

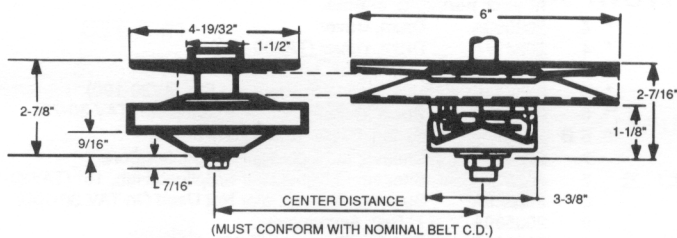
TAV 30

TAV (TORQ-A-VERTER)

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° while the stationary sheave face is $2\ 1/2^\circ$ for a collective angle of $20\ 1/2^\circ$. 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° 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 TAV can actually attain an .90:1 or 10% overdrive.



SPECIFICATIONS & GENERAL INFORMATION

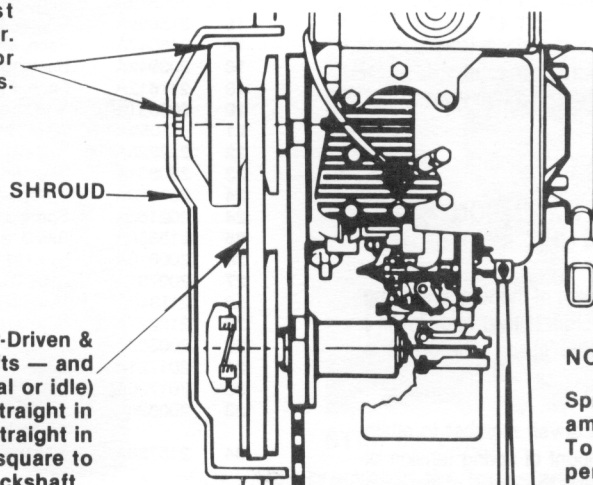


SYSTEM: TAV30 SERIES
TYPE: ASYMMETRICAL ($20\ 1/2^\circ$)
RECOMMENDED H.P.:
MAX: 8 H.P. 2 CYCLE
MAX: 8 H.P. 4 CYCLE
DRIVE BELT: 3/4" TOP WIDTH
 ASYMMETRICAL TYPE
DRIVE CLUTCH BORE SIZES:
 3/4" (3/16 KEY), 1" (1/4 KEY)
DRIVE CLUTCH ENGAGEMENT:
 2200 RPM
DRIVEN UNIT DIA. 6"

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.

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

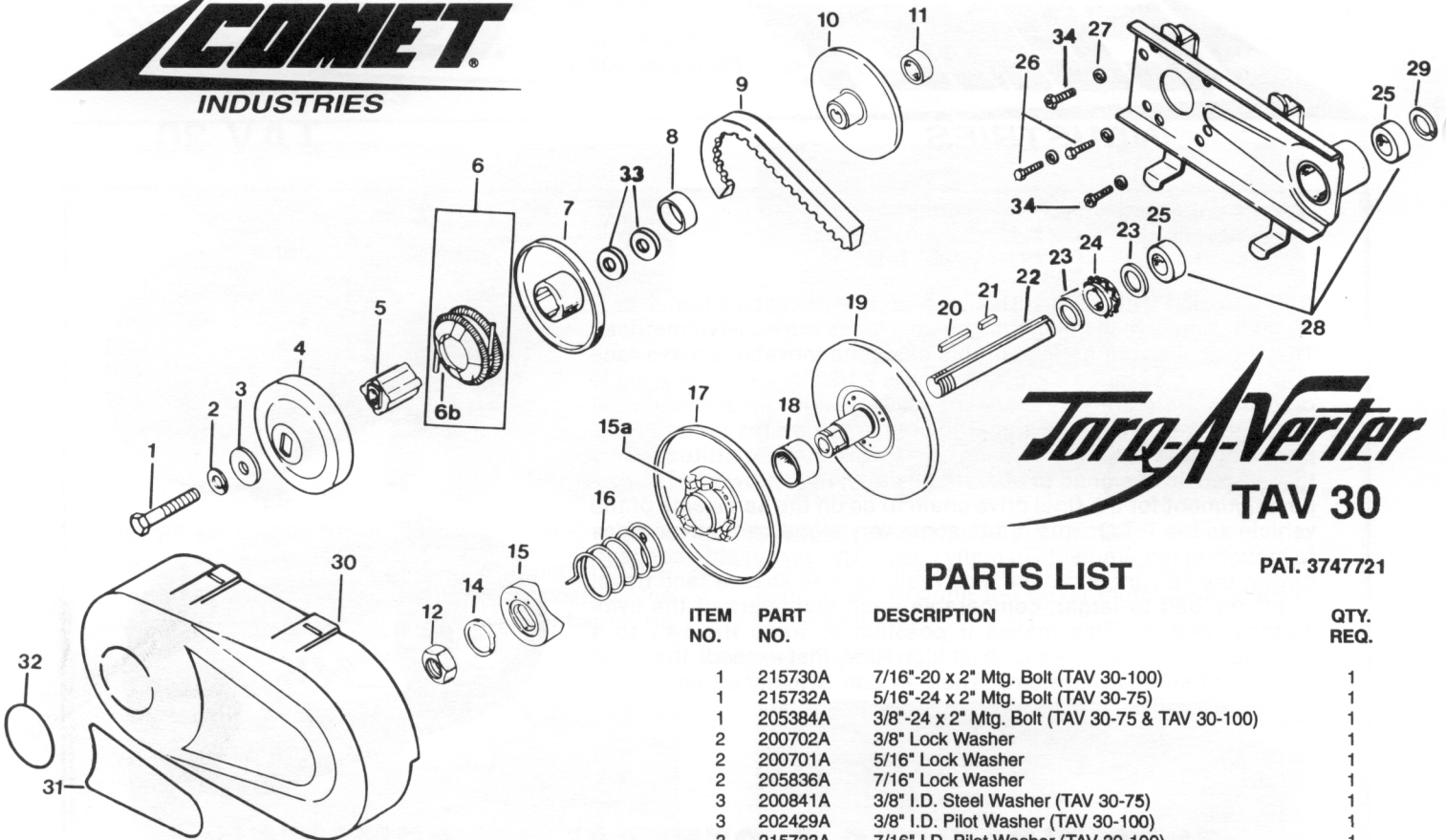
NOTE!
 With torque Converter (Driver-Driven & Belt) mounted on parallel shafts — and the system in the low (Neutral or idle) Position the belt should be straight in the sheaves. The belt when straight in the sheaves should also be square to the engine crankshaft and jackshaft.



NOTE: JACKSHAFT
 Sprocket ratio must be ample for maximum Torque Converter performance.



#23 - Both spacers next to plate.



PARTS LIST

PAT. 3747721

ITEM NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	215730A	7/16"-20 x 2" Mtg. Bolt (TAV 30-100)	1
1	215732A	5/16"-24 x 2" Mtg. Bolt (TAV 30-75)	1
1	205384A	3/8"-24 x 2" Mtg. Bolt (TAV 30-75 & TAV 30-100)	1
2	200702A	3/8" Lock Washer	1
2	200701A	5/16" Lock Washer	1
2	205836A	7/16" Lock Washer	1
3	200841A	3/8" I.D. Steel Washer (TAV 30-75)	1
3	202429A	3/8" I.D. Pilot Washer (TAV 30-100)	1
3	215733A	7/16" I.D. Pilot Washer (TAV 30-100)	1
3	200840A	5/16" I.D. Steel Washer (TAV 30-75)	1
* 4	202090A	Drum, Driver	1
* 4	202427A	Drum, Driver (TAV30-100)	1
* 5	200376A	Hub, Driver 3/4" I.D.	1
* 5	203641A	Hub, Driver, Splined, 1" I.D. (TAV30-100)	1
** 6	200344A	Driver Weight Assembly Complete (TAV 30-75)	1
** 6 B	11188A	Spring, Garter (Blue) (TAV 30-75)	2
7	200410A	Sheave, Movable Half w/Hub, 3/4 Bore	1
7	203515A	Sheave, Movable Half w/Splined Hub, 18" (TAV30-100)	1
8	200349A	Bushing, Bronze (Idler Not Used On TAV 30-100)	1
9	203589A	7" Belt, Asymmetric	1
10	202066A	Sheave, Stationary, 2 1/2, 3/4 I.D.	1
10	206633A	Sheave, Stationary, 2 1/2, 1" I.D. (TAV30-100)	1
11	200389A	Spacer, 3/4" I.D.	1
11	202877A	Spacer, 1" I.D. (TAV30-100)	1
12	203189A	Jam Nut, 5/8-18 x 3/8	1
14	204714A	Ring, Retaining	1
15	215650A	Cam, Fixed	1
15 A	204332A	Button, Insert	6
16	215699A	Spring, Green	1
17	215647A	Face, Movable w/Cam	1
18	203942A	Bushing	1
19	217612A	Face, Fixed w/Post, 5/8 Bore	1
20	209831A	3/16" Sq. x 2 1/4" Key	1
21	11059A	3/16" Sq. x 9/16 Key	1
22	212225A	5/8" Dia. Jackshaft	1
23	200834A	Washer, 5/8 I.D., 1" O.D.	2
24	200379A	Sprocket, 12T - 35P	1
24	202168A	Sprocket, 10T - 40/41P	1
25	215558A	Ball Bearing	2
26	200816A	Hex Hd Cap Screw, 5/16-24 x 3/4	2
27	200701A	Lock Washer, 5/16"	4
28	211349A	Mounting Bracket w/Bearings	1
29	212227A	Ring, Retaining	1
30	200383A	Shroud, Plastic	1
31	201721A	Decal (Torq-A-Verter)	1
32	201720A	Decal (Asymmetric)	1
33	200836A	Washer, Belt Spacer, (TAV 30-75 Only) (Not required on units manufactured after March 1994)	2
34	215726A	5/16"-24 x 3/4" Soc. Hd. Screw	2

The above hardware is included to mount your drive clutch to your engine. It is important that you use the correct bolt and washers to fit your particular engine.

REPLACEMENT DRIVER UNIT

ORDER #	MODEL #	DESCRIPTION
*203814A	CAT30 - 75	3/4" Bore
*203603A	30C - 100	1" Bore

REPLACEMENT DRIVEN UNIT

ORDER #	MODEL #	DESCRIPTION
217610A	31D - 62	5/8" Bore

COMPLETE UNIT

ORDER #	MODEL #	DESCRIPTION
217785A	TAV30 - 75	35P 12T 3/4 Bore
217784A	TAV30 - 75	40/41P10T 3/4 Bore
217789A	TAV30 - 100	35P 12T 1" Bore
217790A	TAV30 - 100	40/41P 10T 1" Bore

*1-1/2" mounting bolt included with replacement clutch must be discarded and 2" mounting bolt from old clutch must be used.

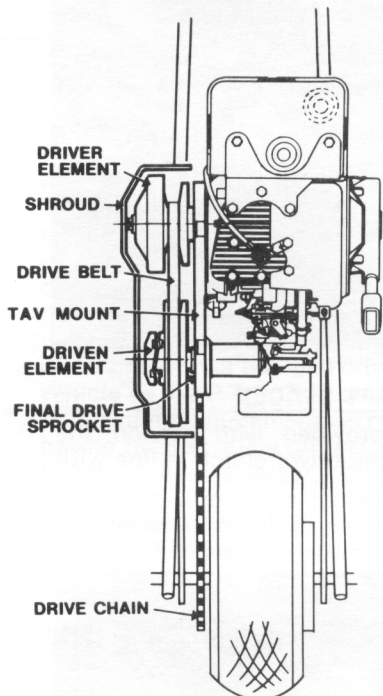
ADJUSTING THE SPRING TENSION OF THE DRIVEN UNIT

NOTE: By increasing the spring tension of the torque sensing system . . . the power ratio of the system (Driver and Driven) can be held longer at higher engine r.p.m.'s before it is overcome by the clutch driver.

To shorten the time required for the driven member to attain it's speed ratio, DECREASE the amount of spring tension of the torque sensing cams. This will allow the r.p.m. of the drive clutch to overcome the power ratio of the driven unit at a faster rate in a lower r.p.m. range.

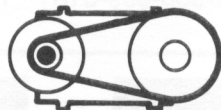
* NOTE: Driver Drum & Hub must be well aligned and torqued down tightly.
** To assure proper balance the Springs should be replaced in pairs or the entire Weight Assembly should be replaced.

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



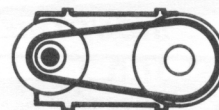
Here is how the Comet TORQ-A-VERTER Functions

NEUTRAL
DRIVER DRIVEN



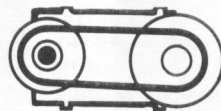
The asymmetric belt has no engagement during the idling of the engine. The TC30 system is Neutral — with no belt friction and no drag.

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 demands within its realm of capabilities.

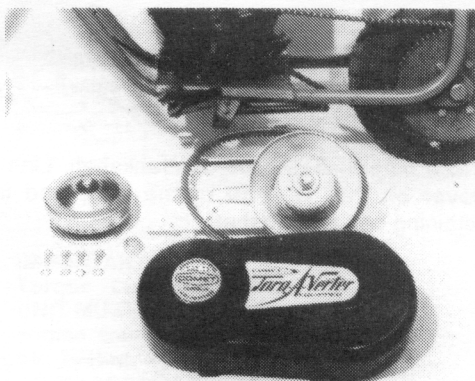
HIGH RANGE-OVERDRIVE
DRIVER DRIVEN



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

STEP #1



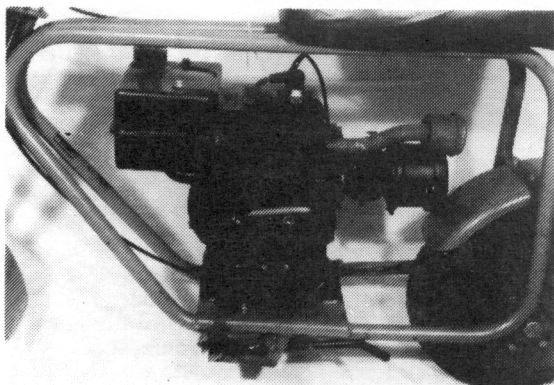
TOOLS NEEDED

1. 1/2"-9/16" Socket Wrench or Box End Wrench.
2. Chain Breaker.
3. 1/4" Allen Wrench

STEP #1:

Components in kit are layed out in front of machine.

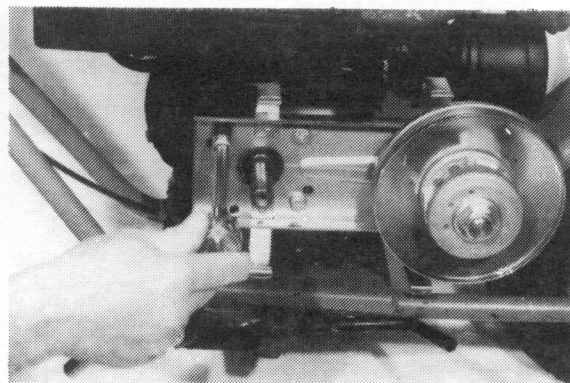
STEP #2



STEP #2: STRIP

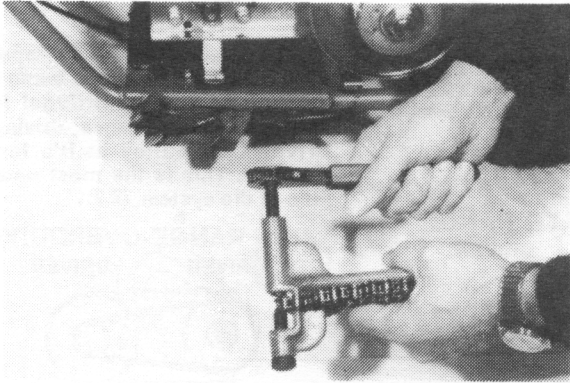
Remove old centrifugal clutch.

STEP #3



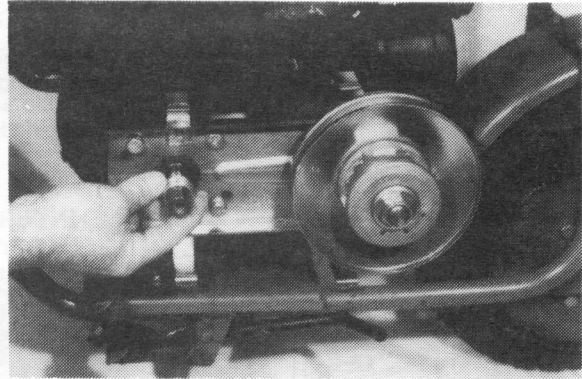
STEP #3: EASY

Bolt bracket to the four standard tapped holes in the engine crankcase using two Hex Head and two Soc. Head screws supplied. Bracket may be rotated up or down if necessary.



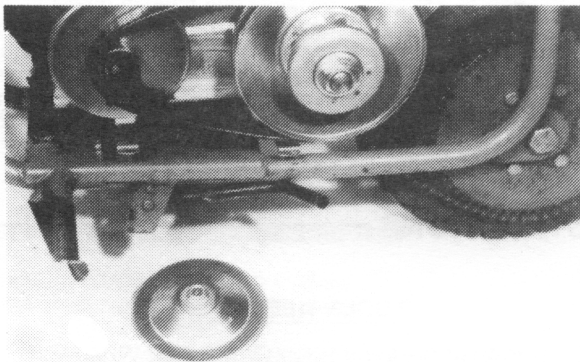
STEP #4: CHAIN BREAKING

Break chain at proper length to go around sprocket on T.A.V. and final drive sprocket. Join chain by the master link. Move the engine forward or backward for correct tension.



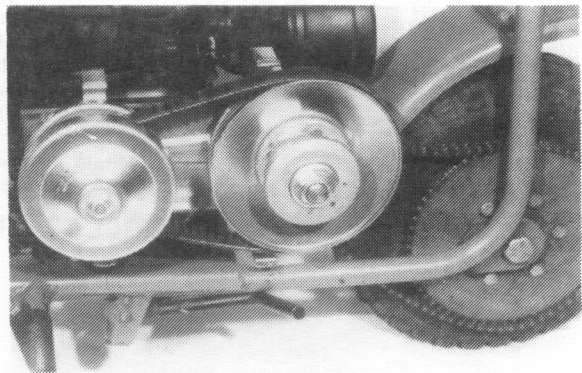
STEP #5: CRANKSHAFT SPACER

Place the spacer (provided with kit) on the crankshaft, to bring the driver clutch in line with the driven unit.



STEP #6: DRIVE CLUTCH

Separate driver, place flat sided sheave on crankshaft. Slip belt over driven unit and over post of driver unit. Install 4 splined hub "D" outboard. **IMPORTANT: BE SURE BRONZE IDLER BUSHING IS IN PLACE on TAV 30-75. TAV 30-100 does not require Bronze Idler Bushing.**



STEP #7: BOLT

Place other half of drive on crankshaft. Line up outer cover on the "D" part of the hub, and install 2" retaining bolt and washer.



STEP #8: LAST STEP

Snap the transmission cover over the ears of the mounting plate.



FINISH JOB

Total time was approximately 45 minutes.