



Tool Products

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

SECTION M12
MANUAL 25

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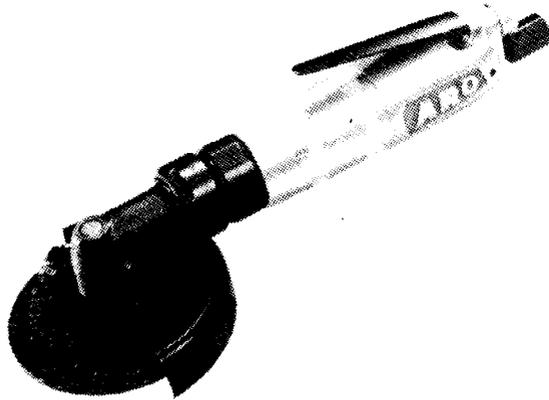
"0" SERIES RIGHT-ANGLE GRINDER

Models: 8317-L-1, 8317-L-2, 8317-L-3 and 8317-L-4.



⚠ WARNING

READ THIS MANUAL CAREFULLY BEFORE INSTALLING,
OPERATING OR SERVICING THIS EQUIPMENT.



FEATURES:

- LEVER TYPE THROTTLE
- 14,000 R.P.M.
- 1/4" N.P.T.F. AIR INLET ADAPTER
- REAR EXHAUST
- WHEEL GUARD

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For parts and service information, contact your local ARO distributor, or the Customer Service Dept. of the Ingersoll-Rand Distribution Center, White House, TN at PH: (615) 672-0321, FAX: (615) 672-0801.

ARO Tool Products

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MODEL IDENTIFICATION

MODEL	R.P.M.	DESCRIPTION
8317-L-1	14,000	GUARD, FLANGES AND SPINDLE NUT FOR TYPE 1 REINFORCED WHEELS ONLY. 1/8" THICK x 4" DIA. MAX. WHEEL SIZE.
8317-L-2		GUARD AND FLANGES FOR TYPE 27 AND 28 REINFORCED WHEELS. 1/4" THICK x 3" DIA. MAX. WHEEL SIZE.
CANCELLED 8317-L-3		GUARD AND FLANGES* FOR TYPE 1 REINFORCED WHEELS ONLY. 1/8" THICK x 4" DIA. MAX. WHEEL SIZE. *OUTER FLANGE AND NUT ARE INTEGRAL.
8317-L-4		1/4" COLLET ASSEMBLY FOR USE WITH MOUNTED TYPE WHEELS (OPTIONAL COLLETS: 41750-1, 1/8" CAP. - 41750-2, 3/16" CAP.).

GENERAL DESCRIPTION AND OPERATION

Model 8317-L-1 has flanges, nut and guard for use with Type 1 reinforced wheels only (1/8" thick x 4" diameter - MAX. wheel size).

Model 8317-L-2 has flanges and guard for use with Type 27 and 28 wheels (1/4" thick x 3" diameter - MAX. wheel size).

Model 8317-L-3 has flanges (outer flange and nut are integral) and guard for use with Type 1 reinforced wheels only (1/8" x 4" diameter

- MAX. wheel size).

Model 8317-L-4 is furnished with a collet type spindle for use with mounted type wheels.

NOTE: Right-angle section can be positioned on tool, with respect to lever throttle, in eight (8) different positions (45 degree increments) to best suit operator (right or left-handed, application considerations, etc.).

Safe and efficient operation of your ARO grinder can best be attained by observing proper operating, inspection and maintenance procedures. Allow only competent and qualified people to operate grinder and subject each grinder to a regular inspection and maintenance procedure. The qualified grinder operator must be carefully instructed in the safe operation and use of the grinder, including a study of the manufacturer's literature. The grinder operator should have a good attitude regarding safety.

To aid in a better understanding of proper grinding wheel use, the publication, "Use, Care and Protection of Abrasive Wheels" A.N.S.I. B7.1-1978 can be purchased from the American National Standards Institute, Inc., 1430 Broadway, N.Y., N.Y., 10018. Also, the publication "Safety Code for Portable Air Tools" A.N.S.I. B186.1-1975, can be purchased from either A.N.S.I. or the Compressed Air and Gas Institute, 1230 Keith Building, Cleveland, Ohio 44115.

OPERATOR SAFETY EQUIPMENT. The grinder operator shall wear safety goggles or face shield at all times the grinder is turned on. Other protective clothing shall be worn if necessary for spark deflection. Respirators shall be used in poorly ventilated areas. Adjacent personnel shall be protected from grinding sparks and wheel fragments by protective barriers.

STARTING AND STOPPING. Before starting a grinder, the operator shall make sure that no one is in the unguarded plane of wheel rotation. Upon mounting a new wheel, the tool shall be run at operating speed with the safety guard in place or in a protected enclosure for at least one minute before applying the wheel to the work, during which time no one shall stand in front of or in line with the wheel. Before a grinder is put down, the throttle shall be released and the wheel shall come to a stop. Tool rests, hangers or balancers are recommended.

SAFETY GUARDS are furnished in the accessory groups along with necessary flanges and other supporting hardware. The wheel guard is detachable for replacement due to damage or to convert to another size or type wheel ONLY. A PROPER GUARD MUST BE ATTACHED BEFORE USING GRINDER.

NOTICE: Models for Type 1 reinforced grinding wheels are intended for use where surfaces adjacent to the spindle end provide protection to the operator. If this condition does not exist, use 8317-L-2 with

Type 27 reinforced wheels.

USE ONLY WHEELS WITH ADEQUATE SPEED RATINGS. The maximum operating speed marked on the wheel, blotters or packaging shall equal or exceed the rated speed stamped on the grinder.

AT EACH WHEEL CHANGE, ARO recommends the free speed be checked by competent authorized personnel to assure that the maximum tool speed is lower than manufacturers rated speed for the wheel to be used. A speed check shall never be made with grinding wheel on the tool.

NOTE: THE SPEED OF THE TOOL may be regulated by turning air regulator (35642) right or left. If necessary, loosen nut (36609) to facilitate adjustment of air regulator.

A GRINDER SHALL NOT BE OPERATED AT A SPEED EXCEEDING ITS RATED SPEED.

USE RECOMMENDED GUARD.

If a wire brush should ever be used with this tool, insure the speed rating of the brush is greater than the speed of the tool the brush is to be used with and insure the brush conforms to applicable safety standards. BE CERTAIN brush is compatible with mounting means on the tool. ALWAYS USE A WHEEL GUARD.

Some of the more common causes of wheel breakage are: IMPROPER MOUNTING of the WHEELS, IMPROPER SPEEDS, ABUSIVE OPERATION and CARELESS HANDLING.

Do

DO always HANDLE AND STORE wheels in a CAREFUL manner (handle with due regard, grinding wheels are fragile). Grinding wheels shall be stored in protective racks or containers and protected from moisture and temperature extremes.
DO VISUALLY INSPECT all wheels before mounting for possible damage in transit.
DO CHECK MAXIMUM OPERATING SPEED established for the wheel against grinders speed.
DO CHECK MOUNTING FLANGES for correct size and design.
DO USE MOUNTING BLOTTERS supplied with wheels where applicable.
DO INSURE TOOL IS kept IN FIRST CLASS operating CONDITION.
DO always USE A GUARD covering at least one half of the grinding wheel.
DO allow NEWLY MOUNTED WHEELS, with guard in place, to run at operating speed for at least one minute before grinding.
DO always WEAR SAFETY GLASSES or GOGGLES when grinding.
DO always OBSERVE all SAFETY RULES when operating or handling portable grinders.

and

Don't

DON'T use a wheel that HAS BEEN DROPPED.
DON'T FORCE a wheel onto the spindle OR ALTER the size of the mounting — if the wheel won't fit the spindle, get one that will.
DON'T ever EXCEED MAXIMUM OPERATING SPEED established for the wheel.
DON'T use mounting flanges on which the bearing surfaces ARE NOT CLEAN AND FLAT.
DON'T TIGHTEN the mounting nut EXCESSIVELY. Tighten only sufficiently to drive wheel and prevent slippage.
DON'T grind on the SIDE OF THE WHEEL unless wheel is specifically designed for that purpose.
DON'T start the grinder until the WHEEL GUARD IS IN PLACE.
DON'T STAND DIRECTLY IN FRONT of a grinding wheel whenever a grinder is started.
DON'T grind material for which the WHEEL IS NOT DESIGNED.
DON'T GRIND IN GROOVES. Twisting of wheels in grooves can cause them to break.

OPERATING PRECAUTIONS

WARNING: Repeated prolonged operator exposure to vibrations which may be generated in the use of certain hand-held tools may produce Raynaud's phenomenon, commonly referred to as Whitefinger disease. The phenomenon produces numbness and burning sensations in the hand and may cause circulation and nerve damage as well as tissue necrosis. Repetitive users of hand-held tools who experience vibrations should closely monitor duration of use and their physical condition.

GRINDING WHEEL MOUNTING INSTRUCTIONS

DISCONNECT AIR SUPPLY from tool or shut off air supply and drain line of compressed air BEFORE mounting (or removing) any abrasive wheel or wire brush or otherwise performing maintenance or service to tool.

CHECK TOOL SPEED BEFORE mounting wheel with a tachometer to make sure that its actual speed does not exceed its rated free speed.

CHECK OPERATING SPEED OF WHEEL or wire brush to be used with tool. The maximum operating speed marked on the wheel, blotters or packaging shall equal or exceed the rated free speed of the tool. ALSO, the type and size of grinding wheels (or other accessory) shall be compatible with the tool spindle size and type.
CHECK ABRASIVE WHEELS prior to mounting for chips or cracks.

Cracked or chipped wheels shall not be used.

CARE MUST BE TAKEN that a grinding wheel or wire brush of the correct speed rating is used. Rated wheel capacities for Aro grinders are maximum only. Regardless of the rated capacity and speed of any Aro grinder, abrasive wheels or wire brushes shall never be operated at a speed greater than that recommended by the wheel (or brush) manufacturer.

DRESSING ABRASIVE WHEELS. Upon mounting a grinding wheel, the tool should be operated at gradually increasing speed and check for good balance of the wheel. If unbalance is observed, the wheel shall be dressed. If dressing fails to establish acceptable balance, the wheel shall not be used.

TYPE 1 WHEELS

The driving flange shall be inspected to see that it is of the relieved type, that its diameter is at least one third the diameter of the wheel and that it is free of nicks, burrs and sharp edges. A blotter, separate or attached to the wheel and at least the diameter of the driving flange, shall bear against the driving flange. The wheel shall be placed on the spindle following the first blotter. The wheel should not fit too snugly nor too freely on the spindle. The normal diametral clearance between the wheel and the spindle is approximately .007 inch (.17 mm), maximum. Abrasive wheels which do not properly fit the spindle shall not be used. Separate reducing bushings, unless supplied or recommended by the abrasive wheel manufacturer, shall not be used to adapt

larger hole abrasive wheels.

A second blotter, separate or attached to the wheel and at least the diameter of the outside flange, shall follow the wheel on the spindle. An outer flange, the same diameter as the driving flange, shall follow the second blotter. The outer flange shall have a relief and contact face identical to the driving flange, placed toward the blotter.

The safety guard shall be properly positioned and the mounting shall be checked to assure secure positioning.

TYPE 27 AND 28 WHEELS

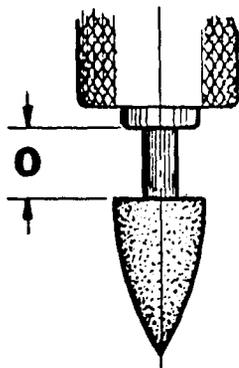
The adapter shall be screwed securely on spindle using a spanner type wrench.

NOTE: When the adapter is integral with the grinding wheel, any necessary spacers shall conform to the wheel manufacturer's recommendations.

If the wheel is separate from the adapter, the wheel shall be placed on the adapter face and the adapter nut screwed on firmly against

the wheel, using an adapter nut wrench while holding the spindle from rotating. The wheel shall be checked for firmness of mount by holding the spindle and pulling on the edge of the wheel in the tightening direction. The safety guard shall be properly positioned to be between the wheel and the operator. The mounting shall be checked to assure its secure mounting. The lip of the guard shall be forward of the wheel.

MOUNTING INSTRUCTIONS FOR MOUNTED WHEELS



MANDREL OVERHANG — DIMENSION "O"

DISCONNECT AIR SUPPLY. Before mounting (or removing) any abrasive wheel or sanding disc, the grinder shall be disconnected from the air supply line or the air supply line shall be shut off and relieved of compressed air.

The collet shall be inspected to assure it to be in good condition and properly affixed to the grinder spindle.

The mandrel shall be inserted to the full depth of the gripping jaws of the collet. At least one half the mandrel length shall be inserted into the collet.

The maximum safe operating speed for mounted wheels shall be determined by the following: 1.) Shape and size of the mounted wheel. 2.) Size of mandrel and 3.) Overhang of mandrel. In no case shall the maximum safe operating speed recommended by the wheel manufacturer be exceeded.

The tool free speed can be reduced by means of an air regulator for use with **SMALLER DIAMETER** wheels that are not compatible with the rated free speed of the tool. It is recommended that the "Tables of Maximum Operating Speeds For Mounted Wheels" of the American National Standard publication B7.1-1978 previously mentioned, or other reliable source, be consulted to determine the safe operating speed of a particular size and shape wheel combined with the size and overhang of mandrel.

AIR AND LUBE REQUIREMENTS

AIR HOSES. Air supply hoses shall have a minimum working pressure rating of 150 p.s.i.g. (10 bars) or 150 percent of the maximum pressure produced in the system, whichever is higher, and shall have an oil-resistant inner surface and an abrasion-resistant exterior surface. When severe operating conditions make the possibility of cutting or damaging the hose likely, the hose shall be of extra ply, armored or other protective construction. Hoses should be as flexible as possible to provide maximum maneuverability and control. When air hoses are used to suspend tools, the load strength of the hose assembly shall be at least five times that of the suspended load. **RECOMMENDED HOSE SIZE** — 5/16" (8 mm) nominal inside diameter.

AIR PRESSURE at the tool inlet with the grinder running shall not exceed the rated pressure of the grinder. Free speed ratings are based on 90 p.s.i.g. (6 bars) at the air inlet of the tool when the tool is operating at free speed.

COUPLER AND CONNECTORS. Quick-disconnect couplings are used in conjunction with a grinder for wheels of four inches diameter and larger shall be separated from the tool by a whip hose. The female coupler shall contain a valve which closes automatically and shuts off air pressure in the hose when the connector is uncoupled. The male connector shall be made of hardened steel or of material of

comparable wear characteristics and shall be affixed down-stream from the coupler.

CLEAN AND OILED air must be supplied to the grinder to insure safe and efficient operation of the tool. A line filter capable of filtering particles larger than 50 microns should be used with a line oiler.

FILTER-REGULATOR-LUBRICATOR (F-R-L) assembly model 128231-800 is recommended for use with this tool. The capacity of the individual Filter-Regulator-Lubricator is adequate to provide clean (40 micron) oiled and regulated air for the tool. The F-R-L must be installed on the stationary air line, in that order, with the lubricator nearest to the tool. **NEVER** mount the unit on the detachable flexible hose to the tool.

APPLY GREASE (33153) thru grease fitting in right-angle housing a minimum of every 160 hours of use, to provide proper lubrication for bearings and gears. Right-angle should contain approximately 1/8 oz. grease.

RECOMMENDED LUBRICANTS: Spindle Oil 29665, 1 qt. (.9 liter) container for oiler and air inlet; Grease 33153, 5 lb. (2.3 kg) can for gears and bearings; "O" Ring Lubricant 36460, 4 oz. (113 g) tube for lubrication and installation of "O" rings.

INSPECTION

IT IS IMPORTANT that power grinders be serviced and inspected at regular intervals for maintaining safe, trouble-free operation of the tool.

Insure tool is receiving adequate lubrication, as failure to lubricate can create hazardous operating conditions resulting from excessive wear.

Insure that air supply lines and connectors are of proper size to provide a sufficient quantity of air to the tool.

Safety guards shall be in good functional condition. Damaged, bent or severely worn guards shall be replaced. A guard which has been subjected to a wheel failure is likely to be internally weakened and shall not be reused.

GENERAL MAINTENANCE

DISCONNECT AIR SUPPLY from tool or shut off air supply and drain line of compressed air BEFORE performing maintenance or service to tool.

TOOL MAINTENANCE and repair shall be performed by authorized, trained, competent personnel. Tools, hose and fittings shall be replaced if unsuitable for safe operation and responsibility should be assigned to insure that all tools requiring guards or other safety devices are so equipped. Critical rating markings on the tool shall be kept in legible condition. Maintenance and repair records should be maintained on all tools. Frequency of repair and the nature of the repairs can reveal unsafe application. Scheduled maintenance by competent authorized personnel should detect any mistreatment or abuse of the tool and worn parts. Corrective action should be taken before returning tool for use. Insure tool is receiving adequate lubrication, as failure to lubricate can create hazardous operating conditions resulting from excessive wear. Insure that air supply lines and connectors are of proper size to provide a sufficient quantity of air to the tool.

AIR TOOLS are made of precision parts and should be handled with reasonable care when servicing. Excessive pressure exerted by a holding device may cause distortion of a part. Apply pressure evenly when disassembling (or assembling) parts which have a press fit. When removing or installing bearings, apply pressure to the bearing race that will be the press fit to the mating part; if this is not practiced, Brinelling of the bearing races may occur making replacement necessary. It is important that the correct tools and fixtures are used when servicing this grinder.

DISASSEMBLY should be done on a clean work bench with a clean

cloth spread to prevent the loss of small parts.

After disassembly is completed, all parts should be thoroughly washed in a clean solvent, blown dry with air and inspected for wear levels, abuse and contamination. Double sealed or shielded bearings should never be placed in solvent unless a good method of relubricating the bearing is available. Open bearings may be washed but should not be allowed to spin while being blown dry.

UPON REASSEMBLING, lubricate parts where required. Use 33153 grease, or equivalent, in bearings. Use 36460 lubricant for "O" ring assembly. When assembling "O" rings or parts adjacent "O" rings, care must be exercised to prevent damage to the rubber sealing surfaces. A small amount of grease will usually hold steel balls and other small parts in place while assembling.

Before mounting a wheel, after all repairs and whenever a grinder is issued for use, the r.p.m. of the grinder shall be checked with a tachometer to make certain that its actual speed does not exceed its rated speed.

REPLACE GUARD!!

When REPLACEMENT PARTS are necessary, consult drawing containing the part for identification.

WHEN ORDERING PARTS, be sure to list PART NUMBER, PART NAME and MODEL NUMBER OF TOOL. USE ONLY GENUINE ARO® REPLACEMENT PARTS.

DISASSEMBLY AND REASSEMBLY OF TOOLS

DISCONNECT AIR SUPPLY from tool or shut off air supply and drain line of compressed air BEFORE performing maintenance or service to tool.

Before disassembling or reassembling this grinder (any part or completely) be sure to read the Maintenance Section.

To minimize the possibility of parts damage and for convenience, the steps for disassembly or reassembly listed on the following pages are recommended.

The basic sections and instructions for removing them from tool are as follows:

RIGHT-ANGLE SECTION

Place tool in a suitable holding device, loosen nut (31508) completely and pull right-angle section from tool.

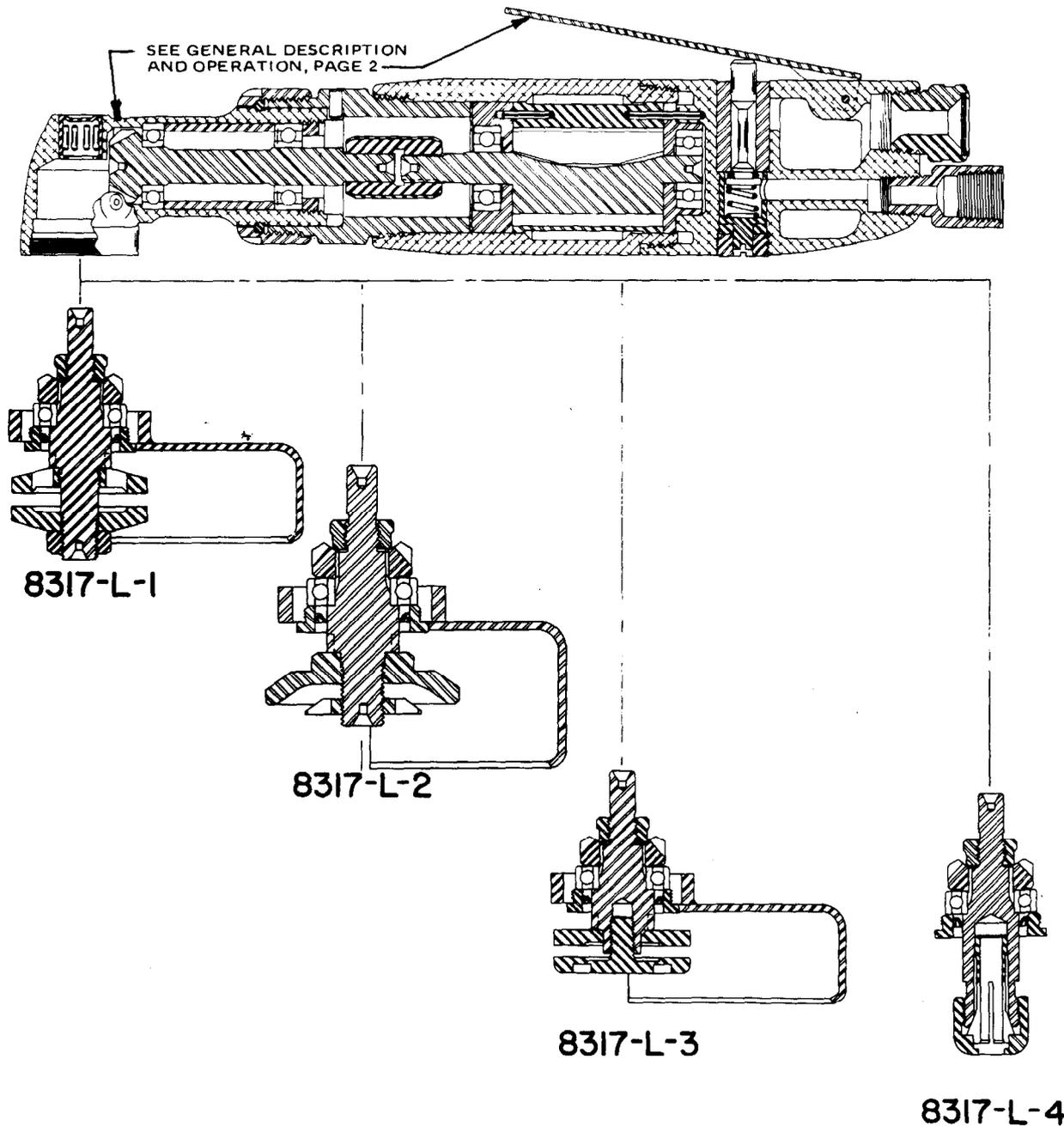
MOTOR SECTION

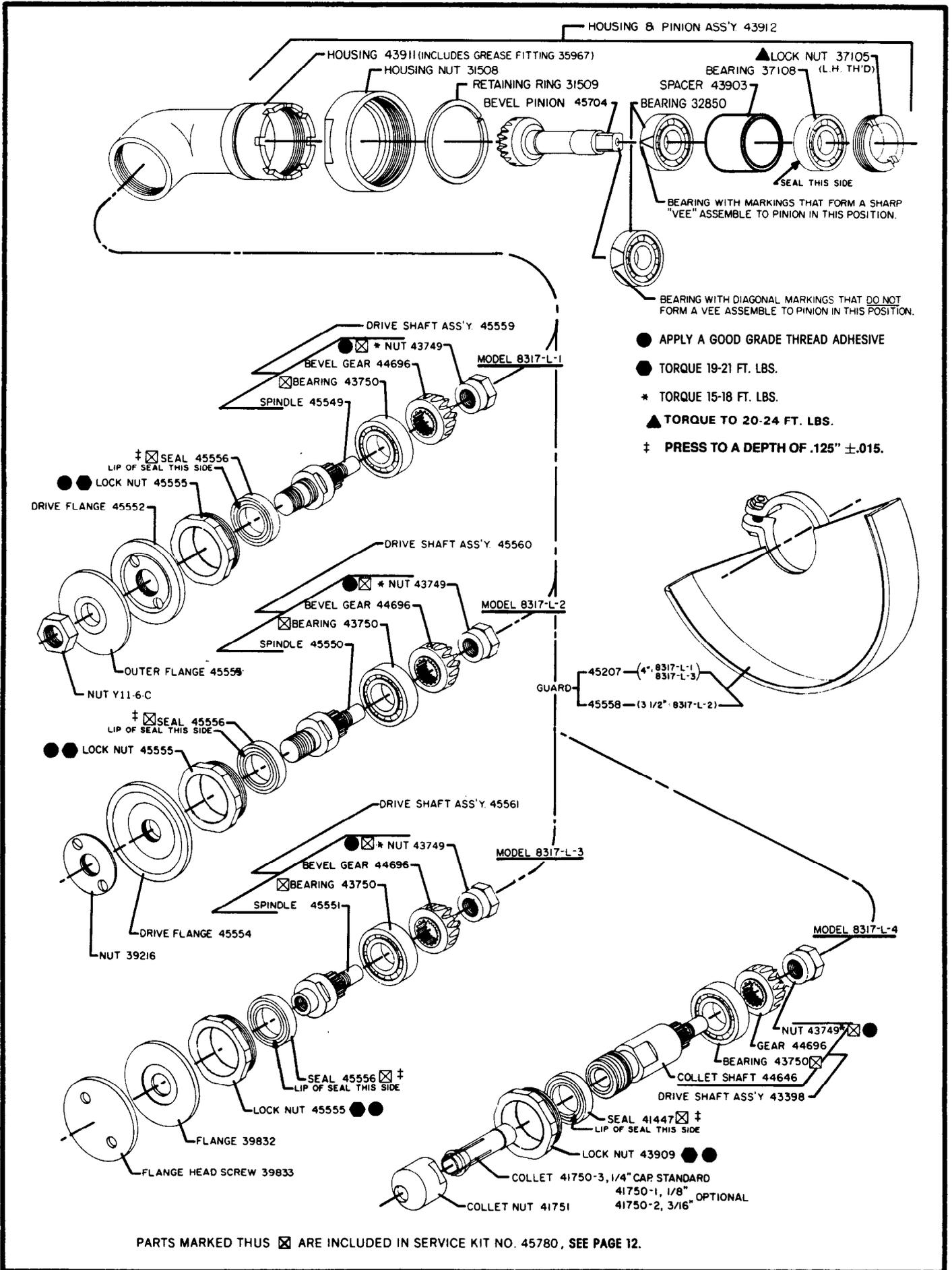
Motor assembly can be removed from tool after the removal of right-angle section and adapter (45562).

HEAD SECTION

Place head of tool in a suitable holding device and using a strap type wrench on motor housing, unscrew and remove.

CROSS-SECTION OF TOOL





RIGHT-ANGLE SECTION

DISASSEMBLY

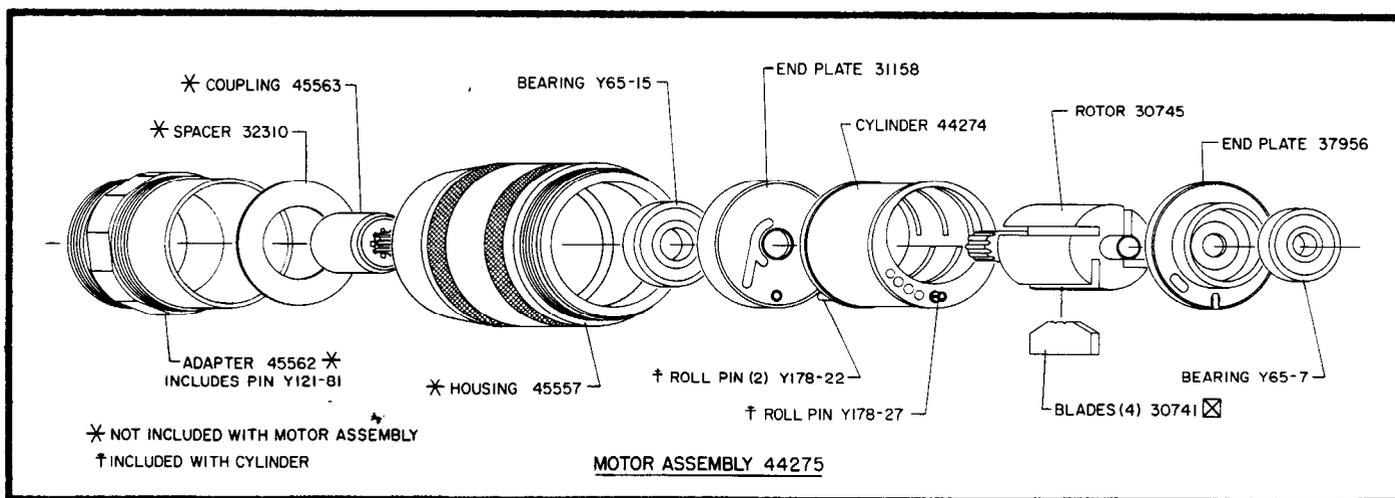
- Remove lock nut (45555 or 43909), with seal (45556 or 41447), and remove drive shaft assembly from housing.
- Remove nut (43749) to remove gear (44696) and bearing (43750) from shaft.
- Remove lock nut (37105) — LEFT HAND THREAD — to remove bevel pinion (45704) and components from housing.

REASSEMBLY

- NOTE: Pack bearings and lubricate gears liberally with ARO 33153 grease, or equivalent, upon assembly. right-angle assembly should contain approximately 1/8 oz. of grease.
- Assemble bearing (32850), spacer (43903) and bearing (37108) to bevel pinion (45704). NOTE: Bearing (32850) has two different styles of identification markings; see page 7 showing different style markings and correct positioning on bevel pinion. Assemble bearing (37108) to bevel pinion

- (45704) with shielded side facing inward.
- Assemble bevel pinion (45704), with bearings and spacer, to housing and secure with lock nut (37105) — LEFT HAND THREADS. Torque to 20 – 24 ft lbs.
- Assemble bearing (43750) and bevel gear (44696) to drive shaft and secure with nut (43749). NOTE: Apply a good grade thread adhesive before assembly.
- Assemble seal (45556 or 41447) into lock nut (45555 or 43909), pressing to a depth of .125" ±.015".
- Assemble drive shaft assembly to housing and secure with lock nut (45555 or 43909). NOTE: Torque lock nut to 19 – 21 ft lbs.
- NOTE: Right-angle section can be positioned on tool, with respect to lever throttle, in eight (8) different positions (45 degree increments) to best suit operator (right or left handed, application considerations, etc.).

MOTOR SECTION



PARTS MARKED THUS ◻ ARE INCLUDED IN SERVICE KIT NO. 45780, SEE PAGE 12.

DISASSEMBLY

- Remove motor assembly from housing.
- Grasp cylinder in one hand and tap splined end of rotor with a soft face hammer; motor will come apart.

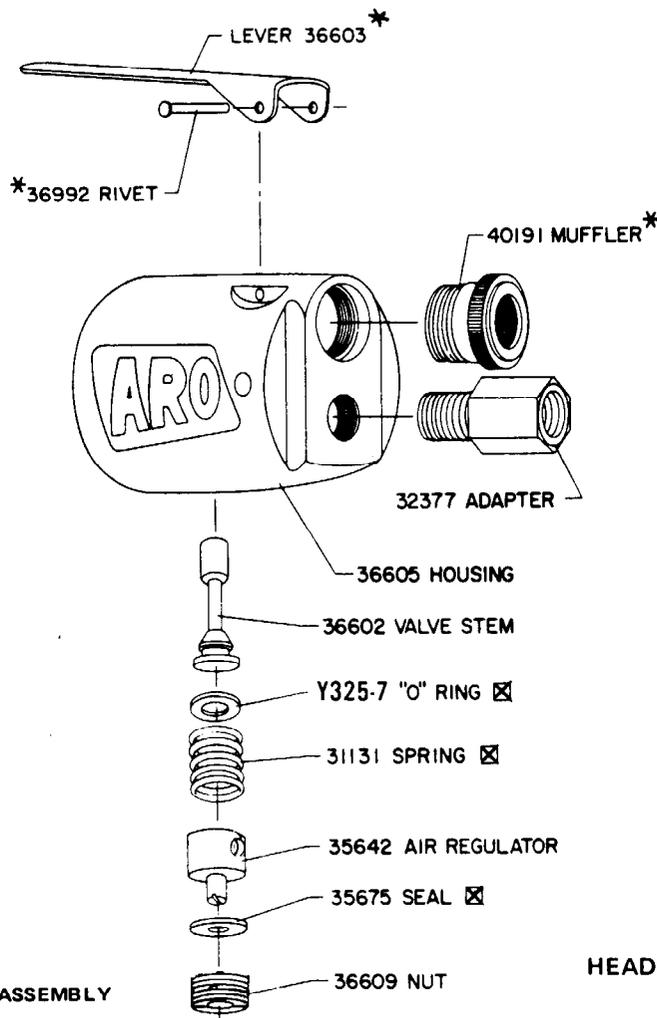
REASSEMBLY

- Assemble bearings to end plates and assemble end plate (37956) to rotor.
- Assemble cylinder over rotor aligning air inlet holes in cylinder with inlet slot of end plate and roll pin with hole in end plate. NOTE: Coat i.d. of cylinder with spindle oil upon assembly.
- Assemble blades to rotor and assemble end plate (31158) to rotor and cylinder aligning roll pin with hole in end plate.

- Insure rotor does not bind (if rotor binds, tap splined end lightly with a soft face hammer to loosen) and assemble to tool. See "Assembling Motor To Tool".

ASSEMBLING MOTOR TO TOOL

Remove motor housing from head. Place head of tool in a suitable holding device with "motor end" in an upright position. Place motor assembly on head aligning roll pin (Y178-27) with .106 diameter blind hole in head. Slip motor housing over motor and secure to head. Assemble spacer (32310), adapter (45562), coupling (45563) and right-angle assembly to tool.



NOT SHOWN
48176-1 WARNING LABEL

* NOT INCLUDED IN HEAD ASSEMBLY

HEAD ASSEMBLY 36604

PARTS MARKED THUS ☐ ARE INCLUDED IN SERVICE KIT NO. 45780, SEE PAGE 12.

DISASSEMBLY

— To remove valve components from head, remove nut (36609).

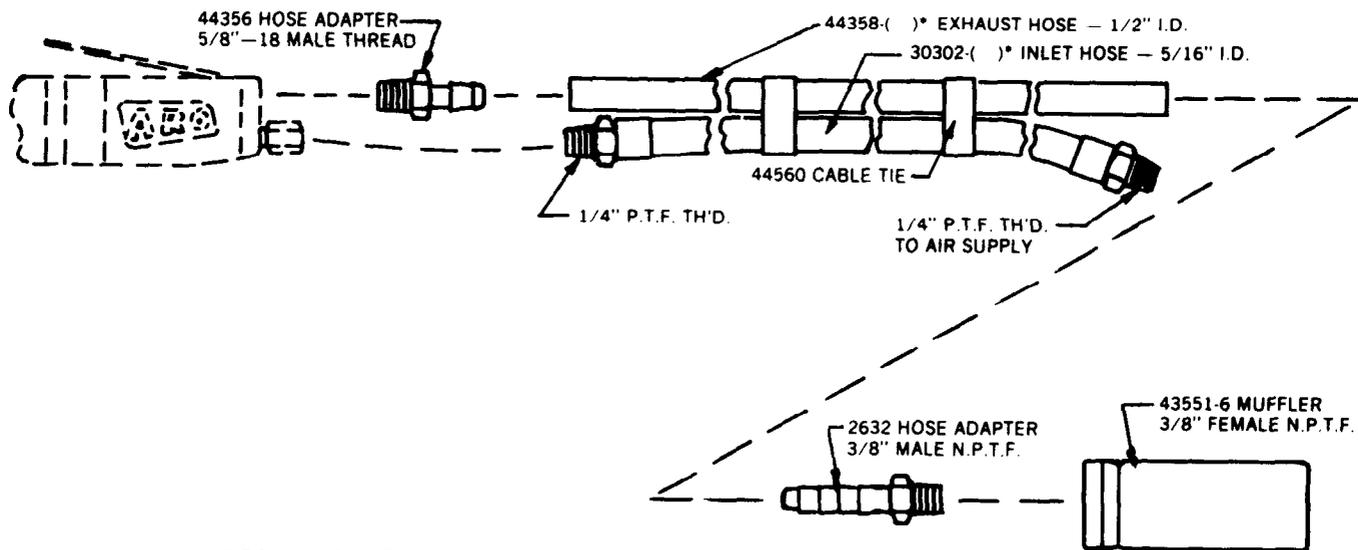
REASSEMBLY

— Assemble "O" ring (Y325-7) to valve stem (36602), and assem-

ble to head. Assemble spring (31131) and regulator (35642) to head and secure with seal (35675) and nut (36609). When assembling regulator to head, insure hole in regulator is aligned with air inlet of head.

ACCESSORIES

PIPED EXHAUST SYSTEM

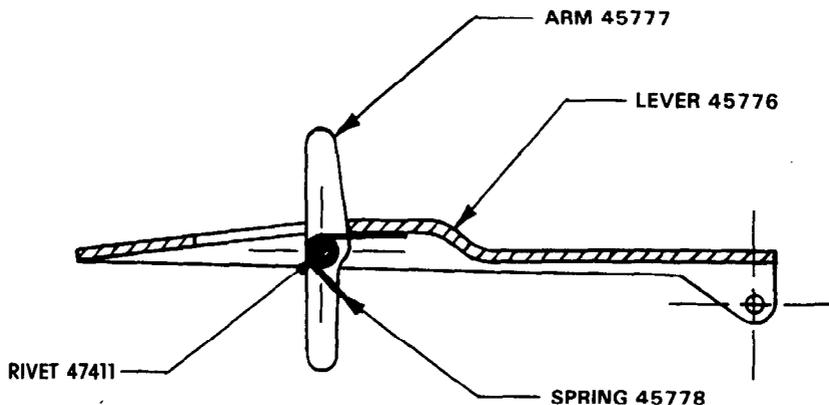
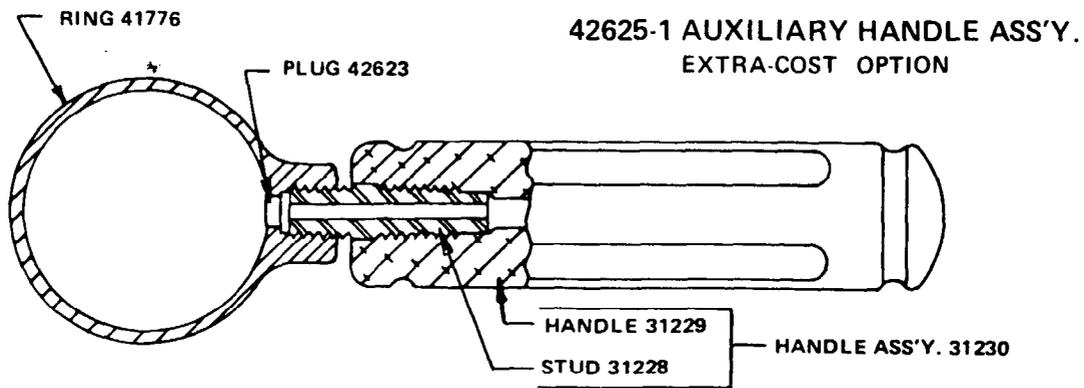


44360-() PIPED EXHAUST SYSTEM ASSEMBLY

PIPED EXHAUST ASSEMBLY CONSISTS OF 5/16" I.D. AIR INLET HOSE WITH 1/4" MALE FITTING AT EACH END, 1/2" I.D. EXHAUST HOSE, 44356 EXHAUST HOSE ADAPTER WITH 5/8"-18 MALE THREAD AND 2632 BARBED INSERT WITH 3/8" MALE THREAD.

*TO ORDER PIPED EXHAUST SYSTEM ASSEMBLY: ADD DASH NUMBER TO INDICATE DESIRED LENGTH OF HOSE IN FEET. EXAMPLE 44360-20, THE -20 INDICATES 20 FEET OF HOSE. ORDER LENGTH DESIRED UP TO 30 FEET MAX.

TO ASSEMBLE TO TOOL: REMOVE EXHAUST MUFFLER AND REPLACE WITH ADAPTER 44356. THREAD INLET HOSE TO INLET ADAPTER AND TIGHTEN SO EXHAUST HOSE ALIGNS WITH ADAPTER 44356 AND SLIP EXHAUST OVER ADAPTER. NO CLAMP IS NEEDED TO SECURE HOSE TO ADAPTER SINCE EXHAUST PRESSURE IS VERY LOW.

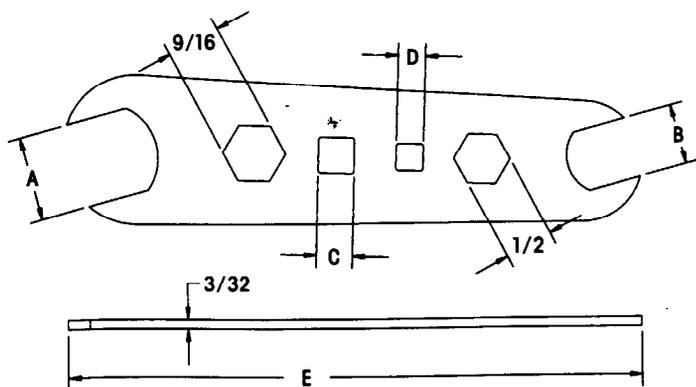


45779 LOCK-OFF LEVER ASSEMBLY

LISTED BELOW ARE THE MOST COMMON CAUSES FOR GRINDER MALFUNCTION. MALFUNCTIONS BEYOND THE SCOPE OF THIS MANUAL SHOULD BE BROUGHT TO THE ATTENTION OF YOUR ARO REPRESENTATIVE OR RETURN GRINDER TO FACTORY FOR REPAIR.

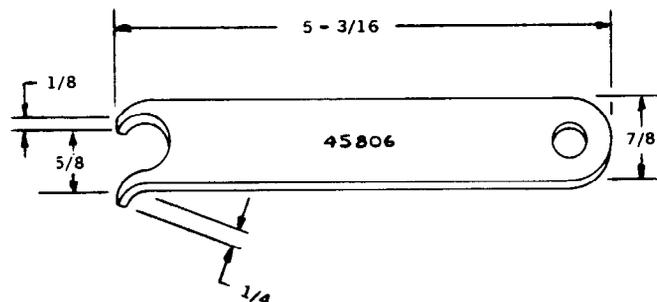
CONDITION	POSSIBLE CAUSE	CORRECTIVE ACTION
LOW SPEED AND POWER OR GRINDER WILL NOT RUN.	<ol style="list-style-type: none"> 1. INADEQUATE AIR SUPPLY. 2. AIR INLET OR EXHAUST SCREEN PLUGGED. 3. OBSTRUCTION IN THROTTLE VALVE OR VALVE NOT OPENING. 4. IMPROPER LUBRICATION OF UNIT (MOTOR OR RIGHT-ANGLE). ROTOR BLADES STICKING OR BADLY WORN. WORN BEARINGS IN MOTOR OR RIGHT-ANGLE. COUPLING 45563 BADLY WORN. 5. BUILT-IN REGULATOR 35642 IMPROPERLY ADJUSTED. 	<ol style="list-style-type: none"> 1. CHECK AIR SUPPLY FOR CORRECT REGULATOR ADJUSTMENT (90 P.S.I.G. MAX.). 2. INSPECT, WASH, CLEAN. PAGE 9. 3. DISASSEMBLE THROTTLE, PAGE 9. CLEAN, INSPECT FOR OBSTRUCTIONS OR DAMAGED PARTS. 4. INSURE LUBRICATOR IS FULL OF OIL AND RIGHT-ANGLE IS LUBRICATED REGULARLY, REFER TO PAGES 4 AND 5. DISASSEMBLE, CLEAN, INSPECT, REPLACE WORN OR DAMAGED PARTS, LUBRICATE. REFER TO PAGES 4 THRU 9. 5. CHECK REGULATOR ADJUSTMENT.
THROTTLE VALVE HARD TO OPERATE.	<ol style="list-style-type: none"> 1. DAMAGED VALVE PIN OR "O" RING, OR SPRING. 	<ol style="list-style-type: none"> 1. DISASSEMBLE VALVE COMPONENTS, INSPECT, REPLACE IF NECESSARY.
GRINDER WILL NOT SHUT OFF.	<ol style="list-style-type: none"> 1. DAMAGED VALVE COMPONENTS. 	<ol style="list-style-type: none"> 1. DISASSEMBLE VALVE COMPONENTS, INSPECT, REPLACE PARTS IF NECESSARY.

MAINTENANCE TOOLS

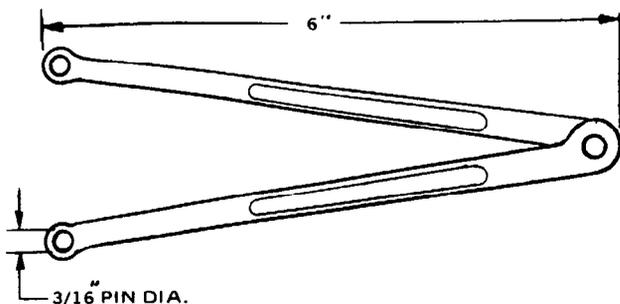


**GENERAL PURPOSE FLAT WRENCH
(FURNISHED WITH EACH TOOL)**

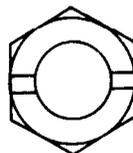
PART NO.	A	B	C	D	E
30131	11/16	1/2			5-9/16
37167	7/8	5/8	3/8	9/32	6



**45806 SPANNER WRENCH
FURNISHED WITH 8317-L-2
EXTRA-COST OPTION FOR USE WITH 8317-L-1**

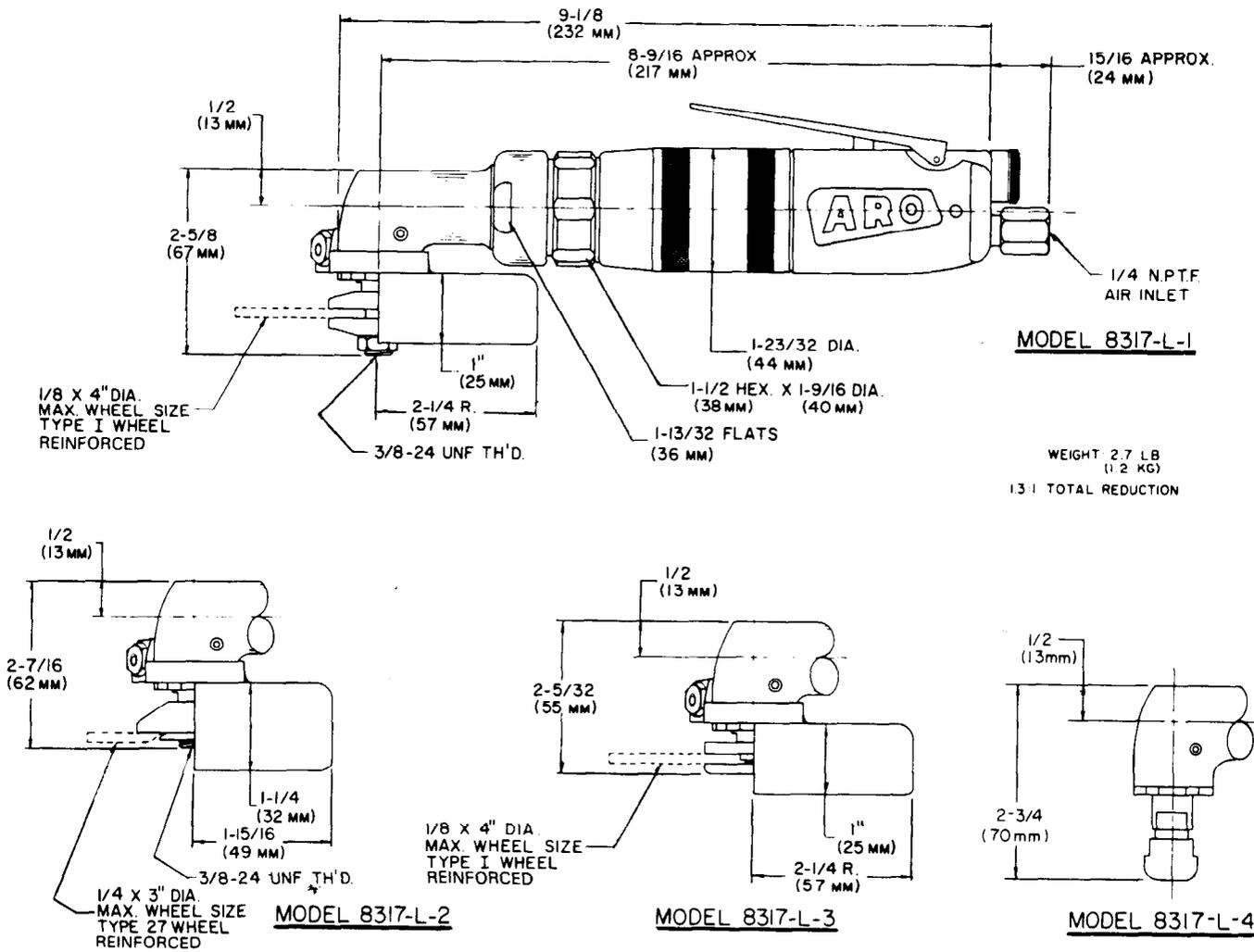


**38237 ADJUSTABLE SPANNER WRENCH
EXTRA-COST OPTION FOR USE WITH 8317-L-3**



**41358 WRENCH
AVAILABLE AT EXTRA COST
(FOR USE WITH 37105 LOCK NUT)**

DIMENSIONAL DATA



SERVICE KIT NO. 45780

FOR SERVICING MODELS 8317-L-1, 8317-L-2, 8317-L-3.

CONSISTING OF:

QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
1	45556	Seal	1	31131	Spring
1	43750	Bearing	1	35675	Seal
1	43749	Nut	1	41795	Motor Oil
4	30741	Blades	1	41799	Gear Lube
1	Y325-7	O-Ring	* 1	41447	Seal

* USED WITH 8317-4 MODELS ONLY