

US & International explosion hazardous areas

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

| | 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 | Cl. 1/2/3 - Div. 1* | Cl. 1/2/3 - Div. 1 | Cl. 1/2/3 - Div. 2 |
| US NEC 505 / IEC | Zone 0* | Zone 1 / 21 | Zone 2 / 22 |

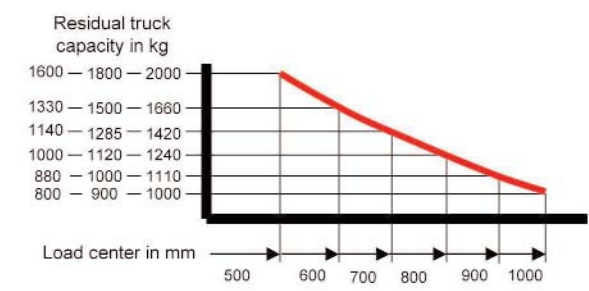
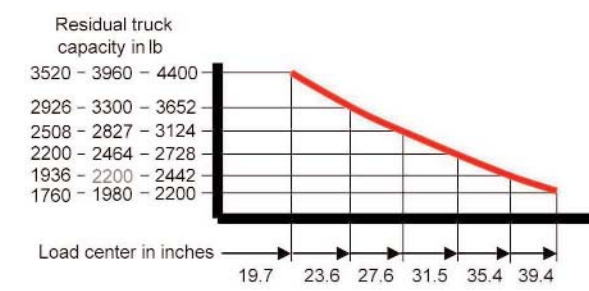
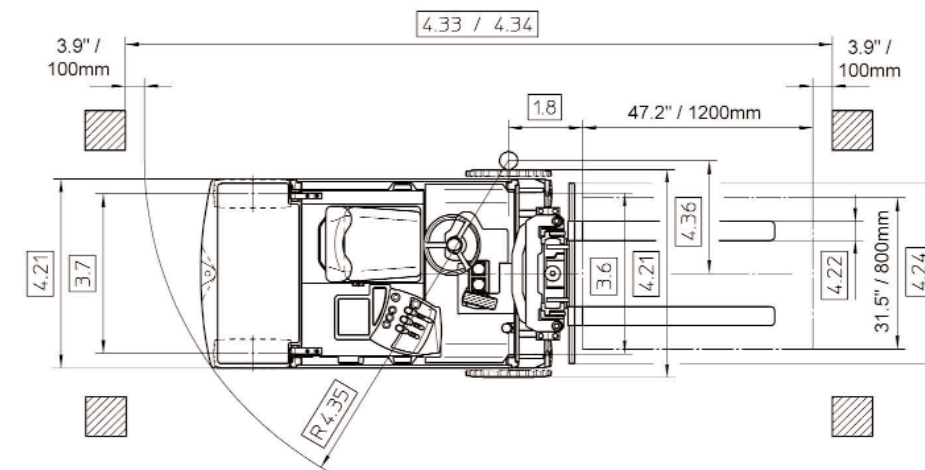
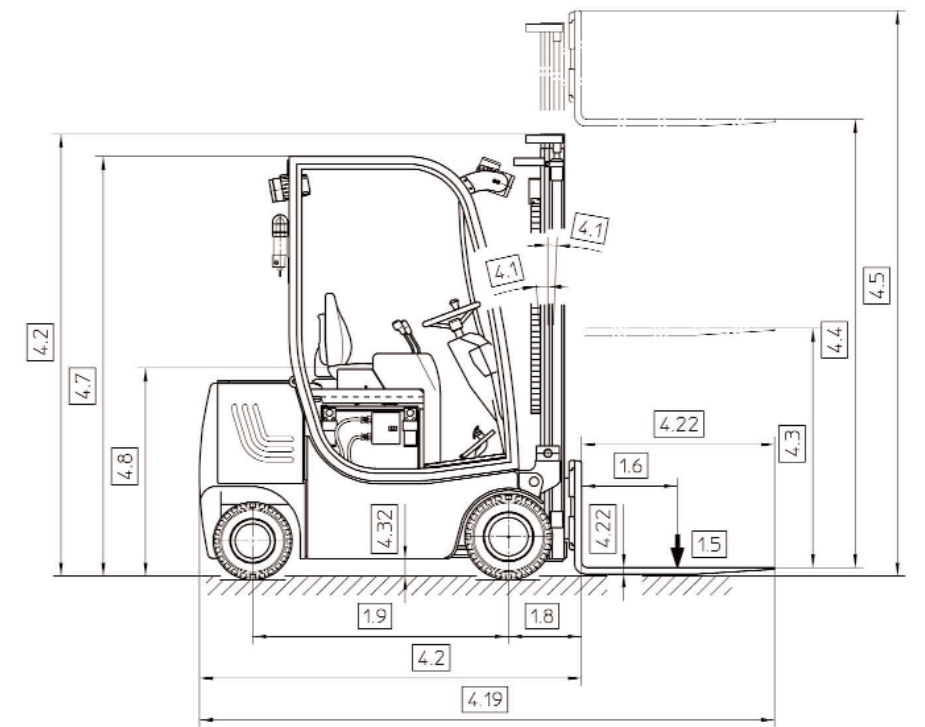
* Only intrinsically safe electrical equipment may be used in these areas

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



Use our EX forklift truck selector guide at www.sichelschmidt.com

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EX Electric 4-Wheel Counterbalance Truck M-700-4EEx/ASM (short wheel base)

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 | Sichelschmidt | Sichelschmidt | Sichelschmidt |
| | 1.2 Model designation | M-716-4EEx/ASM | M-718-4EEx/ASM | M-720-4EEx/ASM |
| | 1.3 Propulsion | electric | electric | electric |
| | 1.4 Operator position | sit down | sit down | sit down |
| | 1.5 Capacity | 3520lb (1600kg) | 3960lb (1800kg) | 4400lb (2000kg) |
| | 1.6 Load center | 19.7" (500mm) | 19.7" (500mm) | 19.7" (500mm) |
| | 1.8 Load distance (center of the front wheel to the front of the fork shank) | 14.9" (379mm) ^{*/**} | 15.2" (385mm) ^{*/**} | 15.2" (385mm) ^{*/**} |
| | 1.9 Wheel base (center of the front wheel to the center of the rear wheel) | 53.0" (1347mm) | 53.0" (1347mm) | 53.0" (1347mm) |
| | 2.1 Truck weight | 8580lb (3900kg) ¹ | 8866lb (4030kg) ¹ | 9350lb (4250kg) ¹ |
| Weights | 2.2 Axle load WITH maximum capacity load - front / rear | 9988/2090lb (4540/950kg) ¹ | 10956/1870lb (4980/850kg) ¹ | 11748/2002lb (5340/910kg) ¹ |
| | 2.3 Axle load WITHOUT load - front / rear | 3960/4620lb (1800/2100kg) ¹ | 4136/4730lb (1880/2150kg) ¹ | 4466/4884lb (2030/2220kg) ¹ |
| | 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) | Super-elastic | Super-elastic |
| 3.2 Front wheel dimensions - diameter x width | | 18 x 7-8 | 18 x 8-9 | 18 x 8-9 |
| 3.3 Rear wheel dimensions - diameter x width | | 16 x 6-8 | 16 x 6-8 | 16 x 6-8 |
| 3.4 Caster wheels - diameter x width | | --- | --- | --- |
| 3.5 Number of wheels - front / rear ((x) = drive wheel) | | 2 / 2(x) | 2 / 2(x) | 2 / 2(x) |
| 3.6 Wheel track front | | 35.4" (900mm) | 39.8" (1010mm) | 39.8" (1010mm) |
| 3.7 Wheel track rear | | 32.7" (830mm) | 32.7" (830mm) | 32.7" (830mm) |
| General dimensions | 4.1 Mast tilt - forward / backward | See mast specification chart | | |
| | 4.2 Mast collapsed height | See mast specification chart | | |
| | 4.3 Mast free lift | See mast specification chart | | |
| | 4.4 Mast fork elevated height | See mast specification chart | | |
| | 4.5 Mast overall extended height | See mast specification chart | | |
| | 4.6 Base lift | - | - | - |
| | 4.7 Overhead guard height | 87.4" (2220mm) ² | 87.4" (2220mm) ² | 87.4" (2220mm) ² |
| | 4.8 Operator seat height / stand height | ca. 41.7" (1060mm) | ca. 41.7" (1060mm) | ca. 41.7" (1060mm) |
| | 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 | 117.7" (2989mm) ^{***} | 117.9" (2994mm) ^{***} | 117.9" (2994mm) ^{***} |
| | 4.20 Truck length to the back of the fork shank | 78.3" (1989mm) ^{***} | 78.5" (1994mm) ^{***} | 78.5" (1994mm) ^{***} |
| | 4.21 Truck overall width | 41.3" (1050mm) | 47.2" (1200mm) | 47.2" (1200mm) |
| | 4.22 Fork specifications - width x thickness x length (<i>stainless steel plated</i>) | 4.2" x 1.6" x 39.4" (106mm x 41mm x 1000mm) | 4.2" x 1.8" x 39.4" (106mm x 45mm x 1000mm) | 4.2" x 1.8" x 39.4" (106mm x 45mm x 1000mm) |
| | 4.23 Hook type fork class | ITA Class 2 (ISO 2B) | ITA Class 2 (ISO 2B) | ITA Class 2 (ISO 2B) |
| | 4.24 Fork carriage width | 37.4" (950mm) | 37.4" (950mm) | 37.4" (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 | 2.9" (75mm) | 2.9" (75mm) | 2.9" (75mm) | |
| 4.32 Under clearance between the wheel base | 3.5" (90mm) | 3.5" (90mm) | 3.5" (90mm) | |
| 4.33 Aisle requirements with 39.4" long x 47.2" wide load (1000mm x 1200mm) | 137.2" (3484mm) ^{***} | 137.4" (3490mm) ^{***} | 137.4" (3490mm) ^{***} | |
| 4.34 Aisle requirements with 47.2" long x 31.5" wide load (1200mm x 800mm) | 145.0" (3684mm) ^{***} | 145.3" (3690mm) ^{***} | 145.3" (3690mm) ^{***} | |
| 4.35 Turning radius | 75.0" (1905mm) | 75.0" (1905mm) | 75.0" (1905mm) | |
| 4.37 Truck length including the base legs | --- | --- | --- | |
| Performance | 5.1 Travel speed - with / without load | 7.5/8.1mph (12.0/13.0 km/h) | 7.4/8.1mph (11.8/13.0 km/h) | 7.2/8.1mph (11.5/13.0 km/h) |
| | 5.2 Lift speed - with / without load | 13.4/17.3 in/s (0.34/0.44m/s) | 13.0/17.3 in/s (0.33/0.44m/s) | 12.6/17.3 in/s (0.32/0.44m/s) |
| | 5.3 Lower speed - with / without load | 19.7/15.7 in/s (0.5/0.4m/s) | 19.7/15.7 in/s (0.5/0.4m/s) | 19.7/15.7 in/s (0.5/0.4m/s) |
| | 5.6 Maximum towing capacity - with / without load | --- - 3687 lb/f (--- -5000N) | --- - 3687 lb/f (--- -5000N) | --- - 3687 lb/f (--- -5000N) |
| | 5.8 Gradient - with / without load | 11 / 16 | 10 / 15 | 10 / 15 |
| 5.10 Brake system | Hydraulic | Hydraulic | Hydraulic | |
| Motors | 6.1 Drive motor performance - S2 60 min. | 10.1HP (7.5KW) | 10.1HP (7.5KW) | 10.1HP (7.5KW) |
| | 6.2 Hydraulic motor performance - S3 15% | 8.7HP (6.5KW) | 8.7HP (6.5KW) | 8.7HP (6.5KW) |
| | 6.3 Battery according to DIN 43531/ 35 / 36 A, B, C, NO | NO | NO | NO |
| | 6.4 Battery specification - V / AH / tank # | 80V / 280-310AH / 147A | 80V / 280-310AH / 147A | 80V / 280-310AH / 147A |
| | 6.5 Minimum battery weight | 1914lb (870kg) | 1914lb (870kg) | 1914lb (870kg) |
| | 6.6 Energy usage after VDI-cycle | --- | --- | --- |
| Others | 8.1 Drive system | Frequency controller | Frequency controller | Frequency controller |
| | 8.2 Attachment hydraulic working pressure | 1740PSI (120bar) | 1740PSI (120bar) | 1740PSI (120bar) |
| | 8.4 Noise level according to EN 12053 | ca. 72 dBA | ca. 72 dBA | ca. 72 dBA |

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 2.6" (65mm)
^{**)} Trucks with side-shift ad 2.2" (55mm)

Model: M-716-4EEx/ASM (short wheel base)

| 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) |
|--|------------------------|--------------------------|--|-----------------------|------------------------------------|
| DFFM <i>(Two stage, no free lift)</i> | 82.7" (2100mm) | 125.0" (3175mm) | 161.0" (4090mm) | 5.9" (150mm) | 2° / 3° |
| | 87.6" (2225mm) | 134.8" (3425mm) | 170.9" (4340mm) | 5.9" (150mm) | 2° / 3° |
| DFFM <i>(Two stage, with free lift)</i> | 82.7" (2100mm) | 125.0" (3175mm) | 161.0" (4090mm) | 57.5" (1460mm) | 2° / 3° |
| | 87.6" (2225mm) | 134.8" (3425mm) | 170.9" (4340mm) | 62.4" (1585mm) | 2° / 3° |
| TFFM <i>(Three stage, with free lift)</i> | 82.7" (2100mm) | 180.5" (4585mm) | 216.5" (5500mm) | 57.5" (1460mm) | 1° / 2° |
| | 87.6" (2225mm) | 191.3" (4860mm) | 227.4" (5775mm) | 62.4" (1585mm) | 1° / 2° |

Model: M-718-4EEx/ASM (short wheel base)

| 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) |
|--|------------------------|--------------------------|--|-----------------------|------------------------------------|
| DFFM <i>(Two stage, no free lift)</i> | 82.7" (2100mm) | 122.0" (3100mm) | 158.1" (4015mm) | 5.9" (150mm) | 2° / 3° |
| | 87.6" (2225mm) | 131.9" (3350mm) | 167.9" (4265mm) | 5.9" (150mm) | 2° / 3° |
| DFFM <i>(Two stage, with free lift)</i> | 82.7" (2100mm) | 122.0" (3100mm) | 158.1" (4015mm) | 57.5" (1460mm) | 2° / 3° |
| | 87.6" (2225mm) | 131.9" (3350mm) | 167.9" (4265mm) | 62.4" (1585mm) | 2° / 3° |
| TFFM <i>(Three stage, with free lift)</i> | 82.7" (2100mm) | 180.5" (4585mm) | 216.5" (5500mm) | 57.5" (1460mm) | 1° / 2° |
| | 87.6" (2225mm) | 191.3" (4860mm) | 227.4" (5775mm) | 62.4" (1585mm) | 1° / 2° |

Model: M-720-4EEx/ASM (short wheel base)

| 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) |
|--|------------------------|--------------------------|--|-----------------------|------------------------------------|
| DFFM <i>(Two stage, no free lift)</i> | 82.7" (2100mm) | 122.0" (3100mm) | 158.1" (4015mm) | 5.9" (150mm) | 2° / 3° |
| | 87.6" (2225mm) | 131.9" (3350mm) | 167.9" (4265mm) | 5.9" (150mm) | 2° / 3° |
| DFFM <i>(Two stage, with free lift)</i> | 82.7" (2100mm) | 122.0" (3100mm) | 158.1" (4015mm) | 57.5" (1460mm) | 2° / 3° |
| | 87.6" (2225mm) | 131.9" (3350mm) | 167.9" (4265mm) | 62.4" (1585mm) | 2° / 3° |
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| | 87.6" (2225mm) | 191.3" (4860mm) | 227.4" (5775mm) | 62.4" (1585mm) | 1° / 2° |

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)