



INSTRUCTION MANUAL & PARTS BOOK

WALK-BEHIND POWER TROWEL

**MODELS
B436 / B446**

Use this guide along with the parts lists attached to locate and identify components of your trowel. When ordering replacement parts be sure to provide the model number and serial number from the trowel.



POWERFUL - EFFICIENT - DEPENDABLE

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WALK-BEHIND TROWEL INSTRUCTION MANUAL

FOREWORD

The Terex Bartell Walk-Behind Power Trowel is highly effective for a wide variety of surface, sub-soil, and back-fill materials. Although relatively light in weight and easy to operate, the Walk-Behind Power Trowel delivers a tremendous impact to the soil. Pound for pound, the Walk-Behind Power Trowels provide a higher impact force. That means more productivity from our ideal combination of speed and deeper compaction.

SAFETY PRECAUTIONS

- Always keep unauthorized, inexperienced, untrained people away from this machine.
- Rotating and moving parts will cause injury if contacted. Make sure guards are in place. Keep hands and feet away from moving parts.
- Fuel the machine only when the engine is stopped, using all necessary safety precautions.
- The engine must always be stopped before attempting any repair or adjustments. Ignition switch should be off.
- Be careful not to come in contact with the muffler when the engine is hot, serious burns may result!

DANGER:

Never operate the machine in an explosive atmosphere, near combustible materials or where ventilation does not clear exhaust fumes. Repair fuel leaks immediately. Refer to your engine owner's manual for more safety instructions.

ASSEMBLY INSTRUCTIONS

Your new Terex Bartell Walk-Behind Power Trowel has been shipped to you partially assembled. Filling the fuel tank and a brief check of lubricant levels in preparation for operation is required. To complete the assembly the following instructions will be helpful.

1. **TROWELS** – Attach trowel blades with screws and lock washers supplied. See (A) and (B) Fig. 1. Be careful that adjusting screw (C) does not protrude below arm when attaching blades. This could cause the machine to jump and promote excessive wear in operation.
2. **STABILIZER RING** – (if supplied) Install using screws, bushings and lock washers supplied. See Fig. 1 (D)
3. **HANDLE ASSEMBLY** – Put cable end Fig. 2 (A) through hole in yoke (B) and secure with nut (C), then install handle bracket on gearbox. To get proper cable tension, turn control knob Fig. 3, counter-clockwise to stop position. Guide screw (B) will now be at the bottom slot. Tighten nut Fig. 4 (A) until slack is removed from point (B) as indicated. If more than 2 or 3 threads show through, then nut should be turned back.

Guide screw, Fig. 3 (B) should be moved to next lower hole in slide bushing and cable re-adjusted as above. Turn hand knob completely clockwise and check for clearance between yoke and gearbox at point (C) Fig. 4. There should be enough space to pass a business card through.

4. **STATIONARY RING** – Install stationary ring as shown in Fig. 5 with the side bar on engine recoil side. (May not be exactly as shown). Install rubber bushings (A) on top and bottom of mounting plate. Install metal caps (B). Place ring on top and run screw (C) through caps and rubbers. Tighten lock nut (D) securely on bottom. It is best to start nuts on all 4 corners before tightening.
5. **ENGINE CONTROLS** – Attach throttle control to handle with screws provided. See DIAGRAM 1 below for your engine model hook-up. For safety switch connection, attach wire to terminal provided at "ON/OFF" location.

The throttle cable must be cut and formed to fit. Feed the cable through the cable clamp on the engine. Pull the cable through the clamp until it forms a smooth arc from the handle to the engine. Mark the cable at the clamp and pull the cable back from the casing at the throttle. Without cutting the cable, Cut casing at the mark and push the cable back through fresh cut end. Form a small "L" bend in the cable, hook the inner cable into the throttle block and tighten cable clamp down onto the casing. With thumb lever and throttle block in the fully open position, cut the inner cable by the thumb lever, leaving enough wire exposed to secure to the lever. Insert the cable into the fitting and tighten the screw. Restore throttle to idle position.

IMPORTANT:

Before running machine with belt installed, ensure that engine idles properly and that the safety-switch shuts off the engine.

6. **BELT GUARD** – Install after machine has been tested, taking care that it does not touch clutch or pulley.

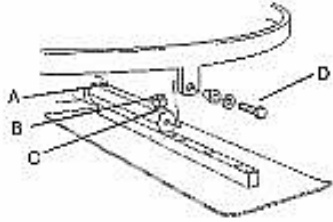
ATTENTION:

For any information regarding engine adjustments, please refer to the engine manual supplied.

WALK-BEHIND TROWEL INSTRUCTION MANUAL

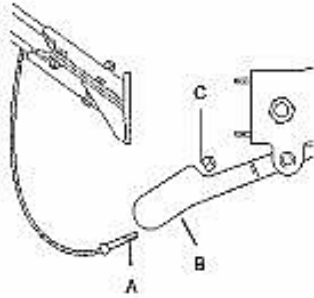
DIAGRAM 1

Fig. 1



REFER TO
ENGINE MANUAL
FOR THROTTLE
CONTROL SETTING

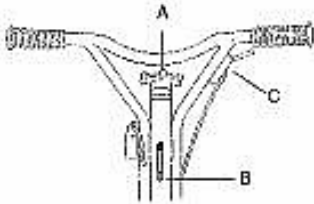
Fig. 2



Honda—
GX160 5.5 H.P.
GX270 8 H.P.
GX340 10 H.P.
Shown in
last
position

REFER TO
ENGINE MANUAL
FOR THROTTLE
CONTROL SETTING

Fig. 3



Wisconsin
Robin—
WI-185 4.6 H.P.
Shown in
fast
position

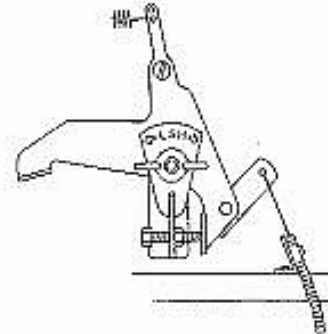
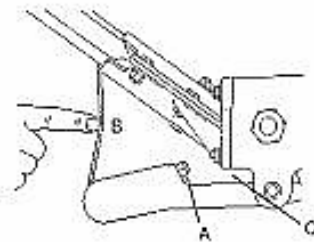


Fig. 4



Wisconsin
Robin—
WI-280 7.5 H.P.
Shown in
fast
position

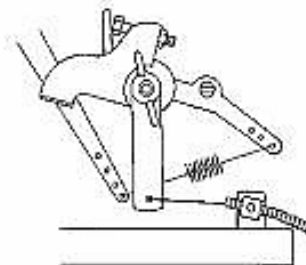
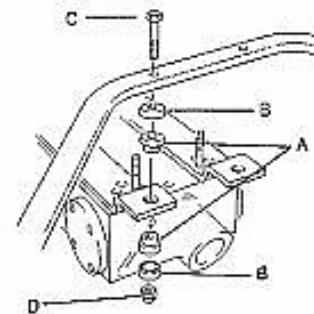


Fig. 5



WALK-BEHIND TROWEL INSTRUCTION MANUAL

OPERATION (Floating)

When the slab has set sufficiently firm that the operator's footprint leaves a very slight depression on the surface of the slab, it is ready for the floating operation.

Under normal operating conditions the machine should cover as much as 1000 sq. ft. in about 15 minutes. It is recommended that a slight tension on the trowel control cable, (but *not* a definite tilt), during the floating operation will cause the machine to operate much smoother. After the floated slab has set sufficiently, it is ready for the finishing operation.

CAUTION:

Do not let the machine stand in one spot on the soft cement. Lift from the slab when the floating operation is complete.

OPERATION (Finishing)

When starting the finishing operation, never set the trowels up over 1/4" pitch. This is important. Guiding the machine on the slab is very simple, a slight upward lift of the handle causes the machine to travel to the left. Holding the handle in the neutral position, will slowly cause the machine to spin in one spot. Slight downward pressure on the handle causes the machine to travel to the right. Best results are obtained by covering approximately 4" on each turn. In other words, let the machine move right or left, backwards or forwards, approximately 4" with each revolution of the trowels. To fill a hole or cut down a hump, move the unit back and forth over the problem area.

After the first pass over the slab, the waiting time between operations is determined in the same manner as if you were hand troweling. To repeat; the entire application and action of the troweling machine in regard to getting on the slab, and the correct pitch of the trowels, is determined in the same manner as would be used by a cement finisher when troweling by hand.

STARTING PROCEDURE: *WARM CLIMATE

Open fuel valve on gas tank. Set throttle lever to "Fast" idle position, set choke to closed position, start engine. Open choke slightly to prevent flooding. Move to "Open" or "Run" position when engine is warm, increase throttle to maximum operation position (3600 rpm).

STARTING PROCEDURE: *COLD CLIMATE

Follow same procedure as above but allow longer warm-up period – 3 to 5 minutes. In cold weather, oil is much heavier to move and requires more time to work its way into the moving parts. If maximum power is not attained, allow further warm-up time. Fill fuel tank with clean gasoline, use safety approved gas containers. **DO NOT MIX OIL WITH GASOLINE – USE UNLEADED GAS ONLY.**

STOPPING PROCEDURE

1. Throttle engine down.
2. Turn off stop switch.

LUBRICATION

1. ENGINE OIL

The long life and successful operation of any piece of machinery is dependent on frequent and thorough lubrication.

Before using the trowel, always check your engine for oil. Use proper engine oil as recommended in the engine manufacturer's manual. Fill crankcase to levels as recommended.

2. SPIDER PLATE

There are 8 (eight) grease fittings on the spider plates, 4 (four) on each must be greased daily. **SPIDER PLATES MUST BE GREASED EVERY TIME MACHINE IS USED.**

3. GEARBOX

Check the oil level sight plugs on both gearboxes daily to ensure the oil is half way on the sight glass. Top up with Agma 8 compounded gear oil only. Gearbox capacity 16 oz. to 19 oz. (473ml. To 562ml.) Example: Esso/Exxon Cyclesstic TK680.

4. TO CHANGE GEARBOX OIL

Place a pan beneath the drain plug to catch the oil. Remove the drain plug and the filler plug from the gearbox. After the oil has drained completely, replace the drain plug and tighten. Fill the gearbox through the filler plug with 16 oz. to 19 oz. (473ml. To 562ml.) of Agma 8 compounded gear oil. Replace the filler plug and tighten.

5. GREASE FITTINGS

There are 6 bearings in total. Grease all bearings and U-joints to ensure adequate supply of lubricant. They are located above the gearboxes (2 per gearbox) and 2 located in the drive system. The U-joints are located in the drive system as well.

ENGINE OIL SPECIFICATIONS

Season Temperature	Grade of Engine Oil
<i>Spring to Autumn</i> +40°F (4°C) to +120°F (49°C)	SAE 30
<i>Winter</i> +15°F (-9°C) to +40°F (4°C)	SAE 20
Below +15°F (-9°C)	SAE 10W-30

WALK-BEHIND TROWEL INSTRUCTION MANUAL

STORAGE

The following steps should be taken to prepare your Walk-Behind Power Trowel for extended storage.

1. Close fuel shut off valve.
2. Siphon excess gasoline from tank.
3. Start engine until it stops from lack of fuel. This will use up all the fuel in the carburetor and prevent formation of deposits due to evaporation of fuel.
4. Remove spark plug and pour 2 oz. of SAE-30 or SAE-40 motor oil into the cylinder. Slowly crank the engine 2 or 3 times to distribute the oil throughout the cylinder. This will help prevent rust during storage. Replace spark plug.
5. Store the unit in an upright position in a cool, dry, well ventilated area.

MAINTENANCE

Maintaining your Walk-Behind Power Trowel will insure long life to the machine and its components.

AIR CLEANER - Keep air filter clean at all times. Wash away dust and debris using a non-oil based cleaning solvent. Let the filter dry before re-installing.

LUBRICATION – Always check engine oil regularly. Use proper engine oil as recommended. See chart below. Fill crankcase to levels as recommended in manufacture's engine manual.

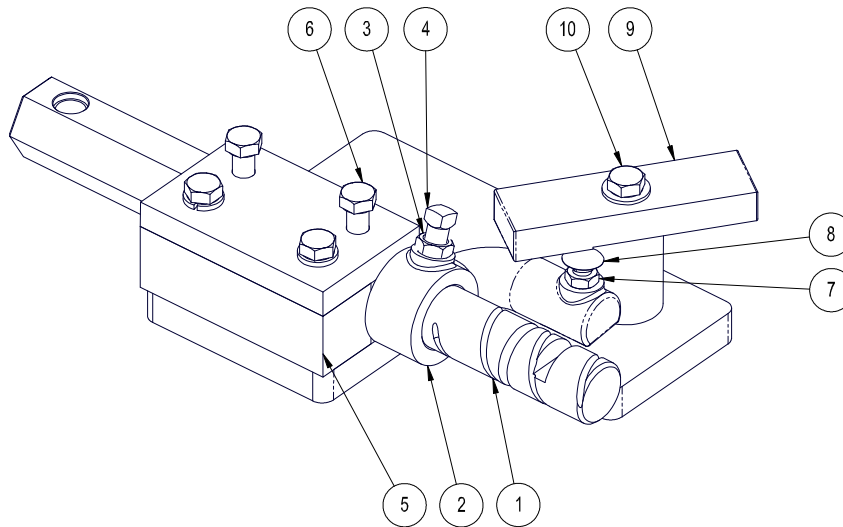
SPARK PLUG – Check and clean spark plugs regularly. A fouled, dirty or carboned spark plug causes hard starting and poor engine performance. Set spark plug gap to recommended clearance. Refer to engine manual.

BELT TENSION – IMPORTANT!

If there is excessive belt play, there will be a decrease in the impact force and erratic vibration, which could cause machine damage. The normal belt play should be 1/2" to 5/8" which is attained by depressing the top section of the belt at the belt guard mounting bracket location. When adjusting the belt make sure that the clutch is in alignment with exciter pulley. Tighten all engine mount bolts, adjust the two engine-stop bolts, and tighten lock nuts.

WALK-BEHIND TROWEL INSTRUCTION MANUAL

TROWEL ARM ADJUSTMENT FIXTURE



PART #20801

Ex: Unit 36" (B436)

- 1) 10810A – Trowel arm
- 2) 10817A – Lift lever
- 3) 10808 – Jam nut
- 4) 10809 – Set screw
- 5) 10824 – Block top
- 6) 10507 – Bolt
- 7) 10808 – Jam nut
- 8) 10807 – Carriage bolt
- 9) 10832 – Adjustment bar
- 10) 10507 – Bolt

Figure 5a.

The trowel arm adjustment fixture (20801) is reversible. By rotating the arm clamping fixture and the ring bolt, both left hand and right hand trowel arms may be adjusted. Before attempting adjustment, determine whether the trowel arm is right handed or left handed. When adjusting left hand trowel arms use the side of the fixture marked "L". When adjusting right hand trowels arms use the opposite side. The adjustment bar will be set on "36" for the Walk-behind trowel arm.

ADJUSTMENT PROCEDURE

1. Remove all trowel arm assemblies (1 & 2 arm and attached lift lever) from suspected maladjusted spider plate.
2. Remove lift lever (2) from trowel arm (1) by first loosening jam nut (3) then square head screw (4). If upon inspection (method left to discretion of serviceman) any trowel arm (1) is found to be in a bent condition, it must either be brought back to its original straight condition (method left to the serviceman's discretion) or replaced with new part.
3. Replace lift levers (2) on new or straightened arms (1) by reversing procedure as described above.

NOTE: IT IS IMPORTANT THAT WHEN TIGHTENING SQUARE HEAD NUT (4), IT SEATS ITSELF SECURELY INTO DIMPLE MACHINED IN ARM.

4. Place trowel arm assembly (1 and 2) in fixture (5) with lift lever (2) butting up against fixture. Secure in place with bolts (6).

5. Loosen locknut (7) and screw carriage bold (8) down to full depth allowable. This will provide for ample clearance to swing precision ground adjustment bar (9) over head of carriage bolt. Adjustment bar (9) is stamped for appropriate size of machine. Swing appropriate side directly over carriage bolt (8) and secure in place with bolt (10).
6. Adjust carriage bolt (8) upwards until contact is made with adjustment bar (9); holding carriage bolt in position with one wrench, tighten locknut (7) to secure in position with second wrench.

NOTE: IT IS VITALLY IMPORTANT TO ENSURE THAT ONCE THE CARRIAGE BOLT IS ADJUSTED TO THE CORRECT HEIGHT, IT DOES NOT MOVE BEFORE, OR DURING THE TIGHTENING OF LOCKNUT.

7. This same procedure is to be followed with ALL arms from spider plate assembly, and will ensure correct and exact adjustment.

TROWEL ARM ADJUSTMENT SCREW

When assembling trowel blades to trowel arms, the adjustment screw should NEVER protrude below the under-side surface to a trowel arm except when using for emergency on-site adjustment to level trowel blades.

If the adjustment screw is not flush with the underside of the trowel arm, then this will cause the power trowel to bounce and vibrate especially at high speed. This will also cause the trowel blades to leave an uneven finish to the concrete due to the blades not being level to one another.

Make certain that the adjusting screw is held firmly in place while tightening the bolt which secures the blade to the trowel arm.

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- 13 -

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TROUBLESHOOTING

WON'T START

- Throttle fully open
- Hand lever wire broken
- No gas
- Dirty gas
- Gas filter plugged
- Gas line plugged
- Hole in gas line
- Gas supply valve turned off
- Dead-man safety switch
- Safety switch wire or connectors not making good contact
- Other engine problems (Refer to engine manual)

STARTS BUT NO HIGH SPEED

- Engine problems
- Throttle cable broken or seized
- Throttle lever and connectors loose or out of adjustment
- Clutch shoes worn

STARTS AT HIGH SPEED, WON'T SLOW DOWN

- Same as above

ENGINE WON'T STOP

- Safety switch, wire or connectors not making good contact

ENGINE STARTS BUT WON'T TURN TROWELS AT ANY SPEED

- Clutch seized
- No weights in clutch
- Wrong belt
- Broken or missing key
 - Clutch
 - Pulley
 - Worm gear (countershaft)
 - Main gear
 - Spider plate
- Gearbox seized

TROWELS TURN, ENGINE AT IDLE

- Idle too fast
- Belt too tight
- Clutch seized
- Pulley out of alignment

TROWELS BLADES WEARING UNEVENLY

- Spider plate seized
- Arms bent
- Adjusting screws (carriage bolts) incorrectly set

MACHINE JUMPS ON FLOOR

- Concrete hardened on bottom of spider plate
- Trowels unevenly worn
- Spider plate seized
- Spider plate loose
- Trowel arms bent
- Adjusting screws (carriage bolts) incorrectly set - use spider plate adjustment jig (pg,13)
- Mainshaft bent

PITCH CONTROLS WILL NOT OPERATE BLADES

- Cable broken or out of adjustment
- Slot screw missing (under-side of handle)
- Spider plate seized
- Pressure plate and/or yoke arm broken or badly worn
- Hand crank adjuster malfunctioning

BELT WEARING RAPIDLY

- Belt adjusted improperly
- Pulley out of alignment
- Wrong belt/defective belt
- Clutch sticking
- Gearbox seizing

OIL LEAKS

- a) Top of gearbox
 - Engine leaks
 - Relief valve broken
 - Too much oil in gearbox
 - Set screw missing in cover
- b) Between end cap and gearbox (recoil side)
 - "O" ring damaged
 - End cap not tight
- c) At mainshaft or countershaft
 - Relief valve seized
 - Shaft and/or seal worn

TROWEL BLADES WILL NOT TURN

- Yoke arm broken
- Spline stripped
- Key sheared

SPIDER PLATE HARD TO GREASE

- Fittings plugged
- Cement in grease grooves of arms
- Grease fittings too tight

WALK-BEHIND TROWEL INSTRUCTION MANUAL

SPECIFICATIONS

WALK-BEHIND TROWEL

Model	Path	Power Source (gas option)	Float Blade Size	Finish Trowel Size	Combination Blade Size	Pans Flaots	Pans Flaots	Operating Weight
B436	36" (90 cm)	5.5 hp Honda OHV 6 hp Honda OHV 9 hp Honda OHV 4 hp Robin OHV	10" x 14" (25 x 36 cm)	6" x 14" (15 x 36 cm)	8" x 14" (20 x 36 cm)	38 ½" (98 cm)	186 lbs. 85 kg	Up to 165 lb. (75 kg)
B446	46" (120 cm)	9 hp Honda OHV 9 hp Robin OHV 11 hp Honda OHV 11 hp Robin OHV	10" x 18" (25 x 46 cm)	6" x 18" (15 x 46 cm)	8" x 18" (20 x 46 cm)	48 ½" (123 cm)	187 lbs. 85 kg	Up to 245 lb. (110 kg)

Walk Behind Trowel (GASOLINE)	
Blade Speed (RPM)	130-160
Engine Speed (RPM)	3600
Clutch Type	Centrifugal
Variable Speed	Yes
Gearbox Oil	Agma 8 compounded gear oil
Gearbox Oil Capacity	16 oz. (473 ml), 19 oz. (562 ml)
Engine Fuel	Gasoline – Unleaded
Engine Oil Alert	Yes
Cooling	Air
Starting	Recoil Starter - Manual
Dead-man Safety Switch	Yes
Fuel Capacity (approximately)	3 Gal. (12.5 L)
Running Time (approximately)	2 ½ hours
Number of Blades	4
Engine Acoustic Power Lwa (dB)	97-103
Engine Acoustic Pressure Lpa (Db)	82-86
Level of Vibration	1.1-1.5
Vibration value on the handle	7.0 aw
Options	Oil-Bath Spider Assembly Insta-Pitch Lever Hoist Hook Carry Bar Folding Handle

- Power rating conforming to DIN 6270 & ISO 3048/1 Std.
- RPM results may vary by engine option.