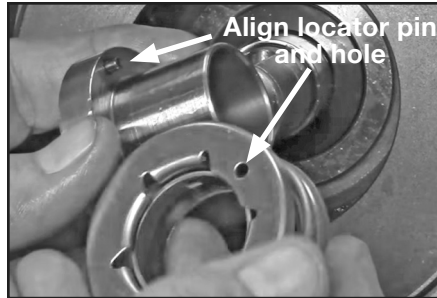
STEP 11

Install the seal sleeve O-ring: Clean the pump shaft and install the new seal sleeve O-ring. Make sure it is seated on the shoulder of pump shaft.

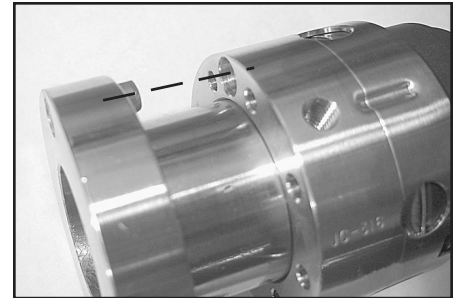


STEP 12

Assemble the seal and seal sleeve: Apply a thin coat of oil to the face of the rotating carbon and the O-ring that goes behind the rotating carbon. Insert the seal sleeve into the seal by aligning the locating pin on the seal sleeve with the notch/hole on the seal. NOTE: The current and previous seal assemblies are shown to the right. Although the installation photos show the new seal design, the assembly instructions are the same for the previous design.



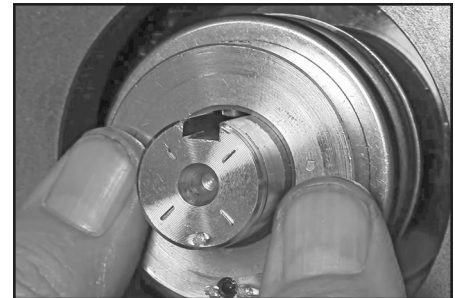
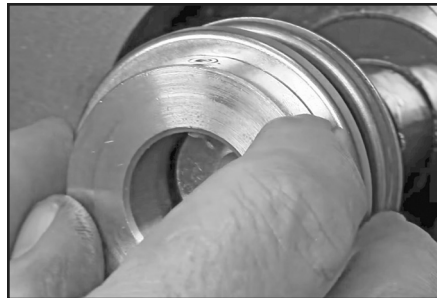
Current design: Part #3189-1X_6



Previous design: Part #5264-X_6

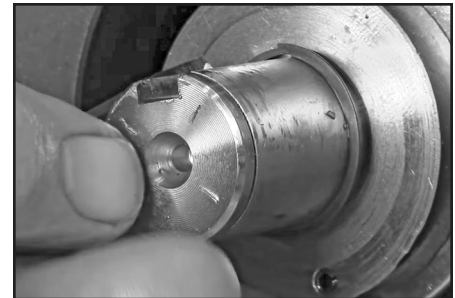
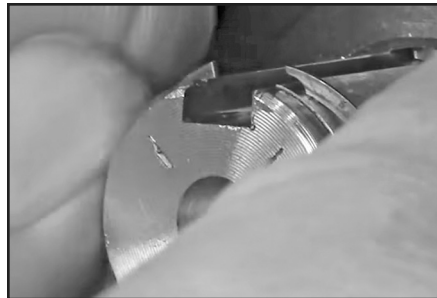
STEP 13

Install the seal: Before installing the new seal, make sure hands are clean. Small debris or contamination can cause the seal to leak. Align the seal drive pin with the pump shaft keyway and slide the seal assembly onto the shaft until the seal assembly snaps into place.



STEP 14

Install the first retainer ring: Install the first retainer ring at the rear of the shaft near the seal sleeve. NOTE: In order to seat the retainer ring inside the retainer ring groove, use the impeller to compress the seal assembly. Place the impeller on the shaft backwards (**hub side in**) and push inward until the retainer ring snaps into the groove on the pump shaft. After the retainer ring is seated into the groove, remove the impeller. For quick removal, insert one of the cover bolts into the impeller and remove it from the shaft.



STEP 15

Install the rear impeller key: Install a new impeller key into the keyway slot located at the front end of the pump shaft. Next, install the impeller with the **hub side out**. The impeller should slide freely on the shaft. If it does not slide freely, carefully remove any burrs from the impeller key and/or keyway using a small file. Remove all fillings from the pump shaft and casing.



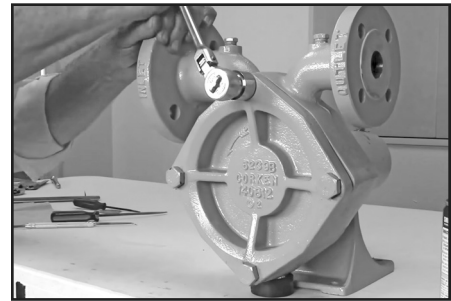
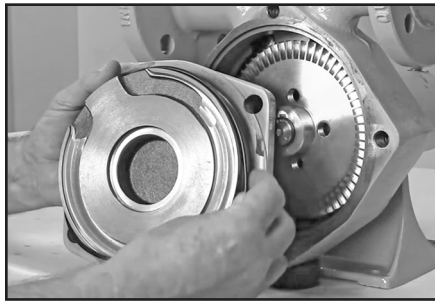
STEP 16

Secure the impeller and key with the second retainer ring: Make certain the impeller is pushed back to the pump casing. To ensure the impeller and key stay in place, install the second retainer ring into the groove located at the front of the pump shaft.



STEP 17

Install the cover: Install the O-ring, and pump cover. Torque each cover bolt to 60 ft•lbs. Be certain the Corken label on the cover is horizontal and right side up. Rotate the pump shaft and ensure the impeller turns freely. NOTE: On older models prior to serial number YU, it may be necessary to install a clearance shim if the pump does not turn after installing the cover.



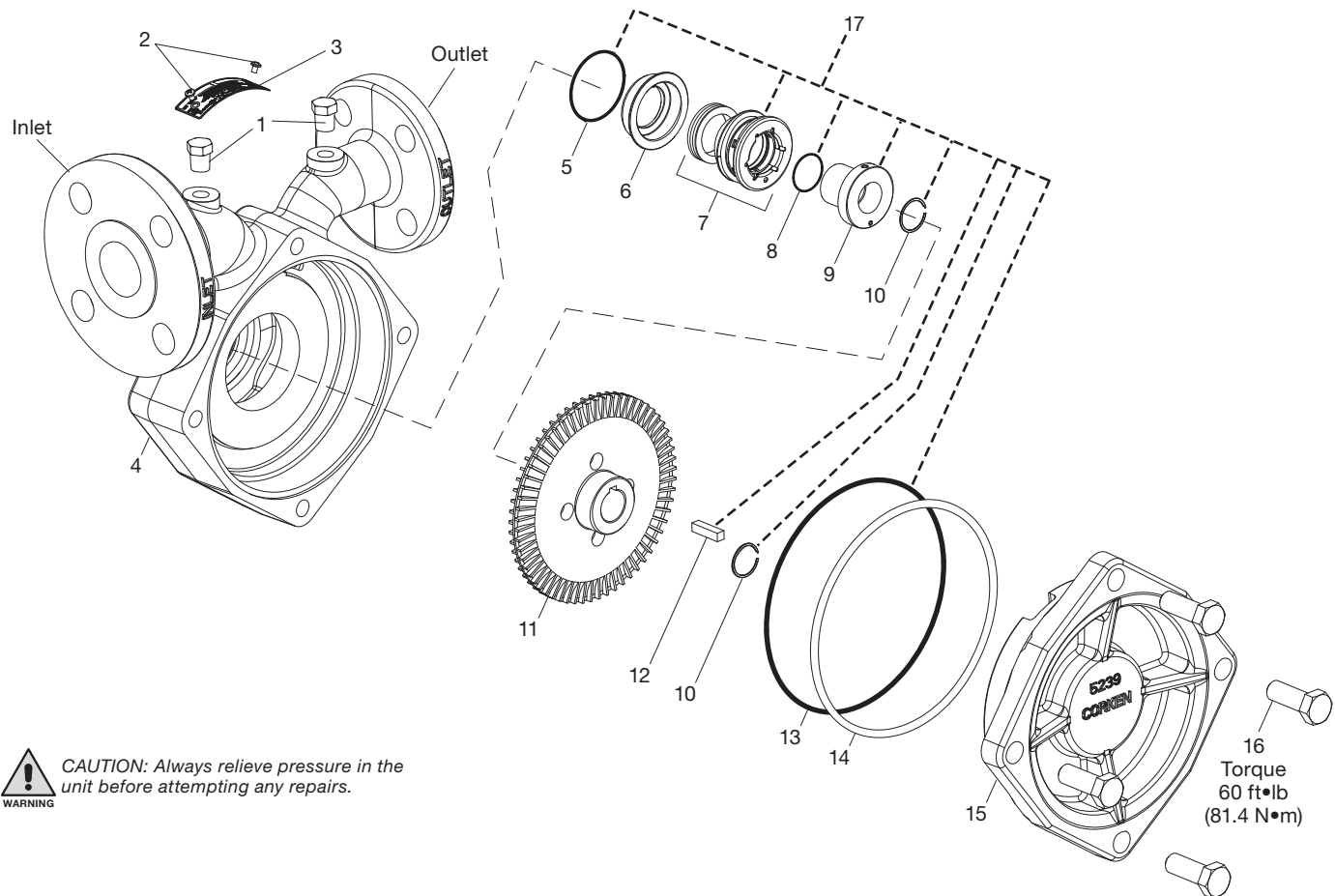
Before operating the pump, pressurize the pump case with vapor. After the pump has been pressurized, slowly add liquid.



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Parts Details for Models 060, 075, and 150 Coro-Flo® Turbine Pumps

Frame Mount ASME Class 300 RF (ANSI) Flange (FF) and Din Flange (FD)



Ref No.	Part No.	Description	Qty.
1.	3442	Pipe plug, 1/4"	2
2.	7012-0065F019E	Nameplate screw	2
3.	1914-1	Nameplate	1
4.	5238-060	Case—model 060, ASME Class 300 RF flange (FF)	1
	5238-75	Case—model 075, ASME Class 300 RF flange (FF)	1
	5238	Case—model 150, ASME Class 300 RF flange (FF)	1
	5238-061	Case—model 060, DIN flange (FD)	1
	5238-751	Case—model 075, DIN flange (FD)	1
	5238-1	Case—model 150, DIN flange (FD)	1
5.	2-133 ^{a, b}	Seal housing O-ring	1
6.	5244-1X	Seal housing assembly	1
7.	Not sold separately ^b	Seal sub assembly	1
8.	2-018 ^{a, b}	Seal sleeve O-ring	1
9.	Not sold separately ^b	Seal sleeve assembly	1
10.	2760-883	Retainer ring, 7/8"	1

Ref No.	Part No.	Description	Qty.
11.	5240-060	Impeller, bronze—model 060	1
	5240-75	Impeller, bronze—model 075	1
	5240	Impeller, bronze—model 150	1
	5240-061	Impeller, stainless steel—model 060	1
	5240-751	Impeller, stainless steel—model 075	1
	5240-1	Impeller, stainless steel—model 150	1
	5240-062	Impeller, steel—model 060	1
	5240-752	Impeller, steel—model 075	1
12.	42443	Impeller key	1
13.	2-260 ^{a, b}	Case O-ring	1
14.	5248 ^c	Case clearance shim	1
15.	5239-060	Cover—model 060	1
	5239-75	Cover—model 075	1
	5239	Cover—model 150	1
16.	7301-140MC040A	Bolt (hex head, M14-2 x 40 mm)	4
17.	3189-1X ^a	Seal assembly	1

^a Denotes material code

^b Included in seal assembly 3189-1X^a

^c The case clearance shim only applies to models prior to serial number prefix YU. For a complete explanation of Corken's serial number prefix codes, see page A400 (latest version) located in the "Policy and Prices" section of the sales catalog or service manual.

^d Registered trademark of the DuPont company

Material Code	
A	Buna-N
B	Neoprene ^{®d}
D	Viton ^{®d}
G	Ethylene propylene
K	Kalrez ^{®d}

Solutions beyond products...
CORKEN®

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Printed in the U.S.A.
August 2019