

# AC INDUCTION MOTOR DATA SHEET

|                                                |                                                                                                                               |                                                                              |                                                              |                                                                         |                       |           |           |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------|-----------|-----------|
| Model No.or RFQ No.                            |                                                                                                                               | Item No.                                                                     |                                                              | Rev. No. [ 0 ]                                                          |                       |           |           |
| Project Name                                   |                                                                                                                               | Project No.                                                                  |                                                              | Quantity sets                                                           |                       |           |           |
| <b>GENERAL SPECIFICATION</b>                   |                                                                                                                               |                                                                              | <b>PERFORMANCE DATA</b>                                      |                                                                         |                       |           |           |
| Frame Size                                     | 225S                                                                                                                          |                                                                              | Rated Output                                                 | 45 kW 60 HP                                                             |                       |           |           |
| Type                                           | HS-45/6                                                                                                                       |                                                                              | Number of Poles                                              | 6                                                                       |                       |           |           |
| Enclosure(Protection)                          | Totally Enclosed ( IP55 )                                                                                                     |                                                                              | Rotor Type                                                   | Squirrel Cage                                                           |                       |           |           |
| Method of Cooling                              | IC411(FC)                                                                                                                     |                                                                              | Starting Method*                                             | <input checked="" type="checkbox"/> D.O.L <input type="checkbox"/> Y- Δ |                       |           |           |
| Rated Frequency                                | 60 Hz                                                                                                                         |                                                                              | Rated Voltage                                                | 440 V                                                                   | 380 V 220 V           |           |           |
| Number of Phases                               | 3                                                                                                                             |                                                                              | Current                                                      | Full Load                                                               | 75.6 A 87.5 A 151.1 A |           |           |
| Insulation Class                               | <input checked="" type="checkbox"/> F <input type="checkbox"/> B <input type="checkbox"/> H                                   |                                                                              |                                                              | Locked-rotor**                                                          | 630 % 630 % 630 %     |           |           |
| Temp. Rise at full load (by resistance method) |                                                                                                                               |                                                                              | Efficiency                                                   |                                                                         |                       |           |           |
| at 1.0 S.F 80 deg. C                           |                                                                                                                               |                                                                              | 50% Load 93.3 %                                              |                                                                         |                       |           |           |
| Motor Location                                 | <input checked="" type="checkbox"/> Indoor <input type="checkbox"/> Outdoor                                                   |                                                                              | 75% Load 93.7 %                                              |                                                                         |                       |           |           |
| Altitude                                       | Less than 1000 meter                                                                                                          |                                                                              | 100% Load 93.6 %                                             |                                                                         |                       |           |           |
| Relative Humidity                              | Less than 80 %                                                                                                                |                                                                              | Power Factor(p.u)                                            |                                                                         |                       |           |           |
| Ambient Temp.                                  | 40 deg. C (Max.)                                                                                                              |                                                                              | 50% Load 0.750                                               |                                                                         |                       |           |           |
| Duty Type                                      | Continuous ( S1 )                                                                                                             |                                                                              | 75% Load 0.825                                               |                                                                         |                       |           |           |
| Service Factor                                 | 1.15                                                                                                                          |                                                                              | 100% Load 0.835                                              |                                                                         |                       |           |           |
| Mounting                                       | <input type="checkbox"/> B3 <input checked="" type="checkbox"/> B5 <input type="checkbox"/> V1 <input type="checkbox"/> B3/B5 |                                                                              | Speed at Full Load 1185 r.p.m                                |                                                                         |                       |           |           |
| Bearing                                        | Type                                                                                                                          | Anti-Friction                                                                | Torque                                                       |                                                                         |                       |           |           |
|                                                | DE/N-DE                                                                                                                       | 6314C3 / 6213C3                                                              | Full Load 37.0 kg·m                                          |                                                                         |                       |           |           |
|                                                | Lubricant                                                                                                                     | Grease(Gadus S2 V 100 2)                                                     | Locked-rotor** 150 %                                         |                                                                         |                       |           |           |
| External Thrust                                | Not applicable                                                                                                                |                                                                              | Breakdown** 230 %                                            |                                                                         |                       |           |           |
| Coupling Method                                | <input checked="" type="checkbox"/> Direct <input type="checkbox"/> V-Belt                                                    |                                                                              | Moment of Inertia (J)                                        |                                                                         |                       |           |           |
| Shaft Extension                                | <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double                                                    |                                                                              | Load(Max.) 101.050 kg·m²                                     |                                                                         |                       |           |           |
| Terminal Box                                   | Main                                                                                                                          | <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Cast Iron | Motor 1.555 kg·m²                                            |                                                                         |                       |           |           |
|                                                | Aux.                                                                                                                          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          | Sound Pressure Level (No-load & mean value at 1m from motor) |                                                                         |                       |           |           |
|                                                | Location                                                                                                                      | Refer to Outline Drawing                                                     | 73 dB(A)                                                     |                                                                         |                       |           |           |
| Application                                    |                                                                                                                               |                                                                              | Vibration 2.2 mm/sec (r.m.s)                                 |                                                                         |                       |           |           |
| Area classification                            | Non-Hazardous                                                                                                                 |                                                                              | Permissible number of                                        |                                                                         |                       |           |           |
| Type of Ex-Protection                          | Not applicable                                                                                                                |                                                                              | consecutive starts Cold 3 times                              |                                                                         |                       |           |           |
| Applicable Standard                            | KS,IEC,NEMA MG1 Part30(Vpeak)                                                                                                 |                                                                              | Hot 2 times                                                  |                                                                         |                       |           |           |
|                                                |                                                                                                                               |                                                                              | Paint                                                        | Munsell No.                                                             | 4.0PB5.4/5.5(VL-451)  |           |           |
| <b>ACCESSORIES</b>                             |                                                                                                                               |                                                                              | <b>SUBMITTAL DRAWING</b>                                     |                                                                         |                       |           |           |
|                                                |                                                                                                                               |                                                                              | Outline Dimension Drawing \ Motor Weight(Approx.)            |                                                                         |                       |           |           |
|                                                |                                                                                                                               |                                                                              | B3                                                           |                                                                         | kg                    |           |           |
|                                                |                                                                                                                               |                                                                              | B5                                                           |                                                                         | TJ25BP51 420 kg       |           |           |
|                                                |                                                                                                                               |                                                                              | V1                                                           |                                                                         | kg                    |           |           |
|                                                |                                                                                                                               |                                                                              | B3/B5                                                        |                                                                         | kg                    |           |           |
|                                                |                                                                                                                               |                                                                              | Main T-Box Ass'y                                             |                                                                         |                       | 3M-016881 |           |
| <b>SPARE PARTS</b>                             |                                                                                                                               |                                                                              | <b>REMARK</b>                                                |                                                                         |                       |           |           |
|                                                |                                                                                                                               |                                                                              | High Efficiency                                              |                                                                         |                       |           |           |
|                                                |                                                                                                                               |                                                                              | *. For use on PWM VFD 10:1VT, 3:1CT@1.0S.F&F Temp. rise      |                                                                         |                       |           |           |
|                                                |                                                                                                                               |                                                                              |                                                              |                                                                         |                       |           |           |
|                                                |                                                                                                                               |                                                                              | Date                                                         | DSND                                                                    | CHKD                  | CHKD      | APPD      |
|                                                |                                                                                                                               |                                                                              | 2010-05-28                                                   | R.G. KIM                                                                | O.J. KIM              | J.H. KIM  | K.J. KANG |

Note: Others not mentioned in this data sheet shall be in accordance with maker standard.

Above technical data are only design values and shall be guaranteed with tolerance of applicable standard.

Inspection and performance test shall be maker standard, if not mentioned.

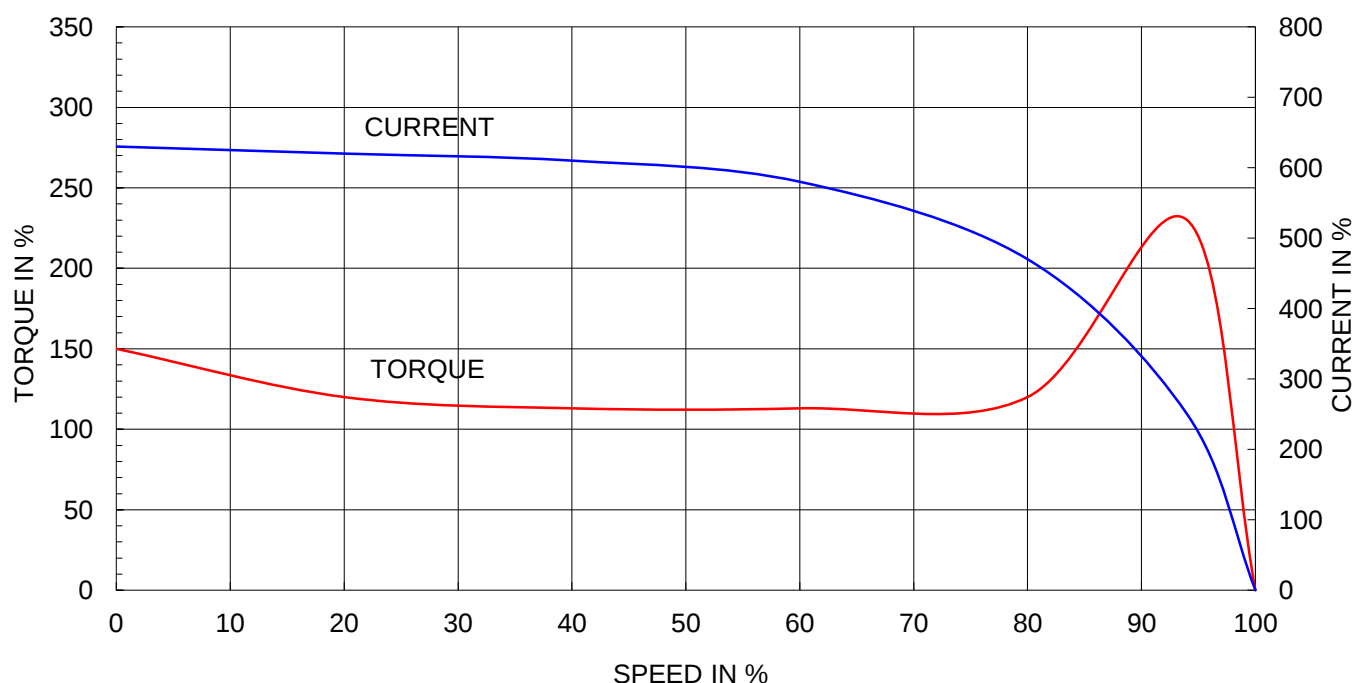
\* In case of Inverter-Fed Motor, performance data is based on sine wave tests.

\*\* Data is based on when the motor is supplied at rated voltage & frequency, and the data is expressed as a percentage of full-load value.

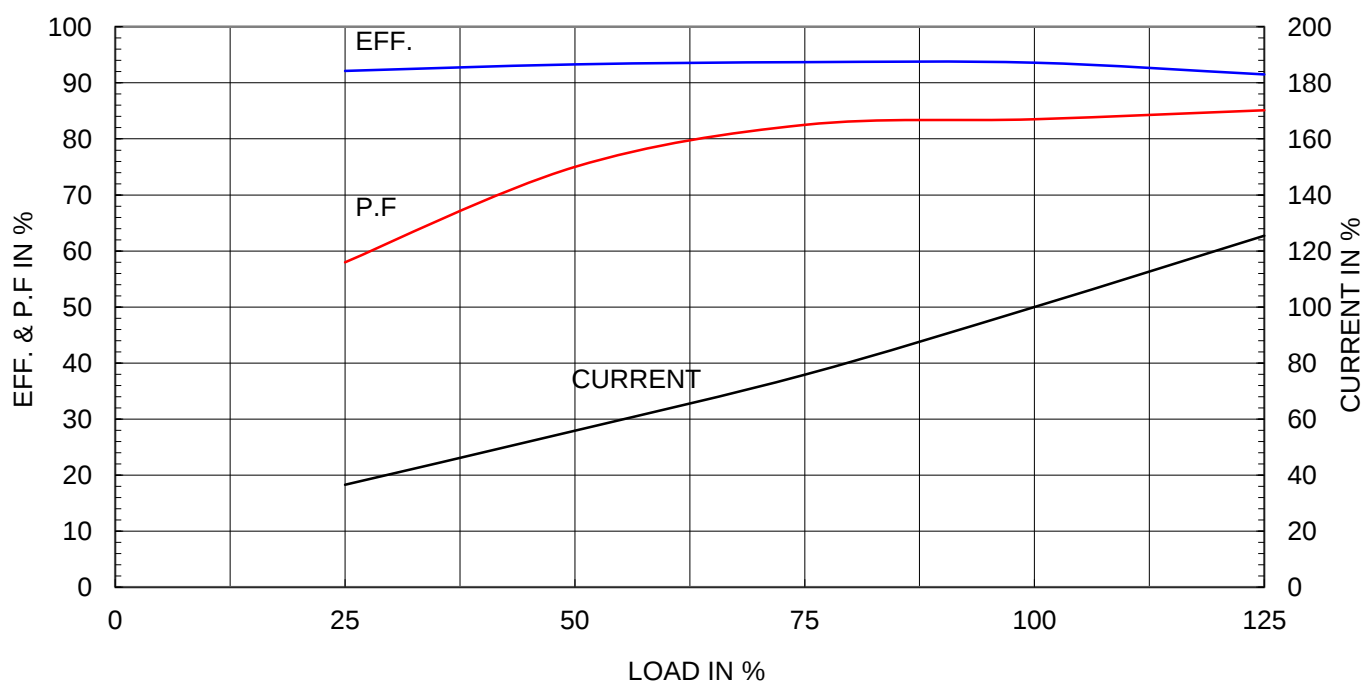
|                             |   |                           |
|-----------------------------|---|---------------------------|
| Type                        | : | HS                        |
| Full Load Torque            | : | 37.0 Kg.m                 |
| Motor moment of Inertia (J) | : | 1.555 Kg.m <sup>2</sup>   |
| Load moment of Inertia (J)  | : | 101.050 Kg.m <sup>2</sup> |

|                      |       |       |        |          |  |
|----------------------|-------|-------|--------|----------|--|
| 45 kW                |       | 6 P   |        | 60 Hz    |  |
| Speed at Full Load : |       |       |        | 1185 RPM |  |
| Rated Voltage        | 440V  | 380V  | 220V   |          |  |
| Full Load Current    | 75.6A | 87.5A | 151.1A |          |  |

SPEED VS TORQUE & CURRENT CURVE



OUTPUT VS EFF., P.F & CURRENT CURVE



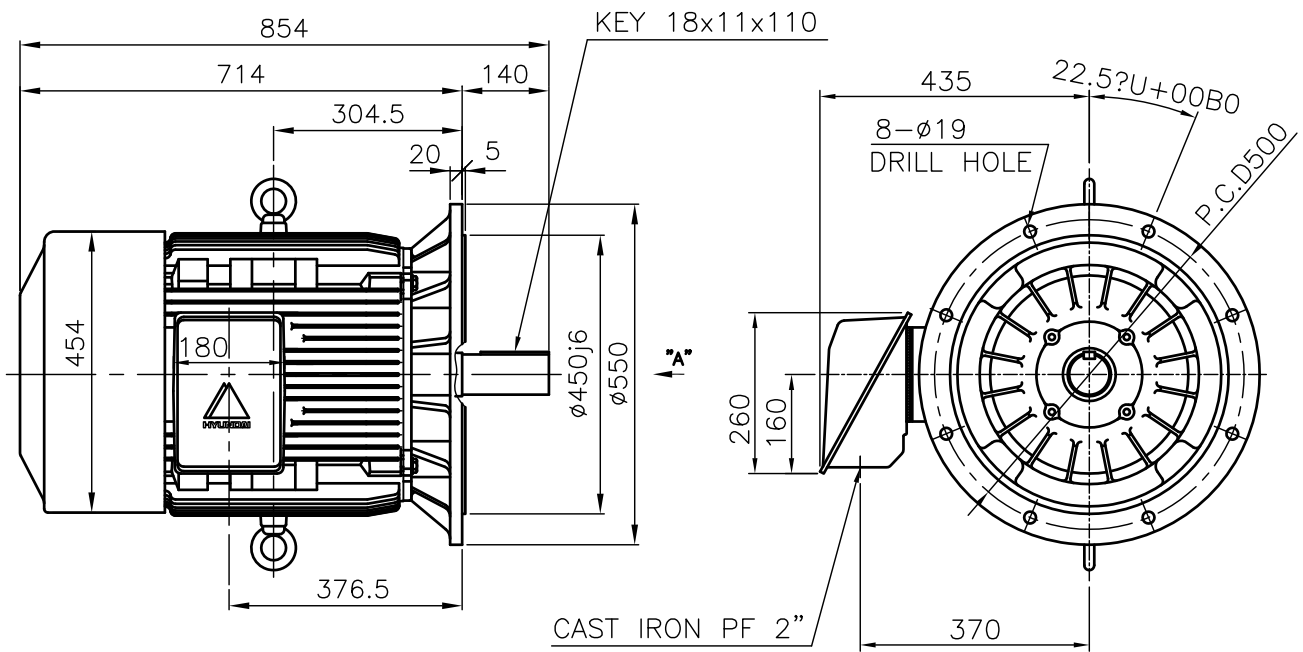
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|--------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------|--|-------------|------------------|
|  <b>HYUNDAI</b><br>HEAVY INDUSTRIES CO., LTD. |  | <b>TEFC</b><br><b>THREE PHASE INDUCTION MOTOR</b> |  | <b>TYPE</b> | (1)<br>TNB , TDB |
|                                                                                                                                |  |                                                   |  |             | CAST IRON FRAME  |

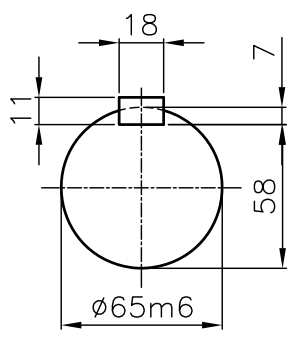


NOTE

1.TOLERANCE :

|                 |        |                  |
|-----------------|--------|------------------|
| RABBET DIAMETER | ø450j6 | ±0.020           |
| SHAFT DIAMETER  | ø65m6  | +0.030<br>+0.011 |
| KEYWAY WIDTH    | 18P9   | -0.018<br>-0.061 |
| KEYWAY DEPTH    | 7      | +0.2<br>0        |

2.The type (1)-"TNB, TDB" is for HHI's standard products and it can be changed for customer's requirements or detail designing.



|                    |      |
|--------------------|------|
| TEFC STANDARD      |      |
| CAD PROJ           | FILE |
| MMSTD MTR/TJ25BP51 |      |

|         |               |          |            |
|---------|---------------|----------|------------|
| APPD BY | KANG K.J.     | UNIT     | MM         |
| CHKD BY | KIM O.J.      | SCALE    | 1/13       |
| CHKD BY | LEE N.D.      | PROJEC'N | 3rd Angle  |
| DSND BY | KIM RYANG GYU | DATE     | 2007.03.23 |

|         |                                        |                |
|---------|----------------------------------------|----------------|
| SUBJECT | KS Fr.225 TEFC                         |                |
| TITLE   | OUTLINE<br>THREE-PHASE INDUCTION MOTOR |                |
| REF. NO | L3-Series                              | Sheet No. of   |
| DWG NO  | TJ25BP51                               | Revision No. 0 |

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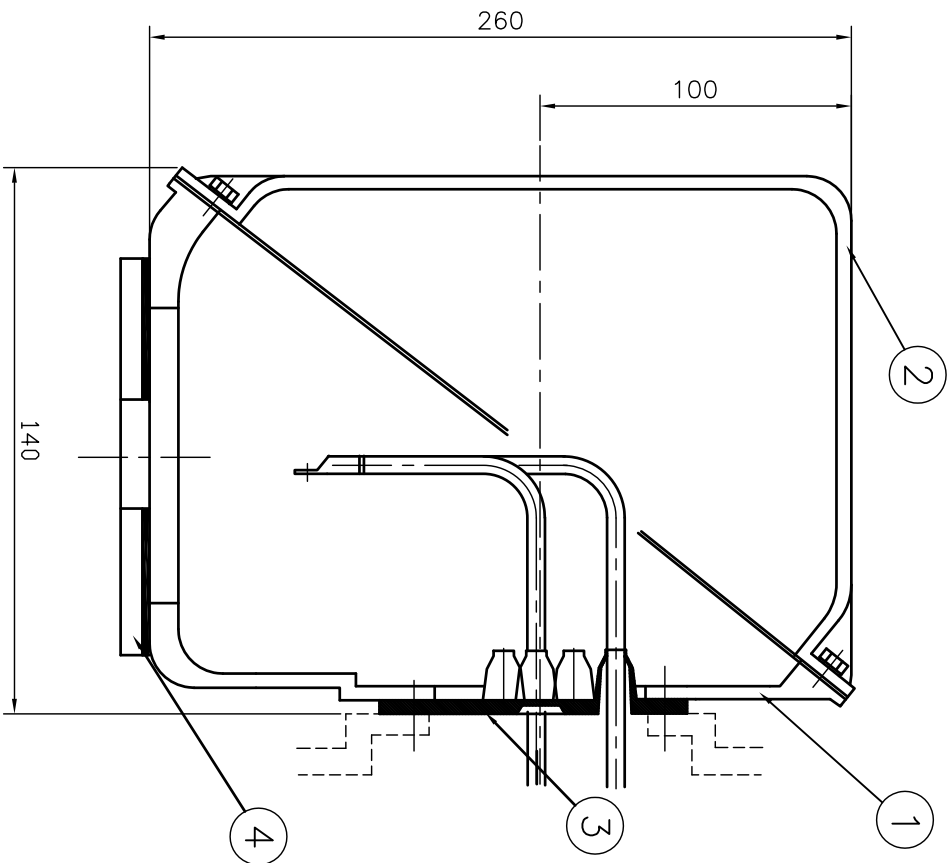
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D

C

B

A



|                                                                                                                                       |                    |           |                 |  |           |  |                    |              |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|-----------------|--|-----------|--|--------------------|--------------|--------------------------------------|
| 1                                                                                                                                     | EARTH TERMINAL LUG |           |                 |  |           |  |                    |              | 5                                    |
| 1                                                                                                                                     | CABLE ENTRY PLATE  |           |                 |  |           |  |                    |              | 4                                    |
| 1                                                                                                                                     | GASKET             |           | NBR             |  |           |  |                    |              | 3                                    |
| 1                                                                                                                                     | TERMINAL BOX COVER |           | CAST IRON       |  |           |  |                    |              | 2                                    |
| 1                                                                                                                                     | TERMINAL BOX BODY  |           | CAST IRON       |  |           |  |                    |              | 1                                    |
| QTY                                                                                                                                   | DESCRIPTION        |           | MATERIAL        |  | DIMENSION |  | WEIGHT             | PART NO.     | REMARK NO.                           |
| APPD BY                                                                                                                               | 김 진 오              | UNIT      | MM              |  | SUBJECT   |  | HLA6 - 200, 225Fr. |              | CAD PROJ & FILE & T-BOX-M \ 35016881 |
| Q.P CHK                                                                                                                               | 조 영 결              | SCALE     | NONE            |  | TITLE     |  | (CAST IRON)        |              |                                      |
| CHKD BY                                                                                                                               | 권 오 철              | PROJEC'TN | 3 차각(3rd Angle) |  |           |  | TERMINAL BOX ASS'Y |              |                                      |
| DSND BY                                                                                                                               | 김 현 태              | DATE      | 92.06.05        |  |           |  |                    |              |                                      |
|                                                                                                                                       |                    |           |                 |  | REF. NO   |  |                    | Sheet No.    | of                                   |
|                                                                                                                                       |                    |           |                 |  | DWG NO    |  | 3M-016881          | Revision No. | 0                                    |
|  <b>HYUNDAI</b><br>ELECTRICAL ENGINEERING CO., LTD. |                    |           |                 |  |           |  |                    |              |                                      |
| 6                                                                                                                                     | 7                  | 8         | 9               |  |           |  |                    |              |                                      |