

FASTENING



Pistol grip for horizontal applications or for better controllability



In-line shape for vertical applications

HOW TO SELECT YOUR FASTENING SCREWDRIVERS?

STEP 1

Applications

- ▶ Materials/Fasteners
- ▶ Joint types
- ▶ Accuracy
- ▶ Torque/Speed
- ▶ Duty

STEP 2

Screws

- ▶ Shape
- ▶ Size
- ▶ Access
- ▶ Bits

STEP 3

Tools

- ▶ Clutch type
- ▶ Torque/Speed
- ▶ Handle type

CLUTCH TYPE

- ▶ **IMPACT CLUTCH (ROCKING DOG)**
 - Good on very soft joints providing high speed rundown
- ▶ **DIRECT DRIVE**
 - No clutch, directly driven bit
 - Stall torque regulated to air pressure
 - Easy to use by maintain
 - Ergonomic handling (light weight, size...)
- ▶ **POSITIVE CLUTCH**
 - Good for varying torque applications
 - Operator can force clutch engagement for higher torque
 - Excellent for wood applications
- ▶ **CUSHION CLUTCH**
 - High speed rundown
 - Torque output adjusted by spring tension
 - Clutch ratchets at preset torque
 - Easy to use, adjust and to maintain
- ▶ **SHUT-OFF CLUTCH**
 - Clutch shut-off at preset torque
 - Various speed models available
 - Torque adjustment for accurate tightening
 - Various shapes for all types of applications















CLUTCH TYPES	IMPACT	DIRECT	POSITIVE	CUSHION	SHUT-OFF
SUPER INDUSTRIAL		CP2754 CP2764		CP2816 - CP2817 CP2826 - CP2829	CP2003 - CP2005 CP2007 - CP2008 CP2010 - CP2012
INDUSTRIAL MAINTENANCE AND PRODUCTION		CP2755 CP2765	CP2780	CP2623 - CP2612 CP780 - CP781 CP781	CP2611 CP2621 CP2622
GENERAL MAINTENANCE	CP2036 - CP2037 CP2041 - CP2042 CP2136 - CP2141				

FASTENING

SCREWDRIVER SELECTION

1. Types of Screws

Many types of screws are available and are selected depending on the applications and materials. 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...	
	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. Screws Selection Charts

















Fastener Torque Values for metric screws:

GRADES	ISO MACHINE SCREWS					THREAD FORMING/ ROLLING SCREWS
	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

3. Screwdrivers Torque and Speed range

STRAIGHT OR PISTOL	TYPE OF CLUTCH	MODEL	TORQUE RANGE ft.lbs (Nm)																	FREE SPEED rpm	START					
			1.47 (2)	2.95 (4)	4.42 (6)	5.9 (8)	7.37 (10)	8.85 (12)	10.3 (14)	11.8 (16)	13.3 (18)	14.7 (20)	16.2 (22)	17.7 (24)	19.2 (26)	20.6 (28)	22.1 (30)	23.6 (32)	25.1 (34)			26.5 (36)	28 (38)	29.5 (40)	30.9 (42)	
	IMPACT	CP2136																							10,000	LEVER
	IMPACT	CP2141																								13,000
	IMPACT	CP2036																							10,000	LEVER
	IMPACT	CP2037																							10,000	LEVER
	IMPACT	CP2041																							15,000	TRIGGER
	IMPACT	CP2042																							5,600	TRIGGER
	DIRECT	CP2754																							1,450	TRIGGER
	DIRECT	CP2755																							2,200	TRIGGER
	DIRECT	CP2764																							600	TRIGGER
	DIRECT	CP2765																							900	TRIGGER
	POSITIVE	CP2780																							2,100	TRIGGER
	CUSHION	CP780																							1,800	TRIGGER
	CUSHION	CP781																							800	TRIGGER
	CUSHION	CP782																							1,800	LEVER
	CUSHION	CP783																							2,000	LEVER
	CUSHION	CP2828 																							1,300	LEVER
	CUSHION	CP2829 																							900	LEVER
	CUSHION	CP2623																							1,700	LEVER
	CUSHION	CP2816 																							1,800	TRIGGER
	CUSHION	CP2817 																							800	TRIGGER
	CUSHION	CP2612																							1,700	TRIGGER
	SHUT-OFF	CP2005																							1,100	PUSH
	SHUT-OFF	CP2611																							1,000	TRIGGER
	SHUT-OFF	CP2010																							1,470	PUSH
	SHUT-OFF	CP2003																							1,100	PUSH
	SHUT-OFF	CP2012																							1,470	LEVER
	SHUT-OFF	CP2007																							1,100	PUSH
	SHUT-OFF	CP2008																							1,100	LEVER
	SHUT-OFF	CP2622																							1,700	PUSH
	SHUT-OFF	CP2621																							1,000	PUSH



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