



DIAMOND RANGE SUCTION UNIT



**High Diamond Suction Unit
(Red Back)**



**Low Diamond Suction Unit
(Orange Back)**



**Thoracic Diamond Suction Unit
(Green Back)**

INSPECTION

Remove the Diamond Suction Unit from the packaging and inspect for damage. If there is any damage, DO NOT USE, and contact Therapy Equipment Ltd.

FUNCTION/INTENDED USE



The Diamond Suction Unit should only be used by Hospital personnel authorised and trained in its use.



Read all instructions before using – DO NOT USE the Suction Unit if you do not understand the instructions given in these User Instructions.

The function of the Diamond Range Suction Unit is to provide a controllable Suction level from a Piped Vacuum supply.

There are three types available:

High Suction/High Flow	-	Vacuum 0 to -625mmHG
Low Suction/High Flow	-	Vacuum 0 to max -150mmHG (Relief Valve (full relief) set at -180mmHG)
Thoracic Suction	-	Vacuum 0 to max -60cmH ₂ O (Relief Valve (full relief) set at -75cmH ₂ O)

The unit should be operated and stored in a dry clean environment within the temperature range of -10 °C to +40 °C.

USER INSTRUCTIONS

1. Unpack the Controller from the packaging
2. Push the Controller Probe into the Yellow Vacuum Wall Outlet.
3. Push the 1/4" Bore Plastic Suction Tubing over the coned end of Pipeline Protector Bowl at the bottom of the unit, ensuring that a good fit is achieved, and that the tubing cannot come loose. The Suction Tubing should be a maximum of 2 Metres between the Suction Controller and Receiver Jar.
4. Turn the unit on using by moving the On/Off Tap on the side of the unit 180° so that the ON is showing.
5. The level of vacuum required can then be adjusted by turning the Control Knob on the top of the unit. (Increase – clockwise; Decrease – anti-clockwise).
6. To pre-set the vacuum level before use, occlude the Suction Tubing between the Controller and the Receiver Jar. Turn the Control Knob until the required level of suction reads on the gauge at the front of the unit. The Suction Unit can now be switched off, and will apply the set vacuum level, the next time the unit is switched on.
7. The unit should be switched off by moving the On/Off Tap on the side of the unit back to the OFF position whenever not in use.

High/Low Suction controllers should not be used for continuous drainage.

The Pipeline Suction Unit should only be used by persons who have received adequate instructions in its use.

It is the responsibility of the end user to ensure that the correct unit and vacuum level is selected. Therapy Equipment accepts no responsibility for the selection of an incorrect unit or vacuum setting

DIAMOND PIPELINE PROTECTORS

The Pipeline Protector is a complete plastic bowl fitted to the bottom of the Diamond Range Suction Controller. The unit is supplied complete with a Hydrophobic Filter that automatically shuts down the Suction Controller when the filter comes into contact with fluid, thereby giving 100% protection against possible contamination of the Vacuum Pipeline. To assist end users in identifying Pipeline Protectors that have activated, the filter will turn pink.

The Pipeline Protector should be changed immediately if the filter turns pink or discoloured (the original colour is white). It is also recommended that the Pipeline Protector be changed routinely as follows:

High Usage Area i.e. Theatres, HDU etc.	-	Every 3 months
Low Usage Area i.e. Wards etc.	-	Annually

The Pipeline Protector is changed by turning the plastic bowl in an anti-clockwise direction until the bayonet mechanism releases. The entire plastic bowl complete with filter should be disposed of and replaced with new. The new Pipeline Protector should be fitted by lining up the 'lugs' on the Bowl with the mating sections of the underneath of the Suction Unit, and turning in a clockwise direction until the bowl is locked into place.

Spare Pipeline Protectors - Part No. 7900 (Pack of 10)

The function checks detailed under Preventative Maintenance should be carried out after any dismantling and reassembly of the unit, including Pipeline Protector changes.

CLEANING INSTRUCTIONS

Wipe over the outside of the unit and the gas supply hose with an alcohol or disinfecting wipe. If you suspect that the unit is contaminated, remove it from use and refer the device to the appropriate department.

TECHNICAL SPECIFICATION

The range of Pipeline Suction Equipment manufactured by Therapy Equipment Ltd fully conforms to ISO 10079-3:2009.

Inlet Connection	-	Direct British Standard Vacuum Probe	
Outlet Connection	-	6.4mm Male – Tapered	
Constitutional Materials	-	External Components	ABS
		Internal Metal Components	Stainless Steel
		On/Off Tap	Glass Filled Nylon
Flowrates	-	High Suction Unit – In Excess of 55LPM @ -80 kPa Low Suction Unit – In Excess of 20LPM @ -20 kPa Thoracic Suction Unit – In Excess of 20LPM @ -6 kPa	

WARNINGS



DO NOT autoclave, or immerse in liquid



DO NOT attempt to use if the collection canister is full, or if the Pipeline Protector is wet or discoloured



DO NOT use if the Suction Controller becomes internally contaminated.



ENSURE all connections are tight and leak free

TROUBLESHOOTING

<u>PROBLEM</u>	<u>ANALYSIS</u>	<u>ACTION</u>
Faulty Gauge	Suction Controller indicating wrong vacuum	<ul style="list-style-type: none">Return to the Hospital Department responsible for maintenance or Manufacturer
Relief Valve on Thoracic or Low Suction Malfunctions	Too high vacuum maybe applied to the patient	<ul style="list-style-type: none">Adjust the controller up to the full, and ensure that the relief valve is functional, before connecting to the patient.
Pipeline Protector malfunction or has been contaminated	Suction Controller will not function or if Pipeline Protector becomes contaminated will cease to function	<ul style="list-style-type: none">Ensure adequate safeguard against contamination of ControllerEnsure that the new Pipeline Protector is functional if contamination has occurred.
Breakage of On/Off Tap	If Tap is in Off Position the Controller will not function	<ul style="list-style-type: none">If Tap is in On Position the Controller can be turned off by means of the Control KnobVisual Inspection to ensure that the Suction Controller is not damagedIf damaged return the unit to the Hospital Department responsible for maintenance or Manufacturer
Leaking On/Off Tap	When the unit is turned on the Suction will creep up to	<ul style="list-style-type: none">Preset the unit to -100mmHg, occlude the Pipeline Protector and

	maximum when occluded	<ul style="list-style-type: none">ensure the suction maintains the correct level• If creeping return the unit to the Hospital Department responsible for maintenance or Manufacturer
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RECEIVER JARS

A Suction Receiver Jar Assembly should always be used in conjunction with Suction Controllers. Whilst Therapy Equipment supplies its own Receiver Jar system, the Suction Controllers can be used with any manufacturer's Jar System, including Disposable Liner Systems. Standard Receiver Jars can be used with High and Low Suction Controllers, however more specialist Drainage systems are required for use with Thoracic Suction Controllers to maintain the very low levels of Suction being applied.

REPLACEMENT PARTS DETAILS

A Full range of spares are available (see Catalogue),

USE OF ANIMAL TISSUES/PHTHALATES

The standard Direct Diamond Suction unit has not been manufactured using any Animal Tissue or Phthalates. We should confirm however that Phthalates are used in the manufacture of the flexible High Pressure Hose, Suction Tubing and Disposable Liner (full details are available on request).

PREVENTATIVE MAINTENANCE/PRE-USE CHECKS

Whilst the Suction Controllers are supplied with a Lifetime Function Warranty (7 years), the unit should be included in an annual service inspection.

- The unit should be wiped with an Alcohol or Disinfecting Wipe to clean
- A check for leakage as follows:
 1. Turn Suction Controller on and adjust Control Knob to maximum
 2. Occlude Pipeline Protector/Filter Jar outlet and wait for full vacuum (in excess of – 500mmHG) to register on gauge.
 3. Adjust Control Knob to minimum.
 4. The gauge should not drop showing the unit is leak tight (A drop over the complete scale on the Low Controller taking 15 seconds or more is acceptable)
- A check for function/flowrate as follows:
 1. Turn Suction Controller on and adjust vacuum to maximum
 2. Occlude Patient outlet on Receiver Jar and ensure that a vacuum of –400mmHG (High Suction) or –150mmHG (Low Suction) is registered within 4 seconds.
- The Pipeline Protector (Part No. 7900) should be regularly changed. The frequency of the change depends on hospital policy however we recommend every 3 months in a high usage area e.g. Theatre and annually in a low usage area e.g. Wards.

For Diamond Thoracic Suction Units only:

1. Turn the Thoracic Diamond Range Suction On/Off tap downwards so the ON is showing
2. Occlude the Pipeline Protector and turn the Control Knob clockwise to MAXIMUM and make sure the Vacuum level reaches in excess of -50cmH₂O
3. While still occluded, turn the Control Knob to MINIMUM and make sure the Vacuum Gauge registers zero.

Regular strip down maintenance on the Suction Controller is not required.



Revision No.	0	1	2	3	4	5	6	7	8	9
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