

Parts Manual
PL12EN-48EP-1
10/09/2012

Cleco®

48EP Series

Electronically Controlled Pistol Grip Nutrunner

OMEGA TECHNOLOGIES



For additional product information visit our website at:
<https://dotcotool.com/product-category/cleco-tools/cleco-corded-electric-nutrunners-cleco-air-tools/cleco-48-series-transducer-control-pistol-corded-electric-nutrunners/>

Language Version:

This Parts Manual is the *“Original Instructions”* intended for all persons who will use or repair these tools.

Product Identification:

Refer to the “Model Nomenclature” page in this document.

Noise and Vibration:

Refer to documents CE-1002DC and CE-1002TD.

General Description:

Brushless DC electric transducer controlled pistol grip portable nutrunners.

Intended Use:

These DC electric tools are 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.

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Cleco®
Model Nomenclature

PL12EN-48EP-1
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“A”

	48	E	P	X	XXX	XX	X
<u>Tool Series</u> 48							
<u>Motor Style</u> E = Brushless Electric Motor							
<u>Tool Type</u> P = Pistol Grip							
<u>Feature</u> - = Matrix Tool Connector (Standard) E = Air LB Connector							
<u>Maximum Torque Nm (rounded to nearest Nm)</u> 65 = 65 Nm 90 = 90 Nm 125 = 125 Nm 150 = 150 Nm							
<u>Attachment</u> D4 = 1/2" Square Drive							
<u>Spindle Type</u> - = Pin Retainer (Standard) B = Ball Retainer							

“B”

m-Pro-400 Series
Controller



TME-200 Series
Controller



Complete Tool
Order Number
48EP(E)65D4
48EP(E)65D4B
48EP(E)90D4
48EP(E)90D4B
48EP(E)125D4
48EP(E)125D4B
48EP(E)150D4
48EP(E)150D4B

Tool In/Out Tool Cable



m-Pro-400GC
Global Controller



m-Pro-400-IT
Isolation Transformer
(48EP Models)

Tool Cable

Tool Cable

48EPE Models



TME and m-Pro-400 Series Controllers

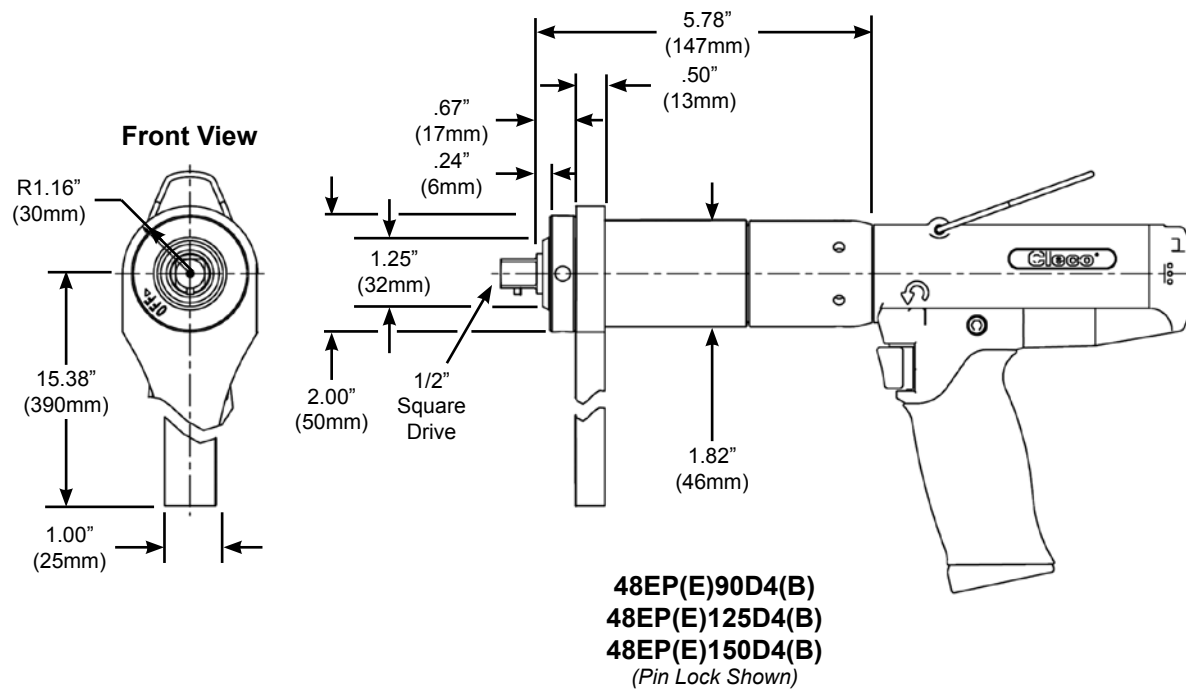
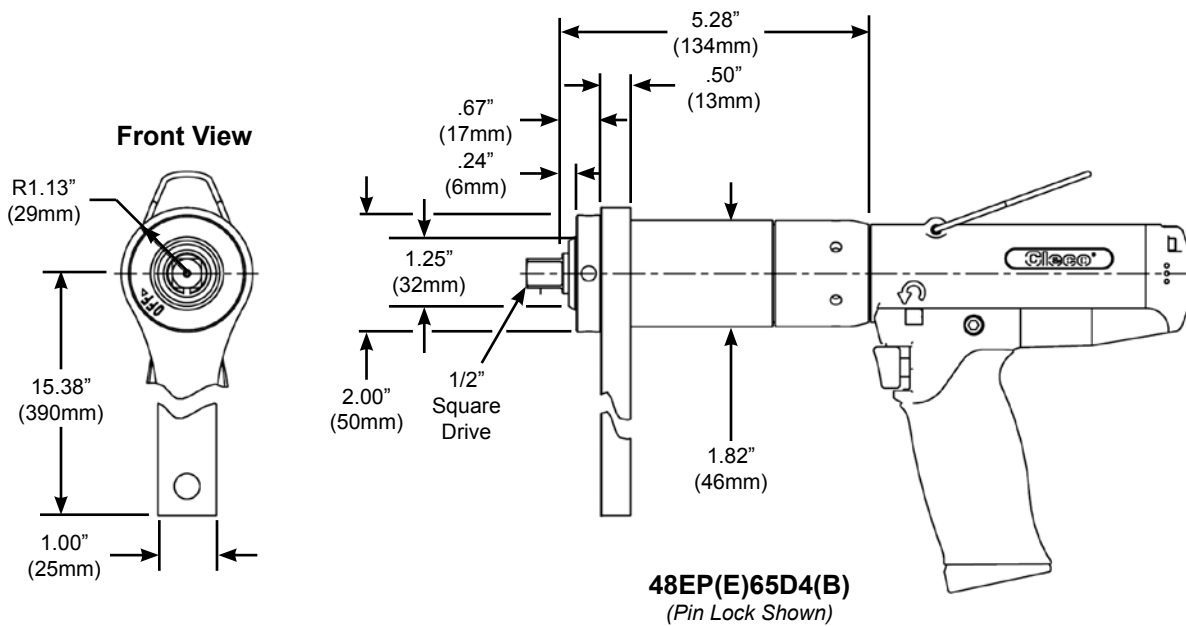
48EP	48EPE	EN
		Description
115 VAC	Standard	TMEI-114-15-U
115 VAC	DeviceNet	TMEI-114-15-U-ED
115 VAC	ProfiBus	TMEI-114-15-U-EP
TME-200	m-Pro-400	Controller
PL12()-1300	*	Programming Notes
575708	*	Battery
541683-01	*	Power Cord: 115VAC - USA
541683-02	*	Power Cord: 230VAC - USA
541683-03	*	Power Cord: 230VAC - Europe
542779-XXX	301877-XXX	Extension Cable
544056-XXX	301904-XXX	Swivel Cable
544055-XXX	301903-XXX	Swivel Cable - Right Angle
542778-XXX	301866-XXX	Tool Cable

* Note: Contact Apex Tool Group

TME-200 Series Controller

Supply Voltage	EN
	Order Number
115 VAC	TME-211-15-U
115 VAC	TME-221-15-U
230 VAC	TME-211-30-U
230 VAC	TME-221-30-U

“C”



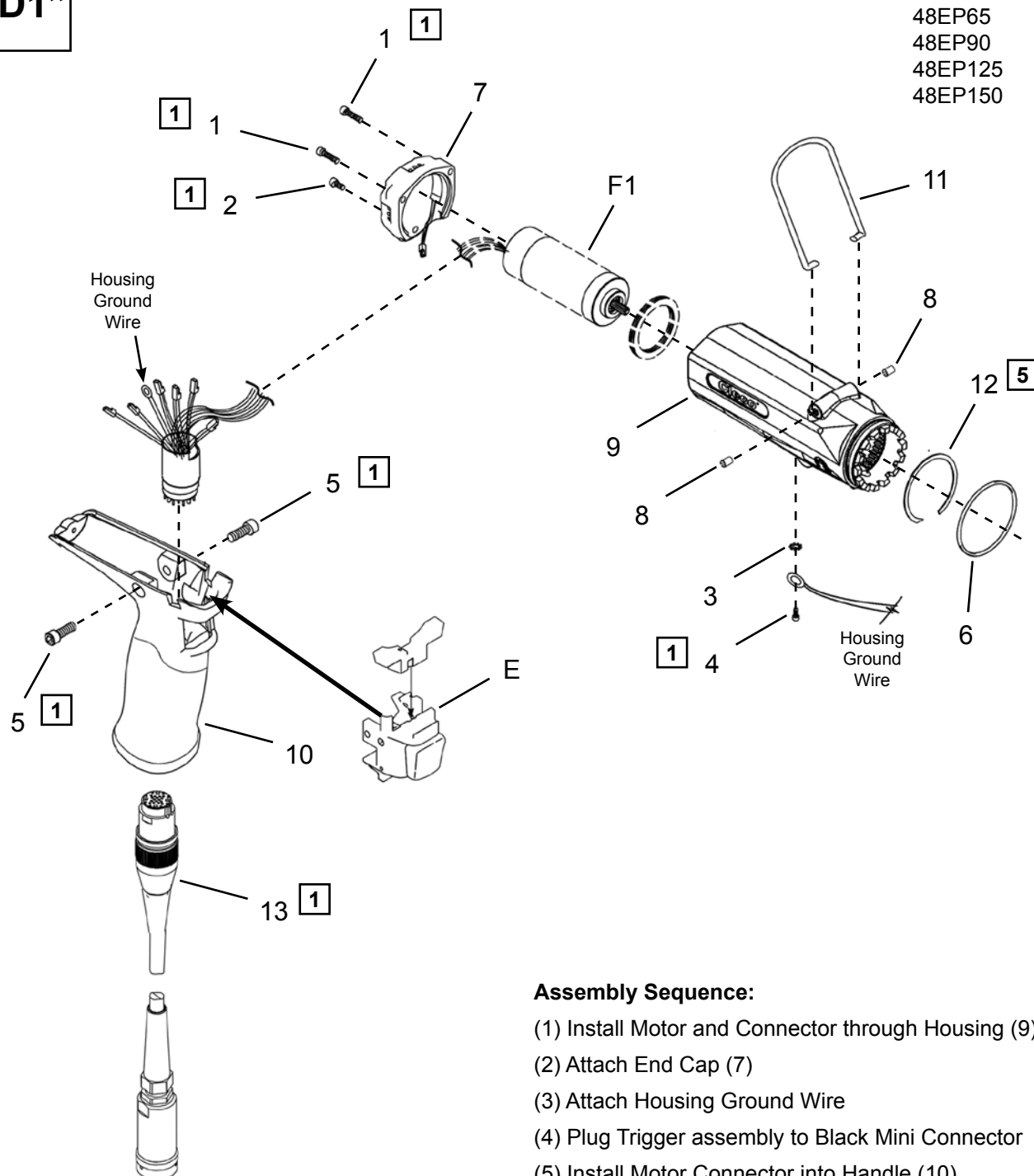
"D1"**Models**

48EP65

48EP90

48EP125

48EP150

**Assembly Sequence:**

- (1) Install Motor and Connector through Housing (9)
- (2) Attach End Cap (7)
- (3) Attach Housing Ground Wire
- (4) Plug Trigger assembly to Black Mini Connector
- (5) Install Motor Connector into Handle (10)
- (6) Install Trigger assembly into Handle (10)
(See Illustration "E")
- (7) Install Reverse Actuator components into Trigger
(See Illustration "E")

1 5 See Service Notes

Cleco®
Handle - Matrix Tool Connector

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Illustration "D1"

Ref	Number	#	X	EN
				Description
1	B121A	2	4	Cap Screw
2	B124R	1	3	Cap Screw
3	W115	1	3	Lock Washer
4	541927	1	3	Screw
5	B122S	2	4	Cap Screw
6	22598	1	3	O-Ring
7	542820	1		Rear Cap
8	931791	2	4	Spring Pin
9	542679	1		Top Handle
10	207338	1		Bottom Handle
11	931962	1	1	Suspension Bail
12	505306	1	1	Retaining Ring
Tool Cable (Optional Length)				
13	542778-1M	1		1 meter cable
	542778-2M			2 meter cable
	542778-3M			3 meter cable
	542778-6M			6 meter cable
	542778-8M			8 meter cable
	542778-10M			10 meter cable
	542778-15M			15 meter cable
	542778-50M			50 meter cable
Inline Swivel Cable (Optional Length)				
13	544056-1M	1		1 meter cable
	544056-2M			2 meter cable
	544056-3M			3 meter cable
	544056-6M			6 meter cable
	544056-8M			8 meter cable
	544056-10M			10 meter cable
	544056-15M			15 meter cable
Angle Swivel Cable (Optional Length)				
13	544055-1M	1		1 meter cable
	544055-2M			2 meter cable
	544055-3M			3 meter cable
	544055-6M			6 meter cable
	544055-8M			8 meter cable
	544055-10M			10 meter cable
	544055-15M			15 meter cable
Tool Cable Extension (Optional Length)				
13	542779-1M	1		1 meter cable
	542779-2M			2 meter cable
	542779-3M			3 meter cable
	542779-6M			6 meter cable
	542779-10M			10 meter cable
	542779-15M			15 meter cable
	542779-50M			50 meter cable

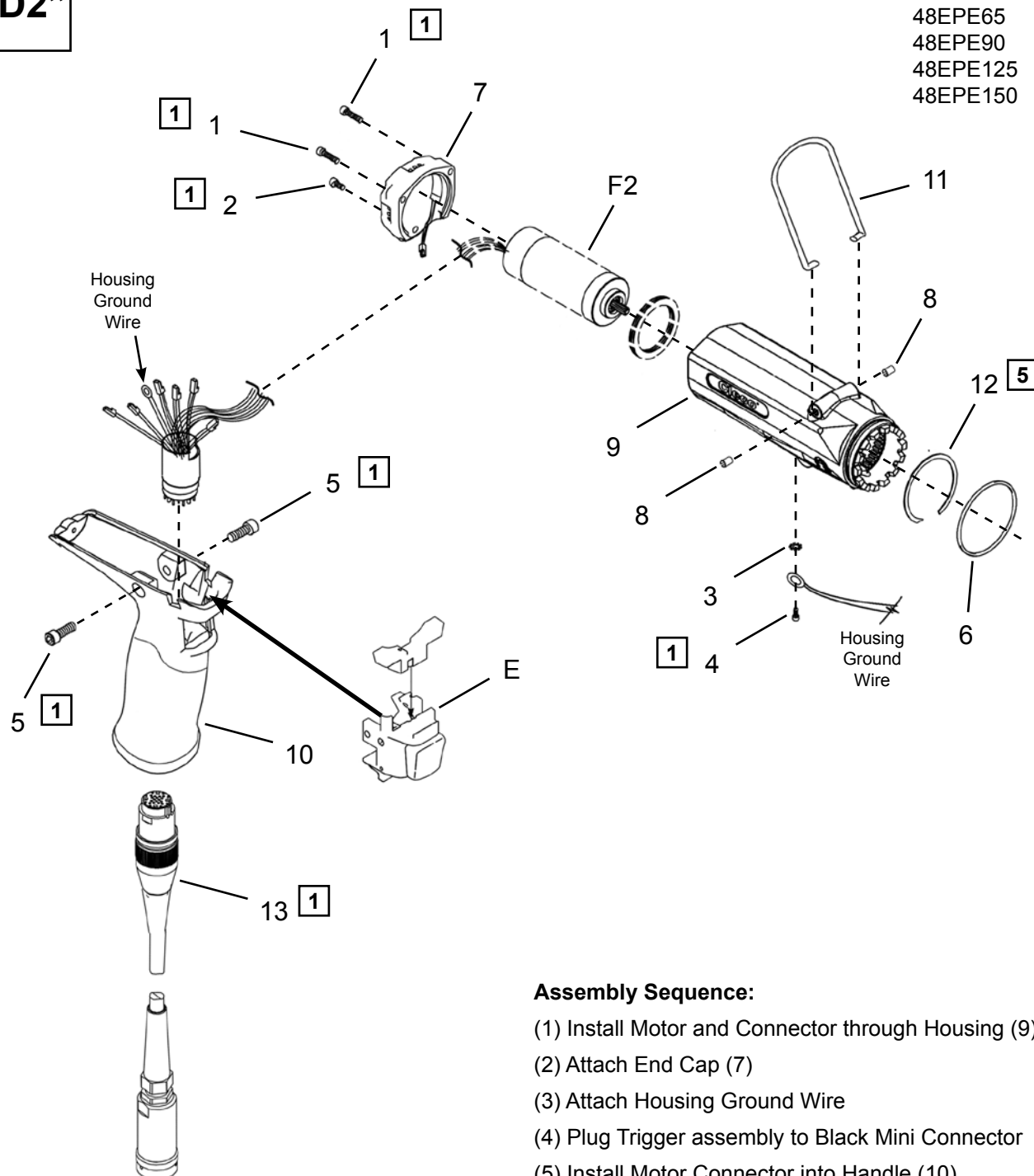
(#) Quantity

(X) Recommended Spare Parts

"D2"

Models

48EPE65
48EPE90
48EPE125
48EPE150



Assembly Sequence:

- (1) Install Motor and Connector through Housing (9)
- (2) Attach End Cap (7)
- (3) Attach Housing Ground Wire
- (4) Plug Trigger assembly to Black Mini Connector
- (5) Install Motor Connector into Handle (10)
- (6) Install Trigger assembly into Handle (10)
(See Illustration "E")
- (7) Install Reverse Actuator components into Trigger
(See Illustration "E")

1 5 See Service Notes

Cleco®
Handle - Air LB Tool Connector

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Illustration "D2"

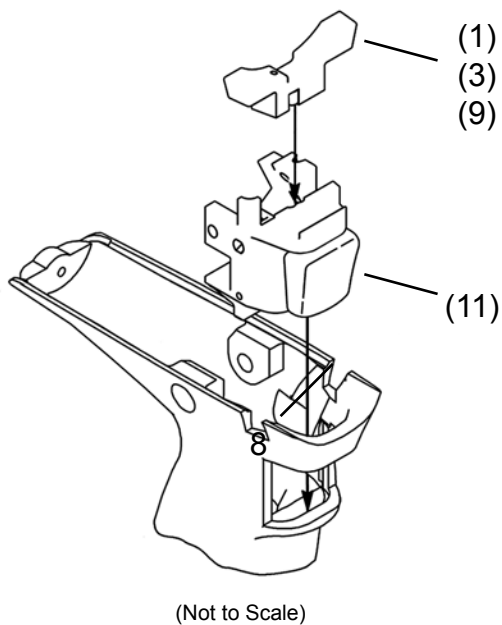
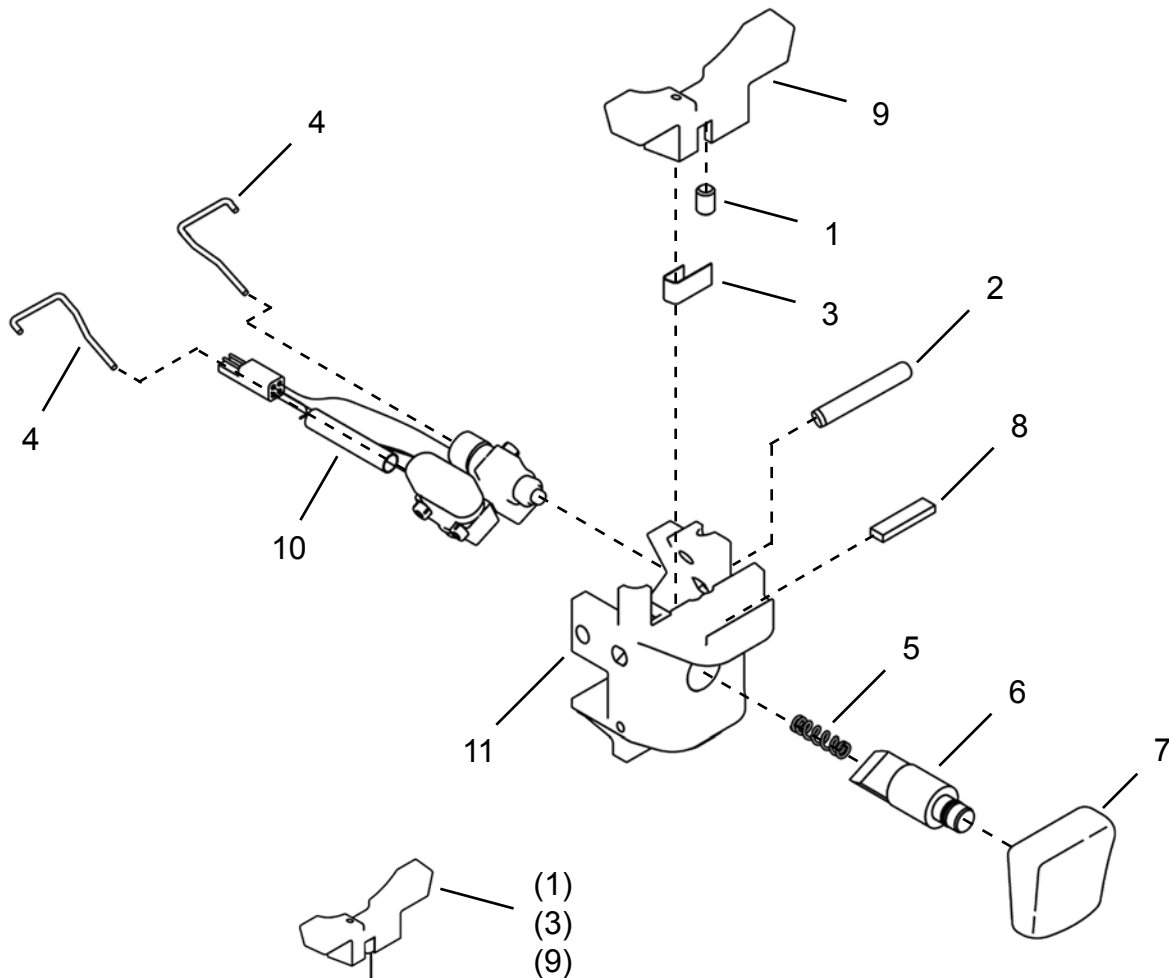
Ref	Number	#	X	EN
				Description
1	B121A	2	4	Cap Screw
2	B124R	1	3	Cap Screw
3	W115	1	3	Lock Washer
4	541927	1	3	Screw
5	B122S	2	4	Cap Screw
6	22598	1	3	O-Ring
7	542820	1		Rear Cap
8	931791	2	4	Spring Pin
9	542679	1		Top Handle
10	207338E	1		Bottom Handle
11	931962	1	1	Suspension Bail
12	505306	1	1	Retaining Ring
Tool Cable (Optional Length)				
13	301866-2M	1		2 meter cable
	301866-3M			3 meter cable
	301866-4M			4 meter cable
	301866-6M			6 meter cable
	301866-8M			8 meter cable
	301866-10M			10 meter cable
	301866-15M			15 meter cable
Inline Swivel Cable (Optional Length)				
13	301904-2M	1		2 meter cable
	301904-3M			4 meter cable
	301904-8M			8 meter cable
	301904-15M			15 meter cable
Angle Swivel Cable (Optional Length)				
13	301903-2M	1		2 meter cable
	301903-3M			4 meter cable
	301903-8M			8 meter cable
	301903-15M			15 meter cable
Tool Cable Extension (Optional Length)				
13	301877-4M	1		4 meter cable
	301877-8M			8 meter cable
	301877-10M			10 meter cable
	301877-20M			20 meter cable
	301877-30M			30 meter cable
	301877-40M			40 meter cable
	301877-50M			50 meter cable

(#) Quantity

(X) Recommended Spare Parts

Cleco®
Trigger Assembly

“E”



Assembly Sequence:

Squeeze trigger slightly and slide down into position.

Install the Reverse Actuator and components (1, 3, 9) into the trigger.

Cleco®
Trigger Assembly

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Illustration "E"

Ref	Number	#	X	EN
				Description
1	1007441	1	3	Detent Pin
2	843280	1	2	Pin
3	207318	1		Leaf Spring
4	935077	2	3	Spring Pin
5	913365	1	3	Spring
6	207315	1		Trigger Shaft
7	1110038	1		Trigger
8	542088	1	3	Foam Pad
9	207314	1		Reverse Actuator
10	301729	1	2	Start / Reverse Switch
11	207313	1		Switch Housing

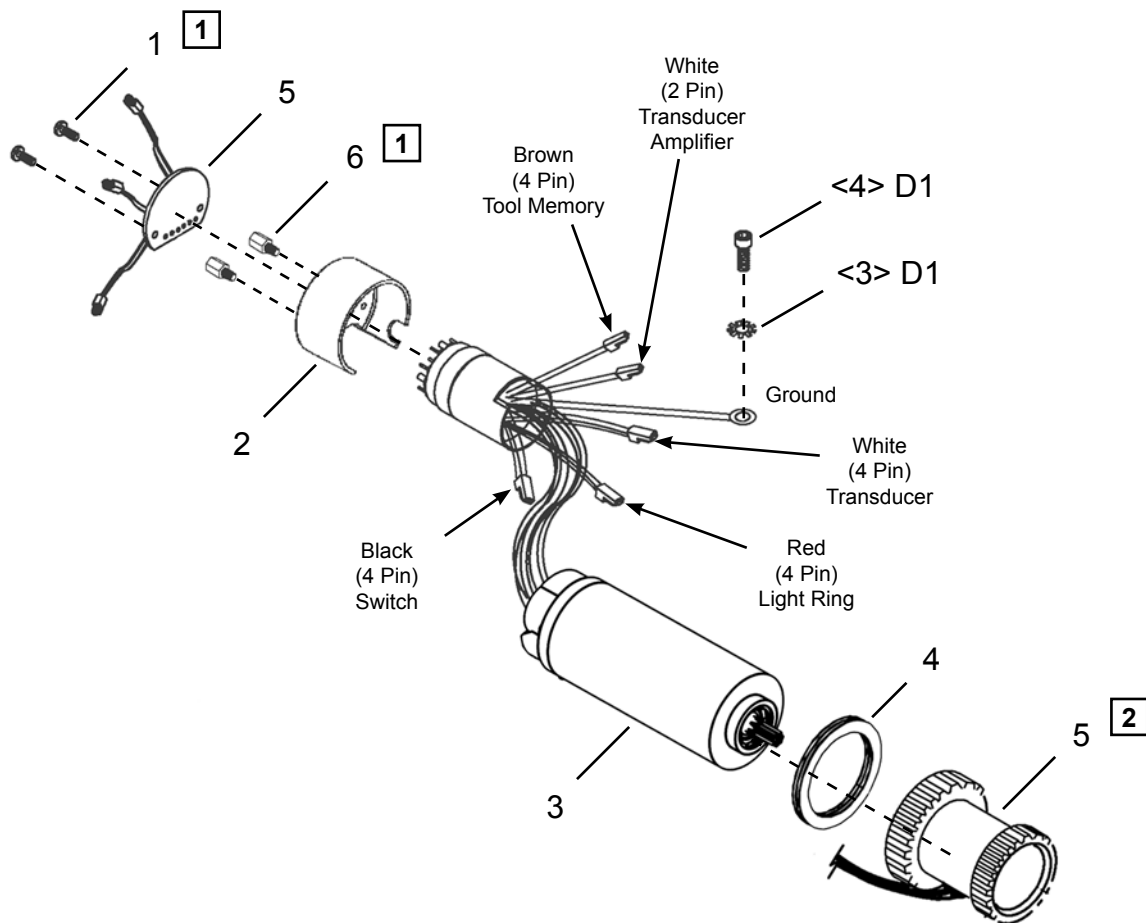
(#) Quantity

(X) Recommended Spare Parts

“F1”

Models

48EP65
48EP90
48EP125
48EP150



1 **2** See Service Notes

Cleco®
Motor - Matrix Tool Connector

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Illustration "F1"

Ref	Number	#	X	EN
				Description
1	17-111	2	4	Pan Head Screw - #4-40 x .19
2	542588	1		Motor Spacer
3	301761	1		Motor Assembly
4	542098	1	2	Wave Spring
5	Table "F1"	1		Transducer Assembly
6	542244	2	2	Stand Off

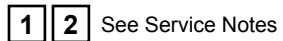
(#) Quantity

(X) Recommended Spare Parts

Table "F1"

Ref.	Description	#	48EP65D4	#	48EP90D4	#	48EP125D4 48EP150D4
5	Transducer (unprogrammed)	1	542846-12	1	542846-31	1	542846-36
	Transducer (programmed)	1	542846-12P	1	542846-31P	1	542846-36P
	Transducer Capacity		12 Nm		31 Nm		36 Nm

48EPE65
48EPE90
48EPE125
48EPE150



Cleco®
Motor - Air LB Tool Connector

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Illustration "F2"

Ref	Number	#	X	EN
				Description
1	17-111	2	4	Pan Head Screw - #4-40 x .19
2	542588	1		Motor Spacer
3	301761E	1		Motor Assembly
4	542098	1	2	Wave Spring
5	Table "F2"	1		Transducer Assembly
6	542244	2	2	Stand Off

(#) Quantity

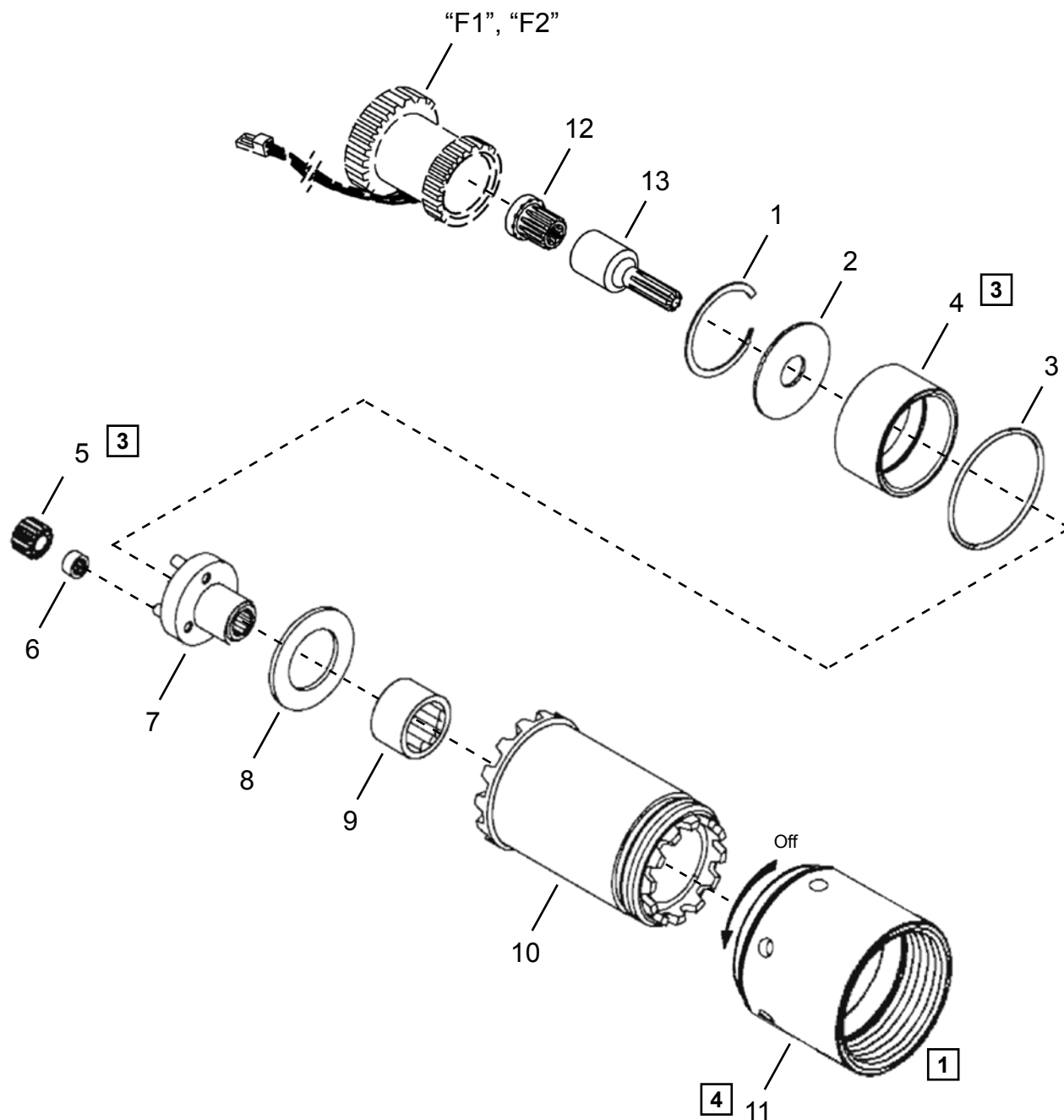
(X) Recommended Spare Parts

Table "F2"

Ref.	Description	#	48EPE65D4	#	48EPE90D4	#	48EPE125D4 48EPE150D4
5	Transducer (unprogrammed)	1	542846-12	1	542846-31	1	542846-36
	Transducer (programmed)	1	542846-12P	1	542846-31P	1	542846-36P
	Transducer Capacity		12 Nm		31 Nm		36 Nm

"G"

Models
48EP(E)65



1 3 4 See Service Notes

Cleco®
Single Stage Gearing

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Illustration "G"

Ref	Number	#	X	EN
				Description
--	543464-1	1		Gear Case Assembly
1	800116	1	2	Retaining Ring
2	541887	1		Retention Washer
3	1011732	1	3	O-Ring
4	542090	1		Ring Gear
5	541893	3	6	Idler Gear (21T)
6	541487	3	6	Bearing Cage
7	542793	1		Output Spindle
8	502983	1		Thrust Race
9	500528	1	2	Needle Bearing
10	542794	1		Angle Adapter (includes Ref. 9)
11	543462-01	1		Gear Case Nut
12	541044	1	2	Pinion Adapter
13	541898	1	2	Extension Pinion

(#) Quantity

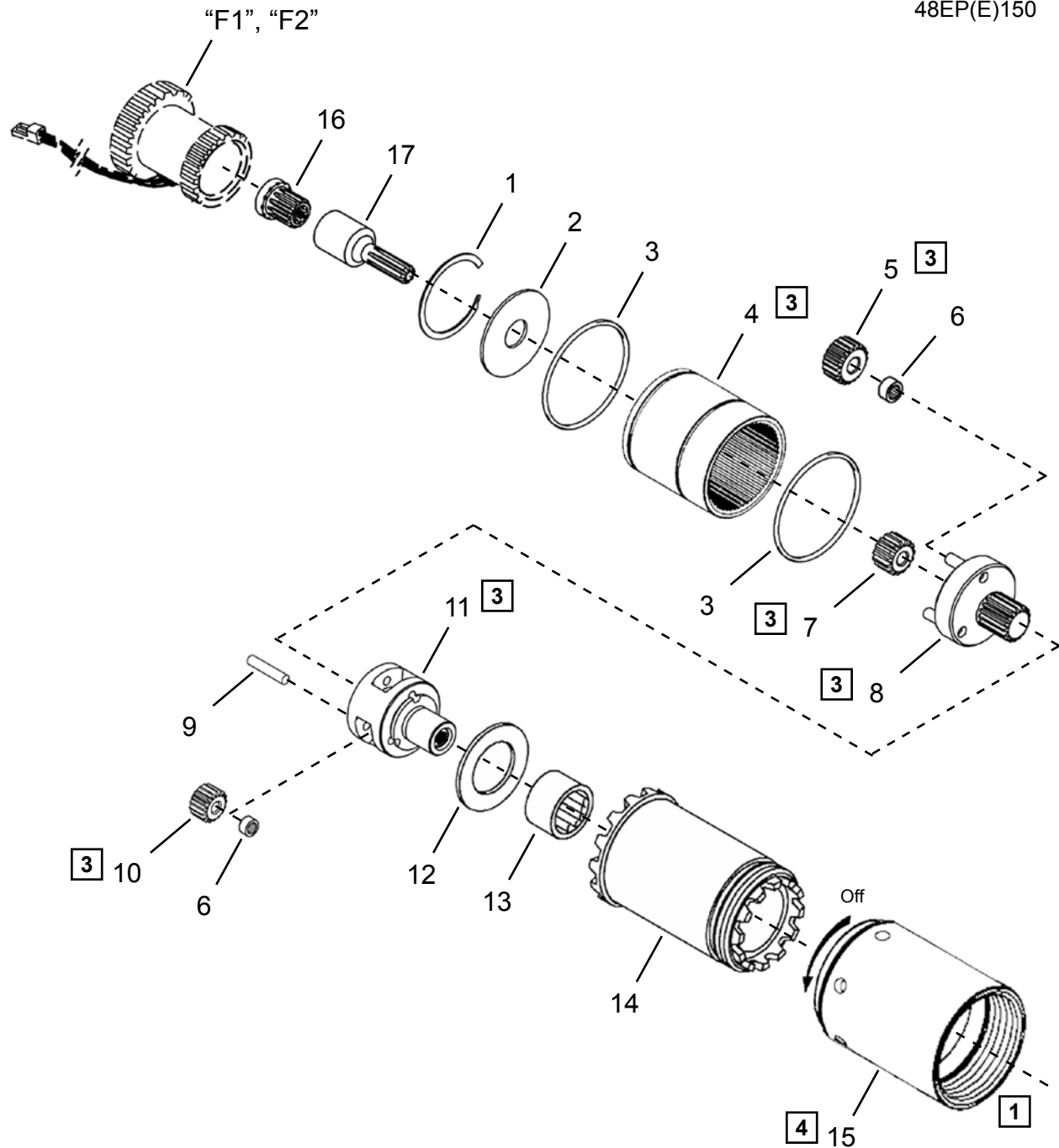
(X) Recommended Spare Parts

(T) Teeth

Cleco®
Double Stage Gearing

"H"

Models
48EP(E)90
48EP(E)125
48EP(E)150



1 3 4 See Service Notes

Cleco®
Double Stage Gearing

PL12EN-48EP-1
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Illustration "H"

Ref	Number	#	X	EN
				Description
--	Table "H"	1		Gear Case Assembly
1	800116	1	2	Retaining Ring
2	541887	1		Retention Washer
3	542724	2	3	O-Ring
4	542722	1		Ring Gear
5	Table "H"	3	6	Idler Gear
6	203749	6	12	Needle Bearing
7	541899	1	3	Slip-On Gear
8	Table "H"	1		Planet Carrier
9	541888	3	6	Pin
10	Table "H"	3	6	Idler Gear
11	Table "H"	1		Lower Gear Cage
12	502983	1		Thrust Race
13	500528	1	2	Needle Bearing
14	542829	1		Angle Adapter (includes Ref. 13)
15	543462-02	1		Gear Case Nut
16	541044	1	2	Pinion Adapter
17	541898	1	2	Extension Pinion

(#) Quantity

(X) Recommended Spare Parts

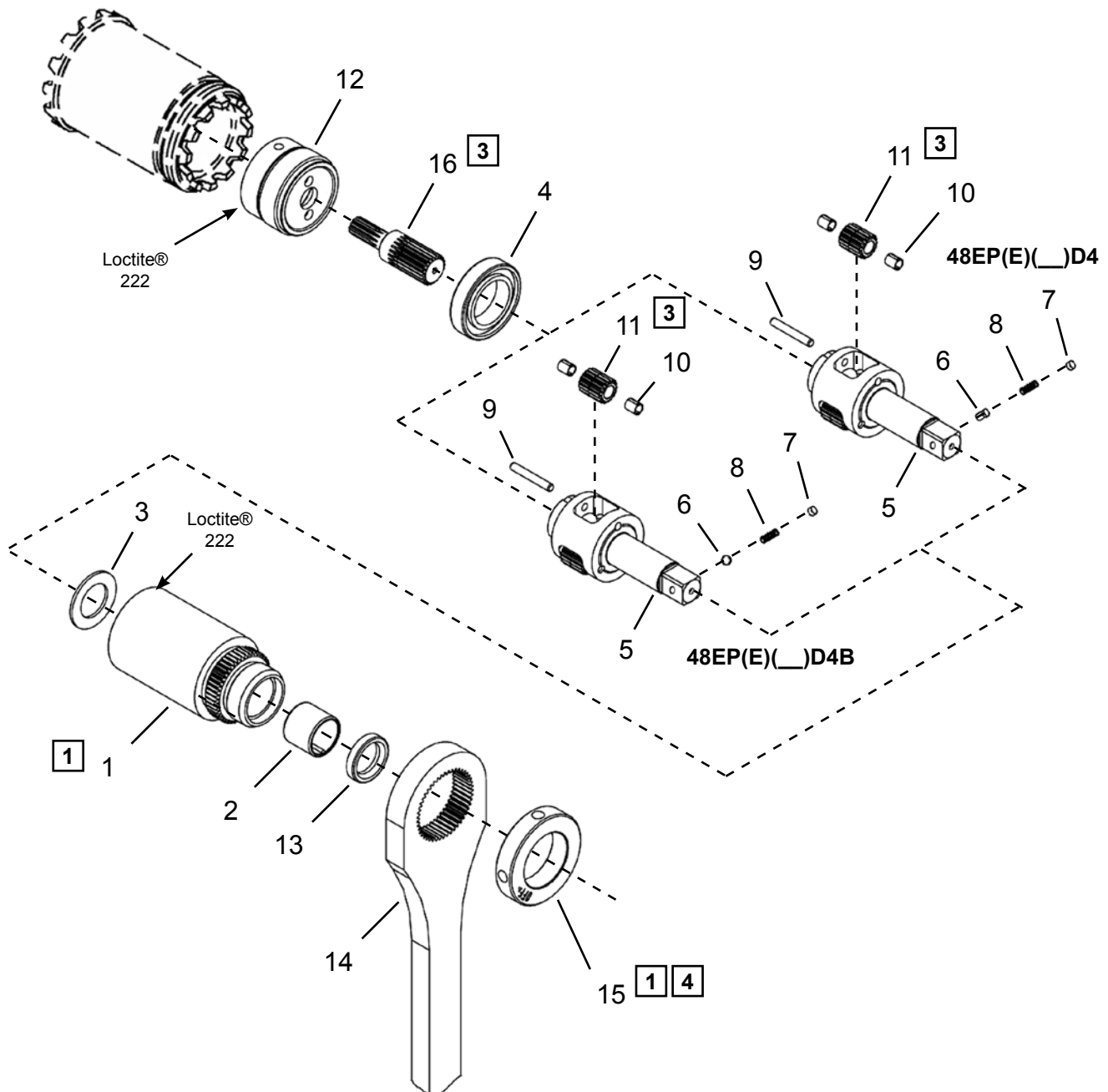
Table "H"

Ref.	Description	#	48EP(E)90	#	48EP(E)125	#	48EP(E)150
--	Gear Case Assembly	1	543464-02	1	543464-03	1	543464-03
5	Idler Gear	3	541894 (17T)	3	541894 (17T)	3	541897 (20T)
8	Planet Carrier	1	542230	1	542233	1	542233
10	Idler Gear	3	541894 (17T)	3	541897 (20T)	3	541897 (20T)
11	Lower Gear Cage	1	542079	1	542099	1	542099

(T) Teeth

"1"

Models
48EP(E)90
48EP(E)125



1 3 4 See Service Notes

Illustration "I"

Ref	Number	#	X	EN
				Description
--	Table "I"	1		Gear Case Assembly
1	543461	1		Inline Gear Case
2	203253	1	2	Needle Bearing
3	502981	1		Thrust Race
4	92100120	1	2	Ball Bearing
5	Table "I"	1		Output Spindle (includes Ref. 6, 7, 8)
6	Table "I"	1	3	Retainer Button
	Table "I"	1	3	Steel Ball
7	Table "I"	1	3	Plug Retainer
8	Table "I"	1	3	Spring
9	543506	3	6	Idler Pin
10	92110002	6	12	Bearing Cage
11	543457	3	6	Idler Gear (17T)
12	543463	1		Gear Case Adapter
13	93140030	1	2	Oil Seal
14	48047128	1		Torque Bar (Steel)
15	11841013	1		Lock Nut
16	543456	1	1	Pinion Shaft

(#) Quantity

(X) Recommended Spare Parts

(T) Teeth

Table "I"

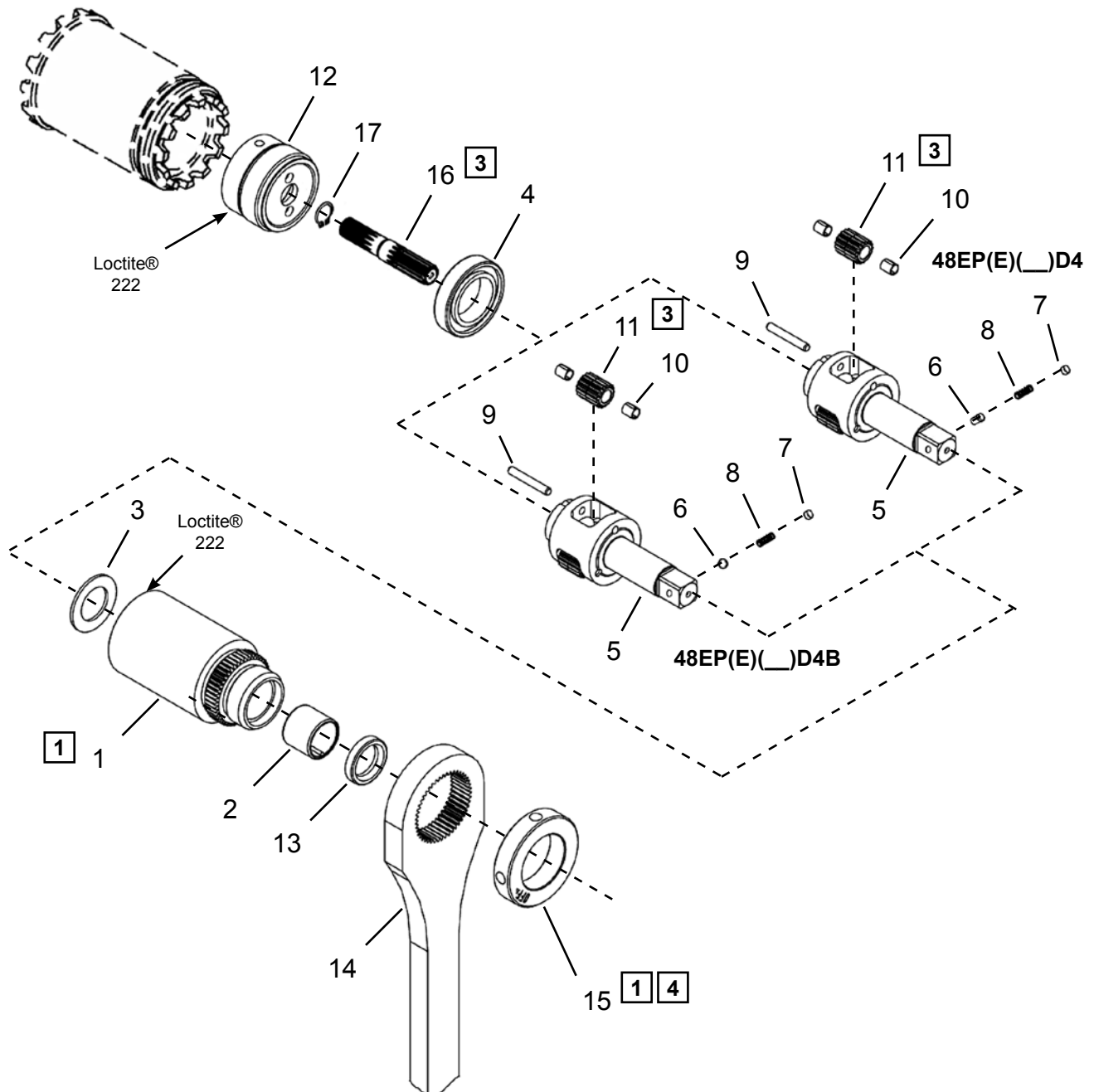
Ref.	Description	#	48EP(E)90D4 48EP(E)125D4	#	48EP(E)90D4B 48EP(E)125D4B
--	Gear Case Assembly	1	543465-01	1	543465-03
5	Output Spindle	1	543455-01	1	543996-01
6	Retainer Button	1	24499		-----
	Steel Ball		-----	1	1014198
7	Plug Retainer	1	26989	1	LB-501
8	Spring	1	9D6481	1	WS-371-B

“J”

Models

48EP(E)65

48EP(E)150



1 3 4 See Service Notes

Cleco®
Output Gearing

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Illustration "J"

Ref	Number	#	X	EN
				Description
--	Table "J"	1		Gear Case Assembly
1	543461	1		Inline Gear Case
2	203253	1	2	Needle Bearing
3	502981	1		Thrust Race
4	92100120	1	2	Ball Bearing
5	Table "J"	1		Output Spindle (includes Ref. 6, 7, 8)
6	Table "J"	1	3	Retainer Button
	Table "J"	1	3	Steel Ball
7	Table "J"	1	3	Plug Retainer
8	Table "J"	1	3	Spring
9	543507	3	6	Idler Pin
10	543508	6	12	Bearing Cage
11	543460	3	6	Idler Gear (21T)
12	543463	1		Gear Case Adapter
13	93140030	1	2	Oil Seal
14	Table "J1"	1		Torque Bar
15	11841013	1		Lock Nut
16	543459	1	1	Pinion Shaft
17	8000146	1	2	Retaining Ring

(#) Quantity
(X) Recommended Spare Parts
(T) Teeth

Table "J"

Ref.	Description	#	48EP(E)65D4 48EP(E)150D4	#	48EP(E)65D4B 48EP(E)150D4B
--	Gear Case Assembly	1	543465-02	1	543465-04
5	Output Spindle	1	543458-01	1	543997-01
6	Retainer Button	1	24499		-----
	Steel Ball		-----	1	1014198
7	Plug Retainer	1	26989	1	LB-501
8	Spring	1	9D6481	1	WS-371-B

Table "J1"

Ref.	Description	#	48EP(E)65D4	#	48EP(E)150D4
14	Torque Bar	1	48047126	1	48047128
	Material		Aluminum		Steel

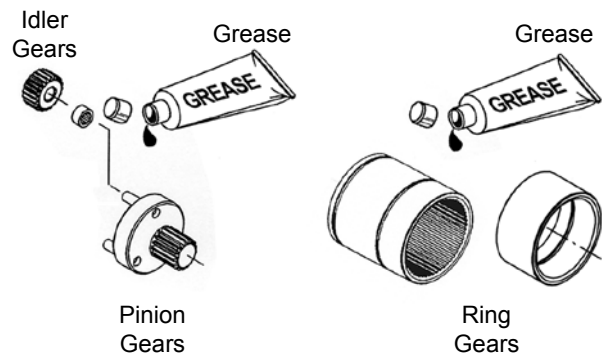
1 Tightening Torque

Illustration	Reference	Tightening torque	
		Ft-Lbs (in-lbs)	Nm
D1, D2	1	(10-14)	1,1-1,6
	2	(10-14)	1,1-1,6
	4	(10-14)	1,1-1,6
	5	(50-55)	5,6-6,2
	13 (Swivel)	15-18	20-25
F1, F2	1	(4-6)	0,45-0,68
	6	(4-6)	0,45-0,68
G	11	35-40	47-54
H	15	35-40	47-54
I	1	55-65	75-90
	15	45-50	60-70
J	1	55-65	75-90
	15	45-50	60-70

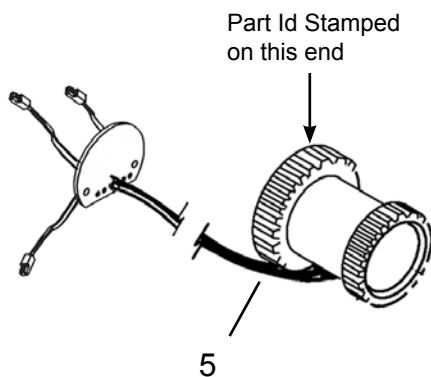
3 Gear Train Lubrication

541444 - 2 oz. (56 g)

541445 - 1 pound (0.45 kg)

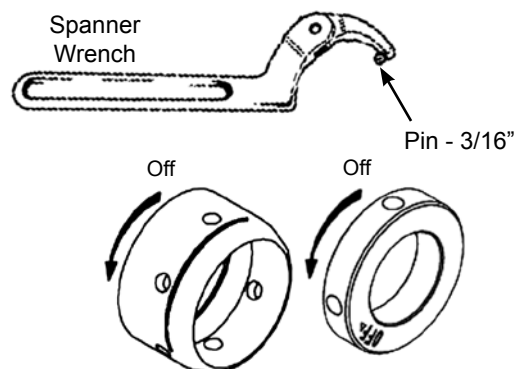


2 Transducer Identification

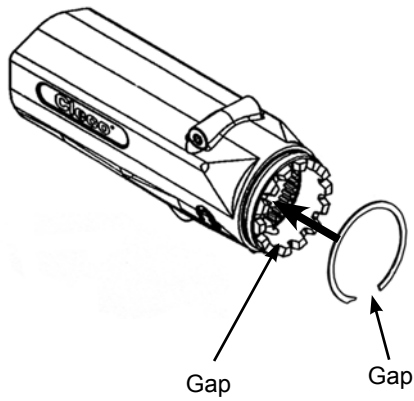


Transducers are not interchangeable, check part number.

4 Spanner Wrench



5 Retaining Ring Assembly



48EP(E) Tool Memory Parameters

Model Number	Max Speed [RPM]	Max Torque [Nm]	Torque Cal [Nm]	Transducer Type	Angle Cal [PPD]	Static Current Factor [Nm/A]
48EP(E)65D4	750	65	70.3865	542846-12	113.2308	2.7124
48EP(E)90D4	510	90	111.9428	542846-31	166.1383	3.7809
48EP(E)125D4	360	125	127.3235	542846-36	234.4323	5.3350
48EP(E)150D4	240	150	190.6085	542846-36	350.9548	7.9868

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, MI

**Apex Tool Group
Sales & Service Center**
2630 Superior Court
Auburn Hills, MI 48326
Tel: 248-391-3700
Fax: 248-391-7824

Houston, TX

**Apex Tool Group
Sales & Service Center**
6550 West Sam Houston
Parkway North, Suite 200
Houston, TX 77041
Tel: 713-849-2364
Fax: 713-849-2047

Lexington, SC

Apex Tool Group
670 Industrial Drive
Lexington, SC 29072
Tel: 800-845-5629
Tel: 803-951-7544
Fax: 803-358-7681

Los Angeles, CA

**Apex Tool Group
Sales & Service Center**
15503 Blackburn Avenue
Norwalk, CA 90650
Tel: 562-623-4457
Fax: 562-802-1718

Seattle, WA

**Apex Tool Group
Sales & Service Center**
2865 152nd Avenue N.E.
Redmond, WA 98052
Tel: 425-497-0476
Fax: 425-497-0496

York, PA

**Apex Tool Group
Sales & Service Center**
3990 East Market Street
York, PA 17402
Tel: 717-755-2933
Fax: 717-757-5063

Canada

**Apex Tool Group
Sales & Service Center**
5925 McLaughlin Road
Mississauga, Ont. L5R 1B8
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England

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