

# US & International explosion hazardous areas

| Differences in codes                 | US NEC 500                               | IEC (see NEC 505)                        |
|--------------------------------------|------------------------------------------|------------------------------------------|
| <i>EX protection philosophy</i>      | <b>Contain</b> explosions.               | <b>Prevent &amp; contain</b> explosions. |
| <i>EX codes writing institutes</i>   | <b>NFPA</b> (mostly industry members)    | <b>IEC</b> (independent members)         |
| <i>EX codes &amp; regulations</i>    | Codes are NOT turned into <b>LAWS</b>    | Codes are turned into <b>LAWS</b>        |
| <i>EX codes enforcement</i>          | <b>Insurance companies / OSHA</b>        | <b>Local Governments</b>                 |
| <i>EX code acceptance / coverage</i> | <b>North America, Mexico &amp; China</b> | <b>Worldwide</b>                         |

|                  | Ignitable concentrations of hazardous material are present <i>all of the time.</i> | Ignitable concentrations of hazardous material are present <i>some of the time.</i> | Ignitable concentrations of hazardous material might, but are not likely to exist. |
|------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| US NEC 500 / IEC | <b>Cl. 1/2/3 - Div. 1*</b>                                                         | <b>Cl. 1/2/3 - Div. 1</b>                                                           | <b>Cl. 1/2/3 - Div. 2</b>                                                          |
| US NEC 505 / IEC | <b>Zone 0*</b>                                                                     | <b>Zone 1 / 21</b>                                                                  | <b>Zone 2 / 22</b>                                                                 |

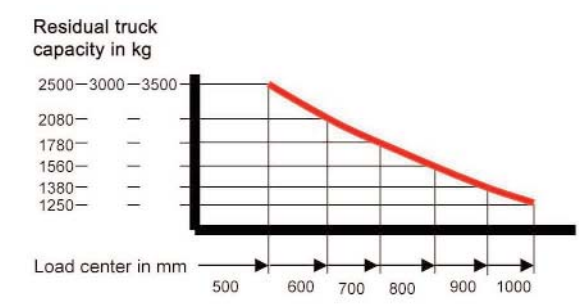
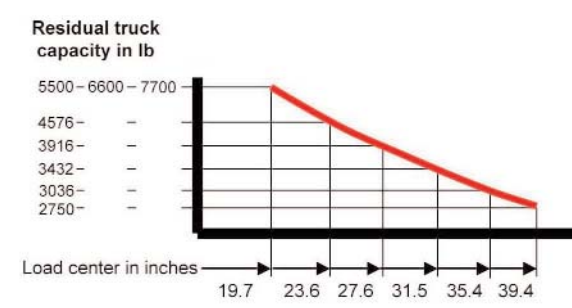
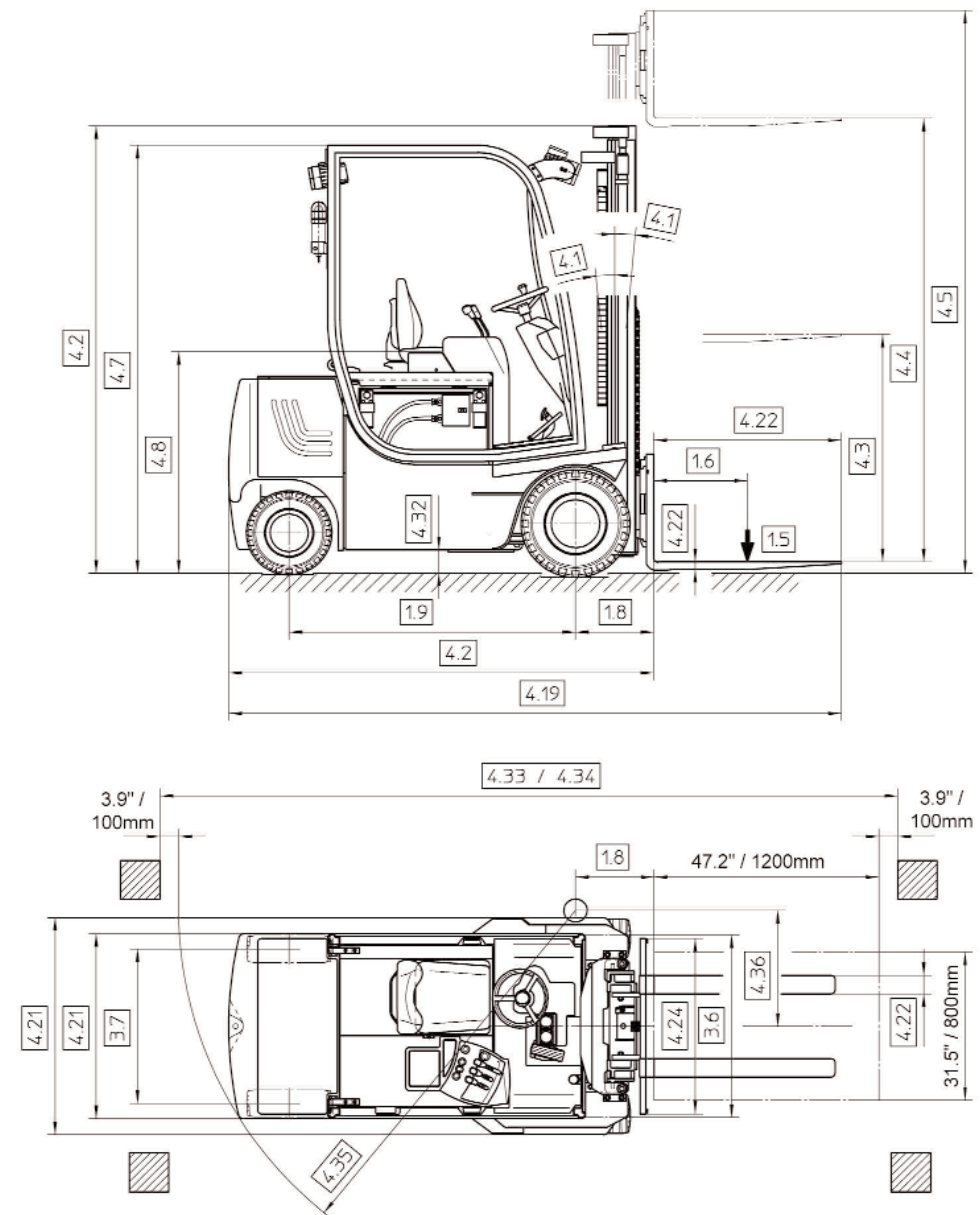
\* Only intrinsically safe electrical equipment may be used in these areas

|                                                    | US NEC 500 / IEC                                                                                                                                                                           | US NEC 505 / IEC                                                                       |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <b>Class I: Flammable Gases, Vapors or Liquids</b> | <b>Division 1:</b> (where ignitable concentrations of Flammable Gasses, vapors or liquids are likely to exist <i>all of the time</i> (zone 0) under normal operating conditions.)          | <b>Groups:</b> A, B, <b>Zone 0:</b> (all the time)                                     |
|                                                    | <b>Division 1:</b> (where ignitable concentrations of Flammable Gasses, vapors or liquids are likely to exist <i>some of the time</i> (zone 1) under normal operating conditions.)         | <b>Groups:</b> C & D <b>Zone 1:</b> II C, IIB & IIA, T4 (120oC)(some of the times)     |
|                                                    | <b>Division 2:</b> (where ignitable concentrations of Flammable Gasses, vapors or liquids <i>might but are not likely</i> to exist under normal operating conditions.)                     | <b>Groups:</b> A, B, C & D <b>Zone 2:</b> II C, IIB & IIA, T4 (120oC)                  |
| <b>Class II: Combustible Dusts</b>                 | <b>Division 1:</b> (where ignitable concentrations of combustible dusts are likely to exist <i>all the time or some of the time</i> under normal operating conditions.)                    | <b>Groups:</b> E, F&G <b>Zone 21:</b> IIB & IIA, T4 (120oC) with dust protection       |
|                                                    | <b>Division 2:</b> (where ignitable concentrations of combustible dusts <i>might but are not likely to exist</i> under normal operating conditions.)                                       | <b>Groups:</b> E, F&G <b>Zone 22:</b> II C, IIB & IIA, T4 (120oC) with dust protection |
| <b>Class III: Ignitable Fibers &amp; materials</b> | <b>Division 1:</b> (where ignitable concentrations of easily ignitable fibers or materials are likely to exist <i>all the time or some of the time</i> under normal operating conditions.) | <b>No groups</b> <b>Zone 21:</b> IIB & IIA, T4 (120oC) with dust protection            |
|                                                    | <b>Division 2:</b> (where ignitable concentrations of easily ignitable fibers or materials <i>might but are not likely to exist</i> under normal operating conditions.)                    | <b>No groups</b> <b>Zone 22:</b> II C, IIB & IIA, T4 (120oC) with dust protection      |

| Group designations |                     |                 |
|--------------------|---------------------|-----------------|
| US gas designation | IEC gas designation | Gas description |
| A                  | IIC                 | Acetylene       |
| B                  |                     | Hydrogen        |
| C                  | IIB                 | Ethylene        |
| D                  | IIA                 | Propane         |

| Group designations        |                  |
|---------------------------|------------------|
| US & IEC dust designation | Dust description |
| E                         | Metals           |
| F                         | Coal             |
| G                         | Grain            |

**EEx Zone 1 explosion proof, Category 2G - 94/9/EG**  
**Protection type: Ex II 2G IIB 120° / PTB 03 ATEX 3038**



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# EX Electric 4-Wheel Counterbalance Truck

# M-725-4EEx/ASM

**EEx Zone 1 explosion proof, Category 2G - 94/9/EG - Protection type: Ex II 2G IIB 120° / PTB 03 ATEX 3038**

| Description                                                                 |                                                                                         | Truck specifications                                  |                                      |  |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------|--|
| Designations                                                                | 1.1 Manufacturer                                                                        | <b>Sichelschmidt</b>                                  |                                      |  |
|                                                                             | 1.2 Model designation                                                                   | <b>M-725-4EEx/ASM</b>                                 |                                      |  |
|                                                                             | 1.3 Propulsion                                                                          | <b>electric</b>                                       |                                      |  |
|                                                                             | 1.4 Operator position                                                                   | <b>sit down</b>                                       |                                      |  |
|                                                                             | 1.5 Capacity                                                                            | <b>5500lb</b> (2500kg)                                |                                      |  |
|                                                                             | 1.6 Load center                                                                         | <b>19.7"</b> (500mm)                                  |                                      |  |
|                                                                             | 1.8 Load distance (center of the front wheel to the front of the fork shank)            | <b>16.9"</b> (428mm) <sup>*)</sup>                    |                                      |  |
|                                                                             | 1.9 Wheel base (center of the front wheel to the center of the rear wheel)              | <b>60.1"</b> (1527mm)                                 |                                      |  |
|                                                                             | Weights                                                                                 | 2.1 Truck weight                                      | <b>7876lb</b> (4530kg) <sup>1)</sup> |  |
| 2.2 Axle load WITH maximum capacity load - front / rear                     |                                                                                         | <b>13706/5115lb</b> (6230/800kg) <sup>1)</sup>        |                                      |  |
| 2.3 Axle load WITHOUT load - front / rear                                   |                                                                                         | <b>4950/5016lb</b> (2250/2280kg) <sup>1)</sup>        |                                      |  |
| 2.4 Axle load with extended mast - front / rear                             |                                                                                         | ---                                                   |                                      |  |
| 2.5 Axle load with retracted mast - front / rear                            |                                                                                         | ---                                                   |                                      |  |
| Wheels & Chassis                                                            | 3.1 Tire type (Solid rubber / Super elastic (Solid Pn.) / Pneumatic / Poly)             | <b>Super-elastic</b>                                  |                                      |  |
|                                                                             | 3.2 Front wheel dimensions - diameter x width                                           | <b>23x 9-10</b>                                       |                                      |  |
|                                                                             | 3.3 Rear wheel dimensions - diameter x width                                            | <b>18 x 7-8</b>                                       |                                      |  |
|                                                                             | 3.4 Caster wheels - diameter x width                                                    | ---                                                   |                                      |  |
|                                                                             | 3.5 Number of wheels - front / rear ((x) = drive wheel)                                 | <b>2 / 2(x)</b>                                       |                                      |  |
|                                                                             | 3.6 Wheel track front                                                                   | <b>39.8"</b> (1010mm)                                 |                                      |  |
|                                                                             | 3.7 Wheel track rear                                                                    | <b>32.7"</b> (830mm)                                  |                                      |  |
| General dimensions                                                          | 4.1 Mast tilt - forward / backward                                                      | <b>See mast specification chart</b>                   |                                      |  |
|                                                                             | 4.2 Mast collapsed height                                                               | <b>See mast specification chart</b>                   |                                      |  |
|                                                                             | 4.3 Mast free lift                                                                      | <b>See mast specification chart</b>                   |                                      |  |
|                                                                             | 4.4 Mast fork elevated height                                                           | <b>See mast specification chart</b>                   |                                      |  |
|                                                                             | 4.5 Mast overall extended height                                                        | <b>See mast specification chart</b>                   |                                      |  |
|                                                                             | 4.6 Base lift                                                                           | -                                                     |                                      |  |
|                                                                             | 4.7 Overhead guard height                                                               | <b>91.3"</b> (2320mm) <sup>2)</sup>                   |                                      |  |
|                                                                             | 4.8 Operator seat height / stand height                                                 | <b>ca. 46.1"</b> (1170mm)                             |                                      |  |
|                                                                             | 4.9 Control handle height (walk behind units)                                           | ---                                                   |                                      |  |
|                                                                             | 4.10 Base leg height                                                                    | ---                                                   |                                      |  |
|                                                                             | 4.11 Special free lift                                                                  | ---                                                   |                                      |  |
|                                                                             | 4.15 Fork lowered height                                                                | ---                                                   |                                      |  |
|                                                                             | 4.19 Total truck length                                                                 | <b>129.0"</b> (3277mm) <sup>*)</sup>                  |                                      |  |
|                                                                             | 4.20 Truck length to the back of the fork shank                                         | <b>89.6"</b> (2277mm) <sup>*)</sup>                   |                                      |  |
|                                                                             | 4.21 Truck overall width                                                                | <b>47.2"</b> (1200mm)                                 |                                      |  |
|                                                                             | 4.22 Fork specifications - width x thickness x length ( <i>stainless steel plated</i> ) | <b>4.2" x 2.0" x 39.4"</b><br>(106mm x 51mm x 1000mm) |                                      |  |
|                                                                             | 4.23 Hook type fork class                                                               | <b>ITA Class 2</b> (ISO 2B)                           |                                      |  |
|                                                                             | 4.24 Fork carriage width                                                                | <b>37.4"</b> (950mm)                                  |                                      |  |
|                                                                             | 4.25 Maximum overall fork spread - manually adjustable                                  | ---                                                   |                                      |  |
| 4.26 Base leg opening                                                       | ---                                                                                     |                                                       |                                      |  |
| 4.28 Mast reach                                                             | ---                                                                                     |                                                       |                                      |  |
| 4.29 Side shift (non standard option)                                       | ---                                                                                     |                                                       |                                      |  |
| 4.31 Minimum under clearance                                                | <b>2.9"</b> (75mm)                                                                      |                                                       |                                      |  |
| 4.32 Under clearance between the wheel base                                 | <b>4.3"</b> (110mm)                                                                     |                                                       |                                      |  |
| 4.33 Aisle requirements with 39.4" long x 47.2" wide load (1000mm x 1200mm) | <b>147.6"</b> (3748mm) <sup>*)</sup>                                                    |                                                       |                                      |  |
| 4.34 Aisle requirements with 47.2" long x 31.5" wide load (1200mm x 800mm)  | <b>155.4"</b> (3948mm) <sup>*)</sup>                                                    |                                                       |                                      |  |
| 4.35 Turning radius                                                         | <b>83.5"</b> (2120mm)                                                                   |                                                       |                                      |  |
| 4.37 Truck length including the base legs                                   | ---                                                                                     |                                                       |                                      |  |
| Performance                                                                 | 5.1 Travel speed - with / without load                                                  | <b>7.5/8.1mph</b> (12.0/13.0 km/h)                    |                                      |  |
|                                                                             | 5.2 Lift speed - with / without load                                                    | <b>12.6/17.3 in/s</b> (0.32/0.44m/s)                  |                                      |  |
|                                                                             | 5.3 Lower speed - with / without load                                                   | <b>19.7/15.7 in/s</b> (0.5/0.4m/s)                    |                                      |  |
|                                                                             | 5.6 Maximum towing capacity - with / without load                                       | --- - <b>3687 lb/f</b> (--- -5000N)                   |                                      |  |
|                                                                             | 5.8 Gradient - with / without load                                                      | <b>10 / 16</b>                                        |                                      |  |
| 5.10 Brake system                                                           | <b>Hydraulic</b>                                                                        |                                                       |                                      |  |
| Motors                                                                      | 6.1 Drive motor performance - S2 60 min.                                                | <b>10.1HP</b> (7.5KW)                                 |                                      |  |
|                                                                             | 6.2 Hydraulic motor performance - S3 15%                                                | <b>8.7HP</b> (6.5KW)                                  |                                      |  |
|                                                                             | 6.3 Battery according to DIN 43531/ 35 / 36 A, B, C, NO                                 | <b>NO</b>                                             |                                      |  |
|                                                                             | 6.4 Battery specification - V / AH / tank #                                             | <b>80V / 420 - 465AH / 148A</b>                       |                                      |  |
|                                                                             | 6.5 Minimum battery weight                                                              | <b>2618lb</b> (1190kg)                                |                                      |  |
|                                                                             | 6.6 Energy usage after VDI-cycle                                                        | ---                                                   |                                      |  |
| Others                                                                      | 8.1 Drive system                                                                        | <b>Frequency controller</b>                           |                                      |  |
|                                                                             | 8.2 Attachment hydraulic working pressure                                               | <b>1750PSI</b> (120bar)                               |                                      |  |
|                                                                             | 8.4 Noise level according to EN 12053                                                   | <b>ca. 72 dBA</b>                                     |                                      |  |

1) Specification based on truck with DFFM mast, 4.2 = 87.6" (2225mm) without side-shift  
2) with all weather cabin and closed roof ad 1.2" (30mm)

\*) Trucks with a TFFM mast, ad 1.2" (32mm)  
\*\*) Trucks with side-shift ad 2.2" (55mm)

Model: M-725-4EEx/ASM

| Mast type                                    | 4.2 Mast closed height | 4.4 Fork elevated height | 4.5 Overall extended height (with 36" = 915mm lbr) | 4.3 / 4.6 Free Lift   | 4.1 Mast Tilt (forward / backward) |
|----------------------------------------------|------------------------|--------------------------|----------------------------------------------------|-----------------------|------------------------------------|
| DFSM<br><i>(Two stage, no free lift)</i>     | <b>77.8"</b> (2100mm)  | <b>122.0"</b> (3100mm)   | <b>158.1"</b> (4015mm)                             | <b>5.9"</b> (150mm)   | <b>2° / 3°</b>                     |
|                                              | <b>87.6"</b> (2225mm)  | <b>131.9"</b> (3350mm)   | <b>167.9"</b> (4265mm)                             | <b>5.9"</b> (150mm)   | <b>2° / 3°</b>                     |
| DFFM<br><i>(Two stage, with free lift)</i>   | <b>77.8"</b> (2100mm)  | <b>122.0"</b> (3100mm)   | <b>158.1"</b> (4015mm)                             | <b>57.5"</b> (1460mm) | <b>2° / 3°</b>                     |
|                                              | <b>87.6"</b> (2225mm)  | <b>131.9"</b> (3350mm)   | <b>167.9"</b> (4265mm)                             | <b>62.4"</b> (1585mm) | <b>2° / 3°</b>                     |
| TFFM<br><i>(Three stage, with free lift)</i> | <b>77.8"</b> (2100mm)  | <b>170.3"</b> (4325mm)   | <b>206.3"</b> (5240mm)                             | <b>54.3"</b> (1378mm) | <b>1° / 2°</b>                     |
|                                              | <b>87.6"</b> (2225mm)  | <b>185.0"</b> (4700mm)   | <b>221.0"</b> (5615mm)                             | <b>59.2"</b> (1503mm) | <b>1° / 2°</b>                     |

### Standard equipment & features:

- Maintenance free ASM-AC drive and hydraulic motors
- Fully programmable performance characteristics
- Dual overheating protection with speed reduction and disconnect
- Driver impulse control
- Regenerative braking system
- Hydraulic power steering
- Anti static package
- Conductive tires and wheels
- Stainless steel plated forks (brass optional)
- EEx Hour meter & battery state of charge combo
- Load backrest, 36" (915mm) high from the top of the forks
- Clear view mast
- Air horn
- Parking brake
- Startup diagnostic
- Locked battery connectors
- Automatic travel speed reduction when lifting the mast
- Multiple disc break system
- Operator, owners and spare parts manuals

### Optional equipment & features:

- Brass plated forks (standard for US deliveries)
- EEx Side-shift (other attachments also available)
- Brass bumpers
- All weather cabin
- Closed overhead guard with safety glass window
- Alternative fork lengths
- Offshore anti corrosion package
- EEx Backup Alarm
- EEx Work lights (front and or back)
- Turning signal and brake lights
- EEx Strobe light
- Fire extinguisher
- Windshield & windshield wipers
- Custom mast elevations
- Custom paint color
- Turtle speed switch
- Lift limit switch with bypass
- Crane lugs
- Pneumatic tires (up to 3520lb = 1600kg capacity)