



DN Meditech

DN Lithotripter

"DN LITH Digi" is a unique device for intra corporeal stone fragmentation by "Direct Contact Lithotripsy" under direct vision endoscopic control. "DN LITH Digi" is the intra corporeal Pneumatic lithotripter having supremacy in techno-applicability point of view. It is a most reliable device, found to be an inexpensive and safe form of lithotripsy for fragmenting stones in the kidney, ureter and urinary bladder. We have a model "DN LITH Digi" that is a quite sophisticated digitally controlled pressure flow device. It generates highly accurate pulses by means of digitally controlled microprocessor based device in single pulse as well as continuous pulse mode. In continuous pulse mode it facilitates to indicate number of pulses per second via digital display that can be adjustable by feather touch switch.

The most striking feature of "DN LITH Digi" is the design of its rigid probe, which results in rapid and safe fragmentation of the large and hard calculi situated anywhere in the urinary system i.e. kidneys, ureters and bladder. Therefore, there is no chance of any heat generation on the tip of the probe and consequent damage to the mucosa. Being based on the simple operating principle, the "DN LITH Digi" provides very effective, safe, inexpensive and more reliable system for intra corporeal lithotripsy. The "DN LITH Digi" consists of a Control Unit, Hand Piece and Solid Probes. The foot-switch operated, microprocessor based control unit is a highly precise electro-pneumatic device provided with the standard electrical supply as well as the clean and dry compressed air. It is connected with the hand piece through flexible tubing. The rigid probe is connected to hand piece. The probe tip is placed in direct contact with the stones. As soon as the control unit energizes by the foot switch, the compressed air enters the hand piece and propels a small piston against the base of the probe at a frequency from 1 cycles/sec to 12 cycles/sec. The ballistic energy is then transmitted through the probe into the stone, thereby fragmenting the stone.

LIMITATION : The limitation of the "DN LITH" is its rigid probe design as it can be used only with rigid and semi-rigid endoscopes.

FUNCTION OF URINARY SYSTEM : The urinary system consists of two kidneys, two ureters, bladder and urethra. The kidneys principally function to filter the waste products from the blood and circulate the cleaned blood in the body. The ureters carry the waste products (urine) from the kidneys to the bladder. In the bladder the urine is stored until urination. Thereafter, the urine passes out of the body through urethra.

FORMATION OF THE STONE : The hyper concentration of the dissolved chemicals in the urine crystallizes them. Mass of such crystals forms up the stones anywhere in the ureters, kidneys and bladder. There are different types of stones such as Calcium Oxalate (Monohydrate or Dihydrate), Calcium Phosphate, Uric Acid, Struvite, Cystine and Xanthine etc. The stones may vary in size, number and consistency according to their chemical compositions.



Product Profile of DN Lithotripter



Control Unit

- ✓ Attractive Control Unit molded with ABS plastic body.
- ✓ Lightweight, compact and mobile.
- ✓ Single and multiple mode operation.
- ✓ In multiple mode, four options are available to change the frequency.
- ✓ No possibility of heat generation inside, hence; no chance of any thermal injury.
- ✓ Pressure setting knob to set the desired pressure which also facilitates constant monitoring of pressure via pressure dial.
- ✓ Most striking features of 'DN LITH' are safety and its efficacy.



Hand Piece

- ✓ Light weight.
- ✓ Long life.
- ✓ Para medical staff can easily dismantle it for maintenance and immediate service.
- ✓ Sterilization : Formalin chamber OR Cidex.



Probe

- ✓ Rigid lithotripsy probes are available in all sizes and compatible with any ureteroscope and nephroscope.
- ✓ Cost effective and durable.
- ✓ Sterilization : Formalin chamber OR Cidex.
- ✓ Probes for Ureteric stones : 0.8 mm; 1.0mm; 1.2mm; 1.4mm – Length : 610mm
- ✓ Probes for kidney and bladder stones : 2.0mm; 2.5mm; 3.0mm – Length : 450mm



Oxygen Regulator



Foot Switch



Technical Specification of DN Lithotripter

Supply Voltage	230 VA/ 50Hz/Â± 10 % 110 VA C @60 HzÂ± 10 %
Power Consumptions	30 Watts
Input Gas	Oxygen / Compressed Dry Air
In Let Pressure Range (To Control Unit)	4 - 6 Kg / cm ²
Out Let Pressure Indication	0 - 5 Kg / cm ² by Digital Display
Freq. of Impacts	Single and multiple mode operations. In multiple modes, twelve options are available to change the frequency from 1 pulse/second to 12 pulse/second by feather touch switches.

Control Unit (Made from rust free plastic body)

Size	L 195mm X W 240mm X H 125mm
Weight	1930 gms

Probes For Ureteric Stones

Size	0.8mm, 1mm, 1.1mm, 1.2mm, 1.4mm, 1.5mm
Length	610 mm

Probes For Kidney Stones

Size	2.5mm, 3mm
Length	450mm

Probes For Bladder Stones By Using Litho Bridge

Size	1.5mm
Length	460mm

Hand Piece (Made from non toxic aluminium Alloy)

Weight	105 gms
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Accessories of DN Lithotripter

DN LITH Control Unit	1 No.
Hand Piece	2 Nos.
Probe Set	1 set [6 nos. probes]
Pneumatic tubing to connect with hand piece	1 No.
Pneumatic tubing to connect with control unit	1 No.
Mains Cable	1 No.
Foot switch with cable	2 No.
Protection Cap-hand piece	1 No.
Regulator for Oxygen Cylinder	1 No.

Optional Accessories	
Bladder Attachment	
Single Channel Breathe	1 No.
Litho Bridge	1 No.
Sheath (23.5fr/ 25 fr)	1 No.
Bladder probe.	2 No.
DN LITH VAC	1 No.

Operating Instructions of DN Lithotripter

Prior to the surgical operation, ensure that the Hand Piece and the Probe are duly sterile. Formalin or Cidex sterilization can be preferred. During sterilization, 'sterilization / protection cap' must be placed on the Hand Piece.

Before starting the surgical operation, confirm that the Hand Piece is properly assembled and the system is working. Test the working of the Hand Piece by energizing the control unit by foot-switch for a while. You will receive jolts to your hand ensuring that the system is working. Make sure that the Hand Piece is not in contact with any part of the human body.

Selection

Probe :

Ureteric Stone = Probes of 1mm, 1.2mm, 1.4mm are supplied as standard accessories for the use in Ureteroscopy. Probes of 0.8mm, 1.1mm and 1.5mm can be supplied on specific request. Select the probe which can pass through the scope easily revealing the smooth movement and better endoscopic vision. The bigger probe in diameter will help you in better fragmentation and reducing the procedure time.

Kidney Stone = Probes of 2.5mm and 3.0mm are supplied as standard accessories for use in Per Cutaneous Nephro Lithotripsy.

Bladder Stone = 1.5mm for treating bladder stone with cystoscope sheath as an optional accessory.

Frequency :

The frequency can be obtained in a single pulse as well as multiple pulses.

Single Pulse = The control unit is energized for single pulse on the tip of the probe by pressing the foot-switch. This is ideal for ureteroscopy towards better and controlled fragmentation, thereby avoiding migration of the stone from the ureter.

Multiple Pulse = The control unit is energized for the multiple pulse, varying from 1 impact per second to 12 impacts per second linearly by rotating selector switch; on the tip of the probe, by pressing the foot-switch. This mode is useful for fast fragmentation of hard as well as large calculi. For fast and controlled fragmentation it is advisable to keep the frequency between 5 impacts per second and 8 impacts per second per second.

Pressure :

Ureteric stones = The permitted operating pressure is between 1 kg./cm² and 2.5 Kg./cm².

Kidney Stones = The permitted operating pressure is between 1 kg./cm² and 4 Kg./cm².

Bladder Stones = The permitted operating pressure is between 1 kg./cm² and 4 Kg./cm².

For the fast and controlled fragmentation, the pressure and frequency is to be adjusted according to the hardness of the stone.

Routine Maintenance : After every surgical procedure, dismantle the Hand Piece completely, clean all the parts gently applying the spirit by dry cotton and ensure that no foreign particle enters the cylinder. Do not use harsh detergents to clean. The liquid soap / light detergents can be used for cleaning the Hand Piece and its parts.