

# **SCREWDRIVERS GX 30 VOLTS**



# **INSTRUCTIONS MANUAL**



Warning	p 4
1. Scheme	p 5
2. Optional products	p 5
3. Description	p 5
4. Main features	p 5
5. Model composition	р 6
6. Models	р 6
7. Panel of each model	p 7
8. Alarm display by LED color	p 8
8.1 Speed & Soft start (GX _)	p 8
8.2 Speed/Angle control & Auto Reverse (GXT _)	р 9
9. Exploded view	p 14
9.1 Drawing for GX Lever Start	p 14
9.2 Drawing for GX Push to Start	p 15
10. Parts list for GX Series	p 16

#### **WARNING**

- Keep the working area clean.
   Avoid wearing the harmful clothes to the electric shock.
- 2. Don't touch the electrical parts after opening the cover. It may be dangerous for the electric shock.
- 3. Always keep the power off during contact the electrical parts.
- 4. Before the power on, always check the electric concerned.
- 5. Be sure that the any live parts should not be touched to the steel parts.
- 6. Use the rated power voltage for each models
- 7. Be careful the earth line not to touch the electric parts or lead on power.
- 8. Never use the non-specified parts.
- 9. Never lubricate aerosol oil the electrical part including the motor
- 10. The wires should not be damaged by sharp edge, soldering iron or any pulling force when close the cover.
- 11. All solder points should be protected by the shrink cable
- 12. Be aware that the motor can be damaged by the impact or hit.

#### 1. Scheme

25W Brushless motor equipped screwdiver with the torque control system by the mechanical clutch working with the spring. The range of torque: 0.2 – 12 Kgf.cm

#### 2. Optional products

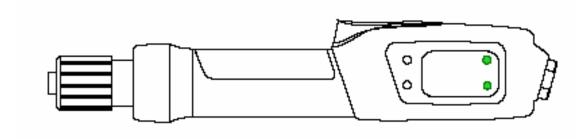
- 1) Soft stop, ESD and Clean room operation
- ---> Semi conductor, optical, storage and LCD products industry
- 2) Automation market with the long lasting life time with less maintenance
- ---> Mobile phone, LCD products and automatic fastening system industry

#### 3. Description

Grip: Dia. 30 mm Length: 220 mm Weight: 350 gr Max.

Torque range: 0.2 - 12 Kgf.cm

Voltage: DC 30V



#### 4. Main features

#### **STANDARD**

- Brushless DC motor equipped
- Built in BLDC drive circuit
- Sensor operated for Start, FOR/REV selecting, Torque limit
- Optional Soft start, Double hit
- Soft Stop (shockless) models available
- Over Current, voltage and heat Protection
- Screw pick-up accessories by the vacuum
- LED display of alarm status

## 5. Model composition

① Series: GX

2 Operation

☐ (Empty) : Standard screwdriver

A: Automation - Direct signal start and clamping flange S: Soft Stop (Shockless) - lower shock when it stops

T: Timer & Auto Reverse

③ Maxim torque value of the range ( Kgf.cm )

35 = 3.5 Kgf.cm 45 = 4.5 Kgf.cm 80 = 8.0 Kgf.cm 120 = 12.0 Kgf.cm

4 Start type

☐: Lever start P: Push start

#### 6. Models

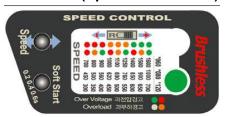
		Т	Rotation		Options	 }	
Model	Start	Torque	Speed	Clu	ıtch	Software	*
		(Kgf.cm)	(Rpm)	Standard	Soft Stop	Standard	Т
GX 35/ESD	LEVER	0.2~3.5	300~1100		0	0	
GX 45/ESD		0.4~4.5	300~700		0	0	
GX 80/ESD V2	LEVER	1.0~8.0	450~1000	0		0	
GX 120/ESD V2		2.0~12.0	300~700	0		0	
GX 80P/ESD V2	PUSH	1.0~8.0	450~1000	0		0	
GX 120P/ESD V2	PUSH	2.0~12.0	300~700	0		0	
GXS 80/ESD V2	LEVER	1.0~8.0	450~1000		0	0	
GXS 120/ESD V2	LEVER	2.0~12.0	300~700		0	0	
GXS 80P/ESD V2	- PUSH	1.0~8.0	450~1000		0	0	
GXS 120P/ESD V2	F 0311	2.0~12.0	300~700		0	0	
GXT 80/ESD V2	LEVER	1.0~8.0	450~1000		0		0
GXT 120/ESD V2	LEVER	2.0~12.0	300~700		0		0
GXA 35/ESD V3		0.2~3.5	300~1100		0	0	
GXA 45/ESD V3	REMOTE	0.4~4.5	300~700		0	0	
GXA 80/ESD V3	REWOLE	1.0~8.0	450~1000		0	0	
GXA 120/ESD V3		2.0~12.0	300~700		0	0	

#### \* Features definition:

- <u>Standard</u> = Speed Control + Soft Start (soft start not available on GX35 & GX45 and GXA models)
- $-\overline{\underline{T}}$  = Speed & Angle Control + Auto Reverse

#### 7. Panel of each model

- Standard (Speed & Soft Start) / GX\_\_\_\_



- Speed & Angle Control & Auto Reverse / GXT\_\_\_\_



## 8. Alarm display by LED color

Orange	Over Voltage	Blink Orange color stop the driver immediately over DC33V.  Automatically reset below DC33V.
<b>Q</b> Red	Over Heat	Blink Red color stop the driver immediately over 70°C.  Automatically reset below 70°C.
<b>00</b> G+0	Over Load	Blink Green & Orange color stop the driver immediately over 2.5A.  Automatically reset below 2.5A load.
© Green	Motor Drive	Motor drive lamp.

#### 8. Settings

#### 8.1 Speed & Soft Start (GX )

#### **Speed Selection:**



- 1) Press the Speed button <u>for 2 seconds</u> to visit to PROGRAM mode. Then the two LED lights will display colours depending on the set speed.
- 2) Select "Reverse" on F/R switch for increasing speed or select "Forward" on F/R switch for increasing speed.
- 3) Press the Speed button and select the target speed. The set speed can be recognized by the colors of two LED as below.
- 4) Press the Speed button <u>for 2 seconds</u> to go back to operating (work) mode.

■ Speed display by two LED color (Standard model)

Model	LED	• •	• •	• •	• •	• •	• •	• •	• •	• •
Woder	Button	1th	2nd	3rd	4th	5th	6th	7th	8th	9th
GX 35	RPM	300	400	500	600	700	800	900	1000	1100
GX 45	RPM	300	350	400	450	500	550	600	650	700
GX 80	RPM	450	500	560	620	690	780	850	900	1000
GX 120	RPM	300	350	400	450	500	550	600	650	700

#### Soft Start Setting:

- 1) Press the Soft Start button for 2 seconds to enter setting mode.
- 2) Press the Soft Start button (pulse) to increase the Soft Start duration. As shown below, 3 steps are available.
- 3) Press the Soft Start button for 2 seconds to save.

Green: 0.2 secondRed: 0.4 secondOrange: 0.6 second

## 8.2 Speed / Angle Control & Auto Reverse (GXT )

Model: GXT 80, GXT 120

One triggering by the lever can make 3 steps operation sequence in a cycle

## ■ Start, Stop and Direction in a cycle

Step	1	$\rightarrow$	2	<b>→</b>	3
Sequence	first RUN		stop HOLD		reverse RUN
Rotating direction	Clockwise or Counter- clockwise by F/R switch				Reverse
Activating	Screwdriver runs to the target angle and stops. It always stops at the set torque, even it does not reach the target angle.		Stop and hold for set time		Rotate reverse until releasing the lever or stop at the target torque
Time setting	0 - 5 sec / 30 steps		0 - 5 sec / 12 steps		х

<sup>-</sup> Screwdriver stops immediately when the lever is released in any sequence.

<sup>-</sup> Sliding F/R switch works for

#### ■ Operating (Work) mode

① Rotating direction (FOR-REV)

#### ■ PROGRAM mode

- ① First run angle (Increase / Decrease) together with "First Run(Speed)" button
- ② Time (Increase / Decrease) together with "Stop(Reverse)" button
- ③ Rotation speed (Increase / Decrease) together with "Speed(First Run)" button
- 4 Reverse run angle (Increase / Decrease) together with "Reverse(Stop)" button



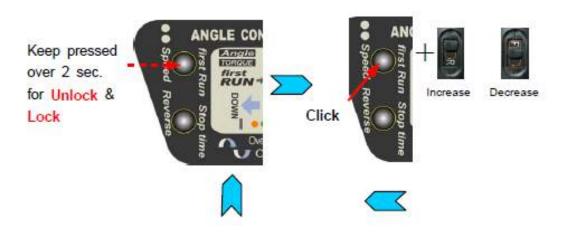




#### ■ Angle setting for first RUN

- ① Keep the first Run button pressed over 2 sec. for angle setting. Then press one by one for the desired rotating angle
- ② Select the R position of F/R switch for increasing set angle or F position for decreasing set angle
- ③ Keep the first Run button pressed over 2 sec. to Lock & operating mode.

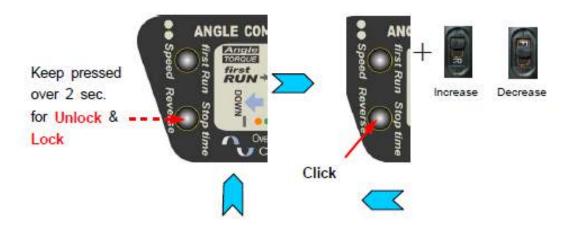
Click	0	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	1 2	1 3	4	1 5	6	7	1 8	1 9	2	1	2	2	2
Angle in turn	Off	14	2 4	34	1	54	64	74	2	94	10	11	3	4	5	6	7	8	9	1	1	1 2	1 3	1	1 5
LED	0	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	0



#### ■ Time setting for stop HOLD

- ① Keep the **stop time** button pressed over 2 sec. Then click the stop time button one by one for desired stop holding time
- ② Select the R position of F/R switch for increasing set time or F position for decreasing set time
- ③ Keep the *stop time* button pressed over 2 sec. to Lock & operating mode.

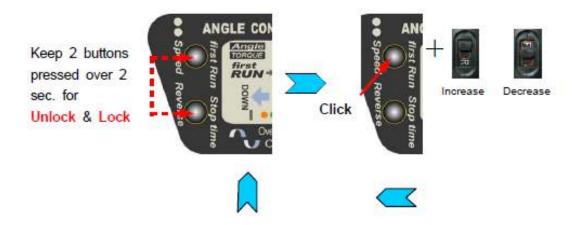
Click	0	1th	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th
Time (second)	Off	0.1	0.3	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
LED	Orange	R	G	R	G	R	G	R	G	R	G	R	G	R	0



#### ■ Rotating speed setting

- ① Keep both *first Run* & *stop time* buttons pressed over 2 sec. to unlock. Then click one by one for the desired rotating speed.
- ② Select the R position of F/R switch for increasing speed or F position for decreasing speed
- ③ Keep the first Run button pressed over 2 sec. to Lock & operating mode.

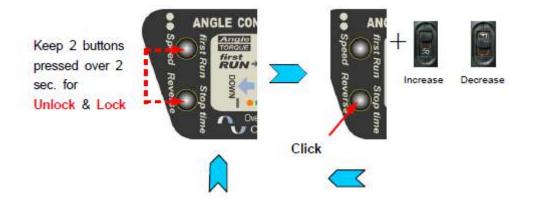
Click	0	1st	2nd	3rd	4th	5th	6th	7th	8th
Speed (rpm)	700	650	600	550	500	450	400	350	300
LED	Orange	Red	Green	Red	Green	Red	Green	Red	Orange



#### ■ Angle setting for Reverse RUN

- ① Keep both first Run & stop time buttons pressed over 2 sec. to unlock. Then click stop time button one by one for the desired angle
- ② Select the R position of F/R switch for increasing set angle or F position for decreasing set angle
- ③ Keep the stop time button pressed over 2 sec. to Lock & operating mode.

Click	0	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	1	3	1	5	6	1 7	8	9	2	2	2	2	2
Angle in turn	Off	14	<u>2</u>	34	1	54	64	74	2	94	10 4	<u>11</u> 4	3	4	5	6	7	8	9	1	1	1	3	1	1 5
LED	0	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	0

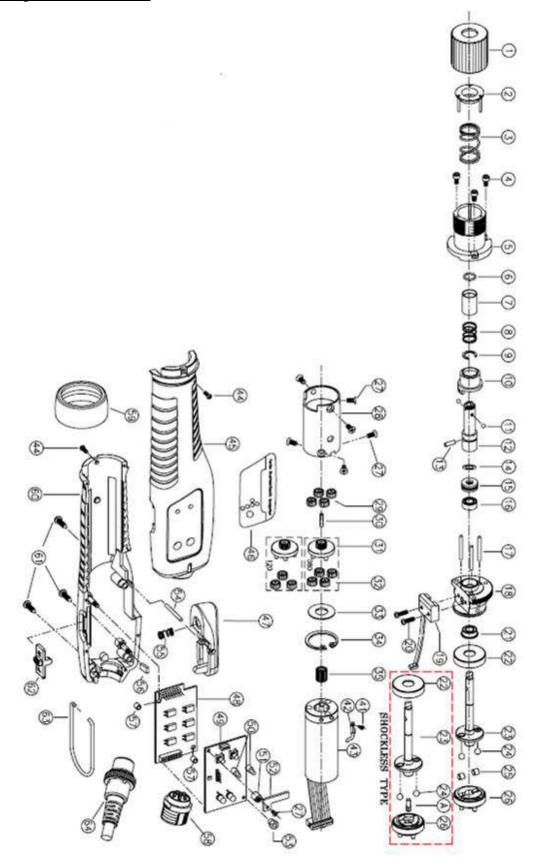


## ■ Application Example

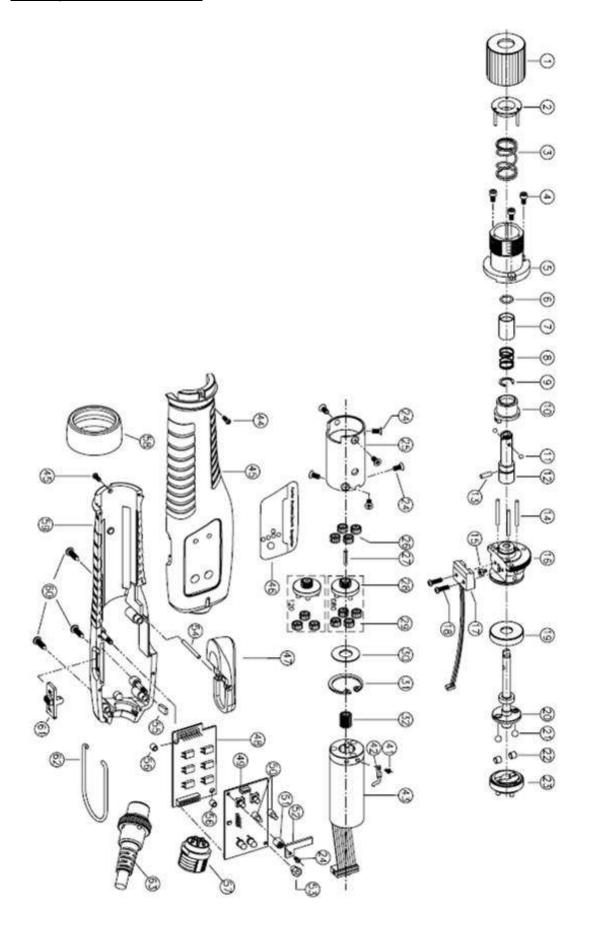
	First RUN Angle	Stop HOLD Time	Auto Reverse Angle	Applications with different sequence in a cycle
Normal screwdriver	off	off	off	Normal screwdriver It stops at the set torque
Angle control	ON(1)	off	off	It stops at set angle(1)
Tapper or Insert fastening	ON(1)	ON(2)	ON(3) or off	It stops at set angle(1) and waits for set time(2), and makes reverse rotation to the set angle(3)
Wire inserting on terminal block	ON(1)	ON(2)	off	It stops at set angle(1) and waits for set time(2), and makes reverse rotation and stops at set torque

## 9. Exploded view

# 9.1 Drawing for GX Lever start



## 9.2 Drawing For GX Push to start



## 10. Parts list for GX Series

PFE1801 ADUSTER   PFE1815 TORQUE SPRING SILVERI   PFE1815 TORQUE SPRING SILVERI   PFE1815 TORQUE SPRING SILVERI   1	No- LEVER	No- PUSH	CODE	Part Name	Ref.	GX080	GX120	GXT080	GXT120	GX080P	GX120P	GXS080	GXS120
2         PFE1132         TOROUE SPRING HOLDER ASSY         080         1	-	1	200	ADJUSTER		l l		-	-	1	1	-	1
PFE1815 TOROUE SPRING ISLUVER  080 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	2	PFE1132	SPRING HOLDER		l l	ı	1	1	1	ı	1	1
3   PFE1816 TOROUG SPRING (BLACK)   120   1   1   1   1   1   1   1   1   1			PFE1815	SPRING [	080		K	1	1	1	1	1	1
PFE1817 TORQUE SPRING BROWZE	c	്	PFE1816	SPRING	120		L		1		l.	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1
PFE1814   TORQUE SPRING [GOLD]   1   1   1   1   1   1   1   1   1	?	0	PFE1817	SPRING		l l	L	1	1	1	L	1	1
4 PSW2201 WRENCH BOLT IM HEX M2.5x6L]   5 PFE1313 SITE SOCKER ASSY	-		PFE1814	TORQUE SPRING [GOLD]		L	I.	1	1	1	l.	1	1
6         PFE1131         TOP COVER ASSY         1/4"         1 <td>4</td> <td>4</td> <td>PSW2201</td> <td>100</td> <td></td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td>	4	4	PSW2201	100		3	3	3	3	3	3	3	3
6         PFE1973         BIT SOCKET RING         1/4"         1 <td>5</td> <td>5</td> <td>PFE1131</td> <td>TOP COVER ASSY</td> <td></td> <td>ı</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>ı</td> <td>1</td> <td>1</td>	5	5	PFE1131	TOP COVER ASSY		ı	1	1	1	1	ı	1	1
γ         PFE1974         BIT SOCKET RING B         4mm         14"         1	ر		PFE1973	BIT SOCKET RING	1/4"	L	-		1	1	L	+	1
7         PFE1410         BIT COLLAR         I/4"         1	٥	0	PFE1974	SOCKET RING	4mm					1000		400	
PFE1414 BIT COLLAR B	1	1	PFE1410		1/4"	J.	L	1	1	1	L	1	1
PFE1964 COLLAR SPRING   14"   1   1   1   1   1   1   1   1   1		,	PFE1414	COLLAR	4mm		3						
°         PFE1965         COLLAR SPRING B         4mm         1 <td>c</td> <td>c</td> <td>PFE1964</td> <td>COLLAR SPRING</td> <td>1/4"</td> <td></td> <td>-</td> <td></td> <td>1</td> <td>1</td> <td></td> <td>-</td> <td>1</td>	c	c	PFE1964	COLLAR SPRING	1/4"		-		1	1		-	1
9         PFE1955         C-RING [5103-31]         1	o	o	PFE1965		4mm		9						
10         3000030         SLEEVE ASSY, EFV3         1 <td>6</td> <td>6</td> <td>PFE1955</td> <td>C-RING [5103-31]</td> <td></td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td>1</td> <td>-</td> <td>-</td> <td>1</td>	6	6	PFE1955	C-RING [5103-31]			-	-	-	1	-	-	1
11 PAL1927 STEEL BALL [¢1:5] 1/4" 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	10	10	3000030			-	-		-	1		-	1
12 PFE1412 BIT SOCKET A 14 PFE1412 BIT SOCKET A 13 PFE1413 HOLDER PIN ¢2.5X7.5L  X PFE1946 BEND WASHER  X PFE1920 THRUST BEARING [F5-11]  X PFE197 BALL BEARING [MR105]  14 PFE1327 NEEDLE PIN (¢2X19.55L)  X PFE197 BALL BEARING MR105]  15 3000043 MAGNET HOLDER ASSY [LEVER]  X PFE1919 BEARING COVER ASSY [LEVER]  X PFE1919 BEARING COVER ASSY [LEVER]  X PFE1919 SENSOR ASSY 3EF[L]  X 3000035 SENSOR ASSY 3EF[L]  X 3000037 SENSOR ASSY 3EF[L]  X PFE1918 BALL BEARING [MF105]  X PFE1919 SLIDE RING  X PFE119 SLIDE RING			PAL1927	BALL	1/4"	2	2	2	2	2	2	2	2
12 PFE1412 BIT SOCKET A 13 PFE1413 BIT SOCKET E 13 PFE1413 HOLDER PIN ¢2.5X7.5L 14 PFE1413 HOLDER PIN ¢2.5X7.5L 15 PFE1946 BEND WASHER  17 X PFE1946 BEND WASHER  18 PFE1920 THRUST BEARING [F5-11] 19 PFE1319 SLIDE RING  10 PFE1413 BIT SOCKET E 10 PFE1413 BIT SOCKET E 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-		PAL1928	BALL	4mm					200			
13 PFE1403 BIT SOCKET E 13 PFE1413 HOLDER PIN \$ 2.5X7.5L  X PFE1946 BEND WASHER  X PFE1920 THRUST BEARING [F5-11]  X PFE1920 THRUST BEARING [F5-11]  X PFE1920 THRUST BEARING [MR105]  14 PFE1327 NEEDLE PIN (\$2X19.55L)  15 3000043 MAGNET HOLDER ASSY  X PFE1118 BEARING COVER ASSY [LEVER]  X PFE1119 BEARING COVER ASSY [LEVER]  X PFE1119 BEARING COVER ASSY [LEVER]  X 3000036 SENSOR ASSY.3EF[L]  X 3000037 SENSOR ASSY.3EF[P]  17 3000037 SENSOR ASSY.3EF[P]  X PFE1908 BALL BEARING [MF105]  X PFE1919 SLIDE RING  X PFE1319 SLIDE RING  X PFF1319 SLIDE RING  X PFF1319 SLIDE RING	4.7	43	PFE1412	CKET	1/4"	į,			l l	1	b		1
X         PFE1946         BEND WASHER         1	7	71	PFE1403	SOCKET	4mm	(a)	200	200		8 8		200	
X         PFE1946         BEND WASHER         1	13	13	PFE1413	LDER PIN \$2.5X7	200000000000000000000000000000000000000	I I	l I		l.	1	b		I
X         PFE1920         THRUST BEARING [F5-11]         1	14	×	PFE1946	BEND WASHER	3 )	l.	ı		1	8		-	1
X         PFE1907         BALL BEARING [MR105]         1 </td <td>15</td> <td>×</td> <td>PFE1920</td> <td>BEARING</td> <td>3-3</td> <td>l l</td> <td>ı</td> <td></td> <td>1</td> <td></td> <td></td> <td>200</td> <td></td>	15	×	PFE1920	BEARING	3-3	l l	ı		1			200	
14         PFE1327         NEEDLE PIN (¢2X19.55L)         3 <th< td=""><td>16</td><td>×</td><td>PFE1907</td><td>BEARING IMF</td><td>3_3</td><td>i i</td><td>ı</td><td></td><td>1</td><td></td><td></td><td></td><td>1</td></th<>	16	×	PFE1907	BEARING IMF	3_3	i i	ı		1				1
15         3000043         MAGNET HOLDER ASSY [LEVER]         1	17	14	PFE1327	100	3-3	3	3	3	3	3	3	3	3
X         PFE1118         BEARING COVER ASSY [LEVER]         1         <	X	15	3000043	HOLDER ASSY					0.00	1		200	
16         PFE1119         BEARING COVER ASSY [PUSH]         1         <	18	×	PFE1118	COVER ASSY	2 3	l.		-	ı			-	1
X         3000036 SENSOR ASSY,3EF(L)         1 </td <td>×</td> <td>16</td> <td>PFE1119</td> <td>COVER ASSY</td> <td>3-3</td> <td></td> <td></td> <td>200</td> <td></td> <td>1</td> <td>1</td> <td>300</td> <td></td>	×	16	PFE1119	COVER ASSY	3-3			200		1	1	300	
17         3000037         SENSOR ASSY,3EF(P)         1 <td>19</td> <td>×</td> <td>3000036</td> <td>10.00</td> <td>2 3</td> <td>l.</td> <td>L</td> <td>-</td> <td>ı</td> <td></td> <td></td> <td>-</td> <td>1</td>	19	×	3000036	10.00	2 3	l.	L	-	ı			-	1
18         PSW2211         SCREW [M PHILIPS M2.3x8L]         2         <	×	17	3000037	ASSY,3EF	3_3	9 19011	740	200	1 96	1	1	3/4	
X         PFE1908         BALL BEARING [MF105]         1 </td <td>20</td> <td>18</td> <td>PSW2211</td> <td>[M PHILIPS</td> <td></td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td>	20	18	PSW2211	[M PHILIPS		2	2	2	2	2	2	2	2
19         PFE1319         SLIDE RING         1         2         2         2	21	×	PFE1908	NG [MF		l.	L	1	1	908	100	1	1
X PFF1319 SLIDE	22	19	PFE1319	SLIDE RING		1		1	1	1	1	S 340	
	77	×	PFF1319	SLIDE RING			165		0 000	0 20 0		-	1

GXS120		_		2						9	+		4	-		_		3	1	-	3	+	1			2	_	-	1			*		*
GX5080	6	-		2	8 9			1		9	1	4		1	1	3	4		1	1	1		1	-	1	2	-	-	1		-	-		-
GX120P	83		1	7	2		1	100	36	9	1	. 8	4	1	1	- 1		3	1	+		1	1	-	1	2	-	-	1				-	
GX080P			1	2	2	1				6	1	4	- 52	1	1		4		1		1		1	1	1	2	-	1	1				-	
GXT120	1		-	2	2		1	72477		9	1		4	1		1		3	1	1	-	- 1	1	1	-1	2	-	-		-	-	-		-
GXT080	1	3 - 1		7	7			8-19		9	1	7	ii.	L	į.		4		1	-	1	0	1	1	ı	2	-	-		1	-			-
GX120	1			2	2		-		-8	9	1		4	•				3	1	-		1	1	1	1	2	-		1		-	-		-
GXO80	1			2	2	+				9	-	4	50	1	1		4		1	-	1		1		1	2	-	-	-		-	-		*
Ref.	GXS							GXS080	GXS120			080	120		080	120	080	120			080	120							eX	GXT		ESD		ESD
Part Name	SHAFT [LEVER]		PUSH SHAFT ASSY	STEEL BALL [¢4]	ROLLER( \$ 4X3.8L)	CLUTCH ASSY	CLUTCH ASSY B	CLUTCH ASSY	CLUTCH ASSY B	SCREW [M PHILIPS M2.6x6L FLAT HEAD]	GEAR CASE	2ND IDLE GEAR (12T)	2ND IDLE GEAR B (14T)	CENTER PIN	1ST GEAR HOLDER ASSY	1ST GEAR HOLDER ASSY B	1ST IDLE GEAR (12T)	1ST IDLE GEAR B (13T)	WASHER	SNAP RING [R21]	PINION GEAR	PINION GEAR B	SCREW [M PHILIPS M2.3x5L]	EARTH WIRE GX	MOTOR SET	SCREW [M PHILIPS M2.6x5L]	UPPER	UPPER HOUSING ASSY	WINDOW LABEL	WINDOW LABEL		LEVER ASSY	ATTACHMENT	ATTACHMENT AMP DOR SET FOR AS
CODE	PFE1302	PFF1121	PFE1114	PAL1932	PFE1910	PFE1105	PFE1106	PFF1105	PFF1106	PSW2207	PFE1201A	PFE1211	PFE1212	PFE1915	PFE1102	PFE1103	PFE1216	PFE1217	PFE1947	PFE1903	PFE1235	PFE1236	PSW2205	<b>GFE0325A</b>	PFF4005A	PSW2202	PFF1120B	PFF1120D	QFF0406A	QFF0408A	PFF1115	PFF1115B	PFF1819	PFF1819B DFF7537A
No- PUSH	>	<	20	21	22	× 33		<	24	25	20	07	27	00	07	20	67	30	31	33	75	41	42	43	44	ĄĶ	2		46	>	<	47	48	
No- No- LEVER PUSH	22	67	×	24	25	26			27	28	00	67	30	24	0	27	32	33	34	35	25	14	42	43	44	AF	5		46	17	+	×	48	

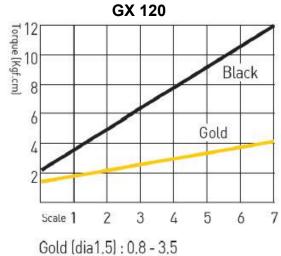
j° C	Kel.	AMP PCB(PFFZ537A) + CONTROL PCB(PFFZ538A,PFFZ539A))	1 1 1 1		2 1 1 1 1	-	-	1 1 1 1 1				2 2 2 2 2		1 1 1 1		-	3 3 3 3	1 1 1 1 1	1 1 1 1		
	P PCB(PFFZ537A) + CON		-	1 1 2	1 1	1 1 1	1 1	1 1 1	1 1		2 2 2	1 1 1	1 1 1	1 1 1	1 1 1	e e	1 1	1 1 1	-		
A Post	Part Name	PFFZ516 CONTROL PCB SET (before S/N:8077011) ( Al	PFFZ538A CONTROL PCB SET FOR AS	PFFZ539A CONTROL PCB SET FOR AS	PFF1723 BUTTON CAP	NOT	PFF1719 CONNECTOR LOCK COVER	NUT	LEVER PIN	LEVER SPRING	PFF1830 SWITCH LOCK	PFF1842A STAND-OFF	PELZ318 6PIN CONNECTOR N	HOUSING NUT	LOWER HOUSING	LOWER HOUSING ESD	PSW2602 SCREW [T TORX 2.6x10L]	SWITCH COVER ASSY		PELZ932A CABLE 6PIN [3M,STANDARD]	PFF1306 SHAFT [CAM CLUTCH TYPE] FS
1000	CODE	PFFZ516	PFFZ538A	PFFZ539A	PFF1723	PFF1824C NUT	PFF1719	PFF1824 NUT	PAL1840	PFE1841	PFF1830	PFF1842A	PELZ318	PFF1802	PFF1828	PFF1828B	PSW2602	PFF1130	PAL1803	PELZ932A	PFF1306
No- No-	LEVER PUSH		49 49		20 20	51 51	52 52	53 53	54 54	X 99	56 55	95 25	28 22	59 58		66 09	61 60	62 61	63 62	64 63	X

- 1) Red colors show the newly replaced parts.
- 2) SENSOR ASSY(PFFZ511A, PFFZ512A) works with SLEEVE ASSY(PFF1123) ( Before serial no. 7117001)
- 3) SENSOR ASSY(3000036,3000037) works with SLEEVE ASSY(3000030) From serial no 1002060031. If it is push to start type of screwdriver, replace MAGNET HOLDER ASSY(3000043), too.
- 3) CONTROL PCB SET FOR AS(PFFZ539A) does not have firmware install.
  CONTROL PCB SET(PFFZ516) with serial no. before 8077011 is combined with Amp & Control part.
- 4) PELZ318 6PIN CONNECTOR N is for PELZ932 CABLE 6PIN only. (Applied from s/n.8077011)

#### **Torque Springs**

#### **Curves**

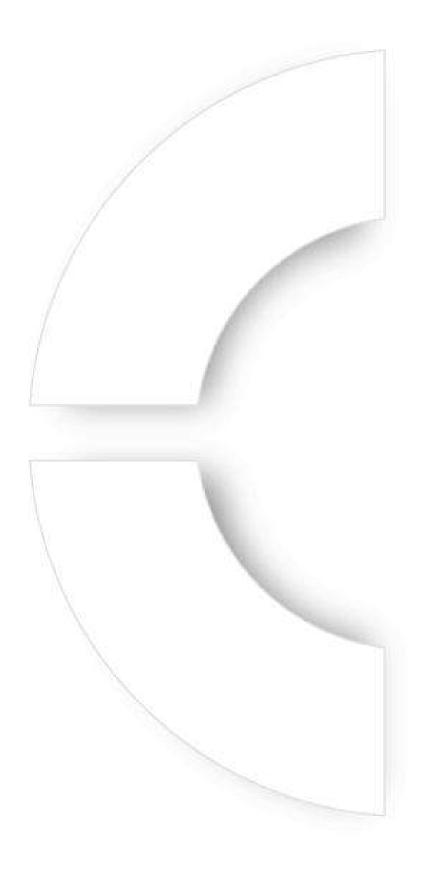




Black (dia2,0): 1,8 - 12,0

#### Changing springs:

- 1 Loosen completely the torque adjusting ring.
- 2 Take off the torque spring you do not want to used anymore.
- 3 Put in the torque spring you want to use.
- 4 Put back the torque adjusting ring.
- 5 Do not forget to adjust the torque ring to the target torque.





www.doga.fr