



Tool Products

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

SECTION M30

MANUAL 55

Released: 11-1-90

Revised: 11-10-95

Form: 3582-2

50 SERIES SCREWDRIVER

Models: AG054A-()-(), AG057A-()-(),
AG058A-()-() and AS058A-()-().



⚠ WARNING

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

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

Pneumatic tools should always be installed and used in accordance with A.N.S.I. B186.1 "Safety Code For Portable Air Tools."

⚠ 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 bit, socket or device attached to tool or performing 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.
- 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) 672-0801.

ARO Tool Products

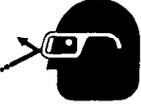
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FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

⚠ 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



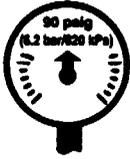
Do not use damaged, frayed or deteriorated air hoses and fittings.

⚠ 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

⚠ WARNING

Read the manual before operating this tool.
Operate at 90 psig/6.2 bar max.

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 160 HOURS OF TOOL OPERATION – Lubricate clutch parts with molybdenum grease (40036-1). Lubricate gearing. Pack bearings, coat shafts and lubricate gears with NLGI #1 "EP" grease (33153). Gearing should contain approximately 3/64 oz. (1.3 g) of grease for single reduction and 1/16 oz. (1.8 g) for double reduction. Clutch should contain approximately 1/16 oz. (1.8 g) of grease.

AIR SUPPLY REQUIREMENTS

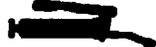
For maximum operating efficiency, the following air supply specifications should be maintained to this air tool:

- 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 & Lip Seals	36460	4 oz. Stringy Lubricant
Gears and Bearings	33153	5 lb. "EP" - NLGI #1 Grease
Clutches	40036-1	1 lb. "EP" Molybdenum Disulfide

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.

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.

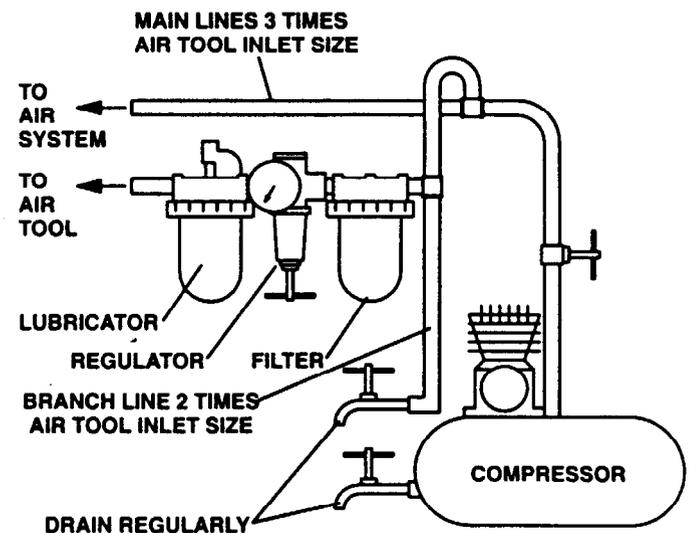
Tool maintenance and repair shall be performed by authorized, trained, competent personnel. Tools, hose and fittings shall be replaced if unsuitable for safe operation and responsibility should be assigned to be sure that all tools requiring guards or other safety devices shall be kept in legible condition.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



MODEL IDENTIFICATION

MODEL NUMBER	R.P.M.	GEARING REDUCTION	ROTOR (ITEM 52)	MOTOR ASSEMBLY	CLUTCH SPRING (ITEM 87)	CLUTCH ASSEMBLY	CLUTCH TORQUE RANGE (IN. LBS)
AG054A-8-()-()	800	19.36:1	46453	48159-1	48047	48303-1	35 - 100
AG054A-10-()	1000	15.09:1	46453	48159-1	48047	48303-1	35 - 80
AG054A-16-()	1600	9.91:1	46453	48159-1	48095	48303-2	25 - 60
AG054A-24-()-()	2400	6.67:1	46469	48158-1	48096	48303-3	15 - 40
AG057A-8-()	800	19.36:1	46453	48159-1	48047	48303-5	35 - 100
AG057A-10-()	1000	15.09:1	46453	48159-1	48047	48303-5	35 - 80
AG057A-16-()-()	1600	9.91:1	46453	48159-1	48095	48303-6	25 - 60
AG057A-24-()	2400	6.67:1	46469	48158-1	48096	48303-7	15 - 40
AG058A-8-()-()	800	19.36:1	46453	48159-1	48047	48303-1	35 - 100
AG058A-10-()-()	1000	15.09:1	46453	48159-1	48047	48303-1	35 - 80
AG058A-16-()-()	1600	9.91:1	46453	48159-1	48095	48303-2	25 - 60
AG058A-24-()	2400	6.67:1	46469	48158-1	48096	48303-3	15 - 40
AS058A-8-()-()	800	19.36:1	46453	47726	48047	48303-1	35 - 100
AS058A-10-()	1000	15.09:1	46453	47726	48047	48303-1	35 - 80
AS058A-17-()	1700	9.91:1	46453	47726	48095	48303-2	25 - 60
AS058A-25-()	2500	6.67:1	46469	47725	48096	48303-3	15 - 40

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

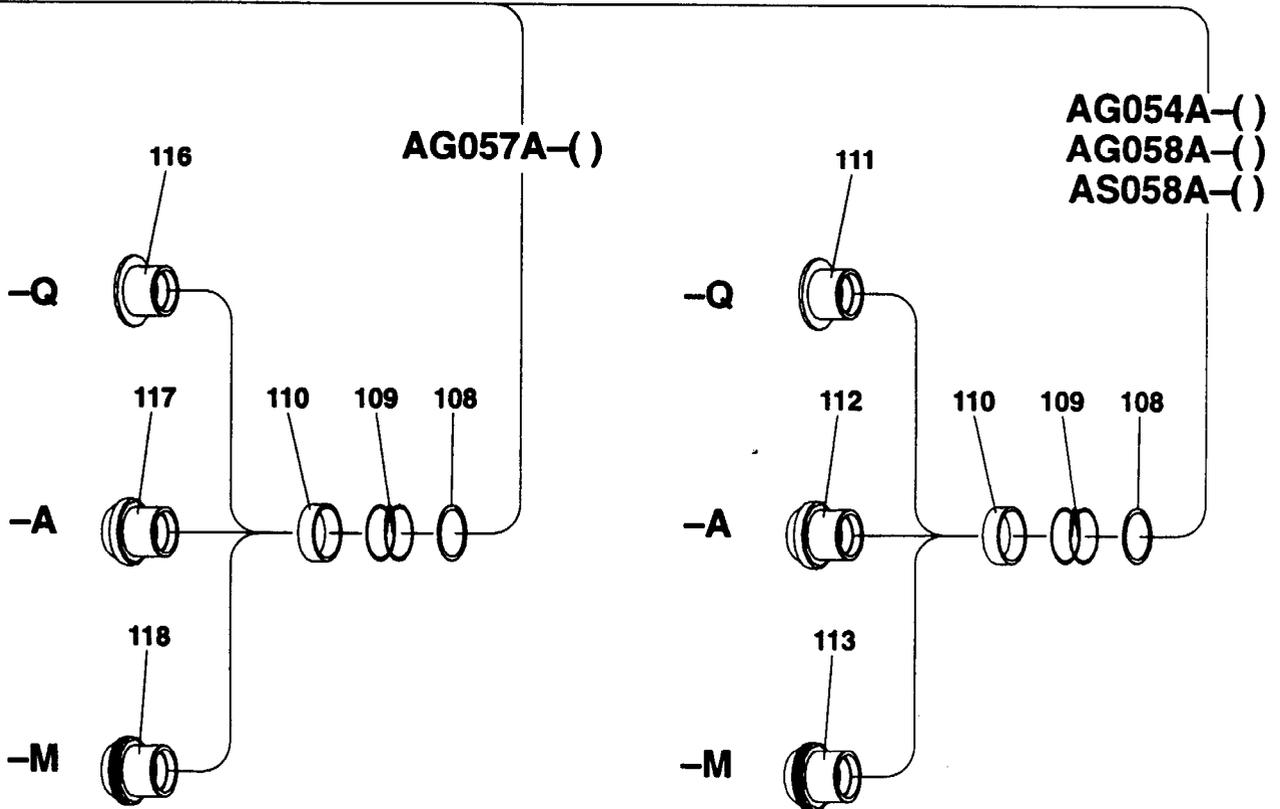
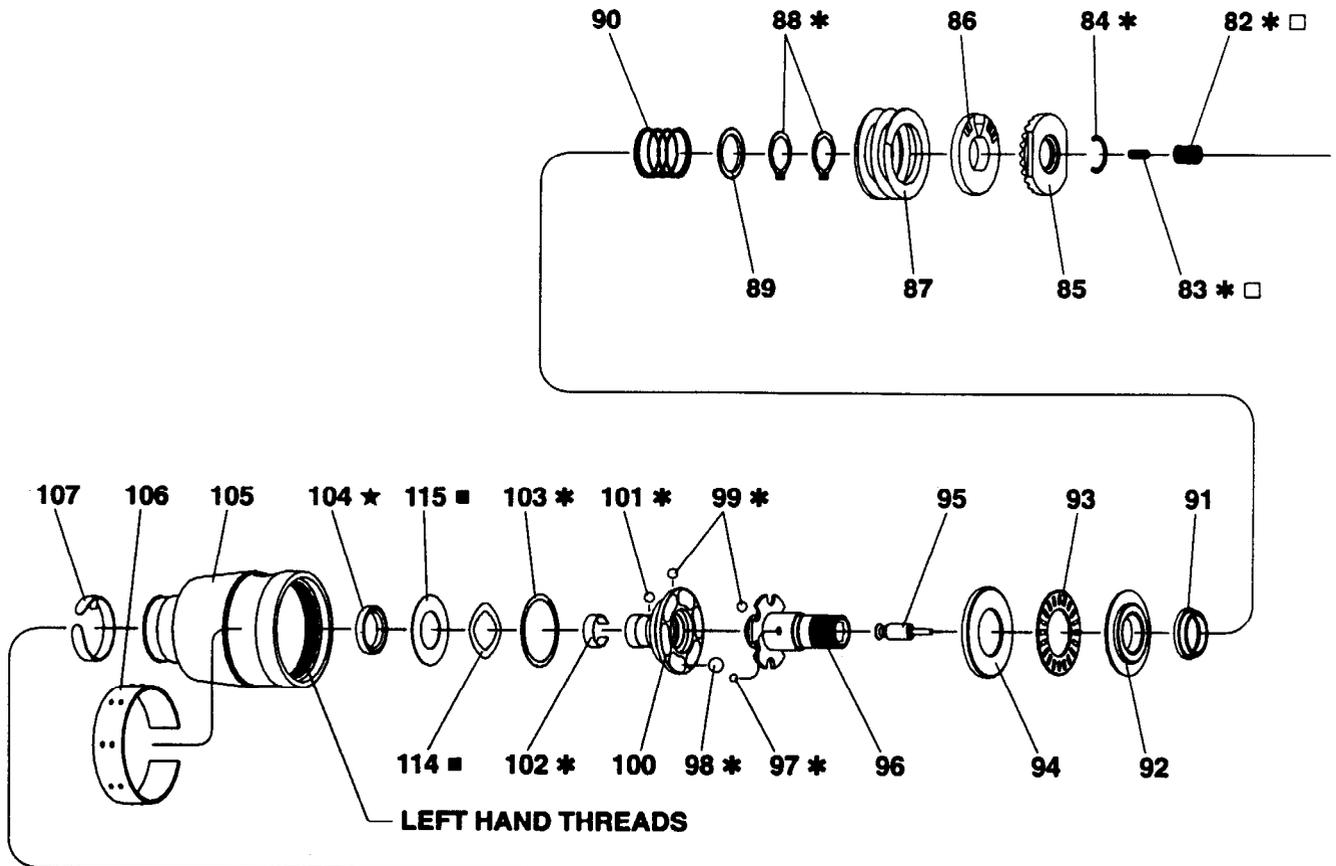
A - APEX MAGNETIC BIT HOLDER
F - FINDER
M - MAGNA BIT MAGNETIC BIT HOLDER
Q - QUICK-CHANGE SLEEVE

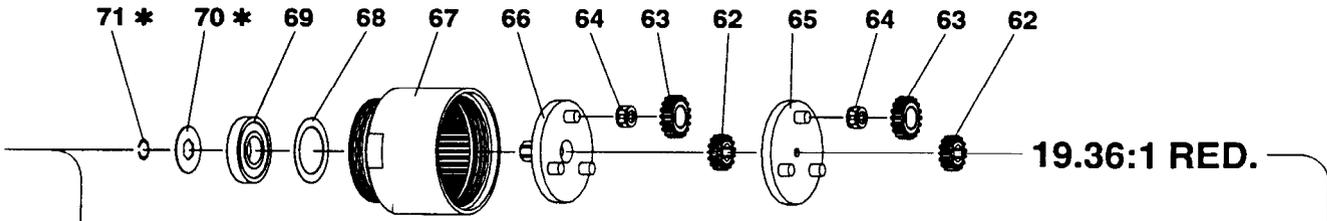
* ITEMS INCLUDED IN SERVICE KIT NO. 48910.

□ ITEM NOT USED ON MODELS AG057A-().

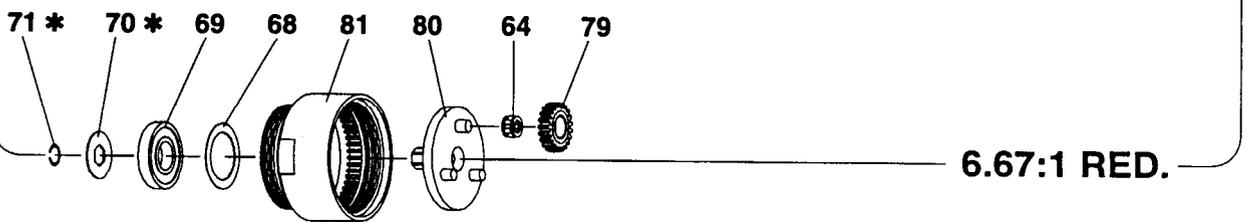
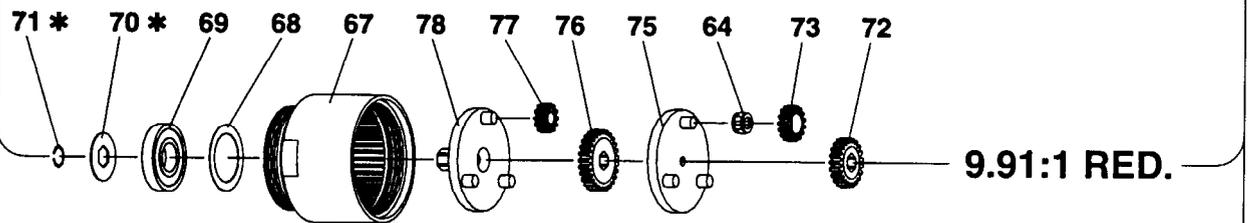
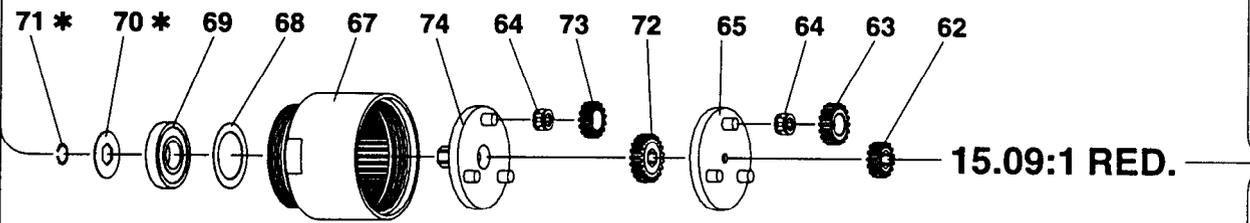
■ ITEM USED ON MODELS AG057A-() ONLY.

★ OIL IMPREGNATED BRONZE BUSHING, DO NOT WASH, WIPE CLEAN ONLY.





* ITEMS INCLUDED IN SERVICE KIT NO. 48910.

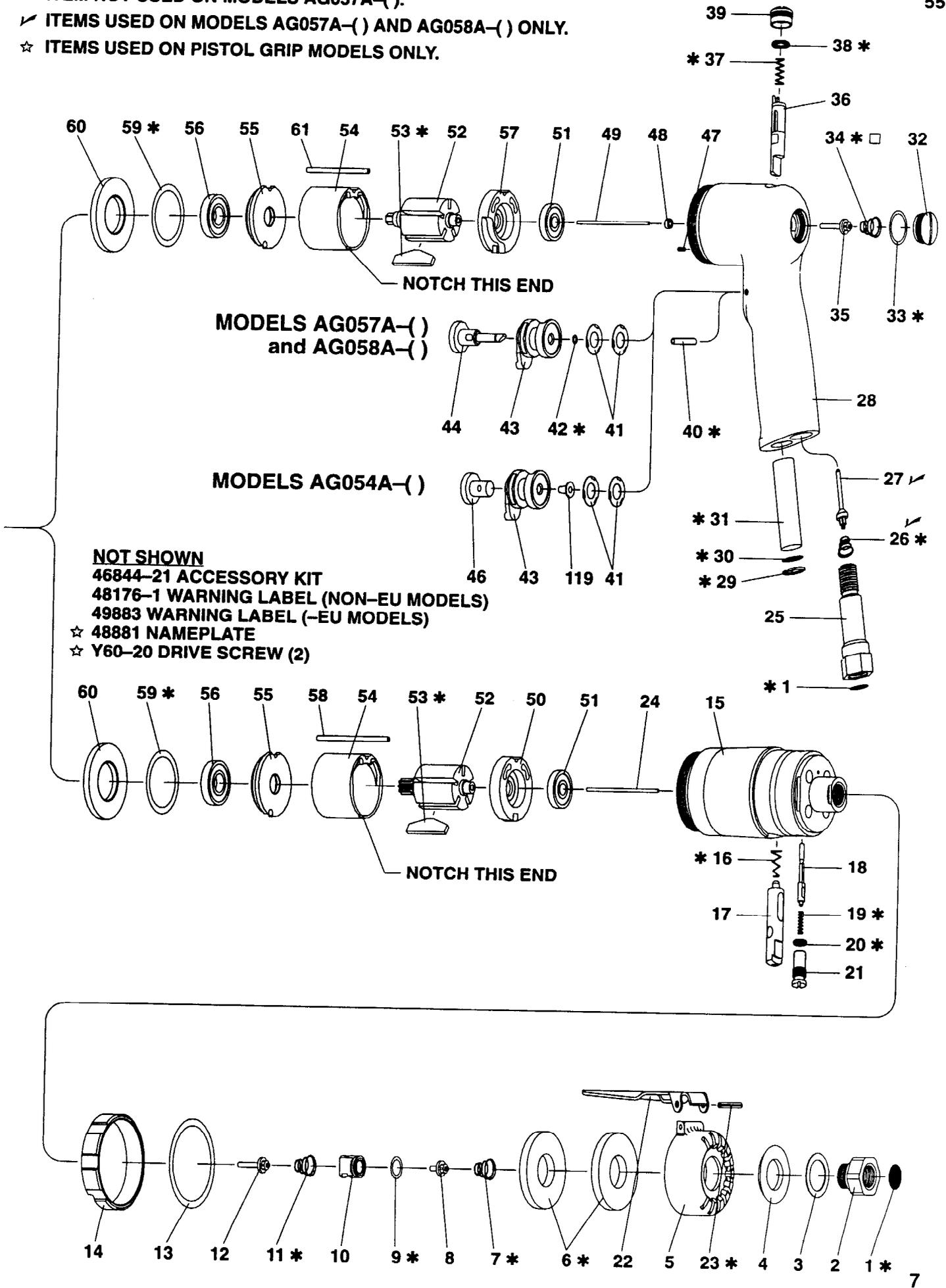


* ITEMS INCLUDED IN SERVICE KIT NO. 48910.

□ ITEM NOT USED ON MODELS AG057A-().

✓ ITEMS USED ON MODELS AG057A-() AND AG058A-() ONLY.

☆ ITEMS USED ON PISTOL GRIP MODELS ONLY.



DISASSEMBLY/ASSEMBLY INSTRUCTIONS

NOTICE

- 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 this tool.
- Use only genuine ARO replacement parts for this tool. When ordering, specify part number, description, tool model number and serial number.

CLUTCH DISASSEMBLY

- Clamp tool in a smooth face vise – pistol grip models, clamp on handle (28) – straight models, clamp on inlet adapter (20).
- Using a strap type wrench, remove clutch housing (105) – LEFT HAND THREADS.
- Remove clutch assembly from tool. NOTE: Springs (82 and 83) are loose parts and may fall out.
- Clamp a 1/4" hex wrench in a vise then place bit holder (100) and clutch assembly on it.
- Remove snap ring (84).
- Using a 7/8" wrench, remove adjustment nut (85).
- Remove adjustment washer (86) and clutch spring (87).
- Remove retaining rings (88).
- Slide off guide (89), spring (90), ball sleeve (91), thrust race (92) and thrust bearing (93). NOTE: Removal of ball sleeve (91) releases six balls (97).
- Remove thrust race (94), releasing six balls (98).
- Remove retaining ring (103), then rotate bit holder to remove twelve balls (99). Separate bit holder (100) and spindle (96), releasing eleven balls (99).

CLUTCH ASSEMBLY

- For clutch part lubrication, use ARO 40036-1 grease on parts as pointed out in this section.
- Assemble thrust race (115) and wave washer (114) to clutch housing (105), where applicable.
- Lubricate ball grooves of clutch spindle (96).
- Install eleven balls (99) into groove.
- Slide spindle (96) into bit holder (100), securing balls.
- Assemble twelve balls (99) into bit holder, then secure with retaining ring (103).
- Lubricate ball pockets of bit holder and install six balls (98) into pockets, securing with thrust race (94).
- Lubricate and assemble thrust bearing (93) and thrust race (92) to spindle.
- Coat plunger (95) with spindle oil 29665 and assemble spring (83) to plunger. Assemble plunger and spring to spindle, securing with balls (97). NOTE: Assemble two balls per hole.
- Secure balls with ball sleeve (91).
- Assemble spring (90) and guide (89) to spindle, securing with retaining rings (88).
- Install clutch spring (87).
- Lubricate face of adjustment washer (86) and install on spindle.
- Thread adjustment nut (85) onto spindle, securing with snap ring (84).
- Lubricate ball (101) of bit holder.
- Assemble spring (82) into spindle. NOTE: Assemble spring (82) with large diameter into spindle first.
- Assemble clutch assembly to tool.
- Assemble clutch housing (105) to tool – LEFT HAND THREADS.
- See "Clutch Adjustment".

CLUTCH ADJUSTMENT

EXTERNAL:

- Rotate sleeve (106) until opening in housing is visible.
- Depress bit to engage clutch, then rotate until notch in adjustment washer (86) is visible.
- Insert a no. 1 Phillips screwdriver in notch to turn gear teeth on nut (85).
- Clockwise = decrease torque.
- Counterclockwise = increase torque.

INTERNAL:

- Remove clutch housing, bit holder and clutch assembly from tool. NOTE: Clutch housing has left hand threads.
- With bit in bit holder, clamp bit in vise.
- Place clutch assembly on bit holder.
- Engage jaws, hold clutch assembly from turning then rotate adjustment nut (85) with a 7/8" wrench.

GEARING DISASSEMBLY

- Remove clutch from tool (see "Clutch Disassembly").
- Using a wrench on flats, remove ring gear (67 or 81).
- Remove snap ring (71) and washer (70).
- Remove spindle(s) and gears from ring gear (67 or 81). NOTE: Keep gears grouped with mating spindle when disassembling double reduction gearing.
- Do not remove bearing (69) and spacer (68) unless damage is evident.
- To remove bearing (69) and spacer (68) from ring gear, press on spacer (68) from inside splined end of ring gear.
- Do not remove gears (62, 72 and 76) from carrier assembly unless damage is evident. Gears are press fit onto carrier assembly.

GEARING ASSEMBLY

- Assemble spacer (68) into ring gear.
- Press bearing (69) into ring gear. NOTE: Press on outer race of bearing and press to shoulder of ring gear.
- Coat shafts of spindle with ARO 33153 grease.
- Assemble gears to shafts of mating spindle.
- Assemble carrier assembly to spindle assembly of double reduction gearing.
- Assemble spindle(s) and gearing into ring gear. Rotate spindle and gears to align gear teeth with splines of ring gear.
- Thread ring gear (67 or 81) to tool and tighten with a wrench on flats.
- Assemble clutch to tool.

MOTOR DISASSEMBLY

- Remove clutch and gearing from tool.
- Remove spacer (60) and "O" ring (59).
- Tap front edge of housing to remove motor assembly. Locating pin should also come out.
- Tap drive end of rotor (52) with a soft face hammer; motor will come apart. NOTE: Bearings are light press fit in end plates. Bearing (51) is press fit on rotor.
- Remove end plate (50 or 57) and bearing (51) from rotor.

MOTOR ASSEMBLY

- Lubricate bearing (51) with ARO 33153 grease and assemble to end plate (50 or 57), pressing on outer race of bearing.
- Assemble end plate (50 or 57) to rotor, pressing on inner race of bearing.

- Coat five rotor blades (53) with ARO 29665 spindle oil and assemble to rotor slots – straight side out.
- Coat i.d. of cylinder (54) with ARO 29665 spindle oil and assemble over rotor, aligning air inlet slots of cylinder with air inlet slots in end plate (50 or 57).
- Assemble bearing (56) to end plate (55), pressing on outer race of bearing.
- Assemble end plate (55) to rotor, pressing on inner race of bearing. Be sure rotor turns without binding.
- Insert locating pin (58 or 61) into .096" diameter blind hole at bottom of motor cavity in housing.
- Align notches of end plates and cylinder and install motor into housing, aligning notches with pin.
- Grease and assemble "O" ring (59) to end plate (55).
- Assemble spacer (60) to motor.
- Assemble gearing and clutch to tool.

LEVER THROTTLE HOUSING DISASSEMBLY

- Clamp air inlet adapter (2) in a smooth face vise.
- Using a strap type wrench, unthread housing (15).
- Remove spacer (3), diffuser washer (4), exhaust cap (5), filler (6), spring (7) and valve assembly (8).
- Remove cap (21) and spring (19), releasing valve stem (18).
- Remove valve block (10) and spring (11), releasing valve assembly (12). CAUTION: Do not remove or adjust rubber portion of valve assemblies (8 and 12), as they are preset at the factory.
- Remove "O" ring (13) and reverse sleeve (14), releasing valve body (17) and spring (16).

LEVER THROTTLE HOUSING ASSEMBLY

- Assemble spring (16) to housing, securing with valve body (17).
- Assemble reverse sleeve (14) and "O" ring (13) to housing, securing valve body.
- Grease and assemble "O" ring (9) to valve block (10).
- Assemble valve assembly (12) and spring (11) to housing, securing with valve block (10). NOTE: Assemble valve block (10) with counterbore towards cap (21).
- Grease and assemble "O" ring (20) to cap (21).
- Assemble valve stem (18) and spring (19) to housing, securing with cap (21). NOTE: Assemble valve stem (18) with slot turned to accept valve assembly (8).
- Assemble filler (6) and exhaust cap (5) to housing, aligning lever with valve stem (18).
- Assemble valve assembly (8) to housing, being certain valve assembly seats in slot in valve stem (18).
- Assemble spring (7) to housing, securing with diffuser washer (4), spacer (3) and inlet adapter (2).
- Clean and install screen (1) in inlet adapter.

PISTOL GRIP HOUSING DISASSEMBLY

- Remove end cap (32) and "O" ring (33), releasing spring (34)

- and valve rod (35).
- Remove top cap (39) and "O" ring (38), releasing spring (37) and reverse valve (36).
- Do not remove roll pin (47) or bushing (48) unless damage is evident. To remove, press thru to reverse valve cavity.
- To remove trigger (44) or button (46), drive pin (40) out of housing, releasing trigger (44) or button (46), reverse cam (43) and springs (41).
- MODELS AG054A-(): Remove plug (119) from reverse cam (43).
- MODELS AG057A-() and AG058A-(): Remove "O" ring (42), releasing trigger (44) from reverse cam (43).
- Remove inlet adapter (25) and screen (1).
- MODELS AG057A-() and AG058A-(): Remove spring (26) and valve rod (27).
- Remove retaining ring (29), releasing screen (30) and muffling (31).

PISTOL GRIP HOUSING ASSEMBLY

- Assemble muffling (31) and screen (30) into housing, securing with retaining ring (29).
- MODELS AG057A-() and AG058A-(): Coat valve rod (27) with ARO 29665 spindle oil and assemble valve rod and spring (26) into housing.
- Assemble inlet adapter (25) to tool.
- Clean and replace screen (1) in inlet adapter.
- Coat trigger (44) or button (46) with ARO 29665 spindle oil and assemble to reverse cam (43).
- MODELS AG057A-() and AG058A-(): Grease and assemble "O" ring (42) to trigger (44).
- MODELS AG054A-(): Assemble plug (119) to reverse cam (43).
- Assemble springs (41) to reverse cam, flat side away from reverse cam, and assemble reverse cam and components to housing, aligning holes in trigger and housing.
- Assemble pin (40) to housing, securing reverse cam and trigger.
- Assemble bushing (48) to housing, pressing flush with counterbore in bottom of motor cavity.
- Assemble roll pin (47) to housing, pressing flush with bottom of motor cavity.
- Coat reverse valve (36) with ARO 29665 spindle oil and assemble into housing, aligning slot in reverse valve with roll pin (47).
- Assemble spring (37) to housing.
- Grease and assemble "O" ring (38) to top cap (39) and assemble cap to housing, securing spring (37) and reverse valve (36).
- Coat valve rod (35) with ARO 29665 spindle oil and assemble to housing.
- Assemble spring (34) to housing, where applicable.
- Grease and assemble "O" ring (33) to end cap (32) and assemble cap to housing, securing valve rod and spring.

PART NUMBER FOR ORDERING

PART NUMBER FOR ORDERING

1	Screen	33911	63	Planet Gear (3 or 6 req'd) 4.4:1 ratio (18 teeth) ..	46900
2	Inlet Adapter	46377	64	Needle Bearing (3 or 6 req'd)	42315
3	Spacer	47205	65	Carrier Assembly 4.4:1 ratio	46522
4	Diffuser Washer	46449	66	Spindle Assembly 4.4:1 ratio	47753
5	Exhaust Cap	46448	67	Ring Gear (double reduction) lever throttle models	46467
6	Filler (2 req'd)	46452		pistol grip models	48904
7	Spring	41654	68	Spacer	46496
8	Valve Assembly	46354-2	69	Bearing	Y65-13
9	"O" Ring	Y325-11	70	Washer	47694
10	Valve Block	48335-1	71	Snap Ring	Y142-2
11	Spring	41654	72	Sun Gear 3.43:1 ratio (21 teeth)	46465
12	Valve Assembly	46354	73	Planet Gear (3 req'd) 3.43:1 ratio (15 teeth)	46899
13	"O" Ring	48347-1	74	Spindle Assembly 3.43:1 ratio	47752
14	Reverse Sleeve	48337-2	75	Carrier Assembly 3.43:1 ratio	46521
15	Head and Bushing Assembly	48351-1	76	Sun Gear 2.89:1 ratio (27 teeth)	46464
16	Spring	49794	77	Planet Gear (3 req'd) 2.89:1 ratio (12 teeth)	46460
17	Valve Body	48349-2	78	Spindle Assembly 2.89:1 ratio	47751
18	Valve Stem	48342-2	79	Planet Gear (3 req'd) 6.67:1 ratio (21 teeth)	46901
19	Spring	31058	80	Spindle Assembly 6.67:1 ratio	47750
20	"O" Ring	Y325-10	81	Ring Gear (single reduction) lever throttle models	46468
21	Cap	48338-2		pistol grip models	48905
22	Lever	48246-1	82	Spring	47709
23	Roll Pin	Y178-28	83	Spring	48333-1
24	Throttle Rod (lever throttle models) 800, 1000 and 1700 r.p.m. models (4.452" long)	46511-445	84	Snap Ring	Y110-105
	2500 r.p.m. models (3.942" long)	46511-394	85	Adjustment Nut	46895
25	Inlet Adapter	46385	86	Adjustment Washer	48093
26	Spring	41654	87	Clutch Spring (see chart, page 4)	
27	Valve Rod Assembly	46354	88	Retaining Ring (2 req'd)	Y145-18
28	Housing for models AG054A-()	48156-1	89	Guide	48295-1
	for models AG057A-() and AG058A-()	48154-1	90	Spring	47064
29	Retaining Ring	Y147-56	91	Ball Sleeve	48294-1
30	Screen	48808-1	92	Thrust Race	48094
31	Muffling	48443-1	93	Thrust Bearing	38995
32	End Cap	48146-1	94	Thrust Race	48301-1
33	"O" Ring	Y325-15	95	Plunger	48293-2
34	Spring	41654	96	Spindle	48299-1
35	Valve Rod Assembly	46354	97	Ball (6 req'd)	Y16-203
36	Reverse Valve	48133-1	98	Ball (6 req'd)	Y16-206
37	Spring	48304-1	99	Ball (23 req'd)	Y16-204
38	"O" Ring	Y325-12	100	Bit Holder	48298-1
39	Top Cap	48145-1	101	Ball	Y16-204
40	Pin	49754	102	Retaining Clip	47695
41	Spring (2 req'd)	48138-1	103	Retainer Ring	48300-1
42	"O" Ring	48139-1		AUTO SHUT-OFF CLUTCH ASSEMBLY for models AG054A, AG058A and AS058A (includes items 82 thru 103) (see chart, page 4) for models AG057A (includes items 84 thru 103) (see chart, page 4)	
43	Reverse Cam	48132-1	104	Bushing	46360
44	Trigger	48148-1	105	Clutch Housing (includes items 104 and 106) for -A, -M and -Q models lever throttle models	47749
46	Button	48149-1		pistol grip models	48901
47	Roll Pin	Y178-211		for -F models lever throttle models	47784
48	Bushing	48362-1		pistol grip models	48903
49	Throttle Rod (pistol grip models) 800, 1000 and 1600 r.p.m. models (3.942" long)	46511-394	106	External Adjustment Sleeve	46534
	2400 r.p.m. models (3.410" long)	46511-341	107	Retaining Clip and Pin	47782
50	Rear End Plate	46312-1	108	Retaining Ring	47779
51	Bearing	47724	109	Spring	47778
52	Rotor (see chart, page 4)		110	Bushing	47775
53	Blade (5 req'd)	46413	111	Sleeve	47702
54	Cylinder	46311	112	Magnetic Guide	47776
55	Front End Plate	47722	113	Magnetic Guide	47777
56	Bearing	Y65-13		GUIDE ASSEMBLY Quick-Change Sleeve Assembly (includes items 108 thru 111)	46884
57	Rear End Plate	48162-1			
	MOTOR ASSEMBLY (see chart, page 4) for lever throttle models (includes items 50 thru 56) for pistol grip models (includes items 51 thru 57)				
58	Locating Pin (lever throttle models)	47723-2			
59	"O" Ring	Y325-214			
60	Spacer	46412			
61	Locating Pin (pistol grip models)	47723-1			
62	Sun Gear (1 or 2 req'd) 4.4:1 ratio (15 teeth) ..	46466			

PART NUMBER FOR ORDERING

	Apex Magnetic Bit Holder Guide Assembly (includes items 108, 109, 110 and 112)	46885
	Magna Bit Magnetic Bit Holder Guide Assembly (includes items 108, 109, 110 and 113)	46886
114	Wave Washer	45645
115	Thrust Bearing Race	42364
116	Sleeve	47702-1
117	Magnetic Guide	47776-1
118	Magnetic Guide	47777-1
119	Plug	11481-1
	GUIDE ASSEMBLY	
	Quick-Change Sleeve Assembly (includes items 108, 109, 110 and 116)	46884-1
	Apex Magnetic Bit Holder Guide Assembly (includes items 108, 109, 110 and 117)	46885-1
	Magna Bit Magnetic Bit Holder Guide Assembly (includes items 108, 109, 110 and 118)	46886-1
	SERVICE KIT: includes items 1, 6, 7, 9, 11, 16, 19, 20, 23, 26, 29, 30, 31, 33, 34, 37, 38, 40, 42, 53, 59, 70, 71, 82, 83, 84, 88, 97, 98, 99, 101, 102 and 103	48910

