

Parts Manual
PL12EN-48EC
11/03/2011

OMEGA TECHNOLOGIES

Cleco®

48EC Series
Electronically Controlled Crowfoot Nutrunner



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-crowfoot-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 angle 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	C	X	30	XX	XX	X	1
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Tool Series

48

Motor Style

E = Brushless Electric Motor

Tool Type

C = Crowfoot

Feature

- = Matrix Tool Connector (Standard)

E = Air LB Connector

Maximum Torque Nm (rounded to nearest Nm)

30 = 30 Nm

Tool Termination

C1 = 15 Degree Angle Head

C3 = 30 Degree Angle Head

Socket

EA = 1/4"

MA = 7mm

XX = No Socket

EC = 3/8"

MB = 8mm (5/16")

EE = 1/2"

MC = 9mm

EF = 9/16"

MD = 10mm

ME = 11mm (7/16")

MF = 12mm

MG = 13mm

MH = 14mm

MI = 15mm

Extension

0 = Flush

4 = 1/2"

6 = 3/4"

X = No Socket

Output Type

1 = Thru Hex

X = No Socket

Crowfoot Socket Data

“B”

m-Pro-400 Series
Controller



TME-200 Series
Controller



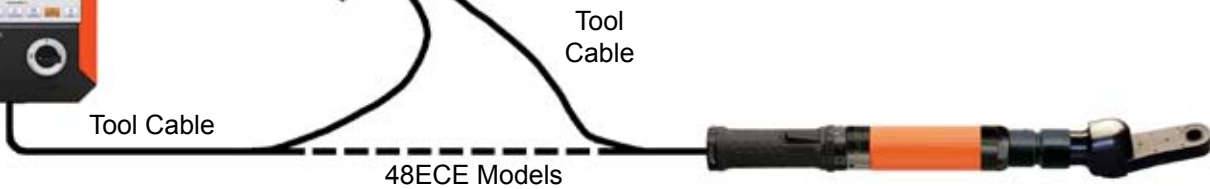
Complete Tool Order Number	Angle Attachment Order Number	Socket Order Number
48EC(E)30C1(xxxx)	301071	See Socket Table
48EC(E)30C3(xxxx)	301072	See Socket Table



m-Pro-400GC
Global Controller



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



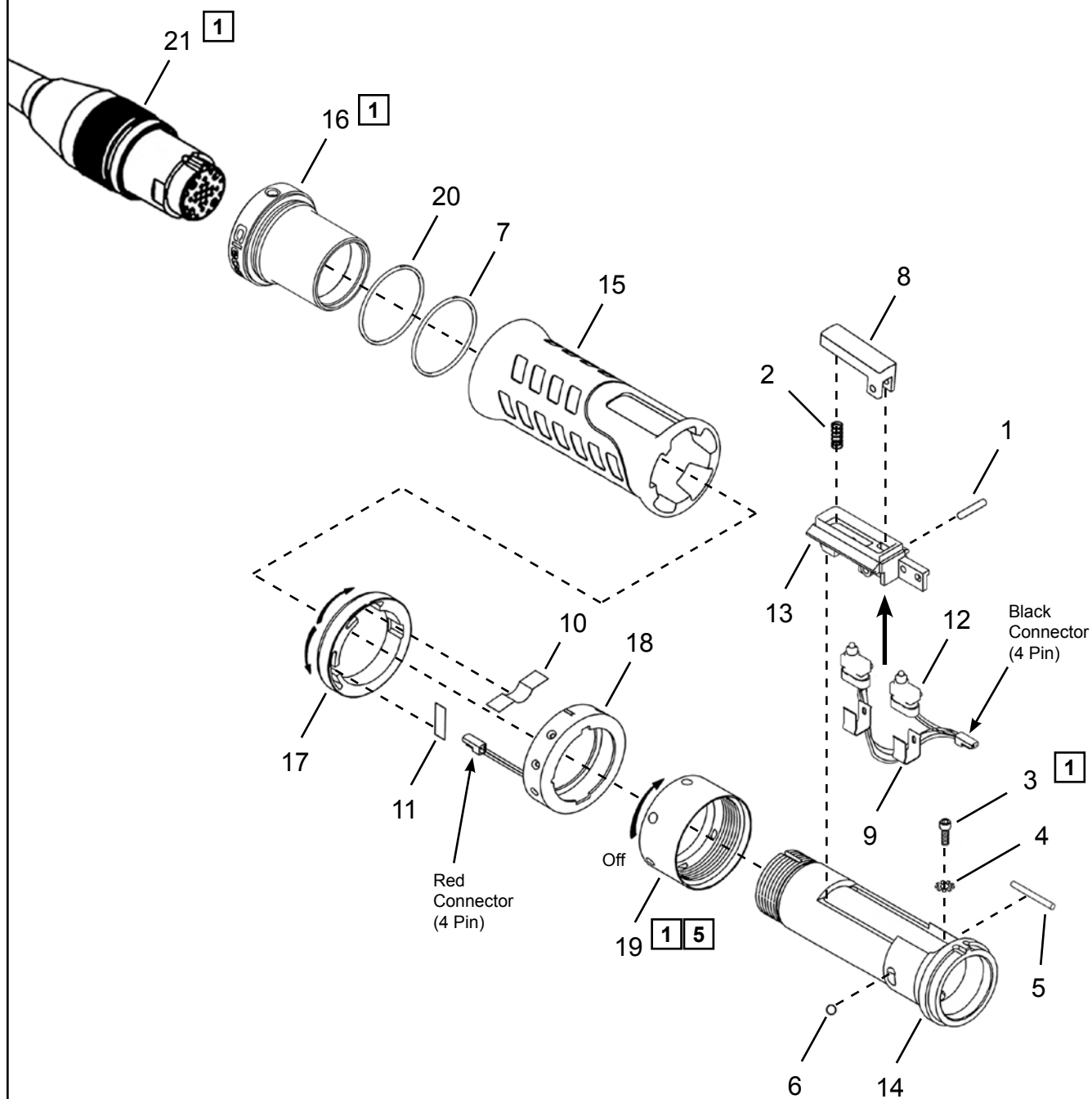
TME and m-Pro-400 Series Controllers

48EC	48ECE	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



1 **5** See Service Notes

Cleco®
Handle - Matrix Tool Connector

PL12EN-48EC

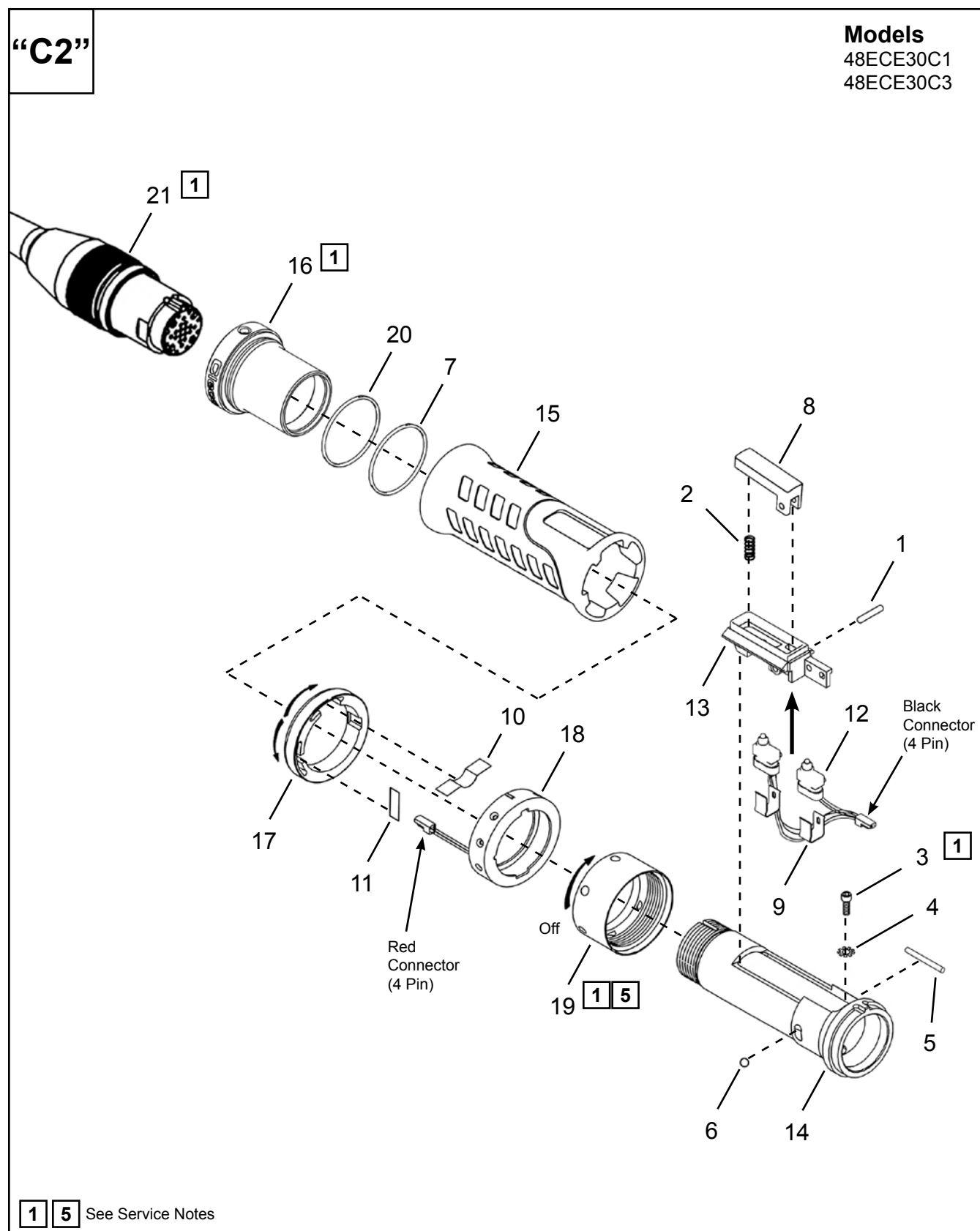
11/03/2011

Illustration "C1"

Ref	Number	#	X	EN
				Description
1	541480	1	3	Switch Pin
2	266255	1	3	Switch Spring
3	B159V	1	3	Cap Screw - #6-32
4	W115	1	3	Lock Washer
5	1009089	1	3	Housing Pin
6	1091PT	1	3	Steel Ball - 3/16"
7	22598	1	3	O-Ring
8	F900185	1		Switch Actuator
9	207317	2	2	Switch Spring Clip
10	541033	1	2	Reverse Spring
11	541624	1	2	Forward/Reverse Spring
12	F900571	1	2	Start/Reverse Switch
13	207316	1		Switch Holder
14	541015	1		Handle
15	207323	1		Handle Sleeve
16	207325	1		Connector Sleeve
17	542938	1		Reverse Ring
18	542819	1		Light Ring Assembly
19	541017	1		Handle Retainer Nut
20	524818	1	3	O-Ring
Tool Cable (Optional Length)				
21	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)				
21	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)				
21	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)				
21	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

PL12EN-48EC

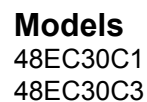
11/03/2011

Illustration "C2"

Ref	Number	#	X	EN
				Description
1	541480	1	3	Switch Pin
2	266255	1	3	Switch Spring
3	B159V	1	3	Cap Screw - #6-32
4	W115	1	3	Lock Washer
5	1009089	1	3	Housing Pin
6	1091PT	1	3	Steel Ball - 3/16"
7	22598	1	3	O-Ring
8	F900185	1		Switch Actuator
9	207317	2	2	Switch Spring Clip
10	541033	1	2	Reverse Spring
11	541624	1	2	Forward/Reverse Spring
12	F900571	1	2	Start/Reverse Switch
13	207316	1		Switch Holder
14	207322	1		Handle
15	207323	1		Handle Sleeve
16	207325E	1		Connector Sleeve
17	542938	1		Reverse Ring
18	542819	1		Light Ring Assembly
19	541017	1		Handle Retainer Nut
20	524818	1	3	O-Ring
Tool Cable (Optional Length)				
21	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)				
21	301904-2M	1		2 meter cable
	301904-3M			3 meter cable
	301904-8M			8 meter cable
	301904-15M			15 meter cable
Angle Swivel Cable (Optional Length)				
21	301903-2M	1		2 meter cable
	301903-3M			3 meter cable
	301903-8M			8 meter cable
	301903-15M			15 meter cable
Tool Cable Extension (Optional Length)				
21	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®
Motor - Matrix Tool Connector

PL12EN-48EC
11/03/2011

Illustration "D1"

Ref	Number	#	X	EN
				Description
1	17-111	3	6	Pan Head Screw - #4-40 x .19
2	541009	2	2	Wave Washer
3	542244	2	2	Stand Off - 5/16"
4	505306	1	2	Retaining Ring
5	542588	1		Motor Spacer
6	301761	1		Motor Assembly
7	Table "D1"	1		Transducer Assembly
8	207340	1		Housing

(#) Quantity

(X) Recommended Spare Parts

Table "D1"

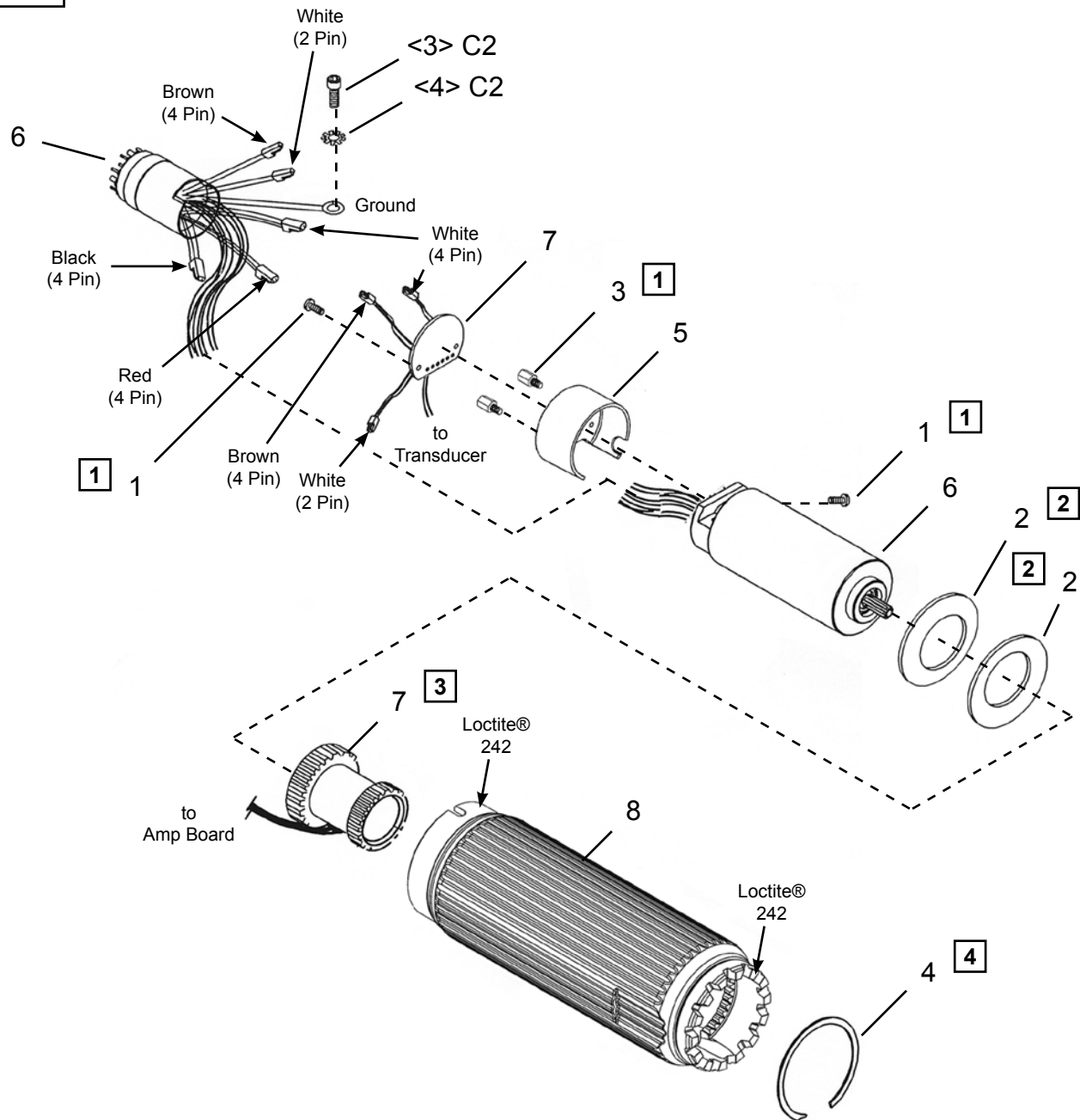
Ref.	Description	#	48EC30C1	#	48EC30C3
7	Transducer (unprogrammed)	1	542846-48	1	542846-48
	Transducer (programmed)	1	542846-48P	1	542846-48P
	Transducer Capacity		48 Nm		48 Nm

"D2"

Models

48ECE30C1

48ECE30C3



1 2 3 4 See Service Notes

Cleco®
Motor - Air LB Tool Connector

PL12EN-48EC
11/03/2011

Illustration "D2"

Ref	Number	#	X	EN
				Description
1	17-111	3	6	Pan Head Screw - #4-40 x .19
2	541009	2	2	Wave Washer
3	542244	2	2	Stand Off - 5/16"
4	505306	1	2	Retaining Ring
5	542588	1		Motor Spacer
6	301761E	1		Motor Assembly
7	Table "D2"	1		Transducer Assembly
8	207340	1		Housing

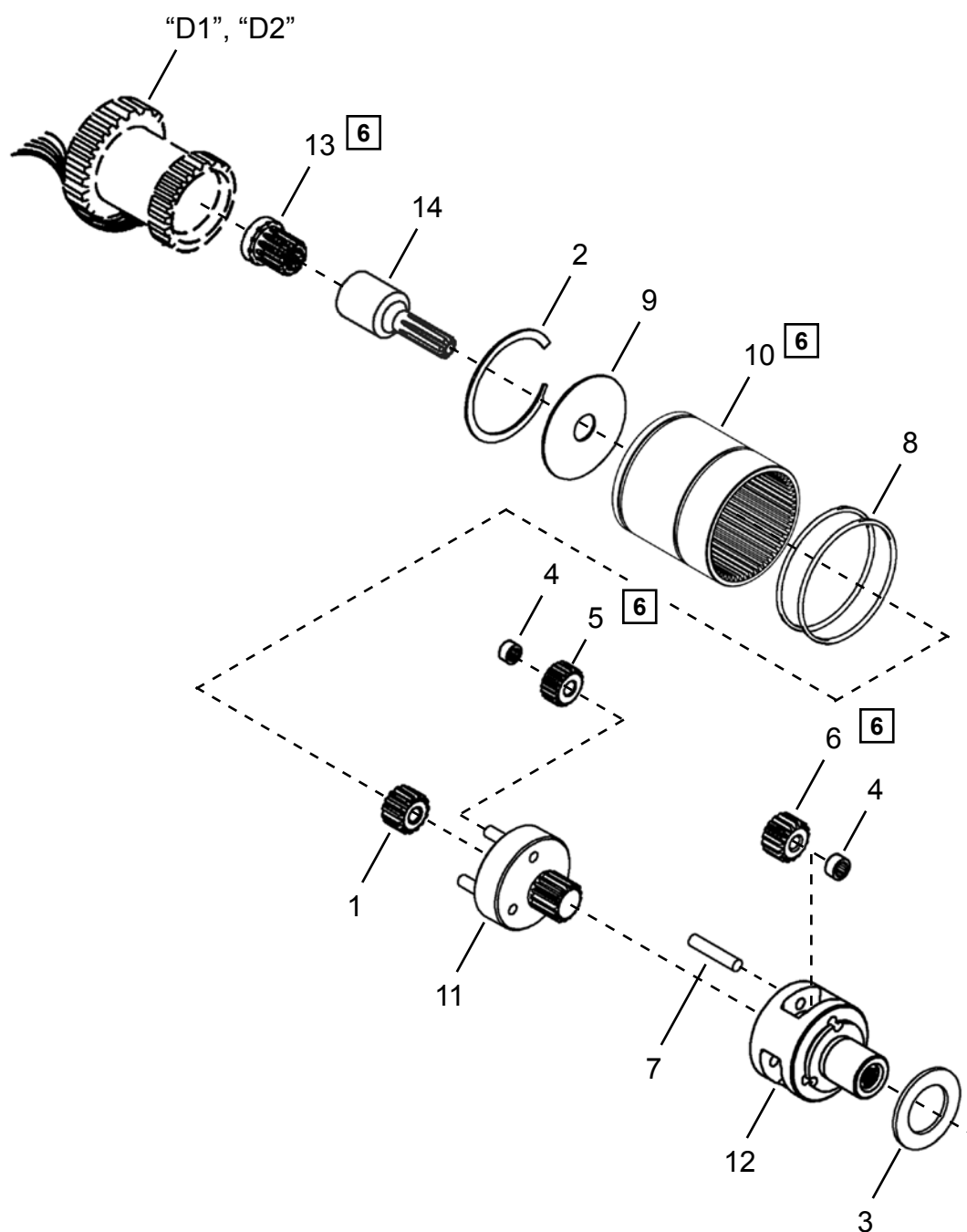
(#) Quantity

(X) Recommended Spare Parts

Table "D2"

Ref.	Description	#	48ECE30C1	#	48ECE30C3
7	Transducer (unprogrammed)	1	542846-48	1	542846-48
	Transducer (programmed)	1	542846-48P	1	542846-48P
	Transducer Capacity		48 Nm		48 Nm

"E"



6 See Service Notes

Cleco®
Double Stage Gearing

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Illustration "E"

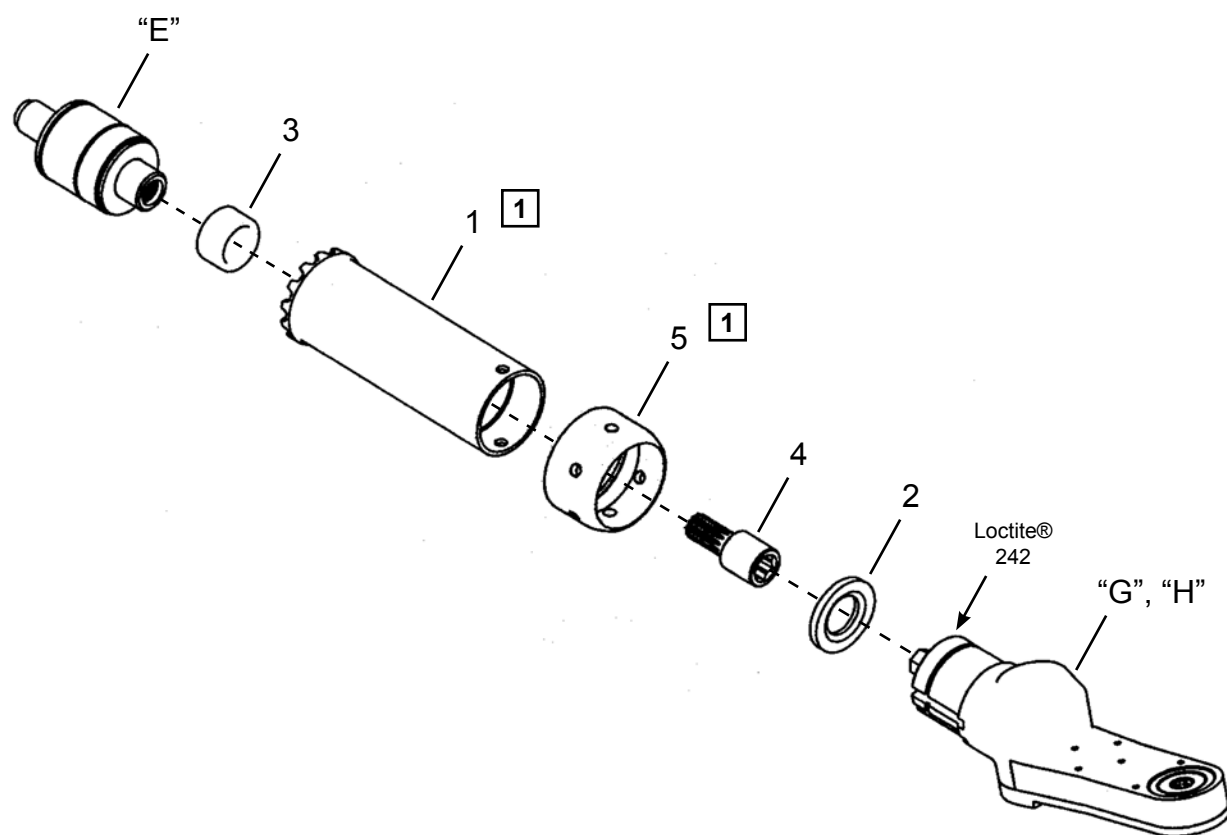
Ref	Number	#	X	EN
				Description
1	541899	1	3	Slip-On Gear (17T)
2	800116	1	2	Retaining Ring
3	207303	1	2	Thrust Washer
4	203749	6	12	Needle Bearing
5	541894	3	6	Planet Gear (17T)
6	541897	3	6	Planet Gear (20T)
7	541888	3	6	Planet Pin
8	542724	2	6	O-Ring
9	541887	1	2	Washer
10	542722	1		Ring Gear
11	542233	1		Planet Carrier
12	542099	1		Planet Cage
13	541044	1	2	Pinion Adapter
14	541898	1	2	Extension Pinion

(#) Quantity

(X) Recommended Spare Parts

(T) Teeth

"F"



1 See Service Notes

Cleco®
Crowfoot Adapter

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Illustration "F"

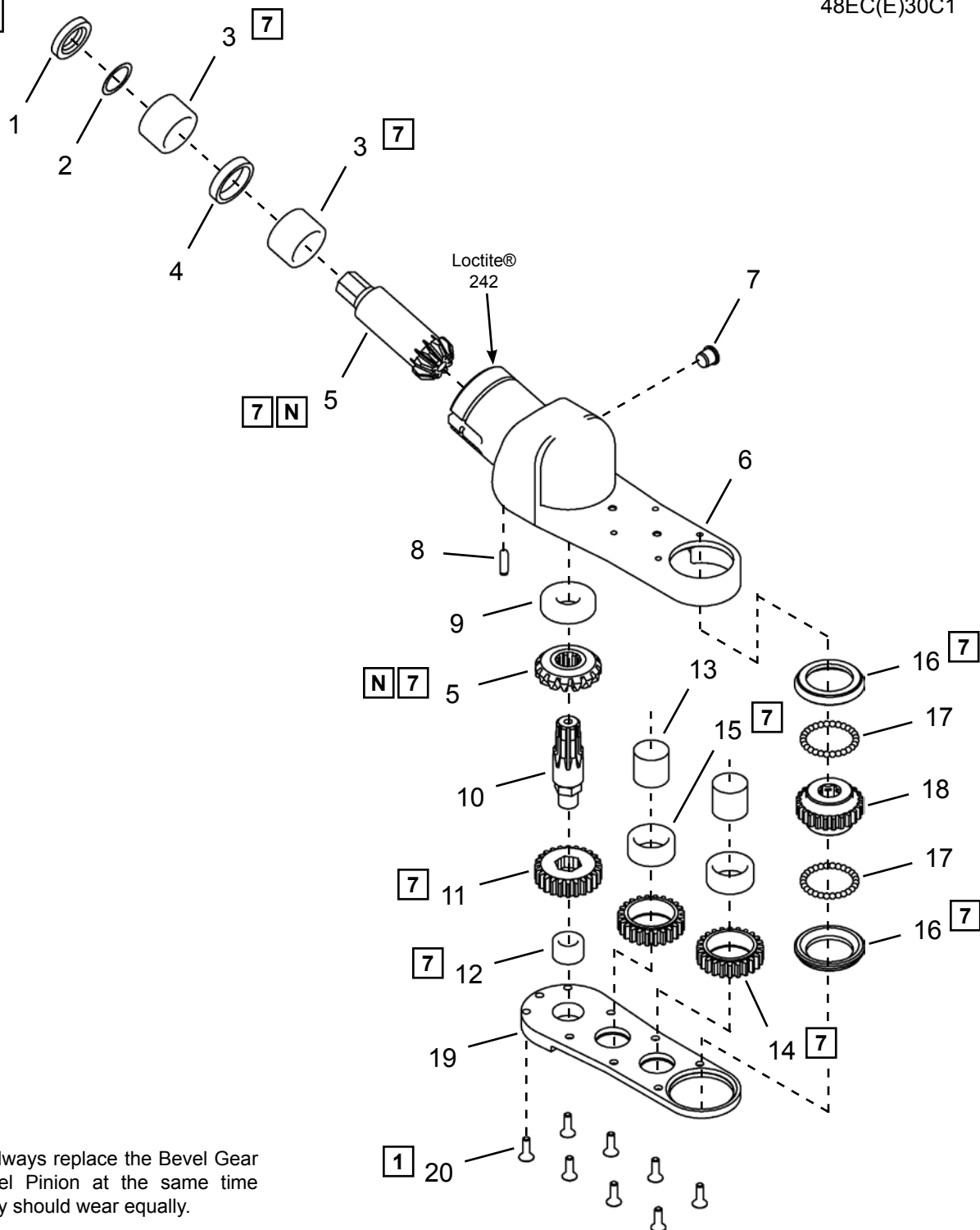
Ref	Number	#	X	EN
				Description
1	207349	1		Adapter (includes Ref. 3)
2	207495	1		Spacer
3	500528	1	2	Needle Bearing
4	543435	1	2	Extension Pinion
5	541904	1		Gear Case Nut

(#) Quantity

(X) Recommended Spare Parts

"G"

Model
48EC(E)30C1



N

NOTE: Always replace the Bevel Gear and Bevel Pinion at the same time since they should wear equally.

1

7

See Service Notes

301959PT 15° Crowfoot Angle Head

Illustration "G"

Ref	Number	#	X	EN
				Description
1	864751	1	2	Pinion Spacer
2	202349	1	2	Shim
3	800177	2	4	Needle Bearing
4	869206	1	2	Bearing Spacer
5	861690	1	2	Gear Set (Pinion Gear and Bevel Gear)
6	207603PT	1		15° Angle Head
7	843589	1	2	Grease Fitting
8	833075	1	2	Dowel Pin
9	847095	1	2	Ball Bearing
10	869211	1	2	15° Gear Shaft
11	202127	1	2	Driving Gear
12	843827	1	2	Needle Bearing
13	207606PT	2		Bearing Post
14	202128	2	4	Idler Gear (includes Ref. 15)
15	864202	2	4	Needle Bearing
16	864264	2		Ball Race
17	842980	56	112	Ball (.094")
18	Table "G"	1	2	Socket
19	207605PT	1		Base Plate
20	863462	8	16	Base Plate Screw

(#) Quantity

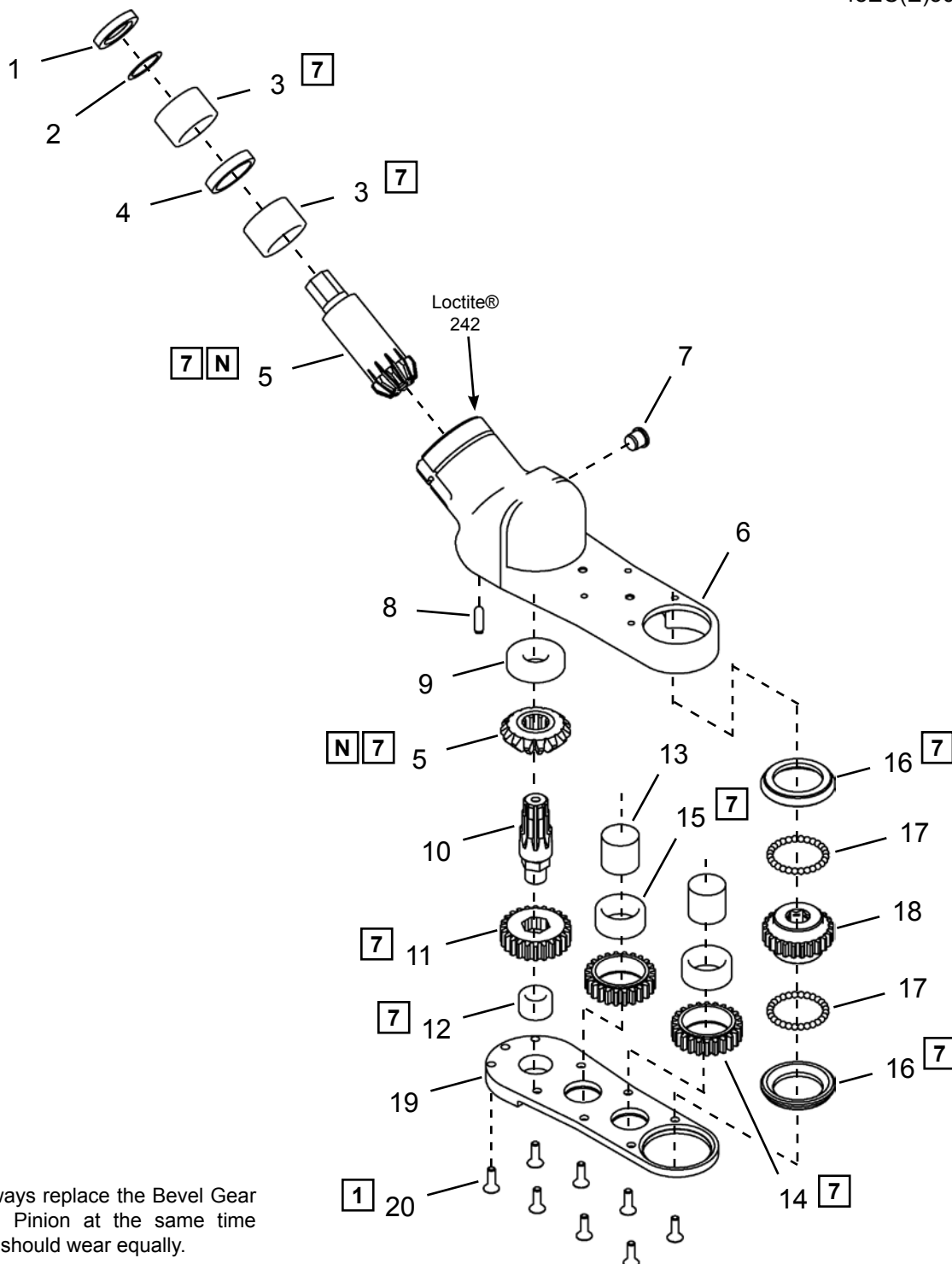
(X) Recommended Spare Parts

Table "G"

Reference # 18 - Socket					
Description			Flush	1/2" (12.7mm) Extended	3/4" (19mm) Extended
Code	Size (in.)	Size (mm)	Order Number		
EA	1/4"	6.35	CSEA01	CSEA41	CSEA61
MA	0.276"	7	CSMA01	CSMA41	CSMA61
MB	5/16"	8	CSMB01	CSMB41	CSMB61
MC	0.354"	9	CSMC01	CSMC41	CSMC61
EC	3/8"	9.53	CSEC01	CSEC41	CSEC61
MD	0.394"	10	CSMD01	CSMD41	CSMD61
ME	7/16"	11	CSME01	CSME41	CSME61
MF	0.472"	12	CSMF01	CSMF41	CSMF61
EE	1/2"	12.7	CSEE01	CSEE41	CSEE61
MG	0.512"	13	CSMG01	CSMG41	CSMG61
MH	0.551"	14	CSMH01	CSMH41	CSMH61
EF	9/16"	14.29	CSEF01	CSEF41	CSEF61
MI	0.591	15	CSMI01	CSMI41	CSMI61
XXXX	No Socket				

"H"

Model
48EC(E)30C3



N

NOTE: Always replace the Bevel Gear and Bevel Pinion at the same time since they should wear equally.

1

7

See Service Notes

Cleco®
301960PT 30° Crowfoot Angle Head

PL12EN-48EC

11/03/2011

Illustration "H"

Ref	Number	#	X	EN
				Description
1	864751	1	2	Pinion Spacer
2	202349	1	2	Shim
3	800177	2	4	Needle Bearing
4	869206	1	2	Bearing Spacer
5	861691	1	2	Gear Set (Pinion Gear and Bevel Gear)
6	207604PT	1		30° Angle Head
7	843589	1	2	Grease Fitting
8	833075	1	2	Dowel Pin
9	847095	1	2	Ball Bearing
10	869208	1	2	30° Gear Shaft
11	202127	1	2	Driving Gear
12	843827	1	2	Needle Bearing
13	207606PT	2		Bearing Post
14	202128	2	4	Idler Gear (includes Ref. 15)
15	864202	2	4	Needle Bearing
16	864264	2		Ball Race
17	842980	56	112	Ball (.094")
18	Table "G"	1	2	Socket
19	207605PT	1		Base Plate
20	863462	8	16	Base Plate Screw

(#) Quantity

(X) Recommended Spare Parts

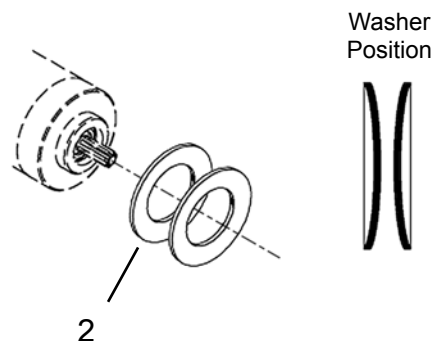
Table "H"

Reference # 18 - Socket					
Description			Flush	1/2" (12.7mm) Extended	3/4" (19mm) Extended
Code	Size (in.)	Size (mm)	Order Number		
EA	1/4"	6.35	CSEA01	CSEA41	CSEA61
MA	0.276"	7	CSMA01	CSMA41	CSMA61
MB	5/16"	8	CSMB01	CSMB41	CSMB61
MC	0.354"	9	CSMC01	CSMC41	CSMC61
EC	3/8"	9.53	CSEC01	CSEC41	CSEC61
MD	0.394"	10	CSMD01	CSMD41	CSMD61
ME	7/16"	11	CSME01	CSME41	CSME61
MF	0.472"	12	CSMF01	CSMF41	CSMF61
EE	1/2"	12.70	CSEE01	CSEE41	CSEE61
MG	0.512"	13	CSMG01	CSMG41	CSMG61
MH	0.551"	14	CSMH01	CSMH41	CSMH61
EF	9/16"	14.29	CSEF01	CSEF41	CSEF61
MI	0.591	15	CSMI01	CSMI41	CSMI61
XXXX	No Socket				

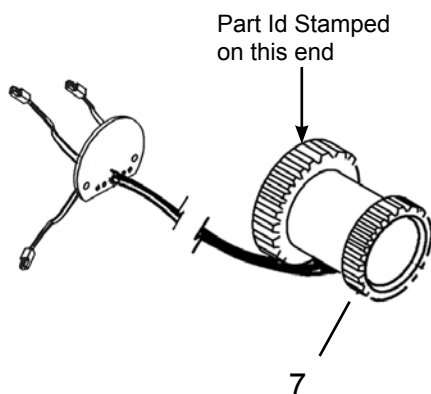
1 Tightening Torque

Illustration	Reference	Tightening torque	
		Ft-Lbs (in-lbs)	Nm
C1, C2	3	(10-14)	1,1-1,6
	16	25-30	34-41
	19	35-40	47-54
	21 (Swivel)	15-18	20-25
D1, D2	1	(4-6)	0,45-0,68
	3	(4-6)	0,45-0,68
	10	35-40	47-54
F	1	40-50	54-68
	5	40-50	54-68
G	20	(8-10)	0,9-1,1
H	20	(8-10)	0,9-1,1

2 Washer Assembly

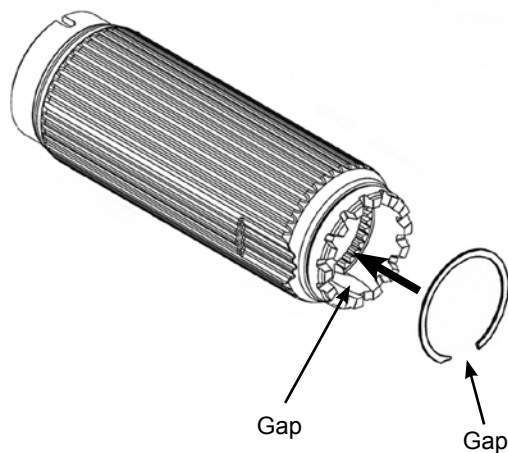


3 Transducer Identification

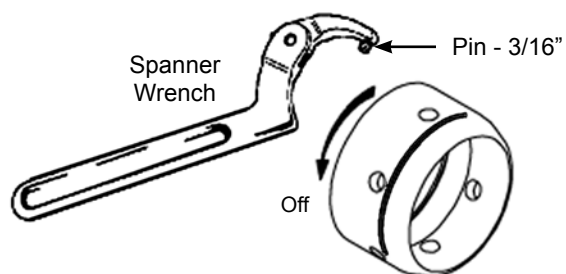


Transducers are not interchangeable, check part number.

4 Retaining Ring Assembly

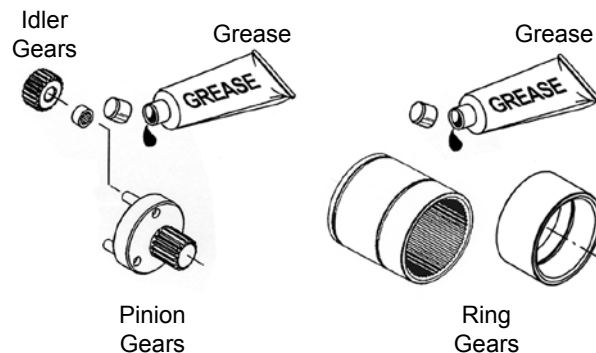


5 Spanner Wrench



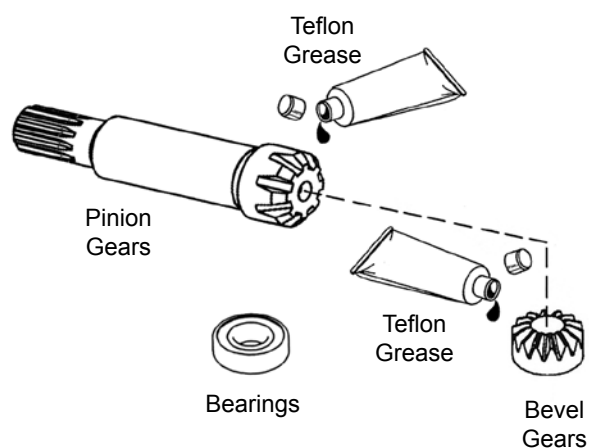
6 Gear Train Lubrication

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



7 Attachment Lubrication

544076 - 2 oz. (56 g)
544077 - 1 pound (0.45 kg)



Cleco®
Tool Memory Parameters

48EC(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]
48EC(E)30C1xxxx	860	30	49.1424	542846-48	99.1829	1.5444
48EC(E)30C3xxxx	860	30	49.1424	542846-48	99.1829	1.5444

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.

Dallas, TX
**Apex Tool Group
Sales & Service Center**
1470 Post & Paddock
Grand Prairie, TX 75050
Tel: 972-641-9563
Fax: 972-641-9674

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
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Redmond, WA 98052
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3990 East Market Street
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