

# 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                                                                                                                             | 280L                                                                                        |                                                                              | Rated Output                                            | 160 kW 214 HP                                                           |                         |           |           |
| Type                                                                                                                                   | HS-160/4                                                                                    |                                                                              | Number of Poles                                         | 4                                                                       |                         |           |           |
| 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                                                               | 251.1 A 290.8 A 502.3 A |           |           |
| Insulation Class                                                                                                                       | <input checked="" type="checkbox"/> F <input type="checkbox"/> B <input type="checkbox"/> H |                                                                              |                                                         | Locked-rotor**                                                          | 670 % 670 % 670 %       |           |           |
| Temp. Rise at full load (by resistance method)                                                                                         |                                                                                             |                                                                              | Efficiency                                              |                                                                         |                         |           |           |
| at 1.0 S.F 80 deg. C                                                                                                                   |                                                                                             |                                                                              | 50% Load 94.6 %                                         |                                                                         |                         |           |           |
| Motor Location <input checked="" type="checkbox"/> Indoor <input type="checkbox"/> Outdoor                                             |                                                                                             |                                                                              | 75% Load 95.1 %                                         |                                                                         |                         |           |           |
| Altitude Less than 1000 meter                                                                                                          |                                                                                             |                                                                              | 100% Load 95.0 %                                        |                                                                         |                         |           |           |
| Relative Humidity Less than 80 %                                                                                                       |                                                                                             |                                                                              | Power Factor(p.u)                                       |                                                                         |                         |           |           |
| Ambient Temp. 40 deg. C (Max.)                                                                                                         |                                                                                             |                                                                              | 50% Load 0.810                                          |                                                                         |                         |           |           |
| Duty Type Continuous ( S1 )                                                                                                            |                                                                                             |                                                                              | 75% Load 0.875                                          |                                                                         |                         |           |           |
| Service Factor 1.15                                                                                                                    |                                                                                             |                                                                              | 100% Load 0.880                                         |                                                                         |                         |           |           |
| Mounting <input checked="" type="checkbox"/> B3 <input type="checkbox"/> B5 <input type="checkbox"/> V1 <input type="checkbox"/> B3/B5 |                                                                                             |                                                                              | Speed at Full Load 1785 r.p.m                           |                                                                         |                         |           |           |
| Bearing                                                                                                                                | Type                                                                                        | Anti-Friction                                                                |                                                         | Torque                                                                  |                         |           |           |
|                                                                                                                                        | DE/N-DE                                                                                     | 6318C3 / 6316C3                                                              |                                                         | Full Load 87.3 kg·m                                                     |                         |           |           |
|                                                                                                                                        | Lubricant                                                                                   | Grease(Gadus S2 V 100 2)                                                     |                                                         | Locked-rotor** 170 %                                                    |                         |           |           |
| 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.) 97.250 kg·m²                                 |                                                                         |                         |           |           |
| Terminal Box                                                                                                                           | Main                                                                                        | <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Cast Iron |                                                         | Motor 3.653 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                                                     |                                                         | 85 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                                                      | TJ8LAP51                                                                | 840 kg                  |           |           |
|                                                                                                                                        |                                                                                             |                                                                              | B5                                                      |                                                                         | kg                      |           |           |
|                                                                                                                                        |                                                                                             |                                                                              | V1                                                      |                                                                         | kg                      |           |           |
|                                                                                                                                        |                                                                                             |                                                                              | B3/B5                                                   |                                                                         | kg                      |           |           |
|                                                                                                                                        |                                                                                             |                                                                              | Main T-Box Ass'y                                        |                                                                         |                         | 3M-016882 |           |
| <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.

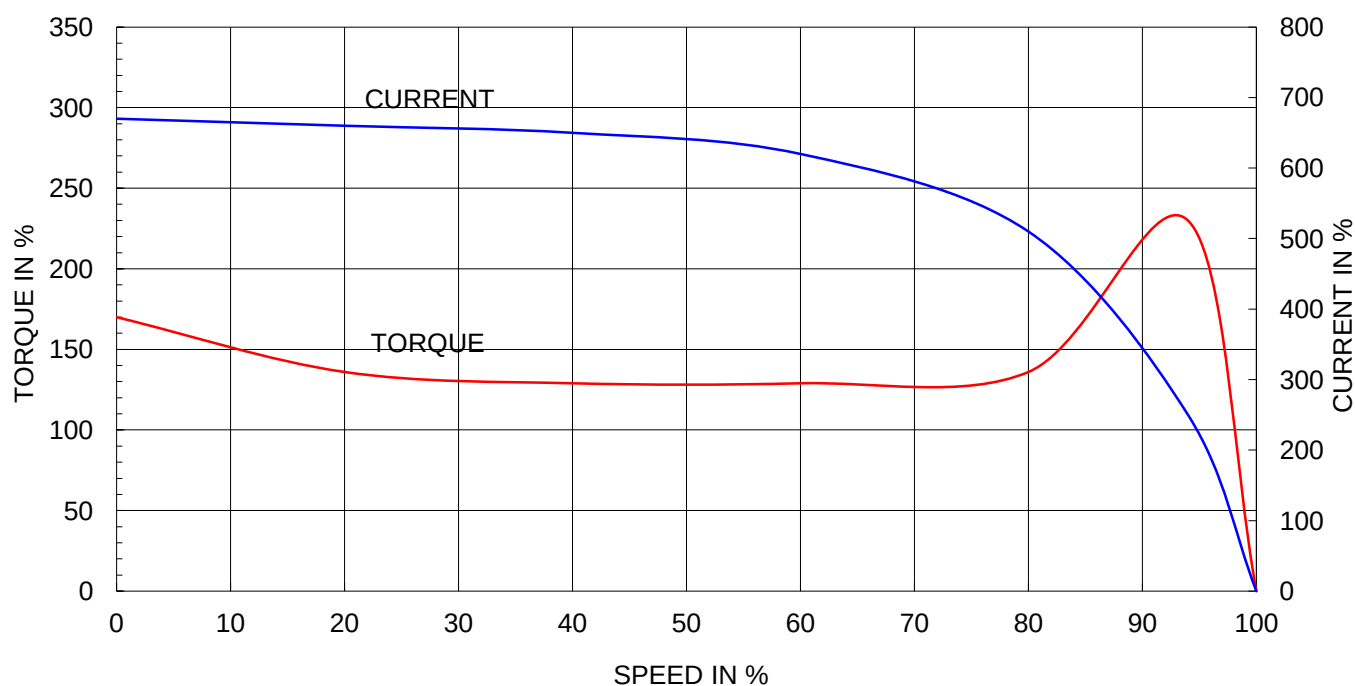
\* In case of Inverter-Fed Motor, performance data is based on sine wave tests.

\*\* 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.

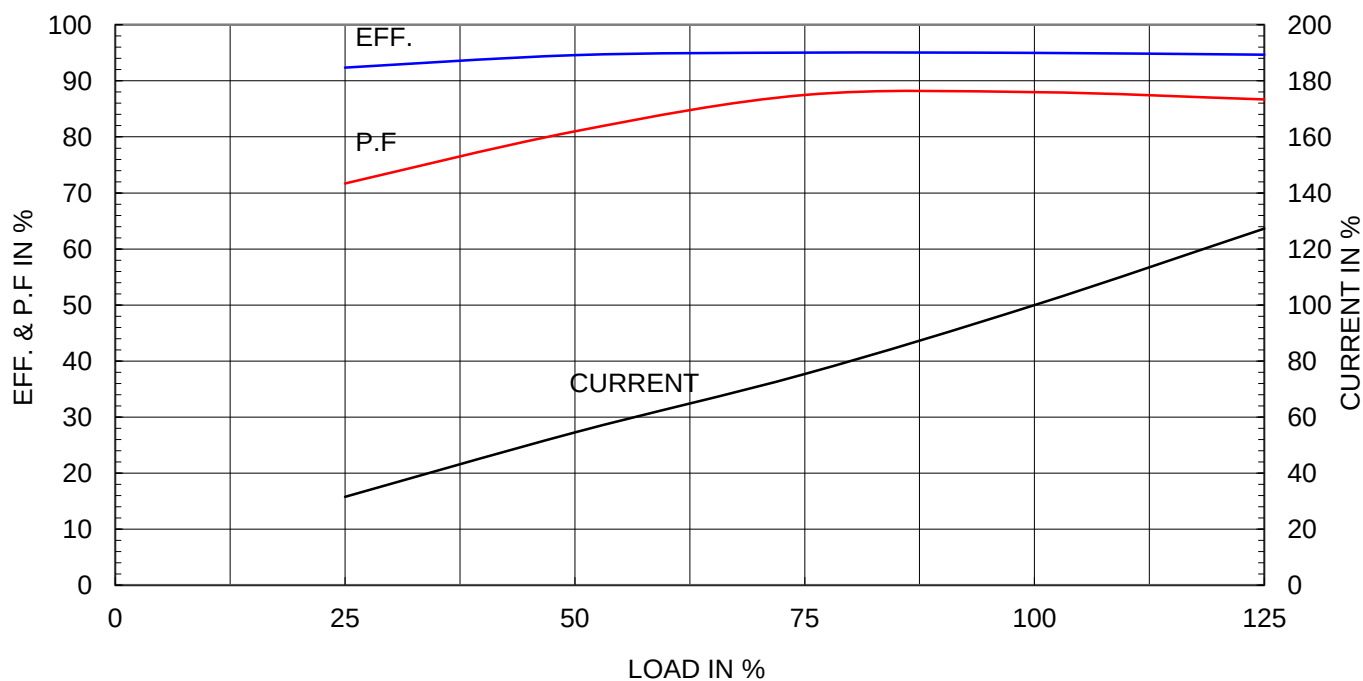
|                             |   |                          |
|-----------------------------|---|--------------------------|
| Type                        | : | HS                       |
| Full Load Torque            | : | 87.3 Kg.m                |
| Motor moment of Inertia (J) | : | 3.653 Kg.m <sup>2</sup>  |
| Load moment of Inertia (J)  | : | 97.250 Kg.m <sup>2</sup> |

|                      |        |        |        |          |  |
|----------------------|--------|--------|--------|----------|--|
| 160 kW               |        | 4 P    |        | 60 Hz    |  |
| Speed at Full Load : |        |        |        | 1785 RPM |  |
| Rated Voltage        | 440V   | 380V   | 220V   |          |  |
| Full Load Current    | 251.1A | 290.8A | 502.3A |          |  |

SPEED VS TORQUE & CURRENT CURVE



OUTPUT VS EFF., P.F & CURRENT CURVE





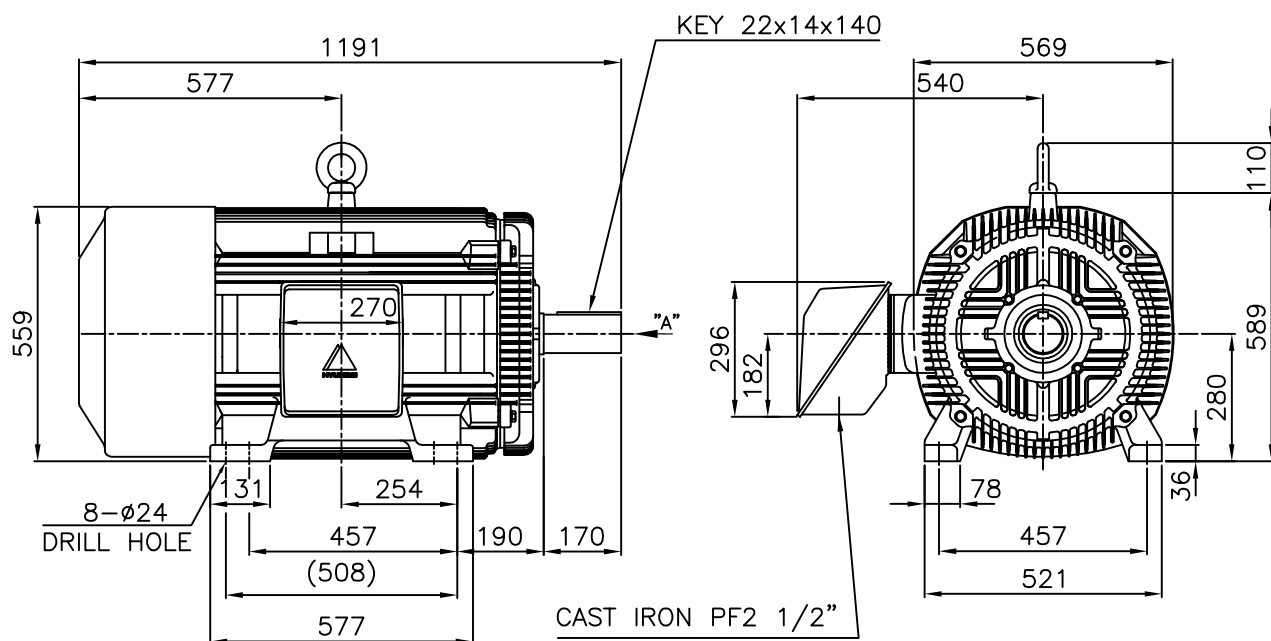
# TEFC

## THREE PHASE INDUCTION MOTOR

**TYPE**

(1) TNB , TDB

CAST IRON FRAME

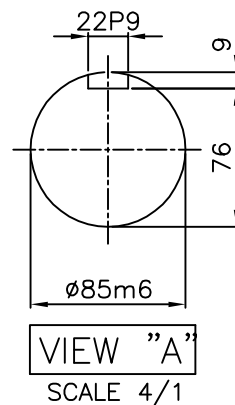


### NOTE

1.TOLERANCE :

|                |                                         |
|----------------|-----------------------------------------|
| CENTER HEIGHT  | 280 <sub>-1.0</sub> <sup>0</sup>        |
| SHAFT DIAMETER | ø85 <sub>+0.013</sub> <sup>+0.035</sup> |
| KEYWAY WIDTH   | 22 <sub>-0.074</sub> <sup>-0.022</sup>  |
| KEYWAY DEPTH   | 9 <sub>0</sub> <sup>+0.2</sup>          |

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



VIEW "A"  
SCALE 4/1

TEFC STANDARD

CAD PROJ \ FILE

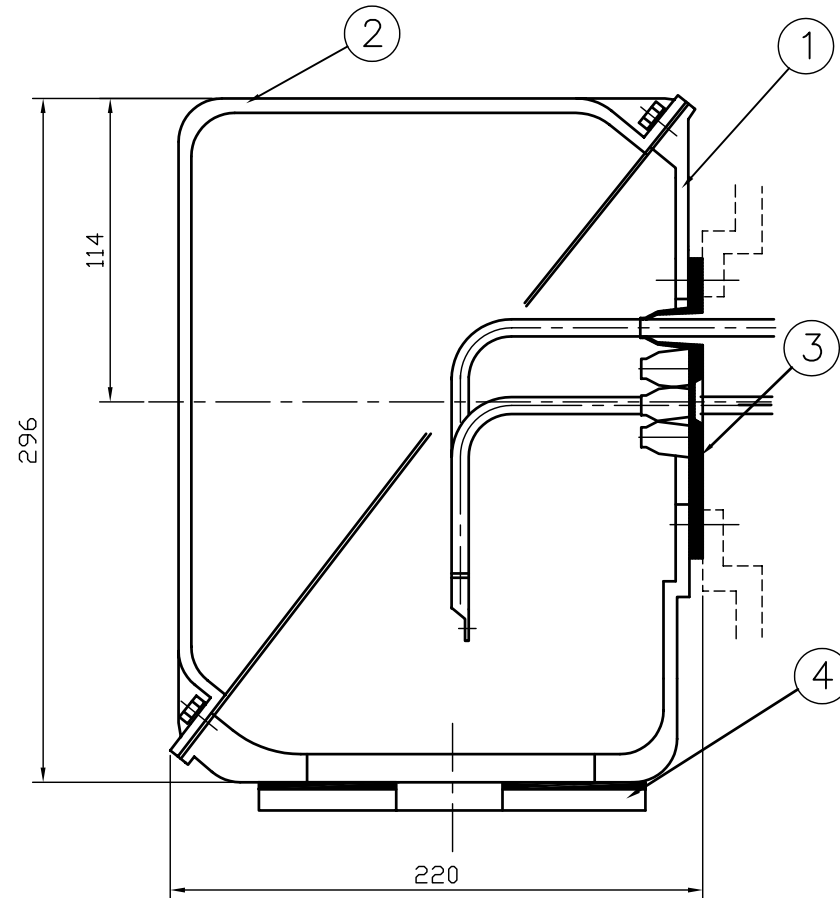
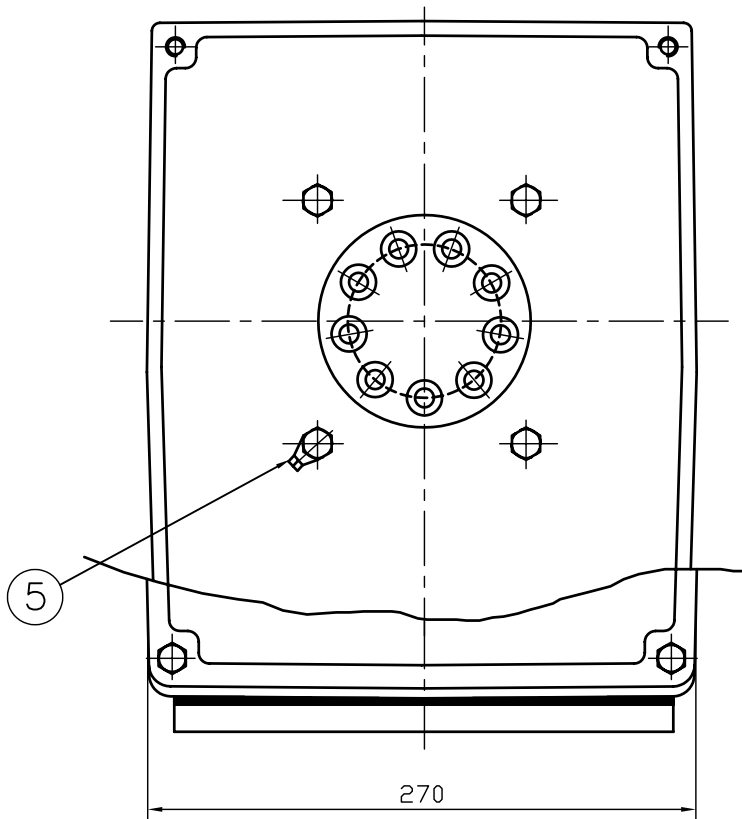
MMSTDMTR/TJ8LAP51

|         |               |          |            |
|---------|---------------|----------|------------|
| APPD BY | KANG K.J.     | UNIT     | MM         |
| CHKD BY | KIM O.J.      | SCALE    | 1/17       |
| CHKD BY |               | PROJEC'N | 3rd Angle  |
| DSND BY | KIM RYANG GYU | DATE     | 2003.08.30 |



|         |                 |              |                                        |
|---------|-----------------|--------------|----------------------------------------|
| SUBJECT | KS Fr.280L TEFC | TITLE        | OUTLINE<br>THREE-PHASE INDUCTION MOTOR |
| REF. NO | L2-Series       | Sheet No.    | of                                     |
| DWG NO  | TJ8LAP51        | Revision No. | 0                                      |

본 도면은 현대중공업(주) 재산이므로 허가없이  
복사할 수 없음 (도면제출 시 유의하시기 바랍니다.)



|                                                                                       |                    |           |                  |                                         |                   |                     |     |
|---------------------------------------------------------------------------------------|--------------------|-----------|------------------|-----------------------------------------|-------------------|---------------------|-----|
| 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   |
| Q'TY                                                                                  | DESCRIPTION        | MATERIAL  | DIMENSION        | WEIGHT                                  | PART NO.          | REMARK              | NO. |
| APPD BY                                                                               | 김 진 오              | UNIT      | MM               | SUBJECT                                 | HLA6 - 250,280Fr. | CAD PROJ ㉠ \ FILE ㉠ |     |
| Q.P. CHK                                                                              | 주 영 겅              | SCALE     | NONE             |                                         |                   | T-BOX-M \ 3R016882  |     |
| CHKD BY                                                                               | 권 오 철              | PROJEC'N  | 3 각법 (3rd Angle) | TITLE (CAST IRON)<br>TERMINAL BOX ASS'Y |                   |                     |     |
| DSND BY                                                                               | 김 현 태              | DATE      | 92.06.05         |                                         |                   |                     |     |
|  |                    |           |                  | REF. NO                                 |                   | Sheet No. of        |     |
|                                                                                       |                    |           |                  | DWG NO                                  | 3M-016882         | Revision No.        |     |

| REV | DATE | CONTENTS | REVD BY | CHKD BY | Q.P. CHK | APPD BY |
|-----|------|----------|---------|---------|----------|---------|
| 1   |      |          |         |         |          |         |
| 2   |      |          |         |         |          |         |
| 3   |      |          |         |         |          |         |
| 4   |      |          |         |         |          |         |