

A large, faded background image of a diamond drill rig, showing its complex mechanical structure and vertical mast.

OPERATING MANUAL AND PARTS LISTS

**Revised December 2006
Revised October 2008
Revised January 2011
Revised June 2013**



MANUAL

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WHEN ORDERING PARTS PLEASE GIVE:

- 1. Model of Drill**
- 2. Part Name of Part**
- 3. Catalogue Reference Number**
- 4. Quantity Required**
- 5. When ordering parts for engines, pumps, winch, etc., always include the PART NAME and the NAMEPLATE READING of the unit**
- 6. Shipping instructions**

Order by Email from

sales@partshq.com

Sales Terms	INCOTERMS2000 EXW Burlington ON Canada
Freight :	Extra to destination (can be estimated and included)
Taxes if applicable :	Extra
FOB Point :	Burlington, Ontario, Canada
Delivery :	Delivery date to be estimated at time of quotation
Payment Terms:	Terms to be stated on quotation
Payment By:	Bank Transfer to Canadian Bank (details to be supplied)
Currency:	Usually Canadian Dollars or United States Dollars
Viability of Quote	Prices are valid for ninety day from date of Quotation
Shipping Specs :	Depending on quantities of drill material ordered with the drill.



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WINKIE: THE MOST OUTSTANDING BUY IN ITS FIELD:

Meet a pint-size powerhouse, driller's drill, ready to rewrite your footage costs with its nine (9) outstanding features.

Lower Maintenance - Maintenance costs are reduced over the conventional core drill, resulting from minimizing the moving parts, and having only three precision machined anology castings in the drill itself.

Lower Moving Costs - Set up and moving costs are very low. Savings may be made with carrying the Winkie Drill to the site, in lieu of building roads.

Lower Labor Costs - Labor cost may be cut by 50% through using only one man to operate the Winkie. Save by not building roads for the portable carry-in-hand Winkie.

Lower Fuel Costs - Fuel consumption under full load is approximately 3 or 4 gallons per drilling shift.

Lower Diamond Bit Costs - Dynamic balance in this dri11 means less rod vibration; thus, less drill rod and corebarrel wear, and most important, LESS DIAMOND BIT COST.

High R.P.M. - High Speed bit rotation plays a very important role in reducing bit cost, in addition to yielding a greater daily footage. Diamond wear is reduced as speed of rotation approaches 700 RPM, above 700 RPM, and up to the Winkie Speed of 2000 RPM.

Less Handling of Tools - The overhead principle drive on the Winkie allows as great as 3 foot runs without re-chucking on the drill rod. Compare chucking time of 36 inch strokes for the Winkie, against conventional drills with 24 inch strokes.

Less Water Required - Drilling with the minimum water requirements is the best policy with the Winkie. **Experience** - No experienced Diamond Drill Operator is required. A minimum of instruction is required.

Plus these added features:

- Full 10 H.P. 2 cycle gasoline engine. 6000 RPM.
- Torque resolving safety clutch
- Built-in water swivel with adjustable packed type water seal.
- Vacuum carburetion system to allow continued operation of the engine at any conceivable angle. Circular holding ring (for protection of the unit and complete selection of gripping areas.). Hardened spur gears for quieter, smoother and longer operation.
- Water-cooled gear box.
- Recess mounted bearings designed with a safety factor of "3".
- Unipress mechanical pull down pressure feed.



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DESCRIPTION OF WINKIE DRILL

The Winkie drill is a lightweight portable core drill. The drill was designed to recover 1" cores to a depth of 450'. In some formations, cores up to 2 1/8" in diameter can be recovered to lesser depths. A lightweight water pump is used to circulate water to remove the cuttings and to cool the bit. Diamond core bits specially designed or selected are used to cut the rock. In some softer overburdens, drag bits can be used to put the hole down to solid material.

APPLICATIONS The principal applications of the Winkie are:

1. **Exploration** - core samples desired for mines or quarries.
2. **Probing** - to find depth to rock for foundation or other testing.
3. **Highway Sampling** - concrete cores recovered for testing pavement.
4. **Masonry Drilling** - cutting holes through reinforced concrete, brick; for conduits, pipes, etc. used by public utilities, industrial plants, refineries, maintenance work, etc.
5. **Grout Holes** - Drilling holes for the purpose of grout injection. After the grouting has been completed, a series of holes can be drilled to produce cores showing the effectiveness of the grout.
6. **Marine Blast Hole Drilling** - in certain applications, due to its portability and principal overhead direct drive the drill can be operated from an inexpensive boat or raft.
7. **Underwater Drilling**

Remember, the Winkie Drill is the smallest and lightest weight patented gear shift drill of its type on the world market.

LIMITATIONS

The Winkie drill cannot be used to produce cores in gravel, sand or silty clay formations. It is not designed to compete against jack hammers for production drilling. Its principal application is where cores are primary and hole is secondary. However, in some cases, such as drilling holes for parking meters, the hole can be drilled to required diameters. With jack hammers, a rough hole by comparison is drilled. As you see the Winkie work, more ideas for its application will be uncovered.

COMPONENTS OF THE WINKIE DRILL

The drill itself consists of 3 assemblies:

- (1) Engine
- (2) Transmission
- (3) Unipress

1. **Engine** - 10 HP, 2 cycle, air cooled gasoline engine. Easy starting with a nylon cord recoil type starter. A vacuum carburetor system allows drilling "up" holes or at any angle. The engine is mounted with its drive shaft vertical so that it drives directly into the transmission.



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2. Transmission Assembly - The transmission contains the clutch, gear box and water swivel. The engine shaft, through a splined connection, drives the centrifugal clutch. As the engine speed is increased past 900 RPM, the clutch shoes are thrown out and engage the clutch drum which rotates the input shaft to the gear box. If the engine speed should be reduced to lower than 900 RPM, the springs on the clutch shoe will pull the shoes away from the inner drum surface and, of course, power to the drill rods is removed.

3. Unipress - The Winkie Unipress enables the operator to exert a steady pressure with a minimum of exertion. Fatigue of the operator is reduced by 50% or more, contributing to more economical operation.

4. Water System - Circulating water through the drill rods down to the bit is required to wash out cuttings, cool the bit, and to keep the core from sticking. For this purpose, an engine-pump unit complete with hoses and water by-pass system is offered.

The pump is a JKS - BRONCO "8" - 7/8 stroke 1-1/2" bore - two piston progressing cavity positive displacement 8.2 U.S. GPM at 400 PSI. Since the pump runs constantly with the engine, a pressure valve relieves pressure on the pump, if for any reason the bit or rods become clogged.

A 3/4" x 20' 4-ply pressure hose with fittings and shut-off valve, and a 1" x 15' 3-ply suction hose with fittings, foot valve and strainer are part of the water system unit.

Of course, a water supply is necessary. For masonry drilling, city water pressure is convenient. For field work, it may be necessary to use a water tank or drum for the water. If the formation is solid enough, it may be convenient to recirculate the water from the hole to the tank. In this case a "T" joint on top of the casing is required to direct the water to the tank.

BRIEF HISTORY OF DIAMOND DRILLING

Modern Diamond Drilling dates back to the year 1862 when a Swiss, named Jean Rudolphe, gave birth to the idea of mounting diamonds in the periphery of a tube to cut a cylindrical core of rock. Even before this time, recorded history shows that as far back as 2000 B.C., the ancient Egyptians were using tubular drills to assist in building their pyramids.

The first steam-powered drill was built in 1862-63. By 1870, steam drills with RPM as high as 360 and 5 to 7 horsepower were being used. Through the years, marked improvements have been made in Diamond Drills and their accessories, paralleling the ever-increasing need for rock sampling in hard formations.

The introduction of the Winkie Drill was a major step in Diamond Drill development. It offers, for the first time, portability with Winkie drilling capacities, presently associated with drills ten times the Winkie's weight. But the Winkie costs only a fraction of other drills.



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To get better core recovery in soft formation, it is a known fact in the Diamond Drilling Industry that larger diameter holes have to be drilled. However, the Winkie Type Drill, with its high RPM and faster penetration using less circulating water, has proven to be the first in various fields to get a larger percentage of core recovery, drilling smaller diameter holes than the conventional drill.

For instance, on one drilling project using conventional Diamond Drills, the core recovery in the coal seam was practically nil using double tube core barrels. The Winkie Drill was used on the same project with a single tube core barrel. It recovered 29-3/4" of coal cores from a 32" seam.

The standard Diamond Bit sizes used are the following:

**IEW (1-1/2" diameter hole – 7/8 " core)

**IAW (1 3/4" diameter hole – 1 1/8" core)

**JKT-48 (1-7/8" diameter hole - 1 3/8" core)

**JKS designed a Thin Wall mining series bits hole as the "W" series to produce a larger diameter core.

The mining series Thin Wall Diamond Bit allows faster penetration and uses less water to wash up less sludge. The automatic safety clutch on the Winkie Drill permits the use of thin wall bits to be run with a minimum supply of water without the worry of burning an expensive Diamond Bit.

TECHNICAL INFORMATION

DRILLING PROCEDURE

First of all, drill must be securely anchored.

Starting the Drill Hole Starting on Rock Surfaces:

- A. Use a short core barrel ranging between 1-1/2" to 2, often termed the starting barrel. This barrel is a single or double tube barrel. Drill the starting barrel at least 4" to 6" into the rock.
- B. If using a whole stone straight wall bit (a bit without a core spring), dry block. Dry blocking with impregnated bit will significantly reduce bit life.
 - a. Shut off the water supply and
 - b. Run the drill at half throttle, at the same time applying pressure to bit.
 - c. The machine will automatically stop when the bit has dry blocked (wedged the core in the face of the bit with rock dust). With a core spring, the bit may be drawn off bottom and the core will remain in the barrel. In the event the core may be left in the hole, a core fisher with springs is attached to the core barrel to fish the lost core. Do not rotate the core fisher.



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Starting with Soil Overburden:

- i. The soil must be stabilized either by casing or drilling mud preceding the initiation of core drilling. Casing may be either drilled into the soil or driven until it is well seated into the rock.
- ii. Assuming casing has been advanced to rock surface, the casing must be well cleaned out to free it of all foreign matter (mud, gravel etc.) except water. This is accomplished by a chopping and washing or fishtailing procedure.

A tungsten carbide drag bit, adapted directly to the drill rods, can be used to put down a pilot hole with the WINKIE, and give the operator an estimate on the depth of overburden and amount of casing required to case the whole to solid formation. After a solid formation with the drag bit, adapt the diamond or tungsten carbide casing shoe to the casing and repeat the same operation, as when drilling with drag bit but use the casing and rotate it down the pilot hole made with the drag bit. When this performance is completed, adapt the core barrel with diamond and reaming shell to drill rods and start coring.

It is also possible to adapt the diamond or tungsten carbide casing shoe to the casing and rotate the casing into solid formation without a pilot hole. When solid formation is encountered, just leave the casing in the hole as the core barrel will pass through the casing shoe.

If core recovery is required in soft shale formation, a tungsten carbide core bit can be used as well as a large stone diamond bit. It is not possible to take a core in clay, sand or gravel, and never attempt to use a diamond bit in the above formations as it will wear and destroy any expensive diamond bit.

- iii. Now, lower the tools to the bottom of the hole in this order:
 - a. Diamond bit and reaming shell
 - b. Core Barrel
 - c. Drill rod or rods
- iv. Connect the Winkie to top of the drill rods and follow the drilling procedure as outlined in steps A, B and C in the discussion preceding on starting on rock surfaces.

TROUBLE INDICATORS

Blocked Bit

The drill engine automatically slows down, indicating that the core barrel should be withdrawn and the core emptied.

Blocked Core Barrel

A blocked bit usually shows itself by first a refusal to penetrate and secondly a bumping of the tools as they rotate, commonly called a "kick".



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NOTE: One of the best methods to gauge the rate of penetration is to mark the drill rods with drillers' chalk when the drill rod rotates, these rings will disappear below the collar of the hole as the bit penetrates.

Always keep very close record of measurements. This is important to your logging procedure.

NOTE: If drilling is continued when the core barrel is blocked, it ordinarily results in grinding of core, in turn, causing a decrease in core recovery and excessive wear on the diamond bit.

Continued Blocking of the Bit

A. Check to see that a free flow of water is reaching the bit. Often times the drill rods are obstructed with clay, gravel, etc. Also check your diamond bit for inside gauge. It is possible the used bit may cut a larger diameter core than the core barrel will admit.

B. Possibly an insufficient water pressure is being used. Refer to the pumping chart to establish volumes for various size drill holes. In order to attain these volumes, a positive pressure must be maintained.

C. Dented or bent inner tube can cause blocking.

Causes of Vibration (Not necessarily in order of importance)

1. Lack of rod grease.
2. Excessive feed rate or pressure.
3. Drilling over or grinding core.
4. Incorrect water pressure and volumes.
5. Bent rod drills.
6. Incorrect size of rods and core barrels in relation to the size of the hole.
7. Drill bits too dull.

ROTATIONAL SPEED VERSUS LINEAL TRAVEL

Do not confuse RPM with the actual lineal travel of a diamond. A diamond on the outside cutting edge of an EW (1-1/2" dia.) bit at 1000 RPM travels 393 feet per minute. AW (1-3/4" dia.) bit has a peripheral speed of 491 feet per minute. A BW (2-3/8" dia.) bit has a peripheral speed of 622 feet per minute. A 6-1/2" dia. bit has a peripheral speed of 1636 feet per minute. When a diamond bit is not in use, protect it and do not use it as you would a hammer; it is valuable and will serve you better if used properly. Never drop your rods on the bottom of the drill hole; this could severely damage the diamond bit. Fill the hole with water before lowering.

When changing from old to new bits, use caution in lowering the rods in the hole, and it is a good practice to ream the last two or three inches, just in case the old bit lost some gauge which would cause a new bit to get wedged and also damage outside stones. Never wrench your drill rods down a tight hole. This is bound to damage the outside diamonds on the



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WATER REQUIREMENTS FOR DIAMOND DRILLING

A continuous flow of water is necessary to keep the diamonds cool or from polishing: also to remove the cuttings, and to keep the core from sticking in the core barrel.

A rising current of 12 inches to 18 inches per second in the hole is usually sufficient.

To maintain this latter figure requires about 120 gallons per hour in an EW hole (1-1/2" dia.); 200 gallons in an AW hole (1-7/8" dia.); 430 gallons in a BW hole 2-3/8" dia.) using (EW), (AW) and (BW) drill rods.

The volume of water required in normal rock drilling ranges from about two gallons per minute using XRW rods cutting a 1-1/4" dia. hole, and water pressure required from 80 lbs. to 120 lbs. Hard rock formation will consume less water than soft rock formation. Always make certain to flush and clean out the bottom of the drill hole before starting to rotate the drill rods. This is always good practice and will increase your daily footage as well as giving a better percentage of core recovery. A constant flow of water through the bit is required at all times whether using a diamond bit, drag bit, a chopping bit or wing type bit.

UNIPRESS

To anchor unipress, drill hole the same diameter as your split wedge bolt or bolts, approximately 5" deep, then tighten the nut to secure split wedge bolt. You are now ready to place your unipress on top of the same. Then tighten the second nut to secure the base to split wedge bolt or bolts.

To drill angle holes, use portable protractor with level bubble. Position the protractor on the guide rod. Loosen the two nuts on guide bar hinge bolts and tilt unipress until level bubble comes to rest at desired angle; tighten both nuts and adjust back stay to maintain proper position.

METHODS OF ANCHORING DRAW DOWN CHAIN

"Dead Man" Installation

Dig a hole adjacent to the boring or casing to a depth where sound soil exists. At this depth undermine the hole. Place a cross bar parallel to ground surface in the undermined hole such that when it is lifted up, it butts against sound soil. Attach a chain of sufficient length to this bar to tie down the unipress. Now, fill this hole and tamp the soil such that you have constructed a "dead man" anchor.

Truck or auto Plate Method

By using a plate of 10" wide x 36" long x 1/2" thick, a vehicle can be driven on this plate such that the weight of the vehicle will "anchor" the unipress. (Which is bolted to the plate).



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EYE BOLT OR ANCHOR BOLT

The eye bolt is a recoverable split type wedge anchor to secure the base of the drill to allow the operator to exert a pull down force on the cutting tool. Eye bolts come in various sizes. For example, for the EW Core Barrel, use 1-1/2" OD eye bolt. Always use same diameter eye bolt as core barrel.

To secure the eye bolt, drill a hole approximately 5" deep, approximately 8" distance from the exploration hole to be drilled; put the eye bolt into the drilled hole then tighten nut on top to secure the same.

SOILS ANCHOR

The eyebolt must be replaced by a soils anchor when starting holes in overburden and no outcropping of rock is available. The soil anchor can be turned into the soil by hand or with a wrench, same as an auger. It is complete with chain.

WINKIE DRILLING TOOLS

Masonry Drilling - For masonry drilling, the drill string used is much simpler. This string consists of the Winkie, a sub and the masonry bit. The sub is AW box to 1-1/4-7 thread pin, the box thread on the masonry bit (2" to 6-1/4" dia.) is 1-1/4-7 thread. The core barrel of the masonry bit is an integral part of the bit and is usually 12" long; however, they can be purchased in 18" or 14" lengths or longer at extra cost.

"W" SERIES ALUMINUM DRILL ROD

JKS aluminum rods are manufactured from a high quality seamless aluminum tubing and the couplings are made from alloy steel. JKS aluminum rods have the following advantages compared to steel rods; less than half the weight, easier handling, faster lowering and hoisting, increase drill capacity, increased production and lower transportation costs. JKS "W" series aluminum drill rods conform to DCDMA, CDDA and BSI standards.

ROD SIZES EW and AW are specified for diamond drilling and refer to the outside diameter.

		EW	AW
Rod O.D.	Inches	1 3/8	1 3/4
	mm	34.9	44.
Coupling I.D.	Inches	7/16	5/8
	mm	11.1	15.9
SQ. Thread per Inch		3	3
Five foot (1.52m) aluminum rod and steel coupling	Pounds	5.5	7.5
	Kg.	2.5	3.4



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STEEL DRILL RODS

ROD SIZES EW, and AW are specified for diamond drilling and refer to the outside diameter.

		EW	AW
Rod O.D.	Inches	1 3/8	1 3/4
	mm	34.9	44.
Coupling I.D.	Inches	7/16	5/8
	mm	11.1	15.9
SQ. Threads per inch		3	3
Five foot steel rod and steel coupling	Pounds.	17.5	21.7
	Kg.	8.0	9.8

DIAMOND BITS

Mining series - All types of mining series bits are available. See Bit Section.

Reaming Shells - The Reaming shell is used between the core barrel and the diamond bit to maintain the gauge of the drill hole. See Bit Section.

Masonry Bits - Masonry thinwall diamond bits are identified by nominal O.D. (inches); sizes up to 14" diameter are available and are complete with 12" long core barrel (or longer on request at extra cost). These bits are designed to drill through plain or reinforced concrete. They have a very narrow Kerf which minimizes the amount of concrete to be cut. A narrow Kerf bit is also a faster penetrating bit.

Bit Salvage - All Surface Set mining series bits and resettable masonry bits may be returned for salvage. The customer is given credits for any diamonds which are still useable against the purchase of new bits. In other words, the customer is only charged for those new diamonds needed plus the resetting charge.

TUNGSTEN CARBIDE CASING SHOE AND CASTING BIT

The casing shoe is attached to the bottom of the casing and is used to drill through soft overburden until bedrock is reached. The diamond core bit will pass through the casing shoe so that there is no need to pull up the casing until the hole is completed. The tungsten carbide casing bit will not allow the core bit or reaming shell to pass through. The casing shoe has a narrow Kerf to be used for generally soft overburden. The casing bit has a wider Kerf and will take greater punishment drilling through boulders and hard pan encountered in the various types of overburden. Tungsten carbide coring bits can only be used in very soft formations. Diamond set casing bits are recommended for hard formations.



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CROSS CHOPPING BIT

The chopping bit is adapted to the drill and is used to clean out the inside of the casing before using the diamond bit and also to chop out any core left in the hole that cannot be fished out with the core picker. Any loose material in drill holes should be cleaned out before using a diamond bit. This method will give the diamond bit greater drilling life.

DG TUNGSTEN CARBIDE DRAG BIT

This bit is adapted to the drill rods and will drill through any soft formation such as clay and shale when core recovery is not required. It can also be used for probing to determine the depth of overburden but must be used with water circulating through it at all times.

HOISTING EQUIPMENT

LOWERING IRON

This is an eccentric clevis with a 5" handle attached. When placed over the drill rods, it will hold the rods in position for adding lengths when lowering into the hole.

COM-A-LONGS (Pipe Wrenches)

These are best explained as open-type simple wrenches and are used to get better leverage when pulling drill rods out of the hole; also to protect the surface of the drill rods. Light weight aluminum pipe wrenches with hardened steel gripping teeth are available.

PIPE PIN TO CASING PIN

To recirculate and save on water consumption, the adapter is installed to the top of the casing, after bedrock has been reached, and a pipe T is used. EW to 1-1/2" pipe, AW to 2" pipe, and BW to 2-1/2" pipe.

ADJUSTABLE PIPE TONGS

The adjustable tongs are used when withdrawing the drill rods from the hole. They can be locked in any position, suspending the rods and preventing them from dropping back down the hole.



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ADAPTERS

ROD BOX TO CASING PIN

Sub used to connect the casing to the drill rods.

AW ROD BOX TO BW ROD PIN

Required when using AW drill rods and a BW core barrel.

AW BOX TO 1-1/4" - 7 THREAD ADAPTER

This adapter is only required to connect the masonry thin wall bit to the Winkie Drill. AW ROD

PIN TO EW ROD PIN SUB OR AW ROD PIN TO BW ROD PIN SUB

This sub is used to reduce the size from the Winkie AW box to the smaller drill rods and core barrels such as EW; also to larger drill rods. It is attached directly to the Winkie box output shaft (drive chuck).

FISHING TOOLS

ROD AND COUPLING RECOVERY TAPS

Used when drill rod or couplings break in the drill hole. It is a tapered and threaded tool that is attached to the drill rods and lowered into the hole. Turn the upper string of rods with a wrench, until the tap is secured firmly into the broken lower string of rods, then withdraw the complete string of drill rods.

CORE LIFTER CASE AND CORE LIFTER

Required on all "I" series and JKT 48 swivel type core barrels. This item must be attached to the end of the inner core tube to keep the core from falling out of the core barrel when withdrawing the rods from the drill hole.



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OPERATING INSTRUCTIONS FOR YOUR WINKIE

The Winkie Diamond Drill is designed to give you the most in drill performance and economy.

Engine care and operation:

The Winkie Drill is powered by a 10 HP, 2 cycle, air cooled, high speed gasoline engine. If the following instructions are carefully observed, you may be assured of dependable and long service.

"IMPORTANT"

Fuel: Refer to Plate #1619B on fuel

When operating in extreme cold weather you may add one pint of diesel fuel oil to one gallon of your regular Winkie Mix. As above item B explained, this will eliminate the engine stalling due to the non-detergent oil congealing in the carburetor.

Starting Engine:

1. Make sure fuel is at carburetor by using hose pump.
2. Move choke lever to choke position (move towards the air filter).
3. Open throttle wide.
4. Crank the engine by pulling the recoil starter handle. A short, quick pull, allowing no more than two (2) feet of rope to be exposed assures quicker and easier starting plus greater starter life. In very cold weather, or if the engine has not been run for a long period, two or more pulls may be necessary. After the engine starts, gradually move the choke lever back until engine has warmed up. When starting a warm engine, choking is not necessary. Choking a warm engine or excessively choking a cold engine can cause flooding. If this occurs, continue cranking engine until it starts, with the choke pushed open and the fuel line disconnected.

Stopping Engine:

Press the "Kill Button" or close the choke to stop the engine.

Muffler and Exhaust Ports:

The muffler and the exhaust ports should be cleaned every fifty (50) hours when the engine is running under continuous full load conditions. Clean every one hundred (100) to one hundred (150) hours when the engine is under light load. Clean exhaust ports if the engine loses power.



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Cleaning Engine:

To clean the cylinder exhaust ports, remove muffler and spark plug, then turn the starter pulley so that the piston is at the bottom of stroke, below the exhaust holes. With any blunt instrument, scrape the carbon from the three (3) cylinder holes so that they are completely open and remove the carbon from the surrounding exhaust chamber. Crank the engine several times to blow out the loosened carbon. Replace the spark plug and muffler.

Throttle Linkage:

For proper engine operation, throttle linkage, and carburetor throttle shaft and spring, must be free of all foreign material. Check each time the engine is used and clean if necessary.

Carburetor Adjustments:

These three (3) adjustments are on the carburetor:

- A. High speed at full load adjustment, marked by a stamping on the carburetor housing with the letter "H".
- B. Low speed (no load) adjustment, marked by a stamping on the carburetor housing with the Letter "L".
- C. Idle speed adjustment, merely is an adjustable set screw to increase, or decrease the distance the carburetor throttle shaft may travel.

High Speed Adjustment:

This was previously referred to as the full load adjustment. This has been properly adjusted before leaving the factory and should not be tampered with needlessly. When attempting an adjustment, do it while drilling at full throttle. To adjust the engine, the unit must be under load.

This adjustment may be made by ear. Rotate the adjustment screw slowly first to the left, then to the right until the engine speeds up and runs at the smoothest tempo. Do not run with screw less than one (1) full turn open. If screw is less than (1) full turn open the proper amount of lubricant cannot enter.

For normal operation use one and one half (1-1/2) turns.



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WINKIE DRILL CARE & MAINTENANCE

CAUTION:

Before operating the drill or starting the engine, fill the gear case with Shell Tellus #69 or equivalent high speed transmission oil.

Capacity of the gear case one (1) quart. With temperature of less than 40 degrees F. it may be necessary to thin the oil with any good SAE 30 weight oil. In unusual circumstances when the aforementioned oil is not readily available use SAE 40 weight oil in plus 40 degree F. temperatures, and SAE oil in minus 40 degree F. temperatures. Fill the gear case so that the oil just runs out the filler hole when the drill is held in upright position.

- A. Tighten all nuts and screws after the first eight (8) hours of use.
Repeat this tightening of all nuts and screws after each fifty (50) hours of operation or as needed.

SAFETY NOTE

Never attempt to add or take off drill rods while engine is idling. If in doubt about any operation STOP AND THINK!

ENGINE MAINTENANCE

Spark Plug: (AC 44F, Champion L90C, NGK B5HS)

Check plug periodically. Oily or carboned plug causes starting difficulty. Some plugs may operate hours and then prove defective requiring replacement.

The spark plug should be cleaned, and the points set at .030 inches. If there is any doubt of the condition of the plug, it should be replaced with original equipment. (Same type)

Air Filter:

Replace when necessary.

Low Speed Adjustment:

This again has been set at the factory and need not be tampered with unless deemed absolutely necessary. When an adjustment is necessary, run the machine at an idle without load, adjusting in the same manner as the High Speed Adjustment. Adjustment should be normally one and quarter (1-1/4) turns for low speed.

Idle Speed Adjustment:

This adjustment may be governed to suit an individual's preference.



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NOTE: Two cycle engines, when running under light loads, may appear to miss. This in no way affects the operation of the engine.

Should Engine Fail to Start:

- A. Check for fuel in the fuel tank and check to see that the valve is open.
- B. Check for spark; remove spark plug and, with magneto wire attached, hold the base of the plug against the engine, crank engine. A spark should jump across the plug points. If it does not, clean the plug or replace
- C. with a new one.
- D. Check magneto; hold the spark wire 3/16" from engine, spark should jump from the terminal to the engine when cranked. If no spark occurs, test the condenser and coil. If faulty, replace.
- E. Check for flooding. Remove spark plug and if plug is wet or if gap is closed by liquid fuel, the plug should be dried and with shut-off valve closed the engine should be cranked until vapor stops coming out of spark
- F. plug hole. Re-insert plug and open shut-off valve.
- G. Check for gasket leaks and for leaks around the crankshaft seal.

Should Engine Overheat:

Check the flow of air over the cylinder. If restricted by grease or dirt, remove the air shroud and clean cylinder fins. Be sure to use the correct fuel mixture. Use a clean container for mixing oil and fuel. (See Fuel Section - Plate #1619B)

NEVER USE SYNTHETIC OIL

Should Engine Knock:

Check connecting rod bearings; move flywheel back and forth quickly a few degrees; if rod is worn, play can be felt and a loud click can be heard; if worn, replace. Check piston and pin; if worn, replace.

Should Engine Lack Power:

- A. Check carburetor adjustments. See instructions preceding.
- B. Check for carbon. If exhaust port and muffler are restricted by carbon, scrape clean.
- C. Check compression. Remove spark plug and place compression gauge in cylinder spark plug hole. After cranking the engine several times, the gauge should register 90 lbs. or more. If compression is faulty, remove and replace piston rings.
- D. Check for proper fuel mixture.
- E. Check cylinder, carburetor, read plate and transfer port gaskets for leaks. Also check for leaks around the crankshaft seals. The governor cover and magneto must be removed for this check.



PARTS MANUAL

FUEL MIX AND ENGINE BREAK-IN

- 1) Factory fuel-oil mix recommendation is 24:1 (1/3 pint oil per gallon gasoline or 4% oil). Factory oil recommendation is BIA-TCW. Oil carries many names, but a "BIA-TCW" label appears on all containers with the proper oil. This oil has passed severe testing by BIA. Under heavy drilling conditions use 20:1 fuel mixture and a 16:1 fuel mixture for break-in conditions.

BIA-TCW or equivalent is recommended (automotive motor oil should not be used).

- 2) Break-in of any new engine is critical and is necessary for reliable operation. Never run a new engine wide open throttle until the break-in has been completed, 45 minutes to (1) hour, of idle and part throttle operation with momentary bursts to wide open throttle and with at least 2 cooling down periods of 20 minutes to 1/2 hour each.
- 3) Be sure proper oil is used and at correct gas-oil ration. If in doubt, for break-in purposes, use a slightly richer gas-oil mix.



PARTS MANUAL

MASTER LIST PARTS AND DRAWINGS - WINKIE DRILL ASSEMBLY 5015000

ASSEMBLY	DESCRIPTION	PAGES
7820001	Drillhead & Transmission Assembly Parts List	22 23 24
	Schematic PL338A	24
	GW10 GW 15 Transmission Complete Detail	37
	GW10 Water Swivel, Clutch, Shaft Seal Assembly Detail	38
	GW15 Water Swivel, Clutch, Shaft Seal Assembly Detail	39
7820000	Unipress Complete Assembly Parts List	25
	Schematic PL1329A	26
W5150265	Head Stop Assembly Detail	27
	GW10 GW15 Top Plate and Drill Handle Assembly Detail	40
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782002	Engine Group Chrysler Two Stroke Parts List	28
	Starter and Fan Housing (Chrysler Engine)	29
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PARTS MANUAL



WINKIE

DRILL



PARTS MANUAL

7820001 DRILL HEAD & TRANSMISSION ASSEMBLY Drawing M PL1338A

DWG	QUANTITY	PART NUMBER	DESCRIPTION
1	1	5150128	TRANSMISSION HOUSING
2	1	5000172	BEARING
3	1	5150023	GASKET
4	1	5150015	BEARING AND SEAL RETAINER
5	3	5160050	10-24 X 1/2 SLOT RHMS STE
6	1	5040228	OIL SEAL
7	1	7830005	HEAT TREATED DRUM
8	1	5180046	COPPER WASHER 1" X 1/2" X 5/16"
9	1	5160212	ESNA LIGHT HEX NUT R.H.
10	1	5160207	7/16 - 2OUNF FLEXLOX LEFT HAND
11	1	7830004	STEEL CLUTCH
13	1	5150144-M	HI/LO SPEED PINION CLUSTER
14	1	5054302	RETAINING RING
15	1	5000220	BEARING
16	1	5150092	GASKET
17	1	5222516	5/16" 0 X 1" LG SPRING PIN
18	1	5150004	TRANSMISSION COVER BOTTOM
19	1	5176307	LOCK NUT
20	1	5181307	LOCK WASHER
21	1	5000049	BEARING
22	1	5150001	BEARING RETAINING GASKET
23	1	5150089	BEARING AND SEAL RETAINING
24	1	5101416	1/4 2OUNC X 3/4" LG SHCS
25	1	5040229	OIL SEAL
26	1	5150123-2	MAIN SEAL SPINDLE AW ROD BOX
27	1	5150145	HI & LO SPEED GEAR CLUSTER
28	1	5150097	SHIFTING FORK
29	1	5000221	BEARING
30	1	5054303	SPIROLOX RETAINING RING
31	1	5054304	RETAINING RING
32	1	5000172	BEARING
33	1	5160212	ESNA LIGHT HEX NUT R.H.
34	1	5150069	SHIFT LEVER SWIVEL
35	1	5150052	INSIDE SHIFT LEVER
36	1	5054305	RETAINING RING
37	1	5150054	GASKET
38	1	5030015	O RING
39	2	5222412	SPRING PIN 1/4 X 3/4
40	1	5150055	SHIFT LEVER COVER



PARTS MANUAL

7820001 DRILL HEAD & TRANSMISSION ASSEMBLY Drawing M PL1338A

DWG	QUANTITY	PART NUMBER	DESCRIPTION
41	3	5224012	1/4" DIA X 1/2 " LG DOWEL PIN
42	4	5101416	1/2 2OUNC X 3/4 " LGSHCS
43	1	5200529	SPRING
44	1	5160350	10-24 UNC X 3/8" SOC SET SCR CUP
45	1	5150064	SHIFT LEVER DETENT
46	1	5150065	SHIFT LEVER
48	1	5150061	SHIFT LEVER PIN
49	1	5150058	SHIFT LEVER YOKE
50	1	5150059	SHIFT LEVER SHAFT
51	2	5070005	WOODRUFF KEY
52	1	5150068	GASKET
53	1	5150067	TRANSMISSION FRONT COVER
54	4	5101503	1/4-2 OUNC X 7/8" LG HHCS
55	1	5200077	3/8" NPT SQ HEAD PIPE PLUG
56	6	5180505	5/16 LOCKWASHER
57	2	5112303	5/16 - 18 UNC X 2 1/4" LG HHCS
58	4	5102603	5/16 - 18 UNC X 1" LG HHCS
59	1	5200076	1/4" NPT SQ HEAD PIPE PLUG
60	1	5200078	1/2"STEEL PIPE PLUG
61	8	5222520	ROLL PIN 5/16 X 1
62	2	5150225	LOWER GUIDE BRACKET
63	4	5114003	7/16 - 14 UNC X 1 1/2" LG HHCS
64	4	5180507	7/16 LOCKWASHER
65	4	5150218	BRONZE BUSHING
66	8	5150251	CHAIN HOOK
67	1	5150217	R H HANDLE BRACKET
68	2	5113503	3/8-16 UNC X 2 3/4" LG HHCS
69	4	5180506	3/8 LOCKWASHER
70	2	5113303	3/8-16 UNC X 2:1/4" LG HHCS
71	1	5150220	UPPER CHAIN ADJUSTMENT
72	1	5221063	COTTER PIN 3/16 X 1-1/2 LG
73	1	5150224	L H HANDLE BRACKET
74	1	5150048	RING HANDLE
75	2	5112013	5/16-18 UNC X 1 1/2" FLAT HD
76	2	5112413	5/16-18 UNC X 2 1/4" FLAT HD
78	1	5040230	OIL SEAL SET (2 PER)
79	1	5150121	WATERSWIVEL BASE GW 15
80	4	5112203	5/16-18 UNC X 2" LG HHCS
81	4	5180505	5/16 LOCK WASHER
82	1	5150130	PACKING RING GW 15



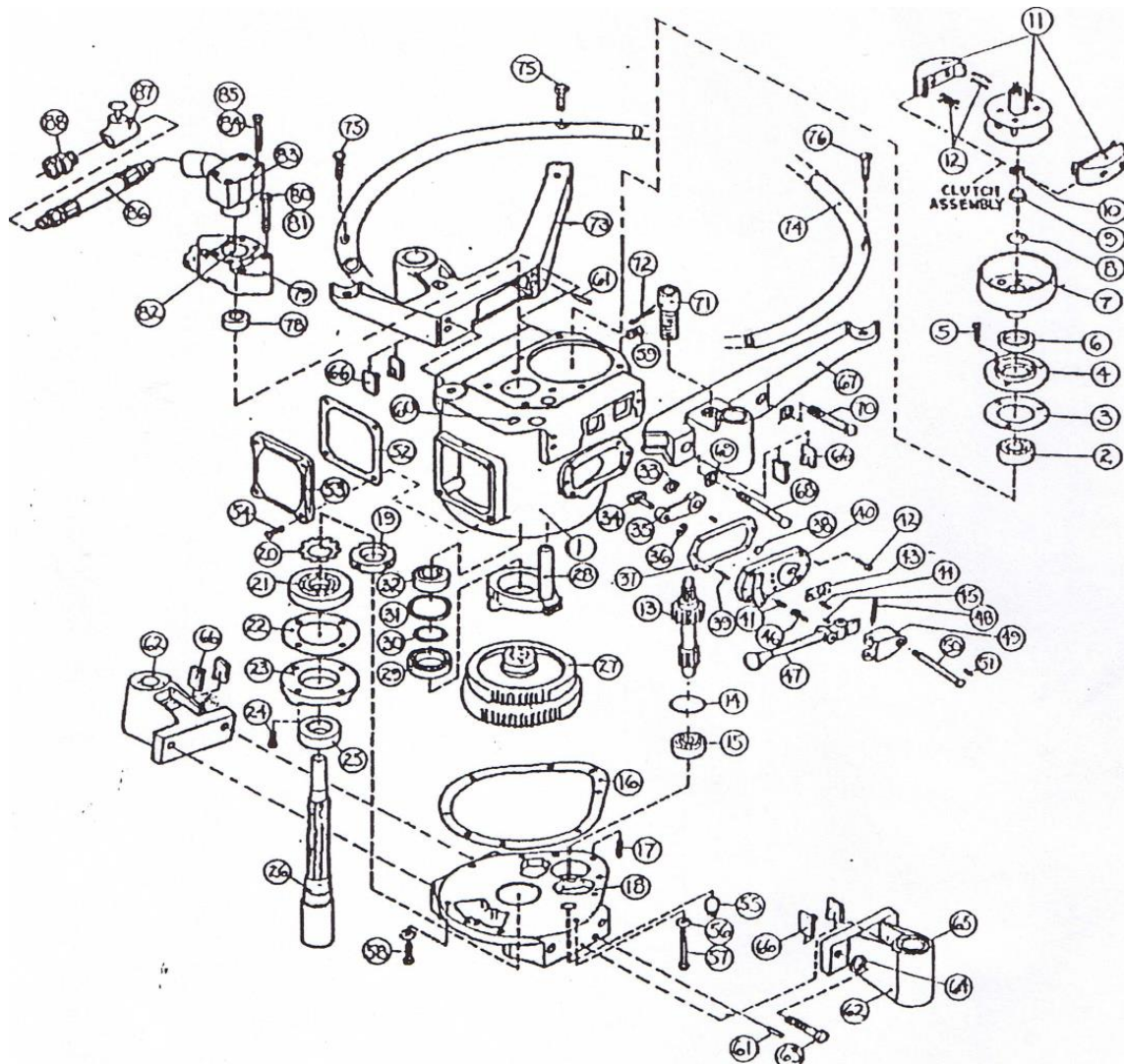
PARTS MANUAL

7820001 DRILL HEAD & TRANSMISSION ASSEMBLY Drawing M PL1338A

DWG	QUANTITY	PART NUMBER	DESCRIPTION
83	1	5150122	WATERSWIVEL GLAND GW15
84	2	5111203	¼ 2OUNC X 2" LG HHCS
85	1	5180504	¼ LOCK WASHER
86	1	5150049	10" HOSE ASSY
87	1	5203448	½ " DIAMETR BALL VALVE
88	1	8701082	SWIVEL ADAPTER ½ " TO ¾ "
89	1	5070007	WOODRUFF KEY

Detail See GW10 Page 38
Detail See GW15 Page 39

Detail Clutch See GW10-GW15 Page 38
Detail Clutch See GW10-GW15 Page 39



Detail Transmission See Page 37

Detail Motor Transmission Mounts See Page 41

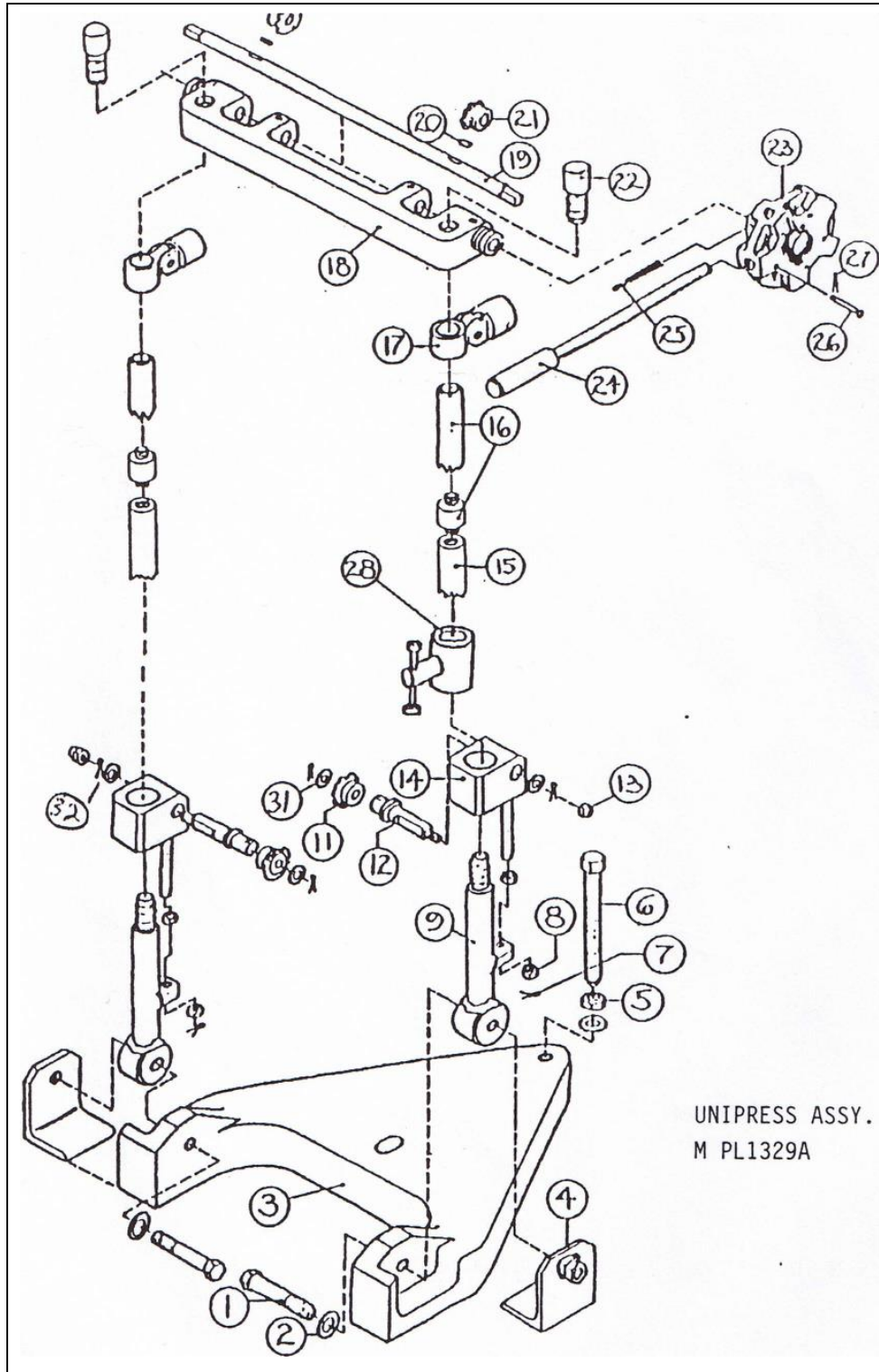


PARTS MANUAL

7820000 UNIPESS ASSEMBLY Drawing M PL1329A

DWG	QUANTITY	PART NUMBER	DESCRIPTION
1	2	5119803	3/4 10UNC X 3 1/2" LG HHCS
2	3	5180212	3/4 FLAT REG WASHER
3	1	5150248	BASE
4	2	5150241	HINGE CLAMP SHOE MTO
5	1	5170612	3/4 10UNC HEX NUT
6	1	5150249	LEVELLING SCREW
7	6	5221032	COTTER PIN 3/32 X 1" LG
8	4	5170608	1/2 13C NHEX NUT
9	2	5150239	GUIDE ROD HINGE
11	2	7830006	SPROCKET
12	2	5150234	SHAFT
13	2	5172208	1/2 13 UNC CASTLE NUT
14	2	5150230	LOWER SPROCKET SADDLE
15	2	1872005	E 5' STEEL DRILL ROD/STL CPLG
16	2	1872901	1' STEEL DRILL ROD/LESS CPLG
17	2	5150210	BACK STAY HINGE CLAMP
18	1	5150200	HEAD
19	1	5150201	SHAFT
20	2	5150203	KEY FOR SPROCKET
21	2	5150231	SPROCKET
22	2	5150209	TOP COUPLING
23	1	5150204	HAND WHEEL HUB
24	5	5150215	HAND WHEEL HANDLE
25	1	5221086	1/4" DIA X 2 3/4" LG COTTER PIN
26	5	5202721	CLEVIS PIN 5/16 X 1 3/4 LG
27	5	5221032	COTTER PIN 3/32 X 1" LG
28	1	5150265	WINKIE HEAD STOP ASSEMBLY
29	2	5200791	CHAIN - 12 1/2' LG
30	2	5150252	CONNECTING LINK
31	2	5150233	3/4 " THIN WASHER
32	2	5180210	1/2 " FLAT WASHER

PARTS MANUAL



**For Detail Drawing
of Top Bracket
See Page 40**

**For Detail Drawing
of Head Stop Assy
See Page 27**

**For Detail Drawing
of Base Assembly
See Page 41**

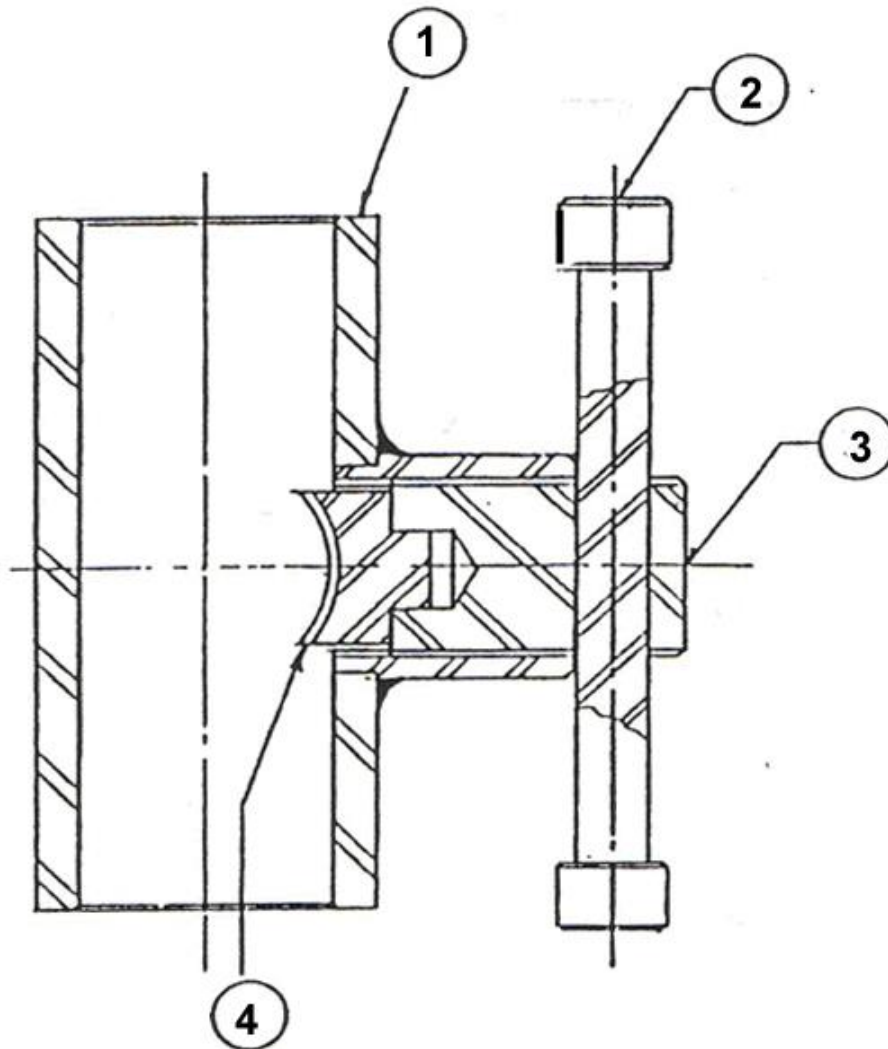
UNIPRESS ASSY.
M PL1329A



PARTS MANUAL

WK5150265 WINKIE HEAD STOP ASSEMBLY Drawing PL1527A

DWG	QUANTITY	PART NUMBER	DESCRIPTION
1	1	5150265-4	BODY
2	1	5150265-1	HANDLE
3	1	5150265-3	ADJUSTING SCREW
4	1	5150265-2	SHOE



WL5150265 HEAD STOP ASSEMBLY

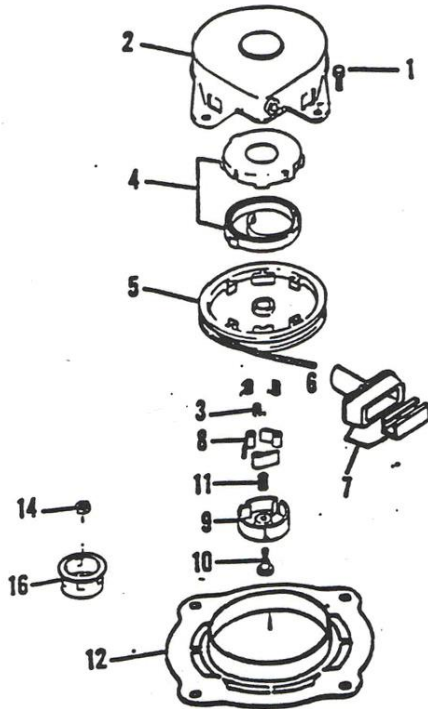


PARTS MANUAL

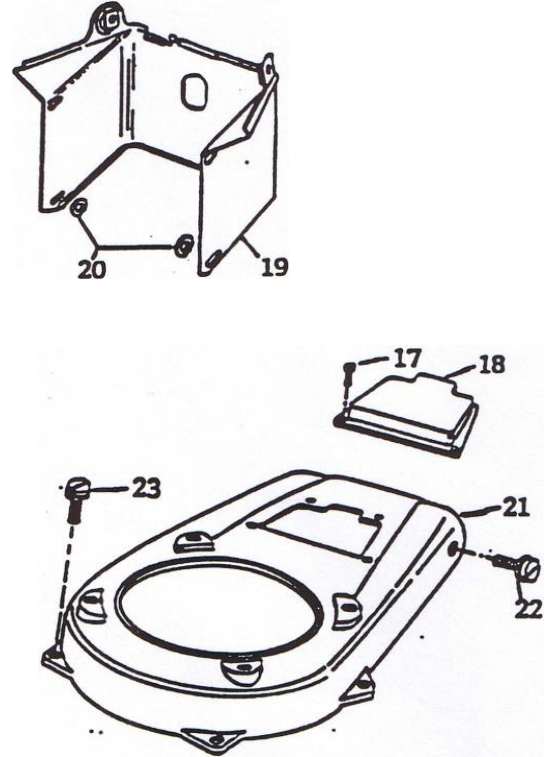
7820002 ENGINE GROUP (CHRYSLER TWO STROKE)

DWG	QUANTITY	PART NUMBER	DESCRIPTION
1	1	5230214	WINKLE ENGINE ASSY/10HP/ELECT. IGN.
2	1	175279	MUFFLER GASKET
3	1	5151598	WINKIE MUFFLER
4	1	5150127	MOTOR ADAP'TER GW 15
5	4	5102603	5/16 18UNC X 1" LG HHCS
6	8	5180505	5/16 LOCKWASHER
7	4	5102603	5/16 18UNC X 1" LG HHCS
8	12	6784549	CLEAR GAS LINE
9	1	5201490	3/8 TO 7/8 O.D. CLAMP
10	1	5310069	QUICK DISCONNECT MALE
13	1	5150028	GAS TANK ASSEMBLY
14	4	5170605	5/16 18UNC HEX NUT
15	1	5200530	SPRING
16	1	5160213	#10 24UNC X 1/2LG RD HD SCREW
17	1	5150044	RATCHET PAWL
18	3	5180203	3/16 REG FLAT WASHER
19	1	5221022	COTTER PIN
20	1	5153215	THROTTLE LEVER LINK
21	2	5160339	MACH. SCREW 10-24 UNC X 1"
22	4	5180403	3/16 LIGHT LOCK WASHER
23	1	5153815	THROTTLE HAND LEVER
24	1	5150037	THROTTLE RACHET
25	2	5160338	MACH. SCREW 10-24 UNC X 3/4"
26	1	5150042	THROTTLE LINK PIVOT
27	1	5102323	5/16NC X 5/8 SOCHD ST SCREW
28	1	5150041	BRASS WASHER
29	1	5150034	THROTTLE LEVER SHAFT
30	4	5112016	5/16-18UNC X 1 1/2" LG SHCS

Starter



Fan Housing

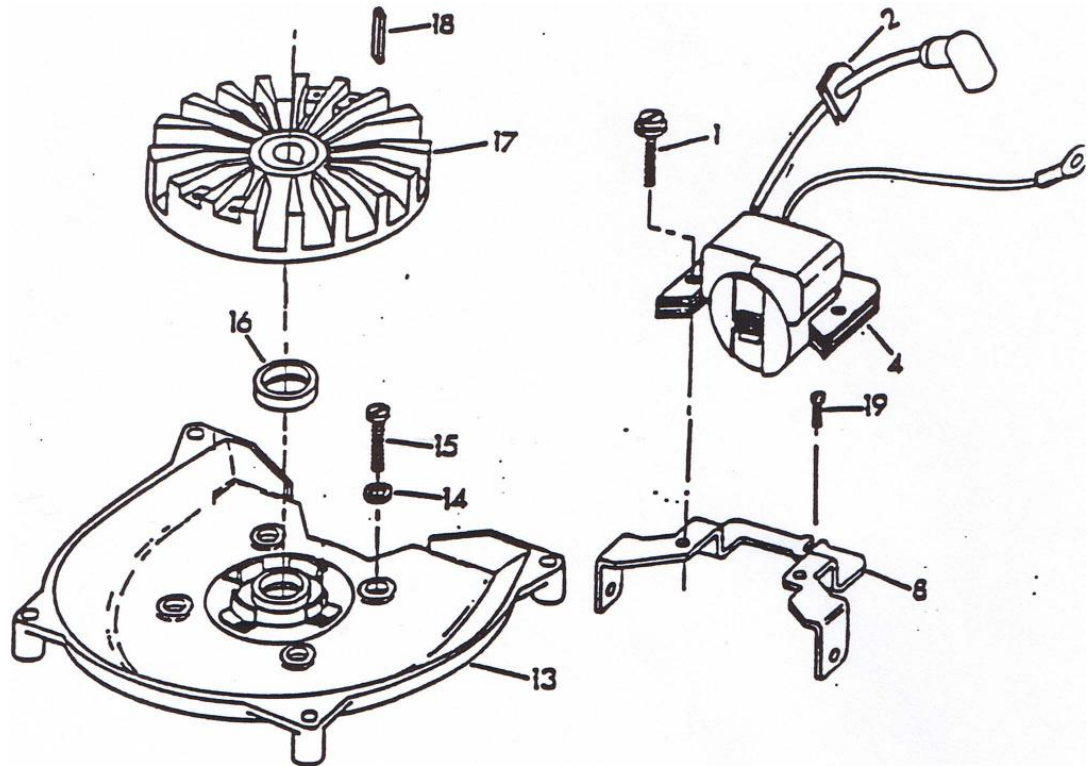


REF	PART NO.	QTY.	DESCRIPITON
1*	1096	4	¼ 20 x ½ PN HD
2*	264063	1	COMPLETE STARTER
3*	N/A	3	DOG SPRING
4*	N/A	1	SPRING & KEEPER
5*	N/A	1	PULLEY WITH BEARING
6*	K15585	1	ROPE
7*	A250132	1	T-HANDLE & INSERT
8*	N/A	3	DOG
9*	N/A	1	DOG RETAINER
10*	N/A	1	SCREW
11*	N/A	1	BRAKE SPRING
12*	15603-1	1	STARTER SCREEN
14	1353	1	7/16 20 FLYWHEEL NUT

REF	PART NO.	QTY.	DESCRIPTION
16*	560456	1	STARTER COP
17	1927	3	10-32x3/8 PN HD
18	559408	1	COIL COVER
19	174648-1	1	CYLINDER COVER
20	8026	2	17/64 X ½ X 1/8 WASHER
21	560596	1	FAN HOUSING
22	1096	2	¼ 20 x ½ PN HD
23	1439	4	¼ 20 x 5/8 SLTRDHD
	K264063	1	STARTER KIT

* INDICATES ITEMS INCLUDED IN THE K264063 STARTER KIT

Ignition



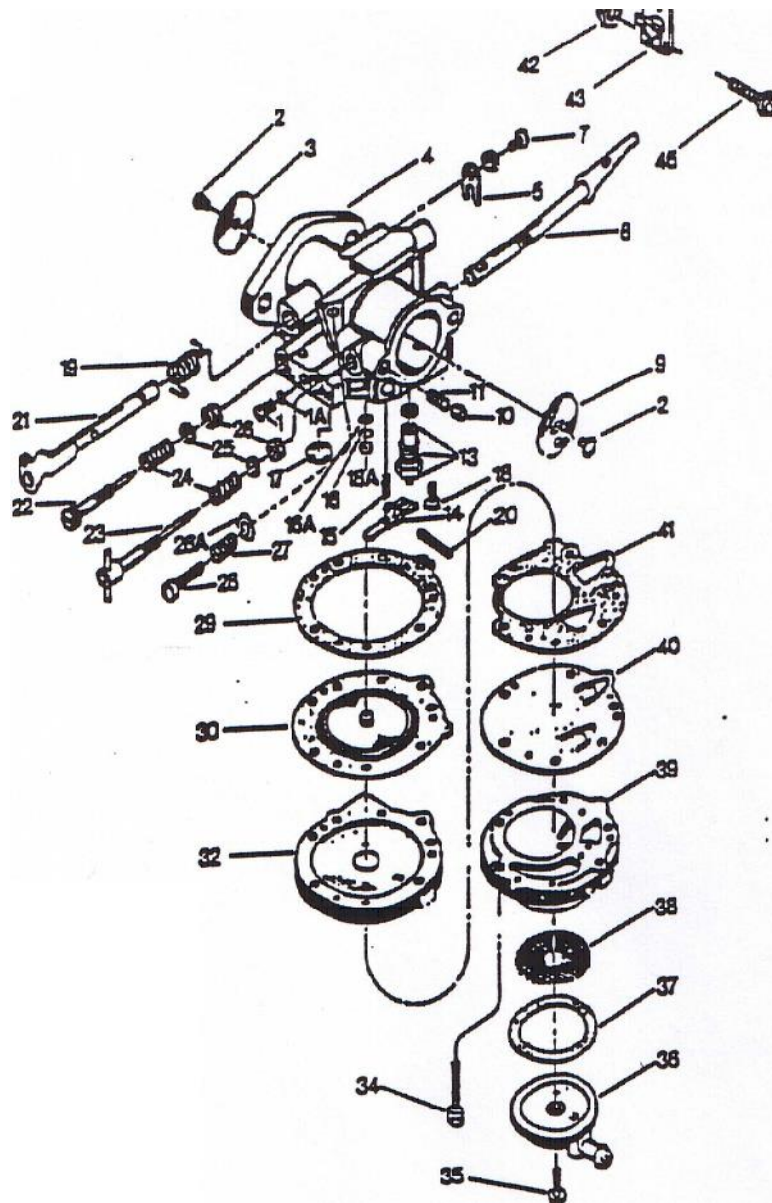
REF	PART NUMBER	QUANTITY	DESCRIPTION
1	1523	2	10-32 x 7/8 PN HD
2*	175899	1	GROMMET
4*	A560475-2	1	COIL ASSY.
8	560502	1	COIL BRACKET
13	2A560038-1	1	SUPPORT PLATE W/ # 1616 om
14	1609	4	¼ EXT. LOCKWASHER
15	1156	4	¼ 20 x 5/8 SLT FLAT
16	2770146-1	1	DRIVE END SEAL
17	560097	1	FLYWHEEL
18	128498	1	FLYWHEEL KEY
19	1457	1	¼ 20 x 5/8 SLT RD HD

* INDICATES ITEMS INCLUDED IN A560475-2 COIL ASSY.

Carburetor (Chrysler Engine)

CARBURETOR (Chrysler Engine)

DWG	QUANTITY	PART NUMBER	DESCRIPTION
1*	1	018038	GOVERNOR VALVE
IA*	1	010404	SEAING RING
	2	08942-1	SHUTTER SCREW W/L . W.
	1	013534	COMPLETE CARB (HL329C)
5	1	09678	THROTTLE SHAFT CLIP





Carburetor (Chrysler Engine)

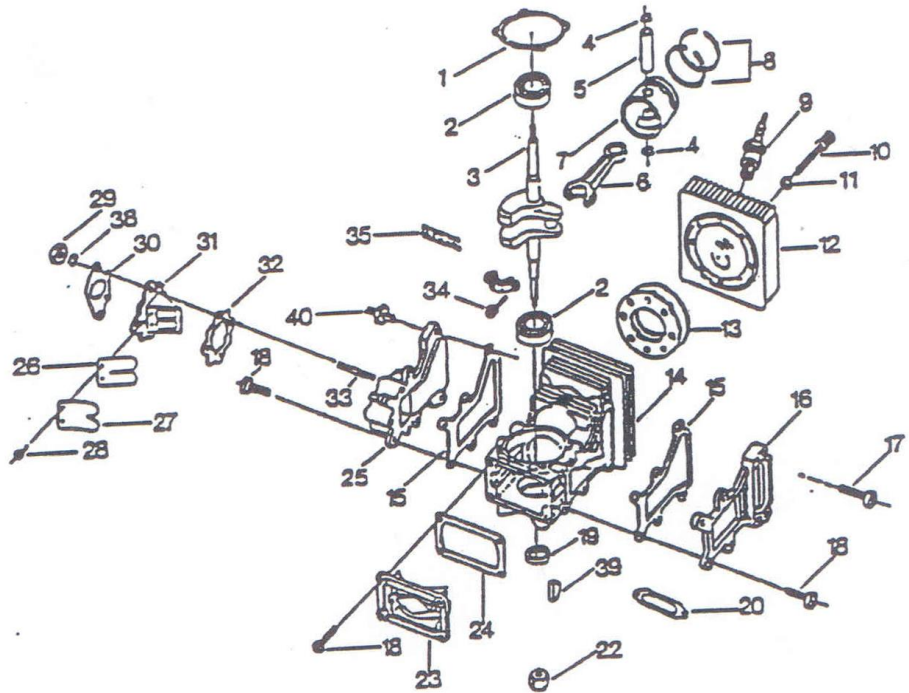
CARBURETOR (Chrysler Engine)

DWG	QUANTITY	PART NUMBER	DESCRIPTION
7	1	01974	RETAINING CLIP SCREW
8	1	014288	CHOKE SHAFT AND LEVER
9	1	013547	CHOKE SHUTTER
10	1	04784	CHOKE FRICTION BALL
11	1	08805	CHOKE FRICTION SPRING
13*	1	015206	INLET NEEDLE AND SEAT
14*	1	014020	INLET CONTROL LEVER
15	1	011503	INLET TENSION SPRING
16*	1	012345	RETAINING SPRING
16A*	1	012884	NOZZLE SCREEN
17*	1	02531	WELCH PLUG
18	1	013269	INLET CONTROL LEVER SCREW
18A*	1	012347	CHANNEL PLUG
19	1	013541	THROTTLE SHAFT RETURN SPRING
20	1	013406	INLET CONTROL LEVER PIN
21	1	013165	THROTTLE SHAFT AND LEVER
22	1	011498	IDLE ADJUSTING SCREW
23	1	012225	MAIN ADJUSTING SCREW
24	2	08793	ADJUSTING SCREW SPRING
25*	2	011428	ADJUSTING SCREW WASHER
26*	2	011401	ADJUSTING SCREW PACKING
	1	010404	GOVERNOR GASKET
27	1	0788	IDLE SPEED REGULATING SCREW SPRING
28	1	05095	IDLE SPEED REGULATING SCREW
29*	1	012473	DIAPHRAGM GASKET
30*	1	012475	DIAPHRAGM
32	1	013228	DIAPHRAGM COVER
34	6	018031	BODY SCREW
35	1	010571	STRAINER COVER GASKET
36	1	010527	STRAINER COVER
37*	1	010529	STARTER SCREEN
38*	1	010530	FUEL PUMP BODY
39	1	013335	FUEL DIAPHRAGM
40	1	012698	FUEL GASKET
41	1	012930	10-24 STOP NUT
42	1	7011	THROTTLE SHAFT
43	1	A2770589	ARM WITH #42 AND #45
45	1	1733	10 24 X 5/8 PN HD
*	1	10289	MESH SCREEN
	1	K10232	CARBURETOR REPAIR KIT COMPLETE

* INDICATES ITEMS INCLUDED IN K10232 CARBURETOR REPAIR KIT



Power Head



REF	PART NO.	QTY	DESCRIPTION	REF	PART NO.	QTY	DESCRIPTION
1**	175277	1	BEARING CAGE GASKET	23	175150	1	CRANKCASE COVER
2	127910-2	1	BALL BEARING	24**	175148	1	CCASE COVER GASKET
3	180018	1	CRANKSHAFT	25	236157	1	MANIFOLD
4	31410	2	RETAINING RING	26	31160-2	2	REED
5	175017	1	PISTON PIN	27	31161	2	REED STOP
6	S175016	1	CONK ROD W/#34 INC.	28	1755	4	6 32 x 5/16 RD HD
7	175015	1	PISTON	29	1490	2	¼ 20 HEX NUT
8	A175260-1	1	PISTON RING SET	30**	175906	1	CARB GASKET
9	0247227-1	1	SPARK PIRG (AC R44F)	31	A31158-1	1	REED PLATE ASSY. With #26, 27, 28.
10	1465	8	¼ 20x1 SOCKFT HD	32**	31168	1	MANIFOLD GASKET
11	8026	8	17/64x½ x 1/8 WASHER	33	27209-1	2	CARB STUD
12	175518-2	1	CYLINDER HEAD	34	175634	2	CONN ROD SCREW
13**	175529062	1	HEAD GASKET	35	A175228	1	CRANKPIN BEERING
13A	175529032	1	HEAD GASKET	38	8060	2	¼ EXT LOCK WASHER
14	170010	1	CYLINDER W/#19 INC.	39	9044	1	WOODRUFF KEY
15**	175223	2	T'PORT COVER GASKET	40	27209-1	2	SHOULDER STUDS
16	560222	1	T'PORT COVER		G819-2	1	GASKET KIT
17	1497	2	¼ 20x7/8 SLT PN HD				
	1439	12	¼ 20x3/4 SLT PN HD				
	31146	1	DRIVE END SEAL				
20**	175279	1	EXHAUST GASKET				
22	1353	1	7/16-20 HEX NUT				

** INDICATES ITEMS INCL IN G819-2 GASKET KIT



OPERATING INSTRUCTIONS

FUEL MIXTURE

Normal operation mixture for Power Bee 2-cycle engines is 1/3 pint (BIA-TCW) two cycle oil with each gallon of gasoline thoroughly mixed in a separate clean container.

All brands of gasoline with octane rating of 87 are recommended. Avoid the use of gasoline-alcohol.

Strain fuel mixture through a fine meshed screen when filling gasoline tank to remove dirt and water if present.

PREPARATION FOR STARTING

1. Fill gasoline tank with fuel mixture prepared as instructed above. Wipe up all spilled gasoline.
2. Open gasoline shut-off valve.
3. Move choke lever to closed position. **NOTE:** If engine is warm, it may not require choking.
4. Open the throttle and crank engine.
5. When engine starts, move choke lever to open position.

NOTE: A starting point of 1 turn out from closed should be used for both the low and high speed mixture needles. Occasional readjustment may be required but it is not necessary to readjust for starting except for cold weather starting when it may be necessary to open the high speed adjusting needle an additional 1/8 turn.

TO STOP ENGINE

Kill Button Switch will stop the engine by shorting magneto to ground.

CARBURETOR ADJUSTMENT

1. Turn both adjustment needles clockwise until completely closed.

CAUTION: Do not force needle tightly closed as the seat may be damaged.

2. Turn both needles counter-clockwise one turn.
3. Start engine and allow it to warm up, then, if carburetor setting is too "lean", engine will not run at full speed and will "pop" and may stop. Turn main adjustment needle counter-clockwise an eighth of a turn at a time until the engine runs smoothly.



If engine runs at full speed without load, but will not maintain full speed under load, turn the main adjustment needle counter-clockwise 1/8 turn.

If carburetor setting is too "rich", engine will not develop full power but will roll and run unevenly under load. Turn main adjustment needle clockwise 1/8 turn at a time until the engine runs smoothly.

4. To verify proper idle needle setting, start engine and allow to warm up. If motor surges, and runs at uneven speed, turn the idle adjustment needle slowly clockwise up to 1/4 turn. If this aggravates rather than corrects the situation, return to the original setting, then turn the idle adjustment needle slowly counter-clockwise up to 1/4 turn. This should cause the engine to "settle down" and run at a constant speed.

NOTE: If engine fails to accelerate, open idle screw 1/8 turn.

5. If engine runs too fast at idle speed, back out the idle stop screw a little at a time until desired speed is obtained. To increase idling speed, turn in the idle stop screw.

MAGNETO IGNITION

1. Breaker point gap should be set at .020". Set points with cam follower at highest point of breaker.
2. Directional arrow on cam must be UP.
3. For magneto inspection or service, contact your nearest authorized dealer.
4. If magneto stator plate is loosened or removed from the engine for any reason, be sure it is reinstalled as follows:
 - A. Place stator plate in position.
 - B. Install hold down screws, but do not tighten.
 - C. Turn stator plate to the mid-range position.
 - D. Tighten screws.
 - E. Reset breaker points to .020" gap.

This procedure places the stator plate in position for correct ignition timing.

AIR CLEANER

Under ordinary operating conditions, the air cleaner should be cleaned daily. However, under extremely dirty condition, more frequent cleaning is recommended. To clean the air cleaner, follow equipment manufacturer's recommendations.

IMPORTANT: Dirt that enters the engine through the carburetor is one of the greatest causes of engine wear. Therefore, it is very important that the air cleaner be serviced regularly.



STARTER SCREEN

The screen keeps dirt, etc., from entering the fan housing and clogging the air cooling passages.

Because this engine is air-cooled, it is necessary to keep this screen clean at all times to permit the unrestricted passage of air into the fan housing.

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 at .030".

STORING MOTOR

The following steps should be taken to prepare your engine for storage.

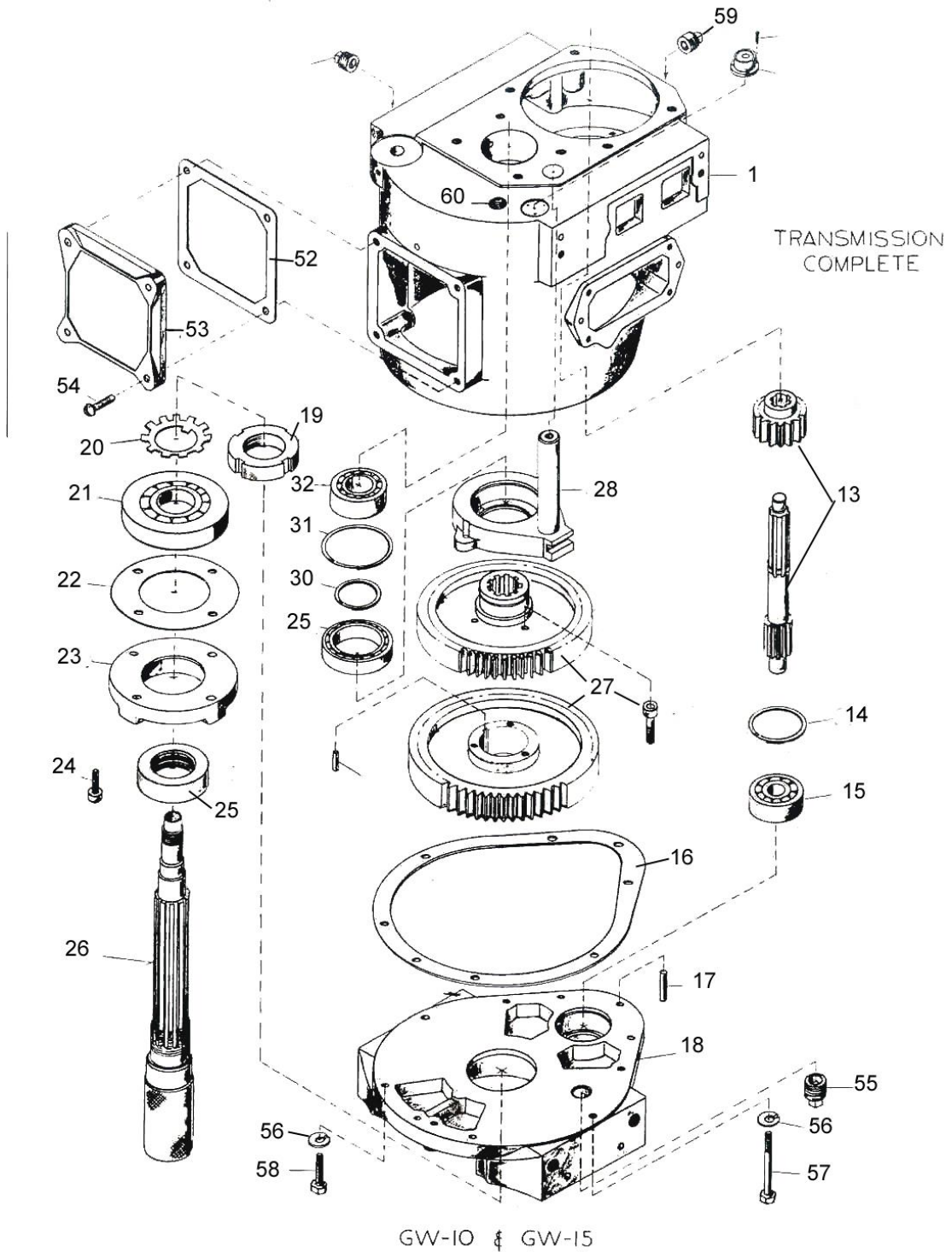
1. Close gasoline shut-off valve.
2. Start engine and allow to run until it stops from lack of fuel. This will use up all the fuel in the carburetor and prevent the formation of deposits due to evaporation of fuel.
3. Disconnect fuel line and permit all fuel to drain from the gasoline tank. Replace fuel line.
4. Remove spark plug and pour cup of motor oil into cylinder. Replace spark plug.
5. Crank engine two or three times to distribute oil throughout cylinder. This will coat the cylinder walls with oil and prevent rust from forming during the storage period.

TORQUE CHART

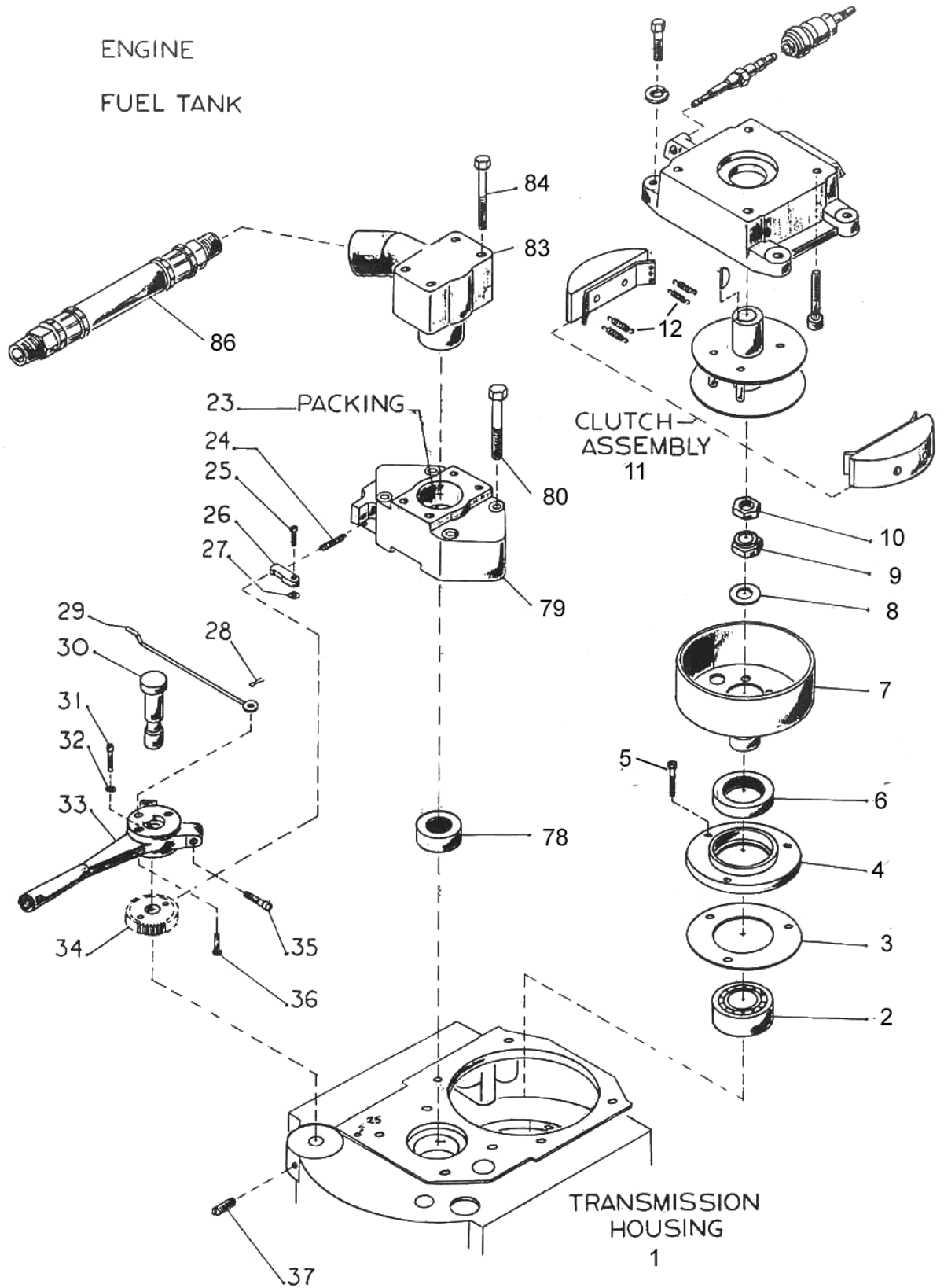
FLYWHEEL	420 In. Lbs.
CONNECTING ROD	80-90 In. Lbs.
SPARK PLUG	120-180 In. Lbs.

GENERAL SCREWS

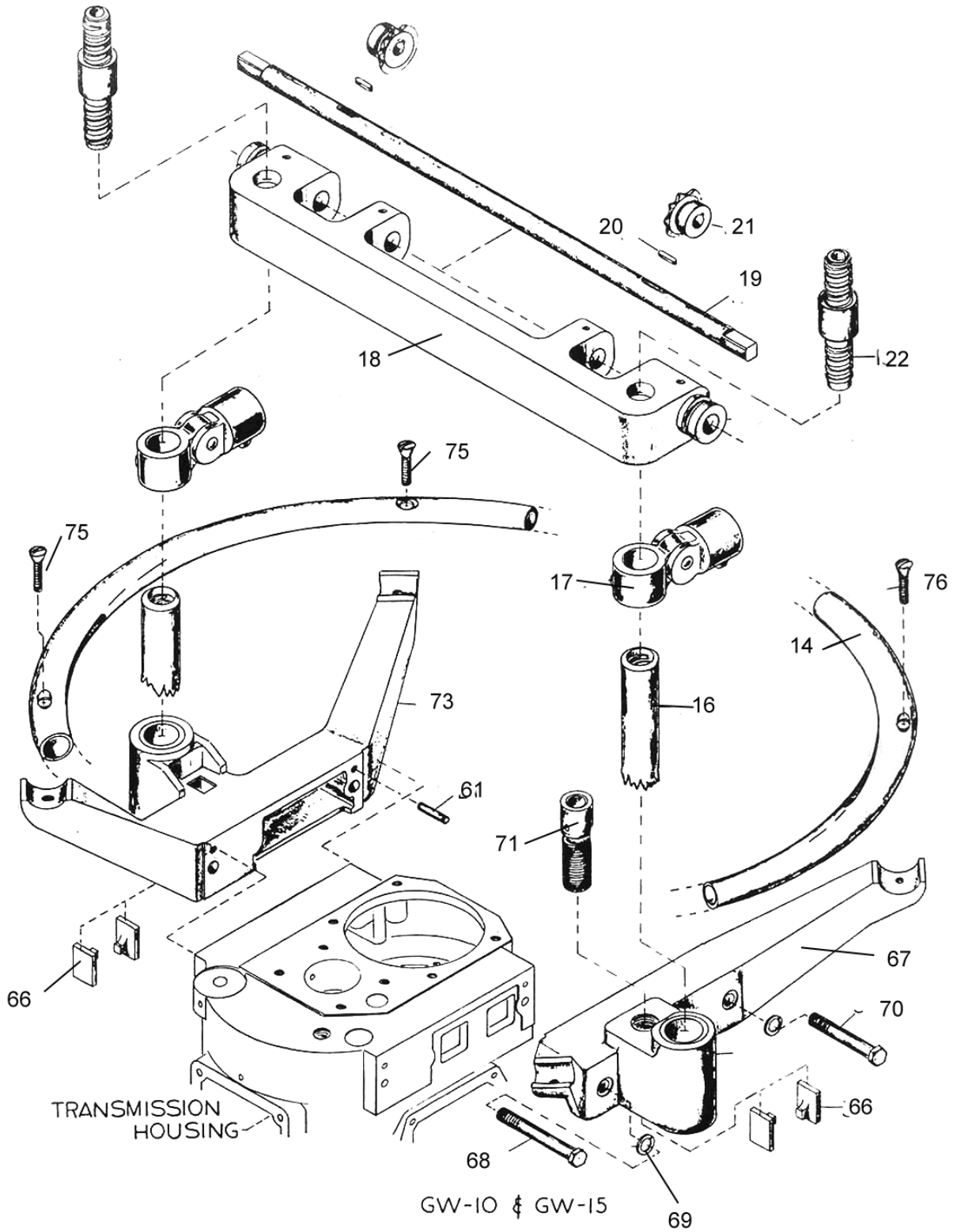
10-24	30 In. Lbs.	1/4-20	70 In. Lbs.
10-32	35 In. Lbs.	5/16-18	160 In. Lbs.
		1/4-28	75 In. Lbs.



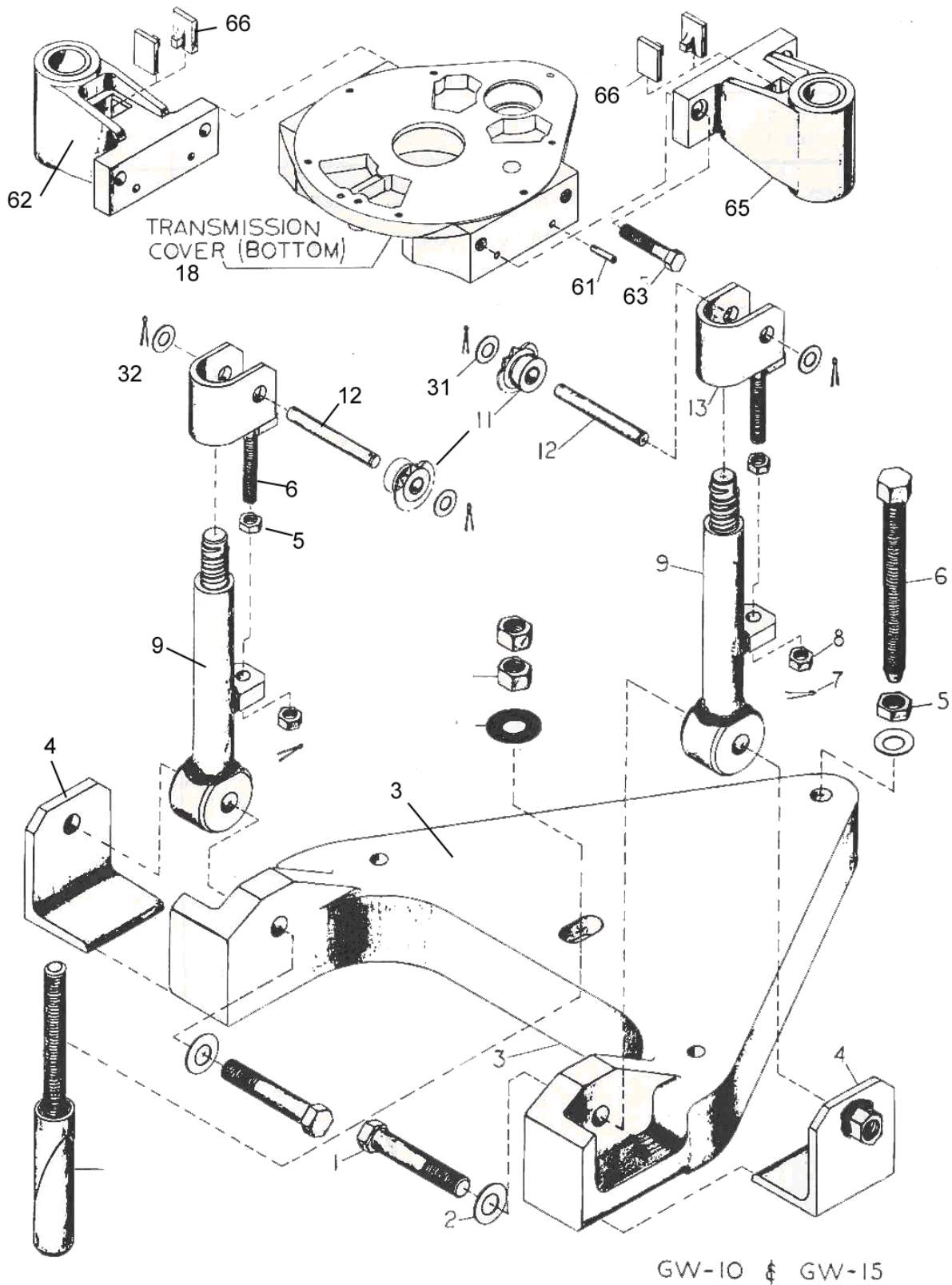
From General Assembly Drawing PL1338A Page 24

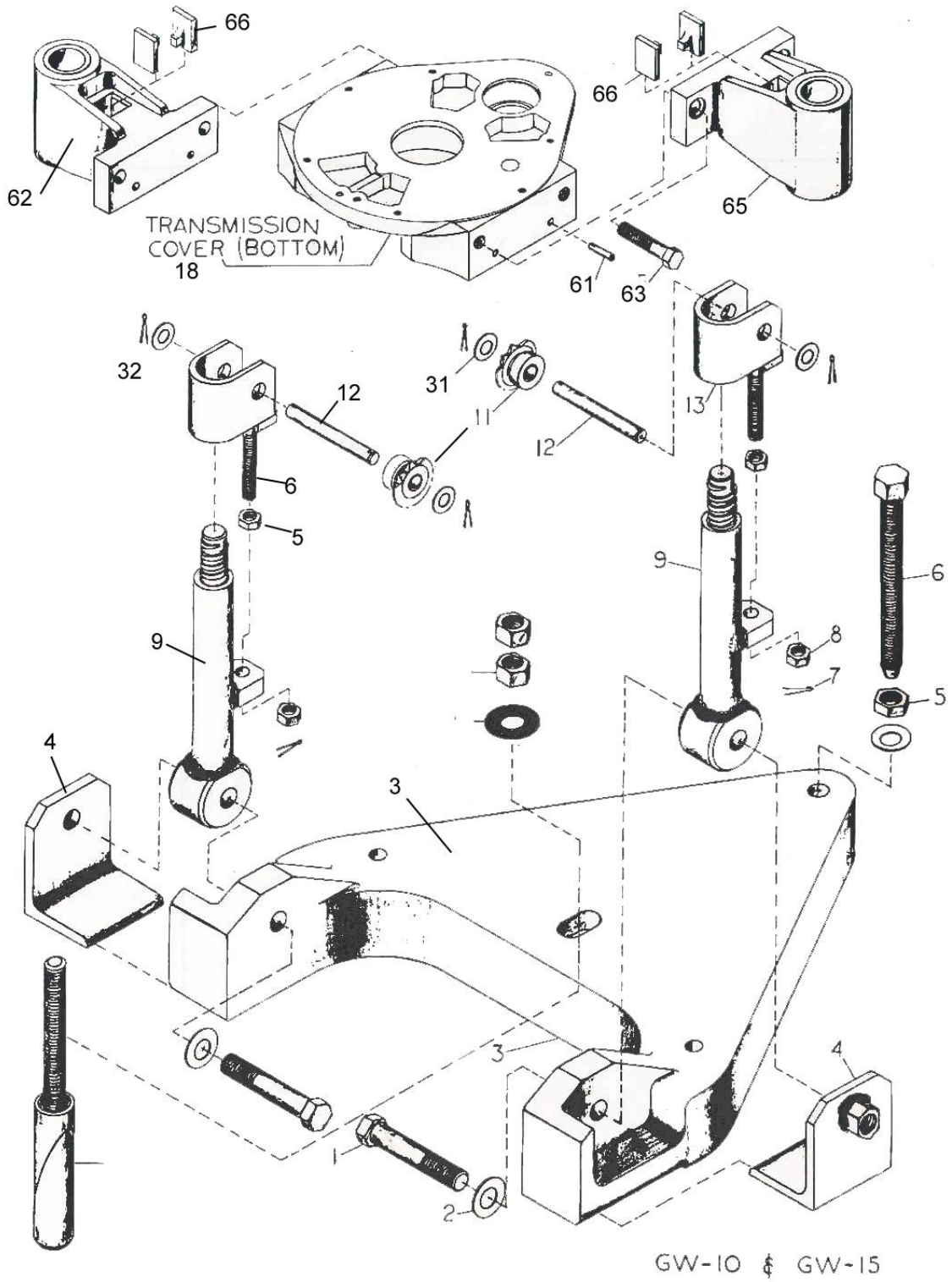


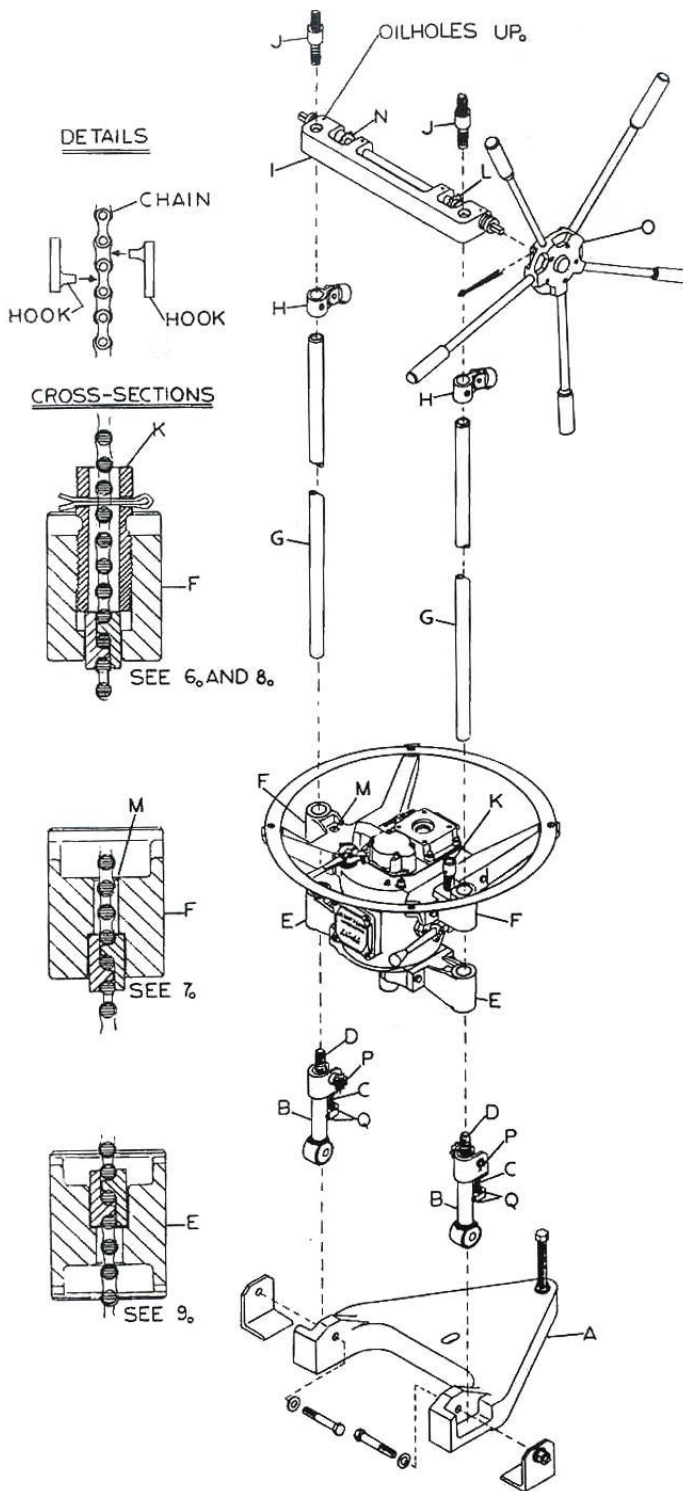
GW-15



From General Assembly Drawing PL1329A Page 26







1. Install guide rod hinges (B) on base (A) with chain adjusting screws (C) to rear.
2. Mount drill with lower guide bushing (E) over hinge thread (D).
3. Pass guide rods (G) through upper guide bushing (F) and tighten onto the hinge threads (D).
4. Install backstay hinges (H).
5. Mount head and shaft assembly (I) on guide rods (G) with shaft to rear. Tighten rod couplings (J) with long end down.
6. Pass chain over shaft through adjusting sleeve (K) far enough to install chain hooks (see details). Pull hooks up into square recess against adj. sleeve (K). Pull up slack and hang chain on sprocket (L).
7. Pass other chain over shaft through square hole (M) in guide arm, far enough to install chain hooks, pull back into square recess and take up slack to hand chain over sprocket (N).
8. Install handwheel (O) and raise drill off rod hinges (B). Turn sleeve (K) up or down to equalize tension on both chains. Secure by passing cotter pin through hole in sleeve (K) and chain.
9. Pass free end of chains up through square hole in lower guide bushing (E) far enough to install chain hooks and lower into square recess.
10. Remove lower sprocket pins (P) and mount sprocket into chain. Replace pin (P) and tighten chain with adjusting nut (Q).

NOTE: Engine Not Shown.



GENERAL INFORMATION

HOW TO ORDER

A formal purchase order on company letterhead mailed or faxed is satisfactory. Email orders are satisfactory if full company details are provided. Telephone orders should be confirmed in writing through mail, fax or Email.

The purchase order should contain: the full company name, address, phone and fax numbers (for quick reference or clarification) as well as details to contact the authorizing purchasing personnel.

Please list on the purchase order: quantity, part number, item description, price, shipping address and preferred routing for shipments

When ordering complete machines or major assemblies please furnish complete descriptions of the power unit required, sprocket ratios preferred, swivelhead type, chuck jaws sizes, and other relative information of standard optional equipment preferred.

When ordering pumps please furnish complete description of the power unit required, the sprocket size preferred, the bore size, if a transmission, chain or belt drive is preferred and if gear reduction is required.

WHERE TO SEND THE ORDER

Mail or fax orders to:



PARTS HEADQUARTERS INC.

1175 APPLEBY LINE, UNIT C2, BURLINGTON, ONTARIO L7L 5H9
TEL: 905-332-3271 FAX: 905-332-9497 TOLL FREE: 1-800-267-2082
INTERNET: www.partshq.com

Email orders to:

sales@partshq.com



TERMS AND CONDITIONS

TERMS

- NORTH AMERICA:** Net 30 days on approved credit
Overdue payment of invoices incur monthly interest charges of 1.5%)
- EXPORT SALES :** Confirmed irrevocable letter of credit drawn on Canadian Bank
Net 30 days credit terms available through Canadian EDC guarantees
If purchasing company has an acceptable EDC credit rating
Visa or MasterCard acceptable for payment with references
Payment in advance of shipment by wire transfer to Canadian Bank

DELIVERY

Most items are available from stock and you will receive a confirmed order acknowledgement specifying shipment date. Shipments will be routed by the most direct and economical means of transportation unless otherwise specified and your order should indicate if partial orders are acceptable.

RETURN OF GOODS

Goods may be returned with the advance express written permission of Parts HeadQuarters Inc. Goods returned are subject to 25% restocking charges. Special equipment is not returnable. Only new drilling material is returnable. No credit will be issued for used drill material or tools. Parts HeadQuarters Inc. retains the right to inspect and reject any material returned for credit and to deny credit for any goods judged not to be suitable for resale.

GENERAL INFORMATION

Prices and specifications listed are subject to change at any time without notice.
Quotations for products are dated and valid for no more than 60 days from the date shown.
All prices are F.O.B. Parts HeadQuarters Inc warehouse, Burlington, Ontario, Canada, L7L 5H9.
Federal and Provincial taxes where applicable are extra and charged on PHQ invoices.
The cost of exporting documents and insurance may be added and shown on PHQ invoices.
Prepaid freight and handling charges may be added and shown on PHQ invoices



PHQ began twenty eight years ago to supply pneumatic underground mining equipment, replacement parts and mining hardware.

PHQ grew into the manufacturing of complete percussion drills, drill feeds, drill centralizers, remote control panels, mufflers, drill jumbos, diamond drills, high pressure pumps, diamond drill bits, rods, corebarrels, and accessories.

PHQ cooperates in active research to find improvements for pneumatic drill equipment. We have successfully developed a patented anti-vibration damping handle for pneumatic Jackleg drills working with CANMET LLC the University of Sherbrooke and a consortium of six major Mining Groups in Quebec Canada.



PHQ continually strives toward excellence

PHQ has maintained an ISO rated quality system since 1996. **PHQ** up-graded our in-house quality system in 2009 from ISO9001:2000 to ISO9001:2008 and have passed subsequent audits of the up graded system with no faults whatsoever every year since.

Annual quality audits are conducted by QMI SAI GLOBAL



PHQ adopted the picture of a miner running a pneumatic hand held Jackleg drill as the main symbol of our company. The Jackleg miner is an integral part of the Logo that we proudly display on all **PHQ** literature. It signifies our commitment to producing superior pneumatic drilling equipment for the mining industry.

