

# FUEL SYSTEM

FOR BF, B43M AND B48M

## CARBURETOR CLEANING AND INSPECTION

To clean the carburetor, soak all components thoroughly in a good carburetor cleaner, following the manufacturer's instructions. Be sure to remove all carbon from carburetor bore, especially in the area of the throttle valve. After soaking, clean out all passages with filtered, compressed air.

Check the adjusting needles and nozzle for damage. If float is loaded with fuel or damaged, replace it. The float should fit freely on its pin without binding.

Check the choke and throttle shafts for excessive side play and replace if necessary.

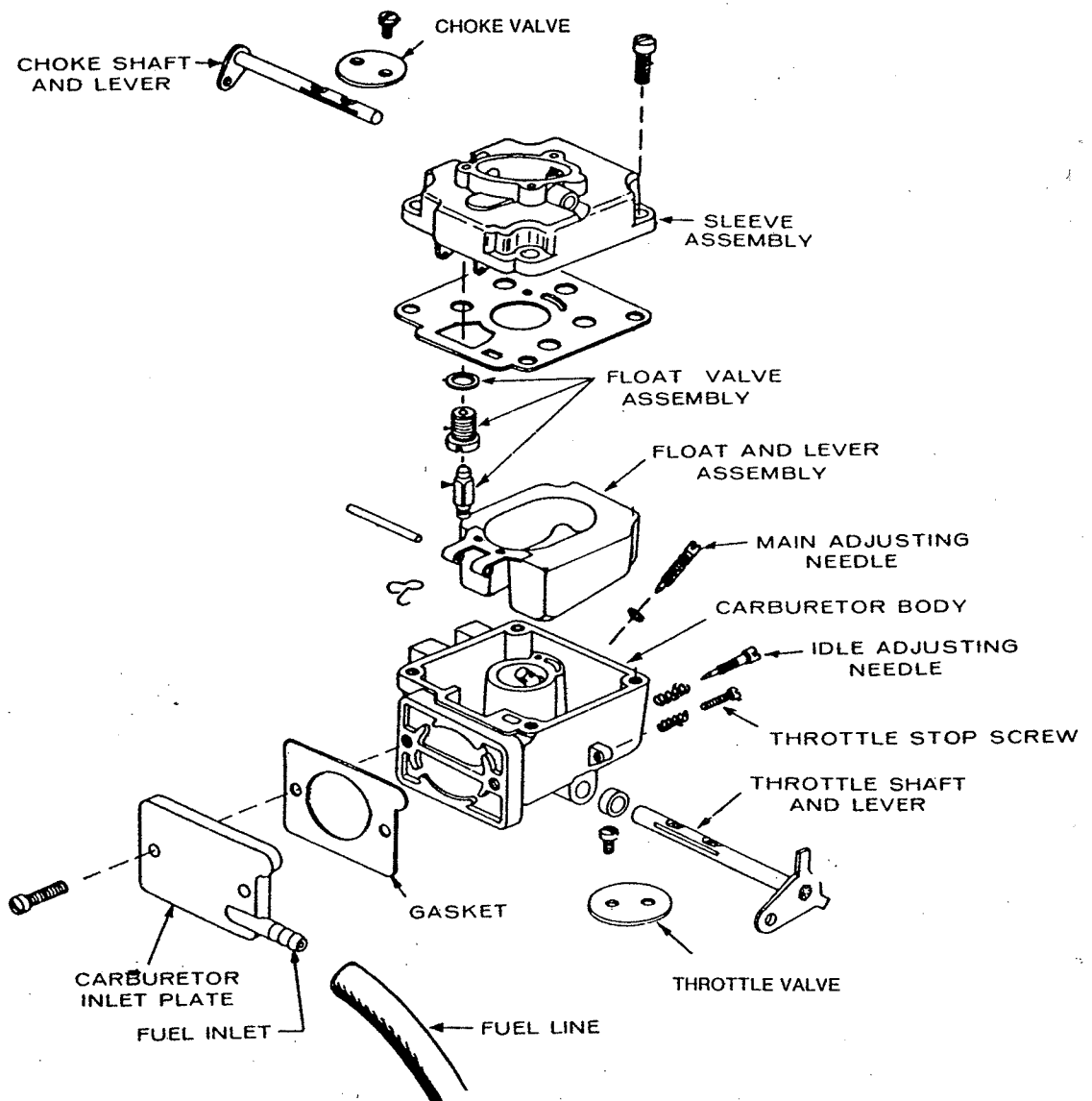


FIGURE 5. EXPLODED VIEW OF CARBURETOR

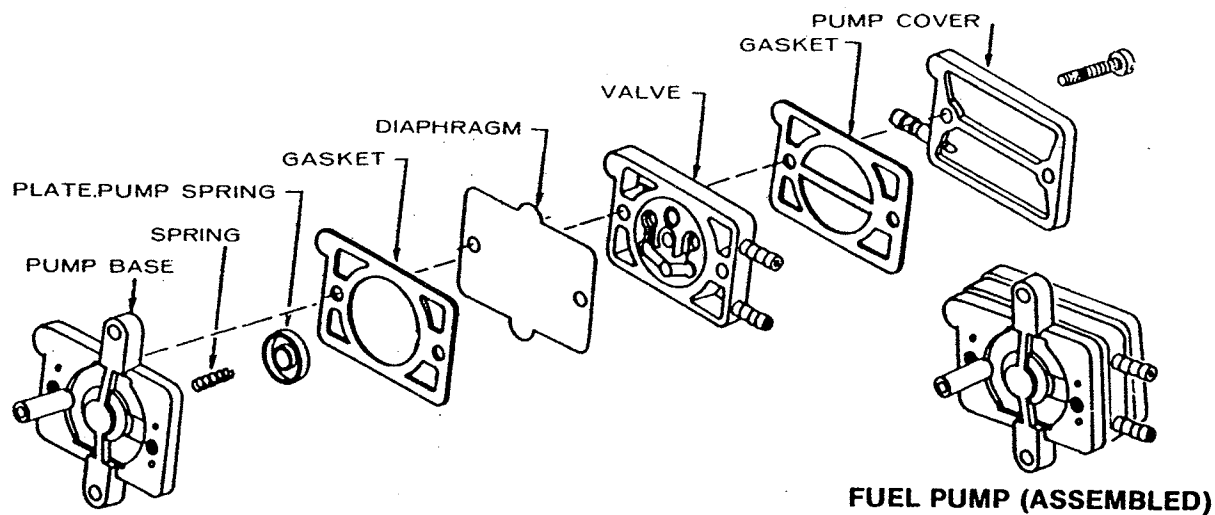


FIGURE 5A. EXPLODED VIEW OF FUEL PUMP

### Fuel Pump Disassembly (Figure 5A)

1. Remove vacuum line and fuel line.
2. Remove the two fuel pump attaching screws.
3. Grasp pump and carefully pull apart. Diaphragm, plunger, return spring, pump body and mounting gaskets will now be loose.
4. Internal fuel pump parts are available in a repair kit.
5. Ensure that clamps are replaced on fuel line.

**IMPORTANT**

Use care when reassembling pump; all parts must be perfectly aligned, or pump will leak, creating a fire hazard.

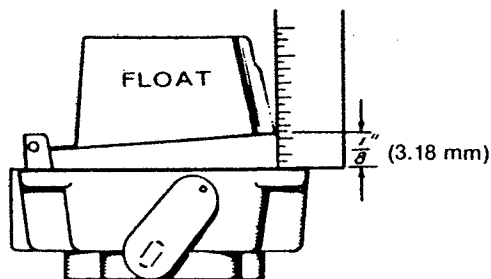


FIGURE 6. FLOAT ADJUSTMENT

### CARBURETOR DISASSEMBLY AND REPAIR (Figure 5)

#### Removal

1. Remove air cleaner and hose.
2. Disconnect governor and throttle linkage, choke control and fuel line from carburetor.
3. Remove the four intake manifold cap screws and lift complete manifold assembly from engine.
4. Remove carburetor from intake manifold.

Always work on carburetor in clean conditions.

#### Replacing Needle and Valve Seat

1. Remove four screws from top of carburetor and lift off float assembly.
2. Invert float assembly as shown in Figure 6.
3. Push out pin that holds float to cover.
4. Remove float and set aside in a clean place. Pull out needle and spring.
5. Remove valve seat and replace with a new one, making sure to use a new gasket.
6. Install new bowl gasket.
7. Clip new needle to float assembly with spring clip. Install float.

#### Carburetor Float Adjustment

1. Invert float assembly and casting.
2. With the float resting lightly against the needle and seat, there should be 1/8-inch (3.18 mm) clearance between the bowl cover gasket and the free end of float.
3. If it is necessary to reset the float level, bend float tangs near pin to obtain a 1/8-inch (3.18 mm) clearance (Figure 6).

# "NIKKI" CARBURETOR ADJUSTMENT PROCEDURE

For 1986 Model 226, 446, 448 and 648 Tractors  
 SUPPLEMENT TO SERVICE MANUAL 9-51392

## FLOAT ADJUSTMENT

**WARNING: IGNITION OF FUEL MIGHT CAUSE SERIOUS PERSONAL INJURY OR DEATH BY FIRE OR EXPLOSION. DO NOT PERMIT ANY FLAME, CIGARETTE OR OTHER IGNITER NEAR THE FUEL SYSTEM.**

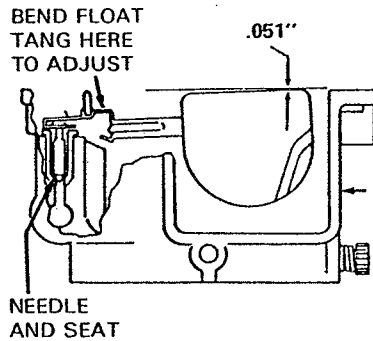
1. Drain as much fuel as possible from carburetor by starting engine and shutting fuel supply off.
2. Remove and insulate the B + lead at ignition coil. Remove air cleaner and top half of carburetor.
3. Gently push float tang down until needle just seats, measure float level as shown in Figure 1. Adjust float level if necessary. Release float tang

and measure float drop as shown in Figure 2. Float drop is the distance from top of the carburetor body to top of the float.

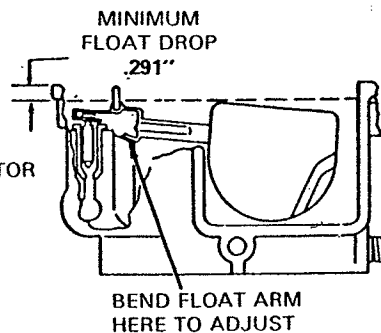
4. Place carburetor top on bowl and fasten, turn fuel supply on and crank engine for 45 seconds (This must be done in 15 second intervals-allow starter to cool for one minute after each 15 second cranking interval). Remove carburetor top to make sure carburetor bowl is full. Measure fuel level in carburetor bowl as shown in Figure 3.
5. Replace top of carburetor and air cleaner. Remove insulation and reconnect B+ coil lead. Start engine and check for proper operation.

## CARBURETORS WITH SPRING ASSIST CHOKE

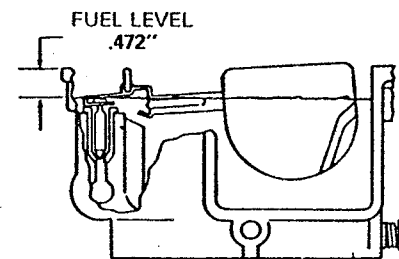
When checking float level and float drop, measure to float body, not seam.



FLOAT LEVEL ADJUSTMENT  
 FIGURE 1



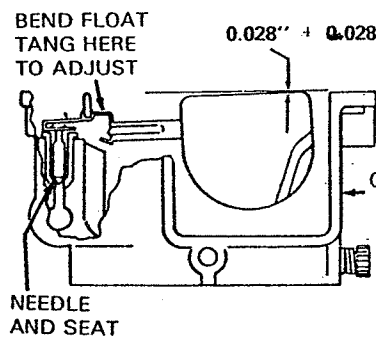
NO FUEL  
 FIGURE 2



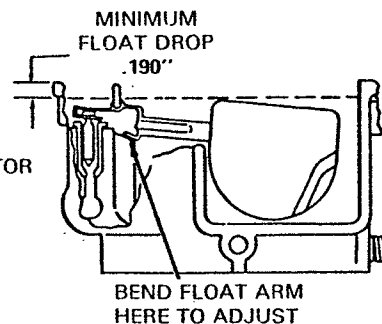
WITH FUEL  
 FIGURE 3

## CARBURETORS WITHOUT SPRING ASSIST CHOKE

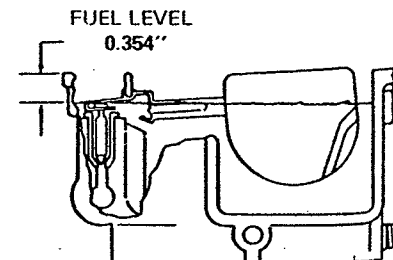
When checking float level and float drop, measure to float body, not seam.



FLOAT LEVEL ADJUSTMENT  
 FIGURE 1



NO FUEL  
 FIGURE 2



WITH FUEL  
 FIGURE 3

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## CARBURETOR ADJUSTMENTS

The carburetor has a main fuel valve adjusting screw and an idle valve adjusting screw (Figure 7). A low speed adjustment screw is shown in Figure 8.

### Initial Adjustment

1. Turn main fuel valve clockwise until it just closes.

#### IMPORTANT

Do not open main fuel jet more than 1/2 turn beyond the maximum power point as this could cause spark plug fouling, etc.

2. Now open main fuel valve 1-1/4 turn counterclockwise from seat.
3. Close idle valve in same manner and open it one turn (counterclockwise).
4. This initial adjustment will permit engine to start and warm up prior to final adjustment.

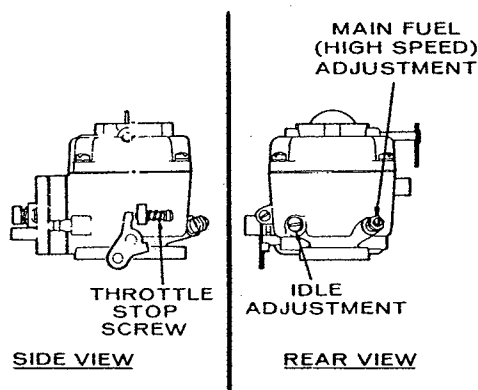


FIGURE 7. MAIN FUEL AND IDLE VALVE ADJUSTMENT

### Final Adjustment

1. Turn main fuel valve in until engine misses (lean mixture), then turn it out past the point where engine runs smoothly until engine runs unevenly (rich mixture). Turn valve to mid-point between lean and rich so engine runs smoothly. (This should be 1-1/4 to 1-1/2 from seat.)
2. Hold engine at idle position and set low speed adjustment screw (Figure 8) until a fast idle is obtained (1200 rpm).
3. Hold throttle in idle position and turn idle adjustment valve in (lean) and out (rich) until engine idles smoothly.
4. Reset low speed adjustment screw so engine idles at 1200 rpm.
5. Release throttle—engine should accelerate without hesitation. If engine does not accelerate properly, readjust main fuel valve by turning out slightly.

Do not open more than 1/2 turn beyond maximum power point.

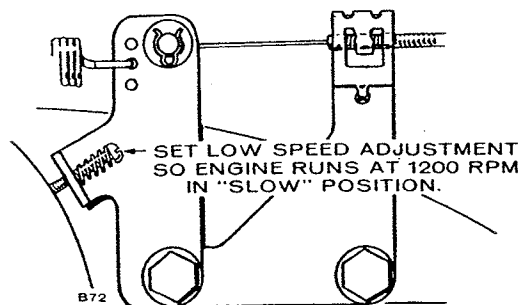


FIGURE 8. LOW SPEED ADJUSTMENT ON VARIABLE SPEED GOVERNOR

## GOVERNOR

These engines are adapted for use where a wide range of speed settings is desired (see Figure 9). Engine speed is controlled at any given point between minimum and maximum by simply shifting the throttle lever on the dash panel until the desired speed is reached.

The fixed speed (standard) and the variable speed (optional) governor gives an automatic decrease in sensitivity when the speed is increased. The result is good stability at all speeds.

A reliable instrument for checking engine speed is required for accurate governor adjustment. Engine speed can be checked with a tachometer.

Check the governor arm, linkage, throttle shaft, and lever for binding condition or excessive slack and wear at connecting points. A binding condition at any point will cause the governor to act slowly and regulation will be poor. Excessive looseness may cause a hunting condition and regulation could be erratic. Work the arm back and forth several times by hand while the engine is idling to check for above conditions.

If the governor is hunting or not operating properly, adjust as follows and as shown in Figure 9.

1. Disconnect linkage (A) from one of holes (C).
2. Push linkage (A) and governor arm (B) as far back (toward carburetor) as they will go.
3. Holding linkage and governor arm toward direction of carburetor, insert end of linkage into whichever hole (C) in governor arm lines up the closest. If between two holes, insert in next hole out.

The governor control spring is factory set in the third hole of the governor arm (farthest from pivot). To increase sensitivity, move spring loop into hole nearest the pivot point or shaft. To decrease sensitivity, move spring outward. After the sensitivity has been set, adjust the low speed with adjustment screw on the control wire bracket. The spring will normally be in third hole from pivot.