

Pump Selector Quick Manual

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1. Introduction

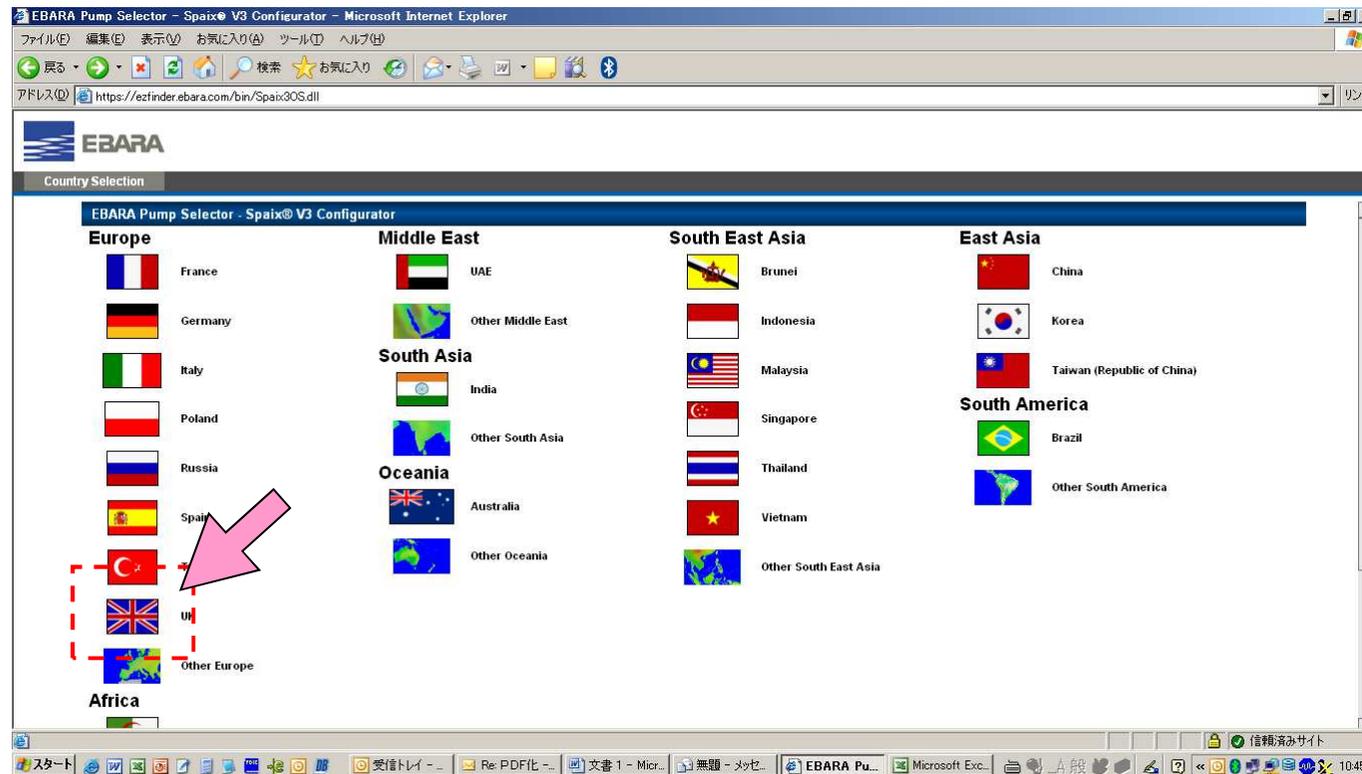
From Ebara official site (<http://www.ebara.co.jp/en/>)

there is link button to Ebara Pump Selector.

The image shows a screenshot of the Ebara Corporation website in Microsoft Internet Explorer. The browser window title is "EBARA CORPORATION - Microsoft Internet Explorer". The address bar shows "http://www.ebara.co.jp/en/". The website content includes the Ebara logo, navigation links (Contact, Site Map, Japanese), and a main banner with the text "Technical capabilities that sustain society" and "Building today, and opening up tomorrow". Below the banner, there are sections for "Products" (listing Pumps, Compressors, Chillers & Cooling towers, Blowers, Environmental Engineering, Dry Vacuum Pump, Gas Abatement System, Ozone System, Special Pump, Semiconductor manufacturing equipment) and "News". A sidebar on the right contains links for "EBARA'S Response to the Great East Japan Earthquake", "Products", "Global Network", "EBARA Pump Selector" (highlighted with a red dashed box and a pink arrow), "EBARA China", and "About Us". At the bottom, there are logos for the Hatakeyama Memorial Museum of Fine Art and the 100th Anniversary Challenge Next100.

1. Introduction (continued)

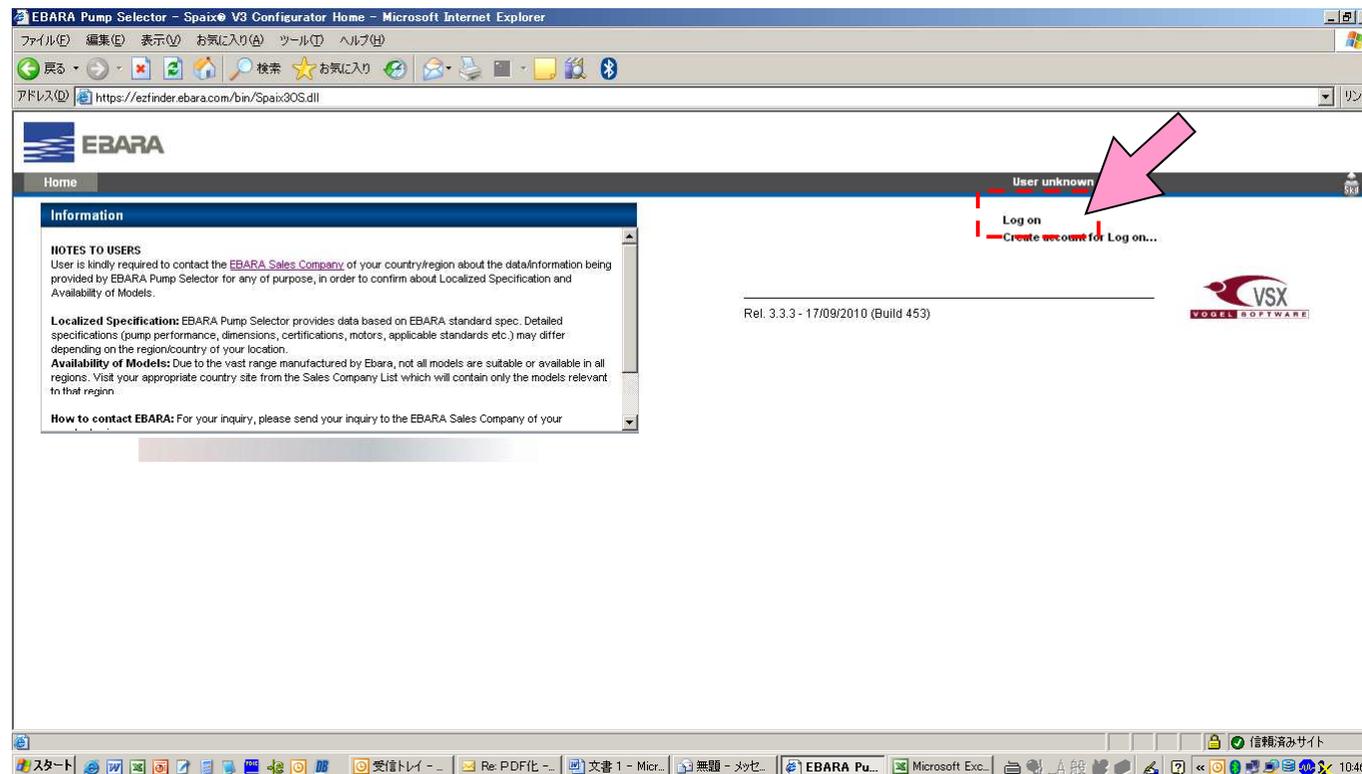
or direct enter from <https://ezfinder.ebara.com/bin/Spaix3OS.dll>



Then click one country. This example is UK.

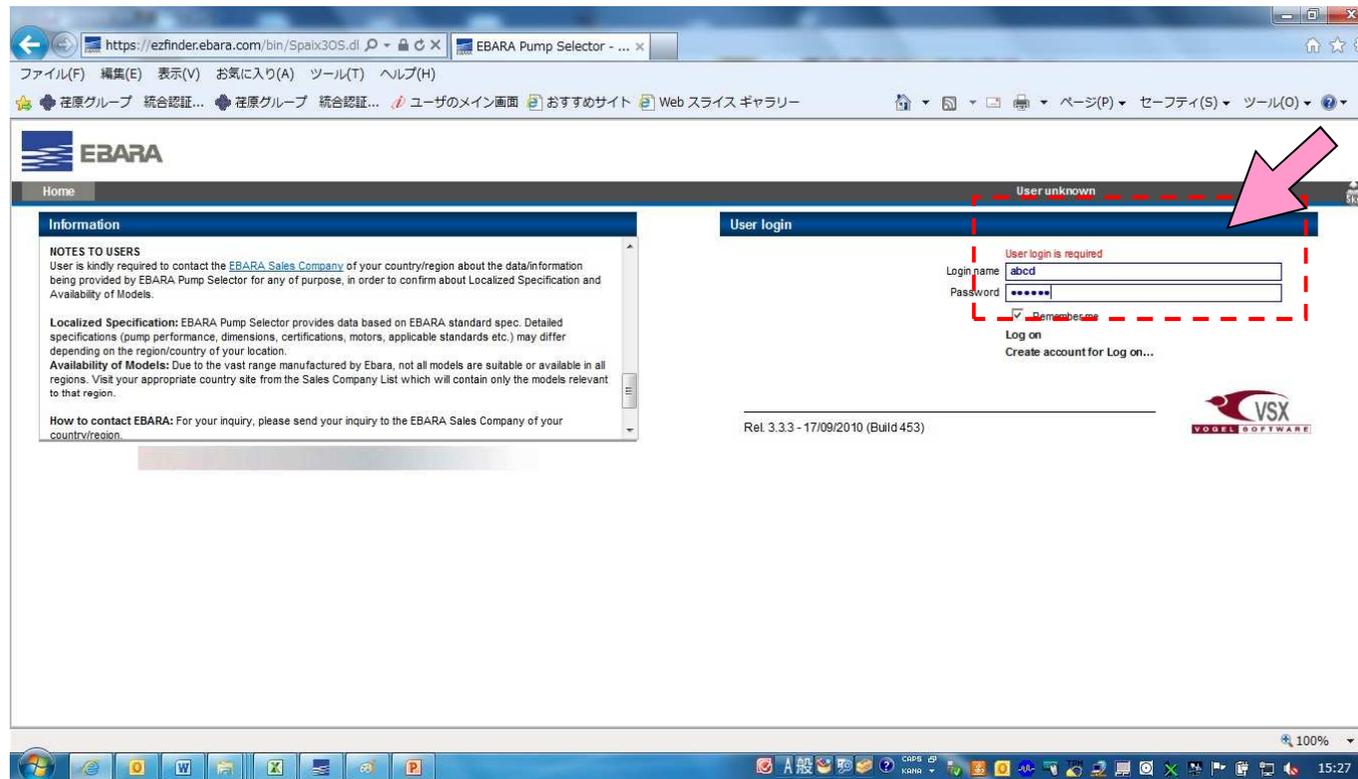
1. Introduction (continued)

Click “Log on”



1. Introduction (continued)

Input your Login Name and Password.

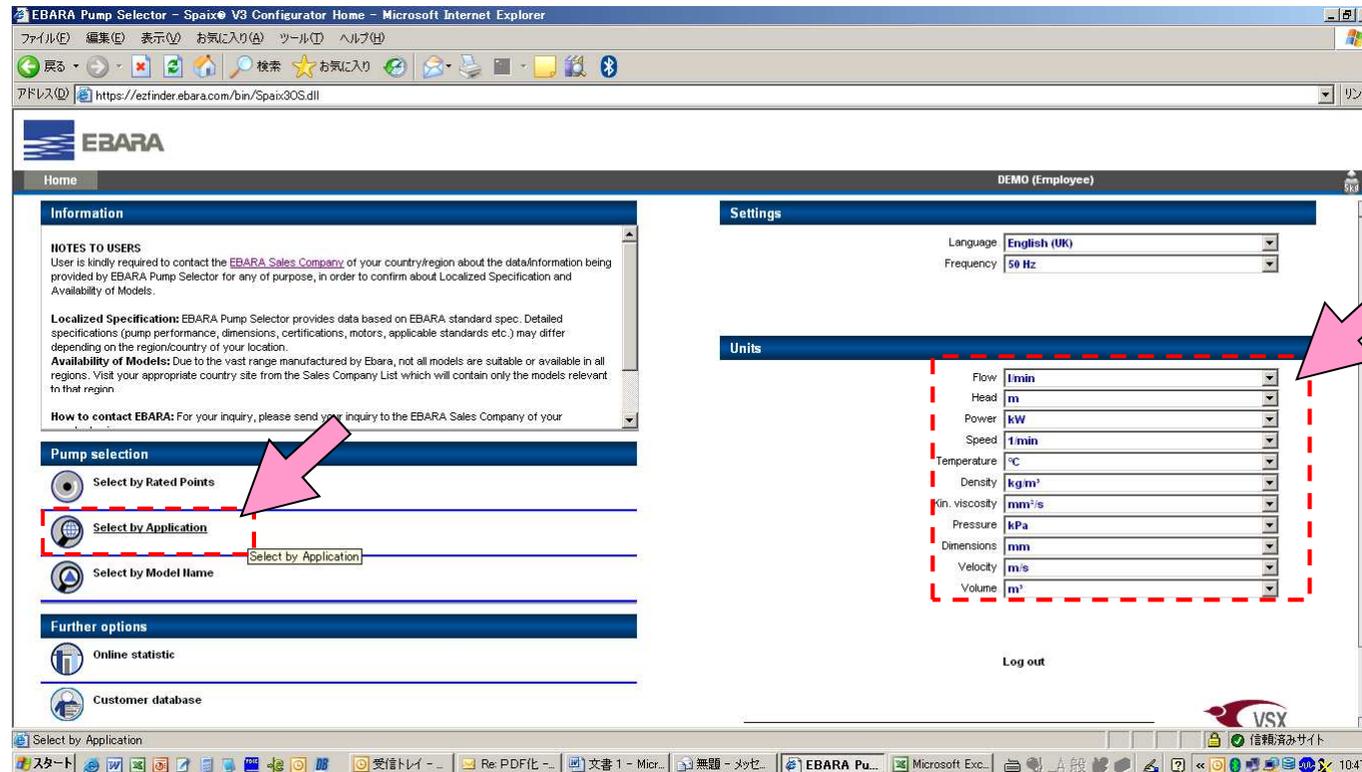


1. Introduction (continued)

As example selection, click “Select by Application”.

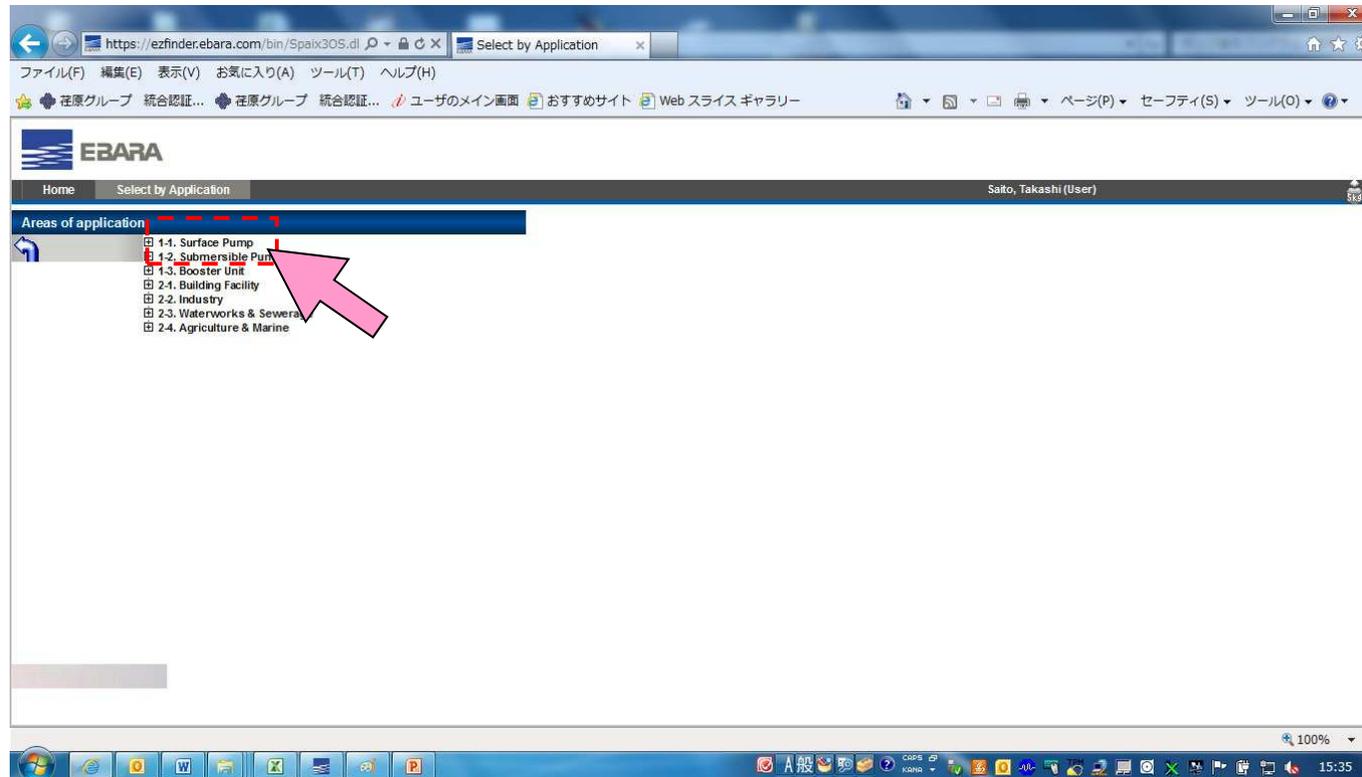
And confirm the setting of Units.

(Regarding selection by the “Select by Rated Points”, please refer to chapter 2. 3.)



1. Introduction (continued)

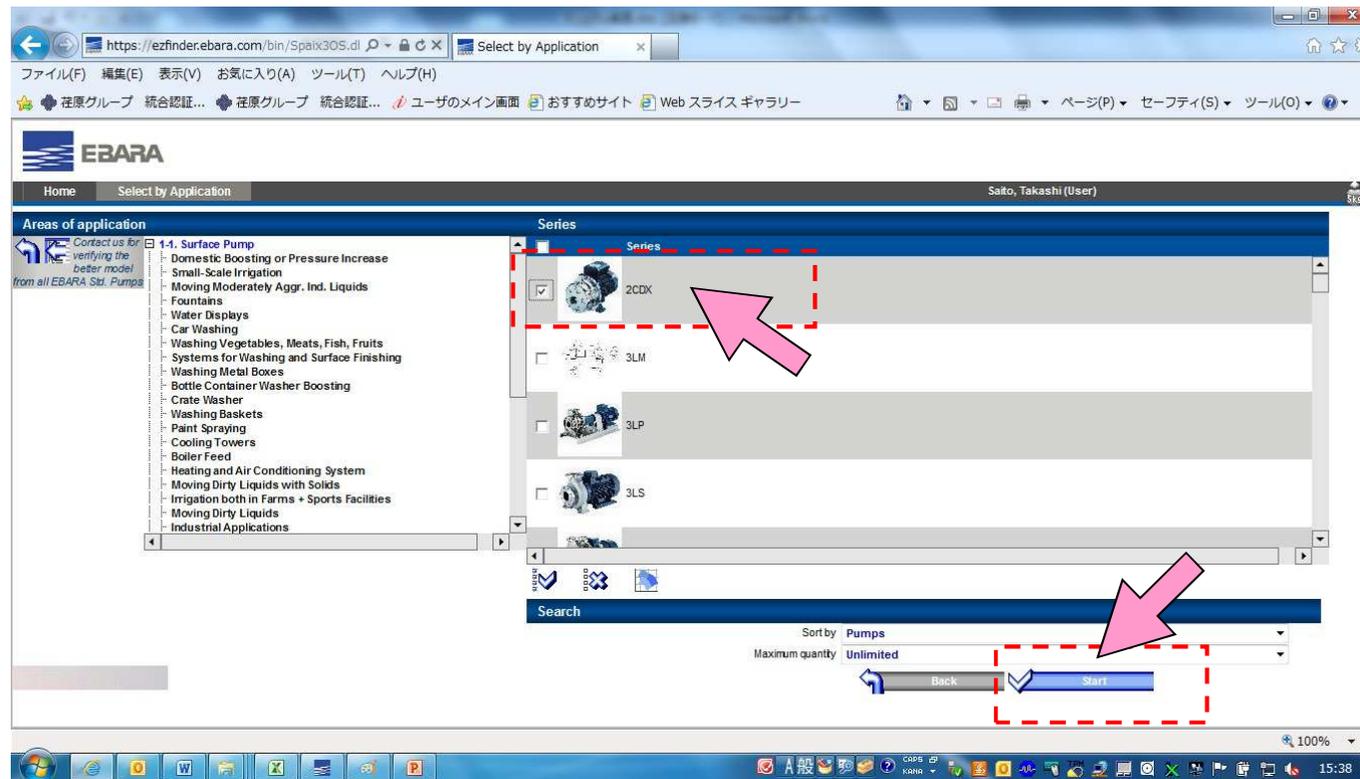
Select “1-1. Surface Pump”. (as example selection)



1. Introduction (continued)

Click “2CDX_SERIES”. (as example selection)

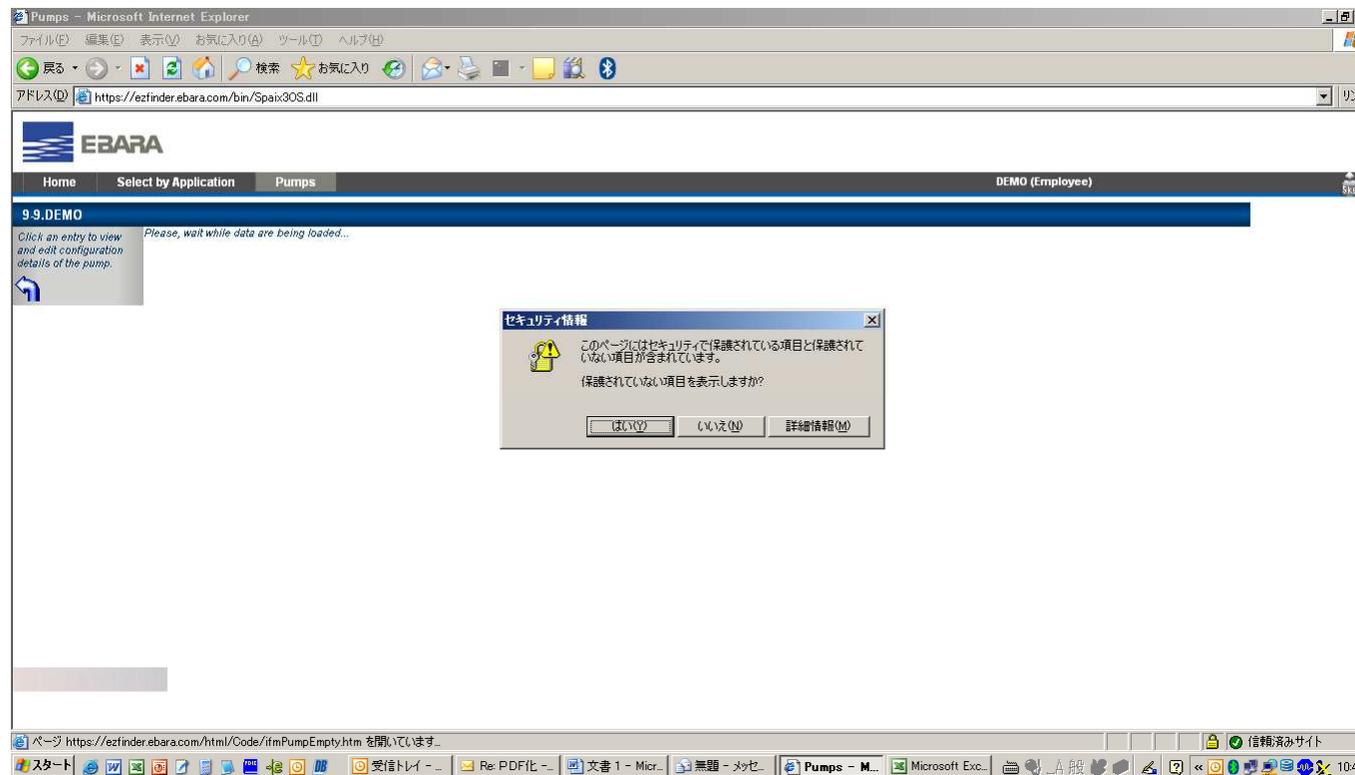
Then click [START] below.



1. Introduction (continued)

Warning window will be opened. (Actually, this site is safe completely.)

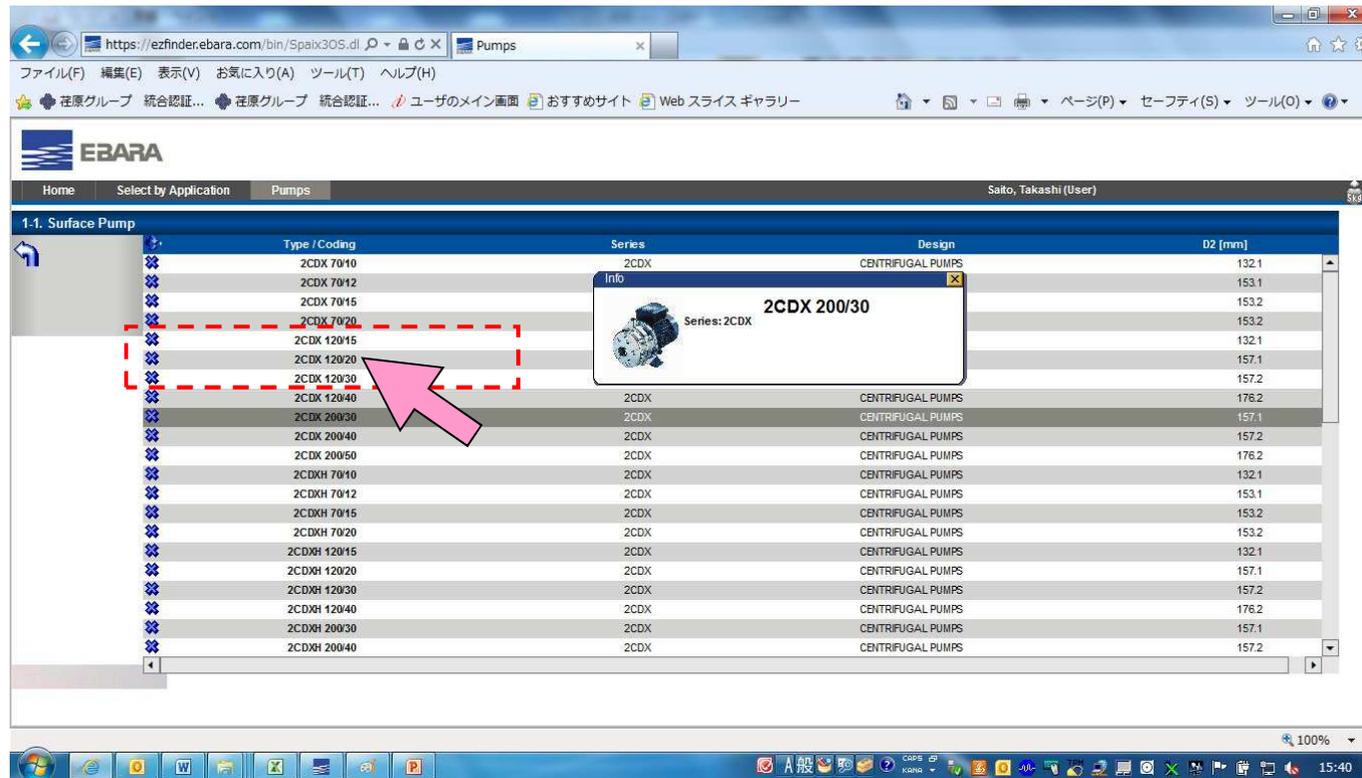
And click [Yes] to proceed.



1. Introduction (continued)

Select model “2CDX 200/30” as sample.

Other models can be select.



1. Introduction (continued)

Click the mark in middle circle, then duty point window will open.

During selection process, if you need to change the unit, click “5kg” logo on each page.

The screenshot displays the Ebara website interface for pump selection. The browser address bar shows the URL: <https://ezfinder.ebara.com/bin/Spaix30S.dl>. The page title is "Pumps". The EBARA logo is visible in the top left. The user is logged in as "Saito, Takashi (User)".

The main content area shows a list of pumps under the heading "1-1. Surface Pump". The table below lists the pumps:

Type / Coding	Series	Design	D2 [mm]
2CDX 200/30	2CDX	CENTRIFUGAL PUMPS	157.1
2CDX 200/40	2CDX	CENTRIFUGAL PUMPS	157.2
2CDX 200/50	2CDX	CENTRIFUGAL PUMPS	176.2
2CDXH 70/10	2CDX	CENTRIFUGAL PUMPS	132.1
2CDXH 70/12	2CDX	CENTRIFUGAL PUMPS	153.1

Below the table, the "Pump 2CDX 200/30" performance curve is shown for 50 Hz. The graph displays Head [m], Shaft power P2 [kW], NPSH-values [m], and Efficiency [%] against flow rate [l/min]. A "Duty points" dialog box is open, showing a selected curve and a "Duty points" window with input fields for Q [l/min] and H [m]. The "5kg logo" is highlighted in the top right corner of the browser window.

1. Introduction (continued)

Input required duty point Q, H, and static head. Then click “apply”.

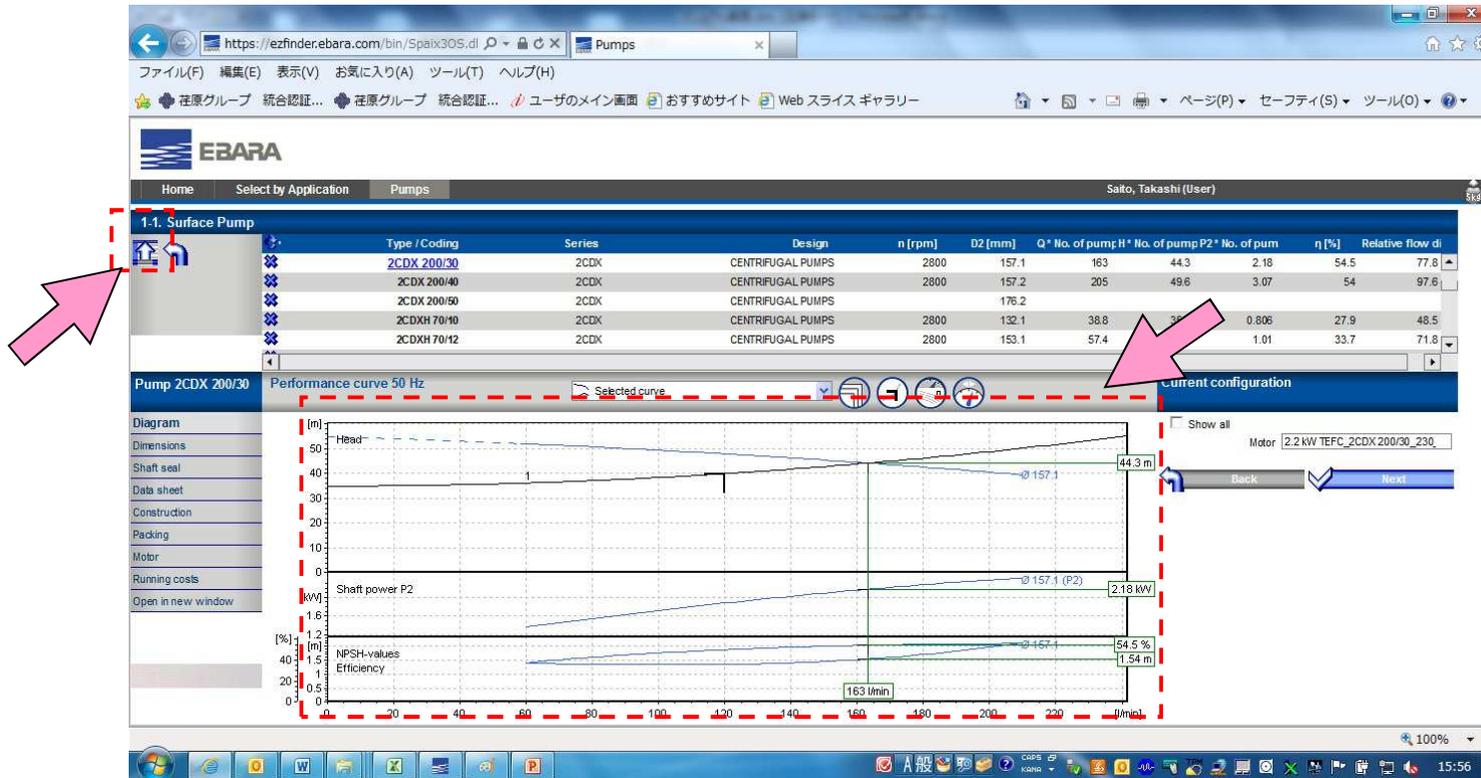
The screenshot displays the Ebara website's pump selection interface. The main content area shows a table of pump models under the heading "1.1. Surface Pump". The selected pump is "2CDX 200/30". Below the table, there is a "Performance curve 50 Hz" graph. The graph plots Head [m], Shaft power P2 [kW], NPSH-values [m], and Efficiency [%] against flow rate [l/min]. A configuration dialog box is open, allowing input for flow rate (Q: 120 l/min), static head (35 m), and head (H: 40 m). A pink arrow points to the "Apply" button in the dialog box. Another pink arrow points to the "Advanced" button in the configuration area. The background shows the Ebara logo and navigation tabs like "Home", "Select by Application", and "Pumps".

Type / Coding	Series	Design	D2 [mm]
2CDX 200/30	2CDX	CENTRIFUGAL PUMPS	157.1
2CDX 200/40	2CDX	CENTRIFUGAL PUMPS	157.2
2CDX 200/50	2CDX	CENTRIFUGAL PUMPS	176.2
2CDXH 70/10	2CDX	CENTRIFUGAL PUMPS	132.1
2CDXH 70/12	2CDX	CENTRIFUGAL PUMPS	153.1

1. Introduction (end)

Its data is reflected on pump performance curve.

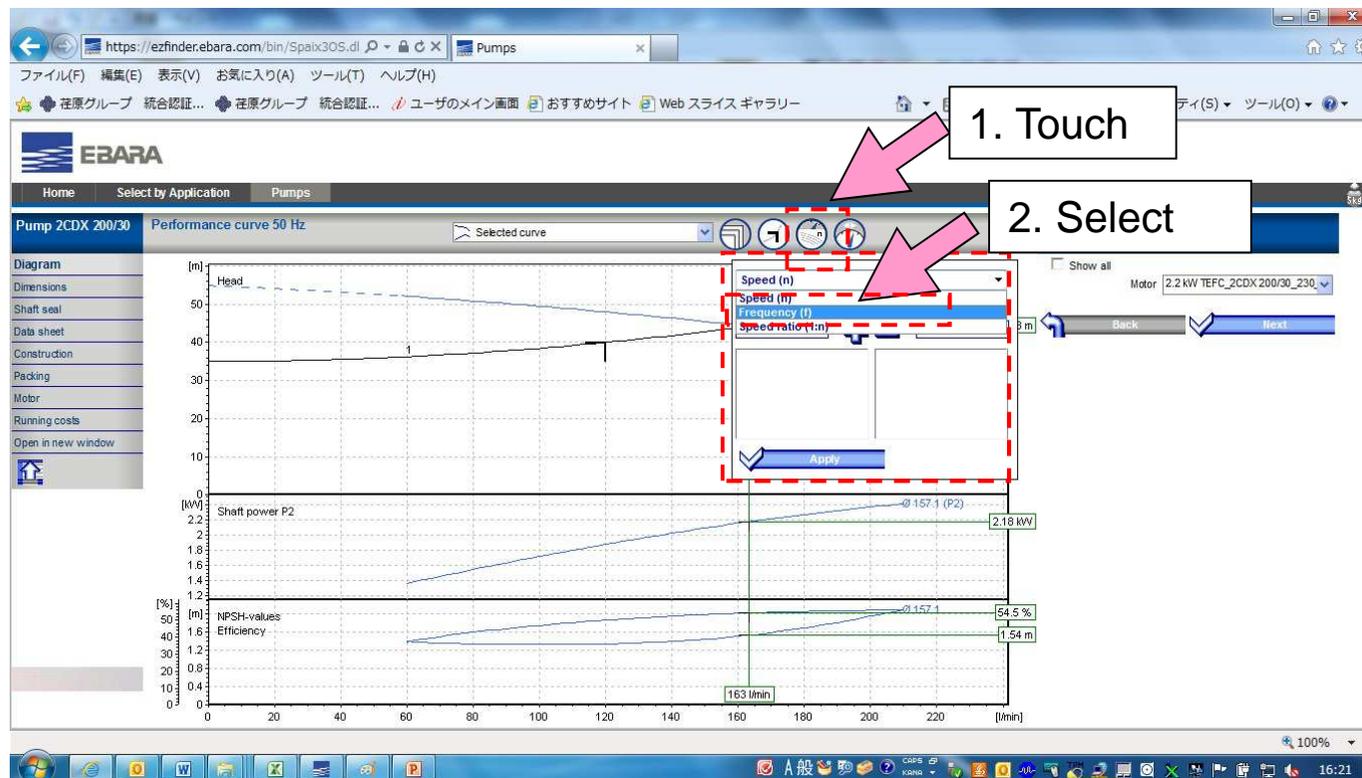
If you hide upper portion, click “↑” logo on each page.



2. Function

2. 1) Creation of Multiple Speed Curves

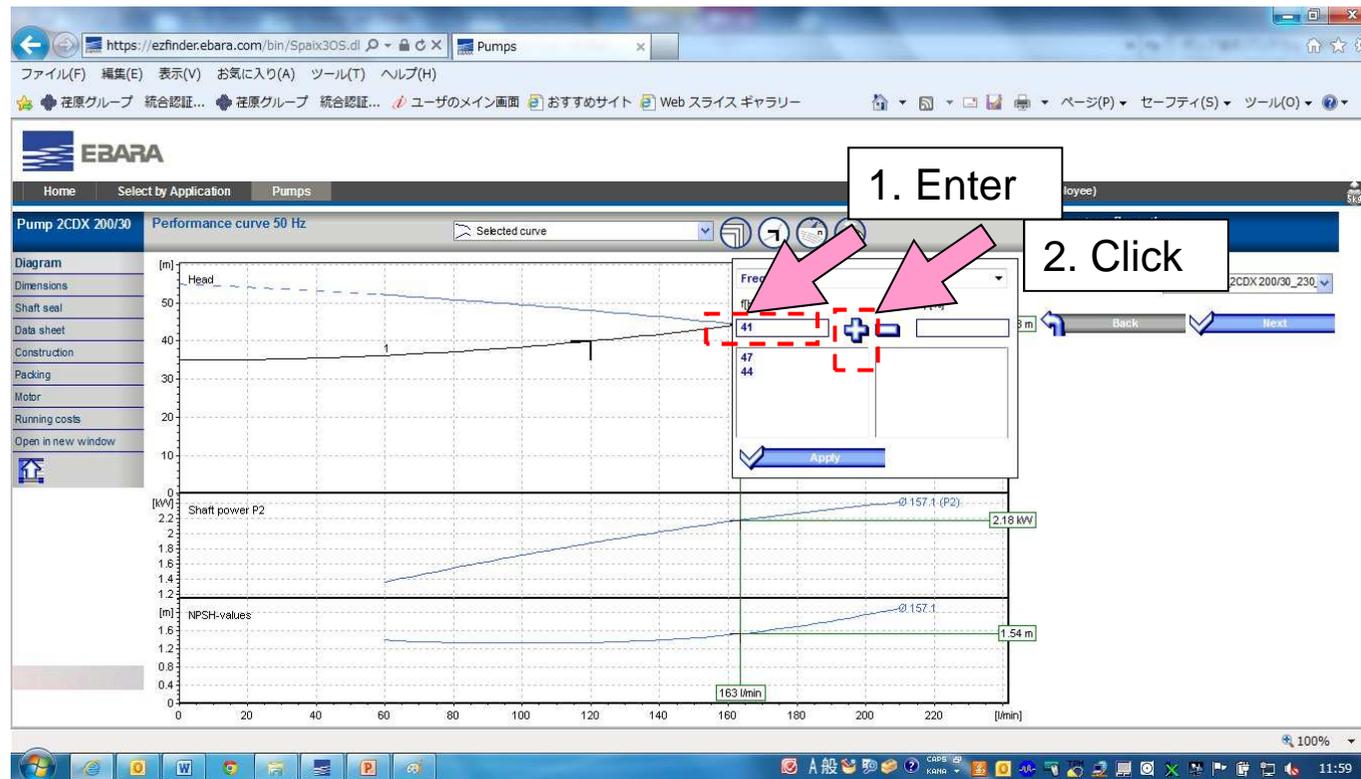
As an option, pump performance curves can be calculated by different frequency.
(Confirm the calculation factors, Frequency, and so on.)



2. 1) Creation of Multiple Speed Curves (continued)

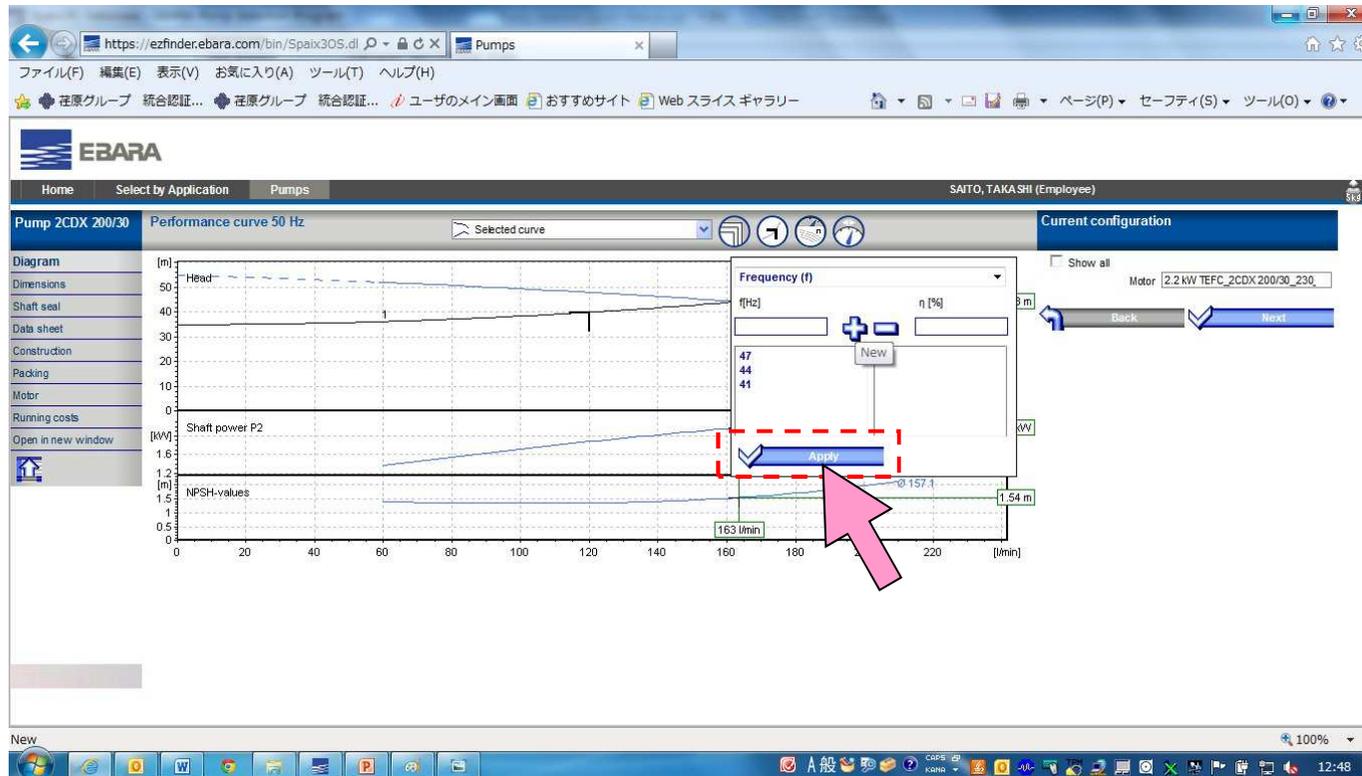
Enter frequency. Then click “+”.

You can enter multiple frequency by repeating above operation.



2. 1) Creation of Multiple Speed Curves (continued)

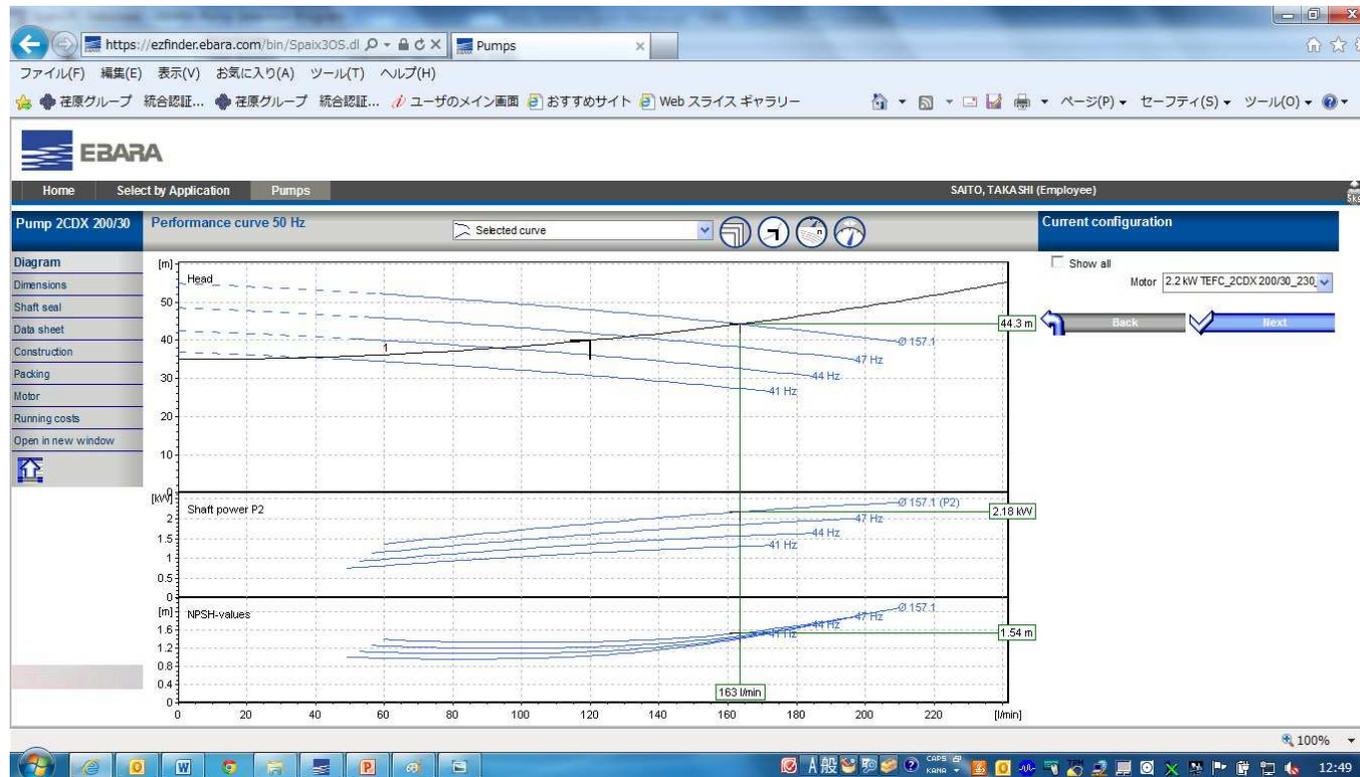
Click “Apply”.



2. 1) Creation of Multiple Speed Curves (end)

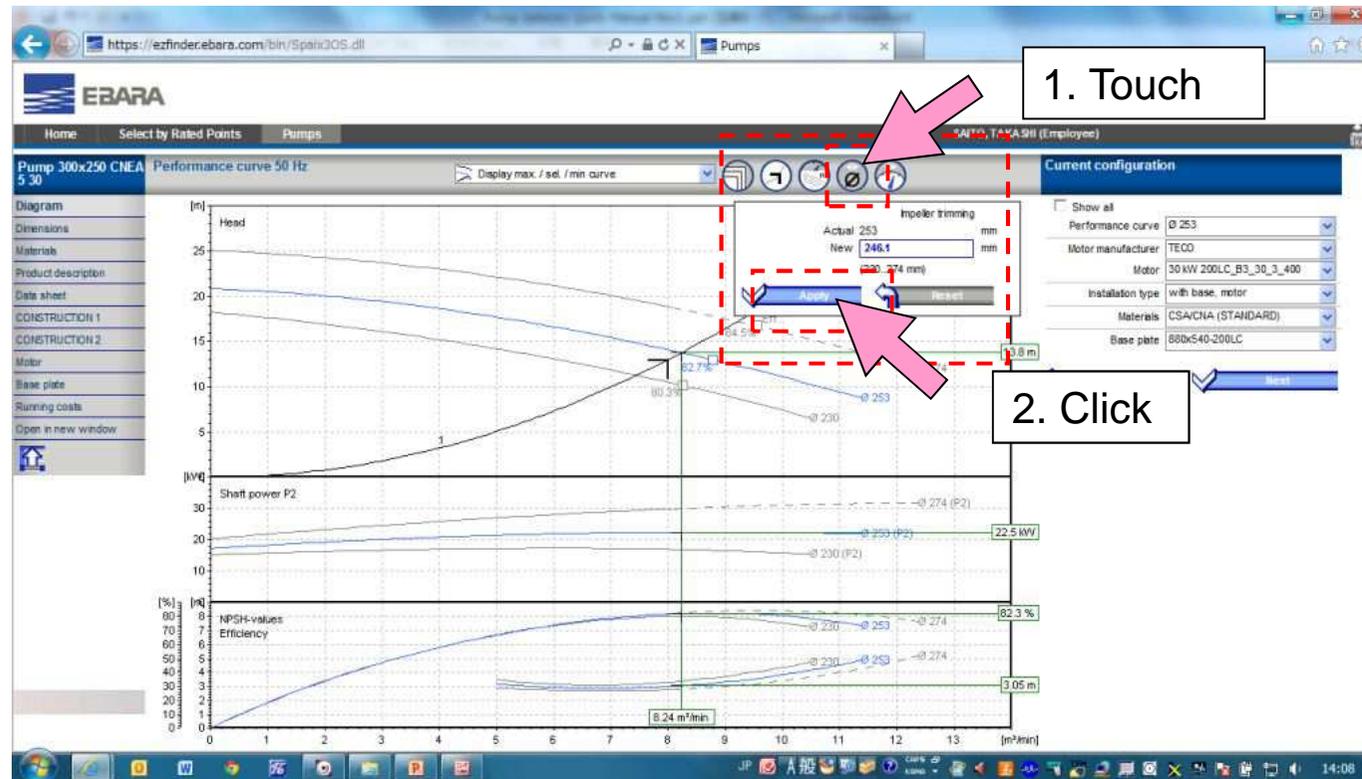
After click of “Apply”, the curves will be created.

(In case that you input the frequency 50Hz, same two performance curves will be drawn as overwriting.)



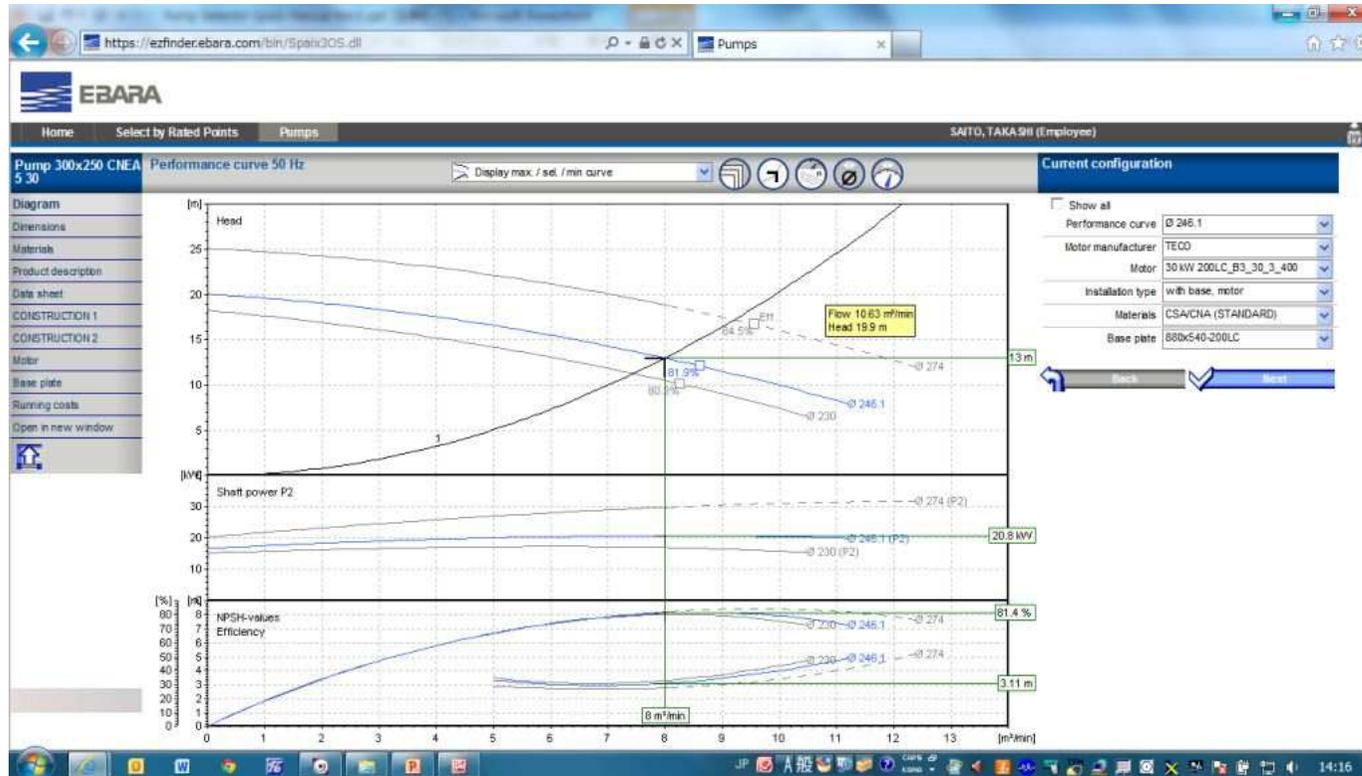
2. 2) Creation of Trimmed Impeller Curves

As other option, pump performance curve can be calculated in case impeller diameter is trimmed so as to pass through a duty point .
(Within max. and min. diameter for trimming)



2. 2) Creation of Trimmed Impeller Curves(end)

After click of “Apply”, trimmed impeller curve through the rated point will be created.



2. 3) Creation of Parallel Operation Curves

As other option, pump performance curve can be calculated for parallel operation. (Max. 6 set of pumps)

This option is available only for “Select by Rated Points”.

The screenshot shows the EBARA Pump Selector web application. The browser address bar displays the URL: https://ezfinder.ebara.com/bin/5pnh30S.dl17S__NEXTPAGE=bdyStart&L__LGG=EN. The page header includes the EBARA logo and the user name SAITO, TAKASHI (Employee). The main content area is divided into several sections:

- Information:** Contains three entries for pump data updates with their respective dates and model lists.
- Pump selection:** A section with three radio button options: "Select by Rated Points" (selected), "Select by Application", and "Select by Model Name". This section is highlighted with a red dashed box, and a pink arrow points to the "Select by Rated Points" option.
- Further options:** Includes links for "Online statistic", "Customer database", and "Open project".
- Settings:** Includes dropdown menus for "Language" (English (UK)) and "Frequency" (50 Hz).
- Units:** A list of unit selection dropdowns for Flow, Head, Power, Speed, Temperature, Density, Kin. viscosity, Pressure, Dimensions, Velocity, and Volume.

The footer of the page displays "Rel 3.3.3 - 17/09/2010 (Build 453)" and the VSX logo.

2. 3) Creation of Parallel Operation Curves (continued)

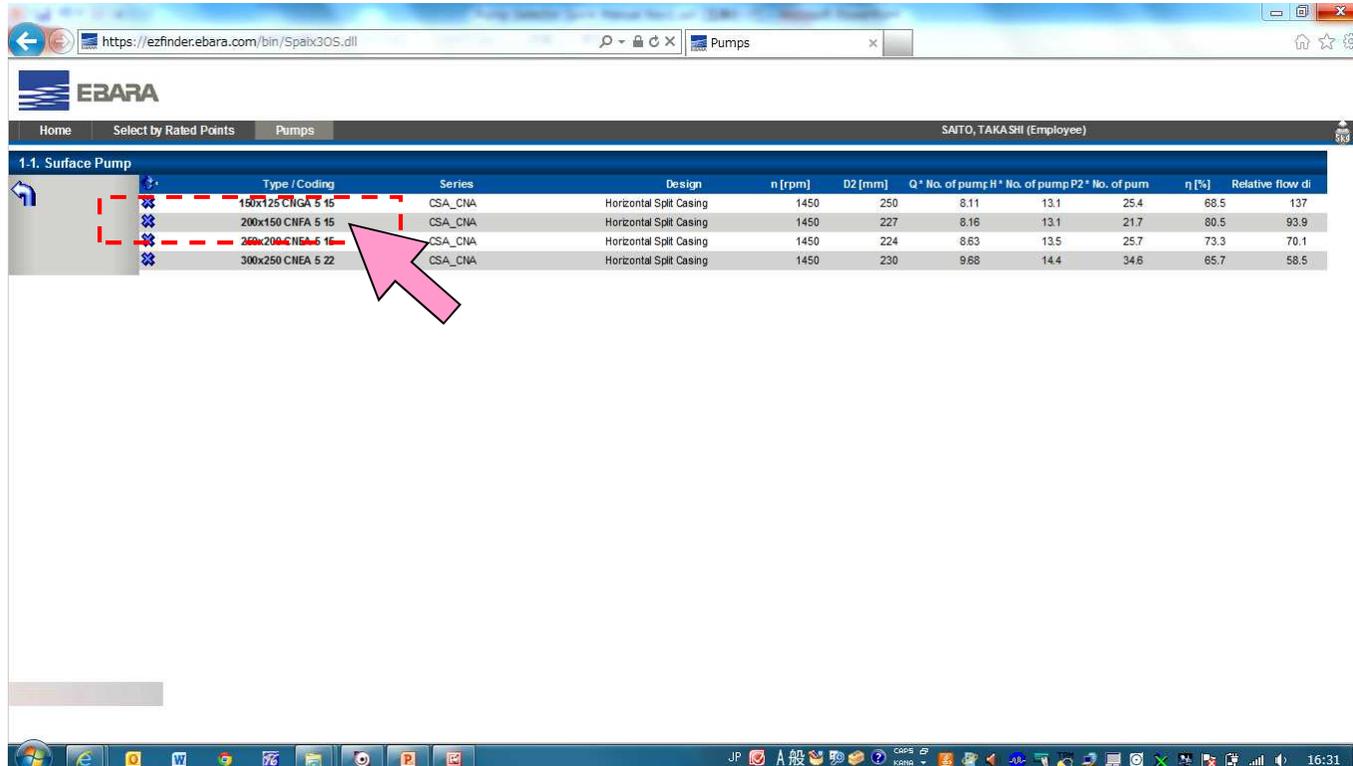
1. Select number of pumps.
2. Click “Start”.

The screenshot displays the EBARA website's 'Select by Rated Points' interface. The page is titled 'Select by Rated Points' and shows the user 'SAITO, TAKASHI (Employee)'. The interface is divided into several sections:

- Areas of application:** A sidebar on the left lists various applications such as 'Surface Pump', 'Domestic Boosting or Pressure Increase', 'Small-Scale Irrigation', etc.
- Search options:** A central section with a 'Duty point' section containing input fields for 'Total flow' (8 m³/min), 'Total head' (13 m), and 'Static head' (10 m). Below this, there are fields for 'Qmin / Qopt' (10%), 'Qmax / Qopt' (200%), 'Available system NPSH' (0 m), 'Max. inlet pressure head' (0 m), and 'Usable inlet pressure head' (0 m).
- Series:** A section where the 'Nature of system' is set to 'Single pumps as parallel circuit'. The 'No. of pumps' dropdown menu is highlighted with a red box and a pink arrow, showing a list of pump models including 'MULIIGO', 'PRA', 'CSA CMA', 'FHA', 'FSA', 'FSDA', and 'LPDA'. A 'Start' button is highlighted with a red dashed box and a pink arrow.

2. 3) Creation of Parallel Operation Curves (continued)

Select pump.

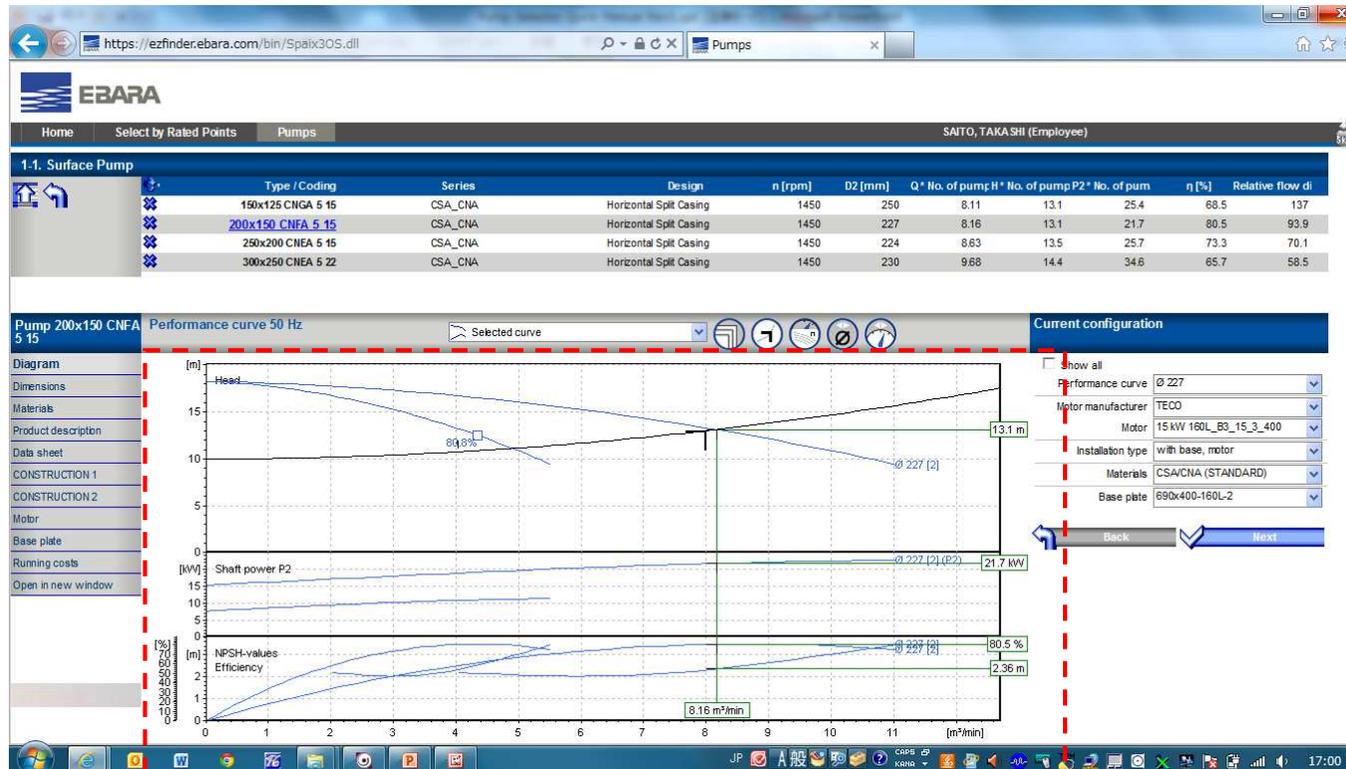


The screenshot shows the EBARA website interface. The browser address bar displays <https://ezfinder.ebara.com/bin/Spaix30S.dll>. The page title is "Pumps". The user is identified as "SAITO, TAKASHI (Employee)". The main content area is titled "1-1. Surface Pump" and contains a table with the following data:

Type / Coding	Series	Design	n [rpm]	D2 [mm]	Q* No. of pump	H* No. of pump	P2* No. of pump	η [%]	Relative flow di
150x125 CNGA 5 15	CSA_CNA	Horizontal Split Casing	1450	250	8.11	13.1	25.4	68.5	137
200x150 CNFA 5 15	CSA_CNA	Horizontal Split Casing	1450	227	8.16	13.1	21.7	80.5	93.9
200x200 CNEA 5 15	CSA_CNA	Horizontal Split Casing	1450	224	8.63	13.5	25.7	73.3	70.1
300x250 CNEA 5 22	CSA_CNA	Horizontal Split Casing	1450	230	9.68	14.4	34.6	65.7	58.5

2. 3) Creation of Parallel Operation Curves (end)

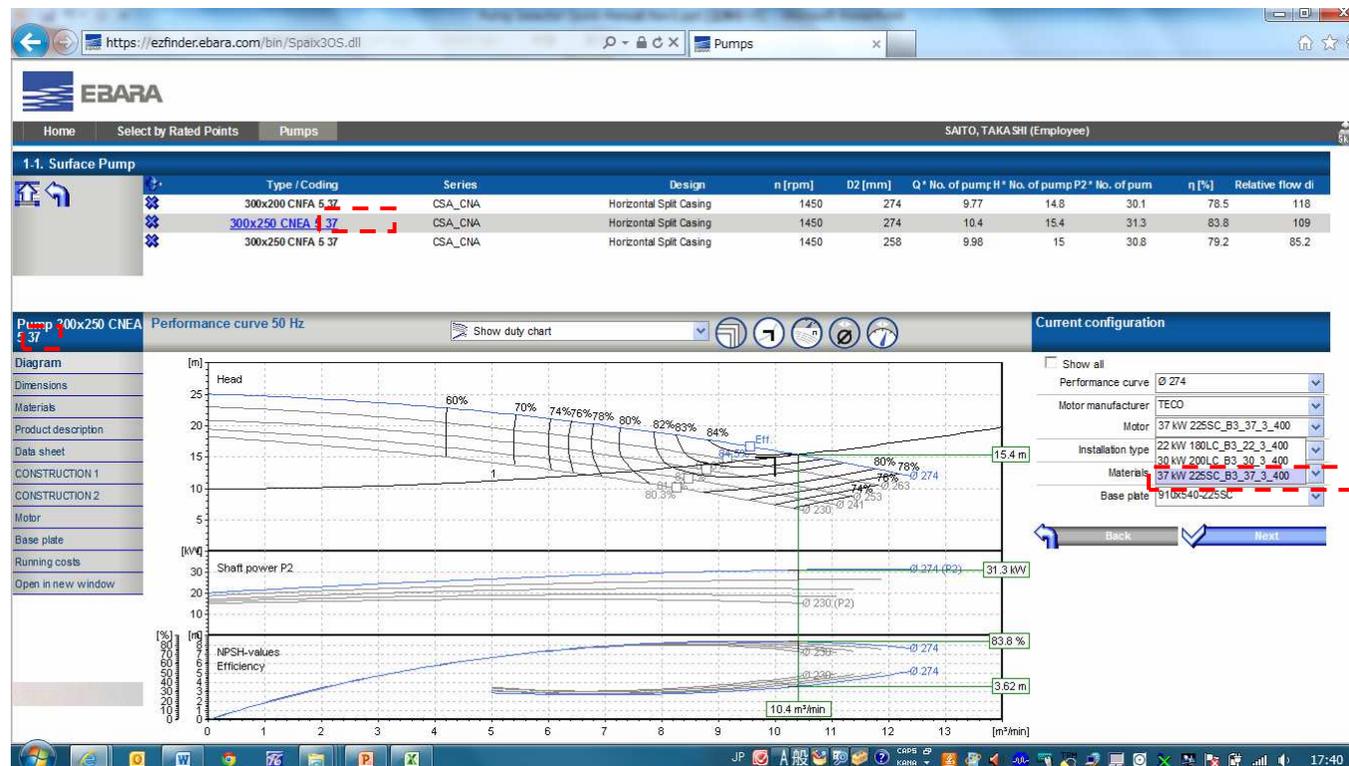
After selection of the pump, parallel operation curves will be created.



2. 4) Automatic Selection of Motor

On the pumps whose impeller can be trimmed, an adequate power of motor will be automatically selected after selection of the pump.

In this sample, 37kW motor is automatically selected from among 22, 30 and 37 kW motors.



2. 5) Selection of Installation type

After selection of the pump, you can select installation type by clicking the tab on the right side of the screen.

In this sample, 6 kind of installation type can be selected.

The screenshot displays the Ebara website interface for selecting a pump and its installation type. The browser address bar shows <https://ezfinder.ebara.com/bin/Spaix30S.dll>. The page title is "Pumps". The user is identified as SAITO, TAKASHI (Employee).

The main content area is titled "1.2. Submersible Pumps" and contains a table of pump models:

Type / Coding	Series	Design	D2 [mm]
65 DL 51.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	210
80 DL 51.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	198
80 DL 52.2	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	216
80 DL 53.7	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	242
80 DLC 55.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	272

Below the table, the selected pump is "Pump 65 DL 51.5". The installation type is set to "STANDARD". The "Current configuration" section shows the motor as "1.5 kW DL 51.5_380_Three phas" and the installation type as "STANDARD".

The "Dimensions [mm]" table is as follows:

Dimension	Value [mm]
A	497
B	291
C	353
CL	10m
D	144
E	265
F	200
H	576
J	200
L1	140
Weight	kg 52

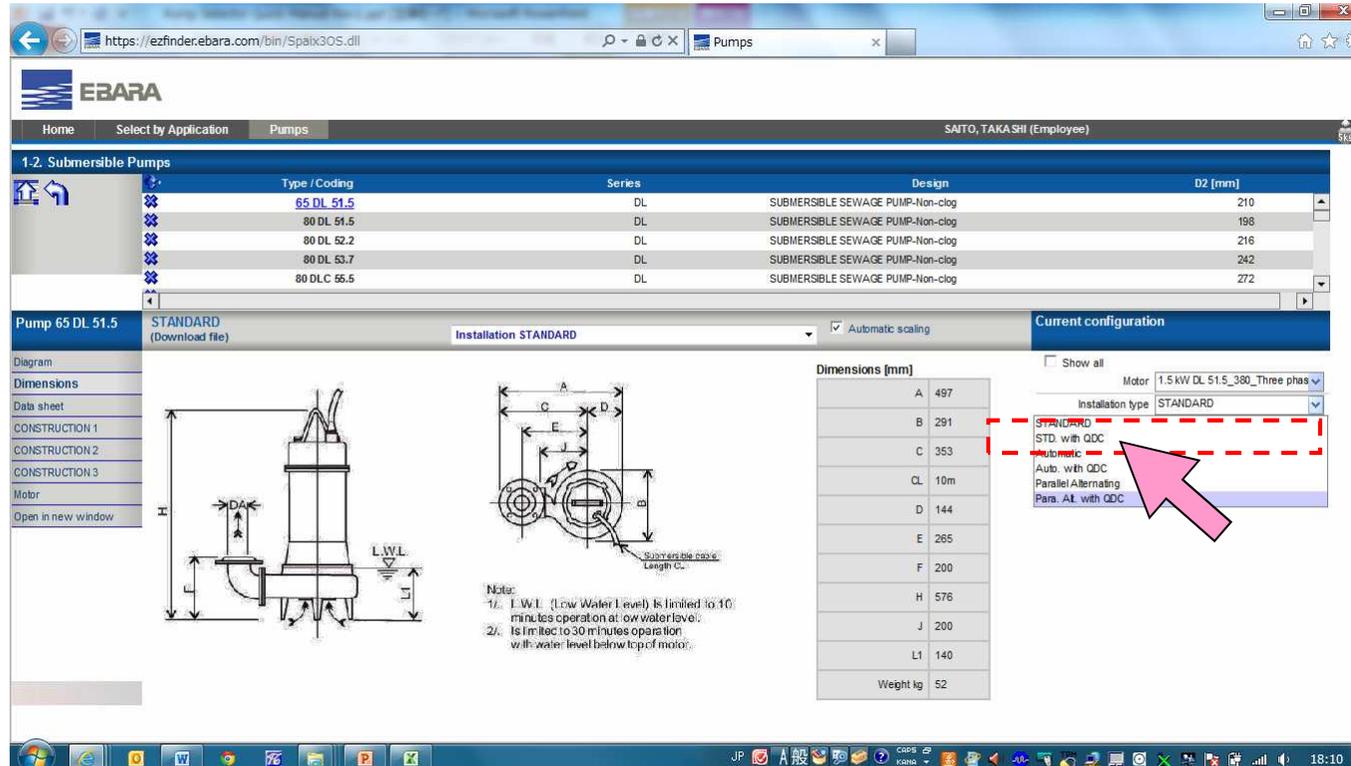
Technical diagrams and notes are also present. A note states: "Note: 1. L.W.L. (Low Water Level) is limited to 10 minutes operation at low water level. 2. Is limited to 30 minutes operation with water level below top of motor."

Two callouts are present: "1." points to the "Installation type" dropdown menu, and "2." points to the "STANDARD" option within that menu.

“STANDARD” is selected on this screen.

2. 5) Selection of Installation type (Continued)

Select other installation type by clicking.
In this example, select “STD with QDC”.



The screenshot shows the EBARA website interface for selecting a pump installation type. The main content area displays a table of submersible pumps and a detailed view for the 'Pump 65 DL 51.5'. The 'Installation' dropdown menu is open, showing the current selection 'STANDARD' and a list of other options: 'STD. with QDC', 'Automatic', 'Aut. with QDC', 'Parallel/Alternating', and 'Para. Alt. with QDC'. A pink arrow points to the 'STD. with QDC' option, which is highlighted with a red dashed box. The 'Current configuration' panel shows the motor as '1.5 kW DL 51.5_380_Three phase' and the installation type as 'STANDARD'. The 'Dimensions [mm]' table is also visible, listing various dimensions from A to L1 and the weight in kg.

Type / Coding	Series	Design	D2 [mm]
65 DL 51.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	210
80 DL 51.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	198
80 DL 52.2	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	216
80 DL 53.7	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	242
80 DLC 55.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	272

Dimensions [mm]	Value
A	497
B	291
C	353
CL	10m
D	144
E	265
F	200
H	576
J	200
L1	140
Weight kg	52

2. 5) Selection of Installation type (end)

Dimension image and dimensions are changed for the installation type “STD with QDC”.

The screenshot displays the Ebara website interface for pump selection. The browser address bar shows <https://ezfinder.ebara.com/bin/Spaix30S.dll>. The user is identified as SAITO, TAKASHI (Employee).

The main content area is titled "1-2-2. For Sewage Water" and contains a table of pump models:

Type / Coding	Series	Design	D2 [mm]
65 DL 51.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	210
80 DL 51.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	198
80 DL 52.2	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	216
80 DL 53.7	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	242
80 DL 55.5	DL	SUBMERSIBLE SEWAGE PUMP-Non-clog	272

The selected pump is "Pump 65 DL 51.5" with the installation type "STD. with QDC". The "Automatic scaling" checkbox is checked. The "Current configuration" section shows:

- Motor: 1.5 kW DL 51.5_380_Three phas
- Installation type: STD. with QDC
- Inlet / outlet: JIS 10K

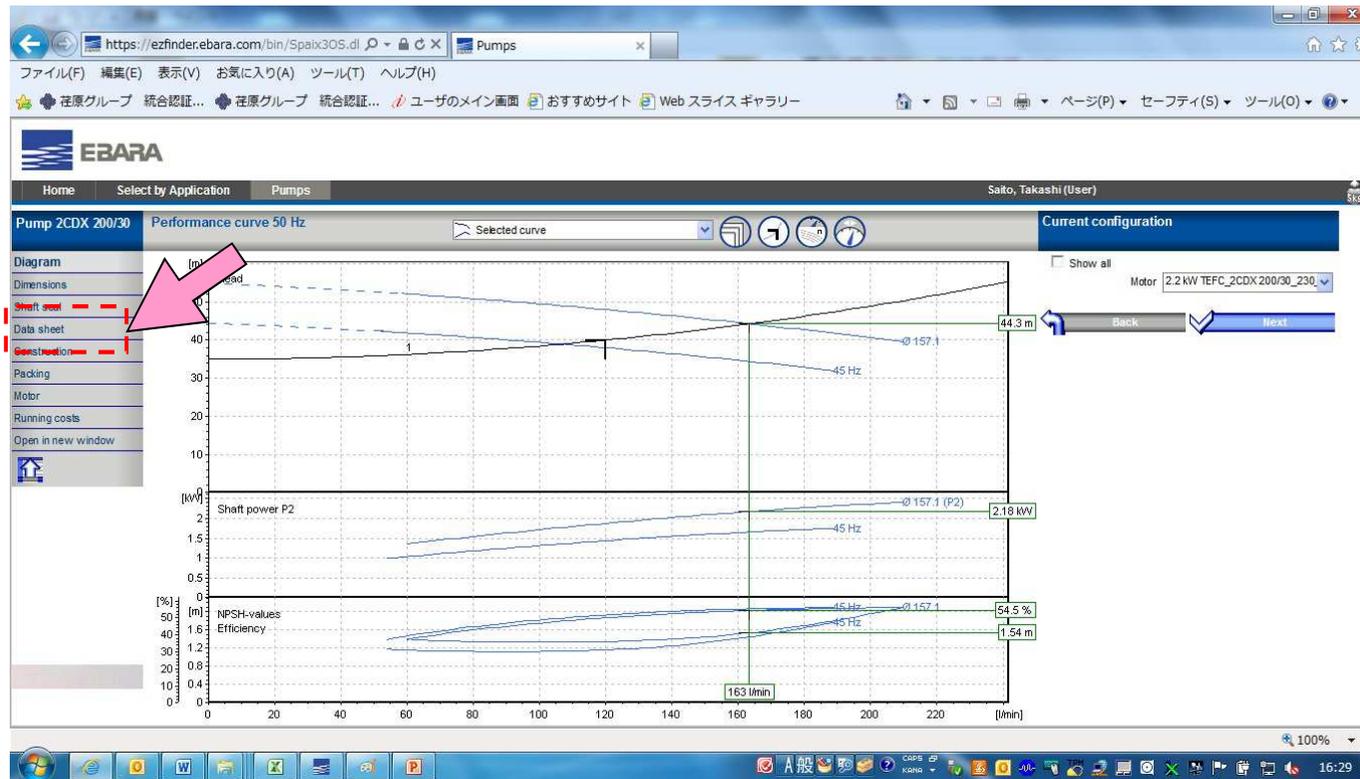
The "Dimensions [mm]" table is as follows:

Dimension	Value [mm]
A QDC	464
BN1	75
BN2	95
D1	12
E1	140
F QDC	250
G1	120
G2	180
H1	145
H2	190
H3	240

The diagram area shows technical drawings of the pump installation with dimensions A through H3. A red dashed box highlights the diagram and the dimensions table. The "Back" and "Next" buttons are visible at the bottom of the configuration panel.

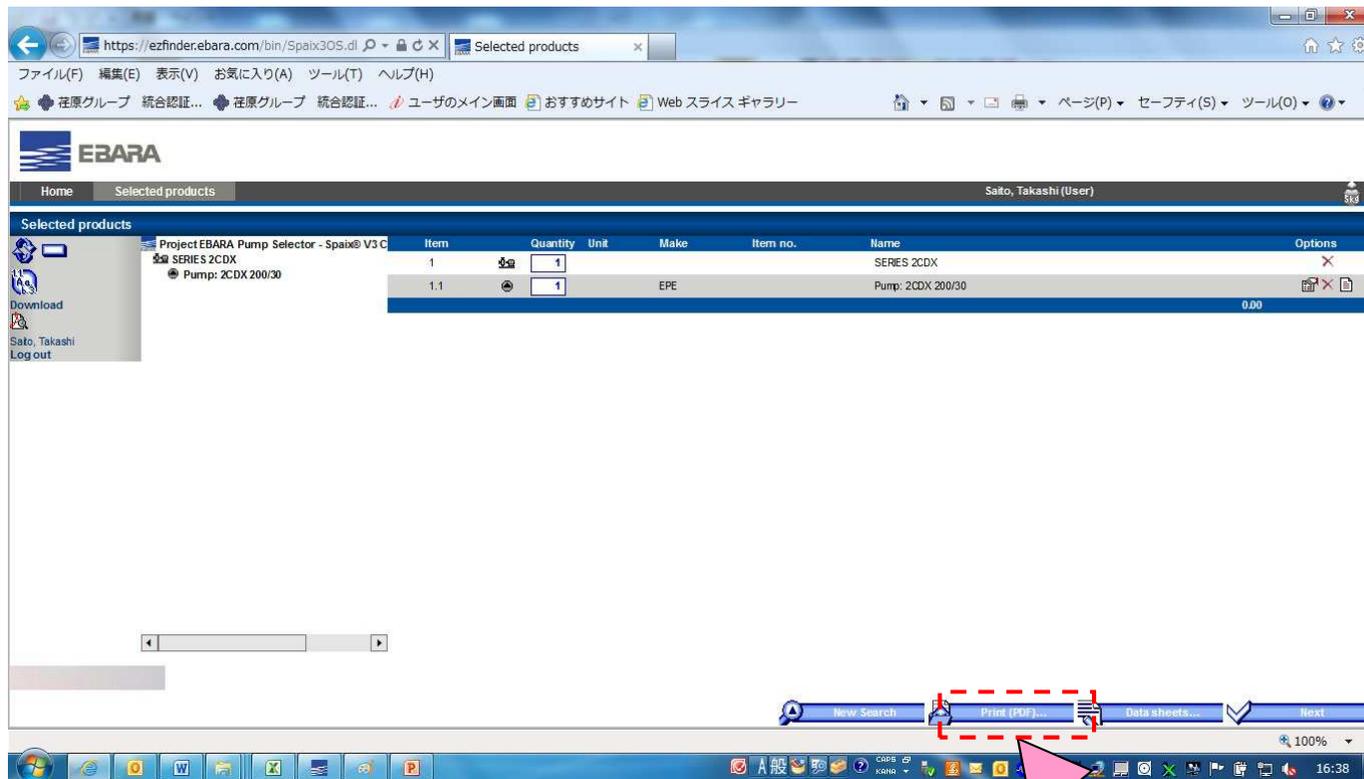
3. Result Output

Click the tab of “Data sheet”.



3. Result Output (continued)

When click “Print PDF button”, PDF file of Data sheet will be created on another window.



3. Result Output (end)

From new window, you can save or print out the data sheets that are created.

The screenshot shows a web browser window displaying a data sheet and a performance curve for an Ebara pump. The browser address bar shows the URL <https://ezfinder.ebara.com/dat/TEMP/~pj5>. The page content includes a table of specifications, a section for 'Performance curve' with pump name '2CDX 200/30', and a graph showing the performance characteristics. A red dashed box highlights the browser window, and a pink arrow points to the print icon in the toolbar.

Model	Capacity	Head	Power
2CDX 200/30	200 L/min	30 m	1.5 kW

Performance curve Pump name: 2CDX 200/30

Flow rate (L/min)	Head (m)	Power (kW)
0	30	0
100	25	0.5
200	15	1.5

Test standard: ISO 9906 Annex A