



SERVICE MANUAL FOR WEED EATER/POULAN/POULAN PRO  
18cc,21cc AND 24cc ENGINES

LT7000;LT7500;FEATHERLITE SERIES;WT21;PP110;PT112;PP113;PT115;PT165;  
LT17; PROLITE; TWIST-N-EDGE(TE) UNITS; ULTRATRIM

**1. SCREW SPECIFICATIONS**

<b>PART NO.</b>	<b>LOCATION (QTY)</b>	<b>SIZE</b>	<b>TORQUE (IN-LBS)</b>
<b><u>CRANKCASE &amp; CYLINDER</u></b>			
530015953	CYLINDER/CRANKCASE (2)	1/4 – 20	90-100
952030201	SPARK PLUG (1)	14mm	11-15(FT LBS)
530015810	FAN HSG/CRANKCASE (4)	10 - 24	40 - 50
530016014	CARB ADAPTER/CYL (2)	12 - 24	50 - 60
530015887	CARB/CARB ADAPTER(2)	9 - 15	60 - 70
530015966	AIR BOX COVER/BOX (2)	10 - 14	10 - 15
<b><u>IGNITION SYSTEM</u></b>			
530038604	DRIVE COUPLING (1)	5/16 - 24	10 – 12(FT LBS)
530015954	MODULE/CRANKCASE (2)	8 – 32	30 - 40
<b><u>STARTING SYSTEM, FAN HOUSING &amp; CLUTCH HOUSING</u></b>			
530015882	STARTER DOG/FLYWHEEL (2)	6 - 19	8 - 12
530016080	PULLEY/ROPE (1)	6 - 19	10 - 12
530015886	CLUTCH HSG/FAN HSG (3)	10 - 14	30 - 40
530015882	SPRING/HSG RET. (1)	6 - 19	8 - 12
530015875	NOSE CLAMP	10 - 24	25 - 35
<b><u>SHROUD &amp; TANK</u></b>			
530015810	SHROUD/CRANKCASE (4)	10 - 24	40 - 50
530015934	SHROUD/FAN HSG (10)	10 - 14	30 - 40
53015886	TANK/SHROUD (2)	10 - 14	40 - 50
<b><u>LOWER END</u></b>			
530047905	HUB/DRIVESHAFT (1)	5/16-24	70 - 90
530016273	THROTTLE/HSG	8-16	10-15

USE LOCTITE 242 ( MEDIUM STRENGTH) OR PERMA-LOK MM 115.

**2. SUMMARY OF ENGINE SPECIFICATIONS**

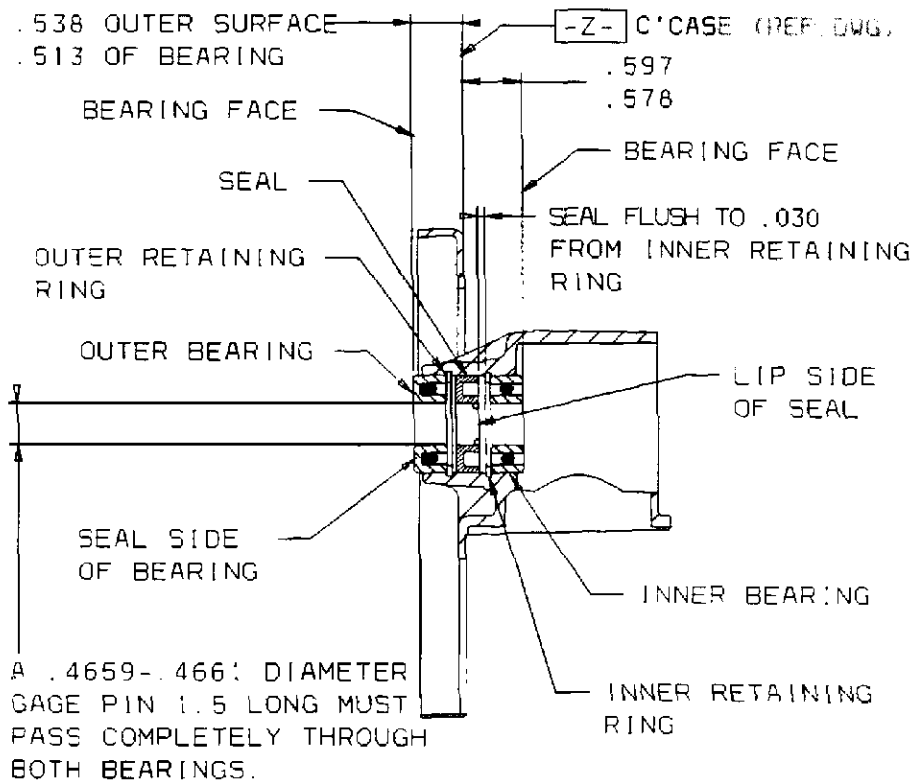
A.	COMPRESSION (COLD ENGINE AFTER MOTOR TEST)	110 - 130 PSIG
B.	CRANKSHAFT RUN-OUT (CIRCULAR RUN-OUT @ .400 GAGE DIA)	.004 MAX
C.	IDLE SPEED	3400 - 4200 RPM
D.	WIDE OPEN THROTTLE	INTERMITTENT 2/4 TO (AFTER 3 MINUTES WARM-UP AND MOTOR TEST). JUST CLEAN 2-CYCLE (2/4 MUST BE MAX 1/8 TURN RICHER THAN POINT WHERE ENGINE JUST BREAKS INTO A CLEAN 2-CYCLE).
E.	IGNITION TIMING (FIXED)	18° - 22° BTDC @ 3000 RPM
F.	MIXTURE SCREW SETTING	1 1/2 - 2 1/2 TURNS OUT
G.	COIL AIR GAP	.010" - .014"
H.	SPARK PLUG GAP (RCJ8Y)	.023" - .028"
I.	CHOKE SHUTTER STAND OFF	.004" MAXIMUM

**3. CRANKCASE ASSEMBLY SPECIFICATIONS**

- A. INSTALL INNER RETAINING RING IN CRANKCASE.
- B. PRESS SEAL INTO CRANKCASE WITH SEAL "LIP: ORIENTED TOWARDS CYLINDER END OF CRANKCASE.
- C. INSTALL OUTER RETAINING RING INTO CRANKCASE.
- D. PRESS OUTER BEARING (WITH SEAL) UNTIL IT STOPS AGAINST OUTER RETAINING RING. SEE FIGURE 1.

**NOTE:** MAKE SURE SEAL SIDE OF BEARING FACES AWAY FROM RETAINING RING.

- E. PRESS INNER BEARING (NO SEAL) UNTIL IT STOPS AGAINST INNER RETAINING RING ON OPPOSITE SIDE OF RING FROM SEAL.



**FIGURE 1**

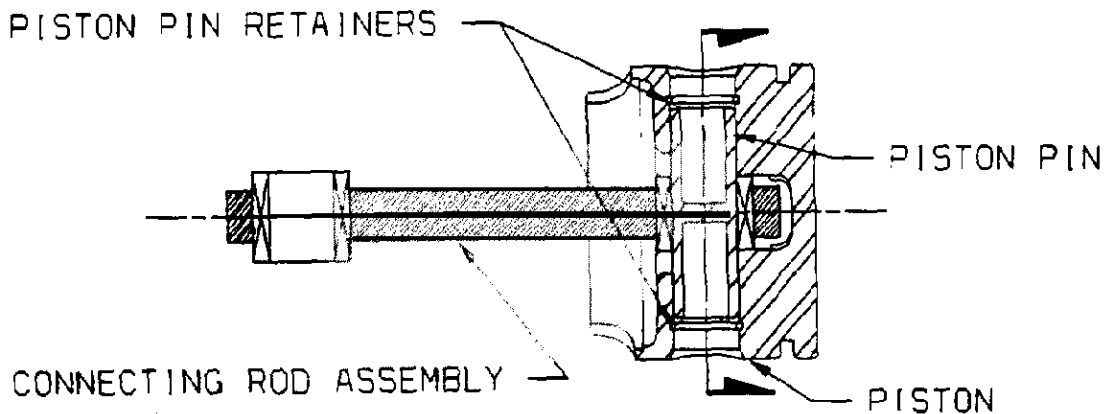
**4. PISTON, CRANKSHAFT, CYLINDER ASSEMBLY SPECIFICATIONS**

**A. SPECIAL CAUTION NOTES:**

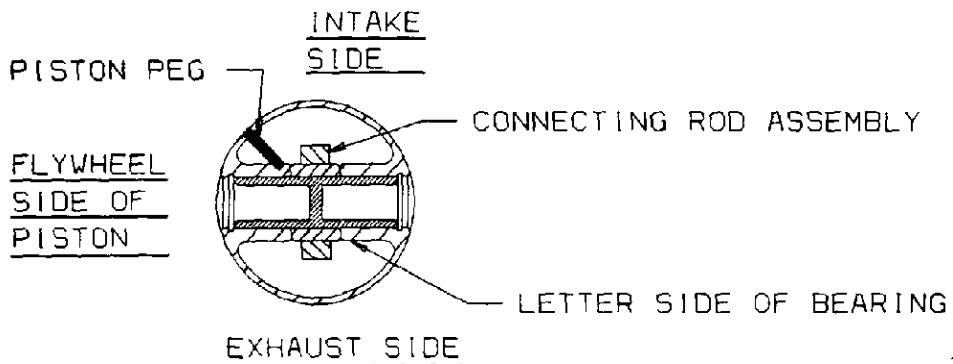
- 1) CARE MUST BE TAKEN TO PROTECT PISTON FROM SCRAPES AND NICKS.
- 2) ASSEMBLY FIXTURES MUST BE KEPT CLEAN TO AVOID DAMAGE TO THE PISTON.
- 3) DO NOT HAMMER OR TAP PISTON PIN INTO PISTON.
- 4) CRANKCASE MUST BE KEPT FREE OF CHIPS, DIRT, AND DEBRIS BEFORE AND DURING ENGINE ASSEMBLY.

**B. PISTON AND CONNECTING ROD ASSEMBLY**

- 1) INSTALL PISTON PIN RETAINER IN ONE SIDE OF PISTON.
- 2) ASSEMBLE CONNECTING ROD TO PISTON (SEE FIGURE 2 FOR ORIENTATION OF CONNECTING ROD ASSEMBLY).
- 3) PRESS PISTON PIN (NO SPECIAL ORIENTATION) TO PISTON AND CONNECTING ROD.
- 4) INSTALL PISTON PIN RETAINER TO OTHER SIDE.



**FIGURE 2**



4. **PISTON, CRANKSHAFT, CYLINDER ASSEMBLY SPECIFICATIONS** - CONTINUED

C. CRANKSHAFT ASSEMBLY

- 1) PRESS CRANKSHAFT ASSEMBLY INTO BEARINGS UNTIL SHOULDER OF COUNTERWEIGHT BOTTOMS OUT ON INNER BEARING. IMPORTANT: CHECK TO SEE IF RETAINING RING GROOVE IS CLEAR TO ASSEMBLE RETAINING RING AND CRANKSHAFT TURNS FREELY (FIGURE 3) WHILE SUPPORTING THE OUTER BEARING COMPLETELY AND ORIENTING PROPERLY THE COUNTERWEIGHT.
- 2) ASSEMBLE RETAINING RING INTO CRANKSHAFT GROOVE.

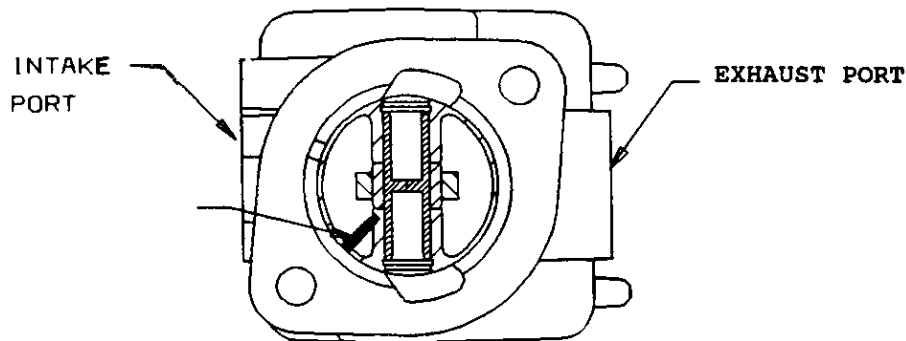
**NOTE:** CARE MUST BE TAKEN TO DETERMINE WHEN THE SHOULDER OF THE CRANKSHAFT WILL CONTACT THE INNER RACE OF THE INSIDE BEARING SO NO EXCESSIVE FORCE WILL BE APPLIED OVER THE BEARING.

FIGURE 3

4. **PISTON, CRANKSHAFT, CYLINDER ASSEMBLY SPECIFICATIONS** - CONTINUED

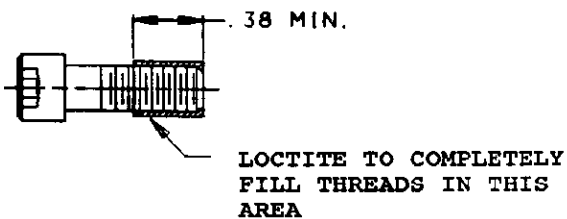
D. CYLINDER ASSEMBLY

- 1) COAT CYLINDER WALLS, PISTON, AND PISTON RING WITH 30 OR 40 WEIGHT OIL PRIOR TO ASSEMBLY.
- 2) ASSEMBLE CYLINDER GASKET TO CYLINDER
- 3) ASSEMBLE PISTON TO CYLINDER USING A RING PROTECTOR



**RING ORIENTATION PEG  
ROTATED AWAY FROM EXHAUST PORT**

- 4) TURN CRANKSHAFT TO TOP-DEAD-CENTER. ASSEMBLE CONNECTING ROD TO CRANKSHAFT ASSEMBLY.
- 5) FIT CYLINDER TO CRANKCASE.
- 6) ASSEMBLE TWO (2) SCREWS TO CYLINDER AND CRANKCASE USING LOCTITE ON TH THREADS.



**5. CARBURETOR, AIR BOX ASSEMBLY SPECIFICATIONS(18cc FEATHERLITE SERIES)**

- A. ASSEMBLE CARBURETOR ADAPTER GASKET TO CARB ADAPTER (FIGURE 4) (NOTE GASKET RETENTION POSTS).
- B. ASSEMBLE CARB ADAPTER TO CYLINDER WITH TWO (2) SCREWS. TORQUE TO SPECIFICATION.
- C. SLIDE CHOKE PLATE (SIDE WITH THREE DETENTS TO BE FACING AIR FILTER BOX) INTO AIR FILTER BOX UNTIL ALL THREE HOLES LINE UP WITH THE HOLES IN AIR FILTER BOX.
- D. PLACE CHOKE SHUTTER INTO FILTER BOX MAKING SURE THAT DETENT ON THE SHUTTER WILL ENGAGE THE THREE DETENTS IN THE CHOKE PLATE (FIG. 5).

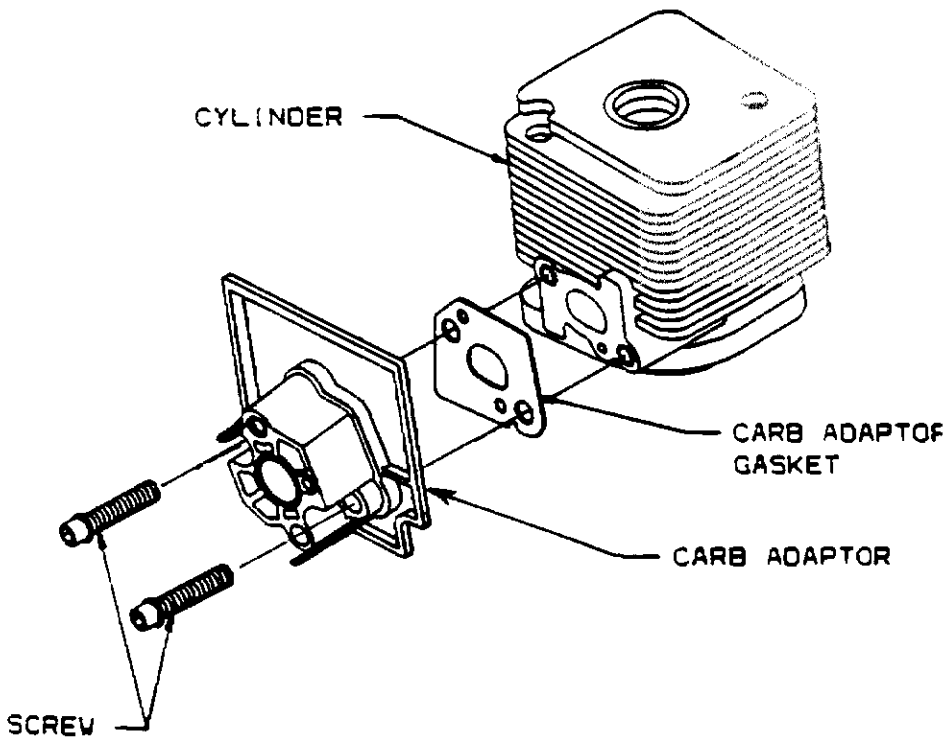


FIGURE 4



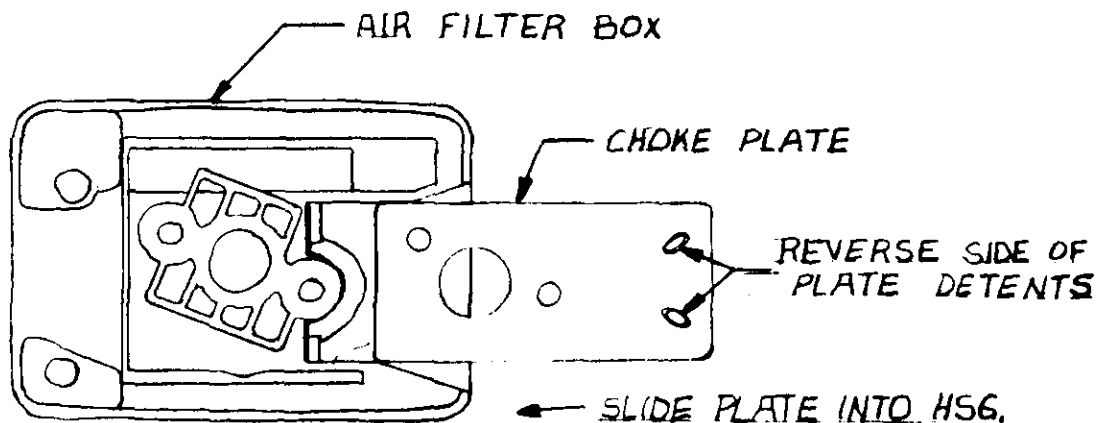


FIGURE 5

5. **CARBURETOR, AIR BOX ASSEMBLY SPECIFICATIONS** - CONTINUED

- E. PLACE CARB GASKET TO CARB ADAPTER, MAKING SURE SLOTS IN GASKET ALIGN WITH PINS ON ADAPTER (FIGURE 6).
- F. ATTACH LARGE DIA. PURGE RETURN LINE FROM FUEL TANK TO LOWER ANGLED FITTING ON CARB (AS VIEWED FROM REAR OF POWERHEAD).
- G. ATTACH SMALL DIA. FUEL LINE FROM FUEL TANK TO FUEL INLET FITTING ON THE CARBURETOR (THE FUEL INLET FITTING IS THE UPPER STRAIGHT FITTING AS VIEWED FROM THE REAR OF THE POWERHEAD).
- H. INSTALL SCREW THROUGH THE CHOKE SPACER (WITH THE FLANGE AGAINST THE SCREW HEAD), THROUGH WAVE WASHER AND THEN THROUGH THE CHOKE SHUTTER INTO AIR FILTER BOX. INSTALL OTHER SCREW THROUGH THE OTHER HOLE IN THE AIR BOX.
- I. ALIGN SCREWS IN AIR FILTER BOX THROUGH CARBURETOR INTO CARB ADAPTER AND TORQUE SCREWS TO SPECIFICATION.
- J. IMPORTANT: CHECK CHOKE LEVER MOVEMENT. CHOKE LEVER MUST HAVE POSITIVE STOP AT ALL DETENTS AND CYCLE THROUGH ALL THREE POSITIONS OF CHOKE FREELY.
- K. POSITION FILTER SUPPORT PLATE INTO AIR FILTER BOX, RAISED CENTER AREA UP.
- L. FIT AIR FILTER FOAM INTO AIR FILTER BOX. THERE ARE TO BE NO GAPS OR PINCH AREAS AROUND EDGES.
- M. INSTALL AIR BOX COVER TO AIR FILTER BOX WITH VERBIAGE TO TOP OF UNIT. TORQUE (2) SCREWS TO SPECIFICATION.

FIGURE 6

7. CARBURETOR ADAPTOR ASSEMBLY SPECIFICATION (24CC)

- A. ASSEMBLE CARB ADAPTER GASKET TO CARB ADAPTOR ALIGNING NOTCHES IN GASKET WITH RETENTION POSTS ON CARB ADAPTOR.
- B. PLACE THROTTLE CABLE IN POCKET IN CARB ADAPTOR AS SHOWN IN FIG. 7.
- C. ASSEMBLE CARB ADAPTOR TO CYLINDER USING (2) SCREWS AND TORQUE TO SPECIFICATION.

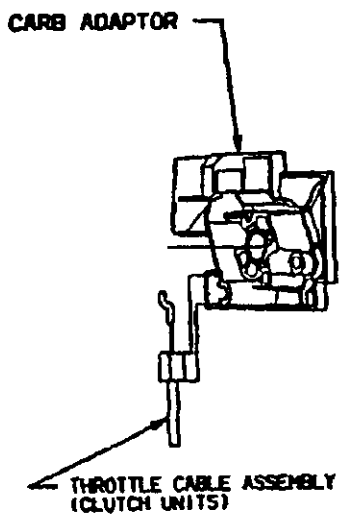


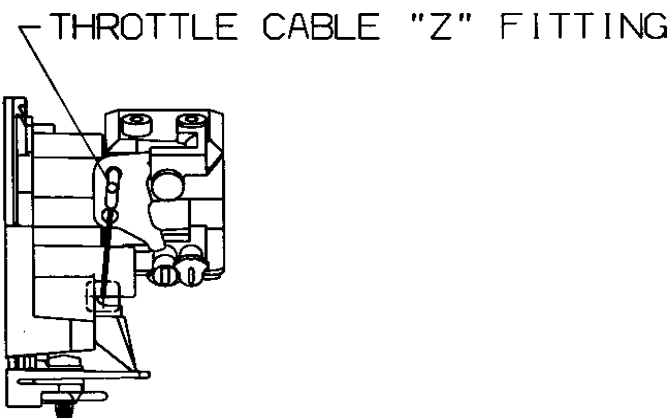
FIGURE 7

**15. CARBURETOR/AIR BOX ASSEMBLY SPECIFICATION**

- A. ASSEMBLE CARB GASKET TO CARB ADAPTOR, ENSURING NOTCHES IN GASKET ALIGN WITH PINS ON CARB ADAPTOR.
- B. ATTACH LARGE DIAMETER FUEL LINE FROM TANK TO ANGLED FITTING ON CARB.
- C. ATTACH SMALL DIAMETER FUEL LINE FROM TANK TO STRAIGHT INLET FITTING ON CARB.
- D. ASSEMBLE CHOKE SPACER AND WAVE WASHER ONTO (1) CARB SCREW AND INSERT THROUGH CHOKE PLATE AND CHOKE LEVER. INSERT REMAINING (1) CARB SCREW THROUGH CHOKE PLATE. (SEE FIGURE 8)
- E. INSERT SCREWS THROUGH CARB AND INTO CARB ADAPTOR AND TORQUE TO SPECIFICATIONS. (SEE FIGURE 9)

**NOTE: IMPORTANT - CHECK CHOKE LEVER MOVEMENT AFTER INSTALLATION AND ENSURE IT MOVES FREELY THROUGH ALL POSITIONS.**

- F. ATTACH "Z" FITTING ON THROTTLE CABLE TO CARB THROTTLE PLATE. (SEE BELOW)
- G. ASSEMBLE AIR BOX TO CHOKE PLATE BY INSERTING CHOKE LEVER THROUGH SLOT ON AIR BOX AND SECURING WITH (3) SCREWS. TORQUE SCREWS TO SPECIFICATION.
- H. PLACE FILTER ELEMENT INTO AIR BOX.
- I. ASSEMBLE AIR BOX COVER TO AIR BOX WITH VERBIAGE FACING UP WITH (2) SCREWS. TORQUE SCREWS TO SPECIFICATION.



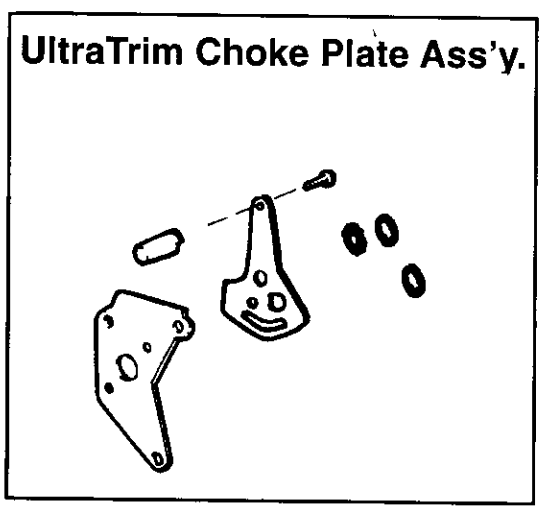
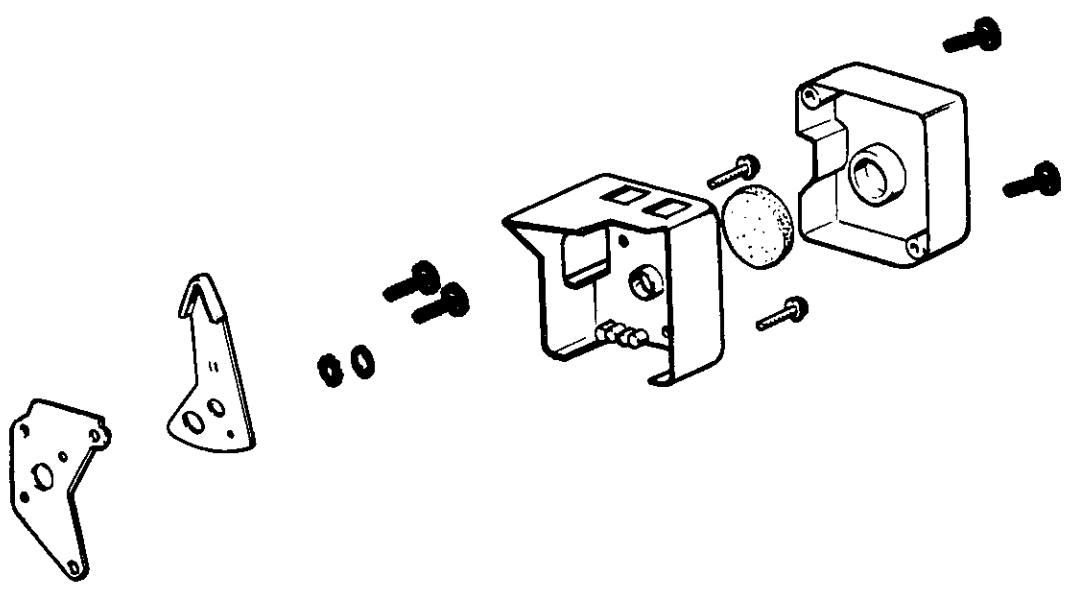


FIGURE 8

FIGURE 9

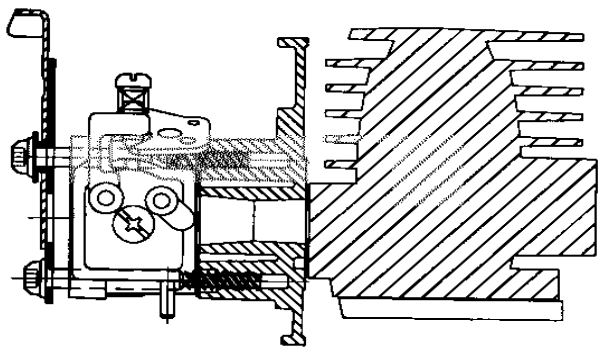


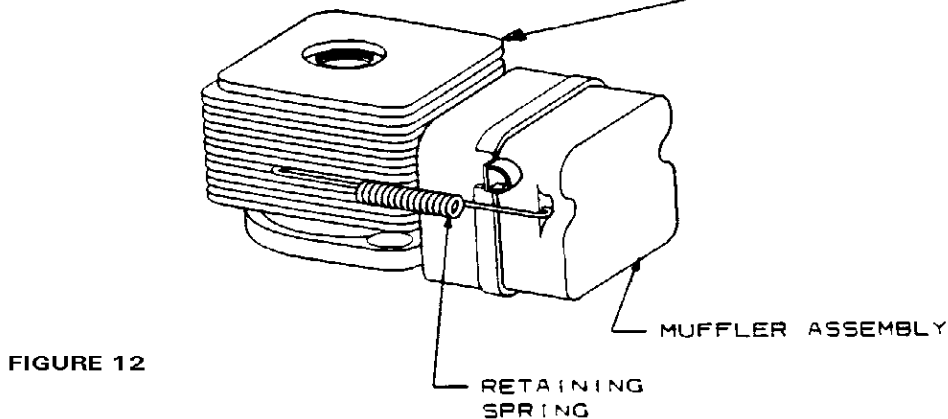
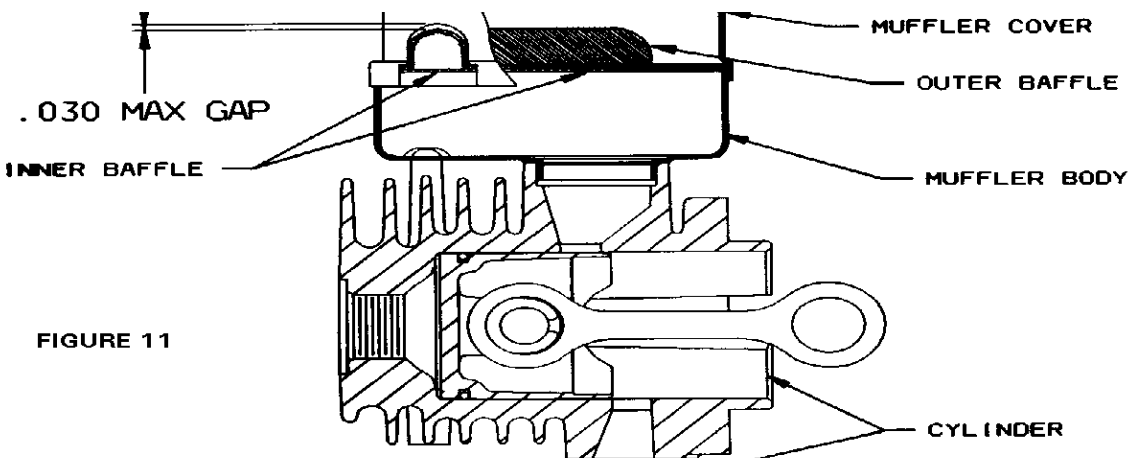
FIGURE 9

**6. MUFFLER ASSEMBLY SPECIFICATIONS**

**- NOTE: STEPS A-D ARE NOT REQUIRED WHEN USING ONE PIECE MUFFLER ASSY.**

- A. ASSEMBLE OUTER BAFFLE TO COVER ASSEMBLY (FIGURE 11).
- B. ASSEMBLE INNER BAFFLE TO COVER ASSEMBLY.
- C. ASSEMBLE MUFFLER BODY TO MUFFLER COVER UNTIL MUFFLER BODY SEATS IN COVER ASSEMBLY.
- D. ASSEMBLE MUFFLER ASSEMBLY TO CYLINDER. MAKE SURE MUFFLER ASSEMBLY SETS SQUARE ON CYLINDER EXHAUST PORT. IF MUFFLER IS "COCKED" OR LEANING ON CYLINDER, REMOVE IT AND REASSEMBLE TO CYLINDER.
- E. SECURE MUFFLER ASSEMBLY TO CYLINDER USING 2 RETAINING SPRINGS (FIGURE 12).

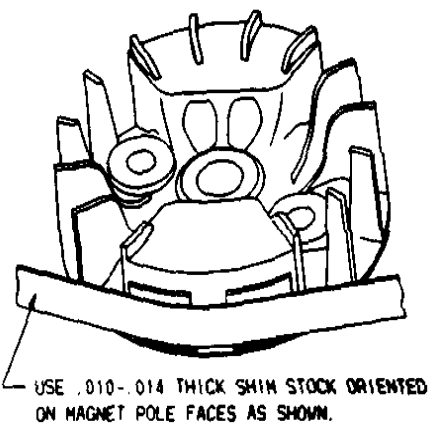
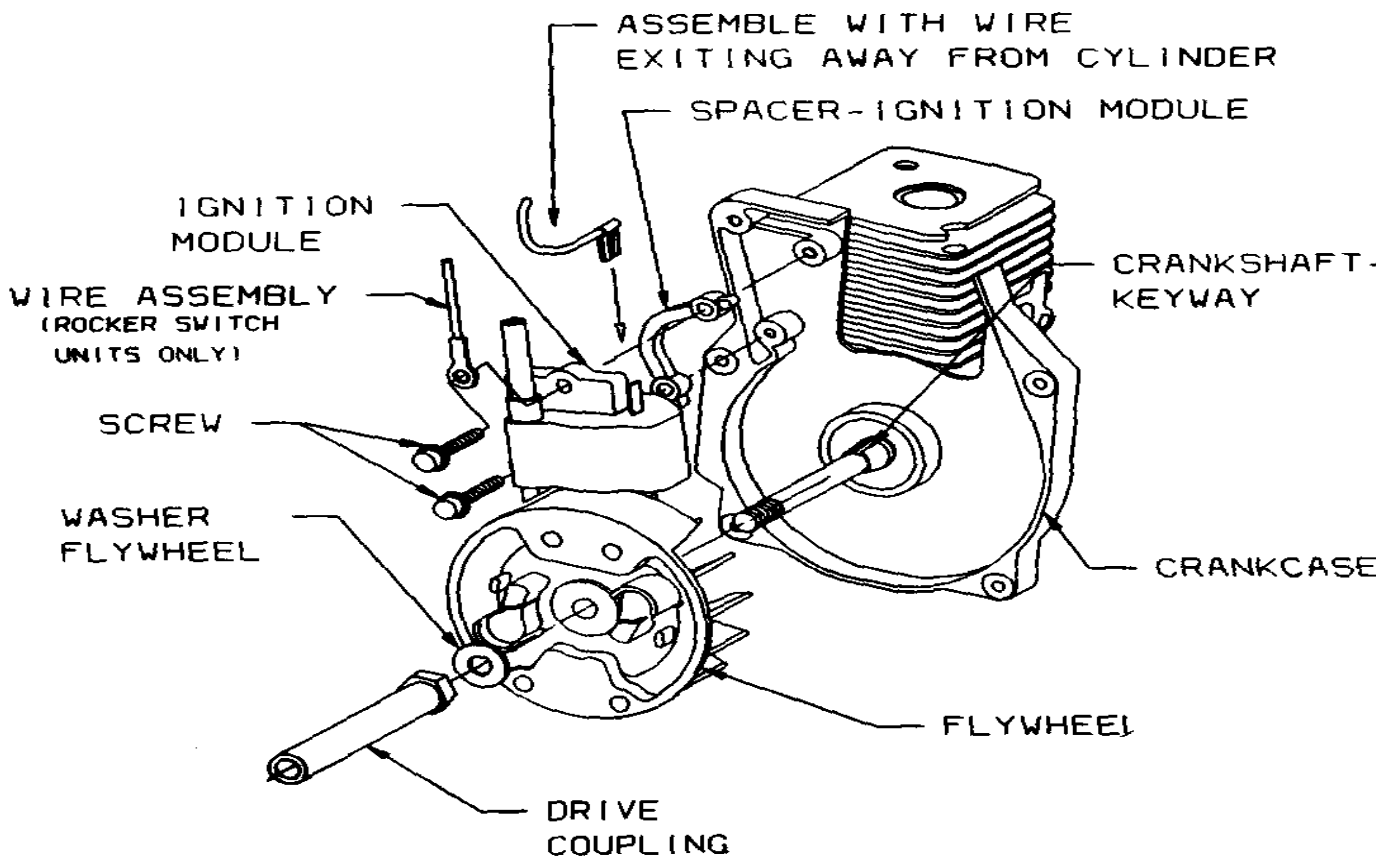
**NOTE:** CARE MUST BE TAKEN WHEN PULLING SPRING OVER INTO MUFFLER ATTACHING HOLES TO AVOID STRAIGHTENING OF SPRING HOOKS.



**7. IGNITION SYSTEM SPECIFICATIONS**

**NOTE:** CLEAN CRANKSHAFT TAPER WITH AN ALCOHOL DAMPENED CLOTH TO REMOVE GREASE AND OIL PRIOR TO FLYWHEEL INSTALLATION.

- A. ASSEMBLE FLYWHEEL ONTO CRANKSHAFT. ASSEMBLE WASHER AND DRIVE COUPLING TO CRANKSHAFT. HOLD FLYWHEEL WHILE TIGHTENING DRIVE COUPLING.
- B. DIP SCREW THREADS IN ADHESIVE COMPLETELY FILLING THREADS. ADHESIVE TO COVER A MINIMUM .250" OF THREAD LENGTH.
- C. PUT ONE SCREW THROUGH RING TERMINAL ON WIRE ASSEMBLY.
- D. INSTALL SCREWS THROUGH IGNITION MODULE, THEN SPACER, AND INTO CRANKCASE, SETTING AIR GAP AT .010-.014" .
- E. ATTACH FLAG TERMINAL ON WIRE SO THAT THE WIRE EXITS AWAY FROM CYLINDER, AND BE SURE TERMINAL IS SECURE ON TAB.



**8. STARTER HOUSING SPECIFICATIONS**

- A. INSERT STARTER SPRING IN FAN HSG.
- B. TORQUE SEMS SCREW TO HOLD DOWN SPRING HOOK.
- C. GREASE STARTER PULLEY POST WITH VERSILUBE
- D. PULLEY ASSEMBLY:
  - 1) PLACE PULLEY ONTO FAN HSG. POST. WIND PULLEY CLOCKWISE UNTIL STARTER SPRING BOTTOMS OUT.
  - 2) ROTATE PULLEY COUNTERCLOCKWISE UNTIL NOTCH IN PULLEY ALIGNS WITH NOTCH IN HOUSING THEN ROTATE PULLEY COUNTERCLOCKWISE ONE ADDITIONAL COMPLETE TURN. PLACE RETAINERS INTO NOTCHES IN FAN HOUSING AND TORQUE SCREWS TO SPEC.
  - 3) FEED STARTER ROPE THROUGH FAN HOUSING EYELET AND INTO STARTER PULLEY HOLE. LOOP ROPE (COUNTERCLOCKWISE) AROUND RATCHET AND TUCK LOOSE END BACK UNDER ROPE. POSITION ROPE TAIL BETWEEN SCREW BOSS AND OUTER RETAINING RIB. ROPE TAIL SHOULD BE FLUSH WITH THE END OF THE RETAINING RIB TO 1/4" PAST. INSTALL SCREW AND WASHER ASSEMBLY TO TORQUE SPECIFIED (FIGURE 13).
  - 4) PULL ON STARTER HANDLE TO INSURE THAT ROPE IS PROPERLY RETAINED IN PULLEY.
- G. QUALITY CHECK WHEN PROPERLY ASSEMBLED:
  - 1) ONE TO TWO FULL TURNS SHOULD REMAIN ON STARTER SPRING WHEN ROPE IS AT FULL EXTENDED POSITION.



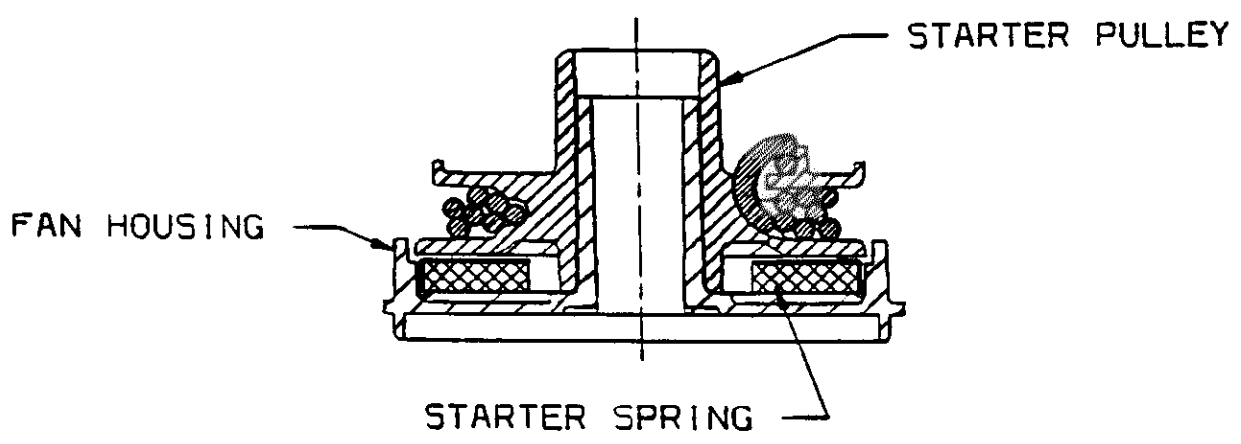
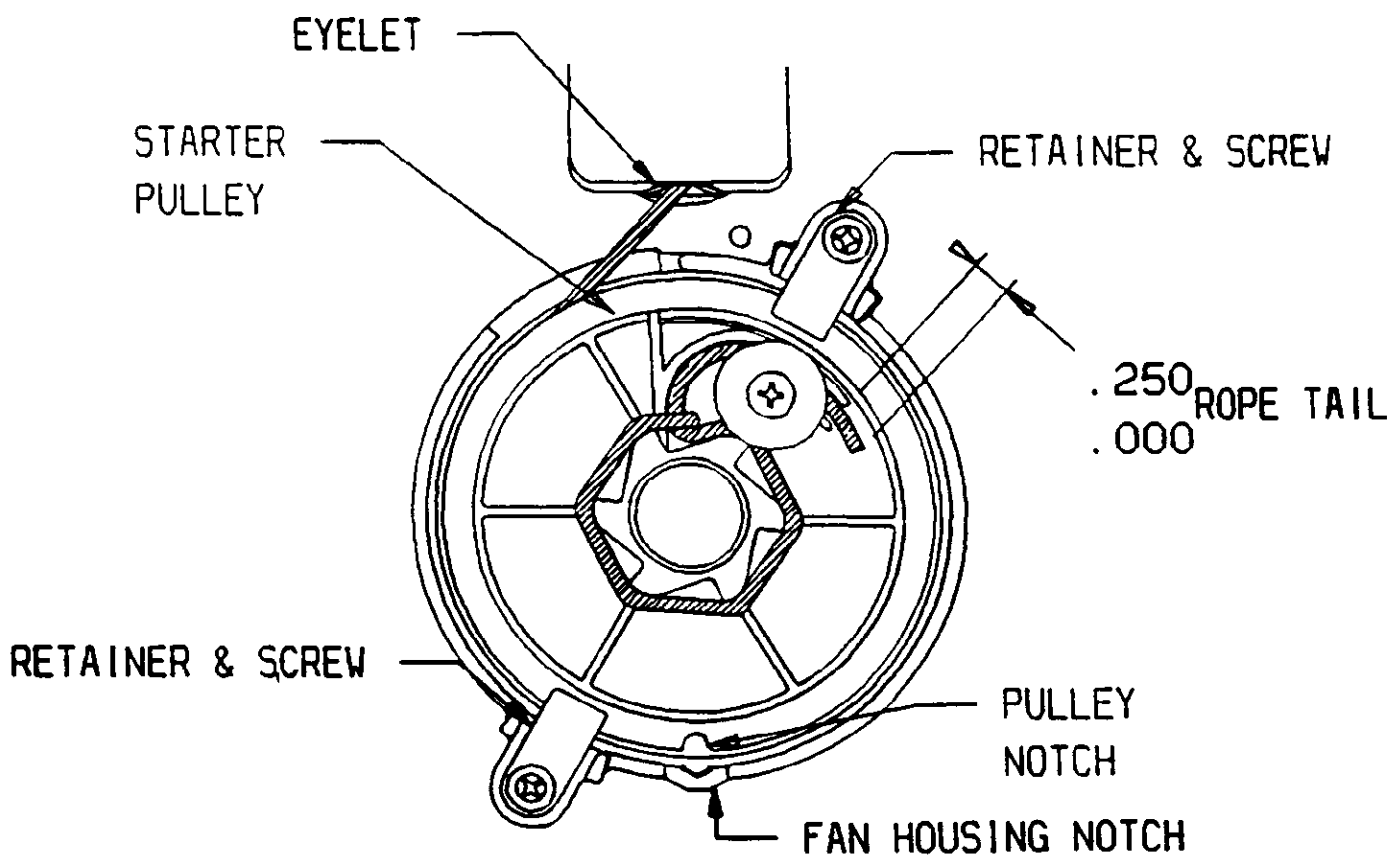


FIGURE 13

**9. FAN HOUSING/CRANKCASE ASSEMBLY SPECIFICATIONS**

- A. INSERT SCREWS INTO FAN HOUSING AND ASSEMBLE TO CRANKCASE (4 PLACES). PULL ON STARTER ROPE TO HELP SET STARTER DOGS (FIG. 14).
  - 1) FEED (2) LEAD WIRES THROUGH OPENING IN FAN HOUSING DURING ASSEMBLY.
  
- B. ASSEMBLE LEAD WIRE TERMINALS TO ENGINE STOP SWITCH. SNAP ENGINE STOP SWITCH INTO FAN HOUSING SO THAT BOTH TABS ARE TO THE TOP OF THE FAN HOUSING.

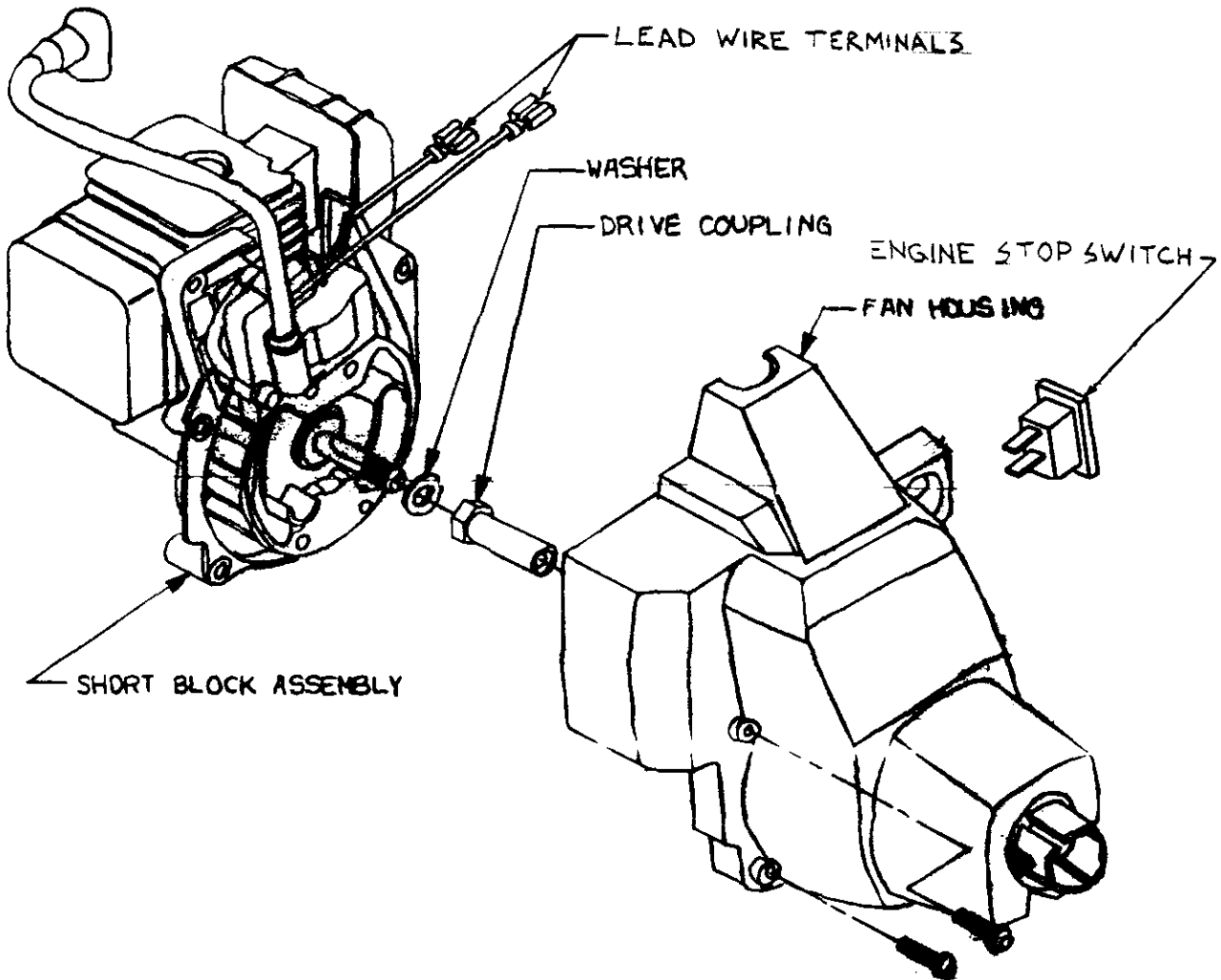


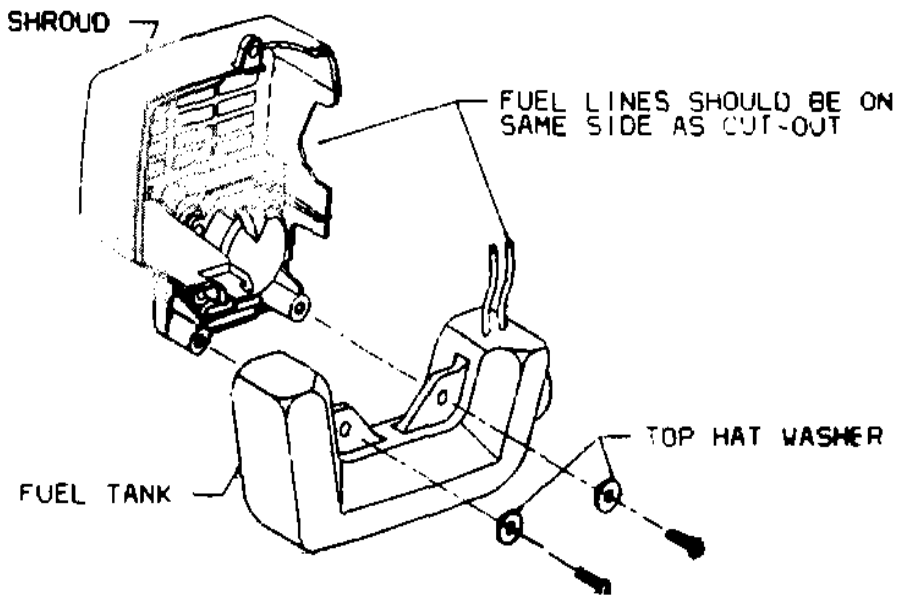
FIGURE 14

**10. FUEL TANK ASSEMBLY SPECIFICATION (BLOW MOLDED TANKS ONLY)**

- A. PRESS "TOP HAT" WASHERS INTO TANK MOUNTING HOLES (FIGURE 15).

**NOTE:** ORIENT AS SHOWN.

- B. INSERT BOLTS THROUGH "TOP HAT" WASHERS IN FUEL TANK, AND THREAD INTO MOUNTING BOSSES ON SHROUD. TORQUE BOLTS TO SPEC.



**FIGURE 15**

**13. FUEL TANK ASSEMBLY SPECIFICATION**

- A. ASSEMBLE ROUND ISOLATORS INTO FUEL TANK AND PLACE ASSEMBLY ON CRANKCASE BOSSES AS SHOWN IN FIGURE 16.
- B. ASSEMBLE TRIANGULAR SHAPED ISOLATORS INTO FUEL TANK AS SHOWN IN FIGURE 16.

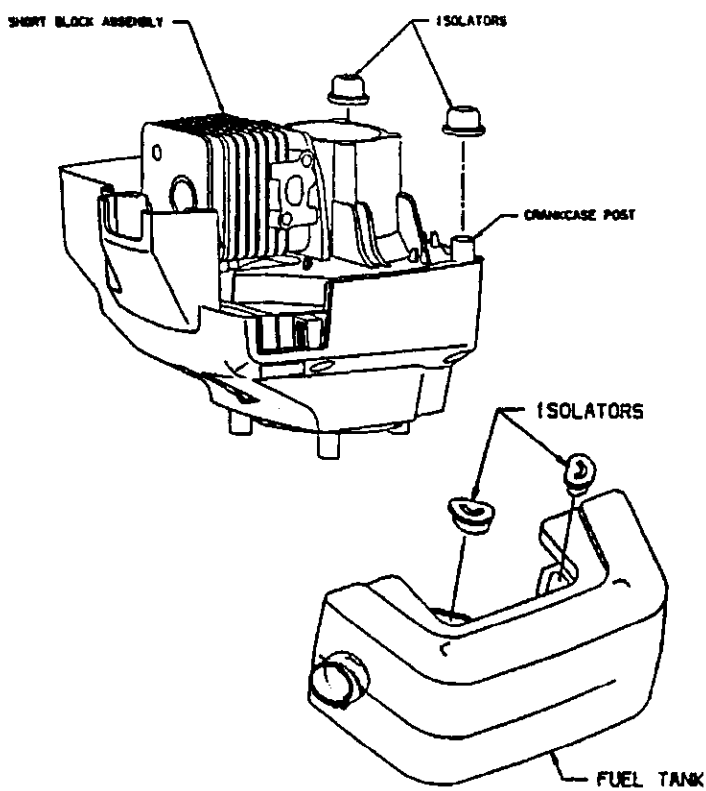


FIGURE 16

11. **SHROUD ASSEMBLY SPECIFICATIONS (PREVIOUS STYLE)**

- A. BEFORE ASSEMBLING THE SHROUD TO THE CRANKCASE THERE MUST BE A CONTINUOUS BEAD OF FORMED-IN-PLACE GASKET (RTV SILICONE) ON BOTH MATING SURFACES.

**NOTE:** CARE MUST BE TAKEN NOT TO LET SILICONE ON THE INSIDE OF THE CRANKCASE.

- B. INSTALL CRANKCASE COVER GASKET TO SHROUD (FIGURE 17).
- C. INSERT (4) SCREWS THROUGH SHROUD TO CRANKCASE. STEP-TORQUE TO SPECIFICATIONS.
- D. ASSEMBLE ONE (1) SCREW PLASTITE THROUGH SHROUD TAB ON TOP INTO FAN HOUSING. TORQUE TO SPECIFICATIONS.
- E. ASSEMBLE SPARK PLUG INTO CYLINDER AND TORQUE. PUSH IGNITION MODULE BOOT ONTO SPARK PLUG. TWIST TO HELP

**NOTE: CURRENT STYLE UNITS USE AN O-RING IN PLACE OF THE SHROUD GASKET, AND NO SILICONE IS REQUIRED.**

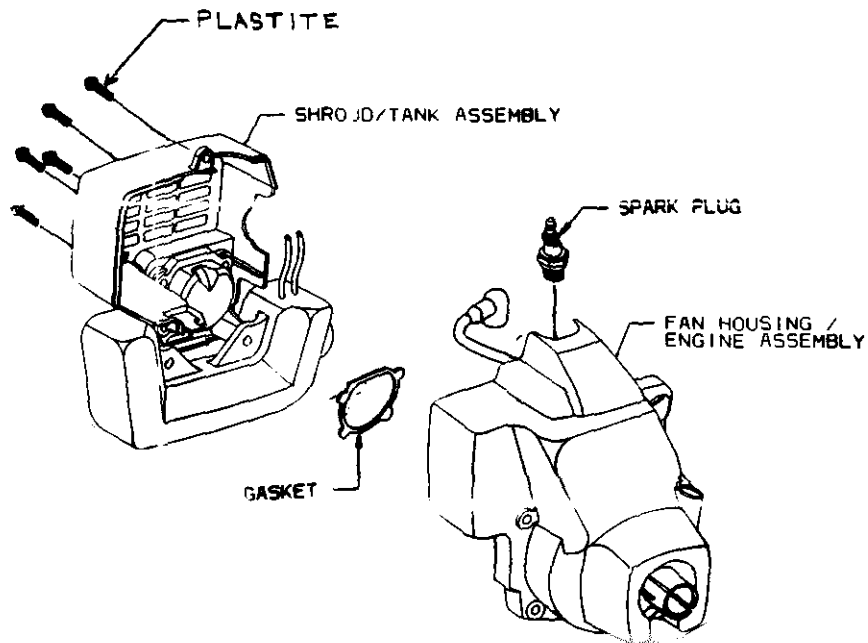
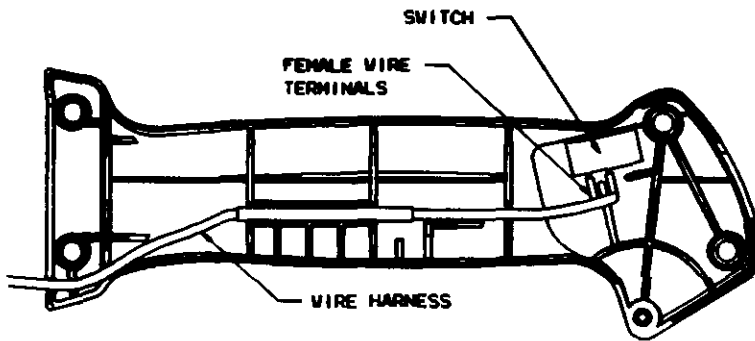


FIGURE 17

**12. THROTTLE HANDLE ASSEMBLY SPECIFICATION** - NOTE: STEPS A-C OF "CE UNITS ONLY" AND STEPS A-D OF "ALL UNITS" NOT REQUIRED IF THROTTLE HOUSING IS RECEIVED FULLY ASSEMBLED.

**CE UNITS ONLY**

- A. FEED FEMALE WIRE TERMINALS OF HARNESS THROUGH SWITCH OPENING IN THROTTLE HOUSING.
- B. INSTALL WIRE TERMINALS TO LUGS ON SWITCH & SNAP SWITCH INTO OPENING IN THROTTLE HOUSING AS SHOWN.
- C. ROUTE WIRE HARNESS THROUGH CHANNEL IN THROTTLE HOUSING (SEE FIGURE 18).



**FIGURE 18**

**A. ASSEMBLY FOR T-N-E MODELS**

- 1) ASSEMBLE ACTUATOR, SPRING AND WASHER ON LOWER END AS SHOWN IN FIGURE 19.
- 2) PLACE RIGHT THROTTLE HOUSING IN FIXTURE.
- 3) ASSEMBLE ACTUATOR, SPRING AND WASHER IN THROTTLE HOUSING AS SHOWN IN FIGURE 19.
- 4) ASSEMBLE POWER HEAD TO LOWER END, PULLING STARTER ROPE TO EASE ASSEMBLY.
- 5) ASSEMBLE TRIGGER TO THROTTLE CABLE AND PLACE TRIGGER ON POST IN THROTTLE HOUSING (NOTE: BE SURE TO PLACE STOP TAB OUTSIDE THROTTLE HSG OPENING). PLACE THROTTLE CABLE ANCHOR IN POCKET ON THROTTLE HOUSING. PUSH THROTTLE CABLE BETWEEN MOUNTING RIBS.
- 6) ASSEMBLE LEFT THROTTLE HOUSING TO RIGHT THROTTLE HOUSING USING SIX (6) SCREWS. TORQUE SCREWS TO SPECIFICATION.

**FIGURE 19**

**ALL UNITS**

A. INSERT CABLE BARREL END FITTING INTO POCKET ON TRIGGER.

B. PLACE THROTTLE TRIGGER ONTO POST IN HANDLE (FIGURE 20).

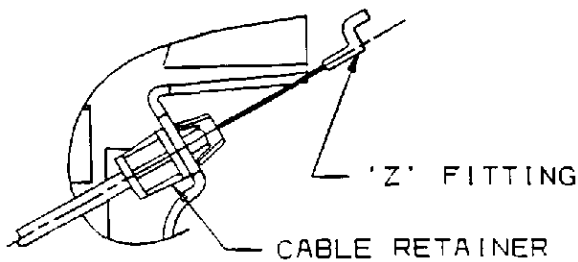
**NOTE:** BE SURE TO PLACE THE STOP TAB OUTSIDE THE HANDLE OPENING.

C. ROUTE THROTTLE CABLE UP THROUGH CENTER OF THE HANDLE, LOCATE SQUARE FITTING END OF CABLE POCKET, PUSH CABLE BETWEEN THE MOUNTING RIBS.

D. ASSEMBLE COVER HANDLE HALVES TOGETHER TO RETAIN THROTTLE CABLE AND TRIGGER IN CORRECT POSITION. **IMPORTANT:** CHECK AND SEE IF TRIGGER ASSEMBLY FUNCTIONS CORRECTLY. ASSEMBLE FOUR (4) SCREWS TO BE TORQUED.

E. SLIDE Z END OF THROTTLE CABLE THROUGH HOLE IN SIDE OF FAN HOUSING. SNAP IN CABLE RETAINER (SEE BELOW).

F. PLACE Z FITTING INTO THROTTLE PLATE ON CARBURETOR .



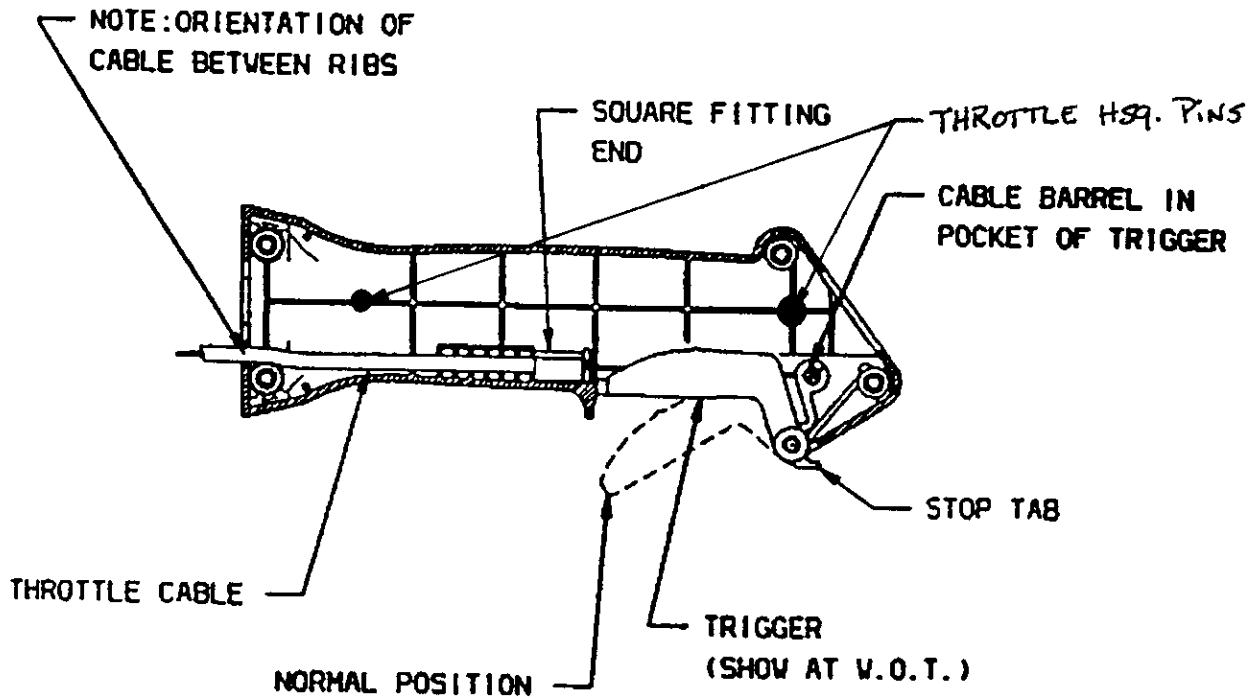


FIGURE 20

### 13. LOWER END SPECIFICATIONS AND ASSEMBLY

#### A. FLEX SHAFT INSTALLATION

- 1) APPLY GREASE TO FLEX SHAFT.
- 2) INSERT FLEX SHAFT INTO HOUSING UNTIL IT ENGAGES IN ARBOR.
- 3) ROTATE SHAFT TO INSURE ENGAGEMENT.

#### B. TRIMMER HEAD ASSEMBLY SPECIFICATIONS.

- 1) HOLD THE DUST CUP TO KEEP FROM TURNING.
- 2) THREAD TRIMMER HEAD ONTO ARBOR SHAFT. TIGHTEN FIRMLY AGAINST DUST CUP.



13. **LOWER END SPECIFICATIONS AND ASSEMBLY** - CONTINUED

D. POWERHEAD TO LOWER END ASSEMBLY

- 1) PLACE NOSE CONE CLAMP ASSEMBLY OVER TABS ON FAN HOUSING, AND ALIGN SLOT IN CLAMP TO TAB ON FAN HOUSING (FIGURE 21).
- 2) ASSEMBLE LOWER END ASSEMBLY INTO THROTTLE GRIP THEN TO POWERHEAD ASSEMBLY UNTIL LOWER END ASSEMBLY SEATS IN FAN HOUSING. TORQUE NOSE CONE CLAMP SCREW TO SPECIFICATION. HOOK THROTTLE GRIP INTO THE FAN HOUSING SLOT AND TIGHTEN (4) SCREWS IN THROTTLE GRIP.



FIGURE 21

**14. CARBURETOR SPECIFICATIONS AND ADJUSTMENT PROCEDURES**

- A. WORK AREA MUST BE CLEAN AND FREE OF ANY LOOSE PARTICLES (CHIPS, FLOOR SWEEP, ETC.) WHICH COULD BE DRAWN INTO THE ENGINE WHILE RUNNING.
- B. ENGINE MUST BE FULLY EQUIPPED WITH AIR FILTER COVER IN PLACE.
- C. CONDITIONS
  - 1) USE CLEAN, FRESH 40:1 FUEL MIX.
    - A) USE REGULAR UNLEADED GASOLINE
    - B) USE POULAN 40:1 OIL
- D. START ENGINE AND ALLOW TO WARM UP BETWEEN 2-3 MINUTES
- E. FINAL ADJUSTMENT
  - 1) WITH ENGINE STARTED, RUN AT LEAST FIVE (5) SECONDS AT WIDE OPEN THROTTLE (W.O.T.) BEFORE BEGINNING THE FOLLOWING ADJUSTMENT SEQUENCE, AT 16" LINE LOAD.
    - a) WITH ENGINE STILL AT W.O.T., ADJUST SCREW SLOWLY, CLOCKWISE (LEAN) UNTIL ENGINE JUST BREAKS INTO A CLEAN 2-CYCLE.
    - b) ADJUST MIXTURE SCREW SLOWLY, COUNTERCLOCKWISE (RICH) UNTIL ENGINE OCCASIONALLY 4-CYCLES.
    - c) ADJUST MIXTURE SCREW ONLY A SLIGHT AMOUNT IN THE CLOCKWISE (LEAN) DIRECTION TO PRODUCE A JUST CLEAN 2-CYCLE MODE (OCCASIONAL 4-CYCLING PERMITTED).

**NOTE:** DUE TO FUEL PUDDLING EFFECTS OF A 2-CYCLE ENGINE, THE ENGINE MUST BE FULLY WARMED-UP BY THE TIME STEP c) IS COMPLETED. ADJUST IDLE SPEED IN THE FOLLOWING STEP AND CHECK W.O.T. PERFORMANCE AFTERWARDS.
    - d) ADJUST IDLE SPEED TO SPECIFICATIONS (3400 - 4000 RPM), NOTING THAT THE SPEED WILL DROP FROM THE ORIGINAL SETTING AS THE FUEL PUDDLE BEGINS TO FORM IN THE CRANKCASE. COMPENSATE FOR THIS DROP BY SETTING TOWARD THE TOP OF THE SPEC (CLOSE TO 4000) AFTER THE ENGINE FIRST RETURNS TO IDLE.
    - e) CHECK W.O.T. PERFORMANCE (ACCELERATION AND TOP RPM CONDITION).

- (1) ACCELERATION MUST BE POSITIVE (IF IDLED LESS THAN 15 SECONDS. IF IDLED LONGER, RICH ACCELERATION WILL BE NORMAL DUE TO FUEL PUDDLE).
- (2) TOP RPM MUST BE JUST CLEAN 2-CYCLE (OCCASIONAL 4-CYCLING PERMITTED).

**NOTE:** IF ANY SLIGHT ADJUSTMENTS ARE MADE TO MIXTURE NEEDLE (RICHER, IF STUMBLING (LEAN) ON ACCELERATION OR LEANER IF W.O.T. STILL 4-CYCLE) IDLE SPEED WILL NEED READJUSTMENT.

f) FINAL CHECK

- (1) IDLE SPEED: 3400 - 4200 RPM.
- (2) ACCELERATION: ENGINE MUST COME UP SMOOTHLY.
- (3) W.O.T.: MUST BE 2-CYCLE (OCCASIONAL 4-CYCLING PERMITTED).
- (4) RPM RANGE: 7000 MINIMUM.

**NOTE:** MINIMUM OF 7000 RPM MUST BE ACHIEVED WHEN SET TO PROPER W.O.T. CONDITION. IF RPM IS LOWER AND UNIT IS ADJUSTED PROPERLY, SOME OTHER FAULTS EXIST IN THE ENGINE.

NOTE: IDLE SPEED, ACCELERATION AND W.O.T. SETTING MUST BE VERIFIED WITH CARBURETOR ADJUSTMENT LIMITER CAPS INSTALLED ON CARBURETOR MIXTURE NEEDLE. AT PROPER SETTINGS THE LIMITER CAP IS TO HAVE EQUAL CLOCKWISE AND COUNTERCLOCKWISE ADJUSTMENT RANGE.