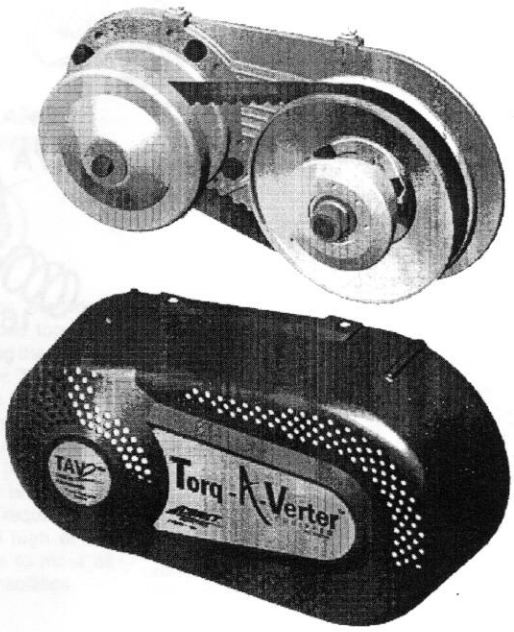
COMET®

TAV2

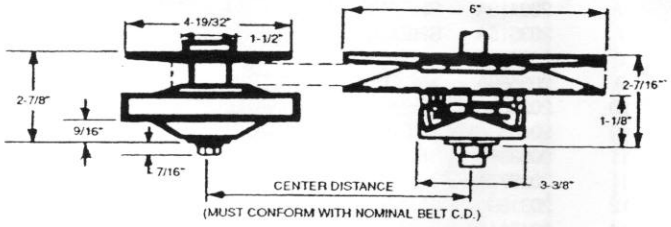
TORQ-A-VERTER

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˚ while the stationary sheave face is 2 1/2˚ for a collective angle of 20 1/2˚. 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 TAV2 can actually attain an .90:1 or 10% overdrive.



SPECIFICATIONS & GENERAL INFORMATION

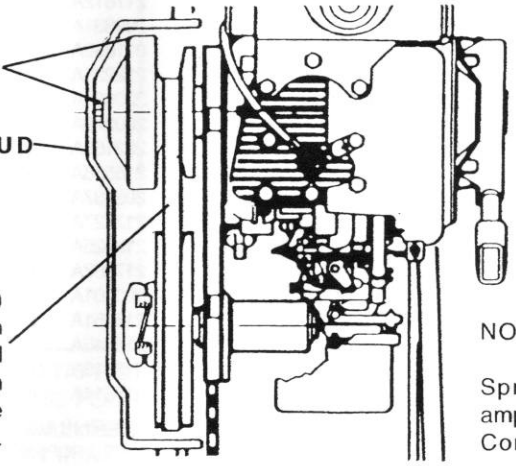


SYSTEM: TAV2 30 SERIES
TYPE: ASYMMETRICAL (20 1/2˚)
RECOMMENDED H.P.:
MAX: 8 H.P. **2 CYCLE**
MAX: 8 H.P. **4 CYCLE**
DRIVE BELT: 3/4" TOP WIDTH ASYMMETRICAL TYPE
DRIVE CLUTCH BORE SIZES: 3/4" (3/16 KEY), 1" (1/4 KEY)
DRIVE CLUTCH ENGAGEMENT: 2200 RPM
DRIVEN UNIT DIA. 6"

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.

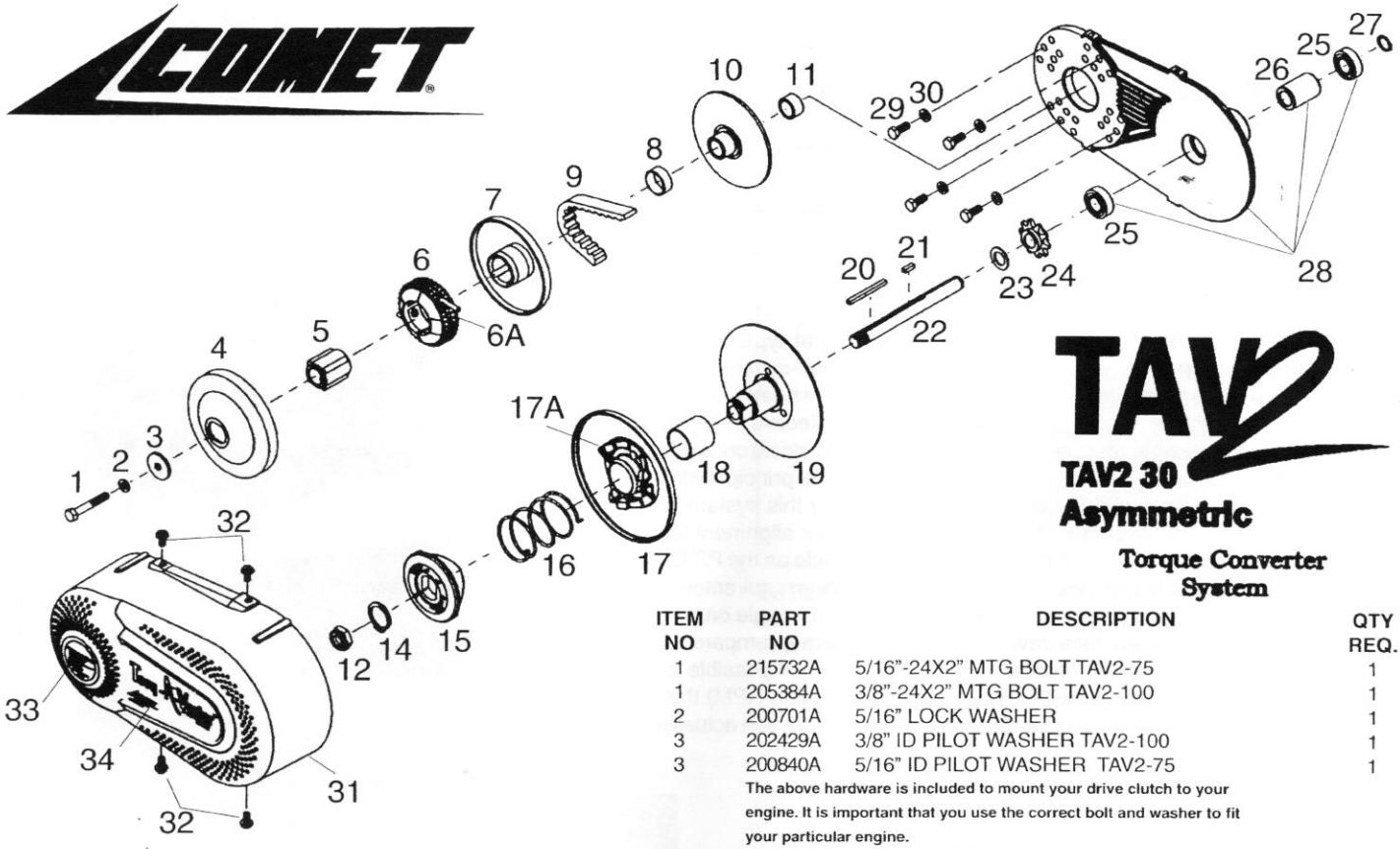
2 1/2˚ angle (flat side) of belt must be against the 2 1/2˚ angle pulley flange (Next to engine).

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.



TAV2

TAV2 30 Asymmetric

Torque Converter System

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

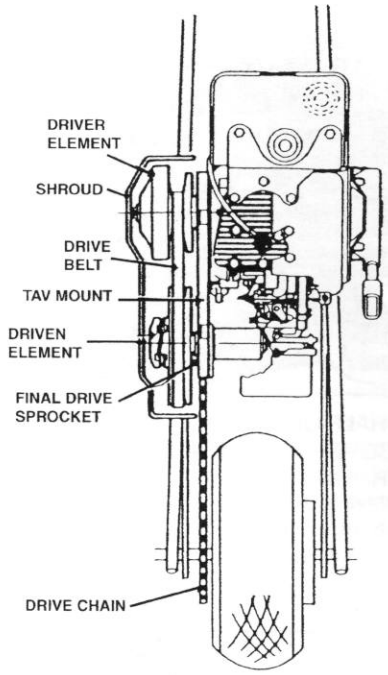
ORDER #	MODEL #	DESCRIPTION
218352A	TAV2 30-75	35P 12T 3/4" BORE
218353A	TAV2 30-75	40/41P 10T 3/4" BORE
218354A	TAV2 30-100	35P 12T 1" BORE
218355A	TAV2 30-100	40/41P 10T 1" BORE

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

ITEM NO	PART NO	DESCRIPTION	QTY REQ.
1	215732A	5/16"-24X2" MTG BOLT TAV2-75	1
1	205384A	3/8"-24X2" MTG BOLT TAV2-100	1
2	200701A	5/16" LOCK WASHER	1
3	202429A	3/8" ID PILOT WASHER TAV2-100	1
3	200840A	5/16" ID PILOT WASHER TAV2-75	1
		The above hardware is included to mount your drive clutch to your engine. It is important that you use the correct bolt and washer to fit your particular engine.	
*4	202090A	DRUM DRIVER TAV2-75	1
*4	202427A	DRUM DRIVER TAV2-100	1
*5	200376A	HUB DRIVER 3/4" ID 4 SPLINED	1
*5	203641A	HUB DRIVER 1" ID 8 SPLINED	1
**6	200344A	DRIVER WEIGHT ASSY W/ SPRINGS	1
**6A	011188A	BLUE GARTER SPRING SET OF 2	1
7	200410A	SHEAVE MOVABLE HALF W/HUB 3/4" BORE	1
7	203515A	SHEAVE MOVABLE HALF W/HUB 1" BORE	1
8	200349A	BUSHING BRONZE (NOT USED ON TAV2-100)	1
9	203589A	7" BELT ASYMMETRIC	1
10	202066A	SHEAVE STATIONARY 2 1/2 3/4" BORE	1
10	206633A	SHEAVE STATIONARY 2 1/2 1" BORE	1
11	200389A	SPACER 3/4" ID	1
11	202877A	SPACER 1" ID	1
12	203189A	JAM NUT 5/8-18X3/8	1
14	204714A	RING RETAINING	1
15	215650A	CAM FIXED	1
16	215699A	SPRING GREEN	1
17	215647A	FACE MOVABLE W/CAM	1
17A	204332A	BUTTON INSERT	6
18	203942A	BUSHING	1
19	217612A	FACE FIXED W/POST 5/8" BORE	1
20	209831A	KEY 3/16" SQ. X 2 1/4"	1
21	011059A	KEY 3/16" SQ. X 9/16"	1
22	212225A	5/8" DIA JACKSHAFT-6 3/8" LONG	1
23	200834A	WASHER 5/8" ID X 1" OD	1
24	200379A	SPROCKET 12T 35P	1
24	202168A	SPROCKET 10T 40/41P	1
25	215558A	BALL BEARING	2
26	203187A	SPACER 5/8 X 7/8 X 1"	1
27	212227A	RING RETAINING	1
28	218525A	MOUNTING BRACKET W/BEARINGS AND SPACER	1
29	217867A	HEX HD CAP SCREW 5/16-24 X 1"	4
30	200701A	LOCK WASHER 5/16"	4
31	218351A	SHROUD PLASTIC W/ DECALS	1
32	214146A	SCREW THD FRM 1/4-20X1/2	4
33	218513A	DECAL	1
34	218514A	DECAL	1

*NOTE: DRIVER DRUM AND 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.

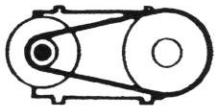
A typical installation of the TORQ-A-VERTER on a DIRECT DRIVE MINI-BIKE



Here is how the Comet TORQ-A-VERTER Functions

NEUTRAL

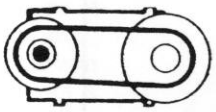
DRIVER DRIVEN



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

INTERMEDIATE RANGE

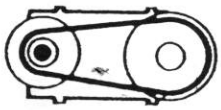
DRIVER DRIVEN



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.

LOW RANGE

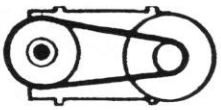
DRIVER DRIVEN



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)

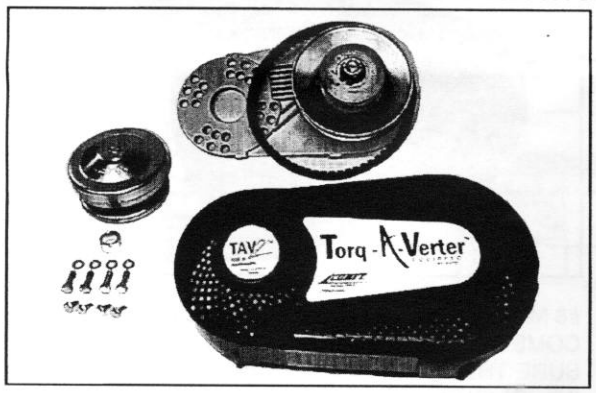
HIGH RANGE-OVERDRIVE

DRIVER DRIVEN

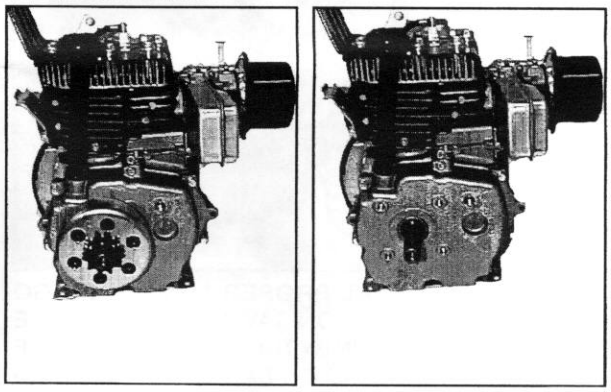


At it's highest speed (overdrive) and lowest load demand, the Driven unit pulley flanges are wide open providing the smallest possible belt contact diameter. The Drive unit pulley flanges, at this point, are closed to provide the largest possible belt contact diameter. In the case of the TC30, the unique 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).

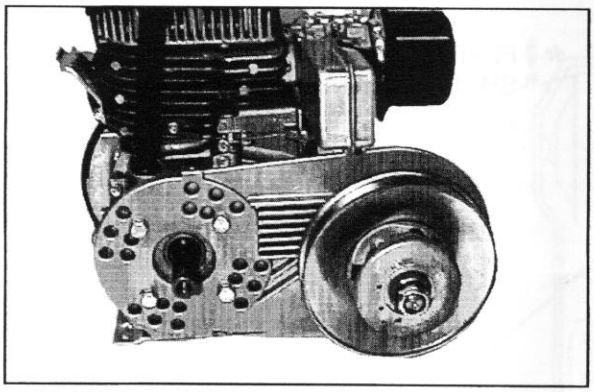
INSTALLATION INSTRUCTIONS



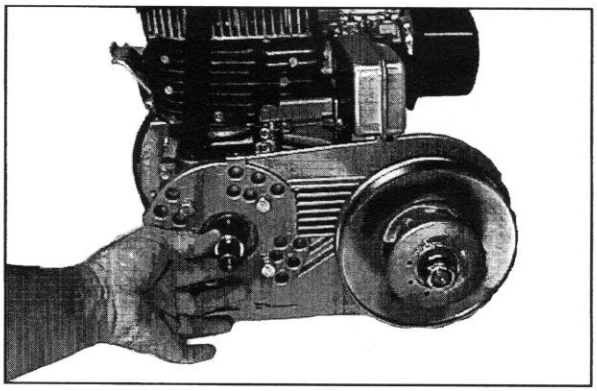
#1 COMPONENTS TO BE INSTALLED ON MACHINE



#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 CRANKSHAFT TO BRING THE DRIVE CLUTCH IN LINE WITH THE DRIVEN UNIT.

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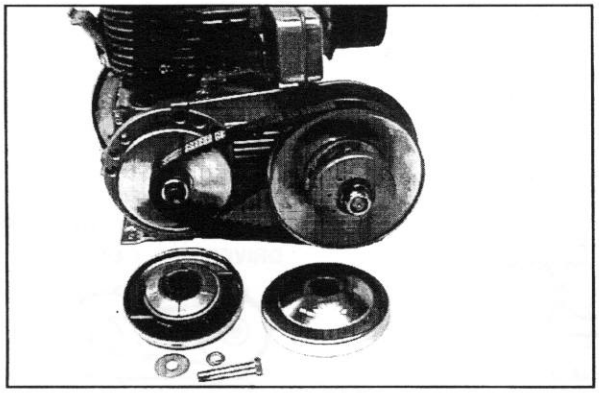
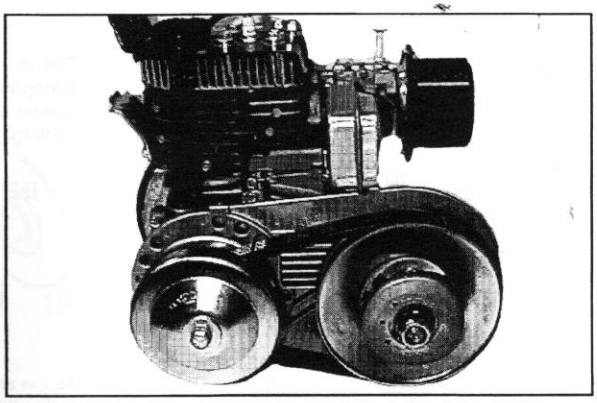
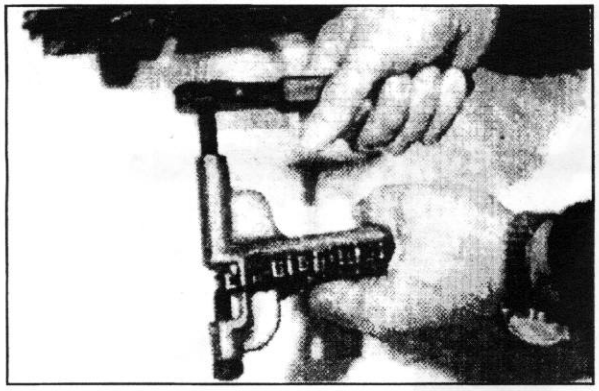


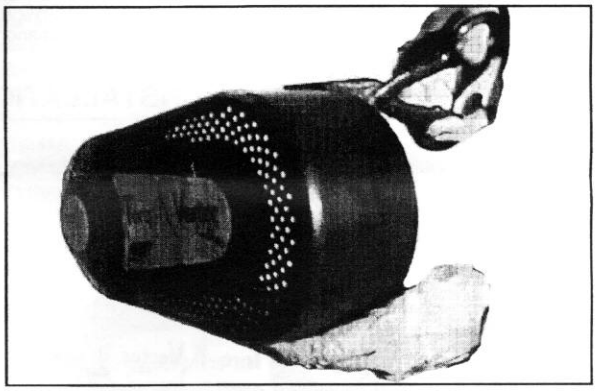
#5 SEPARATE DRIVER, PLACE *FLAT SIDED FACE ON CRANKSHAFT. INSTALL IDLER BUSHING ON POST 3/4 DRIVER ONLY. SLIP BELT OVER DRIVEN UNIT AND OVER POST OF DRIVE UNIT. INSTALL 4 SPLINED HUB "D" OUTBOARD. IMPORTANT: BE SURE BRONZE IDLER BUSHING IS IN PLACE ON TAV2 30-75. TAV2 30-100 DOES NOT REQUIRE BRONZE IDLER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



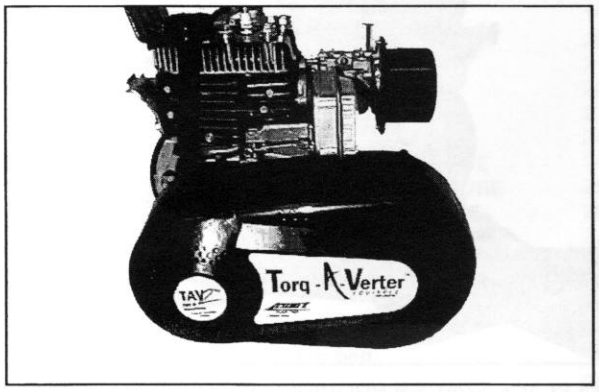
#6 PLACE OTHER HALF OF DRIVE ON CRANKSHAFT. LINE UP OUTER COVER AND INSTALL 2" RETAINING BOLT AND WASHER.



#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.

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