Screwdrivers

Screwdriver Features

SCREWDRIVER SELECTION

SELECTION GUIDE

1. Types of Screws

Many types of screws are available and are selected depending on the application and material. In addition, thread geometry (insertion speed), and head imprint also influence the choice of the bits and the screwdrivers.

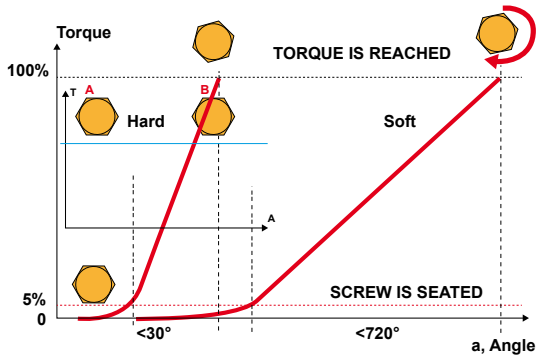
THE MAIN SCREWS TYPES ARE:		THE TYPE OF IMPRINT MAY BE...	
Screw Types	**METRIC** Generally used with nuts and threaded holes.		**SLOTTED** Mainly used in the wood, eye-glasses, electronics sectors, etc.
	SELF-THREADING These form the thread and tighten at the same time. The thread is created by deformation of the material, making this kind of screw particularly suitable for plastic, wood and other lightweight materials.		**CROSS-SLOTTED (PHILIPS-POZIDRIVE)** Used on plastic, sheet metal and wood; the cross-slot improves the connection between screw and screwdriver.
	SELF-TAPPING These are metric screws with special grooves on their threaded shanks which allow the shavings created during tightening to be removed.		**TORX** This transmits higher torque levels with lower axial thrust. The imprint offers a larger surface contact and effective connection with minimum clearance.
	THREE-LOBE These are metric screws that tap through the special lobe shape of the shank, thereby deforming the material rather than removing it.		**HEX SOCKET SCREW (Allen screw)** Normally with metric pitch, it can be used in small spaces.
	SELF-DRILLING These are self-threading screws with a special "drill" tip that makes the hole during drilling.		**HEX HEAD** Used in many sectors, both in the metric and in the self-threading and self-drilling versions etc. Particularly effective for high tightening torque levels.
THE SCREWS CAN BE FITTED WITH:			
	BUILT-IN FLAT WASHER This improves the quality of tightening and makes tightening cycle times quicker.		**KNURLED WASHER UNDER THE HEAD** Fixed or mobile, it reduces the chances of the screw from accidentally loosening.

2. Types of Joints

Steel, aluminium, plastic and wood, etc … create different type of joints and therefore require different tightening forces. That is why it is so important to know are the material used for the joint and what are their specifications to select the perfect screw and screwdriver.

The joints can be differentiate as such:
- Soft: the torque is reached after 2 revolutions (>720°)
- Hard: the torque is reached with a maximum of 30°

As each tightening is unique, you could consider some variations as Very Soft and Medium Soft or Very Hard and Medium Hard.



3. Screws Selection Charts

Fastener Torque Values

MACHINE SCREWS						THREAD FORMING/ ROLLING SCREWS
ISO	4.6	5.8	8.8	10.9	12.9	8.8
THREAD SIZE	RECOMMENDED TORQUE (Nm)					RECOMMENDED TORQUE (Nm)
M1.6	0.07	0.12	0.19	-	-	-
M2	0.15	0.24	0.38	-	-	0.5
M2.2	0.19	0.31	0.51	-	-	-
M2.5	0.28	0.48	0.77	-	-	-
M3	0.51	0.85	1.4	1.9	2.3	1.4
M3.5	0.8	1.34	2.2	3.0	3.6	-
M4	1.2	2.0	3.2	4.5	5.4	3.2
M5	2.4	4.0	6,4	9.0	10.7	6.5
M6	4.1	6.8	10.9	15.3	18.3	11
M8	9.8	16.3	26.1	36.8	44.1	26
M10	19.3	32.2	51.5	72	86.9	52
M12	33.6	56	90	126	151	91

For non metric threads please use the following data as a guide.

THREAD SIZE	QUALITY P		QUALITY S		QUALITY T	
In.	Nm	lbf ft	Nm	lbf ft	Nm	lbf ft
1/4	5.4	4.0	10	7.6	11	8,2
5/16	11.2	8.3	21	15.7	23	17.0
3/8	20.0	14.7	38	27.9	41	30.2
7/16	32.0	23.5	61	44.8	85	48.3
1/2	48.8	36.0	93	68.4	100	73.8

Selecting the Correct Screwdriver

4. Joint/Clutch Combinations

The chart below correlates different joint and clutch combinations. This chart is helpful for initially determining the most likely combination, however on-site testing is recommended to ensure that proper tooling is used for the application.

		Direct Drive	Cushion		Shut-off	
		CP27 Series	CP26 Series	CP20 Series	CP26 Series	CP20 Series
Soft joint (A) and hard joint (B) / metal screw (class 8,8)						
The initial torque required is very low and grows gradually (soft joint A) or rapidly (hard joint B) when the screw head begins to slip on the joint.	Best					xx
	Better			xx	xx	
	Good	x	x			
Sheet metal joint / self -threading screw						
The initial torque for forming the thread is lower than the final tightening torque.	Best				xxx	xxx
	Better		xx	xx		
	Good	x				
Enamelled sheet metal joint / self -threading screw						
The initial torque for forming the thread is higher than the final tightening torque.	Best					
	Better		xx	xx		
	Good	x			x	x
Sheet metal joint / self -drilling screw						
The initial torque for making the hole and forming the thread tends to increase rapidly when the screw head slips on the joint.	Best				xxx	xxx
	Better					
	Good	x	x	x		
Joint with self -locking nut						
The initial torque required to overcome the friction generated by the plastic insert in the nut tends to increase rapidly when the screw head slips on the joint.	Best				xxx	xxx
	Better		xx	xx		
	Good	x				
Joint for wood /plastic screw						
The torque level increases gradually and constantly until the final peak when the screw slips on the joint.	Best	xxx				
	Better		xx	xx		
	Good				x	x

Checklist for screwdriver selection

- Type of screws
- Type of joints
- Clutch selection
- Tools shape for Handle Type
- Torque and speed requirements

It is therefore important that the right screwdriver is selected to give :

- Accuracy
- High Productivity
- Good Ergonomics
- Improved Quality

xxx Best
xx Better
x Good

5. Clutch Type

Direct drive

- No clutch, directly driven bit
- Stall torque regulated to air pressure
- Easy to use and maintain
- Ergonomic handling (light weight, size...)

Cushion clutch

- High speed rundown
- Torque output adjusted by the spring tension
- Clutch ratchets at preset torque
- Easy to use, to adjust and to maintain

Shut-off clutch

- Clutch shut-off the fastening at the preset torque
- Various speeds according to the models
- Torque adjustments for accurate tightenings
- Various shapes and starting mode for all types of applications

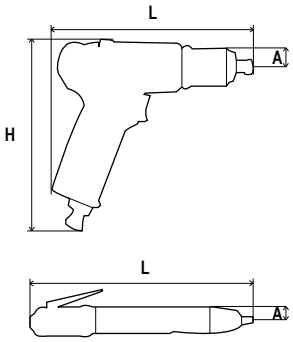
6. Screwdrivers Torque and Speed range

MODEL	TYPE OF CLUTCH	TORQUE RANGE in.lbs (Nm)	START	FREE SPEED	STRAIGHT OR PISTOL
		18 (2.0) 35 (4.0) 53 (6.0) 71 (8.0) 88 (10.0) 106 (12) 124 (14) 142 (16) 159 (18) 177 (20) 195 (22) 212 (24) 230 (26)		rpm	
CP2754	DIRECT		TRIGGER	1,450	
CP2764	DIRECT		TRIGGER	600	
		4.4 (0.5) 8.8 (1.0) 18 (2.0) 30 (3.0) 35 (4.0) 44 (5.0) 53 (6.0) 62 (7.0) 71 (8.0) 80 (9.0) 88 (10.0) 97 (11.0) 106 (12.0)		rpm	
CP2011	CUSHION		LEVER	1,470	
CP2009	CUSHION		LEVER	1,100	
CP2623	CUSHION		LEVER	1,700	
CP2006	CUSHION		TRIGGER	1,100	
CP2612	CUSHION		TRIGGER	1,700	
CP2005	SHUT-OFF		TRIGGER	1,100	
CP2611	SHUT-OFF		TRIGGER	1,000	
CP2010	SHUT-OFF		PUSH	1,470	
CP2012	SHUT-OFF		LEVER	1,100	
CP2003	SHUT-OFF		PUSH	1,100	
CP2007	SHUT-OFF		PUSH	1,100	
CP2008	SHUT-OFF		LEVER	1,100	
CP2622	SHUT-OFF		PUSH	1,700	
CP2621	SHUT-OFF		PUSH	1,000	

Dimensions and Accessories

DIMENSIONS

MODEL	DIMENSIONS					
	L		H		SIDE TO CENTER (A)	
	in.	mm	in.	mm	in.	mm
CP2011	10.9	278	-	-	0.67	17
CP2009	10.8	275	-	-	0.63	16
CP2006	7.2	182	5.6	143	0.67	17
CP2754	8.3	210	6.9	175	0.75	19
CP2764	9.0	228	6.7	170	0.75	19
CP2612	7.5	190	6.9	175	0.71	18
CP2623	8.2	207	-	-	0.71	18



ACCESSORIES INCLUDED

MODEL	DESCRIPTION	PART NO.
CP2009, CP2011	Suspension bail Clutch key	467003 29932
CP2006	Suspension bail Clutch Adjustment Hexagonal key	307683 - 69773
CP2623, CP2612	Suspension bail Bits (2 Phillips E6.3) Color ring (4) Nipple Male 1/4"NPT	894 016 8729 894 020 0791 894 016 8074 -
CP2754, CP2764	Suspension bail	61413

OPTIONAL ACCESSORIES

BITS

MODEL	DESCRIPTION		PART NO.
	in.	mm	
1/4" HEX POWER PHILIPS			
PH1	2	50	111522
PH2	2	50	111532
PH3	2	50	111542
1/4" HEX POWER TORX			
T10	2	50	111352
T15	2	50	111372
T20	2	50	111382
T25	2	50	111392

ADAPTERS

DESCRIPTION	PART NO.
A = 1/4" NPT - B = 1/4" BSP	181523
A = 1/8" NPT - B = 1/8" BSP	61103

LUBRICATION

OIL PROTECTO-LUBE FOR MOTOR	PART NO.
4oz. (0.12 l) - Air tool oil	CA149661
20.8oz (0.591 l) - Air tool oil	CA000046
1 Gal (3.8l) - Airoilene oil	P089507

REAR EXHAUST HOSE ASSEMBLY - NOISE REDUCER

MODEL	DESCRIPTION	PART NO.
CP2764	Noise reducer	205 051 6493

TUNE-UP KITS

MODEL	PART NO.
CP2612	894 016 8416
CP2623	894 016 8330

For Air Line accessory products, Balancers please see pages 78 to 93

Screwdrivers

Cushion Clutches & Direct Drive

3.5 to 124 in.lb (0.4 to 14 Nm)

CP2011

High speed

CP2009

Good accuracy

CP2006

Very ergonomic

CP2623

Lightweight & High speed

CP2754

High speed & Low noise level
Direct drive

CP2764

High torque - Direct drive

FEATURES and BENEFITS

- Multiple combinations of options to suit versatile applications.
- Three air inlets for adaptative tool positioning
- Compact design for easy manipulation
- Keyless clutch for the easy torque adjustment
- 1700 rpm for higher productivity
- One-hand reverse & soft grip for easy handling
- Low vibration & noise level for operator comfort

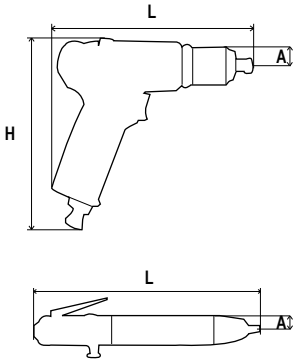
	MODEL	PART NUMBER	FREE SPEED	OUTPUT DRIVE	TORQUE RANGE MIN.		TORQUE RANGE MAX.		NET WEIGHT		AIR CONSUMPTION AT FREE SPEED		AIR INLET
			rpm	in.	in.lb	Nm	in.lb	Nm	lb	kg	cfm	l/s	in.
CUSHION CLUTCHES	STRAIGHT - LEVER START												
	CP2011	615 192 2011	1,470	Hex. 1/4F	18.0	2.0	49	5.5	2.0	0.9	20	9.0	1/4
	CP2009	615 192 2009	1,100	Hex. 1/4F	3.5	0.4	38	4.3	1.5	0.7	14	6.5	1/8
	CP2623	615 192 2623	1,700	Hex. 1/4F	13.3	1.5	49	5.5	1.8	0.8	28	13.0	1/4
	PISTOL GRIP - TRIGGER START												
	CP2006	615 192 2006	1,100	Hex. 1/4F	3.5	0.4	39	4.4	1.8	0.8	14	6.5	1/8
	CP2612	615 192 2612	1,700	Hex. 1/4F	8.9	1.0	53	6.0	2.0	0.9	21	10.0	1/4
DIRECT DRIVE	PISTOL GRIP - TRIGGER START												
	CP2754	615 192 2754	1,450	Hex. 1/4F	-	-	44	5.0	2.0	0.9	17	8.0	1/4
	CP2764	615 192 2764	600	Hex. 1/4F	-	-	124	14.0	2.2	1.0	17	8.0	1/4

Hose int. CP20: 1/4" (6mm) - CP26 & CP27: 3/8" (10mm) - @90 PSI (@6.3 bar).

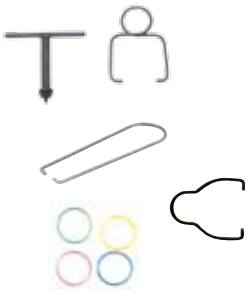
Dimensions and Accessories

DIMENSIONS

MODEL	DIMENSIONS					
	L		H		SIDE TO CENTRE (A)	
	in.	mm	in.	mm	in.	mm
CP2003	7.7	197	-	-	0.59	15
CP2005	7.2	182	5.6	143	0.67	17
CP2007	9.8	250	-	-	0.59	15
CP2008	10.8	275	-	-	0.63	16
CP2010	10.0	253	-	-	0.67	17
CP2012	10.9	278	-	-	0.67	17
CP2611	9.3	235	6.9	175	1.26	32
CP2621	9.1	232	-	-	1.26	32
CP2622	9.1	232	-	-	1.26	32



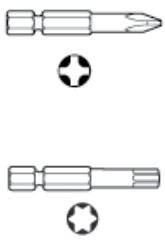
ACCESSORIES INCLUDED



MODEL	DESCRIPTION	PART NO.
CP2007, CP2008, CP2010, CP2012	Suspension bail Chuck key	205 048 2253 29932
CP2003, CP2005	Suspension bail Clutch Adjustment Hexagonal key	307683 - 69773
CP26 Series	Suspension bail Bits (2 Phillips E6.3) Color ring (4) Nipple Male 1/4"NPT	894 016 8729 894 020 0791 894 016 8074 -

OPTIONAL ACCESSORIES

BITS



MODEL	DESCRIPTION		PART NO.
	in.	mm	
1/4" HEX POWER PHILIPS			
PH1	2	50	111522
PH2	2	50	111532
PH3	2	50	111542
1/4" HEX POWER TORX			
T10	2	50	111352
T15	2	50	111372
T20	2	50	111382
T25	2	50	111392

ADAPTERS

DESCRIPTION	PART NO.
A = 1/4" NPT - B = 1/4" BSP	181523
A = 1/8" NPT - B = 1/8" BSP	61103

LUBRICATION

OIL PROTECTO-LUBE FOR MOTOR	PART NO.
4oz. (0.12 l) - Air tool oil	CA149661
20.8oz (0.591 l) - Air tool oil	CA000046
1 Gal (3.8l) - Airoilene oil	P089507

SIDE HANDLE

MODEL	DESCRIPTION	PART NO.
CP2012	Side handle	467033

TUNE-UP KITS

MODEL	PART NO.
CP2622	894 016 8464
CP2621	894 016 8328
CP2611	894 016 8415

For Air Line accessory products, Balancers please see pages 78 to 93

Screwdrivers

Shut-Off Clutches

3.5 to 66 in.lb (0.4 to 7.5 Nm)

CP2010

Fast & high torque

CP2003

Accurate & small

CP2007

Accurate & lightweight

CP2008

Lever Start

CP2012

High torque

CP2005

Accurate & easy handling

CP2622

Very fast

CP2621

High torque & Ergonomic

FEATURES and BENEFITS

- 3 air inlets for multiple applications
- Excellent accuracy for better quality
- Keyless clutch for easy torque adjustment
- One hand reverse & Soft grip for easy handling
- Low vibration & noise level for operator comfort
- 4 Colors ring for better identification

	MODEL	PART NUMBER	FREE SPEED	OUTPUT DRIVE	TORQUE RANGE MIN.		TORQUE RANGE MAX.		NET WEIGHT		AIR CONSUMPTION AT FREE SPEED		AIR INLET
			rpm	in.	in.lb	Nm	in.lb	Nm	lb	kg	cfm	l/s	in.
SHUT-OFF CLUTCHES	**STRAIGHT - PUSH-TO-START**												
	CP2010	615 192 2010	1,470	Hex. 1/4F	18.0	2.0	49	5.5	2.0	0.9	20	9.0	1/4
	CP2003	615 192 2003	1,100	Hex. 1/4F	3.5	0.4	13	1.5	0.9	0.4	9	4.1	1/8
	CP2007	615 192 2007	1,100	Hex. 1/4F	3.5	0.4	38	4.3	1.3	0.6	14	6.5	1/8
	CP2622	615 192 2622	1,700	Hex. 1/4F	4.4	0.5	40	4.5	1.8	0.8	29	13.7	1/4
	CP2621	615 192 2621	1,000	Hex. 1/4F	7.0	0.8	58	6.5	1.8	0.8	31	14.6	1/4
	STRAIGHT - LEVER START												
	CP2008	615 192 2008	1,100	Hex. 1/4F	3.5	0.4	38	4.3	1.5	0.7	14	6.5	1/8
	CP2012	615 192 2012	1,100	Hex. 1/4F	18.0	2.0	49	5.5	2.0	0.9	20	9.0	1/4
	PISTOL GRIP - TRIGGER START												
	CP2005	615 192 2005	1,100	Hex. 1/4F	3.5	0.4	38	4.3	1.8	0.8	14	6.5	1/8
	CP2611	615 192 2611	1,000	Hex. 1/4F	8.8	1.0	66	7.5	2.4	1.1	21	10.0	1/4

Hose int. CP20: 1/4" (6mm) - CP26: 3/8" (10mm) - @90 PSI (@6.3 bar).