



## EBARA *Hydro* Booster System

*Uniquely* EBARA Flow Switch Controlled Booster System  
Type UD

*Custom built for ideal water supply system...*

### APPLICATIONS

- **Domestic**  
High-rise buildings, Condominiums, Apartments, etc.
- **Commercial**  
Office buildings, Hotels, Shopping centres, etc.
- **Industrial**  
High-rise factories, Manufacturing & Processing industries applications, etc.
- **Social Service**  
Schools, Hospitals, etc.

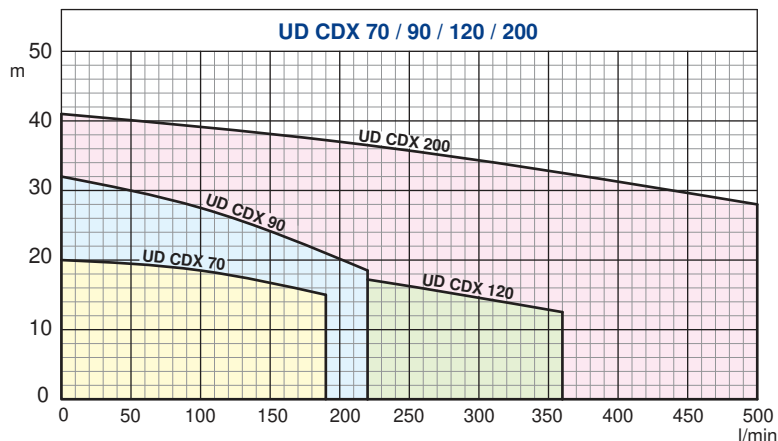
### FEATURES

- **EBARA UD Controller Used**  
User friendly and highly reliable & proven controller.
- **Compact Design**  
Space saving, thus minimise installation area.
- **Flow Control System**  
Prevent frequent start/stop of pumps, thus durable operation assured.
- **Fully Automatic System**  
Lead-lag duty/standby operation.
- **EBARA Quality Components Used**  
Value for money.
- **Total EBARA Warranty**  
Peace-of-mind operation.
- **Packaged Booster System**  
Ready for use by just connecting the pipings and power supply.

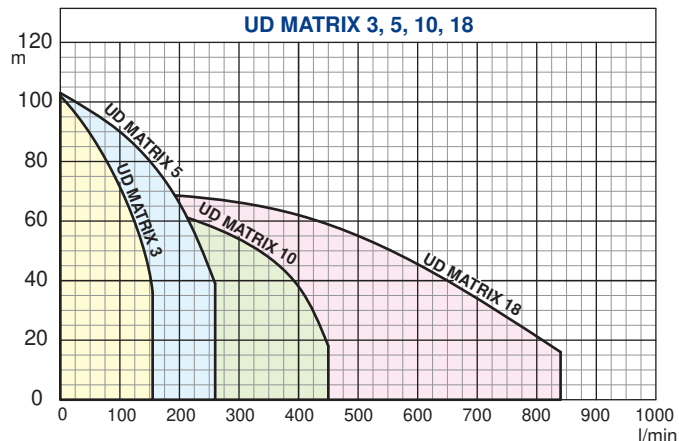


PERFORMANCE CURVE

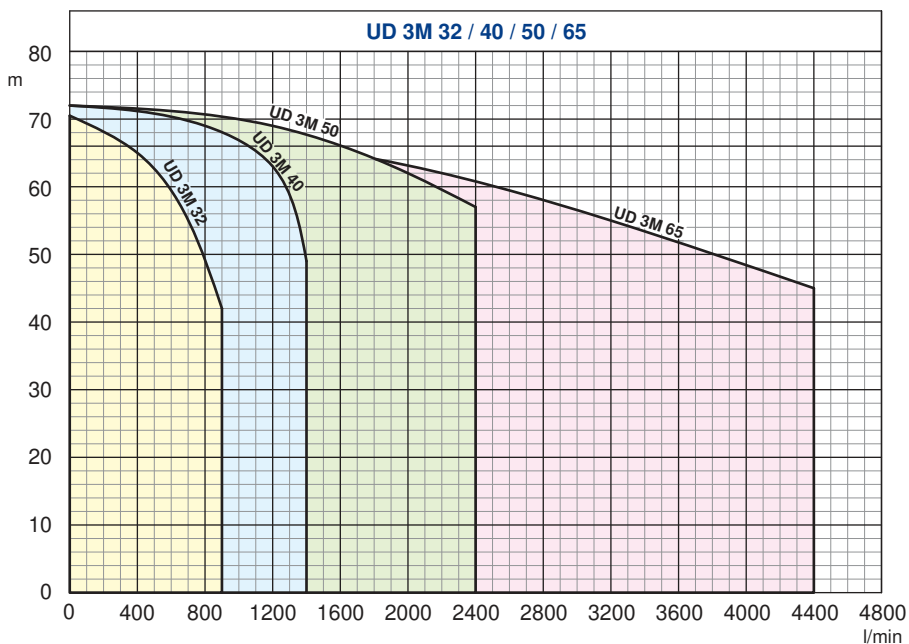
UD CDX 70 / 90 / 120 / 200  
CURVES 2 POLES 50 Hz



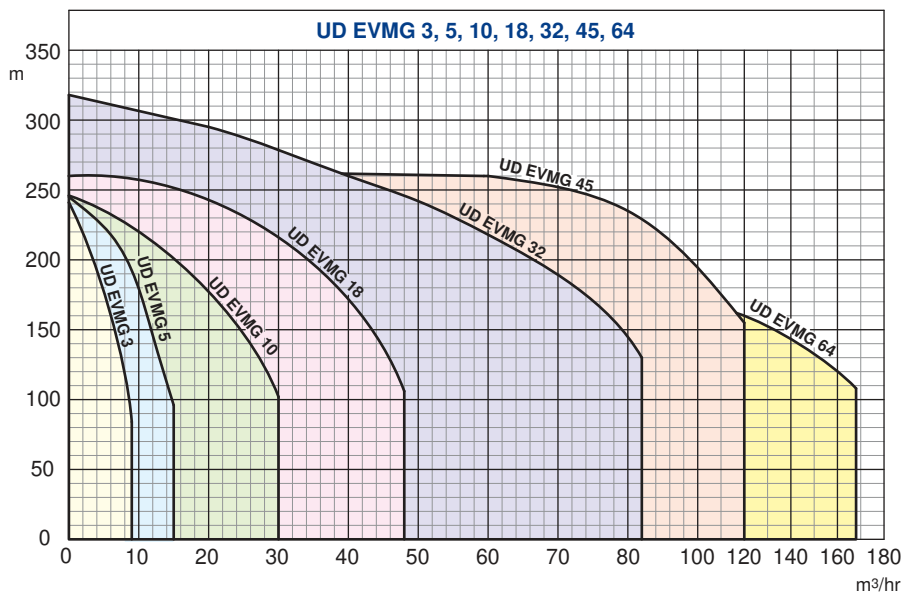
UD MATRIX 3, 5, 10, 18  
CURVES 2 POLES 50 Hz



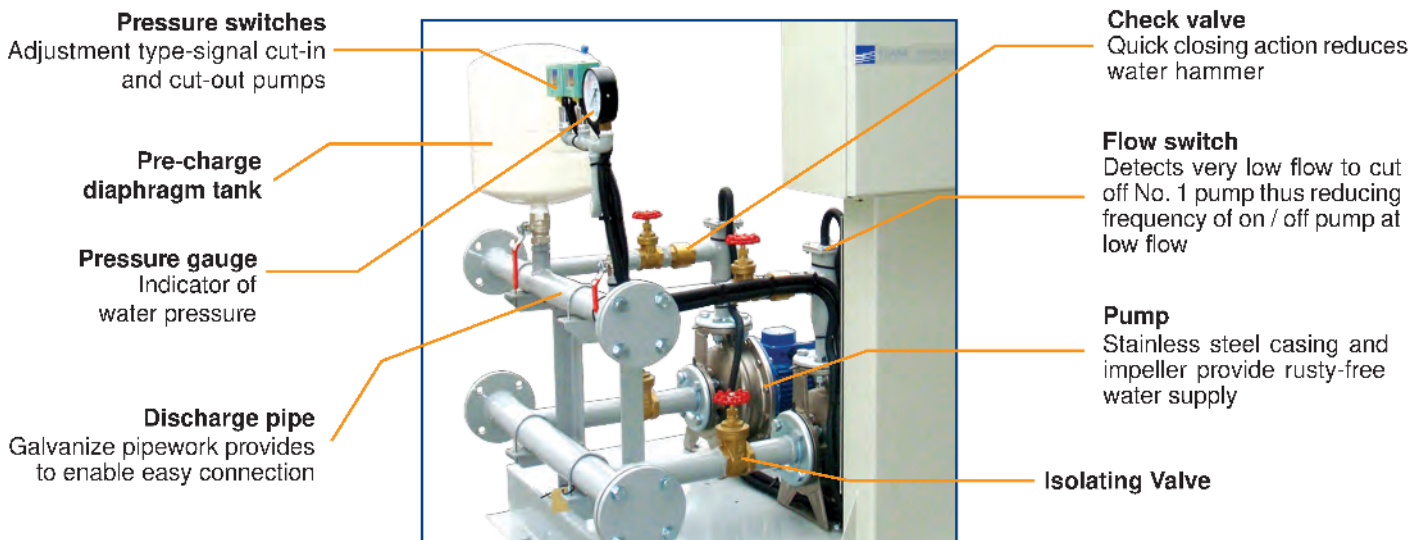
UD 3M 32 / 40 / 50 / 65  
CURVES 2 POLES 50 Hz



UD EVMG 3, 5, 10, 18, 32, 45, 64  
CURVES 2 POLES 50 Hz



## HYDRO BOOSTER - FLOW SWITCH CONTROL SYSTEM



## CONTROLLER UNIT

The heart of the system is the EBARA controller unit, which is user-friendly and permit 'One-touch' operation. It controls the sequence of pump operation with signals input from the pressure switch and/or flow switch in Auto & Alternate mode.

EBARA controller unit generally provides the below 'one-touch' functioning features:

- 1x Selector switch (P1/P2/ALT)
- 1x Selector switch (Manual/Auto/Off)
- 1x Power incoming indicating light
- 2x Pump RUN indicating light
- 1x Pump overload indicating light
- 1x Alarm (fault) indicating light
- 1x Buzzer stop

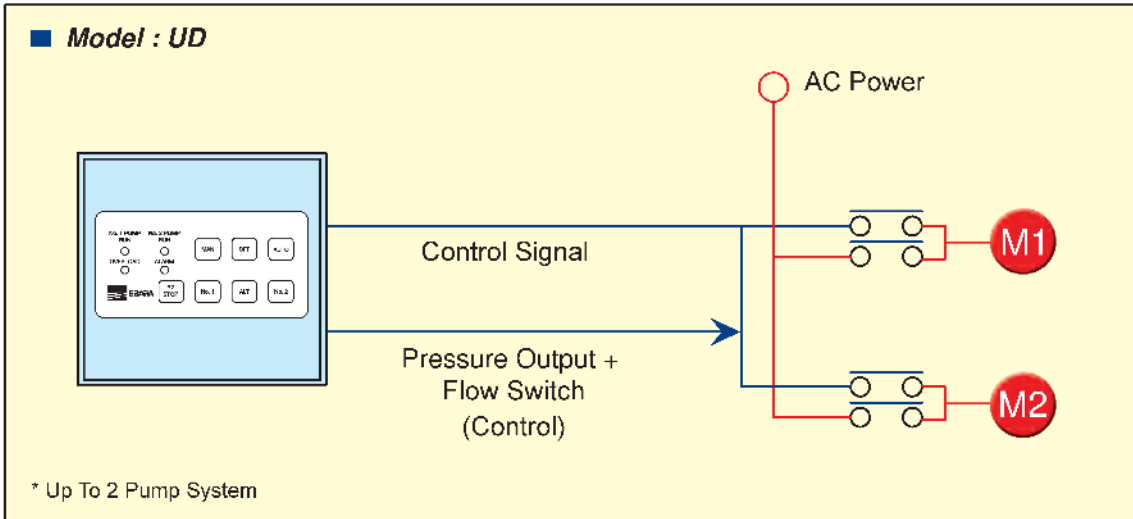
This user-friendly controller unit operates compatible with other electrical components to ensure smooth functioning of booster system.

Fig. below shows the display of panel board. Two modes of operation are possible, namely manual and auto & alternate.

Various configurations of standard control panel are available. It varies from indoor to outdoor, DOL to star-delta starter and auto transformer type panel.



**SYSTEM OPERATION DIAGRAM**

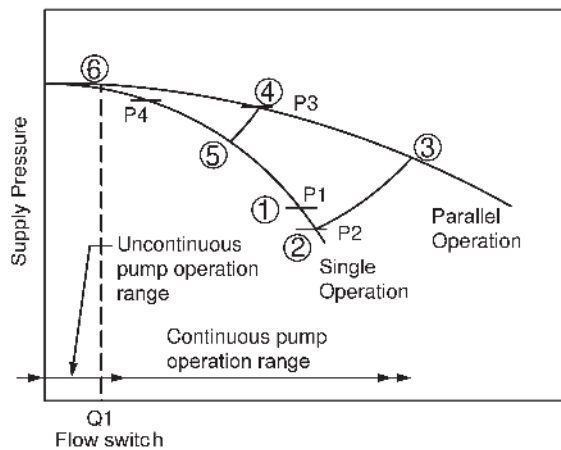


**Input Signal & Type of Sensor**

• UD System

- Booster unit incorporated with 1 or/ 2 fix speed pumps in parallel operation and capable to meets actual system discharge pressure demand at all time.
- Proven UD controller developed by Ebara to prevents start & stop of pump by flow switches and pressure switch control, dry running prevention, high & low pressure limit protection, automatically pump switch over during emergency or/ faulty occurrence and system incorporates with small pressure diaphragm tank.

**Operation Features**



Step 1) Both pumps are stopped when water tank is fully charged. In this condition water is supplied from the pressure tank, and water pressure in tank gradually decreases.

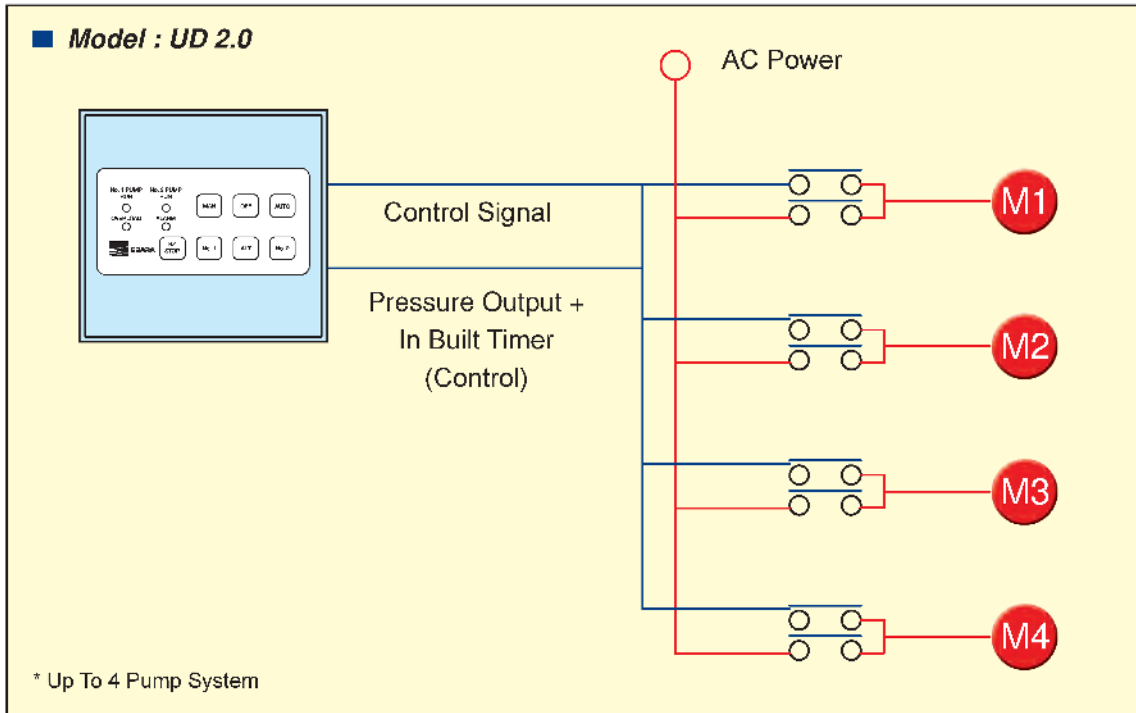
Step 2) No. 1 pump starts at pressure P1 (Point ①) and water is supplied from pump (and pressure tank).

Step 3) When more water is required and water pressure decreases to P2 (Point ②), No. 2 pump also starts, operation point shifts to Point ③ and system shifts to parallel operation.

Step 4) When water consumption decreases, water pressure in tank increases and when pressure reaches P3 (Point ④), No. 2 pump is stopped and operation point shifts to Point ⑤.

Step 5) When water consumption further decreases, water pressure in tank increases and pressure switch is turned off, and the flow switch used to detect small flow, is turned off. When both pressure and flow switches are off, No. 1 pump stops (Point ⑥). Flow switch setting point is at small capacity point, therefore pump continuous operation range is much wider. Accordingly pump start frequency is greatly decreased.

**SYSTEM OPERATION DIAGRAM**



**Operation Functional Features**

• **UD2.0 System**

- Booster unit incorporated with 1 up to 4 fix speed pumps in parallel operation and capable to meets actual system discharge pressure demand at all time.
- Unique UD2.0 controller provided to prevents pump start & stop by common pressure switch and in built timer setting control, dry running prevention, high & low pressure limit protection, automatically pump switch over during emergency or/ faulty occurrence and system incorporates with small pressure diaphragm tank.

**Input Signal & Type of Sensor**

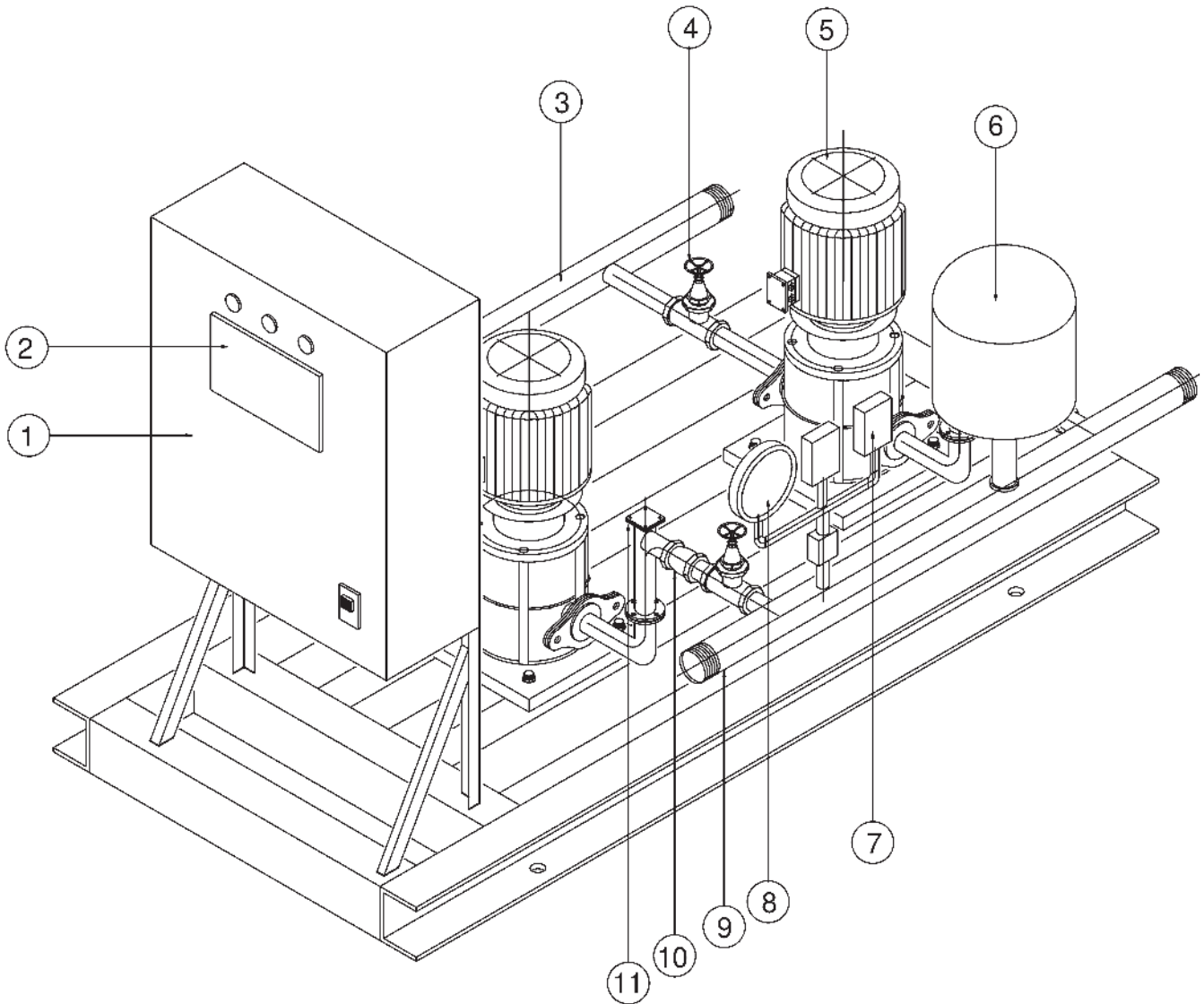
• **Pressure Discharge control installation:**

- **UD system**  
Industrial flow switches and pressure switch with dry contact point (1ph/240V supply voltage) input signal
- **UD2.0 system**  
Industrial pressure switches with dry contact point (1ph/240V supply voltage) input signal.

• **Option:**

- Float less Relay control for Tank to Tank pumping application

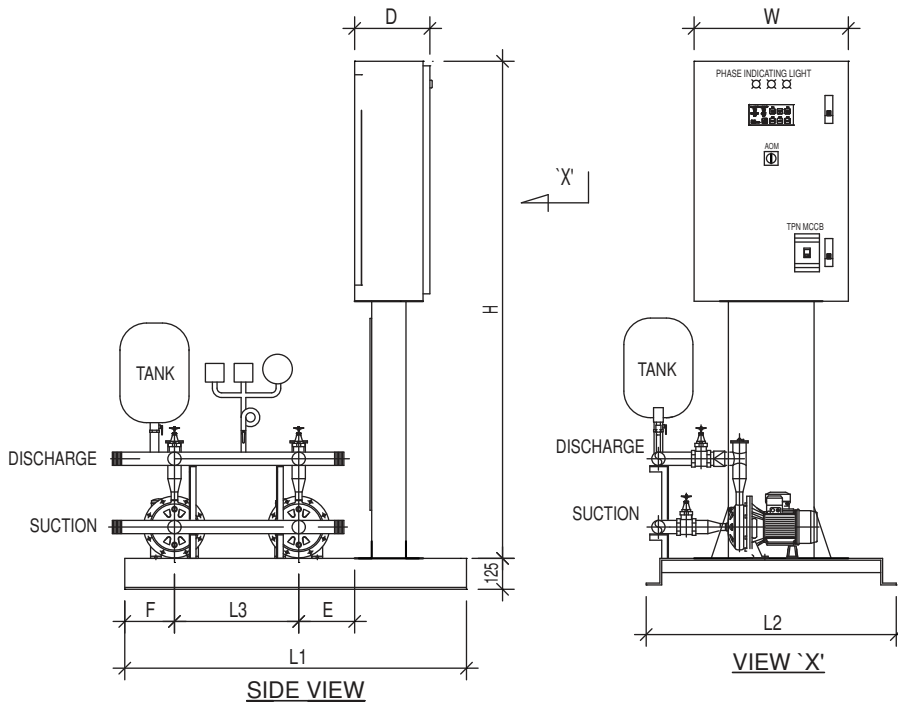
**GENERAL LAYOUT**



No.	Part Name
1	Control Panel
2	Controller - type UD
3	Suction Manifold
4	Gate Valve
5	Pump
6	Diaphragm Tank
7	Pressure Switch
8	Pressure Gauge
9	Discharge Manifold
10	Check Valve
11	Flow Switch

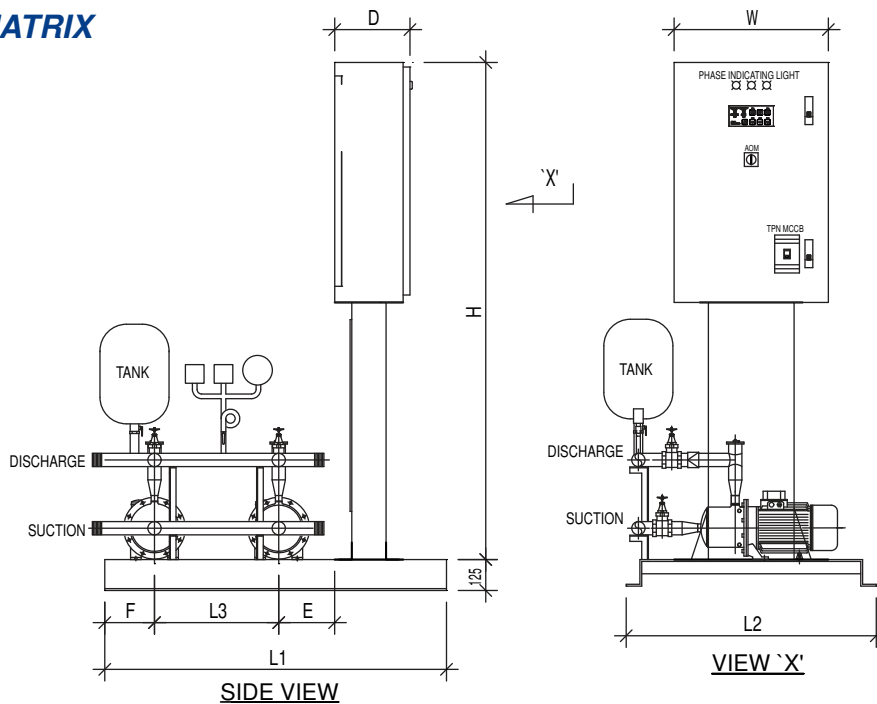
**DIMENSION**

**Type : 2UD-CDX**



MODEL	DIMENSION	D mm	W mm	H mm	L1 mm	L2 mm	L3 mm	E mm	F mm	TANK LITER	PIPE CONNECTION
UD-2 x CDX		200	450	1450	1030	860	350	250	180	18	50 NPT

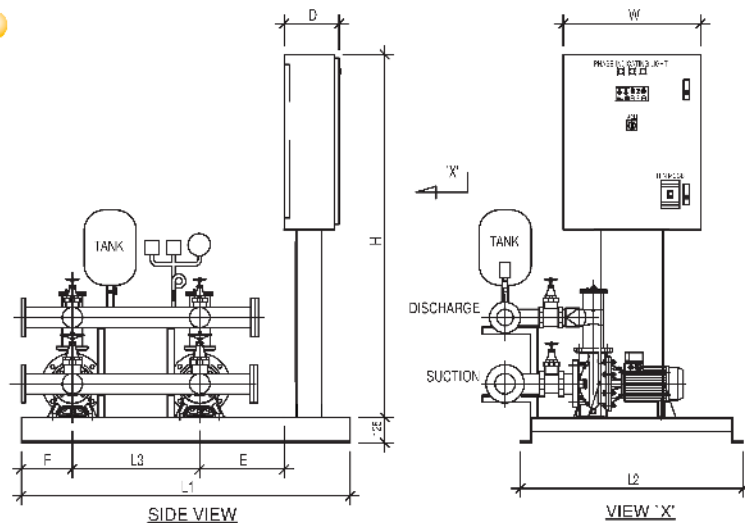
**Type : 2UD-MATRIX**



MODEL	DIMENSION	D mm	W mm	H mm	L1 mm	L2 mm	L3 mm	E mm	F mm	TANK LITER	PIPE CONNECTION
UD-2 x MATRIX 3/5/10		200	450	1450	1030	860	350	250	180	18	50 NPT
UD-2 x MATRIX 18		200	450	1450	1080	910	350	250	180	24	80 FLANGE

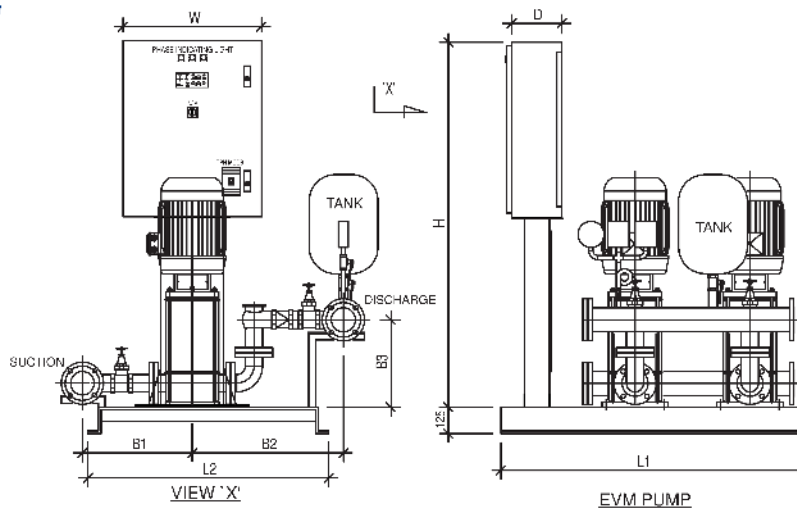
## DIMENSION

Type : 2UD-3M



DIMENSION MODEL	D mm	W mm	H mm	L1 mm	L2 mm	L3 mm	E mm	F mm	TANK LITER	SUCTION MANIFOLD (mm)	DISCHARGE MANIFOLD (mm)	PIPE CONNECTION
2UD-3M32	200	450	1450	1100	850	440	250	210	24	65	50	FLANGE
2UD-3M40	200	450	1450	1460	1050	500	310	250	24	80	65	FLANGE
2UD-3M50	200	450	1450	1460	1050	500	310	250	24	80	65	FLANGE
2UD-3M65	200	450	1450	1460	1050	500	310	250	24	100	80	FLANGE

Type : 2UD-EVM



DIMENSION MODEL	B1 mm	B2 mm	B3 mm	H mm	D mm	W mm	L1 mm	L2 mm	TANK LITER	SUCTION MANIFOLD mm	DISCHARGE MANIFOLD mm	PIPE CONNECTION
2UD-EVM 3	400	700	350	1450	200	450	1030	880	18	50	50	NPT
2UD-EVM 5	400	700	350	1450	200	450	1030	880	18	50	50	NPT
2UD-EVM 10	420	720	350	1450	200	450	1100	1040	24	65	65	NPT
2UD-EVM 18	420	720	350	1450	200	450	1245	1040	24	80	80	FLANGE
2UD-EVM 32	440	740	400	1450	200	450	1755	1360	100	100	100	FLANGE
2UD-EVM 45	440	740	400	1450	200	450	1860	1530	100	150	150	FLANGE
2UD-EVM 64	440	740	400	1450	200	450	1860	1530	100	150	150	FLANGE

\* Dimensional details are provided for reference only.

\* All specifications are subject to change without prior notice.



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