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

Cleco®

48EP Series

Electronically Controlled Pistol Grip Nutrunner

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

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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"A"

48	E	P	X	XXX	XX	X

Tool Series
48

Motor Style
E = Brushless Electric Motor

Tool Type
P = Pistol Grip

Feature
- = Matrix Tool Connector (Standard)
E = Air LB Connector

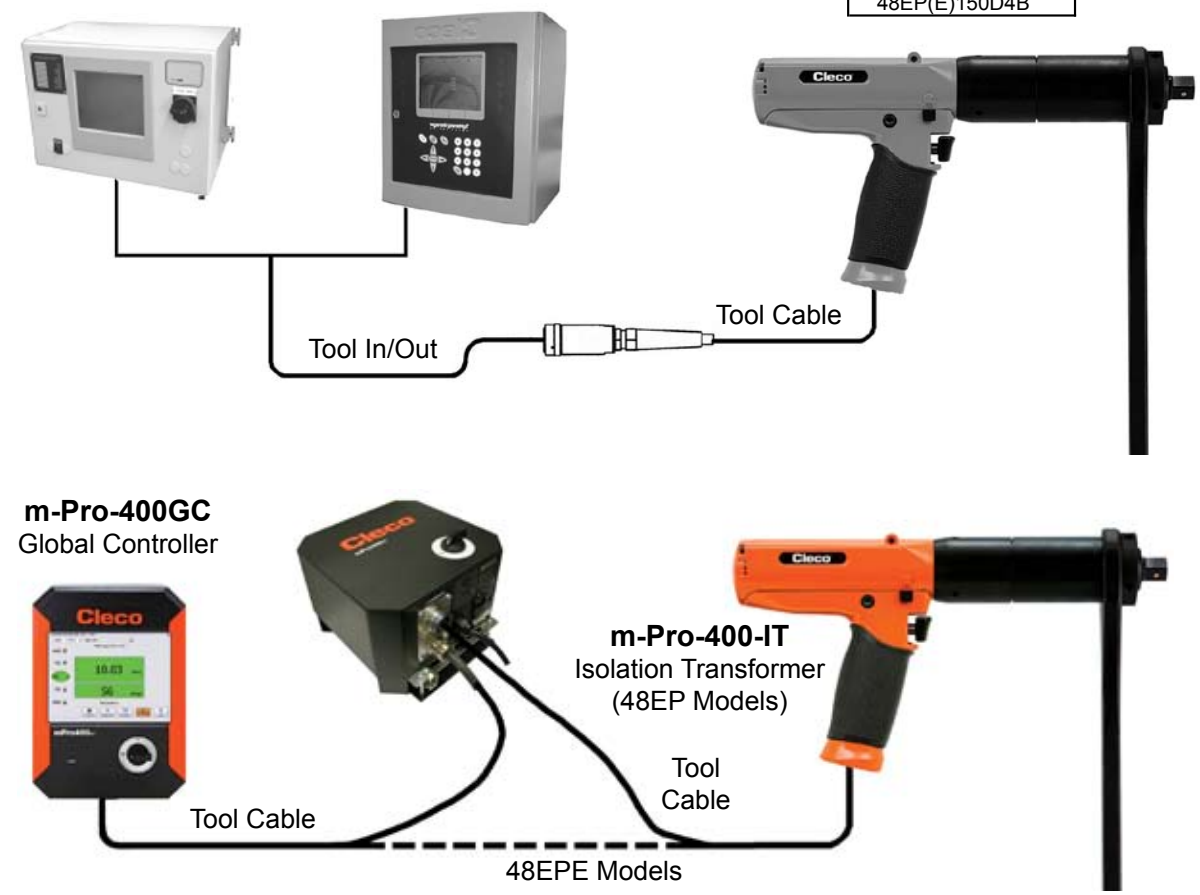
Maximum Torque Nm (rounded to nearest Nm)
65 = 65 Nm
90 = 90 Nm
125 = 125 Nm
150 = 150 Nm

Attachment
D4 = 1/2" Square Drive

Spindle Type
- = Pin Retainer (Standard)
B = Ball Retainer

"B"

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



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

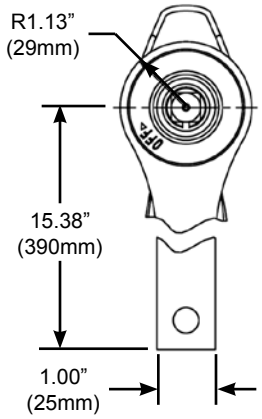
* Note: Contact Apex Tool Group

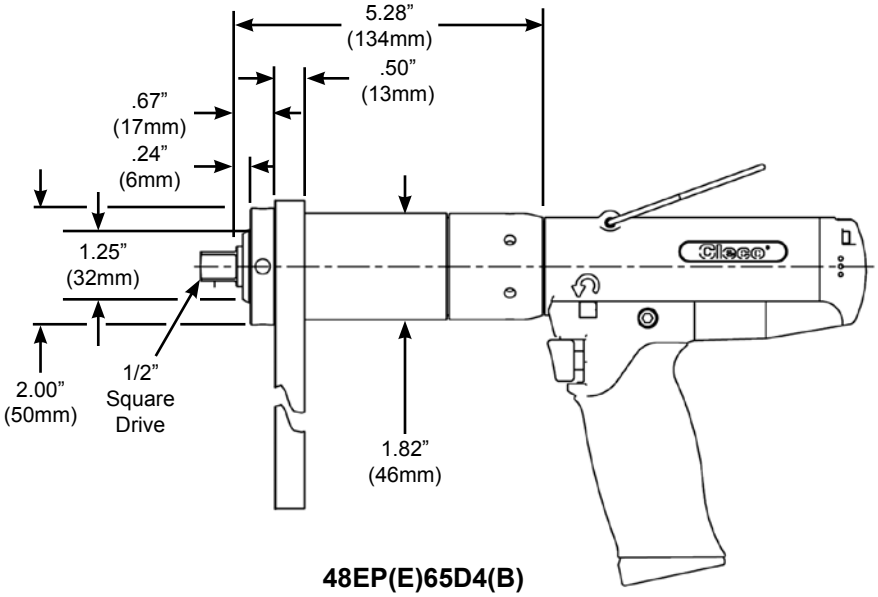
TME-200 Series Controller

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"

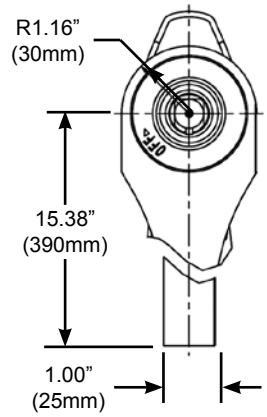
Front View

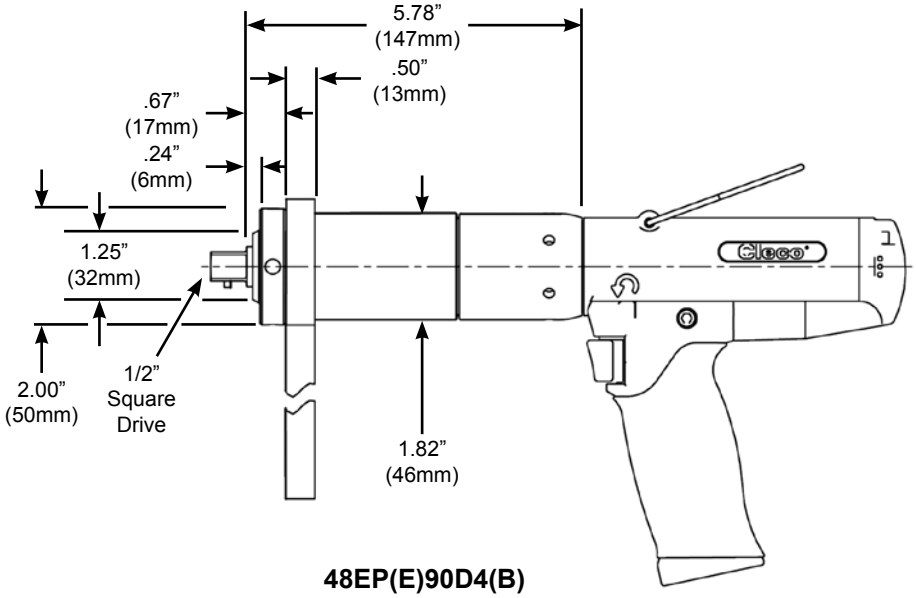




48EP(E)65D4(B)
(Pin Lock Shown)

Front View





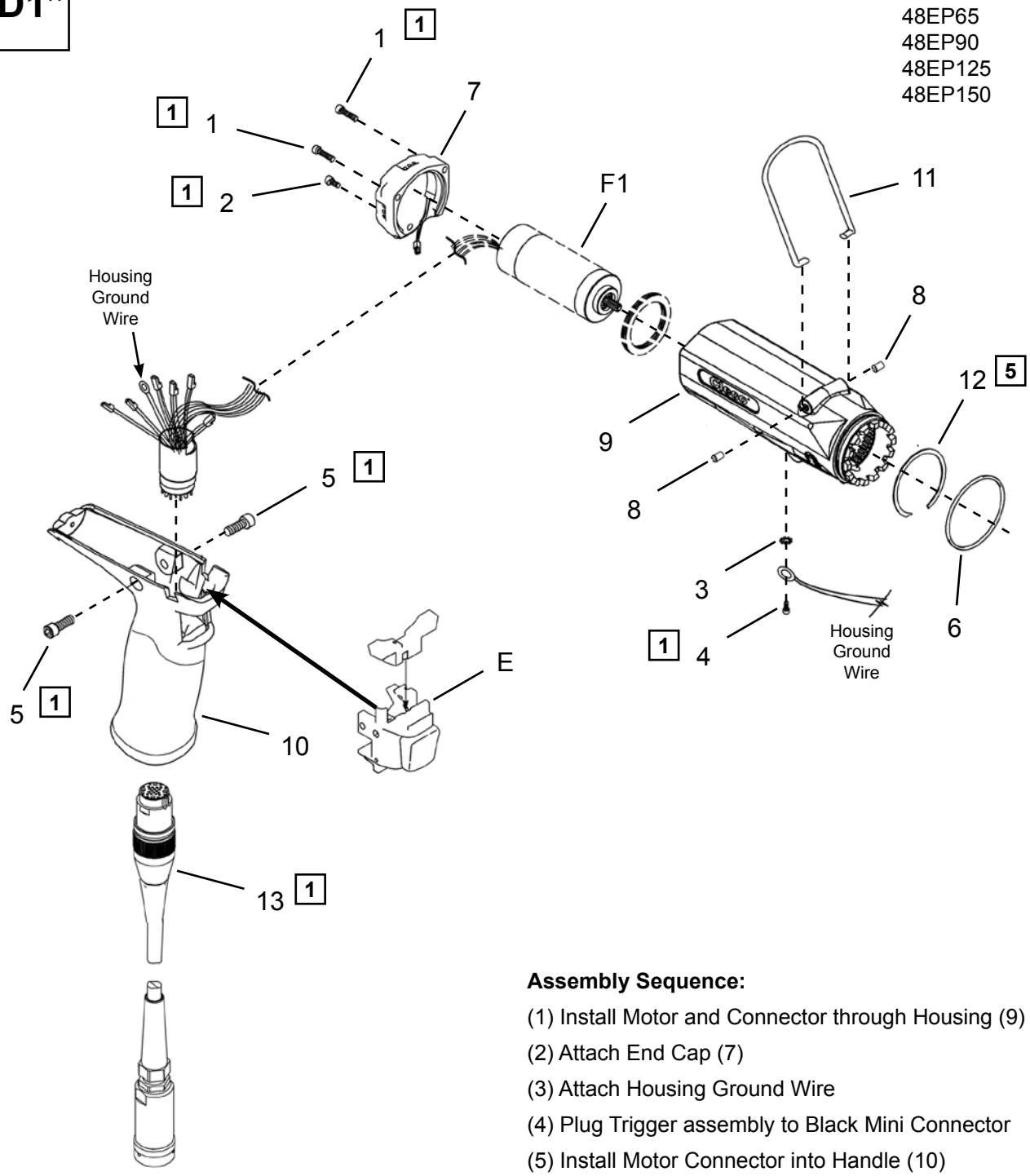
48EP(E)90D4(B)
48EP(E)125D4(B)
48EP(E)150D4(B)
(Pin Lock Shown)

Cleco®

Handle - Matrix Tool Connector

"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

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

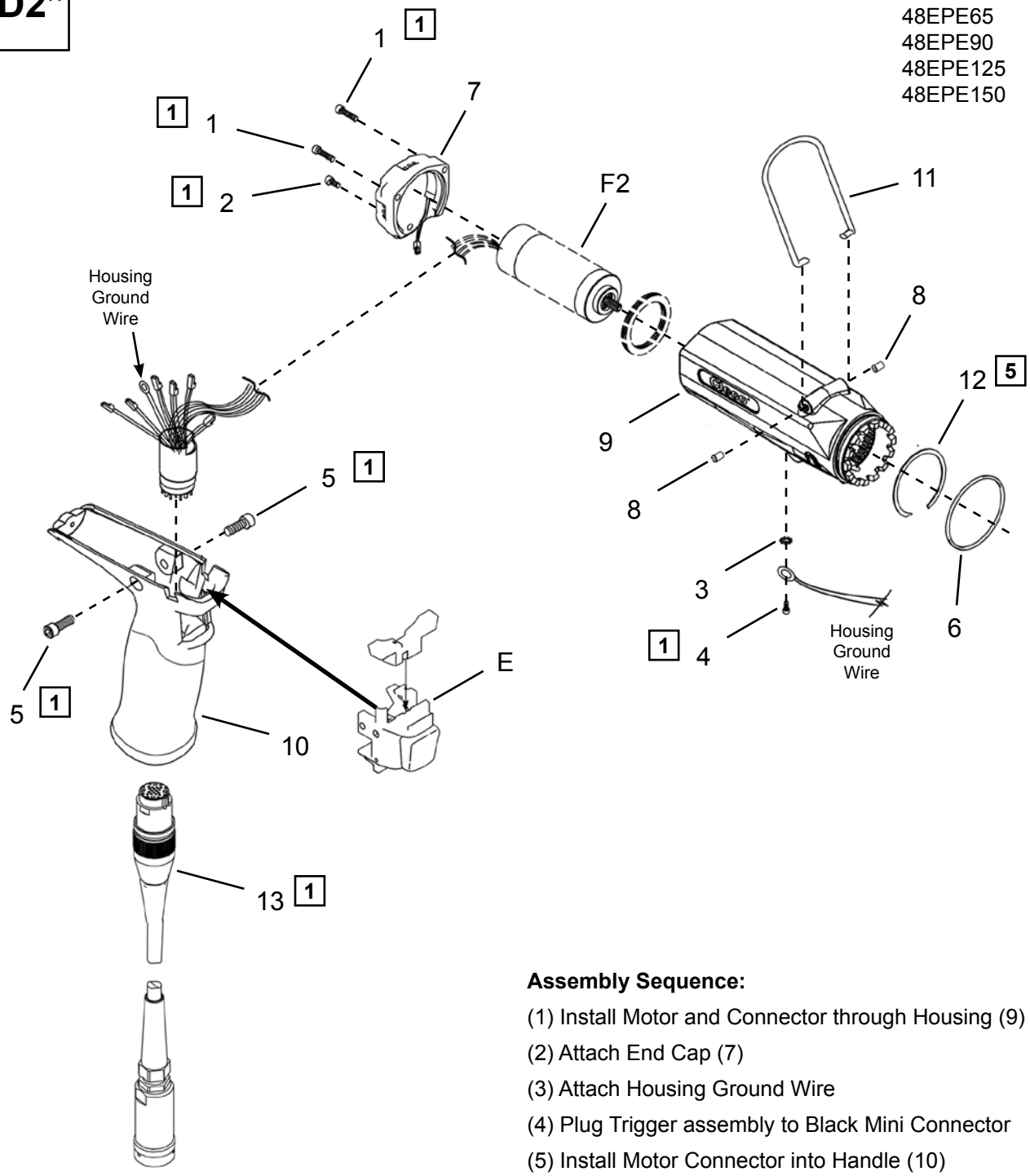
(#) Quantity
(X) Recommended Spare Parts

Cleco®

Handle - Air LB Tool Connector

"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

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

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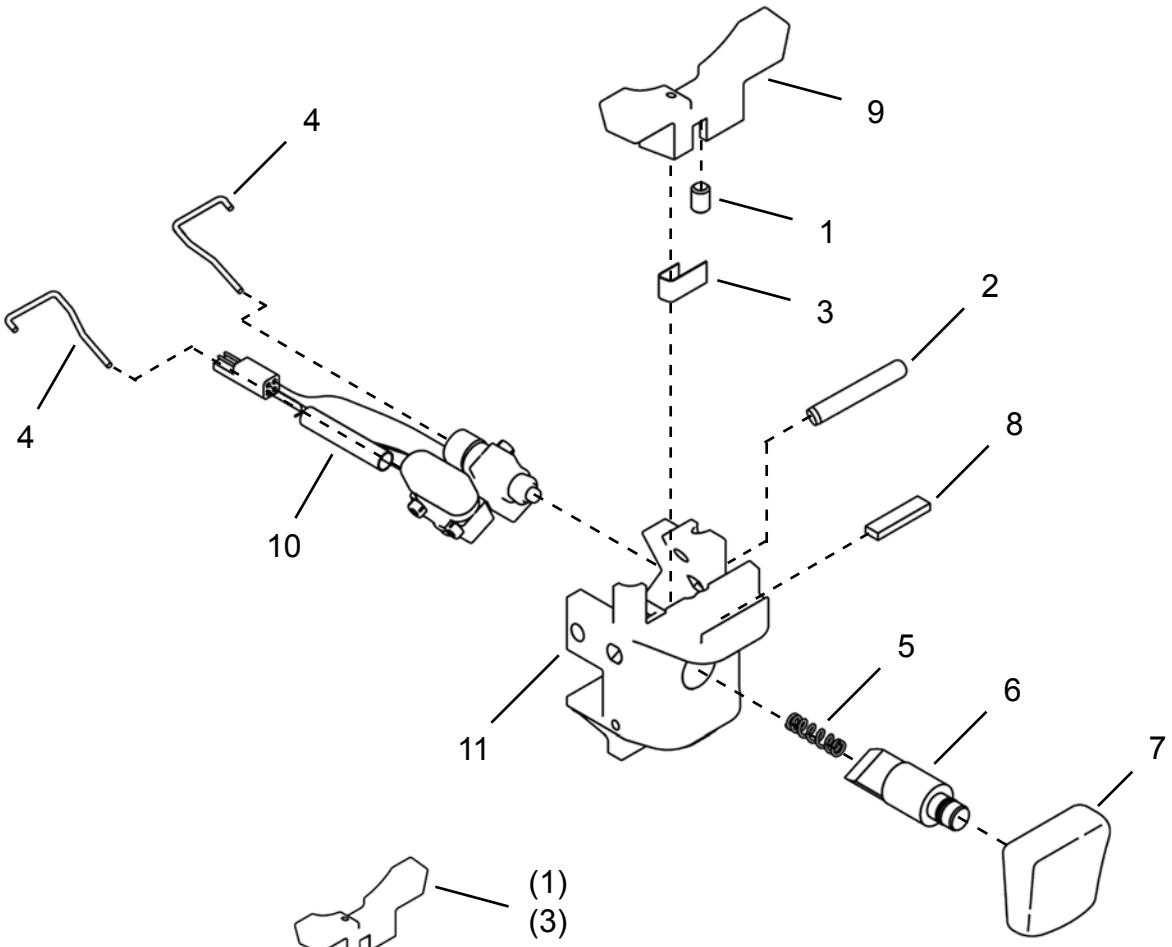
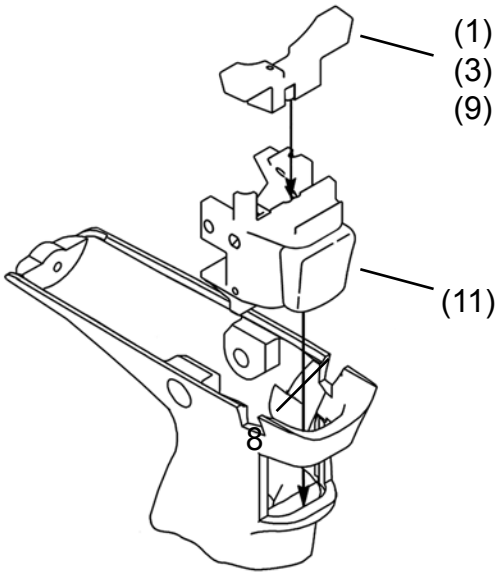
Trigger Assembly

"E"





(Not to Scale)

Assembly Sequence:

Squeeze trigger slightly and slide down into position.

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

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

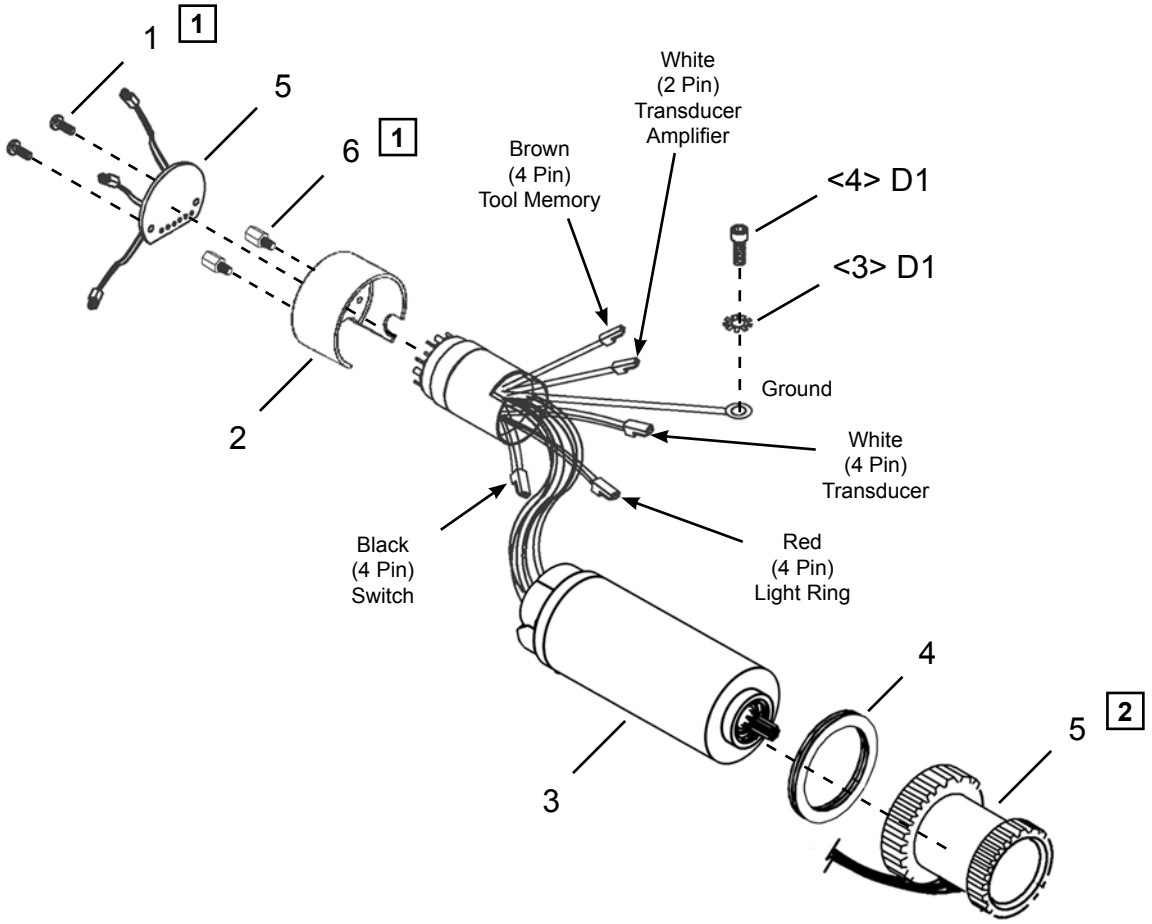
(#) Quantity
(X) Recommended Spare Parts

Cleco®

Motor - Matrix Tool Connector

"F1"

Models
48EP65
48EP90
48EP125
48EP150



1 2 See Service Notes

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"

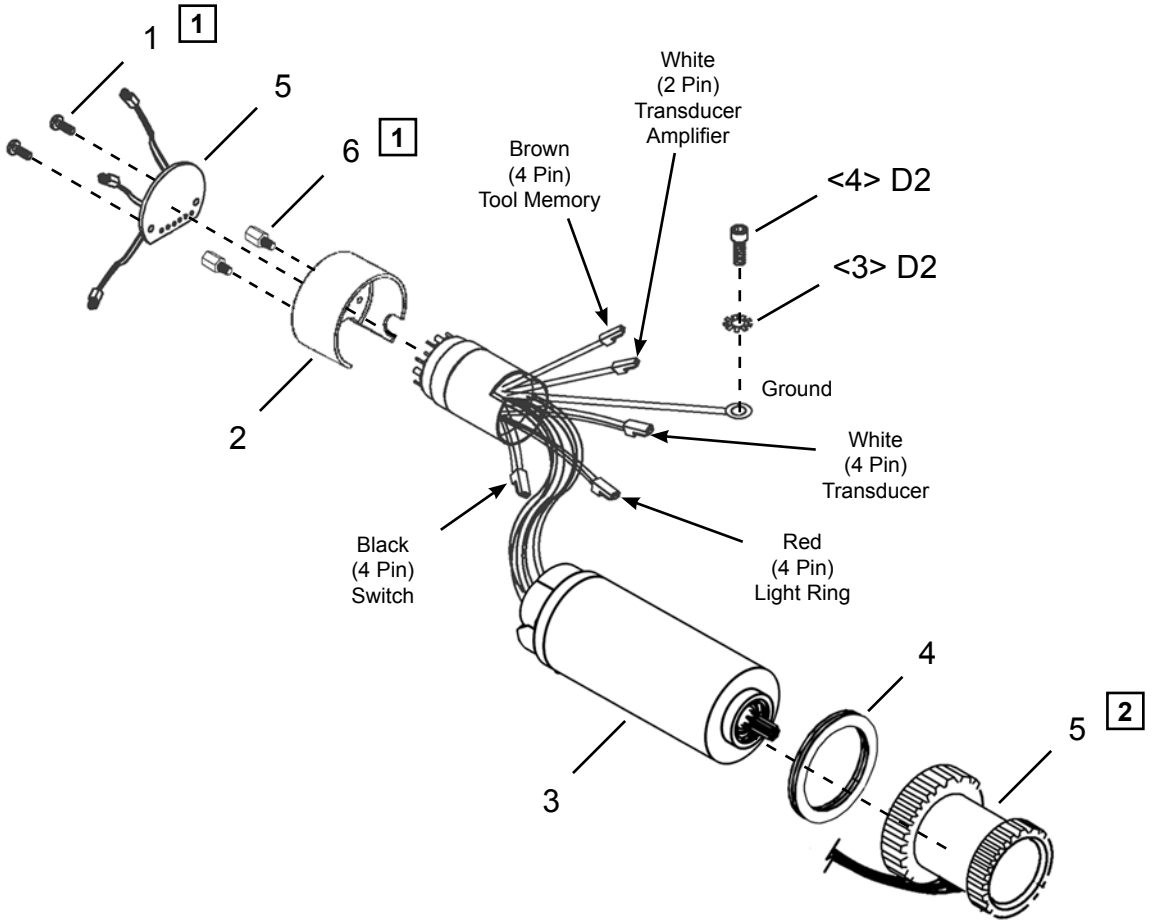
Ref.	Description	#	48EP65D4	#	48EP90D4	#	48EP125D4 48EP150D4
5	Transducer (unprogrammed)	1	542846-12	1	542846-31	1	542846-36
	Transducer (programmed)	1	542846-12P	1	542846-31P	1	542846-36P
	Transducer Capacity		12 Nm		31 Nm		36 Nm

Cleco®

Motor - Air LB Tool Connector

"F2"

Models
48EPE65
48EPE90
48EPE125
48EPE150



1 2 See Service Notes

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

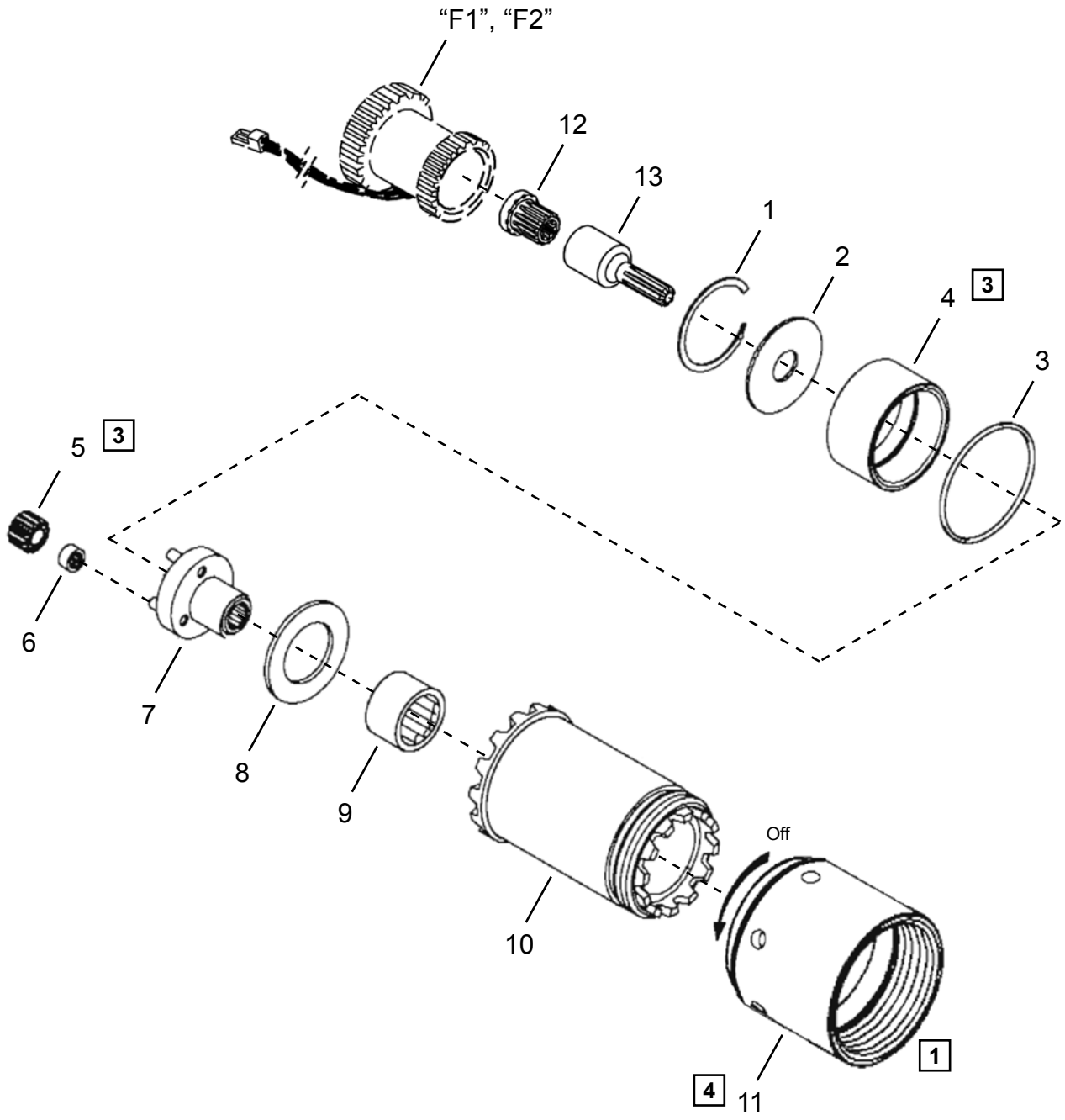
Table "F2"

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

Cleco®
Single Stage Gearing

"G"

Models
48EP(E)65



1 3 4 See Service Notes

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

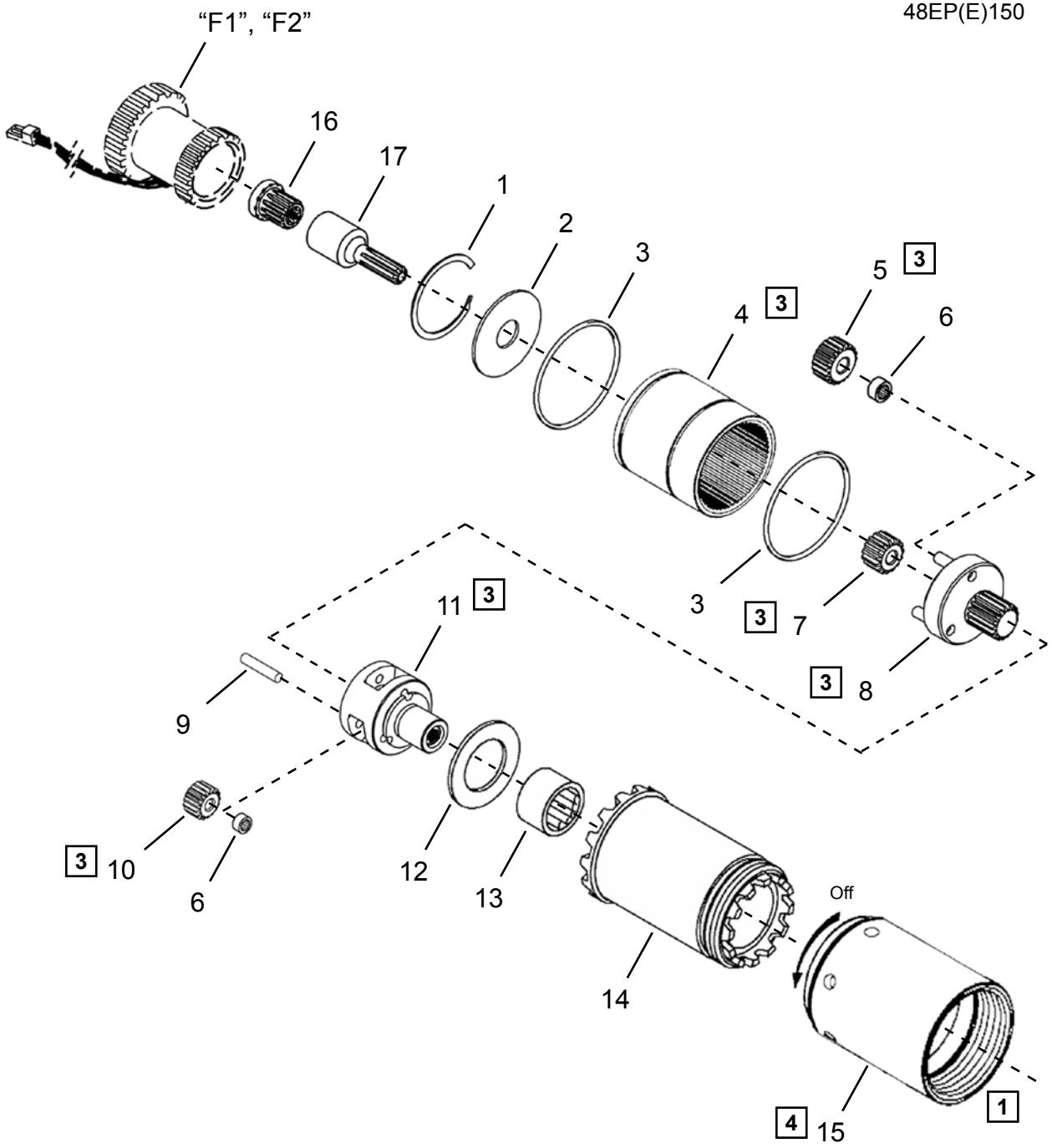
(#) Quantity
(X) Recommended Spare Parts
(T) Teeth

Cleco®

Double Stage Gearing

"H"

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



1 3 4 See Service Notes

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"

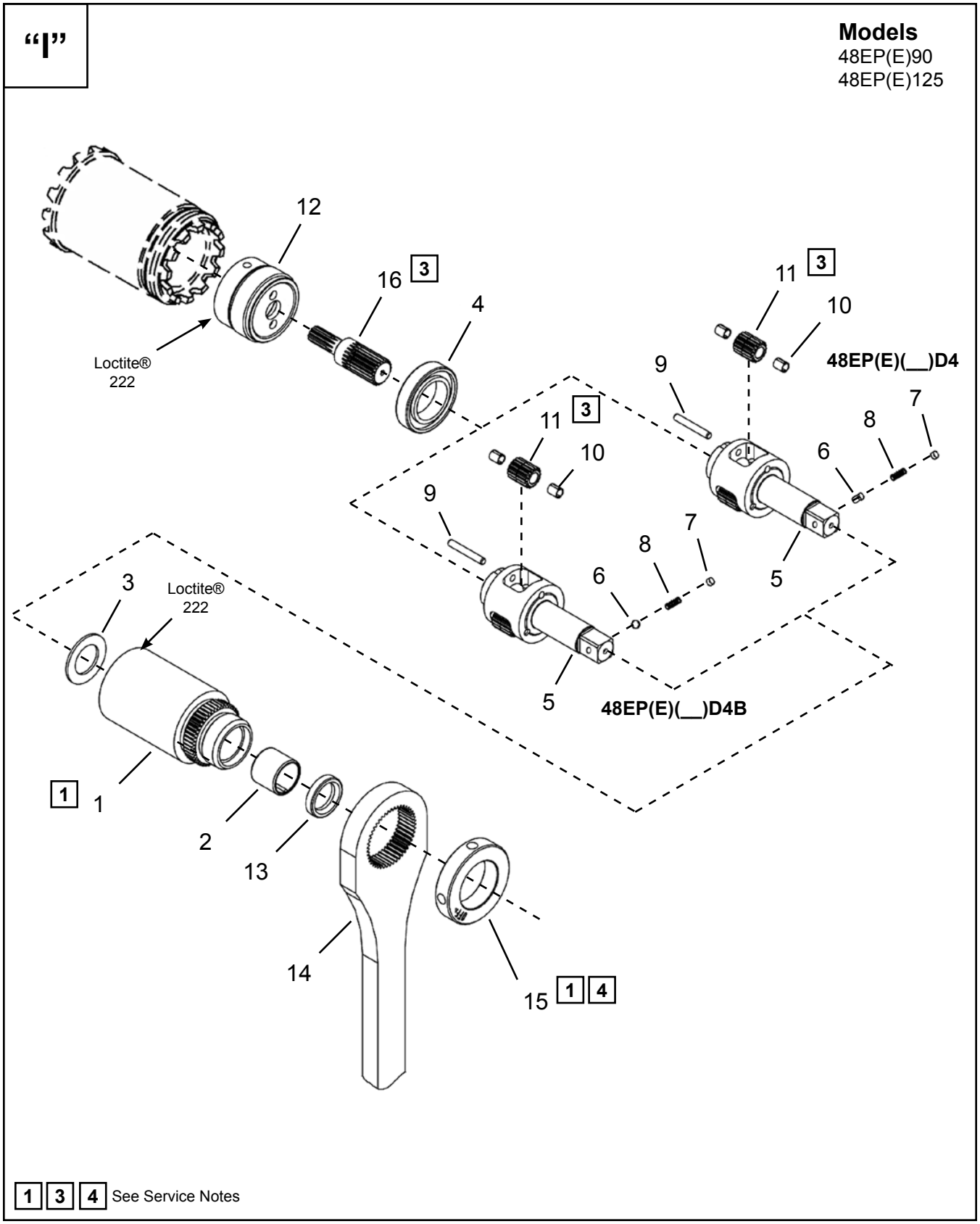
Ref.	Description	#	48EP(E)90	#	48EP(E)125	#	48EP(E)150
--	Gear Case Assembly	1	543464-02	1	543464-03	1	543464-03
5	Idler Gear	3	541894 (17T)	3	541894 (17T)	3	541897 (20T)
8	Planet Carrier	1	542230	1	542233	1	542233
10	Idler Gear	3	541894 (17T)	3	541897 (20T)	3	541897 (20T)
11	Lower Gear Cage	1	542079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

(T) Teeth

Cleco®
Output Gearing

"I"

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

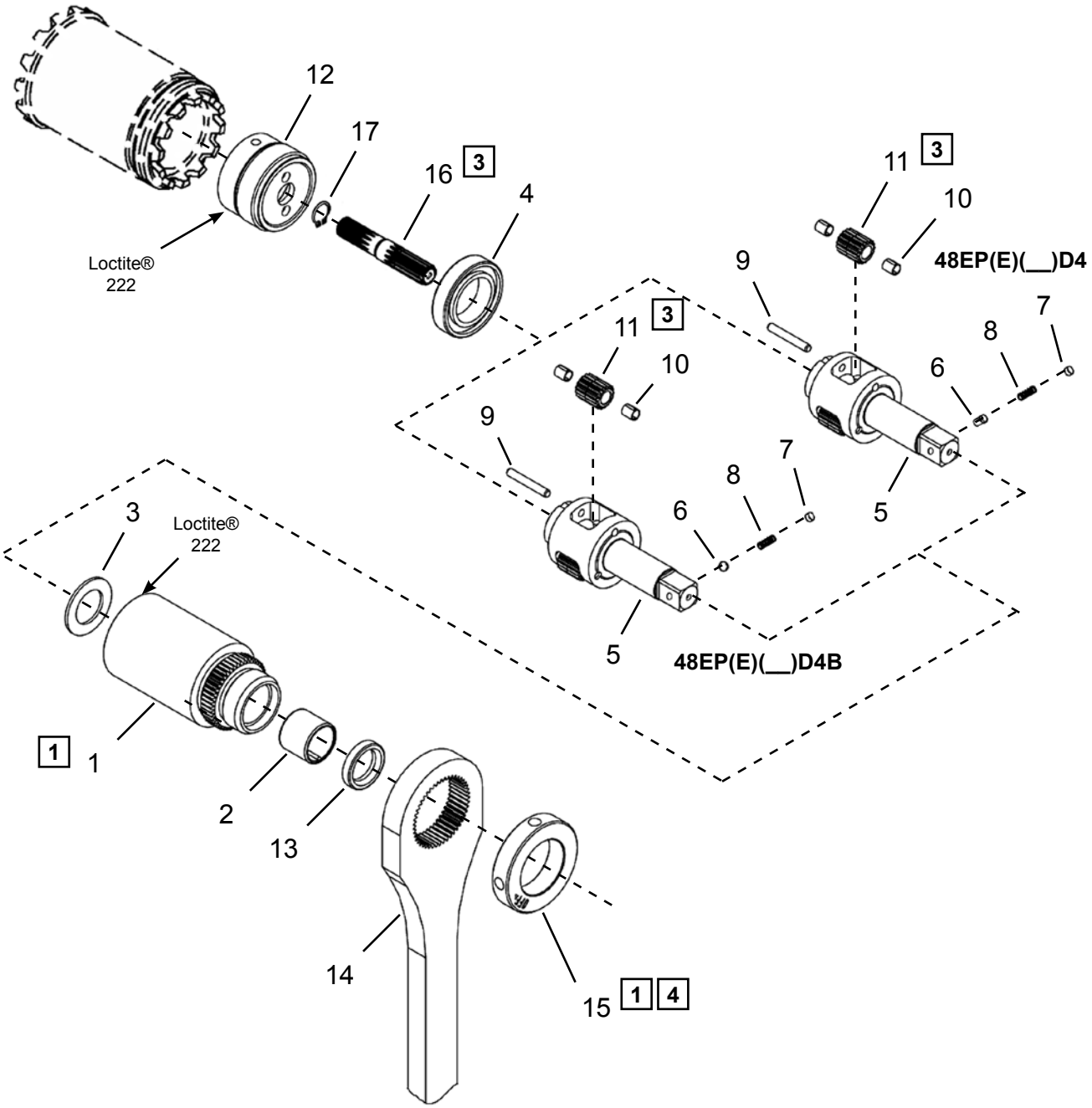
Table "I"

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

Cleco®
Output Gearing

"J"

Models
48EP(E)65
48EP(E)150



1 3 4 See Service Notes

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

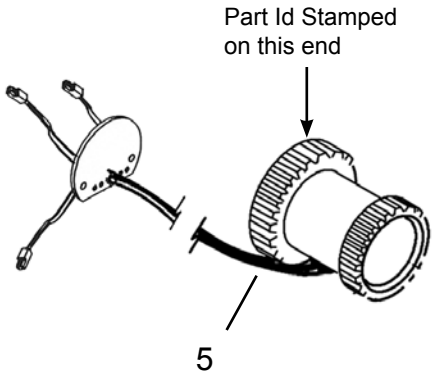
Table "J1"

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

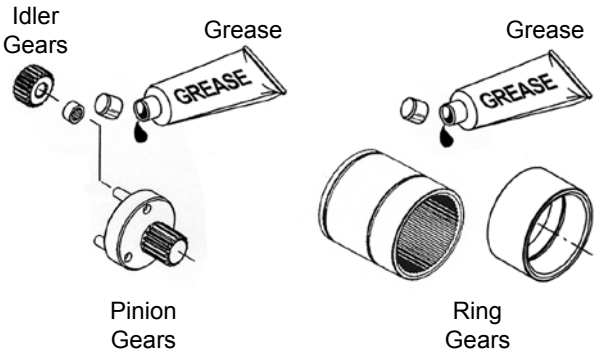
2 Transducer Identification



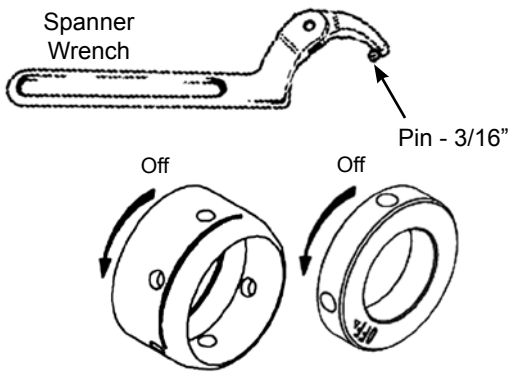
Transducers are not interchangeable, check part number.

3 Gear Train Lubrication

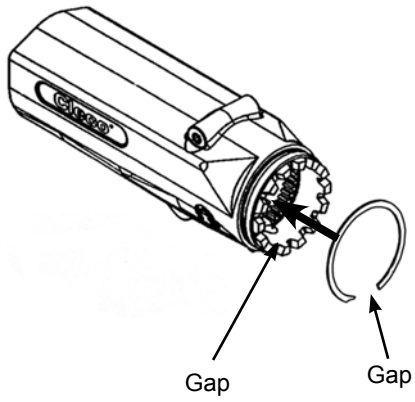
541444 - 2 oz. (56 g)
541445 - 1 pound (0.45 kg)



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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Fax: 905-501-4786

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Fax: +49 (0) 73 63 81 222

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