



Tool Products

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

SECTION	M10
MANUAL	16
Released:	2/86
Revised:	1-20-95
Form:	2884-2

"0" SERIES DIE GRINDER (SHORT GRINDER)

Models: 7015-11-(), 8212-1B-() and 8213-1B.



⚠ WARNING

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

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

To aid the operator's understanding of proper and safe use of grinders, the publications, "Use, Care and Protection of Abrasive Wheels", A.N.S.I. B7.1, and "Safety Code for Portable Air Tools", A.N.S.I. B186.1, can be purchased from:

American National Standards Institute, Inc.
1430 Broadway
New York, New York 10018

⚠ WARNING

- Operate this tool at 90 p.s.i.g. (6.2 bar) maximum air pressure at the air inlet of the tool.
- Disconnect air supply from tool before removing/installing mounted wheel, mounted stone or performing other maintenance procedures.
- Keep hands, clothing and long hair away from rotating end of tool.
- Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.
- Never exceed rated r.p.m. of tool.
- Wear suitable eye and hearing protection while operating tool.
- Tool shaft can continue to rotate briefly after throttle is released.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel.
- Use tool only for purposes for which it was intended.
- Never use mounted stone or carbide burr with speed rating lower than r.p.m. rating of tool.
- Use only mounted wheels of the A, B and W shapes.

- Use only medium and high strength mounted wheels.
- Do not use excessive work pressure.
- Allow only people who have received training in "proper grinder operation" to operate grinder.
- Do not remove any labels. Replace any damaged label.
- Use only accessories recommended by ARO.

⚠ 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.

NOTICE

- The use of other than genuine ARO replacement parts may result in safety hazards, decreased tool performance and increased maintenance and may invalidate all warranties.
- ARO is not responsible for customer modification of tools for applications on which ARO was not consulted.
- Tool maintenance and repair should be performed by authorized, trained, competent personnel. Consult your nearest ARO authorized servicer.
- It is the responsibility of the employer to place the information in this manual into the hands of the operator.

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) 672-0601.

ARO Tool Products

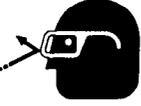
Ingersoll-Rand Company
1725 U.S. No. 1 North • P.O. Box 8000 • Southern Pines, NC 28388-8000
©1995 THE ARO CORPORATION • PRINTED IN U.S.A.



Part of worldwide Ingersoll-Rand

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

⚠ WARNING



Wear eye protection when operating or performing maintenance on this tool.

⚠ WARNING



Wear hearing protection when operating this tool.

⚠ WARNING



Turn off air supply and disconnect air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.

⚠ WARNING



Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.

⚠ WARNING



Do not carry the tool by the hose.

⚠ WARNING



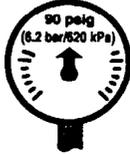
Do not use damaged, frayed or deteriorated air hoses and fittings.

⚠ WARNING



Do not overreach when operating this tool. Keep body stance balanced and firm.

⚠ WARNING



Operate at 90 p.s.i.g. (6.2 bar/620 kPa) maximum air pressure.

NOTICE

<p>⚠ WARNING</p> <p>Read the manual before operating this tool. Operate at 90 psig/6.2 bar max.</p>	
--	---

PN 48176-1 LABEL (NON-EU MODELS) PN 49883 LABEL (-EU MODELS)

This label must appear on the tool at all times. If it is lost or damaged, a replacement label is available at no cost.

WARNING = Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

CAUTION = Hazards or unsafe practices which could result in minor personal injury or product or property damage.

NOTICE = Important installation, operation or maintenance information.

ROUTINE LUBRICATION REQUIREMENTS

Lack of or an excessive amount of lubrication will affect the performance and life of this tool. Use only recommended lubricants at below time intervals:

EVERY 8 HOURS OF TOOL OPERATION – Fill lubricator reservoir of recommended F.R.L. with spindle oil (29665). If an in line or air line lubricator is not used, apply several drops of spindle oil (29665) in air inlet.

EVERY 40 HOURS OF TOOL OPERATION – Flush tool with a solution of three (3) parts cleaning solvent to one (1) part spindle oil.

AIR SUPPLY REQUIREMENTS

For maximum operating efficiency, the following air supply specifications should be maintained to this air tool:

- AIR PRESSURE – 90 p.s.i.g. (6.2 bar)
- AIR FILTRATION – 50 micron
- LUBRICATED AIR SUPPLY
- HOSE SIZE – 5/16" (8 mm) I.D.

An ARO® model C28231–810 air line FILTER/REGULATOR/LUBRICATOR (F.R.L.) is recommended to maintain the above air supply specifications.

RECOMMENDED LUBRICANTS

After disassembly is complete, all parts, except sealed or shielded bearings, should be washed with solvent. To relubricate parts, or for routine lubrication, use the following recommended lubricants:

 Where Used	ARO Part #	Description
Air Motor	29665	1 qt Spindle Oil
"O" Rings	36460	4 oz. Stringy Lubricant
Bearings	33153	5 lb. "EP" – NLGI #1 Grease

MOUNTING INSTRUCTIONS

- Be sure collet is in good condition and properly secured to grinder spindle.
- Insert shaft of mounted wheel to the full depth of gripping jaws of collet. At least one-half of shaft length shall be inserted into collet jaws.
- Be sure mounted stone or mounted wheel is compatible with the speed of the grinder.
- Use type 16, 17, 18, 18R and 19 cone and plug wheels only with optional cone wheel adapter 37292-().
- Wheel guard 37037-2 (2" max. wheel diameter) must be used when using optional arbor assembly 36934 (for type 1 grinding wheels only). Type 1 grinding wheels NOT to be used with models 8212-1B-() and 8213-1B-().

CAPACITIES (MAXIMUM)

- Carbide Bur – 3/4"
- Mounted Stone – 1-1/2"
- Type 1 Wheel – 1/2" x 2" (model 7015-11-() only).

INSPECTION, MAINTENANCE AND INSTALLATION

Disconnect air supply from the tool or shut off air supply and exhaust (drain) line of compressed air before performing maintenance or service to the tool.

nance or service to the tool.

It is important that the tools be serviced and inspected at regular intervals for maintaining safe, trouble-free operation of the tool. Be sure the tool is receiving adequate lubrication, as failure to lubricate can create hazardous operating conditions resulting from excessive wear.

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

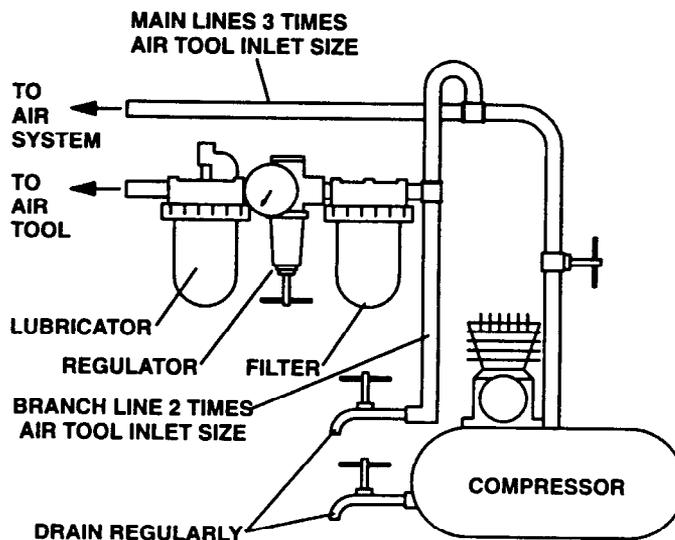
Tool maintenance and repair shall be performed by authorized, trained, competent personnel. Tools, hose and fittings shall be replaced if unsuitable for safe operation and responsibility should be assigned to be sure that all tools requiring guards or other safety devices shall be kept in legible condition. 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 the tool for use.

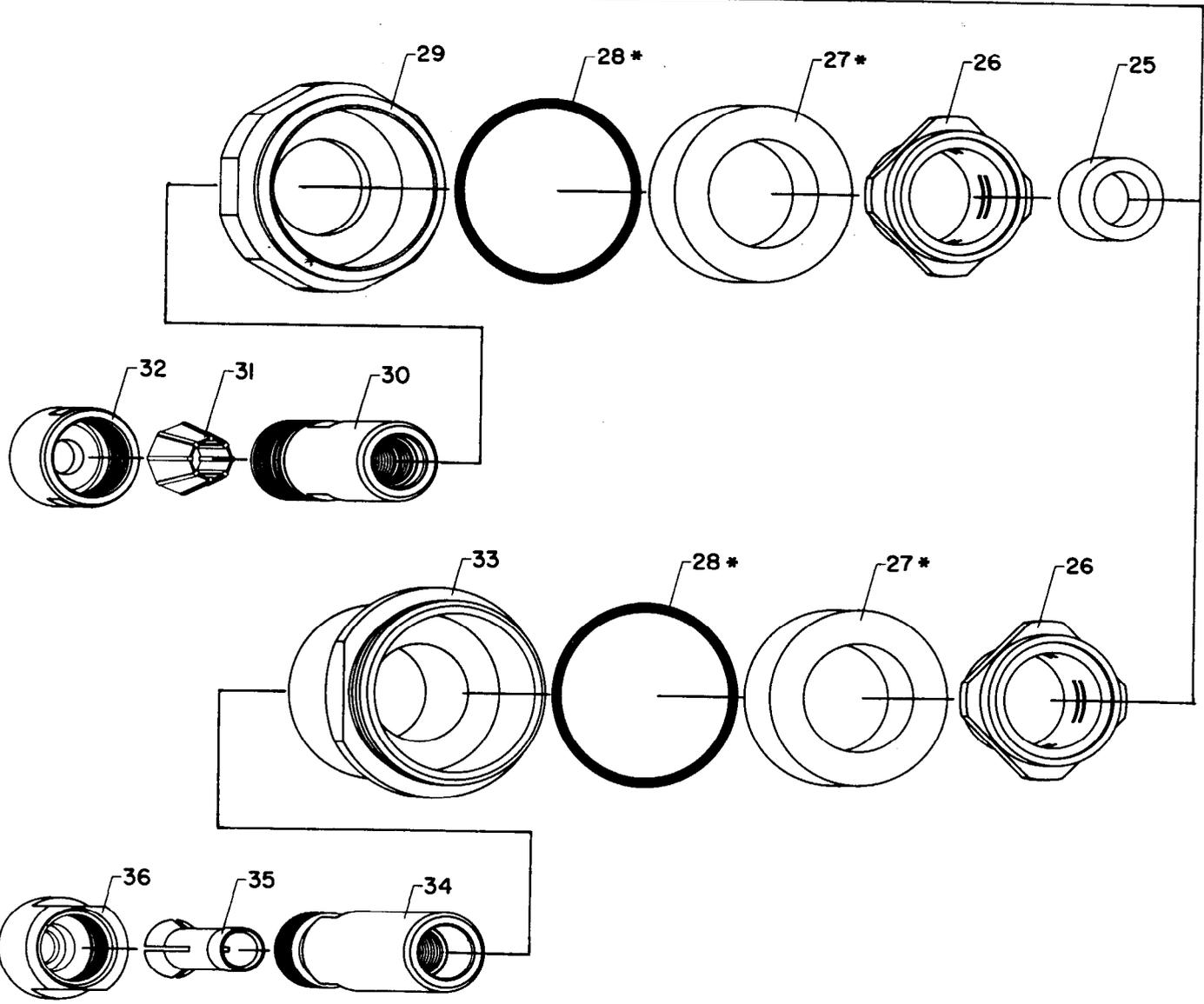
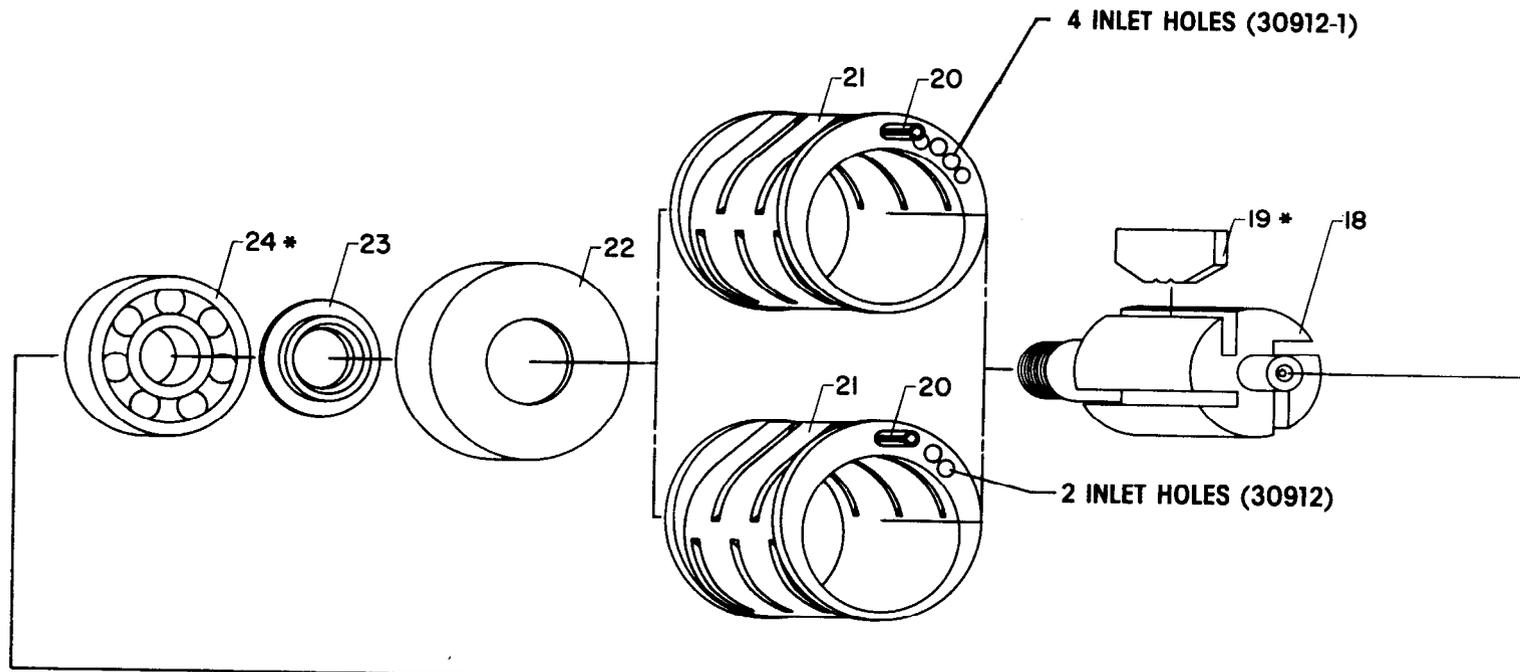
Disassembly should be done on a clean work bench with a clean cloth spread to prevent the loss of small parts. After disassembly is completed, all parts should be thoroughly washed in a clean solvent, blown dry with air and inspected for wear levels, abuse and contamination. Double sealed or shielded bearings should never be placed in solvent unless a good method of re-lubricating the bearing is available. Open bearings may be washed but should not be allowed to spin while being blown dry.

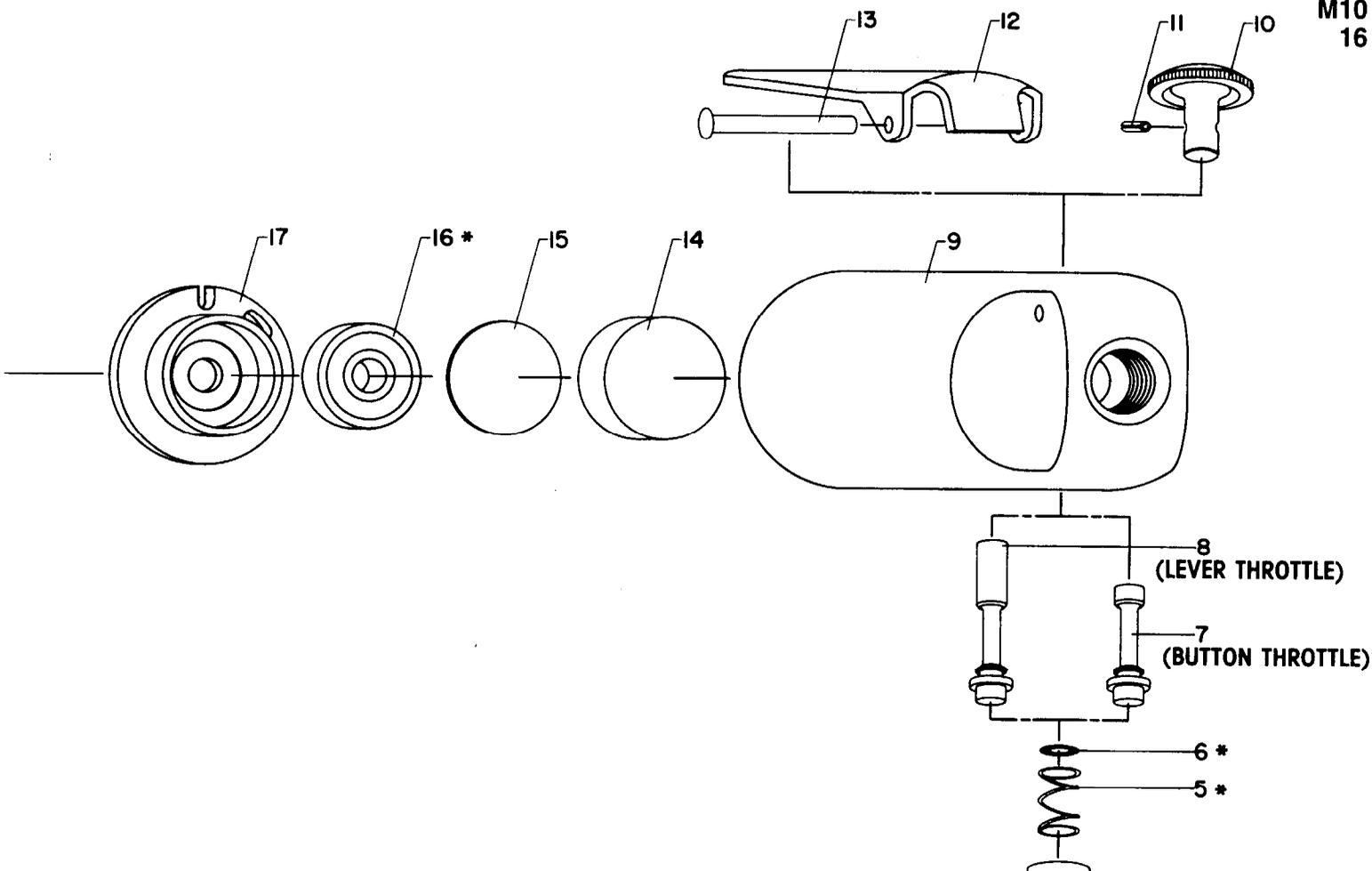
Upon reassembling, lubricate parts where required. Use 33153 grease, or equivalent, in bearings. Use 36460 lubricant for "O" ring assembly. When assembling "O" rings or parts adjacent "O" rings, care must be exercised to prevent damage to the rubber sealing surfaces. A small amount of grease will usually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

When replacement parts are necessary, consult drawing containing the part for identification.

Always use clean, dry air. Dust, corrosive fumes and/or excessive moisture can damage the motor of an air tool. An air line filter can greatly increase the life of an air tool. The filter removes rust, scale, moisture and other debris from the air lines. Low air pressure (less than 90 p.s.i.g.) reduces the speed of the air tool. High air pressure (more than 90 p.s.i.g.) raises performance beyond the rated capacity of the tool and could cause injury. Shown below is a typical piping arrangement.







PART NUMBER FOR ORDERING

LEVER HEAD THROTTLE ASSEMBLY (includes items 1, 2, 3, 4, 5, 6, 8, 9, 12 and 13)		See table
BUTTON HEAD THROTTLE ASSEMBLY (includes items 1, 2, 3, 4, 5, 6, 7, 9, 10 and 11)		See table
LOCK-OFF LEVER HEAD THROTTLE ASSEMBLY (includes items 1, 2, 3, 4, 5, 6, 8, 9, 12 and 13)		See table
1	Plug	30600
2	Washer	Y325-13
3	"O" Ring	Y325-8
4	Air Regulator	31026
5	Spring	30609
6	"O" Ring	Y325-7
7	Valve Stem (button throttle)	46136
8	Valve Stem (lever throttle)	46134
9	Housing (includes bushing)	See table
10	Button Throttle	31033
11	Roll Pin	Y178-212
12	Lever	See table
13	Rivet	31620
14	Cap	38783
15	Shield	38805
16	Ball Bearing	Y65-7
17	Rear End Plate	See table
18	Rotor	30984
19	Blade (4 req'd)	30741
20	Roll Pin	Y178-26
21	Cylinder (includes item 20)	See table
22	Front End Plate	30986
23	Spacer	30987
24	Ball Bearing	30469
MOTOR ASSEMBLY (includes items 16 thru 24)		See table
25	Spacer (models 7015-11-() only)	39955
26	Exhaust Spacer	43578
27	Muffler Strip (felt)	43580

PART NUMBER FOR ORDERING

28	"O" Ring	Y325-26
29	Lock Nut (models 7015-11-() only)	43577
30	Collet Body	45983
31	Collet	See table
32	Collet Nut	37432
Collet Body and Nut Assembly (includes items 30 and 32)		39958
COLLET ASSEMBLY [models 7015-11-()] (includes items 30, 31 and 32)		See table
33	Lock Nut (models 8212-1B-() and 8213-1B)	38988-1
34	Collet Body	41752
35	Collet	See table
36	Collet Nut	41751
COLLET ASSEMBLY [models 8212-1B-() and 8213-1B] (includes items 34, 35 and 36)		See table
SERVICE KIT: Includes items 2, 3, 5, 6, 16, 19, 24, 27 and 28		39001
Wrenches (not shown): flat, open end, 1/2" and 11/16"		30131
flat, open end, 5/8" and 7/8"		37167

MODEL IDENTIFICATION

MODEL NUMBER	R.P.M.	THROTTLE TYPE	THROTTLE ASSEMBLY	HOUSING (ITEM 9)	LEVER (ITEM 12)	END PLATE (ITEM 17)	CYLINDER (ITEM 21)	MOTOR ASS'Y	COLLET ASS'Y	COLLET (ITEM 31 OR 35)	COLLET CAPACITY
7015-11	18,000	LEVER	43582	43583	31023	30750	30912	33804	39959-3	37431-3	3/16" - 1/4"
7015-11-EU	18,000	LEVER	49940	49941	47052	30750	30912	33804	39959-3	37431-3	5 - 6 mm
8212-1B	21,000	LEVER	43582	43583	31023	37956	30912-1	43581	41753-3	41750-3	1/4"
8212-1B-EU	21,000	LEVER	49940	49941	47052	37956	30912-1	43581	41753-12	41750-12	6 mm
8213-1B	21,000	BUTTON	43585	43584		37956	30912-1	43581	41753-3	41750-3	1/4"

 CANCELLED MODELS

MODELS WITH -EU SUFFIX ARE "EC" COMPLIANT MODELS.

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

- Never apply excessive pressure by a holding device which may cause distortion of a part.
- Apply pressure evenly to parts which have a press fit.
- Apply even pressure to the bearing race that will be press fitted to the mating part.
- Use correct tools and fixtures when servicing this tool.
- Don't damage "O" rings when servicing tool.
- Use only genuine ARO replacement parts for this tool. When ordering, specify part number, description, tool model number and serial number.

THROTTLE DISASSEMBLY

- Secure tool in a suitable holding device, locating on flats of valve housing.
- Unthread and remove valve plug (1) and "O" ring (2).
- Regulator (4), "O" ring (3), spring (5) and valve stem (7 or 8), with "O" ring (6), can now be removed from housing.

THROTTLE ASSEMBLY

- Lubricate and assemble "O" ring (6) to valve stem.
- Assemble valve stem, spring (5), regulator (4) and "O" ring (3) to housing and secure with "O" ring (2) and valve plug (1). NOTE: When assembling regulator (4) to housing, align hole in regulator with air inlet of housing.

MOTOR DISASSEMBLY

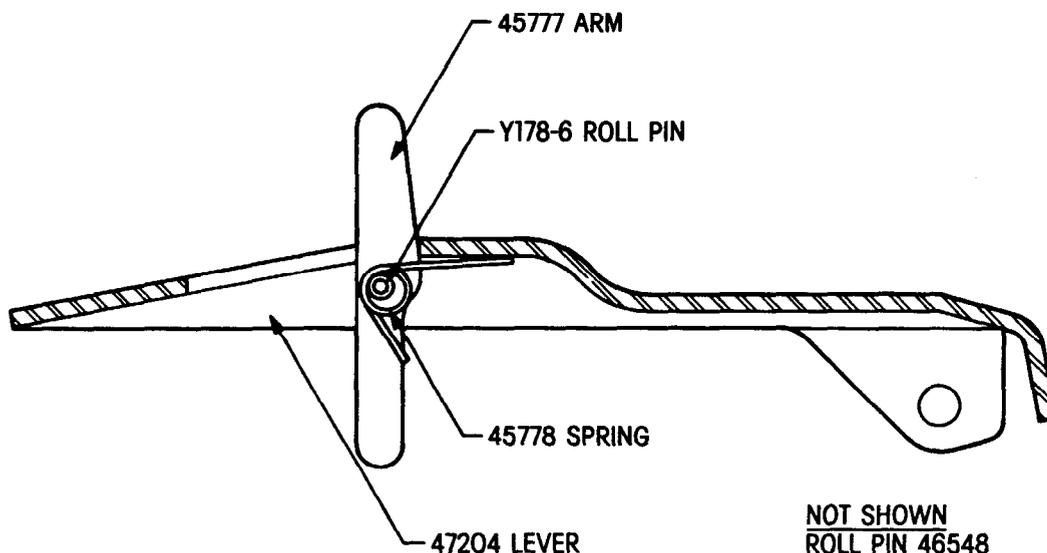
- Remove collet nut and collet.
- Insert a 5/32" hex wrench thru collet body (30 or 34) and engage hex in end of rotor shaft.
- Hold rotor shaft secure with hex wrench and remove collet body using wrench (30131) on flats of collet body.

- Secure housing and remove lock nut (29 or 33).
- Remove muffler strip (27) and exhaust spacer (26).
- Remove motor assembly from housing.
- Tap threaded end of rotor (18) with a soft face hammer; motor will come apart. NOTE: Bearings are light press fit in end plates and press fit on rotor.

MOTOR ASSEMBLY

- Assemble bearing (16) to end plate (17), pressing on outer race of bearing.
- Assemble end plate (17) to rotor (18), pressing on inner race of bearing.
- Coat rotor blades (19) with ARO 29665 spindle oil and assemble to rotor slots - straight side out.
- Coat i.d. of cylinder (21) with ARO 29665 spindle oil and assemble over rotor. NOTE: Roll pin (20) must be aligned with .116" diameter hole in end plate (17).
- Assemble spacer (23) and bearing (24) to end plate (22), pressing on outer race of bearing.
- Assemble end plate (22) to rotor, pressing on inner race of bearing. Be sure rotor turns without binding. If rotor binds, tap threaded end lightly with a soft face hammer to loosen.
- Assemble shield (15) and cap (14) to end plate (17).
- Assemble spacer (25) - models 7015-11-() only - to rotor shaft.
- Assemble collet body to rotor shaft and tighten securely.
- Assemble motor to housing.
- Assemble "O" ring (28), muffler strip (27) and exhaust spacer (26) to lock nut (29 or 33) and assemble lock nut to housing, securing motor.
- Assemble collet and collet nut to collet body.

47052 LOCK-OFF LEVER ASSEMBLY





Part of worldwide Ingersoll-Rand

PN 49999-405