

MCX20

SPECIFICATIONS

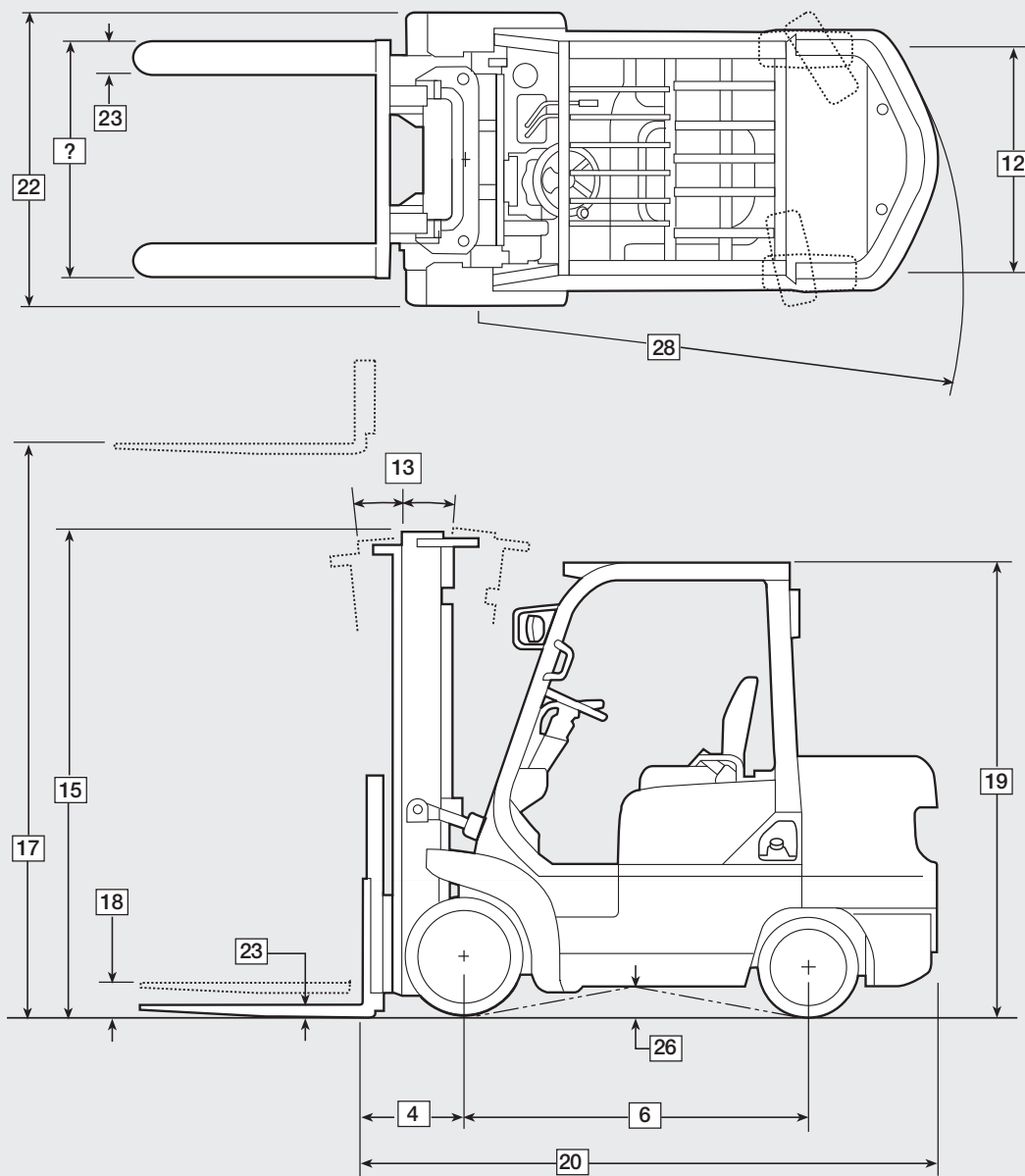
HAMECH

Cushion Tire Lift Trucks

LPG and GAS
8,000 – 10,000 LB CAPACITIES



MCX20 CUSHION TIRE LIFT TRUCKS



NOTE: Most values shown in this publication are rounded. Therefore, direct conversion between metric and English or Imperial may be slightly different from those shown. The performance of machines is affected by the condition of the truck and how it is equipped, as well as the nature and condition of the operating area.

If these specifications are critical or if your needs exceed the specifications shown here, discuss the proposed application with your authorized dealer.

*Optional masts, attachments, longer load dimensions, and higher lifting heights may result in downrating of the capacity. Contact your authorized dealer.

**Other mast heights available. See MAST DATA chart for other standard mast heights. Contact your authorized dealer.

†Includes 48-inch (1,220 mm) high load backrest. Contact your authorized dealer.

††Add load distance and clearance. Contact your authorized dealer.

MCX20 CUSHION TIRE LIFT TRUCK SPECIFICATIONS

GENERAL		G35ST-8	G35BCS-8	G45ST-8	G45BCS-8
1	Power Type	Gasoline	LPG	Gasoline	LPG
2	Operation Type	Sit-Down	Sit-Down	Sit-Down	Sit-Down
3	Capacity @ 24 in. (600 mm) load center* lbs. (kg)	8,000 (3,630)	8,000 (3,630)	10,000 (4,535)	10,000 (4,535)
4	Load distance from center axle (2-stage) in. (mm)	17.9 (455)	17.9 (455)	17.9 (455)	17.9 (455)
5	Load distance from center axle (3-stage mast) in. (mm)	20.2 (515)	20.2 (515)	20.2 (515)	20.2 (515)
6	Wheelbase in. (mm)	63.0 (1,600)	63.0 (1,600)	63.0 (1,600)	63.0 (1,600)
WEIGHT					
7	Service weight (includes 2-stage std. mast & forks) lbs. (kg)	12,960 (5,880)	13,340 (6,050)	14,780 (6,705)	15,070 (6,835)
TIRE					
8	Tire type	Cushion	Cushion	Cushion	Cushion
9	Tire size, front	22 x 9 x 16	22 x 9 x 16	22 x 6 x 16 Dual	22 x 6 x 16 Dual
10	Tire size, rear	18 x 7 x 12 1/8	18 x 6 x 12 1/8	18 x 7 x 12 1/8	18 x 7 x 12 1/8
11	Number of wheels, front/rear x=driven	2x / 2	2x / 2	4x / 2	4x / 2
12	Tread (center of tires) Front in. (mm)	38.8 (985)	38.8 (985)	41.9 (1,065)	41.9 (1,065)
	Rear in. (mm)	39.8 (1,010)	39.6 (1,005)	39.8 (1,010)	39.8 (1,010)
DIMENSIONS					
13	Tilting angle, 2-stage (FV) masts, fwd./bkwd. deg.	6 / 6	6 / 6	6 / 6	6 / 6
14	Tilting angle, 3-stage (TFV) masts, fwd./bkwd. deg.	6 / 6	6 / 6	6 / 6	6 / 6
15	Mast height, lowered (2-stage std. mast) in. (mm)	91.0 (2,310)	91.0 (2,310)	95.0 (2,410)	95.0 (2,410)
16	Mast height, extended (2-stage std. mast)† in. (mm)	179.0 (4,545)	179.0 (4,545)	178.0 (4,520)	178.0 (4,520)
17	Maximum fork height (2-stage std. mast)** in. (mm)	131.0 (3,330)	131.0 (3,330)	130.0 (3,300)	130.0 (3,300)
18	Free lift height (2-stage std. mast) in. (mm)	7.0 (180)	7.0 (180)	7.0 (180)	7.0 (180)
19	Height overhead guard in. (mm)	83.7 (2,125)	83.7 (2,125)	83.7 (2,125)	83.7 (2,125)
20	Length to fork face (2-stage mast) in. (mm)	104.1 (2,645)	95.9 (2,435)	108.3 (2,750)	99.6 (2,530)
21	Length to fork face (3-stage mast) in. (mm)	106.4 (2,705)	98.2 (2,495)	110.6 (2,810)	102.3 (2,605)
22	Overall width, at drive tires (single) in. (mm)	48.0 (1,220)	48.0 (1,220)	53.9 (1,370)	53.9 (1,370)
23	Forks, thickness x width x length in. (mm)	2.0 x 6.0 x 42.0 (50 x 150 x 1070)	2.0 x 6.0 x 42.0 (50 x 150 x 1070)	2.0 x 6.0 x 42.0 (50 x 150 x 1070)	2.0 x 6.0 x 42.0 (50 x 150 x 1070)
24	Carriage width / ITA Class in. (mm)	46.9 (1,190) / III	46.9 (1,190) / III	46.9 (1,190) / III	46.9 (1,190) / III
25	Ground clearance, under mast in. (mm)	4.0 (100)	4.0 (100)	4.0 (100)	4.0 (100)
26	Ground clearance, center of wheelbase in. (mm)	4.9 (125)	4.9 (125)	4.9 (125)	4.9 (125)
27	Right angle stacking aisle (2-stage mast)†† in. (mm)	107.9 (2,740)	100.4 (2,550)	111.6 (2,835)	105.7 (2,685)
	Right angle stacking aisle (3-stage mast)†† in. (mm)	110.2 (2,800)	102.7 (2,610)	113.9 (2,895)	108.0 (2,745)
28	Turning radius, outside in. (mm)	90.0 (2,285)	82.5 (2,095)	93.7 (2,380)	87.8 (2,230)
PERFORMANCE					
29	Travel speed, forward, loaded/unloaded mph (km/h)	9.6 (15.5) / 9.6 (15.5)	9.6 (15.5) / 9.6 (15.5)	9.6 (15.5) / 9.6 (15.5)	9.6 (15.5) / 9.6 (15.5)
30	Lifting speed, loaded/unloaded (2-stage mast) fpm (mm/s)	112 (570) / 114 (580)	112 (570) / 114 (580)	93 (470) / 95 (480)	93 (470) / 95 (480)
31	Lifting speed, loaded/unloaded (3-stage mast) fpm (mm/s)	108 (550) / 110 (560)	108 (550) / 110 (560)	89 (450) / 91 (460)	89 (450) / 91 (460)
32	Lowering speed, loaded/unloaded (2-stage mast) fpm (mm/s)	102 (520) / 93 (470)	102 (520) / 93 (470)	95 (480) / 85 (430)	95 (480) / 85 (430)
33	Lowering speed, loaded/unloaded (3-stage mast) fpm (mm/s)	98 (500) / 89 (450)	98 (500) / 89 (450)	91 (460) / 81 (410)	91 (460) / 81 (410)
34	Maximum drawbar pull, loaded lbs. (kN)	7,730 (34.4)	7,730 (34.4)	7,500 (33.3)	7,500 (33.3)
35	Maximum gradeability, loaded/unloaded at 1 mph %	40 / 18	36 / 18	32 / 16	29 / 16
36	Service brake, operation / control	Foot / Hydraulic	Foot / Hydraulic	Foot / Hydraulic	Foot / Hydraulic
37	Parking brake, operation / control	Hand / Mechanical	Hand / Mechanical	Hand / Mechanical	Hand / Mechanical
38	Steering, type	Hydrostatic, Power	Hydrostatic, Power	Hydrostatic, Power	Hydrostatic, Power
DRIVE					
39	Battery voltage / capacity (20 hour rating)	12 / 60	12 / 60	12 / 60	12 / 60
40	Engine model	TB45E	TB45E	TB45E	TB45E
41	Rated output (SAE Gross) HP (kW) @ rpm	95 (71) @ 2400	95 (71) @ 2400	95 (71) @ 2400	95 (71) @ 2400
42	Maximum torque (SAE Gross) lb. - ft. (Nm) @ rpm	203 (275) @ 1600	203 (275) @ 1600	203 (275) @ 1600	203 (275) @ 1600
43	No. of cylinders/ displacement cu. in. (cm3)	6 / 273 (4,478)	6 / 273 (4,478)	6 / 273 (4,478)	6 / 273 (4,478)
44	Cylinder bore x stroke U.S. gallons (liters)	3.9 (99.5) x 3.8 (96)	3.9 (99.5) x 3.8 (96)	3.9 (99.5) x 3.8 (96)	3.9 (99.5) x 3.8 (96)
45	Fuel tank capacity U.S. gallons (liters)	15.9 (60)	---	15.9 (60)	---
OTHER					
46	Relief pressure, maximum psi (bar)	2,700 (186)	2,700 (186)	2,700 (186)	2,700 (186)
47	Hydraulic tank capacity	12.4 (47)	12.4 (47)	12.4 (47)	12.4 (47)
48	Clutch	Torque converter	Torque converter	Torque converter	Torque converter
49	Transmission	Powershift	Powershift	Powershift	Powershift
50	Air cleaner type dB	Cyclone	Cyclone	Cyclone	Cyclone

MCX20 TRUCK DATA AND FEATURES

Maximum Fork Height in. (mm)	Mast Height Lowered in. (mm)	Mast Height Extended in. (mm)	Free Lift in. (mm)
G35 2-STAGE FREE VIEW (FV)			
119.0 (3,020)	85.0 (2,160)	167.0 (4,240)	7.0 (180)
131.0 (3,330)	91.0 (2,310)	179.0 (4,545)	7.0 (180)
147.0 (3,730)	99.0 (2,515)	195.0 (4,955)	7.0 (180)
158.0 (4,010)	105.0 (2,665)	206.0 (5,230)	7.0 (180)
170.0 (4,320)	111.0 (2,820)	218.0 (5,535)	7.0 (180)
G35 2-STAGE FULL FREE VIEW (FFV)			
118.0 (3,000)	85.0 (2,160)	166.0 (4,220)	37.0 (945)
130.0 (3,300)	91.0 (2,310)	178.0 (4,520)	43.0 (1,095)
146.0 (3,700)	99.0 (2,510)	194.0 (4,930)	51.0 (1,295)
157.0 (4,000)	107.0 (2,710)	205.0 (5,210)	59.0 (1,495)
G35 3-STAGE FULL FREE VIEW (TFV)			
159.0 (4,040)	78.0 (1,980)	207.0 (5,260)	30.0 (760)
171.0 (4,345)	82.0 (2,085)	219.0 (5,565)	34.0 (865)
185.0 (4,700)	87.0 (2,210)	233.0 (5,920)	39.0 (990)
197.0 (5,005)	91.0 (2,310)	245.0 (6,225)	43.0 (1,090)
217.0 (5,510)	98.0 (2,490)	265.0 (6,730)	50.0 (1,270)
237.0 (6,020)	105.0 (2,665)	285.0 (7,240)	57.0 (1,450)
G45 2-STAGE FREE VIEW (FV)			
119.0 (3,020)	89.0 (2,260)	167.0 (4,240)	7.0 (180)
130.0 (3,300)	95.0 (2,415)	178.0 (4,520)	7.0 (180)
146.0 (3,710)	103.0 (2,615)	194.0 (4,930)	7.0 (180)
158.0 (4,010)	109.0 (2,770)	206.0 (5,230)	7.0 (180)
169.0 (4,290)	115.0 (2,920)	217.0 (5,510)	7.0 (180)
G45 2-STAGE FULL FREE VIEW (FFV)			
118.0 (3,000)	85.0 (2,160)	166.0 (4,220)	37.0 (945)
130.0 (3,300)	91.0 (2,310)	178.0 (4,520)	43.0 (1,095)
146.0 (3,700)	99.0 (2,510)	194.0 (4,930)	51.0 (1,295)
157.0 (4,000)	107.0 (2,710)	205.0 (5,210)	59.0 (1,495)
G45 3-STAGE FULL FREE VIEW (TFV)			
158.0 (4,015)	82.0 (2,085)	206.0 (5,320)	34.0 (865)
164.0 (4,165)	84.0 (2,135)	212.0 (5,385)	36.0 (815)
185.0 (4,700)	91.0 (2,310)	233.0 (5,920)	43.0 (1,090)
197.0 (5,005)	95.0 (2,415)	245.0 (6,225)	47.0 (1,195)
218.0 (5,535)	102.0 (2,590)	266.0 (6,755)	54.0 (1,370)
236.0 (5,995)	108.0 (2,745)	284.0 (7,215)	60.0 (1,525)

NOTE: Specifications for 4-Stage Full Free View (QFV) Masts are not indicated. Please consult your authorized dealer for information and availability.

FEATURES AND EQUIPMENT

SPECIAL FEATURES

- The Nissan TB45E industrial engine delivers exceptional power, emission control, and reliable operation for enhanced productivity and fuel efficiency.
- Suspension compartment (SC) greatly reduces operator fatigue by isolating the compartment from engine and traveling vibrations.
- Swing up engine bonnet and lift out floor plate provide quick access for daily checks and maintenance.
- Open perforated steps and assist hand grip makes entry and exit easier.
- Dash display provides easy to read information to the operator and maintenance personnel.
- Compact "BoxCar Special" (BCS) units are available in 8,000 and 10,000 pound lifting capacities and are highly maneuverable.

STANDARD EQUIPMENT

- Dash Display – Fuel, Water Temperature and Hour Meter Gauges
- Drawbar Pin (Except BCS)
- Electronic Ignition; Anti-Restart Ignition Switch
- Engine Oil Pressure and Charge Warning Lamps
- Fully Hydrostatic Power Steering
- Headlights – OHG Mounted
- High Air Intake in OHG
- Horn
- Seat and Operator Restraint System with Lap Belts
- Load Backrest
- Overhead Guard
- Tilting Steering Column
- Torque Converter Oil Cooler
- Turn Signal, Back-up, Stop and Tail Lights

OPTIONAL EQUIPMENT

- Warning Devices – Audible
- Warning Devices – Visual
- Rear-view mirrors
- Additional Length Forks
- Attachments
- Auxiliary Hydraulic Valve
- Internal Hydraulic Hosing

TECHNICAL DATA

ENGINE

TB45E 6 cylinder in-line, 4.5 liter with ECCS (Engine Concentrated Control System) engine to meet the next generation of low emission standards. This new low RPM high torque industrial engine offers exceptional emission controls, acceleration, performance, reliability, and serviceability.

- Three choices: gasoline with multi-port fuel injection, or LPG with single-port (throttle body) fuel injection, or a dual-fuel operation easily switching between fuels with the flip of a switch. All trucks are equipped with a 3-way catalytic converter.
- Gasoline/LPG engines utilize an ECS that continuously monitors engine component data from the accelerator pedal, throttle position, mass-air-flow, water temperature, fuel pressure, and heated oxygen sensor, for increased sensitivity, reliable cold starts, and smooth performance throughout the operating range. An electronic governor is used for rev-limit protection.
- Temperature sensor prevents overheating during high temperature operation by automatically limiting engine speed until the coolant temperature returns to within normal operating range, if the coolant temperature exceeds a specific temperature, the engine will shut down automatically. When the engine exceeds normal operating temperature a dash displayed warning light is also illuminated.

- Aluminum-alloy head for efficient cooling.
- All engine main (seven) and connecting rod bearings are micro-grooved to provide smooth operation and reduce wear.
- Additionally, the low noise level provides comfort to the operator while driving the truck.

FUEL SYSTEM

Gasoline, LPG, or dual-fuel system. Integral fuel (gasoline) tank.

- Easy servicing gasoline four function electric fuel pump with, a fuel level gauge, fuel pressure regulator, and fuel filter.
- Liquid propane gasoline (LPG) fuel is available with (optional) 33 lb. or 43 lb. tank.

COOLING SYSTEM

Large capacity, highly efficient aluminum radiator with integral torque converter and hydraulic oil cooler.

- Easy access reservoir tank for checking or adding coolant.
- Plastic bladed cooling fan with unequal pitched blades for additional noise reduction and efficiency.

ELECTRICAL SYSTEM

Standard operator conveniences that are optional on most, such as a complete light package, horn and hour meter, are standard on Hamech lift trucks.

- 12-volt electrical system.
- 50-amp hour alternator with built in I.C. regulator.
- Key-lock, anti-restart ignition switch.
- Starter motor is enclosed with watertight connectors and planetary gear reduction for higher torque at lower current draw.
- Dash displayed fuel level and water temperature gauges.
- Warning lights for engine oil pressure, battery charging, brake fluid level, ECCS monitor and operation fault indicator.
- ECCS – SST (Service Support Tool) connector interface for rapid engine diagnostics.

HYDRAULIC SYSTEM

The hydraulic system features an integral reservoir, rebuildable direct drive gear pump, and fully filtered system.

- Large capacity reservoir and radiator cooling keeps the hydraulic fluid at an efficient operating temperature.
- Load sensing valve in the hydraulic circuit halts the flow of oil to the power steering system when steering wheel is idle.

TECHNICAL DATA

FRAME

All welded assembly of heavy gauge steel with integral hydraulic and fuel tanks.

- Flange type drive axle mounting and heavy duty engine mounts improve product reliability.
- Front cross member is an integral part of frame for increased structural integrity.
- Open perforated step on both sides of truck for easy entry and exit.

DRIVE AXLE

Heavy duty cast steel axle housing supports weight of truck and load while full-floating axle shafts transmit torque without bearing weight.

- Flange mounting on frame members reduces load deflection increasing stability and capacity.

TRANSMISSION

The Komatsu "Powershift" transmission is a single speed forward and reverse transmission and is built to exacting specifications. It is specially designed for use in industrial lift trucks.

- Column-mounted electric shift directional control lever provides effortless shift for forward and reverse.
- Optimized torque converter stall ratio, improve torque, and gradeability without sacrificing travel speeds.
- Modulating control valve absorbs shock during sudden acceleration or travel direction change. This function improves plugging capability and prolongs transmission life.
- In-line 100 mesh and 25 micron transmission oil filter and oil cooler are equipped as standard to ensure trouble free operation.
- Inching pedal reduces the fluid pressure to the clutch pack – to creep the truck or have high engine RPM's to perform faster hydraulic functions.
- Rebuildable clutch pack can be removed and re-built without removing the transmission.

BRAKES

Hydraulic assisted service brakes with master cylinder booster are self-adjusting and self-centering.

- High friction, large diameter brake linings are housed in the drive axle.
- Enlarged brake covers prevent dirt and water from entering the linings.
- Mechanical parking brake is actuated from adjustable toggle handle on dash allowing for more legroom in the operator's compartment.

STEER AXLE

Standard on demand, Fully Hydrostatic Power Steering.

- Heavy-duty fabricated steel axle with integral double-acting, double-ended power steer cylinder eliminates drag links and tie rods.
- All wheel hub bearing and king pins are easily accessible for lubrication and service.

TECHNICAL DATA

MAST, CARRIAGE, LBR AND FORKS

High-visibility mast assembly with 6-roller carriage available in 2-Stage Free-View and 2-Stage or 3-Stage Full Free-View type.

- Sealed bearings for reduced maintenance with standard side thrust rollers on carriage.
- Equipped with ITA Class III carriage bars for mounting forks or a variety of load handling attachments.
- 48-inch load backrest is standard.
- Single and double function internal hosing is available for operating attachments.

OPERATOR COMPARTMENT

A unique full-floating Suspension Compartment (SC) designed to isolate the operator from fatigue producing vibration.

- Comfort seat with built-in lumbar support, retractable seat belt, lateral restraint system, and adjustable 6" (150mm) of seat travel is standard.
- Hydraulic control levers have easy-to-read international symbols on the contoured grips and are within easy reach of the operator.

- Tilting steering console, with infinite adjustment through tilt range positions instrument panel in full view of operator at all times.
- Floor mounted automotive-type pedals with large ribbed pads for comfort and safe operation. Accelerator pedal is mounted on a Teflon roller mechanism to reduce operator effort.
- Full width floor mat provides large non-slip surface, reduces noise, vibration, and heat.
- Large open steps and convenient assist handgrip provides easy entry and exit for the operator.
- Separate inching and braking pedals provide positive control while reducing wear on the drive train.
- Trucks come standard with an integral headlight/turn indicator control. Turn indicator has automatic return to neutral.
- The 3-piece overhead guard is full width and offers excellent visibility for stacking high loads.

SERVICEABILITY

Excellent access to engine compartment, transmission, and radiator areas can be achieved without tools. Making daily checks and maintenance easier.

- The gas cylinder-assisted, one-piece all metal engine compartment cover lifts easily and is insulated to reduce noise and heat.
- Cover also features a single latch for locking down and an open cover catch to prevent cover from coming down while in open position.
- Bottom corner of cover is angled to allow more access into engine compartment for scheduled maintenance and service.

COMPLIANCE, APPROVALS AND ENVIRONMENTAL CONCERNS

Meets or exceeds American National Standards Institute, ASME B56.1 – Part III Safety Standards for Powered Industrial Trucks.

Compliant with UL 558 for the appropriate truck type. Contact your authorized dealer for application specifics. Meets or Exceeds EPA emissions standards.

Expect solid support nationwide

Hamech, a brand of Crown Equipment Corporation, offers a comprehensive service support network for Hamech LPG, gas or diesel lift trucks.

You can expect ongoing value with the comprehensive services available from your Hamech dealer. See it for yourself in state-of-the-art facilities stocked with products and parts inventories, advanced processes, equipment and tools. It's also apparent in the professionally trained service technicians and well-stocked service vans.

In addition, you can count on Hamech for operator and service technician training, flexible maintenance programs, fleet management and financial services. Hamech's association with Crown also assures you of access to industry-leading electric lift trucks for complete application flexibility.

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HAMECH

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