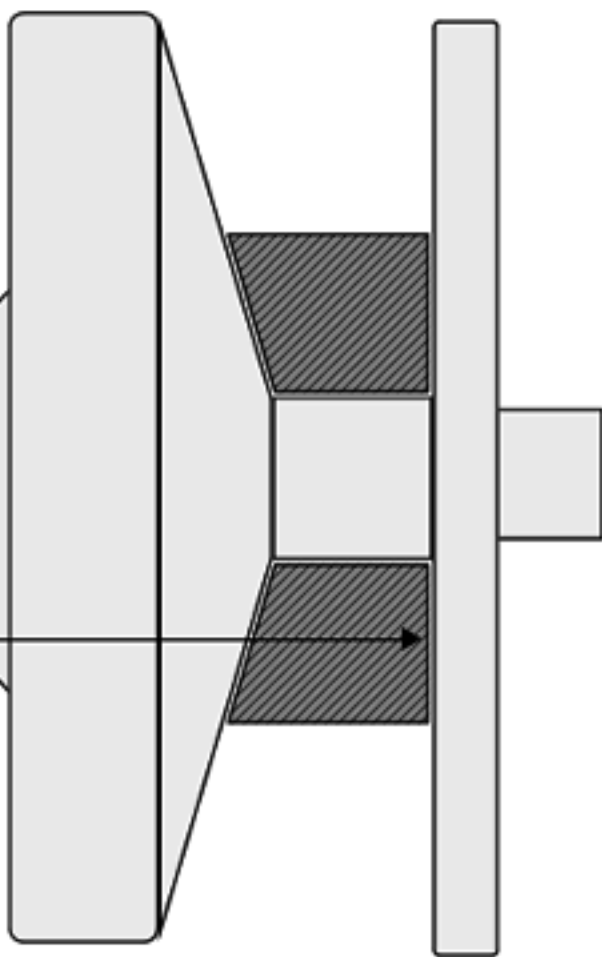


## 30 Series Belt Installation

When installing this belt **NEVER PRY** the belt onto the torque converter drive clutch and/or driven unit. Remove the bolt and outer moveable sheave.

The **flat side of the belt is always facing towards the engine**, the angled side faces out.

Outer sheave 30 series driver unit

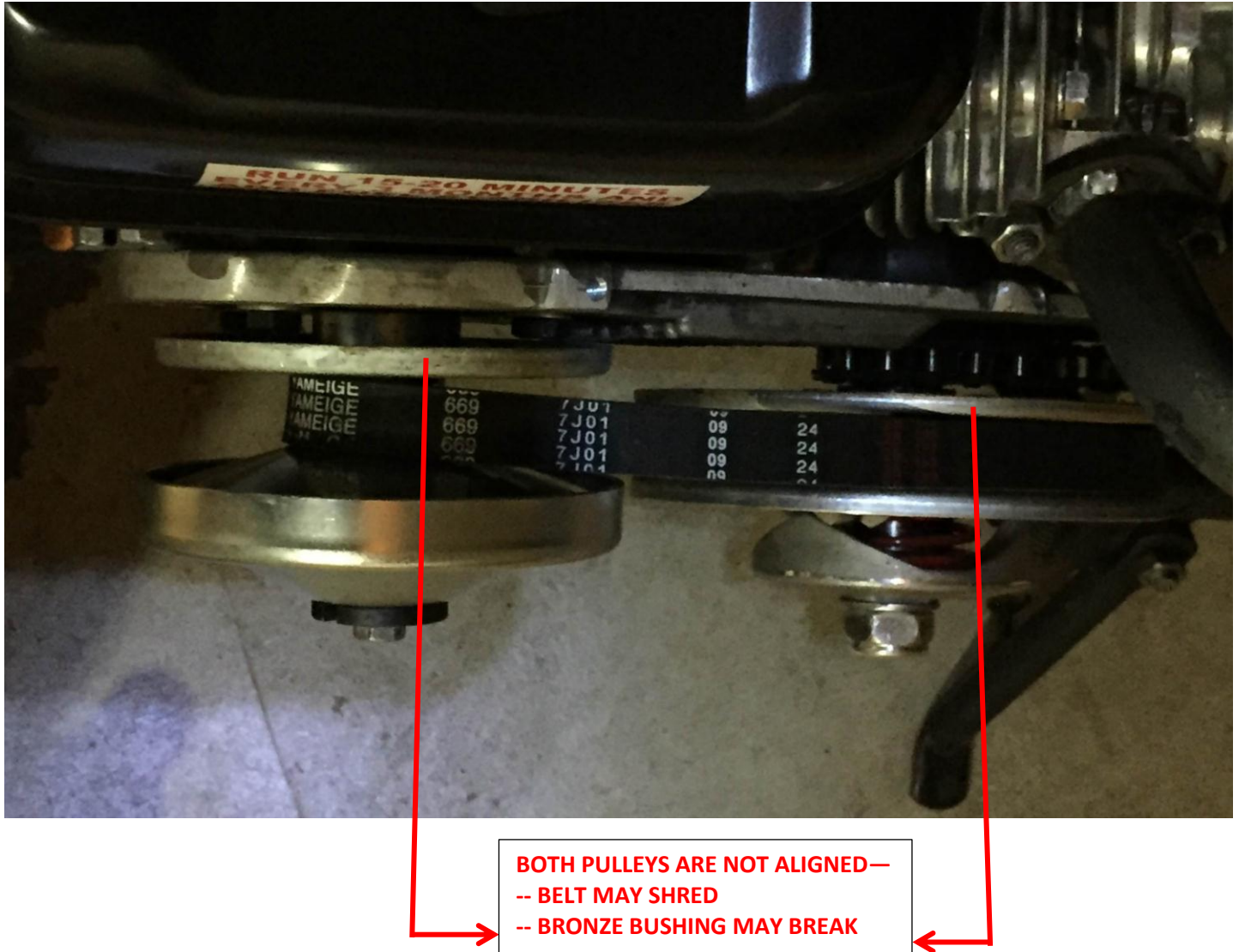


**Engine**



## EXAMPLE OF INCORRECT INSTALLATION:

- In the image below, the driver pulley and driven pulley are not aligned properly.
- The drive belt is not straight due to incorrect alignment and so, belt may shred.

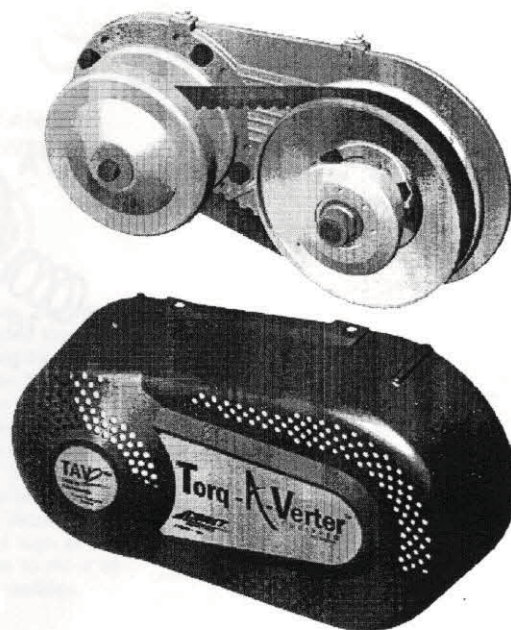


IMPORTANT: If both pulleys do not align, **DO NOT** ride the kart until the alignment is fixed. Driving the kart with incorrect installation may result in damage to bronze bushing, drive belt and/or plastic cover.

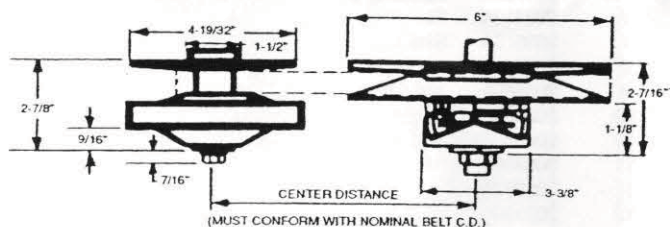
NOTE: In most set-ups, using the 3/4" black spacer provided with the torque converter kit aligns the pulleys. However, some set-up may require a couple extra washers to make the pulleys to align.

## TAV2-30

**GENERAL INFORMATION:** This is an asymmetrical type torque converter system which means the sheave faces are non-symmetrical. They have different angles. In this case, the movable sheave face is  $18^\circ$  while the stationary sheave face is  $2\frac{1}{2}^\circ$  for a collective angle of  $20\frac{1}{2}^\circ$ . Here are some reasons for selecting the asymmetrical concept: The COMET Asymmetric concept operates on an in-line principal with the torque sensing cam in an outboard attitude. Only this system is designed to operate this way, thus providing the proper alignment for the final drive chain to be on the same side of the vehicle as the P.T.O. This offers some very significant advantages to mounting requirements in many cases. The asymmetric concept, having the  $18^\circ$  angle on one side requires less sheave face travel to lift the belt to larger, comparable pitch diameters of the symmetrical system. This makes it possible to force the belt to a diameter within the drive clutch (at high RPM) that exceeds the usual 1:1 ratio of standard systems. The TAV2 can actually attain an .90:1 or 10% overdrive.



## SPECIFICATIONS & GENERAL INFORMATION



### IMPORTANT!

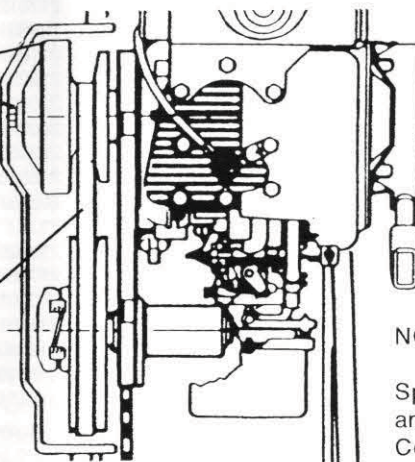
Torque Converter DRIVE UNIT MUST NOT FLOAT on engine crankshaft. It must be bolted tight against engine crankshaft shoulder. Recommended Torque for bolt: 24 ft. lbs. To 30 ft. lbs. Max.

$2\frac{1}{2}^\circ$  angle (flat side) of belt must be against the  $2\frac{1}{2}^\circ$  angle pulley flange (Next to engine).

### NOTE!

With Torque Converter (Driver-Driven & Belt) mounted on parallel shafts and the system in the low (Neutral or idle) position, the belt should be straight in the sheaves. The belt when straight in the sheaves should also be square to the engine crankshaft and jackshaft.

SHROUD



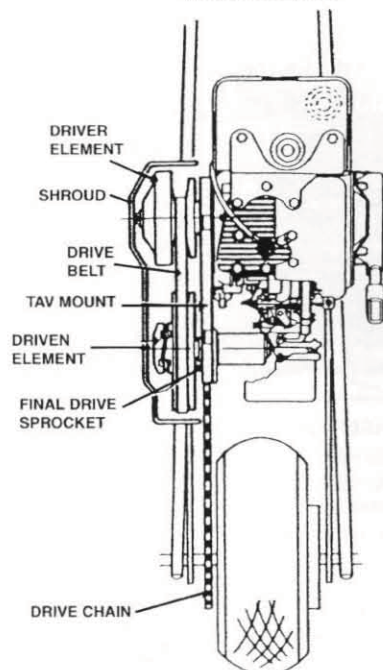
**SYSTEM:** TAV2 30 SERIES  
**TYPE:** ASYMMETRICAL ( $20\frac{1}{2}^\circ$ )  
**RECOMMENDED H.P.:**  
**MAX:** 8 H.P. **2 CYCLE**  
**MAX:** 8 H.P. **4 CYCLE**  
**DRIVE BELT:**  $\frac{3}{4}$ " TOP WIDTH  
 ASYMMETRICAL TYPE  
**DRIVE CLUTCH BORE SIZES:**  
 $\frac{3}{4}$ " ( $\frac{3}{16}$  KEY), 1" ( $\frac{1}{4}$  KEY)  
**DRIVE CLUTCH ENGAGEMENT:**  
 2200 RPM  
**DRIVEN UNIT DIA. 6"**

NOTE: JACKSHAFT

Sprocket ratio must be ample for maximum Torque Converter performance.

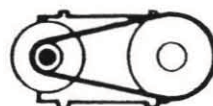


**A typical installation  
of the TORQ-A-VERTER on  
a DIRECT DRIVE  
MINI-BIKE**



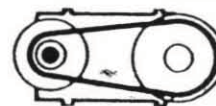
**Here is how the Comet TORQ-A-VERTER Functions**

**NEUTRAL**  
DRIVER DRIVEN



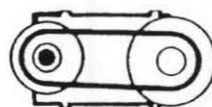
The asymmetric belt has no engagement during the idling of the engine. The TC30 system is Neutral -with no belt friction and no drag.

**LOW RANGE**  
DRIVER DRIVEN



As the engine throttle is "opened" the Driver pulley flanges begin closing together via centrifugal force. The Drive Belt engages, driving the Driven unit pulley at it's largest diameter. This is the most powerful ratio of the system. (2.7:1)

**INTERMEDIATE RANGE**  
DRIVER DRIVEN



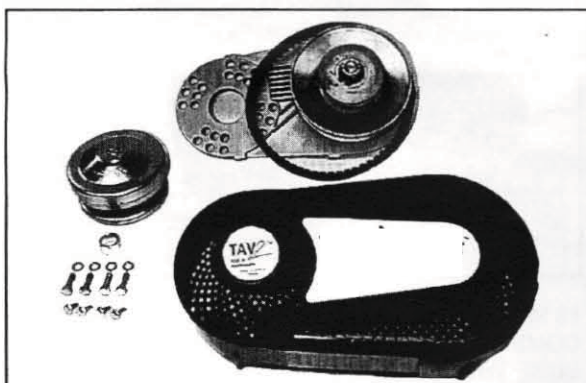
As the engine R.P.M. increases, the Driver pulley flanges continue to close together. This action, in turn, is squeezing the belt out to a larger Driver unit diameter. This action is dependent on acceleration and lack of torque load on the Driven element, allowing its pulley flanges to open thus creating a smaller driven unit diameter. If the torque load is increased, this ratio is reversed instantly and smoothly to its requirement. The ratios between low and high of the TORQ-A-VERTER are infinite to meet all demand within its realm of capabilities.

**HIGH RANGE-OVERDRIVE**  
DRIVER DRIVEN

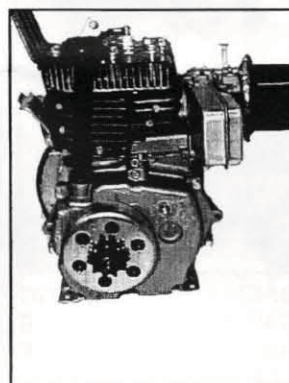


At it's highest speed (overdrive) and lowest load demand, the Driven unit pulley flanges are wide open providing the smallest possible belt contact diameter. The Drive unit pulley flanges, at this point, are closed to provide the largest possible belt contact diameter. In the case of the TC30, the unique asymmetric arrangement of the belt and pulley angles allow the belt to exceed diameters possible with the standard "V" pulley, thus overdrive...and in this case that's 10%(.90:1).

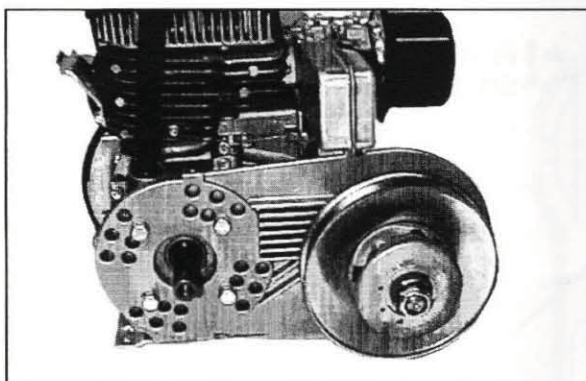
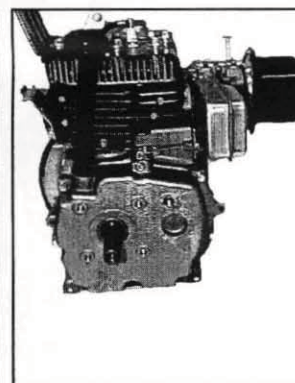
**INSTALLATION INSTRUCTIONS**



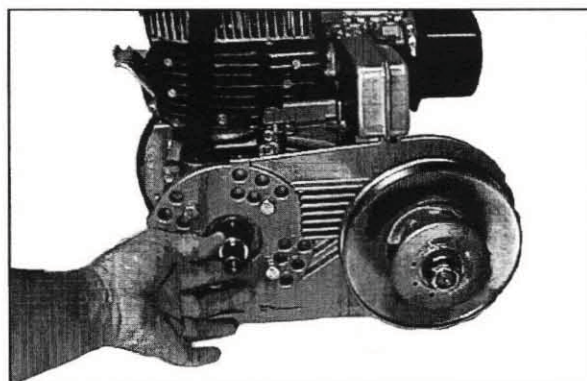
**#1 COMPONENTS TO BE INSTALLED ON MACHINE**



**#2 REMOVE CENTRIFUGAL CLUTCH FROM ENGINE**

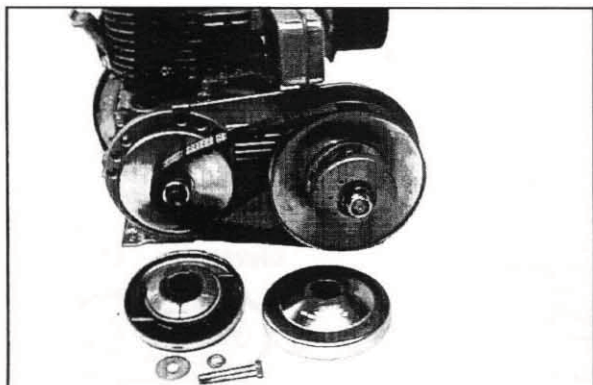


**#3 BOLT BRACKET TO THE FOUR STANDARD TAPPED HOLES IN ENGINE CRANKCASE USING THE FOUR 5/16-24X1" HEX HEAD BOLTS AND LOCK WASHERS. BRACKET MAY BE ROTATED UP OR DOWN IF NECESSARY.**

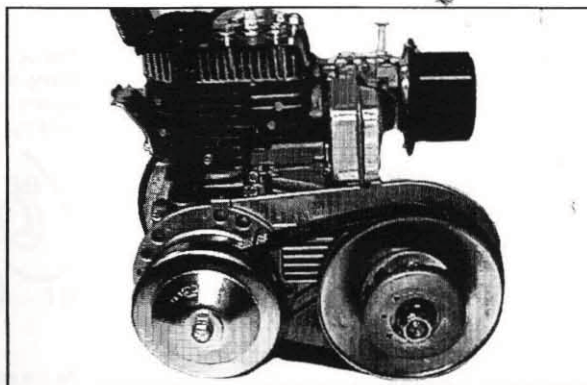


**#4 PLACE SPACER PROVIDED WITH KIT ON CRANK-SHAFT TO BRING THE DRIVE CLUTCH IN LINE WITH THE DRIVEN UNIT.**





#5 SEPARATE DRIVER, PLACE \*FLAT SIDED FACE ON CRANKSHAFT. INSTALL IDLER BUSHING ON POST 3/4 DRIVER ONLY. SLIP BELT OVER DRIVEN UNIT AND OVER POST OF DRIVE UNIT. INSTALL 4 SPLINED HUB "D" OUTBOARD. IMPORTANT: BE SURE BRONZE IDLER BUSHING IS IN PLACE ON TAV2 30-75. TAV2 30-100 DOES NOT REQUIRE BRONZE IDLER BUSHING.



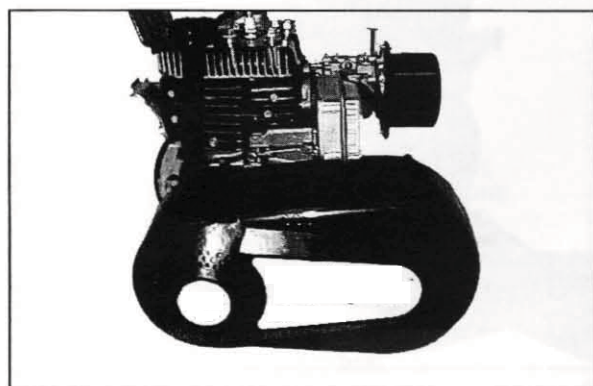
#6 PLACE OTHER HALF OF DRIVE ON CRANKSHAFT. LINE UP OUTER COVER AND INSTALL 2" RETAINING BOLT AND WASHER.



#7 BREAK CHAIN AT PROPER LENGTH TO GO AROUND SPROCKET ON TAV AND FINAL DRIVE SPROCKET. JOIN CHAIN BY THE MASTER LINK. MOVE THE ENGINE FORWARD OR BACKWARD FOR CORRECT TENSION.



#8 MARK THE TAV2 COVER WHERE THE CHAIN WILL COME THROUGH AND CUT WITH SCISSORS. MAKE SURE THERE IS AMPLE ROOM TO PREVENT CHAIN INTERFERENCE DURING OPERATION.



#9 PLACE THE COVER ON THE MOUNTING PLATE. INSTALL THE FOUR 1/4-20X1/2" THREAD FORMING SCREWS.

\* ! FLAT SIDED FACES ON DRIVE AND DRIVEN SHOULD ALIGN. IF THEY DO NOT, ADJUST SPACING ON CRANKSHAFT.

