

Technical Specification No.**M-05-568****for the supply OF****Forklift Truck ("FLT")****38,000 kg LOAD/1,200 mm LOAD CENTER**

Israel part number _____ :

Manufacture part number _____ :

Model: new / renew / used / utex

Date	Function	Name	Signed	Version
	Writer / Editor			
	Direct manager			
	Unit Manager			

Appendix A2
M05-568

TECHNICAL SPECIFICATION FOR
38,000 KG LOAD/1,200 MM LOAD CENTER
FORKLIFT TRUCK ("FLT")

1. Intended Use

- 1.1. The FLT shall be used for Railway track operation at the Beit Shemesh, Kiryat Gat Rail and Ramat Hovav sites of Israel Railways Authority Ltd. (ISR), ISRAEL.
- 1.2. The FLT shall be capable of handling palletized steel wire coils with individual loads up to 34 tons, using forks inserted into their pockets.
- 1.3. THE FLT shall be suitable for operating in dusty environments and driving on uneven surfaces.
- 1.4. The FLT will operate continuously in hard operational conditions and is typically loaded with the maximum loads at the maximum load center (based on FLT's rated load and L.C).

2. Basic design

- 2.1. All mechanical drives, electrical equipment, hydraulic systems, expansion joints, etc. shall be designed to operate within a temperature range of -10°C to $+50^{\circ}\text{C}$ and relative humidity up to 60%.
Design Factors: Ambient temperature 50°C , Relative humidity 20% to 60%.
- 2.2. The FLT systems, engine, transmission, torque converter, and drive axle with the planetary gear must be capable of withstanding the severe working conditions existing at the site.
- 2.3. All systems shall allow for a change in travel direction without requiring the FLTs to come to a full stop.
- 2.4. **FLT stability and safety**
FLT stability and safety will be according to ASME B56.1, Directive 2006/42/EC, ISO 22915-1, SO 22915-2, safety industrial EN1175:2020, EN ISO 3691-1, Noise level acc. to EN12053 inside the cabin, Noise level acc. to 2000/14/EC outside the cabin,

Standards for FLT's within EU or EPA for units produced in the USA or equivalent international standards.

The FLT will have the CE marking.

- 2.5. The offered FLT's will meet all the requirements of the Israel Ministry of Transport for non-road mobile machinery.

3. **Overall dimension**

The FLT's will be operated between container rows and in confined areas with limited operating space. Therefore, minimum length and turning radius are required.

4. **Attachments and Options**

The FLT's shall be provided with the following attachments:

- 4.1. Forks (see para. 5.6.1).
- 4.2. Kissing forks (see para. 5.6.2) – as an option
- 4.3. Steel coil pin (see para. 5.6.3) – as an option
- 4.4. Integral side shifter & fork positioner (see para. 5.5.2).
- 4.5. FLT's' carriage and attachments should be provided for quick mechanical connect/disconnect using the Hook type system to allow for fast and easy interchange forks and other attachments.

Terminal west type carriage (forks - hook type) will be preferred.

5. **Performance Characteristics**

5.1. Capacity (with attachments)

- Not less than **38,000 kg.**
- No **deration** due to side shift/fork position.

5.2. Load center **1,200 mm.**

5.3. **Mast construction:**

The mast should be a standard duplex mast of extra heavy-duty construction with a free-view configuration. Two (2) lift cylinders shall be mounted on the sides or on the back sides of the mast in a protected location. The mast shall be designed to withstand the hard-working conditions described in Para.1, considering that FLT is usually loaded with the highest possible load at the max load center (based on FLT's rated load and L.C). For design, it is important to use the highest safety factors. The structure of the mast frame and connection points to the chassis will be made of high-quality and suitable steel.

It is preferred that the mast shall be provided with heavy-duty side rollers instead of slide blocks.

5.4. **Mast dimension - standard FLT's:**

- Lift height (T.O.F), about - **5,100 mm.**
- Overall lower height (O.L.H), about- **5,300 mm.**

5.5. **Carriage**

5.5.1. Carriage shall be of Extra heavy-duty construction. The carriage shall be designed for maximum visibility, simplicity, and easy access for maintenance and repair. The carriage shall be designed to withstand the hard-working conditions described in Para.1, considering that FLT is usually loaded with the highest possible load at the maximum load center.

Carriage width shall not exceed the width of the FLT.

5.5.2. **Side shift/Fork positioner & forks**

An integral side shift and fork positioner carriage will be installed. The side shift and fork positioner cylinders shall be mounted in a protected location to prevent damage during operation.

5.5.3. The Manufacturer will provide a layout drawing showing the change of attachments (forks, pin, etc.) and specifying the side shift and the distances of the forks in three positions:

5.5.3.1. Minimum distance between the forks – fully closed position.

5.5.3.2. Maximum distance between the forks – fully open position.

5.5.3.3. Distance between the forks in middle position.

5.6. **Forks** (Pocket dimensions: Height-140 mm, Width-370 mm) **& Steel coil**

5.6.1. Standard - **Hook type** for general cargo handling

- Fork length not less than - **2,400 mm**
- Fork thickness - about **135 mm** (less than 140 mm)
- Fork width - about **300 mm** (less than 370 mm)

5.6.2. **Kissing Forks** - **Hook type** for general cargo handling, steel Coil Pin, **20'** and **40'** ISO containers in their pockets as an **option**

- Fork length, about – **2,440 mm.**

- Fork thickness, about - specified by the manufacturer
- Fork width, about - specified by the manufacturer

Notes:

The upper sides of the forks shall be rounded for coil handling.

The forks should fit into the ISO container pockets.

5.6.3. Steel coil pin (ram) (to be priced separately) - Option

- Pin capacity - up to 30 ton.
- Pin length - 1,800 mm.
- Load center about - 900 mm.

The steel coil pin will be provided with quick mounting and dismounting suited to the carriage of the FLT (hook type).

5.7. Tilt angle (Forward & back):

The maximum tilt angles shall comply with the manufacturer's standard for safe operation at the specified lift height.

Forward tilt angle - not less than 5°, with an option for ≥7°.

Back Tilt angle - about 10°.

A maximum forward Tilt angle shall be preferred.

5.8. Overall dimension

The FLTs will be operated between container rows and in confined areas with limited operating space. Therefore, minimum length and turning radius are required.

5.9. Speeds

Top travel with load	about	20	km/hr
Top travel without load	about	25	km/hr
Lift with load	about	0.25	m/sec
Lift without load	about	0.27	m/sec
Lowering with load	about	0.45	m/sec
Lowering without load	about	0.45	m/sec

6. DRIVE LINE

6.1. Engine

The engine shall be equipped with six (6) cylinders, four-stroke inline, turbocharged, and high torque.

The engine should be with electronic management control system, suitable to the FLT

according to our specifications and exhaust emission conforming to **EU stage V**.

Diesel engines such as Cummins, Mercedes-Benz, Caterpillar, Volvo, or equivalent engines with at least **250 KW (335 hp)** should be offered.

Higher power, higher torque, higher displacement & low fuel consumption will be preferred.

6.1.1. Engine cooling

The cooling system shall be rated for work in the tropical zone (see para. 2.1 for ambient temperatures and Relative humidity).

A water-cooled engine shall be provided, equipped with a coolant recovery bottle.

A high coolant capacity will be preferred.

6.1.2. Engine air inlet

The engine air inlet will be provided with a heavy-duty cyclonic pre-cleaner (Turbo 2 air filter or equivalent) and double stage multi-tube dry paper filter elements with an air restriction indicator. The dry paper filter should be DONALSON type or equivalent.

The air Intake should be mounted at least 2,000 mm above ground level, and A turbo cyclone pre-cleaner filter shall be installed.

6.1.3. Exhaust pipe

The exhaust pipe shall be mounted in an upswept position.

6.1.4. Engine oil filter

A full-flow heavy-duty replaceable filter element type shall be provided.

6.1.5. Fuel tank

The Fuel tank capacity shall be sufficient to ensure at least **25** hours of continuous operating.

6.2. Transmission

An automatic Powershift transmission with a heavy-duty torque converter (see para. 2.2 & 2.3) will be installed.

The transmission will include safety features to prevent the starting of travel motion with a full load in high gear.

Forward-reverse gear shifting lock-out should be provided.

A hydrostatic drive system is not accepted.

6.2.1. Transmission oil system

The transmission oil system shall have a separate oil cooler and full flow heavy duty oil filter with a replaceable element. There will not be any connection between the transmission oil system and the hydraulic system.

Synthetic oil shall be offered as **an option**.

7. TRAVEL

7.1. Wheels

Tires: pneumatic bias tubeless type shall be provided.

Application: industrial use.

Six (6) Radial tires will be offered as an option.

Tires such as Bridgestone, Toyo, Yokohama, Michelin, Goodyear, Continental, or equivalent will be offered.

Tire rating:

Tire loading shall not exceed the rated capacity defined by ETRTO standards for the specific tire type and application.

Protection rings on steering wheel nuts will be provided.

Spare wheel (complete – bias tire tubeless and rim) will be offered **as an option**.

Spare wheel (complete – radial tire tubeless and rim) will be offered **as an option**.

Tire Pressure Monitoring System (TPMS) with display inside the cabin shall be offered as an option.

7.2. Steer axle and steering cylinder

The steering cylinder shall be a double-acting, double-ended single cylinder, with fixed-length rod, heavy-duty construction, and well-protected

A pivoting steer axle with dual steer cylinder is unacceptable.

7.3. Steering system

The steering system will be fully hydrostatic. In the event of engine shutdown or power failure, the system shall allow emergency steering (dead engine) to ensure safe control of the FLT. The system shall comply with the safety requirements of EN ISO 3691-1 and

EN 1175:2020.

An electro-hydraulic dead engine steering shall be offered **as an option**.

7.4. Drive axle

An extra-wide and heavy-duty drive axle with a planetary final drive shall be installed.

A wider drive axle shall be preferred.

Special attention shall be given to the configuration and durability of the drive axle to ensure reliable operation under the conditions described in para. 1.

7.5. Brakes

The FLT shall be equipped with a full hydraulic wet multi-disc brake system on the front axle.

An independent cooling system for brake oil will be preferred.

7.6. Parking Brakes

7.6.1. A dry disc brake shall be fitted on the front drive axle or drive shaft.

7.6.2. The brake will be spring actuated, hydraulic release and control manually from inside the cab (switch or handle).

7.6.3. The parking brake will automatically apply when hydraulic pressure drops.

7.6.4. The transmission will change to neutral when the parking brake is applied.

8. Hydraulic System

8.1. All hydraulic components shall be of heavy-duty type and to be made of highest quality steel.

All cylinder rods will be chrome plated.

8.2. All hydraulic hoses (fixed and flexible), valves blocks will be well protected against operation damage (either well concealed or covered by a protective robust shield).

Flexible hoses to be as short as possible and easily replaceable.

Special attention will be given to the protection of components mounted on the front carriage.

8.3. The hydraulic system shall be designed to minimize the use of pipes and hoses.

8.4. A filter on the return line with restriction indicator and filter on delivery line shall be provided to protect the hydraulic System against pump failure.

- 8.5. A multistage control valve will be provided to control all FLT systems and the optional system.
- 8.6. A hydraulic accumulator in the lifting circuit will be provided to reduce the dynamic effects caused to the FLT by the load during operation.
- 8.7. A load lowering safety valve provides safe lowering of the load in the event of hydraulic hose failure.
- 8.8. Hydraulic oil shall be specified by the manufacturer.

9. **Fuel System**

A double-stage fuel filter system will be provided:

- First stage - sediment bowl.
- Second stage - replaceable cartridge.

10. **Electrical System:**

- Electrical system voltage: 24 Volt.
- Heavy duty alternator, 24 volt.
- Battery - at least 110 amp/hr, maintenance free type & battery master switch.
- All electric components to be heavy-duty and rated for 24 volt operation.
- Fuses and relays will be mounded in central electrical box.
- **CAN-BUS** system will be included. Redundant CAN-BUS system shall be preferred.
- TELE SERVICE AND MONITORING - **Option**

The system shall be offered, allowing the manufacturer to access each FLT's remotely in order to monitor performance and diagnose faults. In the event of any malfunction, it will be possible to identify, adjust, and correct the issue remotely.

The **option** will be priced separately.

11. **Driver Cab, Controls, and Instruments**

- 11.1. An enclosed, center mounted operator cab with overhead guard, in compliance with DIN 15165, ISO 6055, ANSI B56.1 or an equivalent internationally recognized standards shall be provided.
- 11.2. The cab shall be fitted with a horizontal panoramic windshield (one complete glass without any vertical divisions, joints or connections, providing a wider field of vision to the sides) extending continuously from the left door frame to the right door frame

without side glass.

Both side doors shall be equipped with sliding windows

All windows will be made of tinted safety glass and as detailed follows:

11.2.1. Front windshield: Toughened (tempered) tinted safety glass) with a thickness of approximate ~ 6 mm.

- **Option**: Laminated tinted safety glass.

11.2.2. Rear window: Toughened (tempered) tinted safety glass.

- **Option** Laminated tinted safety glass.

11.2.3. Roof window: toughened (tempered) tinted safety glass.

- **Option**: Laminated tinted safety glass shall be offered as an.
- **Option**: Polycarbonate with anti-sun reflection.

11.2.4. Doors windows: toughened (tempered) tinted safety glass.

- **Option**: Laminated tinted safety glass.

Note to sections 11.2.1 TO 11.2.4:

The tinted glass shall comply with European regulation ECE R43, ensuring a minimum Visible Light Transmission (VLT) of 70% for the front windshield and meeting all applicable safety standards for other windows.

11.2.5. Wipers (interval) and washers will be installed on the front, rear and roof windows.

11.3. **Great care** shall be given to the operator's (cab) visibility (front, rear, and sides). The cab, front and rear windows shall be large and unobstructed to ensure clear visibility in all directions.

The visibility layout drawing, including rear and front view angles, shall be submitted.

A large cab will be preferred.

The Overhead cab guard will be according to the standards in paragraph 2.4 above.

11.4. The Cab shall be provided with sound and heat insulation. Extra insulation should be provided also between the cab and engine.

Heater/demister and fresh air ventilator, with high ventilation efficiency will be installed.

The cab should be mounted on rubber elements to ensure a low vibration level in the operator's compartment.

11.5. Sound level

the sound level at operator's ear shall not exceed **76** db (A) in accordance with **EN 12053** standard and external sound level shall not exceed **110** dB(A) in accordance with EU noise Directive **2000/14/EC** or equivalent standards to be approved by **ISR**. The manufacturer or the Bidder shall submit measured noise data for the equipment offered with their proposal.

A lower sound level will be preferred.

11.6. Air conditioning

An air conditioning unit with an integrated heating system shall be installed inside the cab. The refrigerant will be type R134a.

At the ambient conditions specified in para. 1, the system should be capable of reducing the cab interior temperature to 18 °C.

All components must be HD - suited and suitable for automotive equipment.

A high cooling capacity (in KW or BTU/h) will be preferred.

11.7. Driver's seat

A fully adjustable and full-suspension driver's seat shall be provided, along with one additional folding seat.

The driver's seat shall feature a high backrest, a three-point safety belt, and an operator presence detection system.

11.8. The following controls will be provided:

11.8.1. Two brake pedals located on the left and right sides of the steering column.

11.8.2. Throttle pedal shall be located on the right side.

11.8.3. Powershift selector for forward/reverse motion control.

11.8.3.1. Monotrol pedal (combined throttle and direction selector) will be offered as an option.

11.8.4. Mast lift / lower control.

11.8.5. Tilt control.

11.8.6. Fork side shift and positioner controls.

11.8.7. Hydraulic system motion controls.

All controls will be located in such a way to ensure smooth, easy and safe operation.

Control handles listed in 11.8.4 - 11.8.7 will be located on the right side of the steering wheel within easy reach of the operator.

Joystick control shall be provided.

11.9. Instruments

At least the following indicators/gauges will be provided:

Hour meter, engine coolant temp, fuel gauge, voltmeter, engine oil pressure gauge, transmission oil temperature gauge.

11.10. Warning light

At least the following warning lights or indicators shall be provided:

Low engine oil pressure, high transmission oil temperature, low transmission oil pressure, alternator malfunction, clogged air cleaner and water in the fuel (all including warning signal).

11.11. Engine protection system

An automatic engine shut-off protection system or "crawl home" system shall be provided. The "Crawl Home" System should reduce the engine RPM and the power output.

The systems mentioned above will monitor at least the following conditions:

11.11.1. Engine - high cool temperature.

11.11.2. Engine - high oil temperature.

11.11.3. Engine - low coolant level.

11.11.4. Engine - low oil pressure.

11.11.5. Transmission - high oil temperature.

11.12. Lights (traveling lights to be operated automatically upon engine starting)

- Two mast-mounted floodlights.
- Tail, stop, reverse, and turn signals.

- Two floodlights – mounted on front fenders.
- Cab – mounted rotating amber beacon.
- Reverse warning alarm with flashing red lights.
- Two floodlights mounted on the rear side of cab.
- **Optional:** Two additional floodlights on the rear side of cab.
- Two flood lights on the front side of the cab to illuminate the fork tips.
- **Optional:** Two additional floodlights on the front side of the cab to illuminate the fork tips.

11.13. A forward-reverse gear shifting lock-out should be provided (see par. 6.2)

11.14. Two rearview mirrors will be installed on the front fenders, and one panoramic rearview mirror inside the cab.

11.15. A radio with BT, FM, USB (including antenna and 2 speakers) will be provided.

11.16. Rear-View Camera System with 7" Color Monitor – Optional (to be priced separately)

A rear-view camera system shall be offered as an optional accessory. The system shall provide the operator with a continuous, real-time view of the rear travel direction of the FLT. The system shall include a high-resolution camera mounted at the rear of the vehicle and a monitor installed in the operator's cabin.

The system shall meet the following minimum requirements:

11.16.1. Monitor size & type: 7" color LCD/TFT monitor.

11.16.2. Resolution: at least 480*234 pixels
Higher resolution systems are acceptable and preferred.

11.16.3. Vibration Resistance:
The system shall be designed and approved for mobile and off-road applications, with protection against vibration and shock in accordance with ISO 16750 or equivalent.

11.16.4. Rear wide-angle view:
Rear camera shall provide a wide-angle view with a minimum horizontal field of view of 110°.
Wider viewing angles (e.g., up to 120°–130°) are preferred for enhanced visibility and safety.

- 11.16.5. Power source 11 - 30 VDC.
- 11.17. Standard 24-volt and 12-volt auxiliary sockets shall be installed in the cabin.
- 11.18. Public Address System – Optional (To Be Priced Separately)
A public address (PA) system of model PA300 manufactured by Federal Signal Corporation, or equivalent, shall be offered.
The system shall be a heavy-duty, 24-volt unit with an output power of 100 watts RMS, and shall be protected against vibration.
- 11.19. The cab shall be electro-hydraulically tiltable to allow easy access for engine maintenance. Manual tilt mechanisms shall be provided as a backup system.
- 11.20. Rear Ultrasonic Obstacle and Personal Proximity Warning System – **Optional**
The system shall continuously monitor the area behind the FLT and issue an audible warning to the operator upon detection of obstacles, including personnel and stationery or moving objects. The minimum horizontal detection angle shall be 110 degrees. Where technically feasible, the system shall support personal identification through a compatible mobile application, enabling enhanced detection of individuals carrying authorized mobile devices.
- 11.21. Rear Radar-Based Obstacle Detection System - **optional**
The system shall be capable of detecting objects, vehicles, and personnel located within the rear operating zone of the FLT, under all weather and lighting conditions. The system shall meet the following minimum technical requirements
Detection range: Minimum of 0.5 to 6 meters behind the vehicle.
Detection angle: Horizontal coverage of at least 120 degrees.
Warning interface: Audible alert to the operator with progressive intensity based on proximity, and visual indication (e.g., LED display or dashboard integration).
Ingress protection: All external components shall be rated IP67 or higher.
A general layout drawing showing the proposed mounting location(s) of the radar sensor(s) on the FLT shall be submitted with the offer.
- 11.22. Foldable or rollable sun visors shall be provided for the front, roof, and rear windows.
- 11.23. A support bar for equipment such as a communication system and/or public address system shall be installed on either the right-hand side (RHS) or left-hand side (LHS) of

the cab. The exact position and location of the support bar shall be specified by ISR during the pre-delivery process.

11.24. Door holders shall be installed.

11.25. Anti-slip of aluminum plating on fenders shall be installed - **Optional**.

12. **Grease**

The FLT shall be greased in accordance with the manufacturer's specifications, or with an equivalent grease subject to the manufacturer's approval.

Central Automatic Lubrication System

The manufacturer shall propose a Central automatic Lubrication progressive system.

A general layout drawing shall be added.

The System should be LINCOLN or equivalent.

13. Fire suppression system and fire extinguisher shall be installed.

- An automatic fire suppression system in the engine compartment shall be installed.

A system such as FOGMAKER, Dafo or equivalent shall be offered.

- A fire extinguisher shall be provided.

14. **Paint**

The FLT shall be painted according to the manufacturer's standard paint scheme.

Note: The Paint system should be complied with according to ISO 12944 and at least corrosion category **C2** or equivalent standard.

A corrosion category higher than C2 shall be preferred.

14.1. A paint system according to ISO 12944 and at least **C3** or other equivalent standards will be offered **Option**.

15. **Quality Control**

15.1. The manufacturer's quality control system should follow **ISO 9001:2015** guidelines.

The manufacturer shall submit a certificate issued by independent organizations showing that he meets the **ISO 9001:2015** requirement.

16. **Final Adjustment and Testing**

The manufacturer shall submit the full testing program to **ISR** for approval. The testing program shall be detailed and shall include at a minimum the following:

- 16.1. Content of test.
- 16.2. Required characteristics and results data.
- 16.3. Method of conducting control and measuring.

The final test shall be conducted at the manufacturer's plant with or without the **ISR** representative. The test report will be submitted to **ISR**.

17. **Safety Arrangements**

- 17.1. General assembly and detailed design of the FLT's shall conform to the safety regulations and codes.
- 17.2. All nuts connecting the moving and rotating parts (couplings, sheaves, etc.) shall be of the self-locking type to prevent their loosening due to vibration.
- 17.3. All exposed rotating parts shall be provided with rigid safety guards.
- 17.4. Unavoidable hazardous points shall be marked with special warning paint (yellow and black stripes).
- 17.5. Walking surfaces must be coated with anti-slip paint.

18. **Maintenance**

- 18.1. Easy access shall be provided to perform all daily maintenance checks and liquid replenishment tasks without the need to tilt the cab or to dismantle obstructing components.
- 18.2. One maintenance kit including all filters and belts up to 3,000 w/hr shall be offered – **Option**.

19. **Acceptance Test Criteria**

- 19.1. Acceptance tests for the forklifts shall be carried out on the basis of the DS (Data Sheet) forms, as completed, signed, and submitted by the Bidder as an integral part of its bid. These tests are intended to verify that each forklift supplied fully complies with all data, requirements, characteristics, and performance parameters declared in the DS, as well as with the requirements of the technical specification and the contract.
- 19.2. The acceptance tests shall include verification of technical and operational data, including: lifting capacity, engine power, front axle width, wheelbase, noise level in the operator's cab, overall dimensions, forklift weights, load distribution, travel speed,

lifting height, mast tilt forward and backward, inner and outer turning radius, lifting speed, lowering speed, and any other data included in the DS.

19.3. Any deviation, discrepancy, or failure to comply with one or more of the data or performance parameters declared in the DS and required under the tender documents shall be deemed a failure to pass the acceptance tests. In such case, the Supplier shall, at its sole expense, perform all repairs, adjustments, completions, or replacements required, and shall resubmit the forklift for repeat testing until the ISR confirms that all requirements have been fully met.

SLA

1. **SLA during the warranty period**
 - 1.1. In the event of a faulty or broken part, the proposer must replace the part under warranty.
 - 1.2. Fault reporting service – 24/7, 7 days a week. Answering via staffed stations or automatic recording.
 - 1.3. Since the difficulty in transporting FLT32 ton, FLT38 ton and Reachstackers on the roads, the supplier must have a means of transportation and the ability to repair faults, perform preventive maintenance and Predictive maintenance within the ISR sites.
 - 1.4. During the warranty period, the proposer shall conduct maintenance according to the manufacturer's instructions, depending on engine hours and the technical experience of Israel Railways (ISR).
 - 1.5. All parts/replacements must be original and conform to the original manufacturer's spare parts catalog or parts manual.
 - 1.6. The proposer must provide services to all sites where the FLT32 ton or FLT 38 ton or Reachstackers will be located.
 - 1.7. The Proposer must submit a monthly performance report to ISR, including at least the following details:
 - 1.7.1. Number of days and hours of FLT out-of-service fault
 - 1.7.2. Description of the Fault
 - 1.7.3. Downtime each fault

- 1.7.4. Spare parts replacement list
- 1.7.5. Monthly downtime duration
- 1.7.6. Planned preventive maintenance
- 1.7.7. preventive maintenance performed
- 1.7.8. Planned Predictive maintenance
- 1.7.9. Predictive maintenance performed

2. Schedule of Penalties:

<u>Fault Type</u>	<u>Target SLA</u>	<u>Definition</u>	<u>Penalty Amount</u>
<u>Critical Fault</u> (Breakdown Fault)	<u>On-site arrival</u> <u>within 5 hours</u>	<u>Arrival of a</u> <u>technician/representative</u> <u>On-site from the time of</u> <u>reporting</u>	<u>250 NIS for each</u> <u>hour of delay</u>
<u>Non-Critical</u> <u>Fault</u> (non-breakdown fault)	<u>On-site arrival</u> <u>within 8 hours</u>	<u>Arrival of a</u> <u>technician/representative</u> <u>On-site from the time of</u> <u>reporting.</u>	<u>200 NIS for each</u> <u>hour of delay</u>
<u>Critical Fault</u> (Breakdown fault)	<u>Repair within</u> <u>24 hours</u>	<u>Full restoration of system</u> <u>operations</u>	<u>600 NIS for each</u> <u>day of delay</u>
<u>Non-Critical</u> <u>Fault (Non-</u> <u>breakdown fault)</u>	<u>Repair within</u> <u>24 hours</u>	<u>Full restoration of system</u> <u>operations.</u>	<u>400 NIS for each</u> <u>day of delay</u>
<u>Supply and</u> <u>repair of</u> <u>imported spare</u> <u>parts</u>	<u>Supplier to</u> <u>provide an</u> <u>estimated</u> <u>schedule</u> <u>including</u> <u>repair time</u> <u>(price quote).</u>	<u>Full restoration of system</u> <u>operations.</u>	<u>300 NIS for each</u> <u>day of delay</u>

3. Response and Repair Times:

3.1. Response times for handling critical faults (FLT's and Reachstackers out of service) that prevent the FLT's (32 and 38 ton) and Reachstackers from operating:

3.1.1. Arrival time for repair: Within 5 hours from reporting.

3.1.2. Fault repair completion: Within 24 hours of technician arrival on-site.

3.1.3. If a part or component for FLT 32 ton, FLT 38 ton, or Reachstackers must be imported from abroad while the equipment is under warranty, the supplier must provide an estimated arrival time for the part and an estimated timeframe for resolving the fault.

In the event of a delay beyond the specified timeframes, the Supplier shall be subject to penalties in according with the table in section 2 above.

3.2. Response times for handling non-critical faults (FLT's 32 ton/38 ton and Reachstacker in service) that do not prevent the equipment from operating:

3.2.1. Arrival time for repair: Within 8 hours from reporting.

3.2.2. Fault repair completion: Within 48 hours of technician arrival on-site.

2. In the event of a delay beyond the specified timeframes, the Supplier shall be subject to penalties in according with the table in section 2 above. **Equipment Availability:**

2.1. FLT's 32 ton, FLT38 ton and Reachstackers must be available for operation at least 97% of the time.

2.2. Equipment downtime (FLT's 32 ton, FLT38 ton and Reachstackers out of service) exceeding 3% annually will be subject to pre-agreed compensation for number of days specified in the table below.

Downtime per Forklift and Reachstacker (Semi-Annual)	Penalty (NIS/day)
Up to 5 days	None
6-8 days	1,000
9 days or more	2,000

3. Response and Repair Times:

3.1. Response times for handling critical faults (FLT's and Reachstackers out of service) that prevent the FLT's (32 and 38 ton) and Reachstackers from operating:

3.1.1. Arrival time for repair: Within 5 hours from reporting.

3.1.2. Fault repair completion: Within 24 hours of technician arrival on-site.

~~3.1.3. If a part or component for FLT 32 ton, FLT 38 ton, or Reachstackers must be imported from abroad while the equipment is under warranty, the supplier must provide an estimated arrival time for the part and an estimated timeframe for resolving the fault.~~

~~In the event of a delay beyond the specified timeframes, the supplier will be penalized according to the table of Equipment Availability section 17.~~

~~3.2. Response times for handling non-critical faults (FLTs 32 ton/38 ton and Reachstacker in service) that do not prevent the equipment from operating:~~

~~3.2.1. Arrival time for repair: Within 8 hours from reporting.~~

~~3.2.2-3.2.3. Fault repair completion: Within 24 hours of technician arrival on-site.~~

4. After repair or maintenance tasks, the supplier must clean the work area and remove all equipment, tools, rags, jerry cans, oils etc. from the railway site.

5. Maintenance:

5.1. Preventive Maintenance:

5.1.1. Preventive maintenance will be performed according to the manufacturer's instructions ~~and guidance from ISR technical representatives.~~

5.1.2. As part of the preventive maintenance, all engine components, the hydraulic system, the brakes, the tires and the electrical systems will be checked according to the manufacturer's instructions.

5.1.3. Upon completion of each service, a detailed report of the inspections and maintenance performed shall be submitted to the ISR.

5.2. Predictive Maintenance:

5.2.1. Maintenance will be performed using ~~sensors, temperature gauges, vibration monitors~~, oils tests, and other tools for the manufacturer's instructions ~~and guidance from ISR technical representatives.~~

5.3. **Spare parts availability**

5.3.1. The availability of critical spare parts will be ensured within a maximum of **48** hours for urgent orders.

5.3.2. The supplier shall commit to maintaining a minimum stock of critical spare parts in accordance with the manufacturer's instructions and subject to the

approval and instructions of a technical representative of the railway (ISR). The stock shall be stored in a local or regional warehouse.

6. Operator/User Training:

- 6.1. The supplier will commit to training the operating teams ~~and refresher courses once a year.~~
- 6.2. The supplier will provide instruction manuals.

7. Control and Reporting:

- 7.1. The supplier will provide a control and reporting system (online technician/customer manager) to monitor service calls and response times.
- 7.2. A monthly performance report will be submitted to the ISR and will include statistics on repair times, recurring faults, and future maintenance plans.
- 7.3. SLA service during Optional Period.

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