



### PRIMA PN

The PRIMA PN test machine, made with a pneumatic actuator, has been designed to run static, semi-static, dynamic and fatigue tests on a large variety of components and materials.

Combined with an TX-1 Controller and related SX Software Suite, the PRIMA PN system is the ideal solution for use in a range of fields.

Reliability, accuracy and an eye-catching design make the PRIMA PN the perfect test machine for companies aiming to approach the world of cyclical tests.

### Specification

- Designed for static, semi-static and dynamic tests
- Test frequency up to 30Hz
- Lightweight and rigid test frame, made with double column and actuator assembled on the top cross strut
- No need for oil
- High number of compatible accessories
- Test capacity from 50 to 4000 N
- Stroke from 1 to 200 mm
- TX-1 Controller

### PRIMA PN Pneumatic System



OIL FREE



LOW CONSUMPTION



HIGH FLEXIBILITY  
AND CONFIGURABLE



TABLE TOP



SIMPLE  
TO USE

### Applications

The PRIMA PN machine can be used in a wide range of applications thanks to the possibility of achieving a number of different configurations in terms of pneumatic actuator strokes.

The simple and intuitive software interface makes the products in the PRIMA PN series perfect for the following sectors:

- *Biomedical*
- *Plastics*
- *Rubber*
- *3D Prints*
- *Springs*
- *Mechanical and composite parts*



Al fine di migliorare le prestazioni tecniche del prodotto, la società si riserva di apportare variazioni senza preavviso.  
In order to improve the technical performances of the product, the company reserves the right to make any change without notice.

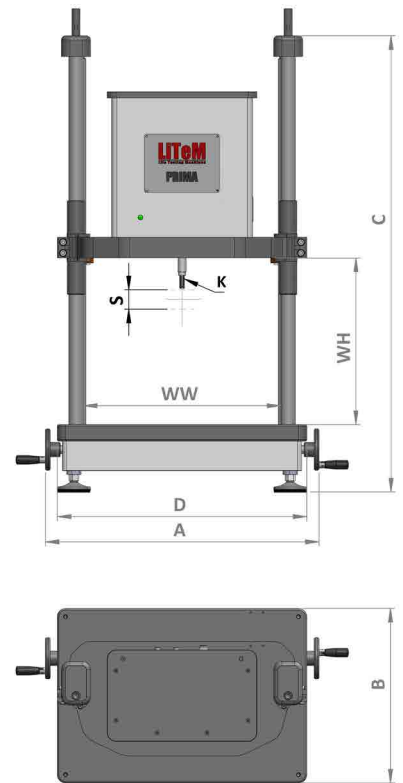
P-PN / 63 - 100 - 5

100	80	63	50	Bore
-----	----	----	----	------

200	150	100	50	Stroke [mm]
-----	-----	-----	----	-------------

Force transducer [kN]	5	10
-----------------------	---	----

TECHNICAL SPECIFICATIONS	eu	PRIMA PN			
		P-PN-50/S	P-PN-63/S	P-PN-80/S	P-PN-100/S
Static force[6 bar]	N	1200	1800	3000	4300
Dynamic force[5 bar]	N	1000	1500	2500	4000
Test frequency	Hz	0.01 - 30 Hz			
Actuator Stroke	mm	50-100-150-200			
Position sensor accuracy	mm	0.02			
Load cell	kN	5	5	5	10
Load cell accuracy	N	1/1000 F.S.			
Controller		TX-1 Real Time Controller			
Software		SX Software Suite			
Control procedures		Force - displacement - AUX 1 - encoder			
Actuator		Pneumatic			
Work pressure	bar	6 bar [ Max 10 bar ]			
Cross strut movement		Manual			
Operating temperature	°C	10 - 40 °C			
Dimensions [ A x B x C ]	mm	640 x 420 x 1100			
Work area [WW - WH]	mm	475 x 800			
Compressed air coupling		Direct coupling with air pipe Rilsan D10/8			
Weight	Kg	100	100	115	120
Power supply [Controller]	V	AC 110-240V 50-60Hz			



\*Specify the stroke of the actuator in the machine code

NOTE: The performance of the machine shown in the table may depend on the test specifications and the characteristics of the test sample.

## KIT and Accessories

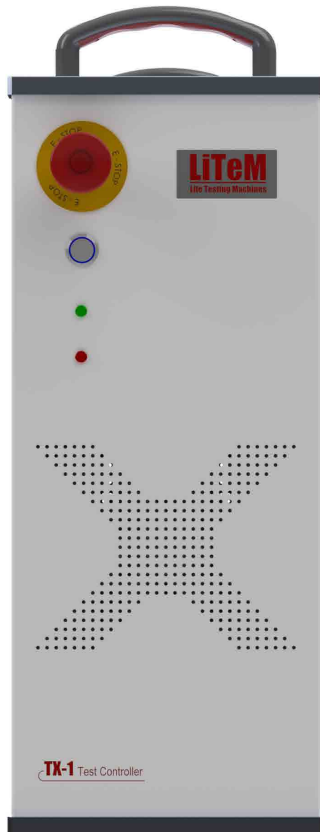
### Components included in the KIT

POS.	COMPONENT
1	PRIMA PN test frame
2	TX-1 Controller
3	SX Software Suite, standard version.
4	Force sensor complete with counter-plate for mounting on the side of the actuator and plate for mounting on the base
5	Air handling unit complete with shut-off valve, pressure regulator, pressure gauge, filter and pre-filter, on-off solenoid valve, 5-metre 24 V DC power cable
6	Sensor, power supply, connection cables
7	PC, monitor 27", Mouse, keyboard
8	Calibration reports, user manuals, tutorial videos
9	1 day of training

### Available accessories

CODE	COMPONENT
A-TS-300	Base with T-Slot grooves 300x250
A-CP-10	Compression test plates
A-AV-10	Quick connection couplings
A-MG	Manual clamps
A-SC-100	Safety cage type A-SC-100

## Software & Controller



### TDX-1 Controller

The RTC controllers are perfect control systems for static, dynamic and fatigue testing.

The control electronics consists of a processor with a Real Time operating system and high-speed FPGA board for acquiring signals coming from sensors and for the closure of the PID control loop for managing safety limits.

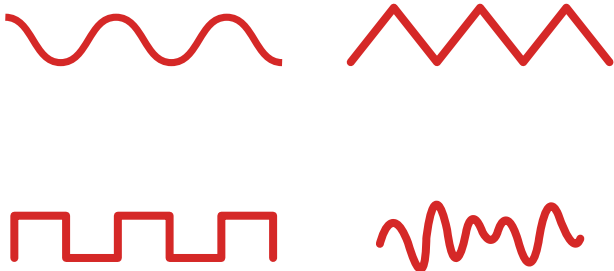
The integrated Real Time Processor generates various wave forms applied by the connected actuator.

### TDX-1 Controller - Datalogger

The TDX-1 controller can be used as a data logger with 4 +/- 10V input channels; this function requires the activation of the WAVE MONITOR Tool software.

### Available Wave Forms

- In load or displacement ramp with settable ramp speed rate
- Cyclical tests with constant amplitude with sinusoidal/triangular/square waves
- Variable amplitude tests with user defined profile or importable from an external text or excel file - Requires the activation of the Tool *PROFILE EDITOR* (software licence).

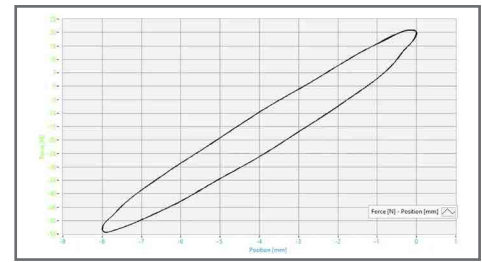


### Types of tests and application fields

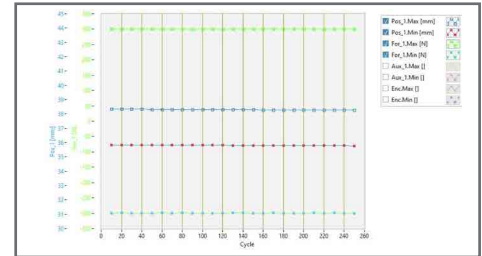
- 1 STATIC YIELD/FAILURE TESTING
- 2 RIGIDITY TESTING
- 3 DYNAMIC TESTING
- 4 CONSTANT AMPLITUDE FATIGUE TESTING
- 5 CONSTANT AMPLITUDE BLOCK FATIGUE TESTING
- 6 VARIABLE AMPLITUDE FATIGUE TESTING
- 7 REPRODUCTION OF LOAD CURVES



Command panel window



XY Graph



Max-min vs cycles graph

## TECHNICAL SPECIFICATIONS

Description	Pneumatic System PRIMA PN
TX-1 Real Time Controller	Yes
Force Channel (control channel)	Input +/-10V, 16 bit
Displacement Channel (control channel)	Input +/-10V, 16 bit
Auxiliary Channel (control channel)	Input +/-10V, 16 bit
Incremental Encoder (control channel)	Incremental
PID output voltage	+/-10V
PID Loop Control Frequency Standard	1000 Hz
Safety limits	Settable by operator
Panel emergency stop	Yes
Remote emergency stop	Yes
4 analog channels in synchronous reading	Can be activated with WAVE MONITOR software
Power supply	AC 110-240V 50-60 Hz

## Software Tool - WAVE MONITOR

The WAVE MONITOR software tool allows you to have a further four analog channels available with reading-only function. These channels can be acquired and registered by the software synchronously with the other command channels (force, displacement, aux and encoder).

Al fine di migliorare le prestazioni tecniche del prodotto, la società si riserva di apportare variazioni senza preavviso.  
In order to improve the technical performances of the product, the company reserves the right to make any change without notice.



TUTORIAL  
VIDEO

**DRC Srl**  
PRODUCTION and SALES

Via Montesicuro, 58/B - 60131 Ancona (Italy)  
Tel (+39) 071 80 36 077

**GENERAL INFORMATION**  
[info@litem.info](mailto:info@litem.info)

[www.litem.info](http://www.litem.info)