



**02-040C  
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**CHANGES TO PUMP MODELS IN TELEDYNE API ANALYZERS**

**I. PURPOSE:**

Information on some changes that Teledyne API was forced to make regarding pumps that we use in our analyzers & to assist in identifying them & the correct rebuild kits for those pumps

**II. TOOLS:**

None

**III. PARTS:**

None

**IV. PROCEDURE:**

**External NOx pumps:**

In the past we have used the Thomas 607 pump as our external vacuum pump for our NOx analyzers (as well as for some special construction analyzers). This pump has been a very good vacuum pump for this application but as with any other product, it was due for an update. Thomas has updated this pump to the 688 model. To identify the differences is very simple. The model 607 pump has a flat head that has the input & output on opposite sides and the head is gray in color. The Model 688 pump has a contoured head that has a gold tint. The 688 pump also has a large starting capacitor (or Cap) that screws to the motor. Thomas is going to continue to support the 607 pump for rebuild kits & the Teledyne API part number for those kits is PU11. The rebuild kit for the new Thomas 688 pump is PU64.

**M701 Pressure pump:**

Thomas has also updated the Dual headed Pressure pump that we use in the M701 Zero air Generator. This pump has the same head design as the 688 in fact the part number for the M701 pump is 2688. the pump rebuild kit for the old Thomas, dual headed pump is still PU23, and you do need 2 of these rebuild kits for each pump assembly (two heads, one pump). The part number for the rebuild kit for the new 2688 dual headed pump is PU65. the PU 65 part number contains all the parts that you will need to rebuild both Cylendars for the M701 pump, you will NOT need two kits for one pump as you do with the old KIT for the old pump.

**IR Analyzer Sample Pumps:**

The Model M300 CO analyzer (& all its derivatives CO2, N2O, high flow, etc) has gone through a number of pumps in recent years. The initial pump that was installed in these machines was a round-headed pump that the head was made out of plastic. This pump is no longer supported by KNF, & if you have one that needs to be replaced, we would recommend that you replace it with PU20 which is the replacement pump that KNF made for this round headed pump. The PU20 pump is an aluminum headed pump that has a square head. This pump has electrical terminals coming out of the motor assy that are secured to the motor. The wiring harness comes out of the analyzer up to the pump & just plugs right into the motor. We have found that this has been a Very good pump for us in this application. The rebuild kit for the PU20 is PU22.

We did a trial run on some pumps made by Aero. These pumps are easy to identify, they have RED cooling fans on the end of the pumps. The part number for these pumps is PU35. The rebuild kit for these pumps is PU57

We have installed in some of the newer machines a pump built by ADI, these pumps are similar to the PU20 KNF pump with the square aluminum head. The differences are that the head on the KNF pump is machined smooth & flat, where the ADI pump is a cast aluminum head & has a dull appearance to it. Also the leads coming off of the motor are wires & terminate into electrical connectors that the analyzer harness plugs into. These leads off of the motor are only about a 1 or 1.5 inches long. The rebuild kit for this pump is PU39

For the E series analyzers only, we have a new pump from KNF. The API part number for this pump is 4084. This pump is what they call the "world pump" this means that it can run on 110 volts or 220 volts, 50 Hz or 60 Hz. The significant change to this pump is that the motor for this pump is about twice as long as the PU20 pump. Another change in this pump is that there are long wires that come off of the pump that go to the switch card. These wires are about 12 inches long & has a Molex 4 pin connector @ the end of the wires. The pump assembly on the end of the motor is the same as the PU20 pump so the rebuild kit is the same PU22 as the PU20 pump.

**M401 Ozone Calibrator:**

This machine has two pumps in it, a sample pump for the Ozone bench & an Ozone pump for the Ozone generator. Both of these pumps were manufactured by ASF. These pumps were not rebuild-able, which made them expensive to operate, being as one they were shot, they had to be replaced. We have replaced the sample pump in the M401 with the part number 034660000 which uses a PU20 KNF pump. This pump has a rebuild kit of PU22. the Ozone pump is replaced with the part number 037070000, which uses a PU43 KNF pump. If you have any of the ASF pumps in your M401 & need to replace them order the 034660000 or 037070000 part numbers. If you have the KNF pumps and need to replace them order the PU20 & PU43 part numbers.