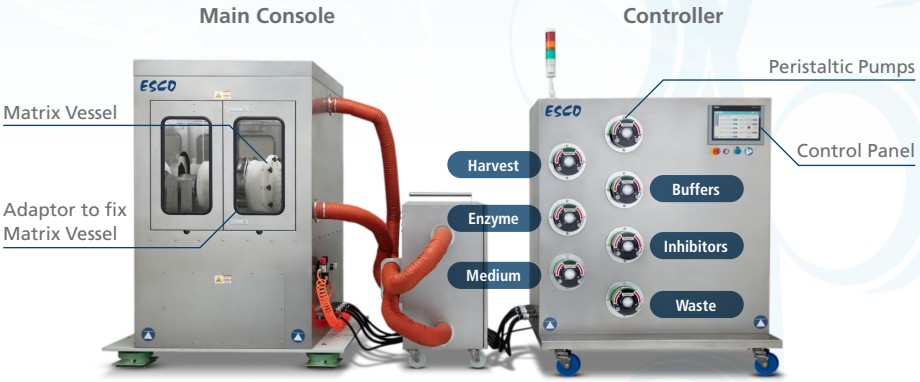
ESCO VACCIXCELL
ADHERENT BIOPROCESSING SPECIALIST

TideXcell®
Harvesting System

TideXcell® Harvesting System (TXLHS) is specially designed for TideXcell® high density cell culture system for cell recovery from the cultured matrix vessel. The TXLHS is a powerful tool to harvest and transfer viable cells , intracellular viruses and more from large scale TideXcell® system in a closed and automated system; thus eliminating the risk of contamination. It can also be applied to harvest cell mass for biological production and any related applications. With the use of TXLHS, up to 10^{11} cells can be harvested within one (1) to three (3) hours operation.



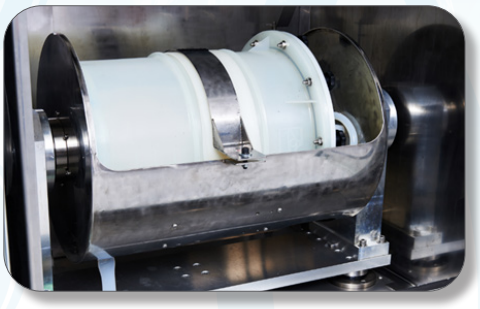
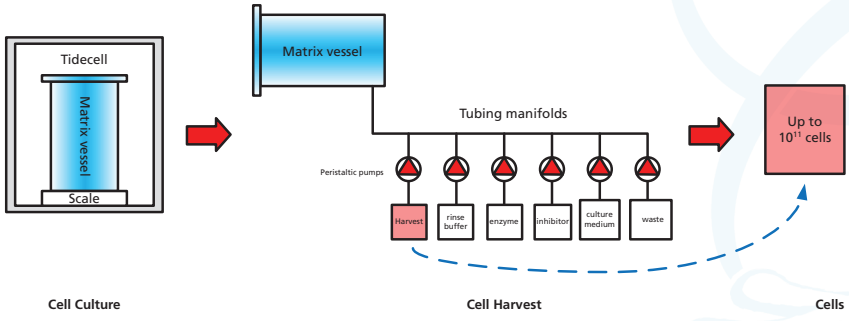


Fig. 1 TideXcell® Harvesting System, which contains two units: main console for shaking and turning of the Matrix Vessel and Controller for pumping and harvest procedure control.

Principle

TideXcell® Harvesting System utilizes the same and conventional cell harvest concept by enzymatic treatment that could digest and detach cells from attached substrates. The procedure includes:

Fig. 2 `Principle and mechanism for cell recovery from the TideXcell® Harvesting System



1. **Installation:** Mount and fix the TideXcell® Matrix Vessel in the TideXcell® Harvesting System and connect the TideXcell® matrix vessel with tubing manifolds that will serve as path for introducing phosphate buffer saline (PBS), enzyme (usually Tryple Select, Accumax, and Collagenase among others), enzyme inhibitor (when using serum-free culture medium), culture medium, and waste container. These six tubings connect with the Matrix Vessel through a manifold.
2. **Rinse:** Rinse the matrixes with phosphate buffer saline or equivalent solution to remove serum that could inhibit the enzymatic activity in the following step.
3. **Enzymatic treatment:** Submerge the matrixes with a chosen enzyme to digest cells until the cells round up for detachment
4. **Cell Detachment:** Shake the matrix vessel together with the matrixes to shake off cells out of the porous matrices.
5. **Collection:** Collect the cells by washing the matrices with cell culture medium or equivalent solution and collect the cells into harvest tank.

Features

1. Suitable for cell harvest from TideXcell® 2L Matrix Vessels to 20L Matrix Vessels.
2. Support the cell seed source for TideXcell®-010 up to TideXcell®-100 systems.
3. Harvest viable animal cells within 1 to 3 hours (harvest time depends on harvest cycles).
4. Entire harvest procedure is done automatically in a closed system. Manual operation is also available.
5. Up to 1011 cells with viability above 90% could be recovered from one THS unit.

Note: Cell harvest efficiency depends on the cell line used.

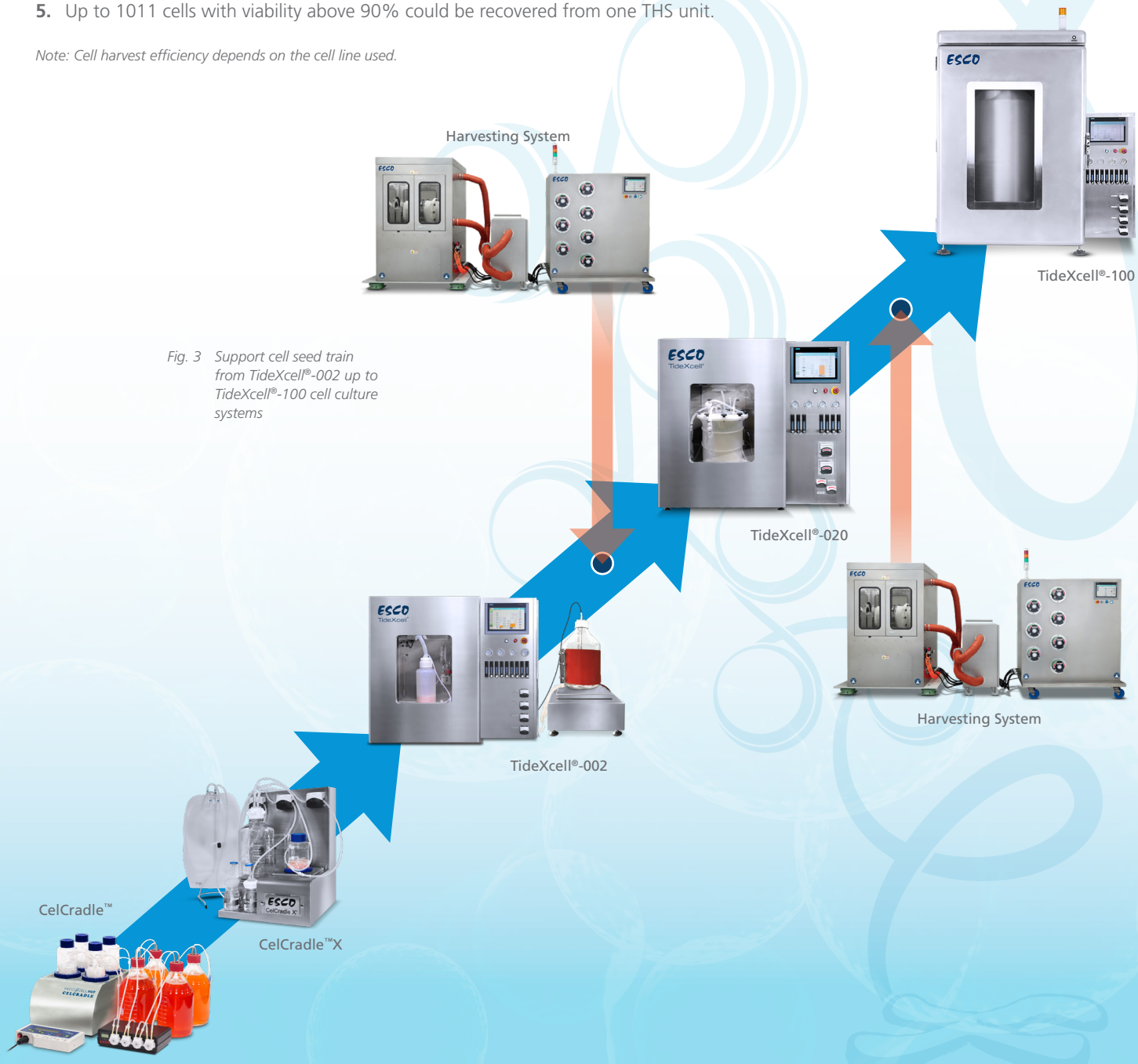


Fig. 3 Support cell seed train from TideXcell®-002 up to TideXcell®-100 cell culture systems

Technical Specifications

Base Unit	
Weight	Operator: 1700 kg Controller: 460 kg Temperature Module: 75 kg
Required space (W x D x H)	Footprint: 3827 x 2118 x 1381 mm Operator: 1500 x 1100 x 1900 Controller: 1400 x 1000 x 2120 Temperature Module: 530 x 1000 x 1100
Power supply	220 V AC 50/60 Hz, Single phase, 3 wire
Gas Input	No less than 0.5 MPa from the air source
Housing	Tank materials : 304 stainless steel Probe adaptor material: - 316 stainless steel (reusable) - Plastics (disposable)
Consumables	2L/20 L PP d isposable matrix vessel Tubing set ID: 3/8”
Operating temperature	18 ~ 27 °C
Maximum relative humidity	80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C, non condensing environment , non condensing environment
Interfaces	Ethernet for SCADA system USB
Ports	Air In for air source
Function	
Rotation	Functional unit: Rotary motor - Range : 0°~180° (back and - Rate : 0~10rpm ±2 rpm - Period : 0~9999 sec
Shake	Functional unit : Shake motor - Range : 13 cm (max) - Rate : 50 ~ 300 rpm ±10 rpm - Period : 0 ~ 9999 sec ±10 sec
Peristaltic Pump	7 User defined Peristaltic pumps: (Default: buffer , enzyme1, enzyme2, trypsin inhibitor, culture media , harvest, waste) - Period : 0 ~ 9999 sec - Tubing ID 9.6 mm (3/8”) - Flow rates : 1.25 ~ 3 LPM
Efficiency	Vero cell recovery rate: 2L Vessel recovery rate: >90% (10 days cell culture period)
Interface	
Control	Siemens PLC
Display	Siemens HMI
Optional external unit	Adaptable to Temperature Control Unit
Regulatory compliance	CE

Temperature Control Unit

Temperature Module	
Temperature Control	Control range: RT+ 7 °C ~ 50 °C Deviation range: ≤ SP±0.7
Air Filter	HEPA Filter

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For queries and comments, please contact Esco VacciXcell Technical Support team.

21 Changi South Street 1 • Singapore 486777
Tel +65 6251 9361 • mail@escovaccixcell.com
www.escovaccixcell.com

CDMO Services:

Esco AsterMavors Cellular Agriculture and Alternative Proteins (Food)
Blk 71 Ayer Rajah Crescent
Singapore 139951
Tel +65 6251 9361

Esco AsterTide PD-Phase 2 CTM (Cells/Viruses/EVs)
Blk 67 Ayer Rajah Crescent
Singapore 139950
Tel +65 6251 9361

Esco Aster Fermentation (Plasmids)
21 Changi South Street 1
Singapore 486777
Tel +65 6542 0833