

USER MANUAL



DISCONNECT POWER SUPPLY BEFORE SERVICING



UNDERSTAND ALL INSTRUCTIONS BEFORE USING

ESCO Tool Guarantee

Guarantee: The manufacturer guarantees its products to be free from defects in material or workmanship for a period of one year from date of shipment from its factory. Said guarantee will not apply if equipment is used in conditions of service for which it is not recommended. The manufacturer is not responsible for damage to its products through improper use, physical damage, poor operating practice, or normal wear.

If any device is found unsatisfactory under the guarantee, the buyer must notify ESCO Tool in writing and after receipt of shipping instructions, buyer must return it directly to ESCO Tool, 75 October Hill Road, Holliston, MA 01746, USA, shipping charges prepaid. Such equipment will be replaced or put in satisfactory operating condition, free of all charges except transportation. The correction of any factory defect by repair or replacement by the manufacturer shall constitute fulfillment of all obligations to the purchaser. Manufacturer's guarantee is void if unauthorized repairs are made to its products.

Manufacturer shall not be liable for consequential damage in case of failure to meet the conditions of any guarantee or shipping schedule, nor will claims for labor, loss of profit, repairs, or other expenses incidental to replacement be allowed.

No other representations, guarantees or warranties, expressed or implied, are made by the manufacturer in connection with the manufacture and sale of its equipment.

Hold Harmless Agreement

Customer agrees to defend, indemnify and hold ESCO Tool, its owners, agents, officers, and/or employees free and harmless from and against any and all claims, liabilities, losses, costs and out of pocket expenses (including attorney's fees) arising out of, or in connection with the ESCO Tool equipment, its use or transportation, or out of operations conducted by customer, its agents, employees, contractors, representatives, guests or invitees, including, but not limited to, active and/or passive negligence.

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Instructions for putting into use

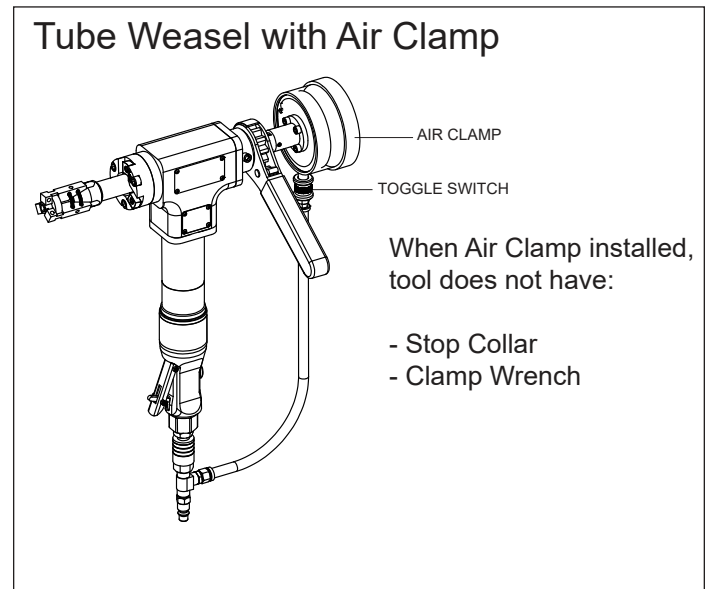
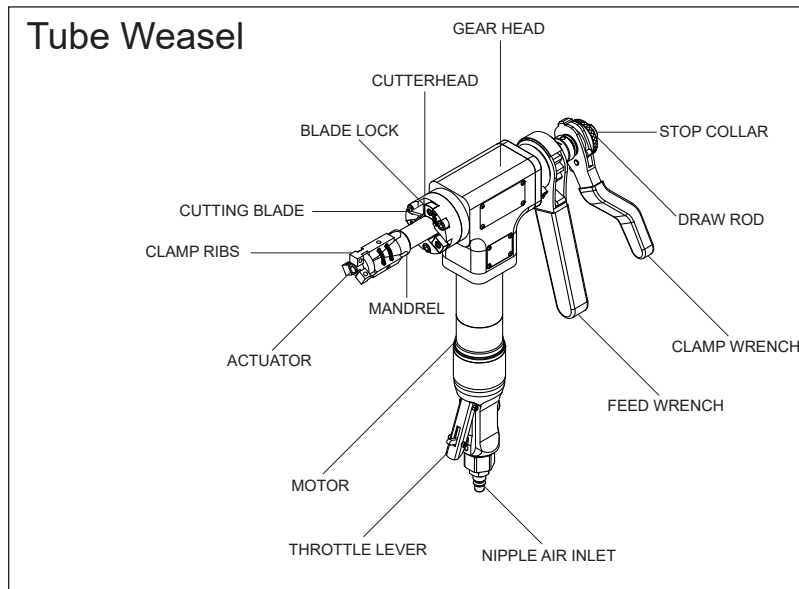
Unpacking

1. Use caution when handling the tool. Cutting blades are sharp. Typically they are protected, however, exposed blades can cause injury.
2. Clean any excess oil, grease or rust preventative from the surface of the tool.

Power supply

1. Recommended air pressure, 90 psi (6.2 bar)
2. Recommended air volume, 35 cfm (990 lt/min.)
3. Clean moisture free air is essential for trouble free operation.
4. Oil laden operating air should be used. Use a light weight air tool motor oil (s.a.e.10).
5. A hose whip with filter and lubricator is provided with each tool. Be sure air filter is clean and lubricator is full before use.
6. For electric motors
 - a. Rated Voltage 230/120v ac
 - b. Power input 950 w
 - c. Frequency 40-60 Hz

Illustrated description of function



Limitation on ambient conditions

1. In damp, moist or humid air, extra precaution must be taken in order to provide the tool with moisture free, oil laden air.
2. In temperatures below 32 degrees Fahrenheit (0 Celsius) a lubricant with antifreeze, such as Marvel Air-Tool Oil, must be used.
3. Do not use the electric motor in wet or excessively humid ambient conditions.

List of contents

- Gear Head Assembly
- Mandrel Assembly
- Draw Rod Assembly (either for Clamp Wrench or Air Clamp)
- Feed Assembly
- Clamp Wrench Assembly (or Air Clamp Assembly)
- One or more Clamp Rib sets
- One or more Cutterhead Assemblies
- Motor Assemblies (either pneumatic, electric or battery)
- Air Hose (or batteries & charger)
- Hand Tool Set
- User Manual
- Case Assembly

Safety precautions**Precautions and use of personal protective equipment**

1. Power tools are not insulated for coming into contact with electric power sources.
2. Tool must not be used in an explosive atmosphere.
3. Do not use tool in a manner other than stated. Use other than stated in the instructions is forbidden.
4. For air powered tools, use valved, quick connect couplers to avoid an unrestrained compressed air hose after disconnecting.
5. Use care regarding the drawing in or trapping of long hair, loose clothing, etc.
6. Cover all exposed skin before operating. Cutting blades are sharp and produce hot chips. Both can cause injury.
7. Do not connect power source until tool is securely fastened to the pipe or tube.
8. Use caution when handling, disconnect power source before removing from work, changing blades, performing maintenance or breaking down.
9. Personal protective garments should include but not be limited to...
 - a. Safety glasses
 - b. Work gloves
 - c. Work boots, or shoes
 - d. Protective clothing
 - e. Hearing protection when operator is exposed to long periods of use
10. Have all nearby persons wear safety glasses with side shields.

Special safety precautions

1. Always disconnect power supply before installing or changing cutting blades, securing to pipe or tube, adjusting, moving or breaking machine down.
2. Do not modify or defeat safety devices.
3. Cutting blades are sharp and can cause serious injury. Use caution when handling.
4. Chips can be hot and sharp. Be careful when clearing from tool.
5. Moving and stationary parts can pinch or cause serious injury. Pay extra attention to rotating cutting blades as they cannot be adequately guarded.
6. During use, machinery may separate, lurch or fall.

Explanation of symbols



Caution (refer to accompanying documents).



Safety glasses must be worn.



Protective gloves, cutting blades and chips can be hot and sharp.



Work boots, or shoes



Protective clothing



Hearing protection



Pinch points

Disclaimer

1. If the equipment is used in a manner not specified by ESCO Tool, the protection provided by the equipment may be impaired.

Operating ergonomics

1. Tool must be mounted at a reasonable working height.
2. Tool may be used in any orientation.
3. Operator must be in a position not to be injured as the machinery may separate, lurch or fall.
Operator must have both feet on a stable platform. Reaching or leaning is not acceptable operating ergonomics.

Operating Instructions

Identification of operating controls and their use

(All tools have similar manner controls except as noted.)

Feed wrench

- Used to advance and retract the cutting blade from the work.

Clamp wrench

- Actuates the clamping mechanism.

Actuator

- Holds and aligns the clamp ribs and pads with mandrel.

Cutterhead

- Rotates and holds the cutting blades.

Throttle lever

- Locking throttle lever requires deliberate action by the operator to activate the tool.
- Actuating lever starts tool.
- Release of lever stops tool.

Nipple air inlet

- Accepts valved quick connect coupler for connecting air supply.
- Always disconnect air supply before installing, changing or securing blades, adjusting, moving, or breaking down.

Motor

- Provides power to the gear head.
- (pneumatic, electric or battery)

Gear Head

- Rotates cutterhead.
- Axially moves on mandrel

Cutting blade

- Consumable item, available in many sizes and configurations.
- Purpose: to machine end preparations on tube or pipe.

Blade lock

- Holds cutting blade to cutterhead.

Clamp ribs

- Secures tool to tube or pipe inside diameter.
- Available in many sizes, see accompanying clamp rib chart.

Mandrel

- Provides torque acceptance for entire tool.
- Allows axial movement of tool.
- Provides point of rotation for cutterhead.

Draw rod

- Connects the actuator to the clamp wrench.

Stop collar

- Secures the draw rod assembly to the tool.

Air Clamp

- Actuates the clamping mechanism.

Toggle Switch

- Actuates the air clamp.

Selection of proper tooling

Clamp rib selection

1. Measure inside diameter of tube or pipe. Or using the outside diameter and minimum wall thickness, calculate the inside diameter.
2. Using the inside diameter and the accompanying clamp rib chart, select the proper clamp rib set.
3. Please see clamp rib assembly drawings section for reference.

Cutterhead selection

1. Measure the outside diameter of the tube or pipe.
2. Select the cutterhead that either matches the outside diameter or is at least one size larger than the outside diameter.
3. Size are: 2-3/4" and 3"
 - a. 1-1/4" and 1" mandrel uses cutterheads TW-24 - 2-3/4" and TW-21 - 3".
 - b. 3/4" mandrel uses cutterhead TW-242 - 2-3/4".
4. Larger cutterheads may be used, subject to mechanical restrictions.

Cutting blade selection

1. Measure the wall thickness of the tube or pipe.
2. Select a blade that is wider than the wall thickness.
3. Standard blade widths are: 3/8" and 5/8". Consult factory for other widths.
4. Cutting blade configuration should be matched to your welding specification.
5. Consult factory for special applications such as: counter boring, seal weld removal, "J" preps, etc.

Installation of proper tooling

Clamp rib installation

Tube Weasel with clamp wrench

1. Remove stop collar. Using draw rod wrench, feed the draw rod assembly from mandrel.
2. Slide clamp ribs over the draw rod with the T end of the clamp rib towards the actuator.
3. Insert the clamp rib into the slots on the actuator.
4. Inspect springs or bands, replace if stretched or damaged.
6. Reassemble, insert draw rod assembly into mandrel and feed it into place using the draw rod wrench. Reinstall the stop collar.

Tube Weasel with air clamp

1. Disengage clamp ribs from actuator.
2. Unthread draw rod and remove from mandrel.
3. Slide clamp ribs off draw rod from the threaded end.
4. Slide new clamp ribs on from threaded end.
5. Insert draw rod into mandrel and thread into air cylinder.
 - a. Turn draw rod 5-8 complete rotations to properly insert it into the air cylinder.
6. Engage clamp ribs with actuator and mandrel

Cutterhead removal and installation

Tube Weasel with clamp wrench

1. Remove stop collar. Using draw rod wrench, feed the draw rod assembly from mandrel.
2. Remove (3) cutterhead mounting screws.
3. Using a soft hammer, tap cutterhead to remove from bearing.
4. Select the cutterhead you want to install and align cutterhead mounting screw holes with the drive shaft.
5. Using the cutterhead mounting screws, evenly tighten. Be sure that the cutterhead seats evenly on the bearing.
6. Insert draw rod assembly into mandrel using the draw rod wrench. Install the stop collar.

Tube Weasel with air clamp

1. Disengage clamp ribs from actuator.
2. Unthread draw rod and remove from mandrel.
3. Remove (3) cutterhead mounting screws.
4. Using a soft hammer, tap cutterhead to remove from bearing.
5. Select the cutterhead you want to install and align cutterhead mounting screw holes with the drive shaft.
6. Using the cutterhead mounting screws, evenly tighten. Be sure that the cutterhead seats evenly on the bearing.
 - a. Insert draw rod into mandrel and thread into air cylinder. Turn draw rod 5-8 complete rotations to properly insert it into the air cylinder.

Cutting blade removal and installation

1. Loosen blade lock screw(s), do not remove. If more than one blade lock screw has to be loosened they should be loosened evenly.
2. Cutting blade must be moved to the outside of the cutterhead for removal.
3. Insert new cutting blade from the outside of the cutterhead and align so that the blade fully covers the tube or pipe wall.
4. Be sure to tighten all blade lock screws

Mounting the tool to the work

Tube Weasel with clamp wrench

1. Using the feed wrench extend the mandrel all the way forward (this moves clamp ribs away from cutterhead).
2. Retract the mandrel two rotations of the feed wrench.
3. Insert the clamp rib portion of the tool into the end of tube or pipe.
4. While positioning the cutting blade away, at least 1/4" from the work, tighten the draw rod wrench.
5. Be sure cutterhead can rotate freely, without coming into contact with the tube or pipe, when first starting tool.

Tube Weasel with air clamp

1. With air connected, turn toggle switch to the right to relax the clamps for the mandrel.
2. Insert the clamp rib portion of the tool into the end of tube or pipe.
3. While positioning the cutting blade away, at least 1/4" from the work, turn the toggle switch to the left.
4. Be sure cutterhead can rotate freely, without coming into contact with the tube or pipe, when first starting tool.

Power connection

1. Use only the air hose supplied with the tool.
2. This hose has a valved quick connect coupler which will hold back all air that is in the supply hose.
 - a. This feature allows the air supply to be safely removed from the tool at any time.
3. Connect the air supply.
4. For electric tools, be sure to connect the tool to a properly grounded outlet and, if using an extension cord, be sure that the extension cord is properly sized for the application. Failure to properly size an extension cord can result in personal injury and/or harm to the electric motor.

Operation of tool

1. Engage the throttle lever (or switch) this will activate the tool.
2. Using the feed wrench, advance the cutting blade towards the work.
3. Use a steady constant feed, creating a continuous chip.
 - a. Using a constant feed allows the heat generated by the cutting action to be removed by the chip. Heat buildup is a primary failure mode for cutting tools.
 - b. Engaging a rotating cutting blade with the work surface without feed (rubbing), creates excessive heat buildup.
4. When the desired end prep is accomplished, quickly reverse the feed wrench by reversing the directional pawl, and retract the cutting blade from the work.
5. Release the throttle lever (or switch). This will stop the tool.
6. Disconnect the power supply.
7. Release the clamp wrench and remove the tool from the work.

Tool limits

Size limits

1. Minimum inside diameter is 1-1/4" with standard mandrel.
 - a. Minimum inside diameter is 3/4" with optional mandrel.
2. Maximum outside diameter is 3"
3. Maximum wall thickness, 5/8" with standard tooling.
4. Extremely thin walls may require special tooling to prevent deformation of diameter.

Material limits

1. Difficult materials may require the following to maximize blade life.
 - a. Lubrication such as cutting oils, soluble oils, soapy water, plain water, etc.
 - b. Slow the speed of air motor, using a valve on the air supply.
 - c. Multiple cutting blades to balance the tool.
 - d. Vary feed rate, often times difficult materials respond to a heavy feed.

Maintenance and servicing

Regular cleaning and lubrication

1. Hose whip, filter and lubricator
 - a. Inspect filter element by removing nut from end of filter assembly.
 - b. If the filter is dirty or plugged, replace it using filter repair kit.
 - c. Remove filler plug from lubricator and be sure the adjusting screw is set half way between open and closed.
 - d. Fill lubricator, use a light weight air tool motor oil (s.a.e. 10).
 - e. For electric tools, inspect the cord for damage. If any damage is noted, the cord should be replaced.
2. Gear housing grease
 - a. Grease gear head after every two hundred hours of use.
 - b. Use grease NLGI # 2.
3. Lubrication for storage
 - a. Before putting the tool away, fill air inlet with a liberal amount of air tool oil and actuate motor momentarily. This will distribute oil to internal motor parts, preventing rust build up.
 - b. Wipe tool down using soft cloth removing all dirt, grease, oil and chips.
 - c. Lightly coat tool with rust preventive.

User service

1. A qualified air tool technician can provide all service for this machine.
 - a. Factory service or assistance is always available, contact us at the numbers below.
 - b. Complete drawings and parts lists are provided in section six.
 - i. No special tools are required to perform complete service.

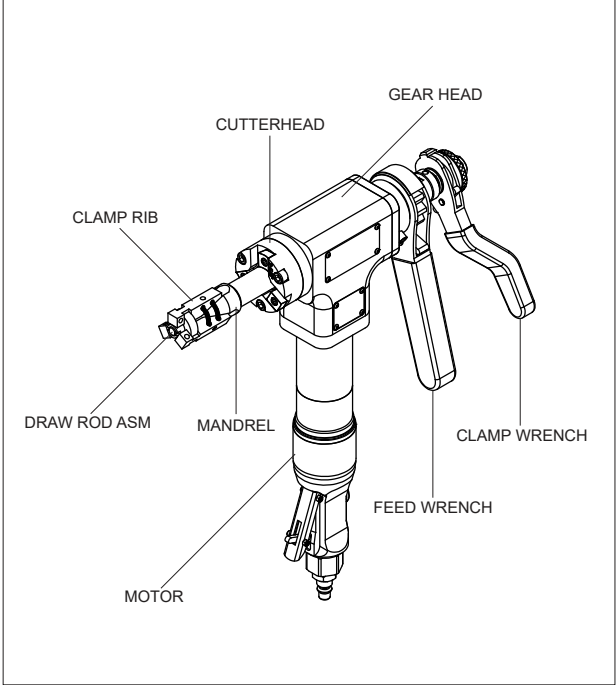
Servicing by manufacturer or agent

1. Factory service, return the tool to the Factory address listed below.
2. Agent service, if applicable return tool to the Agent listed below.
 - a. If unsure of Agent contact the factory.

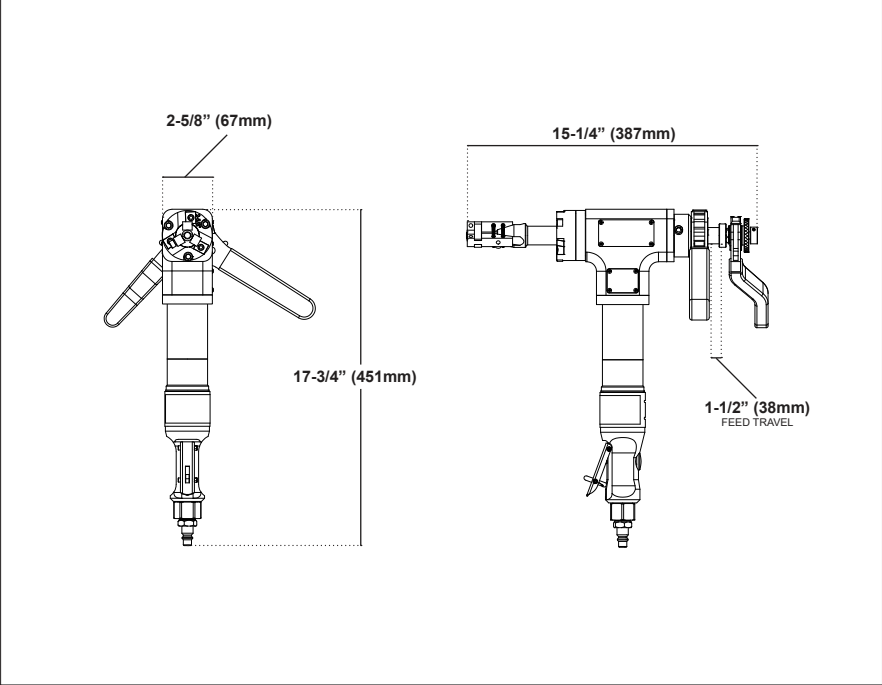
ASSOCIATED PARTS

BLADES: *G-SERIES*
CLAMP RIBS: *G-RIBS & H-RIBS*
DRIVE OPTIONS: *PNEUMATIC, ELECTRIC & BATTERY*

COMPONENT IDENTIFICATION



DIMENSIONS



CLAMP RIB CHART

MANDREL	CLAMP RIB ASM	I.D. RANGE (IN)	I.D. RANGE (MM)
H-241(MANDREL, 3/4)	G-03A	0.750 - 0.905	19.1 - 22.9
	G-04	0.875 - 1.030	22.3 - 26.1
	G-05	1.000 - 1.155	25.4 - 29.3
	G-06	1.125 - 1.280	28.6 - 32.5
	G-07	1.250 - 1.405	31.8 - 35.6
	G-08	1.375 - 1.530	35.0 - 38.8
	G-09	1.500 - 1.655	38.1 - 42.0
	G-10	1.625 - 1.780	41.3 - 45.2
	G-11	1.750 - 1.905	44.5 - 48.3
	G-12	1.875 - 2.030	47.7 - 51.5
H-220 (MANDREL, 1)	G-13	2.000 - 2.155	51.0 - 54.7
	H-00	1.000 - 1.300	25.4 - 33.0
H-21 (MANDREL, 1-1/4)	H-01	1.250 - 1.600	31.8 - 40.6
	H-02	1.525 - 1.925	38.8 - 48.9
	H-03	1.850 - 2.250	47.0 - 57.1
	H-04	2.175 - 2.575	55.3 - 65.4
	H-02 & H-05	2.500 - 2.900	63.5 - 73.6

POWER SPECS

	PN	ELEC	BATT
OUTPUT POWER	1.07 HP	950 W	1100 W
POWER DRAW	90 PSI	120 V	120 V (CHARGER)
VOLUME	35 CFM	≥ 15 AMP	18 V - 5.2 AH
OUTPUT POWER	787 W	950 W	1100 W
POWER DRAW	6.2 BAR	230 V	230 V (CHARGER)
VOLUME	990 LT/MIN	≥ 10 AMP	18 V - 5.2 AH
CUTTERHEAD SPEED	114 RPM	14-58 RPM	43 RPM

HANDLING SPECS

	PN	ELEC	BATT
WORK WEIGHT (lb)	20	22	23
SHIP WEIGHT (lb)	50	56	60
SHIP DIMS (in)	7 X 21 X 25	8 X 23 X 26	8 X 23 X 26
WORK WEIGHT (kg)	9	10	10
SHIP WEIGHT (kg)	23	25	27
SHIP DIMS (mm)	127 X 457 X 559	203 X 584 X 660	203 X 584 X 660

PACKAGING ASSEMBLIES

PART #: CC04-W-01

DESCRIPTION: CASE ASM, WMH/TW (PN)

ITEM #	QTY	PART #	DESCRIPTION
1	1	CC04	CASE, CC04
2	1	FP-CC04-02	FOAM, WMH/TW (PN)
3	1	FP-CC04-01	FOAM, TOP
4	1	CRLB-W-01	LBL, CLAMP RIB (WMH/TW)
5	1	MLB.02	LBL, MILLHOG
6	1	FLB.01	LBL, FLAG

PART #: CC03-W-01 **NON-CURRENT MODEL (USE CC04-W-01)**

DESCRIPTION: CASE ASM, WMH/TW (PN)

ITEM #	QTY	PART #	DESCRIPTION
1	1	CC03	CASE, CC03
2	1	FP-CC03-02	FOAM, WMH/TW (PN)
3	1	FP-CC03-01	FOAM, TOP
4	1	CRLB-W-01	LBL, CLAMP RIB (WMH/TW)
5	1	MLB.02	LBL, MILLHOG
6	1	FLB.01	LBL, FLAG

PART #: CC03-W-02

DESCRIPTION: CASE ASM, WMH/TW (ELEC)

ITEM #	QTY	PART #	DESCRIPTION
1	1	CC03	CASE, CC03
2	1	FP-CC03-03	FOAM, WMH/TW (ELEC)
3	1	FP-CC03-01	FOAM, TOP
4	1	CRLB-W-01	LBL, CLAMP RIB (WMH/TW)
5	1	MLB.02	LBL, MILLHOG
6	1	FLB.01	LBL, FLAG

PART #: CC14-MK-01

DESCRIPTION: CASE ASM, MNDL KIT

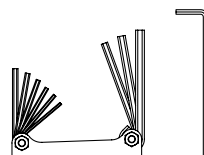
ITEM #	QTY	PART #	DESCRIPTION
1	1	CC14	CASE, CC14
2	1	FP-CC14-04	FOAM, MNDL KIT
3	1	FP-CC14-01	FOAM, TOP

HAND TOOL SETS

PART #: 300-01

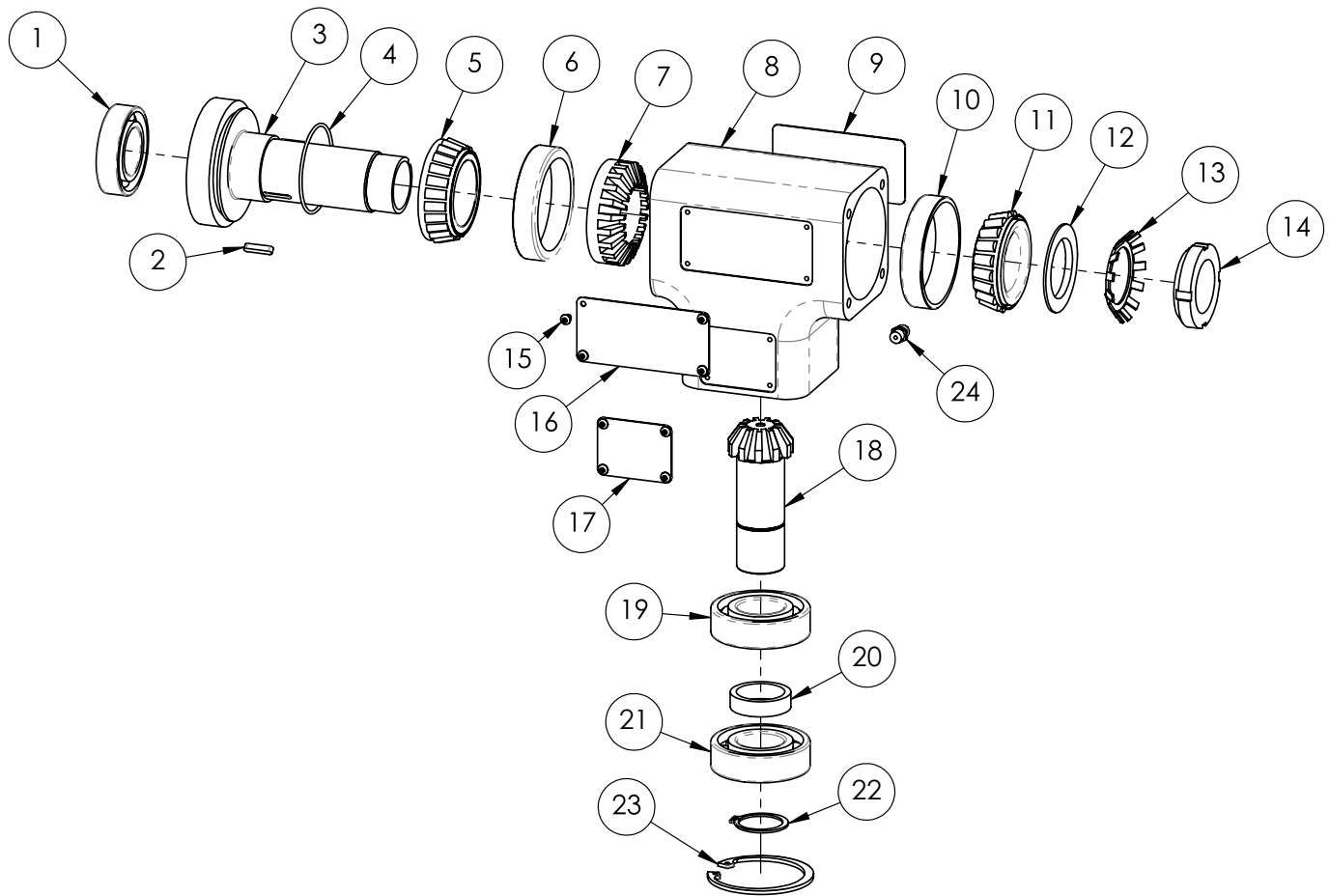
DESCRIPTION: HAND TOOL SET, 01

ITEM #	QTY	PART #	DESCRIPTION
1	1	285-0516	AWS (5/64 - 1/4)
2	1	280-0808	HEX KEY (1/8)



PART #: TW-201-01

DESCRIPTION: GEAR HEAD ASM, TW



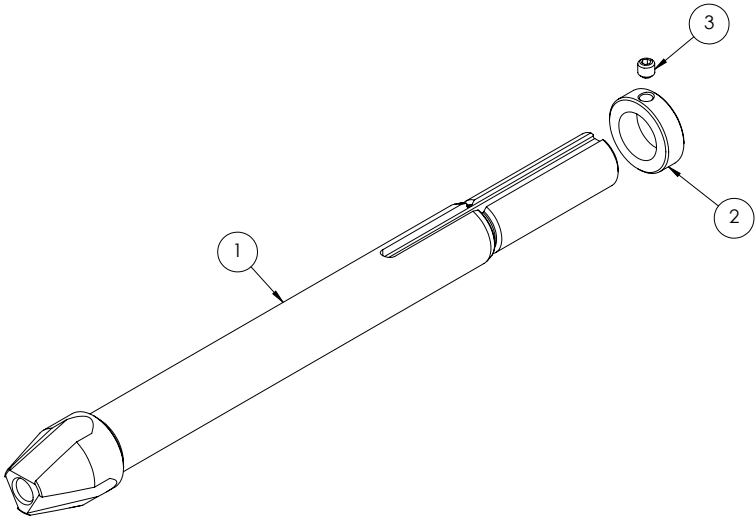
PART #: TW-201-01**DESCRIPTION:** GEAR HEAD ASM, TW

ITEM #	QTY	PART #	DESCRIPTION
1	1	311-008	BALL BEARING
2	2	G-44	KEY
3	1	H-19	DRIVE SHAFT
4	1	230-222	O-RING
5	1	313-009A	BEARING CONE
6	1	313-009B	BEARING CUP
5 & 6	1	313-009	TAPERED ROLLER BEARING ASM
7	1	H-32	DRIVEN GEAR
8	1	TW-33	HOUSING
9	1	NP-100	NAME PLATE (ESCO)
10	1	313-008B	BEARING CUP
11	1	313-008A	BEARING CONE
10 & 11	1	313-008	TAPERED ROLLER BEARING ASM
12	1	H-35A	RADIUS WASHER
13	1	H-36	LOCK WASHER
14	1	H-37	LOCK NUT
15	12	111-0803	BHCS (4-40 X 3/16)
16	1	NP-150	NAME PLATE (TWMH)
17	1	NP-110	NAME PLATE (WARNING)
18	1	H-41	DRIVE GEAR
19	1	311-019	BALL BEARING
20	1	H-43	BEARING SPACER
21	1	311-021	BALL BEARING
22	1	210-098	EXTERNAL RETAINING RING
23	1	200-206	INTERNAL RETAINING RING
24	1	18-01	GREASE FITTING

PART #: H-21A
DESCRIPTION: MANDREL ASM, 1-1/4

DRAW ROD ASM: H-12-01
CLAMP WRENCH ASM: H-203-01
RIB SERIES: H-RIBS

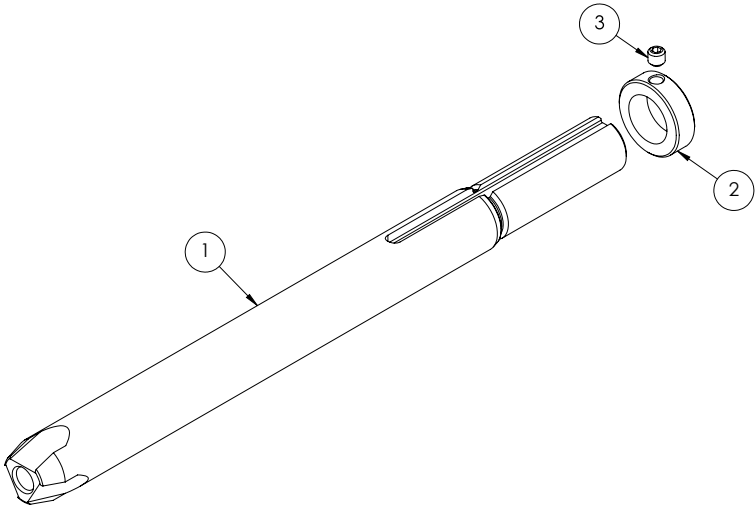
ITEM #	QTY	PART #	DESCRIPTION
1	1	H-21	MANDREL, 1-1/4
2	1	H-57A	FEED STOP COLLAR
3	1	130-2004	SHSS (1/4-20 X 1/4)



PART #: H-220A
DESCRIPTION: MANDREL ASM, 1

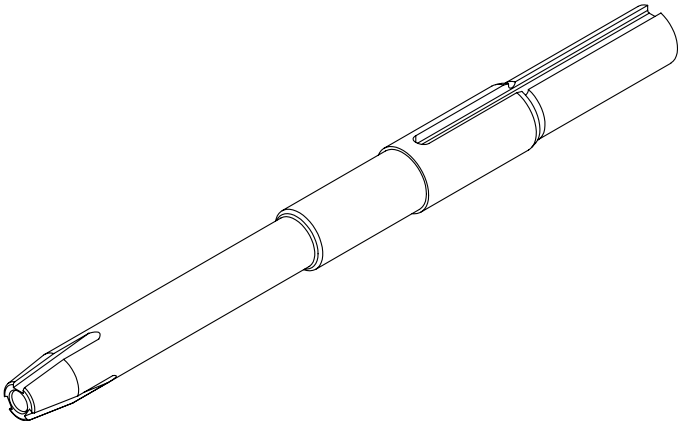
DRAW ROD ASM: H-12A-01
CLAMP WRENCH ASM: H-203-01
RIB SERIES: H-RIBS

ITEM #	QTY	PART #	DESCRIPTION
1	1	H-220	MANDREL, 1
2	1	H-57A	FEED STOP COLLAR
3	1	130-2004	SHSS (1/4-20 X 1/4)



PART #: H-241
DESCRIPTION: MANDREL, 3/4

DRAW ROD ASM: MG-17-01
CLAMP WRENCH ASM: H-203-02
RIB SERIES: G-RIBS

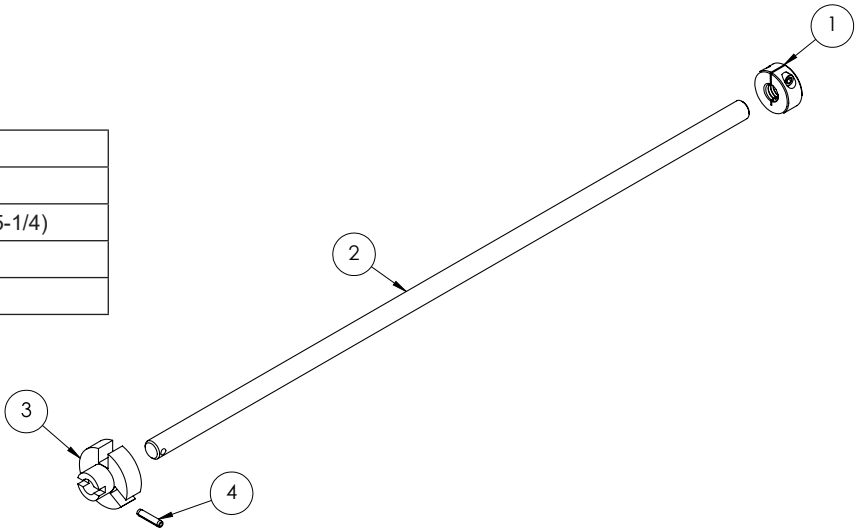


PART #: H-12-01

DESCRIPTION: DRAW ROD ASM, 1-1/4

ITEM #	QTY	PART #	DESCRIPTION
1*	1	H-56A	STOP COLLAR ASM
2	1	H-51	DRAW ROD (3/8-16 X 15-1/4)
3	1	H-12	ACTUATOR, 1-1/4
4	1	134-4309	SSP (1/8 X 9/16)

*REPLACEMENT SCREW FOR H-56A STOP COLLAR ASM IS 110-1206 - SHCS (6-32 X 3/8)

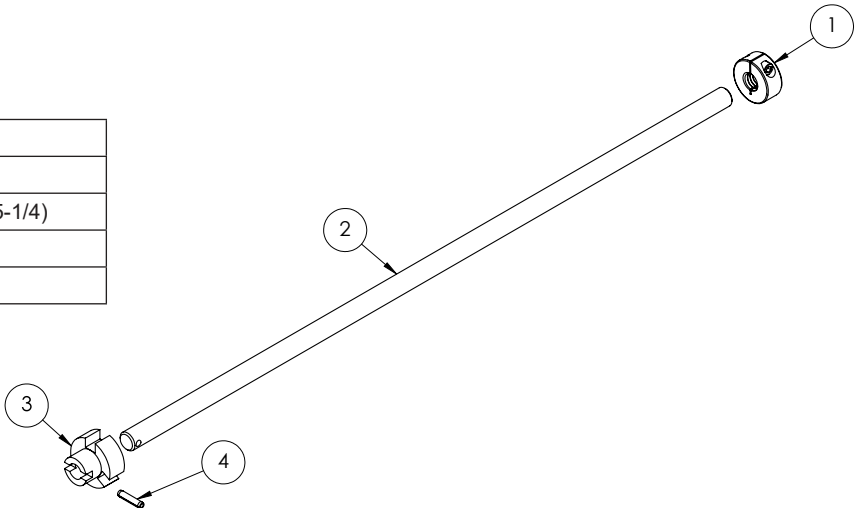


PART #: H-12A-01

DESCRIPTION: DRAW ROD ASM, 1

ITEM #	QTY	PART #	DESCRIPTION
1*	1	H-56A	STOP COLLAR ASM
2	1	H-51	DRAW ROD (3/8-16 X 15-1/4)
3	1	H-12A	ACTUATOR, 1
4	1	134-4309	SSP (1/8 X 9/16)

*REPLACEMENT SCREW FOR H-56A STOP COLLAR ASM IS 110-1206 - SHCS (6-32 X 3/8)



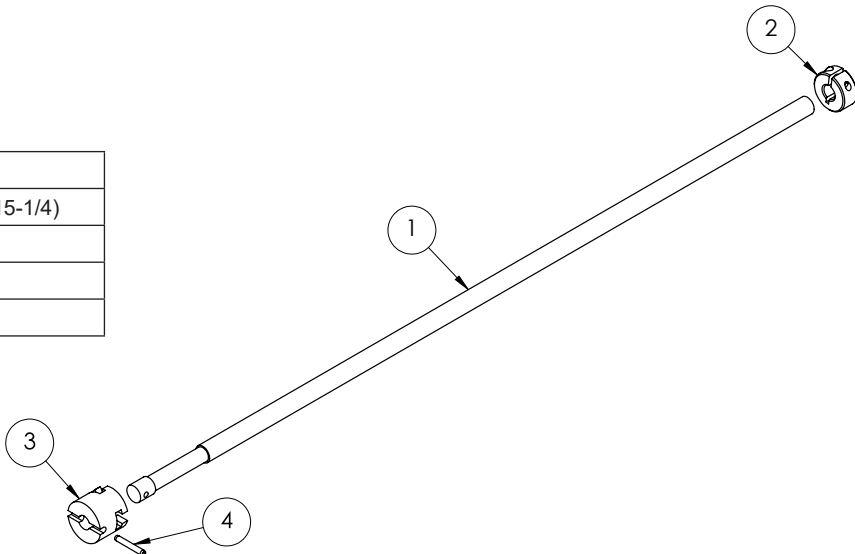
PART #: MG-17-01

DESCRIPTION: DRAW ROD ASM, 3/4

PRICE: \$ 145.00

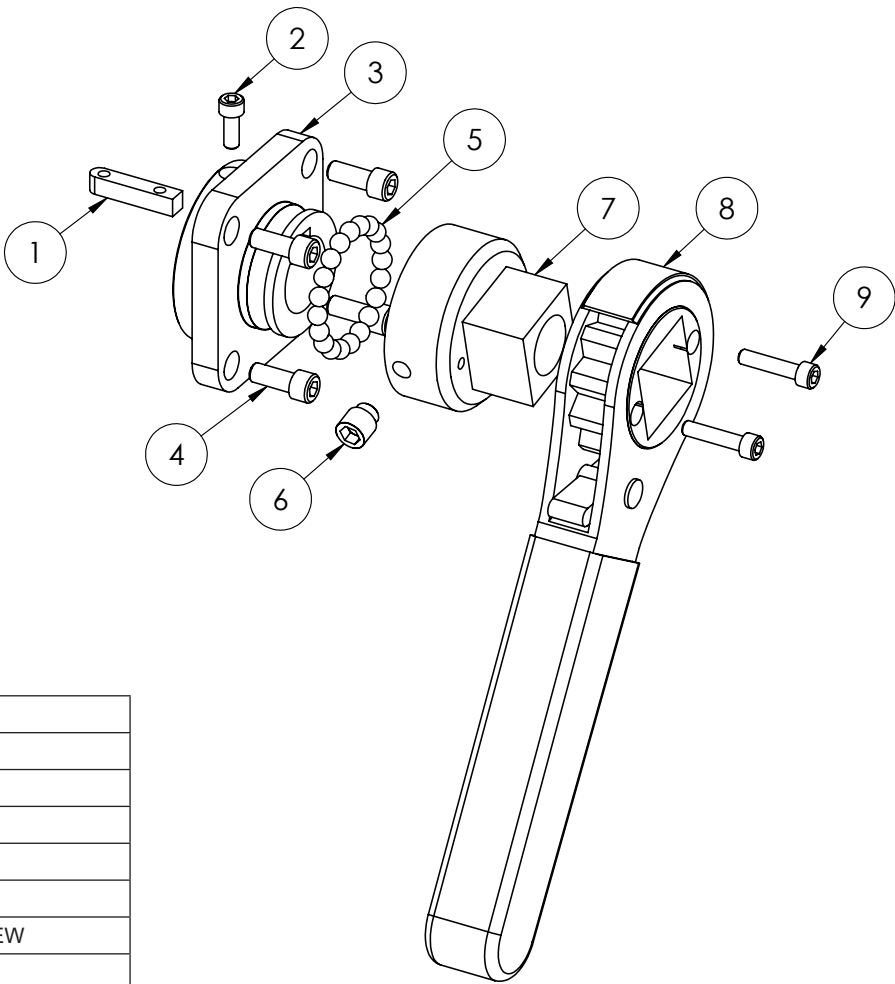
ITEM #	QTY	PART #	DESCRIPTION
1	1	H-247	DRAW ROD (5/16-18 X 15-1/4)
2*	1	G-65	STOP COLLAR ASM
3	1	G-17	ACTUATOR, 3/4
4	1	134-4210	SSP (3/32 X 5/8)

*REPLACEMENT SCREW FOR G-65 STOP COLLAR ASM IS 110-0806 - SHCS (4-40 X 3/8)



PART #: H-202-01

DESCRIPTION: FEED ASM



ITEM #	QTY	PART #	DESCRIPTION
1	1	H-25A	KEY
2	1	110-1608	SHCS (10-24 X 1/2)
3	1	H-38	TORQUE ACCEPTOR
4	4	110-2010	SHCS (1/4-20 X 5/8)
5	20	H-49	FEED KNOB BALL
6	1	H-50	BALL RETAINER SCREW
7*	1	H-28	FEED KNOB ASM
8*	1	H-39	WRENCH ASM
9	2	110-1614	SHCS (10-24 X 7/8)

* PART #: H-28
DESCRIPTION: FEED KNOB ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	H-28A	FEED KNOB
2	1	230-218	O-RING

Exploded view diagram of the FEED KNOB ASM (H-28). It shows a square feed knob (1) and an O-ring (2) that fits around its base.

* PART #: H-39
DESCRIPTION: WRENCH ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	H-39B	WRENCH
2	1	H-39A	GRIP

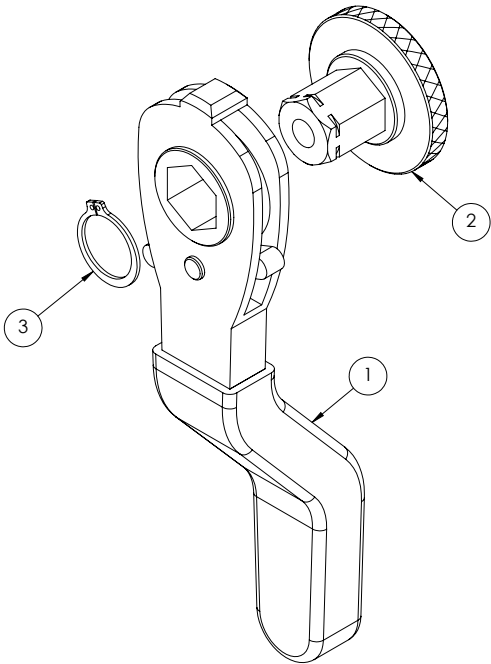
Exploded view diagram of the WRENCH ASM (H-39). It shows a wrench head (1) and a handle/grip (2) that fits into the head.

PART #: H-203-01

DESCRIPTION: CLAMP WRENCH ASM

MANDREL: H-21
DRAW ROD ASM: H-12-01 & H-12A-01

ITEM #	QTY	PART #	DESCRIPTION
1*	1	H-54	WRENCH ASM
2	1	H-53A	DRAW ROD NUT (3/8-16)
3	1	210-075	EXTERNAL RETAINING RING



* **PART #: H-54**
DESCRIPTION: WRENCH ASM

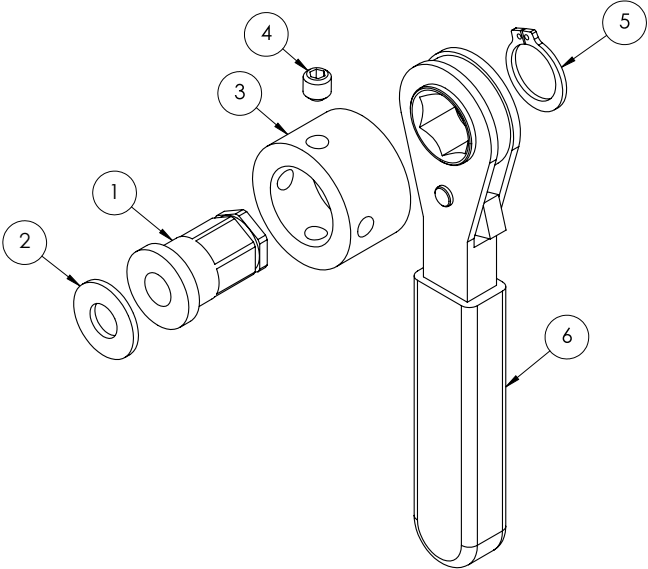
ITEM #	QTY	PART #	DESCRIPTION
1	1	H-54A	WRENCH
2	1	H-54B	GRIP

PART #: H-203-02

DESCRIPTION: CLAMP WRENCH ASM (3/4M)

MANDREL: H-241
DRAW ROD ASM: MG-17-01

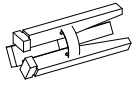
ITEM #	QTY	PART #	DESCRIPTION
1	1	H-244	DRAW ROD NUT (5/16-18)
2	1	165-032	WASHER
3	1	H-245	FEED STOP HOUSING
4	1	130-2004	SHSS (1/4-20 X 1/4)
5	1	211-059	EXTERNAL RETAINING RING
6*	1	G-64	WRENCH ASM



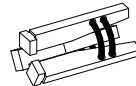
* **PART #: G-64**
DESCRIPTION: WRENCH ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	G-64B	WRENCH
2	1	G-64A	GRIP

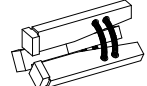
G-RIB ASSEMBLIES

PART #: G-03A**DESCRIPTION:** CLAMP RIB ASM (.750-.905)

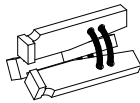
QTY	PART #	DESCRIPTION
3	G-03A_PART	CLAMP RIB
1	G-14F	BAND (G-02A - G-03A)

PART #: G-04**DESCRIPTION:** CLAMP RIB ASM (.875-1.030)

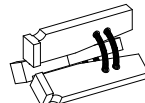
QTY	PART #	DESCRIPTION
3	G-04_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

PART #: G-05**DESCRIPTION:** CLAMP RIB ASM (1.000-1.155)

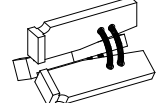
QTY	PART #	DESCRIPTION
3	G-05_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

PART #: G-06**DESCRIPTION:** CLAMP RIB ASM (1.125-1.280)

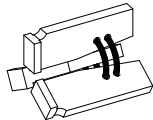
QTY	PART #	DESCRIPTION
3	G-06_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

PART #: G-07**DESCRIPTION:** CLAMP RIB ASM (1.250-1.450)

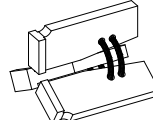
QTY	PART #	DESCRIPTION
3	G-07_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

PART #: G-08**DESCRIPTION:** CLAMP RIB ASM (1.375-1.530)

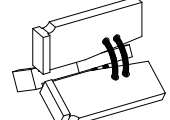
QTY	PART #	DESCRIPTION
3	G-08_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

PART #: G-09**DESCRIPTION:** CLAMP RIB ASM (1.500-1.655)

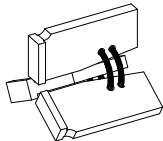
QTY	PART #	DESCRIPTION
3	G-09_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

PART #: G-10**DESCRIPTION:** CLAMP RIB ASM (1.625-1.780)

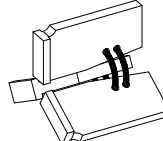
QTY	PART #	DESCRIPTION
3	G-10_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

PART #: G-11**DESCRIPTION:** CLAMP RIB ASM (1.750-1.905)

QTY	PART #	DESCRIPTION
3	G-11_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

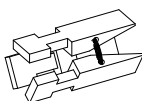
PART #: G-12**DESCRIPTION:** CLAMP RIB ASM (1.875-2.030)

QTY	PART #	DESCRIPTION
3	G-12_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

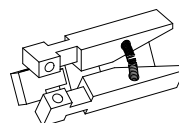
PART #: G-13**DESCRIPTION:** CLAMP RIB ASM (2.000-2.155)

QTY	PART #	DESCRIPTION
3	G-13_PART	CLAMP RIB
2	G-14	SPRING (G-04 - G-13)

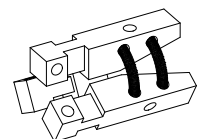
H-RIB/PAD ASSEMBLIES

PART #: H-00**DESCRIPTION:** CLAMP RIB ASM (1.000-1.250)NOTE: ONLY USED ON
H-Z20 MANDREL, 1

QTY	PART #	DESCRIPTION
3	H-00_PART	CLAMP RIB
1	H-14A	SPRING (H-00)

PART #: H-01**DESCRIPTION:** CLAMP RIB ASM (1.250-1.600)

QTY	PART #	DESCRIPTION
3	H-01_PART	CLAMP RIB
1	H-14B	SPRING (H-01 - H-04)

PART #: H-02**DESCRIPTION:** CLAMP RIB ASM (1.525-1.925)

QTY	PART #	DESCRIPTION
3	H-02_PART	CLAMP RIB
2	H-14B	SPRING (H-01 - H-04)

PART #: H-03
DESCRIPTION: CLAMP RIB ASM (1.850-2.250)

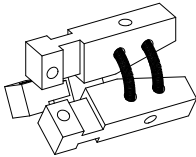


Table with 3 columns: QTY, PART #, DESCRIPTION. Rows include H-03_PART (CLAMP RIB) and H-14B (SPRING).

PART #: H-04
DESCRIPTION: CLAMP RIB ASM (2.175-2.575)

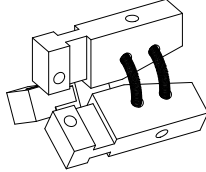


Table with 3 columns: QTY, PART #, DESCRIPTION. Rows include H-04_PART (CLAMP RIB) and H-14B (SPRING).

PART #: H-05
DESCRIPTION: CLAMP PAD SET

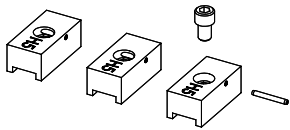


Table with 3 columns: QTY, PART #, DESCRIPTION. Rows include H-00-05 (CLAMP PAD ASM), 134-4212 (SSP), and 110-2006 (SHCS).

RIB KITS

PART #: GRK-03-13
DESCRIPTION: G-RIB KIT (G-03A - G-13)

Table with 4 columns: ITEM #, QTY, PART #, DESCRIPTION. Lists 14 items including various G-RIB ASM parts, springs, bands, and a case.

PART #: HRK-01-05
DESCRIPTION: H-RIB KIT (H-01 - H-05)

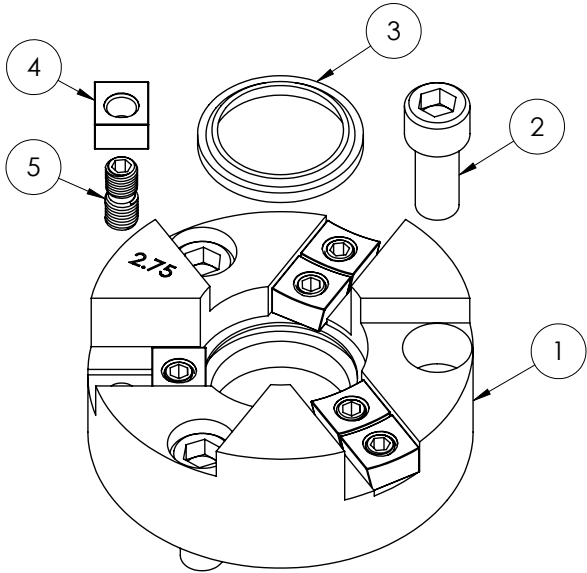
Table with 4 columns: ITEM #, QTY, PART #, DESCRIPTION. Lists 5 items including H-RIB ASM parts and a clamp pad set.

PART #: TW-24

DESCRIPTION: CUTTERHEAD ASM, 2-3/4

MANDREL: H-21 & H-220

ITEM #	QTY	PART #	DESCRIPTION
1	1	TW-24_PART	CUTTERHEAD, 2-3/4
2	3	110-2212	SHCS (5/16-18 X 3/4)
3	1	H-15	SEAL
4	3	G-22	BLADE LOCK, 3/8
5	3	G-21	COMBINATION SCREW

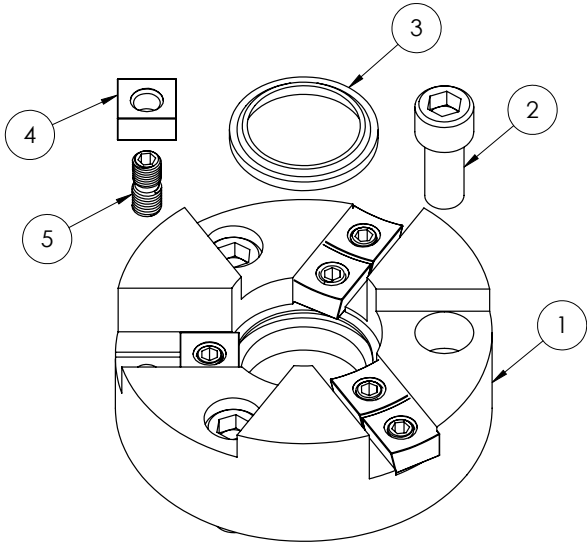


PART #: TW-21

DESCRIPTION: CUTTERHEAD ASM, 3

MANDREL: H-21 & H-220

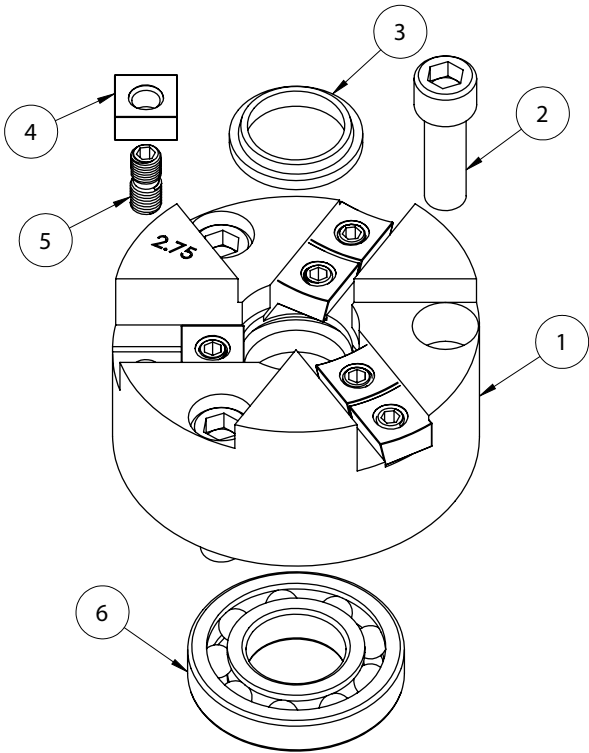
ITEM #	QTY	PART #	DESCRIPTION
1	1	TW-21_PART	CUTTERHEAD, 3
2	3	110-2212	SHCS (5/16-18 X 3/4)
3	1	H-15	SEAL
4	6	TW-22B	BLADE LOCK, 1/2
5	6	G-21	COMBINATION SCREW



PART #: TW-242
DESCRIPTION: CUTTERHEAD ASM, 2-3/4 (3/4M)

MANDREL: H-241

Table with 4 columns: ITEM #, QTY, PART #, DESCRIPTION. It lists 6 items including the cutterhead, shims, seal, blade locks, combination screw, and ball bearing.



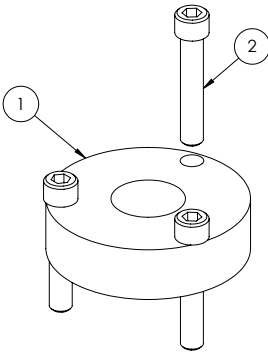
CUTTERHEAD SPACERS

MANDREL: H-21 & H-220

NOTE: SCREWS THAT MOUNT CUTTERHEADS TO THE TOOL WILL NEED TO BE REPLACED BY THE SCREWS THAT COME WITH SPACER ASSEMBLIES, WHILE THE SPACER IS BEING USED.

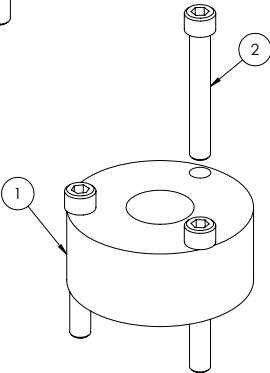
PART #: TW-21A
DESCRIPTION: SPACER ASM, 5/8

Table with 4 columns: ITEM #, QTY, PART #, DESCRIPTION. It lists 2 items for the TW-21A spacer assembly: a spacer and shims.



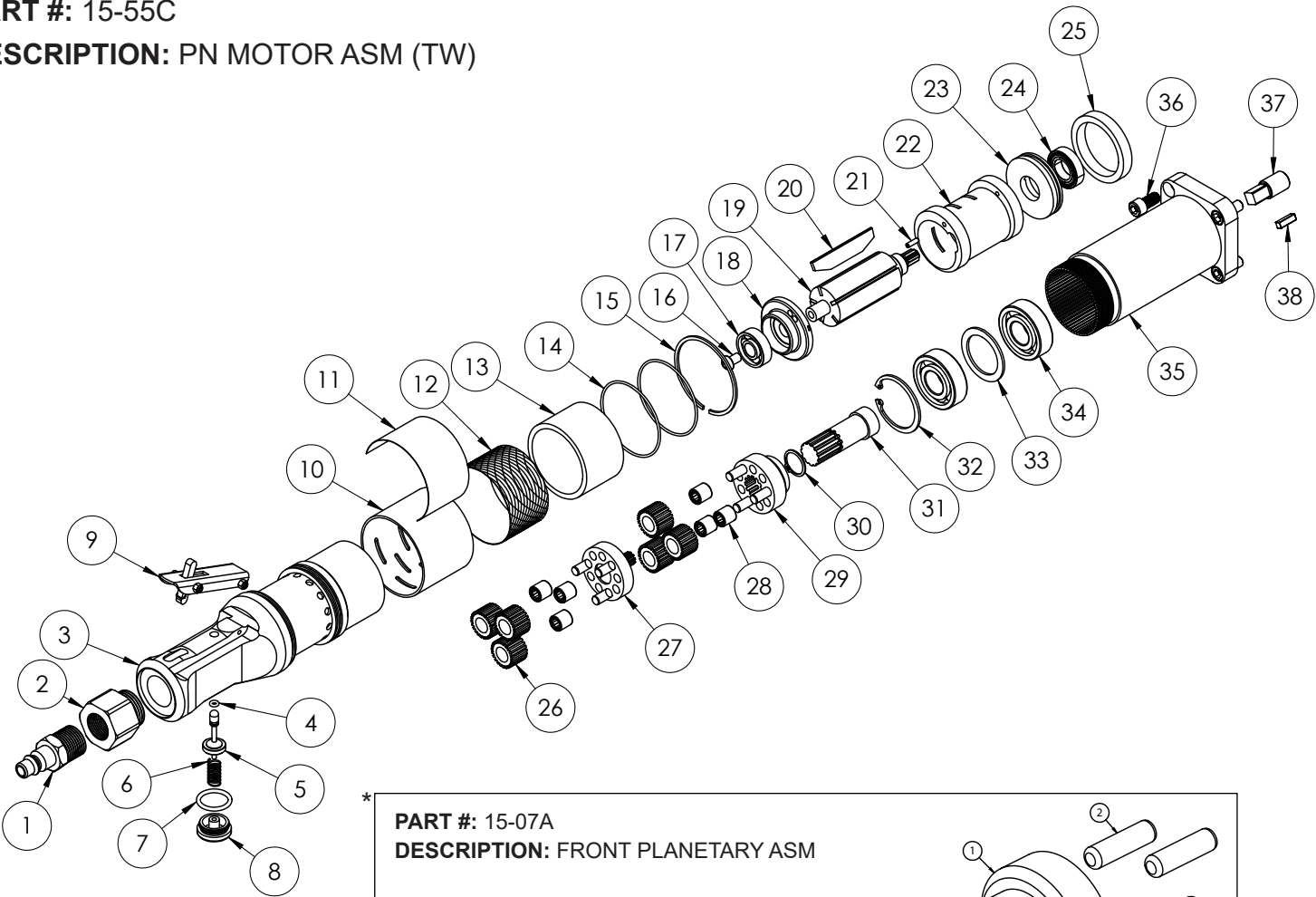
PART #: TW-21B
DESCRIPTION: SPACER ASM, 1
PRICE: \$ 96.00

Table with 4 columns: ITEM #, QTY, PART #, DESCRIPTION. It lists 2 items for the TW-21B spacer assembly: a spacer and shims.



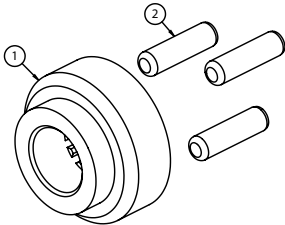
PART #: 15-55C

DESCRIPTION: PN MOTOR ASM (TW)



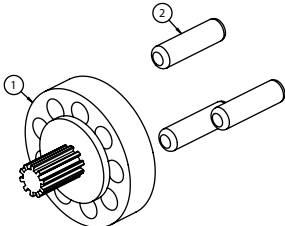
PART #: 15-07A
DESCRIPTION: FRONT PLANETARY ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	15-07	FRONT PLANETARY HOUSING
2	3	133-4814	DP (1/4 X 7/8)



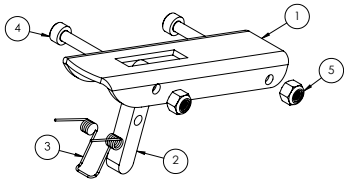
PART #: 15-11A
DESCRIPTION: REAR PLANETARY ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	15-11	REAR PLANETARY HOUSING
2	3	133-4814	DP (1/4 X 7/8)



PART #: 15-21A
DESCRIPTION: THROTTLE LEVER ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	15-21	THROTTLE LEVER
2	1	15-23	SAFETY
3	1	15-22	SPRING
4	2	110-8125SS	SHCS (M3-0.5 X 22)
5	2	176-056SS	LOCK NUT (M3-0.5)



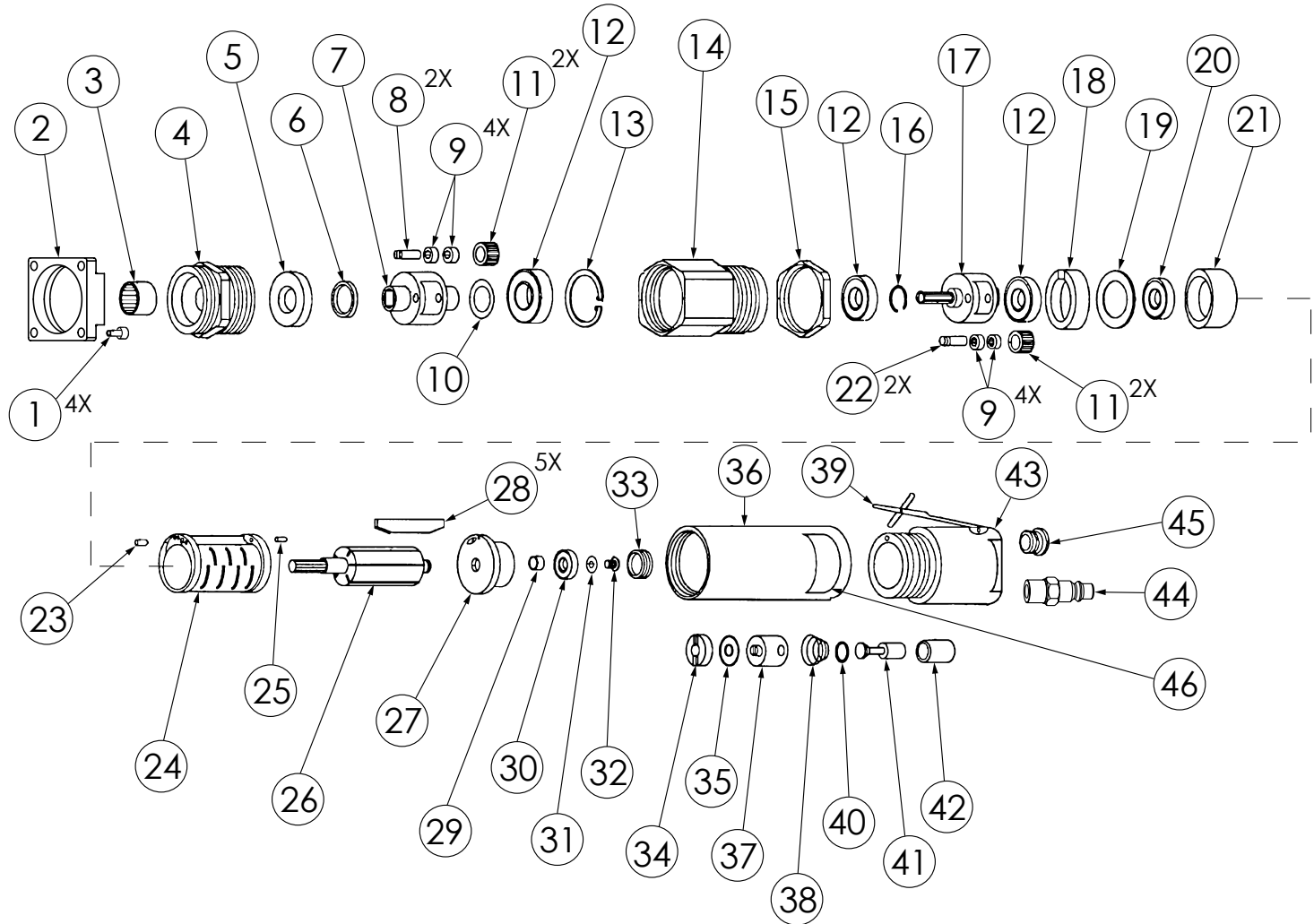
PART #: 15-55C**DESCRIPTION: PN MOTOR ASM (TW)**

ITEM #	QTY	PART #	DESCRIPTION
1	1	355-5052	NIPPLE (3/8 X 1/2 NPT)
2	1	15-24	FILTER ADAPTER
3	1	15-25	THROTTLE HOUSING
4	1	230-006	O-RING
5	1	15-31	VALVE
6	1	15-32	SPRING
7	1	230-016	O-RING
8	1	15-34	END CAP
9*	1	15-21A	THROTTLE LEVER ASM
10	1	15-48	SILENCER BODY
11	1	TWLB-01	LBL, WARNING
12	1	15-47	SCREEN
13	1	15-49	MUFFLER FELT
14	2	230-033	O-RING
15	1	15-46	SPLIT RING
16	1	115-6110SS	FBHCS (M6-1 X 10)
17	2	311-004	BALL BEARING
18	1	15-36	REAR END PLATE
19	1	15-40A	ROTOR
20	1	15-42	ROTOR BLADES (SET OF 5)
21	1	134-8110	SSP (3 X 10)
22	1	15-39	CYLINDER
23	1	15-43A	FRONT END PLATE
24	1	311-041	BALL BEARING
25	1	15-44	SPACER
26	6	15-10	SATELLITE GEAR
27*	1	15-11A	REAR PLANETARY ASM
28	6	316-004	RADIAL ROLLER BEARING
29*	1	15-07A	FRONT PLANETARY ASM
30	1	211-062	EXTERNAL RETAINING RING
31	1	15-03	OUTPUT SHAFT
32	1	200-150	INTERNAL RETAINING RING
33	1	15-02	WASHER
34	2	311-018	BALL BEARING
35	1	15-52	GEAR HOUSING (TW)
36	4	110-2210	SHCS (5/16-18 X 5/8)
37	1	TW-48	SHEAR COUPLER
38	1	H-47	KEY

PART #: 24-150

DESCRIPTION: PN MOTOR ASM (TW)

PRICE: OBSOLETE



* **PART #: 24-134A**
DESCRIPTION: THROTTLE LEVER ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	24-134	THROTTLE LEVER
2	1	24-145	RIVET

ITEM #	QTY	PART #	DESCRIPTION
1	4	110-2210	SHCS (5/16-18 X 5/8)
2	1	TW-58	MOTOR ADAPTER (TW)
3	1	316-006	RADIAL ROLLER BEARING
4	1	24-101	GEAR HOUSING
5	1	24-102	NYLON WASHER
6	1	24-103	SPACER

PART #: 24-150**DESCRIPTION:** PN MOTOR ASM (TW)**PRICE:** OBSOLETE

ITEM #	QTY	PART #	DESCRIPTION
7	1	24-107	TOP GEAR SPIDER
8	2	24-104	PIN
9	8	24-105	BEARING
10	1	24-108	WASHER
11	4	24-106	TOP GEAR
12	3	311-014	BALL BEARING
13	1	200-125	INTERNAL RETAINING RING
14	1	24-111	GEAR HOUSING
15	1	24-112	HOUSING END NUT
16	1	24-114	EXTERNAL RETAINING RING
17	1	24-115	LOWER GEAR SPIDER
18	1	24-118A	BEARING SLEEVE
19	1	24-119	WASHER
20	1	311-003	BALL BEARING
21	1	24-121	TOP PLATE
22	2	24-116	PIN
23	1	134-4206	SSP (3/32 X 3/8)
24	1	24-122	CYLINDER
25	1	134-4208	SSP (3/32 X 1/2)
26	1	24-123	ROTOR
27	1	24-124	END PLATE
28	1	24-127	ROTOR BLADES (SET OF 5)
29	1	24-128	BUSHING
30	1	311-001	BALL BEARING
31	1	167-008	TOOTH LOCK WASHER
32	1	24-131	SCREW
33	1	24-132	RETAINING NUT
34	1	24-138	RETAINING SCREW
35	1	24-139	RUBBER GASKET
36	1	24-133	MOTOR HOUSING
37	1	24-140A	AIR FLOW CONTROL
38	1	24-141	SPRING
39*	1	24-134A	THROTTLE LEVER ASM
40	1	230-007	O-RING
41	1	24-143	FLOW VALVE
42	1	24-144	VALVE BODY
43	1	24-135	THROTTLE HOUSING
44	1	355-5048	NIPPLE (3/8 X 1/4 NPT)
45	1	24-136	MUFFLER
46	1	TWLB-01	LBL, WARNING

ELECTRIC AND BATTERY MOTOR ASSEMBLIES

ELECTRIC MOTOR ASSEMBLIES ARE SOLD COMPLETE WITH THE GEAR DRIVE ASSEMBLY AND THE ELECTRIC MOTOR SUB ASSEMBLY, BUT CAN ALSO BE PURCHASED SEPERATELY. BOTH 110V AND 220V MOTORS ATTACH TO THE ELECTRIC MOTOR GEAR DRIVE ASSEMBLY.

TO PURCHASE ELECTRIC MOTOR ASSEMBLIES (MOTOR AND GEAR DRIVE TOGETHER) PLEASE USE THE FOLLOWING PART NUMBERS.

PART #: TWE-110B

DESCRIPTION: ELEC MOTOR ASM, 110 (TW)

PART #: TWE-220B

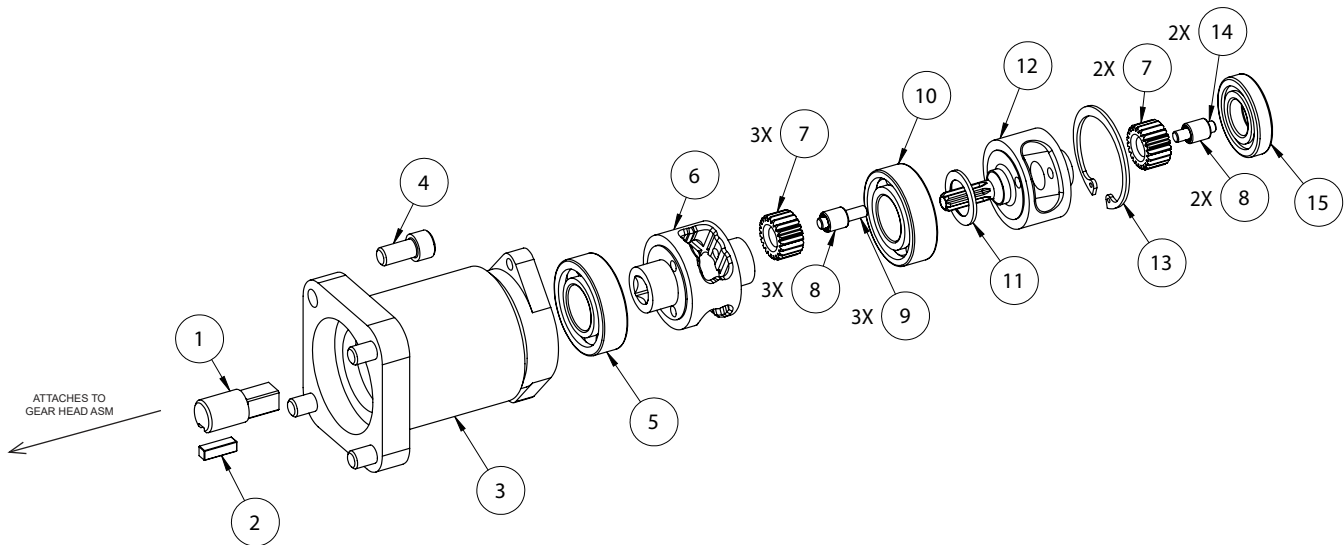
DESCRIPTION: ELEC MOTOR ASM, 220 (TW)

PART #: TWB-18A

DESCRIPTION: BATT MOTOR ASM, 18 (TW)

PART #: 18-02A-01

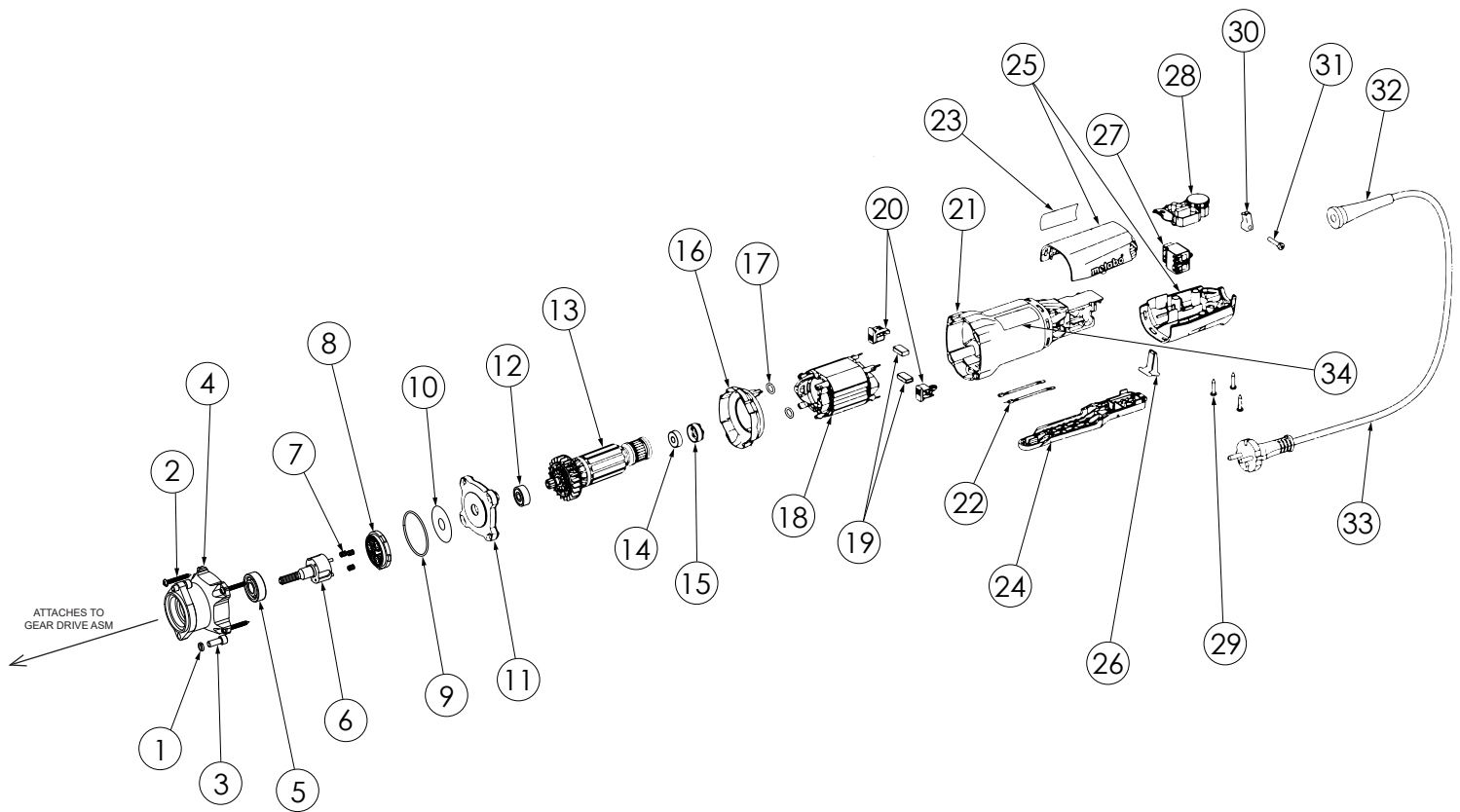
DESCRIPTION: GEAR DRIVE ASM (WMH/TW)



ITEM #	QTY	PART #	DESCRIPTION
1	1	H-48	SHEAR COUPLER
2	1	H-47	KEY
3	1	18-02A	GEAR HOUSING (WMH)
4	4	110-2210	SHCS (5/16-18 X 5/8)
5	1	311-007	BALL BEARING
6	1	18-04	GEAR SPIDER
7	5	18-07	GEAR
8	5	316-002	RADIAL ROLLER BEARING
9	3	133-4614	DP (3/16 X 7/8)
10	1	311-006	BALL BEARING
11	1	18-10	SPACER
12	1	18-11	GEAR SPIDER
13	1	200-165	INTERNAL RETAINING RING
14	1	133-4612	DP (3/16 X 3/4)
15	2	312-031	BALL BEARING

PART #: EM-110B

DESCRIPTION: ELEC MOTOR SUB ASM, 110



PART #: EM-110B**DESCRIPTION:** ELEC MOTOR SUB ASM, 110

ITEM #	QTY	PART #	DESCRIPTION
1	2	166-031	LOCK WASHER
2	4	EG-01	HOUSING SCREW
3	2	110-2010	SHCS (1/4-20 X 5/8)
4	1	EG-02	HOUSING
5	1	311-014	BALL BEARING
6	1	EG-03	PLANET CARRIER DRIVE
7	3	EG-05	NEEDLE ROLLER & CAGE
8	1	EG-06	GEAR SET
9	1	230-134	O-RING
10	1	EM-66	BUTTING WASHER
11	1	EM-19	BEARING FLANGE
12	1	311-002	BALL BEARING
13	1	EM-01-110	ARMATURE, 110
14	1	EM-11	BALL BEARING
15	1	EM-12	RUBBER BUSHING
16	1	EM-13A	BAFFLE
17	2	EM-98	O-RING
18	1	EM-02-110	FIELD COIL, 110
19	1	EM-27	CARBON BRUSHES (SET OF 2)
20	1	EM-26	BRUSH & HOLDER (SET OF 2)
21	1	EM-08A	MOTOR HOUSING
22	2	EM-07	STRAND COMPLETE
23	1	EM-35-110A	RATING PLATE
24	1	EM-09A	SHIFT LEVER COMPLETE
25	1	EM-15A	MOTOR CAP (2 PART)
26	1	EM-10A	PIVOTING SWITCH
27	1	EM-25	SWITCH
28	1	EM-24-110	ELECTRONIC UNIT, 110
29	3	EM-16	FILLISTER HEAD SCREW
30	1	EM-05	CABLE CLIP
31	1	EM-06	FILLISTER HEAD SCREW
32	1	EM-04A	CABLE SLEEVE
33	1	EM-03-110	CABLE W/ UL-CSA-PLUG, 110
34	1	EMLB-01	LBL, WARNING

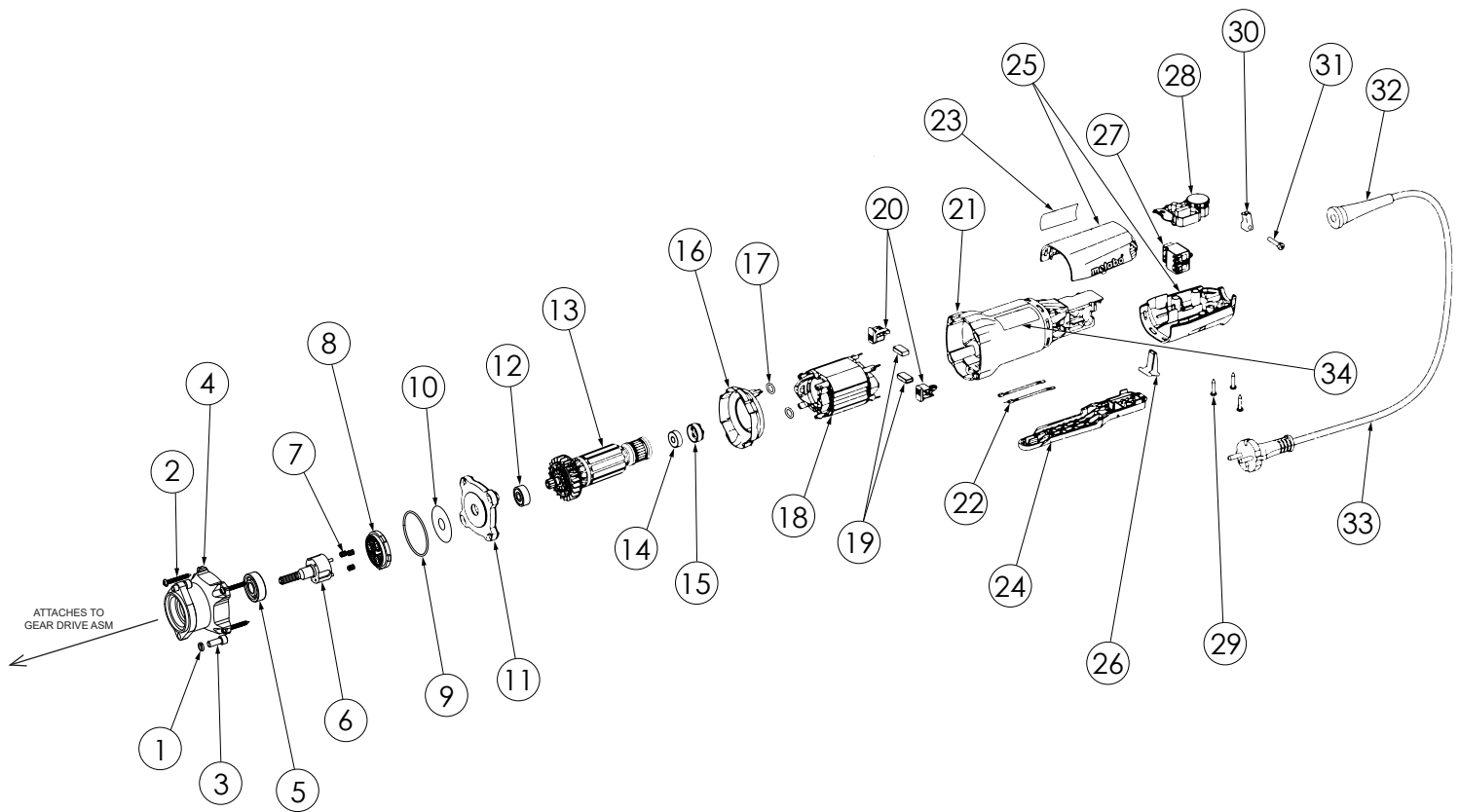
NOTE: FOR IN-HOUSE REPAIRS/RENTAL DAMAGES ONLY... PART # EM-110B-01 CAN BE USED TO REPLACE ITEMS (6 - 33) IN THE CASE THAT ITEMS (1 - 5) ARE IN STRONG WORKING ORDER. THIS ITEM CANNOT BE SHIPPED.

PART #: EM-110B-01

DESCRIPTION: ELEC MOTOR, 110 (REPLACE ONLY)

PART #: EM-220B

DESCRIPTION: ELEC MOTOR SUB ASM, 220



PART #: EM-220B**DESCRIPTION:** ELEC MOTOR SUB ASM, 220

ITEM #	QTY	PART #	DESCRIPTION
1	2	166-031	LOCK WASHER
2	4	EG-01	HOUSING SCREW
3	2	110-2010	SHCS (1/4-20 X 5/8)
4	1	EG-02	HOUSING
5	1	311-014	BALL BEARING
6	1	EG-03	PLANET CARRIER DRIVE
7	3	EG-05	NEEDLE ROLLER & CAGE
8	1	EG-06	GEAR SET
9	1	230-134	O-RING
10	1	EM-66	BUTTING WASHER
11	1	EM-19	BEARING FLANGE
12	1	311-002	BALL BEARING
13	1	EM-01-220	ARMATURE, 110
14	1	EM-11	BALL BEARING
15	1	EM-12	RUBBER BUSHING
16	1	EM-13A	BAFFLE
17	2	EM-98	O-RING
18	1	EM-02-220	FIELD COIL, 220
19	1	EM-27	CARBON BRUSHES (SET OF 2)
20	1	EM-26	BRUSH & HOLDER (SET OF 2)
21	1	EM-08A	MOTOR HOUSING
22	2	EM-07	STRAND COMPLETE
23	1	EM-35-220A	RATING PLATE
24	1	EM-09A	SHIFT LEVER COMPLETE
25	1	EM-15A	MOTOR CAP (2 PART)
26	1	EM-10A	PIVOTING SWITCH
27	1	EM-25	SWITCH
28	1	EM-24-220	ELECTRONIC UNIT, 220
29	3	EM-16	FILLISTER HEAD SCREW
30	1	EM-05	CABLE CLIP
31	1	EM-06	FILLISTER HEAD SCREW
32	1	EM-04A	CABLE SLEEVE
33	1	EM-03-220	CABLE W/ PLUG, 220
34	1	EMLB-01	LBL, WARNING

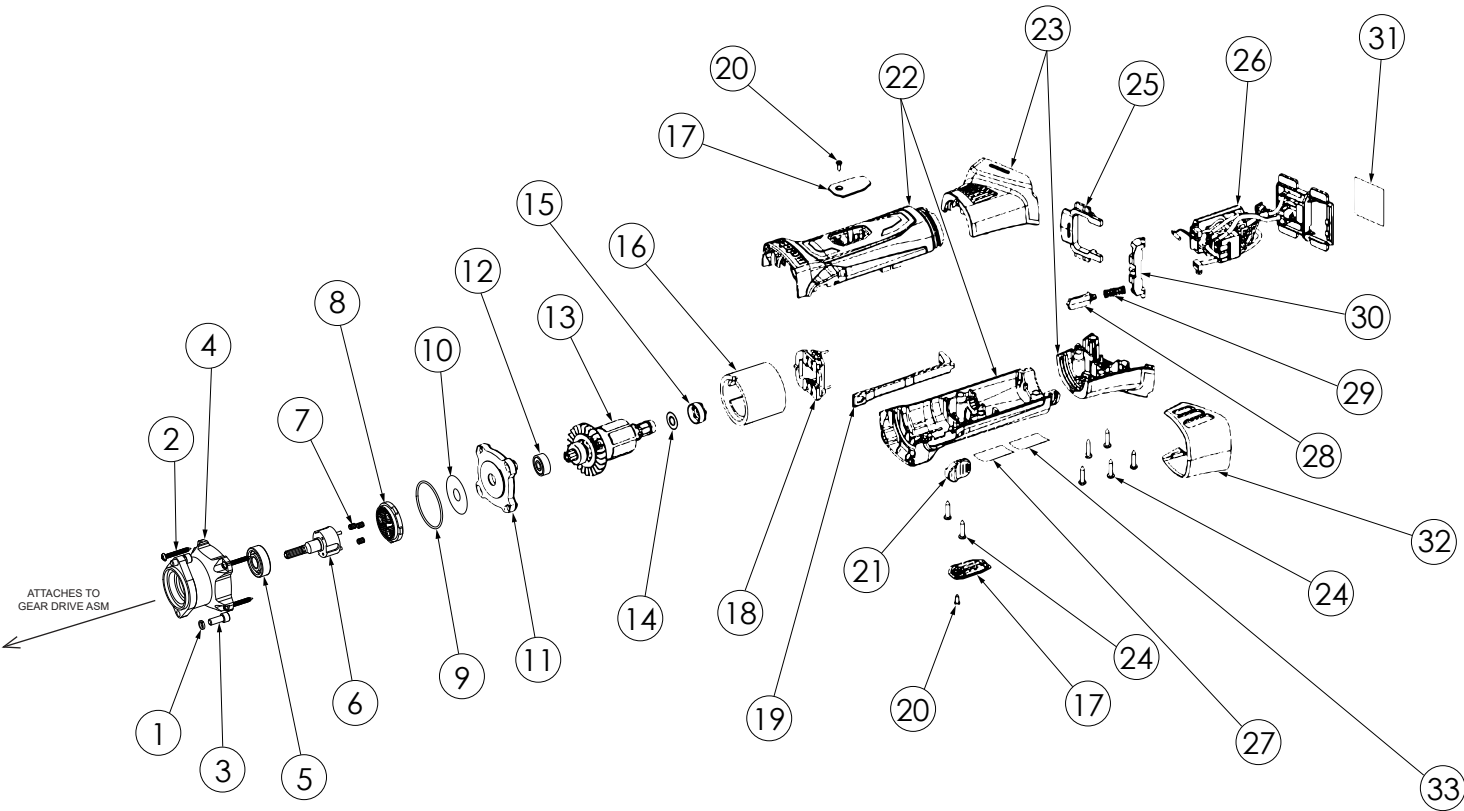
NOTE: FOR IN-HOUSE REPAIRS/RENTAL DAMAGES ONLY... PART # EM-220B-01 CAN BE USED TO REPLACE ITEMS (6 - 33) IN THE CASE THAT ITEMS (1 - 5) ARE IN STRONG WORKING ORDER. THIS ITEM CANNOT BE SHIPPED.

PART #: EM-220B-01

DESCRIPTION: ELEC MOTOR, 220 (REPLACE ONLY)

PART #: EB-18A

DESCRIPTION: BATT MOTOR SUB ASM, 18



PART #: EB-18A**DESCRIPTION:** BATT MOTOR SUB ASM, 18

ITEM #	QTY	PART #	DESCRIPTION
1	2	166-031	LOCK WASHER
2	4	EG-01	HOUSING SCREW
3	2	110-2010	SHCS (1/4-20 X 5/8)
4	1	EG-02	HOUSING
5	1	311-014	BALL BEARING
6	1	EG-03	PLANET CARRIER DRIVE
7	3	EG-05	NEEDLE ROLLER & CAGE
8	1	EG-06	GEAR SET
9	1	230-134	O-RING
10	1	EM-66	BUTTING WASHER
11	1	EM-19	BEARING FLANGE
12	1	311-002	BALL BEARING
13	1	EB-01	ARMATURE, 18
14	1	EB-19	WASHER
15	1	EB-06	RUBBER BUSHING
16	1	EB-02	FIELD COIL, 18
17	2	EB-10	BRUSH COVER
18	1	EB-03	BRUSH HOLDER
19	1	EB-13	SWITCH ROD
20	2	EB-11	FILLISTER HEAD SCREW
21	1	EM-10	SWITCH DEADMAN
22	1	EB-05	MOTOR HOUSING
23	1	EB-08	HOUSING
24	7	EM-16	FILLISTER HEAD SCREW
25	1	EB-17	SWITCH SLIDE
26	1	EB-04	ELECTRONIC UNIT, 18
27	1	EB-36	WARNING LABEL
28	1	EB-14	INDEX BOLT
29	1	EB-15	PRESSURE SPRING
30	1	EB-16	LOCKING PIECE
31	1	EB-23	RATING PLATE
32	1	EB-30	FILTER
33	1	EBLB-01	LBL, WARNING

NOTE: FOR IN-HOUSE REPAIRS/RENTAL DAMAGES ONLY... PART # EB-18A-01 CAN BE USED TO REPLACE ITEMS (6 - 33) IN THE CASE THAT ITEMS (1 - 5) ARE IN STRONG WORKING ORDER. THIS ITEM CANNOT BE SHIPPED.

PART #: EB-18A-01

DESCRIPTION: BATT MOTOR, 18 (REPLACE ONLY)

BATTERY

PART #: EB-100

DESCRIPTION: LI-ION BATTERY, 18-5.2Ah

NOTE: BATTERIES AND BATTERY KITS CANNOT SHIP AIR-FREIGHT.

BATTERY CHARGERS

PART #: EB-110

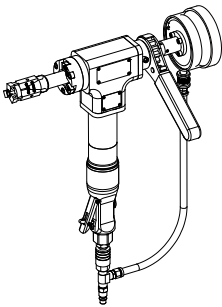
DESCRIPTION: BATTERY CHARGER, 110

PART #: EB-220

DESCRIPTION: BATTERY CHARGER, 220

H-270 - AIR CLAMP ASSEMBLY

THE H-270 AIR CLAMP ASSEMBLY IS A CLAMPING ACCESSORY FOR THE TUBE WEASEL MILLHOG THAT REPLACES THE CLAMP WRENCH ASSEMBLY AND USES AN AIR CYLINDER TO ACTUATE THE CLAMPING MECHANISM. THIS ACCESSORY REQUIRES SPECIFIC DRAW ROD ASSEMBLIES AND CANNOT USE THE STANDARD LENGTH DRAW RODS. (SEE NEXT PAGE FOR DRAW ROD ASSEMBLIES)



PART #: H-270

DESCRIPTION: AIR CLAMP ASM (TW)

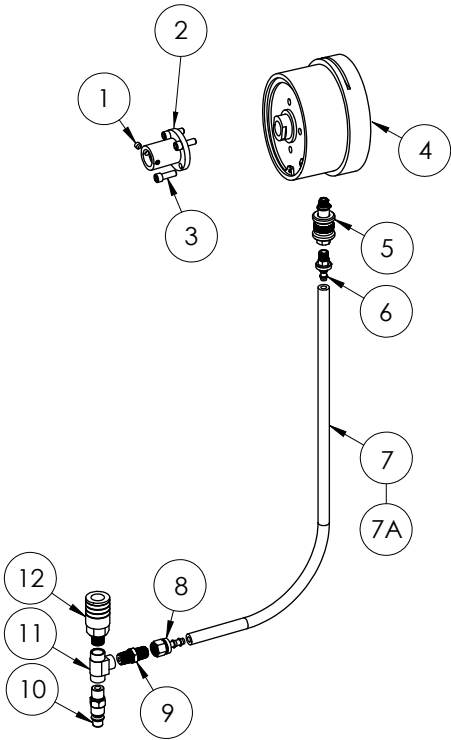
NOTE: H-270 USED FOR TWMH WITH 15-55C, PN MOTOR ASM (TW). LENGTH OF ITEM # 7/7A DEPENDS ON PN MOTOR BEING USED. IF USING 15-55C PN MOTOR ASM, USE ITEM # 7.

PART #: H-270A

DESCRIPTION: AIR CLAMP ASM (TW)

NOTE: H-270A USED FOR TWMH WITH 24-150C, PN MOTOR ASM (TW). LENGTH OF ITEM # 7/7A DEPENDS ON PN MOTOR BEING USED. IF USING THE 24-150C PN MOTOR ASM, USE ITEM # 7A.

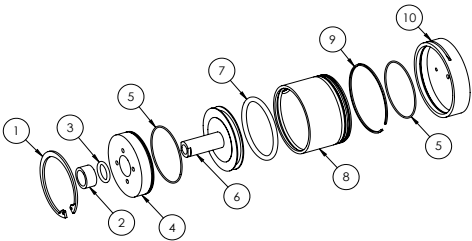
ITEM #	QTY	PART #	DESCRIPTION
1	2	130-2004	SHSS (1/4-20 X 1/4)
2	1	WAC-16	ADAPTER (TW)
3	4	110-2012	SHCS (1/4-20 X 3/4)
4*	1	WAC-09-01	AIR CYLINDER ASM
5	1	WAC-03	ACTUATION VALVE
6	1	350-4843	HOSE BARB (1/4 X 1/8 NPT)
7	21.5	340-025	AIR HOSE (1/4 X 1)
7A	20	340-025	AIR HOSE (1/4 X 1)
8	1	349-4848	HOSE BARB (1/4 X 1/4 NPT)
9	1	WAC-02	CHECK VALVE
10	1	355-5048	NIPPLE (3/8 X 1/4 NPT)
11	1	362-4848	T-FITTING (1/4 X 1/4 NPT)
12	1	354-5048	Q-C COUPLER (3/8 X 1/4 NPT)



*

PART #: WAC-09-01
DESCRIPTION: AIR CYLINDER ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	200-375	INTERNAL RETAINING RING
2	1	GAC-17	BUSHING
3	1	230-210	O-RING
4	1	WAC-13	FRONT PLATE
5	2	230-044	O-RING
6	1	WAC-09	PISTON, 4
7	1	230-342	O-RING
8	1	WAC-07	HOUSING
9	1	WAC-06	INTERNAL RETAINING RING
10	1	WAC-04	BACK PLATE

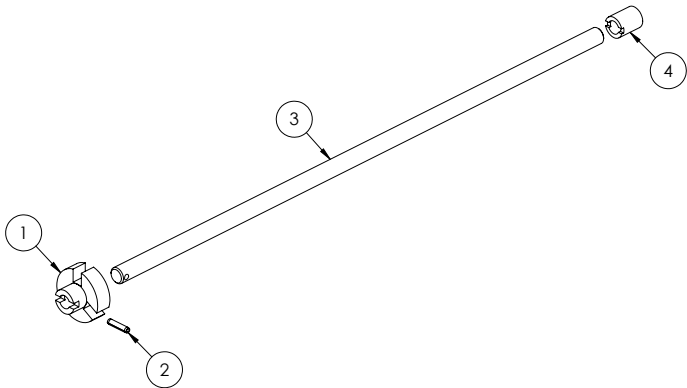


PART #: H-12-02

DESCRIPTION: DRAW ROD ASM, 1-1/4 (A/C)

MANDREL: H-21A

ITEM #	QTY	PART #	DESCRIPTION
1	1	H-12	ACTUATOR, 1-1/4
2	1	134-4309	SSP (1/8 X 9/16)
3	1	WAC-15	DRAW ROD (3/8-16 X 14-1/2)
4	1	WAC-10	TH'D BUSHING (3/8-16)

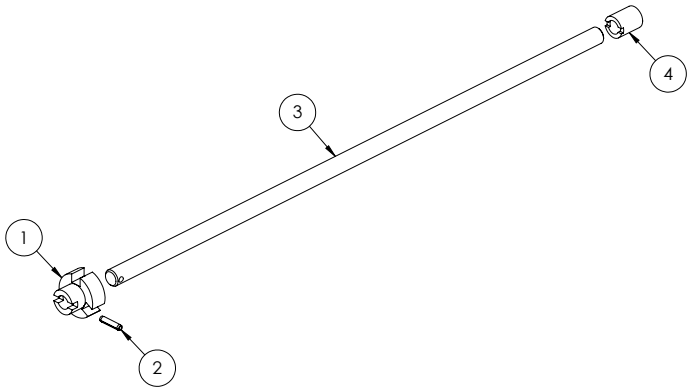


PART #: H-12A-02

DESCRIPTION: DRAW ROD ASM, 1 (A/C)

MANDREL: H-220A

ITEM #	QTY	PART #	DESCRIPTION
1	1	H-12A	ACTUATOR, 1
2	1	134-4309	SSP (1/8 X 9/16)
3	1	WAC-15	DRAW ROD (3/8-16 X 14-1/2)
4	1	WAC-10	TH'D BUSHING (3/8-16)

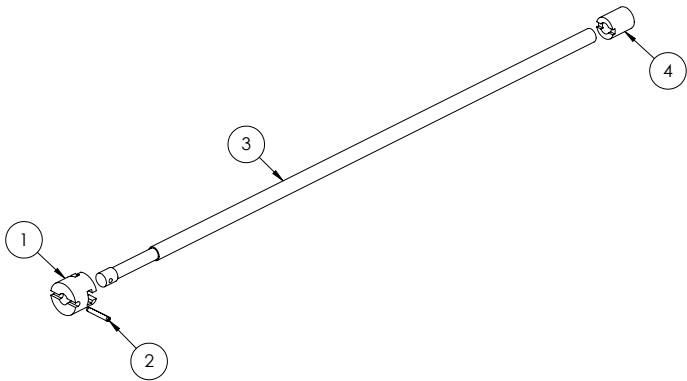


PART #: MG-17-03

DESCRIPTION: DRAW ROD ASM, 3/4 (A/C)

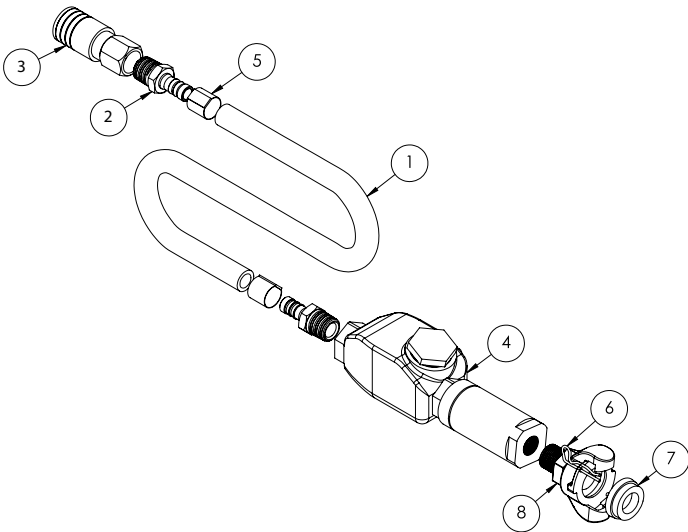
MANDREL: H-241

ITEM #	QTY	PART #	DESCRIPTION
1	1	G-17	ACTUATOR, 3/4
2	1	134-4210	SSP (3/32 X 5/8)
3	1	WAC-15A	DRAW ROD (5/16-18 X 14-1/2)
4	1	GAC-12A	TH'D BUSHING (5/16-18)



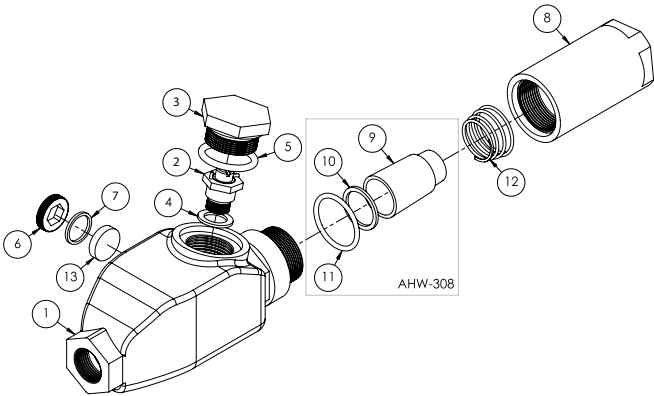
PART #: AH-202
DESCRIPTION: HOSE ASM, 1/2 (3/8 CPL)

ITEM #	QTY	PART #	DESCRIPTION
1	6	340-050	HOSE (1/2 X 12)
2	2	350-5252	HOSE BARB (1/2 X 1/2 NPT)
3	1	352-5052	Q-C COUPLER (3/8 X 1/2 NPT)
4*	1	AHW-307A	FILTER & LUBRICATOR ASM
5	1	AHW-313A	HOSE CLAMP (1 ID)
6	1	AHW-306	SAFETY PIN
7	1	AHW-304	SEAL
8	1	AHW-305	CHICAGO FITTING, 1/2



* **PART #:** AHW-307A
DESCRIPTION: FILTER & LUBRICATOR ASM

ITEM #	QTY	PART #	DESCRIPTION
1	1	AHW-311	LUBRICATOR HOUSING
2	1	AHG-310	OIL ADJ VALVE ASM
3	1	AHG-308	FILLER PLUG
4	1	AHG-311	VALVE GASKET
5	1	230-214	O-RING
6	1	AHG-313	SIGHT DISK LOCK NUT
7	1	AHG-312A	SEAL
8	1	AHW-310	FILTER HOUSING
9	1	AHW-308A	FILTER
10	1	AHW-308B	GASKET
11	1	230-122	O-RING
9, 10 & 11	1	AHW-308	FILTER REPAIR KIT
12	1	AHW-312	SPRING
13	1	AHG-312B	SIGHT DISC



TOOLING SECTION CONTENTS:

1. MILLHOG G-SERIES BLADES

- A. BEVEL BLADES
- B. PEEL BACK BLADES
- C. BORING BLADES
- D. J-BEVEL BLADES
- E. FACING BLADES
- F. REVERSE BEVEL BLADES
- G. TUBE STUB REMOVAL BLADES
- H. TUBE SEAT REMOVAL BLADES

APPLICABLE MODELS:
GROUND
MONGOOSE
TUBE WEASEL
C-HOG

BEVEL BLADES



GBB-1
37-1/2° BEVEL BLADE TIN
3/8" / 9.5MM WIDE



GBB-2
37-1/2° BEVEL BLADE TIN
5/8" / 15.9MM WIDE



GBB-3
30° BEVEL BLADE TIN
3/8" / 9.5MM WIDE



GBB-4
30° BEVEL BLADE TIN
5/8" / 15.9MM WIDE



GBB-1T
37-1/2° BEVEL BLADE TIN
OD TANGENT
3/8" / 9.5MM WIDE



GBB-2T
37-1/2° BEVEL BLADE TIN
OD TANGENT
5/8" / 15.9MM WIDE

PEEL BACK BLADES



GBBP-1
37-1/2° PEEL BACK BLADE HL
1/4" / 6.35MM PEEL BACK
3/8" / 9.5MM WIDE



GBBP-2
37-1/2° PEEL BACK BLADE HL
1/4" / 6.35MM PEEL BACK
5/8" / 15.9MM WIDE

BORING BLADES



GCB10S-1
10° BORING BLADE TIN
3/8" / 9.5MM WIDE



GCB10S-2
10° BORING BLADE TIN
5/8" / 15.9MM WIDE



GCB18S-1
18° BORING BLADE TIN
3/8" / 9.5MM WIDE



GCB18S-2
18° BORING BLADE TIN
5/8" / 15.9MM WIDE



GCBS-1
STRAIGHT BORE BLADE
18° TAPER TIN
3/8" / 9.5MM WIDE



GCBS-2
STRAIGHT BORE BLADE
18° TAPER TIN
5/8" / 15.9MM WIDE

J-BEVEL BLADES



GJB-1
22° J-PREP BLADE TIN
3/16" / 4.8MM RADIUS
3/8" / 9.5MM WIDE



GJB-2
22° J-PREP BLADE TIN
3/16" / 4.8MM RADIUS
5/8" / 15.9MM WIDE

FACING BLADES



GLB-1
FACING BLADE TIN
3/8" / 9.5MM WIDE



GLB-2
FACING BLADE TIN
5/8" / 15.9MM WIDE



GLRB-1
FACING BLADE TIN
OD RADIUS
3/8" / 9.5MM WIDE



GLRB-2
FACING BLADE TIN
OD RADIUS
5/8" / 15.9MM WIDE

REVERSE BEVEL BLADES



GRBB-1
37-1/2° REVERSE BEVEL
BLADE TIN
3/8" / 9.5MM WIDE



GRBB-2
37-1/2° REVERSE BEVEL
BLADE TIN
5/8" / 15.9MM WIDE

TUBE STUB REMOVAL BLADES



GTSR-1
30° TUBE STUB REMOVAL
BLADE HL
3/16" / 4.8MM RADIUS
3/8" / 9.5MM WIDE



GTSR-2
30° TUBE STUB REMOVAL
BLADE HL
3/16" / 4.8MM RADIUS
5/8" / 15.9MM WIDE

TUBE SEAT REMOVAL BLADES



GTSS-1
TUBE STUB REMOVAL
BLADE HL
3/8" / 9.5MM WIDE



GTSS-2
TUBE STUB REMOVAL
BLADE HL
5/8" / 15.9MM WIDE

MEMBRANS/OVERLAY INSERT



MRB-8
OVERLAY/MEMBRANE
INSERT
8MM WIDE

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