

# F.P.T. / BOLT TIGHTENING EQUIPMENT

VERSATILE SOLUTIONS

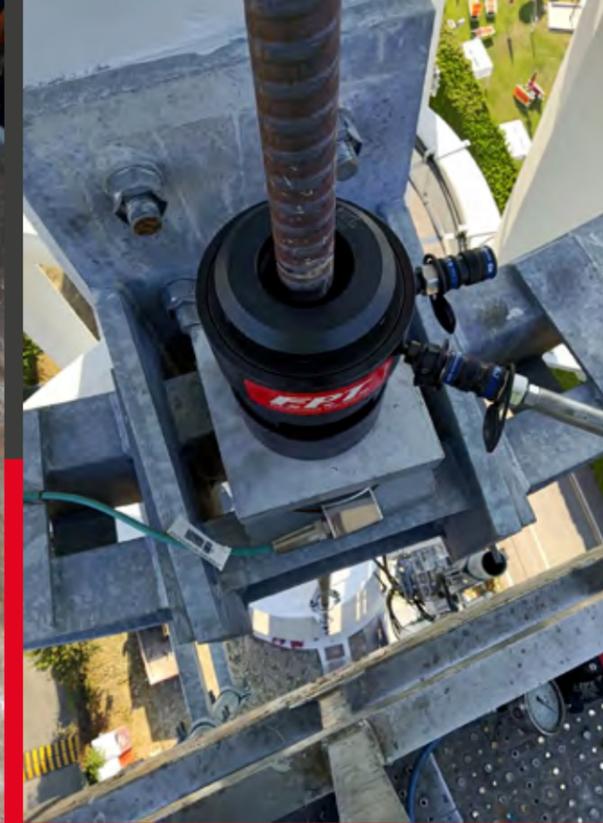


## INDEX

## TORQUE AND TENSIONING

	Series		PAGE
Hydraulic bolt tensioners	TTS CTP		124
Pumps and HPU for hydraulics tensioners and nuts	FPT PDS PP		130
Hydraulic torque wrenches and pumps	FPT-MPU FPT HTW		136
Hydraulic nuts	GH		146





## CUSTOM HYDRAULIC BOLT TENSIONERS

F.P.T. can provide custom design bolt tightening solutions from 700 to 2.500 bar. The relevant markets more and more require hydraulic bolt tensioners built to the customer's to specifics operate within the required geometry. F.P.T. supports customers from studying the layout to the 3D model and the production of the requested tensioners.

F.P.T. doesn't just produce tensioners, but also supports the customer in developing the hydraulic circuit, providing the hydraulic pumps and all the components needed to get the system running.

- Tensioning accuracy. The tensioner, by applying a direct force on the stud, allows very high accurate tightening, directly proportional to the pressure applied to the tensioner itself.
- Easy calculation of the force to be applied to the stud. The calculation of force is simple and F.P.T. provides all the force / pressure conversion data.
- Speed and repeatability in tightening operations. Easy to set up and fast in carrying out the tensioning operation, guaranteeing very high repetitiveness as well.
- Less stress. By this tightening method the studs are less stressed because there are no torsional forces, just axial ones.

Series **TTS** | Standard hydraulic bolt tensioners



PRODUCT  
PAGE

**High forces – reduced dimensions: anti over-stroke device.**

**CUSTOM TENSIONERS ON REQUEST**



- TTS Series tensioners are designed to suit most flanges type: ANSI B16.5 - ANSI B16.47 - B.S.3293 - AWWA - MSS-SP44 - API-6A - API-17D - UNI EN 1092-1.

- High forces and reduced dimensions. TTS Series tensioners represent the optimal combination between the developed strength and their size.

- Extremely compact dimensions and low weight. In TTS series the spaces for the installation are reduced to a minimum level and operations are facilitated by reduced weights.

- Maximum flexibility. With only 6 hydraulic cells the operator can cover an extended range of Imperial or Metric thread sizes from 3/4" to 4" (M20 – M100).

- 15 mm stroke cover most of the tensioning application. If longer strokes are required the tensioning operation can be carried on by steps.

- All components are manufactured with hardened high tensile strength steel.

- Special treatment to guarantee: high resistance to corrosion - high resistance to wear – extremely low friction to help during screw operations.

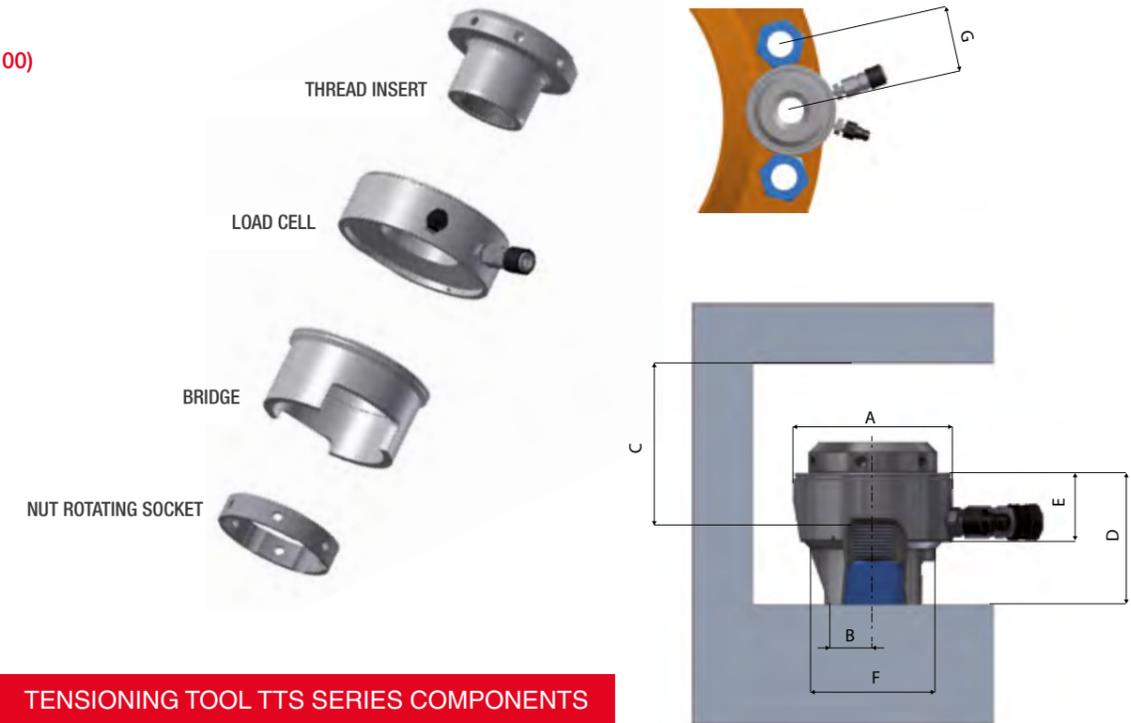
- Safety is a must. All size have over stroke indicators.

- All model are equipped with 2 quick couplers, male and female, for serial hydraulic connection.

- Special high quality seals for leak free operations and easy maintenance.

**TTS**

3/4" to 4" (M20-M100)  
236 kN - 2.820 kN  
Stroke 10 - 15 mm  
1.500 bar



**TENSIONING TOOL TTS SERIES COMPONENTS**

HYDRAULIC CELL	IMPERIAL ADAPTER KITS		METRIC ADAPTER KITS		FORCE		HYDRAULIC AREA		STROKE	WEIGHT	DIMENSIONS (mm)							
	Thread size	Kit code	Thread size	Kit code	kN	Ton	in <sup>2</sup>	mm <sup>2</sup>			A	B	C	D	E	F	G (min)	
TTS1	3/4"-10 UNC	1.KI030410UNC	M20x2,5	1.KM.020025	236,5	24,1	2,44	1576,46	10	2	73	16	75	52	44,50			
	7/8"-9 UNC	1.KI070809UNC	M22x2,5	1.KM.022025								22	79	58	50,50			
	1"-8 UN	1.KI100008UN	M24x3	1.KM.024030								23	81	62	55			
	1.1/8"-8 UN	1.KI110808UN	M27x3	1.KM.027030								24	81	68	61			
TTS2	1.1/8"-8 UN	2.KI110808UN	M27x3	2.KM.027030	459,5	46,8	4,75	3063,05	15	4,6	101	25	104	75	64,50			
	-	-	M30x3,5	2.KM.030035								25	104	75	64,50			
	1.1/4"-8 UN	2.KI110408UN	M33x3,5	2.KM.033035								28	89	108	54	80	69,50	
	1.3/8"-8 UN	2.KI130808UN	M36x4	2.KM.036040								30	111	84	74,50			
TTS3	1.1/2"-8 UN	2.KI110208UN	M39x4	2.KM.039040	831,3	84,7	8,59	5541,77	15	7,7	133	34	106	95	82,50			
	1.5/8"-8 UN	3.KI150808UN	M42x4,5	3.KM.042045								36	109	104	90			
	1.3/4"-8 UN	3.KI130408UN	M45x4,5	3.KM.045045								40	89	112	57	108	94,50	
	1.7/8"-8 UN	3.KI170808UN	M48x5	3.KM.048050								42	117	112	99,50			
TTS4	2"-8 UN	3.KI200008UN	M52x5	3.KM.052050	1345,5	137,2	13,90	8970,03	15	13,7	163	43	125	122	104,50			
	1.7/8"-8 UN	4.KI170808UN	M48x5	4.KM.048050								45	128	123	108			
	2"-8 UN	4.KI200008UN	M52x5	4.KM.052050								12,7	54	102	133	63	132	117,50
	2.1/4"-8 UN	4.KI210408UN	M56x5,5	4.KM.056055								13,3	53	137	140	120,50		
TTS5	2.1/2"-8 UN	4.KI210208UN	M64x6	4.KM.064060	1927,3	196,5	19,91	12848,33	15	18,9	193	57	141	146	128			
	-	-	M60x5,5	4.KM.060055								59	134	148	131			
	2.1/2"-8 UN	5.KI210208UN	M64x6	5.KM.064060								19	62	137	63	154	135	
	2.3/4"-8 UN	5.KI230408UN	M72x6	5.KM.072060								18,2	68	140	158	141,50		
TTS6	3"-8 UN	6.KI300008UN	M76x6	6.KM.076060	2819,9	287,5	29,14	18799,29	15	34,3	232	75	160	170	153			
	-	-	M80x6	6.KM.080060								77	165	177	155			
	3.1/4"-8 UN	6.KI310408UN	M85x6	6.KM.085060								34,3	77	170	182	164,50		
	3.1/2"-8 UN	6.KI310208UN	M90x6	6.KM.090060								33	82	125	175	73	191	174,50
	3.3/4"-8 UN	6.KI330408UN	M95x6	6.KM.095060								32,9	86	180	206	187,50		
	4"-8 UN	6.KI400008UN	M100x6	6.KM.100060								32,9	95	185	216	198		



PRODUCT  
PAGE

### For big sizes

#### CUSTOM TENSIONERS ON REQUEST



The hydraulic bolt tensioners with threaded insert are characterised by the threaded interchangeable insert which makes it possible to work on studs with various threads, using just one hydraulic cell.

This configuration is extremely versatile whenever stud with different threads and similar clearance must be tensioned, all you need is a set of inserts different sockets and in some cases reaction bridges.

F.P.T. is specialized in the study and production of custom hydraulic bolt tensioners from 700 to 2,500 bar.



PRODUCT  
PAGE

### To be compact

#### CUSTOM TENSIONERS ON REQUEST



The compact hydraulic bolt tensioners have the thread integrated in the piston.

This characteristic reduces the overall size at a minimum level, allowing you to have a tensioner with extremely small dimensions and to be able to operate where other tensioners could not be installed.

F.P.T. produces this model of tensioner, with threaded piston, in all those cases in which it is not possible to meet the requirements of dimensions without recurring to multistage tensioner.

Spring return version or pneumatic return can be realised to speed up the return operations of the piston.

Series **CTP-M** | Multi-stage hydraulic bolt tensioners



PRODUCT  
PAGE

**High forces, low clearance**

**CUSTOM TENSIONERS ON REQUEST**



The CTP-M series is characterised by a central puller which two loading cells operate on, this construction makes it possible to double the load capacity whilst keeping the external cell dimension the same. The results obtained are very tight clearances with the load supplied remaining equal.

The multistage tensioners F.P.T. are suitable for all applications where there are reduced radial dimensions available.

This type of tensioner is available also in the version with gear rotation nut mechanism to accelerate tensioning operations. Also there is the possibility of shaping the bridge to best match the available space among nuts.

F.P.T. realizes multistage hydraulic bolt tensioners according to customer specifications by carrying out a preliminary study on the existing dimensions and thus offering the most suitable solution.

Hydraulic bolt tensioners for the wind turbine sector | Series **CTP-W**



PRODUCT  
PAGE

**For wind and renewables**

**CUSTOM TENSIONERS ON REQUEST**



F.P.T. - Fluid Power Technology produces a wide range of wind tensioners, CTP-W series, specifically designed for the wind power sector, for bolted joints of a wind turbine. Extremely compact, they are capable of developing very high forces, designed and engineered for turbine installation and subsequent maintenance.

They have a compact structure, equipped with a piston, spring return and / bush screwing / unscrewing nut device on the stud with ratchet wrench. Equipped with adjustable joint for 360° rotation to place the flexible hoses in the best possible position in order to allow the free access to tensioning tools. Automatic piston return system for maximum speed in operations, nut unscrewing/screwing system and the assisted key positioning equipped.

The wind tensioners are especially designed to tighten swivel ring, bolts, hub and blades of wind towers. They are light, easy to use, easy to handle and carefully designed for greater reliability and durability.

All components are made of high resistance steel and have a special treatment to guarantee a high resistance against corrosion and a high resistance to wear during screwing operations and equipped with Long Life Time Puller.

Series  
**PDSA**

Hand pumps for bolt tensioners and hydraulic nuts 1.600 - 3.000 bar, aluminium made



PRODUCT  
PAGE

**For bolt tensioners  
and hydraulic nuts**

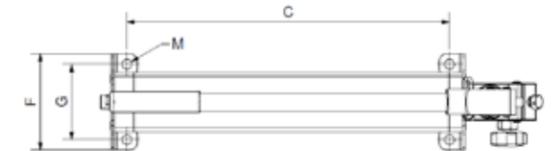
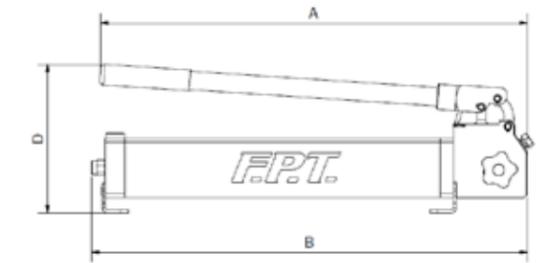
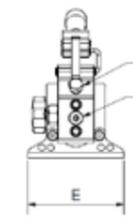
**CUSTOM PUMPS ON REQUEST**



- Very high pressure hand pumps produced in light-weight aluminum alloy of aeronautics grade to reduce weight to a minimum level. The most flexible solution for driving hydraulic bolt tensioners and nuts.
- Two-stage versions at 1,600 bar and 3,000 bar with 40 cc displacement at the first stage for a rapid approach and 1 cc at the second stage.
- Pressure relief valve integrated in the pump body for maximum operator safety.
- Very high pressure, high performance, reduced effort on the handle and ergonomics.
- Integrated pressure gauge connection for direct mounting of the measuring instrument.
- Oil filler cap with integrated breather. Tough pins with trough-holes for attachment to machinery or structures.
- Surface treatments to guarantee total reliability in the most difficult environments and maximum duration.

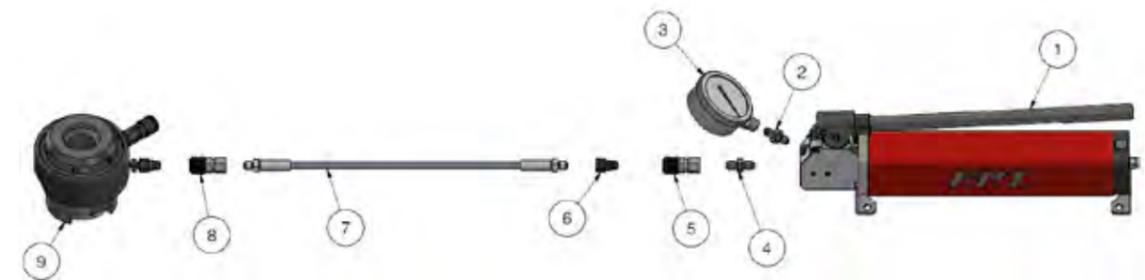
**PDSA**

1.600 - 3.000 bar  
40/1 cm<sup>3</sup> oil displacement  
Double stage  
1,8 l oiltank capacity



PDSA 1600-3000

TYPE OF PUMP	MODEL	PRESSURE	OIL	OIL TANK	USABLE OIL	DIMENSIONS (mm)										WEIGHT
		1°/2° STAGE	DISPLACEMENT	CAPACITY		A	B	C	D	E	F	G	H	M	P	
		bar	cm <sup>3</sup>	litres	litres											kg
DOUBLE STAGE	PDSA-1600	25/1600	40/1	1,8	1,6	577	588,5	436	200	130	130	102	1/4" GAS	13	1/2" GAS	7,8
DOUBLE STAGE	PDSA-3000	16/3000	40/0,5	1,8	1,6	577	588,5	436	200	130	130	102	3/4"-16 UNF	13	9/16"-18 UNF	7,8



Configuration No.1 – Quick coupler on pump  
Configuration No.2 – Flex hose directly assembled on the pump

	1500 Bar - Config.1	1500 Bar - Config.2	1600 Bar - Config.1	1600 Bar - Config.2	2500 Bar - Config.1	2500 Bar - Config.2	3000 Bar - Config.1	3000 Bar - Config.2
ITEM	CODE							
1	01PDSA1600	01PDSA1600	01PDSA1600	01PDSA1600	01PDSA3000	01PDSA3000	01PDSA3000	01PDSA3000
2	-	-	-	-	0922225016	0922225016	0922225016	0922225016
3	01MD200G	01MD200G	01MD200G	01MD200G	01MD300G	01MD300G	01MD300G	01MD300G
4	0925613265	-	0925613265	-	09299199501611	0929112241	0922225257	0922225482
5	07GR15F	-	07GR20F	-	07GR25F	-	07GR30F	-
6	07GR15M	-	07GR20M	-	07GR25M	-	07GR30M	-
7	01TFR#/1800	01TFR#/1800	01TFR#/1800	01TFR#/1800	01TFR#/2500	01TFR#/2500	01TFR#/3000M16D	01TFR#/3000M16G
8	07GR15F	07GR15F	07GR20F	07GR20F	07GR25F	07GR25F	07GR30F	07GR30F
9	Tool							

# insert length of the hose expressed in meters

Series **FPT C7** | Electric pump 1500 - 2000  
and 3000 bar



PRODUCT  
PAGE

**For bolt tensioners and  
hydraulic nuts**

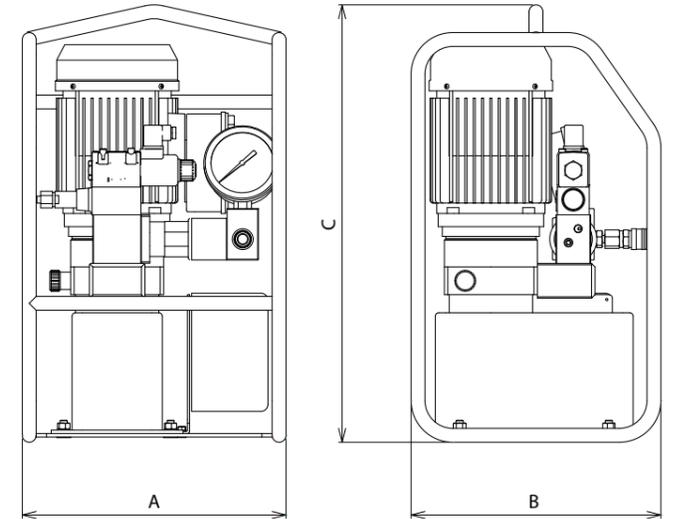
**CUSTOM PUMPS ON REQUEST**



- Single-phase electric power pack suitable to operate hydraulic bolt tensioners and nuts.
- On request different engines, capacities and pressure are available.
- The electric pump is available in three versions: 1.500 - 2.000 and 3.000 bar.
- The pressure regulating valve allows easy output pressure setting.
- Control pendant for easy operation control.
- Data Logger option available as an option, for the download of tightening values.

**FPT C7**

1.500 to 3.000 bar  
40/1 cm<sup>3</sup> oil displacement  
Double stage  
7 l oiltank capacity



FPT C7

MODEL	PRESSURE	OIL FLOW	MOTOR	KW RPM	VALVE	OILTANK CAPACITY	DIMENSIONS			WEIGHT	ACCESSORIES
	bar	l/min			kW/rpm		litres	A	B		
FPT-1500-EV4/3-C7	120/1500	4,5/0,35	SINGLE PHASE, 4 POLES	1,1/1400	SOLENOID VALVE	7	380	360	630	38	PENDANT
FPT-1500-EV4/3-D-C7	120/1500	4,5/0,35	SINGLE PHASE, 4 POLES	1,1/1400	SOLENOID VALVE	7	380	360	630	39	PENDANT WITH DIGITAL DISPLAY
FPT-2000-EV4/3-C7	120/2000	3,7/0,12	SINGLE PHASE, 4 POLES	1,1/1400	SOLENOID VALVE	7	380	360	630	38	PENDANT
FPT-3000-EV4/3-C7	185/3000	3,2/0,15	SINGLE PHASE, 4 POLES	1,1/1400	SOLENOID VALVE	7	380	360	630	38	PENDANT

On request it is possible to have control pendant with digital pressure indicator even for pressures > 1500 bar



Series  
**PP**

**Pneumohydraulic pumps  
for bolt tensioners and  
hydraulic nuts**



PRODUCT  
PAGE

**For bolt tensioners and  
hydraulic nuts**

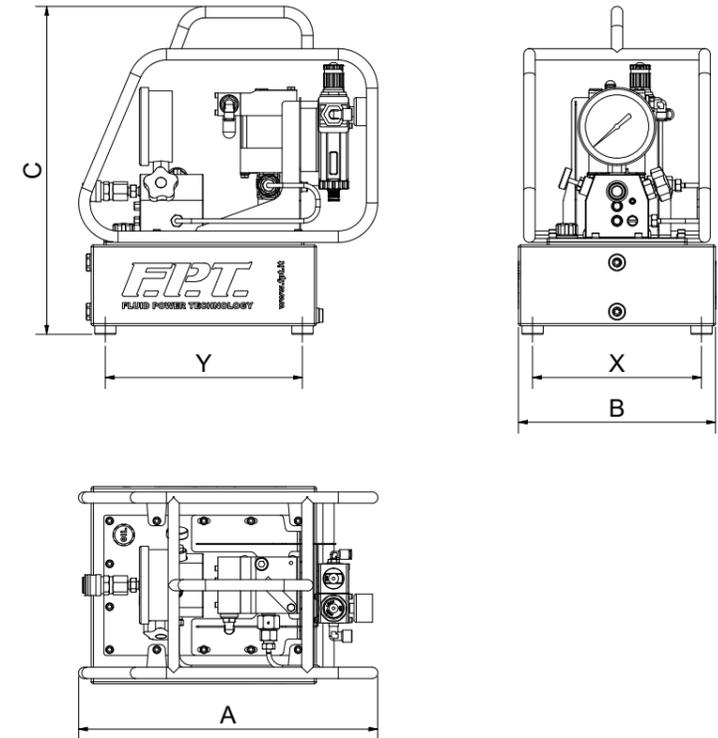
**CUSTOM PUMPS ON REQUEST**



- PP series power packs are the ideal solution for all very high pressure applications when compressed air line connection is needed.
- Hydraulic pumps for stud tensioning, burst tests, laboratory tests, scaling or keying of bearings, actuation of hydraulic bolt tensioners or hydraulic nuts and wherever high pressure is required.
- Standard versions with pressure 1500 bar - 2500 bar - 3000 bar and 4000 bar.
- Equipped with pressure relief valve for maximum operative safety.
- Handwheel pressure regulator valve.
- Pressure gauge, female quick coupler and standard assembly pneumatic regulator filter on all models.
- Models available with remote control pendant.
- Possibility to design and produce custom hydraulic power units on request, with dedicated performance and features.

**PP**

Single stage  
5 to 10 l oiltank capacity  
1500 to 3000 bar



PP

MODEL	HYDRAULIC PRESSURE	MIN. AIR INLET PRESSURE	AVG. AIR CONSUMPTION	MULTIPLICATION RATIO	NO LOAD OIL DISPLACEMENT	OIL DISPLACEMENT AT MAX OIL PRESSURE	OILTANK CAPACITY	AIR PRESSURE RANGE	LENGTH	WIDTH	HEIGHT	FIXING HOLES	SIDE INTERAXIS	FRONT INTERAXIS	WEIGHT (WITH OIL)
	bar	bar	l/min	-	l/min	l/min	litres	bar	A	B	C	-	X	Y	kg
PP1500C05	1500	7	500	1:220	0,28	0,01 @ 7 bar	5	1 - 10 bar	425	265	466	nr.4 M8x12	165	250	19,5
PP1500C10	1500	7	500	1:220	0,28	0,01 @ 7 bar	10		425	280	466	nr.4 M8x12	240	280	25,5
PP1500C05/CDP	1500	7	500	1:220	0,28	0,01 @ 7 bar	5		425	265	466	nr.4 M8x12	165	250	21,0
PP1500C10/CDP	1500	7	500	1:220	0,28	0,01 @ 7 bar	10		425	280	466	nr.4 M8x12	240	280	27,0
PP2500C05	2500	6	600	1:440	0,21	0,03 @ 6 bar	5		425	265	466	nr.4 M8x12	165	250	20,5
PP2500C10	2500	6	600	1:440	0,21	0,03 @ 6 bar	10		425	280	466	nr.4 M8x12	240	280	26,5
PP2500C05/CDP	2500	6	600	1:440	0,21	0,03 @ 6 bar	5		425	265	466	nr.4 M8x12	165	250	22,0
PP2500C10/CDP	2500	6	600	1:440	0,21	0,03 @ 6 bar	10		425	280	466	nr.4 M8x12	240	280	27,5
PP3000C05	3000	8	700	1:440	0,21	0,06 @ 8 bar	5		425	265	466	nr.4 M8x12	165	250	20,5
PP3000C10	3000	8	700	1:440	0,21	0,06 @ 8 bar	10		425	280	466	nr.4 M8x12	240	280	26,5
PP3000C05/CDP	3000	8	700	1:440	0,21	0,06 @ 8 bar	5		425	265	466	nr.4 M8x12	165	250	22,0
PP3000C10/CDP	3000	8	700	1:440	0,21	0,06 @ 8 bar	10		425	280	466	nr.4 M8x12	240	280	27,5

Series **FPT-MPU-HTW** | Portable mini pumps for hydraulic torque wrenches



PRODUCT  
PAGE

To be carried everywhere

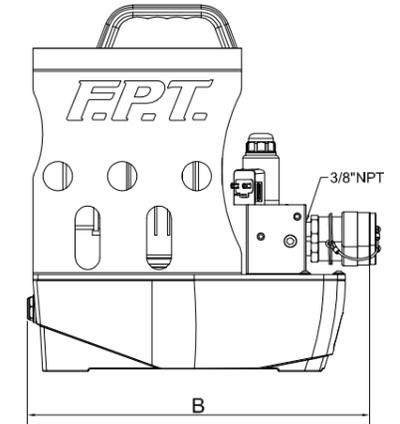
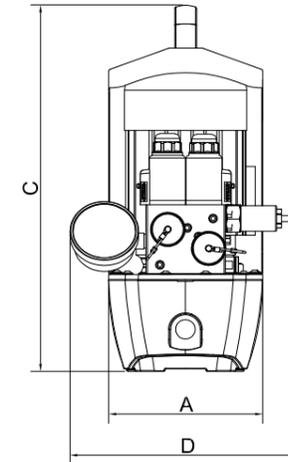
**CUSTOM PUMPS ON REQUEST**



- Portable mini pump, extremely light and compact, suitable for using all small and medium sized torque wrenches.
- **Only 12 kg weight to operate in any environment.**
- Maximum working pressure pressure 700 bar.
- Single-phase electric motor 230V-50Hz, power 0.55 kW.
- Radial piston pump, double stage, suitable for heavy-duty applications.
- 2.1 liter resin tank.
- Metal cage with ergonomic handle.
- Pressure gauge and valve handwheel pressure regulator as standard.
- GR-1 quick coupling as standard on the outports.

**FPT-MPU-HTW**

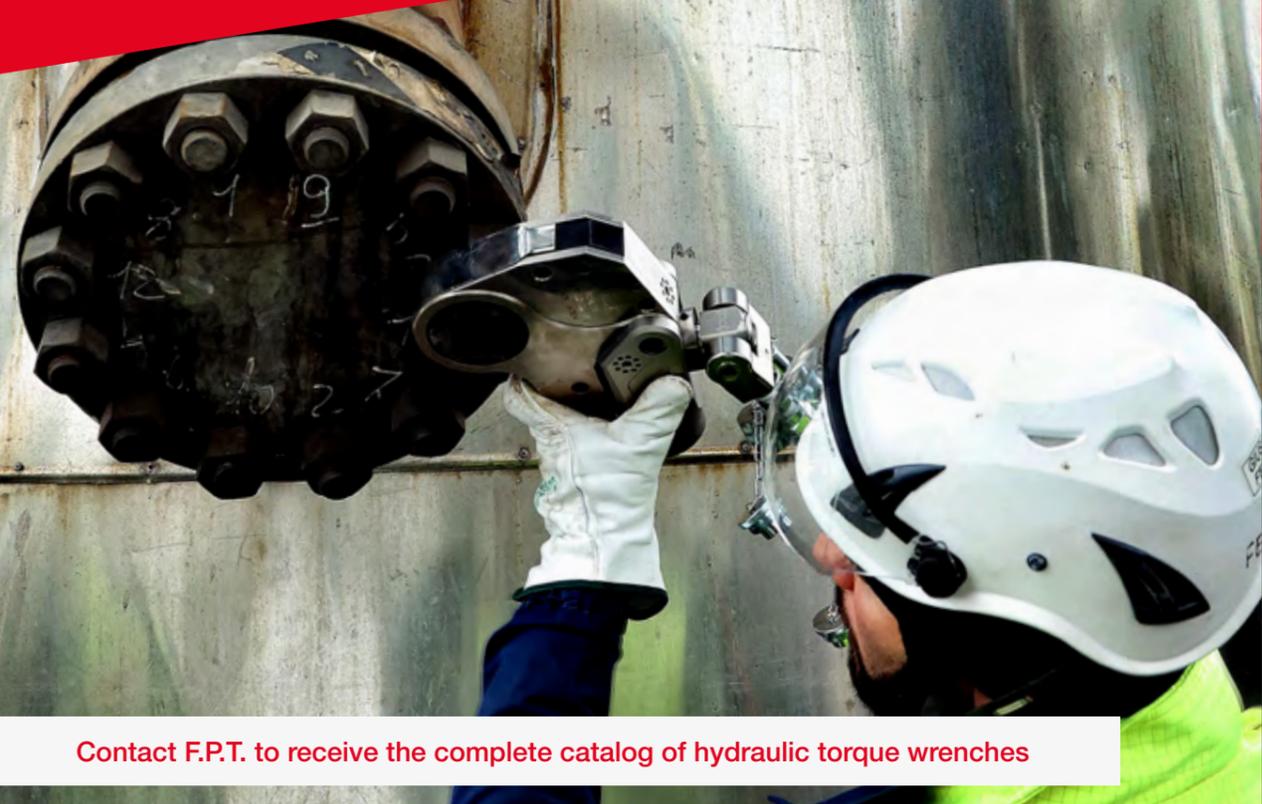
700 bar  
Double stage  
1/0,5 l/min oil flow  
2,1 l oiltank capacity



**FPT-MPU-HTW**

CODE	MODEL	PRESSURE	OIL FLOW	MOTOR	TENSION/ FREQUENCY	POWER/ RPM	TANK CAPACITY	DIMENSIONS mm				WEI- GHT
		1°/2° STAGE	l/min			kW/rpm	litres	A	B	C	D	kg
31FPTMPUHTW	FPT-MPU-HTW	75/700	1/0,5	MONO PHASE ELECTRIC	230V-50Hz	0,55/2800	2,1	155	344	372	238	12

# F.P.T. / SQUARE DRIVE TORQUE WRENCHES, LOW CLEARANCE TORQUE WRENCHES, HYDRAULIC PUMPS AND ACCESSORIES



Contact F.P.T. to receive the complete catalog of hydraulic torque wrenches

F.P.T. offers a wide variety of products for controlled tightening to better meet the customer's specific needs and applications. Including hydraulic torque wrenches, compact and high-flow power packs, twin flex hoses, quick couplers and all the accessories required to complete the system.

Any tightening can be executed with F.P.T.'s torque wrenches. Handy and compact models, square drive and low clearance.

- Accuracy
- Reliability
- Low weight
- Excellent performance



Series  
**FPT-HTW-C**

Compact pumps electric and pneumatic for hydraulic torque wrenches



PRODUCT  
PAGE

To stay light  
and compact

**CUSTOM PUMPS ON REQUEST**

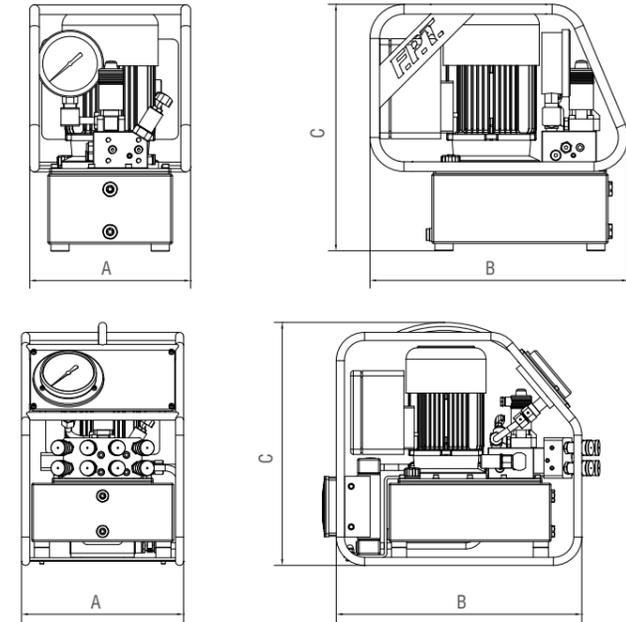


- The FPT-HTW-C is a compact pump that provide the power for your torque wrenches.
- The FPT-HTW-C10 Series is available in both single port models for single tool operation and quad port models for running up to four tools simultaneously.
- The sight glasses enable operator to monitor reservoir oil levels and the transport cage for all around protection and easy handling.
- The hydraulic pump is available in electric or pneumatic version, with different 2-Stage delivery.
- For this model are available different accessories. For both version the heat exchanger, quick couplers and twin hoses, for FPT9-HTW-C10 the quad block and the auto cycle - for automatic operation. It is also possible totally customize the pump up to the customers' needs.

**FPT-HTW-C**

700 bar  
Two speed  
3,5/0,45 - 7,9/0,9 l/m  
5 to 10 l capacity

**FPT-HTW-C**



CODE	MODEL	PRESSURE	OIL FLOW	MOTOR	TENSION/ FREQUENCY	POWER/ RPM	TANK CAPACITY	DIMENSIONS (mm)			WEIGHT
		1°/ 2° STAGE	l/min					litres	A	B	
51001	FPT9-ME41-HTW-C05	80/700	3,5/0,45	MONO PHASE ELECTRIC	230V-50Hz	0,75/1370	5	265	425	405	29
51002	FPT9-ME41-HTW-C05-SC	80/700	3,5/0,45	MONO PHASE ELECTRIC	230V-50Hz	0,75/1370	5	265	425	405	34
51088	FPT9-ME21-HTW-C05-SC	80/700	7,5/0,9	MONO PHASE ELECTRIC	230V-50Hz	1,5/2850	5	265	425	405	34
51003	FPT9-MA-HTW-C05	80/700	5,6/0,65	PNEUMATIC	-	1,3/3000	5	265	425	405	27
51004	FPT9-ME21-HTW-C10	80/700	7,5/0,9	MONO PHASE ELECTRIC	230V-50Hz	1,5/2850	10	320	485	480	36
51005	FPT9-ME21-HTW-C10-SC	80/700	7,5/0,9	MONO PHASE ELECTRIC	230V-50Hz	1,5/2850	10	320	485	480	40
51006	FPT9-ME21-HTW-C10-Q	80/700	7,5/0,9	MONO PHASE ELECTRIC	230V-50Hz	1,5/2850	10	320	485	480	38
51008	FPT9-ME21-HTW-C10-SC-Q	80/700	7,5/0,9	MONO PHASE ELECTRIC	230V-50Hz	1,5/2850	10	320	485	480	43
51009	FPT9-ME21-HTW-C10-SC-Q-AC	80/700	7,5/0,9	MONO PHASE ELECTRIC	230V-50Hz	1,5/2850	10	320	485	480	44
51011	FPT9-ME21-HTW-C10-AC-SC	80/700	7,5/0,9	MONO PHASE ELECTRIC	230V-50Hz	1,5/2850	10	320	485	480	42
51012	FPT9-MA-HTW-C10	80/700	7,9/0,9	PNEUMATIC	-	1,3/3000	10	320	485	480	34
51013	FPT9-MA-HTW-C10-Q	80/700	7,9/0,9	PNEUMATIC	-	1,3/3000	10	320	485	480	36

**OPTIONS**

<b>SC</b>	HEAT EXCHANGER
<b>Q</b>	QUAD BLOCK
<b>AC</b>	AUTO CYCLING



Series **FPT-HTW-HF** | High flow pumps  
for torque wrenches



PRODUCT  
PAGE

When is needed a  
very high flow

**CUSTOM PUMPS ON REQUEST**

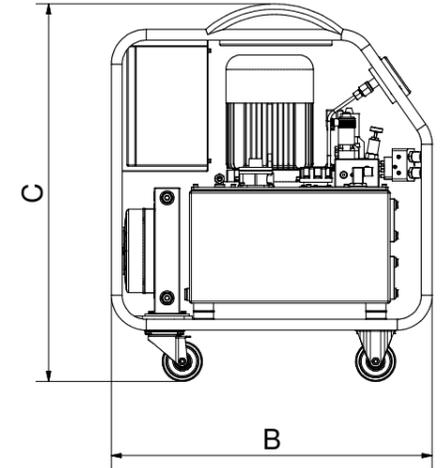
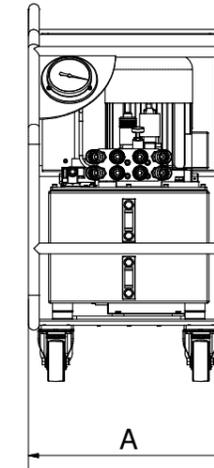


- The pump FPT-HTW-HF is a high flow version typically used for intensive job with multiple tools.
- The pump is available on three-phase version with 15 l/min at 100 bar and 3 l/min at 700 bar.
- The pump is equipped with protection cage and wheels for easy handling.
- Standard for this model are: heater exchanger, quad block manifold and oil return filter.
- There are also available different accessories: automatic cycle, quick couplers and twin hoses.
- The FPT-HTW-HF can also be equipped with different pumps and flow related to the torque specifications.
- Automatic cycle available for heavy duty operations.

**FPT-HTW-HF**

700 bar  
15/3 l/min  
Two speed  
40 l capacity

FPT-HTW-HF



CODE	MODEL	PRESSURE	OIL FLOW	MOTOR	TENSION/ FREQUENCY	POWER/RPM	TANK CAPACITY	DIMENSIONS (mm)			WEIGHT
		1°/ 2° STAGE						litres	A	B	
51086	FPT15-ME4-HTW-HF40	100/700 bar	15/3 l/min	THREE PHASE	400V-50Hz	4/1450 kW/rpm	40	500	800	940	100
51087	FPT15-ME4-HTW-HF40-AC	100/700	12/3	THREE PHASE	400V-50Hz	4/1450	40	500	800	940	100



**ACCESSORIES  
AND CUSTOM  
MADE**

Accessories and custom made pumps for hydraulic torque wrenches



**Twin hoses for torque wrenches**

FPT is specialized in the study and production of hydraulic pumps for custom hydraulic torque wrenches.

High flow versions, compact and lightweight, for simultaneous use of multiple tools, atex certified, with heat exchangers and many other customizations based on the characteristics of the customer's application.

Available different types of hoses length and quick couplers.

MODEL	HOSE AND COUPLERS ASSEMBLY		LENGTH m	PRESSURE BAR
	PUMP END	WRENCH END		
TTFG-5-HTW	N°2 NIPPLES 1/4"	GR1M + GR1F	5	700
TTFG-6-HTW	N°2 NIPPLES 1/4"	GR1M + GR1F	6	700
TTFG-10-HTW	N°2 NIPPLES 1/4"	GR1M + GR1F	10	700
TTFG-5-HTW-C	N°2 NIPPLES 1/4"	GR5M + GR5F	5	700
TTFG-6-HTW-C	N°2 NIPPLES 1/4"	GR5M + GR5F	6	700
TTFG-10-HTW-C	N°2 NIPPLES 1/4"	GR5M + GR5F	10	700
TTFGG-5-HTW	GR1M + GR1F	GR1M + GR1F	5	700
TTFGG-6-HTW	GR1M + GR1F	GR1M + GR1F	6	700
TTFGG-10-HTW	GR1M + GR1F	GR1M + GR1F	10	700
TTFGG-5-HTW-C	GR5M + GR5F	GR5M + GR5F	5	700
TTFGG-6-HTW-C	GR5M + GR5F	GR5M + GR5F	6	700
TTFGG-10-HTW-C	GR5M + GR5F	GR5M + GR5F	10	700





PRODUCT  
PAGE

### Hydraulic nuts

**CUSTOM PUMPS ON REQUEST**



- Hydraulic nuts are used in all those applications where it is not possible to use a mechanical nut because of continuous maintenance operations, heat, vibrations or other factors.
- Replace existing hex nuts to provide an accurate and uniform load at every bolted connection.
- Allow to tighten large diameter bolts, with high and precise preloads easily.
- They can have upper or lower clamping collar and they are extremely compact, it is also possible to connect any number of hydraulic nuts for simultaneous operation, ensuring a uniform tensioning.
- The hydraulic nuts are used for installation and removal of components such as couplings, gears and ship propellers, rudder blades, rudder blade shaft coupling or large pieces on conical seats and for bearings assembling and disassembling.
- The hydraulic nuts can have various threads and dimensions, they are operated by a handpump or high pressure hydraulic pump. Customized solutions produced on request.
- They find application in the naval, iron and steel, mechanical sector.

