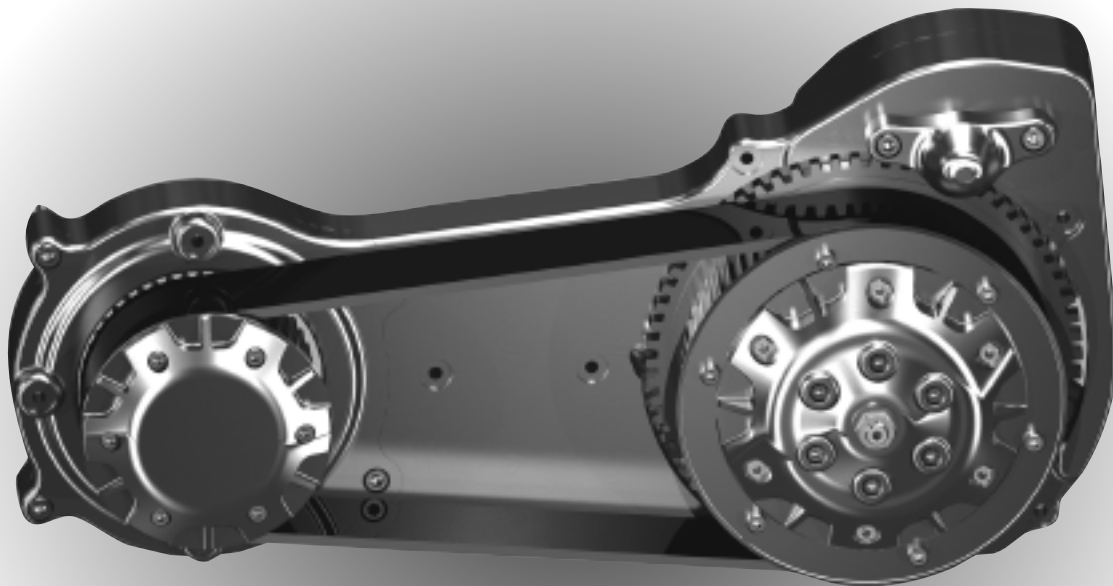




**ASSEMBLY DIAGRAM AND ASSEMBLY REFERENCE  
ULTIMA OLD SCHOOL 2" BELT DRIVE UNITS**

**DYNA® EVO® & T.C.® MODELS '91 - '05**



Part #  
58-900 2" BELT DRIVE ASSEMBLY

REV 10-22-14

# ASSEMBLY DIAGRAM AND ASSEMBLY REFERENCE ULTIMA 8MM BELT DRIVE UNITS

## BELT DRIVE PRODUCTS

### WARRANTY PROVISIONS

Ultima's® component parts used in our belt drives are guaranteed to the original purchaser to be free of manufacturing defects in materials and workmanship for a period of twelve (12) months from the date of purchase through Midwest Motorcycle Supply.

Merchandise that fails to conform to these conditions will be repaired by Ultima® if the parts are returned to Midwest Motorcycle Supply by the purchaser within the 12-month warranty period or within 10 days thereafter.

Some problems can be rectified by a telephone call and need no further course of action. A part that is suspected of being defective must not be replaced by a Dealer without prior authorization from Midwest Motorcycle Supply. If it is deemed necessary for Ultima® to make an evaluation to determine whether the part was defective, it must be packaged properly to prevent further damage and be returned prepaid to Midwest Motorcycle Supply with a copy of the original invoice of purchase, detailed letter outlining the nature of the problem, how the part was used and the circumstances at the time of failure. If, after an evaluation has been made by Ultima® and the part was found to be defective, repair or replacement will be granted at Ultima's® discretion.

### ADDITIONAL WARRANTY PROVISIONS:

1. Ultima® shall have no obligation in the event an Ultima® part is modified by any other person or organization.
2. Ultima® shall have no obligation in the event an Ultima® part becomes defective in whole or in part as a result of improper installation, improper maintenance, improper use, abnormal operation, or any other misuse or mistreatment of the Ultima® part.
3. Ultima® shall not be liable for any consequential or incidental damage resulting from the failure of an Ultima® part, the breach of any warranties, the failure to deliver, delay in delivery, delivery in non-conforming condition, or for any other breach of contract or duty between Ultima® and a customer.
4. These Diagrams are provided for a reference only and in no way imply that this part is suitable for the applications it is being installed to. The Part #'s these diagrams reference were designed to fit OEM Dyna® style motorcycles made from 1991-2005.

### PROFESSIONAL INSTALLATION REQUIREMENTS:

Ultima® Belt Drives should be installed by trained professional mechanics into a motorcycle in which they were intended for use. Failure to do so may result in injury and even death. It is the customer's responsibility to insure their mechanic has proper training.

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## ASSEMBLY INSTRUCTIONS

### I. PREPARATION FOR ASSEMBLY

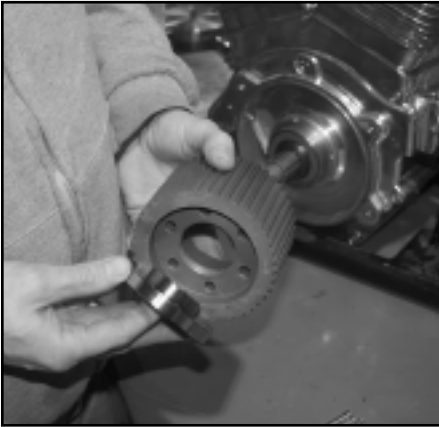
Before installing the Ultima® belt drive system you must remove your entire existing primary drive. This also includes the pressed on transmission mainshaft race used with chain drive inner primary bearings. For most Dyna® models, exhaust must be removed to allow access to swing arm pivot bolt. **Always disconnect battery before removing or installing primary drive systems.**

The Ultima® belt drive system comes with a 1989-1993 type starter drive shaft which will fit 89'-06' starter models. Starter bolts are available to accommodate 89'-06' starters. We also suggest using any of our heavy duty Ultima® Thunder Fire® starters part # 70-220 thru 70-229 which incorporate both 89/93 and 94/06' style drive shaft bolt arrangements. These starters are available in 1.4, 1.75, 2.0 and 2.4 Kw configurations.

At this time we suggest inspection of your charging system. Ultima® belt drives are designed to work with most 32 amp charging system on the market today. Later model 38, 40 and 44 amp systems may interfere with the motor plate.

**While you are inspecting the alternator we highly recommend that you install a new crankshaft seal on the engine replacing the existing seal with a high quality double lip seal and installing the seal with the steel face out.** Belt drive units require a dry environment free from oil and by flipping the oil seal you ensure any crankcase pressure and oil will stay in your engine. This is also a great time to inspect the transmission sprocket and seal for wear and to ensure the sprocket is tight.

## I. SELECTING THE PROPER OFFSET PULLEY INSERT



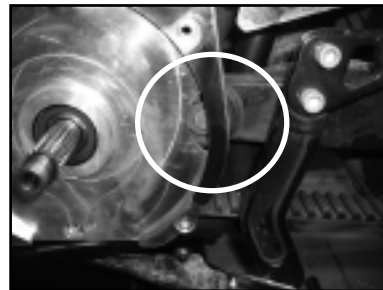
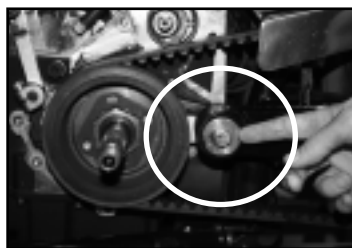
Ultima Drives use 6 bolts to fasten the motor pulley to the pulley insert. Install these bolts using red Loctite and tighten to 18-22 ft lb torque. All Ultima Drives include the stock offset spacer. When using a stock offset spacer, always use the proper thickness shim between the pulley and the rotor. Failure to do so will result in improper torque on the outer portion of the motor pulley instead of the pulley insert.

The following spacers/inserts are available separately for wide tire applications.

MWM # <b>58-606</b> .250" Offset	MWM # <b>58-608</b> .750" Offset	MWM # <b>58-611</b> 1.5" Offset
MWM # <b>58-607</b> .500" Offset	MWM # <b>58-609</b> 1.00" Offset	MWM # <b>58-612</b> 1.75" Offset
	MWM # <b>58-610</b> 1.25" Offset	MWM # <b>58-613</b> 2.00" Offset

When use of a 1-1/2" to 2" offset is needed, you must purchase Midwest Part#**58-724** motor pulley nut.

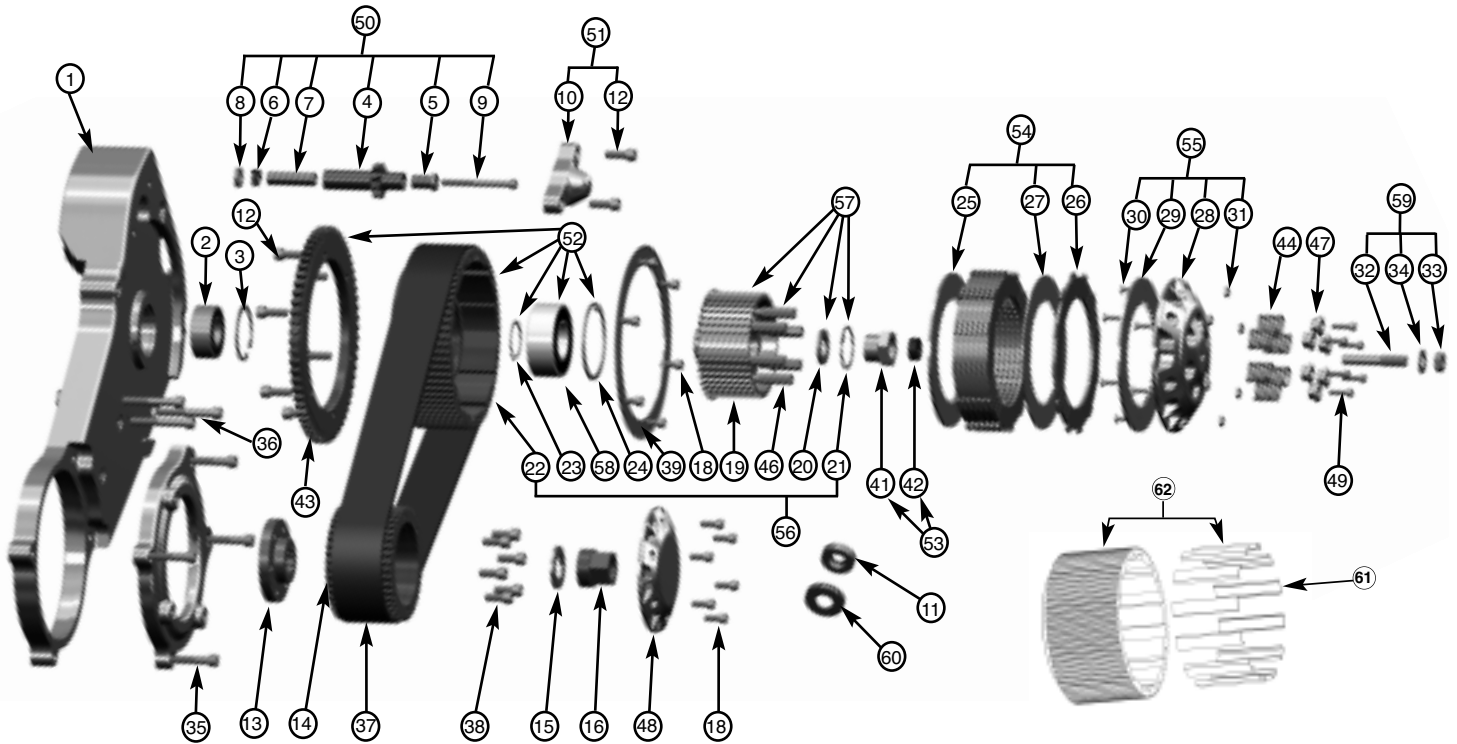
## II. INSTALLING THE MOTOR PLATE



Before installing the backing plate you may need to remove your swingarm pivot bolt & reinstall from the opposite side of the bike frame. This will prevent interference when seating the backing plate. Always support motorcycle frame & swingarm properly before removing the pivot shaft bolt. After removing the castle nut (99 & earlier), we recommend using a correct diameter drift pin to drive the pivot shaft bolt out. Do not damage pivot bolt threads. The drift pin will aid in keeping all components aligned.

Once the pivot bolt is removed, install the supplied counterbored washer/seal onto the shaft. **Remove the stock O-ring & install onto the supplied washer/seal.** Reinstall pivot bolt from the left side so that the head of the bolt is seated inside the counterbore of the washer/seal. This provides the clearance needed for the backing plate to fully seat on the transmission. Using the second supplied washer, reinstall the castle nut & torque to 65 ft lbs. Reinstall safety clip/pin.

Install the motor plate and motor sub-plate without the rubber o-ring for the inner primary to engine. Align the motor plate to the engine and transmission then install the mounting bolts for the engine and trans snug only. You might need a dead blow or plastic hammer to seat the motor plate over the transmissions dowel pin. Torque all bolts to 18-22ft lb.

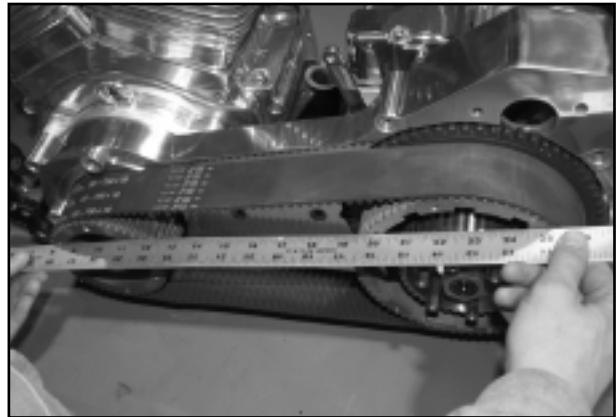
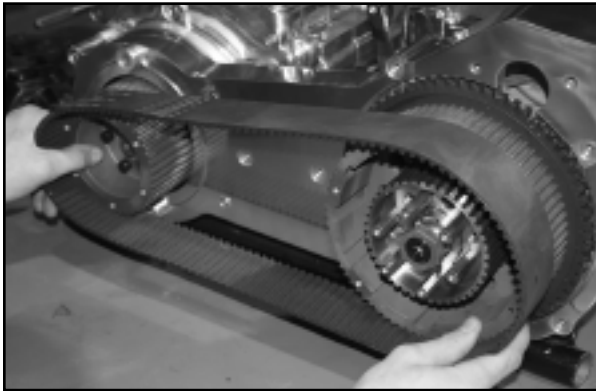


ITEM #	QTY	PART #	COMPONENT	ITEM #	QTY	PART #	COMPONENT
1	1	58-928	MOTOR PLATE, BILLET	29	1	58-772	CLUTCH DRIVE PLATE, UPPER
2	1	58-707	BEARING, BALL, DOUBLE ROW ANGULAR CONTACT, INA 3200 SERIES	30	6	58-774	SHCS 0.164-32 X 0.625
3	1	58-708	N5000-206 SNAP RING	31	6	58-773	MSHXNUT 0.164-32
4	1	58-710	GEAR, STARTER DRIVE, ONE PIECE	32	1	58-780	SSFLATSKT 0.4375-20 X 1
5	1	58-711	STARTER BUSHING	33	1	58-781	HJNUT 0.4375-20
6	1	58-712	STARTER SPRING	34	1	58-782	FW 0.4375
7	1	58-713	STARTER SPACER	35	4	58-919	HX-SHCS 0.3125-18X1.75
8	1	58-714	SPRING STOP	36	3	58-926	HX-SHCS 0.3125-18X2.125
9	1	58-718	STARTER BOLT 89'-93', 1/4-20 X 2-3/4 (SUPPLIED)	37	1	58-901	BELT, GOODYEAR 2" 8MM 140T
10	1	*58-719	STARTER BOLT 94'-06', 10-32 X 2-3/4 (AVAILABLE)	38	6	58-796	HX-SHCS 0.3125-18 X 0.75
11	1	58-930	COVER, STARTER GEAR	39	1	58-761	BELT GUIDE, ULTIMA 2" TRANS PULLEY
12	2	58-798	COUNTERBORED SPACER, SWINGARM	41	1	58-741	HTNUT 0.75-16
13	1	58-605	COLLAR, SPROCKET SHAFT, NO OFFSET	42	1	95-778	CLUTCH ROD SEAL
		IMPORT	USA MADE	43	1	58-735	GEAR, STARTER RING
		*58-606	1/4" OFFSET COLLAR, SPROCKET SHAFT	44	6	96-251	SPRING, CLUTCH - MEDIUM, GOLD (68LB @ 1")
		*58-607	1/2" OFFSET COLLAR, SPROCKET SHAFT	46	6	96-249	SPRING, CLUTCH - HEAVY DUTY, BLACK (82LB @ 1")
		*58-608	3/4" OFFSET COLLAR, SPROCKET SHAFT	47	6	96-250	SPRING, CLUTCH - EXTRA HEAVY DUTY, RED (98LB @ 1")
		*58-609	1" OFFSET COLLAR, SPROCKET SHAFT	48	6	58-833	CLUTCH SPRING STUD
		*58-610	1-1/4" OFFSET COLLAR, SPROCKET SHAFT	49	6	58-852	CLUTCH SPRING GUIDE
		*58-611	1-1/2" OFFSET COLLAR, SPROCKET SHAFT	50	1	58-867	MOTOR PULLEY CAP
		*58-612	*58-106 1-3/4" OFFSET COLLAR, SPROCKET SHAFT	51	1	58-835	SHCS #12-24 X 1.000
		*58-613	2" OFFSET COLLAR, SPROCKET SHAFT	52	1	58-633	GEAR ASSEMBLY, STARTER DRIVE
14	1	58-824	PULLEY, MOTOR 45T 2" DRIVE	53	1	58-720	COVER ASSEMBLY, STARTER GEAR
15	1	58-726	WASHER, 1.655 X 0.94 X 0.125	54	1	58-834	MAIN TRANS PULLEY ASSEMBLY
16	1	58-723	HTNUT 0.8750-14	55	1	58-825	TRANSMISSION PULLEY SUB-ASSEMBLY 71T
		*58-724	NUT, MOTOR PULLEY LONG (FOR 1-1/2-1-3/4" OFFSET COLLAR)	56	1	58-923	TRANSMISSION PULLEY, BARE, W/STAINLESS INSERTS 71T
18	12	58-736	HX-SHCS 0.25-20 X 0.625	57	1	58-925	STAINLESS INSERTS FOR 2" PULLEY. PKG.
19	1	58-828	CLUTCH HUB	58	1	58-622	CLUTCH RETAINING NUT ASSY
20	1	58-756	WASHER, CLUTCH HUB	59	1	58-769	COMPLETE REPLACEMENT CLUTCH ASSY
21	1	58-757	N5000-137 SNAP RING	60	1	58-829	PRESSURE PLATE ASSEMBLY
22	1	58-826	PULLEY, TRANSMISSION 71T	61	1	58-827	CLUTCH HUB ASSEMBLY
23	1	58-739	RETAINING RING, CLUTCH ASSY INNER	62	1	58-737	BEARING, BALL, DOUBLE ROW ANGULAR CONTACT, INA 3200 SERIES
24	1	58-738	RETAINING RING, CLUTCH ASSY OUTER	59	1	58-779	CLUTCH ADJUSTER ASSY
25	1	96-83	CLUTCH DRIVE PLATE, LOWER 0.119	60	1	58-929	GROOVED SPACER, SWINGARM
26	8	—	CLUTCH PLATE, FRICTION	61	1	58-925	PULLEY INSERTS ONLY, 2"
27	7	96-34	CLUTCH PLATE, STEEL 0.049	62	1	58-923	OUTER PULLEY 71T W/INSERTS, 2"
28	1	58-832	PRESSURE PLATE				

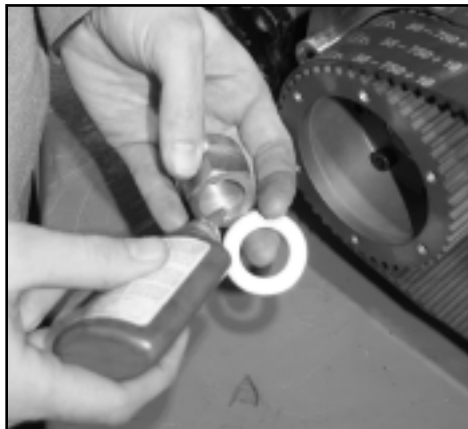
### III. INSTALLING PULLEYS AND BELT



1. Install the clutch basket assembly onto the transmission mainshaft. Apply red Loctite to the mainshaft nut and torque to 55-65 ft lb.

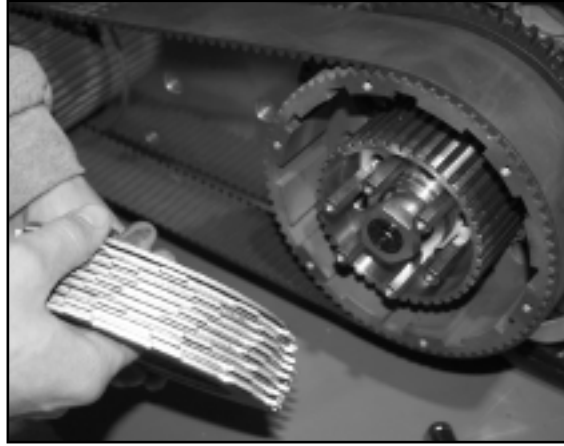


2. Install the stator, rotor, washer and any shims that were present or are needed. Ultima Belt Drives are not as sensitive as chain drives to pulley alignment as the clutch basket acts as a guide but proper alignment should be checked. To insure a completely dry running primary many people use a bead of clear RTV Silicone at each spline to insure no oil will travel between the shaft and spline.  
Install the belt and front pulley at the same time. It can be tricky to align the splines with some tension on the belt. Once you get the spline started you can tap the pulley on lightly with a dead blow or plastic hammer.



3. Install the motor pulley nut using red Loctite and torque to mfg recommended specification.

## IV. INSTALLING THE CLUTCH COMPONENTS



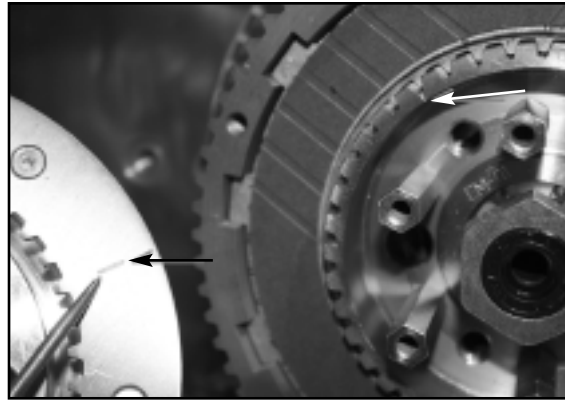
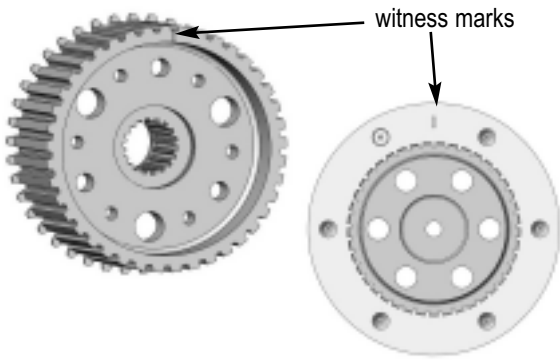
1. Ultima 2" belt drives utilize 8 of the old style 900cc sportster steel drive plates and 8 special size fiber plates designed to provide a very adjustable clutch package. When installing the clutch pack install the thick .119" steel plate first then alternate fiber/steel. The last plate you install should be fiber.



2. Check the pressure plate screws to ensure they are all tight and the heads of the bolts are sitting below the plate surface.



3. Install the clutch adjusting screw using a small amount of high temp grease or anti-sieze on the thread and on the clutch pushrod end. Don't get too much grease out there –Remember this is a DRY clutch.

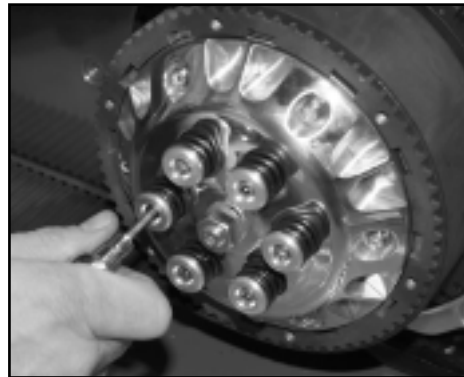


4. Align the witness marks on the pressure plate and inner clutch hub as shown when installing pressure plate. This will insure clutch hub studs will be centered in the appropriate pressure plate holes.

**NOTE: CENTER PUSHROD IS REQUIRED**

The center clutch push rods (located in the transmission main shaft) may need to be changed depending on setup. Below is a list of available sizes.

<u>PART#</u>	<u>LENGTH</u>	<u>DESCRIPTION</u>
<b>96-442</b>	11.375"	1987-1989 5 speed
<b>96-538</b>	10.8125"	1990+ 5 speed
<b>96-469</b>	11.875"	1985+ 5 & 6 speed



5. After installing the pressure plate, install clutch springs w/supplied spring collars and narrow-headed 12-24 bolts. Install using blue Loctite. Spring collars should bottom on clutch hub studs. Torque to 90 in-lbs.

In higher horsepower applications, heavier springs are available.

Midwest Part#**96-251** (68lbs @ 1")

Midwest Part#**96-249** (82lbs @ 1")

Midwest Part#**96-250** (98lbs @ 1")

## V. INSTALLING THE STARTER GEAR



- 58-718 1/4-20 x 2.75 (89'-93' supplied)
- 58-719 10-32 x 2.75 (94'-06' available)



Install your starter motor to the motor plate then install the starter drive gear assembly in the order shown using blue Loctite. The starter drive gear should be a minimum of .150" from the clutch basket starter ring gear once installed. **APPLY SOME HIGH TEMP GREASE OR ANTI-SIEZE TO THE STARTER END CAP BUSHING.** Apply upward pressure to end cap when torquing to 18-22ft lbs, always use blue Locktite on end cap bolts. Reapply grease to bushing every 6 months minimum - **DO NOT RUN DRY!**

## VI. INSTALLING PULLEY CAP AND CLUTCH TRIM RING



Install motor pulley cap and clutch basket trim ring at this time using the supplied 1/4-20 bolts. Torque to 120-140 in-lbs w/blue Loctite.

## VII. KICKSTAND CONSIDERATIONS



Check your kickstand clearance to the belt by pushing down on the belt then adding at least 1/2". Use MWM # 5-190 adjustable kickstand leg stop if needed. This is an important safety check and should be performed before initial startup.