

Parts Manual  
823035EN  
02/14/2014

# Cleco®

**W-2109 & W-2110 Series**  
Impact Wrenches



*For additional product information visit our website at <http://www.apextoolgroup.com>*

**Cleco®**  
Nomenclature

	<b>W</b>	<b>X</b>	<b>X</b>	<b>XXXX</b>	<b>B</b>	<b>-</b>	<b>X</b>
<u>Tool Type</u> <b>W</b> = Impact Wrench							
<u>Handle Type</u> - = Spade Handle Outside Trigger <b>P</b> = Pistol Grip Handle <b>T</b> = Spade Handle Inside Trigger							
<u>Drive Type</u> - = Square <b>S</b> = #5 Spline							
<u>Tool Size</u> <b>2109</b> <b>2110</b>							
<u>Vintage</u> <b>B</b> = 2nd Release							
<u>Output Drive</u> - = #5 Spline <b>8</b> = 1" Square Drive							

The original language of this manual is English.

**Product Safety Information:**

Intended Use:

This air assembly tool is intended for tightening of threaded joints or running down fasteners. Use only for their designated purpose. Do not use as a hammer, lever or other improper usage that can cause tool damage and operator injury.

For additional product safety information refer to Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG document CE-2004, General Safety Impact Wrenches.

**⚠ WARNING**

This air assembly tool must not be modified unless approved in writing by Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG. All safety devices must be properly installed and maintained in good working order.

**Air Line Lubrication:**

Use Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG's lightweight air tool oil 500021 (available in quantities shown in the following chart) or an SAE-5 lightweight spindle oil.

Part No.	Packaged	Designation
540397	1 Quart (0.94 liter)	Airlube 10W/NR-420LB DR
533485	1 US Gallon (3.78 liter)	Airlube 10W/NR-420LB DR

**Oil Reservoir (30W):**

The oil reservoir marked "30W Oil" should not require attention until the tool is disassembled for regular inspection and maintenance. However, it is suggested that the oil level be checked periodically. If oil is required, approximately 1.25 fluid ounces of a good grade 30W oil should be added to the reservoir.

**Air Supply Line:**

Parameter	Description
Air Hose	Hose diameter: 1/2" (12.7 mm) Maximum length: 16.4' (5 m)
Working pressure range	58 to 101.5 psi (400 to 700 kPa) Recommended: 90 psi (620 kPa)
Compressed air	Air quality according to ISO 8573-1, quality class 2.4.3 The compressed air must be clean and dry.

**Service and Repair:**

Tool service and repair should be performed by a properly trained technician or an authorized Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG Center. Refer to the last page of this manual for locations.

**General Disassembly:**

Always disconnect the air supply before performing any maintenance on these tools.

Remove the four (4) hex nuts and washers from the handle area. Remove the handle assembly, reversing valve, handle gasket and the motor clamp seal from the motor housing.

Drive the four housing bolts out the front of the motor assembly. The anvil housing assembly can now be removed allowing the impacting mechanism to slip out the front of the motor assembly. It may be necessary to rotate the anvil housing to clear the anvil and hammer lugs.

**Anvil Housing Disassembly:**

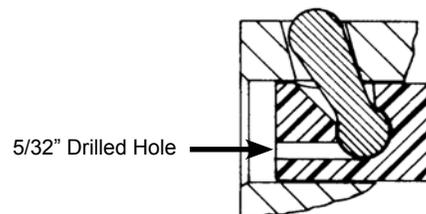
It is recommended that the anvil housing seal (869289) be replaced every time the tool is serviced. The seal can be pried out using a screwdriver after removing the retaining ring.

The anvil housing seal must be removed if the anvil housing bushing requires replacement. The anvil housing bushing can be pressed out the rear of the anvil housing using a suitable bushing driver.

**Impact Mechanism Disassembly:**

Clamp the hammer, horizontally, in a soft jawed vise and drive the anvil away from the hammer using a soft mallet. This will permit the anvil pin, spring clip and hammer spring to be removed from the front of the cam shaft.

*Note: Spline drive models, if any of the socket retainer parts require replacement, a 5/32" hole should be drilled in the socket retainer plunger. Refer to the following illustration. Insert a pin punch into the drilled hole and lightly tap the punch under the socket retainer pin. Pry on the punch to pop the pin out of the pocket in the plunger.*



# Cleco®

## Product Information

Remove the hammer from the vise and slip the cam shaft and related components from the rear of the cam. Remove the shock absorber (slight press fit) from the rear of the cam shaft. This will allow removal of the insulator, butt plate, cam roller and cam roller shaft.

Slip the cam from the rear of the hammer using caution not to lose the timing pin.

### Motor Unit Disassembly:

Remove the motor unit from the rear of the housing and disassemble for inspection of parts.

For cleaning and inspection of the muffler plates, remove the retainer screw.

### Handle Disassembly:

Disassembly of the inside trigger, outside trigger and pistol grip models are the same procedure.

Removing the air inlet bushing will allow removal of the o-ring, air inlet screen, throttle valve spring, throttle valve, throttle valve seal and throttle valve pin.

Do not remove the throttle pin bushing unless replacement is necessary. To remove the throttle pin bushing, tap the I.D. of the bushing using a 1/4"-20 thread tap and then insert a 1/4"-20 bolt of adequate length and clamp the bolt in a vise. Carefully drive the handle away from the vise using a soft mallet.

If the trigger requires replacement, only the trigger pin needs to be removed.

### Maintenance - Reassembly:

#### Cleaning and Inspection:

Clean all parts in a solvent and inspect for excessive wear or damage. If the rotor blades measure less than 11/32" wide on either end they must be replaced. Rotor bearings should be replaced if they feel rough after cleaning or show excessive looseness.

#### Spade Handle Assembly:

When installing the trigger use a pin slightly smaller than the hole in the handle to locate the trigger when driving the trigger pin into the handle.

If the throttle valve bushing was removed, the replacement bushing must be pressed in to a depth of 1-5/8" from the bottom face of the handle.

Inspect the throttle valve seal for wear or damage. If replacement is necessary, push the new seal (cupped face first) onto the throttle valve from the tapered end.

Clean the threads on the air inlet bushing and replace the o-ring if necessary. Apply Loctite® # 271 to the threads.

Install the throttle valve pin and throttle valve assembly into the handle. Place the air inlet screen and throttle valve spring into the air inlet bushing and assemble into the handle. Tighten the air inlet bushing to a minimum of 150 ft. lbs. torque.

### Pistol Grip Handle Assembly:

When installing the trigger use a pin slightly smaller than the hole in the handle to locate the trigger when driving the trigger pin into the handle.

If the throttle valve bushing was removed, the replacement bushing must be pressed in to a depth of 1-15/16" from the bottom face of the handle and the inside diameter of the bushing sized to .1880"/.1887" after installation.

Inspect the throttle valve seal for wear or damage. If replacement is necessary, push the new seal (cupped face first) onto the throttle valve from the tapered end.

Clean the internal threads of the handle and threads of the air inlet bushing. Replace the air inlet o-ring if necessary. Apply Loctite® # 271 to the threads. Tighten the air inlet bushing to 80 ft. lbs. torque.

### Motor Unit Assembly:

Install the muffler plates into the motor housing and secure with the retaining screw.

During reassembly of the bearing plates, the rotor shaft seals should be installed with their "lips" facing out (visible after installation). When installing the rotor bearings press on the bearing's outer race. Lubricate both the seals and rotor bearings with 30W oil before assembly into the motor unit.

If the cylinder was removed, the new cylinder (with alignment key in position) must be pressed in from the rear of the motor housing to a depth of 5/8" from the rear face of the motor housing.

Invert the motor housing and install the rotor with the end stamped "REAR" into the rear rotor bearing.

Insert the six (6) rotor blades into the rotor. Lubricate the o-rings on the front bearing plate and press this assembly into the motor housing. *Note: Make sure the o-ring (619751) is installed on the front bearing plate.*

### Impact Mechanism Assembly:

Put a light coating of 30W oil on all parts before assembling.

Insert the timing pin into the recess located on the small O.D. of the cam. Install the cam and pin into the rear of the hammer.

Install the cam roller shaft into the cam shaft and slide the cam roller over the cam roller shaft. Place the butt plate, insulator and shock absorber onto the rear of the cam shaft.

Hold the cam shaft vertically on the work bench with the shock absorber down and tap the end of the cam shaft with a soft mallet to seat the cam shaft in the shock absorber. Insert the cam shaft assembly through the cam and hammer assembly.

Install the hammer spring, anvil pin and spring clip onto the front of the cam shaft and hammer assembly. Rotate the spring clip to accept the anvil pin and then install the anvil on top of the assembly. Make sure the slot in the anvil lines up with the anvil pin. Drive the anvil down until the spring clip engages the recess in the anvil.

Spline Drive Models: Insert the socket retainer spring and socket retainer plunger into the anvil and then drive the socket retainer pin radially into the plunger.

### **Anvil Housing Assembly:**

When replacing the anvil housing seal, clean the housing bore with a solvent and then coat the bore with "PERMATEX" Aviation Form-A-Gasket No. 3H. Let this air dry for approximately four (4) minutes before installing the seal. Press the seal with its lip toward the bore in the housing. The lip should not be visible after assembly.

### **General Assembly:**

Put a light coating of 30W oil on the hammer and rotor splines. Insert the impact mechanism into the front of the rotor. Lubricate the anvil housing seal and bushing with 30W oil and install on the unit. Make sure the contour of the anvil housing matches the motor housing.

The anvil and hammer lugs should be in line with the recess in the make-up lip located in the anvil housing.

Install the dead handle bracket on the left side of the tool and insert the four housing bolts. Lightly tap the bolts with a hammer until the anvil housing seats against the motor housing.

Clamp the tool vertically in a smooth jawed vise and install the gasket. Insert the o-ring (844320) into the reversing valve bore and install the reversing valve.

Apply a thin coating of grease to the motor clamp seal (869281) and place it into the handle recess.

Assemble the handle to the tool using the four (4) nuts. Tighten the nuts to 20 ft. lbs. torque.

Lay the tool on its right side and remove the 30W oil fill plug. Fill the reservoir with a good grade of 30W oil up to the level of the fill indicator pin located in the reservoir,

approximately 1 to 1.25 fluid ounces.

Place a couple of teaspoons of 10W machine oil in the air inlet bushing before attaching the air hose. This will insure immediate lubrication of all motor components.

### **Disposal:**



Observe local disposal guidelines for all components of this tool and its packaging.

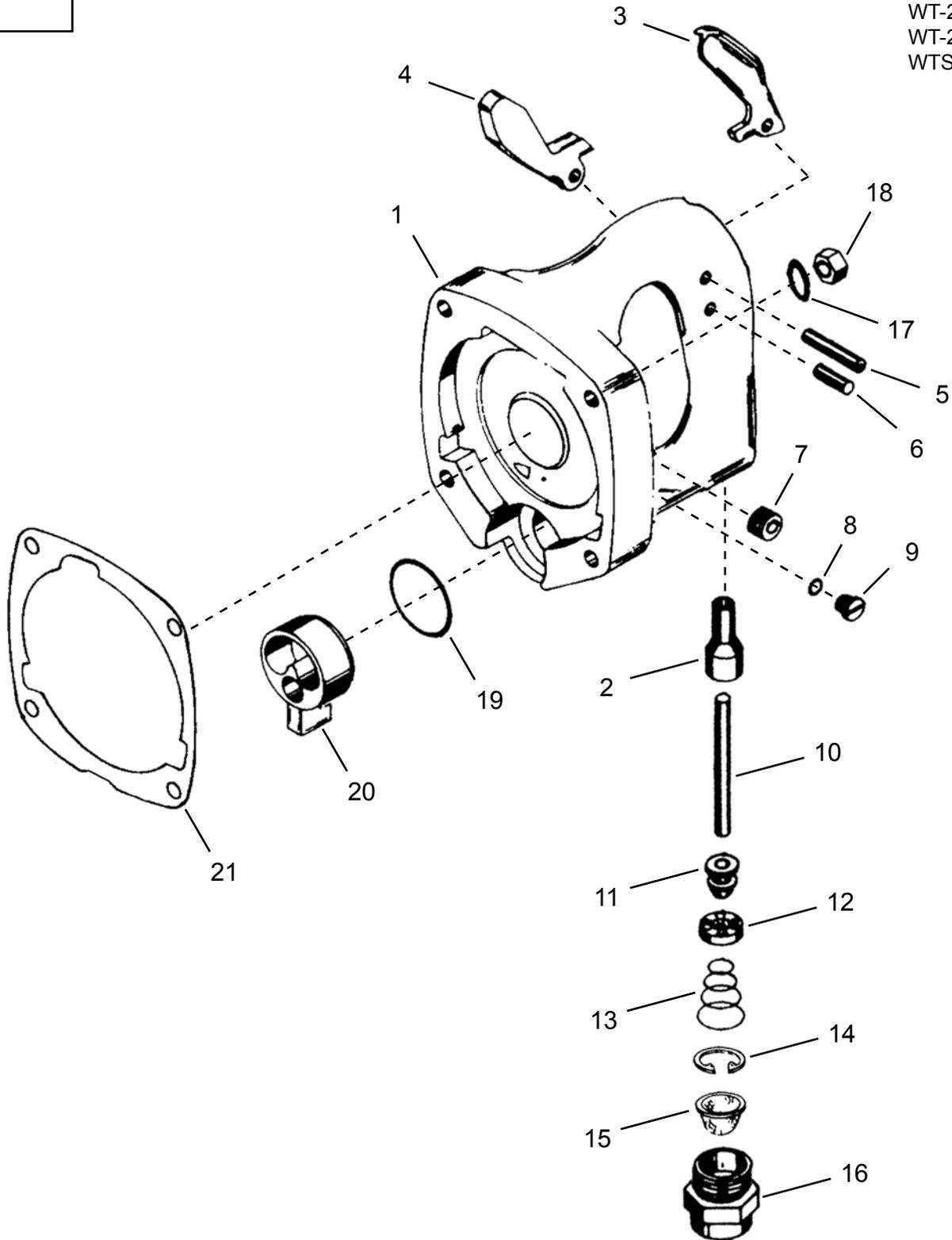
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# Cleco® Spade Handle Assembly

**Models**  
W-2109-8  
WT-2109-8  
WT-2110-8  
WTS-2109

“A”



**Cleco®**  
Spade Handle Assembly

**823035EN**  
02/14/2014

**Illustration "A": Spade Handle Assembly**

Ref	Number	#	X	EN	
				Description	
--	Table "A"	1		Handle Assembly (includes Ref. 1-16)	
1	Table "A"	1		Handle (includes Ref. 2)	
2	864975	1		Throttle Valve Pin Bushing	
3	Table "A"	1		Outside Trigger	
4	Table "A"	1		Inside Trigger	
5	869009	1		Trigger Stop Pin	
6	832125PT	1		Trigger Pin	
7	867801PT	1		Oil Fill Plug (30W)	
8	844303	1	3	O-Ring	
9	864387	1		Oil Fill Plug (10W)	
10	869286	1		Throttle Valve Pin	
11	867974	1		Throttle Valve	
12	867977	1	3	Throttle Valve Seal	
13	864973	1	3	Throttle Valve Spring	
14	619016	1	3	Retaining Ring	
15	843656	1	3	Air Inlet Screen	
16	869283	1	1	Air Inlet Bushing	
17	203282PT	2	2	Washer	
18	865006	4	4	Hex Nut	
19	844320	1	3	O-Ring (Reversing Valve)	
20	869276	1		Reversing Valve	
21	869293	1	3	Handle Gasket	

(#) Quantity

(X) Recommended Spare Parts (quantity shown based on 1-5 tools in operation)

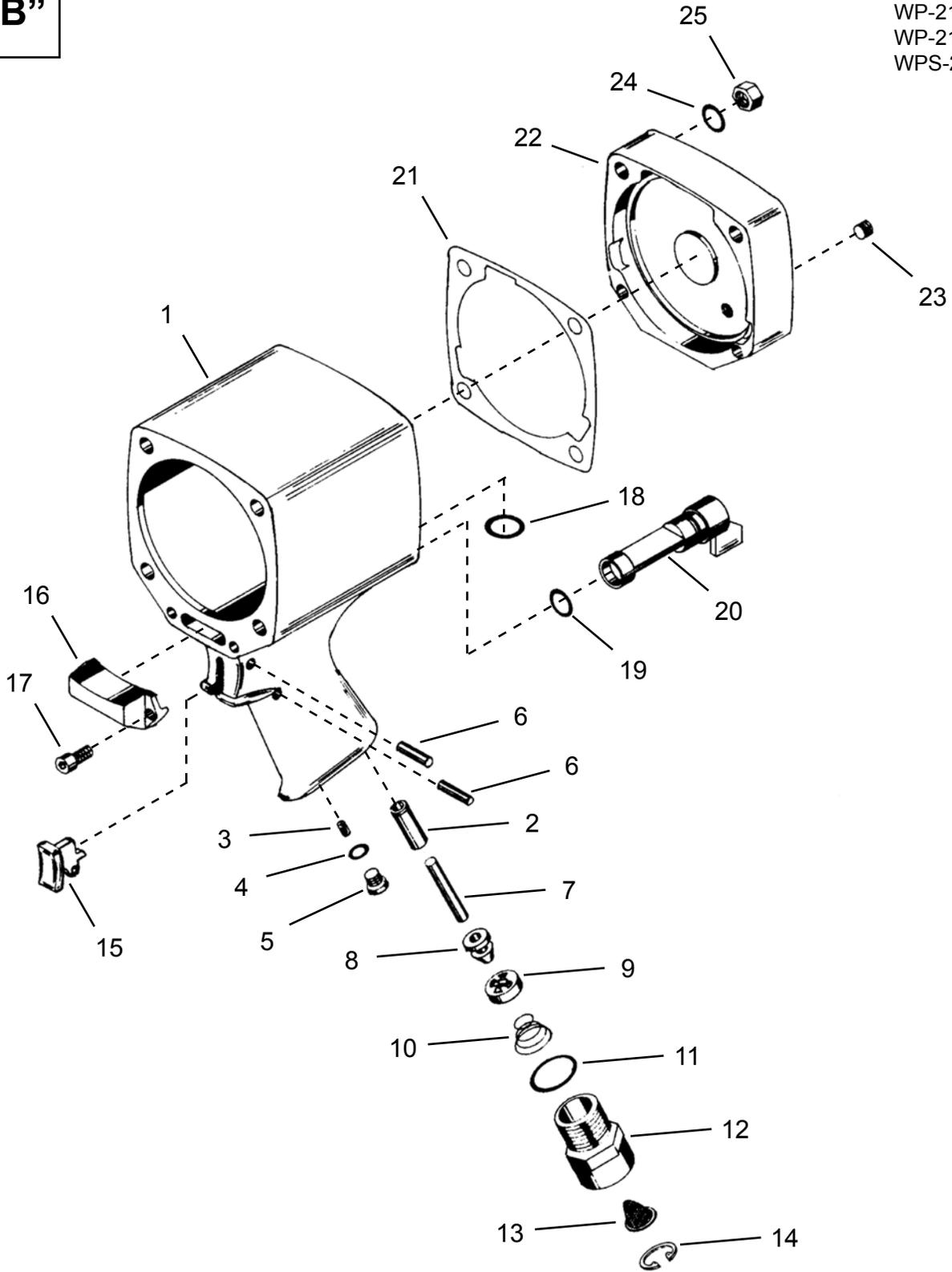
**Table "A"**

Ref.	Description	#	W-2109-8	#	WT-2109-8 WT-2110-8 WTS-2109
--	Handle Assembly	1	861723PT	1	861724
1	Handle	1	869271	1	869270
3	Outside Trigger		869000	1	-----
4	Inside Trigger	1	-----		867998

# Cleco® Pistol Grip Handle Assembly

**Models**  
WP-2109B-8  
WP-2110B-8  
WPS-2109B

**“B”**



**Pistol Grip Handle Assembly**

**Illustration "B": Pistol Grip Handle Assembly**

Ref	Number	#	X	EN
				Description
--	861808	1		Handle Assembly (includes Ref. 1-15)
1	869618	1		Handle (includes Ref. 2-3)
2	832211	1		Throttle Pin Bushing
3	843590	1		Oiler Busing
4	844303	1	3	Oiler Plug O-Ring
5	864387	1		Oiler Plug (10W)
6	842320	2	2	Pin
7	869287	1		Throttle Rod
8	867974	1		Throttle Valve
9	867977	1	3	Throttle Valve Seal
10	863072	1	3	Throttle Valve Spring
11	863009	1	3	Inlet Bushing O-Ring
12	864972	1	1	Air Inlet Bushing
13	412775	1	3	Air Inlet Screen
14	617288	1	3	Retaining Ring
15	869619	1		Trigger
16	869291	1		Muffler Deflector
17	847688	2		Muffler Deflector Screw
18	844312	2	6	O-Ring
19	844310	1	3	Reversing Valve O-Ring
20	869285	1		Reversing Vave
21	869526	1	3	Backcap Gasket
22	869265	1		Backcap (includes Ref. 23)
23	867801PT	1		Oil Fill Plug (30W)
24	203282PT	2	2	Washer
25	865006	4	4	Hex Nut

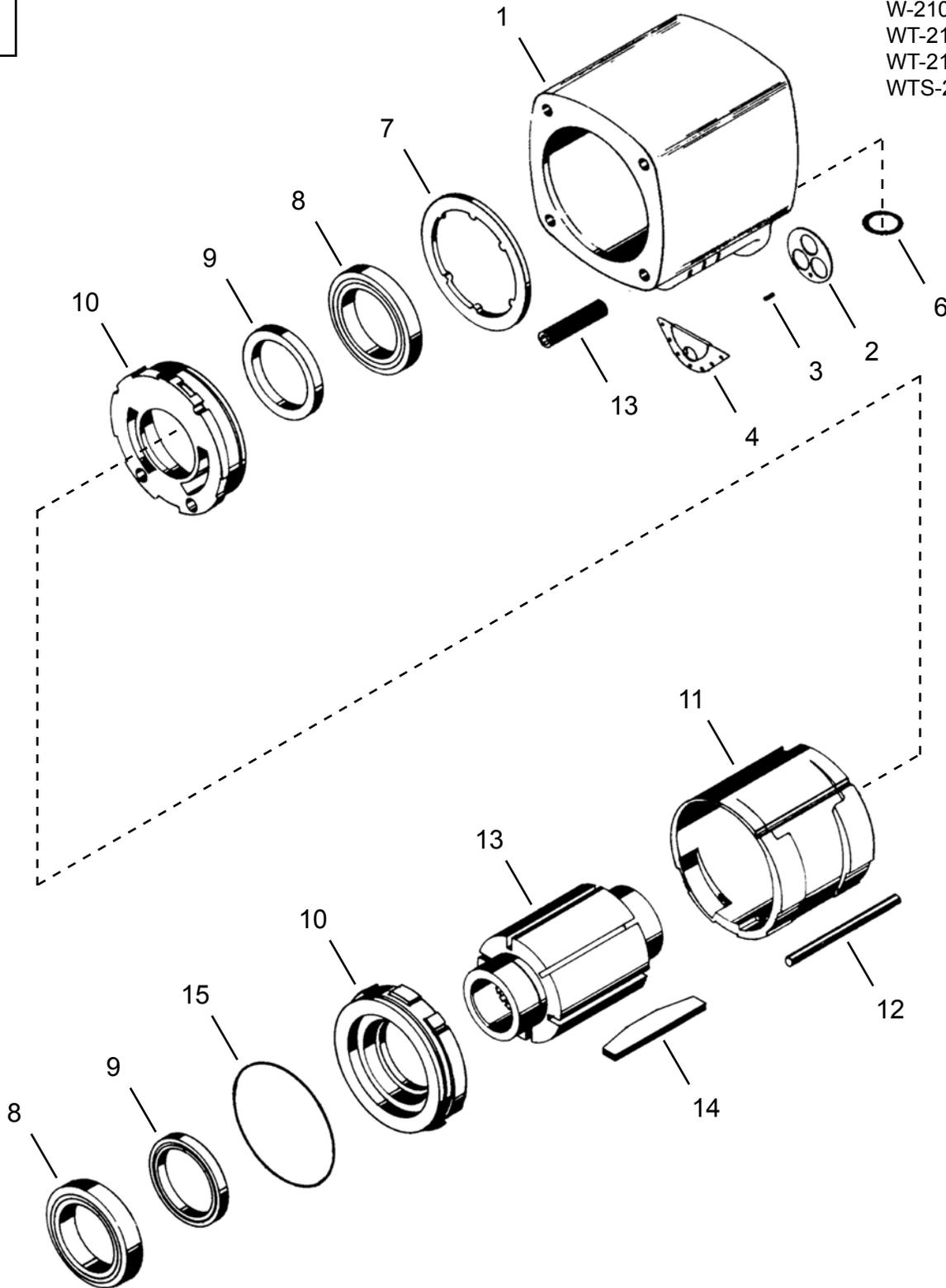
(#) Quantity

(X) Recommended Spare Parts (quantity shown based on 1-5 tools in operation)

# Cleco® Spade Handle Motor Assembly

**Models**  
W-2109-8  
WT-2109-8  
WT-2110-8  
WTS-2109

“C”



**Cleco®**  
Spade Handle Motor Assembly

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**Illustration "C": Spade Handle Motor Assembly**

Ref	Number	#	X	EN
				Description
1	869266	1		Motor Housing (includes Ref. 9-12)
2	869269	1		Muffler Plate
3	863637	1	1	Wear Plate Pin
4	869004	1		Muffler Plate
5	869268	1		Retainer Screw
6	844312	2	6	O-Ring
7	869281	1	1	Motor Clamp Seal
8	863097	2	4	Ball Bearing (Rotor)
9	869275	2	6	Rotor Shaft Seal
10	Table "C"	2		Bearing Plate
11	Table "C"	1		Cylinder
12	864117	1		Alignment Key
13	869299	1		Rotor
14	Table "C"	6	12	Rotor Blade
15	619751	1	3	O-Ring

(#) Quantity

(X) Recommended Spare Parts (quantity shown based on 1-5 tools in operation)

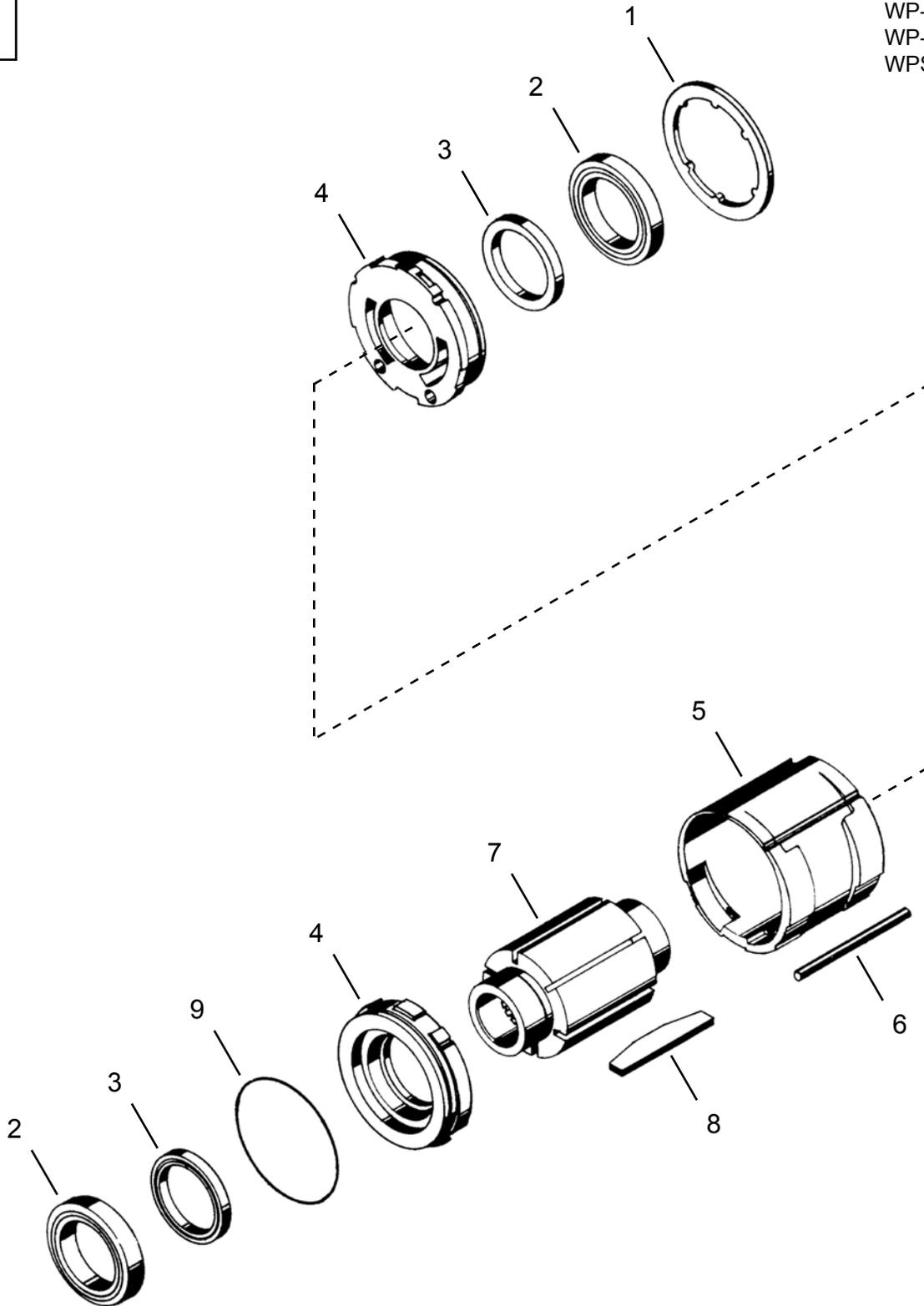
**Table "C"**

Ref.	Description	#	W-2109-8	#	WT-2109-8 WTS-2109	#	WT-2110-8
10	Bearing Plate	2	869297	2	869297	2	869298
11	Cylinder	1	869295	1	869295	1	869294
14	Rotor Blade	6	869280	6	207319	6	869280

# Cleco® Pistol Grip Handle Motor Assembly

**Models**  
WP-2109B-8  
WP-2110B-8  
WPS-2109B

“D”



**Pistol Grip Handle Motor Assembly**

**Illustration "D": Pistol Grip Handle Motor Assembly**

Ref	Number	#	X	EN
				Description
1	869281	1	1	Motor Clamp Seal
2	863097	2	4	Ball Bearing (Rotor)
3	869275	2	6	Rotor Shaft Seal
4	Table "D"	2		Bearing Plate
5	Table "D"	1		Cylinder
6	864117	1		Alignment Key
7	869299	1		Rotor
8	Table "D"	6	12	Rotor Blade
9	619751	1	3	O-Ring

(#) Quantity

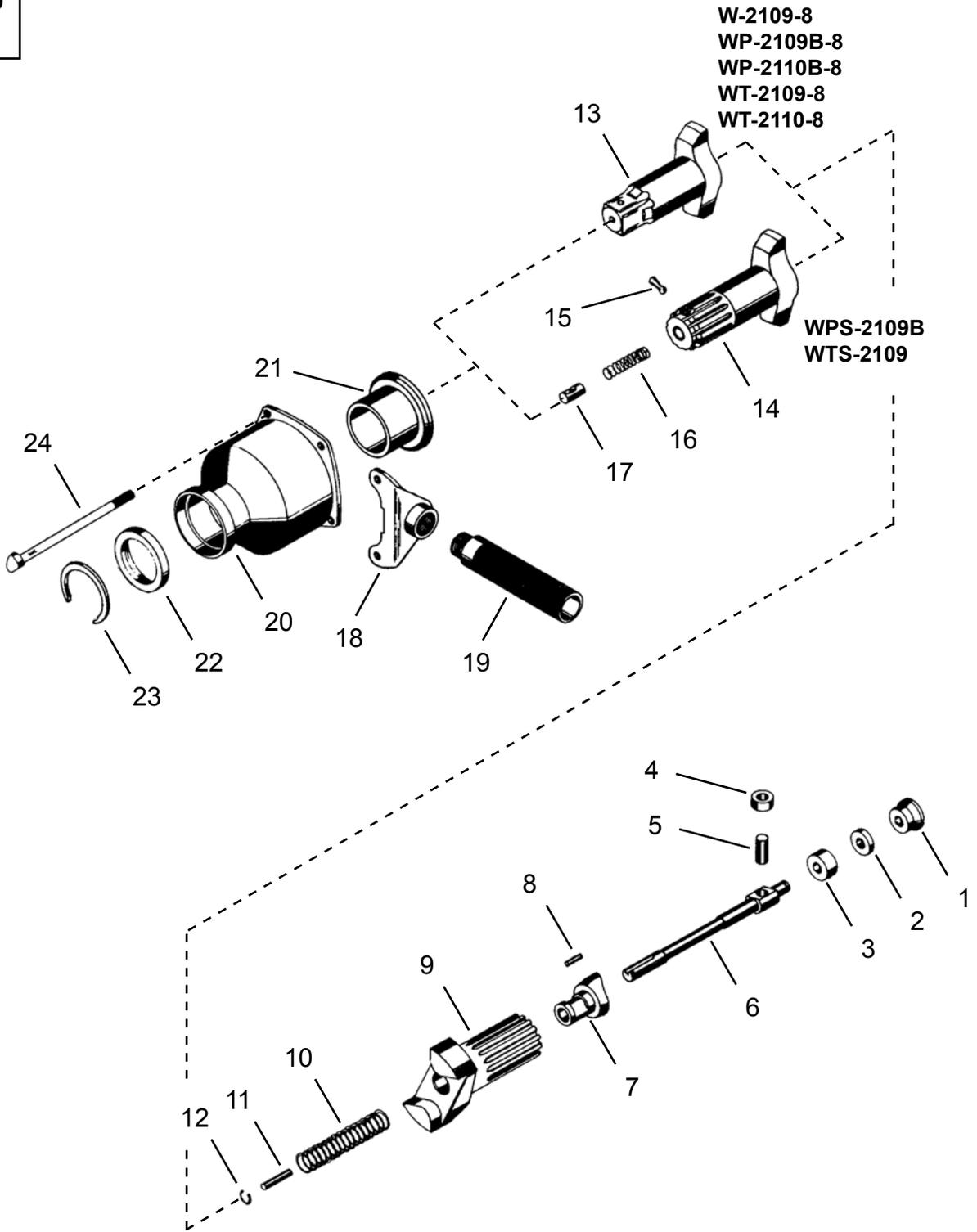
(X) Recommended Spare Parts (quantity shown based on 1-5 tools in operation)

**Table "D"**

Ref.	Description	#	WP-2109B-8 WPS-2109B	#	WP-2110B-8
4	Bearing Plate	2	869297	2	869298
5	Cylinder	1	869295	1	869294
8	Rotor Blade	6	207319	6	869280

# Cleco® Impact Mechanism

“E”



**Cleco®**  
Impact Mechanism

**823035EN**  
02/14/2014

**Illustration "E": Impact Mechanism**

Ref	Number	#	X	EN
				Description
1	867980	1	1	Shock Absorber
2	869012	1	1	Insulator
3	869011	1		Butt Plate
4	869278	1		Cam Roller
5	869277	1		Cam Roller Shaft
6	869292	1		Cam Shaft
7	869296	1		Cam
8	869279	1	1	Timing Pin
9	869303	1		Hammer
10	869282	1	3	Hammer Spring
11	869290	1	1	Anvil Pin
12	869274	1	3	Spring Clip
13	869301	1		Anvil (1" Square Drive)
14	869302	1		Anvil (#5 1-5/8" Spline Drive)
15	867951	1	3	Socket Retainer Pin
16	867949	1	3	Socket Retainer Spring
17	867950	1	3	Socket Retainer Plunger
18	865022	1		Support Handle Bracket
19	842290	1		Support Handle
20	861721	1		Anvil Housing (includes Ref. 21-23)
21	869273	1		Anvil Housing Bushing
22	869289	1	3	Anvil Housing Seal
23	869511	1	3	Retaining Ring
24	869288	4		Housing Bolt

(#) Quantity

(X) Recommended Spare Parts (quantity shown based on 1-5 tools in operation)

## Sales & Service Centers

**Note:** All locations may not service all products. Please contact the nearest Sales & Service Center for the appropriate facility to handle your service requirements.

Detroit, Michigan

**Apex Tool Group  
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Auburn Hills, MI 48326  
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Fax: (248) 391-6295

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Lexington, South Carolina

**Apex Tool Group**  
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Lexington, SC 29072  
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