

**EBARA**

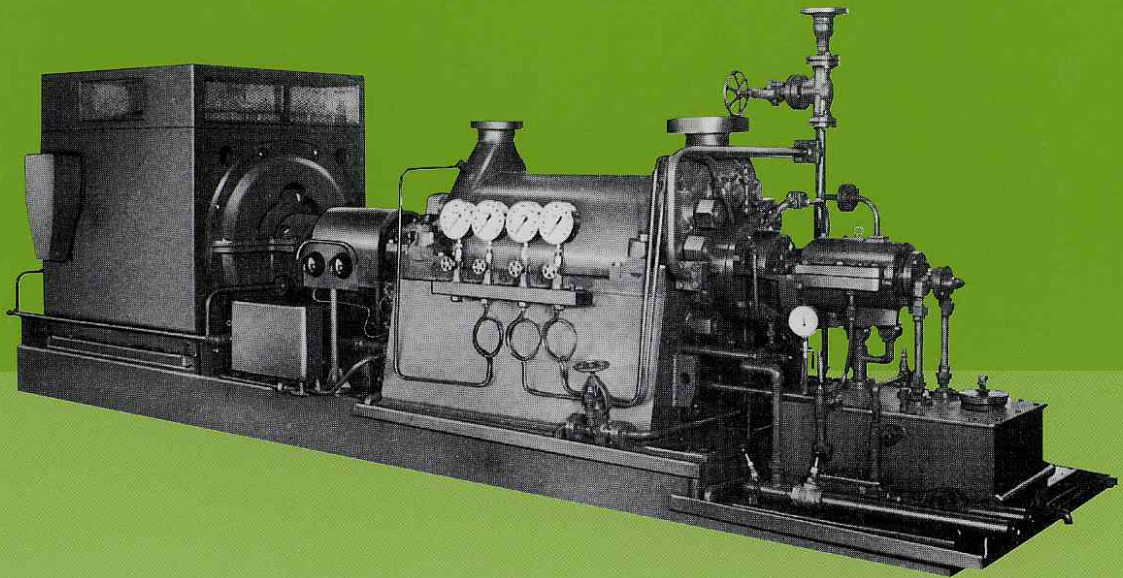
# **HORIZONTAL RING SECTION PUMP**

CS1821EG

Multi Stage, Diffuser Type For Boiler Feed, Mine Drainage,  
Chemical Process and Other High Pressure Services

Models

## **SS/SSD**



# HORIZONTAL RING SECTION PUMP

Multi Stage, Diffuser Type For Boiler Feed, Mine Drainage, Chemical Process and Other High Pressure Services

Models

# SS/SSD

EBARA MODEL SS/SSD HORIZONTAL RING SECTION PUMP of multistage, diffuser type have been widely used in boiler feed, mine drainage, chemical process and other high pressure services for the past long years. Many

improvements have been recently made on this pump to enhance in performance.

Unique original design of this high performance pump provides for superior and extended low-cost operation.

Model SSD denotes double suction impeller type.

## Applications

- Boiler Feed
- Mine Drainage
- Chemical Process
- Other High Pressure Services

## Ratings

|                                  |  |
|----------------------------------|--|
| Capacity                         | To 12m <sup>3</sup> / min { 3170 USGPM }*                    |
| Head                             | To 2500m { 8200 ft }*  |
| Discharge pressure (Gage)        | To 23.5MPaG { 3480 PSIG }*                                   |
| Hydrostatic test pressure (Gage) | To 35.3MPaG { 5220 PSIG }*                                   |
| Speed                            | 50 Hz 2950 min <sup>-1</sup><br>60 Hz 3550 min <sup>-1</sup> |
| Max. allowable Speed             | 7000 min <sup>-1</sup>                                       |
| Rotation:                        | Clockwise viewed from inboard side                           |
| Temperature                      | ~250°C { ~480°F }*   |
| Impeller type                    | Closed   |
| Nozzle position                  | Top-Top  |
| Flange rating                    | ~ANSI 2500 lb. other standards also available                |
| Shaft sealing                    | Conventional packing and mechanical seal                     |

\* These values in parenthesis { } are reference only.

## Features

- Centerline supported and compact design
- High efficiency, High reliability
- Flexibility of design handles wide range of liquids
- All components have been designed for maximum parts interchangeability.
- Low NPSH Performance.

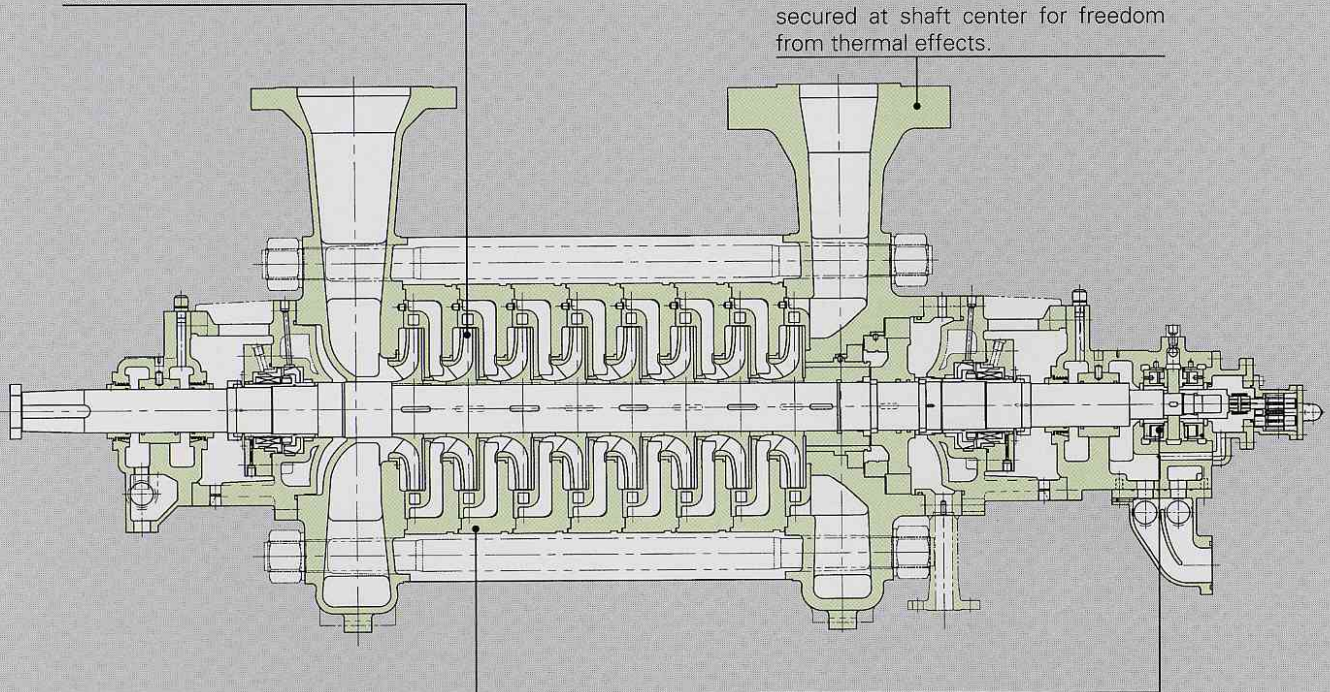
## Construcion

### Impeller

The imperllers are of closed type so finished overall that a maximum hydraulic efficiency can be obtained. They are perfectly balanced, both dynamically and statically. The impellers are all located in one direction, with thrust balanced by drum.

### Casing

The discharge casing is a structure prudently designed and fabricated of carefully selected material for high-temperature and high-pressure services. Particularly, the balance chamber is of a unique construction achieved with years long experience and research efforts. The test are secured at shaft center for freedom from thermal effects.



### Intermediate Casing

The intermediate casing is most simplified in construction for freedom from thermal deformations, and is overall finished for minimum frictional loss in fluid. The interfaces at the respective stages are superfinished for perfect seal without packing used.

### Bearing

While this pump is structurally balanced in thrust, both axially and radially, a pivot shoe type thrust bearing with sufficient load capacity is used to receive thrust resultant from sudden change in load.

## Metallurgy

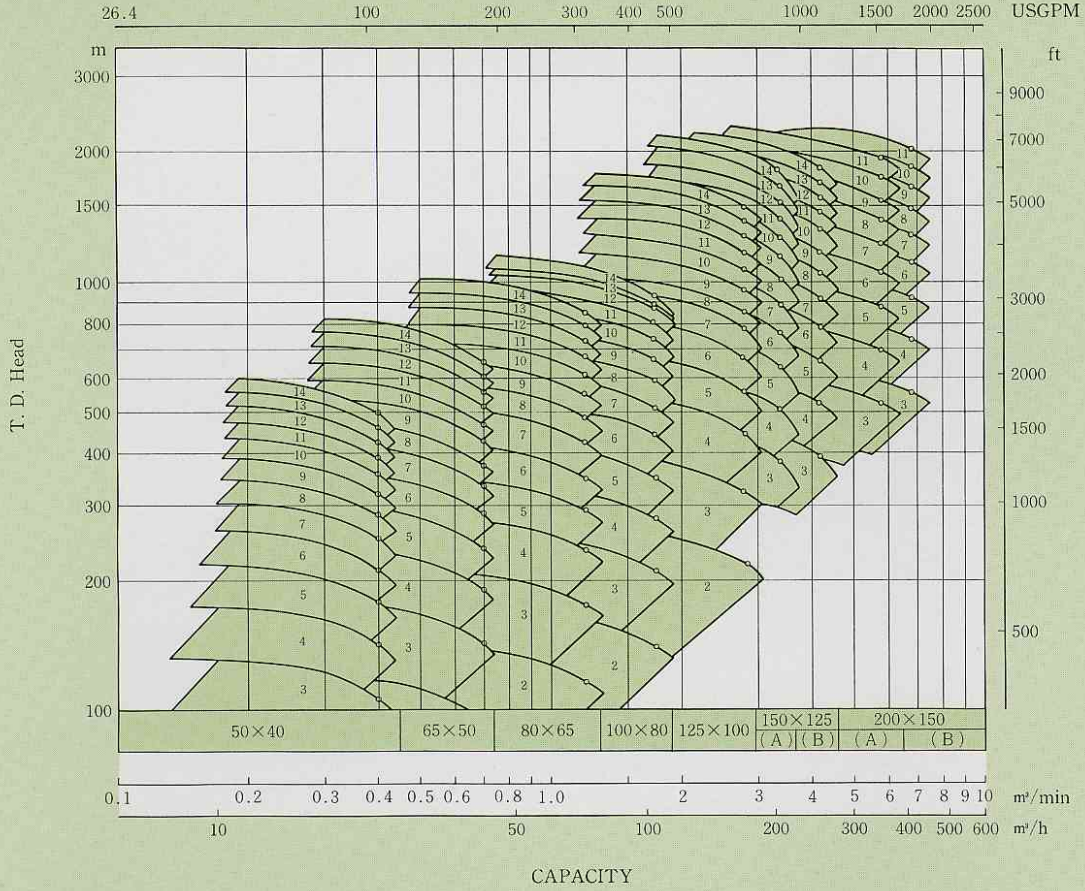
| Part Name                   | Materials JIS / ASTM-AISI |                    |                    |
|-----------------------------|---------------------------|--------------------|--------------------|
|                             | C.Steel                   | 13% Cr. Steel      | 316 S. Steel       |
| Casing                      | SCPH2 / A216 WCB          | A487 CA6NM         | SCS14A / A743 CF8M |
| Intermediate casing         | S30C / AISI1030           | SUS420J1 / AISI420 | SUS316 / AISI316   |
| Impeller                    | A487 CA6NM                | A487 CA6NM         | SCS14A / A743 CF8M |
| Shaft                       | SUS420J1 / AISI420        | SUS420J1 / AISI420 | SUS316 / AISI316   |
| Shaft sleeve for interstage | SUS420J2 / AISI420        | SUS420J2 / AISI420 | SUS316 / AISI316   |
| Case Wearing                | A743 CA40                 | A743 CA40          | SUS316 / AISI316   |
| Casing bolt                 | SCM435 / AISI4135         | SCM435 / AISI4135  | SUM435 / AISI4135  |

Note: Supply of other materials on request.

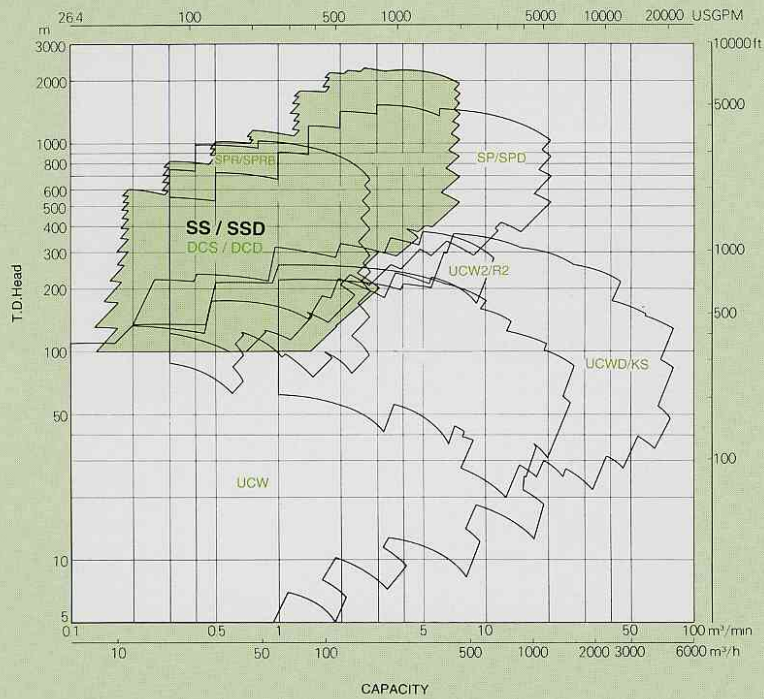
# Performance Ranges

## 50Hz (2950 min<sup>-1</sup>)

### Models SS/SSD



### General Process Pumps



Performance ranges shown on this charts are for preliminary selection only.  
 In case of over 2500m total head requirement, high speed application should be recommended.  
 Please contact to Ebara Corporation International Division Office shown on back page of this catalog.

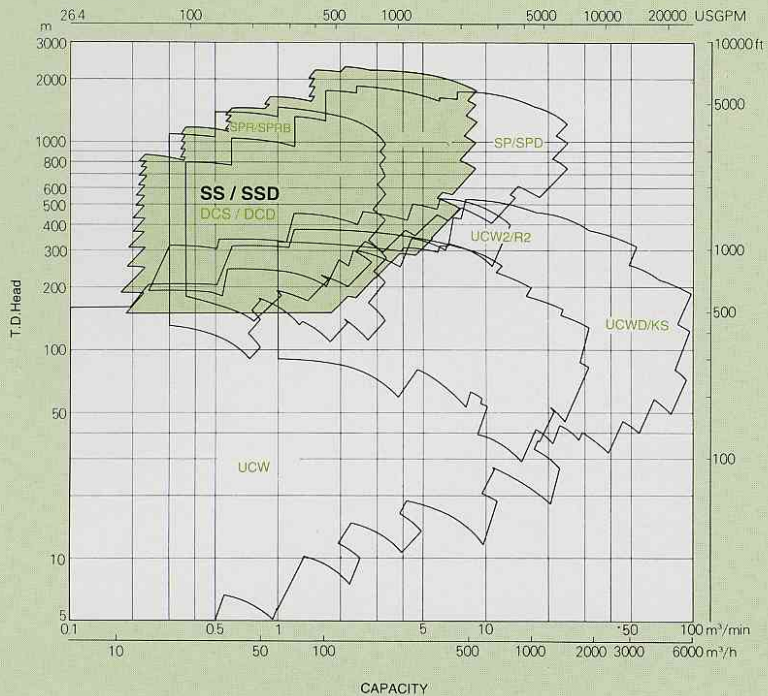
# Performance Ranges

## 60Hz (3550 min<sup>-1</sup>)

### Models SS/SSD

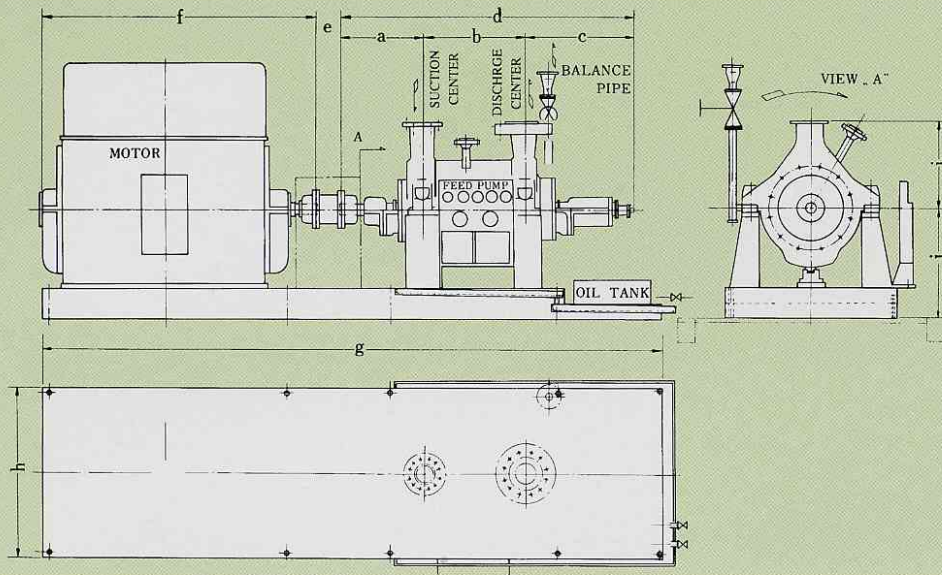


### General Process Pumps



Performance ranges shown on this charts are for preliminary selection only.  
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## Dimensions



| Size      | Stages | a   | b    | c   | d    | e   | f    | g    | h   | i   | j   | Unit (mm) |
|-----------|--------|-----|------|-----|------|-----|------|------|-----|-----|-----|-----------|
| 50x40 SS  | 6      | 410 | 338  | 391 | 1139 | 160 | 1000 | 2100 | 600 | 240 | 450 |           |
|           | 7      | 410 | 390  | 391 | 1191 | 160 | 1000 | 2200 | 600 | 240 | 450 |           |
|           | 8      | 410 | 442  | 391 | 1243 | 160 | 1000 | 2300 | 600 | 240 | 450 |           |
|           | 9      | 410 | 494  | 391 | 1295 | 160 | 1000 | 2300 | 600 | 240 | 450 |           |
|           | 10     | 410 | 546  | 391 | 1347 | 160 | 1000 | 2400 | 600 | 240 | 450 |           |
|           | 11     | 410 | 598  | 391 | 1399 | 160 | 1100 | 2500 | 600 | 240 | 450 |           |
|           | 12     | 410 | 650  | 391 | 1451 | 160 | 1100 | 2600 | 600 | 240 | 450 |           |
|           | 13     | 410 | 702  | 391 | 1503 | 160 | 1200 | 2700 | 600 | 240 | 450 |           |
| 65x50 SS  | 5      | 419 | 328  | 392 | 1139 | 160 | 1100 | 2200 | 700 | 270 | 450 |           |
|           | 6      | 419 | 384  | 392 | 1195 | 160 | 1100 | 2300 | 700 | 270 | 450 |           |
|           | 7      | 419 | 440  | 392 | 1251 | 160 | 1200 | 2400 | 700 | 270 | 450 |           |
|           | 8      | 419 | 496  | 392 | 1307 | 160 | 1200 | 2500 | 700 | 270 | 450 |           |
|           | 9      | 419 | 552  | 392 | 1363 | 160 | 1200 | 2600 | 700 | 270 | 450 |           |
|           | 10     | 419 | 608  | 392 | 1419 | 160 | 1400 | 2700 | 700 | 270 | 500 |           |
|           | 11     | 419 | 664  | 392 | 1475 | 160 | 1400 | 2800 | 700 | 285 | 500 |           |
|           | 12     | 419 | 720  | 392 | 1531 | 160 | 1400 | 2900 | 700 | 285 | 500 |           |
| 80x65 SS  | 4      | 424 | 287  | 406 | 1117 | 160 | 1200 | 2300 | 700 | 300 | 500 |           |
|           | 5      | 424 | 351  | 406 | 1181 | 160 | 1200 | 2400 | 700 | 300 | 500 |           |
|           | 6      | 424 | 415  | 406 | 1245 | 160 | 1400 | 2600 | 700 | 300 | 500 |           |
|           | 7      | 424 | 479  | 406 | 1309 | 160 | 1400 | 2700 | 700 | 300 | 500 |           |
|           | 8      | 424 | 543  | 406 | 1373 | 160 | 1500 | 2900 | 800 | 300 | 550 |           |
|           | 9      | 461 | 607  | 454 | 1522 | 160 | 1500 | 3000 | 800 | 320 | 550 |           |
|           | 10     | 461 | 671  | 454 | 1586 | 160 | 1500 | 3100 | 800 | 320 | 550 |           |
|           | 11     | 461 | 735  | 454 | 1650 | 160 | 1500 | 3200 | 800 | 320 | 550 |           |
| 100x80 SS | 3      | 466 | 250  | 456 | 1172 | 200 | 1384 | 2500 | 800 | 350 | 500 |           |
|           | 4      | 466 | 320  | 456 | 1242 | 200 | 1384 | 2600 | 800 | 350 | 500 |           |
|           | 5      | 466 | 390  | 456 | 1312 | 200 | 1485 | 2700 | 800 | 350 | 550 |           |
|           | 6      | 466 | 460  | 456 | 1382 | 200 | 1485 | 2800 | 800 | 350 | 550 |           |
|           | 7      | 466 | 530  | 456 | 1452 | 200 | 1485 | 2900 | 800 | 350 | 550 |           |
|           | 8      | 466 | 600  | 456 | 1522 | 200 | 1485 | 3000 | 800 | 350 | 550 |           |
|           | 9      | 466 | 670  | 456 | 1592 | 200 | 1485 | 3000 | 800 | 350 | 550 |           |
|           | 10     | 466 | 740  | 456 | 1662 | 200 | 1485 | 3100 | 900 | 350 | 550 |           |
|           | 11     | 466 | 810  | 456 | 1732 | 200 | 1485 | 3200 | 900 | 350 | 550 |           |
|           | 12     | 466 | 880  | 456 | 1802 | 200 | 1485 | 3200 | 900 | 350 | 550 |           |
|           | 13     | 500 | 977  | 514 | 1991 | 200 | 1485 | 3300 | 900 | 410 | 550 |           |
|           | 14     | 500 | 1049 | 514 | 2063 | 200 | 1485 | 3400 | 900 | 410 | 550 |           |

## Dimensions

| Size          | Stages | a   | b    | c   | d    | e   | f    | g    | h    | i   | Unit (mm)<br>j |
|---------------|--------|-----|------|-----|------|-----|------|------|------|-----|----------------|
| 125X100 SS    | 6      | 505 | 565  | 505 | 1575 | 200 | 1500 | 3000 | 900  | 430 | 550            |
|               | 7      | 505 | 650  | 505 | 1660 | 200 | 1500 | 3100 | 900  | 430 | 550            |
|               | 8      | 540 | 748  | 846 | 2134 | 200 | 1800 | 4700 | 900  | 450 | 600            |
|               | 9      | 540 | 833  | 846 | 2219 | 200 | 1800 | 4800 | 900  | 450 | 600            |
|               | 10     | 591 | 918  | 855 | 2364 | 200 | 1900 | 5000 | 1000 | 450 | 600            |
|               | 11     | 591 | 1003 | 855 | 2449 | 200 | 2000 | 5200 | 1000 | 450 | 650            |
|               | 12     | 591 | 1088 | 855 | 2534 | 200 | 2000 | 5300 | 1000 | 450 | 650            |
|               | 13     | 591 | 1173 | 855 | 2619 | 200 | 2100 | 5500 | 1100 | 450 | 650            |
| 150X125(A) SS | 5      | 680 | 540  | 962 | 2182 | 220 | 1500 | 4400 | 1200 | 580 | 850            |
|               | 6      | 680 | 628  | 962 | 2270 | 220 | 1500 | 4500 | 1200 | 580 | 850            |
|               | 7      | 680 | 716  | 962 | 2358 | 220 | 1500 | 4600 | 1200 | 580 | 850            |
|               | 8      | 680 | 804  | 962 | 2446 | 220 | 1900 | 5100 | 1200 | 580 | 850            |
|               | 9      | 680 | 892  | 962 | 2534 | 220 | 2000 | 5300 | 1200 | 580 | 850            |
|               | 10     | 680 | 980  | 962 | 2622 | 220 | 2000 | 5400 | 1200 | 580 | 850            |
|               | 11     | 650 | 1068 | 962 | 2680 | 220 | 2100 | 5500 | 1200 | 585 | 850            |
|               | 12     | 650 | 1156 | 962 | 2768 | 220 | 2100 | 5600 | 1200 | 585 | 850            |
| 150X125(B) SS | 5      | 662 | 540  | 962 | 2164 | 220 | 1800 | 4700 | 1200 | 580 | 850            |
|               | 6      | 662 | 628  | 962 | 2252 | 220 | 1900 | 4900 | 1200 | 580 | 850            |
|               | 7      | 662 | 716  | 962 | 2340 | 220 | 2000 | 5100 | 1200 | 580 | 850            |
|               | 8      | 662 | 804  | 962 | 2428 | 220 | 2000 | 5200 | 1200 | 580 | 850            |
|               | 9      | 662 | 892  | 962 | 2516 | 220 | 2100 | 5400 | 1200 | 585 | 850            |
|               | 10     | 662 | 980  | 962 | 2604 | 220 | 2200 | 5600 | 1200 | 585 | 850            |
|               | 11     | 662 | 1068 | 962 | 2692 | 220 | 2300 | 5700 | 1200 | 585 | 850            |
|               | 12     | 662 | 1156 | 962 | 2780 | 220 | 2300 | 5800 | 1200 | 585 | 850            |
| 200X150(A) SS | 4      | 675 | 485  | 946 | 2106 | 220 | 2100 | 5000 | 1300 | 710 | 900            |
|               | 5      | 675 | 580  | 946 | 2201 | 220 | 2100 | 5100 | 1300 | 710 | 900            |
|               | 6      | 675 | 675  | 946 | 2296 | 220 | 2300 | 5400 | 1300 | 710 | 950            |
|               | 7      | 675 | 770  | 946 | 2391 | 220 | 2300 | 5500 | 1300 | 710 | 950            |
|               | 8      | 675 | 865  | 946 | 2486 | 220 | 2300 | 5600 | 1300 | 710 | 950            |
|               | 9      | 675 | 960  | 946 | 2581 | 220 | 2300 | 5700 | 1300 | 710 | 950            |
|               | 10     | 675 | 1055 | 946 | 2676 | 220 | 2300 | 5700 | 1300 | 710 | 1000           |
| 200X150(B) SS | 5      | 675 | 620  | 946 | 2241 | 220 | 2300 | 5300 | 1300 | 710 | 950            |
|               | 6      | 675 | 725  | 946 | 2346 | 220 | 2300 | 5400 | 1300 | 710 | 950            |
|               | 7      | 675 | 830  | 946 | 2451 | 220 | 2300 | 5500 | 1300 | 710 | 950            |
|               | 8      | 675 | 935  | 946 | 2556 | 220 | 2300 | 5600 | 1300 | 710 | 950            |
|               | 9      | 675 | 1040 | 946 | 2661 | 220 | 2500 | 5900 | 1300 | 710 | 950            |
|               | 10     | 675 | 1145 | 946 | 2766 | 220 | 2500 | 6000 | 1300 | 710 | 1000           |
|               | 11     | 675 | 1250 | 946 | 2871 | 220 | 2500 | 6100 | 1300 | 710 | 1000           |

Note: Dimensions are in mm and for guidance only.

Certified drawings will be provided for actual constructions, motor dimensions are approx. for a given IEC frame.



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