FAMBITION
QINGDAO FAMBITION HEAVY MACHINERY CO.,LTD.

# FL105+ TECHNICAL SPECIFICATION




## High-efficiency Equipment, Made by FAMBITION

FL105+ is an underground LHD specially designed for mining conditions. With a rated payload capacity of 10 tonnes, it is mainly used for ore loading and haulage in underground non-coal mines. This model features a compact structure and powerful performance, suitable for tunnels with a cross-section of 3.8 m*3.8 m or larger. It can operates in complex and confined underground working spaces efficiently, making it an ideal piece of equipment for improving mine transportation efficiency and ensuring operational stability.

**Features:**

- Reinforced frame with compact layout, designed for harsh underground environments.
- Core components sourced from world-renowned brands, paired with high-performance integrated torque converter and transmission to ensure stable equipment operation.
- Premium interior, circulating air duct, extra-large footwell and dual shock absorption system to effectively relieve operator fatigue for prolonged high-efficiency operation
- One-stop maintenance design, maintenance-free drive shafts and detachable copper tube radiator to enable convenient and efficient servicing
- Load-sensing full hydraulic system with variable displacement piston pumps with on-demand power output for high efficiency and energy saving
- 80% of the pipe adopting stainless steel pipe technology with an aesthetically pleasing layout and longer service life
- CAN-bus technology for less wiring and better anti-interference communication
- Self-developed FET (FAMBITION Electronic Technician) technology for real-time monitoring of equipment operation status and intelligent fault self-diagnosis, escorting efficient equipment operation throughout the process
- Self-developed production management system, including vehicle operation status monitoring, production operation management, vehicle alarm management, vehicle maintenance management, etc.

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Address: No.31, Beijing East Road, Longshui Subdistrict Office, Laixi City, Qingdao, Shandong, China.
E-mail: info@fambition.com Tel: +86(532)87900000 Website: Http://www.fambition.com

| Basic dimensions | |
|---|---|
| Length (bucket on ground) | 10 198 mm |
| Length (bucket retracted) | 9 857 mm |
| Max. width | 2 733 mm |
| Height | 2 400 mm |
| Max. dumping height | 2 334 mm |
| Ground clearance | 385 mm |
| Steering angle | 42.5° |
| Inner turning radius | 3 316 mm |
| Outer turning radius | 6 646 mm |

| Operating weights | |
|---|---|
| Total operating weight | 31 600 kg |
| Front axle load | 12 300 kg |
| Rear axle load | 19 300 kg |
| **Loaded weights** | |
| Total loaded weight | 41 600 kg |
| Front axle load | 27 400 kg |
| Rear axle load | 14 200 kg |
| **Motion time** | |
| Raising time | 6.3 sec |
| Lowering time | 4.2 sec |
| Dumping time | 2.6 sec |

| Production capacity | |
|---|---|
| Standard bucket (SAE) | 4 m³ |
| Payload capacity | 10 000 kg |
| Maximum breakout force | 200 kN |
| Maximum traction force | 270 kN |
| Grade ability | 25 % |

| Speeds (4 gears forward & 3 gears reverse, level/loaded) | |
|---|---|
| 1st gear | 4.4 km/h |
| 2nd gear | 10.5 km/h |
| 3rd gear | 22.3 km/h |
| 4th gear | 25.0 km/h |

| Operational conditions | |
|---|---|
| Environmental temperature | -20℃~+55℃ |
| Standard operating altitude | -1500 m~+3000 m @ 25°C |

| Engine | |
|---|---|
| Brand&model | Volvo TAD883VE |
| Rated power | 235 kW @ 2 200 rpm |
| Output torque | 1 330 Nm @ 1 400 rpm |
| Cylinders | Inline six-cylinder |
| Displacement | 7.70 L |
| Cooling system | Water cooled |
| Combustion principle | 4-stroke, electric fuel injection with turbo |
| Air intake system | Two stage filtration, dry type, air-cooler |
| Operating voltage | 24 V |
| Emissions | CN 4, Euro Stage V |
| Ventilation rate (ULSD) | Canmet 8.07 m³/s<br>MSHA 16 000 CFM |
| Particulate index (ULSD) | MSHA 5 500 CFM |
| Exhaust system | DOC+DPF+SCR+ASC |
| Average fuel consumption (at a 40% load) | 26 L/h |
| Fuel tank refill capacity | 310 L |
| Urea tank | 17.6 L |

| Power train | |
|---|---|
| **Torque converter & transmission** | ZF 4WG260 |
| **Gear shifting type** | Electrical gear shift control<br>Manual/automatic |
| **Axles** | Kessler D102 |
| | SAHR, limited slip differentials |
| | Front axle fixed,<br>Rear axle oscillating ±8° |
| | Electrical traction control |
| **Tires** | 18.00-25-32.SS.L-5S.TL |

| Cabin (enclosed) |
|---|
| Fully enclosed side-mounted cabin |
| FOPS certified in accordance with ISO 3471 |
| ROPS certified in accordance with ISO 3449 |


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| |
|---|
| Footbox |
| Cooling-only air conditioning with fresh air system |
| Two-sided laminated tempered glass window |
| Sound-absorbing, noise-reducing and heat-insulating interior |
| Trelleborg rubber shock absorption |
| Multi-angle adjustable control handle |
| Fully electric controlled cabin |
| Emergency outward-push escape window |
| Three-point contact access system to quickly get into the cabin |
| Emergency stop switch |
| Grammer electric pneumatic suspension seat |
| Two point safety belt |
| Cabin door safety interlock |
| Gradienter |
| Tool box/organizer/cup hold |

| **Hydraulics** | |
|---|---|
| **Steering hydraulics** | |
| Electro-hydraulic pilot proportional control<br>Load-sensing hydraulic system with variable displacement piston pumps<br>The oil flow from steering hydraulic pump is directed to bucket hydraulics when steering is not used. | |
| Steering cylinder | Ø125 mm, 2 pcs |
| Steering valve | Rexroth |
| **Boom&bucket hydraulics** | |
| Electro-hydraulic pilot proportional control<br>Load-sensing hydraulic system with variable displacement piston pumps to save energy and improve work efficiency | |
| Lift cylinders | Ø160 mm, 2 pcs |
| Dump cylinder | Ø200 mm, 1 pc |
| Main valve | Parker |
| **Brakes** | |
| Charging valve | SUN |
| Service brake valve | MICO |
| Brake accumulator | HYDAC |
| **Cooling hydraulics** | |
| Hydraulic oil radiator | Parker |
| Steering&engine cooling pumps | Rexroth tandem variable displacement piston pumps |
| Boom and bucket &hydraulic oil cooling pump | Rexroth tandem variable displacement piston pumps |
| Brake pump | Parker gear pump |
| **Hydraulic oil tank** | 240 L |
| **Brake oil tank** | 57 L |
| **Others** | Electric pump for brake release system |
| | O-LOK connector |
| | Zinc-nickel electroplating |
| | Flame retardant sheath for hydraulic hoses |

| **Electrical system** | |
|---|---|
| Generator | 28 V, 110 A |
| Battery | 2*12 V, 150 Ah |
| Starter | 24 V, 5.5 kW |
| Joystick | Caldaro |
| Circuit breaker | ABB |
| Electric relay | Bosch |
| Connector | TE |
| Controller | EPEC SL84 |
| 360° around view monitor | Standard |
| FAMBITION electrical technician (FET) technology Warning | Real-time monitoring of system operation |
| | Fault diagnosis prompts |
| | Fault indicator light |
| | Historical fault records |
| | Operation data download |
| Display | EPEC 6807 7" color display |
| | Adjustable display brightness |
| | Alternative display languages: Chinese, English, Russian, Spanish |

| **Options** |
|---|
| 4 m³ GET bucket |
| 5 m³ bucket |
| Wheel choke |
| Pneumatic suspension seat |


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| |
|---|
| Retrieval hook (Hydraulic brake release by pulling the hook) |
| Emergency steering |
| Boom floating and ride control |
| Electric filling pump |
| Preheater for hydraulic oil |
| Hydraulic oil online monitoring |
| Preheater for diesel |
| Tires of Chinese brands |
| In-cab monitor |
| Tyre pressure monitoring system |
| Harmful gas detection |
| Trailer socket (jump start) |
| Heating, ventilation and air conditioning (HVAC) |
| Selectable highest gear |
| Protecfire automatic fire protection |
| Tele-remote control system |
| WIKA integrated weighing system |
| Arctic package (preheater for hydr. oil tank and engine block) |
| FAMBITION Data Transmission System |

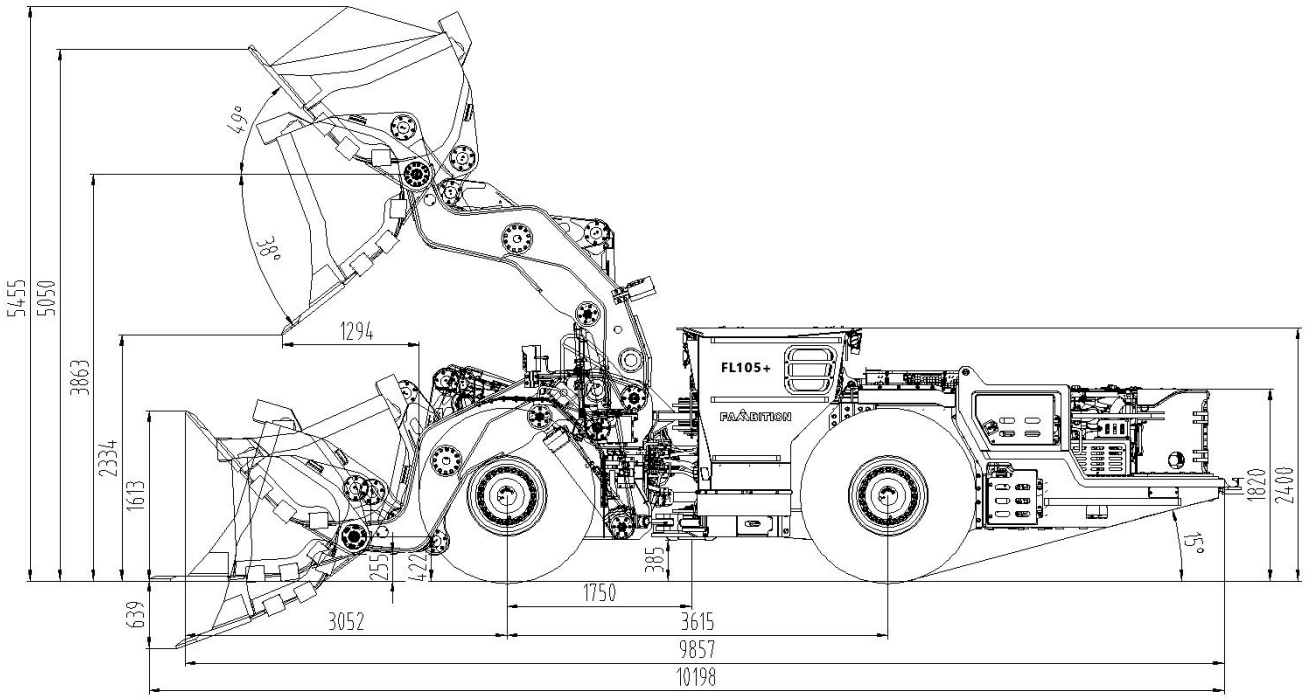
| **Safety** | |
|---|---|
| Portable fire extinguisher | 1*8 kg |
| Emergency stop push button | 1 pc in the cabin;<br>2 pcs on the rear frame |
| LED lamp | 5 pcs on front frame<br>4 pcs on cabin<br>4 pcs on rear frame |
| Boom supporting device | 2 pcs |
| Articulation lock pin | 1 pc |
| Line of sight radio remote control | Standard |
| Neutral brake | Standard |

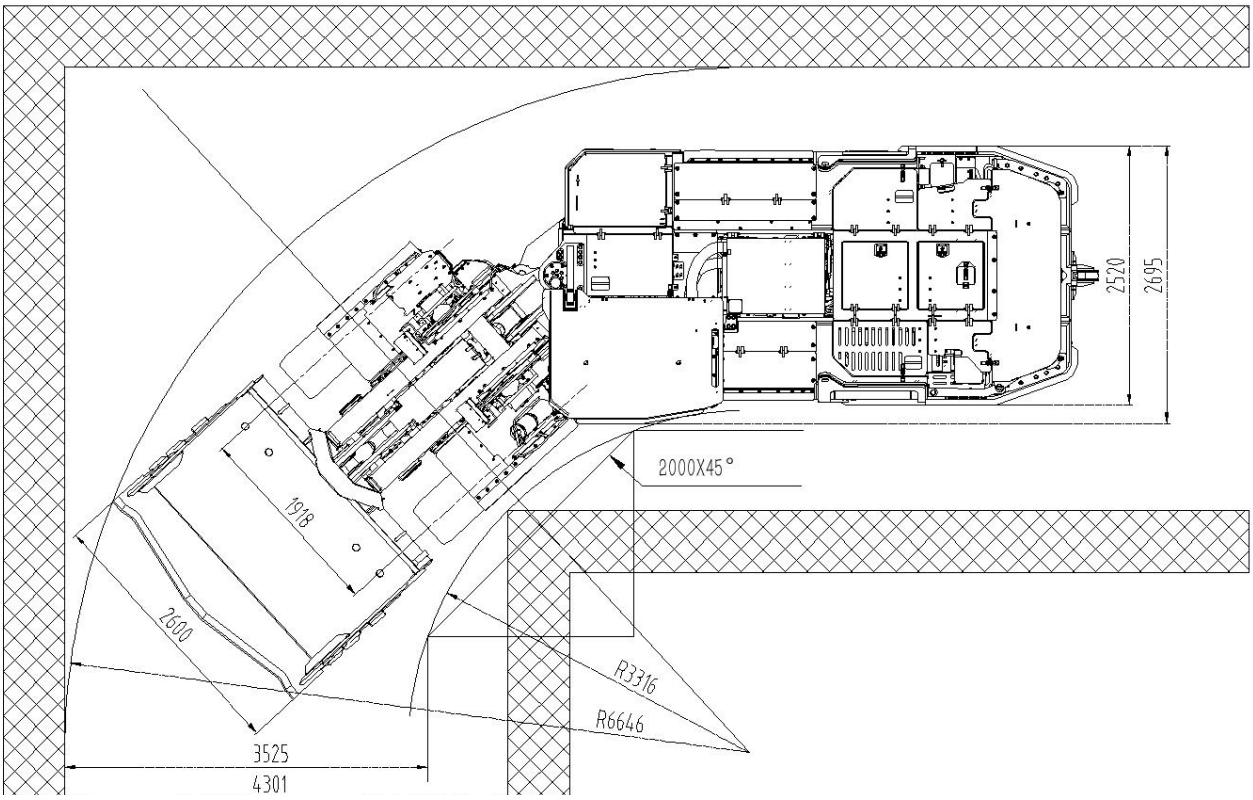
| **Manuals** | |
|---|---|
| Spare parts manual | Chinese/English version |
| Operation and maintenance manual | Chinese/English version |
| Electronic manual | USB stick in pdf Format |

| **FL105+ grade&speed** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Empty | | | | | | | | | |
| Percent grade | 0 | 2.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.5 | 14.3 | 17.0 |
| Ratio | | | | | 1:12 | 1:10 | 1:8 | 1:7 | |
| 1st gear (km/h) | 4.4 | 4.4 | 4.3 | 4.3 | 4.2 | 4.1 | 4.1 | 4.0 | 3.9 |
| 2nd gear (km/h) | 10.5 | 10.1 | 9.8 | 9.4 | 9.0 | 8.6 | 8.2 | 7.9 | 7.4 |
| 3rd gear (km/h) | 22.3 | 20.4 | 18.4 | 16.6 | 14.6 | 12.7 | 10.4 | 8.8 | 6.8 |
| 4th gear (km/h) | 25.0 | 25.0 | 22.9 | 18.3 | 13.8 | 10.1 | 5.4 | | |
| Loaded | | | | | | | | | |
| Percent grade | 0 | 2.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.5 | 14.3 | 17.0 |
| Ratio | | | | | 1:12 | 1:10 | 1:8 | 1:7 | |
| 1st gear (km/h) | 4.4 | 4.3 | 4.2 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 |
| 2nd gear (km/h) | 10.3 | 9.8 | 9.4 | 8.8 | 8.3 | 7.9 | 7.3 | 6.8 | 6.2 |
| 3rd gear (km/h) | 21.4 | 18.8 | 16.3 | 13.7 | 11.2 | 8.8 | 6.3 | 4.5 | |
| 4th gear (km/h) | 25.0 | 23.7 | 17.6 | 12.0 | 7.2 | | | | |

| **Available buckets** | | | | |
|---|---|---|---|---|
| Volume | $m^3$ | 4.0 | 4.0 (G.E.T.) | 5.0 |
| Max. material density | (t/m³) | 2.5 | 2.5 | 2.0 |
| Width | mm | 2 600 | 2 650 | 2 600 |


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Parameters may vary due to different customer requirements.

Qingdao Fambition Heavy Machinery Co., Ltd. reserves the right of final interpretation.

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同舟共济 追求卓越

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