The advent of amorphous fluoropolymer has virtually revolutionized *Degasys*.

Introducing the New Series of

Degasys Ultimate

- micro and analytical HPLC
- high degassing characteristics
- minuscule internal volume of 200 μl*
- independent vacuum chambers
- amorphous fluoropolymer membranous tubing
- high reliability

*at flow rate of 1 ml/minute/channel

The 1990 version: the current analytical 4-channel DG-2410

The 2000 version: the analytical 4-channel *Degasys Ultimate* DU4010

The 2000 version: the analytical 4-channel *Degasys Populaire* DP4010

The 1990 version: the current analytical 4-channel DG-2410

Also Introducing the New Series of

Degasys Populaire

- micro and analytical HPLC
- small internal volume of 800 μl*
- PTFE membranous tubing
- independent vacuum chambers
- high degassing characteristic
- high reliability
- budget prices

*at flow rate of 1 ml/minute/channel

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Degasys Ultimate

With a new amorphous fluoropolymer membranous tubing as well as our new proprietary miniature vacuum pump built in, *Degasys Ultimate* features minuscule internal volumes and outstanding degassing characteristics unavailable elsewhere, not to speak of the incredibly down-sized dimensions and weight.

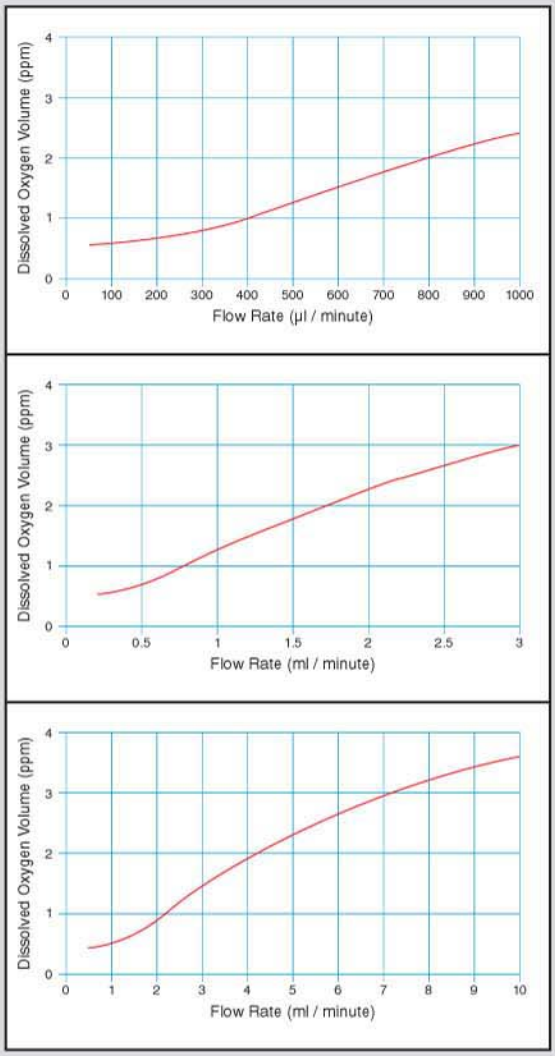
Degasys Ultimate is equipped with independent vacuum chambers for respective channels to avoid possible cross contamination.

DEGASSING EFFICIENCY

The membranous tubing of an amorphous fluoropolymer has gas diffusion rates of 200 - 300 times that of PTFE tubing. The enhanced gas transport rates provide faster degassing response times with shorter lengths of tubing, excellent mechanical and physical properties at temperatures up to 300℃, better mechanical properties including tubular burst strength when compared with PTFE tubing, higher coefficient of friction than PTFE tubing for secure end-fitting attachments, and excellent chemical resistance.

INTERNAL VOLUME

VOLUME	MAX. FLOW RATE
200 μl	1 ml/minute/channel
350 μl	3 ml/minute/channel
650 μl	10 ml/minute/channel



"The extremely small internal volumes are quite beneficial not only to chromatograms but to chromatographers who use rather expensive solvents, as when changing from one solvent to another all the lines have to be thoroughly flushed."

8-channel and 4-channel *Degasys Ultimate*

Degasys Ultimate

Models	Flow Rate/ Channel Max.	Residual Dissolved Oxygen	Pressure Loss	Internal Volume	Wetted Parts	W×H×D (mm)		Weight (kg)	
						1 - 4 CH	5 - 8 CH	1 - 4 CH	5 - 8 CH
DU1001 DU5001 DU2001 DU6001 DU3001 DU7001 DU4001 DU8001	1 ml/minute max.	0.7 ppm max. at flow rate of 0.1 ml/minute	0.07 kPa (0.01 psi) at flow rate of 0.1 ml/minute	0.2 ml	Teflon AF PTFE PPS ETFE	50×80×290	50×100×290	1.4	1.6
DU1003 DU5003 DU2003 DU6003 DU3003 DU7003 DU4003 DU8003	3 ml/minute max.	0.7 ppm max. at flow rate of 0.5 ml/minute	0.56 kPa (0.081 psi) at flow rate of 0.5 ml/minute	0.35 ml					
DU1010 DU5010 DU2010 DU6010 DU3010 DU7010 DU4010 DU8010	10 ml/minute max.	0.6 ppm max. at flow rate of 1 ml/minute	2.1 kPa (0.3 psi) at flow rate of 1 ml/minute	0.65 ml					

Note 1. The first digit from left indicates the number of channel.
2. The maximum flow rates, dependent upon applications, are for reference only.
3. Both the residual dissolved oxygen and the pressure loss are as measured, when aerated deionized water is used at 20˚C - 25˚C (68˚F - 77˚F).
4. The standard sizes of the outer diameter of the tubing are ø3mm or ø1/8". It is also available in ø2mm or ø1/16".

Degasys Populaire

The current long-time best selling *Degasys* which incorporates PTFE membranous tubing has also been down-sized maintaining the high degassing characteristics and providing smaller internal volumes than *Degasys* thanks to the proprietary new miniature vacuum pump built in.

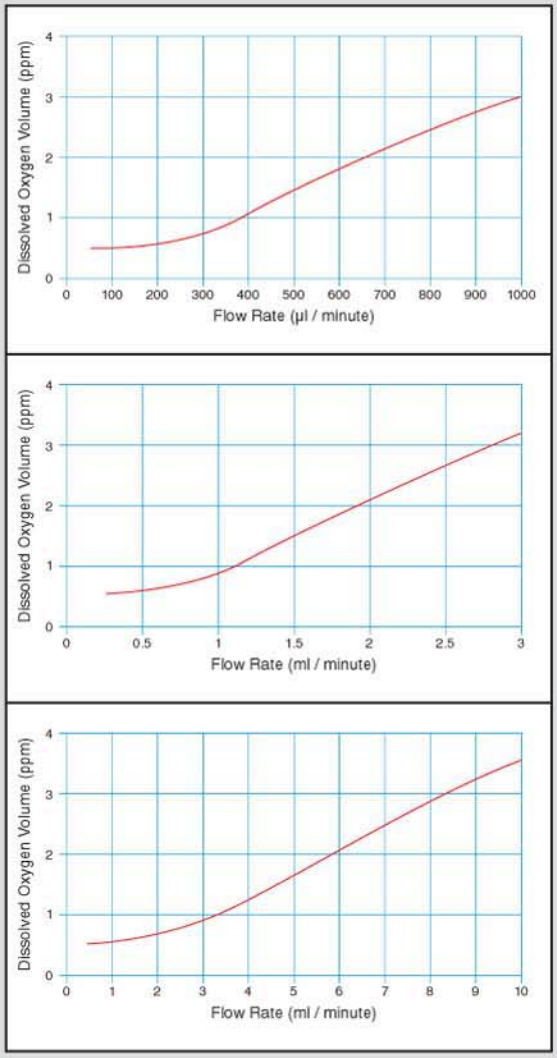
Degasys Populaire has also independent vacuum chambers built in for respective channels like *Degasys Ultimate* to avoid possible cross contamination.

DEGASSING EFFICIENCY

The improved degassing efficiency curves are shown right, which are achieved by higher degrees of vacuum than before.

INTERNAL VOLUME

VOLUME	MAX. FLOW RATE
0.8ml	1 ml/minute/channel
2.5ml	3 ml/minute/channel
7.2ml	10 ml/minute/channel



"The internal volumes, although not so much minimized as Degasys Ultimate, can still compare very favorably with all of the other degassing instruments available in the market today."

8-channel and 4-channel *Degasys Populaire*

Degasys Populaire

Models	Flow Rate/ Channel Max.	Residual Dissolved Oxygen	Pressure Loss	Internal Volume	Wetted Parts	W×H×D (mm)		Weight (kg)	
						1 - 4 CH	5 - 8 CH	1 - 4 CH	5 - 8 CH
DP1001 DP5001 DP2001 DP6001 DP3001 DP7001 DP4001 DP8001	1 ml/minute max.	0.7 ppm max. at flow rate of 0.1 ml/minute	1.5 kPa (0.22 psi) at flow rate of 0.1 ml/minute	0.8 ml	PTFE PPS ETFE	50×80×290	50×150×290	1.5	2.1
DP1003 DP5003 DP2003 DP6003 DP3003 DP7003 DP4003 DP8003	3 ml/minute max.	0.7 ppm max. at flow rate of 0.5 ml/minute	2.5 kPa (0.36 psi) at flow rate of 0.5 ml/minute	2.5 ml					
DP1010 DP5010 DP2010 DP6010 DP3010 DP7010 DP4010 DP8010	10 ml/minute max.	0.6 ppm max. at flow rate of 1 ml/minute	1.7 kPa (0.24 psi) at flow rate of 1 ml/minute	7.2 ml					

5. The above dimensions do not include the rubber footings (3mm high), tubing connectors and other projected parts.
6. The above specifications are of the degassing performances when a dual, paralleled plunger pump is used, and may not be applicable to other types of pump.
7. Power supply: AC85 - 264V 50/60Hz 11W

Why Is Degassing Required and How Does It Work?

LIQUID CHROMATOGRAPHY: All liquids contain dissolved gases which are readily absorbed from the air. In solvents for liquid chromatography, dissolved gases reduce pump flow rate stability, detector baseline stability, and increase detector noise. In low pressure gradient formation, dissolved air often outgases, causing malfunctions of the pump and associated valves. High precision constant-pressure pumping is very difficult to achieve with liquids rich in dissolved gases.

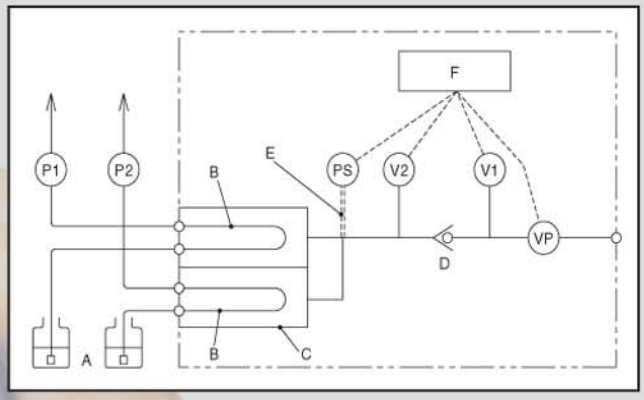
Additionally, as sample volumes continue to decrease, and detection sensitivities continue to increase, the gas components present in liquid eluents and samples have become recognized as a factor influencing analytical results. Dissolved gases affect refractive index, fluorescence, electrochemical, and ultraviolet detectors, producing spurious analytical results.

PRECISION ANALYZERS: In precision analyzers which require precise control of fluid flow rates, such as clinical diagnostic analyzers, dissolved gases in reagents, water, and other liquids reduce the accuracy and precision of the analyzer. Typically, the performance of the pump cannot be optimized unless the fluids being pumped are thoroughly degassed.

HOW DEGASSING WORKS: The degassing unit is conventionally placed in-line between the solvent reservoir and the inlet of the pump. The action of the pump draws the liquid from the reservoir through the degassing unit. Solvent is drawn through the specially formulated fluororesin membranous tubing.

The fluororesin tubing is permeable to the small dissolved gases; hence, gases will permeate out by vacuum through the tubing. The solvent will be thoroughly degassed when it has reached the exit(s) of the degassing unit, and then will enter the pump.

Generally, the efficiency of the degassing is directly related to the internal surfaces of fluororesin tubing encased in the independent vacuum chambers and inversely related to the liquid flow rate.



(P1) (P2): PUMPS (PS): PRESSURE SENSOR
(V1) (V2): SOLENOID VALVES (VP): VACUUM PUMP
A: SOLVENT B: DEGASSING TUBE
C: INDEPENDENT VACUUM CHAMBERS
D: VALVE E: PENETRATION MEMBRANOUS TUBE
F: CONTROLLER

- The membranous tubes are encased in INDEPENDENT VACUUM CHAMBERS to avoid mutual interference.
- SOLENOID VALVE 1 will alternatively exhaust gases in VACUUM CHAMBERS and take in the atmosphere, thereby keeping VACUUM PUMP clean. This function of SOLENOID VALVE 1 will prevent VACUUM PUMP from deteriorating its degassing speeds as well as the service life.
- SOLENOID VALVE 2 will open VACUUM CHAMBERS when POWER SWITCH is turned off, thereby helping minimize the changes in the mixed ratio of solvents.
- PENETRATION MEMBRANOUS TUBE, providing air-curtain by air penetration, will prevent PRESSURE SENSOR from deteriorating, and at the same time maintains the service life of VACUUM PUMP by exhausting the gas inside VACUUM CHAMBERS after the gas is diluted with air entering through PENETRATION MEMBRANOUS TUBE
- The mechanisms contained in the degassing instruments, *Degasys, Degasys Populaire and Degasys Ultimate* are patented in the U.S.A., Germany, and Japan.
- The specifications are subject to change without a prior notice for improvement.

SANWA TSUSHO CO., LTD. Shibaura 2-6-16, Minato-Ku, Tokyo 108-0023, Japan Tel: +81-3-3454-6371 Fax: +81-3-3452-3360
e-mail: sanwatsu@poppy.ocn.ne.jp