

# Technical data

Pump name

150x150 CNFA 5 11

|          |                 |           |
|----------|-----------------|-----------|
| Customer | Date 2021-05-14 | Company   |
| Contact  | Item no.        | Issued by |
| Phone    | Project         | Phone     |
| E-mail   | Project ID      | E-mail    |

## Requested data

|   |                           |                         |                    |             |
|---|---------------------------|-------------------------|--------------------|-------------|
| 1 | Pump type                 | Horizontal Split Casing | Fluid              | Water       |
| 2 | Number of pumps / Reserve | 1 / 0                   | Liquid temperature | °C 20       |
| 3 | Flow m³/h                 |                         | Kin. viscosity     | mm²/s 1.005 |
| 4 | Head m                    |                         | Vapour pressure    | kPa 2.34    |
| 5 | Geodetic head m           |                         | PH value           |             |
| 6 | Inlet pressure (pin) kPa  | 0                       | Density            | kg/m³ 998.3 |
| 7 | Available system NPSH     |                         | Solids             | Weight % 0  |
| 8 | Ambient temperature °C    | 20                      |                    |             |

## Pump

|    |                           |                                |                                   |                  |
|----|---------------------------|--------------------------------|-----------------------------------|------------------|
| 9  | Pump name                 | 150x150 CNFA 5 11              | Frequency                         | Hz 50            |
| 10 | Design                    | Horizontal Split Casing        | Installation type                 | with base, motor |
| 11 | Manufacturer              | EBARA                          | Impeller Diameter                 | Max. mm 227      |
| 12 | Speed rpm                 | 1450                           |                                   | Designed mm 227  |
| 13 | No. of Stage              | 1                              |                                   | Min. mm 194      |
| 14 | Connection Suction side   | JIS 16K                        | Flow                              | Operating m³/h   |
| 15 | Connection Discharge side | JIS 16K                        |                                   | Max- m³/h 276    |
| 16 | Max Working Pressure kPa  | 1600                           |                                   | Min- m³/h 0      |
| 17 | Shut-off head kPa         | 177.31                         | Head                              | Operating m      |
| 18 | Total weight kg           | See the table of "Dimensions". |                                   | - (Qmax.) m 9.1  |
| 19 | Shaft power kW            |                                |                                   | - (Qmin.) m 18.1 |
| 20 |                           |                                | Max. Shaft Power at max. impeller | kW 9.89          |
| 21 | Required pump NPSH m      |                                | Efficiency                        | %                |

## Materials

|    |                 |                     |  |  |
|----|-----------------|---------------------|--|--|
| 22 | Casing          | Cast iron           |  |  |
| 23 | Impeller        | Bronze              |  |  |
| 24 | Shaft           | 316 Stainless steel |  |  |
| 25 | Shaft sleeve    | .                   |  |  |
| 26 | Mechanical seal | .                   |  |  |
| 27 | Ball bearing    | .                   |  |  |

## Motor

|    |                      |                             |                  |        |
|----|----------------------|-----------------------------|------------------|--------|
| 28 | Manufacturer         | TECO                        | Insulation class | F      |
| 29 | Type                 | 160M_B3_11_3_400            | Phases           | 3~     |
| 30 | Specific design      | TEFC / 50 Hz / Pole pairs 2 | Frame size       | 160 M  |
| 31 | Rated power kW       | 11                          | Weight           | kg 115 |
| 32 | Number of poles      | 4                           | Electric voltage | V 400  |
| 33 | Speed rpm            | 1465                        | Electric current | A 20.9 |
| 34 | Degree of protection | IP 55                       |                  |        |
| 35 |                      |                             |                  |        |

## Remarks

# Performance curve

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## Requested data

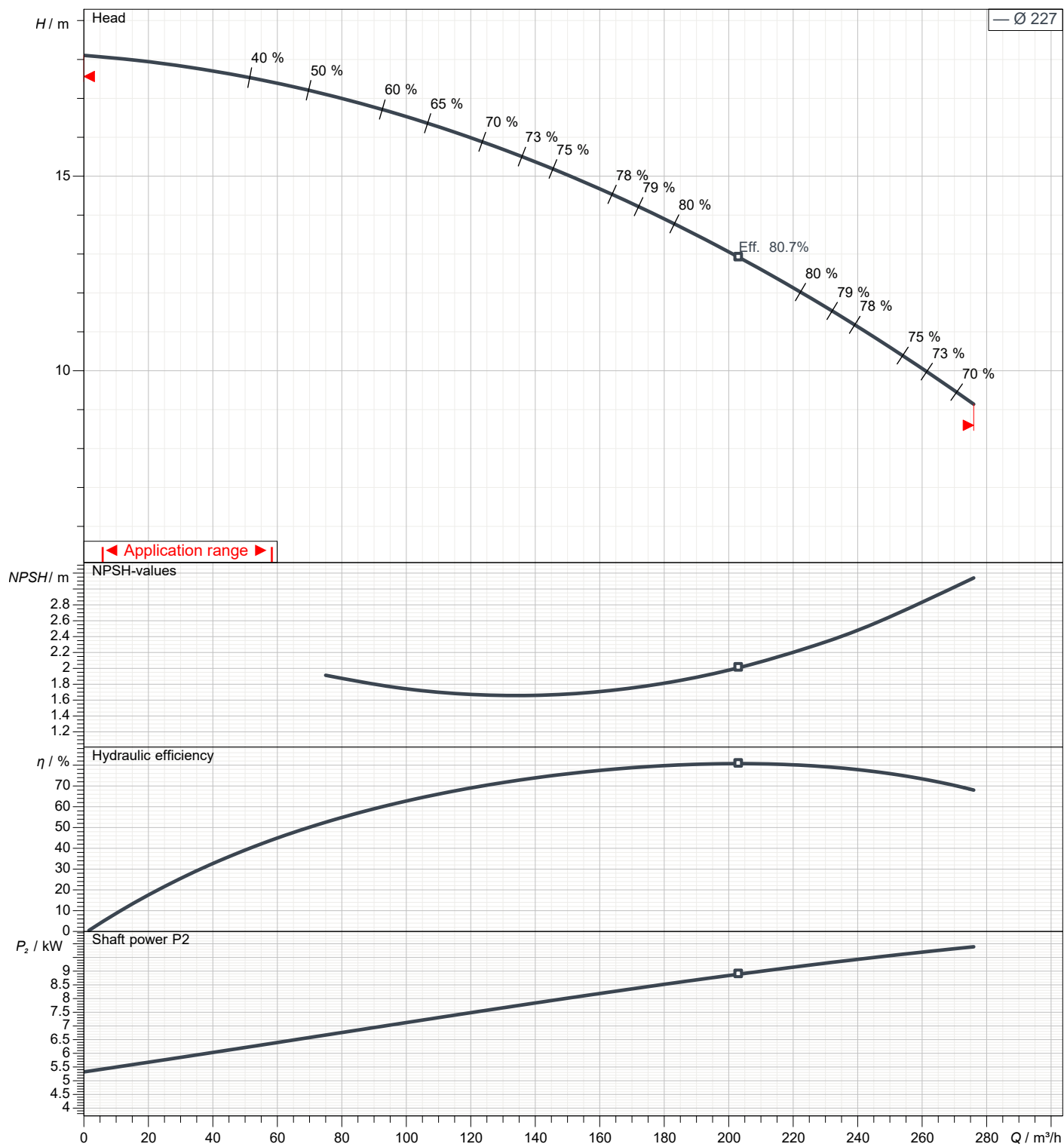
|   |               |      |  |
|---|---------------|------|--|
| 1 | Flow          | m³/h |  |
| 2 | Head          | m    |  |
| 3 | Geodetic head | m    |  |

## Pump

|                            |      |     |                 |     |      |
|----------------------------|------|-----|-----------------|-----|------|
| Operating Flow             | m³/h |     | Frequency       | Hz  | 50   |
| Operating Head             | m    |     | Number of poles |     | 4    |
| Impeller Diameter Designed | mm   | 227 | Speed           | rpm | 1450 |

Test standard: ISO 9906:2012 - Grade3B

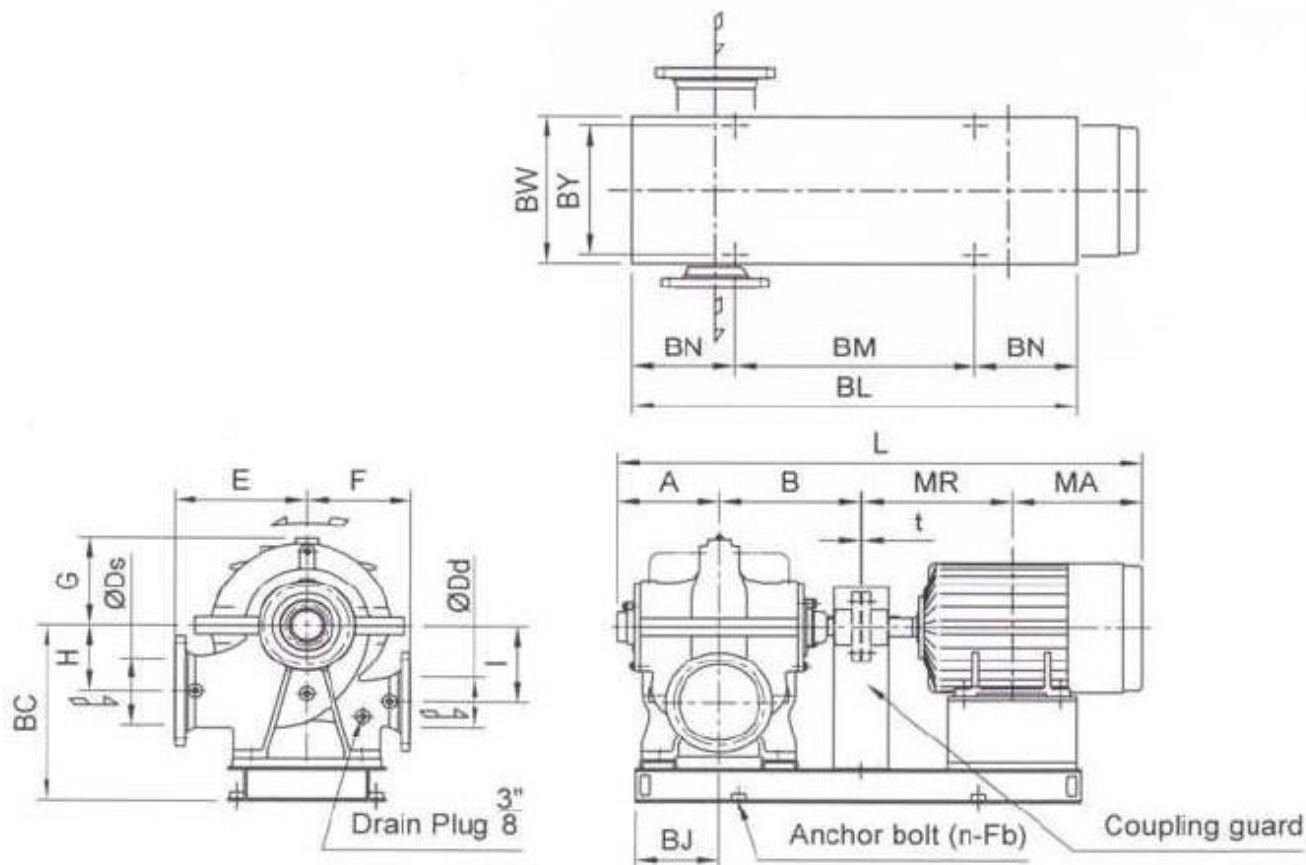
Water; 20°C; 998.3kg/m³; 1.005mm²/s



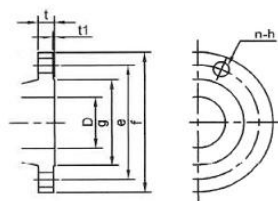
# Dimensions

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## Flange Dimension - Flange (JIS 16K RF)



Total weight : 441 kg

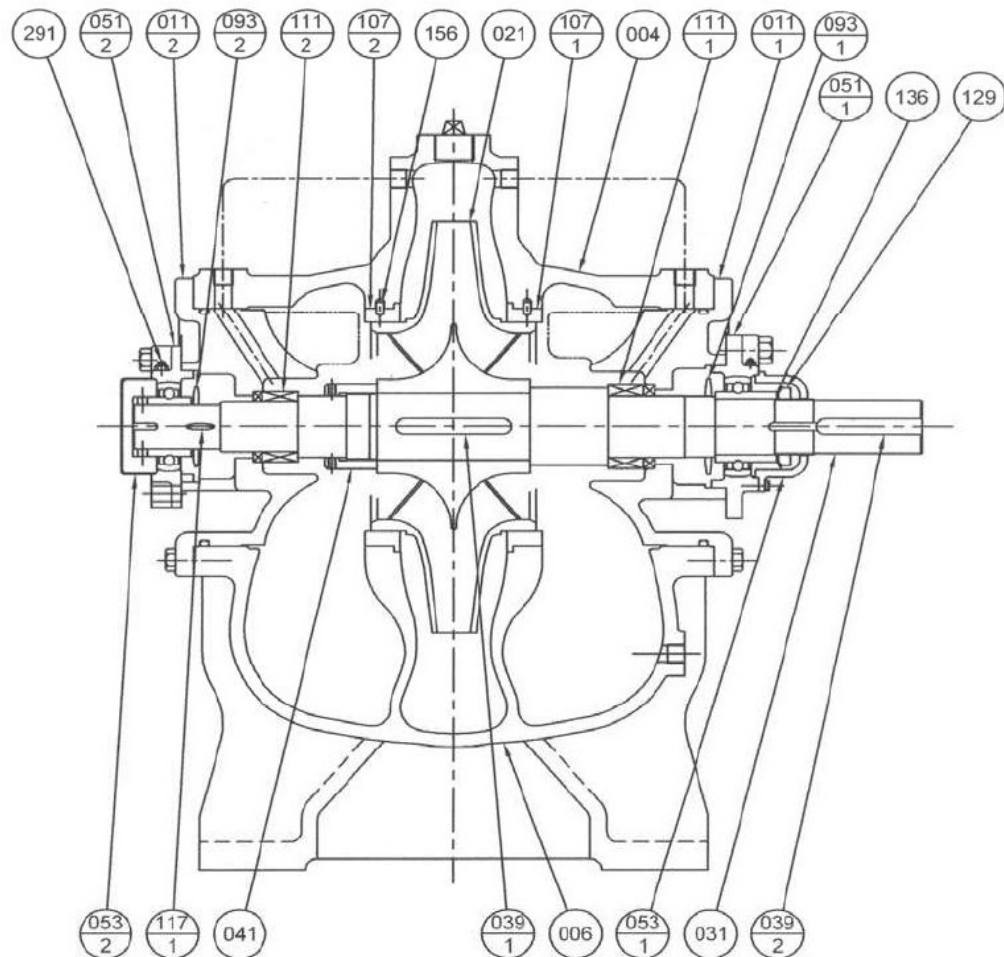
| Pump dimensions mm |      |    |         | Suction side mm |         | Discharge side mm |         |
|--------------------|------|----|---------|-----------------|---------|-------------------|---------|
| A                  | 262  | H  | 180     | D               | 150     | D                 | 150     |
| B                  | 370  | I  | 170     | e               | 260     | e                 | 260     |
| BC                 | 471  | L  | 1243    | f               | 305     | f                 | 305     |
| BJ                 | 210  | MA | 285     | g               | 230     | g                 | 230     |
| BL                 | 1050 | MR | 323     | h               | 25      | h                 | 25      |
| BM                 | 700  | n  | 4 (Num) | n Num           | 8 (Num) | n Num             | 8 (Num) |
| BN                 | 175  | t  | 3       | t               | 28      | t                 | 28      |
| BW                 | 450  |    |         | t1              | 2       | t1                | 2       |
| BY                 | 400  |    |         |                 |         |                   |         |
| Dd                 | 150  |    |         |                 |         |                   |         |
| Ds                 | 150  |    |         |                 |         |                   |         |
| E                  | 330  |    |         |                 |         |                   |         |
| F                  | 290  |    |         |                 |         |                   |         |
| Fb                 | M16  |    |         |                 |         |                   |         |
| G                  | 205  |    |         |                 |         |                   |         |

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## Construction

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### Mechanical Seal Type (Standard)

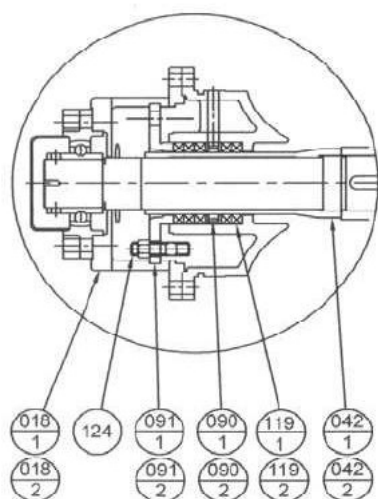
| 051-2 | Bearing Unit      | FC200               | 1             | 291   | Grease Nipple        | C3604BD-F | 2   |
|-------|-------------------|---------------------|---------------|-------|----------------------|-----------|-----|
| 051-1 | Bearing Unit      |                     |               | 156   | Lock Pin             | SUS304    |     |
| 041   | Impeller Nut      | BC6                 |               | 136   | Bearing Washer       | SS400     | 1   |
| 039-2 | Coupling Key      | S50C                |               | 129   | Bearing Nut          |           |     |
| 039-1 | Impeller Key      | 316 Stainless Steel |               | 117-1 | Gasket (Casing)      | V#6500    |     |
| 031   | Shaft             |                     |               | 111-2 | Mechanical Seal      | -         |     |
| 021   | Impeller          | BC6                 |               | 111-1 | Mechanical Seal      | -         | 2   |
| 011-2 | Side Cover        | FC250               |               | 107   | Casing Wear Ring     | BC6       |     |
| 011-1 | Side Cover        |                     |               | 093-2 | Deflector (CCP Side) | Rubber    | 1   |
| 006   | Casing Lower Half |                     |               | 093-1 | Deflector (CP Side)  |           |     |
| 004   | Casing Upper Half |                     |               | 053-2 | Bearing Cover        | FC200     |     |
|       |                   | 053-1               | Bearing Cover |       |                      |           |     |
| No.   | Part Name         | Material            | Qty           | No.   | Part Name            | Material  | Qty |

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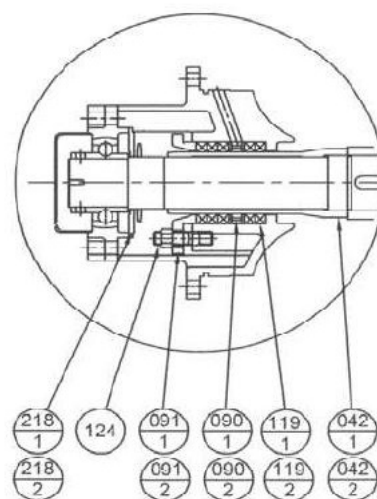
## Construction

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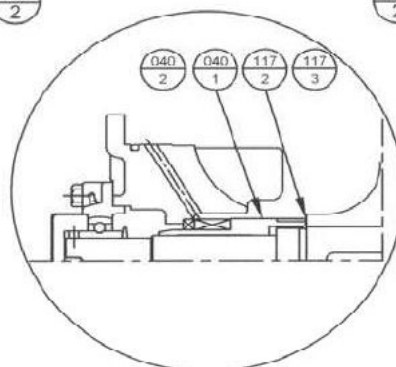
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Gland Packing  
Type 1 (Option)



Gland Packing  
Type 2 (Option)



Mechanical Seal with  
Shaft Sleeve  
(Option)

### **Gland Packing Type 2 (Option)**

|       |                                |           |   |       |                          |                  |   |
|-------|--------------------------------|-----------|---|-------|--------------------------|------------------|---|
| 042-2 | Shaft Sleeve (CCP Side)        | BC6       | 1 | 119-2 | Gland Packing (CCP Side) | Carbonised Fiber | 5 |
| 042-1 | Shaft Sleeve (CP Side)         |           |   | 119-1 | Gland Packing (CP Side)  | Carbonised Fiber | 5 |
| 218-2 | Bearing Cover Plate (CCP Side) | FC150     | 1 | 090-2 | Lantern Ring (CCP Side)  | BC6              | 1 |
| 218-1 | Bearing Cover Plate (CP Side)  |           |   | 090-1 | Lantern Ring (CP Side)   |                  |   |
| 124   | Gland Bolt                     | C3604BD-F | 4 | 091-2 | Gland (CCP Side)         |                  |   |
|       |                                |           |   | 091-1 | Gland (CP Side)          |                  |   |

### **Gland Packing Type 1 (Option)**

|       |                            |           |   |       |                          |                  |   |
|-------|----------------------------|-----------|---|-------|--------------------------|------------------|---|
| 042-2 | Shaft Sleeve (CCP Side)    | BC6       | 1 | 119-2 | Gland Packing (CCP Side) | Carbonised Fiber | 5 |
| 042-1 | Shaft Sleeve (CP Side)     |           |   | 119-1 | Gland Packing (CP Side)  | Carbonised Fiber | 5 |
| 018-2 | Bearing Support (CCP Side) | FC200     | 1 | 090-2 | Lantern Ring (CCP Side)  | BC6              | 1 |
| 018-1 | Bearing Support (CP Side)  |           |   | 090-1 | Lantern Ring (CP Side)   |                  |   |
| 124   | Gland Bolt                 | C3604BD-F | 4 | 091-2 | Gland (CCP Side)         |                  |   |
|       |                            |           |   | 091-1 | Gland (CP Side)          |                  |   |

### **Mechanical Seal with Shaft Sleeve Type (Option)**

|       |                         |          |     |       |                          |          |     |
|-------|-------------------------|----------|-----|-------|--------------------------|----------|-----|
| 040-2 | Shaft Sleeve (CCP Side) | BC6      | 1   | 117-3 | Sleeve Gasket (CCP Side) | V#6500   | 1   |
| 040-1 | Shaft Sleeve (CP Side)  | BC6      |     | 117-2 | Sleeve Gasket (CP Side)  | V#6500   |     |
| No.   | Part Name               | Material | Qty | No.   | Part Name                | Material | Qty |



**EBARA**