

## Performance Converter Kit

Part No.  
**GM-RK-485**

- Pilot
- Turbine Hub
- Sprag Cartridge
- Impeller Hub

Patent No. 6,902,046



**NOTE:** Street/Strip applications only. This kit must be completed with Sonnax included multi-plate base kit and additional OE salvaged parts.

Included:

## Multi-Plate Base Kit

Part No.  
**GM-RK-20M**

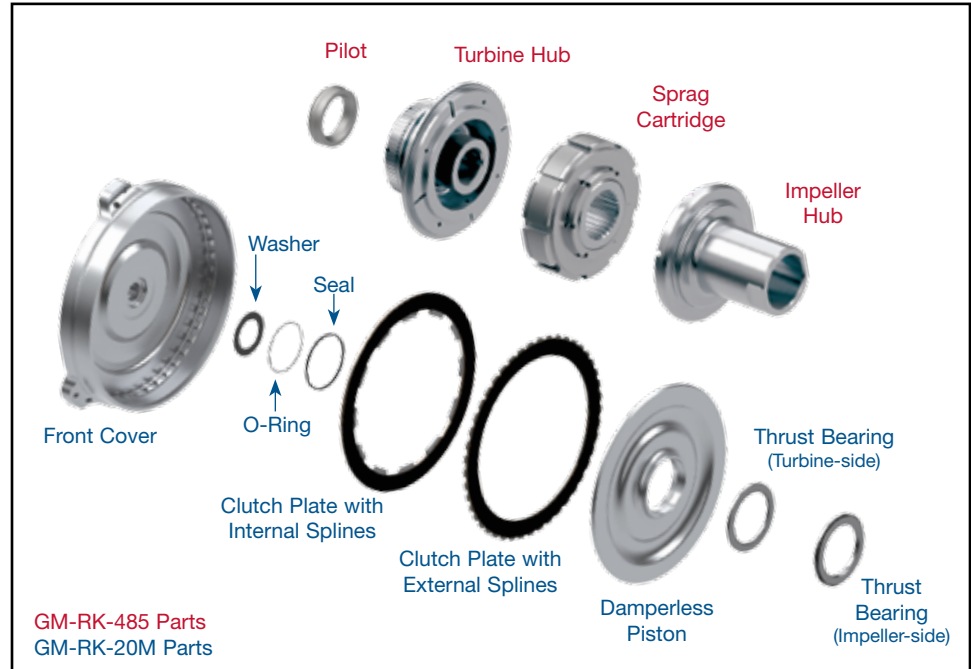
- Front Cover
- Washer Vespel®
- O-Ring Fluorocarbon
- Seal PTFE
- Clutch Plate with External Splines
- Clutch Plate with Internal Splines
- Damperless Piston
- Thrust Bearing Turbine-side
- Thrust Bearing Impeller-side



**NOTE:** The impeller and turbine MUST be furnace-brazed.

## GM 4L80-E, 4L85-E, Multi-Plate

Unit Size: 265mm • Core: GM 265mm • Dampened: No • Turbine Hub Input Spline Count: 35



### 1. Front Cover Assembly

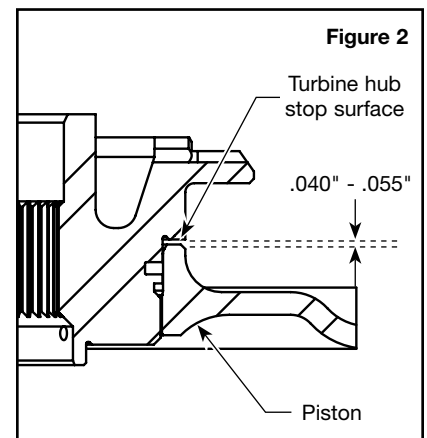
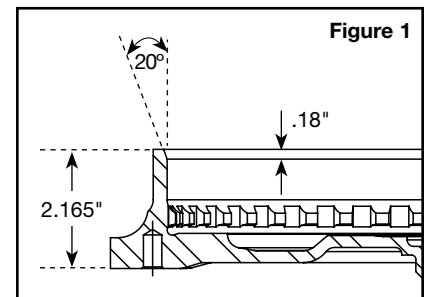
- The cover must be machined to fit the GM 265mm converter core parts (**Figure 1**).
- The pilot is a sliding-fit to light press-fit on the cover. Insert Sonnax pilot all the way to the back surface of the cover and weld in place at the pilot inside diameter.



**CAUTION:** Weld the pilot on the cover before assembling the rest of the converter to prevent heat damage to the Vespel® washer.

### 2. Damperless Piston Assembly

- Install Sonnax internal spline clutch plate, followed by Sonnax external spline clutch plate. External spline plate will engage in the cover splines.
- Place Sonnax piston over clutch plates. Rotate piston until it drops and engages with internal spline clutch plate.
- Place Sonnax Vespel® washer on Sonnax turbine hub, using assembly gel to hold washer in place.
- Insert turbine hub into piston and check clutch release clearance with a feeler gage. It should measure between .040" - .055" (**Figure 2**).



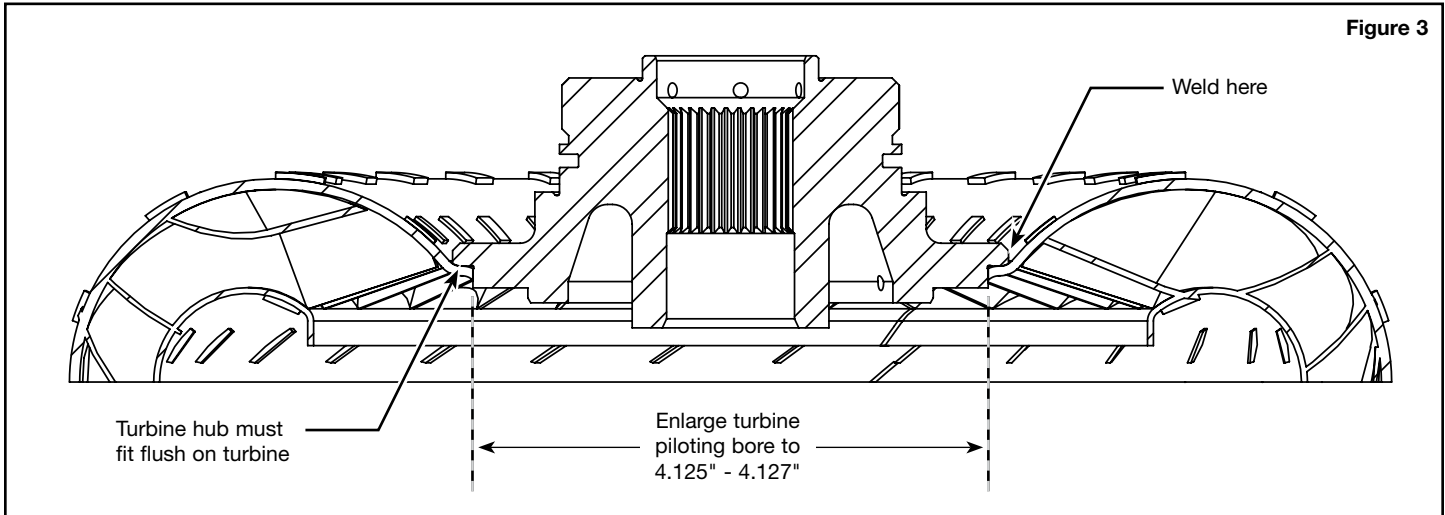


Figure 3

## 2. Damperless Piston Assembly (continued)

- e. If additional clutch release clearance is needed, the turbine hub stop surface can be machined.
- f. Remove turbine hub from the cover assembly.

## 3. Turbine Assembly

The Sonnax turbine hubs are designed for GM 265mm cores and allows the use of the sprag cartridge, impeller hub and thrust bearings provided.

- a. Remove OE turbine hub.
- b. Turn the inside of the turbine to 4.125" - 4.127" (**Figure 3**).
- c. Weld the turbine to the turbine hub as shown.

## 4. Piston & Clutch Plate Assembly

- a. Install clutch plates and piston (see step 2 "Damperless Piston Assembly").
- b. Install Sonnax O-ring, then the Sonnax PTFE seal onto turbine hub.
- c. Place Sonnax Vespel<sup>®</sup> washer on the turbine hub pilot using assembly gel to hold it in place.
- d. Insert turbine/turbine hub assembly into piston, ensuring the turbine drops into piston as far as it can go.

## 5. Sprag Cartridge Installation

The Sonnax sprag cartridge comes preassembled.

- a. Remove impeller-side snap ring from OE stator (thinner blade-side). Leave turbine-side snap ring installed.
- b. Remove and discard OE clutch and stator caps.
- c. Select the small Sonnax thrust bearing provided in base kit **GM-RK-20M**. Place bearing on Sonnax turbine-side stator cap.



**NOTE:** The two stator caps appear identical but are not. The smaller thrust bearing does not fit the impeller-side cap.

- d. Insert Sonnax sprag cartridge with small thrust bearing oriented toward turbine-side of stator.
- e. Install Sonnax impeller stator cap and secure with OE snap ring.

## 6. Converter Assembly

- a. Place small Sonnax thrust bearing and stator assembly on turbine hub, thin blade-side on top. Place large Sonnax thrust bearing on the stator assembly, then place impeller and impeller hub on bearing and weld impeller to the cover.
- b. The overall height for this 4L80/E, 4L85/E Racekit is 6.930".